



RF EXPOSURE Test Report

Report No.: MTi210526002-01E4

Date of issue: Aug. 13, 2021

Applicant: Shenzhen Junyong Technology
Co., Ltd

Product name: Model smart box

Model(s): Y2, A2, A3, Y1, Y3

FCC ID: 2A2DL-Y2

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>



Instructions

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TEST RESULT CERTIFICATION

Applicant's name.....	Shenzhen Junyong Technology Co., Ltd
Address.....	No.35, Fuyuan 1st Road, Xinhe community, Fuhai street, Bao'an District, Shenzhen, China
Manufacturer's Name	Shenzhen Junyong Technology Co., Ltd
Address.....	No.35, Fuyuan 1st Road, Xinhe community, Fuhai street, Bao'an District, Shenzhen, China

Product description

Product name	Model smart box
Trademark	BROxiongdi
Model Name	Y2
Serial Model	A2, A3, Y1, Y3
Standards.....	N/A
Test procedure	KDB 447498 D01 v06

Date of Test

Date (s) of performance of tests	June 17, 2021 ~July 13, 2021
Test Result.....	Pass

This device described above has been tested by Shenzhen Microtest Co., Ltd. and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

Testing Engineer

:

Cindy Qin

(Cindy Qin)

Technical Manager

:

Leo Su

(Leo Su)

Authorized Signatory

:

Tom Xue

(Tom Xue)



RF EXPOSURE EVALUATION

According to FCC 1.1310: 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 §1.1307(b)

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 Exposure				
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
300-1,500			f/300	6
1,500-100,000			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
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

MPE Calculation Method

Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = Power density in mW/cm²

P_{out} = output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π = 3.1415926

R = distance between observation point and center of the radiator in cm (20cm)

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



Measurement Result

BT:

Operation Frequency: 2402-2480MHz,

Power density limited: 1mW/ cm²

5GWiFi:

802.11a: 20 MHz

802.11n: 20 MHz, 40 MHz

802.11ac: 20 MHz, 40 MHz, 80MHz

Antenna Type: FPC Antenna;

WIFI antenna gain: 3dBi

R=20cm

$mW=10^{(dBm/10)}$

antenna gain Numeric= $10^{(dBi/10)}=10^{(3/10)}=2$ (SISO)

antenna gain Numeric= $10^{(dBi/10)}=10^{(6.01/10)}=3.99$ (MIMO)



BR+EDR:

Chann el Freq. (MHz)	modulation n	conducte d power	Tune- up powe r (dBm)	Max		Antenna		Evaluation result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/cm2)	(mW/c m2)
				(dBm)	(mW)	(dBi)	Nume ric		
2402	GFSK	4.612	5±1	6	3.981	0	1.00	0.0008	1
2441		5.395	5±1	6	3.981	0	1.00	0.0008	1
2480		5.48	5±1	6	3.981	0	1.00	0.0008	1
2402	π/4- DQPSK	4.098	5±1	6	3.981	0	1.00	0.0008	1
2441		4.691	5±1	6	3.981	0	1.00	0.0008	1
2480		4.757	5±1	6	3.981	0	1.00	0.0008	1
2402	8DPSK	4.136	5±1	6	3.981	0	1.00	0.0008	1
2441		4.854	5±1	6	3.981	0	1.00	0.0008	1
2480		4.889	5±1	6	3.981	0	1.00	0.0008	1

5GWiFi : UNII-1

Channel Freq. (MHz)	modulation	conducted power		Tune-up power		Max				Antenna		Evaluation result at 20cm			Power density Limits
		(dBm)		(dBm)		tune-up power				Gain		Power density(mW/cm2)			(mW/cm2)
						(dBm)		(mW)		Numeric					
		Ant A	Ant B	Ant A	Ant B	Ant A	Ant B	Ant A	Ant B	Ant A	Ant B	Ant A	Ant B	Sum	
5180	11a	7.44	6.19	8±1	6±1	9	7	7.9433	5.012	2	2	0.0032	0.0020	/	
5200	11a	8.27	6.75	8±1	6±1	9	7	7.9433	5.012	2	2	0.0032	0.0020	/	1
5240	11a	7.86	8.01	8±1	8±1	9	9	7.9433	7.943	2	2	0.0032	0.0032	/	1
5180	11n (HT20)	5.80	5.95	6±1	6±1	7	7	5.0119	5.012	3.99	3.99	0.0040	0.0040	0.0080	1
5200	11n (HT20)	6.39	6.58	7±1	7±1	8	8	6.3096	6.310	3.99	3.99	0.0050	0.0050	0.0100	1
5240	11n (HT20)	7.64	7.04	7±1	7±1	8	8	6.3096	6.310	3.99	3.99	0.0050	0.0050	0.0100	1
5190	11n (HT40)	6.42	6.17	7±1	7±1	8	8	6.3096	6.310	3.99	3.99	0.0050	0.0050	0.0100	1
5230	11n (HT40)	7.72	6.67	7±1	7±1	8	8	6.3096	6.310	3.99	3.99	0.0050	0.0050	0.0100	1
5180	11ac (HT20)	5.66	6.59	6±1	7±1	7	8	5.0119	6.310	3.99	3.99	0.0040	0.0050	0.0090	1
5200	11ac (HT20)	6.98	7.01	7±1	7±1	8	8	6.3096	6.310	3.99	3.99	0.0050	0.0050	0.0100	1
5240	11ac (HT20)	7.67	6.65	7±1	7±1	8	8	6.3096	6.310	3.99	3.99	0.0050	0.0050	0.0100	1
5190	11ac (HT40)	7.35	6.74	7±1	6±1	8	7	6.3096	5.012	3.99	3.99	0.0050	0.0040	0.0090	1
5230	11ac (HT40)	7.87	6.30	7±1	6±1	8	7	6.3096	5.012	3.99	3.99	0.0050	0.0040	0.0090	1
5210	11ac (HT80)	7.17	7.71	7±1	7±1	8	8	6.3096	6.310	3.99	3.99	0.0050	0.0050	0.0100	1



5GWiFi : UNII-3

Channel Freq. (MHz)	modulation	conducted power		Tune-up power		Max				Antenna		Evaluation result at 20cm			Power density Limits
		(dBm)		(dBm)		tune-up power				Gain		Power density(mW/cm2)			(mW/cm2)
						(dBm)		(mW)		Numeric					
		Ant A	Ant B	Ant A	Ant B	Ant A	Ant B	Ant A	Ant B	Ant A	Ant B	Ant A	Ant B	Sum	
5745	11a	5.33	6.18	5±1	7±1	6	8	3.9811	6.310	2	2	0.0016	0.0025	/	
5785	11a	4.61	7.08	5±1	7±1	6	8	3.9811	6.310	2	2	0.0016	0.0025	/	1
5825	11a	5.87	6.93	5±1	7±1	6	8	3.9811	6.310	2	2	0.0016	0.0025	/	1
5745	11n (HT20)	4.86	6.75	5±1	7±1	6	8	3.9811	6.310	3.99	3.99	0.0032	0.0050	0.0082	1
5785	11n (HT20)	5.68	6.98	5±1	7±1	6	8	3.9811	6.310	3.99	3.99	0.0032	0.0050	0.0082	1
5825	11n (HT20)	5.87	7.79	5±1	7±1	6	8	3.9811	6.310	3.99	3.99	0.0032	0.0050	0.0082	1
5755	11n (HT40)	4.29	6.74	5±1	7±1	6	8	3.9811	6.310	3.99	3.99	0.0032	0.0050	0.0082	1
5795	11n (HT40)	4.97	7.30	5±1	7±1	6	8	3.9811	6.310	3.99	3.99	0.0032	0.0050	0.0082	1
5745	11ac (HT20)	4.86	6.75	5±1	7±1	6	8	3.9811	6.310	3.99	3.99	0.0032	0.0050	0.0082	1
5785	11ac (HT20)	5.68	6.98	5±1	7±1	6	8	3.9811	6.310	3.99	3.99	0.0032	0.0050	0.0082	1
5825	11ac (HT20)	5.87	7.79	5±1	7±1	6	8	3.9811	6.310	3.99	3.99	0.0032	0.0050	0.0082	1
5755	11ac (HT40)	4.21	7.18	5±1	7±1	6	8	3.9811	6.310	3.99	3.99	0.0032	0.0050	0.0082	1
5795	11ac (HT40)	5.04	7.32	5±1	7±1	6	8	3.9811	6.310	3.99	3.99	0.0032	0.0050	0.0082	1
5775	11ac (HT80)	4.63	6.76	5±1	7±1	6	8	3.9811	6.310	3.99	3.99	0.0032	0.0050	0.0082	1

Conclusion:

Simultaneous transmit: $0.0008+0.0100=0.0108$

For the max result: $0.0108 \leq 1.0$ for 1g SAR, No SAR is required.

----END OF REPORT----