### FT-2311R

- (1) Disconnect the power cable at the rear of the transceiver, and remove the five screws affixing the bottom cover\*\*\*. Remove the cover carefully so as not to pull on the speaker wires, and lay the set upside down.
- (2) Locate the unconnected brown 10-pin connector at the front right corner on the Main Board just behind the tuning knob. Remove the 27-kilohm resistor (red, violet and orange bands) from between pins 3 and 5 of this connector. Save this resistor, as it must be reinstalled if the FTS-12 is later removed.
- (3) Align the small tab on one side of the 10-pin connector with the hole in one side of the FTS-12 connector, and mate these connectors.
- (4) Now locate the double-sided adhesive tape pre-installed on the inside of the side panel. Remove the paper covering from this tape, and press the FTS-12 against it.
- (5) Replace the bottom cover. The output tone level (VR1 on the FTS-12) is adjusted at the factory for the proper deviation, so no adjustment should be necessary.

\*\*\* If the front panel has not been reversed (ie., angles upwards), the bottom panel is the larger panel which includes the loudspeaker. Otherwise, the bottom panel is the smaller one.



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# **FTS-12** 取扱説明書 FTS-12 INSTALLATION

八重洲無線株式会社 YAESU MUSEN CO., LTD.

#### FT-211RH/311RM/711RH

(4)

- (1)Disconnect the power cable at the rear of the transceiver, and remove the five screws affixing the bottom cover\*. Remove the cover carefully so as not to pull on the speaker wires, and lay the set upside down.
- (2) Locate the unconnected brown 10-pin connector at the front right corner on the Main Board just behind the tuning knob. Align the small tab on one side of this connector with the hole in one side of the FTS-12 connector, and mate these connectors.
- (3) Now locate the double-sided adhesive tape pre-installed on the inside of the side panel. Remove the paper covering from this tape, and press the FTS-12 against it as shown in the diagram below.

On the main circuit board near the FTS-12 mounting position, notice a 27-kilohn resistor (red. violet and m

ange bands). Cut the exposed lead of this resistor. If the FTS-12 is removed from the transceiver, this resistor must be reconnected.

(5) Replace the bottom cover. The output tone level (VR1 on the FTS-12) is adjusted at the factory for the proper deviation, so no adjustment should be necessary.

\* If the fromt pamel has not been reversed (ie., angles upwards), the bottom panel is the larger panel which includes the loudspeaker. Otherwise, the bottom panel is the smaller one.





FT-311RM/711RH





### FT-23R/33R/73R

Make sure the transceiver is off. Remove the hard or soft case, if used, and remove the battery pack. If the FTT-4 DTMF keypad is installed, follow procedure B below. If the FTT-4 is not installed, follow procedure. A.

A. If FTT-4 is NOT Installed

- 1. Remove the four screws affixing the battery spring plate on the bottom of the transceiver and carefully remove the plate.
- 2. Locate the 1/8-watt, 22-kilohm resistor inserted in one side of the (unused) 10-pin connector in the compartment on the bottom of the transceiver, and pull the resistor out of the connector. It is not needed when the FTS-12 is installed.

CAUTION: if the FTS-12 is later removed, the 22-kilohm resistor must be replaced between pins 3 (red wire) and 5 (yellow wire).

- 3. Connect the plug in the transceiver to the FTS-12.
- 4. Locate the double-sided adhesive tape that is already installed inside the compartment on the bottom of the transceiver, and remove the paper cover from the tape. Then mount the FTS-12 by pressing the flat surface of the IC (on the FTS-12) against the tape (see the accompanying drawing).
- 5. Apply the (supplied Insulating adhesive tape to the battery spring plater

c Replace the battery spring plate and its four screws, and the battery pack.

#### **B.** If FTT-4 is Installed

- stalled with the FTT-4.
- replace the battery pack.

Double-sided adhesive tape



1. Remove the four long screws at the corners on the bottom of the FTT-4. Using care not to stress interconnecting wires, separate the FTT-4 from the transceiver just enough to gain access to the compartment in the bottom of the transceiver.

2. Perform steps 2, 3 & 4 of Procedure A. The insulating tape supplied with the FTS-12 is not used when the FTS-12 is in-

3. Replace the FTT-4 and four screws removed in step 1, and then



#### FT-212RH/712RH/912R

- (1) Disconnect the power cable at the rear of the transceiver, place the transceiver upside-down on the workbench, and remove the four screws on the bottom cover. Loosen the two screws on each side, and then remove the bottom cover (Fig. 1).
- Lift the loudspeaker out of its holder, and then remove the three (2)screws in the arms of the holder, and lift it out of the chassis (Fig. 2).
- Remove the jumper plug from jack J1004 in the front left corner  $(\mathbf{3})$ of the speaker compartment (Fig. 2).
- Locate the unconnected brown 10-pin connector at the front of (4) the speaker compartment. Align the small tab on one side of this connector with the hole in one side of the jack on the FTS-12, and mate these connectors (Fig. 3).
- Press the FTS-12 into the clip on the speaker holder (Fig. 4). (5)The output tone level (VR1 on the FTS-12) is adjusted at the factory for the proper deviation, so no adjustment is needed.
- (6) Replace the speaker holder and its three screws, and replace the speaker in the holder. Then replace the bottom cover and its four screws, and retighten the two screws on each side.





Figure 1

### Figure 4

## Figure 2

# MILLING SPACE

J1004

# FT-211/711

- 本体下面(スピーカーがとりつけられている面)のビス1本、ケースの両側にある2本ずつのビス(合計で4本)をとり、下面ケースを取りはずします。
- 写真に矢印で示す抵抗(22kΩ)のリード 線をニッパーで切断してください(後日 FTS-12を取りはずして使う場合は,この 部分をふたたびハンダ付けしないと受信 できなくなりますからご注意ください).
- 3. パネル面から向って右前に茶色の10ピ ンコネクターがあるので、これをFTS-12 に差し込みます.
- 4.写真に示す位置にある両面テープの保 護シートをはがし、その部分にFTS-12を 貼りつけます。



FT-211



FT-711

5.以上で組み込みは終りですが、元通り にケースを取り付けるまえにコネクター がキチッと差し込まれていることを確認 してください.(4.の段階でFTS-12を シャシー内側に貼りつけたあと、コネク ターを差し込んでも結構です.この場合 は3.を省略することになります).

6. FTS-12は各種の測定器を使用して調整 し、標準セットで検査のうえ出荷してい るため、取り付け後の再調整は必要あり ません、万一、トーンレベルの調整が必 要な場合には、VR1で行います.

## FT-2311

- 本体下面(スピーカーがとりつけられている面)のビス1本,ケースの両側にある2本ずつのビス(合計で4本)をとり、下面ケースを取りはずします.
- パネル面から向って右側がFTS-12の 取付位置です、メインユニットより引き 出してある茶色の10ピンコネクターの絶 縁テープをはがして⑥ピン(青線)と⑧ピ ン(灰線)に差し込まれている抵抗(27kΩ) を外し、FTS-12のジャックに接続します、 次に、本体側面に貼り付けてある両面テ ープの保護シートをはがし、FTS-12を貼



67.0	100.0	141.3	203.5
71.9	103.5	146.2	210.7
74.4	107.2	151.4	218.1
77.0	110.9	156.7	225.7
79.7	114.8	162.2	233.5
82.5	118.8	167.9	2418
85.4	123.0	173.8	251.3
88.5	127.3	179.9	-
91.5	131.8	186.2	
94.8	136.5	192.8	-

り付けて固定します.(後日FTS-12を取 り外して使う場合には,この工程で外し た抵抗を元通りに接続しないと受信音が 出ませんのでご注意ください.)

- 以上で組み込みは終りですが、元通り
  にケースを取り付けるまえにコネクター
  がキチッと差し込まれていることを確認
  してください。
- 4. FTS-12は各種の測定器を使用して調整 し、標準セットで検査のうえ出荷してい るため、取り付け後の再調整は必要あり ません、万一、トーンレベルの調整が必 要な場合には、VR1で行います。





# FT-212RH/712RH

- each side, and then remove the bottom cover (Fig. 1).
- D TOUL BY DRIVE AND THE (Fig. 2). SEAT PLANT PLANT PARTY
- (3)of the speaker compartment (Fig. 2).
- (4)FTS-12, and mate these connectors (Fig. 3).
- (6)four screws, and retighten the two screws on each side.

Figure 1

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ADAN DIVE 3 P

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(1) Disconnect the power cable at the rear of the transceiver, place the transceiver upside-down on the workbench, and remove the four screws on the bottom cover. Loosen the two screws on

(2) Lift the loudspeaker out of its holder, and then remove the three screws in the arms of the holder, and lift it out of the chassis THE DURANT ALLED THE TORS THE TORG LIND CEASE AS CHARTER THE STORE TO DR. HEARING

Remove the jumper plug from jack J1004 in the front left corner

Locate the unconnected brown 10-pin connector at the front of the speaker compartment. Align the small tab on one side of this connector with the hole in one side of the jack on the

(5) Press the FTS-12 into the clip on the speaker holder (Fig. 4). The output tone level (VR1 on the FTS-12) is adjusted at the factory for the proper deviation, so no adjustment is needed. TURIDE OF AND DUT . REDOKE DUG DUDAT TOTAL TO ACLINE TOTAL

FIS-12 IS addinged of the group for the proper devisiton, so

Replace the speaker holder and its three screws, and replace the speaker in the holder. Then replace the bottom cover and its 



Figure 2



Figure 3

CTCSS Tone Frequency (Hz)				
67.0	100.0	141.3	203.5	
71.9	103.5	146.2	210.7	
74.4	107.2	151.4	218.1	
77.0	110.9	156.7	225.7	
79.7	114.8	162.2	233.6	
82.5	118.8	167.9	241.8	
85.4	123.0	173.8	250.3	
88.5	127.3	179.9		
91.5	131.8	186.2		
94.8	136.5	192.8		





Figure 4

The FTS-12 is a subaudible CTCSS (Continuous Tone-Controlled Squelch System) which offers programmable selection Transmitonly (encode) and transmit/receive (encode/ of 37 tones for transmission and filter/detectors for reception. decode) modes are selectable from keys on the transceiver.

# FT-23R/33R/73R

Make sure the transceiver is off. Remove the hard or soft case, if used, and remove the battery pack. If the FTT-4 DTMF keypad is installed, follow procedure B below. If the FTT-4 is not installed, follow procedure. A.

- A. If FTT-4 is NOT Installed
- 1. Remove the four screws affixing the battery spring plate on

CAUTION: if the FTS-12 is later removed, the 22-kilohm resistor must be replaced between pins 3 (red wire) and 5 (yellow wire).

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3. Connect the plug in the transceiver to the FTS-12.

SEROSALS THE FLIC CITSELSES DE

- against the tape (see the accompanying drawing).
- spring plate.

6. Replace the battery spring plate and its four screws, and the battery pack.



## FTS-12 TONE SQUELCH UNIT INSTALLATION

the bottom of the transceiver and carefully remove the plate.

2. Locate the 1/8-watt, 22-kilohm resistor inserted in one side of the (unused) 10-pin connector in the compartment on the bottom of the transceiver, and pull the resistor out of the connector. It is not needed when the FTS-12 is installed.

4. Locate the double-sided adhesive tape that is already installed inside the compartment on the bottom of the transceiver, and remove the paper cover from the tape. Then mount the FTS-12 by pressing the flat surface of the IC (on the FTS-12)

Trank rent or the source a state wist a star dent of the state of the 5. Apply the (supplied) insulating adhesive tape to the battery

#### **B.** If FTT-4 is Installed

L.E.STINF 1118H

- 1. Remove the four long screws at the corners on the bottom of the FTT-4. Using care not to stress interconnecting wires, separate the FTT-4 from the transceiver just enough to gain access to the compartment in the bottom of the transceiver.
- 2. Perform steps 2, 3 & 4 of Procedure A. The insulating tape supplied with the FTS-12 is not used when the FTS-12 is installed with the FTT-4.
- 3. Replace the FTT-4 and four screws removed in step 1, and then replace the battery pack.

Double-sided adhesive tape

> 10-pin connector 22-kilohm, 1/8-watt resistor FTS-12

Double-sided adhesive tape

133 0 1 1 1 4 F

520 3.



FTT-4

CTC	SS Tone F	requency	(Hz)
67.0	100.0	141.3	203.5
71.9	103.5	146.2	- 210.7
74.4	107.2	151.4	218.1
77.0	110.9	156.7	225.7
79.7	114.8	162.2	233.6
82.5	118.8	167.9	241.8
85.4	123.0	173.8	250.3
88.5	127.3	179.9	
91.5	131.8	186.2	
94.8	136.5	192.8	

# FT-211RH/311RM/711RH

- (1) the speaker wires, and lay the set upside down.
- (2)
- (3) Now locate the double-sided adhesive tape pre-installed shown in the diagram below.
- (4) On the main circuit board near the FTS-12 mounting positor must be reconnected.
- (5) Replace the bottom cover. The output tone level (VR1 on deviation, so no adjustment should be necessary.

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Disconnect the power cable at the rear of the transceiver, and remove the five screws affixing the bottom cover\*. Remove the cover carefully so as not to pull on

Locate the unconnected brown 10-pin connector at the front right corner on the Main Board just behind the tuning knob. Align the small tab on one side of this connector with the hole in one side of the FTS-12 connector, and mate these connectors.

on the inside of the side panel. Remove the paper covering from this tape, and press the FTS-12 against it as

tion, notice a 27-kilohm resistor (red, violet and orange bands). Cut the exposed lead of this resistor. If the FTS-12 is removed from the transceiver, this resis-

the FTS-12) is adjusted at the factory for the proper

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FT-311RM/711RH

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# FT-2311R

- (1) Disconnect the power cable at the rear of the transceiver, and the set upside down.
- (2) Locate the unconnected brown 10-pin connector at the front
- (3) Align the small tab on one side of the 10-pin connector with the tors.
- Lepanserutri l'ano mildor, a coplace que bortoni coverum traveru (4) Now locate the double-sided adhesive tape pre-installed on the
- the output tour bear on the output adjusted at the Replace the bottom cover. The output tone level (VR1 on the (5) no adjustment should be necessary.

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the speaker compart the west the short tap on one was of

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remove the five screws affixing the bottom cover\*\*\*. Remove the cover carefully so as not to pull on the speaker wires, and lay

right corner on the Main Board Just behind the tuning knob. Remove the 27-kilohm resistor (red, violet and orange bands) from between pins 3 and 5 of this connector. Save this resistor, as it must be reinstalled if the FTS-12 is later removed.

hole in one side of the FTS-12 connector, and mate these connec-

inside of the side panel. Remove the paper covering from this tape, and press the FTS-12 against it.

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	118.8	167.9	241.8
- part	123.0	173.8	250.3
	127.3	179.9	and the second se
	131.8	186.2	1007-00 1007-00
	136.5	192.8	

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