

Test report no. : 95029/4

Item tested : KX-TH1211

**Type of equipment : UPCS Base station
with Bluetooth Transceiver**

FCC ID : ACJ96NKX-TH1211

Client : Panasonic Communications Co., Ltd.

FCC Part 15.247
Frequency Hopping Transmitters /
Digital Transmission System

1 February 2008

Authorized by :

A handwritten signature in blue ink that reads 'Egil Hauger'.

Egil Hauger
Technical Verificator

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1 GENERAL INFORMATION

1.1 Testhouse Info

Name : Nemko Comlab
Address : Gåsevikveien 8, Box 96
N-2027 Kjeller, NORWAY
Telephone : +47 64 84 57 00
Fax : +47 64 84 57 05
E-mail: post@comlab.no
FCC test firm registration # : 994405
IC OATS registration # : 4443
Total Number of Pages: 49

1.2 Client Information

Name : Panasonic Communications Co. Ltd.
Address : 1-62, 4-chome, Minoshima, Hakata-ku, Fukuoka 812-8531, Japan
Telephone : +81 92 477 1405

Contact:

Name : Mr. Junji Sumi
Telephone : +81 92 477 1405
E-mail : sumi.junji@jp.panasonic.com

1.3 Manufacturer

Name : /
Address : /

2 Test Information

2.1 Test Item

Name :	Panasonic
FCC ID :	ACJ96NKX-TH1211
Model/version :	KX-TH1211
Serial number :	Conducted sample marked: NO 1 Radiated sample marked: NO 2
Hardware identity and/or version:	/
Software identity and/or version :	/
Frequency Range :	2402 – 2480 MHz
Tunable Bands :	1
Number of Channels :	79
Operating Modes :	Frequency Hopping Spread Spectrum
Type of Modulation :	Digital (GFSK)
User Frequency Adjustment :	None
Rated Output Power :	30 mW Peak
Type of Power Supply :	Power Adaptor, Model: PQLV207
Antenna Connector :	None
Number of Antennas :	2
Antenna Diversity Supported :	Yes
Desktop Charger :	None

Description of Test Item

The tested equipment is a Bluetooth Transceiver that is integrated into a UPCS base station.

This test report covers only for the Bluetooth Transceiver. The UPCS part is identical to the previously certified model KX-TG9331 (FCC ID: ACJ96NKX-TG9331; IC ID: 216A-KXTG9331) which is covered by Nemko Comlab test reports **93830-5** and **95029-5**

The tested equipment has integral antennas only.

Theory of Operation

The tested EUT is a Frequency Hopping Transmitter that uses the Bluetooth protocols.

Exposure Evaluation

The EUT is designed to be fixed to a wall etc. and the user manual contains text that it shall be mounted with a separation distance of at least 20cm from any persons. For the purposes of exposure evaluation this EUT is a mobile or fixed device. MPE Calculation at 20cm satisfying FCC requirements is submitted as a separate document.

2.2 Test Environment

2.2.1 Normal test condition

Temperature: 21 – 23 °C

Relative humidity: 20 - 40 %

Normal test voltage: 115 V AC

The values are the limit registered during the test period.

2.3 Test Period

Item received date: 2008-01-02

Test period : from 2008-01-15 to 2008-01-31

3 TEST REPORT SUMMARY

3.1 General

Manufacturer: Panasonic

Model No.: KX-TH1211

Serial No.: /

All measurements are traceable to national standards.

The tests were conducted for the purpose of demonstrating compliance with FCC CFR 47 Part 15, paragraph 15.247.

Radiated tests were conducted in accordance with ANSI C63.4-2003. The radiated tests were made in a semi-anechoic chamber at measuring distances of 3 and 10 metres.

☒ New Submission

☒ Production Unit

☐ Class II Permissive Change

☐ Pre-production Unit

DSS Equipment Code

☐ Family Listing

THIS TEST REPORT APPLIES ONLY TO THE ITEM(S) AND CONFIGURATIONS TESTED.

Deviations from, additions to, or exclusions from the test specifications are described in "Summary of Test Data".



TEST REPORT #: 95029-4

TESTED BY:



Frode Sveinsen, Chief engineer

DATE: 18 January 2008

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3.2 Test Summary

Name of test	FCC Part 15 reference	Result
Supply Voltage Variations	15.31(e)	Complies
Number of Operating Frequencies	15.31(m)	Complies
Antenna Requirement	15.203	Complies
Power Line Conducted Emission	15.107(a) 15.207(a)	Complies
Channel Separation	15.247(a)(1)	Complies
Pseudorandom Hopping Algorithm	15.247(a)(1)	Complies
Time of Occupancy	15.247(a)(1)(iii)	Complies
Occupied Bandwidth	15.247(a)(1)	Complies
Minimum 6 dB Bandwidth	15.247(a)(2)	N/A ¹
Peak Power Output	15.247(b)	Complies
Power Spectral Density	15.247(d)	N/A ¹
Spurious Emissions (Antenna Conducted)	15.247(c)	Complies
Spurious Emissions (Radiated)	15.247(c) 15.109(a) 15.209(a)	Complies

¹ This requirement is not applicable for frequency Hopping Transmitters

3.3 Description of modification for Modification Filing

Not applicable.

3.4 Comments

This test report covers only the Bluetooth Module in the KX-TH1211.

The operating channel(s) and slot length was programmed with a computer and with the software supplied by the manufacturer.

The measurements were done with the EUT powered by 115 V AC. It was checked that power variations between 85% and 115% did not have any influence on the measurements.

All ports were populated during spurious emission measurements.

3.5 Family List Rational

Not Applicable.

4 TEST RESULTS

4.1 Power Line Conducted Emissions

Para. No.: 15.207 (a)

Test Performed By: Jan G. Eriksen

Date of Test: 17-Jan-2008

Measurement procedure: ANSI C63.4-2003 using 50 μ H/50 ohms LISN.

Test Results: Complies.

Measurement Data: See attached graph, (Peak detector).

Highest measured value (L1 and N):

Frequency	Detector	Measured value	Limit	Margin
KHz	Peak/QP/AV	dB μ V	dB μ V	dB
/	QP	/	/	/
/	AV	/	/	/
/	QP	/	/	/
/	AV	/	/	/

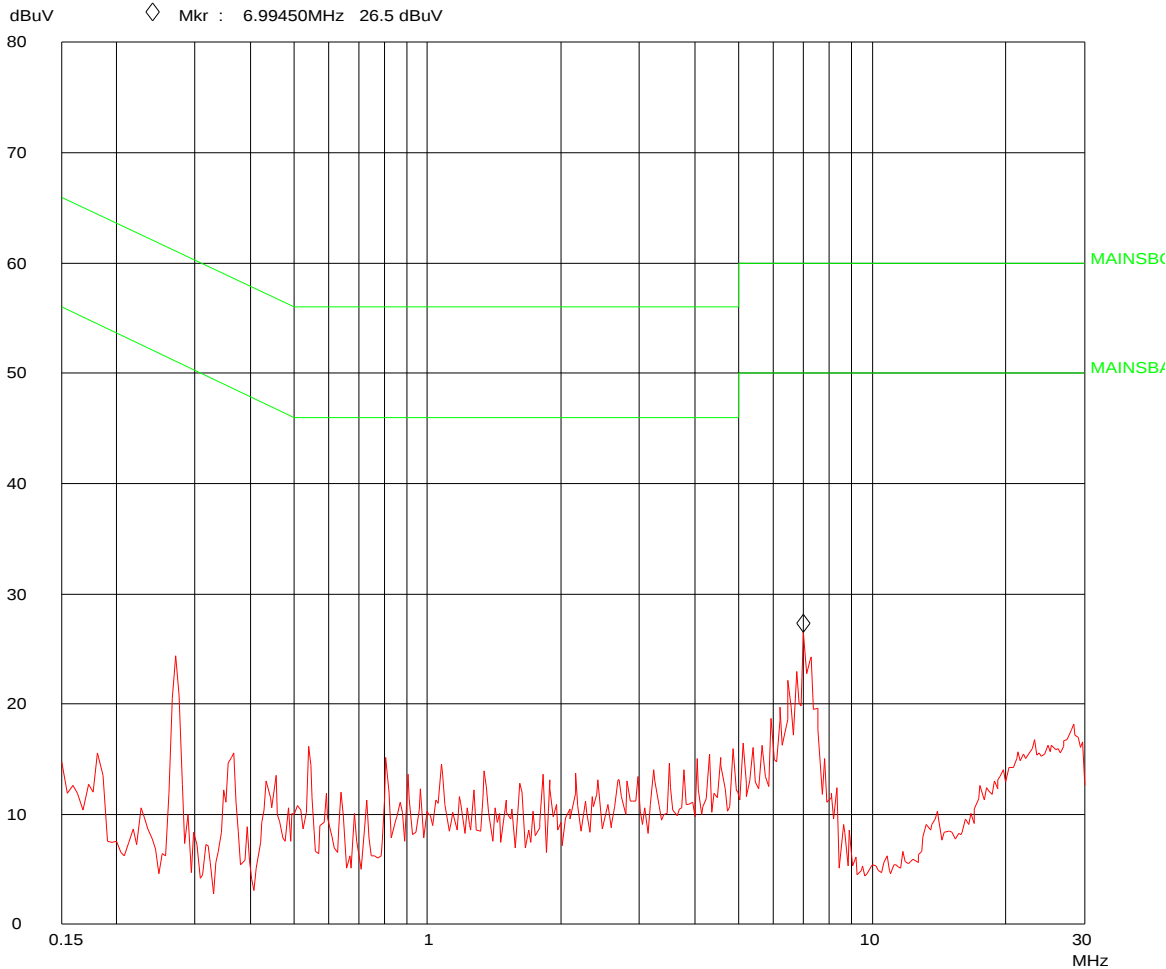
Nemko Comlab
Peak

17. Jan 08 14:35

Operator: JGE
Comment: Panasonic
KX-TH1211 BT
FCC 15.207
Mains 120V AC, Phase N
TX ON

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp OpRge
150k	30M	4.5k	9k	PK	50ms	AUTO LN OFF	60dB



Phase N, TX ON

Nemko Comlab

Peak

17. Jan 08 14:45

Operator:

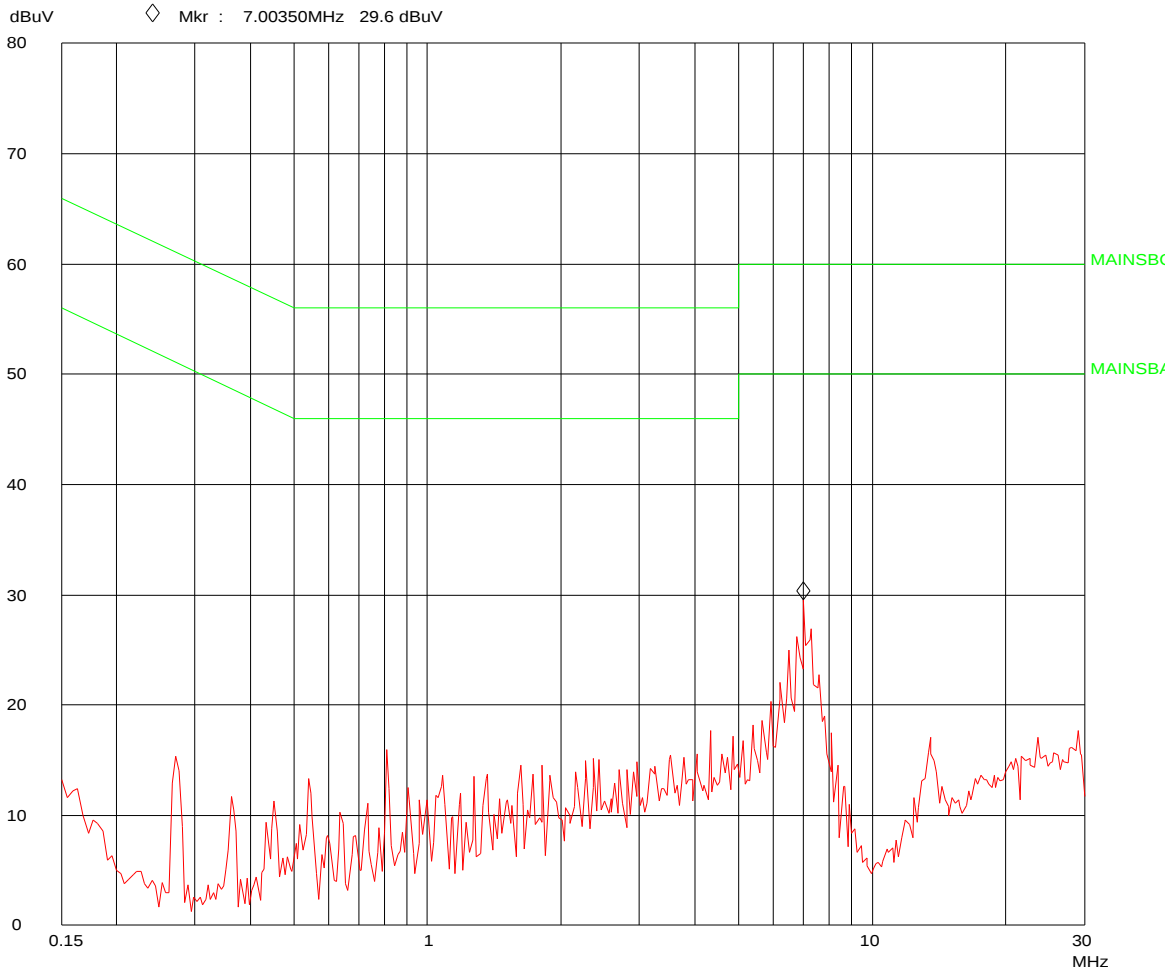
JGE

Comment:

Panasonic
 KX-TH1211 BT
 FCC 15.207
 Mains 120V AC, Phase L1
 TX ON

Scan Settings (1 Range)

Frequencies				Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp OpRge
150k	30M	4.5k	9k	PK	50ms	AUTO LN OFF	60dB



Phase L1, TX ON

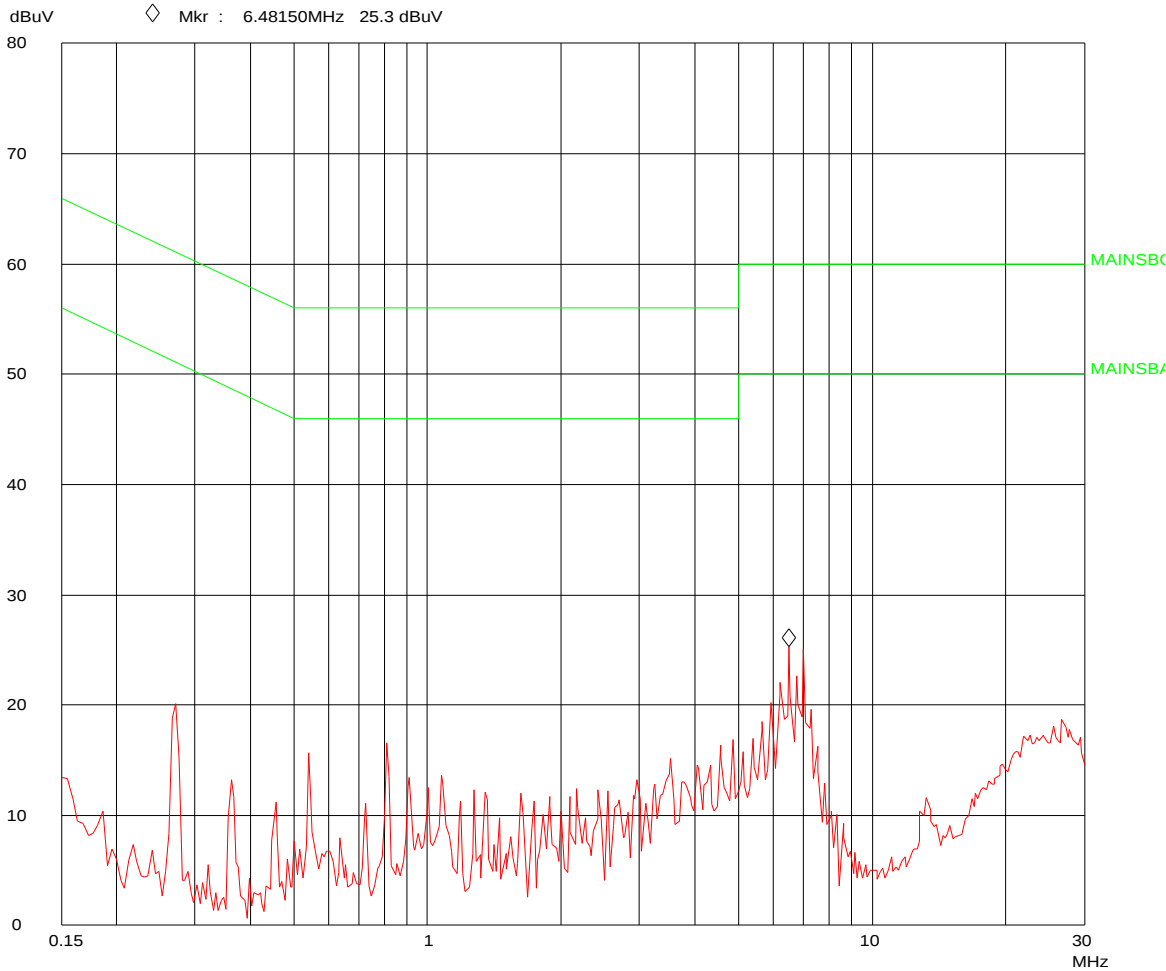
Nemko Comlab
Peak

17. Jan 08 15:00

Operator: JGE
Comment: Panasonic
KX-TH1211 BT
FCC 15.207
Mains 120V AC, Phase N
RX

Scan Settings (1 Range)

Frequencies				Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp OpRge
150k	30M	4.5k	9k	PK	50ms	AUTO LN OFF	60dB



Phase N, RX

Nemko Comlab

Peak

17. Jan 08 14:53

Operator:

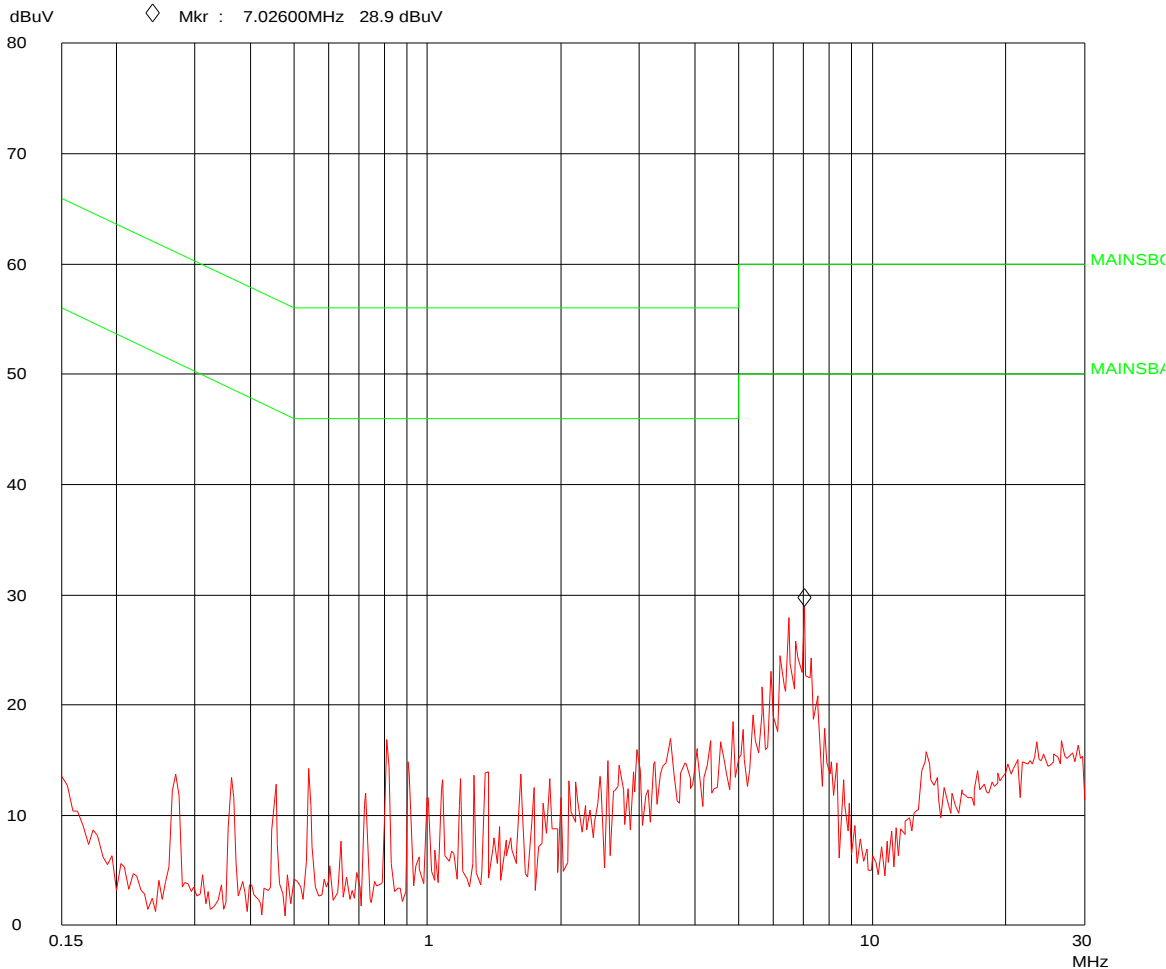
JGE

Comment:

Panasonic
 KX-TH1211 BT
 FCC 15.207
 Mains 120V AC, Phase L1
 RX

Scan Settings (1 Range)

Frequencies				Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	4.5k	9k	PK	50ms	AUTO	LN OFF	60dB



Phase L1, RX

4.2 Channel Separation

Para. No.: 15.247 (a)(1)

Test Performed By: Frode Sveinsen

Date of Test: 15-Jan-2008

Test Results: **Complies**

Measurement Data: Channel Separation: 1.0016 MHz
20 dB Bandwidth of hopping channel: 817.307 MHz

RF channel has no influence on 20 dB bandwidth.

See attached graph

Channel Separation nominal value: 1.000 MHz.

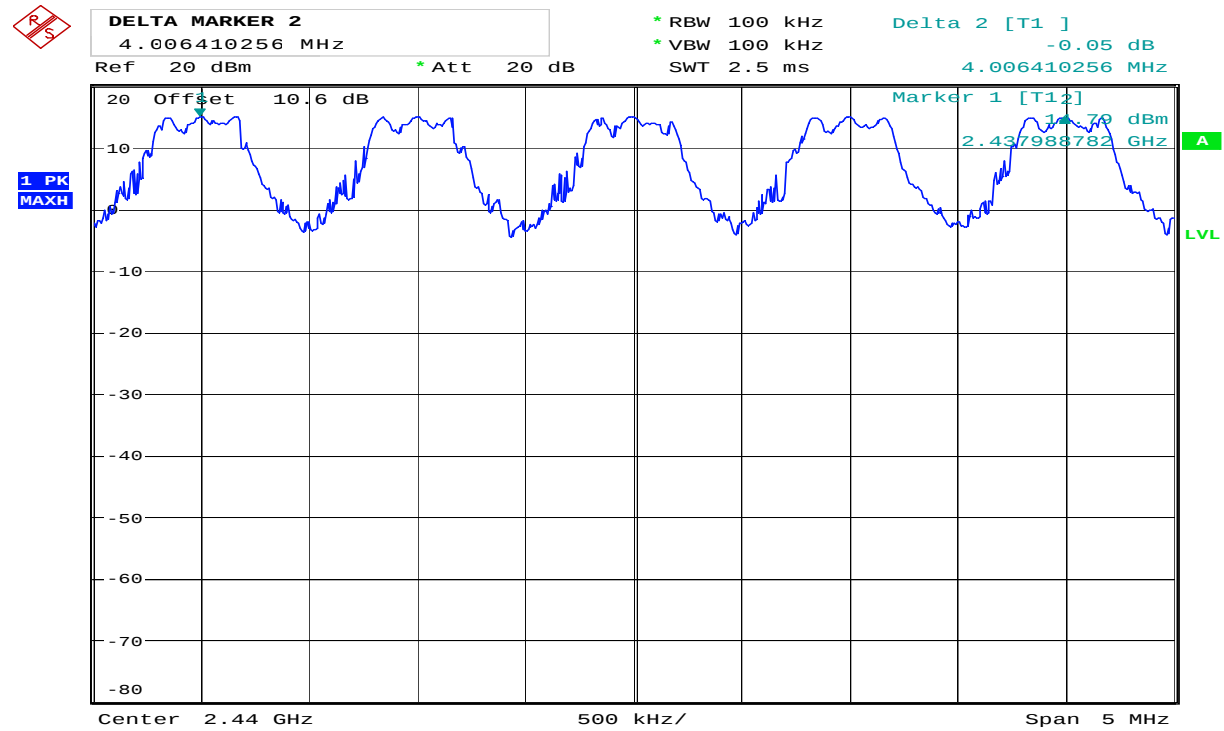
Requirement:

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

or:

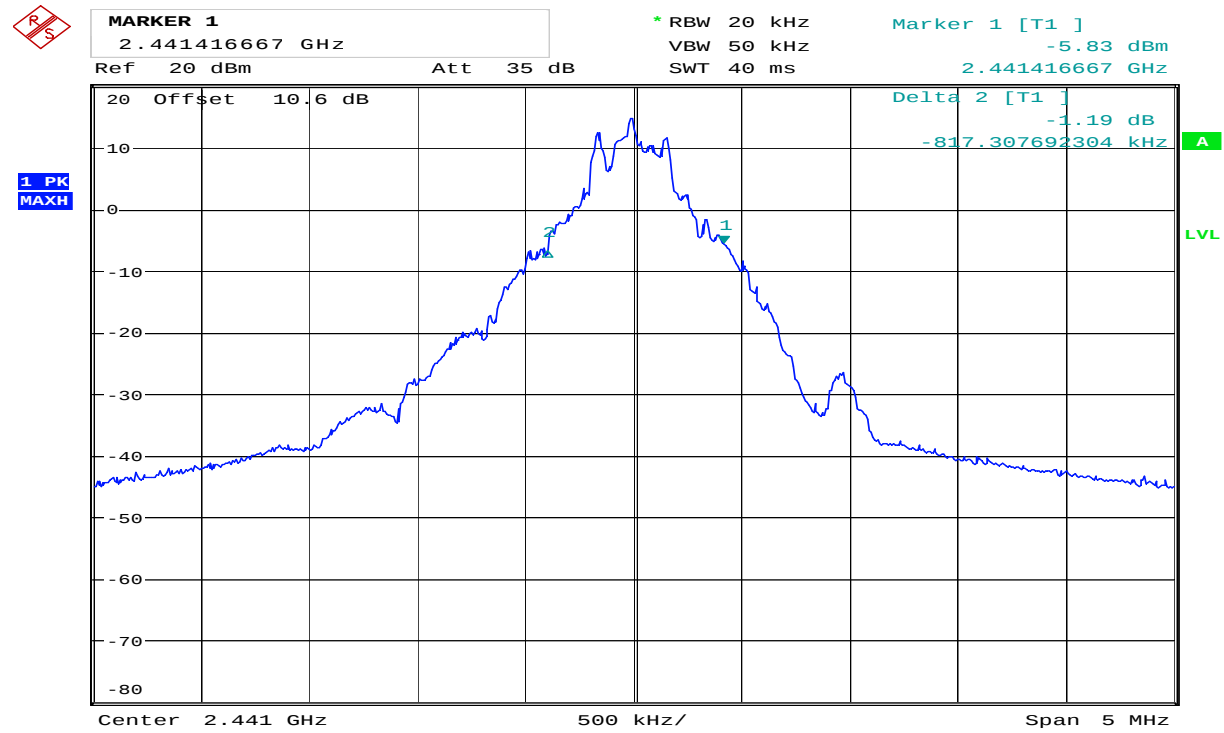
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the system operates with an output power no greater than 125 mW.

No requirements for Digital Transmission Systems.



Date: 15.JAN.2008 13:48:04

Channel Separation



Date: 15.JAN.2008 13:18:53

20 dB Bandwidth

4.3 Pseudorandom Hopping Algorithm

Para. No.: 15.247 (a)(1)

Test Performed By: Frode Sveinsen	Date of Test: 15-Jan-2008
-----------------------------------	---------------------------

Test Results: **Complies**

Measurement Data: /

Requirements:

The channel frequencies shall be selected from a pseudo-random ordered list of hopping frequencies. Each frequency must be used equally by the transmitter.

No requirements for Digital Transmission Systems.

Base Table Hopping Sequence

The equipment uses pseudo-random adaptive hopping based on the Bluetooth standard. See EXHIBIT I for more details.

4.4 Occupancy Time

Para. No.: 15.247 (a)(1)(iii)

Test Performed By: Frode Sveinsen

Date of Test: 15-jan-2008

Test Results: **Complies**

Measurement Data: Number of RF channel: 20
RF burst pr channel (worst case): 1.777 ms
Time between each RF burst on same RF channel: 50 ms

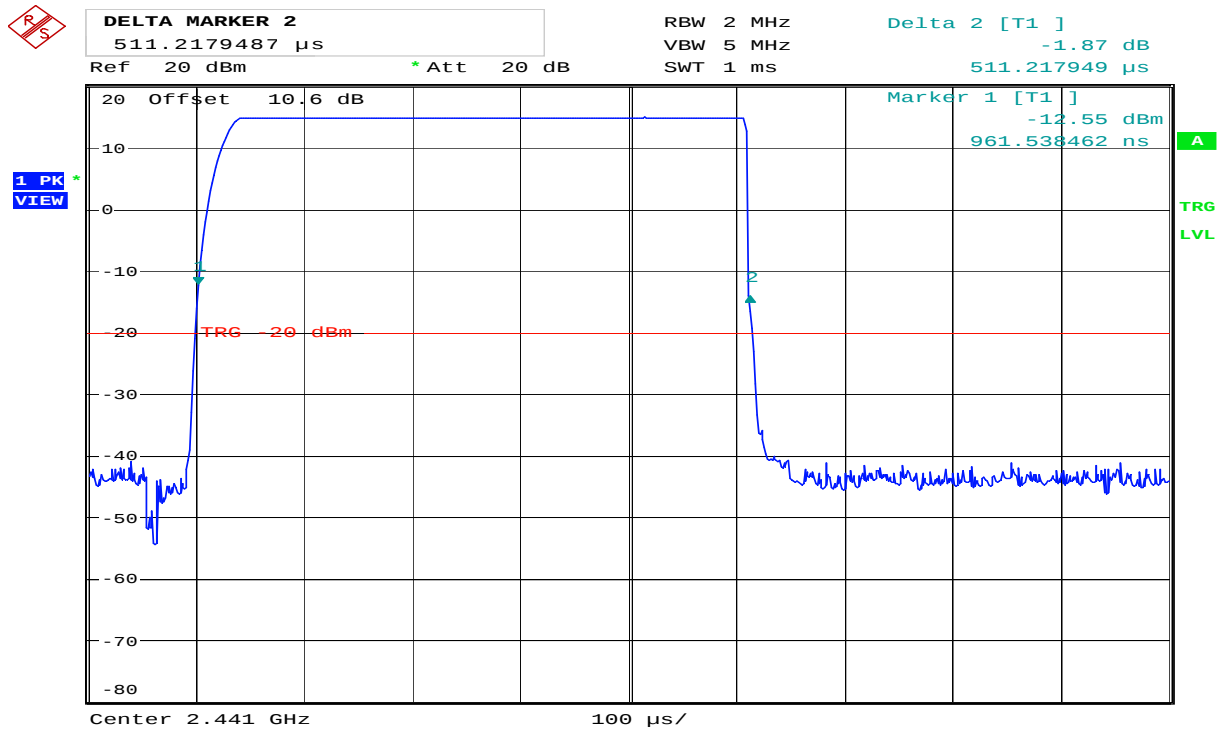
Time of occupancy: $1.777\text{ms} \times 400/50 \times 20 = 0.284 \text{ seconds}$

See attached plots.

Requirements:

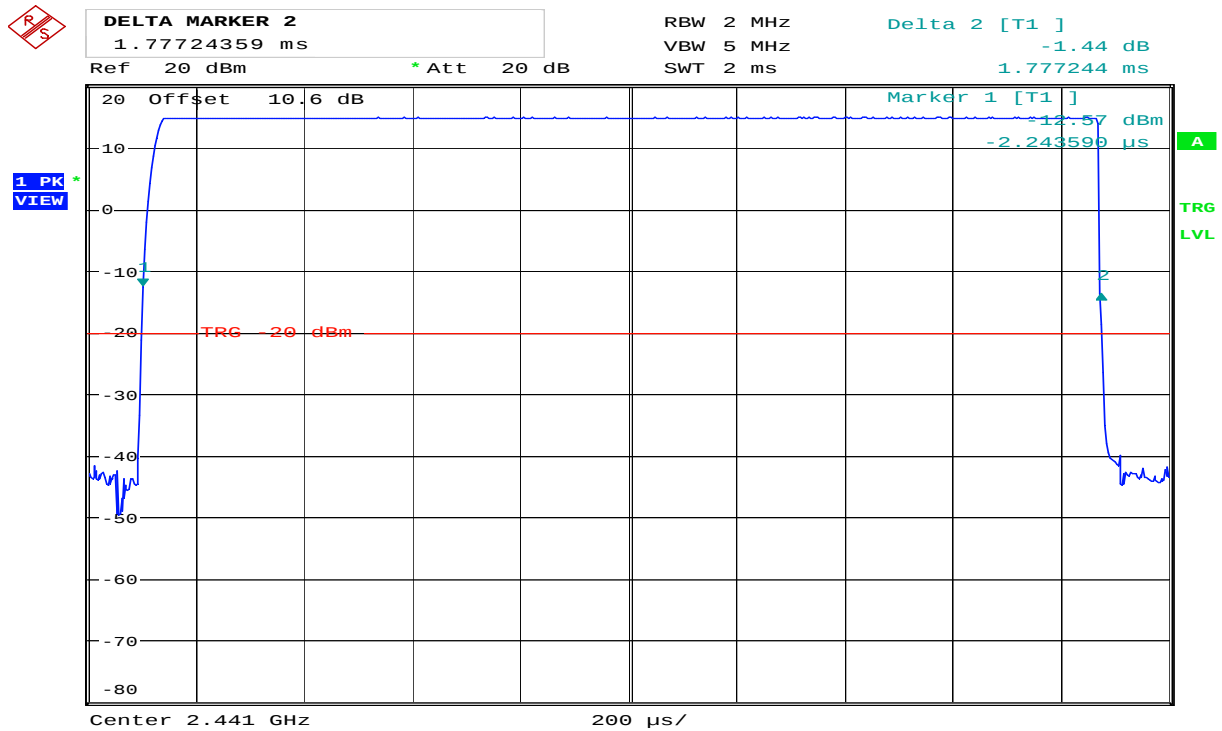
The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

No requirements for Digital Transmission Systems.



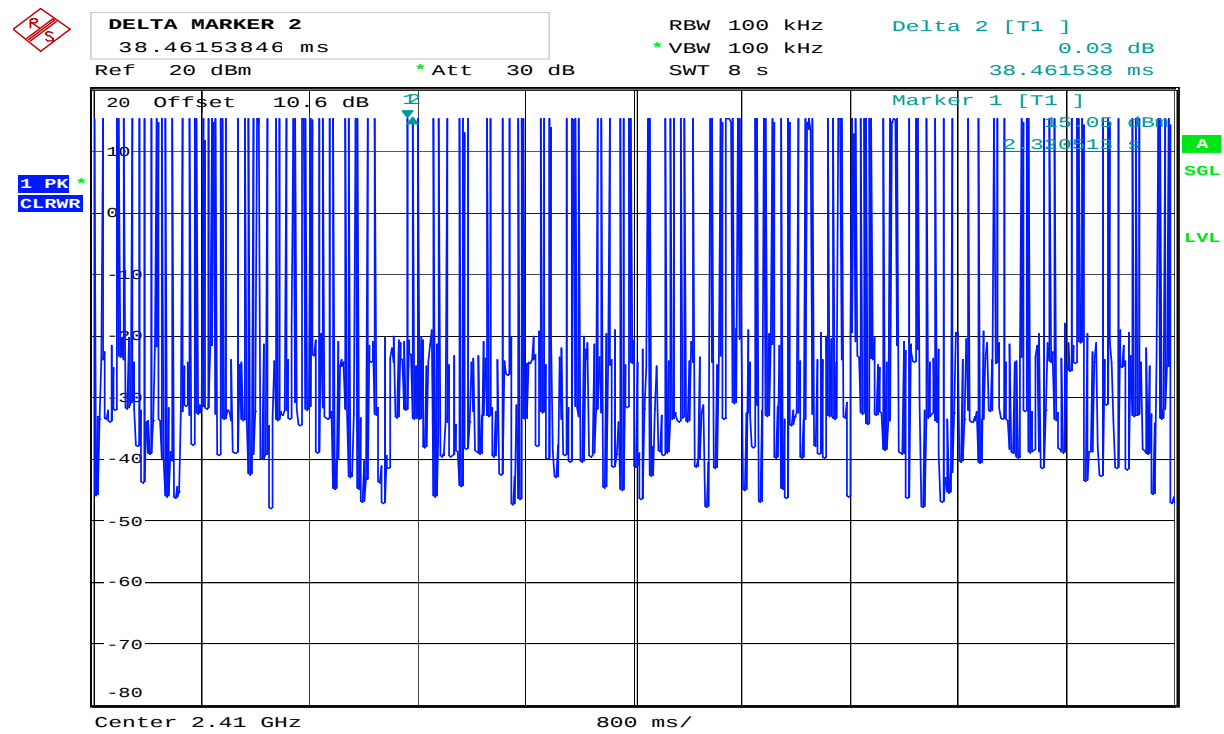
Date: 15.JAN.2008 13:24:12

RF Burst DH1



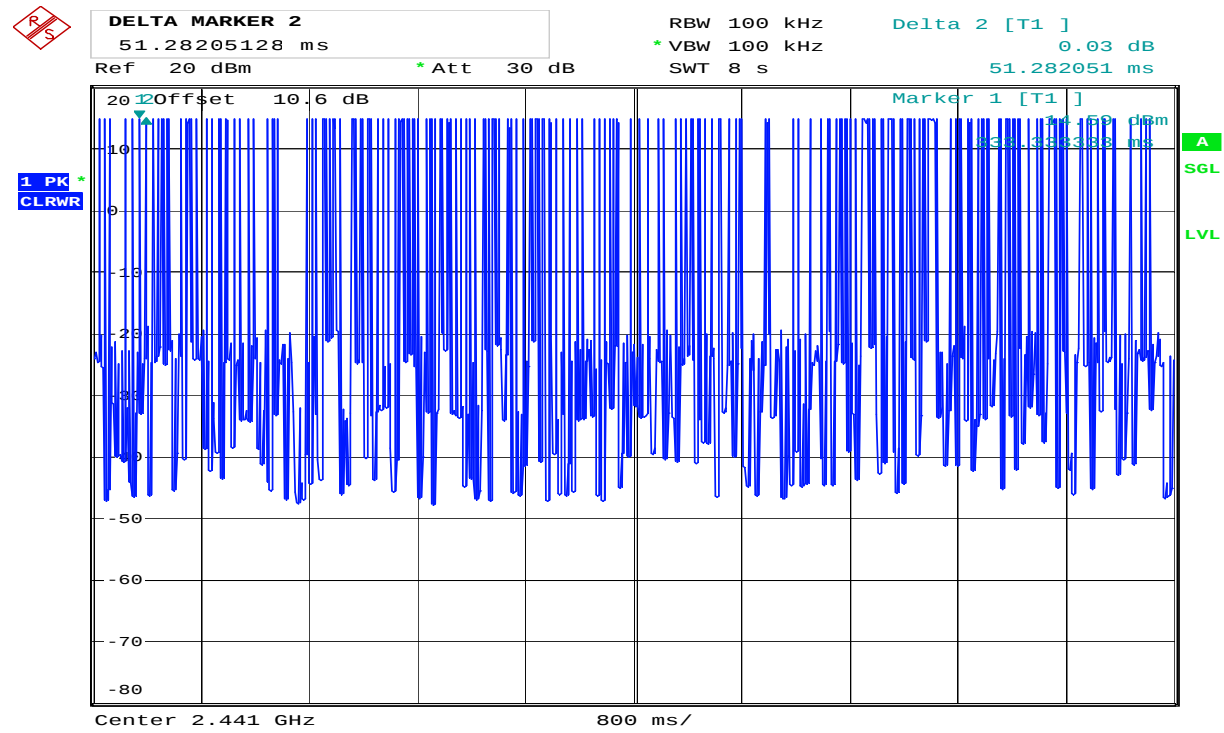
Date: 15.JAN.2008 13:25:52

RF Burst DH3



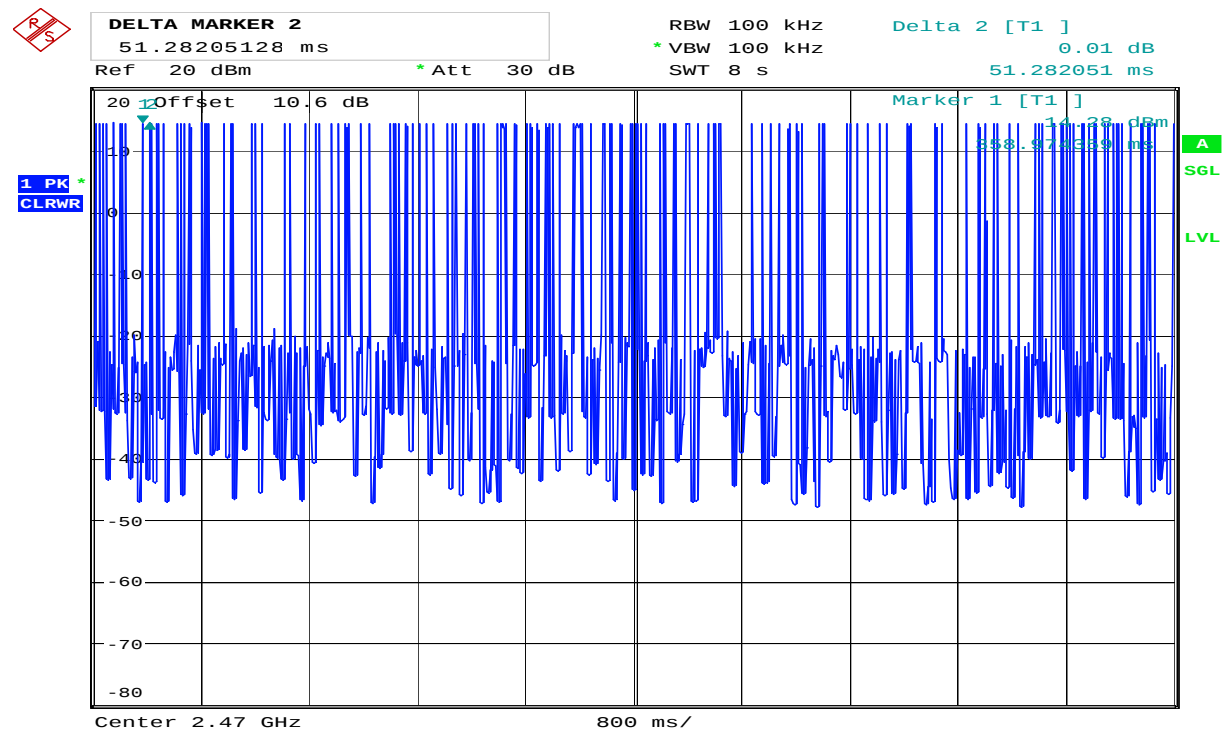
Date: 31.JAN.2008 16:34:47

Dwell Time, Hopping Active, 20L



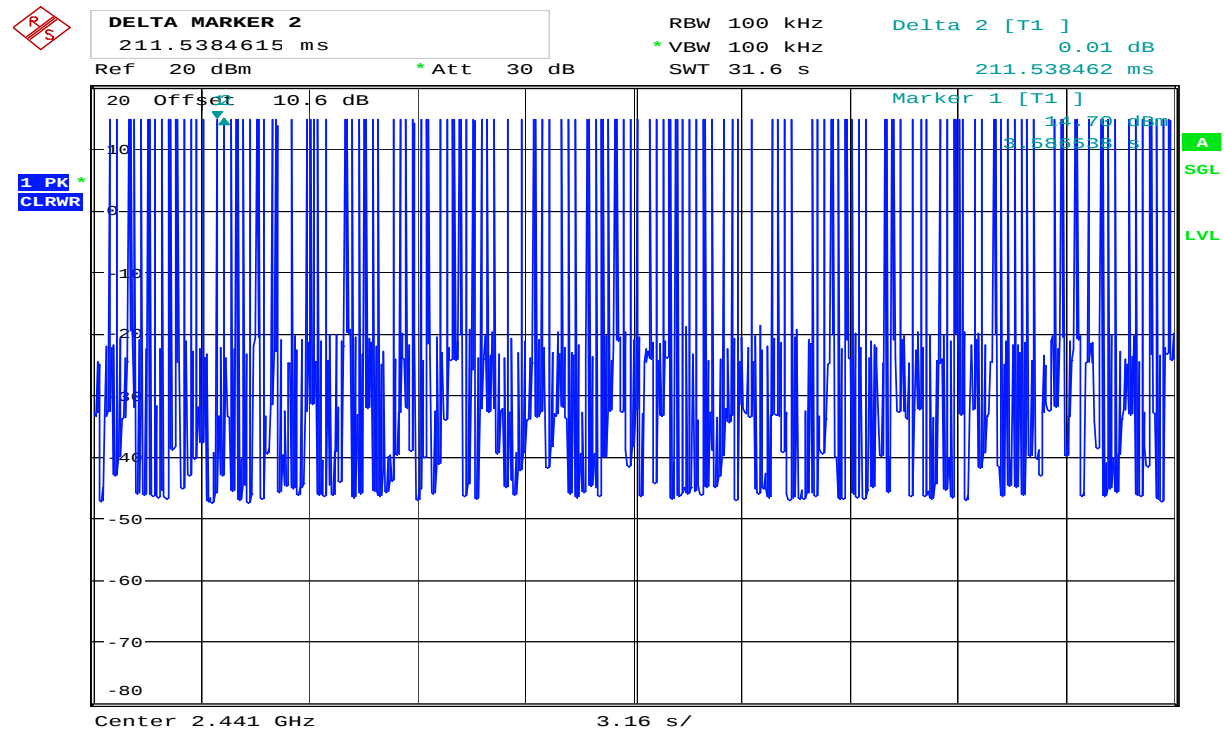
Date: 31.JAN.2008 16:32:58

Dwell Time, Hopping Active, 20M



Date: 31.JAN.2008 16:30:09

Dwell Time, Hopping Active, 20H



Date: 31.JAN.2008 16:44:38

Dwell Time, Hopping Active, 79Ch

4.5 Occupied Bandwidth

Para. No.: 15.247 (a)(1)(iii)

Test Performed By: Frode Sveinsen

Date of Test: 15-Jan-2008

Test Results: **Complies**

Measurement Data: 79 or 20 RF channels in use.

See attached plots.

Requirements:

Frequency hopping systems in the 2400 - 2483.5 MHz band shall use at least 15 non-overlapping channels. No requirements for bandwidth for this frequency band.

No requirements for Digital Transmission Systems.

Channel Centre Frequencies

The 79 channels are centred at each full MHz from 2402 to 2480 MHz.



15. Jan 08 13:38

Ref 20 dBm

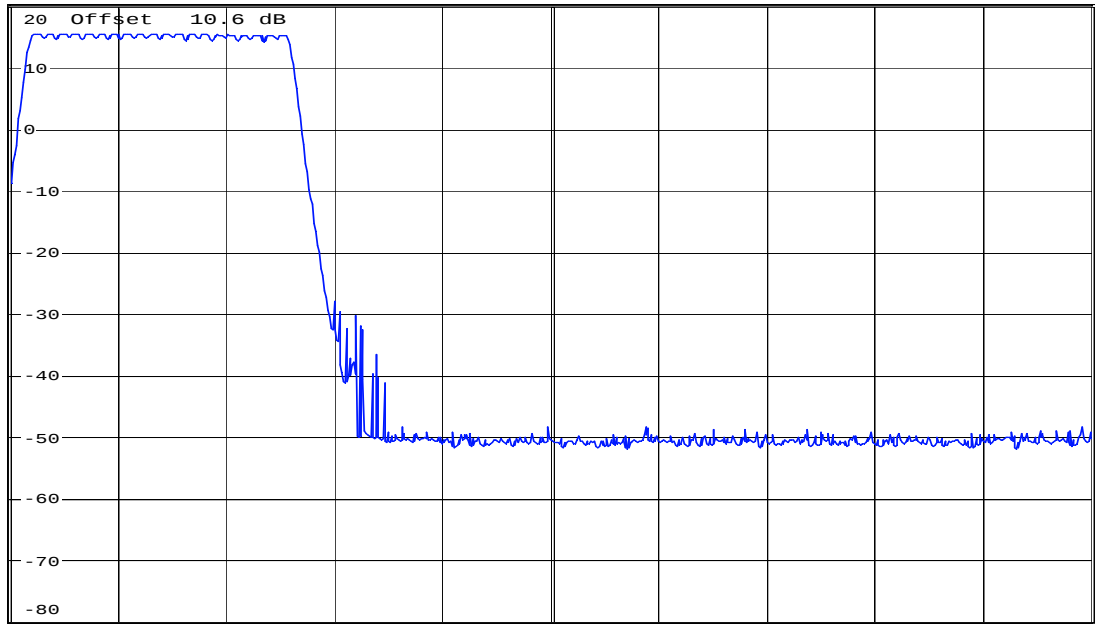
* Att 20 dB

* RBW 1 MHz

* VBW 1 MHz

SWT 2.5 ms

1 PK
MAXH



Start 2.4 GHz

8.35 MHz/

Stop 2.4835 GHz

Date: 15. JAN. 2008 13:38:30

RF Channels in Use, 20 channels, Low



15. Jan 08 13:39

Ref 20 dBm

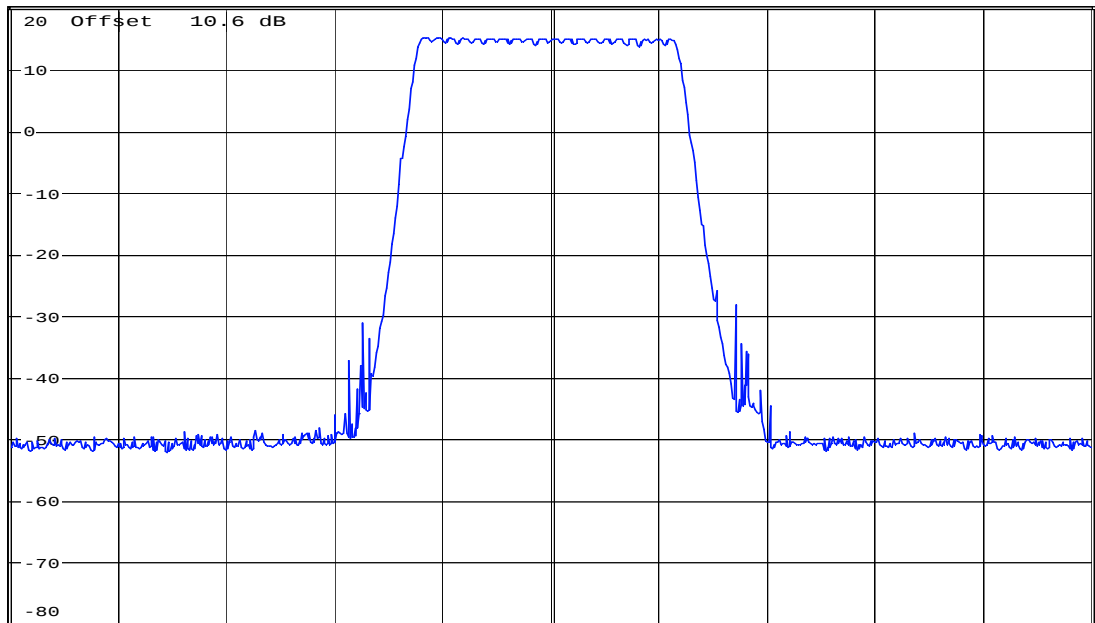
* Att 20 dB

* RBW 1 MHz

* VBW 1 MHz

SWT 2.5 ms

1 PK
MAXH



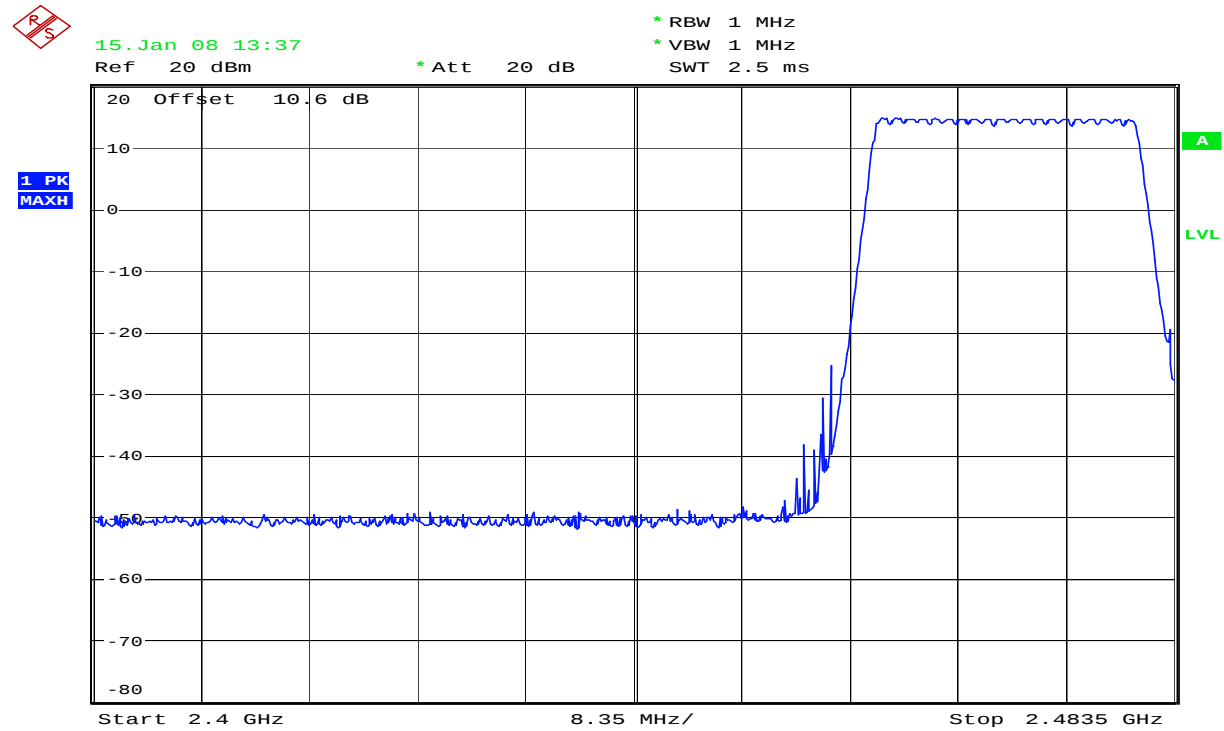
Start 2.4 GHz

8.35 MHz/

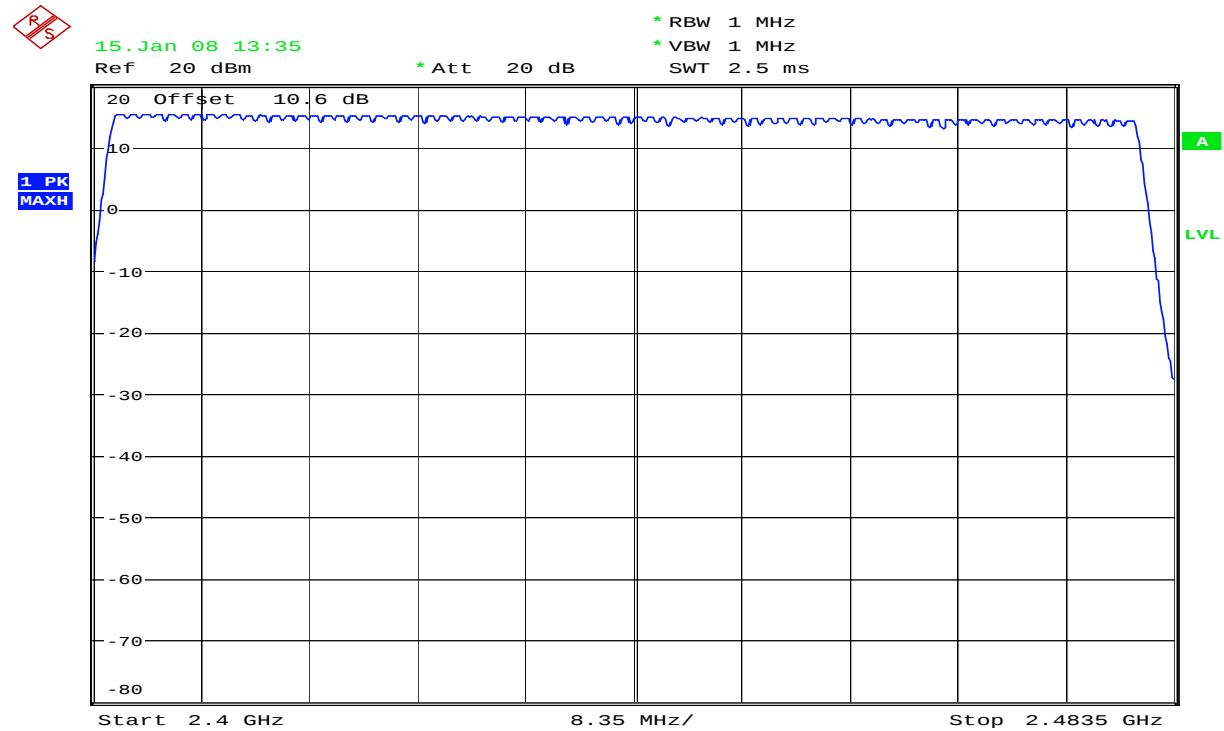
Stop 2.4835 GHz

Date: 15. JAN. 2008 13:39:32

RF Channels in Use, 20 channels, Middle



Date: 15. JAN. 2008 13:37:20
RF Channels in Use, 20 channels, High



Date: 15. JAN. 2008 13:35:21
RF Channels in Use, 79 channels

4.6 Peak Power Output

Para. No.: 15.247 (b)

Test Performed By: Frode Sveinsen

Date of Test: 15-Jan-2008

Test Results: Complies

Measurement Data:

Maximum Conducted Peak Output Power:

RF channel	0	39	78
Measured value (dBm)	15.5	15.0	14.6
Measured value (mW)	35.5	31.6	28.8

Maximum EIRP:

RF channel	0	39	78
Measured EIRP (dBm)	13.1	12.8	12.2
Measured EIRP (mW)	20.4	19.1	16.6
Antenna gain (dBi)	-2.4	-2.2	-2.4

The Radiated Output Power (EIRP) is measured as Output Power with correction factors stored in the Spectrum Analyzer.

It was checked that input voltage variation of 85 and 115% of nominal value did not have any effect on the measured output power, neither radiated nor conducted.

See attached plots.

Detachable antenna?

☐ Yes ☒ No

If detachable, is the antenna connector non-standard?

☐ Yes ☐ No

The EUT has only integral antennas.

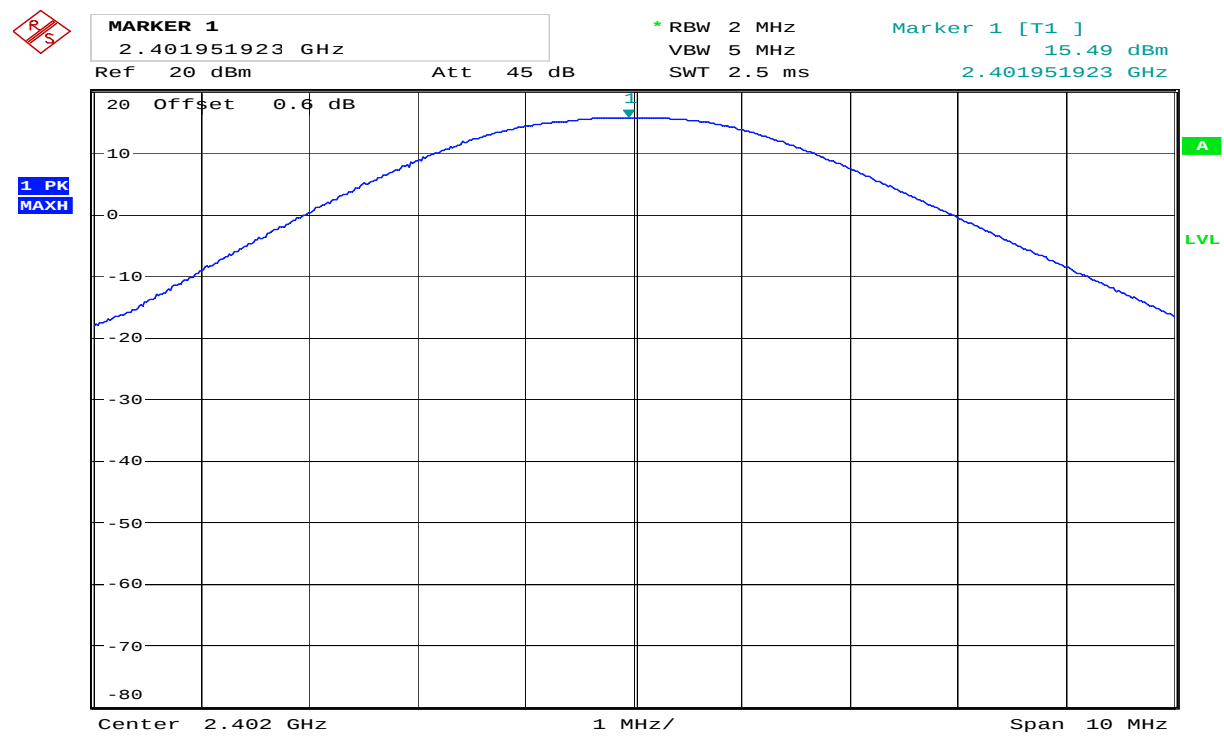
Requirements:

The maximum peak output power shall not exceed the following limits:

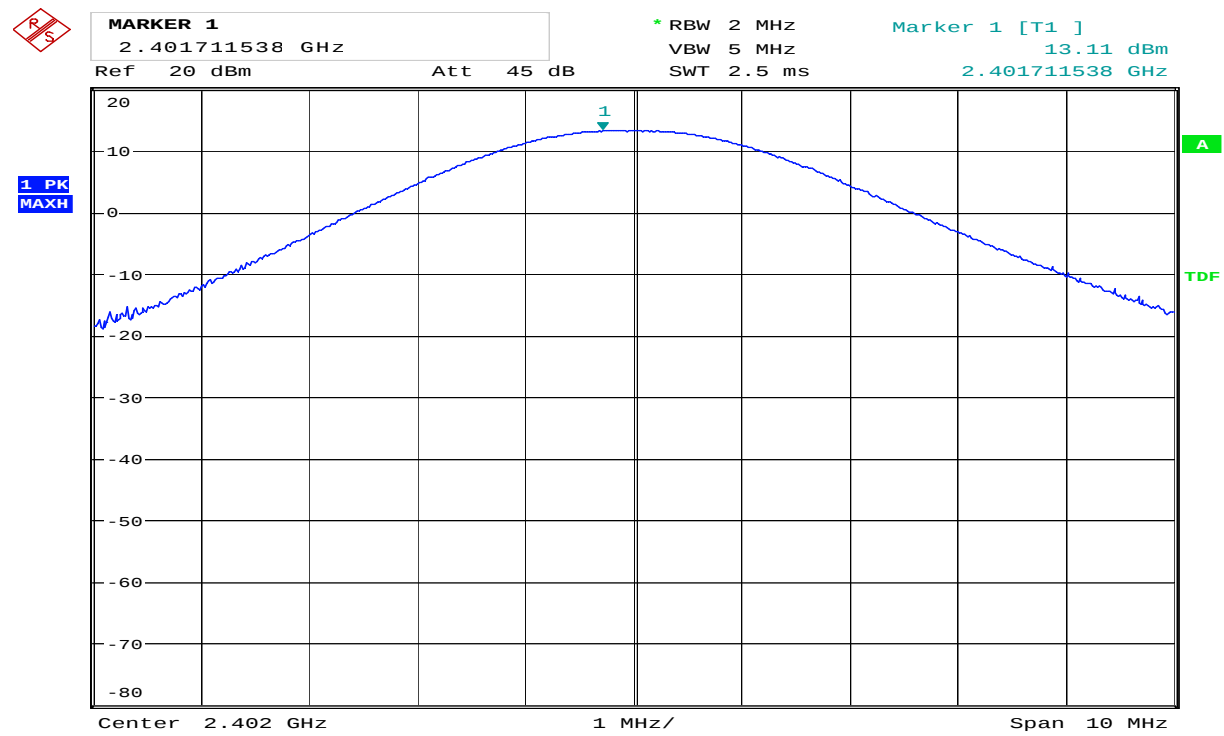
For frequency hopping systems employing at least 75 hopping channels: 1 Watt

For all other frequency hopping systems in the 2400 - 2483.5 MHz band: 0.125 Watts

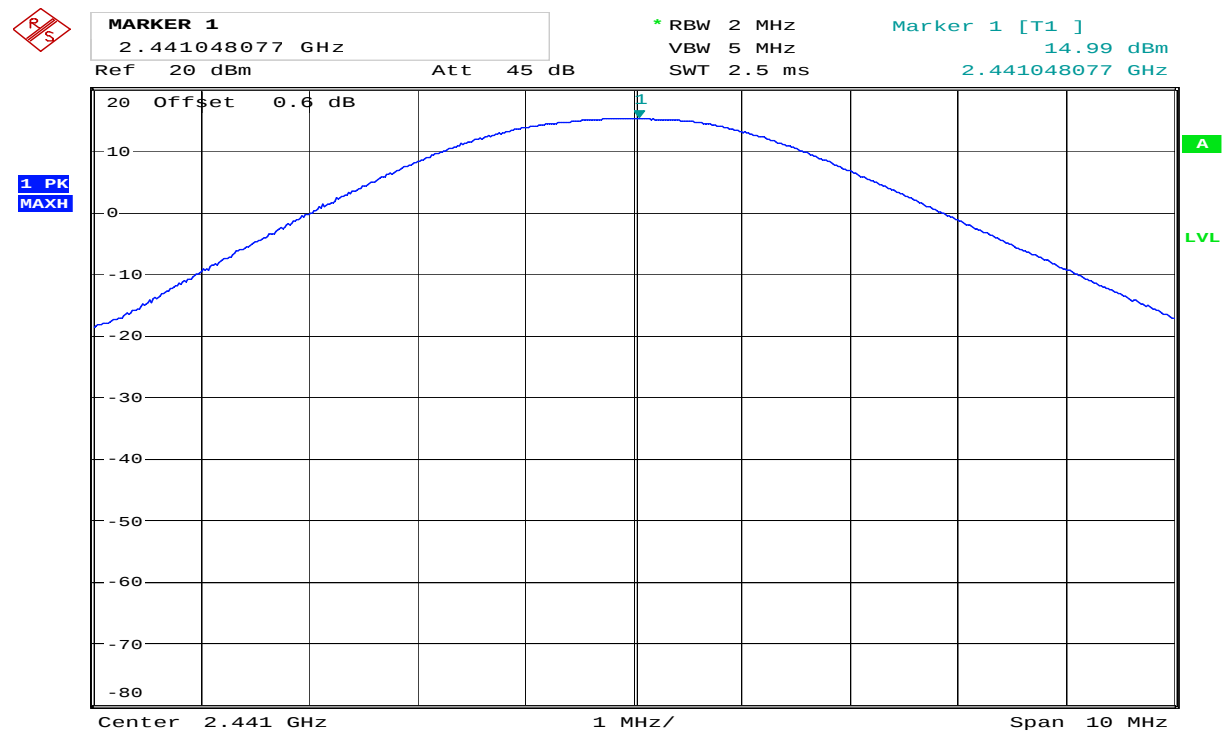
If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power from the intentional radiator shall be reduced below the stated value above by the amount in dB that the directional gain of the antenna exceeds 6 dBi.



Date: 15.JAN.2008 12:47:21
 RF Conducted Output Power, Channel 0

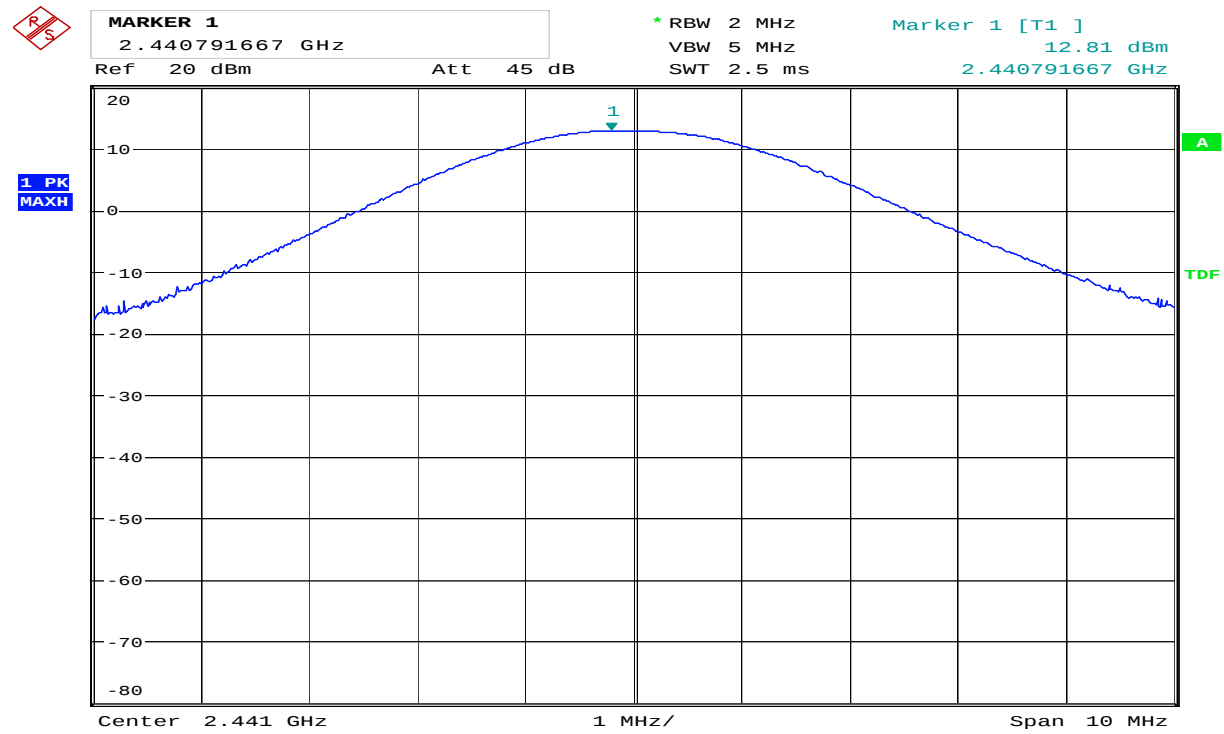


Date: 17.JAN.2008 16:09:21
 RF Radiated Output Power, Channel 0, Max (Sub Ant, HP)



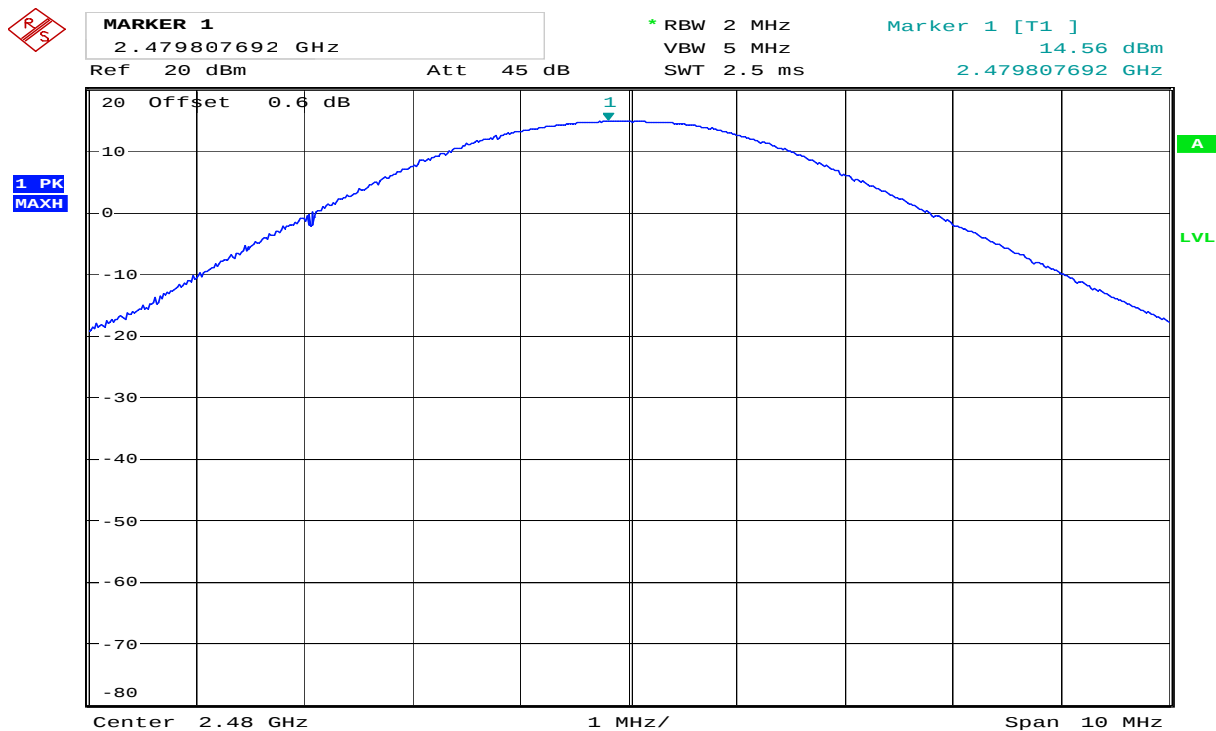
Date: 15. JAN. 2008 12:57:48

RF Conducted Output Power, Channel 39



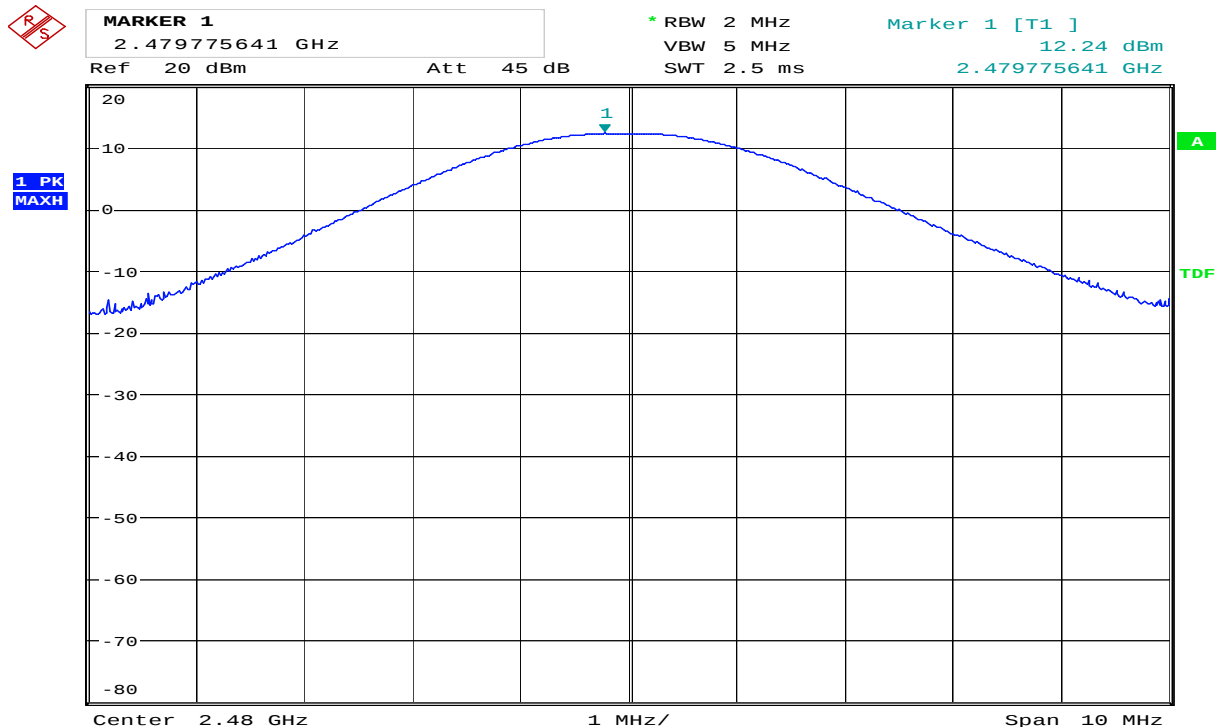
Date: 17. JAN. 2008 16:19:49

RF Radiated Output Power, Channel 39, Max (Sub Ant, HP)



Date: 15.JAN.2008 12:59:12

RF Conducted Output Power, Channel 78



Date: 17.JAN.2008 16:24:18

RF Radiated Output Power, Channel 78, Max (Sub Ant, HP)

4.7 Spurious Emissions

Para. No.: 15.247 (c)

Test Performed By: Frode Sveinsen

Date of Test: 16-Jan-2008

Test Results: Complies

Measurement Data:

Band-edge radiated power

Frequency	Power below nearest channel, dBμV/m		Limit	Margin
GHz	RF ch 0 / 78	Frequency hopping	dBμV/m	dB
2.39	< 54	< 54	74	> 20
2.4835	69.8	69.9	74	4.1

See attached graph

RF conducted power to 25 GHz see attached graphs.

Maximum RF level outside operating band:

RF ch 0: >50 dB/C, margin >30 dB

RF ch 39: >50 dB/C, margin >30 dB

RF ch 78: ≥36 dB/C, margin ≥16 dB

Duty Cycle Correction Factor Calculation:

See also Para 4.4 Occupancy Time.

RF duty cycle: Calculation according to RF burst Para 15.35 (c)

DH3 slots: 3 slots TX and 1 slot RX -> 3x0.625ms per frame -> frame length is 4x0.625ms = 2.5ms

Minimum number of hopping carriers: 20 -> The frame is repeated on the same channel every 50ms.

DC Correction factor = $20 \times \log((6 \times 0.625\text{ms}) / 100\text{ms}) = -28.5 \text{ dB}$

Maximum Duty Cycle Correction Factor according to Para 15.35 (b): -20 dB

This value is used to calculating the Peak Limit for radiated emissions above 1 GHz. The Peak Limit is the Average Limit (54 dBμV/m) minus the Duty Cycle Correction Factor, i.e. the Peak Limit is 74 dBμV/m in when the DC Correction Factor is -20 dB.

Radiated Emissions, 1-25 GHz

Detector: Peak

1-12 GHz measured at a distance of 3m, 12 - 25 GHz measured at 1m.

The EUT was rotated, the antenna height varied and emissions were checked on the highest, lowest and a middle channel.

Transmitter active

Frequency	RF Channel	Distance Correction factor	Field Strength, Peak 3 m	Duty Cycle correction factor	Limit Average Detector	Limit Peak Detector	Margin
GHz	0/39/78	dB	dB μ V/m	dB	dB μ V/m	dB μ V/m	dB
4.804	0	0	52.2	20	54	74	21.8
7.206	0	0	59.2	20	54	74	14.8
24.024	39	9.5	72.3	20	54	74	1.7

See attached graphs.

Antenna factor, amplifier gain and cable loss are included in Spectrum Analyzer "Transducer factor".
The Distance Correction Factor (9.5 dB) is included in the plots where the measurement is performed at 1m.

Radiated Emission 30 – 1000 MHz.

Detector: Quasi-Peak

Measuring distance 10m according to CISPR 22.

Tested in TX-mode with hopping active.

Frequency	Operational condition	Field strength	Measuring distance	Limit FCC15.209	Margin
MHz		dB μ V/m	metres	dB μ V/m	dB
80.000	TX On, VP	24.3	3	40	15.7
112.000	TX On, HP	28.2	3	43.5	15.3
136.000	TX On, HP	26.3	3	43.5	17.2
699.450	TX On, HP	34.5	3	46	11.5
776.000	TX On, HP	37.3	3	46	8.7
809.150	TX On, VP	40.6	3	46	5.4

See attached graphs.

Radiated Emissions 10 kHz-30 MHz.

Measuring distance 10m, measured with Peak detector.

No component were detected, see attached graph.

Limit is converted to 10m using 40 dB/decade according to 15.31 (f) (2).

Tested in TX-mode with hopping active.



15. Jan 08 13:58

Ref 20 dBm

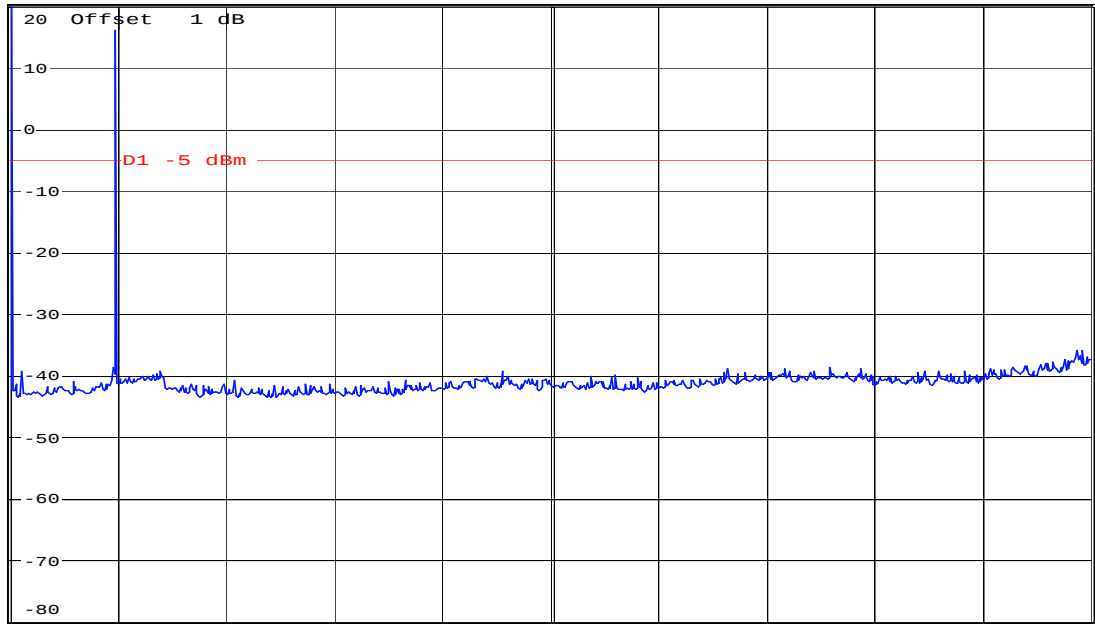
* Att 45 dB

* RBW 100 kHz

* VBW 100 kHz

SWT 2.5 s

1 PK
MAXH



Start 9 kHz

2.4999991 GHz/

Stop 25 GHz

Date: 15. JAN. 2008 13:58:53

Conducted Emissions, 9 kHz – 25 GHz, ch 0



15. Jan 08 14:00

Ref 20 dBm

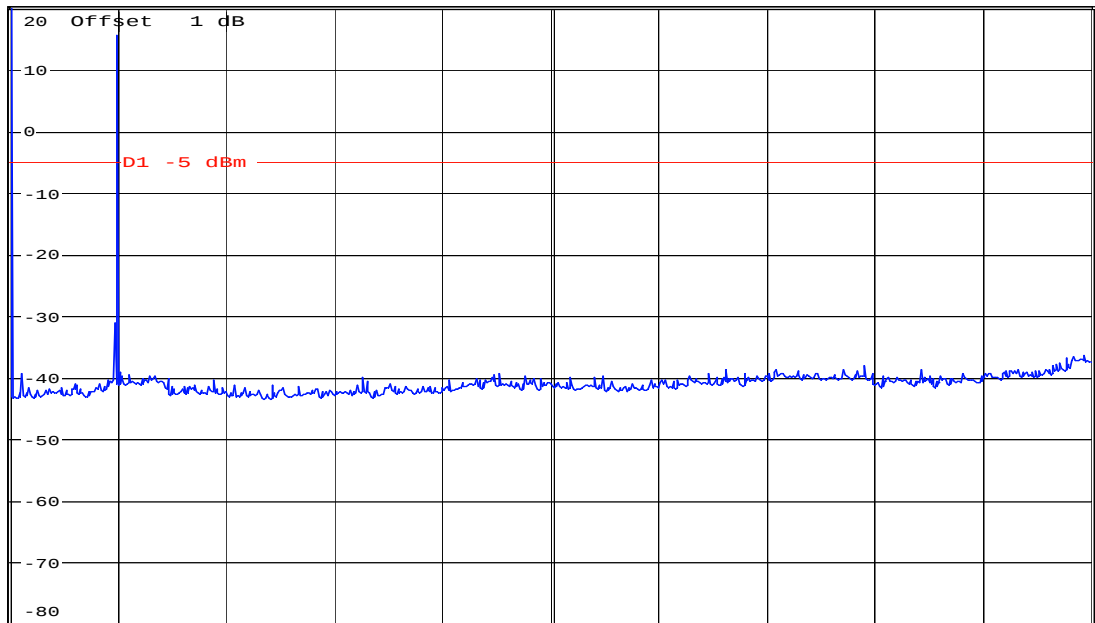
* Att 45 dB

* RBW 100 kHz

* VBW 100 kHz

SWT 2.5 s

1 PK
MAXH



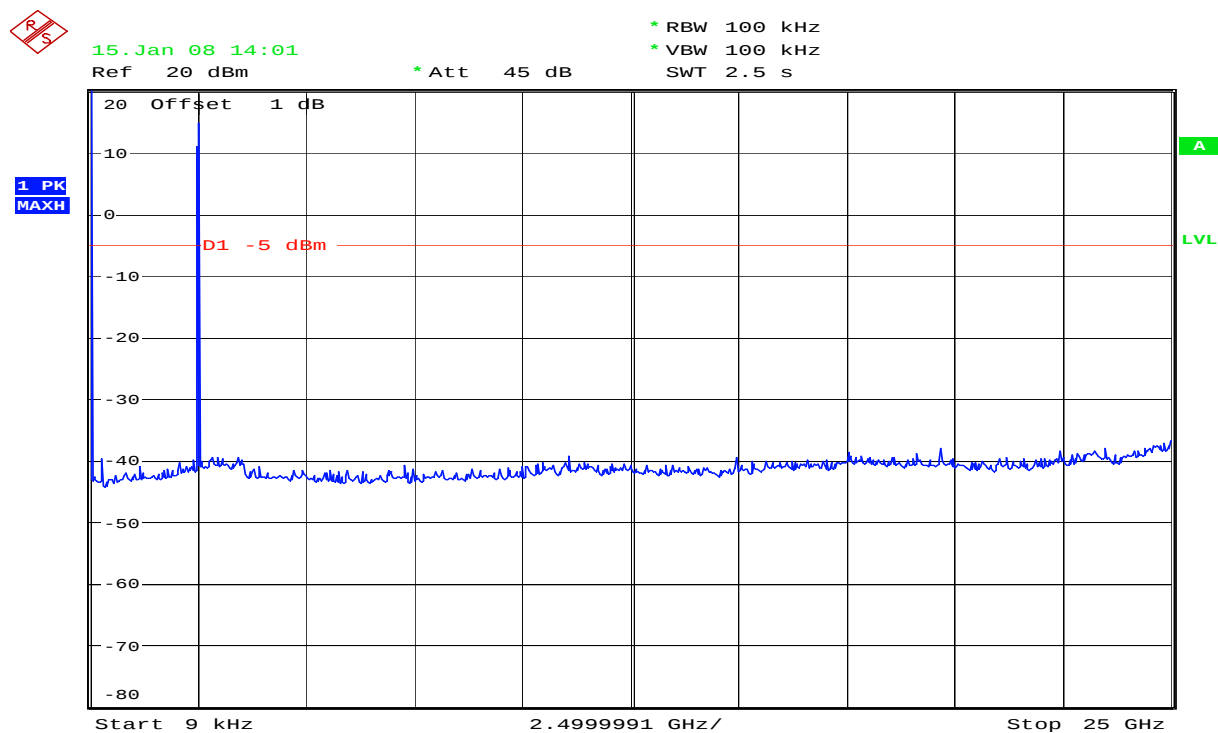
Start 9 kHz

2.4999991 GHz/

Stop 25 GHz

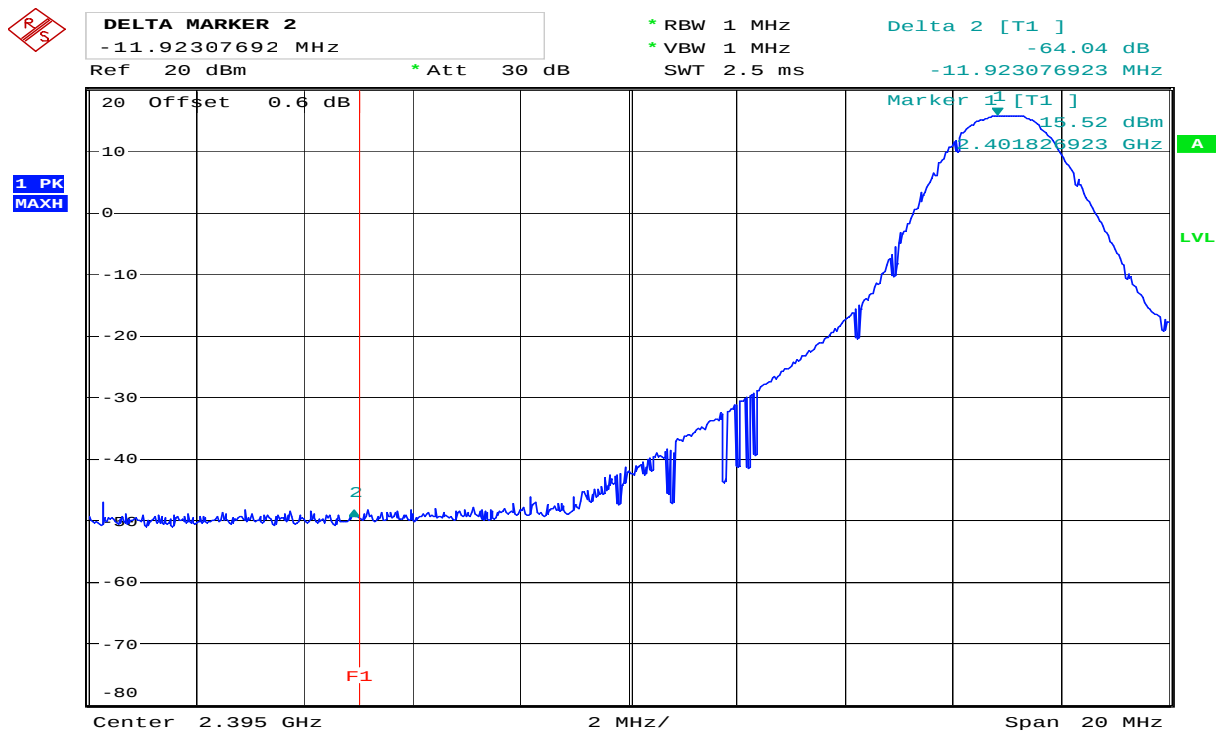
Date: 15. JAN. 2008 14:00:33

Conducted Emissions, 9 kHz – 25 GHz, ch 39



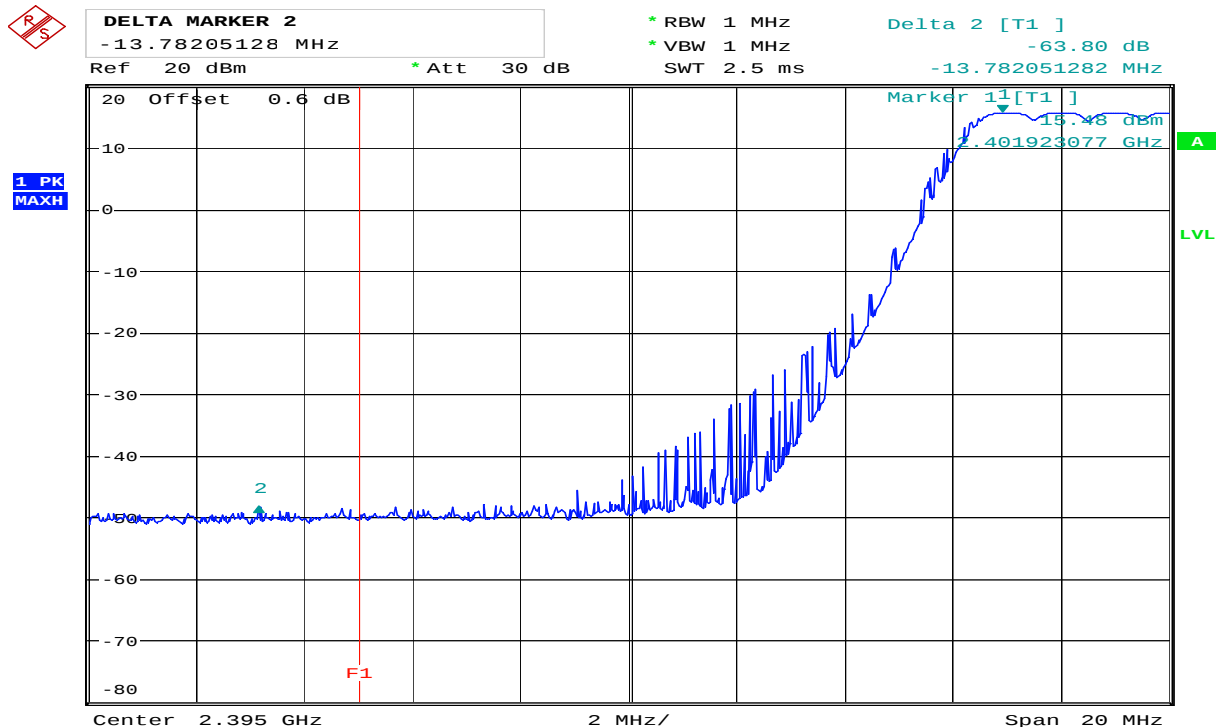
Date: 15 . JAN . 2008 14 : 01 : 43

Conducted Emissions, 9 kHz – 25 GHz, ch 78



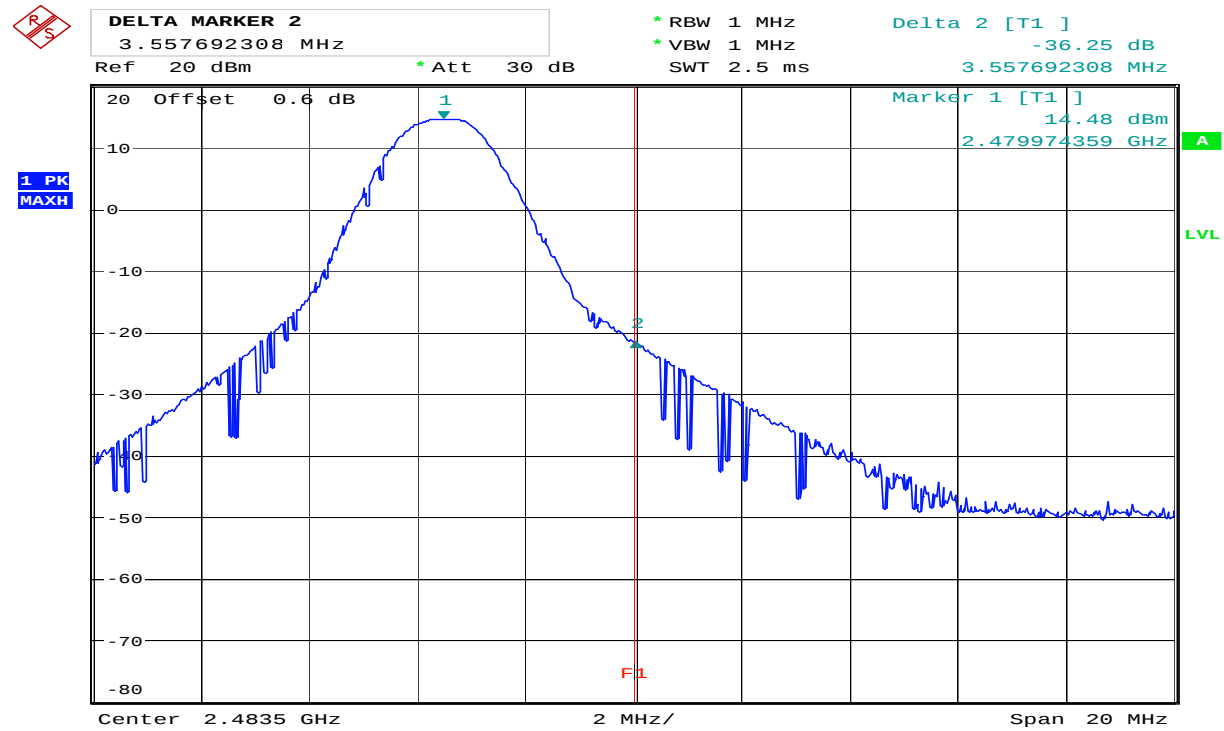
Date: 21. JAN. 2008 15:32:11

Band Edge Compliance, Conducted Emissions, 2.39 GHz, Channel 0



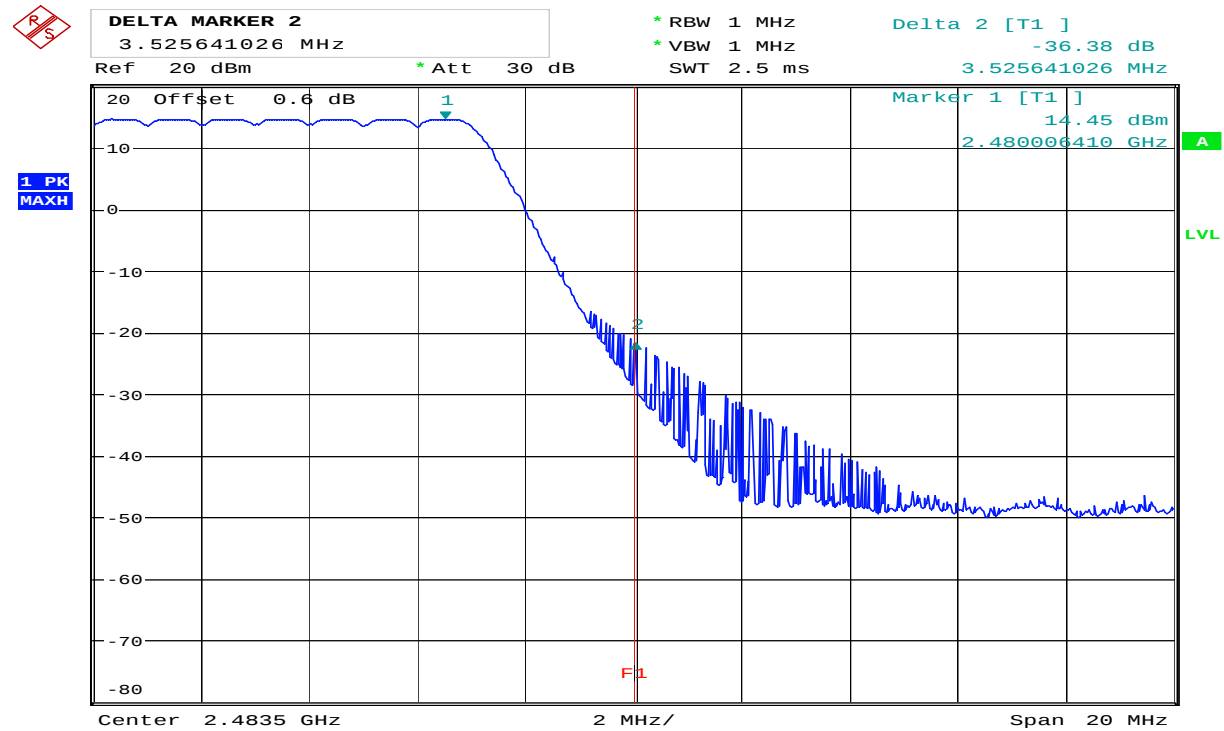
Date: 21. JAN. 2008 15:35:35

Band Edge Compliance, Conducted Emissions, 2.39 GHz, Hopping Active 20L



Date: 21. JAN. 2008 15:37:49

Band Edge Compliance, Conducted Emissions, 2.4835 GHz, Channel 78



Date: 21. JAN. 2008 15:42:12

Band Edge Compliance, Conducted Emissions, 2.4835 GHz, Hopping Active 20L

Nemko Comlab

Peak

17. Jan 08 11:10

Operator:

FS

Comment:

Panasonic

KX-TH1211 BT

FCC 15.209

Dist 10m

Scan Settings (4 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
10k	100k	1k	1k	PK	20ms	0dB	LN OFF	60dB
20k	20k	5k	9k	PK	20ms	AUTO	LN ON	60dB
20k	10M	5k	9k	PK	20ms	AUTO	LN OFF	60dB
10M	30M	5k	9k	PK	20ms	AUTO	LN OFF	60dB

Transducer No.

13

Start

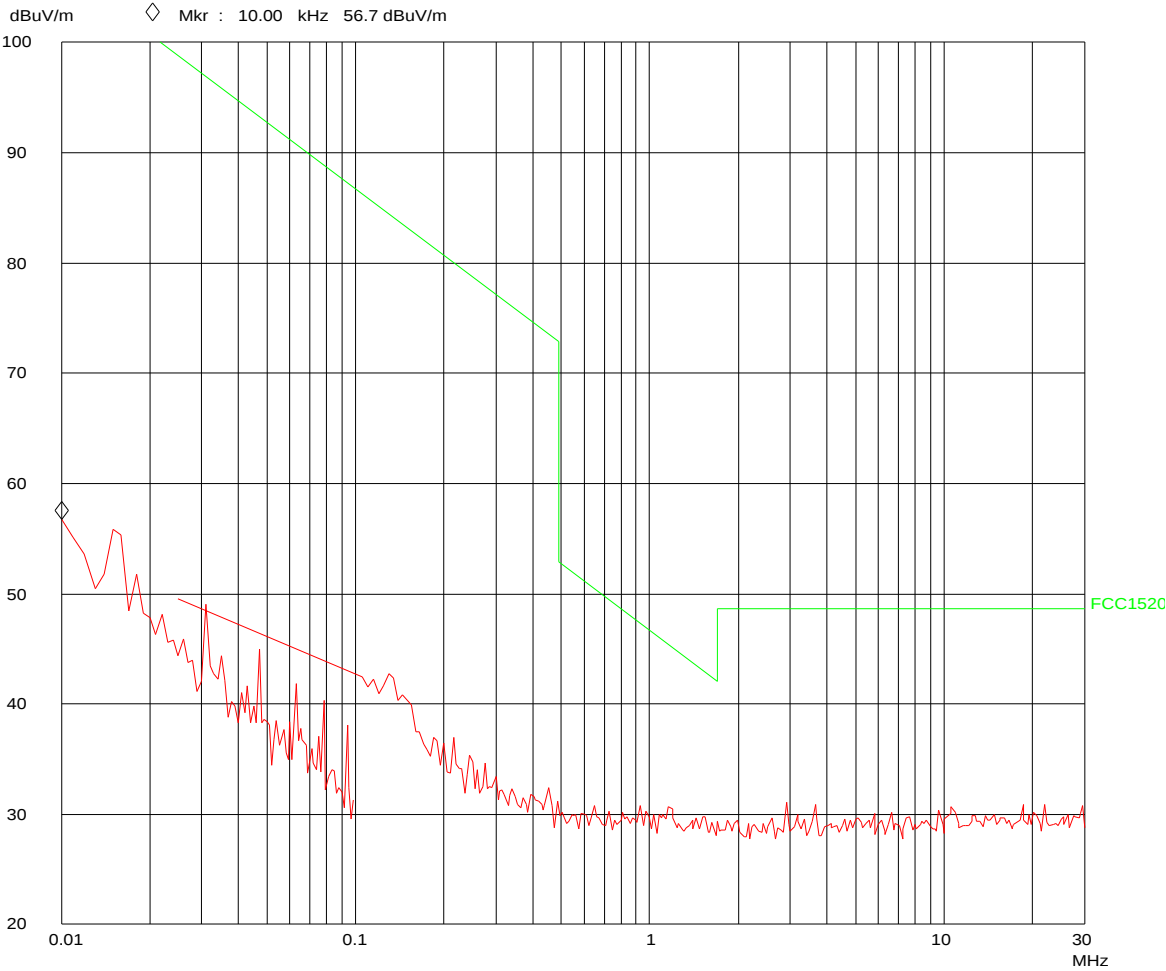
10k

Stop

30M

Name

HFH2Z2



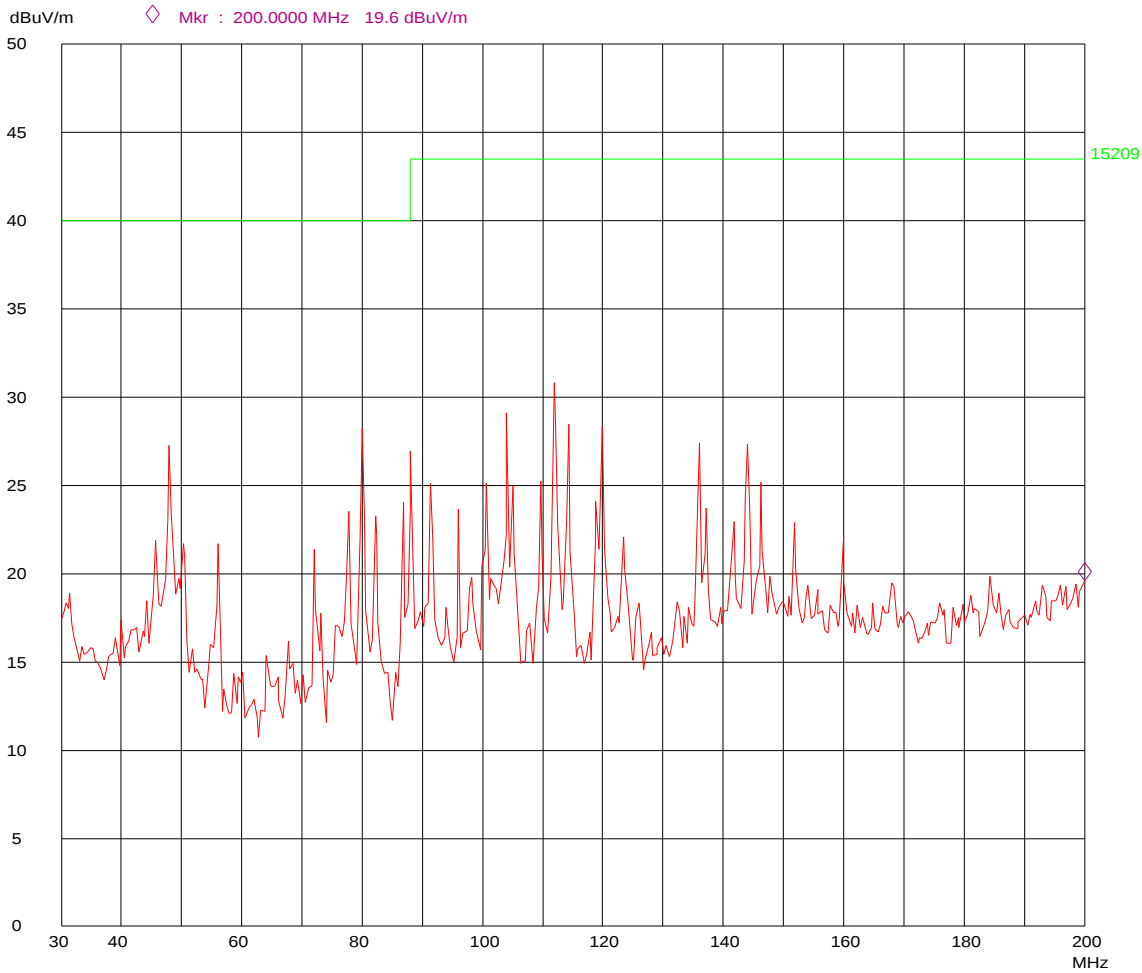
Radiated Emissions 10 kHz – 30 MHz

Nemko Comlab
Peak

17. Jan 08 10:24

EUT: KX-TH1211
Manuf: Panasonic
Op Cond: 3m dist; 1m VP
Operator: FS
Test Spec: FCC 15.209

Scan Settings (1 Range)									
Frequencies					Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge	
30M	200M	50k	120k	PK	50ms	0dBLN	ON	60dB	
Transducer No. Start Stop Name									
20	30M	200M	HK116						



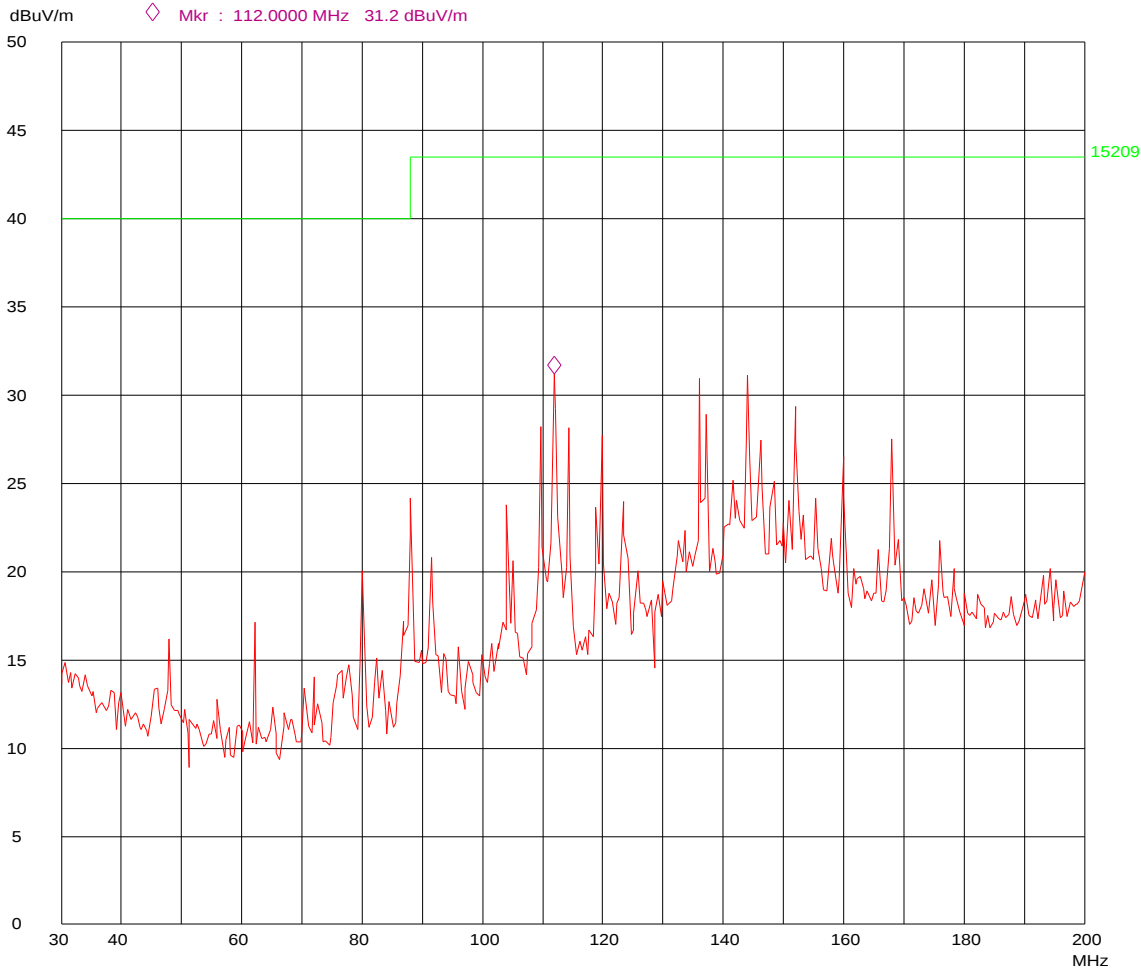
Radiated Emissions 30 – 200 MHz, Vertical Polarization

Nemko Comlab
Peak

17. Jan 08 10:44

EUT: KX-TH1211
Manuf: Panasonic
Op Cond: 3m dist; 2m HP
Operator: FS
Test Spec: FCC 15.209

Scan Settings (1 Range)					Receiver Settings				
Frequencies									
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge	
30M	200M	50k	120k	PK	50ms	0dBLN	ON	60dB	
Transducer No. Start Stop Name									
20	30M	200M	HK116						



Radiated Emissions 30 – 200 MHz, Horizontal Polarization

Nemko Comlab

Peak

16. Jan 08 18:12

EUT:

Manuf:

Op Cond:

Operator:

Test Spec:

KX-TH1211

Panasonic

3m dist; 1m VP

FS

FCC 15.209

Scan Settings (1 Range)

Frequencies				Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
200M	1000M	50k	120k	PK	50ms	0dB	LN ON	60dB

Transducer No.

Start

Stop

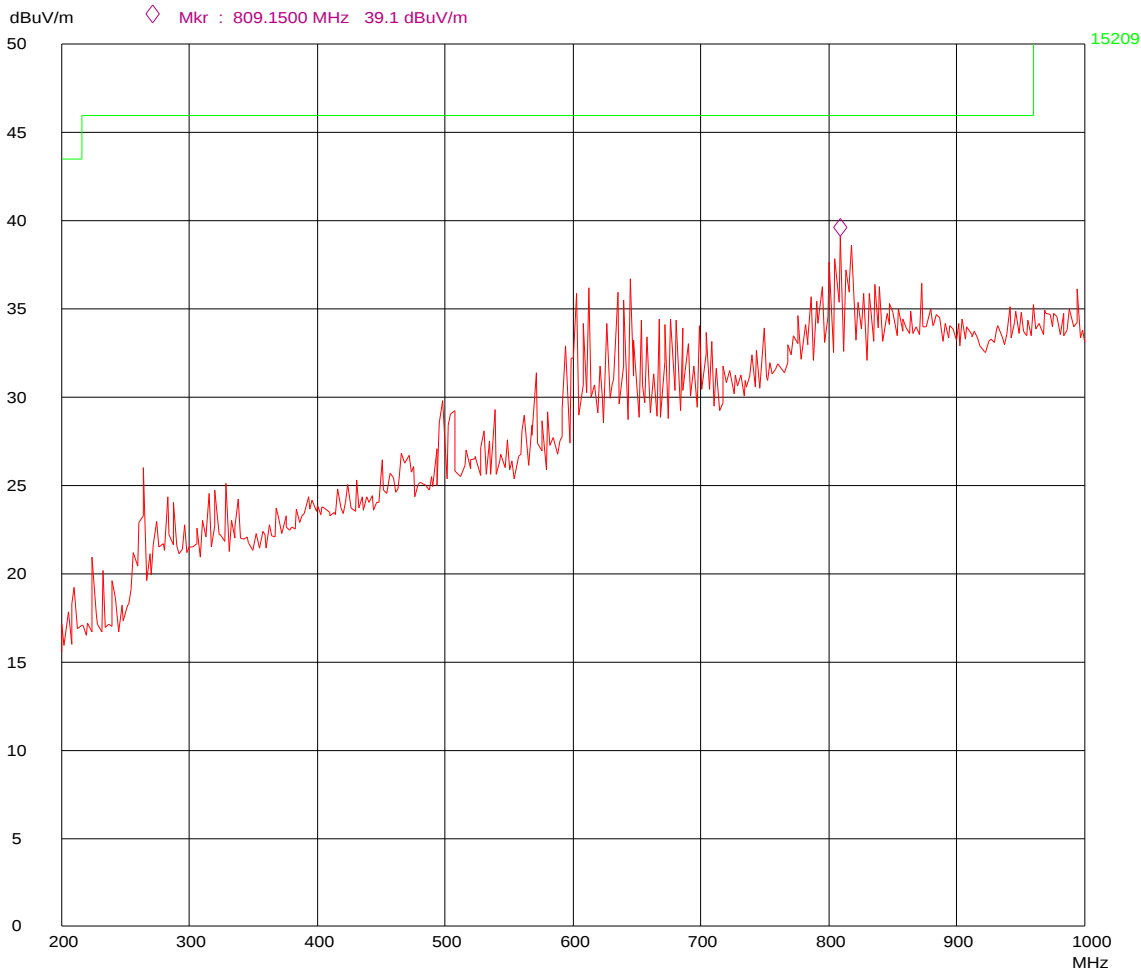
Name

21

200M

1000M

HL223



Radiated Emissions 200 – 1000 MHz, Vertical Polarization

Nemko Comlab
Peak

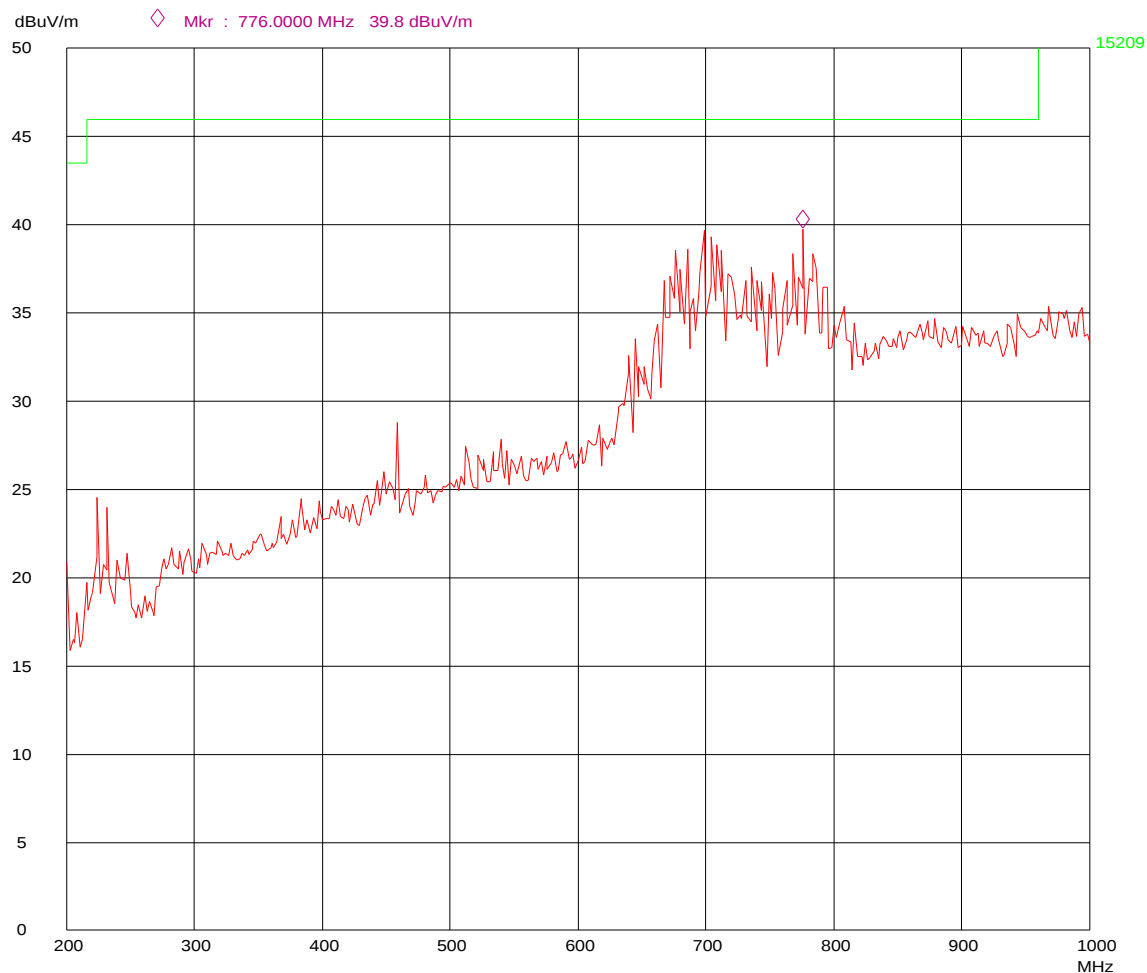
17. Jan 08 09:48

EUT: KX-TH1211
Manuf: Panasonic
Op Cond: 3m dist; 2m HP
Operator: FS
Test Spec: FCC 15.209

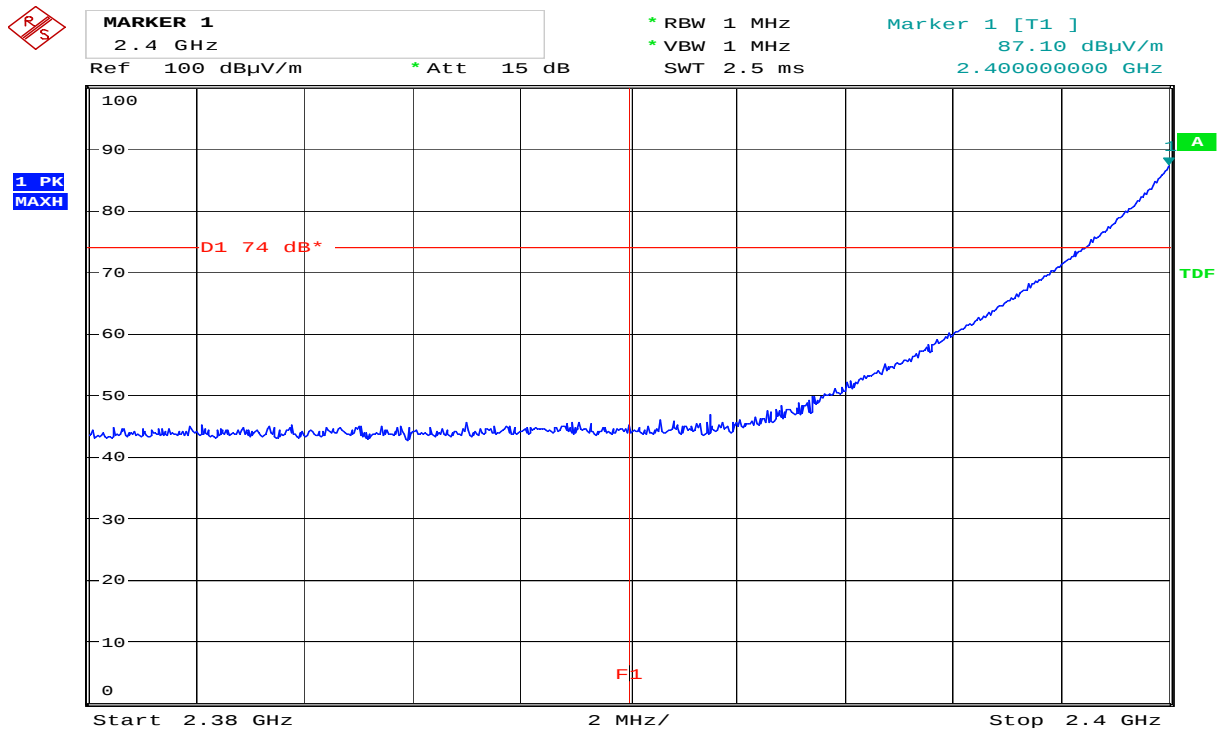
Scan Settings (1 Range)

----- Frequencies -----			----- Receiver Settings -----					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
200M	1000M	50k	120k	PK	50ms	0dB	LN ON	60dB

Transducer No.	Start	Stop	Name
21	200M	1000M	HL223

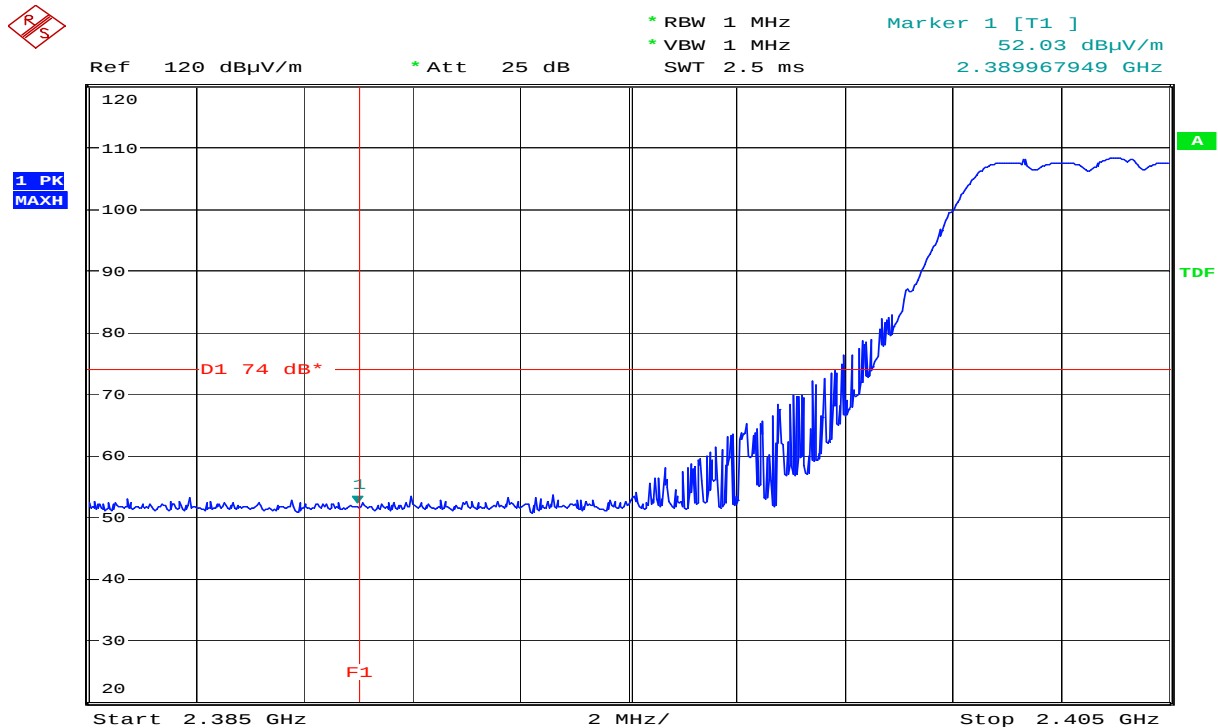


Radiated Emissions 200 – 1000 MHz, Horizontal Polarization



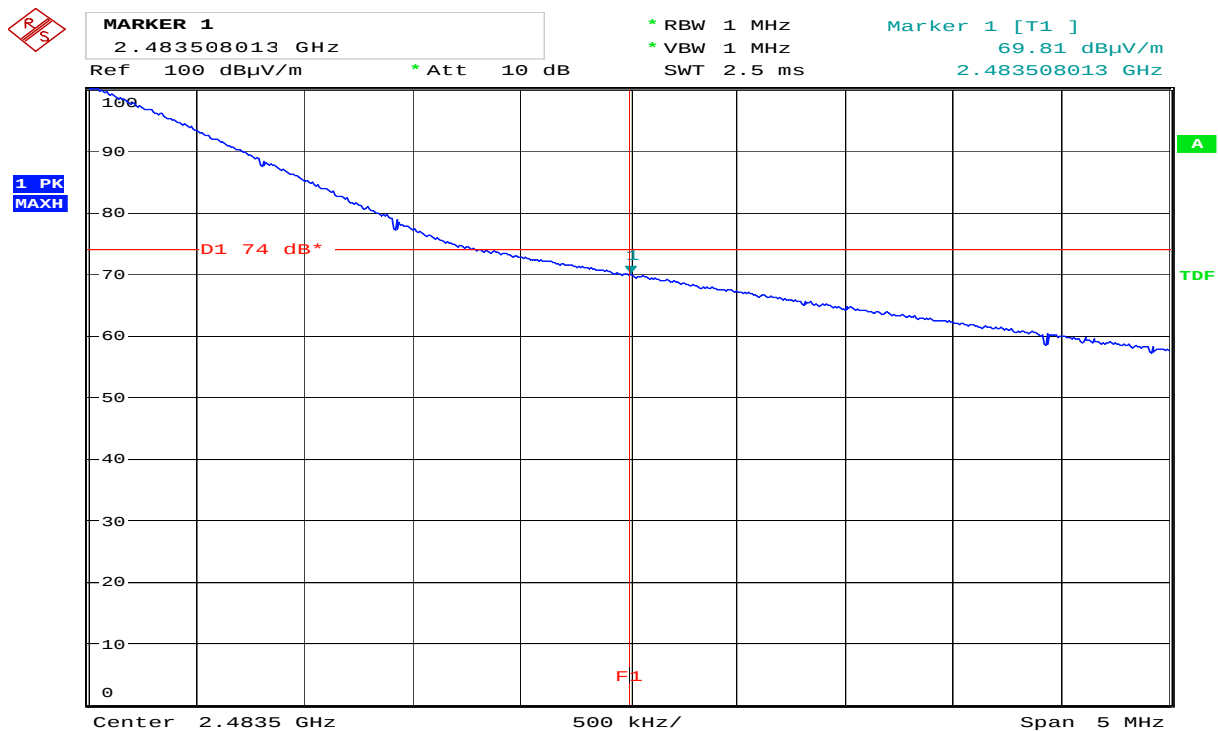
Date: 16. JAN. 2008 12:44:25

Band Edge Compliance, Radiated Emissions, 2.39GHz, ch 0, VP, DH1



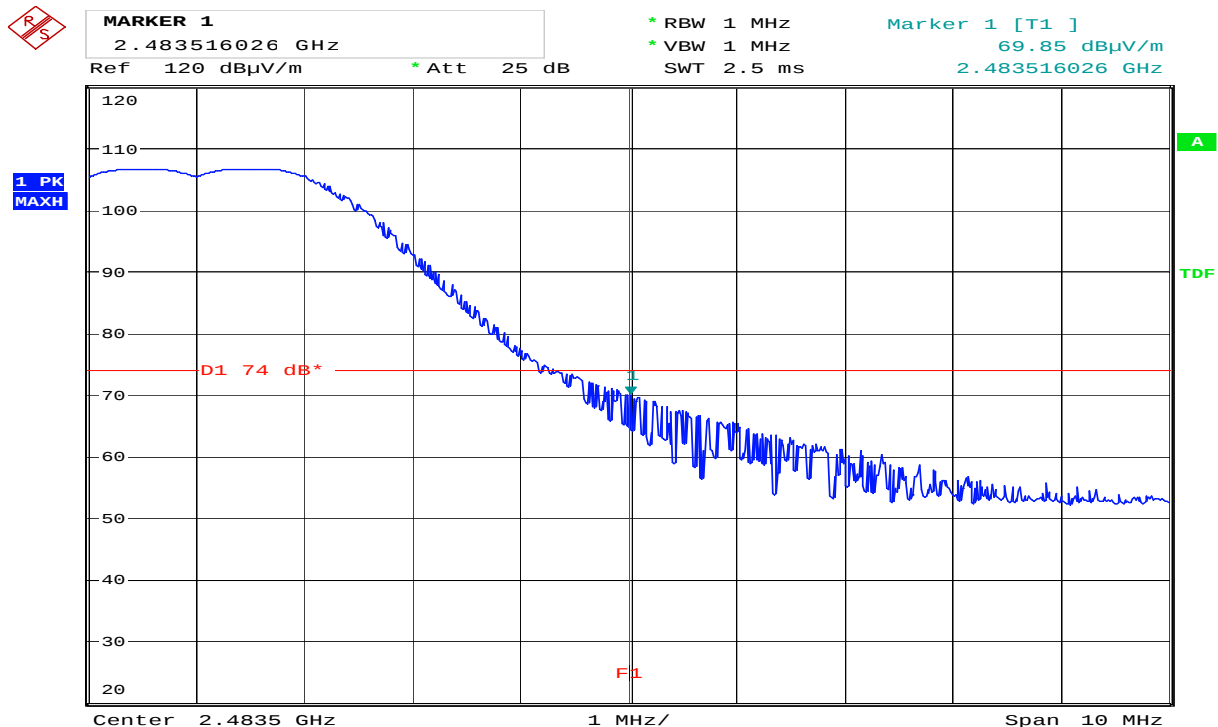
Date: 16. JAN. 2008 14:58:14

Band Edge Compliance, Radiated Emissions, 2.39GHz, Hopping Active, VP, DH1



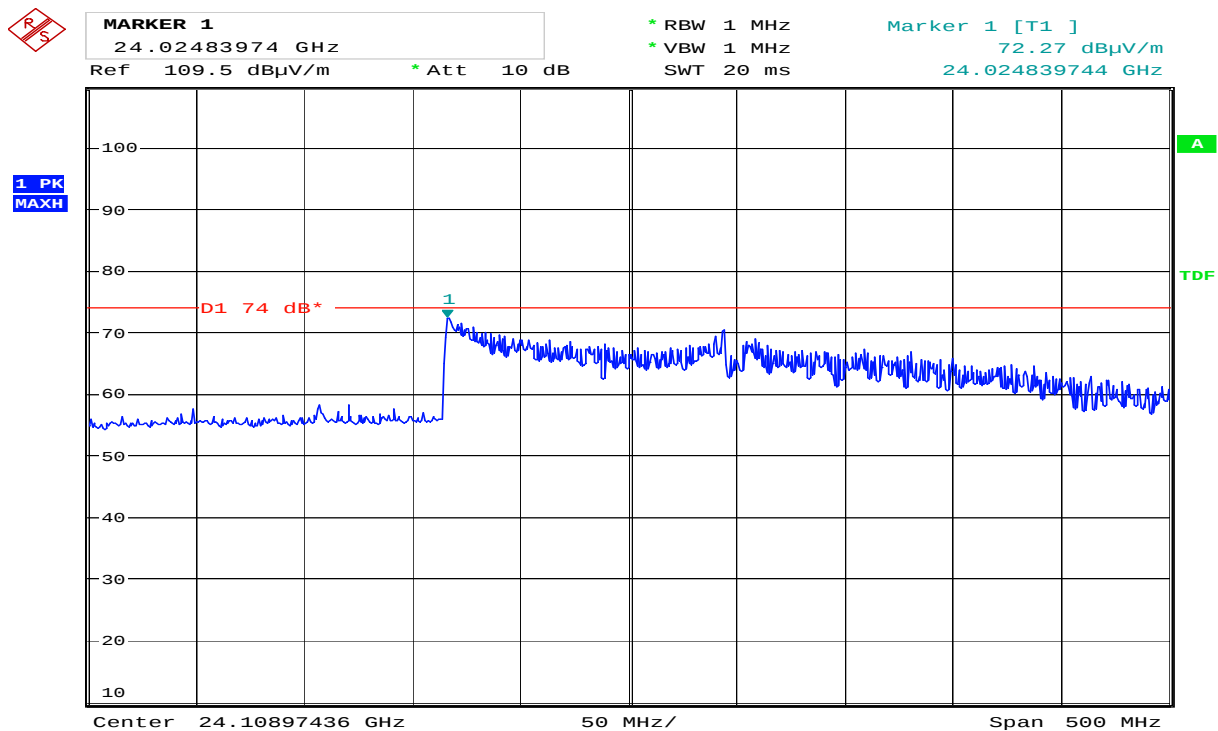
Date: 16. JAN. 2008 13:43:45

Band Edge Compliance, Radiated Emissions, 2.4835GHz, ch 0, VP, DH1



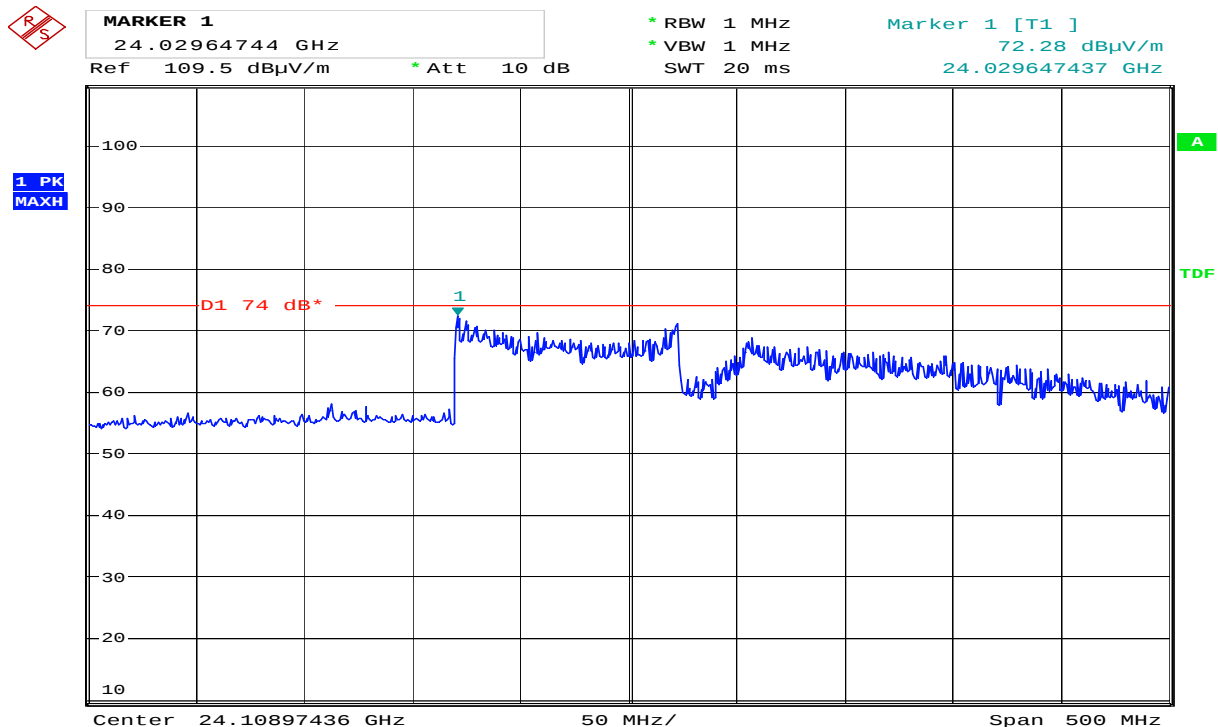
Date: 16. JAN. 2008 14:39:39

Band Edge Compliance, Radiated Emissions, 2.4835GHz, Hopping Active, VP, DH1



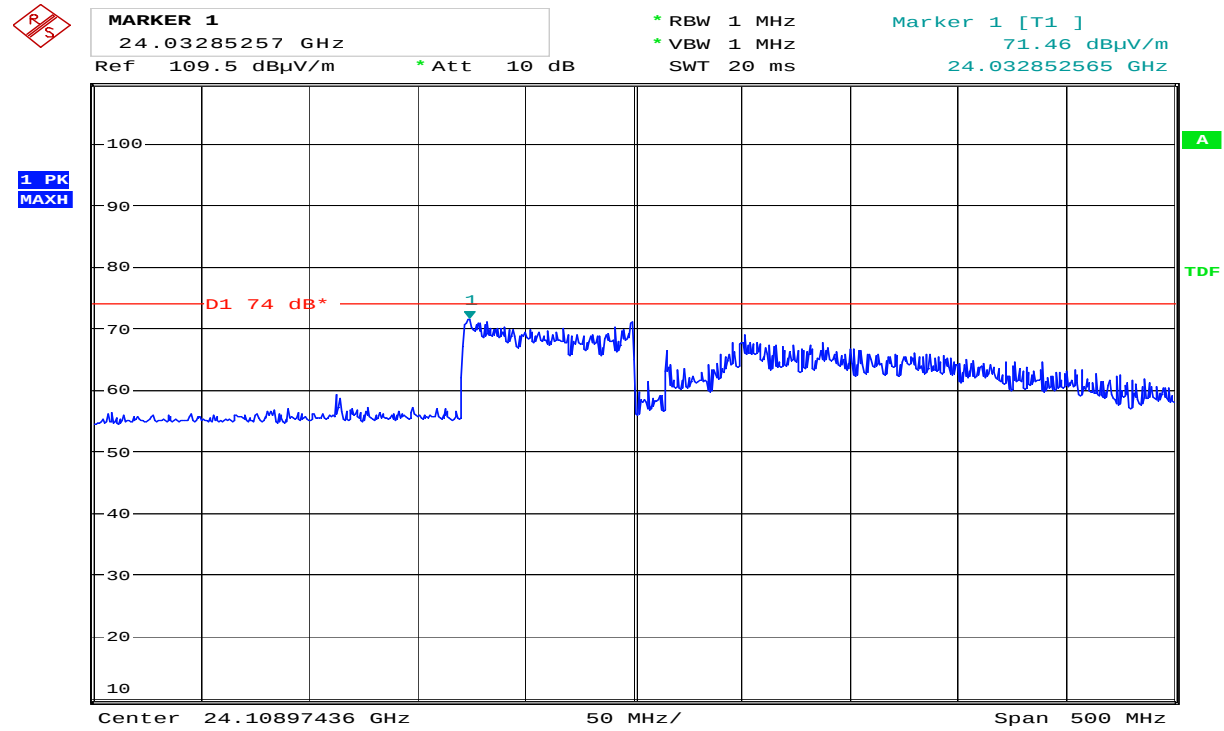
Date: 16.JAN.2008 16:49:09

Radiated Emissions 24.024GHz, ch 0, HP, @1m



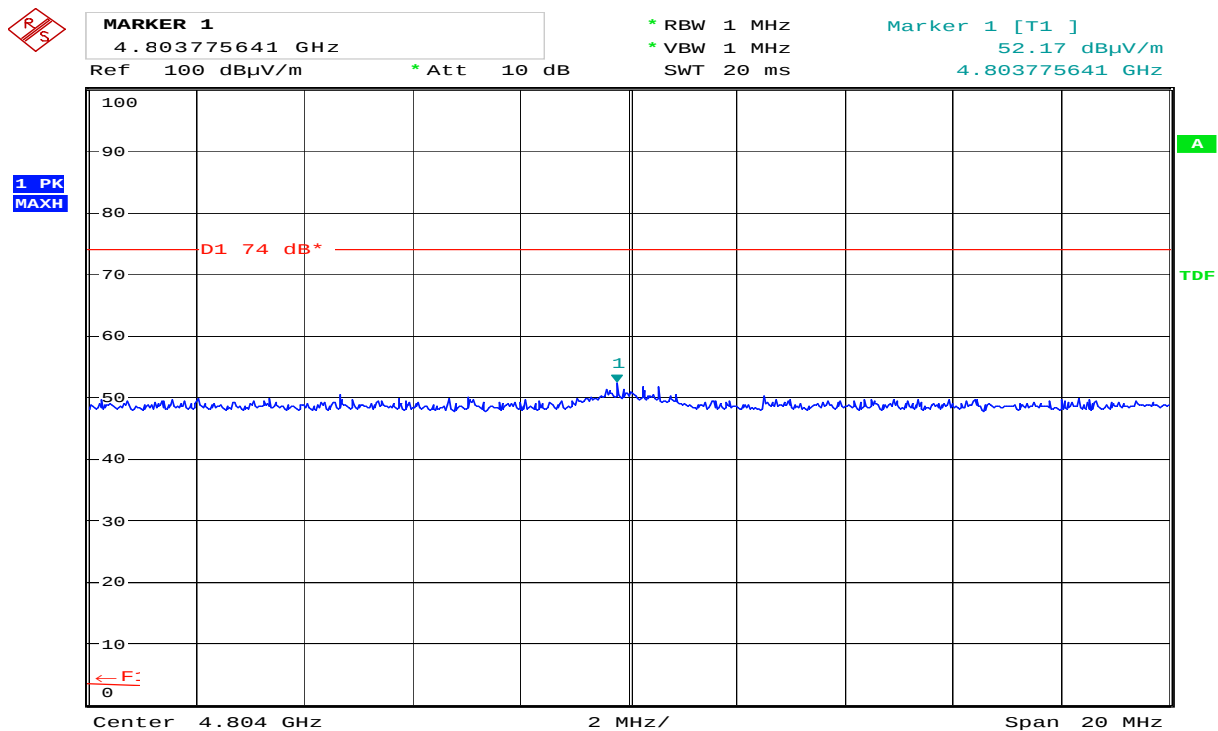
Date: 16.JAN.2008 17:01:00

Radiated Emissions 24.024GHz, ch 39, HP, @1m



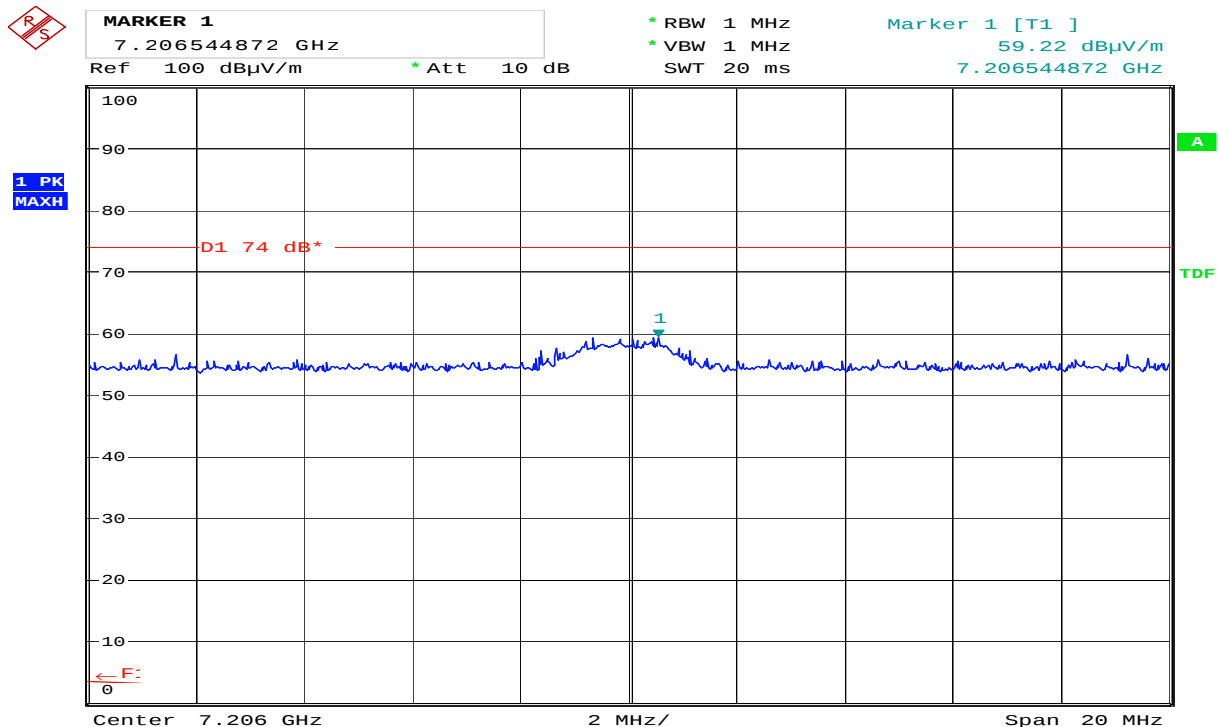
Date: 16.JAN.2008 16:57:11

Radiated Emissions 24.024GHz, ch 78, HP, @1m



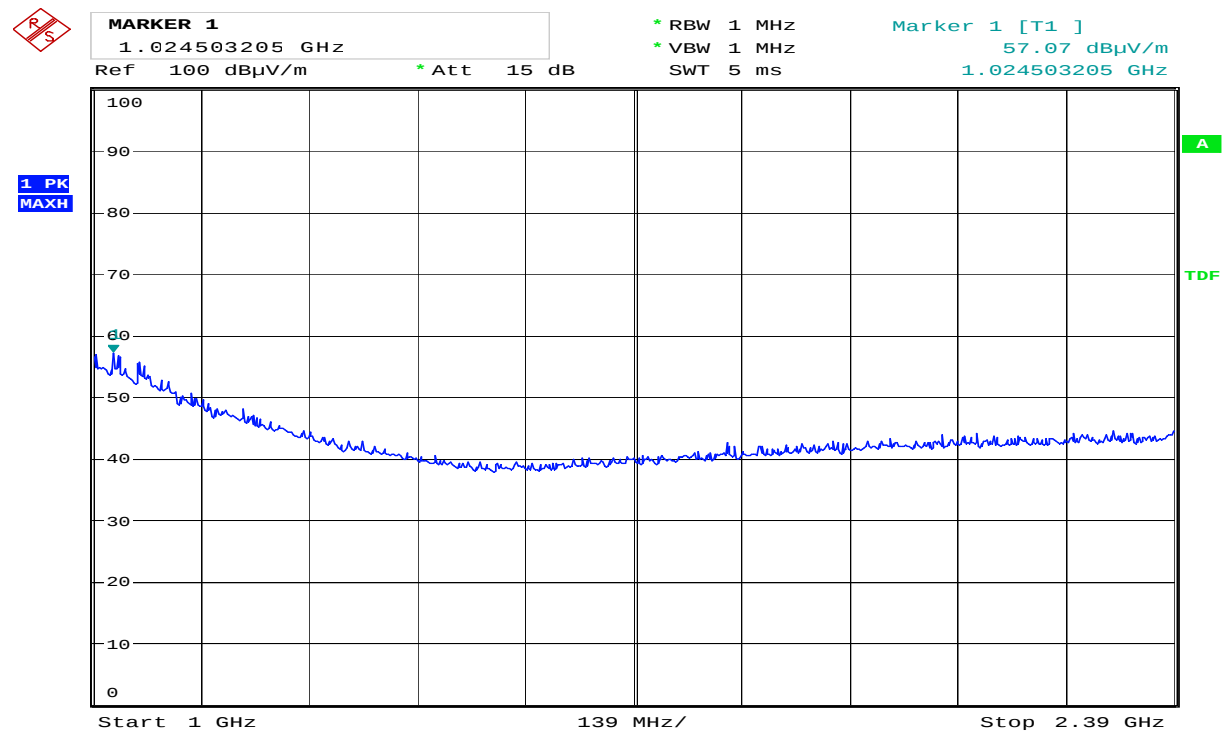
Date: 16.JAN.2008 12:51:42

Radiated Emissions 4.804GHz, ch 0, VP



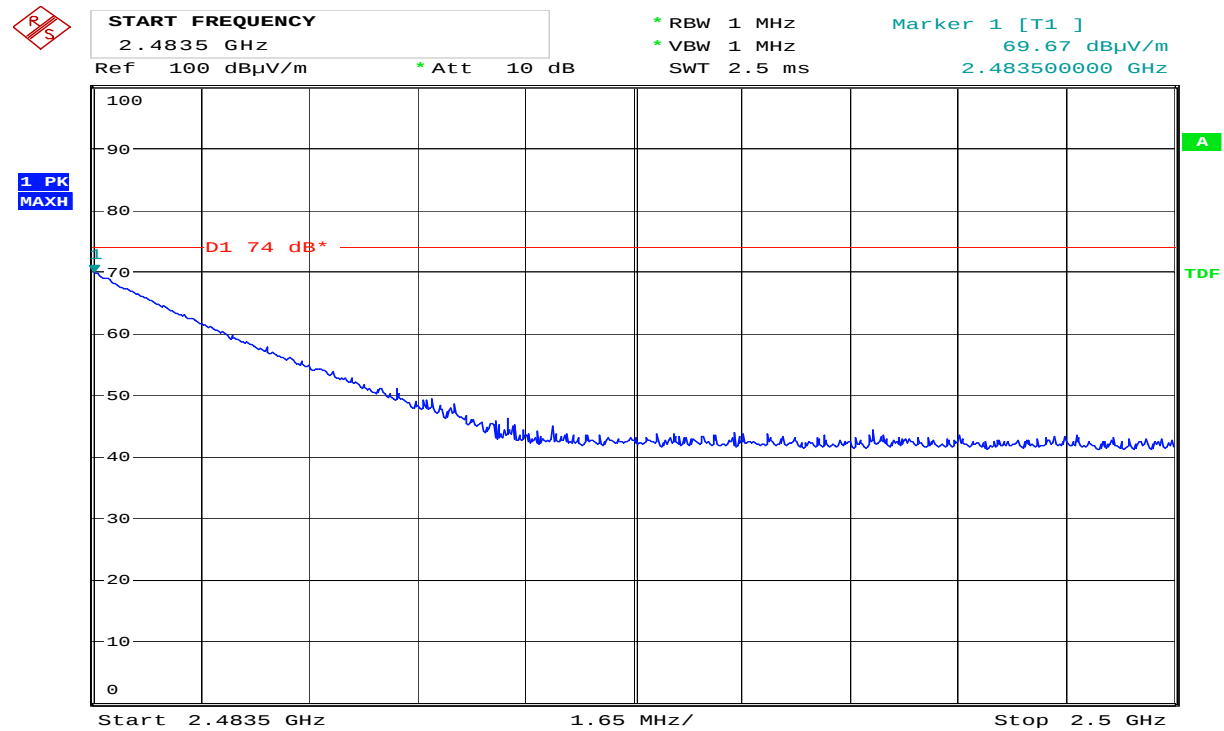
Date: 16.JAN.2008 13:11:47

Radiated Emissions 7.206GHz, ch 0, VP



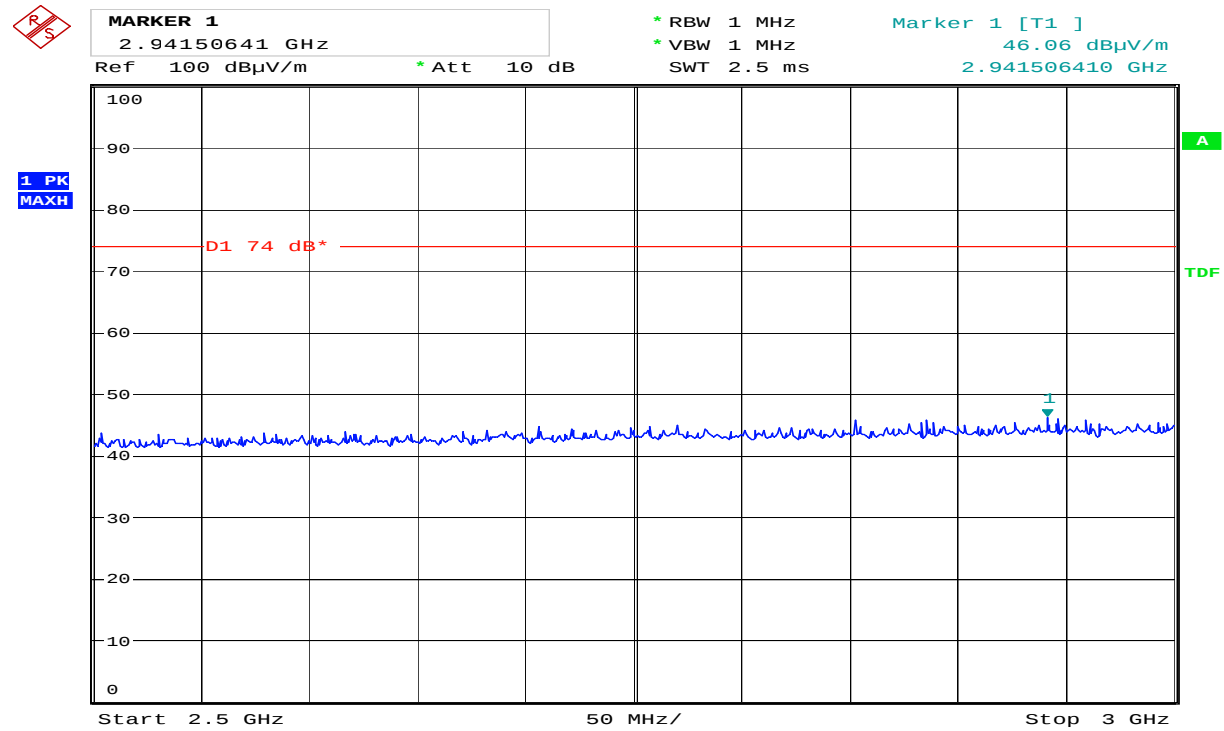
Date: 16.JAN.2008 12:25:18

Radiated Emissions 1-2.39 GHz, ch 0, VP

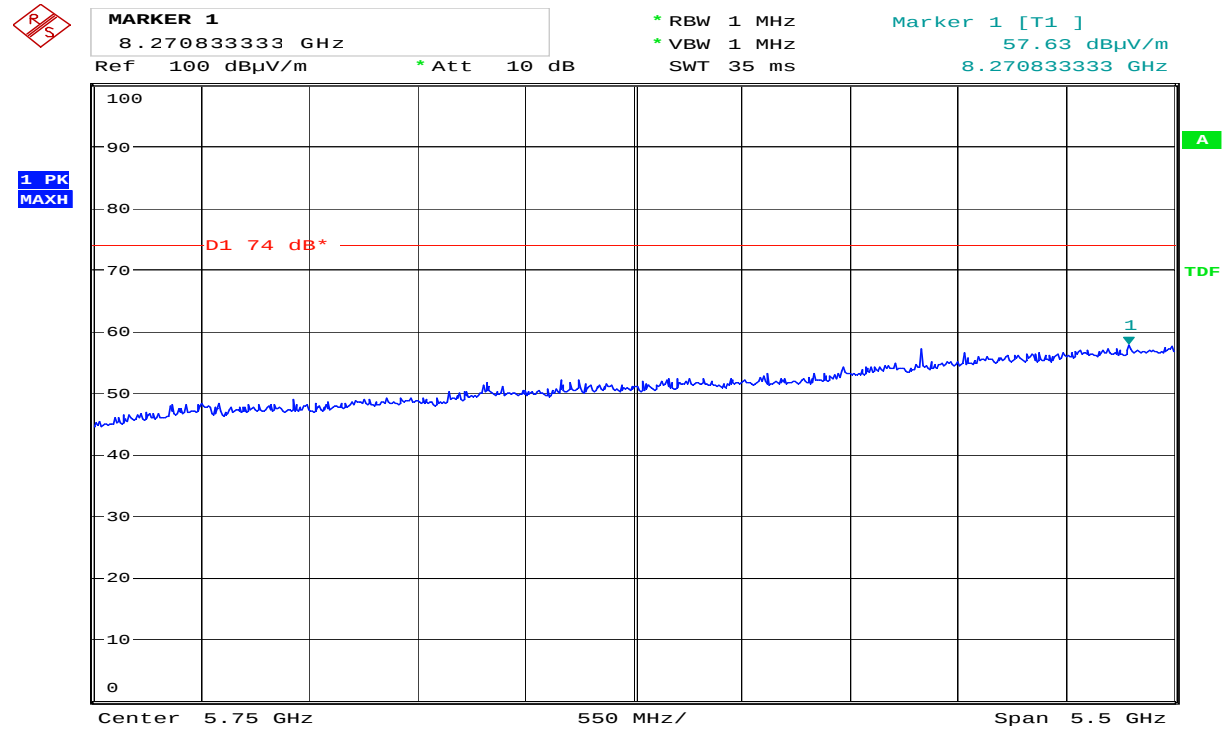


Date: 16.JAN.2008 13:46:43

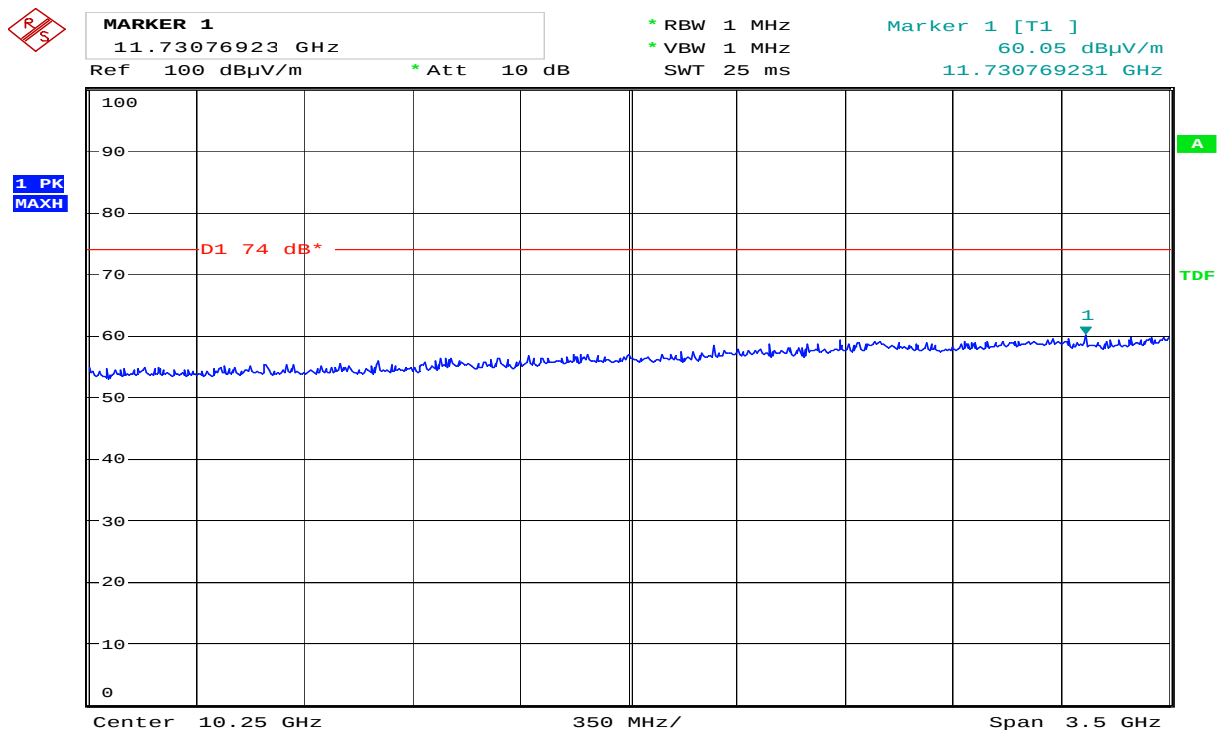
Radiated Emissions 2.4835-2.5 GHz, ch 78, VP



Date: 16.JAN.2008 14:17:15
Radiated Emissions 2.5-3.0 GHz, ch 78, VP

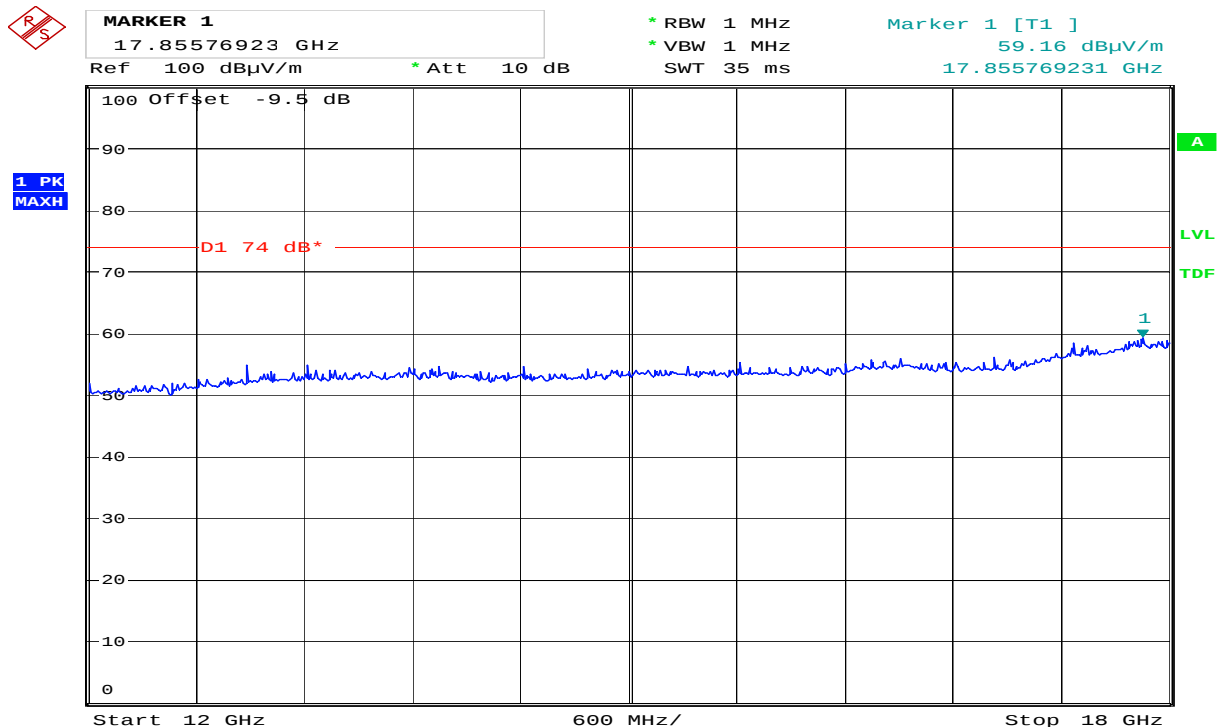


Date: 16.JAN.2008 13:19:50
Radiated Emissions 3.0-8.5 GHz, ch 0, VP



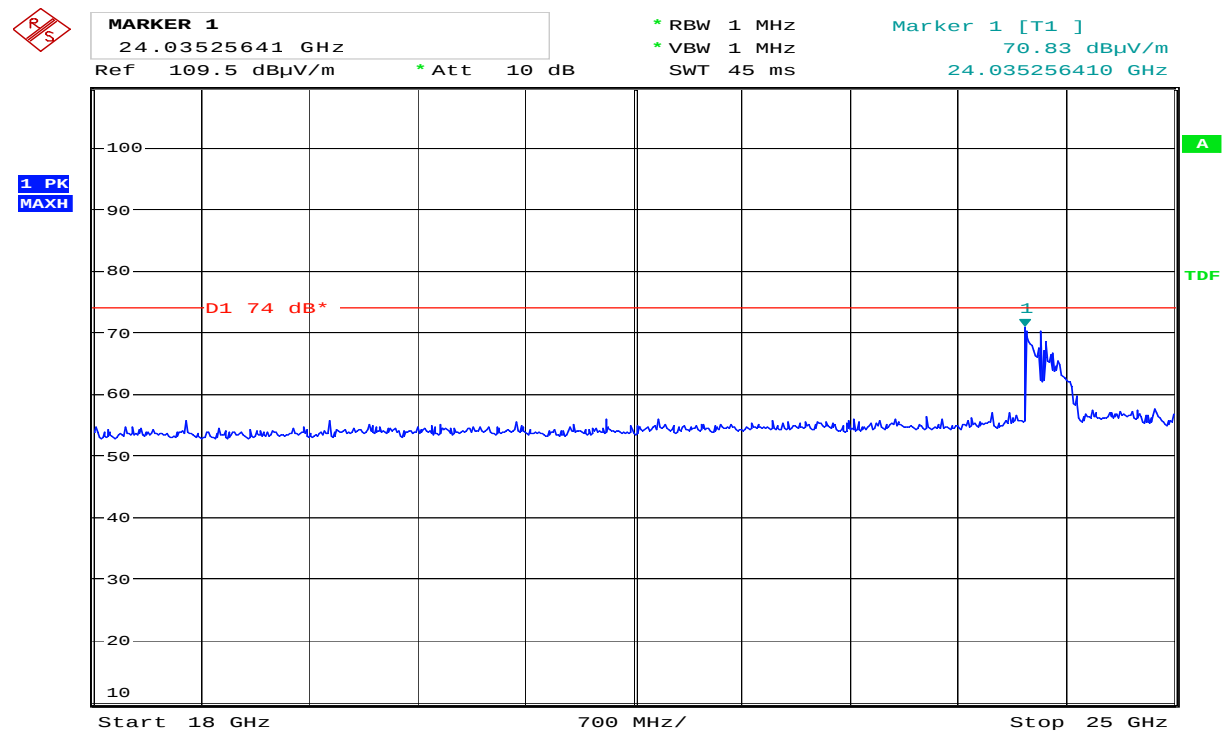
Date: 16.JAN.2008 15:51:29

Radiated Emissions 8.5-12.0 GHz, ch 0, VP



Date: 16.JAN.2008 16:16:32

Radiated Emissions 12.0-18.0 GHz @1m, ch 0, VP



Date: 16.JAN.2008 17:05:22

Radiated Emissions 18.0-25.0 GHz @1m, ch 39, HP

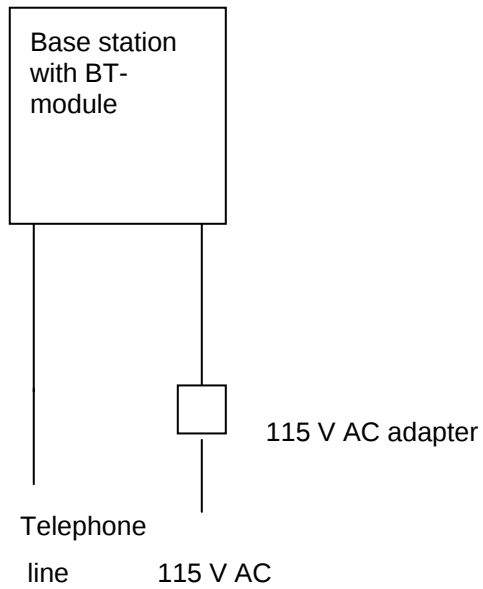
5 LIST OF TEST EQUIPMENT

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment and ancillaries are identified (numbered) by the Test Laboratory.

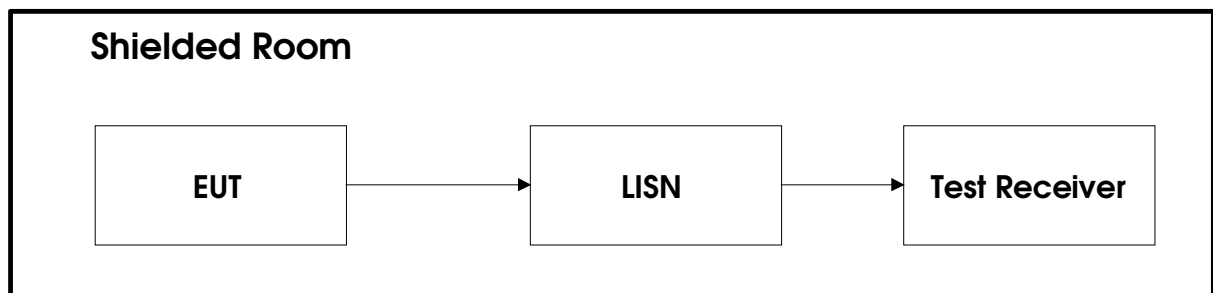
No.	Instrument/ancillary	Type of instrument/ancillary	Manufacturer	Ref. no.
1	FSU26	Spectrum Analyzer	Rohde & Schwarz	LR 1504
2	3115	Antenna horn	EMCO	LR 1330
3	643	Antenna horn	Narda	LR 093
4	642	Antenna horn	Narda	LR 220
5	PM7320X	Antenna horn	Siverts lab	LR 103
6	DBF-520-20	Antenna horn	Systron Donner	LR 101
7	638	Antenna horn	Narda	LR 098
8	6812B	AC Power Source	Agilent	LR 1515
9	ESH3-Z3	LISN	Rohde & Schwarz	LR 1076
10	8449B	Amplifier	Hewlett Packard	LR 1322
11	HFH2-Z2	Antenna loop	Rohde and Schwarz	LR 285
12	10855A	Amplifier	Hewlett Packard	LR 1445
13	HL223	Antenna log.per	Rohde & Schwarz	LR 1261
14	HK116	Antenna biconic	Rohde & Schwarz	LR 1260
15	ESVS 30	Test Receiver	Rohde & Schwarz	LR 1101
16	ESN	Test Receiver	Rohde & Schwarz	LR 1237
17	80S	Signal Generator	Powertron	LT 502

6 BLOCK DIAGRAM

6.1 System set up



6.2 Power Line Conducted Emission



6.3 Test Site Radiated Emission

