

QUANTAR™

Station/Repeater

ASTRO™
DIGITAL SOLUTIONS

QUANTAR™
Station/Repeater
available in:

- ▶ **Conventional:**
Local and Wide Area
- ▶ **Trunking:**
SmartNet and SmartZone
- ▶ **VHF**
132-174 MHz



QUANTAR 125-25 Watt Station/Repeater

FEATURES

Provides Unmatched Flexibility in a Compact Design

- ▶ The software inherent in the product design allows features and system configurations to be specified through your choice of the appropriate software options
- ▶ Software intensive design allows for system migration and feature upgrades via **FLASHport™**
- ▶ Conventional Project 25 compliant (optional)
- ▶ Trunked Voice CAI compliant (optional)
- ▶ Analog, SECURENET or ASTRO operation in conventional systems
- ▶ Analog or ASTRO operation in SmartNet or SmartZone trunking systems
- ▶ IntelliRepeater™ operation in trunked QUANTAR eliminates need for a central site controller
- ▶ 125-25 Watt or 25-6 Watt variable power models
- ▶ Standard EIA 19" rack mount configuration
- ▶ Compact dimensions utilize expensive site space efficiently
- ▶ 12.5, 25 or 30 kHz programmable channel spacing

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
- ▶ Battery reverting available in event of a site power failure
- ▶ Self-testing eases regular maintenance
- ▶ Switching power supply functions over a wide range of voltages and frequencies



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GENERAL SPECIFICATIONS

		Model Number: C99ED/001C Factory ID: T5365	
Application	System Family Option	Power/Band Option	RF Power Output
Conventional Analog Conventional ASTRO Conventional ASTRO CAI 6809 Trunking 6809 ASTRO Trunking 6809 ASTRO CAI Trunking SmartZone 6809 ASTRO Trunking SmartZone 6809 ASTRO CAI Trunking SmartZone IntelliRepeater Secure Transparent SmartZone IntelliRepeater SmartZone ASTRO IntelliRepeater SmartZone ASTRO CAI IntelliRepeater	X597 X599 X806 X997 X992 X900 X989 X897 X999 X998 X990 X898	X330 X530	25-6 Watts 125-25 Watts
No. of Frequencies:	1 Standard on Trunked Stations, 16 Standard on Conventional Stations	Analog Modulation:	FM
Frequency Generation:	Synthesized	Digital Modulation:	C4FM
Analog Channel Spacing:	30 kHz/25 kHz/12.5 kHz	Temperature Range:	-30°C to +60°C
Digital Channel Spacing:	12.5 kHz	Antenna Connectors:	Transmit and Receive, Type "N" Female
Mode of Operation:	Simplex/Semi-duplex/Duplex	Occupied Bandwidth:	99% Power
Input Voltage AC:	90-264 VAC, 47-63 Hz	Operational Battery Revert:	12 VDC (25-6 Watt stations) 24 VDC (125-25 Watt stations)
Optional DC/DC Converter:	Negative or Positive Ground Source: 12 VDC (25-6 Watt stations) 24/48/60 VDC		Output power may be reduced up to 3 dB in battery revert mode to conserve battery life

INPUT POWER IN WATTS (VARIES WITH OPTIONS)

Power Output	Dimensions (H x W x D)	Weight	Operation State	AC Line	Battery Revert		DC/DC Converter (Positive or Negative Ground)		
					12V DC Nominal** (X30 Option)	24V DC Nominal** (X30 Option)	24V DC (X112 Option)	48V DC (X113 Option)	60V DC (X113 Option)
25 W	8.75 x 19 x 17 in.† (221 x 483 x 432 mm)	55 lbs.† (25 kg)	Standby Transmit	60 160	46 95	N/A N/A	N/A N/A	N/A N/A	N/A N/A
125 W	8.75 x 19 x 17 in.† (221 x 483 x 432 mm)	55 lbs.† (25 kg)	Standby Transmit	70 500	N/A N/A	55 385	75 505	65 445	65 445
Alternative Cabinet Enclosure Specifications	12 x 22 x 20 in. (305 x 559 x 508 mm)	30 lbs.* (14 kg)							
	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 station with option X87 Omit Cabinet without triple circulator option *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 station DC input connector.

TRANSMITTER

Frequency:	132-154 MHz, 150-174 MHz
Electronic Bandwidth: (Transmit Bandwidth)	Full Sub-band (reduced with the addition of a duplexer option)
Output Impedance:	50 Ohms
Frequency Stability: (for Temperature and Voltage Variation)	1 PPM/External Ref. (Optional)
Intermodulation Attenuation:	50 dB
Maximum Deviation Clear 30/25 kHz:	±5 kHz
SECURENET Coded:	±4 kHz
Clear 12.5 kHz:	±2.5 kHz
ASTRO Conventional 12.5 kHz:	±3.6 kHz
Audio Sensitivity:	-35 dBm to 0 dBm variable
Spurious and Harmonic Emissions Attenuation:	90 dB
Symbol Rate Accuracy:	10 PPM
FM Hum and Noise: 30/25 kHz:	300 to 3000 Hz bandwidth, 60% RSD, 750 μs de-emphasis
12.5 kHz:	50 dB nominal
	45 dB nominal
Audio Response (Analog):	+1, -3 dB from 6 dB per octave preemphasis; 300-3000 Hz referenced to 1000 Hz at line input
Audio Distortion (Analog):	≤ 2% 1000 Hz @ 60% RSD
Emission Designators:	25 kHz: 16K0F3E, 16K0F1D, 20K0F1E, 12.5 kHz: 11K0F3E, 8K10F1E, 10K0F1D

FCC TYPE ACCEPTANCE

FCC Designation:	Frequency Range in MHz	Type	Power Output in Watts	Type Acceptance Number
	132-174	Transmitter	125-25	ABZ89FC3773
	132-174	Transmitter	25-6	ABZ89FC3774
	132-174	Receiver	N/A	ABZ89FR3776

Specifications subject to change without notice.

RECEIVER

Frequency:	132-154 MHz; 150-174 MHz
IF Frequencies (1st, 2nd): (Frequency)	21.45 MHz/450 kHz
Adjacent Channel Rejection: (12.5/25/30 kHz) (Selectivity)	Analog 80 dB/85 dB/90 dB Digital (12.5 kHz) 60 dB
Preselector Bandwidth: (Receiver Bandwidth)	4.0 MHz
Sensitivity 12 dB SINAD:	0.25 μV
Sensitivity Static Bit Error Rate (BER) 5%:	0.25 μV
Bit Error Rate Floor:	0.01%
Signal Displacement Bandwidth: (12.5/25/30 kHz)	≥ 1 kHz/2 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) (12.5/25/30 kHz)	5%/3%, ≤ 1000 Hz @ 60% RSD
Line Output:	-20 dBm to 0 dBm @ 60% RSD, 1 kHz
FM Hum and Noise: 30/25 kHz:	1000 Hz tone @ 60% RSD
12.5 kHz:	50 dB nominal
	45 dB nominal
RF Input Impedance:	50 Ohms

Note: Digital Specifications per TIA TSB-102 CAAB. Analog Specifications per TIA/EIA 603



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