

IC-F70 / IC-F80 Series VHF and UHF Transceivers



IC-F70DT/DS (P25 digital VHF transceiver with 10-keypad/without 10-keypad)

IC-F80DT/DS (P25 digital UHF transceiver with 10-keypad/without 10-keypad)



Programmable conventional P25 digital and/or FM analog mode per channel, Flash ROM CPU for future upgrades allows you to tailor the system you connect. Moreover, advanced mechanical and analog features such as rugged waterproof construction, built-in multiple signalings and a large capacity Lithium-Ion battery pack satisfy the needs of current analog users. Icom is the smart choice for current – and future – public safety communication needs.

IPX7 waterproof protection

The water removal design from the speaker grill keeps the communication clear, no matter what the elements are. The ICF70/F80 series has waterproof construction that is sealed with waterproof gaskets.

** According to the International Standard IEC60529 (2001). 1m depth for 30 minutes.*



Built-in multiple signaling

Use the built-in CTCSS, DTCS, 2-Tone, 5-Tone and BIIS capability to set up your own talk groups and quiet stand-by when others are talking. You can also set up selective calls to individuals or control a repeater.



Multiple 2-Tone, Multiple 5-Tone

Up to 10 2-Tone and 8 5-Tone codes can be decoded on a single memory channel. This is perfect for professionals who require multiple district paging on one channel. When a matched tone is received, the following items are programmable for each code.

- Bell icon • Answer back • Stun • Beep sound • Auto transmit • Scan



Project 25 (P25) Digital Features

Interoperability

The IC-F70D, F80D series is APCO Project 25 (P25) compliant. It ensures interoperability with other manufacturer’s P25 digital radios in conventional mode.

Upgrade to digital option*

The IC-F70D, F80D series is available in two digital versions. One version is P25 compliant out of the box. Version two is an analog only radio that is future upgradeable to P25 digital compatibility– grow into digital with Icom.

**Upgrade software available later.*

Mixed mode operation

The IC-F70D, F80D series is compatible with both analog FM mode and P25 digital mode. Program digital and/or analog FM modes per channel. The mixed mode scan allows you to detect and receive both analog FM and P25 digital modes and to transmit either mode depending on programming.

Other features

- NAC (Network Access Code) operation provides quiet stand-by in a large group and is used to open a closed digital repeater.
- Selective call/individual call using Unit ID and talkgroup ID
- 100 Unit ID, 250 talkgroup ID memories



Li-Ion battery pack

The large capacity 1600mAh Lithium-Ion (Li-Ion) battery pack, BP-235 provides a practical 8 hours* of operating time. Li-Ion batteries allow flexible charging and have almost no memory effect.

* Typical operation Tx:Rx: Stand-by=5:5:90



Alphanumeric display

The large high contrast LCD clearly shows a variety of information with a full dot-matrix display. Program the display to show either 1 line with 12 characters or 2 lines with 24 characters. Status icons are displayed at the top and the functions assigned to the P buttons (P0–P3) are shown at the bottom of the display.

Wide range coverage and large channel capacity

The IC-F70/F80 series covers a wide frequency range in one version. The large capacity of 256 memory channels with 32 memory zones allow you to divide and store a variety of channels from local to wide area network channels.

Tactical group function

The tactical group function allows you to copy memory channels into a new memory zone (using Zone 32) without using PC programming. This function allows you to construct a temporary work group on site.

Built-in voice scrambler

The IC-F70/F80 series includes a built-in inversion type voice scrambler. When a more secure system is required, the optional voice scrambler unit UT-109 or UT-110 is available.

* These voice scrambler functions are not available in digital mode.

BIIS 1200 Compatible

The following selective calling and data features are available with the BIIS system.

* BIIS system is not programmable simultaneously with digital mode

- Receive up to 95-characters of free text
- 8 SDM transmit memories (12-characters each)
- 24-status messages
- 7 group IDs
- Digital ANI (Automatic Number Identification)
- Max. 6 received SDM and message history and max. 3 received call history capability
- Position data transmission with a GPS receiver
- RS-232C interface for PC connection



Other features

- Built-in audio compander
- 8 DTMF autodial memories
- Powerful 5W/4W (VHF/UHF) output
- Normal and priority scans
- 2 step power saver
- Busy, repeater lockout functions
- Wide and narrow (25/12.5kHz) channel spacing is programmable
- Power ON password, and more...



General

Frequency range	:	
IC-F70T/S, F70DT/DS	:	136-174MHz
IC-F80T/S, F80DT/DS	:	400-470MHz 450-520MHz
Number of channels	:	256 channels / 32 zones
Channel spacing	:	12.5kHz / 25kHz, 15kHz / 30kHz
PLL channel step	:	2.5kHz, 3.125kHz (VHF) 5kHz, 6.25kHz (UHF)
Antenna impedance	:	50Ω
Usable temperature range	:	-30°C to +60°C; +22°F to +140°F



Power supply requirement : 7.2V DC

Output power and current drain (at 7.2V DC; approx.)		IC-F70, F70D	IC-F80, F80D
Output Power		5W	4W
Transmit	High	2.2A	2.4A
	Low (1W)	1.5A	1.5A
Receive	AF Max.	450mA	450mA
	stand-by	150mA	150mA

Dimensions (with battery pack) : 58.6 (W) × 152 (H) × 38 (D) mm;
(Projections not included) $2^{5/16}$ (W) × $5^{31/32}$ (H) × $1^{1/2}$ (D) in

Weight (approx.) : 400g; 14.1 oz (with BP-235)
430g; 15.6 oz (with BP-236)

Transmitter

Max. freq. deviation : ±5kHz (Wide)
+2.5Khz (Narrow)

Frequency Error : ±2.0ppm

Spurious emissions : 70dB typ.

Adjacent channel power : 70dB (Wide), 60dB (Narrow)

FM Hum and Noise :
VHF 45/40dB typ. (Wide/narrow)
UHF 40.35dB typ. (Wide/narrow)

Audio harmonic distortion : 3% typ. (AF 1kHz, 40% deviation)

Modulation limiting : 60-100% of max. deviation

Ext. Microphone connector : 9-pin multi connector / 600Ω

Receiver

Intermediate freq. : 1st 46.35
2nd 450kHz

Sensitivity (typical) :
VHF 0.25μV typ. (at 12dB SINAD)
0.25μV typ. (5% BER APCO)
UHF 0.32μV typ. (at 12dB SINAD)
0.32μV typ. (5% BER APCO)

Squelch sensitivity : (at threshold)
VHF 0.25μV typ.

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UHF	:	0.32μV typ.
Adjacent Channel Selectivity	:	75/70dB typ. (Wide/narrow)
VHF	:	60db typ. (APCO)
UHF	:	73/68dB typ. (Wide/narrow)
UHF	:	60dB typ. (APCO)
Spurious response	:	
VHF	:	80dB typ.
UHF	:	75dB
Intermodulation	:	75dB (typ.)
Hum and noise ratio	:	45/40dB typ. (Wide/narrow)
Audio output power	:	500mW (at 5% distortion with an 8Ω load)
Ext. speaker connector	:	9-pin multi connector / 8Ω

Applicable U.S. Military Specifications Icom makes rugged products that meet MIL-STD requirements and strict environmental standards as follows.

Standard	MIL 810C		MIL 810D		MIL 810E		MIL 810F	
	Method	Procedure	Method	Procedure	Method	Procedure	Method	Procedure
Low pressure	500.1	I	500.2	I, II	500.3	I, II	500.4	I, II
High temp.	501.1	I	501.2	I, II	501.3	I, II	501.4	I, II
Low temp.	502.1	I	502.2	I, II	502.3	I, II	502.4-3	I, II
Temp. shock	503.1	I	503.2	I	503.3	I	503.4	I
Solar Radiation	505.1	I	505.2	I	505.3	I	505.4	I
Rain	506.1	II	506.2	I, II	506.3	I, II	506.4	I, III
Humidity	507.1	I, II	507.2	II, III	507.3	II, III	507.4	-
Salt fog	509.1	I	509.2	I	509.3	I	509.4	-
Dust Blowing	510.1	I	510.2	I	510.3	I	510.4	I
Immersion	512.1	I	512.2	I	512.3	I	512.4	I
Vibration	514.2	VIII, X	514.3	I	514.4	I	514.4	I
Shock	516.2	I, II, V	516.3	I, IV	516.4	I, IV	516.5	I, IV

