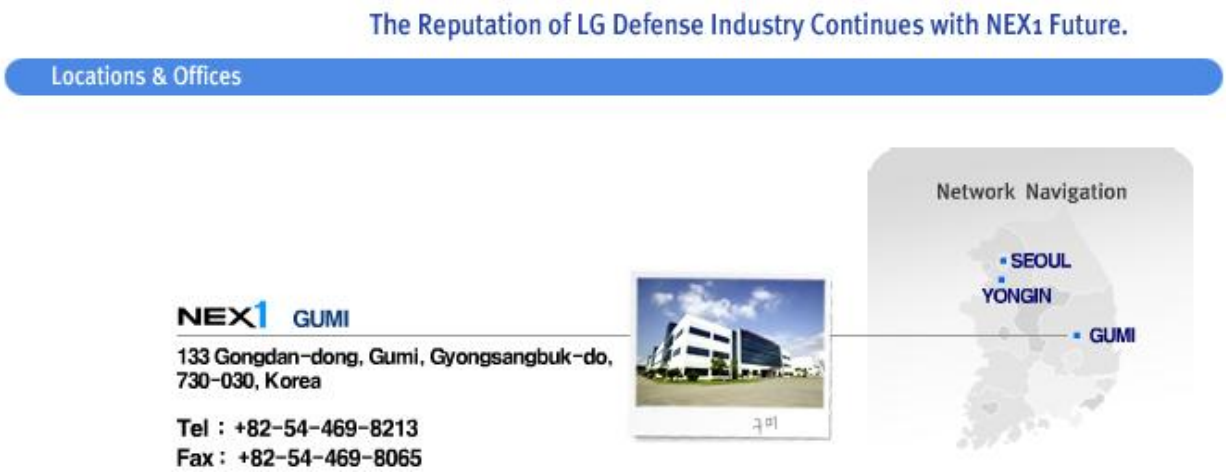
FCC TEST REPORT



November 15, 2006

NEX 1 Future Co., Ltd.

TEST REPORT CERTIFICATION

Applicant	**: Best Buy LLC**
Address	**: 7601 Penn Avenue South ,Richfield, MN 55423, USA**
EUT Name	**: Video Player**
Model No.	**: NS-DVB2G, NS-DVB4G, NS-DVB8G**
Serial No.	**: Engineering Sample**
FCCID	**: UQ5NSDVBXG**
Testing location	**: Nex1 Future Co., Ltd.** **133, Kongdan-Dong, Gumi-City, Kyeongsangbuk-Do, 730-030, R.O.K**
Applied specification	**: FCC Part 15**
Test result	**: The above mentioned test item passed.**

Test Date	**November 15, 2006**	**Review Date**	**November 15, 2006**
Tested by	**Hyo-Jeung, Cho**	**Reviewed by**	**Jeong-Hi, Jin**
Title	**Engineer**	**Title**	**EMC Manager**
Signature		**Signature**	

I HEREBY CERTIFY THAT the data shown in this report were made in accordance with the procedures given in the applied specification and I assume full responsibility for accuracy and completeness of these data.

Contents

1. General Information

1.1 Product Description

Product Name	: Video Player
Product ID	: NS-DVB2G, NS-DVB4G, NS-DVB8G
Serial No.	: Prototype
FCC ID	: UQ5NSDVBXG

1.2 Project data

Receipt of EUT	: November 1, 2006
Date of Test	: November 14, 2006
Data of report	: November 15, 2006

1.3 Applicant

Company Name	: Best Buy LLC
Address	: 7601 Penn Avenue South ,Richfield, MN 55423, USA
Contact Person	: Mr. Nigel Waites

1.4 Manufacturer

Company Name	: JOYTOTO Co., Ltd.
Address	: 3Fl. Sungwoo Bldg. 717-3 Sooseo-dong, Kangnam-gu, Seoul,135-220, Korea
Contact Person	: Mr. Lee Gi-yeon

2. EUT Information

2.1 General EUT Information

Type	Transmitter	Receiver
FCC Classification	FHSS Sequence Spread Spectrum (FHSS)	FHSS Sequence Spread Spectrum (FHSS)
Operating frequency range	2402 – 2480 MHz	2402 – 2480 MHz
Bands of operation	2.400 – 2.4835 GHz	2.400 – 2.4835 GHz
Number of Channels	79	79
Channel Separation	1MHz	1MHz
Type of Antenna	Chip Antenna	Chip Antenna
Power Supply	DC 3.7V Lithium Ion Battery	DC 3.7V Lithium Ion Battery
LSP(Largest supported packet)?	DH5	DH5

2.2 Center Frequency of Tested Channel

Frequency	Tx (MHz)	Rx (MHz)
Lowest	2402	2402
Middle	2441	2441
Highest	2480	2480

2.3 Test Environment

Temperature	25ºC
Relative Humidity	30 ~ 60%
DC Voltage	DC 3.7V
AC Voltage	AC115V/50Hz

2.4 Accessories and Ancillary Equipment

Equipment	Model No.	Serial Number	Maker
Laptop PC	PS428L-OE142	30014068J	Toshiba
Laptop PC	NX9000	CNF3491ZSG	COMPAQ

3. Testing Facilities

Nex1 Future Co., Ltd.
133, Kongdan-Dong, Gumi-City, Kyeongsangbuk-Do, 730-030, R.O.K

4. EUT Description and Operational Description

NS-DVBxG is a Bluetooth capable Audio/Video Portable Player that utilizes flash based memory. NS-DVBxG is based on the NS-DVxG model which does not have Bluetooth capabilities. The 2.2 inch screen supports 320x240 (QVGA) video at a full 30 fps with the ability to view .jpg files.

The player supports MP3, WMV, OGG file formats and has an adjustable EQ. The player has a built-in FM radio with 20 presets. The NS-DVBxG is compatible with Windows Media Player 10 and audiobooks from Audible.com as well as Napster, Rhapsody, and a host of other online music services.

The player has 2 headphone jacks and line-in jack that record in 16-bit/48kHz. The USB 2.0 will allow for fast transfer speeds and battery charging.
and it is also fully compliant with Bluetooth 2.0 specification.

***** General specifications

Item	Description
Bluetooth Specification	V2.0
Supported Profile	A2DP / AVRCP
Rx. Sensitivity	Typ. -70 dBm
Battery	3.7V, 700mAh Li-ion Polymer
Out Power	16Ω / 15mW (normal)
Full Charging Time	≤ 3Hr ±30 min
Operating Temperature	0℃ ~ 60℃
Operating Humidity	60% RH
Storage Temperature	-30℃ ~ 60℃
Storage Humidity	90% RH

5. Test Set-up

5.1 Principle of configuration

Conducted : The equipment under test (EUT) was configured with a temporary SMA Connector and EUT transmits the related packet type with PRBS 9 as payload.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes and test settings were adapted accordingly in reference to the instructions for use.

For details, please refer to the Operation mode in chapter 7.

5.2 Operational Modes

Inquiry Scan

Hopping Mode

Fixed mode (2402Mhz, 2441Mhz and 2480Mhz)

5.3 Applied Specification

FCC Part 15

6. Test Report Summary

Related Clause	Test Cases	FCC Part Sections	Result (Note1)
7.1	Antenna Connector Requirements	15.203 15.204	C
7.2	AC Connected Emission	15.107&15.207	Pass
7.3	Carrier Frequency Separation	15.247	Pass
7.4	Time of Occupancy(Dwell time)	15.247	Pass
7.5	20dB Bandwidth	15.247	Pass
7.6	Number of Hopping Frequencies Requirements	15.247	C
7.7	Pseudorandom Frequency Hopping Sequence and Equal Hopping Frequency use Requirements	15.247	C
7.8	Receiver Input Bandwidth Requirements	15.247	C
7.9	Peak Output Power	15.247	Pass
7.10	Band-edge Compliance	15.247	Pass
7.11	Spurious Conducted emissions	15.247	Pass
7.12	Spurious Radiated emissions	15.109&15.247	Pass

* Note1: C: Complies, Pass: Passed, Fail : Failed and NA : Not Applicable

7. Test Results

7.1 Antenna Connector Requirements

Requirements **Subclause 15.203 and 15.204(c)**

According to the Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. 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 provisions of this Section.
The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
And according to the Part 15.204(c), only the antenna with which an intentional radiator is authorized may be used with the intentional radiator.

Test results

RESULT: **Complies**

The antenna is permanently attached on the PCB.
The EUT has a Chip Antenna soldered to the circuit board.
For more information on the antenna:

Antenna gain	: 0 dBi
Manufacturer	: MICRO RF CO., LTD.
Model No.	: ADSBTM0602-A02
Type	: Surface Chip Antenna

7.2 AC Connected Emission

Test Mode and conditions

The EUT is a multimedia player supporting Bluetooth technologies, data storage, MP3 & Video Player and FM radio receiver.

The test mode is only applied to data storage mode for the test case due to EUT going into charging and data storage mode automatically when it is connected with USB cable.

Test mode	Applied	Remarks
Bluetooth ON	N/A	
Charging and Download	Yes	
MP3&Video Play	N/A	
FM receiver	N/A	

Requirements **Subclause 15.107& 15.207(a)**

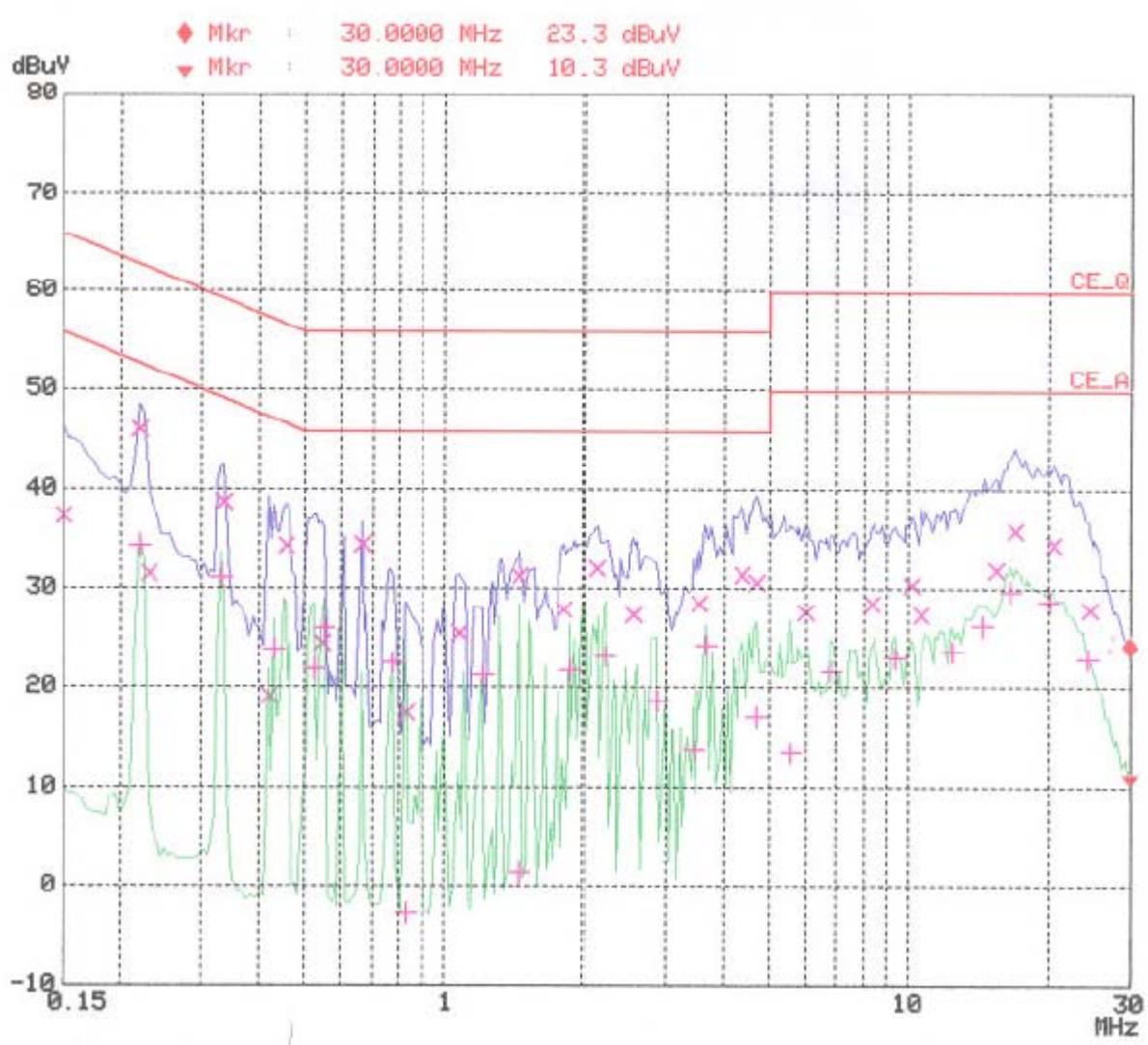
For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN).

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66-56*	56-46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

Test results

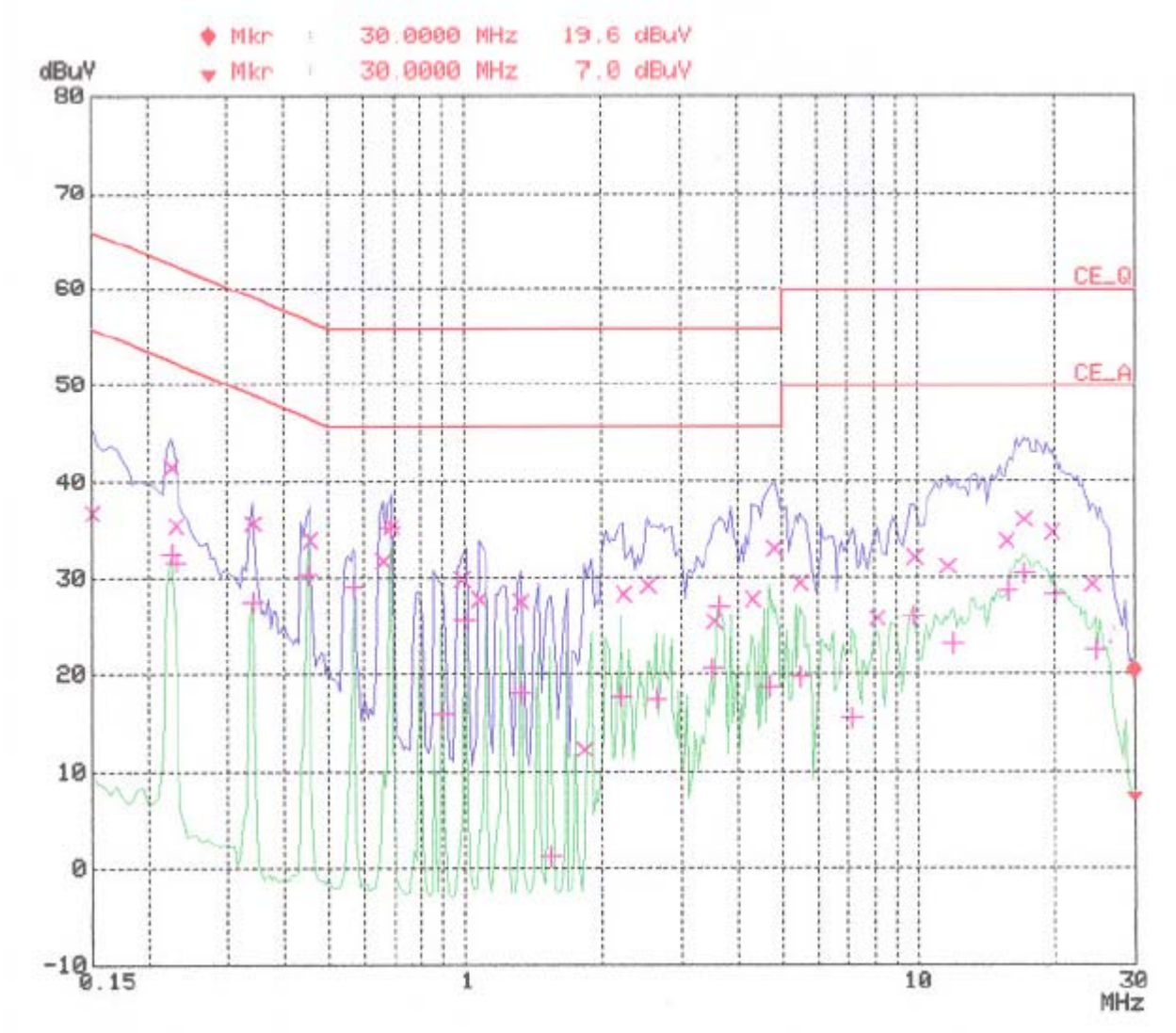
< Live line plot and data >



Frequency MHz	QP Level dBuV	Delta Limit dB	Phase -	PE -
0.15000	37.4	-28.5	L1	gnd
0.22000	46.1	-16.7	L1	gnd
0.23000	31.7	-30.7	L1	gnd
0.33500	38.8	-20.5	L1	gnd
0.42000	19.3	-38.1	L1	gnd
0.45500	34.5	-22.3	L1	gnd
0.54500	24.7	-31.2	L1	gnd
0.66500	34.6	-21.3	L1	gnd
0.83000	17.5	-38.4	L1	gnd
1.07500	25.7	-30.2	L1	gnd
1.46500	31.3	-24.6	L1	gnd
1.82000	28.0	-28.0	L1	gnd
2.12000	32.0	-23.9	L1	gnd
2.54000	27.5	-28.4	L1	gnd
3.53500	28.7	-27.3	L1	gnd
4.39500	31.5	-24.5	L1	gnd
4.72000	30.7	-25.2	L1	gnd
6.01000	27.8	-32.1	L1	gnd
8.37000	28.7	-31.2	L1	gnd
10.19000	30.5	-29.5	L1	gnd
10.65000	27.5	-32.5	L1	gnd
15.44000	31.9	-28.0	L1	gnd
17.03000	36.0	-24.0	L1	gnd
20.67500	34.6	-25.3	L1	gnd
24.58500	28.0	-31.9	L1	gnd

Frequency MHz	AV Level dBuV	Delta Limit dB	Phase -	PE -
0.22000	34.4	-18.4	L1	gnd
0.33000	31.2	-18.2	L1	gnd
0.43000	24.0	-23.2	L1	gnd
0.52500	22.0	-23.9	L1	gnd
0.55000	26.1	-19.8	L1	gnd
0.77500	22.7	-23.3	L1	gnd
0.83000	-2.5	-48.5	L1	gnd
1.21500	21.3	-24.6	L1	gnd
1.46500	1.5	-44.4	L1	gnd
1.87500	21.9	-24.0	L1	gnd
2.21000	23.2	-22.7	L1	gnd
2.87000	18.8	-27.1	L1	gnd
3.44500	13.9	-32.1	L1	gnd
3.67000	24.4	-21.5	L1	gnd
4.70500	17.1	-28.8	L1	gnd
5.60000	13.6	-36.3	L1	gnd
6.85000	21.8	-28.1	L1	gnd
9.39000	23.2	-26.7	L1	gnd
12.43000	23.7	-26.2	L1	gnd
14.51500	26.3	-23.6	L1	gnd
16.62500	29.9	-20.0	L1	gnd
20.16000	28.9	-21.0	L1	gnd
24.28500	22.9	-27.0	L1	gnd

< Neutral line plot and data >



Frequency MHz	QP Level dBuV	Delta Limit dB	Phase -	PE -
0.15000	37.0	-28.9	N	gnd
0.22500	41.7	-20.9	N	gnd
0.23000	35.6	-26.8	N	gnd
0.34000	35.8	-23.4	N	gnd
0.45500	34.0	-22.7	N	gnd
0.66000	31.9	-24.0	N	gnd
0.69000	35.4	-20.5	N	gnd
0.99000	30.0	-25.9	N	gnd
1.08000	27.9	-28.0	N	gnd
1.33500	27.7	-28.2	N	gnd
1.85500	12.4	-43.5	N	gnd
2.23500	28.4	-27.5	N	gnd
2.53000	29.4	-26.5	N	gnd
3.57000	25.6	-30.3	N	gnd
4.34000	28.0	-27.9	N	gnd
4.83500	33.2	-22.7	N	gnd
5.53000	29.6	-30.3	N	gnd
8.18000	26.0	-33.9	N	gnd
9.83500	32.3	-27.6	N	gnd
11.71500	31.3	-28.6	N	gnd
15.79500	34.0	-25.9	N	gnd
17.33000	36.2	-23.7	N	gnd
19.88000	34.8	-25.1	N	gnd
24.30500	29.5	-30.4	N	gnd

Frequency MHz	AV Level dBuV	Delta Limit dB	Phase -	PE -
0.22500	32.7	-19.9	N	gnd
0.23000	31.8	-20.6	N	gnd
0.34000	27.7	-21.5	N	gnd
0.45000	30.5	-16.4	N	gnd
0.57000	29.3	-16.7	N	gnd
0.68500	35.3	-10.6	N	gnd
0.90000	16.1	-29.8	N	gnd
1.00500	25.8	-20.2	N	gnd
1.33500	18.3	-27.6	N	gnd
1.55500	1.4	-44.6	N	gnd
2.21500	17.9	-28.1	N	gnd
2.63500	17.7	-28.2	N	gnd
3.52000	20.8	-25.1	N	gnd
3.66000	27.2	-18.7	N	gnd
4.72000	18.9	-27.0	N	gnd
5.53000	19.9	-30.1	N	gnd
7.19000	15.6	-34.3	N	gnd
9.82500	26.2	-23.7	N	gnd
11.98000	23.3	-26.6	N	gnd
15.87000	28.8	-21.1	N	gnd
17.33000	30.6	-19.3	N	gnd
20.11500	28.5	-21.4	N	gnd
24.72500	22.7	-27.2	N	gnd

7.3 Carrier Frequency Separation

Test Mode and conditions

Mode of operation : Tx mode (hopping on), DH1 packet with PRBS9 payload
Measurement Method : Conducted
Detector : PK
Trace : Max hold
RBW/VBW : 100kHz/300kHz

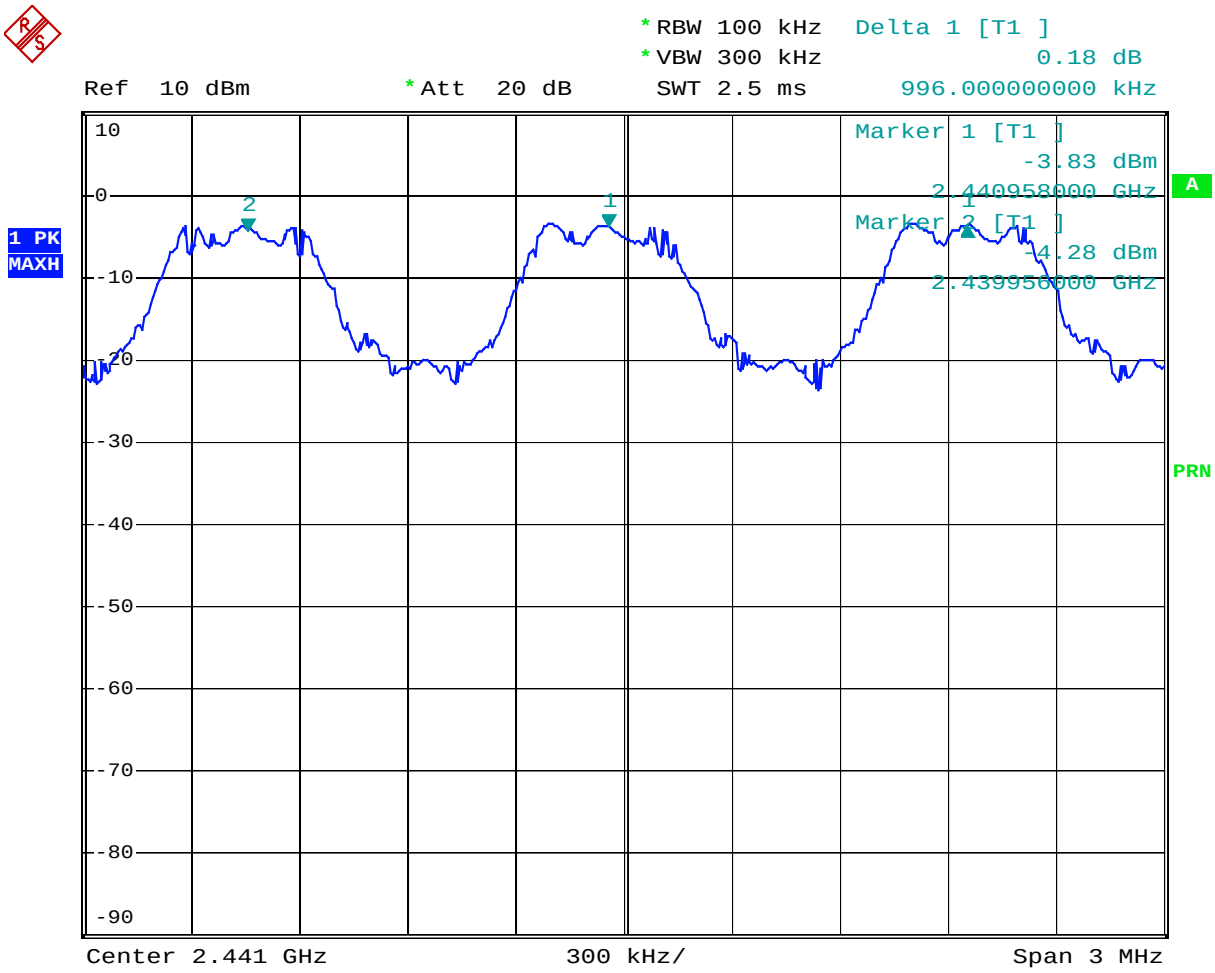
Requirements **Subclause 15.247(a)(1)**

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.

Test results

Reference frequency (MHz)	Channel Separation (kHz)	Limit	Results
2441.000	996.0	Minimum of 25kHz or the 20dB bandwidth	Pass

Carrier Frequency Separation Plot



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7.4 Time of Occupancy(Dwell time)

Test Mode and conditions

Mode of operation : Hopping on , DH5 packet with PRBS9 payload
Measurement Method : Conducted
Detector : PK
Trace : Max hold
RBW/VBW : 1MHz/300kHz

Requirements **Subclause 15.247(a)(1)(iii)**

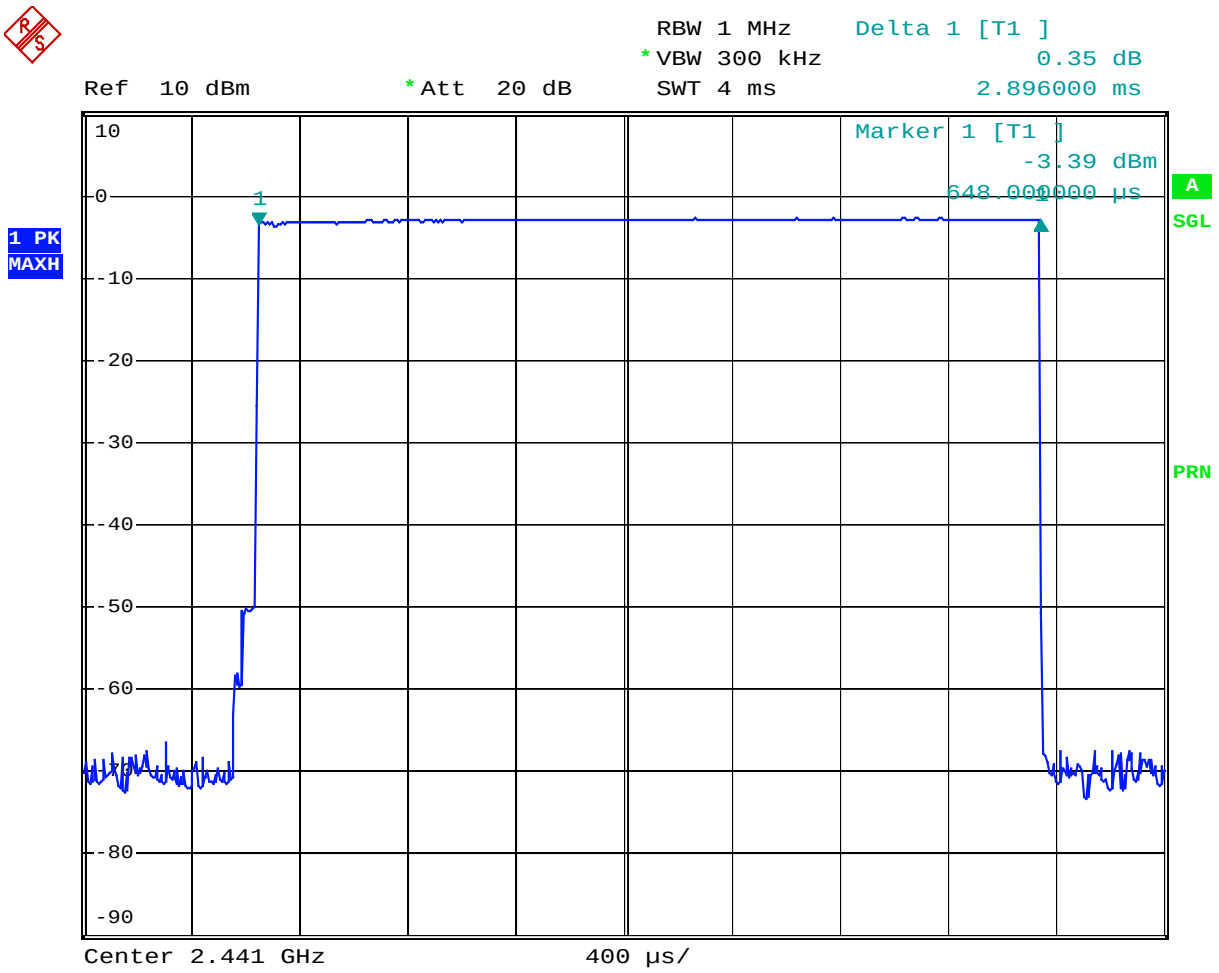
Frequency hopping systems in the 2400 – 2483.5 MHz band shall use at least 75 hopping frequencies. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

Test results

The system makes 1600 hops per second or has a length of 625us.
Let take DH5 packet in worst case. A DH5 packet has 5 slots for transmitting and 1 slot for receiving. It means it can have maximum 266.67 (=1600/6)hops per second.
Therefore it has 3.38 hops(=266.67/79) per second for each channel.
And it has 106.81hops appearance for 31.6 seconds (= 0.4x79channels).

Length per slot(L)	Number slots (N)	Dwell Time (=L*N)	Limit	Results
2.896ms	106.81	309.32176ms	0.4 seconds	Pass

Time of Occupancy Plot



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7.5 20dB Bandwidth

Test Mode and conditions

Mode of operation : Tx mode (2402MHz, 2441MHz, 2480MHz), DH5 packet with PRBS9 payload
Measurement Method : Conducted
Detector : PK
Trace : Max hold
RBW/VBW : 30kHz/100kHz

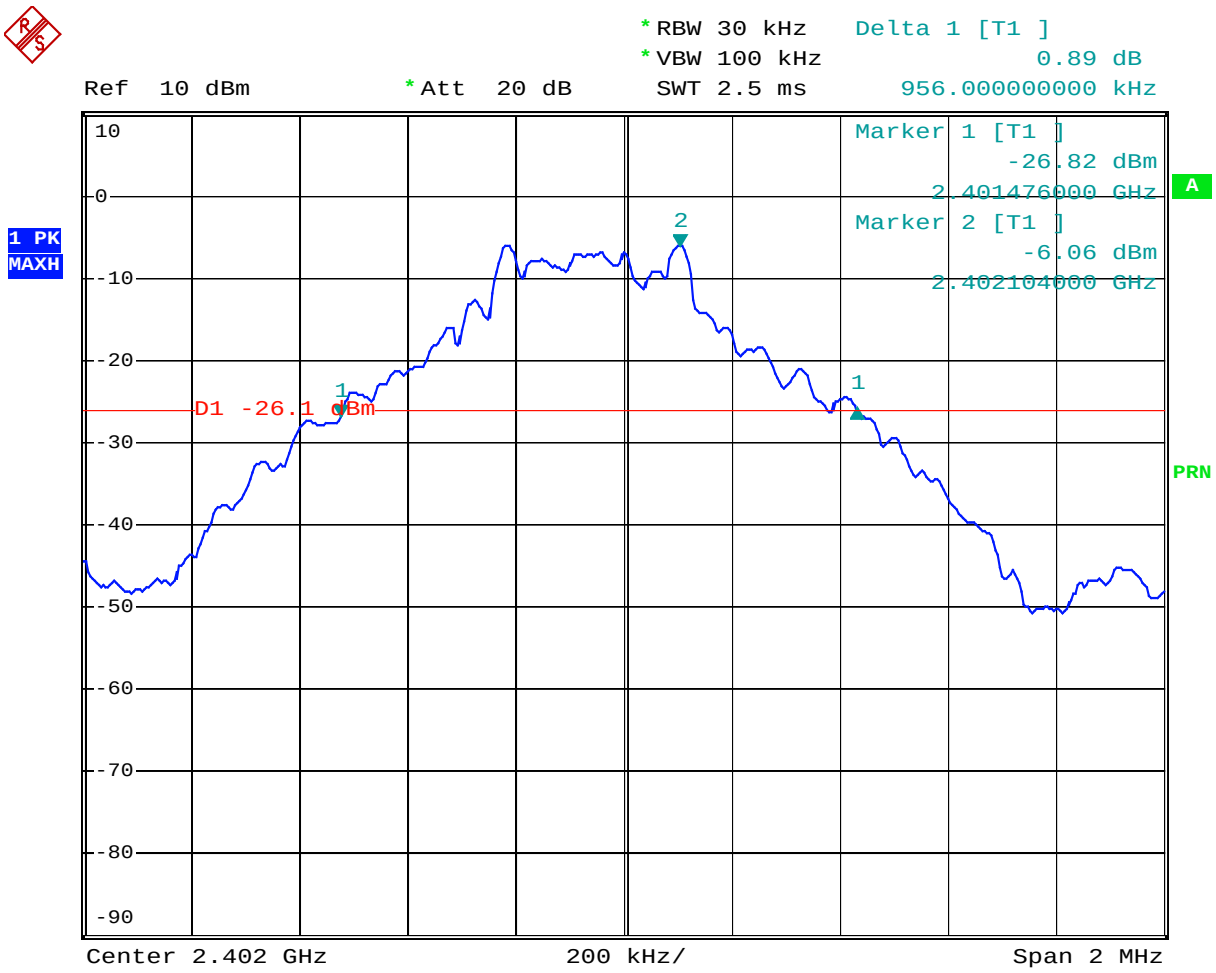
Requirements **Subclause 15.247(a)(1)**

It is mentioned implicitly as the maximum 20dB bandwidth of the hopping channel is 1Mhz.

Test results

Operating frequency (MHz)	20dB Bandwidth (MHz)	Limit	Results
2402	0.956	< 1 Mhz	Pass
2441	0.952	< 1 Mhz	Pass
2480	0.948	< 1 Mhz	Pass

20dB Bandwidth Plot – 2402Mhz



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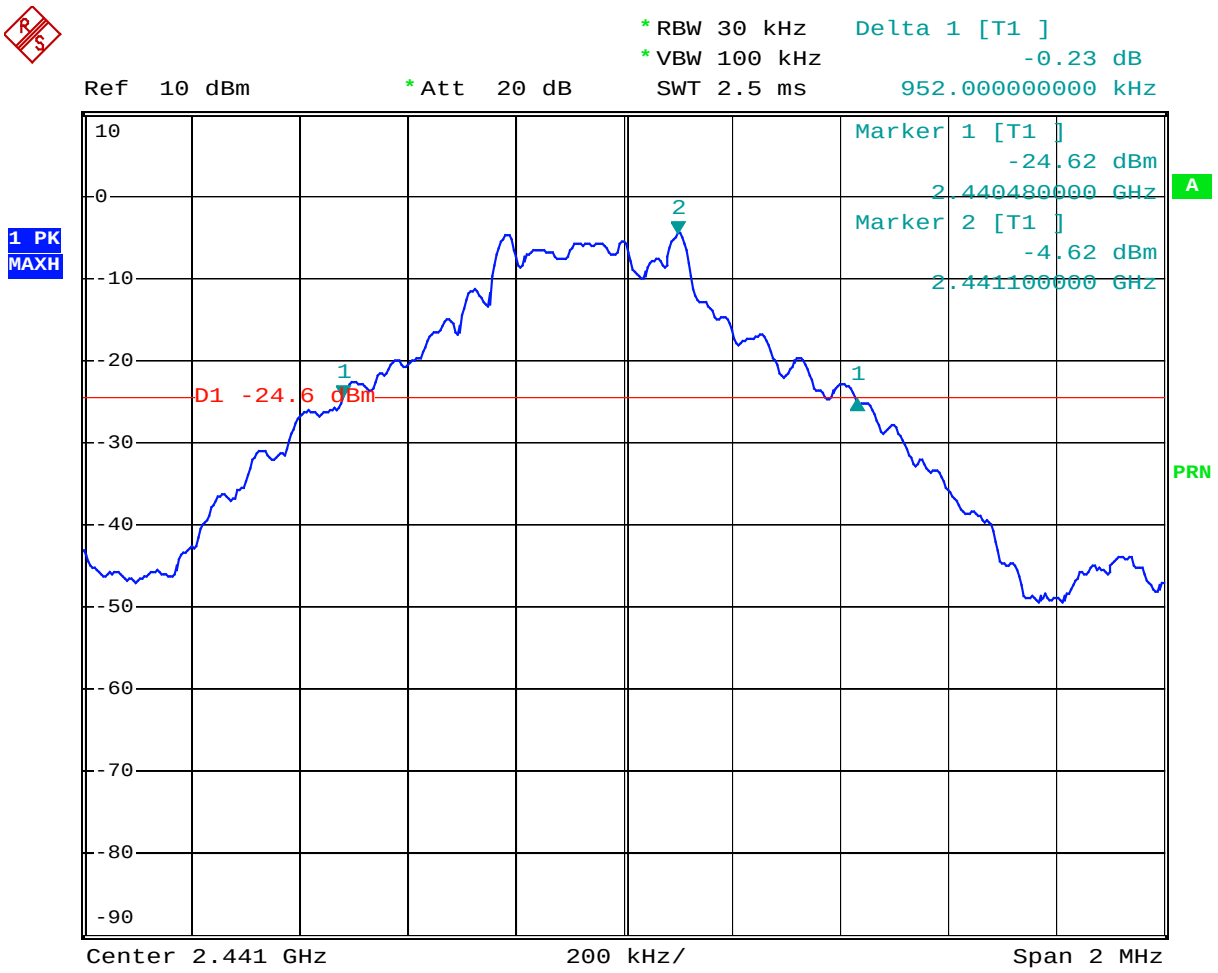
20dB Bandwidth Plot – 2441Mhz



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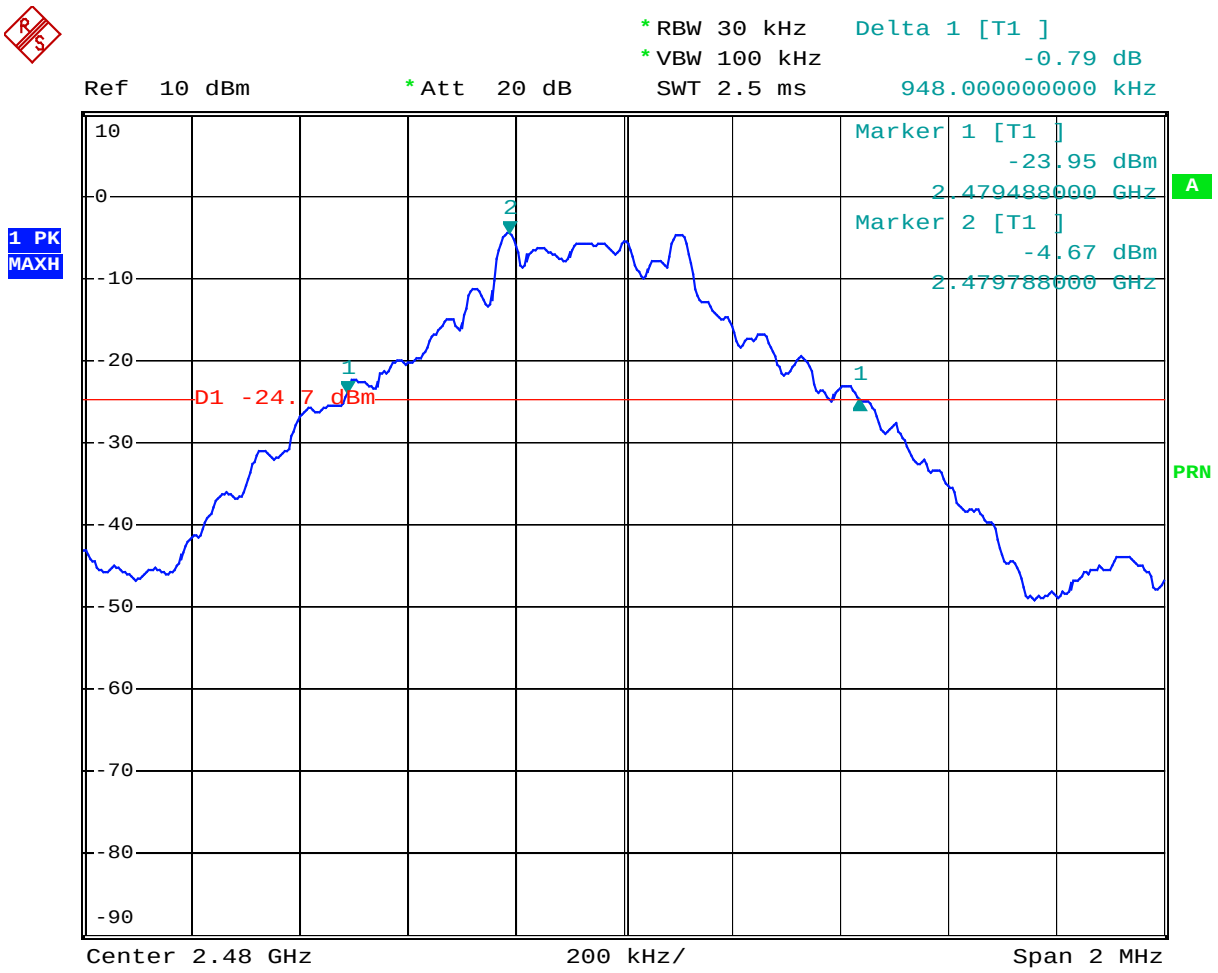
20dB Bandwidth Plot – 2480Mhz



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7.6 Number of Hopping Frequencies Requirements

Test Mode and conditions

Mode of operation : Hopping, DH1 with PRBS9 payload
Measurement Method : Conducted
Detector : PK
Trace : Max hold
RBW/VBW : 100kHz/100kHz

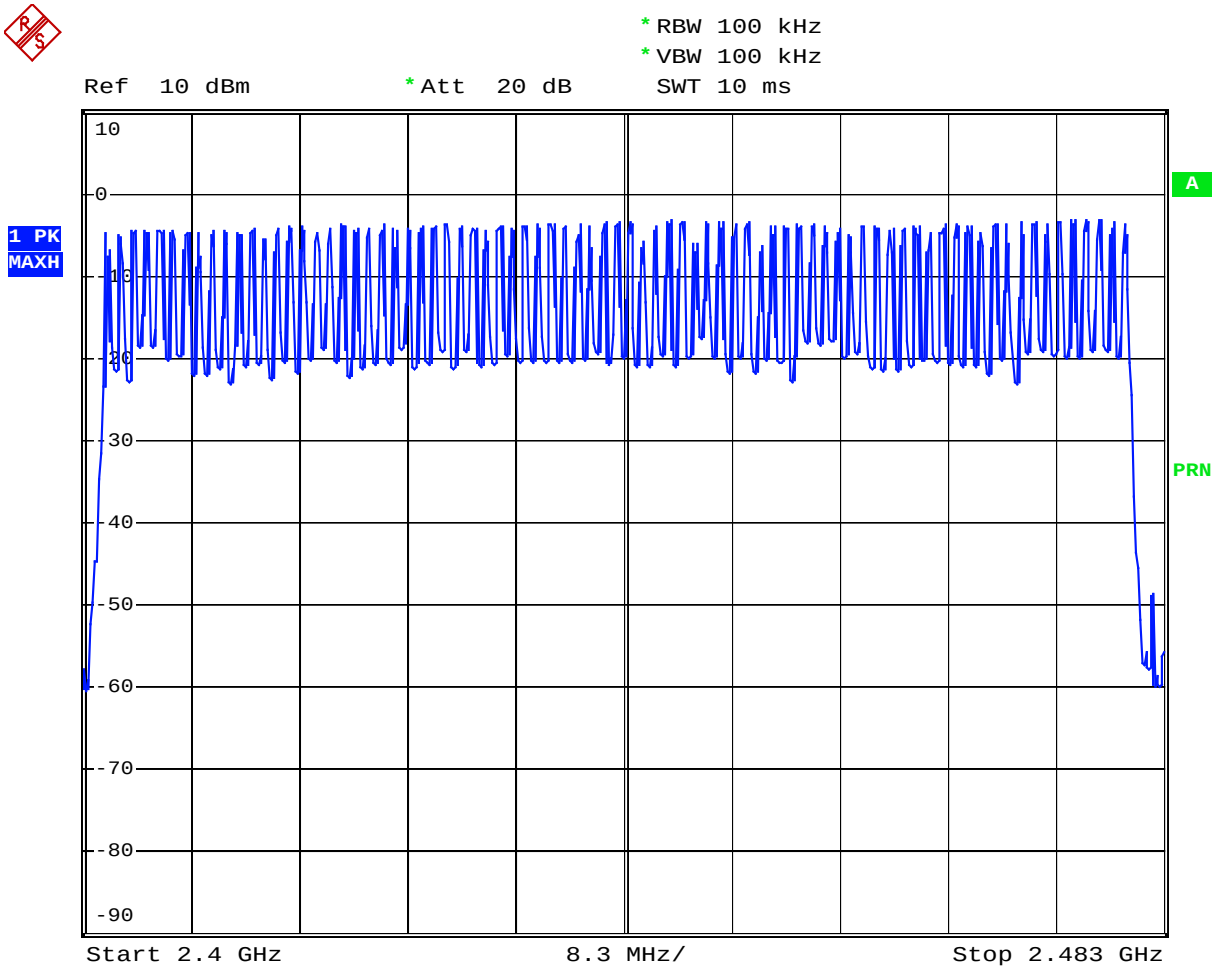
Requirements **15.247(a)(1)(iii)**

Frequency hopping systems in the 2400-2483.5 Mhz band shall use at least 15 non-overlapping Channels.

Test results

Operating frequency (MHz)	Number of Hopping	Limit	Results
2402~2480	79	≥ 15	Pass

Number of Hopping Frequencies Plot



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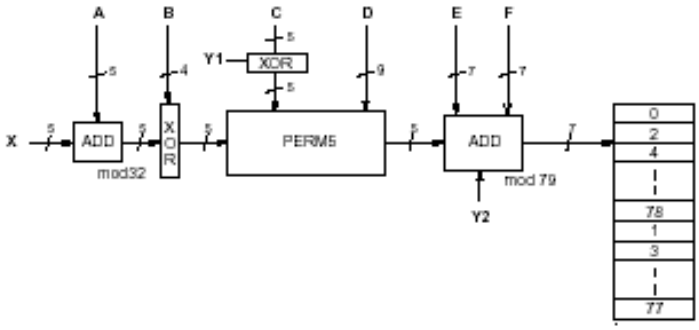
7.7 Pseudorandom FHS and Equal Hopping Frequency use Requirements

Requirements **Subclause 15.247 (a)(1)**

The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter.

RESULT **Complies**

The channel is represented by a pseudo-random hopping sequence hopping throug h the 79 RF channels. The hopping sequence is unique for the piconet and is determined by the Bluetooth device address of the master. For details, refer to the figure 1. The X input determines the phase in the 32-hop segment, whereas Y1 and Y2 selects between master-to-slave and slave-to-master transmission. The inputs A to D determine the ordering within the segment, the inputs E and F determine the mapping onto thehop frequencies.
The algorism in the Bluetooth specifications shows the each of its hoping channels
Is used equally on average also.



< Figure 1 : Block diagram of hop selection kernel for 79 hop system >

7.8 Receiver Input Bandwidth Requirements

Requirements **Subclause 15.247 (a)(1)**

The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in the synchronization with the transmitted signals.

RESULT **Complies**

The receiver bandwidth is equal to the receiver bandwidth in the 79 hopping channel mode, which is 1 MHz. The receiver bandwidth is indirectly verified during Bluetooth RF conformance testing.

7.9 Peak Output Power

Test Mode and conditions

Mode of operation : Tx mode (2402MHz, 2441MHz, 2480MHz), DH1 packet with PRBS 9 payload
Measurement Method : Conducted
Detector : PK
Trace : Max hold
RBW/VBW : 1MHz/3MHz

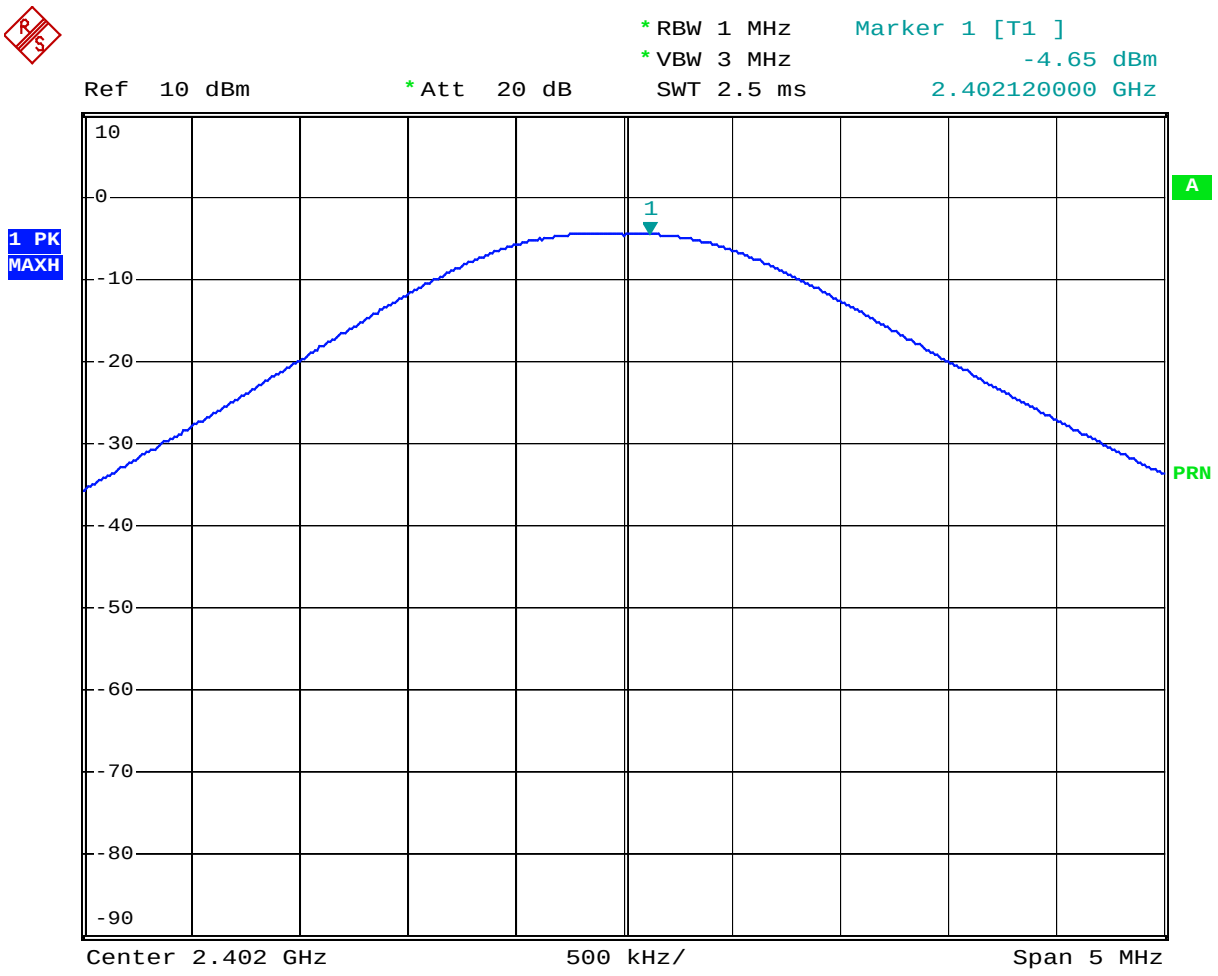
Requirements **Subclause 15.247(b)(1)**

For frequency hopping systems operating in the 2400~2483.5 Mhz band employing at least 75hopping channels, the maximum output power of the intentional radiator shall not exceeded 1 watt.

Test results

Operating Frequency (MHz)	Reading (dBm)	Cable attenuation (dB)	Actual Value (W)	Limit (W)	Results
2402	-4.65	1.80	0.000518800	<1.0	Pass
2441	-3.78	1.83	0.000638300	<1.0	Pass
2480	-3.54	1.85	0.000677642	<1.0	Pass

Peak Output Power Plot - 2402



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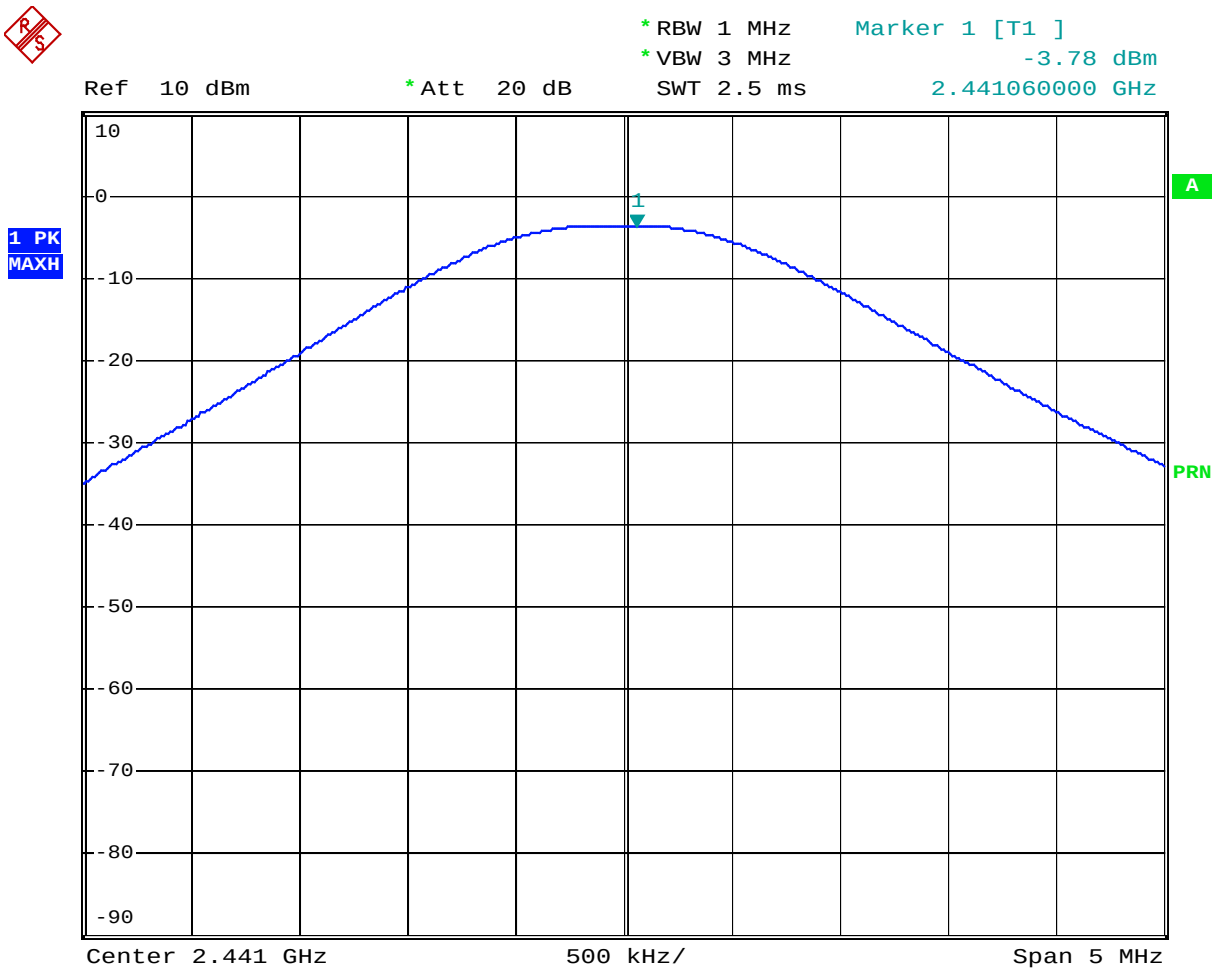
Peak Output Power Plot – 2441



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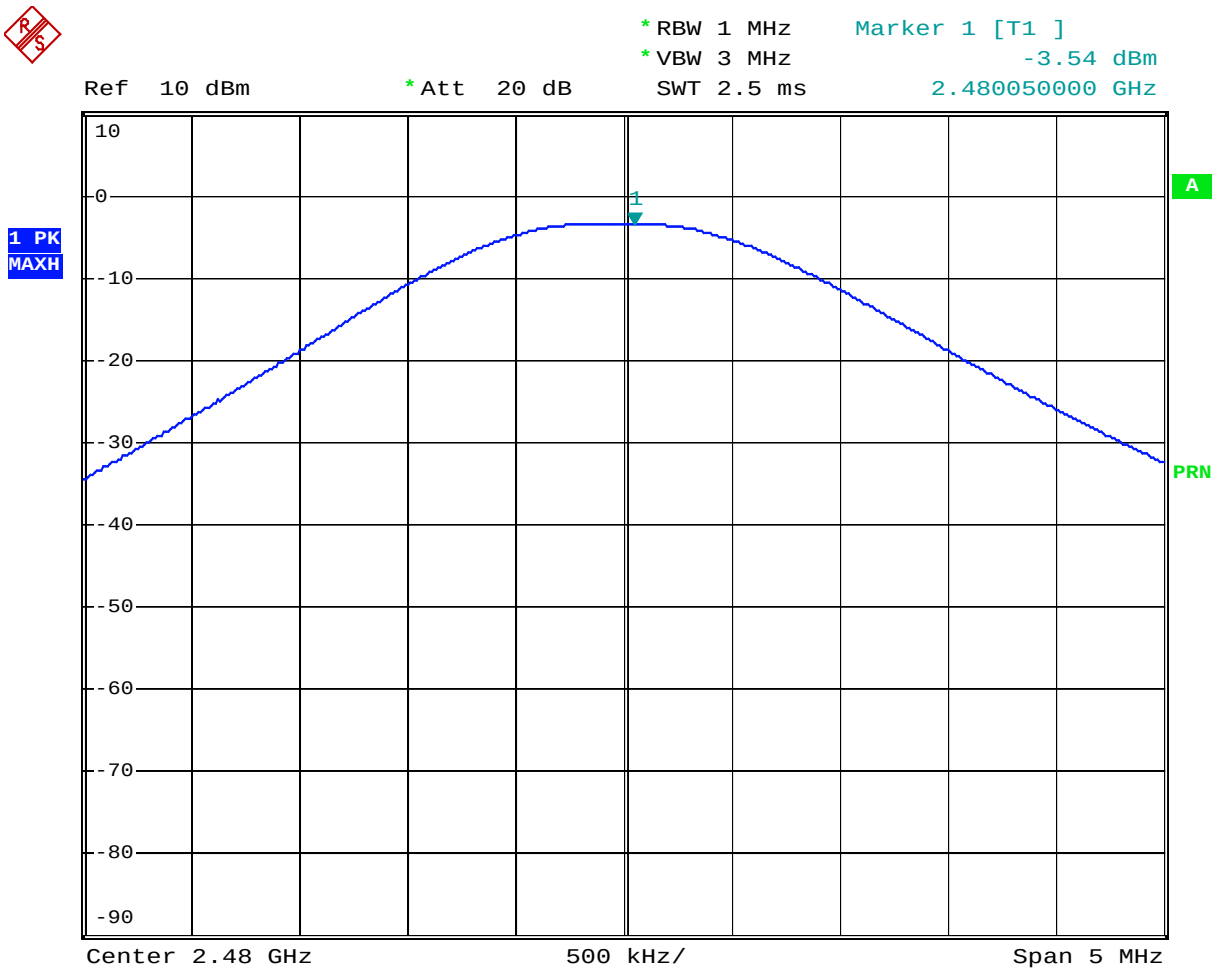
Peak Output Power Plot – 2480



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7.10 Band-edge Compliance

Test Mode and conditions

Mode of operation : Tx mode (2402MHz, 2441MHz, 2480MHz), DH1 packet
Measurement Method : Conducted
Detector : PK
Trace : Max hold
RBW/VBW : 300kHz/1.0MHz

Requirements **Subclause 15.247(c)**

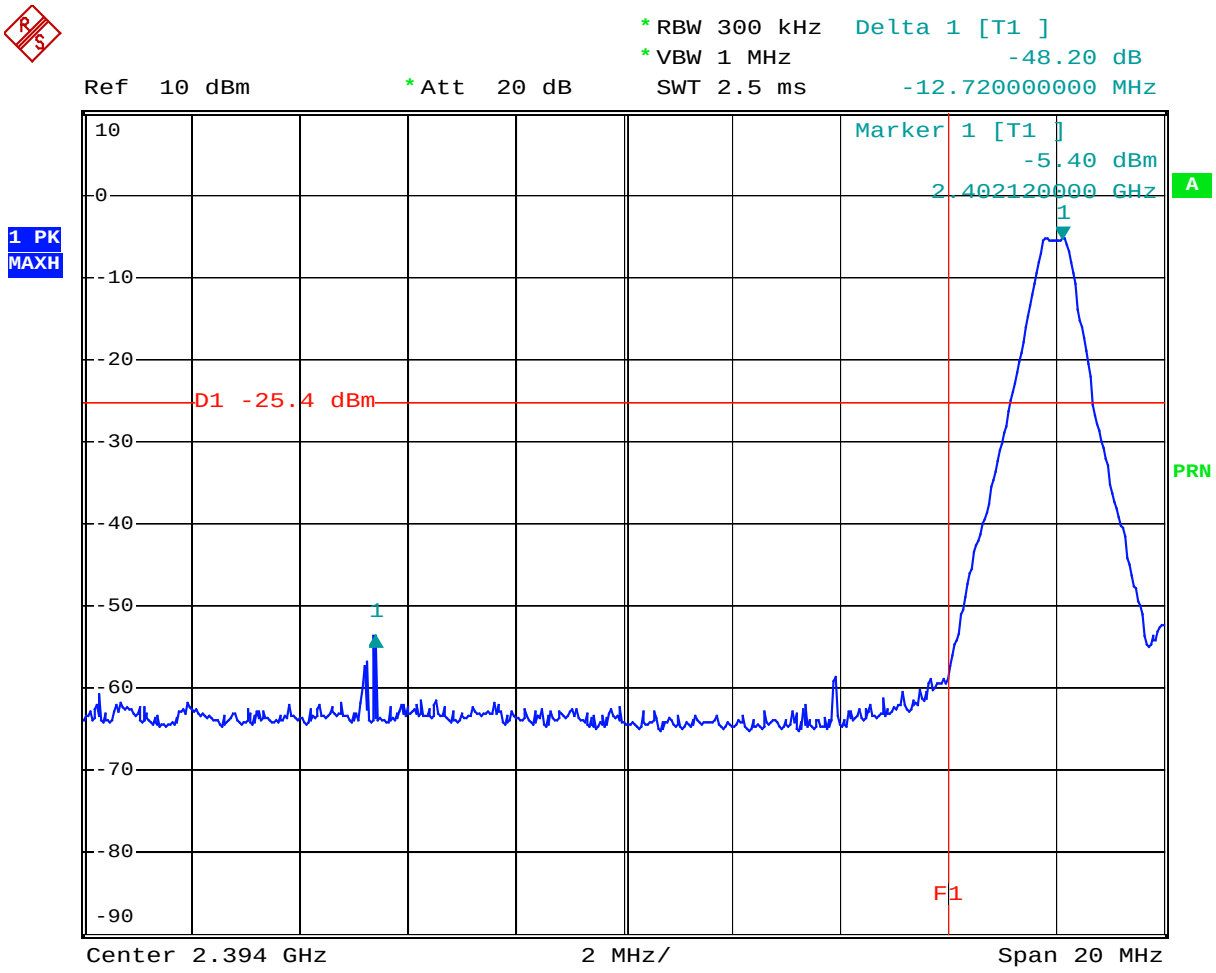
In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100k Hz bandwidth within the band that contains the highest level of the desired power, b ased on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required.

Test results

There is no peak found outside any 100kHz bandwidth of the operating frequency band in the three transmit frequency.

Tx Frequency (MHz)	RF power outside 100kHz BW (MHz)	Limit	Results
2402	No peak above 20dB	20dB below	Pass
2480	No peak above 20dB	20dB below	Pass

Band-edge Compliance Plot - 2402



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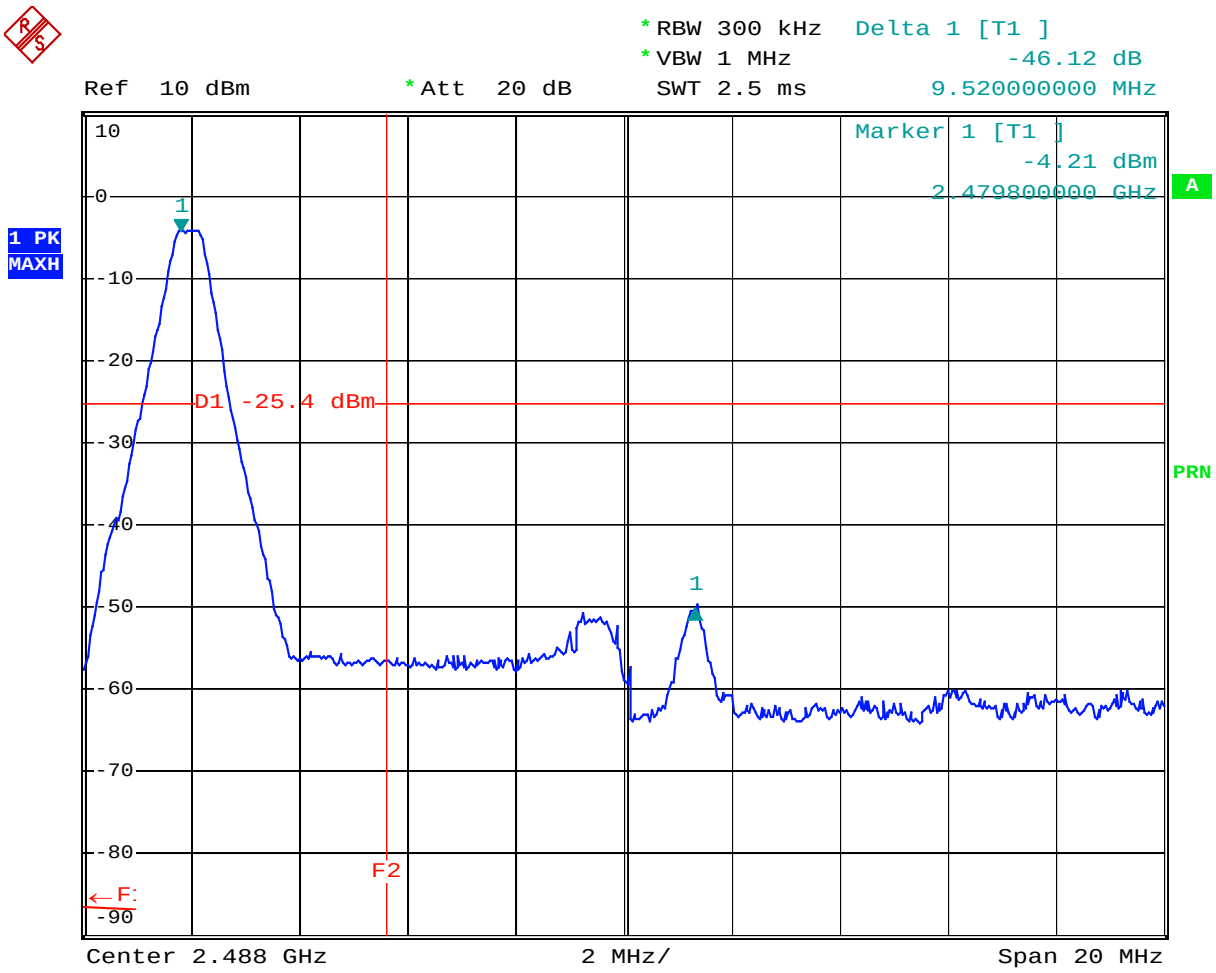
Band-edge Compliance Plot – 2480



Date: 3.NOV.2006 17:32:19

7.11 Spurious Conducted emissions

Test Mode and conditions

Mode of operation	:	Tx mode (2402MHz, 2441MHz, 2480MHz), DH1 packet
Measurement Method	:	Conducted
Detector	:	PK
Trace	:	Max hold
RBW/VBW	:	100kHz/300kHz

Requirements **Subclause 15.247(c)**

In any 100kHz 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 20dB below that in the 100k Hz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required.

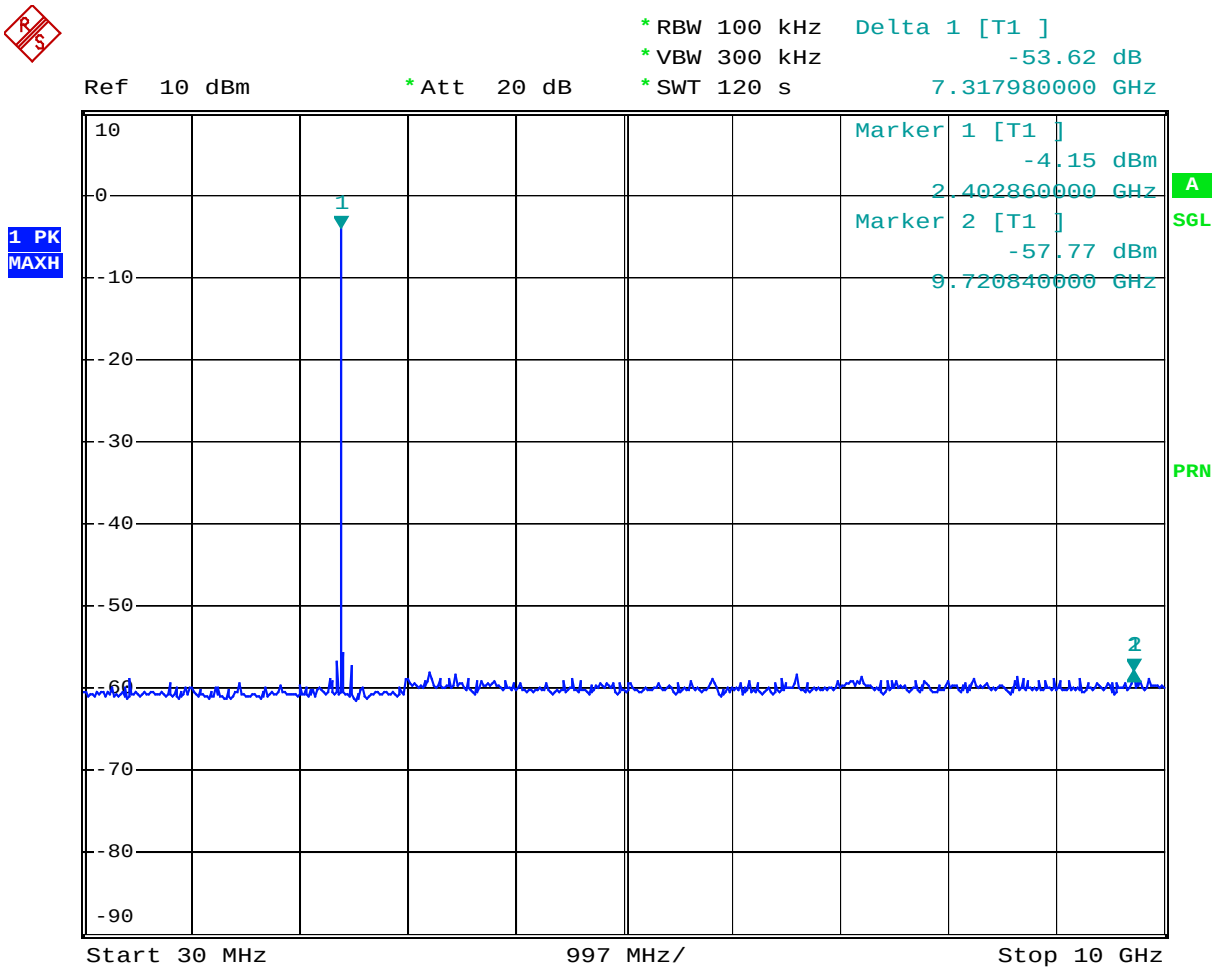
Test results

Frequency (MHz)	Reading Value (dBm)	Correction Factor (dB)	Results (dBm)	Reference Value (dBm)	Delta to Reference (dB)
Operating frequency : 2402MHz					
9720.84	-57.57	5.6	-51.97	-22.350	29.62
13820	-52	6.0	-46	-22.350	23.65
20030	-46.85	6.7	-40.15	-22.350	17.8

Frequency (MHz)	Reading Value (dBm)	Correction Factor (dB)	Results (dBm)	Reference Value (dBm)	Delta to Reference (dB)
Operating frequency : 2441MHz					
6849.48	-57.69	5.6	-52.09	-21.850	30.24
15260	-51.74	6.0	-45.74	-21.850	23.89
20050	-46.44	6.7	-39.74	-21.850	17.89

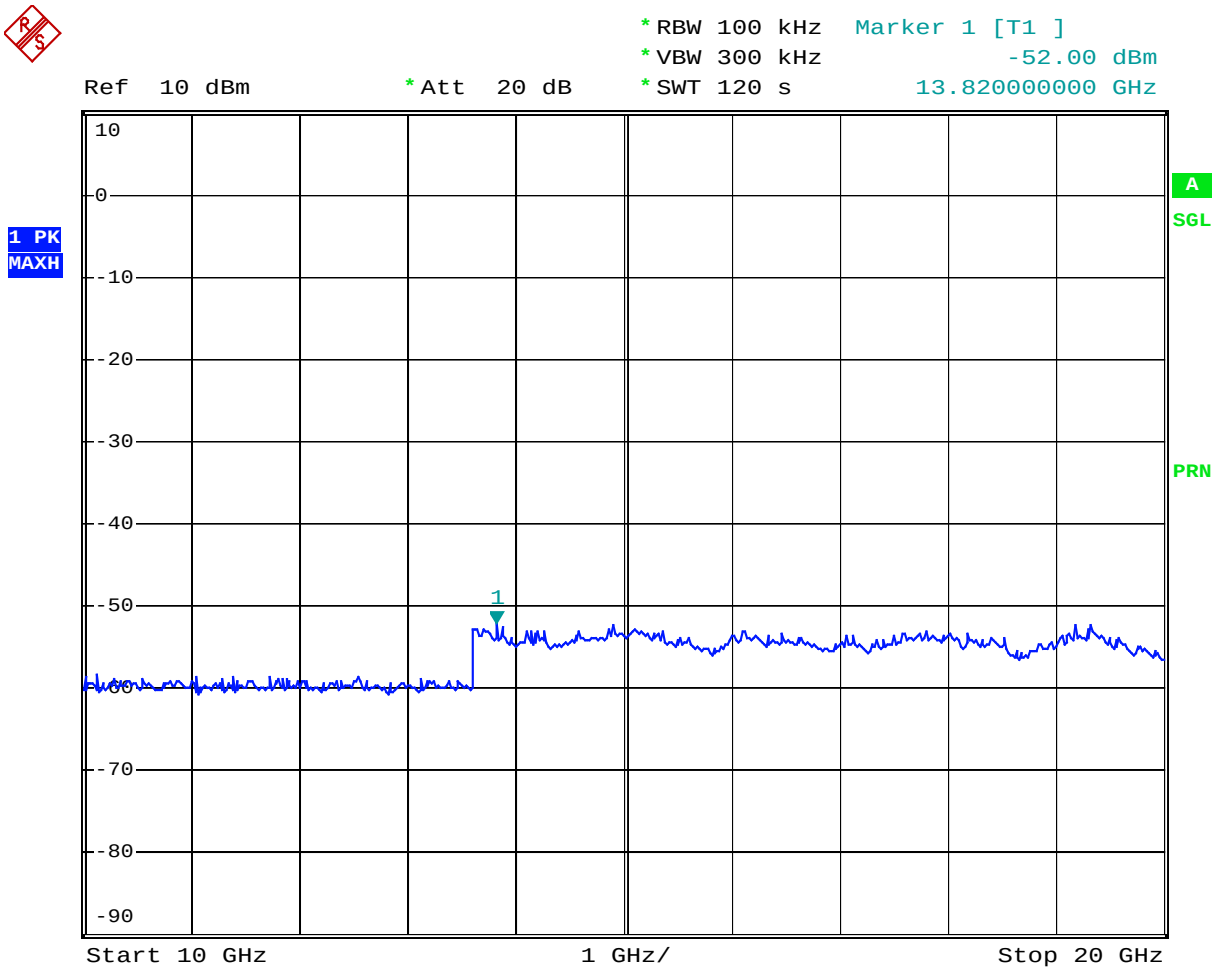
Frequency (MHz)	Reading Value (dBm)	Correction Factor (dB)	Results (dBm)	Reference Value (dBm)	Delta to Reference (dB)
Operating frequency : 2480MHz					
8225.34	-58.41	5.6	-52.81	-21.200	31.61
15100	-52.31	6.0	-46.31	-21.200	25.11
20050	-46.41	6.7	-39.71	-21.200	18.51

Spurious Conducted emissions plot- 2402 (30MHz~10GHz)



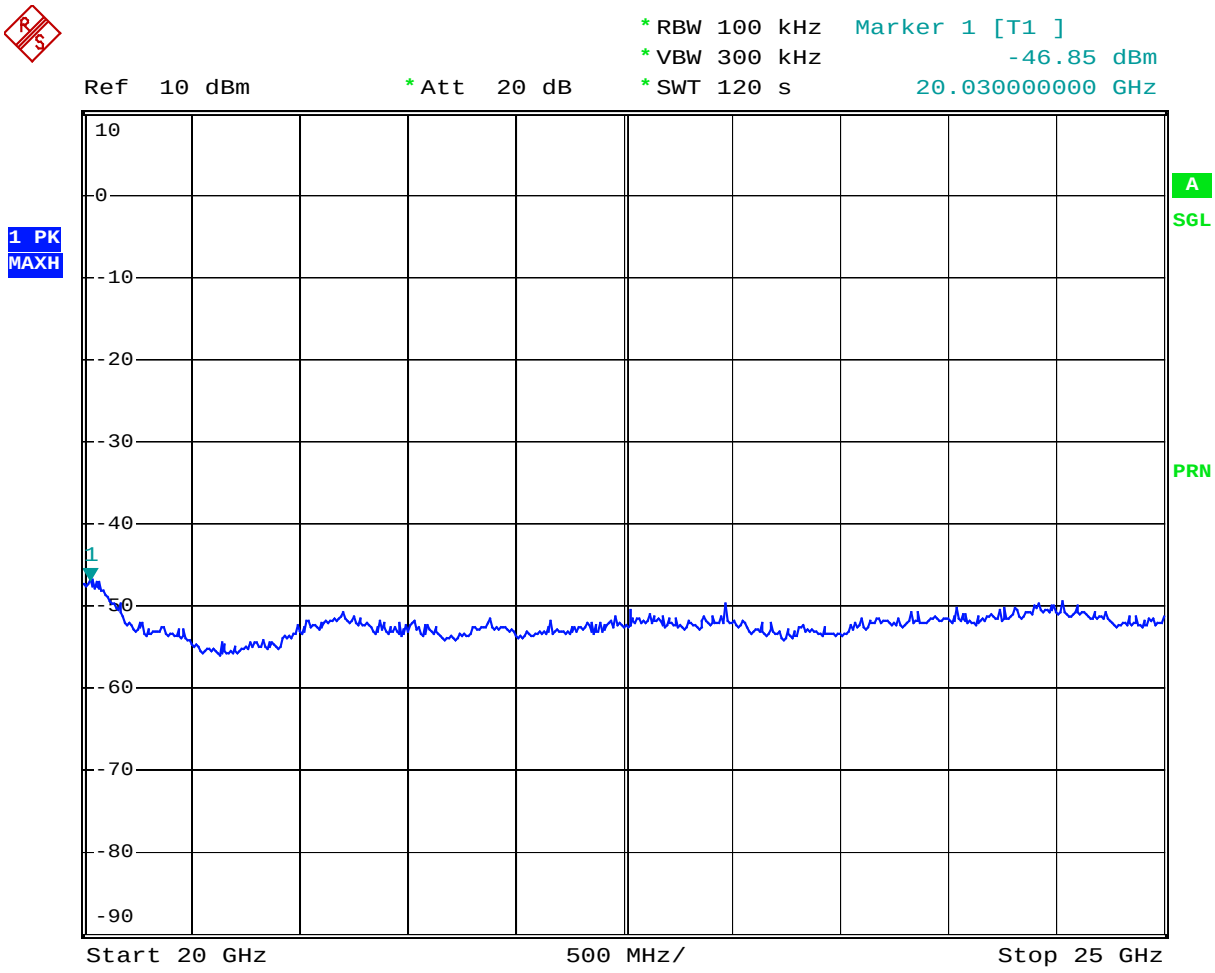
Date: 3.NOV.2006 16:14:55

Spurious Conducted emissions plot- 2402 (10GHz~20GHz)



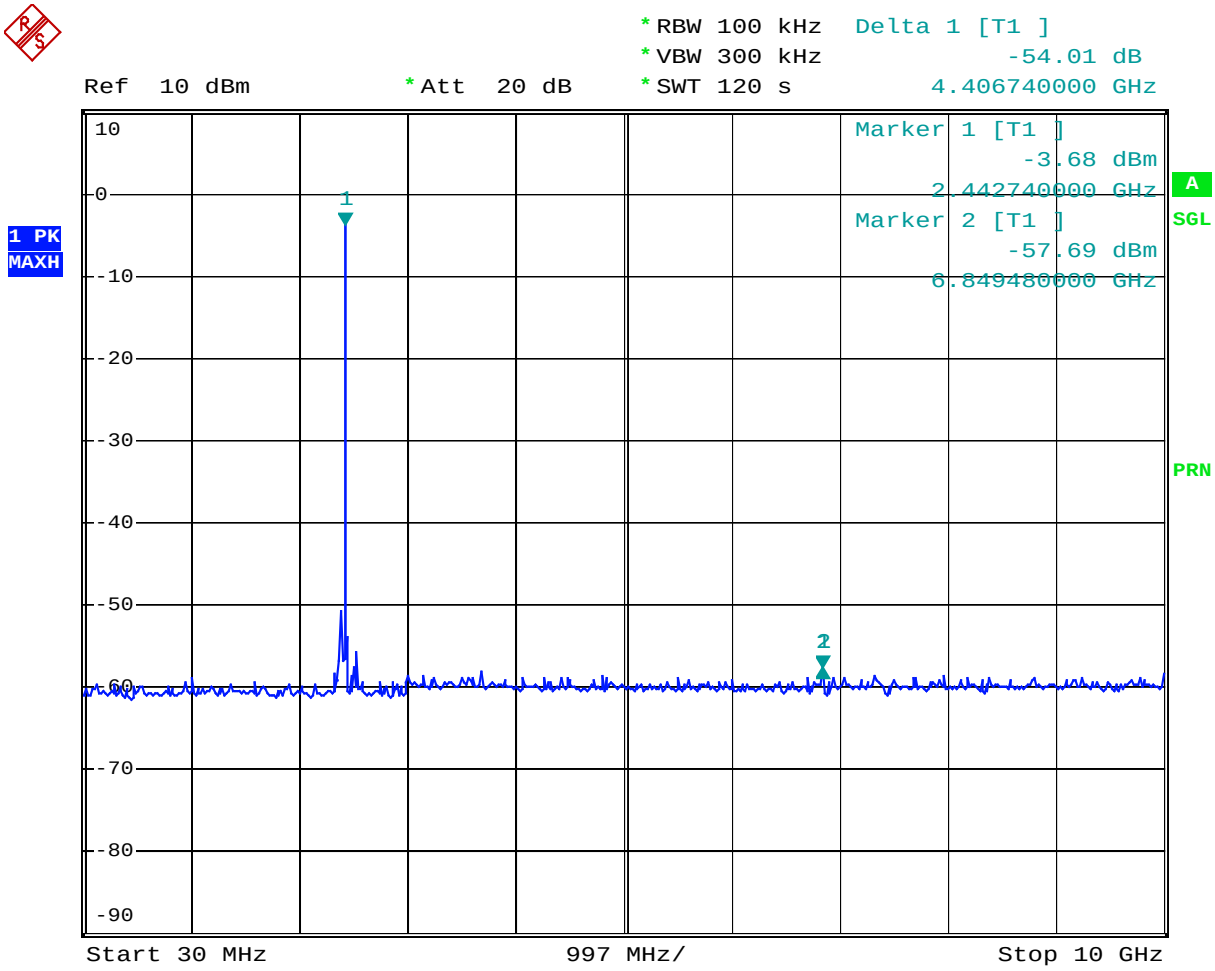
Date: 3.NOV.2006 16:17:32

Spurious Conducted emissions plot- 2402 (20GHz~25GHz)



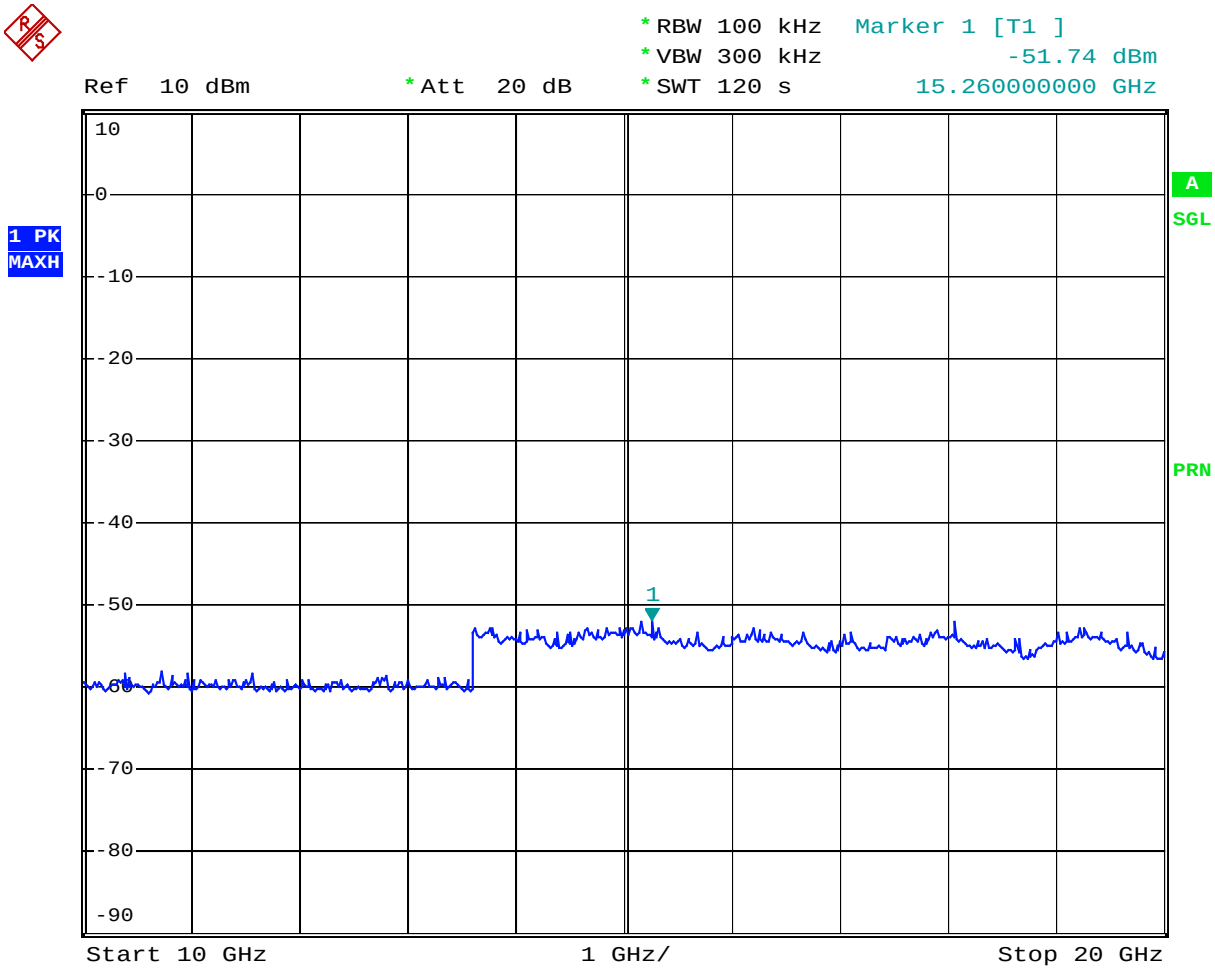
Date: 3.NOV.2006 16:21:06

Spurious Conducted emissions plot- 2441 (30MHz~10GHz)



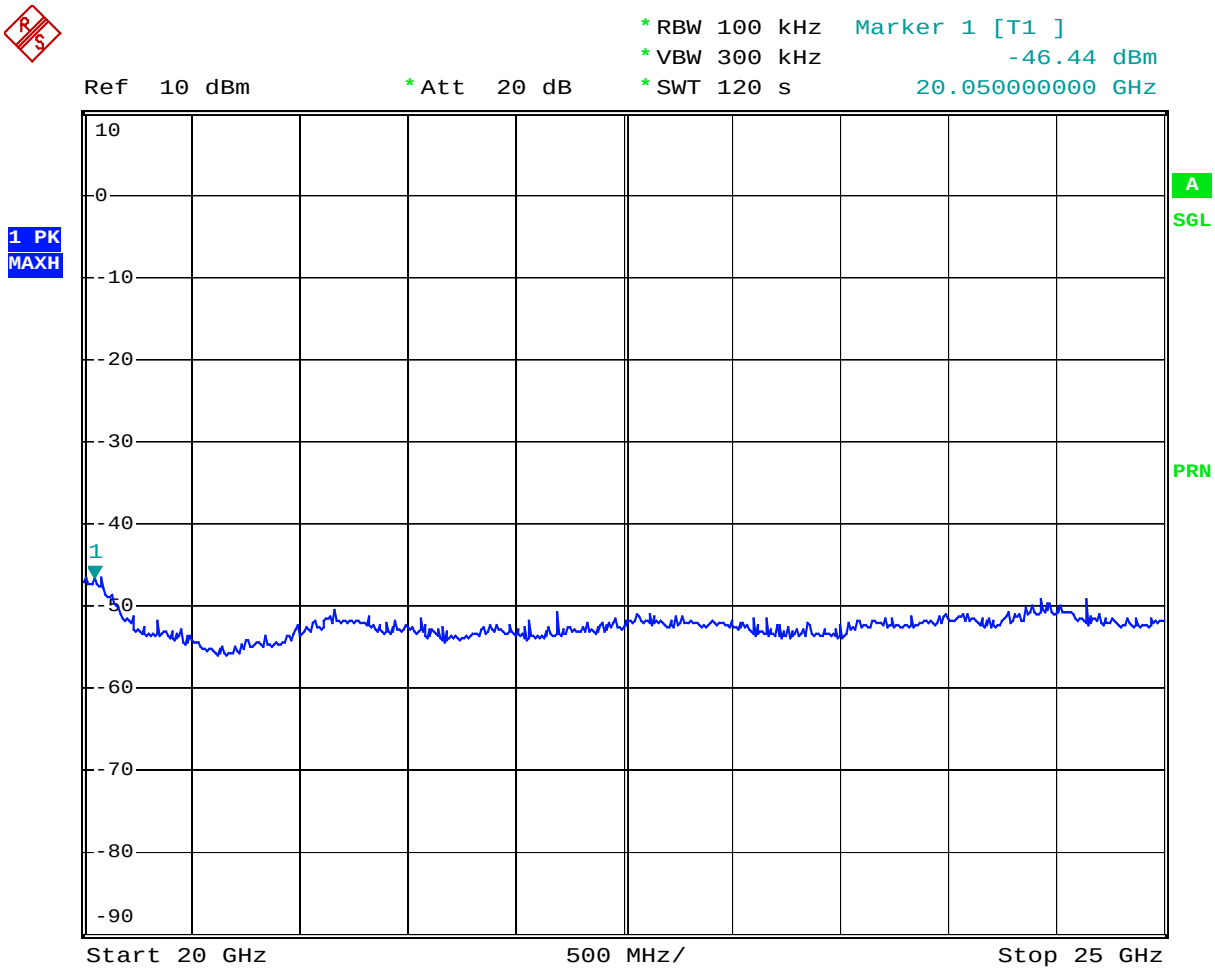
Date: 3.NOV.2006 16:25:34

Spurious Conducted emissions plot- 2441 (10GHz~20GHz)



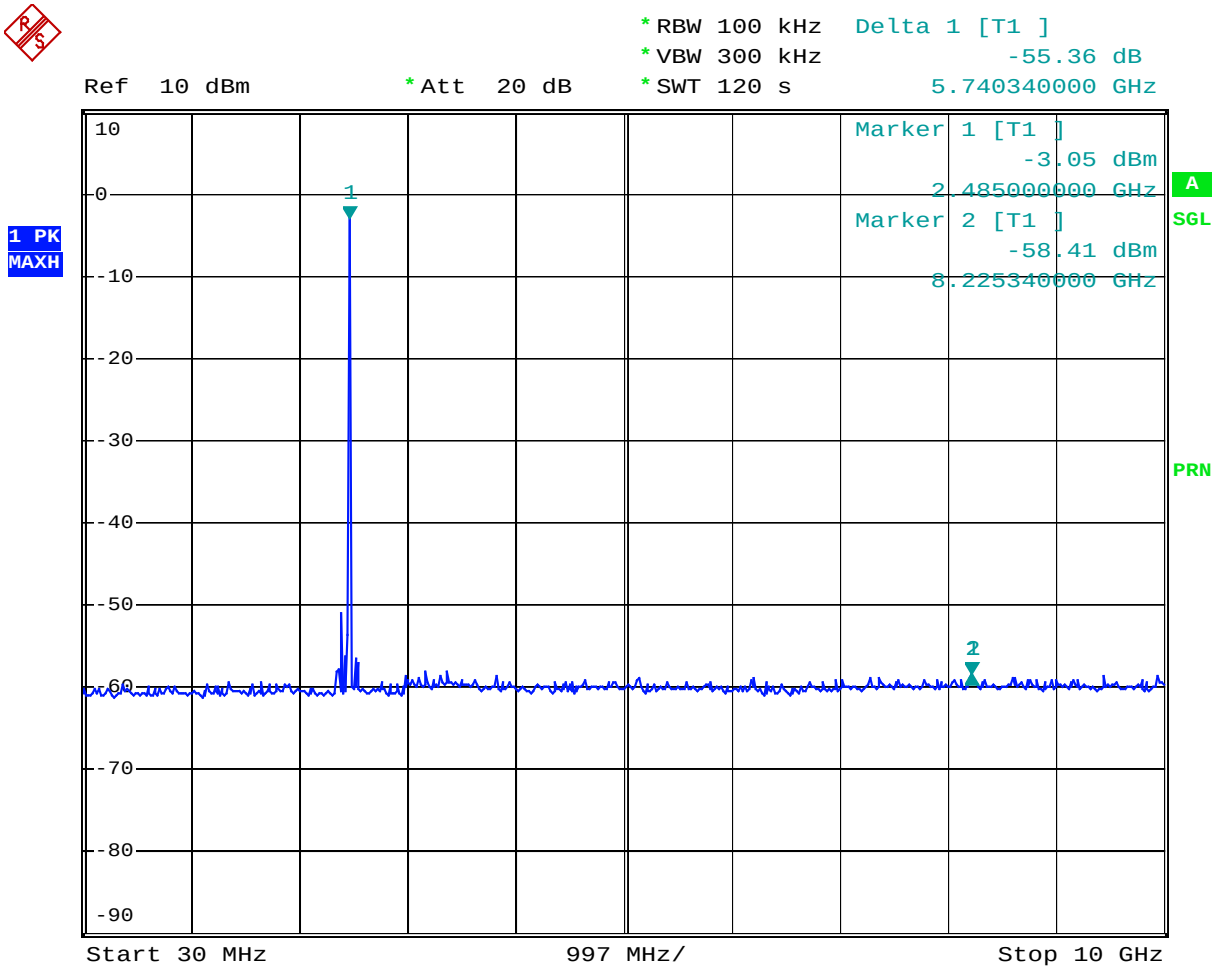
Date: 3.NOV.2006 16:28:39

Spurious Conducted emissions plot- 2441 (20GHz~25GHz)



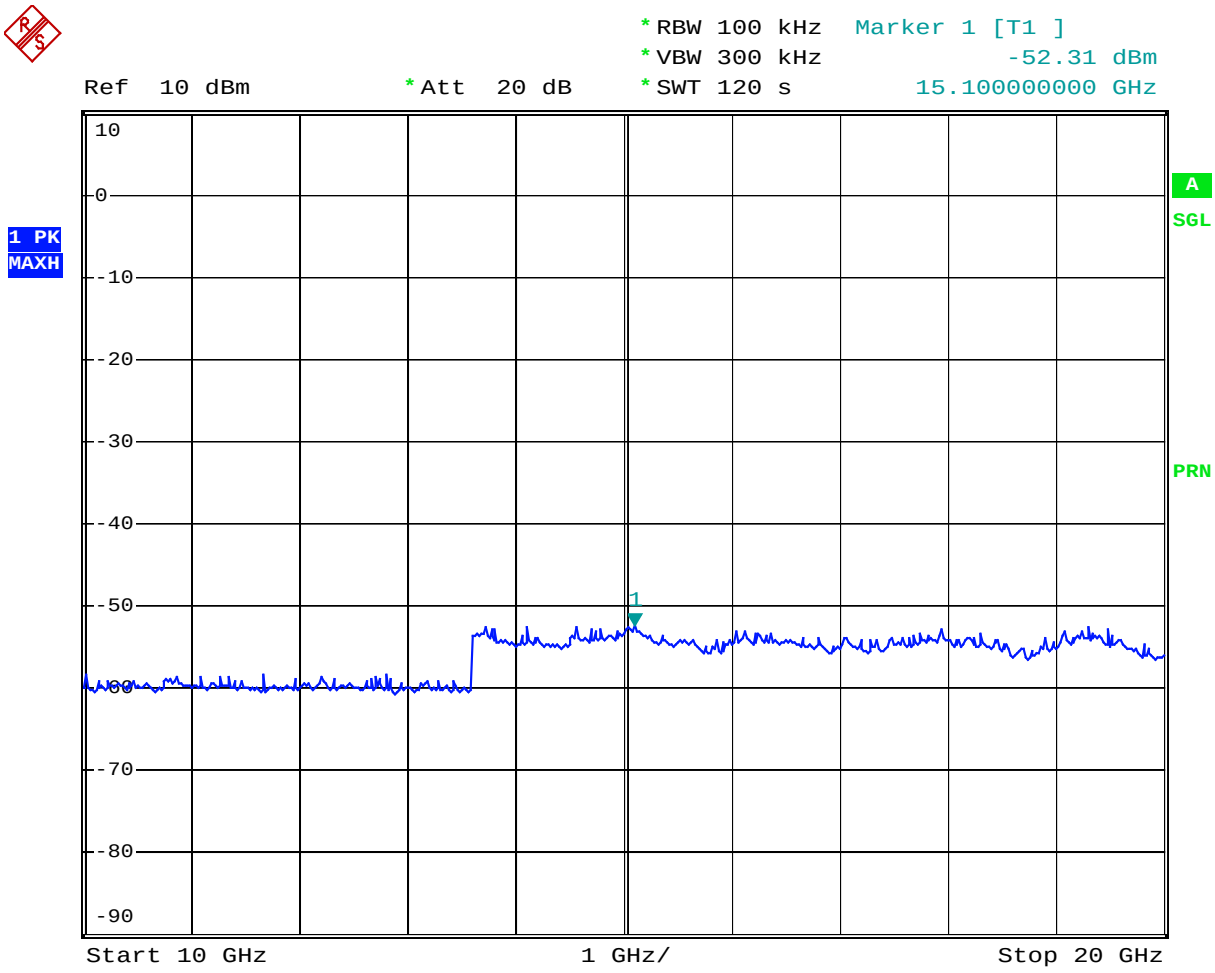
Date: 3.NOV.2006 16:31:01

Spurious Conducted emissions plot- 2480 (30MHz~10GHz)



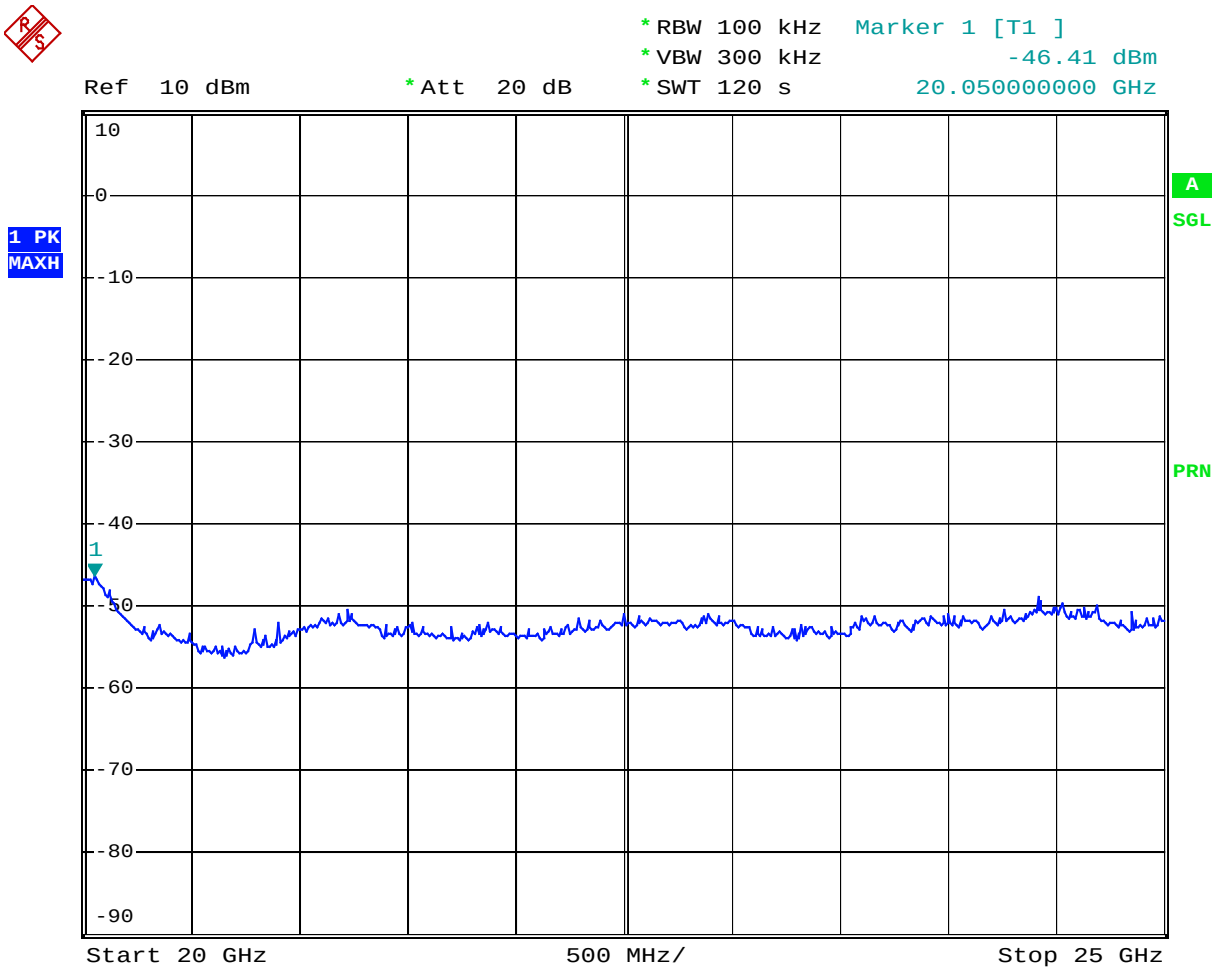
Date: 3.NOV.2006 16:34:27

Spurious Conducted emissions plot- 2480 (10GHz~20GHz)



Date: 3.NOV.2006 16:37:16

Spurious Conducted emissions plot- 2480 (20GHz~25GHz)



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7.12 Spurious Radiated emissions

< Intentional Radiator>

Test Mode and conditions

Mode of operation	:	Tx mode (2402MHz, 2441MHz, 2480MHz), DH1 packet
Detector	:	PK
Trace	:	Max hold
Measurement Method	:	Radiated- Enclosure
Measurement Distance	:	3m
Measurement BW	:	1 MHz for f ≥ 1 GHz, 100kHz for f < 1 GHz

Requirements **Subclause 15.247(c)**

In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

According to Section 15.209(a) , except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Field strength (dBμV/m)	Measurement distance (meters)
30-88	100**	20*log(100) = 40.0	3
88-216	150**	20*log(150) = 43.5	3
216-960	200	20*log(200) = 46.0	3
960-2500	500	20*log(500) = 54.0	3

** Except as provided in paragraph(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72Mhz, 76-88Mhz, 174-216Mhz or 470-806Mhz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

According to section 15.35(b), on any frequency or frequencies above 1000 MHz the radiated limits shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission

measurements are specified in this part, including emission measurements below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit for the frequency being investigated

Test results

Frequ-ency (MHz)	Polariz-ation (H/V)	Corr. Factor (dB)	Result (dBuV/m)		Limit (dBuV/m)		Margin (dB)		Table Angle (Deg.)	Ant. Height (m)
			A	P	A	P	A	P		
Operating frequency : 2402Mhz										
4804	V	16.3	36.8	53.2	54	74	17.2	20.8	0	1.2
4804	H	16.3	37.5	54.6	54	74	16.5	19.4	0	1.2

Frequ-ency (MHz)	Polariz-ation (H/V)	Corr. Factor (dB)	Result (dBuV/m)		Limit (dBuV/m)		Margin (dB)		Table Angle (Deg.)	Ant. Height (m)
			A	P	A	P	A	P		
Operating frequency : 2441Mhz										
4882	V	16.4	36.2	53.2	54	74	17.8	20.8	0	1.2
4882	H	16.4	36.5	53.8	54	74	17.5	20.2	0	1.2

Frequ-ency (MHz)	Polariz-ation (H/V)	Corr. Factor (dB)	Result (dBuV/m)		Limit (dBuV/m)		Margin (dB)		Table Angle (Deg.)	Ant. Height (m)
			A	P	A	P	A	P		
Operating frequency : 2480Mhz										
4960	V	16.4	37.4	54.6	54	74	16.6	19.4	0	1.2
4960	H	16.4	38.3	55.7	54	74	15.7	18.3	0	1.2

Note :

1. Remark “*” means that the emission frequency is produced by local oscillator.
2. Remark”- - “ means that the emission level is too low to be measured.
3. The measurement uncertainty of the radiated emission test is ±3dB
4. “A” and “P” mean average and peak measurement respectively.
5. There are no spurious emissions found between the lowest internal oscillating frequency and 30 MHz.

< Class B digital devices >

Test Mode and Conditions

Test mode	Applied	Remarks
Bluetooth ON	N/A	* refer to Note 1
Charging and Download	Yes	
MP3&Video Play	Yes	
FM Radio receiver	Yes	
Detector	QP	
Trace :	Max hold	
Measurement Distance :	3m	
Measurement BW :	1 MHz for f ≥ 1 GHz, 100kHz for f < 1 GHz	

* Note 1: Bluetooth ON mode is not applied due to EUT going into charging and data storage mode automatically when it is connected with USB cable.

Requirements **Subclause 15.109(a)**

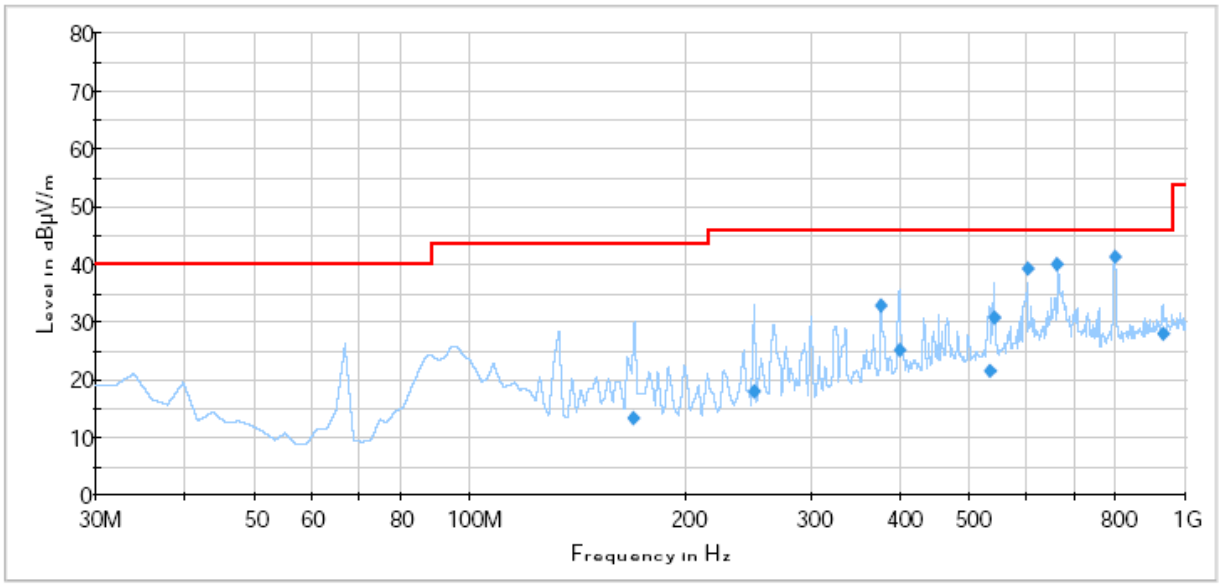
Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values

Frequency (MHz)	Field strength (microvolts/meter)
30-88	100
88-216	150
216-960	200
960-2500	500

Results

1) Charging and Download mode

Electric Field Strength with Sweeps



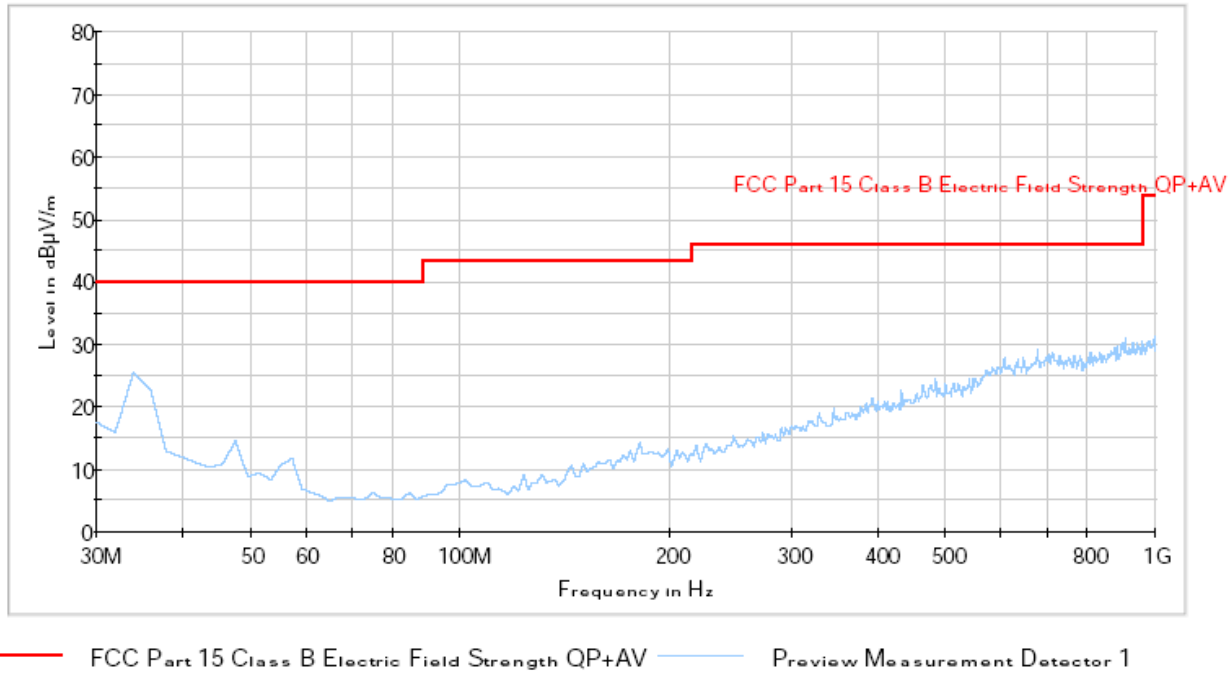
FCC Part 15 Class B Electric Field Strength QP+AV
Preview Measurement Detector 1
Final Measurement Detector 1 ment

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
169.359920	13.2	1000.000	100.0	V	90.0	10.1	30.3	43.5
250.019319	17.9	1000.000	155.0	V	90.0	13.8	28.1	46.0
375.952024	32.8	1000.000	150.0	V	90.0	18.5	13.2	46.0
399.518677	25.0	1000.000	150.0	V	270.0	19.2	21.0	46.0
533.466934	21.6	1000.000	155.0	V	180.0	21.7	24.4	46.0
540.882485	30.9	1000.000	200.0	V	270.0	21.9	15.1	46.0
601.563006	39.3	1000.000	100.0	V	270.0	24.6	6.7	46.0
663.107415	40.0	1000.000	100.0	V	90.0	25.4	6.0	46.0
799.419559	41.2	1000.000	150.0	V	180.0	25.0	4.8	46.0
930.140040	28.0	1000.000	155.0	V	180.0	26.6	18.0	46.0

2) MP3&Video Play Mode

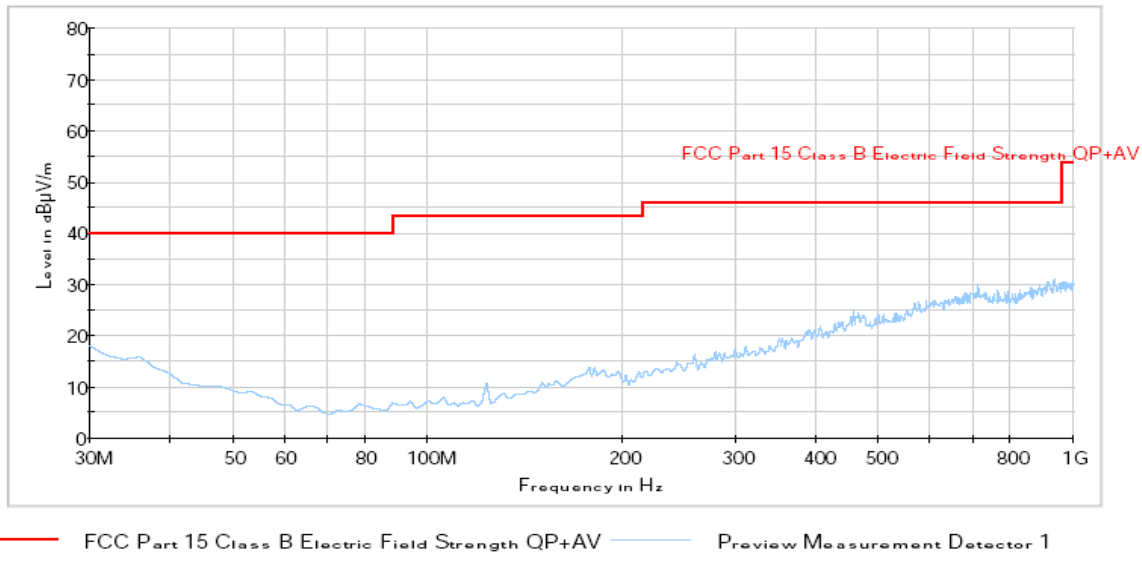
Electric Field Strength with Sweeps



3) FM Radio Receiver mode

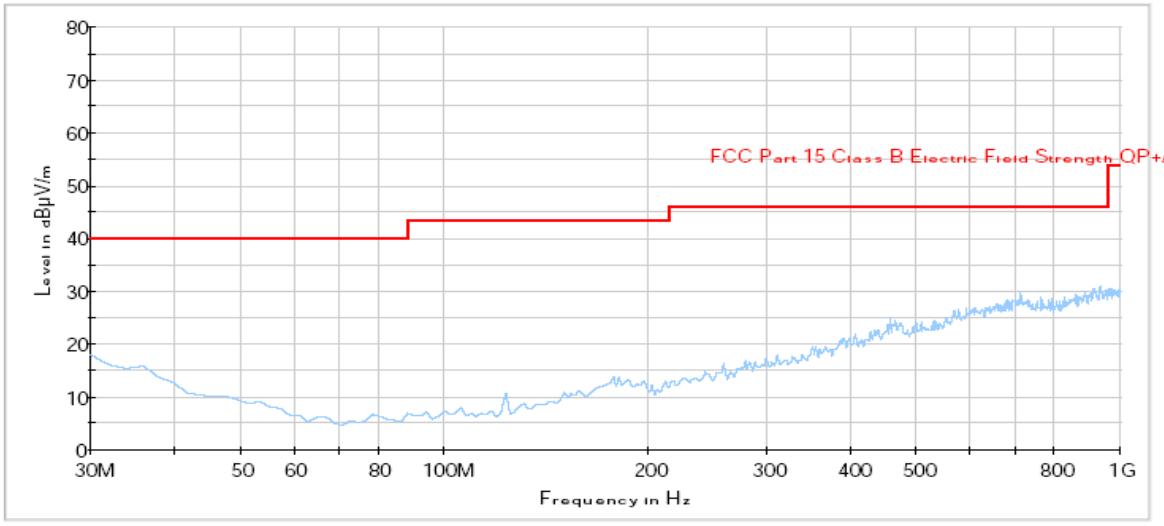
FM mode(87MHz)

Electric Field Strength with Sweeps



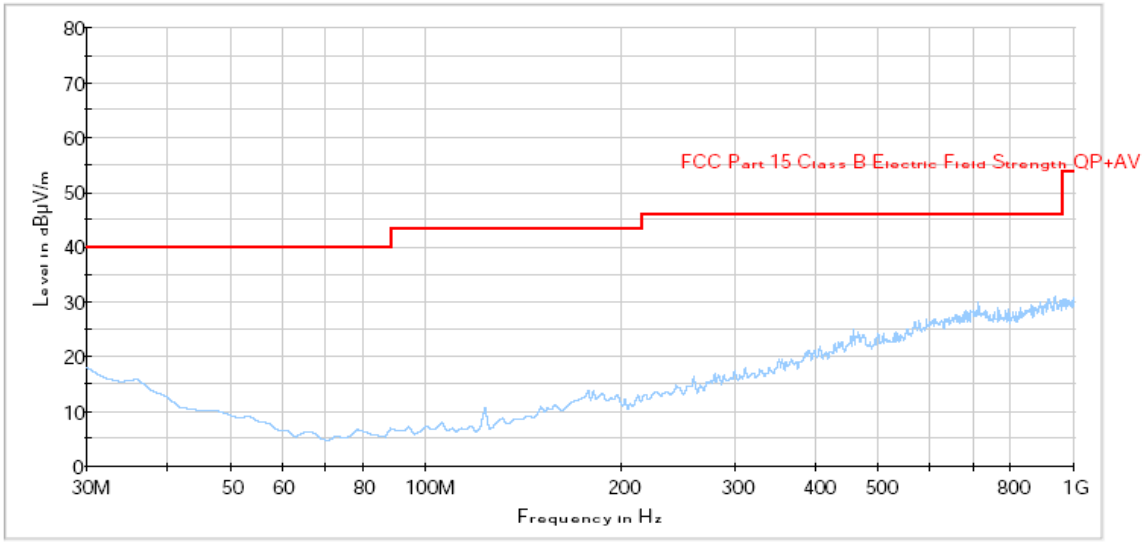
FM mode(98MHz)

Electric Field Strength with Sweeps



FM mode(108MHz)

Electric Field Strength with Sweeps



* Note

1. If the spurious levels were within 3db margin of the limit line, it was tested with quasi peak mode , otherwise it was tested with peak mode.
2. The spurious level for vertical polarization was higher than that of horizontal, the worst case was reported.

8. List of Test and Measurement Instruments

	Kind of Equipment	Type	Manufacturer	S/N
☒	EMI Test Receiver	ESI26	R/S	8340.0010.02
☒	Spectrum Analyzer	FSP30	R/S	1093.4495.30
☐	Tracking Generator	ESMI-B1	R/S	1033.3240.52
☐	Spectrum Analyzer	8566B	HP	3638A0857E
☐	Spectrum Analyzer	E4407B	HP	MY41310181
☐	Wave Dipole Antenna	HZ-12	R/S	842006/0012
☐	Wave Dipole Antenna	HZ-12	R/S	846556/0004
☐	Biconical Antenna	3104C	EMCO	9408-4667
☐	Biconical Antenna	3109	EMCO	9405-2812
☒	Log-Periodic Antenna	3146A	EMCO	1064
☐	Biconilog Antenna	HLP2603	EMC	080100
☐	V-Network	ESH3-Z5	R/S	847265/030
☐	V-Network	ESH3-Z6	R/S	847250/016
☐	T-Network	E-Z10	R/S	84480/011
☒	LISN	ESH3-Z5	R/S	838979/020
☒	Turn Table	2081	EMCO	
☒	Antenna Tower	1072-5	EMCO	9202-1651
☒	Positioning Controller	1090	EMCO	
☐	Printer	C4569A	HP	SG78K1H1FS
☐	Absorbing Clamp	MDS 21	R/S	847905/005
☐	Signal Generator	2023	MARCONI	112246067
☐	Swept Signal Generator	83620B	HP	3722A00549
☐	10dB Attenuator	23-10-34	Weinschel co	BD4316
☐	10dB Attenuator	33-10-34	Weinschel co	BB9784
☒	Loop Antenna	6507	EMCO	9408-1327
☐	Antenna	3142	EMCO	9710-1220
☒	Antenna	3115	EMCO	9202-3820
☒	Antenna	3160-08	EMCO	1168
☒	Antenna	3160-09	EMCO	1304
☒	Amplifier	HP8447F	HP	3113A06911
☒	Amplifier	HP83006	HP	3104A00611
☒	Amplifier	HP8449B	HP	3008A00859

☐	EMI test receiver	ESCS30	R&S	839809/003
☐	Artificial mains network	ESH2-Z5	R&S	829991/009
☐	Artificial hand	FCC-AH-1	Fischer custom communications Inc.	2008

9. Notes

It was tested with NS-DVB8G which has the largest memory size compared to the other models (NS-DVB2G and NS-DVB4G).

The only difference among the models is the memory size,2Gbyte, 4Gbyte and 8Gbyte respectively.