



EMC Test Data

Client: GE MDS LLC	Job Number: J97704
Model: MCR-LN4	T-Log Number: T97706
	Project Manager: Christine Krebill
Contact: Dennis McCarthy	Project Coordinator: -
Standard: FCC CFR 47 Part 1.1310 and RSS-102	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: 5/12/2015

Test Engineer: Deniz Demirci

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):	507

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.



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Run #1: FCC MPE Calculation for 300-1500 MHz single transmitters (General use)

Use: General

Antenna: 5 dBi, 10 dBi and 16 dBi

Run #1a: Antenna gain: 5 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 ²	MPE Limit at 20 cm mW/cm ²
	dBm	mW*						
406.1	41.1	12882.5	0	5	41.1	40738.03	8.105	0.271
430	41.2	13182.6	0	5	41.2	41686.94	8.293	0.287
470	41.1	12882.5	0	5	41.1	40738.03	8.105	0.313

For the cases where S > the MPE Limit

Freq. MHz	Power Density (S) at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²	Distance where S <= MPE Limit cm
406.1	8.105	0.271	109.4
430	8.293	0.287	107.6
470	8.105	0.313	101.7

Run #1b: Antenna gain: 10 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 ²	MPE Limit at 20 cm mW/cm ²
	dBm	mW*						
406.1	41.1	12882.5	0	10	41.1	128824.96	25.629	0.271
430	41.2	13182.6	0	10	41.2	131825.67	26.226	0.287
470	41.1	12882.5	0	10	41.1	128824.96	25.629	0.313

For the cases where S > the MPE Limit

Freq. MHz	Power Density (S) at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²	Distance where S <= MPE Limit cm
406.1	25.629	0.271	194.6
430	26.226	0.287	191.3
470	25.629	0.313	180.9



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Run #1c: Antenna gain: 16 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 ²	MPE Limit at 20 cm mW/cm ²
	dBm	mW*						
406.1	41.1	12882.5	0	16	41.1	512861.38	102.031	0.271
430	41.2	13182.6	0	16	41.2	524807.46	104.407	0.287
470	41.1	12882.5	0	16	41.1	512861.38	102.031	0.313

For the cases where S > the MPE Limit

Freq. MHz	Power Density (S) at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²	Distance where S <= MPE Limit cm
406.1	102.031	0.271	388.3
430	104.407	0.287	381.7
470	102.031	0.313	360.9



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Run #2: Industry Canada MPE Calculation for 300-6000 MHz single transmitters (General use)

Use: General
 Antenna: 5 dBi, 10 dBi and 16 dBi

Run #2a: Antenna gain: 5 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 ²	MPE Limit at 20 cm mW/cm ²
	dBm	mW*						
406.1	41.1	12882.5	0	5	41.1	40738.03	8.105	0.159
430	41.2	13182.6	0	5	41.2	41686.94	8.293	0.165
470	41.1	12882.5	0	5	41.1	40738.03	8.105	0.175

For the cases where S > the MPE Limit

Freq. MHz	Power Density (S) at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²	Distance where S <= MPE Limit cm
406.1	8.105	0.159	142.9
430	8.293	0.165	141.7
470	8.105	0.175	135.9

Run #2b: Antenna gain: 10 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 ²	MPE Limit at 20 cm mW/cm ²
	dBm	mW*						
406.1	41.1	12882.5	0	10	41.1	128824.96	25.629	0.159
430	41.2	13182.6	0	10	41.2	131825.67	26.226	0.165
470	41.1	12882.5	0	10	41.1	128824.96	25.629	0.175

For the cases where S > the MPE Limit

Freq. MHz	Power Density (S) at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²	Distance where S <= MPE Limit cm
406.1	25.629	0.159	254.1
430	26.226	0.165	252.0
470	25.629	0.175	241.7



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Run #2c: Antenna gain: 16 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 ²	MPE Limit at 20 cm mW/cm ²
	dBm	mW*						
406.1	41.1	12882.5	0	16	41.1	512861.38	102.031	0.159
430	41.2	13182.6	0	16	41.2	524807.46	104.407	0.165
470	41.1	12882.5	0	16	41.1	512861.38	102.031	0.175

For the cases where S > the MPE Limit

Freq. MHz	Power Density (S) at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²	Distance where S <= MPE Limit cm
406.1	102.031	0.159	506.9
430	104.407	0.165	502.9
470	102.031	0.175	482.2