

# TEST REPORT

<b>FCC ID.</b> .....	2A9UX-BT32A	
<b>Test Report No.</b> .....	TCT240715E042	
<b>Date of issue</b> .....	Sep. 09, 2024	
<b>Testing laboratory</b> .....	SHENZHEN TONGCE TESTING LAB	
<b>Testing location/ address:</b>	2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China	
<b>Applicant's name</b> .....	Shenzhen Bmax Technology Co., Ltd	
<b>Address</b> .....	B3Building, No.8216, Baoan Avenue, Wanfeng Community, Xinqiao Street, Baoan District, Shenzhen, Guangdong, China	
<b>Manufacturer's name</b> .....	Shenzhen Bmax Technology Co., Ltd	
<b>Address</b> .....	B3Building, No.8216, Baoan Avenue, Wanfeng Community, Xinqiao Street, Baoan District, Shenzhen, Guangdong, China	
<b>Standard(s)</b> .....	FCC CFR Title 47 Part 1.1307	
<b>Product Name</b> .....	Smart doorbell	
<b>Trade Mark</b> .....	<b>BMAX</b>	
<b>Model/Type reference</b> .....	Refer to model list of page 3	
<b>Rating(s)</b> .....	Rechargeable Li-ion Battery DC 3.7V	
<b>Date of receipt of test item</b> .....	Jul. 15, 2024	
<b>Date (s) of performance of test</b> .....	Jul. 15, 2024 ~ Sep. 09, 2024	
<b>Tested by (+signature)</b> .....	Onnado YE	
<b>Check by (+signature)</b> .....	Beryl ZHAO	
<b>Approved by (+signature)</b> :	Tomsin	

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## 1. General Product Information

### 1.1. EUT description

<b>Product Name</b> .....	Smart doorbell
<b>Model/Type reference</b> .....	BT32
<b>Sample Number</b> .....	TCT240715E020-0101
<b>Operation Frequency</b> .....	For 2.4G WIFI: 2412MHz~2462MHz (802.11b/802.11g/802.11n(HT20)) 2422MHz~2452MHz (802.11n(HT40)) For 5G WIFI: 5745 MHz ~ 5825 MHz For SRD: 433.92MHz
<b>Modulation Type</b> .....	For 2.4G WIFI: 802.11b: Direct Sequence Spread Spectrum (DSSS) 802.11g/802.11n: Orthogonal Frequency Division Multiplexing(OFDM) For 5G WIFI: 256QAM, 64QAM, 16QAM, BPSK, QPSK For SRD: FSK
<b>Antenna Type</b> .....	For 2.4G WIFI /5G WIFI: Metal Antenna For SRD: Spring Antenna
<b>Antenna Gain</b> .....	For 2.4G WIFI: 1.73dBi For 5G WIFI: 4.45dBi For SRD: 0dBi
<b>Rating(s)</b> .....	Rechargeable Li-ion Battery DC 3.7V

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

## 1.2. Model(s) list

No.	Model No.	Tested with
1	BT32	<input checked="" type="checkbox"/>
Other models	B1, B3, B4, B05A, B10, B11, B22, B28, B30, B60, B708A, BA1, BA2, BA3, BA4, BA5, BA6, BA7, BA8, BA9, BA10, BA300, BA68, BC1, BC2, BC3, BC4, BC5, BC6, BC7, BC8, BC9, BC10, BD1, BD2, BD3, BD05, BD06, BD08, BD9, BD25, BD32, BF708AD, BH01, BH02, BH03, BH04, BH05, BH06, BH07, BH08, BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, BI10, BL1, BL2, BL3, BL4, BL5, BL6, BL7, BL8, BLD1, BLEE2, BM1, BM02, BM03, BM04, BM05, BM06, BM7, BM8, BM9, BM9S, BM10, BM10S, BM11, BM12, BM13, BM200S, BM018, BM30, BM50, BM638, BN1, BN2, BN3, BN4, BN5, BN6, BN7, BP1, BP2, BP3, BP4, BP5, BP6, BP7, BP8, BP9, BQ1, BQ2, BQ3, BQ4, BQ5, BQ6, BQ7, BQ8, BQ9, BQ10, BT1, BT2, BT3, BT4, BT5, BT6, BT7, BT8, BT9, BT10, BT21, BT22, BT23, BT24, BT25, BT26, BT27, BT28, BT29, BT30, BT31, BT204, BT207, BTKX, BTL, BU1, BU2, BU3, BU4, BU5, BU6, BU7, BU8, BV1, BV2, BV3, BV4, BV5, BV6, BV7, BV8, BV9, BV10, BW001, BW002, BW3, BW004, BW005, BW006, BW007, BW008, BW009, BW010, BW013, BW014, BW500, BW801, BX1, BX2, BX3, BX4, BX5, BX6, BX7, BX8, BX9, BX10, BX11, BX12, BX13, BX14, BX15, BX16, BX17, BX18, BX19, BX20	<input type="checkbox"/>

Note: BT32 is tested model, other models are derivative models. The models are identical in circuit and PCB layout, only different on the model names and appearance. So the test data of BT32 can represent the remaining models.

## 2. General Information

### 2.1. Test environment and mode

Item	Normal condition
Temperature	+25°C
Voltage	DC 3.7V
Humidity	56%
Atmospheric Pressure:	1010 mbar
<b>Test Mode:</b>	
Transmitting Mode:	Keep the EUT in continuous transmitting by select channel

### 2.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

#### Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
3. For conducted measurements (Output Power, 20dB Occupied Bandwidth, Carrier Frequencies Separation, Hopping Channel Number, Dwell Time, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

### 3. Facilities and Accreditations

#### 3.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

- FCC - Registration No.: 645098

SHENZHEN TONGCE TESTING LAB

Designation Number: CN1205

The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A

SHENZHEN TONGCE TESTING LAB

CAB identifier: CN0031

The testing lab has been registered by Innovation, Science and Economic Development Canada for radio equipment testing.

#### 3.2. Location

SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

## 4. Test Results and Measurement Data

According to §1.1307(b), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

Remark: 1) **For 2.4G WIFI:** The maximum output power for antenna is 16.09dBm (40.64mW) at 2437MHz, 1.73dBi antenna gain (with 1.49 numeric antenna gain.)

**For 5G WIFI:** The maximum output power for antenna is 10.64dBm (11.59mW) at 5785MHz, 4.45dBi antenna gain (with 2.79 numeric antenna gain.)

**For SRD:** The maximum output power for antenna is -26.44dBm (0.002mW) at 433.92MHz, 0.8dBi antenna gain (with 1.20 numeric antenna gain.)

Note:  $E[\text{dB}\mu\text{V}/\text{m}] = 73.49$

computational formula

$$\text{EIRP[dBm]} = E[\text{dB}\mu\text{V}/\text{m}] + 20 \log (d[\text{m}]) - 104.77;$$

Conducted Power = EIRP-4.7;

Where E is the electric field strength in V/m; d is the measurement distance in meters (m)

2) For mobile or fixed location transmitters, no SAR consideration applied. The minimum separation generally be used is at least 20cm, even if the calculation indicate that the MPE distance would be lesser.

### Calculation

$$\text{Given } E = \frac{\sqrt{30 \times P \times G}}{d} \quad \& \quad S = \frac{E^2}{3770}$$

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

Substituting the MPE safe distance using  $d=20\text{cm}$  into above equation.

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

Mode	Power(mW)	numeric antenna gain	Power density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Result
2.4G WIFI	40.64	1.49	0.01205	1.0	PASS
5G WIFI	11.59	2.79	0.00643		
SRD	0.002	1.20	0.0000005		

### Simultaneous transmitting:

Maximum Emissions Level					
Mode	BT	WIFI	Total MPE	Limit	Result
2.4G WIFI + 5G WIFI	0.01205	0.00643	0.01848	1.0	PASS
2.4G WIFI + SRD	0.01205	0.0000005	0.01205		

\*\*\*\*\*END OF REPORT\*\*\*\*\*