



INSTRUCTION MANUAL

HF/50 MHz
ALL MODE TRANSCEIVER
IC-756PRO



IMPORTANT

READ THIS INSTRUCTION MANUAL CAREFULLY before attempting to operate the transceiver.

SAVE THIS INSTRUCTION MANUAL. This manual contains important safety and operating instructions for the IC-756PRO.

PRECAUTIONS

⚠ **WARNING HIGH VOLTAGE! NEVER** attach an antenna or internal antenna connector during transmission. This may result in an electrical shock or burn.

⚠ **NEVER** apply AC to the [DC13.8V] jack on the transceiver rear panel. This could cause a fire or ruin the transceiver.

⚠ **NEVER** apply more than 16 V DC, such as a 24 V battery, to the [DC13.8V] jack on the transceiver rear panel. This could cause a fire or ruin the transceiver.

⚠ **NEVER** let metal, wire or other objects touch any internal part or connectors on the rear panel of the transceiver. This may result in an electric shock.

NEVER expose the transceiver to rain, snow or any liquids.

AVOID using or placing the transceiver in areas with temperatures below -10°C ($+14^{\circ}\text{F}$) or above $+60^{\circ}\text{C}$ ($+140^{\circ}\text{F}$). Be aware that temperatures on a vehicle's dashboard can exceed 80°C ($+176^{\circ}\text{F}$), resulting in permanent damage to the transceiver if left there for extended periods.

AVOID placing the transceiver in excessively dusty environments or in direct sunlight.

AVOID placing the transceiver against walls or putting anything on top of the transceiver. This will obstruct heat dissipation.

EXPLICIT DEFINITIONS

WORD	DEFINITION
⚠ WARNING	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	If disregarded, inconvenience only. No risk of personal injury, fire or electric shock.

Place unit in a secure place to avoid inadvertent use by children.

During mobile operation, **DO NOT** operate the transceiver without running the vehicle's engine. When transceiver power is ON and your vehicle's engine is OFF, the vehicle's battery will soon become exhausted.

Make sure the transceiver power is OFF before starting the vehicle. This will avoid possible damage to the transceiver by ignition voltage spikes.

During maritime mobile operation, keep the transceiver and microphone as far away as possible from the magnetic navigation compass to prevent erroneous indications.

BE CAREFUL! The heatsink will become hot when operating the transceiver continuously for long periods.

BE CAREFUL! If a linear amplifier is connected, set the transceiver's RF output power to less than the linear amplifier's maximum input level, otherwise, the linear amplifier will be damaged.

Use Icom microphones only (supplied or optional). Other manufacturer's microphones have different pin assignments, and connection to the IC-756PRO may damage the transceiver.

Spurious may be received near the following frequencies. These are made in the internal circuit and does not indicate a transceiver malfunction:

6.144 MHz, 8.000 MHz,
12.288 MHz, 12.890 MHz (when spectrum scope is ON),
18.433 MHz, 24.573 MHz



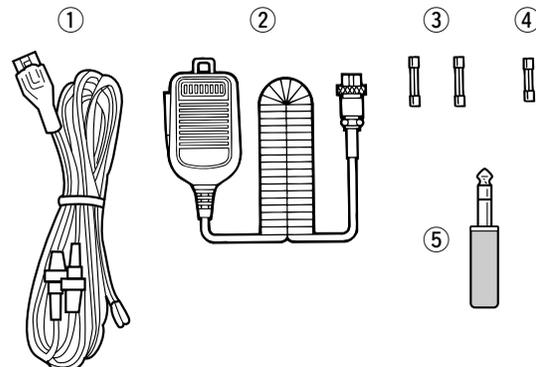
Versions of the IC-756PRO which display the "CE" symbol on the serial number seal, comply with the European harmonised standard ETS300 684 (EMC product standard for Commercially Available Amateur Radio Equipment).

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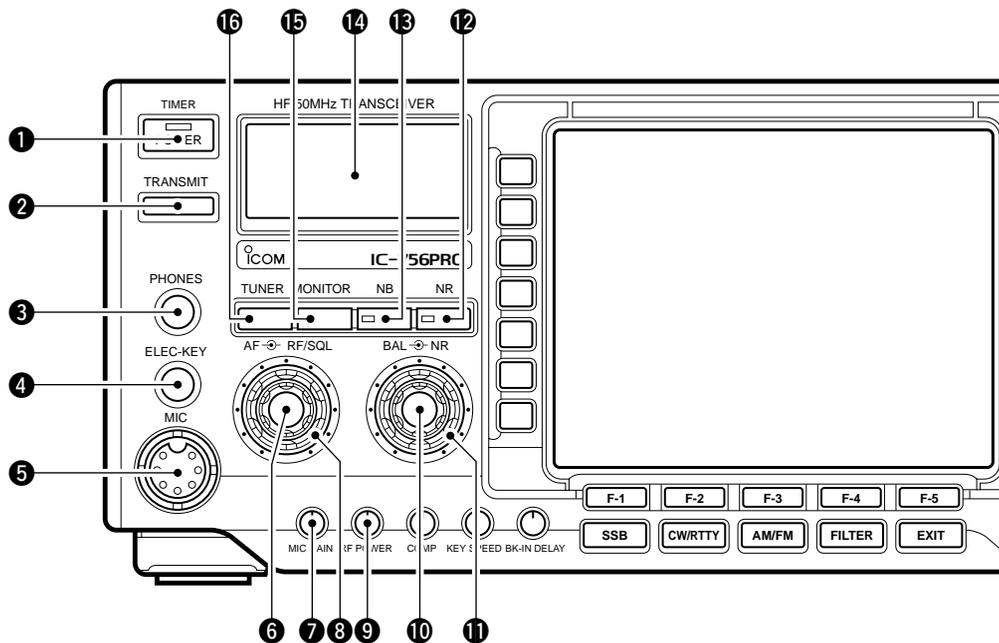
SUPPLIED ACCESSORIES

The transceiver comes with the following accessories.

	Qty.
① DC power cable (OPC-025D)	1
② Hand microphone (HM-36)	1
③ Spare fuses (FGB 30 A)	2
④ Spare fuse (FGB 5 A)	1
⑤ CW keyer plug (AP-330)	1



■ Front panel



1 POWER SWITCH [POWER/TIMER]

- ➔ Push momentarily to turn power ON.
 - Turn the optional DC power supply ON in advance.
 - A/D converter calibration of the DSP unit starts and it takes 10 sec.
- ➔ Push momentarily to toggle the timer function ON and OFF. (p. 63)
 - The power switch lights while the timer function is ON.
- ➔ Push for 2 sec. to turn power OFF.

2 TRANSMIT SWITCH [TRANSMIT]

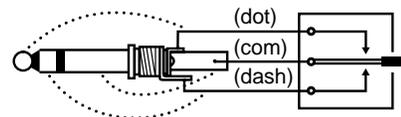
- Selects transmitting or receiving.
- The [TX] indicator lights red while transmitting and the [RX] indicator lights green when the squelch is open.

3 HEADPHONE JACK [PHONES]

- Accepts headphones.
- Output power: 5 mW with an 8 Ω load.
- When headphones are connected, the internal speaker or connected external speaker does not function.

4 ELECTRONIC KEYS JACK [ELEC-KEY] (p. 42)

- Accepts a paddle to activate the internal electronic keyer for CW operation.
- Selection between the internal electronic keyer, bug-key and straight key operation can be made in keyer set mode. (p. 42)
- A straight key jack is separately available on the rear panel. See [KEY] on p. 12.
- Keyer polarity (dot and dash) can be reversed in keyer set mode. (p. 42)
- 4-channel memory keyer is available for your convenience. (p. 43)

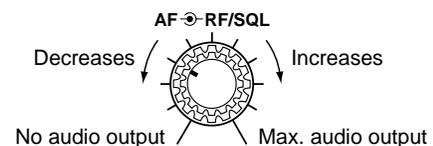


5 MICROPHONE CONNECTOR [MIC]

- Accepts the supplied or optional microphone.
- See p. 81 for appropriate microphones.
- See p. 9 for microphone connector information.

6 AF CONTROL [AF] (inner control)

- Varies the audio output level from the speaker.

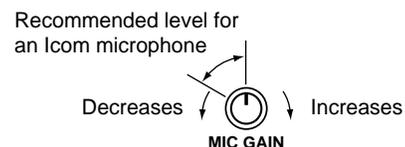


7 MIC GAIN CONTROL [MIC GAIN]

- Adjusts microphone input gain.
- The transmit audio tone in SSB mode can be adjusted in set mode. (p. 65)

✓ How to set the microphone gain.

Set the [MIC] control so that the ALC meter sometimes swings during normal voice transmission in SSB mode.



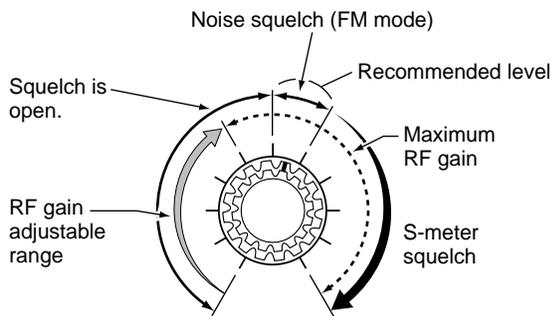
8 RF GAIN CONTROL/SQUELCH CONTROL [RF/SQL] (outer control)

Adjusts the RF gain and squelch threshold level. The squelch removes noise output from the speaker (closed condition) when no signal is received.

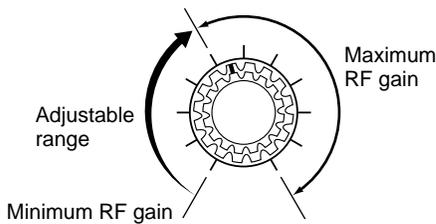
- The squelch is particularly effective for FM. It is also available for other modes.
- 12 to 1 o'clock position is recommended for any setting of the [RF/SQL] control.
- The control can be set as 'Auto' (RF gain control in SSB, CW and RTTY; squelch control in AM and FM) or squelch control (RF gain is fixed at maximum) in set mode as follows. (p. 68)

MODE	SET MODE SETTING		
	AUTO	SQL	RF GAIN + SQL
SSB, CW RTTY	RF GAIN	SQL	RF GAIN + SQL
AM, FM	SQL	SQL	RF GAIN + SQL

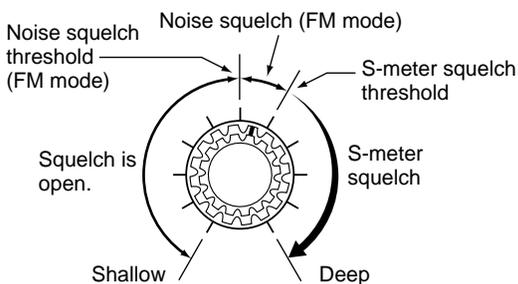
•When setting as RF gain/squelch control



•When functioning as RF gain control
(Squelch is fixed open; SSB, CW, RTTY only)



•When functioning as squelch control
(RF gain is fixed at maximum.)



While rotating the RF gain control, noise may be heard. This comes from the DSP unit and does not indicate an equipment malfunction.

9 RF POWER CONTROL [RF POWER]

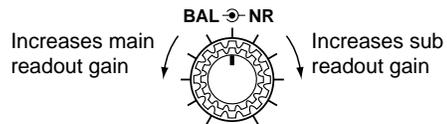
Continuously varies the RF output power from minimum (5 W*) to maximum (100 W*).

*AM mode: 5 W to 40 W



10 BALANCE CONTROL [BAL] (inner control; p. 31)

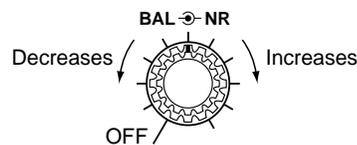
Adjusts the audio output balance between main and sub readout frequencies while in dualwatch.



11 NOISE REDUCTION LEVEL CONTROL [NR]

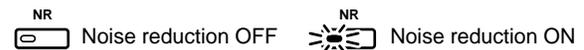
(outer control; p. 27)

Adjusts the noise reduction level when the noise reduction is in use. Set for maximum readability.



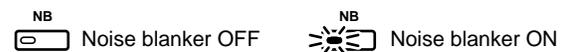
12 NOISE REDUCTION SWITCH [NR] (p. 27)

Toggles the noise reduction ON and OFF.



13 NOISE BLANKER SWITCH [NB] (p. 27)

Toggles the noise blanker ON and OFF. The noise blanker reduces pulse-type noise such as that generated by automobile ignition systems. This function cannot be used for FM, or non-pulse-type noise.



14 S/RF METER (p. 36)

Shows the signal strength while receiving. Shows the relative output power, SWR, ALC or compression levels while transmitting.

15 MONITOR SWITCH [MONITOR] (p. 35)

Monitors your transmitted IF signal.

- The CW sidetone functions when [MONITOR] is OFF in CW mode.

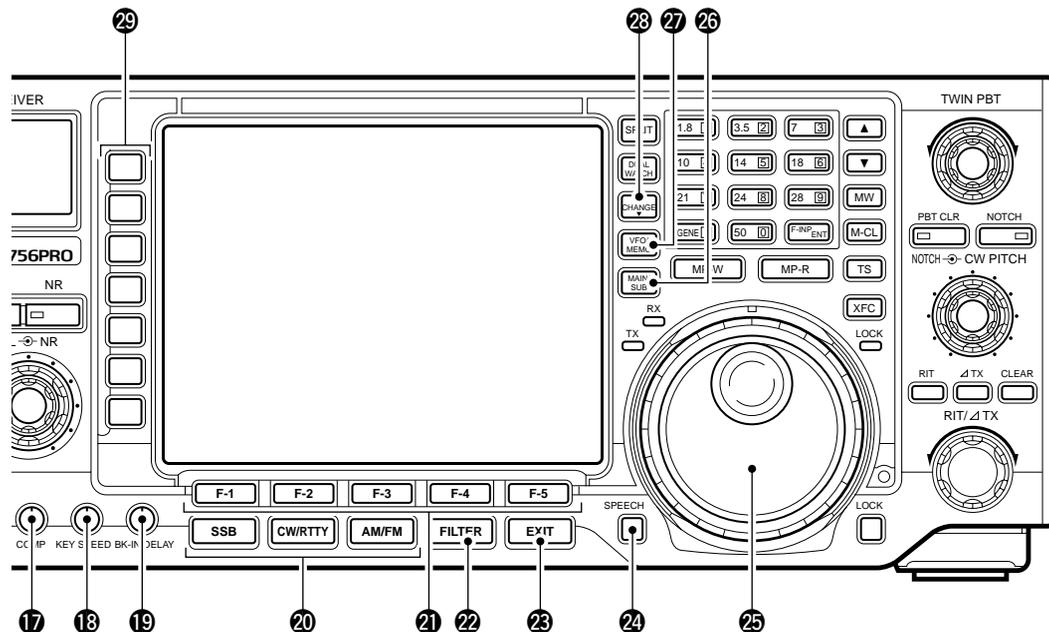
16 ANTENNA TUNER SWITCH [TUNER] (p. 48)

Turns the antenna tuner ON and OFF (bypass) when pushed momentarily.

Starts to tune the antenna manually when pushed for 2 sec.

- When the tuner cannot tune the antenna, the tuning circuit is bypassed automatically after 20 sec.

■ Front panel (continued)



17 COMPRESSION LEVEL CONTROL [COMP]

(p. 37)

Adjusts the speech compression level in SSB.



18 ELECTRONIC CW KEYSER SPEED CONTROL [KEY SPEED] (p. 42)

Adjusts the internal electronic CW keyer's speed.

•6 wpm (min.) to 60 wpm (max.) can be set.



19 SEMI BREAK-IN DELAY CONTROL [BK-IN DELAY]

Adjusts the transmit-to-receive switching delay time for CW semi break-in operation.



20 MODE SWITCHES

Selects the desired mode. (p. 26)

•Announces the selected mode when an optional UT-102 is installed. (pgs. 71, 73)

SSB

- ➔ Selects USB and LSB mode alternately.
- ➔ Toggles SSB and SSB data mode (USB-D, LSB-D) when pushed for 2 sec.

CW/RTTY

- ➔ Selects CW and RTTY mode alternately.
- ➔ Toggles CW and CW-R (CW reverse) mode when pushed for 2 sec. in CW mode.

CW/RTTY

- ➔ Toggles RTTY and RTTY-R (RTTY reverse) mode when pushed for 2 sec. in RTTY mode.

AM/FM

- ➔ Selects AM and FM mode alternately.
- ➔ Toggles AM/FM and AM/FM data mode (AM-D, FM-D) when pushed for 2 sec.

21 LCD FUNCTION SWITCHES [F-1]–[F-5]

Push to select the function indicated in the LCD display above these switches.

•Functions vary depending on the operating condition.

22 FILTER SWITCH [FILTER]

➔ Selects one of 3 IF filter settings.

➔ Enters the filter set mode when pushed for 2 sec.

23 EXIT SWITCH [EXIT]

Exits from a set mode, etc. when pushed.

24 SPEECH SWITCH [SPEECH] (pgs. 71, 73)

Announces the selected readout frequency when an optional UT-102 is installed.

25 TUNING DIAL (p. 24)

Changes the displayed frequency, selects set mode items, etc.

26 MAIN/SUB SWITCH [MAIN/SUB]

Selects the main or sub readout for access.

•The sub readout frequency is displayed in outline or mesh font. The sub readout functions only during split operation or dualwatch.

27 VFO/MEMORY SWITCH [VFO/MEMO]

➔ Toggles the selected readout operating mode between the VFO mode and memory mode when pushed. (pgs. 23, 50)

➔ Transfers the memory contents to VFO when pushed for 2 sec. (p. 53)

28 MAIN/SUB CHANGE SWITCH [CHANGE]

- ➔ Toggles the frequency and selected memory channel between main and sub readouts when pushed.
 - Toggles between transmit frequency and receive frequency when the split frequency function is ON. (p. 32)
- ➔ Equalizes the sub readout frequency to the main readout frequency when pushed for 2 sec.

29 MULTI-FUNCTION SWITCHES

Push to select the functions indicated in the LCD display to the right of these switches.

- Functions vary depending on the operating condition.

- ➔ Toggles the antenna connector selection between ANT1/R and ANT2/R when pushed. (p. 45)



- ➔ Toggles the [RX ANT] (receive antenna) ON and OFF when pushed for 2 sec.

When a transverter is in use, this [ANT] does not function and 'TRV' appears.

- ➔ Selects RF power (Po), ALC, SWR or COMP metering during transmit. (p. 36)



- ➔ Toggles the multi-function digital meter ON and OFF when pushed for 2 sec.

- ➔ Selects one of 2 receive RF preamps or bypasses them.



- "P. AMP1" activates 10 dB preamp for HF all bands.
- "P. AMP2" activates 16 dB high-gain preamp for 21 MHz band and above.

✓ What is the preamp?

The preamp amplifies received signals in the front end circuit to improve the S/N ratio and sensitivity. Select "P. AMP1" or "P. AMP2" when receiving weak signals.

- ➔ Selects 6 dB, 12 dB or 18 dB attenuator, or bypasses them.



✓ What is the attenuator?

The attenuator prevents a desired signal from distorting when very strong signals are near the desired frequency, or when very strong electric fields, such as from a broadcasting station, are near your location.

- ➔ Activates or selects fast, middle or slow AGC time constant when pushed.



- "FAST" is only available for FM mode.

- ➔ Enters the AGC set mode when pushed for 2 sec.

AGC time constant can be set between 0.1 to 8.0 sec. (depends on mode), or turned OFF. While "OFF" is selected, the S-meter does not function.

✓ What is the AGC?

The AGC controls receiver gain to produce a constant audio output level, even when the received signal strength is varied by fading, etc. Select "FAST" for tuning and select "MID" or "SLOW" depending on the receiving condition.

- ➔ Turns the VOX function ON and OFF when pushed in non-CW modes. (p. 35)



- ➔ Enters the VOX set mode when pushed for 2 sec. in non-CW modes. (p. 35)

✓ What is the VOX function?

The VOX function (voice operated transmission) starts transmission without pushing the transmit switch or PTT switch when you speak into the microphone; then, automatically returns to receive when you stop speaking.

- ➔ Selects semi break-in, full break-in operation, or turns the break-in operation OFF when pushed in CW mode.



✓ What is the break-in function?

The break-in function toggles transmit and receive with CW keying. Full break-in (QSK) can monitor the receive signal during keying.

- ➔ Turns the RTTY filter ON and OFF in RTTY mode. (p. 28)



- When the RTTY filter is turned ON, [TWIN PBT] functions as the IF shift control.

- ➔ Enters the RTTY filter set mode when pushed for 2 sec. in RTTY mode. (p. 28)

✓ What is the IF shift?

The IF shift function electronically changes the center of the IF (Intermediate Frequency) passband frequency to reject interference. Only the inner control of [TWIN PBT] can be used for the IF shift control.

- ➔ Turns the speech compressor ON and OFF in SSB mode. (p. 37)



- ➔ Toggles the narrow, middle or wide transmit filter when pushed for 2 sec.

✓ What is the speech compressor?

The speech compressor compresses the transmitter audio input to increase the average audio output level. Therefore, talk power is increased. This function is effective for long distance communication or when propagation conditions are poor.

- ➔ Turns the 1/4 function ON and OFF in CW and RTTY modes. (p. 25)



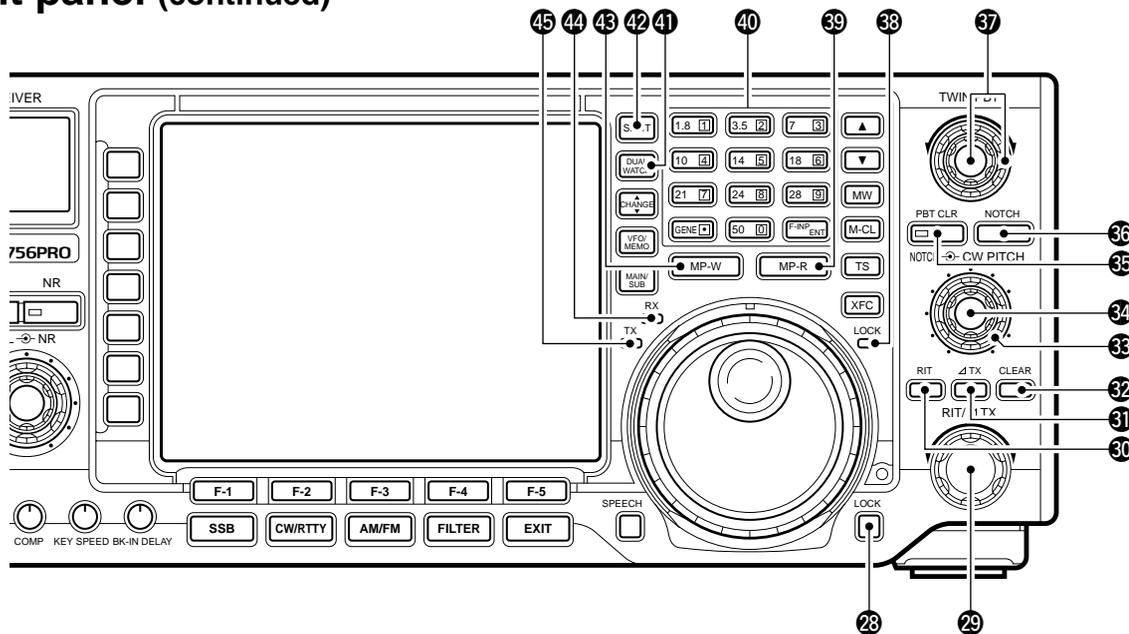
- 1/4 function sets dial rotation to 1/4 of normal for fine tuning.

- ➔ Toggles the tone encoder, tone squelch function and no tone operation when pushed in FM mode. (pgs. 46, 47)



- ➔ Enters the tone set mode when pushed for 2 sec. in FM mode. (pgs. 46, 47)

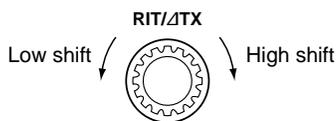
■ Front panel (continued)



28 LOCK SWITCH [LOCK] (p. 45)
Turns the dial lock function ON and OFF.

29 RIT/ΔTX CONTROL [RIT/ΔTX] (p. 34)
Shifts the receive and/or transmit frequency without changing the transmit and/or receive frequency while the RIT and/or ΔTX functions are ON.

- Rotate the control clockwise to increase the frequency, or rotate the control counterclockwise to decrease the frequency.
- The shift frequency range is ±9.999 kHz in 1 Hz steps (or ±9.99 kHz in 10 Hz steps).



30 RIT SWITCH [RIT] (p. 34)
→ Turns the RIT function ON and OFF when pushed.

- Use the [RIT/ΔTX] control to vary the RIT frequency.

→ Adds the RIT shift frequency to the operating frequency when pushed for 2 sec.

✓ **What is the RIT function?**
The RIT (Receiver Incremental Tuning) shifts the receive frequency without shifting the transmit frequency.

This is useful for fine tuning stations calling you on an off-frequency or when you prefer to listen to slightly different-sounding voice characteristics, etc.

31 ΔTX SWITCH [ΔTX] (p. 34)
→ Turns the ΔTX function ON and OFF when pushed.

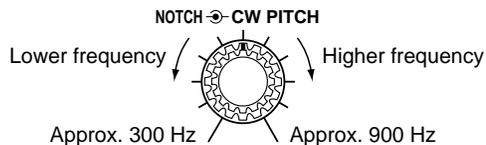
- Use the [RIT/ΔTX] control to vary the ΔTX frequency.

→ Adds the ΔTX shift frequency to the operating frequency when pushed for 2 sec.

✓ **What is the ΔTX function?**
The ΔTX shifts the transmit frequency without shifting the receive frequency. This is useful for simple split frequency operation in CW, etc.

32 CLEAR SWITCH [CLEAR] (p. 34)
Clears the RIT/ΔTX shift frequency when pushed for 2 sec.

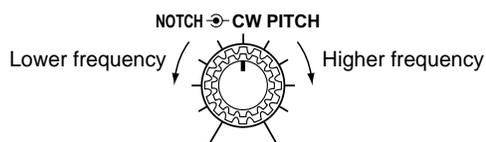
33 CW PITCH CONTROL [CW PITCH] (outer control; p. 29)
Shifts the received CW audio pitch and monitored CW audio pitch without changing the operating frequency.



34 MANUAL NOTCH FILTER CONTROL [NOTCH] (inner control; p. 27)

Varies the peak frequency of the manual notch filter to pick out a receive signal from interference while the manual notch function is ON.

- Notch filter center frequency:
SSB : 0 Hz to 5100 Hz
CW : -900 Hz + CW pitch freq. to 4200 Hz + CW pitch freq.
AM : -5100 Hz to 5100 Hz



Count on us!

