

# **ANTENNA TUNER CONTROLLER MODEL ATC-550**

## **Installation and Operating Instructions**

**Til Document No.  
00RE269  
Rev. A  
Issue 1**

**MAY 2000**

---

**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)

**TECHNISONIC INDUSTRIES LIMITED**

www.til.ca

**CAUTION**

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

***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**

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

**WARRANTY INFORMATION**

The Model ATC-550 Antenna Tuner Controller is 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

NOTICE: The above stated address supersedes all others that may appear otherwise in this manual.

**TABLE OF CONTENTS**

<b>Section</b>	<b>Title</b>	<b>Page</b>
<b>SECTION 1 GENERAL DESCRIPTION</b>		
1.1	Introduction .....	1-1
1.2	Description .....	1-1
1.3	Technical Characteristics .....	1-1
<b>SECTION 2 OPERATING INSTRUCTIONS</b>		
2.1	General .....	2-1
<b>SECTION 3 INSTALLATION INSTRUCTIONS</b>		
3.1	General .....	3-1
3.2	Equipment Packing Log .....	3-1
3.3	Installation .....	3-1
3.4	Installation Kit - Contents .....	3-1
3.5	Installation - Pin Locations and Connections .....	3-2
3.6	Installation - Wiring Instructions .....	3-3

**LIST OF TABLES**

<b>Table No.</b>	<b>Title</b>	<b>Page</b>
3.1	RADIO and TUNER 9-pin D Connections .....	3-2

**LIST OF ILLUSTRATIONS**

<b>Figure No.</b>	<b>Title</b>	<b>Page</b>
3.1	Outline Drawing for the ATC-550 .....	3-1
3.2	Wiring Connections for the ATC-550 RADIO Connector .....	3-3
3.3	Wiring Connections for the ATC-550 TUNER Connector .....	3-4
3.4	Wiring Connections and Notes for the ATC-550 .....	3-5

**TECHNISONIC INDUSTRIES LIMITED**

[www.til.ca](http://www.til.ca)

This page left intentionally blank.

---

## **SECTION 1 - GENERAL DESCRIPTION**

---

### **1.1 INTRODUCTION**

This publication provides operating and installation information on the ATC-550 Antenna Tuner Controller manufactured by Technisonic Industries Limited. The unit allows the Technisonic TFM-550 multi-band transceiver to control specifically the Foxtronics model FLX-3050B Tuner / Antenna system.

### **1.2 DESCRIPTION**

The ATC-550 Antenna Tuner Controller has two RS-232 serial ports on one 9 pin D connector. One port is connected to the TFM-550 transceiver for the frequency and transmit control information while the other port can be connected to the RC-550 slave control head if required. Power and ground is applied to this connector. The second 9-pin D connector supplies the control information to the antenna tuner as well as the 28 volt power.

### **1.3 TECHNICAL CHARACTERISTICS**

<u>Specification</u>	<u>Characteristic</u>
Model Designation:	ATC-550
Serial Baud Rate:	9600
Parity Bits:	None
Data Bits:	8
Stop Bits:	1
Physical Dimensions:	(L) 5.2" x (W) 3.9" x (H) 1.25"
Weight:	7.9 oz. (224 grams)
Operating Temperature Range:	-45° C to +70° C
Power Requirement:	28.0 VDC ± 15%
Voltage:	35 mA
Current:	135 mA Max. with Antenna Tuner Connected

**TECHNISONIC INDUSTRIES LIMITED**

[www.til.ca](http://www.til.ca)

This page left intentionally blank.

## **SECTION 2 – OPERATING INSTRUCTIONS**

### **2.1 GENERAL**

The operation of the ATC-550 is fully transparent to the user. However, to operate the system as a whole there are a few things to keep in mind:

1. Every time the low band frequency is changed on the TFM-550, the tuning process will be required.
2. The first time transmit is initiated on the new frequency, the tuning light (from the Antenna Tuner) will light until the best match is attained. This can take up to 4 seconds. Keep the transmitter keyed during this process and then communicate in the normal fashion.
3. If you are using a split frequency pair (as is the case while using a repeater), the tuner will tune to the transmit frequency. The offset for the receive frequency is usually not enough to cause any reduction in receiver sensitivity.
4. The ATC-550 acts as an RS-232 splitter when an RC-550 slave control head is installed so that both units are connected to the TFM-550 transceiver simultaneously.

**TECHNISONIC INDUSTRIES LIMITED**

[www.til.ca](http://www.til.ca)

This page left intentionally blank.



## SECTION 3 – INSTALLATION INSTRUCTIONS

### 3.1 GENERAL

This section contains information and instructions for the correct installation of the ATC-550 Antenna Tuner Controller.

### 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.

### 3.3 INSTALLATION

The ATC-550 Antenna Tuner Controller has two flanges with two holes each for mounting. See Figure 3-1 for an outline drawing of the unit with dimensions to facilitate the installation. The unit should be mounted near the antenna tuner / antenna.

### 3.4 INSTALLATION KIT - CONTENTS

The IN-ATC installation kit (P/N 999093-1) consists of:

1. One 9-pin Cannon D mating connector (female) complete with crimp pins and hood.
2. One 9-pin Cannon D mating connector (male) complete with crimp pins and hood.
3. One 15-pin D Cannon mating connector (female) complete with crimp pins and hood for interface to the Foxtronics FLX-3050B tuner.

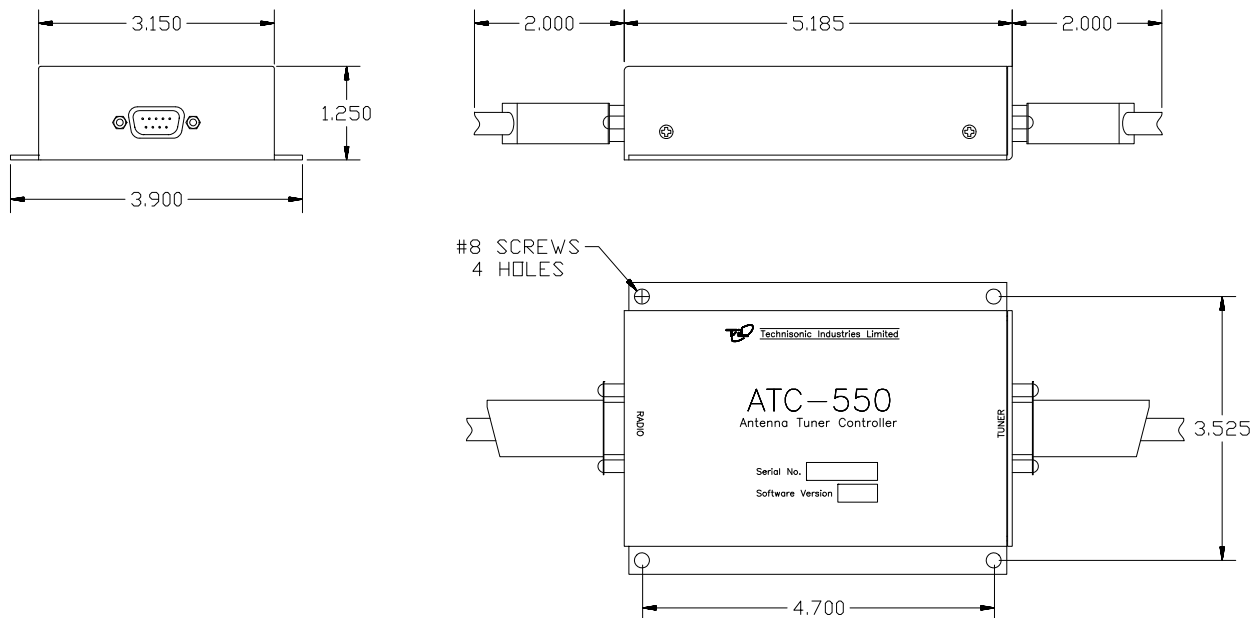


FIGURE 3-1 Outline Drawing for Model ATC-550

**3.5 INSTALLATION - PIN LOCATIONS AND CONNECTIONS**

<b>RADIO 9-Pin D Connections Use FEMALE Connector</b>	
<b>Pin #</b>	<b>Description</b>
1	Ground
2	Main Power +28 VDC
3	No Connection
4	Radio Serial In
5	Radio Serial Out
6	Ground
7	Main Power +28VDC
8	Remote Serial In
9	Remote Serial Out

<b>TUNER 9-Pin D Connections Use FEMALE Connector</b>	
<b>Pin #</b>	<b>Description</b>
1	10 MHz
2	8 MHz
3	4 MHz
4	40 MHz
5	Tune Enable
6	20 MHz
7	Ground
8	No Connection
9	Tuner Power Out +28 VDC

**TABLE 3-1 RADIO and TUNER 9-pin D Connections**

### 3.6 INSTALLATION – WIRING INSTRUCTIONS

Connect to TFM-550 transceiver and RC-550 (if used) as shown in Figure 3-2. Use 22 AWG wire for all connections. Connect ATC-550 to the antenna tuner as shown in Figure 3-3 also using 22 AWG wire. It is recommended that the ATC-550 be mounted near the tuner but is not essential if space does not permit. The tune indicator lamp should be installed in view of the operator using the low band. This could be at the radio, at the remote or both.

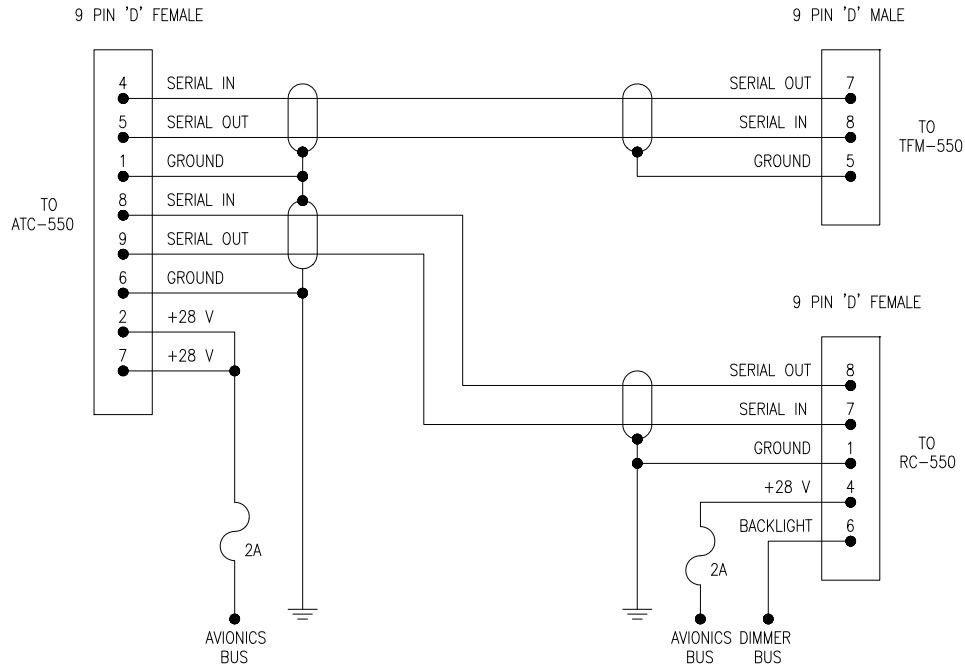


FIGURE 3-2 Wiring connections for the ATC-550 'RADIO' connector

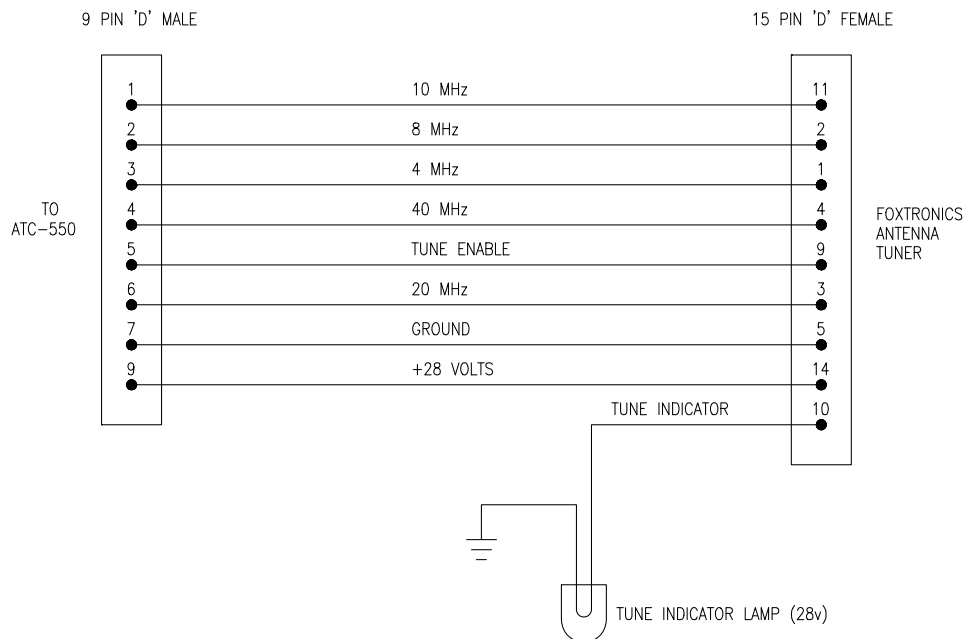
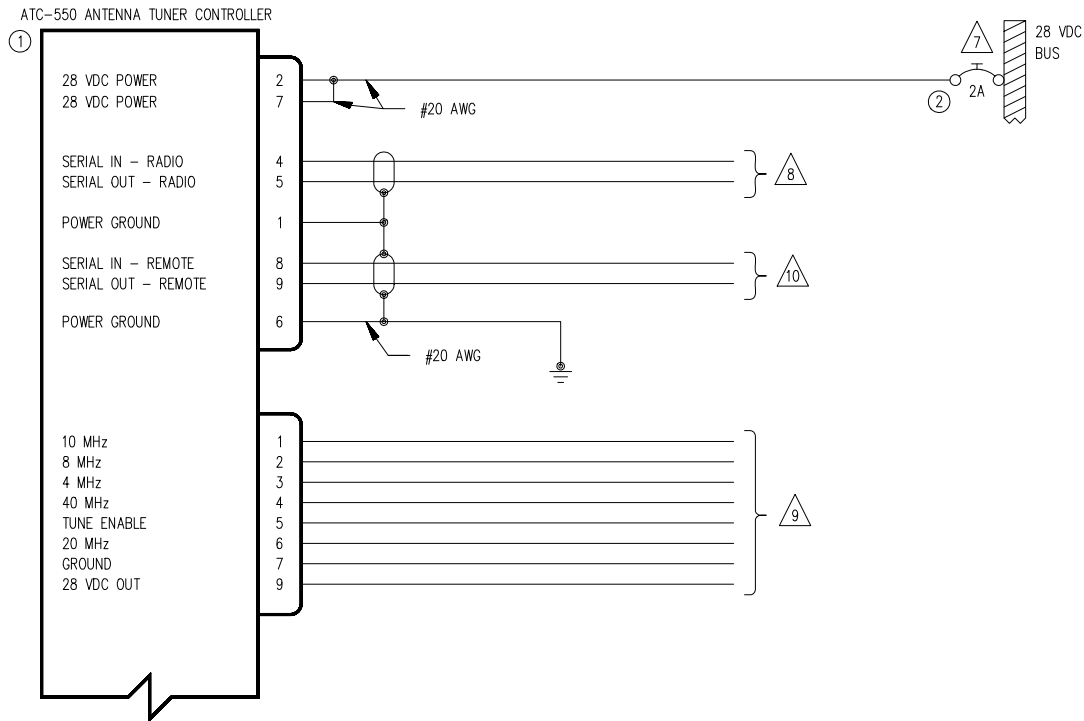


FIGURE 3-3 Wiring connections for the ATC-550 'TUNER' connector



QTY	ITEM	PART NUMBER	DESCRIPTION	SPEC	MATERIAL
1	1	ATC-550	ANTENNA TUNER CONTROLLER	TECHNISONIC INDUSTRIES LIMITED	
1	2	7274-11-2	CIRCUIT BREAKER, 2 AMPS	KLIXON	

NOTES:

- 1) ALL WIRE IAW MIL-W-22759 UNLESS OTHERWISE SPECIFIED.
- 2) ALL CABLE IAW MIL-C-27500 UNLESS OTHERWISE SPECIFIED.
- 3) FABRICATION & INSTALLATION OF WIRING HARNESS IAW AC 43.13-1A CHAPTER 11, SECTION 3, PARA 445 TO 462 AND SECTION 7.
- 4) GROUNDING AND BONDING IAW AC 43.13-1A CHAPTER 11, SECTION 3, PARA 452.
- 5) ALL SINGLE WIRE TO BE #22 AWG MINIMUM AND ALL SHIELDED WIRE TO BE #24 AWG MINIMUM, UNLESS OTHERWISE SPECIFIED.
- 6) INSTALLATION OF ANTENNA IAW AC 43.13-1A CHAPTER 2, SECTION 3, CHAPTERS 5 & 6, 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 SYSTEM WAVELENGTH.

- 7 AN EQUIVALENT CIRCUIT BREAKER OR FUSE MAY BE USED.
- 8 CONNECT TO TFM-550 MULTIBAND TRANSCEIVER.
- 9 CONNECT TO FOXTRONICS ANTENNA / TUNER SYSTEM MODEL FLX-3050B.
- 10 CONNECT TO REMOTE (SLAVE) CONTROL HEAD MODEL RC-550 IF INSTALLED.

11) REFER TO THE AIRCRAFT STRUCTURAL REPAIR MANUAL AND THE MAINTENANCE MANUAL FOR INSTRUCTIONS AND INFORMATION PERTINENT TO THIS INSTALLATION.

**FIGURE 3-4** Wiring connections and notes for the ATC-550