

# FCC TEST REPORT

**REPORT NO.:** RF940513H04

**MODEL NO.:** T60H928

**RECEIVED:** May 17, 2005

**TESTED:** May 23 to 25, 2005

**ISSUED:** June 07, 2005

**APPLICANT:** HON HAI PRECISION IND. CO., LTD.  
HSINCHU SCIENCE PARK BRANCH OFFICE

**ADDRESS:** 5F-1,5 Hsin-An Road Hsinchu, Science-Based  
Industrial Park Taiwan, R.O.C.

**ISSUED BY:** Advance Data Technology Corporation

**LAB LOCATION:** No. 81-1, Lu Liao Keng, 9 Ling, Wu Lung Tsuen,  
Chiung Lin Hsiang, Hsin Chu Hsien,  
Taiwan, R.O.C.

This test report consists of 77 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by CNLA, A2LA or any government agencies. The test results in the report only apply to the tested sample. The test results in this report are traceable to the national or international standards.



0536  
ILAC MRA



No. 2177-01

## TABLE OF CONTENTS


1	CERTIFICATION .....	4
2	SUMMARY OF TEST RESULTS .....	5
3	GENERAL INFORMATION .....	6
3.1	GENERAL DESCRIPTION OF EUT .....	6
3.2	DESCRIPTION OF TEST MODES .....	7
3.3	GENERAL DESCRIPTION OF APPLIED STANDARDS .....	8
3.4	DESCRIPTION OF SUPPORT UNITS .....	9
3.5	CONFIGURATION OF SYSTEM UNDER TEST .....	10
4	TEST procedures and results .....	11
4.1	CONDUCTED EMISSION MEASUREMENT .....	11
4.1.1	LIMITS OF CONDUCTED EMISSION MEASUREMENT .....	11
4.1.2	TEST INSTRUMENTS .....	11
4.1.3	TEST PROCEDURES .....	12
4.1.4	DEVIATION FROM TEST STANDARD .....	12
4.1.5	TEST SETUP .....	13
4.1.6	EUT OPERATING CONDITIONS .....	13
4.1.7	Test Results .....	14
4.2	number of hopping frequency used .....	16
4.2.1	LIMIT OF HOPPING FREQUENCY USED .....	16
4.2.2	TEST INSTRUMENTS .....	16
4.2.3	TEST PROCEDURES .....	17
4.2.4	DEVIATION FROM TEST STANDARD .....	17
4.2.5	TEST SETUP .....	18
4.2.6	TEST RESULTS(MODE 1) .....	18
4.2.7	TEST RESULTS(MODE 2) .....	20
4.3	DWELL TIME ON EACH CHANNEL .....	22
4.3.1	LIMIT OF DWELL TIME USED .....	22
4.3.2	TEST INSTRUMENTS .....	22
4.3.3	TEST PROCEDURES .....	23
4.3.4	DEVIATION FROM TEST STANDARD .....	23
4.3.5	TEST SETUP .....	23
4.3.6	TEST RESULTS .....	24
4.4	CHANNEL BANDWIDTH .....	28
4.4.1	TEST INSTRUMENTS .....	28
4.4.2	TEST PROCEDURE .....	29
4.4.3	DEVIATION FROM TEST STANDARD .....	29
4.4.4	TEST SETUP .....	29
4.4.5	EUT OPERATING CONDITION .....	29
4.4.6	TEST RESULTS(MODE 1) .....	30


4.4.7	TEST RESULTS(MODE 2).....	33
4.5	HOPPING CHANNEL SEPARATION .....	36
4.5.1	LIMIT OF HOPPING CHANNEL SEPARATION .....	36
4.5.2	TEST INSTRUMENTS .....	36
4.5.3	TEST PROCEDURES.....	37
4.5.4	DEVIATION FROM TEST STANDARD .....	37
4.5.5	TEST SETUP .....	37
4.5.6	TEST RESULTS(MODE 1).....	38
4.5.7	TEST RESULTS(MODE 2).....	41
4.6	MAXIMUM PEAK OUTPUT POWER .....	44
4.6.1	LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT .....	44
4.6.2	INSTRUMENTS .....	44
4.6.3	TEST PROCEDURES.....	45
4.6.4	DEVIATION FROM TEST STANDARD .....	45
4.6.5	TEST SETUP .....	46
4.6.6	EUT OPERATING CONDITION .....	46
4.6.7	TEST RESULTS(MODE 1).....	47
4.6.8	TEST RESULTS(MODE 2).....	50
4.6.9	TEST RESULTS(MODE 3).....	53
4.7	RADIATED EMISSION MEASUREMENT .....	56
4.7.1	LIMITS OF RADIATED EMISSION MEASUREMENT .....	56
4.7.2	TEST INSTRUMENTS .....	57
4.7.3	TEST PROCEDURES.....	58
4.7.4	DEVIATION FROM TEST STANDARD .....	58
4.7.5	TEST SETUP .....	59
4.7.6	TEST RESULTS.....	60
4.7.7	TEST RESULTS (MODE 1).....	61
4.7.8	TEST RESULTS (MODE 2).....	64
4.8	BAND EDGES MEASUREMENT .....	67
4.8.1	LIMITS OF BAND EDGES MEASUREMENT .....	67
4.8.2	TEST INSTRUMENTS .....	67
4.8.3	TEST PROCEDURE .....	67
4.8.4	DEVIATION FROM TEST STANDARD .....	67
4.8.5	EUT OPERATING CONDITION .....	67
4.8.6	TEST RESULTS (MODE 1).....	68
4.8.7	TEST RESULTS (MODE 2).....	70
4.9	ANTENNA REQUIREMENT .....	72
4.9.1	STANDARD APPLICABLE .....	72
4.9.2	ANTENNA CONNECTED CONSTRUCTION.....	72
5	PHOTOGRAPHS OF THE TEST CONFIGURATION.....	73
6	INFORMATION ON THE TESTING LABORATORIES.....	77


## 1 CERTIFICATION

**PRODUCT :** USB Bluetooth Module  
**BRAND NAME :** FOXCONN  
**MODEL NO. :** T60H928  
**APPLICANT :** HON HAI PRECISION IND. CO., LTD. HSINCHU  
SCIENCE PARK BRANCH OFFICE  
**TESTED DATE:** May 23 to 25, 2005  
**TEST ITEM :** ENGINEERING SAMPLE  
**STANDARDS :** 47 CFR Part 15, Subpart C (Section 15.247),  
ANSI C63.4-2003

The above equipment (Model: T60H928) has been tested by **Advance Data Technology Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**PREPARED BY :**  , **DATE:** June 07, 2005  
( Midoli Peng )

**TECHNICAL**  
**ACCEPTANCE :**  , **DATE:** June 07, 2005  
Responsible for RF ( Hank Chung )

**APPROVED BY :**  , **DATE:** June 07, 2005  
( Eric Lin, Manager )

## 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
Standard Section	Test Type and Limit	Result	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is -20.03dB at 0.220 MHz
15.247(a)(1)(I)-(ii)	Number of Hopping Frequency Used Spec.: At least 75 channels	PASS	Meet the requirement of limit
15.247(a)(1)(ii)	Dwell Time on Each Channel Spec. : Max. 0.4 second within 31.6 second	PASS	Meet the requirement of limit
15.247(a)(1)(I)-(ii)	Hopping Channel Separation Spec. : Min. 25 kHz or 20 dB bandwidth, which ever is greater	PASS	Meet the requirement of limit
15.247(a)(2)	Spectrum Bandwidth of a Frequency Hopping Sequence Spread Spectrum System Spec.: Max. 1 MHz	PASS	Meet the requirement of limit
15.247(b)	Maximum Peak Output Power Spec.: max. 30dBm	PASS	Meet the requirement of limit
15.247(c)	Transmitter Radiated Emissions Spec.: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is -3.9dB at 719.97MHz
15.247(c)	Band Edge Measurement	PASS	Meet the requirement of limit

### 3 GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>PRODUCT</b>	USB Bluetooth Module
<b>MODEL NO.</b>	T60H928
<b>POWER SUPPLY</b>	DC 3.3V from host equipment
<b>MODULATION TYPE</b>	1 Mbps: GFSK 2 Mbps(EDR): $\pi/4$ -DQPSK 3 Mbps(EDR):8-DPSK
<b>MODULATION TECHNOLOGY</b>	FHSS
<b>FREQUENCY RANGE</b>	2402MHz ~ 2480MHz
<b>NUMBER OF CHANNEL</b>	79
<b>OUTPUT POWER</b>	1.19dBm
<b>ANTENNA TYPE</b>	Printed antenna with 1.97dBi antenna gain
<b>DATA CABLE</b>	NA
<b>I/O PORTS</b>	NA
<b>ASSOCIATED DEVICES</b>	NA

**NOTE:**

1. Bluetooth technology is used for the EUT.
2. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

### 3.2 DESCRIPTION OF TEST MODES

Seventy-nine channels are provided to this EUT.

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	2402	20	2422	40	2442	60	2462
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2431	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461		

**NOTE:**

- Below 1 GHz, the channel 0, 39, and 78 were pre-tested in chamber. The channel 78, worst case one, was chosen for final test.
- Above 1 GHz, the channel 0, 39, and 78 were tested individually.
- The EUT was performed under the following test modes for three different axes placements:

TEST MODE	NOTE
A	Level
B	Upright
C	Flank

The above test mode, Mode C, worst case one, were chosen for final test.

- The EUT was pre-tested in chamber as the following test modes:

MODE	NOTE
A	1 Mbps: GFSK
B	2 Mbps(EDR): $\pi/4$ -DQPSK
C	3 Mbps(EDR): 8-DPSK

The above test mode, Mode A & B, worst case one, were chosen for final test.

5. The EUT was tested under the following test modes:

Conducted emission & Transmitter radiated emissions (Below 1 GHz):	
MODE	NOTE
1	1 Mbps: GFSK
MAXIMUM PEAK OUTPUT POWER	
MODE	NOTE
1	1 Mbps: GFSK
2	2 Mbps(EDR): $\pi/4$ -DQPSK
3	3 Mbps(EDR): 8-DPSK
Others test items:	
MODE	NOTE
1	1 Mbps: GFSK
2	2 Mbps(EDR): $\pi/4$ -DQPSK

### 3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a USB Bluetooth Module. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC Part 15, Subpart C. (15.247)**  
**ANSI C63.4 : 2003**

All test items have been performed and recorded as per the above standards.

**NOTE:** The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.



### 3.4 DESCRIPTION OF SUPPORT UNITS

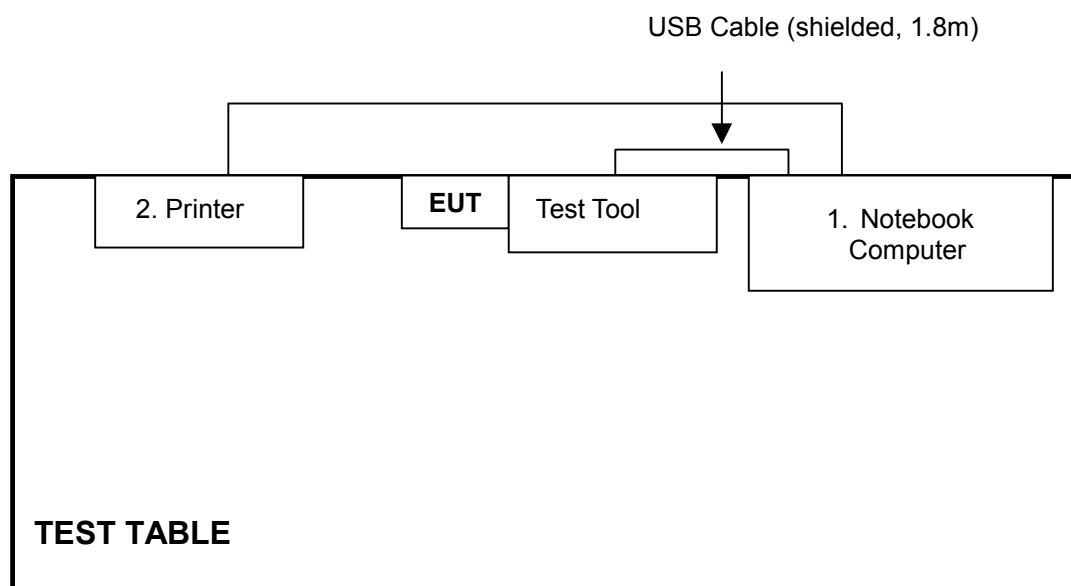
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.	FCC ID
1	NOTEBOOK COMPUTER	ASUS	A2400H	49NG038481	NA
2	PRINTER	HP	C2642A	MY79F1C3MZ	B94C2642X

No.	Signal cable description
1	NA
2	1.1 m braid shielded wire, terminated with DB25 and Centronics connector via metallic frame, w/o core

Note: 1. All power cords of the above support units are unshielded (1.8m).

### 3.5 CONFIGURATION OF SYSTEM UNDER TEST



## 4 TEST PROCEDURES AND RESULTS

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

**Notes:**

1. The lower limit shall apply at the transition frequencies.
2. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

#### 4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
*ROHDE & SCHWARZ Test Receiver	ESCS 30	847124/029	Dec. 07, 2005
*ROHDE & SCHWARZ LISN (for EUT)	ESHS-Z5	848773/004	Nov. 08, 2005
*KYORITSU LISN (for peripheral)	KNW-407	8/1395/12	Jul. 23, 2005
*RF Cable (JETBAO)	RG233/U	Cable_CA_01	Jul. 02, 2005
*Terminator(for KYORITSU)	50	3	Oct. 12, 2005
*Software	Cond-V2e	NA	NA

**Note:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in ADT Shielded Room No. A.
3. The VCCI Con A Registration No. is C-817.
4. \* = These equipment are used for the final measurement.
5. The measurement uncertainty is 2.53 dB, which is calculated as per the document CISPR 16-4

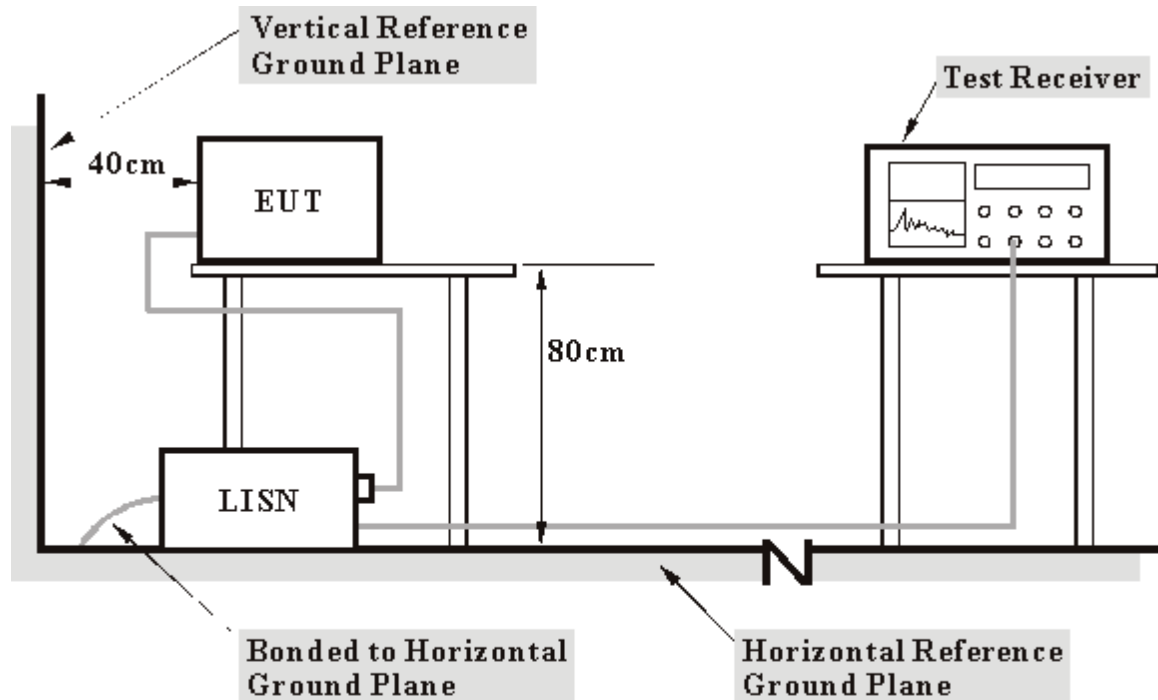
#### 4.1.3 TEST PROCEDURES

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under Limit - 20dB was not recorded.

#### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.1.5 TEST SETUP



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

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

#### 4.1.6 EUT OPERATING CONDITIONS

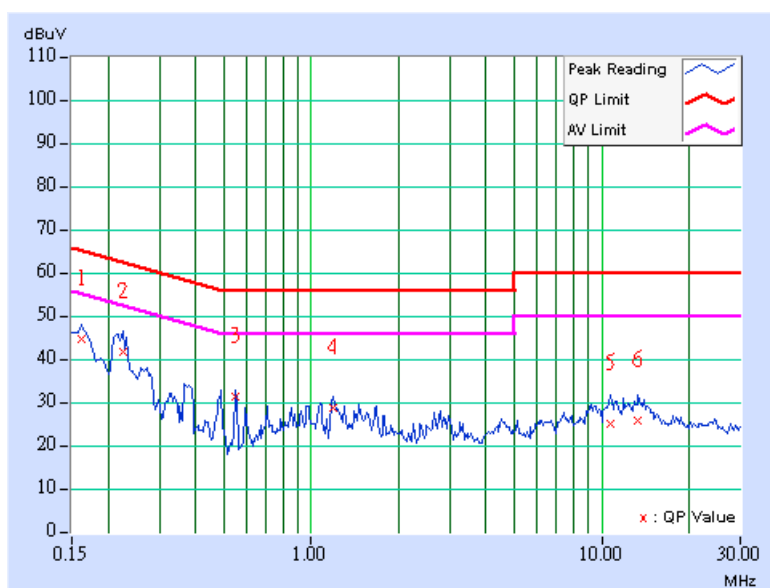
- a. Connected the EUT to test board and placed on the testing table.
- b. The support unit 1 (Notebook computer) ran a test program “Broadcom Bluetooth” to enable EUT under transmission condition continuously at specific channel frequency.
- c. Notebook computer sends "H" messages to printer, and the printer prints them on paper.

## 4.1.7 TEST RESULTS

<b>EUT</b>	USB Bluetooth Module		
<b>MODEL</b>	T60H928	<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>PHASE</b>	Line (L)
<b>ENVIRONMENTAL CONDITIONS</b>	25 deg. C, 65%RH, 963 hPa	<b>TESTED BY</b>	Rex Huang

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.162	9.42	35.05	-	44.47	-	65.38	55.38	-20.90	-
2	0.224	9.21	32.29	-	41.50	-	62.66	52.66	-21.16	-
3	0.548	9.19	22.00	-	31.19	-	56.00	46.00	-24.81	-
4	1.193	9.24	19.20	-	28.44	-	56.00	46.00	-27.56	-
5	10.746	9.56	15.45	-	25.01	-	60.00	50.00	-34.99	-
6	13.387	9.58	16.50	-	26.08	-	60.00	50.00	-33.92	-

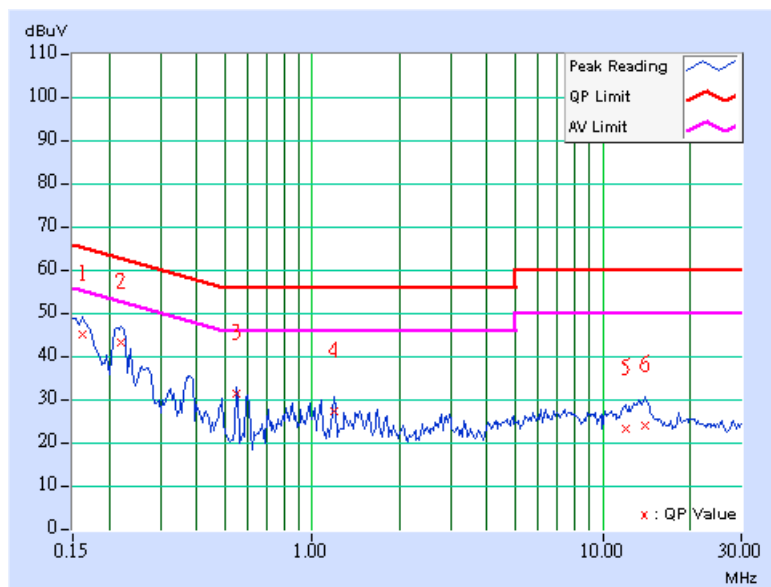
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value = Emission level - Limit value
  5. Correction factor = Insertion loss + Cable loss
  6. Emission Level = Correction Factor + Reading Value.



<b>EUT</b>	USB Bluetooth Module		
<b>MODEL</b>	T60H928	<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>PHASE</b>	Neutral (N)
<b>ENVIRONMENTAL CONDITIONS</b>	25 deg. C, 65%RH, 963 hPa	<b>TESTED BY</b>	Rex Huang

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.162	9.19	35.41	-	44.60	-	65.38	55.38	-20.77	-
2	0.220	9.19	33.58	-	42.77	-	62.81	52.81	-20.03	-
3	0.548	9.23	22.02	-	31.25	-	56.00	46.00	-24.75	-
4	1.193	9.23	17.74	-	26.97	-	56.00	46.00	-29.03	-
5	11.953	9.60	13.81	-	23.41	-	60.00	50.00	-36.59	-
6	14.000	9.64	14.50	-	24.14	-	60.00	50.00	-35.86	-

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value = Emission level - Limit value
  5. Correction factor = Insertion loss + Cable loss
  6. Emission Level = Correction Factor + Reading Value.



## 4.2 NUMBER OF HOPPING FREQUENCY USED

### 4.2.1 LIMIT OF HOPPING FREQUENCY USED

At least 15 hopping frequencies, and should be equally spaced.

### 4.2.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100037	Nov. 23, 2005

**Note:**

1. The measurement uncertainty is 226Hz, which is calculated as per the document ETSI TR 100 028.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.



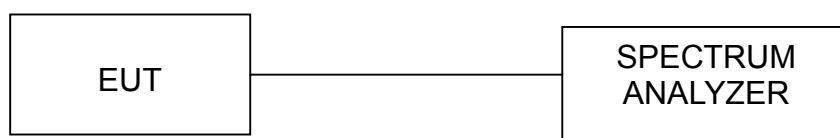
#### 4.2.3 TEST PROCEDURES

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Set the SA on MaxHold Mode, and then keep the EUT in hopping mode. Record all the signals from each channel until each one has been recorded.
4. Set the SA on View mode and then plot the result on SA screen.
5. Repeat above procedures until all frequencies measured were complete.

#### 4.2.4 DEVIATION FROM TEST STANDARD

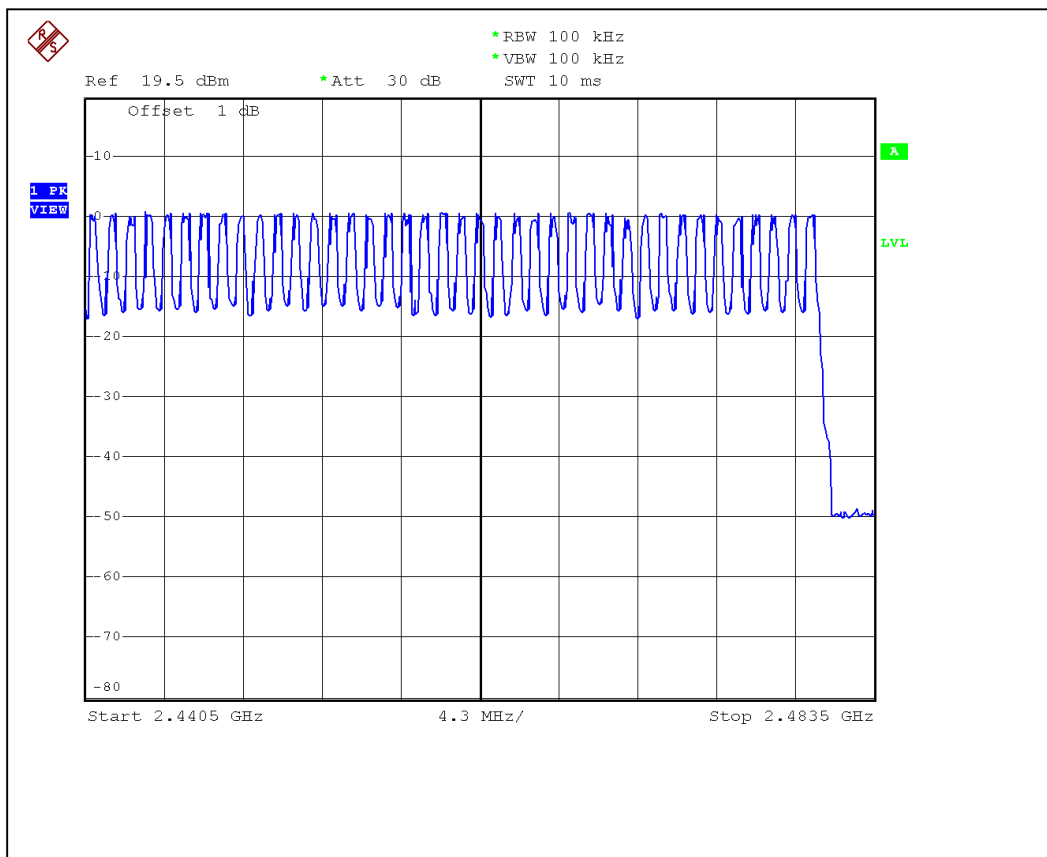
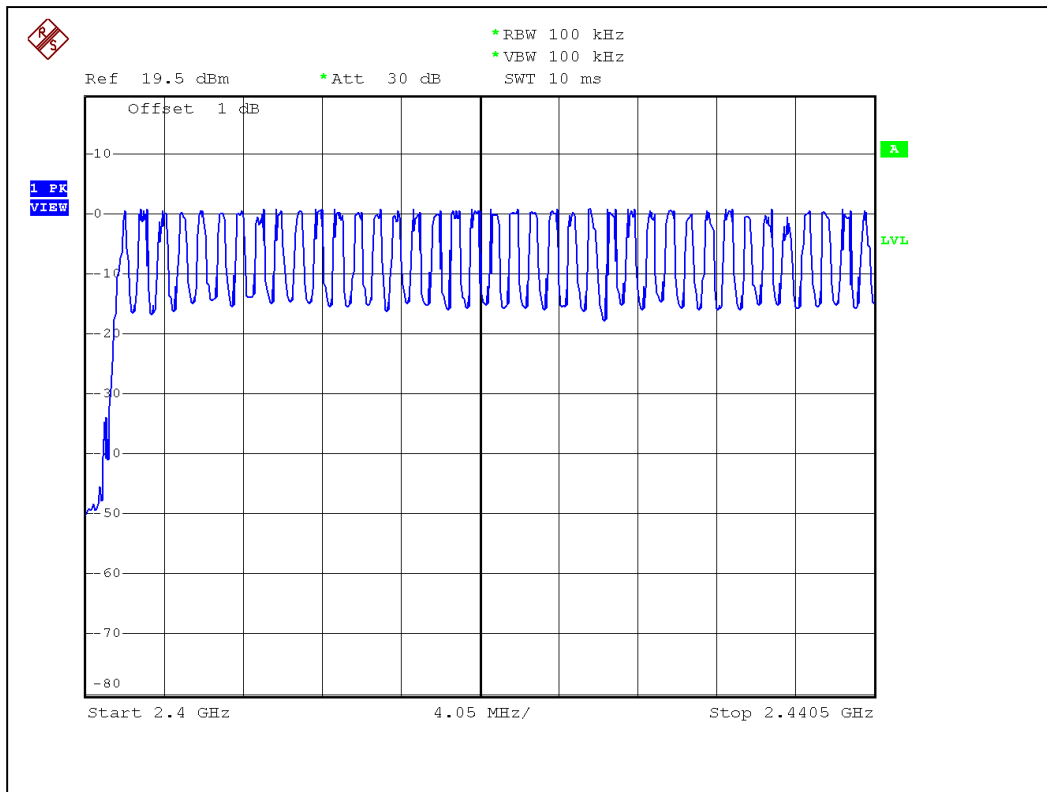
No deviation

#### 4.2.5 TEST SETUP



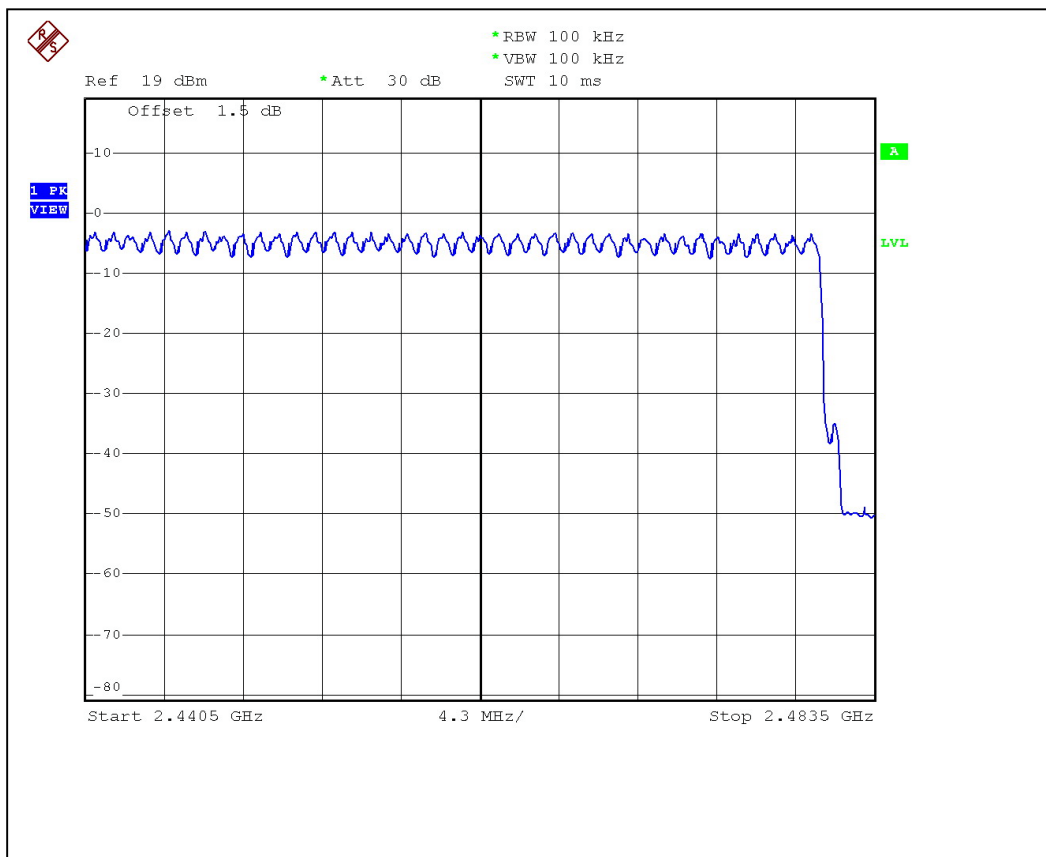
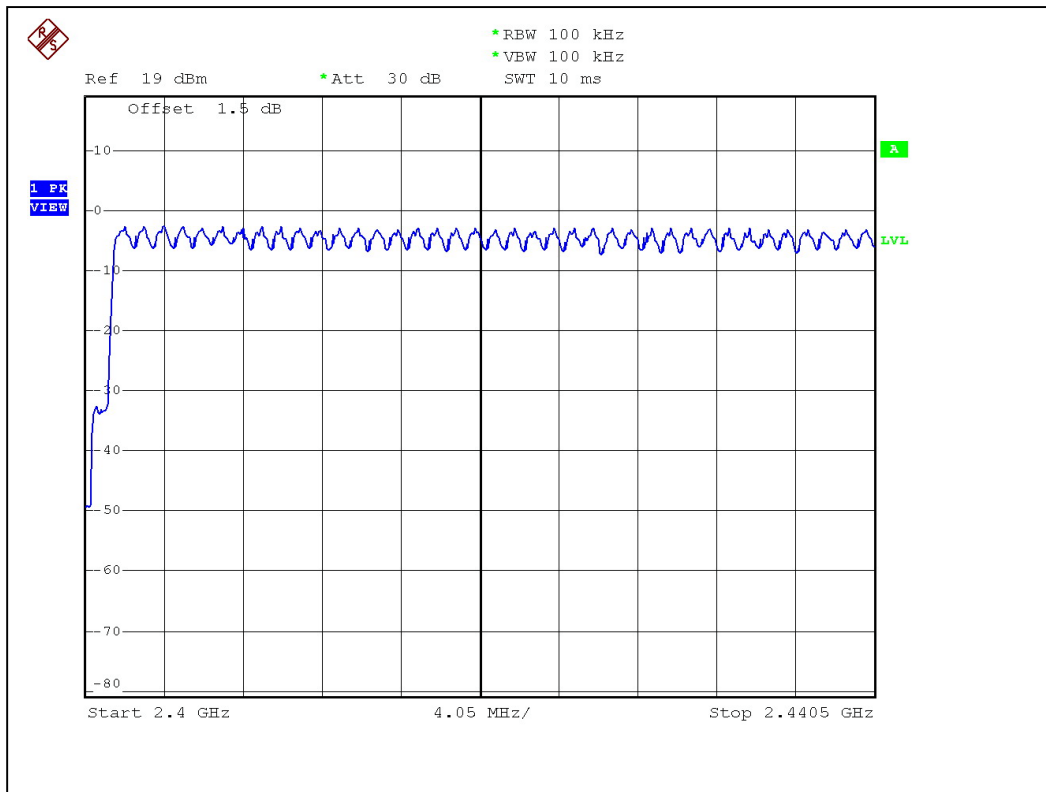
#### 4.2.6 TEST RESULTS(MODE 1)

There are 79 hopping frequencies in the hopping mode. Please refer to next two pages for the test result. On the plots, it shows that the hopping frequencies are equally spaced.



#### 4.2.7 TEST RESULTS(MODE 2)

There are 79 hopping frequencies in the hopping mode. Please refer to next two pages for the test result. On the plots, it shows that the hopping frequencies are equally spaced.



### 4.3 DWELL TIME ON EACH CHANNEL

#### 4.3.1 LIMIT OF DWELL TIME USED

For FHSS, the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 31.6 second period. For hybrid systems, the average time of occupancy on any frequency should not exceed 0.4 seconds within a time period in seconds equal to the number of hopping frequencies employed multiplied by 0.4.

#### 4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 23, 2005

**Note:**

1. The measurement uncertainty is 226Hz, which is calculated as per the document ETSI TR 100 028.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

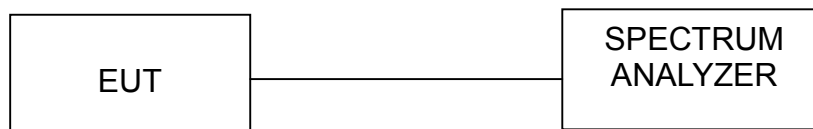
#### 4.3.3 TEST PROCEDURES

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Adjust the center frequency of SA on any frequency be measured and set SA to zero span mode. And then, set RBW and VBW of spectrum analyzer to proper value.
4. Measure the time duration of one transmission on the measured frequency. And then plot the result with time difference of this time duration.
5. Repeat above procedures until all frequencies measured were complete.

#### 4.3.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.3.5 TEST SETUP



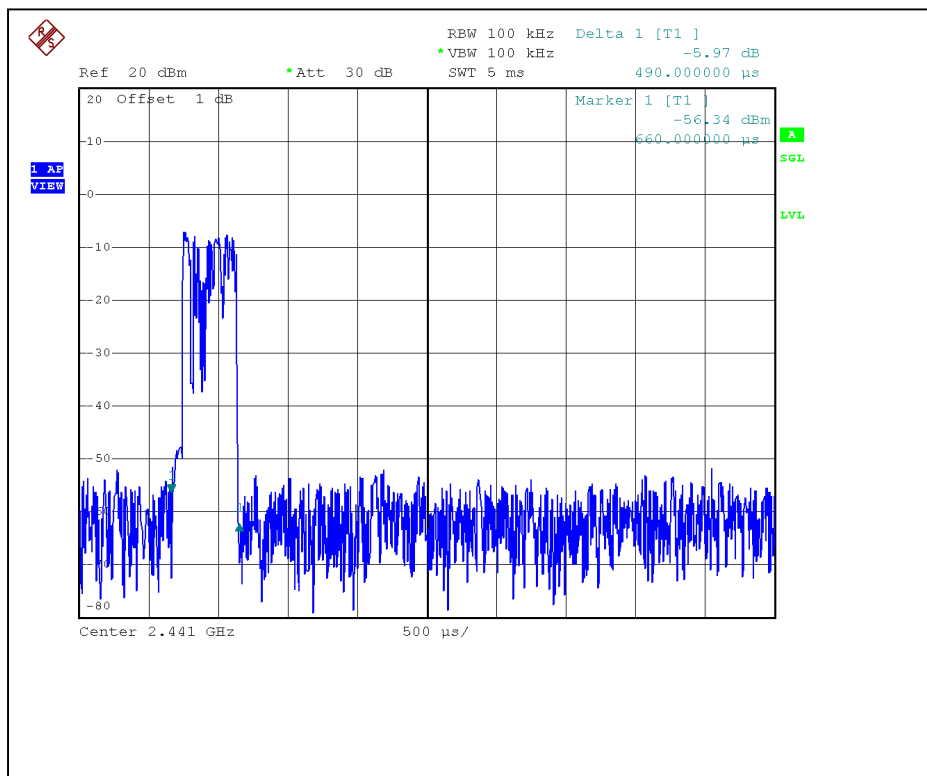
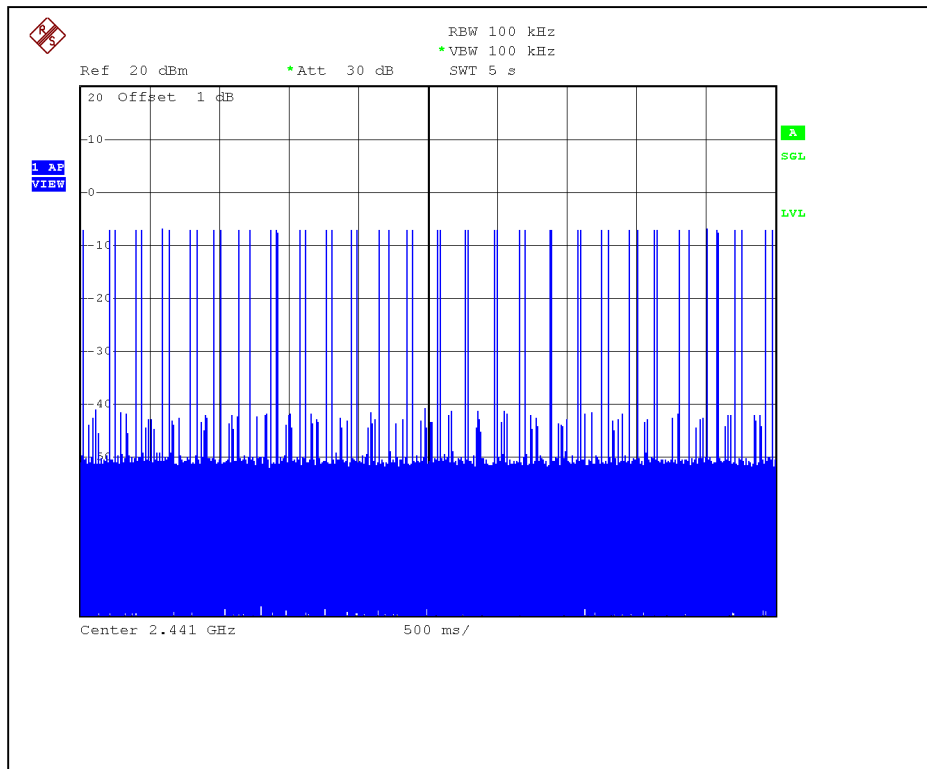
#### 4.3.6 TEST RESULTS

Mode	Number of transmission in a 31.6 (79Hopping*0.4)	Length of transmission time (msec)	Result (msec)	Limit (msec)
DH1	51 (times / 5 sec) *6.32=322.32 times	0.49	157.94	400
DH3	25 (times / 5 sec) *6.32=158.00 times	1.59	251.22	400
DH5	19 (times / 5 sec) *6.32=120.08 times	2.99	359.04	400

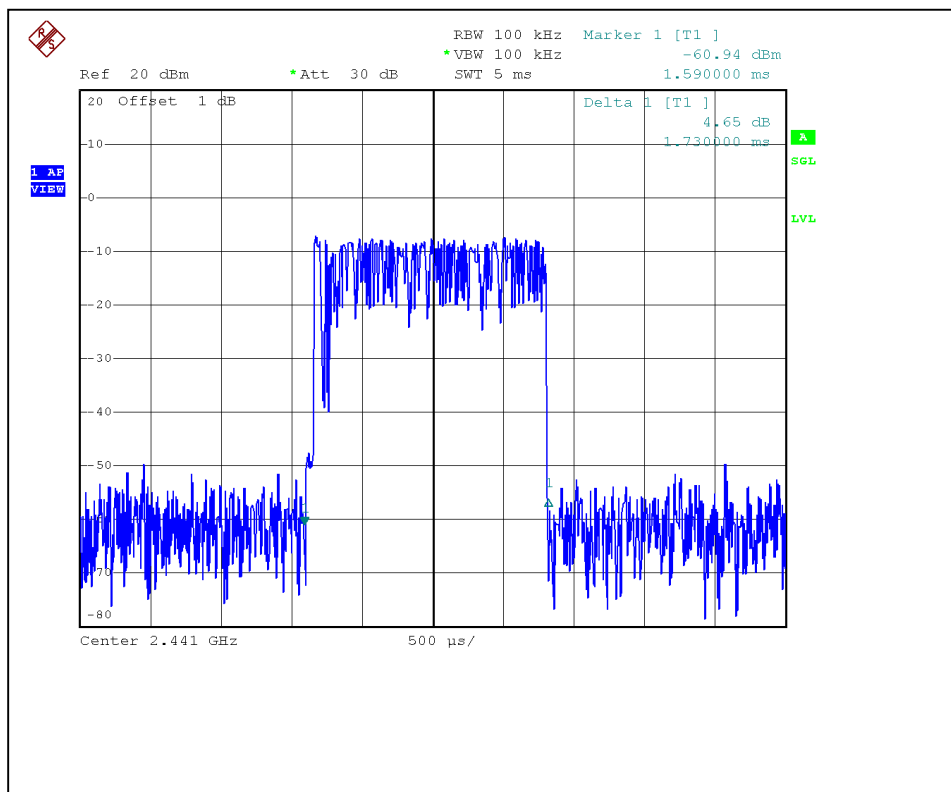
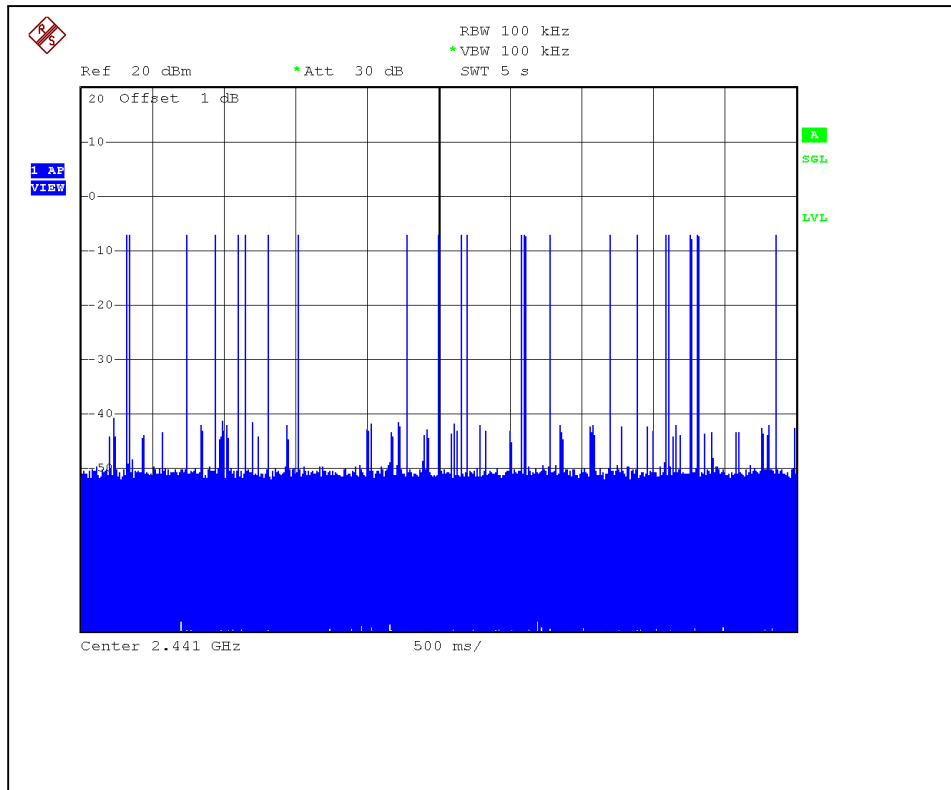
Test plots of the transmitting time slot are shown on next three pages.

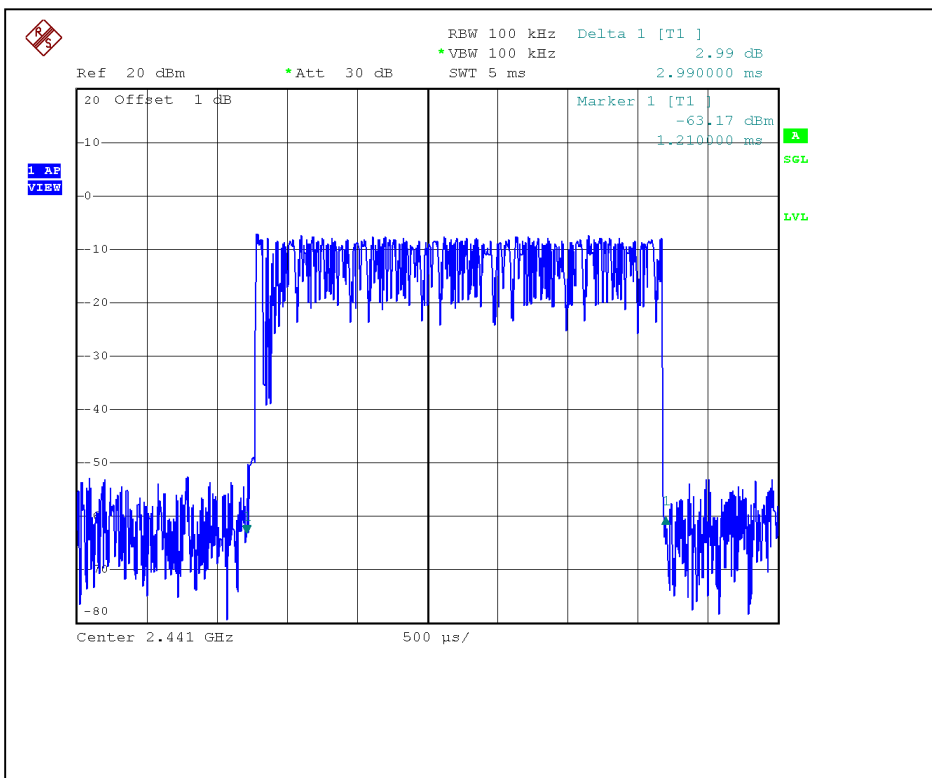
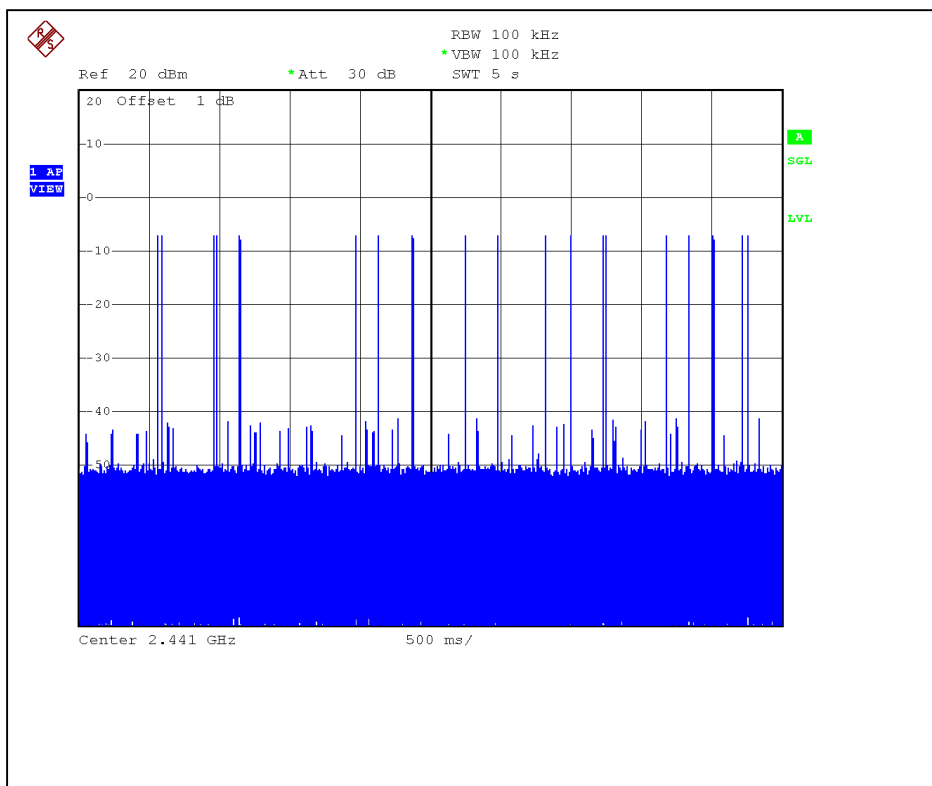


## DH1



## DH3



**DH5**

## 4.4 CHANNEL BANDWIDTH

### 4.4.1 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 23, 2005

**NOTE:**

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

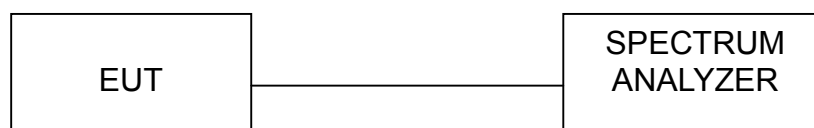
#### 4.4.2 TEST PROCEDURE

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

#### 4.4.3 DEVIATION FROM TEST STANDARD

No deviation

#### 4.4.4 TEST SETUP



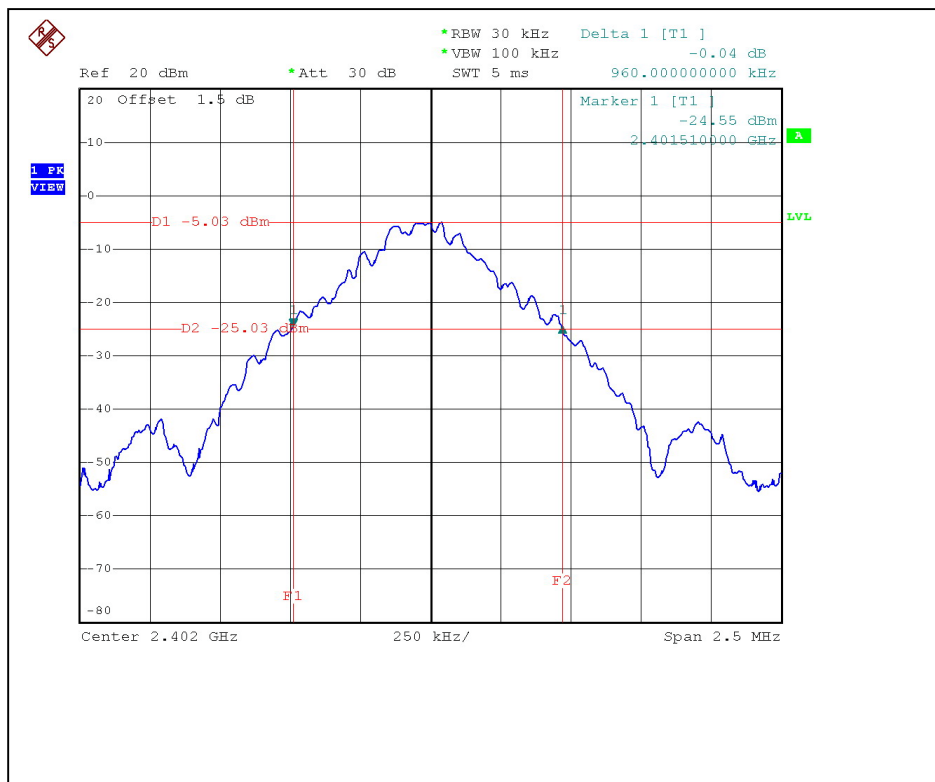
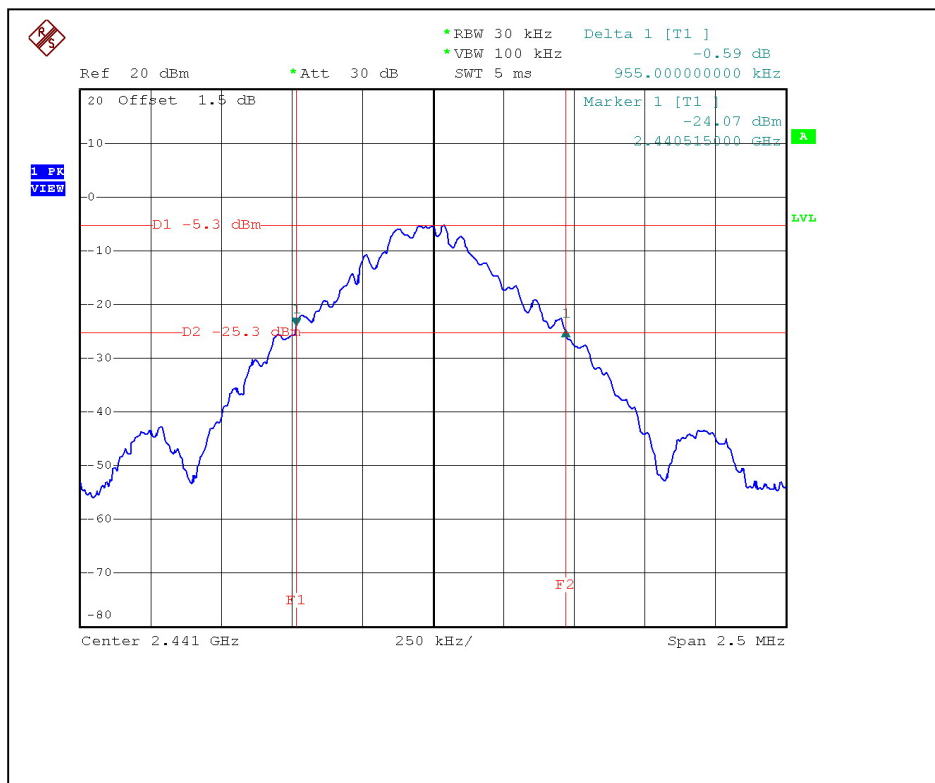
#### 4.4.5 EUT OPERATING CONDITION

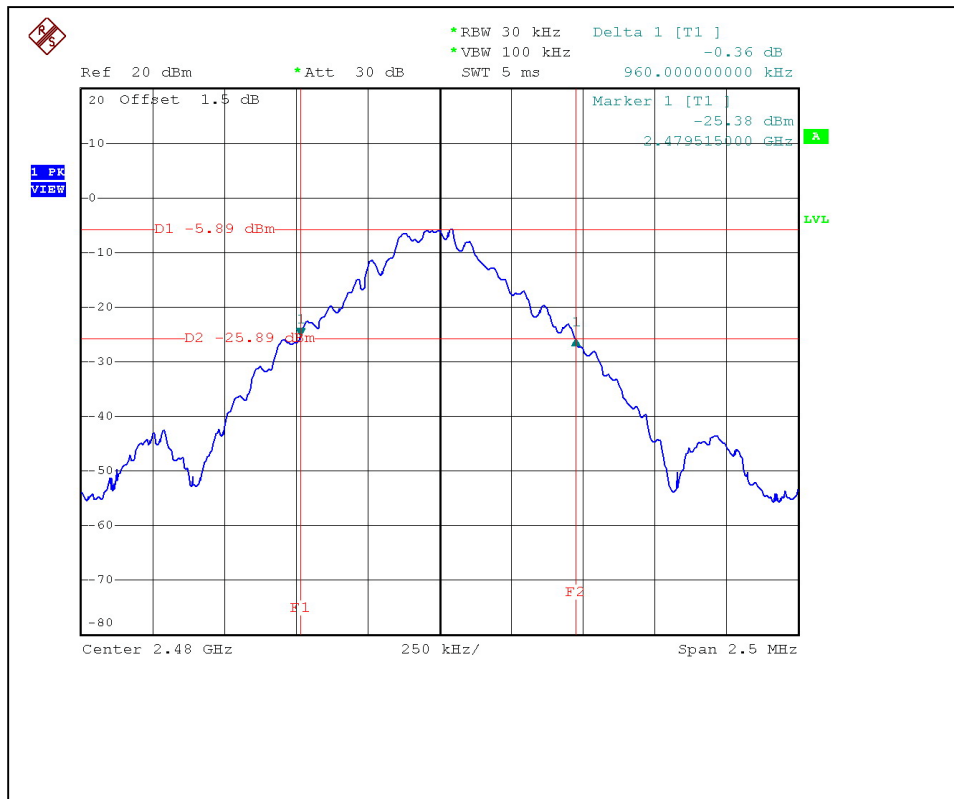
The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

## 4.4.6 TEST RESULTS(MODE 1)

<b>EUT</b>	USB Bluetooth Module	<b>MODEL</b>	T60H928
<b>ENVIRONMENTAL CONDITIONS</b>	20deg. C, 70%RH, 963 hPa	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>TESTED BY</b>	Rex Huang		

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>20dB BANDWIDTH (kHz)</b>
0	2402	960
39	2441	955
78	2480	960

**Channel 0****Channel 39**

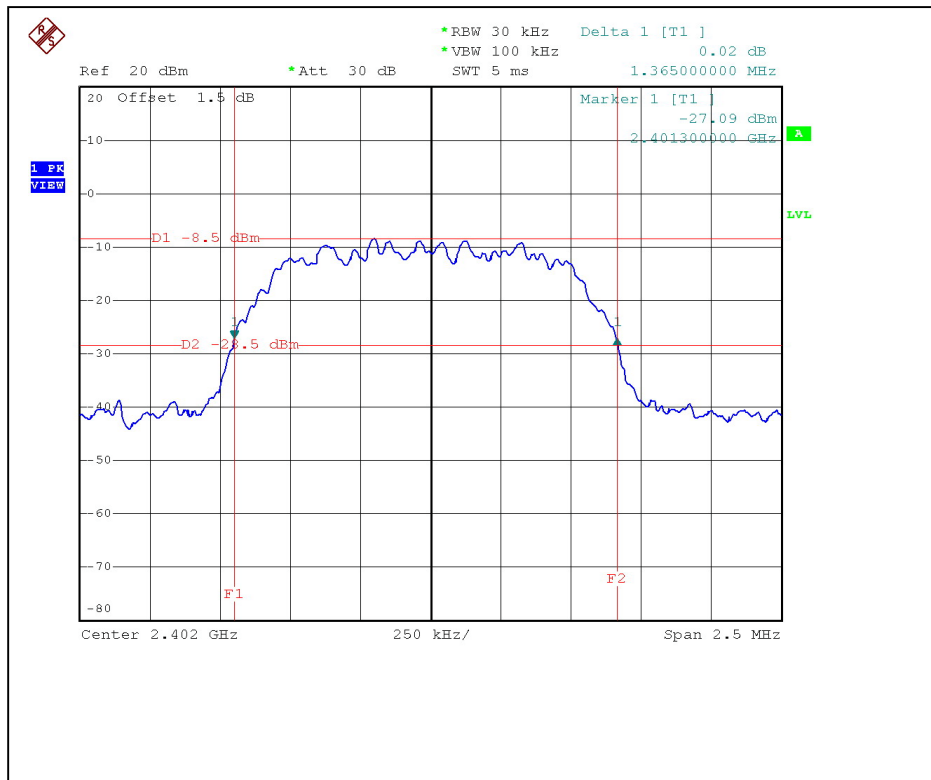
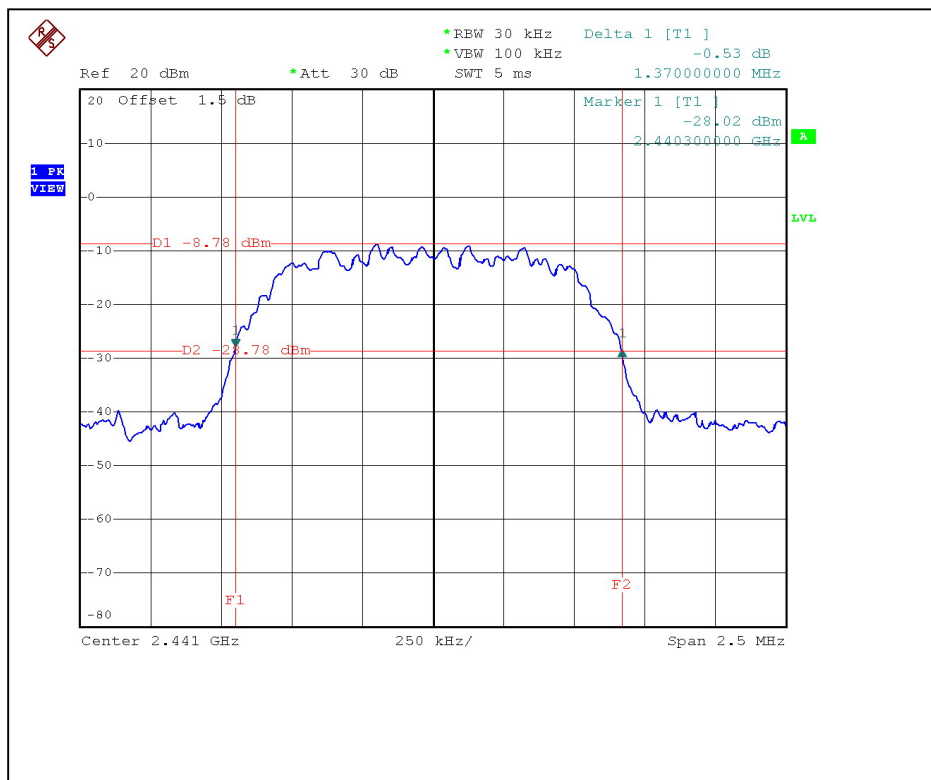
**Channel 78**

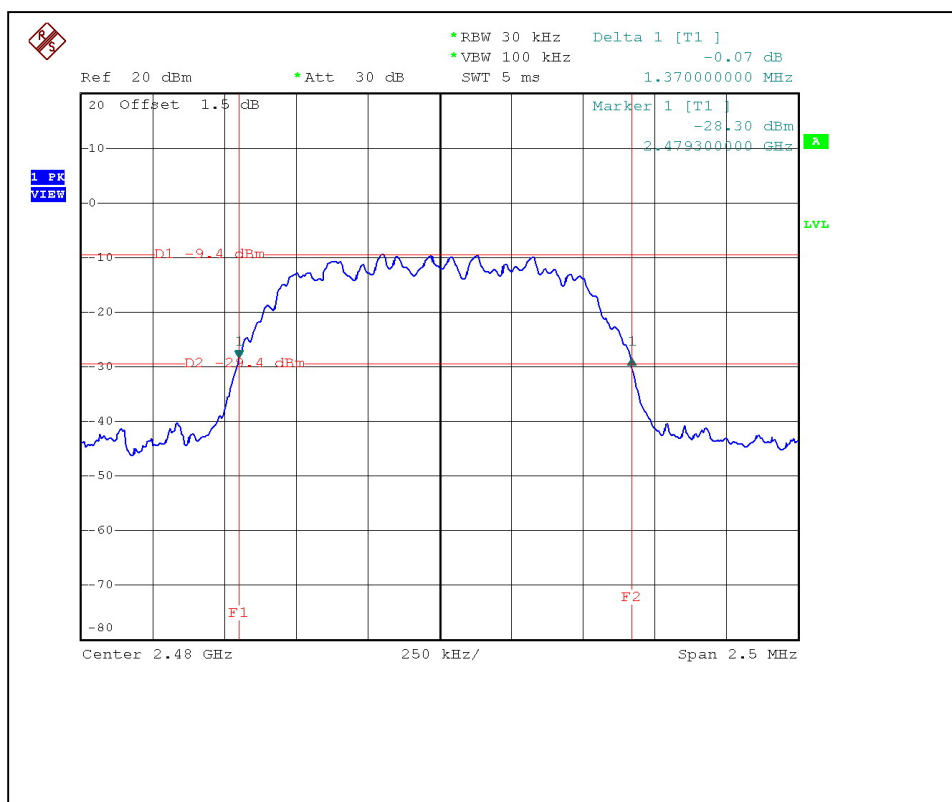


## 4.4.7 TEST RESULTS(MODE 2)

<b>EUT</b>	USB Bluetooth Module	<b>MODEL</b>	T60H928
<b>ENVIRONMENTAL CONDITIONS</b>	20deg. C, 70%RH, 963 hPa	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>TESTED BY</b>	Rex Huang		

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>20dB BANDWIDTH (kHz)</b>
0	2402	1365
39	2441	1370
78	2480	1370

**Channel 0****Channel 39**

**Channel 78**

## 4.5 HOPPING CHANNEL SEPARATION

### 4.5.1 LIMIT OF HOPPING CHANNEL SEPARATION

At least 25 kHz or two-thirds of 20dB hopping channel bandwidth (whichever is greater).

### 4.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 23, 2005

**NOTE:**

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

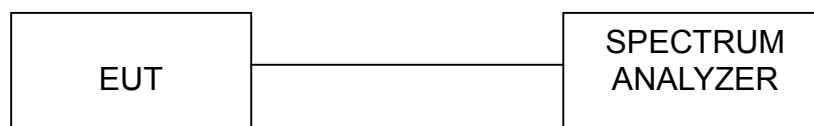
#### 4.5.3 TEST PROCEDURES

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range.
3. By using the MaxHold function record the separation of two adjacent channels.
4. Measure the frequency difference of these two adjacent channels by SA MARK function. And then plot the result on SA screen.
5. Repeat above procedures until all frequencies measured were complete.

#### 4.5.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.5.5 TEST SETUP

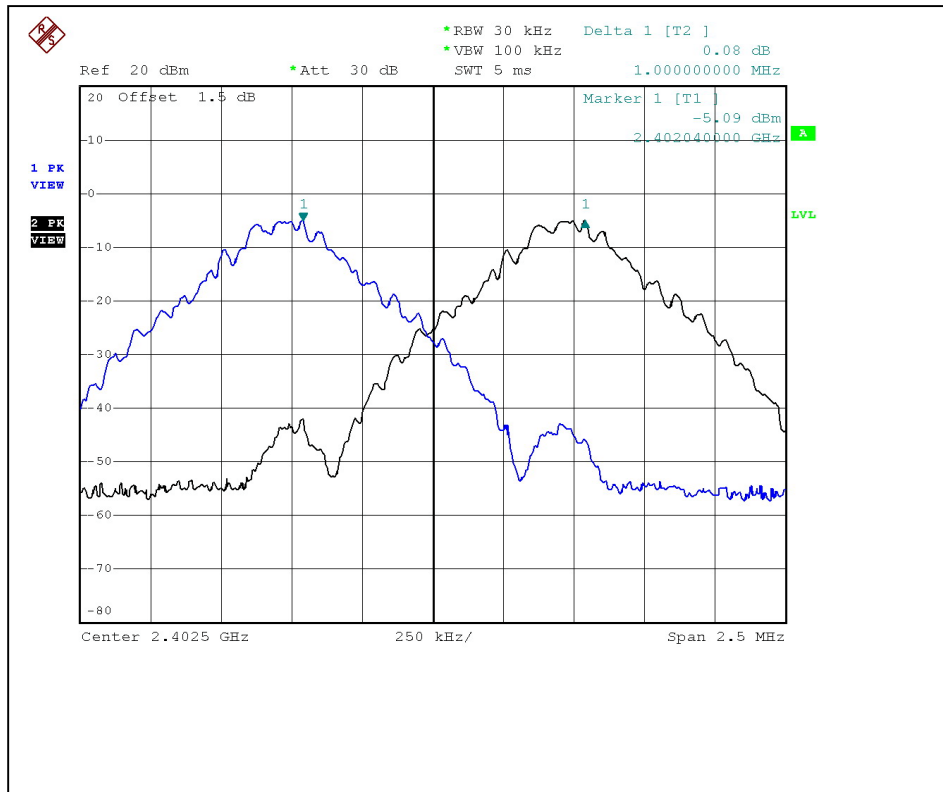
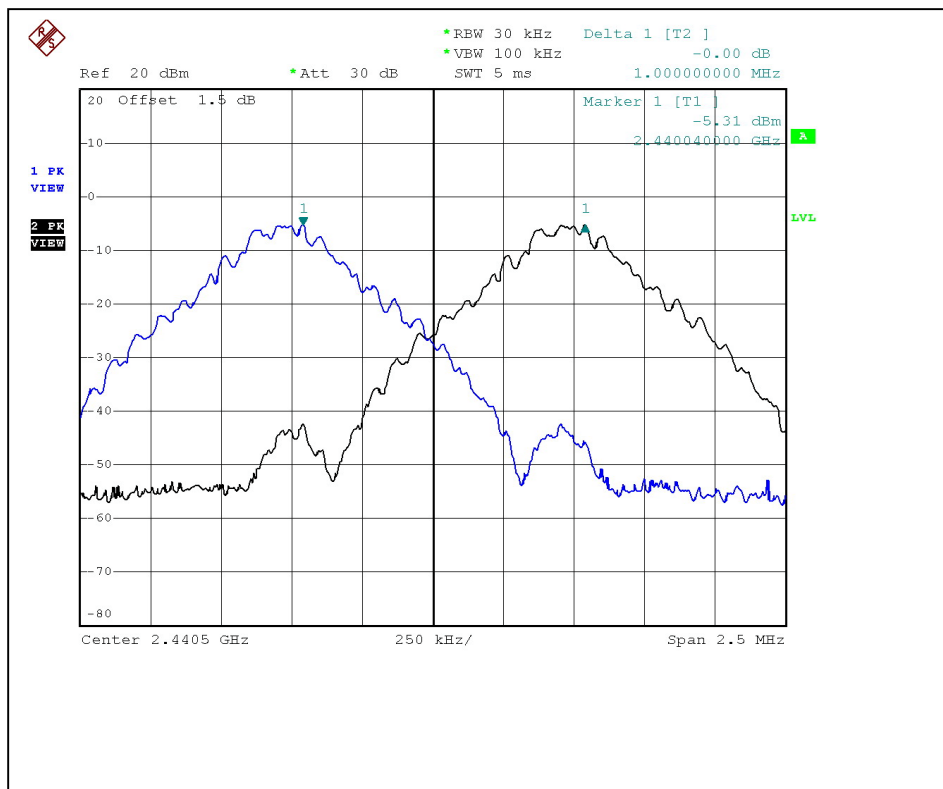


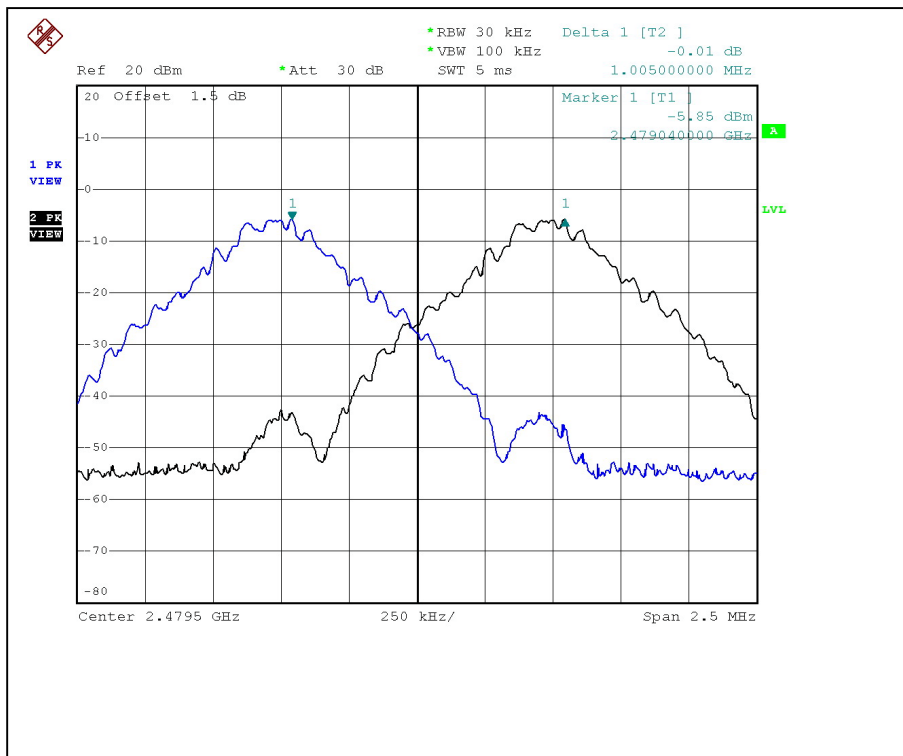
## 4.5.6 TEST RESULTS(MODE 1)

<b>EUT</b>	USB Bluetooth Module	<b>MODEL</b>	T60H928
<b>ENVIRONMENTAL CONDITIONS</b>	24 deg. C, 58%RH, 963 hPa	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>TESTED BY</b>	Rex Huang		

Channel	Frequency (MHz)	Adjacent Channel Separation	Minimum Limit (kHz)	Pass / Fail
0	2402	1.000MHz	640	PASS
39	2441	1.000MHz	637	PASS
78	2480	1.005MHz	640	PASS

The minimum limit is 20dB bandwidth. Test results please refer to next three pages.

**Channel 0****Channel 39**

**Channel 78**

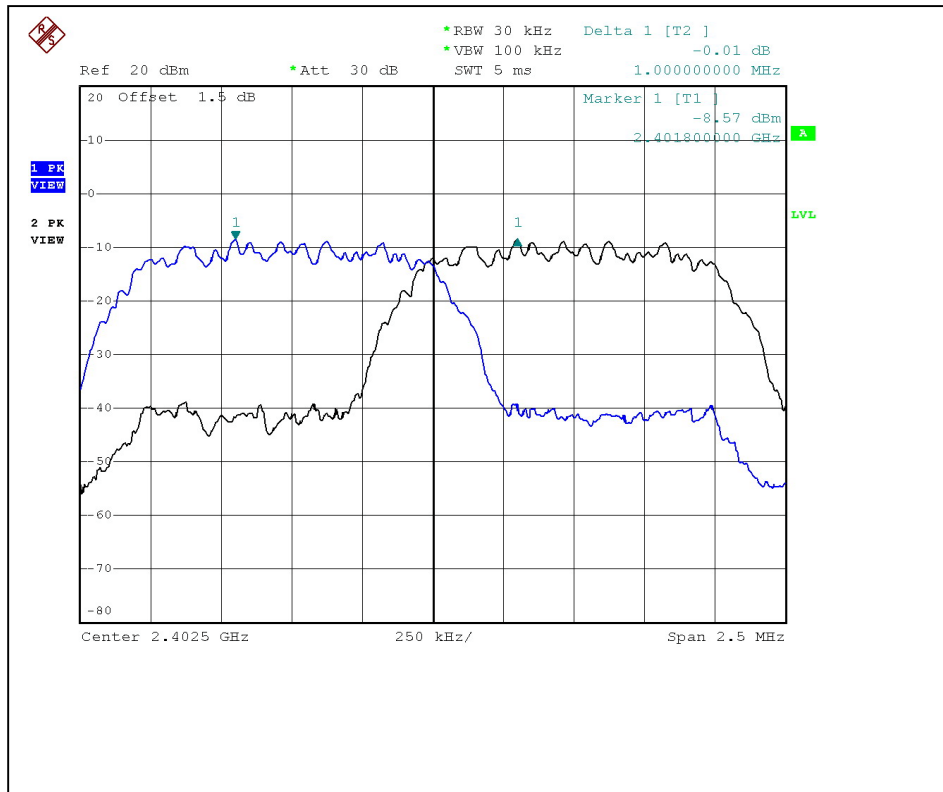
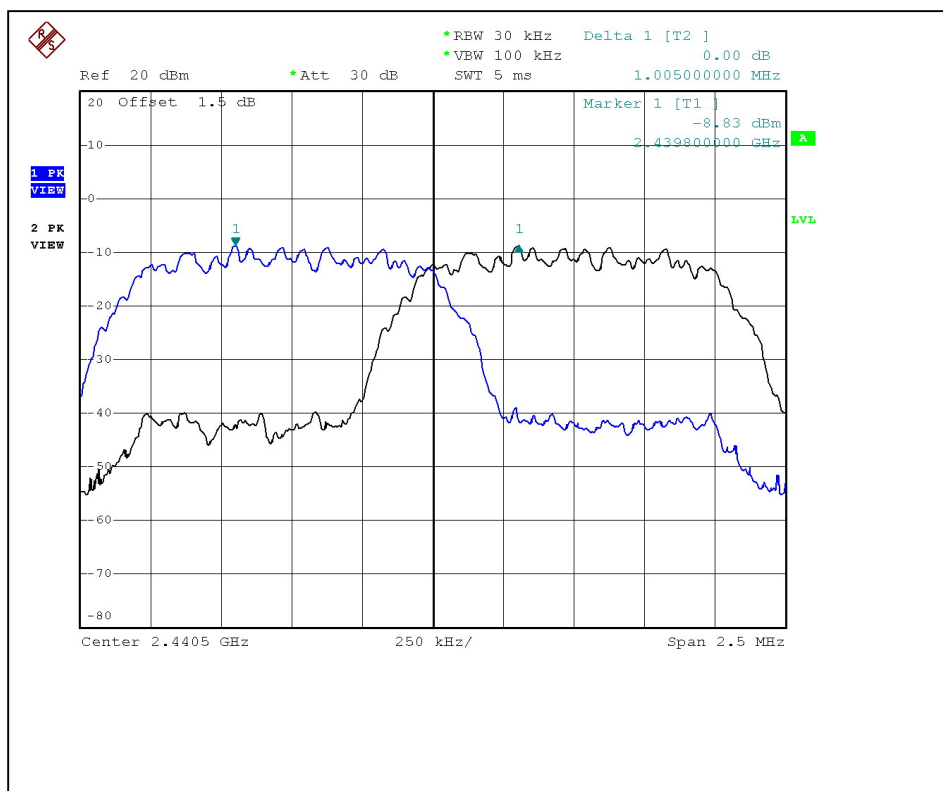


## 4.5.7 TEST RESULTS(MODE 2)

<b>EUT</b>	USB Bluetooth Module	<b>MODEL</b>	T60H928
<b>ENVIRONMENTAL CONDITIONS</b>	20 deg. C, 70%RH, 963 hPa	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>TESTED BY</b>	Rex Huang		

<b>Channel</b>	<b>Frequency (MHz)</b>	<b>Adjacent Channel Separation</b>	<b>Minimum Limit (kHz)</b>	<b>Pass / Fail</b>
0	2402	1.000MHz	910	PASS
39	2441	1.005MHz	913	PASS
78	2480	1.000MHz	913	PASS

The minimum limit is 20dB bandwidth. Test results please refer to next three pages.

**Channel 0****Channel 39**

**Channel 78**