



DAS-9000

DIGITAL AUDIO SPLITTER



Installation Instructions

TiL Document No. 24RE647

Revision N/C issue 1

17 October 2025

Technisonic Industries Limited

240 Traders Boulevard, Mississauga, Ontario L4Z 1W7

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

www.til.ca

REVISION HISTORY [24RE647]				
For the most current revision of this document, please check the Technisonic website: www.til.ca				
REV	PAGE	DESCRIPTION	DATE	EDITED BY
N/C i1	All	Corrected typo as per CR 25696.	Oct. 17, 2025	MM

NOTES

CAUTION STATIC SENSITIVE !



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

FCC COMPLIANCE INFORMATION

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his/her own expense.

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 DAS-9000 Digital Audio Splitter. Every effort has been made to make this manual as complete and accurate as possible.

WARRANTY INFORMATION

The Model DAS-9000 Digital Audio Splitter is under warranty for one year from the 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

TABLE OF CONTENTS

SECTION	TITLE	PAGE
1	GENERAL DESCRIPTION	
1.1	INTRODUCTION	1
1.2	DESCRIPTION	1
2	INSTALLATION INSTRUCTIONS	
2.1	GENERAL	2
2.2	OUTLINE DRAWING	2
2.3	PIN LOCATIONS AND DESCRIPTION	3
2.4	WIRING INSTRUCTIONS	4
2.5	THEORY OF OPERATION	4
2.6	TDFM-9000 WIRING DIAGRAM	5
2.7	TDFM-9100 WIRING DIAGRAM	7
2.8	TDFM-9200 WIRING DIAGRAM	9
2.9	TDFM-9300 WIRING DIAGRAM	11
3	SPECIFICATIONS	
3.1	SPECIFICATIONS	13

SECTION 1: GENERAL DESCRIPTION

1.1 INTRODUCTION

This publication provides installation information for the DAS-9000 Digital Audio Splitter.

1.2 DESCRIPTION

The DAS-9000 Digital Audio Splitter is an interface which allows a TDFM-9000 Series transceiver to be connected to up to 5 TDAP-650 audio controllers via the digital audio data lines. Each audio controller operates independently so each user can select his own audio and transmit selection without interference to/from the other users. Wiring is kept to a minimum as only 2 data lines are required to each audio controller for the TDFM-9000 operation. Other audio sources such as AM coms, NAV audio, etc. must be wired to the audio controllers that require them, typically the pilot and co-pilot panels.

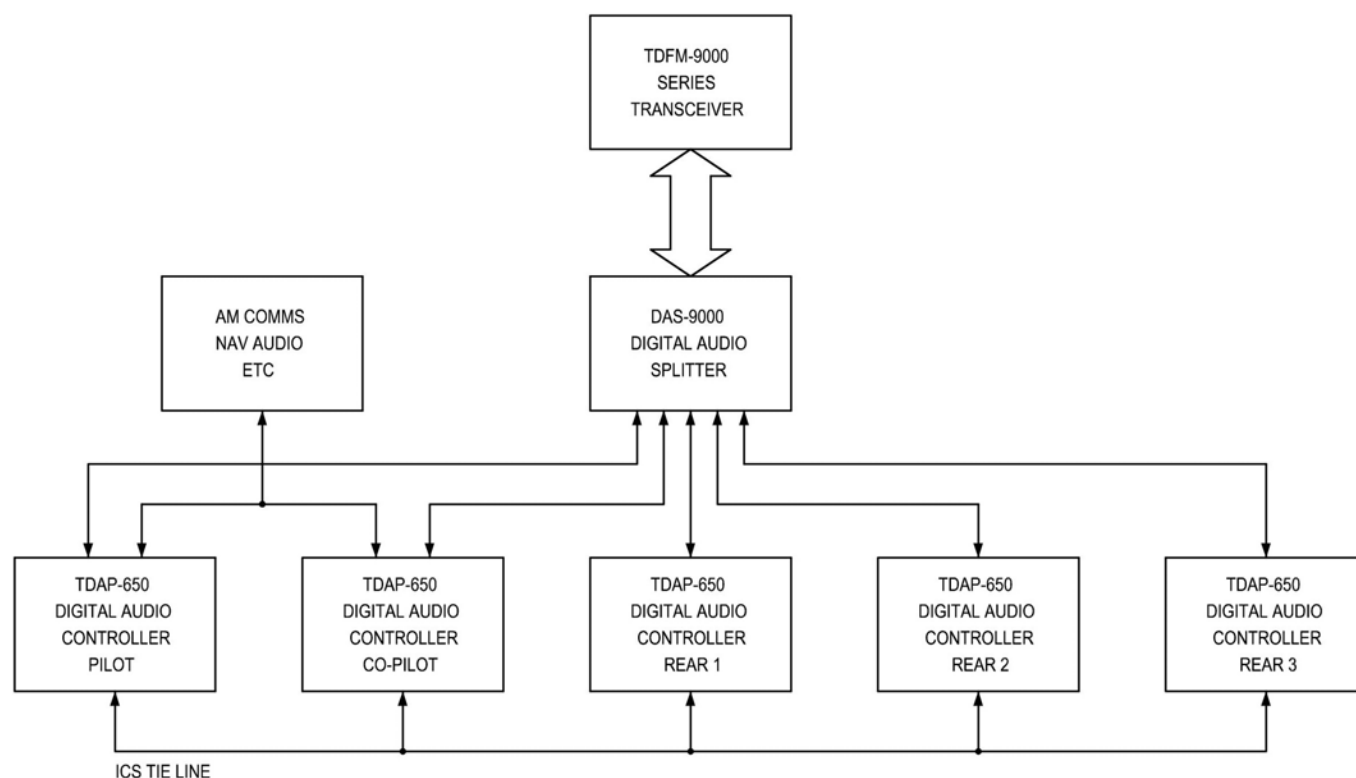


Figure 1: Five panel system with the DAS-9000

SECTION 2: INSTALLATION INSTRUCTIONS

2.1 GENERAL

The DAS-9000 is to be mounted using the holes provided in the flanges. The unit should be located as close to the TDFM-9000 Series Transceiver as possible.

2.2 OUTLINE DRAWING

Refer to the drawing below:

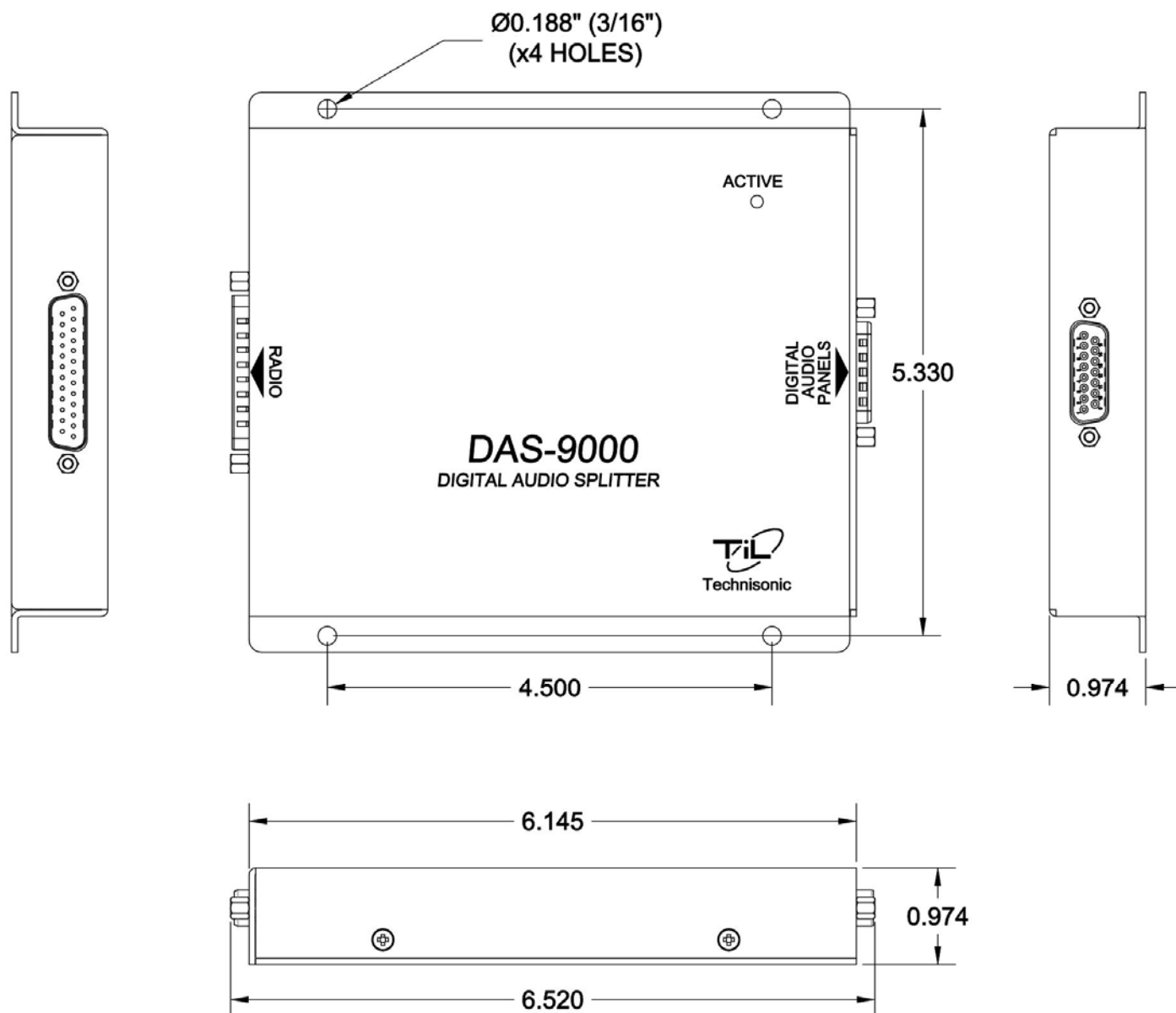


Figure 2: DAS-9000 Outline Drawing (Dimensions in inches)

2.3 PIN LOCATIONS AND DESCRIPTIONS

P1 (25 Pin D Connections) - Use FEMALE Connector	
Pin #	Description
1	Ground
2	PTT Combined 2
3	PTT Combined 1
4	PTT Band 8
5	PTT Band 7
6	PTT Band 6
7	PTT Band 5
8	PTT Band 4
9	PTT Band 3
10	PTT Band 2
11	PTT Band 1
12	Audio Ground
13	+28 Volt In
14	TX Data 1 Out
15	Mic Combined 2
16	Mic Combined 1
17	Mic Band 8
18	Mic Band 7
19	Mic Band 6
20	Mic Band 5
21	Mic Band 4
22	Mic Band 3
23	Mic Band 2
24	Mic Band 1
25	RX Data In

Table 1: P1 Pin Connections (To TDFM-9000 Series Transceiver)

TECHNISONIC INDUSTRIES LIMITED

J1 (15 Pin D Connections) – Use MALE Connector	
Pin #	Description
1	TX Data 1 in
2	RX Data 1 out
3	Ground
4	TX Data 3 in
5	RX Data 3 out
6	Ground
7	TX Data 5 in
8	RX Data 5 out
9	Ground
10	TX Data 2 in
11	RX Data 2 out
12	Ground
13	TX Data 4 in
14	RX Data 4 out
15	Ground

Table 2: J1 Pin Connections (To Audio Panels)

2.4 WIRING INSTRUCTIONS

The DAS-9000 shall be wired in accordance with the transceiver specific diagrams below and the latest revision of the associated TDFM-9000 series installation instructions.

2.5 THEORY OF OPERATION

The TDFM-9000 series of radios only have a single port for digital audio. Receive digital audio out from the transceiver can be connected to multiple audio panels but only one transmit digital audio stream can be connected to the transceiver. The DAS-9000 provides the necessary processing for the extra transmit digital streams from up to four additional audio panels. The digital audios are converted to analog and fed to the transceiver analog Mic and PTT inputs.

2.6 TDFM-9000 WIRING DIAGRAM

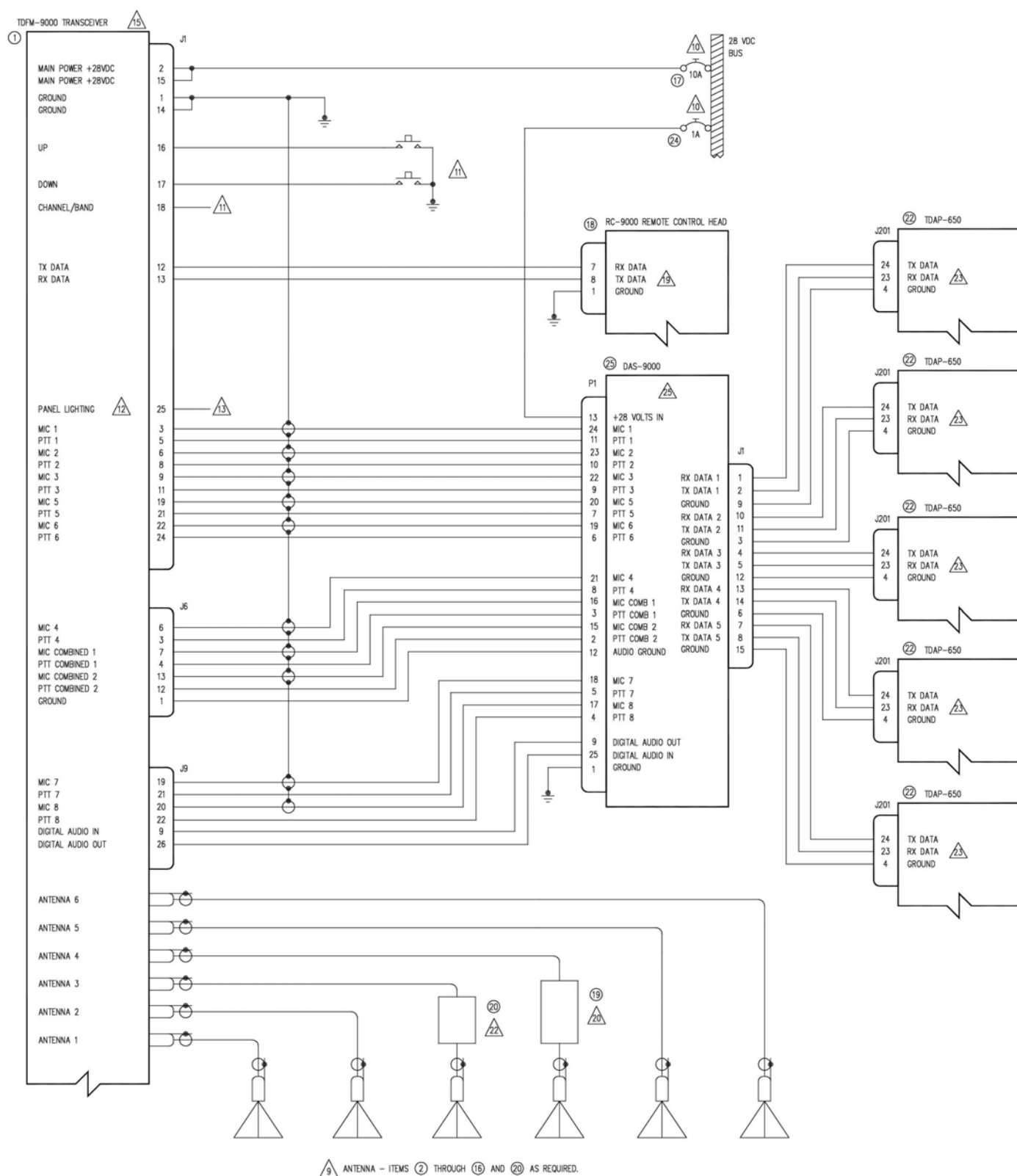


Figure 2: TDFM-9000 Wiring Diagram

TECHNISONIC INDUSTRIES LIMITED

QTY	ITEM	PART NUMBER	DESCRIPTION	MANUFACTURER	MATERIAL
1	1	TDFM-9000	MULTIBAND FM COMMUNICATIONS TRANSCEIVER	TECHNISONIC INDUSTRIES LIMITED	
A/R	2	CI-292-3	VHF ANTENNA, 136 TO 174 MHz	COMANT INDUSTRIES	
A/R	3	CI-292-4	VHF ANTENNA, 136 TO 174 MHz	COMANT INDUSTRIES	
A/R	4	CI-275	UHFLO ANTENNA, 403 TO 470 MHz	COMANT INDUSTRIES	
A/R	5	CI-275	UHFHI ANTENNA, 450 TO 512 MHz	COMANT INDUSTRIES	
A/R	6	CI-285	UHFHI (II) ANTENNA, 450 TO 520 MHz	COMANT INDUSTRIES	
A/R	7	CI-306	800 ANTENNA, 806 TO 870 MHz	COMANT INDUSTRIES	
A/R	8	CI-285	800/700 (II) ANTENNA, 700 TO 870 MHz	COMANT INDUSTRIES	
A/R	9	CI-295-200	VHF/UHF ANTENNA, 136 TO 174 / 380 TO 520 MHz	COMANT INDUSTRIES	
A/R	10	CI-295-250	VHF/700/800 ANTENNA, 136 TO 174 / 764 TO 870 MHz	COMANT INDUSTRIES	
A/R	11	21-50-45	VHF/UHF/700/800 ANTENNA, 136 TO 174 / 380 TO 870 MHz	COOPER ANTENNAS	
A/R	12	AV-925	VHF/UHF/700/800 ANTENNA, 136 TO 174 / 380 TO 520 / 760 TO 870 MHz	RAMI ANTENNAS	
A/R	13	AT-1108/ARC	VHF/UHF ANTENNA, 116 TO 152 / 225 TO 400 MHz	RAMI ANTENNAS	
A/R	14	S65-8282-34	VHF LO/VHF/UHF ANTENNA, 30 TO 88 / 108 TO 174 / 225 TO 400 MHz	SENSOR SYSTEMS INC	
A/R	15	S65-1227	UHF ANTENNA, 225 TO 400 MHz	SENSOR SYSTEMS INC	
A/R	16	AT-256A/ARC	UHF ANTENNA, 225 TO 400 MHz	RAMI ANTENNAS	
1	17	T274-11-10	CIRCUIT BREAKER, 10 AMPS	KLIXON	
A/R	18	RC-9000	REMOTE CONTROL HEAD	TECHNISONIC INDUSTRIES LIMITED	
A/R	19	SRA-6000	SWITCHED RECEIVE ATTENUATOR	TECHNISONIC INDUSTRIES LIMITED	
A/R	20	133956-1	VHF HIGH PASS FILTER	TECHNISONIC INDUSTRIES LIMITED	
A/R	21	S200-P12	SATELLITE COMMUNICATIONS SYSTEM	LATITUDE TECHNOLOGIES	
A/R	22	TDAP-650 OR 750	DIGITAL AUDIO PANEL	TECHNISONIC INDUSTRIES LIMITED	
A/R	23	ASU-9000	ANTENNA SWITCHING UNIT	TECHNISONIC INDUSTRIES LIMITED	
A/R	24	T274-11-1	CIRCUIT BEAKER, 1 AMP	KLIXON	
A/R	25	DAS-9000	DIGITAL AUDIO SPLITTER	TECHNISONIC INDUSTRIES LIMITED	

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 WIRE TO BE #24 AWG MINIMUM, UNLESS OTHERWISE SPECIFIED.
- 7) POWER AND GROUND WIRES TO BE #20 AWG.
- 8) ANTENNA COAX TO BE RG-142/U OR EQUIVALENT.
- 9) 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.
- 10) EQUIVALENT CIRCUIT BREAKERS OR FUSES MAY BE USED.
- 11) THE CHANNEL/BAND UP/DOWN PUSH BUTTONS ARE OPTIONAL. GROUND CHANNEL/BAND INPUT FOR BAND CONTROL, LEAVE UNCONNECTED FOR CHANNEL CONTROL.
- 12) THIS INPUT IS FOR BOTH 28 VDC AND 5 VAC PANEL LIGHTING. SELECT THE APPROPRIATE VOLTAGE IN THE CONFIGURATION MENU.
- 13) CONNECT TO THE APPROPRIATE AIRCRAFT DIMMING BUSS.
- 14) CONNECT TO THE AIRCRAFT AUDIO SYSTEM OR STAND-ALONE HEADSET JACKS.
- 15) INSTALLATION OF TRANSCEIVER 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.
- 16) TEST THE SYSTEM IN ACCORDANCE WITH THE POST-INSTALLATION TEST PROCEDURE IN THE INSTALLATION AND OPERATING INSTRUCTIONS MANUAL.
- 17) REFER TO THE AIRCRAFT STRUCTURAL REPAIR MANUAL AND THE MAINTENANCE MANUAL FOR INSTRUCTIONS AND INFORMATION PERTINENT TO THIS INSTALLATION.
- 18) 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.
- 19) CONNECTION TO AN OPTIONAL RC-9000 SLAVE CONTROL HEAD.
- 20) CONNECTION TO AN OPTIONAL SRA-6000 SWITCHED RECEIVE ATTENUATOR.
- 21) OPTIONAL SATELITE PHONE / PTT SYSTEM. SEE MANUAL FOR INSTALLATION INSTRUCTIONS.
- 22) CONNECTION TO OPTIONAL VHF HIGH PASS FILTER.
- 23) CONNECTION TO OPTIONAL DIGITAL AUDIO PANEL.
- 24) CONNECTION TO OPTIONAL ANTENNA SWITCHING UNIT.
- 25) CONNECTION TO AN OPTIONAL DAS-9000 DIGITAL AUDIO SPLITTER.

2.7 TDFM-9100 WIRING DIAGRAM

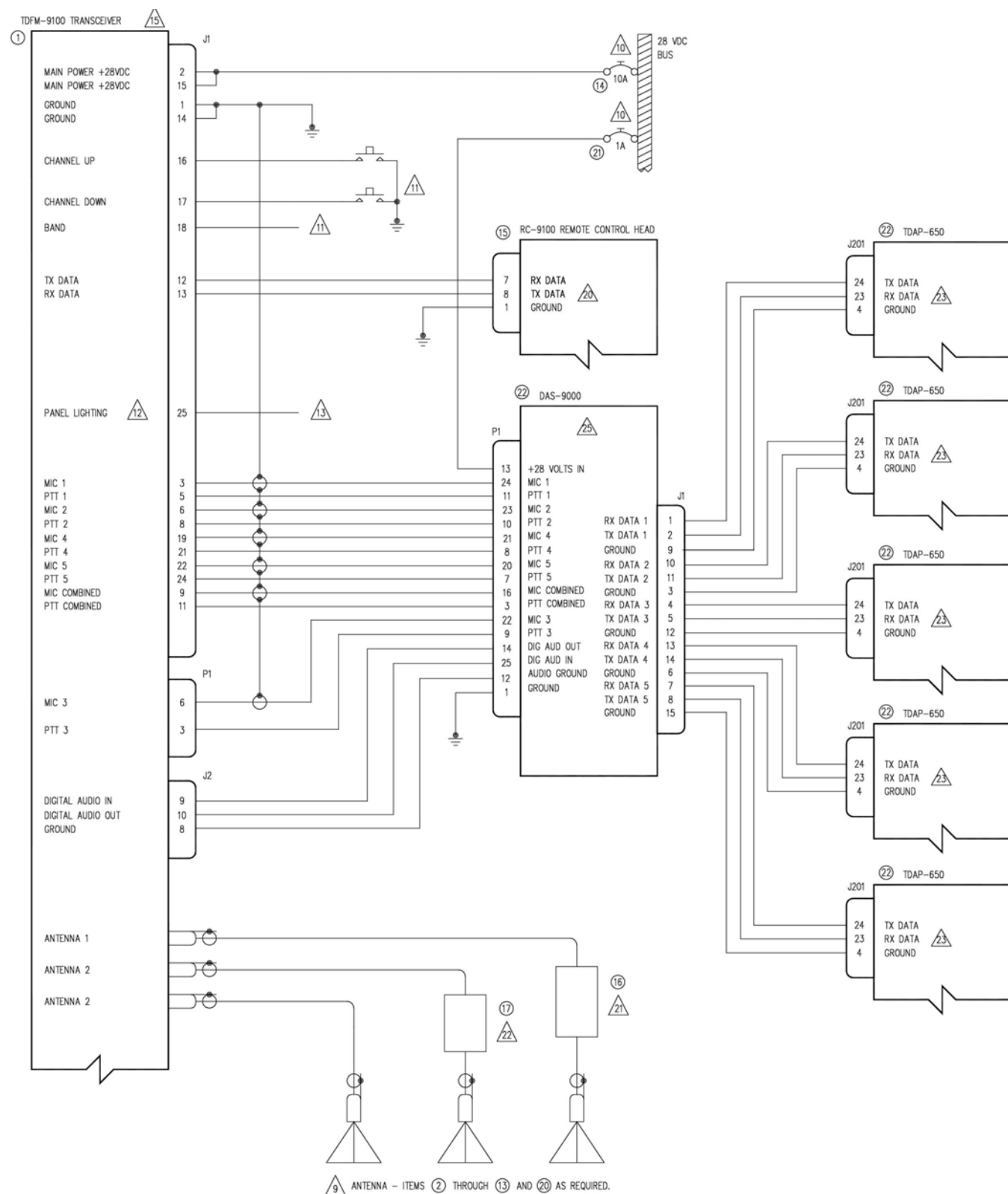


Figure 3: TDFM-9100 Wiring Diagram

TECHNISONIC INDUSTRIES LIMITED

QTY	ITEM	PART NUMBER	DESCRIPTION	MANUFACTURER	MATERIAL
1	1	TDFM-9100	MULTIBAND FM COMMUNICATIONS TRANSCEIVER.	TECHNISONIC INDUSTRIES LIMITED	
A/R	2	CI-292-3	VHF ANTENNA, 136 TO 174 MHz	COMANT INDUSTRIES	
A/R	3	CI-292-4	VHF ANTENNA, 136 TO 174 MHz	COMANT INDUSTRIES	
A/R	4	CI-275	UHFLO ANTENNA, 403 TO 470 MHz	COMANT INDUSTRIES	
A/R	5	CI-275	UHFHI ANTENNA, 450 TO 512 MHz	COMANT INDUSTRIES	
A/R	6	CI-285	UHFHI (II) ANTENNA, 450 TO 520 MHz	COMANT INDUSTRIES	
A/R	7	CI-306	800 ANTENNA, 806 TO 870 MHz	COMANT INDUSTRIES	
A/R	8	CI-285	800/700 (II) ANTENNA, 700 TO 870 MHz	COMANT INDUSTRIES	
A/R	9	CI-295-200	VHF/UHF ANTENNA, 136 TO 174 / 380 TO 520 MHz	COMANT INDUSTRIES	
A/R	10	CI-295-250	VHF/700/800 ANTENNA, 136 TO 174 / 764 TO 870 MHz	COMANT INDUSTRIES	
A/R	11	21-50-45	VHF/UHF/700/800 ANTENNA, 136 TO 174 / 380 TO 870 MHz	COOPER ANTENNAS	
A/R	12	AV-925	VHF/UHF/700/800 ANTENNA, 136 TO 174 / 380 TO 520 / 760 TO 870 MHz	RAMI ANTENNAS	
A/R	13	CI-925-300	VHF/UHF/700/800 ANTENNA, 136 TO 174 / 380 TO 520 / 764 TO 870 MHz	COMANT INDUSTRIES	
1	14	7274-11-5	CIRCUIT BREAKER, 5 AMPS	KLIXON	
A/R	15	RC-9100	REMOTE CONTROL HEAD	TECHNISONIC INDUSTRIES LIMITED	
A/R	16	SRA-6000	SWITCHED RECEIVE ATTENUATOR	TECHNISONIC INDUSTRIES LIMITED	
A/R	17	133956-1	VHF HIGH PASS FILTER	TECHNISONIC INDUSTRIES LIMITED	
A/R	18	S200-P12	SATELLITE COMMUNICATIONS SYSTEM	LATITUDE TECHNOLOGIES	
A/R	19	TDAP-650 OR 750	DIGITAL AUDIO PANEL	TECHNISONIC INDUSTRIES LIMITED	
A/R	20	S65-8282-34	VLO/VHF/UHF ANTENNA, 30 TO 88 / 108 TO 174 / 225 TO 400 MHz	SENSOR SYSTEMS	
1	21	7274-11-1	CIRCUIT BREAKER, 1 AMPS	KLIXON	
A/R	22	DAS-9000	DIGITAL AUDIO SPLITTER	TECHNISONIC INDUSTRIES LIMITED	

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 WIRE TO BE #24 AWG MINIMUM, UNLESS OTHERWISE SPECIFIED.
- 7) POWER AND GROUND WIRES TO BE #20 AWG.
- 8) ANTENNA COAX TO BE RG-142/U OR EQUIVALENT.
- 9) 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 CHOOSE SEPARATIONS THAT CLOSELY APPROXIMATE 1/4 OR 1/2 OR WHOLE NUMBER MULTIPLES OF THE NAVIGATION OR COMMUNICATIONS WAVELENGTH.
- 10) AN EQUIVALENT CIRCUIT BREAKER OR FUSE MAY BE USED.
- 11) THE CHANNEL UP/DOWN AND BAND PUSH BUTTONS ARE OPTIONAL. LEAVE UNCONNECTED IF NOT USED.
- 12) THIS INPUT IS FOR BOTH 28 VDC AND 5 VAC PANEL LIGHTING. SELECT THE APPROPRIATE VOLTAGE IN THE CONFIGURATION MENU.
- 13) CONNECT TO THE APPROPRIATE AIRCRAFT DIMMING BUSS.
- 14) CONNECT TO THE AIRCRAFT AUDIO SYSTEM OR STAND-ALONE HEADSET JACKS.
- 15) INSTALLATION OF TRANSCEIVER 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.
- 16) TEST THE SYSTEM IN ACCORDANCE WITH THE POST-INSTALLATION TEST PROCEDURE IN THE INSTALLATION AND OPERATING INSTRUCTIONS MANUAL.
- 17) REFER TO THE AIRCRAFT STRUCTURAL REPAIR MANUAL AND THE MAINTENANCE MANUAL FOR INSTRUCTIONS AND INFORMATION PERTINENT TO THIS INSTALLATION.
- 18) NOTE REMOVED.
- 19) NOTE REMOVED.
- 20) CONNECTION TO AN OPTIONAL RC-9100 SLAVE CONTROL HEAD.
- 21) CONNECTION TO AN OPTIONAL SRA-6000 SWITCHED RECEIVE ATTENUATOR.
- 22) CONNECTION TO AN OPTIONAL VHF HIGH PASS FILTER.
- 23) CONNECTION TO AN OPTIONAL TDAP-650 OR TDAP-750 DIGITAL AUDIO PANEL.
- 24) CONNECTION TO AN OPTIONAL S200-P12 SATELLITE COMMUNICATIONS SYSTEM.
- 25) CONNECTION TO AN OPTIONAL DAS-9000 DIGITAL AUDIO SPLITTER.

2.8 TDFM-9200 WIRING DIAGRAM

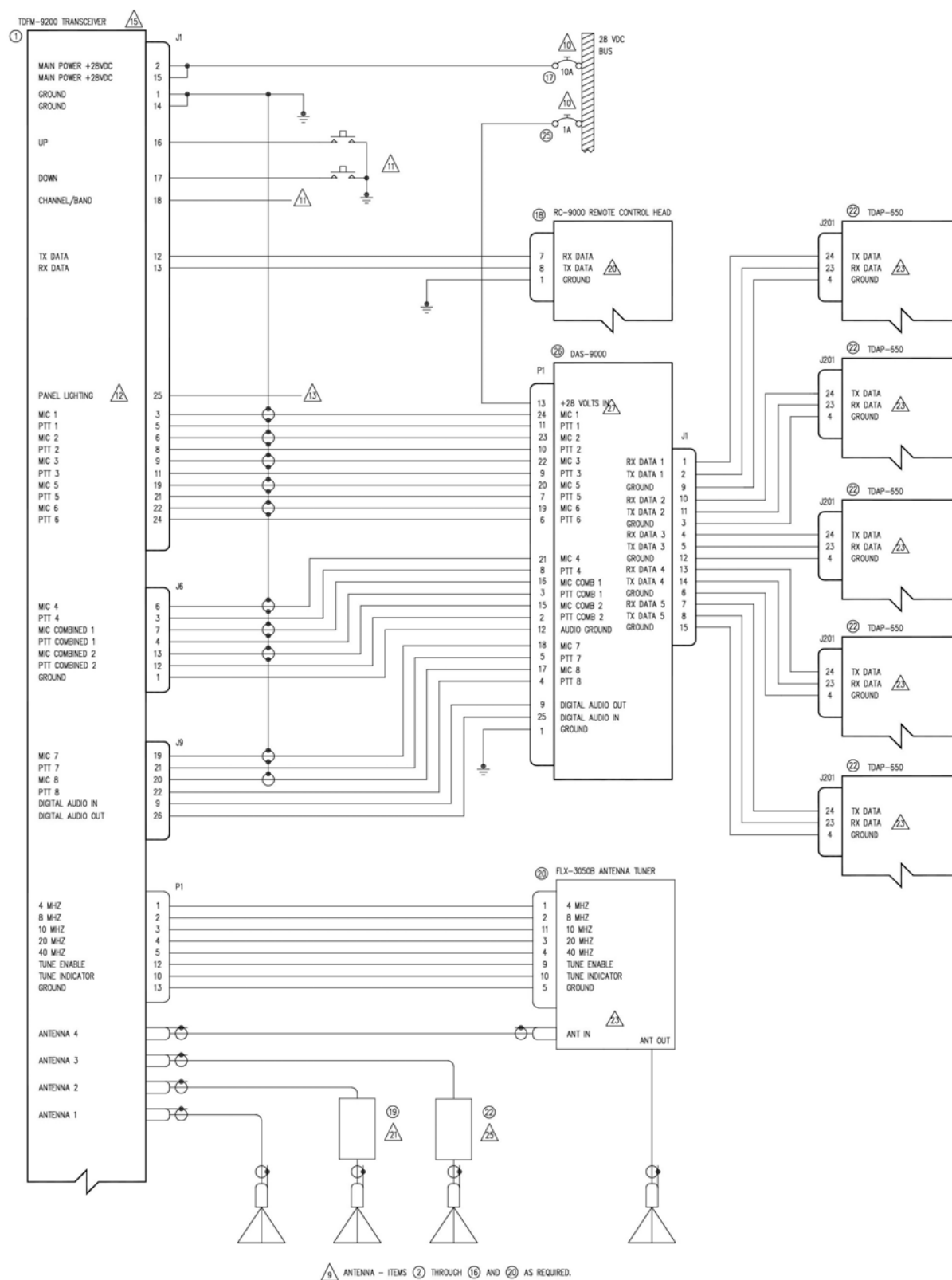


Figure 4: TDFM-9200 Wiring Diagram

TECHNISONIC INDUSTRIES LIMITED

QTY	ITEM	PART NUMBER	DESCRIPTION	MANUFACTURER	MATERIAL
1	1	TDFM-9200	MULTIBAND FM COMMUNICATIONS TRANSCEIVER.	TECHNISONIC INDUSTRIES LIMITED	
A/R	2	CI-292-3	VHF ANTENNA, 136 TO 174 MHz	COMANT INDUSTRIES	
A/R	3	CI-292-4	VHF ANTENNA, 136 TO 174 MHz	COMANT INDUSTRIES	
A/R	4	CI-275	UHFLO ANTENNA, 403 TO 470 MHz	COMANT INDUSTRIES	
A/R	5	CI-275	UHFHI ANTENNA, 450 TO 512 MHz	COMANT INDUSTRIES	
A/R	6	CI-285	UHFHI (II) ANTENNA, 450 TO 520 MHz	COMANT INDUSTRIES	
A/R	7	CI-306	800 ANTENNA, 806 TO 870 MHz	COMANT INDUSTRIES	
A/R	8	CI-285	800/700 (II) ANTENNA, 700 TO 870 MHz	COMANT INDUSTRIES	
A/R	9	CI-295-200	VHF/UHF ANTENNA, 136 TO 174 / 380 TO 520 MHz	COMANT INDUSTRIES	
A/R	10	CI-295-250	VHF/700/800 ANTENNA, 136 TO 174 / 764 TO 870 MHz	COMANT INDUSTRIES	
A/R	11	21-50-45	VHF/UHF/700/800 ANTENNA, 136 TO 174 / 380 TO 870 MHz	COOPER ANTENNAS	
A/R	12	AV-925	VHF/UHF/700/800 ANTENNA, 136 TO 174 / 380 TO 520 / 760 TO 870 MHz	RAMI ANTENNAS	
A/R	13	AT-1108/ARC	VHF/UHF ANTENNA, 116 TO 152 / 225 TO 400 MHz	RAMI ANTENNAS	
A/R	14	S65-8282-34	VHF LO/VHF/UHF ANTENNA, 30 TO 88 / 108 TO 174 / 225 TO 400 MHz	SENSOR SYSTEMS INC	
A/R	15	S65-1227	UHF ANTENNA, 225 TO 400 MHz	SENSOR SYSTEMS INC	
A/R	16	AT-256A/ARC	UHF ANTENNA, 225 TO 400 MHz	RAMI ANTENNAS	
1	17	7274-11-10	CIRCUIT BREAKER, 10 AMPS	KLIXON	
A/R	18	RC-9000	REMOTE CONTROL HEAD	TECHNISONIC INDUSTRIES LIMITED	
A/R	19	SRA-6000	SWITCHED RECEIVE ATTENUATOR	TECHNISONIC INDUSTRIES LIMITED	
A/R	20	FLX-3050B	VHF LO ANTENNA / ANTENNA TUNER	FOXTRONICS INC	
A/R	21	PLF-900	POWER LINE FILTER	TECHNISONIC INDUSTRIES LIMITED	
A/R	22	133956-1	VHF HIGH PASS FILTER	TECHNISONIC INDUSTRIES LIMITED	
A/R	23	S200-P12	SATELLITE COMMUNICATIONS SYSTEM	LATITUDE TECHNOLOGIES	
A/R	24	TDAP-650 OR 750	DIGITAL AUDIO PANEL	TECHNISONIC INDUSTRIES LIMITED	
A/R	25	7274-11-1	CIRCUIT BEAKER, 1 AMP	KLIXON	
A/R	26	DAS-9000	DIGITAL AUDIO SPLITTER	TECHNISONIC INDUSTRIES LIMITED	

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 WIRE TO BE #24 AWG MINIMUM, UNLESS OTHERWISE SPECIFIED.
- 7) POWER AND GROUND WIRES TO BE #20 AWG.
- 8) ANTENNA COAX TO BE RG-142/U OR EQUIVALENT.
- 9) 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 APPROXIMATE 1/4 OR 1/2 OR WHOLE NUMBER MULTIPLES OF THE NAVIGATION OR COMMUNICATIONS WAVELENGTH.
- 10) AN EQUIVALENT CIRCUIT BREAKER OR FUSE MAY BE USED.
- 11) THE CHANNEL/BAND UP/DOWN PUSH BUTTONS ARE OPTIONAL. GROUND CHANNEL/BAND INPUT FOR BAND CONTROL, LEAVE UNCONNECTED FOR CHANNEL CONTROL.
- 12) THIS INPUT IS FOR BOTH 28 VDC AND 5 VAC PANEL LIGHTING. SELECT THE APPROPRIATE VOLTAGE IN THE CONFIGURATION MENU.
- 13) CONNECT TO THE APPROPRIATE AIRCRAFT DIMMING BUSS.
- 14) CONNECT TO THE AIRCRAFT AUDIO SYSTEM OR STAND-ALONE HEADSET JACKS.
- 15) INSTALLATION OF TRANSCEIVER 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.
- 16) TEST THE SYSTEM IN ACCORDANCE WITH THE POST-INSTALLATION TEST PROCEDURE IN THE INSTALLATION AND OPERATING INSTRUCTIONS MANUAL.
- 17) REFER TO THE AIRCRAFT STRUCTURAL REPAIR MANUAL AND THE MAINTENANCE MANUAL FOR INSTRUCTIONS AND INFORMATION PERTINENT TO THIS INSTALLATION.
- 18) 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.
- 19) NOT NORMALLY USED IN AIRCRAFT.
- 20) CONNECTION TO AN OPTIONAL RC-9000 SLAVE CONTROL HEAD.
- 21) CONNECTION TO AN OPTIONAL SRA-6000 SWITCHED RECEIVE ATTENUATOR.
- 22) OPTIONAL SATELLITE PHONE / PTT SYSTEM. SEE MANUAL FOR INSTALLATION INSTRUCTIONS.
- 23) CONNECTION TO OPTIONAL ANTENNA TUNER SYSTEM. SEE MANUAL FOR INSTALLATION INSTRUCTIONS AND POWER CONNECTIONS.
- 24) OPTIONAL POWER LINE FILTER.
- 25) OPTIONAL VHF HIGH PASS FILTER.
- 26) CONNECTION TO AN OPTIONAL DIGITAL AUDIO PANEL
- 27) OPTIONAL DAS-9000 DIGITAL AUDIO SPLITTER

2.9 TDFM-9300 WIRING DIAGRAM

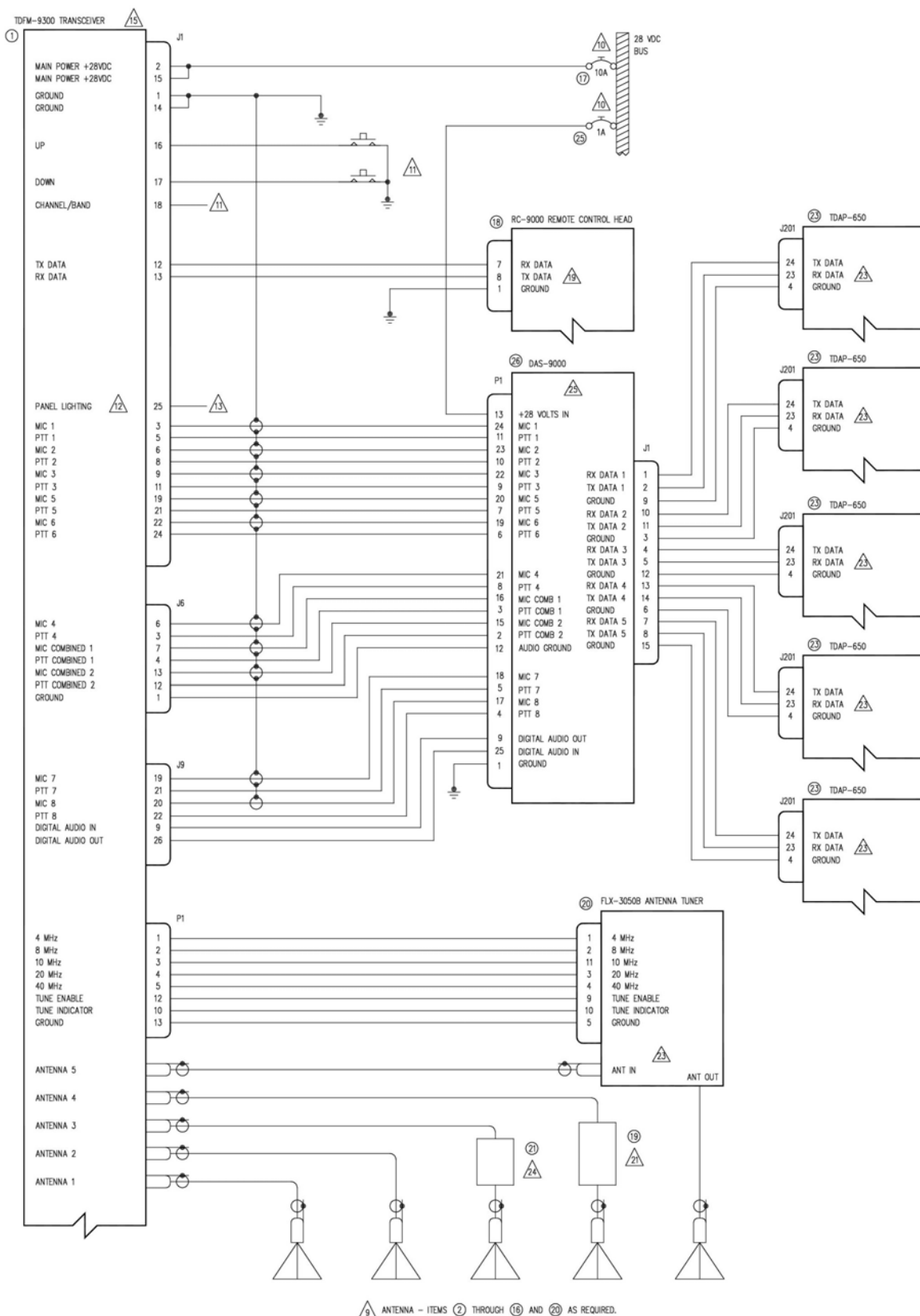


Figure 5: TDFM-9300 Wiring Diagram

TECHNISONIC INDUSTRIES LIMITED

QTY	ITEM	PART NUMBER	DESCRIPTION	MANUFACTURER	MATERIAL
1	1	TDFM-9300	MULTIBAND FM COMMUNICATIONS TRANSCEIVER	TECHNISONIC INDUSTRIES LIMITED	
A/R	2	CI-292-3	VHF ANTENNA, 136 TO 174 MHz	COMANT INDUSTRIES	
A/R	3	CI-292-4	VHF ANTENNA, 136 TO 174 MHz	COMANT INDUSTRIES	
A/R	4	CI-275	UHFLO ANTENNA, 403 TO 470 MHz	COMANT INDUSTRIES	
A/R	5	CI-275	UHFHI ANTENNA, 450 TO 512 MHz	COMANT INDUSTRIES	
A/R	6	CI-285	UHFHI (II) ANTENNA, 450 TO 520 MHz	COMANT INDUSTRIES	
A/R	7	CI-306	800 ANTENNA, 806 TO 870 MHz	COMANT INDUSTRIES	
A/R	8	CI-285	800/700 (II) ANTENNA, 700 TO 870 MHz	COMANT INDUSTRIES	
A/R	9	CI-295-200	VHF/UHF ANTENNA, 136 TO 174 / 380 TO 520 MHz	COMANT INDUSTRIES	
A/R	10	CI-295-250	VHF/700/800 ANTENNA, 136 TO 174 / 764 TO 870 MHz	COMANT INDUSTRIES	
A/R	11	21-50-45	VHF/UHF/700/800 ANTENNA, 136 TO 174 / 380 TO 870 MHz	COOPER ANTENNAS	
A/R	12	AV-925	VHF/UHF/700/800 ANTENNA, 136 TO 174 / 380 TO 520 / 760 TO 870 MHz	RAMI ANTENNAS	
A/R	13	AT-1108/ARC	VHF/UHF ANTENNA, 116 TO 152 / 225 TO 400 MHz	RAMI ANTENNAS	
A/R	14	S65-8282-34	VHF LO/VHF/UHF ANTENNA, 30 TO 88 / 108 TO 174 / 225 TO 400 MHz	SENSOR SYSTEMS INC	
A/R	15	S65-1227	UHF ANTENNA, 225 TO 400 MHz	SENSOR SYSTEMS INC	
A/R	16	AT-256A/ARC	UHF ANTENNA, 225 TO 400 MHz	RAMI ANTENNAS	
1	17	7274-11-10	CIRCUIT BREAKER, 10 AMPS	KLIXON	
A/R	18	RC-9000	REMOTE CONTROL HEAD	TECHNISONIC INDUSTRIES LIMITED	
A/R	19	SRA-6000	SWITCHED RECEIVE ATTENUATOR	TECHNISONIC INDUSTRIES LIMITED	
A/R	20	FLX-3050B	VHF LO ANTENNA / ANTENNA TUNER	FOXTRONICS INC	
A/R	21	133956-1	VHF HIGH PASS FILTER	TECHNISONIC INDUSTRIES LIMITED	
A/R	22	S200-P12	SATELLITE COMMUNICATIONS SYSTEM	LATITUDE TECHNOLOGIES	
A/R	23	TDAP-650	DIGITAL AUDIO PANEL	TECHNISONIC INDUSTRIES LIMITED	
A/R	24	ASU-9000	AUDIO SWITCHING UNIT	TECHNISONIC INDUSTRIES LIMITED	
A/R	25	7472-11-1	CIRCUIT BREAKER, 1 AMP	KLIXON	
A/R	26	DAS-9000	DIGITAL AUDIO SPLITTER	TECHNISONIC INDUSTRIES LIMITED	

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 WIRE TO BE #24 AWG MINIMUM, UNLESS OTHERWISE SPECIFIED.
- 7) POWER AND GROUND WIRES TO BE #20 AWG.
- 8) ANTENNA COAX TO BE RG-142/U OR EQUIVALENT.
- 9) 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 APPROXIMATE 1/4 OR 1/2 OR WHOLE NUMBER MULTIPLES OF THE NAVIGATION OR COMMUNICATIONS WAVELENGTH.
- 10) AN EQUIVALENT CIRCUIT BREAKER OR FUSE MAY BE USED.
- 11) THE CHANNEL/BAND UP/DOWN PUSH BUTTONS ARE OPTIONAL. GROUND CHANNEL/BAND INPUT FOR BAND CONTROL, LEAVE UNCONNECTED FOR CHANNEL CONTROL.
- 12) THIS INPUT IS FOR BOTH 28 VDC AND 5 VAC PANEL LIGHTING. SELECT THE APPROPRIATE VOLTAGE IN THE CONFIGURATION MENU.
- 13) CONNECT TO THE APPROPRIATE AIRCRAFT DIMMING BUSS.
- 14) CONNECT TO THE AIRCRAFT AUDIO SYSTEM OR STAND-ALONE HEADSET JACKS.
- 15) INSTALLATION OF TRANSCEIVER 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.
- 16) TEST THE SYSTEM IN ACCORDANCE WITH THE POST-INSTALLATION TEST PROCEDURE IN THE INSTALLATION AND OPERATING INSTRUCTIONS MANUAL.
- 17) REFER TO THE AIRCRAFT STRUCTURAL REPAIR MANUAL AND THE MAINTENANCE MANUAL FOR INSTRUCTIONS AND INFORMATION PERTINENT TO THIS INSTALLATION.
- 18) 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.
- 19) NOT NORMALLY USED IN AIRCRAFT.
- 20) CONNECTION TO AN OPTIONAL RC-9000 SLAVE CONTROL HEAD.
- 21) CONNECTION TO AN OPTIONAL SRA-6000 SWITCHED RECEIVE ATTENUATOR.
- 22) OPTIONAL DONGLE USED WHEN A SINGLE AUDIO OUTPUT GROUND RETURN IS REQUIRED.
- 23) CONNECTION TO OPTIONAL ANTENNA TUNER SYSTEM. SEE MANUAL FOR INSTALLATION INSTRUCTIONS AND POWER CONNECTIONS.
- 24) CONNECTION TO OPTIONAL VHF HIGH PASS FILTER.
- 25) CONNECTION TO OPTIONAL ANTENNA SWITCHING UNIT.
- 26) CONNECTION TO AN OPTIONAL TDAP-650 DIGITAL AUDIO PANEL.
- 27) CONNECTION TO AN OPTIONAL DAS-9000 DIGITAL AUDIO SPLITTER.

SECTION 3: SPECIFICATIONS

3.1 SPECIFICATIONS

<u>Specification</u>	<u>Characteristic</u>
Power Requirement:	28 Volts DC $\pm$ 15% 300 mA max.
Communication:	RS232 – 460,800, N, 8, 1
Dimensions:	6.52" x 5.5" x 0.974" (16.56 x 13.97 x 2.47cm)
Weight:	0.844 lbs. (382.8 g)

TECHNISONIC INDUSTRIES LIMITED

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 unit (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 online
Warranty Registration Form found at www.til.ca.**