

Conventional MASTR[®] III Station VHF, UHF, 800 MHz

The Conventional MASTR III Base Station provides

- A comprehensive array of control capabilities
- The latest in digital signal processing technology
- Fully shielded and removable modules, front-mounted controls, and remote diagnostics



The Conventional MASTR III provides the flexibility to change system setup as necessary. Whether users are designing a system, programming radio functions, or arranging an installation site, MASTR III keeps pace with their needs.

Flexible, Efficient Design

The microprocessor-controlled, PC programmable options provide flexibility, simplified setup, and easy field upgrades. The fully synthesized design of the MASTR III Base Station allows the user to make frequency changes

quickly, easily, and affordably. In addition, the MASTR III can operate in either a wideband (25 kHz) or narrowband (12.5 kHz) mode.

The modular design of the MASTR III Base Station makes maintenance and servicing simple and fast. Each module furnishes easy-to-read indications of proper operation.

Equipment is available in 37-inch, 69-inch, or 83-inch cabinets or an 86-inch open rack.

Backward Compatible

The MASTR III Base Station can be used in combination with MASTR II or IIe stations. The MASTR III is readily upgradeable through software revisions.

Conventional Options and Accessories

Programmable Options

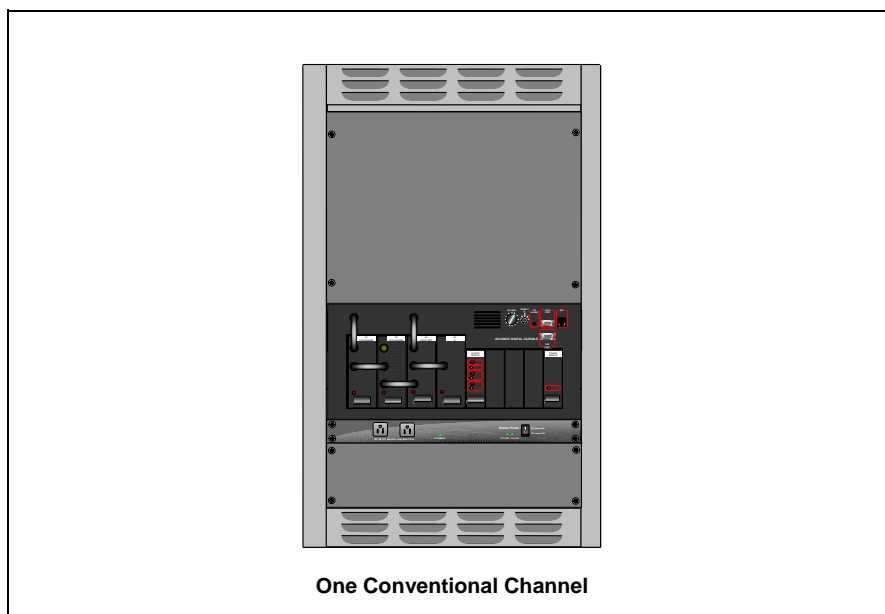
- Transmit Frequencies
- Receive Frequencies
- Channel Guard Digital and Tone
- Channel Guard Disable
- Repeater Disable
- Intercom Function
- DTMF Decode
- Morse Code ID
- Squelch Tail Elimination (STE)
- Carrier Control Timer
- Station Control
 - DC Control
 - Tone Control
 - Repeater
 - DC/Repeat
 - Tone/Repeat
- 2- or 4-Wire Audio
- Scan

Additional Options

- Service Microphone
- Antenna Multicoupler
- 230V Power Supply
- Duplexer
- Antenna Relay (VHF/UHF)
- Combiner
- Isolator
- Squelch-Operated Relay
- Remote Controllers
- Battery Standby
- Battery Charger
- Gel Cell Battery
- Voice Guard Encryption
- Aegis™ Digital
- Switchable Channel Spacing

Conventional Tone and DC Remote Controlled Stations

Audio (Line to Transmitter)	
Line Terminating Impedance:	600 Ω
Line Level (Adjustable):	-20 to +7 dBm
Frequency Response:	±3 dB @ 300-3000 Hz
Tone Control	
Function Tones:	1050,1150,1250,1350,1450, 1550,1650, 1750,1850,1950 and 2050 Hz
Secur-it Tone and Transmit Tone:	2175 Hz
Transmitted 2175 Hz Tone Level:	20 dB Below Voice
Permissible Control Line Loss @2175 Hz:	27 dB
Audio (Receiver to Line)	
Audio Amplifier Input Impedance:	10 KΩ
Input Level:	1 V RMS (for 5 kHz Deviation)
Output Impedance to Line:	600 Ω
Output Level to Line Voice (1 kHz ref):	+7 dBm (Adjustable)
Tone (1 kHz ref):	+7 dBm (Reference 7 dBm)
Frequency Response:	+1 and -3 dB @ 300-3000 Hz
Hum and Noise, Noise Squelch:	-55 dB (Reference 7 dBm)
Tone Squelch:	-30 dB (Reference 7 dBm)
DC Control Control Currents:	
Line Loop Resistance (maximum):	-2.5, ±6, and ±11 mA 11 KΩ (Includes 3K Termination)



Regulatory Data

Frequency Range (MHz)	Power Output (Adjustable) (W)	FCC Type Acceptance Number	Applicable FCC Rules	Industry Canada Certification Number	Applicable Industry Canada Rules	CE Marking	NTIA Certification Number
136-174	10-110	OWDTR-0032-E	22, 90	3636B-0017	RSS-119	Stations available in UHF that meet the following: ETS 300 086 ETS 300 219 ETS 300 113	JF-1208074
403-450	10-100	OWDTR-0038-E	90	3636B-0038	RSS-119		JF-1208074 (380-400, 403-425)
450-512	10-100	OWDTR-0039-E	22, 90, 74	3636B-0039	RSS-119		NA
806-870	10-100	OWDTR-0036-E	90	3636-194-215	RSS-119	NA	NA

General Specifications

CABINET	INDOOR CABINET (Floor Mount)		
	37 in.	69 in.	83 in.
Size [in. (cm)]			
Height	37.0 (94)	69.1 (175)	83.0 (211)
Width	21.5 (55)	23.1 (59)	23.1 (59)
Depth	18.25 (46)	21.0 (53)	21.0 (53)
Weight (min) [(lb (kg))]			
Continuous Duty	121 (55)	576 (261)	693 (315)
Packed, Domestic Shipping	136 (62)	606 (275)	729 (331)
Number of Rack Units	17	33	41
Max. Units w/Power Supply	1	4	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%
Ambient Temperature (or full spec performance per EIA):	-22 to +140°F (-30 to +60°C)
Humidity (EIA):	90% @ 122°F (50°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 AHR (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)

Source Power Drain	VHF	UHF	800
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		
Tx	13.8	2	2
Rx only	13.8	2	2
Tx (full/half power)	26.4	12/8	12/8
Rx only	26.4	0.5	0.5

Transmitter (All specifications measured per TIA/EIA-603 Procedure)

	VHF	UHF	800
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 (dBm)	-36	-36	-36
Frequency Stability (ppm)	±1.0	±1.0	±1.0
Modulation Deviation (kHz)			
Wideband	0 to ±5	0 to ±5	0 to ±5
Narrowband	0 to ±2.5	0 to ±2.5	NA
NPSPAC	NA	NA	0 to ±4
FM Noise (dB)	-55	-55	-55
Channel Spacing (kHz)	12.5/25/30	12.5/25	25 12.5 (NPSPAC)
Synthesizer Step Size (kHz)	1.25	1.25	6.25
Frequency Spread Full Spec (MHz)	2	2	0.5

Audio Distortion (@ 1 kHz): Less than 3%

Number of Channels (Conventional): Up to 12

Audio Response (pre-emphasis): Within +1/-3 dB of 6 dB/octave, 300 to 3000 Hz per EIA

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 (All specifications measured per TIA/EIA-603 Procedure)

	VHF	UHF	800
Frequency Range (MHz)	136-174	380-512	806-825
RF Input Impedance (Ω)	50	50	50
Channel Spacing (kHz)	12.5/25/30	12.5/25	12.5 (NPSPAC)/25
Synthesizer Step Size (kHz)	1.25	1.25	6.25
Sensitivity (dBm) EIA 12 dB SINAD	-116 (0.35 μV)	-116 (0.35 μV)	-118 (0.28 μV)
Threshold Squelch (dBm)	-119 (0.25 μV)	-119 (0.25 μV)	-121 (0.18 μV)
Selectivity EIA 2-Signal (dB)			
12.5 kHz	75	75	20 (NPSPAC)
25 kHz	85	85	85
30 kHz	90	NA	NA
Frequency Stability (ppm)	±1.0	±1.0	±1.0
Signal Displacement Bandwidth (kHz)	12.5:±1, 25/30:±2	12.5:±1, 25:±2	25:±2
Intermodulation (dB)			
12.5 kHz	75	75	NA
25 kHz	80	80	80
30 kHz	80	NA	NA
Spurious and Image Rejection (dB)	90	90	90
Frequency Spread			
Full Specs. (MHz)	2.0	2.0	0.5

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

Audio Output: Within +1/-3 dB of 6 dB/octave (@ Line Output), 300 to 3000 Hz per EIA

1 Watt at less than 3% distortion @ 1000 Hz, 25/30 kHz Channel



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