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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:	Fanvil
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	☐ Portable (<5mm separation) ☐ Mobile (>20cm separation) ☒ Fixed (>20cm separation) ☐ Others ____
Exposure classification	☐ Occupational/Controlled exposure (S=5mW/cm2) ☒ General Population/Uncontrolled exposure (S=1mW/cm2)
Antenna diversity	☒ Single antenna ☐ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Antenna gain (Max)	Wlan: 3.1dBi Rlan U-NII-1: 4.7dBi Rlan U-NII-3: 4.2dBi
Evaluation applied	☒ MPE Evaluation ☐ 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: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

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

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*****