

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

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

Optional FIPS compliant AES encryption unit*

IP55 water jet resistant and dust protection

P25 voting scan* (P25 conventional)

Enhanced dual-rate Vocoder, AMBE+2™

Up to 1024 channel capacity with 128 zones

Optional dual head and COMMANDMIC™ configurations

High visibility and readability color LCD

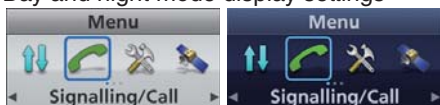
* License key upgrade required



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 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*
 - * 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*1, 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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