

TEST REPORT

Report No.: BCTC2107583394E

Applicant: YoSmart Inc.

Product Name: Outdoor Motion Sensor

Model/Type Ref.: YS7805-UC

Tested Date: 2021-07-27 to 2021-08-05

Issued Date: 2021-08-05

Shenzhen BCTC Testing Co., Ltd.



No.: BCTC/RF-EMC-005 Page 1 of 32 / / Edition: A.



FCC ID: 2ATM77805

Product Name: Outdoor Motion Sensor

Trademark: N/A

YS7805-UC

Model/Type Ref.: YS7805-UA

Prepared For: YoSmart Inc.

Address: 15375 Barranca Parkway, Ste G-105 Irvine, CA 92618, USA

Manufacturer: YoSmart Inc.

Address: 15375 Barranca Parkway, Ste G-105 Irvine, CA 92618, USA

Prepared By: Shenzhen BCTC Testing Co., Ltd.

1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st

Address: Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen,

Guangdong, China

Sample Received Date: 2021-07-27

Sample tested Date: 2021-07-27 to 2021-08-05

Issue Date: 2021-08-05

Report No.: BCTC2107583394E

Test Standards: FCC Part15.249
ANSI C63.10-2013

Test Results: PASS

Tested by:

Sam zeng/Project Handler

Approved by:

Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

No.: BCTC/RF-EMC-005 Page 2 of 32 / / Edition: A.3



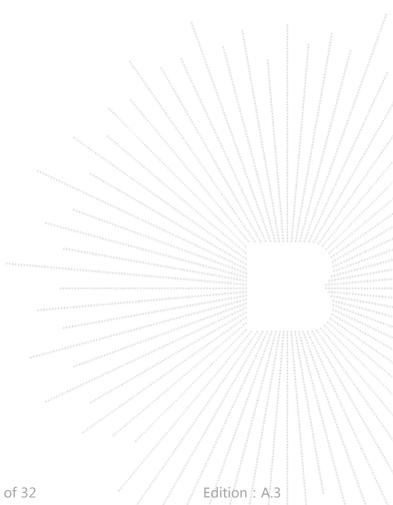
TABLE OF CONTENT

Test	Report Declaration	Page
1.	VERSION	5
2.	TEST SUMMARY	
3.	MEASUREMENT UNCERTAINTY	
4.	PRODUCT INFORMATION AND TEST SETUP	
4.1	Product Information	8
4.2	Test Setup Configuration	
4.3	Support Equipment	
4.4	Channel List	
4.5	Test Mode	
5.	TEST FACILITY AND TEST INSTRUMENT USED	10
5.1	Test Facility	10
5.2	Test Instrument Used	11
5.	CONDUCTED EMISSIONS	12
5.1	Block Diagram Of Test Setup	12
5.2	Limit	12
5.3	Test procedure	12
5.4	EUT operating Conditions	13
5.5	Test Result	
6.	RADIATED EMISSIONS	
6.1	Block Diagram Of Test Setup	14
6.2	Limit	
6.3	Test procedure	
6.4	EUT operating Conditions	
6.5	Test Result	
6.6	Field Strength Calculation	
7.	100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE	
7.1	Block Diagram Of Test Setup	24
7.2	Applicable Standard	24
7.3	Test procedure	24
7.4	EUT operating Conditions	25
7.5	Test Result	25
8.	20 DB BANDWIDTH	27
8.1	Block Diagram Of Test Setup	
8.2	<u>Limit</u>	27
8.3	Test procedure	
8.4	EUT OPERATION CONDITIONS	
8.5	Test Result	
9.	ANTENNA REQUIREMENT	29



9.1	Limit	29
9.2	Test Result	29
10.	EUT PHOTOGRAPHS	30
11.	EUT TEST SETUP PHOTOGRAPHS	31

(Note: N/A means not applicable)

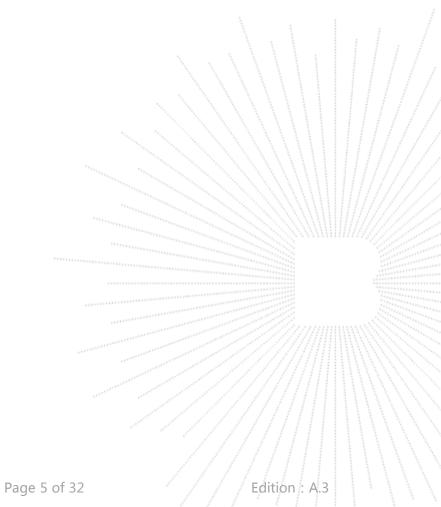


No.: BCTC/RF-EMC-005 Page 4 of 32



1. VERSION

Report No.	Issue Date	Description	Approved
BCTC2107583394E	2021-08-05	Original	Valid



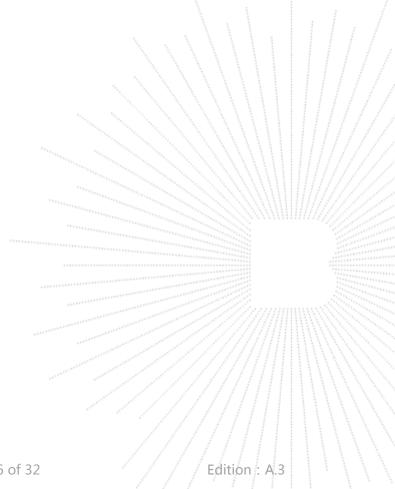
No.: BCTC/RF-EMC-005 Page 5 of



2. TEST SUMMARY

The Product has been tested according to the following specifications:

No.	Test Parameter	Clause No	Results
1	Conducted Emission	15.207	N/A
2	20dB Bandwidth	15.215	PASS
3	Fundamental &Radiated Spurious Emission Measurement	15.249	PASS
4	Band Edge Emission	15.205	PASS
5	Antenna Requirement	15.203	PASS



No.: BCTC/RF-EMC-005 Page 6 of 32 / Edition: 7



3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Uncertainty
1	3m chamber Radiated spurious emission(9kHz-30MHz)	U=3.7dB
2	3m chamber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
3	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
4	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
5	Conducted Emission(150kHz-30MHz)	U=3.20dB
6	Conducted Adjacent channel power	U=1.38dB
7	Conducted output power uncertainty Above 1G	U=1.576dB
8	Conducted output power uncertainty below 1G	U=1.28dB
9	humidity uncertainty	U=5.3%
10	Temperature uncertainty	U=0.59℃

No.: BCTC/RF-EMC-005 Page 7 of 32 Edition: A.3



4. PRODUCT INFORMATION AND TEST SETUP

4.1 Product Information

Model/Type Ref.: YS7805-UC

YS7805-UA

Model differences: All the model are the same circuit and RF module, except model

names.

Hardware Version: N/A

Software Version: N/A

Operation Frequency: 910.3MHz

Type of Modulation: LoRa

Number Of Channel 1CH

Antenna installation: Internal antenna

Antenna Gain: 1dBi Rated Voltage: DC 3V

4.2 Test Setup Configuration

See test photographs attached in *EUT TEST SETUP PHOTOGRAPHS* for the actual connections between Product and support equipment.

Radiated Spurious Emission:

E-1 EUT



4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Data Cable	Power Cord
E-1	Outdoor Motion Sensor	N/A	YS7805-UC	YS7805-UA	EUT	E-1

Item	Shielded Type	Ferrite Core	Length	Note
-	-	-	-	-

Notes:

- 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.

4.4 Channel List

СН	Frequency (MHz)
1	910.3

4.5 Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Test Mode	Test mode
1	Transmitting

Note:

- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) Fully-charged battery is used during the test



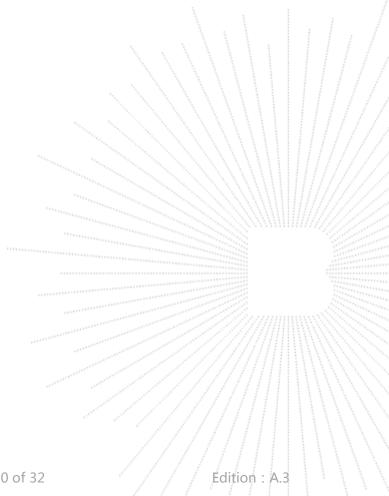
5. TEST FACILITY AND TEST INSTRUMENT USED

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

FCC Test Firm Registration Number: 712850

IC Registered No.: 23583



No.: BCTC/RF-EMC-005 Page 10 of 32



5.2 Test Instrument Used

Report No.: BCTC2107583394E

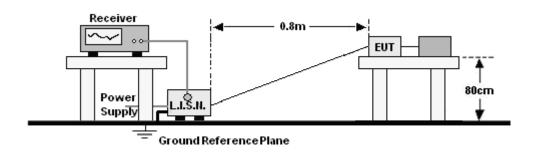
Radiated emissions Test (966 chamber)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	Jun. 06. 2020	Jun. 05, 2023
Receiver	R&S	ESR3	102075	May 28, 2021	May 27, 2022
Receiver	R&S	ESRP	101154	May 28, 2021	May 27, 2022
Amplifier	SKET	LAPA_01G 18G-45dB	\	May 28, 2021	May 27, 2022
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 28, 2021	May 27, 2022
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	VULB9163- 942	Jun. 01, 2021	May 31, 2022
Horn Antenna	SCHWARZBE CK	BBHA9120 D	1541	Jun. 02, 2021	Jun. 01, 2022
Horn Antenna (18GHz-40 GHz)	SCHWARZBE CK	BBHA9170	822	Jun. 15, 2021	Jun. 14, 2022
Amplifier (18GHz-40 GHz)	MITEQ	TTA1840-3 5-HG	2034381	May 28, 2021	May 27, 2022
Loop Antenna (9KHz-30M Hz)	SCHWARZBE CK	FMZB1519 B	014	Jun. 02, 2021	Jun. 01, 2022
RF cables1 (9kHz-30MH z)	Huber+Suhnar	9kHz-30M Hz	B1702988- 0008	May 28, 2021	May 27, 2022
RF cables2 (30MHz-1G Hz)	Huber+Suhnar	30MHz-1G Hz	1486150	May 28, 2021	May 27, 2022
RF cables3 (1GHz-40G Hz)	Huber+Suhnar	1GHz-40G Hz	1607106	May 28, 2021	May 27, 2022
Power Metter	Keysight	E4419B	V	May 28, 2021	May 27, 2022
Power Sensor (AV)	Keysight	E9 300A		May 28, 2021	May 27, 2022
Signal Analyzer 20kHz-26.5 GHz	KEYSIGHT	N9020A	MY491000 60	May 28, 2021	May 27, 2022
Spectrum Analyzer 9kHz-40G Hz	R&S	FSP40	100363	May 28, 2021	May 27, 2022
Software	Frad	EZ-EMC	FA-03A2 RE		

No.: BCTC/RF-EMC-005 Page 11 of 32 Edition: A.3



5. CONDUCTED EMISSIONS

5.1 Block Diagram Of Test Setup



5.2 Limit

FREQUENCY (MHz)	Limit (dBuV)
FREQUENCT (MHZ)	Quas-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Notes:

- 1. *Decreasing linearly with logarithm of frequency.
- 2. The lower limit shall apply at the transition frequencies.

5.3 Test procedure

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

- a. The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- b. The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

No.: BCTC/RF-EMC-005 Page 12 of 32 / / Edition: A.3

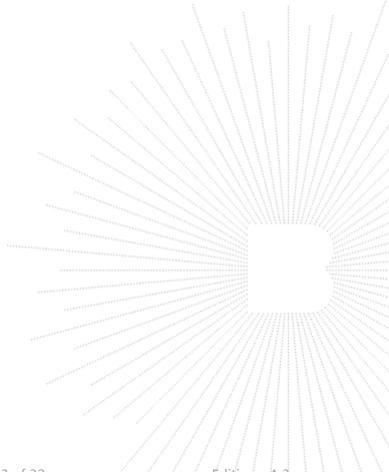


5.4 EUT operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

5.5 Test Result

NOTE: This EUT is powered by the battery only, this test item is not applicable.



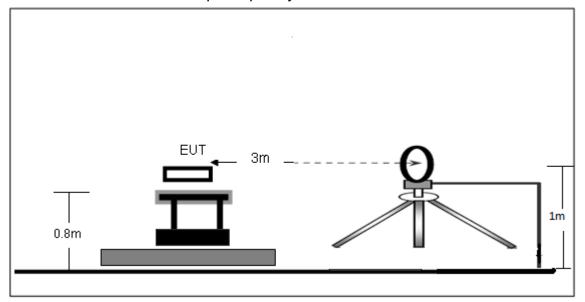
No.: BCTC/RF-EMC-005 Page 13 of 32



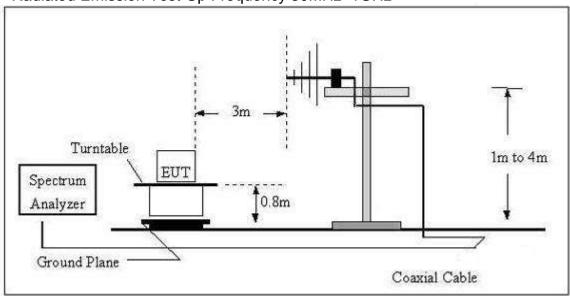
6. RADIATED EMISSIONS

6.1 Block Diagram Of Test Setup

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



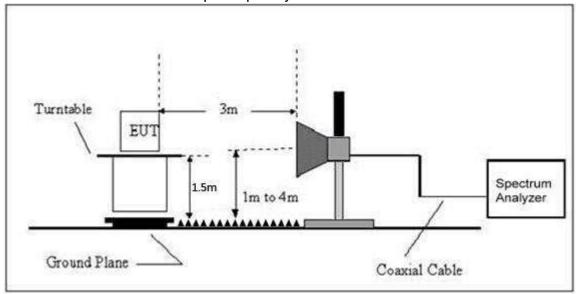
(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



No.: BCTC/RF-EMC-005 Page 14 of 32 Edition: A.3



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



6.2 Limit

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency	Field Strength	Distance	Field Strength Limit at 3m Distance				
(MHz)	uV/m	(m)	uV/m	dBuV/m			
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	20log ^{(2400/F(kHz))} + 80			
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	20log ^{(24000/F(kHz))} + 40			
1.705 ~ 30	30	30	100 * 30	20log ⁽³⁰⁾ + 40			
30 ~ 88	100	3	100	20log ⁽¹⁰⁰⁾			
88 ~ 216	150	3	150	20log ⁽¹⁵⁰⁾			
216 ~ 960	216 ~ 960 200 3		200	20log ⁽²⁰⁰⁾			
Above 960	500	3	500	20log ⁽⁵⁰⁰⁾			

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

No.: BCTC/RF-EMC-005 Page 15 of 32 Edition: A.3



LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENC	Limit (dBuV/m) (at 3M)		
Y (MHz)	PEAK	AVERAGE	
Above 1000	74	54	

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5 th harmonic of the highest frequency or 40 GHz, whichever is lower

6.3 Test procedure

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

No.: BCTC/RF-EMC-005 Page 16 of 32 Edition: A.3



Below 1GHz test procedure as below:

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

- g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 metre to 1.5 metre(Above 18GHz the distance is 1 meter and table is 1.5 metre).
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

Above 1GHz test procedure as below:

- a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

No.: BCTC/RF-EMC-005 Page 17 of 32 / / / Édition: A.3



- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the Highest channel.

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

6.4 EUT operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

No.: BCTC/RF-EMC-005 Page 18 of 32 Edition: A.:



6.5 Test Result

Below 30MHz

Temperature:	26℃	Relative Humidtity:	24%
Pressure:	101 kPa	Test Voltage:	DC 3V
Test Mode:	Mode 1	Polarization :	

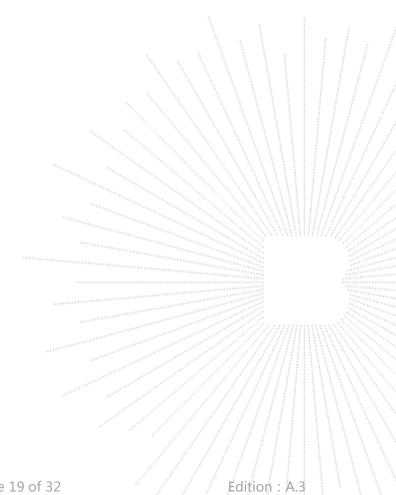
Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
				PASS
				PASS

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.

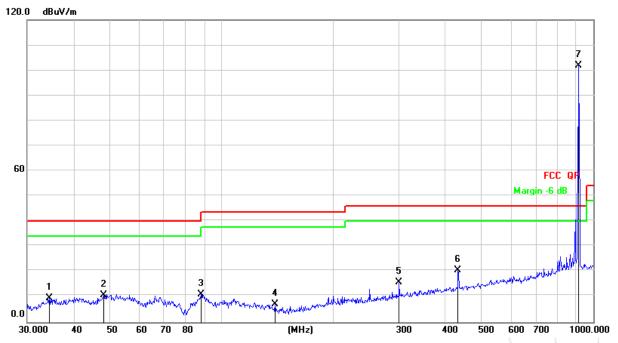


No.: BCTC/RF-EMC-005 Page 19 of 32



Between 30MHz - 1GHz

Temperature:	26℃	Relative Humidtity:	54%
Pressure:	101 kPa	Test Voltage:	DC 3V
Test Mode:	Mode 1	Polarization :	Horizontal



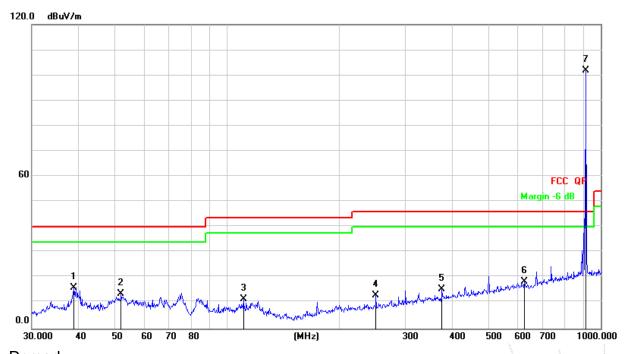
Remark:

Factor = Antenna Factor + Cable Loss - Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB	dBuV/m	dB/m	dB	Detector
1		34.3964	25.96	-16.46	9.50	40.00	-30.50	QP
2		48.1626	25.48	-14.95	10.53	40.00	-29.47	QP
3		88.0329	29.64	-18.55	11.09	43.50	-32.41	QP
4		139.3613	25.94	-18.81	7.13	43.50	-36.37	QP
5	;	300.3672	29.45	-13.59	15.86	46.00	-30.14	QP
6	4	432.5457	30.79	-10.36	20.43	46.00	-25.57	QP
7	* (912.8620	103.38	-1.40	101.98	46.00	55.98	peak



Temperature:	26℃	Relative Humidtity:	54%
Pressure:	101 kpa	Test Voltage:	DC 3V
Test Mode:	Mode 1	Polarization :	Vertical



Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB	dBuV/m	dB/m	dB	Detector
1		38.8878	31.76	-15.62	16.14	40.00	-23.86	QP
2		52.0251	28.57	-15.06	13.51	40.00	-26.49	QP
3		110.5687	28.47	-16.96	11.51	43.50	-31.99	QP
4		250.3012	28.25	-15.14	13.11	46.00	-32.89	QP
5		375.9385	27.22	-11.64	15.58	46.00	-30.42	QP
6		625.0780	25.19	-6.67	18.52	46.00	-27.48	QP
7	*	912.8620	103.38	-1.40	101.98	46.00	55.98	peak

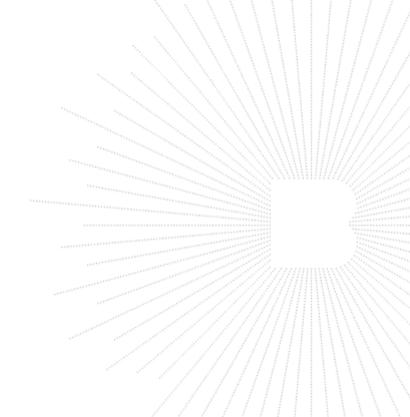


(Above 1000 MHz) Normal Voltage 910.3MHz

Polar	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(H/V)	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Туре
V	1820.60	52.63	-3.47	49.16	74.00	-24.84	Pk
V	1820.60	44.47	-3.47	41.00	54.00	-13.00	AV
V	2730.90	44.79	-3.74	41.05	74.00	-32.95	Pk
V	2730.90	34.74	-3.74	31.00	54.00	-23.00	AV
V	3641.20	24.55	-4.59	19.96	54.00	-34.04	Pk
V	3641.20	13.88	-4.59	9.29	54.00	-44.71	AV
Н	1820.60	50.29	-3.72	46.57	74.00	-27.43	Pk
Н	1820.60	40.81	-3.72	37.09	54.00	-16.91	AV
Н	2730.90	42.56	-3.63	38.93	74.00	-35.07	Pk
Н	2730.90	34.76	-3.63	31.13	54.00	-22.87	AV
Н	3641.20	26.91	-3.57	23.34	54.00	-30.66	Pk
Н	3641.20	19.88	-3.57	16.31	54.00	-37.69	AV

Remark:

Absolute Level= ReadingLevel+ Factor, Margin= Limit- Absolute Level Other harmonics emissions are lower than 20dB below the allowable limit.



Edition: A.3

No.: BCTC/RF-EMC-005 Page 22 of 32



6.6 Field Strength Calculation

Report No.: BCTC2107583394E

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS=RA+AF+CL-AG

FS=Field Strength	CL=Cable Attenuation Factor (Cable Loss)		
RA=Reading Amplitude	AG=Amplifier Gain		
AF=Antenna Factor			

Test Rusult:

Temperature:	126°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Horizontal
Test Voltage:	DC 3V		
Test Mode:	Mode 1		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dB µ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	Type
910.3	98.77	-0.19	98.58	114	-15.42	Peak
910.3	92.47	-0.19	92.28	94	-1.72	Average

Remark:

Factor = Antenna Factor + Cable Loss - Pre-amplifier.

All interfaces was connected, and TX mode

Temperature:	126°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 3V	**********	<i></i>
Test Mode:	Mode 1	**********************	

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dB µ V)	(dB)	(dB µ V/m)	(dB µ V/m)	(dB)	Type
910.3	92.45	-0.19	92.26	114	-21.74	Peak
910.3	86.21	-0.19	86.02	94	-7.98	Average

Remark:

Factor = Antenna Factor + Cable Loss - Pre-amplifier.

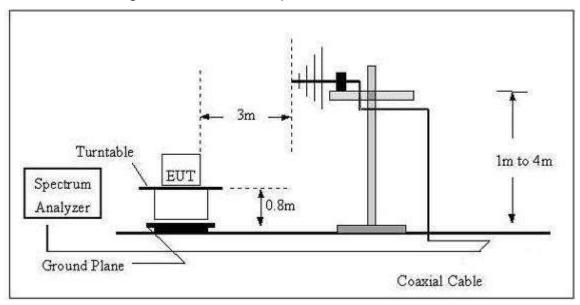
All interfaces was connected, and TX mode

No.: BCTC/RF-EMC-005 Page 23 of 32 / Edition: A.3



7. 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE

7.1 Block Diagram Of Test Setup



7.2 Applicable Standard

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

7.3 Test procedure

- a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- c.VBW for Peak, Quasi-peak, or Average Detector Function: 3 × RBW
- d. Repeat above procedures until all measured frequencies were complete.

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

No.: BCTC/RF-EMC-005 Page 24 of 32 / / Edition: A.3



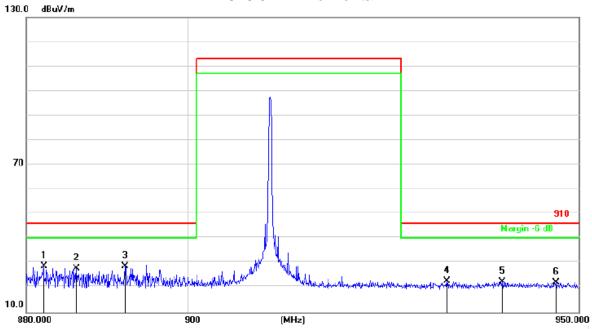
7.4 EUT operating Conditions

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.5 Test Result

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101 kPa	Test Voltage:	DC 3V
Test Mode:	Transmitting		

910.3MHz Horizontal

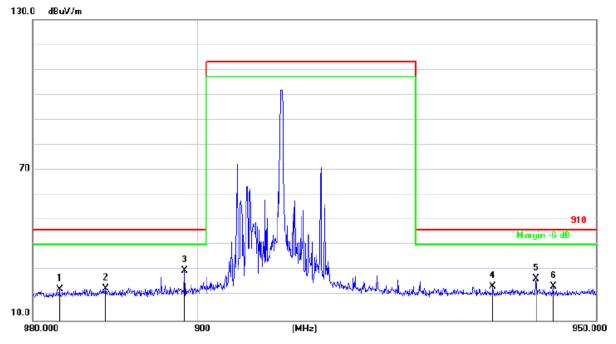


No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	882.1700	30.71	-1.86	28.85	46.00	-17.15	peak
2		886.1600	29.77	-1.78	27.99	46.00	-18.01	peak
3		892.1800	30.37	-1.66	28.71	46.00	-17.29	peak
4		932.9200	23.99	-1.24	22.75	46.00	-23.25	peak
5		940.0600	23.60	-1.19	22.41	46.00	-23.59	peak
6		947.0600	23.29	-1.13	22.16	46.00	-23.84	peak

No.: BCTC/RF-EMC-005 Page 25 of 32 Edition: A.3



910.3MHz Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	8	83.2900	24.27	-1.84	22.43	46.00	-23.57	peak
2	8	88.8200	24.39	-1.73	22.66	46.00	-23.34	peak
3	* 8	98.4100	31.54	-1.53	30.01	46.00	-15.99	peak
4	9	36.8400	24.78	-1.21	23.57	46.00	-22.43	peak
5	9	42.3700	27.88	-1.17	26.71	46.00	-19.29	peak
6	9	44.5400	24.82	-1.15	23.67	46.00	-22.33	peak

No.: BCTC/RF-EMC-005 Page 26 of 32



8. 20 DB BANDWIDTH

8.1 Block Diagram Of Test Setup

EUT	SPECTRUM
	ANALYZER

8.2 Limit

FCC Part15 (15.249), Subpart C					
Section	Test Item	Frequency Range (MHz)	Result		
15.249	Bandwidth	902~928	PASS		

8.3 Test procedure

- 1. Set resolution bandwidth (RBW) = 1-5% or DTS BW, not to exceed 100 kHz.
- 2. Set the video bandwidth (VBW) \geq 3 x RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.
- 7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

8.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

No.: BCTC/RF-EMC-005 Page 27 of 32 // Edition: A.3



8.5 Test Result

Temperature :	1967 ·	Relative Humidity:	54%
Test Voltage :	DC 3V	Remark	N/A

Channel	Frequency (MHz)	20dB bandwidth (KHz)
01	910.3	126.47

CH01



No.: BCTC/RF-EMC-005 Page 28 of 32 Edition: A.3



9. ANTENNA REQUIREMENT

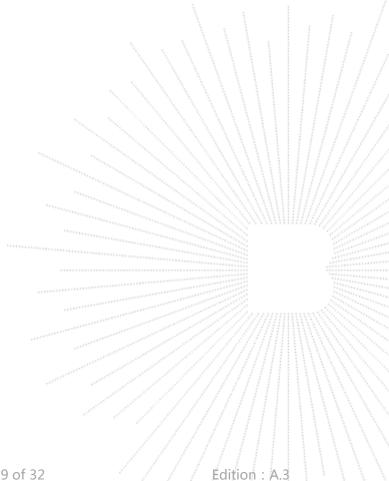
9.1 Limit

15.203 requirement: For intentional device, according to 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.

9.2 Test Result

The EUT antenna is Internal antenna, The antenna gain is 1dBi, fulfill the requirement of this section.



No.: BCTC/RF-EMC-005 Page 29 of 32

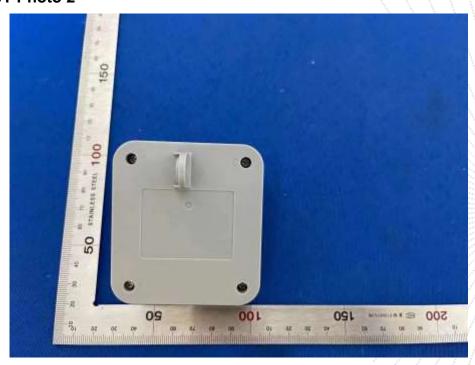


10. EUT PHOTOGRAPHS

EUT Photo 1



EUT Photo 2

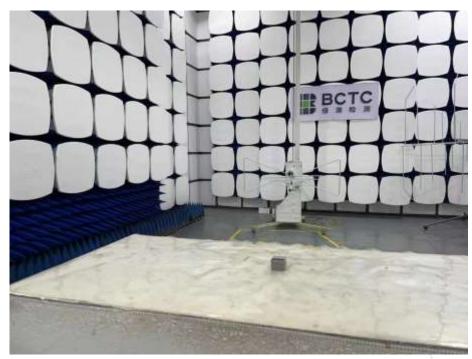


No.: BCTC/RF-EMC-005 Page 30 of 32 Edition: A.3



11. EUT TEST SETUP PHOTOGRAPHS

Radiated Measurement Photos





No.: BCTC/RF-EMC-005 Page 31 of 32 Edition: A.3



STATEMENT

- 1. The equipment lists are traceable to the national reference standards.
- 2. The test report can not be partially copied unless prior written approval is issued from our lab.
- 3. The test report is invalid without stamp of laboratory.
- 4. The test report is invalid without signature of person(s) testing and authorizing.
- 5. The test process and test result is only related to the Unit Under Test.
- 6.The quality system of our laboratory is in accordance with ISO/IEC17025.

7.If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL: 400-788-9558

P.C.: 518103

FAX: 0755-33229357

Website: http://www.chnbctc.com

E-Mail: bctc@bctc-lab.com.cn

**** END ****

No.: BCTC/RF-EMC-005 Page 32 of 32 // Edition: A.