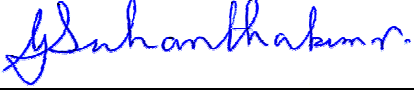


Test Report

Product	BT in Portable DECT Transceiver
Name and address of the applicant	HM Electronics, Inc. 14110 Stowe Drive, Poway, CA 92064 USA
Name and address of the manufacturer	Same as above
Model	BP1G9
Rating	3.7 V DC
Trademark	Clear-Com, An HME Company
Serial number	/
Additional information	Bluetooth 2.1 +EDR, DECT 6.0
Tested according to	FCC Part 15.247 Frequency Hopping Transmitters Industry Canada RSS-210, Issue 8 Low Power Licence-Exempt Radiocommunications Devices
Order number	256262
Tested in period	2014.04.29 to 2014.04.30; 2014.05.15 and 2014.06.05 to 2014.06.16
Issue date	2014.06.16
Name and address of the testing laboratory	 FCC No: 994405 IC OATS: 2040D-1 Instituttveien 6 Kjeller, Norway TEL: (+47) 64 84 57 00 FAX: (+47) 64 84 57 05
 Prepared by [Frode Sveinsen]  Approved by [G.Suwanthakumar]	
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1 INFORMATION

1.1 Test Item

Name :	Clear-Com, An HME Company
FCC ID :	BP1G9
Industry Canada ID :	BYMBP1G9
Model/version :	1860A-BP1G9
Serial number :	/
Hardware identity and/or version:	3
Software identity and/or version :	/
Frequency Range :	2402 - 2480 MHz
Number of Channels :	79 (Adaptive Frequency Hopping)
Type of Modulation :	Digital (GFSK, $\pi/4$ -DQPSK, 8DPSK)
User Frequency Adjustment :	None
Conducted Output Power :	0.00268 Watts (Peak, GFSK) 0.00127 Watts (Peak, EDR)
Power Supply :	Secondary Battery (3.7V Li-Ion)
Antenna Connector :	None
Number of Antennas :	1
Antenna Diversity Supported :	No

Description of Test Item

The EUT is a Bluetooth Transceiver in a portable DECT transceiver. The Bluetooth part supports BT 2.1 +EDR modulations. This report covers only the BT part.

Exposure Evaluation

The EUT is designed to be worn in a belt clip. For the purposes of exposure evaluation this EUT is a mobile device. The Bluetooth portion of the EUT is exempted from SAR evaluation.

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:	20.5 – 22.7 °C
Relative humidity:	34 – 43 %
Normal test voltage:	3.7 V DC (Battery Voltage)

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



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: Tore Løvlien	Date of Test: 15-May-2014
---------------------------------	---------------------------

Measurement procedure: ANSI C63.4-2009 using 50 μ H/50 ohms LISN.

Test Results: Complies

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

For this test the EUT was connected to an USB HUB, and emissions from the USB HUB were then measured.

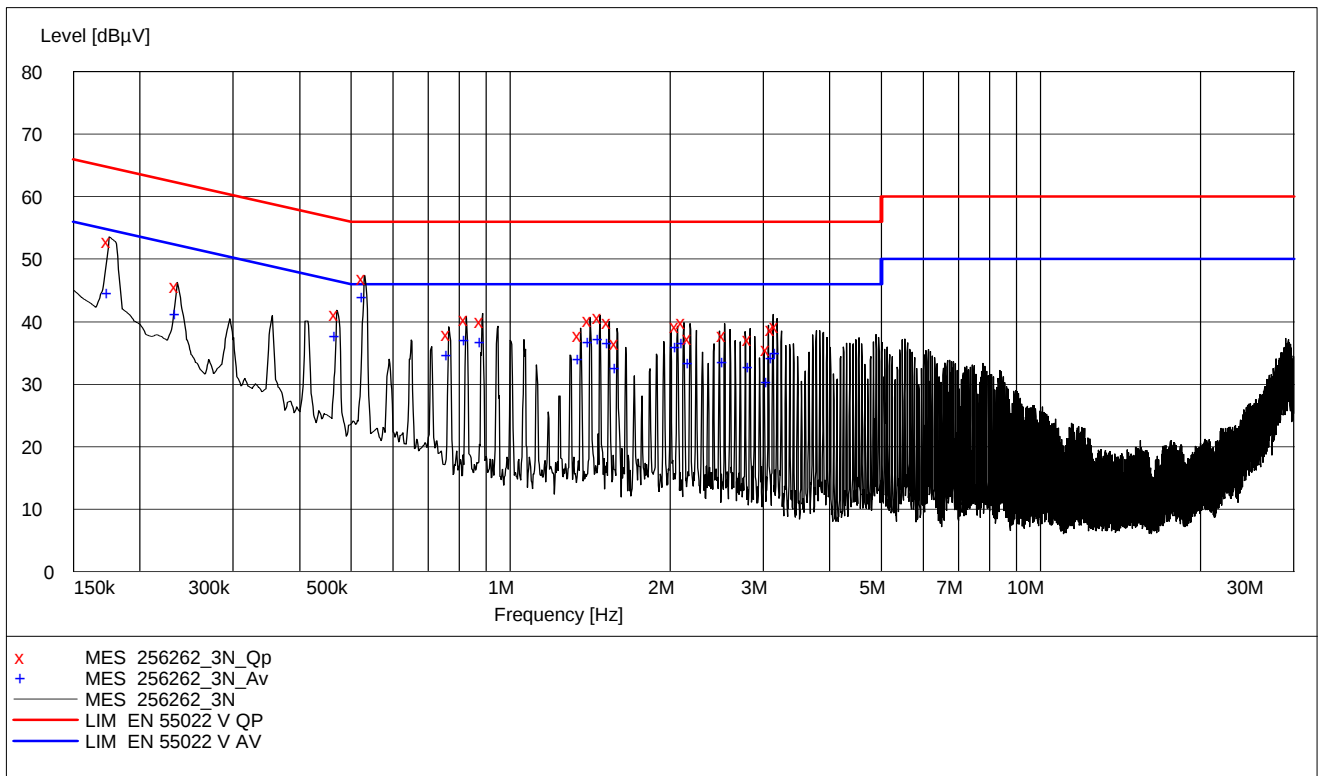
USB HUB: D-Link Model: DUB-H4, S/N: BQ31486000932, HW Ver: B5

AC Adaptor: D-Link Model: JTA0302E-E, S/N: LF4R00081012211

Highest measured value (L1 and N):

BT Active, Hopping, 120V 60Hz, USB Hub:

Frequency [MHz]	Level [dBuV]	Af [dB]	Limit [dBuV]	Margin [dB]	Det	Position	Verdict [Pass/Fail]
0.175000	52.90	10.10	64.70	11.80	QP	L1	Pass
0.235000	45.70	10.10	62.30	16.60	QP	L1	Pass
0.470000	41.20	10.20	56.50	15.30	QP	L1	Pass
0.530000	47.00	10.20	56.00	9.00	QP	L1	Pass
0.765000	38.10	10.20	56.00	17.90	QP	L1	Pass
0.825000	40.40	10.20	56.00	15.60	QP	L1	Pass
0.885000	40.10	10.20	56.00	15.90	QP	L1	Pass
1.355000	37.80	10.20	56.00	18.20	QP	L1	Pass
1.415000	40.20	10.20	56.00	15.80	QP	L1	Pass
1.475000	40.80	10.20	56.00	15.20	QP	L1	Pass
1.535000	39.90	10.20	56.00	16.10	QP	L1	Pass
1.590000	36.50	10.30	56.00	19.50	QP	L1	Pass
2.065000	39.30	10.30	56.00	16.70	QP	L1	Pass
2.125000	40.00	10.30	56.00	16.00	QP	L1	Pass
2.180000	37.40	10.30	56.00	18.60	QP	L1	Pass
2.535000	37.80	10.30	56.00	18.20	QP	L1	Pass
2.830000	37.20	10.30	56.00	18.80	QP	L1	Pass
3.065000	35.60	10.30	56.00	20.40	QP	L1	Pass
3.125000	38.80	10.30	56.00	17.20	QP	L1	Pass
3.185000	39.30	10.30	56.00	16.70	QP	L1	Pass
0.175000	44.50	10.10	54.70	10.20	AV	L1	Pass
0.235000	41.20	10.10	52.30	11.10	AV	L1	Pass
0.470000	37.60	10.20	46.50	8.90	AV	L1	Pass
0.530000	44.00	10.20	46.00	2.00	AV	L1	Pass
0.765000	34.70	10.20	46.00	11.30	AV	L1	Pass
0.825000	37.10	10.20	46.00	8.90	AV	L1	Pass
0.885000	36.80	10.20	46.00	9.20	AV	L1	Pass
1.355000	34.00	10.20	46.00	12.00	AV	L1	Pass
1.415000	36.70	10.20	46.00	9.30	AV	L1	Pass
1.475000	37.30	10.20	46.00	8.70	AV	L1	Pass
1.535000	36.50	10.20	46.00	9.50	AV	L1	Pass
1.590000	32.60	10.30	46.00	13.40	AV	L1	Pass
2.065000	35.90	10.30	46.00	10.10	AV	L1	Pass
2.125000	36.50	10.30	46.00	9.50	AV	L1	Pass
2.180000	33.40	10.30	46.00	12.60	AV	L1	Pass
2.535000	33.50	10.30	46.00	12.50	AV	L1	Pass
2.830000	32.70	10.30	46.00	13.30	AV	L1	Pass
3.065000	30.40	10.30	46.00	15.60	AV	L1	Pass
3.125000	34.10	10.30	46.00	11.90	AV	L1	Pass
3.185000	35.00	10.30	46.00	11.00	AV	L1	Pass



BT Active, Hopping, 120V 60Hz, USB Hub

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: 1.000 MHz

20 dB Bandwidth (kHz)			
Modulation	2402 MHz	2441 MHz	2480 MHz
GFSK (DH5)	926	926	926
2-EDR (2-DH5)	1270	1270	1270
3-EDR (3-DH5)	1230	1230	1230

See attached plots

Channel Separation nominal value: 1.000 MHz

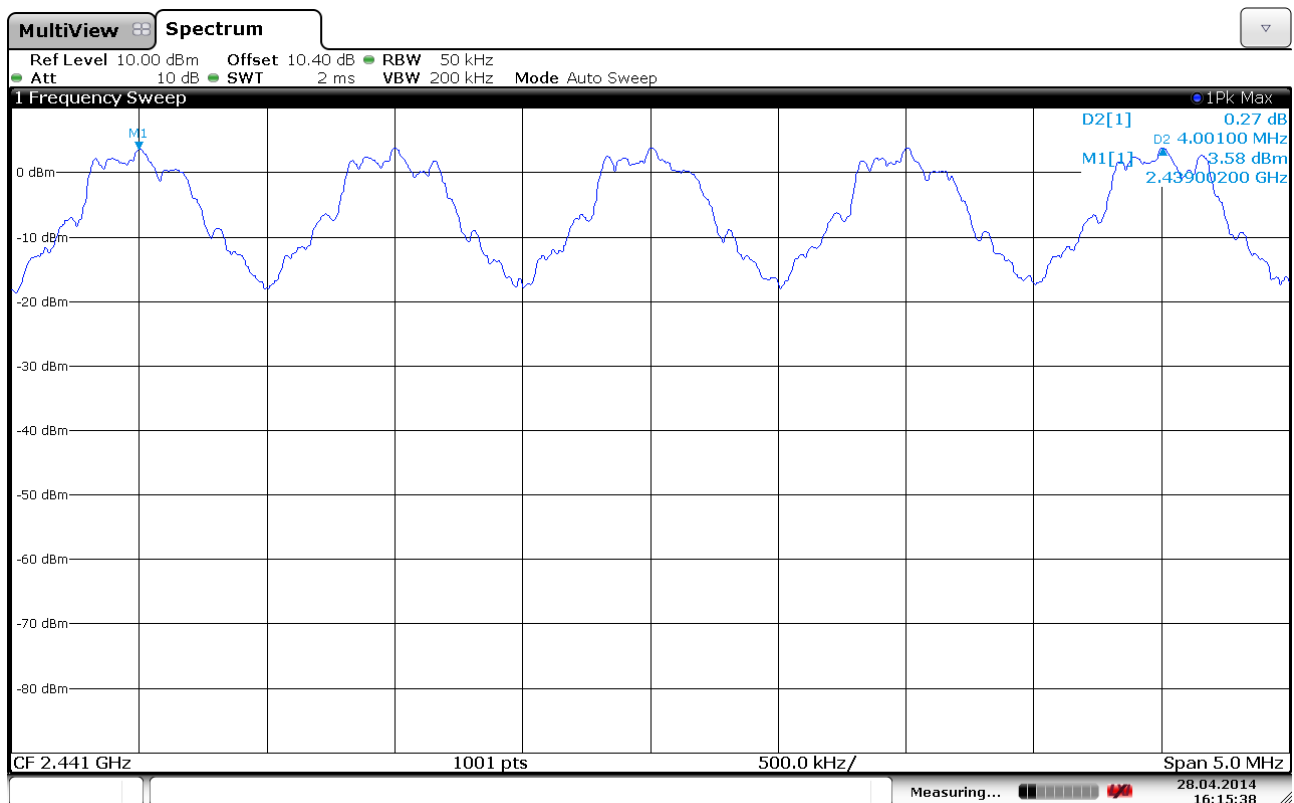
Requirement:

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.

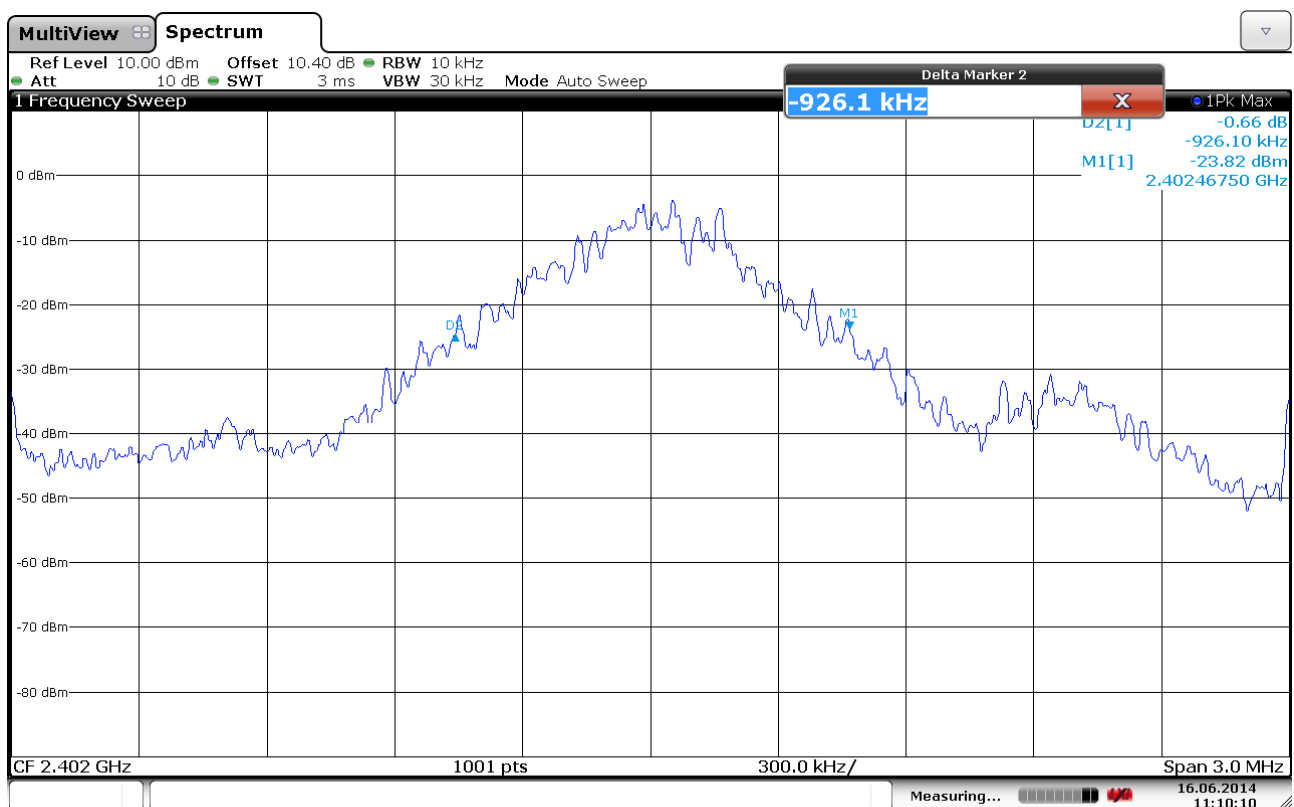
or:

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.

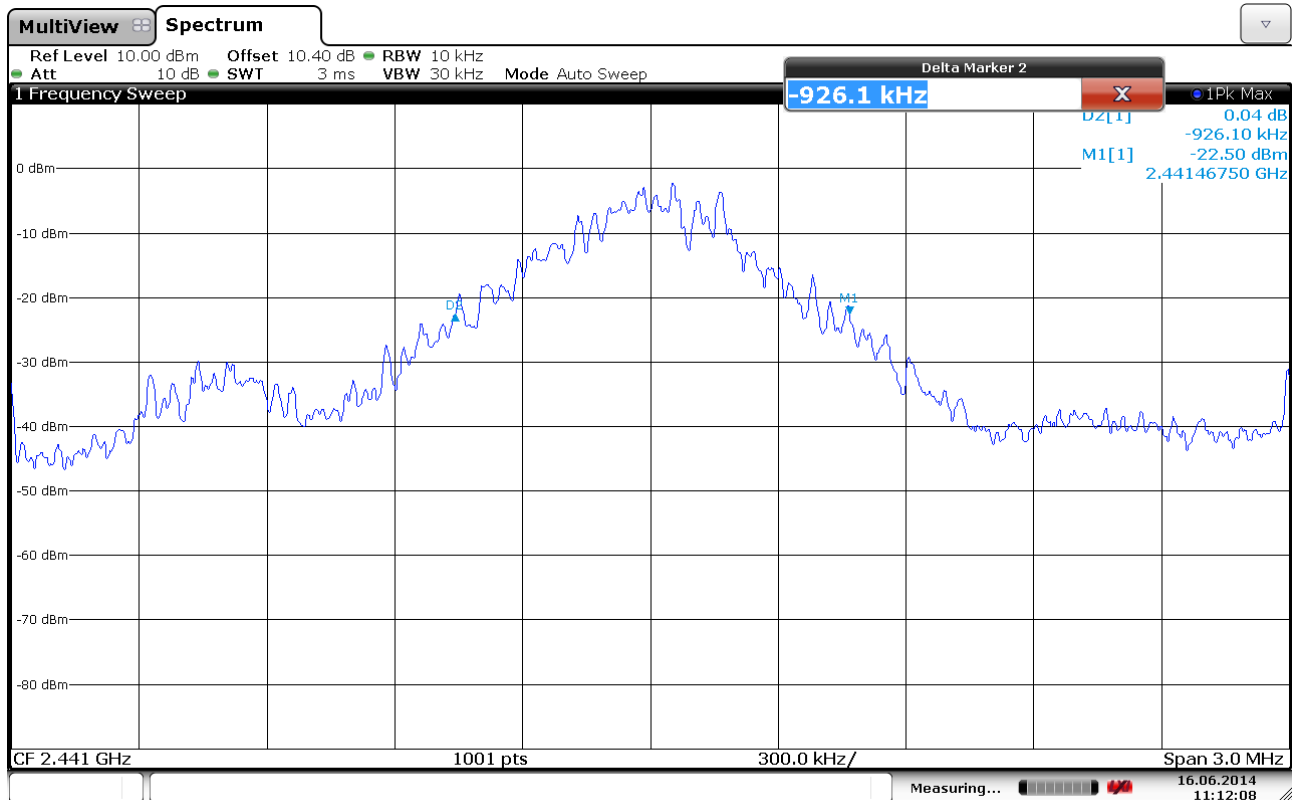
No requirements for Digital Transmission Systems.



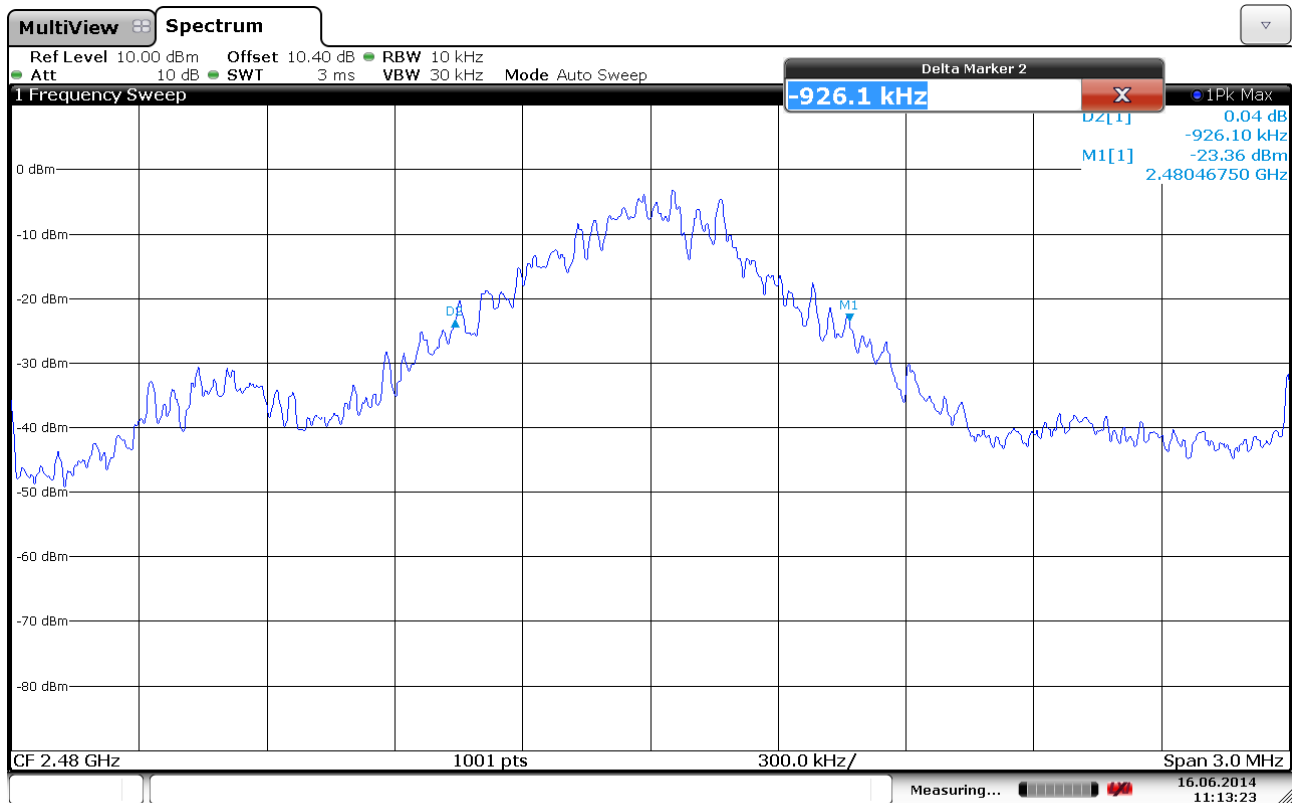
Channel Separation



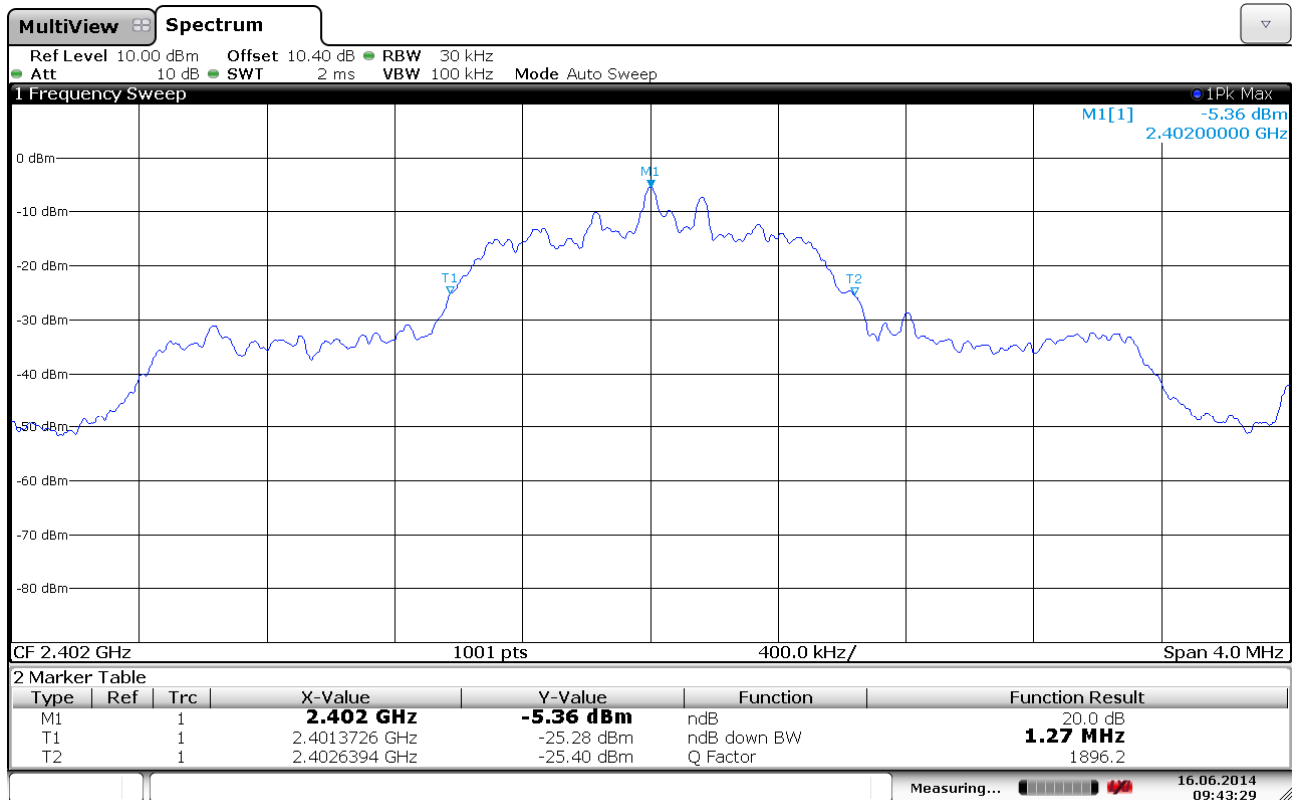
20dB Bandwidth, 2402MHz, GFSK



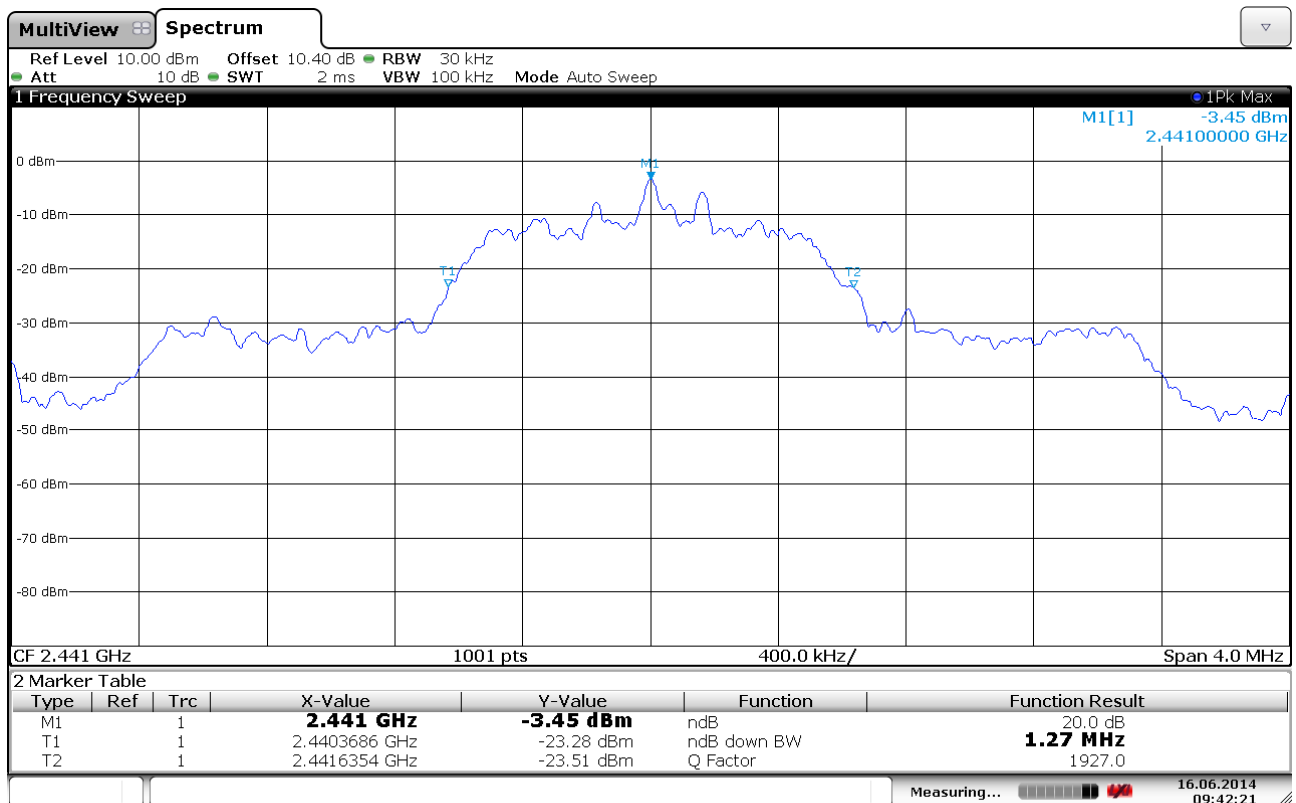
20dB Bandwidth, 2441MHz, GFSK



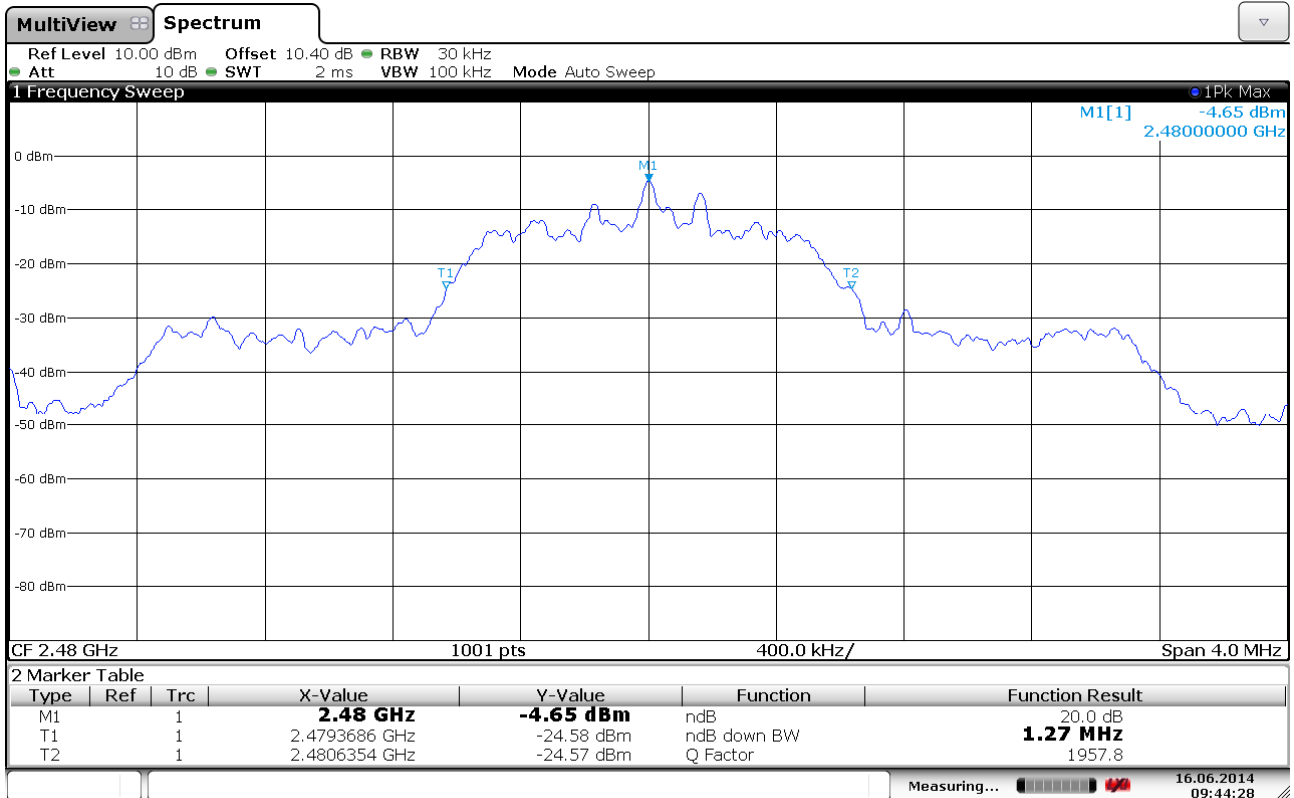
20dB Bandwidth, 2480MHz, GFSK



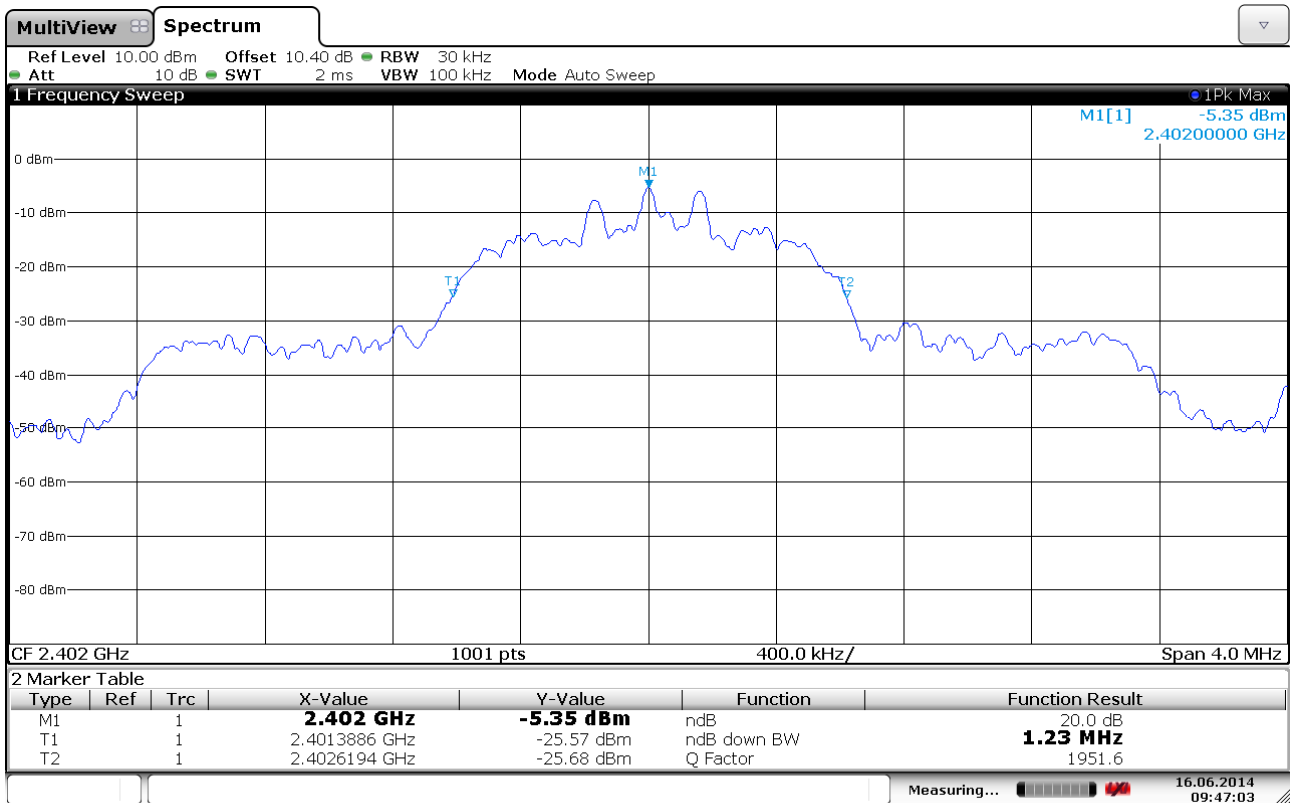
20dB Bandwidth, 2402MHz, 2-EDR



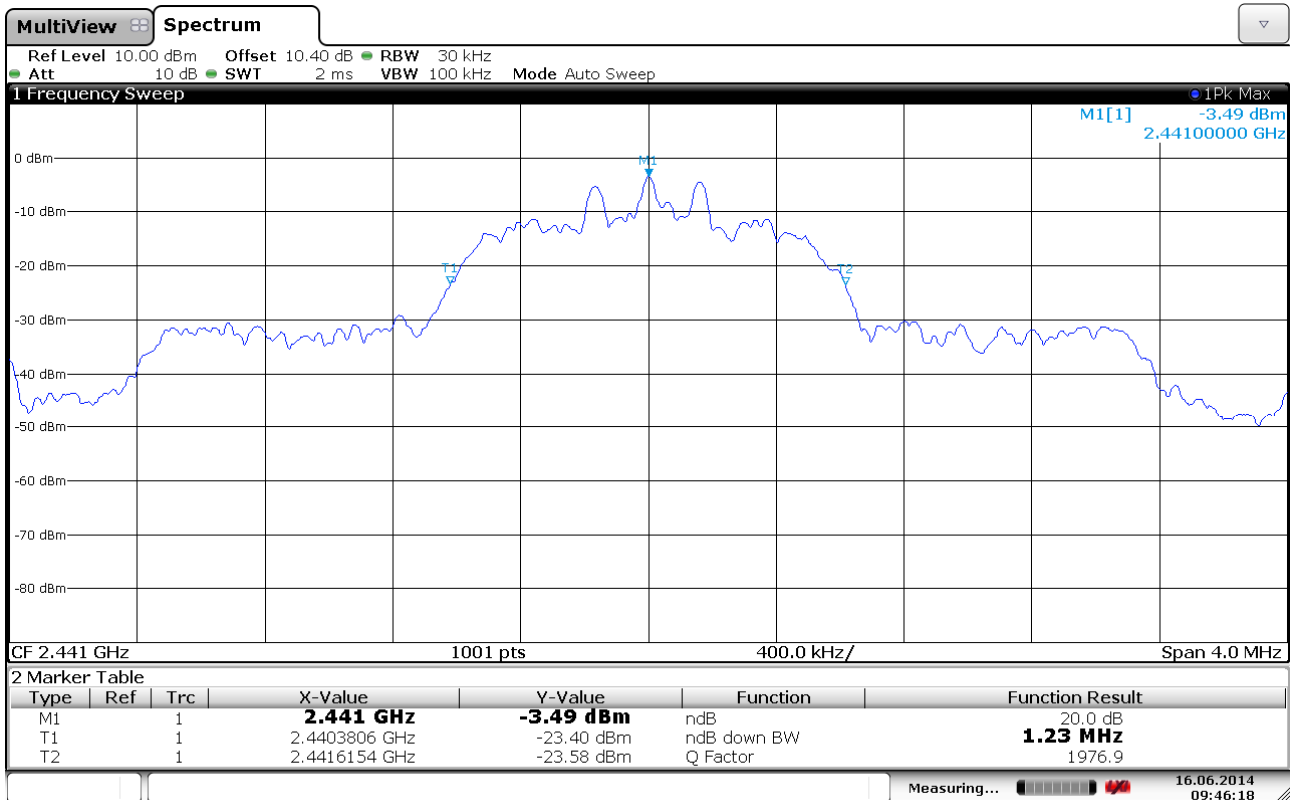
20dB Bandwidth, 2441MHz, 2-EDR



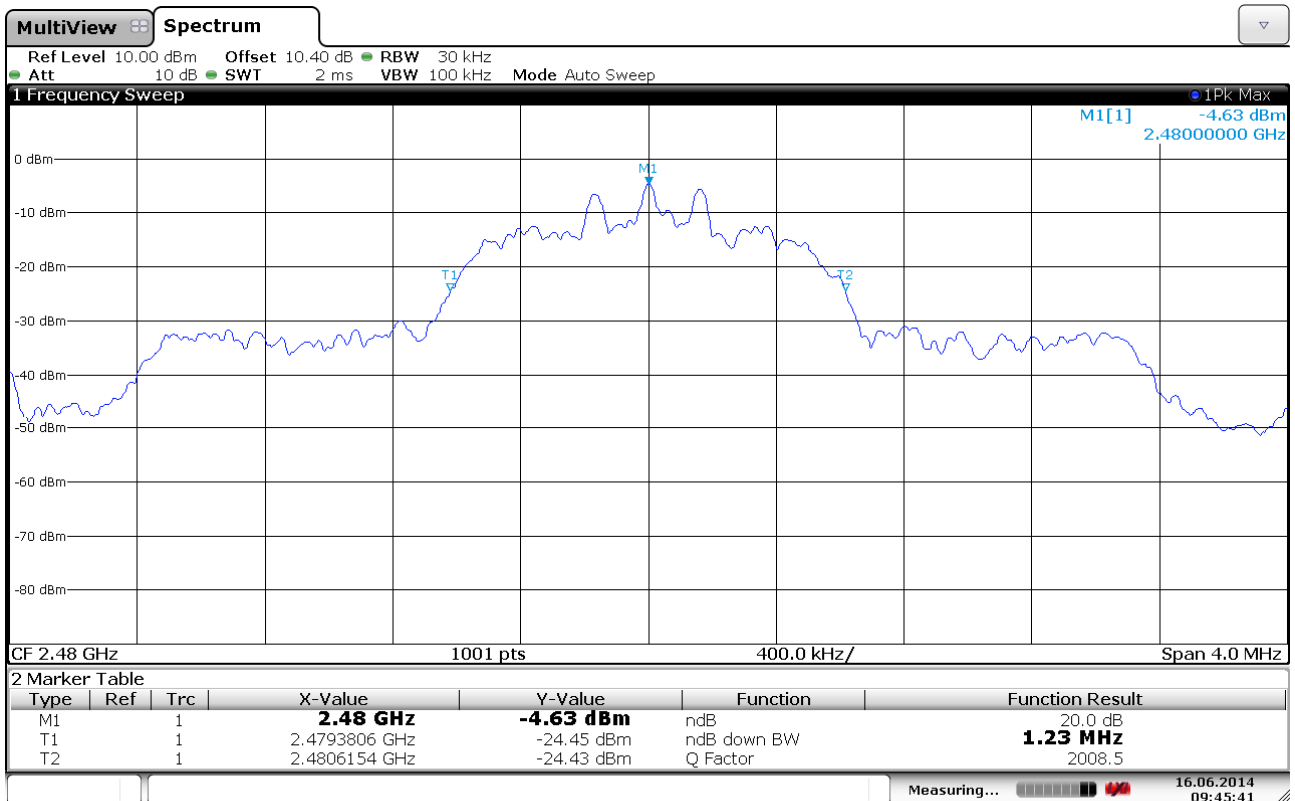
20dB Bandwidth, 2480MHz, 2-EDR



20dB Bandwidth, 2402MHz, 3-EDR



20dB Bandwidth, 2441MHz, 3-EDR



20dB Bandwidth, 2480MHz, 3-EDR

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:

Maximum Number of RF Channels:	79
Maximum Length of RF Burst pr. Channel :	2.91 ms
Time between RF Burst on same RF Channel :	296.25 ms
Time of Occupancy :	310.4 ms

Max Occupancy Time is with DH5 burst:

Time between RF burst on same channel: $3.75 \times 79 \text{ ms} = 296.25 \text{ ms}$

Time of occupancy: $(2.91 \times 400 \times 79) / 296.25 = 310.4 \text{ ms}$

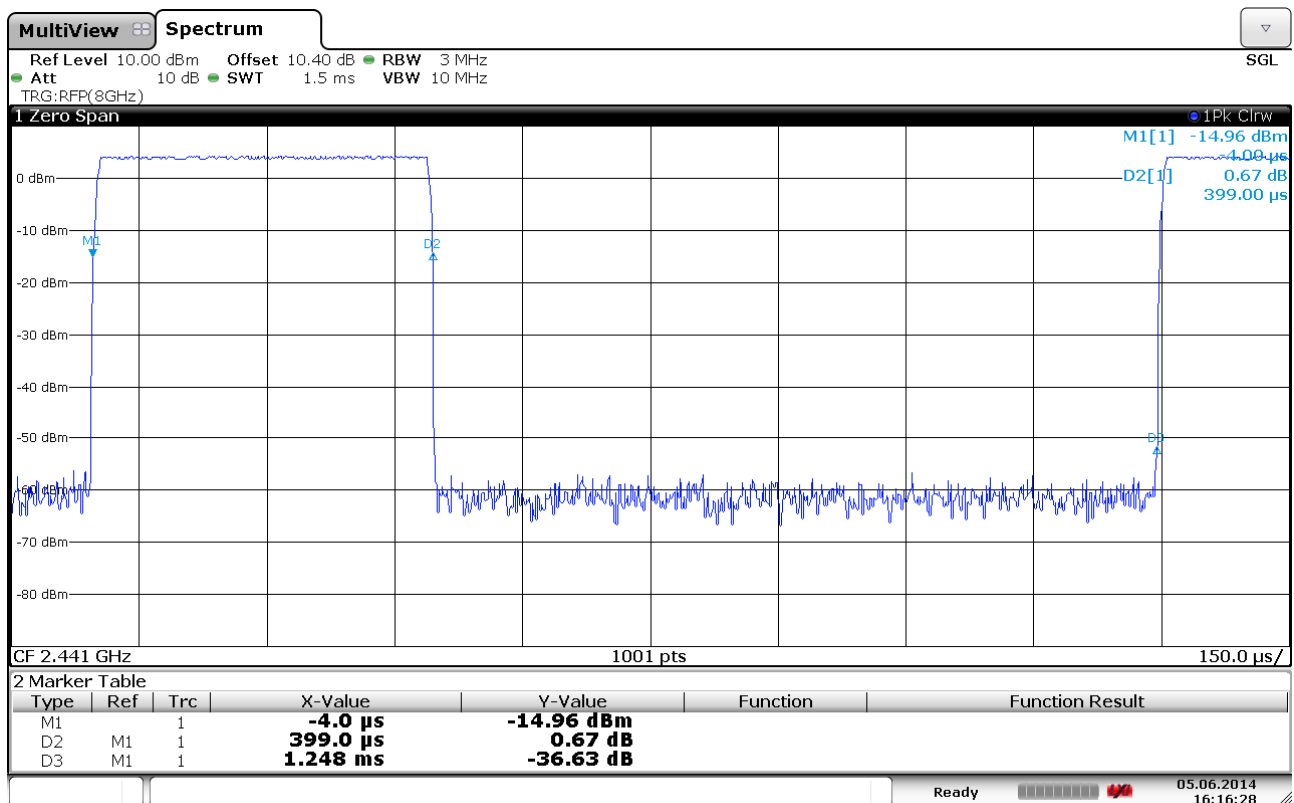
The EUT uses adaptive frequency hopping and will operate with reduced number of channels when interference is detected. Time of Occupancy is independent of number of channels since this is calculated over a period of 0.4 seconds multiplied by the number of hopping channels.

See attached graph.

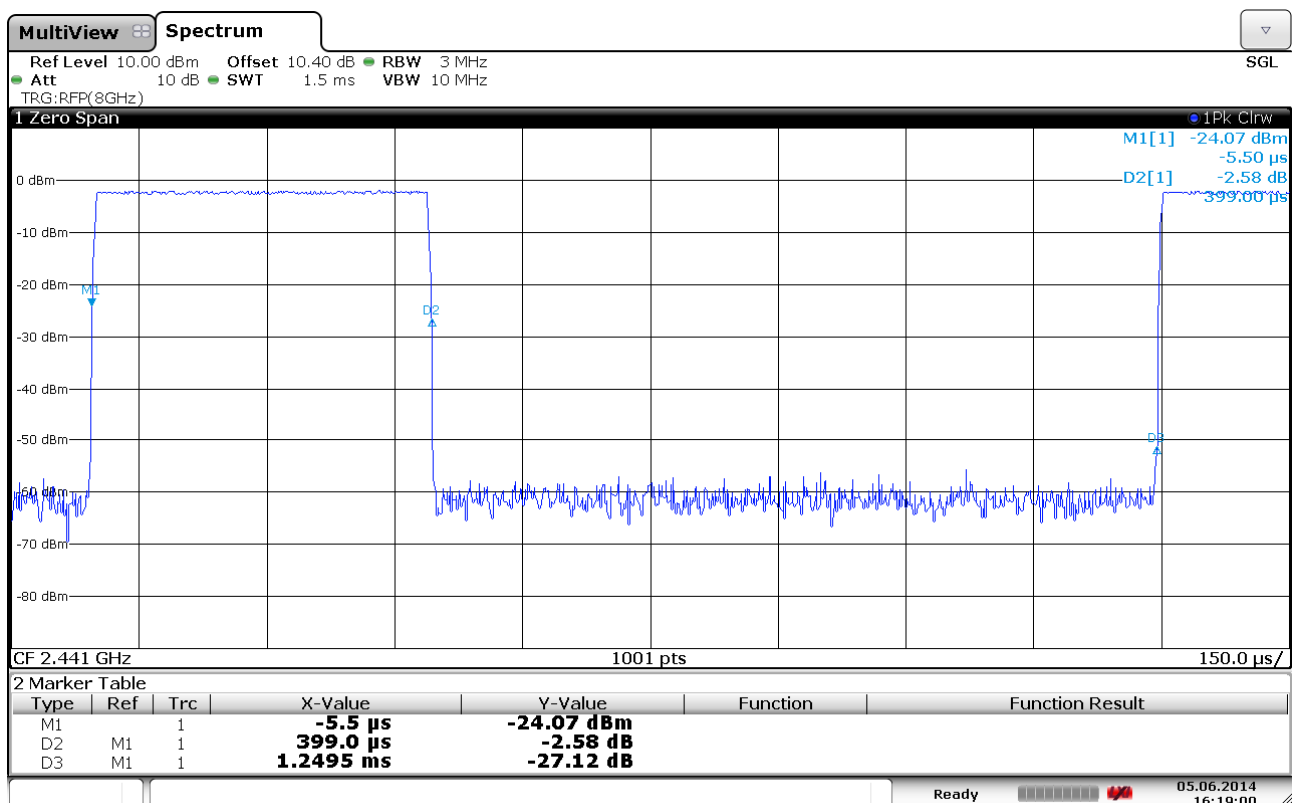
Requirements:

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.

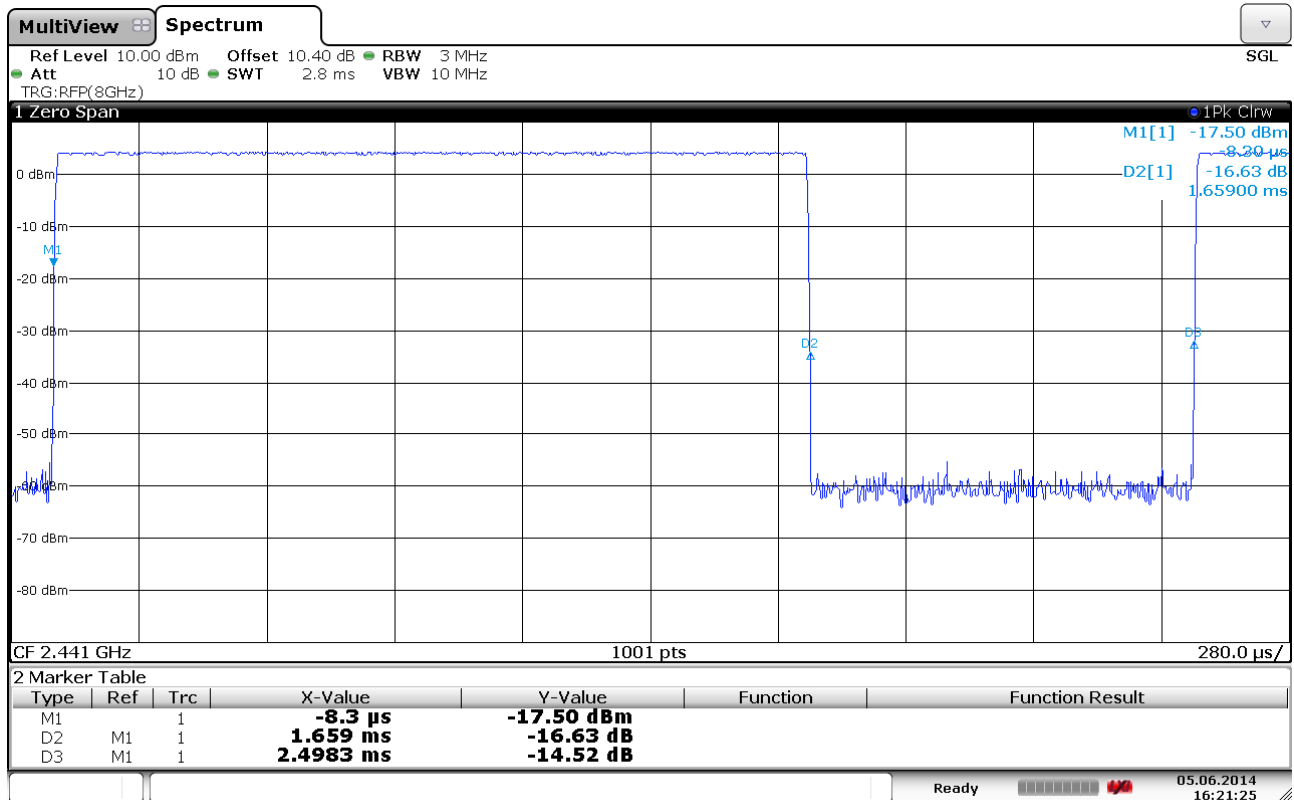
No requirements for Digital Transmission Systems.



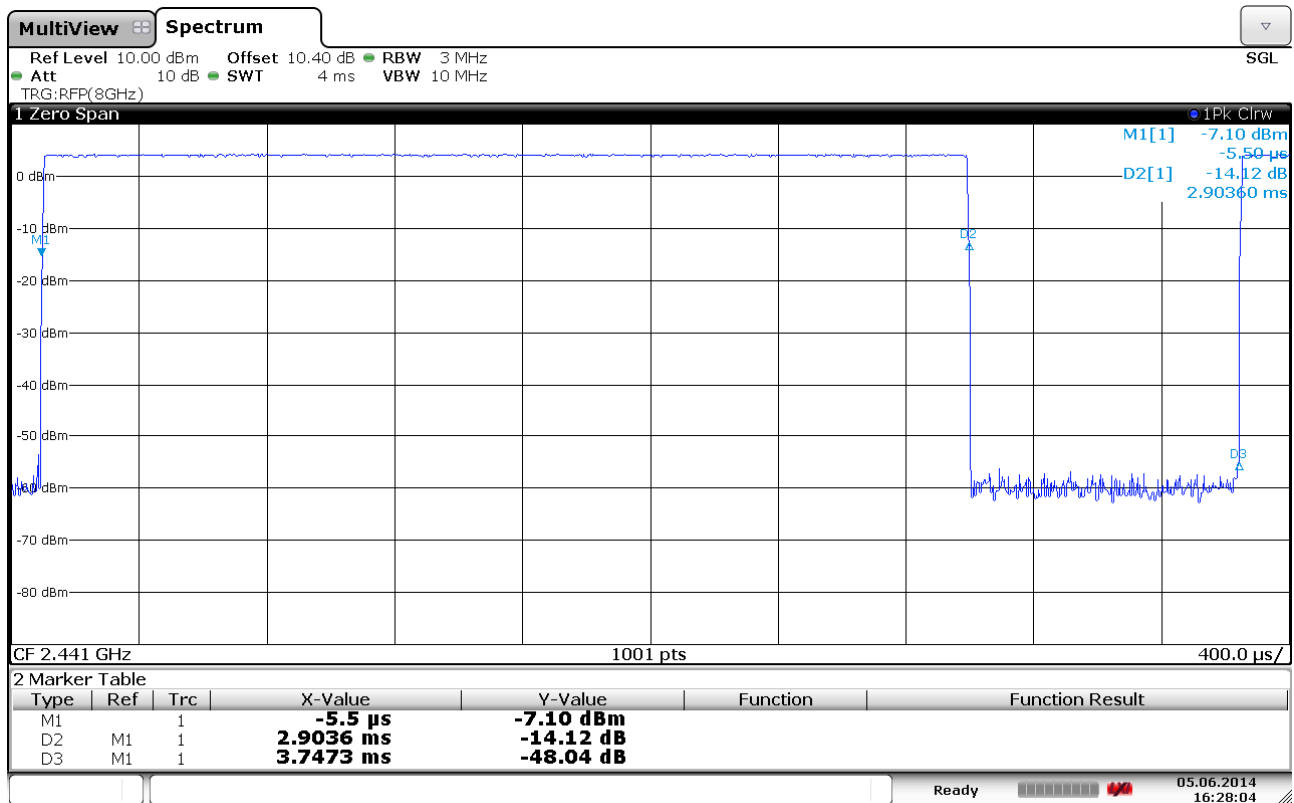
Burst Length, DM1, Basic (GFSK)



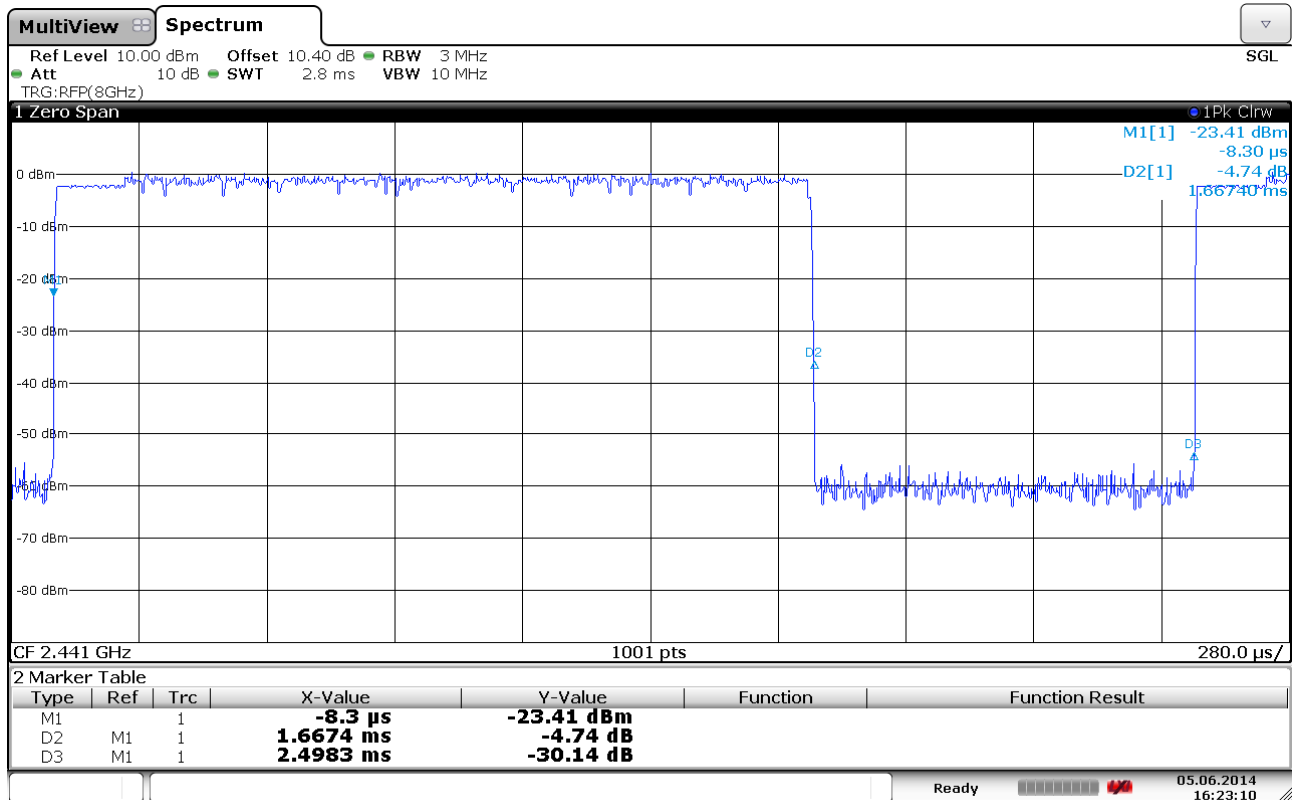
Burst Length, DM1, EDR



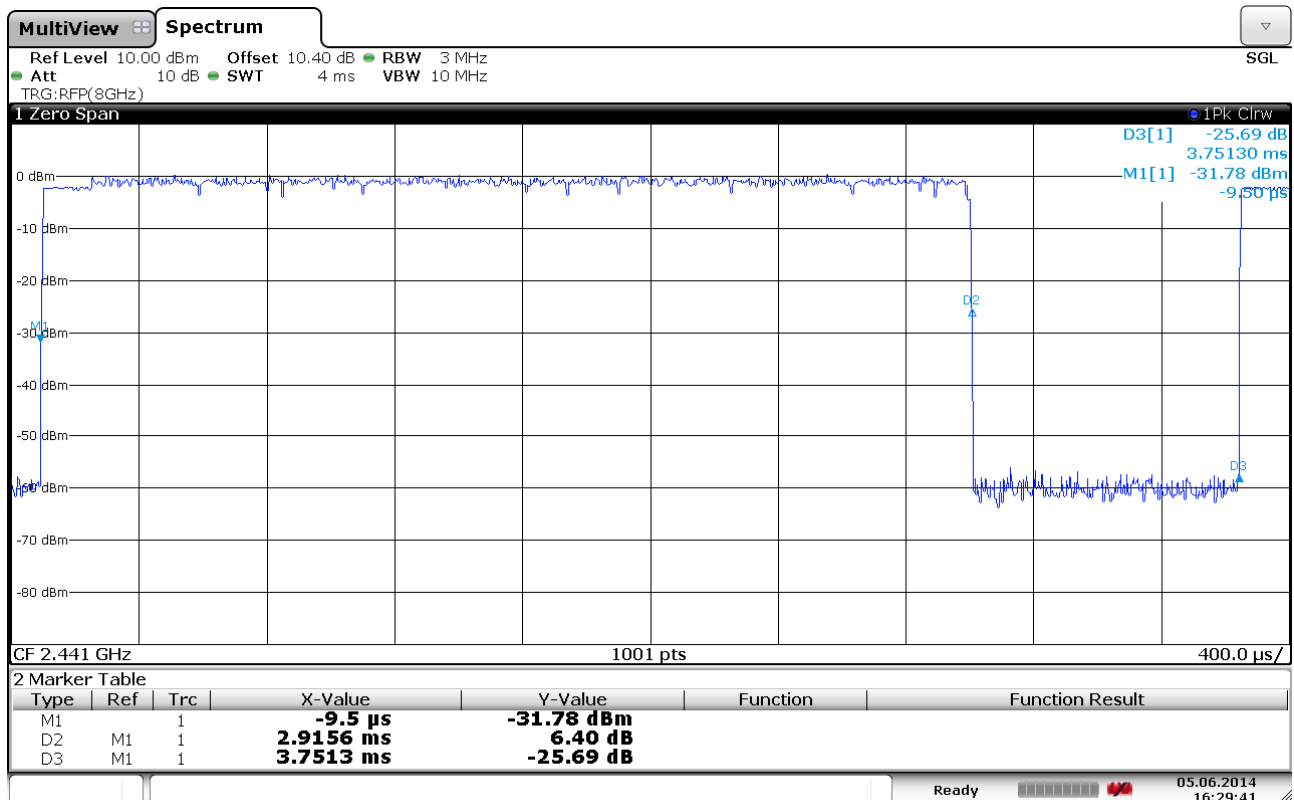
Burst Length, DH3, GFSK



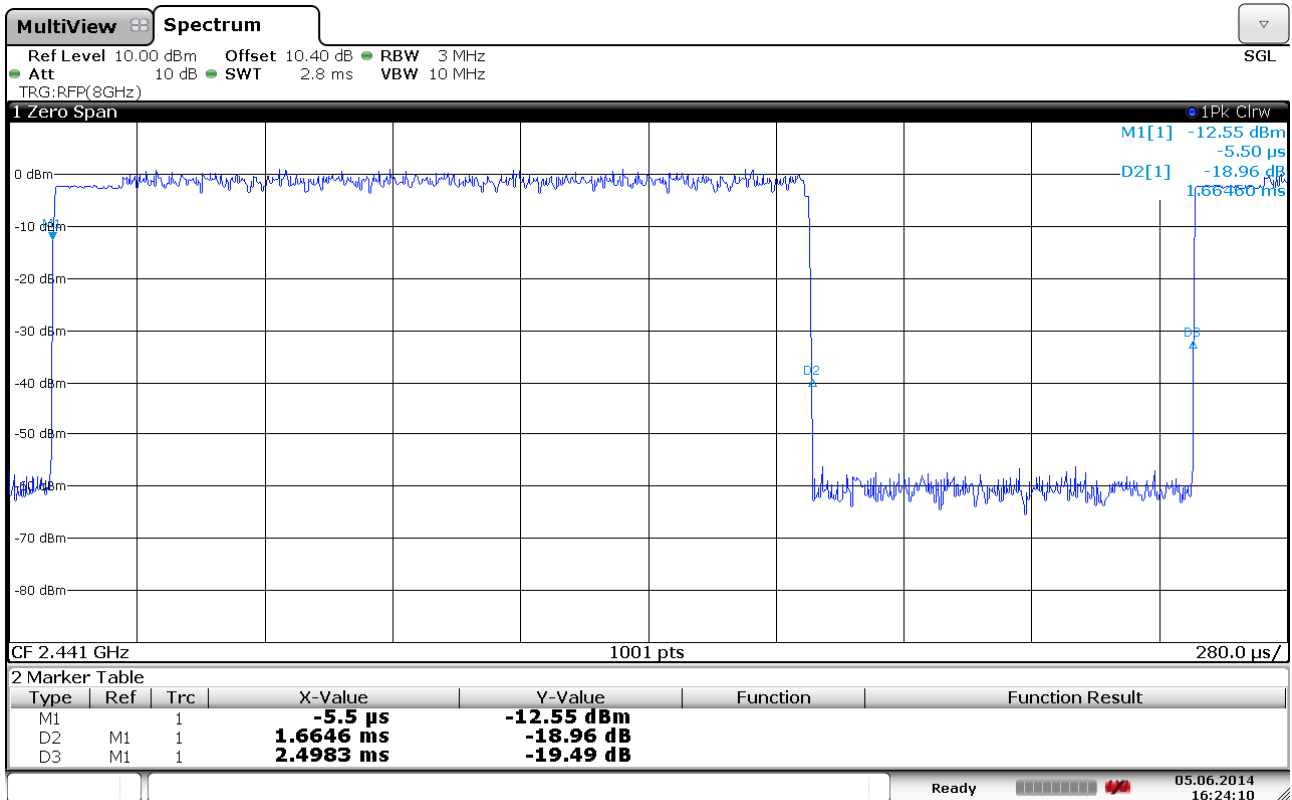
Burst Length, DH5, GFSK



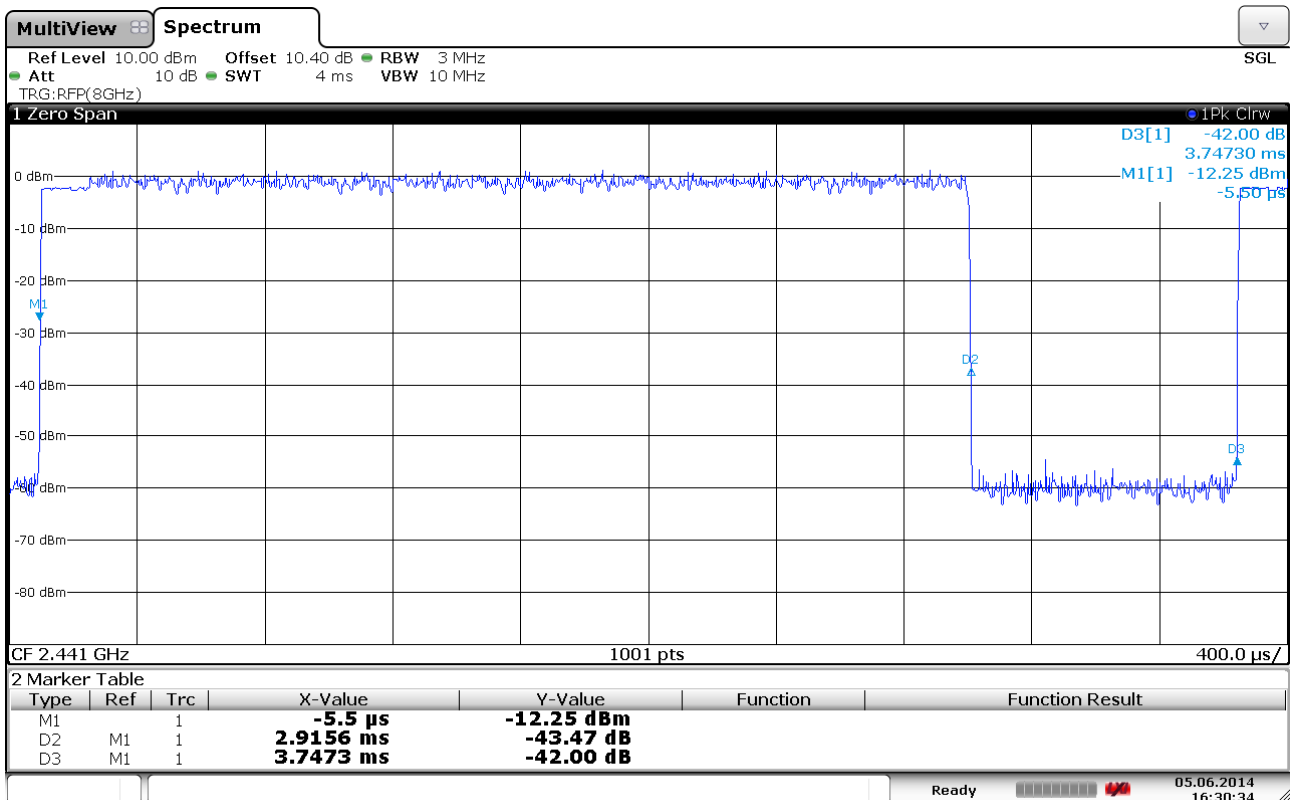
Burst Length, DH3, 2-EDR



Burst Length, DH5, 2-EDR



Burst Length, DH3, 3-EDR



Burst Length, DH5, 3-EDR

3.5 Occupied Bandwidth

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

Test Results: **Complies**

Measurement Data:

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

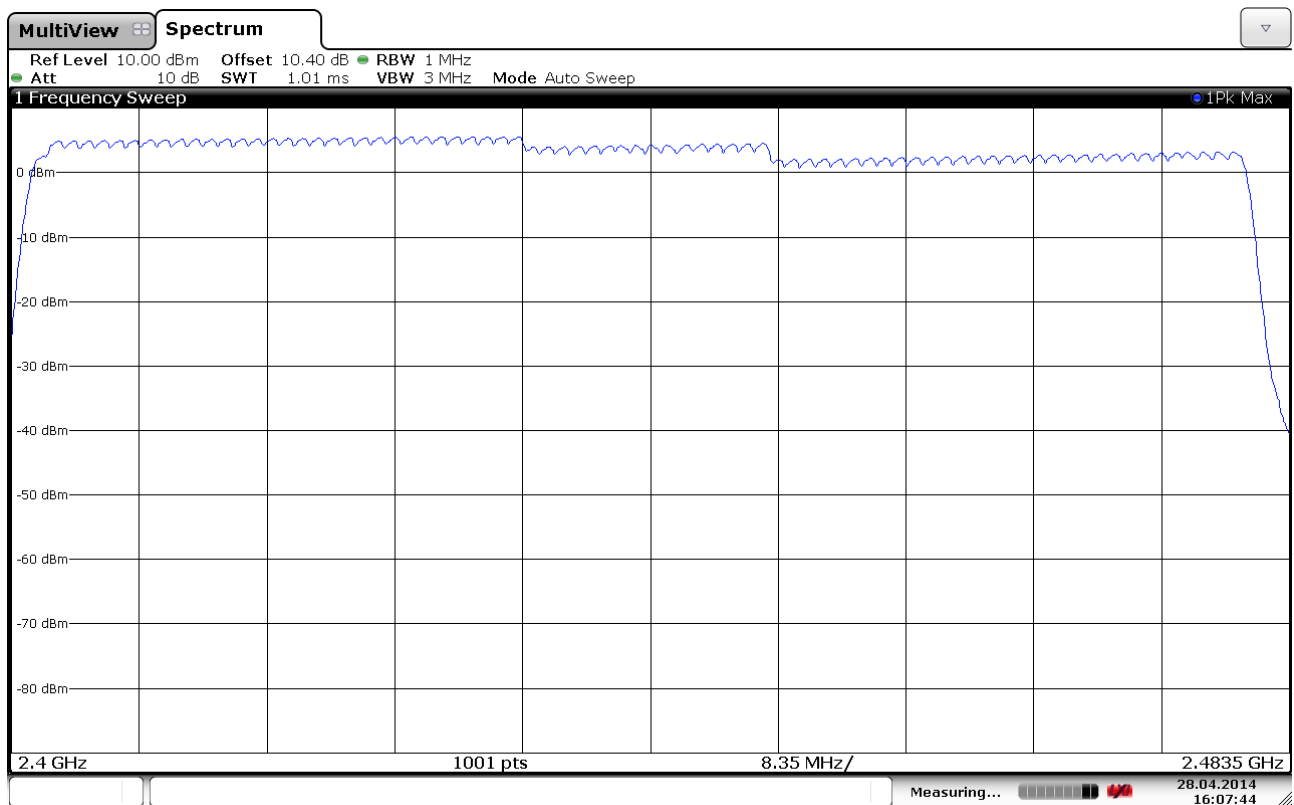
See attached plots.

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

3.6 Peak Power Output

Para. No.: 15.247 (b)

Test Results: Complies

Measurement Data:

	2402 MHz	2441 MHz	2480 MHz
Peak Power (dBm)	2.39	4.28	3.25
Peak Power (Watts)	0.00173	0.00268	0.00211
Field Strength (dBµV/m)	99.1	100.1	97.9
EIRP, Calculated (Watts)	0.00244	0.00307	0.00185
Antenna gain (dBi)	1.5	0.6	-0.6

Peak Power is with GFSK modulation.

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:

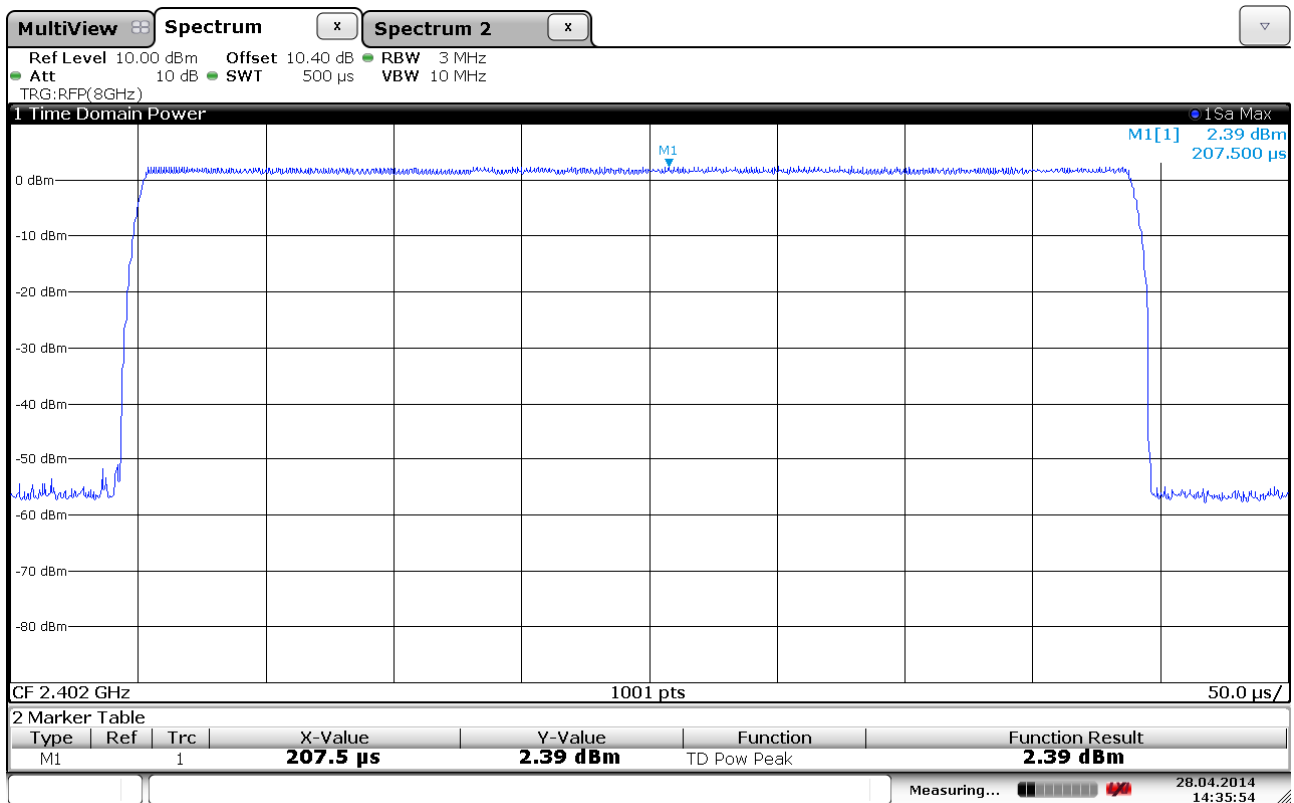
The maximum peak output power shall not exceed the following limits:

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

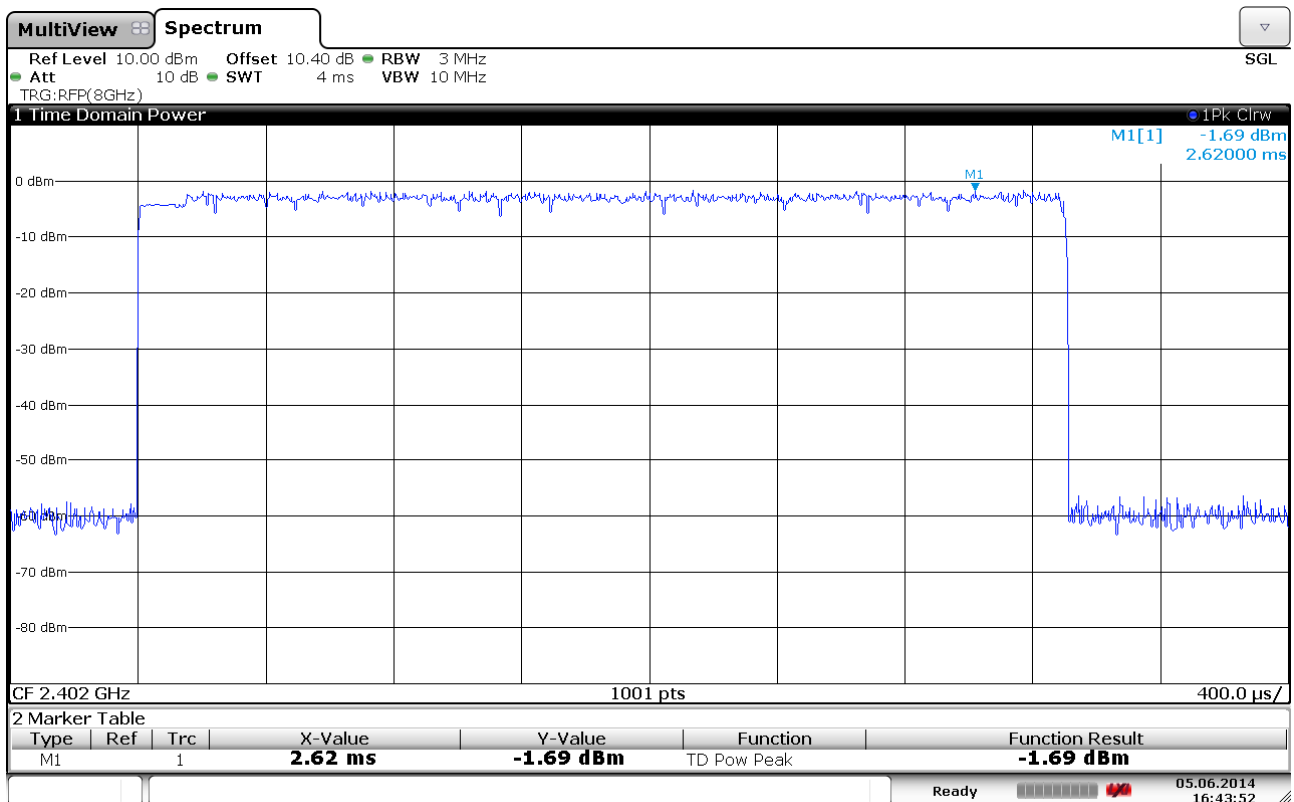
For all other frequency hopping systems in the 2400 - 2483.5 MHz band: 0.125 Watts

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

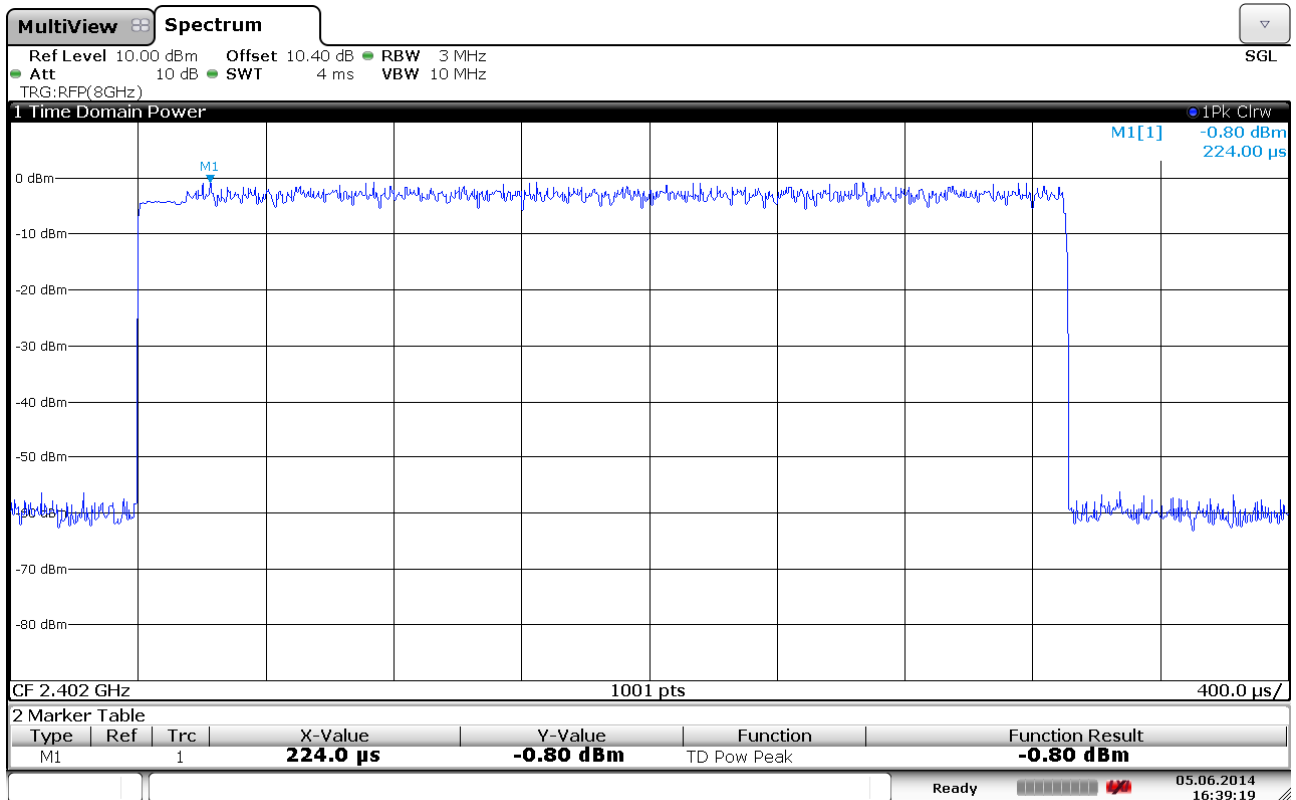
If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power from the intentional radiator shall be reduced below the stated value above by the amount in dB that the directional gain of the antenna exceeds 6 dBi.



Conducted Output Power, 2402MHz, GFSK



Conducted Output Power, 2402MHz, 2-EDR



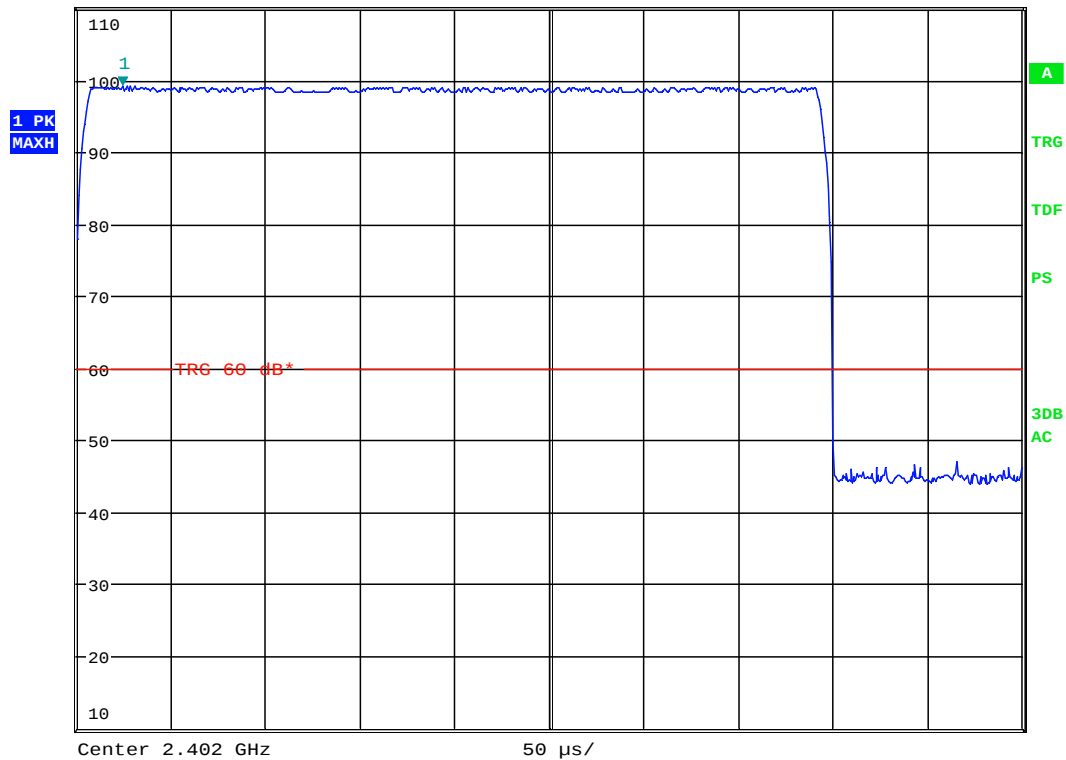
Conducted Output Power, 2402MHz, 3-EDR



MARKER 1
24.03846154 μ s
Ref 110 dB μ V/m * Att 10 dB

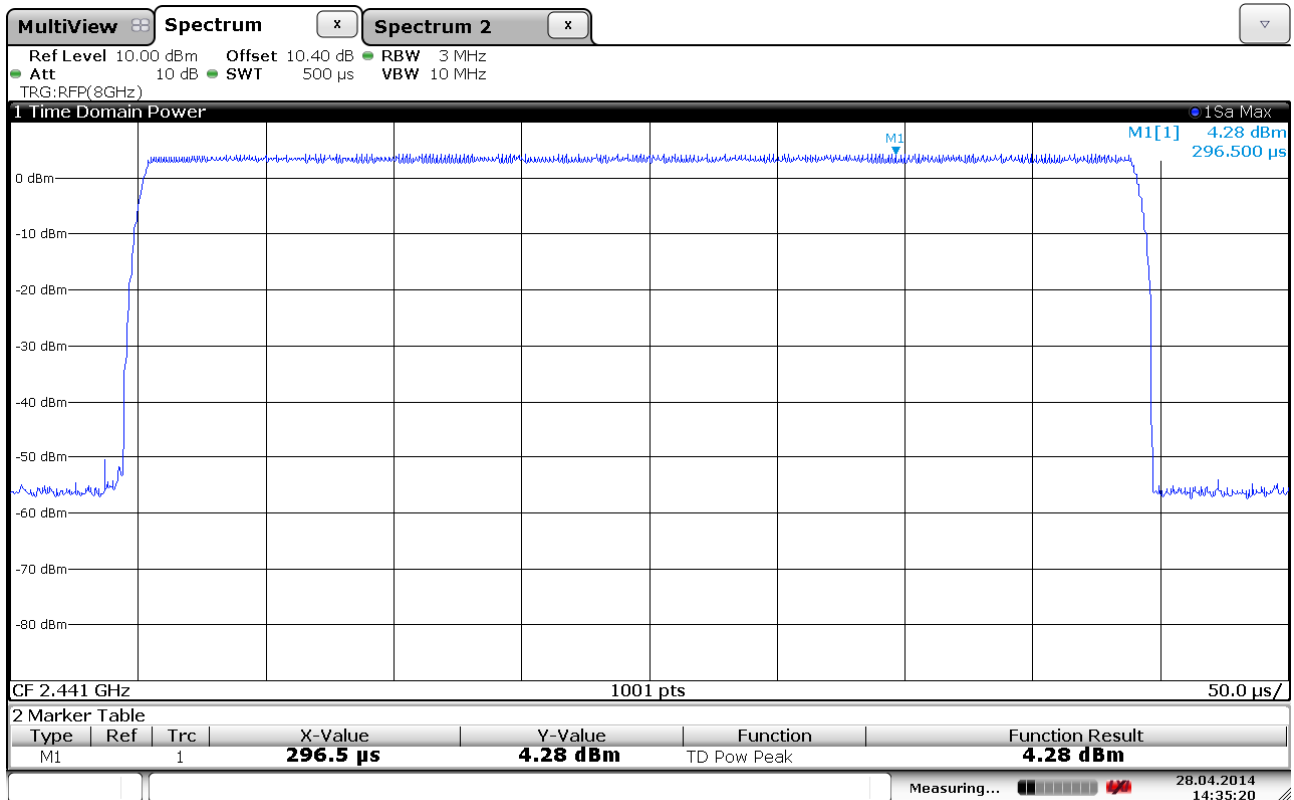
RBW 3 MHz
VBW 10 MHz
SWT 500 μ s

Marker 1 [T1]
99.11 dB μ V/m
24.038462 μ s

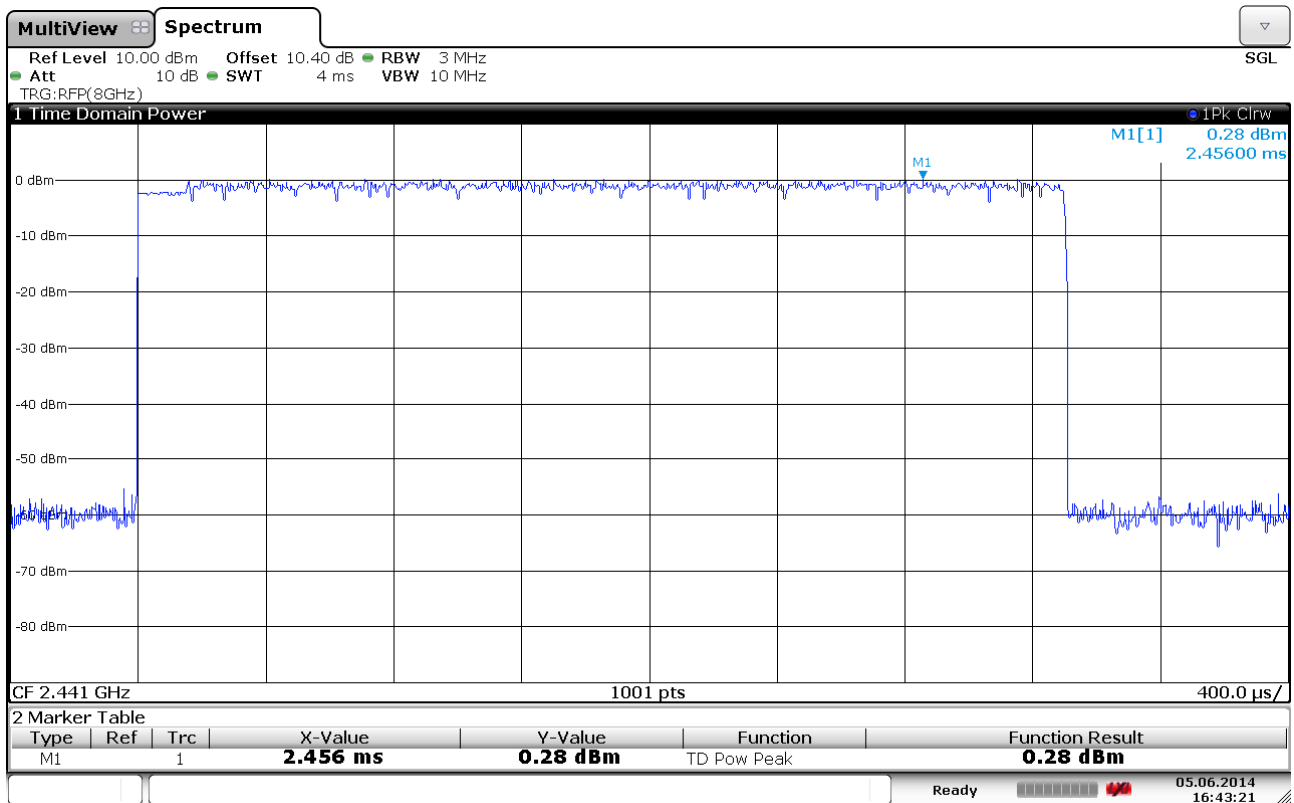


Date: 30.APR.2014 10:47:18

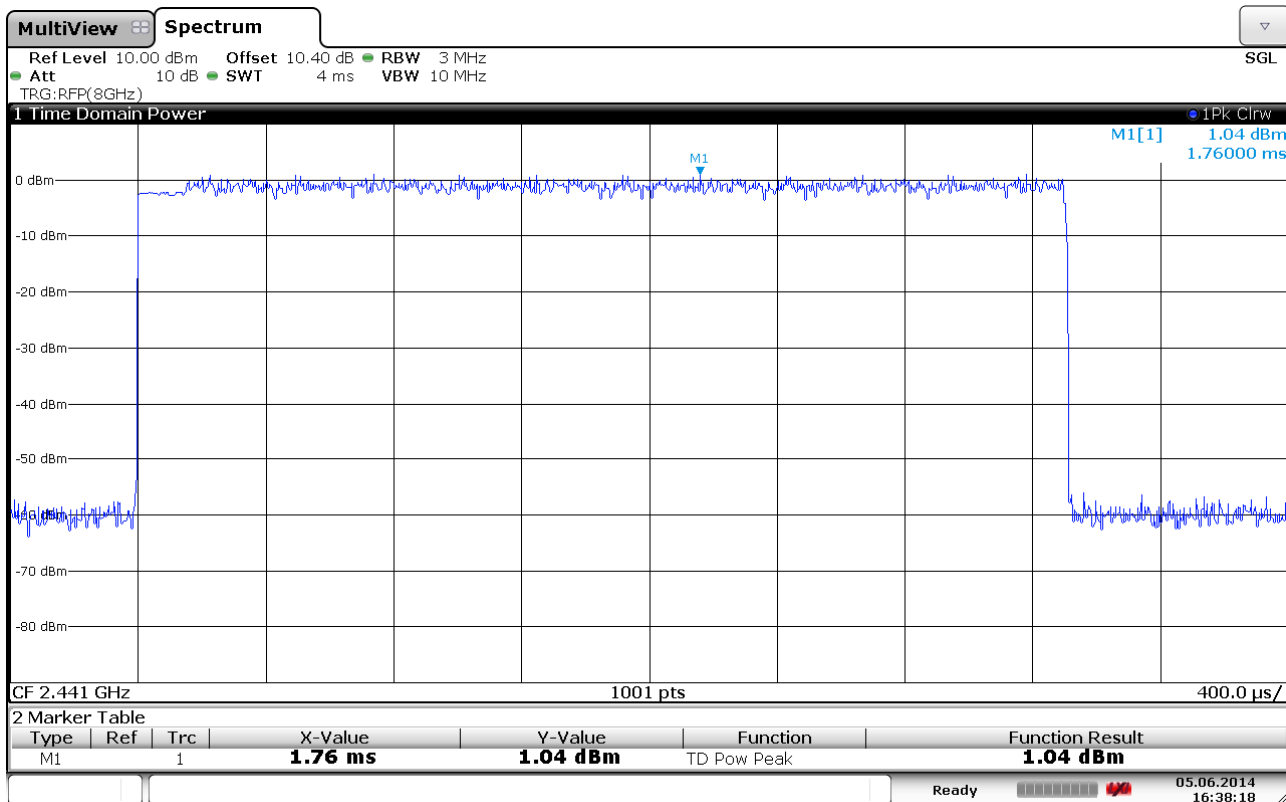
Maximum Field Strength, 2402MHz (Max: HP), GFSK



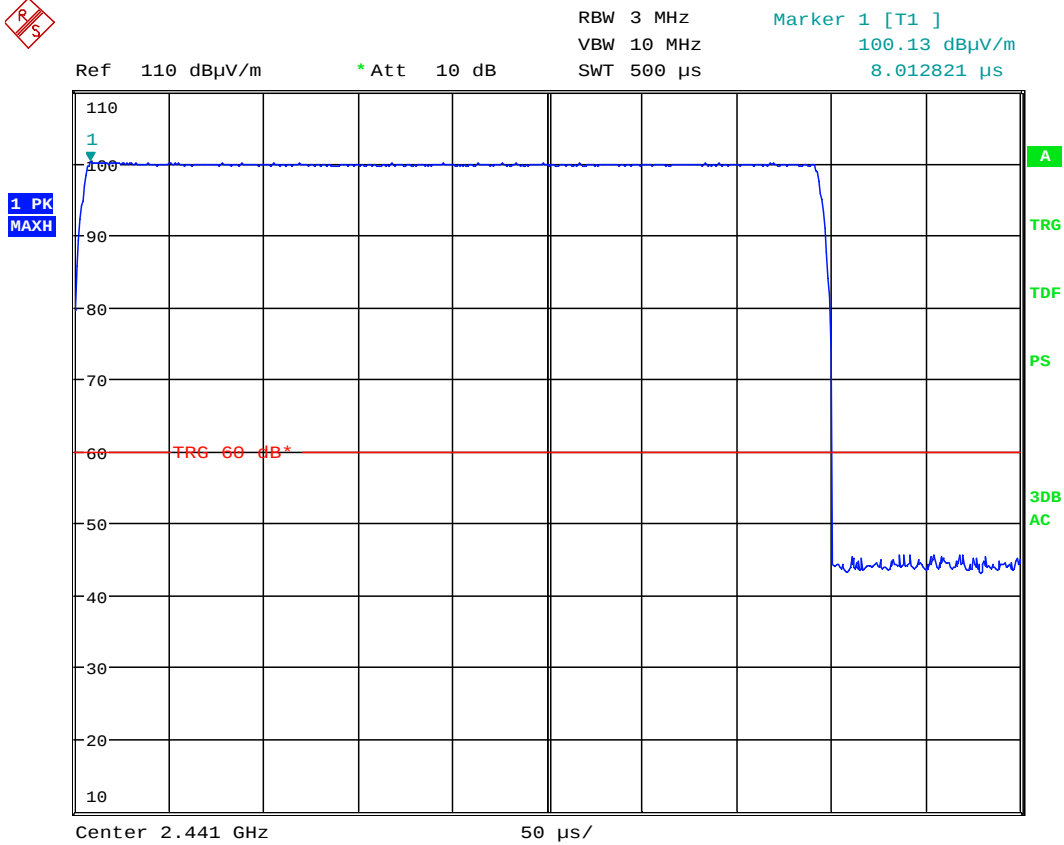
Conducted Output Power, 2441MHz, GFSK



Conducted Output Power, 2441MHz, 2-EDR

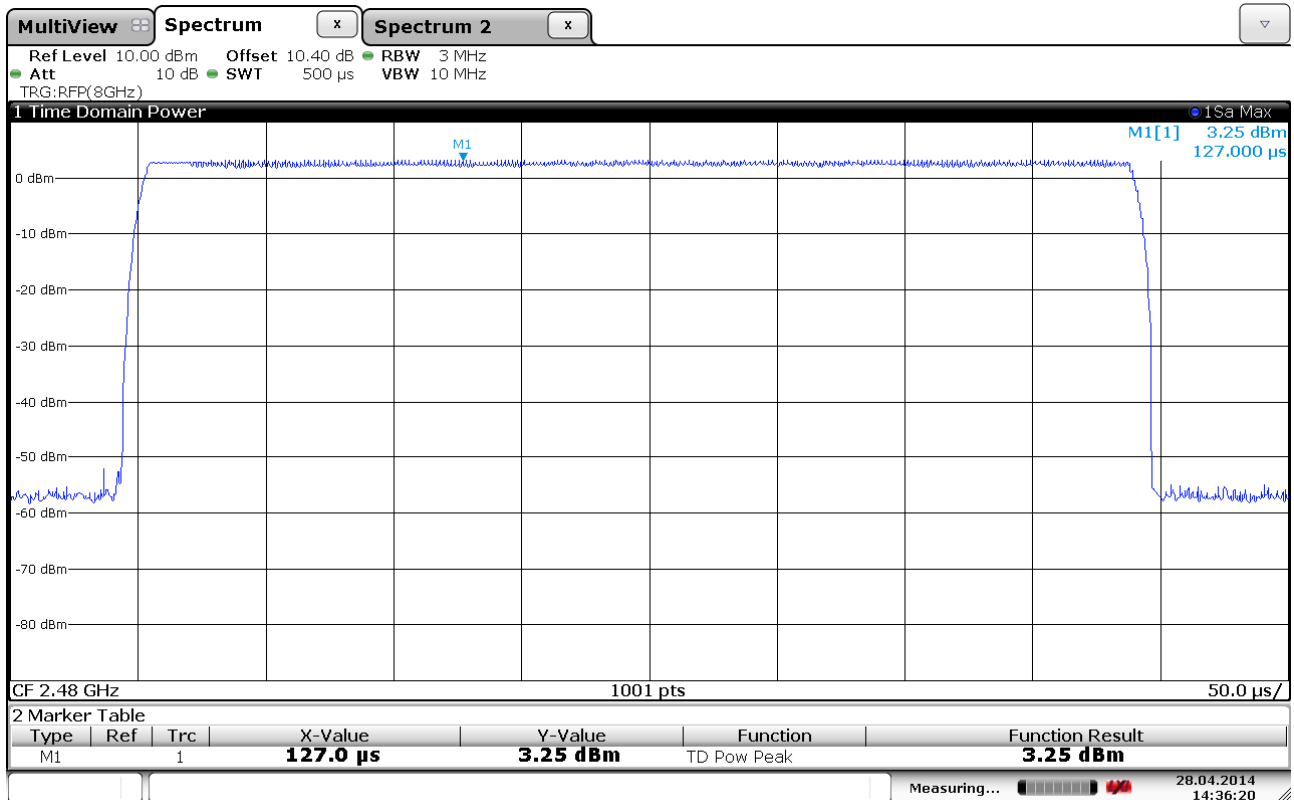


Conducted Output Power, 2441MHz, 3-EDR

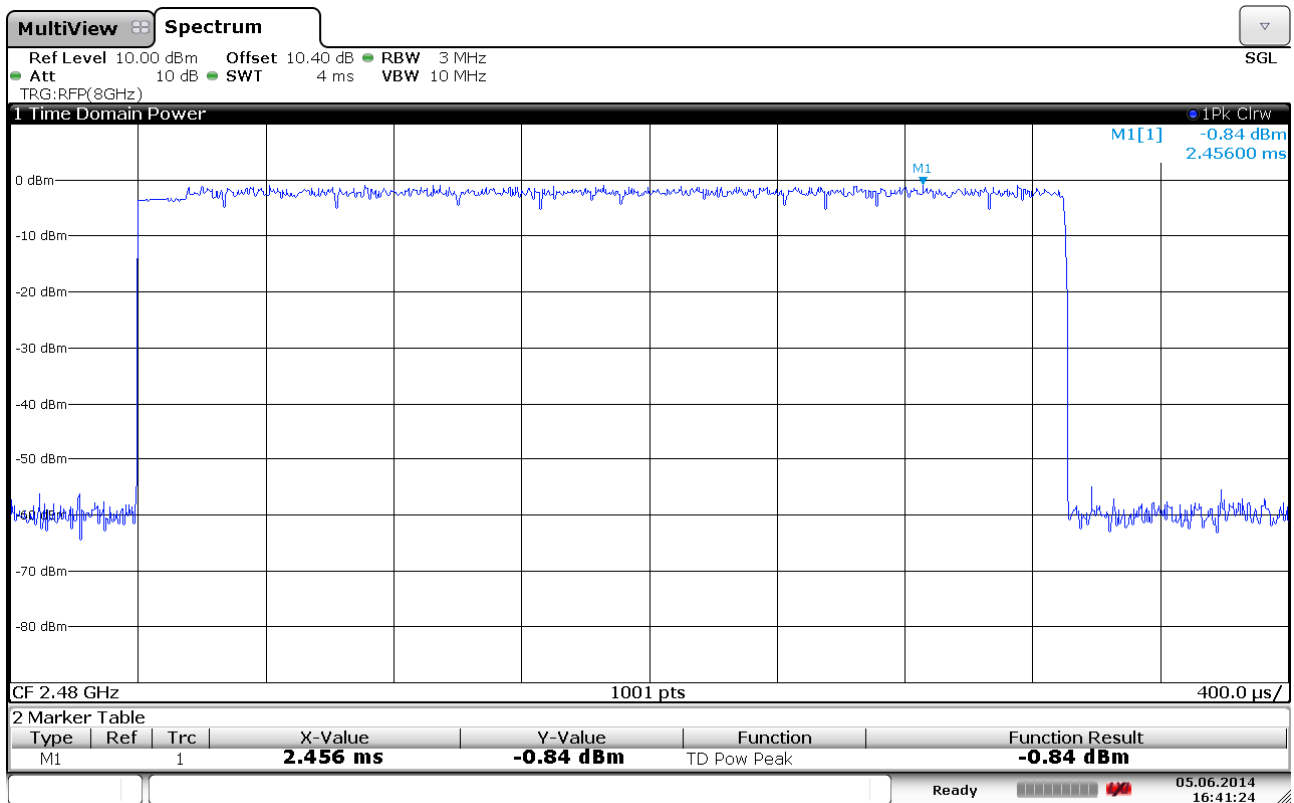


Date: 30.APR.2014 10:18:05

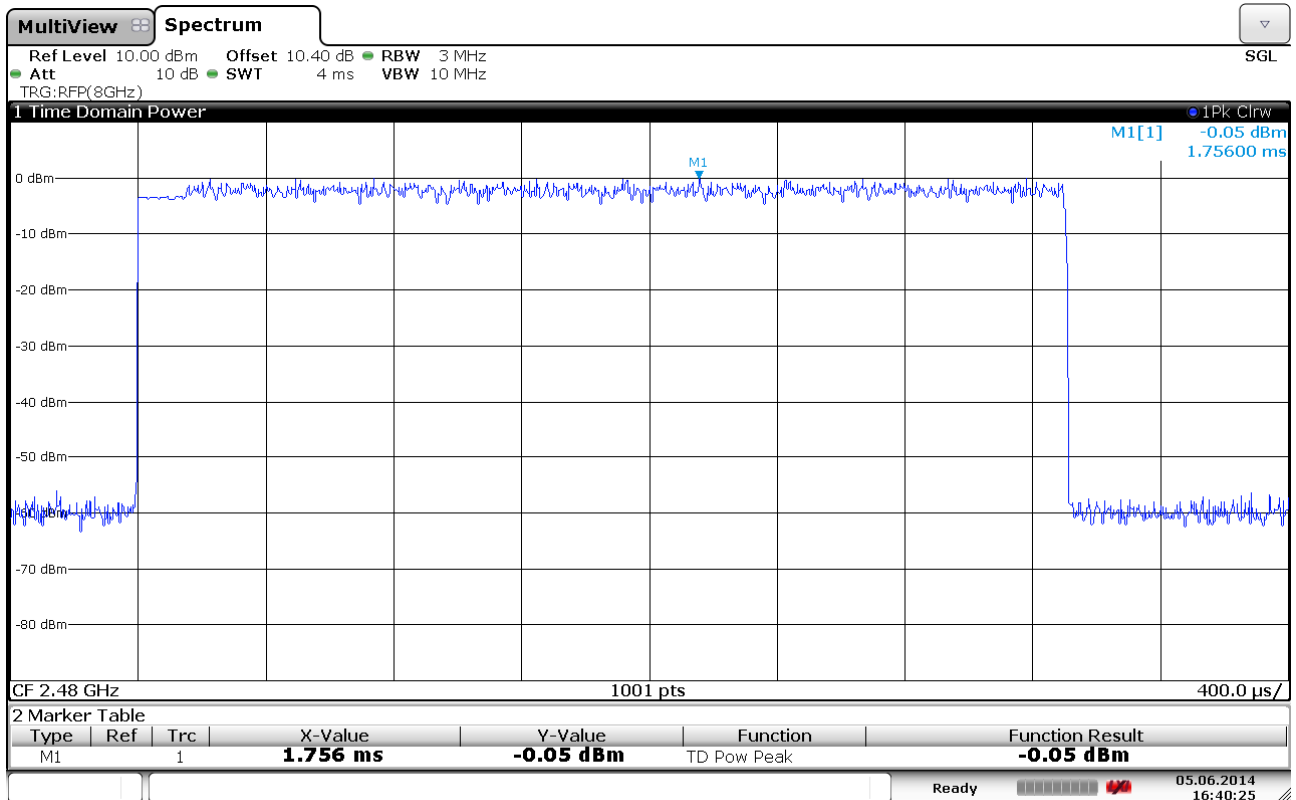
Maximum Field Strength, 2441MHz (Max: HP) , GFSK



Conducted Output Power, 2480MHz, GFSK



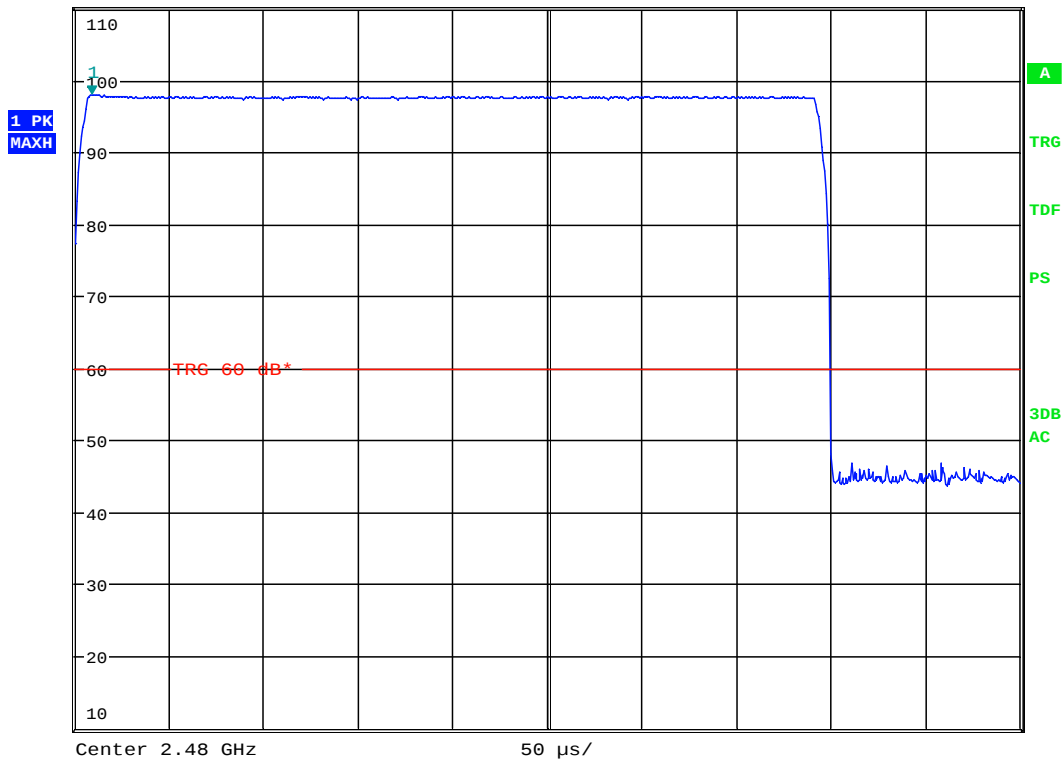
Conducted Output Power, 2480MHz, 2-EDR



Conducted Output Power, 2480MHz, 3-EDR



MARKER 1		RBW 3 MHz	Marker 1 [T1]
8.814102564 μ s		VBW 10 MHz	97.92 dB μ V/m
Ref 110 dB μ V/m	* Att 10 dB	SWT 500 μ s	8.814103 μ s



Date: 30.APR.2014 10:57:38

Maximum Field Strength, 2480MHz (Max: HP) , GFSK

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 (dBμV/m)		Limit	Margin	
	2390 MHz	2483.5 MHz	dBμV/m	dB	
Peak Detector	48.2	58.6	74	25.8	15.4
Average Detector	28.2	38.6	54	25.8	15.4

Band-edge conducted power, Hopping ON:

	Measured field strength @3m (dBμV/m)		Limit	Margin	
	2390 MHz	2483.5 MHz	dBμV/m	dB	
Peak Detector	51.4	59.4	74	26.6	14.6
Average Detector	31.4	39.4	54	26.6	14.6

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

All field strength values above are at 3m.

Measurements with 2-EDR and 3-EDR modulations were only performed Conducted; radiated levels were calculated using the method from KDB 558074 D01 v03r01, clause 12.2.2. Values above are for the highest of the measurements.

See attached plots.

Duty Cycle Correction Factor Calculation:

$$\text{Duty Cycle} = -20 \log_{10}(0.395 / (1.25 \cdot 79)) = 48.0 \text{ dB}$$

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

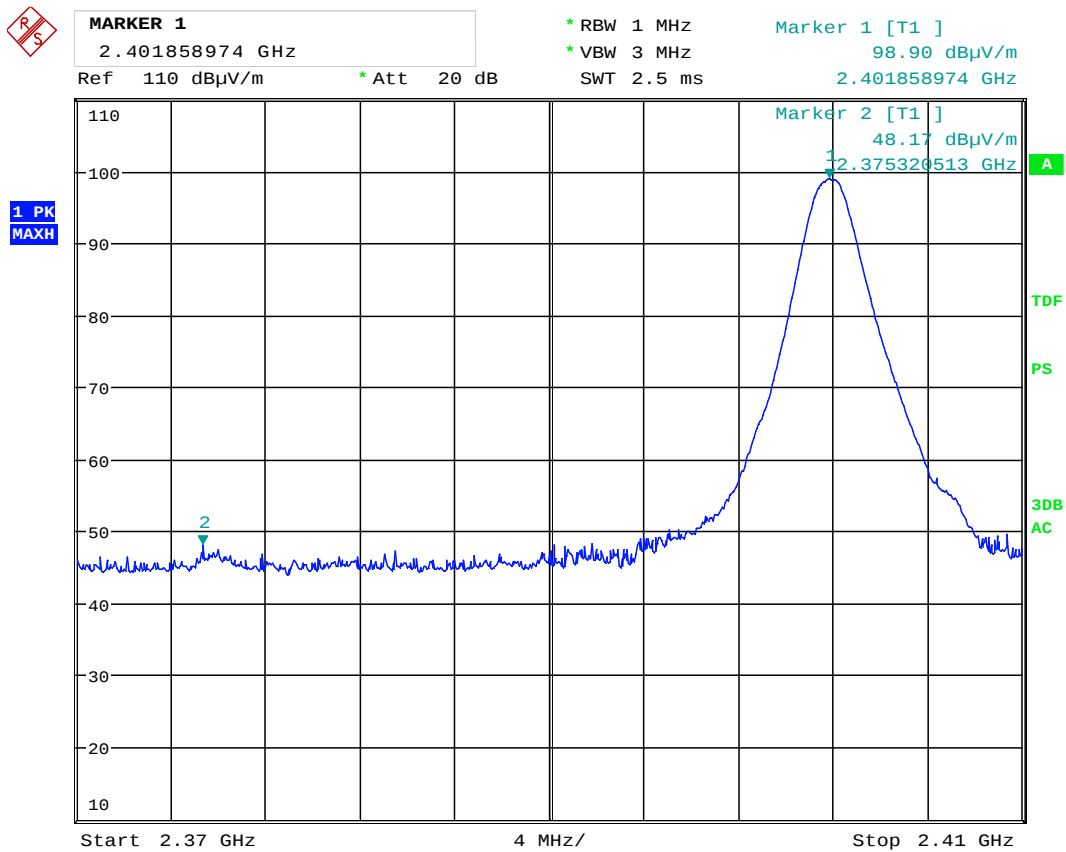
RF conducted power to 25 GHz see attached graph.

Maximum RF level outside operating band:

RF ch 00: >40 dB/C, margin >20 dB

RF ch 39: >40 dB/C, margin >20 dB

RF ch 78: >40 dB/C, margin >20 dB



Date: 30.APR.2014 11:32:21

Band Edge Lower Channel, Radiated, Peak, Hopping OFF

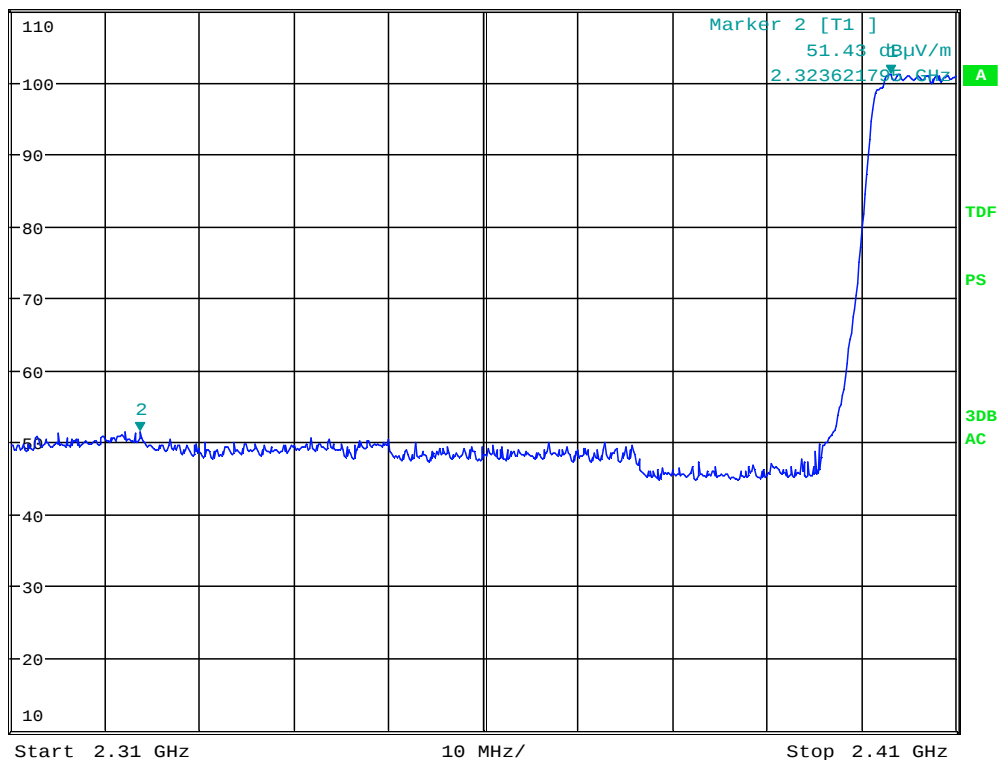


MARKER 1
2.403108974 GHz
Ref 110 dBμV/m * Att 20 dB

* RBW 1 MHz
* VBW 3 MHz
SWT 2.5 ms

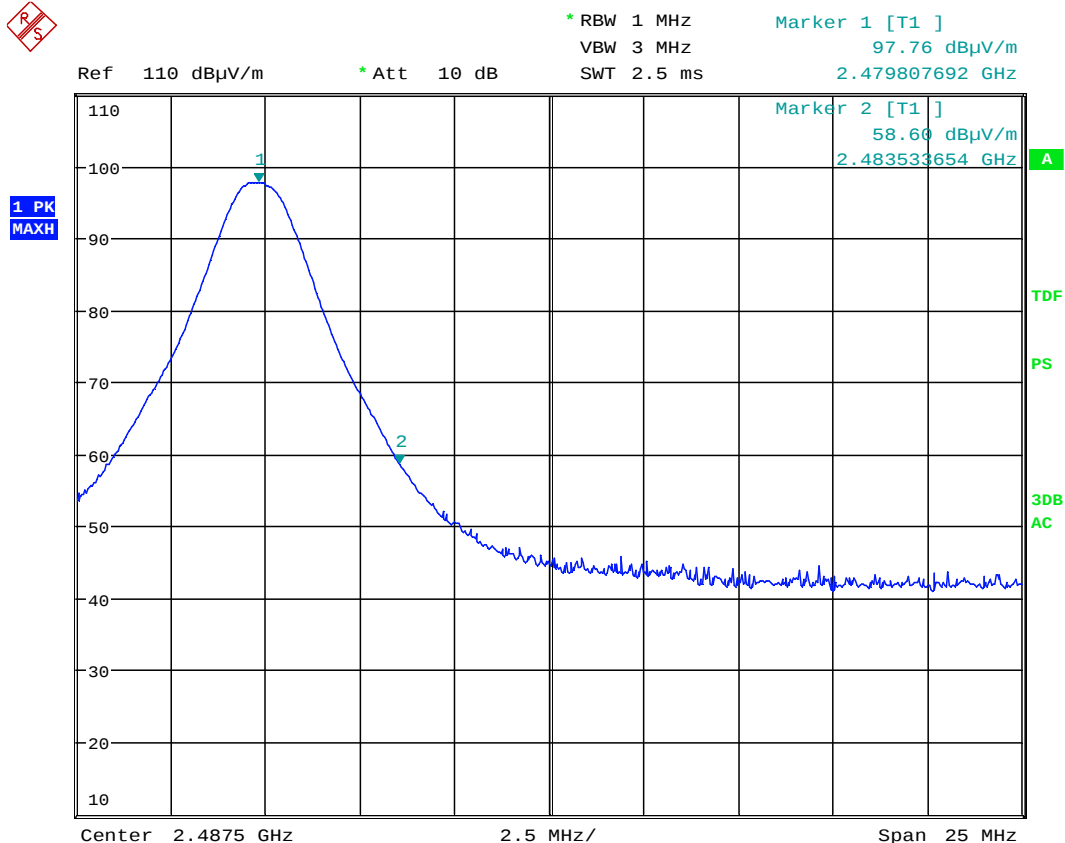
Marker 1 [T1]
101.06 dBμV/m
2.403108974 GHz

1 PK
MAXH



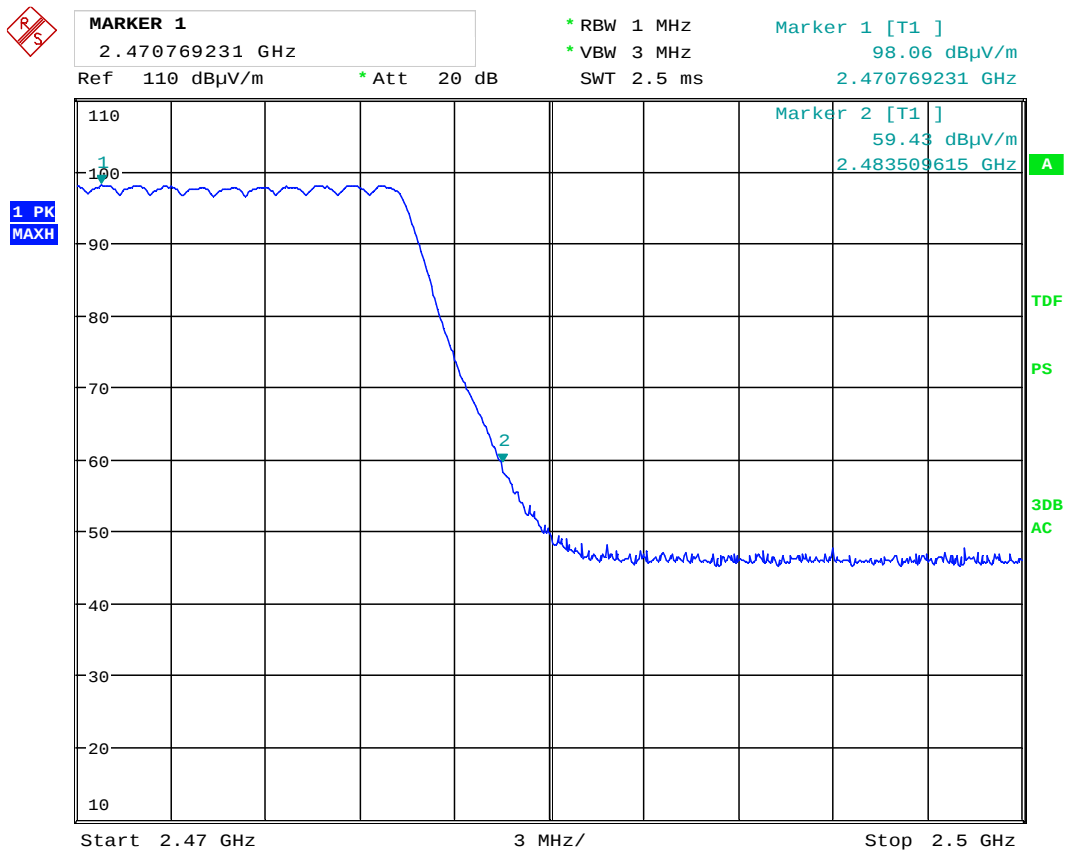
Date: 30.APR.2014 12:40:11

Band Edge Lower Channel, Radiated, Peak, Hopping ON



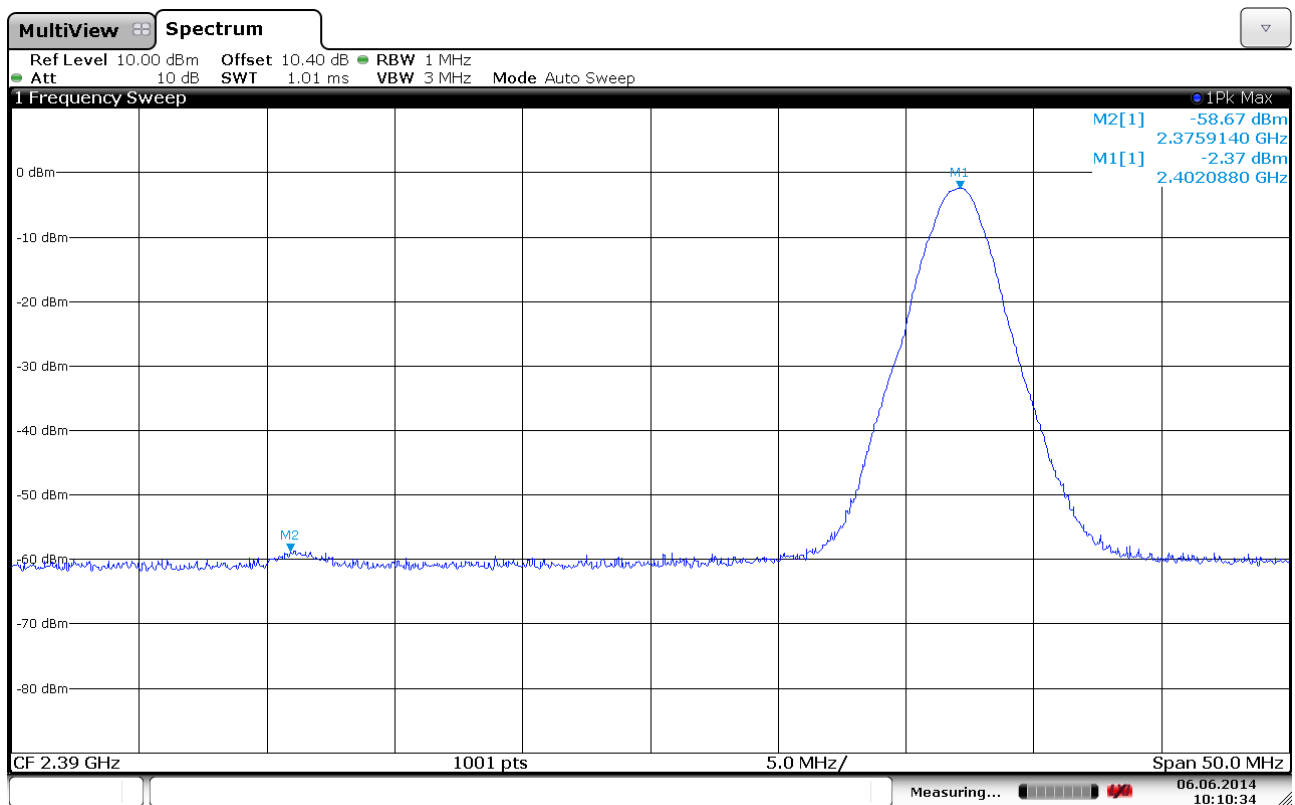
Date: 30.APR.2014 11:05:01

Band Edge Upper Channel, Radiated, Peak, Hopping OFF

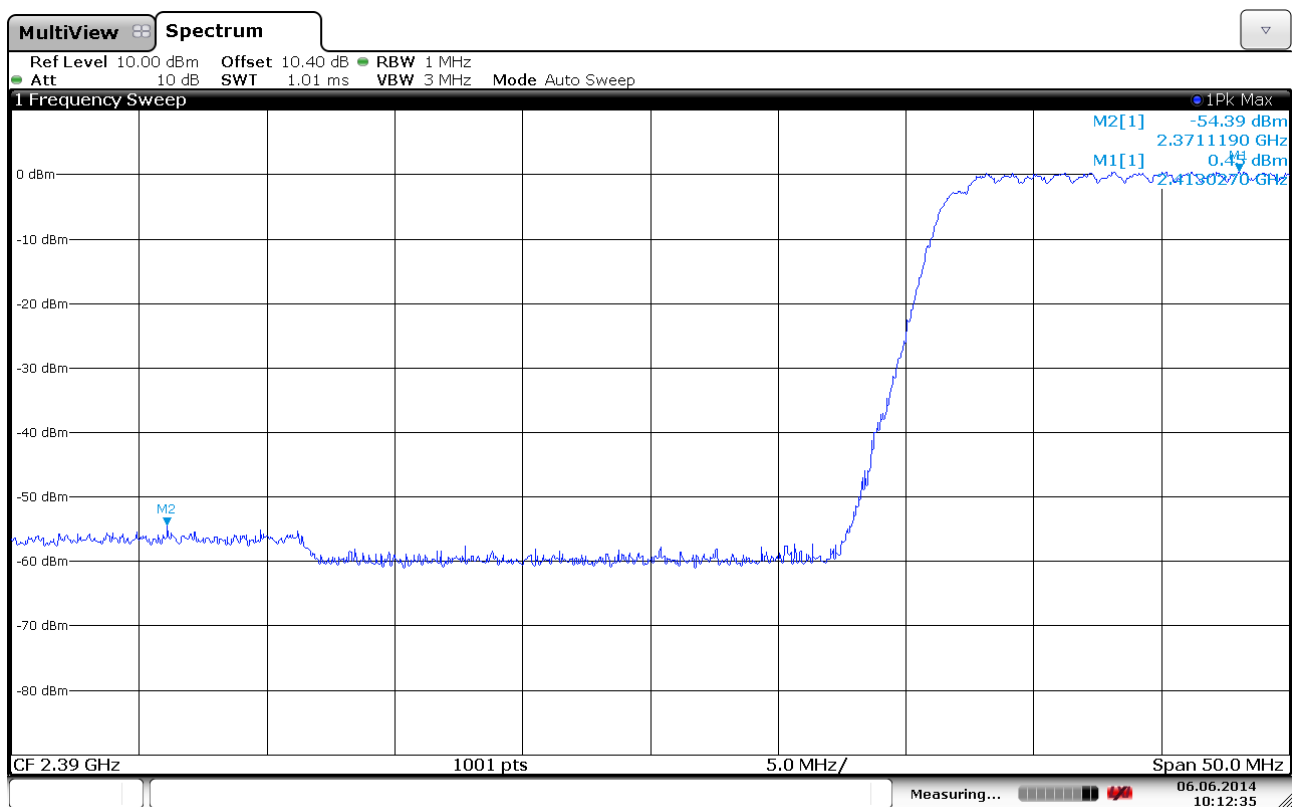


Date: 30.APR.2014 12:41:51

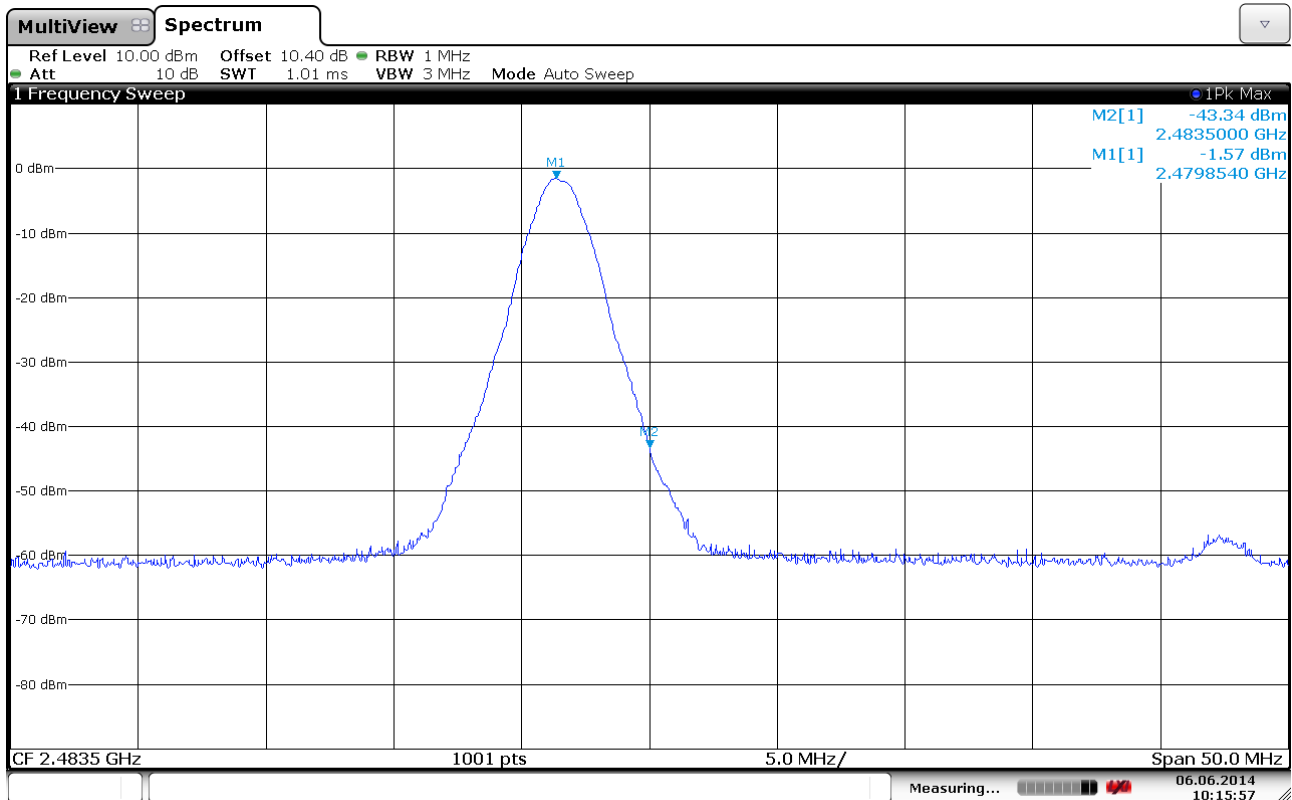
Band Edge Upper Channel, Radiated, Peak, Hopping ON



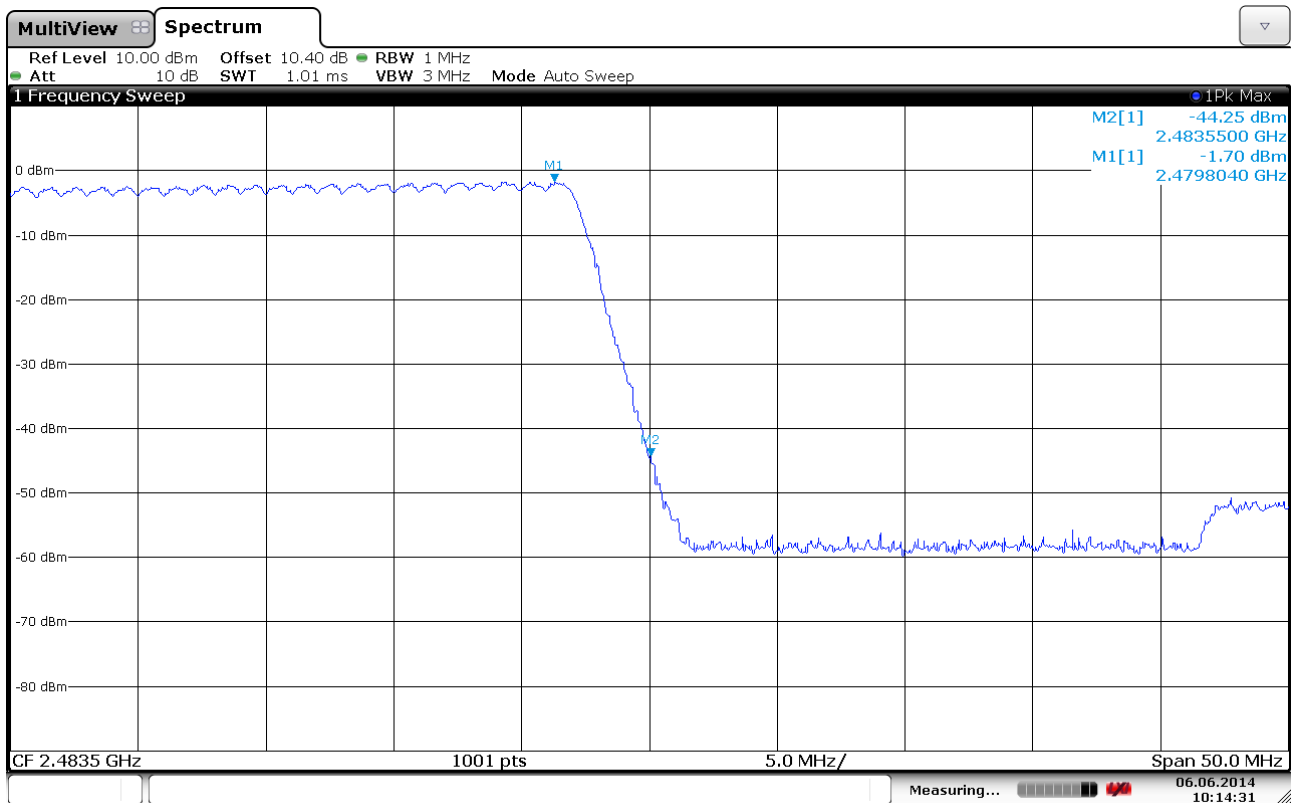
Band Edge, Lower, Conducted, Peak, Hopping OFF, 2-DH5



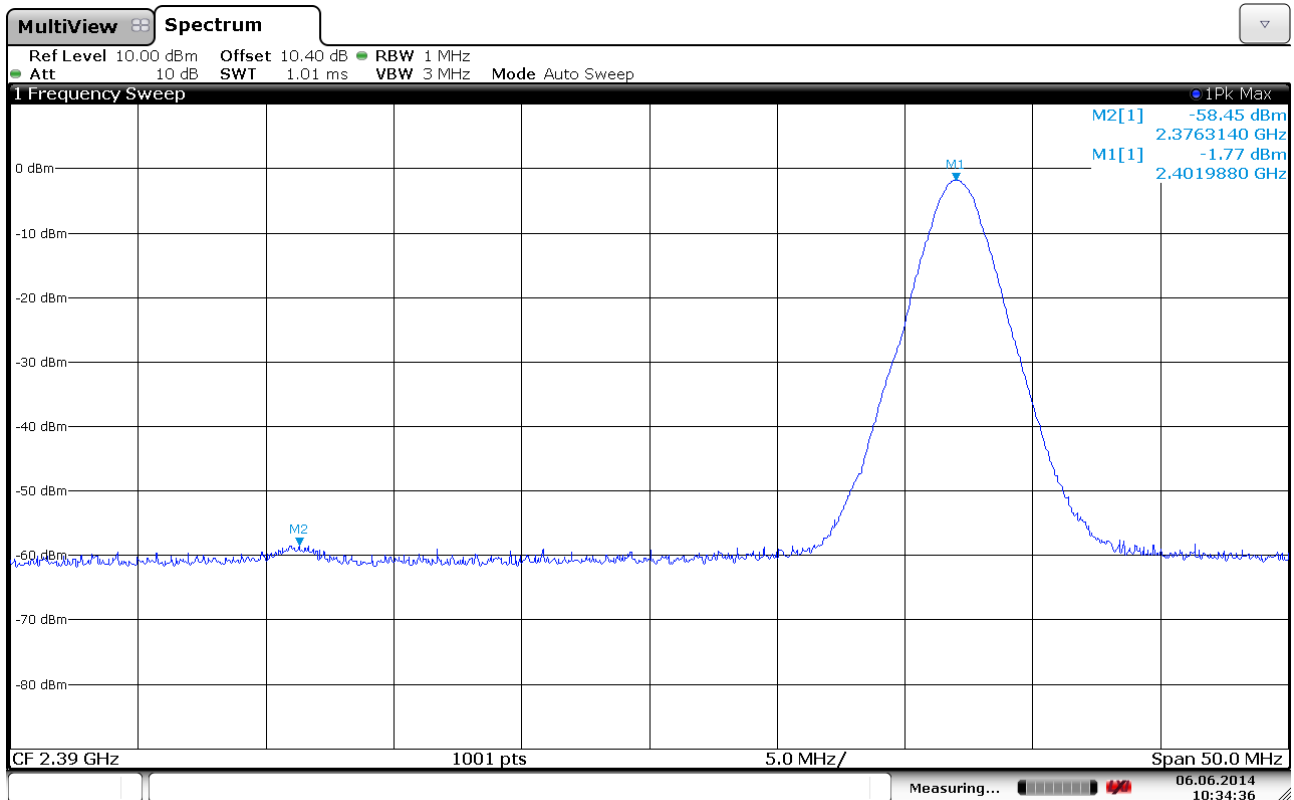
Band Edge, Lower, Conducted, Peak, Hopping ON, 2-DH5



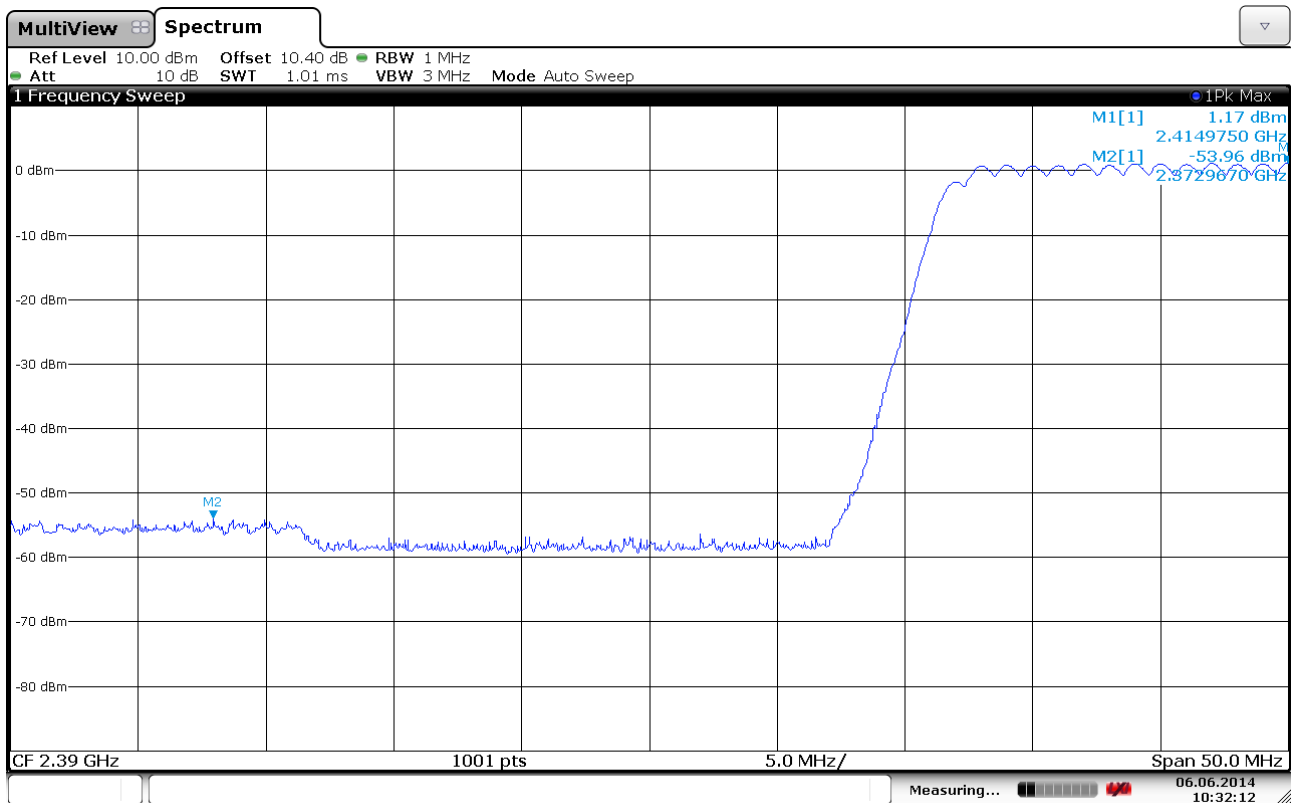
Band Edge, Upper, Conducted, Peak, Hopping OFF, 2-DH5



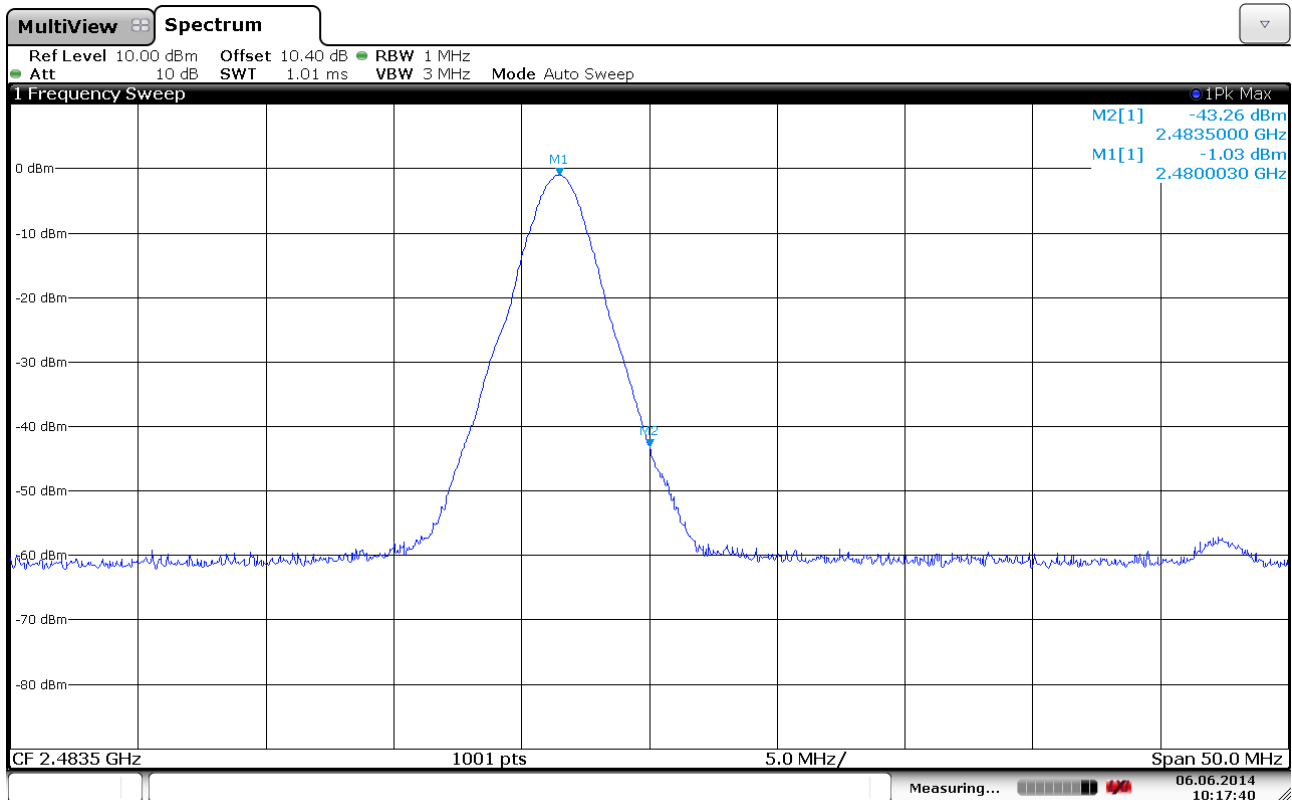
Band Edge, Upper, Conducted, Peak, Hopping ON, 2-DH5



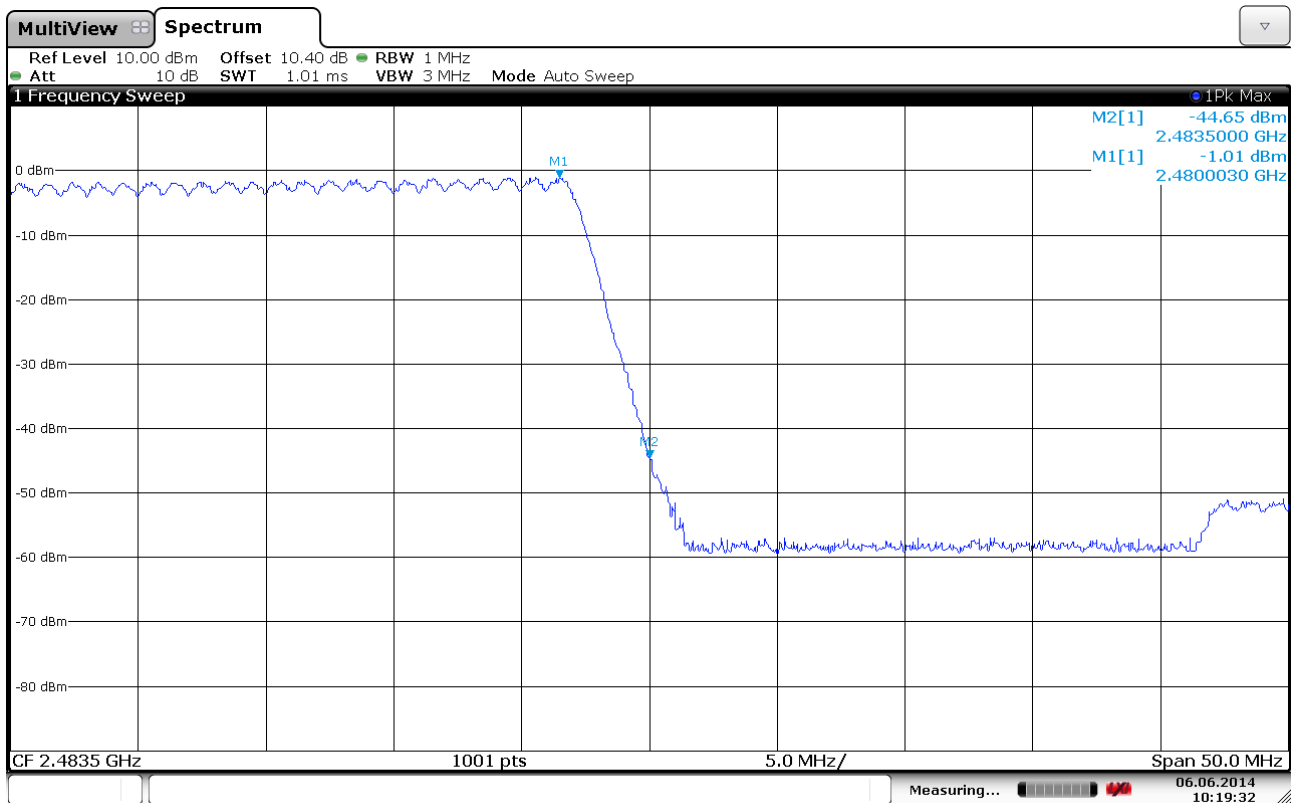
Band Edge, Lower, Conducted, Peak, Hopping OFF, 3-DH5



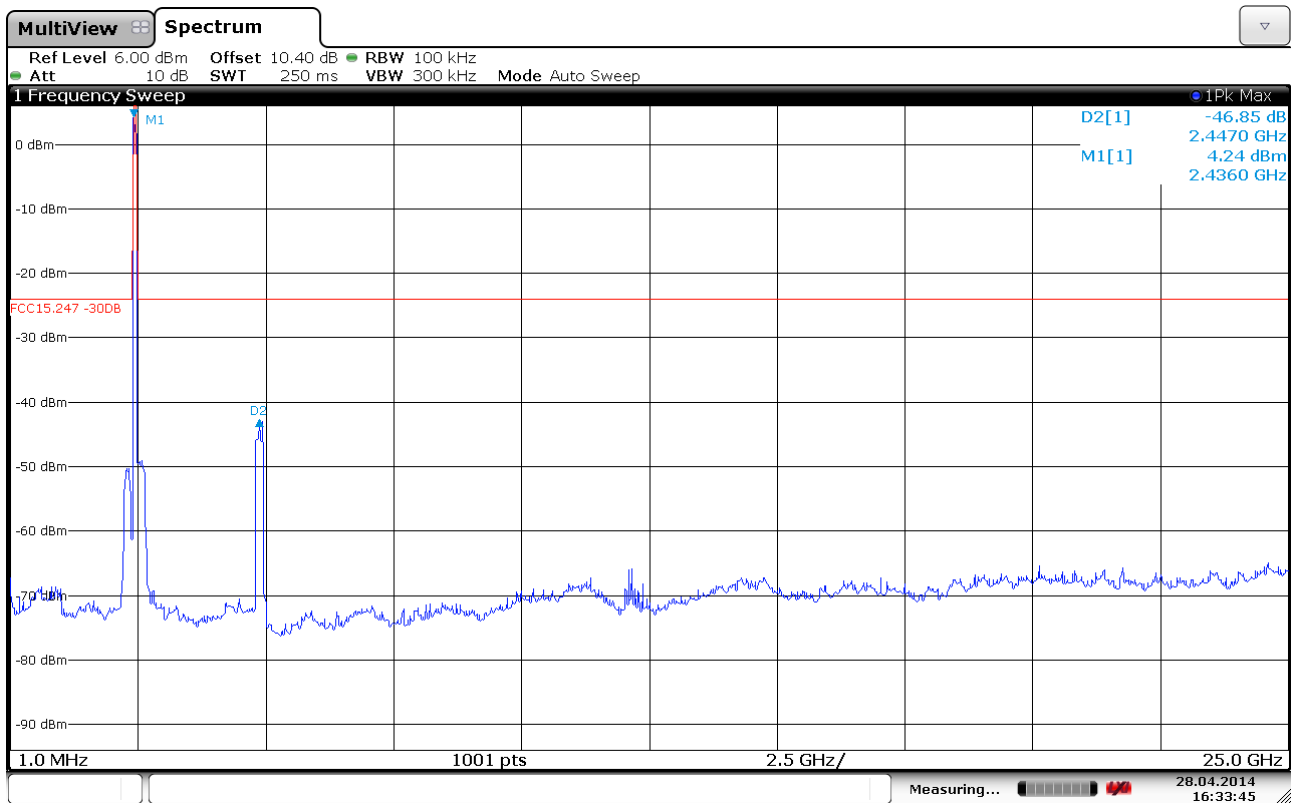
Band Edge, Lower, Conducted, Peak, Hopping ON, 3-DH5



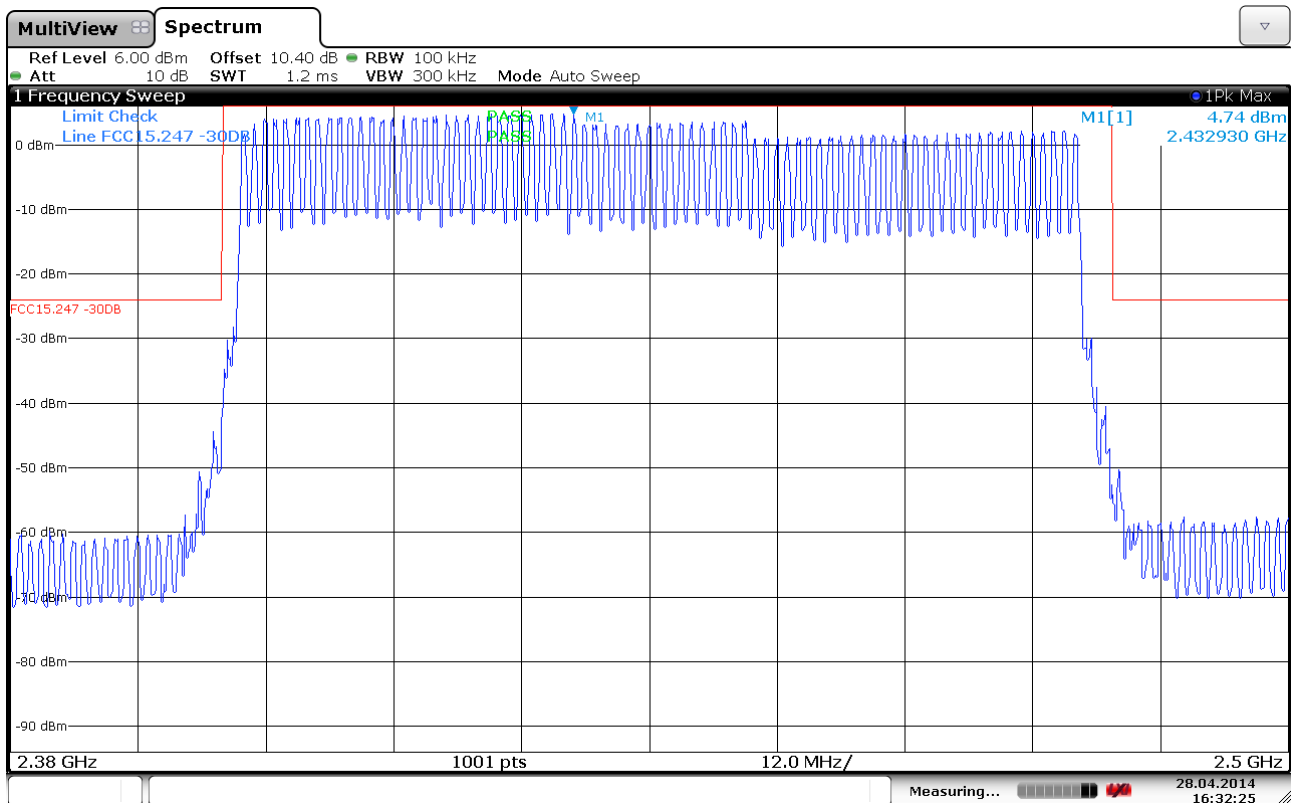
Band Edge, Upper, Conducted, Peak, Hopping OFF, 3-DH5



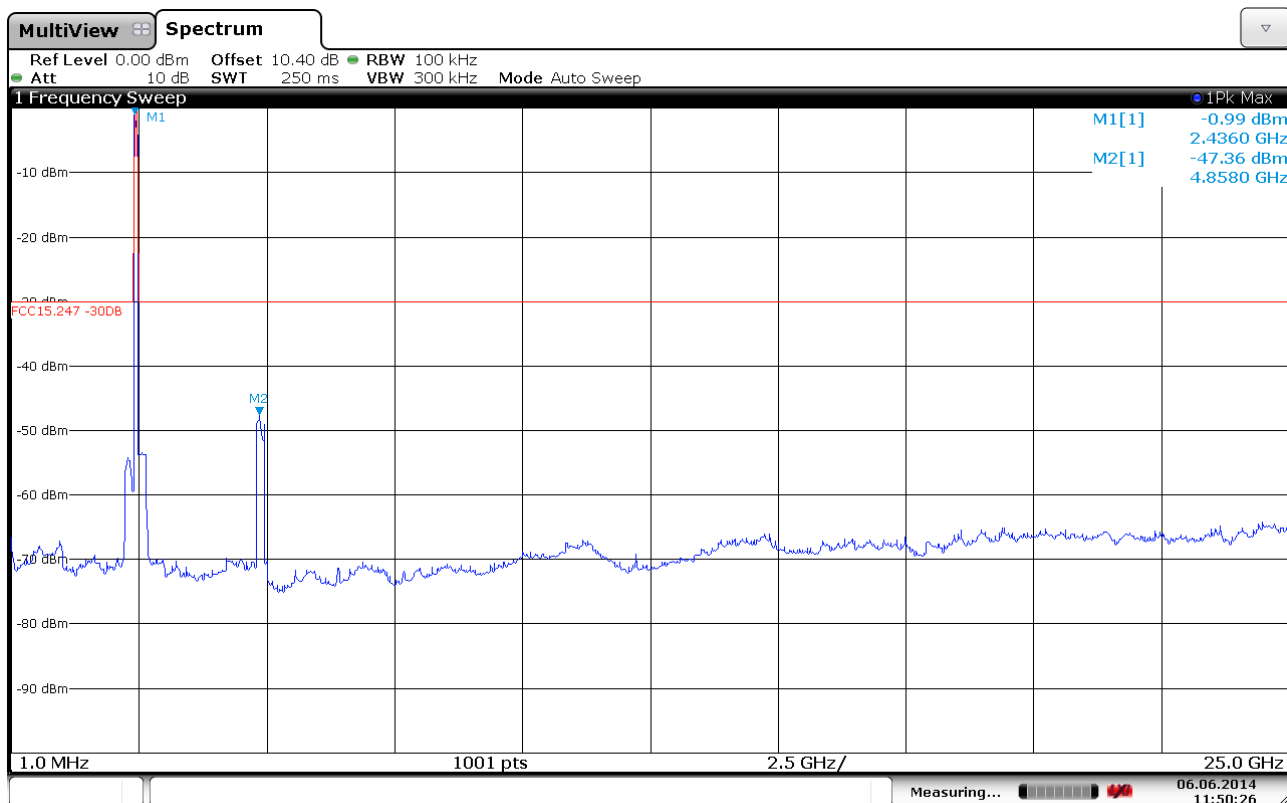
Band Edge, Upper, Conducted, Peak, Hopping ON, 3-DH5



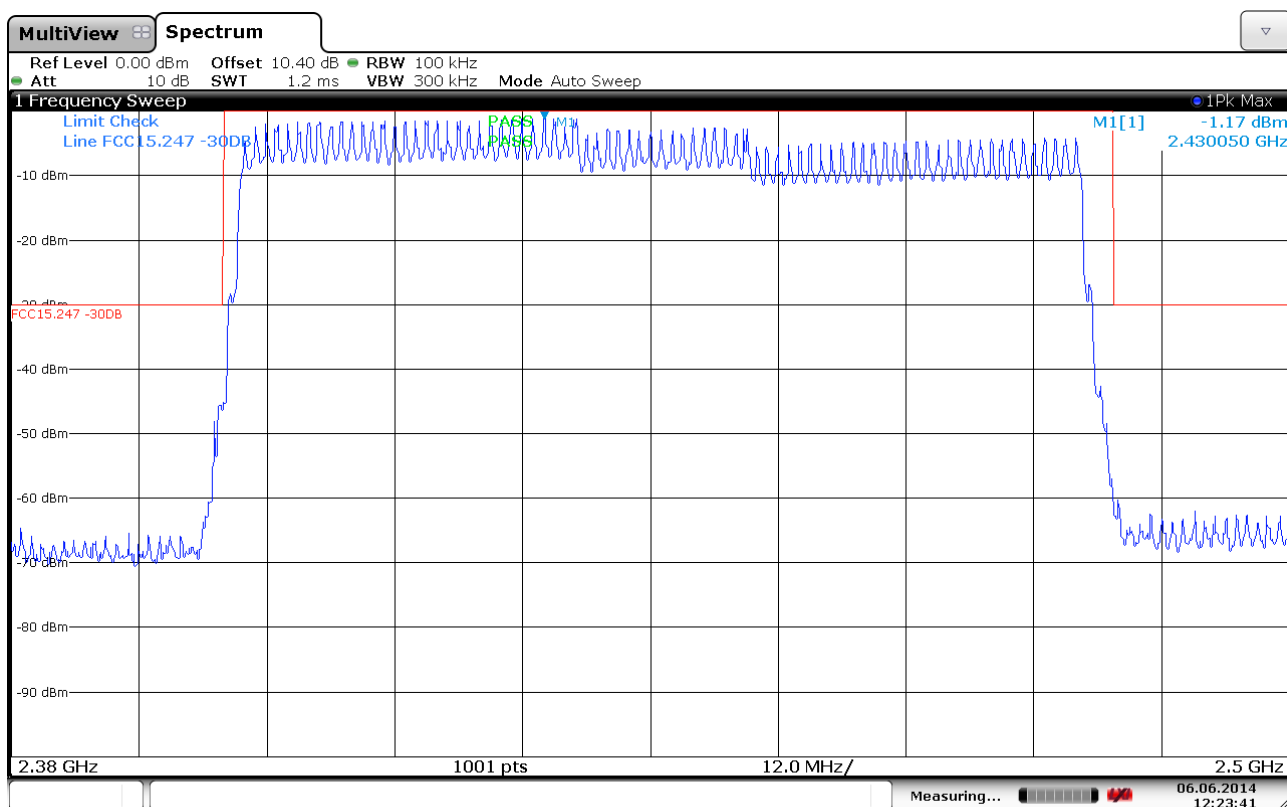
Conducted Emissions, 1MHz -25GHz, Hopping On, GFSK



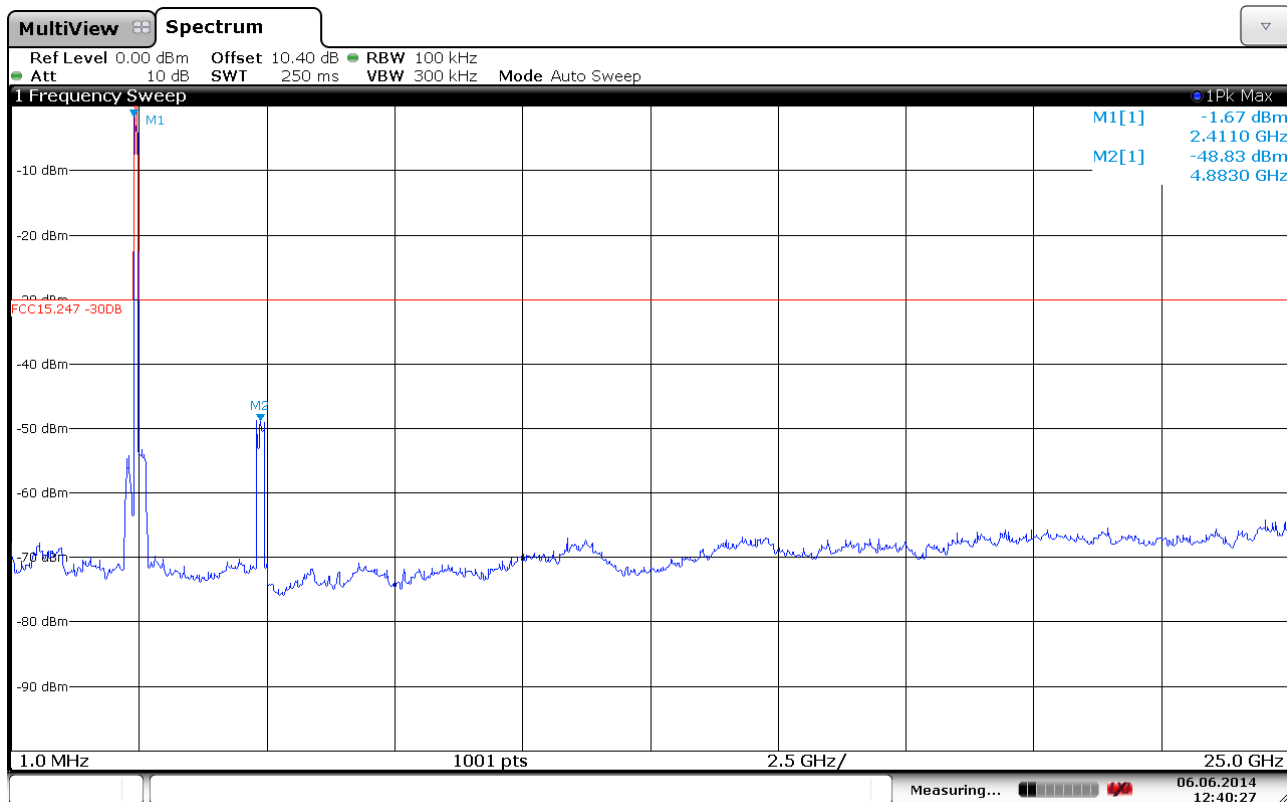
Conducted Emissions, 2380 -2500 MHz, Hopping ON, GFSK



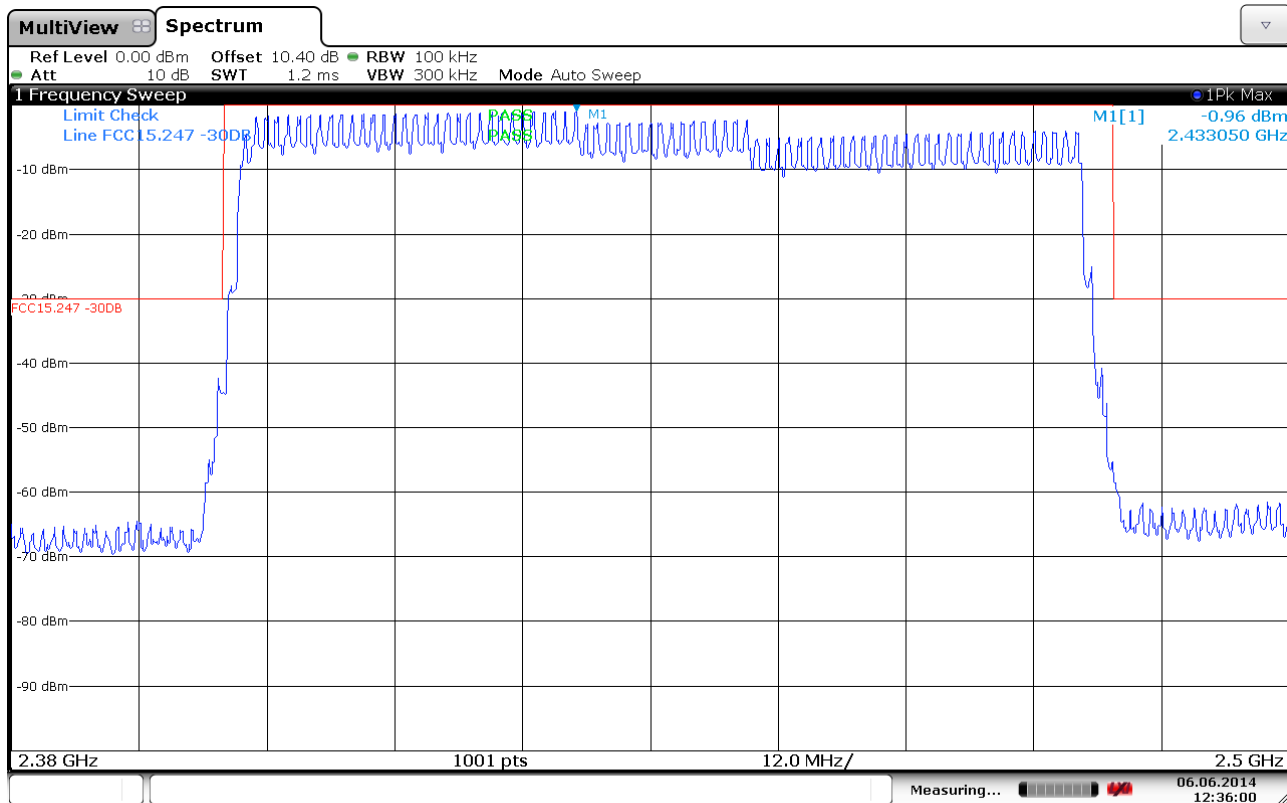
Conducted Emissions, 1MHz -25GHz, Hopping On, 2-EDR



Conducted Emissions, 2380 -2500 MHz, Hopping ON, 2-EDR



Conducted Emissions, 1MHz -25GHz, Hopping On, 3-EDR



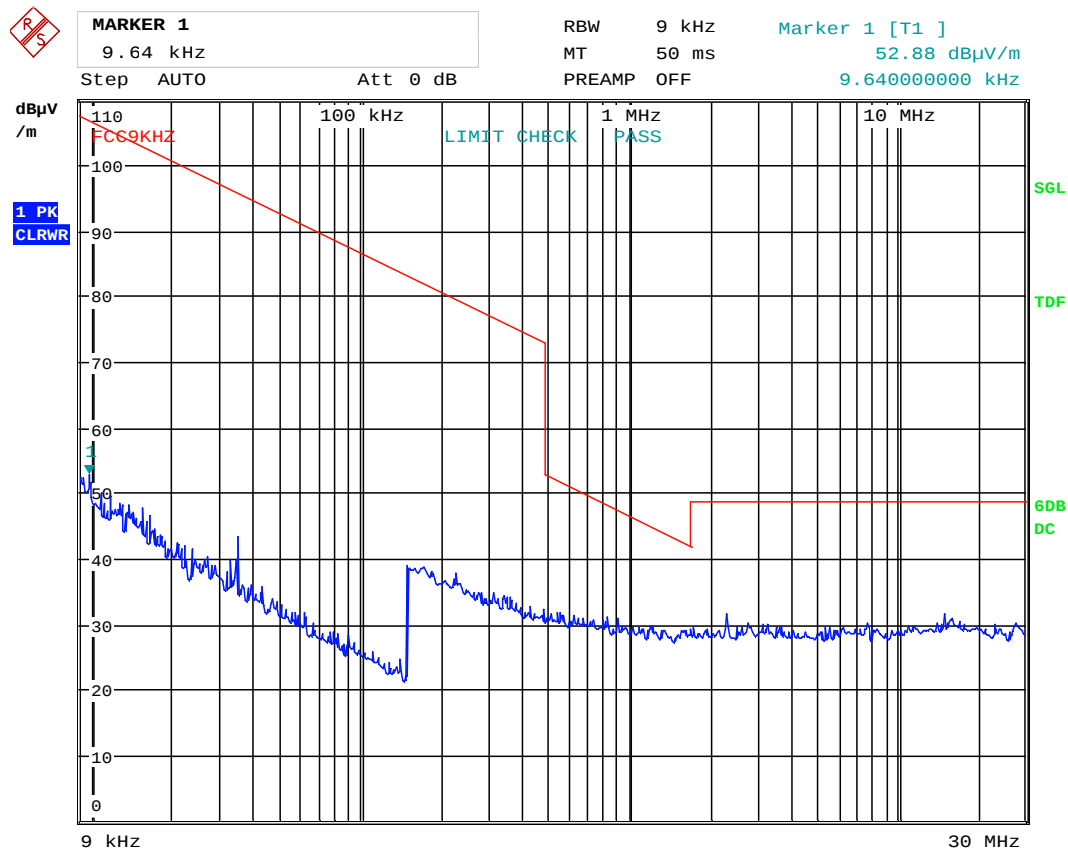
Conducted Emissions, 2380 -2500 MHz, Hopping ON, 3-EDR

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: 30.APR.2014 16:32:13

Radiated emission 30 – 1000 MHz.

Detector: Quasi-Peak

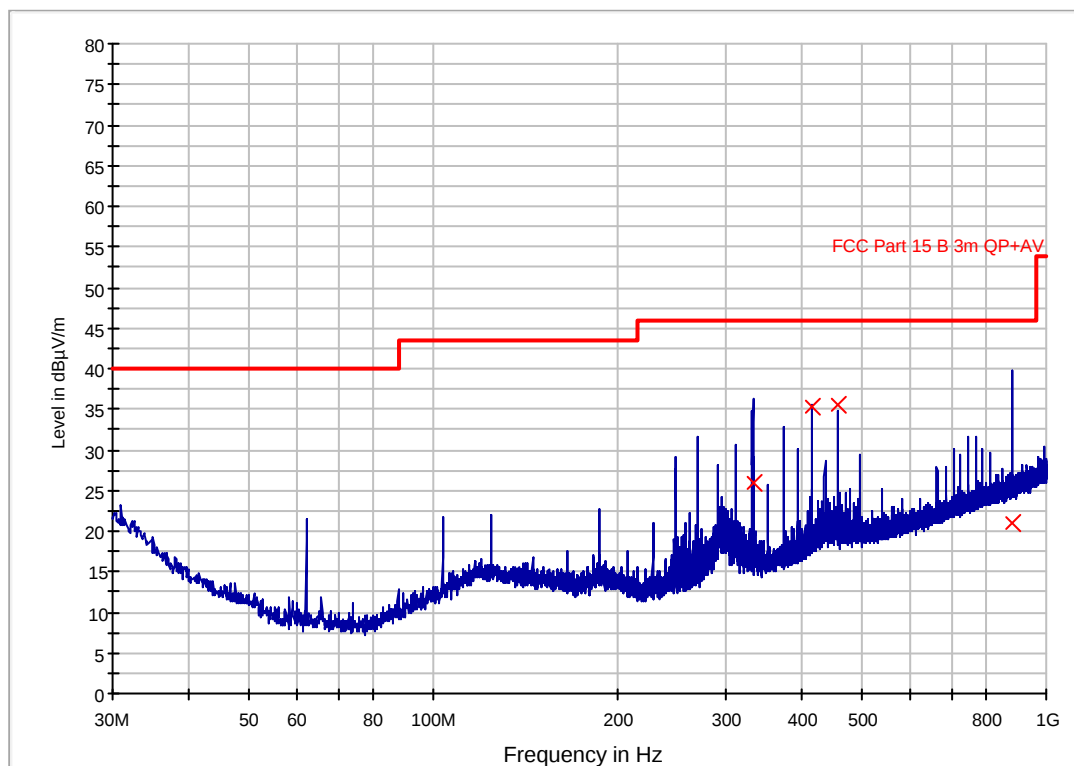
Measuring distance 3 m according to ANSI C63.4-2003.

Tested in speech mode with active connection.

Frequency (MHz)	QuasiPeak (dBμV/m)	Bandwidth (kHz)	Polarization	Margin (dB)	Limit (dBμV/m)	Comment
332.188912	26.0	120.000	H	20.0	46.0	
414.696987	35.2	120.000	H	10.8	46.0	
456.173261	35.7	120.000	H	10.3	46.0	
877.611200	21.0	120.000	V	25.0	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 (5.5 – 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
4882	M	0	54.7	74	19.3
7323	M	0	45.0	74	29.0

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
4882	M	0	34.7	20	54	19.3
7323	M	0	25.0	20	54	29.0

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.

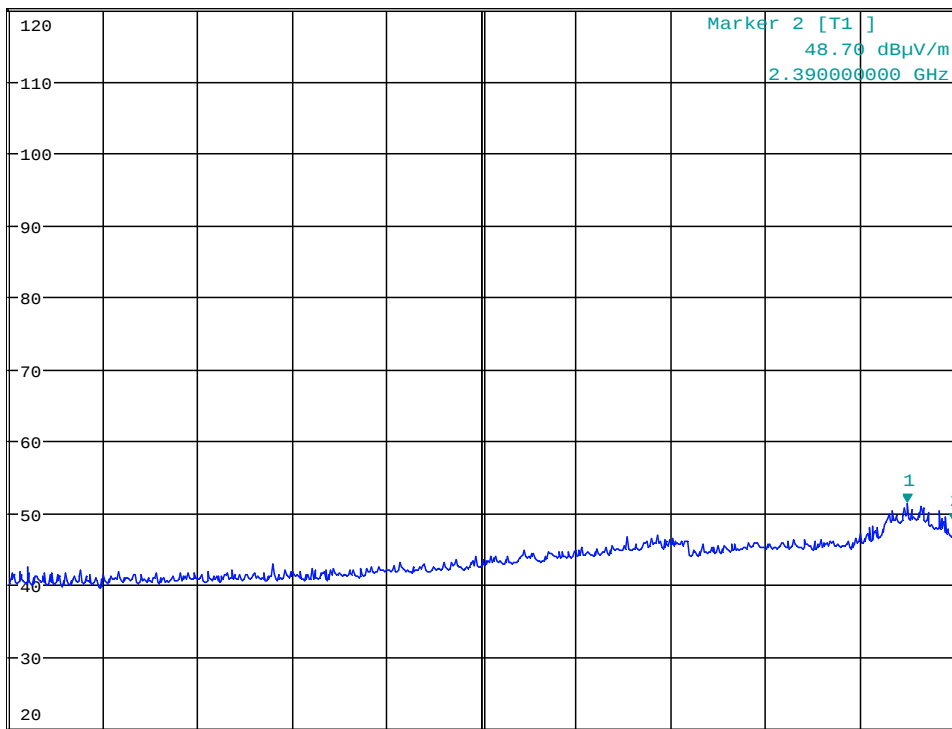


MARKER 1
2.470769231 GHz
Ref 120 dBμV/m * Att 20 dB

* RBW 1 MHz
* VBW 3 MHz
SWT 5 ms

Marker 1 [T1]
51.36 dBμV/m
2.320945513 GHz

1 PK
MAXH



A

TDF

PS

3DB

AC

Date: 30.APR.2014 12:46:14

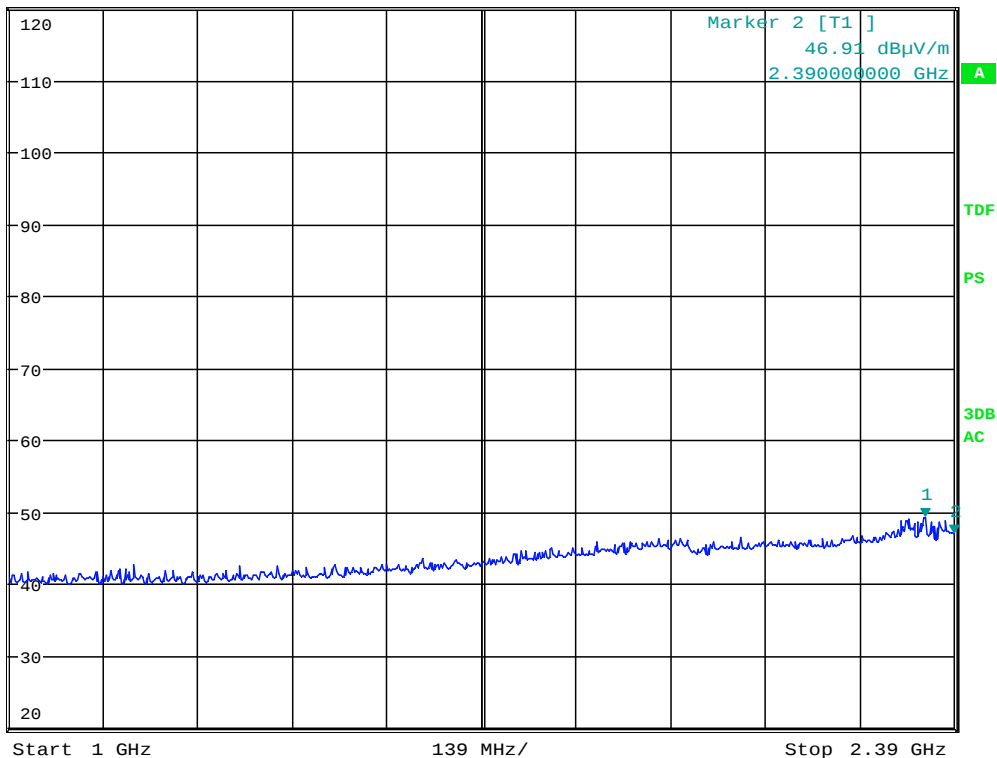
Radiated Emissions, 1000 -2390MHz, VP, Hopping ON



MARKER 1
2.470769231 GHz
Ref 120 dBμV/m * Att 20 dB

* RBW 1 MHz
* VBW 3 MHz
SWT 5 ms
Marker 1 [T1]
49.22 dBμV/m
2.347676282 GHz

1 PK
MAXH



Date: 30.APR.2014 12:48:05

Radiated Emissions, 1000 -2390MHz, HP, Hopping ON

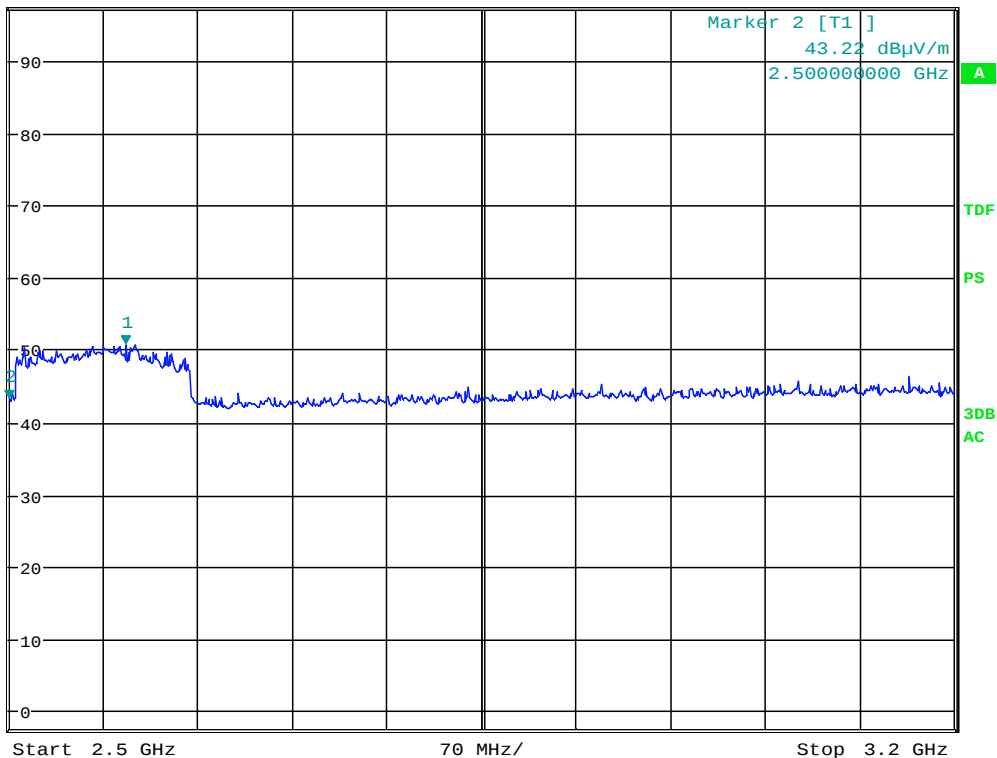


MARKER 1
2.470769231 GHz
Ref 97.5 dBμV/m * Att 10 dB

* RBW 1 MHz
* VBW 3 MHz
SWT 2.5 ms

Marker 1 [T1]
50.79 dBμV/m
2.586378205 GHz

1 PK
MAXH



Date: 30.APR.2014 12:53:54

Radiated Emissions, 2500 -3200MHz, VP, Hopping ON

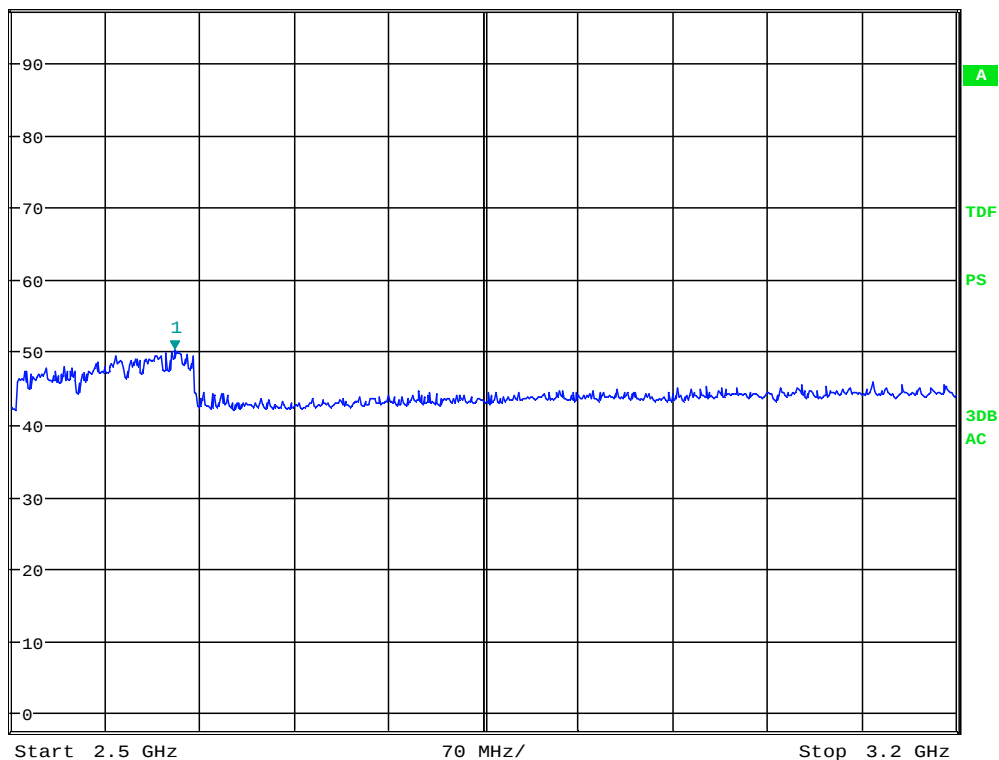


MARKER 1
2.894871795 GHz
Ref 97.5 dBμV/m * Att 10 dB

* RBW 1 MHz
* VBW 3 MHz
SWT 2.5 ms

Marker 1 [T1]
50.23 dBμV/m
2.621153846 GHz

1 PK
MAXH



Date: 30.APR.2014 13:00:21

Radiated Emissions, 2500 -3200MHz, HP, Hopping ON



* RBW 1 MHz
* VBW 3 MHz
SWT 35 ms

Marker 1 [T1]
52.71 dB μ V/m
7.627403846 GHz

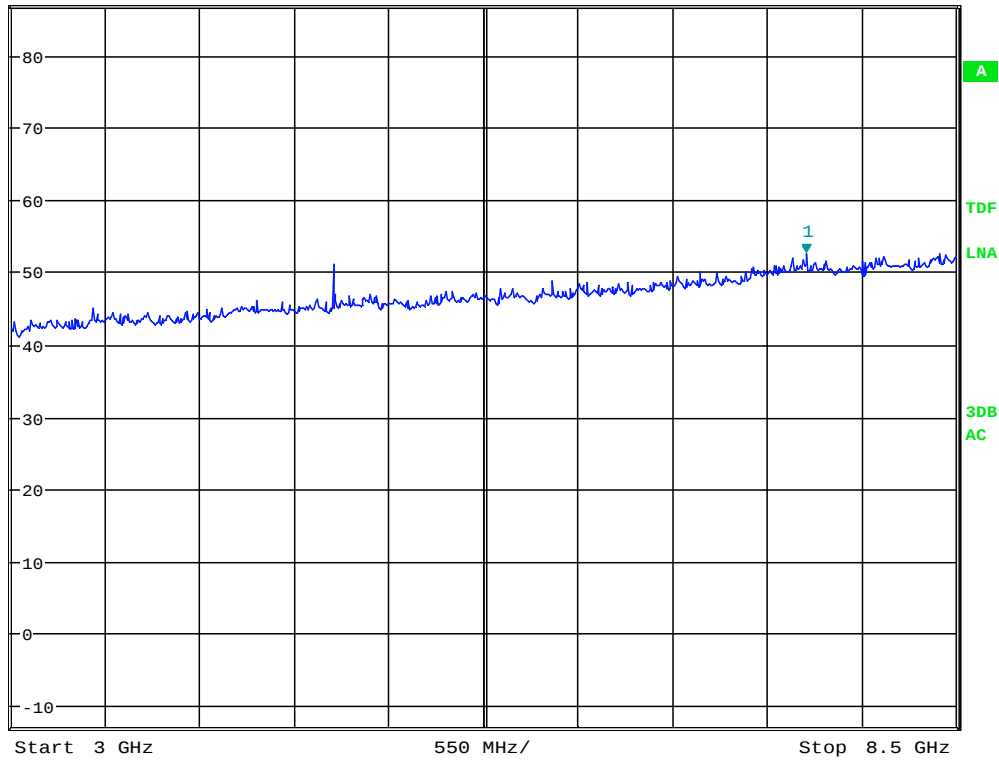
Ref 87 dB μ V/m

* Att 10 dB

SWT 35 ms

7.627403846 GHz

1 PK
MAXH



Date: 30.APR.2014 13:31:47

Radiated Emissions, 3000 -8500MHz, VP



* RBW 1 MHz
* VBW 3 MHz
Marker 1 [T1]
52.85 dBμV/m
8.279647436 GHz

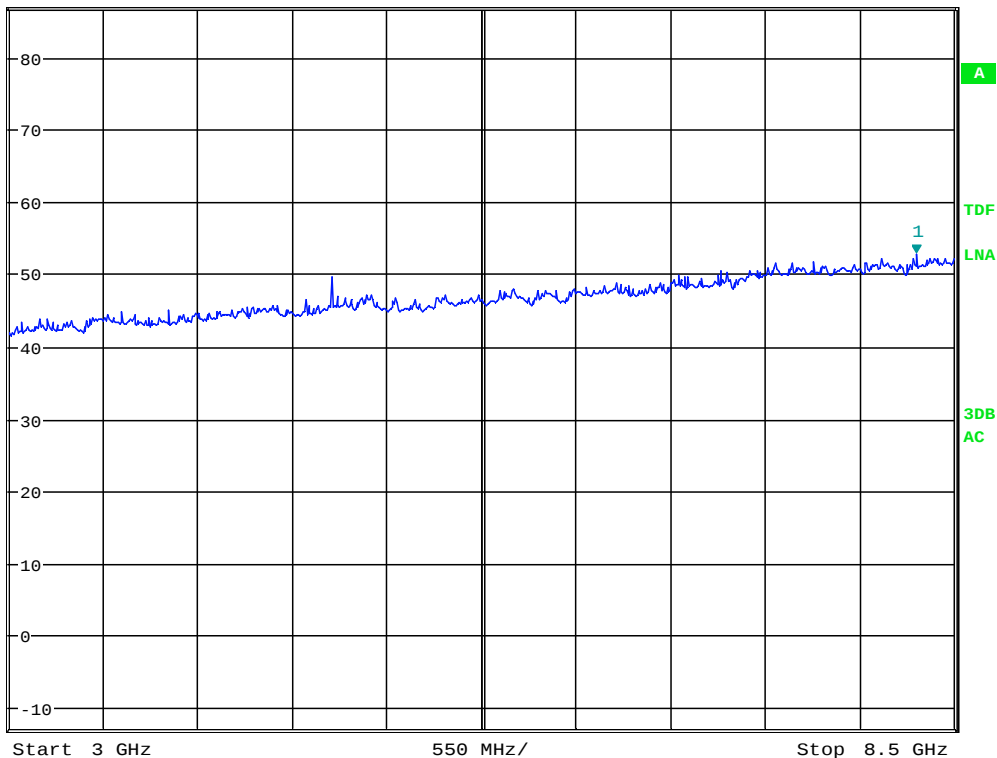
Ref 87 dBμV/m

* Att 10 dB

SWT 35 ms

8.279647436 GHz

1 PK
MAXH



Date: 30.APR.2014 13:33:30

Radiated Emissions, 3000 -8500MHz, HP



* RBW 1 MHz
VBW 3 MHz
* SWT 100 ms

Marker 1 [T1]
54.67 dB μ V/m
4.881230769 GHz

Ref 87 dB μ V/m

* Att 10 dB

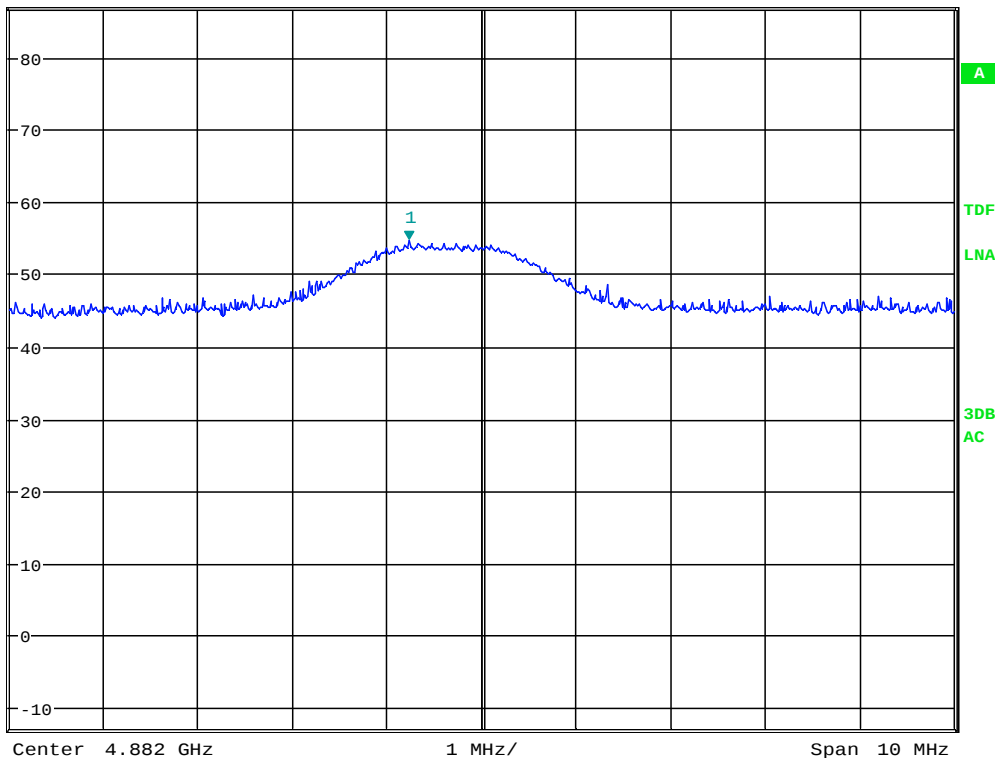
* RBW 1 MHz

Marker 1 [T1]

54.67 dB μ V/m

4.881230769 GHz

1 PK
MAXH



Date: 30.APR.2014 13:27:08

Radiated Emissions, 4882MHz, VP, Ch39, @3m



* RBW 1 MHz
VBW 3 MHz
* SWT 100 ms

Marker 1 [T1]
45.02 dBμV/m
7.320756410 GHz

Ref 87 dBμV/m

* Att 10 dB

* RBW 1 MHz

VBW 3 MHz

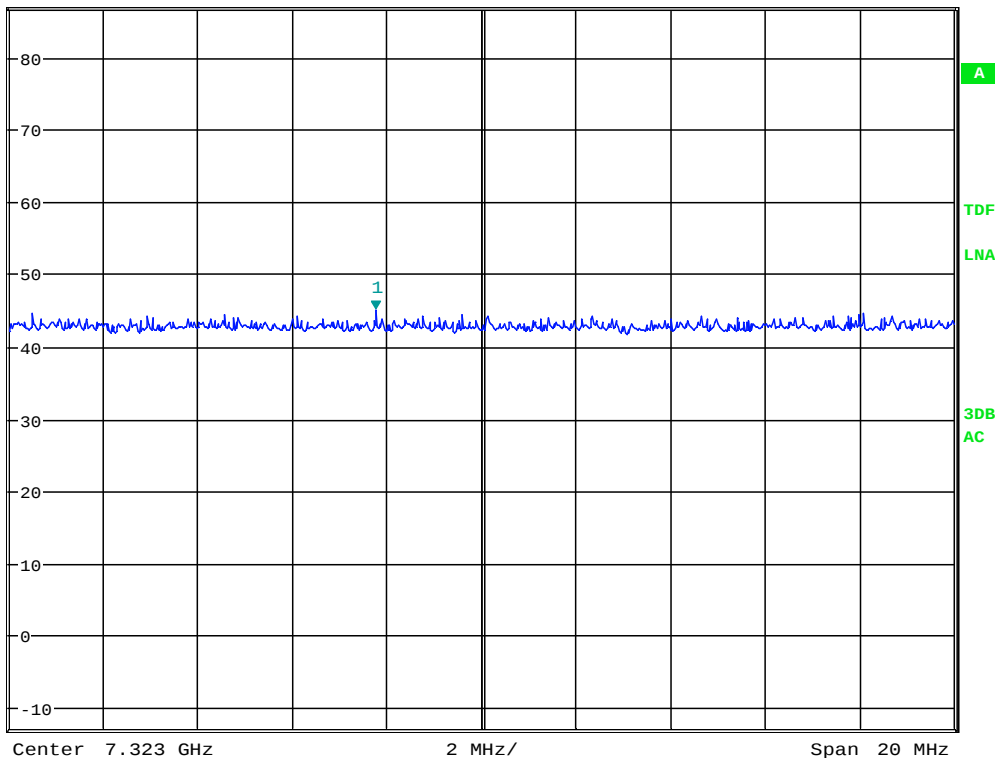
* SWT 100 ms

Marker 1 [T1]

45.02 dBμV/m

7.320756410 GHz

1 PK
MAXH



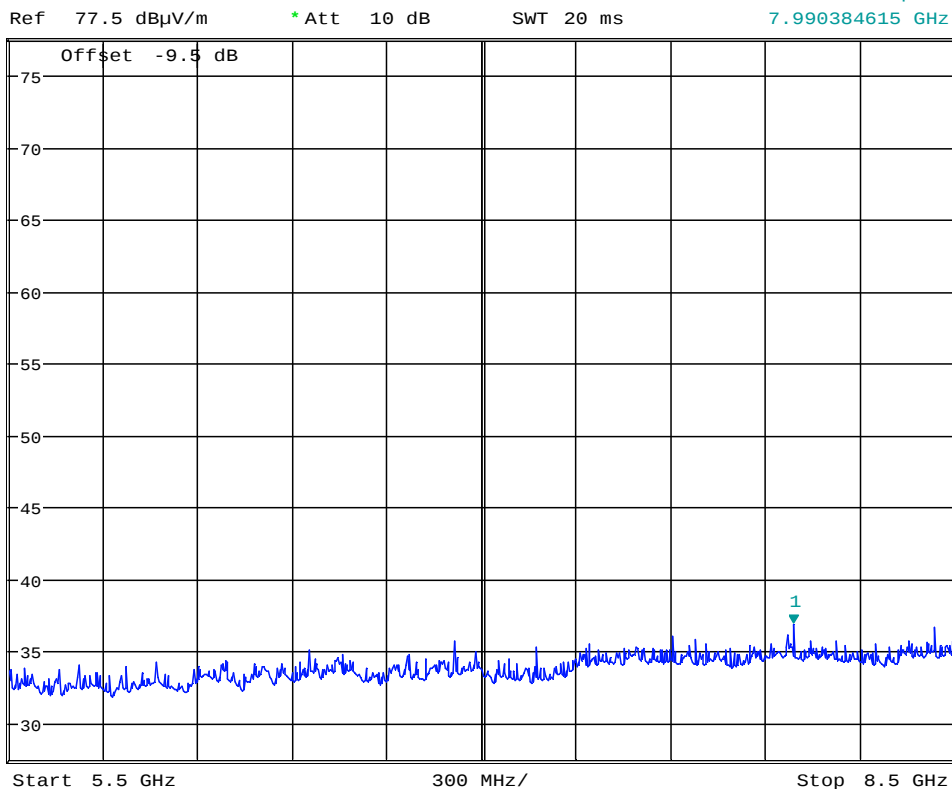
Date: 30.APR.2014 13:58:33

Radiated Emissions, 7323MHz, VP, Ch39, @3m



* RBW 1 MHz
* VBW 3 MHz
SWT 20 ms

Marker 1 [T1]
36.86 dBμV/m
7.990384615 GHz



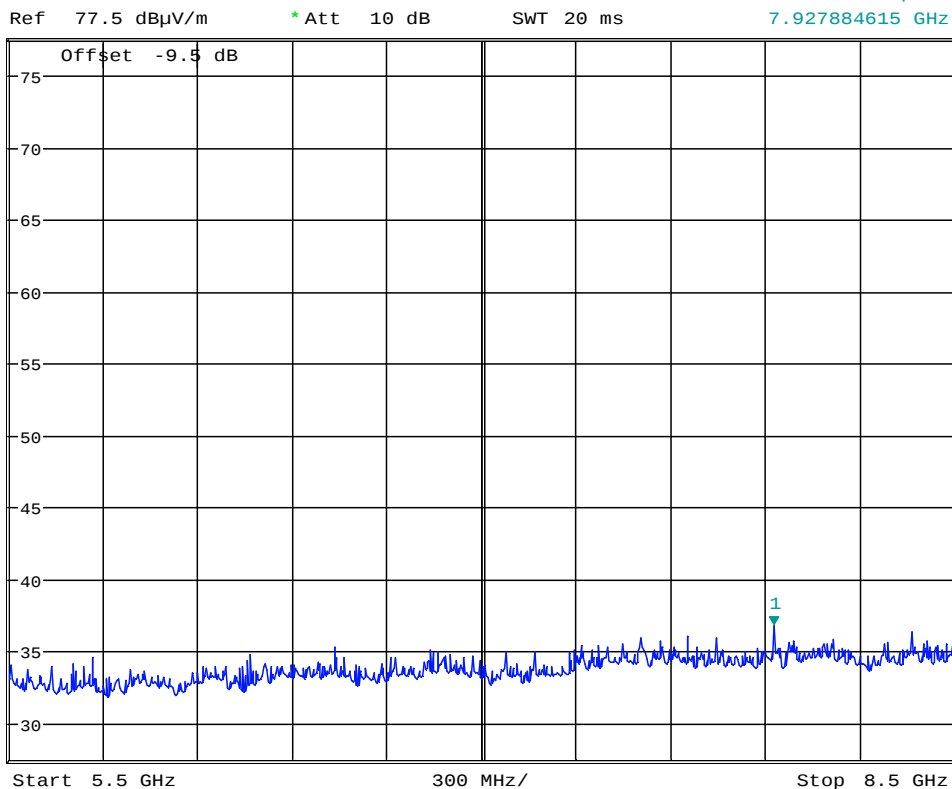
Date: 30.APR.2014 14:06:29

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



* RBW 1 MHz
* VBW 3 MHz
SWT 20 ms

Marker 1 [T1]
36.81 dBμV/m
7.927884615 GHz

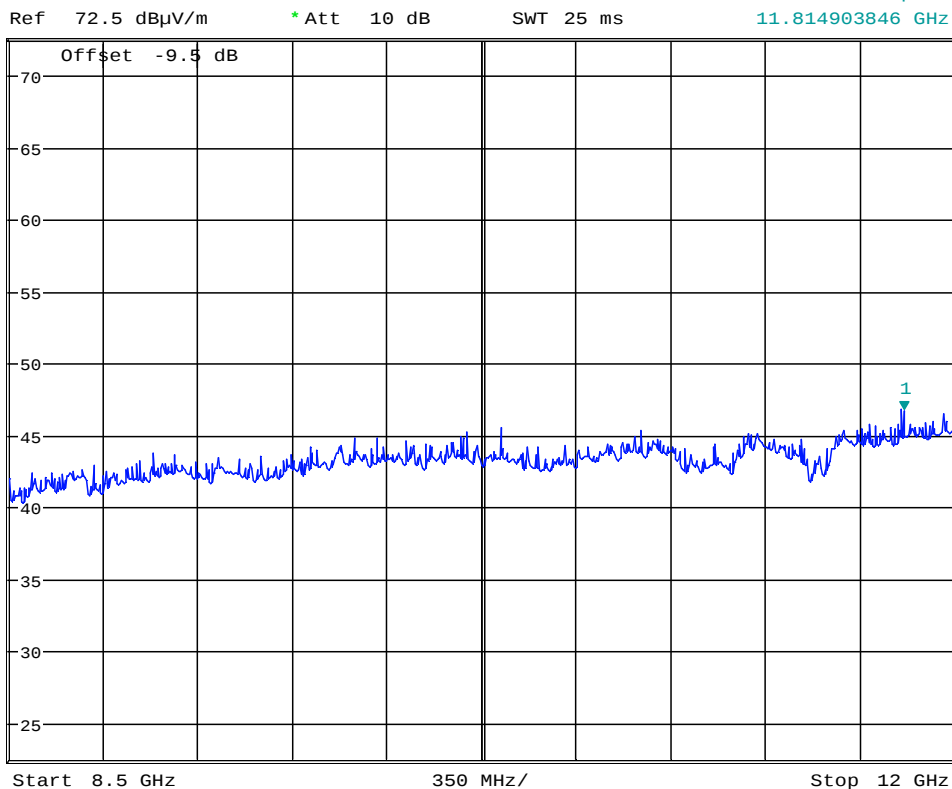


Date: 30.APR.2014 14:08:11

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



* RBW 1 MHz Marker 1 [T1]
* VBW 3 MHz 46.71 dBμV/m
SWT 25 ms 11.814903846 GHz



Date: 30.APR.2014 14:33:55

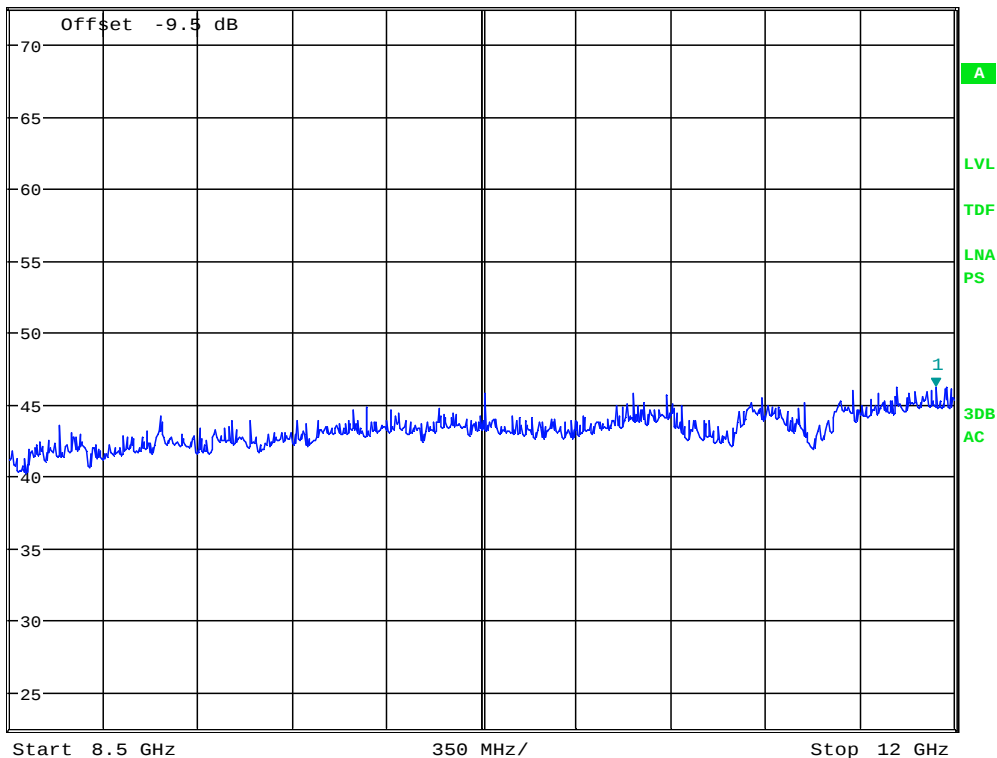
Radiated Emissions, 8500 -12000MHz, VP, @1m



* RBW 1 MHz
* VBW 3 MHz
Marker 1 [T1]
46.21 dBμV/m
11.932692308 GHz

Ref 72.5 dBμV/m * Att 10 dB SWT 25 ms

1 PK
MAXH



Date: 30.APR.2014 14:35:37

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

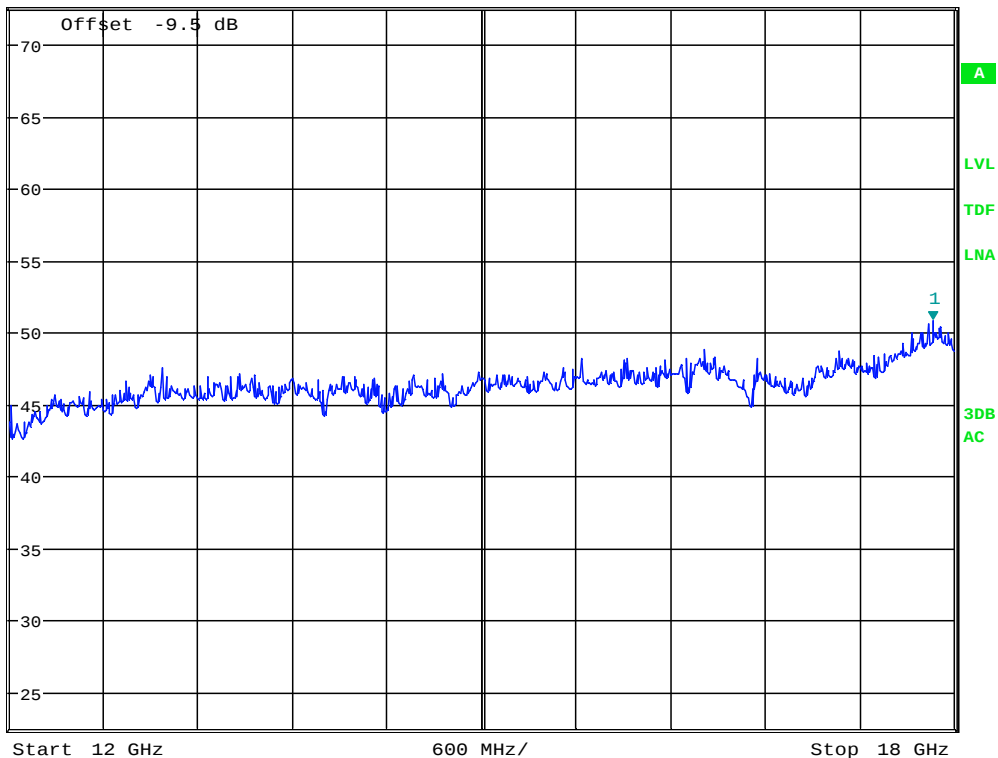


* RBW 1 MHz
* VBW 3 MHz
SWT 35 ms

Marker 1 [T1]
50.85 dB μ V/m
17.865384615 GHz

Ref 72.5 dB μ V/m * Att 10 dB

1 PK
MAXH



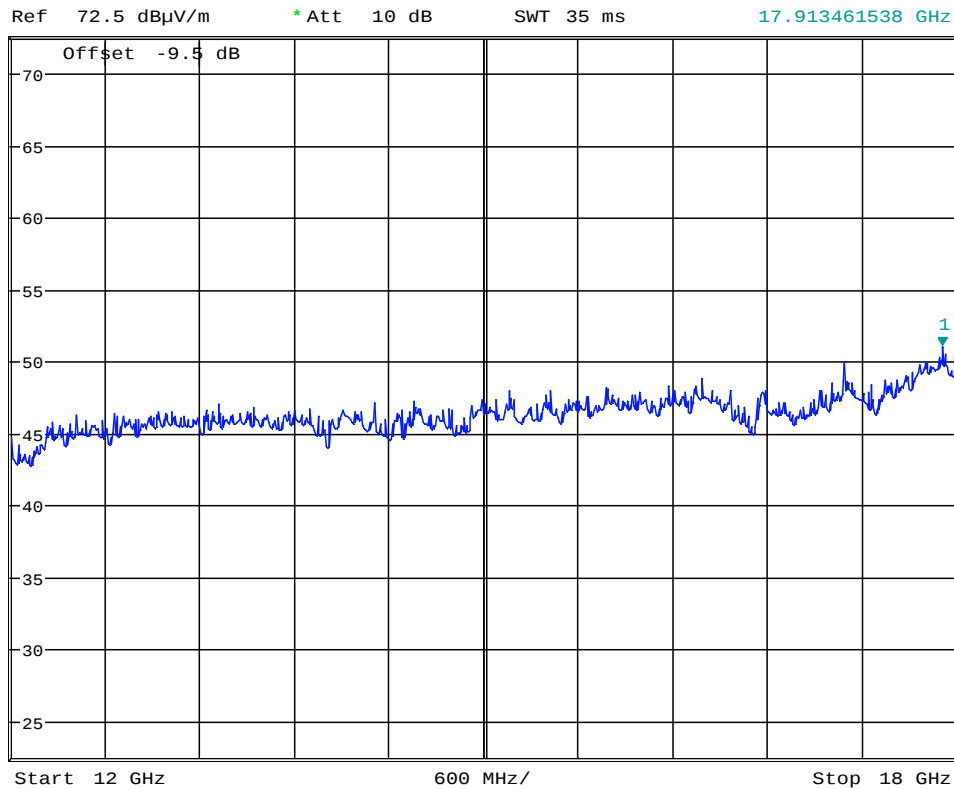
Date: 30.APR.2014 14:50:01

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



* RBW 1 MHz
* VBW 3 MHz
SWT 35 ms

Marker 1 [T1]
51.01 dB μ V/m
17.913461538 GHz



Date: 30.APR.2014 14:51:43

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



MARKER 1

24.34935897 GHz

Ref 67 dBμV/m

* Att 10 dB

* RBW 1 MHz

VBW 3 MHz

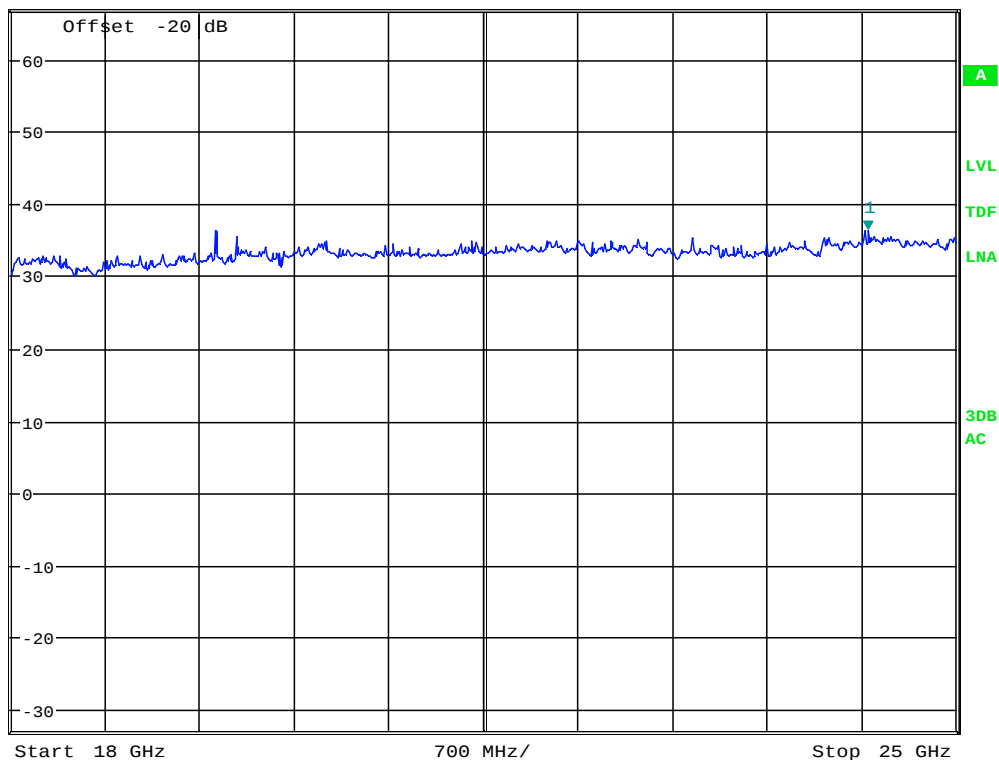
SWT 45 ms

Marker 1 [T1]

36.47 dBμV/m

24.349358974 GHz

1 PK
MAXH



Date: 14.MAY.2014 15:59:54

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

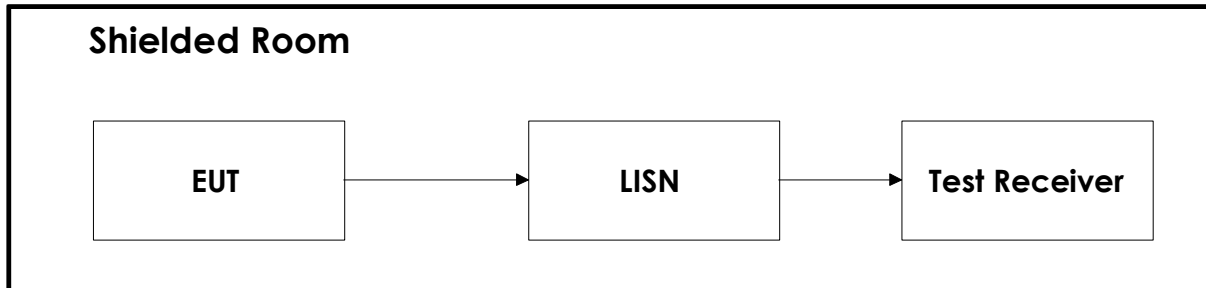
4 LIST OF TEST EQUIPMENT

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	2013.08.30	2014.08.30
2	ESU40	Measuring Receiver	Rohde & Schwarz	LR 1639	2013.09.24	2014.09.24
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	Cal b4 use	
7	3115	Horn Antenna	EMCO	LR 1330	2010.08.05	2015.08.05
8	8449A	Pre-amplifier	Hewlett Packard	LR 1322	2013-09	2014-09
9	643	Antenna Horn	Narda	LR 093	2009.01.26	2019.01.26
10	PM7320X	Antenna Horn	Sivers Lab	LR 102	2009.01.26	2019.01.26
11	DBF-520-20	Antenna Horn	Systron Donner	LR 100	2009.01.26	2019.01.26
12	638	Antenna Horn	Narda	LR 1480	2010.06.17	2015.06.17
14	HFH2-Z2	Loop Antenna	Rohde & Schwarz	LR 285	2010.10	2015.10
15	Model 87V	Multimeter	Fluke	N-4669	2013.09	2014.09
16	6812B	AC Power Source	Agilent	LR 1515	2013.10.28	2014.10.28
17	ESHS10	Measuring Receiver	Rohde & Schwarz	N- 3528	2012.06.28	2014.06.28
18	ESH3-Z5	Two Line V-Network	Rohde & Schwarz	LR 1076	Cal b4 use	
19	ESH3-Z2	Pulse Limiter	Rohde & Schwarz	LR 1074	Cal b4 use	
20	U2000A	Average Power Sensor	Rohde & Schwarz	LR 1523	2013.10.23	2014.10.23

5 BLOCK DIAGRAM

5.1 Power Line Conducted Emission



5.2 Test Site Radiated Emission

