



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-DCP15DV

Product Name : Inverter Pool Pump

Model No. : **Series Inver Master:** IM20DV, IM25DV, IM30DV
Series Inver Victor: IT20DV, X08, IT24DV, X10, IT31DV, X15
Series Inver Pro: IP20, IP25, IP30, IP40
Series Inver Captain: DC40, MP2AI, DCP08DV, MP10AIDV,
DCP12DV, MP15AIDV, DCP15DV, MP165AIDV, DCP18DV,
DCX20, DCX25, MP3AI
Series Inver Gem: IBP08DV, IBP12DV, IBP15DV
Series Inver Hero: IHP08DV, IHP12DV, IHP15DV
Series Inver Smart: DM14 DV, DM19 DV, MP10VSP, DQ19DV,
DM23 DV, MP15VSP, DQ23DV, DM28 DV, MP165VSP,
DQ28DV, DM36DV
Series Inver Eco: DE18DV, 21100, DE22 DV, 21101, DE27 DV,
21102, DE28 DV, 21103, DE36 DV, DEX20, DEX25
Series Inver S: DS14DV, DS19DV, DS23DV, DS28DV, DS36 DV
Series Inver PiLot: DB14DV, P08DV, PP08DV, DB19DV,
P11DV, PP11DV, DB23DV, P15DV, PP15DV, DB28DV, DB36 DV
Series Silence X: DF14DV, DF19DV, T10 PRO, DF23DV, T15
PRO, DF28DV, T20 PRO, DF36DV

Model Description : All models have same electric circuit and PCB layout except for
the appearance, rated power and model name.

Rated Voltage : AC 115-230V, 50/60Hz

Battery Capacity : ---

Power Adapter : ---



Technical Characteristics of EUT

- 2.4G WiFi

Support Standards	802.11b, 802.11g, 802.11n
Frequency Range	2412-2462MHz for 802.11b/g/n(HT20)
RF Output Power	15.15dBm (Conducted)
Modulation	802.11b: DSSS(DBPSK/DQPSK/CCK) 802.11g/n: OFDM (BPSK/QPSK/16QAM/64QAM)
Data Rate	1Mbps for 802.11b; 54Mbps for 802.11g; MCS7 for 802.11n
Quantity of Channels	11 for 802.11b/g/n(HT20)
Channel Separation.....	5MHz
Type of Antenna	FPC Antenna
Antenna Gain	-6.10dBi (Declared by the manufacturer)

- BLE

Bluetooth Version.....	Bluetooth LE
Frequency Range	2402-2480MHz
RF Output Power	6.39dBm (Conducted)
Modulation	GFSK
Data Rate	1Mbps
Quantity of Channels	40
Channel Separation.....	2MHz
Type of Antenna	FPC Antenna
Antenna Gain	-6.10dBi (Declared by the manufacturer)



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

Mode	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)		
2.4G WiFi	2462	-6.1	0.25	15.15	16.00	39.81	0.00194	1.0
BLE	2402	-6.1	0.25	6.39	7.00	5.01	0.00024	1.0

Result: Pass

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