

RF Exposure Requirement

According to KDB680106 D01 RF Exposure Wireless Charging Apps v02 (05/31/2013), the requirement of RF exposure for the Wireless Charging device shall be met.

The RF exposure requirements must be determined in conjunction with the device operating characteristics, according to the mobile and portable exposure requirements. In Section 2.1091 and Section 2.1093 of the rules. SAR and MPE limits do not cover the frequency range for wireless power transfer applications which operate below 100 kHz and 300 kHz respectively; therefore, RF exposure compliance needs to be determined with respect to 1.1307 (c) and (d) of the FCC rules.

For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 10 cm. E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 10 cm measured from the center of the probe(s) to the edge of the device. Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m.

Table 1 – Limits for Maximum Permissible Exposure (MPE)

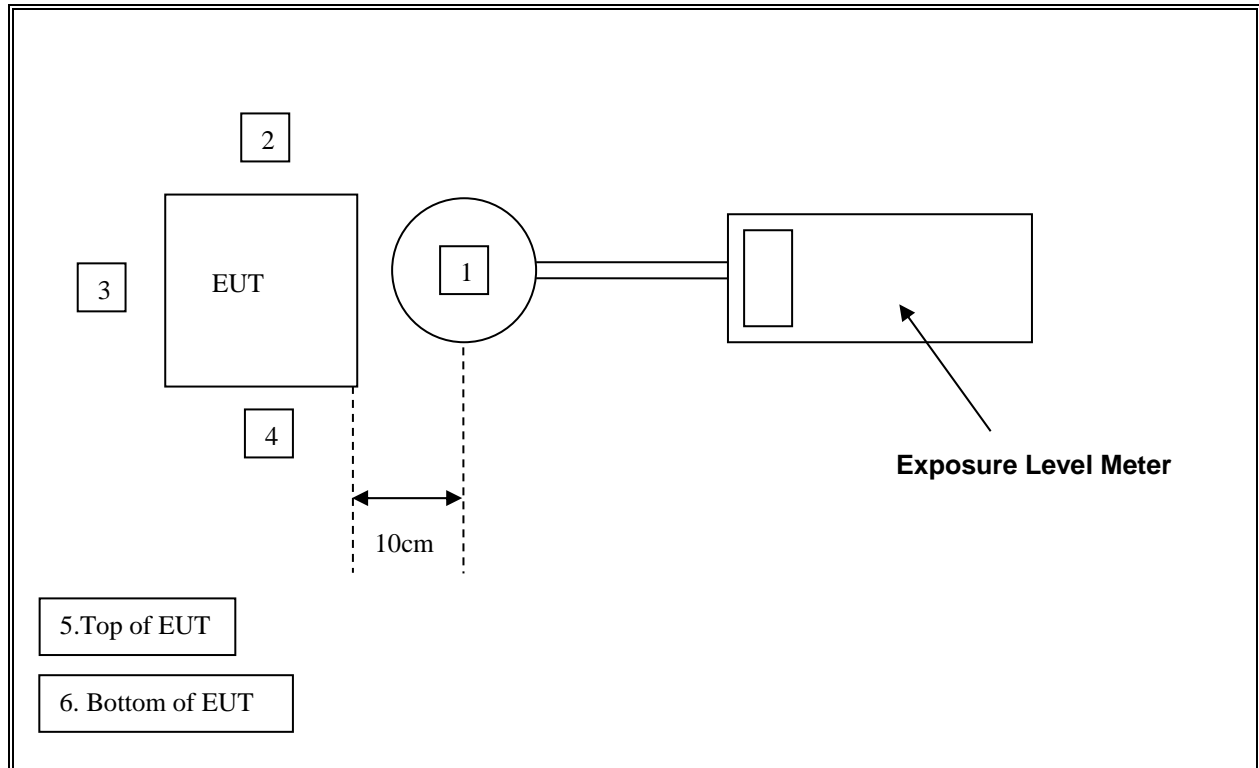
Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

Note: f denotes for frequency in MHz

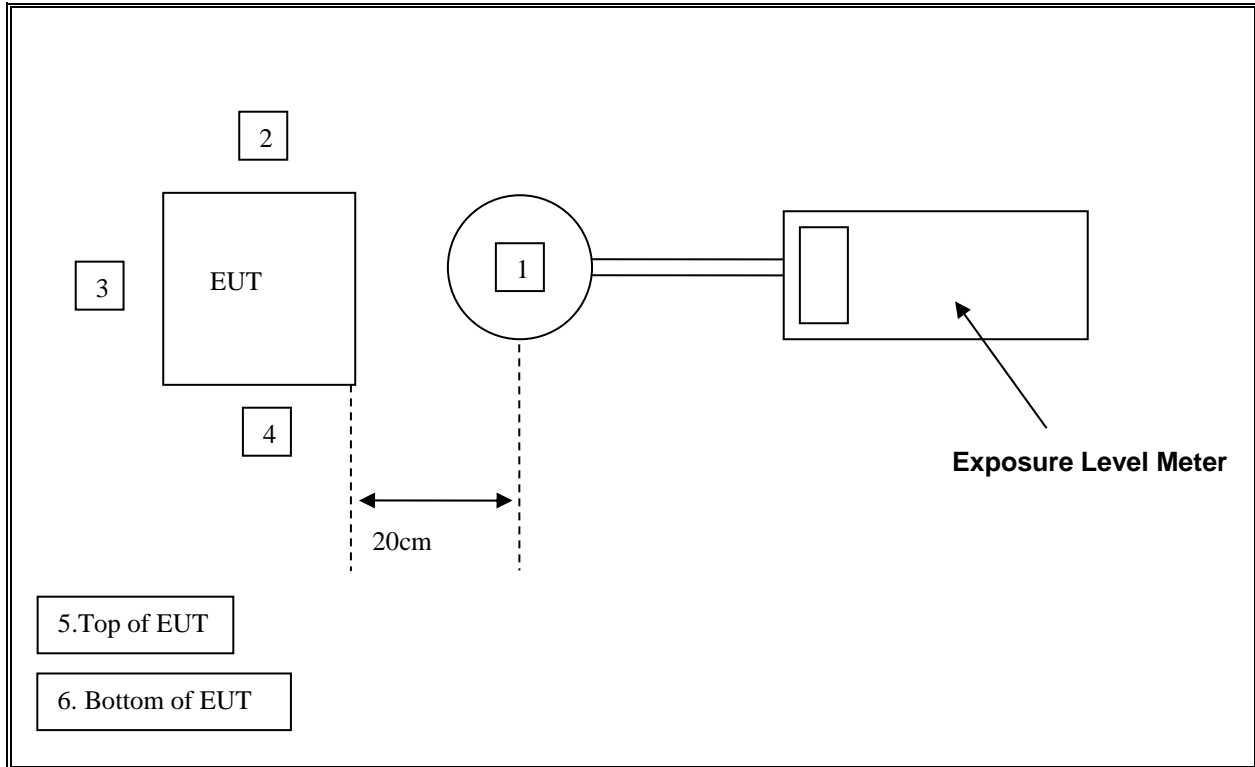
Test Method:

Measurements are conducted with a magnetic field probe located 10cm away from the EUT and its associated attachments. All sides, including top and bottom, of the EUT were scanned for emissions.

Test Setup:



Test Setup:



Test Result

All measurement at defined as $f = 125\text{kHz}$

Magnetic Field (H-Field) strength at 10cm from the boundaries of the EUT

EUT location	Measured H-field (A/m)	Limit (A/m)	30%of Limit	Margin (A/m)
Left (2)	0.457	1.63	0.489	-0.032
Right (4)	0.462	1.63	0.489	-0.027
Front (1)	0.452	1.63	0.489	-0.037
Back (3)	0.451	1.63	0.489	-0.038
Top (5)	0.475	1.63	0.489	-0.014
Bottom (6)	0.460	1.63	0.489	-0.029

Electric Field (E-Field) strength at 10cm from the boundaries of the EUT

EUT location	Calculated E-field (V/m)	Limit (V/m)	30%of Limit	Margin (V/m)
Left (2)	1.607	614.0	184.20	-182.593
Right (4)	1.572	614.0	184.20	-182.628
Front (1)	1.405	614.0	184.20	-182.795
Back (3)	1.623	614.0	184.20	-182.577
Top (5)	0.972	614.0	184.20	-183.228
Bottom (6)	1.524	614.0	184.20	-182.676

Magnetic Field (H-Field) strength at 20cm from the boundaries of the EUT

EUT location	Measured H-field (A/m)	Limit (A/m)	30%of Limit	Margin (A/m)
Left (2)	0.284	1.63	0.489	-0.205
Right (4)	0.275	1.63	0.489	-0.214
Front (1)	0.262	1.63	0.489	-0.227
Back (3)	0.271	1.63	0.489	-0.218
Top (5)	0.282	1.63	0.489	-0.207
Bottom (6)	0.259	1.63	0.489	-0.230

Electric Field (E-Field) strength at 20cm from the boundaries of the EUT

EUT location	Measured E-field (V/m)	Limit (V/m)	30%of Limit	Margin (V/m)
Left (2)	0.552	614.0	184.20	-183.648
Right (4)	0.536	614.0	184.20	-183.664
Front (1)	0.514	614.0	184.20	-183.686
Back (3)	0.568	614.0	184.20	-183.632
Top (5)	0.489	614.0	184.20	-183.711
Bottom (6)	0.544	614.0	184.20	-183.656

Equipment List

Equipment	Magnetic Field Probe meter
Registration No.	EW-2140
Manufacturer	NARDASAFETY
Model No.	ELT400
Calibration Date	Mar 31, 2017
Calibration Due Date	Mar 11, 2017

Equipment	RF Electric Field Probes
Registration No.	EW-2508
Manufacturer	ETS-LINDGREN
Model No.	HI-6113
Calibration Date	Mar 08, 2017
Calibration Due Date	Mar 08, 2018