



IC-F7510 IC-F7520

VHF AND UHF P25 DIGITAL TRANSCEIVERS

Great Choice for Public Organizations Rugged P25 Mobile Radio, Phase 2 Ready

Combines a high visibility color LCD, improved user interface and great audio quality, all within the radio's rugged construction, the IC-F7510 series can be upgraded to P25 Phase 1 trunking and Phase 2 trunking with a license key. Standard GPS receiver, Bluetooth®, voice recorder and microSD card slot further enhance the practicality, effectiveness and safety in operation.

■ P25 Phase 1 conventional, trunking*
and Phase 2 trunking* capable

■ Optional FIPS compliant
AES encryption unit*

■ P25 voting scan* (P25 conventional)

■ Up to 1024 channel capacity
with 128 zones

■ High visibility and readability color LCD

■ Built-in Bluetooth®, voice recording,
and P25 packet data (GPS)* functions

■ IP55 water jet resistant and dust protection

■ Enhanced dual-rate Vocoder, AMBE+2™

■ Optional dual head and COMMANDMIC™
configurations

* License key upgrade required

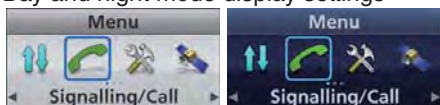


IC-F7510



General Features

- 136–174, 380–470, 450–512, 450–520 MHz versions
- 1024 channels / 128 zones
- High resolution color LCD and intuitive user interface
- Large sized functions and four-direction buttons
- 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, and Russian)
- MIL-STD-810 G such as shock, vibration and temperature
- IP55, water jet resistance and dust protection
- Front panel programming option
 - * License key (ISL-P25FP) required
- Fast resume time wake up from the power save mode
- DTMF autodial

Operating Mode

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

Digital Functions (Voice and Data)

- Over-the-Air Programming (OTAP) function*
 - * OTAP manager software will be required (Planned feature)
- Individual, group call
- Unit ID and talkgroup display on receive
- Status update and status query
- Short data message (Up to 100 characters)
- GPS position and transparent data transmission*
 - * License key (ISL-P25DS) required
- Call alert
- Phone number list
- Call log

Analog Functions

- CTCSS and DTCSS 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*
 - * License key (ISL-P25AES) additionally required for AES encryption
- Over-the-Air Rekeying (OTAR)
- Analog inversion voice scrambler (16-codes)
- Power ON password
- Tactical group temporarily reconfigures user groups
- Radio stun/kill/revive
- Remote monitor
- Radio check
- Power OFF emergency
- Emergency key for emergency call
- Lone worker function

Scan Functions

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

Voice/Audio Functions

- Voice announcement (Channel number and zone)
- VOX function for hands-free operation
- Voice recording/playback (Stored to a microSD card)*
 - * A microSD card is required separately
- 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 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 or microSD card reader mode
- Programmable D-SUB connector for external PTT, channel, horn, PA/RX speaker, ignition switch and dimmer control
- Built-in GPS with GPS position screen*
 - * UX-241 GPS antenna is required
- Internal clock with time auto adjustment
- Low voltage alert
- Optional detached controller, dual head controller or COMMANDMIC™ configurations
- Intercom function between dual head controller or COMMANDMIC™

		IC-F7510	IC-F7520
GENERAL			
Frequency coverage* (* Depending on version)		136–174 MHz	380–470, 450–512, 450–520 MHz
Number of channels		1024 channels /128 zones	
Type of emission* (* Depending on version)		16K0F3E*, 11K0F3E, 8K50F3E, 8K10F1E/F1D, 8K10F1W	
Power supply requirement		13.6 V DC nominal	
Current drain (approx.)	TX	14.0 A (at 50 W)	14.0 A (at 45 W)
	RX	1.2 A /400 mA (Max. audio (external SP)/Standby)	
Antenna impedance		50 Ω	
Operating temperature range		–30 °C to +60 °C; –22 °F to +140 °F	
Dimensions (W × H × D; Projections not included)		174 × 55 × 150 mm; 6.9 × 2.2 × 5.9 in	
Weight (approx.)		1500 g; 3.3 lb	
TRANSMITTER			
Output power (Hi, L2, L1)		50 W, 25 W, 5 W	45 W, 25 W, 5 W
Maximum frequency deviation		±5.0 kHz (@25 kHz), ±2.5 kHz (@12.5 kHz)	
Frequency stability		±1.0 ppm	
Spurious emissions		80 dB typ.	
FM hum and noise		55 dB typ. (@25 kHz), 55 dB typ. (@12.5 kHz)	
Audio harmonic distortion		0.5% typ. (AF 1kHz 40% deviation)	
FSK error		1% typ. (C4FM), 3% typ. (H-CPM)	
RECEIVER			
Sensitivity	Analog (12 dB SINAD)	0.22 μV typ. (@25/12.5 kHz)	0.22 μV typ. (@25/12.5 kHz)
	Digital (5% BER)	0.22 μV typ. (@C4FM, H-DQPSK)	0.22 μV typ. (@C4FM, H-DQPSK)
Adjacent channel selectivity	Analog	80/57 dB typ. (@25/12.5 kHz, TIA-603B), 80/76 dB typ. (@25/12.5 kHz, TIA-603)	75/57 dB typ. (@25/12.5 kHz, TIA-603B), 75/75 dB typ. (@25/12.5 kHz, TIA-603)
	Digital	63 dB typ. (@C4FM, TIA-102) 63 dB typ. (@H-DQPSK, TIA-102)	63 dB typ. (@C4FM, TIA-102) 60 dB typ. (@H-DQPSK, TIA-102)
Spurious response rejection		80 dB typ.	80 dB typ.
Intermodulation rejection	Analog	77 dB typ.	75 dB typ.
	Digital	77 dB typ.	75 dB typ.
Audio output power	Internal SP	4.0 W typ. (at 5% distortion with 4 Ω load)	
	External SP	4.0 W typ. (at 5% distortion with 4 Ω load)	

Measurements made in accordance with TIA-102 (P25), TIA-603 (FM Wide/narrow).

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

*1 25 kHz bandwidth is no longer available for FCC Part 90 licensees for USA versions.

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
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	IP55 (Dust-protection and water jet resistance)

Supplied accessories: (May differ depending on version)

- Hand microphone, HM-220
- DC power cable
- Mounting bracket kit
- Microphone hanger

HAND MICROPHONES AND DESKTOP MICROPHONE

HM-220: Heavy duty microphone. IP54 protection.
HM-220T: Heavy duty microphone with DTMF keypad. IP54 protection.
HM-221: Hand microphone with emergency button. IP55 protection.
HM-221T: Hand microphone with DTMF keypad and emergency button. IP55 protection.
SM-29: Desktop microphone with monitor and monitor lock buttons.



COMMANDMIC™ AND SEPARATION KITS

HM-218: Remote control microphone for use with RMK-5. IP55 protection.
RMK-5: Separation kit. For detached controller configuration.
RMK-7: Dual-head separation kit. Separation kit and secondary controller for dual head configuration.



SEPARATION CABLES

OPC-2364: 1.9 m; 6.2 ft separation cable for RMK-5 or RMK-7.
OPC-2365: 3 m; 9.8 ft separation cable for RMK-5 or RMK-7.
OPC-2366: 5 m; 16.4 ft separation cable for RMK-5 or RMK-7.
OPC-2367: 8 m; 26.2 ft separation cable for RMK-5 or RMK-7.
OPC-2373: 1.9 m; 6.2 ft separation cable for HM-218, COMMANDMIC.
OPC-2374: 8 m; 26.2 ft separation cable for HM-218, COMMANDMIC.



HEADSET

VS-3: Bluetooth headset.



EXTERNAL SPEAKERS

SP-30: External speaker.
 Cable length 2.6 m; 8.5 ft.
SP-35/L: Compact external speaker.
 SP-35 cable length: 2 m; 6.6 ft.
 SP-35L cable length: 6 m; 19.7 ft.



GPS ANTENNA

UX-241: External GPS antenna.
 Cable length 5 m; 16.4 ft.



AES/DES ENCRYPTION UNITS

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



ZONE COPY, PROGRAMMING AND DC POWER CABLES

OPC-2362: Zone copy cable. Mobile to handheld cable.
OPC-2363: Programming cable.
OPC-1132: DC power cable. Cable length 3 m; 9.8 ft.
OPC-347: DC power cable. Cable length 7 m; 23 ft.



SOFTWARE AND ACTIVATION KEYS

CS-F7500: Programming 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.



Detached Controller

Optional RMK-5
and separation cable required.



Dual Head Controller

Optional RMK-7, hand microphone
and separation cables required.



COMMANDMIC™ and Detached Controller

Optional RMK-5, COMMANDMIC, HM-218
and separation cables required.

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