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# AMS-6000

## AUDIO MODE SELECTOR



# Installation and Operating Instructions

TiL Document No. 03RE325  
Revision n/c Issue 6

**AUGUST 2005**

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### Technisonic Industries Limited

240 Traders Boulevard, Mississauga, Ontario L4Z 1W7  
Tel: (905) 890-2113 Fax: (905) 890-5338  
[www.til.ca](http://www.til.ca)



**REVISION HISTORY**  
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REV/ Issue	SECTION - PAGE -	DESCRIPTION	DATE	Edited by
N/C		Original document	JUN 2003	
Iss 1	2.2.3	Squelch Lights para added & typos fixed as found.	DEC 2003	
Iss 2	3.4.2	Added second para "The AMS-6000 backlighting ..."	JUN 2004	
Iss 3	2.3 & Fig 2.3	Description of programming connector and mating cables in section 2.3 on page 2-3. Figure 2-3 on page 2-3 was corrected (CR# 05637)	AUG 2005	JR
Iss 4	Document 03RE325	Revise & Update Sections 2 and 3. Revision added regarding the 28Vdc. Separated wiring diagram into combined & separate mode drawings for simplicity. Corrected pinouts on drawings and tables. Reference CR #07069	AUG 2007	FM
Iss 5	Global	Incorporate New Document Template* affecting Title Page, Revision History, headers and Footers, adds Warranty page. Corrected typo in Revision History page. Figures 3.3 and 3.4 wiring diagram changes 5A fuse to 7.5A. Reference CR#10073	JUL 2010	FM
Iss 6	i 3.3.1&2	Added to Revision History page Changed from 5A to 7.5A the fused connection	OCT 2012	FM

\*NOTE: Editing may have caused pages to be added  
or re-sequenced as a result

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### **ESD CAUTION**



This unit contains static sensitive devices. Wear a grounded wrist strap and/or conductive gloves when handling printed circuit boards.

### **WARNING AND DISCLAIMER**

Changes or modifications not expressly approved by Technisonic Industries could void the user's authority to operate the equipment.

This manual is designed to provide information about the A790. Every effort has been made to make this manual as complete and accurate as possible.

### **WARRANTY INFORMATION**

The Model AMS-6000 is under warranty for one year from date of purchase. Failed units caused by defective parts, or workmanship should be returned to:

Technisonic Industries Limited  
240 Traders Boulevard  
Mississauga, Ontario L4Z 1W7

Tel: (905) 890-2113  
Fax: (905) 890-5338

Summary of DO-160C Environmental Testing for Technisonic Model AMS-6000, Audio Mode Selector:

Conditions	Section	Description of Conducted Tests
Temperature and Altitude	4.0	Equipment tested to categories C4 and D1.
Vibration	8.0	Equipment is tested without shock mounts to categories B, M and N.
Magnetic Effect	15.0	Equipment is class Z.
Power Input	16.0	Equipment tested to category B.
Voltage Spike	17.0	Equipment tested to category B.
RF Emission	21.0	Equipment tested to category Z.

**INSTALLATION APPROVAL NOTE**

Presently no TSO standard exists for airborne FM transceivers. To make it easier for installation agencies to provide their customers with an approved installation supported by an effective Airworthiness Approval, Technisonic has secured Supplemental Type Certificate (STC) Approvals (both US and Canadian) on its Airborne FM products for many helicopters currently being delivered in the US and Canada as well as a number of single engine fixed wing aircraft. The above referenced DO-160C test data is also on file and available from Technisonic to support approval requirements in airframes for which Technisonic does not possess an STC.

Approved aircraft types are listed in the attachments to the formal STC documents. These STCs are the exclusive property of Technisonic and require the written authority of Technisonic for their use. To assist Factory Authorized Technisonic Dealers in the certification process, we have placed copies of our Canadian and US STCs on our web site along with a letter of authorization for their use. These documents may be downloaded and used as support for the technical submission to FAA or Transport Canada. Only factory authorized dealers/installers are permitted to download and make use of these documents on behalf of their customers (end users) in support of regulatory agency approval. Please refer to the Technisonic web site [www.til.ca](http://www.til.ca) for the latest issue of available STCs and letter of authorization for use.

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## **SECTION 1 – GENERAL DESCRIPTION**

### **1.1 INTRODUCTION**

The following document covers both the installation and operation of the AMS-6000 Audio Mode Selector.

### **1.2 PURPOSE OF EQUIPMENT**

The AMS-6000 Audio Mode Selector is designed to provide enhancements to a TDFM-600/6000 series transceiver installation.

### **1.3 DESCRIPTION**

The AMS-6000 is an audio mode selector box that is designed to work in conjunction with the Technisonic TDFM-600/6000 series airborne FM transceivers. The AMS-6000 will combine the audio and key lines from up to three separate RF Bands in a TDFM-6000 and permit the TDFM-6000 to operate as a single transceiver from one position on an audio controller. The TDFM-6000 which operates on three RF bands normally requires three positions on an audio controller and the TDFM-600 normally requires two positions.

When the AMS-6000 is used in the “combined radio mode”, the receive signal from each of the three RF bands is annunciated by a receive LED and the transmit selection/indication functions for each band are also supported via transmit buttons with LED’s for each band.

Missions that require simultaneous operation of all three RF bands in a TDFM-6000 will also benefit from the use of an AMS-6000. If the AMS-6000 is used in the “separate radio mode”, all three RF bands of the TDFM-6000 are connected to three different audio controller positions. Receive indication on any of the three bands is annunciated on the AMS-6000. Transmit selection would be made via the audio controller in the separate radio mode. Given that the TDFM-6000 will only display information about a single band at once, the AMS-6000 will provide receive indication for all three bands and allow rapid response to RF traffic over multiple bands along with simulcast and cross band repeat capability also supported. The benefits of an AMS-6000 in the “separate radio mode” would be most pronounced when it is utilized with a three band TDFM-6000 series transceiver.

The AMS-6000 transmit selection keys can also be used to simulcast the transmit function on two or three of the RF bands or to invoke a cross band repeat function between any or all of the 3 bands. The simulcast and cross band repeat functions are supported in either the combined or separate radio modes. The AMS-6000 also provided a front panel connector to allow PC memory frequency and encryption key programming for each of the bands in the TDFM-6000 that it is installed with. This will pre-empt the requirement to wire a PC programming connector from the TDFM-6000/600 to a bulkhead connector in the airframe.

### **1.4 MODEL VARIATION**

There is only one version of the Model AMS-6000, P/N 031220-1. All units support both 5 and 28 volt back lighting and all are NVG compatible.

## 1.5 TECHNICAL CHARACTERISTICS

<u>Specification</u>	<u>Characteristic</u>
<b>GENERAL</b>	
Model Designation:	AMS-6000
Audio Positions:	3
Audio Modes:	Combined or Separate
RX Audio Output in Combined mode:	500mW into 600 ohms
RX Audio Output in Separate mode:	500mW into 600 ohms (supplied by the TDFM-6000)
TX Audio inputs:	0.145vrms (-10 dBm) nominal
TX Audio outputs:	0.145vrms (-10 dBm) nominal
Physical Dimensions:	Approx. 5.2" X 1.1" X 5.75"
Weight:	Approx. 13 oz. (370 g)
Mounting:	Panel Mount via DZUS fasteners
Operating Temperature Range:	-30°C to +70°C
Power Requirement:	
Voltage:	28.0 Vdc, ± 15%
Current:	2 amps max.
Back Lighting:	28 Volts or 5 Volts
Display Colour:	NVG Compatible Green

## SECTION 2 – OPERATING INSTRUCTIONS

### 2.1 FEATURES

The AMS-6000 provides the following features to a TDFM-600/6000 Transceiver installation:

1. The ability to connect a TDFM-600/6000 transceiver to a single audio panel position.
2. Displays squelch indication for each band in the TDFM-600/6000 simultaneously.
3. Displays transmit indication for each band in the TDFM-600/6000 simultaneously.
4. The ability to simulcast on any two or all three bands.
5. The ability to cross band repeat between any two or all three bands.
6. The program connector on the front panel allows for up or downloading of channels or encryption keys and installing firmware upgrades in the TDFM-600/6000 without the removal of the transceiver.

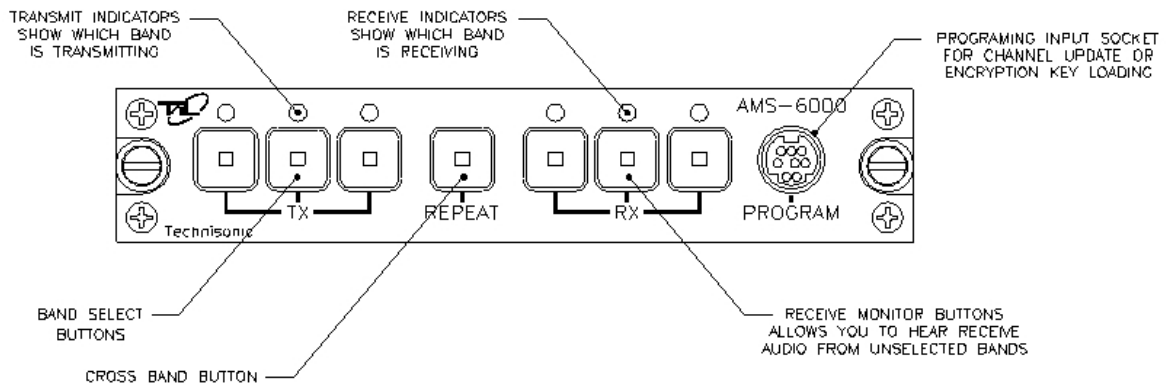


FIGURE 2.1 AMS-6000 Operator's Controls and Indicators.

## 2.2 OPERATING INSTRUCTIONS (See Figure 2.1)

- The AMS-6000 is automatically powered up when the avionics bus is switched on.
- Depending on the installation, the AMS-6000 will be operating in combined or separate radio mode.

### 2.2.1 Combined Mode:

This means that the AMS-6000 is being used to interface the two or three bands on a TDFM-600/6000 to a single position on an audio controller. In the combined mode configuration the AMS-6000 acts like a secondary audio controller expanding the transmit/receive capabilities of the aircraft's main audio panel. Aircraft audio panels connected to the AMS-6000 in a combined mode configuration will not provide simultaneous transmission capabilities for the separate bands available in the TDFM-600/6000 series radios.

- Receive indication for each band is annunciated by the receive squelch LEDs above each RX button.
- Transmit indicators are located above each corresponding TX button.
- The TX buttons select which band will transmit when the PTT is pressed.
- The transmit button selected will automatically deselect the previous activated TX button and reroute the corresponding receive audio to the main aircraft audio panel.
- To simulcast on two or three bands, the two or all three TX buttons will have to be pressed at the same time.
- The RX buttons have a toggle on/off function and provides the option of receiving multiple bands at the same time regardless of the TX button selection.
- Selecting the REPEAT button while two or more TX buttons are selected will result in a simulcast condition and a repeat condition. When a signal is received on one of the selected bands, it will also be retransmitted on the corresponding selected TX buttons.
- The repeat function works both ways but can only work in one direction at a time. This is determined by whichever receiver receives a signal first. The audio is routed so that everyone on all of the selected bands can hear each other, including the user in front of the TDFM-600/6000.
- Selecting REPEAT with only one TX button selected has no effect.

### 2.2.2 Separate Mode:

This means the AMS-6000 is working in parallel with an audio controller which has two or three positions available, one for each band on the TDFM-600/6000 Transceiver. Aircraft audio panels connected to the AMS-6000 in a separate mode configuration will provide simultaneous transmission capabilities for the separate bands available in the TDFM-600/6000 series radios.

- Receive indication for each band is annunciated by the receive squelch LEDs above each RX button.
- There are transmit indicators above each corresponding TX button.
- The RX buttons have no effect in this mode.

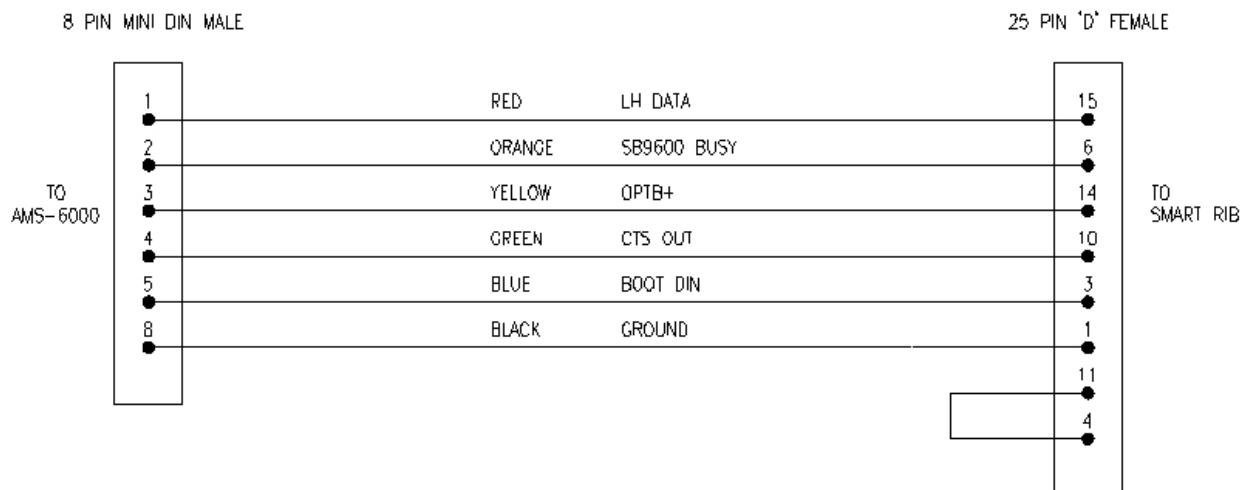
- Pressing a single TX button on the AMS-6000 has no effect since that function is provided by the main audio controller.
- Pressing two or more TX buttons will effectively be connecting the two or three bands together, routing TX and RX audio and PTT to the corresponding positions on the main audio controller. This selection results in a simulcast and receive condition.
- The REPEAT function works the same as it does in the combined mode.

### 2.2.3 Squelch Lights:

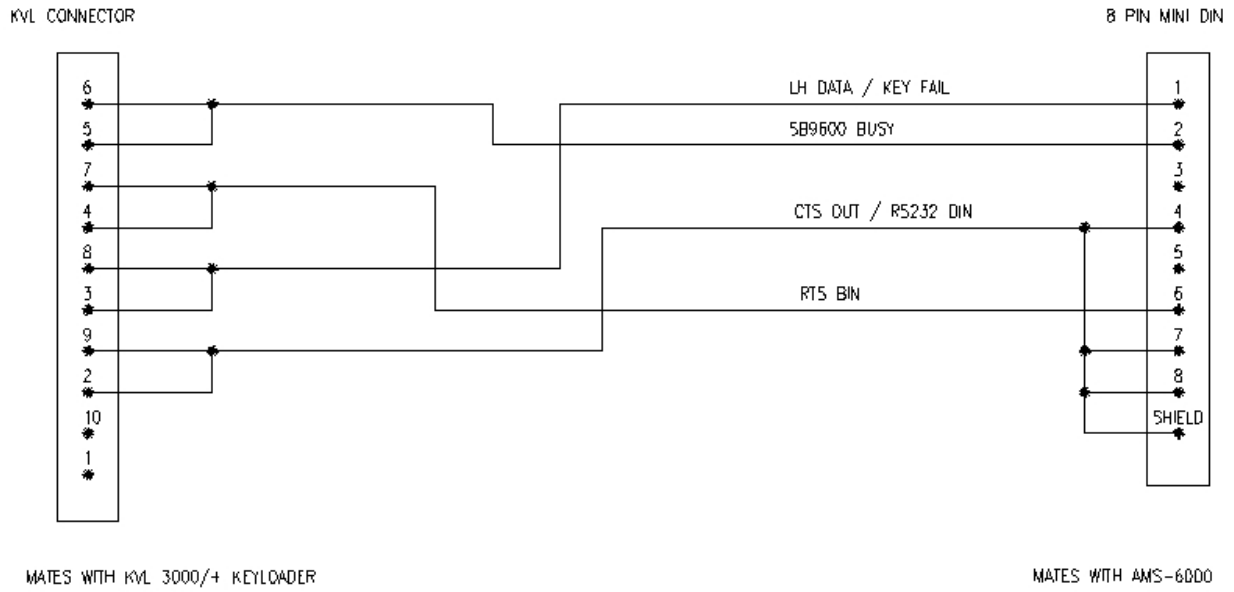
The squelch lights will illuminate while a signal is being received. When the signal ceases, the light will flash for 2 seconds more, giving the operator time to look and see which band was active. If this feature is not desired, it can be toggled on and off by holding the REPEAT button and the left RX button while powering up the unit.

## 2.3 PROGRAMMING CONNECTOR (Mini-DIN)

On the front panel of the AMS-6000 is an 8 pin mini DIN socket which provides access to the TDFM-600/6000 programming lines. Through this connector, channel information can be uploaded or downloaded to the transceiver. The connector can also be used to upgrade the firmware in the transceiver modules and load encryption keys into units with encryption installed. To program channels or upgrade firmware, the Smart RIB cable (figure 2-2) and Smart RIB should be used with TDFM-600/6000 transceivers with type I modules. TDFM-600/6000 units with type II modules must use Technisonic Cable P/N 047365-1 for programming channels or upgrading firmware. This cable cannot be fabricated in the field as it contains internal circuitry. To load encryption keys in units with either type I or type II modules, the encryption key loading cable P/N 037348-1 must be used with the KVL key loader. It is possible to purchase a KVL keyloader cable from Motorola and splice on the 8-pin mini-DIN connector as shown in figure 2.3 below.



**FIGURE 2.2** Smart RIB cable for the AMS-6000 / TDFM-600/6000, P/N 037347-1



**FIGURE 2.3** Key Loading Cable for the AMS-6000 / TDFM-600/6000, P/N 037348-1

## SECTION 3 – INSTALLATION INSTRUCTIONS

### 3.1 GENERAL

This section contains information and instructions for the correct installation of the AMS-6000 Audio Mode Selector.

### 3.2 EQUIPMENT PACKING LOG

Unpack the equipment and check for any damage that may have occurred during transit. Save the original shipping container for returns due to damage or warranty claims. Check that each item on the packing slip has been shipped in the container. Verify that the equipment display and backlighting configuration are the same as those ordered.

### 3.3 WIRING INSTRUCTIONS

The AMS-6000 can be installed and operated in one of two modes. Which mode to use will be determined by how many positions are available on the existing audio panel. If there are enough positions for number of bands in the TDFM-600/6000 (either two or three) then it is recommended to wire the unit in separate mode. If there are not enough audio panel positions available then the AMS-6000 will have to be wired in combined mode. The 'Y' harness P/N 077415 supplied with the AMS-6000 will be needed in either mode while a 15 pin D connector will also be required for a combined mode installation. The following sections describe the specific wiring for each mode of operation.

**IMPORTANT NOTE:** The "Y" harness PN 047394 has been replaced by PN 077415. The new harness does not support routing of the 28Vdc input supply for the transceiver through the AMS-6000. 28Vdc power should be supplied directly to the transceiver via a 5A fused connection. Contact Technisonic for installation instructions if using an older PN 047394 harness.

#### 3.3.1 Combined Mode

In this mode, the TDFM-600/6000 and AMS-6000 will be connected to only one position on the existing audio panel. The 15-pin connector (J2) on the AMS-6000 is used to route the audio and PTT to the transceiver. **28Vdc Power to the Transceiver is supplied directly via a separate 7.5A fused connection.** The 15-pin connector (J2) has the same pin out as our older TFM series of transceivers, making it easy to retrofit the TDFM-600/6000 and AMS-6000 combination into an older installation. The 'Y' cable will be used to connect the AMS-6000 to the TDFM-600/6000 with the third connector unused. See Table 3.1, Figure 3.1 and Figure 3.3.

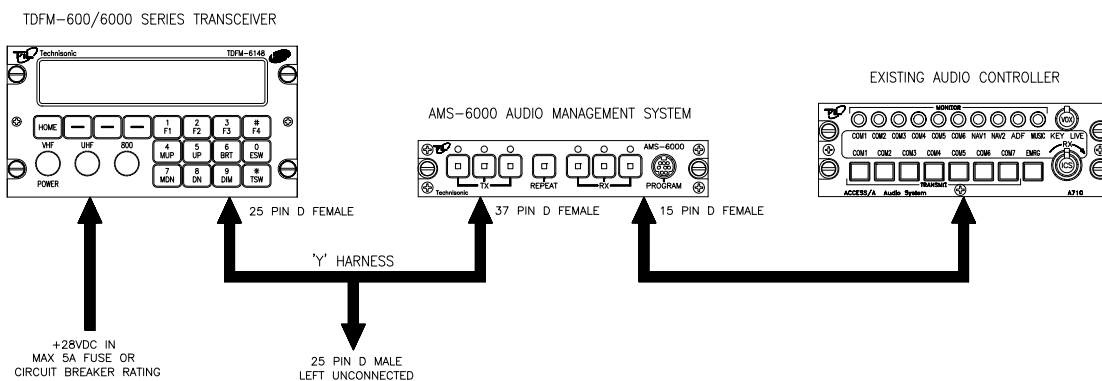


FIGURE 3.1 Combined Mode Installation

### 3.3.2 Separate Mode

In this mode, the TDFM-600/6000 and AMS-6000 will be connected to two or three positions on the existing audio panel. The 'Y' harness is used to connect the TDFM-600/6000 transceiver to the AMS-6000 as well as to the aircraft audio system. The aircraft harness shall be wired as if it were to be plugged directly into the TDFM-600/6000 but instead will be plugged into the third connector on the 'Y' harness. **28Vdc Power to the Transceiver is supplied directly via a separate 7.5A fused connection.** See Table 3.2, Figure 3.2 and Figure 3.4.

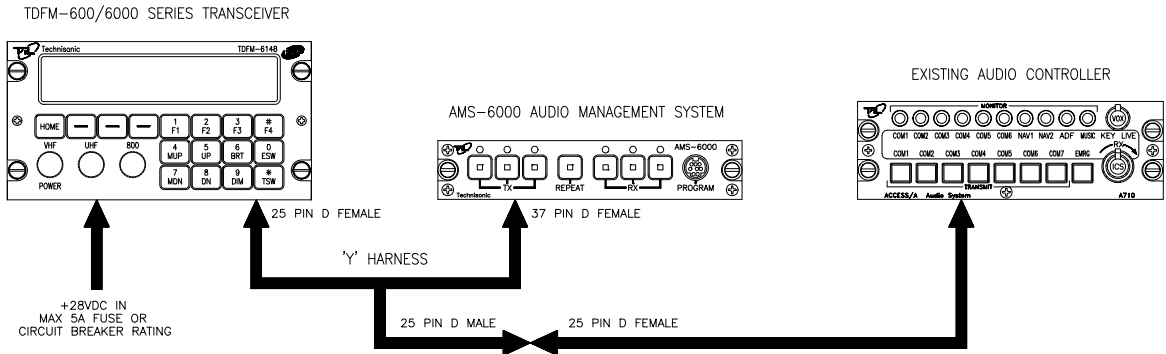


FIGURE 3.2 Separate Mode Installation

### 3.4 AMS-6000 15-PIN CONNECTOR PINOUTS (J2)

The following are the pinouts for the 15-pin connector (J2) and the function of each pin.

Pin #	Description
1	600 Ohm Output
2	No Connection
3	Panel Lighting (28VDC or 5VAC)
4	Memory UP
5	Memory Down
6	Mic Signal Input
7	Main Power +28VDC
8	Main Ground
9	4 ohm Speaker Out
10	4 ohm / 600 ohm output ground
11	No Connection
12	No Connection
13	PTT (Ground Keying)
14	Main Power +28VDC
15	Main Ground

TABLE 3.1 Wire connections on a 15-Pin MALE D Connector (J2)



## DETAILED DESCRIPTION OF THE 15-PIN MALE D CONNECTOR (J2)

### 3.4.1 600 Ohm Output - Pin 1

Combined receive audio output. This is the normal output to connect to the aircraft audio panel while the speaker output described in paragraph 3.7.6 is optional.

### 3.4.2 Panel Lighting - Pin 3

Connect to the aircraft dimmer bus. Can be driven by 5 volts or 28 volts selectable by the internal jumper JP1. No damage will occur to the AMS-6000 if the wrong jumper selection is made, however this line is also routed to the TDFM-600/6000 via the 'Y' harness which is voltage sensitive. Check the transceiver label for backlight voltage.

The AMS-6000 backlighting electronically tracks the voltage on the dimmer bus to dim or brighten the front panel legend and indicators accordingly. Note that the indicator lighting goes to full brightness when "Daytime" operation is selected. This occurs when the dimmer bus voltage is turned off or drops below a minimum level (e.g.  $\sim < 2v$  on 28v lighting system).

### 3.4.3 Memory Up / Memory Down - Pins 4 & 5

Both pins are routed back out through the 'Y' harness to the Transceiver. Grounding one of the pins will scroll the selected memory up or down.

### 3.4.4 Main Power +28 Volts - Pins 7 & 14

Connect both pins to +28 Vdc avionics bus through a 2 amp breaker.

### 3.4.5 Main Ground - Pins 8 & 15

Connect both pins to airframe ground.

### 3.4.6 4-Ohm Speaker Output - Pin 9

This is the combined receive audio output for an optional speaker. This pin does not have to be terminated with 4 ohms if not used.

### 3.4.7 Signal Ground - Pin 10

Connect shields to this pin. This pin is actually connected to chassis ground internally.

### 3.4.8 PTT Input - Pin 13

Push to talk line (ground keying). Connect to aircraft audio panel.

### 3.5 AMS-6000 37-PIN CONNECTOR PINOUTS (J1)

The following are the pinouts for the 37-pin connector (J1) and the function of each pin.

<b>AMS-6000 37-Pin D Connections</b>			
<b>Pin #</b>	<b>Description</b>	<b>Pin #</b>	<b>Description</b>
1	No Connection	20	TX Audio In 2
2	No Connection	21	TX Audio In 3
3	No Connection	22	PTT 1
4	No Connection	23	PTT 2
5	No Connection	24	PTT 3
6	No Connection	25	TX Audio Out 1
7	Ground	26	TX Audio Out 2
8	No Connection	27	TX Audio Out 3
9	Ground	28	Backlight / Dimmer Bus
10	No Connection	29	Memory Up
11	No Connection	30	Memory Down
12	No Connection	31	LH DATA
13	No Connection	32	SB9600 BUSY
14	No Connection	33	OPT B+
15	RX Audio 1	34	CTS OUT
16	No Connection	35	BOOT DIN
17	RX Audio 2	36	RTSBIN
18	RX Audio 3	37	RS232DIN
19	TX Audio In 1		

**TABLE 3.2** AMS-6000 37-Pin D Connections (J1)

**- IMPORTANT NOTE -**

**Power to the transceiver is supplied directly via a fused connection.**

## DETAILED DESCRIPTION OF THE 37-PIN MALE D CONNECTOR (J1)

### 3.5.1 No Connection - Pins 1-6, 8, 10-14, 16

These pins are not used and have no connections (see Table 3.2).

### 3.5.2 Main Ground - Pins 7 & 9

The ground connection is supplied either through the 'Y' harness in separate mode or through the 15 pin connector on the AMS-6000. Therefore this pin may be an input or output.

### 3.5.3 RX Audio 1, 2 and 3 - Pins 15, 17 & 18

The RX Audio lines are input from the transceiver via the 'Y' harness.

### 3.5.4 TX Audio In 1, 2 and 3 - Pins 19, 20 & 21

The TX Audio In lines are inputs from the aircraft audio controller via the 'Y' harness or are unused when in combined mode.

### 3.5.5 PTT 1, 2 and 3 - Pins 22, 23 & 24

These lines are connected via the 'Y' harness to the transceiver and the aircraft audio controller when wired in the separate mode. The PTT lines are bidirectional.

### 3.5.6 TX Audio Out 1, 2 and 3 - Pins 25, 26 & 27

The TX Audio Out lines are connected to the transceiver via the 'Y' harness.

### 3.5.7 Backlight / Dimmer Bus - Pin 28

The back lighting is connected to the transceiver via the 'Y' harness. If wired in the separate mode, the back light signal comes in the third 'Y' harness connector from the aircraft wiring. If the system is wired in the combined mode, the signal comes in the 15-pin connector (J2) on the AMS-6000.

### 3.5.8 Memory Up / Down - Pins 29 & 30

These lines are connected to the transceiver via the 'Y' harness. If wired in the separate mode, the signals come in the third 'Y' harness connector from the aircraft wiring. If the system is wired in the combined mode, the memory up / down signals come in the 15-pin connector (J2) on the AMS-6000.

### 3.5.9 Programming Lines - Pins 31 through 37

The programming lines are used for up dating memories, loading encryption keys, and loading firmware upgrades into the TDFM-600/6000 transceiver. They are connected to the AMS-6000 via the 'Y' harness.

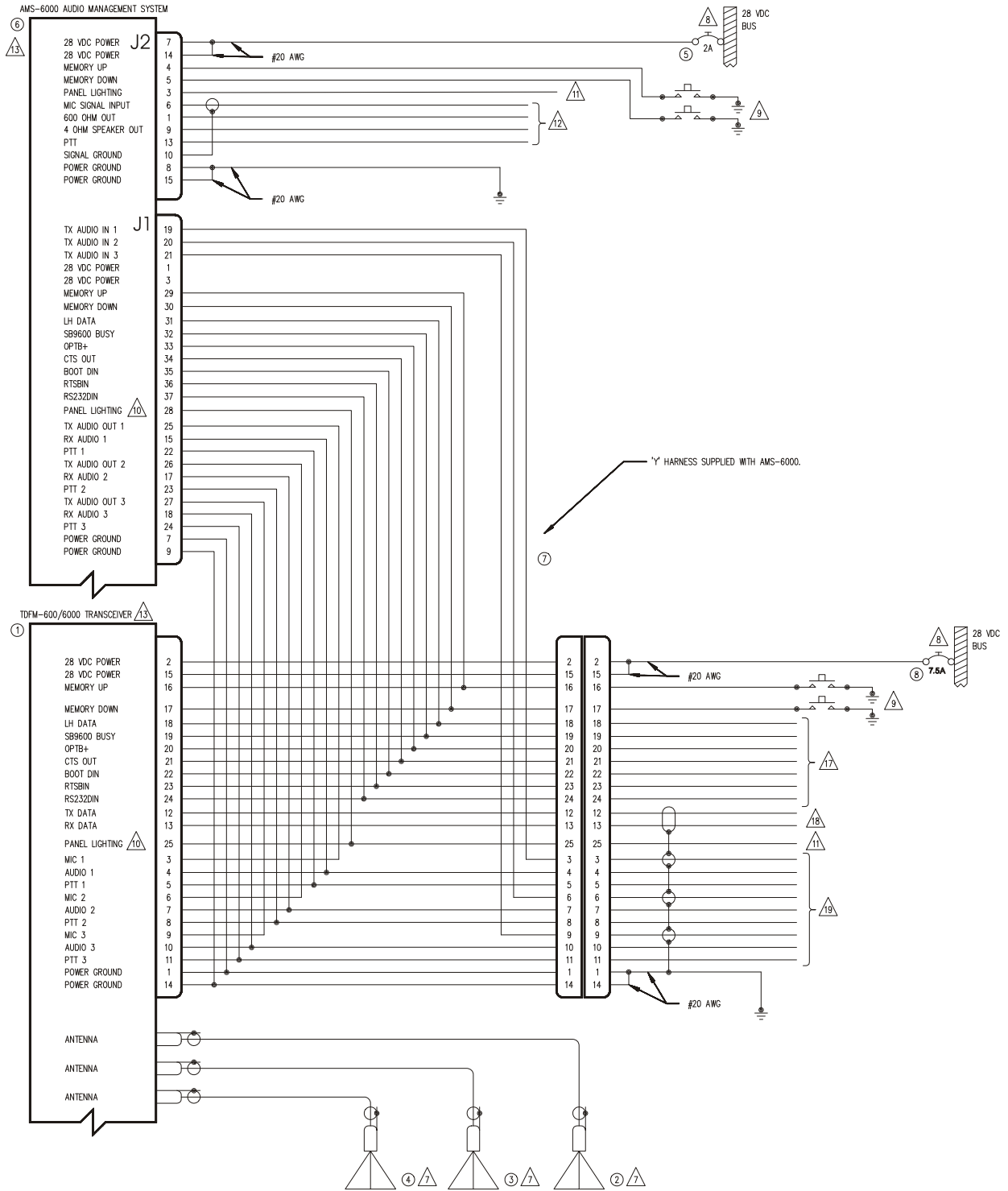












FIGURE 3.3 Wiring Diagram (Combined Mode) - Continued on next page

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ITEM	QTY	PART NOS.	DESCRIPTION	SPEC	MATERIAL
①	1	TDFM-600/6000	VHF/FM COMMUNICATIONS TRANSCEIVER	TECHNISONIC INDUSTRIES LTD	
②	1	CI-292	VHF ANTENNA	COMANT INDUSTRIES	
③	1	CI-275	UHF ANTENNA	COMANT INDUSTRIES	
④	1	CI-306	800 ANTENNA	COMANT INDUSTRIES	
⑤	1	7274-11-2	CIRCUIT BREAKER, 2 AMPS	KLIXON	
⑥	1	031220-1	AUDIO MANAGEMENT SYSTEM	TECHNISONIC INDUSTRIES LTD	
⑦	1	077415	'Y' INTERCONNECT HARNESS	TECHNISONIC INDUSTRIES LTD	
⑧	1	7274-11-5	CIRCUIT BREAKER, 7.5 AMPS	KLIXON	

**NOTES:**

- 1) ALL WIRE IAW MIL-W-22759 UNLESS OTHERWISE SPECIFIED.
- 2) ALL CABLE IAW MIL-C-27500 UNLESS OTHERWISE SPECIFIED.
- 3) COAXIAL CABLE IAW MIL-C-17 UNLESS OTHERWISE SPECIFIED. DO NOT USE COAX WITH PVC INSULATION.
- 4) FABRICATION & INSTALLATION OF WIRING HARNESS IAW AC 43.13-1B CHAPTER 11.
- 5) GROUNDING AND BONDING IAW AC 43.13-1B CHAPTER 11, SECTION 15.
- 6) ALL SINGLE WIRE TO BE #22 AWG MINIMUM AND ALL SHIELDED WIRES TO BE #24 AWG MINIMUM, UNLESS OTHERWISE SPECIFIED.
- 7)  INSTALLATION OF ANTENNA IAW AC 43.13-1B CHAPTER 4, SECTION 4, CHAPTERS 6 & 7, AND AC 43.13-2A CHAPTER 3. IF POSSIBLE, THE ANTENNA SHOULD BE LOCATED A MINIMUM OF 12 FT FROM AIRCRAFT NAVIGATION RECEIVER ANTENNAS AND A MINIMUM OF 4 FEET FROM AIRCRAFT COMMUNICATIONS AND ELT ANTENNAS. BE CAREFUL NOT TO CHOSE SEPARATIONS THAT CLOSELY APROXIMATE 1/4 OR 1/2 OR WHOLE NUMBER MULTIPLES OF THE NAVIGATION OR COMMUNICATIONS WAVELENGTH.
- 8)  AN EQUIVALENT CIRCUIT BREAKER OR FUSE MAY BE USED.
- 9)  THE MEMORY UP/DOWN PUSH BUTTONS ARE OPTIONAL.
- 10)  THE TDFM-600/6000 IS AVAILABLE WITH 28V OR 5V PANEL LIGHTING. CHECK THE CONFIGURATION CONTROL LABEL FOR THE CORRECT VOLTAGE.
- 11)  CONNECT TO THE APPROPRIATE AIRCRAFT DIMMING BUSS.
- 12)  AIRCRAFT AUDIO SYSTEM: COMBINED MODE CONFIGURATION CONNECTS TO "COCKPIT AUDIO PANEL".
- 13)  INSTALLATION OF TRANSCEIVER AND AMS-6000 IAW AC 43.13-1B CHAPTER 4, SECTION 4 AND AC 43.13-2A, CHAPTER 2. PR3 1/2 DZUS RAIL OR EQUIVALENT MAY BE USED.
- 14) TEST THE SYSTEM IN ACCORDANCE WITH THE POST-INSTALLATION TEST PROCEDURE IN THE INSTALLATION AND OPERATING INSTRUCTIONS MANUAL.
- 15) REFER TO THE AIRCRAFT STRUCTURAL REPAIR MANUAL AND THE MAINTENANCE MANUAL FOR INSTRUCTIONS AND INFORMATION PERTINENT TO THIS INSTALLATION.
- 16) THE USE OF RED DISPLAYS SHOULD BE MINIMIZED OR AVOIDED SO AS NOT TO DETRACT FROM THE ATTENTION GETTING CHARACTERISTICS NEEDED IN WARNING AND CAUTION ANNUNCIATORS. RED SHOULD BE USED TO ANNUNCIATE EMERGENCY CONDITIONS REQUIRING IMMEDIATE RESPONSE BY THE FLIGHT CREW. UNITS WITH RED DISPLAYS SHOULD NOT BE LOCATED IN CLOSE PROXIMITY TO WARNING AND CAUTION ANNUNCIATORS. THE INSTALLATION OF UNITS WITH RED DISPLAYS MUST BE EVALUATED ON A CASE BY CASE BASIS TO ENSURE THAT THE EFFECTIVENESS OF THE WARNING AND CAUTION ANNUNCIATORS IS NOT ADVERSELY AFFECTED.
- 17)  OPTIONAL CONNECTION TO A DOWNLOAD PLUG ON THE PANEL.
- 18)  CONNECTION TO AN OPTIONAL RC-6000 SLAVE CONTROL HEAD.
- 19)  AIRCRAFT AUDIO SYSTEM: SEPARTE MODE CONFIGURATION CONNECTS TO "PASSENGER AUDIO PANEL" (IF APPLICABLE).

**FIGURE 3.3** Wiring Diagram (Combined Mode)

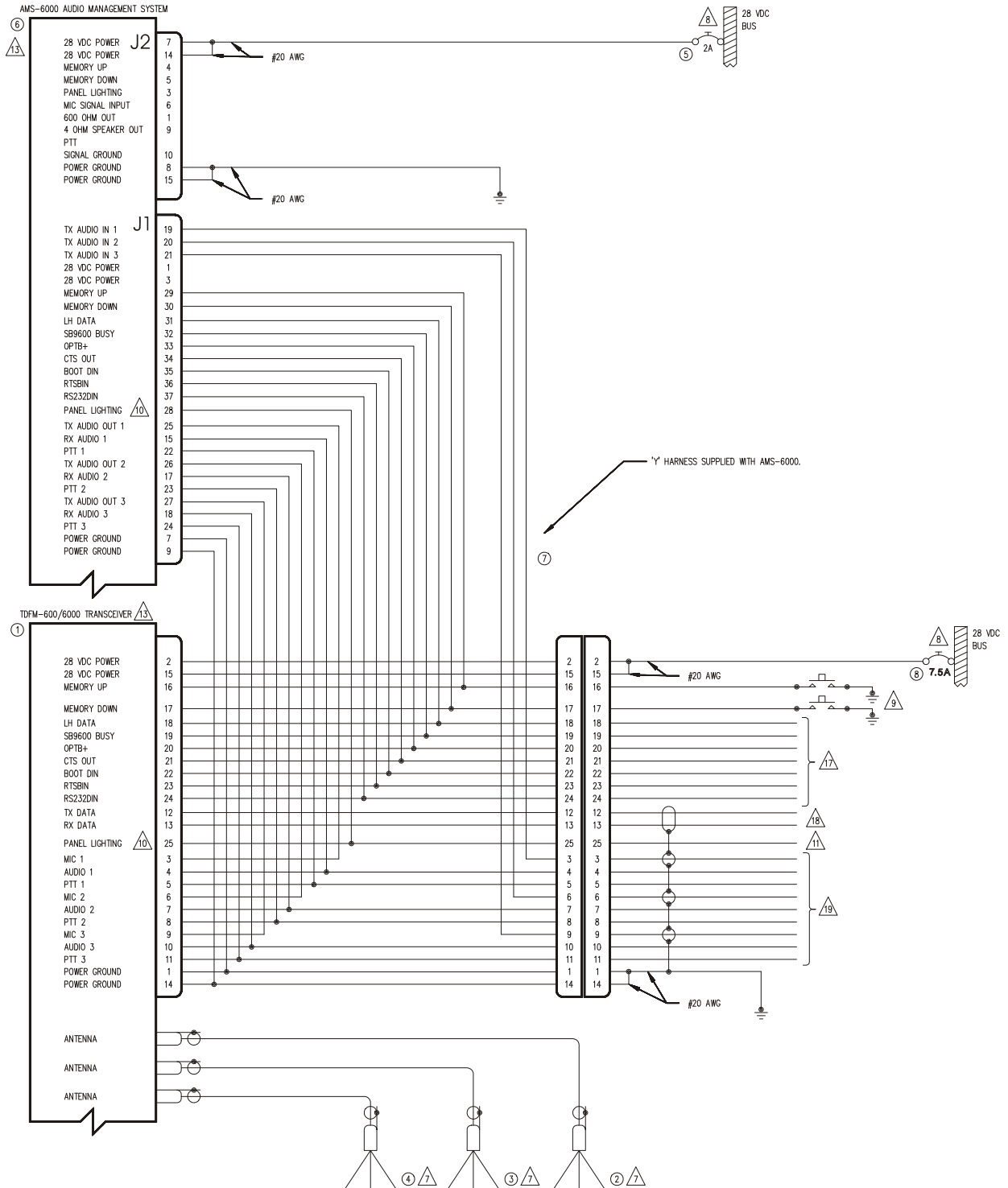












FIGURE 3.4 Wiring Diagram (Separate Mode) - Continued on next page

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ITEM	QTY	PART NOS.	DESCRIPTION	SPEC	MATERIAL
①	1	TDFM-600/6000	VHF/FM COMMUNICATIONS TRANSCEIVER	TECHNISONIC INDUSTRIES LTD	
②	1	CI-292	VHF ANTENNA	COMANT INDUSTRIES	
③	1	CI-275	UHF ANTENNA	COMANT INDUSTRIES	
④	1	CI-306	800 ANTENNA	COMANT INDUSTRIES	
⑤	1	7274-11-2	CIRCUIT BREAKER, 2 AMPS	KLIXON	
⑥	1	031220-1	AUDIO MANAGEMENT SYSTEM	TECHNISONIC INDUSTRIES LTD	
⑦	1	077415	'Y' INTERCONNECT HARNESS	TECHNISONIC INDUSTRIES LTD	
⑧	1	7274-11-5	CIRCUIT BREAKER, 7.5 AMPS	KLIXON	

**NOTES:**

- 1) ALL WIRE IAW MIL-W-22759 UNLESS OTHERWISE SPECIFIED.
- 2) ALL CABLE IAW MIL-C-27500 UNLESS OTHERWISE SPECIFIED.
- 3) COAXIAL CABLE IAW MIL-C-17 UNLESS OTHERWISE SPECIFIED. DO NOT USE COAX WITH PVC INSULATION.
- 4) FABRICATION & INSTALLATION OF WIRING HARNESS IAW AC 43.13-1B CHAPTER 11.
- 5) GROUNDING AND BONDING IAW AC 43.13-1B CHAPTER 11, SECTION 15.
- 6) ALL SINGLE WIRE TO BE #22 AWG MINIMUM AND ALL SHIELDED WIRES TO BE #24 AWG MINIMUM, UNLESS OTHERWISE SPECIFIED.
- 7)  INSTALLATION OF ANTENNA IAW AC 43.13-1B CHAPTER 4, SECTION 4, CHAPTERS 6 & 7, AND AC 43.13-2A CHAPTER 3. IF POSSIBLE, THE ANTENNA SHOULD BE LOCATED A MINIMUM OF 12 FT FROM AIRCRAFT NAVIGATION RECEIVER ANTENNAS AND A MINIMUM OF 4 FEET FROM AIRCRAFT COMMUNICATIONS AND ELT ANTENNAS. BE CAREFUL NOT TO CHOSE SEPARATIONS THAT CLOSELY APROXIMATE 1/4 OR 1/2 OR WHOLE NUMBER MULTIPLES OF THE NAVIGATION OR COMMUNICATIONS WAVELENGTH.
- 8)  AN EQUIVALENT CIRCUIT BREAKER OR FUSE MAY BE USED.
- 9)  THE MEMORY UP/DOWN PUSH BUTTONS ARE OPTIONAL.
- 10)  THE TDFM-600/6000 IS AVAILABLE WITH 28V OR 5V PANEL LIGHTING. CHECK THE CONFIGURATION CONTROL LABEL FOR THE CORRECT VOLTAGE.
- 11)  CONNECT TO THE APPROPRIATE AIRCRAFT DIMMING BUSS.
- 12)  NOT APPLICABLE IN SEPARATE MODE CONFIGURATION.
- 13)  INSTALLATION OF TRANSCEIVER AND AMS-6000 IAW AC 43.13-1B CHAPTER 4, SECTION 4 AND AC 43.13-2A, CHAPTER 2. PR3 1/2 DZUS RAIL OR EQUIVALENT MAY BE USED.
- 14) TEST THE SYSTEM IN ACCORDANCE WITH THE POST-INSTALLATION TEST PROCEDURE IN THE INSTALLATION AND OPERATING INSTRUCTIONS MANUAL.
- 15) REFER TO THE AIRCRAFT STRUCTURAL REPAIR MANUAL AND THE MAINTENANCE MANUAL FOR INSTRUCTIONS AND INFORMATION PERTINENT TO THIS INSTALLATION.
- 16) THE USE OF RED DISPLAYS SHOULD BE MINIMIZED OR AVOIDED SO AS NOT TO DETRACT FROM THE ATTENTION GETTING CHARACTERISTICS NEEDED IN WARNING AND CAUTION ANNUNCIATORS. RED SHOULD BE USED TO ANNUNCIATE EMERGENCY CONDITIONS REQUIRING IMMEDIATE RESPONSE BY THE FLIGHT CREW. UNITS WITH RED DISPLAYS SHOULD NOT BE LOCATED IN CLOSE PROXIMITY TO WARNING AND CAUTION ANNUNCIATORS. THE INSTALLATION OF UNITS WITH RED DISPLAYS MUST BE EVALUATED ON A CASE BY CASE BASIS TO ENSURE THAT THE EFFECTIVENESS OF THE WARNING AND CAUTION ANNUNCIATORS IS NOT ADVERSELY AFFECTED.
- 17)  OPTIONAL CONNECTION TO A DOWNLOAD PLUG ON THE PANEL.
- 18)  CONNECTION TO AN OPTIONAL RC-6000 SLAVE CONTROL HEAD.
- 19)  AIRCRAFT AUDIO SYSTEM: SEPARATE MODE CONFIGURATION (MULTIPLE AUDIO PANELS CAN BE WIRED IN PARALLEL).

**FIGURE 3.4** Wiring Diagram (Separate Mode)

### 3.6 HARDWARE INSTALLATION

The AMS-6000 is designed to mount in a standard 5.75" DZUS rail rack. See Figure 3.4 for physical dimensions. The 'Y' harness is of sufficient length to allow the AMS-6000 to be mounted directly above or below the TDFM-600/6000 series Transceiver. A new 'Y' harness will have to be fabricated if the AMS-6000 is to be mounted anywhere else. As with all avionics installations, be sure to provide sufficient cooling or ventilation.

### 3.7 POST INSTALLATION TEST PROCEDURE

Follow the post installation procedure outlined in the TDFM-600/6000 Installation and Operating Instructions. Check each transmit and receive button for proper function. Confirm operation of the transmit and receive indicators. Test the REPEAT function to ensure there is no interference from or to other equipment in the aircraft.

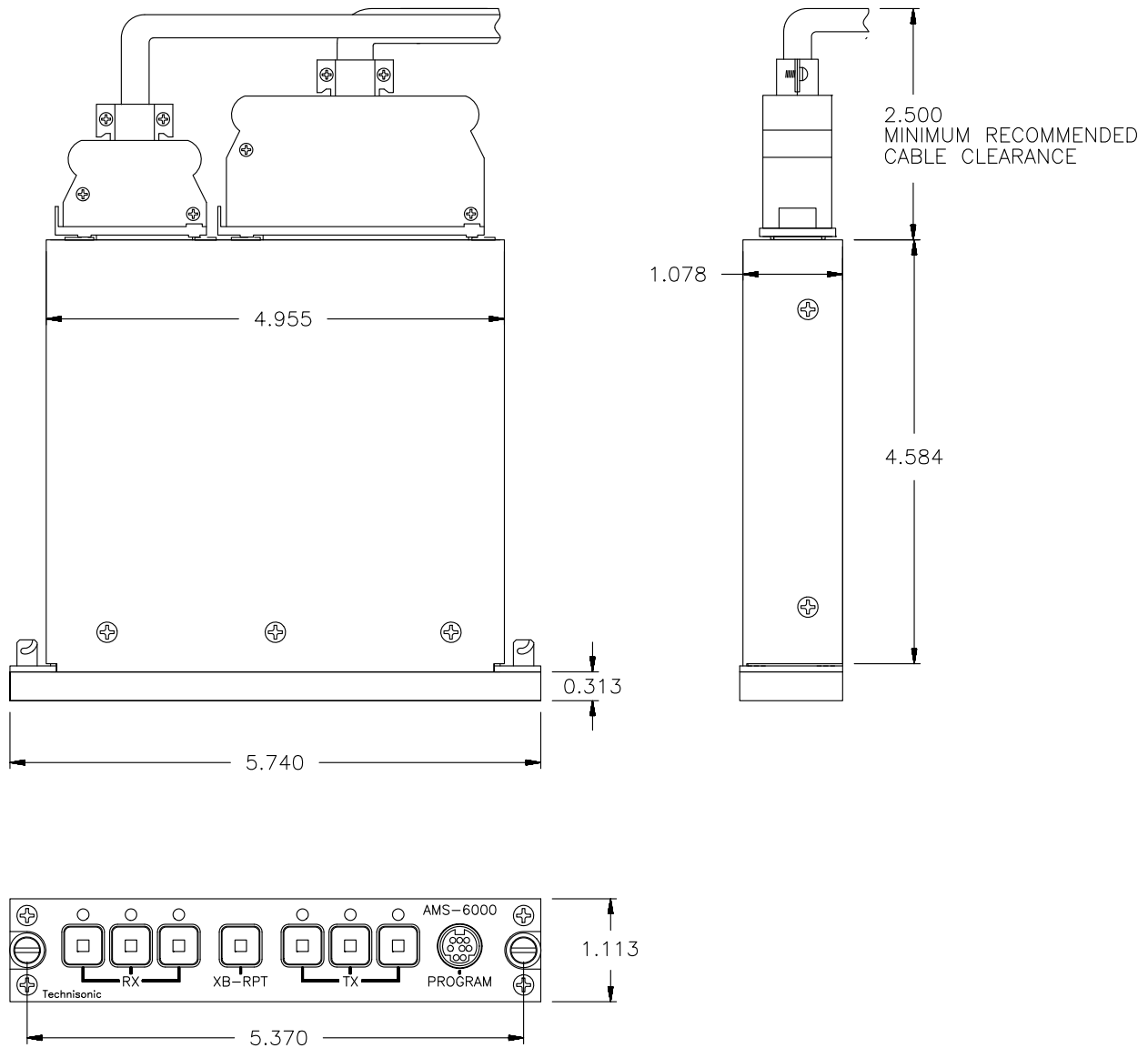


FIGURE 3.5 Outline Drawing for the AMS-6000



**Technisonic Industries Limited**  
240 Traders Blvd., Mississauga, ON Canada L4Z 1W7  
Tel: (905) 890-2113 Fax: (905) 890-5338

**IMPORTANT  
WARRANTY**

All communication equipment manufactured by Technisonic Industries Limited is warranted to be free of defects in Material or Workmanship under normal use for a period of one year from Date of Purchase by the end user.

Warranty will only apply to equipment installed by a factory approved and/or authorized facility in accordance with Technisonic published installation instructions. Equipment falling under the following is not covered by warranty:

- equipment that has been repaired or altered in any way as to affect performance,
- equipment that has been subject to improper installation,
- equipment that has been used for purposes other than intended,
- equipment that has been involved in any accident, fire, flood, immersion or subject to any other abuse.

Expressly excluded from this warranty are changes or charges relating to the removal and re-installation of equipment from the aircraft. Technisonic will repair or replace (at Technisonic's discretion) any defective transceiver (or part thereof) found to be faulty during the Warranty Period.

Faulty equipment must be returned to Technisonic (or its authorized Warranty Depot) with transportation charges prepaid. Repaired (or replacement) equipment will be returned to the customer with collect freight charges. If the failure of a transceiver occurs within the first 30 days of service, Technisonic will return the repaired or replacement equipment prepaid.

Technisonic reserves the right to make changes in design, or additions to, or improvements in its products without obligation to install such additions and improvements in equipment previously manufactured. This Warranty is in lieu of any and all other warranties express or implied, including any warranty of merchantability or fitness, and of all other obligations or liabilities on the part of Technisonic.

This Warranty shall not be transferable or assignable to any other persons, firms or corporations.

**For warranty registration please complete the on-line  
Warranty Registration Form found at [www.til.ca](http://www.til.ca).**

