



ASTRO-TAC™/QUANTAR™

Receivers



**ASTRO-TAC Receiver –
2 Rack Units, Battery Revert
Capability**



**QUANTAR Receiver –
5 Rack Units, Battery Revert/
Charging Capability, Wildcard
Capability**

- Conventional: Local and Wide Area
- Trunking: SMARTNET and SmartZone
- VHF, UHF, 800 MHz
- 900 MHz (Analog Only)

PROVIDES UNMATCHED FLEXIBILITY IN A COMPACT DESIGN

- Analog or ASTRO operation in conventional systems
- Analog or ASTRO operation in SMARTNET or SmartZone trunking systems
- Software intensive design allows for system migration and feature upgrades via
- Standard EIA 19" rack mount configuration
- Compact dimensions utilize expensive site space efficiently
- 12.5 or 25 kHz programmable channel spacing
- Project 25 compliant in ASTRO CAI digital systems
- The software inherent in the product design allows features and system configurations to be specified through your choice of the appropriate software options

SHORTENS INSTALLATION AND MAINTENANCE TIME

- Functionally separate modules: Field Replaceable Units (FRU)
- Software intensive design speeds upgrades
- Programming and diagnostic testing performed through a personal computer
- Lightweight

CONTRIBUTES TO MAXIMIZING SYSTEM UP-TIME

- Reliable solid state performance
- Continuous duty cycle operation
- Self-testing eases regular maintenance
- Switching power supply functions over a wide range of voltages and frequencies

SPECIFICATION SHEET

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VHF RECEIVER

Frequency	132-154 MHz, 150-174 MHz
Adjacent Channel Rejection (Selectivity)	
30 kHz	90 dB
25 kHz	85 dB
15/12.5 kHz	80 dB
Receiver Bandwidth	4.0 MHz
Sensitivity 12 dB SINAD	0.25 μ V
Static Bit Error Rate (BER) 5%	0.25 μ V
Bit Error Rate Floor	0.01 %
Signal Displacement Bandwidth	
12.5/25 kHz	\geq 1 kHz/2kHz
15/30 kHz	\geq 1 kHz/2kHz
Frequency Stability (for Temperature and Voltage Variation)	1 PPM /External Ref. (Optional)*
Intermodulation Rejection	85 dB
Spurious and Image Response Rejection	100 dB
Audio Response (Analog)	+1, -3 dB from 6 dB per octave de-emphasis from 300 Hz to 3000 Hz reference to 1000 Hz
Audio Distortion (Analog) 12.5/25 kHz	\leq 5%/3%, 1000 Hz @ 60% RSD
Line Output	-20 dBm to 0 dBm @ 60% RSD, 1 kHz
FM Hum and Noise (750 μ s de-emphasis)	1000 Hz tone @ 60% RSD
30/25 kHz	50 dB nominal
15/12.5 kHz	45 dB nominal
RF Input Impedance	50 Ohms

UHF RECEIVER

Frequency	403-433 MHz, 438-470 MHz, 470-494 MHz, 494-512 MHz
IF Frequencies (1st, 2nd) (Frequency)	73.35 MHz/450 kHz
Adjacent Channel Rejection (12.5/25 kHz) (Selectivity)	75 dB/85 dB
Receiver Bandwidth	4.0 MHz
Sensitivity 12 dB SINAD	0.35 μ V
Static Bit Error Rate (BER) 5%	0.35 μ V
Bit Error Rate Floor	0.01 %
Signal Displacement Bandwidth (12.5/25 kHz)	\geq 1 kHz/2 kHz
Frequency Stability (for Temperature and Voltage Variation)	1 PPM/External Ref. (Optional)*
Intermodulation Rejection	85 dB
Spurious and Image Response Rejection	100 dB
Audio Response (Analog)	+1, -3 dB from 6 dB per octave de-emphasis from 300 Hz to 3000 Hz reference to 1000 Hz
Audio Distortion (Analog) (12.5/25 kHz)	\leq 5%/3%, 1000 Hz @ 60% RSD
Line Output	-20 dBm to 0 dBm @ 60% RSD, 1 kHz
FM Hum and Noise	1000 Hz tone @ 60% RSD
25 kHz	50 dB nominal
12.5 kHz	45 dB nominal
RF Input Impedance	50 Ohms

* Analog Specifications per TIA/EIA 603. Digital Specifications per TIA/TSB 102.CAAB.

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800 MHZ RECEIVER

Frequency	806-825 MHz
IF Frequencies (1st, 2nd) (Frequency)	73.35 MHz/450 kHz
Adjacent Channel Rejection (12.5/25 kHz) (Selectivity)	70 dB/80 dB
Receiver Bandwidth	19 MHz
Sensitivity 12 dB SINAD	0.30 μ V
Static Bit Error Rate (BER) 5%	0.30 μ V
Bit Error Rate Floor	0.01 %
Signal Displacement Bandwidth (12.5/25 kHz)	\geq 1 kHz/2 kHz
Frequency Stability (for Temperature and Voltage Variation)	
ASTRO-TAC Receiver	1 PPM/External Reference ¹
Quantar Receiver	1 PPM/External Reference ¹ /0.1 PPM Internal Option
Intermodulation Rejection	85 dB
Spurious and Image Response Rejection	100 dB
Audio Response (Analog)	+1, -3 dB from 6 dB per octave de-emphasis from 300 Hz to 3000 Hz reference to 1000 Hz
Audio Distortion (Analog) (12.5/25 kHz)	\leq 5%/3%, 1000 Hz @ 60% RSD
Line Output	-20 dBm to 0 dBm @ 60% RSD, 1 kHz
FM Hum and Noise	1000 Hz tone @ 60% RSD
25 kHz	50 dB nominal
12.5 kHz	45 dB nominal
RF Input Impedance	50 Ohms

900 MHZ RECEIVER

Frequency	896-902 MHz
IF Frequencies (1st, 2nd) (Frequency)	73.35 MHz/450 kHz
Adjacent Channel Rejection (12.5/25 kHz) (Selectivity)	70 dB
Receiver Bandwidth	6 MHz
Sensitivity 12 dB SINAD	0.30 μ V
Static Bit Error Rate (BER) 5%	0.30 μ V
Bit Error Rate Floor	0.01 %
Signal Displacement Bandwidth (12.5/25 kHz)	\geq 1 kHz
Frequency Stability (for Temperature and Voltage Variation)	
ASTRO-TAC Receiver	External Reference*
QUANTAR Receiver	External Reference*/0.1 PPM Internal Option
Intermodulation Rejection	85 dB
Spurious and Image Response Rejection	100 dB
Audio Response (Analog)	+1, -3 dB from 6 dB per octave de-emphasis from 300 Hz to 3000 Hz reference to 1000 Hz
Audio Distortion (Analog)	\leq 3%, 1000 Hz @ 60% RSD
Line Output	-20 dBm to 0 dBm @ 60% RSD, 1 kHz
FM Hum and Noise	1000 Hz tone @ 60% RSD; 45 dB nominal
RF Input Impedance	50 Ohms

¹ Analog Specifications per TIA/EIA 603. Digital Specifications per TIA/TSB 102.CAAB.

² Specifications per TIA/EIA 603. Requires External Reference (not included)

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GENERAL SPECIFICATIONS

		Model Number and Factory ID: T5367 – QUANTAR Receiver T5589 – ASTRO-TAC Receiver
Application	System Family Option	Applies To All Models
Conventional Analog	X597	Frequency Band Options
Conventional ASTRO VSELP	X599	X319 – VHF
Conventional ASTRO CAI	X806	X320 – UHF
6809 Trunking	X997	X600 – 800 MHz
SmartZone 6809 ASTRO VSELP Trunking	X989	X663 – 900 MHz
SmartZone 6809 ASTRO CAI Trunking	X897	
No. of Frequencies	1 Standard on Trunked Receivers, 16 Standard on Conventional Receivers	Analog Modulation FM
Frequency Generation	Synthesized	Digital Modulation C4FM
Analog Channel Spacing	25 kHz/12.5 kHz	Temperature Range –30°C to +60°C
Digital Channel Spacing	12.5 kHz	Antenna Connectors Receive, Type “N” Female
Mode of Operation		
Input Voltage AC	90-264 VAC, 47-63 Hz	
Optional DC/DC Convertor (QUANTAR Receiver Only)	Negative or Positive Ground Source: 48/60 VDC	

INPUT POWER (VARIES BY RECEIVER AND OPTIONS)

	Dimensions (H x W x D)	Weight	Operation State	Nominal Battery Revert		
				AC Line	12 VDC**	24 VDC**
Quantar Receiver – VHF	8.75 x 19 x 17 in.† (221 x 483 x 432 mm)	55 lbs.† (25 kg)	Standby	60	45 (Option X30)	N/A
Quantar Receiver UHF, 800 MHz, 900 MHz	8.75 x 19 x 17 in.† (221 x 483 x 432 mm)	55 lbs.† (25 kg)	Standby	50	40 (Option X30)	N/A
ASTRO-TAC Receiver	3.5 x 17.5 x 14.5 in (88.9 x 445 x 368 mm)	24 lbs. (11 kg)	Standby	30	25	N/A
Alternative Cabinet	12 x 22 x 20 in. (305 x 559 x 508 mm)	30 lbs.* (14 kg)				
Enclosure Specifications	30 x 22 x 20 in. (762 x 559 x 508 mm)	66 lbs.* (30 kg)				
	46 x 22 x 20 in. 1168 x 559 x 508 mm)	75 lbs.* (34 kg)				
	60 x 22 x 20 in. (1524 x 559 x 508 mm)	102 lbs.* (46 kg)				

† Applies to receiver with option X87 Ornit Cabinet

* Enclosure Only

** Output power may be reduced up to 3 dB in battery revert mode to conserve battery life. Full rated RF power is only available for terminal voltages of 13.5 to 15V (12V DC: X30 option) and 27 to 30V (24V DC: X30 option) at the DC input.

FCC TYPE ACCEPTANCE

FCC Designation:	Frequency Range in MHz	Type	Power Output in Watts	Type Acceptance Number
VHF Receiver	132-174	Receiver	N/A	ABZ89FR3776
UHF Receiver	403-520	Receiver	N/A	ABZ89FR4796
800 MHz Receiver	806-825	Receiver	N/A	ABZ89FR4757
900 MHz Receiver	896-915	Receiver	N/A	ABZ89FR5768



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