

Test Report

Product	BT Transceiver in UPCS Base Station	
Name and address of the applicant	Panasonic Corporation of North America	
Name and address of the manufacturer	Panasonic System Networks Co., Ltd. 1-62, 4-chome, Minoshima, Hakata-ku Fukuoka 812-8531, Japan	
Model	KX-TG9541	
Rating	/	
Trademark	Panasonic	
Serial number	/	
Additional information	/	
Tested according to	FCC Part 15.247 Frequency Hopping Transmitters Industry Canada RSS-210, Issue 8 Low Power Licence-Exempt Radiocommunications Devices	
Order number	238317	
Tested in period	2013.05.29 to 2013.06.18	
Issue date	2013.07.15	
Name and address of the testing laboratory	 Instituttveien 6 Kjeller, Norway	FCC No: 994405 IC OATS: 2040D-1 TEL: (+47) 64 84 57 00 FAX: (+47) 64 84 57 05
	 Prepared by [Frode Sveinsen]	 Approved by [G.Suhanthakumar]
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1 INFORMATION

1.1 Test Item

Name :	Panasonic
FCC ID :	ACJ96NKX-TG9541
Industry Canada ID :	216A-KXTG9541
Model/version :	KX-TG9541
Serial number :	/
Hardware identity and/or version:	PNLB1217xx
Software identity and/or version :	SW208
Frequency Range :	2402 - 2480 MHz
Number of Channels :	79
Type of Modulation :	Digital (GFSK)
User Frequency Adjustment :	None
Conducted Output Power :	0.0052 mW (Peak)
Type of Power Supply :	AC Adaptor PNLV234
Antenna Connector :	None
Number of Antennas :	1
Antenna Diversity Supported :	No

Description of Test Item

The EUT is a Bluetooth Module in a DECT Base station.

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 20 cm from any humans. For the purposes of exposure evaluation this EUT is a mobile or fixed device. MPE Calculation at 20 cm satisfying FCC requirements is submitted as a separate document.

The EUT is exempted from RF Exposure Evaluation to Industry Canada requirements since the output power complies with the power levels of section 2.5.2 of RSS-102 Issue 4.

1.2 Test Environment

1.2.1 *Normal test condition*

Temperature:	21.0 – 22.2 °C
Relative humidity:	37.9 – 48.6 %
Normal test voltage:	120 V AC

The values are the limit registered during the test period.

1.3 Test Engineer(s)

Frode Sveinsen

1.4 Test Equipment

See list of test equipment in clause 5.

2 TEST REPORT SUMMARY

2.1 General

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 and Industry Canada RSS-210 Issue 8.

Tests were performed in accordance with ANSI C63.4-2003 and DA 00-705 Filing and Guidelines for Frequency Hopping Spread Spectrum Systems.

Radiated tests were made in a semi-anechoic chamber at measuring distances of 3m and 10m.

A description of the test facility is on file with the FCC and Industry Canada.

New Submission

Production Unit

Class II Permissive Change

Pre-production Unit

DSS Equipment Code

Family Listing



TEST REPORT NO: 238317-2

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".

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2.2 Test Summary

Name of test	FCC Part 15 reference	RSS-210 Issue 8 reference	Result
Supply Voltage Variations	15.31(e)	8 (RSS-GEN)	Complies
Number of Operating Frequencies	15.31(m)	A8.1	Complies
Antenna Requirement	15.203	7.1.4 (RSS-GEN)	Complies
Power Line Conducted Emission	15.107(a) 15.207(a)	7.2.2 (RSS-GEN)	Complies
Channel Separation	15.247(a)(1)	A8.1	Complies
Pseudorandom Hopping Algorithm	15.247(a)(1)	A8.1	Complies
Time of Occupancy	15.247(a)(1)(iii)	A8.1	Complies
Occupied Bandwidth	15.247(a)(1)	A8.1	Complies
Minimum 6 dB Bandwidth	15.247(a)(2)	A8.2	N/A ²
Peak Power Output	15.247(b)	A8.4	Complies
Power Spectral Density	15.247(d)	A8.2	N/A ²
Spurious Emissions (Antenna Conducted)	15.247(c)	A8.5	N/A ¹
Spurious Emissions (Radiated)	15.247(c) 15.109(a) 15.209(a)	A8.5	Complies

¹ The tested equipment has integrated antennas only

² Not Applicable for FHSS equipments

2.3 Description of modification for Modification Filing

Not applicable.

2.4 Comments

The measurements were done with the EUT powered by 120 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.

2.5 Family List Rational

Not Applicable.

3 TEST RESULTS

3.1 Power Line Conducted Emissions

Para. No.: 15.207 (a)

Test Performed By: Thomas Dangle	Date of Test: 18 Jun 2013
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Measurement procedure: ANSI C63.4-2009 using 50 μ H/50 ohms LISN.

Test Results: Complies

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

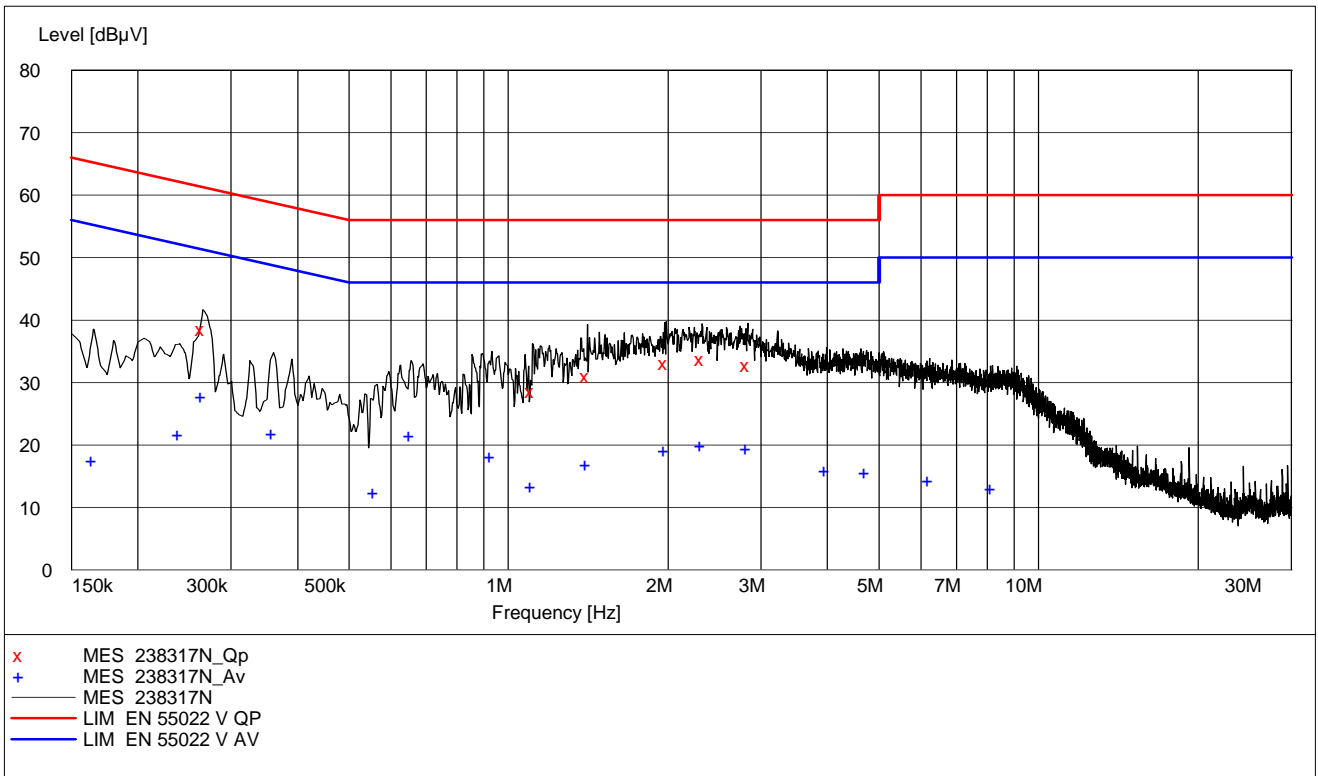
Highest measured value (L1 and N):

Off-Hook Mode:

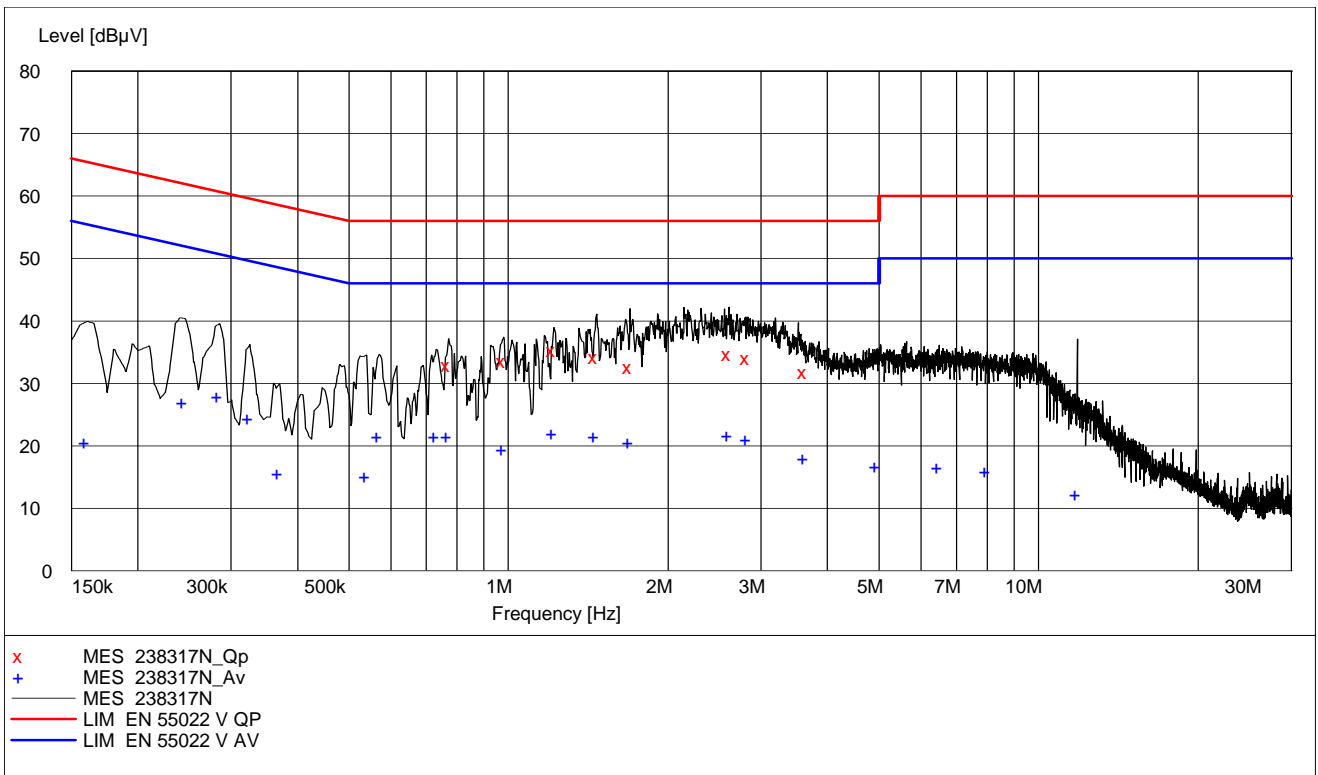
Frequency [MHz]	Level [dBuV]	Af [dB]	Limit [dBuV]	Margin [dB]	Det	Position	Verdict [Pass/Fail]
0.265000	38.60	10.10	61.30	22.70	QP	N	Pass
1.110000	28.70	10.20	56.00	27.30	QP	N	Pass
1.410000	31.00	10.20	56.00	25.00	QP	N	Pass
1.985000	33.20	10.20	56.00	22.80	QP	N	Pass
2.320000	33.70	10.30	56.00	22.30	QP	N	Pass
2.830000	32.70	10.30	56.00	23.30	QP	N	Pass
0.165000	17.50	10.10	55.20	37.70	AV	L1	Pass
0.240000	21.80	10.10	52.10	30.30	AV	L1	Pass
0.265000	27.90	10.10	51.30	23.40	AV	N	Pass
0.360000	22.00	10.20	48.70	26.70	AV	N	Pass
0.560000	12.40	10.20	46.00	33.60	AV	N	Pass
0.655000	21.60	10.20	46.00	24.40	AV	N	Pass
0.930000	18.30	10.20	46.00	27.70	AV	N	Pass
1.110000	13.50	10.20	46.00	32.50	AV	N	Pass
1.410000	16.90	10.20	46.00	29.10	AV	N	Pass
1.985000	19.20	10.20	46.00	26.80	AV	N	Pass
2.320000	19.90	10.30	46.00	26.10	AV	N	Pass
2.830000	19.50	10.30	46.00	26.50	AV	N	Pass
3.980000	16.00	10.40	46.00	30.00	AV	N	Pass
4.745000	15.70	10.40	46.00	30.30	AV	N	Pass
6.225000	14.40	10.50	50.00	35.60	AV	N	Pass
8.195000	13.10	10.60	50.00	36.90	AV	N	Pass

On-Hook Mode, Handset Charging:

Frequency [MHz]	Level [dBuV]	Af [dB]	Limit [dBuV]	Margin [dB]	Det	Position	Verdict [Pass/Fail]
0.770000	33.00	10.20	56.00	23.00	QP	N	Pass
0.980000	33.60	10.20	56.00	22.40	QP	N	Pass
1.220000	35.40	10.20	56.00	20.60	QP	N	Pass
1.465000	34.30	10.20	56.00	21.70	QP	L1	Pass
1.695000	32.60	10.20	56.00	23.40	QP	L1	Pass
2.605000	34.70	10.30	56.00	21.30	QP	L1	Pass
2.830000	34.00	10.30	56.00	22.00	QP	L1	Pass
3.625000	31.80	10.30	56.00	24.20	QP	N	Pass
0.160000	20.50	10.10	55.50	35.00	AV	L1	Pass
0.245000	27.00	10.10	51.90	24.90	AV	N	Pass
0.285000	27.90	10.10	50.70	22.80	AV	L1	Pass
0.325000	24.50	10.20	49.60	25.10	AV	L1	Pass
0.370000	15.70	10.20	48.50	32.80	AV	L1	Pass
0.540000	15.20	10.20	46.00	30.80	AV	N	Pass
0.570000	21.60	10.20	46.00	24.40	AV	N	Pass
0.730000	21.60	10.20	46.00	24.40	AV	N	Pass
0.770000	21.60	10.20	46.00	24.40	AV	N	Pass
0.980000	19.60	10.20	46.00	26.40	AV	N	Pass
1.220000	22.10	10.20	46.00	23.90	AV	N	Pass
1.465000	21.50	10.20	46.00	24.50	AV	L1	Pass
1.695000	20.50	10.20	46.00	25.50	AV	L1	Pass
2.605000	21.70	10.30	46.00	24.30	AV	L1	Pass
2.830000	21.10	10.30	46.00	24.90	AV	L1	Pass
3.625000	18.00	10.30	46.00	28.00	AV	N	Pass
4.960000	16.70	10.40	46.00	29.30	AV	N	Pass
6.495000	16.60	10.50	50.00	33.40	AV	N	Pass
8.000000	16.00	10.60	50.00	34.00	AV	N	Pass
11.845000	12.30	10.70	50.00	37.70	AV	N	Pass



Off-Hook Mode, 120 V AC, Plot shows maximum of Phase L1 and N



On-Hook Mode, Handset Charging, 120 V AC, Plot shows maximum of Phase L1 and N

3.2 Channel Separation and 20dB Bandwidth

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

Test Results: **Complies**

Measurement Data:

Channel Separation:	1.0 MHz
Nominal value for Channel Separation	1.0 MHz
20 dB Bandwidth of hopping channel:	926 kHz

See attached plots

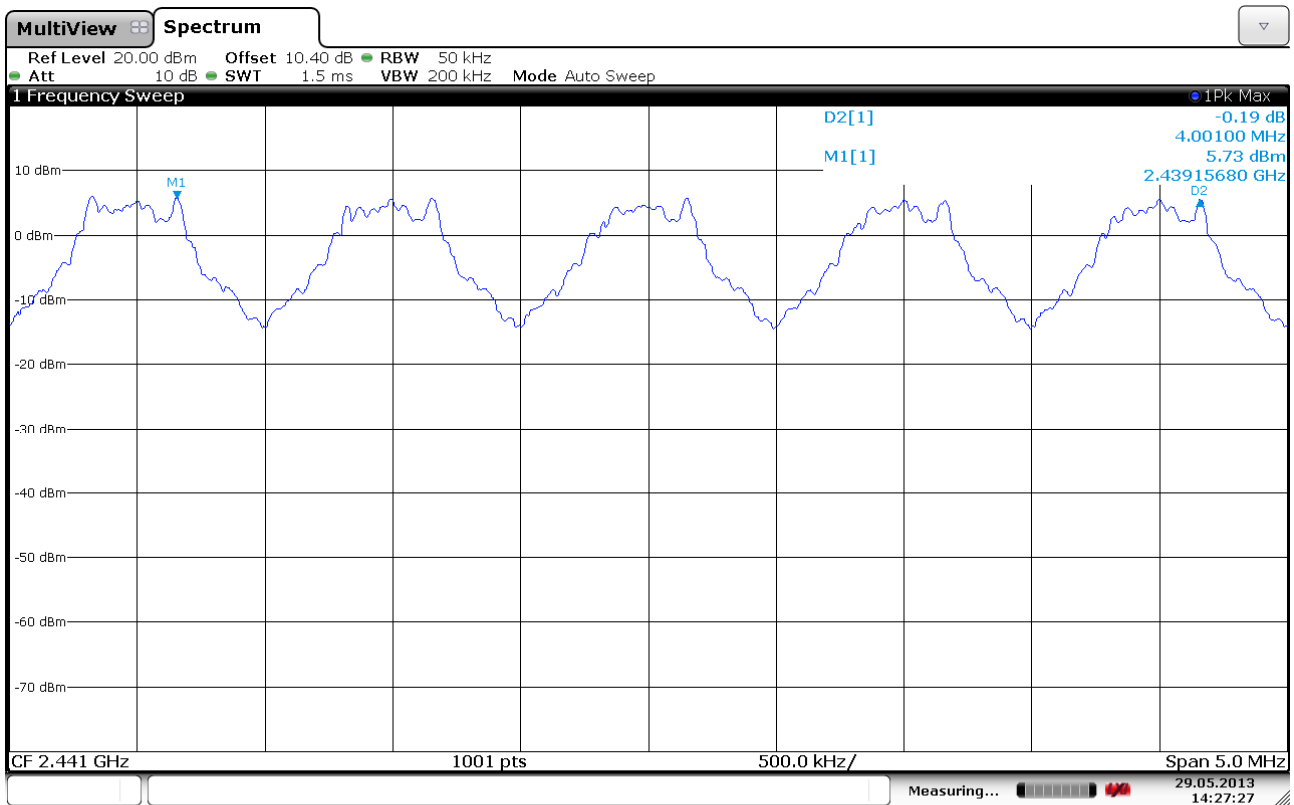
Requirement:

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:

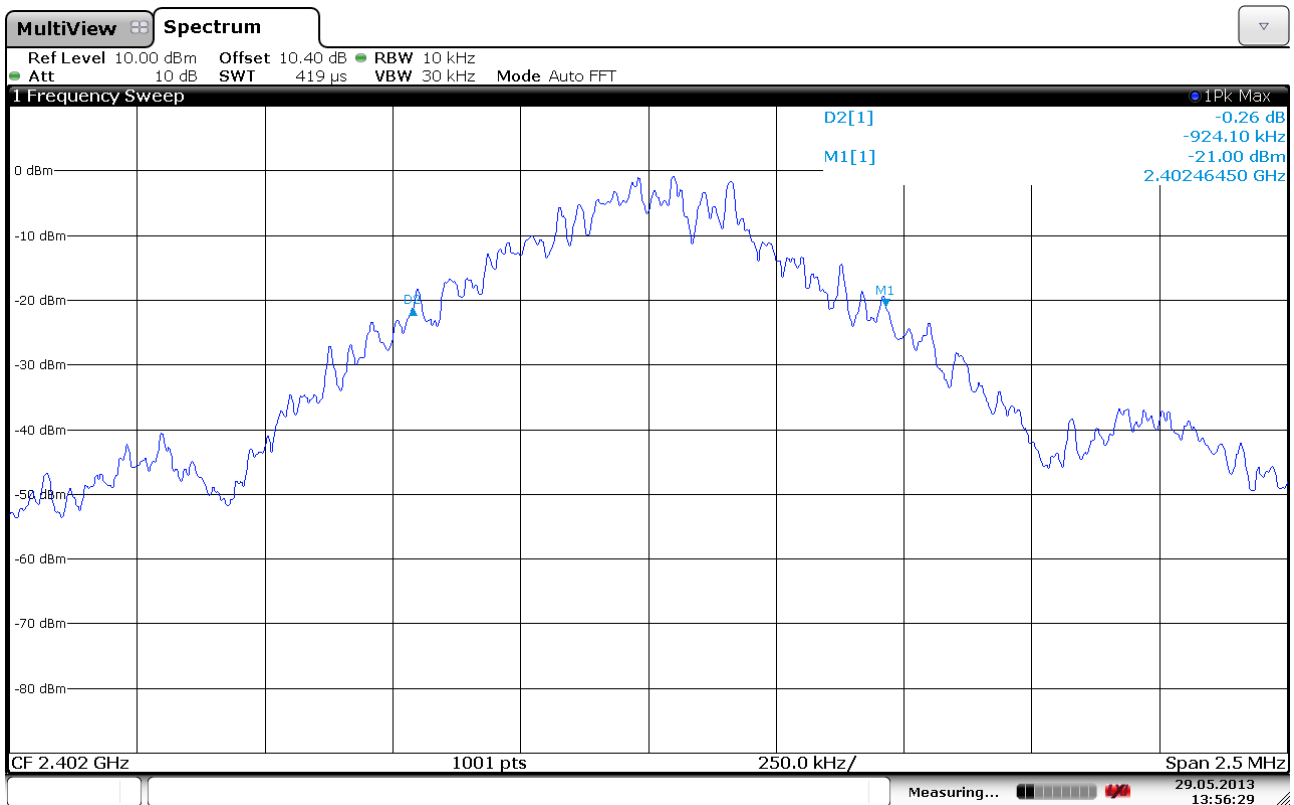
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the system operates with an output power no greater than 125 mW.

No requirements for Digital Transmission Systems.

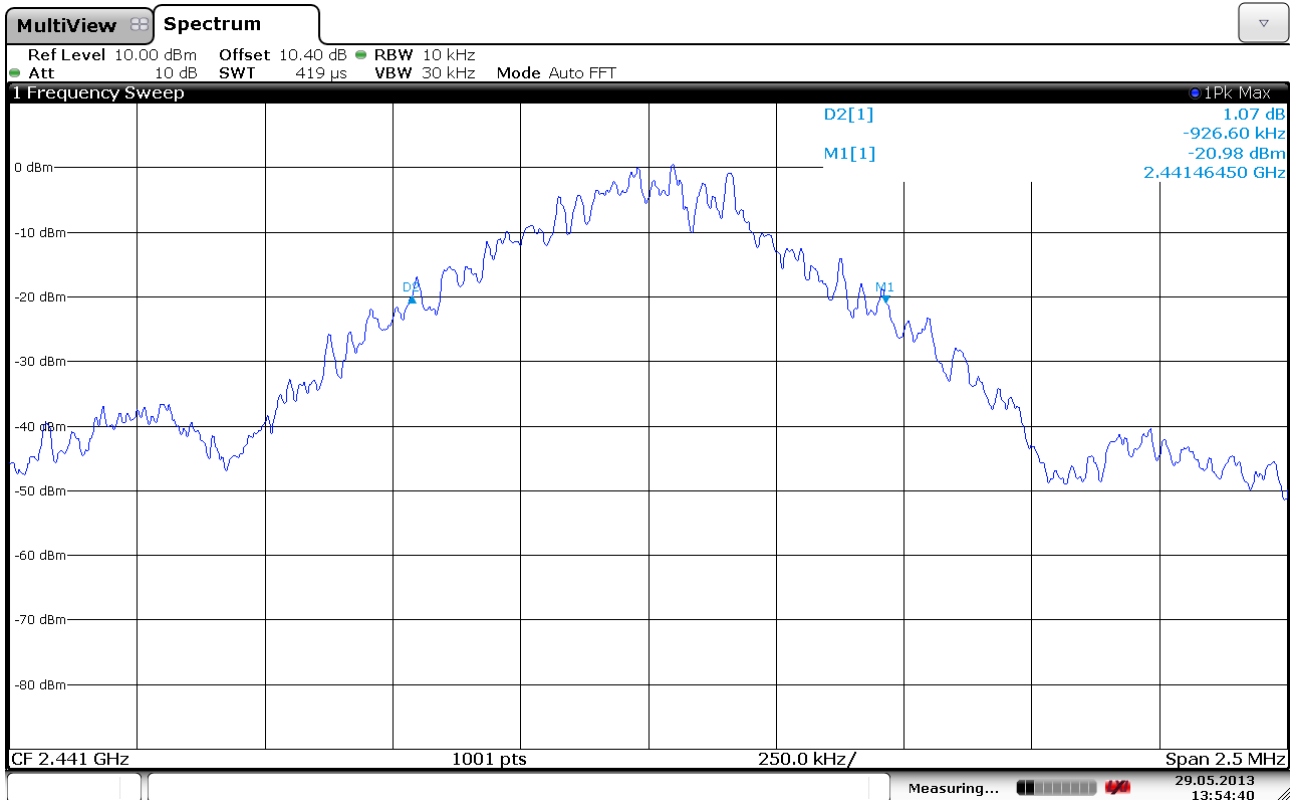


Date: 29.MAY.2013 14:27:27

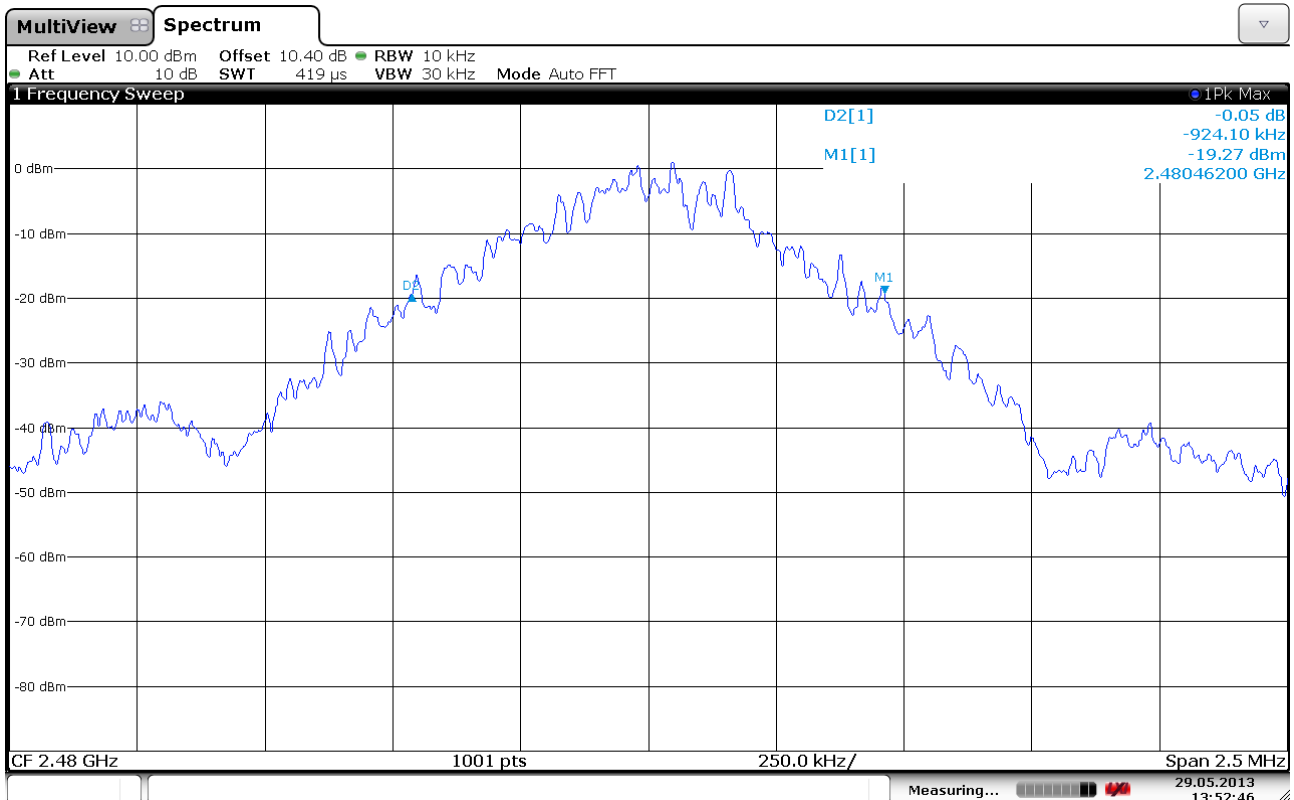
Channel Separation



20dB Bandwidth, 2402MHz



20dB Bandwidth, 2441MHz



20dB Bandwidth, 2480MHz

3.3 Pseudorandom Hopping Algorithm

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

Test Results: Complies

Measurement Data: /

Requirements:

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

No requirements for Digital Transmission Systems.

3.4 Occupancy Time

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

Test Results: **Complies**

Measurement Data:

Minimum Number of RF Channels:	20
Maximum Number of RF Channels:	79
Maximum Length of RF Burst pr. channel	2.90 ms
Time between RF Burst on same RF Channel	74.6 ms (20 ch)
	294.67 ms (79 ch)
Time of Occupancy (20 and 79 ch mode)	311 ms

20 Ch Mode:

Time between RF burst on same channel: $3.73 \times 20 \text{ ms} = 74.6 \text{ ms}$

Time of occupancy: $(2.90 \times 400 \times 20) / 74.6 = 311 \text{ ms}$

79 Ch Mode:

Time between RF burst on same channel: $3.73 \times 79 \text{ ms} = 294.7 \text{ ms}$

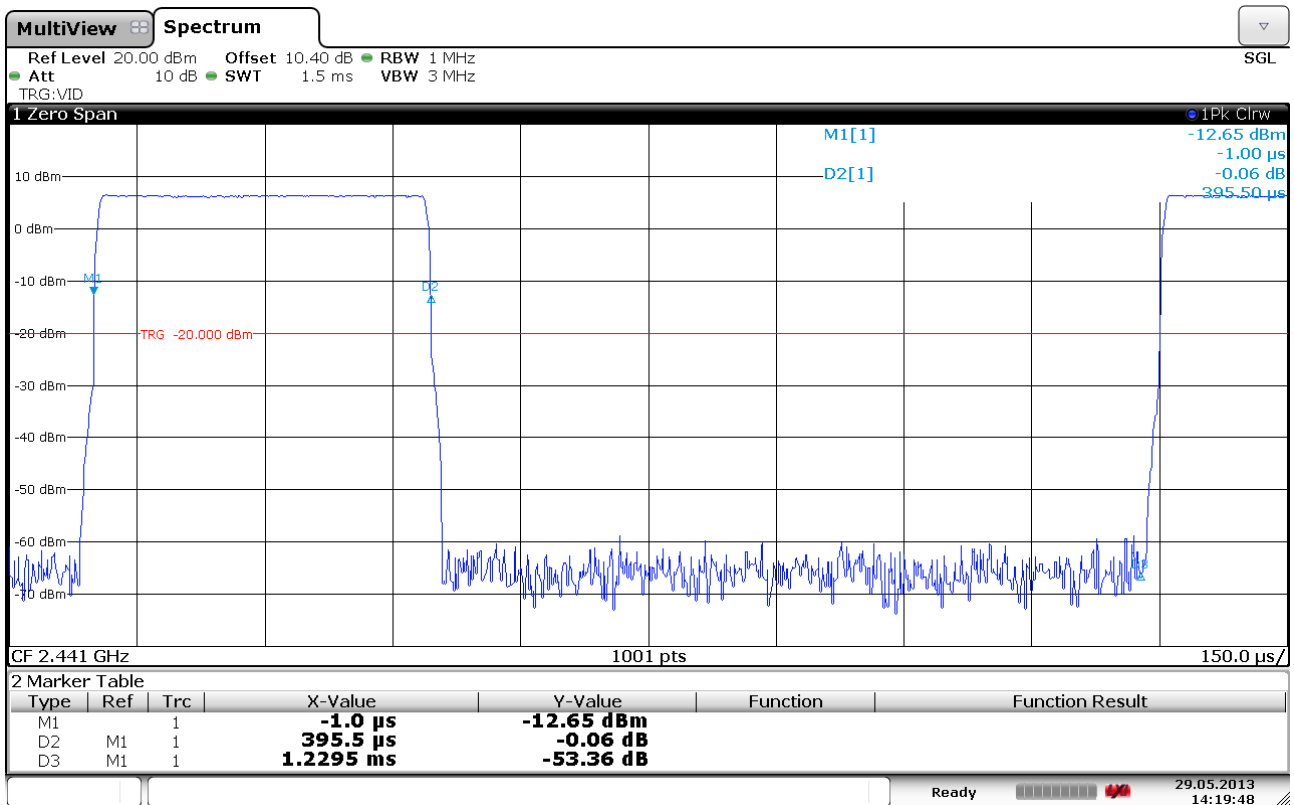
Time of occupancy: $(2.90 \times 400 \times 79) / 294.67 = 311 \text{ ms}$

See attached graph.

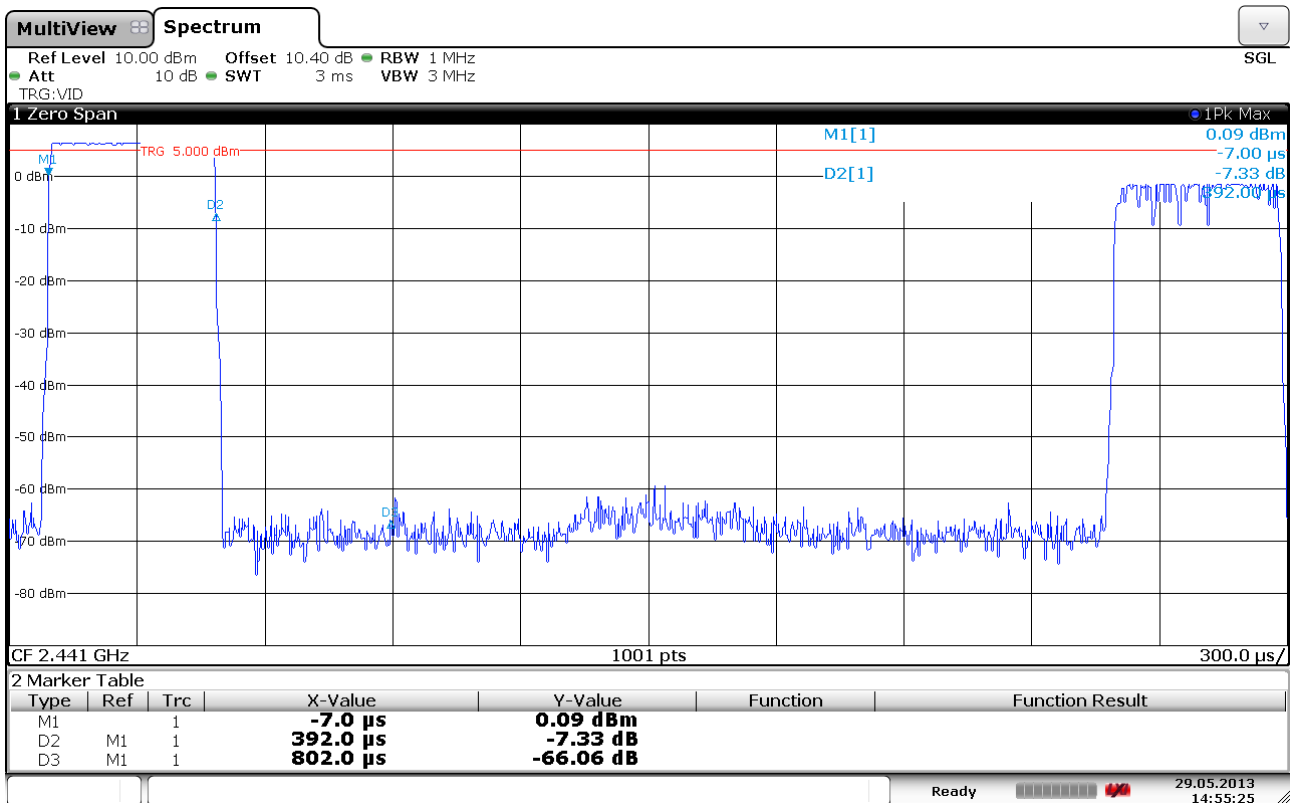
Requirements:

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.

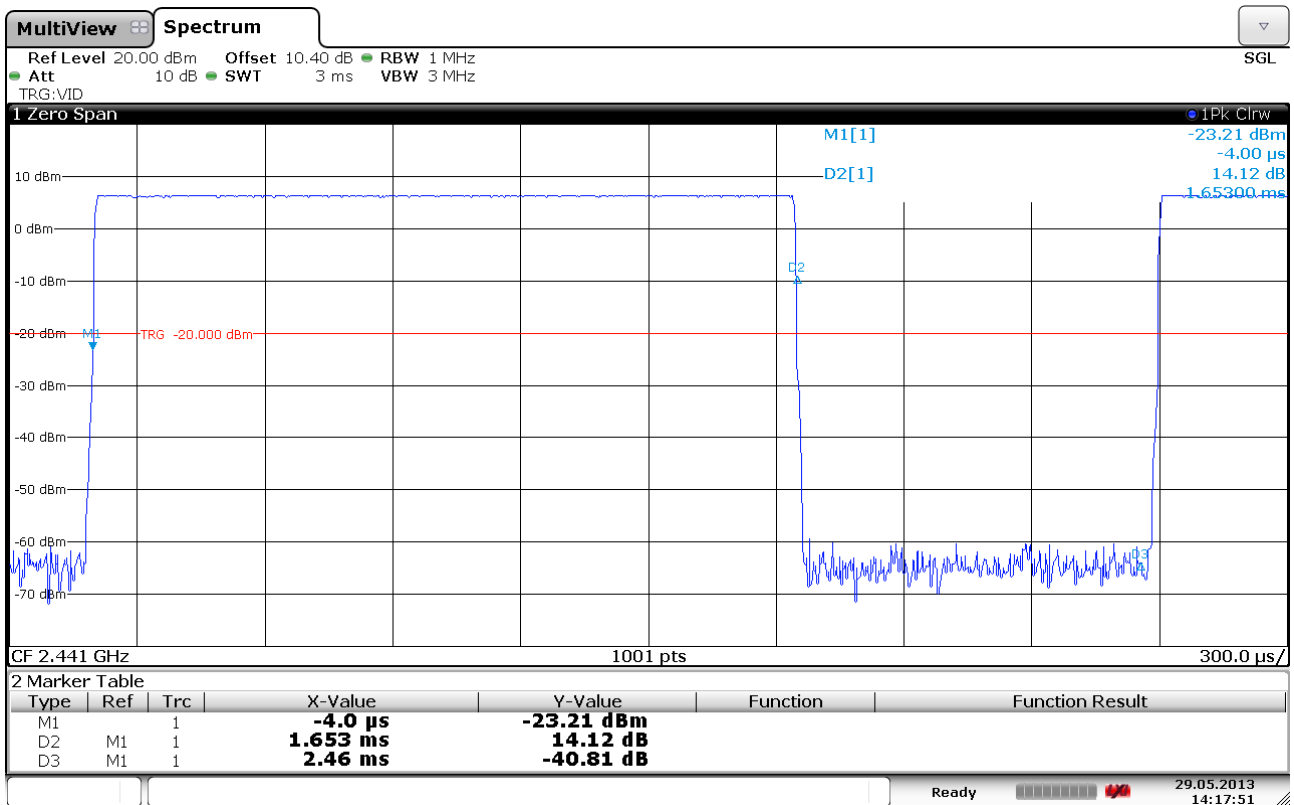
No requirements for Digital Transmission Systems.



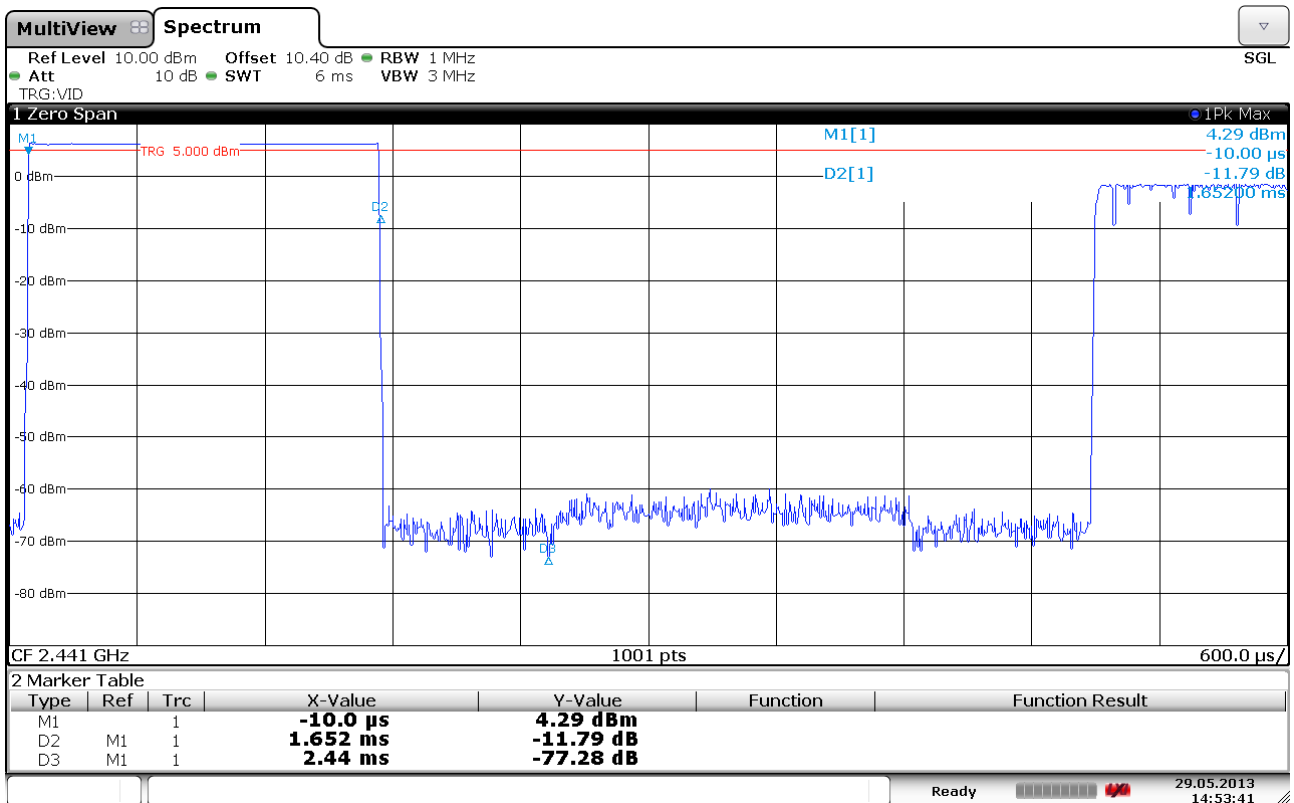
Burst Length, DH1



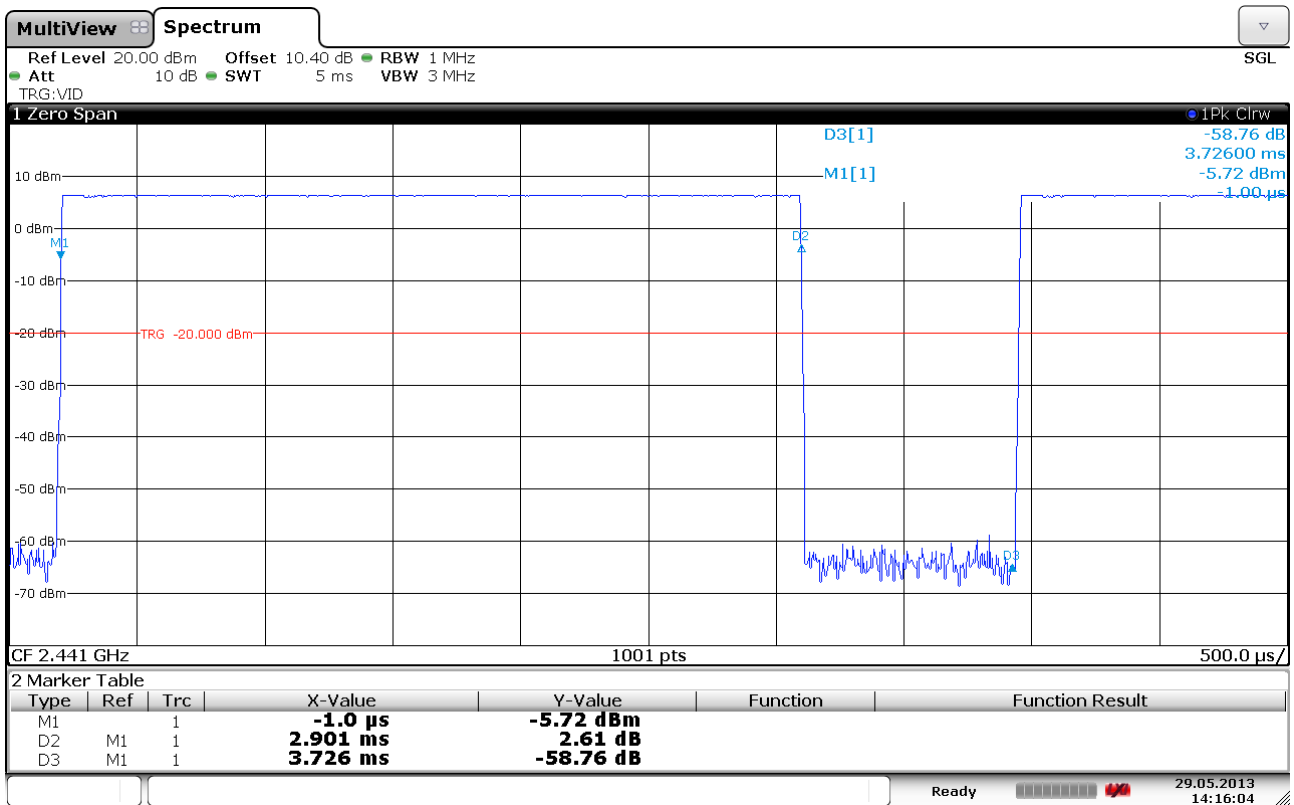
Dwell Time DH1, Hopping Ch 28 - 47



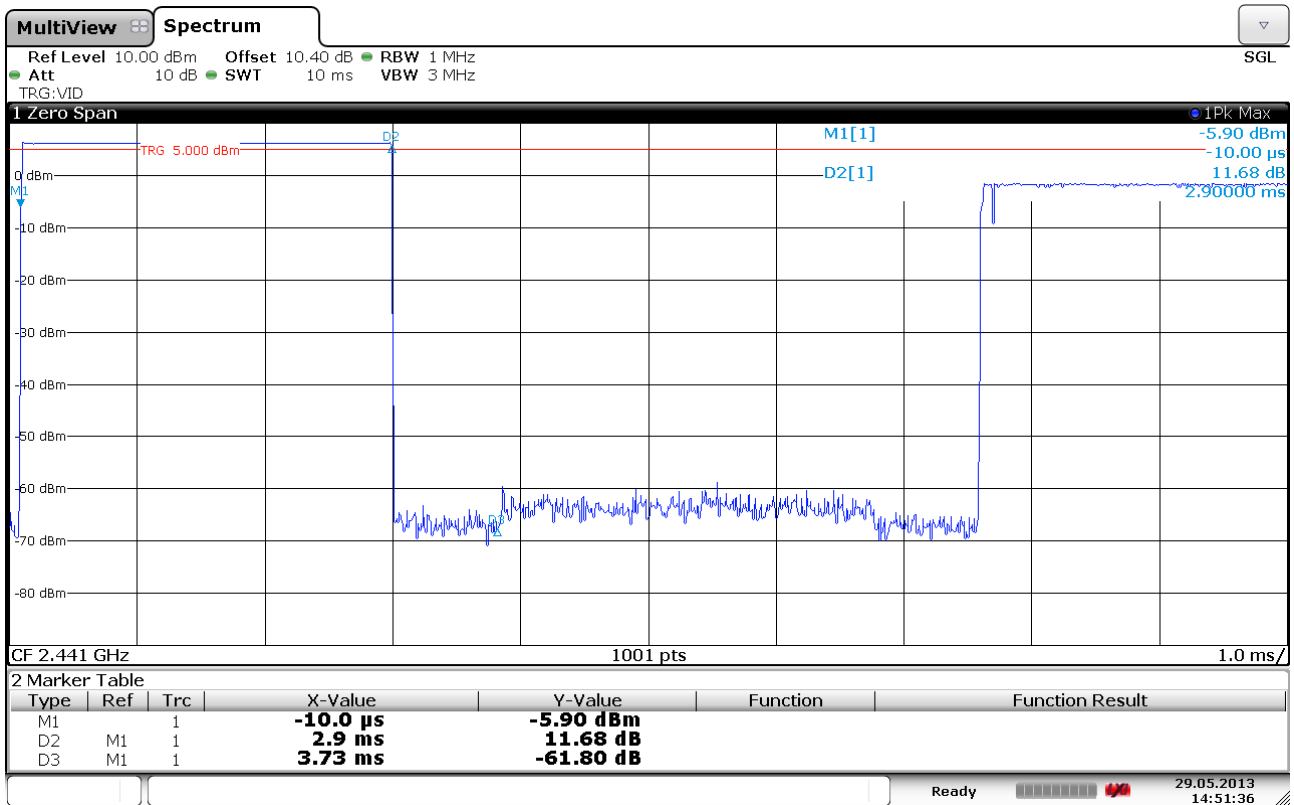
Burst Length, DH3



Dwell Time DH3, Hopping Ch 28 – 47



Burst Length, DH5



Dwell Time DH5, Hopping Ch 28 - 47

3.5 Occupied Bandwidth

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

Test Results: **Complies**

Measurement Data:

Number of RF Channels in use:	20 or 79 RF channels in use
Channel Centre Frequencies:	The channels are centered at each full MHz from 2402 to 2480 MHz

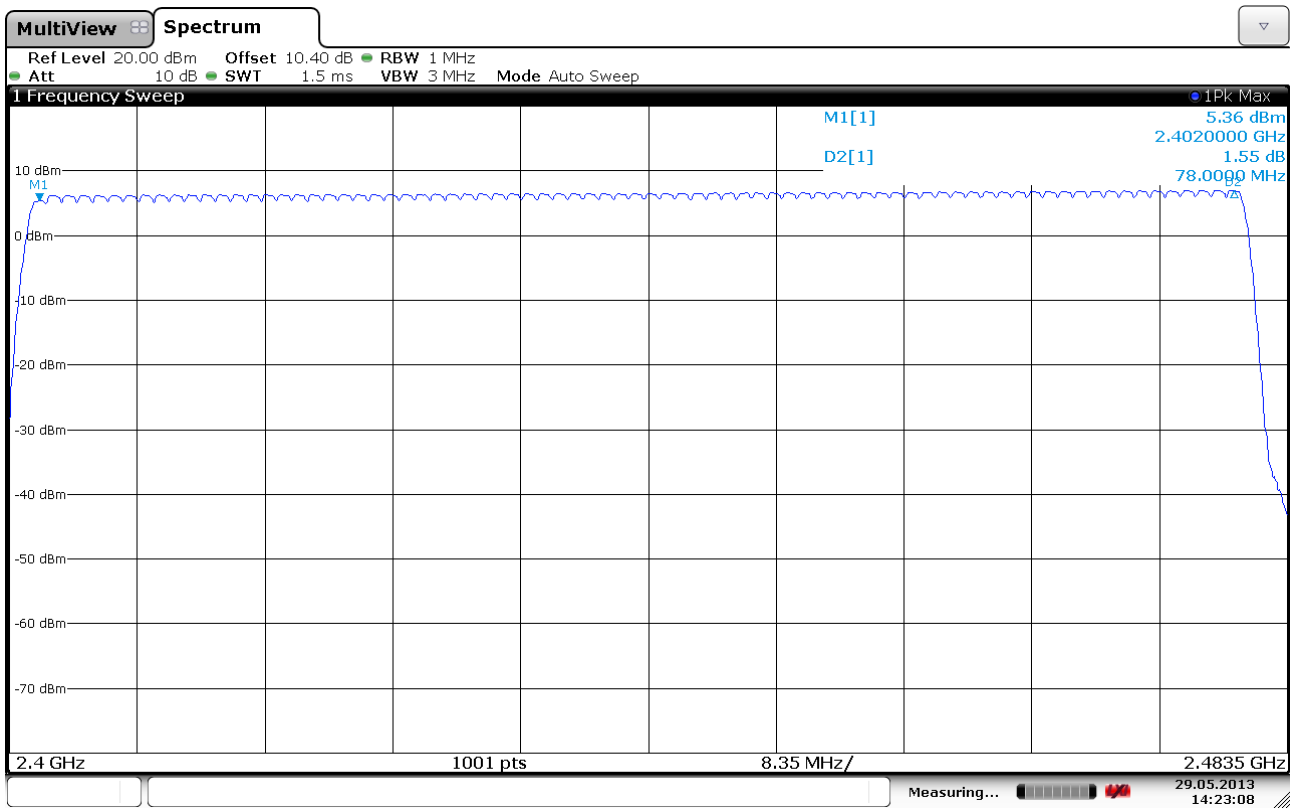
See attached plots.

Requirements:

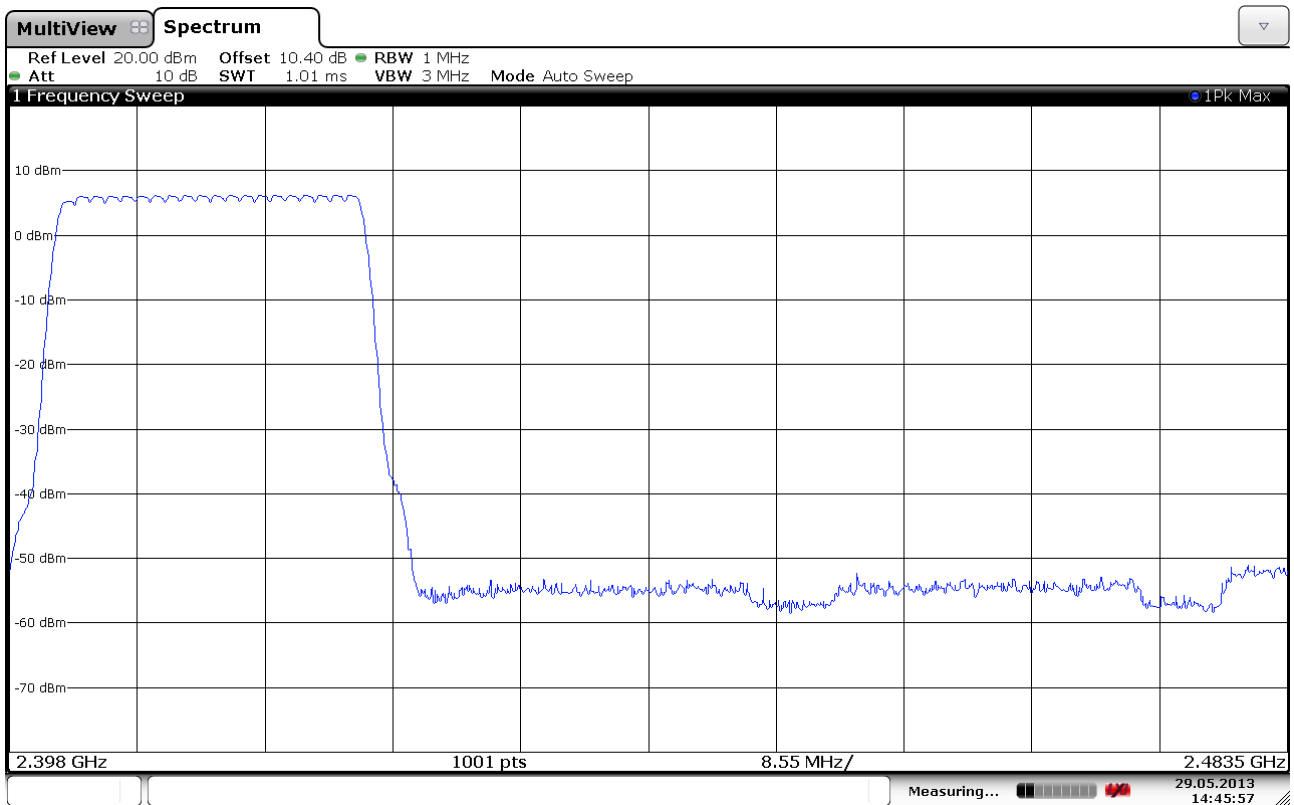
Frequency hopping systems in the 2400 - 2483.5 MHz band shall use at least 15 non-overlapping channels.
No requirements for bandwidth for this frequency band.

No requirements for Digital Transmission Systems.

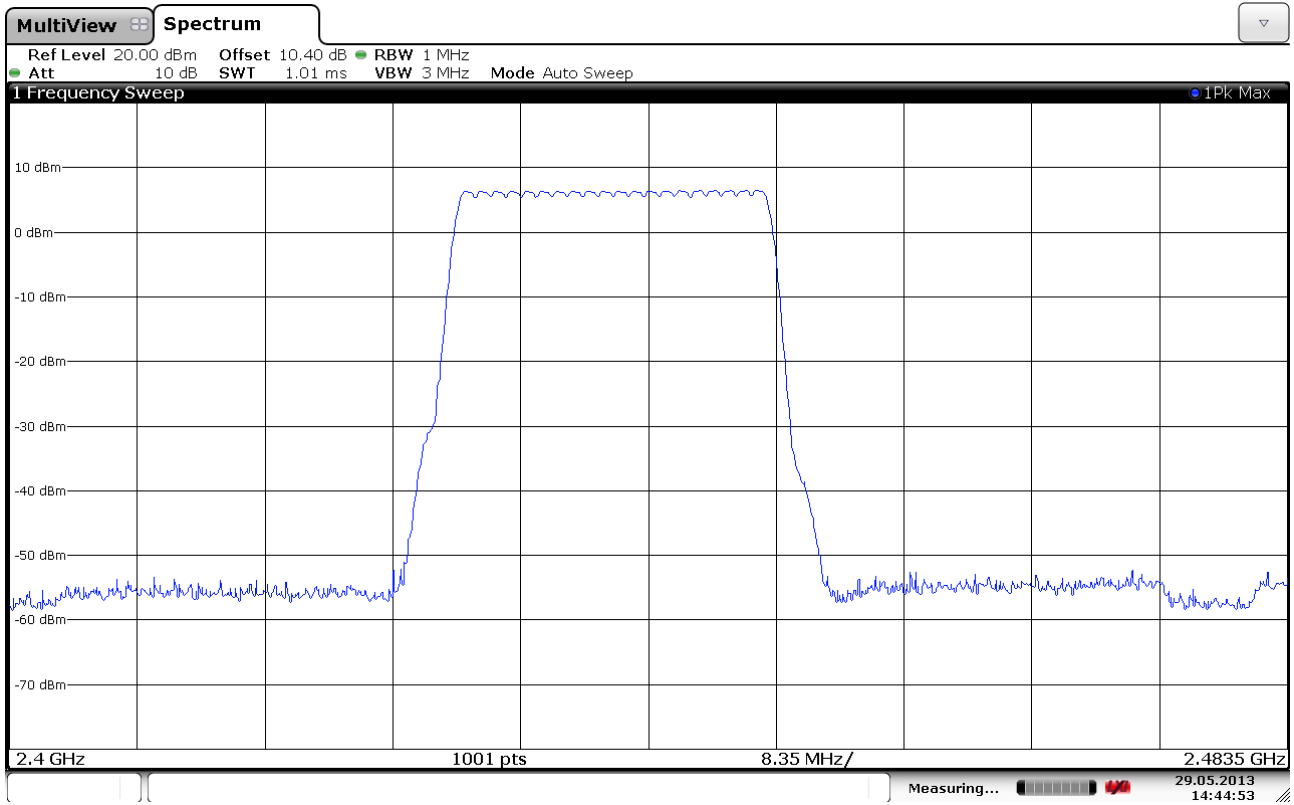
No requirement for 99% BW, reported for information only.



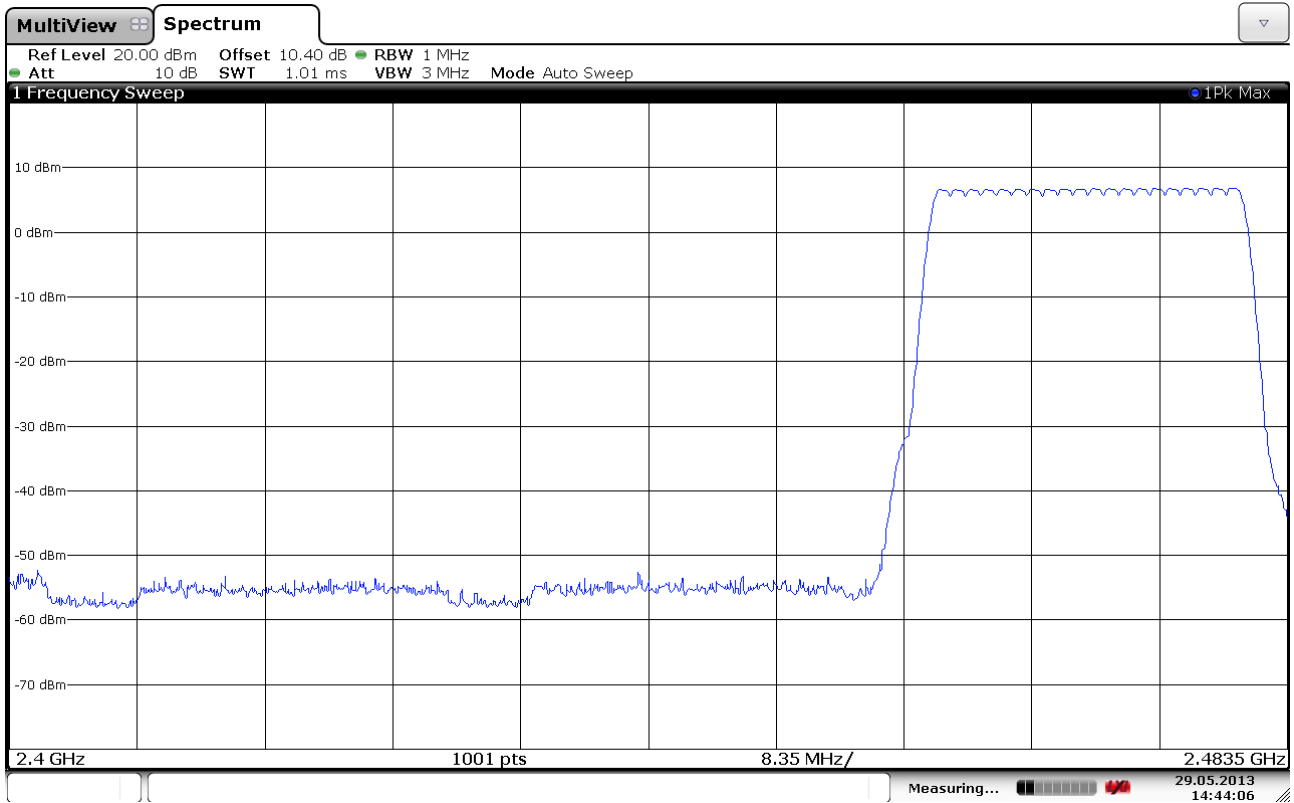
RF Channels in Use, Full Band



RF Channels in Use, 20 Channels, Lower



RF Channels in Use, 20 Channels, Middle



RF Channels in Use, 20 Channels, Upper

3.6 Peak Power Output

Para. No.: 15.247 (b)

Test Results: Complies

Measurement Data:

	2402 MHz	2441 MHz	2480 MHz
Peak Power (dBm)	5.7	6.7	7.2
Peak Power (Watts)	0.0037	0.0047	0.0052
Field Strength (dBµV/m)	101.9	104.0	105.6
EIRP, Calculated (Watts)	0.0046	0.0076	0.0108
Antenna gain (dBi)	0.9	2.1	3.2

Antenna gain = $10 \cdot \log(\text{EIRP} / \text{Conducted power})$ dBi

EIRP is calculated from measured field strength by the formulas in KDB 412172 D01 Determining ERP and EIRP v01.

See attached graph.

Detachable antenna?

Yes No

If detachable, is the antenna connector non-standard?

Yes No

Type of antenna connector: /

Requirements:

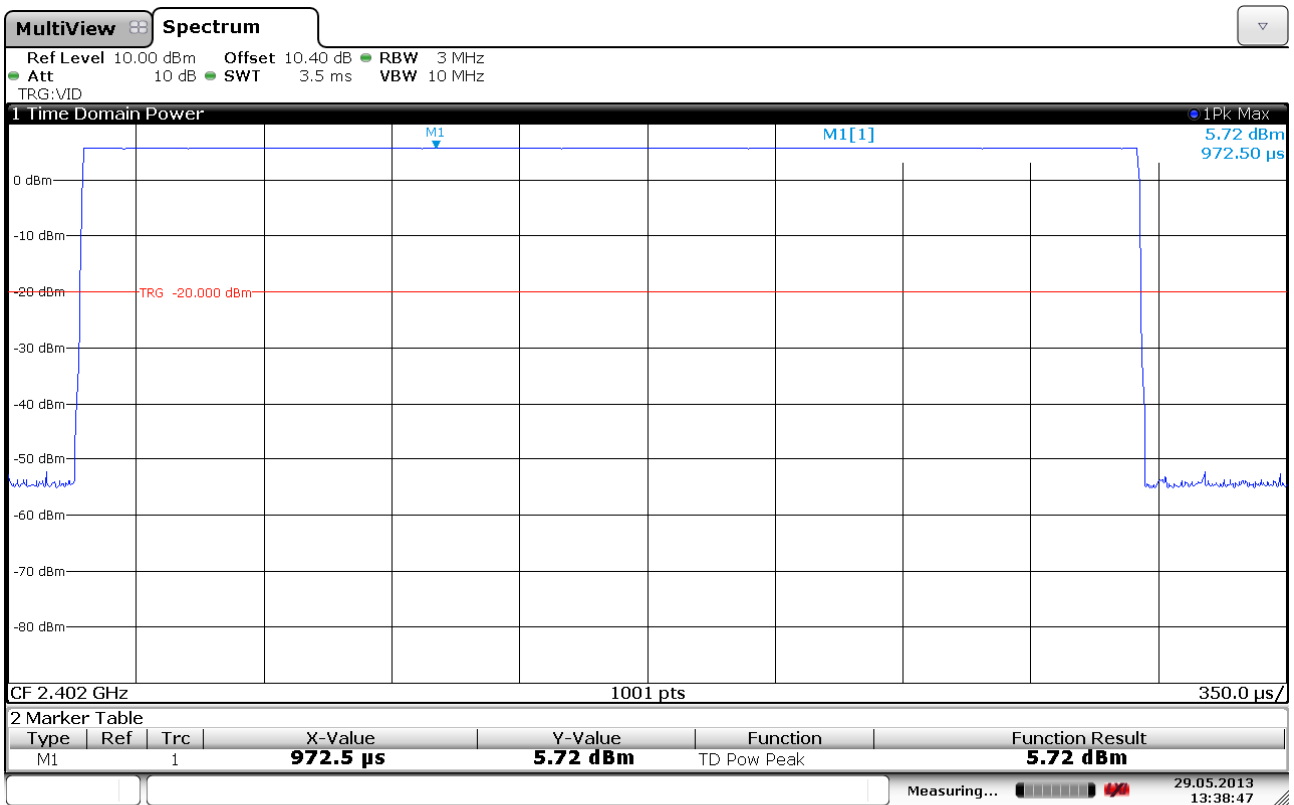
The maximum peak output power shall not exceed the following limits:

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

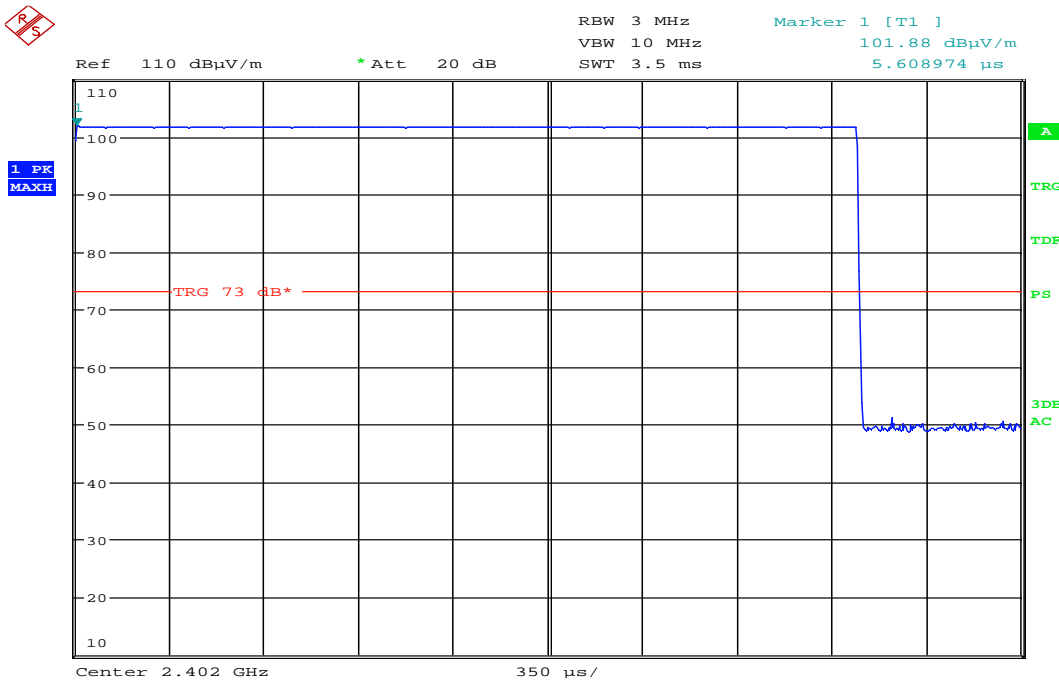
For Digital Transmission Systems in the 2400 - 2483.5 MHz band: 1 Watt

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.



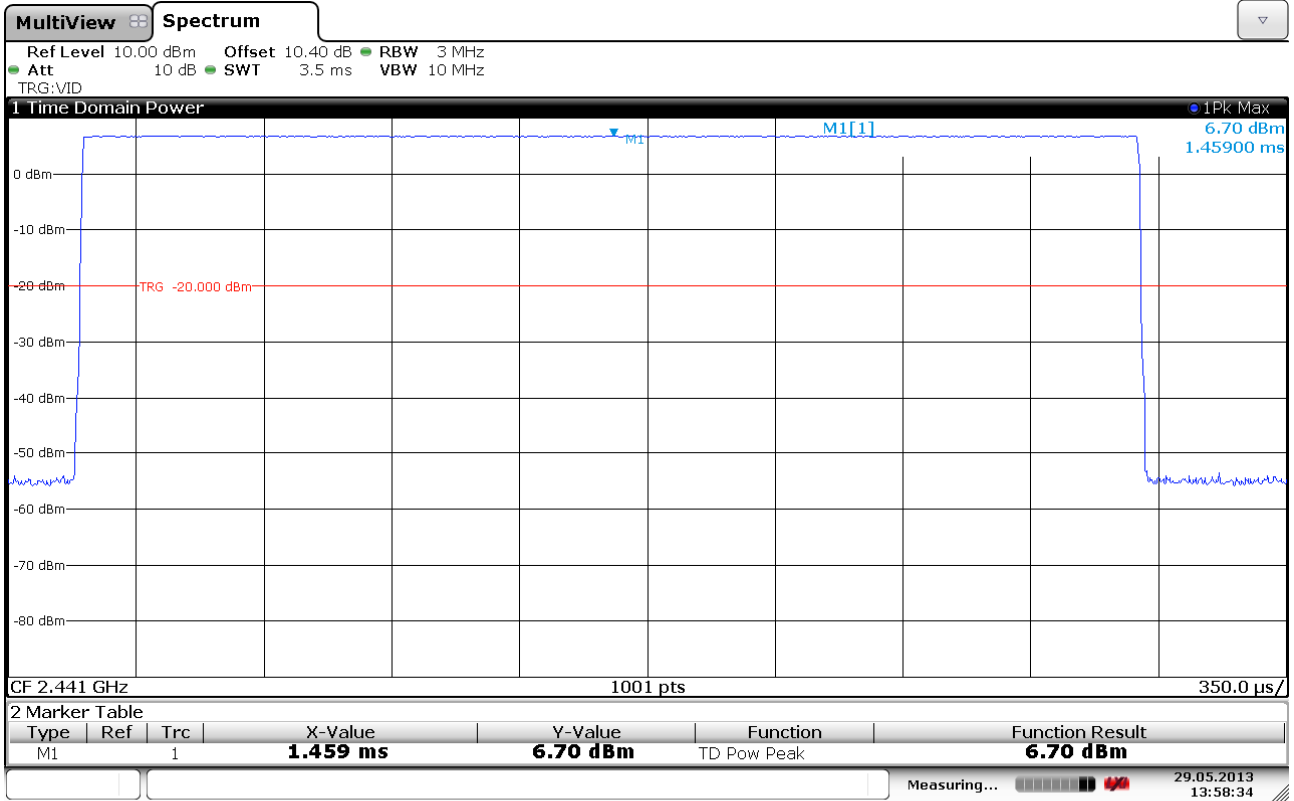
Date: 29.MAY.2013 13:38:47

Conducted Output Power, 2402MHz



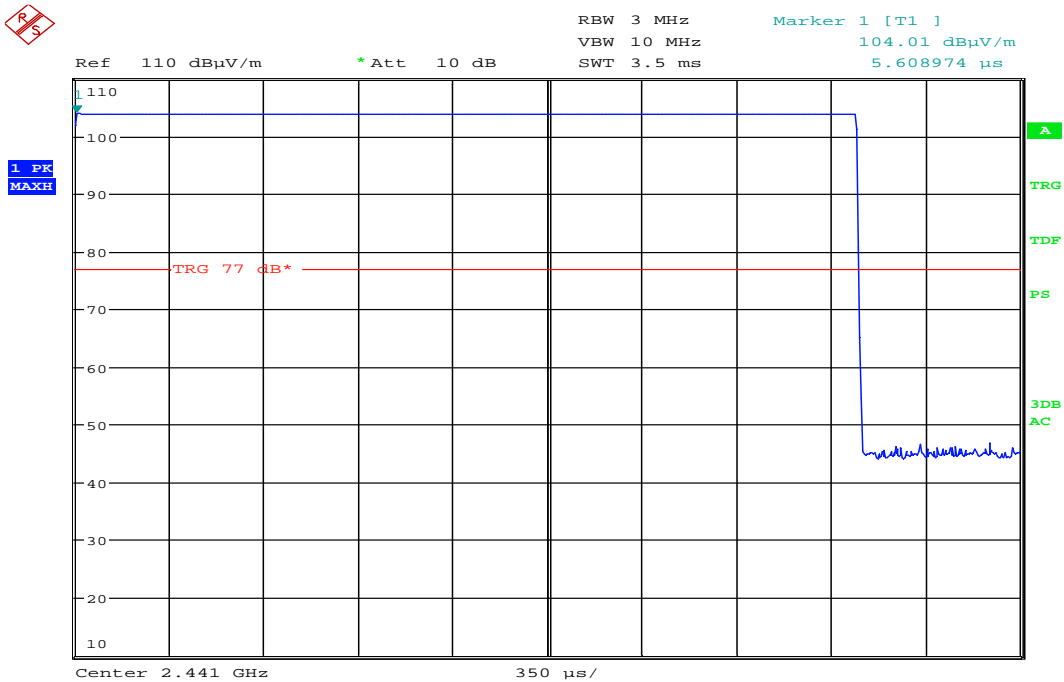
Date: 3.JUN.2013 16:56:20

Maximum Field Strength, 2402MHz (Max: VP)



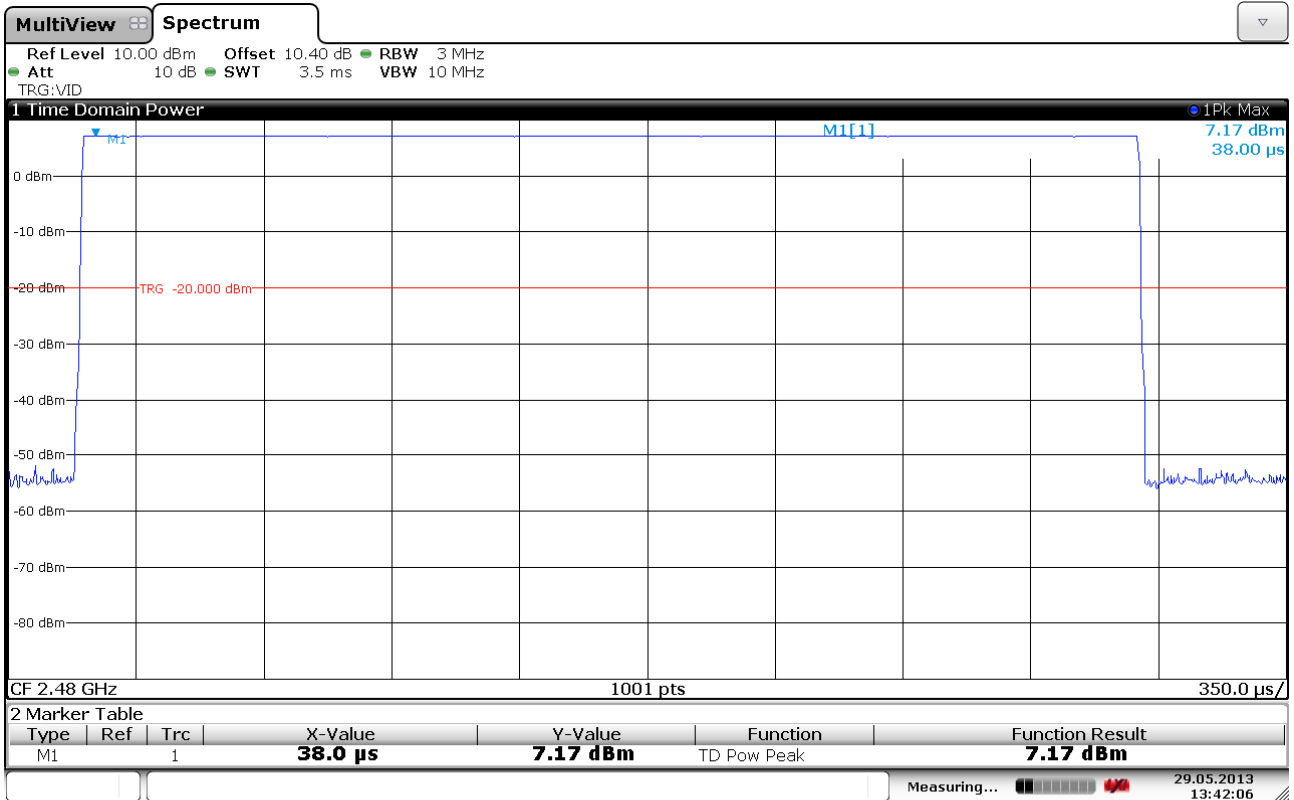
Date: 29.MAY.2013 13:58:34

Conducted Output Power, 2441MHz



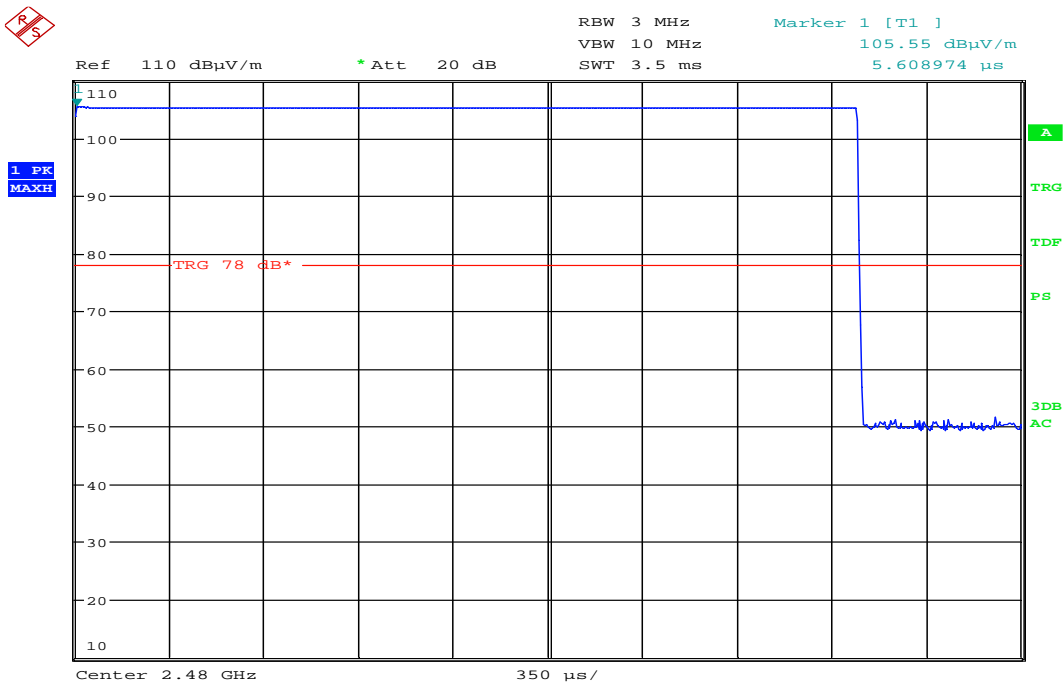
Date: 3.JUN.2013 15:42:07

Maximum Field Strength, 2441MHz (Max: VP)



Date: 29.MAY.2013 13:42:07

Conducted Output Power, 2480MHz



Date: 3.JUN.2013 17:15:10

Maximum Field Strength, 2480MHz (Max: VP)

3.7 Spurious Emissions (Radiated)

Para. No.: 15.247 (c)

Test Results: Complies

Measurement Data:

Band-edge conducted power, Hopping OFF:

	Measured field strength @3m (dB μ V/m)		Limit dB μ V/m	Margin	
	2390 MHz	2483.5 MHz		dB	
Peak Detector	39.0	39.6	74	35.0	34.4
Average Detector	19.0	19.6	54	35.0	34.4

Band-edge conducted power, Hopping ON:

	Measured field strength @3m (dB μ V/m)		Limit dB μ V/m	Margin	
	2390 MHz	2483.5 MHz		dB	
Peak Detector	41.7	45.1	74	32.3	28.9
Average Detector	21.7	25.1	54	32.3	28.9

Average Detector values are measured with Peak Detector and corrected for Duty Cycle.

All field strength values above are at 3m.

See attached plots.

Marker Delta Calculation:

Carrier Frequency	Measured Field Strength @3m (1 MHz RBW) dB μ V/m	Delta Marker (100 kHz RBW) dB	Calculated Field Strength @3m dB μ V/m
2390 MHz, Hopping OFF	101.75	62.71	39.0
2483.5 MHz, Hopping OFF	105.50	65.94	39.6
2390 MHz, Hopping ON	101.75	60.1	41.7
2483.5 MHz, Hopping ON	105.50	60.4	45.1

See attached plots.

Duty Cycle Correction Factor Calculation:

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

RF conducted power to 25 GHz see attached graph.

Maximum RF level outside operating band:

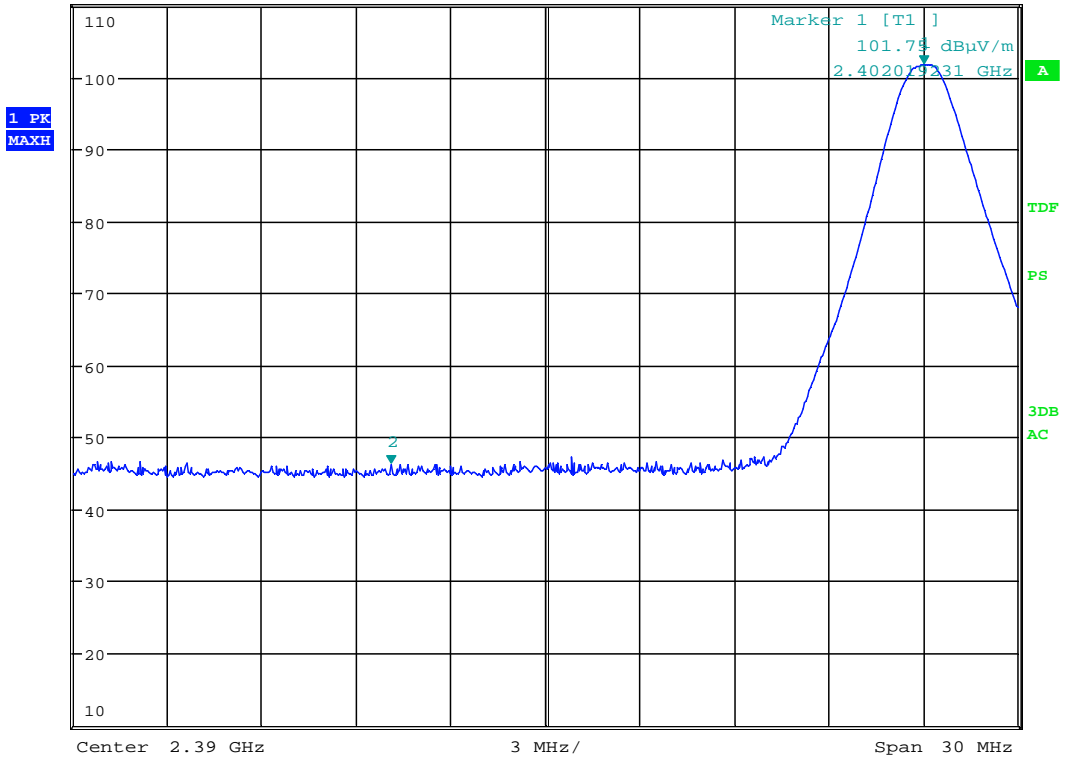
RF ch 00: >50 dB/C, margin >30 dB

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

RF ch 78: >50 dB/C, margin >30 dB

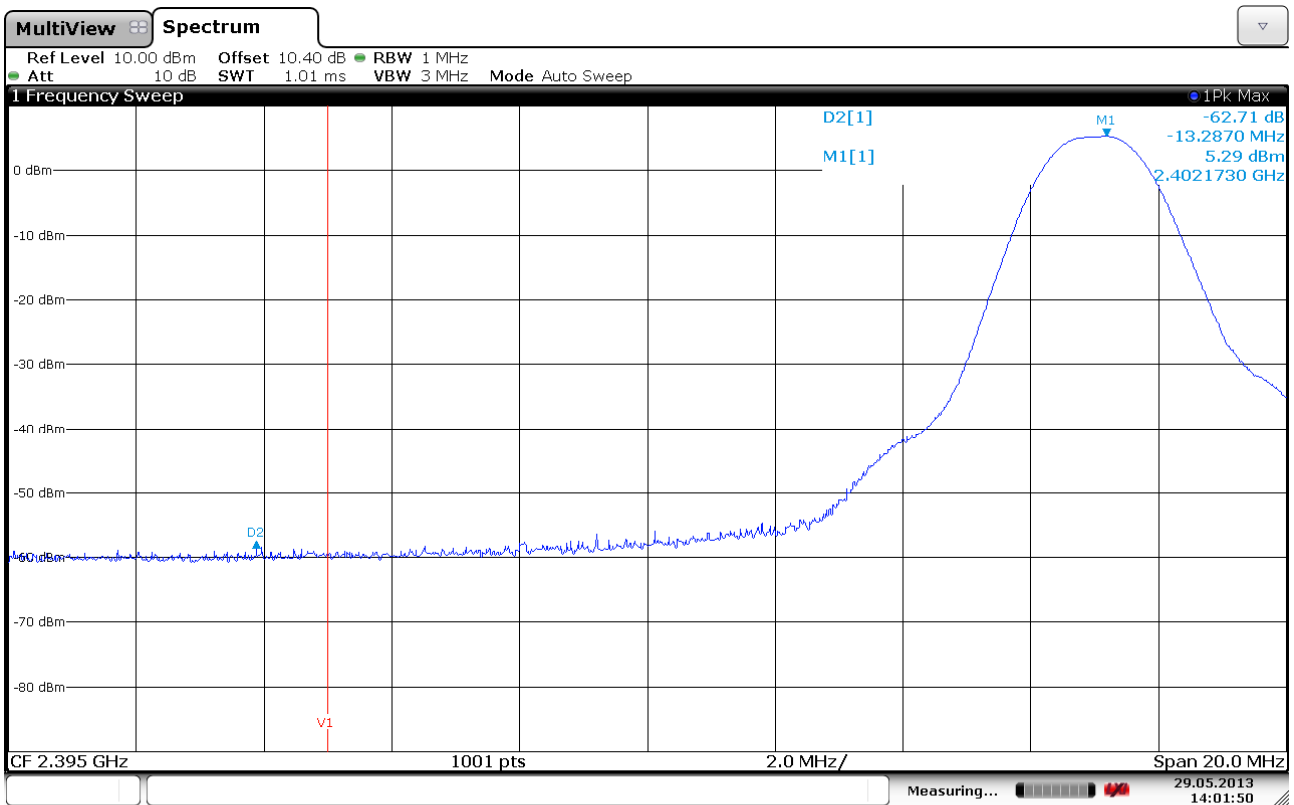


Ref 110 dBµV/m * Att 20 dB * RBW 1 MHz Marker 2 [T1]
 VBW 3 MHz 46.28 dBµV/m
 SWT 2.5 ms 2.385096154 GHz



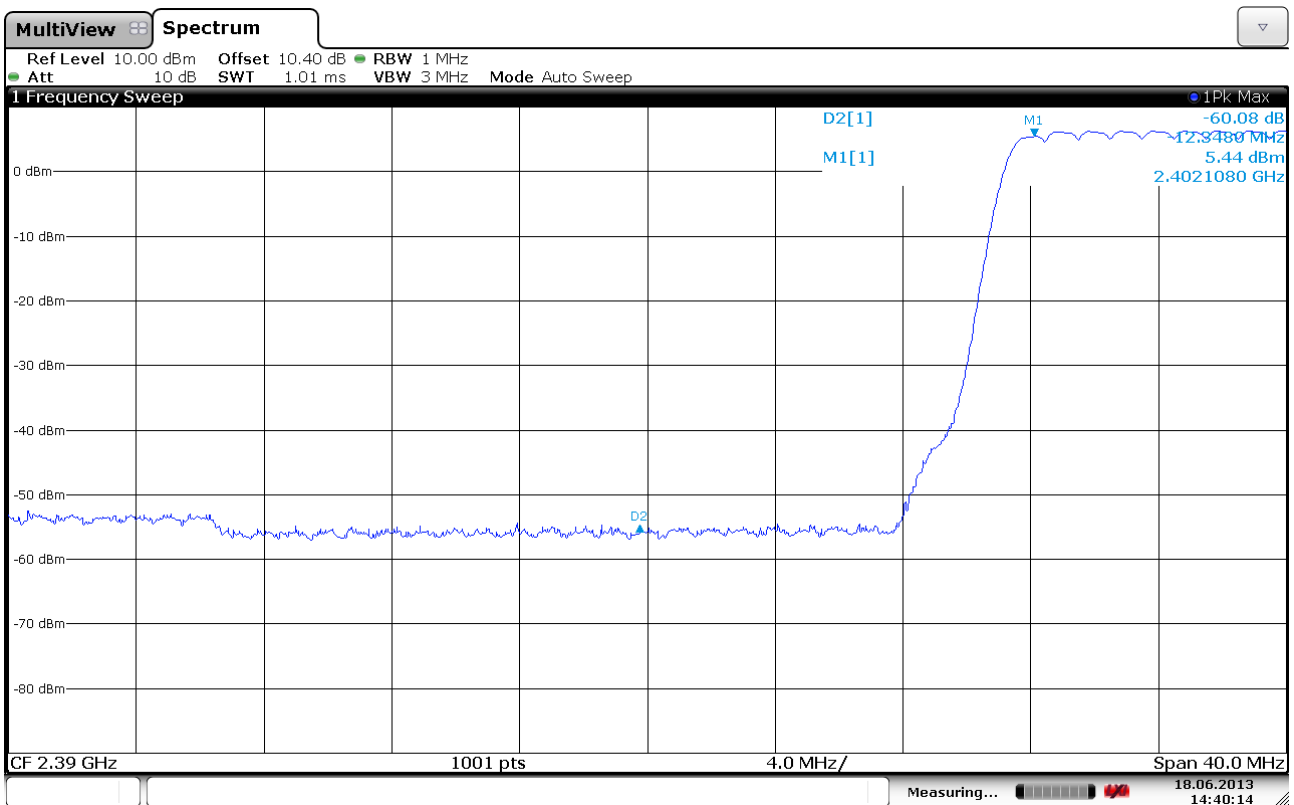
Date: 3.JUN.2013 16:58:51

Ref Level, Lower Channel, @3m



Date: 29.MAY.2013 14:01:50

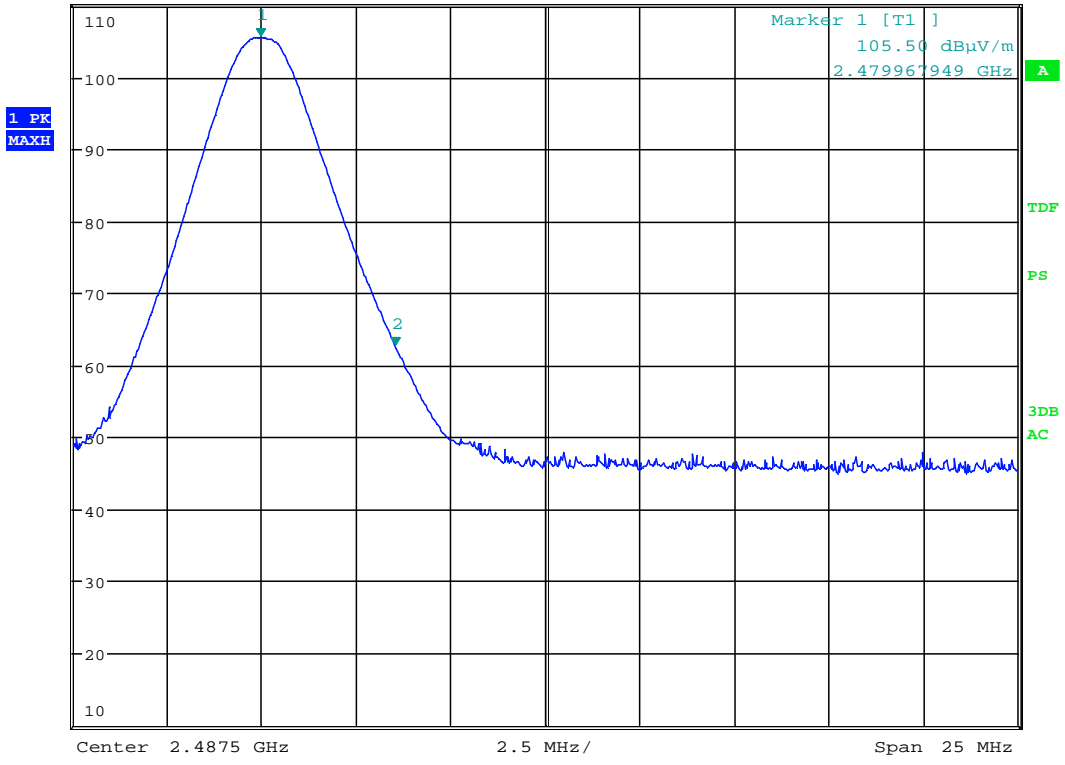
Band Edge Lower Channel, Hopping OFF



Delta Marker Lower Channel, Hopping ON

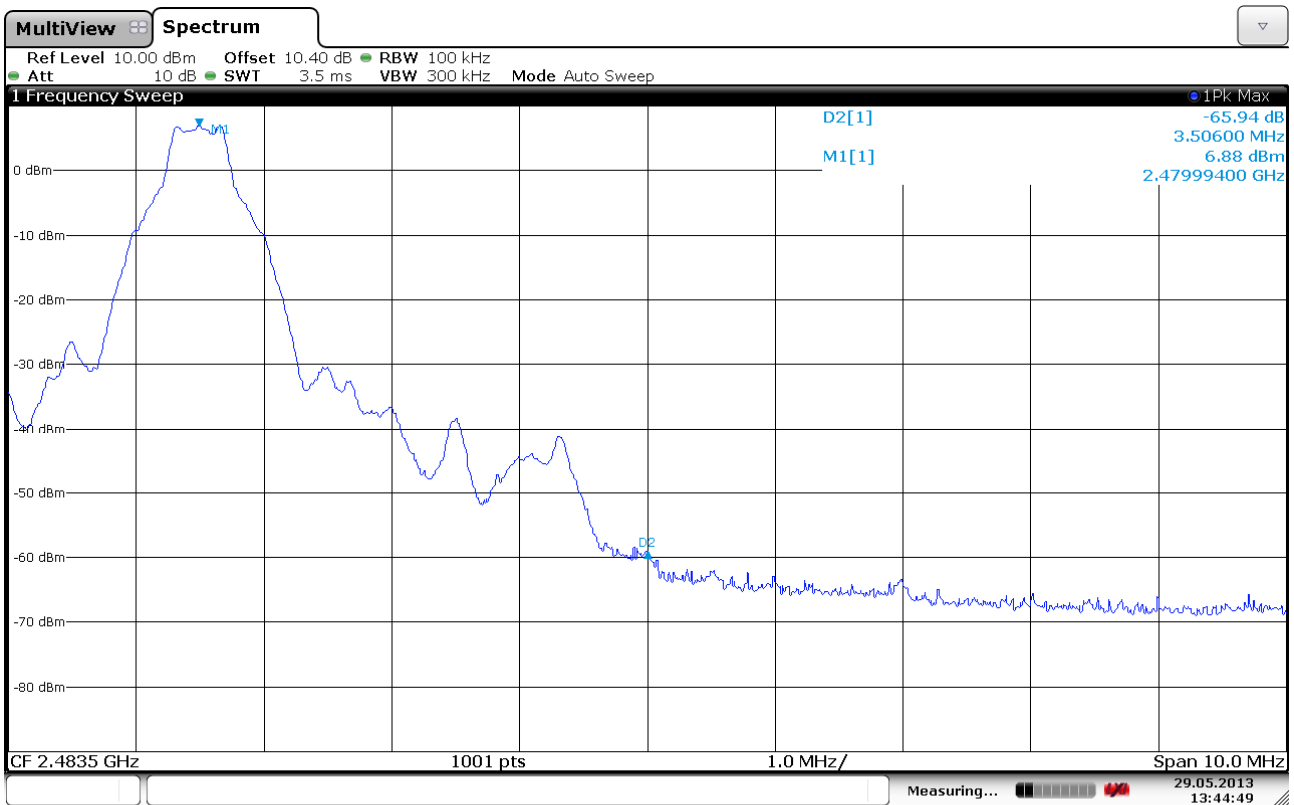


Ref 110 dBµV/m * Att 20 dB * RBW 1 MHz VBW 3 MHz SWT 2.5 ms Marker 2 [T1] 62.70 dBµV/m 2.483533654 GHz



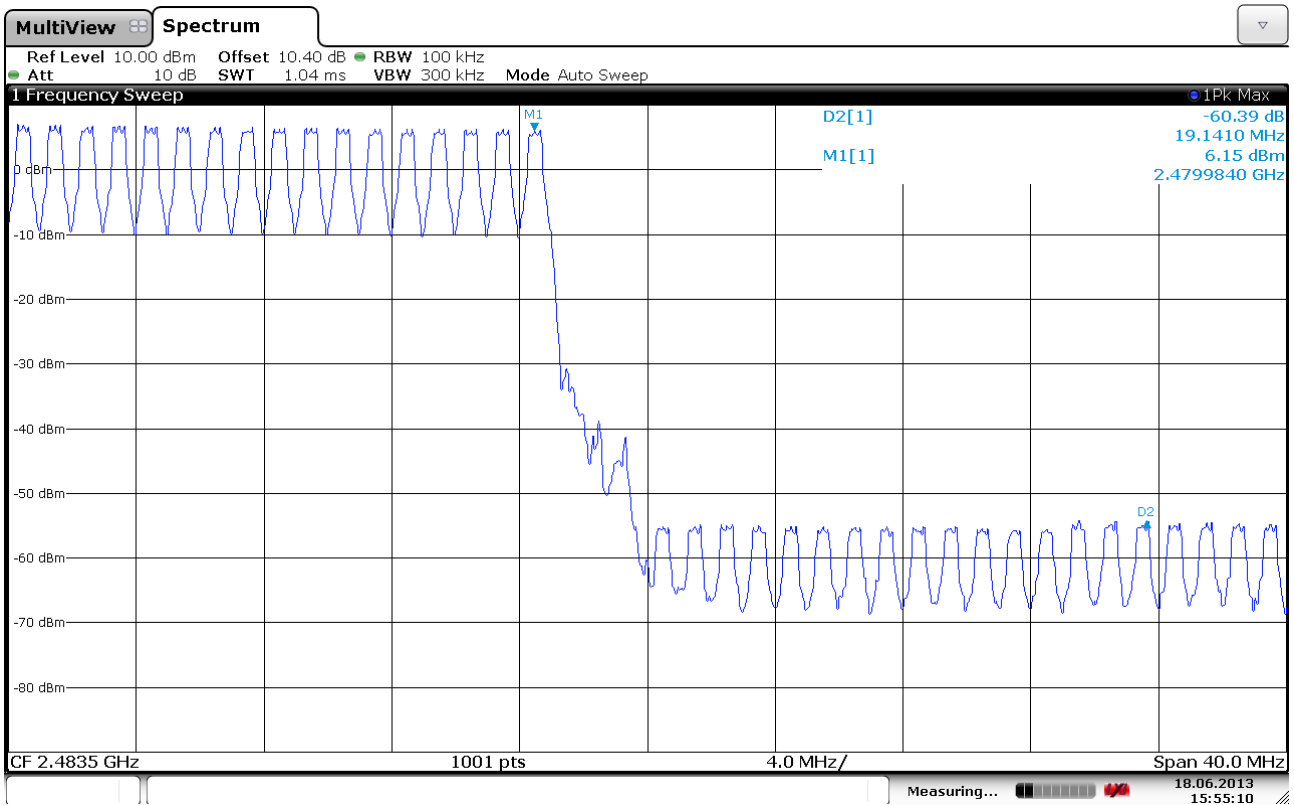
Date: 3.JUN.2013 17:17:24

Ref Level, Upper Channel, @3m

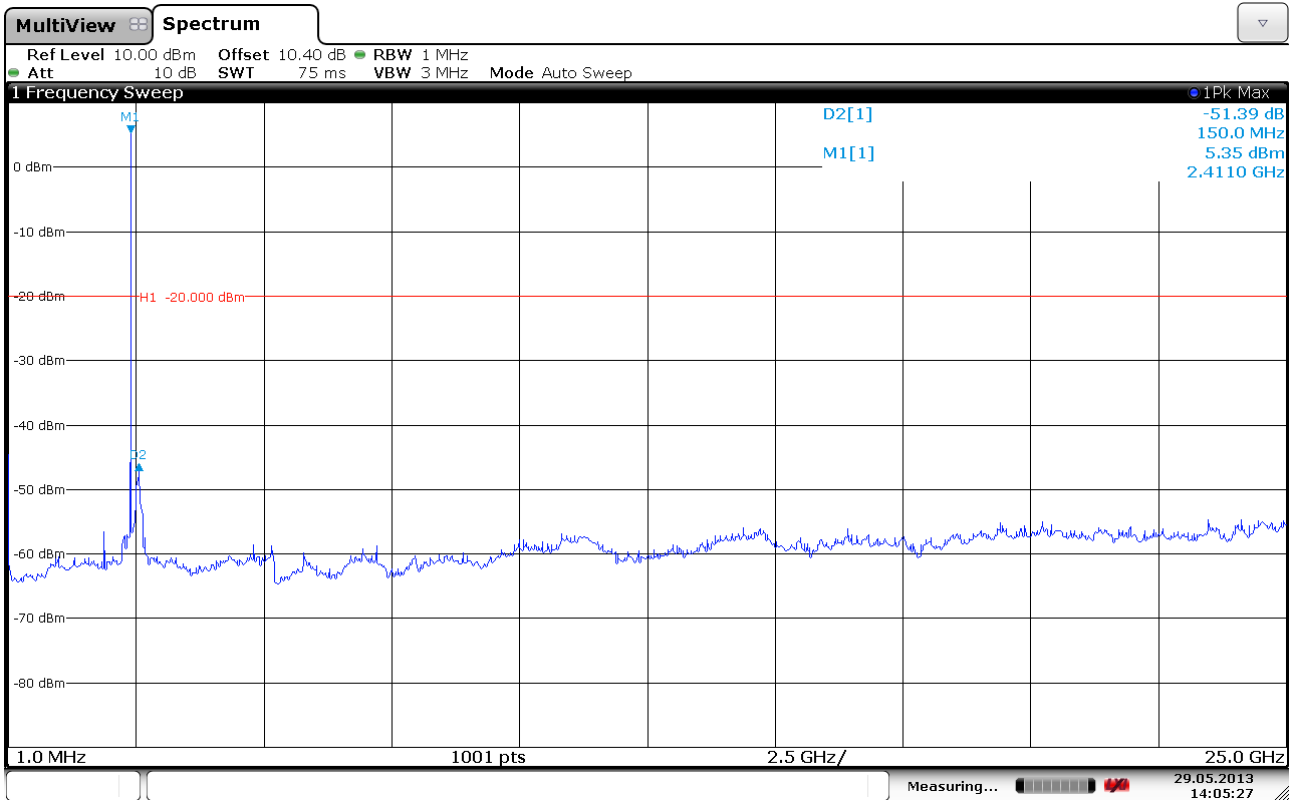


Date: 29.MAY.2013 13:44:49

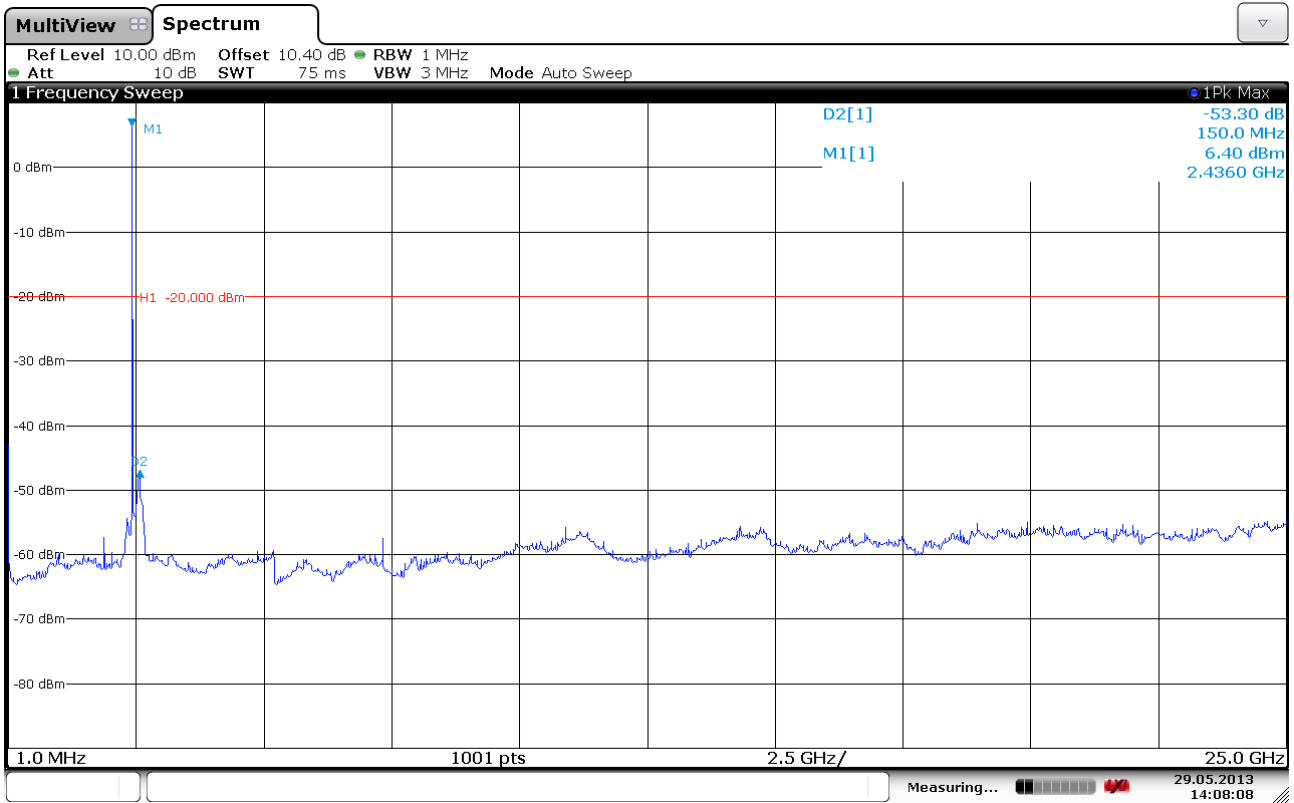
Delta Marker Upper Channel, Hopping OFF



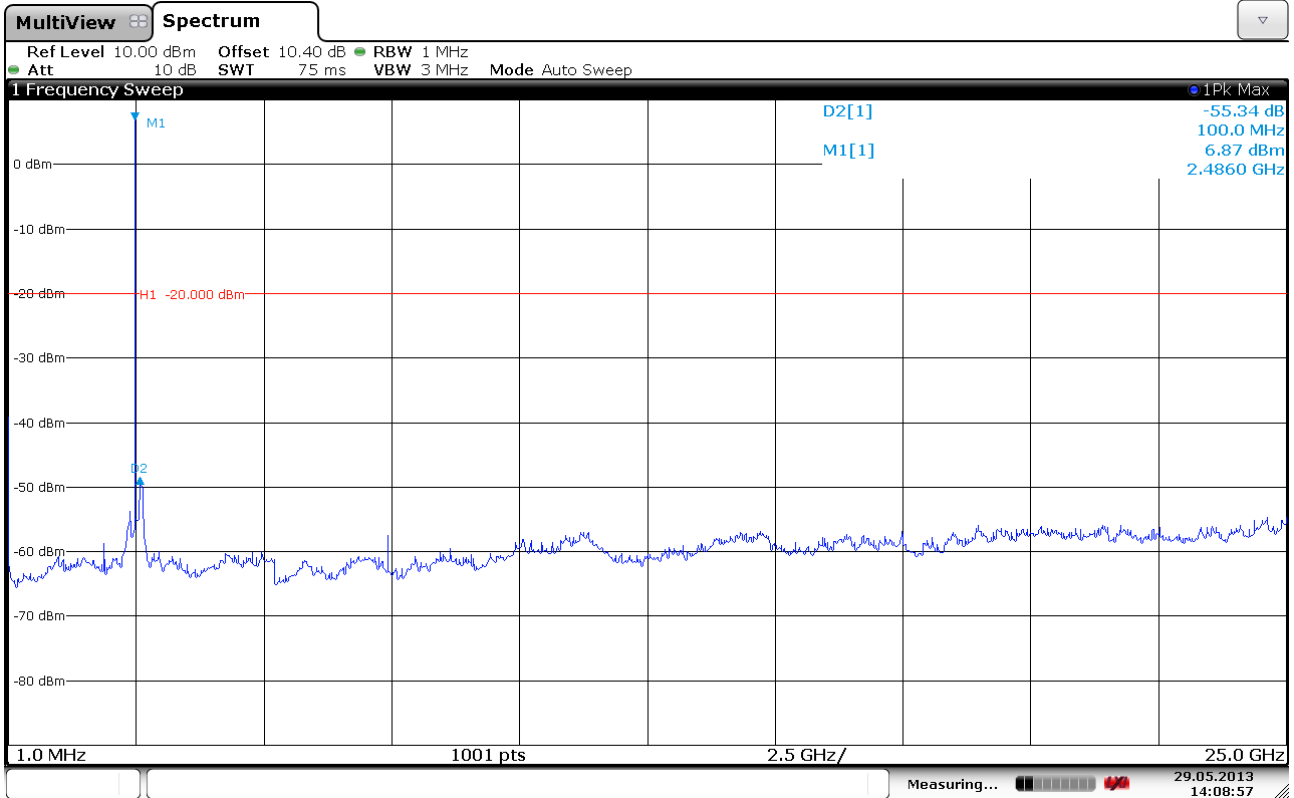
Delta Marker Upper Channel, Hopping ON



Conducted Emissions, 1MHz -25GHz, 2402 MHz



Conducted Emissions, 1MHz -25GHz, 2441 MHz



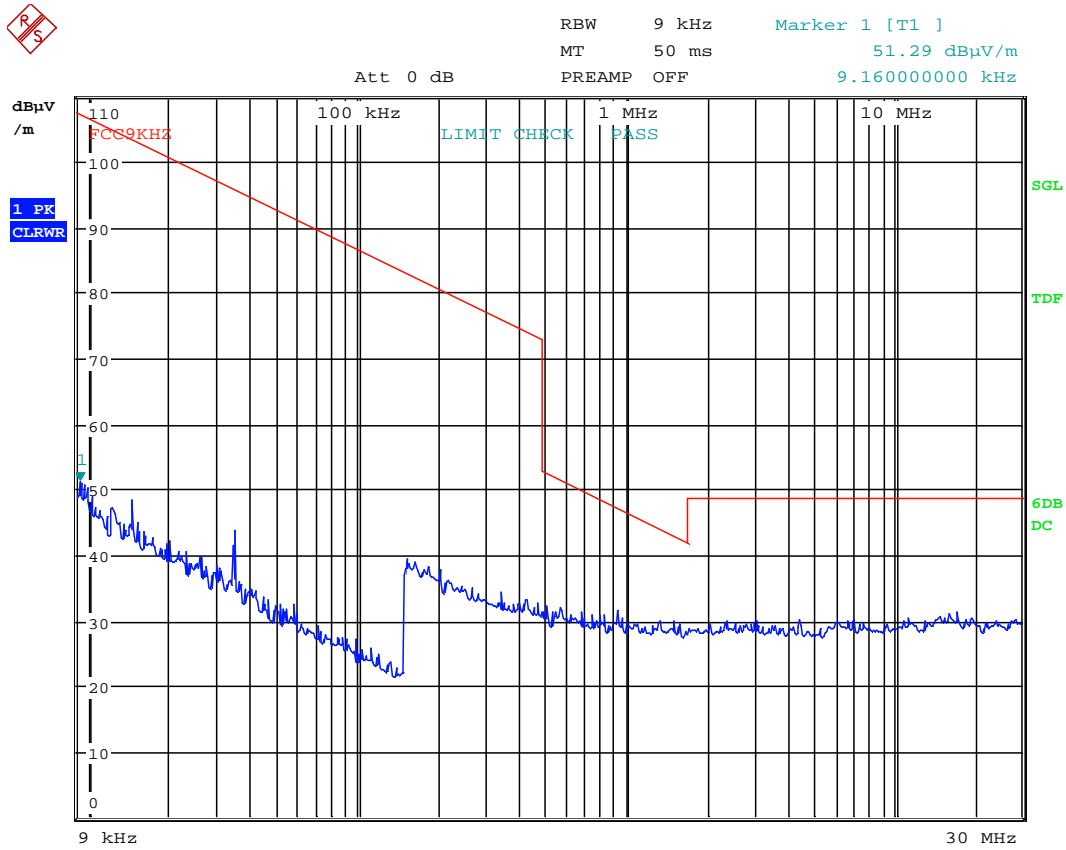
Conducted Emissions, 1MHz -25GHz, 2480 MHz

Radiated emissions 9 kHz-30 MHz.

Measuring distance 10 m, measured with Peak detector.

No component detected, see attached graph.

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



Date: 5.JUN.2013 17:38:10

Radiated emission 30 – 1000 MHz.

Detector: Quasi-Peak

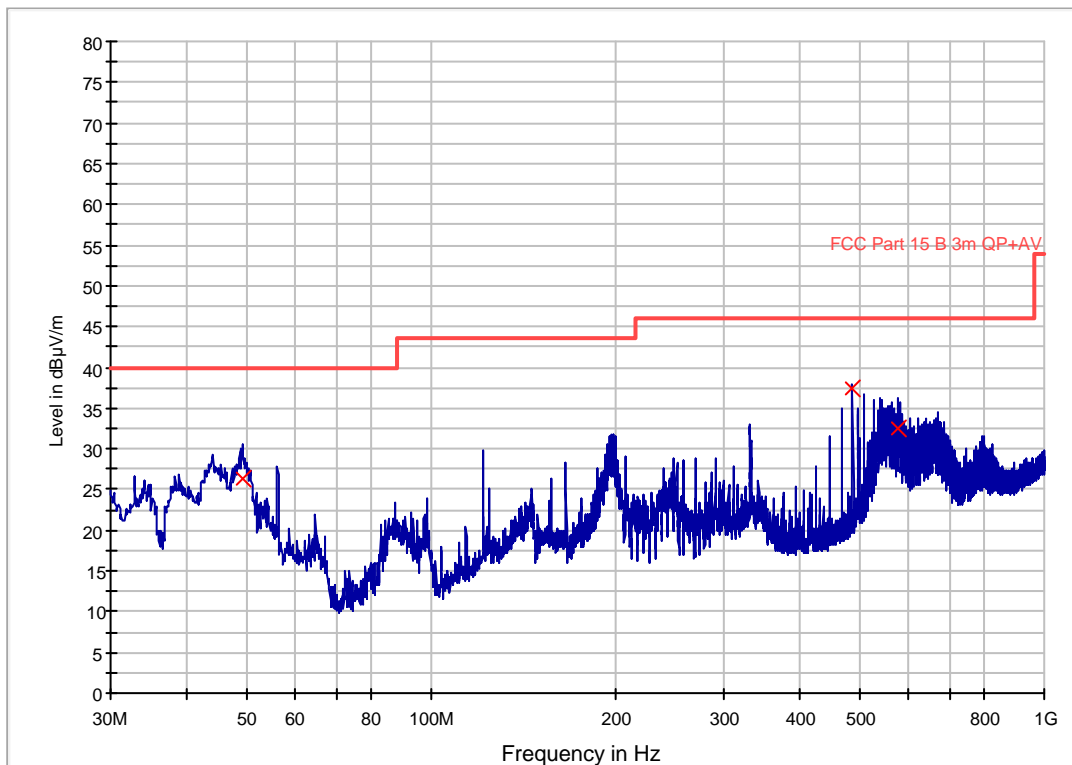
Measuring distance 3 m according to ANSI C63.4-2003.

Tested in speech mode with active connection.

Frequency (MHz)	QuasiPeak (dBµV/m)	Bandwidth (kHz)	Polarization	Margin (dB)	Limit (dBµV/m)	Comment
49.300705	26.4	120.000	V	13.6	40.0	
487.312826	37.4	120.000	H	8.6	46.0	
576.583318	32.5	120.000	V	13.5	46.0	

See plot.

NTC FCC Pt15 Class B 30-1000M 3m



Radiated Emissions, 1-25 GHz

Measuring distance: 3m (1 – 8.5 GHz)
 1m (8.5 – 18 GHz)

A pre-scan was performed above 18 GHz and no spurious emissions were detected.

Peak Detector:

Frequency	RF channel	Dist. corr. factor	Field strength, Peak Detector, 3m	Limit	Margin
MHz	L,M,H	dB	dB μ V/m	dB μ V/m	dB
4804	L	0	50.3	74	23.7
4882	M	0	51.7	74	22.3
4960	H	0	51.7	74	22.3
9608	L	9.5	45.4	74	28.6
9762	M	9.5	49.9	74	24.1
9920	H	9.5	51.7	74	22.3

Average Detector:

Frequency	RF channel	Dist. corr. factor	Field strength, Peak Detector, 3m	Duty cycle corr. factor	Limit	Margin
MHz	L,M,H	dB	dB μ V/m	dB	dB μ V/m	dB
4804	L	0	30.3	20	54	23.7
4882	M	0	31.7	20	54	22.3
4960	H	0	31.7	20	54	22.3
9608	L	9.5	25.4	20	54	28.6
9762	M	9.5	29.9	20	54	24.1
9920	H	9.5	31.7	20	54	22.3

Average Detector values are calculated from Peak values by Duty Cycle Correction Factor.

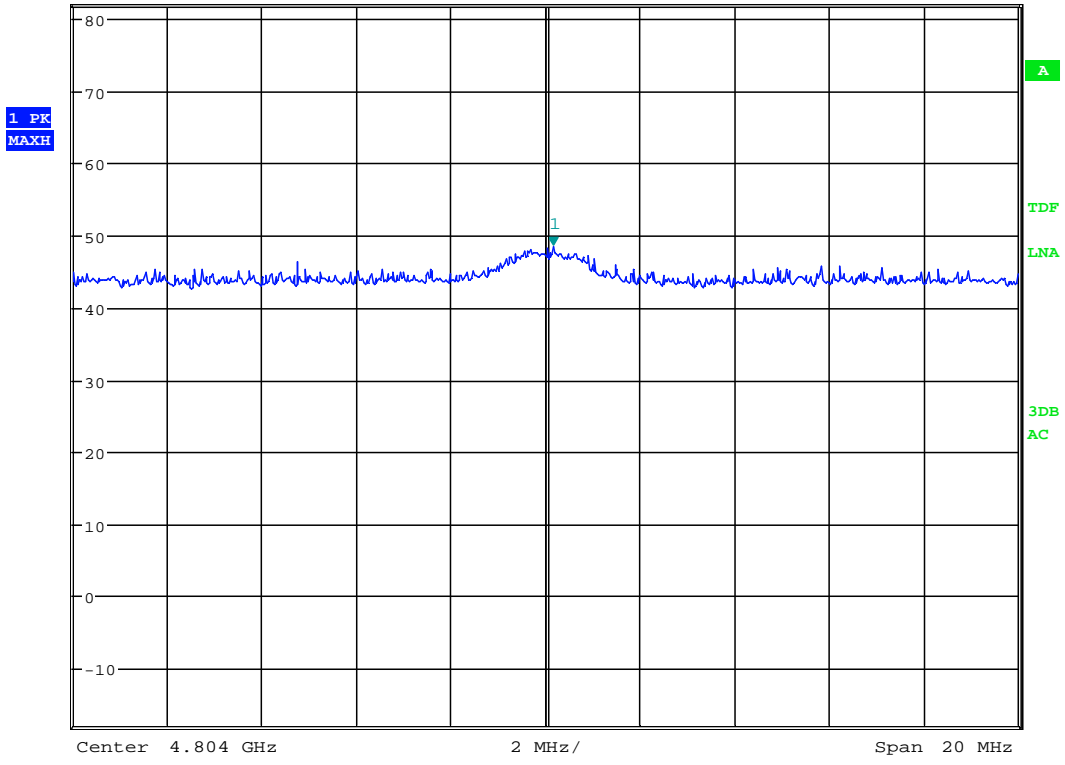
Antenna factor, amplifier gain and cable loss are included in spectrum analyzer "Transducer factor".

Distance correction factor is included on the plots for measurements @1m.

See plots.



Ref 82 dB μ V/m *Att 10 dB *RBW 1 MHz Marker 1 [T1] 48.41 dB μ V/m
 VBW 3 MHz 4.804160256 GHz
 SWT 20 ms

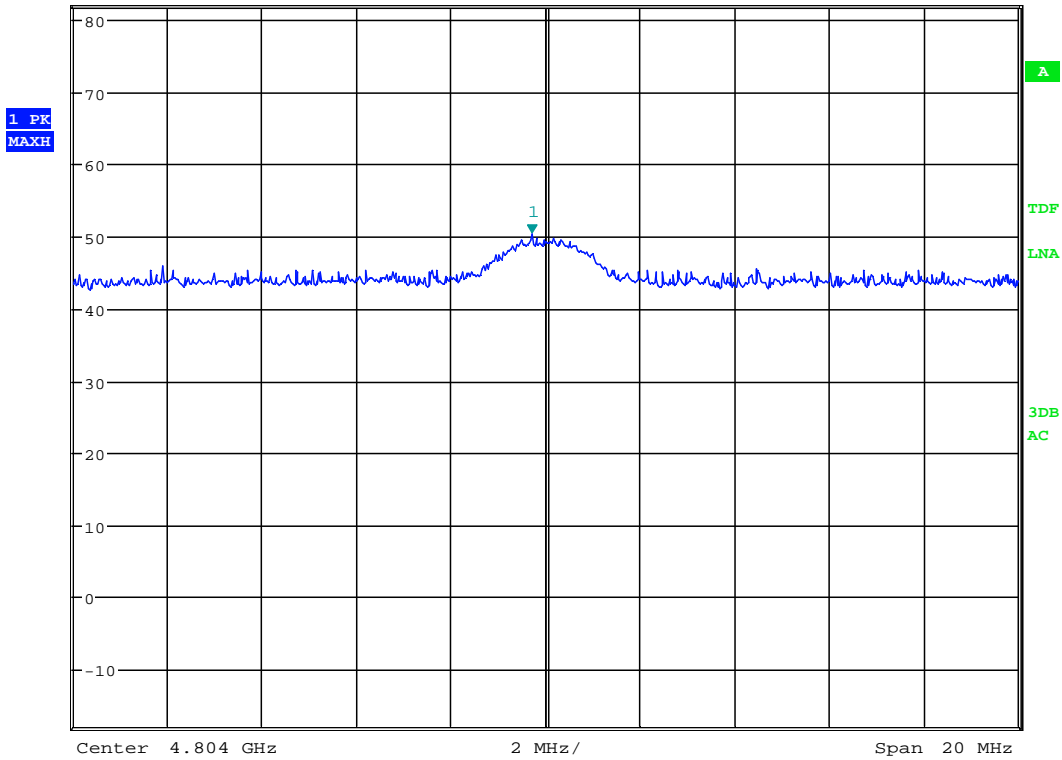


Date: 3.JUN.2013 16:18:12

Radiated Emissions, 4804MHz, Ch00, VP



*RBW 1 MHz Marker 1 [T1]
 VBW 3 MHz 50.33 dBμV/m
 SWT 20 ms 4.803711538 GHz
 Ref 82 dBμV/m *Att 10 dB

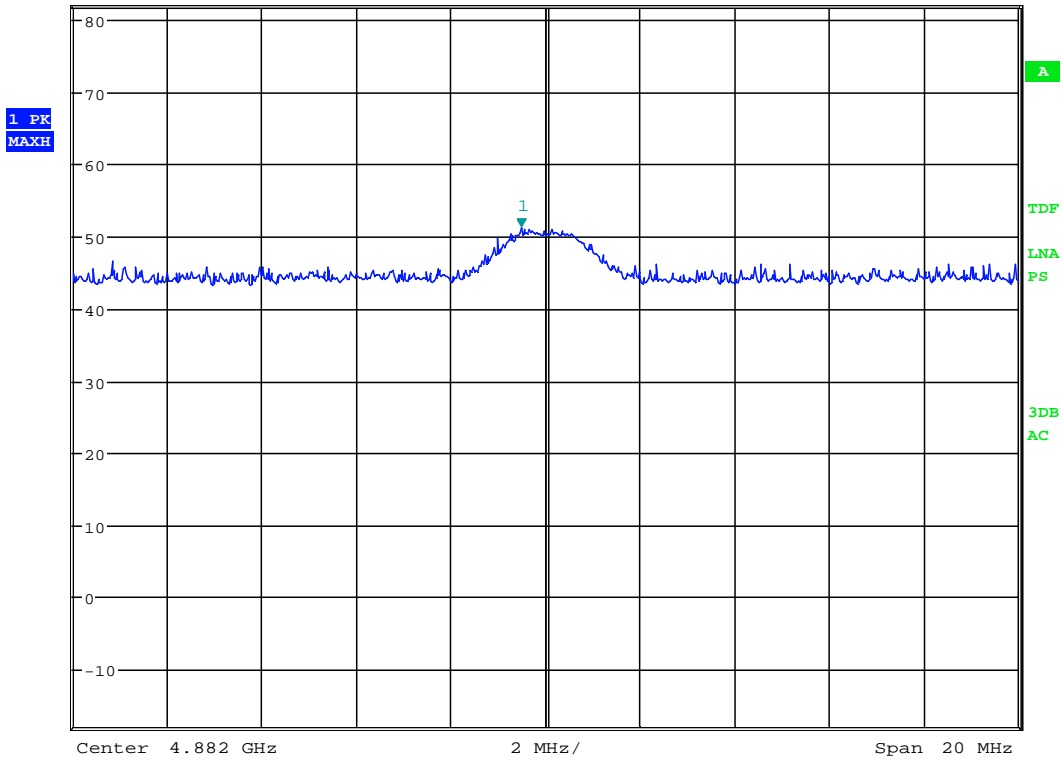


Date: 3.JUN.2013 16:17:11

Radiated Emissions, 4804MHz, Ch00, HP



Ref 82 dB μ V/m *Att 10 dB *RBW 1 MHz Marker 1 [T1]
 *SWT 20 ms VBW 3 MHz 51.27 dB μ V/m
 4.881487179 GHz

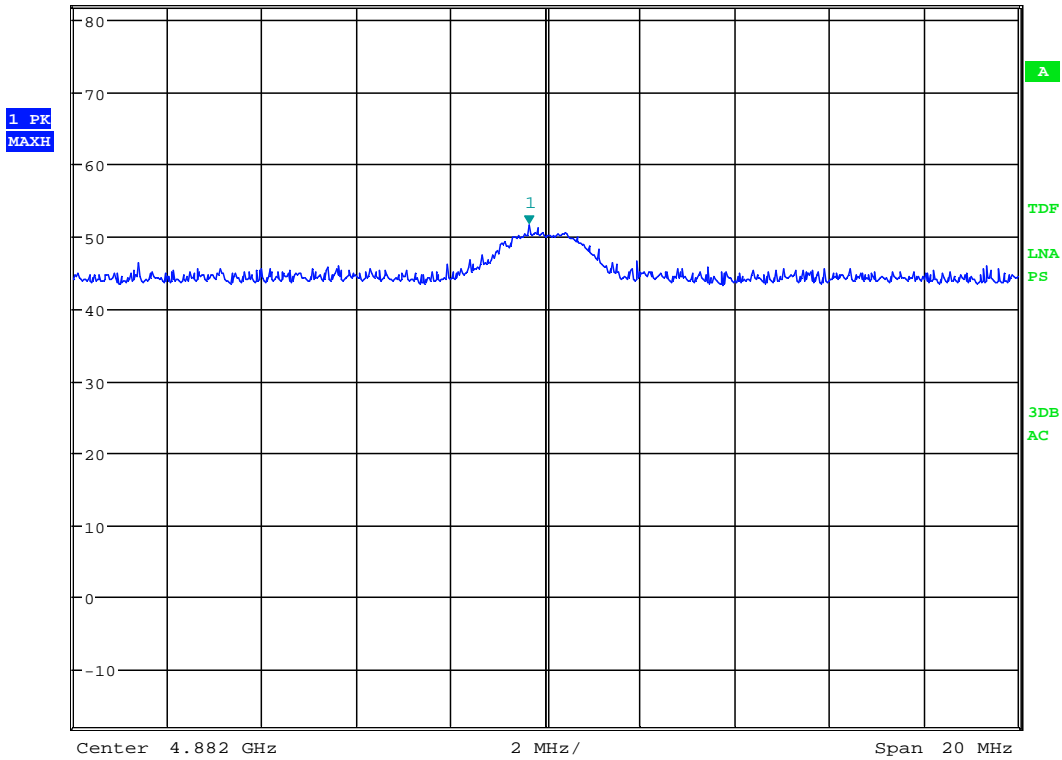


Date: 3.JUN.2013 15:56:29

Radiated Emissions, 4882MHz, Ch39, VP



Ref 82 dB μ V/m * Att 10 dB * RBW 1 MHz Marker 1 [T1] 51.65 dB μ V/m
 * SWT 20 ms 4.881647436 GHz

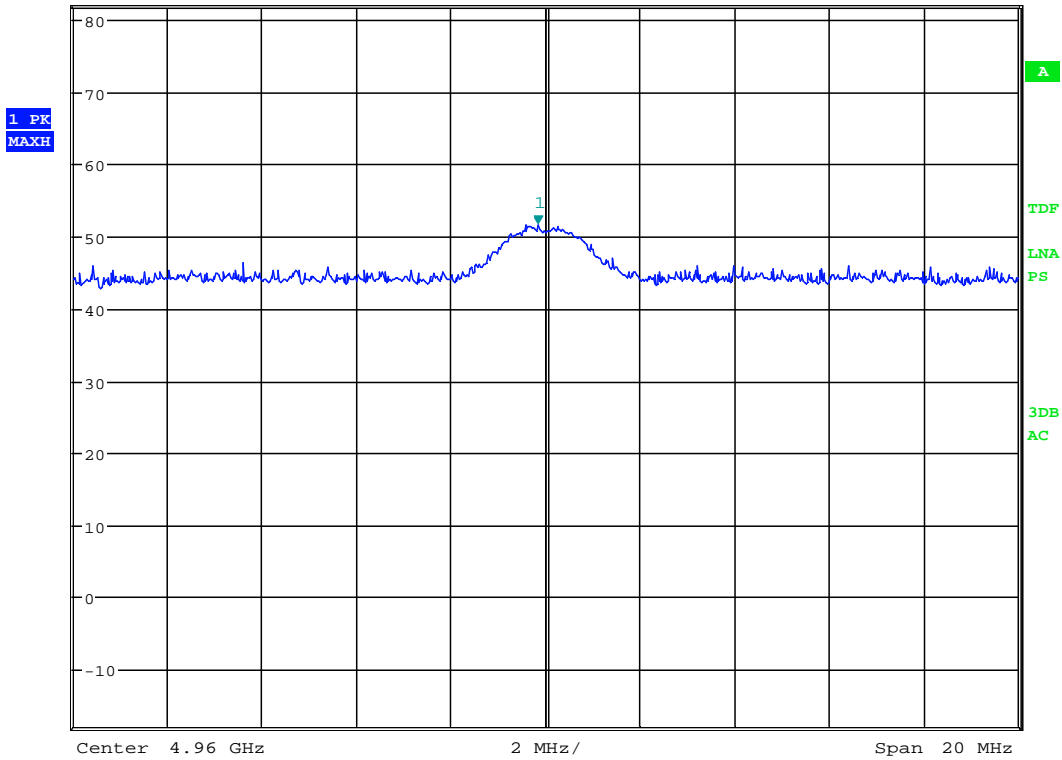


Date: 3.JUN.2013 15:55:55

Radiated Emissions, 4882MHz, Ch39, HP



*RBW 1 MHz Marker 1 [T1]
 VBW 3 MHz 51.70 dBµV/m
 SWT 20 ms 4.959839744 GHz
 Ref 82 dBµV/m *Att 10 dB

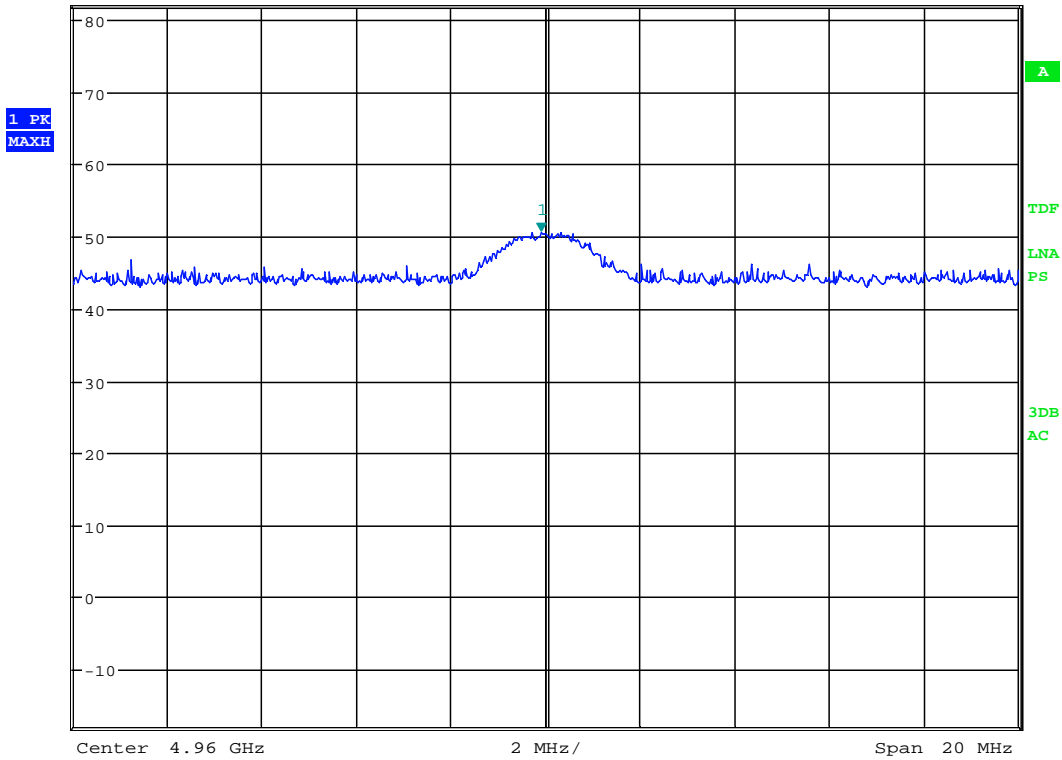


Date: 3.JUN.2013 17:30:58

Radiated Emissions, 4960MHz, Ch78, VP



Ref 82 dB μ V/m *Att 10 dB *RBW 1 MHz Marker 1 [T1] 50.64 dB μ V/m
 *SWT 20 ms 4.959903846 GHz



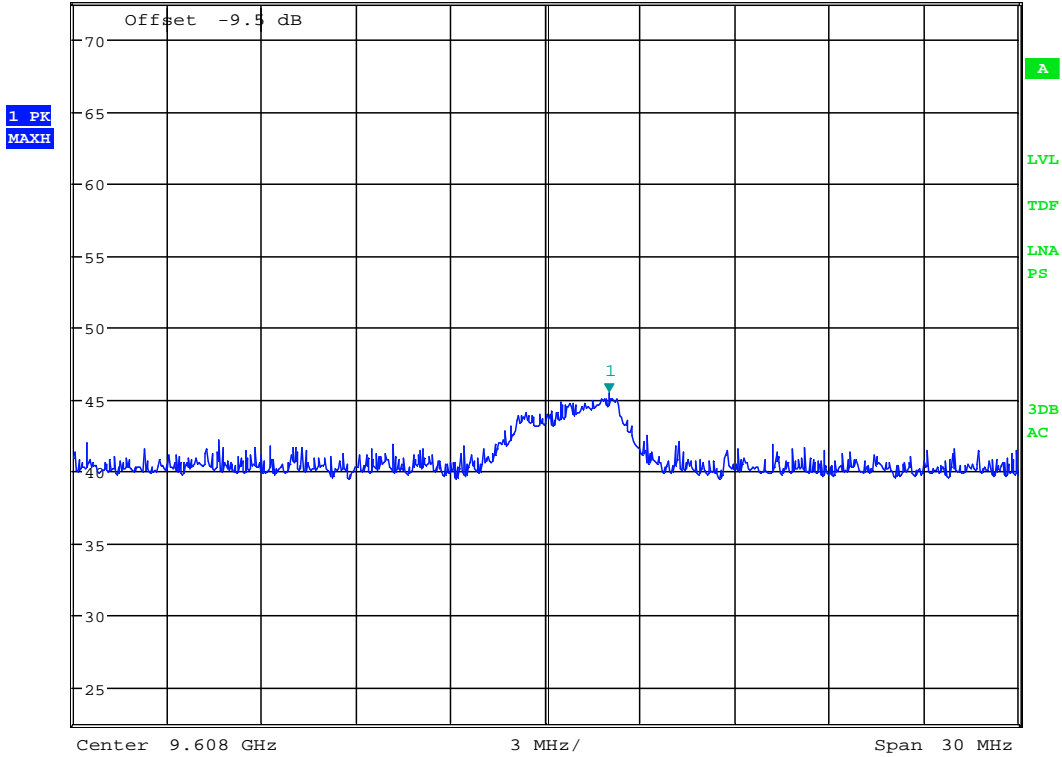
Date: 3.JUN.2013 15:17:34

Radiated Emissions, 4960MHz, Ch78, HP



*RBW 1 MHz Marker 1 [T1]
 VBW 3 MHz 45.44 dBµV/m
 SWT 20 ms 9.610019231 GHz

Ref 72.5 dBµV/m *Att 10 dB

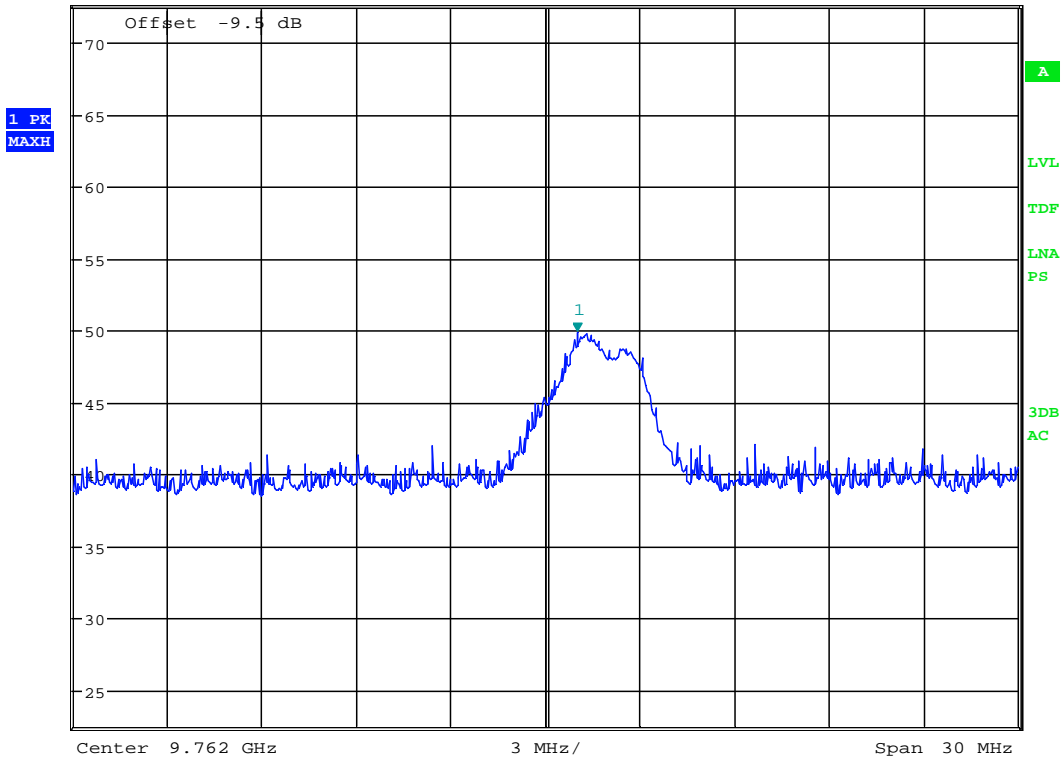


Date: 3.JUN.2013 18:24:49

Radiated Emissions, 9608MHz, Ch00, @1m, Max: VP



Ref 72.5 dBµV/m *Att 10 dB *RBW 1 MHz Marker 1 [T1]
 VBW 3 MHz 49.85 dBµV/m
 SWT 20 ms 9.763009615 GHz

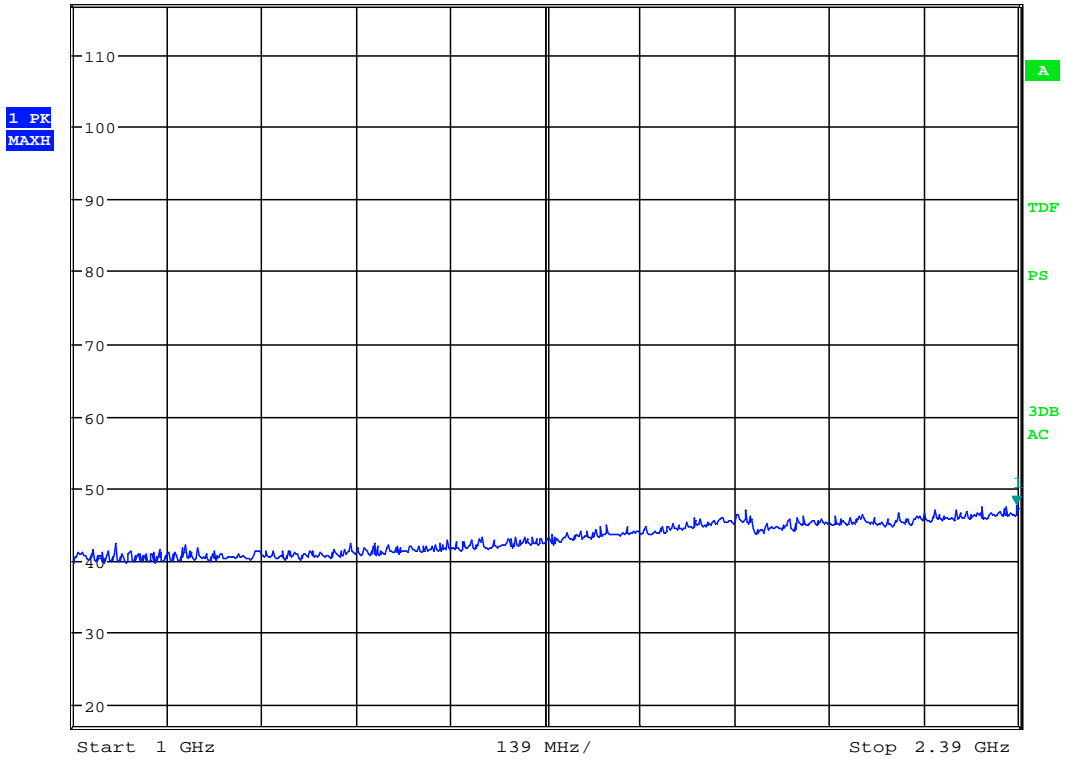


Date: 3.JUN.2013 18:17:00

Radiated Emissions, 9762MHz, Ch39, @1m, Max: VP



*RBW 1 MHz Marker 1 [T1]
 *VBW 3 MHz 47.52 dBµV/m
 Ref 117 dBµV/m *Att 20 dB SWT 5 ms 2.387772436 GHz



Date: 3.JUN.2013 17:01:31

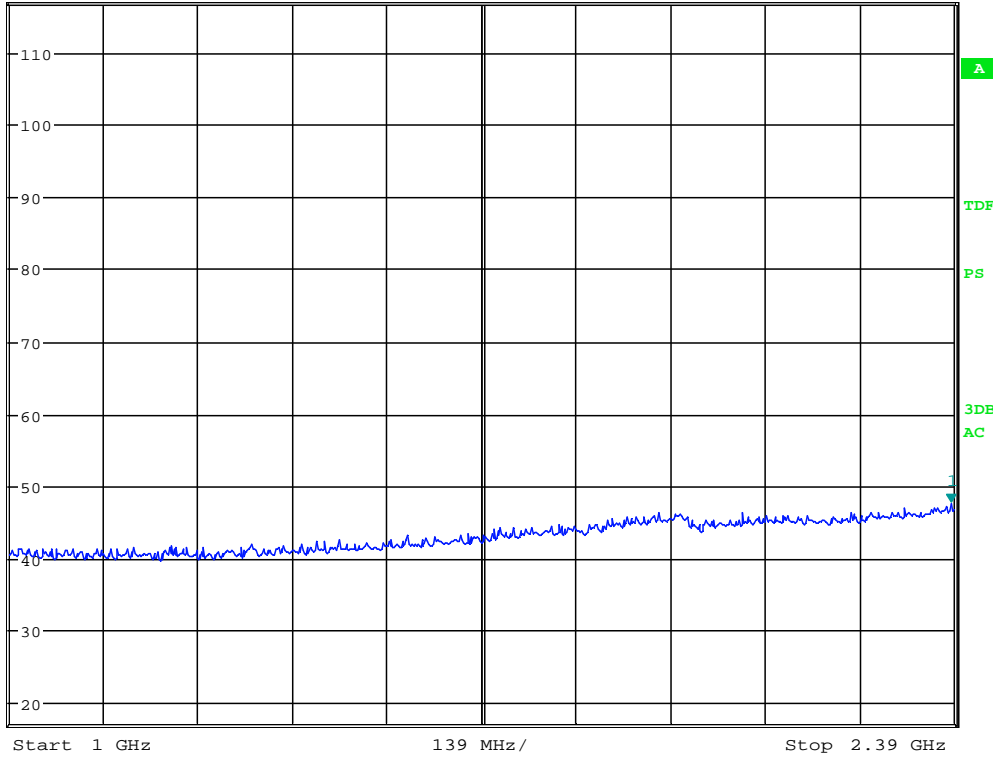
Radiated Emissions, 1000 -2390MHz, VP



*RBW 1 MHz Marker 1 [T1]
 *VBW 3 MHz 47.49 dBuV/m
 SWT 5 ms 2.385544872 GHz

Ref 117 dBuV/m *Att 20 dB

1 PK
 MAXH



Date: 3.JUN.2013 17:03:22

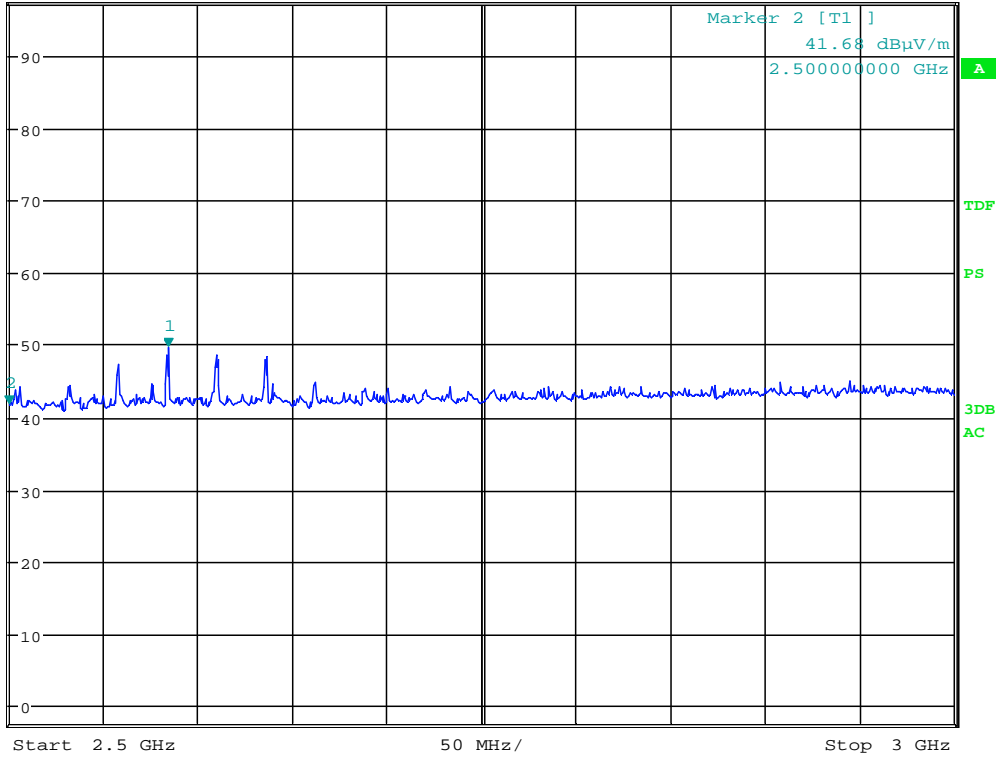
Radiated Emissions, 1000 -2390MHz, HP



*RBW 1 MHz Marker 1 [T1]
 *VBW 3 MHz 49.76 dBµV/m
 SWT 2.5 ms 2.584134615 GHz

Ref 97.5 dBµV/m *Att 10 dB

1 PK
 MAXH



Date: 3.JUN.2013 14:56:52

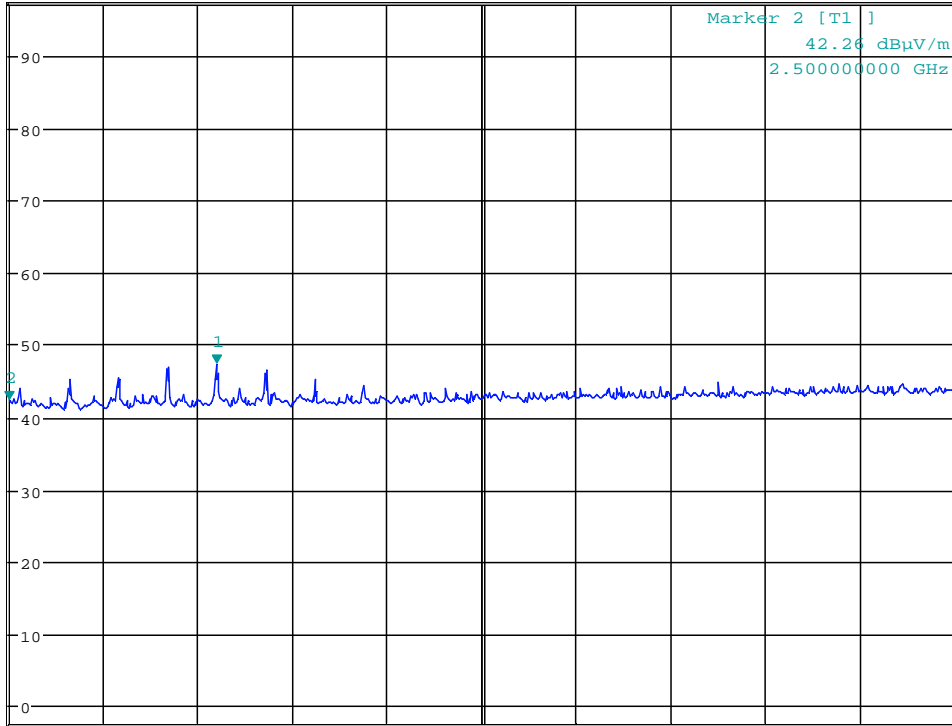
Radiated Emissions, 2500 -3000MHz, VP



*RBW 1 MHz Marker 1 [T1]
 *VBW 3 MHz 47.47 dBµV/m
 SWT 2.5 ms 2.609775641 GHz

Ref 97.5 dBµV/m *Att 10 dB

1 PK
 MAXH



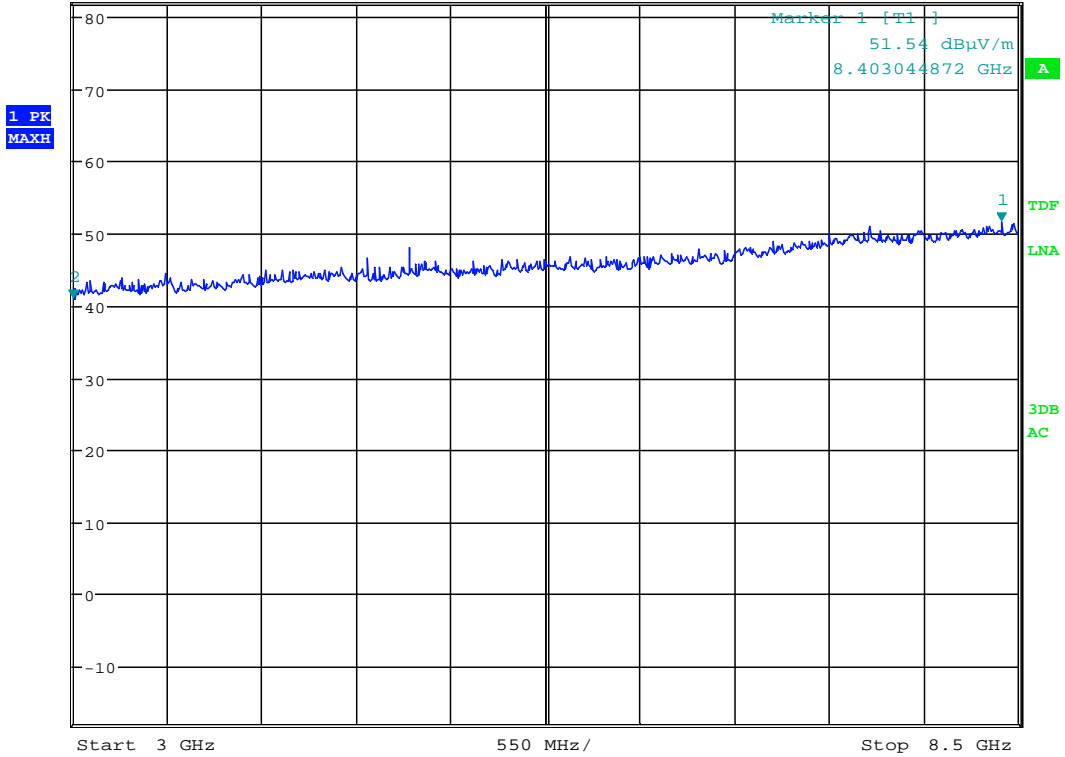
Start 2.5 GHz 50 MHz/ Stop 3 GHz

Date: 3.JUN.2013 14:58:44

Radiated Emissions, 2500 -3000MHz, HP



*RBW 1 MHz Marker 2 [T1]
 *VBW 3 MHz 40.83 dBμV/m
 Ref 82 dBμV/m *Att 10 dB SWT 35 ms 3.000000000 GHz

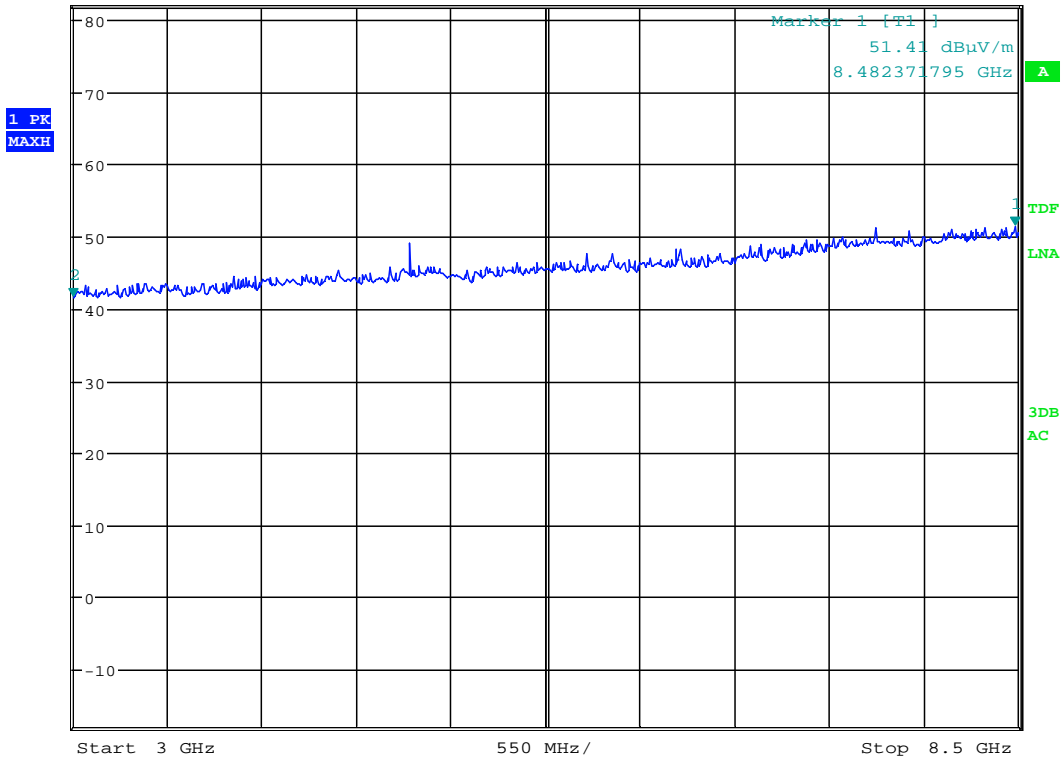


Date: 3.JUN.2013 17:21:04

Radiated Emissions, 3000 -8500MHz, VP



*RBW 1 MHz Marker 2 [T1]
 *VBW 3 MHz 41.47 dBµV/m
 Ref 82 dBµV/m *Att 10 dB SWT 35 ms 3.000000000 GHz



Date: 3.JUN.2013 17:22:45

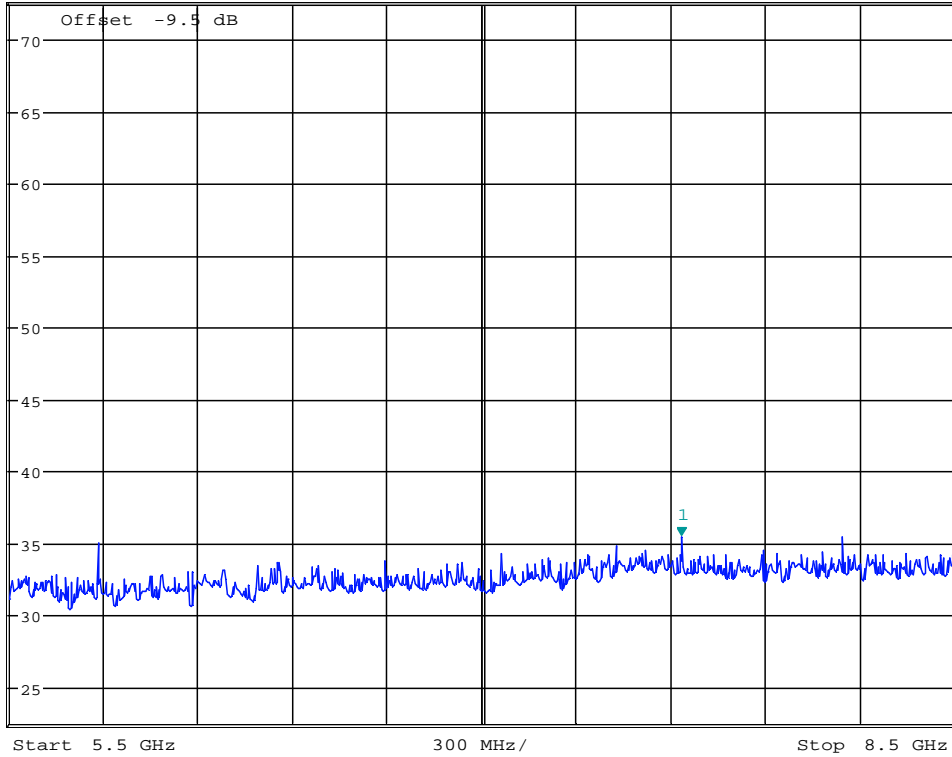
Radiated Emissions, 3000 -8500MHz, HP



*RBW 1 MHz Marker 1 [T1]
 *VBW 3 MHz 35.51 dBμV/m
 SWT 20 ms 7.634615385 GHz

Ref 72.5 dBμV/m *Att 10 dB

1 PK
 MAXH

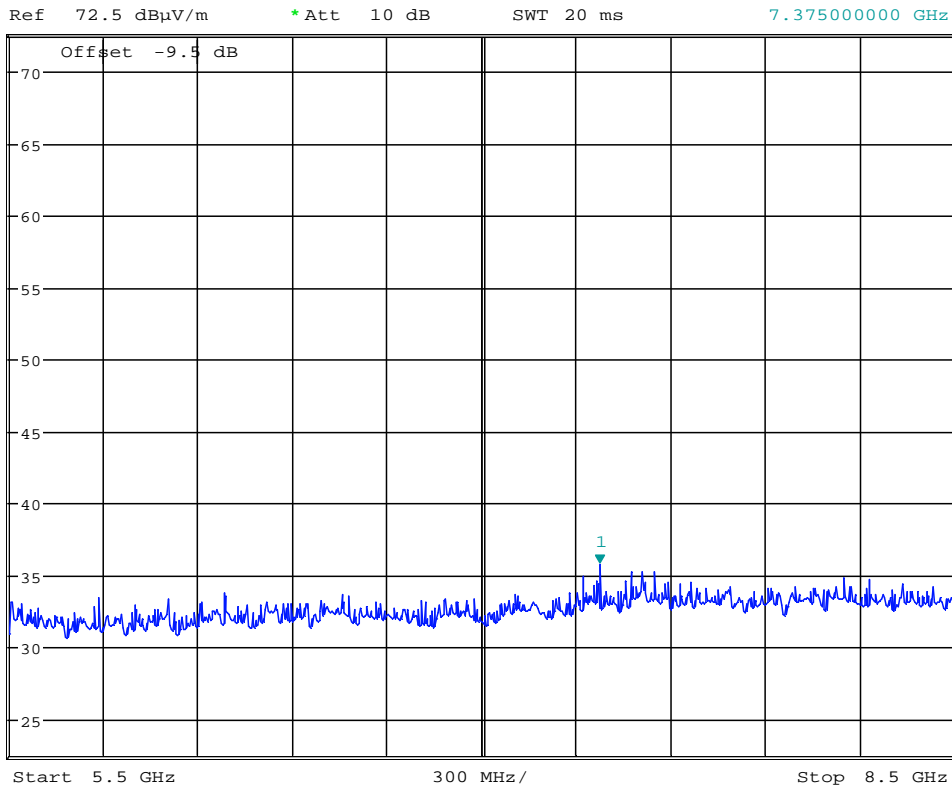


Date: 3.JUN.2013 17:49:59

Radiated Emissions, 5500 -8500MHz, VP, @1m



*RBW 1 MHz Marker 1 [T1]
 *VBW 3 MHz 35.75 dBμV/m
 SWT 20 ms 7.375000000 GHz

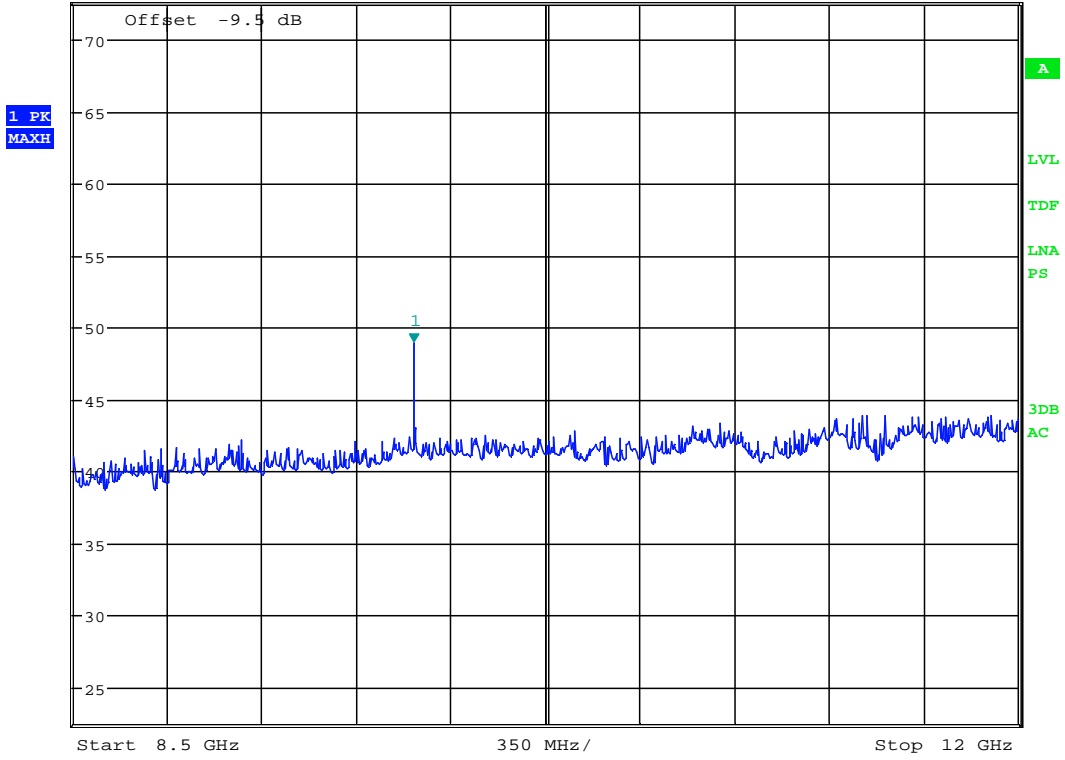


Date: 3.JUN.2013 17:51:41

Radiated Emissions, 5500 -8500MHz, HP, @1m



Ref 72.5 dBµV/m *Att 10 dB *RBW 1 MHz Marker 1 [T1] 48.91 dBµV/m
 SWT 25 ms 9.762019231 GHz



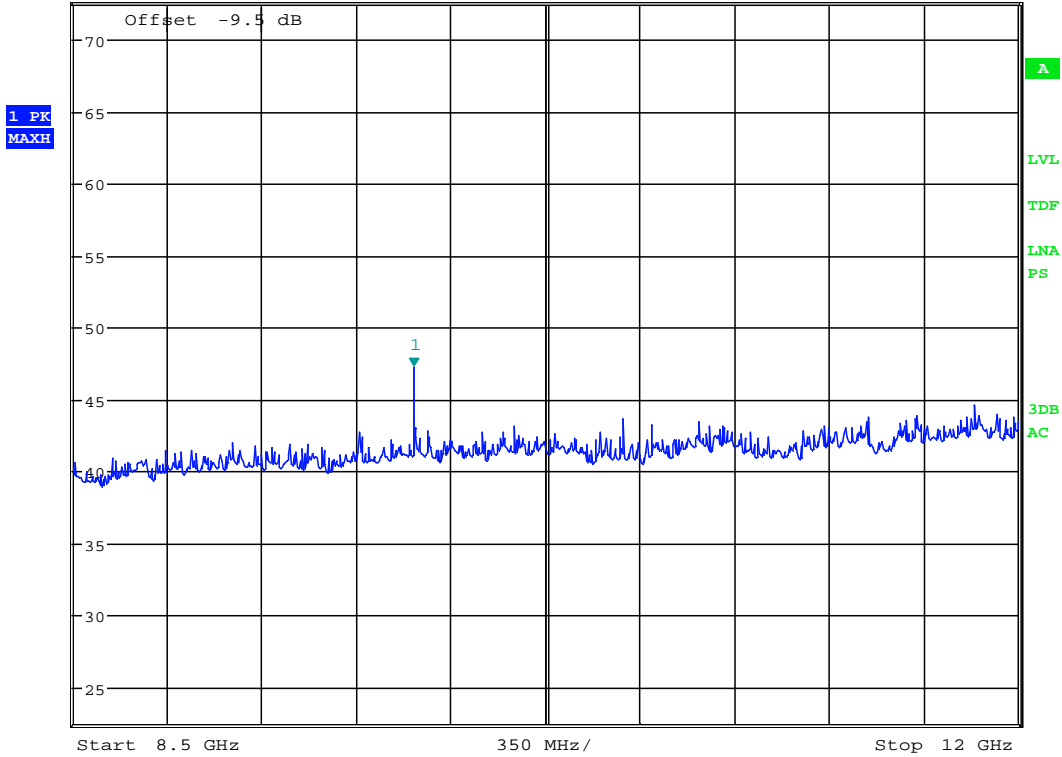
Date: 3.JUN.2013 18:08:54

Radiated Emissions, 8500 -12000MHz, VP, @1m



*RBW 1 MHz Marker 1 [T1]
 *VBW 3 MHz 47.23 dBµV/m
 SWT 25 ms 9.762019231 GHz

Ref 72.5 dBµV/m *Att 10 dB

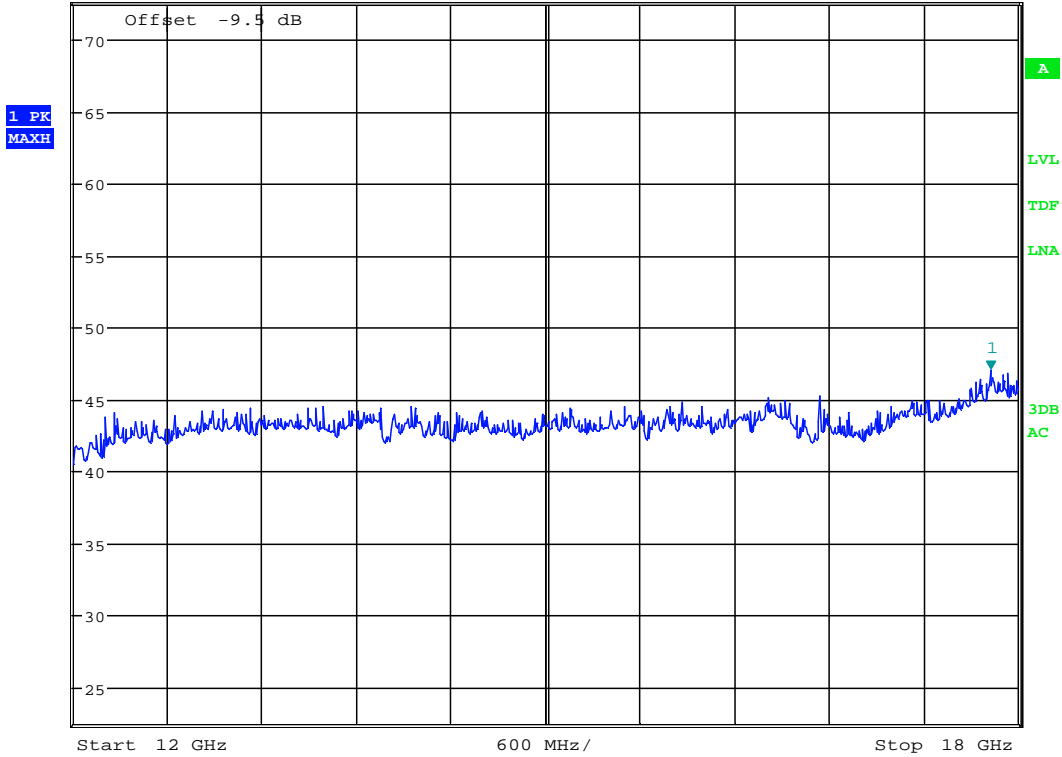


Date: 3.JUN.2013 18:10:36

Radiated Emissions, 8500 -12000MHz, HP, @1m



*RBW 1 MHz Marker 1 [T1]
 *VBW 3 MHz 47.00 dBµV/m
 Ref 72.5 dBµV/m *Att 10 dB SWT 35 ms 17.826923077 GHz



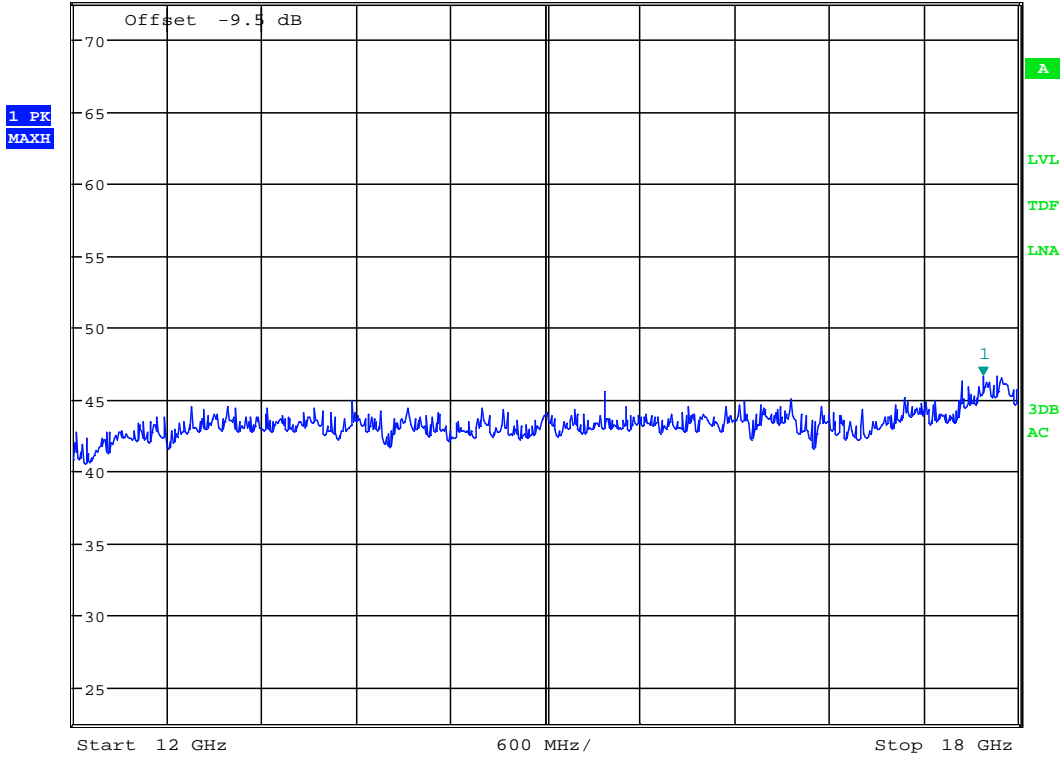
Date: 3.JUN.2013 18:32:01

Radiated Emissions, 12000 -18000MHz, VP, @1m



*RBW 1 MHz Marker 1 [T1]
 *VBW 3 MHz 46.59 dBµV/m
 SWT 35 ms 17.778846154 GHz

Ref 72.5 dBµV/m *Att 10 dB



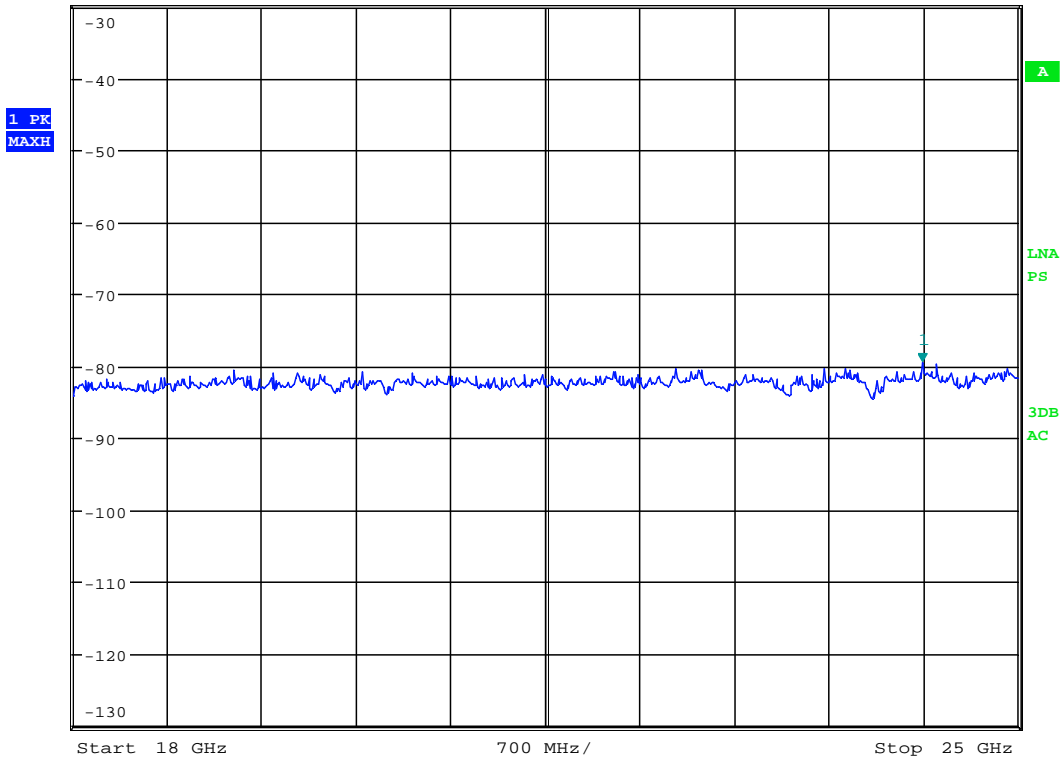
Date: 3.JUN.2013 18:33:43

Radiated Emissions, 12000 -18000MHz, HP, @1m



*RBW 1 MHz Marker 1 [T1]
VBW 3 MHz -79.46 dBm
SWT 45 ms 24.293269231 GHz

Ref -30 dBm *Att 10 dB



Date: 5.JUN.2013 17:59:43

Pre-scan, 18000 -25000MHz, @ approx. 10cm

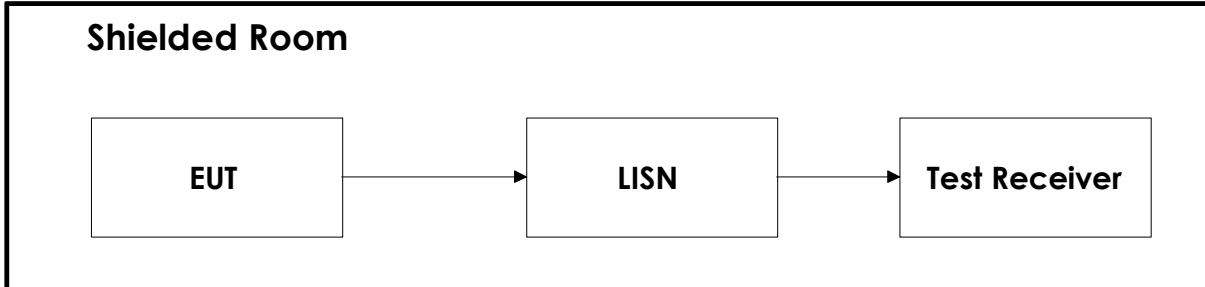
4 LIST OF TEST EQUIPMENT

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.	Model number	Description	Manufacturer	Ref. no.	Cal. date	Cal. Due
1	FSW26	Spectrum Analyzer	Rohde & Schwarz	LR 1640	2012.06	2014.06
2	ESU40	Measuring Receiver	Rohde & Schwarz	LR 1639	2012.06	2014.06
3	4768-10	Attenuator	Narda	LR 1356	Cal b4 use	
4	6HC3000/18000	Highpass Filter	Trilithic	LR 1614	Cal b4 use	
5	JB3	BiLog Antenna	Sunol Sciences	N-4525	2012.10.11	2015.10.11
6	LNA6900	Preamplifier	Teseq	LR 1593	2011.11.24	2013.11.24
7	3115	Horn Antenna	EMCO	LR 1330	2010.08.05	2013.08.05
8	8449A	Pre-amplifier	Hewlett Packard	LR 1322	2012-09	2013-09
9	643	Antenna Horn	Narda	LR 093	2009.01.26	2014.01.26
10	PM7320X	Antenna Horn	Sivers Lab	LR 102	2009.01.26	2014.01.26
11	DBF-520-20	Antenna Horn	Systron Donner	LR 100	2009.01.26	2014.01.26
12	638	Antenna Horn	Narda	LR 1480	2010.06.17	2015.06.17
14	HFH2-Z2	Loop Antenna	Rohde & Schwarz	LR 285	2010.10.08	2013.10.08
15	Model 87V	Multimeter	Fluke	N-4669	2012.09.05	2013.09.05
16	6812B	AC Power Source	Agilent	LR 1515	Cal b4 use	

5 BLOCK DIAGRAM

5.1 Power Line Conducted Emission



5.2 Test Site Radiated Emission

