MOTOTRBO ION

YOUR BUSINESS RUNS ON VOICE AND DATA. BUT IF YOUR DEVICES CAN ONLY ACCESS ONE, YOU'RE NOT RUNNING AT YOUR BEST.

The MOTOTRBO™ Ion smart radio is the first business-ready communication device with all-on voice and broadband data capabilities. It brings together renowned PTT performance, an open app ecosystem on the Android platform, and access to Motorola Solutions' unified technology ecosystem—from video security and analytics solutions, to best-in-class network security, to powerful new software and technology services like smart virtual assistants.

With MOTOTRBO Ion, teams stay connected across networks and devices. Business-critical data and workflows are unified and simplified. And the capabilities your workforce needs to be at their best are always on.

KEY FEATURES

APPS ARE ON
- Android platform
- Open app ecosystem
- Motorola Solutions' unified technology ecosystem
- Full multimedia capabilities
- Intuitive touchscreen interface

UPTIME IS ON
- Fast setup and updates
- Seamless device management
- Managed and supported services

SECURITY IS ON
- Device security
- Application security
- Data security

DEPENDABILITY IS ON
- Built for any environment
- Industry-leading audio
- Ultra-rugged touchscreen
- Customizable experience
- Long battery life
- Redesigned antenna
- Intrinsically safe

CONNECTIVITY IS ON
- Dedicated PTT device
- Seamless Voice Handover
- Full network interoperability with WAVE PTX
- DMR (MOTOTRBO)
- Long Term Evolution (LTE)
- Wi-Fi
- Wi-Fi Hotspot
- 3G and 4G LTE Cellular Connectivity
- Bluetooth
- HD Voice

MOTOROLA SOLUTIONS

FEATURES

CONNECTIVITY

LTE

Bands Supported	B1, B2, B3, B4, B5, B7, B8, B20, B28, B38, B39, B40, B41
	UMTS: 850 MHz, 900 MHz, 1700 MHz, 1900 MHz, 2100 MHz
Device Class	4
Certifications	TTA IoT for Korea

DMR (MOTOTRBO)

Operational Systems	Digital and Analog Conventional Dual Capacity Direct Mode IP Site Connect Capacity Plus Single/Multi-Site Capacity Max
Frequency Bands	UHF (400 -527 MHz)
	Up to 1000 Channels
	Up to 250 Zones
Channel Spacing	12.5, 25 kHz

DMR TRANSMITTER SPEC

RF Output Power	4 W (high) / 1 W (low)
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 Protocol	ETSI TS 102 361, DMR Tier II & III
Conducted/Radiated Emissions (ETSI)	-36 dBm < 1GHz, -30 dBm > 1GHz
Adjacent Channel Power	60dB (12.5 kHz channel), 70dB (25 kHz channel)
Frequency Stability	± 0.5 ppm

DMR RECEIVER SPEC

Analog Sensitivity (12dB SINAD)	0.16uV
Digital Sensitivity (5% BER)	0.14uV
Intermodulation (TIA603D)	70 dB
Adjacent Channel Selectivity, (TIA603A)-1T	60 dB (12.5 kHz channel), 70 dB (25 kHz channel)
Adjacent Channel Selectivity, (TIA603D)-2T	45 dB (12.5 kHz channel), 70 dB (25 kHz channel)
Spurious Rejection (TIA603D)	70 dB

Wi-Fi

Standards Supported	802.11a/b/g/n/ac
Frequency Range	2.4 GHz, 5 GHz
Security	Supports WEP, WPA, WPA2, WPA3, Wi-Fi Enhanced Open

BLUETOOTH

Version	5.0 + LE +BR/EDR
Range	Class 1.5, 33ft (10m)
Simultaneous Connections	1 x audio accessory and 1 x data device

GNSS SPECIFICATIONS

Time To First Fix, Cold Start	< 50 sec
Time To First Fix, Hot Start	< 5 sec
Horizontal Accuracy	< 16.5 ft (< 5 m)

LOCATION TRACKING

Built-in GNSS (GPS/GLONASS/BEIDOU/GALILEO) and AGPS

Indoor Positioning

BATTERY

Technology	IMPRES™ 2 Smart Battery
Battery Capacity	Standard 2820 mAh Standard HazLoc 2900 mAh High Capacity HazLoc 4400 mAh
Power Supply	7.5 V (Nominal)

AUDIO

Audio Output Power	Rated: 1 W @ 1% distortion Maximum: 3 W
Audio Response (EIA)	+1, -3 dB
Hum and Noise	-40 dB (12.5 kHz channel) -45 dB (25 kHz channel)
Conducted Spurious Emissions (TIA603D)	-57dBm
Audio Features	Adaptive Speaker Equalization Adaptive Dual Microphone Noise Suppression Adaptive Gain Control Adaptive Wind Noise Mitigation Automatic Acoustic Feedback Suppression Intelligent Audio IMPRES Audio Microphone Distortion Control User-Selectable Audio Profiles Trill Enhancement
Voice Interaction	Customizable Voice Announcements Voice Control: 13 Actions with Intuitive Commands

SOFTWARE

Operating System	Android 10
Google Certifications	Google Mobile Services Android Enterprise Recommended

VIDEO AND IMAGING

Supported Formats	H.263, H.264, MPEG-4 SP, VP8, JPEG (.jpg), GIF (.gif), PNG (.png), BMP (.bmp), WebP, (.webp) formats supported for playback, streaming, and recording
Supported File Types	3GPP (.3gp), MPEG-4 (.mp4), WebM (.webm), (.mkv)
Video Recording Quality	1080p (FHD) at 30 fps

SECURITY

Root Detection: Standard
Multi-Factor Authentication: Optional
Integrity Monitoring: Standard
Malware Blocking: Standard
Secure boot: Standard
Mobile Virtual Private Network: Optional

SPECIFICATIONS

HARDWARE

Main Display	4 in. color display, 480 x 800 px Capacitive touchscreen with Gorilla Glass Usable with gloves up to 4 mm thick Resistant to false actuation from fresh or salt water, snow, dirt or grease
Top Display	1.05 in. Monochromatic LCD
Memory	4 GB RAM 64 GB Internal Storage Storage is expandable with external up to 256 GB microSD™ card
Card Slot	1 x Nano SIM, 1 x Micro SD, e-SIM support
Camera	Rear 13 MP High-Output LED Flash Auto Focus 8x Digital Zoom
Sensor Platform	Hall-Effect Sensor Barometer Ambient Light Sensor Gyroscope Accelerometer E-Compass
User Interface	High velocity user interface: large touch targets, shallow menu hierarchy, home screen information at a glance.
Physical Buttons	Dedicated PTT Button Power/Volume Knob Dedicated Emergency Button Display On/Off Button 3 Programmable Buttons Channel Selector Knob
Antenna Length	6 cm, 9 cm or 15 cm, depending on frequency. Please refer to the MOTOTRBO Ion Accessory Catalog for details.

HAZLOC PROTECTION

When properly equipped with Motorola UL-Approved battery, MOTOTRBO Ion is UL Approved to TIA-4950 for use in Hazardous Locations, Division 1, Class I, II, III, Groups C,D,E, F, G; Division 2, Class 1, Groups A, B, C, D, T3C. Tamb = -20 °C to +60 °C.

PHYSICAL*

Dimensions (H x W x D) with Standard Battery	143 mm x 70 mm x 29 mm
Dimensions (H x W x D) with Standard Hazloc Battery	143 mm x 70 mm x 38 mm
Dimensions (H x W x D) with High-Capacity Battery	143 mm x 70 mm x 41 mm
Weight with Standard Battery	414 g
Weight with Standard Hazloc Battery	439 g
Weight with High-Capacity Battery	478 g

RUGGEDNESS

Ingress Protection	IP68 (2 meters, 2 hours)

*Physical specifications and dimensions are listed without antenna

77 mm

41 mm

143 mm

70 mm

29 mm

ENVIRONMENTAL AND REGULATORY

MIL-STD 810

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G		MIL-STD 810H	
	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.
Low Pressure	500.1	I	500.2	I/II	500.3	I/II	500.4	I/II	500.6	I/II	500.6	I/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	501.6	I/A1, II/A1	501.7	I/A1, II/A1
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.6	I/C3, II/C1	502.7	I/C3, II/C1
Temperature Shock	503.1	I	503.2	I/A1, C3	503.3	I/A1, C3	503.4	I	503.6	I/C	503.7	I/C
Solar Radiation	505.1	II	505.2	I/Hot-Dry	505.3	I/Hot-Dry	505.4	I/Hot-Dry	505.6	I/A1	505.7	I/A1
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.6	I, III	506.6	I, III
Humidity	507.1	II	507.2	II/Hot-Humid	507.3	II/Hot-Humid	507.4	-	507.6	II/Aggravated	507.6	II/Aggravated
Salt Fog	509.1	I	509.2	I	509.3	I	509.4	-	509.6	-	509.7	-
Dust	510.1	I	510.2	I, II	510.3	I, II	510.4	I, II	510.6	I, II	510.7	I, II
Vibration	514.2	VIII/F, XI	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24, II/5	514.7	I/24, II/5	514.8	I/24, II/5
Shock	516.2	II	516.3	I, IV	516.4	I, IV	516.5	I, IV	516.7	I, IV	516.8	I, IV
Contamination by Fluids									504.2	II	504.3	2.2.6 b

ENVIRONMENTAL

Operating Temperature	-20 to +60 ℃ (-4 to +140 ℉)
Storage Temperature	-40 to +85 ℃ (-40 to +185 ℉)
Humidity	Per MIL-STD 810
Thermal Shock	Per MIL-STD 810
Electrostatic Discharge	IEC 61000-4-2 Level 4
Dust and Water Intrusion	IEC 60529 - IP68, 6.6 ft (2 m) for 2 hrs
Salt Fog	5% NaCl for 48 hrs at 35 ℃, 48 hrs standing
Packaging Test	Per MIL-STD 810

REGULATORY

Model Number	MSLB-MKZ900i	MSLB-MKZ900Ti*

*This model has cellular connectivity capability

For more information, please visit
motorolasolutions.com/ion

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