



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
- CBRS (Nitro™)
- Bluetooth



FEATURES

CONNECTIVITY

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|-----------------|-------------------------------------------------------------|
| LTE | |
| Bands Supported | B2, B4, B5, B7, B12, B13, B14, B17, B30, B48 (Private Band) |
| Device Class | 4 |
| Certifications | Verizon, AT&T, Bell Mobility |

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| 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 |

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|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| 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 |

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|--------------------------------------------|---------------------------------------------------|
| 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 |

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| 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 |

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

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| 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) |

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| LOCATION TRACKING | |
| Built-in GNSS (GPS/GLONASS/BEIDOU/GALILEO) and AGPS | |
| Indoor Positioning | |

*25 kHz channels not available in USA

BATTERY

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|------------------|--------------------------------------------------------------------------------|
| 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

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|----------------------------------------|------------------------------------------------------|
| 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 |

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|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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

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

VIDEO AND IMAGING

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|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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

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

SPECIFICATIONS

HARDWARE

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|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| 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 32 GB Internal Storage Storage is expandable with external up to 128 GB microSD™ card | |
| Card Slot | eSIM for NA 1 x Nano SIM, 1 x Micro SD | |
| Camera | Rear 13 MP Auto Focus | High-Output LED Flash 8x Digital Zoom |
| Sensor Platform | Hall-Effect Sensor Ambient Light Sensor Accelerometer | Barometer Gyroscope 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 Dedicated Emergency Button 3 Programmable Buttons | Power/Volume Knob Display On/Off Button 16-position Channel Selector |
| 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**

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|--------------------------------------------------------|---------------------------------------------------|
| Dimensions (H x W x D) with Standard Battery | 5.6 in x 2.8 in x 1.2 in (143 mm x 70 mm x 29 mm) |
| Dimensions (H x W x D) with Standard Hazloc Battery | 5.6 in x 2.8 in x 1.5 in (143 mm x 70 mm x 38 mm) |
| Dimensions (H x W x D) with High-Capacity Battery | 5.6 in x 2.8 in x 1.6 in (143 mm x 70 mm x 41 mm) |
| Weight with Standard Battery | 15 oz (414 g) |
| Weight with Standard Hazloc Battery | 15 oz (439 g) |
| Weight with High-Capacity Battery | 17 oz (478 g) |

RUGGEDNESS

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|--------------------|--------------------------|
| Ingress Protection | IP68 (2 meters, 2 hours) |
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**Physical specifications and dimensions are listed without antenna



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 |

ENVIRONMENTAL

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|--------------------------|----------------------------------------------|
| Operating Temperature | -20 to +60 °C (-4 to +140 °F) |
| Storage Temperature | -40 to +85 °C (-40 to +185 °F) |
| 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 °C, 48 hrs standing |
| Packaging Test | Per MIL-STD 810 |

REGULATORY

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|--------------|---------------|
| FCC ID | AZ489FT7133 |
| IC ID | 109U-89FT7133 |
| Model Number | MSLB-MKZ900 |

For more information, please visit
motorolasolutions.com/ion



MOTOTRBO
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