MOTOTRBO Portable Radio Specifications

DP 3600/3601 Display Portable Radios

Specifications

GENERAL SPECIFICATIONS

403-470 MHz 1.5 x 63.5 x 37.2 mm 1.5 x 63.5 x 35.2 mm 1.5 x 63.5 x 37.2 mm 430 g 370 g 360 g 7.2V nominal ith battery saver in high power.	Channel Spacing Frequency Stability (-30° C, +60° C, +25° C) Power Output Low Power High Power Modulation Limiting FM Hum and Noise Conducted / Radiated Emission	+/- 5.0 kHz @ 25 kHz -40 dB @ 12.5 kHz -45 dB @ 25 kHz
1.5 x 63.5 x 35.2 mm 1.5 x 63.5 x 37.2 mm 430 g 370 g 360 g 7.2V nominal ith battery saver	(-30° C, +60° C, +25° C) Power Output Low Power High Power Modulation Limiting FM Hum and Noise	+/- 0.5 ppm (DP 3601) 1 W 4 W +/- 2.5 kHz @ 12.5 kHz +/- 5.0 kHz @ 25 kHz -40 dB @ 12.5 kHz -45 dB @ 25 kHz
1.5 x 63.5 x 35.2 mm 1.5 x 63.5 x 37.2 mm 430 g 370 g 360 g 7.2V nominal ith battery saver	Power Output Low Power High Power Modulation Limiting FM Hum and Noise	1 W 4 W +/- 2.5 kHz @ 12.5 kHz +/- 5.0 kHz @ 25 kHz -40 dB @ 12.5 kHz -45 dB @ 25 kHz
430 g 370 g 360 g 7.2V nominal	Low Power High Power Modulation Limiting FM Hum and Noise	4 W +/- 2.5 kHz @ 12.5 kHz +/- 5.0 kHz @ 25 kHz -40 dB @ 12.5 kHz -45 dB @ 25 kHz
430 g 370 g 360 g 7.2V nominal ith battery saver	High Power Modulation Limiting FM Hum and Noise	4 W +/- 2.5 kHz @ 12.5 kHz +/- 5.0 kHz @ 25 kHz -40 dB @ 12.5 kHz -45 dB @ 25 kHz
370 g 360 g 7.2V nominal ith battery saver	Modulation Limiting FM Hum and Noise	+/- 2.5 kHz @ 12.5 kHz +/- 5.0 kHz @ 25 kHz -40 dB @ 12.5 kHz -45 dB @ 25 kHz
370 g 360 g 7.2V nominal ith battery saver	FM Hum and Noise	+/- 2.5 kHz @ 12.5 kHz +/- 5.0 kHz @ 25 kHz -40 dB @ 12.5 kHz -45 dB @ 25 kHz
360 g 7.2V nominal ith battery saver		-40 dB @ 12.5 kHz -45 dB @ 25 kHz
7.2V nominal ith battery saver		-45 dB @ 25 kHz
ith battery saver	Conducted / Radiated Emission	
,	Conducted / Radiated Emission	
in high power.		-36 dBm < 1 GHz
		-30dBm > 1GHz
hrs / Digital: 13 hrs	Adjacent Channel Power	-60 dB @ 12.5 kHz
hrs / Digital: 12 hrs		-70 dB @ 25 kHz
hrs / Digital: 11 hrs	Audio Response	+1, -3 dB
	Audio Distortion	3%
	Digital Vocoder Type	AMBE++
	Digital Protocol	ETSI-TS102 361-1
403-470 MHz		
12.5 kHz/ 25 kHz	GPS	
1.5 ppm (DP 3600)	d. 0	
0.5 ppm (DP 3601)	Accuracy specs are for long-term trace	king (95th percentile values
5 uV (12 dB SINAD)	> 5 satellites visible at a nominal -130	dBm signal strength)
ical) (12 dB SINAD)	TTFF (Time To First Fix) Cold Start	< 1 minute
4 uV (20 dB SINAD)	TTFF (Time To First Fix) Hot Start	< 10 seconds
5% BER: 0.3 uV	Horizontal Accuracy	< 10 meters
65 dB		
60 dB @ 12.5 kHz,	ENVIRONMENTAL SPECIFICATION)NS
70 dB @ 25 kHz		
70 dB		-30° C / +60° C
500 mW		-40° C / +85° C
3% (typical)	Temperature Shock	Per MIL-STD
-40 dB @ 12.5 kHz	Humidity	Per MIL-STD
-45 dB @ 25 kHz	Water Intrusion	EN60529 - IP57
+1, -3 dB	Packaging Test	MIL-STD 810D and E
-57 dBm	* With Lilon battery, operating temperature	specification is -10° C / +60° C.
	hrs / Digital: 13 hrs hrs / Digital: 12 hrs hrs / Digital: 11 hrs 403-470 MHz 12.5 kHz/ 25 kHz 1.5 ppm (DP 3600) 0.5 ppm (DP 3601) 5 uV (12 dB SINAD) ical) (12 dB SINAD) 4 uV (20 dB SINAD) 5 BER: 0.3 uV 65 dB 60 dB @ 12.5 kHz, 70 dB @ 25 kHz 70 dB 500 mW 3% (typical) -40 dB @ 12.5 kHz -45 dB @ 25 kHz +1, -3 dB	hrs / Digital: 13 hrs hrs / Digital: 12 hrs hrs / Digital: 11 hrs hrs / Digital: 12 hrs hrs / Digital: 13 hrs hrs / Digital: 12 hrs hrs / Digital: 12 hrs hrs / Digital: 12 hrs hrs / Digital: 13 hrs hrs / Digital: 12 hrs hrs / Digital: 12 hrs hrs / Digital: 12 hrs hrs / Digital: 13 hrs hrs / Digital: 12 hrs

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Frequency	403-470 MHz
Channel Spacing	12.5 kHz/ 25 kHz
Frequency Stability	+/- 1.5 ppm (DP 3600)
(-30° C, +60° C, +2	5° C) +/- 0.5 ppm (DP 3601)
Power Output	
Low Power	1 W
High Power	4 W
Modulation Limiting	+/- 2.5 kHz @ 12.5 kHz
	+/- 5.0 kHz @ 25 kHz
FM Hum and Noise	-40 dB @ 12.5 kHz
	-45 dB @ 25 kHz
Conducted / Radiate	d Emission -36 dBm < 1 GHz
	-30dBm > 1GHz
Adjacent Channel Po	ower -60 dB @ 12.5 kHz
	-70 dB @ 25 kHz
Audio Response	+1, -3 dB
Audio Distortion	3%
Digital Vocoder Type	
Digital Protocol	ETSI-TS102 361-1
GPS	
, .	or long-term tracking (95th percentile values a nominal -130 dBm signal strength)
TTFF (Time To First I	
TTFF (Time To First I	
Horizontal Accuracy	< 10 meters
Tionzontal / tooditaly	
ENVIRONMENTAL	SPECIFICATIONS
Operating Temperat	
Storage Temperatur	-40° C / +85° C
Temperature Shock	Per MIL-STD
Humidity	Per MIL-STD

TRANSMITTER

MILITARY STANDARDS				
	810E		810F	
Applicable MIL–STD	Methods	Procedures	Methods	Procedures
Low Pressure	500.3	ll .	500.4	II
High Temperature	501.3	I/A, II/A1	501.4	I/Hot, II/Hot
Low Temperature	502.3	I/C3, II/C1	502.4	I/C3, II/C1
Temperature Shock	503.3	I/A, 1C3	503.4	I
Solar Radiation	505.3	I	505.4	I
Rain	506.3	I,II	506.4	I, III
Humidity	507.3	ll .	507.4	-
Salt Fog	509.3	l	509.4	I
Dust	510.3	l	510.4	I
Vibration	514.4	I/10, II/3	514.5	1/24
Shock	516.4	I, IV	516.5	I, IV

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FACTORY MUTUAL APPROVALS - DP family of radios are certified by Factory Mutual Approvals as intrinsically safe for use in Division 1, Class I,II,III, Groups C,D,E,F,G, when ordered with the Factory Mutual approved battery option.

DP 3400/3401 Non-display Portable Radios

Specifications

Channel Capacity	32
Frequency	403-470 MHz
Dimensions (HxWxL)	
with NiMH Battery 1300m	AH 131.5 x 63.5 x 37.2 mm
with Lilon Std Battery 150	0mAH 131.5 x 63.5 x 35.2 mm
with Lilon FM Battery 140	0mAH 131.5 x 63.5 x 37.2 mm
Weight	
with NiMH Battery	400 g
with Lilon FM Battery	340 g
with Lilon Std Battery	330 g
Power Supply	7.2V nominal
Average battery life at 5/5/9	0 duty cycle with battery saver
-	nd transmitter in high power.
IMPRES Lilon Std Battery	
IMPRES FM Lilon Battery	Analogue: 8.5 hrs / Digital: 12 hrs
NiMH Battery	Analogue: 8 hrs / Digital: 11 hrs
RECEIVER	
_	
Frequency	403-470 MHz
Frequency Channel Spacing	12.5 kHz/ 25 kHz
Frequency Channel Spacing Frequency Stability	12.5 kHz/ 25 kHz +/- 1.5 ppm (DP 3400)
Frequency Channel Spacing Frequency Stability (-30° C, +60° C, +25° C)	12.5 kHz/ 25 kHz +/- 1.5 ppm (DP 3400) +/- 0.5 ppm (DP 3401)
Frequency Channel Spacing Frequency Stability	12.5 kHz/ 25 kHz +/- 1.5 ppm (DP 3400) +/- 0.5 ppm (DP 3401) 0.35 uV (12 dB SINAD)
Frequency Channel Spacing Frequency Stability (-30° C, +60° C, +25° C)	12.5 kHz/ 25 kHz +/- 1.5 ppm (DP 3400) +/- 0.5 ppm (DP 3401) 0.35 uV (12 dB SINAD) 0.22 uV (typical) (12 dB SINAD)
Frequency Channel Spacing Frequency Stability (-30° C, +60° C, +25° C) Analogue Sensitivity	12.5 kHz/ 25 kHz +/- 1.5 ppm (DP 3400) +/- 0.5 ppm (DP 3401) 0.35 uV (12 dB SINAD) 0.22 uV (typical) (12 dB SINAD) 0.4 uV (20 dB SINAD)
Frequency Channel Spacing Frequency Stability (-30° C, +60° C, +25° C) Analogue Sensitivity Digital Sensitivity	12.5 kHz/ 25 kHz +/- 1.5 ppm (DP 3400) +/- 0.5 ppm (DP 3401) 0.35 uV (12 dB SINAD) 0.22 uV (typical) (12 dB SINAD) 0.4 uV (20 dB SINAD) 5% BER: 0.3 uV
Frequency Channel Spacing Frequency Stability (-30° C, +60° C, +25° C) Analogue Sensitivity Digital Sensitivity Intermodulation	12.5 kHz/ 25 kHz +/- 1.5 ppm (DP 3400) +/- 0.5 ppm (DP 3401) 0.35 uV (12 dB SINAD) 0.22 uV (typical) (12 dB SINAD) 0.4 uV (20 dB SINAD) 5% BER: 0.3 uV
Frequency Channel Spacing Frequency Stability (-30° C, +60° C, +25° C) Analogue Sensitivity Digital Sensitivity	12.5 kHz/ 25 kHz +/- 1.5 ppm (DP 3400) +/- 0.5 ppm (DP 3401) 0.35 uV (12 dB SINAD) 0.22 uV (typical) (12 dB SINAD) 0.4 uV (20 dB SINAD) 5% BER: 0.3 uV 65 dB
Frequency Channel Spacing Frequency Stability (-30° C, +60° C, +25° C) Analogue Sensitivity Digital Sensitivity Intermodulation Adjacent Channel Selectivity	12.5 kHz/ 25 kHz +/- 1.5 ppm (DP 3400) +/- 0.5 ppm (DP 3401) 0.35 uV (12 dB SINAD) 0.22 uV (typical) (12 dB SINAD) 0.4 uV (20 dB SINAD) 5% BER: 0.3 uV 65 dB y 60 dB @ 12.5 kHz, 70 dB @ 25 kHz
Frequency Channel Spacing Frequency Stability (-30° C, +60° C, +25° C) Analogue Sensitivity Digital Sensitivity Intermodulation Adjacent Channel Selectivity Spurious Rejection	12.5 kHz/ 25 kHz +/- 1.5 ppm (DP 3400) +/- 0.5 ppm (DP 3401) 0.35 uV (12 dB SINAD) 0.22 uV (typical) (12 dB SINAD) 0.4 uV (20 dB SINAD) 5% BER: 0.3 uV 65 dB y 60 dB @ 12.5 kHz, 70 dB @ 25 kHz
Frequency Channel Spacing Frequency Stability (-30° C, +60° C, +25° C) Analogue Sensitivity Digital Sensitivity Intermodulation Adjacent Channel Selectivity Spurious Rejection Rated Audio	12.5 kHz/ 25 kHz +/- 1.5 ppm (DP 3400) +/- 0.5 ppm (DP 3401) 0.35 uV (12 dB SINAD) 0.22 uV (typical) (12 dB SINAD) 0.4 uV (20 dB SINAD) 5% BER: 0.3 uV 65 dB y 60 dB @ 12.5 kHz, 70 dB @ 25 kHz 70 dB
Frequency Channel Spacing Frequency Stability (-30° C, +60° C, +25° C) Analogue Sensitivity Digital Sensitivity Intermodulation Adjacent Channel Selectivity Spurious Rejection Rated Audio Audio Distortion @ Rated Au	12.5 kHz/ 25 kHz +/- 1.5 ppm (DP 3400) +/- 0.5 ppm (DP 3401) 0.35 uV (12 dB SINAD) 0.22 uV (typical) (12 dB SINAD) 0.4 uV (20 dB SINAD) 5% BER: 0.3 uV 65 dB y 60 dB @ 12.5 kHz, 70 dB @ 25 kHz 70 dB 500 mW
Frequency Channel Spacing Frequency Stability (-30° C, +60° C, +25° C) Analogue Sensitivity Digital Sensitivity Intermodulation Adjacent Channel Selectivity Spurious Rejection Rated Audio	12.5 kHz/ 25 kHz +/- 1.5 ppm (DP 3400) +/- 0.5 ppm (DP 3401) 0.35 uV (12 dB SINAD) 0.22 uV (typical) (12 dB SINAD) 0.4 uV (20 dB SINAD) 5% BER: 0.3 uV 65 dB y 60 dB @ 12.5 kHz, 70 dB @ 25 kHz 70 dB 500 mW udio 3% (typical)
Frequency Channel Spacing Frequency Stability (-30° C, +60° C, +25° C) Analogue Sensitivity Digital Sensitivity Intermodulation Adjacent Channel Selectivity Spurious Rejection Rated Audio Audio Distortion @ Rated Audin	12.5 kHz/ 25 kHz +/- 1.5 ppm (DP 3400) +/- 0.5 ppm (DP 3401) 0.35 uV (12 dB SINAD) 0.22 uV (typical) (12 dB SINAD) 0.4 uV (20 dB SINAD) 5% BER: 0.3 uV 65 dB y 60 dB @ 12.5 kHz, 70 dB @ 25 kHz 70 dB 500 mW udio 3% (typical) -40 dB @ 12.5 kHz -45 dB @ 25 kHz
Frequency Channel Spacing Frequency Stability (-30° C, +60° C, +25° C) Analogue Sensitivity Digital Sensitivity Intermodulation Adjacent Channel Selectivity Spurious Rejection Rated Audio Audio Distortion @ Rated Audio Hum and Noise	12.5 kHz/ 25 kHz +/- 1.5 ppm (DP 3400) +/- 0.5 ppm (DP 3401) 0.35 uV (12 dB SINAD) 0.22 uV (typical) (12 dB SINAD) 0.4 uV (20 dB SINAD) 5% BER: 0.3 uV 65 dB y 60 dB @ 12.5 kHz, 70 dB @ 25 kHz 70 dB 500 mW udio 3% (typical) -40 dB @ 12.5 kHz -45 dB @ 25 kHz +1, -3 dB

TRANSMITTER	
Frequency	403-470 MHz
Channel Spacing	12.5 kHz/ 25 kHz
Frequency Stability	+/- 1.5 ppm (DP 3400)
(-30° C, +60° C, +25° C)	+/- 0.5 ppm (DP 3401)
Power Output	
Low Power	1 W
High Power	4 W
Modulation Limiting	+/- 2.5 kHz @ 12.5 kHz
	+/- 5.0 kHz @ 25 kHz
FM Hum and Noise	-40 dB @ 12.5 kHz
	-45 dB @ 25 kHz
Conducted / Radiated Emission	-36 dBm < 1 GHz
	-30dBm > 1GHz
Adjacent Channel Power	-60 dB @ 12.5 kHz
	-70 dB @ 25 kHz
Audio Response	+1, -3 dB
Audio Distortion	3%
Digital Vocoder Type	AMBE++
Digital Protocol	ETSI-TS102 361-1

GPS

Accuracy specs are for long-term tracking (95th pe	ercentile values
> 5 satellites visible at a nominal -130 dBm signal	strength)
TTFF (Time To First Fix) Cold Start	< 1 minute
TTFF (Time To First Fix) Hot Start	< 10 seconds
Horizontal Accuracy	< 10 meters

ENVIRONMENTAL SPECIFICATIONS -30° C / +60° C Operating Temperature* Storage Temperature -40° C / +85° C Temperature Shock Per MIL-STD Humidity Per MIL-STD Water Intrusion EN60529 - IP57 MIL-STD 810D and E Packaging Test

	3 3				
*	With Lilon battery, operating temperature specification				
V	Vith NiMH battery, operating temperature specification	is -20°	C / +60	o° C	

MILITARY STANDARDS				
	810E		810F	
Applicable MIL-STD	Methods	Procedures	Methods	Procedures
Low Pressure	500.3	II	500.4	II
High Temperature	501.3	I/A, II/A1	501.4	I/Hot, II/Hot
Low Temperature	502.3	I/C3, II/C1	502.4	I/C3, II/C1
Temperature Shock	503.3	I/A, 1C3	503.4	I
Solar Radiation	505.3	l	505.4	I
Rain	506.3	1,11	506.4	1, 111
Humidity	507.3	II	507.4	-
Salt Fog	509.3	I	509.4	I
Dust	510.3	l	510.4	I
Vibration	514.4	I/10, II/3	514.5	l/24
Shock	516.4	I, IV	516.5	I, IV

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