



PRE-RELEASE INFORMATION

VHF AND UHF P25 DIGITAL TRANSCEIVERS

IC-F7010T/S

(VHF P25 Digital Transceivers)

IC-F7020T/S

(UHF P25 Digital Transceivers)

IC-F7510

(VHF P25 Digital Transceiver)

IC-F7520

(UHF P25 Digital Transceiver)

P25 Phase 2 Ready



IC-F7020S
(Simple keypad)

IC-F7010T
(Full keypad)

- P25 Phase 1 Conventional, Trunking* and Phase 2 Trunking* Capable
- License Key Upgrade for Feature Enhancements
- FIPS 140 Level 1 AES Encryption with Over-the-Air Rekeying (OTAR)*
- Over-the-Air Programming (OTAP) for Programming Efficiency*
- P25 Voting Scan* Automatically Selects An Optimal Repeater Site (P25 Conventional mode)
- Up to 1024 Channel Capacity with 128 Zones
- Class-Leading Smallest and Lightest Handheld
- IP68 Waterproof Protection up to One Meter Depth, for One Hour (Handheld model only)
- High Visibility and Readability with Color LCD and Common User Interface between Handheld and Mobile Radios
- Integrated Bluetooth® for Serial Interface* and Wireless Audio
- Audio Recording and Replay Function
- P25 Packet Data (GPS)*

* License key upgrade required.



IC-F7510

Other Features

- Front panel programming option (License key upgrade required)
- Active Noise Cancelling
- Voice announcement function
- Audio equalizer
- USB port for PC connection
- Vibration alert for handheld radio

- Man down and motion/stationary detection for emergency call (Handheld models only)
- 2-Tone/MDC 1200/CTCSS/DTCS signalling and inversion type voice scrambler for analog mode
- Horn, dimmer external PTT programmable through D-SUB 25-pin connector for mobile radio
- Optional intelligent charger, BC-225, and software, RS-BC225, indicate the battery information for optimum conditioning

SPECIFICATIONS

	IC-F7010T/S	IC-F7020T/S	IC-F7510	IC-F7520
GENERAL				
Frequency coverage (* Depending on version)	136–174 MHz	380–470, 450–512 450–520 MHz	136–174 MHz	380–470, 450–512 450–520 MHz
Number of channels	1024 channels /128 zones		1024 channels /128 zones	
Type of emission (* Depending on version)	16K0F3E*1, 11K0F3E, 8K50F3E, 8K10F1E/F1D, 8K10F1W		16K0F3E*1, 11K0F3E, 8K50F3E, 8K10F1E/F1D, 8K10F1W	
Channel spacing	25 kHz*1, 15kHz, 12.5 kHz, 6.25e		25 kHz*1, 15 kHz, 12.5 kHz, 6.25e	
Power supply requirement	7.5 V DC nominal		13.6 V DC nominal	
Current Tx High drain Rx Max. audio/Standby (approx.)	1.5 A	1.8A	14.0 A typ. (at 50 W) 1.2 A typ. (External SP)/ 400 mA typ.	14.0 A typ. (at 45 W) 1.2 A typ. (External SP)/ 400 mA typ.
Antenna impedance	50 Ω		50 Ω	
Operating temperature range	–30 °C to +60 °C; –22 °F to +140 °F (Radio specifications)		–30 °C to +60 °C; –22 °F to +140 °F	
Dimensions (W × H × D; Projections not included)	53.6 × 123.5 × 38.2 mm; 2.1 × 4.9 × 1.5 in (With BP-284)		174 × 55 × 150 mm; 6.9 × 2.2 × 5.9 in	
Weight (approx.)	180 g; 6.4 oz (main unit) 355 g; 12.5 oz (BP-284, MB-133, FA-S81VS)		1.5 kg; 3.3 lb	
TRANSMITTER				
Output power (Hi, L2, L1)	5 W, 2 W, 1 W		50 W, 25 W, 5 W	
Frequency stability	±1.0 ppm		±1.0 ppm	
Spurious emissions	80 dB typ.		80 dB typ.	
FM Hum and noise (W/N)	55/55 dB typ.		54/54 dB typ.	
Audio harmonic distortion (AF 1kHz 40% deviation)	0.5% typ.		1.5% typ.	
FSK error	1% typ. (C4FM), 3% typ. (H-CPM)		1% typ. (C4FM), 3% typ. (H-CPM)	
RECEIVER				
Sensitivity Analog 12 dB SINAD Digital 5% BER	0.22 μV typ. 0.22 μV typ.		0.22 μV typ. 0.22 μV typ.	
Adjacent channel selectivity Analog (W/N) Digital	80/57 dB typ. (TIA-603B), 80/76 dB typ. (TIA-603) 63 dB typ. (TIA-102)		75/50 dB typ. (TIA-603B), 80/76 dB typ. (TIA-603) 60 dB typ. (TIA-102)	
Spurious response rejection	80 dB typ.		80 dB typ.	
Intermodulation Analog Digital	75 dB typ. 75 dB typ.		77 dB typ. 77 dB typ.	
Audio output power Internal speaker External speaker	800 mW typ. (at 5% distortion with 12 Ω load) 1000 mW typ. (at 5% distortion with 8 Ω load)		4.0 W typ. (at 5% distortion with 4 Ω load) 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
Solar Radiation	505.5	I
Rain Blowing/Drip	506.5	I, III
Humidity	507.5	–
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. * IC-F7010T/S, IC-F7020T/S only.

Ingress Protection Standard

IC-F7010T/S, F7020T/S	IP68 (Dust-tight and waterproof protection)
IC-F7510, F7520	IP55 (Dust-protection and jet water resistance)

BATTERY LIFE

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

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

Supplied accessories for handheld radios:

- (May differ depending on version)
- Battery pack, BP-284
 - Belt clip, MB-133

Supplied accessories for mobile radios:

- (May differ depending on version)
- Hand microphone, HM-220
 - DC power cable
 - Microphone hanger
 - Mounting bracket kit

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