FCC Test Report

EQUIPMENT	:	**S305, Bluetooth Stereo Headset (Bluetooth Class 2)**
BRAND NAME	:	**Motorola**
MODEL NAME	:	**SYN3060A / SYN3115A / SYN3116A**
FCC ID	:	**IHDT6KU1**
STANDARD	:	**FCC Part 15 Subpart C §15.247**
CLASSIFICATION	:	**Digital Spread Spectrum (DSS)**
APPLICANT	:	**Motorola Inc.**
		600 NORTH US HIGHWAY 45, LIBERTYVILLE, IL 60048, USA

The product sample received on Jan. 01, 2009 and completely tested on Jan. 12, 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 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

Testing Laboratory 1190

SPORTON INTERNATIONAL INC.
No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR910102	Rev. 01	Initial issue of report	Feb. 05, 2009

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(b)(1)	A8.4(2)	Number of Channels	≥ 15Chs	Pass	
3.2	15.247(a)(1)	A8.1(a)	20dB Bandwidth	NA	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(a)(1)	A8.1(b)	Peak Output Power	≤ 0.125W	Pass	-
3.6	15.247(d)	A8.5	Frequency Band Edges	≤ 20dBc	Pass	-
3.7	15.207	Gen 7.2.2	AC Conducted Emission	15.207(a)	Pass	Under limit 23.9 dB at 0.15 MHz
3.8	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 11.05 dB at 31.08 MHz
3.9	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Motorola Inc.
600 NORTH US HIGHWAY 45, LIBERTYVILLE, IL 60048, USA

1.2 Manufacturer

Merry Electronics CO., LTD.
50 Mei Bao Road, Dalang Industrial Park, Dalang, BaoAn, Shenzhen, China

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	S305, Bluetooth Stereo Headset (Bluetooth Class 2)
Brand Name	Motorola
Model Name	SYN3060A / SYN3115A / SYN3116A
Tx/Rx Frequency Range	2400 MHz ~ 2483.5 MHz
Number of Channels	79
Carrier Frequency of Each Channel	2402+n*1 MHz; n=0~78
Channel Spacing	1 MHz
Maximum Output Power to Antenna	Bluetooth : 2.30 dBm (1Mbps) Bluetooth EDR : 2.29 dBm (2Mbps) / 2.55 dBm (3Mbps)
Antenna Type	Chip Antenna with gain 2 dBi
Antenna Connector Type	N/A
HW Version	R2
SW Version	1216
Type of Modulation	Bluetooth (1Mbps) : GFSK Bluetooth EDR (2Mbps) : π/4-DQPSK Bluetooth EDR (3Mbps) : 8-DPSK
EUT Stage	Production Unit

Accessories List:

Accessories Specification		
AC Adapter	**Brand Name**	Motorola
	Model Name	FMP5334A
	Power Rating	I/P:100-240Vac, 50-60Hz, 0.15A; O/P: 5.0Vdc, 550mA
	AC Power Cord Type	1.96 meter non-shielded cable without ferrite core
USB Cable	**Brand Name**	Motorola
	Model Name	SKN6238A
	Signal Line Type	1.01 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. This test report recorded only product characteristics and test results of Digital Spread Spectrum (DSS).
3. For accessories equipped with this EUT, please refer to the appendix of the external photo.

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C TEL: +886-3-3273456 / FAX: +886-3-3284978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	CO05-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.	BT Base Station	Anritsu	8852B	N/A	N/A	Unshielded, 1.8 m
2.	Mobile Phone	Sony Ericsson	W810i	PY7AF052051	N/A	N/A

2 Test Configuration of Equipment Under Test

2.1 Pre-Scanned RF Power

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

RF Output Power				
Channel	Frequency	Data Rate / Modulation		
		GFSK	π/4-DQPSK	8-DPSK
		1Mbps	2Mbps	3Mbps
Ch00	2402MHz	2.30 dBm	2.29 dBm	2.55 dBm
Ch39	2441MHz	1.54 dBm	1.44 dBm	1.60 dBm
Ch78	2480MHz	2.24 dBm	2.13 dBm	2.37 dBm

Remark:

1. The data rate 3Mbps was set for all the test cases, due to the highest RF output power.
2. The data rate 3Mbps was set for dwell time test case.
3. The EUT is programmed to transmit signal 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.

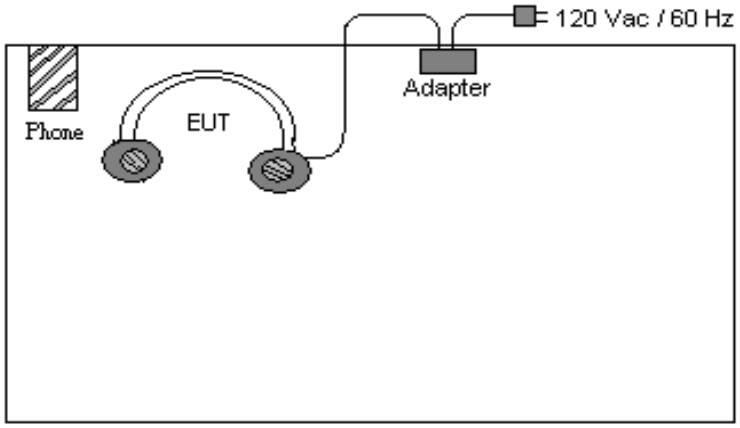
Test Cases			
Test Item	**Modulation**		
	Bluetooth 1Mbps GFSK	**Bluetooth EDR 2Mbps π/4-DQPSK**	**Bluetooth EDR 3Mbps 8-DPSK**
Conducted TCs	■ Mode 1: CH00_2402 MHz ■ Mode 2: CH39_2441 MHz ■ Mode 3: CH78_2480 MHz	■ Mode 4: CH00_2402 MHz ■ Mode 5: CH39_2441 MHz ■ Mode 6: CH78_2480 MHz	■ Mode 7: CH00_2402 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
AC Conducted Emission	■ Mode 1 : BT Link + Adapter		

Remark:

1. The worst case of conducted TCs is Bluetooth 3Mbps, only the test data of these modes was reported.
2. The worst cases of radiated emission were Bluetooth 3Mbps Tx modes; only the test data of these modes were reported.

2.3 Connection Diagram of Test System

<AC Conducted Emission>



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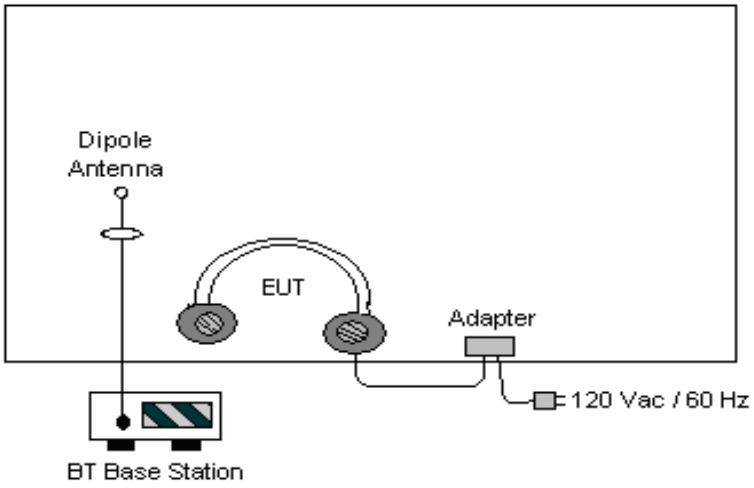


2.4 RF Utility

Press both ”increase” and “backward’ button at the same time to make the EUT into the engineering modes to contact with BT base station for continuous transmitting and receiving signals.

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.

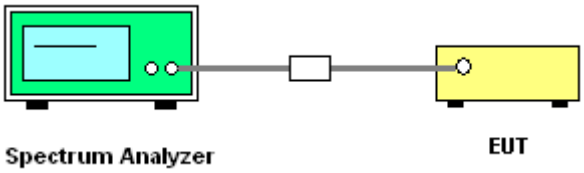
3.1.2 Measuring Instruments

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 ≥ 1% of the span; VBW ≥ 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

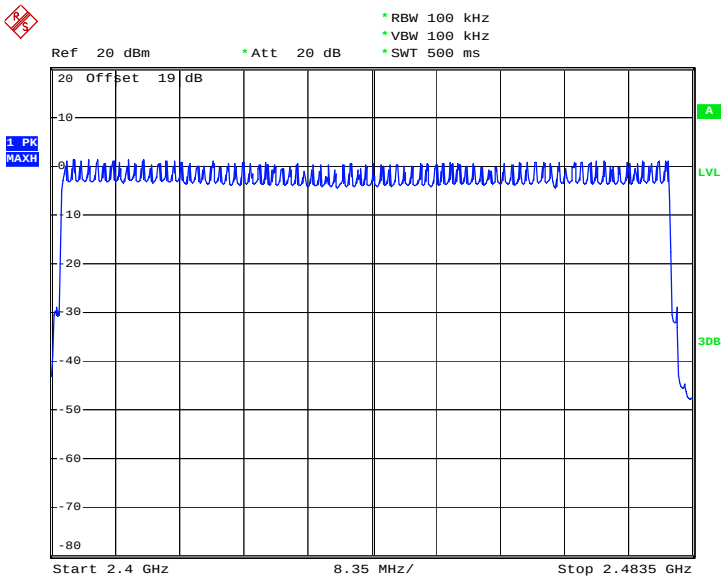


3.1.5 Test Result of Number of Hopping Frequency

Test Mode :	Mode 7~9	Temperature :	20~21℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~41%

Number of Hopping Channels (Channel)	Limits (Channel)	Pass/Fail
79	> 15	Pass

Number of Hopping Channel Plot on Channel 00 - 78



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3.2 20dB Bandwidth Measurement

3.2.1 Limit of 20dB Bandwidth

N/A

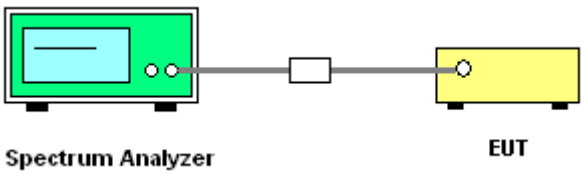
3.2.2 Measuring Instruments

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 ≥ 1% of the 20 dB bandwidth; VBW ≥ 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

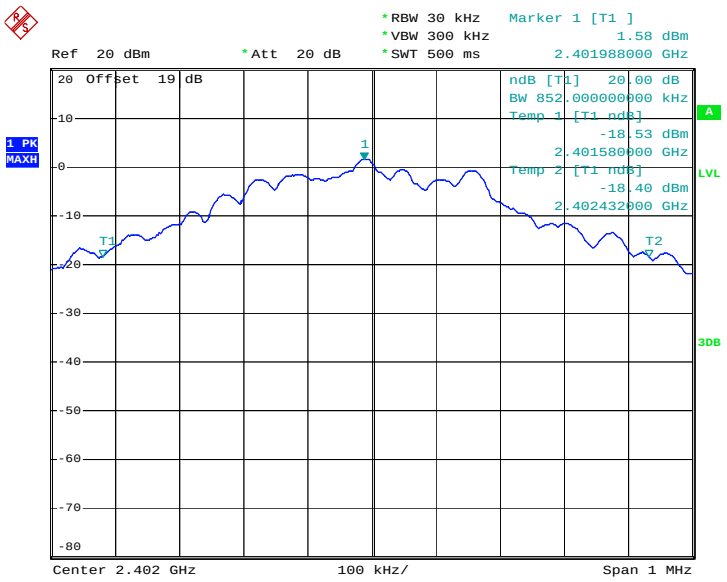


3.2.5 Test Result of 20dB Bandwidth

Test Mode :	Mode 1, 2, 3	Temperature :	20~21℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
00	2402	0.852
39	2441	0.824
78	2480	0.826

20 dB Bandwidth Plot on Channel 00



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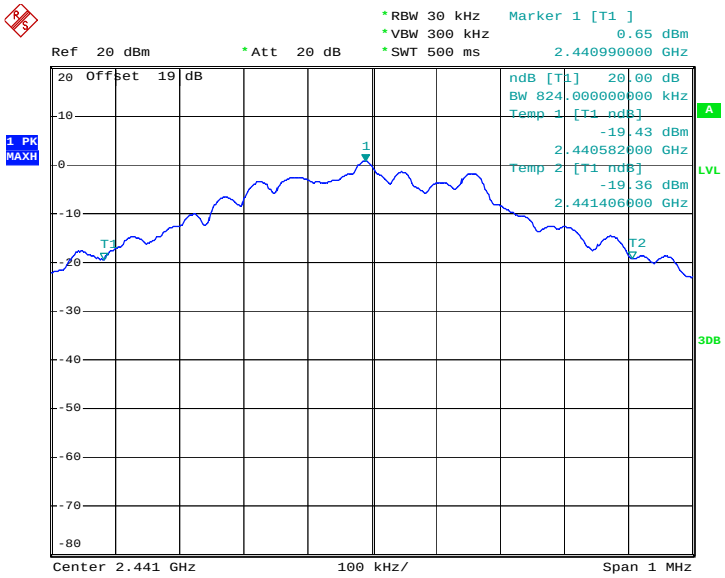
20 dB Bandwidth Plot on Channel 39



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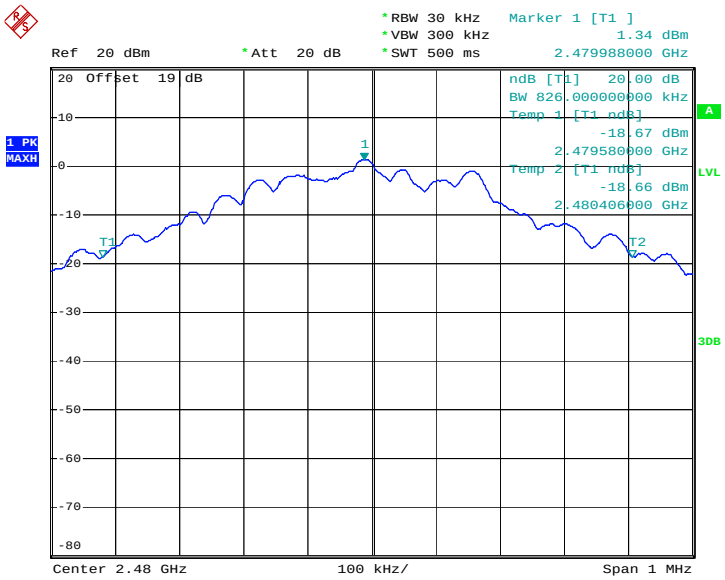
20 dB Bandwidth Plot on Channel 78



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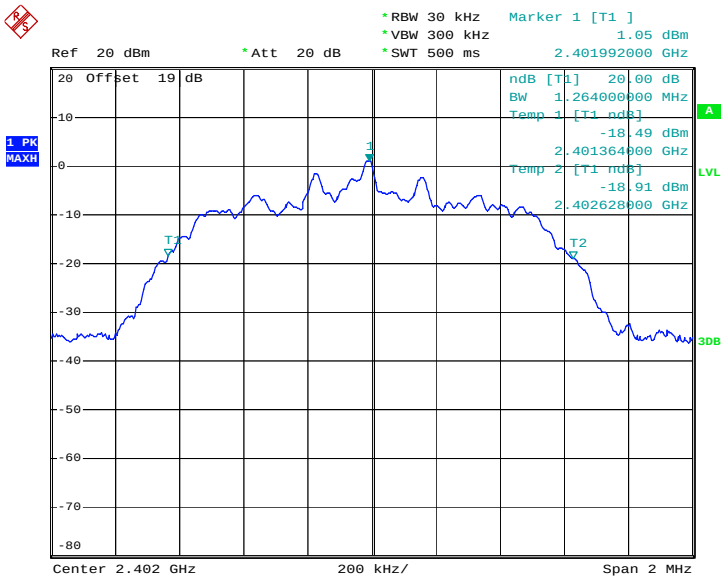
Test Mode :	Mode 4, 5, 6	Temperature :	20~21℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
00	2402	1.264
39	2441	1.260
78	2480	1.264

20 dB Bandwidth Plot on Channel 00



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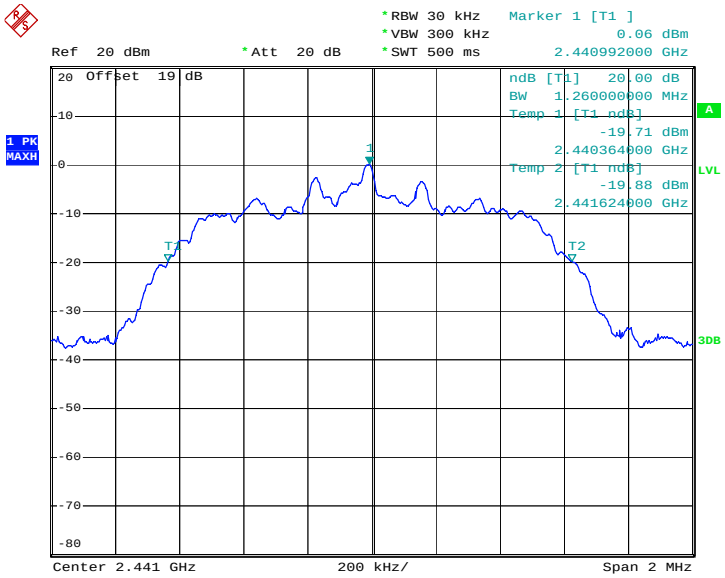
20 dB Bandwidth Plot on Channel 39



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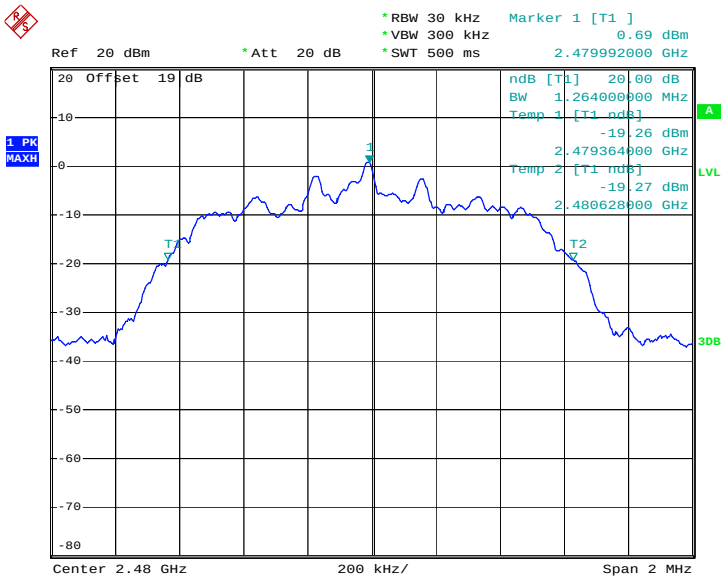
20 dB Bandwidth Plot on Channel 78

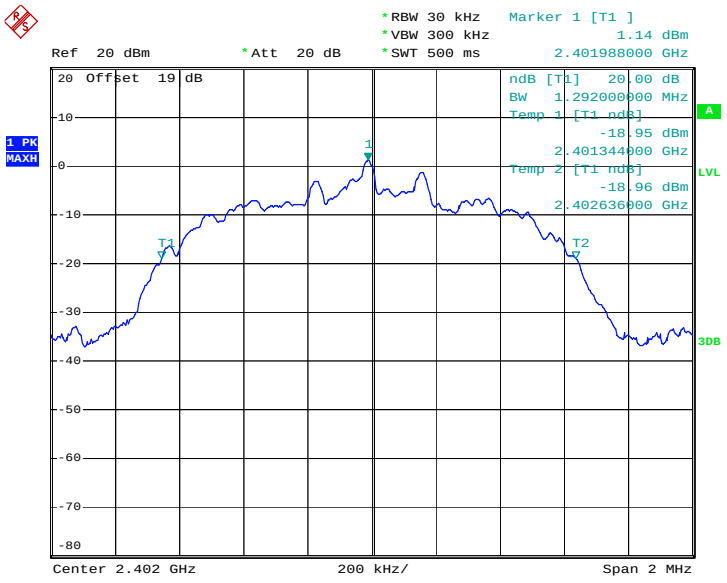


Date: 12.JAN.2009 10:31:32

Test Mode :	Mode 7, 8, 9	Temperature :	20~21℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~41%

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

20 dB Bandwidth Plot on Channel 00



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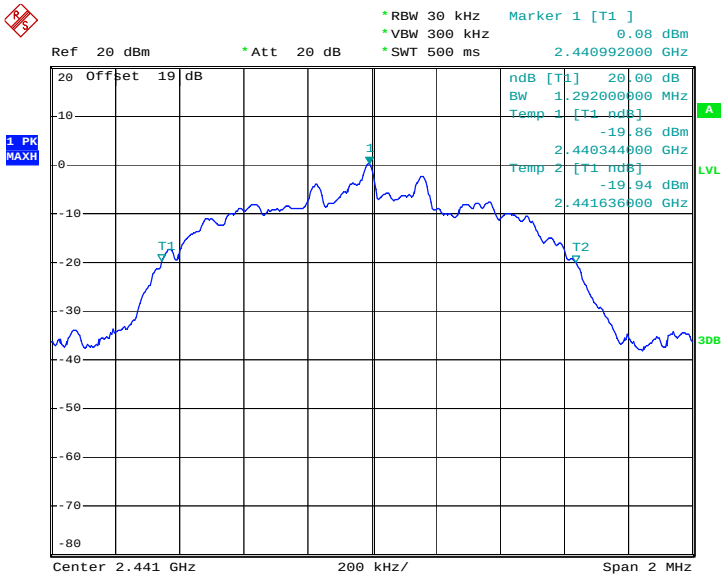
20 dB Bandwidth Plot on Channel 39



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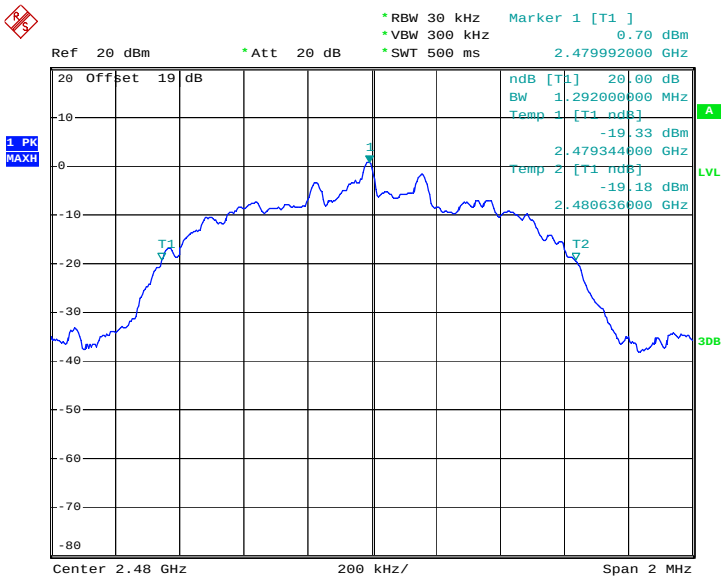
20 dB Bandwidth Plot on Channel 78



Date: 12.JAN.2009 10:31:58

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, provided the systems operate with an output power no greater than 125 mW.

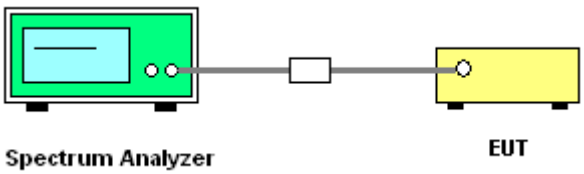
3.3.2 Measuring Instruments

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 ≥ 1% of the span; VBW ≥ 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

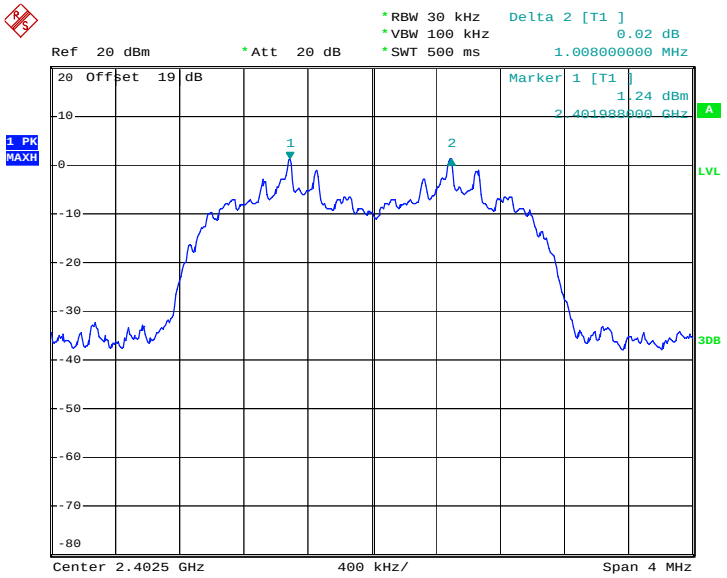


3.3.5 Test Result of Hopping Channel Separation

Test Mode :	Mode 7, 8, 9	Temperature :	20~21℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	Frequency Separation (MHz)	(2/3 of 20dB BW) Limits (MHz)	Pass/Fail
00	2402	1.008	0.861	Pass
39	2441	1.008	0.861	Pass
78	2480	1.000	0.861	Pass

Channel Separation Plot on Channel 00 - 01



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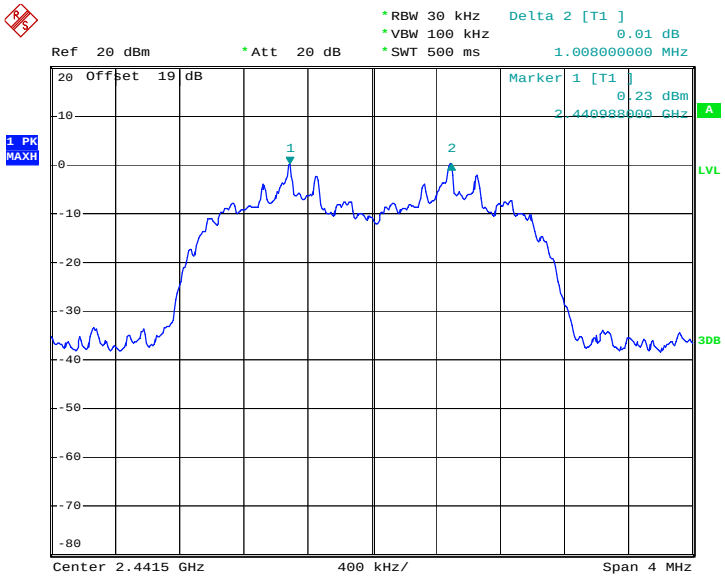
Channel Separation Plot on Channel 39 - 40



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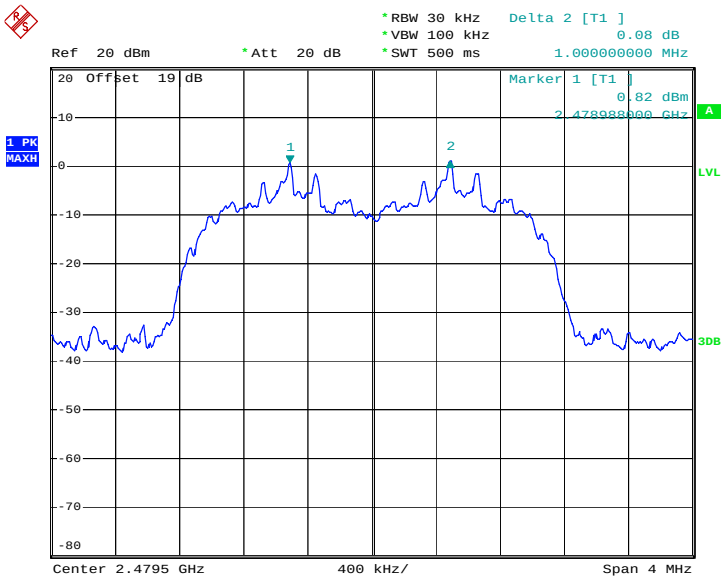
Channel Separation Plot on Channel 77 - 78



Date: 12.JAN.2009 10:51:23

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

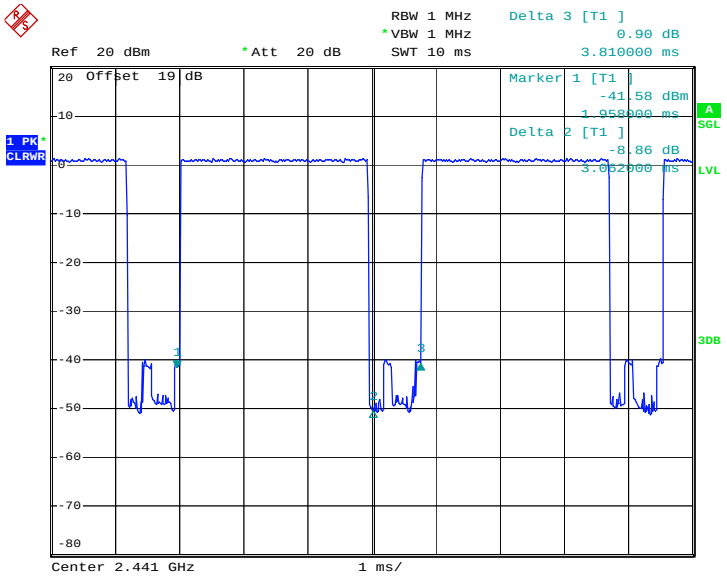
Test Mode :	Mode 9	**Temperature :**	20~21℃
Test Engineer :	Ken Hsu	**Relative Humidity :**	40~41%

Package Mode	Average Hopping Channel	Package Transfer Time (usec)	Dwell Time (sec)	Limits (sec)	Pass/Fail
3DH5	3.60	3062	0.35	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



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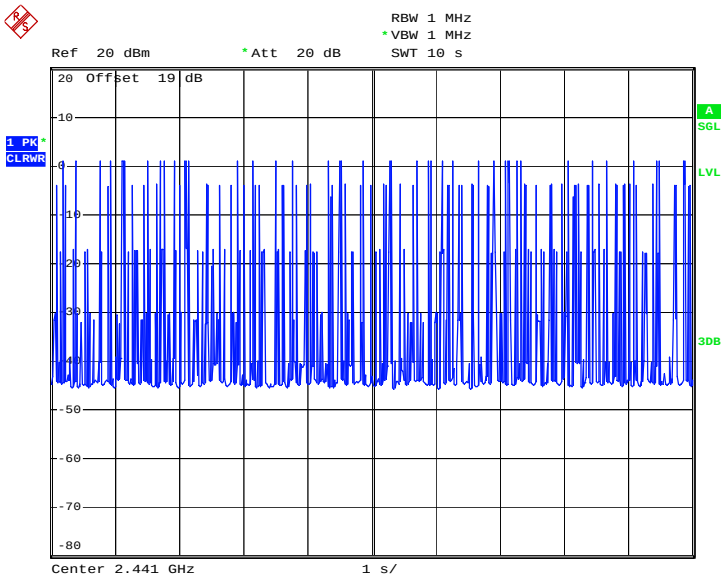
3DH5 Dwell Time (Count Pulses) Plot on Channel 39



Date: 12.JAN.2009 11:03:05

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 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, provided the systems operate with an output power no greater than 1W (30 dBm).

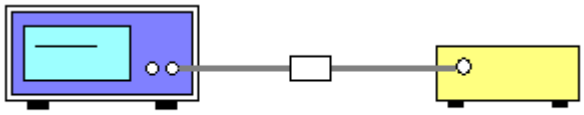
3.5.2 Measuring Instruments

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 peak power meter by a low loss cable.

3.5.4 Test Setup

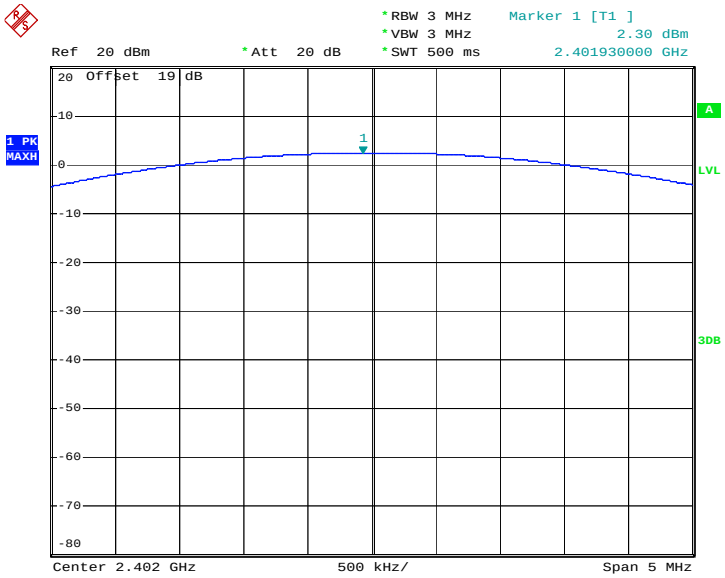


3.5.5 Test Result of Peak Output Power

Test Mode :	Mode 1, 2, 3	Temperature :	20~21℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~41%

Channel	Frequency (MHz)	RF Power (dBm)		
		GFSK	Max. Limits (dBm)	Pass/Fail
		1 Mbps		
00	2402	2.30	30	Pass
39	2441	1.54	30	Pass
78	2480	2.24	30	Pass

Peak Output Power Plot on Channel 00



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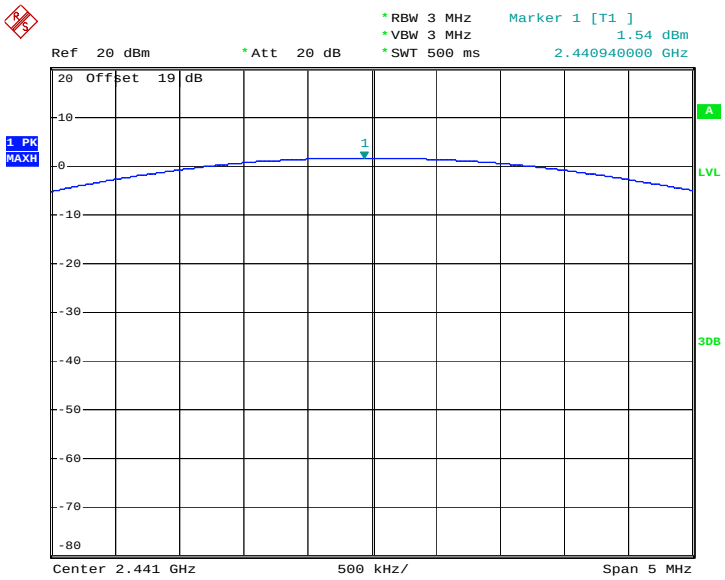
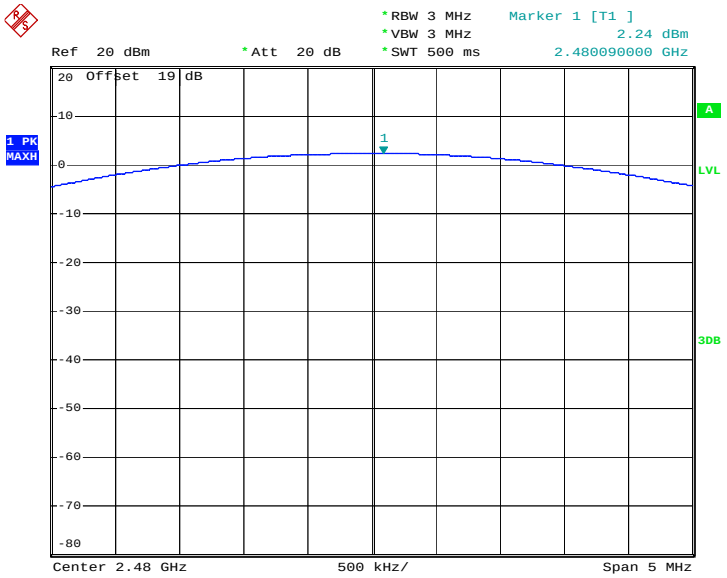
Peak Output Power Plot on Channel 39



Date: 12.JAN.2009 10:12:03

Peak Output Power Plot on Channel 78

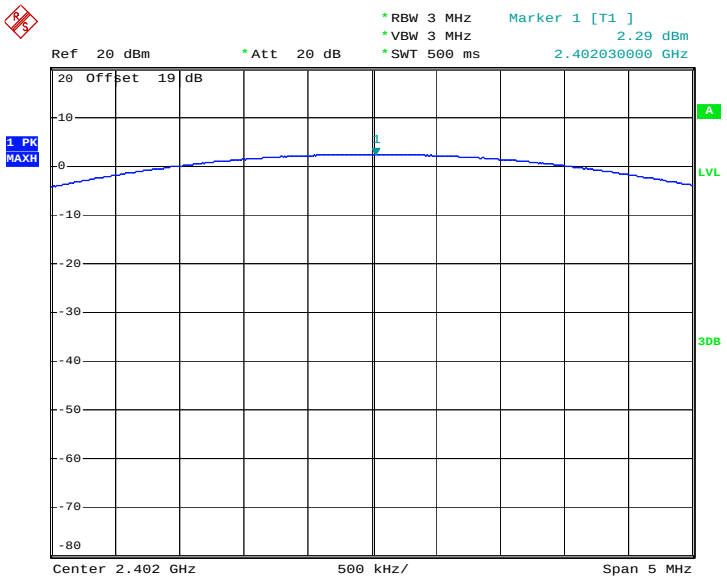


Date: 12.JAN.2009 10:13:33

Test Mode :	Mode 4, 5, 6	Temperature :	20~21℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~41%

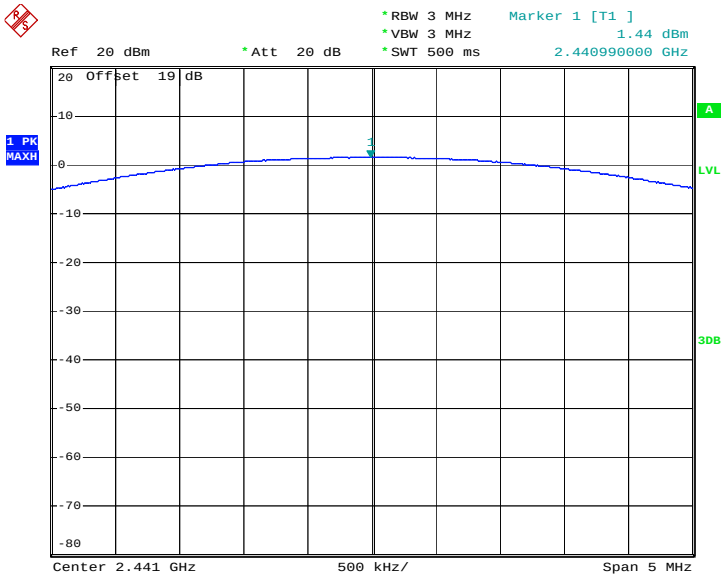
Channel	Frequency (MHz)	RF Power (dBm)		
		π/4-DQPSK 2 Mbps	Max. Limits (dBm)	Pass/Fail
00	2402	2.29	30	Pass
39	2441	1.44	30	Pass
78	2480	2.13	30	Pass

Peak Output Power Plot on Channel 00



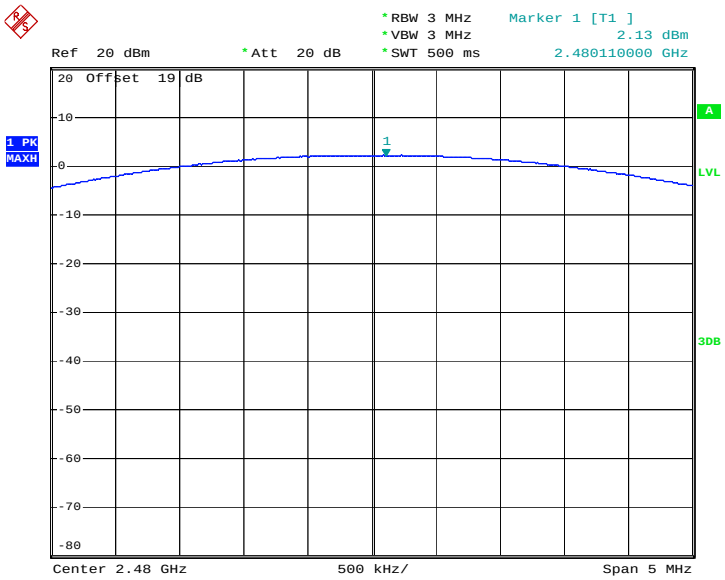
Date: 12.JAN.2009 10:10:17

Peak Output Power Plot on Channel 39



Date: 12.JAN.2009 10:12:25

Peak Output Power Plot on Channel 78

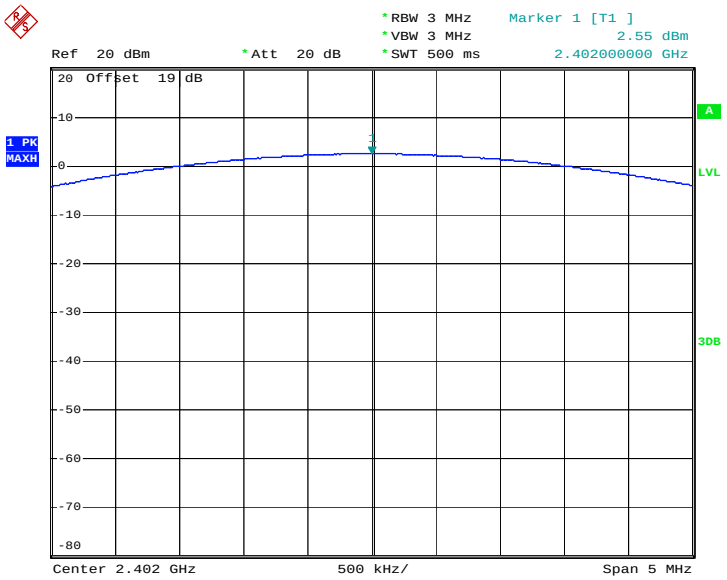


Date: 12.JAN.2009 10:13:58

Test Mode :	Mode 7, 8, 9	Temperature :	20~21℃
Test Engineer :	Ken Hsu	Relative Humidity :	40~41%

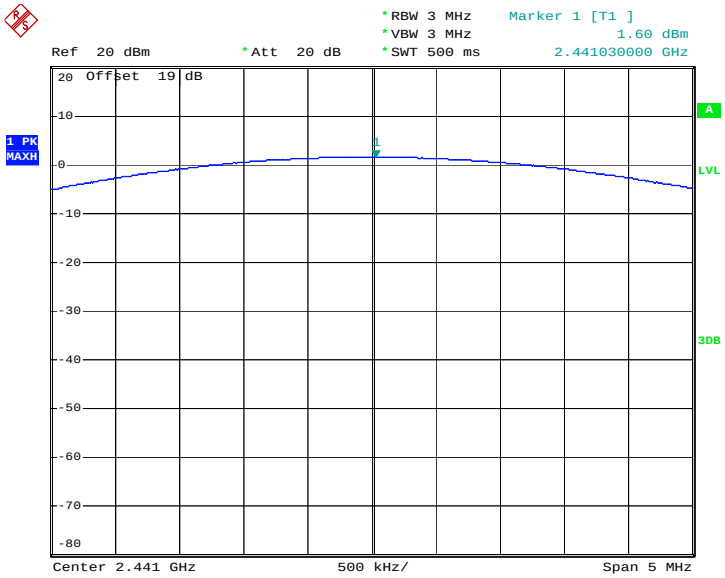
Channel	Frequency (MHz)	RF Power (dBm)		
		8-DPSK 3 Mbps	Max. Limits (dBm)	Pass/Fail
00	2402	2.55	30	Pass
39	2441	1.60	30	Pass
78	2480	2.37	30	Pass

Peak Output Power Plot on Channel 00



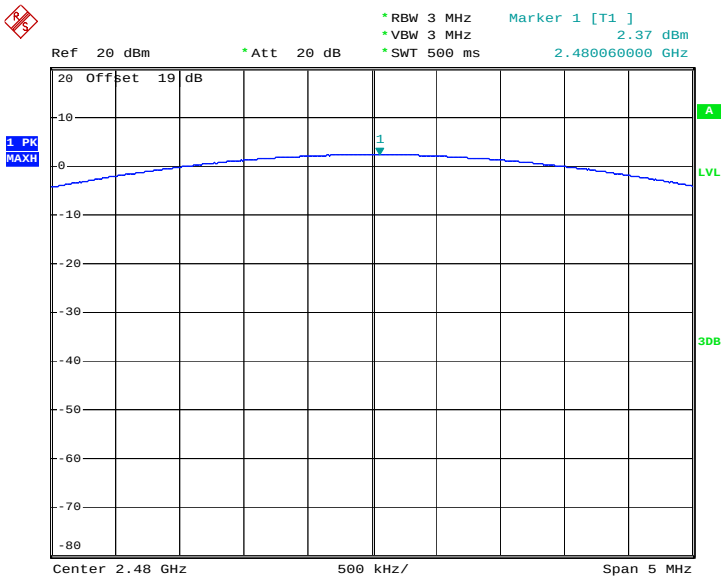
Date: 12.JAN.2009 10:10:47

Peak Output Power Plot on Channel 39



Date: 12.JAN.2009 10:12:48

Peak Output Power Plot on Channel 78



Date: 12.JAN.2009 10:14:24

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.

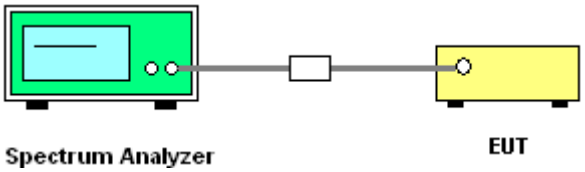
3.6.2 Measuring Instruments

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 = 100 kHz, Video bandwidth (VBW) > RBW, scan up through 10th harmonic. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz 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 = 10 Hz, Sweep: Auto. 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).

3.6.4 Test Setup



3.6.5 Test Result of Radiated Band Edges

Test Mode :	Mode 7	Temperature :	17~21°C
Test Channel :	00	Relative Humidity :	39~43%
Test Engineer :	Sun Wang		

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
2385.05	56.94	-17.06	74.00	57.32	31.98	3.92	36.28	100	0	Peak
2385.05	17.79	-36.21	54.00	18.19	31.96	3.92	36.28	101	239	Average

Remark:

<Delta Marker>

Delta marker at 1% RBW of span = 40.5 dB

Peak band edge at 2385.05 MHz with RBW = VBW = 1MHz = 97.44 dBuV/m – 40.5 dB = 56.94 dBuV/m

Duty factor = 20 log (Package Transfer Times x Avg Hopping Channel) = 20 log (0.003062 x 3.6) = -39.15

Average band edge = Peak band edge + Duty factor = 56.94 dBuV/m + (-39.15) = 17.79 dBuV/m

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
2365.29	53.38	-20.62	74.00	53.95	31.87	3.82	36.27	100	0	Peak
2365.29	14.23	-39.77	54.00	14.68	31.93	3.89	36.28	103	6	Average

Remark:

<Delta Marker>

Delta marker at 1% RBW of span = 40.5 dB

Peak band edge at 2365.29 MHz with RBW = VBW = 1MHz = 93.88 dBuV/m – 40.5 dB = 53.38 dBuV/m

Duty factor = 20 log (Package Transfer Times x Avg Hopping Channel) = 20 log (0.003062 x 3.6) = -39.15

Average band edge = Peak band edge + Duty factor = 53.38 dBuV/m + (-39.15) = 14.23 dBuV/m

Test Mode :	Mode 9	Temperature :	17~21°C
Test Channel :	78	Relative Humidity :	39~43%
Test Engineer :	Sun Wang		

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	48.62	-25.38	74.00	48.79	32.08	4.05	36.30	100	0	Peak
2483.50	9.47	-44.53	54.00	9.64	32.08	4.05	36.30	100	246	Average

Remark:

<Delta Marker>

Delta marker at 1% RBW of span = 47.41 dB

Peak band edge at 2483.50 MHz with RBW = VBW = 1MHz = 96.03 dBuV/m – 47.41 dB = 48.62 dBuV/m

Duty factor = 20 log (Package Transfer Times x Avg Hopping Channel) = 20 log (0.003062 x 3.6) = -39.15

Average band edge = Peak band edge + Duty factor = 48.62 dBuV/m + (-39.15) dB = 9.47 dBuV/m

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	43.26	30.74	74.00	43.43	32.08	4.05	36.30	100	0	Peak
2483.50	4.11	-49.89	54.00	4.28	32.08	4.05	36.30	100	15	Average

Remark:

<Delta Marker>

Delta marker at 1% RBW of span = 47.41 dB

Peak band edge at 2483.50 MHz with RBW = VBW = 1MHz = 90.67 dBuV/m – 47.41 dB = 43.26 dBuV/m

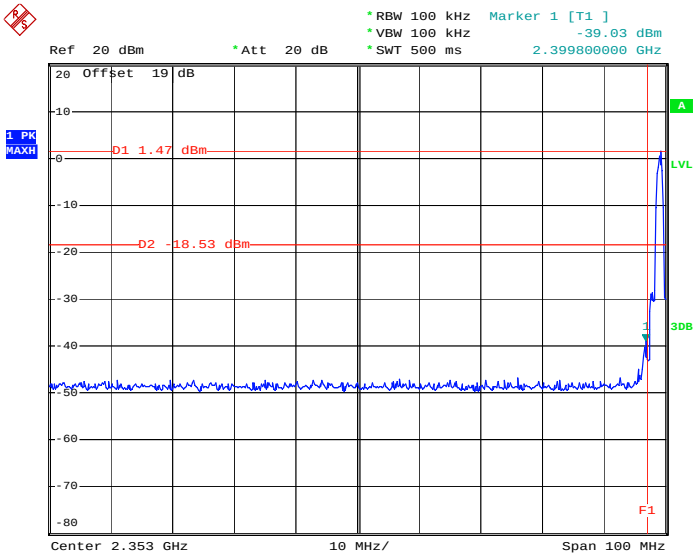
Duty factor = 20 log (Package Transfer Times x Avg Hopping Channel) = 20 log (0.003062 x 3.6) = -39.15

Average band edge = Peak band edge + Duty factor = 43.26 dBuV/m + (-39.15) dB = 4.11 dBuV/m

3.6.6 Test Result of Conducted Band Edges

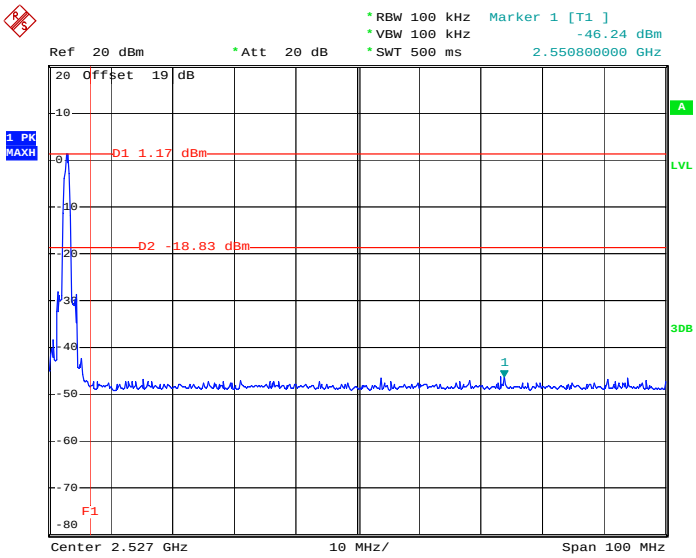
Test Mode :	Mode 7 and 9	**Temperature :**	20~21℃
Test Channel :	00 and 78	**Relative Humidity :**	40~41%
Test Engineer :	Ken Hsu		

Low Band Edge Plot on Channel 00



Date: 12.JAN.2009 10:39:55

High Band Edge Plot on Channel 78



Date: 12.JAN.2009 10:41:19

3.7 AC Conducted Emission Measurement

3.7.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

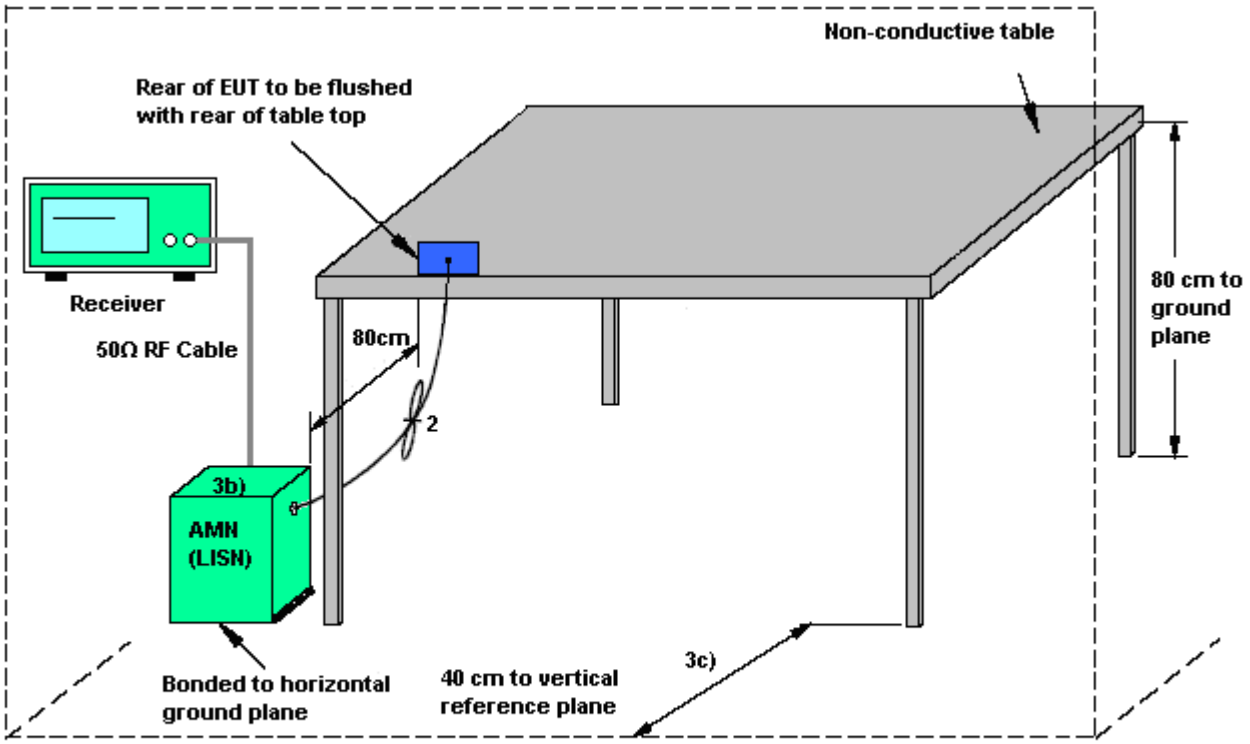
3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

3.7.3 Test Procedures

1. Please follow the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connecting to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 kHz to 30 MHz was searched.
9. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

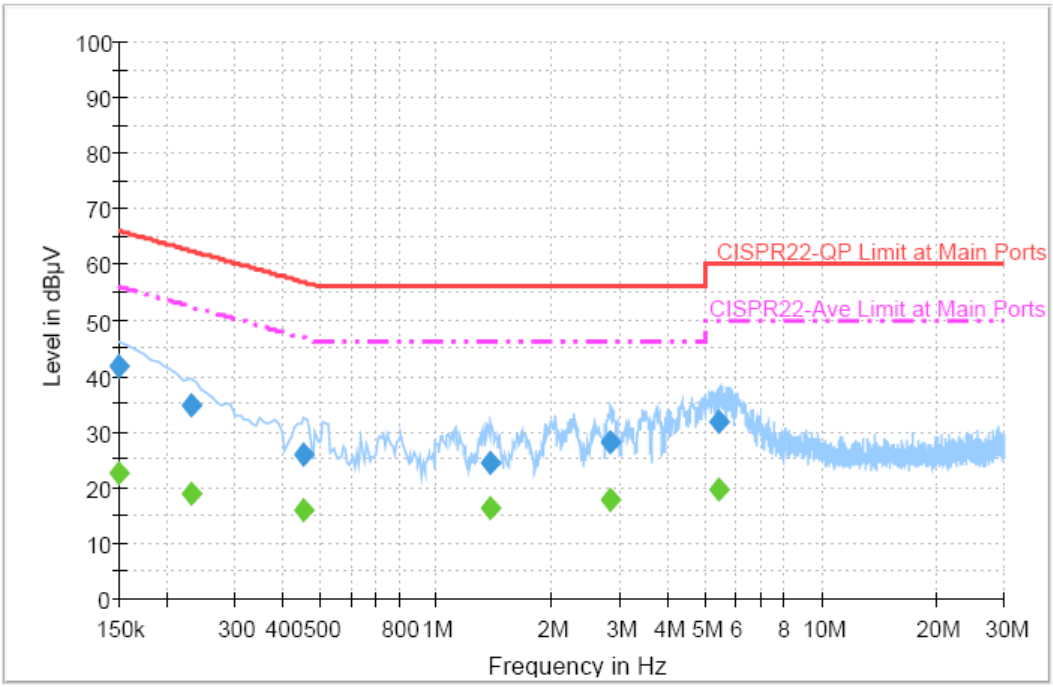
3.7.4 Test Setup



AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

3.7.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	20~21℃
Test Engineer :	Cona Huang	Relative Humidity :	40~41%
		Phase :	Line
Function Type :	BT Link + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



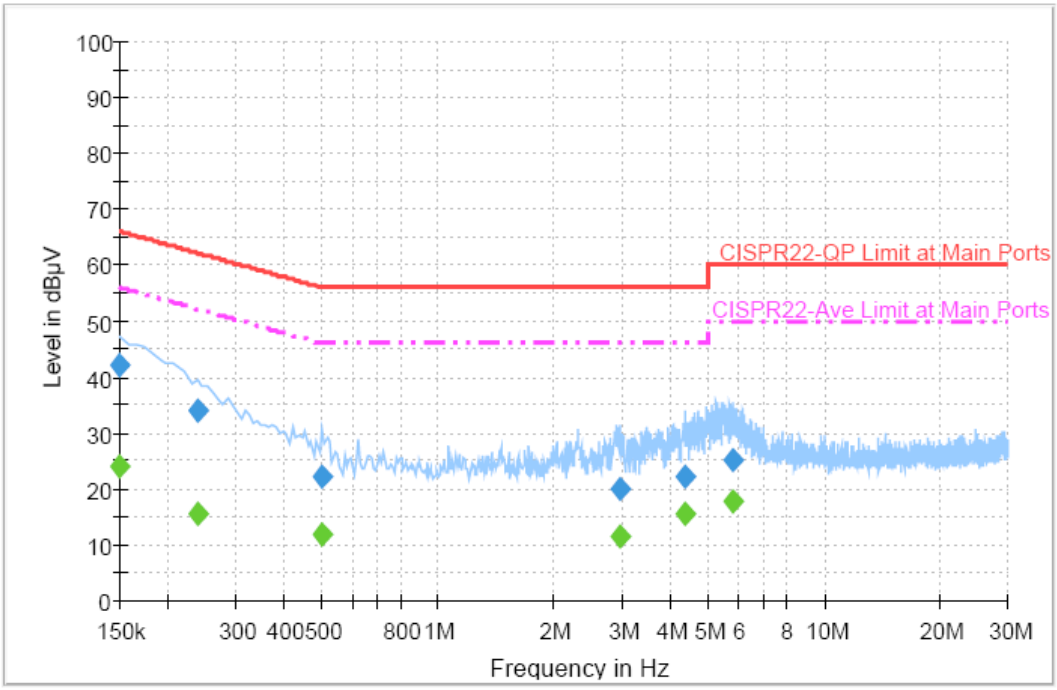
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	41.7	Off	L1	19.4	24.3	66.0
0.230000	34.5	Off	L1	19.4	27.9	62.4
0.454000	25.8	Off	L1	19.3	31.0	56.8
1.390000	24.2	Off	L1	19.4	31.8	56.0
2.846000	27.9	Off	L1	19.5	28.1	56.0
5.430000	31.7	Off	L1	19.5	28.3	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	22.6	Off	L1	19.4	33.4	56.0
0.230000	18.8	Off	L1	19.4	33.6	52.4
0.454000	15.8	Off	L1	19.3	31.0	46.8
1.390000	16.2	Off	L1	19.4	29.8	46.0
2.846000	17.7	Off	L1	19.5	28.3	46.0
5.430000	19.5	Off	L1	19.5	30.5	50.0

Test Mode :	Mode 1	**Temperature :**	20~21℃
Test Engineer :	Cona Huang	**Relative Humidity :**	40~41%
		Phase :	Neutral
Function Type :	BT Link + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	42.1	Off	N	19.4	23.9	66.0
0.238000	34.0	Off	N	19.4	28.2	62.2
0.502000	22.1	Off	N	19.3	33.9	56.0
2.966000	19.7	Off	N	19.5	36.3	56.0
4.390000	22.0	Off	N	19.5	34.0	56.0
5.822000	25.1	Off	N	19.5	34.9	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	23.8	Off	N	19.4	32.2	56.0
0.238000	15.7	Off	N	19.4	36.5	52.2
0.502000	11.9	Off	N	19.3	34.1	46.0
2.966000	11.4	Off	N	19.5	34.6	46.0
4.390000	15.6	Off	N	19.5	30.4	46.0
5.822000	17.9	Off	N	19.5	32.1	50.0

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

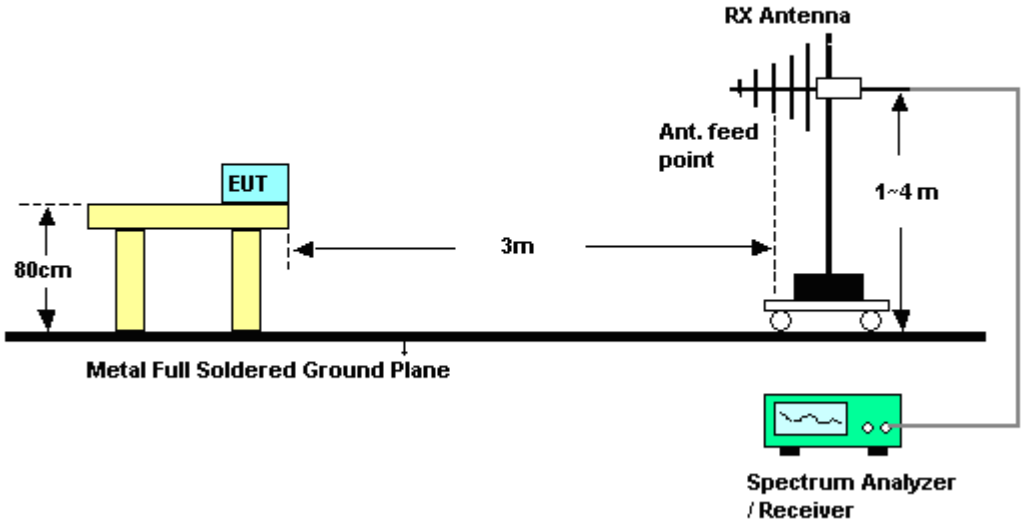
3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

3.8.3 Test Procedures

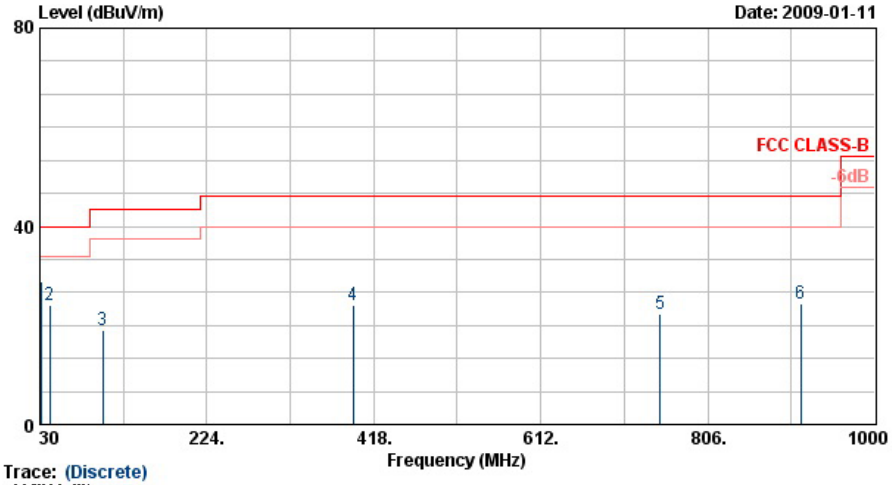
1. The testing follows the guidelines in FCC Public Notice DA 00-705 Measurement Guidelines.
2. Use the following spectrum analyzer settings:
   Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = 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



3.8.5 Test Result of Radiated Emission < 1GHz

Test Mode :	Mode 1	Temperature :	17~21°C
Test Channel :	00	Relative Humidity :	39~43%
Test Engineer :	Sun Wang	Polarization :	Horizontal
Remark :			

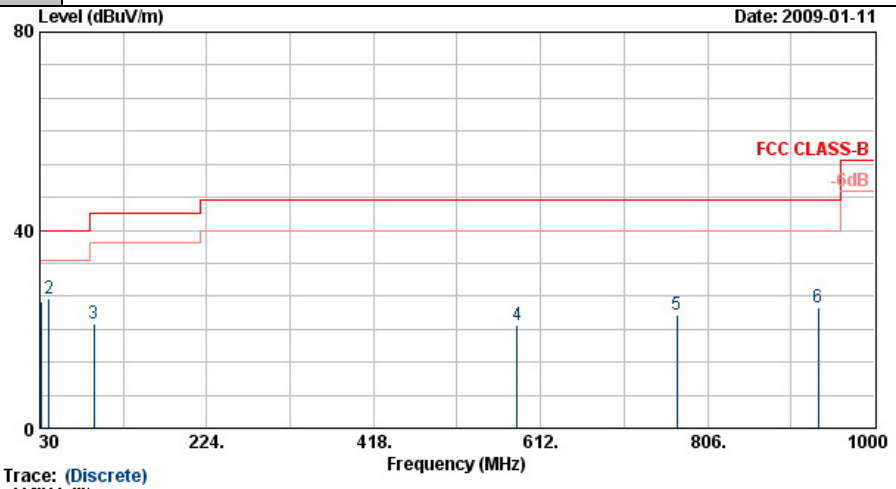


Trace: (Discrete)

Site : 03CH06-HV
Condition : FCC CLASS-B 3m BILOG_081124 HORIZONTAL
Project : FR 910102
Mode : Mode 1

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	31.08	28.95	-11.05	40.00	40.96	19.30	0.30	31.61	100	142	Peak
2	41.34	24.23	-15.77	40.00	42.89	12.74	0.30	31.70	---	---	Peak
3	103.44	18.95	-24.55	43.50	38.50	11.92	0.50	31.97	---	---	Peak
4	393.80	24.20	-21.80	46.00	38.87	16.36	0.84	31.87	---	---	Peak
5	750.80	22.36	-23.64	46.00	33.01	20.31	1.10	32.06	---	---	Peak
6	913.90	24.34	-21.66	46.00	32.87	21.81	1.26	31.60	---	---	Peak

Test Mode :	Mode 1	Temperature :	17~21°C
Test Channel :	00	Relative Humidity :	39~43%
Test Engineer :	Sun Wang	Polarization :	Vertical
Remark :			

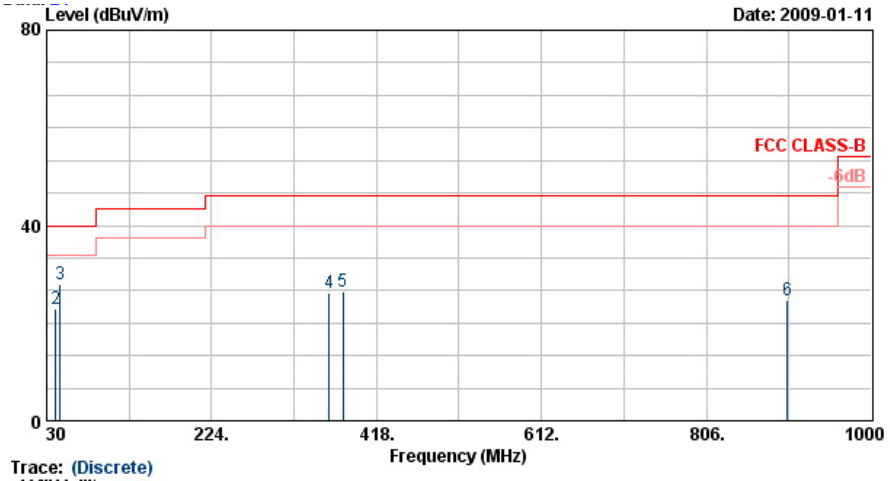


Trace: (Discrete)

Site : 03CH06-HY
Condition : FCC CLASS-B 3m BILOG_081124 VERTICAL
Project : FR 910102
Mode : Mode 1

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	31.62	25.56	-14.44	40.00	38.23	18.70	0.30	31.67	---	---	Peak
2	40.53	26.32	-13.68	40.00	44.39	13.32	0.30	31.70	100	271	Peak
3	92.64	21.11	-22.39	43.50	42.70	10.00	0.50	32.09	---	---	Peak
4	584.90	20.68	-25.32	46.00	32.81	19.04	1.00	32.16	---	---	Peak
5	770.40	22.89	-23.11	46.00	33.40	20.50	1.10	32.11	---	---	Peak
6	934.90	24.51	-21.49	46.00	32.82	21.98	1.20	31.50	---	---	Peak

Test Mode :	Mode 2	Temperature :	17~21°C
Test Channel :	39	Relative Humidity :	39~43%
Test Engineer :	Sun Wang	Polarization :	Horizontal
Remark :			

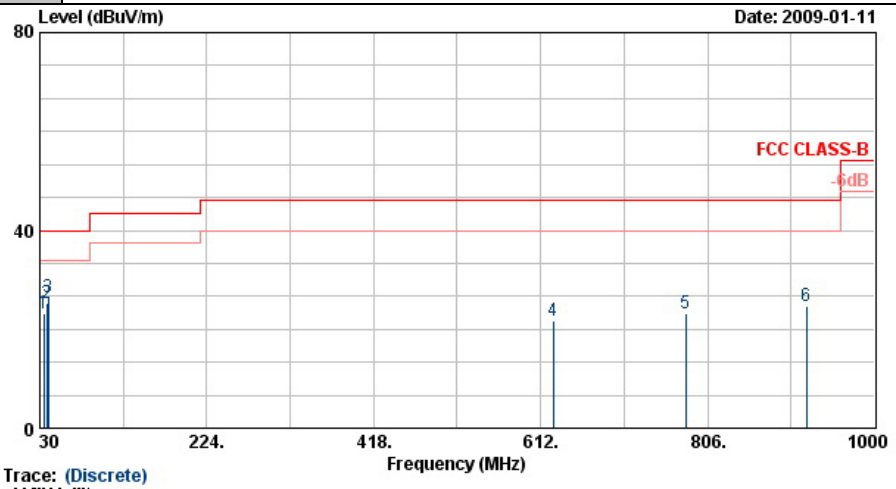


Trace: (Discrete)

Site : 03CH06-HY
Condition : FCC CLASS-B 3m BILOG_081124 HORIZONTAL
Project : FR 910102
Mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.00	24.10	-15.90	40.00	35.46	19.90	0.30	31.56	---	---	Peak
2	40.53	22.98	-17.02	40.00	41.06	13.32	0.30	31.70	---	---	Peak
3 @	45.93	27.90	-12.10	40.00	48.70	10.67	0.30	31.77	100	251	Peak
4	362.30	26.16	-19.84	46.00	41.57	15.61	0.73	31.74	---	---	Peak
5	378.40	26.33	-19.67	46.00	41.27	15.98	0.88	31.80	---	---	Peak
6	901.30	24.70	-21.30	46.00	33.36	21.71	1.30	31.67	---	---	Peak

Test Mode :	Mode 2	Temperature :	17~21°C
Test Channel :	39	Relative Humidity :	39~43%
Test Engineer :	Sun Wang	Polarization :	Vertical
Remark :			

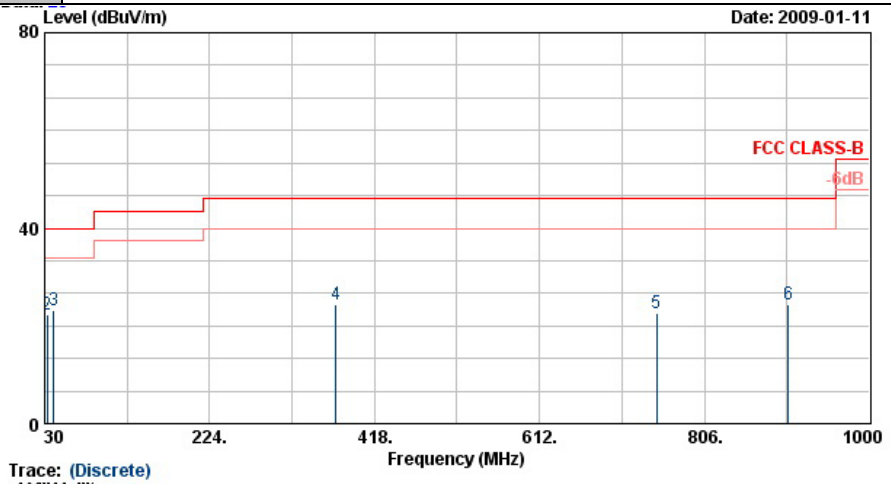


Trace: (Discrete)

Site : 03CH06-HY
Condition : FCC CLASS-B 3m BILOG_081124 VERTICAL
Project : FR 910102
Mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	34.59	23.23	-16.77	40.00	37.86	16.90	0.30	31.83	---	---	Peak
2	37.83	25.40	-14.60	40.00	41.74	15.10	0.30	31.75	---	---	Peak
3	39.99	26.39	-13.61	40.00	43.88	13.90	0.30	31.69	100	156	Peak
4	626.90	21.73	-24.27	46.00	33.41	19.31	1.04	32.02	---	---	Peak
5	780.90	23.30	-22.70	46.00	33.63	20.61	1.20	32.13	---	---	Peak
6	920.90	24.65	-21.35	46.00	33.16	21.86	1.20	31.57	---	---	Peak

Test Mode :	Mode 3	Temperature :	17~21°C
Test Channel :	78	Relative Humidity :	39~43%
Test Engineer :	Sun Wang	Polarization :	Horizontal
Remark :			

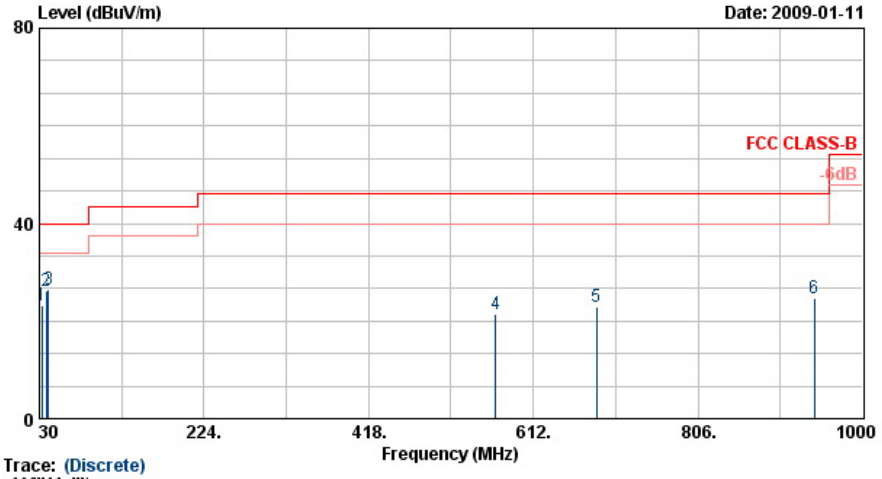


Trace: (Discrete)

Site : 03CH06-HY
Condition : FCC CLASS-B 3m BILOG_081124 HORIZONTAL
Project : FR 910102
Mode : Mode 3

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.00	21.91	-18.09	40.00	33.27	19.90	0.30	31.56	---	---	Peak
2	33.24	22.26	-17.74	40.00	35.59	18.10	0.30	31.72	---	---	Peak
3 @	40.53	23.10	-16.90	40.00	41.18	13.32	0.30	31.70	100	108	Peak
4	372.80	24.37	-21.63	46.00	39.49	15.84	0.82	31.78	---	---	Peak
5	749.40	22.49	-23.51	46.00	33.15	20.30	1.10	32.06	---	---	Peak
6	904.80	24.38	-21.62	46.00	32.99	21.74	1.30	31.65	---	---	Peak

Test Mode :	Mode 3	Temperature :	17~21°C
Test Channel :	78	Relative Humidity :	39~43%
Test Engineer :	Sun Wang	Polarization :	Vertical
Remark :			



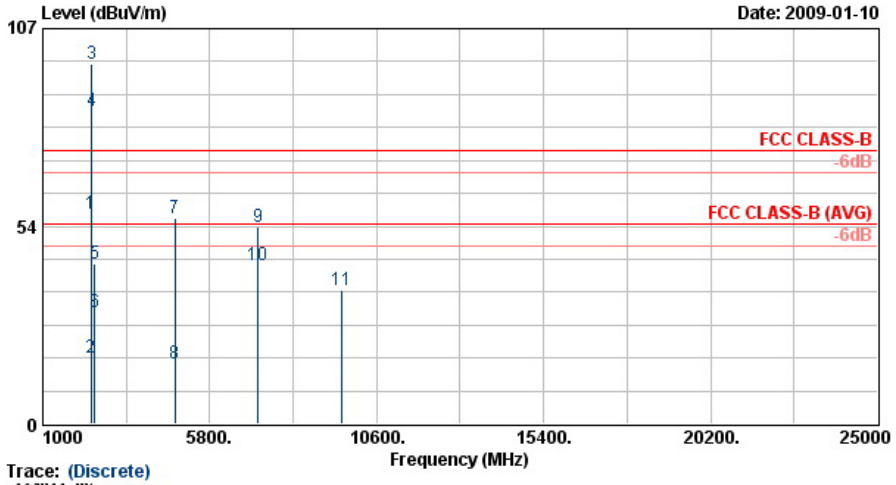
Trace: (Discrete)

Site : 03CH06-HV
Condition : FCC CLASS-B 3m BILOG_081124 VERTICAL
Project : FR 910102
Mode : Mode 3

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	33.24	23.18	-16.82	40.00	36.50	18.10	0.30	31.72	---	---	Peak
2 @	37.83	26.21	-13.79	40.00	42.56	15.10	0.30	31.75	---	---	Peak
3 @	40.53	26.43	-13.57	40.00	44.51	13.32	0.30	31.70	100	89	Peak
4	567.40	21.54	-24.46	46.00	33.71	18.97	1.00	32.14	---	---	Peak
5	686.40	22.91	-23.09	46.00	34.48	19.65	1.10	32.32	---	---	Peak
6	943.30	24.75	-21.25	46.00	32.96	22.05	1.20	31.46	---	---	Peak

3.8.6 Test Result of Radiated Emission ≥ 1GHz

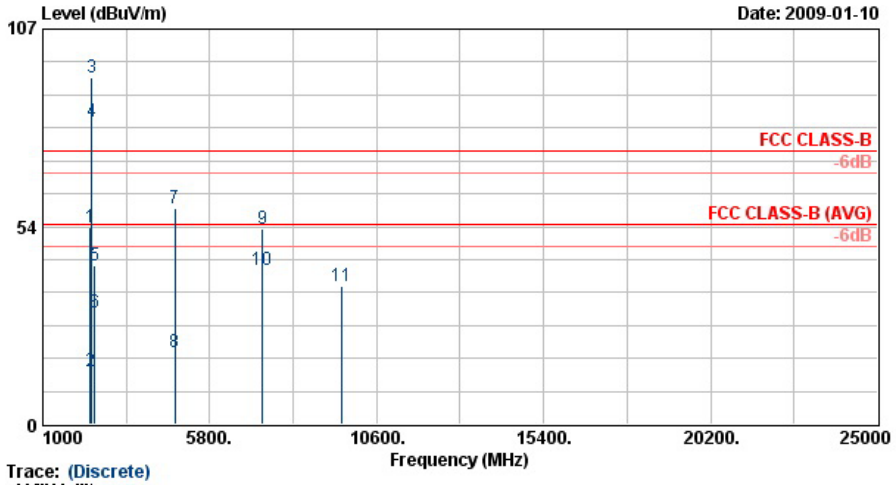
Test Mode :	Mode 1	Temperature :	17~21°C
Test Channel :	00	Relative Humidity :	39~43%
Test Engineer :	Sun Wang	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 910102
Mode : Mode 1

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2385.05	56.94	-17.06	74.00	57.32	31.98	3.92	36.28	100	0	Peak
2	2385.05	17.79	-36.21	54.00	18.19	31.96	3.92	36.28	101	239	Average
3 @	2402.00	97.44			97.80	32.00	3.92	36.28	100	0	Peak
4 @	2402.00	84.72			85.10	31.98	3.92	36.28	101	239	Average
5	2500.00	43.53	-30.47	74.00	43.68	32.10	4.05	36.30	100	0	Peak
6	2500.00	30.34	-23.66	54.00	30.49	32.10	4.05	36.30	101	239	Average
7	4804.00	55.49	-18.51	74.00	51.44	34.42	5.77	36.14	100	0	Peak
8	4804.00	16.34	-37.66	54.00	12.31	34.42	5.75	36.14	174	40	Average
9	7191.00	53.37	-20.63	74.00	47.07	35.62	7.16	36.48	100	0	Peak
10	7191.00	42.88	-11.12	54.00	36.58	35.62	7.16	36.48	100	106	Average
11	9608.00	36.08	-37.92	74.00	75.55	-10.37	7.93	37.04	100	0	Peak

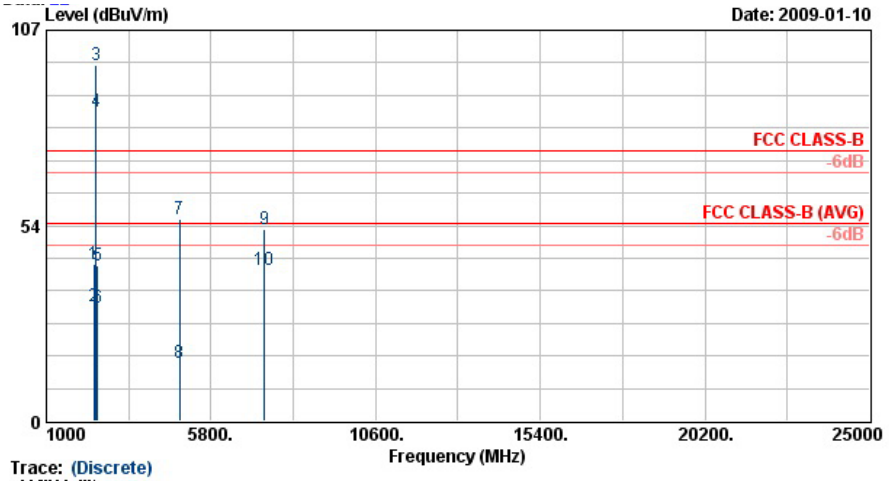
Test Mode :	Mode 1	Temperature :	17~21°C
Test Channel :	00	Relative Humidity :	39~43%
Test Engineer :	Sun Wang	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 910102
Mode : Mode 1

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2365.29	53.38	-20.62	74.00	53.95	31.87	3.82	36.27	100	0	Peak
2	2365.29	14.23	-39.77	54.00	14.68	31.93	3.89	36.28	103	6	Average
3 @	2402.00	93.88			94.24	32.00	3.92	36.28	100	0	Peak
4 @	2402.00	81.80			82.18	31.98	3.92	36.28	103	6	Average
5	2492.00	42.88	-31.12	74.00	43.03	32.10	4.05	36.30	100	0	Peak
6	2492.00	30.38	-23.62	54.00	30.53	32.10	4.05	36.30	103	6	Average
7	4804.00	58.45	-15.55	74.00	54.40	34.42	5.77	36.14	100	0	Peak
8	4804.00	19.30	-34.70	54.00	15.27	34.42	5.75	36.14	100	342	Average
9	7326.00	52.80	-21.20	74.00	46.55	35.57	7.21	36.53	100	0	Peak
10	7326.00	41.57	-12.43	54.00	35.32	35.57	7.21	36.53	100	214	Average
11	9608.00	37.26	-36.74	74.00	76.74	-10.37	7.93	37.04	100	0	Peak

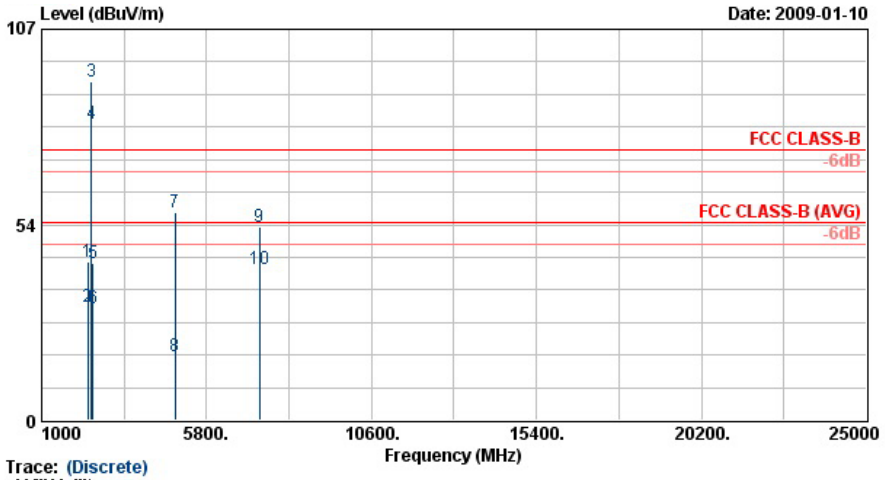
Test Mode :	Mode 2	Temperature :	17~21°C
Test Channel :	39	Relative Humidity :	39~43%
Test Engineer :	Sun Wang	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals		



Site : 03CH06-HV
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 910102
Mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2388.00	42.99	-31.01	74.00	43.36	31.98	3.92	36.28	100	0	Peak
2	2388.00	31.53	-22.47	54.00	31.91	31.98	3.92	36.28	101	236	Average
3 @	2441.00	97.30			97.57	32.04	3.99	36.29	100	0	Peak
4 @	2441.00	84.87			85.14	32.04	3.99	36.29	101	236	Average
5	2486.00	42.71	-31.29	74.00	42.88	32.08	4.05	36.30	100	0	Peak
6	2486.00	30.88	-23.12	54.00	31.05	32.08	4.05	36.30	101	236	Average
7	4882.00	55.22	-18.78	74.00	51.08	34.45	5.82	36.13	100	0	Peak
8	4882.00	16.07	-37.93	54.00	11.93	34.45	5.82	36.13	176	16	Average
9	7362.00	52.59	-21.41	74.00	46.36	35.56	7.22	36.54	100	0	Peak
10	7362.00	41.34	-12.66	54.00	35.11	35.56	7.22	36.54	100	281	Average

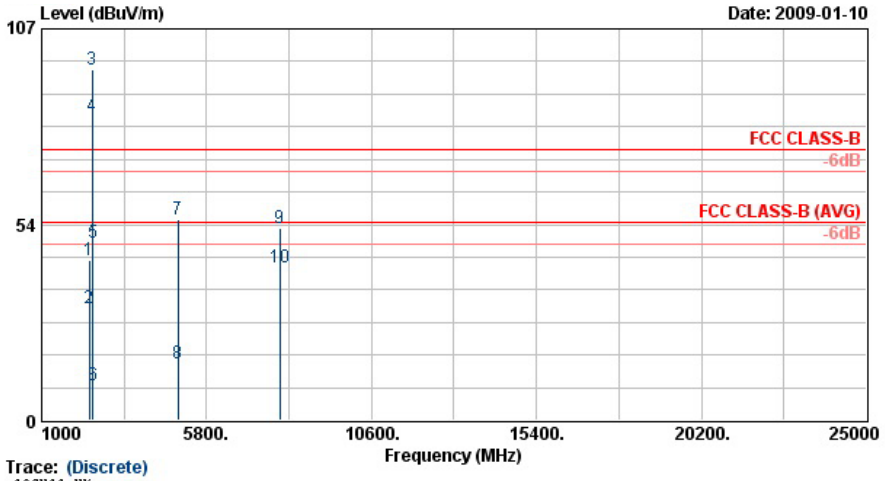
Test Mode :	Mode 2	Temperature :	17~21°C
Test Channel :	39	Relative Humidity :	39~43%
Test Engineer :	Sun Wang	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 910102
Mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2342.00	43.28	-30.72	74.00	43.78	31.91	3.86	36.27	100	0	Peak
2	2342.00	30.89	-23.11	54.00	31.39	31.91	3.86	36.27	100	13	Average
3 @	2441.00	92.66			92.92	32.04	3.99	36.29	100	0	Peak
4 @	2441.00	81.04			81.31	32.04	3.99	36.29	100	13	Average
5	2492.00	43.10	-30.90	74.00	43.25	32.10	4.05	36.30	100	0	Peak
6	2492.00	30.53	-23.47	54.00	30.68	32.10	4.05	36.30	100	13	Average
7	4882.00	56.79	-17.21	74.00	52.65	34.45	5.82	36.13	100	0	Peak
8	4882.00	17.64	-36.36	54.00	13.50	34.45	5.82	36.13	100	339	Average
9	7347.00	52.82	-21.18	74.00	46.59	35.56	7.21	36.54	100	0	Peak
10	7347.00	41.50	-12.50	54.00	35.27	35.56	7.21	36.54	100	171	Average

Test Mode :	Mode 3	Temperature :	17~21°C
Test Channel :	78	Relative Humidity :	39~43%
Test Engineer :	Sun Wang	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals		

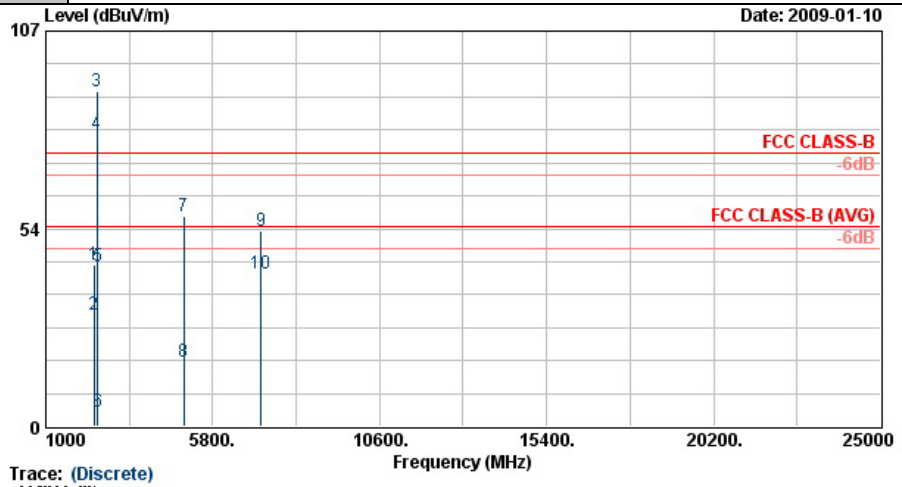


Trace: (Discrete)

Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 910102
Mode : Mode 3

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2380.00	43.60	-30.41	74.00	43.99	31.96	3.92	36.28	100	0	Peak
2	2380.00	30.51	-23.49	54.00	30.91	31.96	3.92	36.28	100	246	Average
3 @	2480.00	96.03			96.20	32.08	4.05	36.30	100	0	Peak
4 @	2480.00	83.30			83.47	32.08	4.05	36.30	100	246	Average
5	2483.50	48.62	-25.38	74.00	48.79	32.08	4.05	36.30	100	0	Peak
6	2483.50	9.47	-44.53	54.00	9.64	32.08	4.05	36.30	100	246	Average
7	4960.00	54.75	-19.25	74.00	50.51	34.49	5.87	36.11	100	0	Peak
8	4960.00	15.60	-38.40	54.00	11.36	34.49	5.87	36.11	100	6	Average
9	7932.00	52.69	-21.31	74.00	46.21	35.67	7.48	36.69	100	0	Peak
10 @	7932.00	41.61	-12.39	54.00	35.14	35.67	7.48	36.69	100	103	Average

Test Mode :	Mode 3	Temperature :	17~21°C
Test Channel :	78	Relative Humidity :	39~43%
Test Engineer :	Sun Wang	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 910102
Mode : Mode 3

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2382.00	43.62	-30.38	74.00	44.02	31.96	3.92	36.28	100	0	Peak
2	2382.00	30.29	-23.71	54.00	30.69	31.96	3.92	36.28	100	15	Average
3 @	2480.00	90.67			90.84	32.08	4.05	36.30	100	0	Peak
4 @	2480.00	79.29			79.46	32.08	4.05	36.30	100	15	Average
5	2483.50	43.26	-30.74	74.00	43.43	32.08	4.05	36.30	100	0	Peak
6	2483.50	4.11	-49.89	54.00	4.28	32.08	4.05	36.30	100	15	Average
7	4960.00	56.71	-17.29	74.00	52.47	34.49	5.87	36.11	100	0	Peak
8	4960.00	17.56	-36.44	54.00	13.32	34.49	5.87	36.11	100	301	Average
9	7182.00	52.72	-21.28	74.00	46.41	35.62	7.16	36.47	100	0	Peak
10 @	7182.00	41.52	-12.48	54.00	35.21	35.62	7.16	36.47	100	291	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 Chip 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 Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 26, 2008	Jun. 25, 2009	Conducted (TH02-HY)
Power Meter	Agilent	E4416A	GB41292344	N/A	Feb. 21, 2008	Feb. 20, 2009	Conducted (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	N/A	Feb. 21, 2008	Feb. 20, 2009	Conducted (TH02-HY)
EMI Receiver	R&S	ESCS 30	100356	9kHz~2.75GHz	Aug. 01, 2008	Jul. 31, 2009	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9kHz~30MHz	Nov. 26, 2008	Nov. 25, 2009	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9kHz~30MHz	Nov. 26, 2008	Nov. 25, 2009	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	N/A	Conduction (CO05-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211030	9kHz~26.5GHz	Oct. 24, 2008	Oct. 23, 2009	Radiation (03CH06-HY)
Spectrum Analyzer	R&S	FSP40	100057	9kHz~40GHz	Oct. 16, 2008	Oct. 15, 2009	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/003	20MHz~1000MHz	Apr. 24, 2008	Apr. 23, 2009	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz~2GHz	Nov. 12, 2008	Nov. 11, 2009	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1G~18GHz	Aug. 18, 2008	Aug. 17, 2009	Radiation (03CH06-HY)
Double Ridge Horn Antenna	Training Research	AF-0801	95119	8G~18G	Oct. 28, 2008	Oct. 27, 2009	Radiation (03CH06-HY)
SHF-EHF Horn	SCHWARZBECK	BBHA 9170	9170-251	14G~40GHz	Oct. 16, 2008	Oct. 15, 2009	Radiation (03CH06-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1G~26.5GHz	Nov. 11, 2008	Nov. 10, 2009	Radiation (03CH06-HY)
Pre Amplifier	Agilent	310N	186713	9kHz~1GHz	Apr. 21, 2008	Apr. 20, 2009	Radiation (03CH06-HY)

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.10	Normal(k=2)	0.05
Cable loss	0.10	Normal(k=2)	0.05
AMN insertion loss	2.50	Rectangular	0.63
Receiver Spec	1.50	Rectangular	0.43
Site imperfection	1.39	Rectangular	0.80
Mismatch	+0.34/-0.35	U-shape	0.24
Combined standard uncertainty Uc(y)	**1.13**		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	**2.26**		

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

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-shaped	0.28
Combined standard uncertainty Uc(y)	**1.27**		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	**2.54**		

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

Contribution	Uncertainty of x_i		$u(x_i)$	Ci	$Ci*u(x_i)$
	dB	Probability Distribution			
Receiver reading	±0.10	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	±1.70	Normal(k=2)	0.85	1	0.85
Cable loss calibration	±0.50	Normal(k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR Γ1= 0.197 Antenna VSWR Γ2= 0.194 Uncertainty=20log(1-Γ1*Γ2)	+0.34/-0.35	U-shaped	0.244	1	0.244
Combined standard uncertainty Uc(y)	**2.36**				
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	**4.72**				

6 Certification of TAF Accreditation

Certificate No. : L1190-081212

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

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

Jay-San Chen
President, Taiwan Accreditation Foundation
Date : December 12, 2008

P1, total 18 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 EP910102 as below.