Maximum Permissible Exposure Evaluation

FCC ID: 2AXBN-FB-A01

1. Client Information

Applicant	:	SHENZHEN CYTON Intelligence Technology CO.,LTD
Address	:	F/L 301,Building J,Jinchangda,No.2000089,Shangwei industrial zone ,Zhangkengjing community,Guanhu Town,Longhua New District,Shenzhen,China
Manufacturer	:	SHENZHEN CYTON Intelligence Technology CO.,LTD
Address	:	F/L 301,Building J,Jinchangda,No.2000089,Shangwei industrial zone ,Zhangkengjing community,Guanhu Town,Longhua New District,Shenzhen,China

2. General Description of EUT

EUT Name	:	Smart Bird Feeder Camera	
Models No.	:	FB-A01, Q8,FB-A02,FB-A03,FB-A04,FB-A05,FB-A06,FB-A07,FB-A08,FB-A09,FB-A10,FB-A11,FB-A12,FB-A13,FB-A14,FB-A15,FB-A16,FB-A17,FB-A18,FB-A19,FB-A20,FB-A01-Q8,FB-D01,FB-D02,FB-D03,FB-D04,FB-D05,FB-D06,FB-D07,FB-D08,FB-D09,FB-D10,BS-D01,BS-D02,BS-D03,BS-D04,BS-D05,BS-D06,BS-D07,BS-D08,BS-D09,BS-D10	
Model Different	:	All of these models are identical on the same PCB, layout and circuit, the cameras are the same, the difference is the model name and appearance shape and color, and the difference between supporting solar and not supporting solar charging.	
Brand Name	:	N/A	
Sample ID	:	HC-C-202501-0012-01-01	
Product Description	:	Operation Frequency:	Bluetooth (BLE): 2402MHz~2480MHz 2.4G WIFI:2412NHz-2462MHz
Power Rating	:	USB Input: DC 5V DC 3.7V 5200mAh Rechargeable Li-ion battery	
Software Version	:	1.10.0	
Hardware Version	:	CG625_C01_V2	
Remark	:	The antenna gain provided by the manufacturer, the verified for the RF conduction test provided by TOBY test lab.	

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Method of Measurement for FCC

1. Max. Antenna Gain:

Mode	Antenna Type	Antenna Gain(dBi)
BLE	PCB	0.5
2.4G WIFI	Copper tube Antenna	5.3

2. EUT Operation Condition:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3. Exposure Evaluation:

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S=(PG)/4\pi R^2$$

Where

S: power density
P: power input to the antenna
G: power gain of the antenna in the direction of interest relative to an isotropic radiator.
R: distance to the center of radiation of the antenna

Simultaneous transmission MPE Considerations

According to KDB447498: All transmitters and antennas in the host must be either evaluated for MPE compliance, by measurement or computational modeling, or qualify for the standalone MPE test exclusion in section 7.1. Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modeled or measured field strengths or power density, is ≤ 1.0.
This means that:

∑ of MPE ratios ≤ 1.0

4. Test Result:

Worst MPE Result							
Test Mode	Frequency (MHz)	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	Max. ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm^2) [S]
BLE	2402	0.411	0±1	1	0.5	20	0.00028
	2440	1.914	1±1	2	0.5	20	0.00035
	2480	2.161	2±1	3	0.5	20	0.00045
2.4G WIFI	2412	14.53	14±1	15	5.3	20	0.02132
	2437	14.11	14±1	15	5.3	20	0.02132
	2462	13.7	14±1	15	5.3	20	0.02132
Note: The antenna gain used max. antenna gain							

5. Conclusion:

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

Limits for General Population/ Uncontrolled Exposure

Frequency Range (MHz)	Power density (mW/ cm^2)
300-1,500	**F/1500**

For: 2402~2480MHz&2412~2462MHz
MPE limit S: 1mW/ cm^2
The MPE is calculated as ***0.02132 mW / cm2 < limit 1mW / cm2.***

BLE and WiFi support Synchronization transmitther

Maximum MPE ratio BLE	Maximum MPE ratio WiFi	∑MPE ratios	Limit	Results
0.00045	0.02132	0.02177	1	PASS

So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR2.1091 (b). The RF Exposure Information page from the manual is included here for reference.

--- END OF REPORT ---