

# MOTOTRBO™ DEM 500 mobile two-way radios

## Digital, now within reach

With enhanced features and integrated systems capability, the MOTOTRBO DEM 500 combines the best of two-way radio functionality with the latest digital technology to help your workers be more effective at what they do.





## Features

- Dual mode digital and analogue
- Voice communications
- Alphanumeric display
- Intelligent Audio
- Basic privacy
- IMPRES™ audio
- Dual Capacity Direct Mode (only in digital version)
- Voice Announcement
- Digital Mobile Radio (DMR) Standards compliant
- Narrowbanding compliant
- IP54 Rated
- Conventional systems capable (IPSC only)

## Options

- Enhanced privacy
- Radio Management suite
- Over the Air Programming (OTAP)
- Transmit Interrupt capability

## Systems compatibility

- IP Site Connect
- Capacity Plus

### GENERAL SPECIFICATIONS

	VHF	UHF BAND 1
Channel Capacity		128
Typical RF Output		
Low Power	1-25 W	1-25 W
High Power	25-45 W	25-40 W
Frequency	136-174 MHz	403-470 MHz
Dimensions (H x W x L)	44 x 169 x 134 mm (1.7 x 6.7 x 5.3 in)	
Weight	1.3 kg (2.9 lbs)	
Current Drain		
Standby	0.81 A max	0.81 A max
Rx @ Rated Audio	2 A max	2 A max
Transmit	1-25 W: 11.0 A max / 25-45 W: 14.5 A max	1-25 W: 11.0 A max / 25-40 W: 14.5 A max



RECEIVER		
	VHF	UHF BAND 1
Frequency	136-174 MHz	403-470 MHz
Channel spacing	12.5 kHz / 25 kHz	
Frequency stability (-30°C, +60°C, +25°C Ref)	± 0.5 ppm	
Analogue sensitivity (12 dB SINAD)	0.3 µV 0.22 µV (typical)	
Digital sensitivity (5% BER)	0.25 µV 0.19 µV (typical)	
Intermodulation (TIA603D)	75 dB	70 dB
Adjacent channel selectivity (TIA603D)	50 dB @ 12.5 kHz 75 dB @ 25 kHz	50 dB @ 12.5 kHz 70 dB @ 25 kHz
Spurious rejection (TIA603D)	75 dB	70 dB
Rated audio	4 W (Internal) 7.5 W (External - 8 ohms) 13 W (External - 4 ohms)	
Audio distortion @ rated audio	3% (typical)	
Hum and noise	-40 dB @ 12.5 kHz -45 dB @ 25 kHz	
Audio response	TIA603D	
Conducted spurious emissions (TIA603D)	-57 dBm	

TRANSMITTER		
	VHF	UHF BAND 1
Frequency	136-174 MHz	403-470 MHz
Channel spacing	12.5 kHz / 25 kHz	
Frequency stability (-30°C, +60°C, +25°C Ref)	± 0.5 ppm	
Low power output	1-25 W	1-25 W
High power output	25-45 W	25-40 W
Modulation limiting	± 2.5 kHz @ 12.5 kHz ± 5.0 kHz @ 25 kHz	
FM hum and noise	-40 dB @ 12.5 kHz -45 dB @ 25 kHz	
Conducted / radiated emission	-36 dBm < 1 GHz -30 dBm > 1 GHz	
Adjacent channel power	60 dB @ 12.5 kHz 70 dB @ 25 kHz	
Audio response	TIA603D	
Audio distortion	3%	
FM modulation	12.5 kHz: 11K0F3E 25 kHz: 16K0F3E	
4FSK digital modulation	12.5 kHz Voice: 7K60F1E and 7K60FXE	
Digital vocoder type	AMBE +2™	
Digital protocol	ETSI TS 102 361-1, -2, -3. DMR Tier II	



MILITARY STANDARDS										
	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G	
	Method	Procedure/ category								
Low pressure	500.1	I	500.2	II	500.3	II	500.4	II	500.5	II
High temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Hot	501.5	I/A1, II
Low temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.5	I/C3, II
Temperature shock	503.1	I	503.2	I/A1/C3	503.3	I/A1/C3	503.4	I	503.5	I/C
Solar radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.5	I/A1
Rain	506.1	I	506.2	I	506.3	I, II	506.4	I, III	506.5	I
Humidity	507.1	II	507.2	II	507.3	II	507.4	-	507.5	II - Aggravated
Salt fog	509.1	-	509.2	-	509.3	-	509.4	-	509.5	-
Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.5	I
Vibration	514.2	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.6	I/24
Shock	516.2	I, II	516.3	I, IV	516.4	I, IV	516.5	I, IV	516.6	I, IV, V, VI

#### ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-30°C / +60°C
Storage temperature	-40°C / +85°C
Thermal shock	Per MIL-STD
Humidity	Per MIL-STD
ESD	IEC 61000-4-2 Level 3
Dust and water intrusion <sup>1</sup>	IP54, MIL-STD
Packaging test	Per MIL-STD

<sup>1</sup> Radio meets IP54 and MIL-STD rating with microphone sealing boot and rear accessory connector cover properly installed.

To learn more, visit: [www.motorolasolutions.com/mototrbo](http://www.motorolasolutions.com/mototrbo)



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