

# Automatic Antenna Tuner FC-50

## Installation Instructions

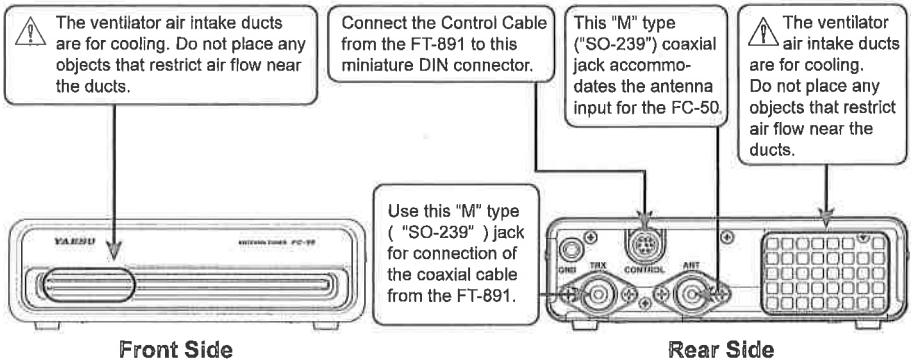
Thank you for your purchase of the model FC-50 Automatic Antenna Tuner. The FC-50 is designed specifically for the FT-891 HF/VHF Transceiver. A cooling fan is incorporated in the tuner to ensure thermal stability of the critical matching elements mounted within the compact case.

The FC-50 Automatic Antenna Tuner responds to control commands from the FT-891 Transceiver, providing microprocessor-based impedance matching on the 160 through 6 meter Amateur bands. On the HF bands the impedance matching range is from 16  $\Omega$  to 150  $\Omega$  (up to 3:1 SWR) and on the 50 MHz band the impedance matching range is from 25  $\Omega$  to 100  $\Omega$  (up to 2:1 SWR). Accordingly, the FC-50 should not be expected to match "long wire" type antennas unless specific design steps are taken to ensure that the impedance presented to the FC-50 is within these specifications.

Please refer to the FT-891 Operating Manual for operating instructions.

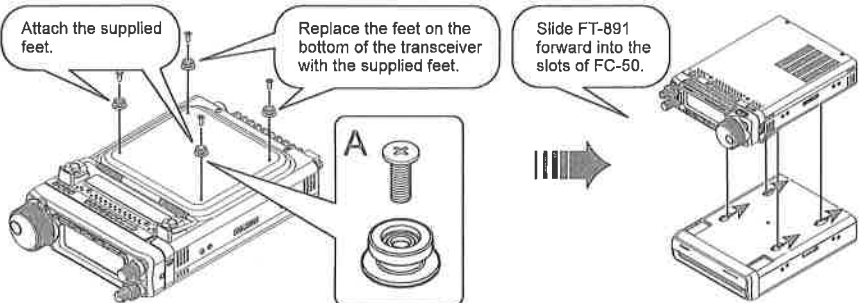
The FC-50 tuner can be activated during receive (refer to "Activate the tuner during receive" on page three of these instructions).

### Front & Rear Panel Information



### Installation to the FT-891

1. Referring to the figure below, remove the four feet and reattach the feet on the bottom of the transceiver with the supplied screws A (M3x8B) (use a screwdriver).  
**⚠** Do not attach any parts other than the supplied mounting parts .
2. Remove the four rubber caps on the top case of the FC-50.
3. Slide FT-891 with the supplied feet toward the rear of the FC-50, into the slots from which the rubber caps were removed in step (2) above.

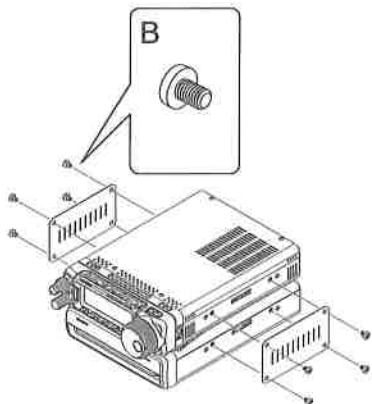


**⚠** When installing the FC-50 and the FT-891 separately, purchase an additional Mobile Mounting Bracket(MMB-82), and mount both units securely.

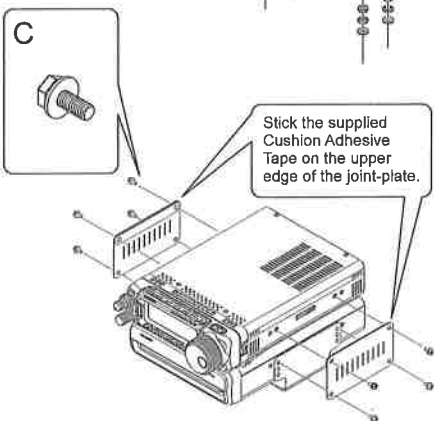
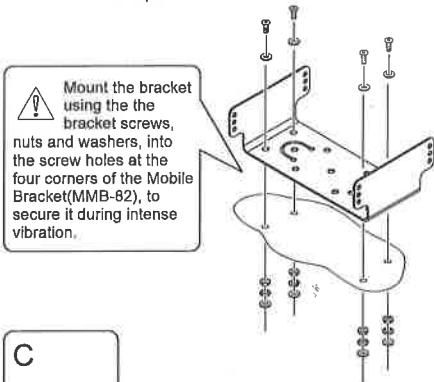
4. Attach the joining plates on both sides of the FC-50 and the FT-891 respectively with the supplied screws (use a screwdriver).

When operating the FC-50 attached to the FT-891 without the Mobile Mounting Bracket, attach them with the supplied screws B (M4x6B).

When operating the FC-50 attached to the FT-891 with the Mobile Mounting Bracket (MMB-82), attach the plates and the bracket with the supplied screws C (M4x10B) and the Cushion Adhesive tapes.



**Normal Attachment**



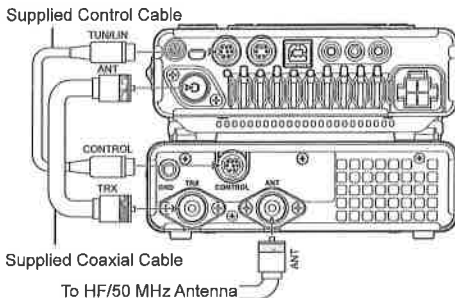
**Attachment with the Mobile Mounting Brackets (MMB-82)**

### Interconnections to the FT-891

- ⚠ Turn the power OFF before connecting the cables to the FC-50.

- ⚠ Do not connect or disconnect the control cable or the coaxial cable with wet hands. Do not connect or disconnect the control cable or the coaxial cable while transmitting, this may cause an electric shock or injury.

- ⚠ Do not place any objects near the FC-50 ventilator ducts.



## Activate the tuner during receive

By configuring the internal DIP switches, the RF signal path may be changed to enable the tuner on both receive and transmit.

### Remove case

1. Turn the FT-891 POWER switch OFF and Remove all cables that are connected to the FC-50.
2. Turn FC-50 upside down.
3. Remove the 8 screws securing the case of the FC-50, and then remove the bottom case (**Figure A**).
4. Remove the 2 screws\*<sup>1</sup> securing the top case of the FC-50, and then remove the top case.

### Activate the tuner during receive

Do not activate the tuner for receive during cross-band operation. If the difference in frequency between TX and RX is more than 100 kHz, the receive signals will be degraded.

1. Turn the FT-891 POWER switch OFF.
2. Remove the 10 screws securing the case of the FC-50, and then remove the top case (**Figure A**).
3. Move the 8th DIP switch toward the rear of the FC-50 circuit board (use a pin) (**Figure B**).
4. Replace the case, using the 10 screws removed in step (2) above.

Figure A

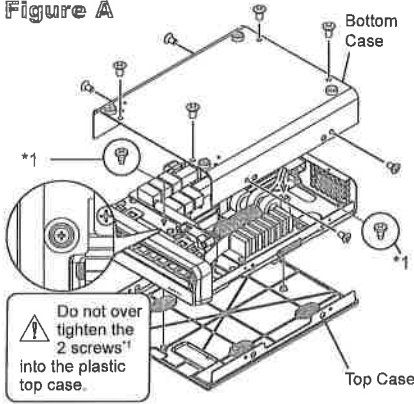
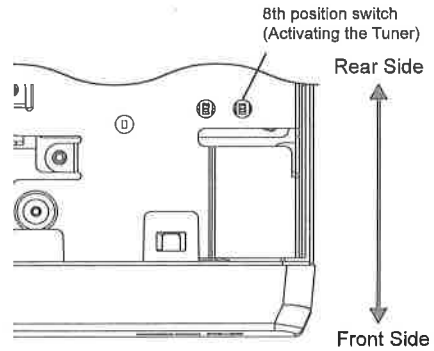


Figure B (inside of the top case)



## Cautions

- Note the default positions of the internal DIP switch components. All switches on the circuit board, except for the 8th switch, are for factory setup use only, and they should not be touched.
- Switch the FC-50 OFF before connecting the cables to the transceiver.
- If the FC-50 does not tune when the FT-891 tuner operation is started, there may be a serious antenna or coaxial cable problem (very high or low impedance due to an "open" or "short"). Please check the antenna and coax if this happens.
- Do not place any objects near the FC-50 ventilator ducts.
- It is normal to hear the sound of the relays while tuning is in progress.
- Depending on the installation and location of some antennas, it may not be possible to tune to a low SWR.
- Do not operate the FC-50 and the FT-891 in a place with intense vibration.

## Supplied Accessories

Coaxial Cable (0.5 m).....	1
Control Cable (0.5 m).....	1
Feet attached on the bottom of the FT-891.....	4
Screws A(M3x8B).....	4
Screws B(M4x6B).....	8*
Screws C(M4x10B).....	8*
Joint-Plates.....	2
Cushion Adhesive Tapes.....	2

\* Either Screws B or Screws C are used through the attaching method.

## Specifications

**Frequency Range** : 1.8 MHz ~ 29.7 MHz , 50 MHz ~ 54 MHz

**Input Impedance** : 50 Ω

**Maximum Power** : 100 Watts

**Tune-up Power** : 4 W ~ 60 W

**Tune-up Time** : 5 seconds or less

**Impedance Matching Range** : 1.8 ~ 29.7 MHz = 16 Ω ~ 150 Ω

50 ~ 54 MHz = 25 Ω ~ 100 Ω

**Impedance Matching Memories** : 100 channels

**Input Voltage Requirement** : 13.8 V ±15 % (supplied from transceiver)

**Operating Temperature Range** : 14° F ~ 122° F (-10 °C ~ +50 °C)

**Case Size (WHD)** : 6.1" x 1.8" x 8.3" (155 x 45 x 210.5 mm)

**Weight** : 1.35 kg (3 lb.)

**Specifications subject to change without notice or obligation.**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Increase the separation between this equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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.

### Disposal of your Electronic and Electric Equipment

Products with the symbol (crossed-out wheeled bin) cannot be disposed as household waste.

Electronic and Electric Equipment should be recycled at a facility capable of handling these items and their waste byproducts.

In EU countries, please contact your local equipment supplier representative or service center for information about the waste collection system in your country.



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### Declaration of Conformity

No. YUK-DDC-0701-16

We, YAESU UK Ltd, certify and declare under our sole responsibility that the following equipment complies with the essential requirements of the Directive 1999/5/EC and 2011/65/EU.

Type of Equipment	Automatic Antenna Tuner
Brand Name	YAESU
Model Number	FT-5R
Manufacturer	YAESU MUSEN CO. LTD.
Address of Manufacturer	Tennoz Parkside Building, 2-5-8 Higashi-Shinagawa, Shinagawa-ku, Tokyo, 140-0002, Japan

Applicable Standards:  
The equipment is tested to and conforms to the essential requirements of directive, as included in following standards:

Safety 1999/5/EC Art. 3 (1) (a)	EN 60950-1:2006 + A2:2013
EMC 1999/5/EC Art. 3 (1) (b)	EN 301 489-01 V1.6.2 EN 301 489-15 V1.2.1
ROHS2 2011/65/EU Art. 7 (b)	EN 60511:2012

The technical documentation as required by the Conformity Assessment procedures is kept at the following address:

Company Address	YAESU UK Ltd Unit 12, Sun Valley Business Park, Winnall Close Winchester, Hampshire UK SO23 0LB
Technical Construction File	Issued by: YAESU Musen Co. Ltd, Tokyo Japan File No: YETA00412 Drawn up in: Winchester, Hampshire UK Date: 01-JU-2016
	Signed for and on behalf of YAESU UK Ltd

Name & Position: PCJ Bigwood  
Technical Sales Manager



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