

## IC-R2 Alignment Procedure

(To enter the alignment mode)

- Pull down cloning terminal with 68K resistor
- Turn on the power while holding FUNC button
- Clone the radio
- Turn off the radio and turn back on the radio.

(When radio is in alignment mode, each key has assigned following function)

- Main dial knob:                      Setting adjustment value
- Band button:                        CH up
- Function button:    CH down
- V/M button:                        Toggle between alignment mode and verifying mode

(To escape alignment mode)

- Turn off the radio
- Hold both Function and V/M buttons and turns radio on

## PLL 1st VCO

- Connect digital volt meter to CP LV1 on the RF board
- Set display to 493.300MHz (Shift on)
- Verify the lock voltage for 2.4V at receive mode
- Set display to 282.900MHz (Shift on)
- Verify the voltage for less than 12V at receive mode
- Set display to 0.495MHz (Shift off)
- Verify the voltage for 1.9V at receive mode
- Set display to 493.295MHz (Shift off)
- Verify the voltage for less than 12V at receive mode

## PLL 2nd VCO

- Connect digital volt meter to CP LV2 on the RF board
- Set display to 430.000MHz
- Verify the lock voltage for 0.7V at receive mode
- Set display to 493.300MHz
- Verify the voltage for less than 2.5V at receive mode

## PLL Frequency

- Connect Frequency counter to CP F on RF board
- Set display to 280.100MHz (FR ch)

- Adjust S9 (Main dial) for 546.800MHz at receive mode

#### De-modulator output

- Connect standard signal generator to antenna connector
- Connect digital volt meter to CP QUAD on the RF board
- Set display to 145.600MHz (tk ch)
- Apply 145.600MHz/60dBu (No modulation) to radio
- Adjust L21 on RF board for 1.0V

#### VHF receiver

- Connect standard signal generator to antenna connector
- Connect digital volt meter to CP SEN on the RF board
- Set display to 145.600MHz (tk ch)
- Apply 145.600MHz/0dBu (No modulation) to radio
- Adjust S9 (Main tuning knob) for maximum voltage
- Verify receive sensitivity for better than -8dBu between 118MHz and 175MHz

#### UHF receiver

- Connect standard signal generator to antenna connector
- Connect digital volt meter to CP SEN on the RF board
- Set display to 435.600MHz (tk ch)
- Apply 435.600MHz/0dBu (No modulation) to radio
- Adjust S9 (Main tuning knob) for maximum voltage
- Verify receive sensitivity for better than -5dBu between 330MHz and 470MHz

#### S meter

- Connect standard signal generator to antenna connector
- Set mode to FM
- Set display to 14.100MHz (RS ch)
- Apply 14.100MHz/-6dBu (No modulation) to radio
- Repress MOD button, and verify s meter readout for 3 dots
- Set display to 145.100MHz (RS ch)
- Apply 145.100MHz/-6dBu (No modulation) to radio
- Repress MOD button, and verify s meter readout for 3 dots
- Set display to 200.100MHz (RS ch)
- Apply 200.100MHz/-6dBu (No modulation) to radio
- Repress MOD button, and verify s meter readout for 3 dots
- Set display to 435.100MHz (RS ch)

- Apply 435.100MHz/-6dBu (No modulation) to radio
- Repress MOD button, and verify s meter readout for 3 dots
- Set display to 650.100MHz (RS ch)
- Apply 650.100MHz/-6dBu (No modulation) to radio
- Repress MOD button, and verify s meter readout for 3 dots
- Set display to 1100.100MHz (RS ch)
- Apply 1100.100MHz/-6dBu (No modulation) to radio
- Repress MOD button, and verify s meter readout for 0 dots

#### ATT

- Connect standard signal generator to antenna connector
- Set mode to FM
- Set display to 1100.100MHz (RS ch)
- Apply 1100.100MHz/-6dBu (No modulation) to radio
- Repress FUNC and SQL button, and verify for dropping s meter readout

#### SQL

- Connect standard signal generator to antenna connector
- Set mode to FM
- Set SQL to AUTO
- Set display to 14.100MHz (RS ch)
- Apply 14.100MHz/-8dBu (No modulation) to radio
- Verify the squelch for open
- Set display to 145.100MHz (RS ch)
- Apply 145.100MHz/-8dBu (No modulation) to radio
- verify squelch for open
- Set display to 200.100MHz (RS ch)
- Apply 200.100MHz/-8dBu (No modulation) to radio
- Verify squelch for open
- Set display to 435.100MHz (RS ch)
- Apply 435.100MHz/-5dBu (No modulation) to radio
- Verify squelch for open
- Set display to 650.100MHz (RS ch)
- Apply 650.100MHz/-5dBu (No modulation) to radio
- Verify squelch for open
- Set display to 1100.100MHz (RS ch)
- Apply 1100.100MHz/-2dBu (No modulation) to radio
- Verify squelch for open

## AF audio output

- Connect standard signal generator to antenna connector
- Connect voltmeter to speaker jack with 8 ohm load
- Set mode to FM
- Set display to 14.100MHz (RS ch)
- Apply 14.100MHz/-60dBu with 1KHz 70% modulation to radio
- Verify audio output for 0.63Vrms at 10% distortion using up/down buttons
- Verify current drain for less than 450mA
- Set display to 145.100MHz (RS ch)
- Apply 145.100MHz/-60dBu with 1KHz 70% modulation to radio
- Verify audio output for 0.63Vrms at 10% distortion using up/down buttons
- Verify current drain for less than 450mA
- Set display to 200.100MHz (RS ch)
- Apply 200.100MHz/-60dBu with 1KHz 70% modulation to radio
- Verify audio output for 0.63Vrms at 10% distortion using up/down buttons
- Verify current drain for less than 450mA
- Set display to 435.100MHz (RS ch)
- Apply 435.100MHz/-60dBu with 1KHz 70% modulation to radio
- Verify current drain for less than 450mA
- Verify audio output for 0.63Vrms at 10% distortion using up/down buttons
- Set display to 650.100MHz (RS ch)
- Apply 650.100MHz/-60dBu with 1KHz 70% modulation to radio
- Verify current drain for less than 450mA
- Verify audio output for 0.63Vrms at 10% distortion using up/down buttons
- Set display to 1100.100MHz (RS ch)
- Apply 1100.100MHz/-60dBu with 1KHz 70% modulation to radio
- Verify audio output for 0.63Vrms at 10% distortion using up/down buttons
- Verify current drain for less than 450mA