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Report Template Version: V04

Report Template Revision Date: 2018-07-06



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CNAS L5785

RF Exposure Evaluation Report

Report No.: CQASZ20260300626E-04
Applicant: Shenzhen Umbra Technology Co., Ltd.
Address of Applicant: Room 702, Building 11, Tianan Yungu Industrial Park, Longgang District, Shenzhen, China
Equipment Under Test (EUT):
Product: Smart Baby Monitor
Model No.: JBM550, JBM550WUS
Test Model No.: JBM550
Brand Name: Jartoo
FCC ID: 2BF7Y-JBM550C1
Standards: 47 CFR Part 1.1307
47 CFR Part 1.1310
KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt: 2026-03-27
Date of Test: 2026-03-27 to 2026-04-14
Date of Issue: 2026-5-19
Test Result: **PASS***

*In the configuration tested, the EUT complied with the standards specified above

Tested By:

Lewis Zhou

(Lewis Zhou)

Reviewed By:

Timo Lei

(Timo Lei)

Approved By:

Jack Ai

(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20260300626E-04	Rev.01	Initial report	2026-5-19

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3 General Information

3.1 Client Information

Applicant:	Shenzhen Umbra Technology Co., Ltd.
Address of Applicant:	Room 702, Building 11, Tianan Yungu Industrial Park, Longgang District, Shenzhen, China
Manufacturer:	Shenzhen Umbra Technology Co., Ltd.
Address of Manufacturer:	Room 702, Building 11, Tianan Yungu Industrial Park, Longgang District, Shenzhen, China
Factory:	Dong Guan Kan Tsang Electroacoustic Technology Co., Ltd.
Address of Factory:	Room 402 First Building, No.8, LuYi First Road, TangXia Town, Dong Guan City, China.

3.2 General Description of EUT

Product Name:	Smart Baby Monitor
Model No.:	JBM550, JBM550WUS
Test Model No.:	JBM550
Trade Mark:	Jartoo
Software Version:	JST31_BABY_MONITOR_XY01_202602060011
Hardware Version:	KT-6313W-BU-V1.0
EUT Power Supply:	MODEL:YWK-AD050150-US INPUT:100-240V~50/60Hz 0.3A OUTPUT:5.0V= 1.5A 7.5W
	MODEL:YC-R02051500UU INPUT:100-240V~50/60Hz 0.2A OUTPUT:5.0V= 1.5A 7.5W

3.3 General Description of BLE

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	Bluetooth Spec 4.2
Modulation Type:	GFSK
Number of Channel:	40
Transfer Rate:	1Mbps
Sample Type:	☒ Mobile ☐ Portable
Antenna Type:	Shrapnel antenna
Antenna Gain:	3.03dBi

3.4 General Description of 2.4G WIFI Classic(AB6032Is)

Operation Frequency:	2412MHz~2462MHz
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g : OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20) : OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channel:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels
Channel Separation:	5MHz
Transfer Rate:	IEEE for 802.11b: 1Mbps/2Mbps/5.5Mbps/11Mbps IEEE for 802.11g : 6Mbps/9Mbps/12Mbps/18Mbps/24Mbps/36Mbps/48Mbps/54Mbps IEEE for 802.11n(HT20) : 6.5Mbps/13Mbps/19.5Mbps/26Mbps/39Mbps/52Mbps/58.5Mbps/65Mbps
Sample Type:	☒ Mobile ☐ Portable
Antenna Type:	Copper antenna
Antenna Gain:	3.32dBi

3.5 General Description of 2.4G WIFI Classic(AB6031X)

Operation Frequency:	2412MHz~2462MHz
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g : OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20) : OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channel:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels
Channel Separation:	5MHz
Transfer Rate:	IEEE for 802.11b: 1Mbps/2Mbps/5.5Mbps/11Mbps IEEE for 802.11g : 6Mbps/9Mbps/12Mbps/18Mbps/24Mbps/36Mbps/48Mbps/54Mbps IEEE for 802.11n(HT20) : 6.5Mbps/13Mbps/19.5Mbps/26Mbps/39Mbps/52Mbps/58.5Mbps/65Mbps
Sample Type:	☒ Mobile ☐ Portable
Antenna Type:	Shrapnel antenna
Antenna Gain:	3.03dBi

4 RF Exposure Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	30
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

F= Frequency in MHz

Friis Formula

Friis 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 center of the radiator in cm

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

4.1.2 Test Procedure

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

4.2 1.1.3 EUT RF Exposure Evaluation

1) For BLE

Antenna Gain: 3.03dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.01 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	6.94	7.0±1	8	6.31
Middle(2440MHz)	7.9	8.0±1	9	7.94
Highest(2480MHz)	5.32	5.5±1	6.5	4.47

The worst case:

Maximum tune-up Power (mW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
7.94	3.03	0.0031748933	1.0	PASS

Note: 1) Refer to report No. CQASZ20260300626E-01 for EUT test Max Conducted Peak Output Power value.

2) $P_d = (P_{out} * G) / (4 * \pi * R^2) = (7.94 * 2.01) / (4 * 3.1416 * 20^2) = 0.0031748933$

2) For 2.4G WIFI(AB6032Is)

Antenna Gain: 3.32dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.15 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

11B mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	13.52	14.0±1	15	31.62
Middle(2437MHz)	13.87	14.0±1	15	31.62
Highest(2462MHz)	12.97	13.0±1	14	25.12

The worst case:

Maximum tune-up Power (mW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
31.62	3.32	0.0135122953	1.0	PASS

Note: 1) Refer to report No. CQASZ20260300626E-02 for EUT test Max Conducted AV Output Power value.

2) $P_d = (P_{out} * G) / (4 * \pi * R^2) = (31.62 * 2.15) / (4 * 3.1416 * 20^2) = 0.0135122953$

3) For 2.4G WIFI(AB6031X)

Antenna Gain: 3.03dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.01 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

11b mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	14.74	15.0±1	16	39.81
Middle(2437MHz)	14.71	15.0±1	16	39.81
Highest(2462MHz)	13.74	14.0±1	15	31.62

The worst case:

Maximum tune-up Power (mW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
39.81	3.03	0.0159121597	1.0	PASS

Note: 1) Refer to report No. CQASZ20260300626E-01 for EUT test Max Conducted AV Output Power value.

$$2) P_d = (P_{out} * G) / (4 * \pi * R^2) = (39.81 * 2.01) / (4 * 3.1416 * 20^2) = 0.0159121597$$

Simultaneous transmission:

2.4GWIFI(AB6032Is)+2.4GWIFI(AB6031X):

$$= 0.0031748933/1 + 0.0159121597/1$$

$$= 0.019087053 \leq 1$$