Service Manual
THE FISHER

CHASSIS SERIAL NUMBERS BEGINNING 10001

PRICE $1.00
FISHER RADIO CORPORATION • 11-46 45th ROAD • LONG ISLAND CITY, N.Y. 11101
REQUIRED TEST EQUIPMENT

The following equipment is required to completely test and align modern high-fidelity amplifiers, tuners, and receivers.

- Line Voltage Auto-transformer or Voltage Regulator
- DC Vacuum Tube Volt-ohmmeter
- Accurately Calibrated AC Vacuum Tube Volt-ohmmeter
- Oscilloscope (1 Flat to 100 kHz Minimum)
- Low-Distortion Audio (Sine Wavel) Generator
- Intermodulation Distortion Analyzer
- Harmonic Distortion Analyzer
- 2 - Load resistors, 8-Ohms, 100 Watt (Minimum Rating)
- AM/FM Signal Generator
- 10.7 MHz Sweep Generator
- Multiplex Generator (preferably with RF output – FISHER 300)
- 455 kHz Sweep Generator
- Ferrite Test Loop Stick
- 2 – Full Range Speakers for Listening Test
- Stereo Source – Turntable, Tape Recorder, etc.
- Soldering Iron with Small Tip, Fully Insulated from AC Line
- Suction Desoldering Tool

CAUTION: This precision high-fidelity instrument should be serviced only by qualified personnel, trained in the repair of transistor equipment and printed circuitry.

Many of these items are included only as a reminder – they are normal procedures for experienced technicians. Shortcuts may be taken, but these often cause additional damage to transistors, circuit components, or printed circuit boards.

SOLDERING: A well-tinned, hot, clean soldering iron tip will make soldering easier, without causing damage to the printed circuit board or the components mounted on it. Regular use of a sponge cleaner will maintain a clean soldering surface. The heat available at the tip, (not the wattage of the iron) is important. Some 50-watt irons reach temperatures of 1,800°F, while others will hardly melt solder. Small-diameter tips should be used for single solder connections, pyramidal and chisel tips for large areas. Always disconnect the AC power cord from the line when soldering. Turning the power switch OFF is not sufficient. Power-line leakage paths, through the heating element of the iron, may destroy transistors.

PARTS REMOVAL: If a part is not being returned for warranty factory replacement, it may be cut in half (with diagonal cutting pliers) to make removal easier. Multiple terminal parts, such as IF transformers, or electrolytic capacitors, should be removed using special de-soldering tips made especially for this purpose. Removing solder from terminals, reduces the possibility of breaking the printed circuit board when the part is removed.

ACCIDENTAL SHORTS: A clean working area, free of metal particles, screws, etc., is an important precaution in avoiding servicing problems. Screws, removed from the chassis during servicing, should be stored in a box until needed. While a set is operating, it takes only an instant for a base-to-collector short to destroy a transistor (and others direct-coupled to it). In the time it takes for a dropped machine screw, washer, or screwdriver, to contact a pair of socket terminals (or terminal chassis), a transistor can be ruined.

SOLID-STATE DEVICES: Integrated Circuits contain the equivalent of many circuit elements, including transistors, diodes, resistors, and capacitors. The preferred troubleshooting procedure requires isolating the trouble to one stage using AC signal tracing methods. Once the suspected stage is located, the DC voltages at the Input and output leads are measured to give an accurate indication of the operating conditions of the IC. DO NOT use an ohmmeter to check continuity with the IC mounted on the printed circuit board. Forward biasing the internal junctions within the IC may burn out the transistors.

Online troubleshooting procedures are checked first, to prevent the replacement IC from failing immediately due to a defect in the connecting components. Solder and unsolder each lead separately using a pint or other heat sink on the lead to prevent damage from excessive heat. Check that the leads are connected to the correct locations on the printed circuit board before turning the set on.

Whenever possible, a transistor tester should be used to determine the condition of a transistor or diode. Ohmmeter checks do not provide conclusive data, and may even destroy the functional within the device.

Never attempt to repair a transistor power amplifier module until the power supply filter-capacitors are fully discharged.

If an output or driver transistor becomes defective (open or short), always check ALL direct-coupled transistors and diodes in that channel. In addition, check the bias pot., and other parts in the bias network, before installing replacement transistors. All output and driver transistors in one channel may be destroyed if the bias network is defective. After parts replacement, always check the bias adjustment for specified idling current.

In some applications, replacement of transistors must be made from the same beta group as the original type. The beta group is indicated by a colored marking on the transistor. Be sure to include this information when ordering replacement transistors.

When mounting a replacement power transistor, be sure the bottom of the flange, mica insulator, and the surface of the heat sink, are free of foreign matter. Dust and grit will prevent flat contact, reducing heat transfer to the heat sink. Metallic particles can puncture the insulator, cause a short, and destroy the transistor.

Silicone grease must be used between the transistor and the mica insulator, and between the mica and the heat sink, for best heat transfer. Use Dow-Corning DC-3, or an equivalent compound made for power transistor heat conduction.

Use care when making connections to speakers and output terminals. To reduce the possibility of shorts, lugs should be used on the exposed ends, or stranded wire should be tied to prevent frayed wire ends. Current in the speakers and output circuitry is quite high – poor contacts, or small sized wire, can cause significant power losses in the system. For wire lengths greater than 30 feet, 16 AWG, or heavier, should be used.

VOLTAGE MEASUREMENTS: All voltages are measured with the line voltage adjusted to 120 volts. All measured voltages are ±10%. DC voltages are measured around with a VTVM, with no signal input unless otherwise noted. AC signal voltages are measured under the conditions specified on the schematic.

ALIGNMENT PROCEDURES: DO NOT attempt realignment unless the required test equipment is available, and the alignment procedure is thoroughly understood.

BECAUSE ITS PRODUCTS ARE SUBJECT TO CONTINUOUS IMPROVEMENT, FISHER RADIO CORPORATION RESERVES THE RIGHT TO MODIFY ANY DESIGN OR SPECIFICATION WITHOUT NOTICE AND WITHOUT INCURRING ANY OBLIGATION.
**REMOVING DRESS PANEL**

1. Disconnect AC power cord.
2. Remove the screws which hold the top and bottom covers to the chassis. (On 260-T, 24R chassis, also remove screws holding top cover to heat link.) Remove the covers.
3. Gently pull the eight leads off the terminal pins behind the TUNE-O-MATIC dial assembly. These push-on terminal leads connect the panel-mounted dial assembly to the chassis circuitry and must be disconnected in order to remove the dress panel. Label each lead with its associated pin location to make replacement easier later.
4. Gently pull all knobs off the front dress panel control shafts. Remove the hex nuts from the shafts and remove panel by pulling forward over the shafts.
5. Reverse procedure for reassembly.

**REMOVING DIAL GLASS ASSEMBLY**

1. Remove dress panel. Refer to REMOVING DRESS PANEL procedure.
2. Gently pull the four leads from the terminal pins on the top rear of the meter and label each lead with its associated pin location for easy replacement later.
3. Gently pull the two pairs of dial lamp leads from the terminal pins on the back of each lead.
4. Gently pull the pair of meter leads from the terminal pins on the back of each lead.

**REPLACING DIAL LAMPS**

1. Remove dress panel. Refer to REMOVING DRESS PANEL procedure.
2. Snap out the defective lamp from the spring clip. Place the new lamp in the socket making sure that the unsoldered side of the lamp faces the top of the glass lens.
3. Replace the front dress panel and secure with the hex nuts removed previously. Replace the knobs on the control shafts.
4. Reconnect the terminal leads (removed previously) to their respective terminal pins behind the TUNE-O-MATIC assembly.

**REPLACING DIAL ASSEMBLY**

1. Remove dress panel. Refer to REMOVING DRESS PANEL procedure.
2. Remove dial glass assembly. Refer to REMOVING DIAL GLASS ASSEMBLY procedure.
3. Gently pry the meter off the dial glass panel, and scrape the residual adhesive off the panel.
4. Peel the backing from one side of the replacement adhesive mounting pad (FRC Part No. ESI1A218), and affix it to the replacement meter. Peel the backing from the bottom side of the adhesive, align the meter face over the dial panel cutout, and firmly press the meter to the back of the dial glass panel.
5. Replace the dial glass assembly.
6. Retighten the dress panel. Reconnect all leads (removed previously) to their respective terminal pins.
7. Check meter calibration. Refer to TUNING METER CALIBRATION procedure.
8. Remount top and bottom covers removed previously.

**REPLACING METER**

1. Remove dress panel. Refer to REMOVING DRESS PANEL procedure.
2. Remove dial glass assembly. Refer to REMOVING DIAL GLASS ASSEMBLY procedure.
3. Gently pry the meter off the dial glass panel, and scrape the residual adhesive off the panel.
4. Peel the backing from one side of the replacement adhesive mounting pad (FRC Part No. ESI1A218), and affix it to the replacement meter. Peel the backing from the bottom side of the adhesive, align the meter face over the dial panel cutout, and firmly press the meter to the back of the dial glass panel.
5. Replace the dial glass assembly.
6. Retighten the dress panel. Reconnect all leads (removed previously) to their respective terminal pins.
7. Check meter calibration. Refer to TUNING METER CALIBRATION procedure.
8. Remount top and bottom covers removed previously.

**REPLACING STEREO BEACON AND METER LAMPS**

**CLEANING FRONT PANEL**

**DIAL STRINGING**

1. Remove dress panel. Refer to REMOVING DRESS PANEL procedure.
2. Remove dial pointers.
3. Remove dial glass assembly. Refer to REMOVING DIAL GLASS ASSEMBLY procedure.
4. Rotate the tuning capacitor drive drum to its maximum CW position. Loosen the two machine screws at the center of the drive drum and remove the old dial cord.
5. Tie end of new dial cord to one end of dial spring. Fatten spring to bottom right side inside drive drum. See Figure 5.
6. Run the dial cord through the slot in the rim of the drive drum and set in the underside of groove 3.
7. Pull dial cord taut and wrap 2 turns CCW around tuning shaft. See Figure 2.
8. Guide the dial cord under and around pulley "A", across to the left side, down and around pulleys "B" and "C". Keep the dial cord taut during this procedure.
9. Rotate the drive drum to its maximum CW position, allowing the cord to wind onto the drive drum. Keep the dial cord taut during this procedure.
10. Guide the dial cord under the drive drum and into groove 5. Bring the dial cord around groove 5 and into the slot in the drive drum. See Figure 3.
11. With the machine screws loosened, place the cord under the beveled washer, pull the dial cord taut, and tighten the screws.
12. Turn the tuning shaft to rotate the drive drum fully CCW and fully CW to distribute the tensioning along the dial cord.
13. Repeat steps (11) and (12) until dial spring is tautened.
14. Remount dial glass panel assembly using the four mounting screws removed previously.
15. Reconnect the ten leads (removed previously) to their respective terminal pins.
16. Place the dial cord over and under the tabs on the rear of the dial pointer (see detail), and place the pointer on the top of the dial glass panel rail.
17. Turn the tuning shaft fully CCW. Slide the dial pointer to zero (0) calibration mark on the logging scale while holding tuning shaft fully CCW. Cement dial pointer to dial cord to prevent slippage. Allow cement to thoroughly dry.
18. Retighten the dress panel and knobs. Reconnect the leads (removed previously) to their respective terminal pins behind the TUNE-O-MATIC assembly.
19. Check dial calibration. Refer to FM FRONT END ALIGNMENT and AM RF ALIGNMENT.
20. Remount top and bottom covers removed previously.

**REMOVING P.C. BOARDS**

To remove a board from its nylon mounts, squeeze the loop of each mounting clip (using pliers), and lift each corner of the board. To remount the board, align the mounting holes over the clips, and press firmly.

**SERVICING INTEGRATED CIRCUITS**

Integrated Circuits are used in this unit to approach the theoretical maximum of AM superheterodyne noise limiting. These IC's contain the equivalent of many circuit parts, including transistors, diodes, resistors, and capacitors. These integrated circuits are high-reliability devices, requiring minimum servicing. In the unlikely event that an IC requires servicing, it should be serviced in the same way as a transistor.

The preferred troubleshooting procedure requires isolating the trouble to one stage using AC signal tracing methods. Once the suspected stage is located, the integrated circuit can be checked by measuring the DC voltages at the input and output leads of the IC using a D.C. V.T.M. These DC voltage measurements give the most accurate indications of the operating conditions of the integrated circuit.

WARNING: Do not use an ohmmeter to check continuity with the IC mounted on the printed circuit board. Forward biasing the internal junctions within the IC may burn out the transistors.
POWER OUTPUT MEASUREMENT

The output amplifier of this unit is designed to deliver its full-rated power with program material levels or slew into 8-ohm loads for an infinite period of time. When a constant audio level is used as a signal to measure the maximum continuous RMS power output, the following procedures must be taken:

1. Measure the power output of one channel at a time.
2. Limit the measurement period to 10 minutes with a load resistance of 8 ohms.
3. 250-W: Use a load resistor with a power rating of at least 50 watts.
4. 480-W: Use a load resistor with a power rating of at least 100 watts.

WARNING: If the power output of both channels is measured simultaneously, use a 100-W load per channel and limit measurements to a period not longer than 5 minutes.

NOTE: The 400-W uses a high-temperature output switch to protect the amplifier against damage resulting from overheating. The switch disables the amplifier by eliminating drive signal in the audio control amplifier. When the amplifier cools to normal operating temperature, the cutoff switch automatically resets.

HARMONIC DISTORTION TEST

Set BALANCE, BASS, and TREBLE controls to their center positions. Set SELECTER switch to AUX. Depress MAIN SPEAKERS pushbutton switch; release all other pushbutton switches to off position.

1. Connect an 8-ohm, 100-watt resistor across the LEFT SPEAKERS MAIN terminals. In parallel with the load resistor, connect the input leads of an HD analyzer and the input leads of an accurately calibrated AC VTVM.
2. Connect a low-distortion 100-W sine-wave generator, set for 100 Hz, to the left channel AUX IN jack.
3. Set BALANCE to center. Allow at least 10 minutes warm-up time before making measurements.
4. Reduce VOLUME control to maximum.
5. Increase audio level generator for 30 watts output (16.5 V RMS across 8-ohm load). HD analyzer should read 0.5% or less.
6. Repeat preceding steps for right channel.

INTERMODULATION DISTORTION TEST

NOTE: Bypass C20 and C21 with direct connections for IM test on 24 Hz corner. Bypass C17 and C18 on 26 Hz.

Set BALANCE, BASS, and TREBLE controls to their center positions. Set SELECTER switch to AUX. Depress MAIN SPEAKERS pushbutton switch; release all other pushbutton switches to off position.

1. Connect an 8-ohm, 100-watt resistor across the LEFT SPEAKERS MAIN terminals. In parallel with the load resistor, connect the input leads of an HD analyzer and the input leads of an accurately calibrated AC VTVM.
2. Connect an IM-analysis generator output to the LEFT channel AUX IN jack.

NOTE: Allow set to warm up at least 10 minutes before making measurements.
3. Rotate VOLUME control to maximum.
4. Increase audio level generator for 30 watts output (12.7 V RMS across 8-ohm load). IM meter reading should be 1.0% or less.
5. Reduce 400-W: Increase IM-analyzer generator output for 50 watts output (16.4 V RMS across 8-ohm load). IM meter reading should be 1.0% or less.
6. Repeat preceding steps for right channel.

NOTE: If any of the preceding instructions differ from those in the IM-analyzer instruction manual, it is best to follow those instructions. If a load resistor of 100-W (or higher) rating is built into the IM analyzer, separate a load resistor is not required.

POWER AMPLIFIER CENTER VOLTAGE TEST

NOTE: Allow set to warm up at least 10 minutes before making measurements or adjustments. Power amplifier center voltage test should be performed before starting this procedure.

Set VOLUME control to minimum. Depress MAIN SPEAKERS pushbutton switch.

1. Connect DC VTVM across the LEFT SPEAKERS MAIN terminals. Meter should read 0 volts (100-W hf).
2. Connect DC VTVM across the RIGHT SPEAKERS MAIN terminals. Meter should read 0 volts (100-W hf).

POWER AMPLIFIER IDLING CURRENT ADJUSTMENT

NOTE: Allow set to warm up at least 10 minutes before making measurements or adjustments. Power amplifier center voltage test should be performed before starting this procedure.

Set VOLUME control to minimum. Depress MAIN SPEAKERS pushbutton switch.

1. Connect ground lead of DC VTVM pin 2B on left channel of predriver/ driver board. Connect probe of DC VTVM to pin 85 on predriver/driver board.
2. (24): 240-T, 244-T, 245-T, 247-T; Adjust pot R815 (OUTPUT BIAS ADJUST) for DC VTVM reading of 18 mV.
3. Adjust pot R815 (OUTPUT BIAS ADJUST) for DC VTVM reading of 18 mV.
4. Connect ground lead of DC VTVM to pin 85 on right channel of predriver/driver board. Connect probe of DC VTVM to pin 85 on predriver/driver board.
5. (24): 240-T, 244-T, 245-T, 247-T; Adjust pot R816 for DC VTVM reading of 18 mV.

NOTE: Remove the power cord and turn ON the power. Set SELECTER switch to AUX. Depress MAIN SPEAKERS pushbutton switch; release all other pushbutton switches to off position.

1. Connect an 8-ohm, 100-watt resistor across the LEFT SPEAKERS MAIN terminals. In parallel with the load resistor, connect the input leads of an HD analyzer and the input leads of an accurately calibrated AC VTVM.
2. Connect an IM-analysis generator output to the LEFT channel AUX IN jack.

NOTE: Set SELECTER switch to FM, and AFC switch to OFF. Turn VOLUME control to minimum. Depress MUTING OFFSET pushbutton switch.

3. Disconnect audio level lead from Test Point 301 (pin 2N on AM/ FM/IF, MFX board) and disconnect vertical AC input of scope to FM Test Point 301. Connect ground lead of scope to pin 30.
4. Connect an RZ resistor across scope input and set scope vertical sensitivity to 10 mV/cm.
5. Connect 10.7 MHZ sweep generator to Test Point 501 (pin 2N on MF R board). Connect ground lead of generator to pin 51. Adjust generator level and sweep to observe IF response curve.
6. Adjust top and bottom cores of C235, C236, and C230 for pin 24 of AM/FM/IF, MFX board; for symmetry and maximum gain.
7. Adjust top and bottom cores of L568 (on FM RF board) for maximum gain and symmetry. Repeat alignment until maximum gain and symmetry are obtained (see Figure 4).
8. Increase audio level generator to full output (approximately 100,000 V). If necessary, slightly readjust top core of 3205 to center 10.7 MHz marker (see Figure 5).
9. Reconnect the jumper lead to FM Test Point 301 (pin 2N on an AM/ FM/IF, MFX board). Disconnect the RZ resistor across scope input connected previously.
10. Reduce generator sweep to zero (sweep off). Adjust FM METER ADJ. pot, R236 on AM/ FM/IF, MFX board for front panel tuning meter reading of 4.5.
11. Connect a 100-k resistor in series with the vertical input of the scope and connect to FM Test Point 405 (pin 4A on AM/ FM/IF, MFX board). Use same AC scope sensitivity setting (100 mV/cm).
12. Adjust generator level and sweep to observe detector "S" curve. Adjust bottom core of C236 first, then top core for maximum gain and symmetry (see Figure 6).

FM FRONT END ALIGNMENT

NOTE: FM IF alignment should be performed before starting this procedure.

Set SELECTER switch to FM, and AFC switch to OFF. Turn VOLUME control to minimum. Depress MUTING OFFSET, and MONO MODE pushbutton switches. Depress MANUAL pushbutton on TUNE-O-MATIC dial assembly.

1. Set TUNING dial to point to zero (0) calibration mark on the logging scale. If the dial pointer is not centered on the 0 at the extreme end of the knob rotation, reposition the pointer assembly on the dial card and cement the pointer in place to prevent slippage. Allow cement to thoroughly dry.

NOTE: Repositioning the dial pointer may require realignment of AM RF board for correct AM station calibration.

2. Connect an accurately calibrated DC VTVM to Test Point 98 (on TUNE-O-MATIC circuit board). DO NOT USE DC VOM.
3. Rotate TUNING knob to center dial pointer on 88 MHz calibration mark on dial glass.
4. Using a small screwdriver, adjust R28, FM ALIGNMENT POT, for DC VTVM reading of exactly 4.3 volts Disconnect DC VTVM.

5. Connect an FM generator to the FM Antenna terminals. Use a 120-ohm connection with each connection. (See output from the generator (see Figure 7).

6. Connect a scope and an AC VTVM to either LEFT or RIGHT RCDR OUT jack.

7. Set FM generator frequency to receiver frequency, 95 MHz, modulated with 500 Hz, 375 kHz deviation. Set generator output level to low as possible.

8. Align (oscillator coil) L604 first, then (mixer coil) L581, and (IF coil) L502 for maximum reading on AC VTVM and tuning meter, and maximum waveform amplitude and symmetry.

9. Set generator frequency and TUNING dial pointer to 100 MHz. Align (oscillator trimmer) C612 first, then (mixer trimmer) C611, and (IF trimmer) C503 for maximum reading on AC VTVM and tuning meter, and maximum waveform amplitude and symmetry.

10. Repeat alignment several times until accurate dial calibration and maximum gain are obtained. Keep generator output level at low as possible during all adjustments.
NOTE: If the IF AM AND DETECTOR ALIGNMENT procedure (including calibration of tuning meter) has been completed, omit the following procedure. Use the following procedure to calibrate the tuning meter without IF alignment; i.e., after meter replacement.

Set SELECTOR switch to FM. TURN VOLUME control to minimum.

1. Connect an FM generator to the FM ANTEnna terminals. Use a 120-ohm composition resistor in series with each lead from the generator (see Figure 7).
2. Adjust generator frequency to the same frequency as receiver generator. Set receiver RF output to full output (approximately 100000 uV with audio modulation). Adjust generator frequency for peak tuning meter reading.
3. Adjust FM METEr ADJ. pot R238 (on AM/FM IF, MPX board) for tuning meter reading of 4.5.

Figure 7. Connections To Provide 300-ohm Generator Output Impedance. Matching Resistors Reduce Generator Voltage By Half At Antenna Terminals.

**MULTIPLICATION ALIGNMENT**

Two methods of aligning the multiplexer decoder are given. The preferred procedure uses a multiplexer generator with RF and IF output. However, the preferred method is to use a wide resistance match, such as the FISHER 300 Multiplexer Generator. This is the better method of alignment because the front end and IF stages are also checked through the use of this procedure. An alternate procedure for use with multiplexers not having a RF output is also given.

**PREFERRED ALIGNMENT PROCEDURE**

NOTE: Check the alignment of the IF amplifier before aligning the multiplexer decoder. Poor IF alignment may correct MPX alignment adjustments.
Set SELECTOR switch to FM. TURN VOLUME control to minimum. Depression MUTING OFF. (Refer to page 20). Depress MANUAL pushbutton on TUNE-O-MATIC dial assembly.

1. Connect RF output of multiplexer generator to the FM ANTEnna terminals. Use a 120-ohm composition resistor in series with each lead from the RF output (see Figure 5). Set MPX generator for external modulation with 19 kHz pilot carrier and 11.7 kHz deviation (100 kHz pilot, 9900). Tune receiver to RF frequency of MPX generator.
2. Connect DC VTCM to Test Point 403 (pin 40 on AM/FM IF, MPX board) for maximum reading on DC VTCM (2.5 to 4 VDC).
3. Connect output of audio generator, set for 1 kHz, to the external modulation input of MPX generator and to the external sync input of an oscilloscope. Adjust audio generator level for 1.2 volts peak-to-peak composite MPX input (1100 pilot, 9900 audio). See Figure 10. Note: Right channel only. Proceed with steps 10 through 15 of PREFERRED ALIGNMENT PROCEDURE.
4. Adjust the multiplexer decoder to pin 4A (on AM/FM IF, MPX board) removed previously.

Figure 10. Composite Input To Multiplexer Decoder.

**ADVANCED ALIGNMENT PROCEDURE**

Set SELECTOR switch to FM, and VOLUME control to minimum. Release all pushbutton switches to our postion.
1. Disconnect the jumper leading to pin 6A (on AM/FM IF, MPX board) and connect the output of the multiplexer generator through a 10k resistor to pin 6A.
2. Connect DC VTCM to Test Point 403 (on AM/FM IF, MPX board). Connect vertical input of the scope to pin 4A.
3. Set MPX generator for 19 kHz pilot carrier output only. Adjust pilot level for approximately 120 mV peak-to-peak input at pin 4A.
4. Adjust antenna RF output of scope to 3002 to 3001 (on AM/FM IF, MPX board) and 2702 (on AM RF board) for maximum gain and symmetry. Repeat steps until maximum gain and symmetry are achieved (see Figure 11).

Figure 11. Antenna RF Alignment

NOTE: Reassign the dial pointer may require reassigning of AM RF board for correct FM station calibration. (See Open the AM ANTEnna SMD link on the antenna terminals. Connect an AM generator to the AM ANTEnna and GND terminals.)
3. Connect a scope on AC VTCM to either the LEFT or RIGHT RCDR OUT link.
4. Set AM generator frequency and TUNING dial pointer to 600 kHz. Use 20% modulation with 400 Hz. Set generator output as low as possible.
5. Adjust capacitance coil 2701 (on AM RF board) for maximum reading on AC VTCM and maximum waveform amplitude and symmetry.
6. Set AM generator frequency and TUNING dial pointer to 1400 kHz. Adjust oscillator trimmer C703 (on AM RF board) for maximum reading on AC VTCM and maximum waveform amplitude and symmetry. (Note: Repeat alignment several times until accurate dial calibration and maximum gain are obtained.)
7. Repeat alignment several times until accurate dial calibration and maximum gain are obtained. Keep the generator output as low as possible during all adjustments.
8. Revert AM generator frequency and TUNING dial pointer to 600 kHz. Adjust the position of the small coil on the ferrite loop antenna for maximum reading on AC VTCM and maximum waveform amplitude and symmetry.
9. Note: To adjust the antenna coil, rotate the wax holding the small coil to the end of the ferrite loop antenna. Shift the coil back and forth for maximum audio indication. Secure the coil in position, remelt the wax.
10. Revert AM generator frequency and TUNING dial pointer to 1400 kHz. Adjust antenna trimmer C701 (on AM RF board) for maximum reading on AC VTCM and maximum waveform amplitude and symmetry.
11. Repeat steps 8 and 9 several times until maximum gain is obtained. Keep generator output as low as possible during all adjustments.
12. Test for peak alignment by setting AM generator and TUNING dial pointer to 600 kHz. Adjust generator output level for tuning meter reading of 3. Generator RF output should be read between 500 uV and 1600 uV.
13. Set AMP generator and TUNING dial pointer to 1400 kHz. Adjust generator output level for tuning meter reading of 3. Generator RF output level should read between 150 uV and 560 uV.