



# MOTOTRBO™ DEM™300 AND DEM™400 MOBILE RADIOS

YOU'RE SIMPLY MORE EFFICIENT



## FEATURES

- Voice Communications
- Dual Capacity Direct Mode (Only Digital version)
- Numeric Display (DEM 300)
- Alphanumeric Display (DEM 400)
- Digital Mobile Radio (DMR) Standards Compliant
- Narrowbanding Compliant
- IP54 Rated
- Analog Scrambling

## OPTIONS

- Radio Management Suite
- Transmit Interrupt (decode only)

Your people are on the move, delivering cargo, picking up consignments, driving children to and from school. You need to keep them in touch and on track efficiently. And you want to make sure the radios they use are as affordable and adaptable as possible.

Now there are flexible mobiles that give you great voice communications today, and a path to crisp and clear digital voice communications when you're ready. Versatile and powerful, MOTOTRBO™ combines the best of two-way radio functionality with the latest analog and digital technology. The MOTOTRBO portfolio offers the right device for the right user, from voice-only portables to feature-rich voice and data radios.

The rugged MOTOTRBO DEM 300 and DEM 400 are available as analog/digital mobile radios that offer all the benefits of the latest technology – from superior audio to greater coverage. These affordable performers are compatible with advanced MOTOTRBO features you'll find are business-essential, for example a transmission can be interrupted to prioritize critical communications.

With its bright, high contrast alphanumeric screen, the DEM 400 allows drivers to see important information such as caller ID at a glance. The DEM 300 offers lower capacity and a simpler numeric display.

The DEM 300 and DEM 400 are so easy to use and deliver such clear voice communications, you'll be amazed how efficient your operation can be.

**SIMPLE VOICE COMMUNICATIONS  
FOR THE EVERYDAY USER WHO WANTS TO STAY CONNECTED**

## CONNECT YOUR CREWS EASILY AND EFFICIENTLY

DEM 300 and DEM 400 mobile radios are ideal for keeping your people reliably and cost-effectively connected so they can communicate, coordinate and collaborate – whether they're delivering packages or transporting passengers. With easy-to-use ergonomics and crisp, clear audio, now your teams can work more efficiently.

Unleash the power of your DEM 300 and DEM 400 mobile radios with Motorola Original® accessories. They're the only accessories designed, built and tested with your radio to optimize its performance. (See separate accessory fact sheet for full portfolio.)

## KEEP THEM IN CONTACT AND ON COURSE

A lost delivery driver uses his DEM 300 mobile radio installation to call the office. The visor microphone and steering wheel-mounted push-to-talk button allow him to communicate safely while driving, and the digital noise-cancelling software filters out the road noise so he can be heard clearly. Soon he's safely back on track.

The school bus driver relies on his DEM 400 to keep his passengers safe. The digital technology gives excellent coverage throughout the district, and now they're running

the MOTOTRBO Dual Capacity Direct Mode, he has no problem getting a channel. The clear, bright alphanumeric screen gives him all the information he needs, and if there's an incident, he can use one of the programmable buttons to call for help – with one touch.

## COMMUNICATE WITHOUT DISTRACTING THEM

The DEM 300 and DEM 400 are designed for the everyday driver and let you connect to your mobile workforce without distracting them. So while they improve efficiency, they also enhance safety.

## GET DURABILITY THAT ENDURES

The DEM 300 and DEM 400 are made to last. They are backed by a two-year standard warranty and a minimum one-year warranty for Motorola-branded accessories. They are rated IP54 (splashproof, virtually dustproof), so they can be used even in harsh environments. Moreover, the design has been proven tough in Motorola's grueling Accelerated Life Test program, in which the radios must survive a simulated 5 years of hard service before they are accepted. You can be confident in the durability of your DEM 300 and DEM 400 radios.



## GENERAL SPECIFICATIONS

	DEM 400		DEM 300	
	VHF	UHF BAND 1	VHF	UHF BAND 1
Channel Capacity	64		16	
Typical RF Output				
Low Power	1-25 W	1-25 W	1-25 W	1-25 W
High Power	25-45 W	25-40 W	25-45 W	25-40 W
Frequency	136-174 MHz	403-470 MHz	136-174 MHz	403-470 MHz
Dimensions (H x W x L)	1.7 x 6.7 x 5.3 in (44 x 169 x 134 mm)		1.7 x 6.7 x 5.3 in (44 x 169 x 134 mm)	
Weight	2.9 lbs (1.3 kg)		2.9 lbs (1.3 kg)	
Current Drain				
Standby	0.81 A max	0.81 A max	0.81 A max	0.81 A max
Rx @ Rated Audio	2 A max	2 A max	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	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
FCC Description	1-25 W: ABZ99FT3090 25-45 W: ABZ99FT3091	1-25 W: ABZ99FT4092 25-40 W: ABZ99FT4093	1-25 W: ABZ99FT3090 25-45 W: ABZ99FT3091	1-25 W: ABZ99FT4092 25-40 W: ABZ99FT4093
IC Description	1-25 W: 109AB-99FT3090 25-45 W: 109AB-99FT3091	1-25 W: 109AB-99FT4092 25-40 W: 109AB-99FT4093	1-25 W: 109AB-99FT3090 25-45 W: 109AB-99FT3091	1-25 W: 109AB-99FT4092 25-40 W: 109AB-99FT4093



DEM 400



DEM 300

## RECEIVER

Frequency	136-174 MHz	403-470 MHz	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			
Analog Sensitivity (12 dB SINAD)	0.3 uV 0.22 uV (typical)			
Digital Sensitivity (5% BER)	0.25 uV 0.19 uV (typical)			
Intermodulation (TIA603D)	75 dB	70 dB	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*	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	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

Frequency	136-174 MHz	403-470 MHz	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			
High Power Output	25-45 W	25-40 W	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 Data: 7K60F1D and 7K60FXD 12.5 kHz Voice: 7K60F1E and 7K60FXE Combination of 12.5 kHz Voice and Data: 7K60F1W			
Digital Vocoder Type	AMBE +2™			
Digital Protocol	ETSI TS 102 361-1, -2, -3			

\*25 kHz is not available in the U.S.  
Specifications subject to change without notice. All specifications shown are typical.  
Radio meets applicable regulatory requirements. Version 1 02/13

**PRODUCT SPEC SHEET**

**MOTOTRBO™ DEM™300 AND DEM™400 MOBILE RADIOS**

<b>MILITARY STANDARDS</b>										
	<b>810C</b>		<b>810D</b>		<b>810E</b>		<b>810F</b>		<b>810G</b>	
	Method	Procedures	Method	Procedures	Method	Procedures	Method	Procedures	Method	Procedures
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	–	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, II	506.2	I, II	506.3	I, II	506.4	I, III	506.5	I, III
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

<b>ENVIRONMENTAL SPECIFICATIONS</b>	
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	IP54, MIL-STD*
Packaging Test	Per MIL-STD

\*Radio meets IP54 and MIL-STD rating with microphone sealing boot and rear accessory connector cover properly installed. Specifications subject to change without notice. All specifications shown are typical. Radio meets applicable regulatory requirements. Version 1 02/13

For more information on the MOTOTRBO™ DEM™300 or DEM™400, visit

[www.motorolasolutions.com/mototrbo](http://www.motorolasolutions.com/mototrbo).

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