

Technisonic Industries Ltd.  
 240 Traders Blvd. E  
 Mississauga, ON  
 L4Z 1W7

SUPPLEMENT No. ICA12026-1  
 Eurocopter France  
 AS 350 B/B1/B2/B3/BA/D  
 Revision A

<b>TECHNISONIC INDUSTRIES LIMITED</b>	
P25 TDFM TRANSCEIVER AIRBORNE SYSTEM	
INSTRUCTIONS for CONTINUED AIRWORTHINESS	
<u>ICA12026-1</u>	
Mfg: Eurocopter France  Type: AS 350 B/B1/B2/B3/BA/D	Prepared by: Avionics Design Services  Checked by: <u><i>Inder Panesar</i></u> Inder Panesar  Released by: <u><i>Chris Heidel</i></u> Chris Heidel DE 102, DAO-06-O-01

Revision No.	Revision Date	Affected Pages	By
N/C	August 22, 2012	ALL.	R. Macdonald
A	December 01, 2013	All. Changes as indicated by redlines in left margin.	T. Laflamme

R E L E A S E D

December 01, 2013

**LOG OF PAGE REVISIONS**

Chapter	Sub-Chapter	Page	Revision
Cover Page	-	-	A
Log of Page Revisions		i	A
Table of Contents		ii	A
1.0	1-00-00	1	A
		2	A
		3	A
4.0	4-00-00	1	A
5.0	5-20-00	1	A
	5-50-00	1	A
23.0	23-10-00	1	A
		2	A
		3	A
		4	A
		5	A
APPENDIX A	-	APP-1	A

RELEASED

TABLE OF CONTENTS

CHAPTER 1.0 - INTRODUCTION ..... 1  
    A. General ..... 1  
    B. Reference Data ..... 1  
    C. ICA Distribution ..... 2  
    D. Acronyms ..... 2  
    E. Supplement Identities: ..... 3

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  
    5-50-00: UNSCHEDULED CHECKS ..... 1  
        A. General ..... 1

CHAPTER 23.0 - COMMUNICATIONS ..... 1  
    23-10-00: TDFM-136B TRANSCEIVER ..... 1  
        1.0 Description / Operation ..... 1  
        101. Troubleshooting ..... 1  
        201. Reserved ..... 1  
        301. Servicing ..... 1  
        401. Removal / Installation ..... 2  
        501. Adjustment / Test ..... 4  
        601. Inspection / Check ..... 4  
        701. Cleaning / Painting ..... 4  
        801. Approved Repairs ..... 5  
        901. Storage ..... 5

APPENDIX A ..... 1

RELEASED

## CHAPTER 1.0 - INTRODUCTION

### A. General

The Technisonic Industries Limited Single-band P25 Airborne TDFM-136B system installation is defined by Avionics Design Services Master Drawing List MDL12026. The following equipment is installed:

CHAPTER	MAKE	MODEL / UNIT	P/N	LOCATION
23-10-00	Technisonic	TDFM-136B Series Single-band Digital FM Transceiver	TDFM-136B	Instrument Panel or Pedestal
	Comant Industries	VHF Antenna 136 - 176 MHz (1 or 2 as required)	CI-292-3	As per Structural Diagram 500214 - See Appendix A
	Technisonic	High Pass Filter (if installed)	133956-1	Refer to Aircraft Log for specific location of filter as applicable for TDFM-136( )tranceiver.

### B. Reference Data

- a) Access equipment in accordance with Eurocopter Description and Operation Manual, AS 350, Chapter 06.
- b) Perform all maintenance procedures in accordance with Eurocopter Standard Practices Manual, Chapter 20.
- c) Refer to Appendix A for documents required to supplement the information in this manual concerning the maintenance of the above components.

RELEASED

C. 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.

D. Acronyms

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

**R E L E A S E D**

E. Supplement Identities: Chapter, Page, Paragraph Numbers

The supplement format follows the general requirements of iSpec 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 / Operation	1.0
Troubleshooting	101
(Reserved)	201
Servicing	301
Removal / Installation	401
Adjustment / Test	501
Inspection / Check	601
Cleaning / Painting	701
Approved Repairs	801
Storage	901

R E L E A S E D

## 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.**

"The airworthiness limitations are FAA approved per Article III of the Bilateral Aviation Safety Agreement (BASA 2000) and Section III, Para. 3.2.2 of the Implementation Procedures, 2008."

R E F E R E N C E

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

A. General

Perform the following General Visual Inspections. The inspections are to be performed referencing the applicable wiring diagrams included in Appendix A. Follow standard maintenance practices of the EC AS 350 Master Servicing Recommendations, Chapter 5.20.01.

Description	Inspection	Inspection Details
Antenna Installation;	Type "T" - 500 hours  OR Type "A" - 24 months  Whichever occurs first.	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-136B Transceiver; 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.

RELEASED



**CHAPTER 5.0 - TIME LIMITS/MAINTENANCE CHECKS**  
**5-50-00: UNSCHEDULED CHECKS**

A. General

Hard Landing

Perform inspection, in accordance with Eurocopter AS350 Maintenance Manual, Chapter 5-53-00 - Inspection Following An Incident, Card 05.53.00.605.

Aircraft Struck by Lightning

Perform inspection, in accordance with Eurocopter AS350 Maintenance Manual, Chapter 5-53-00 - Inspection Following An Incident, Card 05.53.00.609.

R E L E A S E D

## CHAPTER 23.0 - COMMUNICATIONS

### 23-10-00: TDFM-136B TRANSCEIVER

#### 1.0 Description / Operation

The TDFM-136B transceiver is installed in the instrument panel or pedestal.

TDFM-136B is a single-band airborne analog and P25 digital FM system which has the main receive and transmit capability with split operation on pre-assigned frequencies in the 136 to 174 MHz band, and the ability to monitor a guard frequency in the 136 to 174 MHz band. An optional 136MHz high-pass filter is installed on the antenna co-axial between the TFM-136 ( ) transceiver and it's antenna.

The TDFM-136B has a 48-character, and 2-line LED matrix display, with data entry and function control accomplished using the 12-button keypad. The transceiver can operate without restriction on any split frequency pair in the single-band and also incorporates a two channel synthesized guard receiver.

#### 101. Troubleshooting

##### **NOTE:**

Prepare aircraft in accordance with the procedures of the Eurocopter AS 350 Standard Practices Manual, Chapter 20.

Condition	Action
No power.	Ensure connectors are properly affixed. Pull and reset applicable circuit breakers.
Not operating correctly.	Inspect wiring and ring out harness in accordance with Avionics Design Services WD12014 and correct irregularities as required.
Not operating correctly after above action completed.	Remove in accordance with Section 401. A 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.

RELEASED

#### 401. Removal / Installation

The components of this chapter are protected by the following fuses:

FUSE LABEL	AMPS	LOCATION	BUS
FM RADIO	3A	ELECTRICAL MASTER BOX UNIT	28VDC AVIONICS BUS PP12

##### **A. TDFM-136B Series Transceiver**

###### Removal

- a) Pull and collar the above indicated circuit breakers.
- 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) Reconnect 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 circuit breaker collars and reset.
- e) Perform the Function Test in accordance with Sections 501.A, of this chapter.

RELEASED

## **B. Antenna(s)**

### Removal

- a) Gain access to antenna.
- b) Disconnect coaxial cable 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) Re-connect coaxial cable to antenna.
- b) Secure fastening screws used to attach antenna to fuselage.
- c) Seal around periphery of antenna with PRC-DeSoto PR-1422B2, or equivalent.
- d) Perform electrical bonding procedure in accordance with Standard Practices Manual, Section 20.02.07.101. Ensure an electrical bonding reading of .003 ohms between the antenna base plate and ground.
- e) Perform the Function Test in accordance with Sections 501.A, of this chapter.

## **C. High-Pass Filter (If installed)**

### Removal

- a) Pull and collar the above indicated circuit breakers.
- b) Gain access to filter.
- c) Disconnect BNC connectors from mating connectors of filter.
- d) Remove and retain screws securing filter to mounting surface.
- e) Remove filter from mounting surface.

### Installation

- a) Secure filter to mounting surface with screws retained from removal.
- b) Re-connect BNC connectors to mating connectors of filter.
- c) Remove circuit breaker collar and reset.
- d) Perform the Function Test in accordance with Sections 501.A, of this chapter.

501. Adjustment / Test

**A. Function Test**

**NOTE:**

Perform the following function test using the front panel of the TDFM-136B.

- 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 guard knob to defeat squelch 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.

**B. Weight and Balance**

Refer to Structural Diagram 5004214, included in Appendix A, for the Weight & Balance.

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.

R E L E A S E D

801. Approved Repairs

**A. TDFM-136B Transceiver /High-Pass Filter**

There are no approved field repairs for these components. 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.

901. Storage

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

R E L E A S E D

Technisonic Industries Ltd.  
240 Traders Blvd. E  
Mississauga, ON  
L4Z 1W7

SUPPLEMENT No. ICA12026-1  
Eurocopter France  
AS 350 B/B1/B2/B3/BA/D  
Revision A

APPENDIX A		
ITEM	TITLE	REV*
1	WIRING DIAGRAM WD12014 TIL FM TRANSCEIVER EC AS-350	A
2	STRUCTURAL DIAGRAM 5004214 TECHNISONIC ANTENNA INSTALLATION - AS350	A

\* Or later approved revision.

RELEASED