



## The MASTR III P25<sup>IP</sup> Base Station

- Provides secure digital P25<sup>IP</sup> trunked communications
- Delivers Internet Protocol (IP) voice and data with an optional SitePro Controller
- Incorporates a modular design for easy maintenance

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

### **Flexible, Efficient P25<sup>IP</sup> Design**

The MASTR III P25<sup>IP</sup> 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.

### **P25<sup>IP</sup> Network**

As network needs expand, the MASTR III P25 station is ready

to grow to meet the communication requirements of the 21<sup>st</sup> century. The MASTR III P25 and a SitePro Controller enable IP voice and data packets to be sent over a Harris P25<sup>IP</sup> 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<sup>IP</sup> 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.

## General Specifications

	Cabinet		Rack	Optional Input Power Source:	230 VAC (±15%), 47-63 Hz	
	69 inches	83 inches	86 inches	Standby Battery Source:	26.4 VDC; 50 AH (min.)	
Number of Rack Units:	33	41	46	Antenna Connections:	Type N	
Max. Units w/Power Supply:	4	5	5	Length of AC Power Cable:	10 ft (3048 mm)	
Note: One rack unit equals 1.75 inches. Stations occupy 6 rack units of cabinet space.					Metering:	Provided through Handset or TQ0619 Software
Service Speaker:	1W @ 8Ω			Altitude:		
Service Microphone:	Transistorized Dynamic			Operable:	Up to 15,000 ft (4,570 m)	
Duty Cycle (EIA) Continuous:	Transmit/Receive - 100%			Shippable:	Up to 50,000 ft (15,250 m)	
Humidity (EIA):	90% @ 122°F (50°C)			*Standard network equipment for P25 <sup>IP</sup> and EDACS IP configurations (0-40°C). Expanded temperature range equipment is available on request.		
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					

Source Power Drain		VHF P25 Digital	UHF P25 Digital	800 MHz P25 Digital
Frequency Range (MHz)		136-174	350-512	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	350-512	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
NPSAC		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	350-512	806-825
RF Input Impedance (Ω)		50	50	50
Channel Spacing (kHz)		12.5	12.5	25, 12.5 NPSAC
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 (1.0 for 350-370 MHz)	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
136-154	10-110	OWDTR-0048-E	90	3636B-0048	RSS-119	JF-1208074
150-174	10-110	OWDTR-0050-E	90	3636B-0050	RSS-119	JF-1208074
380-400	10-100	NA	NA	NA	NA	JF-1208074
403-450	10-100	OWDTR-0038-E	90	3636B-0038	RSS-119	NA
450-512	10-100	OWDTR-0039-E	22, 90	3636B-0039	RSS-119	NA
806-870	10-100	OWDTR-0036-E	90	3636B-0036	RSS-119	NA

