

The M7300 mobile has

- Multi-Mode functionality
- Dual-band operation
- Secure Communications



The M7300 mobile is a state-of-the-art radio that trunks seamlessly between the 800 MHz frequency band and the newly available 700 MHz frequency band. The M7300 mobile is designed to meet the critical demands of its users.

Multiple Operating Modes

The M7300 mobile supports multiple operating modes, including OpenSky[®] digital trunked operation, Enhanced Digital Access Communications System (EDACS[®]) or ProVoice[™] trunked modes, P25 digital trunked mode, P25 digital conventional mode, and conventional analog mode.

Mutual Aid Operation

The M7300 also provides Project 25 conventional capabilities for interoperability with other users in the 700/800 MHz bands.

GPS Capability

The optional Global Positioning System (GPS) receiver module can provide standard GPS

formatted data over the air on OpenSky systems for vehicle tracking systems.

Secure Communications

The optional Advanced Encryption Standard (AES) is available for maximum communications security.

Over-the-Air Programming

OpenSky radios benefit from a flexible, software-based digital radio design. Features and user profiles are software-defined and can be reprogrammed over the air. The optional over-the-air programming feature allows communications protocols to be changed easily and added at any time.

CH-721 and HHC-731 Control Units

The M7300 radio uses the CH-721 Control Unit which is available in two models: System and Scan. The display is designed to maximize readability and ease of use. The CH-721 utilizes a 3-line 12-character alphanumeric display with large

buttons, volume knob, and channel knob, providing a user-friendly interface.

The HHC-731 is a rugged hand held controller providing an interface similar to the CH-721 in a compact, easy-to-use design. This compact design makes the HHC-731 ideal for special applications such as covert operations. The HHC-731 was also designed for special applications such as motorcycle, marine, and ATV mountings where space is at a premium.

About OpenSky

OpenSky is a secure integrated digital voice and data communication system. OpenSky leverages the power of Internet Protocol (IP) and packet technology for reliability and scalability to bring open data applications to the user. OpenSky uses a 19.2-kbps physical bit rate 4-slot Time Division Multiple Access (TDMA) airlink to achieve 6.25-kHz voice channel spectral efficiency and dynamic bandwidth allocation.

General Specifications

Dimensions (H x W x D):

- Radio Only (30W):
2.0 x 6.9 x 9.2 in.
(50 x 175 x 233 mm)
- RU and CU (Includes Knobs):
2.4 x 6.9 x 12.3 in.
(60 x 175 x 311 mm)
- CU (Remote):
2.4 x 7.0 x 4.0 in.
(60 x 175 x 100 mm)

System Voltage:

- 10.8 to 16.6* VDC Negative Ground
- *Not to exceed 14.3V above +50°C for motorcycle applications.

Ambient Temperature Range:

- 22 to +140°F
(-30 to +60°C)

Relative Humidity:

- 90% @ 122°F (50°C)

Altitude:

- 15,000 ft (4572 m)

Duty Cycle:

- TIA/EIA-603

Programming:

- Field PC Programmable

Microphone:

- Weatherproof microphone with hookswitch

Mounting:

- Front or Remote Mount available

Construction:

- Control Unit: High Impact Plastic
- Transceiver: Cast Metal

Speaker:

- External, 15W

Operation:

- 12 VDC Negative Ground

Signaling:

- OpenSky TDMA
- EDACS Digital Control
- P25 Trunking
- P25 Conventional
- Conventional
- Type 99
- Channel Guard (CTCSS)
- Digital Channel Guard
- G-STAR™ Emergency/ID Encode
- Two-Tone Individual Call Decode

Options and Accessories

- Remote mount kit, system and scan control units, Hand Held Controller, mobile mic, DTMF mic, noise canceling mic, desk mic, desktop control station, and motorcycle kit.

Transmitter

	700	800
Frequency Range (MHz):	764-776, 794-806	806-825, 851-869
Rated Power Output EDACS and P25 (W):	30	35
Rated Power Output OpenSky (W):	30	30
RF Output Impedance (ohm):	50	
Frequency Stability (ppm):	±1.5	
Modulation/Deviation (kHz):	±5 (±4 NPSPAC)	
FM Hum and Noise (dBc):	-45 @ 25 kHz	
Audio Response:	+1/-3.0 dB from 6 dB/octave pre-emphasis; 300-3000 Hz	
Audio Distortion (typical):	2.55% @ 1000 Hz	
Conducted Spurious and Harmonics (dBc):	-65	

Receiver

	700	800
Frequency Range (MHz):	764-776	851-870
RF Input Impedance (ohm):	50	
Channel Spacing (kHz):	12.5, 25	
Frequency Stability (ppm):	±1.5	
Sensitivity		
@ EIA 12 dB SINAD (EIA):	0.25 µV/-119 dBm	
@ 5% BER (EIA):	0.35 µV/-116 dBm	
Selectivity (dB)		
@ 12.5 kHz:	-60	
@ 25 kHz:	-80	
Intermodulation @ 25 kHz (dB):	-77	
Spurious Rejection (except 2 nd image) (dBc):	-90	
FM Hum and Noise (dB):	47	
Audio Output (W):	15	
Note: Numbers are per TIA-EIA-603 Methods.		

Environmental Specifications

Standard	Parameter	Methods & Procedures	
MIL-STD-810F*	Low Pressure	500.4, Proc. I, II	
	High Temperature	501.4, Proc. I, II	
	Low Temperature	502.4, Proc. I, II	
	Temperature Shock	503.4, Proc. I	
	Solar Radiation	505.4, Proc. II	
	Blowing Rain	506.4, Proc. I	
	Humidity	507.4	
	Salt Fog	509.4, Proc. I	
	Blowing Dust	510.4, Proc. I	
	Minimum Integrity Vibration	514.5, Proc. I, Category 24	
	Functional/Basic Shock	516.5, Proc. I	
	Transit Drop	516.5, Proc. IV	
	TIA/EIA-603	Vibration Stability	Par. 2.3.4 & 4.3.4
		Shock Stability	Par. 2.3.5 & 3.3.5
U.S. Forest Service	Vibration Stability	Par. 7.15	

*Also meets superseded MIL-STD-810C, -D, and -E.

Digital Operation

Protocol:	OpenSky	Project 25	TIA/EIA-603
Vocoding Method:	Advanced MultiBand Excitation (AMBE [®])	P25 Improved MultiBand Excitation (IMBE™)	Not Applicable
Data Rate:	19.2 kbps	9.6 kbps	Analog
Modulation:	4-Level GFSK	C4FM	FM
Data Communication Mode:	Full Duplex	Half Duplex	Half Duplex

Encryption

Encryption Technique:	Non-Linear Product/Block Transformation
Algorithm Types:	Data Encryption Standard (DES)/Advanced Encryption Standard (AES) (P25)

Regulatory Data

Frequency Range (MHz)	RF Output (W)	Frequency Stability (ppm)	FCC Type Acceptance Number	Applicable FCC Rules	Industry Canada Certification Number	Applicable Industry Canada Rules
764-806	30	1.5	OWDTR-0051-E	90	3636B-0051	RSS-119
806-870	35	1.5	OWDTR-0051-E	90	3636B-0051	RSS-119

