

RF Exposure Evaluation Report

Product : Projector
Trade mark : N/A
Model/Type reference : A3, A1, A2, A4, A5, A6, A7, A8, A9, A10, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14
Serial Number : N/A
Report Number : EED32M80097103
FCC ID : 2AYUS-A3
Date of Issue : Mar. 17, 2021
Test Standards : 47 CFR Part 1.1307
47 CFR Part 2.1091
KDB447498D01v06
Test result : PASS

Prepared for:

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2 Version

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4 General Information

4.1 Client Information

Applicant:	Shenzhen Bonage Technology Co., Ltd.
Address of Applicant:	Room 601, No.6, Jianghao Industrial Zone, No. 430, Jihua Road, Bantian, Longgang, Shenzhen,China
Manufacturer:	Shenzhen Bonage Technology Co., Ltd.
Address of Manufacturer:	Room 601, No.6, Jianghao Industrial Zone, No. 430, Jihua Road, Bantian, Longgang, Shenzhen,China
Factory:	Shenzhen Bonage Technology Co., Ltd.
Address of Factory:	Room 601, No.6, Jianghao Industrial Zone, No. 430, Jihua Road, Bantian, Longgang, Shenzhen,China

4.2 General Description of EUT

Product Name:	Projector
Model No.:	A3
Add Model No.:	A1, A2, A4, A5, A6, A7, A8, A9, A10, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14
Trade mark:	N/A
EUT Supports Radios application	BT 4.2 single module 2402MHz to 2480MHz; WIFI: IEEE 802.11 b/g/n(HT20)(HT40): 2412MHz to 2462MHz

4.3 Product Specification subjective to this standard

Frequency Range:	BT 4.2 single module 2402MHz to 2480MHz; WIFI: IEEE 802.11 b/g/n(HT20)(HT40): 2412MHz to 2462MHz
Modulation Type:	BT: GFSK, $\pi/4$ DQPSK, 8DPSK; WIFI: IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g :OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20 and HT40) : OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channels:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels IEEE 802.11n HT40: 7 Channels BT: 79 Channels
Test Power Grade:	Default
Test Software of EUT:	WIFI: RTL11n_8188FU BT: FCCAssist
Antenna Type:	Internal antenna
Antenna Gain:	BT: -0.58 dBi; WIFI: 2dBi
Max Conducted Peak Output Power:	BT:4.37dBm; WIFI: 14.93dBm
Power Supply:	AC 120V
Sample Received Date:	Nov. 26, 2020
Sample tested Date:	Nov. 29, 2020 to Feb. 01, 2021
Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified. Model No.: A3, A1, A2, A4, A5, A6, A7, A8, A9, A10, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14 Only the model A3 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, Only model number and colors difference for market reason.	

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4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = d \text{ (m)} / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

5.2 Maximum Permissible Exposure

Substituting the MPE safe distance using $d = 20$ cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

IEEE 802.11b mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
11	2462	31.11	1.58	20	0.0098	1

$\pi/4$ DQPSK mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
0	2402	2.735	0.874	20	0.0005	1

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32M80097101 for EUT external and internal photos.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

*** End of Report ***