

RF Exposure Evaluation

Per Section 5 of KDB Publication 680106 D02 Inductive wireless power transfer applications that meet all of the following requirements are not required to submit a PAG for equipment approved using certification to address RF exposure compliance:

1) Power transfer frequency is less than 1 MHz

Device operates nominally at 109.9 kHz (105 – 115 kHz range).

2) Output power from each primary coil is less than 15 watts

The EUT is a Power Class 0 device following the Wireless Power Consortium design specifications for a device operating at less than 5 watts.

3) The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils

This device is designed to comply with this requirement.

4) Client device is inserted in or placed directly in contact with the transmitter

This device is designed for direct contact charging only.

5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).

The EUT is Mobile (not portable).

f) Aggregate leakage fields at 15 cm surrounding the device and 20 cm from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

Aggregate leakage fields at 10 cm distance surrounding the EUT were measured with each integral coil loaded by a Samsung Galaxy 6 Edge cellular phone and, over three charging levels (1%, 50%, 99%), remains well below 50% of the MPE limit. A summary of this data is included as follows.

Frequency Range
9 kHz f 30 MHz

Det
Integrated RMS

Band
0.009-30 MHz

Test Date:
Test Engineer:
EUT Mode:
Meas. Distance:
EUT Tested:

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Joseph D Brunett
Charging, Coil 1,2,3
10 cm
Delphi WACM2

Application: Mobile (desktop)

#	Load Charge %	EUT Side	Sensor Vector	Sensor Freq Range		Electric Field @ 10cm			Magnetic Field @ 10cm			Worst Case MPE Level (%)
				Start kHz	Stop MHz	Measured		Limit V/m	Measured		Limit A/m	
						dBuV/m	V/m		dBuA/m	A/m		
1	1%	Left	x	9.0	30.0	108.3	0.26	614.00	54.7	0.001	1.63	0.0
2			y	9.0	30.0	87.1	0.02	614.00	42.8	0.000	1.63	0.0
3			z	9.0	30.0	112.1	0.40	614.00	57.2	0.001	1.63	0.1
4		Front	x	9.0	30.0	105.2	0.18	614.00	59.4	0.001	1.63	0.1
5			y	9.0	30.0	120.5	1.06	614.00	69.5	0.003	1.63	0.2
6			z	9.0	30.0	93.7	0.05	614.00	53.5	0.000	1.63	0.0
7		Back	x	9.0	30.0	109.9	0.31	614.00	53.9	0.000	1.63	0.1
8			y	9.0	30.0	120.2	1.02	614.00	62.4	0.001	1.63	0.2
9			z	9.0	30.0	96.4	0.07	614.00	49.6	0.000	1.63	0.0
10		Top	x	9.0	30.0	107.6	0.24	614.00	84.6	0.017	1.63	1.0
11			y	9.0	30.0	98.6	0.08	614.00	82.2	0.013	1.63	0.8
12			z	9.0	30.0	123.5	1.49	614.00	85.0	0.018	1.63	1.1
13	50%	Left	x	9.0	30.0	108.7	0.27	614.00	54.8	0.001	1.63	0.0
14			y	9.0	30.0	87.2	0.02	614.00	43.4	0.000	1.63	0.0
15			z	9.0	30.0	112.2	0.41	614.00	58.0	0.001	1.63	0.1
16		Front	x	9.0	30.0	105.8	0.20	614.00	59.6	0.001	1.63	0.1
17			y	9.0	30.0	120.5	1.06	614.00	70.1	0.003	1.63	0.2
18			z	9.0	30.0	94.3	0.05	614.00	54.5	0.001	1.63	0.0
19		Back	x	9.0	30.0	110.4	0.33	614.00	54.5	0.001	1.63	0.1
20			y	9.0	30.0	120.9	1.11	614.00	63.1	0.001	1.63	0.2
21			z	9.0	30.0	97.3	0.07	614.00	49.9	0.000	1.63	0.0
22		Top	x	9.0	30.0	108.2	0.26	614.00	85.2	0.018	1.63	1.1
23			y	9.0	30.0	98.8	0.09	614.00	82.7	0.014	1.63	0.8
24			z	9.0	30.0	124.3	1.64	614.00	85.3	0.018	1.63	1.1
25	99%	Left	x	9.0	30.0	108.9	0.28	614.00	55.7	0.001	1.63	0.0
26			y	9.0	30.0	88.2	0.03	614.00	44.0	0.000	1.63	0.0
27			z	9.0	30.0	112.2	0.41	614.00	58.3	0.001	1.63	0.1
28		Front	x	9.0	30.0	106.8	0.22	614.00	59.9	0.001	1.63	0.1
29			y	9.0	30.0	121.2	1.15	614.00	70.7	0.003	1.63	0.2
30			z	9.0	30.0	95.2	0.06	614.00	55.2	0.001	1.63	0.0
31		Back	x	9.0	30.0	110.8	0.35	614.00	55.2	0.001	1.63	0.1
32			y	9.0	30.0	121.3	1.16	614.00	63.5	0.002	1.63	0.2
33			z	9.0	30.0	97.5	0.07	614.00	50.2	0.000	1.63	0.0
34		Top	x	9.0	30.0	108.4	0.26	614.00	85.4	0.019	1.63	1.1
35			y	9.0	30.0	99.4	0.09	614.00	83.0	0.014	1.63	0.9
36			z	9.0	30.0	125.0	1.78	614.00	85.4	0.019	1.63	1.1

10cm Exposure Measurement Photographs

