

TECHNICAL MANUAL



HARRIS

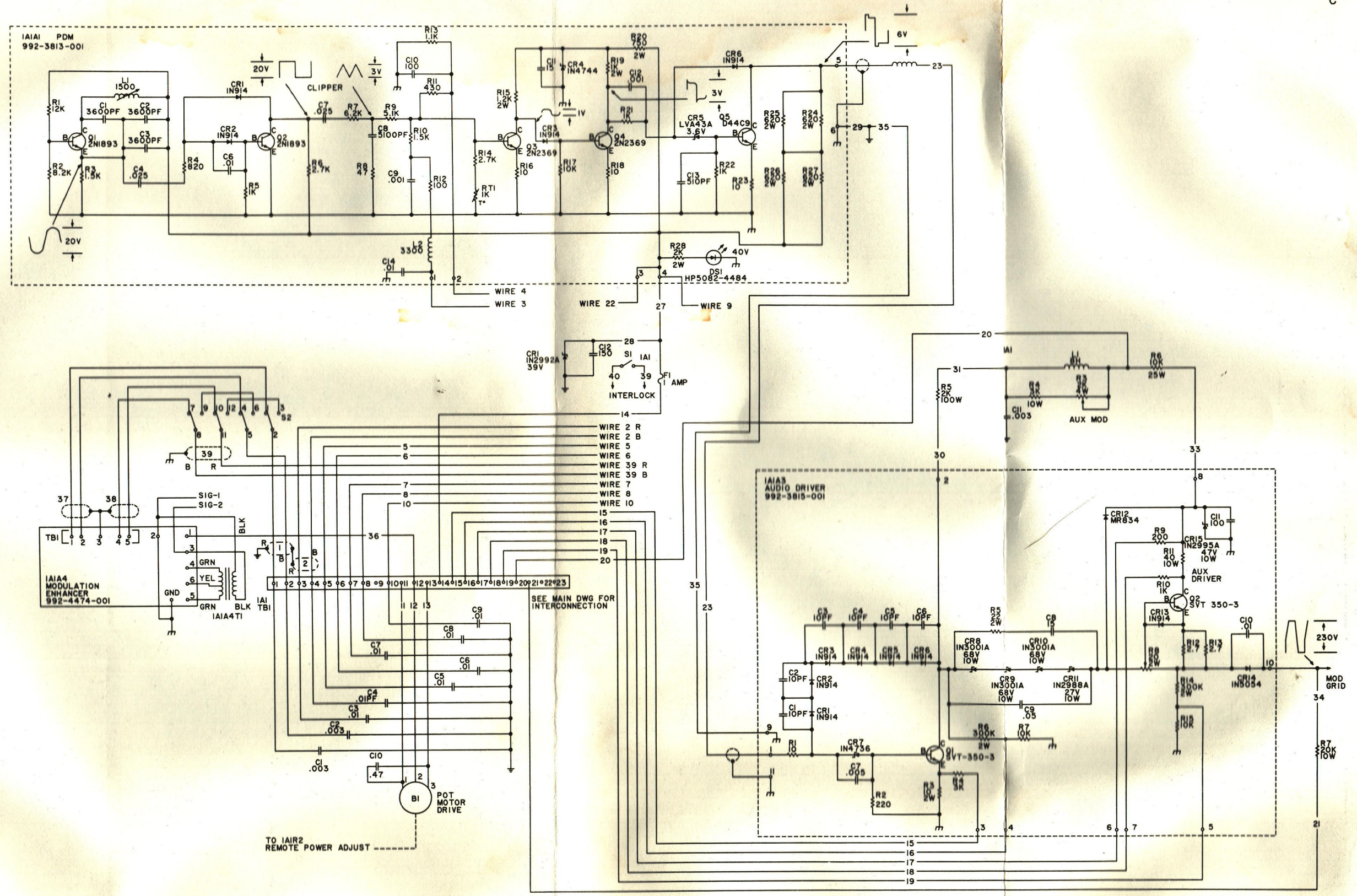
HARRIS CORPORATION Broadcast Group
P.O. Box 4290 Quincy, Illinois 62305-4290

If You Didn't Get This From My Site, Then It Is Stolen From

www.SteamPoweredRadio.Com

MANUAL REVISION HISTORY

MCN OR REV.NO.	MCN OR REV. DATE	ECN NO.	DESCRIPTION OF CHANGE
1	10/14/82	27067	<p>Page 5-4, Table 5-1. PDM Control and Feedback Board 1A1A2 - 992 5934 001. Change R12, 540 0919 000, Resistor, 2k ohm, 1/4W, 5% TO R12, 540 0912 000, Resistor, 1k ohms, 1/4W, 5%.</p> <p>Page 6-3/6-4, Figure 8-1. Schematic PDM Chassis (Sheet 1 of 2) 852 8926 001. Replace with Sheet 1 schematic 839 6354 001.</p> <p>Page 6-5/6-6, Figure 8-1. Schematic PDM Chassis (Sheet 2 of 2) 852 8926 001. Replace with Sheet 2 Schematic 839 6354 001.</p>



- 4. INDUCTANCE IN UH.
- 3. CAPACITANCE IN UF.
- 2. RESISTANCE IN OHMS.
- 1. RESISTORS ARE 1/2 WATT 5%.
- UNLESS OTHERWISE NOTED:

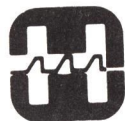
FIGURE 8-1. SCHEMATIC
PDM CHASSIS
(SHEET 1 OF 2)
839 6354 001

6-3/6-4

TECHNICAL MANUAL

MW-5A AND MW-10

AM BROADCAST TRANSMITTER AUDIO INPUT/PDM CONTROL AND
FEEDBACK BOARD MODIFICATION INSTRUCTIONS



HARRIS CORPORATION

Broadcast Products Division

T.M. No. 888-9000-007

© Copyright HARRIS CORPORATION
1981 All Rights Reserved

Printed: September 1981
Revision A: December 1981

If You Didn't Get This From My Site, Then It Is Stolen From

www.SteamPoweredRadio.Com

WARNING

THE CURRENTS AND VOLTAGES IN THIS EQUIPMENT ARE DANGEROUS. PERSONNEL MUST AT ALL TIMES OBSERVE SAFETY REGULATIONS.

This manual is intended as a general guide for trained and qualified personnel who are aware of the dangers inherent in handling potentially hazardous electrical/electronic circuits. It is not intended to contain a complete statement of all safety precautions which should be observed by personnel in using this or other electronic equipment.

The installation, operation, maintenance and service of this equipment involves risks both to personnel and equipment, and must be performed only by qualified personnel exercising due care. HARRIS CORPORATION shall not be responsible for injury or damage resulting from improper procedures or from the use of improperly trained or inexperienced personnel performing such tasks.

During installation and operation of this equipment, local building codes and fire protection standards must be observed. The following National Fire Protection Association (NFPA) standards are recommended as references:

- Automatic Fire Detectors, No. 72E
- Installation, Maintenance, and Use of Portable Fire Extinguishers, No. 10
- Halogenated Fire Extinguishing Agent Systems, No. 12A

WARNING

ALWAYS DISCONNECT POWER BEFORE OPENING COVERS, DOORS, ENCLOSURES, GATES, PANELS OR SHIELDS. ALWAYS USE GROUNDING STICKS AND SHORT OUT HIGH VOLTAGE POINTS BEFORE SERVICING. NEVER MAKE INTERNAL ADJUSTMENTS, PERFORM MAINTENANCE OR SERVICE WHEN ALONE OR WHEN FATIGUED.

Do not remove, short-circuit or tamper with interlock switches on access covers, doors, enclosures, gates, panels or shields. Keep away from live circuits, know your equipment and don't take chances.

WARNING

IN CASE OF EMERGENCY ENSURE THAT POWER HAS BEEN DISCONNECTED.

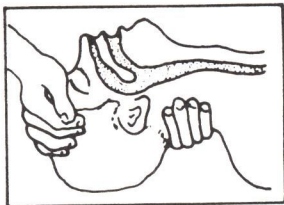
Treatment of Electrical Shock

1. If victim is not responsive follow the A-B-Cs of basic life support.

PLACE VICTIM FLAT ON HIS BACK ON A HARD SURFACE

(A) AIRWAY

IF UNCONSCIOUS,
OPEN AIRWAY



LIFT UP NECK
PUSH FOREHEAD BACK
CLEAR OUT MOUTH IF NECESSARY
OBSERVE FOR BREATHING

(B) BREATHING

IF NOT BREATHING,
BEGIN ARTIFICIAL
BREATHING

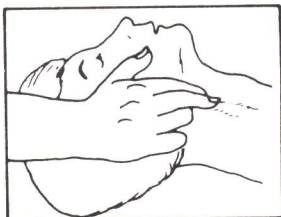


TILT HEAD
PINCH NOSTRILS
MAKE AIRTIGHT SEAL

4 QUICK FULL BREATHS

REMEMBER MOUTH TO MOUTH RESUSCITATION
MUST BE COMMENCED AS SOON AS POSSIBLE

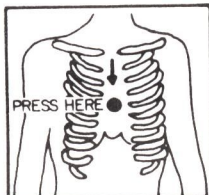
CHECK CAROTID PULSE



IF PULSE ABSENT,
BEGIN ARTIFICIAL
CIRCULATION

(C) CIRCULATION

DEPRESS STERNUM 1 1/2" TO 2"



APPROX. { ONE RESCUER
15 COMPRESSIONS
80 SEC. { 2 QUICK BREATHS

APPROX. { TWO RESCUERS
5 COMPRESSIONS
60 SEC. { 1 BREATH



NOTE: DO NOT INTERRUPT RHYTHM OF COMPRESSIONS
WHEN SECOND PERSON IS GIVING BREATH

Call for medical assistance as soon as possible.

2. If victim is responsive.

- a. keep them warm
- b. keep them as quiet as possible
- c. loosen their clothing
(a reclining position is recommended)

FIRST-AID

Personnel engaged in the installation, operation, maintenance or servicing of this equipment are urged to become familiar with first-aid theory and practices. The following information is not intended to be complete first-aid procedures, it is brief and is only to be used as a reference. It is the duty of all personnel using the equipment to be prepared to give adequate Emergency First Aid and thereby prevent avoidable loss of life.

Treatment of Electrical Burns

1. Extensive burned and broken skin

- a. Cover area with clean sheet or cloth. (Cleanest available cloth article.)
- b. Do not break blisters, remove tissue, remove adhered particles of clothing, or apply any salve or ointment.
- c. Treat victim for shock as required.
- d. Arrange transportation to a hospital as quickly as possible.
- e. If arms or legs are affected keep them elevated.

NOTE

If medical help will not be available within an hour and the victim is conscious and not vomiting, give him a weak solution of salt and soda: 1 level teaspoonful of salt and 1/2 level teaspoonful of baking soda to each quart of water (neither hot or cold). Allow victim to sip slowly about 4 ounces (a half of glass) over a period of 15 minutes. Discontinue fluid if vomiting occurs. (Do not give alcohol.)

2. Less severe burns - (1st & 2nd degree)

- a. Apply cool (not ice cold) compresses using the cleanest available cloth article.
- b. Do not break blisters, remove tissue, remove adhered particles of clothing, or apply salve or ointment.
- c. Apply clean dry dressing if necessary.
- d. Treat victim for shock as required.
- e. Arrange transportation to a hospital as quickly as possible.
- f. If arms or legs are affected keep them elevated.

REFERENCE: ILLINOIS HEART ASSOCIATION

AMERICAN RED CROSS STANDARD FIRST AID AND PERSONAL SAFETY MANUAL
(SECOND EDITION)

TABLE OF CONTENTS

<u>Paragraph</u>		<u>Page</u>
SECTION I. GENERAL DESCRIPTION		
1-1.	Introduction	1-1
SECTION II. INSTALLATION		
2-1.	Introduction	2-1
2-3.	Installation	2-1
2-5.	Audio Board Adjustment	2-3
2-6.	Bessel Filter Adjustment	2-4
2-7.	Low-Frequency -3 dB Point Adjustment	2-4
SECTION III. MAINTENANCE		
3-1.	Introduction	3-1
3-4.	Audio Input/PDM Control - Feedback Board	3-1
3-6.	Audio Board Alignment	3-1
SECTION IV. TROUBLESHOOTING		
4-1.	Introduction	4-1
4-5.	Technical Assistance	4-1
SECTION V. PARTS LIST		
5-1.	Introduction	5-1
5-4.	Replaceable Parts Service	5-1
SECTION VI. DIAGRAMS		
6-1.	Introduction	6-1

LIST OF TABLES

<u>Table</u>	<u>Page</u>
5-1. PDM Control and Feedback Board 1A1A2	5-2

LIST OF ILLUSTRATIONS

<u>Figure</u>	<u>Page</u>
6-1. Schematic PDM Chassis (Sheet 1 of 2)	6-3
6-1. Schematic PDM Chassis (Sheet 2 of 2)	6-5

SECTION I

GENERAL DESCRIPTION

1-1. INTRODUCTION

1-2. This Modification Technical Manual for the Updated Audio Input/PDM Control and Feedback Board contains instructions for the installation and checkout of the board. This Technical Manual is to be used when installing the new board in either the MW-5A or the MW-10 AM BROADCAST TRANSMITTER.

SECTION II

INSTALLATION

2-1. INTRODUCTION

2-2. This section contains documentation for the installation and checkout of the new Audio Input/PDM Control and Feedback Board 1A2A2.

2-3. INSTALLATION

2-4. Installation instructions are as follows:

NOTE

Insure proper operation of transmitter and existing Audio Input/PDM Control and Feedback Board. Check frequency response and distortion to be within specification.

- a. Set Control and Low Volts Circuit Breaker 1A4CB5 to OFF.

WARNING

DISABLE AND LOCK OUT PRIMARY STATION POWER TO THE TRANSMITTER. USE GROUNDING STICK AND CHECK ALL COMPONENTS FOR ELECTRICAL POTENTIAL BEFORE TOUCHING ANY COMPONENT.

- b. Lower PDM Chassis 1A1 access door.
- c. Use grounding stick to discharge any residual potential from all exposed components.
- d. Remove the six (6) nuts and washers that secure the PDM Control and Feedback Board to the access door.
- e. Unsolder the wiring harness from the pc board connection points. Tag all wires as to the board position from which they were removed.
- f. Solder the wiring harness to the connections points on the new pc board, making sure the connections are correct per the following chart.

WIRE
NUMBERS

TERMINAL
LETTERS

<u>MW-5A</u>	<u>MW-10A</u>	<u>1A2A2</u>
2B	2B	N
3	3	A
4	4	B
22	22	C
25	25	D
24	24	E
26	26	F
39R	1R	G
39B	1B	H
5	5	I
6	6	J
10	10	K
7	7	L
2R	2R	M
8	8	O
9	9	P

- g. Dress two 12-inch lengths of 18, 20, 22, or 24 gauge stranded insulated wire to the present PDM cable harness.
- h. Solder one end of the wires to terminals R and S on the new pc board. Solder the other ends of the wires to terminal 2 and 3 on the Modulation Enhancer pc board.

NOTE

For MW-5 Transmitters without the Modulation Enhancer the ac supply can be obtained from terminal board 1A1TB1-12 of the PDM chassis and ground. Because this source is not fused a 1/10 ampere, fast-blow fuse must be added to protect the new Audio board (the fuse and holder not furnished).

- i. Install the Modulation Enhancer safety shield and the new safety shield for terminals R and S on the new pc board.
- j. Compare values of resistor R20, capacitors C7 and C8 on the old pc board with resistor R64 and capacitors C43 and C44. If the values are different, remove components from the old board and use them to replace the components on the new board. This will insure flat frequency response.

NOTE

If further adjustment of frequency response is desired the value of resistor R64 of the new pc board may be varied to obtain the flattest overall frequency response.

- k. Position the new pc board on the six bolts and secure with the nuts and washers removed in step d.

2-5. AUDIO BOARD ADJUSTMENT. Ensure board controls are adjusted as outlined in paragraph 3-5a. Accomplish the following steps for adjustment:

- a. Complete normal transmitter start-up procedures, with no audio applied.
- b. Depress POWER HIGH switch and adjust HI POWER potentiometer R52 CW until normal high operating power is attained.
- c. Depress POWER LOW switch and adjust LO POWER potentiometer R53 CW until normal low operating power is attained.
- d. Set Modulation Enhancer operate/bypass switch to the bypass position.
- e. With the transmitter operating in the HIGH POWER configuration, apply +10 dB 300 Hz sinusoidal audio signal to the transmitter input and adjust INPUT GAIN potentiometer R11 for 100% modulation.
- f. Alternately remove and apply the +10 dB 300 Hz audio input signal while adjusting CARRIER SHIFT potentiometer R35 for no change in the carrier level, as indicated on the station modulation monitor.

NOTE

DUE TO DIODE NONLINEARITIES, A MODULATION TRACKING ADJUSTMENT WILL BE NECESSARY ON MOST TRANSMITTERS.

- g. Reduce the 300 Hz audio input level until 90% modulation is indicated on the station modulation monitor.
- h. Adjust HI POWER potentiometer R52 for a 50% power reduction. Re-adjust RF input level if the station modulation monitor is not accurate over a wide range of power levels. If the modulation changes more than 1% from 90%, adjust MODULATION TRACKING potentiometer R41 one turn CW. Because potentiometer R41 will vary absolute modulation levels, readjust audio input level or INPUT GAIN potentiometer R11 each time potentiometer R41 is adjusted. Readjust HI POWER potentiometer R52 for nominal power output and

recheck modulation tracking. If CW adjustment of potentiometer R41 decreases tracking accuracy, adjust potentiometer R41 CCW and repeat the procedure until proper power tracking accuracy is obtained. This is an interactive process and results will depend on modulation monitor accuracy, operator patience, and careful, deliberate adjustment. If proper power tracking accuracy cannot be obtained, connect a Volt/Ohm meter to pin 10 of integrated circuit U3 (under the tab) and adjust potentiometer R41 for 0.0 Vdc.

- i. Apply a +10 dB 300 Hz sinusoidal audio signal to the transmitter input and adjust INPUT GAIN potentiometer R11 for 100% modulation.
- j. Depress POWER LOW switch and adjust LO POWER AUDIO potentiometer R42 for 100% modulation.
- k. With no audio signal applied to the transmitter and plug P1 in any position in jack J1, adjust HUM NULL potentiometer R29 CW until a dip in noise measurement is noted. If noise increases or no dip is observed, adjust potentiometer R29 fully CCW and reposition plug P1 to another position in jack J1. Repeat the procedure until a dip in noise measurement is noted.
- l. With modulation on and transmitter operating in the HIGH POWER mode, adjust DISS LIMITER potentiometer R38 CCW until a slight reduction in PA PLATE VOLTS meter or POWER meter indication is noted. Readjust potentiometer R38 about 1/4 turn CW.

2-6. BESSEL FILTER ADJUSTMENT. The besseL filter, as supplied with the Audio Board, has a 15k-ohm resistor network (R19) which will significantly reduce overshoot without affecting transmitter frequency response. The 15k-ohm network may be replaced with a 22k-ohm, 27k-ohm, 33k-ohm, or 39k-ohm network, thus further reducing overshoot and move the transmitter's f_{3dB} down in frequency. The optimum network value will be determined by the station audio processing equipment and station format requirements.

2-7. LOW-FREQUENCY -3 DB POINT ADJUSTMENT. With inadequate processing, dc overload or erratic supply current may present a problem. If carrier shift under modulation is severe, check the output of the processing equipment with a dc coupled oscilloscope. The resulting oscilloscope base line should be steady. If the base line oscillates, adjust the station processing equipment. If, however the processing equipment cannot be adjusted to produce a steady base line, capacitor C45 should be replaced with a lesser value to correct the problem.

SECTION III

MAINTENANCE

3-1. INTRODUCTION

3-2. This section presents alignment procedures for the AUDIO INPUT/PDM CONTROL and FEEDBACK board.

3-3. Refer to MW-5A AM BROADCAST TRANSMITTER Technical Manual 888-1735-001 or MW-10 AM BROADCAST TRANSMITTER Technical Manual 888-1850-001 for maintenance and performance checks.

3-4. AUDIO INPUT/PDM CONTROL - FEEDBACK BOARD

3-5. Align the Audio board as follows:

a. Adjust the controls as follows prior to starting an alignment/adjustment procedure:

1. INPUT GAIN potentiometer R11 fully CCW.
2. CMRR potentiometer R66 fully CW.
3. HUM NULL potentiometer R29 fully CCW.
4. DISS LIMITER potentiometer R38 fully CW.
5. CARRIER SHIFT potentiometer R35 midrange.
6. LO POWER AUDIO potentiometer R42 midrange.
7. MODULATION TRACKING potentiometer R41 midrange.
8. HI POWER potentiometer R52 fully CCW.
9. LOW POWER potentiometer R53 fully CCW.
10. BESSEL FILTER IN/OUT switch set to the OUT position.

3-6. AUDIO BOARD ALIGNMENT. Ensure board controls are adjusted as outlined in paragraph 3-5. Accomplish the following steps for alignment:

a. Apply power to the transmitter and depress FILAMENT ON switch.

b. Check for the following voltages:

1. - Transistor Q3 emitter, $14.0 \pm 1.0V$.
2. - Transistor Q4 emitter, $-14.0 \pm 1.0V$.

- c. Jumper terminals G and H together and drive against ground using a low-distortion oscillator with an output impedance of 600 ohms or less.
- d. Connect an oscilloscope to pin 8 of integrated circuit U1C.
- e. Adjust the oscillator output to 0 dBm at 60 Hz and adjust CMRR potentiometer R66 for null. Null depth must be greater than 60 dBm.
- f. Remove jumper wire between terminals G and H.
- g. Drive terminals G and H with a balanced sinusoidal signal at 0 dBm, 300 Hz and adjust MODULATION TRACKING potentiometer R41 for a null at pin 7 and 8 of integrated circuit U3.
- h. Energize relay K1 by switching to transmitter LOW POWER.
- i. Adjust LO POWER AUDIO potentiometer R42 for null at pin 7 and 8 of integrated circuit U3.

SECTION IV
TROUBLESHOOTING

4-1. INTRODUCTION

4-2. Refer to figure 6-1 for schematic diagram of the Audio Input/PDM Control and Feedback board.

4-3. Refer to MW-5A AM BROADCAST TRANSMITTER Technical Manual 888-1735-001 or MW-10 AM BROADCAST TRANSMITTER Technical Manual 888-1850-001 for transmitter troubleshooting.

4-4. Prior to starting a troubleshooting procedure check all switches, power cord connections, connecting cables, and power fuses.

4-5. TECHNICAL ASSISTANCE

4-6. HARRIS Technical and Troubleshooting assistance is available from HARRIS Field Service Department 24 hours a day. Telephone 217/222-8200 to contact the Field Service Department or address correspondence to Field Service Department, HARRIS CORPORATION, Broadcast Products Division, P.O. Box 4290, Quincy, Illinois 62305-4290, USA. The HARRIS factory may also be contacted through a TWX facility (910-246-3312) or a TELEX service (40-4347).

SECTION V

PARTS LIST

5-1. INTRODUCTION

5-2. This section provides a description, reference designator, and part number for replaceable electrical parts and assemblies necessary for proper maintenance of the Audio Input and PDM Feedback module.

5-3. Refer to MW-5A AM BROADCAST TRANSMITTER Technical Manual 888-1735-001 or MW-10 AM BROADCAST TRANSMITTER Technical Manual 888-1850-001 for the other replacement parts information.

5-4. REPLACEABLE PARTS SERVICE

5-5. Replacement parts are available 24 hours a day, seven days a week from the HARRIS Service Parts Department. Telephone 217/222-8200 to contact the service parts department or address correspondence to Service Parts Department, HARRIS CORPORATION, Broadcast Products Division, P.O. Box 4290, Quincy, Illinois 62305-4290, USA. The HARRIS factory may also be contacted through a TWX facility (910-246-3312) or a TELEX service (40-4347).

888-9000-007

5-1

WARNING: Disconnect primary power prior to servicing.

WARNING: Disconnect primary power prior to servicing.

Table 5-1. PDM Control and Feedback Board 1A1A2 - 992 5934 001

REF. SYMBOL	HARRIS PART NO.	DESCRIPTION	QTY.
C1 thru C4	516 0074 000	Capacitor, .005 uF, 1 kV, 20%	4
C5 thru C10	500 0759 000	Capacitor, Mica, 100 pF, 500V	6
C11,C12	516 0453 000	Capacitor, 0.1 uF, 100V, 20%	2
C13	500 0759 000	Capacitor, Mica, 100 pF, 500V	2
C14	500 0832 000	Capacitor, Mica, 360 pF, 500V	1
C15	500 0838 000	Capacitor, Mica, 560 pF, 300V	1
C16	500 0759 000	Capacitor, Mica, 100 pF, 500V	1
C17	500 0827 000	Capacitor, Mica, 130 pF, 500V	1
C18 thru C21	516 0453 000	Capacitor, 0.1 uF, 100V, 20%	4
C22	522 0524 000	Capacitor, 10 uF, 25V	1
C23	526 0102 000	Capacitor, 150 uF, 6V	1
C24	516 0082 000	Capacitor, Disc, .01 uF, 1 kV, GMV	1
C25	522 0524 000	Capacitor, 10 uF, 25V	1
C26,C27	526 0097 000	Capacitor, 47 uF, 35V, 20%	2
C28,C29	526 0109 000	Capacitor, 22 uF, 20V, 20%	2
C30	500 0834 000	Capacitor, Mica, 430 pF, 500V	1
C31	522 0524 000	Capacitor, 10 uF, 25V	1
C32,C33	522 0232 000	Capacitor, 1 uF, 25V	2
C34	516 0082 000	Capacitor, Disc, 0.01 uF, 1 kV, GMV	1
C35	522 0255 000	Capacitor, 15 uF, 50V	1
C36	526 0108 000	Capacitor, 4.7 uF, 35V, 20%	1

Table 5-1. PDM Control and Feedback Board 1A1A2 - 992 5934 001 (Continued)

REF. SYMBOL	HARRIS PART NO.	DESCRIPTION	QTY.
C37,C38	522 0524 000	Capacitor, 10 uF, 25V	2
C39	500 0840 000	Capacitor, Mica, 680 pF, 300V	1
C40	526 0109 000	Capacitor, 22 uF, 20V, 20%	1
C41	508 0258 000	Capacitor, .001 uF, 600V, 10%	1
C42	508 0271 000	Capacitor, .025 uF, 100V, 10%	1
C43,C44	508 0424 000	Capacitor, .15 uF, 50V, 5%	2
C45	522 0523 000	Capacitor, 470 uF, 16V	1
CR1	384 0663 000	Diode Bridge, VM28	1
CR2 thru CR4	384 0205 000	Diode, 1N914	3
CR5,CR6	384 0020 000	Diode, 1N4005	2
CR7,CR8	384 0205 000	Diode, 1N914	2
CR9	385 0106 000	Diode, Zener, 1N4737	1
CR10,CR11	385 0082 000	Diode, Zener, 1N4744A	2
CR12,CR13	384 0205 000	Diode, 1N914	2
CR14,CR15	384 0663 000	Diode Bridge, VM28	2
CR16	384 0205 000	Diode, 1N914	1
J1	612 0904 000	Jack, PC Mount	1
K1	572 0127 000	Relay, 4 PDT, 24 Vdc	1
L1,L2	494 0419 000	Choke, RF, 1000 uH	2
L3,L4	494 0199 000	Choke, RF, 2200 uH, 10P	2
P1	610 0679 000	Plug, Shorting	1
Q1,Q2,Q3	380 0125 000	Transistor, 2N4401	3

Table 5-1. PDM Control and Feedback Board 1A1A2 - 992 5934 001 (Continued)

REF. SYMBOL	HARRIS PART NO.	DESCRIPTION	QTY.
Q4	380 0126 000	Transistor, 2N4403	1
R1 thru R4	540 0889 000	Resistor, 110 ohms, 1/4W, 5%	4
R5,R6	540 0908 000	Resistor, 680 ohms, 1/4W, 5%	2
R7,R8	540 0984 000	Resistor, 1 Megohm, 1/4W, 5%	2
R9,R10	540 0936 000	Resistor, 10k ohms, 1/4W, 5%	2
R11	550 0958 000	Potentiometer, 10k ohms, 1/2W, 10%	1
R12	540 0919 000	Resistor, 2k ohms, 1/4W, 5%	1
R13 thru R16	540 0936 000	Resistor, 10k ohms, 1/4W, 5%	4
R17	540 0935 000	Resistor, 9.1k ohms, 1/4W, 5%	1
R18	540 0936 000	Resistor, 10k ohms, 1/4W, 5%	1
R19	540 1334 000	Resistor Network, 15k ohms	1
R20	540 0935 000	Resistor, 9.1k ohms, 1/4W, 5%	1
R21	540 0904 000	Resistor, 470 ohms, 1/4W, 5%	1
R22	540 0923 000	Resistor, 3k ohms, 1/4W, 5%	1
R23	540 0922 000	Resistor, 2.7k ohms, 1/4W, 5%	1
R24	540 0950 000	Resistor, 39k ohms, 1/4W, 5%	1
R25	540 0929 000	Resistor, 5.1k ohms, 1/4W, 5%	1
R26	540 0952 000	Resistor, 47k ohms, 1/4W, 5%	1
R27	540 0880 000	Resistor, 47 ohms, 1/4W, 5%	1
R28	540 0977 000	Resistor, 510k ohms, 1/4W, 5%	1

Table 5-1. PDM Control and Feedback Board 1A1A2 - 992 5934 001 (Continued)

REF. SYMBOL	HARRIS PART NO.	DESCRIPTION	QTY.
R29	550 0958 000	Potentiometer, 10k ohms, 1/2W, 10%	1
R30	540 0936 000	Resistor, 10k ohms, 1/4W, 5%	1
R31	540 0872 000	Resistor, 22 ohms, 1/4W, 5%	1
R32	540 0922 000	Resistor, 2.7k ohms, 1/4W, 5%	1
R33	540 0929 000	Resistor, 5.1k ohms, 1/4W, 5%	1
R34	540 0872 000	Resistor, 22 ohms, 1/4W, 5%	1
R35	550 0623 000	Potentiometer, 5k ohms, 1/2W, 10%	1
R36	540 0905 000	Resistor, 510 ohms, 1/4W, 5%	1
R37	540 0912 000	Resistor, 1k ohm, 1/4W, 5%	1
R38	550 0626 000	Potentiometer, 10k ohms, 1/2W, 10%	1
R39	540 0904 000	Resistor, 470 ohms, 1/4W, 5%	1
R40	540 0936 000	Resistor, 10k ohms, 1/4W, 5%	1
R41,R42	550 0958 000	Potentiometer, 10k ohms, 1/2W, 10%	2
R43	540 0587 000	Resistor, 100 ohms, 2W, 5%	1
R44	540 0912 000	Resistor, 1k ohm, 1/4W, 5%	1
R45	540 0916 000	Resistor, 1.5k ohms, 1/4W, 5%	1
R46	540 0587 000	Resistor, 100 ohms, 2W, 5%	1
R476	540 0916 000	Resistor, 1.5k ohms, 1/4W, 5%	1
R48	540 0912 000	Resistor, 1k ohm, 1/4W, 5%	1
R49	540 0943 000	Resistor, 20k ohms, 1/4W, 5%	1

Table 5-1. PDM Control and Feedback Board 1A1A2 - 992 5934 001 (Continued)

REF. SYMBOL	HARRIS PART NO.	DESCRIPTION	QTY.
R50	540 0628 000	Resistor, 5.1k ohms, 2W, 5%	1
R51	540 0878 000	Resistor, 39 ohms, 1/4W, 5%	1
R52,R53	550 0976 000	Potentiometer, 25k ohms, 3/4W	2
R54	540 0932 000	Resistor, 6.8k ohms, 1/4W, 5%	1
R55	540 0942 000	Resistor, 18k ohms, 1/4W, 5%	1
R56	540 0949 000	Resistor, 36k ohms, 1/4W, 5%	1
R57	540 0966 000	Resistor, 180k ohms, 1/4W, 5%	1
R58	540 0912 000	Resistor, 1k ohm, 1/4W, 5%	1
R59,R60	540 0936 000	Resistor, 10k ohms, 1/4W, 5%	2
R61	540 0928 000	Resistor, 4.7k ohms, 1/4W, 5%	1
R62	540 0930 000	Resistor, 5.6k ohms, 1/4W, 5%	1
R63	540 0912 000	Resistor, 1k ohm, 1/4W, 5%	1
R64	540 0899 000	Resistor, 300 ohms, 1/4W, 5%	1
R65	540 0927 000	Resistor, 4.3k ohms, 1/4W, 5%	1
R66	550 0956 000	Potentiometer, 2k ohms, 1/2W 10%	1
S1	602 0143 000	Switch, Level DPDT, Dip	1
T1	472 0713 000	Transformer, Power	2
U1	382 0552 000	Integrated Circuit, TL074CN3	1
U2	382 0636 000	Integrated Circuit, TL071CP3	1
U3	382 0711 000	Integrated Circuit, AD534JH	1
XK1	404 0214 000	Socket, Relay, for K1	1

Table 5-1. PDM Control and Feedback Board 1A1A2 - 992 5934 001 (Continued)

REF. SYMBOL	HARRIS PART NO.	DESCRIPTION	QTY.
XR19	404 0675 000	Socket, Integrated Circuit 16 Contact, for R19	1
XU3	404 0303 000	Socket, Integrated Circuit, 10 Pin	1
	943 3854 001	Printed-Circuit Board	1

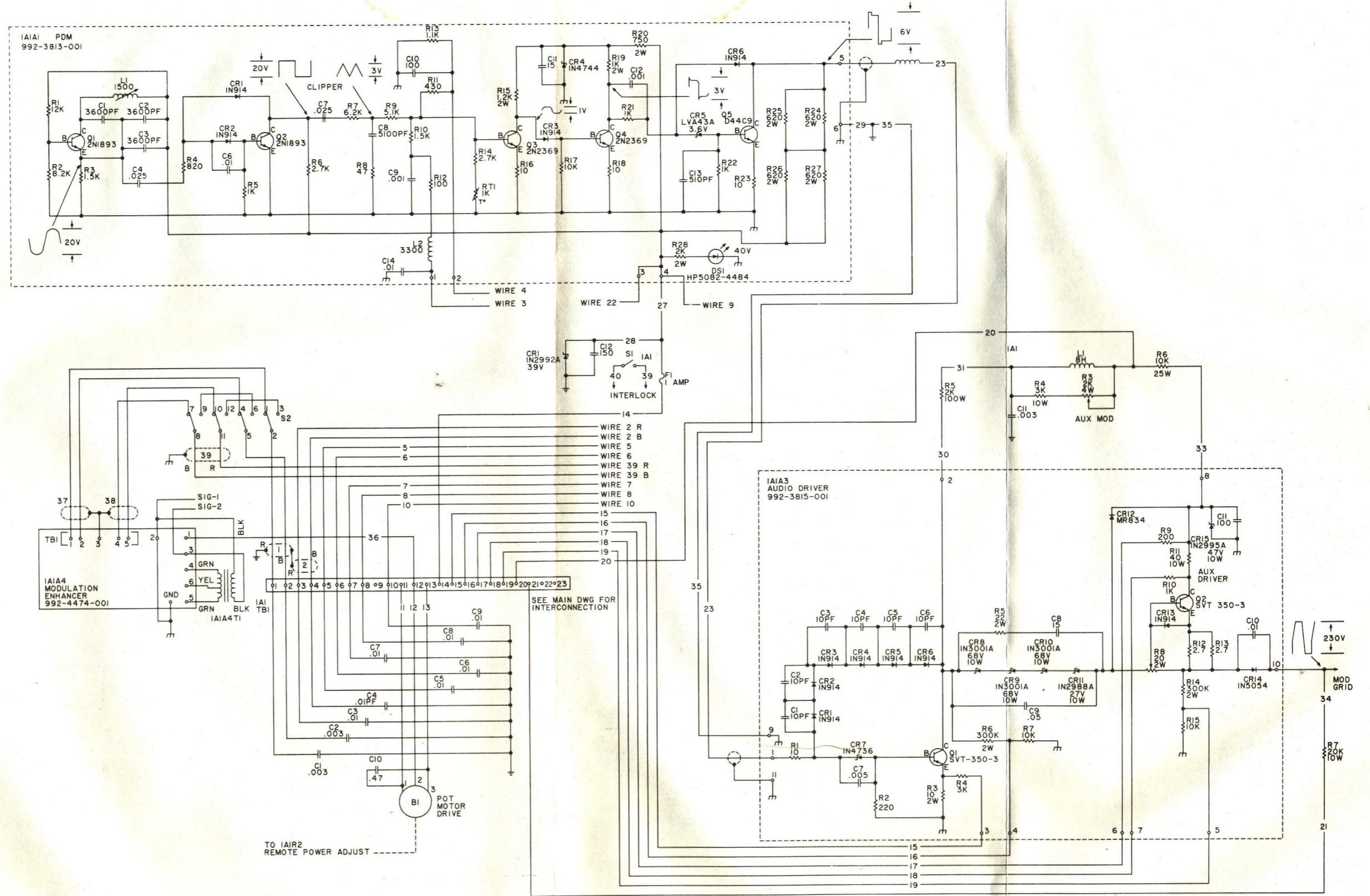
SECTION VI

DIAGRAMS

6-1. INTRODUCTION

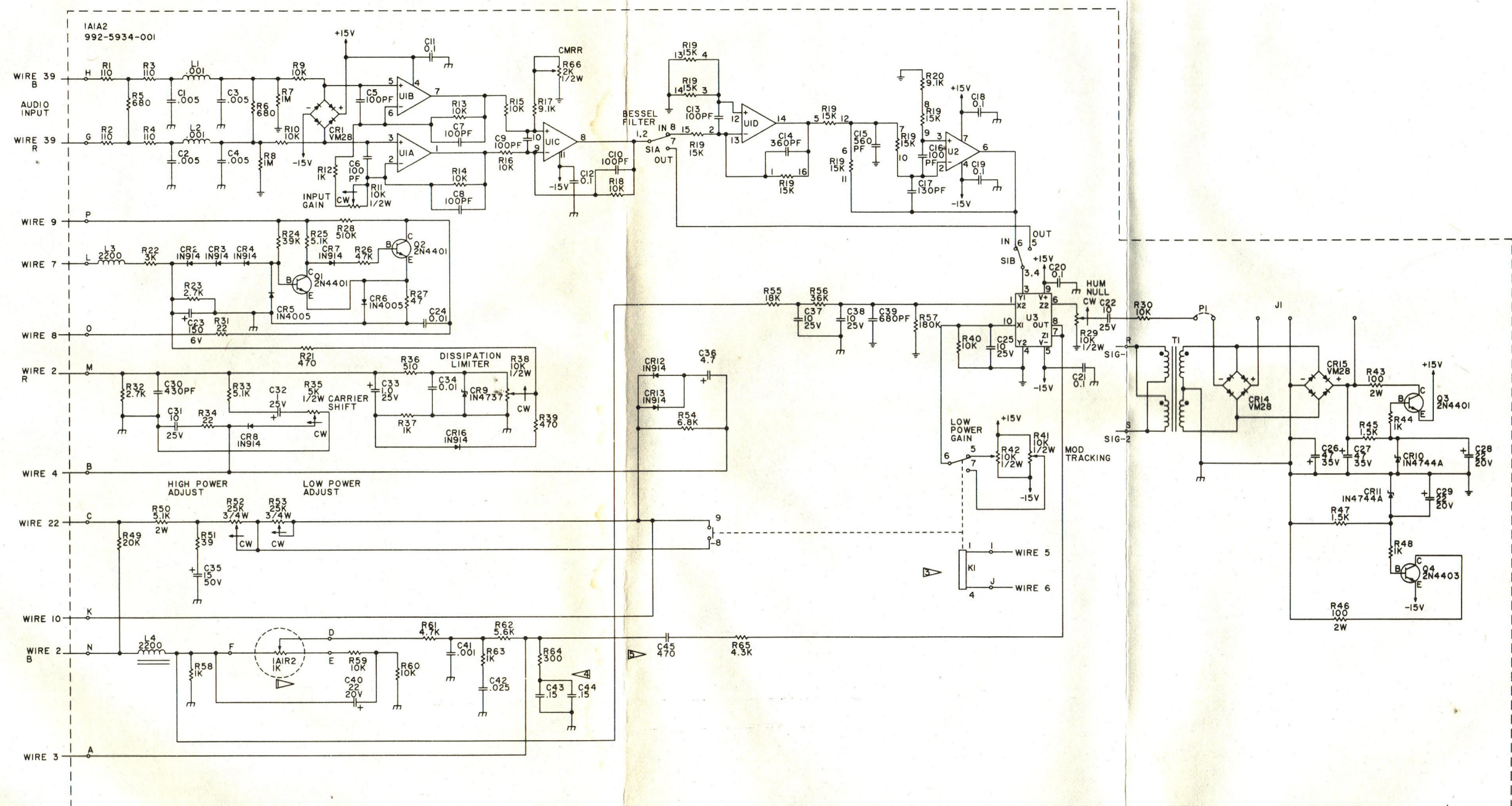
6-2. This section provides a schematic diagram for the PDM Control and Feedback Board.

6-3. Refer to MW-5A AM BROADCAST TRANSMITTER Technical Manual 888-1735-001 or MW-10 AM BROADCAST TRANSMITTER Technical Manual 888-1850-001 for the other schematics and wire running lists.



4. INDUCTANCE IN UH.
 3. CAPACITANCE IN UF.
 2. RESISTANCE IN OHMS.
 1. RESISTORS ARE 1/2 WATT 5%.
 UNLESS OTHERWISE NOTED:

FIGURE 8-1. SCHEMATIC
 PDM CHASSIS
 (SHEET 1 OF 2)
 839 6354 001



- ▷ C45 DETERMINES XMTR LF RESPONSE. IT MAY BE DECREASED IN VALUE IF DC OVERLOADS ARE PREVALENT
- ▷ R64, C43, C44 MAY BE SELECTED IN TEST FOR FLATEST FREQUENCY RESPONSE
- ▷ KI SHOWN IN RELAXED (LOW POWER) STATE
- 2. IC IDENTIFICATION:
 U1 - TLO74CN3
 U2 - TLO7ICP3
 U3 - AD534JH
- ▷ NOT ON BOARD, PART OF POT MOTOR DRIVE

FIGURE 8-1. SCHEMATIC
 PDM CHASSIS
 (SHEET 2 OF 2)
 839 6354 001