

## Specification Sheet

### ASTRO XTS 5000™ Digital Portable Radio



#### **MODEL I:**

- ▶ Large PTT button
- ▶ Angled On/Off volume knob
- ▶ Orange emergency button
- ▶ Illuminated 16 position top mounted rotary knob
- ▶ 2 position concentric switch
- ▶ 3 position toggle switch
- ▶ 3 programmable side buttons
- ▶ Transmit LED indicator
- ▶ No keypad / No display
- ▶ Up to 48 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
  - ▶ Full Bitmap Display
    - 2 lines icons
    - 4 lines w/12 characters per line
    - Status icons including battery and power indicator

#### **MODEL III:**

- Same as XTS Model I features plus the following:
- ▶ 512 channels
  - ▶ Dial from pre-stored lists or freeform
  - ▶ Programmable soft keys for easy access to radio menu
  - ▶ Backlit Keypad
    - 3 soft keys
    - 3 navigation keys
    - 4 x 3 keypad
  - ▶ Full Bitmap Display
    - 2 lines icons
    - 4 lines w/12 characters per line
    - Status icons including battery and power indicator

- ▶ Available in the 700/800 MHz, VHF, UHF R1 and R2 bands
- ▶ Trunking standards supported: clear or digital encrypted APCO P16 and APCO P25
- ▶ Capable of SmartZone, SmartZone Omnilink, SMARTNET, and Conventional System Configurations and ASTRO®25 Trunked Operation
- ▶ Narrow and wide bandwidth digital receiver (12.5 kHz / 25 kHz)
- ▶ High speed and embedded digital signalling (ASTRO & ASTRO 25)
- ▶ Enhanced audio features
  - High quality, error corrected digital voice
  - Noise Reduction Software
  - Audio Gain Control
- ▶ Convenience Features
  - Time / Date
  - Digital Caller ID
- ▶ Ruggedized housing option available in traditional black or public safety yellow
- ▶ Enhanced encryption capability (optional)
- ▶ Utilizes Windows®-based Customer Programming Software (CPS)
  - Supports USB and RS-232 communications
  - Built in FLASHport™ support
- ▶ Meets Applicable Mil Specs 810C, D, E and F
- ▶ XTS5000 VHF is now approved for FCC Rule Part 80, Maritime Services
- ▶ Compatible with most MTS and XTS accessories
- ▶ Interchangeable display labels

## TRANSMITTER

Typical Performance Specifications				
	700/800	VHF	UHF R1	UHF R2
<b>Frequency Range/Bandsplits</b>	<b>700 MHz:</b> 764-776, 773-797, 803-806 <b>800 MHz:</b> 806-824, 851-870	136-174 MHz	380-470 MHz	450-520 MHz
<b>Channel Spacing</b>	12.5 / 25 kHz	12.5 / 25 kHz	12.5 / 25 kHz	12.5 / 25 kHz
<b>Maximum Frequency Separation</b>	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
<b>Rated RF Output Power Adj*</b>	764-806 MHz: 1 to 2.5 W 806-870 MHz: 1 to 3 W	1 to 6 W	1 to 5 W	1 to 5 W
<b>Frequency Stability*</b> (-30°C to +60°C; +25°C Ref.)	±0.00015%	±0.00020%	±0.00020%	±0.00020%
<b>Modulation Limiting*</b>				
25 kHz chnl	±5.0 kHz	±5.0 kHz	±5.0 kHz	±5.0 kHz
NPSPAC chnl	±4.0 kHz	N/A	N/A	N/A
12.5 kHz chnl	±2.5 kHz	±2.5 kHz	±2.5 kHz	±2.5 kHz
<b>Emissions*</b> (Conducted & Radiated)	-75 dBc	-75 dBc	-70 dBc	-75 dBc
<b>Audio Response*</b> (6 dB/Octave Pre-emphasis from 300 to 3000 Hz)	+1, -3 dB	+1, -3 dB	+1, -3 dB	+1, -3 dB
<b>FM Hum &amp; Noise</b>				
25 kHz	-45 dB	-48 dB	-45 dB	-45 dB
12.5 kHz	-40 dB	-42 dB	-40 dB	-40 dB
<b>Audio Distortion*</b>	1.50%	1%	1.50%	1.50%

\* Measured in the analog mode per TIA / EIA 603 under nominal conditions

\*\* Measured in digital mode per TIA / EIA IS 102.CAAA under nominal conditions

## RECEIVER

Typical Performance Specifications				
	700/800	VHF	UHF R1	UHF R2
<b>Frequency Range/Bandsplits</b>	<b>700 MHz:</b> 764-767, 773-776 <b>800 MHz:</b> 806-824, 851-870	136-174 MHz	380-470 MHz	450-520 MHz
<b>Channel Spacing</b>	12.5 / 25 kHz	12.5 / 25 kHz	12.5 / 25 kHz	12.5 / 25 kHz
<b>Maximum Frequency Separation</b>	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
<b>Audio Output Power at Rated*</b>	500 mW	500 mW	500 mW	500 mW
<b>Frequency Stability*</b> (-30°C to +60°C; 25°C Ref.)	±0.00015%	±0.00020%	±0.00020%	±0.00020%
<b>Analog Sensitivity*</b>				
12 dB SINAD	.25	.20	.25	.20
<b>Digital Sensitivity</b>				
1% BER	.40	.25	.40	.25
5% BER	.25	.20	.25	.20
<b>Selectivity*</b>				
25 kHz chnl	-72 dB	-80 dB	-78 dB	-79 dB
12.5 kHz chnl	-63 dB	-63 dB	-60 dB	-65 dB
<b>Intermodulation</b>	-75 dB	-78 dB	-75 dB	-77 dB
<b>Spurious Rejection</b>	-75 dB	-80 dB	-80 dB	-85 dB
<b>FM Hum and Noise</b>				
25 kHz	-48 dB	-56 dB	-64 dB	-53 dB
12.5 kHz	-40 dB	-50 dB	-45 dB	-45 dB
<b>Audio Distortion*</b>	1.5%	1%	1%	1%

## RADIO MODELS

	Display	Keypad	Channel Capacity	FLASHport Memory	700/800 MHz 764-870 MHz	VHF 136-174 MHz	UHF R1 BAND (380-470 MHz)	UHF R1 BAND (450-520 MHz)
<b>Model I</b>	None	None	16/48	8MB	H18UCC9PW5_N	H18KEC9PW5_N	H18QDC9PW5_N	H18SDC9PW5_N
<b>Model II</b>	2 lines of icons 4 lines of text 12 characters per line LCD	3x2	512	8MB	H18UCF9PW6_N	H18KEF9PW6_N	H18QDF9PW6_N	H18SDF9PW6_N
<b>Model III</b>	2 lines of icons 4 lines of text 12 characters per line LCD	3x6	512	8MB	H18UCH9PW7_N	H18KEH9PW7_N	H18QDH9PW7_N	H18SDH9PW7_N
<b>FCC Designation</b>					AZ489FT5806	AZ489FT3804	AZ489FT4855	AZ489FT4864
<b>FCC Emissions Designators</b>	8K10F1E, 20K0F1E, 16K0F3E, 8K10F1D, 11K0F3E							
<b>Power Supply</b>	700/800 MHz: One rechargeable nickel-cadium, or one optional nickel-metal hydride or lithium ion battery VHF/UHF R1&2: One rechargeable nickel-metal hydride, or one optional nickel cadium or lithium ion battery							
<b>Dimensions without battery</b>	6.58" x 2.44" x 1.83"							
<b>Weight without battery</b>	12.5 oz							

## BATTERIES FOR ASTRO DIGITAL XTS 5000

Battery Capacity / Type	Dimensions (HxWxD)	Weight	Battery Part Numbers	Smart Battery	Battery Capacity
High Capacity NiCD	6.15"x2.3"x.92"	11.10 oz	HNN9031	Y	1525 mAH
High Capacity NiCD FM	6.15"x2.3"x.92"	11.10 oz	HNN9032	Y	1525 mAH
High Capacity NiCD Rugged FM	6.15"x2.3"x.92"	11.10 oz	NTN8297	N	1525 mAH
High Capacity NiMH	6.15"x2.3"x.92"	9.53 oz	NNTN4435	Y	1800 mAH
High Capacity NiMH FM	6.15"x2.3"x.92"	9.53 oz	NNTN4436	Y	1750 mAH
High Capacity NiMH Rugged FM	6.15"x2.3"x.92"	9.53 oz	NNTN4437	Y	1750 mAH
Ultra High Capacity NiMH	6.15"x2.3"x.92"	13.18 oz	RNN4006	N	3000 mAH
Ultra High Capacity NiMH FM	6.15"x2.3"x.92"	13.18 oz	RNN4007	N	3000 mAH
High Capacity Lithium Ion	6.15"x2.3"x.60"	6.98 oz	NTN8810	N	1650 mAH
High Capacity Lithium Ion	6.15"x2.3"x.60"	6.98 oz	NTN9862	Y	2000 mAH

## 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.
<b>Low Pressure</b>	500.1	I	500.2	II	500.3	II	500.4	II
<b>High temperature</b>	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Hot
<b>Low Temperature</b>	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1
<b>Temperature Shock</b>	503.1	-	503.2	I/A1C3	503.3	I/A1C3	503.4	I
<b>Solar Radiation</b>	505.1	II	505.2	I	505.3	I	505.4	I
<b>Rain</b>	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III
<b>Humidity</b>	507.1	II	507.2	II	507.3	II	507.4	-
<b>Salt Fog</b>	509.1	-	509.2	-	509.3	-	509.4	-
<b>Blowing Dust</b>	510.1	I	510.2	I	510.3	I	510.4	I
<b>Immersion*</b>	512.1	I	512.2	I	512.3	I	512.4	I
<b>Vibration</b>	514.2	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24
<b>Shock</b>	516.2	I, II	516.3	I, IV	516.4	I/IV	516.5	I, IV

## ENCRYPTION

<b>Supported Encryption Algorithms</b>	ADP, AES, DES-XL and DES-OFB, DVP-XL, DVI-XL
<b>Encryption Algorithm Capacity</b>	8
<b>Encryption Keys per Radio</b>	48 common Key Reference (CKR) Encryption Keys 16 Physical Identifier (PID) Encryption Keys
<b>Encryption Frame Re-sync Interval</b>	P25 CAI 360 msec
<b>Encryption Keying</b>	Key Loader
<b>Synchronization</b>	CFB – Cipher Feedback XL - Counter Addressing OFB - Output Feedback
<b>Vector Generator</b>	National Institute of Standards and Technology (NIST) approved random number generator
<b>Encryption Type</b>	Digital and 12 k-bit Analog, Coventional
<b>Key Storage</b>	Tamper protected volatile or non volatile memory
<b>Key Erasure</b>	Keyboard command and tamper detection
<b>Standards</b>	FIPS 46-2 FIPS 81 FIPS 140-1 Level 1

\* For rugged models only.

## ENVIRONMENTAL SPECIFICATIONS

<b>Operating Temperature</b>	-30°C / +60°C
<b>Storage Temperature</b>	-40°C / +85°C
<b>Humidity</b>	Per MIL-STD
<b>ESD</b>	IEC 801-2KV
<b>Water &amp; Dust Intrusion</b>	IP54, IPX7*, MIL-STD

## RUGGED OPTION SPECIFICATIONS

<b>Leakage (immersion)</b>	MIL-STD-810 C, D, E, F Method 512.X Procedure I: IPX7*
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