Data Sheet

MOTOTRBO™ R5 portable two-way radios

MOTOTRBO R5 connects teams, helping boost efficiency and safety with loud, clear audio that cuts through background noise, plus intuitive status indications and controls so workers can focus on their tasks, all in a tough, compact device that's built to last.

Key features

- VHF and UHF
- Integrated GNSS location tracking1
- Digital and analogue signalling
- 1.5" 132 x 48 px display1
- Modern, intuitive user experience
- Wide suite of accessories
- Sleek and ergonomic form factor
- Automatic acoustic feedback suppression
- SINC+ Noise Suppression
- AI-trained Noise Suppression
- Intelligent Audio
- IMPRES™ audio and energy technology
- Programmable loudness up to 106 phons
- Wideband speaker
- Simple audio configuration
- Up to 32 hours battery life2
- IP67 dust-tight and waterproof
- Intrinsically safe option (UL TIA4950)
- Robust side accessory connector
- Rugged to MIL-STD 810H
- Enhanced 5 year warranty as standard with optional add-ons for enhanced cover

MOTOROLA SOLUTIONS

Specifications

GENERAL SPECIFICATIONS				
	R5 LIMITED KEYPAD MODEL (LKP)		R5 NON-KEYPAD MODEL (NKP)	
Band	**VHF**	**UHF**	**VHF**	**UHF**
Frequency	136-174 MHz 5 W 1 W 12.5 kHz, 20 kHz, 25 kHz 256 50 132 x 48 px 1.5”	400 - 527 MHz	136-174 MHz	400 - 527 MHz
High Power Output		4 W	5 W	4 W
Low Power Output	monochrome display			
Channel Spacing				
Channel Capacity			64	
Zone Capacity			4	
Display			n/a	
Power Supply (Nominal)	7.5 V			
MOTOTRBO R5 WITH SLIM IMPRES LI-ION IP67 2200 MAH BATTERY (PMNN4888)				
Dimensions (h x w x d)	122 x 56 x 35 mm			
Weight	285 g		269 g	
Battery life2 (digital/analogue)	21.5 / 16 hours	20 / 15.5 hours	21.5 / 16 hours	20 / 15.5 hours
Operating temperature	-20 °C to 60 °C (-4 °F to 140 °F)			
MOTOTRBO R5 WITH LI-ION IP67 2400 MAH BATTERY (PMNN4878)				
Dimensions (h x w x d)	122 x 56 x 41 mm			
Weight	314 g		297 g	
Battery life2 (digital/analogue)	24 / 18 hours	22.5 / 17.5 hours	24 / 18 hours	22.5 / 17.5 hours
Operating temperature	-20 °C to 60 °C (-4 °F to 140 °F)			
MOTOTRBO R5 WITH IMPRES LI-ION IP67 3200 MAH BATTERY (PMNN4889)				
Dimensions (h x w x d)	122 x 56 x 41 mm			
Weight	318 g		301 g	
Battery life2 (digital/analogue)	32 / 24 hours	30 / 23 hours	32 / 24 hours	30 / 23 hours
Operating temperature	-20 °C to 60 °C (-4 °F to 140 °F)			
MOTOTRBO R5 WITH IMPRES LI-ION IP67 TIA4950 3200 MAH BATTERY (PMNN4890)				
Dimensions (h x w x d)	122 x 56 x 41 mm			
Weight	332 g		315 g	
Battery life2 (digital/analogue)	32 / 24 hours	30 / 23 hours	32 / 24 hours	30 / 23 hours
Operating temperature	-20 °C to 60 °C (-4 °F to 140 °F)			

Specifications

TRANSMITTER SPECIFICATIONS

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:
Digital Protocol	7K60F1W ETSI TS 102 361-1, -2, -3
Conducted/Radiated Spurious Emissions (TIA603E)	DMR Tier II -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
Modulation Limiting	±2.5 kHz @ 12.5 kHz, ±4.0 kHz @ 20 kHz, ±5.0 kHz @ 25 kHz

RECEIVER SPECIFICATIONS

Analogue Sensitivity (12dB SINAD)	0.16 µV
Digital Sensitivity (5% BER)	0.14 µV
Intermodulation (TIA603E)	70 dB
Adjacent Channel Selectivity, (TIA603A)-1T	60 dB @ 12.5 kHz 70 dB @ 20 kHz / 25 kHz
Adjacent Channel Selectivity, (TIA603E)-2T	45 dB @ 12.5 kHz 70 dB @ 20 kHz / 25 kHz
Spurious Rejection (TIA603E)	70dB
Frequency Stability	±0.5 ppm

GNSS SPECIFICATIONS (LKP MODEL ONLY)

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

SERVICE COVERAGE

Included: Hardware repair (2 years), plus technical support and software updates (5 years)

Optional: Hardware repair (5 years) and accidental damage repair (5 years)

AUDIO SPECIFICATIONS

Digital Vocoder Type	AMBE+2™
Hum and Noise	-40 dB @ 12.5 kHz -45 dB @ 20 kHz / 25 kHz
Audio Response (TIA603E)	+1, -3 dB
Audio Output Power (Rated/Max)	1 W / 3 W
Audio Distortion at Rated Audio	≤3%
Maximum Speech Loudness, Default (ISO532B)	101 phon @ 30 cm
Maximum Programmable Speech Loudness (Digital) (User Selectable Audio Profile Level 3)	106 phon @ 30 cm

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature[3]	-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	IP67
Salt Fog	5% NaCl for 8 hrs at 35 °C, 16 hrs standing
Packaging Test	MIL-STD 810D and E

HAZLOC CERTIFICATION

ANSI/TIA4950 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 when properly equipped with Motorola UL-Approved battery

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	1-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

Feature Comparison

R5 is available with limited keypad (LKP) and non-keypad (NKP) versions.

	R5 LKP	R5 NKP
GENERAL		
VHF 5 W, UHF 4 W	●	●
Limited keypad	●	—
Monochrome display	●	—
Analogue and digital	●	●
Voice and data	●	●
Canned text messaging	●	●[4]
Outdoor location tracking (GNSS)	●	—
Voice operated transmit (VOX)	●	●
Voice announcement	●	●
Home channel reminder	●	●
Late entry	●	●
Priority scan	●	●
AUDIO	●	●
Intelligent Audio in digital mode	●	●
IMPRES audio	●	●
Received audio leveling	●	●
Automatic acoustic feedback suppressor	●	●
Microphone distortion control	●	●
User-selectable audio profile	●	●
Trill enhancement	●	●
AI-trained noise suppression	●	●
Single mic noise cancellation (SINC+)	●	●
SYSTEMS	●	●
Dual Capacity Direct Mode	●	●
Conventional	▯	▯
IP Site Connect	▯	▯
Capacity Plus single site		
Capacity Plus multi-site		

	R5 LKP	R5 NKP
MANAGEMENT		
CPS 2.0 and Radio Management	●	●
Over-the-air programming (via DMR)	●	●
IMPRES energy	▯	▯
IMPRES battery management	▯	▯
Over-the-air battery management	▯	▯
SAFETY	●	●
Emergency button	●	●
Lone worker	●	●
IP67	●	●
Rugged to MIL-STD 810	●	●
Basic privacy	●	●
Enhanced privacy	●	●
Transmit Interrupt	●	●
Digital emergency	●	●
Emergency search tone	●	●[5]
Remote monitor	●	●[5]
Radio disable / enable	●	●
Secure processor	●	●
Hazloc certification	●	●
CUSTOMIZATION	5	3
Slim GCAI accessory port	▯	▯
Programmable buttons[6]		
NFC / RFID tags (Requires aftermarket installation)		

● Included ▯ Optional — Not included

[1] Limited keypad model only.
[2] Typical battery life, 5/5/90 profile at maximum transmitter power with GNSS disabled. Actual observed runtimes may vary.
[3] Radio only. Battery minimum operating temperature -20 °C.
[4] R5 NKP models support canned text message send only.
[5] Decode only.
[6] Including emergency button which can also be programmed for other functions.

To learn more about MOTOTRBO, visit: www.motorolasolutions.com/mototrbo

MOTOROLA SOLUTIONS

These models available in Motorola Solutions EMEA region only. Availability varies and is subject to individual country law and regulations. All specifications shown are typical unless otherwise stated and are subject to change without notice.