RADIO TESTREPORT

Report No: STS1605142F01

Issued for

Voxx Accessories Corp.

3502 Woodview Trace Suite 220 Indianapolis Indiana United states 46268

Product Name:	Projector Bluetooth Speaker
Brand Name:	project nursery
Model Name:	PNP100
Series Model:	N/A
FCC ID:	VIXPNP100
Test Standard:	FCC Part 15.247

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

Applicant'sname……	Voxx Accessories Corp.
Address ..... :	3502 Woodview Trace Suite 220 Indianapolis Indiana United states 46268
Manufacture's Name ..... :	Shenzhen Great Power Innovation And Technology Enterprise Co..Ltd
Address ..... :	Building E, Xinxulong Industrial Area, Kukeng Village, Guanlan Town, Longhua New District, Shenzhen,Guangdong 518110 China

Product description

Product name ..... :	Projector Bluetooth Speaker
Brand name..... :	project nursery
Model and/or type reference . :	PNP100
Standards..... :	FCC Part15.247
Test procedure..... :	ANSI C63.10-2013 and ANSI C63.4-2014

This device described above has been tested by STS, and the test results show that the equipment under test (EUT) is in compliancewith the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Date of Test.....:	
Date (s) of performance of tests .:	16 May 2016 ~25 May 2016
Date of Issue .....:	26 May 2016
Test Result .....:	Pass

Testing Engineer **:** (JinMing)

Technical Manager **:** (Vita Li)

Authorized Signatory **:** (Bovey Yang)

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Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	26 May 2016	STS1605142F01	ALL	Initial Issue

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:
(1)KDB DA 00-705
(2)KDB 558074 D01 DTS Meas Guidance v03r04

FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	--
15.247(a)(1)	Hopping Channel Separation	N/A	--
15.247(a)(1)&(b)(1)	Output Power	N/A	--
15.247(c)	Radiated Spurious Emission	PASS	--
15.247(d)	Conducted Spurious & Band Edge Emission	N/A	--
15.247(a)(iii)	Number of Hopping Frequency	N/A	--
15.247(a)(iii)	Dwell Time	N/A	--
15.247(a)(1)	Bandwidth	N/A	--
15.205	Band Edge Emission	PASS	--
15.203	Antenna Requirement	N/A	--

NOTE:
(1)" N/A" denotes test is not applicable in this Test Report
(2) all tests are according to ANSI C63.10-2013 and ANSI C63.4-2014

1.1 TEST FACTORY

Shenzhen STS Test Services Co., Ltd.
Add. : 1/F., Building B, Zhuoke Science Park, No.190,Chongqing Road,
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CNAS Registration No.: L7649;
FCC Registration No.: 842334; IC Registration No.: 12108A-1

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	±0.70dB
4	Spurious emissions,conducted	±1.19dB
5	All emissions,radiated(<30M)(9KHz-30MHz)	±2.45dB
6	All emissions,radiated(<1G) 30MHz-200MHz	±2.83dB
7	All emissions,radiated(<1G) 200MHz-1000MHz	±2.94dB
8	All emissions,radiated(>1G)	±3.03dB
9	Temperature	±0.5°C
10	Humidity	±2%

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Projector Bluetooth Speaker
Trade Name	project nursery
Model Name	PNP100
Series Model	N/A
Model Difference	N/A
Channel List	Please refer to the Note 2.
Bluetooth	Frequency:2402 – 2480 MHz Modulation: GFSK(1Mbps), π/4-DQPSK(2Mbps), 8-DPSK(3Mbps)
Adapter	Adapter: Input: AC100-240V, 200mA, 50/60 Hz Output: DC 5V, 1200mA
Hardware version number	N/A
Software version number	N/A
Connecting I/O Port(s)	Please refer to the User's Manual

Note:

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

2.

Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455		

3. Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	project nursery	PNP100	PCB Antenna	N/A	1	BT Antenna

The EUT antenna is PCB Antenna. no antenna other than that furnished by the responsible party shall be used with the device.

2.2 DESCRIPTION OF TEST MODES

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.

Pretest Mode	Description	Data Rate/Modulation
Mode 1	TX CH00	1Mbps/GFSK
Mode 2	TX CH39	1Mbps/GFSK
Mode 3	TX CH78	1Mbps/GFSK
Mode 4	TX CH00	2 Mbps/π/4-DQPSK
Mode 5	TX CH39	2 Mbps/π/4-DQPSK
Mode 6	TX CH78	2 Mbps/π/4-DQPSK
Mode7	TX CH00	3 Mbps/8-DPSK
Mode 8	TX CH39	3 Mbps/8-DPSK
Mode 9	TX CH78	3 Mbps/8-DPSK

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) for which the device is capable of operation.

ForACConductedEmission

Test Case	
AC Conducted Emission	Mode 10 : Keeping BT TX

2.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

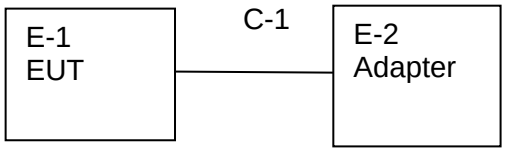
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final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

Test software Version	Test program: Bluetooth		
Frequency	2402 MHz	2441 MHz	2480 MHz
CSR (Power control software) Parameters(1/2/3Mbps)	Power class: 1 M rate:4:27 2 M rate:11:183 3 Mrate:15:339	Power class: 1 M rate:4:27 2 M rate:11:183 3 Mrate:15:339	Power class: 1 M rate:4:27 2 M rate:11:183 3 Mrate:15:339

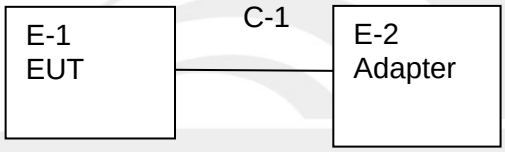
2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

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 of FHSS

Radiated Spurious EmissionTest



Conducted Emission Test



2.5 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-1	Projector Bluetooth Speaker	project nursery	PNP100	N/A	EUT
E-2	Adapter	N/A	TPKB00500120-A0	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note
C-1	USB Cable shielded line (Charging)	NO	100cm	/

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.

(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Spectrum Analyzer	Agilent	E4407B	MY50140340	2015.10.25	2016.10.24
Test Receiver	R&S	ESCI	101427	2015.10.25	2016.10.24
Bilog Antenna	TESEQ	CBL6111D	34678	2015.11.25	2016.11.24
Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1343	2016.03.06	2017.03.05
Horn Antenna	Schwarzbeck	BBHA 9170	9170-0741	2016.03.06	2017.03.05
50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2016.03.06	2017.03.05
PreAmplifier	Agilent	8449B	60538	2015.10.25	2016.10.24
Loop Antenna	ARA	PLA-1030/B	1029	2015.06.08	2016.06.07
Preamplifier	Agilent	8449B	60538	2015.11.05	2016.11.05
Low frequency cable	EM	R01	N/A	N/A	N/A
High frequency cable	SCHWARZBECK	AK9515H	SN-96286/96287	N/A	N/A

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
EMI Test Receiver	R&S	ESPI	102086	2015.11.20	2016.11.19
LISN	R&S	ENV216	101242	2015.10.25	2016.10.24
LISN	EMCO	3810/2NM	000-23625	2015.10.25	2016.10.24
Conduction Cable	EM	C01	N/A	N/A	N/A

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
USB RF power sensor	DARE	RPR3006W	15I00041SNO03	2015.10.25	2016.10.24
Spectrum Analyzer	Agilent	E4407B	MY50140340	2015.10.25	2016.10.24
Signal Analyzer	Agilent	N9020A	MY49100060	2015.11.18	2016.11.17

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 15.107(a)&207(a) limit in the table below has to be followed.

FREQUENCY (MHz)	Conducted Emissionlimit (dBuV)	
	Quasi-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

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.

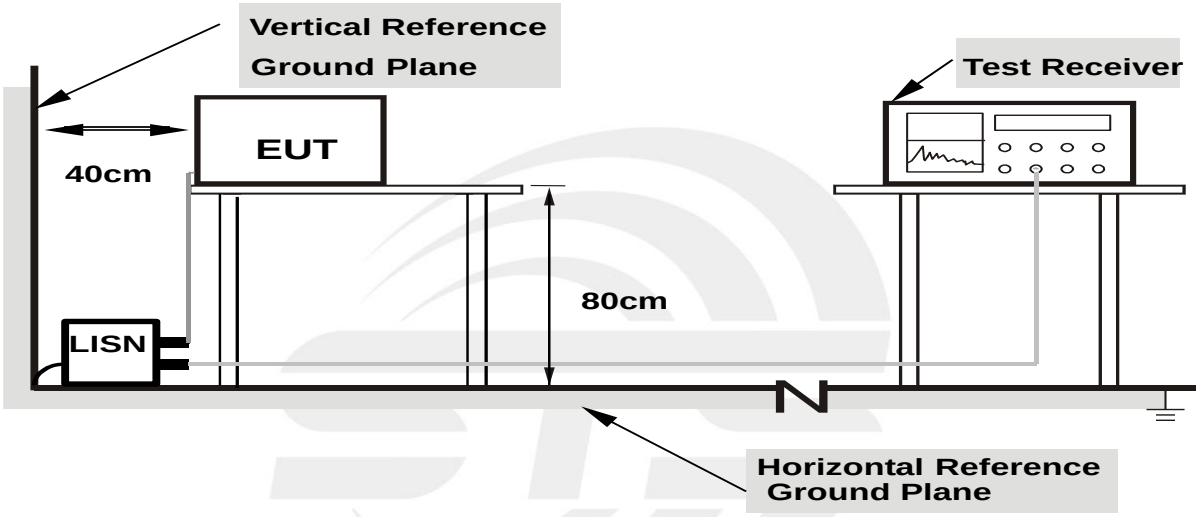
The following table is the setting of the receiver

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 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.
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

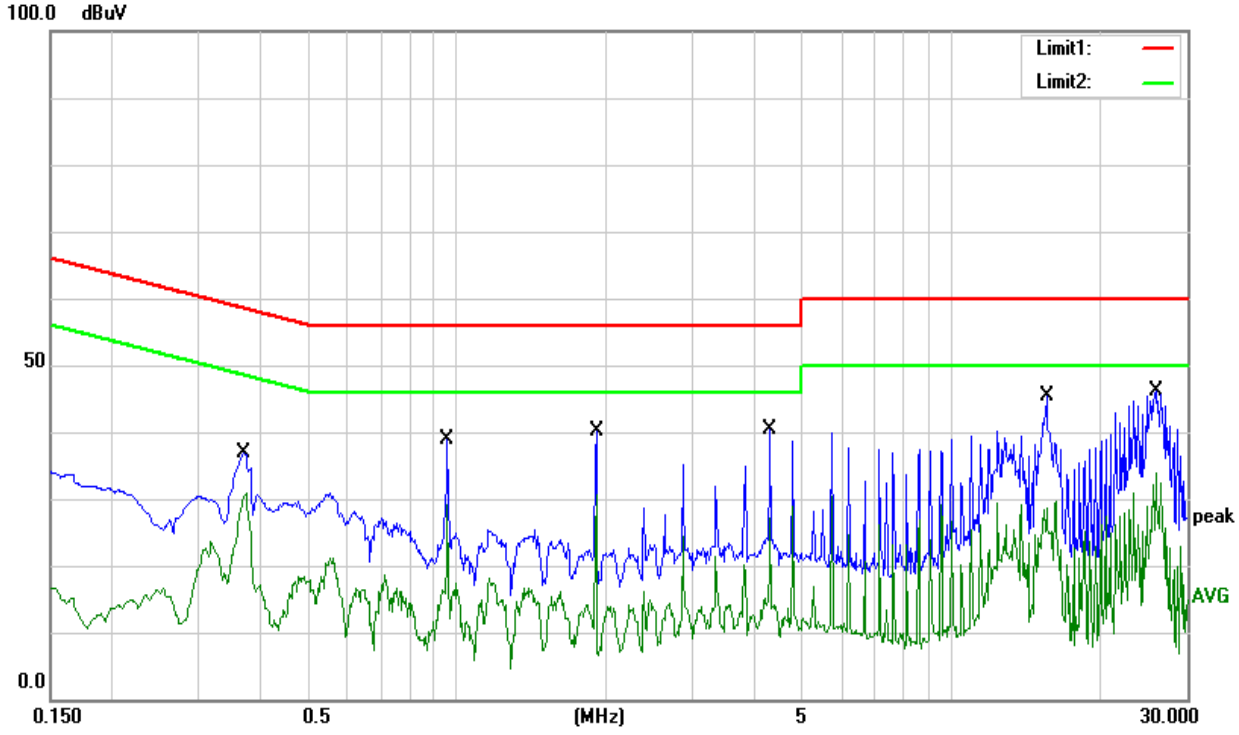
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.5 TEST RESULTS

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase:	L
Test Mode:	Mode 10		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.3700	25.14	9.35	34.49	58.50	-24.01	QP
0.3700	18.69	9.35	28.04	48.50	-20.46	AVG
0.9540	26.78	9.17	35.95	56.00	-20.05	QP
0.9540	16.99	9.17	26.16	46.00	-19.84	AVG
1.9100	27.76	9.24	37.00	56.00	-19.00	QP
1.9100	20.31	9.24	29.55	46.00	-16.45	AVG
4.2980	28.16	9.27	37.43	56.00	-18.57	QP
4.2980	16.59	9.27	25.86	46.00	-20.14	AVG
15.6180	32.88	9.50	42.38	60.00	-17.62	QP
15.6180	17.14	9.50	26.64	50.00	-23.36	AVG
25.8780	33.69	9.75	43.44	60.00	-16.56	QP
25.8780	22.05	9.75	31.80	50.00	-18.20	AVG

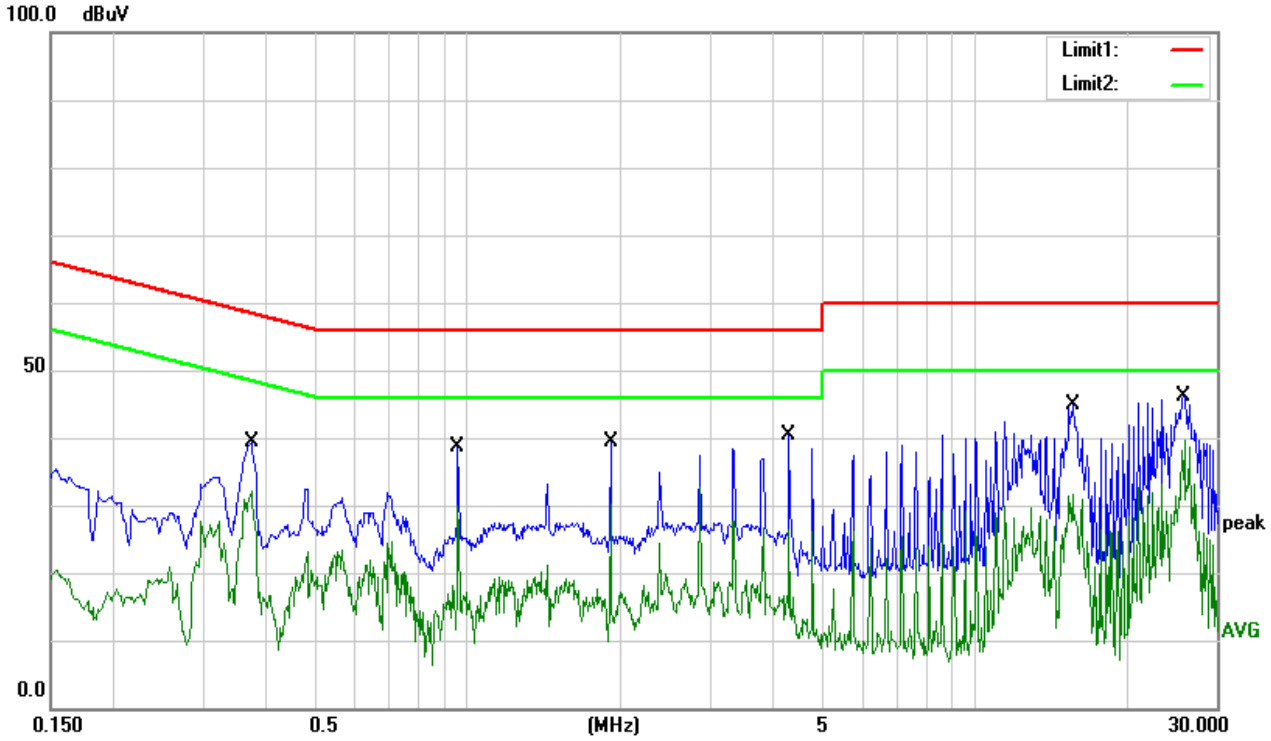
Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase:	N
Test Mode:	Mode 10		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.3740	27.32	9.21	36.53	58.41	-21.88	QP
0.3740	20.34	9.21	29.55	48.41	-18.86	AVG
0.9580	25.61	9.25	34.86	56.00	-21.14	QP
0.9580	18.60	9.25	27.85	46.00	-18.15	AVG
1.9100	27.52	9.25	36.77	56.00	-19.23	QP
1.9100	18.42	9.25	27.67	46.00	-18.33	AVG
4.3020	27.46	9.27	36.73	56.00	-19.27	QP
4.3020	15.47	9.27	24.74	46.00	-21.26	AVG
15.6900	30.60	9.48	40.08	60.00	-19.92	QP
15.6900	20.05	9.48	29.53	50.00	-20.47	AVG
25.8140	32.74	9.93	42.67	60.00	-17.33	QP
25.8140	26.90	9.93	36.83	50.00	-13.17	AVG

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



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS

in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on Part15.205(a)&209(a) limit in the table below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (0.009MHz - 1000MHz)

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
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (1GHz-25 GHz)

FREQUENCY (MHz)	(dBuV/m) (at 3M)	
	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).

For Radiated Emission

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10^{th} carrier hamonic(Peak/AV)
RB / VB (emission in restricted band)	1MHz / 1MHz, AV=1 MHz /10 Hz

For Band edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 2300 to 2430 MHz Upper Band Edge: 2450 to 2500 MHz
RB / VB (emission in restricted band)	1MHz / 1MHz, AV=1 MHz /10 Hz

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

3.2.2 TEST PROCEDURE

a. The measuring distance of at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters(above 1GHz is 1.5 m) above the ground at a 3 meter anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment shall be 0.8 m(above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. horizontal and vertical polarizations of the antenna are set to make the measurement.
d. 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 QuasiPeak detector mode re-measured.
e. 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.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

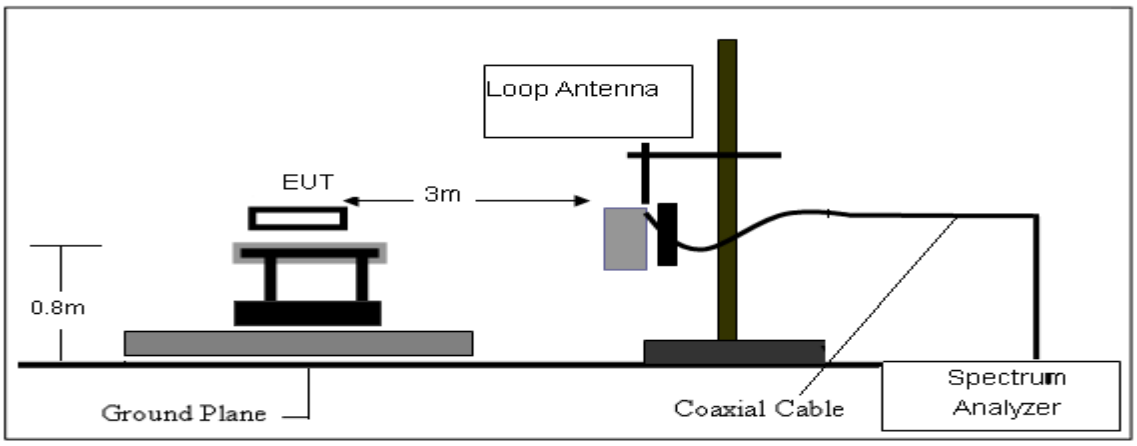
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

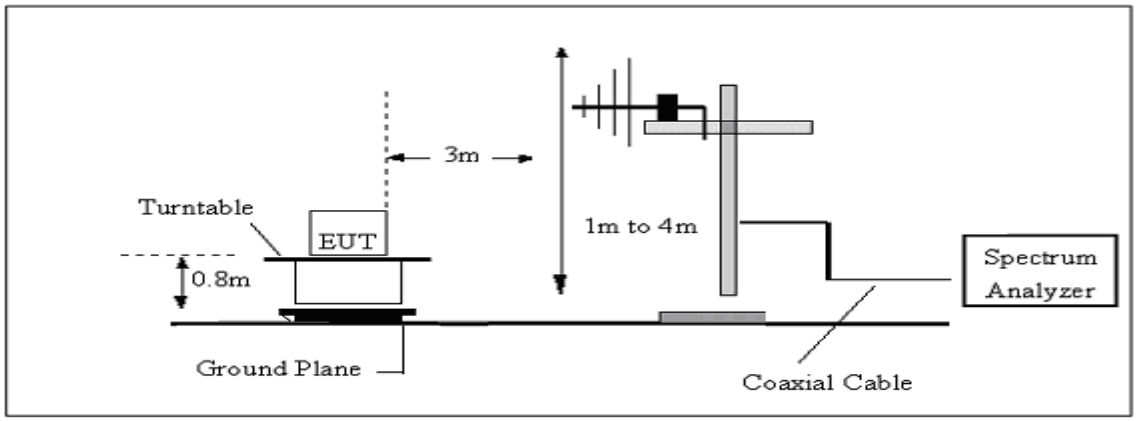
No deviation

3.2.4 TESTSETUP

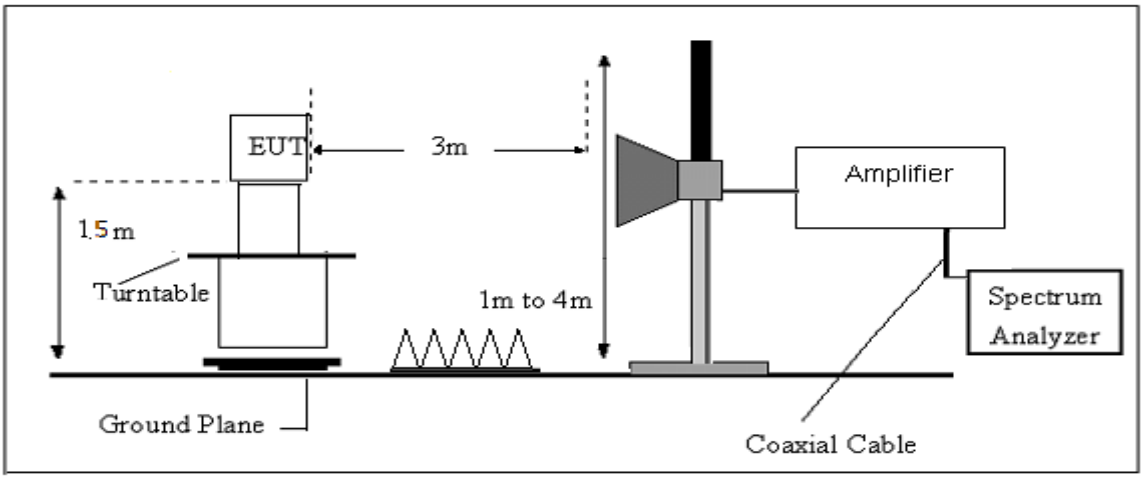
（A）Radiated Emission Test-Up Frequency Below 30MHz



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



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



3.2.5 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.

3.2.6 TEST RESULTS

(9KHz-30MHz)

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Test Mode:	TX Mode
Test Voltage:	AC 120V/60Hz		

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

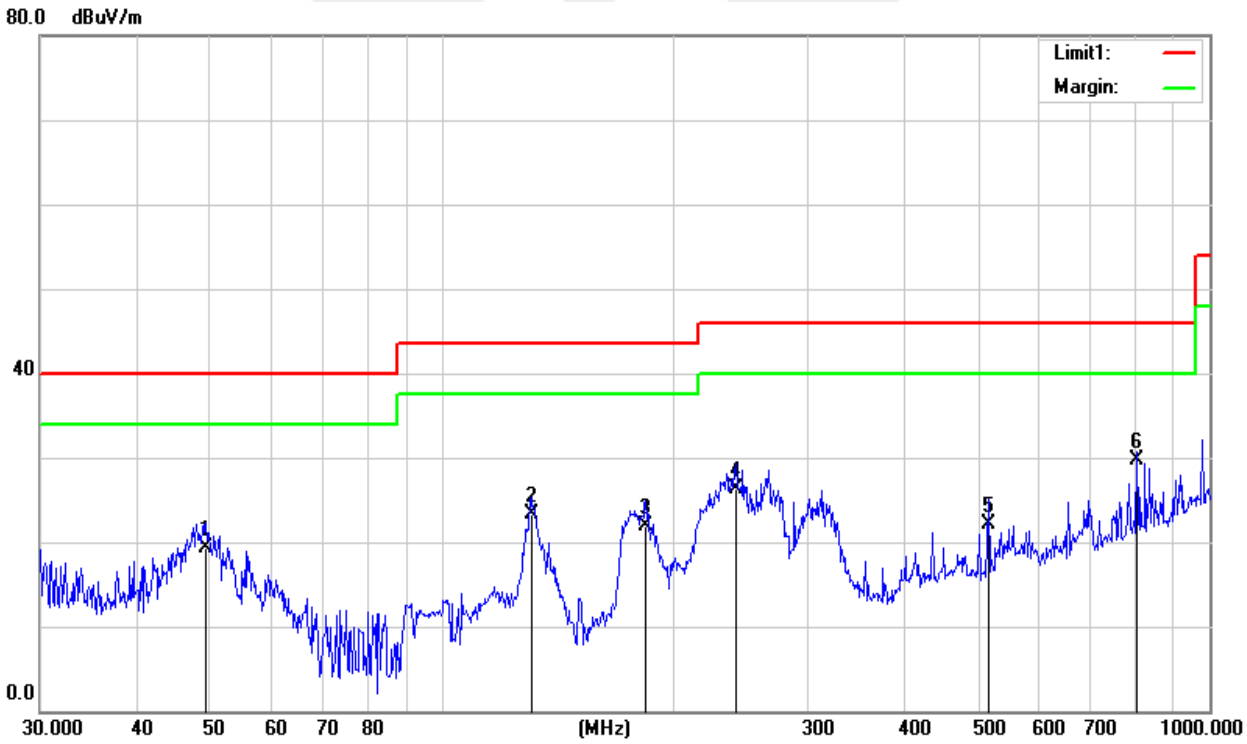
Note:
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =40 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

(30MHz-1000MHz)

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase:	Horizontal
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 1/2/3/4/5/6/7/8/9 (Mode 2-1M worst mode)

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
49.435	40.51	-21.15	19.36	40.00	-20.64	QP
130.862	40.85	-17.55	23.30	43.50	-20.20	QP
184.414	41.68	-19.81	21.87	43.50	-21.63	QP
241.676	43.80	-17.52	26.28	46.00	-19.72	QP
515.437	31.03	-8.86	22.17	46.00	-23.83	QP
804.602	33.26	-3.49	29.77	46.00	-16.23	QP

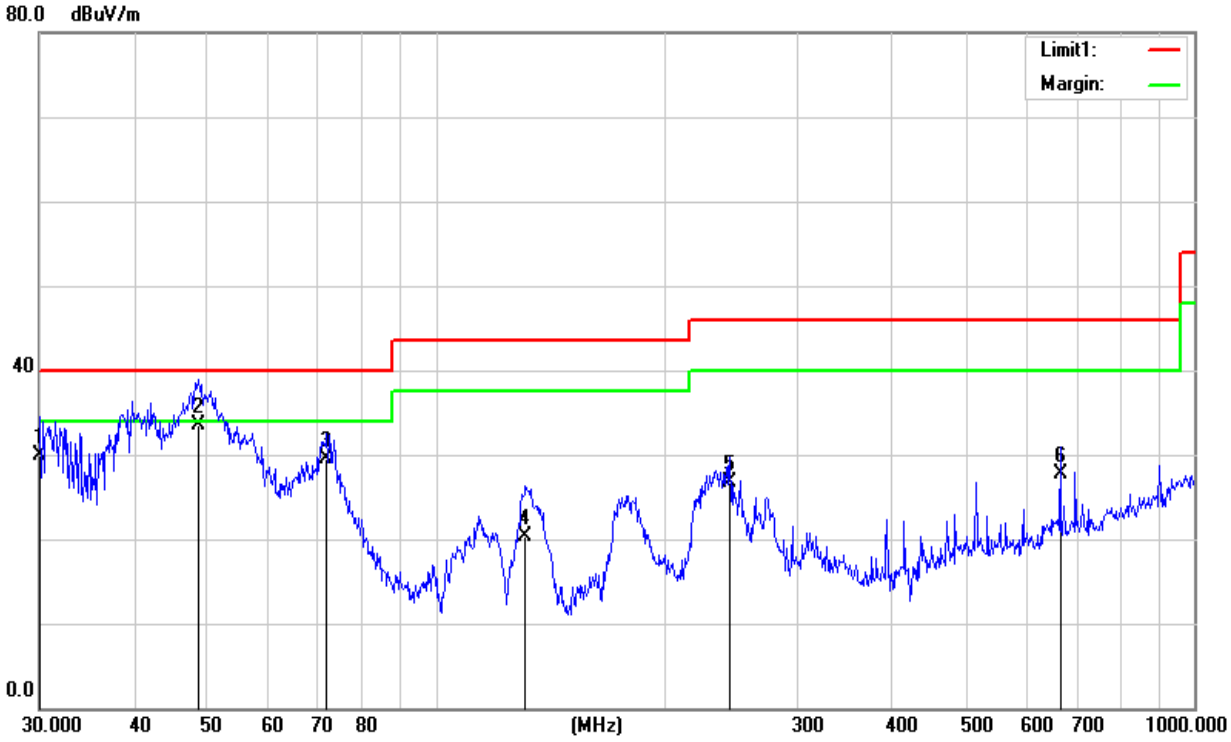
Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase:	Vertical
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 1/2/3/4/5/6/7/8/9 (Mode 2-1M worst mode)

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
30.000	41.15	-11.19	29.96	40.00	-10.04	QP
48.670	54.21	-20.80	33.41	40.00	-6.59	QP
71.544	53.40	-23.84	29.56	40.00	-10.44	QP
131.198	37.91	-17.55	20.36	43.50	-23.14	QP
244.336	43.87	-17.15	26.72	46.00	-19.28	QP
665.824	33.91	-6.11	27.80	46.00	-18.20	QP

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



(1GHz~25GHz)

GFSK Low Channel

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
3265.23	44.22	-9.80	34.42	74.00	-39.58	PK	Vertical
3265.23	34.20	-9.80	24.40	54.00	-29.60	AV	Vertical
3265.36	44.17	-9.80	34.37	74.00	-39.63	PK	Horizontal
3265.36	34.20	-9.80	24.40	54.00	-29.60	AV	Horizontal
3334.91	41.87	-9.75	32.12	74.00	-41.88	PK	Vertical
3334.91	32.62	-9.75	22.87	54.00	-31.13	AV	Vertical
3334.89	41.93	-9.75	32.18	74.00	-41.82	PK	Horizontal
3334.89	26.95	-9.75	17.20	54.00	-36.80	AV	Horizontal
3349.97	41.64	-9.75	31.89	74.00	-42.11	PK	Vertical
3349.97	31.74	-9.75	21.99	54.00	-32.01	AV	Vertical
3350.06	41.69	-9.75	31.94	74.00	-42.06	PK	Horizontal
3350.06	31.71	-9.75	21.96	54.00	-32.04	AV	Horizontal
4000.23	39.07	-6.60	32.47	74.00	-41.53	PK	Vertical
4000.23	29.13	-6.60	22.53	54.00	-31.47	AV	Vertical
4000.30	39.12	-6.60	32.52	74.00	-41.48	PK	Horizontal
4000.30	29.06	-6.60	22.46	54.00	-31.54	AV	Horizontal
4803.96	38.5	-3.56	34.94	74.00	-39.06	PK	Vertical
4803.96	28.48	-3.56	24.92	54.00	-29.08	AV	Vertical
4805.02	38.48	-3.56	34.92	74.00	-39.08	PK	Horizontal
4805.02	28.46	-3.56	24.90	54.00	-29.10	AV	Horizontal
5360.29	36.52	-2.34	34.18	74.00	-39.82	PK	Vertical
5360.29	27.49	-2.34	25.15	54.00	-28.85	AV	Vertical
5360.21	36.42	-2.34	34.08	74.00	-39.92	PK	Horizontal
5360.21	27.39	-2.34	25.05	54.00	-28.95	AV	Horizontal
7206.42	36.87	3.40	39.27	74.00	-33.73	PK	Vertical
7206.42	26.71	3.40	30.11	54.00	-23.89	AV	Vertical
7206.40	36.92	3.40	40.32	74.00	-33.68	PK	Horizontal
7206.40	26.84	3.40	30.24	54.00	-23.76	AV	Horizontal
8124.49	34.28	4.80	39.08	74.00	-34.92	PK	Vertical
8124.49	24.33	4.80	29.13	54.00	-24.87	AV	Vertical
8124.46	34.37	4.80	39.17	74.00	-34.83	PK	Horizontal
8124.46	24.36	4.80	29.16	54.00	-24.84	AV	Horizontal
9105.20	34.12	5.00	39.12	74.00	-34.88	PK	Vertical

9105.20	24.17	5.00	29.17	54.00	-24.83	AV	Vertical
9105.52	34.21	5.00	39.21	74.00	-34.79	PK	Horizontal
9105.52	24.12	5.00	29.12	54.00	-24.88	AV	Horizontal
11036.38	31.21	10.20	41.41	74.00	-32.59	PK	Vertical
11036.38	21.15	10.20	31.35	54.00	-22.65	AV	Vertical
11036.68	31.22	10.20	41.42	74.00	-32.58	PK	Horizontal
11036.68	21.17	10.20	31.37	54.00	-22.63	AV	Horizontal
13299.80	31.02	12.20	43.22	74.00	-30.78	PK	Vertical
13299.80	21.06	12.20	33.26	54.00	-20.74	AV	Vertical
13299.90	30.99	12.20	43.19	74.00	-30.81	PK	Horizontal
13299.90	19.98	12.20	32.18	54.00	-21.82	AV	Horizontal
14480.25	30.82	13.40	44.22	74.00	-29.78	PK	Vertical
14480.25	19.95	13.40	33.35	54.00	-20.65	AV	Vertical
14480.31	30.88	13.40	44.28	74.00	-29.72	PK	Horizontal
14480.31	19.99	13.40	33.39	54.00	-20.61	AV	Horizontal
16000.37	30.14	12.40	42.54	74.00	-31.46	PK	Vertical
16000.37	20.04	12.40	32.44	54.00	-21.56	AV	Vertical
16000.21	30.06	12.40	42.46	74.00	-31.54	PK	Horizontal
16000.21	20.34	12.40	32.74	54.00	-21.26	AV	Horizontal
17998.34	26.15	23.10	49.25	74.00	-24.75	PK	Vertical
17998.34	16.19	23.10	39.29	54.00	-14.71	AV	Vertical
17998.26	26.21	23.10	49.31	74.00	-24.69	PK	Horizontal
17998.26	16.21	23.10	39.31	54.00	-14.69	AV	Horizontal

GFSK Mid Channel

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
3265.33	44.20	-9.80	34.40	74.00	-39.60	PK	Vertical
3265.33	34.18	-9.80	24.38	54.00	-29.62	AV	Vertical
3265.33	44.16	-9.80	34.36	74.00	-39.64	PK	Horizontal
3265.33	34.18	-9.80	24.38	54.00	-29.62	AV	Horizontal
3334.96	41.93	-9.75	32.18	74.00	-41.82	PK	Vertical
3334.96	32.98	-9.75	23.23	54.00	-30.77	AV	Vertical
3334.86	41.95	-9.75	32.20	74.00	-41.80	PK	Horizontal
3334.86	32.93	-9.75	23.18	54.00	-30.82	AV	Horizontal
3349.92	41.63	-9.75	31.88	74.00	-42.12	PK	Vertical
3349.92	32.73	-9.75	22.98	54.00	-31.02	AV	Vertical
3349.93	41.67	-9.75	31.92	74.00	-42.08	PK	Horizontal
3349.93	32.68	-9.75	22.93	54.00	-31.07	AV	Horizontal
4000.29	39.00	-6.60	32.40	74.00	-41.60	PK	Vertical
4000.29	29.09	-6.60	22.49	54.00	-31.51	AV	Vertical
4000.23	39.13	-6.60	32.53	74.00	-41.47	PK	Horizontal
4000.23	29.03	-6.60	22.43	54.00	-31.57	AV	Horizontal
4883.00	38.52	-3.56	34.96	74.00	-39.04	PK	Vertical
4883.00	28.47	-3.56	24.91	54.00	-29.09	AV	Vertical
4883.01	38.45	-3.56	34.89	74.00	-39.11	PK	Horizontal
4883.01	28.45	-3.56	24.89	54.00	-29.11	AV	Horizontal
5360.27	37.36	-2.34	35.02	74.00	-38.98	PK	Vertical
5360.27	27.39	-2.34	25.05	54.00	-28.95	AV	Vertical
5360.27	37.35	-2.34	35.01	74.00	-38.99	PK	Horizontal
5360.27	27.37	-2.34	25.03	54.00	-28.97	AV	Horizontal
7323.30	36.82	3.40	40.22	74.00	-33.78	PK	Vertical
7323.30	27.88	3.40	31.28	54.00	-22.72	AV	Vertical
7323.40	36.89	3.40	40.29	74.00	-33.71	PK	Horizontal
7323.40	26.91	3.40	30.31	54.00	-23.69	AV	Horizontal
8124.46	35.35	4.80	40.15	74.00	-33.85	PK	Vertical
8124.46	25.26	4.80	30.06	54.00	-23.94	AV	Vertical
8124.47	35.34	4.80	40.14	74.00	-33.86	PK	Horizontal
8124.47	25.29	4.80	30.09	54.00	-23.91	AV	Horizontal
9105.20	34.18	5.00	39.18	74.00	-34.82	PK	Vertical
9105.20	24.20	5.00	29.20	54.00	-24.80	AV	Vertical

9105.16	34.12	5.00	39.12	74.00	-34.88	PK	Horizontal
9105.16	24.16	5.00	29.16	54.00	-24.84	AV	Horizontal
11036.44	33.11	10.20	43.31	74.00	-30.69	PK	Vertical
11036.44	23.04	10.20	33.24	54.00	-20.76	AV	Vertical
11036.41	33.08	10.20	43.28	74.00	-30.72	PK	Horizontal
11036.41	23.10	10.20	33.30	54.00	-20.70	AV	Horizontal
13299.94	31.97	12.20	44.17	74.00	-29.83	PK	Vertical
13299.94	24.04	12.20	36.24	54.00	-17.76	AV	Vertical
13299.90	31.85	12.20	44.05	74.00	-29.95	Pk	Horizontal
13299.90	23.95	12.20	36.15	54.00	-17.85	AV	Horizontal
14480.33	30.84	13.40	44.24	74.00	-29.76	PK	Vertical
14480.33	19.83	13.40	33.23	54.00	-20.77	AV	Vertical
14480.27	30.86	13.40	44.26	74.00	-29.74	PK	Horizontal
14480.27	19.86	13.40	33.26	54.00	-20.74	AV	Horizontal
16000.32	30.08	12.40	42.48	74.00	-31.52	PK	Vertical
16000.32	19.98	12.40	32.38	54.00	-21.62	AV	Vertical
16000.20	29.96	12.40	42.36	74.00	-31.64	PK	Horizontal
16000.20	19.94	12.40	32.34	54.00	-21.66	AV	Horizontal
17998.47	27.09	23.10	50.19	74.00	-23.81	PK	Vertical
17998.47	17.18	23.10	40.28	54.00	-13.72	AV	Vertical
17998.24	27.11	23.10	50.21	74.00	-23.79	PK	Horizontal
17998.24	17.23	23.10	40.33	54.00	-13.67	AV	Horizontal

GFSK High Channel

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
3265.17	44.09	-9.80	34.29	74.00	-39.71	PK	Vertical
3265.17	34.08	-9.80	24.28	54.00	-29.72	AV	Vertical
3265.17	43.97	-9.80	34.17	74.00	-39.83	PK	Horizontal
3265.17	34.00	-9.80	24.20	54.00	-29.80	AV	Horizontal
3334.69	41.81	-9.75	32.06	74.00	-41.94	PK	Vertical
3334.69	31.79	-9.75	22.04	54.00	-31.96	AV	Vertical
3334.73	41.72	-9.75	31.97	74.00	-42.03	PK	Horizontal
3334.73	31.79	-9.75	22.04	54.00	-31.96	AV	Horizontal
3349.76	41.57	-9.75	31.82	74.00	-42.18	PK	Vertical
3349.76	31.55	-9.75	21.80	54.00	-32.20	AV	Vertical
3349.80	41.62	-9.75	31.87	74.00	-42.13	PK	Horizontal
3349.80	31.46	-9.75	21.71	54.00	-32.29	AV	Horizontal
4000.18	38.89	-6.60	32.29	74.00	-41.71	PK	Vertical
4000.18	28.94	-6.60	22.34	54.00	-31.66	AV	Vertical
4000.08	39.01	-6.60	32.41	74.00	-41.59	PK	Horizontal
4000.08	28.90	-6.60	22.30	54.00	-31.70	AV	Horizontal
4960.87	38.34	-3.56	34.78	74.00	-39.22	PK	Vertical
4960.87	28.31	-3.56	24.75	54.00	-29.25	AV	Vertical
4960.83	38.38	-3.56	34.82	74.00	-39.18	PK	Horizontal
4960.83	28.32	-3.56	24.76	54.00	-29.24	AV	Horizontal
5360.13	37.26	-2.34	34.92	74.00	-39.08	PK	Vertical
5360.13	27.28	-2.34	24.94	54.00	-29.06	AV	Vertical
5360.11	37.29	-2.34	34.95	74.00	-39.05	PK	Horizontal
5360.11	27.29	-2.34	24.95	54.00	-29.05	AV	Horizontal
7440.17	36.76	3.40	40.16	74.00	-33.84	PK	Vertical
7440.17	26.62	3.40	30.02	54.00	-23.98	AV	Vertical
7440.23	36.74	3.40	40.14	74.00	-33.86	PK	Horizontal
7440.23	26.65	3.40	30.05	54.00	-23.95	AV	Horizontal
8124.31	35.25	4.80	40.05	74.00	-33.95	PK	Vertical
8124.31	25.19	4.80	29.99	54.00	-24.01	AV	Vertical
8124.43	35.12	4.80	39.92	74.00	-34.08	PK	Horizontal
8124.43	25.15	4.80	29.95	54.00	-24.05	AV	Horizontal
9105.06	33.95	5.00	38.95	74.00	-35.05	PK	Vertical
9105.06	23.92	5.00	28.92	54.00	-25.08	AV	Vertical

9105.00	34.04	5.00	39.04	74.00	-34.96	PK	Horizontal
9105.00	23.92	5.00	28.92	54.00	-25.08	AV	Horizontal
11036.25	33.02	10.20	43.22	74.00	-30.78	PK	Vertical
11036.25	23.01	10.20	33.21	54.00	-20.79	AV	Vertical
11036.24	33.04	10.20	43.24	74.00	-30.76	PK	Horizontal
11036.24	22.91	10.20	33.11	54.00	-20.89	AV	Horizontal
13299.78	31.79	12.20	43.99	74.00	-30.01	PK	Vertical
13299.78	21.84	12.20	34.04	54.00	-19.96	AV	Vertical
13299.78	31.77	12.20	43.97	74.00	-30.03	Pk	Horizontal
13299.78	21.79	12.20	33.99	54.00	-20.01	AV	Horizontal
14480.11	30.74	13.40	44.14	74.00	-29.86	PK	Vertical
14480.11	20.71	13.40	34.11	54.00	-19.89	AV	Vertical
14480.08	30.70	13.40	44.10	74.00	-29.90	PK	Horizontal
14480.08	20.74	13.40	34.14	54.00	-19.86	AV	Horizontal
16000.14	29.94	12.40	42.34	74.00	-31.66	PK	Vertical
16000.14	19.84	12.40	32.24	54.00	-21.76	AV	Vertical
16000.12	29.83	12.40	42.23	74.00	-31.77	PK	Horizontal
16000.12	19.77	12.40	32.17	54.00	-21.83	AV	Horizontal
17998.25	27.00	23.10	50.10	74.00	-23.90	PK	Vertical
17998.25	17.05	23.10	40.15	54.00	-13.85	AV	Vertical
17998.13	27.02	23.10	50.12	74.00	-23.88	PK	Horizontal
17998.13	17.02	23.10	40.12	54.00	-13.88	AV	Horizontal

Note:

1) Scan with GFSK, π/4-DQPSK,8DPSK,the worst case is GFSK Mode
2) Factor = Antenna Factor + Cable Loss – Pre-amplifier.

   Emission Level = Meter Reading + Factor

   Margin = Limit - Emission Leve
3) Above did not show the frequency of the emission peaks form is at least 20 decibel limits, transmitting frequency noise mainly comes from the environment.

Band edge

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
GFSK							
2400.0	69.24	-12.99	56.25	74	-17.75	PK	Vertical
2400.0	54.93	-12.99	41.94	54	-12.06	AV	Vertical
2400.0	69.93	-12.99	56.94	74	-17.06	PK	Horizontal
2400.0	53.81	-12.99	40.82	54	-13.18	AV	Horizontal
2483.5	70.85	-12.78	58.07	74	-15.93	PK	Vertical
2483.5	53.87	-12.78	41.09	54	-12.91	AV	Vertical
2483.5	71.08	-12.78	58.30	74	-15.70	PK	Horizontal
2483.5	54.06	-12.78	41.28	54	-12.72	AV	Horizontal
π/4-DQPSK							
2400.0	68.31	-12.99	55.32	74	-18.68	PK	Vertical
2400.0	51.33	-12.99	38.34	54	-15.66	AV	Vertical
2400.0	66.93	-12.99	53.94	74	-20.06	PK	Horizontal
2400.0	51.92	-12.99	38.93	54	-15.07	AV	Horizontal
2483.5	68.25	-12.78	55.47	74	-18.53	PK	Vertical
2483.5	53.04	-12.78	40.26	54	-13.74	AV	Vertical
2483.5	68.06	-12.78	55.28	74	-18.72	PK	Horizontal
2483.5	51.39	-12.78	38.61	54	-15.39	AV	Horizontal
8DPSK							
2400.0	68.33	-12.99	55.34	74	-18.66	PK	Vertical
2400.0	51.28	-12.99	38.29	54	-15.71	AV	Vertical
2400.0	66.98	-12.99	53.99	74	-20.01	PK	Horizontal
2400.0	51.90	-12.99	38.91	54	-15.09	AV	Horizontal
2483.5	68.26	-12.78	55.48	74	-18.52	PK	Vertical
2483.5	53.03	-12.78	40.25	54	-13.75	AV	Vertical
2483.5	68.05	-12.78	55.27	74	-18.73	PK	Horizontal
2483.5	51.35	-12.78	38.57	54	-15.43	AV	Horizontal

Low measurement frequencies is range from 2310 to 2400 MHz, high measurement frequencies is range from 2483.5 to 2500 MHz.
Only showthe worst point data of the emissions in the frequency 2310-2400 MHz and 2483.5-2500 MHz.

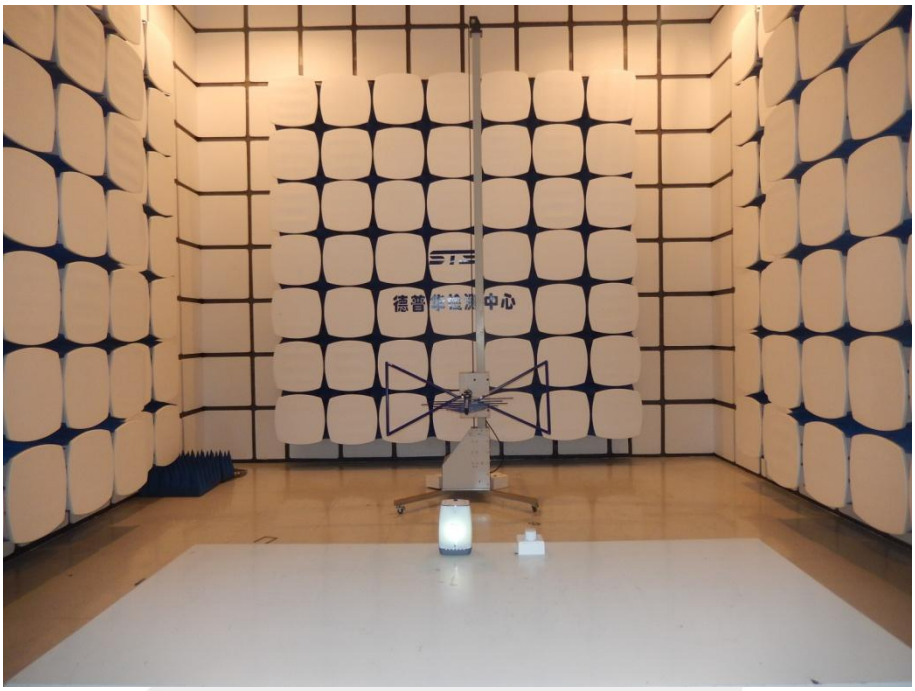
Hopping(Band edge)

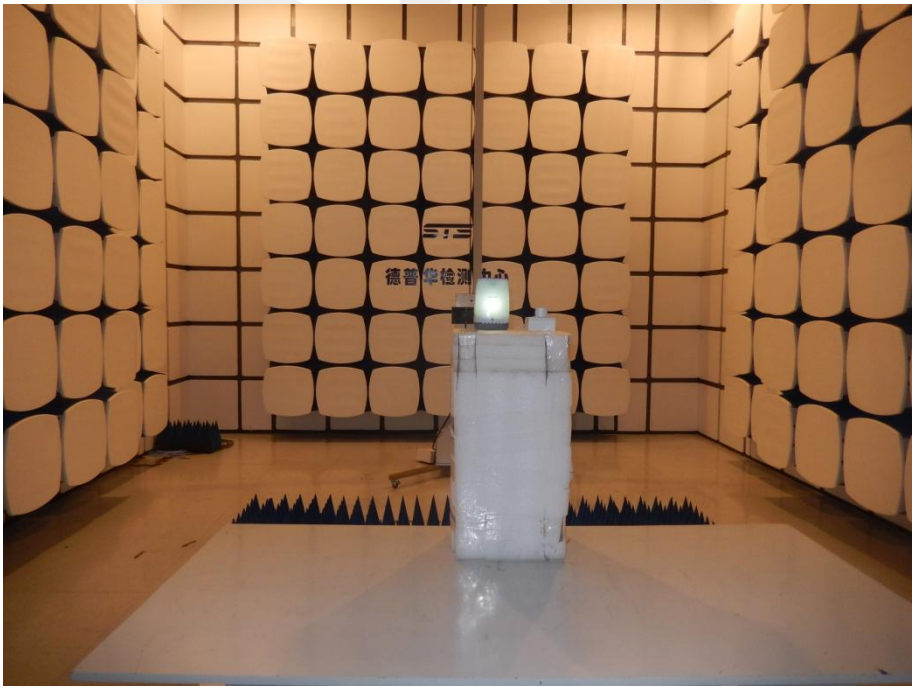
Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
GFSK							
2400.0	68.00	-12.99	55.01	74	-18.99	PK	Vertical
2400.0	53.91	-12.99	40.92	54	-13.08	AV	Vertical
2400.0	67.12	-12.99	54.13	74	-19.87	PK	Horizontal
2400.0	53.92	-12.99	40.93	54	-13.07	AV	Horizontal
2483.5	66.65	-12.78	53.87	74	-20.13	PK	Vertical
2483.5	52.99	-12.78	40.21	54	-13.79	AV	Vertical
2483.5	67.89	-12.78	55.11	74	-18.89	PK	Horizontal
2483.5	53.84	-12.78	41.06	54	-12.94	AV	Horizontal
π/4-DQPSK							
2400.0	66.82	-12.99	53.83	74	-20.17	PK	Vertical
2400.0	54.98	-12.99	41.99	54	-12.01	AV	Vertical
2400.0	66.77	-12.99	53.78	74	-20.22	PK	Horizontal
2400.0	52.81	-12.99	39.82	54	-14.18	AV	Horizontal
2483.5	66.84	-12.78	54.06	74	-19.94	PK	Vertical
2483.5	52.92	-12.78	40.14	54	-13.86	AV	Vertical
2483.5	66.89	-12.78	54.11	74	-19.89	PK	Horizontal
2483.5	53.94	-12.78	41.16	54	-12.84	AV	Horizontal
8DPSK							
2400.0	66.87	-12.99	53.88	74	-20.12	PK	Vertical
2400.0	53.91	-12.99	40.92	54	-13.08	AV	Vertical
2400.0	66.78	-12.99	53.79	74	-20.21	PK	Horizontal
2400.0	53.01	-12.99	41.02	54	-13.98	AV	Horizontal
2483.5	66.79	-12.78	54.01	74	-19.99	PK	Vertical
2483.5	53.02	-12.78	40.24	54	-13.76	AV	Vertical
2483.5	66.78	-12.78	54.00	74	-20.00	PK	Horizontal
2483.5	52.97	-12.78	40.19	54	-13.81	AV	Horizontal

Low measurement frequencies is range from 2310 to 2400 MHz,high measurement frequencies is range from 2483.5 to 2500 MHz.
Only showthe worst point data of the emissions in the frequency 2310-2400 MHz and 2483.5-2500 MHz.

APPENDIX-PHOTOS OF TEST SETUP

Radiated Measurement Photos





Conducted Measurement Photos

※※※※※END OF THE REPORT※※※※※