FCC RADIO TEST REPORT
FCC ID: 2ACXUHUASEMI

Product：	Bluetooth Keyboard
Trade Name：	HUASEMI
Model Number：	805
Serial Model：	806, 807, 808, 809, 810
Report No.：	BZT140821F01

Prepared for

Shenzhen Shiling Digital Technology Co.,Ltd

No.2 Building, KaiJie Industrial Zone No.97, Longhua Dalang Street, Baoan District, Shenzhen, China

Prepared by

BZT Testing Technology Co., Ltd.

TEST RESULT CERTIFICATION

Applicant's name	Shenzhen Shiling Digital Technology Co.,Ltd
Address.....	No.2 Building, KaiJie Industrial Zone No.97, Longhua Dalang Street, Baoan District, Shenzhen, China
Manufacture's Name	Shenzhen Shiling Digital Technology Co.,Ltd
Address.....	No.2 Building, KaiJie Industrial Zone No.97, Longhua Dalang Street, Baoan District, Shenzhen, China
Product description	
Product name.....	Bluetooth Keyboard
Brand name.....	HUASEMI
Model and/or type reference	805
Serial Model：	806, 807, 808, 809, 810
Ratings	DC 5V from Adapter AC 120V/60Hz
Standards	FCC Part15.247
Test procedure	ANSI C63.4-2003

This device described above has been tested by BZT, 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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Date of Test.....	
Date (s) of performance of tests.....	08 August, 2014 ~12 August, 2014
Date of Issue.....	13 August, 2014
Test Result	**Pass**

Testing Engineer : Apple Huang

(Apple Huang)

Technical Manager : Tom Zhang

(Tom Zhang)

Authorized Signatory : Bovey Yang

(Bovey Yang)

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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

BZT Testing Technology Co., Ltd
Add. : 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China.
FCC Registration No.: 701733

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 Keyboard</td></tr>
<tr><td>Trade Name</td><td>HUASEMI</td></tr>
<tr><td>Model Name</td><td>805</td></tr>
<tr><td>Serial Model</td><td>806, 807, 808, 809, 810</td></tr>
<tr><td>Model Difference</td><td>All the model are the same,only different in model names.</td></tr>
<tr><td>Product Description</td><td>The EUT is a Bluetooth Keyboard
<table>
<tr><td>Operation Frequency:</td><td>2402~2480 MHz</td></tr>
<tr><td>Modulation Type:</td><td>FHSS</td></tr>
<tr><td>Bit Rate of Transmitter</td><td>GFSK(1Mbps),π/4-DQPSK(2Mbps),8-DPSK(3Mbps)</td></tr>
<tr><td>Number Of Channel</td><td>79 CH</td></tr>
<tr><td>Antenna Designation:</td><td>Please see Note 3.</td></tr>
<tr><td>Antenna Gain(Peak)</td><td>0.95 dBi</td></tr>
<tr><td>Output Power(Conducted):</td><td>-3.314 dBm (Max.)</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>Adapter</td><td>N/A</td></tr>
<tr><td>Battery</td><td>Rated Voltage: 3.7V</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
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	N/A	N/A	integral Antenna	NA	0.95	BT Antenna

The EUT antenna is integral 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
Mode 1	CH00
Mode 2	CH39
Mode 3	CH78

For Conducted Emission	
Final Test Mode	Description
Mode4	Link mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	CH00
Mode 2	CH39
Mode 3	CH78
Mode4	Link mode

Note:

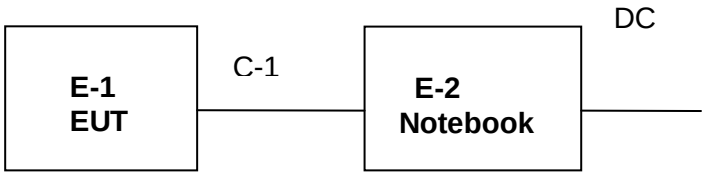
(1) The measurements are performed at the highest, middle, lowest available channels.

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: ActivePerl		
Frequency	2402 MHz	2441 MHz	2480 MHz
Parameters(1Mbps)	DEF	DEF	DEF

2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.5 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 Keyboard	HUASEMI	805	806, 807, 808, 809, 810	EUT
E-2	Notebook	Lenovo	B460	WB03928113	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	0.5m	
C-2	NO	NO	1.2m	

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

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	Agilent	E4407B	160400005	Jul. 06. 2015
2	Test Receiver	R&S	ESPI	101318	Jul. 06. 2015
3	Bilog Antenna	TESEQ	CBL6111D	31216	Nov.23. 2014
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	Jul. 06. 2015
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	Jul. 06. 2015
6	Horn Antenna	EM	EM-AH-10180	2011071402	Nov.23. 2014
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	Jul. 06. 2015
8	Amplifier	EM	EM-30180	060538	Jul. 06. 2015
9	Loop Antenna	ARA	PLA-1030/B	1029	Jul. 06. 2015
10	Power Meter	R&S	NRVS	100696	Jul. 06. 2015
11	Power Sensor (Peak)	R&S	NRV-Z31	0396.0101.19	Jul. 06. 2015

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Test Receiver	R&S	ESCI	101160	Jul. 06. 2015
2	LISN	R&S	ENV216	101313	Jul. 06. 2015
3	LISN	EMCO	3816/2	00042990	Jul. 06. 2015
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	Jul. 06. 2015
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	Jul. 06. 2015
6	Absorbing clamp	R&S	MOS-21	100423	Jul. 06. 2015

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

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

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	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

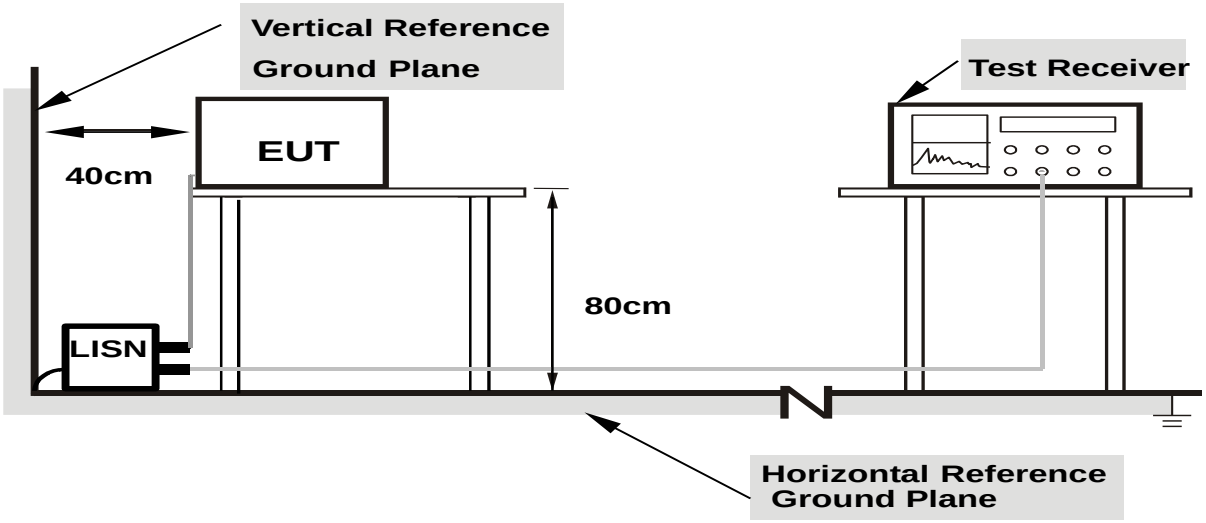
3.1.2 TEST PROCEDURE

a. The EUT was placed 0.4 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 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

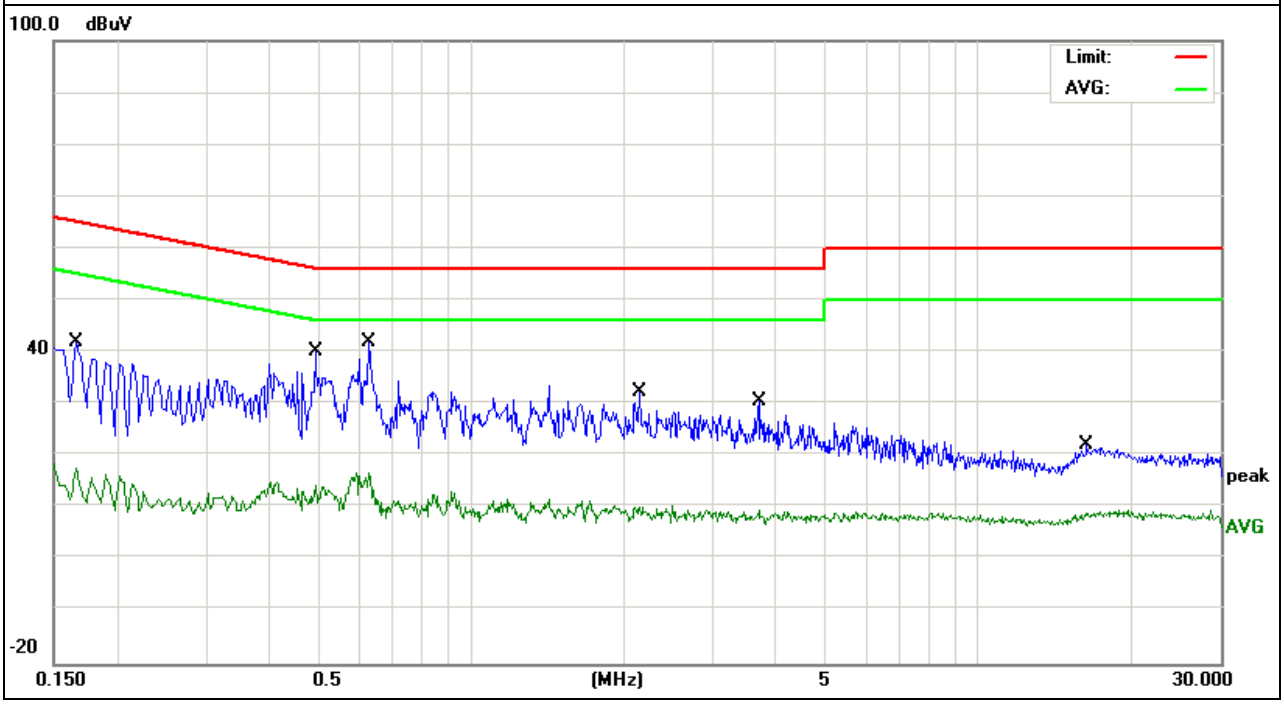
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.6 TEST RESULTS

EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase：	N
Test Voltage ：	DC 5V from Adapter with AC 120V/60Hz	Test Mode：	1

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
0.166	32.27	9.59	41.86	65.15	-23.29	QP
0.166	7.96	9.59	17.55	55.15	-37.6	AVG
0.494	30.62	9.51	40.13	56.1	-15.97	QP
0.494	4.8	9.51	14.31	46.1	-31.79	AVG
0.63	32.56	9.52	42.08	56	-13.92	QP
0.63	7.2	9.52	16.72	46	-29.28	AVG
2.154	22.78	9.55	32.33	56	-23.67	QP
2.154	0.51	9.55	10.06	46	-35.94	AVG
3.698	20.83	9.58	30.41	56	-25.59	QP
3.698	-0.05	9.58	9.53	46	-36.47	AVG
16.3539	12.14	9.97	22.11	60	-37.89	QP
16.3539	-0.68	9.97	9.29	50	-40.71	AVG

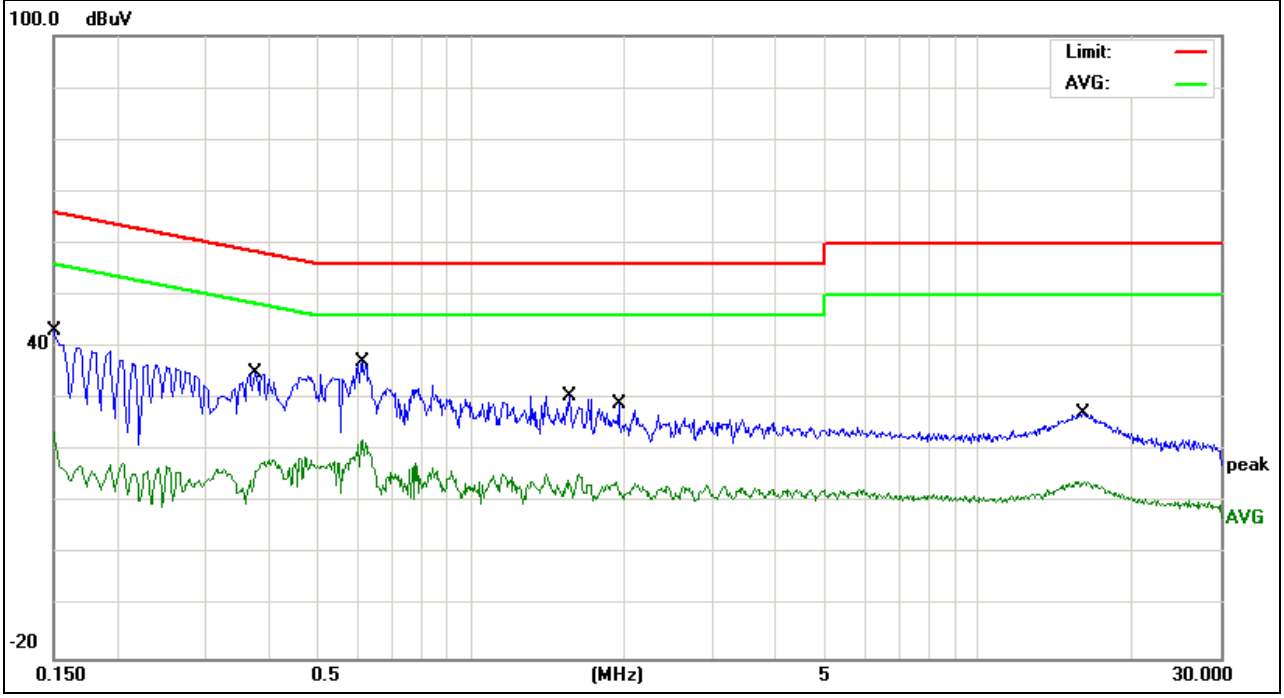
Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	DC 5V from Adapter with AC 120V/60Hz	Test Mode：	1

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
0.15	33.59	9.66	43.25	65.99	-22.74	QP
0.15	14	9.66	23.66	55.99	-32.33	AVG
0.374	25.56	9.52	35.08	58.41	-23.33	QP
0.374	7.41	9.52	16.93	48.41	-31.48	AVG
0.61	27.66	9.53	37.19	56	-18.81	QP
0.61	12.56	9.53	22.09	46	-23.91	AVG
1.562	21.09	9.56	30.65	56	-25.35	QP
1.562	4.79	9.56	14.35	46	-31.65	AVG
1.95	19.47	9.57	29.04	56	-26.96	QP
1.95	4.47	9.57	14.04	46	-31.96	AVG
16.1139	17.43	9.91	27.34	60	-32.66	QP
16.1139	4.28	9.91	14.19	50	-35.81	AVG

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



3.2 RADIATED EMISSION MEASUREMENT

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

20dBc in any 100 kHz bandwidth outside the operating frequency band. 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)	Class A (dBuV/m) (at 3M)		Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80	60	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

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

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

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

3.2.2 TEST PROCEDURE

a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
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 Quasi Peak 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:

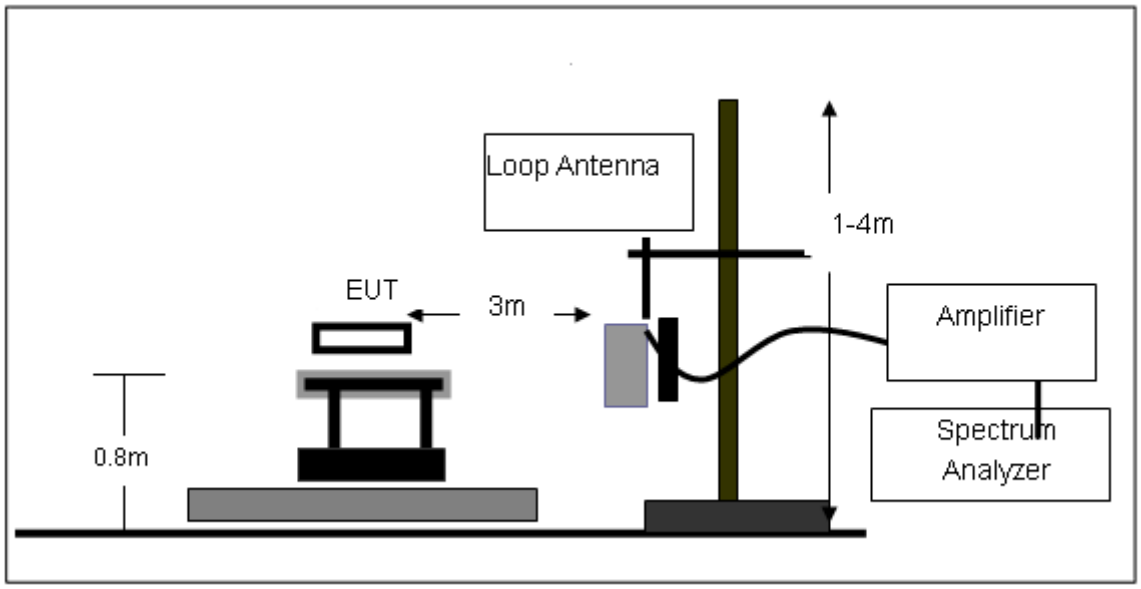
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

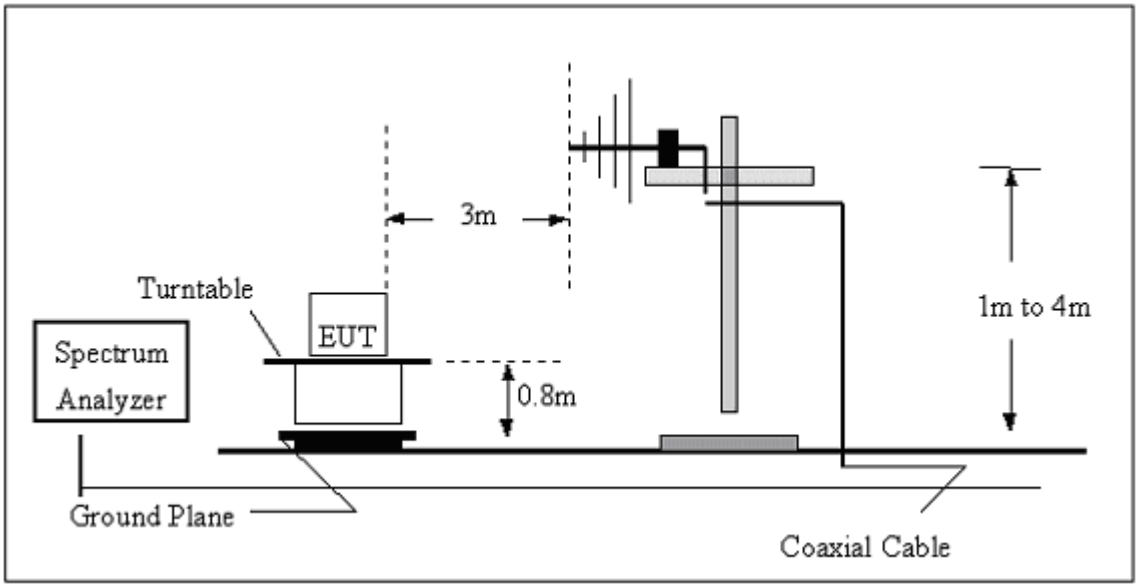
No deviation

3.2.4 TEST SETUP

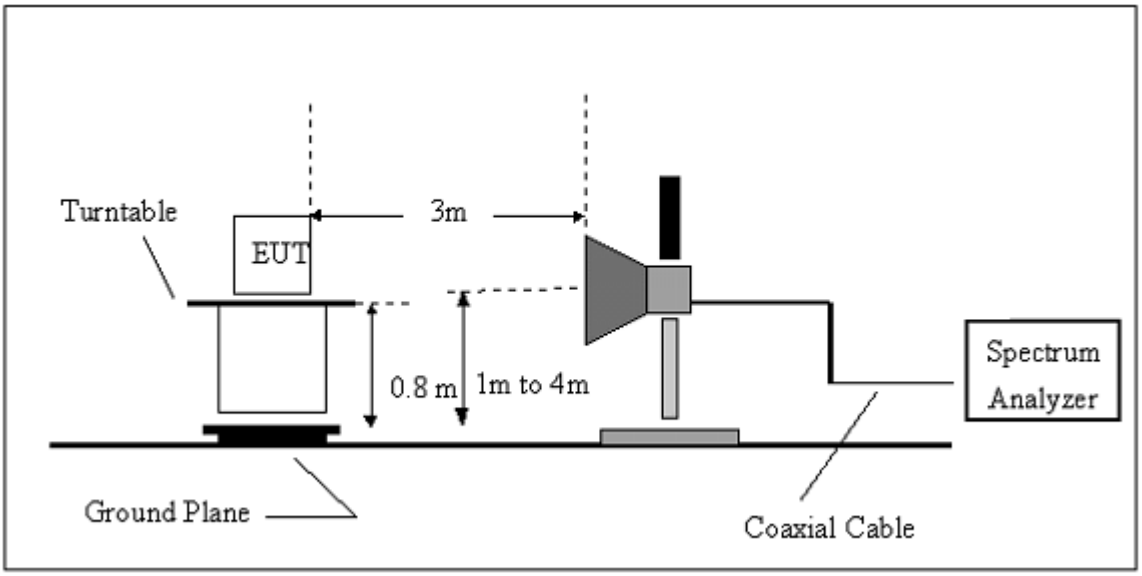
（A）Radiated Emission Test-Up Frequency Below 30MHz



（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 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.6 TEST RESULTS (BELOW 30 MHZ)

EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Polarization：	---
Test Voltage ：	DC 5V from Adapter AC 120V/60Hz		
Test Mode ：	Link mode		

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

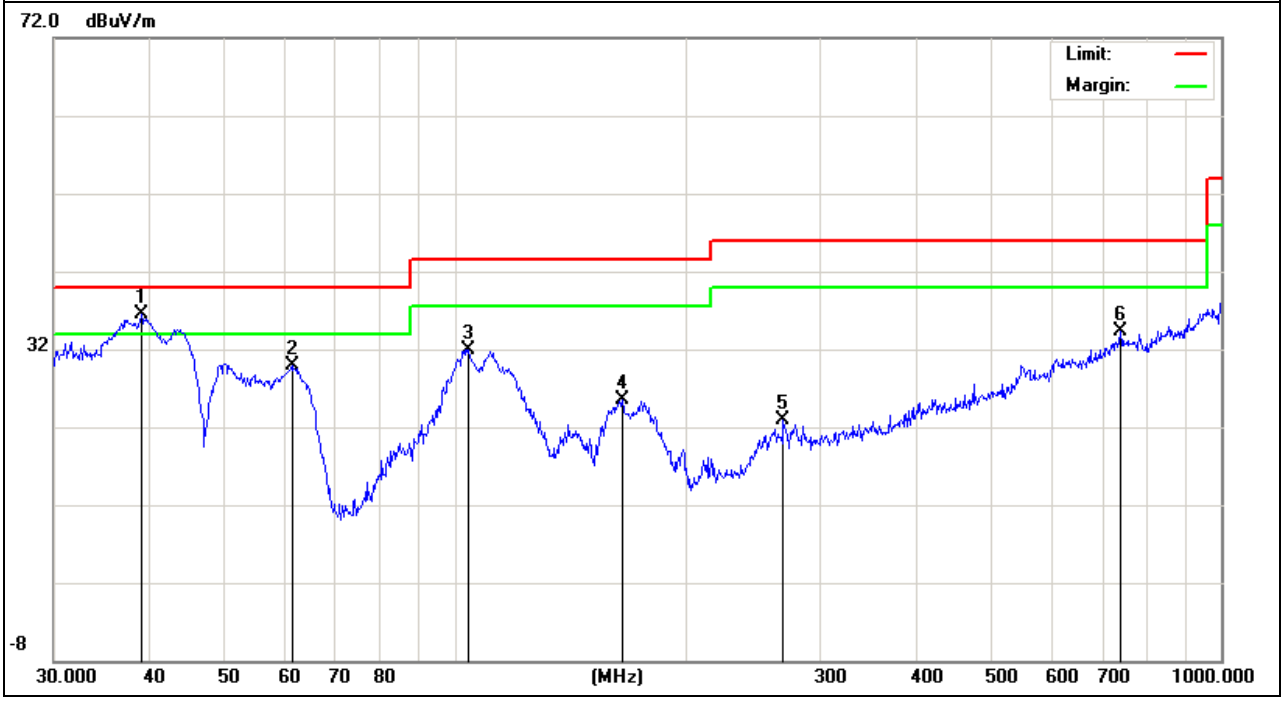
NOTE:
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =40 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

3.2.7 TEST RESULTS (BETWEEN 30M – 1000 MHZ)

EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Polarization：	Horizontal
Test Voltage ：	DC 5V from Adapter AC 120V/60Hz		
Test Mode ：	Link mode		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
39.0245	22.56	13.88	36.44	40	-3.56	QP
61.3462	24.59	5.31	29.9	40	-10.1	QP
104.1701	20.93	11	31.93	43.5	-11.57	QP
165.4866	14.81	10.78	25.59	43.5	-17.91	QP
268.4852	8.66	14.22	22.88	46	-23.12	QP
739.6603	7.82	26.47	34.29	46	-11.71	QP

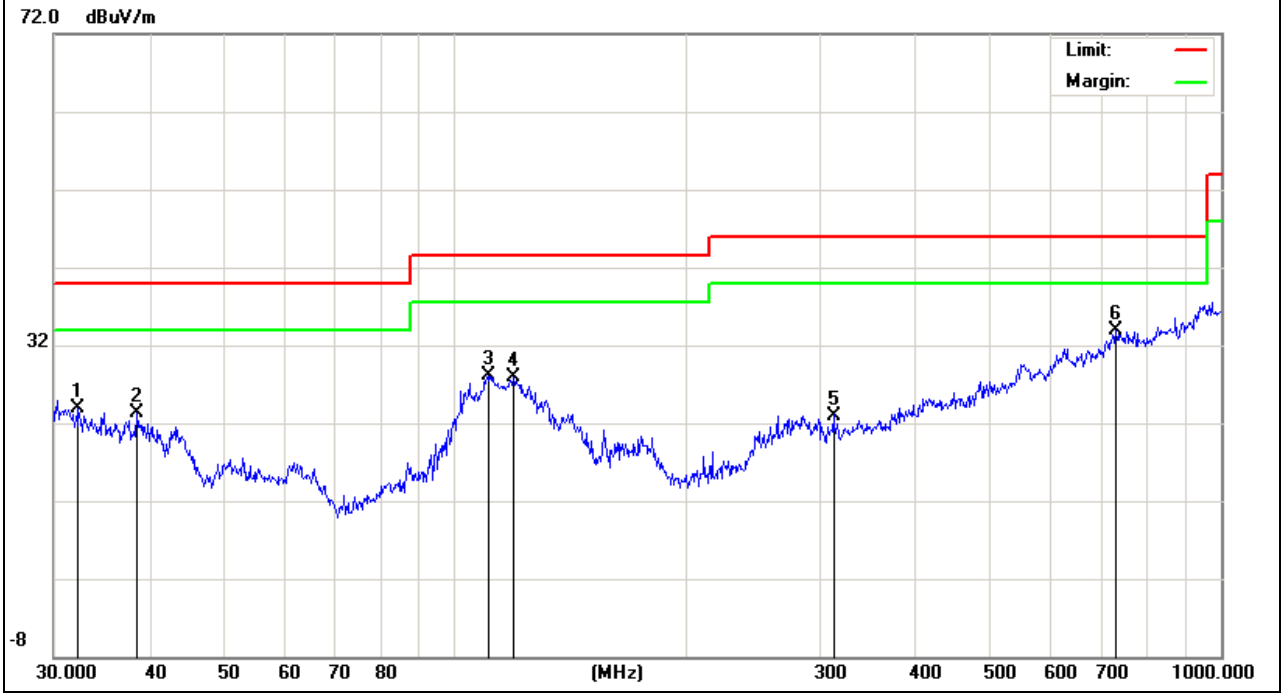
Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Polarization：	Vertical
Test Voltage ：	DC 5V from Adapter AC 120V/60Hz		
Test Mode ：	Link mode		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
32.2924	6.6	17.29	23.89	40	-16.11	QP
38.4808	9.07	14.14	23.21	40	-16.79	QP
110.957	16.48	11.7	28.18	43.5	-15.32	QP
119.436	15.84	12.08	27.92	43.5	-15.58	QP
312.1792	7.87	15.13	23	46	-23	QP
729.3582	7.74	26.21	33.95	46	-12.05	QP

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



3.2.8 TEST RESULTS (ABOVE 1000 MHZ)

Radiated Spurious Emission (Transmitting)

30MHz~25GHz:(Scan with GFSK, π/4-DQPSK,8DPSK,the worst case is GFSK Mode)

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Low Channel (2402 MHz)							
4804.283	66.44	-3.62	62.82	74	-11.18	Pk	Vertical
4804.283	47.38	-3.62	43.76	54	-10.24	AV	Vertical
7206.189	62.06	-0.9	61.16	74	-12.84	Pk	Vertical
7206.189	43.05	-0.9	42.15	54	-11.85	AV	Vertical
4804.057	64.21	-3.64	60.57	74	-13.43	Pk	Horizontal
4804.057	46.11	-3.64	42.47	54	-11.53	AV	Horizontal
Mid Channel (2441 MHz)							
4882.164	65.11	-3.65	61.46	74	-12.54	Pk	Vertical
4882.164	49.29	-3.65	45.64	54	-8.36	AV	Vertical
7323.265	62.02	-0.82	61.20	74	-12.80	Pk	Vertical
7323.265	44.29	-0.82	43.47	54	-10.53	AV	Vertical
4882.184	62.24	-3.68	58.56	74	-15.44	Pk	Horizontal
4882.184	46.27	-3.68	42.59	54	-11.41	AV	Horizontal
High Channel (2480 MHz)							
4960.358	62.18	-3.59	58.59	74	-15.41	Pk	Vertical
4960.358	45.28	-3.59	41.69	54	-12.31	AV	Vertical
4960.236	64.01	-3.59	60.42	74	-13.58	Pk	Horizontal
4960.236	46.39	-3.59	42.80	54	-11.20	AV	Horizontal

Remark:

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

Emission Level = Meter Reading + Factor

Margin = Limit - Emission Level

3.2.9 TEST RESULTS (RESTRICTED BANDS REQUIREMENTS)

BT- non-hopping

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
GFSK							
2390	58.25	-12.99	45.26	74	-28.74	peak	Vertical
2390	65.31	-12.99	52.32	74	-21.68	peak	Horizontal
2483.5	59.08	-12.78	46.30	74	-27.70	peak	Vertical
2483.5	61.54	-12.78	48.76	74	-25.24	peak	Horizontal
π/4-DQPSK							
2390	59.05	-12.99	46.06	74	-27.94	peak	Vertical
2390	57.24	-12.99	44.25	74	-29.75	peak	Horizontal
2483.5	57.33	-12.78	44.55	74	-29.45	peak	Vertical
2483.5	59.29	-12.78	46.51	74	-27.49	peak	Horizontal
8DPSK							
2390	58.09	-12.99	45.10	74	-28.90	peak	Vertical
2390	60.15	-12.99	47.16	74	-26.84	peak	Horizontal
2483.5	60.42	-12.78	47.64	74	-26.36	peak	Vertical
2483.5	62.27	-12.78	49.49	74	-24.51	peak	Horizontal

NOTE: The result(PK) less than AV limite,No need shown AV result.

BT-GFSK- hopping

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
GFSK							
2390	56.33	-12.99	43.34	74	-30.66	peak	Vertical
2390	57.39	-12.99	44.40	74	-29.60	peak	Horizontal
2483.5	53.11	-12.78	40.33	74	-33.67	peak	Vertical
2483.5	56.23	-12.78	43.45	74	-30.55	peak	Horizontal
π/4-DQPSK							
2390	52.83	-12.99	39.84	74	-34.16	peak	Vertical
2390	49.73	-12.99	36.74	74	-37.26	peak	Horizontal
2483.5	51.96	-12.78	39.18	74	-34.82	peak	Vertical
2483.5	57.32	-12.78	44.54	74	-29.46	peak	Horizontal
8DPSK							
2390	58.12	-12.99	45.13	74	-28.87	peak	Vertical
2390	60.15	-12.99	47.16	74	-26.84	peak	Horizontal
2483.5	60.43	-12.78	47.65	74	-26.35	peak	Vertical
2483.5	62.28	-12.78	49.50	74	-24.50	peak	Horizontal

NOTE: The result(PK) less than AV limite,No need shown AV result.

4. NUMBER OF HOPPING CHANNEL

4.1 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	> Operating Frequency Range
RB	100 kHz
VB	100 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

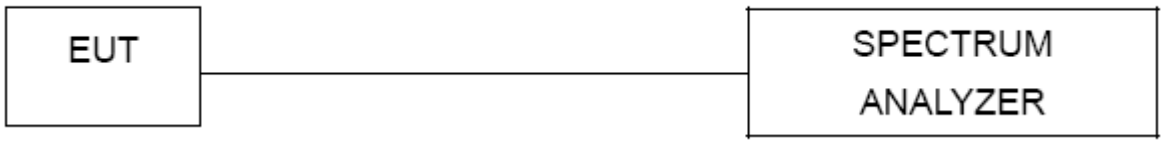
4.1.1 TEST PROCEDURE

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.

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



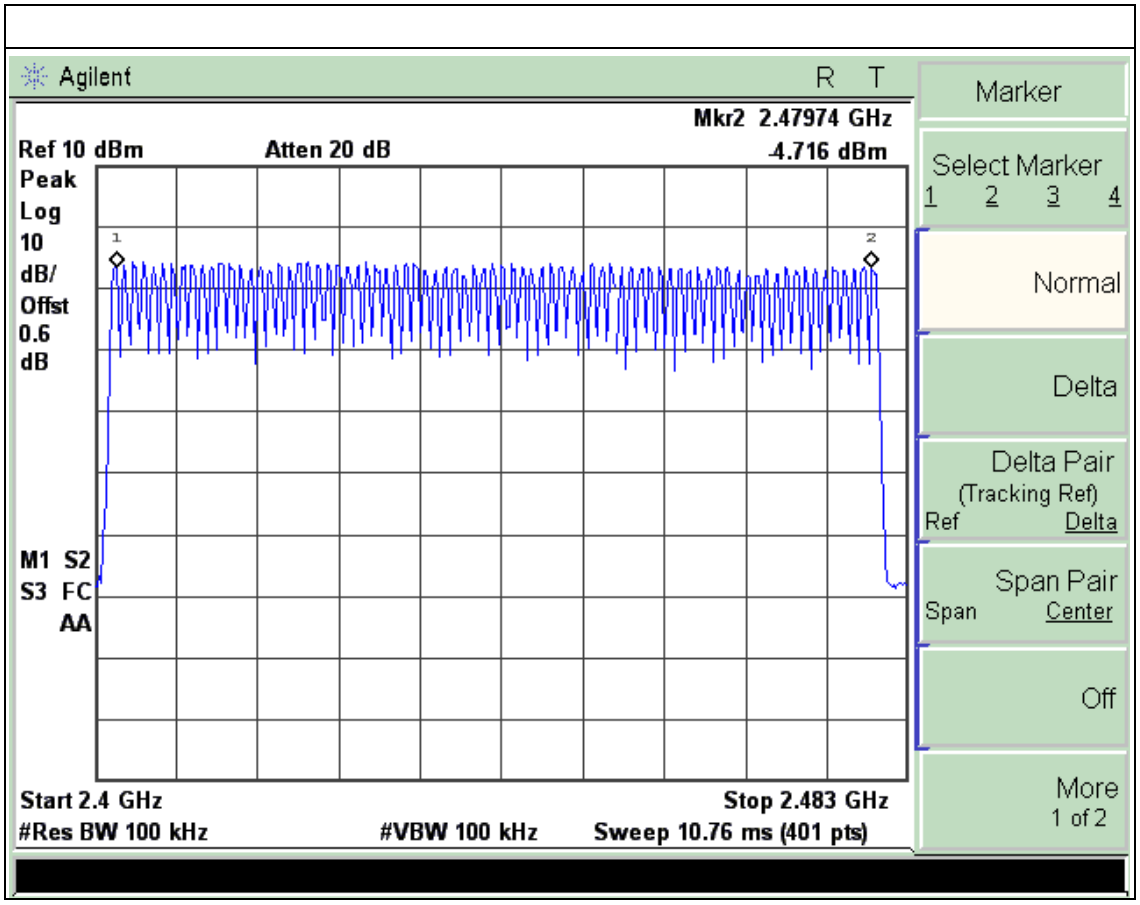
4.1.4 EUT OPERATION CONDITIONS

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

4.1.5 TEST RESULTS

EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1015 hPa	Test Voltage ：	DC 5V from Adapter AC 120V/60Hz
Test Mode ：	Hopping Mode		

Number of Hopping Channel	79



5. AVERAGE TIME OF OCCUPANCY

5.1 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

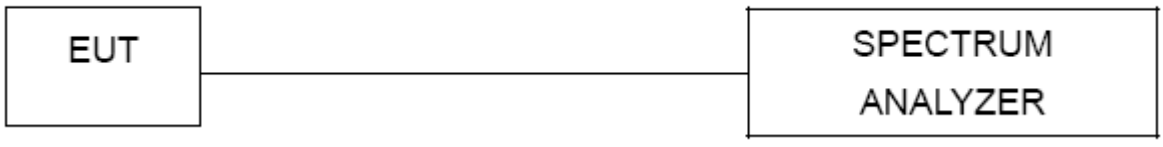
5.1.1 TEST PROCEDURE

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. DH5 Packet permit maximum 1600/ 79 / 6 = 3.37 hops per second in each channel (5 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 3.37 x 31.6 = 106.6 within 31.6 seconds.
j. DH3 Packet permit maximum 1600 / 79 / 4 = 5.06 hops per second in each channel (3 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 5.06 x 31.6 = 160 within 31.6 seconds.
k. DH1 Packet permit maximum 1600 / 79 /2 = 10.12 hops per second in each channel (1 time slot RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 10.12 x 31.6 = 320 within 31.6 seconds.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

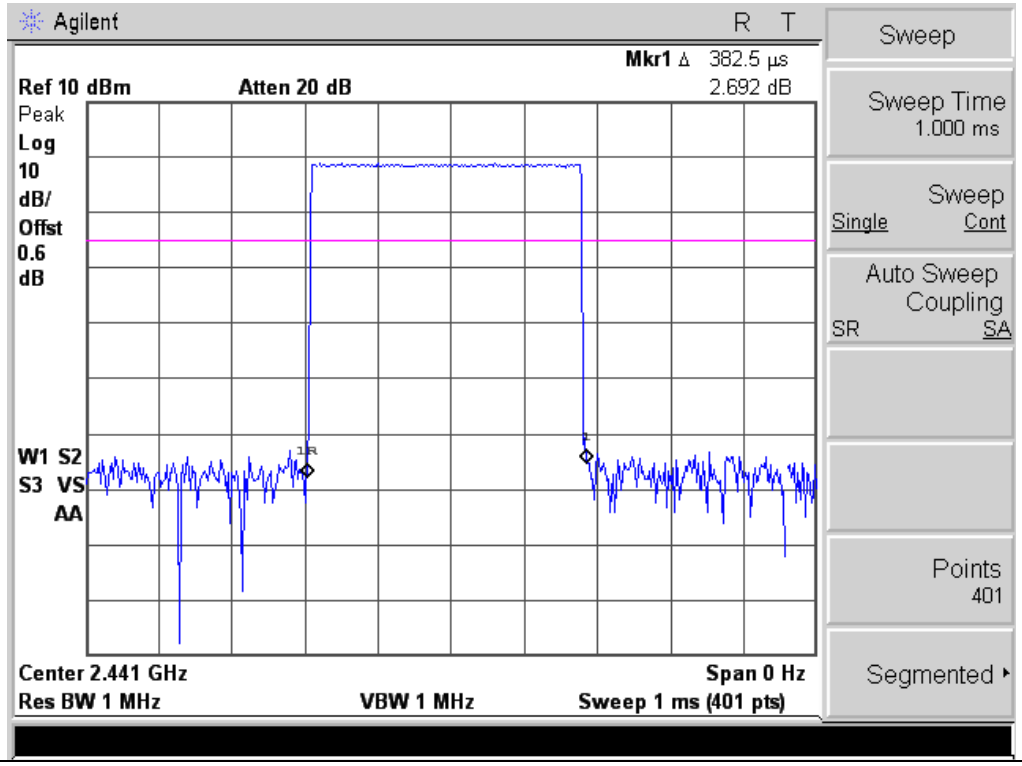
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.5 TEST RESULTS

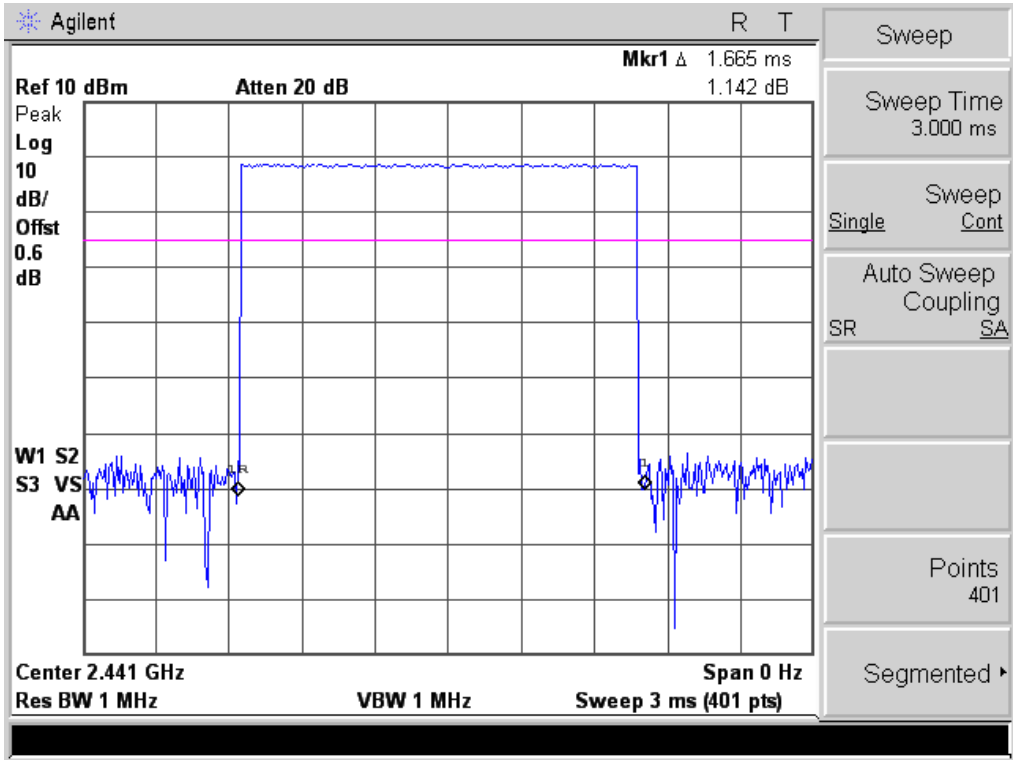
EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	25 ℃	Relative Humidity：	50%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	GFSK(1Mbps)-DH1/DH3/DH5		

Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limits (s)
DH1	MHz	0.38	0.12	0.4
DH3	MHz	1.67	0.27	0.4
DH5	MHz	2.93	0.31	0.4

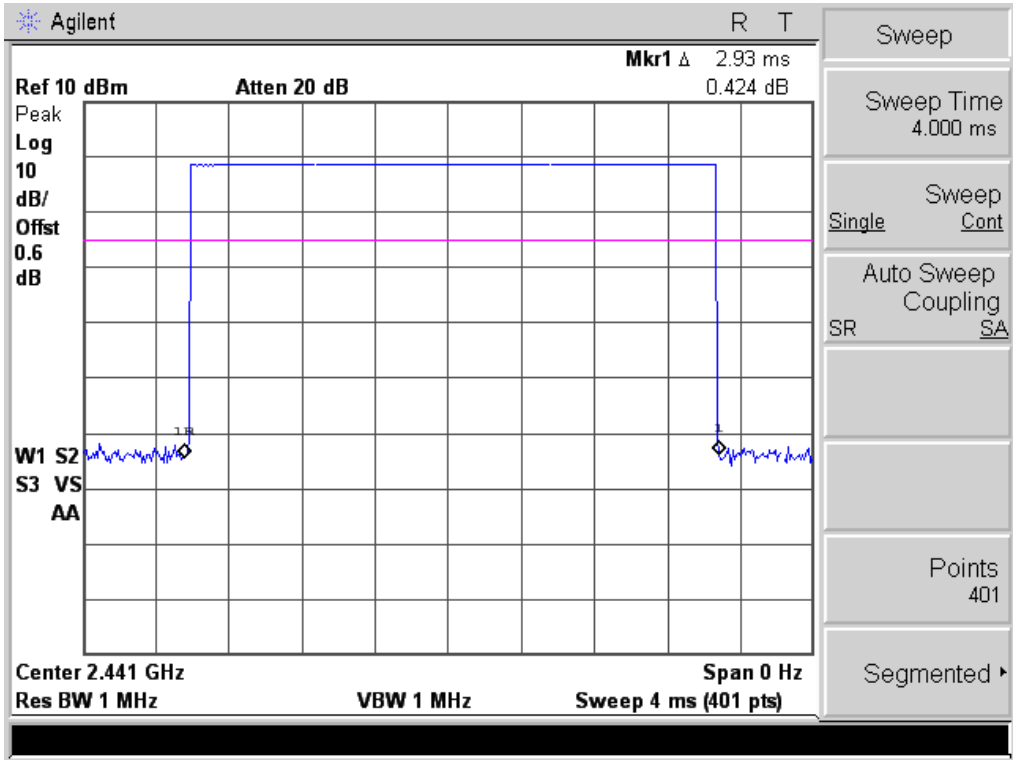
CH39-DH1



CH39-DH3



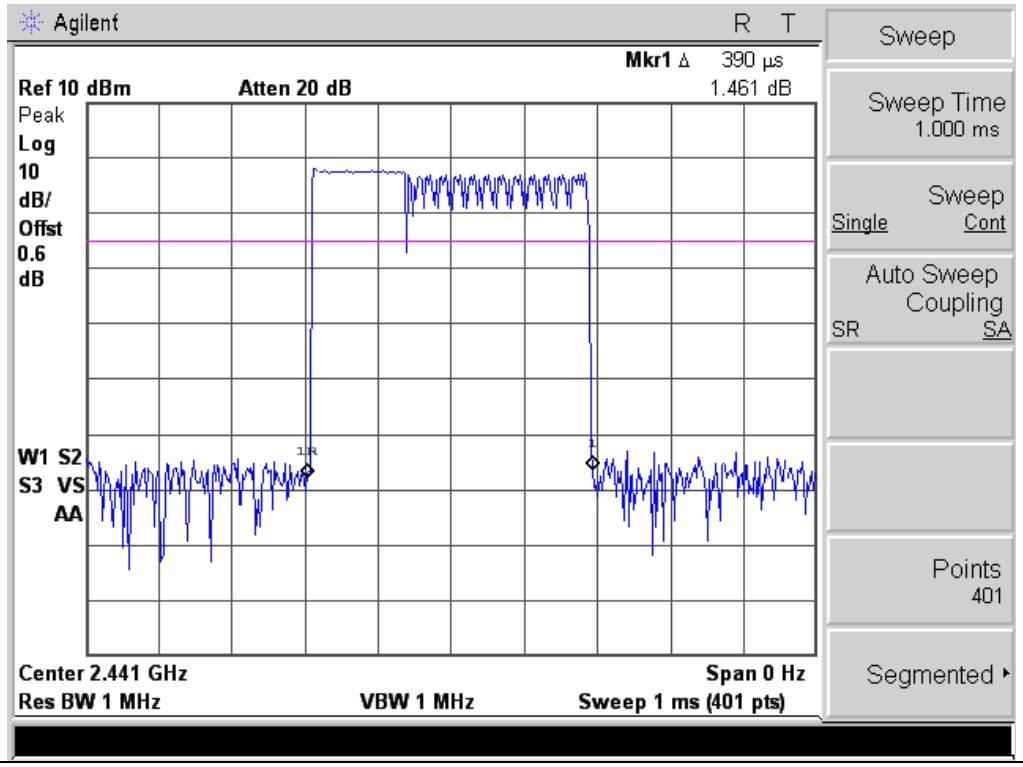
CH39-DH5



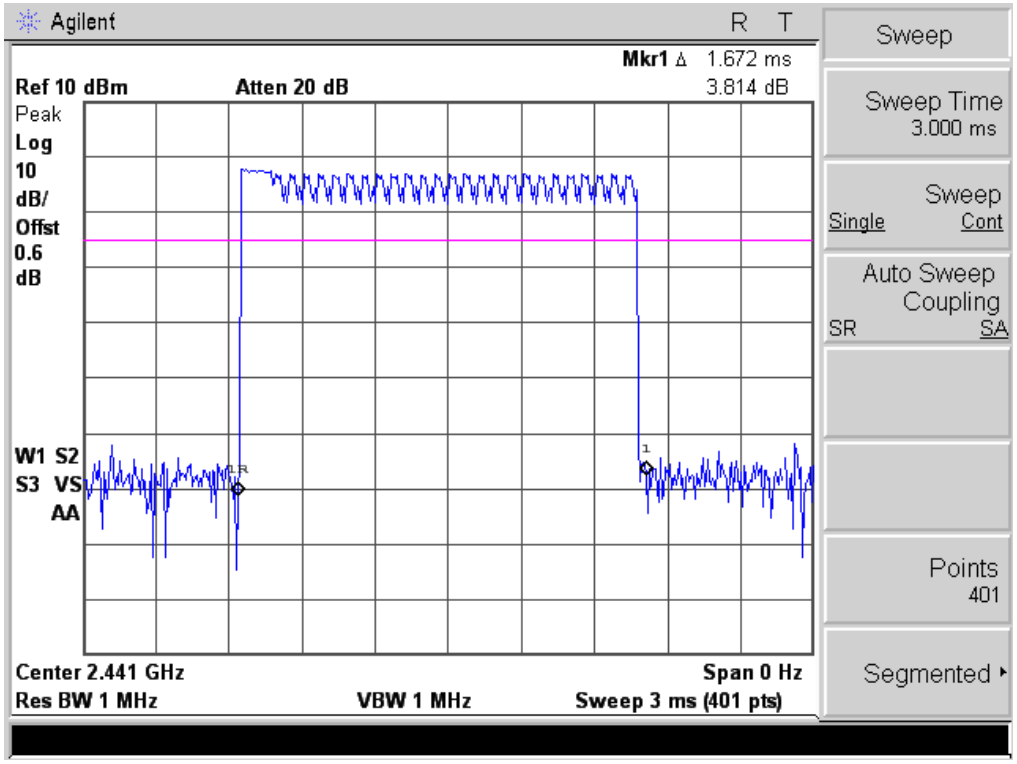
EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	25 ℃	Relative Humidity：	50%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	π/4-DQPSK(2Mbps) –2DH1/2DH3/2DH5		

Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limits (s)
2DH1	MHz	0.39	0.12	0.4
2DH3	MHz	1.67	0.27	0.4
2DH5	MHz	2.94	0.31	0.4

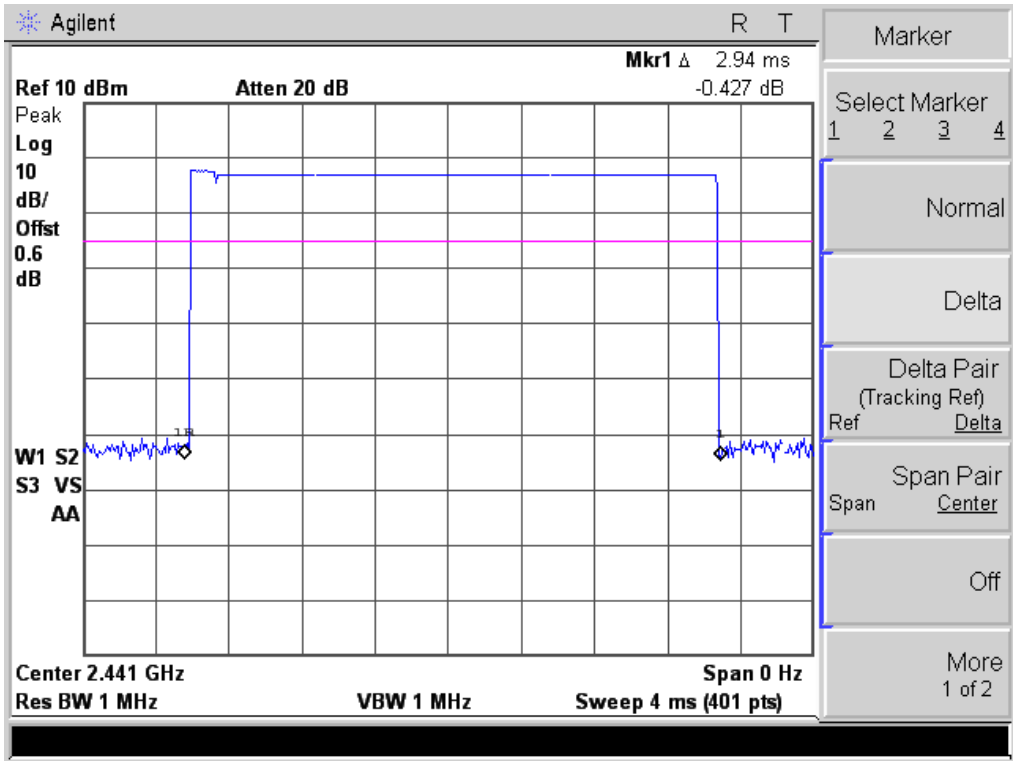
CH39-DH1



CH39-DH3



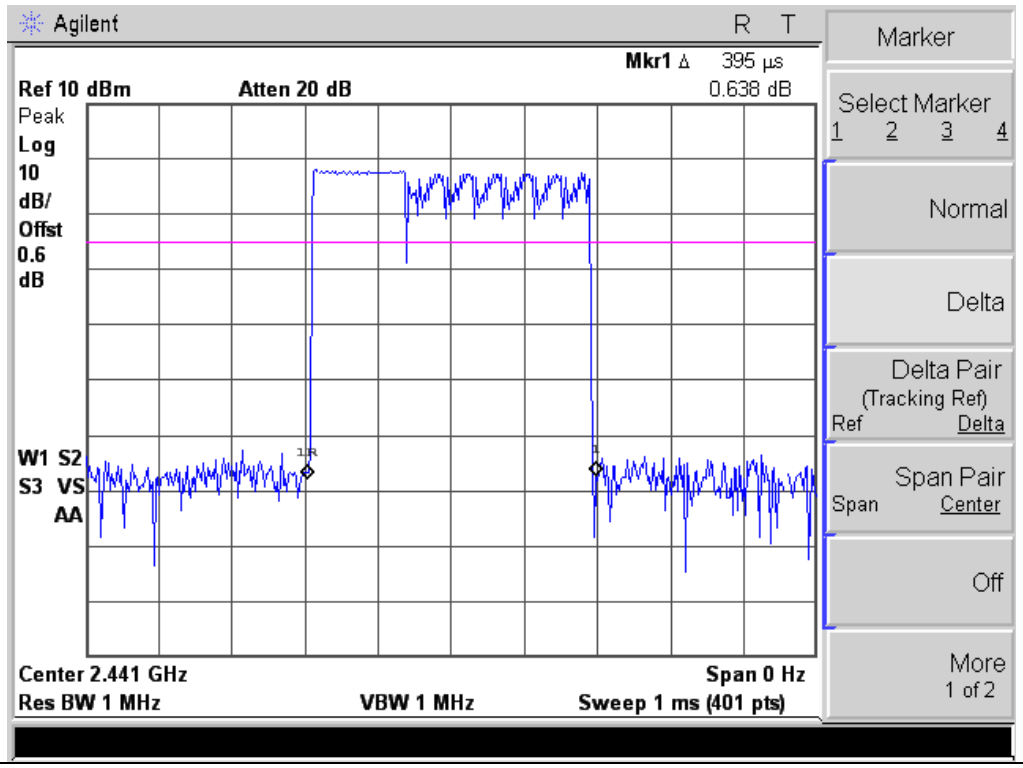
CH39-DH5



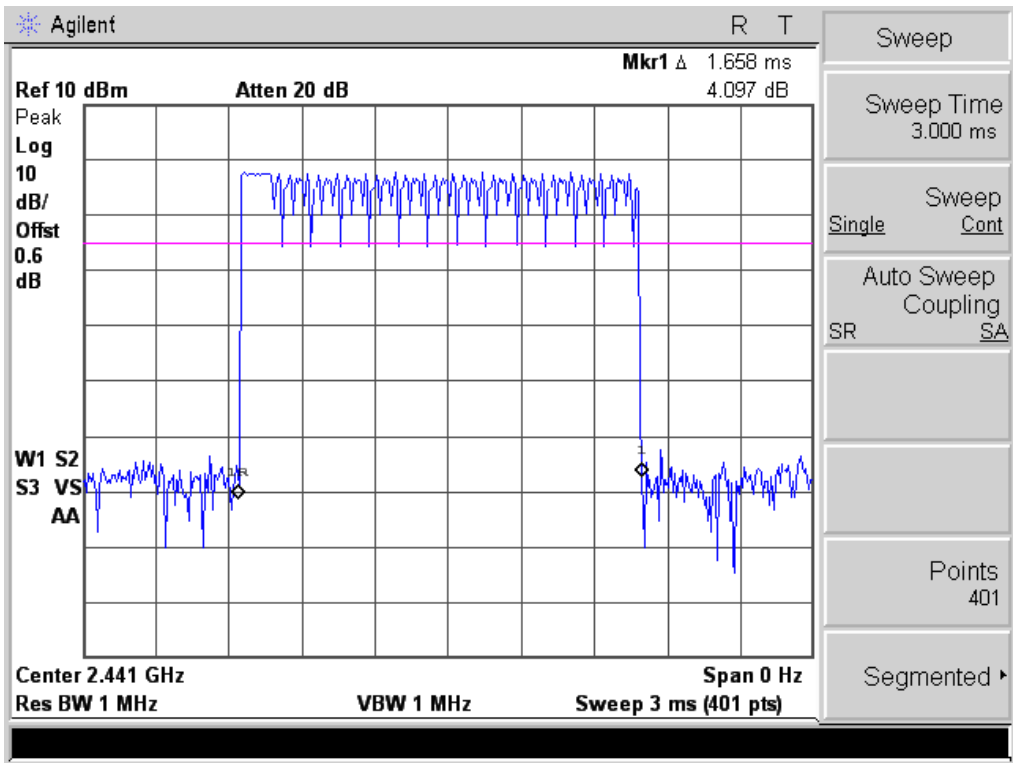
EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	25 ℃	Relative Humidity：	50%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	8-DPSK(3Mbps) -3DH1/3DH3/3DH5		

Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limits (s)
3DH1	MHz	0.40	0.13	0.4
3DH3	MHz	1.66	0.27	0.4
3DH5	MHz	2.94	0.31	0.4

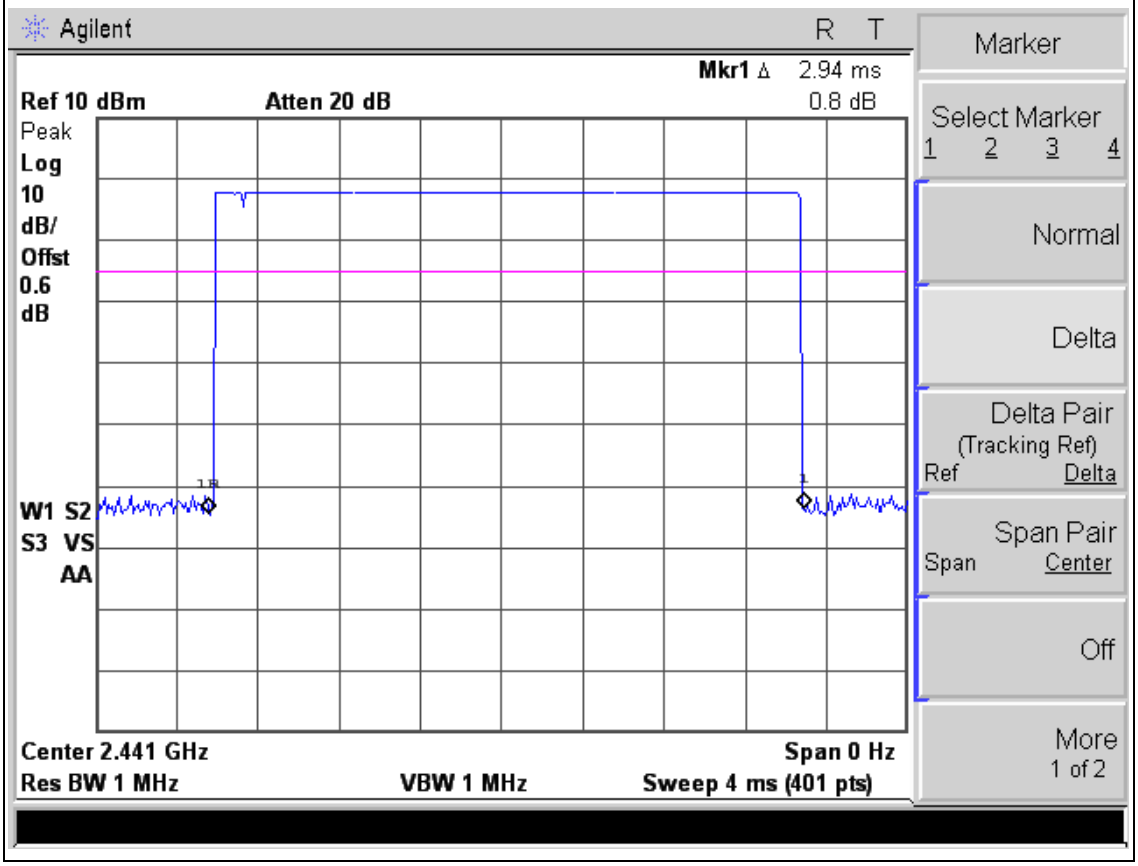
CH39-DH1



CH39-DH3



CH39-DH5



6. HOPPING CHANNEL SEPARATION MEASUREMENT

6.1 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
RBW	30 kHz
VBW	100 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

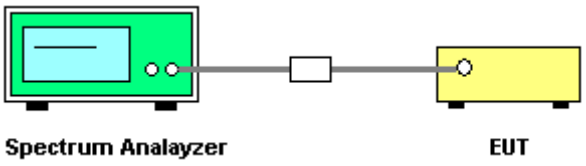
6.1.1 TEST PROCEDURE

a. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
b. The resolution bandwidth of 30 kHz and the video bandwidth of 100 kHz were utilised for 20 dB bandwidth measurement.
c. The resolution bandwidth of 30 kHz and the video bandwidth of 100 kHz were utilised for channel separation measurement.

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.1.5 TEST RESULTS

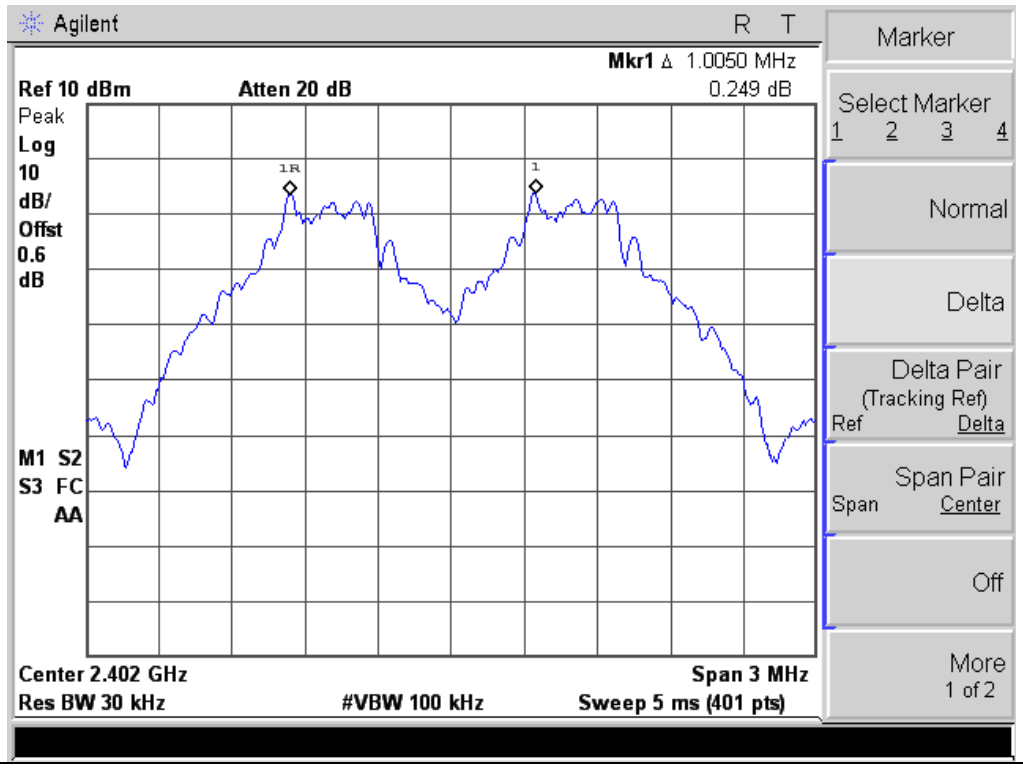
EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5V from Adapter AC 120V/60Hz
Test Mode ：	CH00 / CH39 /CH78 (GFSK Mode) –DH1/DH3/DH5		

Frequency	Ch. Separation (MHz)	Result
2402 MHz	1.005	**Complies**
2441 MHz	1.005	**Complies**
2480 MHz	1.005	**Complies**

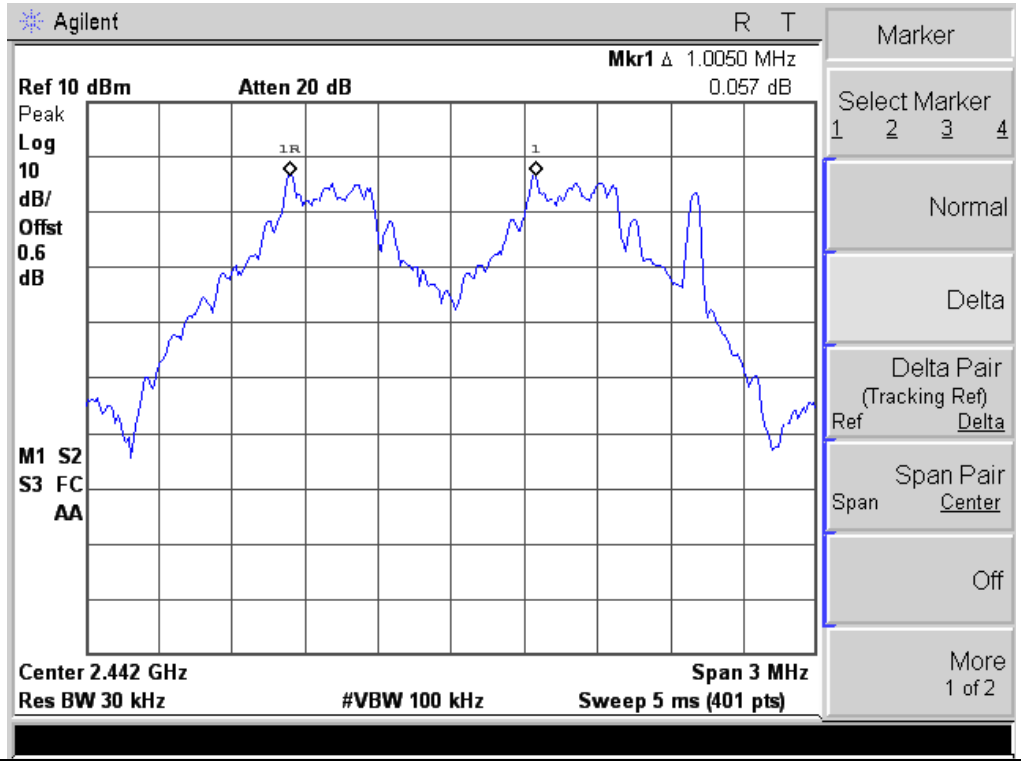
For GFSK:

Ch. Separation Limits: > 20dB bandwidth

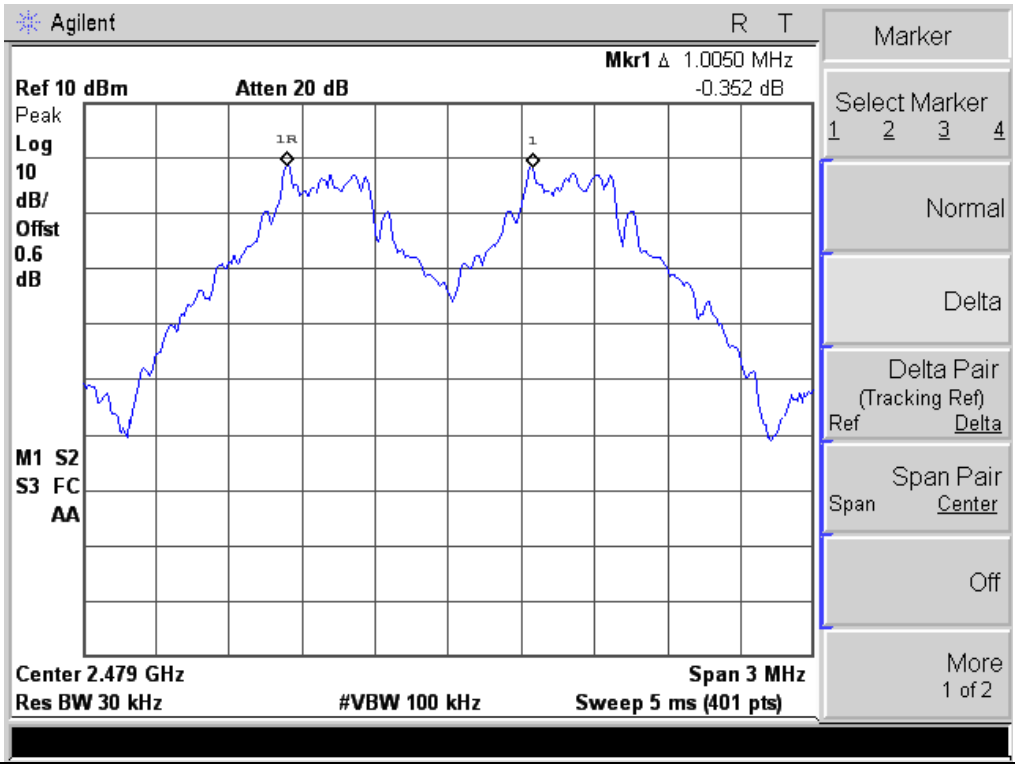
1Mbps CH00



1Mbps CH39



1Mbps CH78



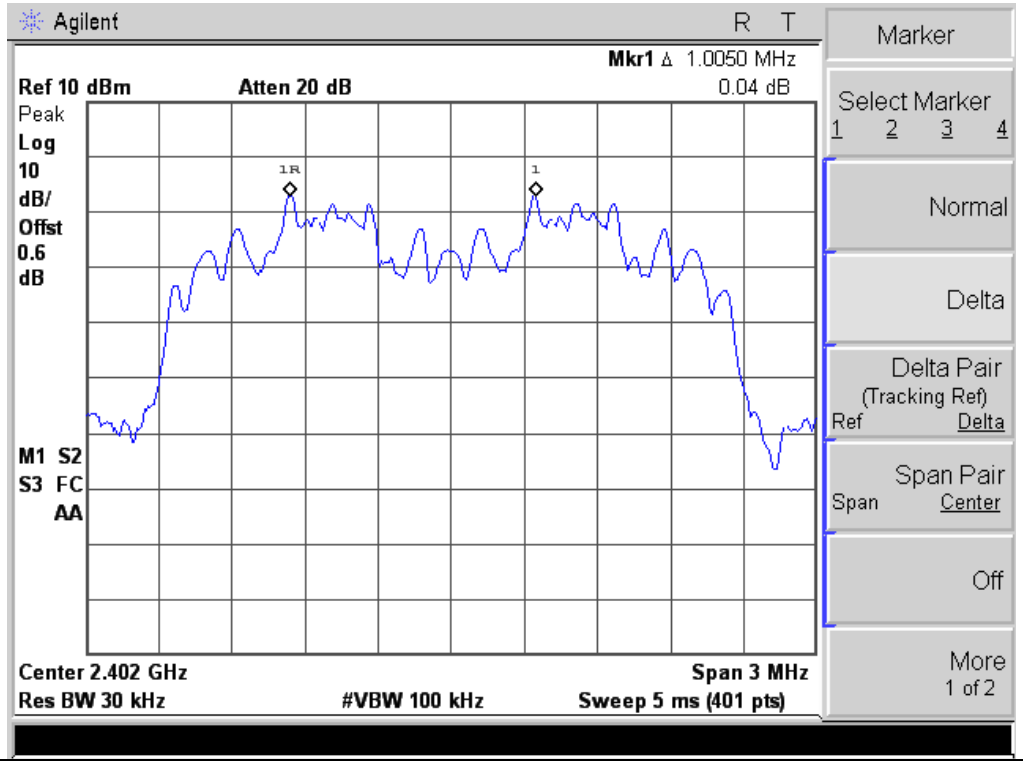
EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5V from Adapter AC 120V/60Hz
Test Mode ：	π/4-DQPSK(2Mbps) –2DH1/2DH3/2DH5		

Frequency	Ch. Separation (MHz)	Result
2402 MHz	1.005	**Complies**
2441 MHz	1.005	**Complies**
2480 MHz	1.005	**Complies**

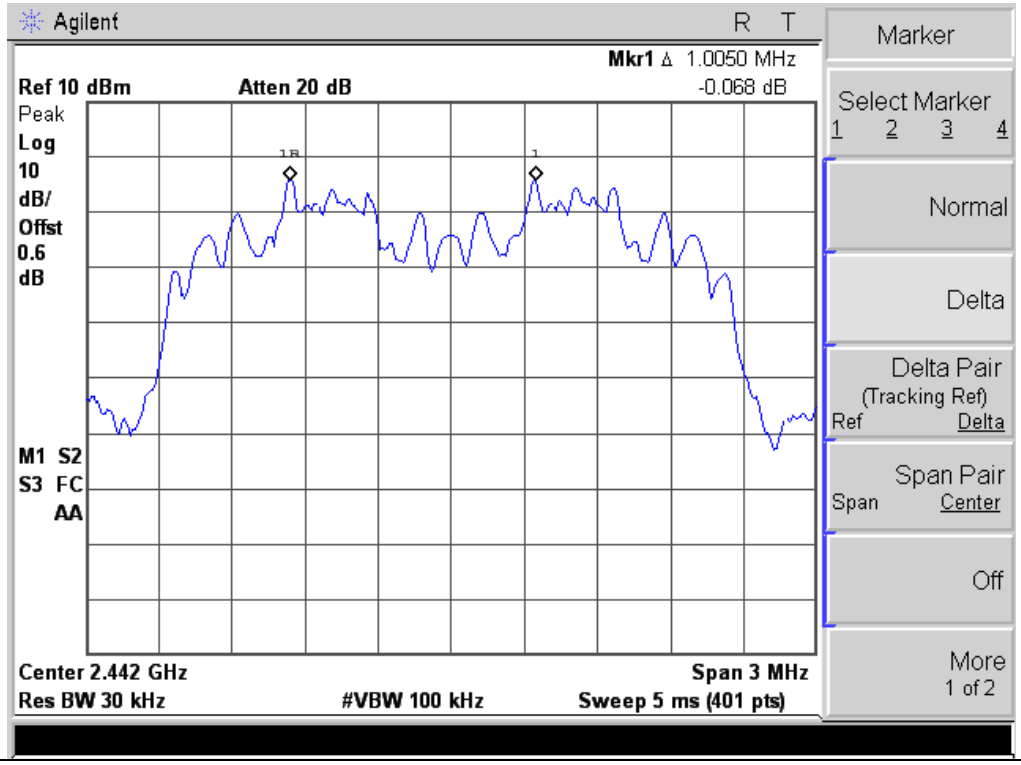
For π/4-DQPSK:

Ch. Separation Limits: > two-thirds 20dB bandwidth

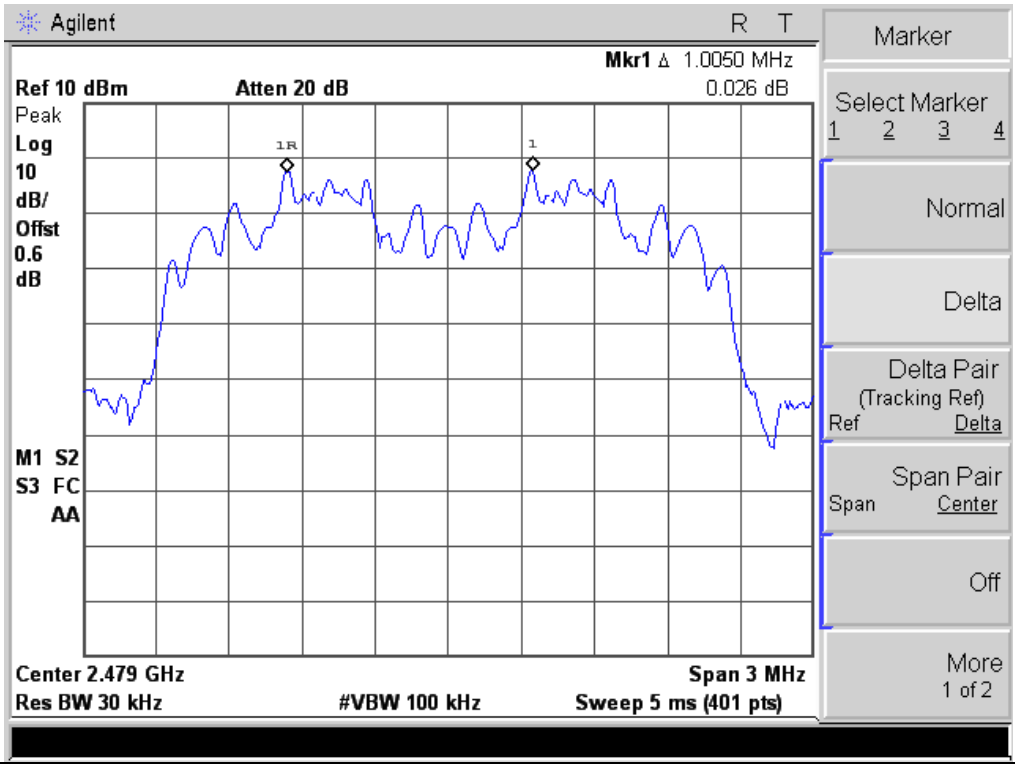
2 Mbps CH00



2Mbps CH39



2Mbps CH78



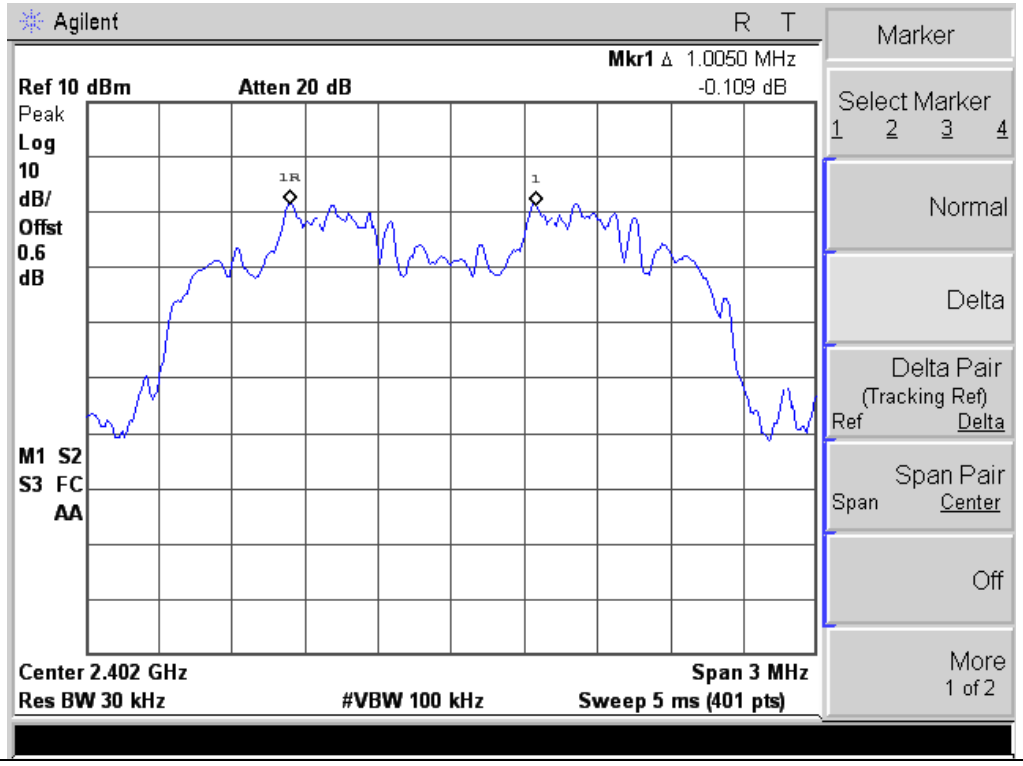
EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5V from Adapter AC 120V/60Hz
Test Mode ：	8-DPSK(3Mbps) -3DH1/3DH3/3DH5		

Frequency	Ch. Separation (MHz)	Result
2402 MHz	1.005	**Complies**
2441 MHz	1.005	**Complies**
2480 MHz	1.005	**Complies**

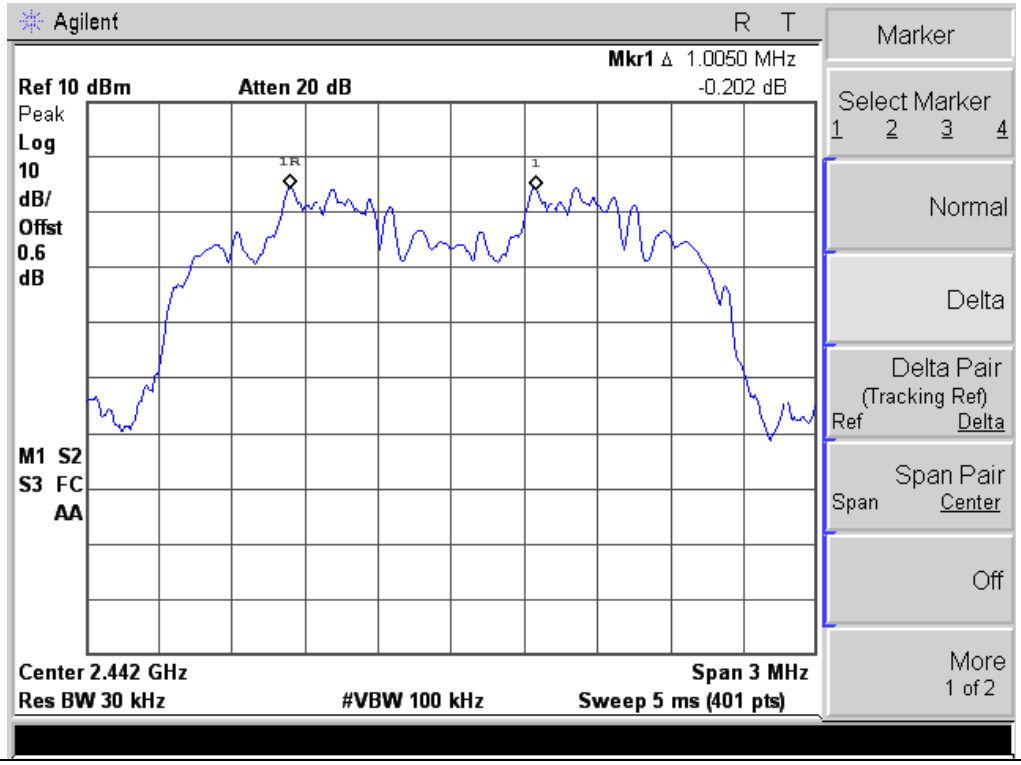
For 8-DPSK(3Mbps):

Ch. Separation Limits: > two-thirds 20dB bandwidth

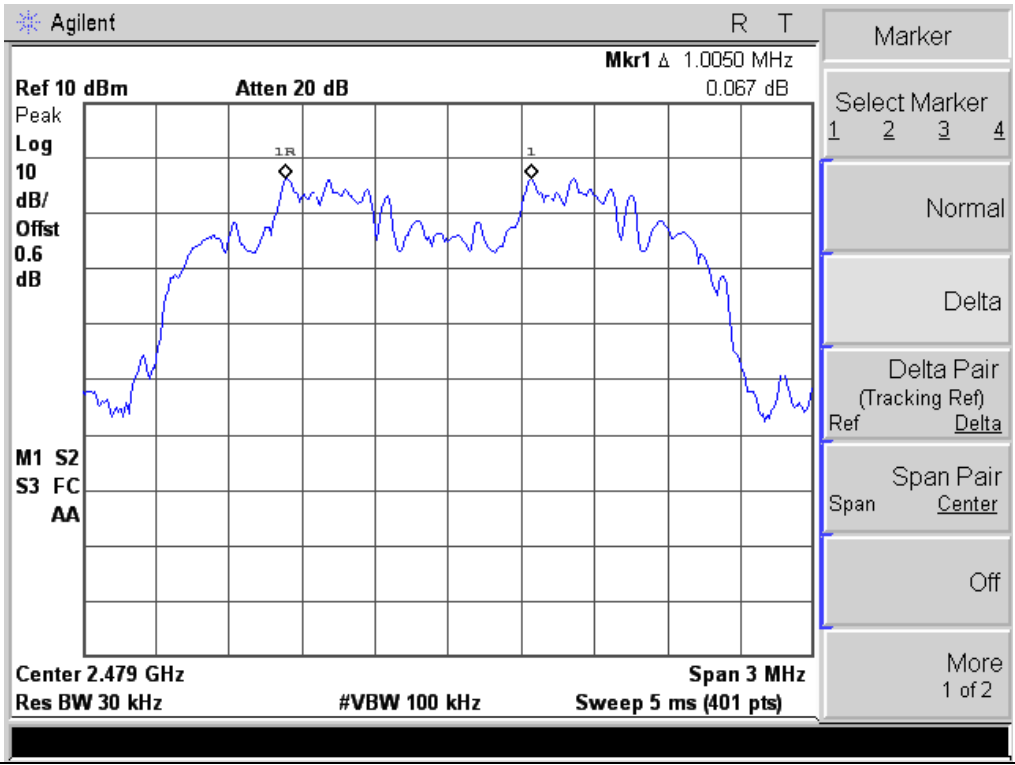
3Mbps CH00



3Mbps CH39



3Mbps CH78



7. BANDWIDTH TEST

7.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 (a)(1)	Bandwidth	(20dB bandwidth)	2400-2483.5	PASS

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RB	30 kHz (20dB Bandwidth)
VB	100 kHz (20dB Bandwidth)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

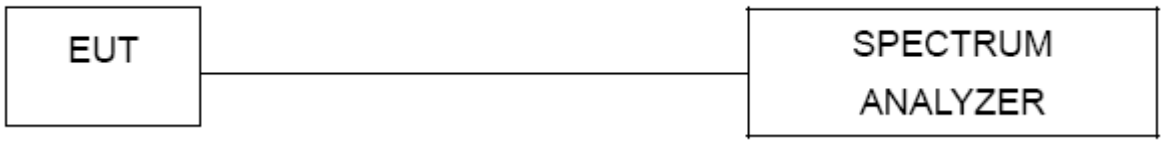
7.1.1 TEST PROCEDURE

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= 30KHz, VBW=100KHz, Sweep time = Auto.

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 EUT OPERATION CONDITIONS

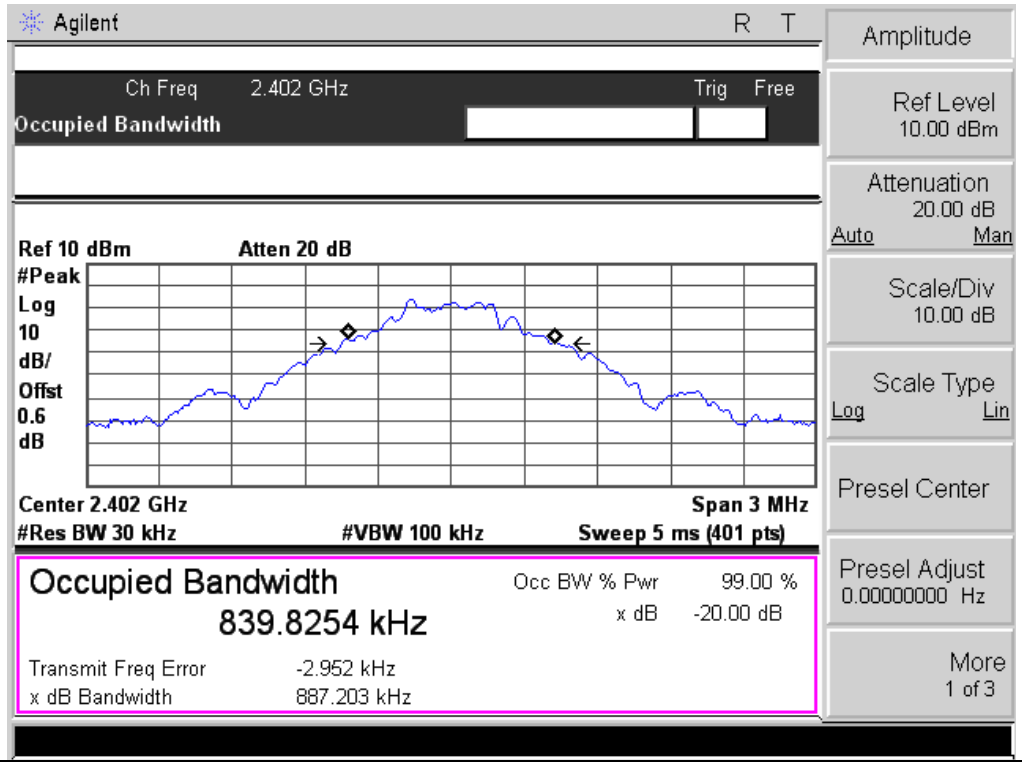
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.5 TEST RESULTS

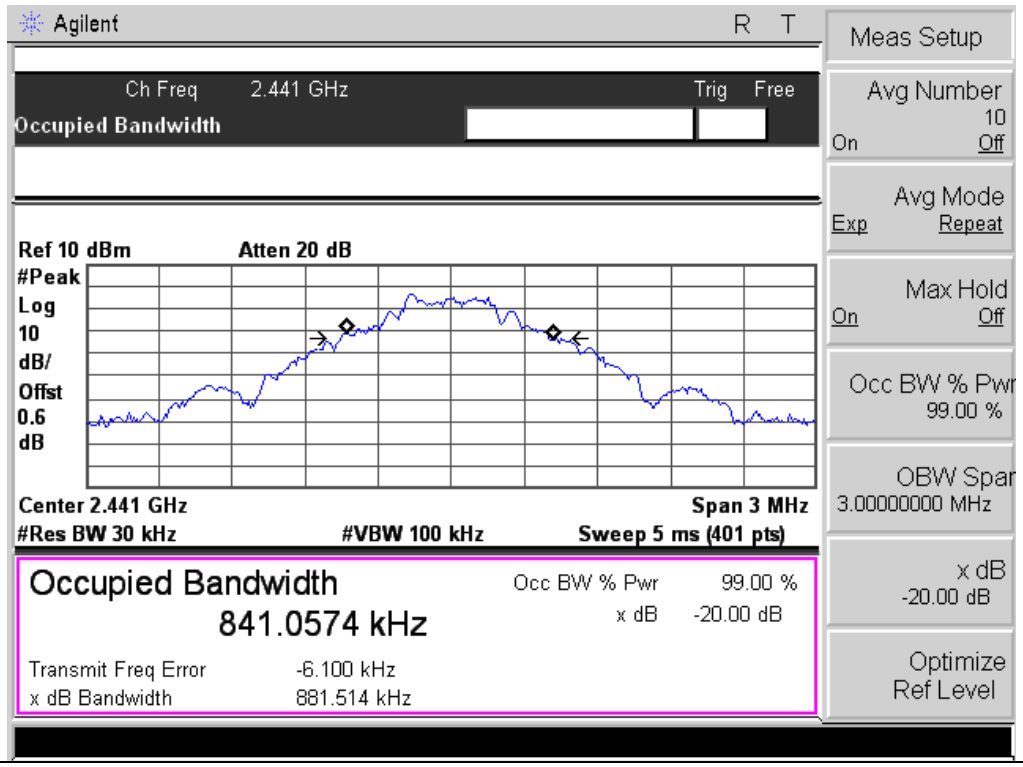
EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5V from Adapter AC 120V/60Hz
Test Mode ：	CH00 / CH39 /C78 for GFSK		

Frequency	20dB Bandwidth (kHz)	Result
2402 MHz	887.203	**PASS**
2441 MHz	881.514	**PASS**
2480 MHz	889.934	**PASS**

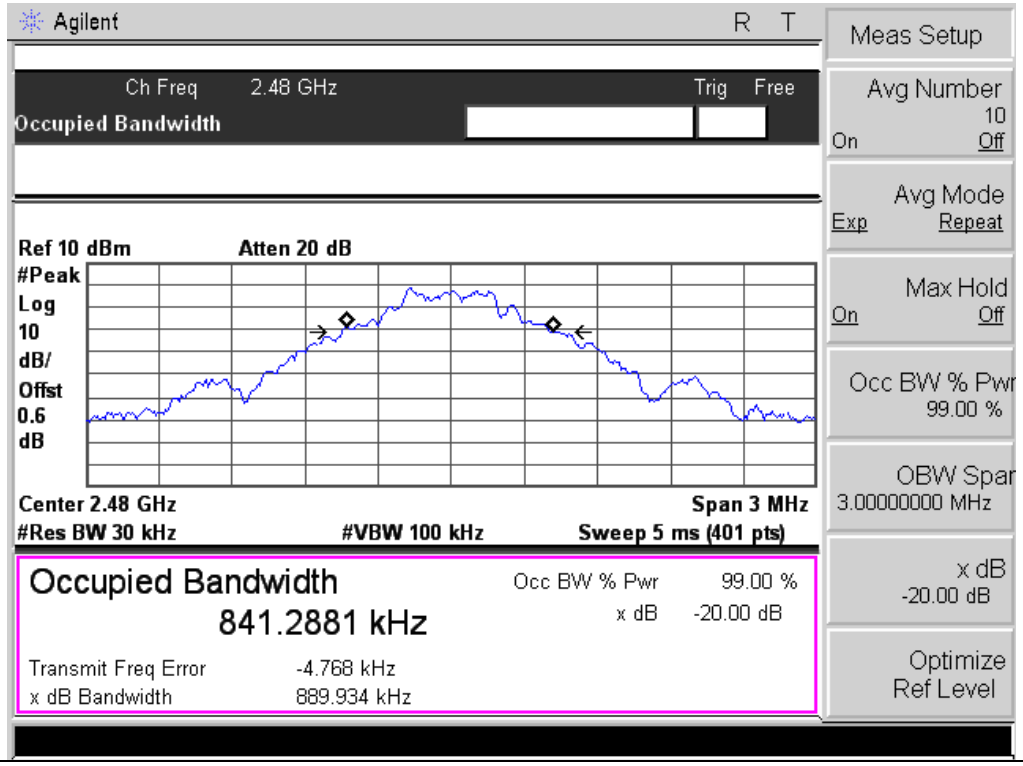
CH00 -1Mbps



CH39 -1Mbps



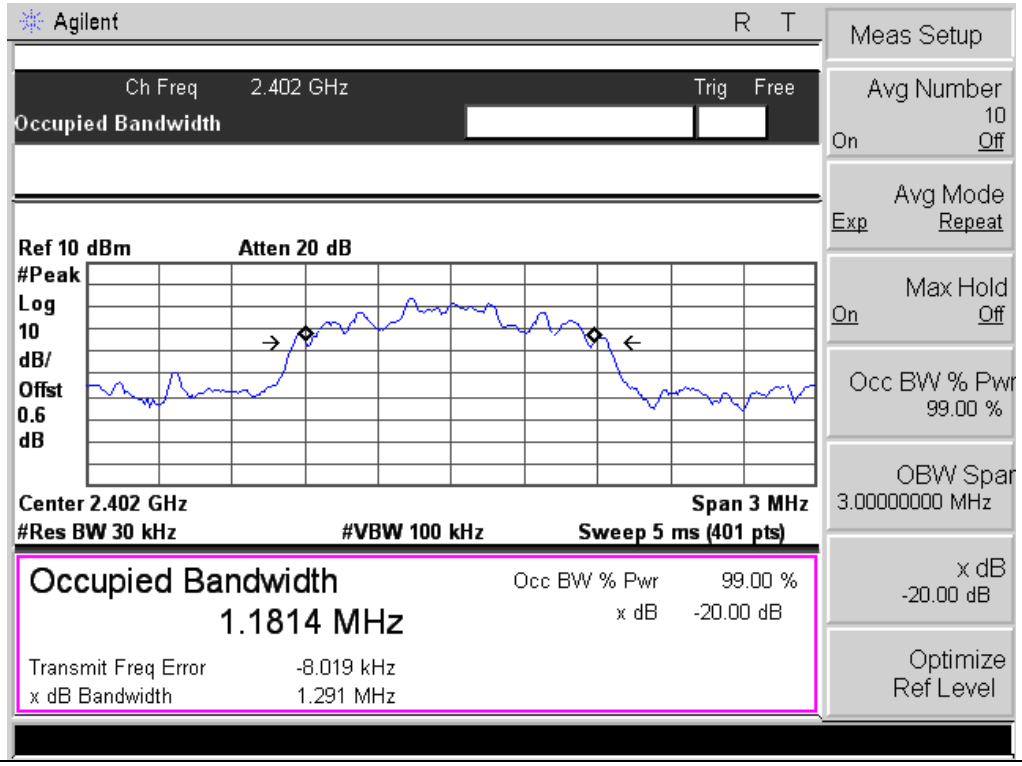
CH78 -1Mbps



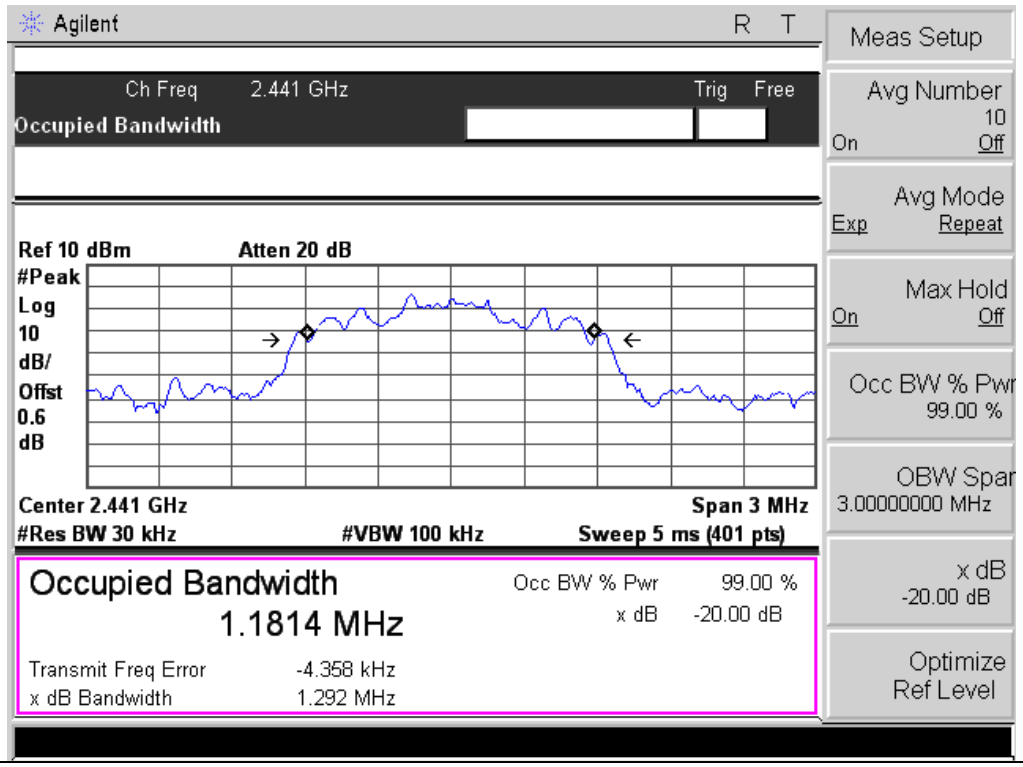
EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5V from Adapter AC 120V/60Hz
Test Mode ：	CH00 / CH39 /C78 forπ/4-DQPSK		

Frequency	20dB Bandwidth (kHz)	Result
2402 MHz	1291	**PASS**
2441 MHz	1292	**PASS**
2480 MHz	1294	**PASS**

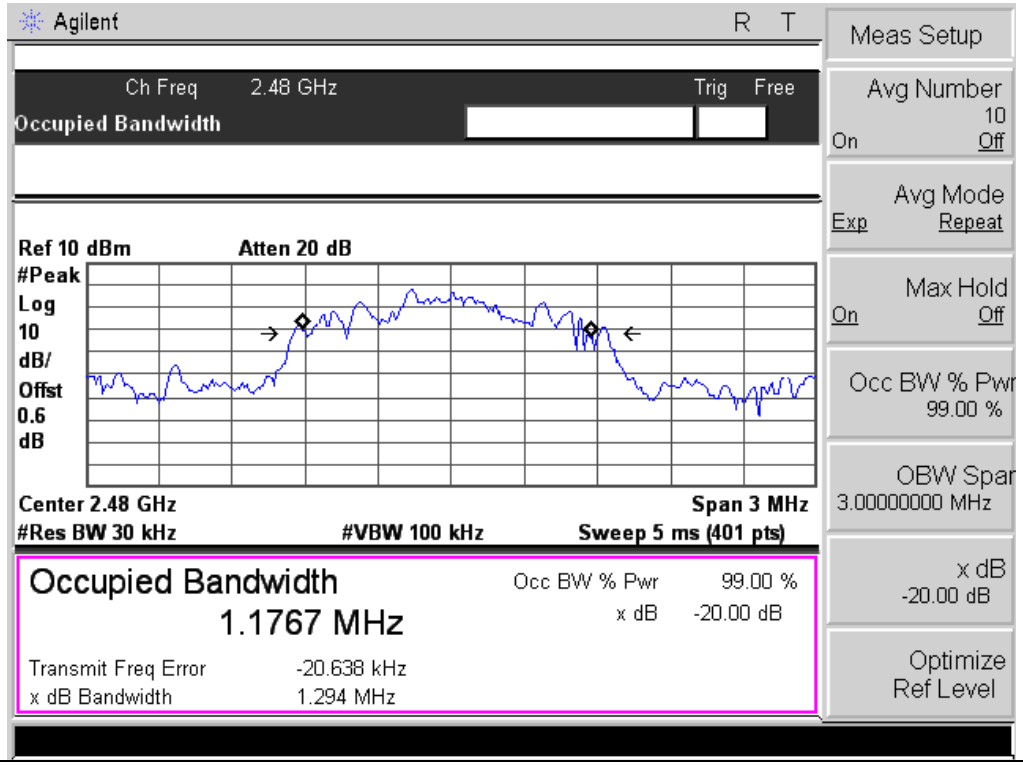
CH00 -1Mbps



CH39 -1Mbps



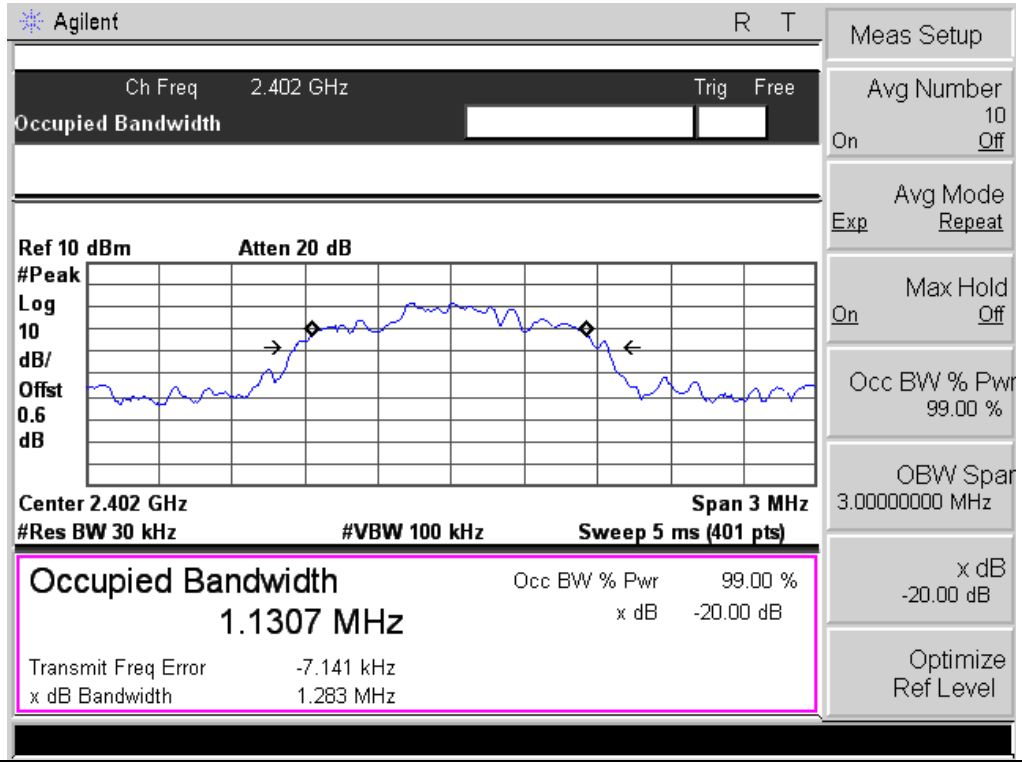
CH78 -1Mbps



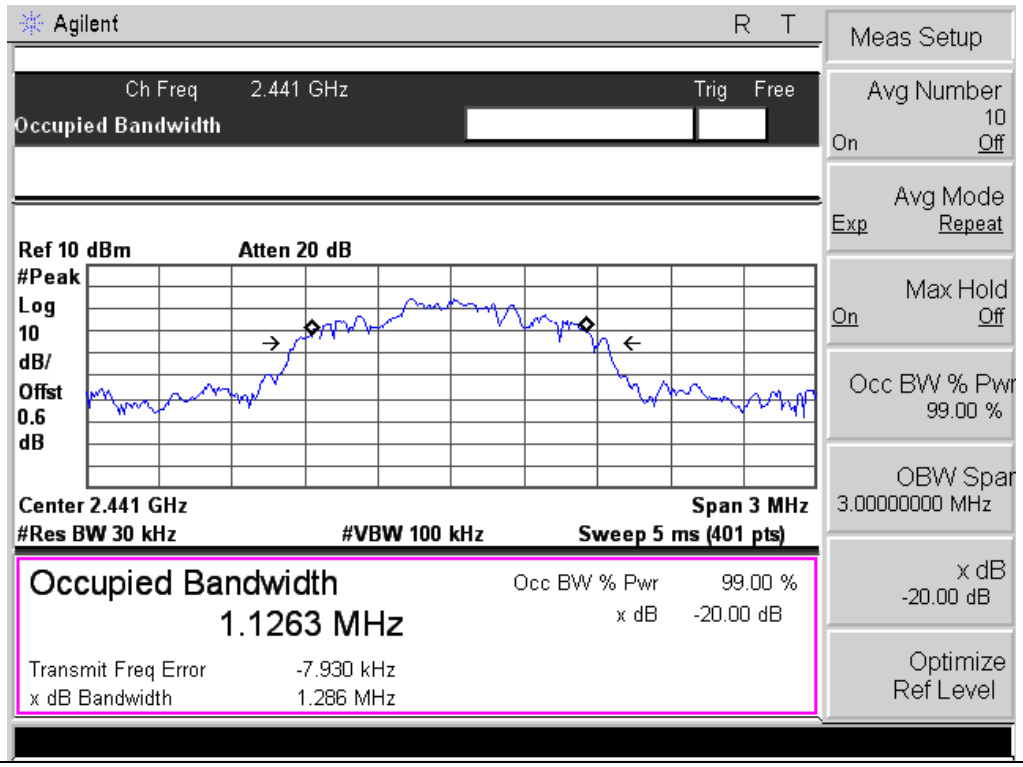
EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5V from Adapter AC 120V/60Hz
Test Mode ：	CH00 / CH39 /C78 for 8-DPSK(3Mbps)		

Frequency	20dB Bandwidth (kHz)	Result
2402 MHz	1283	**PASS**
2441 MHz	1286	**PASS**
2480 MHz	1285	**PASS**

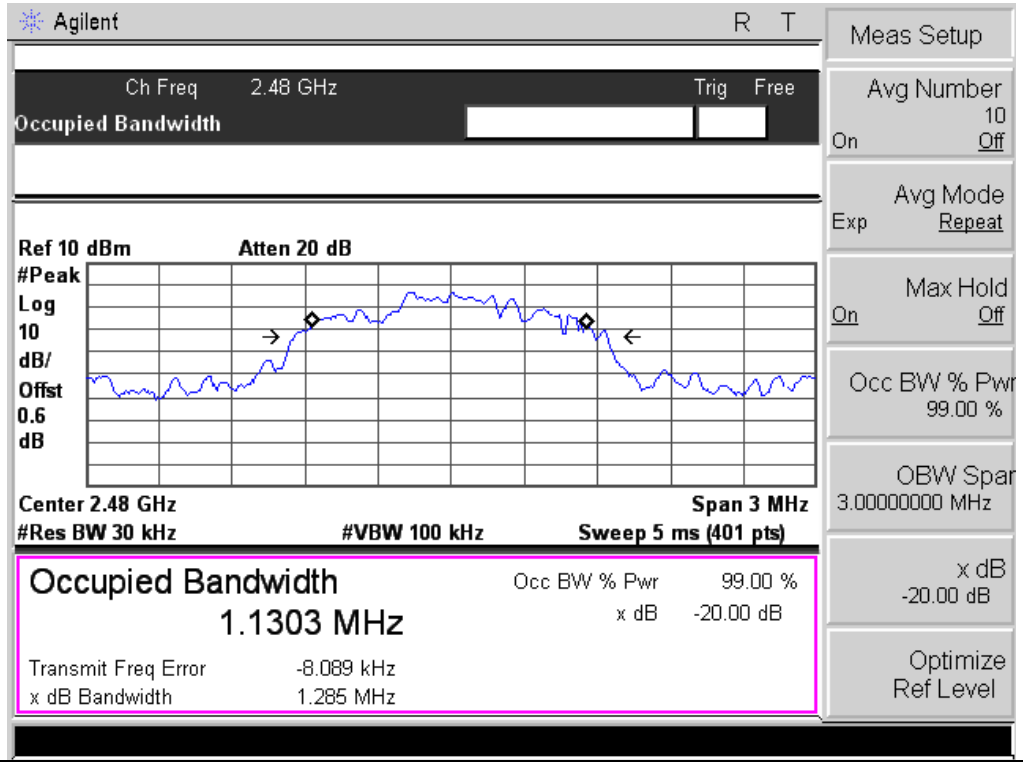
CH00 -1Mbps



CH39 -1Mbps



CH78 -1Mbps



8. PEAK OUTPUT POWER TEST

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	1 W or 30dBm for GFSK	2400-2483.5	PASS
		Or if channel separation > 2/3 bandwidthprovided the systems operatewith an output power no greater than125 mW		

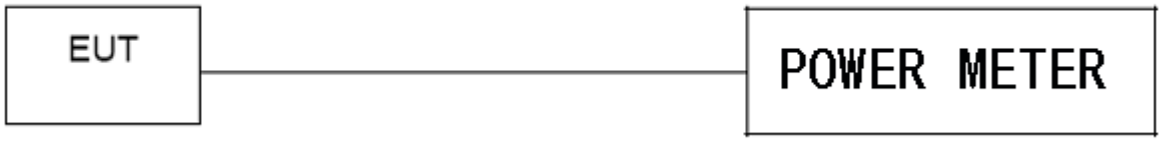
8.1.1 TEST PROCEDURE

a. The EUT was directly connected to the Power meter

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

EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5V from Adapter AC 120V/60Hz
Test Mode ：	CH00/ CH39 /CH78 for GFSK(1Mbps Mode)		

Test Channel	Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	Result
CH00	2402	-4.045	30	PASS
CH39	2441	-4.441	30	PASS
CH78	2480	-4.716	30	PASS

EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5V from Adapter AC 120V/60Hz
Test Mode ：	CH00/ CH39 /CH78 for QPSK(2Mbps Mode)		

Test Channel	Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	Result
CH00	2402	-3.314	20.97	PASS
CH39	2441	-4.332	20.97	PASS
CH78	2480	-4.897	20.97	PASS

Note：the channel separation >2/3 bandwidth

EUT：	Bluetooth Keyboard	Model Name：	805
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5V from Adapter AC 120V/60Hz
Test Mode ：	CH00/ CH39 /CH78 for 8-DPSK(3Mbps)		

Test Channel	Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	Result
CH00	2402	-3.394	20.97	PASS
CH39	2441	-4.364	20.97	PASS
CH78	2480	-4.594	20.97	PASS

Note：the channel separation >2/3 bandwidth

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.

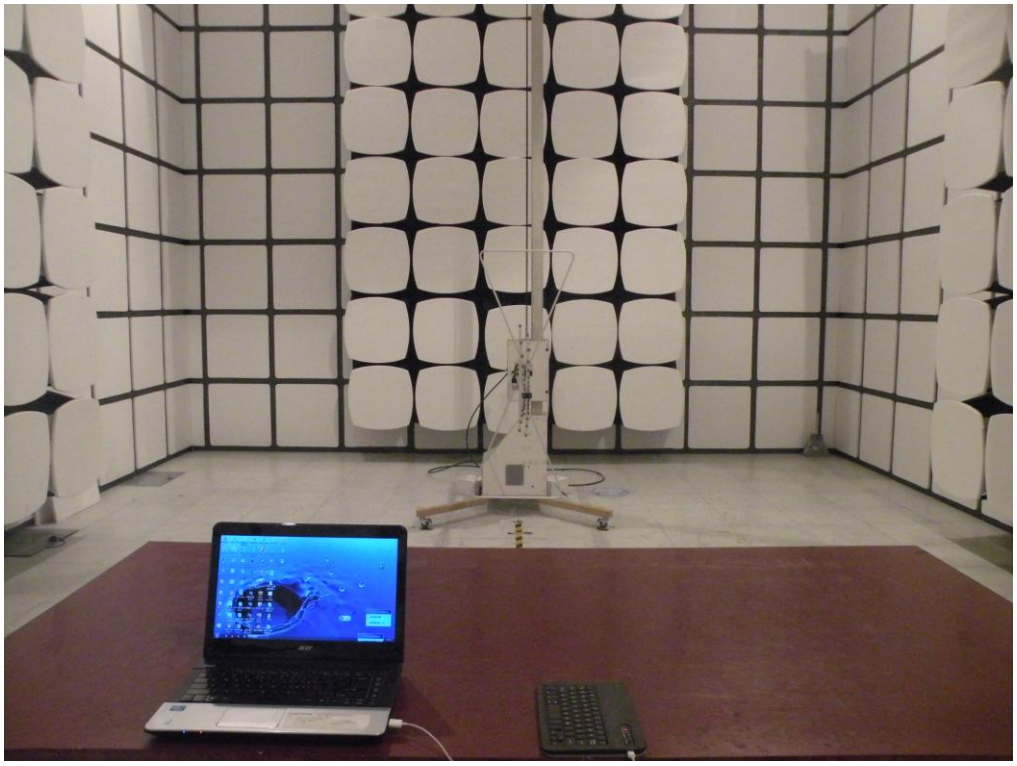
9.2 EUT ANTENNA

The EUT antenna is integral Antenna. It comply with the standard requirement.

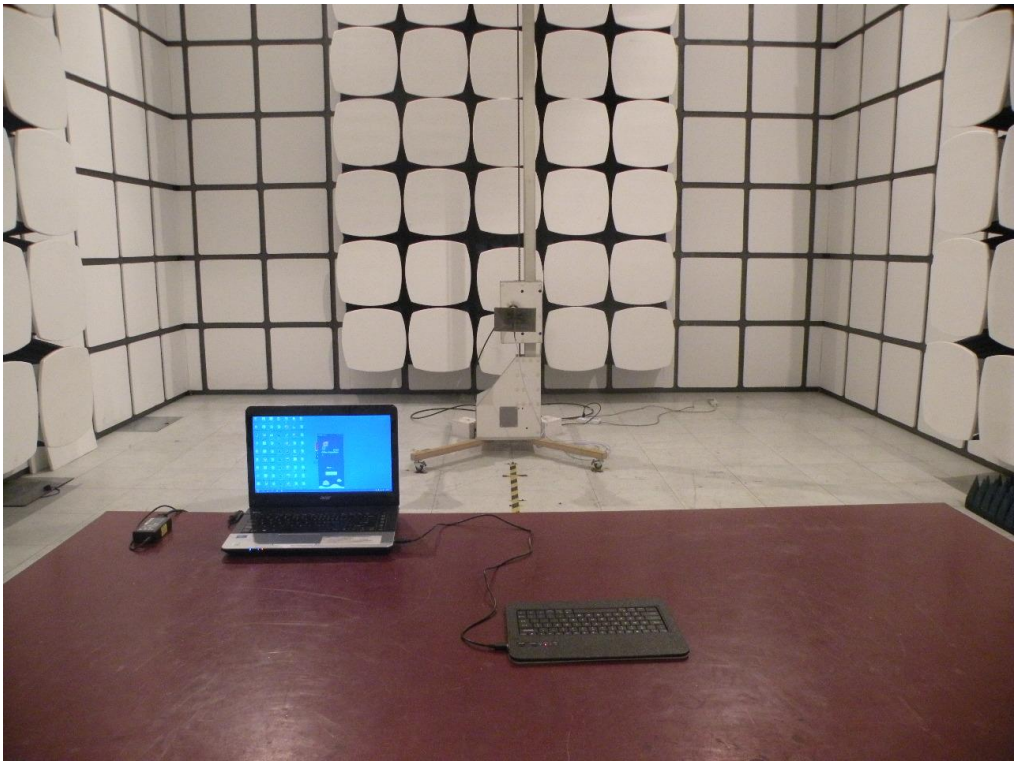
10. EUT TEST PHOTO

Radiated Measurement Photos

Blow 1GHz



Above 1GHz



Conducted Measurement Photos