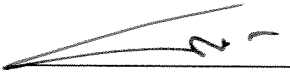



TECHNISONIC INDUSTRIES LIMITED	
TDFM-600/6000 Series VHF/UHF Low/UHF High/800 MHZ Multi-band Transceiver System	
INSTRUCTIONS for CONTINUED AIRWORTHINESS	
<u>MMS02030-1</u>	
<p>Mfg: See Aircraft Applicability Chapter 1.0, Section C.</p> <p>Type: See Aircraft Applicability Chapter 1.0, Section C.</p>	<p>Prepared by: Avionics Design Services</p> <p>Checked by:  Catalin Voicu, DE 103 DAO 06-O-01</p> <p>Released by:  Robert Gow, DE 101 DAO 06-O-01</p>

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 SERVICES LTD
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LOG OF PAGE REVISIONS

Chapter	Sub-Chapter	Page	Revision
Cover Page	-	-	D
Log of Page Revisions		i	D
Table of Contents		ii	D
1.0	1-00-00	1	D
		2	D
		3	D
		4	D
4.0	4-00-00	1	D
5.0	5-20-00	1	D
23.0	23-10-00	1	D
		2	D
		3	D
		4	D
		5	D
		6	D
APPENDIX A	-	1	D

TABLE OF CONTENTS

CHAPTER 1.0 - INTRODUCTION	1
A. General	1
B. ICA Distribution	2
C. Aircraft Applicability	2
D. Acronyms	3
E. Supplement Identities:	4
CHAPTER 4.0 - AIRWORTHINESS LIMITATIONS	1
A. General	1
B. FAA Approval	1
CHAPTER 5.0 - TIME LIMITS/MAINTENANCE CHECKS	1
5-20-00: SCHEDULED CHECKS	1
A. General	1
B. Component Overhaul Schedule	1
CHAPTER 23.0 - COMMUNICATIONS	1
23-10-00: TDFM-600/6000 TRANSCEIVERS	1
1.0 Description	1
101. Fault Isolation	1
201. Reserved	2
301. Servicing	2
401. Removal / Installation	2
501. Adjustment / Test	4
601. Inspection / Check	5
701. Cleaning / Painting	5
801. Approved Repairs	5
APPENDIX A	1

CHAPTER 1.0 - INTRODUCTION

A. General

The Technisonic Industries Limited TDFM-600/6000 Series VHF/UHF Low/UHF High/800 MHZ Multi-band Transceiver installation is defined by Department of Transport Supplemental Type Certificate SA97-129 and FAA Supplemental Type Certificate SA00812NY. The following equipment is installed:

CHAPTER	MAKE	MODEL / UNIT	LOCATION
23-10-00	Technisonic	TDFM-600/6000 Series Multi-band Digital FM Transceiver	DZUS rail-mounted in the cockpit or cabin of the aircraft; refer to Aircraft Weight & Balance and Aircraft Log for specific location of transceiver.
		<u>Type I Modules</u> VHF 138 - 174 MHz UHF Lo 403 - 470 MHz UHF Hi 450 - 512 MHz 800 821 - 870 MHz	
		<u>Type II Modules</u> VHF 138 - 174 MHz UHF Lo 380-470 MHz UHF Hi 450 - 520 MHz 800/700 764 - 870 MHz	
		<u>TDFM-636</u> 136 - 174 MHz	
	RC-6000 Remote Control Head (Optional)	Instrument panel	
	AMS-6000 Audio Mode Selector (Optional)	Instrument Panel	
	SRA-6000 Attenuator (Optional)	Installed in-line between receiver and antenna.	
	Comant	VHF Antenna 136 - 176 MHz (As required) UHFLO 403 - 470 MHz (As required) UHFHI 450 - 512 MHz (As required) 800 806 - 870 MHz (As required)	Refer to Aircraft Weight & Balance and Aircraft Log for specific location of antenna.

The inspection and maintenance practices described herein relate to the TDFM-600/6000 Series Multi-band Transceiver system as described above.

Component part numbers and wiring diagrams are included in the Installation and Operating Instructions included in Appendix A.

The following are reference documents required to supplement the information in this manual concerning the removal, installation and inspection of the above components.

DOCUMENT	DOCUMENT NO.	TITLE
INSTALLATION AND OPERATING INSTRUCTIONS	01RE293	MULTIBAND P25 AIRBORNE TRANSCEIVER MODEL TDFM-600/6000 INSTALLATION AND OPERATING INSTRUCTIONS
INSTALLATION AND OPERATING INSTRUCTIONS	02RE299	MULTIBAND P25 AIRBORNE TRANSCEIVER REMOTE CONTROL RC-6000 INSTALLATION AND OPERATING INSTRUCTIONS

B. ICA Distribution

This document, and any revisions thereto, shall be distributed to authorized users of the applicable STC data. They will be distributed by courier, in electronic format or paper format.

C. Aircraft Applicability

The TDFM-600/6000 Series Multi-band Transceiver system installation is applicable to the following fixed-wing aircraft:

MODEL	MANUFACTURER
172, 172A/B/C/D/E/F/G/H/I/K/L/M/N/P/Q, 172R	CESSNA
180, 180A/B/C/D/E/F/G/H/J/K	CESSNA
182, 182A/B/C/D/E/F/G/H/J/K/L/M/N/P/Q/R, 182S, T182, TR182, R182	CESSNA
185, 185A/B/C/D/E, A185E/F	CESSNA
206, P206, P206A/B/C/D/E, TP206A/B/C/D/E, U206, U206A/B/C/D/E/F/G, TU206A/B/C/D/E/F/G	CESSNA
208, 208A/B	CESSNA
PA-32-260/300/301/301T, PA-32R-300/301(SP)/301(HP)/301T, PA-32S-300, PA-32RT-300/300T	PIPER
PA-28-140/150/151/160/161/180/181/201T/235/236, PA-28R-180/200/20T, PA-28RT-201/201T, PA28S-160/180	PIPER
500, 500-A/B/U/S, 520, 560, 560-A/E	TWIN COMMANDER
560-F, 680, 680E/F/FL/FL(P)/T/V/W, 681, 685, 690, 690A/B/C/D, 695, 695A/B, 720	TWIN COMMANDER
PC-6, PC-6-H1, PC-6-H2, PC-6/350, PC-6/350-H1, PC-6/350-H2, PC-6/A, PC-6/A-H1, PC-6/A-H2, PC-6/B-H2, PC-6/B1-H2, PC-6/B2-H2	PILATUS

D. Acronyms

VHFLO	Very High Frequency Low
VHF	Very High Frequency
FM	Frequency Modulation
UHF	Ultra High Frequency
UHFHI	Ultra High Frequency High
UHFLO	Ultra High Frequency Low
MHz	Mega Hertz
RX	Receive
TX	Transmit
RF	Radio Frequency
STC	Supplemental Type Certificate
FAA	Federal Aviation Administration
ATA	Airline Transport Association

E. Supplement Identities: Chapter, Page, Paragraph Numbers

The supplement format follows the general requirements of Specification ATA-2200 with respect to Chapter and Title. However, since the extent of the supplemental information is relatively small in scope, the page numbering for each chapter is consecutive. Reference can be made to the following Chapter/Subject Listing:

<u>Subject</u>	<u>Page Number</u>
Title page	0
Table of Contents, Index, Page Listing	i, ii, iii, etc.
Content page(s)	1, 2, 3, etc.

Paragraph or component titles are listed via A. B. C. D. etc.

Sub-paragraphs are listed according to:

<u>Subject</u>	<u>Sub-Para. Number</u>
Description	1.0
Fault Isolation	101
(Reserved)	201
Servicing	301
Removal / Installation	401
Adjustment / Test	501
Inspection / Check	601
Cleaning / Painting	701
Approved Repairs	801

CHAPTER 4.0 - AIRWORTHINESS LIMITATIONS

A. General

No airworthiness limitations associated with this type design change.

B. FAA Approval

The following is for installations requiring FAA STC Approval:

The Airworthiness Limitations section is FAA-approved and specifies maintenance required under 43.16 and 91.403 of the Federal Aviation Regulation, unless an alternative program has been FAA approved.

CHAPTER 5.0 - TIME LIMITS/MAINTENANCE CHECKS
5-20-00: SCHEDULED CHECKS

A. General

Perform the following General Visual Inspections, annually. The inspections are to be performed referencing the applicable wiring diagrams in the Installation & Operating Instructions, included in Appendix A. Follow standard maintenance practices of individual Aircraft Maintenance Manual.

Description	Inspection	Inspection Details
Antenna Installation;	Annually	Remove antenna in accordance with Chapter 23-10-00 Section 401 Item B. Perform visual inspection of external skin around periphery of connector cutouts and all rivet locations. Check for damage such as fastener deterioration, skin cracks, corrosion, paint exfoliation and other signs of structural deterioration of the skin structure. Any flaw indication is cause for rejection.
TDFM-600/6000 Series Transceiver; RC-6000 Remote Control Head (if installed); AMS-6000 Audio Mode Selector (if installed); Wiring;		Visually examine all external surfaces for possible damage. Check external connectors for dust, corrosion, or damage. Check external parts for loose or damaged hardware. Make visual check of wiring and connectors for damage.

B. Component Overhaul Schedule

No component overhaul required for this type design change.

CHAPTER 23.0 - COMMUNICATIONS
23-10-00: TDFM-600/6000 TRANSCEIVERS

1.0 Description

The TDFM-600/6000 series of transceivers are airborne multiband radios capable of conventional FM, P25, SmartNet and SMART ZONE trunking systems. The TDFM-600/6000 integrates two or three Motorola portable radio modules in a single unit. RF modules are available in VHF, UHFLO, UHFHI and 800 MHZ bands. The bands are numbered 1, 4, 5, and 8 respectively. An antenna is required for each of the bands.

The optional RC-6000 remote control head is a secondary control point for the TDFM-600/6000 series of transceivers.

The optional AMS-6000 is an audio mode selector box designed to work in conjunction with the TDFM-600/6000 series of transceivers. The AMS-6000 combines the audio and key lines from up to three separate RF Bands in a TDFM-6000 to operate as a single transceiver from one position on an audio controller.

If the optional SRA-6000 attenuator is installed, a switch is installed on the panel near the TDFM-600/6000 transceiver. The ON position is labelled 'IN FLIGHT', the OFF position is labelled 'ON GROUND'.

101. Fault Isolation

NOTE:

Prepare aircraft in accordance with standard aircraft maintenance manual procedures.

Condition	Action
No power.	Ensure connectors are properly affixed. Pull and reset applicable circuit breakers.
Not operating correctly.	TDFM-600/6000; AMS-6000; SRA-6000: Inspect wiring and ring out harness in accordance with Figure 3-2 of Technisonic Industries Ltd. Installation and Operating Instructions document no. 01RE293 and correct irregularities as required. RC-6000: Inspect wiring and ring out harness in accordance with Figure 3-2 of Technisonic Industries Ltd. Installation and Operating Instructions document no. 02RE299 and correct irregularities as required.
Not operating correctly after above action completed.	Remove in accordance with Section 401. B of this chapter and return to Technisonic Industries Ltd. for evaluation and repair.

201. Reserved

Not Applicable

301. Servicing

There are no servicing procedures associated with the components of this chapter.

401. Removal / Installation

NOTES:

1. Prepare aircraft in accordance with standard aircraft maintenance manual procedures.
2. Gain access to the components of this chapter, in accordance with the aircraft maintenance manual.

A. TDFM-600/6000 Transceivers

Removal

- a) Pull and collar applicable TDFM-600/6000 circuit breaker.
- b) Remove four Dzus fasteners from front of transceiver.
- c) Slide transceiver forward of the panel cutout.
- d) Disconnect electrical connector and antenna connector(s) from the rear of the transceiver.
- e) Remove transceiver from the panel cutout.

Installation

- a) Connect electrical connector and antenna connector(s) to the rear of the transceiver.
- b) Slide transceiver into the panel cutout.
- c) Secure four Dzus fasteners on the front of transceiver.
- d) Remove applicable TDFM-600/6000 circuit breaker collar and reset.
- e) Perform the Function Test in accordance with Sections 501.A, of this chapter.

B. Antenna(s)

Removal

- a) Gain access to antenna.
- b) Remove electrical connectors from the antenna.
- c) Remove the sealant from periphery of antenna base.
- d) Remove screws and washers securing the antenna to the mounting surface.
- e) Remove the antenna from the aircraft.

Installation

- a) Perform visual inspection of antenna provisions in accordance with Chapter 5-20-00 prior to installation of antenna.
- b) Connect coaxial cable to antenna coax connector.
- c) Secure fastening screws used to attach antenna to fuselage.
- d) Seal around periphery of antenna with PRC-DeSoto PR-1422B2, or equivalent.
- e) Perform the Function Test in accordance with Sections 501.A, of this chapter.

C. RC-6000 Remote Control Head (optional)

Removal

- a) Pull and collar applicable RC-6000 circuit breaker.
- b) Unlock four Dzus fasteners from front of RC-6000.
- c) Slide RC-6000 forward of the panel cutout.
- d) Disconnect electrical connector from the rear of the RC-6000.
- e) Remove RC-6000 from the panel cutout.

Installation

- a) Connect electrical connector to the rear of the RC-6000.
- b) Slide RC-6000 into the panel cutout.
- c) Secure four Dzus fasteners on the front of RC-6000.
- d) Remove applicable RC-6000 circuit breaker collar and reset.
- e) Perform the Function Test in accordance with Sections 501.A, of this chapter.

D. AMS-6000 Audio Mode Selector (optional)

Removal

- a) Unlock two Dzus fasteners from front of AMS-6000.
- b) Slide AMS-6000 forward of the panel cutout.
- c) Disconnect electrical connector from the rear of the AMS-6000.
- d) Remove AMS-6000 from the panel cutout.

Installation

- a) Connect electrical connector to the rear of the AMS-6000.
- b) Slide AMS-6000 into the panel cutout.
- c) Secure two Dzus fasteners on the front of AMS-6000.

501. Adjustment / Test

A. Function Test

NOTE:

If only the transceiver is installed, perform the following function test using the front panel of the TDFM-600/6000. If the transceiver and the remote controller are installed, perform the following function test from the front panel of the RC-6000.

- a) Power up the Aircraft's avionics systems. Turn on the transceiver and remote controller (as applicable).
- b) Adjust the volume levels as required.
- c) Press the squelch defeat button to open receiver.
- d) Ensure receiver is operational, the RX status indicator light is on and channels are open.
- e) Tune an operating frequency and carry out a transmit / receive. Ensure the TX status indicator lights when receiver is transmitting and RX status indicator lights when receiver is receiving.
- f) Check the operation of all front panel controls.
- g) Test the REPEAT function to ensure there is no interference from or to other equipment on the aircraft (AMS-6000).

601. Inspection / Check

Inspections for this chapters components are to be performed in accordance with Chapter 5-20-00, paragraph A, of these Instructions for Continued Airworthiness.

701. Cleaning / Painting

There are no additional cleaning or painting procedures to be added to the Aircraft Maintenance Manual for the components of this chapter.

801. Approved Repairs

A. TDFM-600/6000 Transceiver / RC-6000 Remote Controller (optional) / AMS-6000 Audio Mode Selector (optional)

There are no approved field repairs for the transceiver or controller. Failed units caused by defective parts or workmanship, should be returned to:

Technisonic Industries Limited
240 Traders Blvd. E
Mississauga, ON
L4Z 1W7
[905] 890-2113

B. Antennas

The antennas associated with this system are non-repairable. If they are determined to be faulty they must be removed and replaced.

APPENDIX A		
ITEM	TITLE	REV *
1	01RE293 INSTALLATION AND OPERATING INSTRUCTIONS MULTIBAND P25 AIRBORNE TRANSCEIVER MODEL TDFM-600/6000. (INCLUDES AMS-6000)	F
2	02RE299 INSTALLATION AND OPERATING INSTRUCTIONS MULTIBAND P25 AIRBORNE TRANSCEIVER REMOTE CONTROL MODEL RC-6000	A

* Or later Transport Canada approved revision.