ASTRO® XTS® 2500 and XTS® 2500I

Digital Portable Radios

MODEL I:
- PTT button
- On/Off volume knob
- Programmable orange emergency button
- 16-position top mounted rotary knob
- 3-position concentric switch
- Programmable monitor button
- 2 programmable side buttons
- Transmit LED indicator
- No keypad
- No display
- Up to 48 channels

MODEL I.5:
Same as XTS Model I features plus the following:
- Large Bitmap Display
  – 2 lines of icons
  – 2 lines of text with 12 characters per line
  – Status icons including battery and received signal strength indicator
- 96 Channels

MODEL II:
Same as XTS Model I features plus the following:
- 512 channels
- Dial from pre-stored lists
- Programmable soft keys for easy access to radio menu
- Backlit Keypad
  – 3 soft keys
  – 3 navigation keys
- Large Bitmap Display
  – 2 lines of icons
  – 4 lines of text with 12 characters per line
  – Status icons including battery and received signal strength indicator

MODEL III:
Same as XTS Model I features plus the following:
- 512 channels
- Dial from pre-stored lists
- Programmable soft keys for easy access to radio menu
- Backlit Keypad
  – 3 soft keys
  – 3 navigation keys
  – 4 x 3 alphanumeric keypad
- Large Bitmap Display
  – 2 lines of icons
  – 4 lines of text with 12 characters per line
  – Status icons including battery and received signal strength indicator

When lives are at stake, a rapid, coordinated response is imperative. Motorola's XTS 2500 high performance digital radio lets you respond immediately and interoperate effectively helping turn Mission Critical into mission complete. Our IP enabled, digital Project 25 portable delivers sophisticated features and advanced technology in a light, compact design. Whether en route or on site, this robust radio assures crisp, continuous, high-quality communication and is an affordable way to migrate seamlessly to the Project 25 digital standard.

SPECIFICATION SHEET

ASTRO® XTS® 2500 AND XTS® 2500I
Digital Portable Radios

FEATURES AND BENEFITS

- Available in 700/800 MHz, VHF, UHF R1 and UHF R2 bands
- Trunking standards supported
  - APCO Project 16 (3600 control channel) and
  - APCO Project 25 (9600 control channel)
- System configurations
  - ASTRO® Analog and Digital Trunking with Mutual Aid and
  - ASTRO®25 Digital Trunking with Mutual Aid
- Narrow and wide bandwidth digital receiver (12.5 kHz, 20 kHz, 25 kHz)
- Embedded digital signaling (ASTRO & ASTRO 25)
- Enhanced Audio Features
  - High quality, error corrected digital voice
  - Noise Reduction Software
  - Audio Gain Control

- Convenience Features
  - Time / Date
  - Caller ID
- Utilizes Windows-Based Customer Programming Software (CPS)
  - Supports USB and RS-232 communications
  - Built in FLASHport support
- Meets Mil Specs 810 C, D, E and F
- Compatible with most MTS and XTS accessories
- Available with an Immersible Housing Option
- Available with Secure Hardware Encryption

TRANSMITTER – TYPICAL PERFORMANCE SPECIFICATIONS

	700/800 MHz	UHF R1	VHF	UHF R2
Frequency Range	700 MHz: 764-776, 794-806 800 MHz: 806-870	380-470 MHz	136-174 MHz	450-520 MHz
Channel Spacing	12.5 / 20 / 25 kHz	12.5/25 kHz	12.5/25 kHz	12.5/25 KHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Rated RF Output Power Adj*	764-806 MHz: 1 to 2.5 W 806-870 MHz: 1 to 3 W	1 to 5 W	1 to 5 W	1 to 5 W
Frequency Stability* (–30°C to +60°C; +25°C Ref.)	±0.00015%	±0.0002%	±0.00025%	±0.0002%
Modulation Limiting*:				
25 kHz channel	±5.0 kHz	±5.0 kHz	±5.0 kHz	±5.0 kHz
NPSPAC channel	±4.0 kHz	N/A	N/A	N/A
12.5 kHz channel	±2.5 kHz	±2.5 kHz	±2.5 kHz	±2.5 kHz
Emissions* (Conducted & Radiated)	–75 dBc	–70 dBc	–65 dBc	–70 dBc
Audio Response* (6 dB/Octave Pre-emphasis from 300 to 3000 Hz)	+1, –3 dB	+1, –3 dB	+1, –3 dB	+1, –3 dB
FM Hum & Noise Radio*				
25 kHz	–43 dB	–45 dB	–46 dB	–45 dB
12.5 kHz	–40 dB	–40 dB	–42 dB	–40 dB
Audio Distortion*	2.0%	2.0%	1%	2.0%

* Measured in the analog mode per TIA / EIA 603
**Measured in digital mode per TIA/EIA IS 102.CAAA
Specifications subject to change without notice.

SPECIFICATION SHEET

ASTRO® XTS® 2500 AND XTS® 2500I
Digital Portable Radios

RECEIVER – TYPICAL PERFORMANCE SPECIFICATIONS

	700/800 MHz	UHF R1	VHF	UHF R2
Frequency Range	700 MHz: 764-776	380-470 MHz	136-174 MHz	450-520 MHz
Note: Radio covers entire 700 MHz and 800 MHz frequency ranges.	800 MHz: 851-870			
Channel Spacing	12.5 / 20 / 25 kHz	12.5/25 kHz	12.5 / 25 kHz	12.5/25 KHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Audio Output Power at Rated*	500 mW	500 mW	500 mW	500 mW
Frequency Stability* (–30°C to +60°C; 25°C Ref.)	±0.00015%	±0.0002%	±0.00025%	±0.0002%
Analog Sensitivity*				
12 dB SINAD	.25 µV	.25 µV	.25 µV	.25 µV
Digital Sensitivity**				
1% BER	.40 µV	.35 µV	.25 µV	.35 µV
5% BER	.25 µV	.25 µV	.20 µV	.25 µV
Selectivity*				
25 kHz chnl	–72 dB	–73 dB	–80 dB	–73 dB
12.5 kHz chnl	–63 dB	–63 dB	–63 dB	–63 dB
Intermodulation*	–74 dB	–73 dB	–78 dB	–75 dB
Spurious Rejection*	–75 dB	–75 dB	–80 dB	–75 dB
FM Hum and Noise*				
25 kHz	–47 dB	–47 dB	–52 dB	–50 dB
12.5 kHz	–40 dB	–40 dB	–40 dB	–47 dB
Audio Distortion*	2.5%	2.0%	1%	2.0%

RADIO MODELS

	Display	Keypad	Channel Capacity	700/800 MHz Band (764-870 MHz)	UHF R1 (380-470 MHz)	VHF (136-174 MHz)	UHF R2 (450-520 MHz)
Model I	N/A	N/A	48	H46UCC9PW5_N	H46QDC9PW5_N	H46KDC9PW5_N	H46SDC9PW5_N
Model I.5	2 lines of icons 4 lines 12 characters per line LCD	N/A	96	H46UCD9PW5_N	H46QDD9PW5_N	H46KDD9PW5_N	H46SDD9PW5_N
Model II	2 lines of icons 4 lines 12 characters per line LCD	3x2	512	H46UCF9PW6_N	H46QDF9PW6_N	H46KDF9PW6_N	H46SDF9PW6_N
Model III	2 lines of icons 4 lines 12 characters per line LCD	3x6	512	H46UCH9PW7_N	H46QDH9PW7_N	H46KDH9PW7_N	H46SDH9PW7_N
FCC Designation				AZ489FT5804	UHF: AZ489FT4865	VHF: AZ489FT3807	AZ489FT4866
FCC Emissions Designators	11K0F3E, 16K0F3E, 8K10F1E, 8K10F1D, 20K0F1E						
Power Supply	One rechargeable nickel-cadmium, or nickel-metal hydride						
Dimensions without battery (HxWxL)	6.00″ x 2.30″ x 1.50″						
Weight without battery	11.0 oz						

BATTERIES FOR ASTRO DIGITAL XTS 2500

Battery Capacity / Type	Dimensions (HxWxD)	Weight	Battery Part Numbers	mAH	Duty Cycle
High Capacity NiCD	4.86″ x 2.37″ x .968″	8.85 oz	NTN9815	1525	5-5-90 / 8 hr.
High Capacity NiCD FM	4.86″ x 2.37″ x .968″	8.85 oz	NTN9816	1525	5-5-90 / 8 hr.
High Capacity NiMH	4.86″ x 2.37″ x .968″	9.63 oz	NTN9858	1800	5-5-90 / 10 hr.
High Capacity NiMH FM	4.86″ x 2.37″ x .968″	9.63 oz	NTN9857	1750	5-5-90 / 10 hr.
Immersible NiMH FM impres™	4.86″ x 2.37″ x .968″	10.16 oz	NNTN6263	1690	5-5-90 / 10 hr.

SPECIFICATION SHEET

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Digital Portable Radios

PORTABLE MILITARY STANDARDS 810 C, D, E & F

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F	
	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II
High temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Hot
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1
Temperature Shock	503.1	I*	503.2	I/A1C3	503.3	I/A1C3	503.4	I
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	I*
Salt Fog	509.1	I*	509.2	I*	509.3	I*	509.4	I*
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I
Vibration	514.2	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24
Shock	516.2	I, II	516.3	I, IV	516.4	I/IV	516.5	I, IV

* Military Standards specify a single procedure for this test.

ENCRYPTION

Supported Encryption Algorithms	ADP, AES, DES, DES-XL and DES-OFB, DVP-XL
Encryption Algorithm Capacity	1
Encryption Keys per Radio	48 common Key Reference (CKR) Encryption Keys 16 Physical Identifier (PID) Encryption Keys
Encryption Frame Re-sync Interval	P25 CAI 360 mSec
Encryption Keying	Key Loader
Synchronization	CFB – Cipher Feedback XL - Counter Addressing OFB - Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital and 12 k-bit Analog Conventional
Key Storage	Tamper protected volatile or non volatile memory
Key Erasure	Keyboard command and tamper detection
Standards	• FIPS 46-2 • FIPS 140-2 • FIPS 197

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	–30°C / +60°C
Storage Temperature	–40°C / +85°C
Humidity	Per MIL-STD
ESD	IEC 801-2KV
Water & Dust Intrusion	IP54, MIL-STD, IP67**

IMMERSIBLE OPTION SPECIFICATIONS

MIL-STD-810, C, D, E, F	
IP67 rating	

** For XTS2500I (immersible) models only.

MOTOROLA