

MOTOTRBO

DR 3000 / MTR3000 PROFESSIONAL DIGITAL TWO-WAY RADIO REPEATER

MOTOTRBO PROFESSIONAL DIGITAL TWO-WAY RADIO SYSTEM THE FUTURE OF TWO-WAY RADIO

Motorola is a company of firsts with a rich heritage of innovation. We continue to invent what's next, connecting people, delivering mobility and making technology personal. Versatile and powerful, MOTOTRBO combines the best in two-way radio functionality with digital technology, making it the ideal communication solution for your business. You get enhanced features, increased capacity, integrated data applications, exceptional voice quality and extended battery performance. This means more productive employees and lower operating costs for your business.



- Integrates voice and data into one device to increase your operational efficiency and support integrated applications including MOTOTRBO Text Messaging Services. Also features an integrated GPS module for use with third-party location-tracking applications.
- Uses Time-Division Multiple-Access (TDMA) digital technology to provide twice the calling capacity (as compared to analogue or FDMA radios) for the price of one frequency license. A second call doesn't require a second repeater, saving you equipment costs.
- In digital mode, provides clearer voice communications throughout the coverage area, as compared to analogue radios, rejecting static and noise.
- Provides easy migration from analogue to digital with the ability to operate

- in both analogue and digital modes and utilising the **dynamic mixed mode** repeater functionality allows for automatic switching between analogue and digital mode on the same repeater.
- Enables additional functionality including dispatch data, enhanced call signaling, basic and enhanced privacy-scrambling and option board expandability.
- Designed to comply with the globally recognised European Telecommunications Standard Institute (ETSI) Digital Mobile Radio (DMR) Tier 2 standard for professional two-way radio users.
- Features the transmit interrupt suite, voice interrupt, remote voice dekey, emergency voice interrupt or data over voice interrupt, to help prioritise critical communication exactly when needed.

- The IP Site Connect digital solution uses an IP network to extend coverage of your MOTOTRBO communication system to users anywhere in the world for dramatically improved customer service and increased productivity.
- Capacity Plus is a scalable, singlesite digital trunking solution that can expand the capacity of your MOTOTRBO communication to over a thousand radio users.
- Motorola's Professional Radio
 Application Partner Programme
 enables the development of
 customised data applications that adapt
 MOTOTRBO radios to meet the unique
 needs of your business.
- Backed by a two-year Standard warranty. Extended Care Option available.

STANDARDS BASED, FUTURE READY SOLUTION

MOTOTRBO is designed to comply with the globally recognised European Telecommunications Standard Institute (ETSI) Digital Mobile Radio (DMR) Tier 2 standard for professional two-way radio users.

DMR is widely backed by industry leading two-way radio manufacturers, and it is the

most widely deployed digital mobile radio technology for professional radio users around the world. This open standard assures long-term stability and develops a community of manufacturers who build interoperable equipment that can compete on features, benefits and price.



The DMR Association represents a collection of companies and organisations that manufacture DMR equipment, supply related products and service or support the standard in other ways. Motorola is an active member of the DMR Association so you can be assured that MOTOTRBO will always be a robust and future-ready digital radio solution.

MOTOTRBO™ DR 3000 REPEATER SPECIFICATIONS

Part	General Specifications	
December	-Solioral opcomodulons	
Table of Michael	Channel Capacity	
	Low Power UHF1 and VHF	
Page	High Power UHF1	25-40 W
March Marc		
Marcian Marc	Frequency	
Wager Hug Wager Pleasuremis 1928/UN PLIT DEV DOL Convert, Device 2024/US VAD Standard Process 2024/US VAD Wager Pleasuremin Look Publish 2024/US VAD Wager Plant Plant VAD Use Plant		
Wasp Preservation 1809-00 Var. 01.8 V DOI Clament Date ADD AND AND AND AND AND AND AND AND AND	Dimensions (HxWxL)	132.6 x 482.6 x 296.5 mm
	Weight	14 kg
Sanday S	Voltage Requirements	100-240 V AC (13.6 V DC)
1908 1908		
March Marc	Standby	
Sep Proposed Sep		
### ### ### ### ### ### ### ### ###	Transmit	
Page	Low Power	
Contains Properties Region 100 to 10	High Power	>2.5A (100 V AC)
Opening Programme Ranger 90°C to 100°C Name Dury Opide 100°C Receiver 100°C Presenting 100°C Presenting 100°C Cleaned Statistics 100°C Optical St		
Manual Potentian Manual Pot	Operating Temperature Bange	
Page		
Projector		
Finguancy		E1SI-15 102 301-1, 2 & 3
Penganery	Receiver	
Channel Spatian ACASTON MIC (URF) Channel Spatian 12.5 MLZ (20 MLW 7.25 MLW Programory, Sublity (-30°C, 49°C, 22°C) 4.0 B ppm Analogue Sensitivy 2.00 LUX (12 MLS SIAMD) 0.22 W (Myrail ILX dis SIAMD) Digital Sensitivy 5.8 BER. 0.3 W Intermediation 7.0 de Adjoin of Channel Selectivity 6.0 de 12.5 MLY Survois Reportion 7.0 de Audio Distrotion of Read Audio 9.0 de 12.5 MLY Audio Distrotion of Read Audio 9.0 de 12.5 MLY Audio Distrotion of Read Audio 9.0 de 12.5 MLY Audio Distrotion of Read Audio 9.0 de 12.5 MLY Audio Distrotion of Read Audio 9.0 de 12.5 MLY Audio Distrotion of Read Audio 9.0 de 12.5 MLY Audio Propriet 9.0 de 12.5 MLY Audio Propriet 9.0 de 12.5 MLY Audio Propriet 9.0 de 12.5 MLY Propriet 9.0 de 12.5 MLY Propriet 9.0 de 12.5 MLY Audio Propriet 9.0 de 12.5 MLY Charrier Spatial 9.0 de 12.5 MLY Charrier Spatial 9.0 de 12.5 MLY Pr		DR 3000
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Casanel Spacing 12.5 MEZ (25 MEZ) (. roquonoy	403-470 MHz (UHF1)
Pengang Statishty		
Ca0**C., A9**C. A9**C	Channel Spacing	12.5 kHz / 20 kHz / 25 kHz
Analogue Sensitivity Call Sensitivity Digital Sensitivity 9.00 (2.00 km) (2.00 db) SINAD) Intermodulation 70 db Adjacent Channel Selectivity 9.00 (2.00 km) (2.00 km) Audio Distortion of Bried Audio 1.00 (2.00 km) Audio Distortion of Bried Audio 9.00 (2.00 km) Audio Bried Programment 9.00 (2.00 km) Frequency Scalibly 9.00 (2.00 km) Frequency Scalibly 9.00 (2.00 km) Frequency Scalably 9.00 (2.00 km)		+/- 0.5 ppm
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Popular Sanstriving \$1.0	Analogue Sensitivity	
Internodulation 70 dB Againet Channel Selectivity 0 dB ⊕ 12 5 Hz² Spurious Rejection 70 dB ⊕ 2025 Hz² Spurious Rejection 70 dB Audio Distortion @ Rated Audio 9 dB ⊕ 2025 Hz² Audio Distortion @ Rated Audio 40 dB ⊕ 12.5 Hz² Audio Response 40 dB ⊕ 12.5 Hz² Choucted Spurious Emission 5 dB ⊕ 2005 Hz² Transmitter DR 8000 Frequency DR 8000 Channel Spacing Channel Spacing 1 dB 2007 Hz (UHZ) Channel Spacing 40 dB 2005 Hz (UHZ) Programmy Stability 40 dB 2005 Hz (UHZ) Channel Spacing 1 dB 2007 Hz (UHZ) Power Cutput 2 dB 2007 Hz (UHZ) Low Power UHZ 24605 tz AHZ) 40 dB 2005 Hz (UHZ) High Power UHZ 45 dB 2007 Hz (UHZ) High Power UHZ 45 dB 2007 SHz (UH		0.4 uV (20 dB SINAD)
Adjacent Channel Selectivity 50 of 8 01.25 kHz Spurious Rejection 70 dB Audio Datoritori of Rated Audio 3% to ploal Hum and Noise 4.9 dB 0.25 kHz Canducide Spurious Emission 5.7 of 98m < 16Hz	Digital Sensitivity	5% BER: 0.3 uV
Power Powe	Intermodulation	70 dB
Spunious Rejection 70 dB Audio Distortion ® Rated Audio 3 % (typical) Hum and Noise 4 dB 8 12 5 kHz Audio Response 4 dB 8 02 025 kHz Audio Response 4 dB 8 02 025 kHz Conducted Squirous Emisson Conducted Squirous Emisson DR 8000 Frequency DR 8000 Frequency Stability Cannel Spacing 1 36-174 MHz (WHF) Frequency Stability 4 0.5 ppm Castro C, 450° C,	Adjacent Channel Selectivity	
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Hum and Noise 450 de 2025 kHz Audio Response 1,3 de Conducted Spurious Emission 57 dbm < 1GHz		
Audio Response 45 dB @ 20/25 kHz Conducted Spurious Emission 5 dBm < 16 Hz TRANSMITTER DR 3000 DR 3000 Frequency DR 3000 Chancel Spacing Prequency Stability C-0.5 ppm - 1.25 bW High Power UHF1 and UHF 1.25 bW High Power UHF2 (450-512 MHz) 1.40 bW High Power UHF2 (450-512 MHz) 1.40 bW High Power UHF2 (450-512 MHz) 1.40 bW High Power UHF2 (450-512 MHz)	Audio Distortion @ Rated Audio	3% (typical)
Audio Response +1,3 dB Conducted Spurious Emission 57 dBm < 1 GHz Transmitter Prequency Prequency Channel Spacing 138-174 MHz (VHF) Channel Spacing 125-5 kHz (20 kHz / 26 kHz Frequency Stability 40-05 ppm Coy Or, +60° C, +25° C) +1 - 25 W Power Outport 1-25 W Ling Power UHF1 and VHF 1-25 W Ling Power UHF2 (450-812 MHz) 1-25 W High Power UHF2 (525-227 MHz) 1-25 W High Power UHF2 (625-227 MHz) 1-25 W High Power UHF1 and VHF 25-45 W High Power UHF1 (625-227 MHz) 1-25 W High Power UHF2 (625-227 MHz) 1-25 W <t< td=""><td>Hum and Noise</td><td></td></t<>	Hum and Noise	
Conducted Spurious Emission 5.7 dBm < 1GHz Transmitter DR 3000 Frequency 136-174 MHz (WHF) 406-427 MHz (WHF) 450-527 MHz (WHF) Channel Spacing 12.5 kHz / 20 kHz / 25 kHz Frequency Stability (-30° C, 460° C, 425° C) 1-25 W Power Output Low Power UHF1 and VHF High Power UHF2 (810-827 MHz) High Power UHF2 (810-827 MHz) High Power UHF2 (812-827 MHz) High Power UHF2	A F D	
Transmitter PER guency Frequency 136-174 MHz (VHF) 403-470 MHz (UHF2) 403-470 MHz (UHF2) Channel Spacing 12.5 kHz / 20 kHz / 25 kHz Frequency Stability (-30° C, +20° C) +/- 0.5 ppm Power Output Low Power UHF1 and VHF (bit 2-512 MHz) High Power UHF2 (812-527 MHz) High Power UHF2 (812-527 MHz) High Power UHF3 (812-627 MHz) High		
Frequency 136-174 MHz (VHF) 403-470 MHz (UHF2) 403-470 MHz (UHF2) 403-470 MHz (UHF2) 403-470 MHz (UHF2) Channel Spacing 12.5 kHz / 20 kHz / 25 kHz Frequency Stability (-30° C, 45° C) +/-0.5 ppm Power Output Low Power UHF1 and VHF (High Power UHF2 (450-512 MHz) High Power UHF2 (450-512 MHz) High Power UHF2 (450-512 MHz) High Power UHF2 (51-527 MHz) High P	Conducted Spurious Emission	-57 dBm < 1GHz
Frequency 136-174 MHz (VHF) 403-470 MHz (UHF) 405-827 MHz (UHF) 405-827 MHz (UHF) Channel Spacing 12.5 kHz / 20 kHz / 25 kHz Frequency Stability (-30° C, +60° C, +25° C) +60° 5 ppm Power Output of VHF 1-25 W Hz / 40.5 ppm High Power UHF1 and VHF High Power UHF2 (812-527 MHz) High Power UHF2 (812-527 MHz) High Power UHF2 (812-527 MHz) High Power UHF3 (812-527 MHz) High	Transmitter	
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Channel Spacing 12.5 kHz / 20 kHz / 25 kHz Frequency Stability (-30° C, +25° C) +* 0.5 ppm Power Output (-30° C, +25° C) +* 0.5 ppm Power Output (-30° C, +25° C) +* 0.5 ppm Power Output (-30° C, +25° C) +* 0.5 ppm Power Output (-30° C, +25° C) +* 0.5 ppm Power Output (-30° C, +25° C) +* 0.5 ppm Power Output (-30° C, +25° C) +* 0.5 ppm Power Output (-30° C, +25° C) +* 0.5 ppm In (-30° C, +25° C) +* 0.5 ppm Power Output (-30° C, +25° C) +* 0.5 ppm Power Output (-30° C, +25° C) +* 0.5 ppm Power Output (-30° C, +25° C) +* 0.5 ppm Modulation Limiting +* 0.5 ppm Modulation Limiting +* 2.5 kHz @ 1.5 kHz @ 1.5 kHz & 1.5 kHz	Frequency	
Channel Spacing 12.5 kHz/20 kHz/25 kHz Frequency Stability (-30° C, +25° C) +/- 0.5 ppm Power Output Cow Power UHF1 and VHF High Power UHF2 (450-512 MHz) High Power UHF2 (450-512 MHz) High Power UHF2 (450-512 MHz) High Power UHF1 2.5 kHz +1- 25	7	403-470 MHz (UHF1)
Frequency Stability (-30° C, +60° C, +25° C) +/- 0.5 ppm Power Output Low Power UHF1 and VHF High Power UHF2 (450-512 MH2) High Power UHF2 (450-512 MH2) High Power UHF3 (450-512 MH2) High Power UHF4 (515-527 MH2) High Power UHF4		
C-30° C, +25° C) Power Output		
Power Output Low Power UHF1 and VHF High Power UHF2 (450-512 MHz) High Power UHF2 (450-512 MHz) High Power UHF2 (512-527 MHz) High Power UHF2 (512-527 MHz) High Power UHF1 (512-527 MHz) High Power UHF2 (512-527 MHz) High Po	Frequency Stability	+/- 0.5 ppm
Low Power UHF2 Ind VHF 1.25 W High Power UHF2 (512-527 MHz) 1.25 W High Power UHF2 (512-527 MHz) 1.25 W High Power UHF1 (512-527 MHz) 25-40 W High Power UHF1 (512-527 MHz) 25-45 W Modulation Limiting +/- 2.5 kHz @ 12.5 kHz +/- 5.0 kHz @ 20 kHz +/- 5.0 kHz &/- 5.0 kHz		
High Power UHF2 (BT2-S27 MHz) 1.25 W High Power UHF1 25-40 W Modulation Limiting +/- 2.5 kHz @ 12.5 kHz +/- 4 kHz @ 20 kHz +/- 4 kHz @ 20 kHz +/- 5.0 kHz @ 25 kHz FM Hum and Noise -40 dB @ 12.5 kHz -/- 5.0 kHz Conducted / Radiated Emission -30 dBm ≤ 1 GHz -/- 3.0 dBm ≤ 1 GHz -/- 3.0 dBm ≤ 1 GHz -/- 3.0 dBm ≤ 1 GHz -/- 7.0 dB @ 20/25 kHz Adjacent Channel Power -60 dB @ 12.5 kHz -/- 7.0 dB @ 20/25 kHz -/- 7.0 dB @ 20/25 kHz Audio Response +1, -3 dB Audio Distortion 3%	Low Power UHF1 and VHF	
High Power UHF1 25-40 W High Power VHF 25-45 W Modulation Limiting +/- 25 kHz @ 12.5 kHz wh. 4 kHz @ 20 kHz wh. 4 kHz @ 20 kHz wh. 4 kHz @ 25 kHz wh. 5 0 kHz @ 25 kHz wh. 4 kHz	High Power LIHE2 (450-512 MHz)	
Modulation Limiting #/- 2.5 kHz @ 12.5 kHz #/- 4 kHz @ 20 kHz #/- 4 kHz @ 20 kHz #/- 4 kHz @ 20 kHz #/- 5.0 kHz @ 25 kHz #/- 5.0 kHz @ 20/25 kHz Conducted / Radiated Emission 36 dBm < 1 GHz #/- 3.0 dBm > 1 GHz #/- 3.0 d	High Power UHF1	25-40 W
#./ 4 kHz @ 20 kHz #./ 5.0 kHz @ 25 kHz FM Hum and Noise		
FM Hum and Noise 40 dB @ 12.5 kHz Conducted / Radiated Emission -36 dBm < 1 GHz	Modulation Limiting	
FM Hum and Noise 40 dB @ 12.5 kHz 45 dB @ 20/25 kHz Conducted / Radiated Emission 36 dBm < 1 GHz 30 dBm > 1 GHz 30		+/- 4 KTZ ¹⁰ ZU KTZ +/- 5.0 kHz ²⁰ St kHz
Conducted / Radiated Emission Capacitated Finance Adjacent Channel Power Adjacent Channel P	FM Hum and Noise	
Adjacent Channel Power -30 dBm > 1 GHz Audio Response +00 dB @ 12.5 kHz Audio Distortion +1,-3 dB Audio Distortion 3%		
Adjacent Channel Power -60 dB @ 12.5 kHz -70 dB @ 20/25 kHz Audio Response +1, -3 dB Audio Distortion 3%	Conducted / Radiated Emission	-36 dBm < 1 GHz
-70 dB @ 20/25 kHz Audio Response +1, -3 dB Audio Distortion 3%		
Audio Response +1, -3 dB Audio Distortion 3%	Adjacent Channel Power	
Audio Distortion 3%	Audio Rosponso	
Digital voccider Type AMBE+2		
	Digital vocoder Type	AMBE+2

MTR3000 BASE STATION / REPEATER SPECIFICATIONS

	MTR3000	Upgrade kit for		
		MTR2000 stations		
Number of Frequencies	L	Up to 16		
Modulation	FN	FM & 4FSK		
Frequency Generation	Syr	Synthesized		
Channel Spacing Analogue Digital		12.5 kHz, 25 kHz* 12.5 kHz (6.25e compliant)		
Mode of Operation	Semi-di	Semi-duplex / Duplex		
Temperature Range	-30°	−30°C to +60°C		
Antenna Connectors	Transmit and Rec	Transmit and Receive, Type "N" Female		
AC Operation	85-264	85-264 VAC, 47-63 Hz		
DC Operation	28.6 VDC (25.7-30.7 V	28.6 VDC (25.7-30.7 VDC full rated output power)		
	Dimensions	Weight		
Base Station Repeater	5.25 x 19 x 16.5 in. (133 x 483 x 419 mm)	40 lbs (19 kg)		

Receiver				
		MTR3000		
Frequency		403-470, 450-524 MHz	403-470 MHz	
Selectivity (TIA603)	25 kHz* 12.5 kHz	80 dB (86 dB typical) 75 dB (78 dB typical)		
Selectivity (TIA603D)	25 kHz* 12.5 kHz	75 dB (85 dB typical) 45 dB (60 dB typical)		
Analogue Sensitivity 12 dB SINAD		0.30 uV (0.22 uV typical)		
Digital Sensitivity 5% BER		0.30 µV (0.20 uV typical)		
Signal Displacement Bandwidth 12.5 / 25 kHz		1 kHz/2 kHz		
Intermodulation Rejection	12.5 and 25 kHz	85 dB		
Spurious and Image Response Rejection		85 dB (typical 95 dB)		
Audio Response		+1,-3 dB from 6 dB per octave de-emphasis; 300-3000 Hz referenced to 1000 Hz at line output		
Audio Distortion		Less than 3% (1.5% typical) at 1000 Hz, 60% RSD		
Line Output		330 mV (RMS) @ 60% RSD		
FM Hum and Noise (750µs de-emphasis)	25 kHz* 12.5 kHz	50 dB nominal 45 dB nominal		
RF Input Impedance		50 Ohms		

Transmitter			
	MTR3000		
Frequency	403-470, 470-524 MHz		
Power Output (Continuous Duty)	8-100 watts		
Electronic Bandwidth	Full Band		
Output Impedance	50 Ohms		
Intermodulation Attenuation	55 dB		
Maximum Deviation (RSD) 25 kHz* 12.5 kHz	±5 kHz ±2.5 kHz		
Audio Sensitivity	60% RSD @ 80 mV RMS		
Spurious and Harmonic Emissions Attenuation	85 dB		
FM Hum and Noise 25 kHz* (750 µs de-emphasis) 12.5 kHz	50 dB nominal 45 dB nominal		
Frequency Stability (for temperature and aging variation)	1.5 PPM/External Ref (optional)		
Audio Response	+1,-3 dB from 6 dB per octave pre-emphasis; 300-3000 Hz referenced to 1000 Hz at line output		
Audio Distortion	Less than 3% (1% typical) at 1000 Hz; 60% RSD		
Emission Designators	FM Modulation: 12.5 kHz: 11K0F3E; 25 kHz*; 16K0F3E 4FSK Modulation: 12.5 kHz - Data Only: 7K60FXD; 12.5 kHz - Data & Voice: 7K60FXE		
Digital Vocoder Type	AMBE +2™ Vocoder		
Digital Protocol	ETSI 102 361-1, -2, -3		

UHF Input Power			
	AC Line 117 Volts / 220 Volts		
100 W Standby	0.4A/0.2A	0.8A	
100 W Transmit	3.3A/1.8A	11.5A	