



# EMC Test Data

Client: GE MDS LLC	Job Number: JD99150
Model: GPA-1	T-Log Number: T99463
	Project Manager: Christine Krebill
Contact: Dennis McCarthy	Project Coordinator: -
Standard: FCC part 90	Class: N/A

## Maximum Permissible Exposure / SAR Exclusion

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 4/5/2016

Test Engineer: David Bare

### General Test Configuration

Calculation uses the free space transmission formula:

$$S = (PG)/(4 \pi d^2)$$

Where: S is power density ( $W/m^2$ ), P is output power (W), G is antenna gain relative to isotropic, d is separation distance from the transmitting antenna (m).

### Summary of Results

Device complies with Power Density requirements at 20cm separation:	No
If not, required separation distance (in cm):	162.2

### Notes

If an installation requires higher output, antennas can be used that allow 500 W ERP per FCC Rules part 90. At 500 W ERP, the separation distance will be higher (5.7 meters). For Canada the maximum is 125 W ERP, this requires a separation distance of 3.6 m.

Operation is not subject to routine environmental evaluation per table 1 of FCC Rules §1.1307 or §1.1307(b)(2)

### Deviations From The Standard

No deviations were made from the requirements of the standard.



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## FCC MPE Calculation

Use: General EUT Power adjusted for maximum including any tolerance  
 Antenna: 0 dBi

Freq. MHz	EUT Power		Cable Loss Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm <sup>2</sup>	MPE Limit at 20 cm mW/cm <sup>2</sup>
	dBm	mW*						
150	46.3	42658.0	0	0	46.3	42657.95	8.487	0.200
162	46.3	42658.0	0	0	46.3	42657.95	8.487	0.200
174	46.3	42658.0	0	0	46.3	42657.95	8.487	0.200

For the cases where S > the MPE Limit

Freq. MHz	Power Density (S) at 20 cm mW/cm <sup>2</sup>	MPE Limit at 20 cm mW/cm <sup>2</sup>	Distance where S <= MPE Limit cm
150	8.487	0.200	130.3
162	8.487	0.200	130.3
174	8.487	0.200	130.3

Antenna: 10.7 dBd ERP = 500 W

Freq. MHz	EUT Power		Cable Loss Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm <sup>2</sup>	MPE Limit at 20 cm mW/cm <sup>2</sup>
	dBm	mW*						
150	46.3	42658.0	0	12.8	46.3	820351.54	163.204	0.200
162	46.3	42658.0	0	12.8	46.3	820351.54	163.204	0.200
174	46.3	42658.0	0	12.8	46.3	820351.54	163.204	0.200

For the cases where S > the MPE Limit

Freq. MHz	Power Density (S) at 20 cm mW/cm <sup>2</sup>	MPE Limit at 20 cm mW/cm <sup>2</sup>	Distance where S <= MPE Limit cm
150	163.204	0.200	571.3
162	163.204	0.200	571.3
174	163.204	0.200	571.3



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## Industry Canada MPE Calculation

Use: General

Antenna: 0 dBi

Freq. MHz	EUT Power		Cable Loss Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm <sup>2</sup>	MPE Limit at 20 cm mW/cm <sup>2</sup>
	dBm	mW*						
150	46.3	42658.0	0	0	46.3	42657.95	8.487	0.129
162	46.3	42658.0	0	0	46.3	42657.95	8.487	0.129
174	46.3	42658.0	0	0	46.3	42657.95	8.487	0.129

For the cases where S > the MPE Limit

Freq. MHz	Power Density (S) at 20 cm mW/cm <sup>2</sup>	MPE Limit at 20 cm mW/cm <sup>2</sup>	Distance where S <= MPE Limit cm
150	8.487	0.129	162.2
162	8.487	0.129	162.2
174	8.487	0.129	162.2

Antenna: 4.7 dBd

ERP = 125 W

Freq. MHz	EUT Power		Cable Loss Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm <sup>2</sup>	MPE Limit at 20 cm mW/cm <sup>2</sup>
	dBm	mW*						
150	46.3	42658.0	0	6.8	46.3	205116.22	40.807	0.129
162	46.3	42658.0	0	6.8	46.3	205116.22	40.807	0.129
174	46.3	42658.0	0	6.8	46.3	205116.22	40.807	0.129

For the cases where S > the MPE Limit

Freq. MHz	Power Density (S) at 20 cm mW/cm <sup>2</sup>	MPE Limit at 20 cm mW/cm <sup>2</sup>	Distance where S <= MPE Limit cm
150	40.807	0.129	355.6
162	40.807	0.129	355.6
174	40.807	0.129	355.6