



ADJUSTMENT PROCEDURE

HF/50 MHz TRANSCEIVER

IC-7300

S-15218XZ-C1
March 2016

Icom Inc.

SECTION 4 ADJUSTMENT PROCEDURE

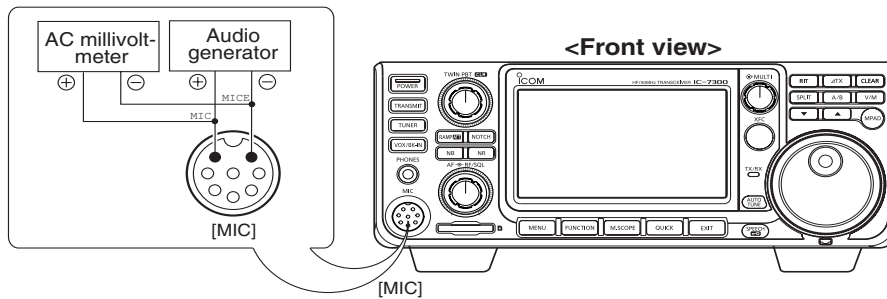
4-1 PREPARATION

■ REQUIRED EQUIPMENTS

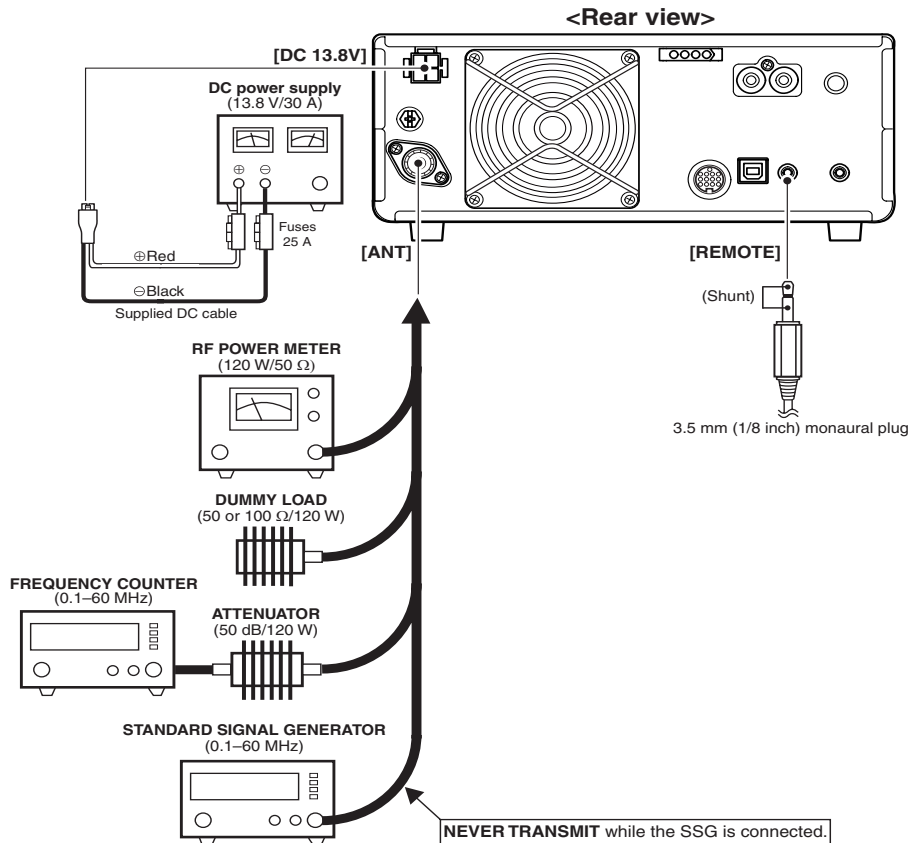
EQUIPMENT	GRADE AND RANGE	EQUIPMENT	GRADE AND RANGE
Shunt plug	Modified 3.5 mm (1/8 inch) monaural plug (See the illustration below.)	Dummy Loads	Impedance: 50 Ω and 100 Ω/120 W
		Attenuator	Attenuation: 50 dB/120 W
RF power meter (50 Ω terminated)	Measuring range: 1–120 W Frequency range: 0.1–60 MHz SWR: Less than 1.2 : 1	Standard signal generator (SSG)	Frequency range: 0.1–60 MHz Output level: -20 dBμ to +94 dBμ (-127 to -13 dBm)
Frequency counter	Frequency range: 0.1–60 MHz Frequency accuracy: ±1 ppm or better Input level: Less than 1 mW	Audio generator (AG)	Frequency range: 300–3000 Hz Output level: 1–500 mV
		AC Millivoltmeter	Measuring range: 10 mV to 10 V

■ GENERAL CONNECTION

• Front panel



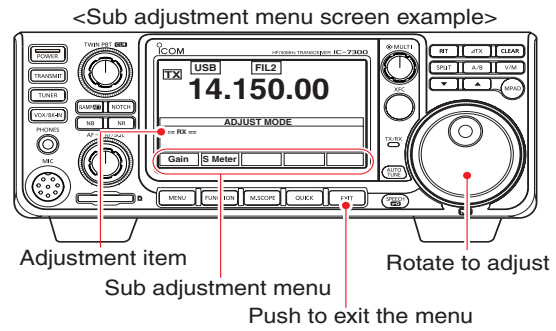
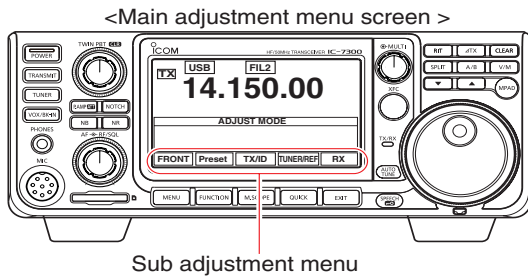
• Rear panel



4-1 PREPARATION (continued)

■ ENTERING THE ADJUSTMENT MODE

- 1) Connect the shunt plug to [REMOTE] (See page 5-1).
- 2) While holding down the [MENU] and [FUNCTION] keys, turn ON the transceiver power.
- 3) The main adjustment menu appears.



■ QUITTING THE ADJUSTMENT MODE

- 1) Remove the shunt plug from [REMOTE].
- 2) Turn OFF the power.
- 3) Turn ON the power again.

4-2 RECEIVE ADJUSTMENTS

- Touch [RX] on the main adjustment menu screen.

NOTE: DO NOT change the SSG output level until the second beep sounds.

ADJUSTMENT ITEM	TRANSCEIVER'S CONDITION	OPERATION	VALUE	
PREPARATION	1	–	–	
RX TOTAL GAIN	2	• Display: "Total Gain PRE OFF ref" • Receive	• Set the SSG as; Level : +34 dBμ (–73 dBm)	Touch [SET]. (A beep sounds, and then another beeps sound 2 sec. later.)
	3	• Display: "Total Gain PRE OFF set" • Receive	• Set the SSG as; Level : OFF	Touch [SET]. (A beep sounds, and then another beeps sound 20 sec. later.)
	4	• Display: "Total Gain PRE1 ref" • Receive	• Set the SSG as; Level : +34 dBμ (–73 dBm)	Touch [SET]. (A beep sounds, and then another beeps sound 2 sec. later.)
	5	• Display: "Total Gain PRE1 set" • Receive	• Set the SSG as; Level : OFF	Touch [SET]. (A beep sounds, and then another beeps sound 20 sec. later.)
S-METER	6	• Display: "HF S9 Level" • Receive	• Set the SSG as; Level : +34 dBμ (–73 dBm)	Touch [SET]. (A beep sounds, and then another beep sounds 1 sec. later.)
	7	• Display: "HF S9+60 Level" • Receive	• Set the SSG as; Level : +90 dBμ (–17 dBm)	
			• Push [EXIT] to return to the main adjustment menu.	

4-3 TX IDLING CURRENT ADJUSTMENTS

• Touch [TX/ID] on the main adjustment menu screen.

NOTE: The transceiver automatically transmits when a TX adjustment item is selected.

ADJUSTMENT ITEM	TRANSCEIVER'S CONDITION	OPERATION	VALUE
PREPARATION	1	1) Connect the power meter (or dummy load) to the antenna connector. 2) Touch [ID] to enter to the TX idling current adjustment mode.	–
ADJUSTMENT	2	• Display: "VDL IDL Set" • Receive	Touch [SET]. (A beep sounds, and then another beep sounds 0.5 sec. later.)
	3	• Display: "FINAL ID SET" • Receive	
	4	• Display: "FINAL1 IDV" • Transmit (automatic)	
	5	• Display: "FINAL2 IDV" • Transmit (automatic)	
	6	• Display: "DRIVER ID SET" • Transmit (automatic)	
	7	• Display: "DRIVER IDV" • Transmit (automatic)	
	• Push [EXIT] to return to the TX adjustment menu.		

4-4 TX POWER ADJUSTMENTS

• Touch [TX/ID] on the main adjustment menu screen.

NOTE: The transceiver automatically transmits when a TX adjustment item is selected.

ADJUSTMENT ITEM	TRANSCEIVER'S CONDITION	OPERATION	ADJUST POINT	VALUE
TX POWER & POWER METER SETTING (Preparation)	1 • Display: "TX POWER SET" • Receive	1) Connect the AG with the millivoltmeter to [MIC], and then set it as; Frequency : 1.5 kHz Level : 30 mVrms 2) Connect the power meter to the antenna connector. 3) Touch [Power] to enter to the TX power adjustment mode.	–	–
(HF BAND)	2 • Display: "TX Total HF Gain" • Transmit (automatic)	• Adjust the TX power by rotating [MAIN DIAL], and then touch [SET].	[MAIN DIAL]	50 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
	3 • Display: "POWER HF 1%" • Transmit (automatic)			2 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
	4 • Display: "POWER HF 10%" • Transmit (automatic)			12.5 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
	5 • Display: "POWER HF TUNE" • Transmit (automatic)			52.5 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
	6 • Display: "POWER HF 50%" • Transmit (automatic)			105 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
	7 • Display: "POWER HF 100%" • Transmit (automatic)			25 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
	8 • Display: "POWER AM Ratio HF" • Transmit (automatic)			1) Touch [SET]. (Automatically starts to transmit.) 2) Adjust the TX power by rotating [MAIN DIAL], and then touch [SET].
TX POWER & POWER METER SETTING (50 MHz band)	9 • Display: "POWER 50M SET" • Transmit (automatic)	–	–	Touch [SET].
	10 • Display: "TX Total 50M Gain" • Transmit (automatic)	• Adjust the TX power by rotating [MAIN DIAL], and then touch [SET].	[MAIN DIAL]	50 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
	11 • Display: "POWER 50M 1%" • Transmit (automatic)			2 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
	12 • Display: "POWER 50M 10%" • Transmit (automatic)			12.5 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
	13 • Display: "POWER 50M TUNE" • Transmit (automatic)			52.5 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
	14 • Display: "POWER 50M 50%" • Transmit (automatic)			105 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
15 • Display: "POWER 50M 100%" • Transmit (automatic)	25 W (A beep sounds, and then another beeps sound 0.5 sec. later.)			
AM CARRIER POWER RATIO (50 MHz band)	16 • Display: "POWER AM Ratio 50M" • Transmit (automatic)	1) Touch [SET]. (Automatically starts to transmit.) 2) Adjust the TX power by rotating [MAIN DIAL], and then touch [SET].	–	Touch [SET].
	17 • Display: "POWER 70M SET" • Receive	–	–	Touch [SET].

(Continued on the next page.)

4-4 TX POWER ADJUSTMENTS (continued)

ADJUSTMENT ITEM	TRANSCIVER'S CONDITION	OPERATION	ADJUST POINT	VALUE
TX POWER & POWER METER SETTING (70 MHz band)	18 • Display: "TX Total 70M Gain" • Transmit (automatic)	-	[MAIN DIAL]	25 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
	19 • Display: "POWER 70M 1%" • Transmit (automatic)			2 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
	20 • Display: "POWER 70M 10%" • Transmit (automatic)			7.5 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
	21 • Display: "POWER 70M TUNE" • Transmit (automatic)			10 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
	22 • Display: "POWER 70M 50%" • Transmit (automatic)			27.5 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
	23 • Display: "POWER 70M 100%" • Transmit (automatic)			52.5 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
AM CARRIER POWER (70 MHz band) Only for [#03, 05 and 06]	24 • Display: "POWER AM Ratio 70M" • Transmit (automatic)	1) Touch [SET]. (Automatically starts to transmit.) 2) Adjust the TX power by rotating [MAIN DIAL], and then touch [SET].		12.5 W (A beep sounds, and then another beeps sound 0.5 sec. later.)
	• Push [EXIT] to return to the main adjustment menu.			

4-5 TX AMPLIFIER ADJUSTMENTS

• Touch [TX/ID] on the main adjustment menu screen.

NOTE: The transceiver automatically transmits when a TX adjustment item is selected.

ADJUSTMENT ITEM	TRANSCIVER'S CONDITION	OPERATION	VALUE	
PREPARATION	1 • Display: "TX POWER SET" • Receive	1) Connect the AG with the millivoltmeter to [MIC], and then set it as; Frequency : 1.5 kHz Level : 30 mVrms 2) Connect the power meter to the antenna connector. 3) Touch [ALC] on the TX adjustment menu, to enter to the TX amplifier adjustment mode.	-	
ALC METER	2 • Display: "ALC HF" • Transmit (automatic)		Touch [SET]. (A beep sounds, and then another beeps sound 3 sec. later.)	
	3 • Display: "ALC 50M" • Transmit (automatic)			
Only for [#03, 05 and 06]	4 • Display: "ALC 70M" • Transmit (automatic)			
DRIVE AMP GAIN	5 • Display: "DRIVE HF" • Transmit (automatic)		Touch [SET]. (A beep sounds, and then another beeps sound 10 sec. later.)	
	6 • Display: "DRIVE 50M" • Transmit (automatic)			
	7 • Display: "DRIVE 70M" • Transmit (automatic)			
SWR METER	8 • Display: "SWR2 (HF)" • Transmit (automatic)	• Connect the 50 Ω dummy load to the antenna connector.	Touch [SET]. (A beep sounds, and then another beeps sound 3 sec. later.)	
	9 • Display: "SWR2 (50M)" • Transmit (automatic)			
Only for [#03, 05 and 06]	10 • Display: "SWR2 (70M)" • Transmit (automatic)			
Id APC	11 • Display: "ID-APC" • Transmit (automatic)	-	Touch [SET]. (A beep sounds, and then another beeps sound 2 sec. later.)	
	• Push [EXIT] to return to the main adjustment menu.			

4-6 FREQUENCY ADJUSTMENTS

• Touch [TUNER/REF] on the main adjustment menu screen.

NOTE: The transceiver automatically transmits when a TX adjustment item is selected.

ADJUSTMENT ITEM		TRANSCEIVER'S CONDITION	OPERATION	VALUE
PREPARATION	1	–	1) Connect the power meter to the antenna connector. 2) Touch [TUNER/REF]. (Enters to the [TUNER/REF ADJ.] menu.) 3) Touch [TUNER].	Touch [TUNER/REF]. (Enters to the [TUNER/REF ADJ.] menu.)
TUNER REFERENCE VOLTAGE ADJUSTMENT (HF and 50 MHz bands)	2	• Display: "Tune IREFV HF 50M" • Transmit (automatic)	–	Touch [SET]. (A beep sounds, and then another beeps sound 11 sec. later.)
(70 MHz band) Only for [#03, 05 and 06]	3	• Display: "Tune IREFV HF 70M" • Transmit (automatic)		Touch [SET]. (A beep sounds, and then another beeps sound 1 sec. later.)
REFERENCE FREQUENCY	4	–	1) Connect the frequency counter to the antenna connector, through the 50 dB attenuator. 2) Touch [MENU] REF adjustment menu.	–
	5	• Display: "REF OSC" • Transmit (automatic)	1) Set the transmit frequency by rotating [MAIN DIAL]. 2) Touch [SET].	50.100000 MHz (±1.2 Hz) (A beep sounds, and then another beeps sound 0.5 sec. later.)
		• Push [EXIT] to return to the main adjustment menu.		