

RF Exposure Report

FCC ID: 2AH3O-V3PRO

RF Exposure Measurement

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

RF Exposure Limit

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of the human exposure to radio-frequency (RF) radiation as specified in 1.1307 (b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)
Limits for Occupational / controlled Exposures			
300 - 1500	--	--	F/300
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
300 - 1500	--	--	F/1500
1500 – 100000	--	--	1.0

F= Frequency in MHz

Friss Formula

Friss 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 the center of radiator in cm

If we know the maximum gain of the antenna and the total output power to the antenna, through calculation, we will know MPE value at distance 20cm.

EUT Operation condition

EUT was enabled to transmit and receive at lowest, middle and highest channels.

Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. Warning statement to the user for keeping at least 20cm or more separation distance from the antenna should be included in the User manual. So, this device is classified as Mobile device.

24G Radar

Mode	24.075GHz ~ 24.175GHz
Detector	PEAK
Radar	16±1dBm

$111.9\text{dBuV/m} = 111.9\text{dBuV/m} - 95.2 = 16.7\text{dBm}$

ANT Gain (G)

Antenna gain : 3.5dBi(gain of antenna in linear scale=2.24)

Protocol	ANT Gain(gain of antenna in linear scale)	Channel Frequency (MHz)	Output Power to Antenna (dBm)	Output Power to Antenna (mW)	Power Density (mW/cm ²)	Limit (mW/cm ²)
Radar	2.24	24000	17	50.1187	0.02233	1

Contains FCC ID: ZQ6-AP6356SDXX

EUT Function	Frequency Band (MHz)	TX Function	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN	2412-2462	1TX	14.15	3.51	20	0.012	1
		2TX	14.91	6.51	20	0.028	1
	5180-5240	2TX	12.43	8.51	20	0.025	1
	5745-5825	2TX	12.69	8.51	20	0.026	1
Bluetooth LE	2402-2480	1TX	7.25	3.51	20	0.002	1
Bluetooth EDR	2402-2480	1TX	7.84	3.51	20	0.003	1

Note:

2.4GHz: Directional gain = 3.5dBi + 10log(2) = 6.51dBi

5GHz: Directional gain = 5.5dBi + 10log(2) = 8.51dBi

* Both of the 2.4GHz and 5GHz can not transmit simultaneously

Transmit simultaneously

BT/2.4GWIFI/5G WIFI+24G Radar=0.028+0.02233=0.5033 mW/cm² less than 1 mW/cm².