



RF Exposure Requirements

1.1 General Information

Client Information

Applicant : Guangdong Chiyang Scent Technology Co.,Ltd.
Address of applicant : 1-9F, Unit A, and 5-9F, Unit B, Building 10, CIMC Center No.3
Chanxing Road, Xianchong Village, Chencun Town, Shunde
District, Foshan, Guangdong, China
Manufacturer : The same as above
Address of manufacturer : The same as above

General Description of E.U.T

FCC ID : 2A3DS-AH333W
Product Name : Aroma Diffuser
Model No. : A-H333M-W, A-H333S-W
Model Description : Two models are identical except for size and air pump
Therefore the full tests were performed on model A-H333M-W.
Rated Voltage : **A-H333M-W:** DC 12V, 8W
A-H333S-W: DC 12V, 5.1W
Battery Capacity : ---
Power Adapter : **HCX2401-1202000U**
Input: 100-240V~, 50-60Hz, 0.8A; Output: DC 12V, 2A
Alternative Power Adapter : **GMB24-120200-1A**
Input: 100-240V~, 50/60Hz, 1.0A; Output: DC 12V, 2.0A

Technical Characteristics of EUT

WiFi

Support Standards : 802.11b, 802.11g, 802.11n20, 802.11n40
Frequency Range : 2412-2462MHz for 802.11b/g/n(HT20)
2422-2452MHz for 802.11n(HT40)
RF Output Power : 19.67dBm (Conducted)
Modulation : 802.11b: DSSS(DBPSK/DQPSK/CCK)
802.11g/n: OFDM (BPSK/QPSK/16QAM/64QAM)
Quantity of Channels : 11 for 802.11b/g/n(HT20); 7 for 802.11n(HT40)
Channel Separation : 5MHz
Type of Antenna : PCB Antenna
Antenna Gain : 3.57dBi



BLE

Bluetooth Version : Bluetooth LE
Frequency Range : 2402-2480MHz
RF Output Power : -1.098dBm (Conducted)
Modulation : GFSK
Data Rate : 1Mbps
Quantity of Channels : 40
Channel Separation..... : 2MHz
Type of Antenna : PCB Antenna
Antenna Gain : 3.57dBi

2 Applicable Standard

According to §1.1307(b)(1) and KDB 447498 D01 General RF Exposure Guidance v06, system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

(a) Limits for Occupational / Controlled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	F/300	6
1500-100000	/	/	5	6

(b) Limits for General Population / Uncontrolled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	F/1500	30
1500-100000	/	/	1	30

Note: f = frequency in MHz: * = Plane-wave equivalents power density



3 Calculation Method

$$S = (30 \cdot P \cdot G) / (377 \cdot R^2)$$

S = power density (in appropriate units, e.g., mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor is normally numeric gain.

R = distance to the center of radiation of the antenna (in appropriate units, e.g., cm), R=20cm.

4 MPE Calculation Result

Frequency (MHz)	Antenna Gain (dBi)	Numeric gain	Conducted Power (dBm)	Maximum Tune-up output power		PD (mW/cm ²)	Limit (mW/cm ²)
				(dBm)	(mW)		
2462 (WiFi)	3.57	2.28	19.67	20.00	100.00	0.04526	1.0
2402 (BLE)	3.57	2.28	-1.098	-1.00	0.79	0.00036	1.0

Result: Pass

=====End of Report=====

WALTEK