

Client:	Samsung Electronics	Job Number:	J97349
Model:	HR54-200	T-Log Number:	T97510
Contact:	Cho Minhyung	Project Manager:	Irene Radamacher
Standard:	FCC 15.247/15.407	Project Coordinator:	-
		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: 9/9/2015

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:	Yes
If not, required separation distance (in cm):	-

Deviations From The Standard

No deviations were made from the requirements of the standard.

Test Notes

Powers are maximum given tolerances of power. There is no tuneup for the radios.

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FCC MPE Calculation

Use: General

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*						
5180	21.7	148.6	0	2.8	21.7	283.2	0.056	1.000
5260	23.6	229.1	0	2.8	23.6	436.5	0.087	1.000
5500	23.6	229.1	0	2.8	23.6	436.5	0.087	1.000
5825	23.2	208.9	0	4.1	23.2	537.0	0.107	1.000

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
5180	0.056	1.000	4.7 cm
5260	0.087	1.000	5.9 cm
5500	0.087	1.000	5.9 cm
5825	0.107	1.000	6.5 cm

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*						
2412	22.9	195.0	0	3.1	22.9	398.1	0.079	1.000
2437	25.4	346.7	0	3.1	25.4	707.9	0.141	1.000
2462	23.3	213.8	0	3.1	23.3	436.5	0.087	1.000

For the cases where S > the MPE Limit

Freq. MHz	S @ 20 cm mW/cm ²	MPE Limit mW/cm ²	Distance where S <= MPE Limit
2412	0.079	1.000	5.6 cm
2437	0.141	1.000	7.5 cm
2462	0.087	1.000	5.9 cm

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RF4CE Operation

The antennas for Wi-Fi and RF4CE are co-located but the contribution to total power of the RF4CE does not affect the MPE distance when combined with the Wi-Fi operation.

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
2425	1.1	1.3	0	3.1	1.1	2.6	0.001	1.000
2450	1.5	1.4	0	3.1	1.5	2.9	0.001	1.000
2475	1.1	1.3	0	3.1	1.1	2.6	0.001	1.000

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
2425	0.001	1.000	0.5 cm
2450	0.001	1.000	0.5 cm
2475	0.001	1.000	0.5 cm

Combined RF4CE and Wi-Fi Opeartion in 2.4 GHz band

The antennas for Wi-Fi and RF4CE are co-located but the contribution to total power of the RF4CE does not affect the MPE distance when combined with the Wi-Fi operation.

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
2412 & 2425	22.9	196.3	0	3.1	22.9	400.7	0.080	1.000
2437 & 2450	25.4	348.1	0	3.1	25.4	710.8	0.141	1.000
2462 & 2475	23.3	215.1	0	3.1	23.3	439.1	0.087	1.000

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
2412 & 2425	0.080	1.000	5.6 cm
2437 & 2450	0.141	1.000	7.5 cm
2462 & 2475	0.087	1.000	5.9 cm