MOTOTRBO R7

MOTOTRBO R7

PORTABLE TWO-WAY RADIOS

MOTOROLA *SOLUTIONS*

MOTOTRBO
R7

MOTOTRBO R7 PORTABLE
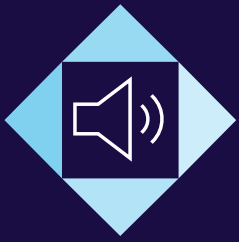TWO-WAY RADIOS

BE
HEARD

MOTOTRBO™ R7 IS A DIGITAL PORTABLE TWO-WAY RADIO THAT OFFERS LOUD, CLEAR, AND CUSTOMISABLE AUDIO IN A RUGGED, DEPENDABLE, AND CONNECTED DEVICE.

Its advanced audio processing ensures that your voice is always understood, while the rugged construction is ready for the toughest environments.

HEAR AND BE HEARD, CONNECT WHEN IT COUNTS AND GET CRITICAL INFORMATION QUICKLY

LOUD AND
CLEAR

CRYSTAL CLEAR AUDIO

MOTOTRBO R7 enables your team to clearly hear and be heard when it matters most. The Adaptive Dual Microphone Noise Suppression brings incredible noise cancelling to your communications, allowing you to hear your team over the deafening sound of machinery or the roar of a stadium at full capacity. Automatic Acoustic Feedback Suppression intelligently cancels out the feedback from other nearby radios, for a professional user experience when standing close to colleagues. Intelligent Audio monitors background noise and adjusts speaker volume so you don't have to, ensuring messages are always at the perfect volume in digital or analogue mode. The IMPRES™ audio technology in the R7 works seamlessly with your Motorola accessories so every call is heard clearly every time.
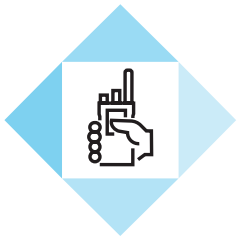
BE HEARD ABOVE EVERYTHING

MOTOTRBO R7 delivers exceptional loudness so your team can hear and be heard in any situation. Engineered with a powerful speaker, the R7 delivers a phenomenal loudness of 102 phons out of the box, loud enough to be heard over the roar of passing traffic. The R7 also features an extra loud audio profile, raising the total loudness to 107 phons on the radio and connected remote speaker microphones for use in the loudest areas you visit.

CUSTOMISABLE AUDIO EXPERIENCE

The MOTOTRBO R7 can be paired with accessories that are specially designed to make your fleet easier to use and even more capable. Remote speaker microphones and other accessories let you quickly use your radio even in loud environments where you may normally have to move to a quieter area. The R7's extra loud profile is supported on many of the purpose-built R7 accessories, meaning your audio requirements are unaffected by your choice of accessory. The carefully designed accessory port adds robust and reliable connectivity to your accessories while being resistant to dust and corrosion.

MOTOTRBO R7 ENABLES YOUR TEAM TO CLEARLY HEAR AND BE HEARD WHEN COMMUNICATION IS CRITICAL

DESIGNED FOR
BUSINESS

BUILT TO LAST

MOTOTRBO R7 is designed and tested to MIL-STD-810 military standards meaning it has no problem accompanying you no matter where or how you work. Device testing to IP66 and IP68 standards show that R7 radios are completely dust-tight and protected from water immersion up to 2 metres deep for 2 hours, as well as high-pressure water jets from any direction. Even the enlarged screen is ruggedised for impact resilience and protection from drops. R7 radios are available with approvals to UL TIA-4950, so you can use them in corresponding explosive environments without the risk of ignition or fire. Additionally, the housing material was specially designed for the medical industry to resist damage from disinfectants and decontamination substances[1], ensuring your radio will last through years of use, cleaning and disinfecting without breaking down.

POWERED BY A LITHIUM CELL BATTERY, MOTOTRBO R7 PROVIDES IMPRESSIVE BATTERY LIFE WHILE KEEPING WEIGHT AND SIZE DOWN
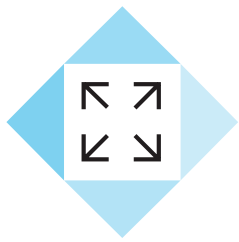
MINIMISED DOWNTIME

Your radios serve you best when they're easy to use, simple to manage, and stay in the field longer. Powered by Lithium Ion cells, MOTOTRBO R7's batteries keep weight and size down while providing long periods between charges. IMPRES® self-calibrating batteries eliminate hours of downtime spent calibrating and reconditioning batteries, while IMPRES chargers maximise the charge cycles from every battery so you get the most from your investment. To keep your devices protected from unauthorised use, built-in safeguards and remote kill and stun radio functions mean your network is only used by those who you want talking. With over-the-air programming and updating via Wi-Fi, you can keep your radios up to date without taking them out of the field.

CONNECTED WHEN IT COUNTS

R7 will keep your teams connected when it counts. The device features push-to-talk (PTT) capabilities for instant communications with your team and dispatchers, so you no longer need to worry about signal coverage and reliance on networks maintained by other organisations. R7 radios have superior receiver sensitivity allowing you to send and receive messages at the edge of coverage where other radios may struggle. MOTOTRBO R7 radios can be used for device-to-device communications in the field while still being compatible with every type of MOTOTRBO system; whether you have a small single-site installation, or a network covering an entire country.

[1] Please refer to the MOTOTRBO R7 user manual for a list of approved disinfectants and decontamination substances.

READY FOR
TOMORROW

BIG FEATURES, COMPACT DESIGN

More features than ever before, in a sleek and ergonomic form factor.

Large and optimally-located emergency button

2.4/5GHz Wi-Fi and Bluetooth 5.2 for fast and secure connectivity

Large 2.4 in. QVGA 320 x 240-pixel display for simple navigation

All these new features fit into a sleek and sophisticated form factor that is rugged while being easy for your teams to carry for an entire extended shift.

Front and back microphones for advanced noise cancelling

Li-Ion batteries to keep your radio light while providing long battery life

Powerful forward-facing speaker, positioned behind the keypad, delivers loud and clear audio

CONNECT AND COLLABORATE

The MOTOTRBO R7 is built with Wi-Fi 5 and Bluetooth® 5.2 connectivity on-board, making connections between radios, data sources, and accessories simple and fast. The modern connectivity provided by these technologies increases bandwidth while minimising power consumption, ensuring your devices last the full shift. With R7 radios, notifications from video security systems, alerts from gas sensors, text messages from colleagues and more can be accessed through your device. With increased connectivity, there is a risk of information overload for your mission-critical operatives; R7 radios reduce this risk by prioritising only the alerts that keep your workforce and customers safe, keeping productivity, efficiency, and safety high.

CRITICAL INFO AT FIRST GLANCE

The MOTOTRBO R7 radio features a large 2.4in. QVGA 320 x 240-pixel display, providing users with the information they need at a single glance. With the colour display and large screen, reading text and navigation of the menus is intuitive and fast, exactly what you want from a mission-critical device. The screen displays relevant information by default such as channel and a single button press allows users to get to commonly used actions with ease.

MOTOTRBO R7
ACCESSORIES

AUDIO
LOUD AND CLEAR, DESIGNED FOR COMFORT AND WEARABILITY

A range of wired and wireless audio accessories enables a tailored experience. Bluetooth 5.2 provides fast and secure wireless connectivity, while the sleek and compact GCAI-mini wired accessory port is designed for improved wearability. The MOTOTRBO R7 comes with an extra loud audio profile option which is compatible with several remote speaker microphones and surveillance earpieces for areas with high ambient noise.

ENERGY
MAXIMUM POWER FOR THE LONGEST SHIFTS

Our lightweight yet robust batteries provide power that lasts a full shift, ensuring that your MOTOTRBO R7 radio works when you need it. With a variety of flexible charging solutions, you can charge one or up to six batteries simultaneously, so your radios are always ready for the next shift.

CARRY
SECURE, EASY ACCESS

Choose from plastic carry cases and belt clips, all designed to secure the radio to your body while providing easy access to the R7 radio when you need it. With R7 carry solutions, your team can stay hands-free and focused on the task ahead.

ANTENNAS
DESIGNED FOR WEARABILITY

Motorola Solutions' R7 antennas provide convenience without compromising performance. Short and flexible, these antennas won't interfere with wearability or use in mission-critical environments.

To view MOTOTRBO R7's full suite of accessories, please visit:
motorolasolutions.com/R7/accessories

MOTOTRBO R7 AND THE MOTOROLA SOLUTIONS ECOSYSTEM

Motorola Solutions has developed the first and only technology ecosystem that unifies voice, video, data and analytics in a single platform, enabling individuals, businesses and communities to work together in more powerful ways. We call it Safety Reimagined.

MOTOTRBO R7 is built into this ecosystem so you can get more out of your communications investment. Keep your teams aware and streamline critical communications by receiving automatic notifications from your video security and access control systems, sensors and more – directly on your device. Control and consolidate instant voice communications from your desktop using innovative computer-aided dispatch solutions. You can even extend communications beyond your radio network with interoperability with flexible broadband push-to-talk solutions.

MISSION-CRITICAL COMMUNICATIONS

SAFETY REIMAGINED

VIDEO SECURITY & ACCESS CONTROL

CONTROL ROOM SOLUTIONS

MANAGED & SUPPORT SERVICES

For more information, please visit
motorolasolutions.com/R7

MOTOTRBO R7

MOTOROLA SOLUTIONS

MOTOTRBO™ R7 portable two-way radios

MOTOTRBO R7 digital portable radios offer game-changing audio capabilities in a rugged, dependable and connected device. Its advanced audio processing ensures that your communications are loud and clear, while its rugged construction is ready for the toughest environments.

Key features

- UHF/VHF/350 MHz
- Digital/Analogue and 5-Tone
- Wi-Fi 2.4/5.0 GHz
- WPA3 Wi-Fi security protocol compliant
- Bluetooth 5.2
- Digital and analogue signalling
- 2.4" 320 x 240 px. QVGA display
- Modern, intuitive user experience
- Full suite of accessories
- Sleek and ergonomic form factor

- Automatic Acoustic Feedback Suppression
- Adaptive Dual Microphone Noise Suppression
- Intelligent Audio
- IMPRES™ technology
- Programmable loudness up to 107 phons
- Wideband speaker and microphones
- Simple audio configuration
- Up to 28 hours of battery life[1]

- IP68 (waterproof up to 2m for 2 hours)
- IP66 (concentrated water jet pressure)
- Intrinsically safe option (UL TIA-4950)
- Disinfectant and decontamination substance resistant housing[2]
- Robust and corrosion-proof side connector
- Rugged to MIL-STD 810

MOTOROLA SOLUTIONS

Specifications

GENERAL SPECIFICATIONS

	R7 FULL KEYPAD MODEL (FKP)			R7 AND R7A NO KEYPAD MODEL (NKP)		
Band	VHF	350 MHz	UHF	VHF	350 MHz	UHF
Frequency	136-174 MHz	350-400 MHz	400-527 MHz	136-174 MHz	350-400 MHz[6]	400-527 MHz
High Power Output	5 W	4 W	4 W	5 W	4 W	4 W
Low Power Output	1 W					
Channel Spacing	12.5 kHz, 20 kHz[6], 25 kHz					
Channel Capacity	1,000 Channels			64 Channels		
Display	2.4" 320 x 240 px. QVGA display, with up to 10 lines of text			N/A		
Power Supply (Nominal)	7.5 V					

MOTOTRBO R7 WITH 2200 MAH SLIM IMPRES LI-ION BATTERY (PMNN4807)

Dimensions (H x W x D)	131.8 x 56 x 34.7 mm (5.2 x 2.2 x 1.4 in.)			131.8 x 56 x 31.3 mm (5.2 x 2.2 x 1.2 in.)		
Weight[3]	316 g (11 oz)			289 g (10 oz)		
Digital / Analogue Battery Life[1]	20 / 15 hrs	19 / 14.5 hrs	19 / 14.5 hrs	20 / 15 hrs	19 / 14.5 hrs	19 / 14.5 hrs
Operating Temperature	-20 °C to 60 °C (-4 °F to 140 °F)					

MOTOTRBO R7 WITH 2450 MAH LI-ION BATTERY (PMNN4808)

Dimensions (H x W x D)	131.8 x 56 x 40.7 mm (5.2 x 2.2 x 1.6 in.)			131.8 x 56 x 37.3 mm (5.2 x 2.2 x 1.5 in.)		
Weight[3]	346 g (12 oz)			319 g (11 oz)		
Digital / Analogue Battery Life[1]	22 / 17 hrs	21.5 / 16.5 hrs	21.5 / 16.5 hrs	22 / 17 hrs	21.5 / 16.5 hrs	21.5 / 16.5 hrs
Operating Temperature	-20 °C to 60 °C (-4 °F to 140 °F)					

MOTOTRBO R7 WITH 2850 MAH IMPRES LI-ION BATTERY (PMNN4809)

Dimensions (H x W x D)	131.8 x 56 x 34.7 mm (5.2 x 2.2 x 1.4 in.)			131.8 x 56 x 31.3 mm (5.2 x 2.2 x 1.2 in.)		
Weight[3]	333 g (12 oz)			306 g (11 oz)		
Digital / Analogue Battery Life[1]	26 / 19.5 hrs	25 / 19 hrs	25 / 19 hrs	26 / 19.5 hrs	25 / 19 hrs	25 / 19 hrs
Operating Temperature	-20 °C to 60 °C (-4 °F to 140 °F)					

MOTOTRBO R7 WITH 3200 MAH HAZLOC IMPRES LI-ION BATTERY (PMNN4810)

Dimensions (H x W x D)	131.8 x 56 x 40.7 mm (5.2 x 2.2 x 1.6 in.)			131.8 x 56 x 37.3 mm (5.2 x 2.2 x 1.5 in.)		
Weight[3]	366 g (13 oz)			339 g (12 oz)		
Digital / Analogue Battery Life[1]	29 / 22 hrs	28 / 21.5 hrs	28 / 21.5 hrs	29 / 22 hrs	28 / 21.5 hrs	28 / 21.5 hrs
Operating Temperature	-20 °C to 60 °C (-4 °F to 140 °F)					

Specifications

TRANSMITTER SPECIFICATIONS

Channel Spacing	12.5 kHz, 20 kHz[6], 25 kHz
4FSK Digital Modulation	• 12.5 kHz Data Only: 7K60F1D & 7K60FXD • 12.5 kHz Data & Voice: 7K60F1E & 7K60FXE • Combination of 12.5 kHz Voice and Data: 7K60F1W
Digital Protocol	• ETSI TS 102 361-1, -2, -3,- 4 • DMR Tier II and DMR Tier III
Conducted/Radiated Emissions (TIA603D)	• -36 dBm < 1 GHz • -30 dBm > 1 GHz
Adjacent Channel Power	• 60 dB @ 12.5 kHz • 70 dB @ 20 kHz / 25 kHz
Frequency Stability	+/-0.5 ppm

RECEIVER SPECIFICATIONS

Analogue Sensitivity (12dB SINAD)	0.16 µV
Digital Sensitivity (5% BER)	0.14 µV
Intermodulation (TIA603D)	70 dB
Adjacent Channel Selectivity, (TIA603A)-1T	• 60 dB @ 12.5 kHz • 70 dB @ 20 kHz / 25 kHz
Adjacent Channel Selectivity, (TIA603D)-2T	• 45 dB @ 12.5 kHz • 70 dB @ 20 kHz / 25 kHz
Spurious Rejection (TIA603D)	70 dB

GNSS SPECIFICATIONS

Constellation Support	GPS, GLONASS, BEIDOU, GALILEO
Time To First Fix, Cold Start	≤ 60 seconds
Time To First Fix, Hot Start	≤10 seconds
Horizontal Accuracy	< 5 m

WI-FI SPECIFICATIONS

Frequency Range	2.4 GHz, 5 GHz
Standards Supported	Wi-Fi 5 / IEEE 802.11a/b/g/n/ac
Security Protocol Supported	WPA-3, WPA-2
Maximum Number of SSIDs	128 (64 for NKP Models)

HAZLOC CERTIFICATION

ANSI/TIA 4950 and CAN/CSA C22.2 No. 157-92 as intrinsically safe for use in Class I, II, III, Division 1, Groups C, D, E, F, G, Division 2, Groups A, B, C, D

SERVICE COVERAGE

Included: 2 year hardware repair with 5 year technical support and software updates

Optional: 5 year hardware repair and 5 year accidental damage

BLUETOOTH SPECIFICATIONS

Version	5.2
Range	Class 2, 10 m (33 ft)
Supported Profiles	Bluetooth Headset Profile (HSP), Serial Port Profile (SPP), Personal Area Network (PAN), Generic Attributes (GATT), In-door location (Bluetooth LE Passive Scanning)
Simultaneous Connections	1 audio accessory and up to 4 data devices

AUDIO SPECIFICATIONS

Digital Vocoder Type	AMBE+2
Audio Response (TIA603D)	+1, -3 dB
Audio Output Power (Rated/Max)	1 W / 3 W
Audio Distortion at Rated Audio	≤1.5%
Maximum Speech Loudness by Default (ISO5326)	102 phon @ 30 cm
Maximum Programmable Speech Loudness (Extra Loud Mode, Level 3)	107 phon @ 30 cm
Hum and Noise	• -40 dB @ 12.5 kHz • -45 dB @ 20 kHz / 25 kHz
Conducted Spurious Emissions (TIA603D)	-57 dBm

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature[4]	-30 °C to 60 °C (-22 °F to 140 °F)
Storage Temperature	-40 °C to 85 °C (-40 °F to 185 °F)
Thermal Shock	Per MIL-STD
Humidity	Per MIL-STD
Electrostatic Discharge	IEC 61000-4-2 Level 4
Dust and Water Intrusion	IP68 (Submersion up to 2m, 2hrs) IP66 for high pressure-water resistance per IEC 60529
Salt Fog	5% NaCl for 8 hrs at 35 °C, 16 hrs standing
Packaging Test	MIL-STD 810D and E

MILITARY STANDARDS (MIL-STD 810)

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G		MIL-STD 810H	
	METHOD	PROCEDURE	METHOD	PROCEDURE	METHOD	PROCEDURE	METHOD	PROCEDURE	METHOD	PROCEDURE	METHOD	PROCEDURE
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II	500.6	II	500.6	II
High Temp	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 Temp	502.1	I	502.2	I, II	502.3	I, II	502.4	I, II	502.6	I, II	502.7	I, II
Temp Shock	503.1	I	503.2	A1/C3	503.3	A1/C3	503.4	I	503.6	I-C	503.7	I-C
Solar Radiation	505.1	II	505.2	I/A1	505.3	I/A1	505.4	I/A1	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	507.3	II	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	-
Blowing Dust & Sand	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/CatF, XI	514.3	I/Cat10, II/Cat3	514.4	I/Cat10, III/Cat3	514.5	I/Cat24, II/Cat5	514.7	I/Cat24, II/Cat5	514.8	I/Cat24, II/Cat5
Shock	516.2	I, II	516.3	I, IV	516.4	I, IV	516.5	I, IV	516.7	I, IV	516.8	I, IV
Contamination by Fluids[2]									504.2	II	504.3	2.2.6 b

Feature Comparison

R7 is available with full keypad and no keypad versions. R7a is available only as no keypad versions.

GENERAL	R7 FULL KEYPAD	R7 NO KEYPAD	R7a NO KEYPAD
VHF 5 W, UHF / 350 MHz 4 W⁶	●	●	●⁶
Full Keypad	●	–	–
Colour Screen	●	–	–
Analogue and Digital	●	●	●
Voice and Data	●	●	●
Integrated Wi-Fi	○	○	–
Canned Text Messaging	●	●	●
Freeform Text Messaging	●	–	–
Text to Speech	●	●	●
Work Order Ticketing	●	–	–
Indoor Location Tracking	○	○	–
Event-Driven Location Update⁷	●	●	–
Outdoor Location Tracking	○	○	–
Bluetooth Audio	○	○	–
Bluetooth Data	○	○	–
Voice Announcement	●	●	●
Home Channel Reminder	●	●	●
Late Entry	●	●	●
Priority Scan	●	●	●
Real-Time Clock	●	●	–
Audio Recording/Playback	○	○	–
Secure Linux Operating System	●	●	●
M-Radio Control App	○	○	–
AUDIO			
Intelligent Audio in Analogue and Digital	●	●	●
IMPRES Audio	●	●	●
Automatic Acoustic Feedback Suppressor	●	●	●
Microphone Distortion Control	●	●	●
User-Selectable Audio Profile	●	●	●
Trill Enhancement	●	●	●
Advanced Dual Microphone Noise Suppression⁵	●	●	–
Single Microphone Noise Cancellation	–	–	●
SYSTEMS			
Dual Capacity Direct Mode	●	●	●
Conventional	●	●	●
IP Site Connect	●	●	●
Capacity Plus Single/Multi Site	●	●	●
Capacity Max	○	○	○

MANAGEMENT	R7 FULL KEYPAD	R7 NO KEYPAD	R7a NO KEYPAD
CPS 2.0 and Radio Management	●	●	●
Over-the-Air Programming (via DMR)	●	●	●
Over-the-Air Software Update (via Wi-Fi)	○	○	–
IMPRES Energy	○	○	○
IMPRES Battery Management	○	○	○
Over-the-Air Battery Management	○	○	○
SAFETY			
Emergency Button	●	●	●
Man Down / Fall Alert	○	○	–
Lone Worker	●	●	●
IP68 (waterproof up to 2 m for 2 hours)	●	●	●
IP66 (concentrated water jet pressure)	●	●	●
Rugged to MIL-STD 810	●	●	●
Disinfectant / Decontamination Resistant²	●	●	●
Sensor Integration	○	○	–
Integrated Accelerometer	●	●	–
Basic Privacy	●	●	●
Enhanced Privacy	●	●	●
AES256 encryption	○	○	○
Transmit Interrupt	●	●	●
Digital Emergency	●	●	●
Emergency Search Tone	●	●	●
Remote Monitor	●	●	●
Radio Disable / Enable	●	●	●
Secure Processor	●	●	●
Digital Certificates	●	●	–
CUSTOMIZATION			
GCAI-Mini Accessory Port	●	●	●
6 Programmable Buttons	●	–	–
4 Programmable Buttons	–	●	●
Day/Night Screen Mode	●	–	–
Action List	●	–	–
Label Recess	●	●	●
Option Board (requires aftermarket installation)	○	○	–

● Included ○ Optional – Not Included

¹ Typical battery life, 5/5/90 profile at maximum transmitter power with GNSS, Bluetooth, Wi-Fi and Option Board applications disabled. Actual observed runtimes may vary.
² Please refer to the MOTOTRBO R7 user manual for a list of approved disinfectants and decontamination substances.
³ Radio weight information is exclusive of General Option Board and antenna.
⁴ Radio only. Battery minimum operating temperature -20 °C.
⁵ Noise suppression method differs between accessories.
⁶ R7a does not support 350 MHz band. R7 FKP and R7 NKP 350 MHz models do not support 20 kHz channel spacing.
⁷ Requires GNSS (Global Navigation Satellite System) support to be enabled.

To learn more, visit: motorolasolutions.com/R7

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