



## 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 encryption (Option)
- MDC 1200 compatible, 2-Tone, 5-Tone
- Intrinsically safe versions available
- 14.5 hrs. operating time with BP-254
- IPX7 Waterproof
- Full dot-matrix LCD

# The Smart Migration to an APCO P25 Digital Radio System



## Digital Radio System



▲ IC-F70T

▲ IC-F80S

### 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.  
\* 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.  
\* Not available in digital mode.

### 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

\* Not available in digital mode.

### 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

## 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

# 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.

## 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.

## 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.

## 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.

(\* Optional UT-120 and EX-2785 J01 required.)

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.

\* 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

\* Not available in digital mode.

## 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.

\* Not available in digital mode.

## 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

\* Not available in digital mode.

## OPTIONS

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



**BP-253** Li-Ion BATTERY PACK, 7.4V, 1570mAh (min.), 1650mAh (typ.) Provides 8 hours operating time\* (approx.).  
**BP-254/FM** Li-Ion BATTERY PACK, 7.4V, 2900mAh (min.), 3040mAh (typ.) Provides 14.5 hours operating time\* (approx.).  
**BP-237** BATTERY CASE: AA (LR6)×6 alkaline cells. BP-237 is water-resistant, equivalent to IPX4.  
 \* Tx: Rx: standby=5.5:9.0. BP-254FM is intrinsically safe version.



**BC-119N** DESKTOP CHARGER + **AD-110** CHARGER ADAPTER + **BC-145** AC ADAPTER Rapidly charges the BP-253 or BP-254. Charging time: approx. 2.5 hours when BP-253 is attached.  
**CP-23L**: CIGARETTE LIGHTER CABLE **OPC-515L**: DC POWER CABLE For use with the BC-119N. (12–16V DC required)



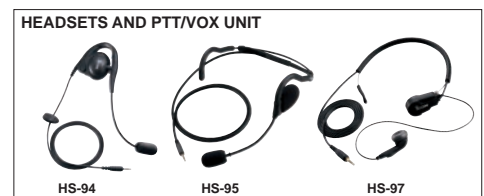
**BC-121N** MULTI-CHARGER + **AD-110** CHARGER ADAPTER + **BC-157S** AC ADAPTER Rapidly charges up to 6 battery packs (Six AD-110s are required). Charging time: approx. 2.5 hours when BP-253 is attached.  
**OPC-656** DC POWER CABLE :For use with the BC-121N. (12–20V DC required).



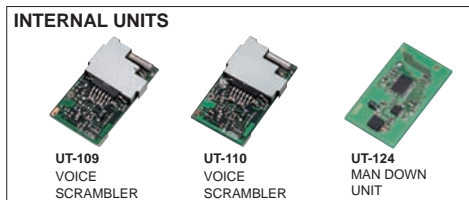
**MB-93**: Swivel type belt clip.  
**MB-94**: Alligator type. Same as supplied.  
**MB-96N**: Swivel type belt hanger.  
**MB-96F**: Fixed type belt hanger.



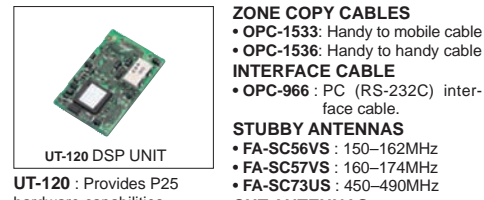
**HM-168/IS**: Compact type speaker-microphone. HM-168IS is for intrinsically safe versions. Equivalent to IPX7.  
**HM-169**: Rugged type speaker-microphone. Equivalent to IP57.  
**HM-170GP**: GPS speaker-microphone. Equivalent to IP57.  
**HM-138**: Full sized speaker-microphone. Equivalent to IPX7.



**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-15C**: PTT/VOX unit. Required when using these headsets.



**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 transmitter is left in a horizontal position for a preset time.  
 Optional internal unit should be installed at an authorized Icom service center only.



**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-SC55V**: 150–174MHz  
 • **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
- Type of emission W/N : 16K0F3E, 11K0F3E  
Digital 8K10F1E, 8K10F1D
- 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/2W/1W	4W/2W/1W
Transmit	High	2.2A
	Low (1W)	1.5A
Receive	AF max.	450mA
	stand-by	150mA

- Dimensions (W × H × D) : 58.6 × 152 × 42.2 mm;  
(projections are not included) 2<sup>5</sup>/<sub>16</sub> × 5<sup>3</sup>/<sub>32</sub> × 1<sup>2</sup>/<sub>32</sub> 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 stability : ±2.0ppm
- Spurious emissions : 70dB typ.
- 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

- Sensitivity :  
Analog (12dB SINAD) 0.25μV typ.  
Digital (5% BER) 0.25μV typ.
- 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	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

## Icom Inc.

1-1-32, Kami-minami, Hirano-ku, Osaka 547-0003, Japan Phone: +81 (06) 6793 5302 Fax: +81 (06) 6793 0013

[www.icom.co.jp/world](http://www.icom.co.jp/world)

Count on us!

## GATT Communications, Inc.

20 E. 49th St 5th Fl.  
New York, NY 10017  
Phone: +1 (212) 755-5995  
Fax: +1 (212) 755-4994  
Email: [sales@gattcom.com](mailto:sales@gattcom.com)  
URL: <http://www.gattcom.com>

## Icom Canada

Glenwood Centre #150-6165 Highway 17,  
Delta, B.C. V4K 5B8, Canada  
Phone: +1 (604) 952-4266  
Fax: +1 (604) 952-0090  
E-mail: [info@icomcanada.com](mailto:info@icomcanada.com)  
URL: <http://www.icomcanada.com>

## Icom (Australia) Pty. Ltd.

Unit 1 / 103 Garden Road,  
Clayton, VIC 3168 Australia  
Phone: +61 (03) 9549 7500  
Fax: +61 (03) 9549 7505  
E-mail: [sales@icom.net.au](mailto:sales@icom.net.au)  
URL: <http://www.icom.net.au>

## Icom New Zealand

146A Harris Road, East Tamaki,  
Auckland, New Zealand  
Phone: +64 (09) 274 4062  
Fax: +64 (09) 274 4708  
E-mail: [inquiries@icom.co.nz](mailto:inquiries@icom.co.nz)  
URL: <http://www.icom.co.nz>

## Icom (Europe) GmbH

Communication Equipment  
Auf der Krautweide 24  
65812 Bad Soden am Taunus, Germany  
Phone: +49 (6196) 76685-0  
Fax: +49 (6196) 76685-50  
E-mail: [info@icomeurope.com](mailto:info@icomeurope.com)  
URL: <http://www.icomeurope.com>

## Icom Spain S.L.

Ctra. Rubi, No. 88 "Edificio Can Castanyer"  
Bajos A 08174, Sant Cugat del Valles,  
Barcelona, Spain  
Phone: +34 (93) 590 26 70  
Fax: +34 (93) 589 04 46  
E-mail: [icom@icomspain.com](mailto:icom@icomspain.com)  
URL: <http://www.icomspain.com>

## Icom (UK) Ltd.

Blacksole House, Altira Park,  
Herne Bay, Kent, CT6 6GZ, U.K.  
Phone: +44 (01227) 741741  
Fax: +44 (01227) 741742  
E-mail: [info@icomuk.co.uk](mailto:info@icomuk.co.uk)  
URL: <http://www.icomuk.co.uk>

## Icom France s.a.s.

Zac de la Plaine,  
1 Rue Brindejonc des Moulinais, BP 45804,  
31505 Toulouse Cedex 5, France  
Phone: +33 (5) 61 36 03 03  
Fax: +33 (5) 61 36 03 00  
E-mail: [icom@icom-france.com](mailto:icom@icom-france.com)  
URL: <http://www.icom-france.com>

## Icom Polska

81-850 Sopot, ul. 3 Maja 54, Poland  
Phone: +48 (58) 550 7135  
Fax: +48 (58) 551 0484  
E-mail: [icompolska@icompolska.com.pl](mailto:icompolska@icompolska.com.pl)  
URL: <http://www.icompolska.com.pl>

## Asia Icom Inc.

6F No. 68, Sec. 1 Cheng-Teh Road,  
Taipei, Taiwan, R.O.C.  
Phone: +886 (02) 2559 1899  
Fax: +886 (02) 2559 1874  
E-mail: [sales@asia-icom.com](mailto:sales@asia-icom.com)  
URL: <http://www.asia-icom.com>

## Beijing Icom Ltd.

10C07, Long Silver Mansion, No.88, Yong Ding  
Road, Haidian District, Beijing, 100039, China  
Phone: +86 (010) 5889 5391/5392/5393  
Fax: +86 (010) 5889 5395  
E-mail: [bjicom@bjicom.com](mailto:bjicom@bjicom.com)  
URL: <http://www.bjicom.com>

Your local distributor/dealer: