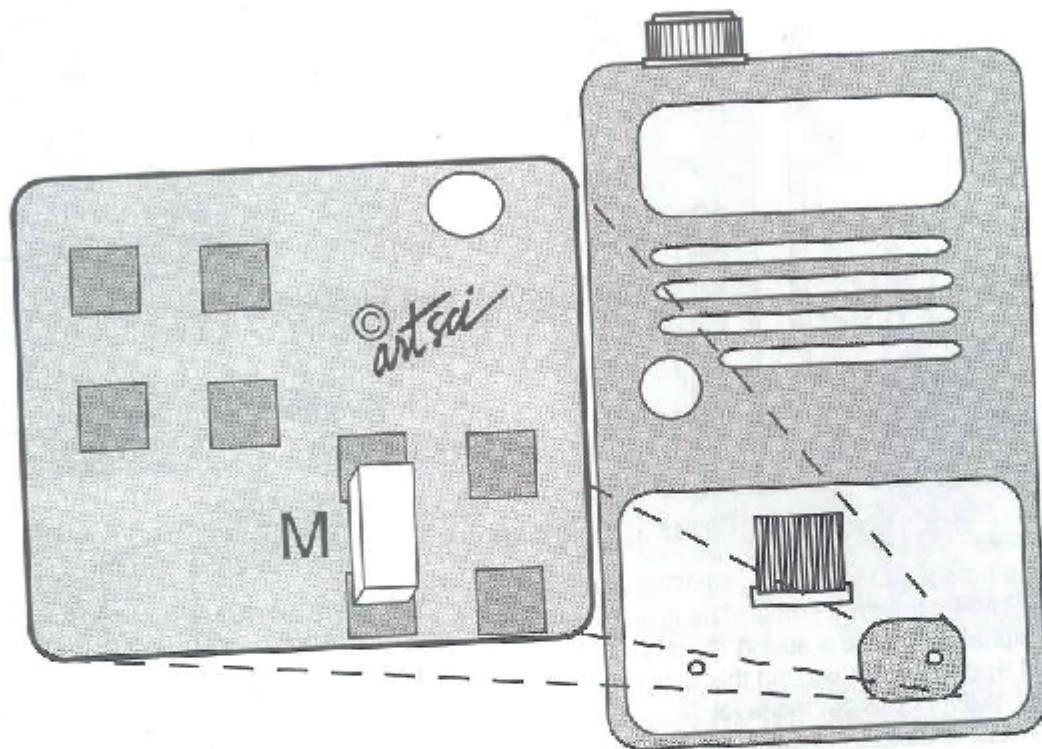


Expansion Range

140 Mhz - 174 Mhz

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

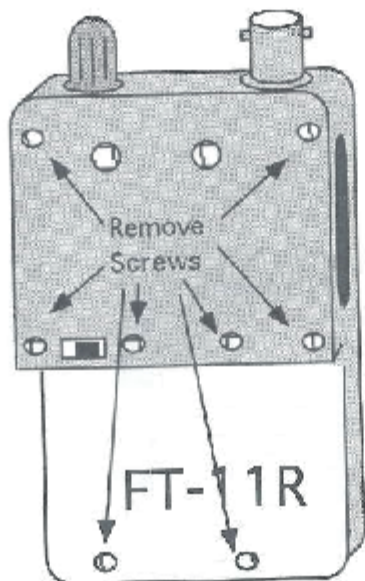
1. Remove the battery and the antenna.
2. Remove the 2 screws under the "N-Cd" Sticker.
3. Carefully lift the keypad and locate the jumper pads.
4. Locate and **unsolder the 0 ohm resistor at location "M"**
5. Reassemble the radio.
6. Reset the microprocessor.
(Press and hold (Top-Notch) and [LAMP] button and turn the radio on)

YAESU FT-11R

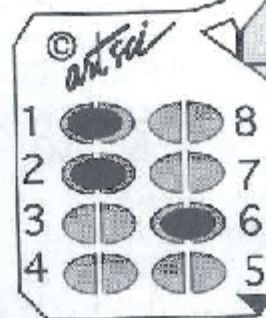
Receive and Transmit Expansion

Expansion Range

The Exact range of this radio is not known as of press time. However radios expand from 138 Mhz - 165 Mhz & 420 - 469 Mhz. Remember that the electronic circuits can only tune a 20-30 MHz w around the original center frequency (tuned at the factory) you may better performance at the top or the bottom ends of the tuneable range.



Remove
Jumper
Pad # 4



Inside front of FT-11
after top circuit board
has been removed



Squelch adjustment

Press and hold [CALL], [UP vol] & [DOWN vol] and turn the radio on.
Press [UP MHz] button 3 times. The display will show SQL T1.
Inject a signal or tune to a strong signal (weather channel etc.)
Press [F] Button for 1/2 second this sets the level. ("AD" will blink on display)
Press the [MR] key to set the level
Press [CALL] to store the level in EEPROM memory.

Add Jumper
for Tone 1

To activate
Press [MR]
[PTT] at 1

Expanded RF Modification

1. Remove Battery and Antenna & belt clip.
2. Remove Screws from the back of the radio. See Drawing.
(note location of battery release & hand strap clip, they will fall out)
3. Open radio and remove silver battery shield.
4. Remove two silver screws from top circuit board (below speaker/mic connector)
5. Gently pry top and bottom circuit boards apart.
6. Locate and **remove solder from pad #4.**
7. Reassemble the radio. Remember the battery clip and hand strap clips.
8. Reset the microprocessor.
(Press and hold [UP] & [DOWN] arrow keys and turn the radio on.)
(Press [MR], [VFO] & [2] and turn the radio on.)

YAESU

and Transmit Expansion

YAESU FT-23R

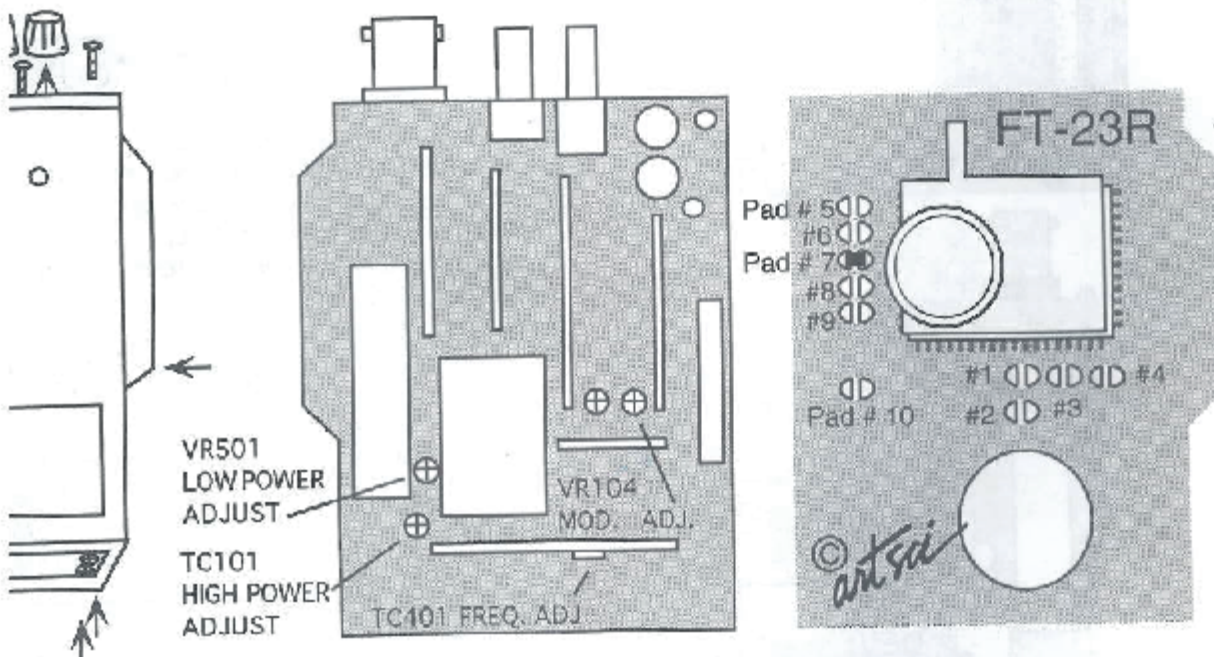
Expansion Range

100 MHz - 163.995 MHz

The electronic circuits can only tune around the original center (at the factory) you may have a choice at the top or the bottom ends of the range.

Repeater Offset control:

1. PRESS AND HOLD [RPT] & TURN ON THE RADIO.
2. DIAL OFFSET & PRESS [RPT]



Expanded RF Modification

- Remove Battery and Antenna.
- Remove control knobs, screws, top panel, battery mounting track & body screws and open Radio
- Remove solder bridge from Pad # 7
- Reassemble radio.

Older Pad functions

Pad #1	Filter for 140-164 RX
Pad #2	Filter for 164-?? RX
Pad #3&4	Step selection 20 or 25 kHz 3&4 unsoldered = 10 kHz step
Pad #5	5 MHz offset
Pad #6	1.6 MHz offset 5&6 unsoldered = 600 kHz offset
Pad #7,8&9	Band selections
Pad #10	Unknown

YAESU



YAESU

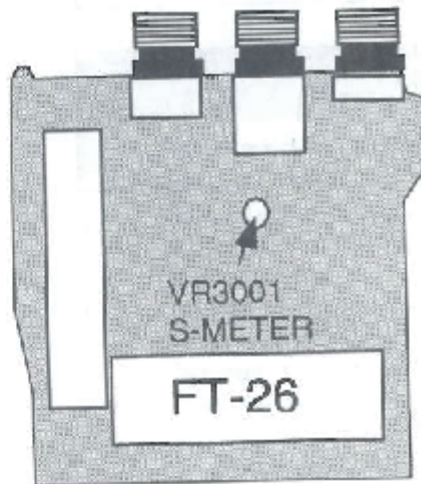
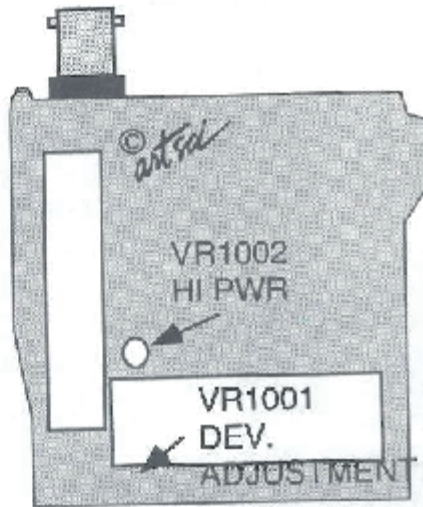
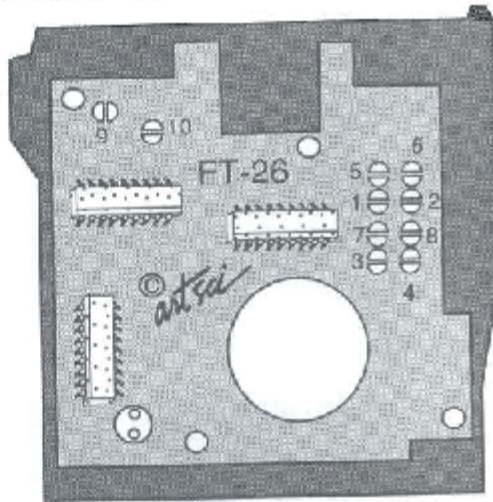
FT-26

Receive and Transmit Expansion

Expansion Range

135 MHz - 174 MHz

Remember that the electronic circuits can only operate in a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom of the tuneable range.



YAESU

Expanded RF Modification

1. Remove Battery and Antenna.
2. Remove the 4 screws holding the battery track.
3. Remove the 2 screws in the back case.
4. Carefully separate the front cover.
5. Locate and remove solder on Jumper pad 10. (on the back of the chassis)
6. Solder jump pads 1, 3, 7 and 8.
7. Reassemble the radio.
8. Turn radio on and each channel indicator will blink.
9. Enter the following frequencies. (use the [F] & up arrow)

CH. 1	135.000	Press [D/MR] Lo
CH. 2	174.000	Press [D/MR] Up
CH. 3	135.000	Press [D/MR] Lo
CH. 4	174.000	Press [D/MR] Up

Reset Commands

Soft RESET

Press and hold [T] & [REV] and turn power on

Master RESET

Press and hold [D/MR] & [T] & [REV] and turn radio on, then enter band Limits below.

Receive and Transmit Expansion

YAESU

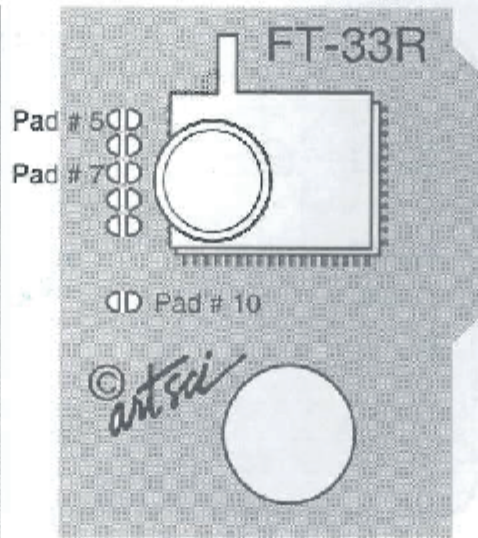
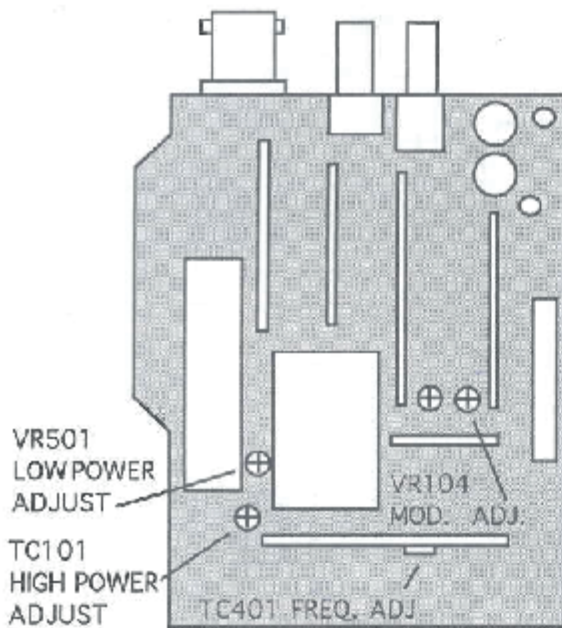
FT-33R

Expansion Range

Exact range of this radio is not known as of this time.
Remember that the electronic circuits can only tune a 1-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.

Repeater Offset control:

1. PRESS AND HOLD [RPT] & TURN ON THE RADIO.
2. DIAL OFFSET & PRESS [RPT]



Expanded RF Modification

1. Remove Battery and Antenna.
2. Remove control knobs, screws, top panel, battery mounting track & body screws and open Radio
3. For display 220-550 MHz Pads 7,8 and 9 are open
For display 50-300 MHz Pads 8 and 9 are open and 7 is bridged
4. Reassemble radio.

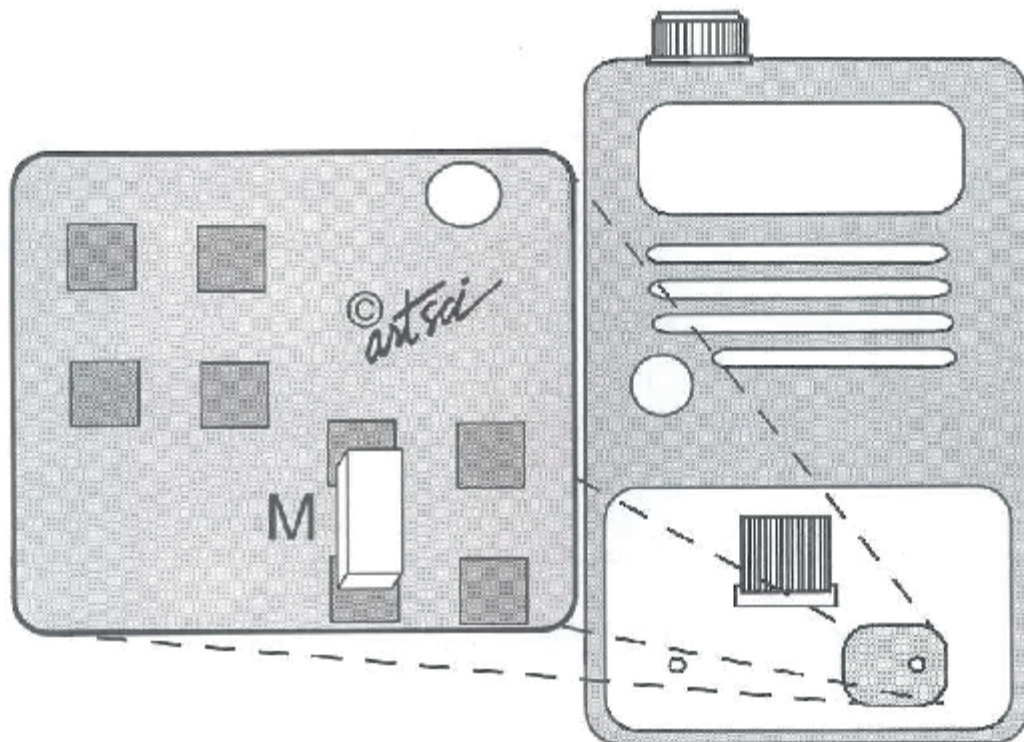
YAESU



Expansion Range

The Exact range of this radio is not known as of press time. However most radios expand from 420 - 469 Mhz.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

1. Remove the battery and the antenna.
2. Remove the 2 screws under the "N-Cd" Sticker.
3. Carefully lift the keypad and locate the jumper pads.
4. Locate and **unsolder the 0 ohm resistor at location "M"**
5. Reassemble the radio.
6. Reset the microprocessor.
(Press and hold (Top-Notch) and [LAMP] button and turn the radio on)

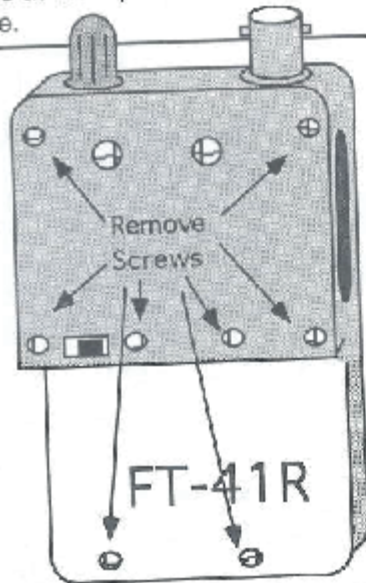
Receive and Transmit Expansion

YAESU FT-41R

Expansion Range

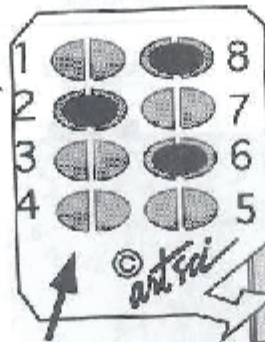
Range of this radio is not known as of now however most radios expand from 420

to 480 MHz. (Because the electronic circuits can only tune a narrow window around the original center frequency (as determined at the factory) you may have some tolerance at the top or the bottom ends of range.



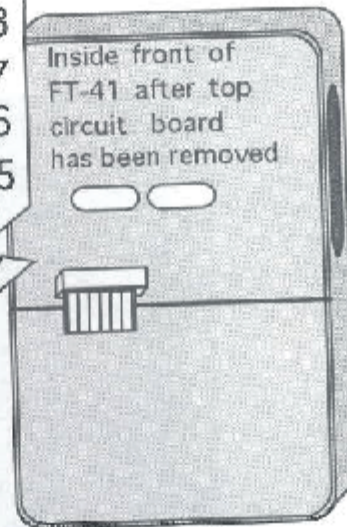
Remove Jumper #2 for Tone Burst.

To activate Tone Burst: Press [Monitor] & [PTT] at the same time.



Remove Jumper Pad #4

Inside front of FT-41 after top circuit board has been removed



Expanded RF Modification

Remove Battery and Antenna & belt clip.

Remove Screws from the back of the radio. See Drawing.

(note location of battery release & hand strap clip, they will fall out)

Open radio and remove silver battery shield.

Remove two silver screws from top circuit board (below speaker/mic connector)

Gently pry top and bottom circuit boards apart.

Locate and **remove solder** from pad #4.

Reassemble the radio. Remember the battery clip and hand strap clips.

Reset the microprocessor.

(Press and hold [UP] & [DOWN] arrow keys and turn the radio on.)

(Press [MR], [VFO] & [2] and turn the radio on.)

Squelch adjustment

Press and hold [CALL], [UP vol] & [DOWN vol] and turn the radio on.

Press [UP MHz] button 3 times. The display will show SQL TI.

Inject a signal or tune to a strong signal (weather channel etc.)

Press [F] Button for 1/2 second this sets the level. ("AD" will blink on display)

Press the [MR] key to set the level

Press [CALL] to store the level in EEPROM memory.

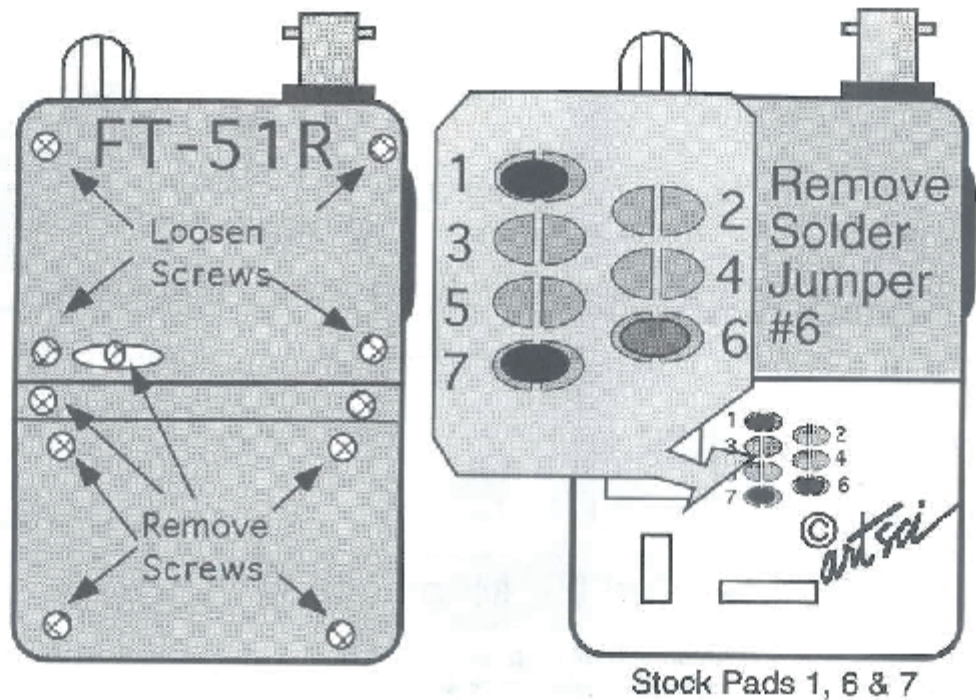
YAESU

FT-51R

Expansion Range

140 MHz - 175 MHz
420 MHz - 470 MHz

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



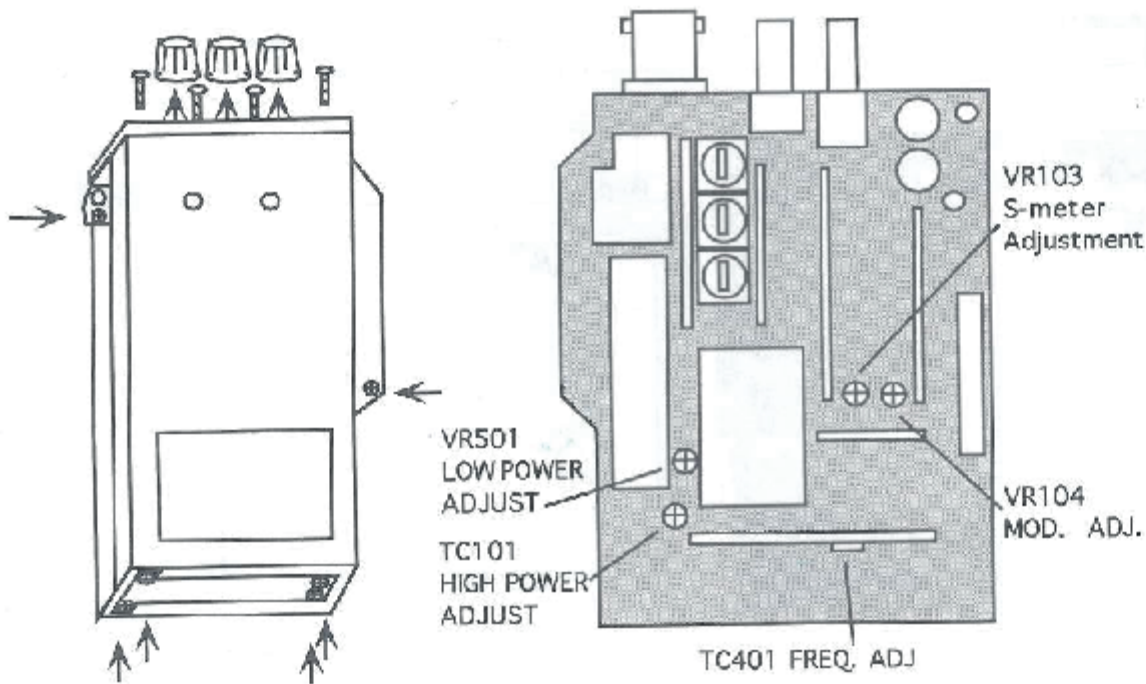
Expanded RF Modification

YAESU

1. Remove Battery and Antenna .
2. Remove the six black screws on the rear plastic cover. (See drawing)
3. Remove the one small black screw on the battery slide button.
4. Loosen the four black screws on the upper rear cover and slightly separate the cover.
(DO NOT REMOVE THESE SCREWS)
5. Remove the "L" plastic cover. (USE CAUTION NOT TO DAMAGE THE RIBBON CABLE)
6. Locate and **unsolder jumper pad # 6** (JP1006).
(Some models may have a small jumper wire on Pad #6, cut it.)
7. Reassemble the radio.
8. **Reset the microprocessor.** (Press and hold [UP] & [DOWN] and turn on the radio.)

Repeater Offset control:

1. PRESS AND HOLD [RPT] & TURN ON THE RADIO.
2. DIAL OFFSET & PRESS [RPT]



Expanded RF Modification

1. Remove Battery and Antenna.
2. Remove control knobs, screws, top panel, battery mounting track & body screws and open Radio
3. Make adjustments.
4. Reassemble the radio.

YAESU

Expansion Range

RX: 400 MHz - 485 MHz
TX: 415 MHz - 470 MHz

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.

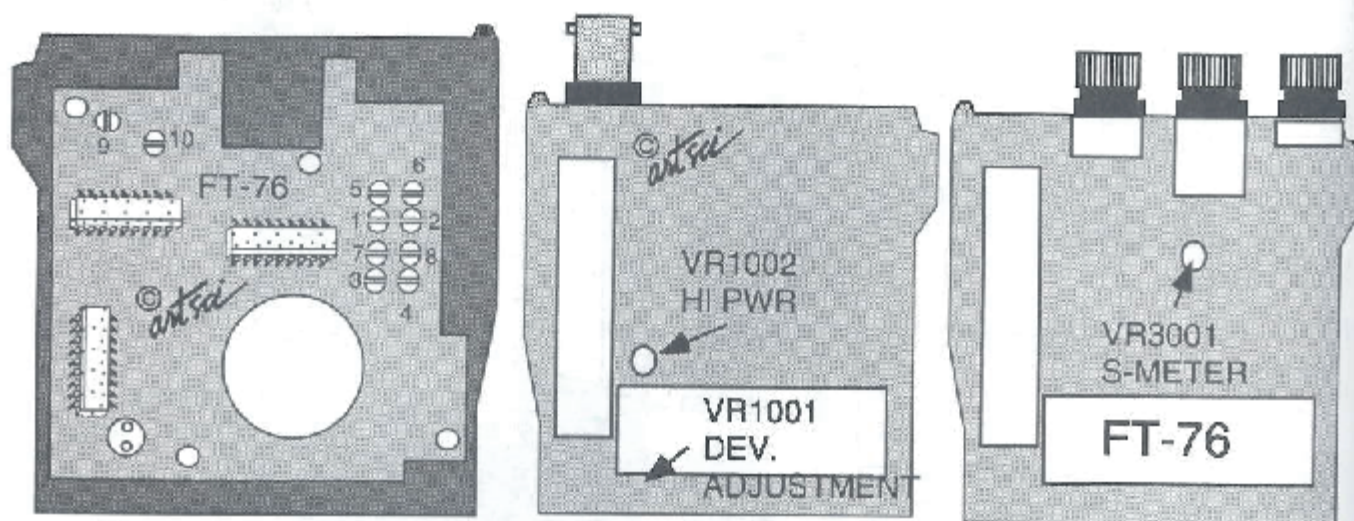
Reset Commands

Soft RESET

Press and hold [T] & [REV] and turn power on.

Master RESET

Press and hold [D/MR] & [T] & [REV] and turn radio on, then enter band Limits below.



Expanded RF Modification

1. Remove Battery and Antenna.
2. Remove the 4 screws holding the battery track.
3. Remove the 2 screws in the back case.
4. Carefully separate the front cover.
5. Locate and remove solder on Jumper pads 4 and 7. (on control board)
6. Solder jump pads 1, 3, 5, 8, 9 and 10 (old mod had pad 4 in place of 5)
7. Reassemble the radio.
8. Turn radio on and each channel indicator will blink.
9. Enter the following frequencies. (use the [F] & up arrow keys)

CH. 1	400.000	Press [D/MR] Lower Rx limit
CH. 2	485.000	Press [D/MR] Upper Rx limit
CH. 3	415.000	Press [D/MR] Lower Tx limit
CH. 4	470.000	Press [D/MR] Upper Tx limit

Performance Report

Radio _____

Date _____

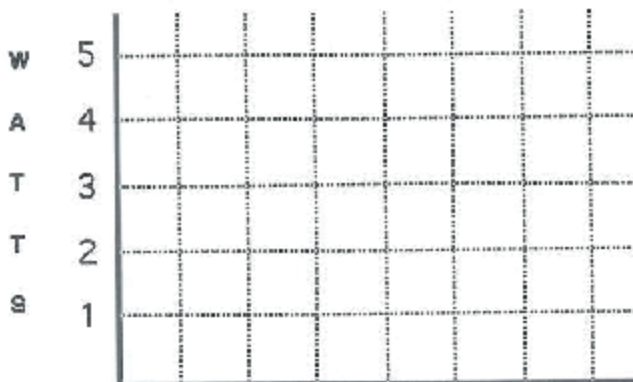
Owner : Name _____

Address _____

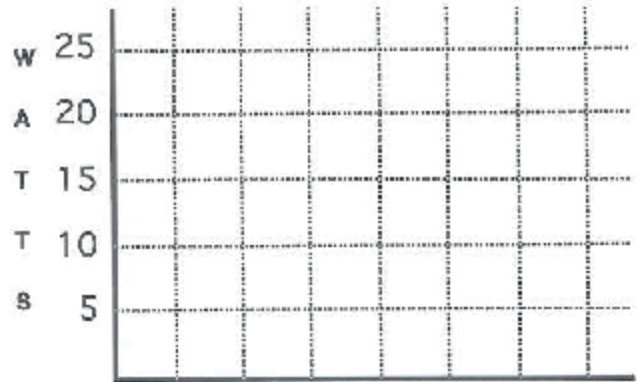
City _____ St. _____ Zip _____

Phone () - _____

Description	Before	After
Power out (Low)	_____ Watts	_____ Watts
Power out (High)	_____ Watts	_____ Watts
Frequency Error (Simplex)	_____ Hz	_____ Hz
Frequency Error (Offset)	_____ Hz	_____ Hz
Receive Sensitivity (Mid-band)	_____ uv	_____ uv
Receive Sensitivity (_____ MHz)	_____ uv	_____ uv
Receive Sensitivity (_____ MHz)	_____ uv	_____ uv
PL Deviation	_____ Hz	_____ Hz
DTMF Deviation	_____ KHz	_____ KHz
Audio Deviation	_____ KHz	_____ KHz
Lowest usable Freq @ .5 Pwr	_____ MHz	_____ MHz
Highest usable Freq @ .5 Pwr	_____ MHz	_____ MHz

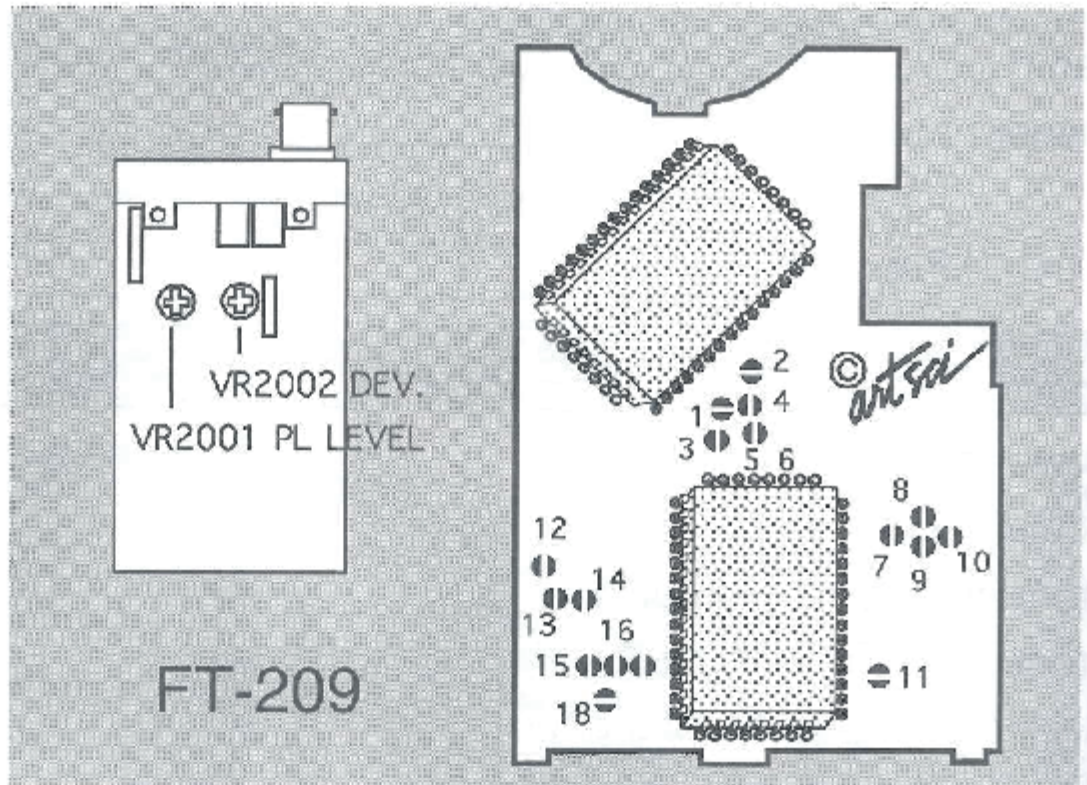


Frequency



Frequency





FT-209

Expanded RF Modification

1. Remove battery and antenna.
2. Remove battery screws, belt clip screws and side strap screws.
3. Remove black trim on sides of the radio.
4. Remove the two side screws and slide the u-shaped back cover off.
5. Remove the four tiny Phillips screws holding the front panel on.
6. Fold panel to the right to open the radio.

Untested out of band mod #1: Jumper pads 1,7,9,10 & 13.

Untested out of band mod #2: Jumper pads 7,9,10,11 & 13.

Factory default is pads 1,9 & 13.

7. Locate alignment pots. Make adjustments
8. Reassemble the radio.
9. Reset the microprocessor (If desired)
10. Enter 1440 [D], 1480 [D], 1440 [D], 1480 [D], 0600 [SHIFT]

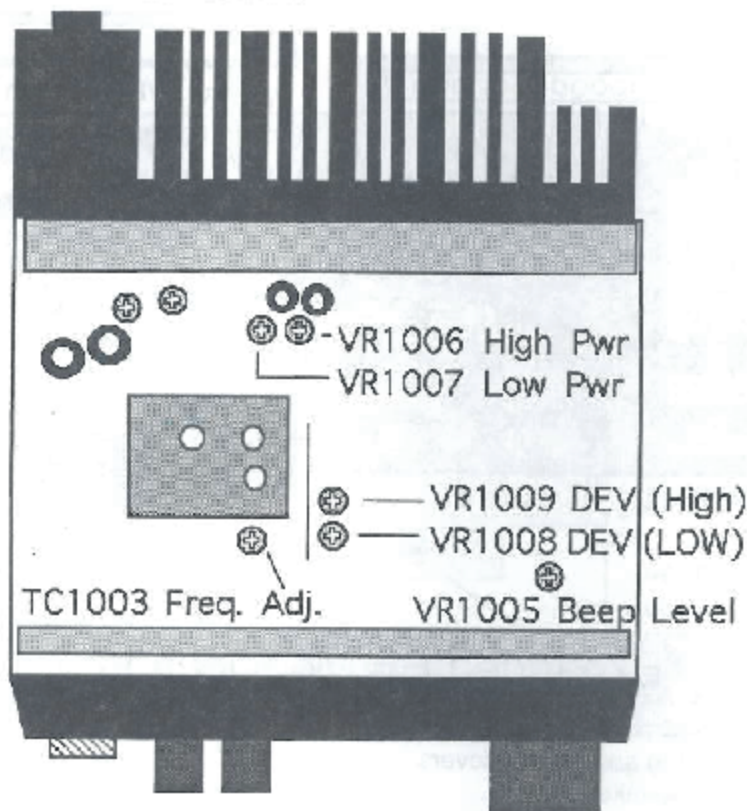
Note: RX range of 144.0 - 148.0 MHz and TX range of 144.0 - 148.0 MHz

YAESU

Expansion Range

The Exact range of this radio is not know as of press time. However most radios expand from 138 Mhz - 165 Mhz.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

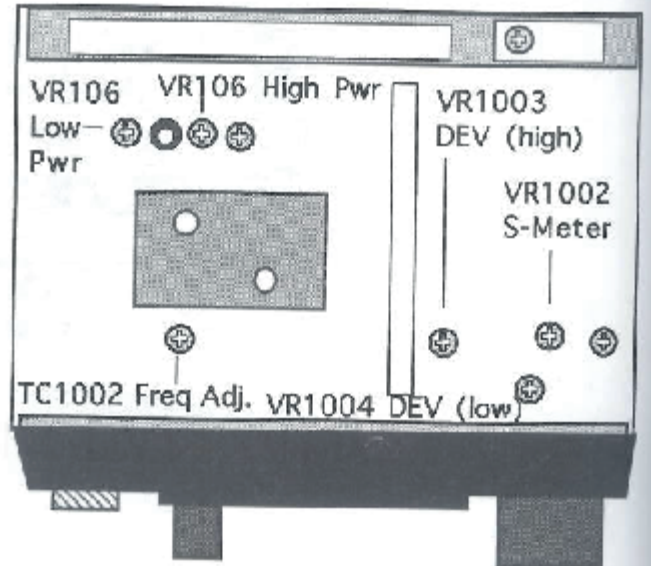
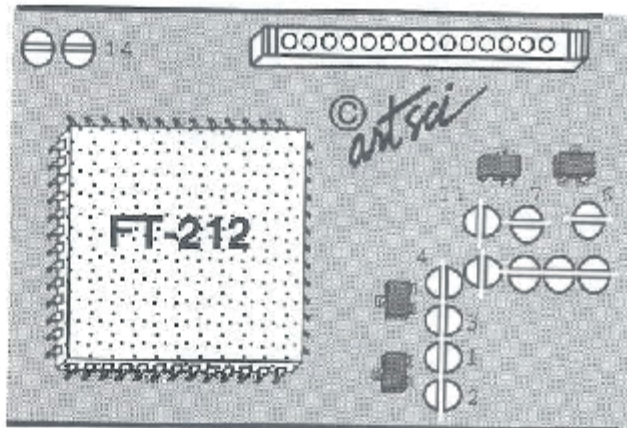
1. Remove five screws from the top cover and remove the cover.
2. Remove five screws from the bottom cover and remove the cover.
3. Unplug the speaker.
4. Remove the four screws holding the front panel.
5. Locate jumper pad number 7.
6. **Solder bridge pad number 7.**
7. Locate the reset pins (Located on the front panel and clearly marked).
8. **Short the reset pins together for one second.**
9. Reassemble the radio.

Expansion Range

140 - 164 MHz

Auto Repeater offset is lost.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

1. Unplug the DC power cable from the radio.
2. Remove the top and bottom covers.
3. Remove the speaker.
4. Remove the knobs and nuts from the front panel.
5. Remove the three screws from the control unit.
6. Remove the Control unit from the front panel.
7. **Locate & remove solder from pad #1 on control unit.**
8. **Locate & solder Jumper Pads 3,4,11 and 14.**
9. Replace the control unit on the front panel.
10. **Reset the microprocessor.** (using a jumper short D09 on the control unit to ground on the radio. Do not apply power).
11. Reassemble the radio. Replace knobs, screws etc.
12. Apply DC power and turn radio on.
13. Press [MHz] & use the control knob to enter 140 and press [D/MR]. (lower limit)
14. Press [MHz] and use knob to enter 174 and press [D/MR]. (upper limit)
15. Press [F] and then [RPT] button. use the control knob to enter 0.600. Press the [RPT] button.

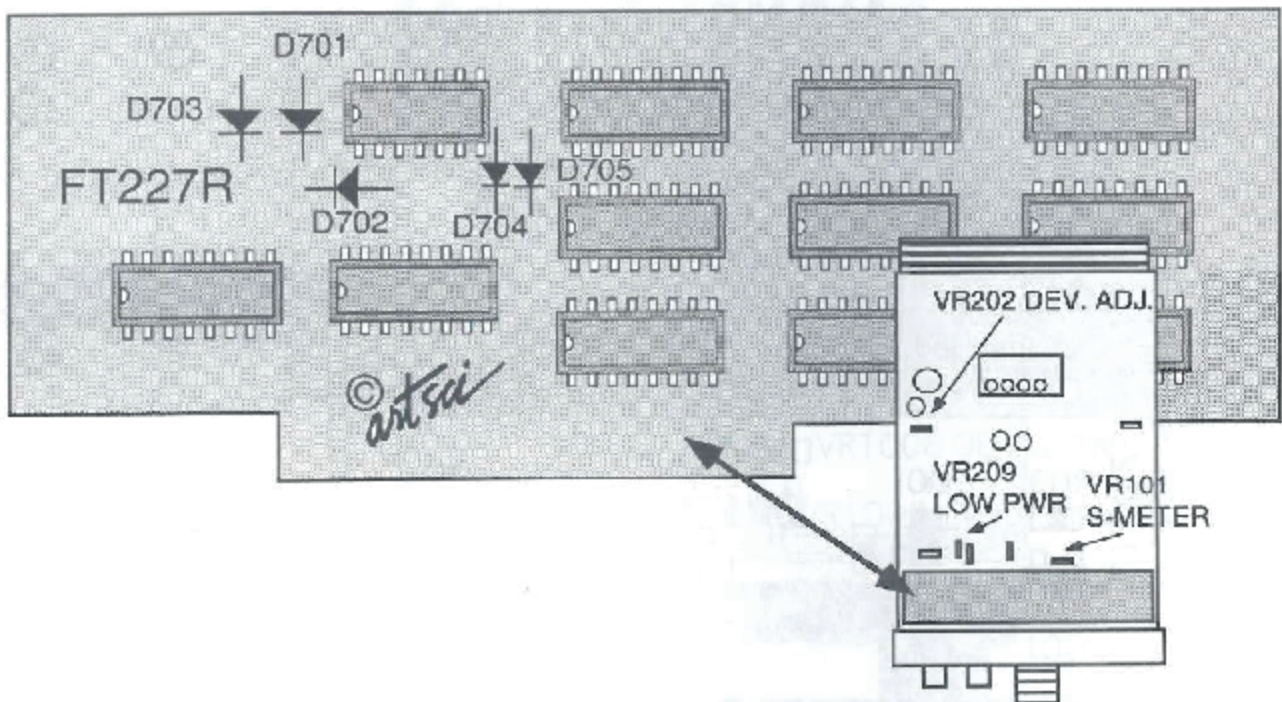
YAESU

Expansion Range

143.990 MHz - 149.000 MHz

Automatic repeater offset is lost.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

1. Unplug the power from the radio.
2. Open radio and locate the PLL CONT. UNIT.
3. **Remove D701 and D702.** Do not place in a jumper.
4. **Locate Q712 (MC14028B), and break the connection to Pin 6. (Blue wire)**
5. **Connect pin 1 of Q711 (red wire) to ground.**
6. Reassemble radio

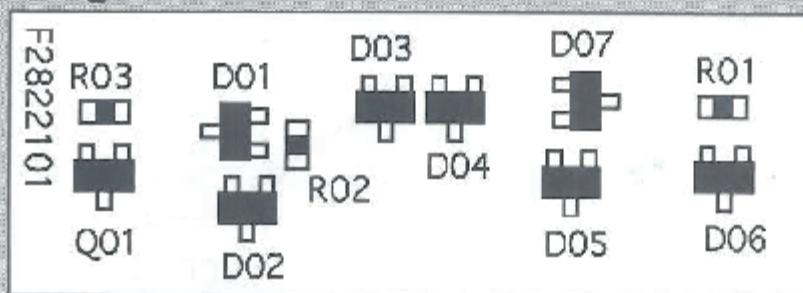
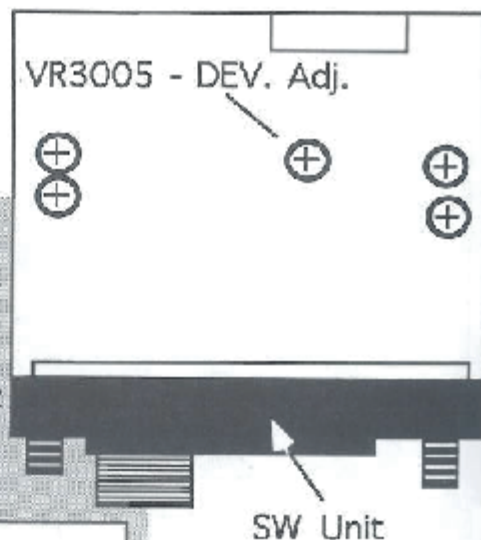
Expansion Range

The Exact range of this radio is not known as of press time. However most radios expand from 138 Mhz - 165 Mhz & 420 - 469 Mhz.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.

D01	D03	R02	R03	
●	●	○	●	144 - 148 MHz
●	●	○	○	140 - 150 MHz
●	●	●	○	144 - 146 MHz
●	○	●	○	144 - 154 MHz

● Installed
 ○ Removed



F2822101

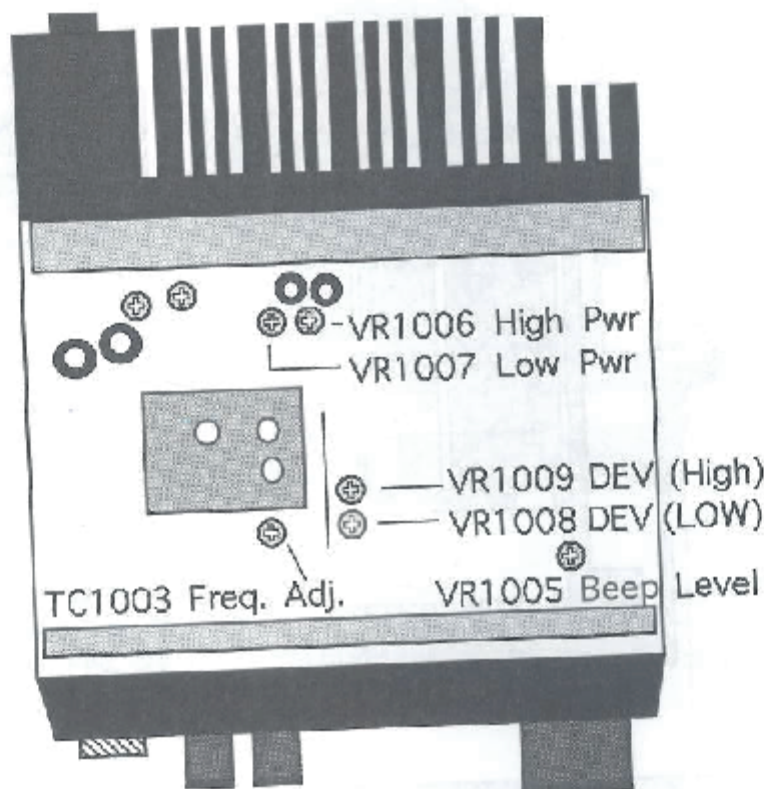
Expanded RF Modification

1. Unplug the power from the radio.
2. Open radio and located SW Unit. The SW unit is located on the front panel, behind the display.
3. Locate components D01, D03, R02 & R03 See drawing.
4. **Remove or Install the components per table 1.**
5. Reassemble the radio.

Expansion Range

The Exact range of this radio is not known as of press time.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

1. Remove five screws from the top cover and remove the cover.
2. Remove five screws from the bottom cover and remove the cover.
3. Unplug the speaker.
4. Remove the four screws holding the front panel.
5. Locate jumper pad number 7.
6. **Solder bridge pad number 7.**
7. Locate the reset pins (Located on the front panel and clearly marked).
8. **Short the reset pins together for one second.**
9. Reassemble the radio.

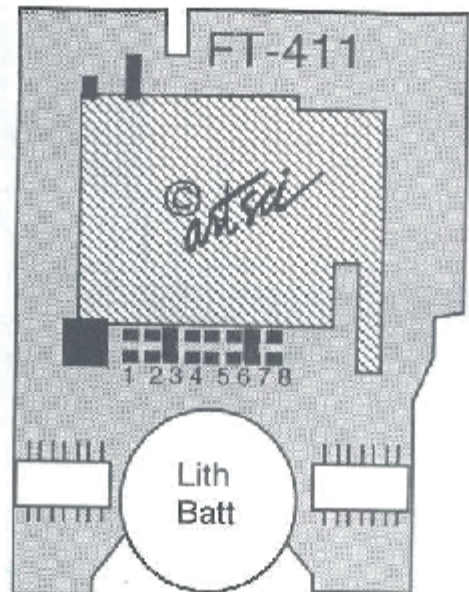
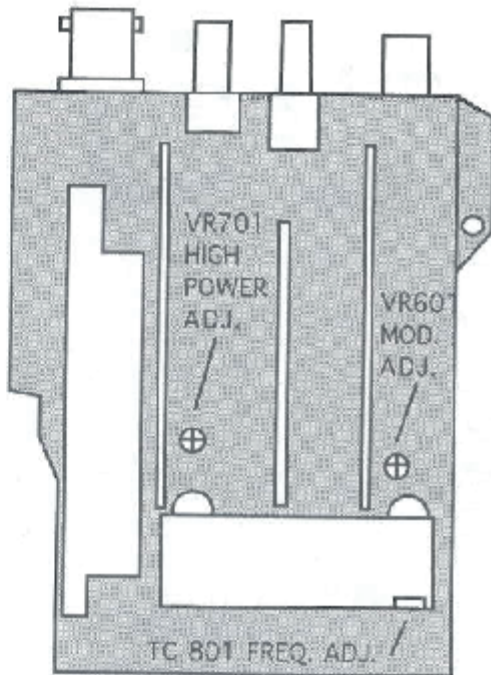
Expansion Range

RX 120 MHz - 174 MHz

TX 140 MHz - 174 MHz

Disables automatic repeater shift

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

1. Remove Battery and Antenna.
2. Remove control knobs, screws, top panel & body screws and open Radio
3. Remove solder bridge from Pad # 2
4. Place solder Bridge on Pad # 3
5. Reassemble Radio
6. Reset Microprocessor.
(Press and hold [MR], [2] & [VFO] and turn radio on then off)
(Press and hold both up and down keys and turn power on)
7. Enter the following: 1200 [VFO] 1740 [VFO] 1400 [VFO] 1740 [VFO]
8. Press [Function] & [7] to change channel step.

Receive and Transmit Expansion

YAESU

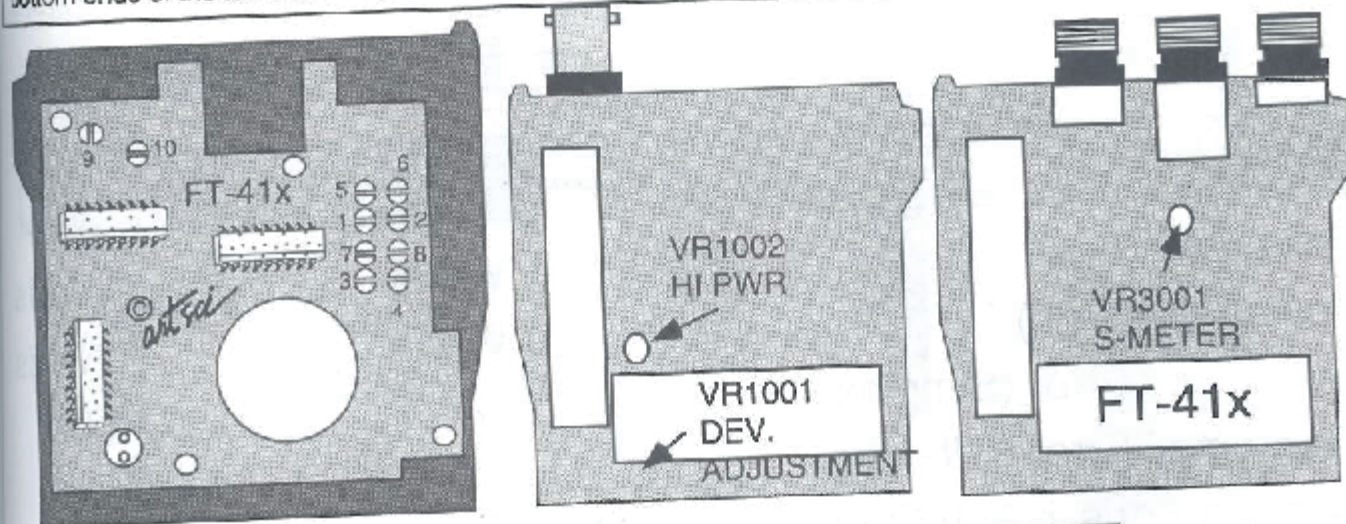
FT-415

FT-416

Expansion Range

RX: 120 - 174 MHz
TX: 135 - 174 MHz

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

1. Remove Battery and Antenna.
2. Remove the four screws holding the battery track in place.
3. Remove the two black screws holding the rear case in place.
4. Carefully open the front cover from the radio.
5. Locate and **solder jumper pads 5 & 7**. Pads 3 and 9 are already jumpered.
(Jumper pads 1 & 10 for 1750 Hz Tone Burst operation)
6. Carefully replace the front cover and replace the two black screws.
7. Replace the battery track and the four screws.
8. **Reset the microprocessor.**
Press and hold [MR], [2] and [VFO] and turn the radio on.
9. The radio display will cycle orderly through the memory channels.
Enter the following band limits:
10. Press [F] [7] and select 5 kHz channel spacing in each VFO.

Master Reset Command:

Press and hold [MR] & [2] & [VFO] and turn power on, then enter new limits

- | | |
|-------|---|
| Ch. 1 | Enter 120.00 and then press [VFO] (Rx low limit) |
| Ch. 2 | Enter 174.00 and then press [VFO] (Rx high limit) |
| Ch.3 | Enter 135.00 and then press [VFO] (Tx low limit) |
| Ch.4 | Enter 174.00 and then press [VFO] (Tx high limit) |

YAESU



Receive and Transmit Expansion

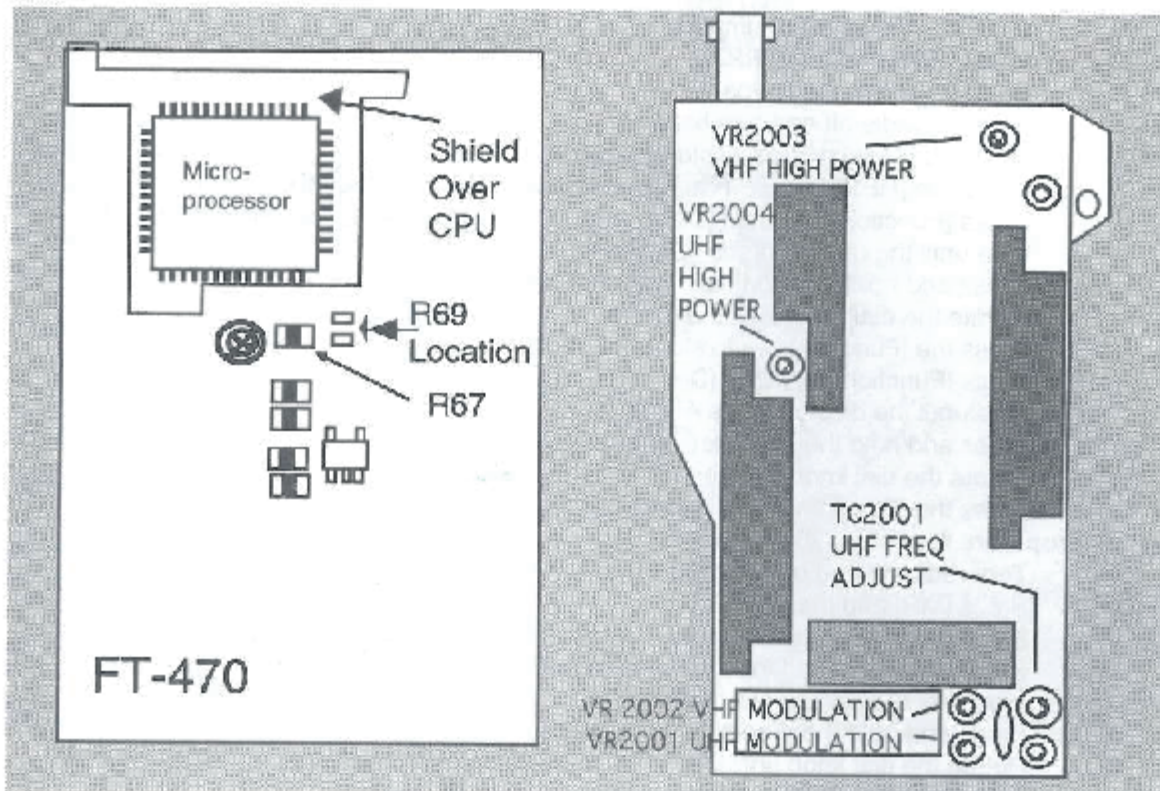
YAESU
FT-470

THERE IS NO MODIFICATION FOR TRANSMIT EXPANSION ABOVE 449.995 MHz

Expansion Range

The Exact range of this radio is not known as of press time. However most radios expand from 140 Mhz - 174Mhz & 420 - 449 Mhz.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

1. Remove Battery and Antenna.
2. Remove control knobs, screws, top panel & body screws and open Radio
3. Carefully unsolder the lithium battery and lift it to expose resistor position .
4. **Solder a Jumper or 0 ohm resistor(or jumper) in the empty R69 position.**
5. OPTIONAL- Crossband Half Duplex mod. Place a jumper wire from pin 4 & 14 of the flat cable wire connecting the front and back panels. This will use the ON AIR signal to mute the AUDIO CNTL line, muting the other band while transmitting.
6. Solder the lithium battery back in place.
7. Reassemble the radio.

More on Next Page



Expanded RF (430 - 500 MHz RX)

The following procedure utilizes the "U" memory location to store the upper limit for the UHF reception. A high UHF frequency (ie 470 MHz) must always be stored in the "U" memory for the expanded UHF reception to work.

1. Program 450.00 MHz simplex.
 2. Press [F/M] and then [RPT].
 3. Enter 0000 into the keypad.
 4. Turn the radio off and turn back on.
 5. Press [RPT] twice for a + (plus) offset.
 6. Press the [REV] button. (The display should now be 1450 MHz)
 7. Press [Function] and then [Down Arrow] to drop the frequency down 1 MHz at a time until the display reads 500 MHz.
 8. Press and hold the [F/M] key until you hear two beeps.
 9. Rotate the dial knob until the "U" memory channel is displayed.
 10. Press the [Function] key to store the frequency in memory.
 11. Press [Function] and then [Down Arrow] to drop the frequency down 1 MHz at a time until the display reads 450 MHz.
 12. Press and hold the [F/M] key until you hear two beeps.
 13. Rotate the dial knob until the "L" memory channel is displayed.
 14. Press the [Function] key to store the frequency in memory.
- *** Stop here for 440 - 470 Coverage.
15. Turn radio off and on and select the "U" memory channel.
 16. Press [MR] and then [RPT]
 17. Press the PTT button 3 times. The display should read 070.00 MHz
 18. Press [Function] and then [Up Arrow] to increase the frequency up 1 MHz at a time until the display reads 400 MHz.
 19. Press and hold the [Function] key until you hear two beeps.
 20. Rotate the dial knob until the "L" memory channel is displayed.
 21. Press the [Function] key to store the frequency in memory.

To receive a desired UHF frequency, you must use the following steps:

1. Select the "U" memory channel.
2. Press the [MR] key to enter the "MEMORY TUNE" mode.
3. Use the [arrow] keys or Dial Knob to select the desired frequency.
4. Store the selected in any memory channel, except memory channel "U" & L

Hyperscan Modification:

1. Select the "ALT" mode by pressing [F] and [ALT]
2. Press the [UP] or [DOWN] arrow.
3. When the scan stops, Press [F] and then [VFO].
4. Press the [UP] or [DOWN] arrow. (HYPERSCAN MODE)
5. Press [F] and [ALT] to stop scan mode.

Receive and Transmit Expansion

YAESU

FT-530

Early Model

Expansion Range

RX: 110-180 MHz, 300-500 MHz
TX: 130-177 MHz, 400-470 MHz

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.

TONE BURST-

Jumper Pad # 12.

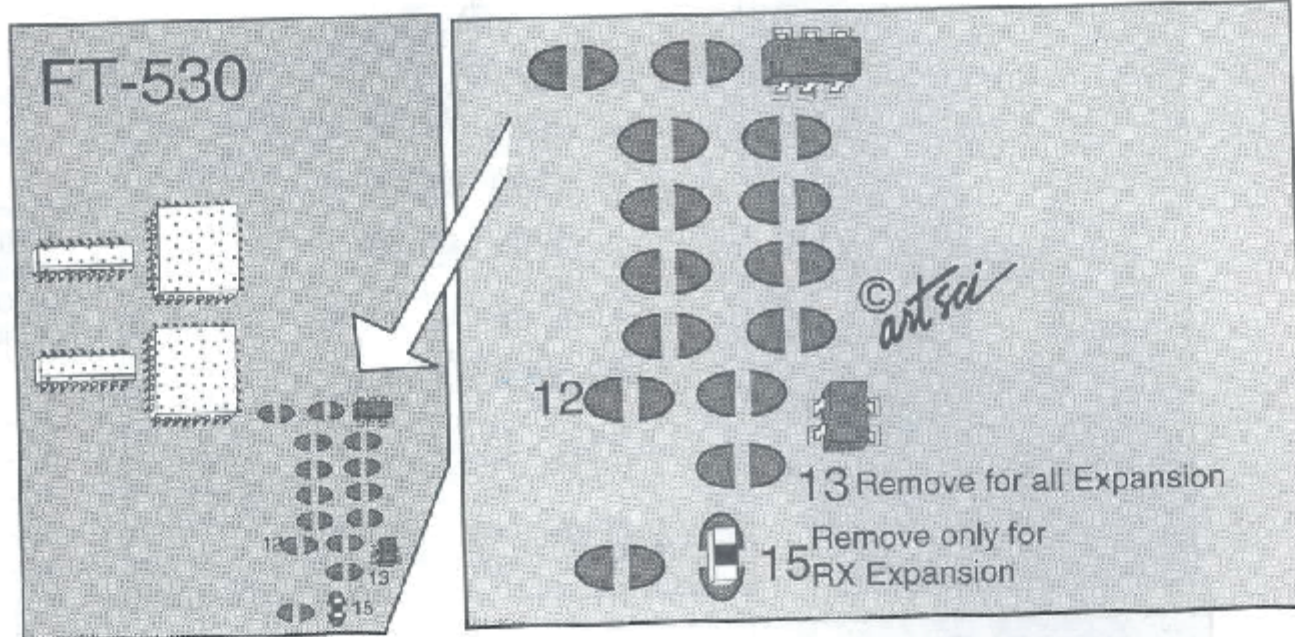
Stock Pads Soldered: 1, 3, 6, 8, 11, 13, 15

RX ABOVE 500 MHz:

Put 300 in lower limit & 950 in upper limit.

Press [MR] [MR]. (a line will appear on the display below "L")

Enter in desired FREQ.



Expanded RF Modification

1. Remove battery and antenna.
2. Locate and remove the 4 screws on the bottom battery track.
3. Locate and remove the 4 black screws on the rear case.
4. Carefully open the front cover and open the radio.
5. Note location of white paper insulator and remove it. (Don't throw away)
6. **Locate jumpers location J13 and remove solder jumper.**
DO NOT DO BOTH JUMPER pads 13 & 15.
7. Replace the paper insulator making sure the ground tabs slide through insulator
8. Close radio being careful not to pinch any wires.
9. Replace all screws.
10. Replace battery and antenna.
11. Press and hold both [MR] & [VFO] arrow buttons and turn power on..

YAESU

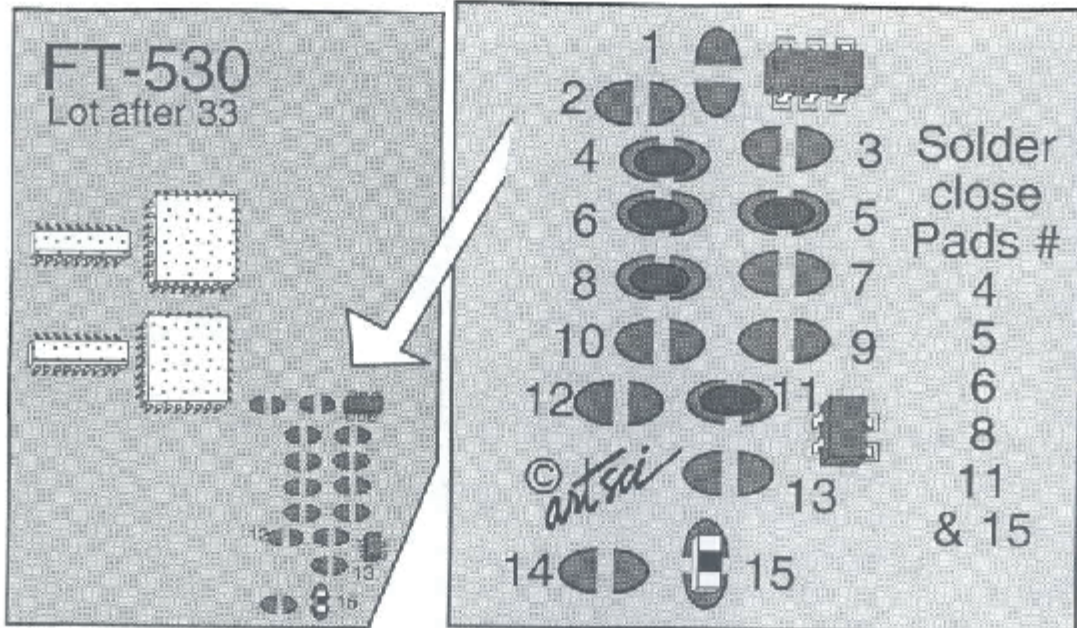
FT-530

After Lot 33

Expansion Range

RX: 110-177 MHz, 300-500 MHz
TX: 130-177 MHz, 400-470 MHz

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Original Jumpers
(O - Open, C - Closed)

- 1 - C
- 2 - O
- 3 - C
- 4 - O
- 5 - O
- 6 - C
- 7 - O
- 8 - C
- 9 - O
- 10 - O
- 11 - C
- 12 - O
- 13 - C
- 14 - O
- 15 - C

Expanded RF Modification

1. Remove battery and antenna.
2. Locate and remove the 4 screws on the bottom battery track.
3. Locate and remove the 4 black screws on the rear case.
4. Carefully open the front cover and open the radio.
5. Note location of white paper insulator and remove it. (Don't throw away)
6. **Locate jumpers and remove solder jumpers #1, 3 & 13 (green wire).**
7. **Solder Jump Pads #4 & 5.**
(Pads #4, 5, 6, 8, 11 & 15 are now soldered.)
8. Replace the paper insulator making sure the ground tabs slide through insulator
9. Close radio being careful not to pinch any wires.
10. Replace all screws.
11. Replace battery and antenna.
12. **Press and hold both [MR] & [VFO] arrow buttons and turn power on.**

YAESU

Expansion Range

24- 56 MHz

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.

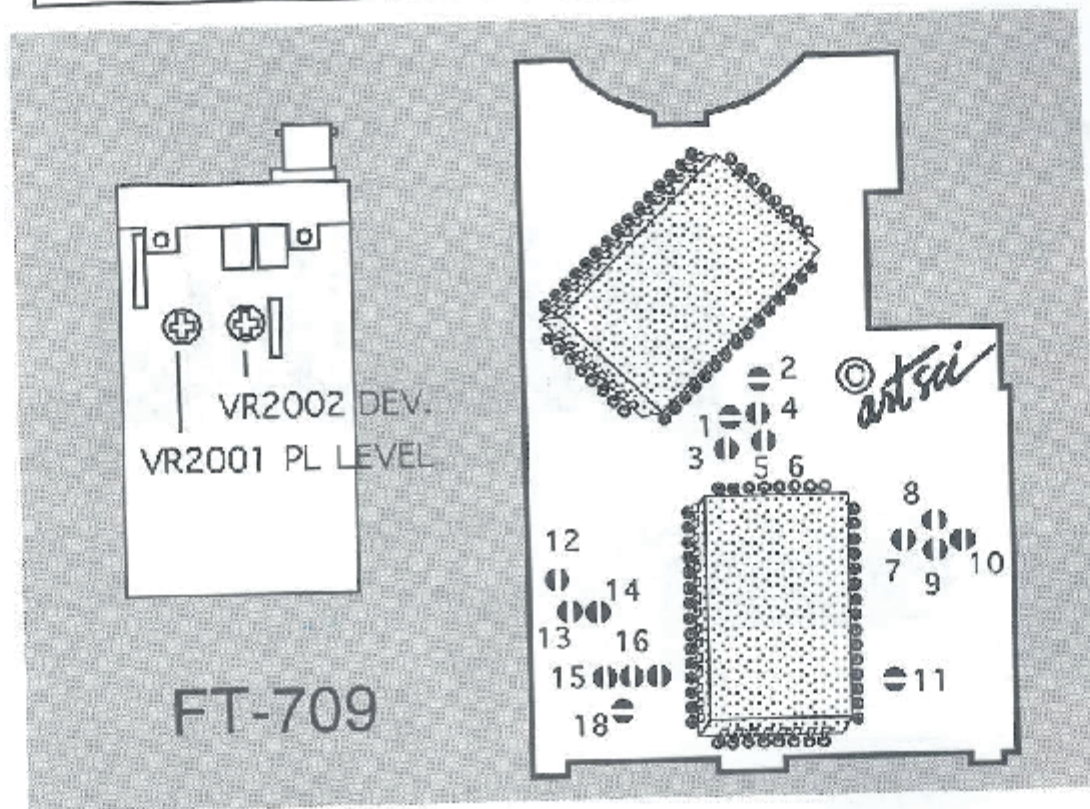
Expanded RF Modification

1. Turn the radio off.
2. Press and hold [VFO] & [MR] and turn on the radio.

Repeat the step above to return to Normal settings

Expansion Range

The Exact range of this radio is not known as of press time.



FT-709

Expanded RF Modification

1. Remove battery and antenna.
2. Remove battery screws, belt clip screws and side strap screws.
3. Remove black trim on sides of the radio.
4. Remove the two side screws and slide the u-shaped back cover off.
5. Remove the four tiny Phillips screws holding the front panel on.
6. The ground jumper on the left side needs to be unsoldered.
7. Fold panel to the right to open the radio

Untested out of band mod #1: Jumper pads 1,7,9,10, 13 & 15.

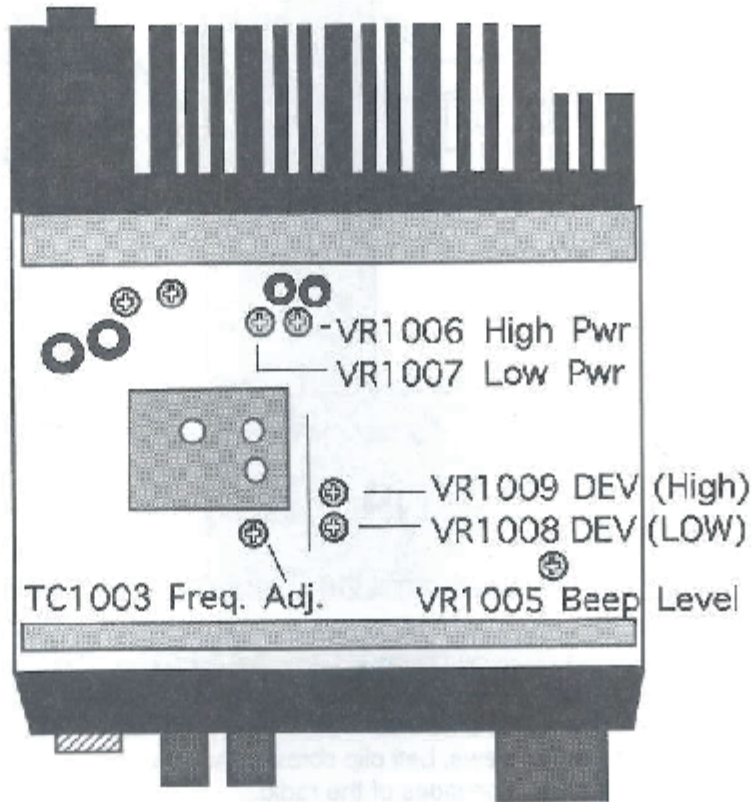
Untested out of band mod #2: Jumper pads 7,9,10,1, 13 & 15.

8. Locate alignment pots. Make adjustments.
 9. Reassemble the radio.
 10. Reset the microprocessor. (If desired)
 11. On FT-709 enter 4400 [D], 4490 [D], 4400 [D], 4490 [D], 5000 [SHIFT]
- Note: RX range of 440.0 - 449.0 MHz and TX range of 440.0 - 449.0 MHz

Expansion Range

The Exact range of this radio is not known as of press time. However most radios expand from 138 Mhz - 165 Mhz & 420 - 469 Mhz.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



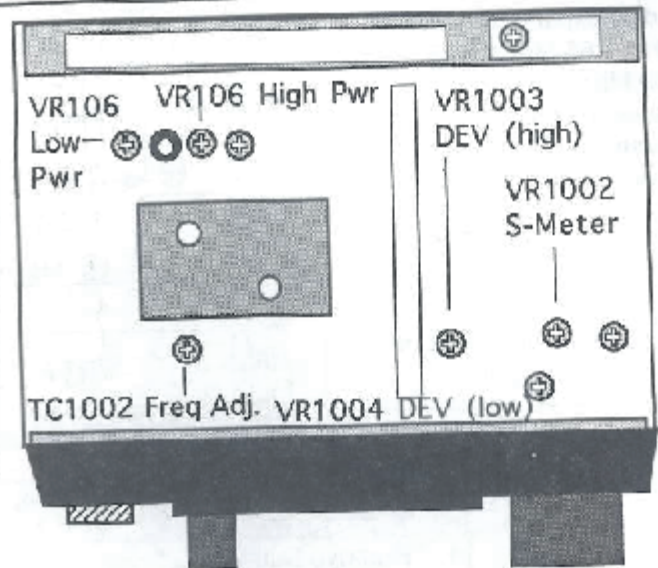
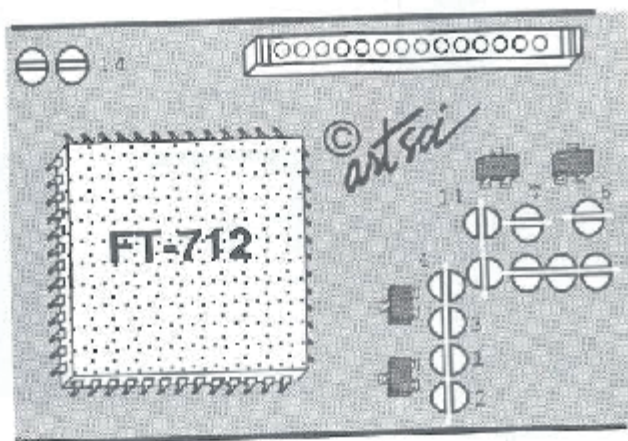
Expanded RF Modification

1. Remove five screws from the top cover and remove the cover.
2. Remove five screws from the bottom cover and remove the cover.
3. Unplug the speaker.
4. Remove the four screws holding the front panel.
5. Locate jumper pad number 7.
6. **Solder bridge pad number 7.**
7. Locate the reset pins (Located on the front panel and clearly marked).
8. Short the reset pins together for one second.
9. Reassemble the radio.

Expansion Range

430 MHz - 465 MHz

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

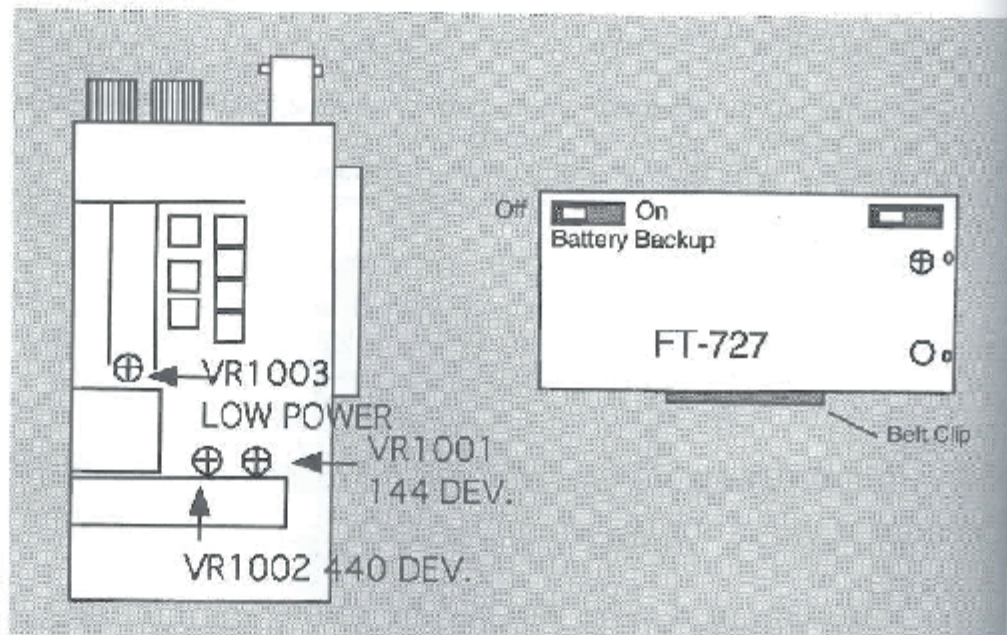
1. Unplug the DC power cable from the radio.
2. Remove the top and bottom covers.
3. Remove the speaker.
4. Remove the knobs and nuts from the front panel.
5. Remove the three screws from the control unit.
6. Remove the Control unit from the front panel.
7. **Remove solder from pad #1 and Pad #2 on control unit.**
8. **Solder jumper Pads 4 and 14.** Pads 3,4,5,7,11 and 14 will be bridged
9. Replace the control unit on the front panel.
10. **Reset the microprocessor.** (using a jumper short D09 on the control unit to ground on the radio. Do not apply power).
11. Apply DC power and turn radio on.
12. Press [MR] & use the control knob to enter 430 and press [D/MR]. (lower limit)
13. Press [MR] and use knob to enter 501 and press [D/MR]. (upper limit)
14. Press [F] and then [RPT] button. use the control knob to enter 5.000. Press the [RPT] button.

FT-727

Expansion Range

The Exact range of this radio is not known as of press time. However most radios expand from 138 Mhz - 165 Mhz & 420 - 469 Mhz.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

1. Remove Battery
2. Turn off the Battery backup switch. (located on the bottom of the radio)
3. Wait 10 Seconds and Turn the switch back on
4. Replace battery
5. Turn Radio ON. (Display should go blank, if not redo steps 1-4)
6. Enter the following: 001111 (note: factory setting is 443300)
7. Reset the VHF & UHF offsets.
 Select VHF then Press [F] then the [Shift] button.
 Enter 0600 then [D]
 Select UHF then Press [F] then the [Shift] button.
 Enter 5000 then [D]

PLL Alignment

1. Remove battery, and belt clip
2. Remove battery track screws
3. Remove rear cover
4. Install the battery track.
5. Turn radio on & enter desired frequency
6. Adjust L01 (black slug) in VCO unit until the on air lamp is lit (red light) (L01 core, turn counter-clock wise)
7. Reassemble the radio.

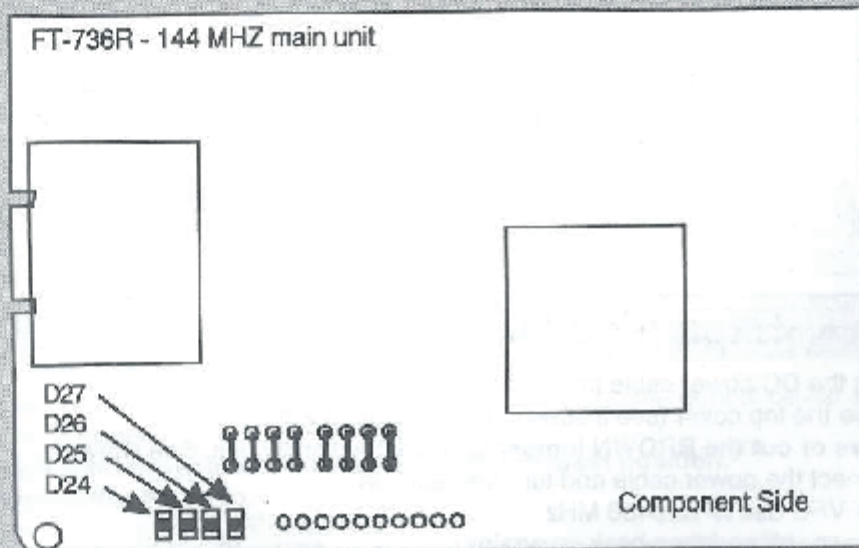
Expanded RF Modification

1. Unplug the power from the radio.
2. Open the radio and locate the 144 MHz main unit.
3. Locate diodes D24, D25, D26 and D27 See drawing.
4. **Remove or Install the diodes per table 1.**
5. Reassemble radio.

D24	D25	D26	D27	
○	●	●	○	144.0 - 148.0 MHz
○	●	●	●	141.0 - 154.0 MHz
○	○	●	●	144.0 - 146.0 MHz

● Installed
○ Removed

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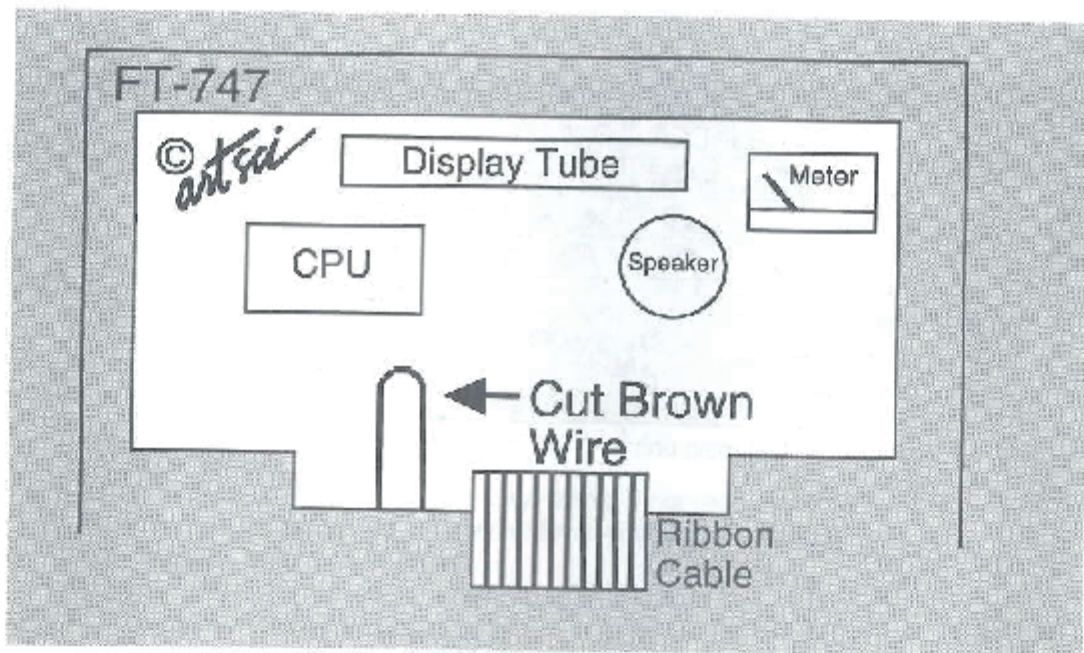


YAESU

Expansion Range

.5 MHz - 30 Mhz.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.

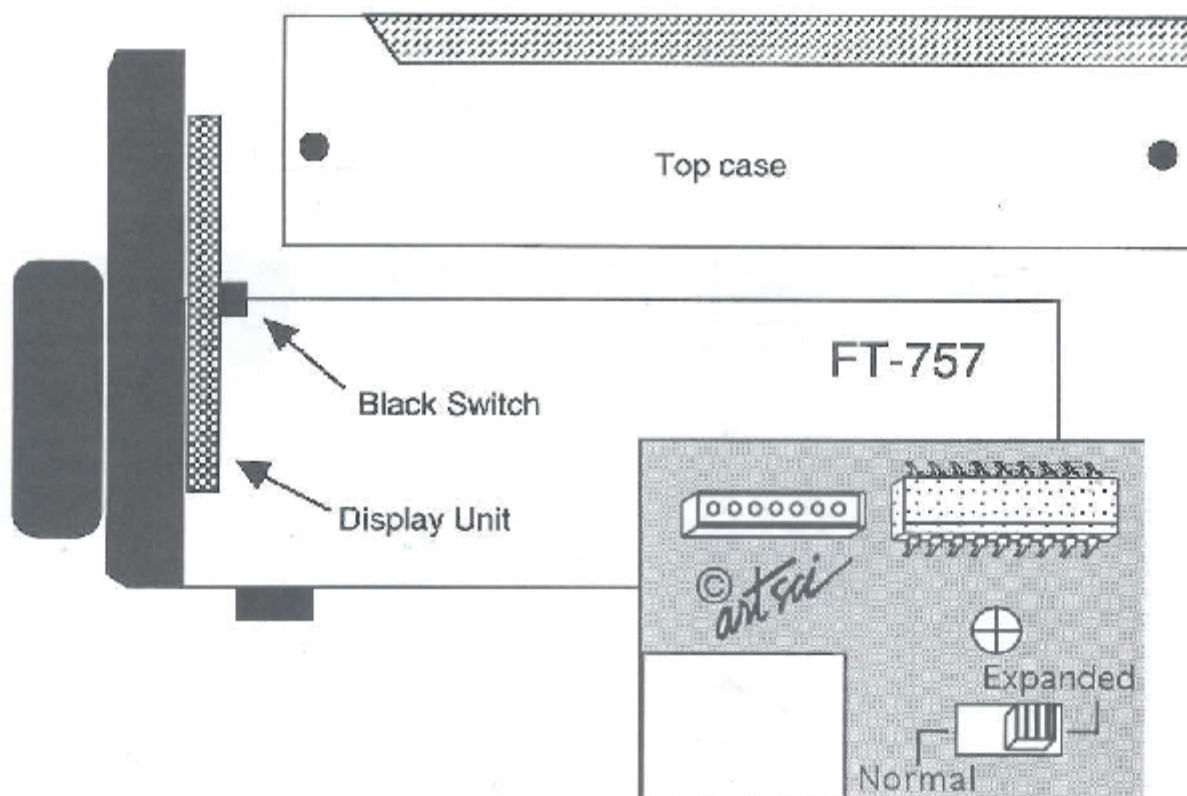


Expanded RF Modification

1. Unplug the DC power cable from the radio
2. Remove the top cover (see instruction manual page 23)
3. **Remove or cut the BROWN jumper wire** on the display unit. See Drawing
4. Reconnect the power cable and turn the radio on
5. Set the VFO dial to 12.3456 MHz
6. Turn power off and then back on again.
7. Turn power off and reassemble radio. (don't pinch any wires)

Expansion Range

The Exact range of this radio is not know as of press time.
Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

1. Unplug the DC power cable from the radio.
2. Remove the top cover. You may need to remove the speaker wire to remove the top cover. (see service manual for cover removal)
3. Locate the Black slide switch on the display panel. (to the right of center and halfway down the backside.
4. Use a screwdriver to set the switch to the left most position.
5. Reassemble the radio.

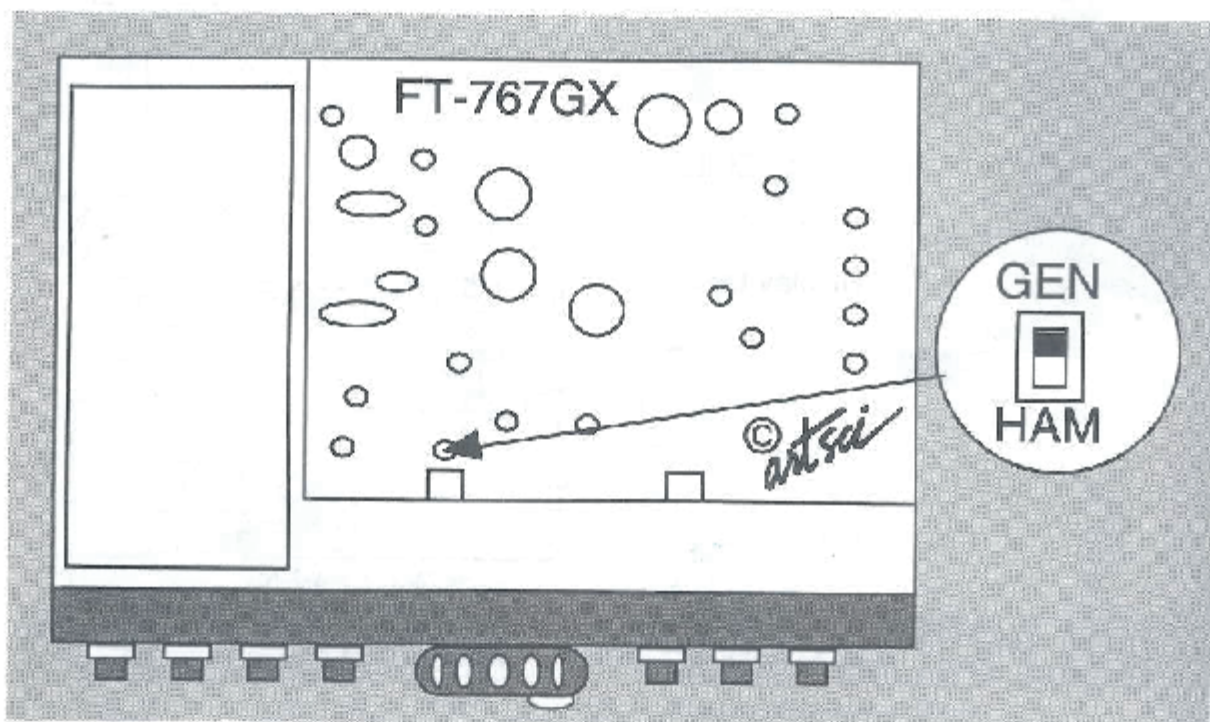
Some models outside the USA may need the following modification -

1. Isolate pin 19 of IC-67(MC68HC05C) on both side of circuit board.
2. Link pin 19 to pin 16 of IC-66(MC14510) with a 10 resistor.
Be sure to use resistor leads are insulated to prevent shorts.

Expansion Range

The Exact range of this radio is not know as of press time.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



YAESU

Expanded RF Modification

1. Unplug the DC power cable from the radio.
2. Remove any VHF or UHF Band modules.
3. Remove two screws at the front of the top cover and remove the top cover .
4. Locate the GEN/HAM switch inside the shield cover.
5. **Use a screwdriver to set the switch to the GEN position.**
6. Reassemble the radio.

Receive and Transmit Expansion

YAESU
FT-811

Expansion Range

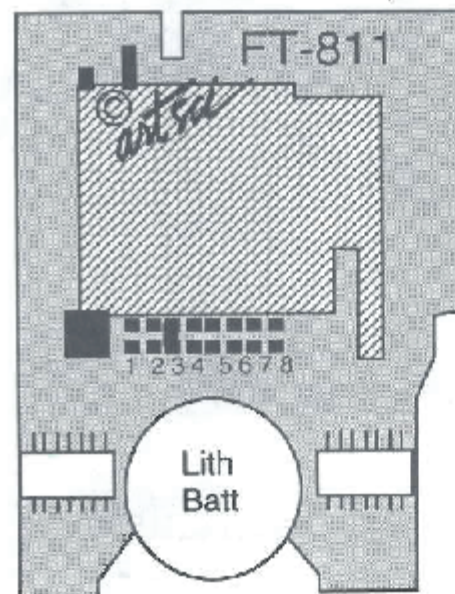
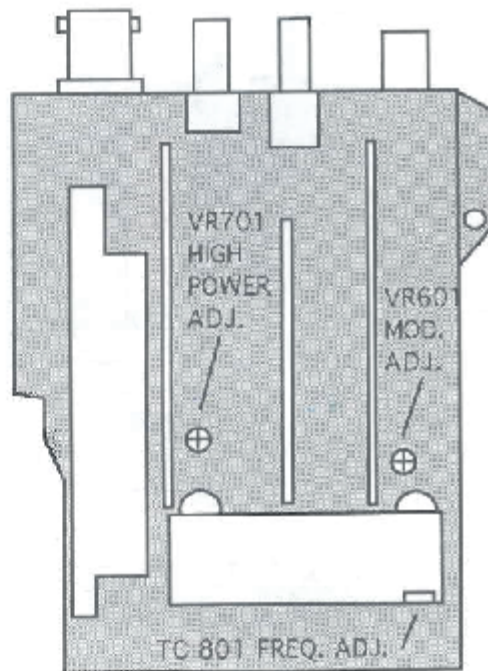
RX 410 MHz - 475 MHz
TX 410 MHz - 475 MHz

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.

(disables automatic repeater shift)

For Serial # 9D, 9F and 9J series only.

Serial Numbers above 9N can not be modified



Pads 2 & 4 OPEN
Pad 3 Closed(soldered)

Expanded RF Modification

1. Remove Battery and Antenna.
2. Remove control knobs, screws, top panel & body screws and open Radio
3. **Remove solder bridge from Pad # 2**
4. **Remove solder bridge from Pad # 4**
4. **Place solder Bridge on Pad # 3**
5. Reassemble the radio
6. **Reset microprocessor.** (Press and hold [MR] & [VFO] and turn radio on then off)
(Press and hold both up and down keys and turn power on)
7. Enter the following: 4100 [VFO] 4750 [VFO] 4100 [VFO] 4750 [VFO]
8. Press [Function] & [7] to change channel step.
9. Press [F] & [RPT] and enter offset in both VFO. (5.00 MHz is standard)

YAESU

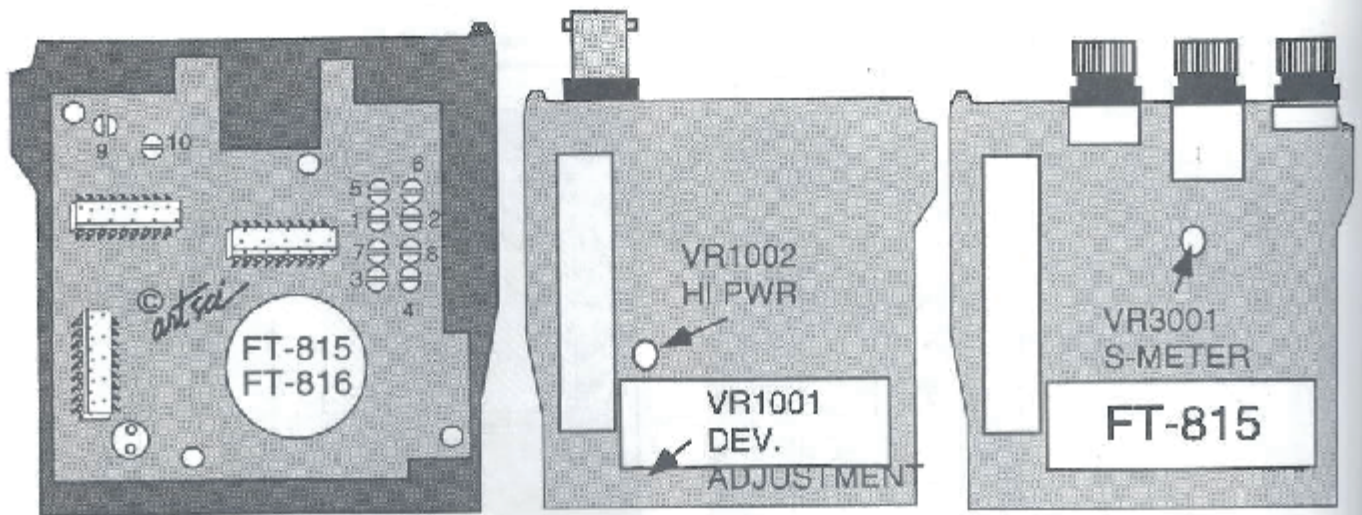


FT-815
FT-816

Expansion Range

410 - 475 MHz RX
415 - 470 MHz TX

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

1. Remove Battery and Antenna.
2. Remove the four screws holding the battery track in place.
3. Remove the two black screws holding the rear case in place.
4. Carefully open the front cover from the radio.
5. Locate and **remove the solder from jumper pad #8.**
6. **Locate and solder jumper pads 5 & 7.** Pad 9 is already jumpered.
7. Carefully replace the front cover and replace the two black screws.
8. Replace the battery track and the four screws.
9. Reset the microprocessor.
10. **Press and hold [MR], [2] and [VFO] and turn the radio on.**
11. The radio display will cycle orderly through the memory channels.
Enter the following band limits:

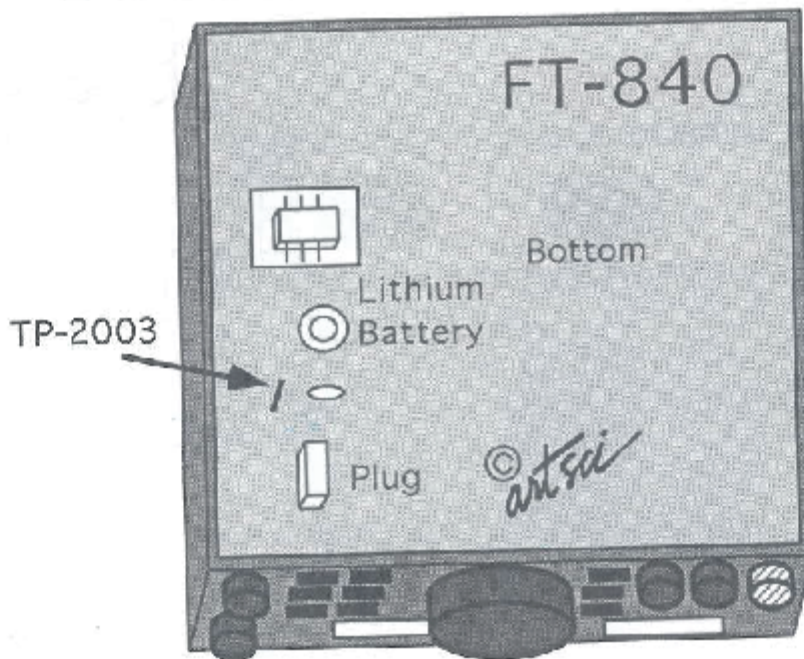
- Ch. 1 Enter 410.00 and then press [VFO] (Rx low limit)
- Ch. 2 Enter 475.00 and then press [VFO] (Rx high limit)
- Ch. 3 Enter 415.00 and then press [VFO] (Tx low limit)
- Ch. 4 Enter 470.00 and then press [VFO] (Tx high limit)

16. Press [F] [0] & [6] and select 5.000 MHz channel spacing in each VFO.

Expansion Range

1.8 MHz - 30 Mhz.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

1. Remove antenna from the radio.
2. Remove top and bottom covers.
3. On Local Unit, **TEMPORARILY** jump TP-2003 to ground.
(Take a wire clip lead and attach it to the metal case)
4. Press and Hold [SSB] & [AM] & turn power on. (display will show 02-OFF)
5. Rotate main control knob to show 02-ON.
6. Press [AM]. The display should show (7.000.00 LSB)
7. Turn the radio off.
8. Press and hold the memory [DOWN] & [UP] buttons and turn the radio on.
9. Turn the radio off.
10. Remove the Jumper to ground on TP-2003
11. Reassemble the radio.

YAESU

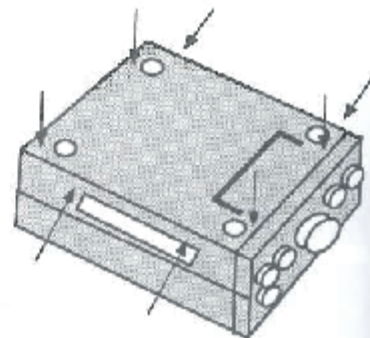
FT-890

Receive and Transmit Expansion

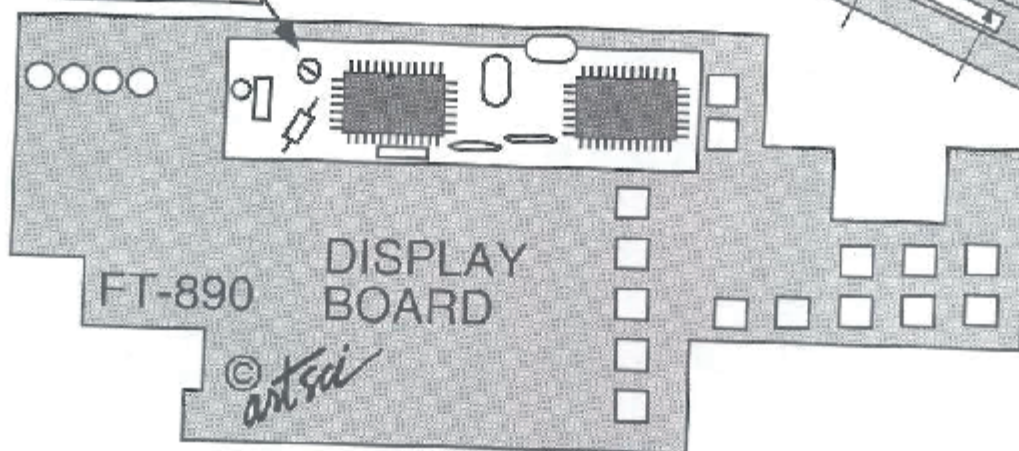
Expansion Range

1.8 MHz - 29.99MHz.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



JW3001



Expanded RF Modification

1. Remove power from the radio.
2. Remove covers.

The next step is done TEMPORARILY.

3. Locate jumper location JW3001 on the DISPLAY UNIT and solder bridge the pads.
4. Reconnect the power cable.
5. Press and hold [PROC], [AGC-F], [IPO] & [ATT] and turn the power on.
6. Rotate the main dial until the display shows 02-ON .
7. Press [PROC]. This will confirm and write the data to EEPROM memory.
8. Turn the power off and remove the power cords.
9. Remove the jumper placed in step 3 above.
10. Replace the covers.

YAESU

ICS

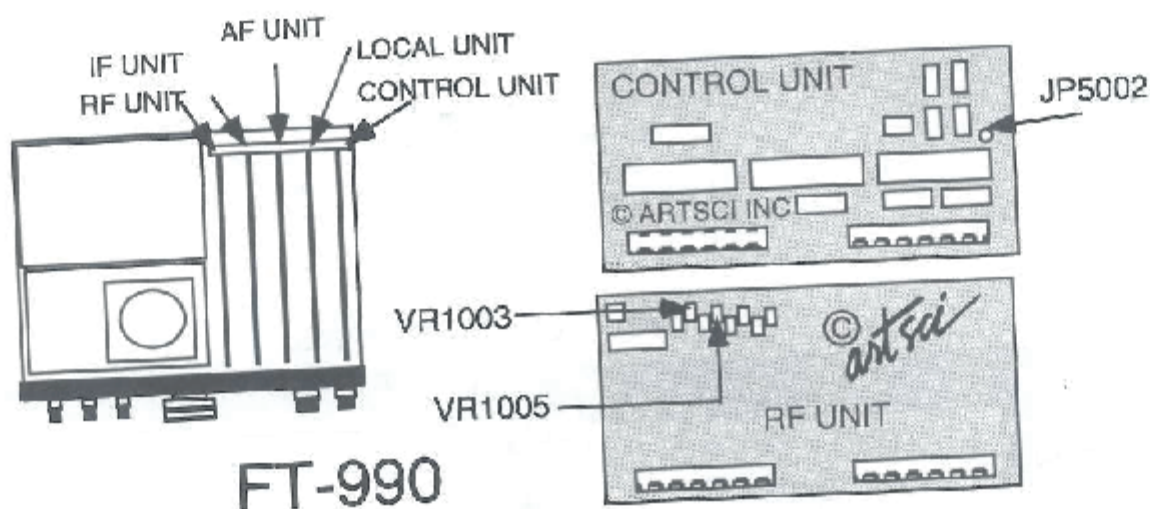
Expansion Range

1.8 MHz - 29.99 Mhz.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.

Expanded RF Modification

1. Remove power from the radio.
2. Remove the two screws on the top cover and the two on the top rear area of the rear panel.
3. Slide the top cover/heat sink towards the rear, to expose the CNTL-1 unit.
(The CNTL unit is the inside part of the front panel.)
4. Locate test points TP3001 & TP3002 on the CNTL unit.
(They are located on the top/center of the CNTL board)
5. **Connect a jumper between TP3001 & TP3002.** An alligator clip will work.
6. **Reconnect power and press and hold [PROC] & [ATT] & [IPO] & [NB] and turn power on.**
7. Release the four keys.
8. The display will show "OFF". **Turn the VFO dial until the display reads "ON".**
9. **Press [PROC] to store the new RF/TX Range.**
10. Remove the Jumper from step 5 above.
11. Reassemble the radio.



FT-990

Expanded RF Modification

1. Remove power from the radio.
2. Remove the top cover of the transceiver.
3. Locate the Control unit. It is the rightmost of the vertically-mounted circuits boards.
4. Remove the two mounting screws on the boards restraining brackets.
5. Remove the control unit.
6. Locate Jumper pad JP5002. It is located in the next to IC Q5016. IC Q5016 is the rightmost IC of the three large IC in the center of the board.
7. Solder bridge Pad JP5002.
8. Reinstall the Control unit.
9. Locate VR1003 & VR1005 on the RF unit.
10. Connect a 50 Ohm dummy load and a key to the key jack.
11. Set CW mode and the METER to the ALC setting.
12. Dial Frequency 5.000 MHz.
13. Set the RF Power switch fully clockwise.
14. Close PTT and the key. (TRANSMITTING)
15. Adjust VR1003 so that the ALC meter reads to the right edge of the scale.
16. Check frequency range 4.0 - 6.5 MHz to make sure ALC meter reads at least slightly across the entire range.
17. Dial Frequency 8.000 MHz.
18. Adjust VR1005 so that the ALC meter reads to the right edge of the scale.
19. Check frequency range 8.0 - 10.0 MHz to make sure ALC meter reads at least slightly across the entire range.
20. Replace the top cover.

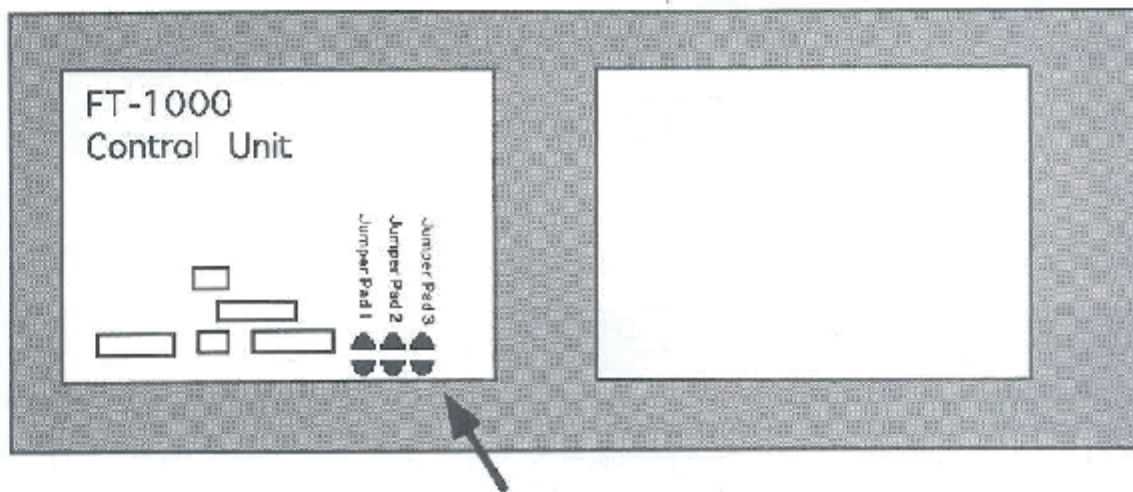
YAESU

Expansion Range

.1 - 30 Mhz.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.

FT-1000 FRONT PANEL



Remove Solder Bridge from Pad #3

Expanded RF Modification

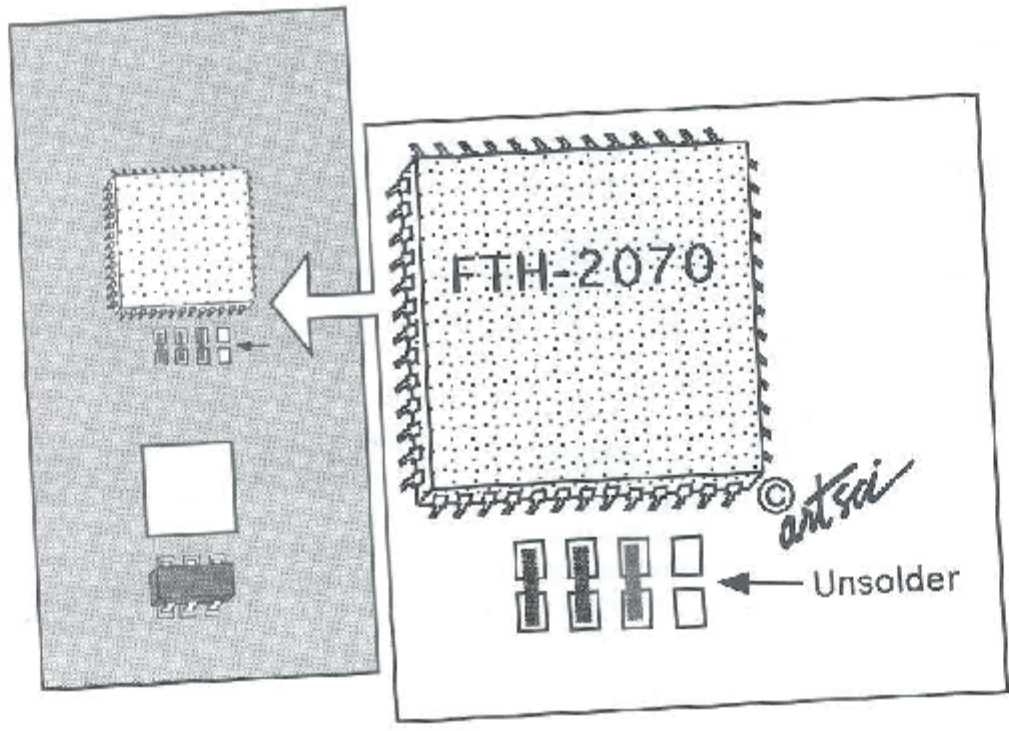
1. Remove power from the radio.
2. Open the case top and bottom.
3. Locate four screws attaching front panel and remove the top screws. Loosen the bottom screws.
4. Tilt front panel forward.
5. On the left side of the radio, remove the plug from the power supply to the front panel. (gray and white wires)
6. Locate jumper position 3 on Control board.
7. **Unsolder the jumper in position 3**
8. Reassemble the radio.
9. **Reset the microprocessor.**

(Turn off the Backup Switch, located inside the panel window)

Expansion Range

134 - 174 MHz
400 - 499 Mhz.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



- ### Expanded RF Modification
1. Remove battery and Antenna from the radio.
 2. Remove screws and open case
 3. **Locate and unsolder jumper pad as shown above**
(Pad connected to Microprocessor pin 11)
 4. Reassemble the radio.
 5. Reset the Microprocessor
(Press [PRI] and turn the radio on.)

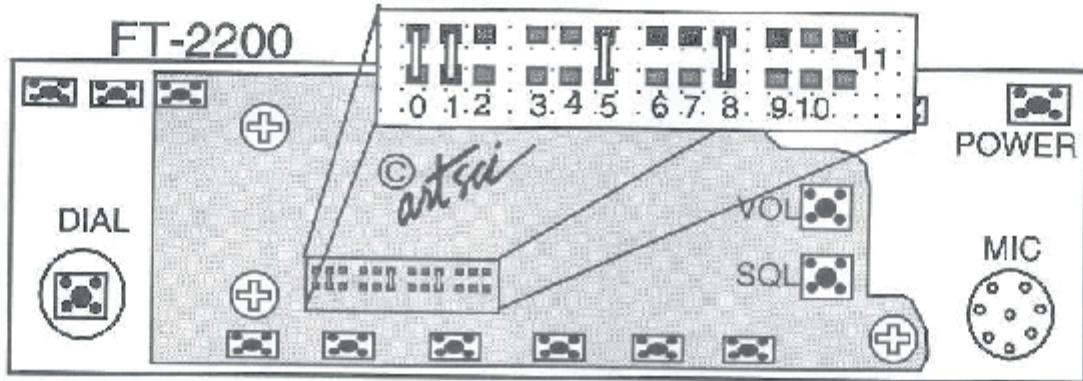
YAESU

FT-2200

Expansion Range

110 - 139.995 AM RX Note: A *** will appear when frequency is below 140 MHz.
 110 - 180 MHz RX The AM mode will store in memory channels.
 140- 174 MHz TX

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

1. Remove power and antenna
2. Remove top and bottom covers. (the speaker may fall out)
3. Remove the Volume, Squelch and Main tuning knobs from the front of the radio.
4. Remove the front panel (push on all four tabs)
5. Remove the tuning knob retainer nut.
6. Lift off the LCD display assembly.
7. Locate jumper Pads #1,2 & 5.
8. **Remove resistor from pads #1 & 2.**
9. **Remove resistor from pads #5.** (AIRCRAFT Rec Mod)
 (One report suggests the Pad #8 should be jumped in place of pad #5)
10. Reassemble the radio.
11. Reset the microprocessor.
 (Press and hold [MHz] and [CALL] buttons and turn the radio on.

The radio will power up and display 10.000 MHz.

Press [MHz] and dial 110.00 and press [D/MR]	VHF RX low Limit
Press [MHz] and dial 174.00 and press [D/MR]	VHF RX High Limit
Press [MHz] and dial 136.00 and press [D/MR]	VHF TX low Limit
Press [MHz] and dial 174.00 and press [D/MR]	VHF TX High Limit
Press [F/W] and then [RPT] and dial 0.600 and press [RPT]	Offset

You will need to cut the Green Wire for 110 - 180 RX
 (it is located near the speaker towards the front panel. It is very obvious)

Expansion Range

1240.00 MHz - 1300.00 MHz

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.

Expanded RF Modification

1. Remove five screws from the top cover and remove the cover.
2. Remove five screws from the bottom cover and remove the cover.
3. Unplug the speaker.
4. Remove the four screws holding the front panel.
5. Locate jumper pad number 7.
6. **Solder bridge pad number 7.**
7. Locate the reset pins (Located on the front panel and clearly marked).
8. Short the reset pins together for one second.
9. Reassemble the radio.

Expansion Range

118-174 MHz Rx, 140-174 MHz Tx.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.

Expanded RF Modification

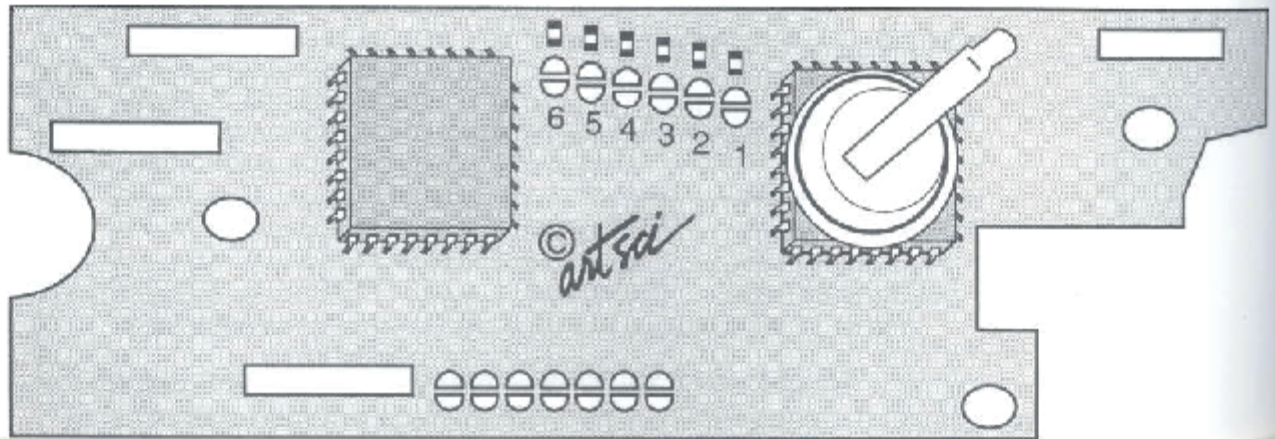
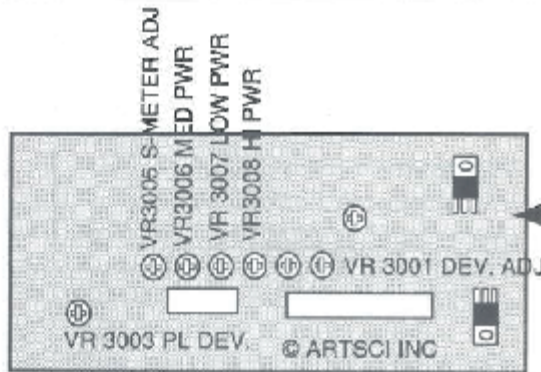
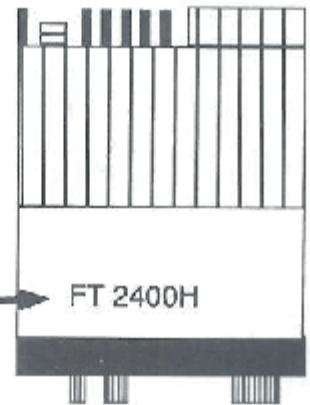
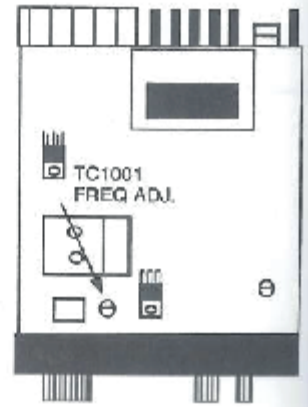
1. Remove Power and Antenna.
2. Locate and remove the two Allen screws from the front panel.
3. Locate and unsolder jumper pad 2. (or follow option below)
4. Locate and solder jump pads 1 & 3.
5. Reassemble the radio.

Option #2

1. Follow steps above, except leave solder pad 2 jumpered.
2. Turn radio on and set the upper and lower limits:

Select 138.00 MHz and Press [D/MR] button	(lower RX limit)
Select 174.00 MHz and Press [D/MR] button	(High RX limit)
Select 138.00 MHz and Press [D/MR] button	(lower TX limit)
Select 174.00 MHz and Press [D/MR] button	(High TX limit)

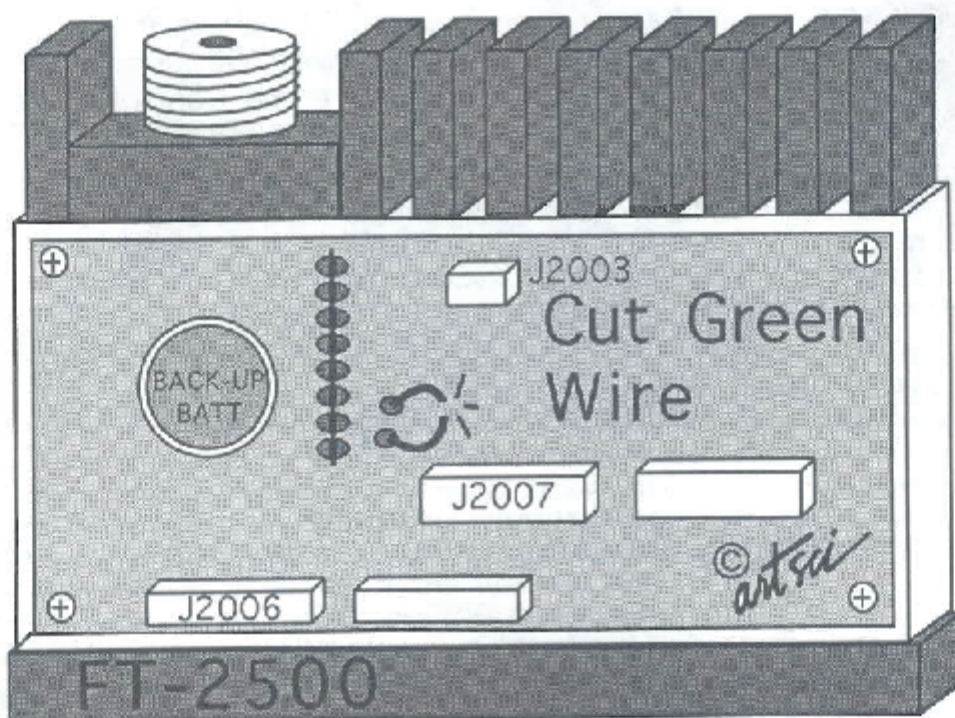
TONE BURST - Solder Pad # 6



Expansion Range

140 MHz - 174 Mhz.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

1. Remove Power and Antenna.
2. Remove five (5) screws holding the top cover.
3. Locate and cut **GREEN COLOR WIRE**.
(The Green wire is located between jumper pad #8 & Ground.)
4. Reassemble the radio.

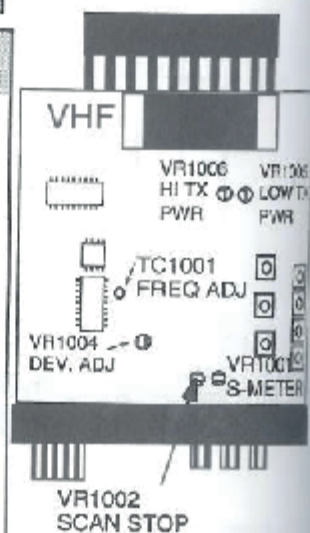
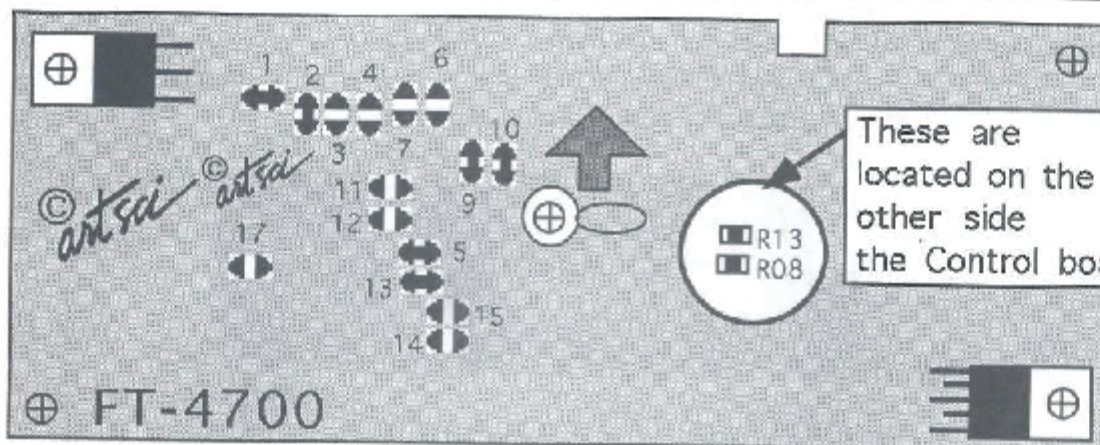
NOTE: One report instructs that Jumper #3 may need to be solder jumped.

FT-4700

Expansion Range

RX Range 138 MHz - 174 MHz 410 MHz - 475 MHz
 TX Range 138 MHz - 174 MHz 410 MHz - 475 MHz

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

1. Remove Front Panel.
2. Locate and **jump** pads 1,2,5,9,10 & 13. Solder short them carefully. (The other jumper pads must remain undisturbed)
3. Reassemble radio.
4. Turn power on. (The microprocessor has been reset)
5. Use the [UP] & [DOWN] buttons and dial to set the UHF range as follows :
 - 410.000 MHz Press [D/MR] button
 - 475.000 MHz Press [D/MR] button
6. The display will show 47.75 (IF freq. for UHF). Press [D/MR]
7. Use the up/down buttons and dial to set the VHF range as follows :
 - 138.000 MHz Press [D/MR] button
 - 174.000 MHz Press [D/MR] button
8. The display will show 17.3 (IF freq. for VHF). Press [D/MR]
9. The repeater shifts for both bands are reset to 000. They must be set using the [F] and [PRT] buttons. Refer to page 27 in the user manual.

Beep Level Reduction

1. Remove Front Panel
2. Remove the five screws holding Control unit in place.
3. Remove P10 from J04
4. Remove P09 from J03
5. Carefully flip the Control board to access the back side.
6. Locate R08 and R13.
7. Replace R08 and R13 with 560 ohm chip resistors (YAESU # J24205561)
8. Reconnect the two Plugs P10 & P09
9. Reassemble the radio.

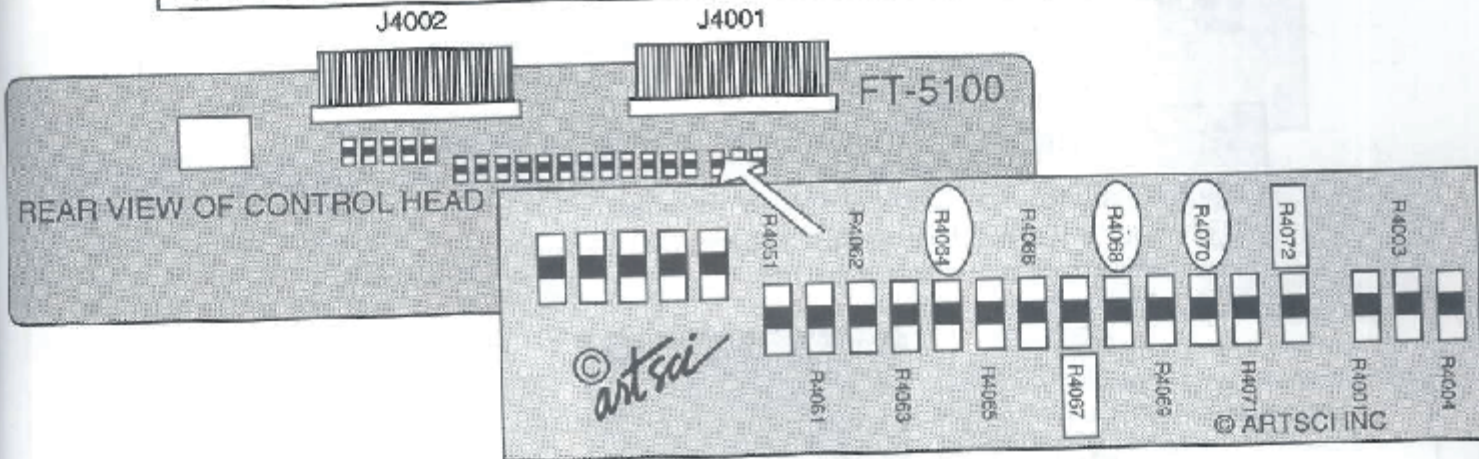
Receive and Transmit Expansion Cross Band & Mic Band Change

YAESU
FT-5100

Expansion Range

128 Mhz - 180 Mhz & 420 - 475 Mhz.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



Expanded RF Modification

1. Remove power and antenna from the radio.
2. Remove 6 screws from top and bottom covers, remove the covers (watch speaker).
3. Remove the 2 silver screws from each side of the radio securing the control head.
4. Carefully pull the Control Head from the radio. DO NOT REMOVE RIBBON CABLES
5. Locate and remove chip resistor R4072. (RX mod)
6. Locate and remove chip resistor R4067. (Mic/Band mod)
7. Locate and install Jumpers in positions R4070, R4068 & R4064. (RX mod)
STOCK US JUMPERS: 4001, 4003, 4004, 4051, 4061, 4062, 4067, 4072
POST MOD JUMPERS 4001, 4003, 4004, 4051, 4061, 4062, 4064, 4068, 4070
8. Reassemble the radio.
9. Turn the radio on
(The display will show 300.000 & 20.000)
10. Press [MHz] and dial 420.00 and press [D/MR] - UHF RX low limit
11. Press [MHz] and dial 475.00 and press [D/MR] - UHF RX high limit
12. Press [MHz] and dial 420.00 and press [D/MR] - UHF TX low limit
13. Press [MHz] and dial 475.00 and press [D/MR] - UHF TX high limit
14. Press [MHz] and dial 128.00 and press [D/MR] - VHF RX low limit
15. Press [MHz] and dial 180.00 and press [D/MR] - VHF RX high limit
16. Press [MHz] and dial 128.00 and press [D/MR] - VHF TX low limit
17. Press [MHz] and dial 180.00 and press [D/MR] - VHF TX high limit
18. Press [F/W] then [RPT] and dial 5.000 and press [RPT] - UHF offset
19. Press [F/W] then [REV] and dial 25.0 and press [RPT]. - Channel Step
20. Press [BAND] then [F/W] then [RPT] and dial 0.600 and press [RPT] - VHF offset.

FAST RESET (Memory clear) - Press and hold [D/MR] & [REV] and turn radio on.

YAESU

Cross Band Operation

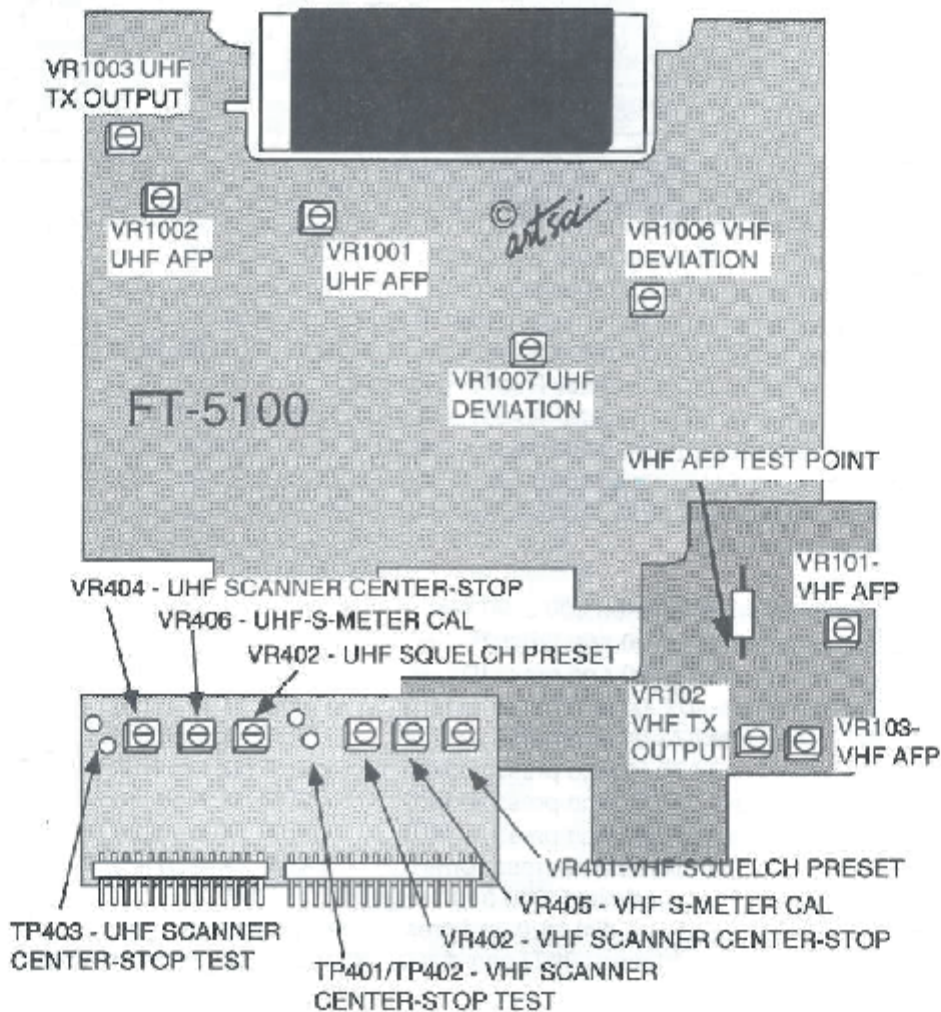
1. Select the desired VHF & UHF frequencies
2. Select low power transmit on both bands (To protect your radio)
3. If desired, adjust the TX time out timer value. (The default is 15 minutes)
 To adjust: Press and hold [LOW] & turn power on.
 Dial desired time out value (0-60 minutes)
 Turn radio off.

TURN ON - Press and hold [RPT] and turn radio on.

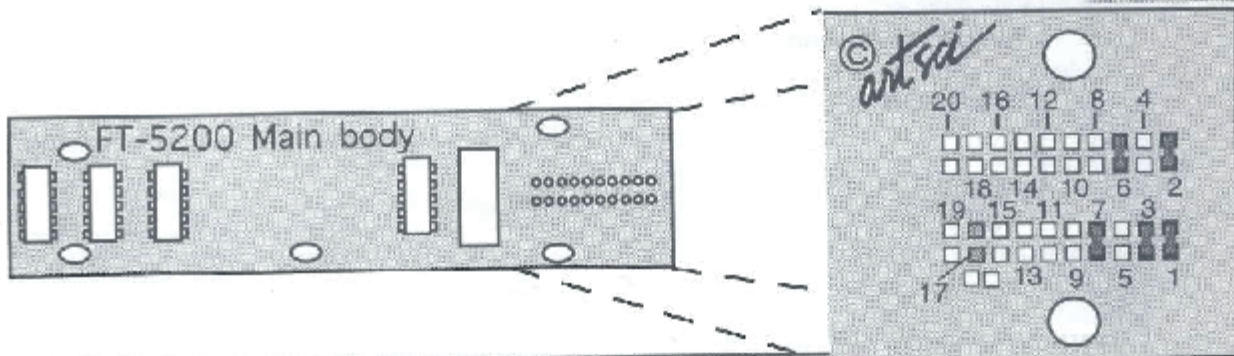
TURN OFF - Press and hold [RPT] and turn radio on.

Microphone Modification

Remove solder from Jumper R4067 to make Microphone [D/MR] button switch band on the radio.



YAESU



Expanded RF Modification

1. Remove power from the radio.
2. Release and remove the front panel.
3. Remove the six screws from the top cover of the radio.
4. Remove the six screws from the bottom of the radio.
5. Remove the top and bottom covers.
(CAUTION: the speaker might fall out.)
6. Remove the two screws & front control head mounting plate from the radio.
7. Locate solder pads 1 - 7.
(Standard jumpered pads are 2 and 7 only)
8. **Solder jump pads 1,3 and 6**
(Pads 1,2,3,6 & 7 are now jumpered)
9. **Unsolder jump pad 17.** (X-Band repeater mod) May be done at the factory!
Caution: Be sure to work on PAD 17. see drawing below
10. Install front panel mounting plate.
11. Reassemble the radio.
12. Reconnect the power to the radio.
13. **Press and hold [D/MR], [F/W] & [REV] keys and turn radio on.**
(Display will show 000.000 & 300.000 on the display)
14. **Set the VHF Receive and Transmit limits:**

Enter 118.00 MHz and press [D/MR]	(VHF RX Low)
Enter 174.00 MHz and press [D/MR]	(VHF RX High)
Enter 140.00 MHz and press [D/MR]	(VHF TX Low)
Enter 174.00 MHz and press [D/MR]	(VHF TX High)

- 15 **Set the UHF Receive and Transmit limits:**

Enter 420.00 MHz and press [D/MR]	(UHF RX Low)
Enter 475.00 MHz and press [D/MR]	(UHF RX High)
Enter 420.00 MHz and press [D/MR]	(UHF TX Low)
Enter 475.00 MHz and press [D/MR]	(UHF TX High)

16. Press [Function] then [RPT] and select 5 MHz Repeater offset for UHF band.
17. Press [Function] then [RPT] and select 600 kHz Repeater offset for VHF band.

Expansion Range

The Exact range of this radio is not known as of press time. However most radios expand from 138 Mhz - 165 Mhz & 420 - 469 Mhz. Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.

Cross Band Repeater

To activate X-Band repeater function:

Press and hold [RPT] and turn power on.

It is recommended that you unplug the microphone during X-Band operation.
(The Mic is live)

• Adjust the volume control to adjust repeat audio level.

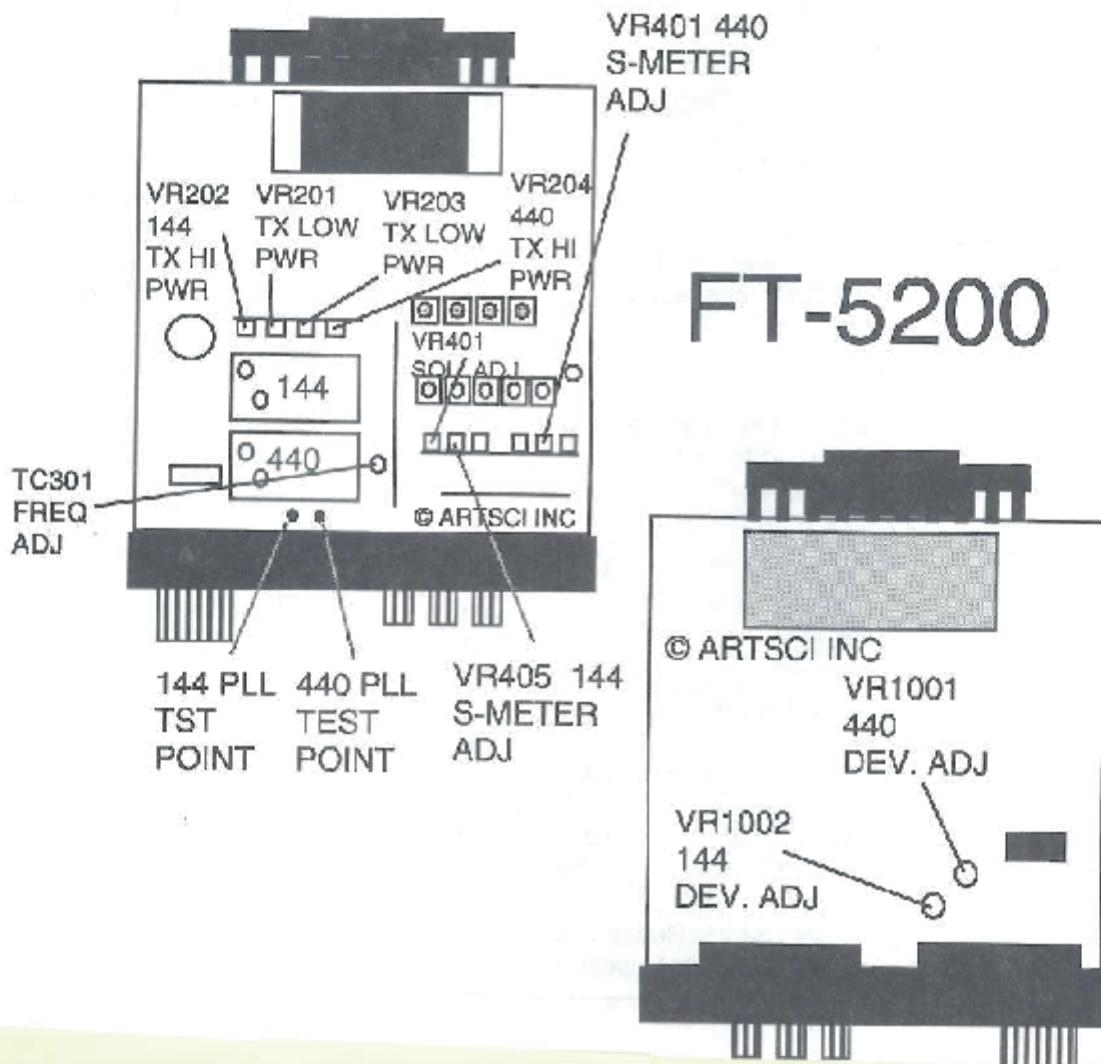
Other Options

Override automatic display dimmer:

Press and hold [MHz] and turn radio on: Use Channel knob to select brightness.

Keyboard VHF Expanded Receive:

Press and hold [DVS] & [MHz] keys and turn radio on.



Receive and Transmit Expansion

**YAESU
FT-6200**

Expansion Range

420 - 475 Mhz.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.

Expanded RF Modification

- Remove power from the radio.
- Release and remove the Control head.
- Remove the top and bottom covers. Six screws hold the top and bottom covers on.
- Remove the two silver screws holding the control head mounting bracket.
- Remove the mounting bracket.
- Locate and solder jumper pad #6.

Pads 2, 4, 6, 7, 8, 15, 17 & 18 will now be jumpered.

Locate and remove solder jumper pad #17. (X-Band repeater mod)

Caution: Make sure you jumper the proper pad. see drawing below.

Reassemble the radio.

Reconnect the power.

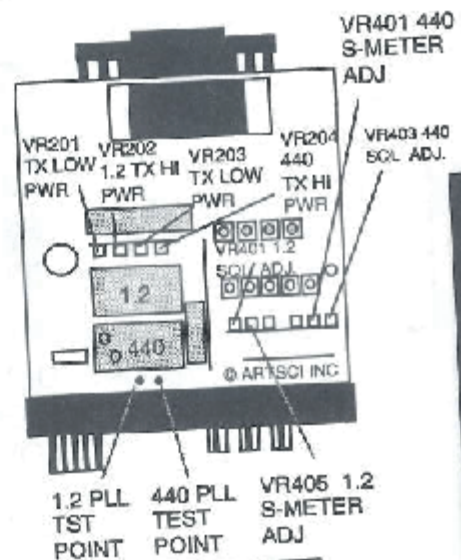
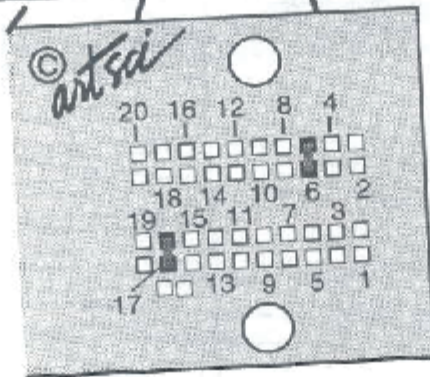
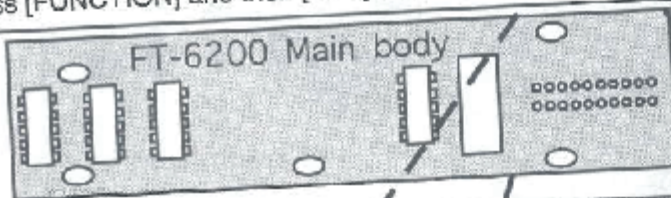
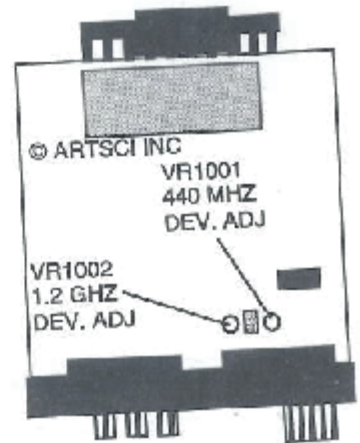
2. Press and hold [D/MR], [F/W] & [REV] and turn the power on.

The radio will now show 300.000

1. Enter the following band limits:

- 420.00 and then press [D/MR] (UHF Rx low limit)
- 475.00 and then press [D/MR] (UHF Rx high limit)
- 420.00 and then press [D/MR] (UHF Tx low limit)
- 475.00 and then press [D/MR] (UHF Tx high limit)

12. Press [FUNCTION] and then [RPT] and select 5.000 MHz repeater offset.



YAESU

To activate X-Band repeater function:
To override automatic display dimmer:

Press and hold [RPT] and turn power on.
Press and hold [MR] and turn power on and
select the desired brightness level)



FT-7400

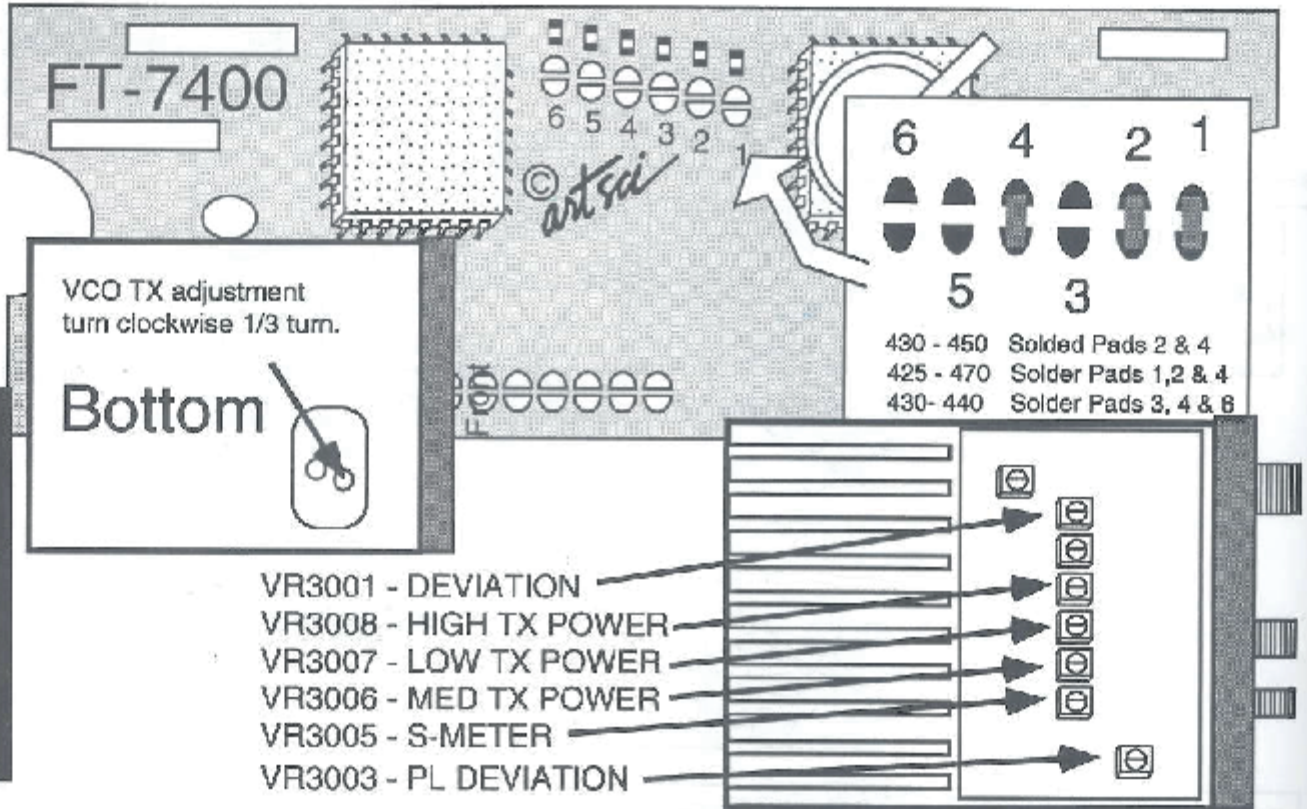
Expansion Range

420 - 470 Mhz.

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.

Expanded RF Modification

1. Remove power from the radio.
2. Remove Front Panel.
3. Locate solder pad #1. (Behind front control panel)
4. **Solder jump pad # 1**
5. Reassemble the radio.



YAESU

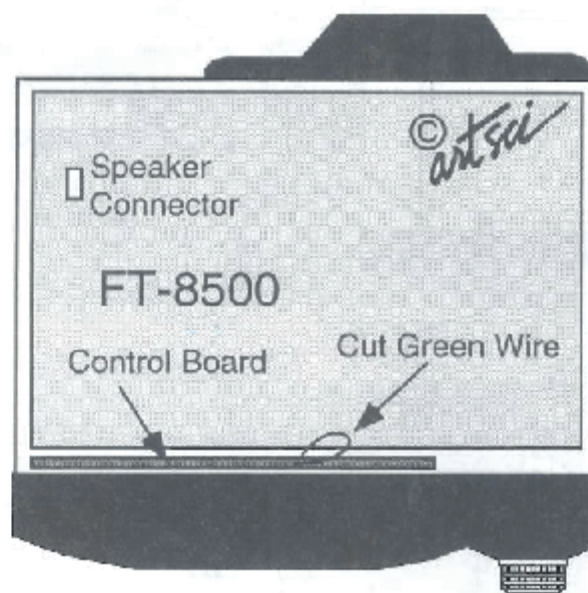
Receive and Transmit Expansion

YAESU
FT-8500

Expansion Range

137 MHz - 174 MHz
410 MHz - 470 MHz

Remember that the electronic circuits can only tune a 20-30 MHz window around the original center frequency (tuned at the factory) you may have better performance at the top or the bottom ends of the tuneable range.



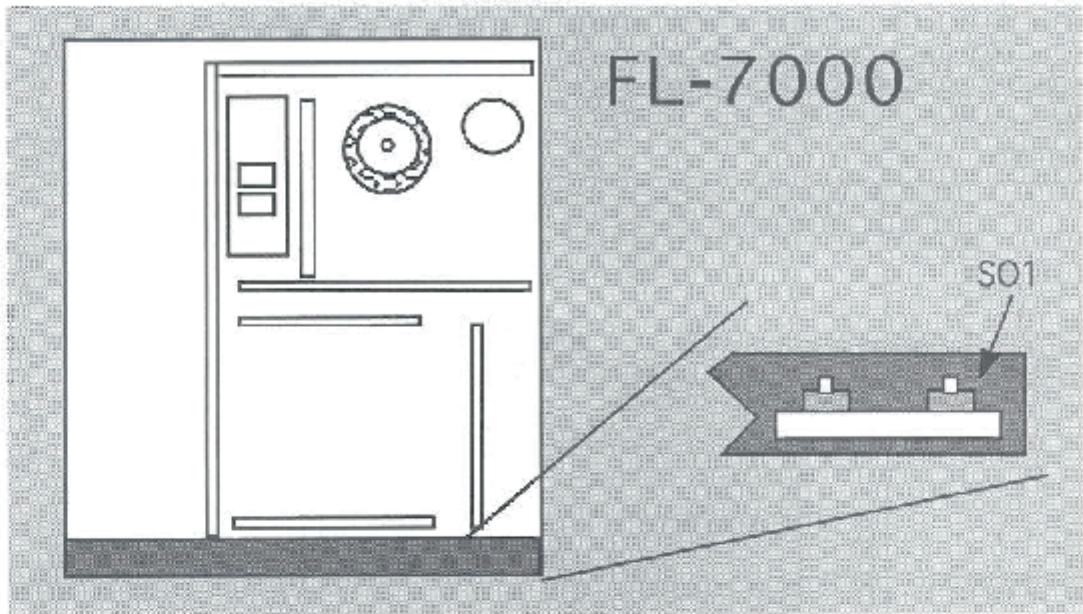
Expanded RF Modification

1. Disconnect power and antenna.
2. Remove screws from covers.
3. Gently tilt up the top cover and unplug the speaker.
4. Locate and **cut the Green wire** on the control board (it is a vertical board)
5. Reassemble the radio.
6. **Reset the microprocessor**
(Press and hold [D/M] & [REV] & [ENT] & turn power on.
(Turn off again)
(Press and hold [SCAN] & [HOME] & turn on. - Exp RX mod)

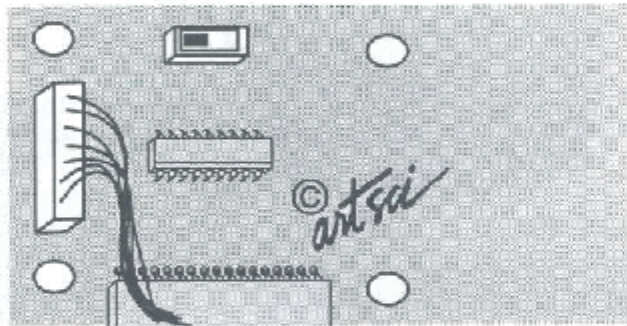
YAESU

FL-7000

Expansion Range
24.5 HMz & 28 MHz

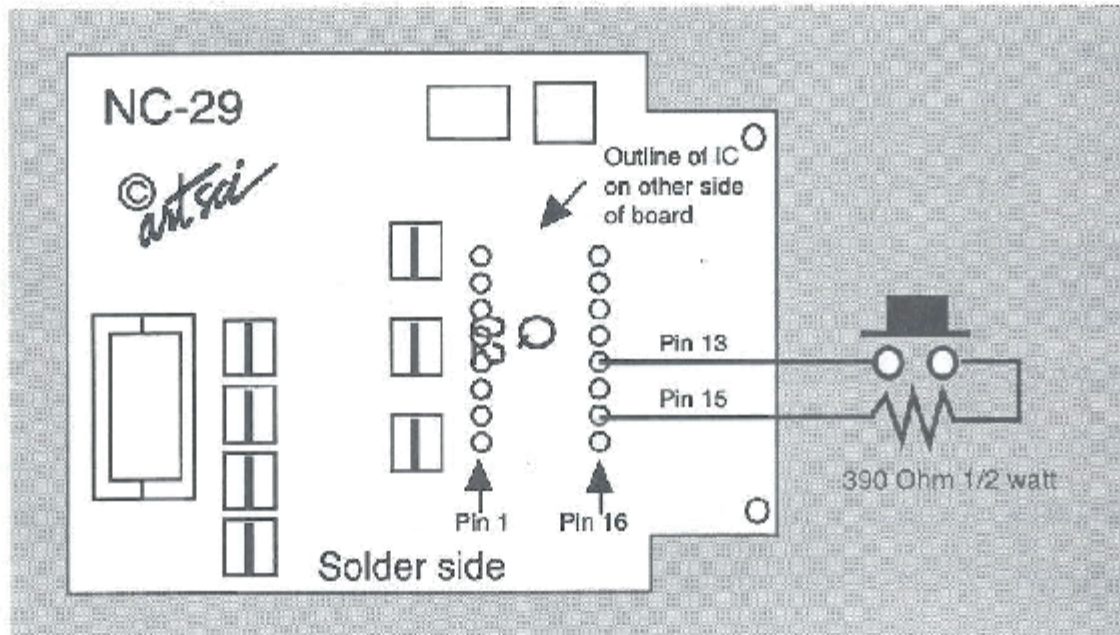


S01



YAESU

- Expanded RF Modification**
1. Remove Power cable and all other cables.
 2. Remove 4 screws from the top cover.
 3. Remove the top cover and the right and left panels.
 4. Remove 4 screws from the power combiner unit and remove screen plate.
 5. **Locate Switch S01 on the CPU unit and set it to the off position.** (A small screwdriver can be used to reach the switch.)
 6. Reassemble the unit.



Modification

This modification will allow you to select the amount of time used to fast charge your battery pack. The standard NC-29 will fast charge a battery for five hours and then switch to trickle charge every time a battery is inserted, even if the battery is fully charged.

This modification will provide a push button to speed up the Internal clock. By pressing the button, you can watch the time remaining LEDs on the panel and select the amount of full charging time.

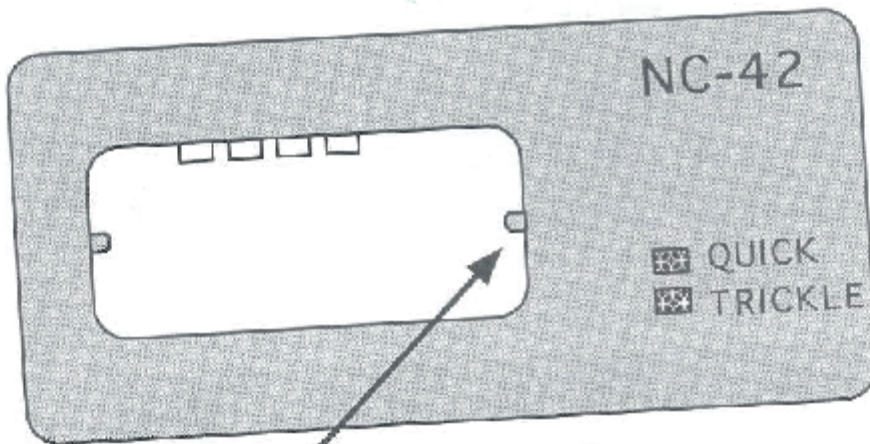
1. Unplug the charger for the AC power
2. Locate IC Q02. see drawing
3. Solder tack a 390 Ohm 1/2 watt resistor and a normally open push button to Pins 13 & 15
4. Position the push button switch in a handy position on the plastic case.

Modification

This modification will allow you to charge FNB-12S, FNB-14, FNB-17, FNB-25, FNB-26 and FNB-27 batteries.

1. Remove the ridge on the inside of the battery charging cup. (right side only)

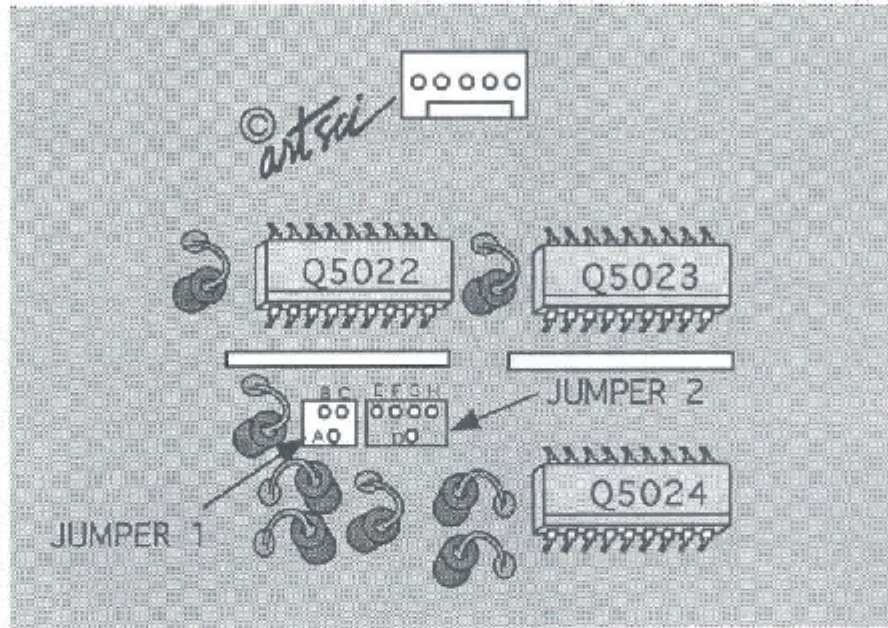
Charging time for all batteries should be about 1 hour or less.



Remove this ridge. Use a file or similar tool

YAESU

Expansion Range
RX: 150 kHz - 30 MHz
TX: 1.8 MHz - 30 MHz



YAESU

- Expanded RF Modification
1. Unplug the power from the radio.
 2. Open radio and locate the CONTROL UNIT.
 3. **Locate and install a Jumper between Point A and point B.**
No Jumper to point C.
 4. **Remove any jumper to point D.** (Transmit range point)
 5. Reassemble radio.

Reset Commands

Radio	Function	Command
FT-1000	Hard Reset	Flip off BACKUP switch. (Inside the top panel window)
	Memory Reset	Press & hold [SUB] & [ENTER] & turn power on
	Soft Reset	Press & hold [1.5] & [3.5] & turn power on. (For checking Display and ROM version)
T-990	Hard Reset	Flip off BACKUP switch. (Inside the top panel window)
	Memory Reset	Press & hold [GEN] & [ENT] & turn power on
	Soft Reset	Press & hold [1.5] & [3.5] & turn power on. (For checking Display and ROM version)
FT-890	Hard Reset	Press & hold [HAM/GEN] & [CLAR] & turn power on.
	Soft Reset	Press & Hold [A/B] & [A=B] & turn power on (For checking Display and ROM version)
FT-767GX	Hard Reset	Switch [B.U.] off & turn radio on.
	Freq. Range Reset	Press and hold [OFFSET] & turn power on. (140.00 - 148.99 MHz)
		Press and hold [CLAR] & turn power on. (140.00 - 145.99 MHz)
		Press and hold [MCK] & turn power on. (140.00 - 1487.99 MHz)
	430/440 toggle	Press and hold [0] & turn power on.
FT-757GX	Hard Reset	Press & hold [MARKER] & [LINEAR] & turn power on.
FT-747GX	Hard Reset	Slide Backup switch towards tuning dial. (Located on bottom of panel)
FRG-8800	Hard Reset	Remove backup batteries
FRG-100	Hard Reset	Turn off backup switch on rear of radio for 5 seconds.

Reset Commands

Radio	Function	Command
FT-11	Master Reset	Press and hold [UP] & [DOWN] & turn on.
FT-41		
FT-26		
FT-76		
	Ham/Extended RX	Press and hold [UP] & [DOWN] & turn on.
	Factory Defaults	
	Soft Reset (memory clear)	Press and hold [T] & [REV] & turn on.
	Master Reset	Press and hold [D/MR] & [T] & [REV] & turn on. (must enter new band limits)
FT-411E	Ham/Extended RX	Press and hold [UP] & [DOWN] & turn on.
FT-811		
FT-911		
FT-415		
FT-418		
FT-470		
FT-815		
FT-530		
	Factory Defaults	Press and hold [T] & [REV] & turn on.
FT-2400H	Ham/Extended RX	Press and hold [UP] & [DOWN] & turn on
	Memory Reset	Press [D/MR] & [F/w] & turn on.
	Factory Defaults	Press [D/MR] & [REV/SKIP] & turn on & turn off & Press & hold [D/MR] & turn on.
FT-5100	Factory Defaults	Press and hold [D/MR] & [REV] & turn on.
FT-5200	Ham/Extended RX	Press and hold [MHz] & [DVS/HOLD] & turn on.
	Factory Defaults	Press and hold [D/MR] & [REV] & turn power on.
FT-212	Ham/Extended RX	Press and hold [MHz] & [VOICE] & turn power on.
FT-712		
FT-912		
FT-290	Hard Reset	Switch internal backup switch off of 30 seconds.
FT-690		
FT-790II		
FT-736R	Hard Reset	Switch internal backup switch off of 30 seconds.

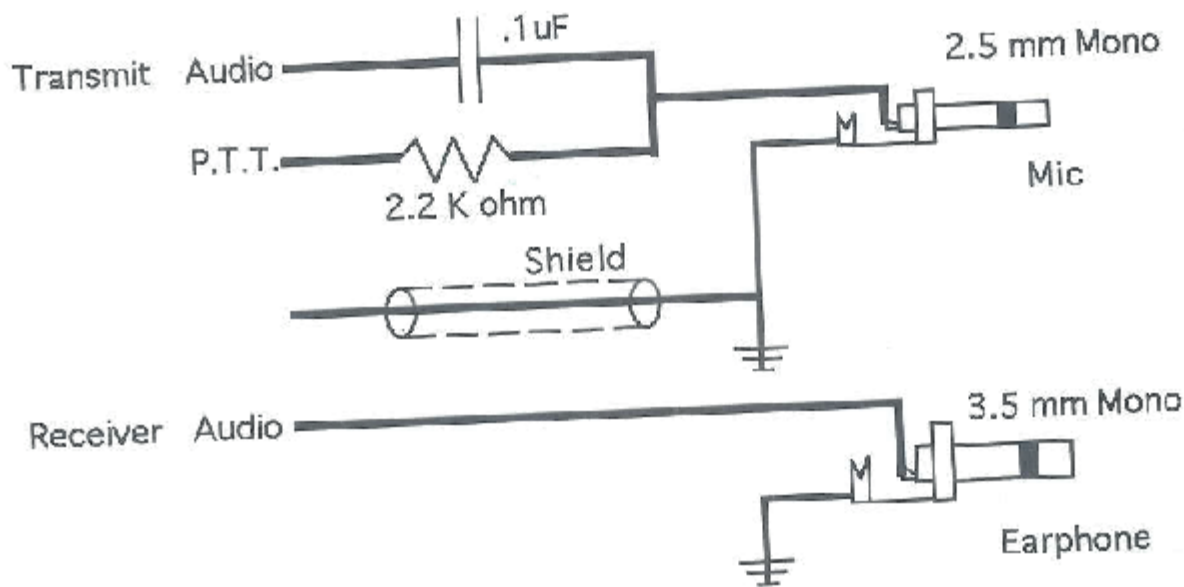
ESU

Handheld to TNC Connections

23,33,73,109,209,709,727,470,411,811,911

Parts Required

- 1 - 0.1 uF, 50V Disk Ceramic Cap
- 2 - 2.2k Ohms, 1/4 Watt Resistor
- 1 - 2.5 mm audio plug
- 1 - 3.5 mm audio plug



YAESU

