

# MTR2000

## 800/900 MHz Station/Repeater/Receiver

MTR2000  
Station/Repeater  
available in:

- ▶ **Conventional:**
  - Local Operation
  - Tone Remote Control
  - Spectra-TAC Voting
- ▶ **Trunking:**
  - SMARTNET and SmartZone
- ▶ **Continuous Duty**



*MTR2000 75 Watt Station/Repeater  
Enhanced Features in an Economical Package*

## FEATURES/BENEFITS

### **Provides Unmatched Flexibility in a Compact Design**

- ▶ Analog operation in conventional systems
- ▶ Analog operation in SMARTNET or SmartZone trunking systems
- ▶ Software based design allows for future system applications
- ▶ 75-20 Watt variable power models
- ▶ Compact dimensions, 3 rack units (5.25" or 13.3 cm), utilize expensive site space efficiently
- ▶ 12.5 or 25 kHz programmable channel spacing (800 MHz)
- ▶ 12.5 kHz channel spacing (900 MHz)

### **Shortens Installation and Maintenance Time**

- ▶ Programming and diagnostic testing performed through a personal computer
- ▶ Standard EIA 19" rack mount configuration
- ▶ Lightweight (40 lbs/19 kg)
- ▶ Functionally separate modules:
  - Field Replaceable Units (FRU)
- ▶ Software based design simplifies upgrades

### **Contributes to Maximizing System Up-Time**

- ▶ Microprocessor based design with integrated DSP capability
- ▶ Continuous duty cycle operation
- ▶ Self testing monitors station performance
- ▶ Switching power supply functions over a wide range of voltages and frequencies



**MOTOROLA**

# MTR2000 Station/Repeater

# SPECIFICATIONS

## GENERAL SPECIFICATIONS

<b>Model Number:</b>	T5544, T5731			
<b>Application</b>	<b>System Software Option</b>	<b>Power/Band Option</b>	<b>RF Power Output</b>	<b>Receiver Band Option</b>
		X450 (851-870 MHz) X460 (935-940 MHz)	75-20 75-20	X600 (806-825 MHz) X663 (896-901 MHz)
<b>Conventional Analog</b>	X597			
<b>SMARTNET 6809 Analog Trunking</b>	X997			
<b>SmartZone 6809 Analog Trunking</b>	X51			
<b>No. of Frequencies:</b>	Up to 32	<b>Modulation:</b>	FM	
<b>Frequency Generation:</b>	Synthesized	<b>Temperature Range:</b>	-30°C to +60°C*	
<b>Channel Spacing:</b>	12.5 kHz/25 kHz 800 MHz 12.5 kHz 900 MHz	<b>Antenna Connectors:</b>	Transmit and Receive, Type "N" Female	
<b>Mode of Operation:</b>	Simplex / Semi-duplex / Duplex			
<b>Input Voltage AC:</b>	85-264VAC, 47-63 Hz			
<b>Optional DC Only Operation</b>	28.6 VDC (75 Watt station)			
<b>Operational Battery Revert:</b>	24 VDC (75-20 Watt stations) Output power may be reduced up to 3 dB in battery revert mode to conserve battery life.			
	<b>Dimensions</b>	<b>Weight</b>		
<b>All Stations and Receivers</b>	5.25 x 19 x 16.5 in. † (133 x 483 x 419 mm)	40 lbs † (19 kg)		
Alternative Cabinet Enclosures				
30" Indoor Cabinet	30 x 22 x 20 in. (762 x 559 x 508 mm)	66 lbs** (30 kg)		
48" Indoor Cabinet	46 x 22 x 20 in. (1168 x 559 x 508 mm)	75 lbs** (34 kg)		
60" Indoor Cabinet	60 x 22 x 20 in. (1524 x 559 x 508 mm)	102 lbs** (46 kg)		
30" Modular Rack	30 x 22 x 20 in. (762 x 559 x 508 mm)	52 lbs** (24 kg)		
45" Modular Rack	46 x 22 x 20 in. (1168 x 559 x 508 mm)	59 lbs** (27 kg)		
52" Modular Rack	60 x 22 x 20 in. (1524 x 559 x 508 mm)	61 lbs** (28 kg)		

† Applies to standard station configuration

\*Temperature specification applies to one station per cabinet only. See Product Planner for details.

\*\* Enclosure Only

## 800/900 MHz INPUT POWER (VARIES WITH OPTIONS)

	<b>AC Line</b>	<b>28 VDC</b>
	<b>117 Volts / 220 Volts</b>	
<b>Standby</b>	0.7A / 0.4A	1A
<b>75 W - Transmit</b>	4.5A / 2.5A	800 MHz: 10A / 900 MHz: 11A

DC Only Operation (x121 Option)  
Neg. Gnd. or Battery Revert

## TRANSMITTER

	800 MHz	900 MHz
<b>Frequency - 75 Watt:</b>	851-870 MHz	935-940 MHz
<b>Bandwidth:</b>	Full Band	Full Band
<b>Output Impedance:</b>	50 Ohms	50 Ohms
<b>Frequency Stability: (for temperature and voltage variation)</b>	1.0 PPM/External Ref (optional)	External Reference Required
<b>Intermodulation Attenuation:</b>	50 dB	50 dB
<b>Maximum Deviation (RSD):</b>		
<b>25 kHz:</b>	±5 kHz	NA
<b>12.5 kHz:</b>	±2.5 kHz	±2.5 kHz
<b>Audio Sensitivity:</b>	-20 dBm to 0 dBm variable	-20 dBm to 0 dBm variable
<b>Spurious and Harmonic Emissions Attenuation:</b>	80 dBc	80 dBc
<b>FM Hum and Noise: (750µs de-emphasis)</b>		
<b>25 kHz:</b>	300 to 3000 Hz bandwidth, 60% RSD	300 to 3000 Hz bandwidth, 60% RSD
<b>12.5 kHz:</b>	50 dB nominal	NA
<b>Audio response:</b>	+1,-3 dB from 6 dB per octave preemphasis; 300-3000 Hz referenced to 1000 Hz at line input	+1,-3 dB from 6 dB per octave preemphasis; 300-3000 Hz referenced to 1000 Hz at line input
<b>Audio distortion:</b>	Less than 3% at 1000 Hz; 60% RSD	Less than 3% at 1000 Hz; 60% RSD
<b>Emission Designators*:</b>	16K0F3E, 13K6F1D*	11K0F3E, 8K60F1D*

\*New FCC emission designators are the result of recent FCC policy changes.

## RECEIVER

	800 MHz	900 MHz
<b>Frequency - Wideband:</b>	806-825 MHz	896-901 MHz
<b>Bandwidth:</b>	Full Band	Full Band
<b>Selectivity:</b>		
<b>25 kHz:</b>	80 dB	NA
<b>12.5 kHz:</b>	70 dB	70 dB
<b>Sensitivity 12 dB SINAD</b>	0.35µV	0.35µV
<b>Signal displacement Bandwidth: (Off Channel Acceptance) (12.5/25 kHz)</b>	1 kHz / 2 kHz	1 kHz / NA
<b>Frequency Stability: (for temperature and voltage variation)</b>	1.0 PPM/External Ref (optional)	External Reference Required
<b>Intermodulation Rejection: (Intermodulation) (12.5 and 25 kHz)</b>	85 dB	85 dB
<b>Spurious and Image Response Rejection:</b>	90 dB	90 dB
<b>Audio Response:</b>	+1,-3 dB from 6 dB per octave de-emphasis; 300-3000 Hz referenced to 1000 Hz at line input	+1,-3 dB from 6 dB per octave de-emphasis; 300-3000 Hz referenced to 1000 Hz at line input
<b>Audio Distortion:</b>	Less than 3% at 1000 Hz; 60% RSD	Less than 3% at 1000 Hz; 60% RSD
<b>Line output:</b>	-20 dBm to 7 dBm, @ full system deviation @ 1 kHz	-20 dBm to 7 dBm, @ full system deviation @ 1 kHz
<b>FM Hum and Noise: (750µs de-emphasis)</b>		
<b>25 kHz:</b>	1000 Hz tone @ 60% RSD	1000 Hz tone @ 60% RSD
<b>12.5 kHz:</b>	50 dB nominal	NA
<b>12.5 kHz:</b>	45 dB nominal	45 dB nominal
<b>RF Input Impedance:</b>	50 Ohms	50 Ohms

## FCC TYPE ACCEPTANCE

Frequency Range in MHz	Type	Power Output in Watts	Type Acceptance Number
851-870	Transmitter	75-20	ABZ89FC5785
806-825	Receiver	NA	ABZ89FR5786
935-940	Transmitter	75-20	ABZ89FC5788
896-901	Receiver	NA	ABZ89FR5789

Industry Canada Approval: Type T554X 109195112

Note: Specifications per TIA/EIA 603.

Specifications subject to change without notice.



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## MOTOROLA

Motorola U.S.A.  
1301 E. Algonquin Road  
Schaumburg, Illinois 60196  
In the U.S. call: 1-800-247-2346

Motorola Canada Limited  
3900 Victoria Park Avenue  
North York, Ontario M2H 3H7  
In Canada call: 1-800-268-5758

Outside the U.S. and Canada call: (847) 538-6602

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