



VHF AND UHF TRANSCEIVERS

IC-F70DT

(P25 digital VHF transceiver with 10-keypad)

IC-F70T

(VHF transceiver with 10-keypad)

IC-F70DS

(P25 digital VHF transceiver without 10-keypad)

IC-F70S

(VHF transceiver without 10-keypad)

IC-F80DT

(P25 digital UHF transceiver with 10-keypad)

IC-F80T

(UHF transceiver with 10-keypad)

IC-F80DS

(P25 digital UHF transceiver without 10-keypad)

IC-F80S

(UHF transceiver without 10-keypad)



DIGITAL



FIPS 140-2 Inside



P25 & Analog



256 ch /
32 zones

APCO P25
conventional

AES / DES encrypt
(Option)

MDC 1200 compati
2-Tone, 5-Tone

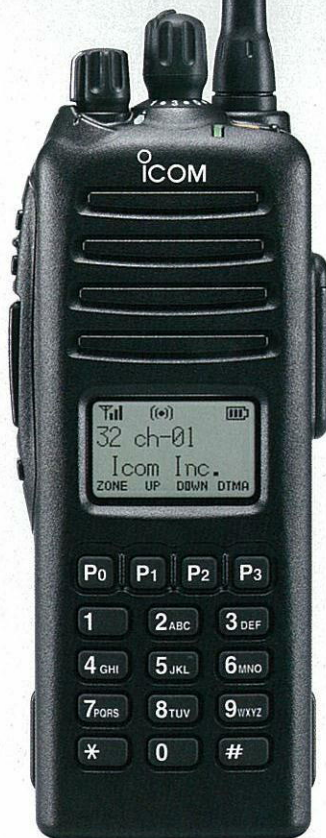
Intrinsically safe
versions available

14.5 hrs. operati
time with BP-25

IPX7
Waterproof

Full dot-matrix
LCD

The Smart Migration to an APCO P25 Digital Radio System



▲ IC-F70T



▲ IC-F80S

VHF TRANSCEIVERS

IC-F70DT/T

P25 digital/analog FM with 10-keypad

IC-F70DS/S

P25 digital/analog FM without 10-keypad

UHF TRANSCEIVERS

IC-F80DT/T

P25 digital/analog FM with 10-keypad

IC-F80DS/S

P25 digital/analog FM without 10-keypad

IPX7 waterproof protection

The water removal design from the speaker grill keeps the communication clear, no matter what the elements are. The IC-F70/F80 series has waterproof construction that is sealed with waterproof gaskets.

* According to the International Standard IEC 60529 (2001). 1m depth for 30 minutes.

Built-in multiple signaling

Use the built-in CTCSS, DTCS, 2-Tone, 5-Tone and MDC 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.

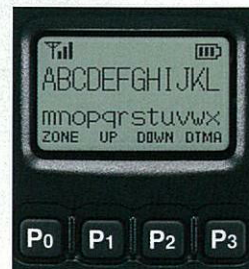
Multiple 2-Tone, Multiple 5-Tone

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

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. The functions assigned to the P buttons (P0-P3) are shown at the bottom of the display.



The bottom side shows the assigned functions.

Li-Ion battery pack

The large capacity 1650mAh Lithium-Ion (Li-Ion) battery pack, BP-253 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

Tactical group function

The tactical group function allows you to copy memory channels to the tactical zone (zone 32) and dynamically regroup memory channels. Using the optional zone copy

Project 25 (P25) Digital Features



Upgrade to digital option

The IC-F70/F80 series offers you three choices to P25 digital compatibility. Choice one is P25 compliant from the factory. Choice two is a digital hardware radio and you can install the P25 activation software (EX-2785 J01) later. Choice three is analog only radio and you can install the DSP unit, UT-120 and P25 activation software (EX-2785 J01) later.

System upgrade chart

Choice A : P25 compliant	Choice B : Digital hardware	Choice C : Analog radio
IC-F70DT/DS (#01,11) IC-F80DT/DS (#01,02,21,22)	IC-F70DT/DS (#02,12) IC-F80DT/DS (#03,04,23,24)	IC-F70T/S (#03,13) IC-F80T/S (#05,06,25,26)
	+	+
	EX-2785 J01, P25 software	EX-2785 J01, P25 software
		UT-120 (#01), DSP unit

AES/DES digital encryption activation software

AES and DES are encryption standards required by public safety agencies. The IC-F70D, F80D series provides secure encryption with DES and AES accordingly when activated with EX-2785 J02 (for DES) and EX-2785 J03 (for AES) activation software. Versions certified to FIPS 140-2 level 1 for AES encryption are available.

Interoperability

The IC-F70D, F80D series is APCO Project 25 (P25) compliant. The mixed mode scan allows you to detect and receive both analog FM and P25 digital modes.

cable, memory channels in the tactical zone can be transferred from a master radio to other radios.

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.

MDC 1200 compatible

The following selective calling and ANI features are available with the built-in MDC signaling.

- PTT ID/Caller ID
- Radio check
- Selective call
- Call alert
- Emergency, emergency mic monitoring
- Emergency man down (with UT-124)
- Radio stun/revive
- 500 Aliases
- Status/message
- Call log

Intrinsically safe version

Intrinsically safe version approved by FM Approvals, is suitable for use in hazardous areas where flammable gasses or liquids are used.

Radio stun/kill function and Power-on password

The radio stun/kill functions disable a lost or stolen radio over the air, eliminating security threats from undesired listeners. The power-on password prevents unauthorized people turning on the radio.

Other features

- 256 memory channels with 32 zones
- Built-in audio compander
- 8 DTMF autodial memories
- Normal and priority scans
- Busy, repeater lockout functions
- Wide and narrow (25/12.5kHz) channel spacing is programmable
- Power ON password, and more...

OPTIONS

Some options may not be available in some countries. Please ask your dealer for details.



BP-253 Li-Ion BATTERY PACK, 7.4V/1650mAh Provides 8 hours operating time* (approx.).
BP-254/FM Li-Ion BATTERY PACK, 7.4V/3040mAh Provides 14.5 hours operating time* (approx.).
BP-237 BATTERY CASE: AA (LR6)x6 alkaline cells. BP-237 is water-resistant, equivalent to IPX4.
 * Tx: Rx: standby=5:5:90. BP-254FM is intrinsically safe version.

RAPID CHARGER



BC-119N DESKTOP CHARGER + **AD-110** CHARGER ADAPTER + **BC-145A** AC ADAPTER Rapidly charges the BP-253 or BP-254. Charging time: approx. 2.5 hours when BP-253 is attached.
CP-17L : CIGARETTE LIGHTER CABLE **OPC-515L** : DC POWER CABLE For use with the BC-119N. (12-16V DC required)

MULTI-CHARGER



BC-121N MULTI-CHARGER + **AD-110** CHARGER ADAPTER + **BC-157** AC ADAPTER
 Rapidly charges up to 6 battery packs (Six AD-110s are required). Charging time: approx. 2.5 hours when BP-253 is attached.
OPC-656 DC POWER CABLE :For use with the BC-121N. (12-20V DC required).

BELT CLIPS AND LEATHER BELT HANGERS



MB-93 : Swivel type belt clip.
MB-94 : Alligator type. Same as supplied.
MB-96N : Swivel type belt hanger.
MB-96F : Fixed type belt hanger.

SPEAKER-MICROPHONES



HM-168/IS : Compact type speaker-microphone. HM-168IS is for intrinsically safe versions. Equivalent to IPX7.
HM-169 : Rugged type speaker-microphone. Equivalent to IP57.
HM-170GP : GPS speaker-microphone. Equivalent to IP57.
HM-138 : Full sized speaker-microphone. Equivalent to IPX7.

HEADSETS AND PTT/VOX UNIT



HS-94: Earhook headset with flexible boom microphone.
HS-95: Behind-the-head headset with flexible boom microphone.
HS-97: Throat microphone fits around your neck and picks up speech vibration.
VS-1SC: PTT/VOX unit. Required when using these headsets.

INTERNAL UNITS



UT-109 : Non-rolling type voice scrambler. Version 02 required.
UT-110 : Rolling type voice scrambler. Version 02 required.
UT-124 : Automatically sends an emergency signal when the transceiver is left in a horizontal position for a preset time.
 Optional internal unit should be installed at an authorized Icom service center only.



UT-120 DSP UNIT
 Provides P25 hardware capabilities. Version 01 required.
ACTIVATION SOFTWARE
EX-2785 J01 : P25 ACTIVATION SOFTWARE
EX-2785 J02 : DES ACTIVATION SOFTWARE
EX-2785 J03 : AES ACTIVATION SOFTWARE

ZONE COPY CABLES

- **OPC-1533**: Handy to mobile cable
- **OPC-1536**: Handy to handy cable

INTERFACE CABLE

- **OPC-966** : PC (RS-232C) interface cable.

STUBBY ANTENNAS

- **FA-SC56VS** : 150-162MHz
- **FA-SC57VS** : 160-174MHz
- **FA-SC73US** : 450-490MHz

CUT ANTENNAS

- **FA-SC61VC** : 136-174MHz
- **FA-SC61UC** : 380-520MHz

ANTENNAS

- **FA-SC25V** : 136-150MHz
- **FA-SC55V** : 150-174MHz
- **FA-SC25U** : 400-430MHz
- **FA-SC57U** : 430-470MHz
- **FA-SC72U** : 470-520MHz

SPECIFICATIONS

GENERAL

- Frequency range :
IC-F70T/S, F70DT/DS 136–174MHz
IC-F80T/S, F80DT/DS 380–450MHz,
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
- Operating Temp. 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 (W × H × D) : 58.6 × 152 × 42.2 mm;
(projections are not included) 2⁵/₁₆ × 5³¹/₃₂ × 1²¹/₃₂ in (with battery pack)
- Weight (approx.) : 400g; 14.1oz (with BP-253)
450g; 15.9oz (with BP-254)

TRANSMITTER

- Max. frequency deviation : ±5.0/2.5kHz (Wide/narrow)
- Frequency error : ±2.0ppm
- Spurious emissions : 70dB typ.
- Adjacent channel power : 70/60dB min. (Wide/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/2.2kΩ

INTRINSICALLY SAFE TYPE APPROVAL



There are versions that conform to intrinsically safe rating of the FM Approvals. Ask your dealer for details.

Intrinsically safe : Class I, II, III, Division 1, Groups C, D, E, F, G ;
Nonincendive : Class I, Division 2, Groups A, B, C, D hazardous locations
Connected battery pack : BP-254FM, "Max. Temp. : T3C at 40°C"
Approved options : HM-138, HM-168IS, HS-94, HS-95, HS-97, VS-1SC,
UT-109, UT-110, UT-111, UT-124

Measurements made in accordance with EIA-152C/204D, TIA-603.

All stated specifications are subject to change without notice or obligation.

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RECEIVER

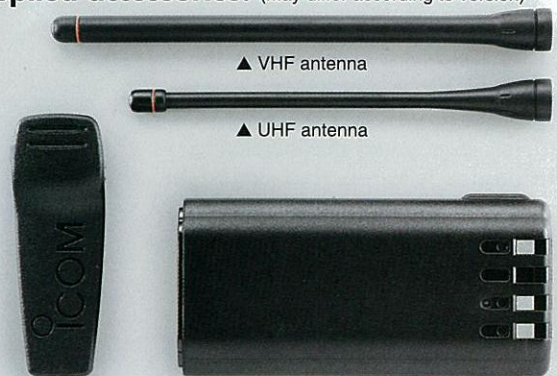
- Intermediate frequency : 1st 46.35MHz 2nd 450kHz
- Sensitivity :
Analog (12dB SINAD) 0.25μV typ.
Digital (5% BER) 0.25μV typ.
- Squelch sensitivity (at threshold) :
0.25/0.32μV typ. (VHF/UHF)
- Adjacent channel selectivity :
Analog VHF 80/73dB typ. (Wide/narrow)
UHF 78/70dB typ. (Wide/narrow)
Digital VHF/UHF 60dB typ.
- Spurious response : 80/75dB typ. (VHF/UHF)
- Intermodulation : 75dB typ.
- Hum and noise ratio : 45/40dB typ. (Wide/narrow)
- Audio output power : 500mW typ. (at 10% distortion with an 8Ω load)
- External speaker connector : 9-pin multi connector/8Ω

Applicable U.S. Military Specifications

Standard	MIL 810F	
	Method	Procedure
Low Pressure	500.4	I, II
High Temperature	501.4	I, II
Low Temperature	502.4-3	I, II
Temperature Shock	503.4	I
Solar Radiation	505.4	I
Rain	506.4	I, III
Humidity	507.4	—
Salt Fog	509.4	—
Dust Blowing	510.4	I
Immersion	512.4	I
Vibration	514.5	I
Shock	516.5	I, IV

Also meets equivalent MIL-STD-810-C, -D and -E.

Supplied accessories: (May differ according to version)



- Alligator-type belt clip, MB-94
- Battery pack, BP-253 or BP-254

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