



For Question,  
Please Contact with WSCT  
[www.wsct-cert.com](http://www.wsct-cert.com)

# FCC Report

FCC ID: 2A7N4-NS6606-T

Product: Barcode Scanner

Model No.: NS6606-T

Additional Model No:

S3303-XX, S3306-XX, S3309-XX, S6603-XX, S6606-XX, S6609-XX, S1103-XX,  
S2203-XX, S2206-XX, S2209-XX, S8100-XX, S8103-XX, S8106-XX, S8109-XX,  
S9100-XX, S9103-XX, S1106-XX, S1109-XX

Trade Mark: NEWSCAN

Report No.: WSCT-A2LA-R&E211200013A-2.4G

Issued Date: 28 June 2022

Issued for:

Dongguan Wansi Technology Co.LTD.

Room 501, building 1, No. 7, Puxing Easst Road, Qingxi Town, Dongguan City,  
Guangdong Province

Issued By:

WORLD STANDARDIZATION CERTIFICATION & TESTING GROUP  
(SHENZHEN) CO., LTD.

Building A-B, Baoshi Road, Baoshi Science & Technology Park, Bao'an District,  
Shenzhen, Guangdong, People's Republic of China

TEL: + (86) 13924678855

FAX: +86-755-86376605



Note: In recognition of the successful completion of the A2LA evaluation process, (including an assessment of the laboratory's compliance with A2LA's ENERGY STAR ® Accreditation Program requirements 1 ) accreditation is granted to this laboratory to perform the following tests: EMC, electromagnetic compatibility, telecommunications and Energy Star.



世标检测认证股份

World Standardization Certification & Testing Group (Shenzhen) Co., Ltd.

ADD:Building A-B Baoshi Science & Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China  
TEL:86-755-26996192 26992306 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com [Http://www.wsct-cert.com](http://www.wsct-cert.com)

Member of the WSCT INC.



For Question,  
Please Contact with WSCT  
[www.wsct-cert.com](http://www.wsct-cert.com)

	3
<b>1. GENERAL INFORMATION</b>	3
<b>1.1 GENERAL DESCRIPTION OF EUT:</b>	4
<b>1.2. FACILITIES AND ACCREDITATIONS</b>	5
<b>1.3. ACCREDITATIONS</b>	5
<b>2. TEST DESCRIPTION</b>	6
<b>2.1 MEASUREMENT UNCERTAINTY</b>	6
<b>2.2 DESCRIPTION OF TEST MODES</b>	7
<b>2.3 CONFIGURATION OF SYSTEM UNDER TEST</b>	8
<b>2.4 DESCRIPTION OF SUPPORT UNITS</b>	8
<b>3. SUMMARY OF TEST RESULTS</b>	9
<b>4. MEASUREMENT INSTRUMENTS</b>	10
<b>5. ANTENNA REQUIREMENTS</b>	11
<b>6. CONDUCTED EMISSIONS MEASUREMENT</b>	12
<b>6.1 POWER LINE CONDUCTED EMISSION LIMITS</b>	12
<b>6.2 TEST PROCEDURE</b>	13
<b>6.3 TEST SETUP</b>	13
<b>6.4 ENVIRONMENTAL CONDITIONS</b>	13
<b>6.5 TEST RESULTS</b>	13
<b>7. RADIATED EMISSION MEASUREMENT</b>	14
<b>7.1 APPLIED PROCEDURES / LIMIT</b>	14
<b>7.2 RADIATED EMISSION LIMITS</b>	14
<b>7.3 TEST EQUIPMENT SETUP</b>	15
<b>7.4 TEST PROCEDURE</b>	15
<b>7.5 TEST SETUP</b>	16
<b>7.6 ENVIRONMENTAL CONDITIONS</b>	17
<b>7.7 TEST RESULTS</b>	18
<b>8. 20DB OCCUPIED BANDWIDTH</b>	28
<b>8.1 STANDARD APPLICABLE</b>	28
<b>8.2 TEST PROCEDURE</b>	28
<b>8.3 TEST SETUP</b>	28
<b>8.4 ENVIRONMENTAL CONDITIONS</b>	28
<b>8.5 TEST RESULTS</b>	29
<b>9. EUT TEST PHOTO</b>	32





## 1. GENERAL INFORMATION

**Product:** Barcode Scanner  
**Model No.:** NS6606-T  
**Additional Model:** S3303-XX, S3306-XX, S3309-XX, S6603-XX, S6606-XX, S6609-XX, S1103-XX, S2203-XX, S2206-XX, S2209-XX, S8100-XX, S8103-XX, S8106-XX, S8109-XX, S9100-XX, S9103-XX, S1106-XX, S1109-XX  
**Applicant:** Dongguan Wansi Technology Co.LTD.  
**Address:** Room 501, building 1, No. 7, Puxing Easst Road, Qingxi Town, Dongguan City, Guangdong Province  
**Manufacturer:** Dongguan Wansi Technology Co.LTD.  
**Address:** Room 501, building 1, No. 7, Puxing Easst Road, Qingxi Town, Dongguan City, Guangdong Province  
**Data of receipt:** 09 December 2021  
**Date of Test:** 09 December 2021 to 27 June 2022  
**Applicable Standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.249

For Question,  
Please Contact with WSCT  
www.wsct-cert.com

The above equipment has been tested by World Standardization Certification & Testing Group Co., Ltd. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By: Wang Xiang  
( Wang Xiang)

Check By: Qin Shuiquan  
( Qin Shuiquan)



Approved By: Wang Fengbing  
( Wang Fengbing)

Date: 28 June 2021





Certificate Number 5768.01

For Question,  
Please Contact with WSCT  
[www.wsct-cert.com](http://www.wsct-cert.com)

## 1.1 GENERAL DESCRIPTION OF EUT:

Product	Barcode Scanner
Model No.	NS6606-T
Brand Name	S3303-XX,S3306-XX,S3309-XX,S6603-XX,S6606-XX,S6609-XX, S1103-XX,S2203-XX,S2206-XX,S2209-XX,S8100-XX,S8103-XX, S8106-XX,S8109-XX,S9100-XX,S9103-XX,S1106-XX,S1109-XX
Extreme Temp. Tolerance	-10°C to +55°C
Battery information:	Li-ion Battery :503450 Rated Voltage: 3.7V Rated Capacity:1000mAh Limited Charge Voltage: 4.2V
Operating Frequency	2404-2469MHz
Channels	4
Channel Spacing	1MHz
Modulation Type	GFSK
Antenna Type:	Integral Antenna
Antenna gain:	0.5dBi
Deviation	None
Condition of Test Sample	Normal

**Model difference:** All models is only the model name difference, the main test model NS6606-T.



世标检测认证股份

ADD:Building A-B Baoshi Science &amp; Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China

TEL:86-755-26996192 26992306 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com [Http://www.wsct-cert.com](http://www.wsct-cert.com)

World Standardization Certification &amp; Testing Group (Shenzhen) Co.,Ltd.

Member of the WSCT INC.



Certificate Number 5768.01

For Question,  
Please Contact with WSCT  
[www.wsct-cert.com](http://www.wsct-cert.com)

## 1.2. FACILITIES AND ACCREDITATIONS

All measurement facilities used to collect the measurement data are located at Building A-B, Baoshi Science & Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China of the WORLD STANDARDIZATION CERTIFICATION & TESTING GROUP (SHENZHEN) CO., LTD.

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

The data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C 63.10-2014. The sample tested as described in this report is in compliance with the FCC Rules Part15 Subpart C.

ALL the testing were referenced KDB NO.453039

The test results of this report relate only to the tested sample identified in this report.

## 1.3. ACCREDITATIONS

**China National Accreditation Service for Conformity Assessment (CNAS)**

Registration number NO: L3732

**American Association for Laboratory Accreditation(A2LA)**

Registration NO: 5768.01

Copies of granted accreditation certificates are available for downloading from our web site,

<http://www.wsct-cert.com>



世标检测认证股份

World Standardization Certification & Testing Group (Shenzhen) Co.,Ltd.

ADD:Building A-B Baoshi Science & Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China

TEL:86-755-26996192 26992306 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com [Http://www.wsct-cert.com](http://www.wsct-cert.com)

Member of the WSCT INC.



Certificate Number 5768.01

For Question,  
Please Contact with WSCT  
www.wsct-cert.com

## 2. TEST DESCRIPTION

### 2.1 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$  · where expended uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$  · providing a level of confidence of approximately 95 % ·

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 3.2\text{dB}$
2	RF power, conducted	$\pm 0.16\text{dB}$
3	Spurious emissions, conducted	$\pm 0.21\text{dB}$
4	All emissions, radiated(<1G)	$\pm 4.7\text{dB}$
5	All emissions, radiated(>1G)	$\pm 4.7\text{dB}$
6	Temperature	$\pm 0.5^\circ\text{C}$
7	Humidity	$\pm 2\%$



世标检测认证股份

ADD: Building A-B Baoshi Science &amp; Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China

TEL: 86-755-26996192 26992306 FAX: 86-755-86376605 E-mail: Fengbing.Wang@wsct-cert.com Http://www.wsct-cert.com

World Standardization Certification &amp; Testing Group (Shenzhen) Co.,Ltd.

## 2.2 DESCRIPTION OF TEST MODES

The system was configured for testing in engineering mode, which was provided by the manufacturer. The engineering mode was configured under maximum power output and switched the channels by keys. 4 channels were provided by the manufacturer.

Channel List	
Channel	Frequency (MHz)
01	2404
02	2419
03	2454
04	2469





## 2.3 CONFIGURATION OF SYSTEM UNDER TEST

EUT

(EUT: Barcode Scanner)

## 2.4 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.

Item	Equipment	Model No.	ID or Specification	Remark
1	/	/	/	/

**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. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.249) , Subpart C			
Standard Section	Test Item	Judgment	Remark
§15.203	Antenna Requirement	PASS	
§15.207	Conducted Emission	N/A	
15.209(a),15.249(a),15.249(c),15.205(a)	Fundamental & Radiated Spurious Emission Measurement	PASS	
§15.249 (d)/ §15.205	Band Edge	PASS	
§15.215 (c)	20dB Occupied Bandwidth	PASS	

**Note:**

1. Pass: Test item meets the requirement.
2. Fail: Test item does not meet the requirement.
3. N/A: Test case does not apply to the test object.
4. The test result judgment is decided by the limit of test standard.



## 4. MEASUREMENT INSTRUMENTS

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibrated	Calibrated until
EMI Test Receiver	R&S	ESCI	100005	2021-11-05	2022-11-04
LISN	Mestec	AN3016	04/10040	2021-11-05	2022-11-04
Coaxial cable	Megalon	LMR400	C001	2021-11-05	2022-11-04
System Controller	CT	SC100	011208	2021-11-05	2022-11-04
Bi-log Antenna	SUNOL Sciences	JB3	A021907	2021-11-05	2022-11-04
Spectrum Analyzer	R&S	FSU	100114	2021-11-05	2022-11-04
Horn Antenna	SCHWARZBECK	9120D	1141	2021-11-05	2022-11-04
Loop Antenna	EMCO	6502	00042960	2021-11-05	2022-11-04
Pre Amplifier	H.P.	HP8447E	2945A02715	2021-11-05	2022-11-04
Pre-Amplifier	CDSI	PAP-1G18-38	7621	2021-11-05	2022-11-04
9*6*6 Anechoic	SAEMC	L×W×H 9×6×6	A002	2021-11-05	2022-11-04
RF cable	H+S	SUCOFLEX 102	R002	2021-11-05	2022-11-04
Horn Antenna	SCHWARZBECK	BBHA 9170	1123	2021-11-05	2022-11-04



Certificate Number 5768.01

For Question,  
Please Contact with WSCT  
[www.wsct-cert.com](http://www.wsct-cert.com)

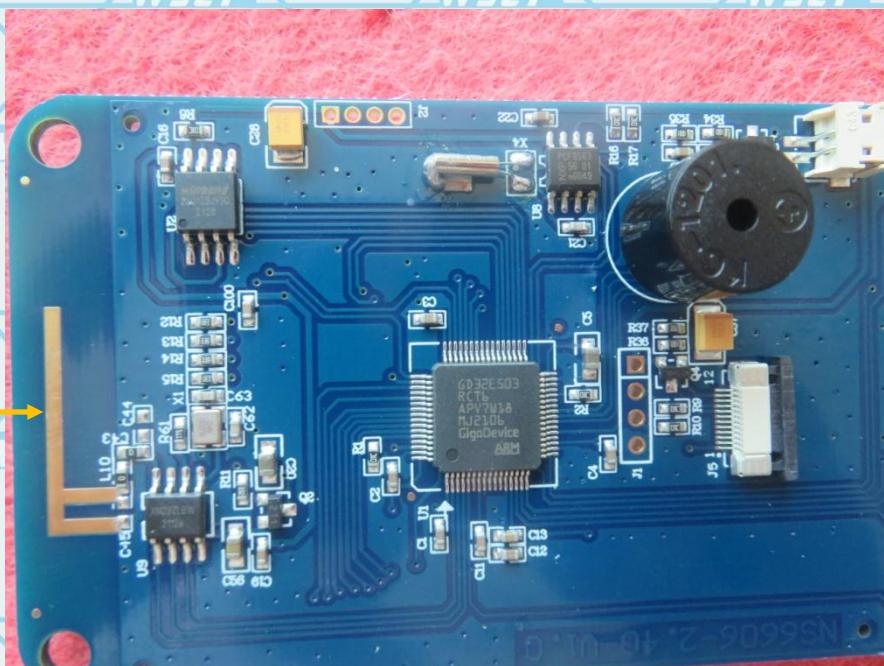
## 5. ANTENNA REQUIREMENTS

### 5.1

According to FCC Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

### 5.2 Test Result

This product has an PCB antenna, fulfill the requirement of this section.



世标检测认证股份

ADD:Building A-B Baoshi Science &amp; Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China

TEL:86-755-26996192 26992306 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com [Http://www.wsct-cert.com](http://www.wsct-cert.com)

World Standardization Certification &amp; Testing Group (Shenzhen) Co.,Ltd.

Member of the WSCT INC.

# 6. CONDUCTED EMISSIONS MEASUREMENT

## 6.1 POWER LINE CONDUCTED EMISSION LIMITS (Frequency Range 150KHz-30MHz)

Frequency of emission (MHz)	Conducted limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

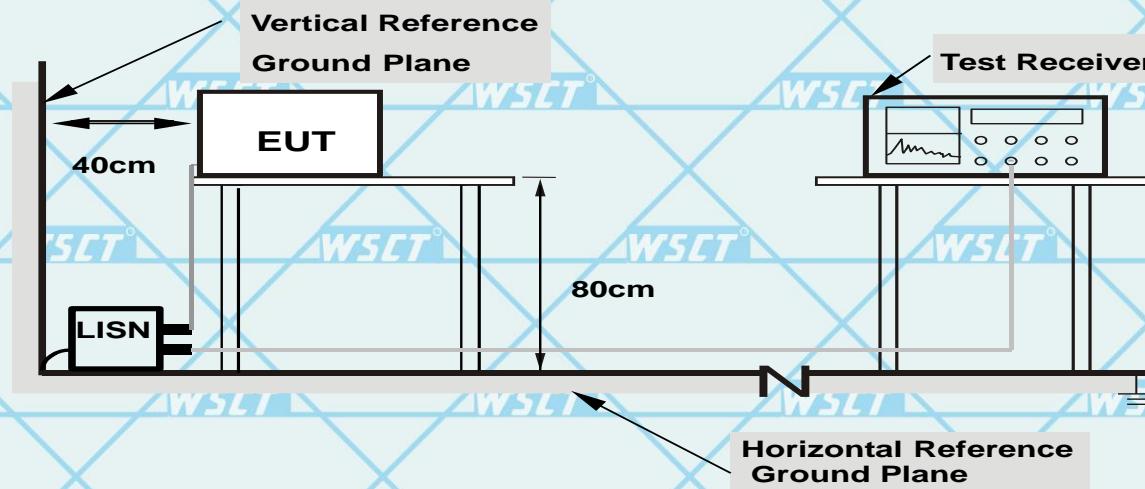




## 6.2 TEST PROCEDURE

- The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

## 6.3 TEST SETUP



**Note:**

1. Support units were connected to second LISN.
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

## 6.4 ENVIRONMENTAL CONDITIONS

Temperature:	24 °C
Relative Humidity:	60 %
ATM Pressure:	1012 mbar

## 6.5 TEST RESULTS

The EUT is supplied by button cell, so Conducted Emission is not applicable.





# 7. RADIATED EMISSION MEASUREMENT

## 7.1 APPLIED PROCEDURES / LIMIT

## 7.2 RADIATED EMISSION LIMITS

According to §15.249(a), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency	Field strength of fundamental (milli-volts/meter)	Field strength of Harmonics (micro-volts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

As per FCC§15.249 (c), Field strength limits are specified at a distance of 3 meters.

(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

Frequencies (MHz)	Field Strength (microvolt/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.





### 7.3 TEST EQUIPMENT SETUP

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

### 7.4 TEST PROCEDURE

- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

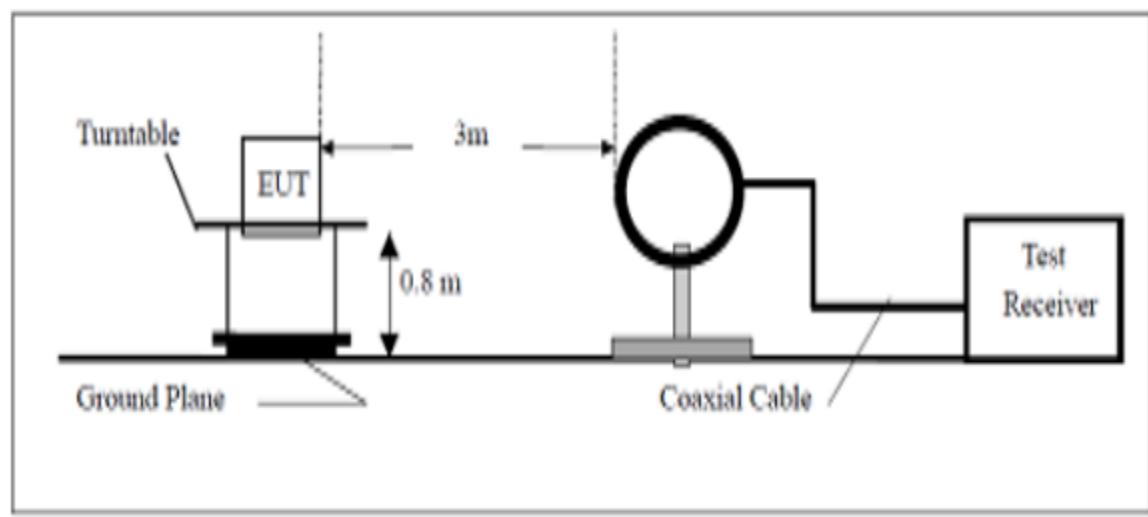




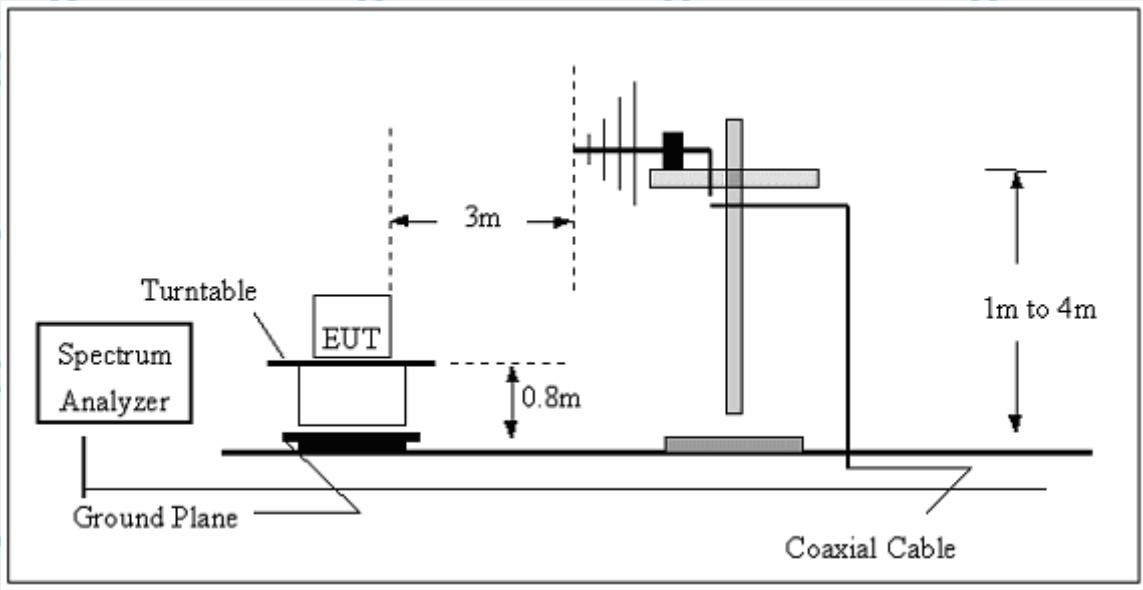
For Question,  
Please Contact with WSCT  
w.wsct-cert.com

## 7.5 TEST SETUP

### (A) Radiated Emission Test-Up Frequency Below 30MHz



### (B) Radiated Emission Test-Up Frequency 30MHz~1GHz



世标检测认证股份

World Standardization Certification & Testing Group (Shenzhen) Co.,Ltd.

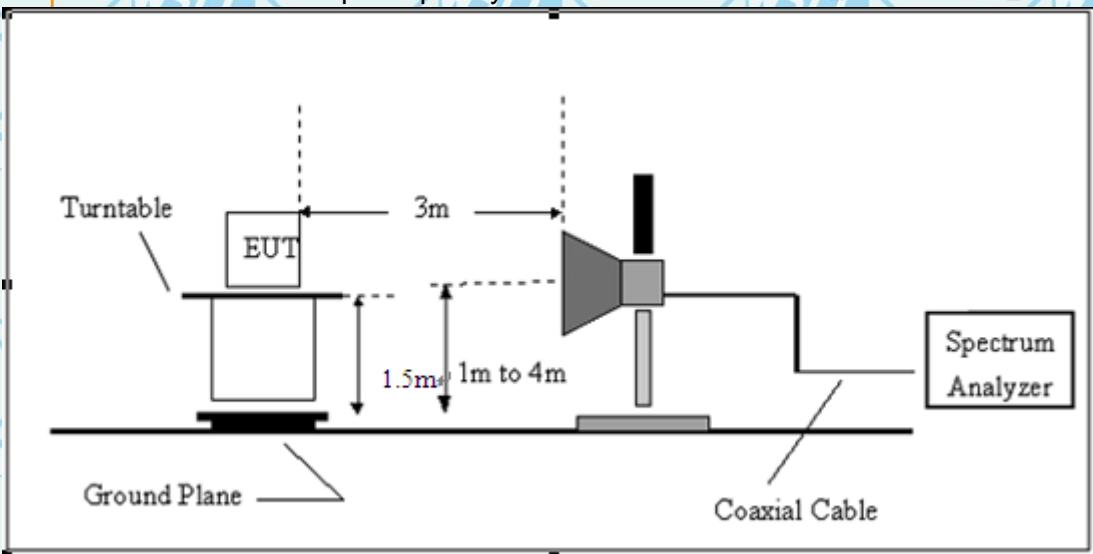
ADD:Building A-B Baoshi Science & Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China

TEL:86-755-26996192 26992306 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com Http://www.wsct-cert.com

Member of the WSCT INC.



## (C) Radiated Emission Test-Up Frequency Above 1GHz



For Question,  
please Contact with WSCT  
[www.wsct-cert.com](http://www.wsct-cert.com)

## 7.6 ENVIRONMENTAL CONDITIONS

Temperature:	25°C
Relative Humidity:	57%
ATM Pressure:	1012 mbar



世标检测认证股份

ADD:Building A-B Baoshi Science &amp; Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China

TEL:86-755-26996192 26992306 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com [Http://www.wsct-cert.com](http://www.wsct-cert.com)

World Standardization Certification &amp; Testing Group (Shenzhen) Co.,Ltd.

Member of the WSCT INC.



## 7.7 TEST RESULTS

## Field Strength of Fundamental

For Question,  
Please Contact with WSCT  
[www.wsct-cert.com](http://www.wsct-cert.com)

Frequency (MHz)	Reading (dBuV/m)	Correct Factor dB/m	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Polar H/V	Detector PK
2404	92.28	-8.72	83.56	114	-30.44	H	PK
2404	92.93	-8.73	84.20	94	-9.80	H	AV
2419	93.37	-8.55	84.82	114	-29.18	H	PK
2419	90.43	-8.55	81.88	94	-12.12	H	AV
2454	92.35	-8.38	83.97	114	-30.03	H	PK
2454	90.69	-8.38	82.31	94	-11.69	H	AV
2469	92.43	-8.17	84.26	114	-29.74	H	PK
2469	92.51	-8.17	84.34	94	-9.66	H	AV
2404	92.37	-8.72	83.65	114	-30.35	V	PK
2404	92.07	-8.73	83.34	94	-10.66	V	AV
2419	90.16	-8.55	81.61	114	-32.39	V	PK
2419	92.49	-8.55	83.94	94	-10.06	V	AV
2454	<b>93.78</b>	-8.38	85.40	114	-28.60	V	PK
2454	92.50	-8.38	84.12	94	-9.88	V	AV
2469	90.57	-8.17	82.40	114	-31.60	V	PK
2469	92.89	-8.17	84.72	94	-9.28	V	AV

## Note:

Correction Factor= Antenna Factor + Cable loss–Pre-amplifier; Emission Level=Peak Reading + Correction Factor; Margin=Emission Level–Limit.





Certificate Number 5768.01

For Question,  
Please Contact with WSCT  
[www.wsct-cert.com](http://www.wsct-cert.com)

Spurious Emissions  
Frequency Range (9 kHz-30MHz)

Freq.	Emission Level	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	P
--	--	--	--	P

**Note:**

1. Emission Level=Reading+ Cable loss-Antenna factor-Amp factor
2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement.



世标检测认证股份

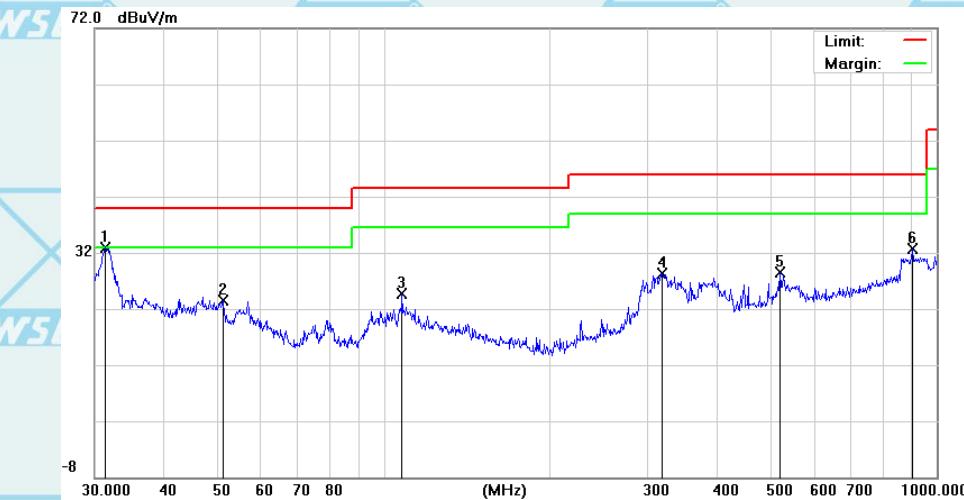
ADD:Building A-B Baoshi Science &amp; Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China

TEL:86-755-26996192 26992306 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com [Http://www.wsct-cert.com](http://www.wsct-cert.com)

World Standardization Certification &amp; Testing Group (Shenzhen) Co.,Ltd.

## Frequency Range (30MHz-1000MHz)

Horizontal:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	31.2893	28.71	4.29	33.00	40.00	-7.00	QP
2		51.1209	28.70	-5.15	23.55	40.00	-16.45	QP
3		107.8877	26.98	-2.28	24.70	43.50	-18.80	QP
4		318.8170	30.38	-2.02	28.36	46.00	-17.64	QP
5		520.8882	27.91	0.68	28.59	46.00	-17.41	QP
6		903.3094	26.98	5.76	32.74	46.00	-13.26	QP





Vertical:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over
		MHz	dBuV	dB	dBuV/m	dB	Detector
1	*	31.7313	26.89	4.13	31.02	40.00	-8.98 QP
2		56.0007	27.67	-5.73	21.94	40.00	-18.06 QP
3		113.7143	26.78	-2.23	24.55	43.50	-18.95 QP
4		296.1836	24.85	-2.42	22.43	46.00	-23.57 QP
5		545.1826	25.58	0.90	26.48	46.00	-19.52 QP
6		903.3094	23.67	5.76	29.43	46.00	-16.57 QP

**Note:**

Measurements were conducted in all channels (high, middle, low), and the worst case (low channel) was submitted only.





Certificate Number 5768.01

For Question,  
Please Contact with WSCT  
Detector.com

## Frequency Range (Above 1G)

Frequency (MHz)	Reading (dBuV/m)	Correct Factor dB/m	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Polar H/V	Detector
Low Channel-2404MHz							
4808	47.79	-1.29	46.50	74	-27.50	H	PK
4808	36.63	-1.29	35.34	54	-18.66	H	AV
7212	48.87	6.51	55.38	74	-18.62	H	PK
7212	36.72	6.51	43.23	54	-10.77	H	AV
4808	46.26	-1.29	44.97	74	-29.03	V	PK
4808	31.37	-1.29	30.08	54	-23.92	V	AV
7212	47.32	6.51	53.83	74	-20.17	V	PK
7212	33.34	6.51	39.85	54	-14.15	V	AV
Middle Channel-2419MHz							
4838	47.54	-0.98	46.56	74	-27.44	H	PK
4838	33.76	-0.98	32.78	54	-21.22	H	AV
7257	47.05	6.83	53.88	74	-20.12	H	PK
7257	31.02	6.83	37.85	54	-16.15	H	AV
4838	49.44	-0.98	48.46	74	-25.54	V	PK
4838	34.80	-0.98	33.82	54	-20.18	V	AV
7257	46.32	6.83	53.15	74	-20.85	V	PK
7257	30.91	6.83	37.74	54	-16.26	V	AV
High Channel-2454MHz							
4908	48.18	-0.8	47.38	74	-26.62	H	PK
4908	36.72	-0.8	35.92	54	-18.08	H	AV
7362	40.65	6.94	47.59	74	-26.41	H	PK
7362	31.38	6.94	38.32	54	-15.68	H	AV
4908	48.10	-0.8	47.30	74	-26.70	V	PK
4908	47.11	-0.8	46.31	54	-7.69	V	AV
7362	48.97	6.94	55.91	74	-18.09	V	PK
7362	46.22	6.94	53.16	54	-0.84	V	AV
High Channel-2469MHz							
4938	49.26	-0.8	48.46	74	-25.54	H	PK
4938	38.15	-0.8	37.35	54	-16.65	H	AV
7407	42.02	6.94	48.96	74	-25.04	H	PK
7407	28.45	6.94	35.39	54	-18.61	H	AV
4938	49.56	-0.8	48.76	74	-25.24	V	PK
4938	38.46	-0.8	37.66	54	-16.34	V	AV
7407	38.53	6.94	45.47	74	-28.53	V	PK
7407	28.27	6.94	35.21	54	-18.79	V	AV



Note:

1. Correction Factor= Antenna Factor + Cable loss–Pre-amplifier; Emission Level=Peak Reading + Correction Factor; Margin=Emission Level–Limit.
- The emission levels of other frequencies are very lower than the limit and not show in test report.
3. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.

Certificate Number 5768.01

For Question,  
Please Contact with WSCT  
[www.wsct-cert.com](http://www.wsct-cert.com)



世标检测认证股份

ADD:Building A-B Baoshi Science & Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China

TEL:86-755-26996192 26992306 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com [Http://www.wsct-cert.com](http://www.wsct-cert.com)

World Standardization Certification & Testing Group (Shenzhen) Co.,Ltd.

Member of the WSCT INC.

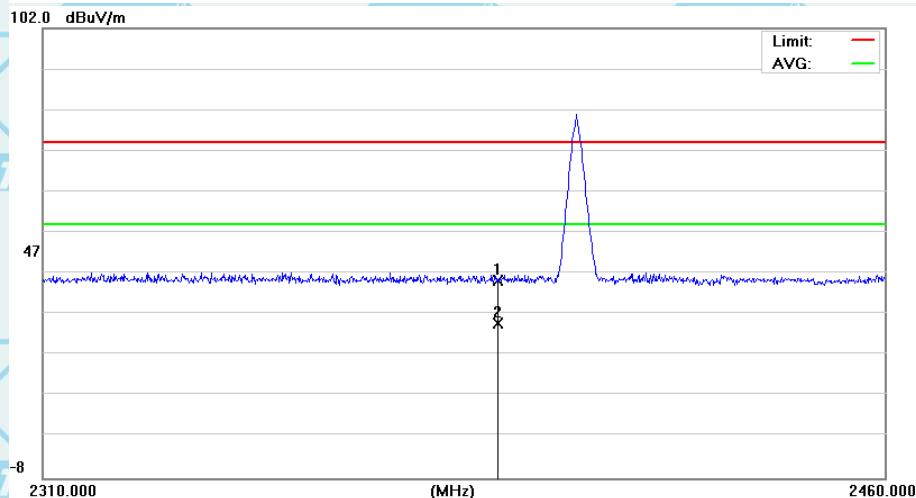


Certificate Number 5768.01

For Question,  
Please Contact with WSCT  
[www.wsct-cert.com](http://www.wsct-cert.com)

## OUT OF BAND EMISSION

Horizontal:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2390.000	32.24	8.10	40.34	74.00	-33.66	peak
2	*	2390.000	21.76	8.10	29.86	54.00	-24.14	AVG



世标检测认证股份

ADD:Building A-B Baoshi Science &amp; Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China

TEL:86-755-26996192 26992306 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com [Http://www.wsct-cert.com](http://www.wsct-cert.com)

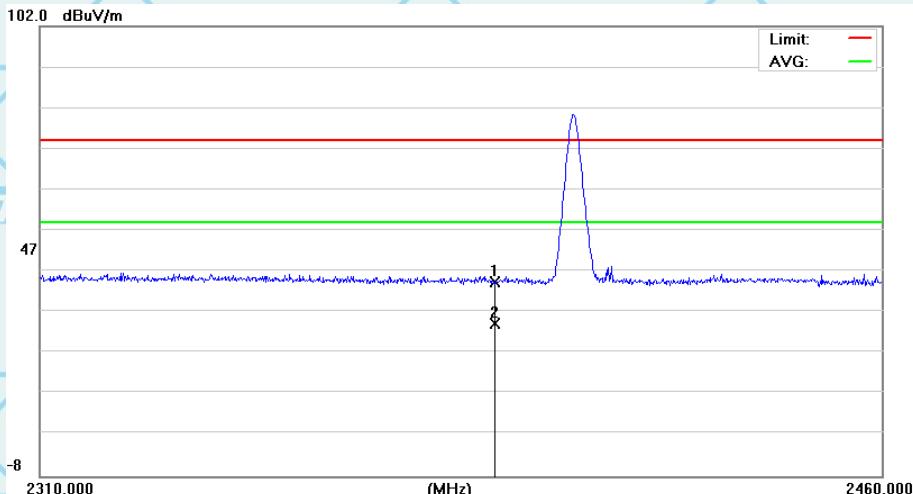
World Standardization Certification &amp; Testing Group (Shenzhen) Co.,Ltd.



Certificate Number 5768.01

For Question,  
Please Contact with WSCT  
www.wsct-cert.com

Vertical:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2390.000	31.43	8.10	39.53	74.00	-34.47	peak
2	*	2390.000	21.21	8.10	29.31	54.00	-24.69	AVG



世标检测认证股份

ADD: Building A-B Baoshi Science &amp; Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China

TEL: 86-755-26996192 26992306 FAX: 86-755-86376605 E-mail: Fengbing.Wang@wsct-cert.com Http://www.wsct-cert.com

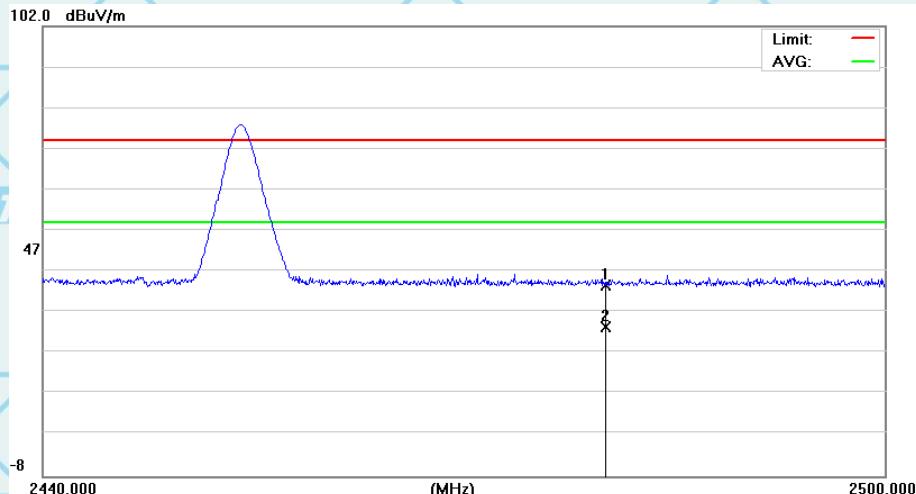
World Standardization Certification &amp; Testing Group (Shenzhen) Co.,Ltd.



Certificate Number 5768.01

For Question,  
Please Contact with WSCT  
www.wsct-cert.com

Horizontal:



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	2480.000	30.60	8.13	38.73	74.00	-35.27	peak
2 *	2480.000	20.43	8.13	28.56	54.00	-25.44	AVG



世标检测认证股份

ADD: Building A-B Baoshi Science &amp; Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China

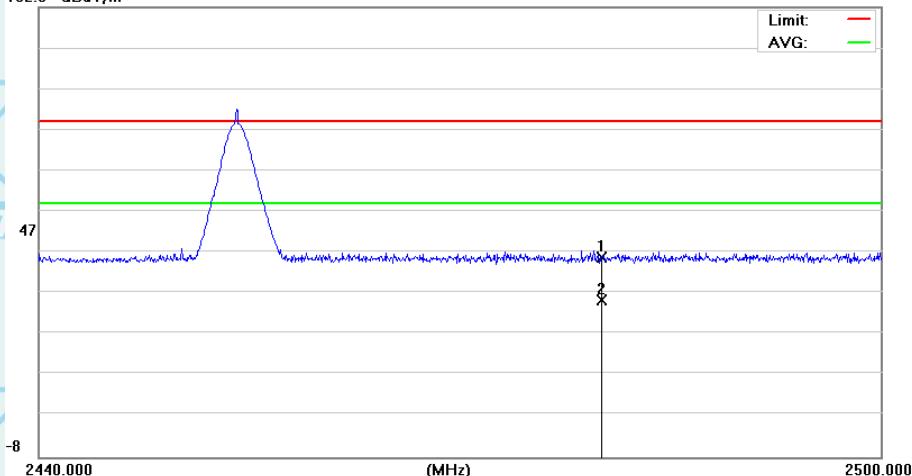
TEL: 86-755-26996192 26992306 FAX: 86-755-86376605 E-mail: Fengbing.Wang@wsct-cert.com Http://www.wsct-cert.com

World Standardization Certification &amp; Testing Group (Shenzhen) Co.,Ltd.

Member of the WSCT INC.

Vertical:

102.0 dBuV/m



For Question,  
Please Contact with WSCT  
[www.wsct-cert.com](http://www.wsct-cert.com)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over
		MHz	dBuV	dB	dBuV/m	dB	Detector
1	2480.000	32.82	8.13	40.95	74.00	-33.05	peak
2	*	2480.000	22.33	8.13	30.46	-23.54	AVG



世标检测认证股份

ADD:Building A-B Baoshi Science &amp; Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China

TEL:86-755-26996192 26992306 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com [Http://www.wsct-cert.com](http://www.wsct-cert.com)

World Standardization Certification &amp; Testing Group (Shenzhen) Co.,Ltd.

Member of the WSCT INC.



# 8. 20DB OCCUPIED BANDWIDTH

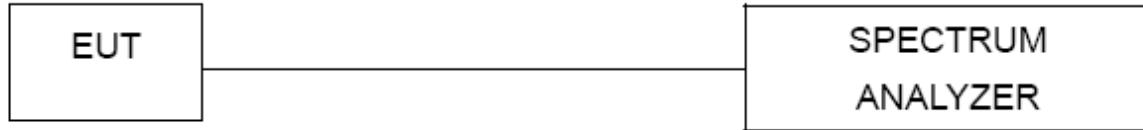
## 8.1 STANDARD APPLICABLE

According to 15.215 (c), intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

## 8.2 TEST PROCEDURE

1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings for 20dB Bandwidth measurement.  
Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel;  
RBW  $\geq 1\%$  of the 20dB bandwidth; VBW  $\geq$  RBW; Sweep = auto; Detector function =peak; Trace = max hold.
4. Measure and record the results in the test report.

## 8.3 TEST SETUP



## 8.4 ENVIRONMENTAL CONDITIONS

Temperature:	22°C
Relative Humidity:	58%
ATM Pressure:	1012 mbar





Certificate Number 5768.01

For Question,  
Please Contact with WSCT  
[www.wsct-cert.com](http://www.wsct-cert.com)

## 8.5 TEST RESULTS

Frequency	20dB Bandwidth (kHz)	Result
2404 MHz	317.307	PASS
2419MHz	326.923	PASS
2454MHz	312.500	PASS
2469 MHz	317.308	PASS



世标检测认证股份

ADD:Building A-B Baoshi Science &amp; Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China

TEL:86-755-26996192 26992306 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com [Http://www.wsct-cert.com](http://www.wsct-cert.com)

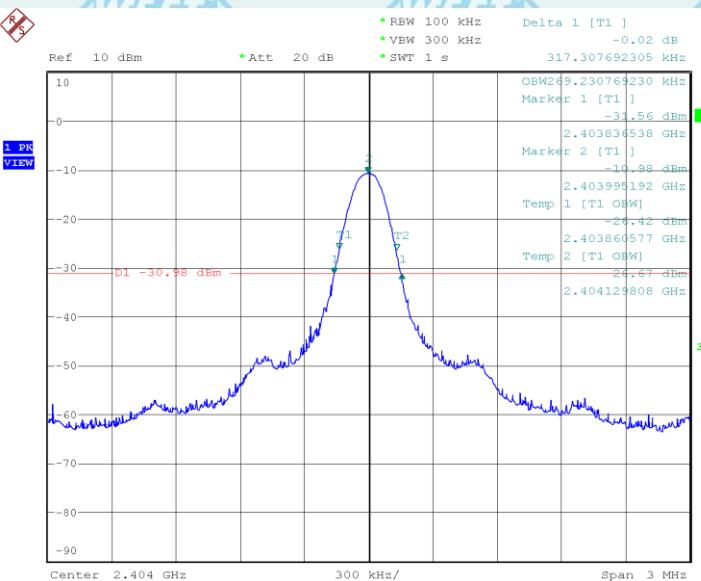
World Standardization Certification &amp; Testing Group (Shenzhen) Co.,Ltd.



Certificate Number 5768.01

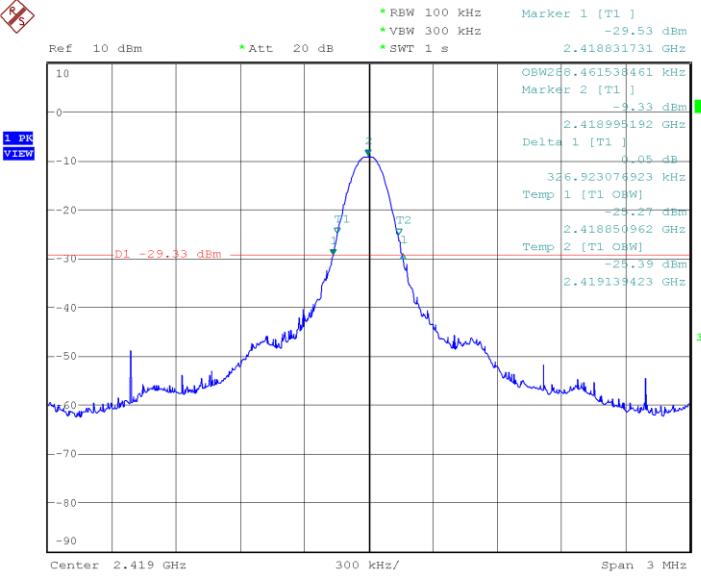
For Question,  
Please Contact with WSCT  
[www.wsct-cert.com](http://www.wsct-cert.com)

## Middle channel-2404MHz



Date: 27.JUN.2022 10:32:12

## Highest channel-2419MHz



Date: 27.JUN.2022 10:41:19



世标检测认证股份

World Standardization Certification &amp; Testing Group (Shenzhen) Co.,Ltd.

ADD:Building A-B Baoshi Science &amp; Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China

TEL:86-755-26996192 26992306 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com [Http://www.wsct-cert.com](http://www.wsct-cert.com)

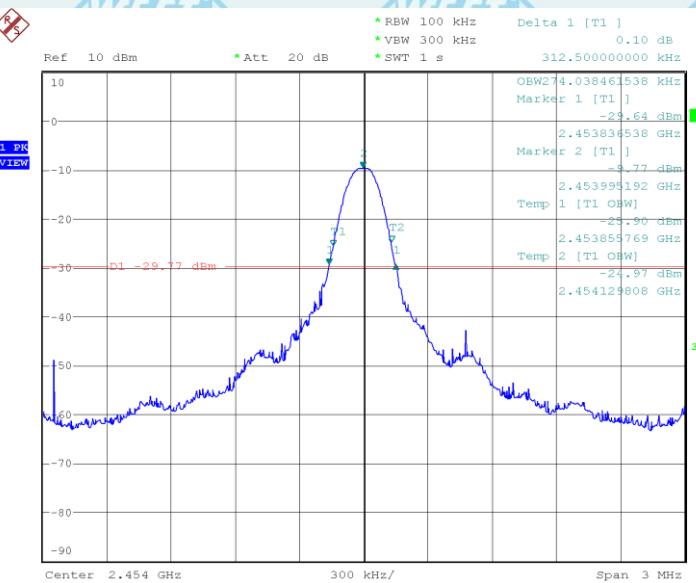
Member of the WSCT INC.



Certificate Number 5768.01

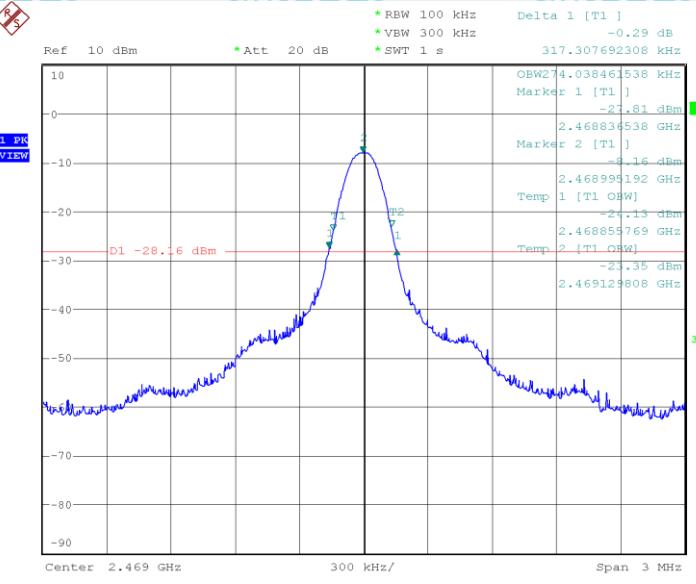
For Question,  
Please Contact with WSCT  
www.wsct-cert.com

## Middle channel-2454MHz



Date: 27.JUN.2022 10:44:27

## Highest channel-2469MHz



Date: 27.JUN.2022 10:38:41



World Standardization Certification &amp; Testing Group (Shenzhen) Co.,Ltd.

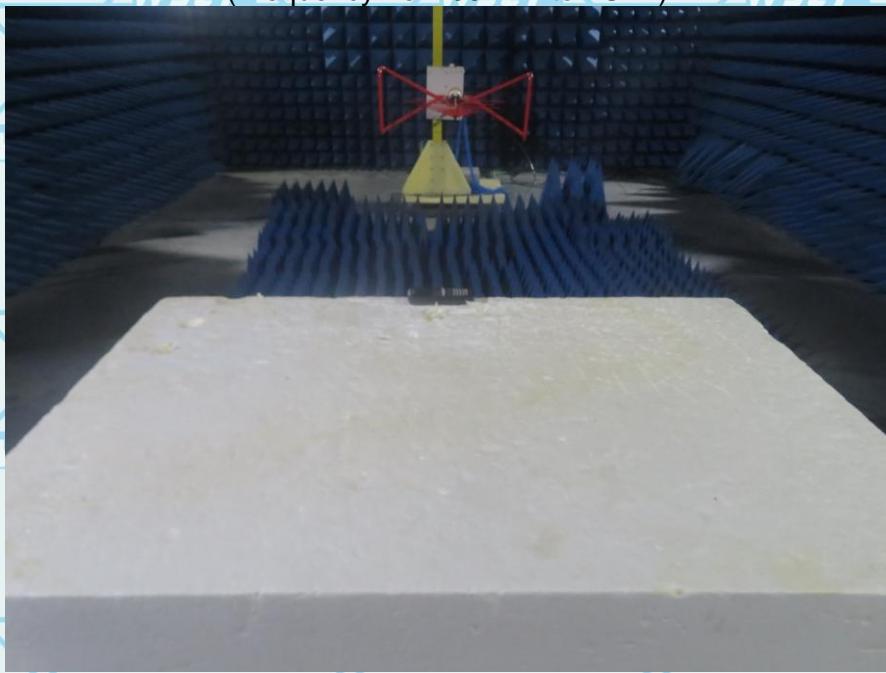
世标检测认证股份

ADD:Building A-B Baoshi Science & Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China  
TEL:86-755-26996192 26992306 FAX:86-755-86376605 E-mail:Fengbing.Wang@wsct-cert.com Http://www.wsct-cert.com

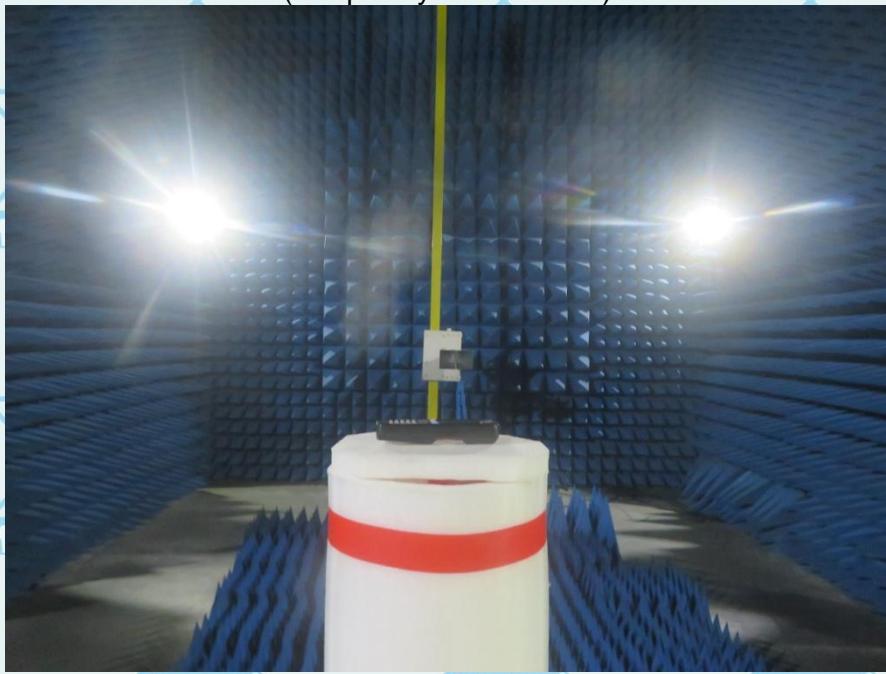
Member of the WSCT INC.

## 9. EUT TEST PHOTO

RADIATED EMISSION TEST  
(Frequency from 30MHz to 1GHz)



RADIATED EMISSION TEST  
(Frequency above 1GHz)



---END OF REPORT---