



RF Exposure Requirements

1 General Information

Client Information

Applicant : AQUAGEM TECHNOLOGY LIMITED
Address of applicant : FLAT / RM H 19/F MAXGRAND, PLAZA 3 TAI YAU STREET,
SAN PO KONG KL, Hong Kong
Manufacturer : Aquagem Manufacturing Limited
Address of manufacturer : NO.15, 101, 16, 401, 501, No.193, Jinlong Road, Dalong Street,
Panyu District, Guangzhou

General Description of E.U.T

FCC ID : 2BRMV-PAT01
Product Name : POOL ACTUATOR TRANSFORMER
Model No. : PAT01, MT24S
Model Description : Two models are identical except model name. Therefore the full tests were performed on model PAT01.
Rated Voltage : 120V~, 60Hz

Technical Characteristics of EUT

2.4G WiFi Specification

Support Standards : 802.11b, 802.11g, 802.11n
Frequency Range : 2412-2462MHz for 802.11b/g/n(HT20)
2422-2452MHz for 802.11n(HT40)
RF Output Power : 15.45dBm (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); 8 for 802.11n(HT40)
Channel Separation : 5MHz
Type of Antenna : FPC IPEX Antenna
Antenna Gain* : -2.38dBi

**The antenna gain information is provided by the customer. The laboratory is not responsible for the accuracy of the antenna gain information.*



BLE Specification

Bluetooth Version.....	: Bluetooth LE
Frequency Range	: 2402-2480MHz
RF Output Power	: 3.58dBm (Conducted)
Modulation	: GFSK
Data Rate	: 1Mbps
Quantity of Channels	: 40
Channel Separation.....	: 2MHz
Type of Antenna	: FPC IPEX Antenna
Antenna Gain*.....	: -2.38dBi

**The antenna gain information is provided by the customer. The laboratory is not responsible for the accuracy of the antenna gain information.*

WALTEK



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	-2.38	0.58	15.45	16.00	39.81	0.00458	1.0

Result: Pass

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