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Maximum Permissible Exposure Evaluation

FCC ID: 2APPZ-BL

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 §1.1307(b)

EUT Specification

Product Name:	IP Phone
Trade Mark:	
Model/Type reference:	X303W
Listed Model(s):	X301W
Model Different:	All these models are identical in the same PCB, layout and electrical circuit, The difference is that: Color screens: X303W Black and white screens: X301W Screens size 240*320: X303W Screens size 128*48: X301W With POE function: X303W Without POE function: X301W
Frequency band (Operating)	Wlan: 2412MHz ~ 2462MHz Rlan: 5180MHz ~ 5240MHz 5745MHz ~ 5825MHz
Device category	<input type="checkbox"/> Portable (<5mm separation) <input type="checkbox"/> Mobile (>20cm separation) <input checked="" type="checkbox"/> Fixed (>20cm separation) <input type="checkbox"/> Others ____
Exposure classification	<input type="checkbox"/> Occupational/Controlled exposure (S=5mW/cm2) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm2)
Antenna diversity	<input checked="" type="checkbox"/> Single antenna <input type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity
Antenna gain (Max)	Wlan: 3.1dBi Rlan U-NII-1: 4.7dBi Rlan U-NII-3: 4.2dBi
Evaluation applied	<input checked="" type="checkbox"/> MPE Evaluation <input type="checkbox"/> SAR Evaluation

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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	30
1500-100000	--	--	1	30

Friis transmission formula: Pd=(Pout*G)/(4*pi*R²)

Where

Pd= Power density in mW/cm²

Pout= output power to antenna in mW

G= gain of antenna in linear scale

Pi= 3.1416

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

Pd 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

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)
802.11b	2462	3.1	15.67	15±1	16	0.01617	1
802.11g	2412	3.1	15.47	15±1	16	0.01617	1
802.11n(HT20)	2437	3.1	14.60	14±1	15	0.01285	1
802.11n(HT40)	2437	3.1	13.94	14±1	15	0.01285	1
802.11a	5180	4.7	16.79	16±1	17	0.02943	1
802.11n(HT20)	5240	4.7	16.23	16±1	17	0.02943	1
802.11n(HT40)	5230	4.7	15.98	16±1	17	0.02943	1
802.11ac(VHT20)	5180	4.7	16.42	16±1	17	0.02943	1
802.11ac(VHT40)	5190	4.7	13.68	14±1	15	0.01857	1

Note:

For a more detailed features description, Please refer to the RF Test Report.

*****THE END*****