

# MTR3000 BASE STATION/REPEATER

MTR3000 is a MOTOTRBO<sup>™</sup> integrated voice and data base station/repeater designed to meet the requirements of small public safety, utilities and professional organizations.

The MTR3000 operates in digital mode in MOTOTRBO Conventional, IP Site Connect, and Capacity Plus systems delivering increased capacity, spectral efficiency, integrated data applications and enhanced voice communications.

In addition the MTR3000 can also operate in analog mode for conventional and LTR/ PassportTrunking systems providing a flexible high power base station/repeater.

For systems currently using the high power MTR2000 base station/repeater a simple MTR3000 upgrade kit is available so the station can operate in a MOTOTRBO system and allow the user to leverage their current investment.



#### **MTR3000 STANDARD FEATURES:**

Operates in analog or MOTOTRBO digital mode with a LED indicating mode of operation

Reliable 100W Continuous Duty Cycle Operation

12.5 or 25 kHz programmable channel spacing

Analog and digital conventional are all standard in one base station without the cost of additional software or hardware

Power supply functions over a wide range of voltages

RoHS (Restriction of Hazardous Substances) compliant

## MTR3000 PROGRAMMED IN MOTOTRBO MODE PROVIDES:

Supports two simultaneous voice paths in digital 12.5 kHz TDMA

6.25e compliant

Divides existing channel into two timeslots delivering twice the capacity through a single repeater

Supports MOTOTRBO IP Site Connect for increased wide area coverage

Supports MOTOTRBO Capacity Plus single site trunking without a separate hardware controller

## MTR3000 SERVICEABILITY:

Repeater diagnostic and control software provides remote or local site monitoring

Easy to replace components with functionally separate Field Replaceable Units (FRU)

Software based design simplifies feature upgrades

Easy access to station ports (no need to remove the front panel) shortening installation and maintenance time

For ease of installation, minimal station alignment is needed

Improved Warranty: Backed by Motorola's Standard 2-year Warranty

#### SPECIFICATION SHEET

MTR3000 Base Station/Repeater

General Specifications				
Model Number	T3000A T2003A - Upgrade kit f	T2003A - Upgrade kit for MTR2000 stations		
Number of Frequencies	Up to 16			
Modulation	FM & 4FSK			
Frequency Generation	Synthesized			
Channel Spacing Analog Digital	12.5 kHz, 25 kHz 12.5 kHz (6.25e compl	12.5 kHz, 25 kHz 12.5 kHz (6.25e compliant)		
Mode of Operation	Semi-duplex / Duplex	Semi-duplex / Duplex		
Temperature Range	-30°C to +60°C			
Antenna Connectors	Transmit and Receive,	Type "N" Female		
AC Operation	85-264 VAC, 47-63 Hz			
DC Operation	28.6 VDC (25.7-30.7 V	CD full rated output power)		
	Dimensions		Weight	
Base Station Repeater	5.25 x 19 x 16.5 in. (13	3 x 483 x 419 mm)	40 lbs (19 kg)	
UHF Input Power Neg. Gnd. or				
	AC Line 117 Volts / 22	20 Volts	28 VDC	
100 W Standby	0.4A/0.2A		0.8A	
100 W Transmit	3.3A/1.8A		11.5A	
Transmitter (UHF)				
	Model T3000A		Model T2003A	
Frequency	403-470, 470-524 MH	Z	403-435, 435-470 MHz	
Power Output	8-100 watts		25-100 watts	
Electronic Bandwidth		Ful	Band	
Output Impedance		50 Ohms		
Intermodulation Attenuation		55 dB		
Maximum Deviation (RSD) 25 kHz 12.5 kH		±5 kHz ±2.5 kHz		
Audio Sensitivity		60% RSD @ 80 mV RMS		
Spurious and Harmonic Emissions Attenu	lation		5 dB	
FM Hum and Noise (750 µs de-emphasis			nominal	
	12.5 kHz	45 dB nominal		
Frequency Stability (for temperature and ag		1.5 PPM/External Ref (optional)		
	+1,-3 dB fron	+1,-3 dB from 6 dB per octave pre-emphasis; 300-3000 Hz referenced to 1000 Hz at line input		
		Less than 3% at 1000 Hz; 60% RSD		
	ENA NA - dudest			
Audio Distortion		on: 12.5 kHz: 11K0F3E; 25 kHz: 1		
Audio Distortion		on: 12.5 kHz: 11K0F3E; 25 kHz: 1	6K0F3E	
Audio Distortion Emission Designators Receiver (UHF)	4FSK Modula Model T3000A	on: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60ł	6K0F3E FXD; 12.5 kHz - Data & Voice: 7K60FXE Model T2003A	
Audio Distortion Emission Designators Receiver (UHF) Frequency	4FSK Modula	yn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60ł z	6K0F3E FXD; 12.5 kHz - Data & Voice: 7K60FXE Model T2003A 403-470 MHz	
Audio Distortion Emission Designators Receiver (UHF) Frequency	4FSK Modula Model T3000A 403-470, 450-524 MH	pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z 8	6K0F3E FXD; 12.5 kHz - Data & Voice: 7K60FXE Model T2003A	
Audio Distortion Emission Designators Receiver (UHF) Frequency Selectivity (TIA603) 25 kHz 12.5 kH	4FSK Modula Model T3000A 403-470, 450-524 MH Iz	pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z z 77 7	6K0F3E XD; 12.5 kHz - Data & Voice: 7K60FXE Model T2003A 403-470 MHz 0 dB	
Audio Distortion Emission Designators Receiver (UHF) Frequency Selectivity (TIA603) 25 kHz 12.5 kH Selectivity (TIA603D) 25 kHz 12.5 kH	4FSK Modula Model T3000A 403-470, 450-524 MH Iz	pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z z 	6K0F3E 	
Audio Distortion Emission Designators Receiver (UHF) Frequency Selectivity (TIA603) 25 kHz 12.5 kH Selectivity (TIA603D) 25 kHz 12.5 kH Selectivity 12 dB SINAD	4FSK Modula Model T3000A 403-470, 450-524 MH Iz	pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z z 	6K0F3E FXD; 12.5 kHz - Data & Voice: 7K60FXE Model T2003A 403-470 MHz 0 dB 5 dB 5 dB 5 dB	
Audio Distortion Emission Designators Receiver (UHF) Frequency Selectivity (TIA603) 25 kHz 12.5 kH Selectivity (TIA603D) 25 kHz 12.5 kH Sensitivity 12 dB SINAD Digital Sensitivity 5% BER	4FSK Modula Model T3000A 403-470, 450-524 MH Iz Iz Iz	pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z z 8 77 4 0.: 0.: 0.:	6K0F3E FXD; 12.5 kHz - Data & Voice: 7K60FXE Model T2003A 403-470 MHz 0 dB 5 dB 5 dB 5 dB 5 dB 5 dB 5 dB	
Audio Distortion Emission Designators Receiver (UHF) Frequency Selectivity (TIA603) 25 kHz 12.5 kH Selectivity (TIA603D) 25 kHz 12.5 kH Sensitivity 12 dB SINAD Digital Sensitivity 5% BER Signal Displacement Bandwidth 12.5 / 2	4FSK Modula Model T3000A 403-470, 450-524 MH Iz Iz Iz	pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z z 8 77 7 2 4 0.0 0.1 0.1 1 kHz	6K0F3E FXD; 12.5 kHz - Data & Voice: 7K60FXE Model T2003A 403-470 MHz 0 dB 5 dB 5 dB 5 dB 5 dB 5 dB 5 dB 5 dB 5 dB	
Audio Distortion Emission Designators Receiver (UHF) Frequency Selectivity (TIA603) 25 kHz 12.5 kH Selectivity (TIA603D) 25 kHz 12.5 kH Sensitivity 12 dB SINAD Digital Sensitivity 5% BER Signal Displacement Bandwidth 12.5 / 2 Intermodulation Rejection 12.5 and	4FSK Modula Model T3000A 403-470, 450-524 MH iz iz iz 5 kHz 4 5 kHz	pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z 8 77 4 0.0 0.0 0.1 1 kHz 8	6K0F3E XD; 12.5 kHz - Data & Voice: 7K60FXE Model T2003A 403-470 MHz 0 dB 5 dB 5 dB 5 dB 5 dB 30 µV 30 µV 30 µV 2 kHz	
Audio Distortion Emission Designators Receiver (UHF) Frequency Selectivity (TIA603) 25 kHz 12.5 kH Selectivity (TIA603D) 25 kHz 12.5 kH Sensitivity 12 dB SINAD Digital Sensitivity 5% BER Signal Displacement Bandwidth 12.5 / 2 Intermodulation Rejection 12.5 and Spurious and Image Response Rejection	4FSK Modula Model T3000A 403-470, 450-524 MH iz iz iz b KHz 4 5 KHz 4 025 KHz 4	pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z 8 77 4 0.0 0.1 0.1 1 kHz 8 8 8 8	6K0F3E XD; 12.5 kHz - Data & Voice: 7K60FXE Model T2003A 403-470 MHz 0 dB 5 dB 5 dB 30 µV 30 µV 30 µV 27 2 kHz 5 dB	
Audio Distortion Emission Designators Receiver (UHF) Frequency Selectivity (TIA603) 25 kHz 12.5 kH Selectivity (TIA603D) 25 kHz 12.5 kH Sensitivity 12 dB SINAD Digital Sensitivity 5% BER Signal Displacement Bandwidth 12.5 / 2 Intermodulation Rejection 12.5 and Spurious and Image Response Rejection Audio Response	4FSK Modula Model T3000A 403-470, 450-524 MH iz iz iz b KHz 4 5 KHz 4 025 KHz 4	pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z z 0.: 1 kHz 8 6 dB per octave de-emphasis; 3	6K0F3E ×D; 12.5 kHz - Data & Voice: 7K60FXE Model T2003A 403-470 MHz 0 dB 5 dB 5 dB 30 μV 21 2 kHz 5 dB 5 dB 5 dB	
Audio Distortion Emission Designators Receiver (UHF) Frequency Selectivity (TIA603) 25 kHz 12.5 kH Selectivity (TIA603D) 25 kHz 12.5 kH Sensitivity 12 dB SINAD Digital Sensitivity 5% BER Signal Displacement Bandwidth 12.5 / 2 Intermodulation Rejection 12.5 and Spurious and Image Response Rejection Audio Response Audio Distortion	4FSK Modula Model T3000A 403-470, 450-524 MH iz iz iz b KHz 4 5 KHz 4 025 KHz 4	pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z z 6 0.3 1 kHz 8 6 dB per octave de-emphasis; 3 Less than 3% at	6K0F3E EXD; 12.5 kHz - Data & Voice: 7K60FXE Model T2003A 403-470 MHz 0 dB 5 dB 00-3000 Hz referenced to 1000 Hz at line output	
Audio Distortion Emission Designators Receiver (UHF) Frequency Selectivity (TIA603) 25 kHz 12.5 kH Selectivity (TIA603D) 25 kHz 12.5 kH Sensitivity 12 dB SINAD Digital Sensitivity 5% BER Signal Displacement Bandwidth 12.5 / 2 Intermodulation Rejection 12.5 and Spurious and Image Response Rejection Audio Response Audio Distortion Line Output	AFSK Modula           Model T3000A           403-470, 450-524 MH           iz           iz           iz           5 kHz           425 kHz           +1,-3 dB from	pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z z 3 3 4 3 3 3 4 3 3 3 3 3 3 3 3 3 3 3	6K0F3E EXD; 12.5 kHz - Data & Voice: 7K60FXE Model T2003A 403-470 MHz 0 dB 5 d	
Audio Distortion Emission Designators Receiver (UHF) Frequency Selectivity (TIA603) 25 kHz 12.5 kH Selectivity (TIA603D) 25 kHz 12.5 kH Sensitivity 12 dB SINAD Digital Sensitivity 5% BER Signal Displacement Bandwidth 12.5 / 2 Intermodulation Rejection 12.5 an Spurious and Image Response Rejection Audio Response Audio Distortion Line Output FM Hum and Noise (750µs de-emphasis)	4FSK Modula Model T3000A 403-470, 450-524 MH z z z kHz 45 kHz 45 kHz 425 kHz 425 kHz 425 kHz 400 400 400 400 400 400 400 40	pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z z 3 3 4 4 0.3 0.3 1 kHz 0.3 0.4 1 kHz 8 8 6 dB per octave de-emphasis; 3 Less than 3% at 330 mV (RM 50 dB 45 dB	6K0F3E ×D; 12.5 kHz - Data & Voice: 7K60FXE Model T2003A 403-470 MHz 0 dB 5 dB	
Audio Distortion Emission Designators Receiver (UHF) Frequency Selectivity (TIA603) 25 kHz 12.5 kH Selectivity (TIA603D) 25 kHz 12.5 kH Sensitivity 12 dB SINAD Digital Sensitivity 5% BER Signal Displacement Bandwidth 12.5 / 2 Intermodulation Rejection 12.5 an Spurious and Image Response Rejection Audio Response Audio Distortion Line Output FM Hum and Noise (750µs de-emphasis)	4FSK Modula Model T3000A 403-470, 450-524 MH z z z kHz 45 kHz 45 kHz 425 kHz 425 kHz 425 kHz 400 400 400 400 400 400 400 40	pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z z 3 3 4 4 0.3 0.3 1 kHz 0.3 0.4 1 kHz 8 8 6 dB per octave de-emphasis; 3 Less than 3% at 330 mV (RM 50 dB 45 dB	6K0F3E ×D; 12.5 kHz - Data & Voice: 7K60FXE Model T2003A 403-470 MHz 0 dB 5 dB	
Audio Distortion Emission Designators Receiver (UHF) Frequency Selectivity (TIA603) 25 kHz 12.5 kH Selectivity (TIA603D) 25 kHz 12.5 kH Selectivity (TIA603D) 25 kHz 12.5 kH Sensitivity 12 dB SINAD Digital Sensitivity 5% BER Signal Displacement Bandwidth 12.5 / 2 Intermodulation Rejection 12.5 and Spurious and Image Response Rejection Audio Response Audio Distortion Line Output FM Hum and Noise (750µs de-emphasis) RF Input Impedance FCC Type Acceptance	4FSK Modula Model T3000A 403-470, 450-524 MH z z z kHz 45 kHz 45 kHz 425 kHz 425 kHz 425 kHz 400 400 400 400 400 400 400 40	pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z z 3 3 4 4 0.3 0.3 1 kHz 0.3 0.4 1 kHz 8 8 6 dB per octave de-emphasis; 3 Less than 3% at 330 mV (RM 50 dB 45 dB	6K0F3E *XD; 12.5 kHz - Data & Voice: 7K60FXE Model T2003A 403-470 MHz 0 dB 5 dB 5 dB 5 dB 5 dB 5 dB 00-3000 Hz referenced to 1000 Hz at line output 1000 Hz; 60% RSD S) @ 60% RSD nominal nominal Ohms	
Frequency         Selectivity (TIA603)       25 kHz         12.5 kH         Selectivity (TIA603D)       25 kHz         Selectivity (TIA603D)       25 kHz         I2.5 kH       12.5 kH         Sensitivity 12 dB SINAD       Digital Sensitivity 5% BER         Signal Displacement Bandwidth       12.5 / 2         Intermodulation Rejection       12.5 and         Spurious and Image Response Rejection       Audio Response         Audio Distortion       Line Output         FM Hum and Noise (750µs de-emphasis)       RF Input Impedance	AFSK Modula       Model T3000A       403-470, 450-524 MH       iz	pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z z 3 3 4 4 0.3 0.3 0.3 1 kHz 8 6 dB per octave de-emphasis; 3 1 Less than 3% at 330 mV (RM 50 dB 45 dB 50	6K0F3E *XD; 12.5 kHz - Data & Voice: 7K60FXE Model T2003A 403-470 MHz 0 dB 5 dB 5 dB 5 dB 5 dB 5 dB 00-3000 Hz referenced to 1000 Hz at line output 1000 Hz; 60% RSD S) @ 60% RSD nominal nominal Ohms	
Audio Distortion Emission Designators Receiver (UHF) Frequency Selectivity (TIA603) 25 kHz 12.5 kH Selectivity (TIA603D) 25 kHz 12.5 kH Selectivity (TIA603D) 25 kHz Signal Displacement Bandwidth 12.5 / 2 Intermodulation Rejection 12.5 an Spurious and Image Response Rejection Audio Response Audio Distortion Line Output FM Hum and Noise (750µs de-emphasis) RF Input Impedance FCC Type Acceptance Frequency Range in MHz	4FSK Modula       Model T3000A       403-470, 450-524 MH       iz	pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z z z 6 dB per octave de-emphasis; 3 Less than 3% at 330 mV (RM 50 dB 45 dB 50 <b>Power Output in W</b>	6K0F3E         YZD; 12.5 kHz - Data & Voice: 7K60FXE         Model T2003A         403-470 MHz         0 dB         5 dB         6 60% RSD         nominal         nominal         Ohms         VS Type Acceptance Number	
Audio Distortion Emission Designators Receiver (UHF) Frequency Selectivity (TIA603) 25 kHz 12.5 kH Selectivity (TIA603D) 25 kHz 12.5 kH Selectivity (TIA603D) 25 kHz I2.5 kH Sensitivity 12 dB SINAD Digital Sensitivity 5% BER Signal Displacement Bandwidth 12.5 / 2 Intermodulation Rejection 12.5 an Spurious and Image Response Rejection Audio Response Audio Distortion Line Output FM Hum and Noise (750µs de-emphasis) RF Input Impedance FCC Type Acceptance Frequency Range in MHz 403-470	AFSK Modula           Model T3000A           403-470, 450-524 MH           iz           iz <t< td=""><td>pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z z z 6 dB per octave de-emphasis; 3 Less than 3% at 330 mV (RM 50 dB 45 dB 50 <b>Power Output in W</b> 8-100</td><td>6K0F3E         XD; 12.5 kHz - Data &amp; Voice: 7K60FXE         Model T2003A         403-470 MHz         0 dB         5 dB         30 µV         30 µV         30 µV         30 µV         30 µV         30 µV         5 dB         5 dB         5 dB         5 dB         5 dB         00-3000 Hz referenced to 1000 Hz at line output         1000 Hz; 60% RSD         S) @ 60% RSD         nominal nominal         Ohms         atts       US Type Acceptance Number         ABZ89FC4823</td></t<>	pn: 12.5 kHz: 11K0F3E; 25 kHz: 1 tion: 12.5 kHz - Data Only: 7K60f z z z 6 dB per octave de-emphasis; 3 Less than 3% at 330 mV (RM 50 dB 45 dB 50 <b>Power Output in W</b> 8-100	6K0F3E         XD; 12.5 kHz - Data & Voice: 7K60FXE         Model T2003A         403-470 MHz         0 dB         5 dB         30 µV         30 µV         30 µV         30 µV         30 µV         30 µV         5 dB         5 dB         5 dB         5 dB         5 dB         00-3000 Hz referenced to 1000 Hz at line output         1000 Hz; 60% RSD         S) @ 60% RSD         nominal nominal         Ohms         atts       US Type Acceptance Number         ABZ89FC4823	

Industry Canada Approval: ICID 109AB-T3000; IC model T3000-UHFR1 Specifications per TIA/EIA 603 unless otherwise noted Product meets ETSI 300-086 & ETSI 300-113

Specifications subject to change without notice.



Vialet SterigAB Connecting Systems

Motorola, Inc. 1301 E. Algonquin Road, Schaumburg, Illinois 60196 U.S.A. 1-800-367-2346

MOTOROLA and the Stylized M Logo are registered in the U.S. Patent and Trademark Office. All other product or service names are the property of their registered owners. © Motorola, Inc. 2009 (0912) R3-2-2010A (POD)

