

RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in KDB 447498 D01 V06 and §1.1307(b)

FCC ID: 2ABC5-E0082

EUT Specification

EUT	Android Tablet
Frequency band (Operating)	<input type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input type="checkbox"/> WLAN: 5.150GHz ~ 5.250GHz <input type="checkbox"/> WLAN: 5.725GHz ~ 5.850GHz <input checked="" type="checkbox"/> Others: 13.56MHz
Device category	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others ____
Exposure classification	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm ²) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity	<input type="checkbox"/> Single antenna <input checked="" type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity
Max. output power	60.68 (dBμV/m)
Antenna gain (Max)	0 dBi
Evaluation applied	<input checked="" type="checkbox"/> MPE Evaluation <input type="checkbox"/> SAR Evaluation

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm ²)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	6
1500-100000	--	--	1	30

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = Power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

NFC:

Mode	Channel	Frequency (MHz)	Field strength of fundamental @ 3m		Field strength of fundamental @ 0.2m		Electric Field Strength (V/m)
			(dBuV/m)	V/m	(dBuV/m)	V/m	
ASK	1	13.56	60.68	0.0011	107.72	0.2432	60.77

Device also contains WLAN/BT modular, maximum MPE ratio is 0.0996 (Test Report No. FA412210).

Simultaneous Transmission MPE

WLAN/BT and NFC share difference modular and antenna, Need consider simultaneous transmission;

According to KDB447498 D01 General RF Exposure Guidance v06 for Transmitters used in mobile exposure conditions for simultaneous transmission operations;
 \sum of MPE ratios ≤ 1.0

6.2.1 Summary simultaneous transmission results

Maximum Simultaneous transmission MPE Ratios for **NFC, 2.4GWLAN**

Maximum MPE ratio NFC	Maximum MPE ratio 2.4GWLAN	\sum MPE ratios	Limit	Results
0.0030	0.0201	0.1026	1.0	PASS

Test Result: Pass