

# QUANTAR™

## Station/Repeater



QUANTAR™  
Station/Repeater  
available in:

- ▶ **Conventional:**  
Local and Wide Area
- ▶ **Trunking:**  
SmartNet and SmartZone
- ▶ **UHF**



QUANTAR 110-25 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 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, SECURENET or ASTRO operation in SmartNet or SmartZone trunking systems
- ▶ IntelliRepeater™ operation in trunked QUANTAR eliminates need for a central site controller
- ▶ 110-25 Watt or 25-6 Watt variable power models
- ▶ Standard EIA 19" rack mount configuration
- ▶ Compact dimensions utilize expensive site space efficiently
- ▶ 12.5 or 25 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



# QUANTAR Station/Repeater

# SPECIFICATIONS

## GENERAL SPECIFICATIONS

Application		System Family Option	Model Number: C99ED/001C Factory ID: T5365	
Conventional Analog		X597	<b>Power/Band Option</b>	<b>RF Power Output</b>
Secure Transparent		X598	X240 (403-433 MHz)	25-6 Watts
Conventional ASTRO		X599	X240 (438-470 MHz)	25-6 Watts
Conventional ASTRO CAI		X806	X640 (403-433 MHz)	110-25 Watts
6809 Trunking		X997	X640 (438-470 MHz)	110-25 Watts
6809 Secure Transparent Trunking		X996	X640 (470-494 MHz)	110-25 Watts
6809 ASTRO Trunking		X992	X640 (494-520 MHz)	100-25 Watts
6809 ASTRO CAI Trunking		X900		
SmartZone 6809 ASTRO Trunking		X989		
SmartZone 6809 ASTRO CAI Trunking		X897		
SmartZone IntelliRepeater		X999		
Secure Transparent SmartZone IntelliRepeater		X998		
SmartZone ASTRO IntelliRepeater		X990		
SmartZone ASTRO CAI IntelliRepeater		X898		
<b>No. of Frequencies:</b>	1 Standard on Trunked Stations, 16 Standard on Conventional Stations	<b>Analog Modulation:</b>	FM	
<b>Frequency Generation:</b>	Synthesized	<b>Digital Modulation:</b>	C4FM	
<b>Analog Channel Spacing:</b>	25 kHz/12.5 kHz	<b>Temperature Range:</b>	-30°C to +60°C	
<b>Digital Channel Spacing:</b>	12.5 kHz	<b>Antenna Connectors:</b>	Transmit and Receive, Type "N" Female	
<b>Mode of Operation:</b>	Simplex/Semi-duplex/Duplex	<b>Occupied Bandwidth:</b>	99% Power	
<b>Input Voltage AC:</b>	90-264V AC, 47-63 Hz	<b>Operational Battery Revert:</b>	12 VDC (25-6 Watt stations) 24V DC (110-25 Watt stations)	
<b>Optional DC/DC Converter:</b>	Negative or Positive Ground Source: 12V DC (25-6 Watt stations) 24/48/60V DC		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 (Pos. or Neg. Gnd.)			
					12V DC Nominal*** (X30 Option)	24V DC Nominal*** (X30 Option)	12V DC (X121 Option)	24V DC (X112/X121**** 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	50 150	40 125	N/A N/A	55 165	55**** 165****	50 150	50 150
110 W*	8.75 x 19 x 17 in.† (221 x 483 x 432 mm)	55 lbs.† (25 kg)	Standby Transmit	55 515	N/A N/A	45 435	N/A N/A	58 570	50 510	50 510
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

\* 100 watts at UHF range 4 (494-520 MHz)  
\*\* Enclosure Only

\*\*\* Output power may be reduced up to 3dB in the battery revert mode to conserve battery life. Full rated RF power is only available or 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.

\*\*\*\* Transmit and standby input power in watts applies to 25W output power stations only.

## TRANSMITTER

<b>Frequency:</b>	403-433 MHz	438-470 MHz	470-494 MHz	494-520 MHz
<b>Electronic Bandwidth: (Transmit Bandwidth)</b>	Full Sub-band (reduced with the addition of a duplexer option)			
<b>Output Impedance:</b>	50 Ohms			
<b>Frequency Stability: (for Temperature and Voltage Variation)</b>	1 PPM/External Ref. (Optional)			
<b>Intermodulation Attenuation:</b>	50 dB			
<b>Maximum Deviation:</b>	±5 kHz			
<b>Clear 25 kHz:</b>	±4 kHz			
<b>SECURENET Coded:</b>	±2.5 kHz			
<b>Clear 12.5 kHz:</b>	±3.6 kHz			
<b>ASTRO Conventional 12.5 kHz:</b>	±3.6 kHz			
<b>Audio Sensitivity:</b>	-35 dBm to 0 dBm variable			
<b>Spurious and Harmonic Emissions Attenuation:</b>	90 dB			
<b>Symbol Rate Accuracy:</b>	10 PPM			
<b>FM Hum and Noise:</b>	300 to 3000 Hz bandwidth, 60% RSD, 750 μs de-emphasis			
<b>25 kHz:</b>	50 dB nominal			
<b>12.5 kHz:</b>	45 dB nominal			
<b>Audio Response (Analog):</b>	+1, -3 dB from 6 dB per octave preemphasis; 300-3000 Hz referenced to 1000 Hz at line input			
<b>Audio Distortion (Analog):</b>	≤ 2% 1000 Hz @ 60% RSD			
<b>Emission Designators:</b>	16K0F3E, 16K0F1D, 20K0F1E, 20K0F1D, 11K0F3E, 8K10F1E, 10K0F1D			

## FCC TYPE ACCEPTANCE

FCC Designation:	Frequency Range in MHz	Type	Power Output in Watts	Type Acceptance Number
	(403-433) (438-470)	Transmitter	25-6	ABZ89FC4797
	(403-433) (438-470) (470-494)	Transmitter	110-25	ABZ89FC4798
	494-520	Transmitter	100-25	ABZ89FC4798
	403-520	Receiver	N/A	ABZ89FR4796

Specifications subject to change without notice.

## RECEIVER

<b>Frequency:</b>	403-433 MHz, 438-470 MHz, 470-494 MHz, 494-520 MHz
<b>IF Frequencies (1st, 2nd) (Frequency):</b>	73.35 MHz/450 kHz
<b>Adjacent Channel Rejection: (12.5/25 kHz) (Selectivity):</b>	Analog 75 dB/85 dB Digital (12.5 kHz) 60 dB
<b>Preselector Bandwidth: (Receiver Bandwidth):</b>	4.0 MHz
<b>Sensitivity 12 dB SINAD:</b>	0.35 μV
<b>Sensitivity Static Bit Error Rate (BER) 5%:</b>	0.35 μV
<b>Bit Error Rate Floor:</b>	0.01%
<b>Signal Displacement Bandwidth: (Off Channel Acceptance): (12.5/25 kHz)</b>	≥ 1 kHz/2 kHz
<b>Frequency Stability: (for Temperature and Voltage Variation)</b>	1 PPM/External Ref. (Optional)
<b>Intermodulation Rejection:</b>	85 dB
<b>Spurious and Image Response Rejection:</b>	100 dB
<b>Audio Response: (Analog)</b>	+1, -3 dB from 6 dB per octave de-emphasis from 300 Hz to 3000 Hz reference to 1000 Hz
<b>Audio Distortion: (Analog) (12.5/25 kHz)</b>	≤ 5%/3%, 1000 Hz @ 60% RSD
<b>Line Output:</b>	-20 dBm to 0 dBm @ 60% RSD, 1 kHz
<b>FM Hum and Noise:</b>	1000 Hz tone @ 60% RSD
<b>25 kHz:</b>	50 dB nominal
<b>12.5 kHz:</b>	45 dB nominal
<b>RF Input Impedance:</b>	50 Ohms TIA/EIA 603

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



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