RADIO TEST REPORT

Report No:STS1806011W02

Issued for

DewertOkin GmbH

Weststr. 1, 32278 Kirchlengern, Germany

Product Name:	CU155+(CONTROL BOX)
Brand Name:	N/A
Model Name:	A1177
Series Model:	N/A
FCC ID:	O3YCU155P
IC ID:	10744A-CU155P
Test Standard:	FCC Part 15.249
	RSS 210 Issue 9

Shenzhen STS Test Services Co., Ltd.
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TEST RESULT CERTIFICATION

Applicant's name ..... :	DewertOkin GmbH
Address ..... :	Weststr. 1, 32278 Kirchlengern, Germany
Manufacture's Name ..... :	DewertOkin GmbH
Address ..... :	Weststr. 1, 32278 Kirchlengern, Germany

Product description

Product Name ..... :	CU155+(CONTROL BOX)
Brand Name ..... :	N/A
Model Name ..... :	A1177
Series Model ..... :	N/A
Test Standards ..... :	FCC Part15.249
	RSS 210 Issue 9
Test procedure ..... :	ANSI C63.10-2013

This device described above has been tested by STS, the test results show that the equipment under test (EUT) is in compliance with the FCC&IC requirements. And it is applicable only to the tested sample identified in the report.
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Date of Test :	
Date of performance of tests :	05 June 2018 ~11 June 2018
Date of Issue :	12 June 2018
Test Result :	**Pass**

Testing Engineer : Chris chen

(Chris chen)

Technical Manager : Sean She

(Sean she)

Authorized Signatory : Vita Li

(Vita Li)

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Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	12 June 2018	STS1806011W02	ALL	Initial Issue

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part 15.249 , Subpart C RSS 210 Issue 9			
Standard Section	Test Item	Judgment	Remark
15.207 RSS-Gen Issue 4 (8.8)	Conducted Emission	N/A	--
15.203 RSS-Gen Issue 4	Antenna Requirement	Pass	--
15.249 RSS 210 Issue 9 (B.10)	Radiated Spurious Emission	Pass	--
15.205	Radiated Band Edge Emission	Pass	--
15.249 RSS-Gen Issue 4	Occupied Bandwidth	Pass	--

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

(2)All tests are according to ANSI C63.10-2013

1.1 TEST FACTORY

Shenzhen STS Test Services Co., Ltd.
Add. : 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road,
Fuyong Street, Bao'an District, Shenzhen, Guangdong, China
CNAS Registration No.: L7649; FCC Registration No.: 625569
IC Registration No.: 12108A; A2LA Certificate No.: 4338.01;

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **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 (9KHz-150KHz)	±2.88dB
2	Conducted Emission (150KHz-30MHz)	±2.67dB
3	RF power,conducted	±0.71dB
4	Spurious emissions,conducted	±0.63dB
5	All emissions,radiated (9KHz-30MHz)	±3.02dB
6	All emissions,radiated (30MHz-200MHz)	±3.80dB
7	All emissions,radiated (200MHz-1000MHz)	±3.97dB

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product Name	CU155+(CONTROL BOX)
Trade Name	N/A
Model Name	A1177
Series Model	N/A
Model Difference	N/A
Product Description	The EUT is a CU155+(CONTROL BOX) Operation Frequency: 2403-2480MHz Modulation Type: GFSK Antenna Designation: PCB Antenna Antenna Gain(Peak): 0 dBi Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.
Channel List	Please refer to the Note 2.
Power Rating	Input: DC 30V
Hardware version number	1003796d
Software version number	89439

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2.

Channel List for 2.4G			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2403	3	2480
2	2440	--	--

3. Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	NA	A1177	PCB	NA	0	Antenna

2.2 DESCRIPTION OF TEST MODES

For conducted test items and radiated spurious emissions
Each of these EUT operation mode(s) or test configuration mode(s) mentioned below was evaluated respectively..

Pretest Mode	Description	Data/Modulation
Mode 1	TX CH01	GFSK
Mode 2	TX CH02	GFSK
Mode 3	TX CH03	GFSK

Note:

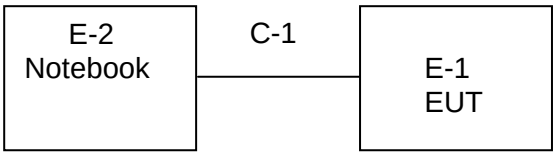
(1) All above mode have been measurement, only worst data was reported.

(2) We have be tested for all avaiable U.S. voltage and frequencies(For 120V,50/60Hz and 240V, 50/60Hz) for which the device is capable of operation, and the worst case of 120V,50/60Hz is shown in the report

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters

Radiated Spurious Emission Test



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	Mfr/Brand	Model/Type No.	Serial No.	Note
E-2	Notebook	DELL	VOSTRO.3800	N/A	N/A

Item	Shielded Type	Ferrite Core	Length	Note
C-1	USB Cable	NO	100cm	N/A

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
EMI Test Receiver	R&S	ESCI	102086	2017.10.15	2018.10.14
Bilog Antenna	TESEQ	CBL6111D	34678	2017.11.02	2018.11.01
Horn Antenna	Schwarzbeck	BBHA 9120D (1201)	9120D-1343	2017.10.27	2018.10.26
Passive Loop (9K--30MHz)	ZHNAN	ZN3090C	16035	2018.03.11	2019.03.10
Pre-mplifier (0.1M-3GHz)	EM	EM330	60538	2018.03.11	2019.03.10
PreAmplifier	Agilent	8449B	60538	2017.10.15	2018.10.14
USB RF power sensor	DARE	RPR3006W	15I00041SNO03	2017.10.15	2018.10.14
Semi-anechoic chamber	Changling	966	N/A	2017.10.15	2018.10.14

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2017.10.15	2018.10.14
LISN	R&S	ENV216	101242	2017.10.15	2018.10.14
conduction Cable	EM	C01	N/A	2018.03.11	2019.03.10
Temperature & Humitidy	Mieo	HH660	N/A	2017.10.15	2018.10.14

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

Operating frequency band. In case the emission fall within the restricted band specified on Part 15.249& RSS-Gen Issue 4 (8.8) limit in the table below has to be followed.

FREQUENCY (MHz)	Class B (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	56.00	46.00	CISPR
5.0 -30.0	60.00	50.00	CISPR

0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

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.

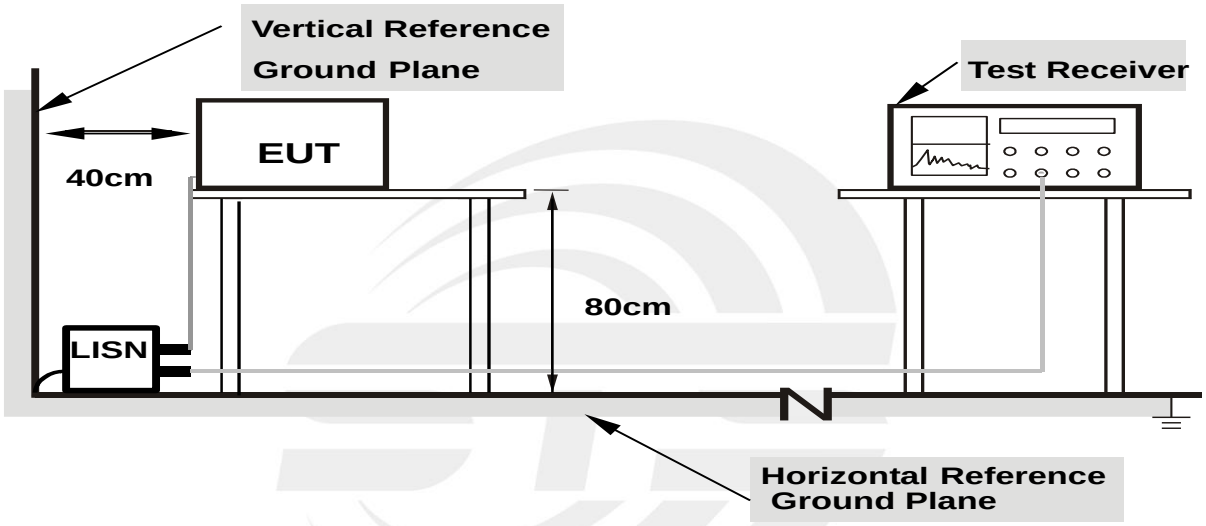
The following table is the setting of the receiver

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

3.1.2 TEST PROCEDURE

a. The EUT was 0.8 meters from the horizontal ground plane and 0.4 meters from the vertical 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.
b. 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.
c. 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.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 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 from other units and other metal planes

3.1.4 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.

3.1.5 TEST RESULTS

Temperature:	24℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Phase:	L/N
Test Mode:	N/A		

Note: denotes test is not applicable in this test report.

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on Part 15.249 and the Part 15.209(a) limit in the table below has to be followed.

Standard FCC 15.209

Frequencies (MHz)	Field Strength (micorvolts/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
960~1000	500	3
Above 1000	Other:74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	3

Standard FCC 15.249

Frequency of Emission (MHz)	**Field Strength of fundamental (millivolts /meter)**	**Field Strength of Harmonics (microvolts/meter)**
900~928	50	500
2400~2483.5	50	500
5725~5875	50	500
24000~242500	250	2500

Notes:

(1) 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.

In case the emission fall within the restricted band specified on RSS-Gen Issue 4 limit in the followed
. In measuring unwanted emissions, the spectrum shall be investigated from 30 MHz or the lowest radio frequency signal generated in the equipment, whichever is lower, without going below 9 kHz, up to at least the frequency given below:
(a) If the equipment operates below 10 GHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
(b) If the equipment operates at or above 10 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
Particular attention should be paid to harmonics and sub-harmonics of the carrier frequency, as well as to those frequencies removed from the carrier by multiples of the oscillator frequency.
Radiation at the frequencies of multiplier stages should also be checked.
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value need not be reported.
When limits are expressed in absolute terms, compliance with the emission limits below 1000 MHz shall be demonstrated using a CISPR quasi-peak detector and the related measurement bandwidth. As an alternative to CISPR quasi-peak measurement, compliance with the emission limits can be demonstrated using measuring equipment employing a peak detector function properly adjusted for factors such as pulse desensitization as required, with an equal or greater measurement bandwidth relative to the applicable CISPR quasi-peak bandwidth.
Above 1000 MHz, compliance with the emission limits shall be demonstrated using an average detector with a minimum resolution bandwidth of 1 MHz.

In case the emission fall within the restricted band specified on RSS 210 Issue 9 (B.10) limit in the followed
1. The field strength of fundamental and harmonic emissions, measured at 3 m, shall not exceed 50 mV/m and 0.5 mV/m respectively.
The field strength limits shall be measured using an average detector, except for the fundamental emission in the frequency band 902-928 MHz, which is based on measurements using an International Special Committee on Radio Interference (CISPR) quasi-peak detector.
2. Emissions radiated outside of the specified frequency bands, except for harmonic emissions, shall be attenuated by at least 50 dB below the level of the fundamental emissions or to the general field strength limits listed in RSS-Gen, whichever is less stringent.

NOTE:
(1)The limit for radiated test was performed according to RSS 210 Issue 9
(2)Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Detector	Peak/AV
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB (emission in restricted band)	>20BW
VB (emission in restricted band)	=3xRB

Receiver Parameter	**Setting**
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
	90kHz~110kHz / RB 200Hz for QP
	110kHz~490kHz / RB 200Hz for PK & AV
	490kHz~30MHz / RB 9kHz for QP
	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

a. The measuring distance of 3m shall be used for measurements. The EUT was placed on the top of arotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation(Below 1GHz)

b. The measuring distance of 3m shall used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation(Above 1GHz)

c. The height of the test antenna shall vary between 1m to 4m.Both horizontal and vertical polarization Of the antenna are set to make the measurement.

d. The initial step in collecting radiated emission data is a receive peak detector mode. Pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

e. All readings are peak unless otherwise stated QP in column of Note. Peak denoted that the Peak reading compliance with the QP limits and then QP Mode measurement didn't perform (Below 1GHz)

f. All readings are Peak mode value unless otherwise stated AVG in column of Note. If the Peak mode measured value compliance with the Peak limits and lower than AVG Limits, the EUT shall be deemed to meet Peak & AVG limits and then only Peak mode was measured, but AVG mode didn't perform.(Above 1GHz)

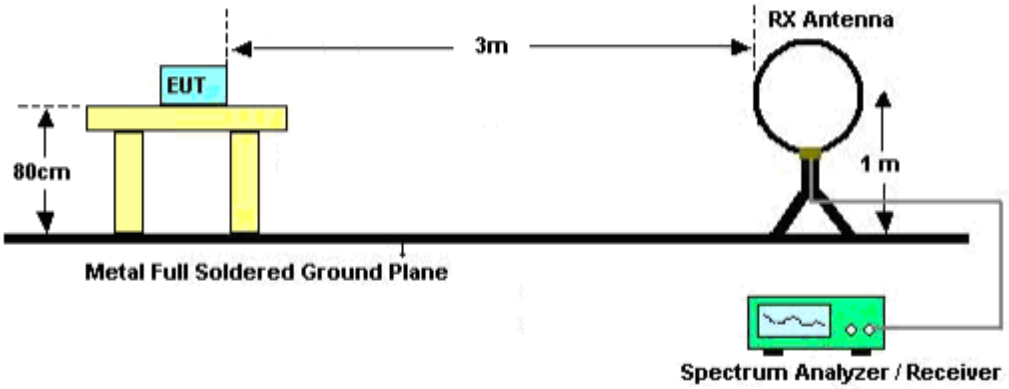
g. For the actual test configuration, please refer to the related Item –EUT Test Photos.
Note: Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

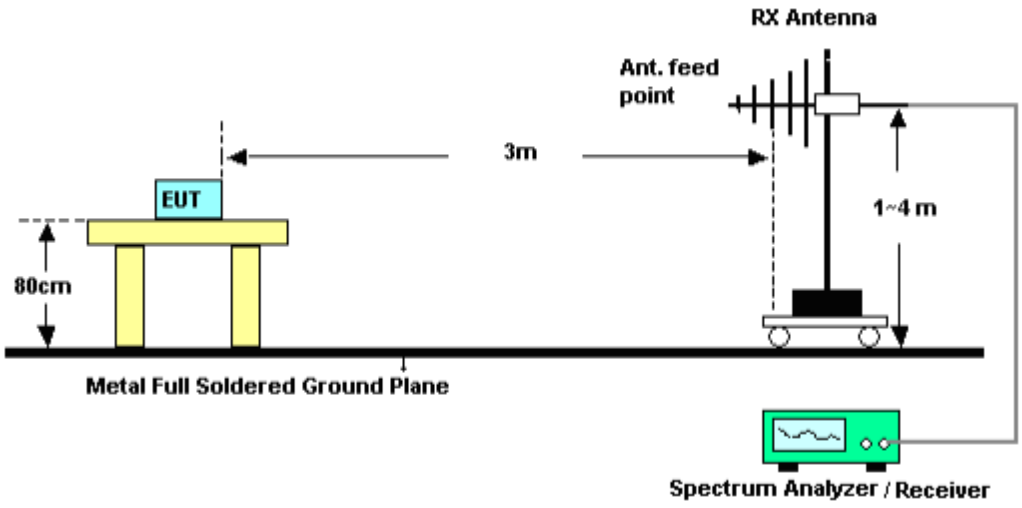
No deviation

3.2.4 TEST SETUP

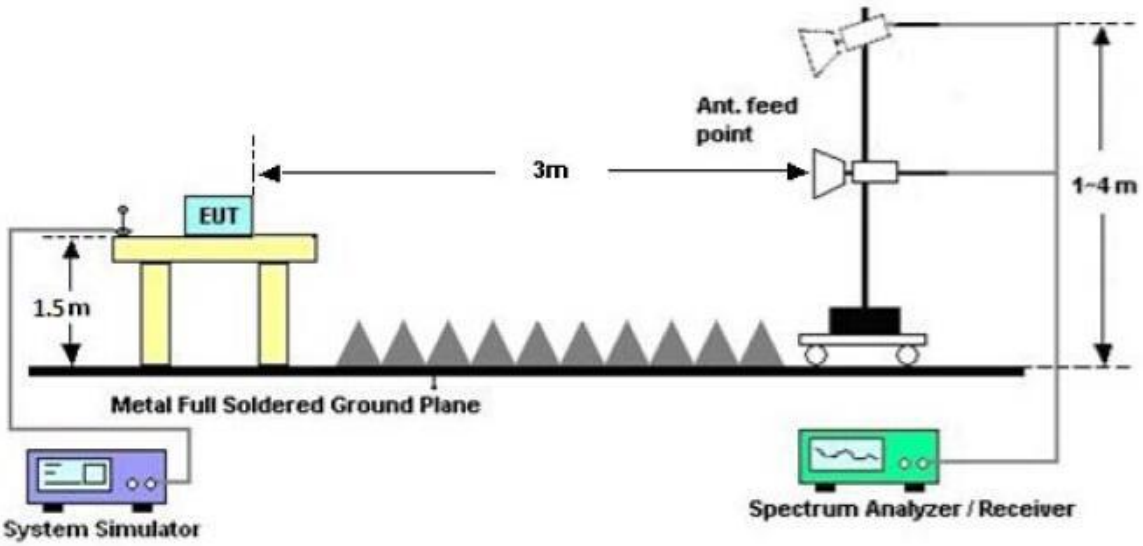
（A）Radiated Emission Test-Up Frequency Below 30MHz



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



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



3.2.5 FIELD STRENGTH CALCULATION

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

Where

FS = Field Strength

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

For example

Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dBμV/m)	(dBμV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

Factor=AF+CL-AG

3.2.6 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.

Below 30 MHz

Temperature:	24 ℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Polarization:	---
Test Mode:	--		

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);

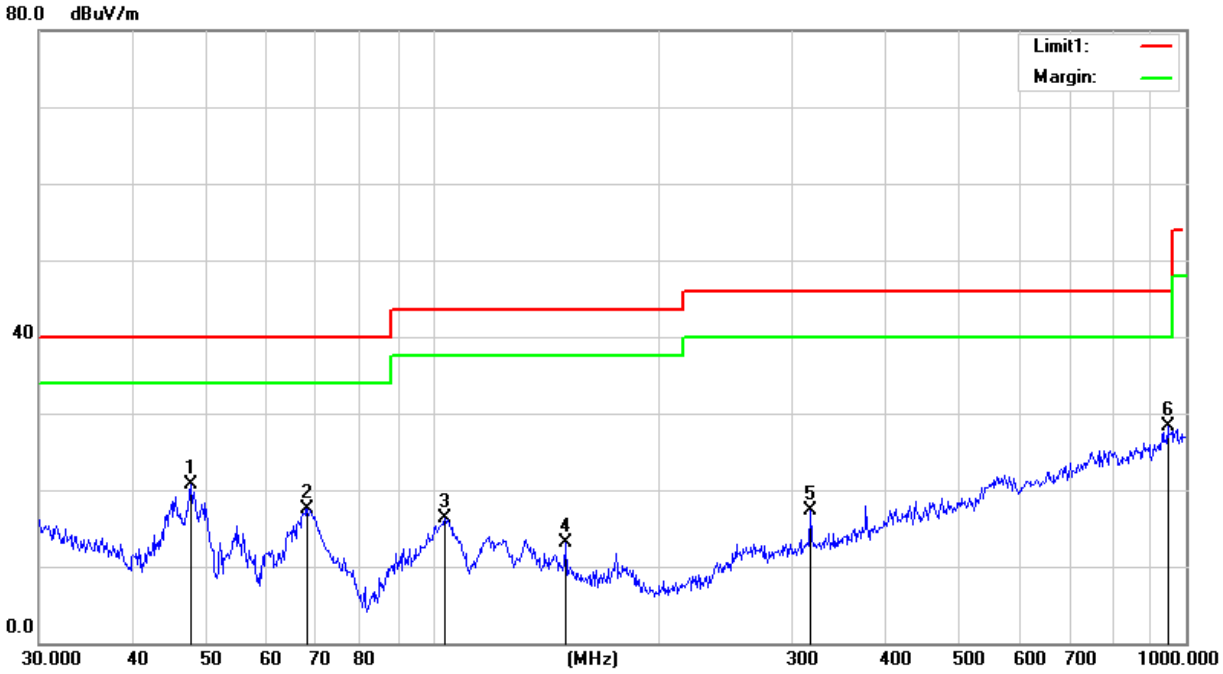
Limit line = specific limits(dBuv) + distance extrapolation factor.

Between 30MHz – 1000 MHz Radiation Spurious

Temperature:	25.5 ℃	Relative Humidity:	62%
Test Voltage:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	Mode 1/2/3(Model 1 worst)		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
47.8260	41.03	-20.36	20.67	40.00	-19.33	QP
68.1512	41.62	-24.15	17.47	40.00	-22.53	QP
103.8054	35.26	-18.87	16.39	43.50	-27.11	QP
150.0107	30.98	-17.97	13.01	43.50	-30.49	QP
317.7010	31.47	-14.25	17.22	46.00	-28.78	QP
945.4398	28.87	-0.54	28.33	46.00	-17.67	QP

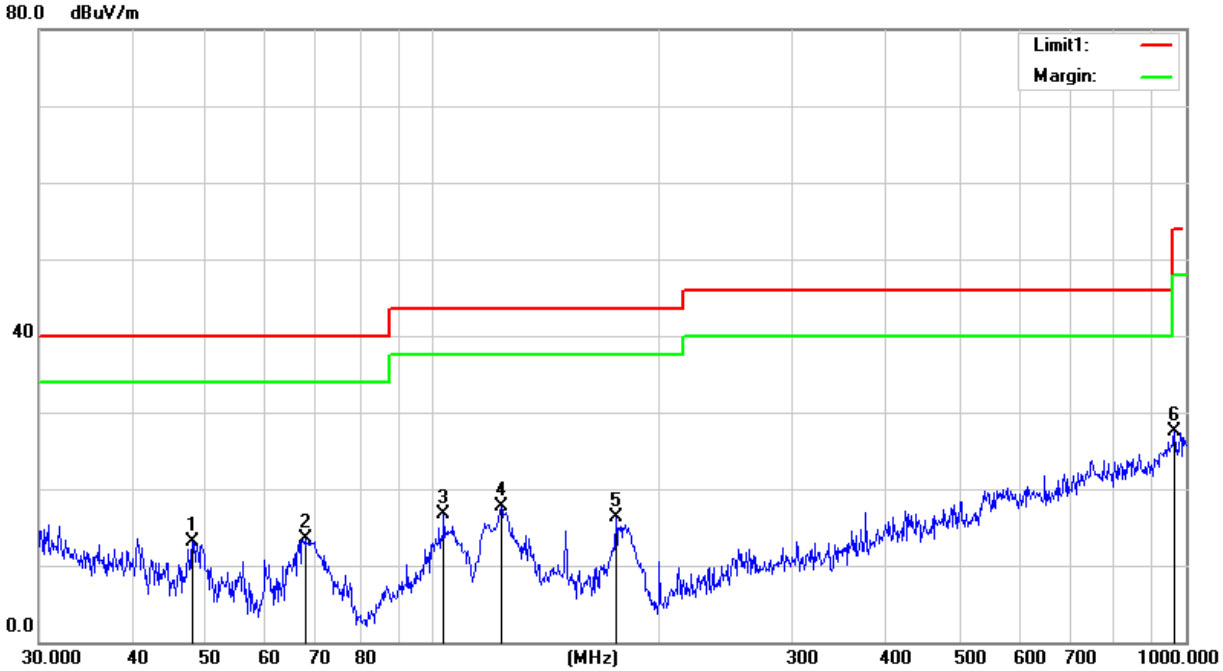
Remark:
1. All readings are Quasi-Peak .
2. Margin = Result (Result =Reading + Factor)–Limit



Temperature:	25.5 ℃	Relative Humidity:	62%
Test Voltage:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	Mode 1/2/3(Model 1 worst)		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
47.9940	33.59	-20.45	13.14	40.00	-26.86	QP
67.6751	37.69	-24.16	13.53	40.00	-26.47	QP
103.4420	35.66	-18.90	16.76	43.50	-26.74	QP
123.2655	35.31	-17.65	17.66	43.50	-25.84	QP
175.0367	35.66	-19.38	16.28	43.50	-27.22	QP
965.5421	27.65	-0.14	27.51	54.00	-26.49	QP

Remark:
1. All readings are Quasi-Peak.
2. Margin = Result (Result =Reading + Factor)–Limit



Fundamental frequency:

PK

Frequency (MHz)	Reading (dBμV/m)	Amplifier	Loss	Antenna Factor	Factor(dB) Corr.	Result (dBμV/m)	Limit (dBμV/m)	Margin(dB)	Polarization
	PEAK	（dB）	（dB）	（dB/m）		PEAK	PEAK	PEAK	
2408	96.648	44.40	6.03	27.60	-10.77	85.88	114	-28.12	Vertical
2408	92.648	44.40	6.03	27.60	-10.77	81.88	114	-32.12	Horizontal
2440	95.613	44.40	6.04	27.63	-10.73	84.89	114	-29.11	Vertical
2440	94.746	44.40	6.04	27.63	-10.73	84.02	114	-29.98	Horizontal
2474	92.184	44.40	6.06	27.66	-10.68	81.51	114	-32.49	Vertical
2474	88.254	44.40	6.06	27.66	-10.68	77.58	114	-36.42	Horizontal

AV

Frequency (MHz)	Reading (dBμV/m)	Amplifier	Loss	Antenna Factor	Factor(dB) Corr.	Result (dBμV/m)	Limit (dBμV/m)	Margin(dB)	Polarization
	AV	（dB）	（dB）	（dB/m）		AV	AV	AV	
2408	76.335	44.40	6.03	27.60	-10.77	65.57	94	-28.43	Vertical
2408	75.948	44.40	6.03	27.60	-10.77	65.18	94	-28.82	Horizontal
2440	66.348	44.40	6.04	27.63	-10.73	55.62	94	-38.38	Vertical
2440	65.198	44.40	6.04	27.63	-10.73	54.47	94	-39.53	Horizontal
2474	72.584	44.40	6.06	27.66	-10.68	61.91	94	-32.09	Vertical
2474	61.864	44.40	6.06	27.66	-10.68	51.19	94	-42.81	Horizontal

Note: RBW>20BW; VBW=3xRBW

Above 1G Radiation Spurious

Frequency (MHz)	Reading (dBμV)	Amplifier （dB）	Loss （dB）	Antenna Factor （dB/m）	Corrected Factor （dB）	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Low Channel (2403 MHz)										
3264.66	48.20	44.70	6.70	28.20	-9.80	38.40	74.00	-35.60	PK	Vertical
3264.66	38.71	44.70	6.70	28.20	-9.80	28.91	54.00	-25.09	AV	Vertical
3264.60	48.29	44.70	6.70	28.20	-9.80	38.49	74.00	-35.51	PK	Horizontal
3264.60	39.05	44.70	6.70	28.20	-9.80	29.25	54.00	-24.75	AV	Horizontal
4804.40	58.38	44.20	9.04	31.60	-3.56	54.82	74.00	-19.18	PK	Vertical
4804.40	38.61	44.20	9.04	31.60	-3.56	35.05	54.00	-18.95	AV	Vertical
4804.36	58.56	44.20	9.04	31.60	-3.56	55.00	74.00	-19.00	PK	Horizontal
4804.36	39.60	44.20	9.04	31.60	-3.56	36.04	54.00	-17.96	AV	Horizontal
5359.60	46.39	44.20	9.86	32.00	-2.34	44.05	74.00	-29.95	PK	Vertical
5359.60	37.96	44.20	9.86	32.00	-2.34	35.62	54.00	-18.38	AV	Vertical
5359.70	45.50	44.20	9.86	32.00	-2.34	43.16	74.00	-30.84	PK	Horizontal
5359.70	37.65	44.20	9.86	32.00	-2.34	35.31	54.00	-18.69	AV	Horizontal
7205.93	51.50	43.50	11.40	35.50	3.40	54.90	74.00	-19.10	PK	Vertical
7205.93	33.52	43.50	11.40	35.50	3.40	36.92	54.00	-17.08	AV	Vertical
7205.90	51.55	43.50	11.40	35.50	3.40	54.95	74.00	-19.05	PK	Horizontal
7205.90	33.38	43.50	11.40	35.50	3.40	36.78	54.00	-17.22	AV	Horizontal

Frequency (MHz)	Reading (dBμV)	Amplifier （dB）	Loss （dB）	Antenna Factor （dB/m）	Corrected Factor （dB）	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Middle Channel (2440 MHz)										
3264.61	48.95	44.70	6.70	28.20	-9.80	39.15	74.00	-34.85	PK	Vertical
3264.61	39.16	44.70	6.70	28.20	-9.80	29.36	54.00	-24.64	AV	Vertical
3264.66	48.83	44.70	6.70	28.20	-9.80	39.03	74.00	-34.97	PK	Horizontal
3264.66	39.27	44.70	6.70	28.20	-9.80	29.47	54.00	-24.53	AV	Horizontal
4880.54	59.38	44.20	9.04	31.60	-3.56	55.82	74.00	-18.18	PK	Vertical
4880.54	39.43	44.20	9.04	31.60	-3.56	35.87	54.00	-18.13	AV	Vertical
4880.60	59.37	44.20	9.04	31.60	-3.56	55.81	74.00	-18.19	PK	Horizontal
4880.60	38.68	44.20	9.04	31.60	-3.56	35.12	54.00	-18.88	AV	Horizontal
5359.67	46.13	44.20	9.86	32.00	-2.34	43.79	74.00	-30.21	PK	Vertical
5359.67	37.98	44.20	9.86	32.00	-2.34	35.64	54.00	-18.36	AV	Vertical
5359.63	45.49	44.20	9.86	32.00	-2.34	43.15	74.00	-30.85	PK	Horizontal
5359.63	37.69	44.20	9.86	32.00	-2.34	35.35	54.00	-18.65	AV	Horizontal
7310.97	50.85	43.50	11.40	35.50	3.40	54.25	74.00	-19.75	PK	Vertical
7310.97	33.84	43.50	11.40	35.50	3.40	37.24	54.00	-16.76	AV	Vertical
7310.88	50.96	43.50	11.40	35.50	3.40	54.36	74.00	-19.64	PK	Horizontal
7310.88	33.45	43.50	11.40	35.50	3.40	36.85	54.00	-17.15	AV	Horizontal

Frequency (MHz)	Reading (dBμV)	Amplifier （dB）	Loss （dB）	Antenna Factor （dB/m）	Corrected Factor （dB）	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
High Channel (2480 MHz)										
3264.64	49.22	44.70	6.70	28.20	-9.80	39.42	74.00	-34.58	PK	Vertical
3264.64	38.45	44.70	6.70	28.20	-9.80	28.65	54.00	-25.35	AV	Vertical
3264.75	48.91	44.70	6.70	28.20	-9.80	39.11	74.00	-34.89	PK	Horizontal
3264.75	37.96	44.70	6.70	28.20	-9.80	28.16	54.00	-25.84	AV	Horizontal
4960.40	58.72	44.20	9.04	31.60	-3.56	55.16	74.00	-18.84	PK	Vertical
4960.40	38.85	44.20	9.04	31.60	-3.56	35.29	54.00	-18.71	AV	Vertical
4960.42	58.48	44.20	9.04	31.60	-3.56	54.92	74.00	-19.08	PK	Horizontal
4960.42	38.30	44.20	9.04	31.60	-3.56	34.74	54.00	-19.26	AV	Horizontal
5359.86	45.66	44.20	9.86	32.00	-2.34	43.32	74.00	-30.68	PK	Vertical
5359.86	38.15	44.20	9.86	32.00	-2.34	35.81	54.00	-18.19	AV	Vertical
5359.85	46.03	44.20	9.86	32.00	-2.34	43.69	74.00	-30.31	PK	Horizontal
5359.85	37.14	44.20	9.86	32.00	-2.34	34.80	54.00	-19.20	AV	Horizontal
7439.85	51.93	43.50	11.40	35.50	3.40	55.33	74.00	-18.67	PK	Vertical
7439.85	33.30	43.50	11.40	35.50	3.40	36.70	54.00	-17.30	AV	Vertical
7439.88	50.77	43.50	11.40	35.50	3.40	54.17	74.00	-19.83	PK	Horizontal
7439.88	33.34	43.50	11.40	35.50	3.40	36.74	54.00	-17.26	AV	Horizontal

Note:

1) Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Emission Level = Reading + Factor

2) The frequency emission of peak points that did not show above the forms are below the limit, the frequency emission is mainly from the environment noise.

(Radiation Band edge)

Frequency (MHz)	Reading (dBμV)	Amplifier （dB）	Loss （dB）	Antenna Factor （dB/m）	Corrected Factor （dB）	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
GFSK										
2390.00	67.35	43.80	4.91	25.90	-12.99	54.36	74.00	-19.64	PK	Vertical
2390.00	53.42	43.80	4.91	25.90	-12.99	40.43	54.00	-13.57	AV	Vertical
2390.00	69.07	43.80	4.91	25.90	-12.99	56.08	74.00	-17.92	PK	Horizontal
2390.00	52.58	43.80	4.91	25.90	-12.99	39.59	54.00	-14.41	AV	Horizontal
2483.50	69.90	43.80	5.12	25.90	-12.78	57.12	74.00	-16.88	PK	Vertical
2483.50	53.06	43.80	5.12	25.90	-12.78	40.28	54.00	-13.72	AV	Vertical
2483.50	70.20	43.80	5.12	25.90	-12.78	57.42	74.00	-16.58	PK	Horizontal
2483.50	53.41	43.80	5.12	25.90	-12.78	40.63	54.00	-13.37	AV	Horizontal

Low measurement frequencies is range from 2310 to 2400 MHz, high measurement frequencies is range from 2483.5 to 2500 MHz.

Only show the worst point data of the emissions in the frequency 2310-2400 MHz and 2483.5-2500 MHz.

4. BANDWIDTH TEST

4.1 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,

b. Spectrum Setting : RBW= 30KHz, VBW≧RBW, Sweep time = Auto.

4.2 TEST SETUP

4.3 EUT OPERATION CONDITIONS

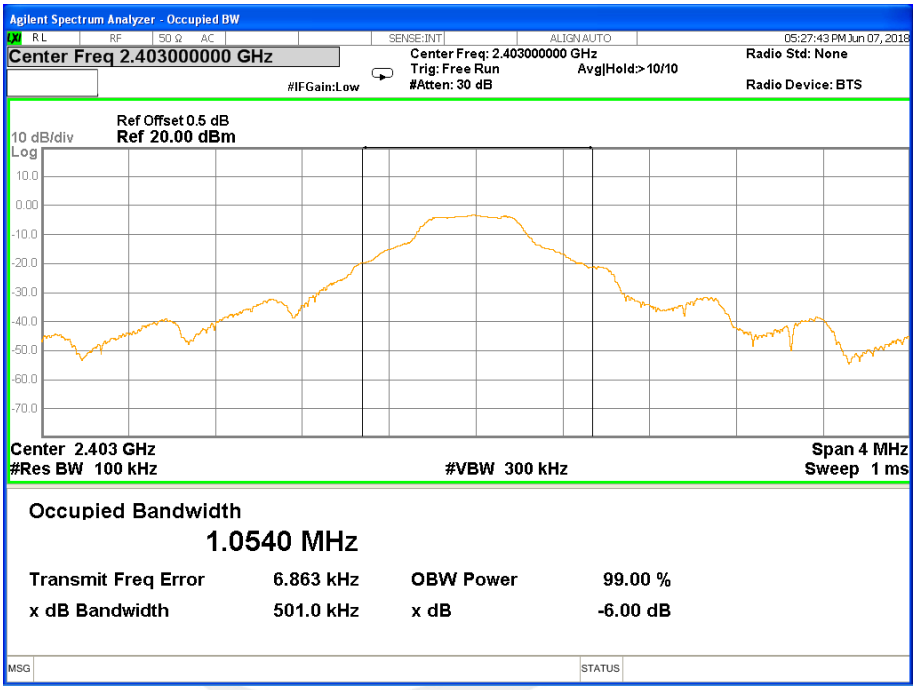
TX mode.

4.4 TEST RESULTS

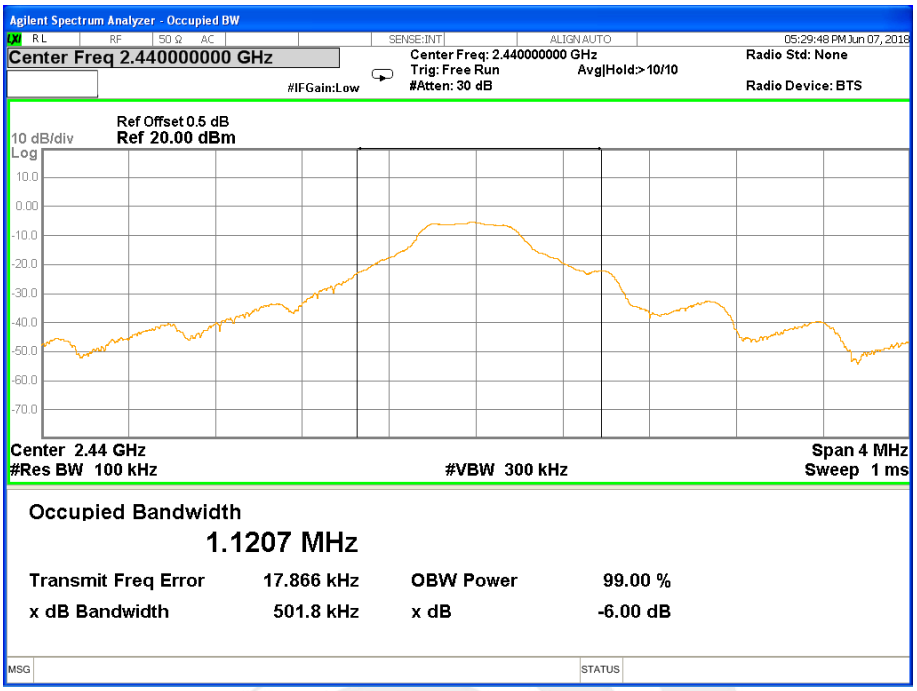
Temperature:	25 ℃	Relative Humidity:	50%
Test Voltage:	AC120V/60Hz		

Test Channel	Frequency (MHz)	6 dBc Bandwidth (MHz)	99% Bandwidth (MHz)
CH01	2403	0.501	1.0540
CH02	2440	0.502	1.1207
CH03	2480	0.502	1.1219

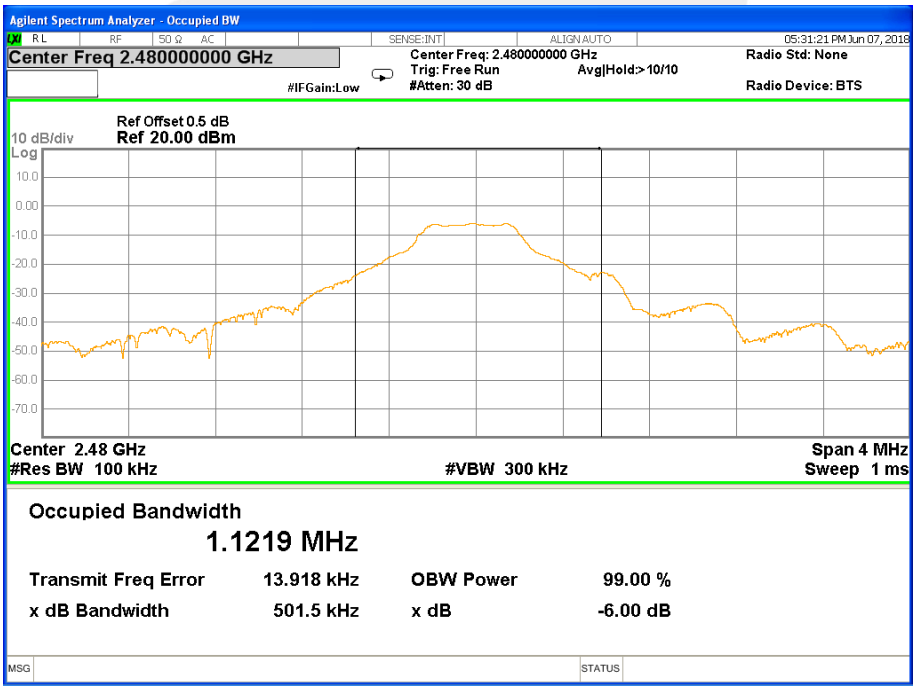
The Lowest Channel:2403MHz



The Middle Channel:2440MHz



The High Channel: 2480MHz



5. ANTENNA REQUIREMENT

5.1 STANDARD REQUIREMENT

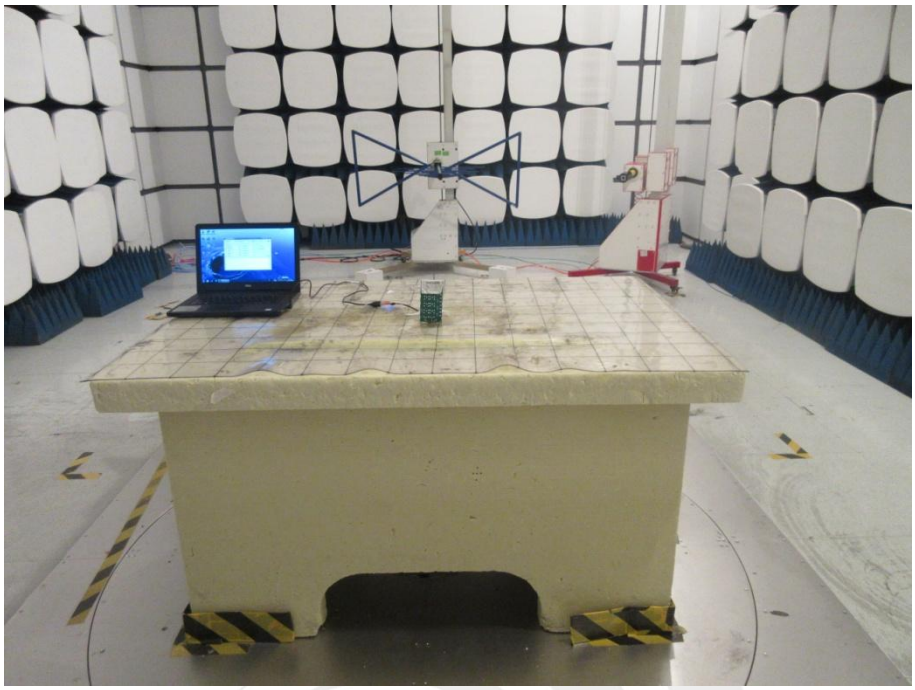
According to the FCC Part 15 Paragraph 15.203& RSS-Gen Issue 4, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

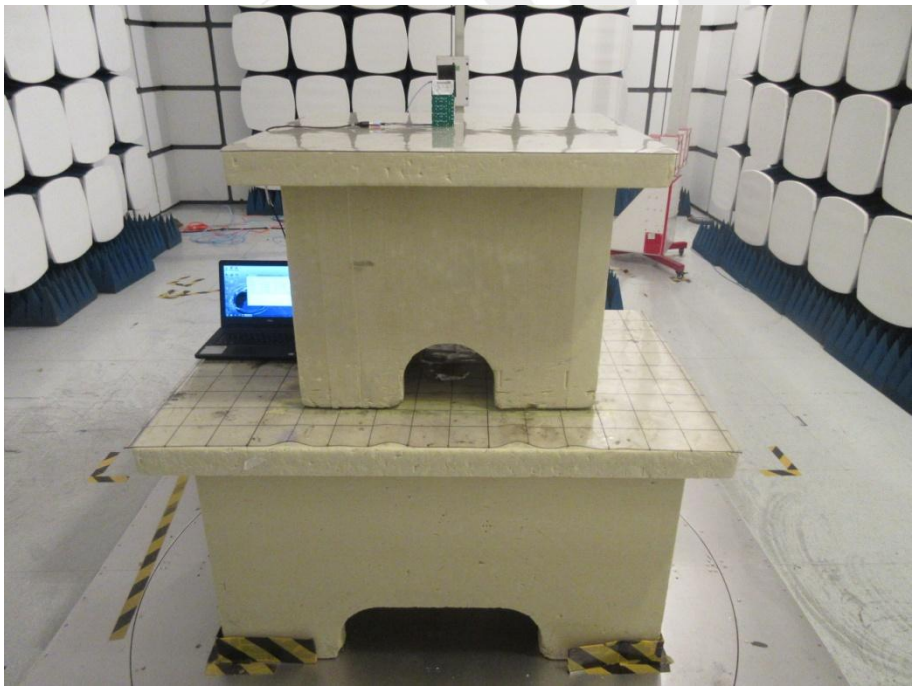
5.2 EUT ANTENNA

The EUT antenna is PCB Antenna.It conforms to the standard requirements.

APPENDIX- PHOTOS OF TEST SETUP

Radiated Measurement Photos





※※※※※END OF THE REPORT※※※※※