Specification Sheet

QUANTAR™ STATION/REPEATER

MOTOROLA
intelligence everywhere™

QUANTAR 100-20 Watt Station/Repeater

QUANTAR™ Station/Repeater available in:

- ***Conventional: Local and Wide Area***
- ***Trunking: SmartNet and SmartZone***
- ***800 MHz***

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™.
- ASTRO®25 Conventional compliant (optional)
- ASTRO®25 Trunking compliant (optional)
- Analog and ASTRO operation in conventional systems
- Analog and ASTRO operation in SmartNet or SmartZone trunking systems
- 100-20 Watt or 20-6 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

GENERAL SPECIFICATIONS

Application	System Family Option
Conventional Analog	X597
Conventional ASTRO	X599
Conventional ASTRO CAI	X806
6809 Trunking	X997
6809 ASTRO Trunking	X992
6809 ASTRO CAI Trunking	X900
SmartZone 6809 ASTRO Trunking	X989
SmartZone 6809 ASTRO CAI Trunking	X897
SmartZone IntelliRepeater	X999
Secure Transparent SmartZone	X998
SmartZone ASTRO IntelliRepeater	X990
SmartZone ASTRO CAI IntelliRepeater	X898
ASTRO 25 Site Repeater	X591
ASTRO 25 Packet IR QTAR	CA00117

Model Number: C99ED/001C
Factory ID: T5365

Power/Band Option	RF Power Output
X250	25-6 Watts
X750	100-20 Watts

No. of Frequencies	1 Standard on Trunked Stations, 16 Standard on Conventional Stations	**Analog Modulation**	FM
		Digital Modulation	C4FM
Frequency Generation	Synthesized	**Temperature Range**	–30°C to +60°C
Analog Channel Spacing	25 kHz/12.5 kHz	**Antenna Connectors**	Transmit and Receive, Type "N" Female
Digital Channel Spacing	12.5 kHz	**Occupied Bandwidth**	99% Power
Mode of Operation	Simplex/Semi-duplex/Duplex		
Input Voltage AC	90-264V AC, 47-63 Hz	**Operational Battery Revert**	12 VDC (25-6 Watt stations) 24V DC (110-25 Watt stations) Output power may be reduced up to 6 dB in battery revert mode to conserve battery life
Optional DC/DC Convertor	Negative or Positive Ground Source 12V DC (25-6 Watt stations); 24/48/60V DC		

INPUT POWER IN WATTS (VARIES WITH OPTIONS)

Power Output	Dimensions (H x W x D)	Weight	Operation State	AC Line	Battery Revert: 12V DC Nominal** (X30 Option)	Battery Revert: 24V DC Nominal** (X30 Option)	DC/DC Converter (Positive or Negative Ground): 12V DC (X121 Option)	DC/DC Converter: 24V DC (X112/X121*** Option)	DC/DC Converter: 48V DC (X113 Option)	DC/DC Converter: 60V DC (X113 Option)
20 W	8.75 x 19 x 17 in.†	55 lbs.†	Standby	50	40	N/A	55	55***	50	50
	(221 x 483 x 432 mm)	(25 kg)	Transmit	140	125	N/A	140	145***	125	130
100 W	8.75 x 19 x 17 in.†	55 lbs.†	Standby	55	N/A	45	N/A	60	50	50
	(221 x 483 x 432 mm)	(25 kg)	Transmit	520	N/A	335	N/A	440	390	395
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 3dB in the 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.

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

TRANSMITTER

Frequency	851-870 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 25 kHz	±5 kHz
Clear 12.5 kHz	±2.5 kHz
ASTRO 12.5 kHz	±3.6 kHz
Audio Sensitivity	–35 dBm to 0 dBm variable
Spurious and Harmonic Emissions Attenuation	80 dB
Symbol Rate Accuracy	10 PPM
FM Hum and Noise	300 to 3000 Hz bandwidth, 60% RSD, 750 µs de-emphasis
25 kHz	50 dB nominal
12.5 kHz	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	16K0F3E, 16K0F1D, 11K0F3E, 8K10F1E, 16K8F1E, 14K0F3E, 14K0F1D, 10K0F1D

FCC TYPE ACCEPTANCE

FCC Designation	Frequency Range in MHz	Type	Power Output in Watts	Type Acceptance Number
	851-870	Transmitter	100-20	ABZ89FC5776-D*
	851-870	Transmitter	20-6	ABZ89FC5775-D*
	851-870	Transmitter	N/A	ABZ89FR5757

* with option X591

RECEIVER

Frequency	806-825 MHz
IF Frequencies (1st, 2nd) (Frequency)	73.35 MHz/450 kHz
Adjacent Channel Rejection (12.5/25 kHz) (Selectivity)	Analog 70 dB/85 dB; Digital (12.5 kHz) 60 dB
Preselector Bandwidth (Receiver Bandwidth)	19 MHz
Sensitivity 12 dB SINAD	0.30 µV
Sensitivity Static Bit Error Rate (BER) 5%	0.30 µV
Bit Error Rate Floor	0.01%
Signal Displacement Bandwidth (12.5/25 kHz)	≥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)	≤ 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

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

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