

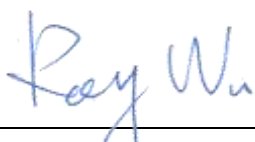
# FCC RF Test Report

**APPLICANT** : Mitac International Corp.  
**EQUIPMENT** : cradle  
**BRAND NAME** : MAGELL  
**MODEL NAME** : Premium Car Kit AP0300  
**FCC ID** : P4Q-N269  
**STANDARD** : FCC Part 15 Subpart C §15.247  
**CLASSIFICATION** : Digital Spread Spectrum (DSS)

The product was received on Nov. 04, 2009 and completely tested on Nov. 13, 2009. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:



Roy Wu / Manager



## **SPORTON INTERNATIONAL INC.**

**No. 52, Hwa Ya 1<sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.**



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**SUMMARY OF TEST RESULT**

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(1)	A8.4(2)	Number of Channels	≥ 15Chs	Pass	
3.2	15.247(a)(1)	A8.1(a)	20dB Bandwidth	NA	Pass	-
3.2	-	Gen 4.4.1	99% Bandwidth	-	Pass	-
3.3	15.247(a)(1)	A8.1(b)	Channel Separation	≥ 2/3 of 20dB BW	Pass	-
3.4	15.247(a)(1)	A8.1(d)	Dwell Time of Each Channel	≤ 0.4sec in 31.6sec period	Pass	-
3.5	15.247(b)(1)	A8.1(b)	Peak Output Power	≤ 1W	Pass	-
3.6	15.247(d)	A8.5	Frequency Band Edges	≤ 20dBc	Pass	-
3.7	15.247(d)	A8.5	Spurious Emission	< 20 dBc	Pass	-
3.8	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 6.05 dB at 2483.50 MHz
3.9	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

# 1 General Description

## 1.1 Applicant

**Mitac International Corp.**

Building B, No. 209, Sec. 1, Nan Gang Rd., Nan Gang Dist., Taipei 11568, Taiwan, R.O.C.

## 1.2 Manufacturer

**MiTAC Computer (KunShan) Co., Ltd.**

No. 269, 2nd Road, Export Processing Zone, Changjiang South Road, KunShan, JiangSu Prov., China

## 1.3 Feature of Equipment Under Test

Product Feature & Specification	
<b>Equipment</b>	cradle
<b>Brand Name</b>	MAGELL
<b>Model Name</b>	Premium Car Kit AP0300
<b>FCC ID</b>	P4Q-N269
<b>Tx/Rx Frequency Range</b>	2400 MHz ~ 2483.5 MHz
<b>Number of Channels</b>	79
<b>Carrier Frequency of Each Channel</b>	2402+n*1 MHz; n=0~78
<b>Channel Spacing</b>	1 MHz
<b>Maximum Output Power to Antenna</b>	Bluetooth (1Mbps) : 1.49 dBm (1.41 mW) Bluetooth EDR (2Mbps) : 3.50 dBm (2.24 mW) Bluetooth EDR (3Mbps) : 3.63 dBm (2.31 mW)
<b>Antenna Type</b>	PIFA Antenna
<b>HW Version</b>	R01
<b>SW Version</b>	R05
<b>Type of Modulation</b>	Bluetooth (1Mbps) : GFSK Bluetooth EDR (2Mbps) : $\pi$ /4-DQPSK Bluetooth EDR (3Mbps) : 8-DPSK
<b>EUT Stage</b>	Identical Prototype

**Remark:**

1. For other wireless features of this EUT, test report will be issued separately.
2. This test report recorded only product characteristics and test results of Digital Spread Spectrum (DSS).



List of Accessory:

Specification of Accessory		
Car Charger	Brand Name	Mitac
	Model Name	CA-051-00U-09
	Power Rating	I/P: 12V/24V; O/P: 5V, 1A
	Power Cord Type	1.3 meter non-shielded cable without ferrite core
Audio Out Cable	Brand Name	Mitac
	Power Cord Type	1.05 meter non-shielded cable without ferrite core

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. For accessories equipped with this EUT, please refer to the appendix of the external photo.



### 1.4 Testing Site

<b>Test Site</b>	SPORTON INTERNATIONAL INC.		
<b>Test Site Location</b>	No. 52, Hwa Ya 1 <sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978		
<b>Test Site No.</b>	<b>Sporton Site No.</b>		<b>FCC/IC Registration No.</b>
	TH02-HY	03CH06-HY	TW1022/4086B-1

### 1.5 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.247
- FCC Public Notice DA 00-705
- ANSI C63.4-2003
- IC RSS-210 Issue 7

**Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B (DoC), recorded in a separate test report.

### 1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Base Station	R&S	CBT32	N/A	N/A	Unshielded, 1.8 m
2.	Car Battery	YUASA	46B24R(S)	N/A	N/A	N/A
3.	iPhone	Apple	A1303	BCGA13303A	N/A	N/A

## 2 Test Configuration of Equipment Under Test

### 2.1 RF Output Power

Preliminary tests were performed in different data rate and recorded the RF output power in the following table:

Channel	Frequency	Bluetooth RF Output Power		
		Data Rate / Modulation		
		GFSK	$\pi$ /4-DQPSK	8-DPSK
		1Mbps	2Mbps	3Mbps
Ch00	2402MHz	1.34 dBm	3.50 dBm	<b>3.63 dBm</b>
Ch39	2441MHz	1.49 dBm	3.20 dBm	3.38 dBm
Ch78	2480MHz	1.07 dBm	2.56 dBm	2.85 dBm

**Remark:**

1. The data rate was set in 3Mbps for all the test items due to the highest RF output power.
2. The EUT is programmed to transmit signals continuously for all testing.



## 2.2 Test Mode

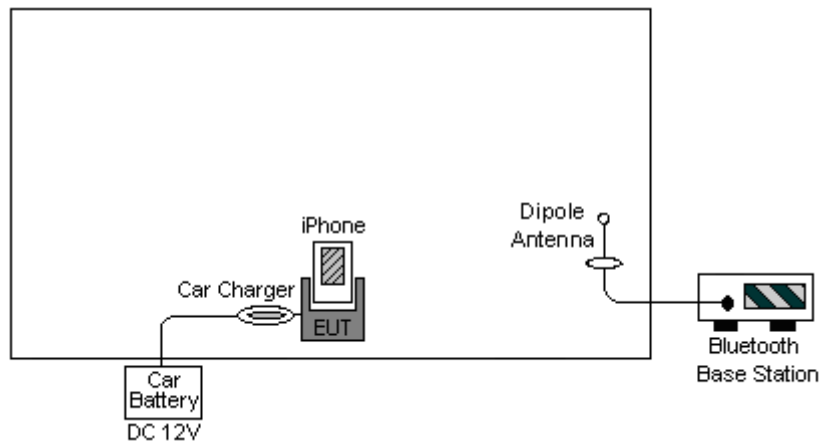
The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Pre-scanned tests were conducted to determine the final configuration from all possible combinations.

The following tables are showing the test modes as the worst cases and recorded in this report.

Test Cases			
Test Item	Data Rate / Modulation		
	Bluetooth 1Mbps GFSK	Bluetooth EDR 2Mbps $\pi$ /4-DQPSK	Bluetooth EDR 3Mbps 8-DPSK
Conducted TCs	Mode 1: CH00_2402 MHz Mode 2: CH39_2441 MHz Mode 3: CH78_2480 MHz	Mode 4: CH00_2402 MHz Mode 5: CH39_2441 MHz Mode 6: CH78_2480 MHz	Mode 7: CH00_2402 MHz Mode 8: CH39_2441 MHz Mode 9: CH78_2480 MHz
Radiated TCs	N/A	N/A	Mode 1: CH00_2402 MHz Mode 2: CH39_2441 MHz Mode 3: CH78_2480 MHz
<b>Remark:</b> For radiated TCs, the data rate was set in 3Mbps due to the highest RF output power; only the data of these modes was reported.			

## 2.3 Connection Diagram of Test System



## 2.4 RF Utility

Apply the power source and the EUT will automatically get into the engineering mode to contact with BT base station for transmitting and receiving signals continuously.

### 3 Test Result

#### 3.1 Number of Channel Measurement

##### 3.1.1 Limits of Number of Hopping Frequency

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

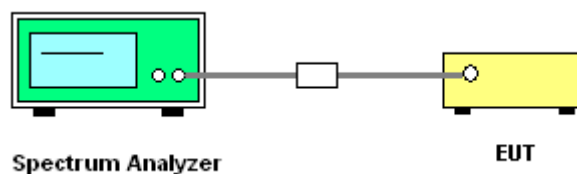
##### 3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

##### 3.1.3 Test Procedure

1. The testing follows FCC Public Notice DA 00-705 Measurement Guidelines.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. The modulation types of EUT are irrelevant to number of hopping channels deviation.
4. The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:  
Span = the frequency band of operation;  $RBW \geq 1\%$  of the span;  $VBW \geq RBW$ ; Sweep = auto;  
Detector function = peak; Trace = max hold.
5. The number of hopping frequency used is defined as the device has the numbers of total channel.

##### 3.1.4 Test Setup

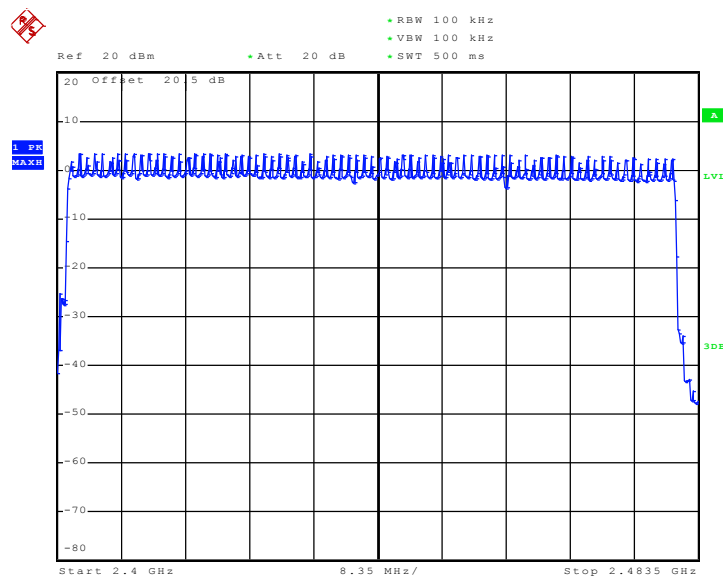




### 3.1.5 Test Result of Number of Hopping Frequency

Test Mode :	Mode 7~9	Temperature :	27~29°C		
Test Engineer :	Tang Liu	Relative Humidity :	41~44%		
Number of Hopping Channels (Channel)		Limits (Channel)		Pass/Fail	
79		> 15		Pass	

Number of Hopping Channel Plot on Channel 00 - 78



Date: 13.NOV.2009 19:05:40

## 3.2 20dB and 99% Bandwidth Measurement

### 3.2.1 Limit of 20dB Bandwidth

N/A

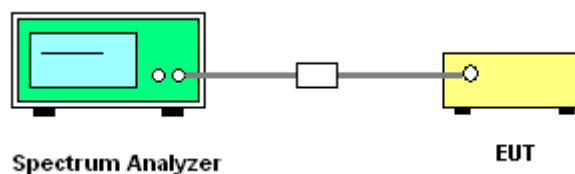
### 3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

### 3.2.3 Test Procedures

1. The testing follows FCC Public Notice DA 00-705 Measurement Guidelines.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. The EUT should be transmitting at its maximum data rate as the worst cases.
4. Use the following spectrum analyzer settings:  
Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel;  
RBW  $\geq$  1% of the 20 dB bandwidth; VBW  $\geq$  RBW; Sweep = auto; Detector function = peak;  
Trace = max hold.
5. The marker-delta reading at this point is the 20 dB bandwidth of the emission.

### 3.2.4 Test Setup



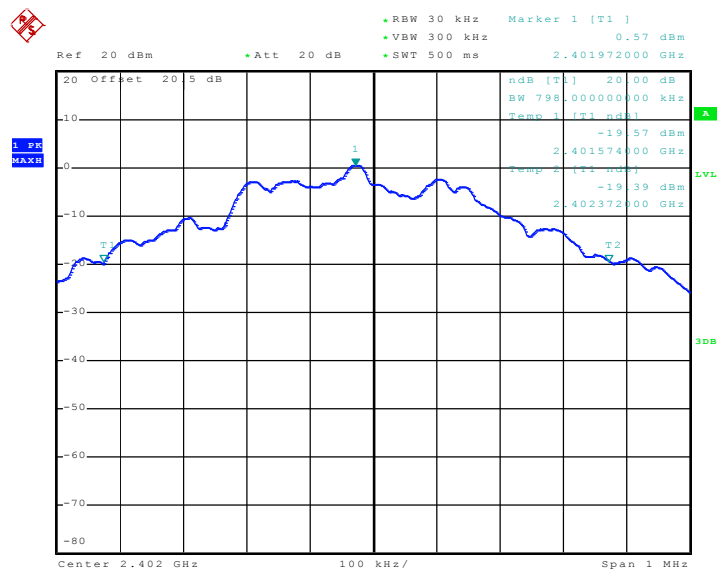


3.2.5 Test Result of 20dB Bandwidth

Test Mode :	Mode 1, 2, 3	Temperature :	27~29°C
Test Engineer :	Tang Liu	Relative Humidity :	41~44%

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
00	2402	0.798
39	2441	0.798
78	2480	0.796

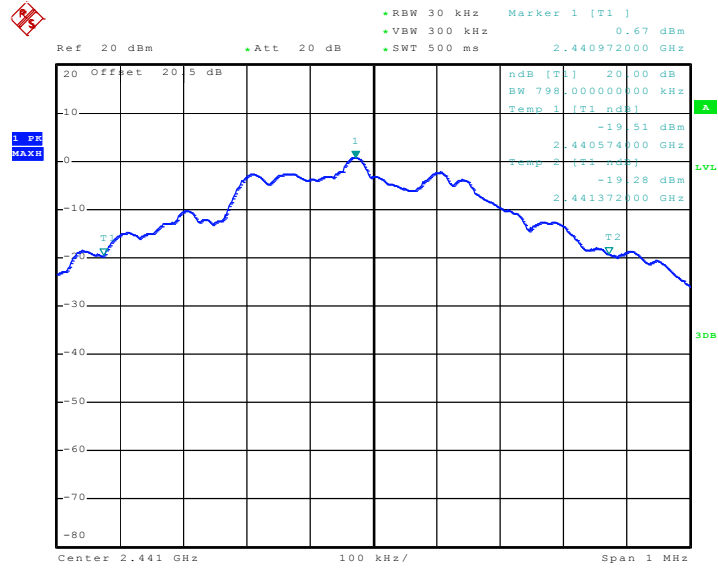
20 dB Bandwidth Plot on Channel 00



Date: 12.NOV.2009 18:19:57

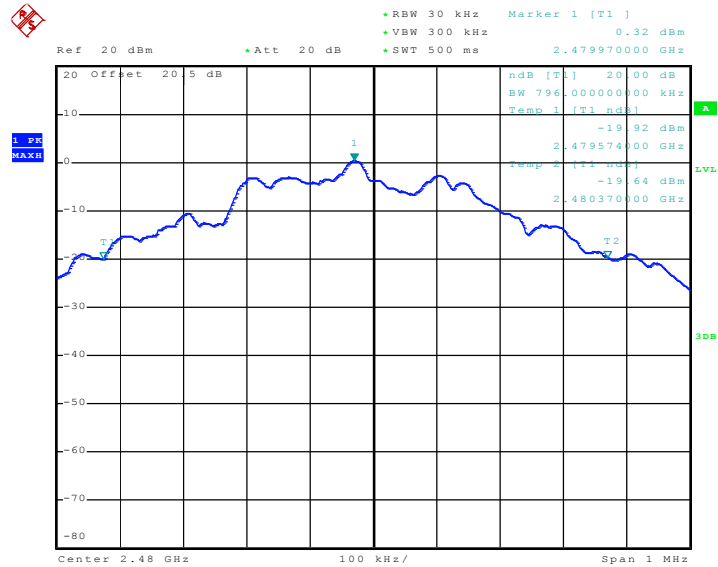


20 dB Bandwidth Plot on Channel 39



Date: 12.NOV.2009 18:20:43

20 dB Bandwidth Plot on Channel 78



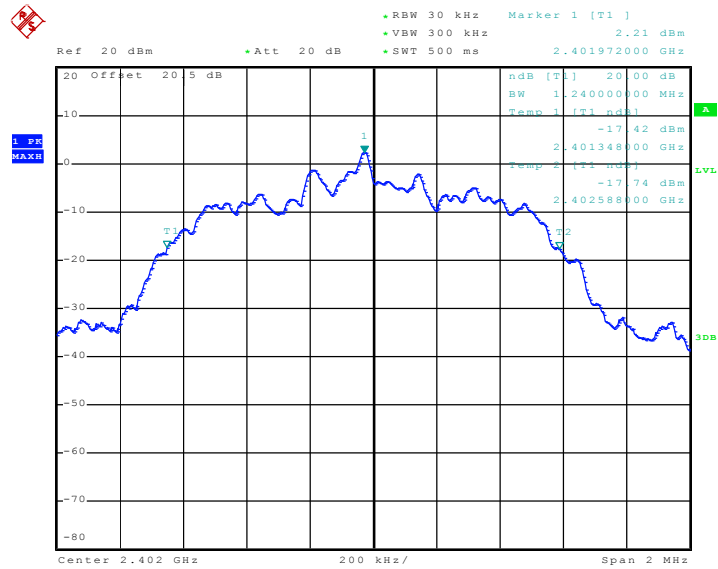
Date: 12.NOV.2009 18:21:06



Test Mode :	Mode 4, 5, 6	Temperature :	27~29°C
Test Engineer :	Tang Liu	Relative Humidity :	41~44%

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
00	2402	1.240
39	2441	1.220
78	2480	1.220

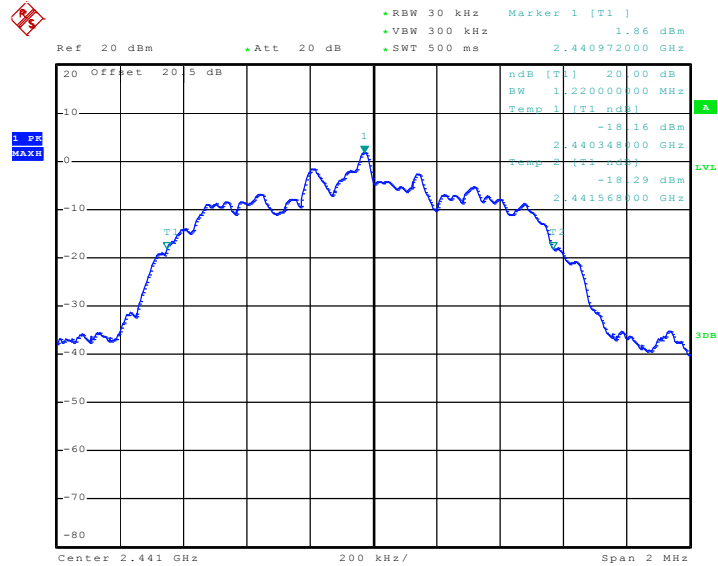
20 dB Bandwidth Plot on Channel 00



Date: 12.NOV.2009 18:23:35

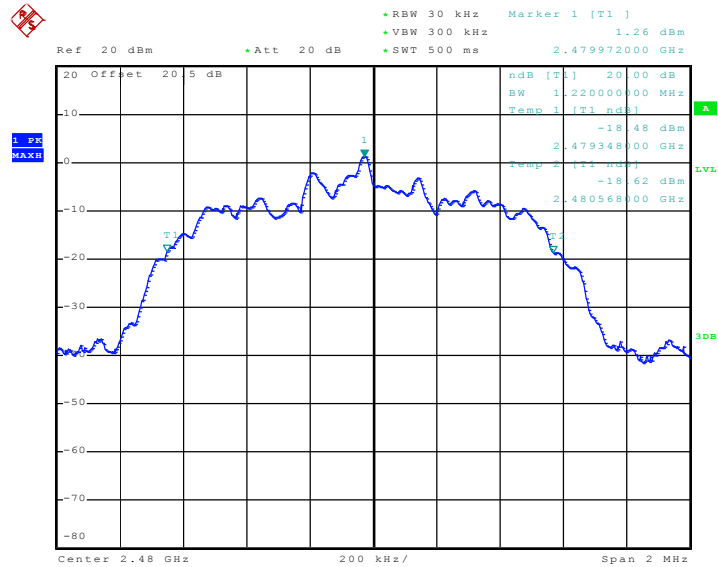


20 dB Bandwidth Plot on Channel 39



Date: 12.NOV.2009 18:23:14

20 dB Bandwidth Plot on Channel 78



Date: 12.NOV.2009 18:21:41

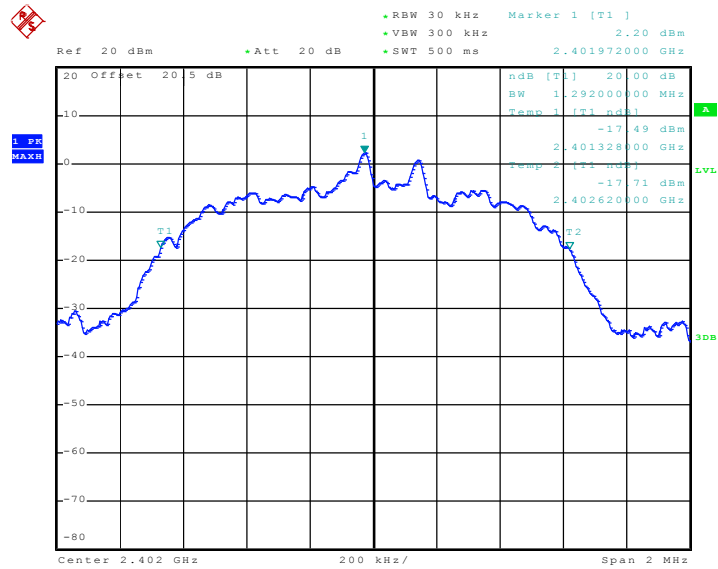




Test Mode :	Mode 7, 8, 9	Temperature :	27~29°C
Test Engineer :	Tang Liu	Relative Humidity :	41~44%

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
00	2402	1.292
39	2441	1.288
78	2480	1.284

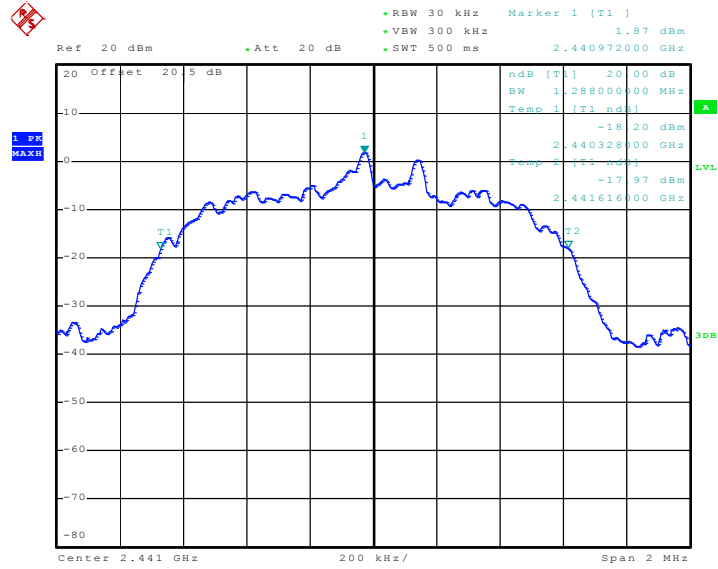
20 dB Bandwidth Plot on Channel 00



Date: 12.NOV.2009 18:24:01

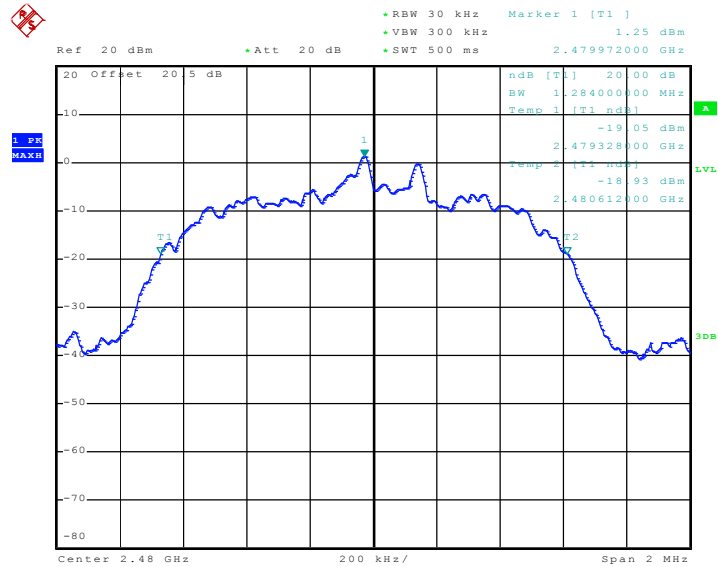


20 dB Bandwidth Plot on Channel 39



Date: 12.NOV.2009 18:22:50

20 dB Bandwidth Plot on Channel 78



Date: 12.NOV.2009 18:22:13

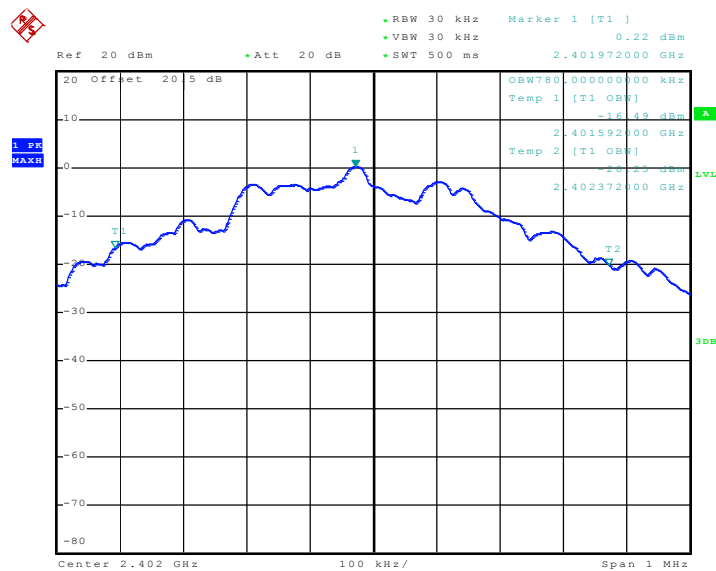


3.2.6 Test Result of 99% Occupied Bandwidth

Test Mode :	Mode 1, 2, 3	Temperature :	27~29°C
Test Engineer :	Tang Liu	Relative Humidity :	41~44%

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
00	2402	0.780
39	2441	0.780
78	2480	0.782

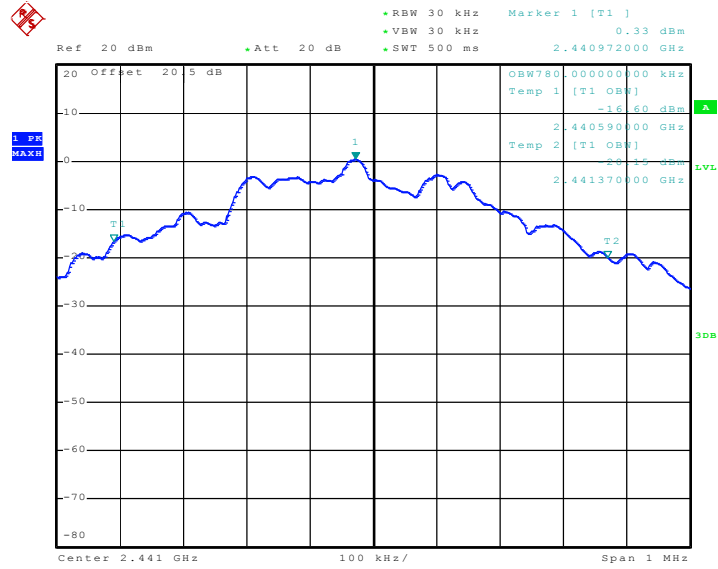
99% Bandwidth Plot on Channel 00



Date: 12.NOV.2009 18:29:16

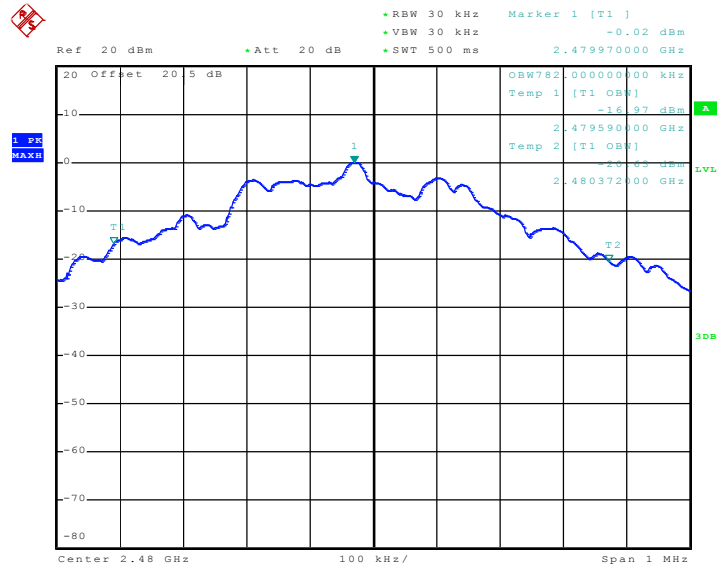


99% Occupied Bandwidth Plot on Channel 39



Date: 12.NOV.2009 18:29:43

99% Occupied Bandwidth Plot on Channel 78



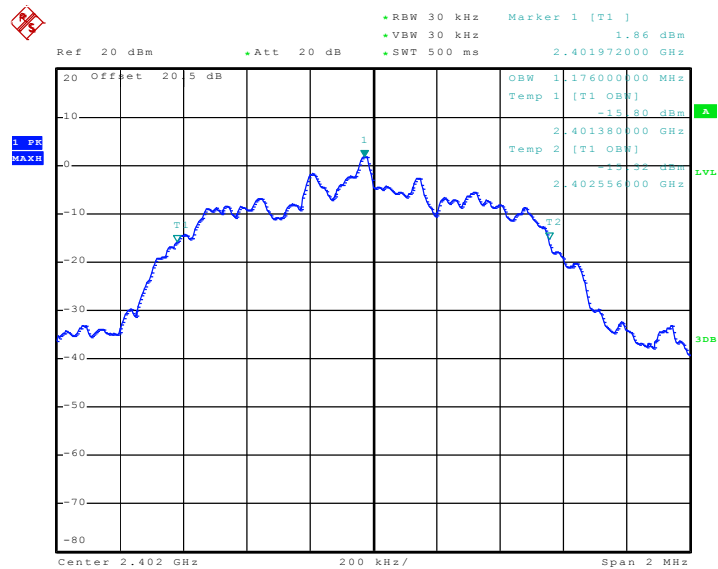
Date: 12.NOV.2009 18:30:14



Test Mode :	Mode 4, 5, 6	Temperature :	27~29°C
Test Engineer :	Tang Liu	Relative Humidity :	41~44%

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
00	2402	1.176
39	2441	1.168
78	2480	1.168

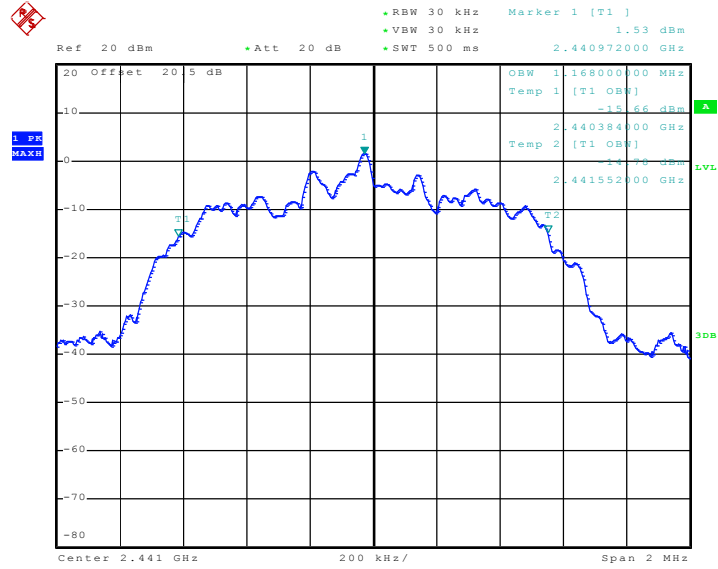
99% Bandwidth Plot on Channel 00



Date: 12.NOV.2009 18:28:09

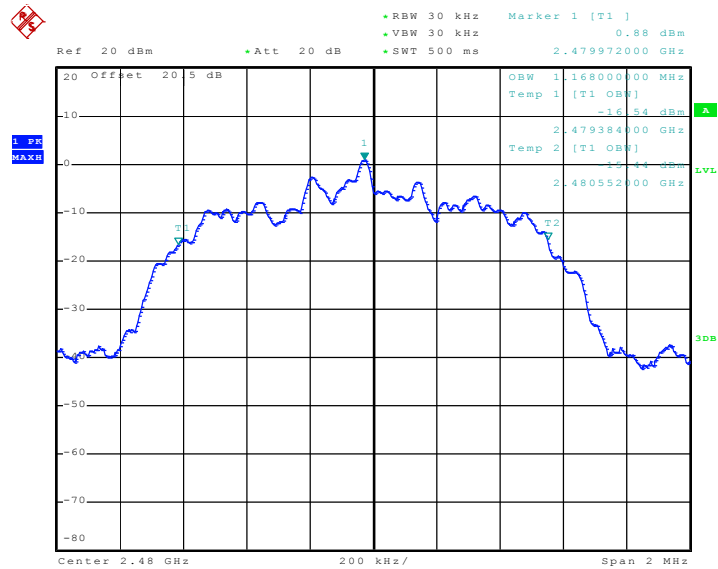


99% Occupied Bandwidth Plot on Channel 39



Date: 12.NOV.2009 18:27:40

99% Occupied Bandwidth Plot on Channel 78



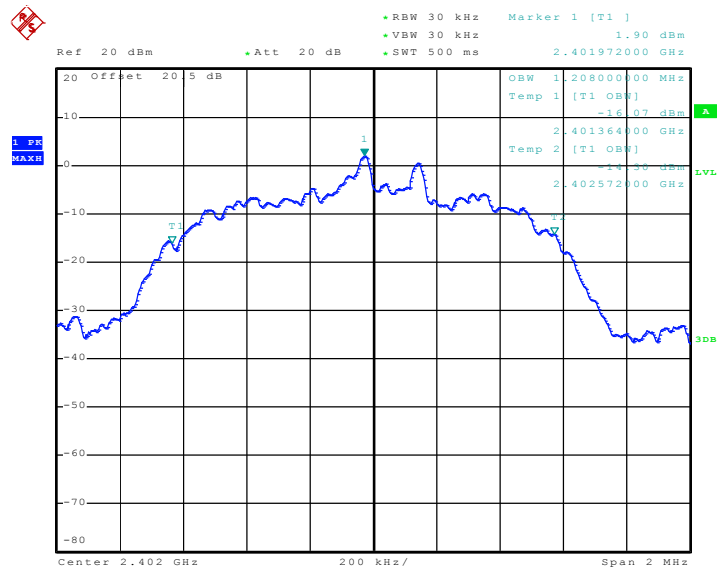
Date: 12.NOV.2009 18:27:18



Test Mode :	Mode 7, 8, 9	Temperature :	27~29°C
Test Engineer :	Tang Liu	Relative Humidity :	41~44%

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
00	2402	1.208
39	2441	1.192
78	2480	1.184

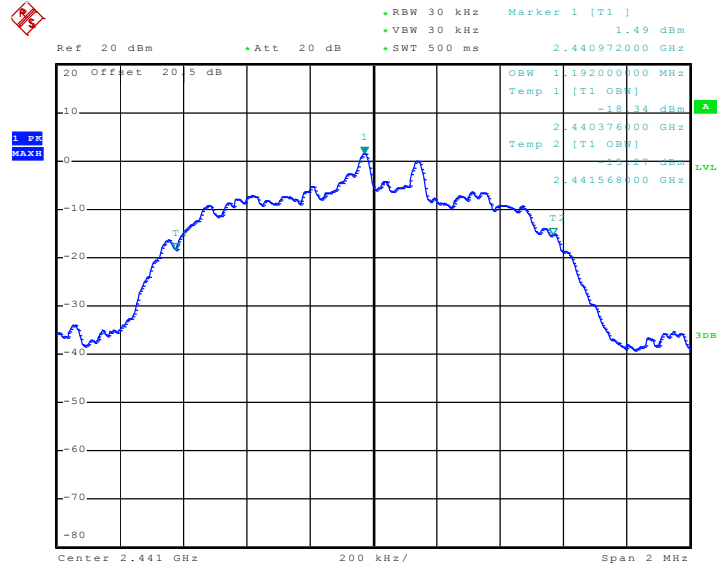
99% Bandwidth Plot on Channel 00



Date: 12.NOV.2009 18:25:21

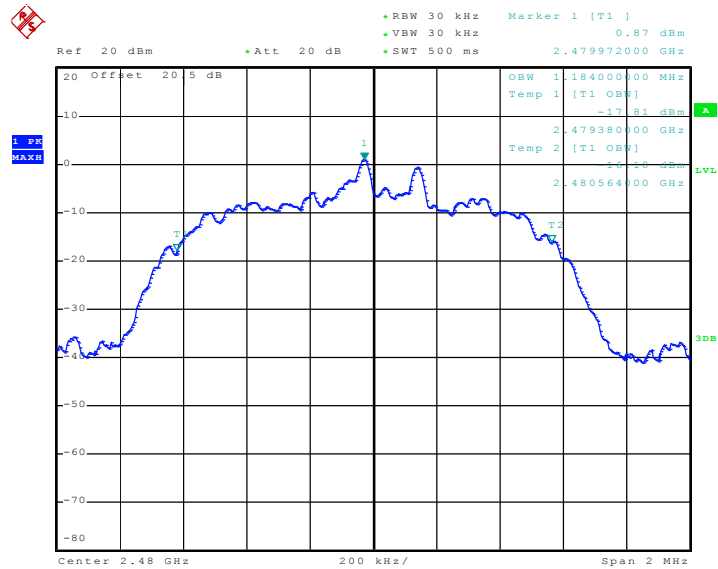


99% Occupied Bandwidth Plot on Channel 39



Date: 12.NOV.2009 18:25:56

99% Occupied Bandwidth Plot on Channel 78



Date: 12.NOV.2009 18:26:32



### 3.3 Hopping Channel Separation Measurement

#### 3.3.1 Limit of Hopping Channel Separation

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.

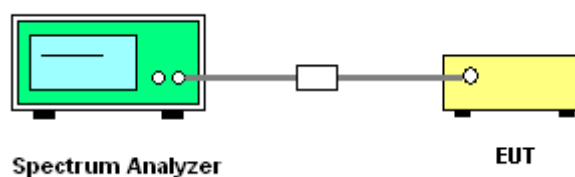
#### 3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

#### 3.3.3 Test Procedures

1. Please refer FCC Public Notice DA 00-705 Measurement Guidelines.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. The EUT should be transmitting at its maximum data rate as the worst cases.
4. Use the following spectrum analyzer settings:  
Span = wide enough to capture the peaks of two adjacent channels;  $RBW \geq 1\%$  of the span;  
VBW  $\geq$  RBW; Sweep = auto; Detector function = peak; Trace = max hold.
5. Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

#### 3.3.4 Test Setup



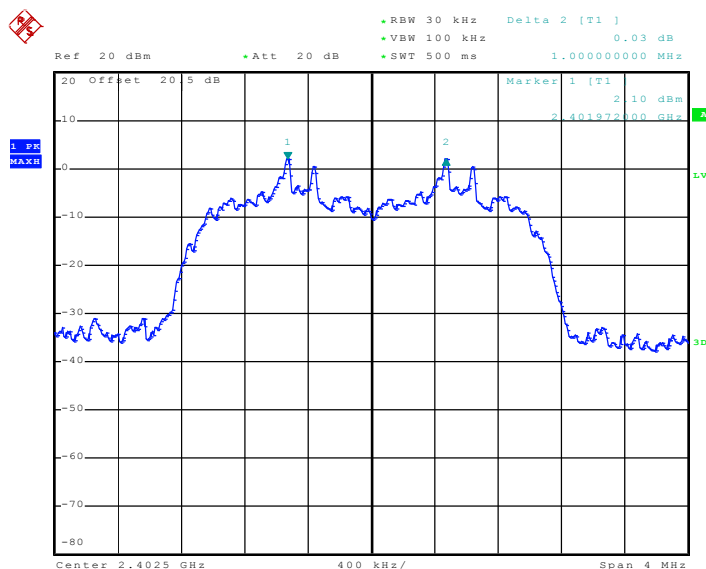


3.3.5 Test Result of Hopping Channel Separation

Test Mode :	Mode 7, 8, 9	Temperature :	27~29°C
Test Engineer :	Tang Liu	Relative Humidity :	41~44%

Channel	Frequency (MHz)	Frequency Separation (MHz)	(2/3 of 20dB BW) Limits (MHz)	Pass/Fail
00	2402	1.000	0.861	Pass
39	2441	1.000	0.859	Pass
78	2480	1.000	0.856	Pass

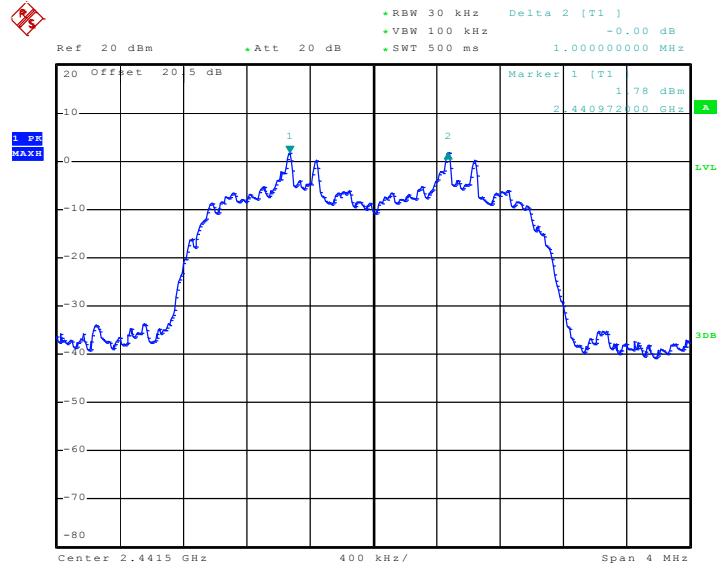
Channel Separation Plot on Channel 00 - 01



Date: 12.NOV.2009 18:53:46

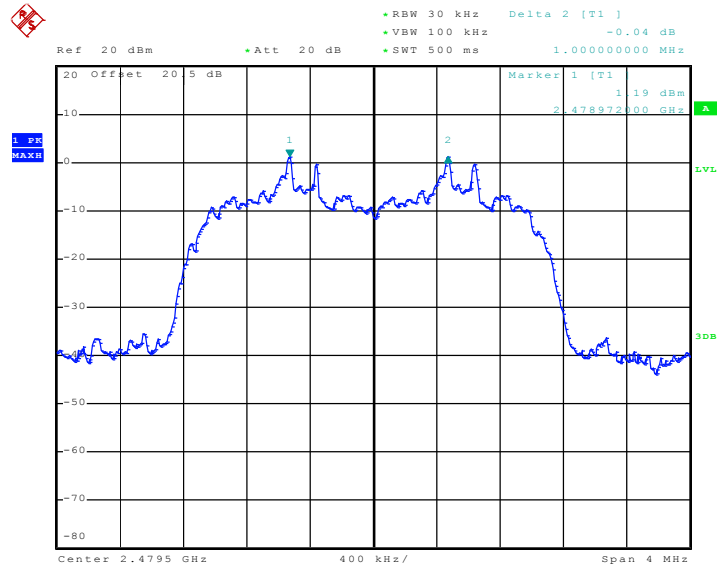


Channel Separation Plot on Channel 39 - 40



Date: 12.NOV.2009 18:54:13

Channel Separation Plot on Channel 77 - 78



Date: 12.NOV.2009 18:54:39

### 3.4 Dwell Time Measurement

#### 3.4.1 Limit of Dwell Time

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

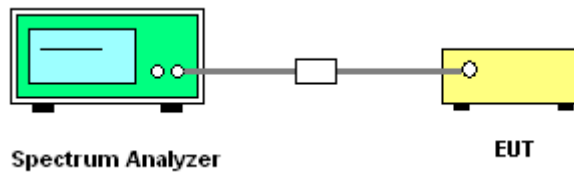
#### 3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

#### 3.4.3 Test Procedures

1. The testing follows FCC Public Notice DA 00-705 Measurement Guidelines.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. The EUT should be transmitting at its maximum data rate as the worst cases.
4. The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:  
Span = zero span, centered on a hopping channel; RBW = 1 MHz; VBW ≥ RBW; Sweep = as necessary to capture the entire dwell time per hopping channel; Detector function = peak; Trace = max hold.
5. Use the marker-delta function to calculate the dwell time.

#### 3.4.4 Test Setup



#### 3.4.5 Test Result of Dwell Time

Test Mode :	Mode 8	Temperature :	27~29°C
Test Engineer :	Tang Liu	Relative Humidity :	41~44%

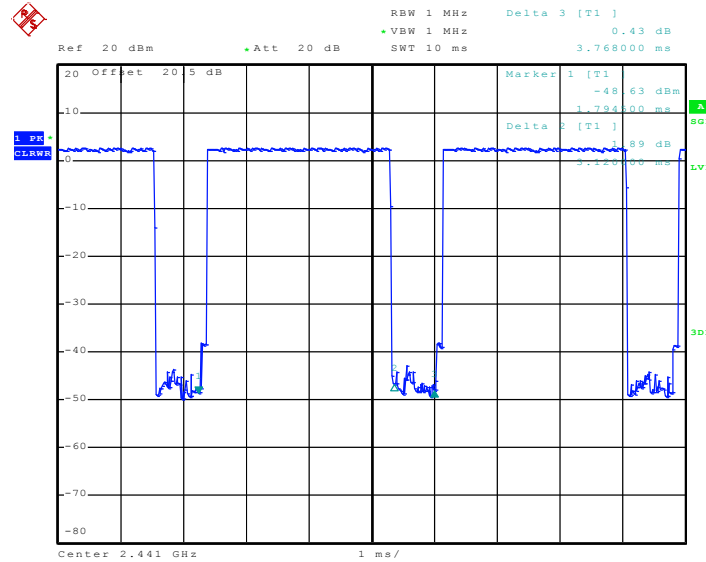
Package Mode	Average Hopping Channel	Package Transfer Time (usec)	Dwell Time (sec)	Limits (sec)	Pass/Fail
3DH5	3.00	3120.00	0.30	0.4	Pass

**Remark:**

1. Dwell Time=79(channels) x 0.4(s) x average hopping channel x package transfer time
2. 79 channels come from the Hopping Channel number.
3. Average Hopping Channel = hops/sweep time
4. t: Package Transfer Time(us)

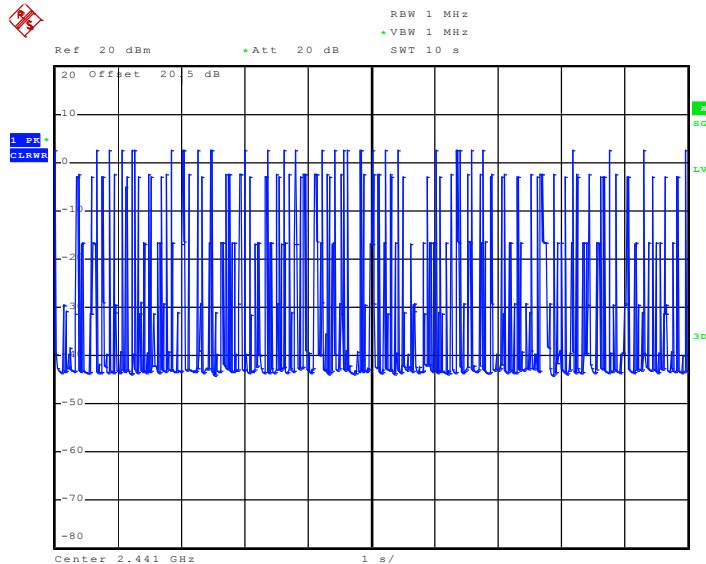


3DH5 Dwell Time (One Pulse) Plot on Channel 39



Date: 12.NOV.2009 19:03:03

3DH5 Dwell Time (Count Pulses) Plot on Channel 39



Date: 12.NOV.2009 21:33:51

### 3.5 Peak Output Power Measurement

#### 3.5.1 Limit of Peak Output Power

Frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels: 1W (30 dBm).

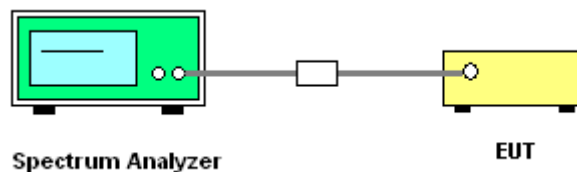
#### 3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

#### 3.5.3 Test Procedures

1. The testing follows FCC Public Notice DA 00-705 Measurement Guidelines.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.

#### 3.5.4 Test Setup



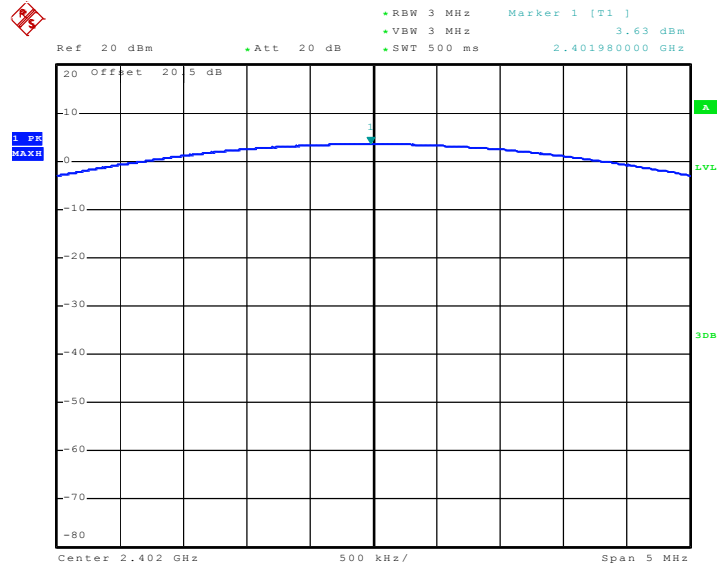
#### 3.5.5 Test Result of Peak Output Power

<b>Test Mode :</b>	Mode 7, 8, 9	<b>Temperature :</b>	27~29°C
<b>Test Engineer :</b>	Tang Liu	<b>Relative Humidity :</b>	41~44%

Channel	Frequency (MHz)	RF Power (dBm)		
		8-DPSK	Max. Limits (dBm)	Pass/Fail
		3 Mbps		
00	2402	3.63	30	Pass
39	2441	3.38	30	Pass
78	2480	2.85	30	Pass

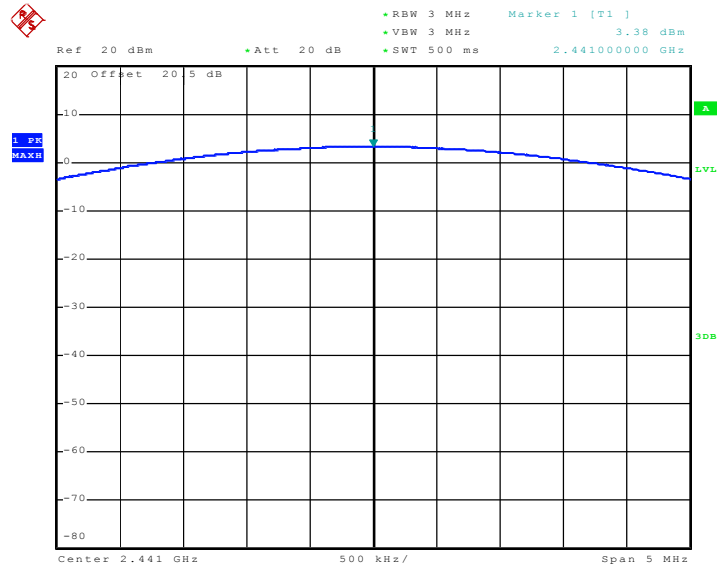


Peak Output Power Plot on Channel 00



Date: 12.NOV.2009 17:13:11

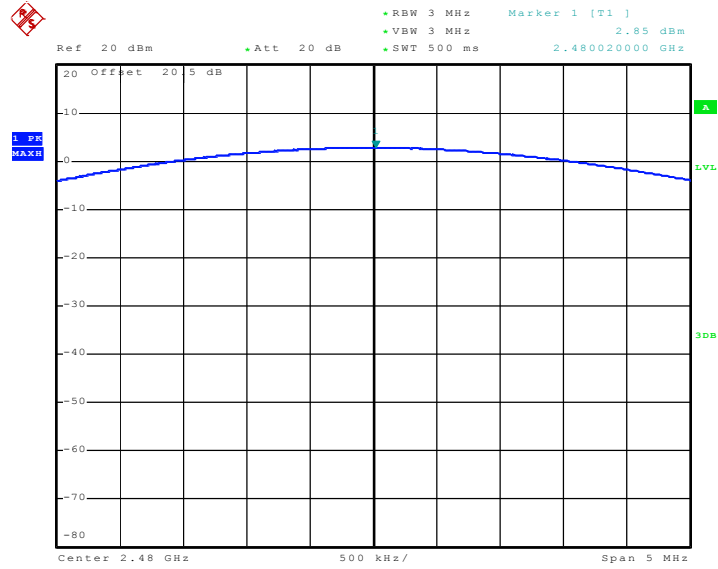
Peak Output Power Plot on Channel 39



Date: 12.NOV.2009 17:14:23



Peak Output Power Plot on Channel 78



Date: 12.NOV.2009 17:21:07



## 3.6 Band Edges Measurement

### 3.6.1 Limit of Band Edges

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

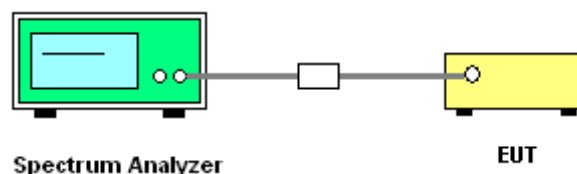
### 3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

### 3.6.3 Test Procedures

1. The testing follows the guidelines in ANSI C63.4-2003 and FCC Public Notice DA 00-705 Measurement Guidelines.
2. RF antenna conducted test: Set RBW = 300kHz, Video bandwidth (VBW)  $\geq$  RBW. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 300kHz RBW. Note: If the device complies with the use of power option 2 the attenuation under this paragraph shall be 30 dB instead of 20 dB.
3. Radiated emission test: Applies to band edge emissions that fall in the restricted bands listed in FCC Section 15.205. The maximum permitted average field strength is listed in FCC Section 15.209. A pre-amp is necessary for this measurement. For measurements above 1 GHz, set RBW = 1MHz, VBW = 1MHz, Sweep: Auto for Peak; set RBW = 1MHz, VBW = 10 Hz, Sweep: Auto for Average. If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation. See FCC Section 15.35(b) and (c).
4. In case the emission is fail due to the used RBW / VBW is too wide, marker-delta method of FCC Public Notice DA 00-705 will be followed.

### 3.6.4 Test Setup





3.6.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	19~21°C
Test Channel :	00	Relative Humidity :	43~45%
		Test Engineer :	Elvis Chen

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2387.14	44.73	-29.27	74.00	45.23	31.86	3.92	36.28	100	235	Peak
2387.14	31.54	-22.46	54.00	32.04	31.86	3.92	36.28	100	235	Average

ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2376.50	45.11	-28.89	74.00	45.67	31.83	3.89	36.28	103	8	Peak
2376.50	32.03	-21.97	54.00	32.59	31.83	3.89	36.28	103	8	Average

Test Mode :	Mode 3	Temperature :	19~21°C
Test Channel :	78	Relative Humidity :	43~45%
		Test Engineer :	Elvis Chen

ANTENNA POLARITY : HORIZONTAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2483.50	58.59	-15.41	74.00	58.86	31.98	4.05	36.30	129	189	Peak
2483.50	45.95	-8.05	54.00	46.22	31.98	4.05	36.30	129	189	Average

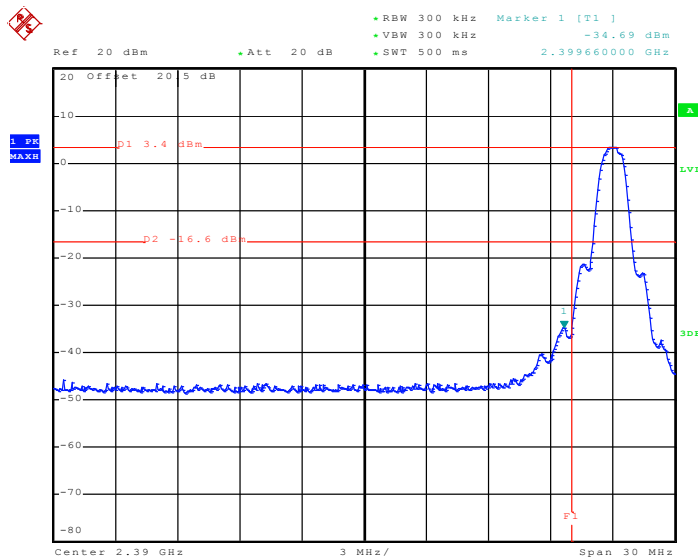
ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2483.50	60.94	-13.06	74.00	61.21	31.98	4.05	36.30	102	17	Peak
2483.50	47.95	-6.05	54.00	48.22	31.98	4.05	36.30	102	17	Average



### 3.6.6 Test Result of Conducted Band Edges

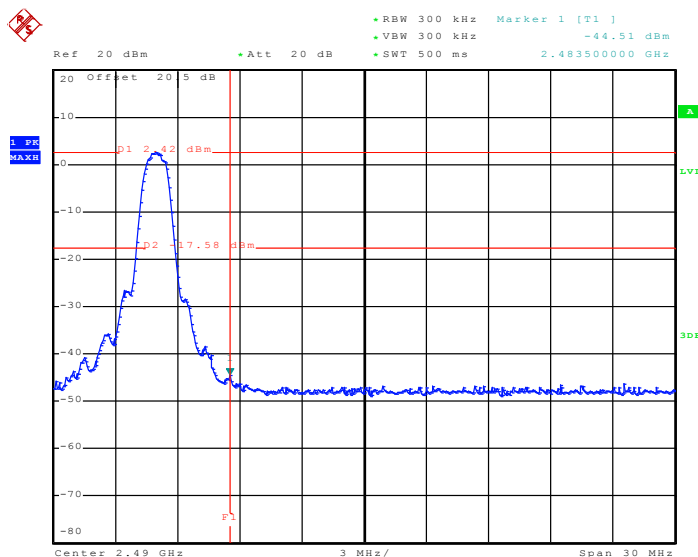
Test Mode :	Mode 7 and 9	Temperature :	27~29°C
Test Channel :	00 and 78	Relative Humidity :	41~44%
		Test Engineer :	Tang Liu

Low Band Edge Plot on Channel 00



Date: 13.NOV.2009 18:52:34

High Band Edge Plot on Channel 78



Date: 13.NOV.2009 18:58:09

## 3.7 Spurious Emission Measurement

### 3.7.1 Limit of Spurious Emission Measurement

All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band.

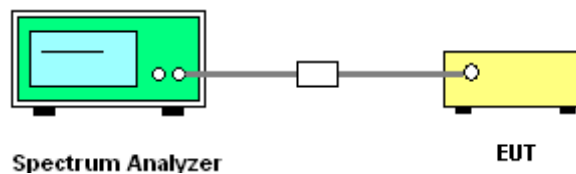
### 3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

### 3.7.3 Test Procedure

1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
2. Set RBW = 100 kHz, Video bandwidth (VBW)  $\geq$  RBW, scan up through 10th harmonic. All harmonics / spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.

### 3.7.4 Test Setup

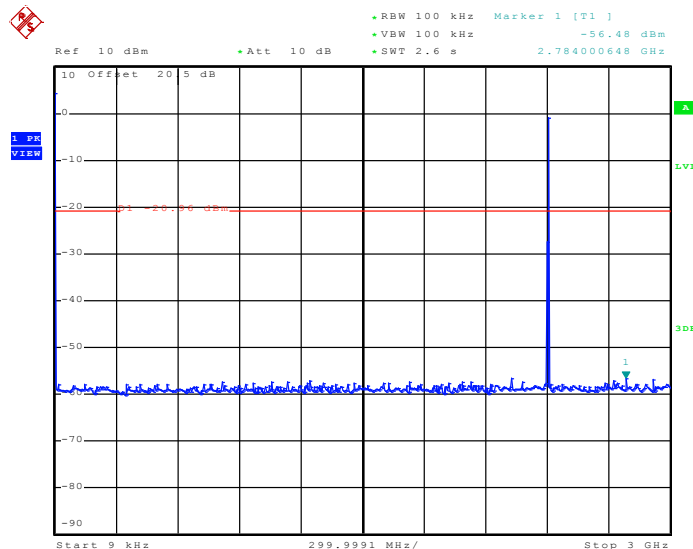




### 3.7.5 Test Result

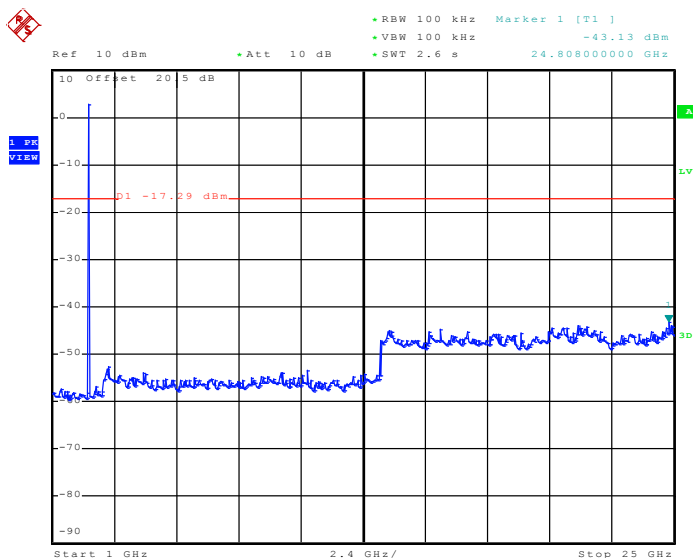
Test Mode :	Mode 7	Temperature :	27~29°C
Test Channel :	00	Relative Humidity :	41~44%
		Test Engineer :	Tang Liu

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 12.NOV.2009 22:15:23

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

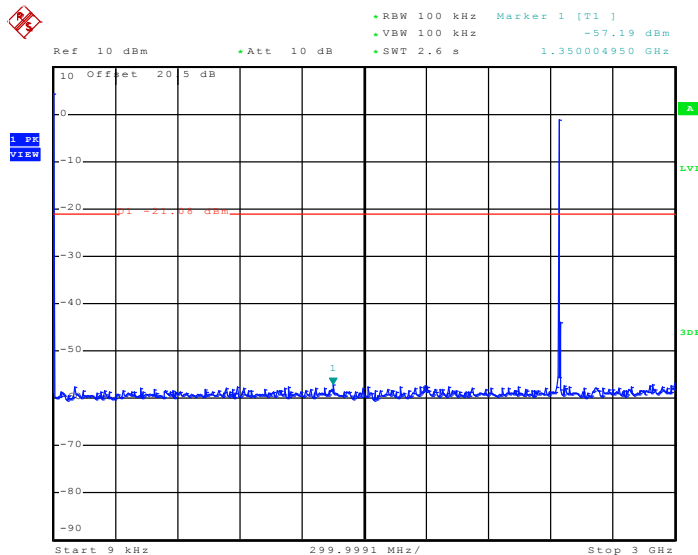


Date: 12.NOV.2009 22:15:48



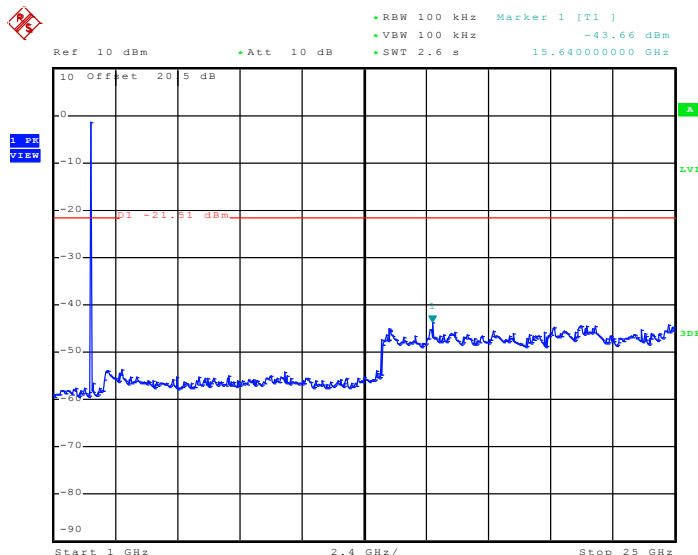
Test Mode :	Mode 8	Temperature :	27~29°C
Test Channel :	39	Relative Humidity :	41~44%
		Test Engineer :	Tang Liu

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 12.NOV.2009 22:16:29

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

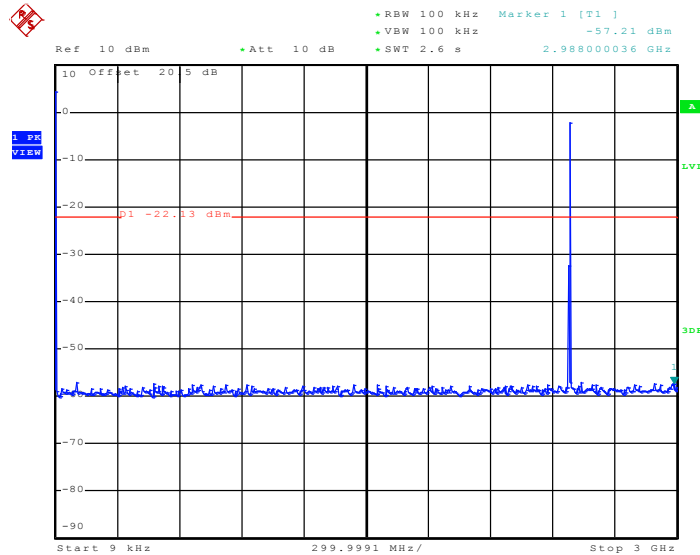


Date: 12.NOV.2009 22:16:52



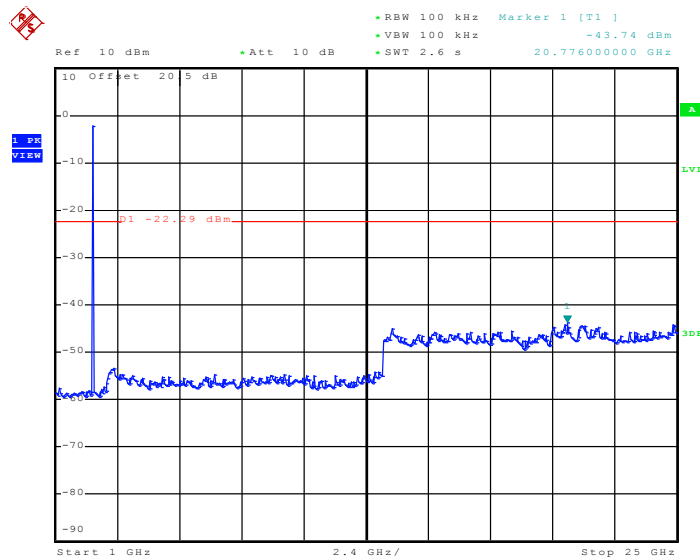
Test Mode :	Mode 9	Temperature :	27~29°C
Test Channel :	78	Relative Humidity :	41~44%
		Test Engineer :	Tang Liu

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 12.NOV.2009 22:17:14

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz



Date: 12.NOV.2009 22:17:33

## 3.8 Radiated Emission Measurement

### 3.8.1 Limit of Radiated Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

Frequency (MHz)	Field Strength (microvolts/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

### 3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

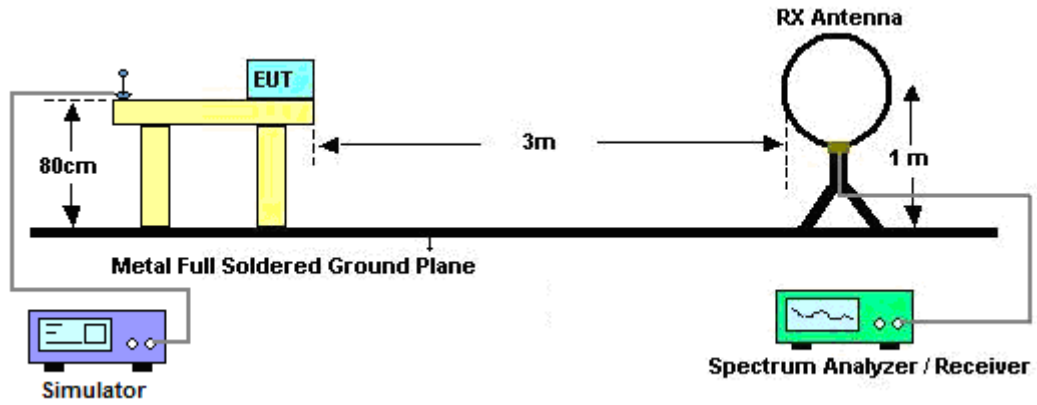
### 3.8.3 Test Procedures

1. The testing follows the guidelines in FCC Public Notice DA 00-705 Measurement Guidelines.
2. Use the following spectrum analyzer settings:  
Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for  $f \geq 1$  GHz, 100 kHz for  $f < 1$  GHz; VBW  $\geq$  RBW; Sweep = auto; Detector function = peak; Trace = max hold.
3. Follow the guidelines in ANSI C63.4-2003 with respect to maximizing the emission by rotating the EUT, measuring the emission for three EUT orthogonal planes, and adjusting the measurement antenna height and polarization. A pre-amp and a high pass filter are used for this test in order to get the good signal level.

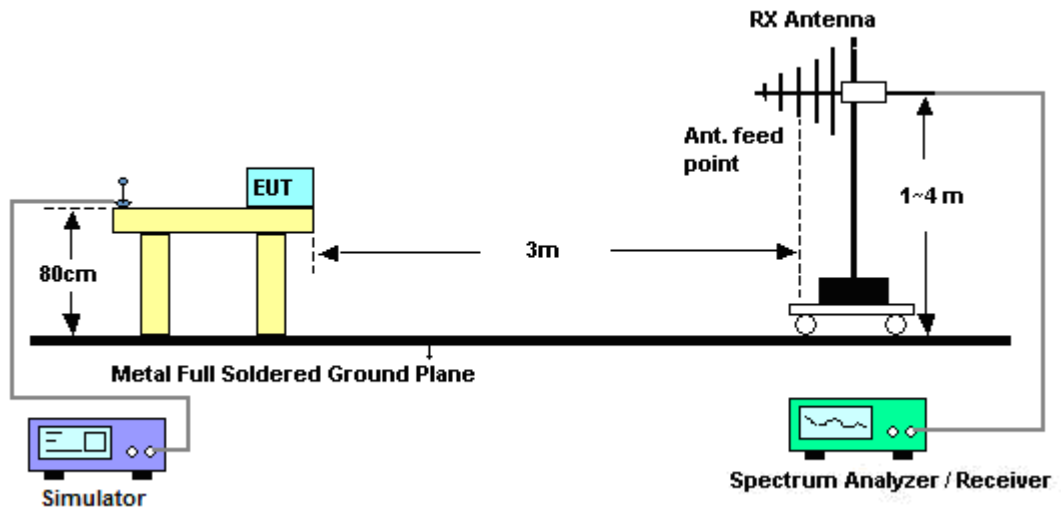


### 3.8.4 Test Setup

For radiated emissions below 30MHz



For radiated emissions above 30MHz





3.8.5 Test Results of Radiated Emissions (9 kHz ~ 30 MHz)

Test Engineer :	Elvis Chen	Temperature :	19~21°C	
		Relative Humidity :	43~45%	
Frequency (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

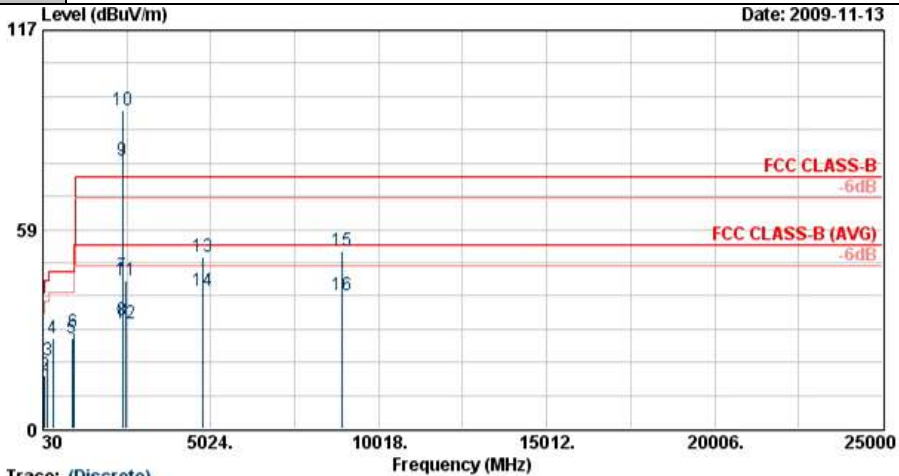
Distance extrapolation factor =  $40 \log(\text{specific distance} / \text{test distance})$  (dB);

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



3.8.6 Test Result of Radiated Emission (30 MHz ~ 10<sup>th</sup> Harmonic)

Test Mode :	Mode 1	Temperature :	19~21°C
Test Channel :	00	Relative Humidity :	43~45%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL  
 Project : FR 9N0414

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.00	18.40	-21.60	40.00	30.62	18.51	0.83	31.56	---	---	Peak
2	77.79	15.54	-24.46	40.00	38.92	7.16	1.39	31.92	---	---	Peak
3	172.83	19.98	-23.52	43.50	40.12	9.64	2.17	31.94	---	---	Peak
4	323.80	26.67	-19.33	46.00	41.72	13.73	3.15	31.93	---	---	Peak
5	897.80	26.40	-19.60	46.00	31.92	20.72	5.45	31.70	---	---	Peak
6	948.90	28.26	-17.74	46.00	33.21	20.93	5.56	31.43	100	102	Peak
7	2387.14	44.73	-29.27	74.00	45.23	31.86	3.92	36.28	100	235	Peak
8	2387.14	31.54	-22.46	54.00	32.04	31.86	3.92	36.28	100	235	Average
9 @	2402.00	78.53			79.03	31.86	3.92	36.28	100	235	Average
10 X	2402.00	93.53			94.03	31.86	3.92	36.28	100	235	Peak
11	2500.00	43.29	-30.71	74.00	43.54	32.00	4.05	36.30	100	235	Peak
12	2500.00	30.71	-23.29	54.00	30.96	32.00	4.05	36.30	100	235	Average
13	4804.00	50.57	-23.43	74.00	47.06	33.90	5.75	36.14	151	167	Peak
14	4804.00	40.53	-13.47	54.00	37.02	33.90	5.75	36.14	151	167	Average
15	8946.00	52.37	-21.63	74.00	45.46	36.05	7.74	36.88	100	58	Peak
16	8946.00	38.97	-15.03	54.00	32.06	36.05	7.74	36.88	100	58	Average



Test Mode :	Mode 1	Temperature :	19~21°C
Test Channel :	00	Relative Humidity :	43~45%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		

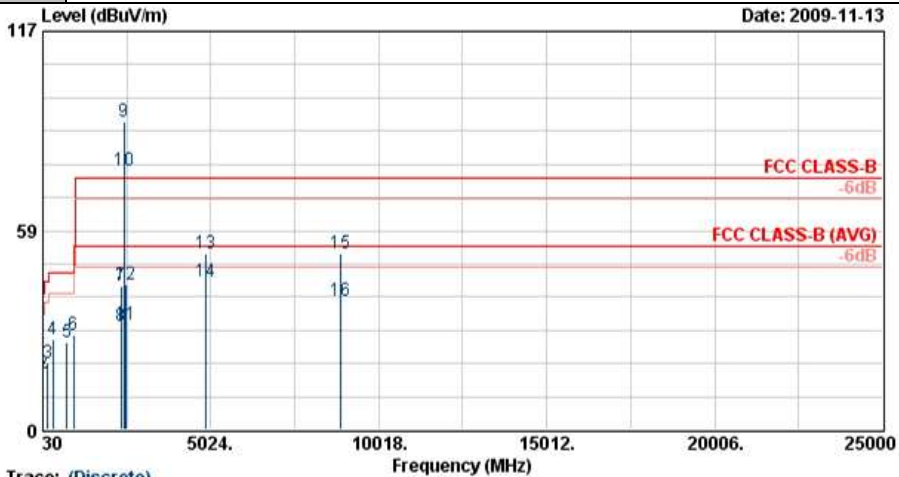


Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL  
 Project : FR 9N0414

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.54	20.62	-19.38	40.00	33.40	17.98	0.85	31.61	---	---	Peak
2	38.64	22.88	-17.12	40.00	40.21	13.42	0.96	31.72	---	---	Peak
3	172.83	22.88	-20.62	43.50	43.01	9.64	2.17	31.94	---	---	Peak
4	322.40	23.68	-22.32	46.00	38.81	13.68	3.14	31.95	---	---	Peak
5	756.40	25.09	-20.91	46.00	32.49	19.71	4.96	32.08	---	---	Peak
6	913.90	30.79	-15.21	46.00	36.12	20.79	5.49	31.60	100	202	Peak
7	2376.50	45.11	-28.89	74.00	45.67	31.83	3.89	36.28	103	8	Peak
8	2376.50	32.03	-21.97	54.00	32.59	31.83	3.89	36.28	103	8	Average
9 @	2402.00	80.99			81.49	31.86	3.92	36.28	103	8	Average
10 X	2402.00	97.17			97.67	31.86	3.92	36.28	103	8	Peak
11	2486.00	44.16	-29.84	74.00	44.43	31.98	4.05	36.30	103	8	Peak
12	2486.00	30.67	-23.33	54.00	30.94	31.98	4.05	36.30	103	8	Average
13	4804.00	53.26	-20.74	74.00	49.75	33.90	5.75	36.14	100	14	Peak
14	4804.00	43.18	-10.82	54.00	39.67	33.90	5.75	36.14	100	14	Average
15	8952.00	52.53	-21.47	74.00	45.61	36.06	7.74	36.88	100	257	Peak
16	8952.00	39.18	-14.82	54.00	32.26	36.06	7.74	36.88	100	257	Average



Test Mode :	Mode 2	Temperature :	19~21°C
Test Channel :	39	Relative Humidity :	43~45%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		

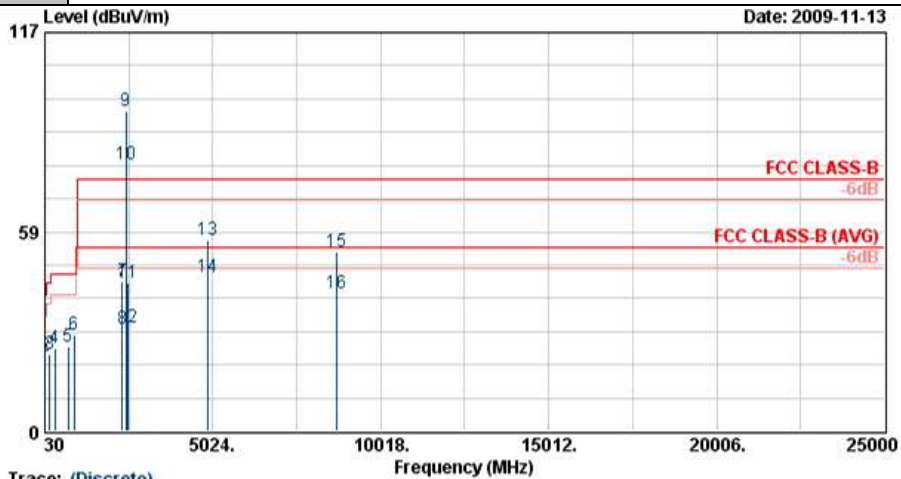


Trace: (Discrete)  
 Site : D3CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL  
 Project : FR 9N0414

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.54	18.92	-21.08	40.00	31.71	17.98	0.85	31.61	---	---	Peak
2	38.64	16.42	-23.58	40.00	33.75	13.42	0.96	31.72	---	---	Peak
3	172.83	19.76	-23.74	43.50	39.89	9.64	2.17	31.94	---	---	Peak
4	323.80	26.44	-19.56	46.00	41.49	13.73	3.15	31.93	---	---	Peak
5	750.80	25.53	-20.47	46.00	32.99	19.66	4.94	32.06	---	---	Peak
6	948.90	27.83	-18.17	46.00	32.78	20.93	5.56	31.43	100	102	Peak
7	2348.00	42.05	-31.95	74.00	42.69	31.78	3.86	36.27	100	307	Peak
8	2348.00	30.42	-23.58	54.00	31.05	31.78	3.86	36.27	100	307	Average
9 X	2441.00	90.42			90.79	31.93	3.99	36.29	100	307	Peak
10 @	2441.00	75.94			76.32	31.93	3.99	36.29	100	307	Average
11	2484.00	30.70	-23.30	54.00	30.97	31.98	4.05	36.30	100	307	Average
12	2484.00	42.77	-31.23	74.00	43.04	31.98	4.05	36.30	100	307	Peak
13	4882.00	51.93	-22.07	74.00	48.33	33.90	5.82	36.13	161	6	Peak
14	4882.00	43.32	-10.68	54.00	39.73	33.90	5.82	36.13	161	6	Average
15	8877.00	51.66	-22.34	74.00	44.86	35.99	7.65	36.85	100	148	Peak
16	8877.00	37.94	-16.06	54.00	31.15	35.99	7.65	36.85	100	148	Average



Test Mode :	Mode 2	Temperature :	19~21°C
Test Channel :	39	Relative Humidity :	43~45%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL  
 Project : FR 9N0414

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB		dBuV	dB/m	dB	dB	cm	deg	
1	30.00	18.46	-21.54	40.00	30.68	18.51	0.83	31.56	---	---	Peak
2	38.64	22.35	-17.65	40.00	39.69	13.42	0.96	31.72	---	---	Peak
3	172.83	22.77	-20.73	43.50	42.91	9.64	2.17	31.94	---	---	Peak
4	329.40	24.55	-21.45	46.00	39.37	13.88	3.18	31.88	---	---	Peak
5	728.40	24.80	-21.20	46.00	32.74	19.47	4.83	32.24	---	---	Peak
6	901.30	28.36	-17.64	46.00	33.83	20.73	5.46	31.67	100	302	Peak
7	2326.00	43.97	-30.03	74.00	44.65	31.76	3.82	36.27	125	68	Peak
8	2326.00	30.16	-23.84	54.00	30.84	31.76	3.82	36.27	125	68	Average
9 X	2441.00	93.78			94.15	31.93	3.99	36.29	125	68	Peak
10 @	2441.00	78.41			78.79	31.93	3.99	36.29	125	68	Average
11	2500.00	43.31	-30.69	74.00	43.56	32.00	4.05	36.30	125	68	Peak
12	2500.00	30.60	-23.40	54.00	30.85	32.00	4.05	36.30	125	68	Average
13	4882.00	56.06	-17.94	74.00	52.47	33.90	5.82	36.13	100	354	Peak
14	4882.00	45.10	-8.90	54.00	41.51	33.90	5.82	36.13	100	354	Average
15	8706.00	52.61	-21.39	74.00	46.09	35.86	7.45	36.78	100	171	Peak
16	8706.00	40.24	-13.76	54.00	33.71	35.86	7.45	36.78	100	171	Average



Test Mode :	Mode 3	Temperature :	19~21°C
Test Channel :	78	Relative Humidity :	43~45%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL  
 Project : FR 9N0414

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.00	18.26	-21.74	40.00	30.48	18.51	0.83	31.56	---	---	Peak
2	77.79	15.15	-24.85	40.00	38.53	7.16	1.39	31.92	---	---	Peak
3	129.09	18.71	-24.79	43.50	36.89	11.69	1.82	31.69	---	---	Peak
4	323.80	26.26	-19.74	46.00	41.31	13.73	3.15	31.93	---	---	Peak
5	901.30	28.20	-17.80	46.00	33.67	20.73	5.46	31.67	100	2	Peak
6	941.90	27.92	-18.08	46.00	32.95	20.90	5.54	31.47	---	---	Peak
7	2340.00	43.74	-30.26	74.00	44.38	31.78	3.86	36.27	129	189	Peak
8	2340.00	30.35	-23.65	54.00	30.98	31.78	3.86	36.27	129	189	Average
9 X	2480.00	77.75			78.02	31.98	4.05	36.30	129	189	Average
10 X	2480.00	92.09			92.36	31.98	4.05	36.30	129	189	Peak
11	2483.50	58.59	-15.41	74.00	58.86	31.98	4.05	36.30	129	189	Peak
12	2483.50	45.95	-8.05	54.00	46.22	31.98	4.05	36.30	129	189	Average
13	4960.00	52.69	-21.31	74.00	49.03	33.90	5.87	36.11	100	67	Peak
14	4960.00	42.07	-11.93	54.00	38.41	33.90	5.87	36.11	100	67	Average
15	8847.00	52.12	-21.88	74.00	45.36	35.98	7.62	36.84	100	252	Peak
16	8847.00	39.61	-14.39	54.00	32.85	35.98	7.62	36.84	100	252	Average



Test Mode :	Mode 3	Temperature :	19~21°C
Test Channel :	78	Relative Humidity :	43~45%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	#9 and #10 are Fundamental Signals which can be ignored.		



Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL  
 Project : FR 9N0414

	Freq	Level	Over Limit	Limit Line	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	30.00	18.93	-21.07	40.00	31.15	18.51	0.83	31.56	---	Peak
2	38.64	22.83	-17.17	40.00	40.16	13.42	0.96	31.72	---	Peak
3	129.63	22.24	-21.26	43.50	40.46	11.64	1.83	31.69	---	Peak
4	315.40	22.95	-23.05	46.00	38.35	13.51	3.10	32.01	---	Peak
5	854.40	26.48	-19.52	46.00	33.06	20.43	5.32	32.33	---	Peak
6	901.30	28.99	-17.01	46.00	34.46	20.73	5.46	31.67	100	67 Peak
7	2310.00	43.61	-30.39	74.00	44.32	31.73	3.82	36.26	102	17 Peak
8	2310.00	30.62	-23.38	54.00	31.32	31.73	3.82	36.26	102	17 Average
9 X	2480.00	94.64			94.91	31.98	4.05	36.30	102	17 Peak
10 @	2480.00	79.34			79.61	31.98	4.05	36.30	102	17 Average
11	2483.50	60.94	-13.06	74.00	61.21	31.98	4.05	36.30	102	17 Peak
12	2483.50	47.95	-6.05	54.00	48.22	31.98	4.05	36.30	102	17 Average
13	4960.00	54.47	-19.53	74.00	50.82	33.90	5.87	36.11	109	358 Peak
14	4960.00	46.13	-7.87	54.00	42.47	33.90	5.87	36.11	109	358 Average
15	8727.00	52.36	-21.64	74.00	45.78	35.89	7.48	36.79	100	33 Peak
16	8727.00	38.90	-15.10	54.00	32.33	35.89	7.48	36.79	100	33 Average





## **3.9 Antenna Requirements**

### **3.9.1 Standard Applicable**

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

### **3.9.2 Antenna Connected Construction**

The antennas type used in this product is PIFA Antenna without connector and it is considered to meet antenna requirement.

### **3.9.3 Antenna Gain**

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



## 4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
System Simulator	R&S	CMU200	116456	N/A	Jun. 05, 2008	Jun. 04, 2010	Conducted (TH02-HY)
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 23, 2009	Jun. 22, 2010	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	0932001	N/A	Sep. 17, 2009	Sep. 16, 2010	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	0846202	N/A	Sep. 10, 2009	Sep. 09, 2010	Conducted (TH02-HY)
Power Meter	Agilent	E4416A	GB41292344	N/A	Feb. 19, 2009	Feb. 18, 2010	Conducted (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	N/A	Feb. 19, 2009	Feb. 18, 2010	Conducted (TH02-HY)
Thermal Chamber	TEN BILLION	TTH-D35P	TBN-930701	N/A	Jul. 29, 2009	Jul. 28, 2010	Conducted (TH02-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211030	9KHz-26.5GHz	Oct. 23, 2009	Oct. 22, 2010	Radiation (03CH06-HY)
Spectrum Analyzer	R&S	FSP40	100057	9KHz-40GHz	Oct. 20, 2009	Oct. 19, 2010	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/003	20MHz-1000MHz	Apr. 28, 2009	Apr. 27, 2010	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Oct. 31, 2009	Oct. 30, 2010	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz~18GHz	Aug. 20, 2009	Aug. 19, 2010	Radiation (03CH06-HY)
Double Ridge Horn Antenna	Training Research	AH-0801	95119	8GHz~18GHz	Nov. 02, 2009	Nov. 01, 2010	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 14, 2009	Oct. 13, 2010	Radiation (03CH06-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1GHz- 26.5GHz	Nov. 11, 2009	Nov. 10, 2010	Radiation (03CH06-HY)
Amplifier	Agilent	310N	186713	9KHz~1GHz	Apr. 20, 2009	Apr. 19, 2010	Radiation (03CH06-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz~30MHz	May 22, 2008	May 21, 2010	Radiation (03CH06-HY)
Bluetooth Base Station	R&S	CBT32	100519	N/A	May 12, 2009	May 11, 2011	Radiation (03CH06-HY)

## 5 Uncertainty of Evaluation

### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Contribution	Uncertainty of $X_i$		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.41	Normal (k=2)	0.21
Antenna Factor Calibration	0.83	Normal (k=2)	0.42
Cable Loss Calibration	0.25	Normal (k=2)	0.13
Pre-Amplifier Gain Calibration	0.27	Normal (k=2)	0.14
RCV/SPA Specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site Imperfection	1.43	Rectangular	0.83
Mismatch	+0.39 / -0.41	U-Shape	0.28
<b>Combined Standard Uncertainty <math>U_c(y)</math></b>	<b>1.27</b>		
<b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2U_c(y)</math>)</b>	<b>2.54</b>		

### Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Contribution	Uncertainty of $X_i$		$u(X_i)$	$C_i$	$C_i * u(X_i)$
	dB	Probability Distribution			
Receiver Reading	$\pm 0.10$	Normal (k=2)	0.10	1	0.10
Antenna Factor Calibration	$\pm 1.70$	Normal (k=2)	0.85	1	0.85
Cable Loss Calibration	$\pm 0.50$	Normal (k=2)	0.25	1	0.25
Receiver Correction	$\pm 2.00$	Rectangular	1.15	1	1.15
Antenna Factor Directional	$\pm 1.50$	Rectangular	0.87	1	0.87
Site Imperfection	$\pm 2.80$	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\text{Log}(1-\Gamma_1*\Gamma_2)$	+0.34 / -0.35	U-Shape	0.244	1	0.244
<b>Combined Standard Uncertainty <math>U_c(y)</math></b>	<b>2.36</b>				
<b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2U_c(y)</math>)</b>	<b>4.72</b>				

## 6 Certification of TAF Accreditation



Certificate No. : L1190-090417

財團法人全國認證基金會  
Taiwan Accreditation Foundation

### Certificate of Accreditation

This is to certify that

**Sporton International Inc.**  
**EMC & Wireless Communications Laboratory**  
No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien,  
Taiwan, R.O.C.

**is accredited in respect of laboratory**

<b>Accreditation Criteria</b>	: ISO/IEC 17025:2005
<b>Accreditation Number</b>	: 1190
<b>Originally Accredited</b>	: December 15, 2003
<b>Effective Period</b>	: January 10, 2007 to January 09, 2010
<b>Accredited Scope</b>	: Testing Field, see described in the Appendix
<b>Specific Accreditation Program</b>	: Accreditation Program for Designated Testing Laboratory for Commodities Inspection Accreditation Program for Telecommunication Equipment Testing Laboratory Accreditation Program for BSMI Mutual Recognition Arrangement with Foreign Authorities

  
Jay-San Chen  
President, Taiwan Accreditation Foundation  
Date : April 17, 2009

P1, total 20 pages

The Appendix forms an integral part of this Certificate, which shall be invalid when use without the Appendix



## **Appendix A. Photographs of EUT**

Please refer to Sporton report number EP9N0414 as below.