FCC Part 15C Test Report

FCC ID: 2ALEA00E18

Product Name:	Bluetooth Adapter/Earbud
Trademark:	N/A
Model Name :	00E18 00E27, 00E12, 00E01, 00E02, 00E03, 00E04, 00E05, 00E06, 00E07, 00E08, 00E09, 06E05, 00E10, 00E14, 00E15, 00E23
Prepared For :	DONGGUAN GBE TECHNOLOGIES CO., LTD.
Address :	3/F., Building C, Maolin Industrial Park, No.13 Donghuan 2nd Road,Huangjiang Town,Dongguan City, Guangdong Province, China
Prepared By :	Shenzhen BCTC Technology Co., Ltd.
Address :	No.101,Yousong Road,Longhua New District, Shenzhen,China
Test Date:	Feb. 27, 2017 – Mar. 08, 2017
Date of Report :	Mar. 08, 2017
Report No.:	BCTC-LH170200492E

TEST RESULT CERTIFICATION

Applicant's name..... :	DONGGUAN GBE TECHNOLOGIES CO., LTD.
Address..... :	3/F., Building C, Maolin Industrial Park, No.13 Donghuan 2nd Road,Huangjiang Town,Dongguan City, Guangdong Province, China
Manufacture's Name..... :	DONGGUAN GBE TECHNOLOGIES CO., LTD.
Address..... :	3/F., Building C, Maolin Industrial Park, No.13 Donghuan 2nd Road,Huangjiang Town,Dongguan City, Guangdong Province, China
Product description	
Product name.....:	Bluetooth Adapter/Earbud
Trademark.....:	N/A
Model and/or type reference :	00E18 00E27, 00E12, 00E01, 00E02, 00E03, 00E04, 00E05, 00E06, 00E07, 00E08, 00E09, 06E05, 00E10, 00E14, 00E15, 00E23
Standards..... :	FCC Part15.247 ANSI C63.10-2013

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

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Testing Engineer	:	Eric Yang
Reviewer Supervisor	:	Jade Yang
Approved & Authorized Manager:	:	Carson Zhang

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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

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

NOTE:

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

1.1 TEST FACILITY

Shenzhen BCTC Technology Co., Ltd.
Add. : No.101,Yousong Road,Longhua New District, Shenzhen,China
FCC Registered No.: 187086

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 Test	±1.38dB
2	RF power,conducted	±0.16dB
3	Spurious emissions,conducted	±0.21dB
4	All emissions,radiated(<1G)	±4.68dB
5	All emissions,radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

<table>
<tr><td>Equipment</td><td>Bluetooth Adapter/Earbud</td></tr>
<tr><td>Trade Name</td><td>N/A</td></tr>
<tr><td>Model Name</td><td>00E18
00E27, 00E12, 00E01, 00E02, 00E03, 00E04, 00E05, 00E06, 00E07, 00E08, 00E09, 06E05, 00E10, 00E14, 00E15, 00E23</td></tr>
<tr><td>Model Difference</td><td>The product's different for model name and outlook color.</td></tr>
<tr><td>Product Description</td><td>The EUT is a Bluetooth Speaker
<table>
<tr><td>Operation Frequency:</td><td>2402~2480 MHz</td></tr>
<tr><td>Modulation Type:</td><td>GFSK, PI/4 DPSK, 8DPSK</td></tr>
<tr><td>Bit Rate of Transmitter</td><td>1/2/3Mbps</td></tr>
<tr><td>Number Of Channel</td><td>79 CH</td></tr>
<tr><td>Antenna type:</td><td>internal antenna</td></tr>
<tr><td>Antenna Gain (dBi)</td><td>0dBi</td></tr>
</table>
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.</td></tr>
<tr><td>Channel List</td><td>Please refer to the Note 2.</td></tr>
<tr><td>Power</td><td>DC 3.7V
DC 5V from adapter</td></tr>
<tr><td>hardware version</td><td>--</td></tr>
<tr><td>Software version</td><td>--</td></tr>
<tr><td>Serial number</td><td>--</td></tr>
<tr><td>Connecting I/O Port(s)</td><td>Please refer to the User's Manual</td></tr>
</table>

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
~	~	~	~	~	~
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2441	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
~	~	~	~	~	~
14	2416	41	2443	68	2470
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		

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.

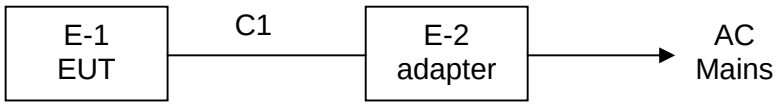
Pretest Mode	Description	
Mode 1	CH00	GFSK,PI/4 DPSK,8DPSK
Mode 2	CH39	
Mode 3	CH78	
Mode 4	Link Mode	
For Conducted & Radiated Emission		
Final Test Mode	Description	
Mode 1	CH00	GFSK,PI/4 DPSK,8DPSK
Mode 2	CH39	
Mode 3	CH78	
Mode 4	Link Mode	

Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated & Conducted Spurious Emission Test



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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.	Series No.	Note
E-1	Bluetooth Adapter/Earbud	N/A	00E18	N/A	EUT
E-2	Adapter	N/A	QX65W15350F	N/A	I/P:AC 100-240V 50/60Hz O/P: DC 5V /1.0A

Item	Shielded Type	Ferrite Core	Length	Note
C1	No	No	0.5m	Mini USB Line

Note:

(1) 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

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer	Agilent	E4407B	MY45109572	2016.08.27	2017.08.26
2	Test Receiver	R&S	ESPI	101396	2016.08.27	2017.08.26
3	Bilog Antenna	SCHWARZBECK	VULB9160	VULB9160-3369	2016.08.27	2017.08.26
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2016.08.27	2017.08.26
5	Spectrum Analyzer	Agilent	N9020A	MY5051041	2016.08.27	2017.08.26
6	Horn Antenna	SCHWARZBECK	9120D	9120D-1275	2016.08.29	2017.08.28
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2016.08.29	2017.08.28
8	Amplifier	SCHWARZBECK	BBV9718	9718-270	2016.08.29	2017.08.28
9	Amplifier	SCHWARZBECK	BBV9743	9743-119	2016.08.29	2017.08.28
10	Loop Antenna	ARA	PLM600D MI-BTH0730/B	1029	2016.07.06	2017.07.05
11	Power Meter	R&S	NRVS	100696	2016.08.27	2017.08.26
12	Power Sensor	R&S	URV5-Z4	0395.1619.05	2016.08.27	2017.08.26
13	RF cables	R&S	N/A	N/A	2016.08.27	2017.08.26
14	966 chamber	ChengYu	966 Room	966	2016.08.27	2017.08.26

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Test Receiver	R&S	ESCI	1166.5950K03-101165-ha	2016.08.27	2017.08.26
2	LISN	R&S	NSLK8126	8126466	2016.08.27	2017.08.26
3	LISN	R&S	NSLK8126	8126487	2016.08.27	2017.08.26
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2016.08.27	2017.08.26
5	RF cables	R&S	R204	R20X	2016.08.27	2017.08.26

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quasi-peak	Average	
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 placed 0.8 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.

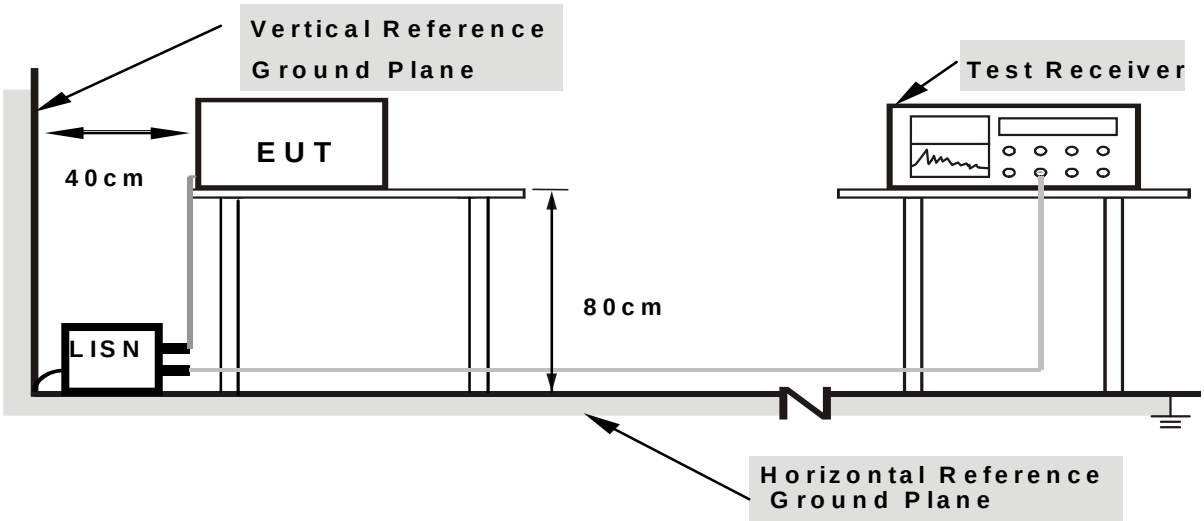
d. LISN at least 80 cm from nearest part of EUT chassis.

e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



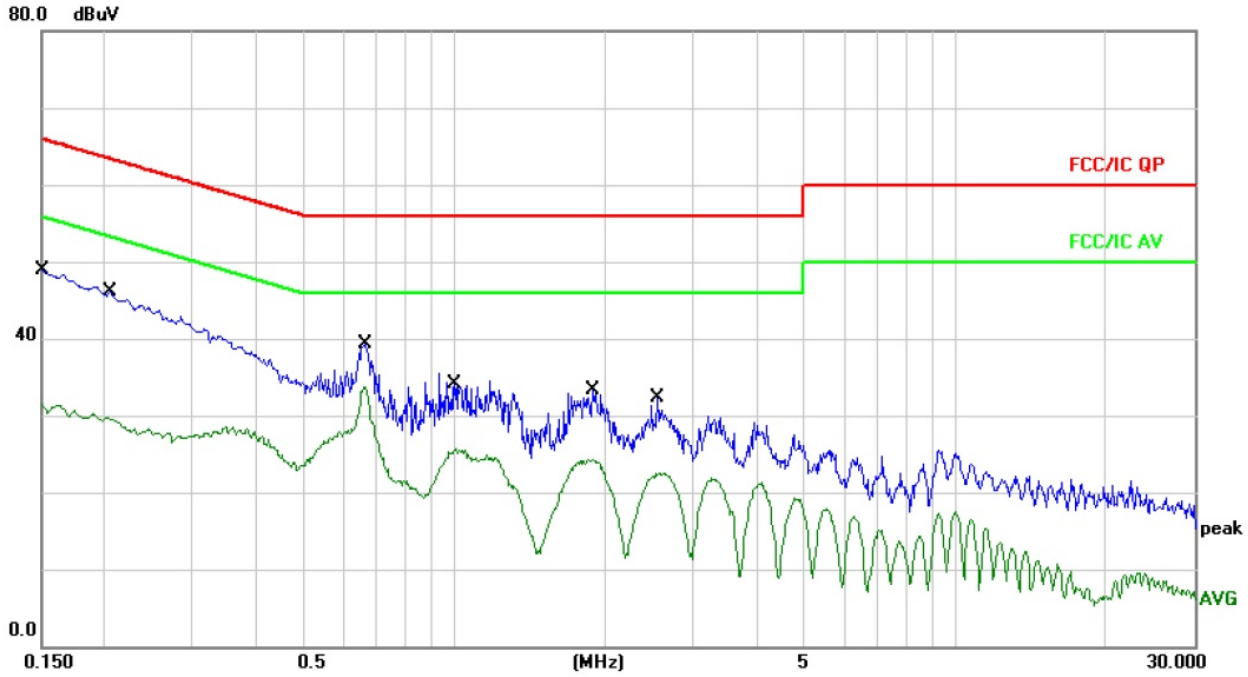
Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.5 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.

3.1.6 TEST RESULTS

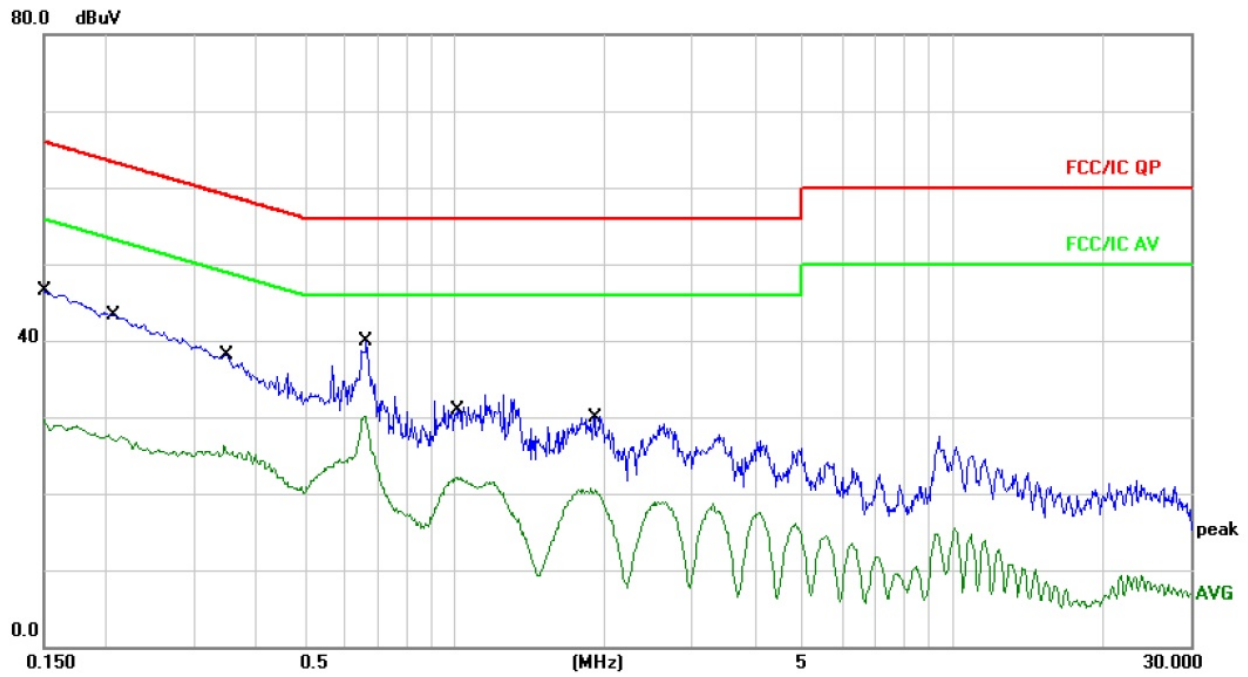
Temperature：	25 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	AC 120V/60Hz	Test Mode：	Mode 4



Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1499	38.86	10.05	48.91	66.00	-17.09	QP	
2		0.1499	21.52	10.05	31.57	56.00	-24.43	AVG	
3		0.2039	19.57	10.07	29.64	53.45	-23.81	AVG	
4		0.2060	35.95	10.07	46.02	63.36	-17.34	QP	
5		0.6620	29.15	10.13	39.28	56.00	-16.72	QP	
6	*	0.6660	23.29	10.13	33.42	46.00	-12.58	AVG	
7		1.0020	24.00	10.17	34.17	56.00	-21.83	QP	
8		1.0020	15.31	10.17	25.48	46.00	-20.52	AVG	
9		1.8900	23.14	10.18	33.32	56.00	-22.68	QP	
10		1.8900	14.06	10.18	24.24	46.00	-21.76	AVG	
11		2.5460	22.01	10.19	32.20	56.00	-23.80	QP	
12		2.5460	12.06	10.19	22.25	46.00	-23.75	AVG	

Temperature：	25 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase：	N
Test Voltage ：	AC 120V/60Hz	Test Mode：	Mode 4



Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1499	36.38	10.05	46.43	66.00	-19.57	QP	
2		0.1499	19.72	10.05	29.77	56.00	-26.23	AVG	
3		0.2083	33.14	10.07	43.21	63.27	-20.06	QP	
4		0.2083	16.92	10.07	26.99	53.27	-26.28	AVG	
5		0.3464	16.07	10.10	26.17	49.05	-22.88	AVG	
6		0.3500	27.99	10.10	38.09	58.96	-20.87	QP	
7	*	0.6660	29.67	10.13	39.80	56.00	-16.20	QP	
8		0.6660	19.33	10.13	29.46	46.00	-16.54	AVG	
9		1.0020	20.23	10.17	30.40	56.00	-25.60	QP	
10		1.0020	11.56	10.17	21.73	46.00	-24.27	AVG	
11		1.9060	10.02	10.18	20.20	46.00	-25.80	AVG	
12		1.9180	19.77	10.18	29.95	56.00	-26.05	QP	

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

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.

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 (Above 1000MHz)

FREQUENCY (MHz)	Limit (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).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	25GHz
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

3.2.2 TEST PROCEDURE

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 camber. 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:

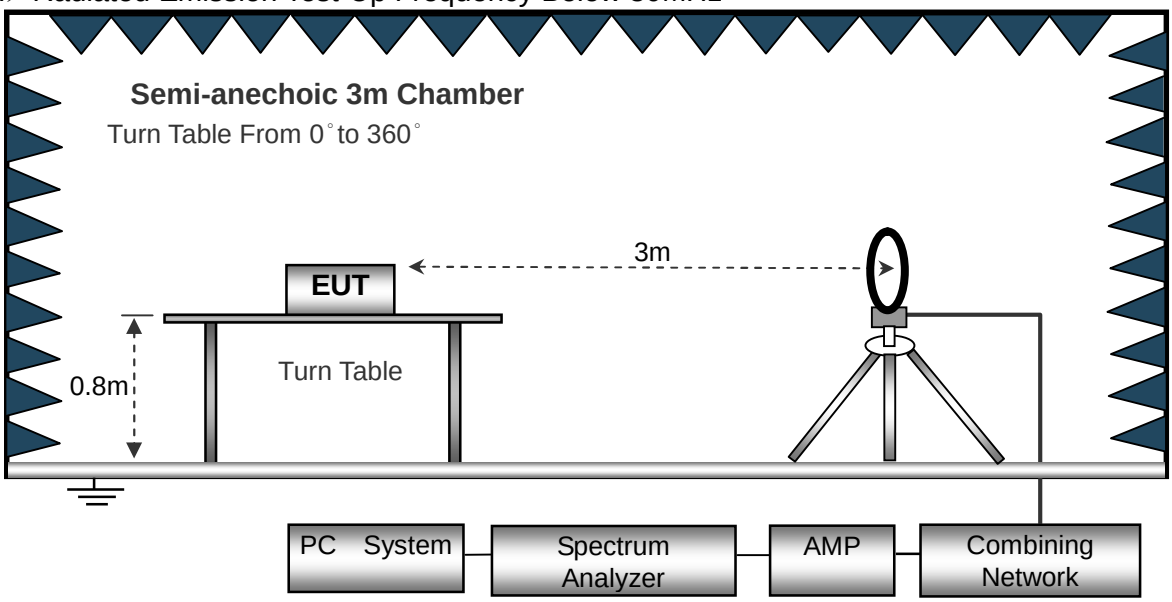
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

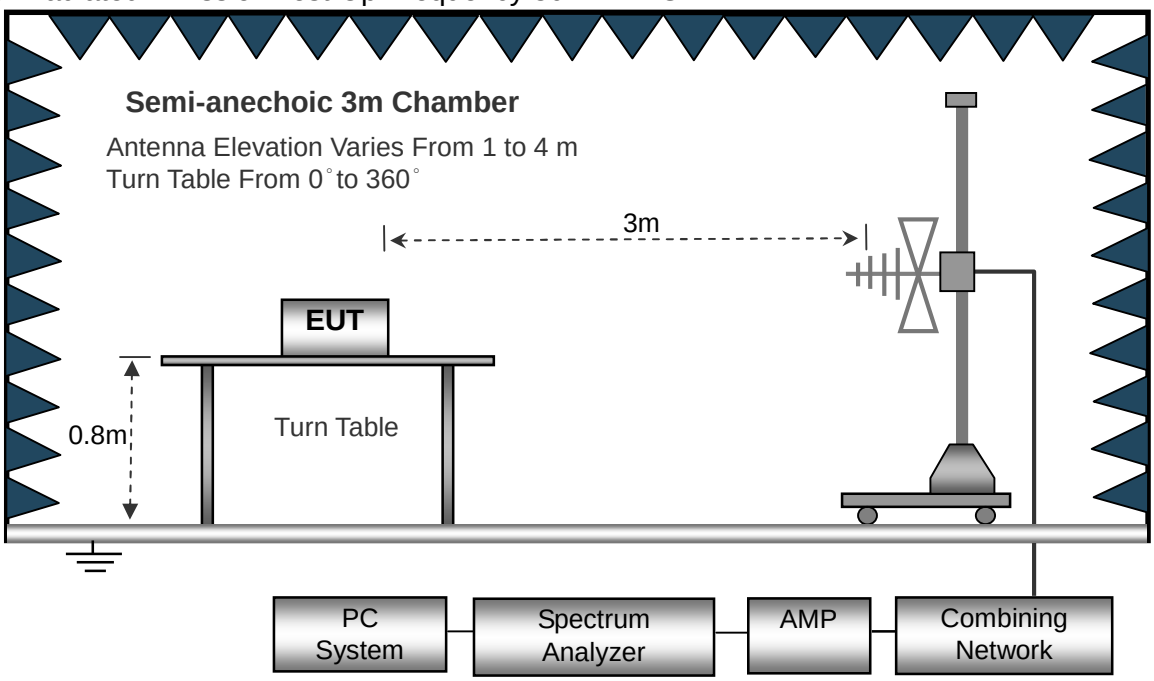
No deviation

3.2.4 TEST SETUP

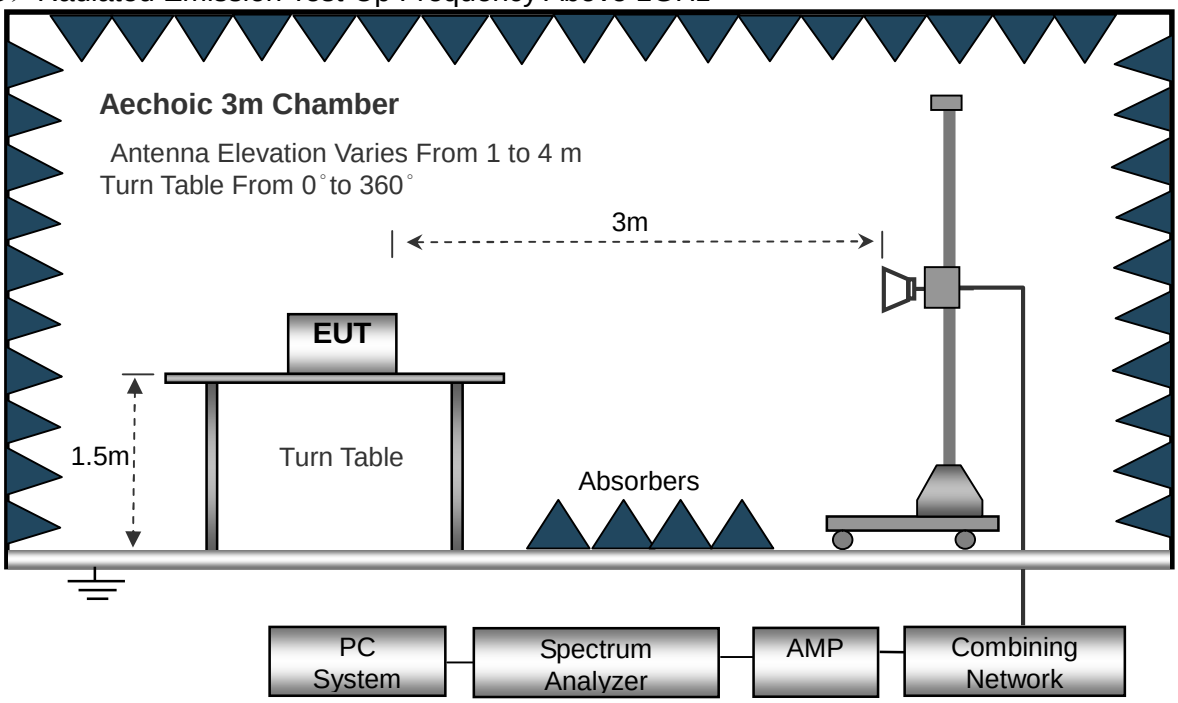
（A）Radiated Emission Test-Up Frequency Below 30MHz



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



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



3.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)

Temperature:	20℃	Relative Humidtity:	48%
Pressure:	1010 hPa	Test Voltage :	DC 11.1V
Test Mode :	Mode 4	Polarization :	--

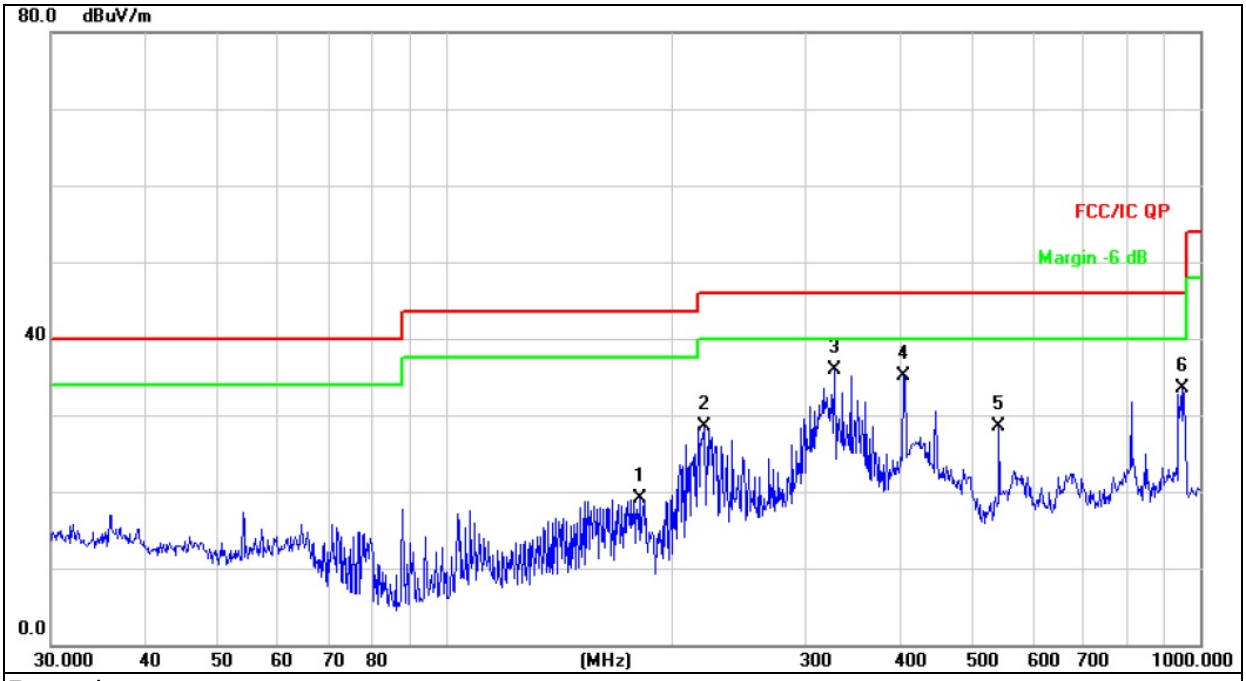
Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

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.

3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)

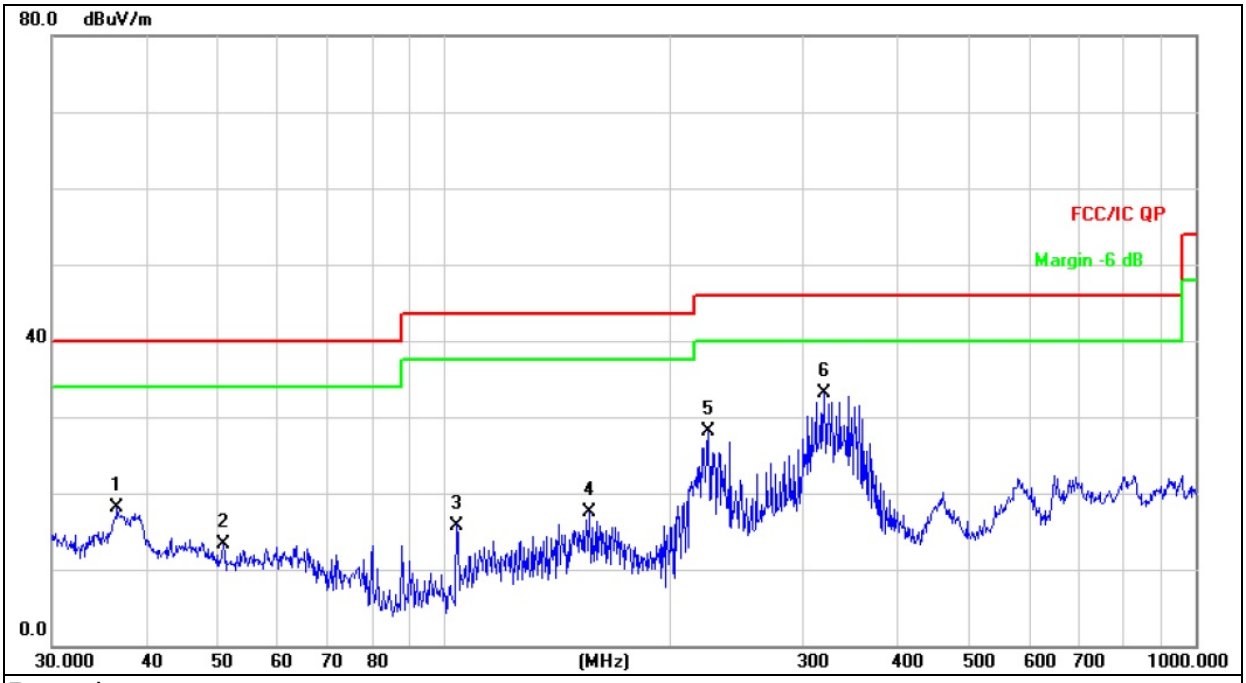
Temperature：	26℃	Relative Humidity：	54%
Pressure：	1010 hPa	Polarization：	Horizontal
Test Voltage ：	DC 3.7V		
Test Mode ：	Mode 4		



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

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		180.6488	33.43	-14.42	19.01	43.50	-24.49	QP
2		220.6171	44.04	-15.60	28.44	46.00	-17.56	QP
3	*	327.8873	47.75	-11.86	35.89	46.00	-10.11	QP
4		404.6665	45.15	-10.08	35.07	46.00	-10.93	QP
5		541.3725	35.76	-7.35	28.41	46.00	-17.59	QP
6		945.4399	34.12	-0.56	33.56	46.00	-12.44	QP

Temperature：	26℃	Relative Humidity：	54%
Pressure：	1010 hPa	Polarization：	Vertical
Test Voltage ：	DC 3.7V		
Test Mode ：	Mode 4		



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

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		36.6375	26.69	-8.64	18.05	40.00	-21.95	QP
2		50.7637	23.75	-10.42	13.33	40.00	-26.67	QP
3		103.8055	31.96	-16.16	15.80	43.50	-27.70	QP
4		155.9101	30.46	-12.87	17.59	43.50	-25.91	QP
5		224.5193	43.39	-15.37	28.02	46.00	-17.98	QP
6	*	319.9370	45.16	-12.06	33.10	46.00	-12.90	QP

3.2.8 TEST RESULTS (1GHZ~25GHZ)

GFSK

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2402									
V	4804.00	62.11	38.06	7.78	23.25	55.08	74.00	-18.92	PK
V	4804.00	46.81	38.06	7.78	23.25	39.78	54.00	-14.22	AV
V	7206.00	60.53	38.45	8.13	23.71	53.92	74.00	-20.08	PK
V	7206.00	44.53	38.45	8.13	23.71	37.92	54.00	-16.08	AV
V	16132.00	54.63	38.75	10.36	26.57	52.81	74.00	-21.19	PK
H	4804.00	62.31	38.06	7.78	23.25	55.28	74.00	-18.72	PK
H	4804.00	46.65	38.06	7.78	23.25	39.62	54.00	-14.38	AV
H	7206.00	60.75	38.45	8.13	23.71	54.14	74.00	-19.86	PK
H	7206.00	44.39	38.45	8.13	23.71	37.78	54.00	-16.22	AV
H	16132.00	54.78	38.75	10.36	26.57	52.96	74.00	-21.04	PK
operation frequency:2441									
V	4882.00	62.38	38.11	7.82	23.61	55.70	74.00	-18.30	PK
V	4882.00	46.31	38.11	7.82	23.61	39.63	54.00	-14.37	AV
V	7323.00	60.39	38.51	8.28	23.96	54.12	74.00	-19.88	PK
V	7323.00	44.18	38.51	8.28	23.93	37.88	54.00	-16.12	AV
V	16132.00	54.67	38.75	10.36	26.57	52.85	74.00	-21.15	PK
H	4882.00	62.57	38.11	7.82	23.61	55.89	74.00	-18.11	PK
H	4882.00	46.62	38.11	7.82	23.61	39.94	54.00	-14.06	AV
H	7323.00	60.48	38.51	8.28	23.96	54.21	74.00	-19.79	PK
H	7323.00	44.29	38.51	8.28	23.93	37.99	54.00	-16.01	AV
H	16132.00	54.82	38.75	10.36	26.57	53.00	74.00	-21.00	PK
operation frequency:2480									
V	4960.00	63.15	38.26	7.96	23.83	56.68	74.00	-17.32	PK
V	4960.00	46.94	38.26	7.96	23.83	40.47	54.00	-13.53	AV
V	7440.00	60.17	38.72	8.31	24.03	53.79	74.00	-20.21	PK
V	7440.00	44.06	38.72	8.31	24.03	37.68	54.00	-16.32	AV
V	16132.00	54.66	38.75	10.36	26.57	52.84	74.00	-21.16	PK
H	2480.00	63.34	38.26	7.96	23.83	56.87	74.00	-17.13	PK
H	2480.00	46.85	38.26	7.96	23.83	40.38	54.00	-13.62	AV
H	4960.00	61.81	38.72	8.31	24.03	55.43	74.00	-18.57	PK
H	4960.00	44.75	38.72	8.31	24.03	38.37	54.00	-15.63	AV
H	16132.00	54.71	38.75	10.36	26.57	52.89	74.00	-21.11	PK

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

PI/4 DPSK

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2402									
V	4804.00	62.78	38.06	7.78	23.25	55.75	74.00	-18.25	PK
V	4804.00	46.39	38.06	7.78	23.25	39.36	54.00	-14.64	AV
V	7206.00	60.33	38.45	8.13	23.71	53.72	74.00	-20.28	PK
V	7206.00	44.15	38.45	8.13	23.71	37.54	54.00	-16.46	AV
V	16132.00	54.58	38.75	10.36	26.57	52.76	74.00	-21.24	PK
H	4804.00	62.69	38.06	7.78	23.25	55.66	74.00	-18.34	PK
H	4804.00	46.54	38.06	7.78	23.25	39.51	54.00	-14.49	AV
H	7206.00	60.39	38.45	8.13	23.71	53.78	74.00	-20.22	PK
H	7206.00	44.47	38.45	8.13	23.71	37.86	54.00	-16.14	AV
H	16132.00	54.69	38.75	10.36	26.57	52.87	74.00	-21.13	PK
operation frequency:2441									
V	4882.00	61.87	38.11	7.82	23.61	55.19	74.00	-18.81	PK
V	4882.00	46.03	38.11	7.82	23.61	39.35	54.00	-14.65	AV
V	7323.00	59.87	38.51	8.28	23.96	53.60	74.00	-20.40	PK
V	7323.00	43.63	38.51	8.28	23.93	37.33	54.00	-16.67	AV
V	16132.00	54.78	38.75	10.36	26.57	52.96	74.00	-21.04	PK
H	4882.00	62.54	38.11	7.82	23.61	55.86	74.00	-18.14	PK
H	4882.00	46.19	38.11	7.82	23.61	39.51	54.00	-14.49	AV
H	7323.00	60.09	38.51	8.28	23.96	53.82	74.00	-20.18	PK
H	7323.00	44.17	38.51	8.28	23.93	37.87	54.00	-16.13	AV
H	16132.00	54.39	38.75	10.36	26.57	52.57	74.00	-21.43	PK
operation frequency:2480									
V	4960.00	62.39	38.26	7.96	23.83	55.92	74.00	-18.08	PK
V	4960.00	46.27	38.26	7.96	23.83	39.80	54.00	-14.20	AV
V	7440.00	60.22	38.72	8.31	24.03	53.84	74.00	-20.16	PK
V	7440.00	44.57	38.72	8.31	24.03	38.19	54.00	-15.81	AV
V	16132.00	54.41	38.75	10.36	26.57	52.59	74.00	-21.41	PK
H	2480.00	63.12	38.26	7.96	23.83	56.65	74.00	-17.35	PK
H	2480.00	46.87	38.26	7.96	23.83	40.40	54.00	-13.60	AV
H	4960.00	60.38	38.72	8.31	24.03	54.00	74.00	-20.00	PK
H	4960.00	44.37	38.72	8.31	24.03	37.99	54.00	-16.01	AV
H	16132.00	54.71	38.75	10.36	26.57	52.89	74.00	-21.11	PK

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

8DPSK

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2402									
V	4804.00	62.55	38.06	7.78	23.25	55.52	74.00	-18.48	PK
V	4804.00	46.57	38.06	7.78	23.25	39.54	54.00	-14.46	AV
V	7206.00	60.21	38.45	8.13	23.71	53.60	74.00	-20.40	PK
V	7206.00	44.11	38.45	8.13	23.71	37.50	54.00	-16.50	AV
V	16132.00	54.25	38.75	10.36	26.57	52.43	74.00	-21.57	PK
H	4804.00	62.67	38.06	7.78	23.25	55.64	74.00	-18.36	PK
H	4804.00	46.29	38.06	7.78	23.25	39.26	54.00	-14.74	AV
H	7206.00	60.57	38.45	8.13	23.71	53.96	74.00	-20.04	PK
H	7206.00	44.11	38.45	8.13	23.71	37.50	54.00	-16.50	AV
H	16132.00	54.39	38.75	10.36	26.57	52.57	74.00	-21.43	PK
operation frequency:2441									
V	4882.00	62.61	38.11	7.82	23.61	55.93	74.00	-18.07	PK
V	4882.00	46.55	38.11	7.82	23.61	39.87	54.00	-14.13	AV
V	7323.00	60.61	38.51	8.28	23.96	54.34	74.00	-19.66	PK
V	7323.00	44.17	38.51	8.28	23.93	37.87	54.00	-16.13	AV
V	16132.00	54.48	38.75	10.36	26.57	52.66	74.00	-21.34	PK
H	4882.00	62.48	38.11	7.82	23.61	55.80	74.00	-18.20	PK
H	4882.00	46.29	38.11	7.82	23.61	39.61	54.00	-14.39	AV
H	7323.00	60.06	38.51	8.28	23.96	53.79	74.00	-20.21	PK
H	7323.00	44.18	38.51	8.28	23.93	37.88	54.00	-16.12	AV
H	16132.00	54.61	38.75	10.36	26.57	52.79	74.00	-21.21	PK
operation frequency:2480									
V	4960.00	62.05	38.26	7.96	23.83	55.58	74.00	-18.42	PK
V	4960.00	45.97	38.26	7.96	23.83	39.50	54.00	-14.50	AV
V	7440.00	59.87	38.72	8.31	24.03	53.49	74.00	-20.51	PK
V	7440.00	44.18	38.72	8.31	24.03	37.80	54.00	-16.20	AV
V	16132.00	54.52	38.75	10.36	26.57	52.70	74.00	-21.30	PK
H	2480.00	62.31	38.26	7.96	23.83	55.84	74.00	-18.16	PK
H	2480.00	45.92	38.26	7.96	23.83	39.45	54.00	-14.55	AV
H	4960.00	60.31	38.72	8.31	24.03	53.93	74.00	-20.07	PK
H	4960.00	43.79	38.72	8.31	24.03	37.41	54.00	-16.59	AV
H	16132.00	53.97	38.75	10.36	26.57	52.15	74.00	-21.85	PK

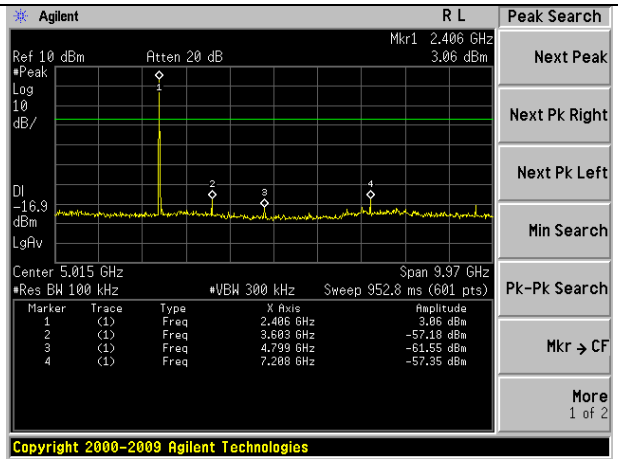
Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

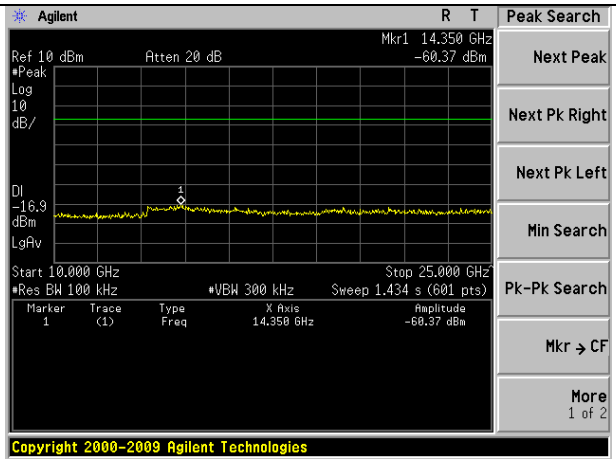
For Conducted

During the test, pre-scan the GFSK, Pi/4QPSK, 8DPSK modulation, and found the GFSK modulation which it is worse case.

Test channel: Lowest channel

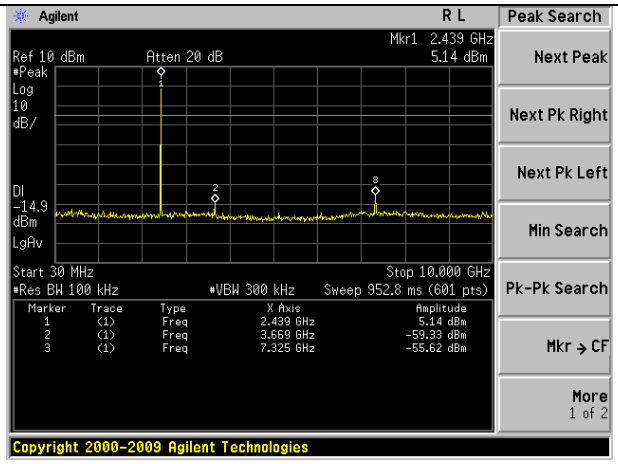


30MHz~10GHz

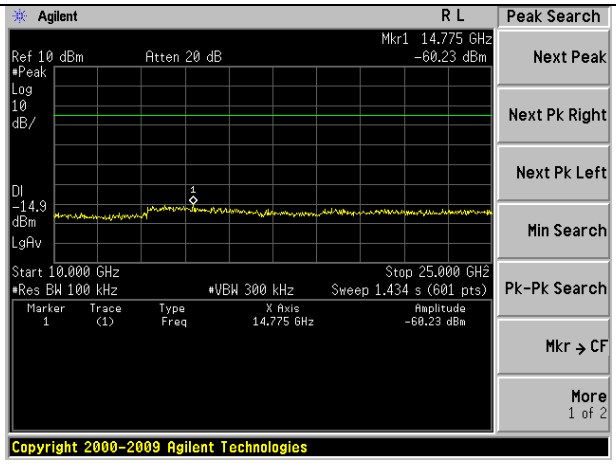


10GHz~25GHz

Test channel: Middle channel

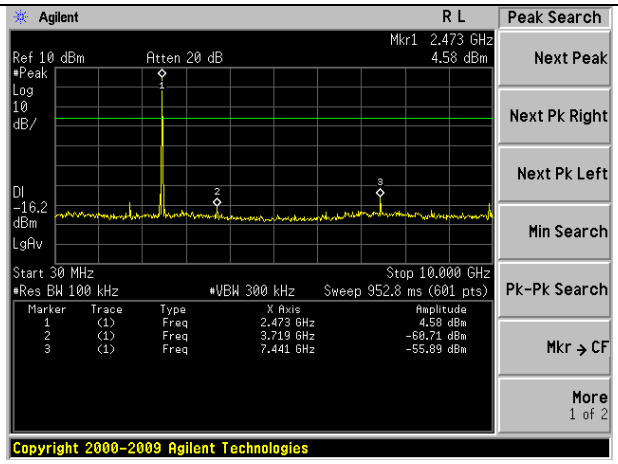


30MHz~10GHz

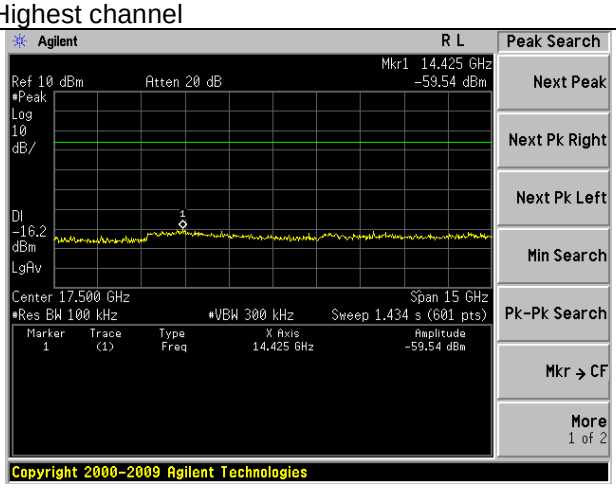


10GHz~25GHz

Test channel: Highest channel



30MHz~10GHz



10GHz~25GHz

3.3 RADIATED BAND EMISSION MEASUREMENT

3.3.1 TEST REQUIREMENT:

FCC Part15 C Section 15.209 and 15.205

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (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).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	2300MHz
Stop Frequency	2520
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

3.3.2 TEST PROCEDURE

Above 1GHz test procedure as below:

a. 1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. 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 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:

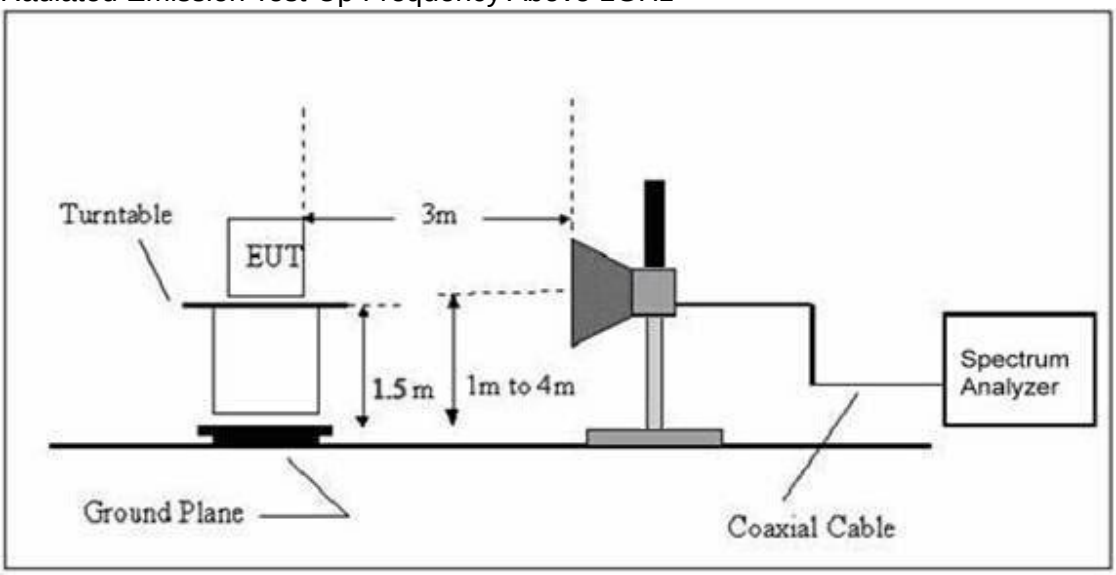
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

3.3.3 DEVIATION FROM TEST STANDARD

No deviation

3.3.4 TEST SETUP

Radiated Emission Test-Up Frequency Above 1GHz



3.3.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

3.3.6 TEST RESULT

GFSK

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission evel (dBuV/m)	Limits (dBuV/m	Margin (dB)	Detector Type
operation frequency:2402									
V	2390.00	66.11	38.06	7.42	20.15	55.62	74.00	-18.38	PK
V	2390.00	54.91	38.06	7.42	20.15	44.42	54.00	-9.58	AV
V	2400.00	66.31	38.06	7.42	20.15	55.82	74.00	-18.18	PK
V	2400.00	54.50	38.06	7.42	20.15	44.01	54.00	-9.99	AV
H	2390.00	66.39	38.06	7.42	20.15	55.90	74.00	-18.10	PK
H	2390.00	54.94	38.06	7.42	20.15	44.45	54.00	-9.55	AV
H	2400.00	66.26	38.06	7.42	20.15	55.77	74.00	-18.23	PK
H	2400.00	54.88	38.06	7.42	20.15	44.39	54.00	-9.61	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2480									
V	2483.50	66.31	38.17	7.42	20.51	56.07	74.00	-17.93	PK
V	2483.50	55.15	38.17	7.42	20.51	44.91	54.00	-9.09	AV
V	2500.00	66.25	38.20	7.45	20.54	56.04	74.00	-17.96	PK
V	2500.00	54.61	38.20	7.45	20.54	44.40	54.00	-9.60	AV
H	2483.50	66.43	38.17	7.42	20.51	56.19	74.00	-17.81	PK
H	2483.50	55.19	38.17	7.42	20.51	44.95	54.00	-9.05	AV
H	2500.00	66.06	38.20	7.45	20.54	55.85	74.00	-18.15	PK
H	2500.00	55.44	38.20	7.45	20.54	45.23	54.00	-8.77	AV

Remark:

1. Emission Level = Meter Reading + Factor, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

PI/4 DPSK

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission evel (dBuV/m)	Limits (dBuV/m	Margin (dB)	Detector Type
operation frequency:2402									
V	2390.00	66.26	38.06	7.42	20.15	55.77	74.00	-18.23	PK
V	2390.00	55.04	38.06	7.42	20.15	44.55	54.00	-9.45	AV
V	2400.00	66.47	38.06	7.42	20.15	55.98	74.00	-18.02	PK
V	2400.00	54.63	38.06	7.42	20.15	44.14	54.00	-9.86	AV
H	2390.00	66.55	38.06	7.42	20.15	56.06	74.00	-17.94	PK
H	2390.00	55.07	38.06	7.42	20.15	44.58	54.00	-9.42	AV
H	2400.00	66.42	38.06	7.42	20.15	55.93	74.00	-18.07	PK
H	2400.00	55.01	38.06	7.42	20.15	44.52	54.00	-9.48	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2480									
V	2483.50	66.47	38.17	7.42	20.51	56.23	74.00	-17.77	PK
V	2483.50	55.29	38.17	7.42	20.51	45.05	54.00	-8.95	AV
V	2500.00	66.41	38.20	7.45	20.54	56.20	74.00	-17.80	PK
V	2500.00	54.74	38.20	7.45	20.54	44.53	54.00	-9.47	AV
H	2483.50	66.59	38.17	7.42	20.51	56.35	74.00	-17.65	PK
H	2483.50	55.33	38.17	7.42	20.51	45.09	54.00	-8.91	AV
H	2500.00	66.21	38.20	7.45	20.54	56.00	74.00	-18.00	PK
H	2500.00	55.58	38.20	7.45	20.54	45.37	54.00	-8.63	AV

Remark:

1. Emission Level = Meter Reading + Factor, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

8DPSK

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m	Margin (dB)	Detector Type
operation frequency:2402									
V	2390.00	66.44	38.06	7.42	20.15	55.95	74.00	-18.05	PK
V	2390.00	55.21	38.06	7.42	20.15	44.72	54.00	-9.28	AV
V	2400.00	66.66	38.06	7.42	20.15	56.17	74.00	-17.83	PK
V	2400.00	54.78	38.06	7.42	20.15	44.29	54.00	-9.71	AV
H	2390.00	66.73	38.06	7.42	20.15	56.24	74.00	-17.76	PK
H	2390.00	55.24	38.06	7.42	20.15	44.75	54.00	-9.25	AV
H	2400.00	66.60	38.06	7.42	20.15	56.11	74.00	-17.89	PK
H	2400.00	55.17	38.06	7.42	20.15	44.68	54.00	-9.32	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2480									
V	2483.50	66.66	38.17	7.42	20.51	56.42	74.00	-17.58	PK
V	2483.50	55.44	38.17	7.42	20.51	45.20	54.00	-8.80	AV
V	2500.00	66.59	38.20	7.45	20.54	56.38	74.00	-17.62	PK
V	2500.00	54.88	38.20	7.45	20.54	44.67	54.00	-9.33	AV
H	2483.50	66.77	38.17	7.42	20.51	56.53	74.00	-17.47	PK
H	2483.50	55.48	38.17	7.42	20.51	45.24	54.00	-8.76	AV
H	2500.00	66.39	38.20	7.45	20.54	56.18	74.00	-17.82	PK
H	2500.00	55.73	38.20	7.45	20.54	45.52	54.00	-8.48	AV

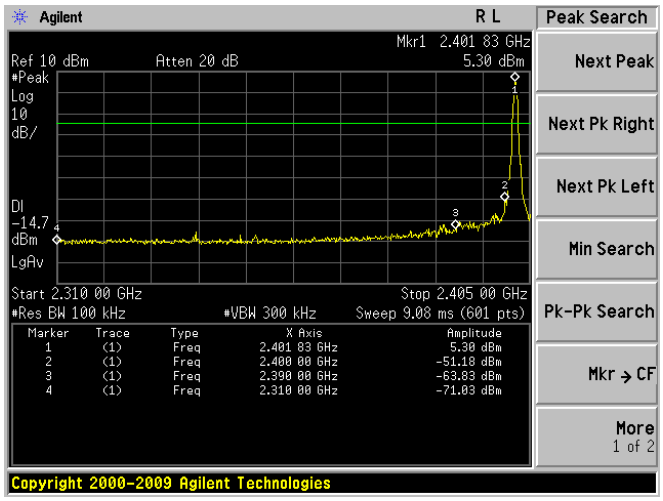
Remark:

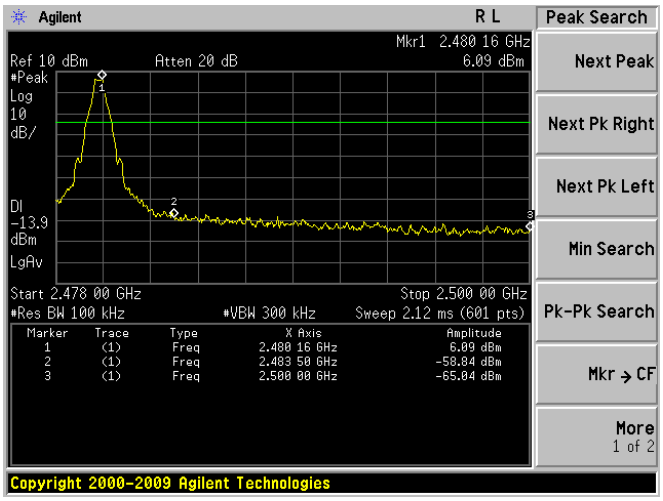
1. Emission Level = Meter Reading + Factor, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

For Conducted

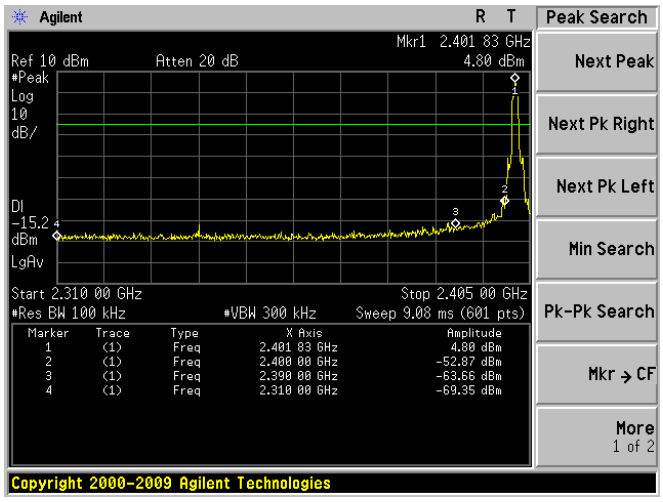
Unhopping

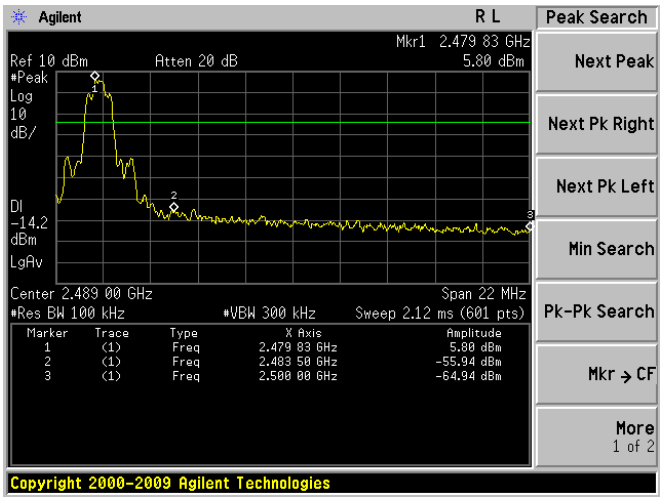
GFSK



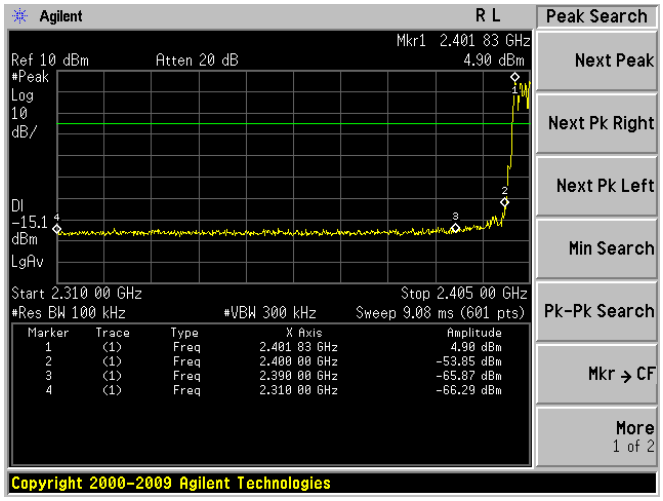


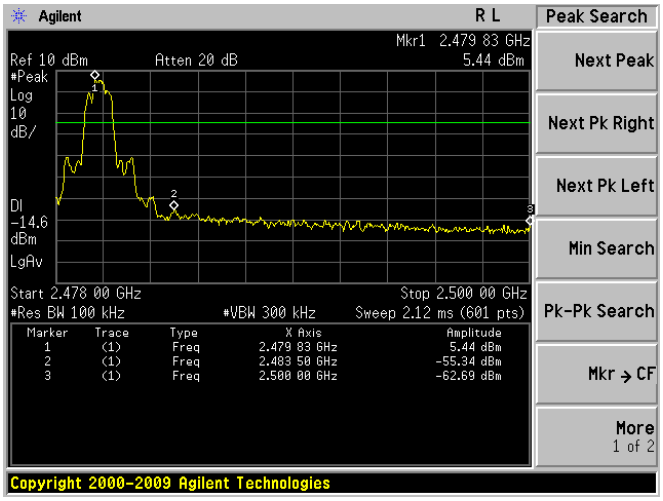
PI/4 DPSK



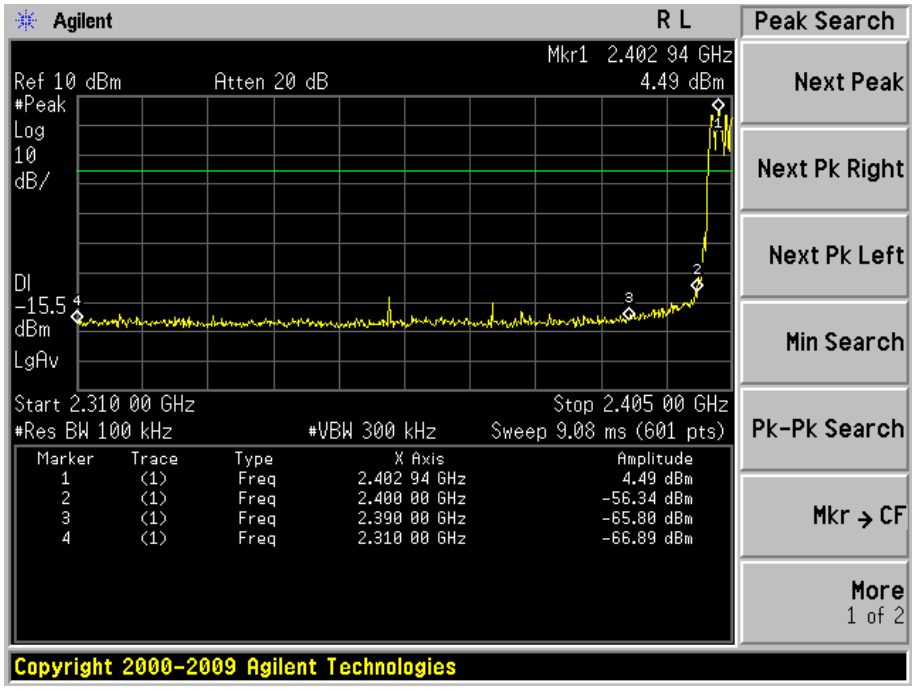


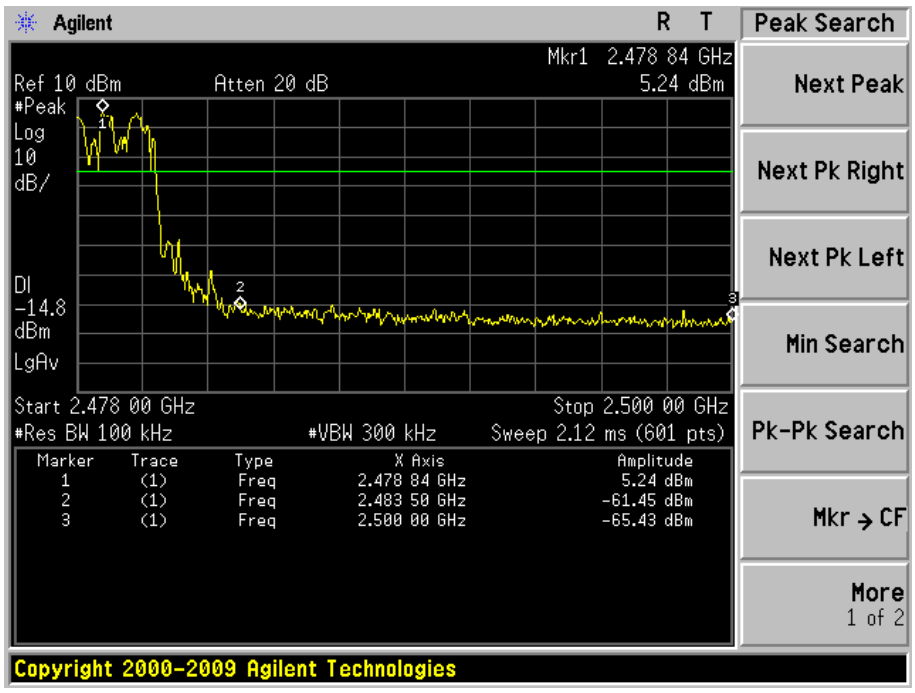
8DPSK





Hopping Mode





4. BANDWIDTH TEST

4.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C	
Section	Test Item
15.247(a)(2)	Bandwidth

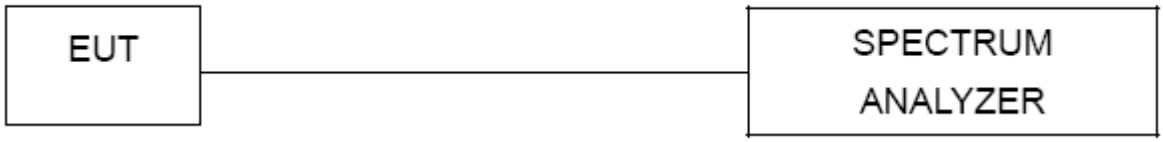
4.1.1 TEST PROCEDURE

1. Set RBW = 30 kHz.
2. Set the video bandwidth (VBW) ≥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 frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



4.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

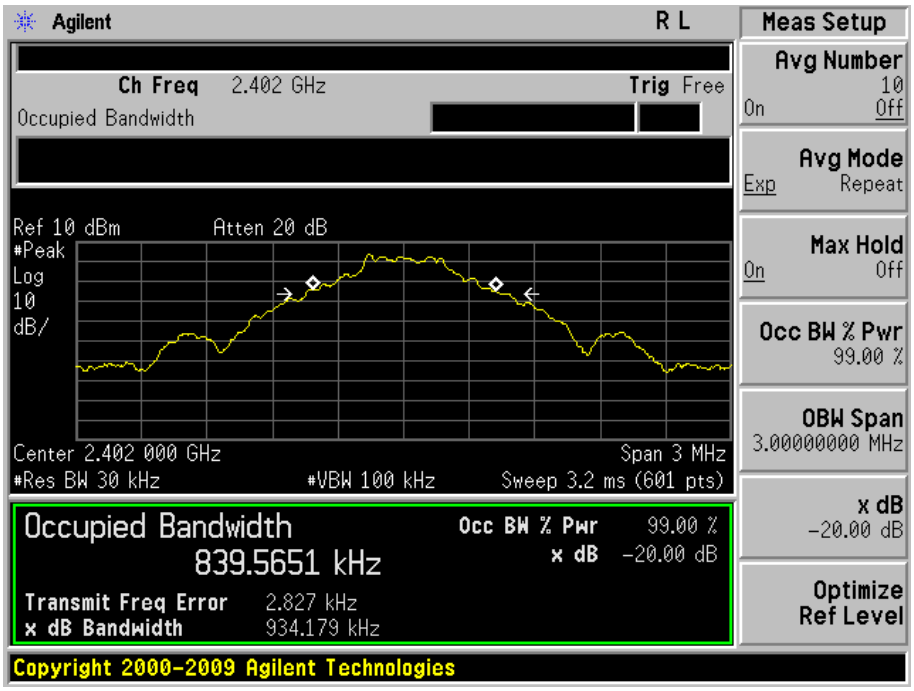
4.1.5 TEST RESULTS

Temperature：	25℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX Mode /CH00, CH39, CH78		

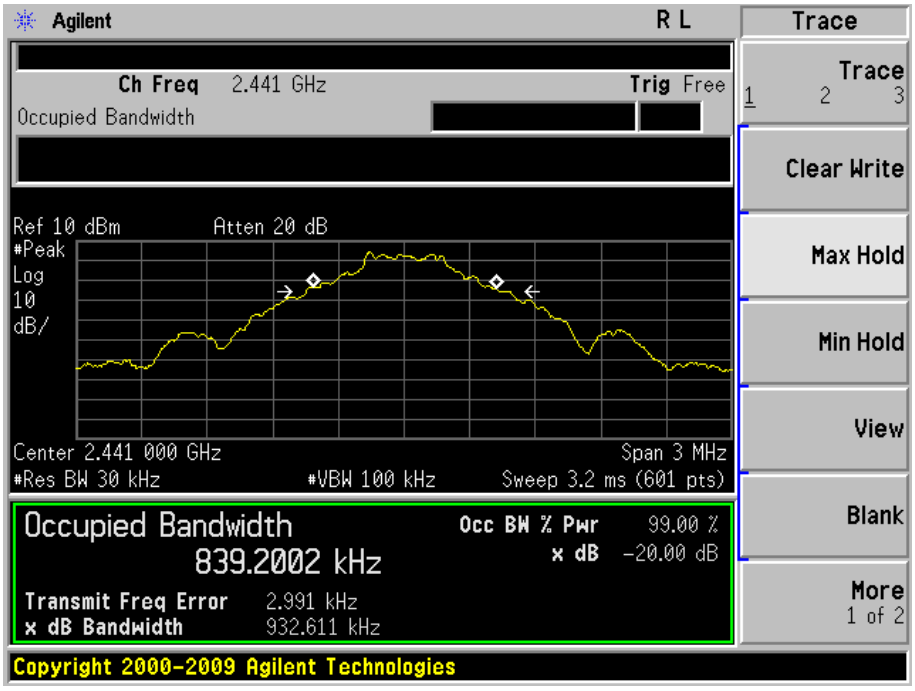
	Frequency (MHz)	Bandwidth	Result
GFSK	2402	0.934	Pass
	2441	0.933	Pass
	2480	0.930	Pass
PI/4 DPSK	2402	1.122	Pass
	2441	1.121	Pass
	2480	1.121	Pass
8DPSK	2402	1.168	Pass
	2441	1.168	Pass
	2480	1.167	Pass

GFSK

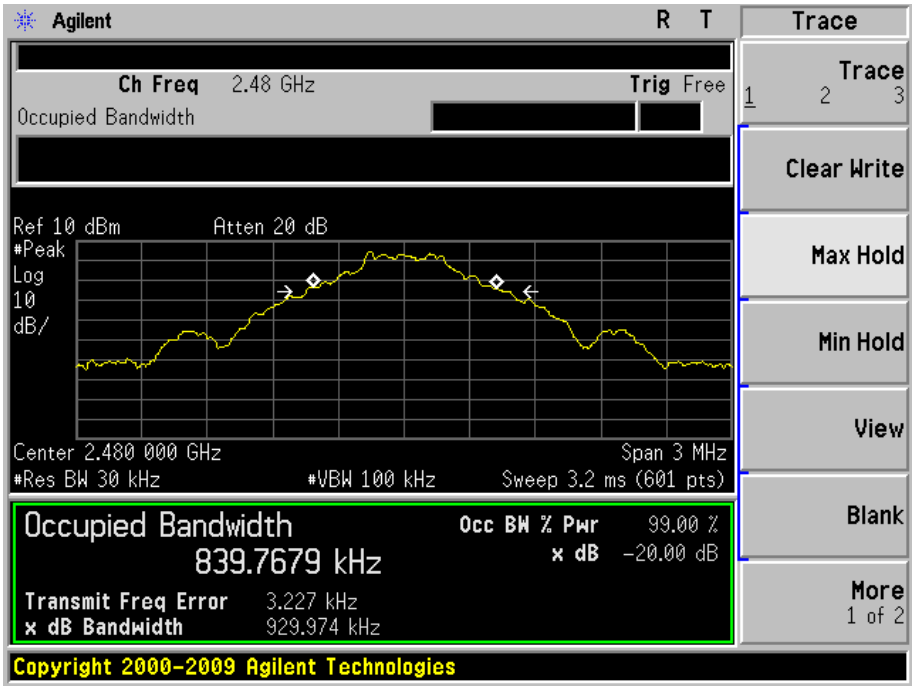
TX CH 00



TX CH 39

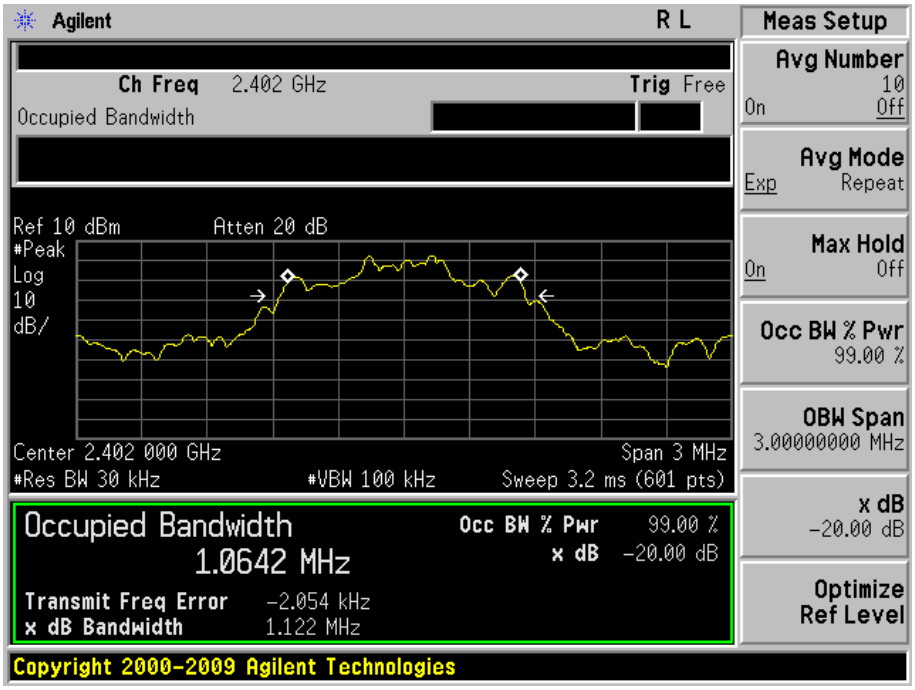


TX CH 78

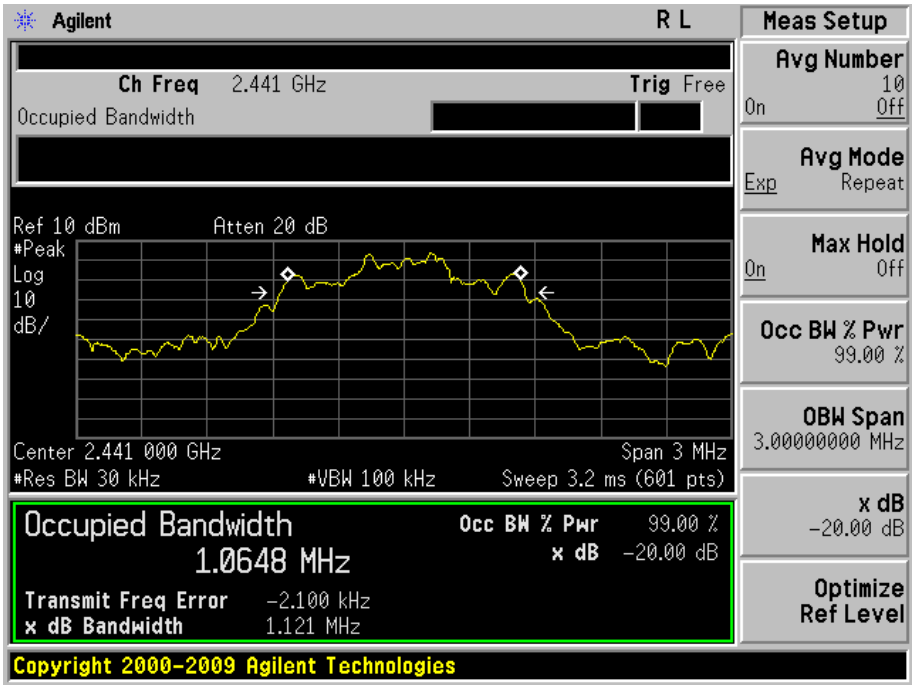


PI/4 DPSK

TX CH 00



TX CH 39



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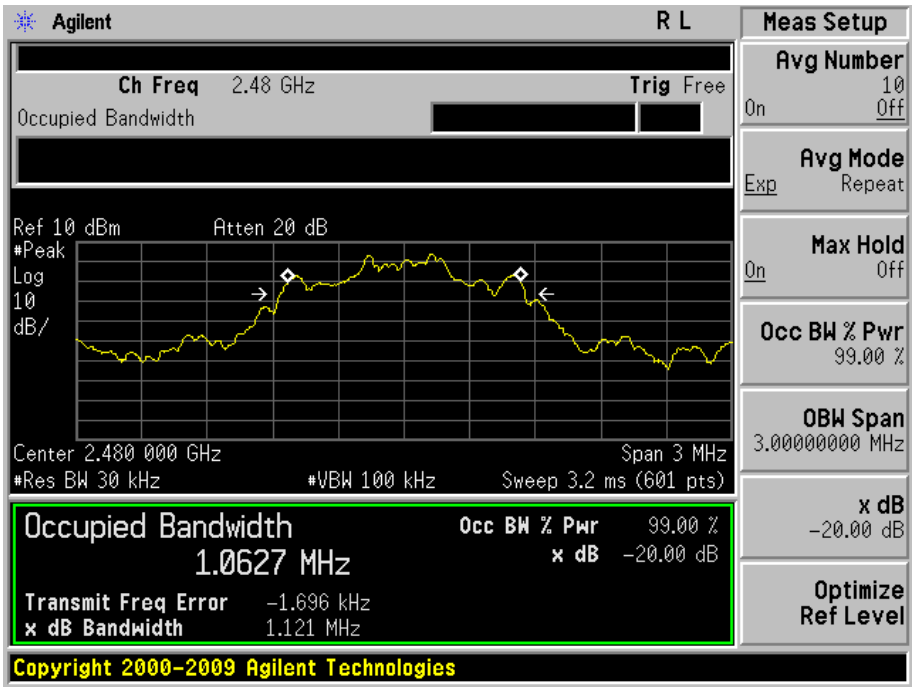
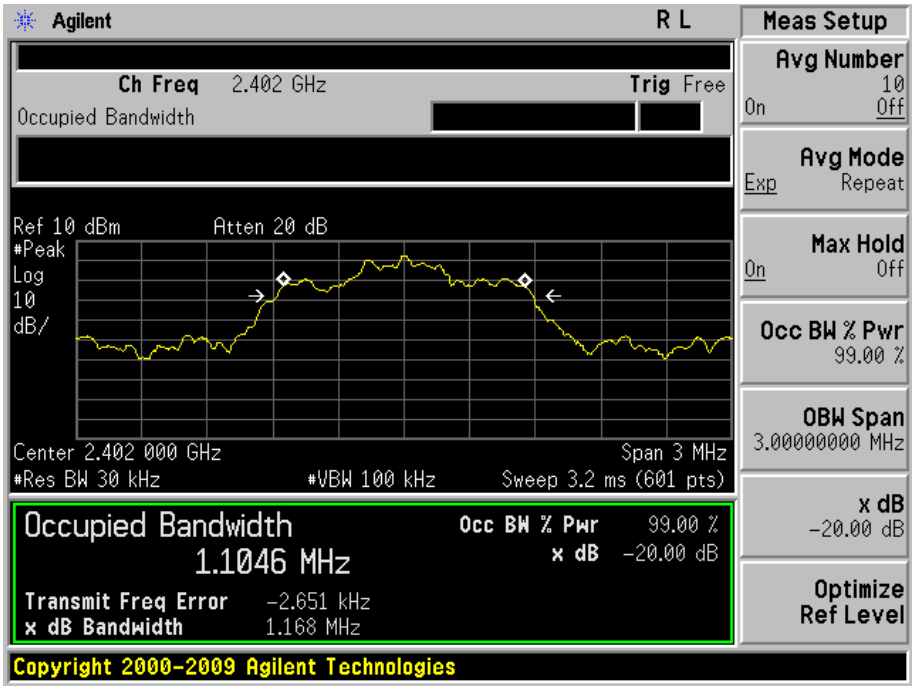
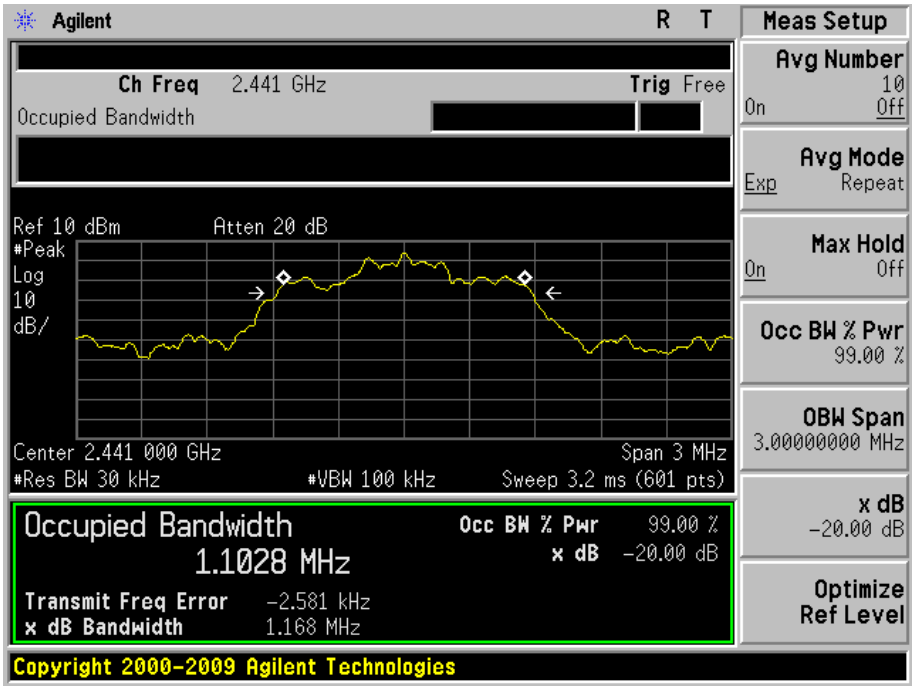


8DPSK

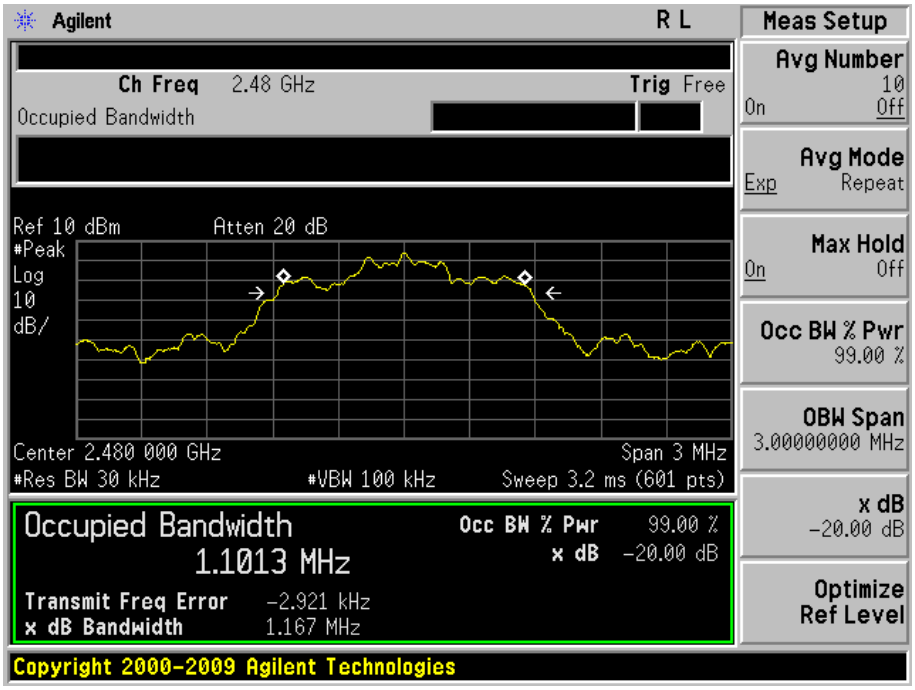
TX CH 00



TX CH 39



TX CH 78



5. NUMBER OF HOPPING CHANNEL

5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 (a)(1)(iii)	Number of Hopping Channel	≥15	2400-2483.5	PASS

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	= the frequency band of operation
RB	RBW ≥ 1% of the span
VB	VBW ≥ RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

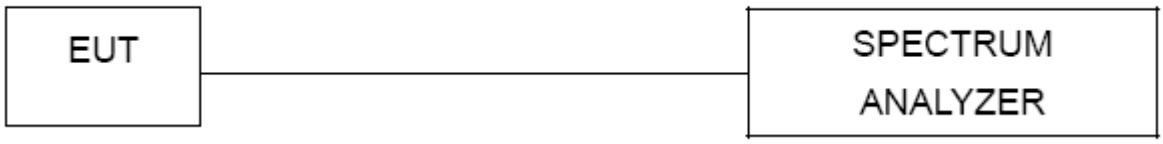
5.1.1 TEST PROCEDURE

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= 100KHz, VBW=100KHz, Sweep time = Auto.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



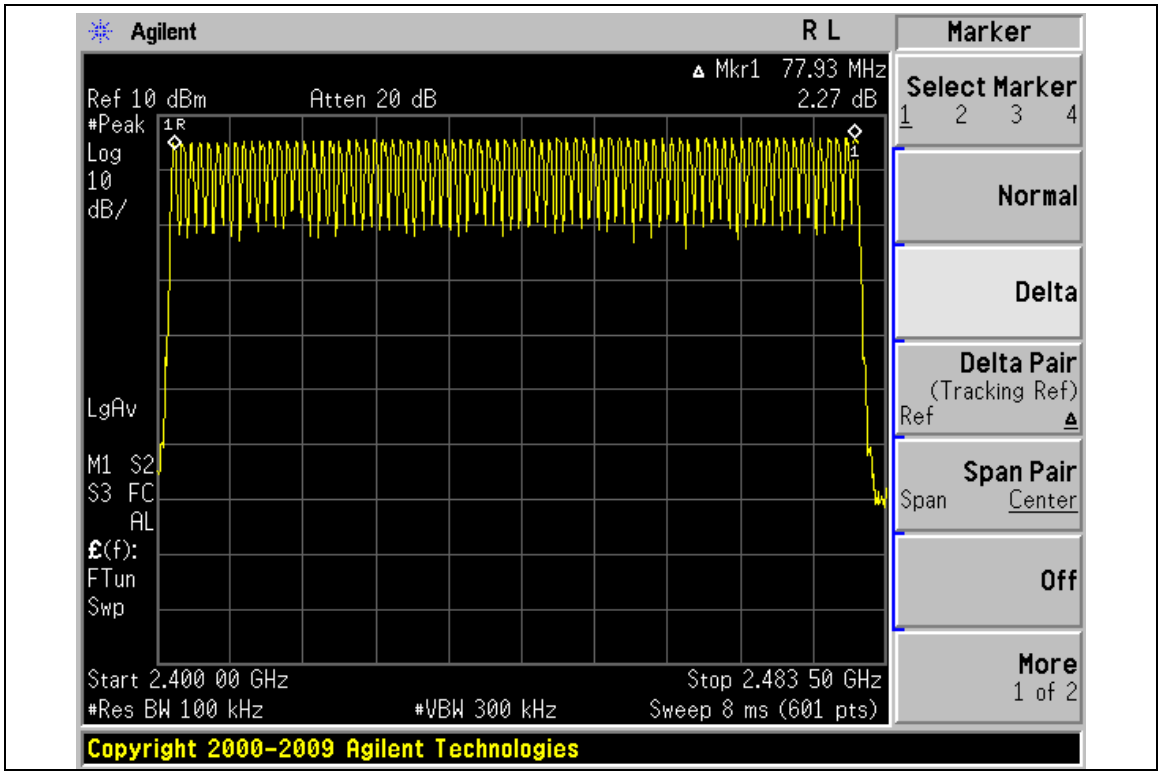
5.1.4 EUT OPERATION CONDITIONS

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.

5.1.5 TEST RESULTS

Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1015 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	Hopping Mode		

Number of Hopping Channel	79



6. AVERAGE TIME OF OCCUPANCY

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 (a)(1)(iii)	Average Time of Occupancy	0.4sec	2400-2483.5	PASS

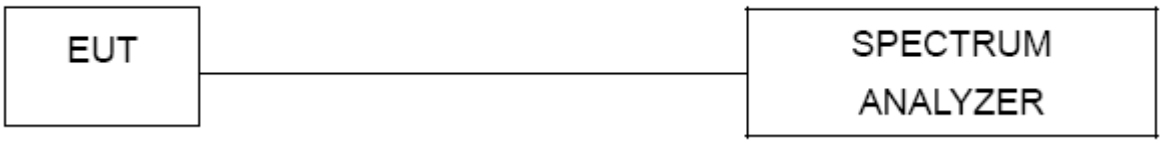
6.1.1 TEST PROCEDURE

a. The transmitter output (antenna port) was connected to the spectrum analyzer
b. Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz.
c. Use a video trigger with the trigger level set to enable triggering only on full pulses.
d. Sweep Time is more than once pulse time.
e. Set the center frequency on any frequency would be measure and set the frequency span to zero span.
f. Measure the maximum time duration of one single pulse.
g. Set the EUT for DH5, DH3 and DH1 packet transmitting.
h. Measure the maximum time duration of one single pulse.
i. A Period Time = (channel number)*0.4
DH1 Time Slot: Reading * (1600/2)*31.6/(channel number)
DH3 Time Slot: Reading * (1600/4)*31.6/(channel number)
DH5 Time Slot: Reading * (1600/6)*31.6/(channel number)

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 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.

6.1.5 TEST RESULTS

EUT：	Smart Band	Model Name ：	A2
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	CH39-DH5, 2DH5, 3DH5		

Frequency	Packet	Dwell time(ms)	Limit(ms)	Result
2402MHz	DH1/2-DH1/3-DH1	118.40	400	Pass
2441MHz	DH3/2-DH3/3-DH3	260.00	400	Pass
2480MHz	DH5/2-DH5/3-DH5	305.81	400	Pass

The test period: T= 0.4 Second/Channel x 79 Channel = 31.6 s

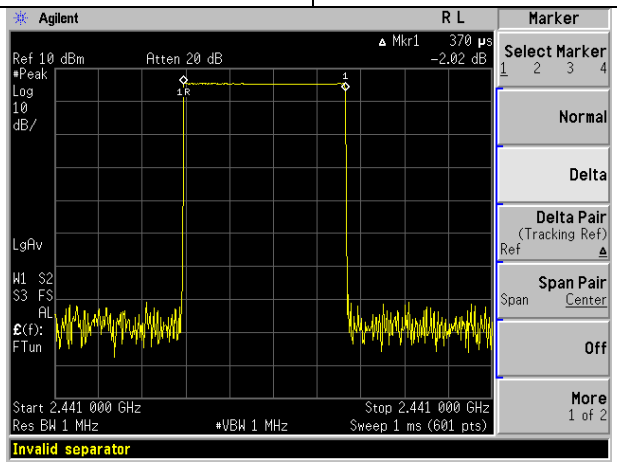
Test channel: 2402MHz/2441MHz/2480MHz as blow

DH1/2-DH1/3-DH1 time slot=0.370(ms)*(1600/ (2*79))*31.6=118.40ms

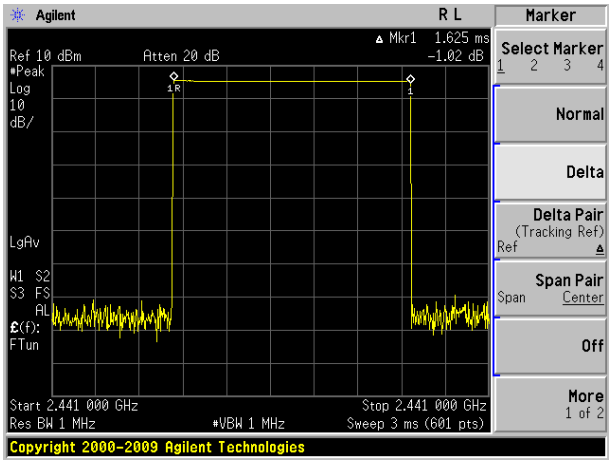
DH3/2-DH3/3-DH3 time slot=1.625(ms)*(1600/ (4*79))*31.6=260.00ms

DH5/2-DH5/3-DH5 time slot=2.867(ms)*(1600/ (6*79))*31.6=305.81ms

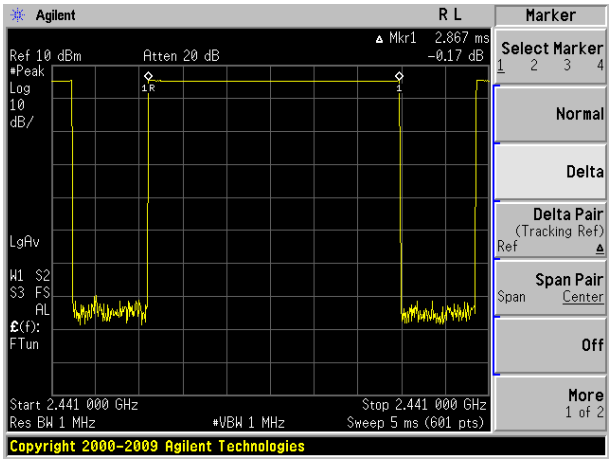
Test channel:	2402MHz/2441MHz/2480MHz



DH1/2-DH1/3-DH1



DH3/2-DH3/3-DH3



DH5/2-DH5/3-DH5

7. HOPPING CHANNEL SEPARATION MEASUREMENT

7.1 APPLIED PROCEDURES / LIMIT

Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RB	100 kHz (Channel Separation)
VB	300 kHz (Channel Separation)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

7.1.1 TEST PROCEDURE

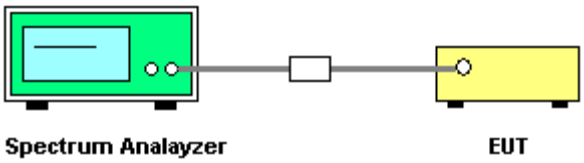
a. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.

b. The resolution bandwidth of 100 kHz and the video bandwidth of 300 kHz were utilised for channel separation measurement.

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 EUT OPERATION CONDITIONS

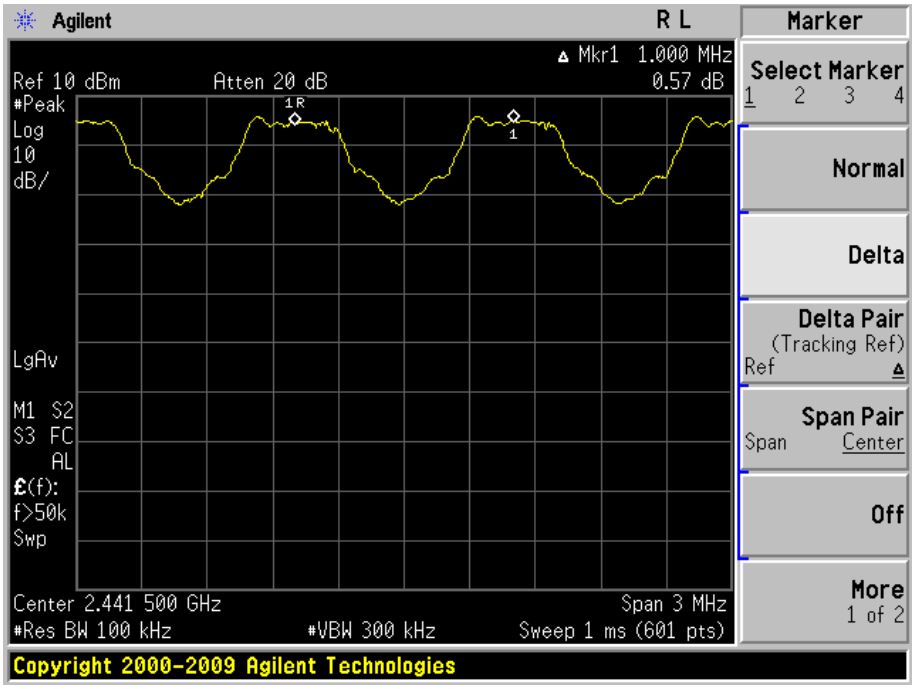
The EUT was programmed to be in continuously transmitting mode.

7.1.5 TEST RESULTS

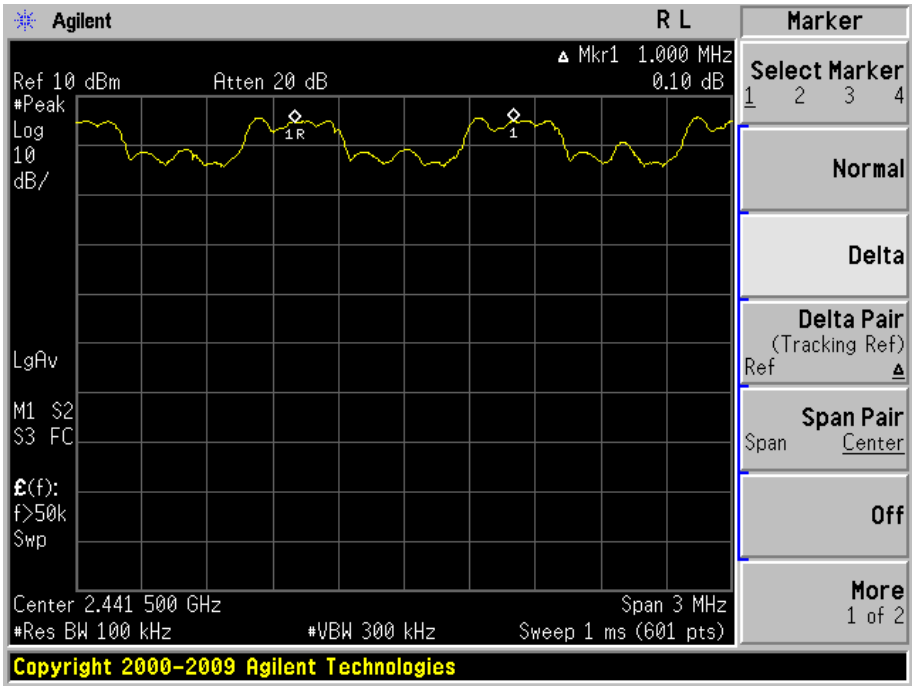
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	GFSK, PI/4 DPSK, 8DPSK		

Test Mode	**Ch. Separation (MHz)**	**Limit (MHz)**	**Result**
GFSK	1.00	0.934	Complies
PI/4 DPSK	1.00	0.748	Complies
8DPSK	1.00	0.779	Complies

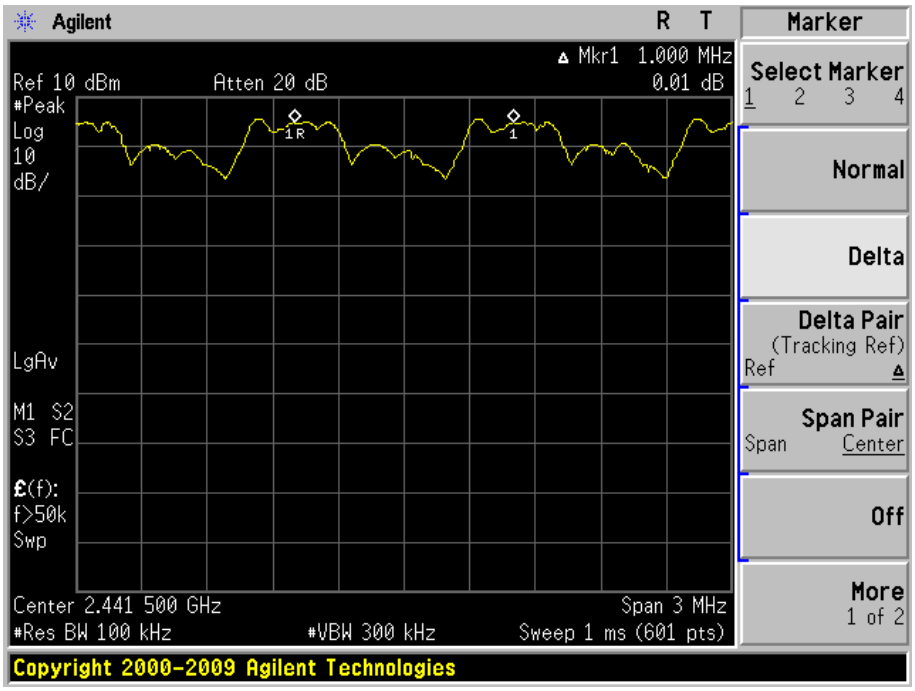
GFSK



PI/4 DPSK



8DPSK



8. HOPPING CHANNEL SEPARATION MEASUREMENT

8.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 (b)(i)	Peak Output Power	30Bm or 20.96dBm	2400-2483.5	PASS

8.1.1 TEST PROCEDURE

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

b. Spectrum Setting : RBW > the 20 dB bandwidth of the emission being measured

Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel

VBW ≥ RBW

Sweep = auto

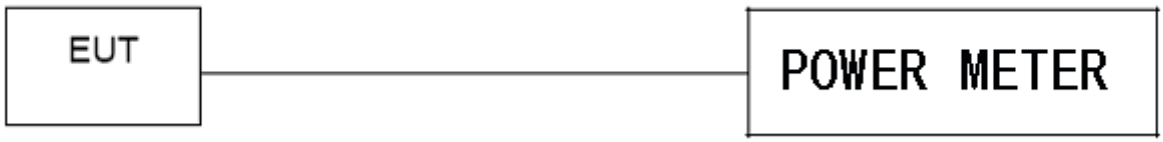
Detector function = peak

Trace = max hold

8.1.2 DEVIATION FROM STANDARD

No deviation.

8.1.3 TEST SETUP



8.1.4 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.

8.1.5 TEST RESULTS

Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	CH00/ CH39 /CH78 (1M/2M/3Mbps Mode)		

1Mbps			
Test Channel	Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)
CH00	2402	1.322	30.00
CH39	2441	1.485	30.00
CH78	2480	1.351	30.00
2Mbps			
CH00	2402	1.225	20.96
CH39	2441	1.296	20.96
CH78	2480	1.129	20.96
3Mbps			
CH00	2402	1.152	20.96
CH39	2441	1.281	20.96
CH78	2480	1.275	20.96

9. ANTENNA REQUIREMENT

9.1 STANDARD REQUIREMENT

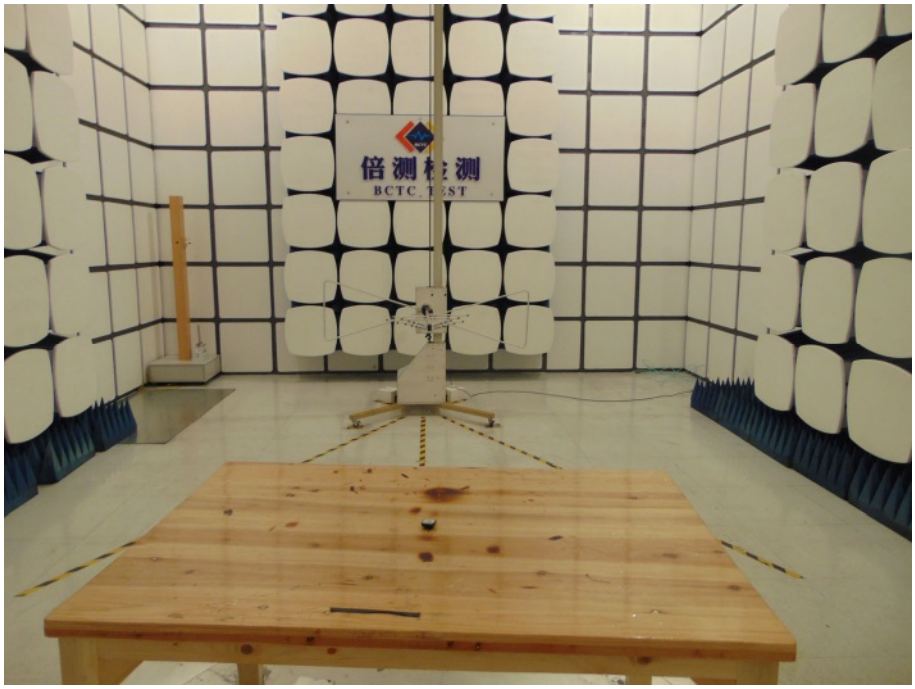
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

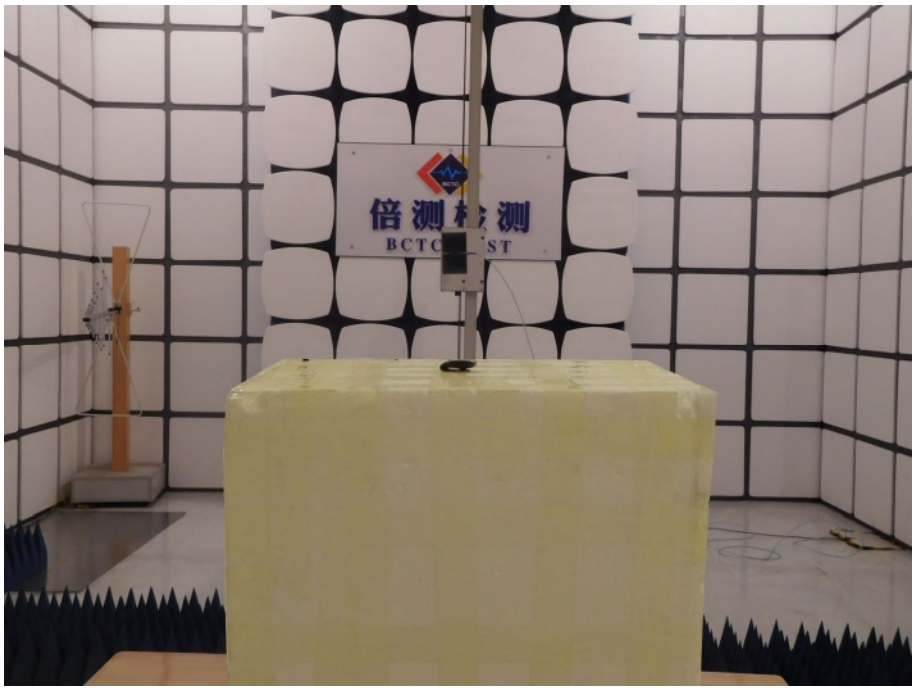
9.2 EUT ANTENNA

The EUT antenna is internal antenna,. It comply with the standard requirement.

10. TEST SEUUP PHOTO

Radiated Measurement Photos

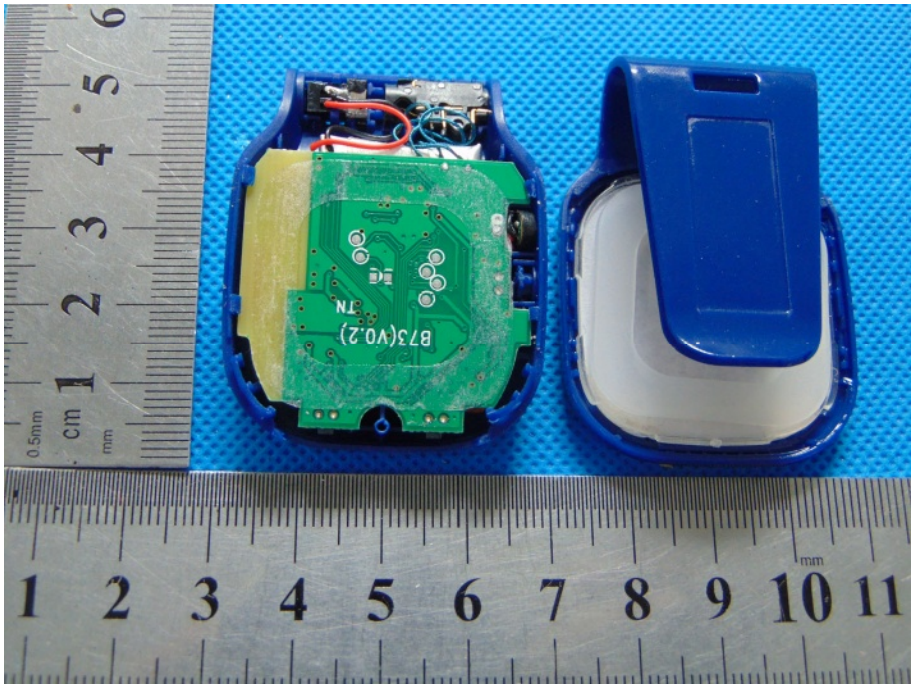




Conducted Measurement Photos

11. EUT PHOTO

FedEx
Express



※※※※※ **END OF REPORT** ※※※※※