P25IP Trunked

MASTR® III P25 Base Station VHF, UHF, 800 MHz

The MASTR III P25 digital Base Station, built on the tradition of the popular MASTR series of repeaters, is an industry leader in interoperability, performance, and reliability. The MASTR III P25 provides secure digital trunked communications for mission critical applications. The addition of a SitePro Controller provides the capability of delivering Internet Protocol (IP) data and voice to a M/A-COM P25IP network.

Product Overview

The MASTR III P25 provides the flexibility to commission a base station that will meet critical communication needs today and into the future.

Flexible, Efficient P25 Design

The MASTR III P25 incorporates P25 digital voice and data using a digital signal processor modem for maximum design flexibility. P25 digital voice is translated through an on-board voice encoder/decoder in the station to allow immediate access to P25 communications through the user's existing network.

P25IP Network

As network needs expand, the MASTR III P25 station is ready to grow to meet the communication requirements of the 21st century. The MASTR III P25 and a SitePro Controller enable IP voice and data packets to be sent over a M/A-COM P25IP network and be received at the base station. This setup enables all of the advantages of IP:

- Seamless integration of off-the-shelf IP data applications.
- Easy interconnection of peripherals and ancillary equipment such as mobile data terminals, printers, scanners, and video devices for user organizations.
- Economical routing and backhaul of network data.
- Redundancy benefit of distributed IP architecture, one of the key requirements for most public safety users.

Programmable Flexibility

PC programmable options provide flexibility, simplified setup, and easy field upgrades. The fully synthesized design of the MASTR III P25 base station allows the user to make frequency changes quickly, easily, and affordably.

The modular design of the base station makes maintenance and servicing simple and fast.

For More Information

For more information about this or any other M/A-COM Wireless Systems product, call toll free in the U.S. 1-800-368-3277. From outside the U.S. call 1-434-455-9223 (Asia Pacific), 1-434-455-9229 (Latin America and Middle East), and 1-434-455-9219 (Europe).

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Technical specifications are subject to change without notice. This product is subject to U.S. export control for national security reasons.

General Specifications

	Cabinet		Rack
	69 inches	83 inches	86 inches
Number of Rack Units	33	41	46
Max. Units w/Power Supply	4	5	5

Note: One rack unit equals 1.75 inches. Stations occupy 6 rack units of cabinet space.

Service Speaker:	1W @ 8Ω
Service Microphone:	Transistorized Dynamic
Duty Cycle (EIA) Continuous:	Transmit/Receive - 100%
Humidity (EIA):	90% @ 122°F (50°C)
Ambient Temperature (or full spec performance per EIA):	-22 to +140°F (-30 to +60°C)*
Input Power Source:	120 VAC (±20%), 47-63 Hz
Optional Input Power Source:	230 VAC (±15%), 47-63 Hz
Standby Battery Source:	26.4 VDC, 50 AH (min.)
Antenna Connections:	Type N
Length of AC Power Cable:	10 ft (3048 mm)
Metering:	Provided through Handset or TQ0619 Software
Altitude:	
Operable::	Up to 15,000 ft (4,570 m)
Shippable:	Up to 50,000 ft (15,250 m)
Mean Time Between Failure (MTBF):	150,000 hours

*Standard network equipment for P25IP and EDACS IP configurations (0-40°C). Expanded temperature range equipment is available on request.

Source Power Drain		VHF P25 Digital	UHF P25 Digital	800 MHz P25 Digital
Frequency Range (MHz)		136-174	380-512	851-870 TX, 806-825 RX
AC Input Power		5A @ 120 VAC or 3A @ 230 VAC	5A @ 120 VAC or 3A @ 230 VAC	5A @ 120 VAC or 3A @ 230 VAC
DC Input Power (A)	**VDC**	**A**	**A**	**A**
Tx (full/half) Power	**13.8**	2	2	2
Rx Power	**13.8**	2	2	2
Tx (full/half) Power	**26.4**	12/8	12/8	12/8
Rx Power	**26.4**	0.5	0.5	0.5

Transmitter (As applicable, analog specifications measured per TIA/EIA-603 Procedure and P25 digital per TIA-102.CAAA-A)

	VHF P25 Digital	UHF P25 Digital	800 MHz P25 Digital
Frequency Range (MHz)	136-174	380-512	851-870
Rated Power Output (W)	110	100	100
RF Output Impedance (Ω)	50	50	50
Conducted Spurious and Harmonic Emission	-70 dBc	-70 dBc (spurious emission)	-70 dBc (spurious emission)
Frequency Stability (ppm)	±1.5	±0.5 (CAAB 3.2.2) external frequency std	±0.15 external frequency std
Modulation Deviation (kHz)			
Wideband	NA	NA	2.83 kHz nominal per TIA 102 CAAB
Narrowband	2.83 kHz nominal per TIA 102 CAAB	2.83 kHz nominal per TIA 102 CAAB	NA
NPSPAC	NA	NA	2.83 kHz nominal per TIA 102 CAAB
FM Noise (dB)	NA	NA	NA
Channel Spacing (kHz)	12.5	12.5	25
Synthesizer Step Size (kHz)	1.25	1.25	6.25
Frequency Spread Full Spec (MHz)	1.5	1.5	0.75
Audio Distortion (@ 1 kHz)	Tx mask 47CFR90.210d	Tx mask 47CFR90.210d	Tx mask 47CFR90.210d
Audio Response (pre-emphasis)	Mod fidelity <5%	Mod fidelity <5%	Mod fidelity <5%
No. of Conventional Channels	Up to 12	Up to 12	Up to 12

NOTE: Rated power output is measured at the transmitter power amplifier output connector per FCC Type Acceptance filing information. Any customer-required optional items such as power measuring devices and/or duplexers will introduce loss between the transmitter output connector and the station cabinet output connector. This loss will reduce the available power at the station connector.

Receiver (As applicable, analog specifications measured per TIA/EIA-603 Procedure and P25 digital per TIA-102.CAAA-A)

	VHF P25 Digital	UHF P25 Digital	800 MHz P25 Digital
Frequency Range (MHz)	136-174	370-512	806-825
RF Input Impedance (Ω)	50	50	50
Channel Spacing (kHz)	12.5	12.5	25, 12.5 NPSPAC
Synthesizer Step Size (kHz)	1.25	1.25	6.25
Sensitivity (dBm) EIA	-116 (5% BER) (0.35 µV)	-116 (5% BER) static, -108 faded	-116 (5% BER) static, -108 faded
Threshold Squelch (dBm)	NA	NA	NA
Selectivity			
12.5 kHz	60 dB Dig ACR, 70 dB Analog ACR	60 dB Dig ACR, 70 dB Analog ACR	60 dB Dig ACR, 70 dB Analog ACR
25 kHz	NA	NA	60 dB Dig ACR, 70 dB Analog ACR
30 kHz	NA	NA	NA
Frequency Stability (ppm)	±1.5	±0.5	±0.15 (external freq. std)
Signal Displacement Bandwidth (kHz)	±1	±1	±1
Intermodulation Rejection (dB)			
12.5 kHz	80	80	NA
25 kHz	NA	NA	80
30 kHz	NA	NA	NA
Spurious and Image Rejection (dB)	90	90	90
Frequency Spread			
Full Specs. (MHz)	2.0	2.0	0.5
Audio Output @ 1000 Hz, 25/30 kHz Channel (W)	NA	NA	NA

***Audio Response (de-emphasis):** **Within +2/-8 dB of 6 dB/octave (@ Local Speaker), 300 to 3000 Hz per EIA**
Within +1/-3 dB of 6 dB/octave (@ Line Output), 300 to 3000 Hz per EIA

Regulatory Data

Frequency Range (MHz)	Power Output (Adjustable) (W)	FCC Type Acceptance Number	Applicable FCC Rules	Industry Canada Certification Number	Applicable Industry Canada Rules	NTIA Certification Number
136-174	10-110	OWDTR-0032-E	22, 90	3636B-0017	RSS-119	JF-1208074
403-450	10-100	OWDTR-0038-E	90	3636B-0038	RSS-119	JF-1208074
450-512	10-100	OWDTR-0039-E	22, 74, 90	3636B-0039	RSS-119	JF-1208074
806-870	10-100	OWDTR-0036-E	90	3636B-0036	RSS-119	NA

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