



**FIELD MEASUREMENT DATA**

**LPFM THIRD-ADJACENT CHANNEL  
INTERFERENCE ANALYSIS**

**THE MITRE CORPORATION**

**CONTRACT No. 50181**

**UNDER PRIME CONTRACT No. CON01000020**

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## 1 Background and Overview

On December 21, 2000, President Clinton signed into law an appropriations bill<sup>1</sup> containing a requirement that the Federal Communications Commission (FCC) conduct an experimental program to determine whether low-power FM (LPFM) radio stations will cause harmful interference to listeners of existing full-power FM (FPFM) radio stations or FM translator stations operating on third-adjacent channels.

Section 632(b) of the bill states that the “Commission shall select an independent testing entity to conduct field tests in the markets of the stations in the experimental program.” The statute further requires that the field tests include “an opportunity for the public to comment on interference” and “independent audience listening tests to determine what is objectionable and harmful interference to the average radio listener.”

Section 632(b) also requires the FCC to “conduct such tests in no more than nine FM radio markets, including urban, suburban, and rural markets, by waiving the minimum distance separations for third-adjacent channels for the stations that are subject of the experimental program. At least one of the stations shall be selected for the purpose of evaluating whether minimum distance separations for third-adjacent channels are needed for FM translator stations.”

Finally, the bill states that the FCC is required to submit a report to Congress on the testing activity results, including analysis, evaluations, and recommendations derived from the completed test components.

The MITRE Corporation was selected by the FCC to provide technical leadership and management of the mandated requirement by establishing and monitoring the experimental program. In this role, MITRE will prepare a final report for use by the

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<sup>1</sup> HR 5548, Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriation Law, FY 2001

FCC in reporting to Congress.

Comsearch was contracted by MITRE to conduct the field measurement and public comment data collection portions of this experimental program by measuring the effects of LPFM stations located within the protected F(50,50) contour and operating on the third adjacent channel of FPFM and FM translator stations.

The purpose of the measurements performed in this program was to provide experimental data on the extent to which an LPFM station operating on the third-adjacent channel of an FPFM or FM translator station produces perceptible degradation at the output of an FM receiver tuned to the FPFM or FM translator station broadcast signal.

The measurement data collected will be the basis for developing criteria for the retention, modification or elimination of rules governing the deployment of LPFM stations with respect to physical and frequency separation.

The measurements performed in this program were performed in accordance with experimental plans developed as part of the experimental program requirements. The experimental plan consisted of three parts: a Program Management Plan, a Field Test Plan (FTP), and a Test Procedures Plan (TPP). These documents will be part of the complete deliverable package to be provided to the FCC, and are described as follows:

- The Program Management Plan lays out the program schedule, planning mechanisms and risk assessments.
- The FTP describes the overall design of the tests, selection of test locations, procurement and assembly of hardware (portable LPFM broadcast station and test equipment), field test descriptions and data collection forms, and collection of public comment.

- The TPP provides the step-by-step instructions describing the setup of equipment and procedures that are called out in the FTP document. The field team performing the data collection used these procedures during all field measurements.

The TPP elaborated the detailed procedures used by the field team during the performance of field measurements. The field team followed the procedures of the TPP, without variance, in the performance of these field measurements.

## **2 Field Measurement Description**

The FM broadcast industry in the United States is well defined by rules and guidelines that provide station operators with a protected service contour for a corresponding class of FPFM broadcast station. This is accomplished through formal regulation of frequency separations, minimum separation distances between transmitters, antenna heights, and effective radiated powers (ERPs).

This experimental program is designed to measure the effects of LPFM stations transmitting on third-adjacent channels inside the protected service zones of selected FPFM stations. This was accomplished by operating a portable LPFM station within the F(50,50) contours of existing FPFM stations while recording the effects on receivers tuned to those FPFM stations. The F(50,50) contour is the locus of points where the field strength stipulated by the FCC for the station class in question is exceeded at 50% of the potential receiver locations for at least 50% of the time at a receiving antenna height of 9.1 meters. Recordings were made to document the effects of each test scenario or parameter change of the portable LPFM broadcast station. Public comment was requested and collected before, during, and after field testing in each LPFM measurement area. All public comments collected during the field measurements are referred to in Section 7 of this document and presented verbatim without any modification or interpretation in the appendix.

Execution of this experimental program was performed utilizing standard, off-the-

shelf components that were integrated into portable vehicle platforms which were then driven to various test sites throughout the United States. The use of standard components ensured that the data collection process was repeatable from site to site and could be easily reproduced at a later date if necessary.

## **2.1 LPFM Site Survey**

Prior to the field measurements, site surveys were performed at each of seven proposed LPFM sites. The surveys were performed to determine the feasibility of using the selected site for field measurements and to ensure that the associated third-adjacent channel FPFM broadcast station was received clearly on a vehicular receiver at each selected measurement site. GPS coordinates were obtained for use during the FCC licensing process for each selected portable LPFM site.

During this process, it was determined that the site in Ukiah, CA selected during the preparation of the Program Management Plan for the FM translator input field testing would not yield the range of desired-to-undesired signal ratios needed to obtain meaningful results for that test. Owatonna, MN, was selected as an alternative. Since Owatonna had been previously selected for one of the other tests, two sets of data were collected at Owatonna and appear in this report.

## **2.2 Field Measurement Parameters**

The field measurements were performed through the use of two portable platforms consisting of an LPFM transmitter station and a receiver vehicle. The details of the configuration of these vehicles are described in detail in FTP Section 3, and are described briefly below.

## **2.2.1 Portable LPFM Transmitter Station Parameters**

The portable LPFM transmitter station platform consisted of two parts: 1) a vehicle that housed the LPFM broadcast equipment, and 2) the associated test equipment for determining power output. The second part was a cell on wheels (COW) trailer with an extendable mast and a 2-bay FM antenna system.

### **2.2.1.1 LPFM Transmitter Station**

A portable LPFM station consisted of a standard CD player as a program source, a processor to accommodate the audio format changes and a transmitter. These components were integrated into the transmitter test vehicle. The transmitter output was connected to a 2-bay FM antenna system through a bi-directional coupler and 129 feet of ½-inch coaxial cable.

Three ERP settings, 10 W, 0 W, and 100 W, were used at each FM antenna height. Two program content settings were used at each ERP setting. Of the three types of programming formats used during the experimental program -- processed music (P), unprocessed music (U) and news/talk (T) -- only two of the program content settings were used at each receiver measurement location. These formats were rotated among the LPFM sites so that all combinations of the formats were tested. All of the test conditions used during the tests are listed in Section 4 of this document. A spectrum analyzer and a digital power meter were used to monitor and verify the output of the transmitter to maintain the calculated ERP of the transmitter during all operational periods.

### **2.2.1.2 Portable Tower**

The LPFM transmitter was connected to the antenna with 129 feet of coaxial cable. The antenna was placed on a portable tower that

can be extended and lowered to achieve the desired antenna height above ground level (AGL) for each test site. Two antenna heights, 10 m and 30 m AGL, were utilized.

### **2.2.1.3 Transmitter Test Vehicle Log**

The following parameters were recorded in the Transmitter Test Vehicle Log:

- Date of test
- LPFM site name
- Call sign of FPFM station
- Transmit frequencies of LPFM and FPFM stations
- Latitude and longitude of LPFM transmitter site
- Local time of test
- Power meter readings (incident and reflected)
- Cable losses
- Directional coupler coupling factor
- All on/off condition changes of the LPFM transmitter

The Transmitter Test Vehicle Log for each field measurement site is shown in Section 5.

### **2.2.1.4 LPFM Transmitter Station Equipment**

- Commercially available 300 W LPFM broadcast station:
  - o 300 W Energy-Onix Exciter (LPFM transmitter)
  - o A 3-band Audio Processor/Digital Stereo Generator (Omnia 4.5 FM) with processing presets
  - o 129 feet of ½-inch coaxial RF cable (Times Microwave T-Com 400, Ultra Flexible)
  - o Two 10-foot jumper cables (for connection from splitter to each antenna bay)
  - o 1 circularly polarized FM broadcast 2-bay antenna system, 0 dBd

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- 1 bi-directional coupler manufactured by the Connecticut Microwave Corporation (40 dB nominal coupling factor)
- 1 spectrum analyzer – Advantest U3661
- 1 power meter – Hewlett Packard E4418B
- CD player – Sony CDP-CE275
- GPS receiver – Garmin GPSMAP 76S
- Trailer-mounted tower

A diagram of the LPFM transmitter station can be found in Figure 1.

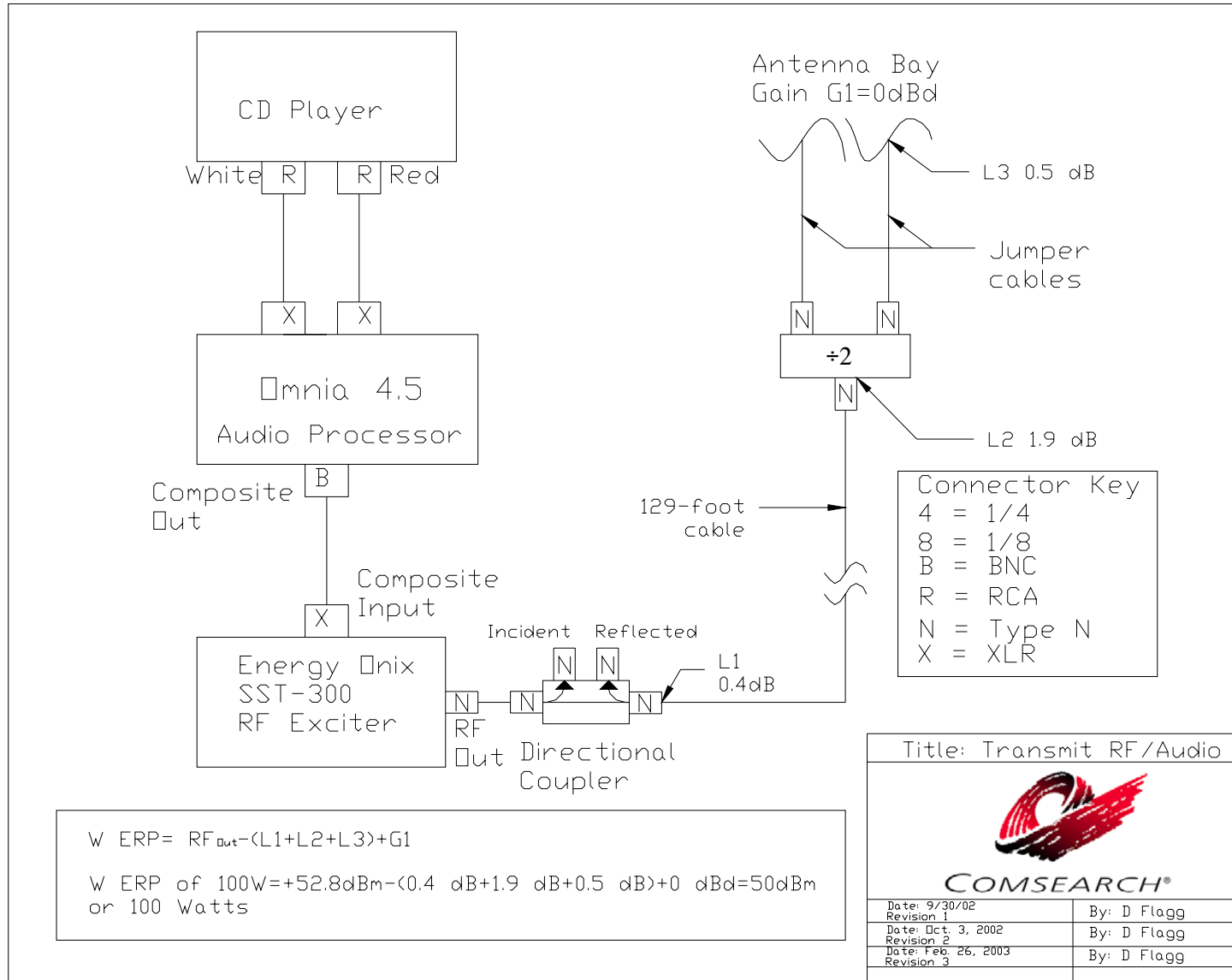


Figure 1 – Transmitter Station Diagram



## **2.2.2 Receiver Vehicle Parameters**

The second vehicle platform contained the spectrum analyzer, calibrated bi-conical dipole antenna, FM receiving equipment, and digital audio workstation. The FM receiving equipment consisted of a vehicular receiver, home receiver, clock radio, boombox, and Walkman, which were used to receive the FPFM signal, in the presence of the LPFM signal, at various test locations. During the testing at East Bethel, in which the associated FPFM station transmitted a subcarrier for the Reading Service for the Visually Impaired, a special receiver designed to receive the subcarrier signal was also used.

### **2.2.2.1 Data Collection**

At each test location and for each combination of antenna height, ERP, and program content, two-minute digital recordings were made simultaneously for all the FM receiver audio outputs. Each receiver (except for the special receiver used by the Reading Service for the Visually Impaired) had a stereo output so both the left (L) and right (R) channels were recorded. The recordings were made, using CD-quality sampling rates, on a Yamaha AW 4416 Professional Audio Workstation. The recordings were transferred from the audio workstation to compact disks (CDs). Two backups were made of the recordings. One remained in the field (as a backup) and one was sent to Comsearch for reformatting into serial two-minute recordings. The serial recordings were processed at the Comsearch facility on two identical Yamaha AW 4416 Professional Audio Workstations and transferred to CDs. Each two-minute recording was identified on these CDs with their unique identification number found on the data receiver data sheets. These CD recordings can be used for listening tests.

### **2.2.2.2 Locations for Receiver Equipment**

The movement of the receiver vehicle along a radial line drawn from the FPFM through the LPFM and out to the F(50,50) contour presents the opportunity to test the varying effect of the LPFM signal on the FPFM signal within the F(50,50) contour of the FPFM station. The vehicle was moved to points at 8 distinct distances, positioned as close to the radial line as was feasible, away from the LPFM broadcast station. The planned values of these distances were determined *a priori* by the ratio between the desired signal strength (D) of the FPFM station and the undesired signal strength (U) of the LPFM site. The values of the D/U ratio used for the selection of test receiver measurement locations were mathematically determined for use in this experiment. Specific details of the selection process and mathematical definitions can be found in Section 6 of the Field Test Plan (FTP). The distance values for the points actually used in the tests differed slightly in some cases from the planned values in order to meet requirements for safety or other operational factors.

### **2.2.2.3 Receiver Test Data Sheets**

The following parameters were measured and recorded in the Receiver Test Data Sheets:

- Date of each test
- Call sign of FPFM
- Frequency of FPFM and LPFM
- Measurement location number
- Latitude and longitude of measurement location
- Start time of each recording
- Spectrum analyzer readings (LPFM and FPFM stations)

- ID number of each recording
- FPFM program content
- Degradation comments

The Receiver Test Data Sheets for each field measurement site are shown in Section 5.

#### **2.2.2.4 Receiver Vehicle Equipment**

The following equipment was mounted in a vehicle for portability. The vehicle was equipped with an inverter which provided electrical power for the equipment. The equipment was not physically altered in any way, but merely strapped to an equipment shelf to prevent movement during transportation.

- Yamaha AW 4416 Professional Audio Workstation
- Blank CD media
- GPS receiver – Garmin GPSMAP 76S
- Spectrum analyzer – Advantest U3661
- Bi-conical dipole calibrated test antenna – EMCO 3104
- FM Receivers
  - Vehicle-mounted stereo as factory-installed by Ford in receiver test vehicle (Expedition)
  - Clock radio – RCA RP3755
  - Boombox – Sony CFD-F5000
  - Walkman FM radio – Sony Walkman SRF-M35
  - Home receiver – Kenwood VR-605
  - Reading Service for the Visually Impaired receiver, supplied by the Minnesota State Services for the Blind

The FM receivers selected for the experimental program are representative of equipment in use by the public at large and persons using the Minnesota State Services for the Blind receivers.

Selection of the above units was made after investigating the currently available models at the local Best Buy and Circuit City chain stores.

Requirements for selection were:

- The receiver must be capable of stereo reception. Stereo receivers were selected in all cases but one, because the stereo signal is more likely to be degraded in the course of the experiment than the monophonic signal. The exception was the receiver supplied by the Minnesota State Services for the Blind, since the Reading Service for the Visually Impaired is limited to a monophonic signal.
- A stereo earphone jack must be factory-installed. The jack was used to connect to the Yamaha AW4416 Professional recording workstation. This allowed the receiver to be used in the test without modification. Since the jack allows the output of the receiver to be directly connected to the recorder, it eliminated the need to use speakers and microphones that otherwise might have inadvertently recorded background noise from outside the vehicle.
- The receiver must have a digital tuner. This was required to eliminate the possibility of any of the receivers being mistuned, which could be misconstrued as interference when the recorded data is played back.

Once the receivers were selected matching the above requirements, major brand names were given the highest consideration in making the final selection. A secondary consideration was that the receivers should be median-priced at the time of purchase. A diagram of the receiver vehicle can be found in Figure 2.

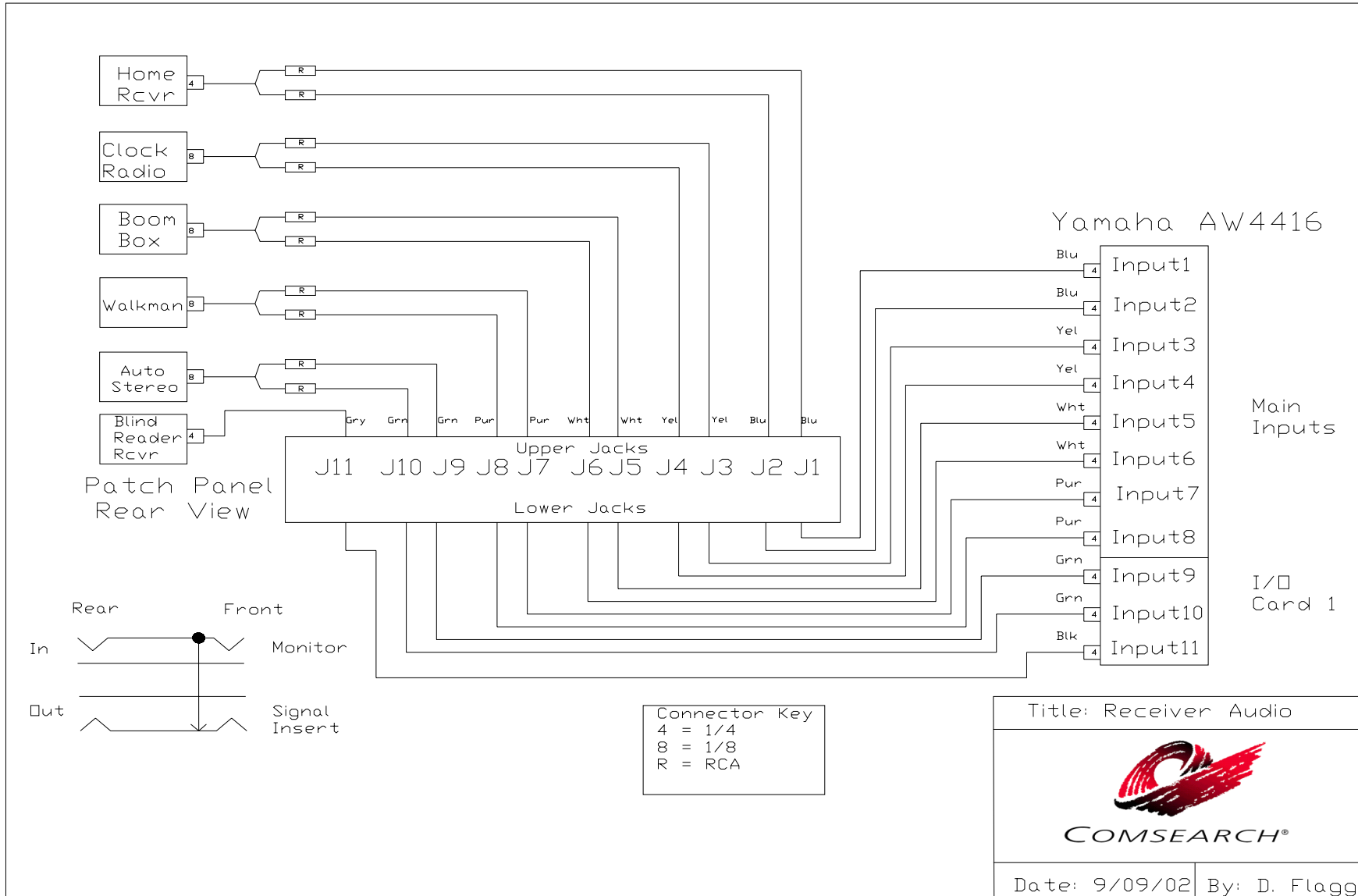


Figure 2 – Receiver Vehicle Diagram

## **2.3 Field Demonstration**

Two demonstrations of the field-test plans and procedures were conducted prior to actual field tests to validate the test equipment configuration/operation, measurement setups, and test procedures before actual data collection began. The first laboratory demonstration was conducted at Comsearch on October 4, 2002. During the laboratory demonstration, the equipment vans and tower were inspected and the steps of the test procedure were demonstrated. All aspects of the operation of the LPFM transmit system and the collection of FM received signals was presented along with the procedures of data collection using the data sheets developed for the experimental program. The procedures to be used for producing the audio recordings of the FM receiver outputs were also demonstrated. When the laboratory demonstration was complete, MITRE granted permission for the Comsearch team to proceed to the first test site in Avon, CT to carry out the second field demonstration, which involved a dry run of the third-adjacent channel test under actual field conditions. The second field demonstration was carried out on October 7 and 8, 2002. MITRE personnel were present to observe the testing activity at each of the selected sites.

## **3 Broadcast Test Scenarios**

Third-adjacent channel interference measurements were conducted at seven sites selected for this experimental program. Completion of the program at each site required the transmission of two of the three unique program contents from a portable LPFM broadcast station operating on the third-adjacent channel (600 kHz away from the center frequency) of an existing FPFM broadcast station. Simultaneous audio recordings were made on up to six FM receivers (auto, clock, boombox, Walkman, home, and Reading Service for the Visually Impaired) for each FPFM broadcast station identified for investigation during this experimental program.

The Reading Service for the Visually Impaired receiver was used at only one site. This public service is provided on a subcarrier of some FPFM broadcast stations. Not all FPFM broadcast stations offer this service.

The FM translator input test site selected for this experimental program was selected to meet the criteria established for the investigation of possible third-adjacent channel interference on the input of a FM translator broadcast station receiver. Transmission of three unique program contents was performed with a portable LPFM broadcast station operating on the third-adjacent channel (600 kHz away from the center frequency) of the FM translator station receiver input frequency. Recordings were made of the FM translator station output with five receivers (auto, clock, boombox, Walkman, and home) simultaneously.

Test Scenarios utilized during the third-adjacent channel portion of the experimental program were conducted at three LPFM ERP settings (10 W, 0 W, and 100 W) and at two antenna heights (10 m AGL and 30 m AGL). This created six unique scenario configurations that were utilized at all measurement sites, except at the FM translator site. Three different LPFM program contents (processed, unprocessed and news/talk) were used as the final scenario variable for the completion of the experimental conditions. Two of the three possible program contents were broadcast at each of the six ERP/antenna-height scenario configurations for each of the third-adjacent measurement sites.

The test scenario used during the FM translator station input test portion of the experimental program consisted of two antenna heights (10 m AGL and 30 m AGL) and eight ERP settings (100 W, 50 W, 20 W, 10 W, 5 W, 2 W, 1 W, and 0 W). All three possible program contents were used during all 14 LPFM scenario configurations for the FM translator input measurements.

Exact scenario configurations utilized during data collection at each LPFM broadcast site are documented in the TPP, Section 2.

## **4 Field Measurement Conditions**

The measurements were performed at seven sites: one each in Connecticut and Maine, three in Minnesota, and two in California. The sites were selected from a list of thirty-nine eligible LPFM applicants' communities to encompass urban, suburban, and rural areas and audiences. The areas were also chosen to have a wide geographic variation in terrain and foliage (i.e., flat, hilly, mountainous, and near water) and various types of buildings and various climatic conditions. Sites were selected for which the "distance ratio" — the distance between the LPFM site and the FPFM station, divided by the FPFM station's F(50,50) contour radius — varied from 0.09 to 0.82. Also, the site selections included an FM translator, one minority-market FPFM station, and one small-market FPFM broadcaster. The great-circle distances shown in both the text and on the figures were calculated using the FCC's on-line distance calculator at <http://www.fcc.gov/mb/audio/bickel/distance.html>. The distances are based on the actual coordinates collected during the field measurements.

Comsearch calculated the height above average terrain (HAAT) using an internally developed software program called the HAAT Calculator that followed the procedures described in the FCC Rules Part 73.313. The software uses a digitized database called the National Elevation Database (NED) developed by the U. S. Geological Survey. The NED data product is a 1-arcsecond digital elevation model. The HAAT Calculator uses the Environmental Systems Research Institute (ESRI) Arc View 3.2 MACRO software for data sample point extraction. Fifty data points on each radial were used for each of the eight radials to calculate the HAAT.

### **4.1 Measurement Demonstrations**

There were two demonstrations of the measurement program. The first, which was the laboratory demonstration, was performed in Ashburn, VA at the Comsearch facility. The second, a field demonstration, took place in Avon, CT, which was also the first test site.



#### **4.1.1 Laboratory Demonstration**

The purpose of the laboratory demonstration was to present the test equipment assembled for the measurements, including the vehicles and antenna tower with its trailer, to be used as the measurement platforms. In addition to displaying the equipment and vehicles, a dry run of the parameter measurements and recording procedures was also demonstrated.

#### **4.1.2 Avon, CT Field Demonstration**

The purpose of the field demonstration was to dry-run the measurement procedures under actual field conditions. It allowed the test equipment and procedures to be displayed under actual test conditions. In attendance were Comsearch personnel and MITRE representatives.

### **4.2 Avon, CT LPFM Site**

The Field Test Lead and one additional Comsearch field engineer were positioned in the LPFM vehicle and were responsible for monitoring and changing the parameters of the LPFM transmitter and tower. The Field Test Lead directed all actions via radio, cell phone, or satellite phone, or in person, and all actions were verified as necessary to keep the test synchronized between the transmit vehicle and the receiver test vehicle. Two Comsearch field engineers also manned the receiver test vehicle. They were responsible for taking RF measurements and creating recordings of the FPFM station under test. All receiver outputs were recorded simultaneously for a period of two minutes for each height, ERP, and program format specified in the TPP. The recorded output was not altered or enhanced in any way. Recording levels were set at the start of a test period and not changed again until the vehicle was moved to the next location. In this way, if a receiver was affected and the output level changed it would sound the same on the CDs when the recorded data was used for analysis. The levels of the received signals from both the LPFM and FPFM (plus noise) were measured using a spectrum analyzer and calibrated antenna, and

the results recorded on data sheets for correlation to the FM receivers' audio outputs.

The LPFM transmitter test site was a parking lot of a church. The lot was large enough to allow the first three receiver locations to be placed inside the perimeter of the church property. The area between the LPFM and the FPFM was heavily wooded and hilly. The FPFM station under test was received at the LPFM site on the receiver located in the LPFM transmitter vehicle. Most of the testing was done during daylight hours, but some testing occurred during the evening and after dark. The transmitter log and receiver data sheets for this site can be found in Section 5, Figures 10 through 18, of this document.

The particulars of the Avon test site are as follows:

Date of tests: October 14 and 15, 2002

The NAD 83 coordinates of the portable LPFM transmitter station were:

Latitude: N 41° 46' 39.0"

Longitude: W 72° 51' 41.2"

The coordinates for each receiver location can be found on the map in Figure 3.

The antenna heights for the Avon test site were:

10m AGL = -21.8m HAAT

30m AGL = -1.8m HAAT

The distance from the FPFM station to the portable LPFM station was 3.583 miles. The distance multiplier stipulated in section 6.1.3 of the Field Test Plan for planning the distances of successive receiver locations from this LPFM site was 2.43.

In attendance were Comsearch field personnel and a MITRE representative.

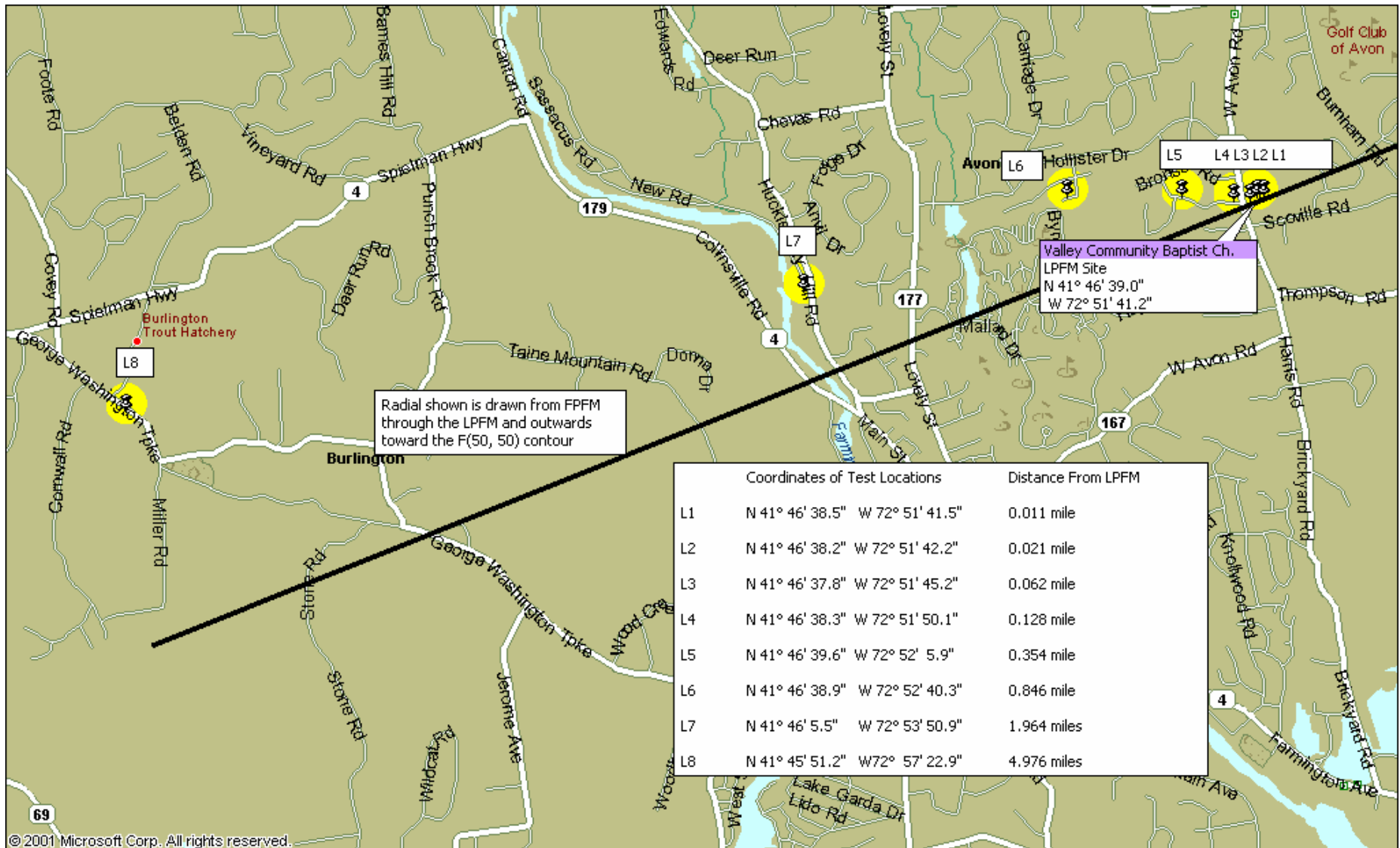


Figure 3 – Avon Receiver Test Location Map

#### **4.2.1 Receiver Data Collection Locations**

##### **4.2.1.1 Avon Data Collection Location 1**

This location was within the boundaries of the church parking lot. There were densely treed lots between the LPFM and FPFM positions. There were no obstructions between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.011 mile.

The NAD 83 coordinates of the location were:

Latitude: N 41° 46' 38.5"

Longitude: W 72° 51' 41.5"

##### **4.2.1.2 Avon Data Collection Location 2**

This location was within the boundaries of the church parking lot. There were no obstructions between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.021 mile.

The NAD 83 coordinates of the location were:

Latitude: N 41° 46' 38.2"

Longitude: W 72° 51' 42.2"

##### **4.2.1.3 Avon Data Collection Location 3**

This location was also within the boundaries of the church parking lot. It was near the highway running parallel to the church property. There were no obstructions between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.062 mile.

The NAD 83 coordinates of the location were:

Latitude: N 41° 46' 37.8"

Longitude: W 72° 51' 45.2"

**4.2.1.4 Avon Data Collection Location 4**

This location was on a public street in a large housing development. The area was heavily treed. The receiver test vehicle was not visible from the LPFM due to trees and houses blocking the view. The distance from the LPFM transmitter site to this location was 0.128 mile.

The NAD 83 coordinates of the location were:

Latitude: N 41° 46' 38.3"

Longitude: W 72° 51' 50.1"

**4.2.1.5 Avon Data Collection Location 5**

This location was in the same housing area as location 4. Mature trees and houses were common. The distance from the LPFM transmitter site to this location was 0.354 mile.

The NAD 83 coordinates of the location were:

Latitude: N 41° 46' 39.6"

Longitude: W 72° 52' 05.9"

**4.2.1.6 Avon Data Collection Location 6**

Location 6 was at the end of a cul-de-sac in the same neighborhood as locations 4 and 5. It was on a slight uphill portion of the street compared to location 5. The distance from the LPFM transmitter site to this location was 0.846 mile.

The NAD 83 coordinates of the location were:

Latitude: N 41° 46' 38.9"

Longitude: W 72° 52' 40.3"

#### **4.2.1.7 Avon Data Collection Location 7**

This location was on a corner in a heavily wooded area. A dense tree line existed between the receiver test vehicle and the LPFM transmitter. The distance from the LPFM transmitter site to this location was 1.964 miles.

The NAD 83 coordinates of the location were:

Latitude: N 41° 46' 05.5"

Longitude: W 72° 53' 50.9"

#### **4.2.1.8 Avon Data Collection Location 8**

Location 8 was along the side of a road, as depicted on the map, in a densely wooded area. The distance from the LPFM transmitter site to this location was 4.976 miles.

The NAD 83 coordinates of the location were:

Latitude: N 41° 45' 51.2"

Longitude: W 72° 57' 22.9"

### **4.3 Brunswick, ME LPFM Site**

The Field Test Lead and one additional Comsearch field engineer were positioned in the LPFM vehicle and were responsible for monitoring and changing the parameters of the LPFM transmitter and tower. The Field Test Lead directed all actions via radio, cell phone, or satellite phone, or in person, and all actions were verified as necessary to keep the test synchronized between the transmit vehicle and the receiver test vehicle. Two Comsearch field engineers also manned the receiver test vehicle. They were responsible for taking RF measurements and creating recordings of the FPFM station under test. All receiver outputs were recorded simultaneously for a period of two minutes for each height, ERP, and program format specified in the TPP. The recorded output was not altered or enhanced in any way. Recording levels were set at the start of a test period and not changed again until the vehicle was moved to the next location. In this way, if a receiver was affected and the output

level changed it would sound the same on the CDs when the recorded data was sent to MITRE for analysis. The levels of the received signals from both the LPFM and FPFM (plus noise) were measured using a spectrum analyzer and calibrated antenna, and the results recorded on data sheets for correlation to the FM receivers' audio outputs.

The LPFM test site was in a rental storage area in the general vicinity of a LPFM applicant near Brunswick, ME. The FPFM station under test could be received at the LPFM test site but was somewhat weak when compared to other stations in the area that could be received on the factory-mounted FM receiver in the test vehicle. Testing was conducted during both daylight and nighttime hours. The area around the test site was tree-lined and the area in general was moderately to heavily wooded. The transmitter log and receiver data sheets for this site can be found in Section 5, Figures 19 through 27 of this document.

The particulars of the Brunswick test site are as follows:

Date of tests: October 21 and 22, 2002

The NAD 83 coordinates of the portable LPFM transmitter station were:

Latitude: N 43° 54' 23.00"

Longitude: W 69° 59' 48.70"

The coordinates for each receiver location can be found on the map in Figure 4.

The antenna heights for the Brunswick test site were:

10m AGL = 9.1m HAAT

30m AGL = 29.1m HAAT

The distance from the FPFM station to the portable LPFM station was 22.719 miles. The distance multiplier for use in planning the distance from the LPFM to each successive test location was 2.76.

In attendance were Comsearch field personnel and a MITRE representative.

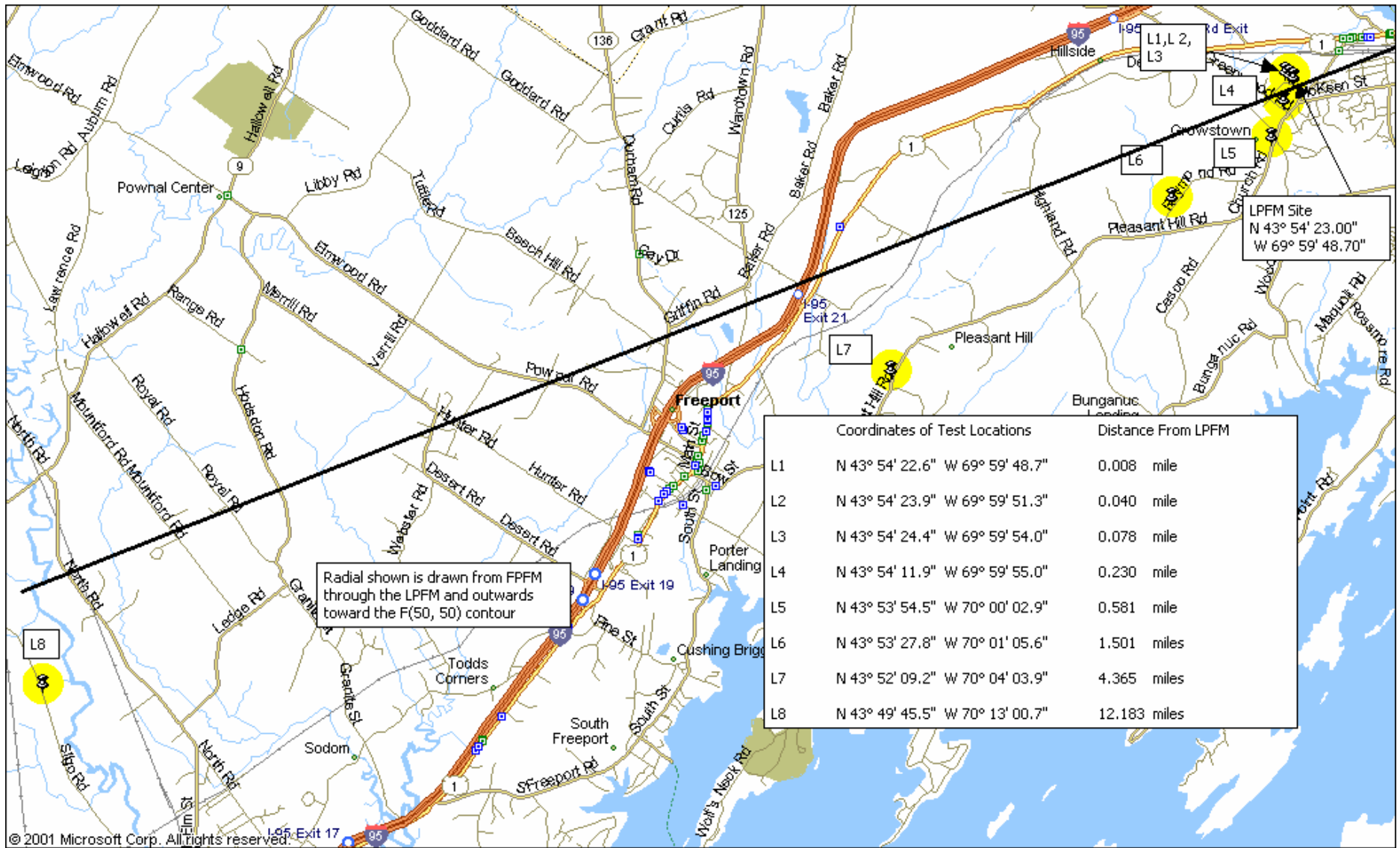


Figure 4 – Brunswick Receiver Test Location Map



### **4.3.1 Receiver Data Collection Locations**

#### **4.3.1.1 Brunswick Data Collection Location 1**

This location was within the immediate area of the LPFM transmitter. There were buildings and a fence surrounding the area of both the LPFM and the receiver test vehicle. No other obstructions were between the receiver test vehicle and the LPFM. The distance from the LPFM transmitter site to this location was 0.008 mile.

The NAD 83 coordinates of the location were:

Latitude: N 43° 54' 22.6"

Longitude: W 69° 59' 48.7"

#### **4.3.1.2 Brunswick Data Collection Location 2**

This location was also inside a fenced area with the LPFM transmitter. Due to limited access to roadways, this location was the correct distance from the LPFM, but only as near as possible to the radial line drawn on a map from a point at the FPFM through the LPFM and outward to the F(50,50) contour. To the extent possible, locations were selected in an attempt to remain on the radial line. The distance from the LPFM transmitter site to this location was 0.040 mile.

The NAD 83 coordinates of the location were:

Latitude: N 43° 54' 23.9"

Longitude: W 69° 59' 51.3"

#### **4.3.1.3 Brunswick Data Collection Location 3**

This location was on a roadway outside the fenced compound and at a slightly higher (approximately 10 feet) elevation than the LPFM. There were trees nearly 50 feet tall between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.078 mile.

The NAD 83 coordinates of the location were:

Latitude: N 43° 54' 24.4"

Longitude: W 69° 59' 54.0"

**4.3.1.4 Brunswick Data Collection Location 4**

This location was slightly downhill from the LPFM and also in a wooded area. Though the location was not very distant, it could not be seen from the LPFM due to the trees blocking the view. The distance from the LPFM transmitter site to this location was 0.230 mile.

The NAD 83 coordinates of the location were:

Latitude: N 43° 54' 11.9"

Longitude: W 69° 59' 55.0"

**4.3.1.5 Brunswick Data Collection Location 5**

This location was in a wooded area. Housing is present in the area. The distance from the LPFM transmitter site to this location was 0.581 mile.

The NAD 83 coordinates of the location were:

Latitude: N 43° 53' 54.5"

Longitude: W 70° 00' 02.9"

**4.3.1.6 Brunswick Data Collection Location 6**

This location was in an area that is wooded and continues on a downhill slope from the LPFM. The distance from the LPFM transmitter site to this location was 1.501 miles.

The NAD 83 coordinates of the location were:

Latitude: N 43° 53' 27.8"

Longitude: W 70° 01' 05.6"

#### **4.3.1.7 Brunswick Data Collection Location 7**

This location was at or near the bottom of the hill from the LPFM transmitter. The distance from the LPFM transmitter site to this location was 4.365 miles.

The NAD 83 coordinates of the location were:

Latitude: N 43° 52' 09.2"

Longitude: W 70° 04' 03.9"

#### **4.3.1.8 Brunswick Data Collection Location 8**

This location was in an area that is mostly farmland. Very few trees were present in the near vicinity of the test location. The distance from the LPFM transmitter site to this location was 12.183 miles.

The NAD 83 coordinates of the location were:

Latitude: N 43° 49' 45.5"

Longitude: W 70° 13' 00.7"

### **4.4 East Bethel, MN LPFM Site**

The Field Test Lead and one additional Comsearch field engineer were positioned in the LPFM vehicle and were responsible for monitoring and changing the parameters of the LPFM transmitter and tower. The Field Test Lead directed all actions via radio, cell phone, or satellite phone, or in person, and all actions were verified as necessary to keep the test synchronized between the transmit vehicle and the receiver test vehicle. Two Comsearch field engineers also manned the receiver test vehicle. They were responsible for taking RF measurements and creating recordings of the FPFM station under test. All receiver outputs were recorded simultaneously for a period of two minutes for each height, ERP, and program format specified in the TPP. The recorded output was not altered or enhanced in any way. Recording levels were set at the start of a test period and not changed again until the vehicle was moved to the next location. In this way if a receiver was affected and the output level changed it would sound the same on the CDs when the recorded data was

sent to MITRE for analysis. The levels of the received signals from both the LPFM and FPFM (plus noise) were measured using a spectrum analyzer and calibrated antenna, and the results recorded on data sheets for correlation to the FM receivers' audio outputs.

The test site was in a church parking lot. The general area was flat and was a mix of both wooded areas and flat open areas. The area near the LPFM was large enough that the first three test locations were within the area of the church parking lot. The FPFM station under test was received clearly with no obvious interference by the factory installed radio in the LPFM test vehicle when the LPFM was in a 0 W condition. Testing was conducted during the daylight hours over two days. The transmitter log and receiver data sheets for this site can be found in Section 5, Figures 28 through 36 of this document.

The particulars of the East Bethel, MN test site are as follows:

Date of tests: October 28 and 29, 2002

The NAD 83 coordinates of the portable LPFM transmitter station were:

Latitude: N 45° 19' 8.3"

Longitude: W 93° 13' 48.0"

The coordinates for each receiver location can be found on the map in Figure 5.

The antenna heights for the East Bethel test site were:

10m AGL = 9.3m HAAT

30m AGL = 29.3m HAAT

The distance from the FPFM station to the portable LPFM station was 18.279 miles. The distance multiplier for use in planning the distance from the LPFM to each successive test location was 2.43.

In attendance were Comsearch field personnel and a MITRE representative.

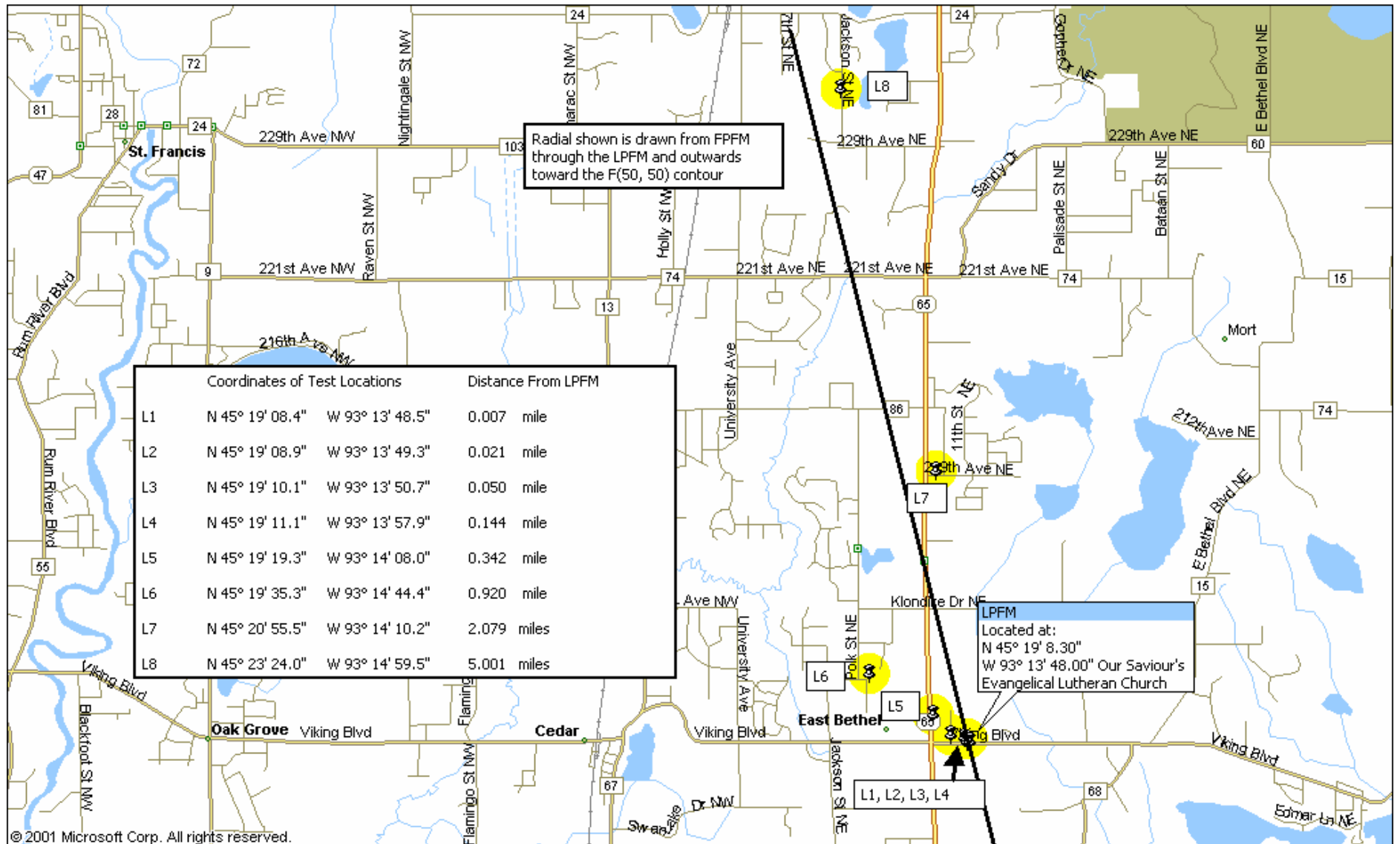


Figure 5 – East Bethel Receiver Test Location Map

#### **4.4.1 Receiver Data Collection Locations**

##### **4.4.1.1 East Bethel Data Collection Location 1**

This location was in the church parking lot near the LPFM transmitter. The terrain was flat and open in the area of the parking lot. The lot was surrounded by trees on the south and east sides. There were no obstructions between the LPFM transmitter and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.007 mile.

The NAD 83 coordinates of the location were:

Latitude: N 45° 19' 08.4"

Longitude: W 93° 13' 48.5"

##### **4.4.1.2 East Bethel Data Collection Location 2**

This location was also in the church parking lot. No obstructions were between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.021 mile.

The NAD 83 coordinates of the location were:

Latitude: N 45° 19' 08.9"

Longitude: W 93° 13' 49.3"

##### **4.4.1.3 East Bethel Data Collection Location 3**

This location was at the edge of the parking lot near the roadway, which runs parallel to the church property. There were no obstructions between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.050 mile.

The NAD 83 coordinates of the location were:

Latitude: N 45° 19' 10.1"

Longitude: W 93° 13' 50.7"

**4.4.1.4 East Bethel Data Collection Location 4**

Location 4 was across the roadway from the church. The LPFM vehicle was no longer visible to the receiver test vehicle due to the church building blocking the view. The area had some trees but was mainly open. The distance from the LPFM transmitter site to this location was 0.144 mile.

The NAD 83 coordinates of the location were:

Latitude: N 45° 19' 11.1"

Longitude: W 93° 13' 57.9"

**4.4.1.5 East Bethel Data Collection Location 5**

Location 5 was along the edge of the main north/south highway in the area. There were some trees and small buildings between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.342 mile.

The NAD 83 coordinates of the location were:

Latitude: N 45° 19' 19.3"

Longitude: W 93° 14' 08.0"

**4.4.1.6 East Bethel Data Collection Location 6**

This location was in a housing area. There were few trees in the immediate area. The distance from the LPFM transmitter site to this location was 0.920 mile.

The NAD 83 coordinates of the location were:

Latitude: N 45° 19' 35.3"

Longitude: W 93° 14' 44.4"

#### **4.4.1.7 East Bethel Data Collection Location 7**

Location 7 was in an open area with few obstructions. The distance from the LPFM transmitter site to this location was 2.079 miles.

The NAD 83 coordinates of the location were:

Latitude: N 45° 20' 55.5"

Longitude: W 93° 14' 10.2"

#### **4.4.1.8 East Bethel Data Collection Location 8**

This last location was in an open area. The terrain was flat. The distance from the LPFM transmitter site to this location was 5.001 miles.

The NAD 83 coordinates of the location were:

Latitude: N 45° 23' 24"

Longitude: W 93° 14' 59.5"

### **4.5 Owatonna, MN (FM Translator Output)**

The Field Test Lead and one additional Comsearch field engineer were positioned in the LPFM vehicle and were responsible for monitoring and changing the parameters of the LPFM transmitter and tower. The Field Test Lead directed all actions via radio, cell phone, or satellite phone, or in person, and all actions were verified as necessary to keep the test synchronized between the transmit vehicle and the receiver test vehicle. Two Comsearch field engineers also manned the receiver test vehicle. They were responsible for taking RF measurements and creating recordings of the FM translator under test. All receiver outputs were recorded simultaneously for a period of two minutes for each height, ERP, and program format specified in the TPP. The recorded output was not altered or enhanced in any way. Recording levels were set at the start of a test period and not changed again until the vehicle was moved to the next location. In this way, if a receiver was affected and the output level changed it would sound the same on the CDs when the recorded data was sent to MITRE for analysis. The levels of the received signals from both the LPFM



and FPFM (plus noise) were measured using a spectrum analyzer and calibrated antenna, and the results were recorded on data sheets for correlation to the FM receivers' audio outputs.

The test site was located at the end of a road in a new housing subdivision. It was approximately 0.4 mile from the coordinates of the LPFM license application that was selected for the test. The area was flat farmland from the LPFM site northward, and medium to densely populated with housing toward the south. The first three receiver test locations were in the housing subdivision near the LPFM and the remainder of the locations were in the adjacent farmland, staying as close as possible to the radial line drawn on the map from the FPFM stations through the LPFM site, and outward toward the F(50,50) contour. The transmitter log and receiver data sheets for this site can be found in Section 5, Figures 37 through 45 of this document.

The particulars of the Owatonna, MN test site are as follows:

Date of tests: October 31 and November 4, 2002. The separation in dates was due to weather and scheduling. While waiting for the weather to clear, the scheduled date for the FM translator output test was met. Locations 7 and 8 of the third adjacent input test were completed after the FM translator output tests were completed.

The NAD 83 coordinates of the portable LPFM transmitter station were:

Latitude: N 44° 06' 44.8"

Longitude: W 93° 12' 42.0"

The coordinates for each receiver location can be found on the map in Figure 6.

The antenna heights for the Owatonna, MN test site were:

10m AGL = 9.0m HAAT

30m AGL = 29.0m HAAT

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The distance from the FPFM station to the portable LPFM station was 3.898 miles. The distance multiplier for use in planning the distance from the LPFM to each successive test location was 2.69.

In attendance were Comsearch field personnel and a MITRE representative.

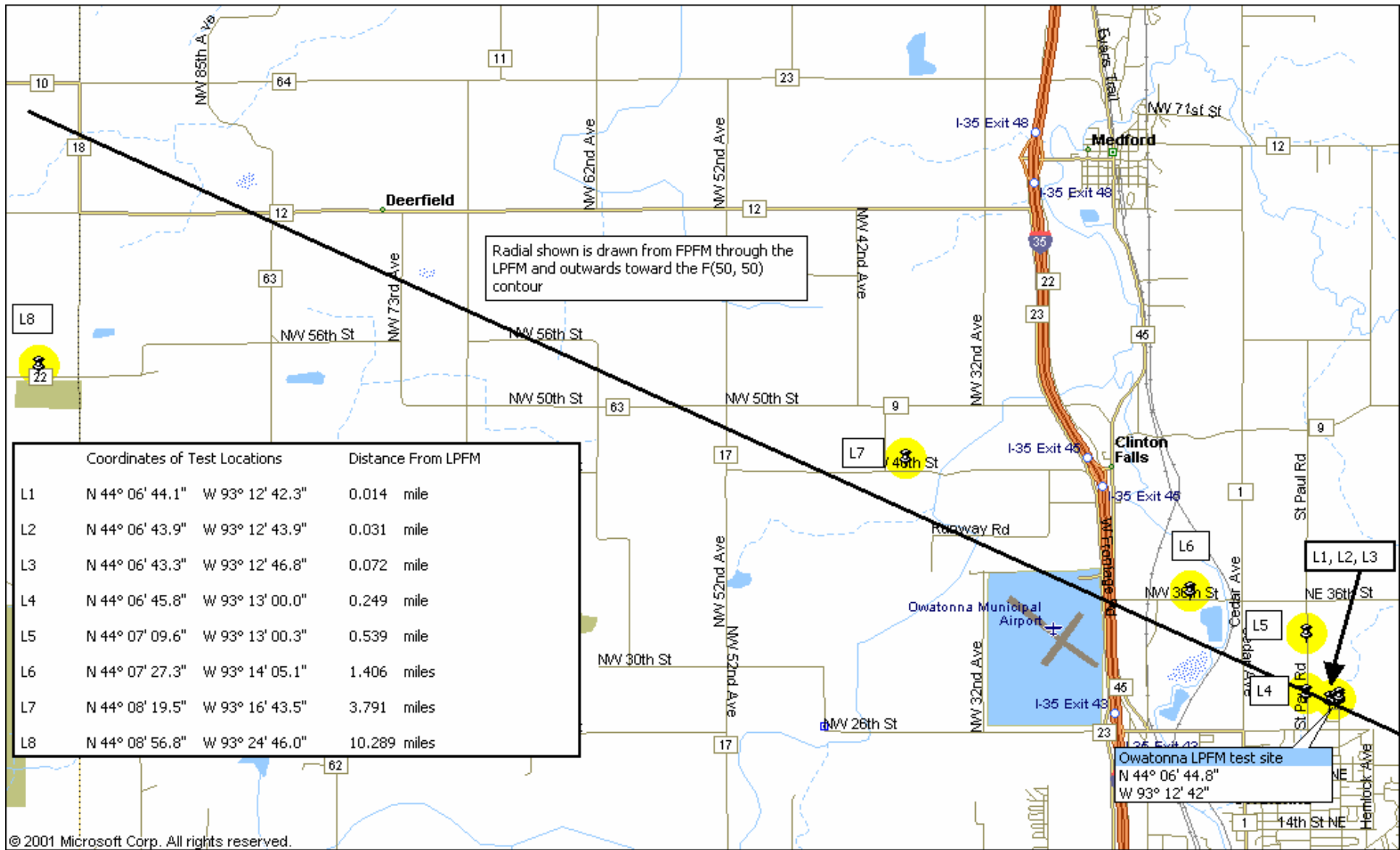


Figure 6 – Owatonna Receiver Test Location Map

#### **4.5.1 Receiver Data Collection Locations**

##### **4.5.1.1 Owatonna Data Collection Location 1**

This location was on a public street in a housing subdivision. There were no obstructions between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.014 mile.

The NAD 83 coordinates of the location were:

Latitude: N 44° 06' 44.1"

Longitude: W 93° 12' 42.3"

##### **4.5.1.2 Owatonna Data Collection Location 2**

This location was also on a public street in the same neighborhood as location 1. There were no obstructions between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.031 mile.

The NAD 83 coordinates of the location were:

Latitude: N 44° 06' 43.9"

Longitude: W 93° 12' 43.9"

##### **4.5.1.3 Owatonna Data Collection Location 3**

Location 3 was also in the housing area on a public street. At this location, we could no longer see the receiver test vehicle from the LPFM due to the houses. No obstructions were between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.072 mile.

The NAD 83 coordinates of the location were:

Latitude: N 44° 06' 43.3"

Longitude: W 93° 12' 46.8"

**4.5.1.4 Owatonna Data Collection Location 4**

Location 4 was on the side of a country road adjacent to the farmland where the LPFM was situated. The receiver test vehicle was visible from the LPFM vehicle. No obstructions were between the LPFM and the receiver test vehicle. The area was flat and treeless. The distance from the LPFM transmitter site to this location was 0.249 mile.

The NAD 83 coordinates of the location were:

Latitude: N 44° 06' 45.8"

Longitude: W 93° 13' 00.0"

**4.5.1.5 Owatonna Data Collection Location 5**

This location was flat farmland. There were no obstructions between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.539 mile.

The NAD 83 coordinates of the location were:

Latitude: N 44° 07' 09.6"

Longitude: W 93° 13' 00.3"

**4.5.1.6 Owatonna Data Collection Location 6**

Location 6 was also flat farmland. The distance from the LPFM transmitter site to this location was 1.406 miles.

The NAD 83 coordinates of the location were:

Latitude: N 44° 07' 27.3"

Longitude: W 93° 14' 05.1"

**4.5.1.7 Owatonna Data Collection Location 7**

Location 7 was on the northwest side of the Owatonna airport. The area was flat with no obstructions between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 3.791 miles.

The NAD 83 coordinates of the location were:

Latitude: N 44° 08' 19.5"

Longitude: W 93° 16' 43.5"

#### **4.5.1.8 Owatonna Data Collection Location 8**

Location 8 was at the side of the road in the middle of farmland. No obstructions were between the LPFM and the receiver test vehicle.

The distance from the LPFM transmitter site to this location was 10.289 miles.

The NAD 83 coordinates of the location were:

Latitude: N 44° 08' 56.8"

Longitude: W 93° 24' 46.0"

### **4.6 Owatonna, MN (FM Translator Input Test)**

The Field Test Lead and one additional Comsearch field engineer were positioned in the LPFM vehicle and were responsible for monitoring and changing the parameters of the LPFM transmitter and tower. The Field Test Lead directed all actions via radio, cell phone, or satellite phone, or in person, and all actions were verified as necessary to keep the test synchronized between the transmit vehicle and the receiver test vehicle. Two Comsearch field engineers also manned the receiver test vehicle. They were responsible for taking RF measurements and creating recordings of the FM translator under test. All receiver outputs were recorded simultaneously for a period of two minutes for each height, ERP, and program format specified in the TPP. The recorded output was not altered or enhanced in any way. Recording levels were set at the start of a test period and not changed again until the vehicle was moved to the next location. In this way, if a receiver was affected and the output level changed it would sound the same on the CDs when the recorded data was sent to MITRE for analysis. The levels of the received signals from both the LPFM and FPFM (plus noise) were measured using a spectrum analyzer and calibrated antenna, and the results recorded on data sheets for correlation to the FM receivers' audio outputs.

The test site was located at a small driveway leading into a farm field. This site was chosen because of its close proximity to the FM translator's receiving antenna. It was also as close as possible to the path of propagation from the master FM station, KGAC-FM, to the FM translator, K289AE. There were no obstructions between the LPFM station and the receiving antenna of the FM translator. Since this area was only farmland and mostly flat, there also were no obstructions between the output of the FM translator and the receiver test vehicle. The receiver test vehicle was positioned at two locations. Location 1 was 3.972 miles from the translator, approximately halfway between the translator and the F(50,50) contour. Location 2 was 7.748 miles from the translator, close to the F(50,50) contour. In general, the reception of the signal from the FM translator was found to be weak at the F(50,50) contour whether or not the LPFM was transmitting. This can be confirmed in the recorded data from the second location. There was static on all of the receivers from this location when the LPFM was not transmitting. The reception by all receivers was better at the first location, at approximately half the F(50,50) contour distance. Listening to the collected recordings reveals that both receiver test locations produced similar degradation results with regard to the transmitter on/off status, the antenna height AGL, and the programming format of the LPFM station. The transmitter log and receiver data sheets for this site can be found in Section 5, Figures 46 through 54 of this document.

In Figures 48, 50, 52, and 54, data for cases where the LPFM ERP was 0 W are recorded only in columns whose subheadings contain the notation "0W P". Since the 0 W results are independent of LPFM program content the columns corresponding to "0W U" and "0W T" are left unmarked in the data sheets, and no recordings were made using the associated ID codes.

The particulars of the Owatonna, MN FM translator input test site are as follows:

Date of tests: November 2, 2002.

The NAD 83 coordinates of the portable LPFM transmitter station were:

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Latitude: N 44° 05' 18.4"

Longitude: W 93° 08' 45.9"

The coordinates for each receiver location can be found on the map in Figure 7.

The antenna heights for the Owatonna, MN FM translator input test site were:

10m AGL = 22.6m HAAT

30m AGL = 42.6m HAAT

The distance from the FPFM station to the portable LPFM station was 0.278 mile.

In attendance were Comsearch field personnel and a MITRE representative.



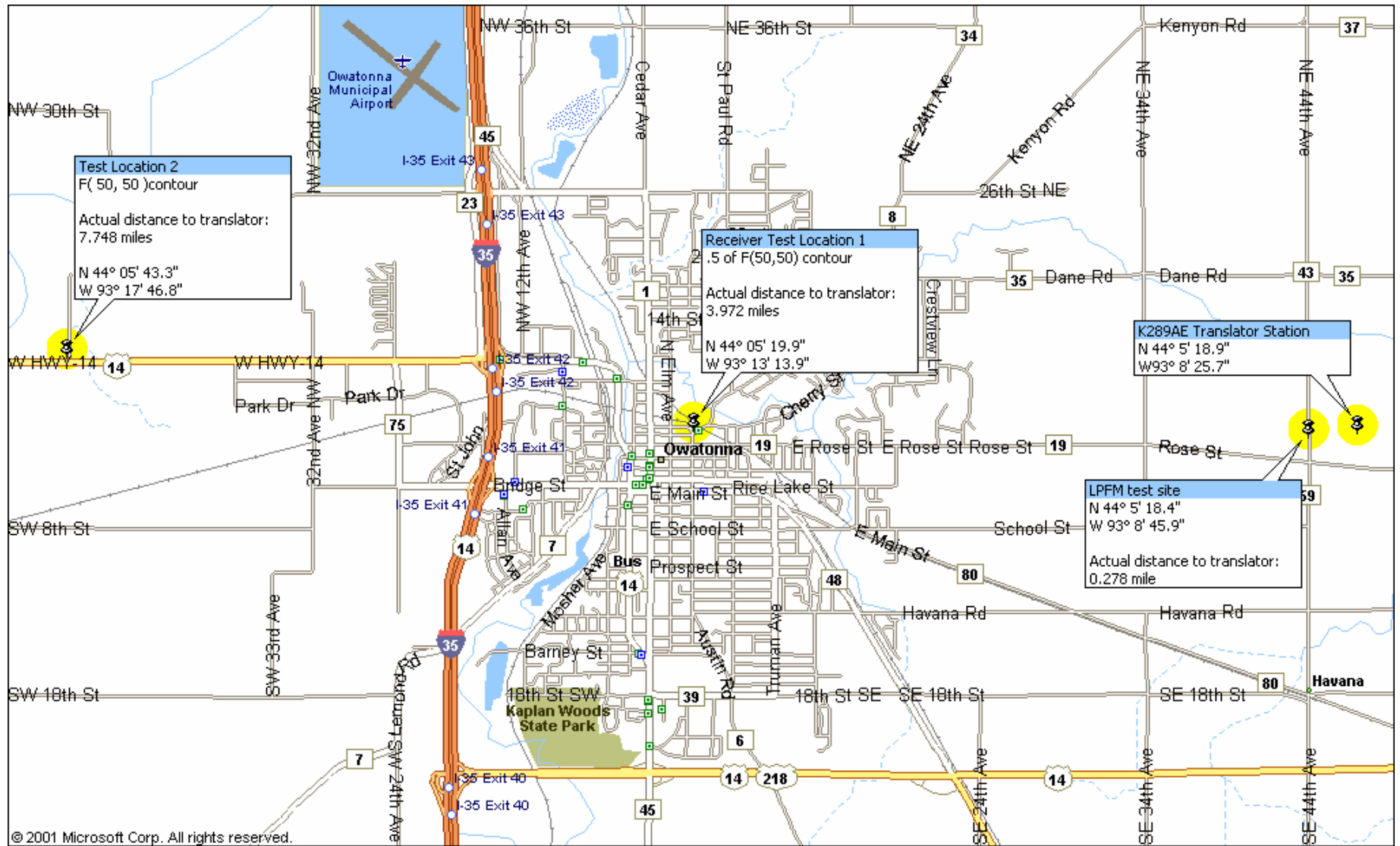


Figure 7 – Owatonna (FM Translator) Receiver Test Location Map

#### **4.6.1 Receiver Data Collection Locations**

##### **4.6.1.1 Owatonna (FM Translator) Data Collection Location 1**

This location was near the downtown area of Owatonna, MN. There were buildings and some trees between the LPFM, the FM translator and the receiver test vehicle. The distance from the translator to this location was 3.972 miles. This location was selected to be close to one-half the distance to the F(50,50) contour along a radial line drawn from the FM translator through the LPFM and outward toward the F(50,50) contour.

The NAD 83 coordinates of the location were:

Latitude: N 44° 05' 19.9"

Longitude: W 93° 13' 13.9"

##### **4.6.1.2 Owatonna (FM Translator) Data Collection Location 2**

This location was selected to be close to the translator's F(50,50) contour. The area was flat farmland with no nearby obstructions between the receiver test vehicle, the LPFM and the FM translator station. The location was on the side of a roadway. The distance from the LPFM transmitter site to this location was 7.748 miles.

The NAD 83 coordinates of the location were:

Latitude: N 44° 05' 43.3"

Longitude: W 93° 17' 46.8"

#### **4.7 Winters, CA LPFM Site**

The Field Test Lead and one additional Comsearch field engineer were positioned in the LPFM vehicle and were responsible for monitoring and changing the parameters of the LPFM transmitter and tower. The Field Test Lead directed all actions via radio, cell phone, or satellite phone, or in person, and all actions were verified as necessary to keep the test synchronized between the transmit vehicle and the receiver test vehicle. Two Comsearch field engineers also manned the receiver test

vehicle. They were responsible for taking RF measurements and creating recordings of the FPFM station under test. All receiver outputs were recorded simultaneously for a period of two minutes for each height, ERP, and program format specified in the TPP. The recorded output was not altered or enhanced in any way. Recording levels were set at the start of a test period and not changed again until the vehicle was moved to the next location. In this way, if a receiver was affected and the output level changed it would sound the same on the CDs when the recorded data was sent to MITRE for analysis. The levels of the received signals from both the LPFM and FPFM (plus noise) were measured using a spectrum analyzer and calibrated antenna, and the results recorded on data sheets for correlation to the FM receivers' audio outputs.

The test site was located in a densely populated housing area at the edge of the town of Winters, CA. It was adjacent to a vacant lot at the end of a street. The area was mostly flat with few trees. The area changes toward the west to mostly mountainous. The path chosen for this test passed through the town of Winters and outward toward the mountains. The last test location was in a canyon leading out of town to the west. Transmitter log and receiver data sheets for this site can be found in Section 5, Figures 55 through 63 of this document.

The particulars of the Winters, CA test site are as follows:

Date of tests: November 12 and 13, 2002.

The NAD 83 coordinates of the portable LPFM transmitter station were:

Latitude: N 38° 31' 39.2"

Longitude: W 121° 57' 33.2"

The coordinates for each receiver location can be found on the map in Figure 8.

The antenna heights for the Winters, CA test site were:

10m AGL = -44.0m HAAT

30m AGL = -24.0m HAAT

Contract No. 50181

The distance from the FPFM station to the portable LPFM station was 13.287 miles.  
The distance multiplier for use in planning the distance from the LPFM to each successive test location was 2.43.

In attendance were Comsearch field personnel and a MITRE representative.

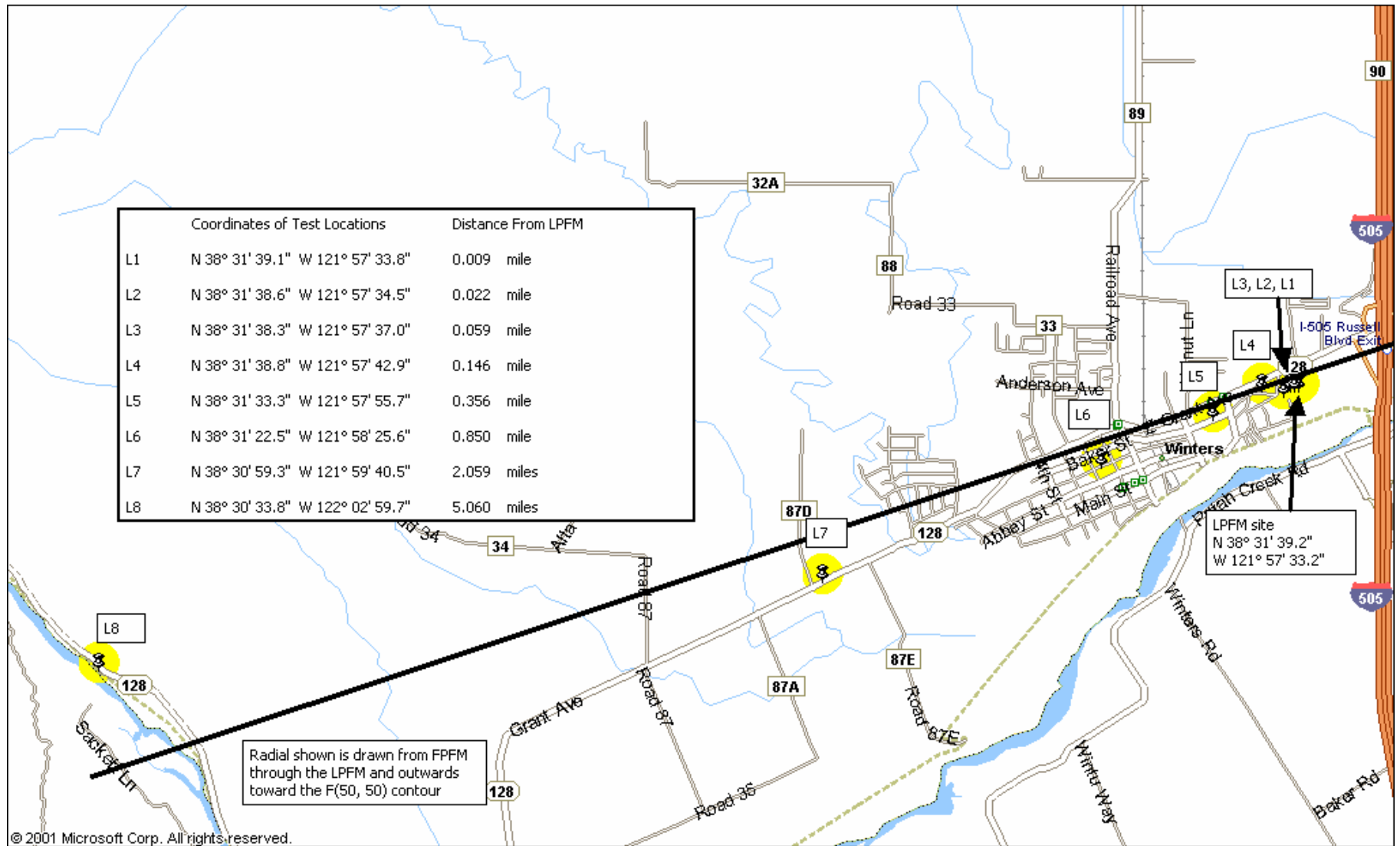


Figure 8 – Winters Receiver Test Location Map

#### **4.7.1 Receiver Data Collection Locations**

##### **4.7.1.1 Winters Data Collection Location 1**

Location 1 was on a public street adjacent to the LPFM. No obstructions were between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.009 mile.

The NAD 83 coordinates of the location were:

Latitude: N 38° 31' 39.1"

Longitude: W 121° 57' 33.8"

##### **4.7.1.2 Winters Data Collection Location 2**

This location was also on a public street with no obstructions between the LPFM and the receiver vehicle. The distance from the LPFM transmitter site to this location was 0.022 mile.

The NAD 83 coordinates of the location were:

Latitude: N 38° 31' 38.6"

Longitude: W 121° 57' 34.5"

##### **4.7.1.3 Winters Data Collection Location 3**

This location was further toward town on a public street in a residential area. There were no obstructions between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.059 mile.

The NAD 83 coordinates of the location were:

Latitude: N 38° 31' 38.3"

Longitude: W 121° 57' 37.0"

##### **4.7.1.4 Winters Data Collection Location 4**

Location 4 was on the side of a main street leading into Winters. It was also in a residential area of the town. The distance from the LPFM transmitter site to this location was 0.146 mile.

The NAD 83 coordinates of the location were:

Latitude: N 38° 31' 38.8"

Longitude: W 121° 57' 42.9"

**4.7.1.5 Winters Data Collection Location 5**

Location 5 was toward the center of Winters and was on a public street in a residential area. The distance from the LPFM transmitter site to this location was 0.356 mile.

The NAD 83 coordinates of the location were:

Latitude: N 38° 31' 33.3"

Longitude: W 121° 57' 55.7"

**4.7.1.6 Winters Data Collection Location 6**

This location was in the center of town in a residential area behind the business district. The area was tree-lined but with no tall buildings between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.850 mile.

The NAD 83 coordinates of the location were:

Latitude: N 38° 31' 22.5"

Longitude: W 121° 58' 25.6"

**4.7.1.7 Winters Data Collection Location 7**

Location 7 was at the far end of town from the LFPM. It was more open than the others, and near the start of the farmland located outside of town. The distance from the LPFM transmitter site to this location was 2.059 miles.

The NAD 83 coordinates of the location were:

Latitude: N 38° 30' 59.3"

Longitude: W 121° 59' 40.5"

#### **4.7.1.8 Winters Data Collection Location 8**

This final location was in a canyon at the start of the mountains to the west of the town of Winters. The location was at the side of the public road near a stream. The distance from the LPFM transmitter site to this location was 5.060 miles.

The NAD 83 coordinates of the location were:

Latitude: N 38° 30' 33.8"

Longitude: W 122° 02' 59.7"

### **4.8 Benicia, CA LPFM Site**

The Field Test Lead and one additional Comsearch field engineer were positioned in the LPFM vehicle and were responsible for monitoring and changing the parameters of the LPFM transmitter and tower. The Field Test Lead directed all actions via radio, cell phone, or satellite phone, or in person, and all actions were verified as necessary to keep the test synchronized between the transmit vehicle and the receiver test vehicle. Two Comsearch field engineers also manned the receiver test vehicle. They were responsible for taking RF measurements and creating recordings of the FPFM station under test. All receiver outputs were recorded simultaneously for a period of two minutes for each height, ERP, and program format specified in the TPP. The recorded output was not altered or enhanced in any way. Recording levels were set at the start of a test period and not changed again until the vehicle was moved to the next location. In this way, if a receiver was affected and the output level changed it would sound the same on the CDs when the recorded data was sent to MITRE for analysis. The levels of the received signals from both the LPFM and FPFM (plus noise) were measured using a spectrum analyzer and calibrated antenna, and the results recorded on data sheets for correlation to the FM receivers' audio outputs.

The Benicia test site was located in American Canyon, CA. This was an alternative to the site that was originally selected from the FCC list of license applications. The



original site was not suitable for testing, since most of the area was on private land, there were no locations nearby that would support the setup of the LPFM, and there were no accessible test locations for the receiver test vehicle. The general area around the original site was mostly swamp. A decision was made and approved to test from an alternate site that presented nearly the same terrain (flat to hilly), was about the same distance from the FPFM station and provided more accessible test locations. The transmitter log and receiver data sheets for this site can be found in Section 5, Figures 64 through 72 of this document.

The particulars of the Benicia, CA test site are as follows:

Date of tests: November 14, 2002.

The NAD 83 coordinates of the portable LPFM transmitter station were:

Latitude: N 38° 10' 55.9"

Longitude: W 122° 15' 21.8"

The coordinates for each receiver location can be found on the map in Figure 9.

The antenna heights for the Benicia, CA test site were:

10m AGL = -33.1m HAAT

30m AGL = -13.1m HAAT

The distance from the FPFM station to the portable LPFM station was 35.551 miles. The distance multiplier for use in planning the distance from the LPFM to each successive test location was 2.71.

In attendance were Comsearch field personnel and a MITRE representative.

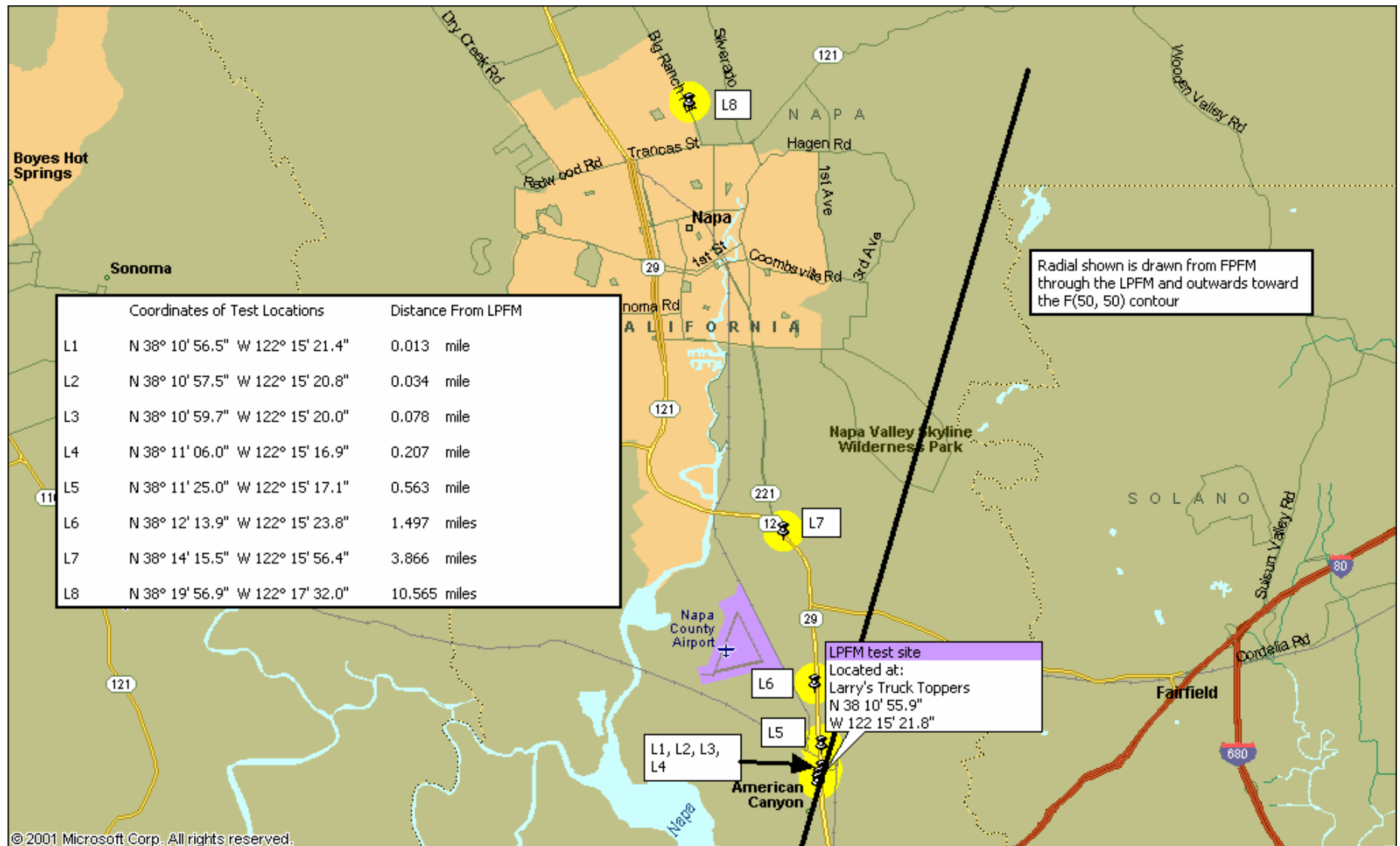


Figure 9 – Benicia Receiver Test Location Map

#### **4.8.1 Receiver Data Collection Locations**

##### **4.8.1.1 Benicia Data Collection Location 1**

Location 1 was inside the parking lot where the LPFM was set up. It was flat and open with no obstructions between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.013 mile.

The NAD 83 coordinates of the location were:

Latitude: N 38° 10' 56.5"

Longitude: W 122° 15' 21.4"

##### **4.8.1.2 Benicia Data Collection Location 2**

This location was also inside the boundary of the parking lot where the LPFM was set up. There were no obstructions between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.034 mile.

The NAD 83 coordinates of the location were:

Latitude: N 38° 10' 57.5"

Longitude: W 122° 15' 20.8"

##### **4.8.1.3 Benicia Data Collection Location 3**

Location 3 was within the area of the parking lot and had no obstructions between the LPFM and the receiver test vehicle. The general area was flat and open. The distance from the LPFM transmitter site to this location was 0.078 mile.

The NAD 83 coordinates of the location were:

Latitude: N 38° 10' 59.7"

Longitude: W 122° 15' 20.0"

**4.8.1.4 Benicia Data Collection Location 4**

Location 4 was at the roadside outside of the parking lot. There were no obstructions between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.207 mile.

The NAD 83 coordinates of the location were:

Latitude: N 38° 11' 06.0"

Longitude: W 122° 15' 16.9"

**4.8.1.5 Benicia Data Collection Location 5**

This location was further up the main highway in a northerly direction from the LPFM. It was near an overpass on a side road. The area was open with no trees and no obstructions between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 0.563 mile.

The NAD 83 coordinates of the location were:

Latitude: N 38° 11' 25.0"

Longitude: W 122° 15' 17.1"

**4.8.1.6 Benicia Data Collection Location 6**

Location 6 was again further north on Highway 29. It was along the side of the highway and open with no trees. The distance from the LPFM transmitter site to this location was 1.497 miles.

The NAD 83 coordinates of the location were:

Latitude: N 38° 12' 13.9"

Longitude: W 122° 15' 23.8"

#### **4.8.1.7 Benicia Data Collection Location 7**

This location was in a commercial area but with no tall buildings. The terrain was open with no obstructions between the LPFM and the receiver test vehicle. The distance from the LPFM transmitter site to this location was 3.866 miles.

The NAD 83 coordinates of the location were:

Latitude: N 38° 14' 15.5"

Longitude: W 122° 15' 56.4"

#### **4.8.1.8 Benicia Data Collection Location 8**

Location 8 was inside the town limits of Napa, CA. The general area was residential with mature trees. The distance from the LPFM transmitter site to this location was 10.565 miles. This was approximately 10 miles inside the F(50,50) contour of the FPFM station.

The NAD 83 coordinates of the location were:

Latitude: N 38° 19' 56.9"

Longitude: W 122° 17' 32.0"

## **5 Field Measurement Collected Data**

The measurement results are presented in two formats: data sheets describing the measurement conditions including data results, and audio recordings referenced to the unique identifier for the individual test condition on the data sheet. All of the data sheets are assembled and presented in this report.

The presentation of the data sheets for each of the sites measured will have a uniform order in the following subsections. The data sheets are presented by site with the transmitter data sheets presented first, followed by the receiver data sheets. The transmitter data sheets are a record of when each broadcast scenario was performed. The receiver data sheet for each measurement location, where (in the

original handwritten receiver logs) the field engineer recorded his observations by circling appropriate letters to note his observations for each recording, has been highlighted here to provide a more user-friendly presentation. Each data column in the receiver data sheets contains a header showing LPFM antenna height AGL, ERP and program content (P for processed music, U for unprocessed music or T for news/talk). Thus "30m 10W P" means "30 m AGL, 10 W ERP, processed music." Below each column header a timestamp and measured received-signal-plus-noise levels for the LPFM and FPFM are recorded. (FPFM signal-plus-noise measurements, in accordance with the Field Test Plan, were done less often than those for LPFM.) Each column also provides, for each receiver, the identification (ID) number of a specific recording of the output of that receiver, followed by a cell containing key data on the parameters and results associated with the recording. Within each cell the presence (Y) or absence (N) of degraded audio quality, as perceived by the test engineer, and the FPFM program content (P, U, or T) being broadcast during the recording, are signified by **bold** type and are boxed except for the N, which is made bold when applicable but is never boxed. (Non-bold letters within a cell indicate conditions that did not apply to the given recording.) Additionally, if degraded audio quality was perceived on a specific receiver immediately before or during each recording, the Y has been boxed and **shaded**. The observed FPFM content (P, U, or T) has been boxed but not shaded.

Audio recordings have been provided for all receivers at all locations for every site where measurements were performed. The audio recordings for the third-adjacent channel measurements are presented on sixteen CDs, two per location. When the receiver used for the Reading Service for the Visually Impaired was included at the East Bethel LPFM site, the number increased to 32 CDs, four per location. The number of CDs for the input to the FM translator station at Owatonna required 16 CDs, eight per location.

An asterisk (\*) on the following receiver data sheets or transmitter logs represents a clarification of the original data collected in the field and the data presented in this report. No changes have been made on the original data sheets or logs to any data

collected. All clarifications were made after careful review of any recorded data and conversations with the field personnel responsible for collection of the original data. Any omission of recorded data on the original data sheets or logs will also be identified by an asterisk (\*) on each data sheet or log in this report.

The transmitter logs provide a record of LPFM transmitter operation conforming to FCC requirements and as a reference timetable with regard to any public comment collected during the project. While the timing of the events was synchronized as previously described, through real-time coordination of events by personnel at the transmitter and receiver vehicles, the event timestamps on the receiver data sheets and the transmitter logs do not always coincide. This is because those recorded times were taken from timing devices, in separate test vehicles, that had not been exactly synchronized.

### 5.1 Avon, CT – Transmitter Log and Receiver Data Sheets

LPFM Transmit Test Vehicle Log				
Date	LPFM Site Name:	LPFM Freq.	Test Site GPS Coordinates	Local Time of Test
10/14/02	Avon	107.5 MHz	41 46 39 N	11:43AM
	<b>FPFM Call Sign:</b>	<b>FPFM Freq.</b>	72 51 41.2 W	
	WCCC	106.9 MHz		
Cable Losses		Directional Coupler Coupling Factor		
129' Cable	1.9 dB	Incident and Reflected		
10' Jumper Cable	0.5 dB	-39.0 dB		
VSWR Check Power Meter Readings				
Incident	Reflected			
0.82 dBm	-19.42 dBm			
NOTES:				
Locations 1 - 2 completed 10/14/02				
Locations 3 - 8 completed 10/15/02				
Transmitter Actions (Avon, CT), Location # 1				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
11:44	11:48	10	VSWR Test	
12:26	12:49	30	Processed	10
14:37	14:55	30	Processed	10
14:55	N/A	30	Mute On	0
15:14	15:36	30	Processed	100
15:38	15:50	30	News/Talk	10
15:50	15:58	30	News/Talk	10
15:58	N/A	30	Mute On	0
16:12	16:19	30	News/Talk	100
17:04	17:11	10	Processed	10
17:11	N/A	10	Mute On	0
17:19	17:29	10	Processed	100
17:30	17:38	10	News/Talk	10
17:38	N/A	10	Mute On	0
17:43	17:47	10	News/Talk	100

Figure 10 – Avon Transmitter Test Vehicle Log



<b>Transmitter Actions (Avon, CT) Location # 2</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
18:20	18:22	10	Processed Music	10
18:23	18:33	10	Processed Music	10
18:33	N/A	10	Mute On	0
18:48	18:57	10	Processed Music	100
18:58	19:02	10	News/Talk	10
19:02	N/A	10	Mute On	0
19:09	19:17	10	News/Talk	100
19:28	19:32	30	Processed Music	10
19:32	N/A	30	Mute On	0
19:36	19:40	30	Processed Music	100
19:41	19:44	30	News/Talk	10
19:44	N/A	30	Mute On	0
19:51	19:55	30	News/Talk	100
<b>Transmitter Actions (Avon, CT), Location # 3</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
9:42	9:44	10	VSWR Test	
9:53	9:59	10	Processed Music	10
10:01	10:12	10	Processed Music	10
10:12	N/A	10	Mute On	0
10:20	10:27	10	Processed Music	100
10:30	10:39	10	News/Talk	10
10:39	N/A	10	Mute On	0
10:46	10:49	10	News/Talk	100
11:10	11:20	30	Processed Music	10
11:20	N/A	30	Mute On	0
11:32	11:35	30	Processed Music	100
11:37	11:42	30	News/Talk	10
11:42	N/A	30	Mute On	0
11:45	11:54	30	News/Talk	100

**Figure 10 – Avon Transmitter Test Vehicle Log (Cont.)**

<b>Transmitter Actions (Avon, CT), Location # 4</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
12:29	12:37	30	Processed Music	10
12:37	N/A	30	Mute On	0
12:43	13:03	30	Processed Music	100
13:05	13:05 (30secs)	30	News/Talk	10
13:06	13:11	30	News/Talk	10
13:11	N/A	30	Mute On	0
13:16	13:23	30	News/Talk	100
13:32	13:33	10	Processed Music	10
13:35	13:42	10	Processed Music	10
13:42	N/A	10	Mute On	0
13:46	13:56	10	Processed Music	100
13:58	14:02	10	News/Talk	10
14:02	N/A	10	Mute On	0
14:06	14:11	10	News/Talk	100
<b>Transmitter Actions (Avon, CT), Location # 5</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
15:37	15:45	10	Processed Music	10
15:45	N/A	10	Mute On	0
15:51	16:02	10	Processed Music	100
16:05	16:10	10	News/Talk	10
16:10	N/A	10	Mute On	0
16:14	16:20	10	News/Talk	100
16:30	16:35	30	Processed Music	10
16:35	N/A	30	Mute On	0
16:38	16:43	30	Processed Music	100
16:44	16:48	30	News/Talk	10
16:48	N/A	30	Mute On	0
16:52	16:59	30	News/Talk	100

**Figure 10 – Avon Transmitter Test Vehicle Log (Cont.)**

<b>Transmitter Actions (Avon, CT), Location # 6</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
17:25	17:37	30	Processed Music	10
17:37	N/A	30	Mute On	0
17:41	17:43	30	Processed Music	100
17:44	17:50	30	Processed Music	100
17:52	18:01	30	News/Talk	10
18:01	N/A	30	Mute On	0
18:06	18:12	30	News/Talk	100
18:21	18:33	10	Processed Music	10
18:33	N/A	10	Mute On	0
18:37	18:43	10	Processed Music	100
18:44	18:53	10	News/Talk	10
18:53	N/A	10	Mute On	0
18:59	19:05	10	News/Talk	100
<b>Transmitter Actions (Avon, CT), Location # 7</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
19:35	19:46	10	Processed Music	10
19:46	N/A	10	Mute On	0
19:52	19:56	10	Processed Music	100
19:58	20:02	10	News/Talk	10
20:02	N/A	10	Mute On	0
20:06	20:10	10	News/Talk	100
20:20	20:25	30	Processed Music	10
20:25	N/A	30	Mute On	0
20:33	21:17	30	Processed Music	100
21:18	21:34	30	News/Talk	10
21:34	N/A	30	Mute On	0
21:39	21:46	30	News/Talk	100

**Figure 10 – Avon Transmitter Test Vehicle Log (Cont.)**

<b>Transmitter Actions (Avon, CT), Location # 8</b>				
<b>Time on</b>	<b>Time Off</b>	<b>Height AGL (Meters)</b>	<b>Format</b>	<b>ERP (Watts)</b>
22:14	22:20	30	Processed Music	10
22:20	N/A	30	Mute On	0
22:30	22:35	30	Processed Music	100
22:36	22:44	30	News/Talk	10
22:44	N/A	30	Mute On	0
22:53	22:58	30	News/Talk	100
23:10	23:15	10	Processed Music	10
23:15	NA	30	Mute On	0
23:19	23:28	10	Processed Music	100
23:29	23:32	10	News/Talk	10
23:32	N/A	10	Mute On	0
23:35	23:43	10	News/Talk	100

**Figure 10 – Avon Transmitter Test Vehicle Log (Cont.)**

Avon, Connecticut LPFM Site												
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port				
10/14/02	41 46 39.0 N 72 51 41.2 W		WCCC 106.9 MHz Processed		107.5 MHz	-39.0 dB	100 W	13.8 dBm				
							10 W	3.8 dBm				
Location 1	Latitude / Longitude	41 46 38.5 N			72 51 41.5 W							
	30m 10W P	30m 0W P	30m 100W P	30m 10W T	30m 0W T	30m 100W T	10m 10W P	10m 0W P	10m 100W P	10m 10W T	10m 0W T	10m 100W T
Time of Recording	14:58	15:06	15:39	16:00	16:05	16:21	17:12	17:17	17:27	17:42	17:46	17:50
FPFM (dBm)	-35.42	-34.39	-34.46	-34.65	-34.66	-35.40	-34.36	-33.86	-33.98	-33.20	-33.56	-34.49
FPFM (dBuV/m)	82.18	83.21	83.14	82.95	82.94	82.20	83.24	83.74	83.62	84.40	84.04	83.11
LPFM (dBm)	-6.08	-75.60	2.85	-6.17	-85.40	3.67	-6.61	-87.58	4.30	-5.37	-85.85	5.25
LPFM (dBuV/m)	111.52	42.00	120.45	111.43	32.20	121.27	110.99	30.02	121.90	112.23	31.75	122.85
Auto RX Rec ID#	AV115P1	AV111P1	AV118P1	AV115T1	AV111T1	AV118T1	AV125P1	AV121P1	AV128P1	AV125T1	AV121T1	AV128T1
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Clock Radio Rec ID#	AV115P2	AV111P2	AV118P2	AV115T2	AV111T2	AV118T2	AV125P2	AV121P2	AV128P2	AV125T2	AV121T2	AV128T2
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Boom Box Rec ID#	AV115P3	AV111P3	AV118P3	AV115T3	AV111T3	AV118T3	AV125P3	AV121P3	AV128P3	AV125T3	AV121T3	AV128T3
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Walkman RX Rec ID#	AV115P4	AV111P4	AV118P4	AV115T4	AV111T4	AV118T4	AV125P4	AV121P4	AV128P4	AV125T4	AV121T4	AV128T4
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Home RX Rec ID#	AV115P5	AV111P5	AV118P5	AV115T5	AV111T5	AV118T5	AV125P5	AV121P5	AV128P5	AV125T5	AV121T5	AV128T5
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N

\* AV111P2 – Clarification from original data sheet, 0W scenario

\* AV125P2 – Clarification from original data sheet

Figure 11 – Avon Receiver Data Sheet, Location 1

Avon, Connecticut LPFM Site																		
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port										
10/14/02	41 46 39.0 N 72 51 41.2 W		WCCC 106.9 MHz Processed		107.5 MHz	-39.0 dB	100 W	13.8 dBm										
							10 W	3.8 dBm										
Location 2	Latitude / Longitude	41 46 38.2 N		72 51 42.2 W														
	30m 10W P	30m 0W P	30m 100W P	30m 10W T	30m 0W T	30m 100W T	10m 10W P	10m 0W P	10m 100W P	10m 10W T	10m 0W T	10m 100W T						
Time of Recording	7:34	7:39	7:43	7:47	7:54	7:58	6:36	6:39	7:00	7:04	7:10	7:17						
FPFM (dBm)	-42.23	-43.02	-43.01	-43.17	-43.22	-41.68	-45.65	-45.00	-44.92	-44.94	-42.90	-42.94						
FPFM (dBuV/m)	75.37	74.58	74.59	74.43	74.38	75.92	71.95	72.60	72.68	72.66	74.70	74.66						
LPFM (dBm)	-15.50	-87.54	-5.26	-14.63	-87.58	-4.69	-4.59	-87.29	4.96	-4.64	-87.36	4.00						
LPFM (dBuV/m)	102.10	30.06	112.34	102.97	30.02	112.91	113.01	30.31	122.56	112.96	30.24	121.60						
Auto RX Rec ID#	AV215P1	AV211P1	AV218P1	AV215T1	AV211T1	AV218T1	AV225P1	AV221P1	AV228P1	AV225T1	AV221T1	AV228T1						
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N		
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Clock Radio Rec ID#	AV215P2	AV211P2	AV218P2	AV215T2	AV211T2	AV218T2	AV225P2	AV221P2	AV228P2	AV225T2	AV221T2	AV228T2						
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Boom Box Rec ID#	AV215P3	AV211P3	AV218P3	AV215T3	AV211T3	AV218T3	AV225P3	AV221P3	AV228P3	AV225T3	AV221T3	AV228T3						
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Walkman RX Rec ID#	AV215P4	AV211P4	AV218P4	AV215T4	AV211T4	AV218T4	AV225P4	AV221P4	AV228P4	AV225T4	AV221T4	AV228T4						
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Home RX Rec ID#	AV215P5	AV211P5	AV218P5	AV215T5	AV211T5	AV218T5	AV225P5	AV221P5	AV228P5	AV225T5	AV221T5	AV228T5						
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N

Figure 12 – Avon Receiver Data Sheet, Location 2

Avon, Connecticut LPFM Site																											
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port																			
10/15/02	41 46 39.0 N 72 51 41.2 W		WCCC 106.9 MHz Processed		107.5 MHz	-39.0 dB	100 W	13.8 dBm																			
							10 W	3.8 dBm																			
Location 3	Latitude / Longitude	41 46 37.8 N			72 51 45.2 W																						
	30m 10W P	30m 0W P	30m 100W P	30m 10W T	30m 0W T	30m 100W T	10m 10W P	10m 0W P	10m 100W P	10m 10W T	10m 0W T	10m 100W T															
Time of Recording	11:17	11:27	11:33	11:37	11:42	11:52	10:01	10:15	10:21	10:33	10:41	10:47															
FPFM (dBm)	-34.70	-34.25	-34.57	-34.29	-34.34	-34.36	-34.46	-35.01	-34.65	-34.51	-34.14	-34.17															
FPFM (dBuV/m)	82.90	83.35	83.03	83.31	83.26	83.24	83.14	82.59	82.95	83.09	83.46	83.43															
LPFM (dBm)	-15.08	-86.29	-4.40	-14.02	-87.66	-4.21	-16.07	-87.51	-5.99	-15.45	-87.36	-5.71															
LPFM (dBuV/m)	102.52	31.31	113.20	103.58	29.94	113.39	101.53	30.09	111.61	102.15	30.24	111.89															
Auto RX Rec ID#	AV315P1	AV311P1	AV318P1	AV315T1	AV311T1	AV318T1	AV325P1	AV321P1	AV328P1	AV325T1	AV321T1	AV328T1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	AV315P2	AV311P2	AV318P2	AV315T2	AV311T2	AV318T2	AV325P2	AV321P2	AV328P2	AV325T2	AV321T2	AV328T2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	AV315P3	AV311P3	AV318P3	AV315T3	AV311T3	AV318T3	AV325P3	AV321P3	AV328P3	AV325T3	AV321T3	AV328T3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	AV315P4	AV311P4	AV318P4	AV315T4	AV311T4	AV318T4	AV325P4	AV321P4	AV328P4	AV325T4	AV321T4	AV328T4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	AV315P5	AV311P5	AV318P5	AV315T5	AV311T5	AV318T5	AV325P5	AV321P5	AV328P5	AV325T5	AV321T5	AV328T5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

Figure 13 – Avon Receiver Data Sheet, Location 3

Avon, Connecticut LPFM Site																											
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port																			
10/15/02	41 46 39.0 N 72 51 41.2 W		WCCC 106.9 MHz Processed		107.5 MHz	-39.0 dB	100 W	13.8 dBm																			
							10 W	3.8 dBm																			
Location 4	Latitude / Longitude	41 46 38.3 N				72 51 50.1 W																					
	30m 10W P	30m 0W P	30m 100W P	30m 10W T	30m 0W T	30m 100W T	10m 10W P	10m 0W P	10m 100W P	10m 10W T	10m 0W T	10m 100W T															
Time of Recording	12:31	12:42	13:01	13:06	13:11	13:18	13:35	13:42	13:52	13:59	14:03	14:07															
FPFM (dBm)	-42.60	-42.53	-42.30	-42.56	-41.76	-44.92	-43.50	-43.71	-41.38	-43.41	-44.30	-40.97															
FPFM (dBuV/m)	75.00	75.07	75.30	75.04	75.84	72.68	74.10	73.89	76.22	74.19	73.30	76.63															
LPFM (dBm)	-24.75	-87.84	-14.76	-24.13	-87.77	-14.26	-35.64	-87.77	-24.24	-33.79	-87.69	-24.13															
LPFM (dBuV/m)	92.85	29.76	102.84	93.47	29.83	103.34	81.96	29.83	93.36	83.81	29.91	93.47															
Auto RX Rec ID#	AV415P1	AV411P1	AV418P1	AV415T1	AV411T1	AV418T1	AV425P1	AV421P1	AV428P1	AV425T1	AV421T1	AV428T1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	AV415P2	AV411P2	AV418P2	AV415T2	AV411T2	AV418T2	AV425P2	AV421P2	AV428P2	AV425T2	AV421T2	AV428T2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	AV415P3	AV411P3	AV418P3	AV415T3	AV411T3	AV418T3	AV425P3	AV421P3	AV428P3	AV425T3	AV421T3	AV428T3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	AV415P4	AV411P4	AV418P4	AV415T4	AV411T4	AV418T4	AV425P4	AV421P4	AV428P4	AV425T4	AV421T4	AV428T4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	AV415P5	AV411P5	AV418P5	AV415T5	AV411T5	AV418T5	AV425P5	AV421P5	AV428P5	AV425T5	AV421T5	AV428T5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

\* AV421P1, AV421P2, AV421P3, AV421P4, and AV421P5 – Clarification from original data sheet, 0W scenario

Figure 14 – Avon Receiver Data Sheet, Location 4



Avon, Connecticut LPFM Site																								
Date of Test	LPFM Site Lat/Lon		FPFM				LPFM	Dir. Coup.	ERP	Incident Port														
10/15/02	41 46 39.0 N 72 51 41.2 W		WCCC 106.9 MHz Processed				107.5 MHz	-39.0 dB	100 W	13.8 dBm														
									10 W	3.8 dBm														
Location 5	Latitude / Longitude	41 46 39.6 N				72 52 05.9 W																		
	30m 10W P	30m 0W P	30m 100W P	30m 10W T	30m 0W T	30m 100W T	10m 10W P	10m 0W P	10m 100W P	10m 10W T	10m 0W T	10m 100W T												
Time of Recording	16:31	16:35	16:40	16:45	16:50	16:54	15:37	15:46	16:01	16:05	16:10	16:15												
FPFM (dBm)	-26.08	-25.86	-26.70	-26.29	-25.82	-25.56	-26.45	-26.19	-26.31	-26.26	-26.38	-26.05												
FPFM (dBuV/m)	91.52	91.74	90.90	91.31	91.78	92.04	91.15	91.41	91.29	91.34	91.22	91.55												
LPFM (dBm)	-39.65	-86.44	-29.31	-39.31	-84.68	-29.79	-46.71	-87.05	-37.22	-46.37	-86.00	-37.03												
LPFM (dBuV/m)	77.95	31.16	88.29	78.29	32.92	87.81	70.89	30.55	80.38	71.23	31.60	80.57												
Auto RX Rec ID#	AV515P1	AV511P1	AV518P1	AV515T1	AV511T1	AV518T1	AV525P1	AV521P1	AV528P1	AV525T1	AV521T1	AV528T1												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N						
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Clock Radio Rec ID#	AV515P2	AV511P2	AV518P2	AV515T2	AV511T2	AV518T2	AV525P2	AV521P2	AV528P2	AV525T2	AV521T2	AV528T2												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Boom Box Rec ID#	AV515P3	AV511P3	AV518P3	AV515T3	AV511T3	AV518T3	AV525P3	AV521P3	AV528P3	AV525T3	AV521T3	AV528T3												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Walkman RX Rec ID#	AV515P4	AV511P4	AV518P4	AV515T4	AV511T4	AV518T4	AV525P4	AV521P4	AV528P4	AV525T4	AV521T4	AV528T4												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Home RX Rec ID#	AV515P5	AV511P5	AV518P5	AV515T5	AV511T5	AV518T5	AV525P5	AV521P5	AV528P5	AV525T5	AV521T5	AV528T5												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N

\* AV521P4 – Clarification from original data sheet, 0W scenario

Figure 15 – Avon Receiver Data Sheet, Location 5

Avon, Connecticut LPFM Site																								
Date of Test	LPFM Site Lat/Lon		FPFM			LPFM	Dir. Coup.	ERP	Incident Port															
10/15/02	41 46 39.0 N 72 51 41.2 W		WCCC 106.9 MHz Processed			107.5 MHz	-39.0 dB	100 W	13.8 dBm															
								10 W	3.8 dBm															
Location 6	Latitude / Longitude	41 46 38.9 N			72 52 40.3 W																			
	30m 10W P	30m 0W P	30m 100W P	30m 10W T	30m 0W T	30m 100W T	10m 10W P	10m 0W P	10m 100W P	10m 10W T	10m 0W T	10m 100W T												
Time of Recording	17:36	17:39	17:45	18:00	18:03	18:08	18:31	18:34	18:41	18:53	18:57	19:01												
FPFM (dBm)	-29.75	-29.86	-30.23	-30.41	-29.39	-29.10	-29.97	-29.57	-29.32	-29.39	-29.38	-28.17												
FPFM (dBuV/m)	87.85	87.74	87.37	87.19	88.21	88.50	87.63	88.03	88.28	88.21	88.22	89.43												
LPFM (dBm)	-69.38	-87.36	-58.70	-67.84	-85.60	-58.46	-70.34	-64.60	-60.93	-69.35	-84.48	-60.16												
LPFM (dBuV/m)	48.22	30.24	58.90	49.76	32.00	59.14	47.26	53.00	56.67	48.25	33.12	57.44												
Auto RX Rec ID#	AV615P1	AV611P1	AV618P1	AV615T1	AV611T1	AV618T1	AV625P1	AV621P1	AV628P1	AV625T1	AV621T1	AV628T1												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N						
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Clock Radio Rec ID#	AV615P2	AV611P2	AV618P2	AV615T2	AV611T2	AV618T2	AV625P2	AV621P2	AV628P2	AV625T2	AV621T2	AV628T2												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Boom Box Rec ID#	AV615P3	AV611P3	AV618P3	AV615T3	AV611T3	AV618T3	AV625P3	AV621P3	AV628P3	AV625T3	AV621T3	AV628T3												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Walkman RX Rec ID#	AV615P4	AV611P4	AV618P4	AV615T4	AV611T4	AV618T4	AV625P4	AV621P4	AV628P4	AV625T4	AV621T4	AV628T4												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Home RX Rec ID#	AV615P5	AV611P5	AV618P5	AV615T5	AV611T5	AV618T5	AV625P5	AV621P5	AV628P5	AV625T5	AV621T5	AV628T5												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N

Figure 16 – Avon Receiver Data Sheet, Location 6

Avon, Connecticut LPFM Site															
Date of Test	LPFM Site Lat/Lon		FPFM			LPFM	Dir. Coup.	ERP	Incident Port						
10/15/02	41 46 39.0 N 72 51 41.2 W		WCCC 106.9 MHz Processed			107.5 MHz	-39.0 dB	100 W	13.8 dBm						
								10 W	3.8 dBm						
Location 7	Latitude / Longitude	41 46 05.5 N			72 53 50.9 W										
	30m 10W P	30m 0W P	30m 100W P	30m 10W T	30m 0W T	30m 100W T	10m 10W P	10m 0W P	10m 100W P	10m 10W T	10m 0W T	10m 100W T			
Time of Recording	20:23	20:32	21:15	21:31	21:37	21:41	19:43	19:47	19:54	19:59	20:03	20:08			
FPFM (dBm)	-48.54	-48.68	-48.79	-48.68	-48.72	-48.93	-49.42	-48.46	-48.68	-48.39	-48.61	-48.65			
FPFM (dBuV/m)	69.06	68.92	68.81	68.92	68.88	68.67	68.18	69.14	68.92	69.21	68.99	68.95			
LPFM (dBm)	-86.08	-87.66	-82.80	-86.18	-86.26	-81.74	-86.74	-86.14	-81.66	-86.18	-87.62	-81.55			
LPFM (dBuV/m)	31.52	29.94	34.80	31.42	31.34	35.86	30.86	31.46	35.94	31.42	29.98	36.05			
Auto RX Rec ID#	AV715P1	AV711P1	AV718P1	AV715T1	AV711T1	AV718T1	AV725P1	AV721P1	AV728P1	AV725T1	AV721T1	AV728T1			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
Clock Radio Rec ID#	AV715P2	AV711P2	AV718P2	AV715T2	AV711T2	AV718T2	AV725P2	AV721P2	AV728P2	AV725T2	AV721T2	AV728T2			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
Boom Box Rec ID#	AV715P3	AV711P3	AV718P3	AV715T3	AV711T3	AV718T3	AV725P3	AV721P3	AV728P3	AV725T3	AV721T3	AV728T3			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
Walkman RX Rec ID#	AV715P4	AV711P4	AV718P4	AV715T4	AV711T4	AV718T4	AV725P4	AV721P4	AV728P4	AV725T4	AV721T4	AV728T4			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
Home RX Rec ID#	AV715P5	AV711P5	AV718P5	AV715T5	AV711T5	AV718T5	AV725P5	AV721P5	AV728P5	AV725T5	AV721T5	AV728T5			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	

Figure 17 – Avon Receiver Data Sheet, Location 7

Avon, Connecticut LPFM Site																																													
Date of Test	LPFM Site Lat/Lon		FPFM			LPFM	Dir. Coup.	ERP		Incident Port																																			
10/15/02	41 46 39.0 N 72 51 41.2 W		WCCC 106.9 MHz Processed			107.5 MHz	-39.0 dB	100 W	13.8 dBm																																				
								10 W	3.8 dBm																																				
Location 8	Latitude / Longitude	41 45 51.2 N			72 57 22.9 W																																								
		30m 10W P	30m 0W P	30m 100W P	30m 10W T	30m 0W T	30m 100W T	10m 10W P	10m 0W P	10m 100W P	10m 10W T	10m 0W T	10m 100W T																																
Time of Recording	22:16	22:29	22:32	22:38	22:46	23:01	23:12	23:17	23:21	23:31	23:34	23:43																																	
FPFM (dBm)	-63.20	-63.65	-63.64	-63.98	-64.24	-63.15	-51.18	-51.04	-51.04	-51.18	-50.93	-51.33																																	
FPFM (dBuV/m)	54.40	53.95	53.96	53.62	53.36	54.45	66.42	66.56	66.56	66.42	66.67	66.27																																	
LPFM (dBm)	-87.25	-87.43	-86.65	-87.20	-86.30	-85.67	-87.43	-86.82	-87.18	-87.29	-87.21	-86.77																																	
LPFM (dBuV/m)	30.35	30.17	30.95	30.40	31.30	31.93	30.17	30.78	30.42	30.31	30.39	30.83																																	
Auto RX Rec ID#	AV815P1	AV811P1	AV818P1	AV815T1	AV811T1	AV818T1	AV825P1	AV821P1	AV828P1	AV825T1	AV821T1	AV828T1																																	
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N									
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T			
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Clock Radio Rec ID#	AV815P2	AV811P2	AV818P2	AV815T2	AV811T2	AV818T2	AV825P2	AV821P2	AV828P2	AV825T2	AV821T2	AV828T2																																	
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N						
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Boom Box Rec ID#	AV815P3	AV811P3	AV818P3	AV815T3	AV811T3	AV818T3	AV825P3	AV821P3	AV828P3	AV825T3	AV821T3	AV828T3																																	
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N						
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Walkman RX Rec ID#	AV815P4	AV811P4	AV818P4	AV815T4	AV811T4	AV818T4	AV825P4	AV821P4	AV828P4	AV825T4	AV821T4	AV828T4																																	
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N						
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Home RX Rec ID#	AV815P5	AV811P5	AV818P5	AV815T5	AV811T5	AV818T5	AV825P5	AV821P5	AV828P5	AV825T5	AV821T5	AV828T5																																	
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N						
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			

Figure 18 – Avon Receiver Data Sheet, Location 8

## 5.2 Brunswick, ME – Transmitter Log and Receiver Data Sheets

LPFM Transmit Test Vehicle Log				
Date	LPFM Site Name:	LPFM Freq.	Test Site GPS Coordinates	Local Time of Test
10/21/02	Brunswick	97.3 MHz	43 54 23 N	10:00 AM
	<b>FPFM Call Sign:</b>	<b>FPFM Freq.</b>	69 59 48.7 W	
	WCME	96.7 MHz		
Cable Losses		Directional Coupler Coupling Factor		
129' Cable	1.9 dB	Incident and Reflected		
10' Jumper Cable	0.5 dB	-39.9 dB		
VSWR Check Power Meter Readings				
Incident	Reflected			
-3.37 dBm	-18.08 dBm			
NOTES:				
Locations 1 - 4 completed 10/21/02				
Locations 5 - 8 completed 10/22/02				
Locations 4 - 8 completed in reverse order				
Transmitter Actions (Brunswick, ME), Location # 1				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
10:18	10:28	10	VSWR Test	
11:56	12:08	10	Unprocessed Music	10
12:08	N/A	10	Mute On	0
12:26	12:29	10	Unprocessed Music	10
12:29	N/A	10	Mute On	0
12:40	12:44	10	Unprocessed Music	100
12:45	12:46	10	News/Talk	10
12:47	12:48	10	News/Talk	10
12:49	12:52	10	News/Talk	10
12:52	N/A	10	Mute On	0
13:10	13:18	10	News/Talk	100
13:28	13:37	30	Unprocessed Music	10
13:37	N/A	30	Mute On	0
13:41	13:46	30	Unprocessed Music	100
13:47	13:51	30	News/Talk	10
13:51	N/A	30	Mute On	0
13:56	13:58	30	News/Talk	100
14:12	14:16	30	Unprocessed Music	10

Figure 19 – Brunswick Transmitter Test Vehicle Log

<b>Transmitter Actions (Brunswick, ME), Location # 2</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
14:54	15:01	30	Unprocessed Music	10
15:01	N/A	30	Mute On	0
15:09	15:15	30	Unprocessed Music	100
15:16	15:27	30	News/Talk	10
15:27	N/A	30	Mute On	0
15:31	15:42	30	News/Talk	100
15:53	15:58	10	Unprocessed Music	10
*15:53	N/A	10	Mute On	0
16:09	16:15	10	Unprocessed Music	100
16:16	16:25	10	News/Talk	10
16:25	N/A	10	Mute On	0
16:28	16:28 (30 secs)	10	News/Talk	100
16:30	16:35	10	News/Talk	100
<b>Transmitter Actions (Brunswick, ME), Location # 3</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
17:25	17:27	10	Unprocessed Music	10
17:28	17:42	10	Unprocessed Music	10
17:42	N/A	10	Mute On	0
17:46	17:47	10	Unprocessed Music	100
17:48	17:55	10	Unprocessed Music	100
17:56	18:09	10	News/Talk	10
18:09	N/A	10	Mute On	0
18:12	18:13	10	News/Talk	100
18:14	18:17	10	News/Talk	100
18:31	18:35	30	Unprocessed Music	10
18:35	N/A	30	Mute On	0
18:41	18:45	30	Unprocessed Music	100
18:46	18:52	30	News/Talk	10
18:52	N/A	30	Mute On	0
18:57	19:01	30	News/Talk	100
19:05	19:08	30	News/Talk	100

\* Start time of 15:53 for mute on action is a typographical error as entered by the field engineer; the correct time is 15:58, which corresponds to the off time of the preceding 10 W unprocessed condition.

**Figure 19 – Brunswick Transmitter Test Vehicle Log (Cont.)**

<b>Transmitter Actions (Brunswick, ME), Location # 4</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
20:13	20:21	30	Unprocessed Music	10
20:21	N/A	30	Mute On	0
20:25	20:28	30	Unprocessed Music	100
20:30	20:36	30	News/Talk	10
20:36	N/A	30	Mute On	0
20:39	20:41	30	News/Talk	100
20:50	20:54	10	Unprocessed Music	10
20:54	N/A	10	Mute On	0
21:03	21:07	10	Unprocessed Music	100
21:08	21:09	10	News/Talk	10
21:10	21:12	10	Unprocessed Music	100
21:13	21:21	10	News/Talk	10
21:21	N/A	10	Mute On	0
21:24	21:29	10	News/Talk	100
<b>Transmitter Actions (Brunswick, ME), Location # 5</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
18:27	18:36	10	Unprocessed Music	10
18:36	N/A	10	Mute On	0
18:40	18:43	10	Unprocessed Music	100
18:45	18:46	10	News/Talk	10
18:51	18:53	10	News/Talk	10
18:53	N/A	10	Mute On	0
18:57	18:59	10	News/Talk	100
19:05	19:09	10	News/Talk	100
19:18	19:25	30	Unprocessed Music	10
19:25	N/A	30	Mute On	0
19:28	19:36	30	Unprocessed Music	100
19:37	19:40	30	News/Talk	10
19:40	N/A	30	Mute On	0
19:44	19:46	30	News/Talk	100
19:49	19:52	30	News/Talk	100

**Figure 19 – Brunswick Transmitter Test Vehicle Log (Cont.)**

<b>Transmitter Actions (Brunswick, ME), Location # 6</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
16:53	16:56	30	Unprocessed Music	10
16:56	N/A	30	Mute On	0
17:08	17:11	30	Unprocessed Music	100
17:12	17:14	30	News/Talk	10
17:14	N/A	30	Mute On	0
17:21	17:21 (30 secs)	30	News/Talk	100
17:21	17:25	30	News/Talk	100
17:36	17:39	10	Unprocessed Music	10
17:39	N/A	10	Mute On	0
17:43	17:46	10	Unprocessed Music	100
17:47	17:50	10	News/Talk	10
17:50	N/A	10	Mute On	0
17:58	17:59	10	News/Talk	100
18:04	18:09	10	News/Talk	100
<b>Transmitter Actions (Brunswick, ME), Location # 7</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
11:34	11:41	30	Unprocessed Music	10
11:41	N/A	30	Mute On	0
11:51	11:57	30	Unprocessed Music	100
12:02	12:07	10	Unprocessed Music	10
12:07	N/A	10	Mute On	0
12:11	12:15	10	Unprocessed Music	100
12:16	12:22	10	News/Talk	10
12:22	N/A	10	Mute On	0
12:34	12:38	10	News/Talk	100
12:39	12:41	10	News/Talk	10
12:42	12:51	10	Unprocessed Music	10
12:51	N/A	10	Mute On	0
12:54	12:54 (30secs)	10	Unprocessed Music	100
12:54	13:03	10	Unprocessed Music	100
16:11	16:17	30	Unprocessed Music	100
16:18	16:23	30	News/Talk	10
16:23	NA	30	News/Talk	0
16:26	16:29	30	News/Talk	100

\* Due to local management issues at the LPFM transmitter facility, Location 7, 30 m AGL measurements were not performed consecutively.

**Figure 19 – Brunswick Transmitter Test Vehicle Log (Cont.)**



<b>Transmitter Actions (Brunswick, ME), Location # 8</b>				
<b>Time on</b>	<b>Time Off</b>	<b>Height AGL (Meters)</b>	<b>Format</b>	<b>ERP (Watts)</b>
9:28	9:38	30	Unprocessed Music	10
9:38	N/A	30	Mute On	0
9:43	9:48	30	Unprocessed Music	100
9:50	9:53	30	News/Talk	10
9:53	N/A	30	Mute On	0
9:57	9:58	30	News/Talk	100
10:05	10:09	30	News/Talk	100
10:19	10:22	10	Unprocessed Music	10
10:22	N/A	10	Mute On	0
10:25	10:25 (30secs)	10	Unprocessed Music	100
10:26	10:29	10	Unprocessed Music	100
10:30	10:35	10	News/Talk	10
10:35	N/A	10	Mute On	0
10:39	10:40	10	News/Talk	100
10:40	10:46	10	News/Talk	100
10:46	10:50	10	News/Talk	100

**Figure 19 – Brunswick Transmitter Test Vehicle Log (Cont.)**

Brunswick, Maine LPFM Site																											
Date of Test	LPFM Site Lat/Lon		FPFM			LPFM	Dir. Coup.	ERP	Incident Port																		
10/21/02	43 54 23 N 69 59 48.7 W		WCME 96.7 MHz Processed			97.3 MHz	-39.9 dB	100 W	12.95 dBm																		
								10 W	2.95 dBm																		
Location 1	Latitude / Longitude	43 54 22.6 N			69 59 48.7 W																						
	30m 10W U	30m 0W U	30m 100W U	30m 10W T	30m 0W T	30m 100W T	10m 10W U	10m 0W U	10m 100W U	10m 10W T	10m 0W T	10m 100W T															
Time of Recording	13:32	13:35	13:39	13:45	13:49	13:54	12:26	12:29	12:39	12:47	13:03	13:15															
FPFM (dBm)	-76.20						-76.20																				
FPFM (dBuV/m)	40.30						40.30																				
LPFM (dBm)	-20.51	-85.25	-11.82	-20.03	-85.31	-12.41	-6.50	-85.31	3.81	-6.44	-85.28	3.94															
LPFM (dBuV/m)	95.99	31.25	104.68	96.47	31.19	104.09	110.00	31.19	120.31	110.06	31.22	120.44															
Auto RX Rec ID#	BR115U1	BR111U1	BR118U1	BR115T1	BR111T1	BR118T1	BR125U1	BR121U1	BR128U1	BR125T1	BR121T1	BR128T1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	BR115U2	BR111U2	BR118U2	BR115T2	BR111T2	BR118T2	BR125U2	BR121U2	BR128U2	BR125T2	BR121T2	BR128T2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	BR115U3	BR111U3	BR118U3	BR115T3	BR111T3	BR118T3	BR125U3	BR121U3	BR128U3	BR125T3	BR121T3	BR128T3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	BR115U4	BR111U4	BR118U4	BR115T4	BR111T4	BR118T4	BR125U4	BR121U4	BR128U4	BR125T4	BR121T4	BR128T4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	BR115U5	BR111U5	BR118U5	BR115T5	BR111T5	BR118T5	BR125U5	BR121U5	BR128U5	BR125T5	BR121T5	BR128T5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

\* BR118T1 – Subsequent review provides evidence that there was no degradation on receiver with LPFM radiating.

\* BR128T1, BR128T2, BR128T3, BR128T4, and BR128T5 – Clarifications from original data sheet

**Figure 20 – Brunswick Receiver Data Sheet, Location 1**

Brunswick, Maine LPFM Site												
Date of Test	LPFM Site Lat/Lon		FPFM			LPFM	Dir. Coup.	ERP		Incident Port		
10/21/02	43 54 23 N 69 59 48.7 W		WCME 96.7 MHz Processed			97.3 MHz	-39.9 dB	100 W	12.95 dBm			
								10 W	2.95 dBm			
Location 2	Latitude / Longitude	43 54 23.9 N			69 59 51.3 W							
	30m 10W U	30m 0W U	30m 100W U	30m 10W T	30m 0W T	30m 100W T	10m 10W U	10m 0W U	10m 100W U	10m 10W T	10m 0W T	10m 100W T
Time of Recording	14:55	15:03	15:08	15:20	15:25	15:42	15:52	16:03	16:08	16:20	16:23	16:28
FPFM (dBm)	-63.29											
FPFM (dBuV/m)	53.21											
LPFM (dBm)	-22.00	-85.39	-12.66	-23.25	-85.39	-11.65	-12.31	-85.50	-2.27	-12.27	-85.35	-2.44
LPFM (dBuV/m)	94.50	31.11	103.84	93.25	31.11	104.85	104.19	31.00	114.23	104.23	31.15	114.06
Auto RX Rec ID#	BR215U1	BR211U1	BR218U1	BR215T1	BR211T1	BR218T1	BR225U1	BR221U1	BR228U1	BR225T1	BR221T1	BR228T1
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Clock Radio Rec ID#	BR215U2	BR211U2	BR218U2	BR215T2	BR211T2	BR218T2	BR225U2	BR221U2	BR228U2	BR225T2	BR221T2	BR228T2
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Boom Box Rec ID#	BR215U3	BR211U3	BR218U3	BR215T3	BR211T3	BR218T3	BR225U3	BR221U3	BR228U3	BR225T3	BR221T3	BR228T3
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Walkman RX Rec ID#	BR215U4	BR211U4	BR218U4	BR215T4	BR211T4	BR218T4	BR225U4	BR221U4	BR228U4	BR225T4	BR221T4	BR228T4
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Home RX Rec ID#	BR215U5	BR211U5	BR218U5	BR215T5	BR211T5	BR218T5	BR225U5	BR221U5	BR228U5	BR225T5	BR221T5	BR228T5
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N

Figure 21 – Brunswick Receiver Data Sheet, Location 2

Brunswick, Maine LPFM Site																											
Date of Test	LPFM Site Lat/Lon		FPFM			LPFM	Dir. Coup.	ERP	Incident Port																		
10/22/02	43 54 23 N 69 59 48.7 W		WCME 96.7 MHz Processed			97.3 MHz	-39.9 dB	100 W	12.95 dBm																		
								10 W	2.95 dBm																		
Location 3	Latitude / Longitude	43 54 24.4 N			69 59 54.0 W																						
	30m 10W U	30m 0W U	30m 100W U	30m 10W T	30m 0W T	30m 100W T	10m 10W U	10m 0W U	10m 100W U	10m 10W T	10m 0W T	10m 100W T															
Time of Recording	18:31	18:35	18:40	18:48	18:52	19:04	N/A	17:40	17:48	18:03	18:07	18:14															
FPFM (dBm)								-79.40																			
FPFM (dBuV/m)								37.10																			
LPFM (dBm)	-21.64	-85.39	-11.87	-21.24	-85.35	-11.87	-29.16	-85.39	-19.40	-28.26	-85.35	-19.14															
LPFM (dBuV/m)	94.86	31.11	104.63	95.26	31.15	104.63	87.34	31.11	97.10	88.24	31.15	97.36															
Auto RX Rec ID#	BR315U1	BR311U1	BR318U1	BR315T1	BR311T1	BR318T1	BR325U1	BR321U1	BR328U1	BR325T1	BR321T1	BR328T1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	BR315U2	BR311U2	BR318U2	BR315T2	BR311T2	BR318T2	BR325U2	BR321U2	BR328U2	BR325T2	BR321T2	BR328T2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	BR315U3	BR311U3	BR318U3	BR315T3	BR311T3	BR318T3	BR325U3	BR321U3	BR328U3	BR325T3	BR321T3	BR328T3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	BR315U4	BR311U4	BR318U4	BR315T4	BR311T4	BR318T4	BR325U4	BR321U4	BR328U4	BR325T4	BR321T4	BR328T4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	BR315U5	BR311U5	BR318U5	BR315T5	BR311T5	BR318T5	BR325U5	BR321U5	BR328U5	BR325T5	BR321T5	BR328T5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

\* 10m 10W U recording time – omission from original data sheet

\* BR325U3 and BR321U3 – Clarifications from original data sheet

Figure 22 – Brunswick Receiver Data Sheet, Location 3

Brunswick, Maine LPFM Site															
Date of Test	LPFM Site Lat/Lon		FPFM				LPFM	Dir. Coup.	ERP	Incident Port					
10/22/02	43 54 23 N 69 59 48.7 W		WCME 96.7 MHz Processed				97.3 MHz	-39.9 dB	100 W	12.95 dBm					
									10 W	2.95 dBm					
Location 4	Latitude / Longitude	43 54 11.9 N				69 59 55 W									
	30m 10W U	30m 0W U	30m 100W U	30m 10W T	30m 0W T	30m 100W T	10m 10W U	10m 0W U	10m 100W U	10m 10W T	10m 0W T	10m 100W T			
Time of Recording	20:11	20:20	20:24	20:31	20:34	20:37	20:50	20:53	21:09	21:16	21:20	21:22			
FPFM (dBm)	-60.24														
FPFM (dBuV/m)	56.26														
LPFM (dBm)	-34.66	-85.13	-23.29	-33.62	-85.17	-23.63	-44.33	-84.69	-31.93	-41.81	-85.09	-31.67			
LPFM (dBuV/m)	81.84	31.37	93.21	82.88	31.33	92.87	72.17	31.81	84.57	74.69	31.41	84.83			
Auto RX Rec ID#	BR415U1	BR411U1	BR418U1	BR415T1	BR411T1	BR418T1	BR425U1	BR421U1	BR428U1	BR425T1	BR421T1	BR428T1			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y
Clock Radio Rec ID#	BR415U2	BR411U2	BR418U2	BR415T2	BR411T2	BR418T2	BR425U2	BR421U2	BR428U2	BR425T2	BR421T2	BR428T2			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y
Boom Box Rec ID#	BR415U3	BR411U3	BR418U3	BR415T3	BR411T3	BR418T3	BR425U3	BR421U3	BR428U3	BR425T3	BR421T3	BR428T3			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y
Walkman RX Rec ID#	BR415U4	BR411U4	BR418U4	BR415T4	BR411T4	BR418T4	BR425U4	BR421U4	BR428U4	BR425T4	BR421T4	BR428T4			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y
Home RX Rec ID#	BR415U5	BR411U5	BR418U5	BR415T5	BR411T5	BR418T5	BR425U5	BR421U5	BR428U5	BR425T5	BR421T5	BR428T5			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y

\* Location coordinates – clarification of coordinates taken from map located in Figure 4

\* BR428U5 – Clarification from original data sheet

Figure 23 – Brunswick Receiver Data Sheet, Location 4

Brunswick, Maine LPFM Site																								
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port																
10/22/02	43 54 23 N 69 59 48.7 W		WCME 96.7 MHz Processed		97.3 MHz	-39.9 dB	100 W	12.95 dBm																
							10 W	2.95 dBm																
Location 5	Latitude / Longitude	43 53 54.5 N		70 00 2.9 W																				
	30m 10W U	30m 0W U	30m 100W U	30m 10W T	30m 0W T	30m 100W T	10m 10W U	10m 0W U	10m 100W U	10m 10W T	10m 0W T	10m 100W T												
Time of Recording	19:20	19:23	19:31	19:35	19:38	19:48	18:30	18:34	18:38	18:49	18:52	19:03												
FPFM (dBm)							-75.87																	
FPFM (dBuV/m)							40.63																	
LPFM (dBm)	-55.46	-85.17	-45.17	-54.84	-84.54	-44.53	-55.79	-85.13	-45.31	-54.95	-85.13	-44.77												
LPFM (dBuV/m)	61.04	31.33	71.33	61.66	31.96	71.97	60.71	31.37	71.19	61.55	31.37	71.73												
Auto RX Rec ID#	BR515U1	BR511U1	BR518U1	BR515T1	BR511T1	BR518T1	BR525U1	BR521U1	BR528U1	BR525T1	BR521T1	BR528T1												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	BR515U2	BR511U2	BR518U2	BR515T2	BR511T2	BR518T2	BR525U2	BR521U2	BR528U2	BR525T2	BR521T2	BR528T2												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	BR515U3	BR511U3	BR518U3	BR515T3	BR511T3	BR518T3	BR525U3	BR521U3	BR528U3	BR525T3	BR521T3	BR528T3												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	BR515U4	BR511U4	BR518U4	BR515T4	BR511T4	BR518T4	BR525U4	BR521U4	BR528U4	BR525T4	BR521T4	BR528T4												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	BR515U5	BR511U5	BR518U5	BR515T5	BR511T5	BR518T5	BR525U5	BR521U5	BR528U5	BR525T5	BR521T5	BR528T5												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

\* BR528U4 – Clarification from original data sheet

Figure 24 – Brunswick Receiver Data Sheet, Location 5

Brunswick, Maine LPFM Site																								
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port																
10/22/02	43 54 23 N 69 59 48.7 W		WCME 96.7 MHz Processed		97.3 MHz	-39.9 dB	100 W	12.95 dBm																
							10 W	2.95 dBm																
Location 6	Latitude / Longitude	43 53 27.8 N				70 01 05.6 W																		
	30m 10W U	30m 0W U	30m 100W U	30m 10W T	30m 0W T	30m 100W T	10m 10W U	10m 0W U	10m 100W U	10m 10W T	10m 0W T	10m 100W T												
Time of Recording	16:51	17:03	17:07	17:10	17:16	17:19	17:35	17:38	17:41	17:44	17:54	18:02												
FPFM (dBm)	-68.44																							
FPFM (dBuV/m)	48.06																							
LPFM (dBm)	-68.33	-85.24	-58.44	-67.41	-85.24	-57.23	-67.05	-85.24	-56.34	-66.60	-85.20	*												
LPFM (dBuV/m)	48.17	31.26	58.06	49.09	31.26	59.27	49.45	31.26	60.16	49.90	31.30	*												
Auto RX Rec ID#	BR615U1	BR611U1	BR618U1	BR615T1	BR611T1	BR618T1	BR625U1	BR621U1	BR628U1	BR625T1	BR621T1	BR628T1												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N						
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Clock Radio Rec ID#	BR615U2	BR611U2	BR618U2	BR615T2	BR611T2	BR618T2	BR625U2	BR621U2	BR628U2	BR625T2	BR621T2	BR628T2												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Boom Box Rec ID#	BR615U3	BR611U3	BR618U3	BR615T3	BR611T3	BR618T3	BR625U3	BR621U3	BR628U3	BR625T3	BR621T3	BR628T3												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Walkman RX Rec ID#	BR615U4	BR611U4	BR618U4	BR615T4	BR611T4	BR618T4	BR625U4	BR621U4	BR628U4	BR625T4	BR621T4	BR628T4												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Home RX Rec ID#	BR615U5	BR611U5	BR618U5	BR615T5	BR611T5	BR618T5	BR625U5	BR621U5	BR628U5	BR625T5	BR621T5	BR628T5												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N

\* 10m 100W T Scenario – Received LPFM signal level omitted from original data sheet

Figure 25 – Brunswick Receiver Data Sheet, Location 6

<b>Brunswick, Maine LPFM Site</b>																								
Date of Test	LPFM Site Lat/Lon	FPFM			LPFM	Dir. Coup.	ERP	Incident Port																
10/22/02	43 54 23 N 69 59 48.7 W	WCME 96.7 MHz Processed			97.3 MHz	-39.9 dB	100 W	12.95 dBm																
							10 W	2.95 dBm																
Location 7	Latitude / Longitude	43 52 09.2 N			70 04 03.9 W																			
	30m 10W U	30m 0W U	30m 100W U	30m 10W T	30m 0W T	30m 100W T	10m 10W U	10m 0W U	10m 100W U	10m 10W T	10m 0W T	10m 100W T												
Time of Recording	11:36	11:47	16:11	16:18	16:21	16:24	12:45	12:49	12:52	12:37	12:30	12:33												
FPFM (dBm)	-70.83		-72.70																					
FPFM (dBUV/m)	45.67		43.80																					
LPFM (dBm)	-84.91	-85.35	-83.80	-85.06	-85.20	-83.95	-85.17	-85.28	-83.44	-85.06	-85.39	-83.95												
LPFM (dBUV/m)	31.59	31.15	32.70	31.44	31.30	32.55	31.33	31.22	33.06	31.44	31.11	32.55												
Auto RX Rec ID#	BR715U1	BR711U1	BR718U1	BR715T1	BR711T1	BR718T1	BR725U1	BR721U1	BR728U1	BR725T1	BR721T1	BR728T1												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N				
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Clock Radio Rec ID#	BR715U2	BR711U2	BR718U2	BR715T2	BR711T2	BR718T2	BR725U2	BR721U2	BR728U2	BR725T2	BR721T2	BR728T2												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Boom Box Rec ID#	BR715U3	BR711U3	BR718U3	BR715T3	BR711T3	BR718T3	BR725U3	BR721U3	BR728U3	BR725T3	BR721T3	BR728T3												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Walkman RX Rec ID#	BR715U4	BR711U4	BR718U4	BR715T4	BR711T4	BR718T4	BR725U4	BR721U4	BR728U4	BR725T4	BR721T4	BR728T4												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Home RX Rec ID#	BR715U5	BR711U5	BR718U5	BR715T5	BR711T5	BR718T5	BR725U5	BR721U5	BR728U5	BR725T5	BR721T5	BR728T5												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N

\* BR718T1, BR718T2, BR718T3, BR718T4, BR718T5 – Clarifications from original data sheet

\* BR 721U3 – Clarification from original data sheet, 0W scenario

**Figure 26 – Brunswick Receiver Data Sheet, Location 7**



Brunswick, Maine LPFM Site															
Date of Test	LPFM Site Lat/Lon		FPFM				LPFM	Dir. Coup.	ERP	Incident Port					
10/22/02	43 54 23 N 69 59 48.7 W		WCME 96.7 MHz Processed				97.3 MHz	-39.9 dB	100 W	12.95 dBm					
									10 W	2.95 dBm					
Location 8	Latitude / Longitude	43 49 45.5 N				70 13 00.7 W									
	30m 10W U	30m 0W U	30m 100W U	30m 10W T	30m 0W T	30m 100W T	10m 10W U	10m 0W U	10m 100W U	10m 10W T	10m 0W T	10m 100W T			
Time of Recording	9:31	9:38	9:45	9:49	9:53	10:05	10:17	10:20	10:23	10:31	10:35	10:38			
FPFM (dBm)	-76.49								-79.91						
FPFM (dBuV/m)	40.01								36.59						
LPFM (dBm)	-85.31	-85.31	-85.17	-85.35	-85.25	-85.17	-85.46	-85.43	-85.35	-85.35	-85.20	-85.40			
LPFM (dBuV/m)	31.19	31.19	31.33	31.15	31.25	31.33	31.04	31.07	31.15	31.15	31.30	31.10			
Auto RX Rec ID#	BR815U1	BR811U1	BR818U1	BR815T1	BR811T1	BR818T1	BR825U1	BR821U1	BR828U1	BR825T1	BR821T1	BR828T1			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y
Clock Radio Rec ID#	BR815U2	BR811U2	BR818U2	BR815T2	BR811T2	BR818T2	BR825U2	BR821U2	BR828U2	BR825T2	BR821T2	BR828T2			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y
Boom Box Rec ID#	BR815U3	BR811U3	BR818U3	BR815T3	BR811T3	BR818T3	BR825U3	BR821U3	BR828U3	BR825T3	BR821T3	BR828T3			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y
Walkman RX Rec ID#	BR815U4	BR811U4	BR818U4	BR815T4	BR811T4	BR818T4	BR825U4	BR821U4	BR828U4	BR825T4	BR821T4	BR828T4			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y
Home RX Rec ID#	BR815U5	BR811U5	BR818U5	BR815T5	BR811T5	BR818T5	BR825U5	BR821U5	BR828U5	BR825T5	BR821T5	BR828T5			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y

Figure 27 – Brunswick Receiver Data Sheet, Location 8

### 5.3 East Bethel, MN – Transmitter Log and Receiver Data Sheets

LPFM Transmit Test Vehicle Log				
Date	LPFM Site Name:	LPFM Freq.	Test Site GPS Coordinates	Local Time of Test
10/28/02	East Bethel	91.7 MHz	45 19 8.3 N	9:00
	<b>FPFM Call Sign:</b>	<b>FPFM Freq.</b>	93 13 48 W	
	KNOW	91.1 MHz		
<b>Cable Losses</b>		<b>Directional Coupler Coupling Factor</b>		
129' Cable	1.9 dB	Incident and Reflected		
10' Jumper Cable	0.5 dB	-40.5 dB		
<b>VSWR Check Power Meter Readings</b>				
Incident	Reflected			
-3.33 dBm	-24.1 dBm			
NOTES:				
Locations 1 - 4 completed 10/28/02				
Locations 5 - 8 completed 10/29/02				
11:30 Mute On data derived from end time of previous data entry of 11:27 Time On to 11:30 Time Off, not from Log sheet entry				
<b>Transmitter Actions (East Bethel, MN), Location # 1</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
10:32	10:34	10	VSWR Test	
10:50	10:53	10	VSWR Test	
11:27	11:30	10	Unprocessed Music	10
11:30	NA	10	Mute On	0
11:34	11:44	10	Unprocessed Music	100
11:47	11:49	10	Processed Music	10
11:50	NA	10	Mute On	0
11:53	11:56	10	Processed Music	100
12:08	12:13	30	Unprocessed Music	10
12:13	NA	30	Mute On	0
12:19	12:21	30	Unprocessed Music	100
12:22	12:25	30	Processed Music	10
12:25	NA	30	Mute On	0
12:29	12:31	30	Processed Music	100

Figure 28 – East Bethel Transmitter Test Vehicle Log

<b>Transmitter Actions (East Bethel, MN), Location # 2</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
12:47	12:51	30	Unprocessed Music	10
12:51	NA	30	Mute On	0
12:58	13:03	30	Unprocessed Music	100
13:04	13:11	30	Processed Music	10
13:11	NA	30	Mute On	0
13:15	13:17	30	Processed Music	100
13:31	13:36	10	Unprocessed Music	10
13:36	NA	10	Mute On	0
12:40	13:44	10	Unprocessed Music	100
13:46	13:48	10	Processed Music	10
13:48	NA	10	Mute On	0
13:51	13:54	10	Processed Music	100
<b>Transmitter Actions (East Bethel, MN), Location #3</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
14:10	14:14	10	Unprocessed Music	10
14:14	NA	10	Mute On	0
14:18	14:20	10	Unprocessed Music	100
14:22	14:24	10	Processed Music	10
14:24	NA	10	Mute On	0
14:28	14:30	10	Processed Music	100
14:40	14:44	30	Unprocessed Music	10
14:44	NA	30	Mute On	0
14:48	14:51	30	Unprocessed Music	100
14:52	14:54	30	Processed Music	10
14:54	NA	30	Mute On	0
14:58	15:02	30	Processed Music	100
17:24	17:26	30	Processed Music	100

**Figure 28 – East Bethel Transmitter Test Vehicle Log (Cont.)**

<b>Transmitter Actions (East Bethel, MN), Location #4</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
17:32	17:38	30	Unprocessed Music	10
17:38	NA	30	Mute On	0
17:42	17:44	30	Unprocessed Music	100
17:46	17:49	30	Processed Music	10
17:49	NA	30	Mute On	0
17:52	17:54	30	Processed Music	100
18:06	18:10	10	Unprocessed Music	10
18:10	NA	10	Mute On	0
18:14	18:16	10	Unprocessed Music	100
18:17	18:20	10	Processed Music	10
18:20	NA	10	Mute On	0
18:24	18:29	10	Processed Music	100
<b>Transmitter Actions (East Bethel, MN), Location # 5</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
8:18	8:20	10	VSWR Test	
8:41	8:43	10	Unprocessed Music	10
8:43	NA	10	Mute On	0
8:47	8:51	10	Unprocessed Music	100
8:53	8:55	10	Processed Music	10
8:55	NA	10	Mute On	0
8:58	9:01	10	Processed Music	100
9:13	9:17	30	Unprocessed Music	10
9:17	NA	30	Mute On	0
9:20	9:23	30	Unprocessed Music	100
9:24	9:27	30	Processed Music	10
9:27	NA	30	Mute On	0
9:31	9:34	30	Processed Music	100

**Figure 28 – East Bethel Transmitter Test Vehicle Log (Cont.)**

<b>Transmitter Actions (East Bethel, MN), Location # 6</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
9:54	10:01	30	Unprocessed Music	10
10:01	NA	30	Mute On	0
10:05	10:07	30	Unprocessed Music	100
10:08	10:12	30	Processed Music	10
10:12	NA	30	Mute On	0
10:15	10:18	30	Processed Music	100
10:30	10:32	10	Unprocessed Music	10
10:32	NA	10	Mute On	0
10:36	10:38	10	Unprocessed Music	100
10:40	10:43	10	Processed Music	10
10:43	NA	10	Mute On	0
10:47	10:50	10	Processed Music	100
<b>Transmitter Actions (East Bethel, MN), Location # 7</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
11:25	11:28	10	Unprocessed Music	10
11:28	NA	10	Mute On	0
11:33	11:36	10	Unprocessed Music	100
11:38	11:41	10	Processed Music	10
11:41	NA	10	Mute On	0
11:47	11:50	10	Processed Music	100
12:01	12:03	30	Unprocessed Music	10
12:03	NA	30	Mute On	0
12:08	12:10	30	Unprocessed Music	100
12:12	12:15	30	Processed Music	10
12:15	NA	30	Mute On	0
12:18	12:20	30	Processed Music	100

**Figure 28 – East Bethel Transmitter Test Vehicle Log (Cont.)**

<b>Transmitter Actions (East Bethel, MN), Location # 8</b>				
<b>Time on</b>	<b>Time Off</b>	<b>Height AGL (Meters)</b>	<b>Format</b>	<b>ERP (Watts)</b>
12:42	12:46	30	Unprocessed Music	10
12:46	NA	30	Mute On	0
12:49	12:53	30	Unprocessed Music	100
12:53	12:55	30	Processed Music	10
12:55	NA	30	Mute On	0
13:00	13:02	30	Processed Music	100
13:13	13:16	10	Unprocessed Music	10
13:16	NA	10	Mute On	0
13:19	13:22	10	Unprocessed Music	100
13:23	13:25	10	Processed Music	10
13:25	NA	10	Mute On	0
13:28	13:31	10	Processed Music	100

**Figure 28 – East Bethel Transmitter Test Vehicle Log (Cont.)**

East Bethel, Minnesota LPFM Site																								
Date of Test	LPFM Site Lat/Lon		FPFM				LPFM	Dir. Coup.	ERP	Incident Port														
10/28/02	45 19 08.3 N 93 13 48.0 W		KNOW 91.1 MHz Unprocessed				91.7 MHz	-40.5 dB	100 W	12.3 dBm														
									10 W	2.3 dBm														
Location 1	Latitude / Longitude	45 19 08.4 N				93 13 48.5 W																		
	30m 10W U	30m 0W U	30m 100W U	30m 10W P	30m 0W P	30m 100W P	10m 10W U	10m 0W U	10m 100W U	10m 10W P	10m 0W P	10m 100W P												
Time of Recording	12:05	12:12	12:16	12:20	12:22	12:26	11:24	11:29	11:36	11:44	11:47	11:51												
FPFM (dBm)							-51.1																	
FPFM (dBuV/m)							64.90																	
LPFM (dBm)	-12.50	-85.13	-2.07	-12.33	-85.17	-2.41	-12.30	-85.10	-2.20	-12.10	-85.02	-2.21												
LPFM (dBuV/m)	103.50	30.87	113.93	103.67	30.83	113.59	103.70	30.90	113.80	103.90	30.98	113.79												
AuPo RX Rec ID#	EB115U1	EB111U1	EB118U1	EB115P1	EB111P1	EB118P1	EB125U1	EB121U1	EB128U1	EB125P1	EB121P1	EB128P1												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	EB115U2	EB111U2	EB118U2	EB115P2	EB111P2	EB118P2	EB125U2	EB121U2	EB128U2	EB125P2	EB121P2	EB128P2												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	EB115U3	EB111U3	EB118U3	EB115P3	EB111P3	EB118P3	EB125U3	EB121U3	EB128U3	EB125P3	EB121P3	EB128P3												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	EB115U4	EB111U4	EB118U4	EB115P4	EB111P4	EB118P4	EB125U4	EB121U4	EB128U4	EB125P4	EB121P4	EB128P4												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	EB115U5	EB111U5	EB118U5	EB115P5	EB111P5	EB118P5	EB125U5	EB121U5	EB128U5	EB125P5	EB121P5	EB128P5												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Blind Reader Rec ID#	EB115U6	EB111U6	EB118U6	EB115P6	EB111P6	EB118P6	EB125U6	EB121U6	EB128U6	EB125P6	EB121P6	EB128P6												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

\* EB118P3 – Clarification from original data sheet

Figure 29 – East Bethel Receiver Data Sheet, Location 1

East Bethel, Minnesota LPFM Site																								
Date of Test	LPFM Site Lat/Lon		FPFM				LPFM	Dir. Coup.	ERP	Incident Port														
10/28/02	45 19 08.3 N 93 13 48.0 W		KNOW 91.1 MHz Unprocessed				91.7 MHz	-40.5 dB	100 W	12.3 dBm														
									10 W	2.3 dBm														
Location 2	Latitude / Longitude	45 19 08.9 N				93 13 49.3 W																		
	30m 10W U	30m 0W U	30m 100W U	30m 10W P	30m 0W P	30m 100W P	10m 10W U	10m 0W U	10m 100W U	10m 10W P	10m 0W P	10m 100W P												
Time of Recording	12:43	12:51	12:58	13:05	13:08	13:11	13:30	13:33	13:39	13:43	13:45	13:48												
FPFM (dBm)	-54.16																							
FPFM (dBuV/m)	61.84																							
LPFM (dBm)	-19.83	-85.13	-10.08	-19.96	-85.24	-9.94	-15.82	-85.17	-6.60	-16.45	-85.10	-6.60												
LPFM (dBuV/m)	96.17	30.87	105.92	96.04	30.76	106.06	100.18	30.83	109.40	99.55	30.90	109.40												
AuPo RX Rec ID#	EB215U1	EB211U1	EB218U1	EB215P1	EB211P1	EB218P1	EB225U1	EB221U1	EB228U1	EB225P1	EB221P1	EB228P1												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N						
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Clock Radio Rec ID#	EB215U2	EB211U2	EB218U2	EB215P2	EB211P2	EB218P2	EB225U2	EB221U2	EB228U2	EB225P2	EB221P2	EB228P2												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Boom Box Rec ID#	EB215U3	EB211U3	EB218U3	EB215P3	EB211P3	EB218P3	EB225U3	EB221U3	EB228U3	EB225P3	EB221P3	EB228P3												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Walkman RX Rec ID#	EB215U4	EB211U4	EB218U4	EB215P4	EB211P4	EB218P4	EB225U4	EB221U4	EB228U4	EB225P4	EB221P4	EB228P4												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Home RX Rec ID#	EB215U5	EB211U5	EB218U5	EB215P5	EB211P5	EB218P5	EB225U5	EB221U5	EB228U5	EB225P5	EB221P5	EB228P5												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Blind Reader Rec ID#	EB215U6	EB211U6	EB218U6	EB215P6	EB211P6	EB218P6	EB225U6	EB221U6	EB228U6	EB225P6	EB221P6	EB228P6												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N

Figure 30 – East Bethel Receiver Data Sheet, Location 2



East Bethel, Minnesota LPFM Site																								
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port																
10/28/02	45 19 08.3 N 93 13 48.0 W		KNOW 91.1 MHz Unprocessed		91.7 MHz	-40.5 dB	100 W	12.3 dBm																
							10 W	2.3 dBm																
Location 3	Latitude / Longitude	45 19 10.1N				93 13 50.7 W																		
	30m 10W U	30m 0W U	30m 100W U	30m 10W P	30m 0W P	30m 100W P	10m 10W U	10m 0W U	10m 100W U	10m 10W P	10m 0W P	10m 100W P												
Time of Recording	14:39	14:42	14:45	14:49	14:52	14:55	14:08	14:11	14:14	14:19	14:22	17:19												
FPFM (dBm)							-44.3																	
FPFM (dBuV/m)							71.70																	
LPFM (dBm)	-16.15	-85.02	-6.63	-16.50	-85.17	-6.82	-15.50	-85.24	-5.40	-15.73	-85.20	-6.22												
LPFM (dBuV/m)	99.85	30.98	109.37	99.50	30.83	109.18	100.50	30.76	110.60	100.27	30.80	109.78												
AuPo RX Rec ID#	EB315U1	EB311U1	EB318U1	EB315P1	EB311P1	EB318P1	EB325U1	EB321U1	EB328U1	EB325P1	EB321P1	EB328P1												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	EB315U2	EB311U2	EB318U2	EB315P2	EB311P2	EB318P2	EB325U2	EB321U2	EB328U2	EB325P2	EB321P2	EB328P2												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	EB315U3	EB311U3	EB318U3	EB315P3	EB311P3	EB318P3	EB325U3	EB321U3	EB328U3	EB325P3	EB321P3	EB328P3												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	EB315U4	EB311U4	EB318U4	EB315P4	EB311P4	EB318P4	EB325U4	EB321U4	EB328U4	EB325P4	EB321P4	EB328P4												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	EB315U5	EB311U5	EB318U5	EB315P5	EB311P5	EB318P5	EB325U5	EB321U5	EB328U5	EB325P5	EB321P5	EB328P5												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Blind Reader Rec ID#	EB315U6	EB311U6	EB318U6	EB315P6	EB311P6	EB318P6	EB325U6	EB321U6	EB328U6	EB325P6	EB321P6	EB328P6												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

\* 10m 100W P Scenario – Scenario re-recorded before continuation of location 4 data collection

Figure 31 – East Bethel Receiver Data Sheet, Location 3

East Bethel, Minnesota LPFM Site																											
Date of Test	LPFM Site Lat/Lon		FPFM				LPFM	Dir. Coup.	ERP	Incident Port																	
10/28/02	45 19 08.3 N 93 13 48.0 W		KNOW 91.1 MHz Unprocessed				91.7 MHz	-40.5 dB	100 W	12.3 dBm																	
									10 W	2.3 dBm																	
Location 4	Latitude / Longitude	45 19 11.1 N				93 13 57.9 W																					
		30m 10W U	30m 0W U	30m 100W U	30m 10W P	30m 0W P	30m 100W P	10m 10W U	10m 0W U	10m 100W U	10m 10W P	10m 0W P	10m 100W P														
Time of Recording	17:33	17:35	17:39	17:43	17:45	17:49	18:05	18:07	18:11	18:14	18:17	18:21															
FPFM (dBm)	-54.1																										
FPFM (dBuV/m)	61.90																										
LPFM (dBm)	-31.92	-85.06	-22.40	-32.30	-85.02	-22.70	-37.80	-85.10	-27.33	-37.60	-85.13	-27.20															
LPFM (dBuV/m)	84.08	30.94	93.60	83.70	30.98	93.30	78.20	30.90	88.67	78.40	30.87	88.80															
AuPo RX Rec ID#	EB415U1	EB411U1	EB418U1	EB415P1	EB411P1	EB418P1	EB425U1	EB421U1	EB428U1	EB425P1	EB421P1	EB428P1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Clock Radio Rec ID#	EB415U2	EB411U2	EB418U2	EB415P2	EB411P2	EB418P2	EB425U2	EB421U2	EB428U2	EB425P2	EB421P2	EB428P2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Boom Box Rec ID#	EB415U3	EB411U3	EB418U3	EB415P3	EB411P3	EB418P3	EB425U3	EB421U3	EB428U3	EB425P3	EB421P3	EB428P3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Walkman RX Rec ID#	EB415U4	EB411U4	EB418U4	EB415P4	EB411P4	EB418P4	EB425U4	EB421U4	EB428U4	EB425P4	EB421P4	EB428P4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Home RX Rec ID#	EB415U5	EB411U5	EB418U5	EB415P5	EB411P5	EB418P5	EB425U5	EB421U5	EB428U5	EB425P5	EB421P5	EB428P5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Blind Reader Rec ID#	EB415U6	EB411U6	EB418U6	EB415P6	EB411P6	EB418P6	EB425U6	EB421U6	EB428U6	EB425P6	EB421P6	EB428P6															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			

Figure 32 – East Bethel Receiver Data Sheet, Location 4

East Bethel, Minnesota LPFM Site																		
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port										
10/29/02	45 19 08.3 N 93 13 48.0 W		KNOW 91.1 MHz Unprocessed		91.7 MHz	-40.5 dB	100 W	12.3 dBm										
							10 W	2.3 dBm										
Location 5	Latitude / Longitude	45 19 19.3 N			93 14 08 W													
	30m 10W U	30m 0W U	30m 100W U	30m 10W P	30m 0W P	30m 100W P	10m 10W U	10m 0W U	10m 100W U	10m 10W P	10m 0W P	10m 100W P						
Time of Recording	9:10	9:14	9:17	9:22	9:24	9:28	8:38	8:41	8:46	8:49	8:52	8:55						
FPFM (dBm)							-44.2											
FPFM (dBuV/m)							71.79											
LPFM (dBm)	-35.48	-84.98	-25.21	-35.90	-85.06	-25.97	-45.50	-85.06	-35.60	-45.64	-85.10	-35.69						
LPFM (dBuV/m)	80.52	31.02	90.79	80.10	30.94	90.03	70.50	30.94	80.40	70.36	30.90	80.31						
AuPo RX Rec ID#	EB515U1	EB511U1	EB518U1	EB515P1	EB511P1	EB518P1	EB525U1	EB521U1	EB528U1	EB525P1	EB521P1	EB528P1						
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N		
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Clock Radio Rec ID#	EB515U2	EB511U2	EB518U2	EB515P2	EB511P2	EB518P2	EB525U2	EB521U2	EB528U2	EB525P2	EB521P2	EB528P2						
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Boom Box Rec ID#	EB515U3	EB511U3	EB518U3	EB515P3	EB511P3	EB518P3	EB525U3	EB521U3	EB528U3	EB525P3	EB521P3	EB528P3						
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Walkman RX Rec ID#	EB515U4	EB511U4	EB518U4	EB515P4	EB511P4	EB518P4	EB525U4	EB521U4	EB528U4	EB525P4	EB521P4	EB528P4						
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Home RX Rec ID#	EB515U5	EB511U5	EB518U5	EB515P5	EB511P5	EB518P5	EB525U5	EB521U5	EB528U5	EB525P5	EB521P5	EB528P5						
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Blind Reader Rec ID#	EB515U6	EB511U6	EB518U6	EB515P6	EB511P6	EB518P6	EB525U6	EB521U6	EB528U6	EB525P6	EB521P6	EB528P6						
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N

\* 10m and 30m measurements are reversed on original data sheet

Figure 33 – East Bethel Receiver Data Sheet, Location 5

East Bethel, Minnesota LPFM Site																								
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port																
10/29/02	45 19 08.3 N 93 13 48.0 W		KNOW 91.1 MHz Unprocessed		91.7 MHz	-40.5 dB	100 W	12.3 dBm																
							10 W	2.3 dBm																
Location 6	Latitude / Longitude	45 19 35.3 N		93 14 44.4 W																				
	30m 10W U	30m 0W U	30m 100W U	30m 10W P	30m 0W P	30m 100W P	10m 10W U	10m 0W U	10m 100W U	10m 10W P	10m 0W P	10m 100W P												
Time of Recording	9:56	9:58	10:01	10:06	10:09	10:12	10:27	10:29	10:33	10:37	10:40	10:44												
FPFM (dBm)	-46.3																							
FPFM (dBuV/m)	69.70																							
LPFM (dBm)	-45.75	-84.65	-35.80	-46.05	-84.30	-36.25	-52.30	-84.98	-42.52	-52.70	-84.51	-42.85												
LPFM (dBuV/m)	70.25	31.35	80.20	69.95	31.70	79.75	63.70	31.02	73.48	63.30	31.49	73.15												
AuPo RX Rec ID#	EB615U1	EB611U1	EB618U1	EB615P1	EB611P1	EB618P1	EB625U1	EB621U1	EB628U1	EB625P1	EB621P1	EB628P1												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N						
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Clock Radio Rec ID#	EB615U2	EB611U2	EB618U2	EB615P2	EB611P2	EB618P2	EB625U2	EB621U2	EB628U2	EB625P2	EB621P2	EB628P2												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Boom Box Rec ID#	EB615U3	EB611U3	EB618U3	EB615P3	EB611P3	EB618P3	EB625U3	EB621U3	EB628U3	EB625P3	EB621P3	EB628P3												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Walkman RX Rec ID#	EB615U4	EB611U4	EB618U4	EB615P4	EB611P4	EB618P4	EB625U4	EB621U4	EB628U4	EB625P4	EB621P4	EB628P4												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Home RX Rec ID#	EB615U5	EB611U5	EB618U5	EB615P5	EB611P5	EB618P5	EB625U5	EB621U5	EB628U5	EB625P5	EB621P5	EB628P5												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Blind Reader Rec ID#	EB615U6	EB611U6	EB618U6	EB615P6	EB611P6	EB618P6	EB625U6	EB621U6	EB628U6	EB625P6	EB621P6	EB628P6												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N

Figure 34 – East Bethel Receiver Data Sheet, Location 6

East Bethel, Minnesota LPFM Site													
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port					
10/29/02	45 19 08.3 N 93 13 48.0 W		KNOW 91.1 MHz Unprocessed		91.7 MHz	-40.5 dB	100 W 10 W	12.3 dBm 2.3 dBm					
	Latitude / Longitude		45 20 55.5 N		93 14 10.2 W								
Location 7	30m 10W U	30m 0W U	30m 100W U	30m 10W P	30m 0W P	30m 100W P	10m 10W U	10m 0W U	10m 100W U	10m 10W P	10m 0W P	10m 100W P	
Time of Recording	11:58	12:01	12:04	12:08	12:11	12:14	11:22	11:27	11:30	11:35	11:40	11:44	
FPFM (dBm)							-40.6						
FPFM (dBuV/m)							75.40						
LPFM (dBm)	-63.48	-84.20	-62.10	-68.31	-84.32	-61.71	-71.12	-84.18	-62.56	-72.37	-83.26	-62.37	
LPFM (dBuV/m)	52.52	31.80	53.90	47.69	31.68	54.29	44.88	31.82	53.44	43.63	32.74	53.63	
AuPo RX Rec ID#	EB715U1	EB711U1	EB718U1	EB715P1	EB711P1	EB718P1	EB725U1	EB721U1	EB728U1	EB725P1	EB721P1	EB728P1	
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Clock Radio Rec ID#	EB715U2	EB711U2	EB718U2	EB715P2	EB711P2	EB718P2	EB725U2	EB721U2	EB728U2	EB725P2	EB721P2	EB728P2	
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Boom Box Rec ID#	EB715U3	EB711U3	EB718U3	EB715P3	EB711P3	EB718P3	EB725U3	EB721U3	EB728U3	EB725P3	EB721P3	EB728P3	
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Walkman RX Rec ID#	EB715U4	EB711U4	EB718U4	EB715P4	EB711P4	EB718P4	EB725U4	EB721U4	EB728U4	EB725P4	EB721P4	EB728P4	
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Home RX Rec ID#	EB715U5	EB711U5	EB718U5	EB715P5	EB711P5	EB718P5	EB725U5	EB721U5	EB728U5	EB725P5	EB721P5	EB728P5	
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Blind Reader Rec ID#	EB715U6	EB711U6	EB718U6	EB715P6	EB711P6	EB718P6	EB725U6	EB721U6	EB728U6	EB725P6	EB721P6	EB728P6	
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	

Figure 35 – East Bethel Receiver Data Sheet, Location 7

East Bethel, Minnesota LPFM Site																								
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port																
10/29/02	45 19 08.3 N 93 13 48.0 W		KNOW 91.1 MHz Unprocessed		91.7 MHz	-40.5 dB	100 W	12.3 dBm																
							10 W	2.3 dBm																
Location 8	Latitude / Longitude	45 23 24 N				93 14 59.5 W																		
	30m 10W U	30m 0W U	30m 100W U	30m 10W P	30m 0W P	30m 100W P	10m 10W U	10m 0W U	10m 100W U	10m 10W P	10m 0W P	10m 100W P												
Time of Recording	12:40	12:43	12:46	12:49	12:53	12:56	13:11	13:13	13:16	13:19	13:21	13:25												
FPFM (dBm)																								
FPFM (dBuV/m)																								
LPFM (dBm)	-83.00	-85.30	-76.31	-83.10	-84.90	-76.30	-84.10	-85.24	-79.25	-84.21	-85.20	-80.10												
LPFM (dBuV/m)	33.00	30.70	39.69	32.90	31.10	39.70	31.90	30.76	36.75	31.79	30.80	35.90												
AuPo RX Rec ID#	EB815U1	EB811U1	EB818U1	EB815P1	EB811P1	EB818P1	EB825U1	EB821U1	EB828U1	EB825P1	EB821P1	EB828P1												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N						
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Clock Radio Rec ID#	EB815U2	EB811U2	EB818U2	EB815P2	EB811P2	EB818P2	EB825U2	EB821U2	EB828U2	EB825P2	EB821P2	EB828P2												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Boom Box Rec ID#	EB815U3	EB811U3	EB818U3	EB815P3	EB811P3	EB818P3	EB825U3	EB821U3	EB828U3	EB825P3	EB821P3	EB828P3												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Walkman RX Rec ID#	EB815U4	EB811U4	EB818U4	EB815P4	EB811P4	EB818P4	EB825U4	EB821U4	EB828U4	EB825P4	EB821P4	EB828P4												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Home RX Rec ID#	EB815U5	EB811U5	EB818U5	EB815P5	EB811P5	EB818P5	EB825U5	EB821U5	EB828U5	EB825P5	EB821P5	EB828P5												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Blind Reader Rec ID#	EB815U6	EB811U6	EB818U6	EB815P6	EB811P6	EB818P6	EB825U6	EB821U6	EB828U6	EB825P6	EB821P6	EB828P6												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N

\* FPFM signal level measurement – omission from original data sheet

Figure 36 – East Bethel Receiver Data Sheet, Location 8

### 5.4 Owatonna, MN – Transmitter Log and Receiver Data Sheets

LPFM Transmit Test Vehicle Log				
Date	LPFM Site Name:	LPFM Freq.	Test Site GPS Coordinates	Local Time of Test
10/31/02	Owatonna (3rd Adj.)	106.3 MHz	44 6 44.8 N	8:40
	<b>FPFM Call Sign:</b>	<b>FPFM Freq.</b>	93 12 42 W	
	KGAC	105.7 MHz		
Cable Losses		Directional Coupler Coupling Factor		
129' Cable	1.9 dB	Incident and Reflected		
10' Jumper Cable	0.5 dB	-39.1 dB		
VSWR Check Power Meter Readings				
Incident	Reflected			
-1.56 dBm	-25.62 dBm			
NOTES:				
Locations 1 - 6 completed 10/31/02				
Locations 7 - 8 completed 11/4/02				
Transmitter Actions (Owatonna, MN), Location # 1				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
8:40	8:58	10	VSWR Test	
9:28	9:31	10	Processed Music	10
9:31	NA	10	Mute On	0
9:35	9:38	10	Processed Music	100
9:40	9:42	10	News/Talk	10
9:42	NA	10	Mute On	0
9:46	9:49	10	News/Talk	100
10:06	10:09	30	Processed Music	10
10:09	NA	30	Mute On	0
10:12	10:15	30	Processed Music	100
10:16	10:19	30	News/Talk	10
10:19	NA	30	Mute On	0
10:23	10:26	30	News/Talk	100

Figure 37 – Owatonna Transmitter Test Vehicle Log

<b>Transmitter Actions (Owatonna, MN), Location #2</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
10:41	10:44	30	Processed Music	10
10:44	NA	30	Mute On	0
10:48	10:51	30	Processed Music	100
10:52	10:54	30	News/Talk	10
10:54	NA	30	Mute On	0
10:58	11:01	30	News/Talk	100
11:12	11:15	10	Processed Music	10
11:15	NA	10	Mute On	0
11:20	11:24	10	Processed Music	100
11:24	11:27	10	News/Talk	10
11:27	NA	10	Mute On	0
11:31	11:35	10	News/Talk	100
<b>Transmitter Actions (Owatonna, MN), Location # 3</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
11:49	11:51	10	Processed Music	10
11:51	NA	10	Mute On	0
11:56	11:58	10	Processed Music	100
11:59	12:03	10	News/Talk	10
12:03	NA	10	Mute On	0
12:06	12:09	10	News/Talk	100
12:32	12:34	30	Processed Music	10
12:34	NA	30	Mute On	0
12:38	12:41	30	Processed Music	100
12:42	12:44	30	News/Talk	10
12:44	NA	30	Mute On	0
12:48	12:51	30	News/Talk	100

**Figure 37 – Owatonna Transmitter Test Vehicle Log (Cont.)**



<b>Transmitter Actions (Owatonna, MN), Location # 4</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
13:06	13:09	30	Processed Music	10
13:09	NA	30	Mute On	0
13:13	13:15	30	Processed Music	100
13:16	13:21	30	News/Talk	10
13:21	NA	30	Mute On	0
13:25	13:28	30	News/Talk	100
13:43	13:46	10	Processed Music	10
13:46	NA	10	Mute On	0
13:50	13:53	10	Processed Music	100
13:54	13:56	10	News/Talk	10
13:56	NA	10	Mute On	0
14:00	14:02	10	News/Talk	100
<b>Transmitter Actions (Owatonna, MN), Location # 5</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
14:15	14:18	10	Processed Music	10
14:18	NA	10	Mute On	0
14:21	14:26	10	Processed Music	100
14:27	14:31	10	News/Talk	10
14:31	NA	10	Mute On	0
14:34	14:37	10	News/Talk	100
14:47	14:50	30	Processed Music	10
14:50	NA	30	Mute On	0
14:54	14:56	30	Processed Music	100
14:58	15:02	30	News/Talk	10
15:02	NA	30	Mute On	0
15:06	15:09	30	News/Talk	100

**Figure 37 – Owatonna Transmitter Test Vehicle Log (Cont.)**

<b>Transmitter Actions (Owatonna, MN), Location # 6</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
15:25	15:33	30	Processed Music	10
15:33	NA	30	Mute On	0
15:37	15:39	30	Processed Music	100
15:40	15:42	30	News/Talk	10
15:42	NA	30	Mute On	0
15:46	15:48	30	News/Talk	100
15:59	16:02	10	Processed Music	10
16:02	NA	10	Mute On	0
16:06	16:09	10	Processed Music	100
16:10	16:12	10	News/Talk	10
16:12	NA	10	Mute On	0
16:15	16:20	10	News/Talk	100
<b>Transmitter Actions (Owatonna, MN), Location # 7</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
14:51	14:54	10	Processed Music	10
14:54	NA	10	Mute On	0
14:58	1:03	10	Processed Music	100
15:04	1:06	10	News/Talk	10
15:06	NA	10	Mute On	0
15:09	15:11	10	News/Talk	100
15:24	15:27	30	Processed Music	10
15:27	NA	30	Mute On	0
15:31	15:36	30	Processed Music	100
15:37	15:40	30	News/Talk	10
15:40	NA	30	Mute On	0
15:44	15:47	30	News/Talk	100

**Figure 37 – Owatonna Transmitter Test Vehicle Log (Cont.)**

<b>Transmitter Actions (Owatonna, MN), Location # 8</b>				
<b>Time on</b>	<b>Time Off</b>	<b>Height AGL (Meters)</b>	<b>Format</b>	<b>ERP (Watts)</b>
16:06	16:08	30	Processed Music	10
16:08	NA	30	Mute On	0
16:12	16:14	30	Processed Music	100
16:15	16:17	30	News/Talk	10
16:17	NA	30	Mute On	0
16:22	16:24	30	News/Talk	100
16:35	16:39	10	Processed Music	10
16:40	NA	10	Mute On	0
16:43	16:46	10	Processed Music	100
16:47	16:50	10	News/Talk	10
16:50	NA	10	Mute On	0
16:53	16:59	10	News/Talk	100

**Figure 37 – Owatonna Transmitter Test Vehicle Log (Cont.)**

Owatonna, Minnesota LPFM Site													
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port					
10/31/02	44 06 44.8 N 93 12 42.0 W		KGAC 105.7 MHz Unprocessed		106.3 MHz	-39.1 dB	100 W	13.7 dBm					
							10 W	3.7 dBm					
Location 1	Latitude / Longitude	44 06 44.1 N			93 12 42.3 W								
	30m 10W P	30m 0W P	30m 100W P	30m 10W T	30m 0W T	30m 100W T	10m 10W P	10m 0W P	10m 100W P	10m 10W T	10m 0W T	10m 100W T	
Time of Recording	10:03	10:06	10:09	10:14	10:16	10:19	9:25	9:29	9:32	9:36	9:40	9:45	
FPFM (dBm)							-58.88						
FPFM (dBUV/m)							58.72						
LPFM (dBm)	-5.96	-85.09	3.68	-5.92	-85.02	4.06	-7.21	-84.87	2.66	-6.80	-84.80	2.88	
LPFM (dBUV/m)	111.64	32.51	121.28	111.68	32.58	121.66	110.39	32.73	120.26	110.80	32.80	120.48	
Auto RX Rec ID#	OW115P1	OW111P1	OW118P1	OW115T1	OW111T1	OW118T1	OW125P1	OW121P1	OW128P1	OW125T1	OW121T1	OW128T1	
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
Clock Radio Rec ID#	OW115P2	OW111P2	OW118P2	OW115T2	OW111T2	OW118T2	OW125P2	OW121P2	OW128P2	OW125T2	OW121T2	OW128T2	
Degrad. W/O LPFM	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
Boom Box Rec ID#	OW115P3	OW111P3	OW118P3	OW115T3	OW111T3	OW118T3	OW125P3	OW121P3	OW128P3	OW125T3	OW121T3	OW128T3	
Degrad. W/O LPFM	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
Walkman RX Rec ID#	OW115P4	OW111P4	OW118P4	OW115T4	OW111T4	OW118T4	OW125P4	OW121P4	OW128P4	OW125T4	OW121T4	OW128T4	
Degrad. W/O LPFM	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
Home RX Rec ID#	OW115P5	OW111P5	OW118P5	OW115T5	OW111T5	OW118T5	OW125P5	OW121P5	OW128P5	OW125T5	OW121T5	OW128T5	
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
FPFM Format	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	

Figure 38 – Owatonna Receiver Data Sheet, Location 1

Owatonna, Minnesota LPFM Site																																				
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port																												
10/31/02	44 06 44.8 N 93 12 42.0 W		KGAC 105.7 MHz Unprocessed		106.3 MHz	-39.1 dB	100 W	13.7 dBm																												
							10 W	3.7 dBm																												
Location 2	Latitude / Longitude	44 06 43.9 N				93 12 43.9 W																														
	30m 10W P	30m 0W P	30m 100W P	30m 10W T	30m 0W T	30m 100W T	10m 10W P	10m 0W P	10m 100W P	10m 10W T	10m 0W T	10m 100W T																								
Time of Recording	10:39	10:42	10:45	10:48	10:52	10:55	11:09	11:13	11:16	11:21	11:25	11:30																								
FPFM (dBm)	-57.67																																			
FPFM (dBUV/m)	59.93																																			
LPFM (dBm)	-20.13	-85.13	-9.74	-19.53	-85.09	-9.17	-5.75	-84.90	4.24	-5.03	-85.13	4.90																								
LPFM (dBUV/m)	97.47	32.47	107.86	98.07	32.51	108.43	111.85	32.70	121.84	112.57	32.47	122.50																								
Auto RX Rec ID#	OW215P1	OW211P1	OW218P1	OW215T1	OW211T1	OW218T1	OW225P1	OW221P1	OW228P1	OW225T1	OW221T1	OW228T1																								
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N									
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T			
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Clock Radio Rec ID#	OW215P2	OW211P2	OW218P2	OW215T2	OW211T2	OW218T2	OW225P2	OW221P2	OW228P2	OW225T2	OW221T2	OW228T2																								
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Boom Box Rec ID#	OW215P3	OW211P3	OW218P3	OW215T3	OW211T3	OW218T3	OW225P3	OW221P3	OW228P3	OW225T3	OW221T3	OW228T3																								
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Walkman RX Rec ID#	OW215P4	OW211P4	OW218P4	OW215T4	OW211T4	OW218T4	OW225P4	OW221P4	OW228P4	OW225T4	OW221T4	OW228T4																								
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Home RX Rec ID#	OW215P5	OW211P5	OW218P5	OW215T5	OW211T5	OW218T5	OW225P5	OW221P5	OW228P5	OW225T5	OW221T5	OW228T5																								
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			

Figure 39 – Owatonna Receiver Data Sheet, Location 2

Owatonna, Minnesota LPFM Site														
Date of Test	LPFM Site Lat/Lon		FPFM				LPFM	Dir. Coup.	ERP	Incident Port				
10/31/02	44 06 44.8 N 93 12 42.0 W		KGAC 105.7 MHz Unprocessed				106.3 MHz	-39.1 dB	100 W	13.7 dBm				
									10 W	3.7 dBm				
Location 3	Latitude / Longitude	44 06 43.3 N				93 12 46.8 W								
	30m 10W P	30m 0W P	30m 100W P	30m 10W T	30m 0W T	30m 100W T	10m 10W P	10m 0W P	10m 100W P	10m 10W T	10m 0W T	10m 100W T		
Time of Recording	12:28	12:31	12:35	12:39	12:42	12:45	11:46	11:50	11:52	11:57	12:00	12:03		
FPFM (dBm)														
FPFM (dBuV/m)														
LPFM (dBm)	-22.10	-85.06	-11.90	-21.34	-84.98	-11.12	-21.87	-85.15	-11.97	-21.75	-85.13	-11.61		
LPFM (dBuV/m)	95.50	32.54	105.70	96.26	32.62	106.48	95.73	32.45	105.63	95.85	32.47	105.99		
Auto RX Rec ID#	OW315P1	OW311P1	OW318P1	OW315T1	OW311T1	OW318T1	OW325P1	OW321P1	OW328P1	OW325T1	OW321T1	OW328T1		
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>		
Degrad. On Rec.	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
Clock Radio Rec ID#	OW315P2	OW311P2	OW318P2	OW315T2	OW311T2	OW318T2	OW325P2	OW321P2	OW328P2	OW325T2	OW321T2	OW328T2		
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>		
Degrad. On Rec.	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
Boom Box Rec ID#	OW315P3	OW311P3	OW318P3	OW315T3	OW311T3	OW318T3	OW325P3	OW321P3	OW328P3	OW325T3	OW321T3	OW328T3		
Degrad. W/O LPFM	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>		
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		
Walkman RX Rec ID#	OW315P4	OW311P4	OW318P4	OW315T4	OW311T4	OW318T4	OW325P4	OW321P4	OW328P4	OW325T4	OW321T4	OW328T4		
Degrad. W/O LPFM	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>		
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		
Home RX Rec ID#	OW315P5	OW311P5	OW318P5	OW315T5	OW311T5	OW318T5	OW325P5	OW321P5	OW328P5	OW325T5	OW321T5	OW328T5		
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>		
Degrad. On Rec.	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		

\* FPFM Signal Level Measurement – Omission from original data sheet

Figure 40 – Owatonna Receiver Data Sheet, Location 3

Owatonna, Minnesota LPFM Site														
Date of Test	LPFM Site Lat/Lon		FPFM				LPFM	Dir. Coup.	ERP	Incident Port				
10/31/02	44 06 44.8 N 93 12 42.0 W		KGAC 105.7 MHz Unprocessed				106.3 MHz	-39.1 dB	100 W	13.7 dBm				
									10 W	3.7 dBm				
Location 4	Latitude / Longitude	44 06 45.8 N				93 13 0.0 W								
	30m 10W P	30m 0W P	30m 100W P	30m 10W T	30m 0W T	30m 100W T	10m 10W P	10m 0W P	10m 100W P	10m 10W T	10m 0W T	10m 100W T		
Time of Recording	13:01	13:06	13:10	13:15	13:19	13:22	13:41	13:44	13:47	13:50	13:53	13:56		
FPFM (dBm)	-54.47													
FPFM (dBuV/m)	63.13													
LPFM (dBm)	-27.36	-85.17	-17.22	-26.41	-85.17	-16.34	-37.12	-85.09	-27.09	-36.37	-85.17	-26.03		
LPFM (dBuV/m)	90.24	32.43	100.38	91.19	32.43	101.26	80.48	32.51	90.51	81.23	32.43	91.57		
Auto RX Rec ID#	OW415P1	OW411P1	OW418P1	OW415T1	OW411T1	OW418T1	OW425P1	OW421P1	OW428P1	OW425T1	OW421T1	OW428T1		
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>		
Degrad. On Rec.	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
Clock Radio Rec ID#	OW415P2	OW411P2	OW418P2	OW415T2	OW411T2	OW418T2	OW425P2	OW421P2	OW428P2	OW425T2	OW421T2	OW428T2		
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>		
Degrad. On Rec.	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
Boom Box Rec ID#	OW415P3	OW411P3	OW418P3	OW415T3	OW411T3	OW418T3	OW425P3	OW421P3	OW428P3	OW425T3	OW421T3	OW428T3		
Degrad. W/O LPFM	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>		
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		
Walkman RX Rec ID#	OW415P4	OW411P4	OW418P4	OW415T4	OW411T4	OW418T4	OW425P4	OW421P4	OW428P4	OW425T4	OW421T4	OW428T4		
Degrad. W/O LPFM	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>		
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		
Home RX Rec ID#	OW415P5	OW411P5	OW418P5	OW415T5	OW411T5	OW418T5	OW425P5	OW421P5	OW428P5	OW425T5	OW421T5	OW428T5		
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>		
Degrad. On Rec.	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		

Figure 41 – Owatonna Receiver Data Sheet, Location 4

Owatonna, Minnesota LPFM Site													
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port					
10/31/02	44 06 44.8 N 93 12 42.0 W		KGAC 105.7 MHz Unprocessed		106.3 MHz	-39.1 dB	100 W	13.7 dBm					
							10 W	3.7 dBm					
Location 5	Latitude / Longitude	44 07 09.6 N			93 13 00.3 W								
	30m 10W P	30m 0W P	30m 100W P	30m 10W T	30m 0W T	30m 100W T	10m 10W P	10m 0W P	10m 100W P	10m 10W T	10m 0W T	10m 100W T	
Time of Recording	14:43	14:47	14:50	14:54	14:59	15:02	14:12	14:15	14:20	14:24	14:28	14:31	
FPFM (dBm)	-51.45												
FPFM (dBuV/m)	66.15												
LPFM (dBm)	-39.91	-85.10	-29.87	-39.13	-84.98	-29.66	-48.35	-84.90	-38.30	-47.75	-85.06	-37.90	
LPFM (dBuV/m)	77.69	32.50	87.73	78.47	32.62	87.94	69.25	32.70	79.30	69.85	32.54	79.70	
Auto RX Rec ID#	OW515P1	OW511P1	OW518P1	OW515T1	OW511T1	OW518T1	OW525P1	OW521P1	OW528P1	OW525T1	OW521T1	OW528T1	
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
Clock Radio Rec ID#	OW515P2	OW511P2	OW518P2	OW515T2	OW511T2	OW518T2	OW525P2	OW521P2	OW528P2	OW525T2	OW521T2	OW528T2	
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
Boom Box Rec ID#	OW515P3	OW511P3	OW518P3	OW515T3	OW511T3	OW518T3	OW525P3	OW521P3	OW528P3	OW525T3	OW521T3	OW528T3	
Degrad. W/O LPFM	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
Walkman RX Rec ID#	OW515P4	OW511P4	OW518P4	OW515T4	OW511T4	OW518T4	OW525P4	OW521P4	OW528P4	OW525T4	OW521T4	OW528T4	
Degrad. W/O LPFM	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
Home RX Rec ID#	OW515P5	OW511P5	OW518P5	OW515T5	OW511T5	OW518T5	OW525P5	OW521P5	OW528P5	OW525T5	OW521T5	OW528T5	
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	

Figure 42 – Owatonna Receiver Data Sheet, Location 5



Owatonna, Minnesota LPFM Site																											
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port																			
10/31/02	44 06 44.8 N 93 12 42.0 W		KGAC 105.7 MHz Unprocessed		106.3 MHz	-39.1 dB	100 W	13.7 dBm																			
							10 W	3.7 dBm																			
Location 6	Latitude / Longitude	44 07 27.3 N				93 14 05.1 W																					
	30m 10W P	30m 0W P	30m 100W P	30m 10W T	30m 0W T	30m 100W T	10m 10W P	10m 0W P	10m 100W P	10m 10W T	10m 0W T	10m 100W T															
Time of Recording	15:27	15:30	15:33	15:37	15:39	15:43	15:57	16:00	16:03	16:06	16:09	16:15															
FPFM (dBm)	-55.93																										
FPFM (dBUV/m)	61.67																										
LPFM (dBm)	-48.40	-83.00	-37.90	-47.45	-82.93	-37.08	-56.34	-80.83	-46.20	-55.68	-82.37																
LPFM (dBUV/m)	69.20	34.60	79.70	70.15	34.67	80.52	61.26	36.77	71.40	61.92	35.23																
Auto RX Rec ID#	OW615P1	OW611P1	OW618P1	OW615T1	OW611T1	OW618T1	OW625P1	OW621P1	OW628P1	OW625T1	OW621T1	OW628T1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	OW615P2	OW611P2	OW618P2	OW615T2	OW611T2	OW618T2	OW625P2	OW621P2	OW628P2	OW625T2	OW621T2	OW628T2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	OW615P3	OW611P3	OW618P3	OW615T3	OW611T3	OW618T3	OW625P3	OW621P3	OW628P3	OW625T3	OW621T3	OW628T3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	OW615P4	OW611P4	OW618P4	OW615T4	OW611T4	OW618T4	OW625P4	OW621P4	OW628P4	OW625T4	OW621T4	OW628T4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	OW615P5	OW611P5	OW618P5	OW615T5	OW611T5	OW618T5	OW625P5	OW621P5	OW628P5	OW625T5	OW621T5	OW628T5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

\* 10m 100W T Scenario – Received LPFM signal level omitted from original data sheet

Figure 43 – Owatonna Receiver Data Sheet, Location 6

Owatonna, Minnesota LPFM Site																											
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port																			
11/4/02	44 06 44.8 N 93 12 42.0 W		KGAC 105.7 MHz Unprocessed		106.3 MHz	-39.1 dB	100 W	13.7 dBm																			
							10 W	3.7 dBm																			
Location 7	Latitude / Longitude	44 08 19.5 N		93 16 43.5 W																							
	30m 10W P	30m 0W P	30m 100W P	30m 10W T	30m 0W T	30m 100W T	10m 10W P	10m 0W P	10m 100W P	10m 10W T	10m 0W T	10m 100W T															
Time of Recording	15:21	15:24	15:30	15:34	15:37	15:41	14:48	14:50	14:54	15:00	15:03	15:07															
FPFM (dBm)							-61.21																				
FPFM (dBuV/m)							56.39																				
LPFM (dBm)	-67.23	-85.00	-57.15	-66.50	-85.06	-56.20	-76.45	-85.06	-66.97	-65.50	-85.06	-66.20															
LPFM (dBuV/m)	50.37	32.60	60.45	51.10	32.54	61.40	41.15	32.54	50.63	52.10	32.54	51.40															
Auto RX Rec ID#	OW715P1	OW711P1	OW718P1	OW715T1	OW711T1	OW718T1	OW725P1	OW721P1	OW728P1	OW725T1	OW721T1	OW728T1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	OW715P2	OW711P2	OW718P2	OW715T2	OW711T2	OW718T2	OW725P2	OW721P2	OW728P2	OW725T2	OW721T2	OW728T2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	OW715P3	OW711P3	OW718P3	OW715T3	OW711T3	OW718T3	OW725P3	OW721P3	OW728P3	OW725T3	OW721T3	OW728T3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	OW715P4	OW711P4	OW718P4	OW715T4	OW711T4	OW718T4	OW725P4	OW721P4	OW728P4	OW725T4	OW721T4	OW728T4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	OW715P5	OW711P5	OW718P5	OW715T5	OW711T5	OW718T5	OW725P5	OW721P5	OW728P5	OW725T5	OW721T5	OW728T5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

Figure 44 – Owatonna Receiver Data Sheet, Location 7

Owatonna, Minnesota LPFM Site																											
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port																			
11/4/02	44 06 44.8 N 93 12 42.0 W		KGAC 105.7 MHz Unprocessed		106.3 MHz	-39.1 dB	100 W	13.7 dBm																			
							10 W	3.7 dBm																			
Location 8	Latitude / Longitude	44 08 56.8 N				93 24 46.0 W																					
	30m 10W P	30m 0W P	30m 100W P	30m 10W T	30m 0W T	30m 100W T	10m 10W P	10m 0W P	10m 100W P	10m 10W T	10m 0W T	10m 100W T															
Time of Recording	16:02	16:05	16:08	16:11	16:14	16:18	16:33	16:36	16:40	16:43	16:47	16:49															
FPFM (dBm)	-67.70																										
FPFM (dBuV/m)	49.90																										
LPFM (dBm)	-81.05	-84.87	-72.90	-80.60	-85.06	-72.30	-83.66	-84.95	-78.77	-83.62	-84.80	-77.90															
LPFM (dBuV/m)	36.55	32.73	44.70	37.00	32.54	45.30	33.94	32.65	38.83	33.98	32.80	39.70															
Auto RX Rec ID#	OW815P1	OW811P1	OW818P1	OW815T1	OW811T1	OW818T1	OW825P1	OW821P1	OW828P1	OW825T1	OW821T1	OW828T1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	OW815P2	OW811P2	OW818P2	OW815T2	OW811T2	OW818T2	OW825P2	OW821P2	OW828P2	OW825T2	OW821T2	OW828T2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	OW815P3	OW811P3	OW818P3	OW815T3	OW811T3	OW818T3	OW825P3	OW821P3	OW828P3	OW825T3	OW821T3	OW828T3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	OW815P4	OW811P4	OW818P4	OW815T4	OW811T4	OW818T4	OW825P4	OW821P4	OW828P4	OW825T4	OW821T4	OW828T4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	OW815P5	OW811P5	OW818P5	OW815T5	OW811T5	OW818T5	OW825P5	OW821P5	OW828P5	OW825T5	OW821T5	OW828T5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

Figure 45 – Owatonna Receiver Data Sheet, Location 8

### 5.5 Owatonna, MN – Transmitter Log and Receiver Data Sheets (FM Translator)

LPFM Transmit Test Vehicle Log				
Date	LPFM Site Name:	LPFM Freq.	Test Site GPS Coordinates	Local Time of Test
11/2/02	Owatonna (Translator)	91.1 MHz	44 05 18.4 N	10:00
	<b>FPFM Call Sign:</b>	<b>FPFM Freq.</b>	93 08 45.9 W	
	KGAC	105.7 MHz		
<b>Cable Losses</b>		<b>Directional Coupler Coupling Factor</b>		
129' Cable	1.9 dB	Incident and Reflected		
10' Jumper Cable	0.5 dB	-39.35 dB		
<b>VSWR Check Power Meter Readings</b>				
Incident	Reflected			
-2.2 dBm	-27.6 dBm			
NOTES:				
Locations 1 - 8 completed 11/02/02				
<b>Transmitter Actions (Owatonna, MN) Translator</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
10:51	10:54	10	VSWR Test	
10:58	10:59	10	Processed Music	1
11:01	11:02	10	Processed Music	100
<b>Transmitter Actions (Owatonna, MN), Location 2</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
11:47	11:57	10	Processed Music	100
11:57	12:07	10	Unprocessed Music	100
12:07	12:10	10	News/Talk	100
12:10	12:14	10	Processed Music	50
12:14	12:20	10	Unprocessed Music	50
12:20	12:23	10	News/Talk	50
12:24	12:27	10	Processed Music	20
12:27	12:31	10	Unprocessed Music	20
12:31	12:35	10	News/Talk	20

Figure 46 – Owatonna (FM Translator) Transmitter Test Vehicle Log

Transmitter Actions (Owatonna, MN), Location 2				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
12:35	12:38	10	Processed Music	10
12:38	12:41	10	Unprocessed Music	10
12:41	12:44	10	News/Talk	10
12:44	12:48	10	Processed Music	5
12:48	12:53	10	Unprocessed Music	5
12:53	12:56	10	News/Talk	5
12:56	13:03	10	Processed Music	2
13:03	13:07	10	Unprocessed Music	2
13:07	13:11	10	News/Talk	2
13:11	13:16	10	Processed Music	1
13:16	13:21	10	Unprocessed Music	1
13:21	13:24	10	News/Talk	1
13:24	NA	10	Mute On	0
13:42	13:47	30	Processed Music	100
13:47	13:51	30	Unprocessed Music	100
13:51	13:55	30	News/Talk	100
13:56	13:58	30	Processed Music	50
13:58	14:01	30	Unprocessed Music	50
14:01	14:05	30	News/Talk	50
14:05	14:10	30	Processed Music	20
14:10	14:14	30	Unprocessed Music	20
14:14	14:19	30	News/Talk	20
14:19	14:22	30	Processed Music	10
14:22	14:26	30	Unprocessed Music	10
14:26	14:29	30	News/Talk	10
14:29	14:32	30	Processed Music	5
14:32	14:36	30	Unprocessed Music	5
14:36	14:40	30	News/Talk	5
14:40	14:43	30	Processed Music	2
14:43	14:46	30	Unprocessed Music	2
14:46	14:48	30	News/Talk	2
15:20	15:27	30	News/Talk	2
15:27	15:29	30	Processed Music	1
15:29	15:32	30	Unprocessed Music	1
15:32	15:35	30	News/Talk	1

Figure 46 – Owatonna (FM Translator) Transmitter Test Vehicle Log (Cont.)

<b>Transmitter Actions (Owatonna, MN), Location 1</b>				
<b>Time on</b>	<b>Time Off</b>	<b>Height AGL (Meters)</b>	<b>Format</b>	<b>ERP (Watts)</b>
17:00	17:04	30	Processed Music	100
17:04	17:07	30	Unprocessed Music	100
17:07	17:10	30	News/Talk	100
17:10	17:15	30	Processed Music	50
17:15	17:18	30	Unprocessed Music	50
17:18	18:20	30	News/Talk	50
17:21	17:25	30	Processed Music	20
17:25	17:28	30	Unprocessed Music	20
17:28	17:31	30	News/Talk	20
17:31	17:34	30	Processed Music	10
17:34	17:37	30	Unprocessed Music	10
17:37	17:40	30	News/Talk	10
17:41	17:44	30	Processed Music	5
17:44	17:48	30	Unprocessed Music	5
17:48	17:53	30	News/Talk	5
17:53	17:55	30	Processed Music	2
17:55	17:58	30	Unprocessed Music	2
17:58	18:02	30	News/Talk	2
18:02	18:06	30	Processed Music	1
18:06	18:09	30	Unprocessed Music	1
18:09	18:20	30	News/Talk	1

**Figure 46 – Owatonna (FM Translator) Transmitter Test Vehicle Log (Cont.)**

Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
18:34	18:46	10	Processed Music	100
18:46	18:51	10	Unprocessed Music	100
18:51	18:54	10	News/Talk	100
18:55	18:58	10	Processed Music	50
18:58	19:02	10	Unprocessed Music	50
19:02	19:05	10	News/Talk	50
19:05	19:08	10	Processed Music	20
19:08	19:11	10	Unprocessed Music	20
19:11	19:14	10	News/Talk	20
19:14	19:16	10	Processed Music	10
19:16	19:19	10	Unprocessed Music	10
19:19	19:22	10	News/Talk	10
19:22	19:25	10	Processed Music	5
19:25	19:28	10	Unprocessed Music	5
19:29	19:31	10	News/Talk	5
19:32	19:34	10	Processed Music	2
19:34	19:37	10	Unprocessed Music	2
19:37	19:40	10	News/Talk	2
19:41	19:43	10	Processed Music	1
19:43	19:46	10	Unprocessed Music	1
19:46	19:49	10	News/Talk	1

**Figure 46 – Owatonna (FM Translator) Transmitter Test Vehicle Log (Cont.)**

Owatonna, Minnesota LPFM Site (Translator Input)													
Date of Test	LPFM Site Lat/Lon		FPFM			LPFM	Dir. Coup.	ERP	Incident Port	ERP	Incident Port	ERP	Incident Port
11/2/02	44 05 18.4 N 93 08 45.9 W		KGAC 90.5 MHz Unprocessed			91.1 MHz	-40.5 dB	100 W	12.3 dBm	10 W	2.3 dBm	1 W	-7.7 dBm
								50 W	9.2 dBm	5 W	-0.7 dBm		
								20 W	5.3 dBm	2 W	-4.7 dBm		
<b>Location 1 30 Meter</b>	Latitude / Longitude	44 05 19.9 N			93 13 13.9 W								
	30m 100W P	30m 100W U	30m 100W T	30m 50W P	30m 50W U	30m 50W T	30m 20W P	30m 20W U	30m 20W T	30m 10W P	30m 10W U	30m 10W T	
Time of Recording	16:57	17:02	17:05	17:08	17:12	17:16	17:19	17:22	17:25	17:28	17:31	17:34	
FPFM (dBm)	-58.18												
FPFM (dBuV/m)	57.82												
LPFM (dBm)	-67.78	-67.90	-67.19	-70.43	-69.80	-70.13	-74.18	-74.43	-73.70	-76.82	-76.60	-76.58	
LPFM (dBuV/m)	48.22	48.10	48.81	45.57	46.20	45.87	41.82	41.57	42.30	39.18	39.40	39.42	
Auto RX Rec ID#	OT118P1	OT118U1	OT118T1	OT117P1	OT117U1	OT117T1	OT116P1	OT116U1	OT116T1	OT115P1	OT115U1	OT115T1	
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
FPFM Format	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
Clock Radio Rec ID#	OT118P2	OT118U2	OT118T2	OT117P2	OT117U2	OT117T2	OT116P2	OT116U2	OT116T2	OT115P2	OT115U2	OT115T2	
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
FPFM Format	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
Boom Box Rec ID#	OT118P3	OT118U3	OT118T3	OT117P3	OT117U3	OT117T3	OT116P3	OT116U3	OT116T3	OT115P3	OT115U3	OT115T3	
Degrad. W/O LPFM	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
FPFM Format	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
Walkman RX Rec ID#	OT118P4	OT118U4	OT118T4	OT117P4	OT117U4	OT117T4	OT116P4	OT116U4	OT116T4	OT115P4	OT115U4	OT115T4	
Degrad. W/O LPFM	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
FPFM Format	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
Home RX Rec ID#	OT118P5	OT118U5	OT118T5	OT117P5	OT117U5	OT117T5	OT116P5	OT116U5	OT116T5	OT115P5	OT115U5	OT115T5	
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
FPFM Format	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	

Figure 47 – Owatonna (FM Translator) Receiver Data Sheet, Location 1: 30 Meter, 10 - 100 Watt LPFM



Owatonna, Minnesota LPFM Site (Translator Input)												
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port	ERP	Incident Port	ERP	Incident Port
11/2/02	44 05 18.4 N 93 08 45.9 W		KGAC 90.5 MHz Unprocessed		91.1 MHz	-40.5 dB	100 W	12.3 dBm	10 W	2.3 dBm	1 W	-7.7 dBm
							50 W	9.2 dBm	5 W	-0.7 dBm		
							20 W	5.3 dBm	2 W	-4.7 dBm		
<b>Location 1 30 Meter</b>	Latitude / Longitude	44 05 19.9 N			93 13 13.9 W							
	30m 5W P	30m 5W U	30m 5W T	30m 2W P	30m 2W U	30m 2W T	30m 1W P	30m 1W U	30m 1W T	30m 0W P	30m 0W U	30m 0W T
Time of Recording	17:38	17:42	17:46	17:49	17:51	17:55	17:59	18:03	18:06	18:14	None	None
FPFM (dBm)					-58.40							
FPFM (dBuV/m)					57.60							
LPFM (dBm)	-78.94	-78.59	-78.51	-80.43	-80.51	-80.61	-81.53	-81.42	-81.79	-83.18		
LPFM (dBuV/m)	37.06	37.41	37.49	35.57	35.49	35.39	34.47	34.58	34.21	32.82		
Auto RX Rec ID#	OT114P1	OT114U1	OT114T1	OT113P1	OT113U1	OT113T1	OT112P1	OT112U1	OT112T1	OT111P1	OT111U1	OT111T1
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
FPFM Format	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
Clock Radio Rec ID#	OT114P2	OT114U2	OT114T2	OT113P2	OT113U2	OT113T2	OT112P2	OT112U2	OT112T2	OT111P2	OT111U2	OT111T2
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
FPFM Format	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
Boom Box Rec ID#	OT114P3	OT114U3	OT114T3	OT113P3	OT113U3	OT113T3	OT112P3	OT112U3	OT112T3	OT111P3	OT111U3	OT111T3
Degrad. W/O LPFM	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
FPFM Format	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
Walkman RX Rec ID#	OT114P4	OT114U4	OT114T4	OT113P4	OT113U4	OT113T4	OT112P4	OT112U4	OT112T4	OT111P4	OT111U4	OT111T4
Degrad. W/O LPFM	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
FPFM Format	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
Home RX Rec ID#	OT114P5	OT114U5	OT114T5	OT113P5	OT113U5	OT113T5	OT112P5	OT112U5	OT112T5	OT111P5	OT111U5	OT111T5
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
FPFM Format	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>

Figure 48 – Owatonna (FM Translator) Receiver Data Sheet, Location 1: 30 Meter, 0-5 Watt LPFM

Owatonna, Minnesota LPFM Site (Translator Input)													
Date of Test	LPFM Site Lat/Lon		FPFM			LPFM	Dir. Coup.	ERP	Incident Port	ERP	Incident Port	ERP	Incident Port
11/2/02	44 05 18.4 N 93 08 45.9 W		KGAC 90.5 MHz Unprocessed			91.1 MHz	-40.5 dB	100 W	12.3 dBm	10 W	2.3 dBm	1 W	-7.7 dBm
								50 W	9.2 dBm	5 W	-0.7 dBm		
								20 W	5.3 dBm	2 W	-4.7 dBm		
Location 1 10 Meter	Latitude / Longitude	44 05 19.9 W			93 13 13.9 W								
	10m 100W P	10m 100W U	10m 100W T	10m 50W P	10m 50W U	10m 50W T	10m 20W P	10m 20W U	10m 20W T	10m 10W P	10m 10W U	10m 10W T	
Time of Recording	18:41	18:46	18:49	18:51	18:56	18:59	19:02	19:05	19:08	19:10	19:13	19:16	
FPFM (dBm)	-59.54												
FPFM (dBuV/m)	56.46												
LPFM (dBm)	-77.96	-78.07	-77.67	-80.06	-80.06	-79.95	-82.04	-82.26	-82.23	-83.03	-79.10	-83.15	
LPFM (dBuV/m)	38.04	37.93	38.33	35.94	35.94	36.05	33.96	33.74	33.77	32.97	36.90	32.85	
Auto RX Rec ID#	OT128P1	OT128U1	OT128T1	OT127P1	OT127U1	OT127T1	OT126P1	OT126U1	OT126T1	OT125P1	OT125U1	OT125T1	
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Clock Radio Rec ID#	OT128P2	OT128U2	OT128T2	OT127P2	OT127U2	OT127T2	OT126P2	OT126U2	OT126T2	OT125P2	OT125U2	OT125T2	
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Boom Box Rec ID#	OT128P3	OT128U3	OT128T3	OT127P3	OT127U3	OT127T3	OT126P3	OT126U3	OT126T3	OT125P3	OT125U3	OT125T3	
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Walkman RX Rec ID#	OT128P4	OT128U4	OT128T4	OT127P4	OT127U4	OT127T4	OT126P4	OT126U4	OT126T4	OT125P4	OT125U4	OT125T4	
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Home RX Rec ID#	OT128P5	OT128U5	OT128T5	OT127P5	OT127U5	OT127T5	OT126P5	OT126U5	OT126T5	OT125P5	OT125U5	OT125T5	
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	

Figure 49 – Owatonna (FM Translator) Receiver Data Sheet, Location 1: 10 Meter, 10-100 Watt LPFM

Owatonna, Minnesota LPFM Site (Translator Input)																											
Date of Test	LPFM Site Lat/Lon		FPFM			LPFM	Dir. Coup.	ERP	Incident Port	ERP	Incident Port	ERP	Incident Port														
11/2/02	44 05 18.4 N 93 08 45.9 W		KGAC 90.5 MHz Unprocessed			91.1 MHz	-40.5 dB	100 W	12.3 dBm	10 W	2.3 dBm	1 W	-7.7 dBm														
								50 W	9.2 dBm	5 W	-0.7 dBm																
								20 W	5.3 dBm	2 W	-4.7 dBm																
Location 1 10 Meter	Latitude / Longitude	44 05 19.9 N			93 13 13.9 W																						
	10m 5W P	10m 5W U	10m 5W T	10m 2W P	10m 2W U	10m 2W T	10m 1W P	10m 1W U	10m 1W T	10m 0W P	10m 0W U	10m 0W T															
Time of Recording	19:19	19:23	19:26	19:28	19:31	19:34	19:37	19:40	19:44	19:47	None	None															
FPFM (dBm)																											
FPFM (dBuV/m)																											
LPFM (dBm)	-83.40	-83.81	-81.90	-83.40	-83.99	-83.33	-84.54	-83.48	-84.32	-84.04																	
LPFM (dBuV/m)	32.60	32.19	34.10	32.60	32.01	32.67	31.46	32.52	31.68	31.96																	
Auto RX Rec ID#	OT124P1	OT124U1	OT124T1	OT123P1	OT123U1	OT123T1	OT122P1	OT122U1	OT122T1	OT121P1	OT121U1	OT121T1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	OT124P2	OT124U2	OT124T2	OT123P2	OT123U2	OT123T2	OT122P2	OT122U2	OT122T2	OT121P2	OT121U2	OT121T2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	OT124P3	OT124U3	OT124T3	OT123P3	OT123U3	OT123T3	OT122P3	OT122U3	OT122T3	OT121P3	OT121U3	OT121T3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	OT124P4	OT124U4	OT124T4	OT123P4	OT123U4	OT123T4	OT122P4	OT122U4	OT122T4	OT121P4	OT121U4	OT121T4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	OT124P5	OT124U5	OT124T5	OT123P5	OT123U5	OT123T5	OT122P5	OT122U5	OT122T5	OT121P5	OT121U5	OT121T5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

Figure 50 – Owatonna (FM Translator) Receiver Data Sheet, Location 1: 10 Meter, 0-5 Watt LPFM

Owatonna, Minnesota LPFM Site (Translator Input)													
Date of Test	LPFM Site Lat/Lon		FPFM			LPFM	Dir. Coup.	ERP	Incident Port	ERP	Incident Port	ERP	Incident Port
11/2/02	44 05 18.4 N 93 08 45.9 W		KGAC 90.5 MHz Unprocessed			91.1 MHz	-40.5 dB	100 W	12.3 dBm	10 W	2.3 dBm	1 W	-7.7 dBm
								50 W	9.2 dBm	5 W	-0.7 dBm		
								20 W	5.3 dBm	2 W	-4.7 dBm		
Location 2 30 Meter	Latitude / Longitude	44 5 43.3 N			93 17 46.8 W								
	30m 100W P	30m 100W U	30m 100W T	30m 50W P	30m 50W U	30m 50W T	30m 20W P	30m 20W U	30m 20W T	30m 10W P	30m 10W U	30m 10W T	
Time of Recording	13:41	13:45	13:48	13:52	13:55	13:59	14:03	14:08	14:12	14:16	14:20	14:23	
FPFM (dBm)				-65.61									
FPFM (dBuV/m)				50.39									
LPFM (dBm)	-78.99	-79.69	-79.98	-80.13	-80.02	-78.84	-78.81	-79.18	-78.88	-79.42	-78.62	-79.22	
LPFM (dBuV/m)	37.01	36.31	36.02	35.87	35.98	37.16	37.19	36.82	37.12	36.58	37.38	36.78	
Auto RX Rec ID#	OT218P1	OT218U1	OT218T1	OT217P1	OT217U1	OT217T1	OT216P1	OT216U1	OT216T1	OT215P1	OT215U1	OT215T1	
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
Clock Radio Rec ID#	OT218P2	OT218U2	OT218T2	OT217P2	OT217U2	OT217T2	OT216P2	OT216U2	OT216T2	OT215P2	OT215U2	OT215T2	
Degrad. W/O LPFM	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
Boom Box Rec ID#	OT218P3	OT218U3	OT218T3	OT217P3	OT217U3	OT217T3	OT216P3	OT216U3	OT216T3	OT215P3	OT215U3	OT215T3	
Degrad. W/O LPFM	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
Walkman RX Rec ID#	OT218P4	OT218U4	OT218T4	OT217P4	OT217U4	OT217T4	OT216P4	OT216U4	OT216T4	OT215P4	OT215U4	OT215T4	
Degrad. W/O LPFM	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
FPFM Format	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	P <input checked="" type="checkbox"/> U <input type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
Home RX Rec ID#	OT218P5	OT218U5	OT218T5	OT217P5	OT217U5	OT217T5	OT216P5	OT216U5	OT216T5	OT215P5	OT215U5	OT215T5	
Degrad. W/O LPFM	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
FPFM Format	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	P <input type="checkbox"/> U <input checked="" type="checkbox"/> T <input type="checkbox"/>	
Degrad. On Rec.	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	

Figure 51 – Owatonna (FM Translator) Receiver Data Sheet, Location 2: 30 Meter, 10-100 Watt LPFM

Owatonna, Minnesota LPFM Site (Translator Input)																											
Date of Test	LPFM Site Lat/Lon		FPFM			LPFM	Dir. Coup.	ERP	Incident Port	ERP	Incident Port	ERP	Incident Port														
11/2/02	44 05 18.4 N 93 08 45.9 W		KGAC 90.5 MHz Unprocessed			91.1 MHz	-40.5 dB	100 W	12.3 dBm	10 W	2.3 dBm	1 W	-7.7 dBm														
								50 W	9.2 dBm	5 W	-0.7 dBm																
								20 W	5.3 dBm	2 W	-4.7 dBm																
Location 2 30 Meter	Latitude / Longitude	44 5 43.3 N			93 17 46.8 W																						
	30m 5W P	30m 5W U	30m 5W T	30m 2W P	30m 2W U	30m 2W T	30m 1W P	30m 1W U	30m 1W T	30m 0W P	30m 0W U	30m 0W T															
Time of Recording	14:26	14:30	14:34	14:38	14:40	15:18	15:23	15:26	15:29	15:32	None	None															
FPFM (dBm)					-69.54																						
FPFM (dBuV/m)					46.46																						
LPFM (dBm)	-79.10	-78.73	-78.59	-79.25	-80.44	-79.21	-78.66	-77.96	-78.26	-78.59																	
LPFM (dBuV/m)	36.90	37.27	37.41	36.75	35.56	36.79	37.34	38.04	37.74	37.41																	
Auto RX Rec ID#	OT214P1	OT214U1	OT214T1	OT213P1	OT213U1	OT213T1	OT212P1	OT212U1	OT212T1	OT211P1	OT211U1	OT211T1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Clock Radio Rec ID#	OT214P2	OT214U2	OT214T2	OT213P2	OT213U2	OT213T2	OT212P2	OT212U2	OT212T2	OT211P2	OT211U2	OT211T2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Boom Box Rec ID#	OT214P3	OT214U3	OT214T3	OT213P3	OT213U3	OT213T3	OT212P3	OT212U3	OT212T3	OT211P3	OT211U3	OT211T3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Walkman RX Rec ID#	OT214P4	OT214U4	OT214T4	OT213P4	OT213U4	OT213T4	OT212P4	OT212U4	OT212T4	OT211P4	OT211U4	OT211T4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Home RX Rec ID#	OT214P5	OT214U5	OT214T5	OT213P5	OT213U5	OT213T5	OT212P5	OT212U5	OT212T5	OT211P5	OT211U5	OT211T5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			

Figure 52 – Owatonna (FM Translator) Receiver Data Sheet, Location 2: 30 Meter, 0-5 Watt LPFM

Owatonna, Minnesota LPFM Site (Translator Input)													
Date of Test	LPFM Site Lat/Lon		FPFM			LPFM	Dir. Coup.	ERP	Incident Port	ERP	Incident Port	ERP	Incident Port
11/2/02	44 05 18.4 N 93 08 45.9 W		KGAC 90.5 MHz Unprocessed			91.1 MHz	-40.5 dB	100 W	12.3 dBm	10 W	2.3 dBm	1 W	-7.7 dBm
								50 W	9.2 dBm	5 W	-0.7 dBm		
								20 W	5.3 dBm	2 W	-4.7 dBm		
Location 2 10 Meter	Latitude / Longitude	44 05 43.3 N			93 17 46.8 W								
	10m 100W P	10m 100W U	10m 100W T	10m 50W P	10m 50W U	10m 50W T	10m 20W P	10m 20W U	10m 20W T	10m 10W P	10m 10W U	10m 10W T	
Time of Recording	11:52	12:00	12:05	12:08	12:13	12:18	12:21	12:24	12:28	12:31	12:35	12:37	
FPFM (dBm)	-65.19												
FPFM (dBuV/m)	50.81												
LPFM (dBm)	-79.91	-79.84	-80.30	-79.69	-79.03	-79.06	-79.03	-78.88	-79.84	-78.96	-79.58	-80.39	
LPFM (dBuV/m)	36.09	36.16	35.70	36.31	36.97	36.94	36.97	37.12	36.16	37.04	36.42	35.61	
Auto RX Rec ID#	OT228P1	OT228U1	OT228T1	OT227P1	OT227U1	OT227T1	OT226P1	OT226U1	OT226T1	OT225P1	OT225U1	OT225T1	
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
Clock Radio Rec ID#	OT228P2	OT228U2	OT228T2	OT227P2	OT227U2	OT227T2	OT226P2	OT226U2	OT226T2	OT225P2	OT225U2	OT225T2	
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
Boom Box Rec ID#	OT228P3	OT228U3	OT228T3	OT227P3	OT227U3	OT227T3	OT226P3	OT226U3	OT226T3	OT225P3	OT225U3	OT225T3	
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
Walkman RX Rec ID#	OT228P4	OT228U4	OT228T4	OT227P4	OT227U4	OT227T4	OT226P4	OT226U4	OT226T4	OT225P4	OT225U4	OT225T4	
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
Home RX Rec ID#	OT228P5	OT228U5	OT228T5	OT227P5	OT227U5	OT227T5	OT226P5	OT226U5	OT226T5	OT225P5	OT225U5	OT225T5	
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	

Figure 53 – Owatonna (FM Translator) Receiver Data Sheet, Location 2: 10 Meter, 10-100 Watt LPFM

Owatonna, Minnesota LPFM Site (Translator Input)																											
Date of Test	LPFM Site Lat/Lon		FPFM			LPFM	Dir. Coup.	ERP	Incident Port	ERP	Incident Port	ERP	Incident Port														
11/2/02	44 05 18.4 N 93 08 45.9 W		KGAC 90.5 MHz Unprocessed			91.1 MHz	-40.5 dB	100 W	12.3 dBm	10 W	2.3 dBm	1 W	-7.7 dBm														
								50 W	9.2 dBm	5 W	-0.7 dBm																
								20 W	5.3 dBm	2 W	-4.7 dBm																
<b>Location 2 10 Meter</b>	Latitude / Longitude	44 05 43.3 N			93 17 46.8 W																						
	10m 5W P	10m 5W U	10m 5W T	10m 2W P	10m 2W U	10m 2W T	10m 1W P	10m 1W U	10m 1W T	10m 0W P	10m 0W U	10m 0W T															
Time of Recording	12:41	12:46	12:49	12:57	13:02	13:04	13:08	13:15	13:18	13:22	None	None															
FPFM (dBm)							-65.19																				
FPFM (dBuV/m)							50.81																				
LPFM (dBm)	-79.58	-79.03	-79.76	-81.20	-79.18	-79.73	-79.76	-78.84	-79.69	-79.85																	
LPFM (dBuV/m)	36.42	36.97	36.24	34.80	36.82	36.27	36.24	37.16	36.31	36.15																	
Auto RX Rec ID#	OT224P1	OT224U1	OT224T1	OT223P1	OT223U1	OT223T1	OT222P1	OT222U1	OT222T1	OT221P1	OT221U1	OT221T1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	OT224P2	OT224U2	OT224T2	OT223P2	OT223U2	OT223T2	OT222P2	OT222U2	OT222T2	OT221P2	OT221U2	OT221T2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	OT224P3	OT224U3	OT224T3	OT223P3	OT223U3	OT223T3	OT222P3	OT222U3	OT222T3	OT221P3	OT221U3	OT221T3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	OT224P4	OT224U4	OT224T4	OT223P4	OT223U4	OT223T4	OT222P4	OT222U4	OT222T4	OT221P4	OT221U4	OT221T4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	OT224P5	OT224U5	OT224T5	OT223P5	OT223U5	OT223T5	OT222P5	OT222U5	OT222T5	OT221P5	OT221U5	OT221T5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

Figure 54 – Owatonna (FM Translator) Receiver Data Sheet, Location 2: 10 Meter, 0-5 Watt LPFM

### 5.6 Winters, CA – Transmitter Log and Receiver Data Sheets

LPFM Transmit Test Vehicle Log				
<b>Date</b>	<b>LPFM Site Name:</b>	<b>LPFM Freq.</b>	<b>Test Site GPS Coordinates</b>	<b>Local Time of Test</b>
11/12/02	Winters	103.1MHz	38 31 39.2 N	11:30 AM
	<b>FPFM Call Sign:</b>	<b>FPFM Freq.</b>	121 57 33.2 W	
	KSFM	102.5 MHz		
<b>Cable Losses</b>		<b>Directional Coupler Coupling Factor</b>		
129' Cable	1.9 dB	Incident and Reflected		
10' Jumper Cable	0.5 dB	-39.4 dB		
<b>VSWR Check Power Meter Readings</b>				
Incident	Reflected			
-1.83 dBm	-25.1 dBm			
<b>NOTES:</b>				
Locations 1 - 4 completed 11/12/02				
Locations 5 - 8 completed 11/13/02				
<b>Transmitter Actions (Winters, CA), Location # 1</b>				
<b>Time on</b>	<b>Time Off</b>	<b>Height AGL (Meters)</b>	<b>Format</b>	<b>ERP (Watts)</b>
11:32	11:32	10	VSWR Test	
11:40	11:40 (30 seconds)	10	VSWR Test	
11:58	12:01	10	News/Talk	10
12:01	NA	10	Mute On	0
12:04	12:07	10	News/Talk	100
12:08	12:10	10	Unprocessed Music	10
12:10	NA	10	Mute On	0
12:14	12:17	10	Unprocessed Music	100
12:27	12:30	30	News/Talk	10
12:30	NA	30	Mute On	0
12:33	12:38	30	News/Talk	100
12:51	12:55	30	News/Talk	100
13:00	13:03	30	Unprocessed Music	10
13:03	NA	30	Mute On	0
13:07	13:10	30	Unprocessed Music	100

Figure 55 – Winters Transmitter Test Vehicle Log



<b>Transmitter Actions (Winters, CA), Location # 2</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
13:19	13:21	30	News/Talk	10
13:21	NA	30	Mute On	0
13:24	13:26	30	News/Talk	100
13:27	13:30	30	Unprocessed Music	10
13:30	NA	30	Mute On	0
13:34	13:36	30	Unprocessed Music	100
13:45	13:47	10	News/Talk	10
13:47	NA	10	Mute On	0
13:50	13:53	10	News/Talk	100
13:54	13:57	10	Unprocessed Music	10
13:57	NA	10	Mute On	0
14:01	14:03	10	Unprocessed Music	100
<b>Transmitter Actions (Winters, CA), Location # 3</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
14:10	14:15	10	News/ Talk	10
14:15	NA	10	Mute On	0
14:18	14:20	10	News/ Talk	100
14:21	14:24	10	Unprocessed Music	10
14:24	NA	10	Mute On	0
14:27	14:30	10	Unprocessed Music	100
14:39	14:44	30	News/ Talk	10
14:44	NA	30	Mute On	0
14:47	14:49	30	News/ Talk	100
14:50	14:52	30	Unprocessed Music	10
14:52	NA	30	Mute On	0
14:56	14:59	30	Unprocessed Music	100

**Figure 55 – Winters Transmitter Test Vehicle Log (Cont.)**

<b>Transmitter Actions (Winters, CA), Location # 4</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
15:15	15:17	30	News/Talk	10
15:17	NA	30	Mute On	0
15:20	15:23	30	News/Talk	100
15:23	15:25	30	Unprocessed Music	10
15:25	NA	30	Mute On	0
15:29	15:31	30	Unprocessed Music	100
15:40	15:48	10	News/Talk	10
15:48	NA	10	Mute On	0
15:52	15:55	10	News/Talk	100
15:55	15:57	10	Unprocessed Music	10
15:57	NA	10	Mute On	0
16:00	16:03	10	Unprocessed Music	100
<b>Transmitter Actions (Winters, CA), Location # 5</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
11:01	11:01	10	VSWR Test	
11:20	11:22	10	News/ Talk	10
11:22	NA	10	Mute On	0
11:26	11:28	10	News/ Talk	100
11:29	11:31	10	Unprocessed Music	10
11:31	NA	10	Mute On	0
11:34	11:44	10	Unprocessed Music	100
11:53	11:55	30	News/ Talk	10
11:55	NA	30	Mute On	0
11:58	12:01	30	News/ Talk	100
12:01	12:03	30	Unprocessed Music	10
12:03	NA	30	Mute On	0
12:07	12:10	30	Unprocessed Music	100

**Figure 55 – Winters Transmitter Test Vehicle Log (Cont.)**

<b>Transmitter Actions (Winters, CA), Location # 6</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
12:21	12:24	30	News/ Talk	10
12:24	NA	30	Mute On	0
12:27	12:29	30	News/ Talk	100
12:29	12:32	30	Unprocessed Music	10
12:32	NA	30	Mute On	0
12:35	12:38	30	Unprocessed Music	100
12:46	12:49	10	News/ Talk	10
12:49	NA	10	Mute On	0
12:59	13:02	10	News/ Talk	100
13:03	13:05	10	Unprocessed Music	10
13:05	NA	10	Mute On	0
13:15	13:18	10	Unprocessed Music	100
<b>Transmitter Actions (Winters, CA), Location # 7</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
13:30	13:35	10	News/ Talk	10
13:35	NA	10	Mute On	0
13:38	13:46	10	News/ Talk	100
13:46	13:48	10	Unprocessed Music	10
13:48	NA	10	Mute On	0
13:55	13:57	10	Unprocessed Music	100
14:06	14:23	30	News/ Talk	10
14:23	NA	30	Mute On	0
14:26	14:29	30	News/ Talk	100
14:30	14:32	30	Unprocessed Music	10
14:32	NA	30	Mute On	0
14:35	14:44	30	Unprocessed Music	100

**Figure 55 – Winters Transmitter Test Vehicle Log (Cont.)**

<b>Transmitter Actions (Winters, CA), Location # 8</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
14:58	15:03	30	News/ Talk	10
15:03	NA	30	Mute On	0
15:06	15:08	30	News/ Talk	100
15:08	15:11	30	Unprocessed Music	10
15:11	NA	30	Mute On	0
15:22	15:25	30	Unprocessed Music	100
15:32	15:35	10	News/ Talk	10
15:35	NA	10	Mute On	0
15:38	15:44	10	News/ Talk	100
15:44	15:51	10	Unprocessed Music	10
15:51	NA	10	Mute On	0
15:53	15:57	10	Unprocessed Music	100

**Figure 55 – Winters Transmitter Test Vehicle Log (Cont.)**

Winters, California LPFM Site																																				
Date of Test	LPFM Site Lat/Lon		FPFM			LPFM	Dir. Coup.	ERP	Incident Port.																											
11/12/02	38 31 39.2 N 121 57 33.2 W		KSFM 102.5 MHz Processed			103.1 MHz	-39.4 dB	100 W	13.4 dBm																											
								10 W	3.4 dBm																											
Location 1	Latitude / Longitude	38 31 39.1 N			121 57 33.8 W																															
	30m 10W T	30m 0W T	30m 100W T	30m 10W U	30m 0W U	30m 100W U	10m 10W T	10m 0W T	10m 100W T	10m 10W U	10m 0W U	10m 100W U																								
Time of Recording	12:27	12:30	12:55	12:59	13:03	13:06	11:58	12:01	12:04	12:08	12:10	12:13																								
FPFM (dBm)				-46.17			-45.09																													
FPFM (dBuV/m)				70.33			71.41																													
LPFM (dBm)	-6.56	-84.47	3.52	-7.11	-84.76	2.96	-15.98	-84.80	-5.21	-16.60	-84.84	-6.34																								
LPFM (dBuV/m)	109.94	32.03	120.02	109.39	31.74	119.46	100.52	31.70	111.29	99.90	31.66	110.16																								
Auto RX Rec ID#	WI115T1	WI111T1	WI118T1	WI115U1	WI111U1	WI118U1	WI125T1	WI121T1	WI128T1	WI125U1	WI121U1	WI128U1																								
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N												
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	WI115T2	WI111T2	WI118T2	WI115U2	WI111U2	WI118U2	WI125T2	WI121T2	WI128T2	WI125U2	WI121U2	WI128U2																								
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	WI115T3	WI111T3	WI118T3	WI115U3	WI111U3	WI118U3	WI125T3	WI121T3	WI128T3	WI125U3	WI121U3	WI128U3																								
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	WI115T4	WI111T4	WI118T4	WI115U4	WI111U4	WI118U4	WI125T4	WI121T4	WI128T4	WI125U4	WI121U4	WI128U4																								
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	WI115T5	WI111T5	WI118T5	WI115U5	WI111U5	WI118U5	WI125T5	WI121T5	WI128T5	WI125U5	WI121U5	WI128U5																								
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

Figure 56 – Winters Receiver Data Sheet, Location 1

Winters, California LPFM Site																								
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port																
11/12/02	38 31 39.2 N 121 57 33.2 W		KSFM 102.5 MHz Processed		103.1 MHz	-39.4 dB	100 W	13.4 dBm																
							10 W	3.4 dBm																
Location 2	Latitude / Longitude	38 31 38.6 N		121 57 34.5 W																				
	30m 10W T	30m 0W T	30m 100W T	30m 10W U	30m 0W U	30m 100W U	10m 10W T	10m 0W T	10m 100W T	10m 10W U	10m 0W U	10m 100W U												
Time of Recording	13:18	13:21	13:24	13:27	13:30	13:33	13:44	13:47	13:50	13:53	13:57	14:00												
FPFM (dBm)	-49.91																							
FPFM (dBuV/m)	66.59																							
LPFM (dBm)	-16.86	-84.73	-5.99	-16.57	-84.80	-6.80	-8.62	-84.69	1.95	-8.93	-84.73	1.45												
LPFM (dBuV/m)	99.64	31.77	110.51	99.93	31.70	109.70	107.88	31.81	118.45	107.57	31.77	117.95												
Auto RX Rec ID#	WI215T1	WI211T1	WI218T1	WI215U1	WI211U1	WI218U1	WI225T1	WI221T1	WI228T1	WI225U1	WI221U1	WI228U1												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N		
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Clock Radio Rec ID#	WI215T2	WI211T2	WI218T2	WI215U2	WI211U2	WI218U2	WI225T2	WI221T2	WI228T2	WI225U2	WI221U2	WI228U2												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Boom Box Rec ID#	WI215T3	WI211T3	WI218T3	WI215U3	WI211U3	WI218U3	WI225T3	WI221T3	WI228T3	WI225U3	WI221U3	WI228U3												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Walkman RX Rec ID#	WI215T4	WI211T4	WI218T4	WI215U4	WI211U4	WI218U4	WI225T4	WI221T4	WI228T4	WI225U4	WI221U4	WI228U4												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Home RX Rec ID#	WI215T5	WI211T5	WI218T5	WI215U5	WI211U5	WI218U5	WI225T5	WI221T5	WI228T5	WI225U5	WI221U5	WI228U5												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N

\* WI218U1 – Clarification from original data sheet

Figure 57 – Winters Receiver Data Sheet, Location 2

Winters, California LPFM Site																											
Date of Test	LPFM Site Lat/Lon		FPFM			LPFM	Dir. Coup.	ERP	Incident Port																		
11/12/02	38 31 39.2 N 121 57 33.2 W		KSFM 102.5 MHz Processed			103.1 MHz	-39.4 dB	100 W	13.4 dBm																		
								10 W	3.4 dBm																		
Location 3	Latitude / Longitude	38 31 38.3 N			121 57 37.0 W																						
	30m 10W T	30m 0W T	30m 100W T	30m 10W U	30m 0W U	30m 100W U	10m 10W T	10m 0W T	10m 100W T	10m 10W U	10m 0W U	10m 100W U															
Time of Recording	14:41	14:43	14:46	14:49	14:52	14:55	14:12	14:14	14:17	14:21	14:24	14:27															
FPFM (dBm)							-59.58																				
FPFM (dBuV/m)							56.92																				
LPFM (dBm)	-11.83	-84.98	-2.03	-12.55	-85.13	-3.24	-13.04	-84.95	-3.13	-13.29	-84.95	-2.57															
LPFM (dBuV/m)	104.67	31.52	114.47	103.95	31.37	113.26	103.46	31.55	113.37	103.21	31.55	113.93															
Auto RX Rec ID#	WB315T1	WB311T1	WB318T1	WB315U1	WB311U1	WB318U1	WB325T1	WB321T1	WB328T1	WB325U1	WB321U1	WB328U1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	WB315T2	WB311T2	WB318T2	WB315U2	WB311U2	WB318U2	WB325T2	WB321T2	WB328T2	WB325U2	WB321U2	WB328U2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	WB315T3	WB311T3	WB318T3	WB315U3	WB311U3	WB318U3	WB325T3	WB321T3	WB328T3	WB325U3	WB321U3	WB328U3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	WB315T4	WB311T4	WB318T4	WB315U4	WB311U4	WB318U4	WB325T4	WB321T4	WB328T4	WB325U4	WB321U4	WB328U4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	WB315T5	WB311T5	WB318T5	WB315U5	WB311U5	WB318U5	WB325T5	WB321T5	WB328T5	WB325U5	WB321U5	WB328U5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

Figure 58 – Winters Receiver Data Sheet, Location 3

Winters, California LPFM Site																														
Date of Test	LPFM Site Lat/Lon		FPFM				LPFM	Dir. Coup.	ERP	Incident Port																				
11/12/02	38 31 39.2 N 121 57 33.2 W		KSFM 102.5 MHz Processed				103.1 MHz	-39.4 dB	100 W	13.4 dBm																				
									10 W	3.4 dBm																				
Location 4	Latitude / Longitude	38 31 38.8 N				121 57 42.9 W																								
	30m 10W T	30m 0W T	30m 100W T	30m 10W U	30m 0W U	30m 100W U	10m 10W T	10m 0W T	10m 100W T	10m 10W U	10m 0W U	10m 100W U																		
Time of Recording	15:14	15:17	15:20	15:22	15:25	15:28	15:44	15:48	15:51	15:54	15:57	16:01																		
FPFM (dBm)	-53.75																													
FPFM (dBuV/m)	62.75																													
LPFM (dBm)	-26.51	-84.51	-16.33	-26.63	-84.65	-16.55	-32.75	-84.73	-22.93	-33.50	-84.66	-23.19																		
LPFM (dBuV/m)	89.99	31.99	100.17	89.87	31.85	99.95	83.75	31.77	93.57	83.00	31.84	93.31																		
Auto RX Rec ID#	WI415T1	WI411T1	WI418T1	WI415U1	WI411U1	WI418U1	WI425T1	WI421T1	WI428T1	WI425U1	WI421U1	WI428U1																		
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N						
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T			
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Clock Radio Rec ID#	WI415T2	WI411T2	WI418T2	WI415U2	WI411U2	WI418U2	WI425T2	WI421T2	WI428T2	WI425U2	WI421U2	WI428U2																		
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Boom Box Rec ID#	WI415T3	WI411T3	WI418T3	WI415U3	WI411U3	WI418U3	WI425T3	WI421T3	WI428T3	WI425U3	WI421U3	WI428U3																		
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Walkman RX Rec ID#	WI415T4	WI411T4	WI418T4	WI415U4	WI411U4	WI418U4	WI425T4	WI421T4	WI428T4	WI425U4	WI421U4	WI428U4																		
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
Home RX Rec ID#	WI415T5	WI411T5	WI418T5	WI415U5	WI411U5	WI418U5	WI425T5	WI421T5	WI428T5	WI425U5	WI421U5	WI428U5																		
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			

Figure 59 – Winters Receiver Data Sheet, Location 4



Winters, California LPFM Site																								
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port																
11/13/02	38 31 39.2 N 121 57 33.2 W		KSFM 102.5 MHz Processed		103.1 MHz	-39.4 dB	100 W	13.4 dBm																
							10 W	3.4 dBm																
Location 5	Latitude / Longitude	38 31 33.3 N			121 57 55.7 W																			
	30m 10W T	30m 0W T	30m 100W T	30m 10W U	30m 0W U	30m 100W U	10m 10W T	10m 0W T	10m 100W T	10m 10W U	10m 0W U	10m 100W U												
Time of Recording	11:52	11:55	11:58	12:00	12:03	12:06	11:19	11:22	11:25	11:28	11:30	11:41												
FPFM (dBm)							-51.26																	
FPFM (dBuV/m)							65.24																	
LPFM (dBm)	-32.30	-83.81	-22.67	-32.33	-83.81	-22.83	-44.22	-83.84	-31.75	-41.97	-83.95	-32.34												
LPFM (dBuV/m)	84.20	32.69	93.83	84.17	32.69	93.67	72.28	32.66	84.75	74.53	32.55	84.16												
Auto RX Rec ID#	WI515T1	WI511T1	WI518T1	WI515U1	WI511U1	WI518U1	WI525T1	WI521T1	WI528T1	WI525U1	WI521U1	WI528U1												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N						
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Clock Radio Rec ID#	WI515T2	WI511T2	WI518T2	WI515U2	WI511U2	WI518U2	WI525T2	WI521T2	WI528T2	WI525U2	WI521U2	WI528U2												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Boom Box Rec ID#	WI515T3	WI511T3	WI518T3	WI515U3	WI511U3	WI518U3	WI525T3	WI521T3	WI528T3	WI525U3	WI521U3	WI528U3												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Walkman RX Rec ID#	WI515T4	WI511T4	WI518T4	WI515U4	WI511U4	WI518U4	WI525T4	WI521T4	WI528T4	WI525U4	WI521U4	WI528U4												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Home RX Rec ID#	WI515T5	WI511T5	WI518T5	WI515U5	WI511U5	WI518U5	WI525T5	WI521T5	WI528T5	WI525U5	WI521U5	WI528U5												
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N

\* WI515P1 – Clarification from original data sheet

Figure 60 – Winters Receiver Data Sheet, Location 5

Winters, California LPFM Site																											
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port																			
11/14/02	38 31 39.2 N 121 57 33.2 W		KSFM 102.5 MHz Processed		103.1 MHz	-39.4 dB	100 W	13.4 dBm																			
							10 W	3.4 dBm																			
Location 6	Latitude / Longitude	38 31 22.5 N			121 58 25.6 W																						
	30m 10W T	30m 0W T	30m 100W T	30m 10W U	30m 0W U	30m 100W U	10m 10W T	10m 0W T	10m 100W T	10m 10W U	10m 0W U	10m 100W U															
Time of Recording	12:20	12:23	12:26	12:29	12:32	12:35	12:46	12:56	12:59	13:02	13:11	13:14															
FPFM (dBm)	-51.91																										
FPFM (dBuV/m)	64.59																										
LPFM (dBm)	-72.79	-85.20	-62.52	-69.95	-85.24	-60.72	-74.18	-85.24	-66.60	-75.80	-85.17	-66.24															
LPFM (dBuV/m)	43.71	31.30	53.98	46.55	31.26	55.78	42.32	31.26	49.90	40.70	31.33	50.26															
Auto RX Rec ID#	WI615T1	WI611T1	WI618T1	WI615U1	WI611U1	WI618U1	WI625T1	WI621T1	WI628T1	WI625U1	WI621U1	WI628U1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	WI615T2	WI611T2	WI618T2	WI615U2	WI611U2	WI618U2	WI625T2	WI621T2	WI628T2	WI625U2	WI621U2	WI628U2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	WI615T3	WI611T3	WI618T3	WI615U3	WI611U3	WI618U3	WI625T3	WI621T3	WI628T3	WI625U3	WI621U3	WI628U3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	WI615T4	WI611T4	WI618T4	WI615U4	WI611U4	WI618U4	WI625T4	WI621T4	WI628T4	WI625U4	WI621U4	WI628U4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	WI615T5	WI611T5	WI618T5	WI615U5	WI611U5	WI618U5	WI625T5	WI621T5	WI628T5	WI625U5	WI621U5	WI628U5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

Figure 61 – Winters Receiver Data Sheet, Location 6

Winters, California LPFM Site															
Date of Test	LPFM Site Lat/Lon		FPFM				LPFM	Dir. Coup.	ERP	Incident Port					
11/13/02	38 31 39.2 N 121 57 33.2 W		KSFM 102.5 MHz Processed				103.1 MHz	-39.4 dB	100 W	13.4 dBm					
									10 W	3.4 dBm					
Location 7	Latitude / Longitude	38 30 59.3 N				121 59 40.5 W									
	30m 10W T	30m 0W T	30m 100W T	30m 10W U	30m 0W U	30m 100W U	10m 10W T	10m 0W T	10m 100W T	10m 10W U	10m 0W U	10m 100W U			
Time of Recording	14:18	14:23	14:26	14:29	14:32	14:41	13:32	13:34	13:43	13:46	13:48	13:53			
FPFM (dBm)					-61.42		-61.05								
FPFM (dBUV/m)					55.08		55.45								
LPFM (dBm)	-70.31	-84.62	-59.87	-70.17	-84.51	-60.83	-77.78	-84.58	-68.59	-78.51	-84.58	-69.25			
LPFM (dBUV/m)	46.19	31.88	56.63	46.33	31.99	55.67	38.72	31.92	47.91	37.99	31.92	47.25			
Auto RX Rec ID#	WI715T1	WI711T1	WI718T1	WI715U1	WI711U1	WI718U1	WI725T1	WI721T1	WI728T1	WI725U1	WI721U1	WI728U1			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
Clock Radio Rec ID#	WI715T2	WI711T2	WI718T2	WI715U2	WI711U2	WI718U2	WI725T2	WI721T2	WI728T2	WI725U2	WI721U2	WI728U2			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
Boom Box Rec ID#	WI715T3	WI711T3	WI718T3	WI715U3	WI711U3	WI718U3	WI725T3	WI721T3	WI728T3	WI725U3	WI721U3	WI728U3			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
Walkman RX Rec ID#	WI715T4	WI711T4	WI718T4	WI715U4	WI711U4	WI718U4	WI725T4	WI721T4	WI728T4	WI725U4	WI721U4	WI728U4			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
Home RX Rec ID#	WI715T5	WI711T5	WI718T5	WI715U5	WI711U5	WI718U5	WI725T5	WI721T5	WI728T5	WI725U5	WI721U5	WI728U5			
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	

Figure 62 – Winters Receiver Data Sheet, Location 7

Winters, California LPFM Site																								
Date of Test	LPFM Site Lat/Lon		FPFM			LPFM	Dir. Coup.	ERP	Incident Port															
11/13/02	38 31 39.2 N 121 57 33.2 W		KSFM 102.5 MHz Processed			103.1 MHz	-39.4 dB	100 W	13.4 dBm															
								10 W	3.4 dBm															
Location 8	Latitude / Longitude	38 30 33.8 N			122 02 59.7 W																			
	30m 10W T	30m 0W T	30m 100W T	30m 10W U	30m 0W U	30m 100W U	10m 10W T	10m 0W T	10m 100W T	10m 10W U	10m 0W U	10m 100W U												
Time of Recording	14:58	15:02	15:05	15:08	15:19	15:22	15:32	15:35	15:38	15:48	15:51	15:54												
FPFM (dBm)	-53.66											-53.22												
FPFM (dBuV/m)	62.84											63.28												
LPFM (dBm)	-78.88	-85.24	-69.73	-78.40	-85.28	-69.52	-83.03	-85.24	-76.38	-82.91	-85.31	-75.94												
LPFM (dBuV/m)	37.62	31.26	46.77	38.10	31.22	46.98	33.47	31.26	40.12	33.59	31.19	40.56												
Auto RX Rec ID#	WB15T1	WB11T1	WB18T1	WB15U1	WB11U1	WB18U1	WB25T1	WB21T1	WB28T1	WB25U1	WB21U1	WB28U1												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	WB15T2	WB11T2	WB18T2	WB15U2	WB11U2	WB18U2	WB25T2	WB21T2	WB28T2	WB25U2	WB21U2	WB28U2												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	WB15T3	WB11T3	WB18T3	WB15U3	WB11U3	WB18U3	WB25T3	WB21T3	WB28T3	WB25U3	WB21U3	WB28U3												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	WB15T4	WB11T4	WB18T4	WB15U4	WB11U4	WB18U4	WB25T4	WB21T4	WB28T4	WB25U4	WB21U4	WB28U4												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	WB15T5	WB11T5	WB18T5	WB15U5	WB11U5	WB18U5	WB25T5	WB21T5	WB28T5	WB25U5	WB21U5	WB28U5												
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

Figure 63 – Winters Receiver Data Sheet, Location 8

### 5.7 Benicia, CA – Transmitter Log and Receiver Data Sheets

LPFM Transmit Test Vehicle Log				
Date	LPFM Site Name:	LPFM Freq.	Test Site GPS Coordinates	Local Time of Test
11/14/02	Benicia	100.3 MHz	38 10 55.9 N	10:00
	<b>FPFM Call Sign:</b>	<b>FPFM Freq.</b>	122 15 21.8 W	
	KFRC	99.7 MHZ		
Cable Losses		Directional Coupler Coupling Factor		
129' Cable	1.9 dB	Incident and Reflected		
10' Jumper Cable	0.5 dB	-39.6 dB		
VSWR Check Power Meter Readings				
Incident	Reflected			
-2.77 dBm	-28.42 dBm			
NOTES:				
Locations 1 - 8 completed 11/14/02				
Transmitter Actions (Benicia, CA), Location # 1				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
10:01	10:02	10	VSWR Test	
10:02	10:02	10	VSWR Test	
10:44	10:46	10	Unprocessed Music	10
10:46	NA	10	Mute On	0
10:49	10:51	10	Unprocessed Music	100
10:52	10:54	10	Processed Music	10
10:54	NA	10	Mute On	0
10:58	11:00	10	Processed Music	100
11:09	11:12	30	Unprocessed Music	10
11:12	NA	30	Mute On	0
11:15	11:18	30	Unprocessed Music	100
11:18	11:20	30	Processed Music	10
11:20	NA	30	Mute On	0
11:30	11:33	30	Processed Music	100

Figure 64 – Benicia Transmitter Test Vehicle Log

<b>Transmitter Actions (Benicia, CA), Location # 2</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
11:38	11:45	30	Unprocessed Music	10
11:45	NA	30	Mute On	0
11:49	11:51	30	Unprocessed Music	100
11:51	11:54	30	Processed Music	10
11:54	NA	30	Mute On	0
11:56	11:59	30	Processed Music	100
12:08	12:11	10	Unprocessed Music	10
12:11	NA	10	Mute On	0
12:14	12:17	10	Unprocessed Music	100
12:18	12:20	10	Processed Music	10
12:20	NA	10	Mute On	0
12:31	12:33	10	Processed Music	100
<b>Transmitter Actions (Benicia, CA), Location # 3</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
12:44	12:47	10	Unprocessed Music	10
12:47	NA	10	Mute On	0
12:50	12:52	10	Unprocessed Music	100
12:53	12:55	10	Processed Music	10
12:55	NA	10	Mute On	0
12:58	13:00	10	Processed Music	100
13:10	13:12	30	Unprocessed Music	10
13:12	NA	30	Mute On	0
13:16	13:18	30	Unprocessed Music	100
13:19	13:21	30	Processed Music	10
13:21	NA	30	Mute On	0
13:31	13:34	30	Processed Music	100

**Figure 64 – Benicia Transmitter Test Vehicle Log (Cont.)**

<b>Transmitter Actions (Benicia, CA), Location # 4</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
13:58	14:00	30	Unprocessed Music	10
14:00	NA	30	Mute On	0
14:04	14:06	30	Unprocessed Music	100
14:06	14:09	30	Processed Music	10
14:09	NA	30	Mute On	0
14:12	14:14	30	Processed Music	100
14:28	14:31	10	Unprocessed Music	10
14:31	NA	10	Mute On	0
14:35	14:37	10	Unprocessed Music	100
14:38	14:43	10	Processed Music	10
14:43	NA	10	Mute On	0
14:47	14:49	10	Processed Music	100
<b>Transmitter Actions (Benicia, CA), Location # 5</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
15:02	15:04	10	Unprocessed Music	10
15:04	NA	10	Mute On	0
15:08	15:12	10	Unprocessed Music	100
15:12	15:15	10	Processed Music	10
15:15	NA	10	Mute On	0
15:18	15:20	10	Processed Music	100
15:29	15:32	30	Unprocessed Music	10
15:32	NA	30	Mute On	0
15:35	15:38	30	Unprocessed Music	100
15:39	15:49	30	Processed Music	10
15:49	NA	30	Mute On	0
15:53	15:56	30	Processed Music	100

**Figure 64 – Benicia Transmitter Test Vehicle Log (Cont.)**

<b>Transmitter Actions (Benicia, CA), Location # 6</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
16:18	16:30	30	Unprocessed Music	10
16:30	NA	30	Mute On	0
16:33	16:25	30	Unprocessed Music	100
16:36	16:47	30	Processed Music	10
16:47	NA	30	Mute On	0
16:50	16:52	30	Processed Music	100
17:01	17:05	10	Unprocessed Music	10
17:05	NA	10	Mute On	0
17:09	17:11	10	Unprocessed Music	100
17:12	17:16	10	Processed Music	10
17:16	NA	10	Mute On	0
17:34	17:36	10	Processed Music	100
<b>Transmitter Actions (Benicia, CA), Location # 7</b>				
Time on	Time Off	Height AGL (Meters)	Format	ERP (Watts)
18:04	18:06	10	Unprocessed Music	10
18:06	NA	10	Mute On	0
18:10	18:12	10	Unprocessed Music	100
18:14	18:16	10	Unprocessed Music	100
18:16	18:18	10	Processed Music	10
18:18	NA	10	Mute On	0
18:21	18:23	10	Processed Music	100
18:33	18:35	30	Unprocessed Music	10
18:35	NA	30	Mute On	0
18:38	18:41	30	Unprocessed Music	100
18:42	18:50	30	Processed Music	10
18:51	NA	30	Mute On	0
18:54	18:58	30	Processed Music	100

**Figure 64 – Benicia Transmitter Test Vehicle Log (Cont.)**



<b>Transmitter Actions (Benicia, CA), Location # 8</b>				
<b>Time on</b>	<b>Time Off</b>	<b>Height AGL (Meters)</b>	<b>Format</b>	<b>ERP (Watts)</b>
19:23	19:29	30	Unprocessed Music	10
19:29	NA	30	Mute On	0
19:33	19:35	30	Unprocessed Music	100
19:35	19:37	30	Processed Music	10
19:37	NA	30	Mute On	0
19:48	19:50	30	Processed Music	100
19:59	20:07	10	Unprocessed Music	10
20:07	NA	10	Mute On	0
20:16	20:18	10	Unprocessed Music	100
20:18	20:20	10	Processed Music	10
20:20	NA	10	Mute On	0
20:23	20:27	10	Processed Music	100

**Figure 64 – Benicia Transmitter Test Vehicle Log (Cont.)**

Benicia, California LPFM Site																											
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port																			
11/14/02	38 10 55.9 N 122 15 21.8 W		KFRC 99.7 MHz Processed		100.3 MHz	-39.6 dB	100 W	13.2 dBm																			
							10 W	3.2 dBm																			
Location 1	Latitude / Longitude	38 10 56.5 N				122 15 21.4 W																					
	30m 10W U	30m 0W U	30m 100W U	30m 10W P	30m 0W P	30m 100W P	10m 10W U	10m 0W U	10m 100W U	10m 10W P	10m 0W P	10m 100W P															
Time of Recording	11:09	11:11	11:14	11:17	11:27	11:30	10:43	10:45	10:48	10:51	10:54	10:57															
FPFM (dBm)							-66.20																				
FPFM (dBuV/m)							50.30																				
LPFM (dBm)	-13.02	-83.92	-2.96	-13.20	-84.20	-3.79	-15.80	-84.00	-5.88	-16.32	-83.88	-6.60															
LPFM (dBuV/m)	103.48	32.58	113.54	103.30	32.30	112.71	100.70	32.50	110.62	100.18	32.62	109.90															
AuPo RX Rec ID#	BE115U1	BE111U1	BE118U1	BE115P1	BE111P1	BE118P1	BE125U1	BE121U1	BE128U1	BE125P1	BE121P1	BE128P1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	BE115U2	BE111U2	BE118U2	BE115P2	BE111P2	BE118P2	BE125U2	BE121U2	BE128U2	BE125P2	BE121P2	BE128P2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	BE115U3	BE111U3	BE118U3	BE115P3	BE111P3	BE118P3	BE125U3	BE121U3	BE128U3	BE125P3	BE121P3	BE128P3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	BE115U4	BE111U4	BE118U4	BE115P4	BE111P4	BE118P4	BE125U4	BE121U4	BE128U4	BE125P4	BE121P4	BE128P4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	BE115U5	BE111U5	BE118U5	BE115P5	BE111P5	BE118P5	BE125U5	BE121U5	BE128U5	BE125P5	BE121P5	BE128P5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

Figure 65 – Benicia Receiver Data Sheet, Location 1

Benicia, California LPFM Site																											
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port																			
11/14/02	38 10 55.9 N 122 15 21.8 W		KFRC 99.7 MHz Processed		100.3 MHz	-39.6 dB	100 W	13.2 dBm																			
							10 W	3.2 dBm																			
Location 2	Latitude / Longitude	38 10 57.5 N				122 15 20.8 W																					
	30m 10W U	30m 0W U	30m 100W U	30m 10W P	30m 0W P	30m 100W P	10m 10W U	10m 0W U	10m 100W U	10m 10W P	10m 0W P	10m 100W P															
Time of Recording	11:42	11:45	11:48	11:51	11:53	11:56	12:08	12:10	12:14	12:17	12:27	12:30															
FPFM (dBm)	-58.11																										
FPFM (dBuV/m)	58.39																										
LPFM (dBm)	-20.10	-84.20	-9.92	-20.20	-84.84	-9.65	-10.83	-85.02	-0.87	-11.53	-85.06	-1.42															
LPFM (dBuV/m)	96.40	32.30	106.58	96.30	31.66	106.85	105.67	31.48	115.63	104.97	31.44	115.08															
AuPo RX Rec ID#	BE215U1	BE211U1	BE218U1	BE215P1	BE211P1	BE218P1	BE225U1	BE221U1	BE228U1	BE225P1	BE221P1	BE228P1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	BE215U2	BE211U2	BE218U2	BE215P2	BE211P2	BE218P2	BE225U2	BE221U2	BE228U2	BE225P2	BE221P2	BE228P2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	BE215U3	BE211U3	BE218U3	BE215P3	BE211P3	BE218P3	BE225U3	BE221U3	BE228U3	BE225P3	BE221P3	BE228P3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	BE215U4	BE211U4	BE218U4	BE215P4	BE211P4	BE218P4	BE225U4	BE221U4	BE228U4	BE225P4	BE221P4	BE228P4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	BE215U5	BE211U5	BE218U5	BE215P5	BE211P5	BE218P5	BE225U5	BE221U5	BE228U5	BE225P5	BE221P5	BE228P5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

Figure 66 – Benicia Receiver Data Sheet, Location 2

Benicia, California LPFM Site																											
Date of Test	LPFM Site Lat/Lon		FPFM				LPFM	Dir. Coup.	ERP	Incident Port																	
11/14/02	38 10 55.9 N 122 15 21.8 W		KFRC 99.7 MHz Processed				100.3 MHz	-39.6 dB	100 W	13.2 dBm																	
									10 W	3.2 dBm																	
Location 3	Latitude / Longitude	38 10 59.7 N				122 15 20 W																					
	30m 10W U	30m 0W U	30m 100W U	30m 10W P	30m 0W P	30m 100W P	10m 10W U	10m 0W U	10m 100W U	10m 10W P	10m 0W P	10m 100W P															
Time of Recording	13:09	13:12	13:15	13:18	13:27	13:31	12:44	12:46	12:49	12:52	12:55	12:57															
FPFM (dBm)								-65.76																			
FPFM (dBUV/m)								50.74																			
LPFM (dBm)	-29.32	-84.29	-19.21	-29.19	-84.51	-20.08	-28.88	-84.40	-18.77	-29.03	-84.32	-19.39															
LPFM (dBUV/m)	87.18	32.21	97.29	87.31	31.99	96.42	87.62	32.10	97.73	87.47	32.18	97.11															
AuPo RX Rec ID#	BE315U1	BE311U1	BE318U1	BE315P1	BE311P1	BE318P1	BE325U1	BE321U1	BE328U1	BE325P1	BE321P1	BE328P1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	BE315U2	BE311U2	BE318U2	BE315P2	BE311P2	BE318P2	BE325U2	BE321U2	BE328U2	BE325P2	BE321P2	BE328P2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	BE315U3	BE311U3	BE318U3	BE315P3	BE311P3	BE318P3	BE325U3	BE321U3	BE328U3	BE325P3	BE321P3	BE328P3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	BE315U4	BE311U4	BE318U4	BE315P4	BE311P4	BE318P4	BE325U4	BE321U4	BE328U4	BE325P4	BE321P4	BE328P4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	BE315U5	BE311U5	BE318U5	BE315P5	BE311P5	BE318P5	BE325U5	BE321U5	BE328U5	BE325P5	BE321P5	BE328P5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

Figure 67 – Benicia Receiver Data Sheet, Location 3

Benicia, California LPFM Site																		
Date of Test	LPFM Site Lat/Lon		FPFM				LPFM	Dir. Coup.	ERP	Incident Port								
11/14/02	38 10 55.9 N 122 15 21.8 W		KFRC 99.7 MHz Processed				100.3 MHz	-39.6 dB	100 W	13.2 dBm								
									10 W	3.2 dBm								
Location 4	Latitude / Longitude	38 11 6.0 N				122 15 16.9 W												
	30m 10W U	30m 0W U	30m 100W U	30m 10W P	30m 0W P	30m 100W P	10m 10W U	10m 0W U	10m 100W U	10m 10W P	10m 0W P	10m 100W P						
Time of Recording	13:57	14:00	14:03	14:06	14:09	14:11	14:28	14:31	14:34	14:40	14:43	14:46						
FPFM (dBm)	-64.14																	
FPFM (dBuV/m)	52.36																	
LPFM (dBm)	-32.06	-85.02	-22.35	-32.55	-84.98	-22.81	-45.06	-84.98	-35.09	-45.27	-84.95	-35.25						
LPFM (dBuV/m)	84.44	31.48	94.15	83.95	31.52	93.69	71.44	31.52	81.41	71.23	31.55	81.25						
AuPo RX Rec ID#	BE415U1	BE411U1	BE418U1	BE415P1	BE411P1	BE418P1	BE425U1	BE421U1	BE428U1	BE425P1	BE421P1	BE428P1						
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N		
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Clock Radio Rec ID#	BE415U2	BE411U2	BE418U2	BE415P2	BE411P2	BE418P2	BE425U2	BE421U2	BE428U2	BE425P2	BE421P2	BE428P2						
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Boom Box Rec ID#	BE415U3	BE411U3	BE418U3	BE415P3	BE411P3	BE418P3	BE425U3	BE421U3	BE428U3	BE425P3	BE421P3	BE428P3						
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Walkman RX Rec ID#	BE415U4	BE411U4	BE418U4	BE415P4	BE411P4	BE418P4	BE425U4	BE421U4	BE428U4	BE425P4	BE421P4	BE428P4						
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Home RX Rec ID#	BE415U5	BE411U5	BE418U5	BE415P5	BE411P5	BE418P5	BE425U5	BE421U5	BE428U5	BE425P5	BE421P5	BE428P5						
Degrad. W/O LPFM	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N

Figure 68 – Benicia Receiver Data Sheet, Location 4

Benicia, California LPFM Site																											
Date of Test	LPFM Site Lat/Lon		FPFM				LPFM	Dir. Coup.	ERP	Incident Port																	
11/14/02	38 10 55.9 N 122 15 21.8 W		KFRC 99.7 MHz Processed				100.3 MHz	-39.6 dB	100 W	13.2 dBm																	
									10 W	3.2 dBm																	
Location 5	Latitude / Longitude	38 11 25 N				122 15 17.1 W																					
	30m 10W U	30m 0W U	30m 100W U	30m 10W P	30m 0W P	30m 100W P	10m 10W U	10m 0W U	10m 100W U	10m 10W P	10m 0W P	10m 100W P															
Time of Recording	15:29	15:32	15:36	15:46	15:49	15:52	15:01	15:04	15:07	15:12	15:14	15:17															
FPFM (dBm)								-59.84																			
FPFM (dBUV/m)								56.66																			
LPFM (dBm)	-57.56	-79.91	-36.90	-47.14	-80.06	-36.45	-57.56	-80.72	-47.08	-57.70	-79.73	-47.56															
LPFM (dBUV/m)	58.94	36.59	79.60	69.36	36.44	80.05	58.94	35.78	69.42	58.80	36.77	68.94															
AuPo RX Rec ID#	BE515U1	BE511U1	BE518U1	BE515P1	BE511P1	BE518P1	BE525U1	BE521U1	BE528U1	BE525P1	BE521P1	BE528P1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	BE515U2	BE511U2	BE518U2	BE515P2	BE511P2	BE518P2	BE525U2	BE521U2	BE528U2	BE525P2	BE521P2	BE528P2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	BE515U3	BE511U3	BE518U3	BE515P3	BE511P3	BE518P3	BE525U3	BE521U3	BE528U3	BE525P3	BE521P3	BE528P3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	BE515U4	BE511U4	BE518U4	BE515P4	BE511P4	BE518P4	BE525U4	BE521U4	BE528U4	BE525P4	BE521P4	BE528P4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	BE515U5	BE511U5	BE518U5	BE515P5	BE511P5	BE518P5	BE525U5	BE521U5	BE528U5	BE525P5	BE521P5	BE528P5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

Figure 69 – Benicia Receiver Data Sheet, Location 5

Benicia, California LPFM Site																											
Date of Test	LPFM Site Lat/Lon			FPFM			LPFM	Dir. Coup.	ERP	Incident Port																	
11/14/02	38 10 55.9 N 122 15 21.8 W			KFRC 99.7 MHz Processed			100.3 MHz	-39.6 dB	100 W	13.2 dBm																	
									10 W	3.2 dBm																	
Location 6	Latitude / Longitude	38 12 13.9 N			122 15 23.8 W																						
		30m 10W U	30m 0W U	30m 100W U	30m 10W P	30m 0W P	30m 100W P	10m 10W U	10m 0W U	10m 100W U	10m 10W P	10m 0W P	10m 100W P														
Time of Recording	16:25	16:28	16:31	16:44	16:47	16:50	17:03	17:05	17:08	17:11	17:14	17:33															
FPFM (dBm)	-61.42																										
FPFM (dBuV/m)	55.08																										
LPFM (dBm)	-58.51	-82.01	-47.45	-58.51	-82.78	-48.55	-72.22	-84.32	-62.59	-73.11	-83.92	-62.85															
LPFM (dBuV/m)	57.99	34.49	69.05	57.99	33.72	67.95	44.28	32.18	53.91	43.39	32.58	53.65															
AuPo RX Rec ID#	BE615U1	BE611U1	BE618U1	BE615P1	BE611P1	BE618P1	BE625U1	BE621U1	BE628U1	BE625P1	BE621P1	BE628P1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	BE615U2	BE611U2	BE618U2	BE615P2	BE611P2	BE618P2	BE625U2	BE621U2	BE628U2	BE625P2	BE621P2	BE628P2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	BE615U3	BE611U3	BE618U3	BE615P3	BE611P3	BE618P3	BE625U3	BE621U3	BE628U3	BE625P3	BE621P3	BE628P3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	BE615U4	BE611U4	BE618U4	BE615P4	BE611P4	BE618P4	BE625U4	BE621U4	BE628U4	BE625P4	BE621P4	BE628P4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	BE615U5	BE611U5	BE618U5	BE615P5	BE611P5	BE618P5	BE625U5	BE621U5	BE628U5	BE625P5	BE621P5	BE628P5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

Figure 70 – Benicia Receiver Data Sheet, Location 6

Benicia, California LPFM Site													
Date of Test	LPFM Site Lat/Lon		FPFM		LPFM	Dir. Coup.	ERP	Incident Port.					
11/14/02	38 10 55.9 N 122 15 21.8 W		KFRC 99.7 MHz Processed		100.3 MHz	-39.6 dB	100 W	13.2 dBm					
							10 W	3.2 dBm					
Location 7	Latitude / Longitude	38 14 15.5 N			122 15 56.4 W								
	30m 10W U	30m 0W U	30m 100W U	30m 10W P	30m 0W P	30m 100W P	10m 10W U	10m 0W U	10m 100W U	10m 10W P	10m 0W P	10m 100W P	
Time of Recording	18:32	18:35	18:38	18:47	18:50	18:53	18:03	18:06	18:09	18:14	18:17	18:20	
FPFM (dBm)							-56.09						
FPFM (dBuV/m)							60.41						
LPFM (dBm)	-75.02	-77.81	-68.26	-75.24	-77.26	-67.78	-76.90	-77.12	-74.62	-76.56	-78.04	-75.68	
LPFM (dBuV/m)	41.48	38.69	48.24	41.26	39.24	48.72	39.60	39.38	41.88	39.94	38.46	40.82	
AuPo RX Rec ID#	BE715U1	BE711U1	BE718U1	BE715P1	BE711P1	BE718P1	BE725U1	BE721U1	BE728U1	BE725P1	BE721P1	BE728P1	
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Clock Radio Rec ID#	BE715U2	BE711U2	BE718U2	BE715P2	BE711P2	BE718P2	BE725U2	BE721U2	BE728U2	BE725P2	BE721P2	BE728P2	
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Boom Box Rec ID#	BE715U3	BE711U3	BE718U3	BE715P3	BE711P3	BE718P3	BE725U3	BE721U3	BE728U3	BE725P3	BE721P3	BE728P3	
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Walkman RX Rec ID#	BE715U4	BE711U4	BE718U4	BE715P4	BE711P4	BE718P4	BE725U4	BE721U4	BE728U4	BE725P4	BE721P4	BE728P4	
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Home RX Rec ID#	BE715U5	BE711U5	BE718U5	BE715P5	BE711P5	BE718P5	BE725U5	BE721U5	BE728U5	BE725P5	BE721P5	BE728P5	
Degrad. W/O LPFM	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
FPFM Format	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	P U T	
Degrad. On Rec.	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	

Figure 71 – Benicia Receiver Data Sheet, Location 7



Benicia, California LPFM Site																											
Date of Test	LPFM Site Lat/Lon			FPFM			LPFM	Dir. Coup.	ERP		Incident Port.																
11/14/02	38 10 55.9 N 122 15 21.8 W			KFRC 99.7 MHz Processed			100.3 MHz	-39.6 dB	100 W	13.2 dBm																	
									10 W	3.2 dBm																	
Location 8	Latitude / Longitude	38 19 56.9 N			122 17 32 W																						
		30m 10W U	30m 0W U	30m 100W U	30m 10W P	30m 0W P	30m 100W P	10m 10W U	10m 0W U	10m 100W U	10m 10W P	10m 0W P	10m 100W P														
Time of Recording	19:26	19:29	19:32	19:34	19:44	19:47		20:04	20:07	20:15	20:17	20:20	20:23														
FPFM (dBm)	-64.10																										
FPFM (dBuV/m)	52.40																										
LPFM (dBm)	-82.74	-82.96	-80.24	-82.70	-82.78	-80.13	-82.15	-82.19	-82.15	-82.41	-82.34	-82.01															
LPFM (dBuV/m)	33.76	33.54	36.26	33.80	33.72	36.37	34.35	34.31	34.35	34.09	34.16	34.49															
AuPo RX Rec ID#	BE815U1	BE811U1	BE818U1	BE815P1	BE811P1	BE818P1	BE825U1	BE821U1	BE828U1	BE825P1	BE821P1	BE828P1															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N			
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Clock Radio Rec ID#	BE815U2	BE811U2	BE818U2	BE815P2	BE811P2	BE818P2	BE825U2	BE821U2	BE828U2	BE825P2	BE821P2	BE828P2															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Boom Box Rec ID#	BE815U3	BE811U3	BE818U3	BE815P3	BE811P3	BE818P3	BE825U3	BE821U3	BE828U3	BE825P3	BE821P3	BE828P3															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Walkman RX Rec ID#	BE815U4	BE811U4	BE818U4	BE815P4	BE811P4	BE818P4	BE825U4	BE821U4	BE828U4	BE825P4	BE821P4	BE828P4															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
Home RX Rec ID#	BE815U5	BE811U5	BE818U5	BE815P5	BE811P5	BE818P5	BE825U5	BE821U5	BE828U5	BE825P5	BE821P5	BE828P5															
Degrad. W/O LPFM	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N
FPFM Format	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T	P	U	T
Degrad. On Rec.	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N	Y		N

Figure 72 – Benicia Receiver Data Sheet, Location 8

## **6 Characterization of Field Measurement Results**

The results of the measurements at each site will be described in each of the following subsections.

### **6.1 Avon, CT**

The results from Avon represent the test condition in this experimental program where the LPFM is located at the nearest point to the FPFM station. The Comsearch field engineer reported degradation of the FPFM audio quality while the LPFM was operational at test locations 1, 2, and 3. At test locations 3, 7, and 8, there was degraded audio quality to some of the FM receiver outputs but it occurred whether the LPFM was operational or not. With one exception, every degraded audio quality case reported while the LPFM was transmitting revealed only a slight effect. The one case of significantly degraded audio quality occurred at test location 1. The receiver affected was the Walkman. The LPFM audio can distinctly be heard on the FPFM signal along with static. The data reference for this case is AV118P4, where the LPFM was transmitting an ERP of 100 W and the antenna height was 30 m. The degraded audio quality for this case can be heard on Track 14 of the AV1A CD. The other receivers with reported degraded audio quality from the LPFM were the clock radio and boombox. The vehicle radio and home receiver had no reported degraded audio quality traceable to the LPFM at any test location for this site.

### **6.2 Brunswick, ME**

The measurement results for Brunswick are representative of the experimental test condition where the LPFM site is separated from the FPFM station by 0.82 times the F(50,50) contour radius -- the greatest distance ratio used in the tests. The Comsearch engineer reported degraded audio quality for most of the FM receiver outputs, but the degraded audio quality occurred whether the LPFM was transmitting or not. This was especially true for the clock radio, boombox, and Walkman, whose

audio quality was significantly degraded at all test locations. The vehicle receiver had degraded audio quality detected by the Comsearch engineer at test location 1, for some of the test conditions. The home receiver had degraded audio quality at test locations 1, 2, 3, 7, and 8. All of the cases at test locations 7 and 8 occurred with and without the LPFM transmitting. Some of the cases at test locations 1, 2, and 3 occurred with and without the LPFM transmitting. For the clock radio, boombox, and Walkman, it is interesting to see a direct correlation between the intensity of the degraded audio quality and the ERP of the LPFM for the closer-in test locations. An interesting note about the measurements at Brunswick is that test location 7 was close to the F(50,50) contour and test location 8 was approximately seven miles beyond the contour. At these distances, the reception capability of the clock radio, boombox and Walkman was nonexistent without the LPFM transmitting, and the home receiver exhibited marginal performance without the LPFM and significant degraded audio quality when the LPFM was transmitting. The vehicle receiver operated normally at test locations 7 and 8 with and without the LPFM transmitting.

### **6.3 East Bethel, MN**

The testing at East Bethel involved both the normal third-adjacent channel measurements and the Reading Service for the Visually Impaired receiver measurements. The summary of the two measurement results will be described separately in this section. The East Bethel measurements are representative of the experimental test condition where the LPFM site is located at a distance ratio of 0.37 (i.e., 37% of the distance from the FPFM station to the FPFM F(50,50) contour). The NPR affiliate is KNOW-FM, a Class C FPFM station.

#### **6.3.1 East Bethel Third-Adjacent Channel Measurement Results**

There was significant degraded audio quality to the clock radio, boombox, and Walkman audio outputs for test locations 1, 2, and 3. There was degraded audio quality in the vehicle receiver at test location 1 when the LPFM was at 10 m, processed programming, and 100 W ERP (EB128P1).

That was the only case of degraded audio quality for the vehicle receiver at East Bethel. There was also degraded audio quality to the home receiver at test location 1. It occurred when the LPFM was at 10 m, unprocessed programming and 100 W ERP (EB128U5). The home receiver had four cases of degraded audio quality at test location 2 and none at test location 3. At test location 4 there were two cases of slightly degraded audio quality to the boombox receiver and one for the Walkman. At test location 5 there was one slight case of degraded audio quality in the clock radio and the Walkman. The degradation to the clock radio (EB525U2) as a result of the LPFM transmission is questionable because the interference is a constant hum for the first 54 seconds of the 2-minute recording. From the 54-second spot in the recording to the end the hum vanishes and the audio is perfect. The hum did not resemble any of the other audio distortion caused by the LPFM in all of the testing. None of the receivers reported degraded audio quality at test location 7 or 8.

### **6.3.2 East Bethel Visually Impaired Reader Measurements**

KNOW-FM provides a Reading Service for the Visually Impaired broadcast via a subcarrier authorized under the FCC Subsidiary Communications Authorization (SCA) program. The subcarrier is separated from the FM carrier by 67 kHz and produces a monaural output comparable to the quality of most AM broadcast signals. It is estimated that the subcarrier was approximately 23 dB below the ERP of the FM carrier, which was 100 kW. This means that the ERP of the subcarrier is only 500 W. At test locations 1, 2, and 3, the Reading Service for the Visually Impaired audio quality was profoundly degraded in all test modes by the LPFM operation. (Without the LPFM transmitting, at location 1 and sometimes at location 2, there was degraded audio quality on the receiver for the Reading Service for the Visually Impaired, but it was not totally unacceptable or disagreeable.) At test location 4, the receiver for the Reading Service for the Visually Impaired had degraded audio quality in

some cases whether the LPFM was transmitting or not, but there were also a number of cases where there was no degraded audio quality with or without the LPFM transmitting. For test locations 5 through 8, degraded audio quality was reported with and without the LPFM transmitting.

#### **6.4 Owatonna, MN (FM Translator Output)**

The LPFM site for this test was located where the distance ratio is 0.54. The FM translator programming was classical unprocessed music. At test locations 1, 2, and 3, there was degraded audio quality detected for the boombox and Walkman receivers with and without the LPFM transmitting. The degraded audio quality was more severe with the LPFM transmitting, as would be expected, but the degradation effects were different. One could hear the LPFM programming on the boombox audio, and the Walkman receiver lost audio or seemed to desensitize with the presence of the LPFM transmission. For the vehicle receiver there was only one case of degraded audio quality at location 1, and none at locations 2 and 3. For the home receiver there were three cases of degraded audio quality at locations 1 and 2, and none at location 3. The clock radio had degraded audio quality with and without the LPFM transmitting at test location 1, only when the LPFM was transmitting at test location 2, and only for two test conditions at test location 3. At test location 4 no degraded audio quality was detected on the clock radio. Also, no degraded audio quality was observed for the vehicle or home receiver at this location. At test location 5, all of the reported degraded audio quality cases were slight, and they occurred on the boombox and Walkman only. At test location 6, there were many degraded audio quality cases, but most of these were reported with and without the LPFM transmitting. This probably resulted partially from the fact that the F(50,50) contour range of the FM translator was being approached at location 6, and was exceeded at locations 7 and 8. For locations 7 and 8, degraded audio quality was reported with and without the LPFM transmitting in all cases but two. In one case, the degraded audio quality was reported on the vehicle receiver and was barely perceptible at test location 7. In the other case the home receiver

had reported interference for the 0 W ERP. The Walkman receiver was not receiving the FM translator signal very effectively at test locations 7 and 8 without the LPFM transmitting.

### **6.5 Owatonna, MN (FM Translator Input Test)**

This measurement introduced an undesired LPFM signal into the third-adjacent channel of an FM translator receiver. The separation distance of the LPFM source and the FM translator's receiving antenna was 0.278 mile. The LPFM source was cycled through steps of ERP and programming format for two antenna heights. The ERP steps were 100, 50, 20, 10, 5, 2, and 1 W. The programming formats were processed, unprocessed, and news/talk. The two antenna heights were 10 and 30 m AGL. To sample the degraded audio quality of the FM translator, its transmitter output was received at two test locations: one at approximately half the FM translator contour distance (the actual test location distance was 3.972 miles), and the second at approximately the full contour distance (the actual test distance was 7.748 miles). The results of the measurements showed a direct correlation with LPFM ERP and degraded audio quality. The results also showed that LPFM processed programming at a given ERP level caused more degradation than unprocessed and news/talk programming, whose degradation effects were similar to each other. In this test there was degraded audio quality in the clock radio, boombox, and Walkman in many cases at test location 1, even without the LPFM transmitting. At test location 2, all the receivers experienced some degraded audio quality without the LPFM transmitting; the clock radio, boombox, and Walkman suffered severely degraded audio quality, while the vehicle and home receiver experienced only slight degradation.

### **6.6 Winters, CA**

The measurement results for Winters are representative of the experimental test condition where the LPFM site is located at a distance ratio of 0.33 with respect to the FPFM station's F(50,50) contour radius. The FPFM at Winters was KSFM and

represented a station that serviced a minority market. For test locations 1, 2, and 3, there are cases of degraded audio on all of the receivers, varying from slight to total loss of quality, except for the home receiver, which was not degraded at locations 1 and 3. At these test locations, the boombox and Walkman suffered the worst degradation. At test location 4, the number of degraded-audio-quality cases dropped dramatically. At this location, most of the degraded audio quality occurred in the boombox receiver, with some of the cases quite significant. The other receivers experiencing degraded audio quality were the clock radio and Walkman. At test location 5, only the boombox receiver had degraded audio quality, and in all cases that degradation was barely discernible. At test location 6, there was only one case of degraded audio quality, which occurred on the boombox and was barely discernible. At test location 7, there were many cases of slight to barely discernible degraded audio quality, involving all of the receivers except for the clock radio. Multipath fading is a possible explanation for the large number of reported cases at this location. Supporting this inference is the fact that degraded audio quality was present in every case whether the LPFM was transmitting or not. At test location 8, there was some slight degradation of the vehicle receiver and clock radio. No degraded audio quality was observed in the other receivers. Multipath to the vehicle receiver and clock radio is a possible reason for this at test location 8, for the same reasons as stated for test location 7.

## **6.7 Benicia, CA**

The measurement results for Benicia represent an experimental test condition where the LPFM site is located at a distance ratio of 0.68 with respect to the FPFM station's F(50,50) contour radius. The received field strength levels of the FPFM station (KFRC) for test locations 1, 2, and 3 were 50.3, 58.1, and 50.7 dB $\mu$ V/m, respectively. These levels are near or below the FCC protected contour level of a Class B station, which is 54 dB $\mu$ V/m. Because of this condition, many of the reported degraded audio quality cases existed with or without the LPFM transmitting. The clock radio, boombox, and Walkman receivers were the most affected at the

three test locations. The home receiver was affected at test location 3 only. The vehicle receiver was not affected at all. The amount of degraded audio quality increased significantly for the boombox and Walkman with the LPFM transmitting at test locations 1 and 2. At test location 4, most of the degraded audio quality cases were reported with and without the LPFM. The largest number of degraded audio quality cases was reported for the Walkman, followed by the boombox and then the clock radio. At test location 5 there were only three degraded audio quality cases reported with the LPFM transmitting, one each for the clock radio, boombox, and Walkman. Each of these degraded audio quality cases was hardly discernible. At test location 6, there were seven degraded audio quality cases reported for the boombox with the LPFM transmitting. All seven were barely discernible. There were no degraded audio quality cases reported for test location 7. At test location 8, there were a large number of reported degradation cases. All of them occurred with and without the LPFM transmitting and all were slight to barely discernible. It is likely that another FM station in the vicinity was causing the interference, since the LPFM field strength measured at receiver location 8 remained basically unchanged whether the LPFM was transmitting or not.



## 7 Public Comments

Public comments were collected for each LPFM measurement site. This process allowed the general public the opportunity to voice their opinion as to the effect, if any, that the LPFM transmission had on the reception of the FPFM broadcast.

Announcements were placed in the local dominant newspaper and on the FPFM radio station under test at each LPFM measurement site. Announcements were made two weeks before and during performance of the tests at each LPFM measurement site. Announcements were designed to facilitate the general public's awareness of the:

- Opportunity for the public to provide comments on any potential interference experienced
- Medium in which comments should be submitted
- Deadline for comments to be received

Comments were collected two weeks prior to, during, and for two weeks after the performance of the tests at each LPFM measurement site.

All comments collected are included in this report, organized by LPFM measurement site and presented in the following subsections. One e-mail message and 11 telephone calls were received during this experimental program. The original call sheets are reproduced in Appendix A.

### 7.1 Avon, CT

WCCC (106.9 MHz) was the FPFM station for the measurement site in Avon, CT. The dates of measurements performed at this site were October 14 and 15, 2002.

Public notices were placed in the *Hartford Herald* on 9/20/02, 10/04/02, 10/08/02, 10/11/02, 10/15/02, and 10/22/02.

Four telephone calls were received from the public for this measurement site. All four comments were made by listeners of the WCCC FPFM broadcast station. In two of the comments, degraded audio quality was noticed during early morning hours when the LPFM transmitter was not in operation. The other two comments referred to observations of degraded audio quality on days when no measurements were performed.

## **7.2 Brunswick, ME**

WCME (96.7 MHz) was the FPFM station for the measurement site in Brunswick, ME. The dates of measurements performed at this site were October 21 and 22, 2002.

Public notices were placed in the *Portland Press* on 10/04/02, 10/16/02, 10/23/02, and 10/30/02.

No comments were received from the public for this measurement site.

## **7.3 East Bethel, MN**

KNOW (91.1 MHz) was the FPFM station for the measurement site in East Bethel, MN. The dates of measurements performed at this site were October 28 and 29, 2002.

Public notices were placed in the *Minneapolis Star Tribune* on 10/09/02, 10/18/02, 10/26/02, and 11/01/02.

Two comments were received for this measurement site. One e-mail was received, reporting degraded audio quality on FPFM station KNOW on a date where no LPFM transmitter activity was being performed. One telephone commenter reported degraded audio quality on a different FPFM station (102.9 MHz) from the one tested in this experimental program.

## **7.4 Owatonna, MN**

Two measurement sites were tested at Owatonna, MN. The associated FPFM station was KGAC, a translator that transmits at 105.7 MHz and receives at 90.5 MHz. Tests were performed on the KGAC transmitter's third-adjacent channel for locations 1 through 6 on October 31, 2002, and for locations 7 and 8 on November 4, 2002. The separation in dates was due to weather and to the intervening execution of the FM translator input measurements on November 2, 2002.

Public notices were placed in the *Owatonna People's Press* on 10/22/02, 10/29/02, 11/05/02, 11/13/02, 11/20/02, 11/26/02, and 12/03/02.

Two telephone calls were received from the public for this measurement site. Neither involved the FPFM translator station used during this experimental program.

## **7.5 Winters, CA**

KSFM (102.5 MHz) was the FPFM station for the measurement site in Winters, CA. The dates of measurements performed at this site were November 12 and 13, 2002.

Public notices were placed in the *Sacramento Bee* on 11/06/02, 11/10/02, 11/14/02, and 11/19/02.

No comments were received from the public for this measurement site.

## **7.6 Benicia, CA**

KFRC (99.7 MHz) was the FPFM station for this measurement site in Benicia, CA. The date of measurements performed at this site was November 14, 2002.

Public notices were placed in the *San Francisco Times Herald* on 11/07/02, 11/16/02, 11/20/02, and 11/24/02.

Four telephone calls were received from the public for this measurement site. None of the instances reported in the telephone calls occurred on the FPFM station used for this experimental program.

## **8 Observations**

The measurements performed in this experimental program have produced data that allows some generalizations to be made with regard to receiver performance, LPFM co-location with FPFMs or FM translators, types of programming for LPFM, effects on the Reading Service for the Visually Impaired, and FPFM and FM translator F(50,50) contours.

### **8.1 Receiver Performance**

The measured results indicate the receiver least susceptible to LPFM interference was the vehicle receiver. Next was the home receiver, followed by the clock radio. The boombox and Walkman were the worst performers. In the presence of high levels of interference from the LPFM, the boombox would produce a very noisy output and the Walkman would produce a diminished or no output. Also, where the F(50,50) contour of the FPFM or FM translator station was approached, the boombox and Walkman would have trouble receiving the desired signal. Their range of operation was noticeably limited compared to the other three receivers.

### **8.2 Proximity of LPFM and FPFM Stations**

During the measurements at Avon, locating a third-adjacent channel LPFM station relatively close to an FPFM station did not seem to cause seriously degraded audio quality, except for the Walkman when located approximately 50 feet from the LPFM. This exemplifies how occurrences of degraded audio quality tend to be fewer, the closer the LPFM is located to the FPFM station. At the Avon site, the ratio of the LPFM-FPFM distance to the FPFM contour radius was the smallest tested (0.09). Consequently, all of the Avon receiver locations were well within the F(50,50)

contour of the FPFM station, and the FPFM signal level was consistently strong. This enabled the desired signal to suppress the third-adjacent channel Avon LPFM signal, in all but a handful of cases at locations very close to the Avon LPFM transmitter.

### **8.3 Proximity of LPFM and FM Translator Stations**

The Owatonna FM translator-input test results indicate that the degradation threshold of the FM translator receiver on the third-adjacent channel of the LPFM station 0.278 mile away was reached when the LPFM ERP was greater than 1 W but less than 5 W. This suggests that for an LPFM transmitting at 100 W ERP, a separation distance of 2.78 miles would provide at least enough additional free-space path loss to protect the receiver, and an LPFM operating at 10 W ERP could be as close as 0.879 mile under similar operating conditions (in the main beam of the translator's receiving antenna) without significant degradation.

### **8.4 LPFM Programming Formats and Degradation**

There was a very distinct trend in the measurement results indicating that when the LPFM was transmitting a processed signal, the degradation effect was more evident on all of the receivers. The unprocessed and news/talk signals had less of a degradation effect than the processed signals. It was not possible to ascertain, from the measured data, any significant difference between the levels of degradation produced by the unprocessed and news/talk formats.

### **8.5 Visually Impaired Reader Service Degradation**

The audio on the receiver used for the Reading Service for the Visually Impaired is comparable to that of an AM receiver. The measurements at East Bethel were made around an LPFM site where the signal of the Reading Service for the Visually Impaired was relatively weak. At this range, there was degradation to the audio quality before the LPFM was operated, but the audio signal was still audible and

acceptable. For the close-in test locations (1, 2, and 3) the signal of the Reading Service for the Visually Impaired was totally degraded when the LPFM was transmitting. From test locations 4 through 8, there were cases of degraded audio quality with and without the LPFM transmitting, but the audio was never totally obliterated as it was when the receiver was in close proximity to the LPFM.

## **8.6 Operating Contours for FPFM and FM Translators**

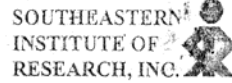
During measurements conducted close to the operating F(50,50) contours predicted by the FCC method, the boombox and Walkman receivers were seldom able to receive the FPFM signal even with the LPFM transmitter turned off. The clock radio, home, and vehicular receivers were usually able to operate at ranges beyond the contour, with the vehicular receiver having the best range. Cases reported on the measurement data sheets of degraded receiver audio quality without the LPFM transmitting were often the result of out-of-range conditions for a particular receiver.

## **Appendix A: Public Comments**

This appendix contains all public comments that were collected during this experimental program, sorted by site.

# Avon, CT

SIR #6343 (RGS #2)



10/17

## LOW POWER FREQUENCY MODULATION

Questionnaire # \_\_\_\_\_

Sources:

- FMAV@SIRresearch.com
- FMBR@SIRresearch.com
- FMEB@SIRresearch.com
- FMOW@SIRresearch.com
- FMWI@SIRresearch.com
- FMBE@SIRresearch.com

- (Avon, CT)
- (Brunswick, ME)
- (East Bethel, MN)
- (Owatonna, MN)
- (Winters, CA)
- (Benicia, CA)

*Hartford*

( - )

Start time: \_\_\_\_\_

### Introduction *leigh*

Hello, this is (Leslie) at Southeastern Institute of Research. I'm working on a research project for the Federal Communications Commission Regarding the possible effects that a third party low power FM station might be having on other operating channels.

1. Is this the reason you are calling?

*d.K.* (Go to Q. 2) ← Yes 01  
(Go to Q. 1a) ← No 02

1a. For what reason are you calling?

*Everyday at 8:15a 106.9  
WCCC dies for about  
4 minutes*

(PROCEED IF RELATED TO JOB, OTHERWISE TERMINATE)

2. I need to read to you a statement regarding legislation directed towards low power FM stations.

In December 2000, Congress passed legislation requiring the Federal Communications Commission to impose third-adjacent channel interference restrictions on Low Power FM stations. That legislation also directed the FCC to initiate an independent field-testing program to further investigate the possible effects that an LPFM station operating on the third-adjacent channel has on an existing FM station.

As part of this experimental program, Congress and the FCC are requesting feedback from the listening community. Your comments are being recorded by Southeastern Institute of Research, an independent agency and will be included in the overall evaluation of possible interference into existing FM stations.

I'm now going to ask you some questions to ensure that your comments satisfy the minimum requirements for consideration.

2a. Have you, in fact, experienced interference on an existing FM station due to the adding of a new FM station adjacent to your older one?

(Go to Q. 2b) ← Yes *01*  
(Terminate) ← No 02

2b. (IF YES,) What type of interference have you experienced; describe it to me please:

*Everyday at 8:15am it*

### Public Comment 1 – Avon, CT



it dips for 4 minutes

2c. What was your response to the occurrence; what did you do, once you noticed it?

I just waited for it to come back

2d. Did you change stations when it occurred; or did you just leave it alone until it cleared up?

- Changed stations  01
- Left alone  02
- Other
- Don't know

3. What was the date of the last occurrence you've just described?

every day

4. What was the time of that last occurrence?

8:15

5. Approximately, how long did that last occurrence last?

4 mins

6. Which station - by name, call letters or number - were you listening to when the last occurrence occurred?

6a. Station name: d.K

6b. Call letters: WOPC

6c. Frequency Number: 106.9

7. Which type of programming were you listening to when the last interference occurred? Was it:

- Rock  01
- Soft Rock 02
- R & B, or Rhythm & Blues 03
- Alternative 04
- Jazz 05
- Country 06
- Oldies 07
- News/Talk 08
- Gospel 09
- Christian 10
- Top 40 11
- Classical 12
- Or, something else

(PROBE & CLARIFY) It's a Rock station but I was listening to Howard Stern

8. Did this occurrence you've described, happen while you were in an automobile or while you were at home?

- (Go to Q. 9)  Automobile 01
- (Go to Q. 11)  Home 02
- work  Other 03
- Don't know 04

9. What is the year and make or model of the car you were in at the time of this occurrence?

Year: \_\_\_\_\_  
Model: \_\_\_\_\_  
Make: \_\_\_\_\_

10. And what direction was the car headed at this time? Was it headed:

- North 01
- East 02
- West 03
- South 04
- Northeast 05
- Northwest 06

Public Comment 1 - Avon, CT (cont.)

Southeast 07  
Southwest 08  
( ) Or, something else   
Don't know

(ASK Q. 11, SKIP Q. 12)

11. What was the exact location of your radio at the time of interference?

Nearest Street Intersection:

RT 5 & Craftsman  
City: East Windsor  
State: CT.

12. (HOME LISTENERS ONLY) Which type of radio were you listening to at the time of interference? Was it:

A Boom Box 01  
A Walkman 02  
A Clock Radio 03  
A Vehicle Radio 04  
A typical Home Radio 05  
(PROBE & CLARIFY) Or, something else   
stereo  
Don't know

And now, for my last questions:

What is your name: Tim Paul  
Your address: 56 Hockanum Dr  
City/State/Zip: East Hartford Ct 06118  
Your Phone Number: 860 559 8283

THIS COMPLETES OUR SURVEY! THANK YOU FOR YOUR TIME. HAVE A GOOD EVENING!

Thank you for participating! Your Opinion Counts.

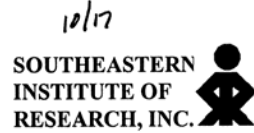
Respondent gender:

- 1) Male
- 2) Female

Interviewer name: Myra C

Date: 10-17-02  
Time end: 11 03  
Length of interview: 10 mins  
Interviewer ID # 1 1 4

SIR #6343 (RGS #2)



LOW POWER FREQUENCY MODULATION

Questionnaire # \_\_\_\_\_

Sources:

- FMAV@SIRresearch.com
- FMBR@SIRresearch.com
- FMEB@SIRresearch.com
- FMOV@SIRresearch.com
- FMWI@SIRresearch.com
- FMBE@SIRresearch.com

(Avon, CT) - Windsor, CT.  
 (Brunswick, ME)  
 (East Bethel, MN)  
 (Owatonna, MN)  
 (Winters, CA)  
 (Benicia, CA)

( - )

Start time: \_\_\_\_\_

Introduction

Hello, this is Leslie at Southeastern Institute of Research. I'm working on a research project for the Federal Communications Commission Regarding the possible effects that a third party low power FM station might be having on other operating channels.

1. Is this the reason you are calling?

(Go to Q. 2) ← Yes 01  
 (Go to Q. 1a) ← No 02

1a. For what reason are you calling?

\_\_\_\_\_  
 \_\_\_\_\_

(PROCEED IF RELATED TO JOB, OTHERWISE TERMINATE)

2. I need to read to you a statement regarding legislation directed towards low power FM stations.

In December 2000, Congress passed legislation requiring the Federal Communications Commission to impose third-adjacent channel interference restrictions on Low Power FM stations. That legislation also directed the FCC to initiate an independent field-testing program to further investigate the possible effects that an LPFM station operating on the third-adjacent channel has on an existing FM station.

As part of this experimental program, Congress and the FCC are requesting feedback from the listening community. Your comments are being recorded by Southeastern Institute of Research, an independent agency and will be included in the overall evaluation of possible interference into existing FM stations.

I'm now going to ask you some questions to ensure that your comments satisfy the minimum requirements for consideration.

2a. Have you, in fact, experienced interference on an existing FM station due to the adding of a new FM station adjacent to your older one?

(Go to Q. 2b) ← Yes 01  
 (Terminate) ← No 02

2b. (IF YES,) What type of interference have you experienced; describe it to me please:

Complete blackout on station

I listened to morning show  
Mon. 10/14 - 7<sup>45</sup>/a.m. - about  
15 min after turned station on  
last approx. 15 minutes

2c. What was your response to the occurrence; what did you do, once you noticed it?

I left it on & waited - Didn't  
other stations - only happened  
on this one. Turned back to  
original station & waited.

2d. Did you change stations when it occurred; or did you just leave it alone until it cleared up?

Changed stations  01  
Left alone  02  
Other

Don't know

3. What was the date of the last occurrence you've just described?

Mon. 10/14/02

4. What was the time of that last occurrence?

7<sup>45</sup>/a.m.

5. Approximately, how long did that last occurrence last?

15 min.

6. Which station - by name, call letters or number - were you listening to when the last occurrence occurred?

6a. Station name: \_\_\_\_\_

6b. Call letters: WCCC

6c. Frequency Number: 106.9

7. Which type of programming were you listening to when the last interference occurred? Was it:

- Rock  01
- Soft Rock 02
- R & B, or Rhythm & Blues 03
- Alternative 04
- Jazz 05
- Country 06
- Oldies 07
- News/Talk 08
- Gospel 09
- Christian 10
- Top 40 11
- Classical 12
- Or, something else

(PROBE & CLARIFY) Hard Rock

8. Did this occurrence you've described, happen while you were in an automobile or while you were at home?

- (Go to Q. 9) ← Automobile  01
- (Go to Q. 11) ← Home 02
- Other 03
- Don't know 04

9. What is the year and make or model of the car you were in at the time of this occurrence?

Year: 96

Model: Dodge

Make: Caravan

10. And what direction was the car headed at this time? Was it headed:

- North 01
- East 02
- West  03
- South 04
- Northeast 05
- Northwest 06

( ) Southeast 07  
( ) Southwest 08  
( ) Or, something else   
( ) Don't know

(ASK Q. 11, SKIP Q. 12)

11. What was the exact location of your radio at the time of interference?

Nearest Street Intersection:

66 Hartford Ave / Salmon Brook Rd(?)

City: Grandby

State: CT.

12. (HOME LISTENERS ONLY) Which type of radio were you listening to at the time of interference? Was it:

- A Boom Box 01
- A Walkman 02
- A Clock Radio 03
- A Vehicle Radio 04
- A typical Home Radio 05
- (PROBE & CLARIFY) Or, something else
- Don't know

And now, for my last questions:

What is your name: Damon Solomon

Your address: 66 Hartford Ave.

City/State/Zip: Grandby CT. 06035

Your Phone Number: (860) 844-8782

**THIS COMPLETES OUR SURVEY! THANK YOU FOR YOUR TIME. HAVE A GOOD EVENING!**

Thank you for participating! Your Opinion Counts.

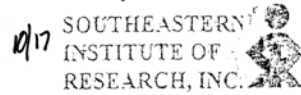
Respondent gender:

- 1) Male
- 2) Female

Interviewer name: Conn C.

Date: 10/17/02  
Time end: 12:10 pm  
Length of interview: approx 8-10 min.  
Interviewer ID # 2 7 4

SIR #6343 (RGS #2)



LOW POWER FREQUENCY MODULATION

Questionnaire # \_\_\_\_\_

Sources:

- [FMAY@SIRresearch.com](mailto:FMAY@SIRresearch.com)
- [FMBR@SIRresearch.com](mailto:FMBR@SIRresearch.com)
- [FMEB@SIRresearch.com](mailto:FMEB@SIRresearch.com)
- [FMOW@SIRresearch.com](mailto:FMOW@SIRresearch.com)
- [FMWI@SIRresearch.com](mailto:FMWI@SIRresearch.com)
- [FMBE@SIRresearch.com](mailto:FMBE@SIRresearch.com)

- (Avon, CT) *wolcott, Ct*
- (Brunswick, ME)
- (East Bethel, MN)
- (Owatonna, MN)
- (Winters, CA)
- (Benicia, CA)

Start time: \_\_\_\_\_

Introduction *Leigh*

Hello, this is *(Leigh)* at Southeastern Institute of Research. I'm working on a research project for the Federal Communications Commission Regarding the possible effects that a third party low power FM station might be having on other operating channels.

1. Is this the reason you are calling?

(Go to Q. 2) ← Yes **01**  
(Go to Q. 1a) ← No 02

As part of this experimental program, Congress and the FCC are requesting feedback from the listening community. Your comments are being recorded by Southeastern Institute of Research, an independent agency and will be included in the overall evaluation of possible interference into existing FM stations.

I'm now going to ask you some questions to ensure that your comments satisfy the minimum requirements for consideration.

1a. For what reason are you calling?

(PROCEED IF RELATED TO JOB, OTHERWISE TERMINATE)

2a. Have you, in fact, experienced interference on an existing FM station due to the adding of a new FM station adjacent to your older one?

(Go to Q. 2b) ← Yes **01**  
(Terminate) ← No 02

2. I need to read to you a statement regarding legislation directed towards low power FM stations.

In December 2000, Congress passed legislation requiring the Federal Communications Commission to impose third-adjacent channel interference restrictions on Low Power FM stations. That legislation also directed the FCC to initiate an independent field-testing program to further investigate the possible effects that an LPFM station operating on the third-adjacent channel has on an existing FM station.

2b. (IF YES,) What type of interference have you experienced; describe it to me please.

*family Christian station*

10/10/02

1

Public Comment 3 – Avon, CT

and Fox Station in N.J.  
 Cut in to WEEC in certain  
 areas of Waterbury, and  
 the signal for WEEC cuts  
 out for some reason in  
 the Willow St. Area

2c. What was your response to the occurrence; what did you do, once you noticed it?  
 I called the D.S.'s  
 several times (4)  
 the D.S.'s of the stations  
 that cut in

2d. Did you change stations when it occurred; or did you just leave it alone until it cleared up?  
 Changed stations 01  
 Left alone 02  
 Other   
 Don't know   
 I was driving to a hillside  
 area of town & it cleared  
 up.

3. What was the date of the last occurrence you've just described?  
 A few weeks ago (?) Oct. 1  
 2002

4. What was the time of that last occurrence?  
 8:00 - 10:00 PM

5. Approximately, how long did that last occurrence last?  
 Several minutes

6. Which station - by name, call letters or number - were you listening to when the last occurrence occurred?  
 6a. Station name: DK  
 6b. Call letters: WEEC

6c. Frequency Number: 106.9

7. Which type of programming were you listening to when the last interference occurred? Was it:

- Rock 01
- Soft Rock 02
- R & B, or Rhythm & Blues 03
- Alternative 04
- Jazz 05
- Country 06
- Oldies 07
- News/Talk 08
- Gospel 09
- Christian 10
- Top 40 11
- Classical 12
- Or, something else

(PROBE & CLARIFY)

8. Did this occurrence you've described, happen while you were in an automobile or while you were at home?  
 (Go to Q. 9) ← Automobile 01  
 (Go to Q. 11) ← Home 02  
 Other 03  
 Don't know 04

9. What is the year and make or model of the car you were in at the time of this occurrence?  
 Year: 1993  
 Model: Century  
 Make: Buick

10. And what direction was the car headed at this time? Was it headed:  
 North 01  
 East 02  
 West 03  
 South 04  
 Northeast 05  
 Northwest 06

Public Comment 3 – Avon, CT (cont.)

- Southeast  07
- Southwest  08
- ( ) Or, something else
- Don't know

(ASK Q. 11, SKIP Q. 12)

Date: 10/17/02  
 Time end: 2:57  
 Length of interview: 10  
 Interviewer ID #: 114

11. What was the exact location of your radio at the time of interference?

Nearest Street Intersection:

Meriden Rd & Schraft Rd

City: Waterbury

State: CT

12. (HOME LISTENERS ONLY) Which type of radio were you listening to at the time of interference? Was it:

- A Boom Box  01
- A Walkman  02
- A Clock Radio  03
- A Vehicle Radio  04
- A typical Home Radio  05
- (PROBE & CLARIFY) Or, something else
- \_\_\_\_\_ Don't know

And now, for my last questions:

What is your name: Ralph Nigro

Your address: 85 Ferrigno Ave

City/State/Zip: Wolcott, Ct. 06716

Your Phone Number: 203 879 0870

THIS COMPLETES OUR SURVEY! THANK YOU FOR YOUR TIME. HAVE A GOOD EVENING!

Thank you for participating! Your Opinion Counts.

Respondent gender:

- 1) Male
- 2) Female

Interviewer name: MC


10/10/02

3

Public Comment 3 – Avon, CT (cont.)



SIR #6343 (RGS #2)

10/23  
SOUTHEASTERN  
INSTITUTE OF  
RESEARCH, INC. 

LOW POWER FREQUENCY MODULATION

Questionnaire # \_\_\_\_\_

Sources:

- FMAV@SIRresearch.com
- FMBR@SIRresearch.com
- FMEB@SIRresearch.com
- FMOW@SIRresearch.com
- FMWJ@SIRresearch.com
- FMBE@SIRresearch.com

- (Avon, CT)
- (Brunswick, ME)
- (East Bethel, MN)
- (Owatonna, MN)
- (Winters, CA)
- (Benicia, CA)

*50mis from  
Manchester CT  
near Hartford CT*

( - )

Start time: \_\_\_\_\_

**Introduction** *Leigh*

Hello, this is Leigh at Southeastern Institute of Research. I'm working on a research project for the Federal Communications Commission Regarding the possible effects that a third party low power FM station might be having on other operating channels.

1. Is this the reason you are calling?

(Go to Q. 2) ←  Yes 01  
(Go to Q. 1a) ←  No 02

1a. For what reason are you calling?

\_\_\_\_\_  
\_\_\_\_\_

(PROCEED IF RELATED TO JOB, OTHERWISE TERMINATE)

2. I need to read to you a statement regarding legislation directed towards low power FM stations.

In December 2000, Congress passed legislation requiring the Federal Communications Commission to impose third-adjacent channel interference restrictions on Low Power FM stations. That legislation also directed the FCC to initiate an independent field-testing program to further investigate the possible effects that an LPFM station operating on the third-adjacent channel has on an existing FM station.

As part of this experimental program, Congress and the FCC are requesting feedback from the listening community. Your comments are being recorded by Southeastern Institute of Research, an independent agency and will be included in the overall evaluation of possible interference into existing FM stations.

I'm now going to ask you some questions to ensure that your comments satisfy the minimum requirements for consideration.

2a. Have you, in fact, experienced interference on an existing FM station due to the adding of a new FM station adjacent to your older one?

(Go to Q. 2b) ← Yes 01  
(Terminate) ← No 02

*Not sure*

2b. (IF YES,) What type of interference have you experienced; describe it to me please:

*Signal cuts out - home level*

background noise that sounds like talking

2c. What was your response to the occurrence; what did you do, once you noticed it?

changed channels - other channels came in fine

2d. Did you change stations when it occurred; or did you just leave it alone until it cleared up?

Changed stations (01) Left alone (02)

flipped back - cleared for a little while & then noise came back - changed stations again

3. What was the date of the last occurrence you've just described?

10/23/02

4. What was the time of that last occurrence?

9:15 - 9:25 am

5. Approximately, how long did that last occurrence last?

10 minutes

6. Which station - by name, call letters or number - were you listening to when the last occurrence occurred?

6a. Station name:

6b. Call letters: WCCC

6c. Frequency Number: 106.9

7. Which type of programming were you listening to when the last interference occurred? Was it:

- Rock 01
Soft Rock 02
R & B, or Rhythm & Blues 03
Alternative 04
Jazz 05
Country 06
Oldies 07
News/Talk (08)
Gospel 09
Christian 10
Top 40 11
Classical 12
Or, something else [ ]

(PROBE & CLARIFY) Howard Stern

8. Did this occurrence you've described, happen while you were in an automobile or while you were at home?

- (Go to Q. 9) (Go to Q. 11)
Automobile (01) Home 02
Other 03
Don't know 04

9. What is the year and make or model of the car you were in at the time of this occurrence?

Year: 1993

Model: Pontiac

Make: Sunbird

10. And what direction was the car headed at this time? Was it headed:

- North 01
East (02)
West 03
South 04
Northeast 05
Northwest 06

\_\_\_\_\_) Or, something else   
Southeast 07  
Southwest 08  
Don't know

(ASK Q. 11, SKIP Q. 12)

11. What was the exact location of your radio at the time of interference?

Nearest Street Intersection: East Center St / Broad St  
City: Manchester  
State: CT.

12. (HOME LISTENERS ONLY) Which type of radio were you listening to at the time of interference? Was it:

A Boom Box 01  
A Walkman 02  
A Clock Radio 03  
A Vehicle Radio 04  
A typical Home Radio 05  
(PROBE & CLARIFY) Or, something else   
\_\_\_\_\_  
Don't know

And now, for my last questions:

What is your name: Dan Piela  
Your address: 28 Emerson St.  
City/State/Zip: Manchester CT.  
Your Phone Number: 860-432-2302

THIS COMPLETES OUR SURVEY! THANK YOU FOR YOUR TIME. HAVE A GOOD EVENING!

Thank you for participating! Your Opinion Counts.

Respondent gender:

Male  
 Female

Interviewer name: Ann Crump

Date: 11/23/2m  
Time end: 11:31/2m  
Length of interview: 8 min.  
Interviewer ID # 2 7 4

1123

Contract No. 50181

## **Brunswick, ME**

No public comments were received for this site.

## East Bethel, MN

10/10/02


mailbox:///C:/WINDOWS/Profiles/Amy2/Application%20Data/Mozi...

**Subject:** Attn: Leigh  
**From:** t.sundell@att.net  
**Date:** Thu, 10 Oct 2002 19:19:11 +0000  
**To:** FMBR@SIRresearch.com

While listening to KNOW 91.1 on my car radio in the Circle Pines, MN area, I noticed several instances of three "clicks." I'm not sure of the time and date, but I believe it was on 10/7 around the middle of the day.

STR #6543 (RGS #2)

10/10

SOUTHEASTERN INSTITUTE OF RESEARCH, INC. 

LOW POWER FREQUENCY MODULATION

Questionnaire # \_\_\_\_\_

Sources:

- FMAV@SIRresearch.com (Avon, CT)
- FMBR@SIRresearch.com (Brunswick, ME)
- FMEB@SIRresearch.com (East Bethel, MN)
- FMOW@SIRresearch.com (Owatonna, MN)
- FMWI@SIRresearch.com (Winters, CA)
- FMBE@SIRresearch.com (Benicia, CA)

MINNEAPOLIS MN.

Start time: \_\_\_\_\_

Introduction

Hello, this is (Leslie) at Southeastern Institute of Research. I'm working on a research project for the Federal Communications Commission Regarding the possible effects that a third party low power FM station might be having on other operating channels.

1. Is this the reason you are calling?

(Go to Q. 2) ←  Yes 01  
(Go to Q. 1a) ←  No 02

1a. For what reason are you calling?

\_\_\_\_\_  
\_\_\_\_\_

(PROCEED IF RELATED TO JOB, OTHERWISE TERMINATE)

2. I need to read to you a statement regarding legislation directed towards low power FM stations.

In December 2000, Congress passed legislation requiring the Federal Communications Commission to impose third-adjacent channel interference restrictions on Low Power FM stations. That legislation also directed the FCC to initiate an independent field-testing program to further investigate the possible effects that an LPFM station operating on the third-adjacent channel has on an existing FM station.

As part of this experimental program, Congress and the FCC are requesting feedback from the listening community. Your comments are being recorded by Southeastern Institute of Research, an independent agency and will be included in the overall evaluation of possible interference into existing FM stations.

I'm now going to ask you some questions to ensure that your comments satisfy the minimum requirements for consideration.

2a. Have you, in fact, experienced interference on an existing FM station due to the adding of a new FM station adjacent to your older one?

(Go to Q. 2b) ←  Yes 01  
(Terminate) ←  No 02

2b. (IF YES.) What type of interference have you experienced; describe it to me please:

Distorted sounds  
Static Fades in and

10/10/02

Public Comment 6 – East Bethel, MN

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2c. What was your response to the occurrence; what did you do, once you noticed it?

I changed the  
station

2d. Did you change stations when it occurred; or did you just leave it alone until it cleared up?

Changed stations  01  
Left alone  02  
Turned Radio off Other   
Don't know

3. What was the date of the last occurrence you've just described?

10/10/02

4. What was the time of that last occurrence?

8:30 AM

5. Approximately, how long did that last occurrence last?

Turned off

6. Which station - by name, call letters or number - were you listening to when the last occurrence occurred?

6a. Station name: 102.9

6b. Call letters: WLTE

6c. Frequency Number: \_\_\_\_\_

7. Which type of programming were you listening to when the last interference occurred? Was it:

- Rock 01
- Soft Rock 02
- R & B, or Rhythm & Blues 03
- Alternative 04
- Jazz  05
- Country 06
- Oldies 07
- News/Talk 08
- Gospel 09
- Christian 10
- Top 40 11
- Classical 12
- Or, something else

(PROBE & CLARIFY) \_\_\_\_\_

8. Did this occurrence you've described, happen while you were in an automobile or while you were at home?

(Go to Q. 9) ← Automobile  01  
(Go to Q. 11) ← Home  02  
Other  03  
Don't know  04

9. What is the year and make or model of the car you were in at the time of this occurrence?

Year: \_\_\_\_\_

Model: \_\_\_\_\_

Make: \_\_\_\_\_

10. And what direction was the car headed at this time? Was it headed:

- North 01
- East 02
- West 03
- South 04
- Northeast 05
- Northwest 06

10/10/02

Public Comment 6 – East Bethel, MN (cont.)

Southeast 07  
Southwest 08  
( ) Or, something else   
Don't know

(ASK Q. 11, SKIP Q. 12)

11. What was the exact location of your radio at the time of interference?

Nearest Street Intersection:

City: MINNEAPOLIS  
State: MN

12. (HOME LISTENERS ONLY) Which type of radio were you listening to at the time of interference? Was it:

A Boom Box 01  
A Walkman 02  
A Clock Radio 03  
A Vehicle Radio 04  
A typical Home Radio 05  
(PROBE & CLARIFY) Or, something else   
Don't know

And now, for my last questions:

What is your name: Ms. Smalls  
Your address: 216 2nd St. N.E.  
City/State/Zip: MINNEAPOLIS  
Your Phone Number: 612-378-9518

THIS COMPLETES OUR SURVEY! THANK YOU FOR YOUR TIME. HAVE A GOOD EVENING!

Thank you for participating! Your Opinion Counts.

Respondent gender:

1) Male  
2) Female

Interviewer name: Sherie Neutra

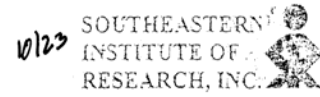
Date: 10/10/02  
Time end: \_\_\_\_\_  
Length of interview: \_\_\_\_\_  
Interviewer ID # \_\_\_\_\_

10/10/02



# Owatonna, MN

SIR #6343 (RGS #2)



## LOW POWER FREQUENCY MODULATION

Questionnaire # \_\_\_\_\_

Sources:

- FMAV@SIRresearch.com (Avon, CT)
- FMBR@SIRresearch.com (Brunswick, ME)
- FMEB@SIRresearch.com (East Bethel, MN)
- FMOW@SIRresearch.com (Owatonna, MN)
- FMWI@SIRresearch.com (Winters, CA)
- FMBE@SIRresearch.com (Benicia, CA)

Start time: \_\_\_\_\_

### Introduction Leigh

Hello, this is Leigh at Southeastern Institute of Research. I'm working on a research project for the Federal Communications Commission Regarding the possible effects that a third party low power FM station might be having on other operating channels.

1. Is this the reason you are calling?

(Go to Q. 2) ← Yes 01  
(Go to Q. 1a) ← No 02

1a. For what reason are you calling?  
\_\_\_\_\_  
\_\_\_\_\_

(PROCEED IF RELATED TO JOB, OTHERWISE TERMINATE)

2. I need to read to you a statement regarding legislation directed towards low power FM stations.

In December 2000, Congress passed legislation requiring the Federal Communications Commission to impose third-adjacent channel interference restrictions on Low Power FM stations. That legislation also directed the FCC to initiate an independent field-testing program to further investigate the possible effects that an LPFM station operating on the third-adjacent channel has on an existing FM station.

As part of this experimental program, Congress and the FCC are requesting feedback from the listening community. Your comments are being recorded by Southeastern Institute of Research, an independent agency and will be included in the overall evaluation of possible interference into existing FM stations.

I'm now going to ask you some questions to ensure that your comments satisfy the minimum requirements for consideration.

2a. Have you, in fact, experienced interference on an existing FM station due to the adding of a new FM station adjacent to your older one?

(Go to Q. 2b) ← Yes 01  
(Terminate) ← No 02

2b. (IF YES,) What type of interference have you experienced; describe it to me please.

*just a buzz, a low buzz - the*

10/10/02

1

Station is not coming in;

news 94.1 music 94.5

2c. What was your response to the occurrence; what did you do, once you noticed it?

changed to different station.

2d. Did you change stations when it occurred; or did you just leave it alone until it cleared up?

Changed stations 01

Left alone 02

Other

Don't know

3. What was the date of the last occurrence you've just described?

last night 10/21

4. What was the time of that last occurrence?

11 pm

5. Approximately, how long did that last occurrence last?

d.k. never turned back on.

6. Which station - by name, call letters or number - were you listening to when the last occurrence occurred?

6a. Station name:

6b. Call letters: KNOW

6c. Frequency Number: 91.1

7. Which type of programming were you listening to when the last interference occurred? Was it:

- Rock 01
- Soft Rock 02
- R & B, or Rhythm & Blues 03
- Alternative 04
- Jazz 05
- Country 06
- Oldies 07
- News/Talk 08
- Gospel 09
- Christian 10
- Top 40 11
- Classical 12
- Or, something else

(PROBE & CLARIFY)

world news brought on radio

8. Did this occurrence you've described, happen while you were in an automobile or while you were at home?

(Go to Q. 9) ← Automobile 01

(Go to Q. 11) ← Home 02

Other 03

Don't know 04

9. What is the year and make or model of the car you were in at the time of this occurrence?

Year:

Model:

Make:

10. And what direction was the car headed at this time? Was it headed:

- North 01
- East 02
- West 03
- South 04
- Northeast 05
- Northwest 06

\_\_\_\_\_) Or, something else   
Don't know

Southeast 07  
Southwest 08

Date: 10/23  
Time end: 10:11  
Length of interview: \_\_\_\_\_  
Interviewer ID # 1 1 4

(ASK Q. 11, SKIP Q. 12)

11. What was the exact location of your radio at the time of interference?

Nearest Street Intersection: Rose & Pine  
City: Owatonna  
State: MN

12. (HOME LISTENERS ONLY) Which type of radio were you listening to at the time of interference? Was it:

A Boom Box 01  
A Walkman 02  
A Clock Radio 03  
A Vehicle Radio 04  
A typical Home Radio 05  
(PROBE & CLARIFY) Or, something else   
Home Stereo System  
Don't know

And now, for my last questions:

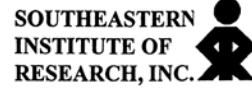
What is your name: Tina Iserman  
Your address: 434 N. Pine Ave  
City/State/Zip: Owatonna MN 55060  
Your Phone Number: 507 451 0757

THIS COMPLETES OUR SURVEY! THANK YOU FOR YOUR TIME. HAVE A GOOD EVENING!

Thank you for participating! Your Opinion Counts.

Respondent gender:  
1) Male  
2) Female  
Interviewer name: mc

SIR #6343 (RGS #2)



LOW POWER FREQUENCY MODULATION

)))

Questionnaire # \_\_\_\_\_

Sources:

( - )

- FMAV@SIRresearch.com (Avon, CT)
- FMBR@SIRresearch.com (Brunswick, ME)
- FMEB@SIRresearch.com (East Bethel, MN)
- FMOW@SIRresearch.com (Owatonna, MN) - Minneapolis
- FMWJ@SIRresearch.com (Winters, CA)
- FMBE@SIRresearch.com (Benicia, CA)

Start time: \_\_\_\_\_

**Introduction**

Hello, this is (Leigh) at Southeastern Institute of Research. I'm working on a research project for the Federal Communications Commission Regarding the possible effects that a third party low power FM station might be having on other operating channels.

1. Is this the reason you are calling?

(Go to Q. 2) ← Yes 01  
(Go to Q. 1a) ← No 02

1a. For what reason are you calling?

\_\_\_\_\_  
\_\_\_\_\_

**(PROCEED IF RELATED TO JOB, OTHERWISE TERMINATE)**

2. I need to read to you a statement regarding legislation directed towards low power FM stations.

In December 2000, Congress passed legislation requiring the Federal Communications Commission to impose third-adjacent channel interference restrictions on Low Power FM stations. That legislation also directed the FCC to initiate an independent field-testing program to further investigate the possible effects that an LPFM station operating on the third-adjacent channel has on an existing FM station.

As part of this experimental program, Congress and the FCC are requesting feedback from the listening community. Your comments are being recorded by Southeastern Institute of Research, an independent agency and will be included in the overall evaluation of possible interference into existing FM stations.

I'm now going to ask you some questions to ensure that your comments satisfy the minimum requirements for consideration.

2a. Have you, in fact, experienced interference on an existing FM station due to the adding of a new FM station adjacent to your older one?

(Go to Q. 2b) ← Yes 01  
(Terminate) ← No 02

2b. (IF YES,) What type of interference have you experienced; describe it to me please:

Access to the station. Cutting in and out, comes back, then static again. It will be playing, then static, then sound comes back, then static again and it keeps that up. Also, I have heard a high pitched whining noise.

2c. What was your response to the occurrence; what did you do, once you noticed it?

Checked other stations to see if it was my radio. All other stations were o.k.

2d. Did you change stations when it occurred; or did you just leave it alone until it cleared up?

- Changed stations  01
- Left alone  02
- Other
- Don't know

3. What was the date of the last occurrence you've just described?

today, 11/1/02

4. What was the time of that last occurrence?

9:00 AM

5. Approximately, how long did that last occurrence last?

I don't know. I waited 15 minutes.

6. Which station - by name, call letters or number - were you listening to when the last occurrence occurred?

6a. Station name: \_\_\_\_\_

6b. Call letters: KMOJ

6c. Frequency Number: 89.9

7. Which type of programming were you listening to when the last interference occurred? Was it:

- Rock 01
- Soft Rock 02
- R & B, or Rhythm & Blues  03
- Alternative 04
- Jazz 05
- Country 06
- Oldies 07
- News/Talk 08
- Gospel 09
- Christian 10
- Top 40 11
- Classical 12
- Or, something else

(PROBE & CLARIFY) \_\_\_\_\_

8. Did this occurrence you've described, happen while you were in an automobile or while you were at home?

- (Go to Q. 9) ← Automobile  01
- (Go to Q. 11) ← Home  02
- Other  03
- Don't know  04

9. What is the year and make or model of the car you were in at the time of this occurrence?

Year: 1997

Model: Honda

Make: Civic



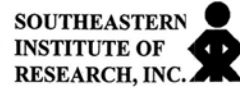
Contract No. 50181

## **Winters, CA**

No public comments were received for this site.

# Benicia, CA

SIR #6343 (RGS #2)



## LOW POWER FREQUENCY MODULATION

11/11

Questionnaire # \_\_\_\_\_

Sources:

( - )

- FMAV@SIRresearch.com (Avon, CT)
- FMBR@SIRresearch.com (Brunswick, ME)
- FMEB@SIRresearch.com (East Bethel, MN)
- FMOW@SIRresearch.com (Owatonna, MN)
- FMWI@SIRresearch.com (Winters, CA)
- FMBE@SIRresearch.com (Benicia, CA)

*VALLE 30, & A*

Start time: \_\_\_\_\_

### Introduction

Hello, this is (Leigh) at Southeastern Institute of Research. I'm working on a research project for the Federal Communications Commission Regarding the possible effects that a third party low power FM station might be having on other operating channels.

1. Is this the reason you are calling?

(Go to Q. 2) ← Yes 01  
(Go to Q. 1a) ← No 02

1a. For what reason are you calling?

\_\_\_\_\_  
\_\_\_\_\_

**(PROCEED IF RELATED TO JOB, OTHERWISE TERMINATE)**

2. I need to read to you a statement regarding legislation directed towards low power FM stations.

In December 2000, Congress passed legislation requiring the Federal Communications Commission to impose third-adjacent channel interference restrictions on Low Power FM stations. That legislation also directed the FCC to initiate an independent field-testing program to further investigate the possible effects that an LPFM station operating on the third-adjacent channel has on an existing FM station.

As part of this experimental program, Congress and the FCC are requesting feedback from the listening community. Your comments are being recorded by Southeastern Institute of Research, an independent agency and will be included in the overall evaluation of possible interference into existing FM stations.

I'm now going to ask you some questions to ensure that your comments satisfy the minimum requirements for consideration.

2a. Have you, in fact, experienced interference on an existing FM station due to the adding of a new FM station adjacent to your older one?

(Go to Q. 2b) ← Yes 01  
(Terminate) ← No 02

*Dont know*



2b. (IF YES,) What type of interference have you experienced; describe it to me please:

It does two things: one time it stopped completely, wiped off the air and a canned top 40's station came on. It also buzzes intermittently

2c. What was your response to the occurrence; what did you do, once you noticed it?

I looked for the notice to call you.

2d. Did you change stations when it occurred; or did you just leave it alone until it cleared up?

- Changed stations 01
- Left alone  02
- Other
- Don't know

3. What was the date of the last occurrence you've just described?

The buzzing was today, 11/11/02. The top 40's station came on last Friday.

4. What was the time of that last occurrence?

2:08 - Pacific time for buzzing, Don't remember when the top 40's station took over.

5. Approximately, how long did that last occurrence last?

3 seconds.

6. Which station - by name, call letters or number - were you listening to when the last occurrence occurred?

6a. Station name: \_\_\_\_\_

6b. Call letters: KQED

6c. Frequency Number: 88.5

7. Which type of programming were you listening to when the last interference occurred? Was it:

- Rock 01
- Soft Rock 02
- R & B, or Rhythm & Blues 03
- Alternative 04
- Jazz 05
- Country 06
- Oldies 07
- News/Talk 08
- Gospel 09
- Christian 10
- Top 40 11
- Classical 12
- Or, something else

(PROBE & CLARIFY)

National Public Radio (NPR)

8. Did this occurrence you've described, happen while you were in an automobile or while you were at home?

- (Go to Q. 9) ← Automobile 01
- (Go to Q. 11) ← Home  02
- Other 03
- Don't know 04

9. What is the year and make or model of the car you were in at the time of this occurrence?

Year: \_\_\_\_\_

Model: \_\_\_\_\_

Make: \_\_\_\_\_

10. And what direction was the car headed at this time?  
Was it headed:

- North 01
- East 02
- West 03
- South 04
- Northeast 05
- Northwest 06
- Southeast 07
- Southwest 08
- ( ) Or, something else
- Don't know

(ASK Q. 11, SKIP Q. 12)

11. What was the exact location of your radio at the time of interference?

Nearest Street Intersection:

Louisiana St. and Amador

City: Vallejo

State: CA

12. (HOME LISTENERS ONLY) Which type of radio were you listening to at the time of interference? Was it:

- A Boom Box 01
- A Walkman 02
- A Clock Radio 03
- A Vehicle Radio 04
- A typical Home Radio 05
- (PROBE & CLARIFY) Or, something else
- Home Sound System
- Don't know

And now, for my last questions:

What is your name: Martie O'Reilly

Your address: 1338 Louisiana

City/State/Zip: Vallejo, CA 94591

Your Phone Number: Refused

**THIS COMPLETES OUR SURVEY! THANK YOU FOR YOUR TIME. HAVE A GOOD EVENING!**

**Thank you for participating! Your Opinion Counts.**

Respondent gender:

- 1) Male
- 2) Female

Interviewer name: Myla Campbell

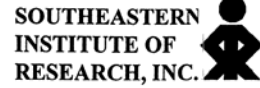
Date: 11/11/02

Time end: 5:15

Length of interview: \_\_\_\_\_

Interviewer ID # 114

SIR #6343 (RGS #2)



LOW POWER FREQUENCY MODULATION

11/12

Questionnaire # \_\_\_\_\_

Sources:

( - )

- FMAV@SIRresearch.com (Avon, CT)
- FMBR@SIRresearch.com (Brunswick, ME) Pleasant, CA
- FMEB@SIRresearch.com (East Bethel, MN)
- FMOW@SIRresearch.com (Owatonna, MN)
- FMWI@SIRresearch.com (Winters, CA)
- FMBE@SIRresearch.com (Benicia, CA) PLEASANT, CA.

Start time: 12:50 p.m

Introduction

Hello, this is (Leigh) at Southeastern Institute of Research. I'm working on a research project for the Federal Communications Commission Regarding the possible effects that a third party low power FM station might be having on other operating channels.

1. Is this the reason you are calling?

(Go to Q. 2) ← Yes 01  
(Go to Q. 1a) ← No 02

As part of this experimental program, Congress and the FCC are requesting feedback from the listening community. Your comments are being recorded by Southeastern Institute of Research, an independent agency and will be included in the overall evaluation of possible interference into existing FM stations.

1a. For what reason are you calling?

was interested. saw something about it and was interested.

I'm now going to ask you some questions to ensure that your comments satisfy the minimum requirements for consideration.

(PROCEED IF RELATED TO JOB, OTHERWISE TERMINATE)

2a. Have you, in fact, experienced interference on an existing FM station due to the adding of a new FM station adjacent to your older one?

(Go to Q. 2b) ← Yes 01  
(Terminate) ← No 02

2. I need to read to you a statement regarding legislation directed towards low power FM stations.

In December 2000, Congress passed legislation requiring the Federal Communications Commission to impose third-adjacent channel interference restrictions on Low Power FM stations. That legislation also directed the FCC to initiate an independent field-testing program to further investigate the possible effects that an LPFM station operating on the third-adjacent channel has on an existing FM station.

2b. (IF YES,) What type of interference have you experienced; describe it to me please:

Another hispanic on 96.9 FM, smiles, I think it's about smiles from the one I was listening to.

2c. What was your response to the occurrence; what did you do, once you noticed it?

Retuned the radio a little.

2d. Did you change stations when it occurred; or did you just leave it alone until it cleared up?

- Changed stations 01
- Left alone  02
- Other
- Don't know

3. What was the date of the last occurrence you've just described?

? Don't Remember

4. What was the time of that last occurrence?

Morning - ? - Don't know

5. Approximately, how long did that last occurrence last?

15-20 min

6. Which station - by name, call letters or number - were you listening to when the last occurrence occurred?

6a. Station name: 96.9 The Eagle

6b. Call letters: KSEG

6c. Frequency Number: 96.9

7. Which type of programming were you listening to when the last interference occurred? Was it:

- Rock  01
- Soft Rock 02
- R & B, or Rhythm & Blues 03
- Alternative 04
- Jazz 05
- Country 06
- Oldies 07
- News/Talk 08
- Gospel 09
- Christian 10
- Top 40 11
- Classical 12
- Or, something else

(PROBE & CLARIFY)

Classic Rock

8. Did this occurrence you've described, happen while you were in an automobile or while you were at home?

- (Go to Q. 9) ← Automobile 01
- (Go to Q. 11) ← Home  02
- Other 03
- Don't know 04

9. What is the year and make or model of the car you were in at the time of this occurrence?

Year: \_\_\_\_\_

Model: \_\_\_\_\_

Make: \_\_\_\_\_

10. And what direction was the car headed at this time?  
Was it headed:

- North 01
- East 02
- West 03
- South 04
- Northeast 05
- Northwest 06
- Southeast 07
- Southwest 08
- ( ) Or, something else
- Don't know

(ASK Q. 11, SKIP Q. 12)

11. What was the exact location of your radio at the time of interference?

Nearest Street Intersection:

Calletta - couple miles from Brewers

City: Pleasant

State: CA

12. (HOME LISTENERS ONLY) Which type of radio were you listening to at the time of interference? Was it:

- A Boom Box  01
- A Walkman 02
- A Clock Radio 03
- A Vehicle Radio 04
- A typical Home Radio 05
- (PROBE & CLARIFY) Or, something else
- Don't know

And now, for my last questions:

What is your name: Frank

Your address: P.O. Box 753

City/State/Zip: \_\_\_\_\_

Your Phone Number: \_\_\_\_\_

**THIS COMPLETES OUR SURVEY! THANK YOU FOR YOUR TIME. HAVE A GOOD EVENING!**

**Thank you for participating! Your Opinion Counts.**

Respondent gender:

- 1) Male
- 2) Female

Interviewer name: Bryan Hoover


Date: 11/12/02

Time end: 1:07 p.m

Length of interview: 17 minutes

Interviewer ID # 2436

SIR #6343 (RGS #2)

SOUTHEASTERN  
INSTITUTE OF  
RESEARCH, INC. 

LOW POWER FREQUENCY MODULATION

11/25

Questionnaire # \_\_\_\_\_

Sources:

( - )

- FMAV@SIRresearch.com (Avon, CT)
- FMBR@SIRresearch.com (Brunswick, ME)
- FMEB@SIRresearch.com (East Bethel, MN)
- FMOW@SIRresearch.com (Owatonna, MN)
- FMWI@SIRresearch.com (Winters, CA)
- FMBE@SIRresearch.com (Benicia, CA) *Vallejo*

Start time: \_\_\_\_\_

**Introduction**

Hello, this is Leigh at Southeastern Institute of Research. I'm working on a research project for the Federal Communications Commission Regarding the possible effects that a third party low power FM station might be having on other operating channels.

1. Is this the reason you are calling?

- (Go to Q. 2) ← Yes 01
- (Go to Q. 1a) ← No 02

As part of this experimental program, Congress and the FCC are requesting feedback from the listening community. Your comments are being recorded by Southeastern Institute of Research, an independent agency and will be included in the overall evaluation of possible interference into existing FM stations.

1a. For what reason are you calling?

\_\_\_\_\_  
\_\_\_\_\_

I'm now going to ask you some questions to ensure that your comments satisfy the minimum requirements for consideration.

**(PROCEED IF RELATED TO JOB, OTHERWISE TERMINATE)**

2a. Have you, in fact, experienced interference on an existing FM station due to the adding of a new FM station adjacent to your older one?

- (Go to Q. 2b) ← Yes 01
- (Terminate) ← No 02

2. I need to read to you a statement regarding legislation directed towards low power FM stations.

In December 2000, Congress passed legislation requiring the Federal Communications Commission to impose third-adjacent channel interference restrictions on Low Power FM stations. That legislation also directed the FCC to initiate an independent field-testing program to further investigate the possible effects that an LPFM station operating on the third-adjacent channel has on an existing FM station.

11/7/2002

1

2b. (IF YES,) What type of interference have you experienced; describe it to me please:

In the last couple of months.  
Public stations fades in and out.

2c. What was your response to the occurrence; what did you do, once you noticed it?

Got frustrated. Moved the radio  
around. Moved the antenna.

2d. Did you change stations when it occurred; or did you just leave it alone until it cleared up?

Changed stations  01  
Left alone  02  
changed stations between the Other   
two public stations.  
Don't know

3. What was the date of the last occurrence you've just described?

yesterday 11/24/02

4. What was the time of that last occurrence?

Early in the AM - 5 am

5. Approximately, how long did that last occurrence last?

all day and night, in and out

6. Which station - by name, call letters or number - were you listening to when the last occurrence occurred?

6a. Station name: \_\_\_\_\_

6b. Call letters: KQED

6c. Frequency Number: \_\_\_\_\_

7. Which type of programming were you listening to when the last interference occurred? Was it:

- Rock 01
- Soft Rock 02
- R & B, or Rhythm & Blues 03
- Alternative 04
- Jazz 05
- Country 06
- Oldies 07
- News/Talk  08
- Gospel 09
- Christian 10
- Top 40 11
- Classical 12
- Or, something else

(PROBE & CLARIFY) public affairs

8. Did this occurrence you've described, happen while you were in an automobile or while you were at home?

- (Go to Q. 9) ← Automobile  01
- (Go to Q. 11) ← Home  02
- Other  03
- Don't know  04

9. What is the year and make or model of the car you were in at the time of this occurrence?

Year: \_\_\_\_\_

Model: \_\_\_\_\_

Make: \_\_\_\_\_

10. And what direction was the car headed at this time?  
Was it headed:

- North 01
- East 02
- West 03
- South 04
- Northeast 05
- Northwest 06
- Southeast 07
- Southwest 08
- ( ) Or, something else
- Don't know

(ASK Q. 11, SKIP Q. 12)

11. What was the exact location of your radio at the time of interference?

Nearest Street Intersection:

Flying Dutchman Ct. + North Regatta Dr.

City: Vallejo

State: CA

12. (HOME LISTENERS ONLY) Which type of radio were you listening to at the time of interference? Was it:

- A Boom Box 01
- A Walkman 02
- A Clock Radio 03
- A Vehicle Radio 04
- A typical Home Radio 05

(PROBE & CLARIFY) Or, something else

portable  
Don't know

And now, for my last questions:

What is your name: refused

Your address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Your Phone Number: \_\_\_\_\_

**THIS COMPLETES OUR SURVEY! THANK YOU FOR YOUR TIME. HAVE A GOOD EVENING!**

**Thank you for participating! Your Opinion Counts.**

Respondent gender: -----

- ① Male
- 2) Female

Interviewer name: Myra Campbell

Date: 11/25/02


Time end: \_\_\_\_\_

Length of interview: \_\_\_\_\_

Interviewer ID # 1 1 4



SIR #6343 (RGS #2)

SOUTHEASTERN INSTITUTE OF RESEARCH, INC. 

LOW POWER FREQUENCY MODULATION

11/27

Questionnaire # \_\_\_\_\_

Sources:

( - )

- FMAV@SIRresearch.com (Avon, CT)
- FMBR@SIRresearch.com (Brunswick, ME)
- FMEB@SIRresearch.com (East Bethel, MN)
- FMOW@SIRresearch.com (Owatonna, MN)
- FMWI@SIRresearch.com (Winters, CA)
- FMBE@SIRresearch.com (Benicia, CA) -vallejo

Start time: \_\_\_\_\_

Introduction

Hello, this is (Leigh) at Southeastern Institute of Research. I'm working on a research project for the Federal Communications Commission Regarding the possible effects that a third party low power FM station might be having on other operating channels.

1. Is this the reason you are calling?

- (Go to Q. 2) ← Yes 01
- (Go to Q. 1a) ← No 02

As part of this experimental program, Congress and the FCC are requesting feedback from the listening community. Your comments are being recorded by Southeastern Institute of Research, an independent agency and will be included in the overall evaluation of possible interference into existing FM stations.

1a. For what reason are you calling?

\_\_\_\_\_  
\_\_\_\_\_

I'm now going to ask you some questions to ensure that your comments satisfy the minimum requirements for consideration.

(PROCEED IF RELATED TO JOB, OTHERWISE TERMINATE)

2a. Have you, in fact, experienced interference on an existing FM station due to the adding of a new FM station adjacent to your older one?

- (Go to Q. 2b) ← Yes 01
- (Terminate) ← No 02

Don't know

2. I need to read to you a statement regarding legislation directed towards low power FM stations.

In December 2000, Congress passed legislation requiring the Federal Communications Commission to impose third-adjacent channel interference restrictions on Low Power FM stations. That legislation also directed the FCC to initiate an independent field-testing program to further investigate the possible effects that an LPFM station operating on the third-adjacent channel has on an existing FM station.

11/7/2002

1

Public Comment 12 – Benicia, CA

2b. (IF YES,) What type of interference have you experienced; describe it to me please:

On the public stations, 88.5, in the eastern part of my house, it is 88.5, but in the western side, I can only get 88.3. Also, has a lot of background noise like somebody is talking in the background.

2c. What was your response to the occurrence; what did you do, once you noticed it?

I get really frustrated. I move the radio and speakers around.

2d. Did you change stations when it occurred; or did you just leave it alone until it cleared up?

Changed stations 01  
Left alone 02  
Moved the radio and the antenna around. Other   
Don't know

3. What was the date of the last occurrence you've just described?

It's continuous. Yesterday, Nov. 26.

4. What was the time of that last occurrence?

About 3:00p.m. (pac time)

5. Approximately, how long did that last occurrence last?

Don't know

6. Which station - by name, call letters or number - were you listening to when the last occurrence occurred?

6a. Station name: \_\_\_\_\_

6b. Call letters: Don't know

6c. Frequency Number: 88.5

7. Which type of programming were you listening to when the last interference occurred? Was it:

- Rock 01
- Soft Rock 02
- R & B, or Rhythm & Blues 03
- Alternative 04
- Jazz 05
- Country 06
- Oldies 07
- News/Talk 08
- Gospel 09
- Christian 10
- Top 40 11
- Classical 12
- Or, something else

(PROBE & CLARIFY)

An interview show. Fresh Air (maybe)

8. Did this occurrence you've described, happen while you were in an automobile or while you were at home?

- (Go to Q. 9) ← Automobile 01
- (Go to Q. 11) ← Home 02
- Other 03
- Don't know 04

9. What is the year and make or model of the car you were in at the time of this occurrence?

Year: \_\_\_\_\_

Model: \_\_\_\_\_

Make: \_\_\_\_\_

10. And what direction was the car headed at this time?  
Was it headed:

- North 01
- East 02
- West 03
- South 04
- Northeast 05
- Northwest 06
- Southeast 07
- Southwest 08
- ( ) Or, something else
- Don't know

(ASK Q. 11, SKIP Q. 12)

11. What was the exact location of your radio at the time of interference?

Nearest Street Intersection:

Seahorse and Datrigger

City: Vallejo

State: CA

12. (HOME LISTENERS ONLY) Which type of radio were you listening to at the time of interference? Was it:

- A Boom Box 01
- A Walkman 02
- A Clock Radio 03
- A Vehicle Radio 04
- A typical Home Radio 05

(PROBE & CLARIFY) Or, something else

BOSS compact CD player and radio

Don't know

And now, for my last questions:

What is your name: Kiane Mogel

Your address: 271 Seahorse Dr.

City/State/Zip: Vallejo, CA 94591

Your Phone Number: (707)645-0652

**THIS COMPLETES OUR SURVEY! THANK YOU FOR YOUR TIME. HAVE A GOOD EVENING!**

**Thank you for participating! Your Opinion Counts.**

Respondent gender:

- 1) Male
- 2) Female

Interviewer name: Myra Campbell

Date: 11/27/02

Time end: \_\_\_\_\_

Length of interview: \_\_\_\_\_

Interviewer ID # 114