ICOM

IC-F7040 Series

700/800 MHz P25 DIGITAL TRANSCEIVERS

P25 Conventional and Trunking Smallest and Lightest of Its Class



IC-F7040T IC-F7040S

The IC-F7040 series are small and lightweight P25-compliant 700/800 MHz radios and can be upgraded to Phase 1 trunking and Phase 2 trunking with a license key. The radios offer rugged durability and IP68 submersible protection, and are easy to use with a high visibility color LCD screen. Plus the GPS receiver, Bluetooth® and microSD card slot come standard.

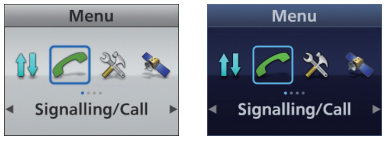
- **P25 Phase 1 conventional, trunking* and Phase 2 trunking* capable**
- **Optional FIPS compliant AES encryption unit***
- **P25 voting scan* (P25 conventional mode)**
- **Up to 1024 channel capacity with 128 zones**
- **IP68 waterproof protection (1 m depth/1 hour)**
- **High visibility and readability with a color LCD**
- **Icom's custom high power handling capacity speaker for 1300 mW of powerful audio**
- **Built-in Bluetooth®, voice recording and P25 packet data (GPS)* functions**
- **Enhanced dual-rate AMBE+2™ Vocoder**
- **Battery information display by the intelligent battery pack**

* License key upgrade required

FEATURES

General Features

- 700/800 MHz frequency bands
- 1024 channels / 128 zones
- High resolution color LCD with intuitive user interface
- Day and night mode display settings



Day and night mode example

- Functions and menu items can be set in a language other than English (For example French, Spanish, Russian, and Traditional Chinese)
- 16-position rotary selector and ON/OFF volume knob
- Quick A/B switch on the top panel programmable for various functions such as zone, scrambler/encryption, and so on.
- 1300 mW loud and intelligible internal speaker audio
- MIL-STD-810 G such as shock, vibration and temperature
- IP68, one meter depth for one hour waterproof and dust-tight protection
- 38.2 mm (1.5 inch) slim dimensions (With BP-284 battery pack)
- Battery information display
- Flat sheet keypad offers large button space and protects the radio from dust
- Front panel programming option (ISL-P25FP License key required)
- Fast wake up time from the power save mode
- DTMF autodial

Operating Mode

- P25 Phase 1 conventional
- P25 Phase 1 trunking (ISL-P25TR License key required)
- P25 Phase 2 trunking (ISL-P25P2 License key required)
- Analog mode
- Analog/digital mixed operation

Digital Functions (Voice and Data)

- Over-the-Air Programming (OTAP) function (CS-OTPM2 manager software required)
- Individual, group call
- Unit ID and talkgroup display on receive
- Status update and status query
- Short data messages of up to 100 characters
- GPS position and transparent data transmission (ISL-P25DS License key required)
- Call alert
- Phone number list
- Call log

Analog Functions

- CTCSS and DTCS tone
- 2-Tone
- MDC functions

Security and Safety

- Optional UT-125FIPS FIPS compliant AES/DES encryption unit and UT-134 non-FIPS AES/DES unit (ISL-P25AES License key required for AES encryption)
- Over-the-Air Rekeying (OTAR)
- Analog inversion voice scrambler (16-codes)
- Power ON password
- Tactical group temporarily regroup user groups
- Radio Stun/Kill/Revive
- Remote monitor • Radio check
- Emergency key for emergency call
- Man Down function • Lone Worker function
- Motion/stationary detection
- External emergency button with optional HM-222
- Advanced System Key (ASK) protects the radio from unauthorized programming

Scan Functions

- Priority scan • Talkgroup scan
- Voting scan for automatically selecting optimal repeater site (ISL-P25VS License key required)

Voice/Audio Functions

- Voice announcement (Channel number and zone)
- VOX function for hands-free operation
- Voice recording/playback is saved to a microSD card (Up to 500 hours with a 32 GB card) (User supplied)
- TX/RX active noise canceller
- TX/RX audio equalizer (Flat, high/mid/low boost, low cut)
- AF volume equalizing function adds high-pass filter to provide clear, intelligible audio, when increases the volume
- Adjustable analog and digital volume level

Hardware Features

- Programmable vibration alert and ringer beep
- Built-in Bluetooth® for wireless audio and data
- Third-party wireless Bluetooth® headset (Like a 3M™ Peltor™ WS™ 5) can be used
- Wireless radio programming over Bluetooth®
- USB connector for data transfer mode or card reader mode
- 14-pin accessory connector
- Built-in GPS with GPS position screen
- Internal clock with time auto adjustment
- Optional BC-225 intelligent charger and RS-BC225 reader software for BC-225 for battery life cycle management

SPECIFICATIONS

		IC-F7040T/S
GENERAL		
Frequency coverage (* Depends on the transceiver version)	USA	769–775 (RX/TX), 799–805 (TX), 806–824 (TX), 851–869 (RX/TX) MHz
	EXP	764–776 (RX/TX), 794–806 (TX), 806–825 (TX), 851–870 (RX/TX) MHz
Number of channels		1024 channels /128 zones
Type of emission (* Depends on the transceiver version)		16K0F3E, 14K0F3E, 11K0F3E, 8K50F3E, 8K10F1E/F1D, 8K10F1W
Power supply requirement		7.5 V DC nominal
Current drain (approximate)	TX	1.6 A
	RX	620 mA /220 mA (Max. audio (internal SP)/Standby)
Antenna impedance		50 Ω
Operating temperature range		–30 °C to +60 °C, –22 °F to +140 °F (Radio specifications)
Dimensions (W × H × D, Projections not included)		53.6 × 123.5 × 38.2 mm, 2.1 × 4.9 × 1.5 in (With BP-284)
Weight (approximate)		180 g, 6.4 oz (main unit)
		345 g, 12.2 oz (BP-284, MB-133, FA-S100U)
TRANSMITTER		
Output power (Hi)		3 W
Maximum frequency deviation		±5.0 kHz (25 kHz), ±4.0 kHz (20 kHz), ±2.5 kHz (12.5 kHz)
Frequency stability		±1.0 ppm
Spurious emissions		70 dB minimum
FM hum and noise		55 dB typical
Audio harmonic distortion		1.5% typical (AF 1kHz 40% deviation)
FSK error		1% typical
RECEIVER		
Sensitivity	Analog (12 dB SINAD)	0.25 µV typical
	Digital (5% BER)	0.25 µV typical
Adjacent channel selectivity	Analog	75/75/53 dB typical (25/20/12.5 kHz, TIA-603B) 75/75/72 dB typical (25/20/12.5 kHz, TIA-603)
	Digital	60 dB typical (TIA-102)
Spurious response rejection		70 dB minimum
Intermodulation rejection	Analog	70 dB typical
	Digital	70 dB typical
Audio output power	Internal SP	1300 mW typical (at 5% distortion with an 8 Ω load)
	External SP	1000 mW typical (at 5% distortion with an 8 Ω load)

Measurements made in accordance with TIA-102 (P25), TIA-603 (FM wide/middle/narrow).
All stated specifications are subject to change without notice or obligation.

Applicable U.S. Military Specifications & IP Rating

Standard	MIL 810G	
	Method	Procedure
Low Pressure	500.5	I, II
High Temperature	501.5	I, II
Low Temperature	502.5	I, II
Temperature Shock	503.5	I-C
Solar Radiation	505.5	I
Rain Blowing/Drip	506.5	I, III
Humidity	507.5	II
Salt Fog	509.5	–
Dust Blowing	510.5	I
Immersion	512.5	I
Vibration	514.6	I
Shock	516.6	I, IV

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

Ingress Protection Standard	
Dust & Water	IP68 (Dust-tight and waterproof protection)

Battery Life

Battery pack	Type	Capacity	Operating time* (Approx.)
BP-283	Rechargeable Li-ion	2010 mAh (typ.), 1910 mAh (min.)	9 hours
BP-284	Rechargeable Li-ion	3210 mAh (typ.), 3070 mAh (min.)	14 hours

* Tx: Rx: standby = 5:5:90 duty cycle.

Supplied accessories: (May differ, depending on transceiver version)
• Battery pack, BP-284 • Belt clip, MB-133

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OPTIONS

BATTERY PACKS

BP-283: Rechargeable Li-ion battery. 2010 mAh (typical), 1910 mAh (minimum). IP68 protection.
BP-284: Rechargeable Li-ion battery. 3210 mAh (typical), 3070 mAh (minimum). IP68 protection.


BP-283 BP-284

BATTERY CHARGERS

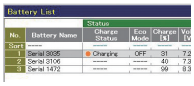
BC-225: Intelligent charger. Shows the charging information with LED lighting. Charges the BP-283/BP-284 in 2.5/4.5 hours (approximate).
+ BC-123SA/SE: AC adapter.
RS-BC225: Reader software for BC-225. Windows® PC software.

BC-227: Compact type desktop charger. Charges the BP-283/BP-284 in 2.7/4.3 hours.
+ BC-123SA/SE: AC adapter.

BC-219N: Desktop charger. Charges the BP-283/BP-284 in 2.8/4.5 hours (approx.).
+ BC-123SA/SE: AC adapter.

BC-214: Multi-charger. Charges up to six BP-283/BP-284 batteries in 2.8/4.5 hours (approx.).
+ **BC-157S**: AC adapter.
* AD-132N charger adapter is supplied with the BC-214, depending on version.


BC-123S BC-225 BC-227 BC-219N BC-214 BC-157S


RS-BC225

POWER SUPPLY CABLES

CP-23L: Vehicle charger cable for use with the BC-219N or BC-227.
OPC-515L: DC power cable for use with the BC-219N, BC-225 or BC-227.
OPC-656: DC power cable for use with the BC-214.

SPEAKER-MICROPHONES

HM-222: Speaker microphone with an emergency button and a 3.5 mm ear-phone jack. IP68 protection.
HM-163MC: Tie-clip microphone with a 2.5 mm earphone jack.
EH-15B: Earphone with a 2.5 mm plug for use with the HM-163MC.
SP-28: Earhook type earphone with a 2.5 mm plug for use with the HM-163MC.
SP-32: Tube earphone adapter for use with the EH-15B.
SP-27: Tube earphone with 3.5 mm plug. For use with the HM-222 or AD-135.
SP-29: Earhook type earphone with 3.5 mm plug. For use with the HM-222 or AD-135.
SP-40: Earphone with 3.5 mm plug. For use with the HM-222 or AD-135.


HM-222 HM-163MC EH-15B SP-28 SP-32
SP-27 SP-29 SP-40

HEADSETS AND PTT SWITCH CABLE

HS-94: Earphone-headset. VS-5MC is required.
HS-95: Behind-the-head headset. VS-5MC is required.
HS-97: Throat microphone. VS-5MC is required.
VS-3: Bluetooth headset.
VS-5MC: PTT switch cable with VOX function. VS-5MC is required when using any of HS-94, HS-95 or HS-97.


HS-94 HS-95 HS-97 VS-3 VS-5MC

BELT CLIPS, BELT HANGERS AND CARRYING CASE

MB-133: Alligator belt clip. Same as supplied.
MB-136: Swivel belt clip.
MB-96N: Swivel type belt hanger.
MB-96F: Fixed type belt hanger. For use with the MB-133.
MB-96FL: Long fixed type belt hanger. For use with the MB-133.
LC-184: Carrying case.


MB-133 MB-136 MB-96N MB-96F MB-96FL LC-184

AES/DES ENCRYPTION UNITS

UT-134: AES/DES encryption unit.
UT-125FIPS: AES/DES encryption unit (FIPS compliant).


UT-134 UT-125FIPS

OTHER OPTIONS AND CABLES

AD-135: 3.5 mm earphone jack adapter for use with any of SP-27, SP-29 or SP-40 earphone.
AD-118: ACC adapter. For use with a Hirose plug accessory.
OPC-2338: Programming cable. USB–14-pin type.
OPC-1870: Zone copy cable. Handheld to handheld cable.
OPC-2362: Zone copy cable. Handheld to mobile cable.
FA-S100U: 700/800 MHz antenna.


AD-135 AD-118 OPC-1870 OPC-2362 FA-S100U

SOFTWARE AND ACTIVATION KEYS

CS-F7500: Programming software.
CS-OTPM2: OTAP manager software.
ISL-P25VS: P25 conventional voting scan upgrade key.
ISL-P25TR: P25 Phase 1 trunking upgrade key.
ISL-P25P2: P25 Phase 2 trunking upgrade key.
ISL-P25DS: P25 packet data service (GPS and transparent data) upgrade key.
ISL-P25AES: AES encryption upgrade key. Either UT-134 or UT-125FIPS is required.
ISL-P25FP: Front panel programming key.

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

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