CFR 47 FCC Part 15.247

TEST REPORT

Product：	**Bluetooth Keyboard**
Trade Name：	N/A
Model Number：	PSK-4152i;ASK-4152i;PSK-4752i;ASK-4752i; KSK-3003 lbt;KSK-3005 lbt;XEK-ONYX
FCC ID：	RAC4152A01

Prepared for

PRECISION SQUARED TECHNOLOGY CORPORATION
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Remark：

The test report consists of ***54*** pages in total. It shall not be reproduced except in full, without the written approval of IETC. This document may be altered or revised by IETC only, and shall be noted in the revision section of the document.
The test results in the report only to the tested sample.

Table of Contents

Statement of Compliance

Applicant:	PRECISION SQUARED TECHNOLOGY CORPORATION
Manufacturer:	JING MOLD ELECTRONIC TECHNOLOGY(SHEN ZHEN)CO.,LTD
Product:	Bluetooth Keyboard
Model No.:	PSK-4152i;ASK-4152i;PSK-4752i;ASK-4752i; KSK-3003 lbt;KSK-3005 lbt;XEK-ONYX
Tested Power Supply:	DC 3V
Date of Final Test:	Apr. 29, 2011
Revision of Report:	Rev. 03

Configuration of Measurements and Standards Used：

FCC Rules and Regulations Part 15 Subpart C

I HEREBY CERTIFY THAT: The data shown in this report were made in accordance with the procedures given in ANSI C63.4, and the energy emitted by the device was founded to be within the limits applicable. I assume full responsibility for accuracy and completeness of these data.

Note: 1. The result of the testing report relate only to the item tested.

2. The testing report shall not be reproduced expect in full, without the written approval of IETC

Report Issued: 2011/06/01

Project Engineer: Elli Chang Approved: Jerry Liu

1 General Information

1.1 Description of Equipment Under Test

Product	:	Bluetooth Keyboard
Model Number	:	PSK-4152i;ASK-4152i;PSK-4752i;ASK-4752i; KSK-3003 lbt;KSK-3005 lbt;XEK-ONYX
Applicant	:	**PRECISION SQUARED TECHNOLOGY CORPORATION** 5F-7, NO.2 JIAN BA ROAD, CHUNG HO CITY, TAIPEI HSIENG, TAIWAN, R.O.C.
Manufacturer	:	**JING MOLD ELECTRONIC TECHNOLOGY(SHEN ZHEN)CO.,LTD** San Xing Industry Area, Oin Xi Town, Dong Guan City Guang Dong Provice China
Power Supply	:	DC 3V
Operating Frequency	:	2402MHz ~ 2480MHz
Channel Number	:	79 channels
Type of Modulation	:	GFSK
Antenna description	:	This device uses PCB Antenna. The antenna is integral to the device, thereby meeting the requirement of FCC 15.203.
Date of Test	:	Mar. 31 ~ Apr. 29, 2011
Additional Description	:	1) The Model Number “**PSK-4152i**” is representative selected in the test and included in this report. 2) All models included in this report, the difference is for different market; the rest parts are identical. 3) For more detail specification about EUT, please refer to the user’s manual. 4) Compliant with Bluetooth 1.2

1.2 Details of Tested Supporting System

1.2.1 PC

PC25

Model Number	:	ASUS-BM5320
CPU Speed	:	Intel Core2 Duo E5200
EMC Compliance	:	BSMI R31018
Manufacturer	:	ASUS
RAM	:	Anya 1G DDR2 800
Hard Disk Driver	:	Seagate ST32500310AS 250G
Switching Power Supply	:	Detal GPS-300AB C 300W
USB 3.0 Card	:	Manufacturer: BUFFALO, Model: IFC-PCIE2U3-AP, SN: 15542291202517 FCC, CE, VCCI, BSMI D33093
Power Cord	:	Non-shielded, Detachable, 1.8m, w/o core

1.2.2 Monitor

MT30

Model Number	:	CMV 92GH 19”
Serial Number	:	92GHAGCN9120289
EMC Compliance	:	FCC, CE, BSMI: R31374, UL, TUV
Manufacturer	:	CHIMEI
Power Cord	:	Non-shielded, Detachable, 1.8m, w/o core
D-Sub Cable	:	Non-shielded, Detachable, 1.8m, with core

1.2.3 USB Mouse

USB58

Model Number	:	CMS-721
Serial Number	:	02904439NF
EMC Compliance	:	CE, FCC, C-Tick, BSMI
Manufacturer	:	Aopen
Data Cable	:	Non-shielded, detachable, 1.0m

1.2.4 Modem

MD03

Model Number	:	199450042
Serial Number	:	211-28E1-1100-3
EMC Compliance	:	N/A
Manufacturer	:	DATATRONICS
Data Cable	:	Shielded, Detachable, 1.5m
Power Adapter	:	Amigo, Model AM-12830A Non-Shielded, Detachable, 1.8m

1.2.5 Printer

PR06

Model Number	:	C20SX
Serial Number	:	DW4E085945
EMC Compliance	:	BSMI 3902E004
Manufacturer	:	EPSON
Data Cable	:	Shielded, Detachable, 1.8m
Power Cord	:	Non-shielded, Un-detachable, 1.8m

1.2.6 Bluetooth Dongle

Model Number	:	BT-001
Manufacturer	:	Yu-Kai

1.3 Table for Carrier Frequencies

Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402 MHz	30	2432 MHz	60	2462 MHz
1	2403 MHz	31	2433 MHz	61	2463 MHz
2	2404 MHz	32	2434 MHz	62	2464 MHz
3	2405 MHz	33	2435 MHz	63	2465 MHz
4	2406 MHz	34	2436 MHz	64	2466 MHz
5	2407 MHz	35	2437 MHz	65	2467 MHz
6	2408 MHz	36	2438 MHz	66	2468 MHz
7	2409 MHz	37	2439 MHz	67	2469 MHz
8	2410 MHz	38	2440 MHz	68	2470 MHz
9	2411 MHz	39	2441 MHz	69	2471 MHz
10	2412 MHz	40	2442 MHz	70	2472 MHz
11	2413 MHz	41	2443 MHz	71	2473 MHz
12	2414 MHz	42	2444 MHz	72	2474 MHz
13	2415 MHz	43	2445 MHz	73	2475 MHz
14	2416 MHz	44	2446 MHz	74	2476 MHz
15	2417 MHz	45	2447 MHz	75	2477 MHz
16	2418 MHz	46	2448 MHz	76	2478 MHz
17	2419 MHz	47	2449 MHz	77	2479 MHz
18	2420 MHz	48	2450 MHz	78	2480 MHz
19	2421 MHz	49	2451 MHz		
20	2422 MHz	50	2452 MHz		
21	2423 MHz	51	2453 MHz		
22	2424 MHz	52	2454 MHz		
23	2425 MHz	53	2455 MHz		
24	2426 MHz	54	2456 MHz		
25	2427 MHz	55	2457 MHz		
26	2428 MHz	56	2458 MHz		
27	2429 MHz	57	2459 MHz		
28	2430 MHz	58	2460 MHz		
29	2431 MHz	59	2461 MHz		

1.4 Test Facility

Site Description : ☒RF Test Room ☒OATS 2 ☒Conducted 2

Name of Firm : Interocean EMC Technology Corp.

Company web : http://www.ietc.com.tw

Site 1, 2, 3 Location : No.5-2, Lin 1, Tin-Fu Tsun, Lin-Kou Hsiang,
Taipei County, Taiwan, R.O.C.

Site Filing :

- Federal Communication Commissions – USA
  Registration No.: 96399 (OATS 1 & 2)
  Registration No.: 518958 (OATS 3)
  Designation No.: TW1020
- Voluntary Control Council for Interference by Information Technology Equipment (VCCI) – Japan
  Member No.: 1349
  Registration No. (Conducted Room): C-1094
  Registration No. (Conducted Room): T-1562
  Registration No. (OATS 1): R-1040; G-274
  Registration No. (OATS 2): R-1041
- Industry Canada (IC)
  OUR FILE: 46405-4437 Submission: 145171
  Registration No. (OATS 1): Site# 4437A-1
  Registration No. (OATS 2): Site# 4437A-2
  Registration No. (OATS 3): Site# 4437A-3

Site Accreditation :

- Bureau of Standards and Metrology and Inspection (BSMI) – Taiwan, R.O.C.
  Accreditation No.:
  SL2-IN-E-0026 for CNS13438 / CISPR22
  SL2-R1-E-0026 for CNS13439 / CISPR13
  SL2-R2-E-0026 for CNS13439 / CISPR13
  SL2-A1-E-0026 for CNS13783-1 / CISPR14-1
  SL2-L1-E-0026 for CNS 14115 / CISPR 15
- Taiwan Accreditation Foundation (TAF)
  Accrditation No.: 1113
- TüV NORD
  Certificate No: TNTW0801R-03

1.5 Test Equipment

Instrument	Manufacturer	Model	Serial No.	Next Cal. Date
Spectrum Analyzer	R&S	FSP30	100002	2012/01/02
Preamplifier	Agilent	8449B	3008A01434	2012/04/28
Preamplifier	Agilent	83050A	3950A00225	2012/09/07
Preamplifier	SCHAFFNER	CA30100	2	2011/10/28
Horn Antenna	COM-POWER	AH-118	10081	2012/05/19
Horn Antenna	Schwarzbeck	BBHA 9120	9120D-583	2013/05/01
Horn Antenna	Schwarzbeck	BBHA 9170	213	2012/07/19
Wide Bandwidth Sensor	Anritsu	MA2491A	728133	2011/11/13
Power Meter	Anritsu	ML2495A	736010	2011/11/13
Temp & Humidity chamber	GIAN FORCE	GTH-150-40-2P-U	MAA0305-012	2011/05/07
Spectrum Analyzer	R&S	FSP30	100002	2012/01/02
EMI Test Receiver	R&S	ESCI	100836	2011/06/09
Biconical Antenna	Schwarzbeck	VHA 9103	2484	2011/10/08
Log Antenna	Schwarzbeck	UHALP 9108	A 0765	2011/10/08
Pre-Amplifier	SCHAFFNER	CPA9231A	3349	2011/08/03
RF Cable	IETC	8DFB	CBL14	2011/07/14
EMI Test Receiver	R&S	ESCS30	100134	2011/07/20
RF Cable	HARBOUR	RG-58/U	CBL40	2011/11/10
L.I.S.N.	Schaffner	MN2050D	1597	2011/06/10
L.I.S.N.	R&S	ESH3-Z5	829996/016	2012/01/02

Note: The above equipments are within the valid calibration period.

1.6 Summary of Measurement

Report Clause	Test Parameter	Reference Document CFR47 Part15	Results
2	20dB Bandwidth test	§15.247(a)(1)	Pass
3	Carrier Frequency Separation test	§15.247(a)(1)	Pass
4	Number of hopping frequencies test	§15.247(a)(1)	Pass
5	Time of Occupancy (dwell time) test	§15.247(a)(1)	Pass
6	Maximum Peak output power test	§15.247(b)	Pass
7	RF Conducted spurious emission	§15.247(c)	Pass
8	RF Radiated spurious emission test	§15.205, 15.209	Pass
9	Emission on the Band Edge test	§15.247(d)	Pass
10	AC Power Line Conducted Emission test	§15.207	Pass

1.7 Justification

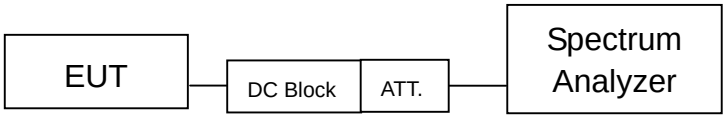
The test of radiated measurements according to FCC Part15 Section 15.33(a) had been conducted and the field strength of the frequency band were all arrive limit requirement, thus we evaluate the EUT pass the specified test.

2 20dB Bandwidth test

2.1 Limit

No regulation limit, for reference purpose.

2.2 Configuration of Measurement



2.3 Test Procedure

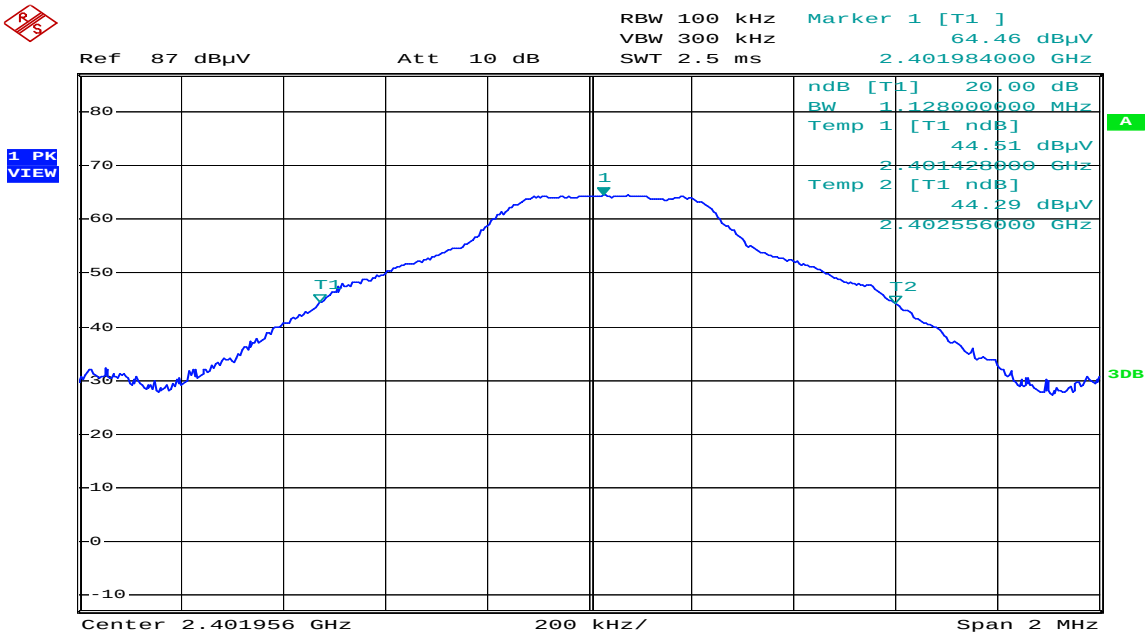
The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.
The 20dB bandwidth per FCC §15.247(a)(1) was measured using a 50 ohm spectrum analyzer with the resolutions bandwidth set at 100 kHz, the video bandwidth≧RBW, and the SPAN may equal to approximately 2 to 3 time the 20dB bandwidth.

2.4 Test Result

PASS.
The final test data is shown as following pages.

Test CH		20dB Bandwidth (MHz)	Limit (kHz)
Modulation	Frq. (MHz)		
GFSK	2402	1.128	>500
	2441	1.124	>500
	2480	1.120	>500

2402MHz 20dB BW



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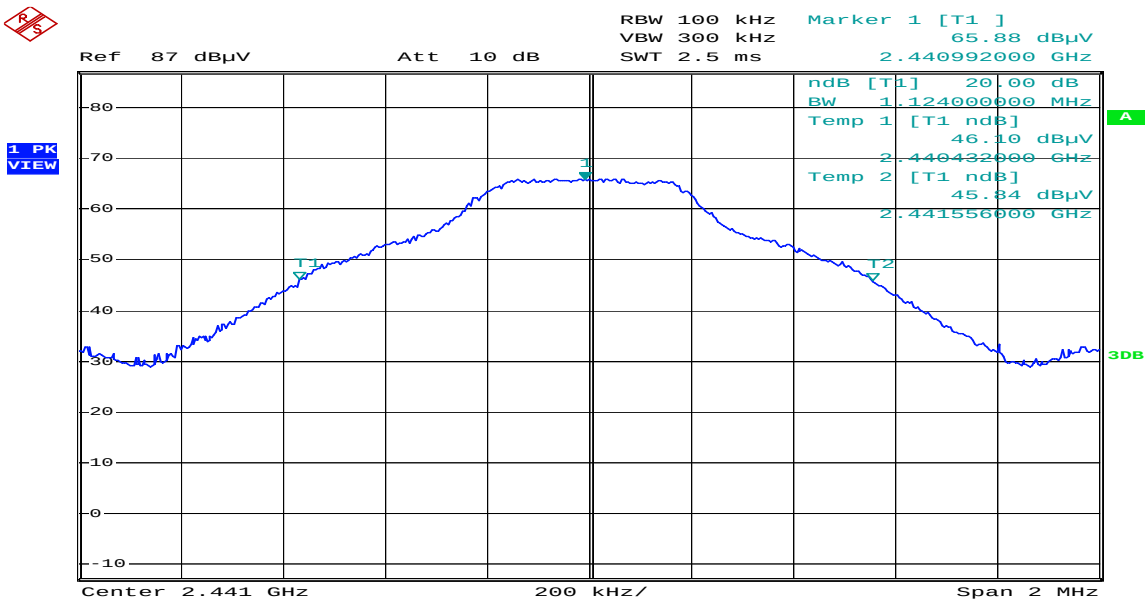
2441MHz 20dB BW



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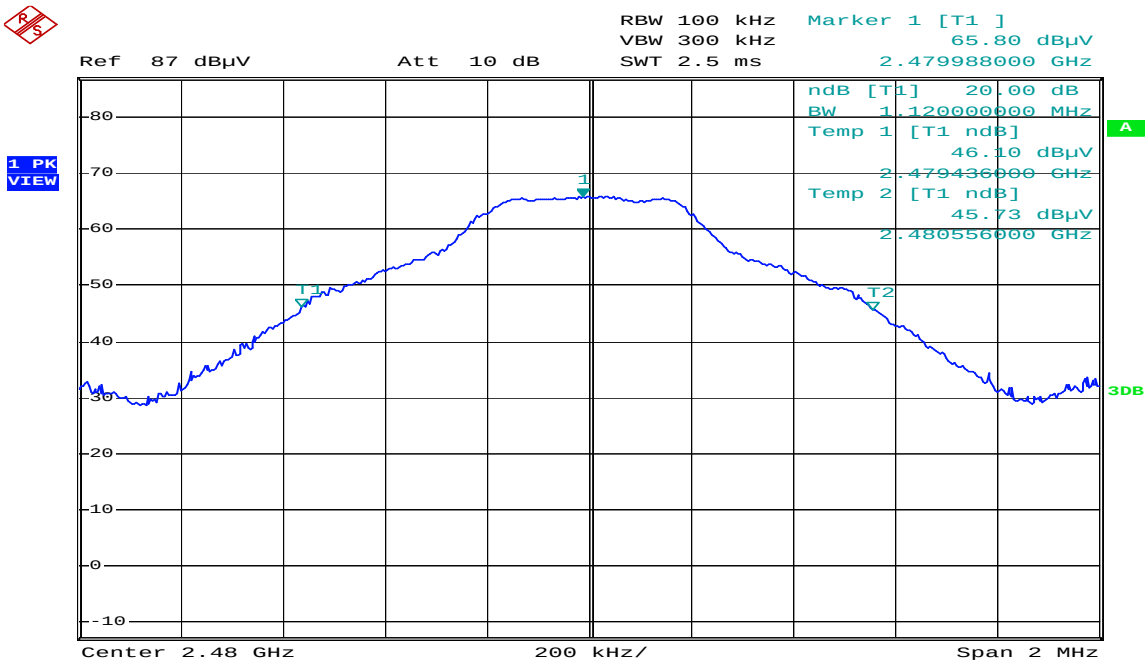
2480MHz 20dB BW

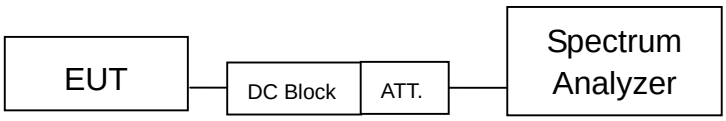


3 Carrier Frequency Separation test

3.1 Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25kHz or the 20dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125mW.

3.2 Configuration of Measurement



3.3 Test Procedure

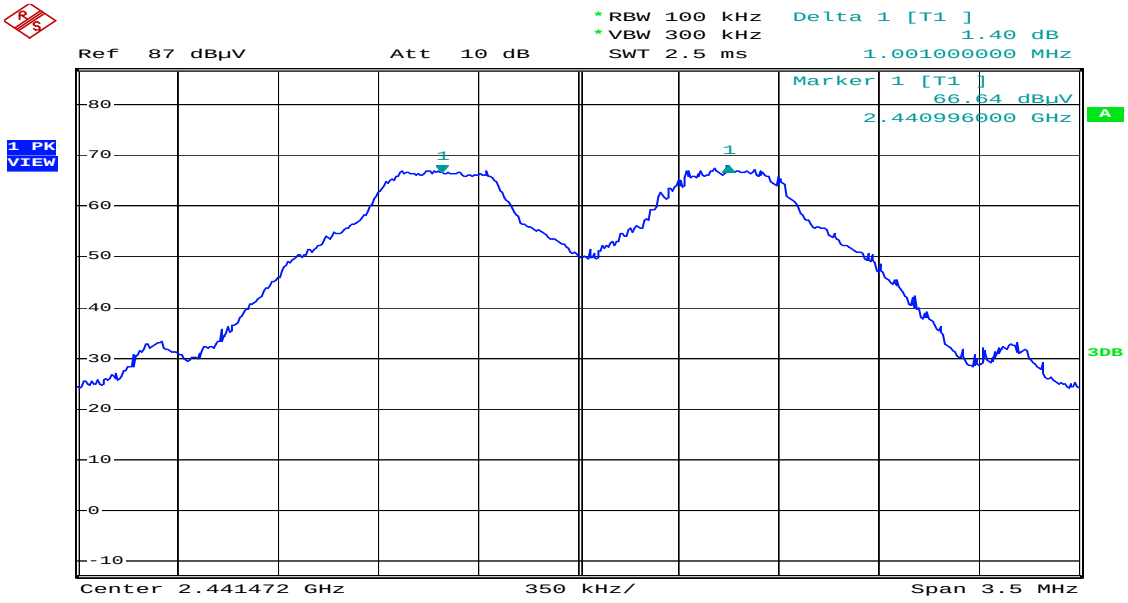
The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.
The carrier frequency separation per FCC Part15.247(a)(1) was measured using a 50 ohm spectrum analyzer with the resolutions bandwidth set at ≧1% of the span, the video bandwidth ≧RBW, and the SPAN was wide enough to capture the peaks of two adjacent channels.

3.4 Test Result

PASS.
The final test data is shown as following pages.

Modulation	Carrier Frequency Separation (kHz)
GFSK	1001

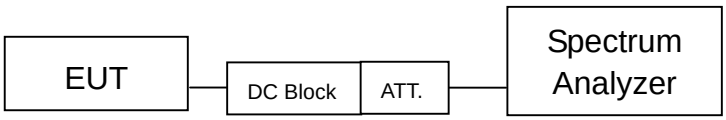
Channel Separation



Date: 31.MAR.2011 11:03:28

4 Number of hopping frequencies test

4.1 Configuration of Measurement



4.2 Test Procedure

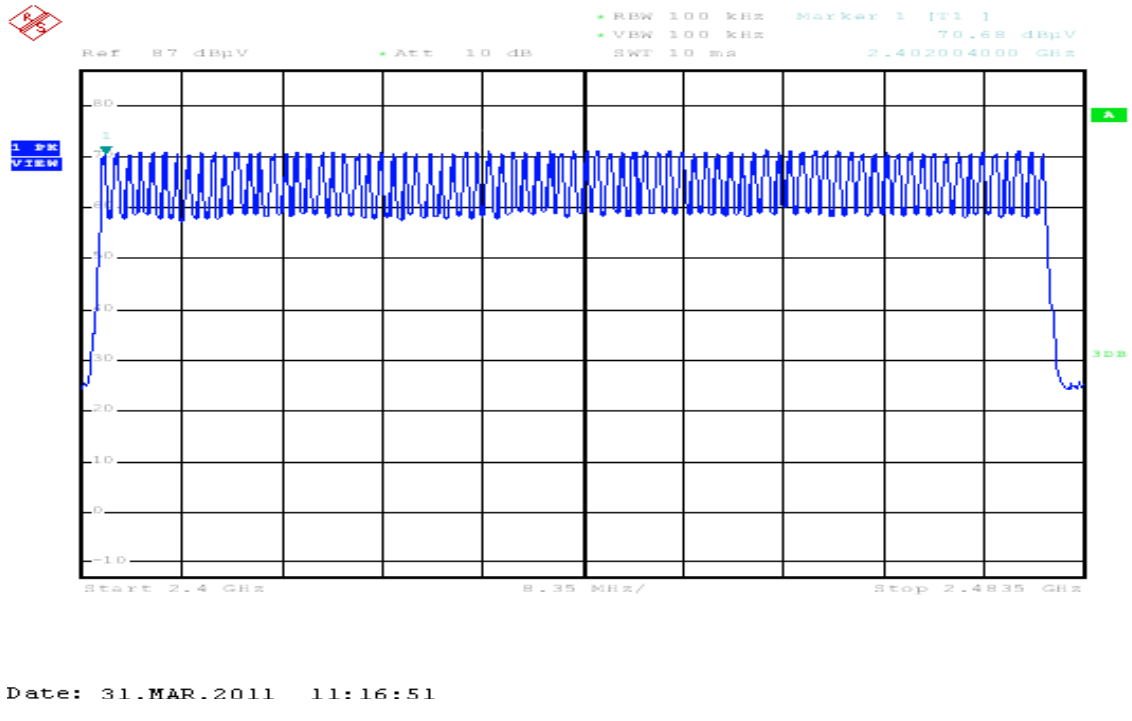
The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.
The number of hopping frequencies per FCC Part15.247(a)(1) was measured using a 50 ohm spectrum analyzer with the resolutions bandwidth set at ≧1% of the span, the video bandwidth ≧RBW, and the SPAN was the frequency band of operation.

4.3 Test Result

PASS.
The final test data is shown as following pages.

Modulation	No. of Hopping CH.
GFSK	79

Channel Number



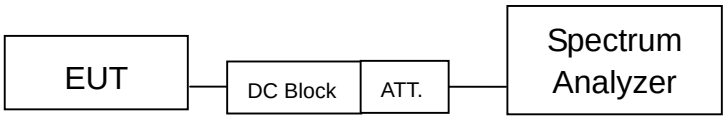
Date: 31.MAR.2011 11:16:51

5 Time of Occupancy (dwell time) test

5.1 Limit

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 second within a period of 0.4 second multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

5.2 Configuration of Measurement



5.3 Test Procedure

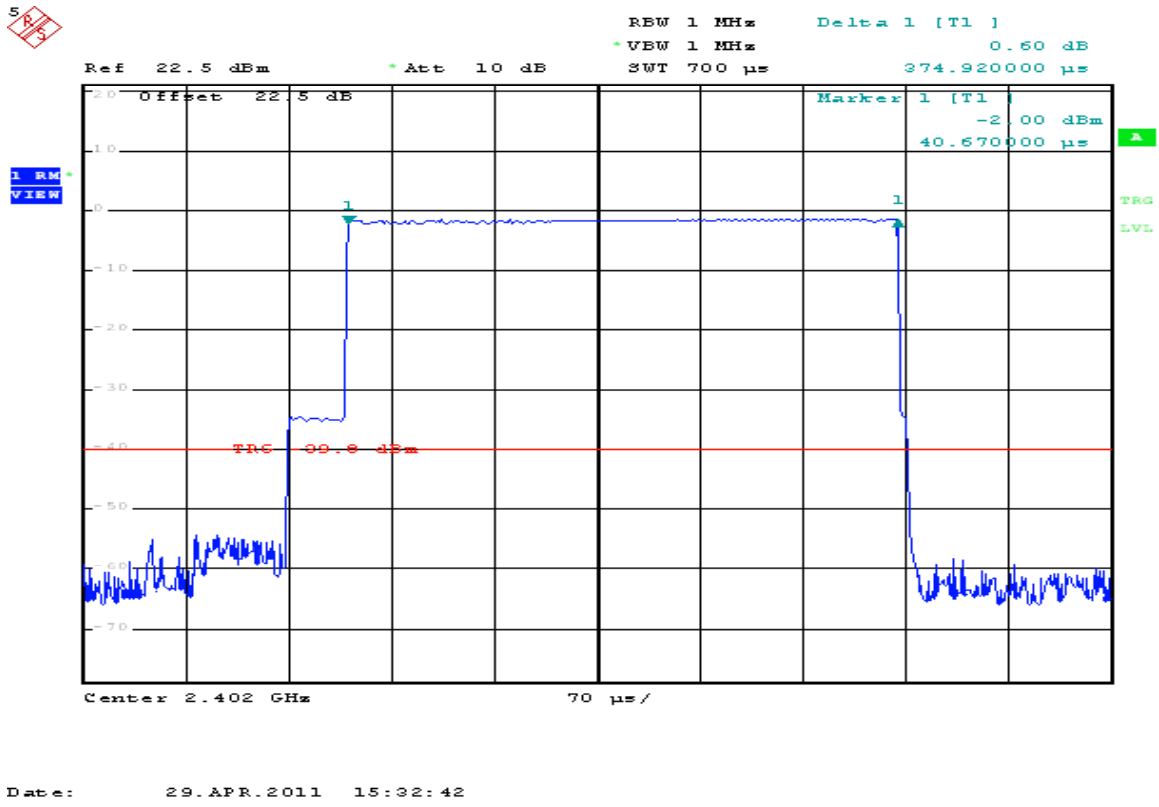
The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.
According to FCC Part15.247(a)(1) the time of occupancy (dwell time) was measured using a 50 ohm spectrum analyzer with the resolutions bandwidth set at 1MHz, the video bandwidth≧ RBW and the zero span function of spectrum analyzer was enable. The EUT has its hopping function enable.
Formula for Dwell time calculation:
Dwell time = time slot * hop rate * 1/s / 79 *31.6s

5.4 Test Result

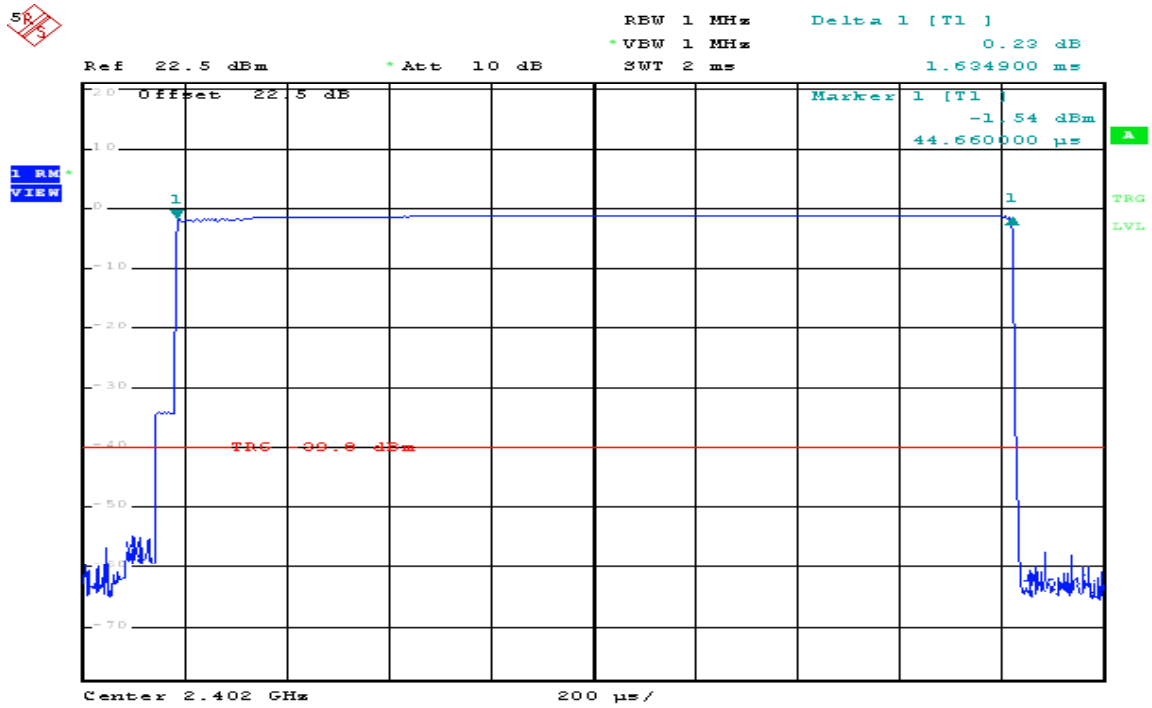
PASS.
The final test data is shown as following pages.

Dwell Time Test						
Modulation Type	**Packet Type**	**Time Slot Length (ms)**	**Hop Rate (Hz)**	**Dwell Time (s)**	**Limit (s)**	**Test Result**
GFSK	DH1	0.37492	800	0.120	<0.4	Pass
	DH3	1.63490	400	0.262	<0.4	Pass
	DH5	2.88542	266	0.308	<0.4	Pass

DH1 Dwell time

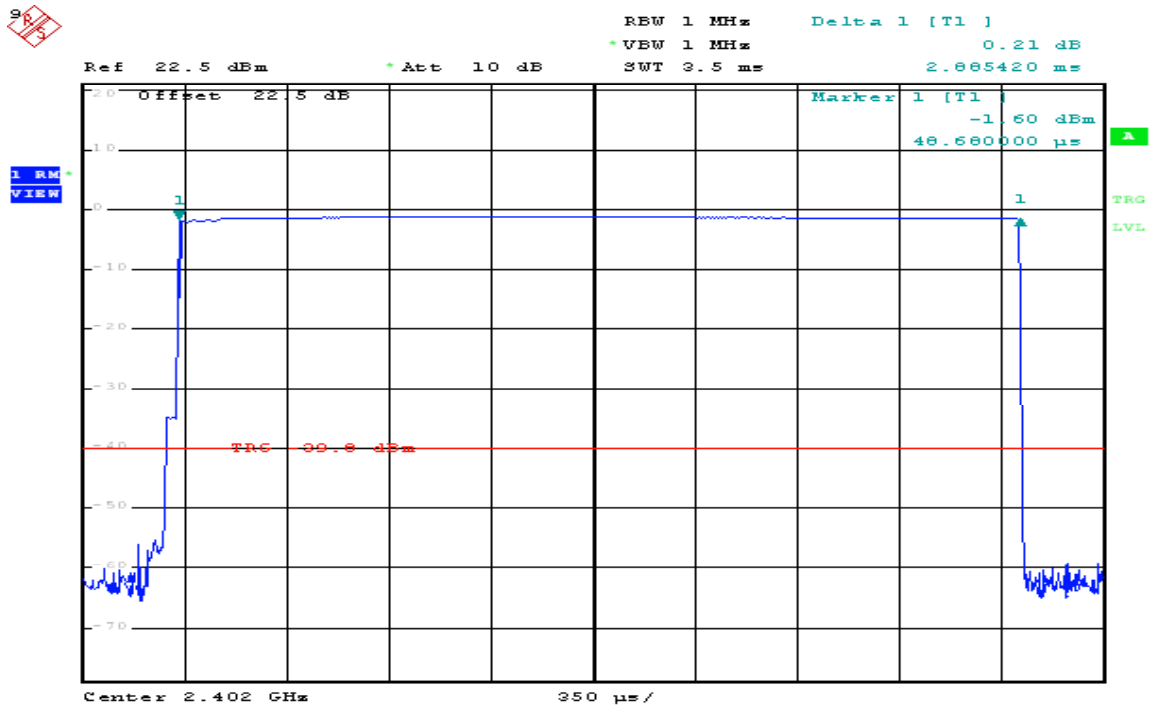


DH3 Dwell time



Date: 29.APR.2011 15:35:54

DH5 Dwell time

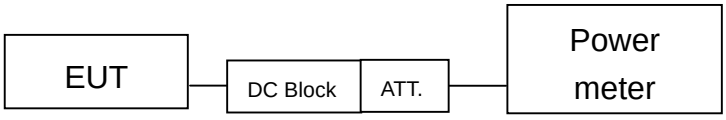


6 Maximum Output Power test

6.1 Limit

For frequency hopping systems operating in the 2400-2483.5MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850MHz band: 1 watt.
For all other frequency hopping systems in the 2400-2483.5MHz band: 0.125 watts.

6.2 Configuration of Measurement



6.3 Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.
For FCC Part 15.247(b) the power output per was measured on the EUT using a 50 ohm SMA cable connected to peak power meter via power sensor. Peak output power was read directly from power meter. The test was performed at 3 channels (lowest, middle and highest).

6.4 Test Result

PASS.
The final test data is shown as following pages.

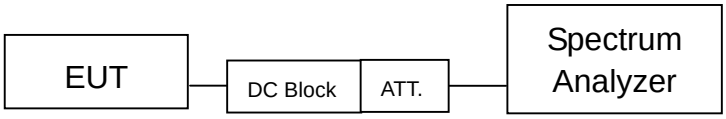
CH	Temp. (℃)	Test Voltage (Vdc)	Maximum transmit power (dBm)	Watts	Limit (dBm)	Margin (dB)
0	23.6	3	-4.99	0.00032	30	-34.99
39	23.6	3	-5.17	0.00030	30	-35.17
78	23.6	3	-2.01	0.00063	30	-32.01

7 RF Conducted spurious emission

7.1 Limit

According to FCC Part 15.247(d) requirement：
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

7.2 Configuration of Measurement



7.3 Test Procedure

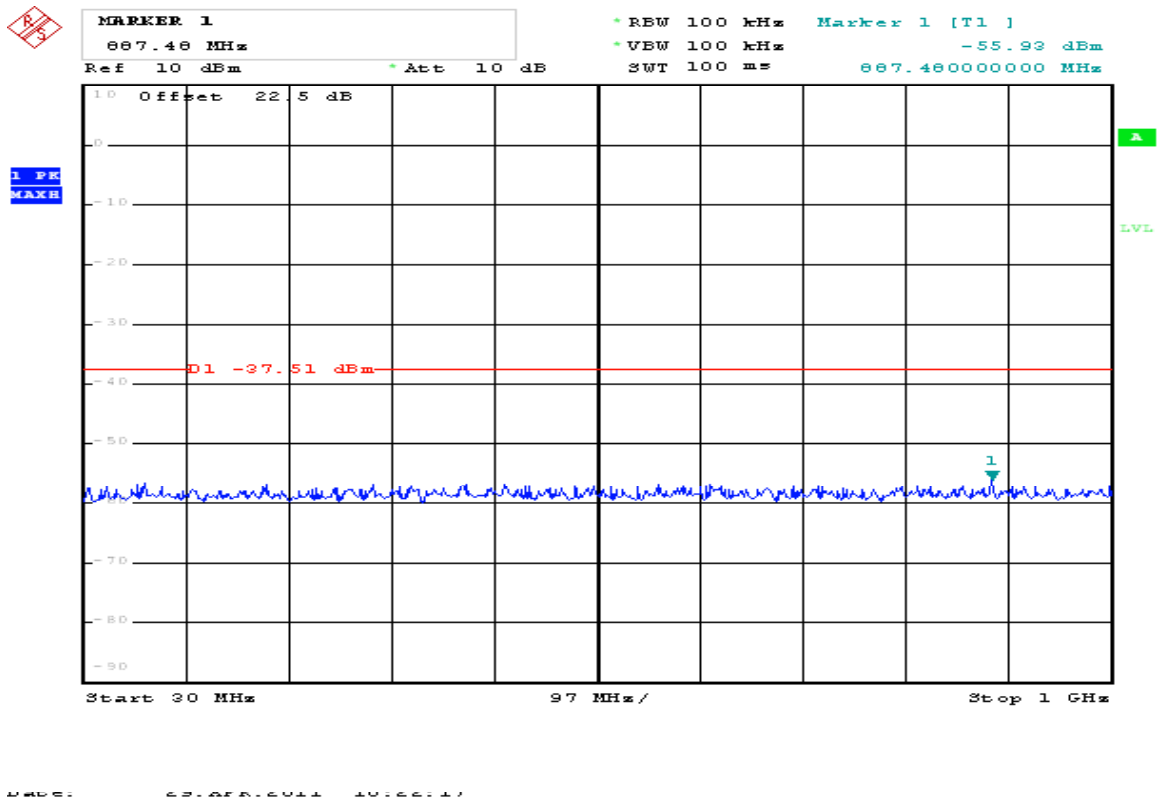
The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.
RF antenna conducted spurious emissions was measured from the EUT antenna port using a 50ohm spectrum analyzer with the resolution bandwidth set at 100 kHz, and the video bandwidth set at 100 kHz.
The measurements were performed from 30MHz to 25GHz.

7.4 Test Result

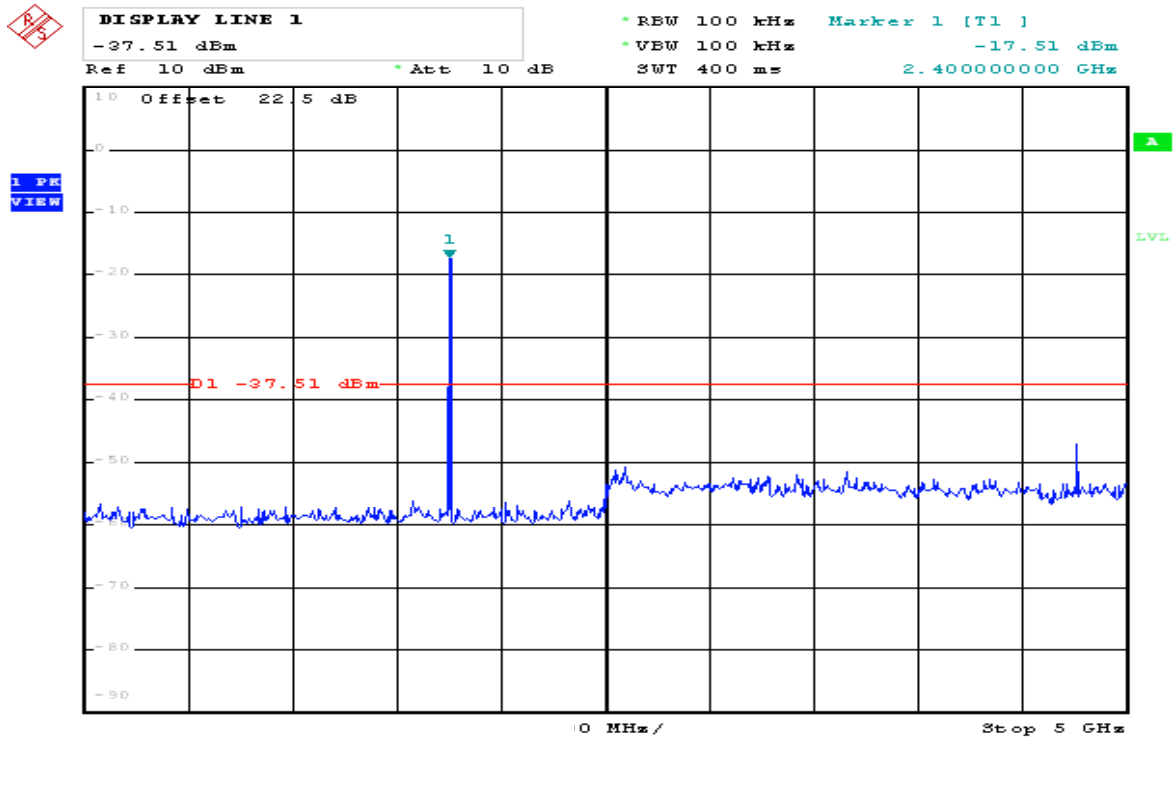
PASS.
The final test data is shown as following pages.

Conducted spurious emission

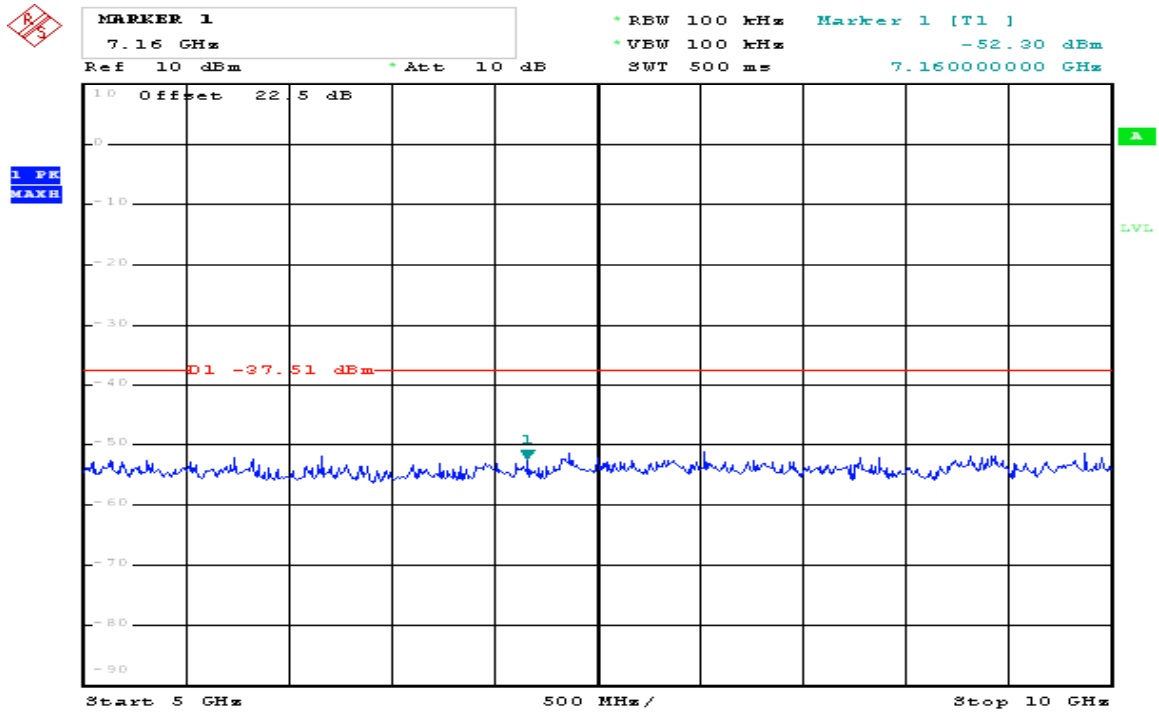
2402MHz (30M~1GHz)



2402MHz (1G~5GHz)



2402MHz (5G~10GHz)



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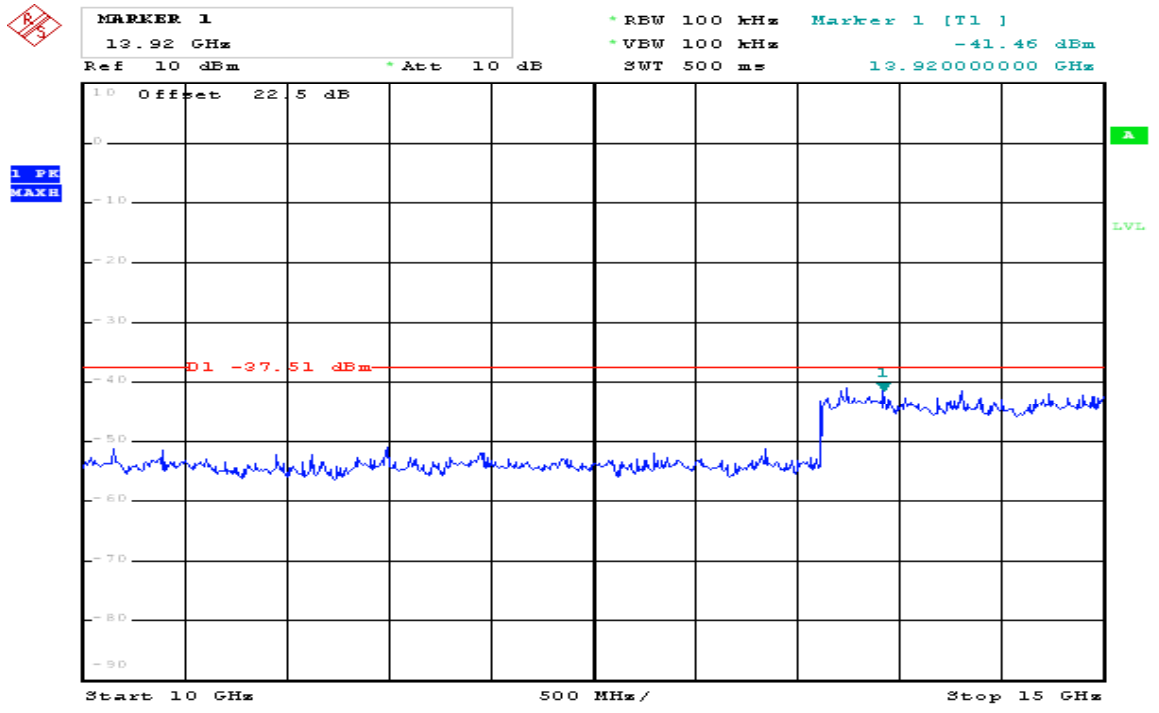
2402MHz (10G~15GHz)



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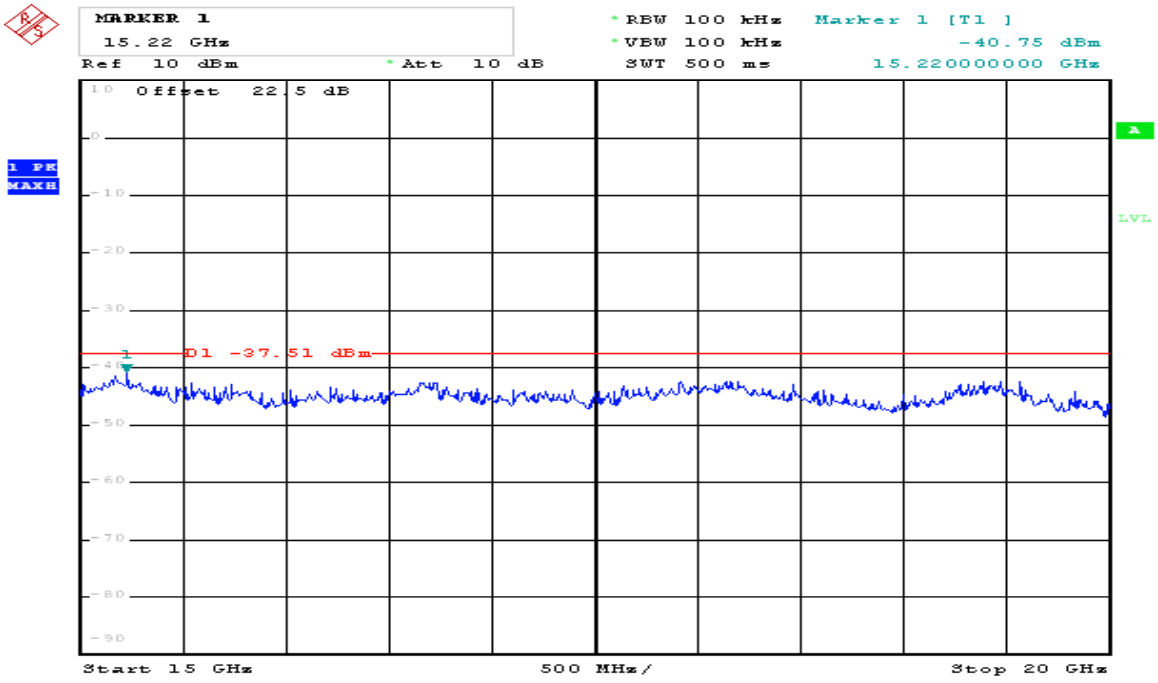
2402MHz (15G~20GHz)



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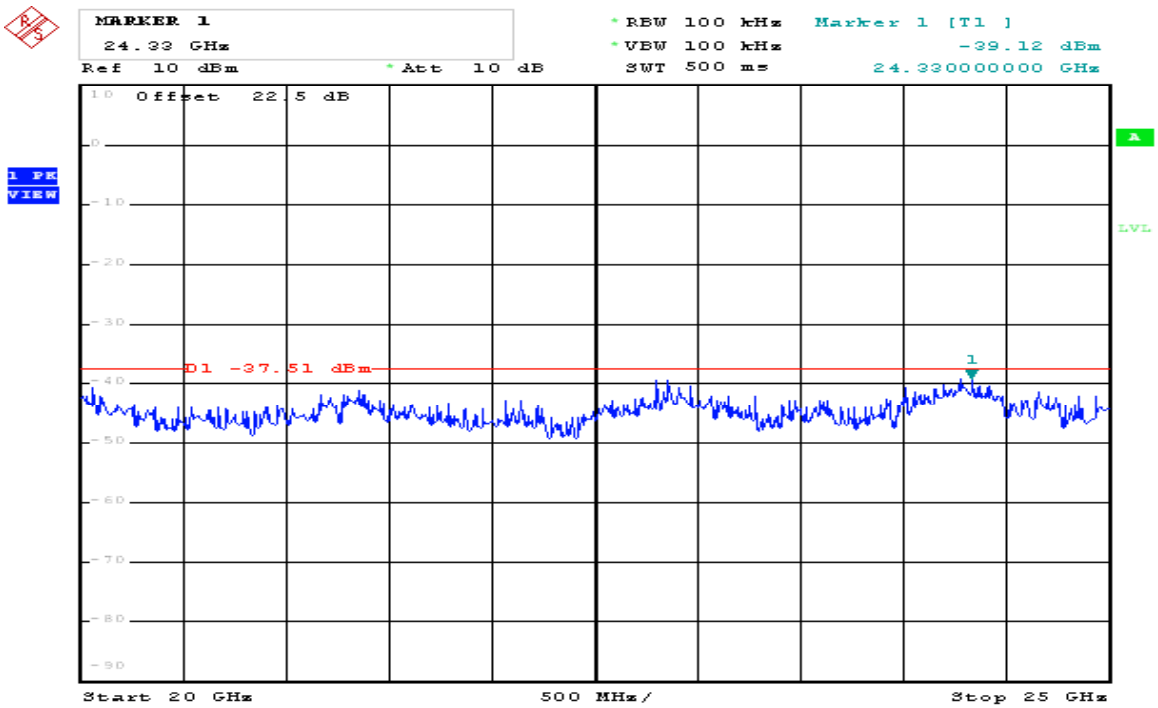
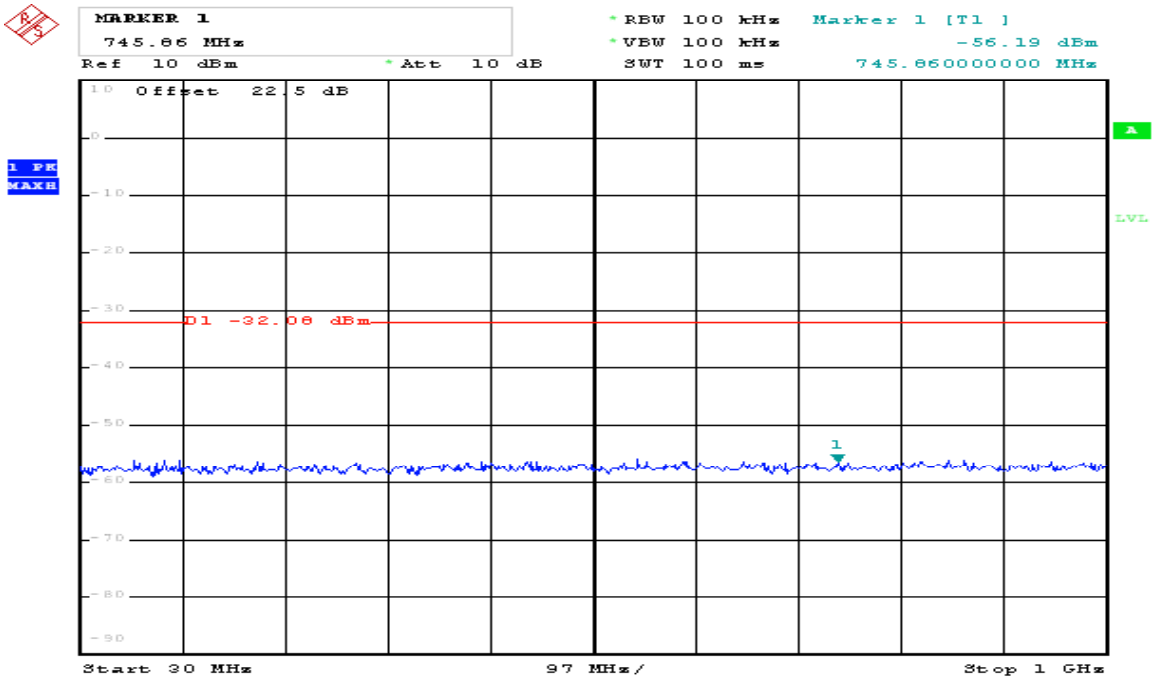
2402MHz (20G~25GHz)



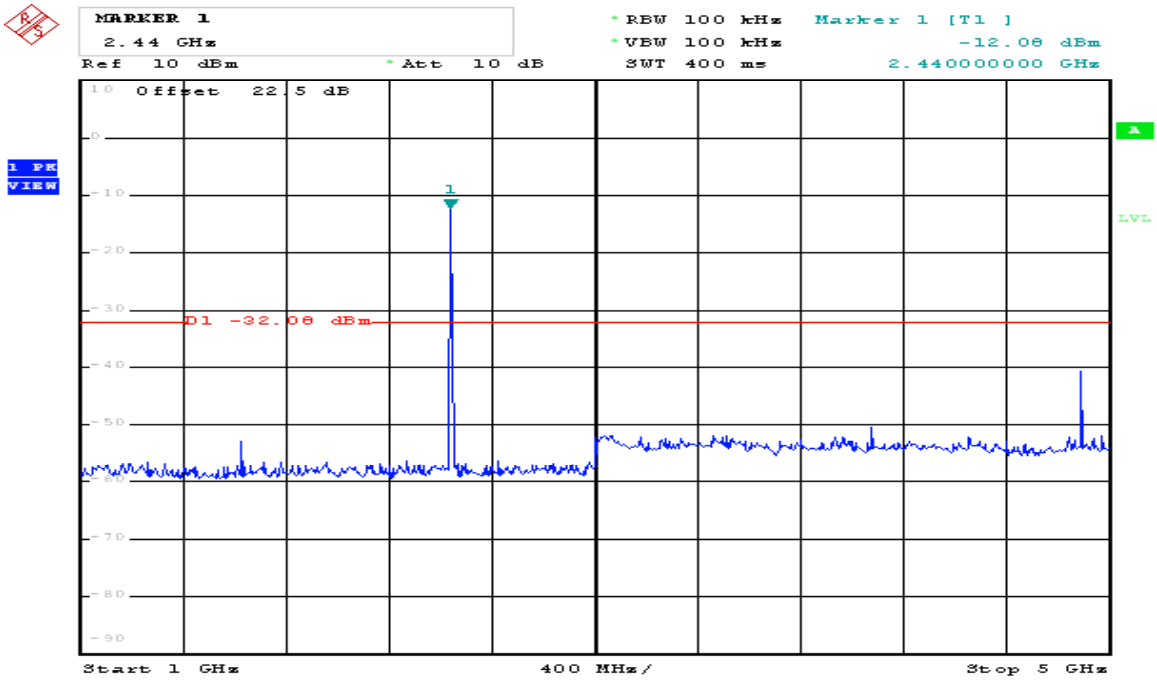
Date: 29.APR.2011 10:27:37

2441MHz (30M~1GHz)



Date: 29.APR.2011 10:33:57

2441MHz (1G-5GHz)



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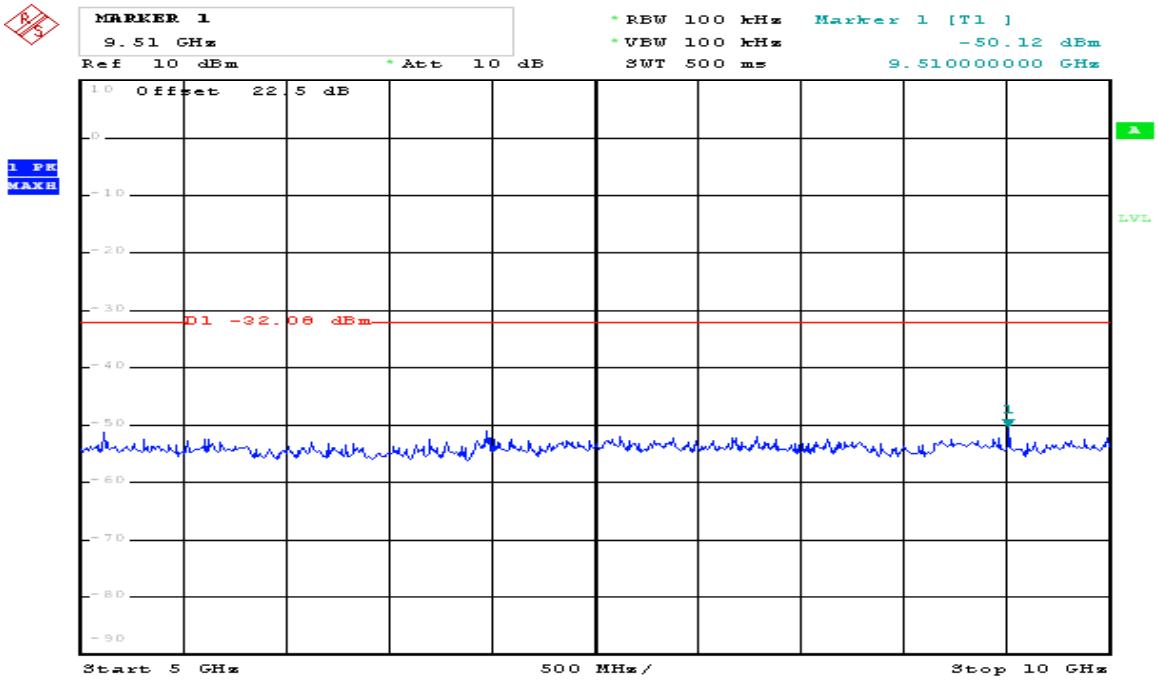
2441MHz (5G-10GHz)



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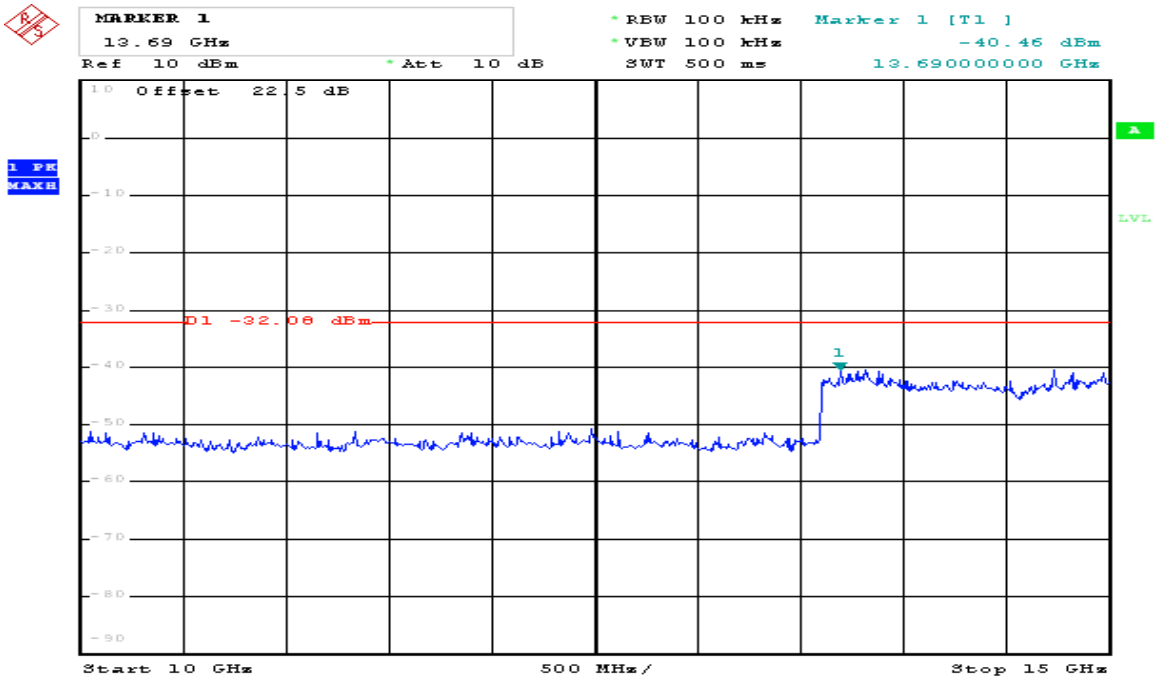
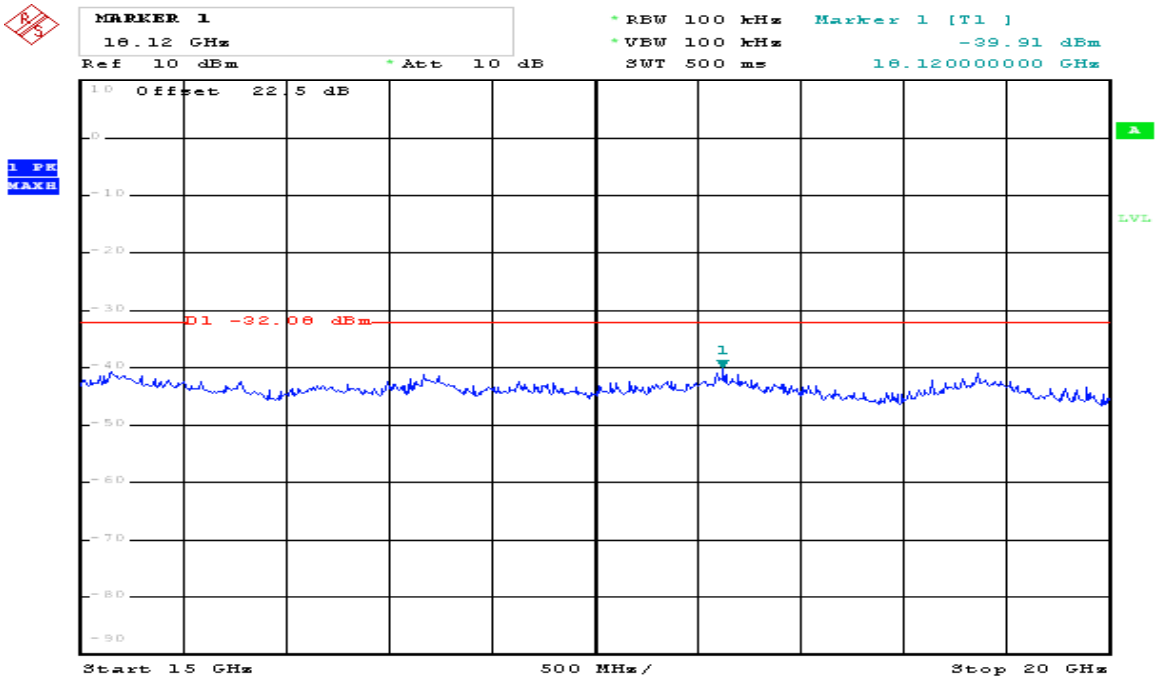
2441MHz (10G-15GHzHz)



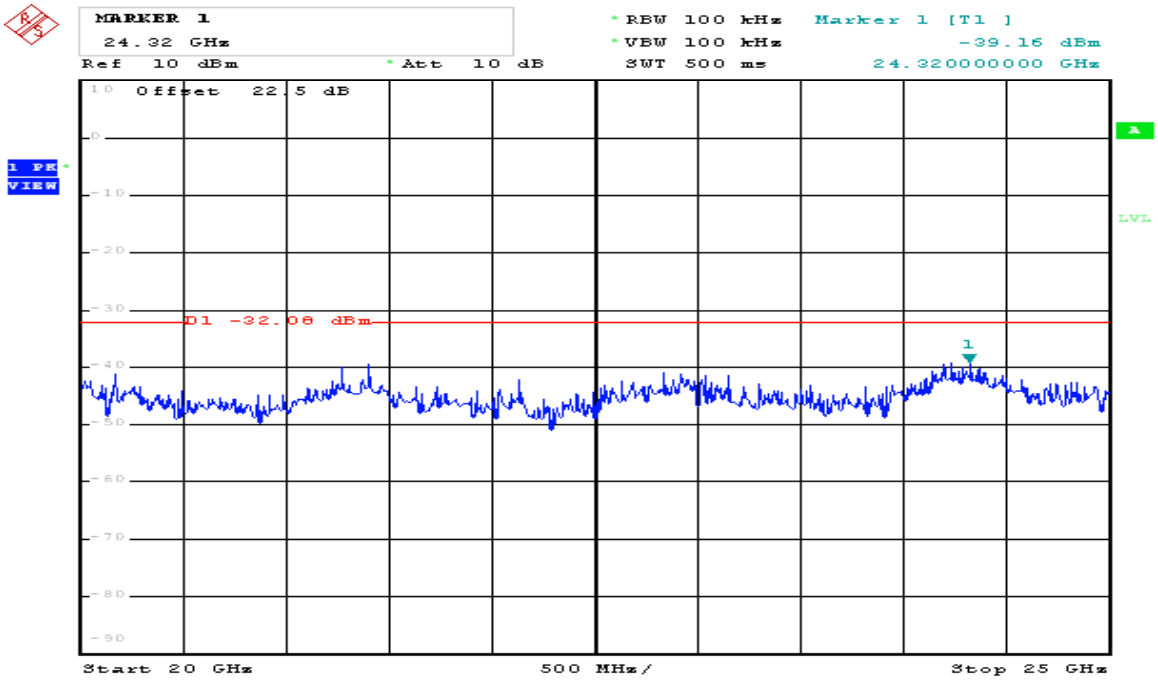
Date: 29.APR.2011 10:36:09

2441MHz (15G-20GHz)



Date: 29.APR.2011 10:37:13

2441MHz (20G-25GHz)



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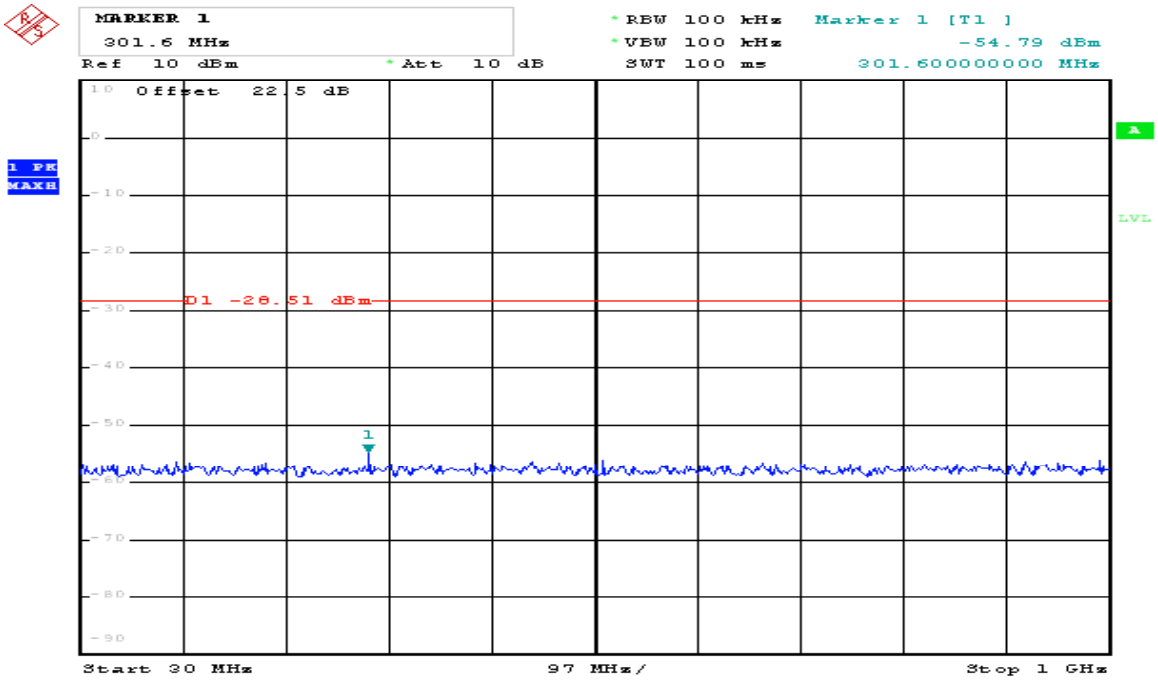
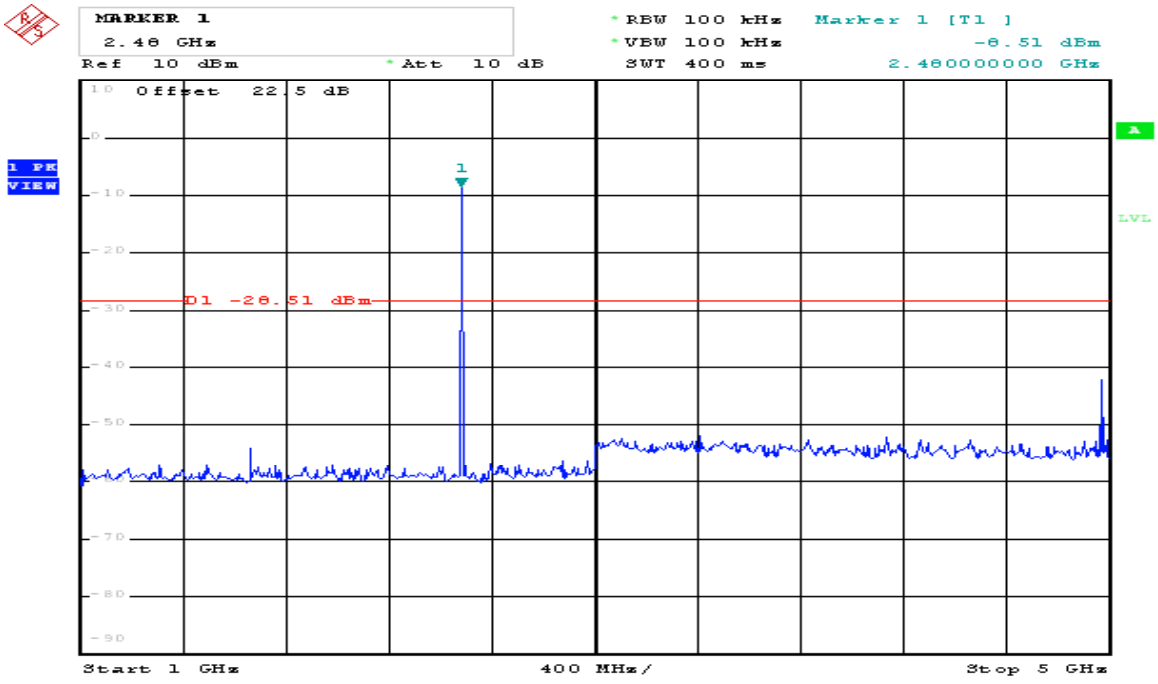
2480MHz (30M-1GHz)



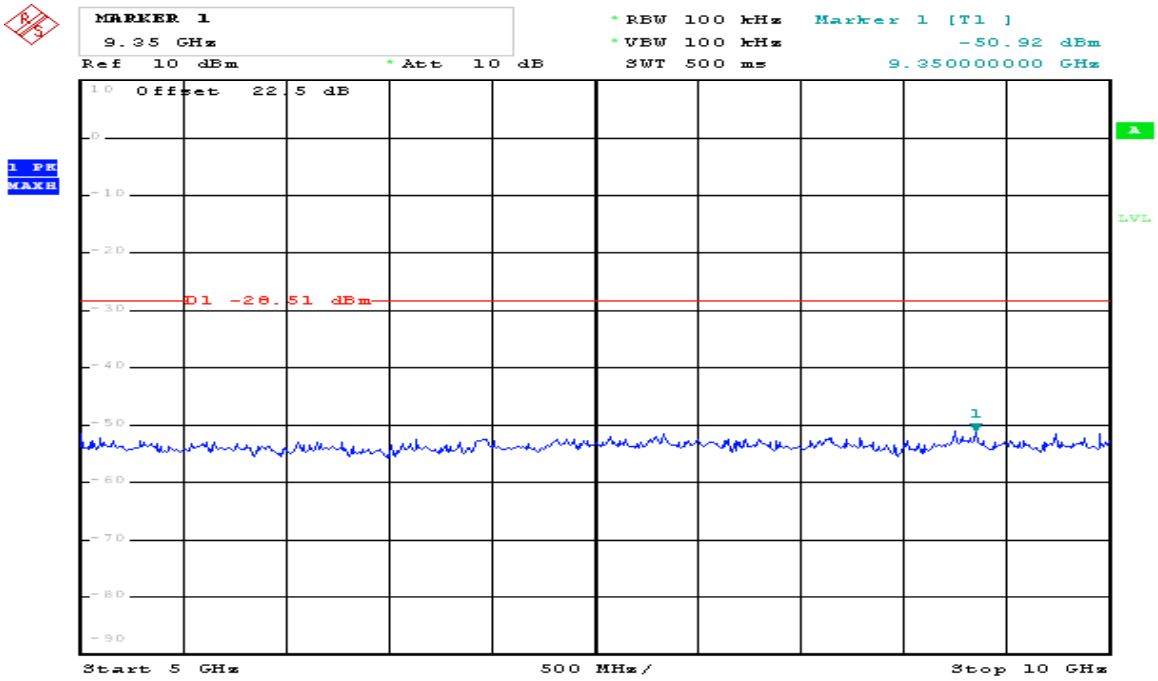
Date: 29.APR.2011 10:43:35

2480MHz (1G-5GHz)



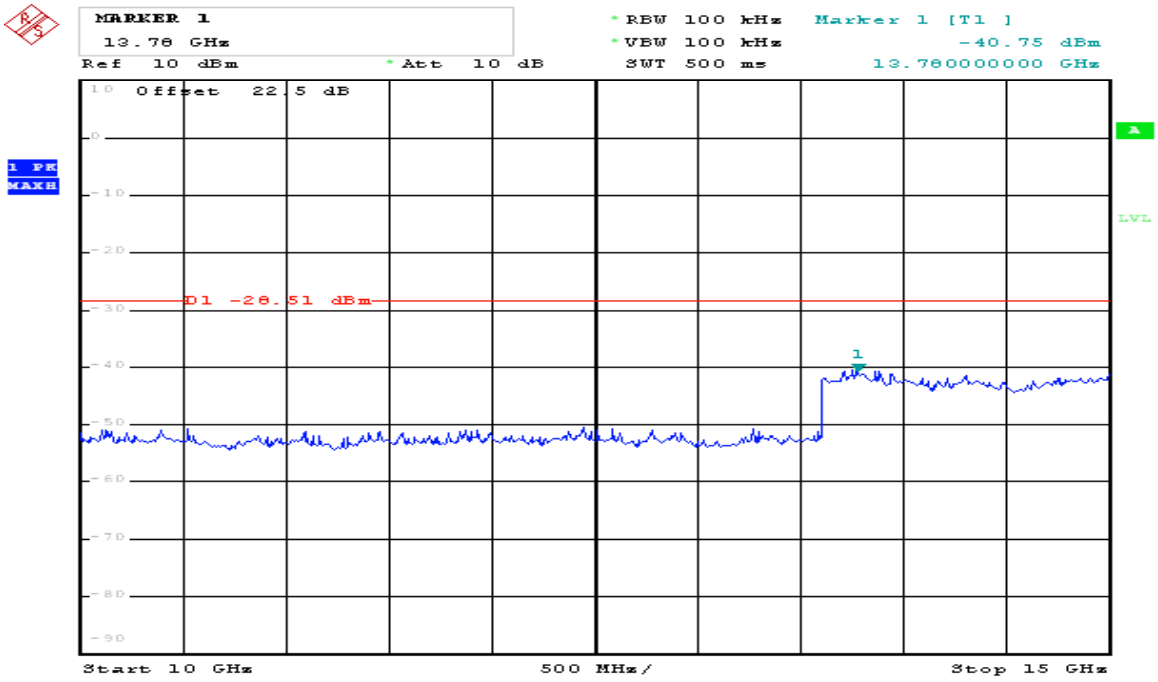
Date: 29.APR.2011 10:42:16

2480MHz (5G-10GHz)



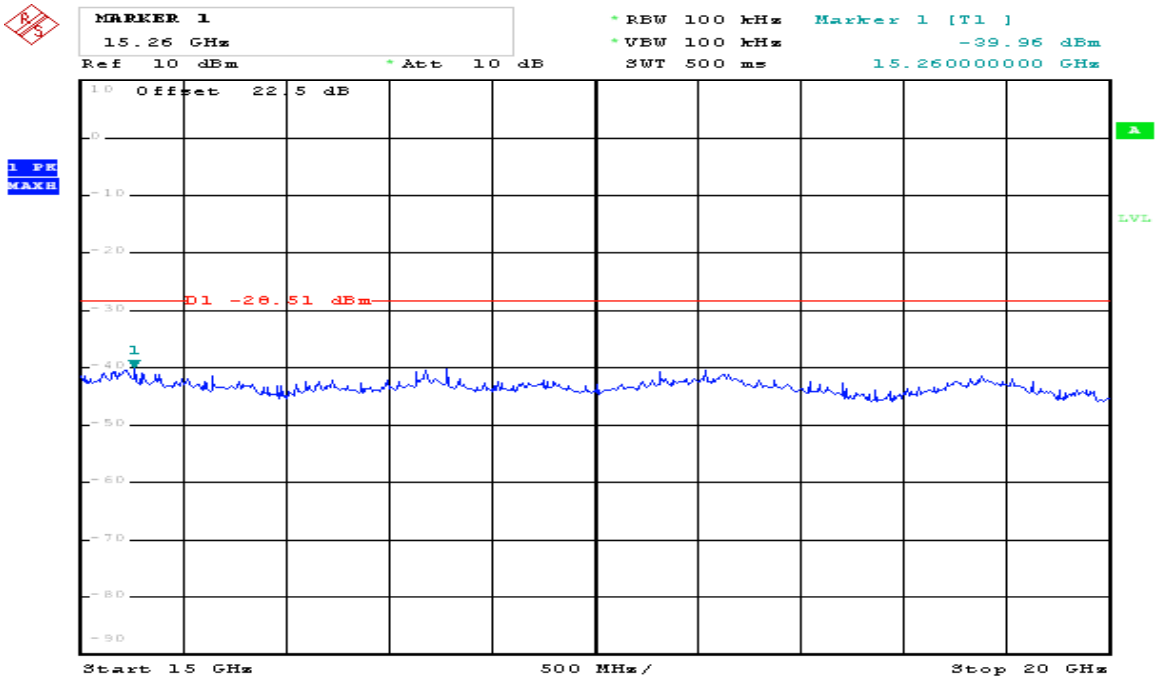
Date: 29.APR.2011 10:46:04

2480MHz (10G-15GHz)



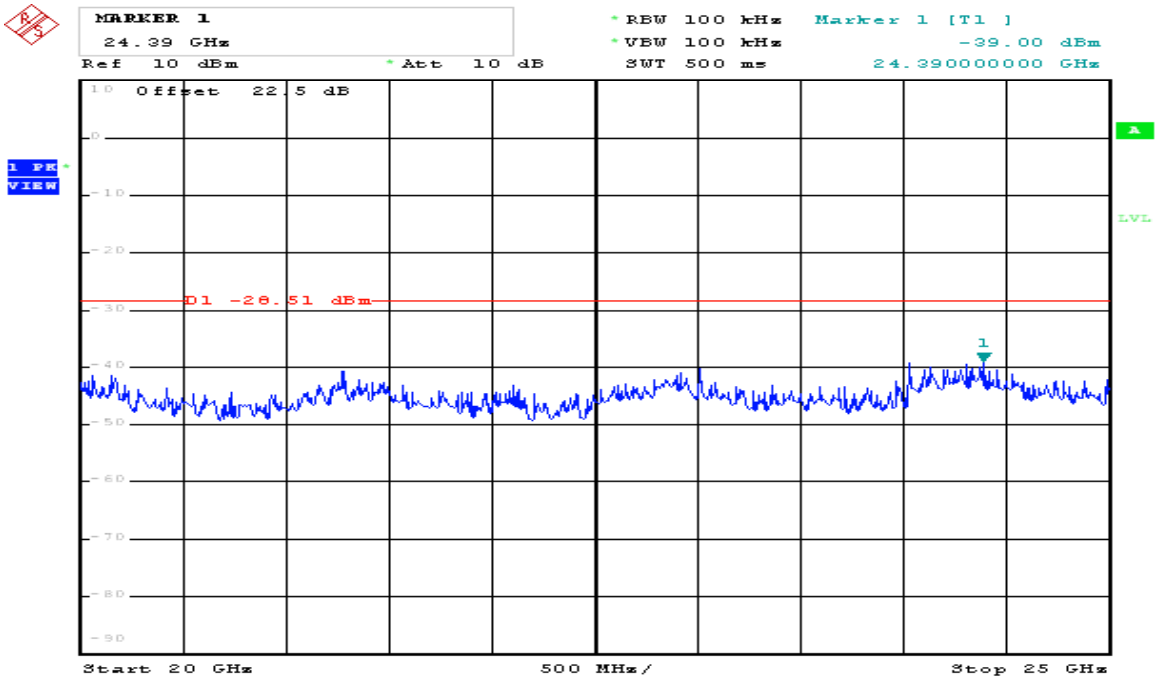
Date: 29.APR.2011 10:47:56

2480MHz (15G-20GHz)



Date: 29.APR.2011 10:50:08

2480MHz (20G-25GHz)



Date: 29.APR.2011 10:53:35

8 RF Radiated spurious emission test

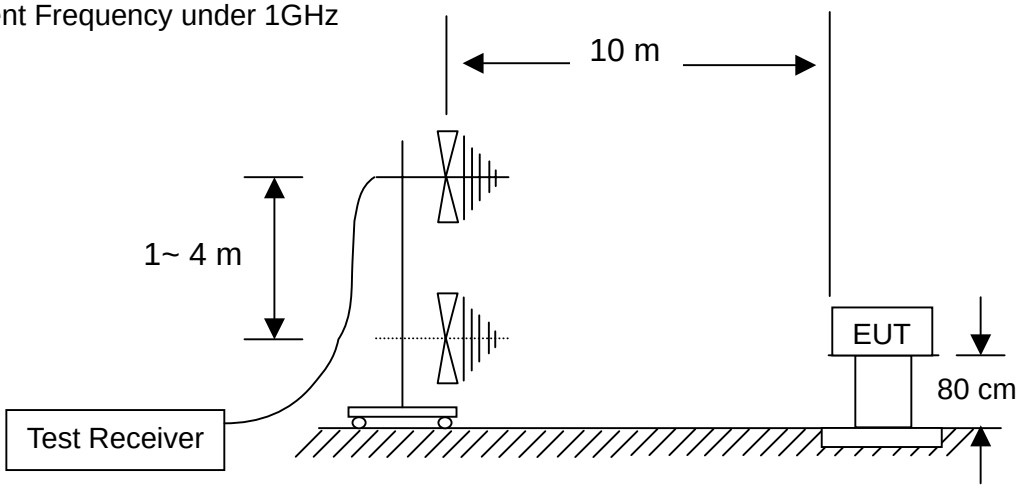
8.1 Limit

For intentional radiator, the radiated emission shall comply with FCC Part 15.209(a).
For intentional radiators, according to FCC Part 15.247 (a), operation under this provision is limited to frequency hopping and direct sequence spread spectrum, and the out band emission shall be comply with FCC Part 15.247 (c)

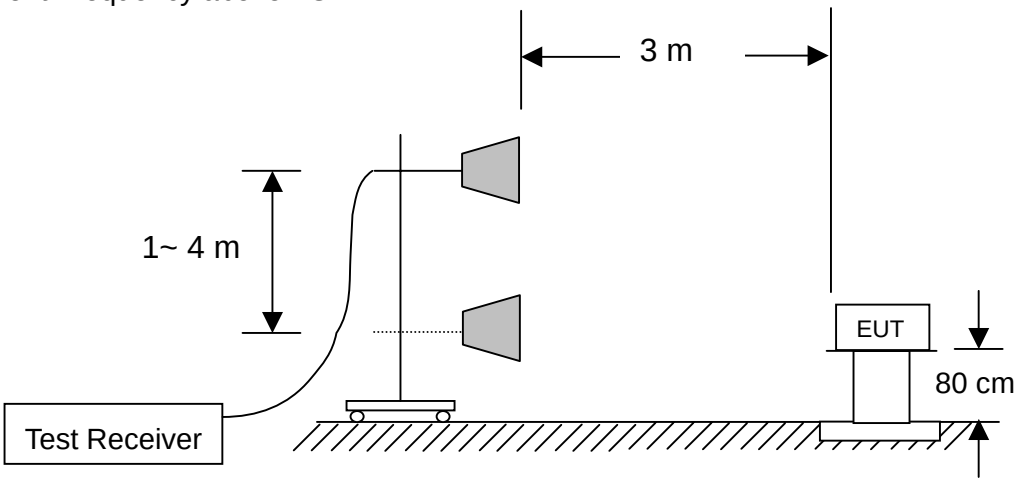
Frequency (MHz)	Field strength dB(μV/m)	Measurement distance (meters)
1.705~30.0	29.5	30
30 ~ 88	40	3
88~216	43.5	3
216~960	46	3
Above 960	54	3

8.2 Configuration of Measurement

Measurement Frequency under 1GHz



Measurement Frequency above 1GHz



8.3 Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.
Radiated emission measurements were performed from 30MHz to 25GHz. Spectrum Analyzer set as below: For frequency range from 30MHz to 1GHz: RBW=100kHz or greater. For frequencies above 1GHz: set RBW=VBW=1MHz for peak detector and RBW=1MHz, VBW=10Hz for average detector.
The EUT for testing is arranged on a wooden turntable. If some peripherals apply to the EUT, the peripherals will be connected to EUT and whole system. During the test, all cables were arranged to present worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meter and down to 1 meter.

8.4 Test Result

PASS.

The final test data is shown as following pages.

Radiated Emission below 1GHz

Frequency (MHz)	Antenna Polarization	Reading (dB μ V)	Preamp (dB)	Correction Factor (dB/m)	Corrected Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Det. Mode
68.630	H	51.16	33.30	7.04	24.90	40.00	-15.10	QP
115.630	H	47.16	33.00	13.10	27.26	43.52	-16.26	QP
168.710	H	45.96	33.39	16.84	29.41	43.52	-14.11	QP
256.630	H	45.63	33.47	20.41	32.57	46.02	-13.45	QP
336.300	H	45.85	33.56	17.31	29.60	46.02	-16.42	QP
402.200	H	42.85	33.94	19.94	28.85	46.02	-17.17	QP
56.350	V	50.80	33.30	9.35	26.85	40.00	-13.15	QP
133.650	V	49.53	33.10	15.68	32.11	43.52	-11.41	QP
168.650	V	44.29	33.39	17.82	28.72	43.52	-14.80	QP
245.630	V	44.96	33.40	20.66	32.22	46.02	-13.80	QP
306.500	V	49.85	33.60	16.85	33.10	46.02	-12.92	QP
433.650	V	47.16	34.20	19.93	32.89	46.02	-13.13	QP

Remark ： Corrected Level = Reading + Correction Factor – Preamp
Correction Factor = Antenna Factor + Cable Loss

Radiated Emission above 1GHz

2402MHz								
Frequency (MHz)	Antenna Polarization	Reading (dB μ V)	Preamp (dB)	Correction Factor (dB/m)	Corrected Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Det. Mode
4804	H	49.83	36.30	37.47	51.00	54	-3.00	PK
7206	H	42.82	36.54	42.87	49.15	54	-4.85	PK
*9608	H	41.33	36.92	46.00	50.41	54	-3.59	PK
4804	V	51.82	36.30	37.47	52.99	54	-1.01	PK
7206	V	48.11	36.54	42.87	54.44	74	-19.56	PK
7206	V	45.12	36.54	42.87	51.45	54	-2.55	AV
*9608	V	43.25	36.92	46.00	52.33	54	-1.67	PK

2441MHz								
Frequency (MHz)	Antenna Polarization	Reading (dB μ V)	Preamp (dB)	Correction Factor (dB/m)	Corrected Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Det. Mode
4882	H	55.26	36.30	37.59	56.55	74	-17.45	PK
4882	H	52.19	36.30	37.59	53.48	54	-0.52	AV
7323	H	50.78	36.56	43.14	57.36	74	-16.64	PK
7323	H	45.12	36.56	43.14	51.70	54	-2.30	AV
*9764	H	42.16	36.95	46.17	51.38	54	-2.62	PK
4882	V	52.23	36.30	37.59	53.52	74	-20.48	PK
4882	V	47.38	36.30	37.59	48.67	54	-5.33	AV
7323	V	50.78	36.56	43.14	57.36	74	-16.64	PK
7323	V	44.37	36.56	43.14	50.95	54	-3.05	AV
*9764	V	41.71	36.95	46.17	50.93	54	-3.07	PK

Remark ： Corrected Level = Reading + Correction Factor – Preamp
Correction Factor = Antenna Factor + Cable Loss
* Mark indicated background noise level.

2480MHz								
Frequency (MHz)	Antenna Polarization	Reading (dB μ V)	Preamp (dB)	Correction Factor (dB/m)	Corrected Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Det. Mode
4960	H	46.08	36.30	37.72	47.50	54	-6.50	PK
7440	H	41.78	36.59	43.42	48.61	54	-5.39	PK
*9920	H	41.47	36.98	46.34	50.83	54	-3.17	PK
4960	V	50.66	36.30	37.72	52.08	54	-1.92	PK
7440	V	45.98	36.59	43.42	52.81	54	-1.19	PK
*9920	V	42.19	36.98	46.34	51.55	54	-2.45	PK

Remark ： Corrected Level = Reading + Correction Factor – Preamp
Correction Factor = Antenna Factor + Cable Loss
* Mark indicated background noise level.

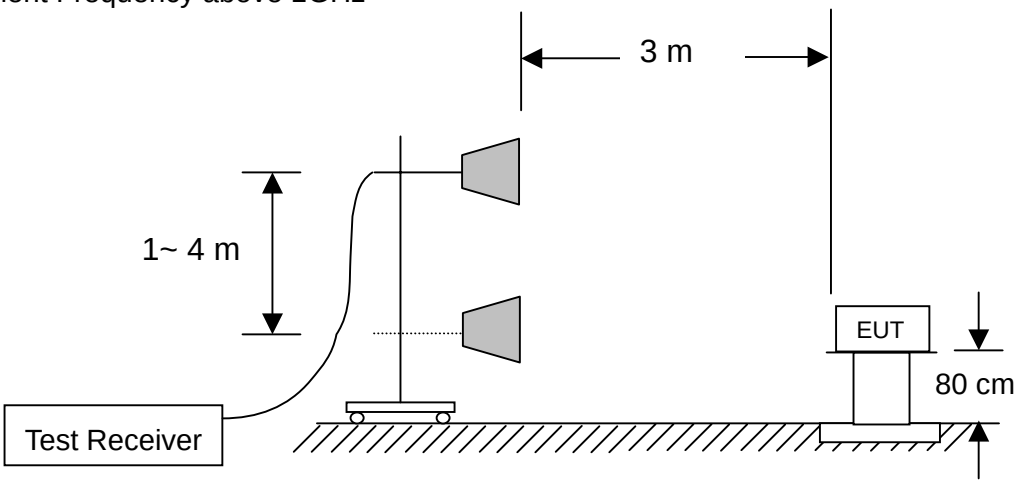
9 Emission on the Band Edge test

9.1 Limit

In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 KHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

9.2 Configuration of Measurement

Measurement Frequency above 1GHz



9.3 Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.
Radiated emission measurements were performed from 30MHz to 25GHz. Spectrum Analyzer set as below: For frequency range from 30MHz to 1GHz: RBW=100kHz or greater. For frequencies above 1GHz: set RBW=VBW=1MHz for peak detector and RBW=1MHz, VBW=10Hz for average detector.
The EUT for testing is arranged on a wooden turntable. If some peripherals apply to the EUT, the peripherals will be connected to EUT and whole system. During the test, all cables were arranged to present worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meter and down to 1 meter.

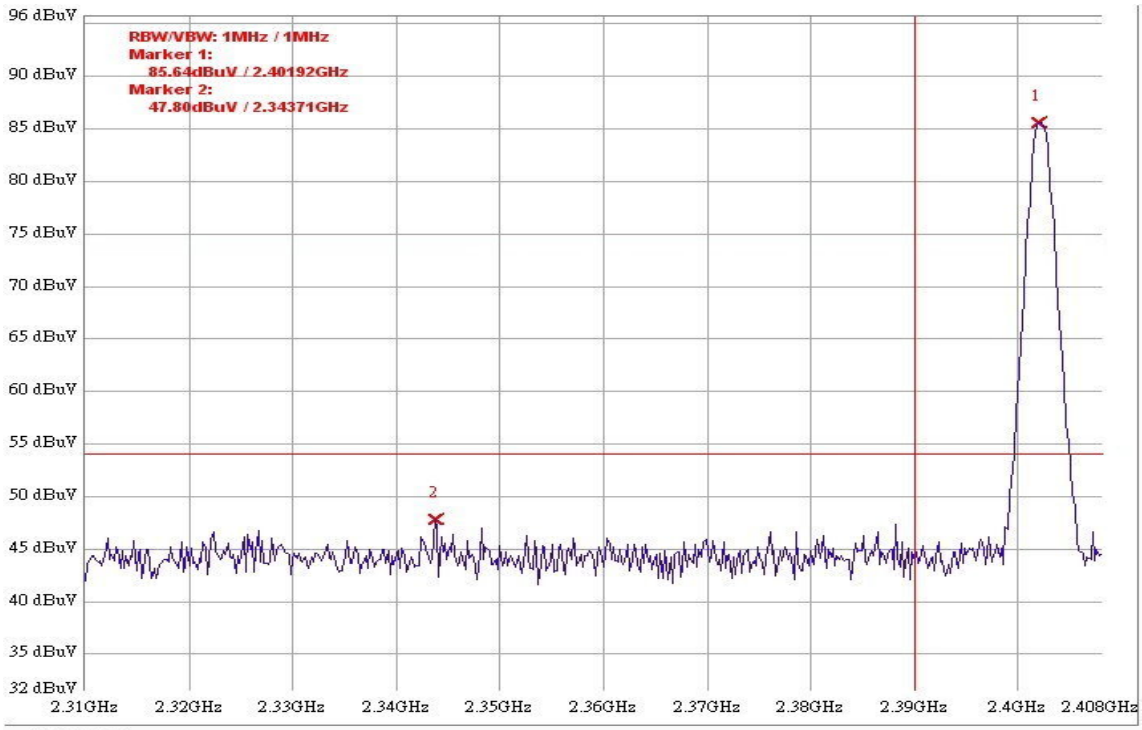
9.4 Test Result

PASS.
The final test data is shown as following pages.

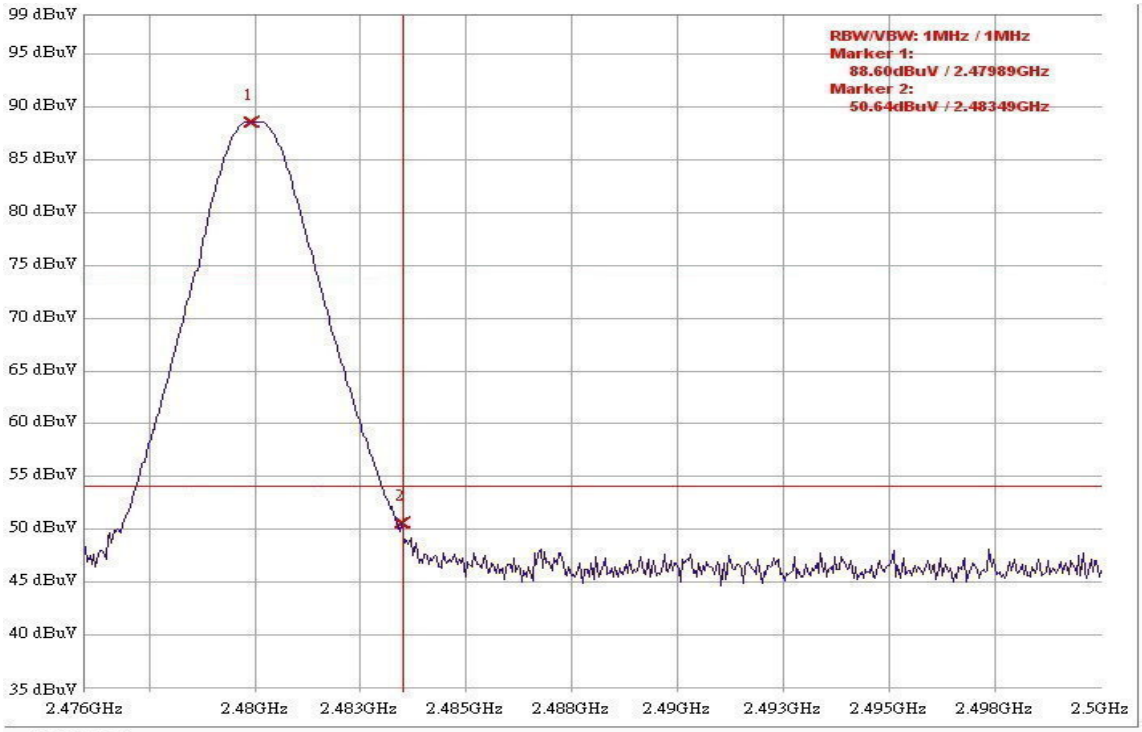
CH	Restrict Freq. Band (MHz)	Detector Mode	Reading (dBuV)	Limit (dBm)	Magin (dB)
0	2310~2390	PK	47.80	54	-6.20
78	2483.5~2500	PK	50.64	54	-3.36

Remark ： Correction Level = Reading + Correction Factor
Correction Factor = Cable loss + Ant. Factor - Amp Gain

2402MHz PK



2480MHz PK

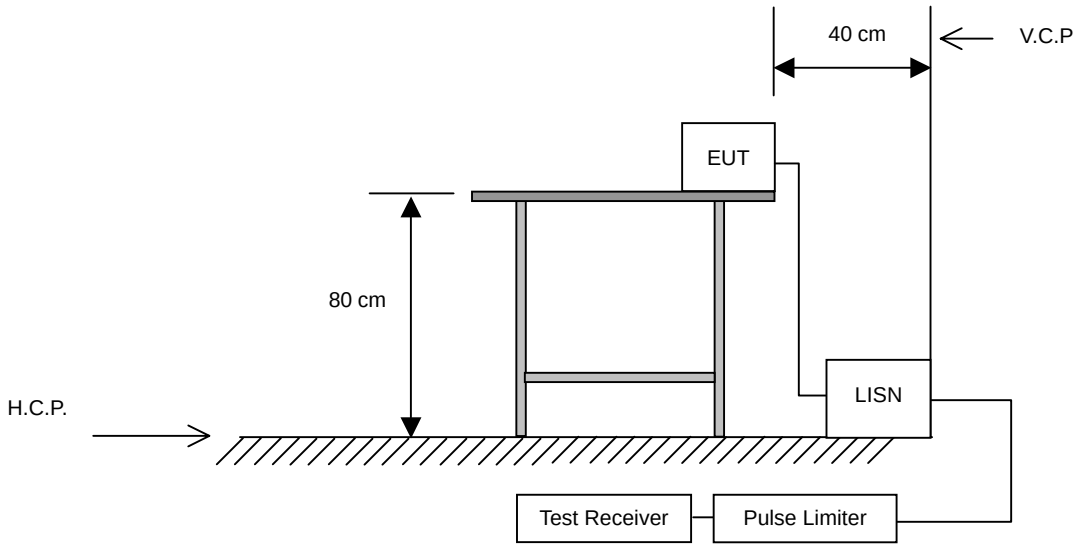


10 AC Power Line Conducted Emission test

10.1 Limits

Frequency (MHz)	Quasi-Peak (dB μV)	Average (dB μV)
0.15 to 0.5	66 to 56	56 to 46
> 0.5 to 5	56	46
> 5 to 30	60	50
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

10.2 Configuration of Measurement



10.3 Test Procedures

10.3.1 The EUT was placed 80cm height above ground on a non-conductive table and vertical conducting plane located 40cm to the rear of the EUT.

10.3.2 The EUT was connected to the main power through Line Impedance Stabilization Networks (LISN). This setup provided a 50ohm/50mH coupling impedance for the measuring equipment. The auxiliary equipment will place in secondary LISN.

10.3.3 Both sides (Line and Neutral) of AC line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4/2003 on conducted measurement.

10.3.4 The bandwidth of the field strength meter (R & S Test Receiver ESCS 30) is set at 9kHz.

10.4 Test Result

PASS.

The final test data is shown as following pages.

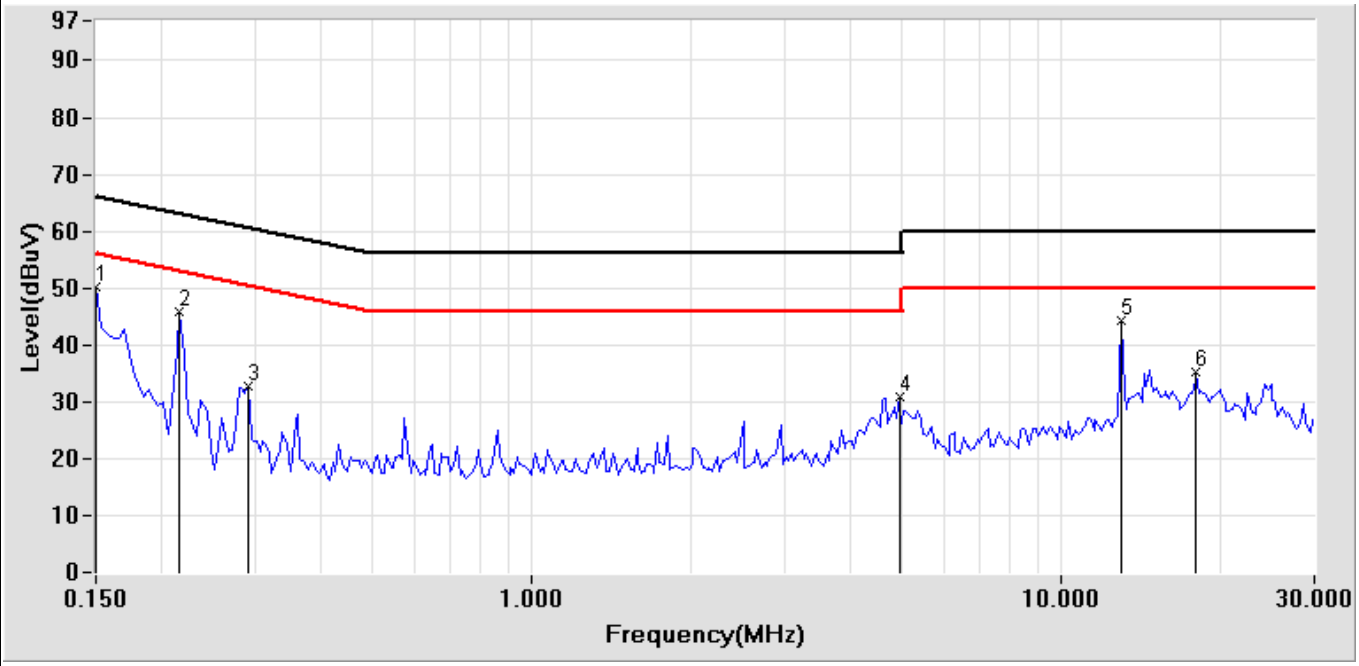
Power Line Conducted Test Data

EUT: Bluetooth Keyboard	POLARITY: Line
CLIENT:精矩	DISTANCE:
MODEL: PSK-4152i	Serial No.:
RATING:120V / 60Hz	FILE/DATA#:精矩.emi/6
Temperature: 24.0 ℃	OPERATOR: Elli
Humidity: 49 %	TEST SITE: Conduction 2

Frequency	Factor	Meter Reading (dBµV)		Emission Level (dBµV)		Limits (dBµV)		Margin (dB)	
(MHz)	(dB)	Quasi-Peak	Average	Quasi-Peak	Average	Quasi-Peak	Average	Quasi-Peak	Average
0.150	0.22	48.40	44.69	48.62	44.91	66.00	56.00	-17.38	-11.09
0.216	0.19	44.87	38.91	45.06	39.10	62.97	52.97	-17.91	-13.87
0.291	0.19	35.88	30.55	36.07	30.74	60.50	50.50	-24.43	-19.76
4.939	0.30	25.29	19.23	25.59	19.53	56.00	46.00	-30.41	-26.47
12.970	0.75	45.42	42.55	46.17	43.30	60.00	50.00	-13.83	-6.70
17.931	0.95	30.15	23.56	31.10	24.51	60.00	50.00	-28.90	-25.49

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

LIMIT: CISPR22_B_150K~30MHZ(QP).LMT



Test Mode: Working Mode

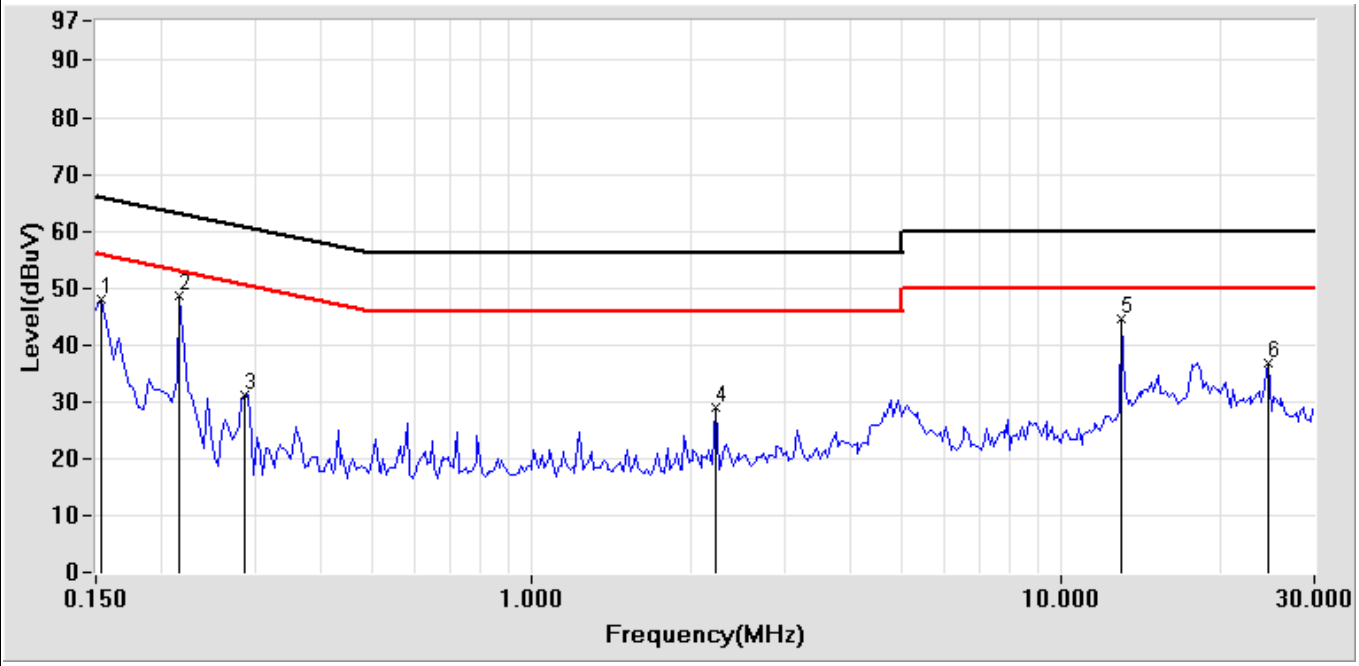
Power Line Conducted Test Data

EUT: Bluetooth Keyboard	POLARITY: Neutral
CLIENT:精矩	DISTANCE:
MODEL: PSK-4152i	Serial No.:
RATING:120V / 60Hz	FILE/DATA#:精矩.emi/7
Temperature: 24.0 ℃	OPERATOR: Elli
Humidity: 49 %	TEST SITE: Conduction 2

Frequency	Factor	Meter Reading (dBµV)		Emission Level (dBµV)		Limits (dBµV)		Margin (dB)	
(MHz)	(dB)	Quasi-Peak	Average	Quasi-Peak	Average	Quasi-Peak	Average	Quasi-Peak	Average
0.154	0.21	45.99	41.40	46.20	41.61	65.78	55.78	-19.58	-14.17
0.216	0.19	47.34	40.38	47.53	40.57	62.97	52.97	-15.44	-12.40
0.287	0.19	33.11	27.81	33.30	28.00	60.61	50.61	-27.31	-22.61
2.228	0.15	24.85	16.90	25.00	17.05	56.00	46.00	-31.00	-28.95
12.970	0.67	45.44	42.64	46.11	43.31	60.00	50.00	-13.89	-6.69
24.595	1.02	29.53	21.04	30.55	22.06	60.00	50.00	-29.45	-27.94

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

LIMIT: CISPR22_B_150K~30MHZ(QP).LMT



Test Mode: Working Mode