

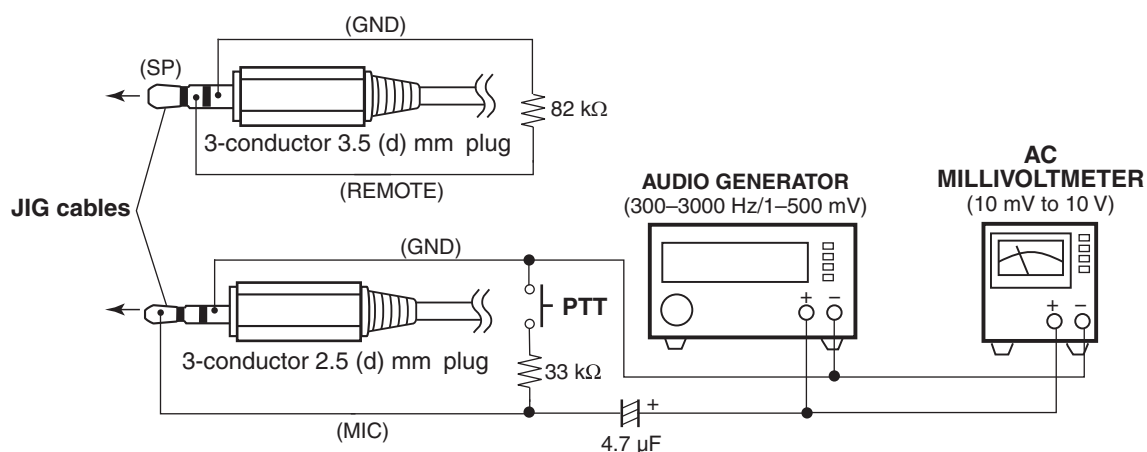
SECTION 5 ADJUSTMENT PROCEDURE

5-1 PREPARATION

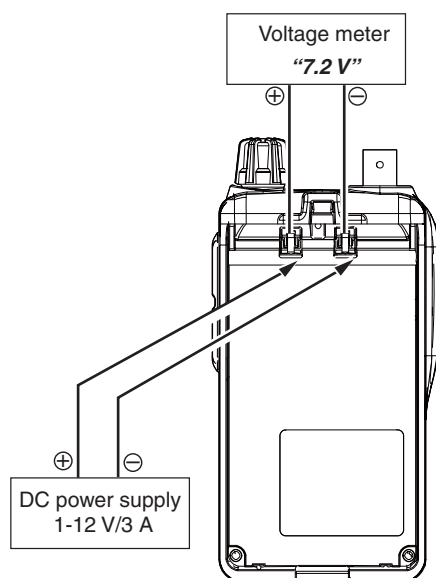
EQUIPMENT	GRADE AND RANGE	EQUIPMENT	GRADE AND RANGE
Power supply	Voltage range : 1–12 V DC Current capacity : 3 A	JIG cable	(See the illust below)
RF power meter (50 Ω terminated)	Measuring range : 0.1–10 W Frequency range : 100–300 MHz SWR : Less than 1.2 : 1	Frequency counter	Frequency range : 0.1–300 MHz Frequency accuracy : ± 0.5 ppm or better Input level : Less than 1 mW
Modulation Analyzer	Frequency range : 0.1–300 MHz Measuring range : 0 to ± 10 kHz	Standard signal generator (SSG)	Frequency range : 0.1–300 MHz Output level : -20 dB μ to 90 dB μ (-127 to -17 dBm)
AC millivolt meter	Measuring range : 10 mV to 10 V	Attenuator	Power attenuation : 30 dB Capacity : More than 10 W
Audio generator (AG)	Frequency range : 300–3000 Hz Output level : 1–500 mV	Terminator	Impedance : 50 Ω

CAUTION!: BACK UP the originally programmed memory data in the transceiver before starting adjustment.
When the adjustment is finished, the memory data may be cleared.

JIG CABLE

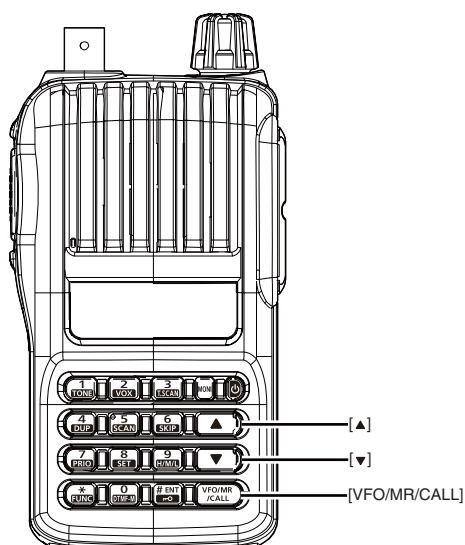


POWER SUPPLY

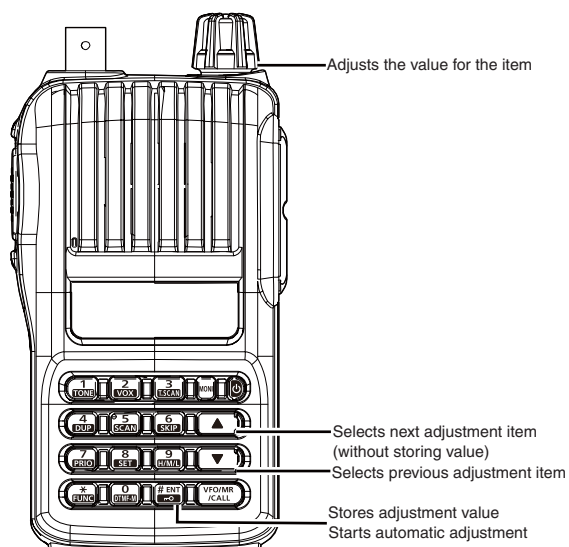


■ ENTERING ADJUSTMENT MODE

- ① Turn the power OFF.
- ② Connect the JIG cable (See the page 5-1) to the [SP/MIC] jack.
- ③ While pushing [▲], [▼] and [VFO/MR/CALL], turn the power ON.



■ KEY ASSIGNMENTS FOR THE ADJUSTMENT MODE



■ QUITTING ADJUSTMENT MODE

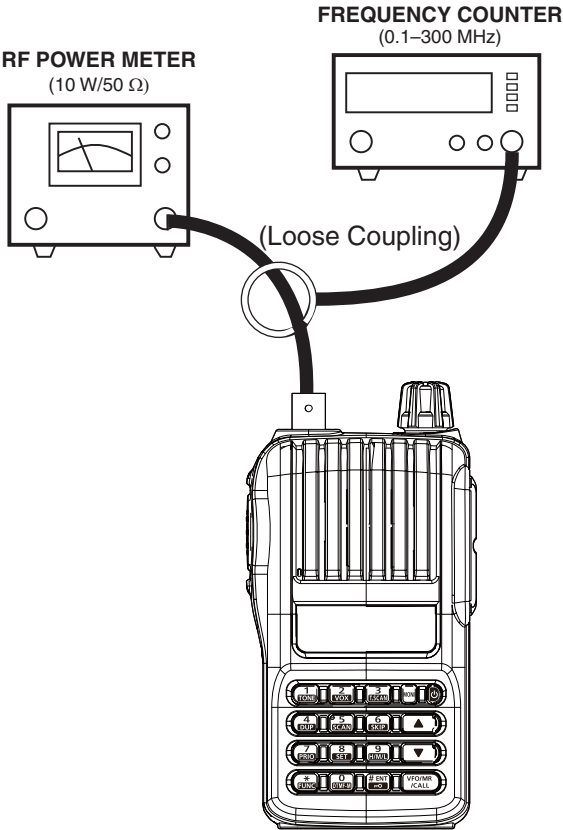
- ① Turn the power OFF.
- ② Disconnect the JIG cable, then turn the power ON.

5-2 FREQUENCY ADJUSTMENTS

- 1) Select an adjustment item using [▲]/[▼].
- 2) Set or modify the adjustment value as specified using [DIAL], then push [ENT].

ADJUSTMENT		TRANSCIVER'S CONDITION	OPERATION	ADJUSTMENT ITEM	VALUE
REFERENCE FREQUENCY	1	<ul style="list-style-type: none">• Frequency : (Displayed)• Transmitting	<ul style="list-style-type: none">• Loosely couple a frequency counter to the antenna connector.	[Fr]	Displayed frequency (±100 Hz)

■ CONNECTION

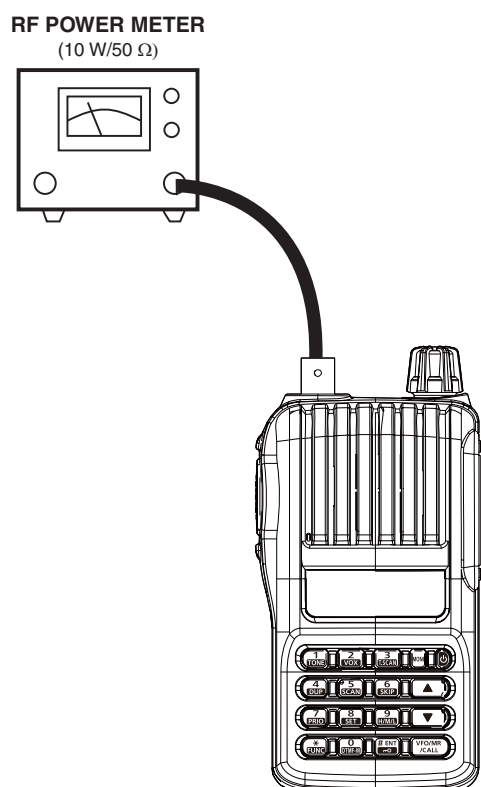


1) Select an adjustment item using [▲]/[▼].

	TRANSGIVER'S	
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ADJUSTMENT		TRANSCEIVER'S CONDITION	OPERATION	ADJUSTMENT ITEM	VALUE
TX OUTPUT POWER (Hi power)	1	<ul style="list-style-type: none"> • Frequency : 146.000 MHz • Transmitting 	<ul style="list-style-type: none"> • Connect an RF power meter to the antenna connector. 	[PO]	5.3–5.7 W
(Mid power)	2	<ul style="list-style-type: none"> • Frequency : 146.000 MHz • Transmitting 		[PO]	2.3–27 W
(Low power)	3	<ul style="list-style-type: none"> • Frequency : 146.000 MHz • Transmitting 		[PO]	0.4–0.6 W

■ CONNECTION



5-3 TRANSMIT ADJUSTMENTS (continued)

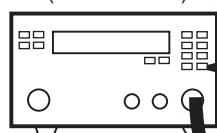
1) Select an adjustment item using [▲]/[▼].

2) Set or modify the adjustment value as specified using [DIAL], then push [ENT].

ADJUSTMENT	TRANSCEIVER'S CONDITION	OPERATION	ADJUSTMENT ITEM	VALUE
FM DEVIATION (Wide mode, band low)	1 • Frequency : 144.000 MHz • Transmitting	1) Connect a modulation analyzer to the antenna connector through an attenuator.	[dE]	±4.1 to ±4.3 kHz
(Wide mode, band high)	2 • Frequency : 148.000 MHz • Transmitting	2) Connect an audio generator to the JIG cable (see the page 5-1), and set it as; Frequency : 1 kHz Level : 150mVrms	[dE]	
DTCS BALANCE (Wide mode, band low)	1 • Frequency : 144.000 MHz • Transmitting	1) Connect a modulation analyzer to the antenna connector through an attenuator.	[dt]	±4.1 to ±4.3 kHz
(Wide mode, band high)	2 • Frequency : 148.000 MHz • Transmitting	2) Connect an audio generator to the JIG cable (see the page 5-1), and set it as; Frequency : 300 Hz Level : 450mVrms	[dt]	
TONE DEVIATION (CTCSS)	1 • Frequency : 146.000 MHz • Transmitting	• Connect a modulation analyzer to the antenna connector through an attenuator. (No audio signals are applied.)	[dc]	±0.7 to ±0.8 kHz
(DTCS)	2 • Frequency : 146.000 MHz • Transmitting		[dd]	
(DTMF)	3 • Frequency : 146.000 MHz • Transmitting		[df]	±3.4 to ±3.6 kHz
(EURO TONE)	4 • Frequency : 146.000 MHz • Transmitting		[du]	

CONNECTION

MODULATION ANALYZER
(0.1–300 MHz)

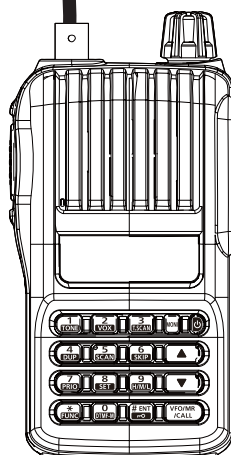


SETTING
HPF : OFF
LPF : 20 kHz
De-emphasis : OFF
Detector : (P-P)/2

ATTENUATOR
(30 dB/10 W)



JIG cable
(See the page 5-1)



5-4 RECEIVE ADJUSTMENTS

1) Select an adjustment item using [▲]/[▼].

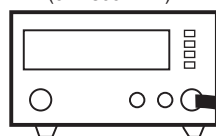
2) Set or modify the adjustment value as specified using [DIAL], then push [ENT].

ADJUSTMENT		TRANSCEIVER'S CONDITION	OPERATION	ADJUSTMENT ITEM	VALUE
RX SENSITIVITY (Band low)	1	NOTE: When "RX SENSITIVITY" is re-adjusted, "S-METER" must be re-adjusted too.			
		<ul style="list-style-type: none">• Frequency : 136.020 MHz• Receiving	<ul style="list-style-type: none">• Connect an SSG to the antenna connector and set it as; Frequency : 136.020 MHz Level† : 0 dBμ (−107 dBm) Modulation : 1 kHz Deviation : ±3.5 kHz	[t1]	Push [ENT] (Automatic adjustment)
	(Band center)	2	<ul style="list-style-type: none">• Frequency : 155.020 MHz• Receiving	<ul style="list-style-type: none">• Set the SSG as; Frequency : 155.020 MHz	
(Band high)	3	<ul style="list-style-type: none">• Frequency : 173.980 MHz• Receiving	<ul style="list-style-type: none">• Set the SSG as; Frequency : 173.980 MHz	[t3]	
SQUELCH (Wide mode)	1	<ul style="list-style-type: none">• Frequency : 146.020 MHz• Receiving	<ul style="list-style-type: none">• Connect a terminator to the antenna connector.	[Sq]	Push [ENT] (Automatic adjustment)
(Narrow mode)	2	<ul style="list-style-type: none">• Frequency : 146.020 MHz• Receiving		[Sn]	
S-METER	1	NOTE: When "RX SENSITIVITY" must be adjusted before "S-METER." And when "RX SENSITIVITY" is re-adjusted, "S-METER" must be re-adjusted too.			
		<ul style="list-style-type: none">• Frequency : 146.020 MHz• Receiving	<ul style="list-style-type: none">• Connect an SSG to the antenna connector and set it as; Frequency : 146.020 MHz Level† : −9 dBμ (−116 dBm) Deviation : None	[SL]	Push [ENT] (Automatic adjustment)
BATTERY TYPE SELECT	1	<ul style="list-style-type: none">• Receiving	<ul style="list-style-type: none">• Select the battery type. (According to the version)	[bt]	00 =#02, 05, 09 02 =#32, 33, 35, 37, 39, 40 01 =Other than above

†; The output level of the standard signal generator (SSG) is indicated as the SSG's terminated (50 Ω) circuit.

CONNECTION

STANDARD SIGNAL GENERATOR
(0.1–300 MHz)



CAUTION:
NEVER transmit while an SSG is connected to the antenna connector.

