



## General specifications

	R2	R5 Series	DP3000e Series	R7 Series	R7Ex Series	DP4000 Ex Series	Ion Smart Radio	SL Series	DM1000 Series	DM2000 Series	DM4000e Series
Protocol	DMR or analogue communications	Analogue / Digital or Analogue Only	Analogue / Digital	Analogue / Digital	Analogue / Digital	Analogue / Digital	Analogue / Digital	Analogue / Digital	Analogue / Digital	Analogue / Digital	Analogue / Digital
Frequency	Capable of operating in the following frequency ranges	VHF: 136-174MHz UHF: 400-480MHz	VHF: 136-174MHz UHF: 400-527MHz	VHF: 136-174MHz UHF: 400-527MHz	VHF: 136-174MHz UHF: 400-527MHz	VHF: 136-174MHz UHF: 400-527MHz	VHF: 136-174MHz UHF: 400-527MHz	VHF: 136-174MHz UHF: 400-527MHz	VHF: 136-174MHz UHF: 400-527MHz	VHF: 136-174MHz UHF: 400-527MHz	VHF: 136-174MHz UHF: 400-527MHz
Max. power output	Radio's full power rating	4W UHF / 5W VHF	4W UHF / 5W VHF	4W UHF / 5W VHF	4W UHF / 5W VHF	2W UHF / 4W 350	4W	2W(an) / 3W(dig)	25W or 40 / 45W <sup>12</sup>	25W or 40 / 45W <sup>12</sup>	25W or 40 / 45W <sup>12</sup>
Max. channel capacity	Programmable channel capacity	64	64	64	64	1000	1000	99	160	160	99
Channel spacing	Programmable channel spacing	12.5 / 20 / 25 kHz	12.5 kHz, 20 kHz, 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz	12.5 / 20 / 25 kHz
Display	Displays provide easy access to advanced features	No	No	No	No	No	No	No	No	No	No
Keypad	Keypads provide access to radio controls, texting and telephony	No	No	No	No	No	No	No	No	No	No
Audio recording	Enables the radio to record received voice calls	No	No	No	No	No	No	No	No	No	No
Integrated GPS	Embedded GPS receiver for location monitoring	No	No	No	No	No	No	No	No	No	No
Integrated GLONASS	Embedded GLONASS receiver for location monitoring	No	No	No	No	No	No	No	No	No	No
Event driven location updates	Location update based on input from external device (eg door sensor)	No	No	No	No	No	No	No	No	No	No
Distance driven location updates	Location update transmission based on distance travelled	No	No	No	No	No	No	No	No	No	No
Integrated Bluetooth 2.1	Wireless connection for audio accessories or data comms	No	No	No	No	No	No	No	No	No	No
Integrated Bluetooth 4.0	Energy efficient Bluetooth for greater battery life	No	No	No	No	No	No	No	No	No	No
Integrated Bluetooth 5.0	Draws less power than Bluetooth 4.2, which helps accessories with small batteries, such as earpieces, to last longer	No	No	No	No	No	No	No	No	No	No
Integrated Bluetooth 5.2	Draws less power and helps accessories with small batteries, such as earpieces, last longer	No	No	No	No	No	No	No	No	No	No
Permanent Bluetooth discovery	Bluetooth "always on" mode used by some applications	No	No	No	No	No	No	No	No	No	No
Smartphone collaboration	M-Radio Control App allows user to view radio status and control selected features	No	No	No	No	No	No	No	No	No	No
Dedicated emergency button	Orange programmable button for one-touch emergency calling	No	No	No	No	No	No	No	No	No	No
Programmable buttons	Allow access to most often used features with one press	2	3	5	4	6	4	6	3	5	4
Digital DMR signalling	DMR standard digital voice communications	Yes <sup>1</sup>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PL / DPL signalling	Analogue Private Line / Digital Private Line compatible	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quick Call II signalling	Analogue Quick Call II compatible	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MDC signalling	Analogue MDC compatible	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5 Tone signalling	Analogue 5 tone compatible	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DTMF hot keypad	DTMF tone compatible	No	No	No	No	No	No	No	No	No	No
MPT1327 signalling	Analogue MPT1327 compatible (requires option board)	No	No	No	No	No	No	No	No	No	No
Option board capability	Supports option boards for third party applications	No	No	No	No	No	No	No	No	No	No
IMPRES <sup>®</sup> audio compatible	IMPRES <sup>®</sup> audio ensures your voice is heard clearer and louder	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SINCS <sup>®</sup> noise cancellation	Integrated, advanced noise cancellation for noisy environments	Option	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Automatic gain control	Modifies microphone performance to produce the best voice quality	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Microphone distortion control	Automatic microphone gain adjustment to reduce distortion	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Trill enhancement	Additional processing to enhance rolling "r" sound so speech is clearer	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IMPRES <sup>®</sup> energy compatible	Use IMPRES <sup>®</sup> batteries for longer life and optimal performance	No	Option	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IMPRES <sup>®</sup> OTA battery management	Automatic collection of battery data over the air with radios still in use	No	Option	Yes <sup>1</sup>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ATEX certified	ATEX certified for use in potentially explosive environments	No	No	No	No	No	No	No	No	No	No
IEC Ex certified	IEC Ex certified for use in potentially explosive environments	No	No	No	No	No	No	No	No	No	No
TIA950 certified	Telecommunications Industry Association (TIA) approved for IS use	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SOLAS, MED/5.20, UK/5.20	Meets requirements of Marine Equipment Directive 2014/90/EU Item 5.20 and Merchant Shipping (Marine Equipment) Regulations 2016 Item 5.20	No	No	No	No	No	No	No	No	No	No
IP rating	Rated sealing for dust and water ingress	IP55	C, D, E, F, G & H	IP67	IP68	IP66 / IP68	IP67	IP68	IP54	IP54	IP54
MIL-STD 810	Rated to withstand environmental conditions	C, D, E, F, G & H	C, D, E, F, G & H	C, D, E, F, G & H	C, D, E, F, G & H	C, D, E, F, G & H	C, D, E, F, G & H	C, D, E, F, G & H	C, D, E, F, G & H	C, D, E, F, G & H	C, D, E, F, G & H
Dimensions (HxWxL) mm	Physical size	125 x 55 x 36.8 <sup>1</sup>	122 x 56 x 41 mm <sup>1</sup>	100 x 55 x 36 <sup>1</sup>	132 x 56 x 31 mm	132 x 56 x 35 mm	140 x 57 x 38 mm	140 x 57 x 40 mm	138 x 57 x 38 <sup>1</sup>	138 x 57 x 40 <sup>1</sup>	126 x 55 x 22 <sup>1</sup>
Dimensions (Weight)	Physical weight	286g <sup>1</sup>	314g <sup>1</sup>	254g <sup>1</sup>	290g <sup>1</sup>	289g	289g	316g	460g	460g	456g <sup>1</sup>

## Features and functions

Intelligent audio	Automatic volume control based on background noise levels	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
User selectable audio profiles	Optimises audio for specific environments and personal preferences	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Emergency alarm	Radio can initiate an Emergency call process	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lone worker	Initiates emergency if user does not respond to periodic alerts	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Remote monitor	Radio can remotely activate another radio's microphone	Decode Only	Decode Only	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
VOX (supported on radio)	Voice activated calling allows handsfree operation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Audio feedback suppressor	Blocks feedback from other radios to eliminate "howling"	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Freeform text messaging	User can enter and send free-form text messages	No	No	No	No	Yes	No	Yes	No	No	Yes <sup>4</sup>
Pre-programmed text messaging	Radio can send pre-programmed text messages	Yes	Send Only	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Extended texting	Maximum text message length is 280 character	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes
Vibrate alert	Vibrate silently alerts the user to an incoming call	No	No	No	No	No	No	No	No	No	No
Covert mode	Disable display, LEDs and audible tones for ultimate discretion	No	No	No	No	No	No	No	No	No	No
All call	One-way call to all radios on a logical channel	Decode Only	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Radio check	Check if another radio is active on a system without notifying the user	Decode Only	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Digital telephone patch	Ability to connect to telephone system (requires additional hardware)	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Option	Yes
Transmit interrupt encode	Radio can interrupt transmissions from other radios	Decode Only	Yes	Yes	Yes	Yes	Yes	Yes	Decode Only	Option	Yes
Basic privacy	MOTOTRBO 16-bit encryption for protection against eavesdropping	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Enhanced privacy	MOTOTRBO 40-bit encryption for more robust protection	Option	Yes	Yes	Yes	Yes	Yes	Yes	No	Option	Yes
AES256 encryption	Advanced Encryption Standard (AES) 256-bit encryption	No	No	Option	Option	Option	Option	Option	Yes	Option	Yes
Default voice announcement	Audible confirmation of selected operations of the radio	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Programmable voice announcement	Ability to use customised recordings for voice announcements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Text-to-speech voice announcement	Radio "reads out" Channel, Zone, Functions, Text Messages, Job Tickets	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Radio management	Centralised radio configuration and code plug management	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Over the air programming (OTAP)	Remote, over-air programming using Radio Management	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Integrated Wi-Fi	Enables remote software updates for easier radio management	No	LKP BT/WiFi Yes	Yes	No	Capable / Yes	No	Yes	No	Yes	Yes
Indoor location tracking	Use built-in Bluetooth with iBeacons and suitable apps to locate and track radios	No	LKP BT/WiFi Yes	Yes	No	Capable / Yes	No	Yes	No	Option	Yes
Restricted access to system	Prevents unauthorised users from communicating through the repeater	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Radio enable / disable	Radio can remotely disable and re-enable another radio	Decode Only	Decode Only	Yes	Yes	Yes	Decode Only	Yes	Decode Only	Yes	Yes
Fall Alert	Built-in accelerometer enhances personnel safety by monitoring movement	No	No	Yes	No	Yes	Yes	Yes	No	No	No
Dual capacity direct mode	Use both TDMA time slots to double system capacity without a repeater	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Telemetry supported	Integrated basic telemetry capability	No	No	No	No	No	No	No	No	No	Yes
Telemetry I/O pins	Number of built-in input / output pins to support telemetry	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	4
Telemetry buttons	Number of buttons that can be configured for telemetry	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	3
Fixed installation	Mobile radios can be used in a fixed installation such as a control room	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes
Control station	Mobile acts as the RF link between an Application Server and the radio network	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes
Remote mount control head	Controls and display can be located separately from radio chassis	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Option
Data ADKs available	Data Application Developer Kits are available to ADP members	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Certificate based Wi-Fi access	WPA / WPA2 Enterprise Wi-Fi Support allowing Wi-Fi enabled MOTOTRBO radios to access certificate based Wi-Fi networks	No	No	No	No	Capable / Yes	Yes	Yes	No	No	Yes
Rental timer	Supports the ability to set a timer where the radio will stop functioning after the timer expires	Yes	No	No	3	3	n/a	No	No	No	No

## System configurations

Direct Mode Operation	Direct radio-to-radio operation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Single-Site Conventional	Single-site conventional operation (channel selection by users)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Extended Range Direct Mode	Single-site conventional range extension via single channel repeater	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IP Site Connect	Multi-site conventional operation (channel selection by users)	Option	Yes	Yes	Yes	Yes	Yes	Yes	Option	Yes	Yes
Capacity Plus	Single- or multi-site MOTOTRBO trunking (channel selection managed by system)	Option <sup>18</sup>	Option	Yes	Yes	Yes	Yes	Yes	No	Option	Yes
Capacity Max	Multi-site, DMR Tier III compliant trunking with centralised controller	No	No	Option	Option	Option	Option	Option	No	Option	Option

<sup>1</sup> Integrated Bluetooth, GPS, GLONASS and Wi-Fi are supported on DP4401e, DP4601e, DP4801e, DM4401e & DM4601e only  
<sup>2</sup> Based on NiMH battery  
<sup>3</sup> Based on standard Li-Ion battery  
<sup>4</sup> Requires keypad microphone  
<sup>5</sup> DP4401e, DP4801e, DP4801e Ex are available with MPT Option Board factory fitted  
<sup>6</sup> DP1400, DM1400 and DM1600 analogue-only models can be upgraded to MOTOTRBO digital by purchasing a software license  
<sup>7</sup> SL1600 Programmable Button can scroll through up to 7 features  
<sup>8</sup> Requires IMPRES<sup>®</sup> battery  
<sup>9</sup> Event & distance driven location updates only supported on models with built-in GPS / GLONASS  
<sup>10</sup> Only DP2400e, DP4401e, DP4801e, DM4401e and DM4601e available in 300MHz versions  
<sup>11</sup> Integrated man down on DP4401e, DP4601e and DP4801e only  
<sup>12</sup> VHF models: 45W / 300MHz & UHF models: 40W  
<sup>13</sup> 20 kHz not supported for all 300MHz models or DM4000e 450-527MHz models  
<sup>14</sup> Maximum output RF power is 2W for frequencies >470MHz  
<sup>15</sup> Feature is standard on "Premium" models and optional on "Capable" models  
<sup>16</sup> DP4401e, DP4601e and DP4801e with software earlier than R02.21.04.3002 supported this feature  
<sup>17</sup> Only supported on DP4401e, DP4601e and DP4801e with software R02.21.04.3002 or greater  
<sup>18</sup> Single Site, 2 Repeaters  
<sup>19</sup> R7a OTAP via DMR only