

Certification Test Report

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IC: 109U-89FT7059

FCC Rule Part: 15.247

IC Radio Standards Specification: RSS-210

ACS Report Number: 14-2074.W06.1B

Manufacturer: Motorola Solutions

Model(s): H97TGD9PW1AN & NUR1065A

Test Begin Date: **July 1, 2014**

Test End Date: **July 1, 2014**

Report Issue Date: July 7, 2014



FOR THE SCOPE OF ACCREDITATION UNDER CERTIFICATE NUMBER AT-1533

This report must not be used by the client to claim product certification, approval, or endorsement by ACCLASS, ANSI, or any agency of the Federal Government.

Project Manager:

A handwritten signature in blue ink, appearing to read "Thierry Jean-Charles".

Thierry Jean-Charles
EMC Engineer
Advanced Compliance Solutions, Inc.

Reviewed by:

A handwritten signature in blue ink, appearing to read "Kirby Munroe".

Kirby Munroe
Director, Wireless Certifications
Advanced Compliance Solutions, Inc.

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This report contains 63 pages

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1 GENERAL

1.1 Purpose

The purpose of this report is to demonstrate compliance with Part 15 Subpart C of the FCC's Code of Federal Regulations and Industry Canada's Radio Standards Specification RSS-210 for the specific requirements documented herein.

1.2 Product Description

The APX7000L models H97TGD9PW1AN & NUR1065A are portable 2-way LMR devices operating in the VHF, 700 and 800 MHz band with integrated Bluetooth and LTE data capability. The model H97TGD9PW1AN is marketed for the United States and the NUR1065A for Canada. The two models are identical per the manufacturer.

Technical Details:	Bluetooth 2.0+EDR
Operating Range:	2402 MHz – 2480 MHz
Number of Channels:	79
Channel Separation:	1 MHz
Modulation:	GFSK, $\pi/4$ -DQPSK, 8DPSK
Data Rate:	1Mbps (GFSK) 2Mbps ($\pi/4$ -DQPSK) 3Mbps (8DPSK)
Input Voltage:	7.4 V Lithium Ion Battery

1.3 Manufacturer Information

Motorola Solutions
8000 W. Sunrise Blvd
Plantation, FL 33322

Model Number: H97TGD9PW1AN & NUR1065A

Test Sample Serial Number(s): 655CQH1475

Test Sample Condition: The samples were in good conditions with no observable physical damages.

1.4 Test Methodology and Considerations

The EUT was evaluated for RF conducted emissions for the 2.4 GHz Bluetooth transceiver. Compliance to the radiated and power line conducted emissions requirements are investigated in a separate evaluation effort by the manufacturer or a third-party laboratory and is not covered by this document.

The RF conducted measurements were performed with the EUT configured with a temporary SMA connector at the RF port. The EUT was evaluated at the maximum RF output power for all available modulations. Where applicable, the data is provided for the worst case configuration.

The frequencies and data rates used during the evaluation are provided below.

Table 1.4-1: Bluetooth Radio Test configuration

Mode of Operations	Frequency (MHz)	Data Rate (kbps)
GFSK	2402	1000
	2441	1000
	2480	1000
$\pi/4$ DQPSK	2402	2000
	2441	2000
	2480	2000
8 DPSK	2402	3000
	2441	3000
	2480	3000

2 TEST FACILITIES

2.1 Location

The radiated and conducted emissions test sites are located at the following address:

Advanced Compliance Solutions, Inc.
3998 FAU Blvd, Suite 310
Boca Raton, Florida 33431
Phone: (561) 961-5585
Fax: (561) 961-5587
www.acstestlab.com

FCC Test Firm Registration #: 475089
Industry Canada Lab Code: 4175C

2.2 Laboratory Accreditations/Recognitions/Certifications

ACS is accredited to ISO/IEC 17025 by ANSI-ASQ National Accreditation Board under their ACLASS program and has been issued certificate number AT-1533 in recognition of this accreditation. Unless otherwise specified, all test methods described within this report are covered under the ISO/IEC 17025 scope of accreditation.

2.3 Radiated & Conducted Emissions Test Site Description

2.3.1 Semi-Anechoic Chamber Test Site

The EMC radiated test facility consists of an RF-shielded enclosure. The interior dimensions of the indoor semi-anechoic chamber are approximately 48 feet (14.6 m) long by 36 feet (10.8 m) wide by 24 feet (7.3 m) high and consist of rigid, 1/8 inch (0.32 cm) steel-clad, wood core modular panels with steel framing. In the shielded enclosure, the faces of the panels are galvanized and the chamber is self-supporting. 8-foot RF absorbing cones are installed on 4 walls and the ceiling. The steel-clad ground plane is covered with vinyl floor.

The turntable is driven by pneumatic motor, which is capable of supporting a 2000 lb. load. The turntable is flushed with the chamber floor which it is connected to, around its circumference, with a continuous metallic loaded spring. An EMCO Model 1050 Multi-device Controller controls the turntable position.

A pneumatic motor is used to control antenna polarizations and height relative to the ground. The height information is displayed on the control unit EMCO Model 1050.

The control room is an RF shielded enclosure attached to the semi-anechoic chamber with two bulkhead panels for connecting RF, and control cables. The dimension of the room is 7.3 m x 4.9 m x 3 m high and the entrance doors of both control and conducted rooms are 3 feet (0.91 m) by 7 feet (2.13 m).

A diagram of the Semi-Anechoic Chamber Test Site is shown in Figure 2.3.1-1 below:

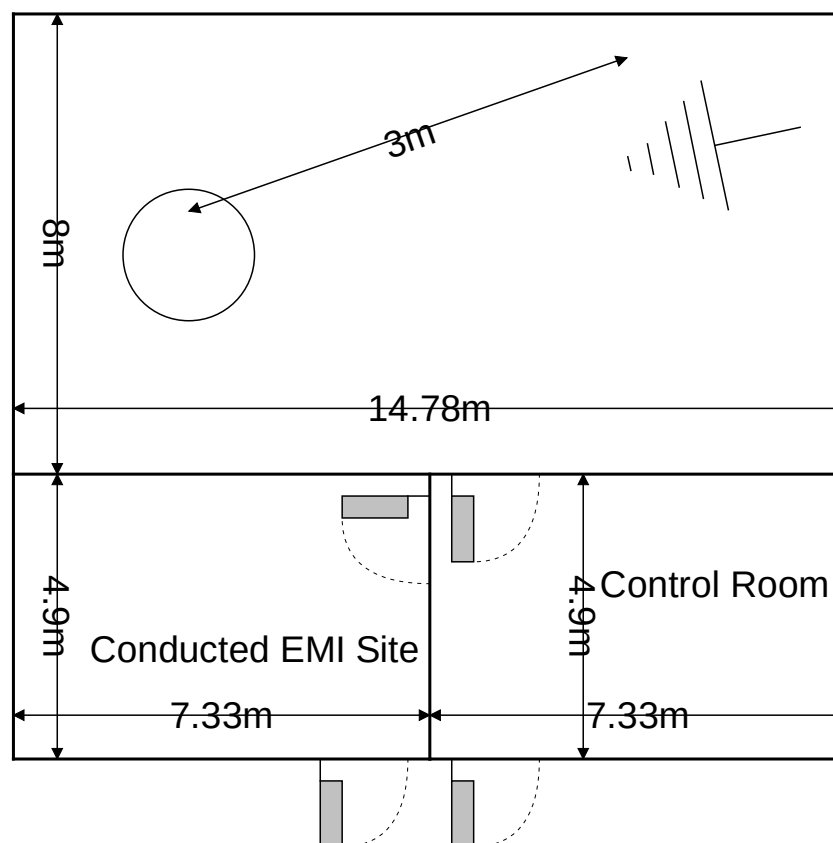


Figure 2.3.1-1: Semi-Anechoic Chamber Test Site

2.3.2 Conducted Emissions Test Site Description

The dimensions of the shielded conducted room are 7.3 x 4.9 x 3 m³. As per ANSI C63.4 2003 requirements, the data were taken using two LISNs; a Solar Model 8028-50 50 Ω /50 μ H and an EMCO Model 3825, which are installed as shown in Photograph 3. For 220 V, 50 Hz, a Polarad LISN (S/N 879341/048) is used in conjunction with a 1 kVA, 50 Hz/220 V EDGAR variable frequency generator, Model 1001B, to filter conducted noise from the generator.

A diagram of the room is shown below in figure 2.3.2-1:

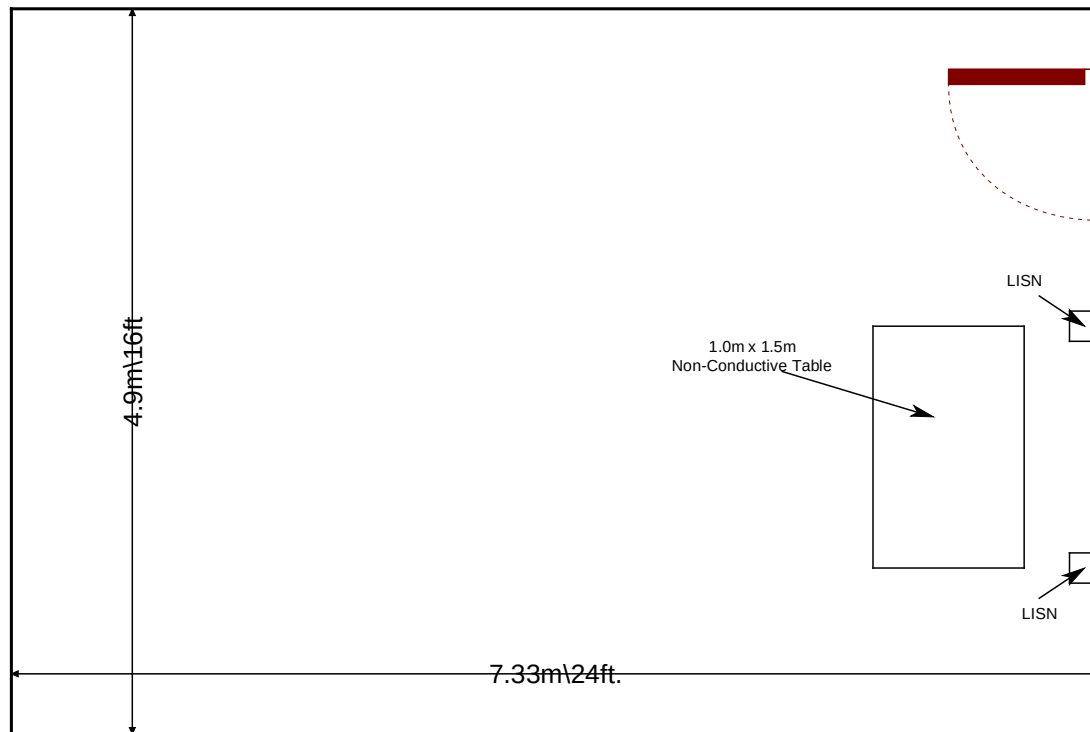


Figure 2.3.2-1: AC Mains Conducted EMI Site

3 APPLICABLE STANDARD REFERENCES

The following standards were used:

- ❖ ANSI C63.4-2003: Method of Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the 9KHz to 40GHz
- ❖ ANSI C63.10-2009: American National Standard for Testing Unlicensed Wireless Devices
- ❖ US Code of Federal Regulations (CFR): Title 47, Part 2, Subpart J: Equipment Authorization Procedures, 2014
- ❖ US Code of Federal Regulations (CFR): Title 47, Part 15, Subpart C: Radio Frequency Devices, Intentional Radiators, 2014
- ❖ FCC Public Notice DA 00-705 - Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems, March 30, 2000
- ❖ Industry Canada Radio Standards Specification: RSS-210 - Low-power License-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment, Issue 8 December 2010.
- ❖ Industry Canada Radio Standards Specification: RSS-GEN – General Requirements and Information for the Certification of Radiocommunication Equipment, Issue 3, December 2010.

4 LIST OF TEST EQUIPMENT

The calibration interval of test equipment is annually or the manufacturer's recommendations. Where the calibration interval deviates from the annual cycle based on the instrument manufacturer's recommendations, it shall be stated below.

Table 4-1: Test Equipment List

AssetID	Manufacturer	Model #	Equipment Type	Serial #	Last Calibration Date	Calibration Due Date
283	Rohde & Schwarz	FSP40	Spectrum Analyzers	1000033	9/18/2013	9/18/2015
341	Aeroflex/Weinschel	54A-20	Attenuators	4686	7/29/2013	7/29/2014
2082	Teledyne Storm Products	90-010-048	Cables	2082	5/8/2014	5/8/2015

5 SUPPORT EQUIPMENT

Table 5-1: EUT and Support Equipment

Item #	Type Device	Manufacturer	Model/Part #	Serial #
1	EUT	Motorola Solutions, Inc.	H97TGD9PW1AN, NUR1065A (IC)	655CQH1475
2	Adaptive Charger	Motorola Solutions, Inc.	Impres WPLN4114AR	072637776737088MKH02
3	Laptop	Dell	Latitude D531	CN-0XM006-48643-789-2125
4	Power Supply	Dell	PA-1650-05D2	CN-0F7970-71615-54P-C958

Table 5-2: Cable Description

Cable #	Cable Type	Length	Shield	Termination
A	GCAI	1.44 m	No	EUT to Laptop
B	Power	1.83 m	No	Charger to AC Mains
C	Power	1.83 m	No	Power Supply to Laptop
D	Power	0.9 m	No	Power Supply to AC Mains

6 EQUIPMENT UNDER TEST SETUP BLOCK DIAGRAM

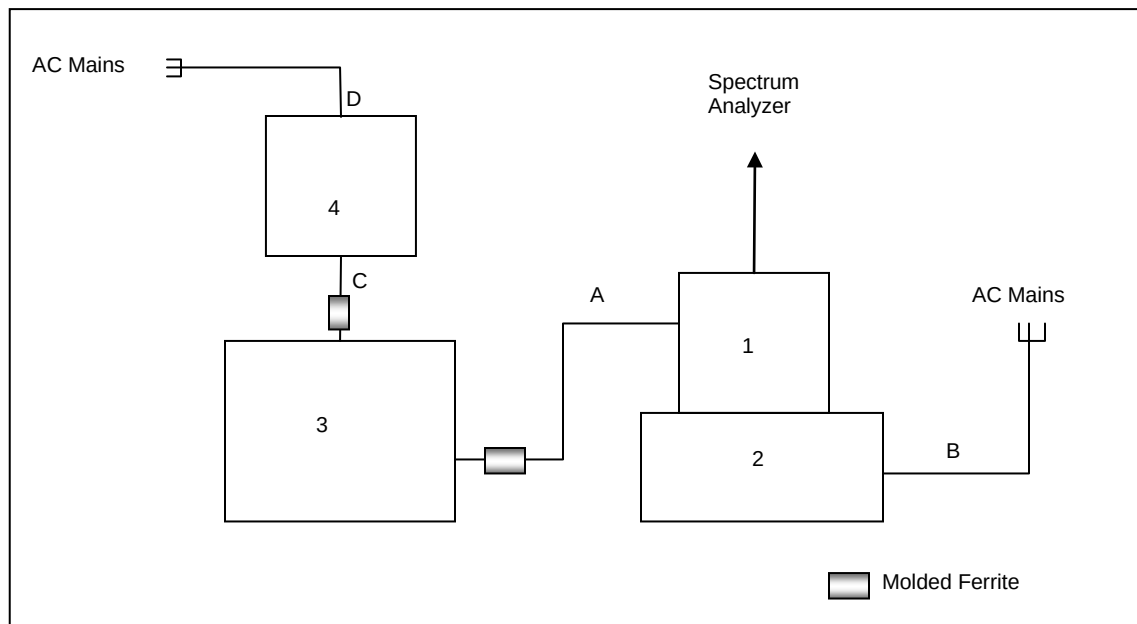


Figure 6-1: RF Conducted Emissions Setup

7 SUMMARY OF TESTS

Along with the tabular data shown below, plots were taken of all signals deemed important enough to document.

7.1 Peak Output Power - FCC Section 15.247(b)(1) IC: RSS-210 A8.4(2)

7.1.1 Measurement Procedure (Conducted Method)

The RF output port of the EUT was directly connected to the input of the spectrum analyzer through suitable attenuation.

7.1.2 Measurement Results

Results are shown below:

Table 7.1.2-1: RF Output Power (GFSK)

Frequency (MHz)	Power (dBm)
2402	7.59
2441	7.68
2480	8.20

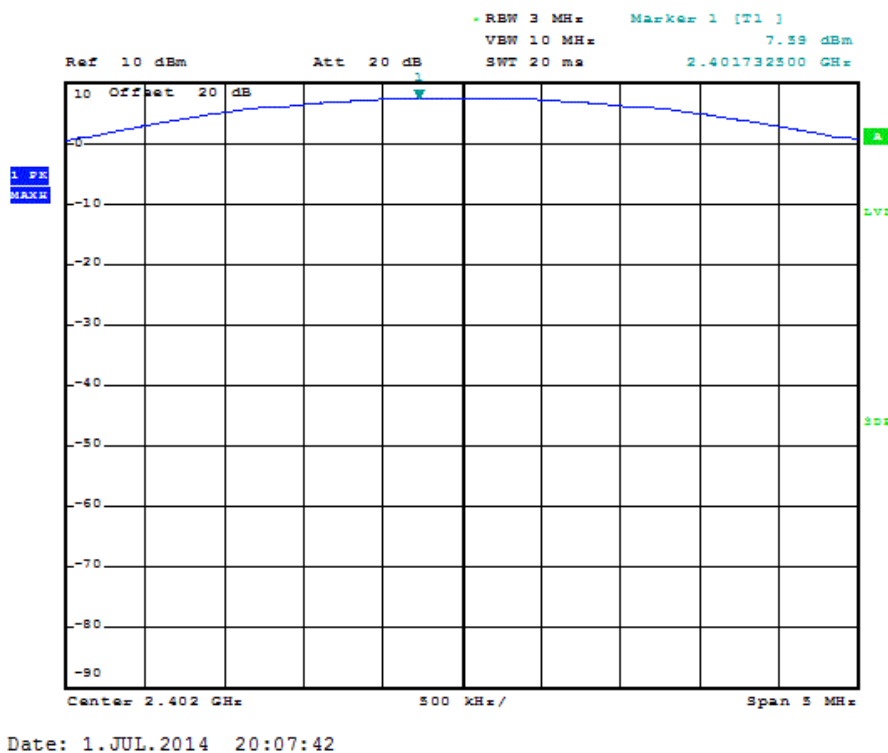
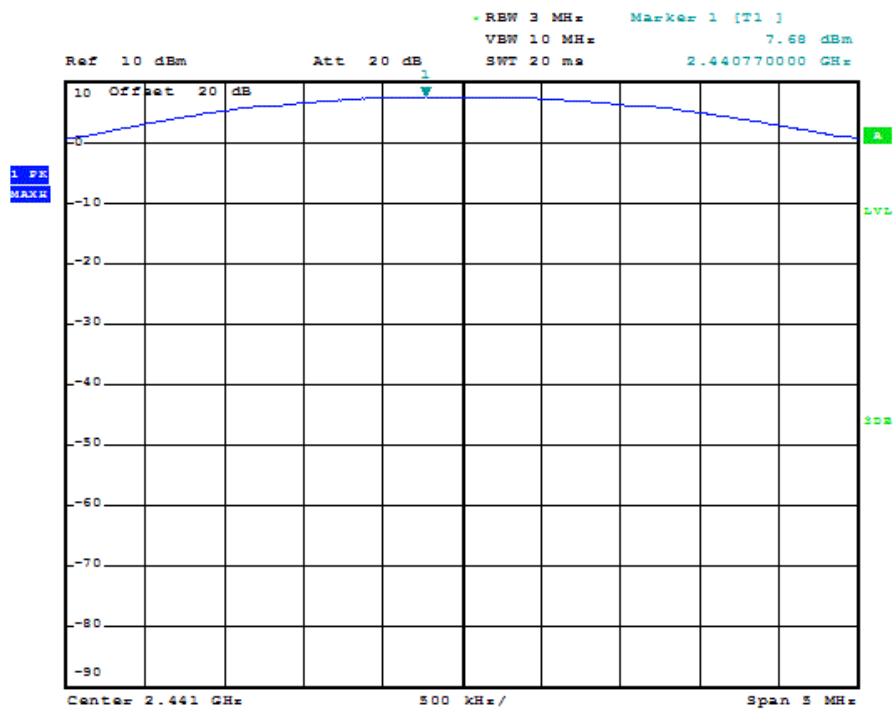
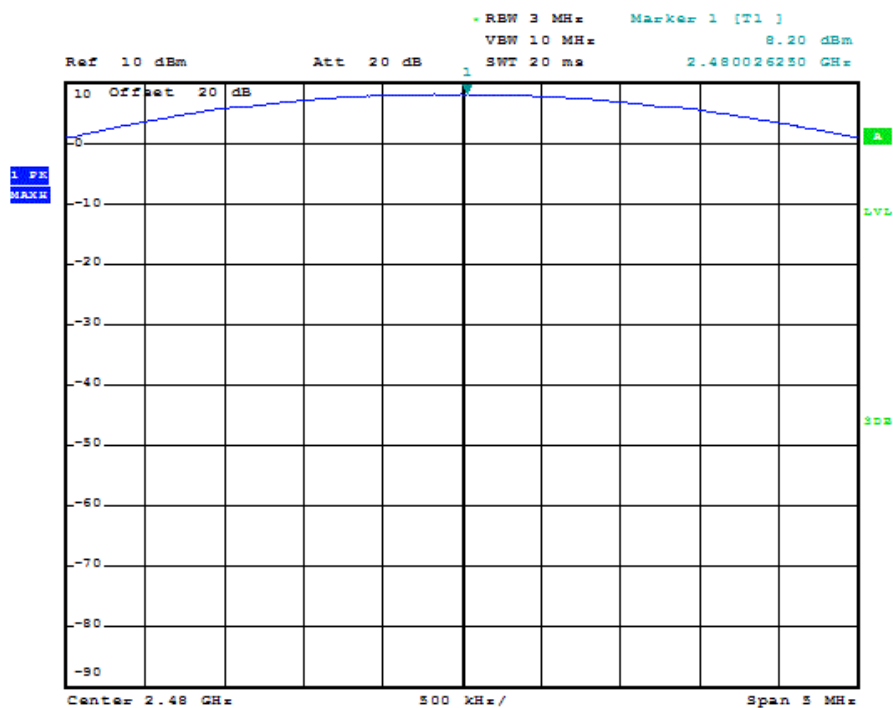


Figure 7.1.2-1: RF Output Power (GFSK) - Low Channel



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Figure 7.1.2-2: RF Output Power (GFSK) - Middle Channel

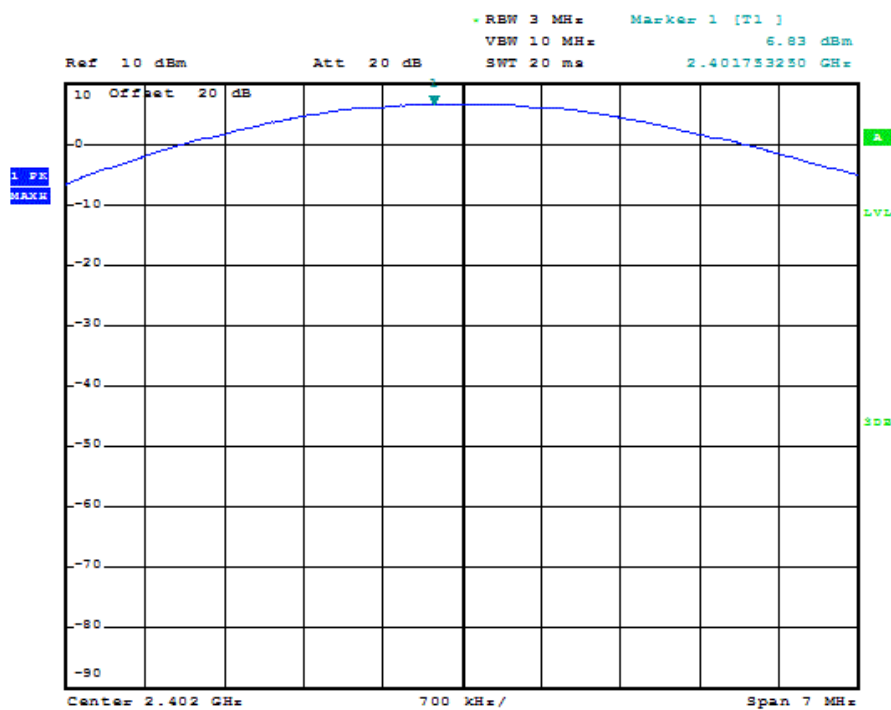


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Figure 7.1.2-3: RF Output Power (GFSK) - High Channel

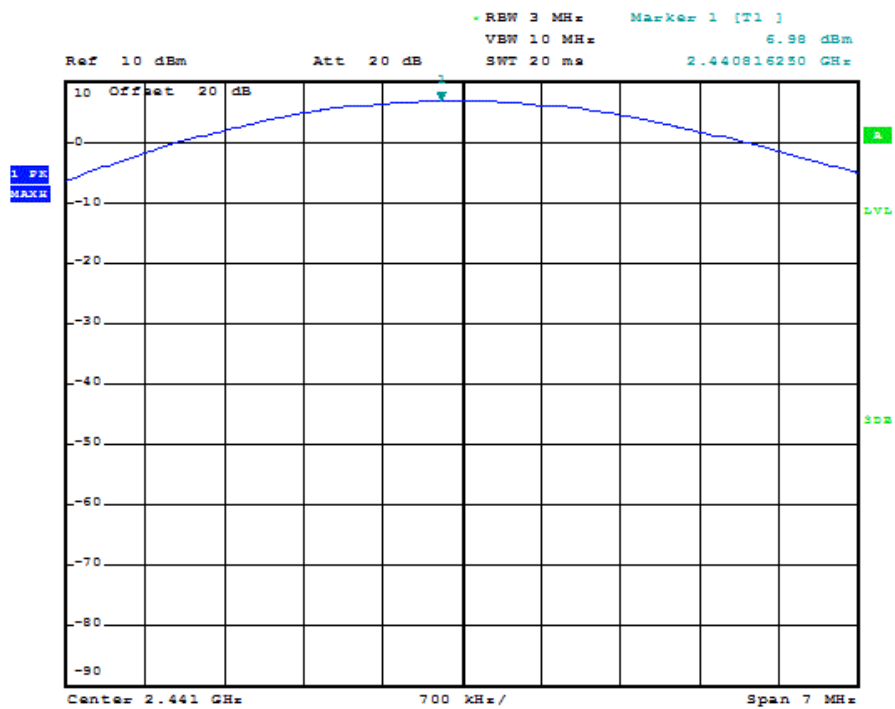
Table 7.1.2-2: RF Output Power ($\pi/4$ DQPSK)

Frequency (MHz)	Power (dBm)
2402	6.83
2441	6.98
2480	7.56

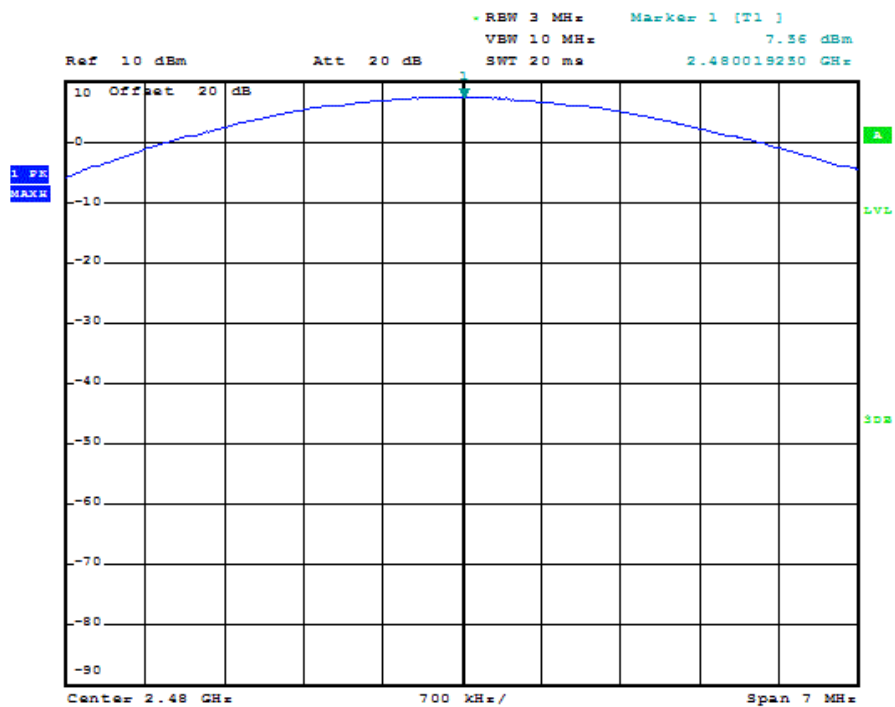


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Figure 7.1.2-4: RF Output Power ($\pi/4$ DQPSK) - Low Channel



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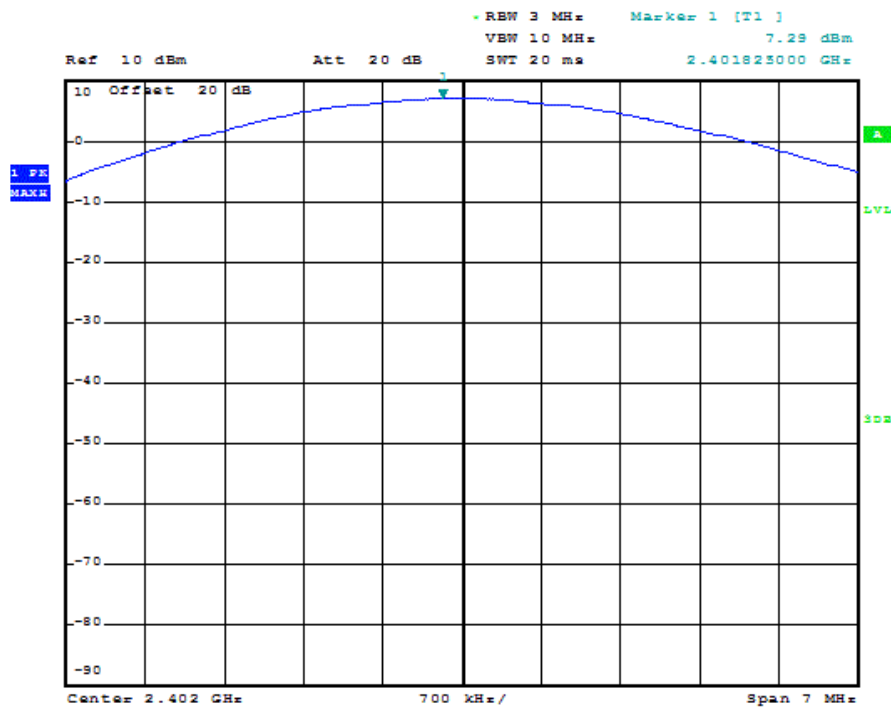
Figure 7.1.2-5: RF Output Power ($\pi/4$ DQPSK) - Middle Channel

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Figure 7.1.2-6: RF Output Power ($\pi/4$ DQPSK) - High Channel

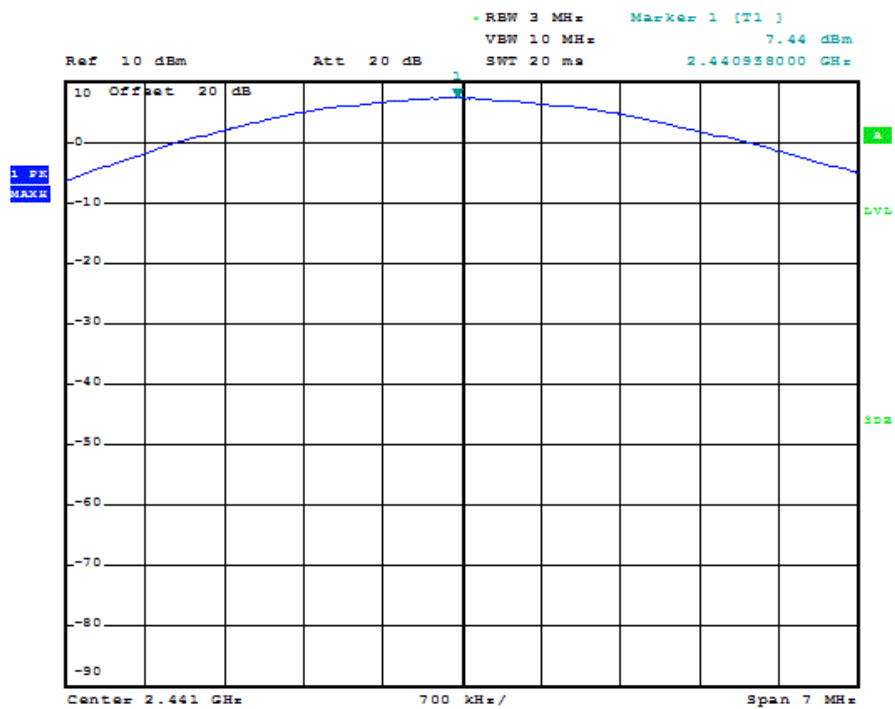
Table 7.1.2-3 RF Output Power (8DPSK)

Frequency (MHz)	Power (dBm)
2402	7.29
2441	7.44
2480	7.99



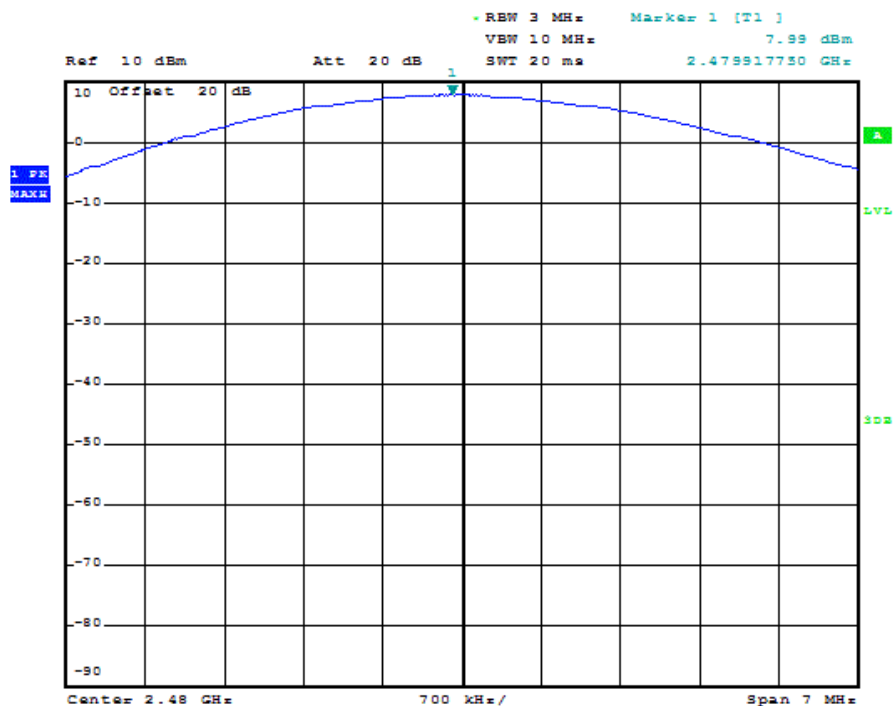
Date: 1.JUL.2014 21:15:45

Figure 7.1.2-7: RF Output Power (8DPSK) - Low Channel



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Figure 7.1.2-8: RF Output Power (8DPSK) - Middle Channel



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Figure 7.1.2-9: RF Output Power (8DPSK) - High Channel

7.2 Channel Usage Requirements

7.2.1 Carrier Frequency Separation – FCC: Section 15.247(a)(1) IC: RSS-210 A8.1(b)

7.2.1.1 Measurement Procedure

The RF output port of the EUT was directly connected to the input of the spectrum analyzer through suitable attenuation. The span of the spectrum analyzer was set wide enough to capture two adjacent peaks and the RBW and VBW were set to $\geq 1\%$ of the span.

7.2.1.2 Measurement Results

Results are shown below:

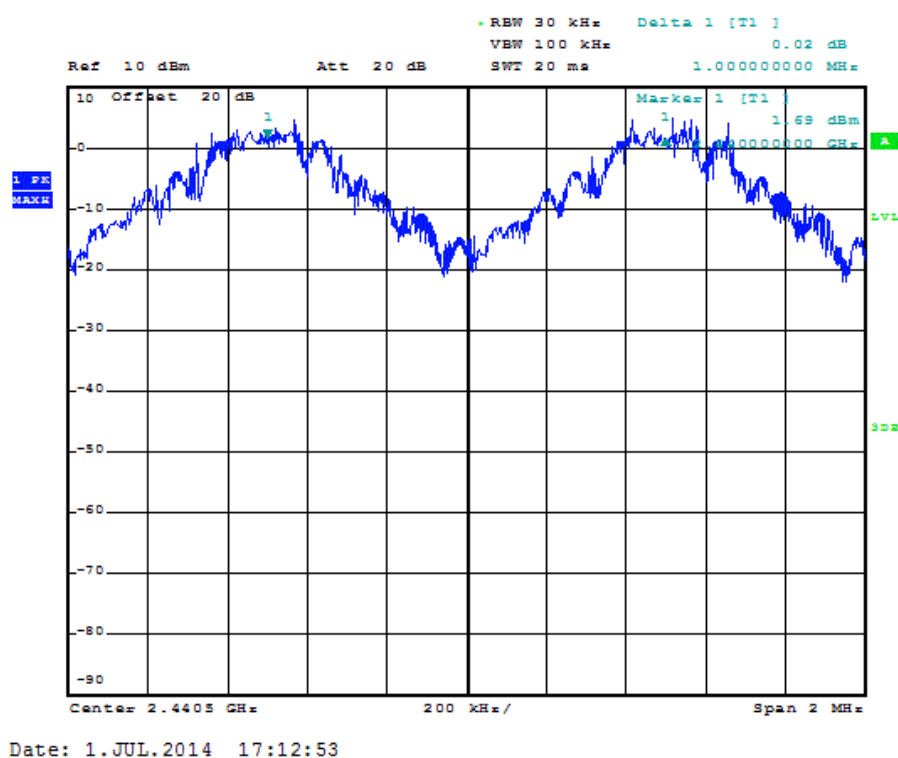


Figure 7.2.1.2-1: Carrier Frequency Separation

7.2.2 Number of Hopping Channels – FCC: Section 15.247(a)(1)(iii) IC: RSS-210 A8.1(d)

7.2.2.1 Measurement Procedure

The RF output port of the EUT was directly connected to the input of the spectrum analyzer. The span of the spectrum analyzer was set wide enough to capture the number of hopping channels. The peak detector max hold function was enabled for the measurements.

7.2.2.2 Measurement Results

Results are shown below:

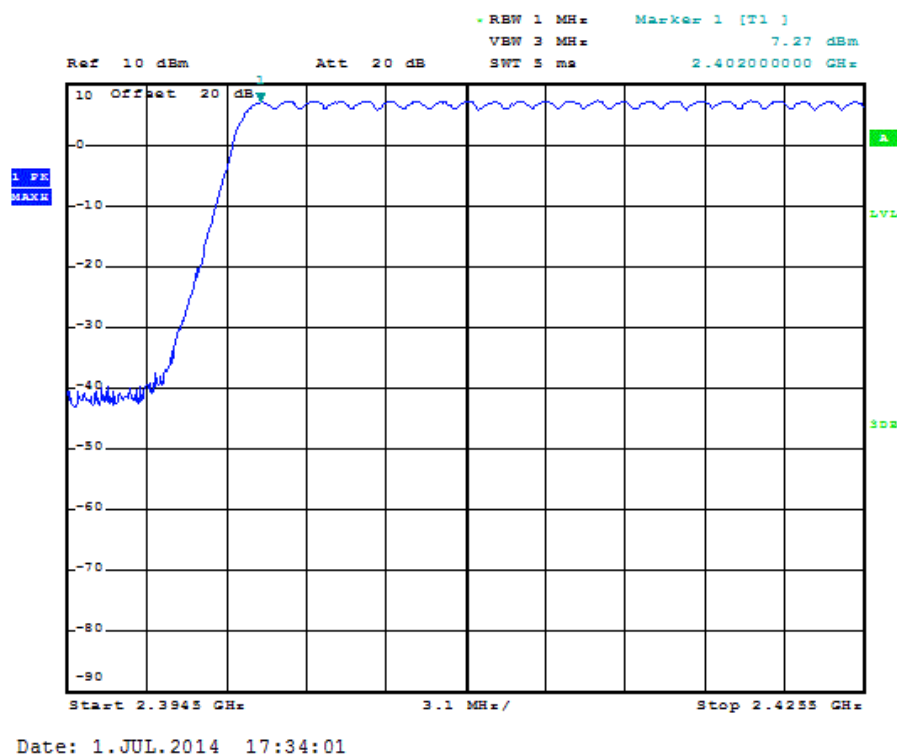
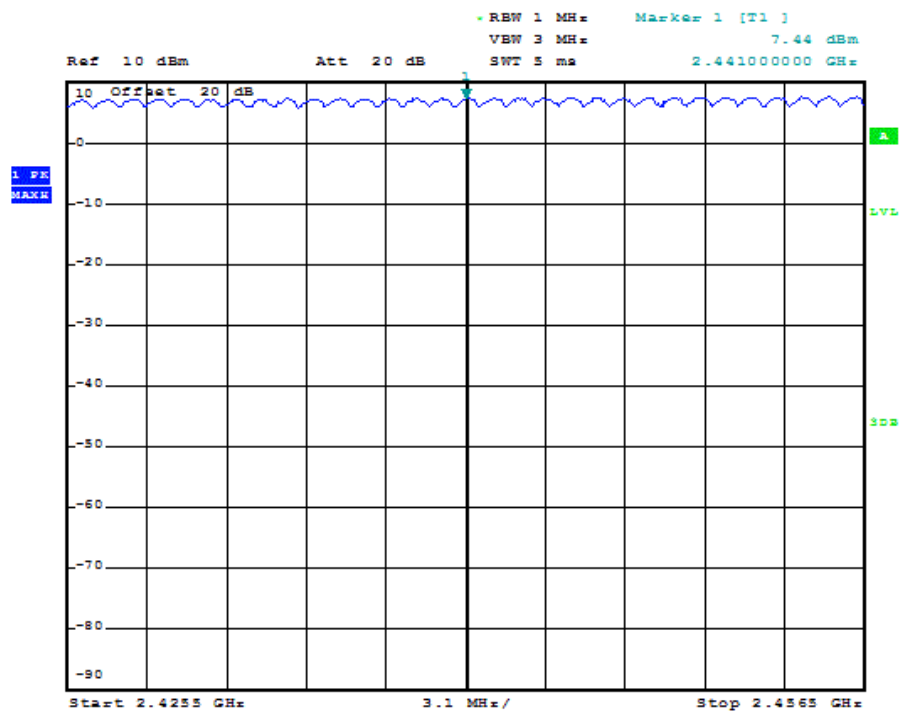
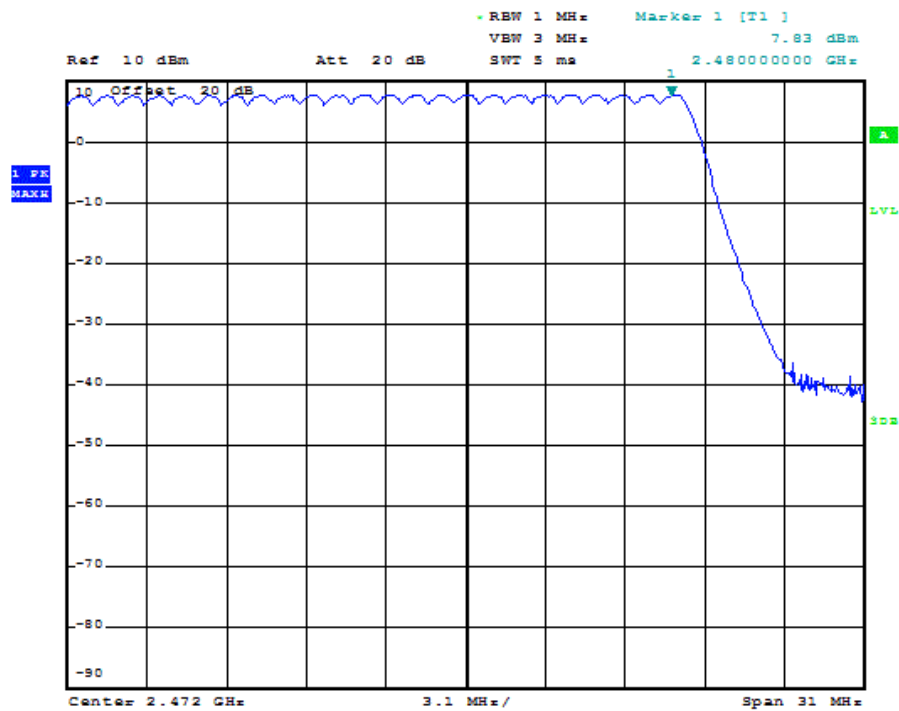


Figure 7.2.2.2-1: Number of Hopping Channels (1 – 24)



Date: 1.JUL.2014 17:35:16

Figure 7.2.2.2-2: Number of Hopping Channels (25 – 55)



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Figure 7.2.2.2-3: Number of Hopping Channels (56 – 79)

7.2.3 Channel Dwell Time – FCC: Section 15.247(a)(1)(iii) IC: RSS-210 A8.1(d)

7.2.3.1 Measurement Procedure

The RF output port of the EUT was directly connected to the input of the spectrum analyzer. The span of the spectrum analyzer was set 0 Hz centered on a hopping channel. The RBW was set to 1 MHz and the sweep time adjusted to capture the entire dwell time per channel with peak detector max hold function.

7.2.3.2 Measurement Results

Results are shown below:

Table 7.2.3.2-1 Dwell Time on a 31.6 Second Cycle

Packet Format	Number of Hops Per Sec. (NHPS)	Number of Hops per Channel Per Sec. (NHPCPS)	Number of hops on a 31.6 s Cycle (NHPC)	Measured Dwell Times (ms)	Dwell Times on a 31.6 s Cycle (ms)	Limit (ms)	Status
DH1	800	10.13	320	0.43	137.60	400	PASS
DH3	400	5.06	160	1.69875	271.80	400	PASS
DH5	266.67	3.38	106.67	3.02875	323.08	400	PASS

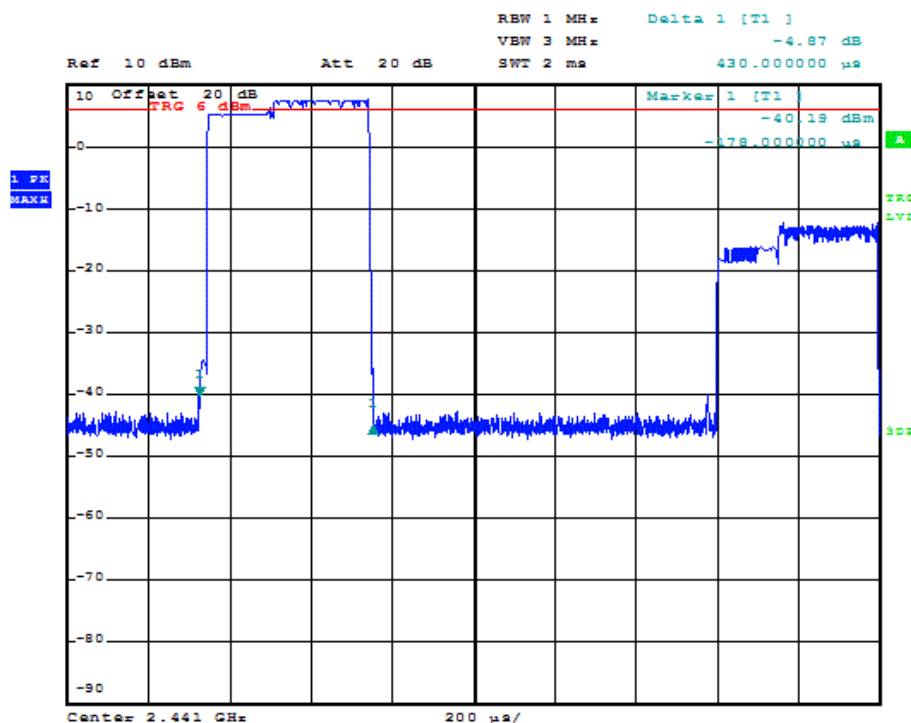
*Notes:

NHPS = (1600 /sec)/ (NT+NR) (where NT and NR are the number of transmit and receive packets, respectively)

NHPCPS = NHPS/79

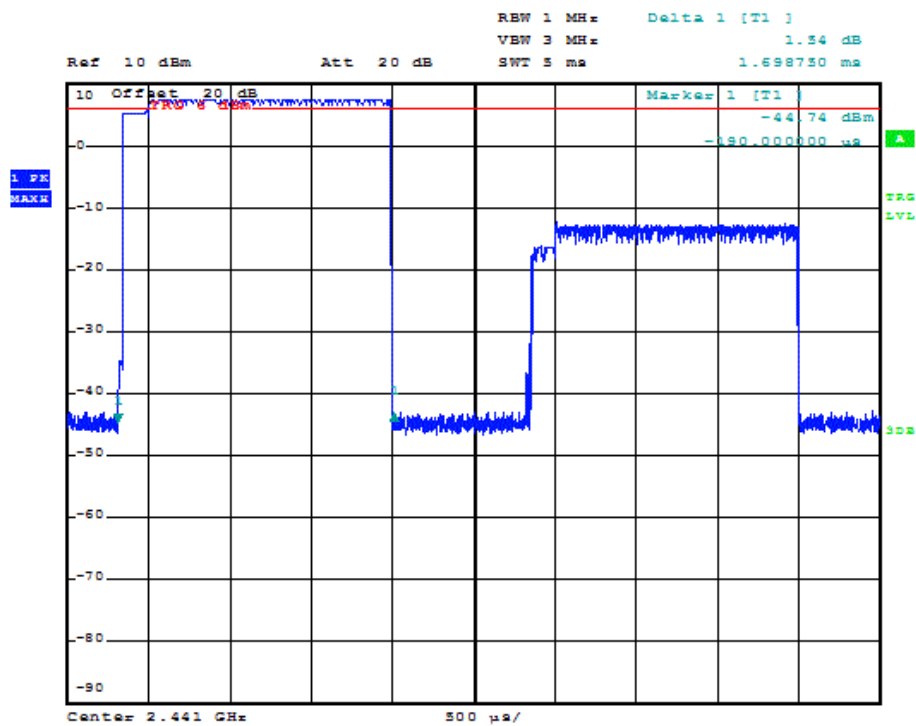
NHPC = NHPCPS * 31.6s

Dwell Time per Cycle = NHPC* Measured Dwell Time



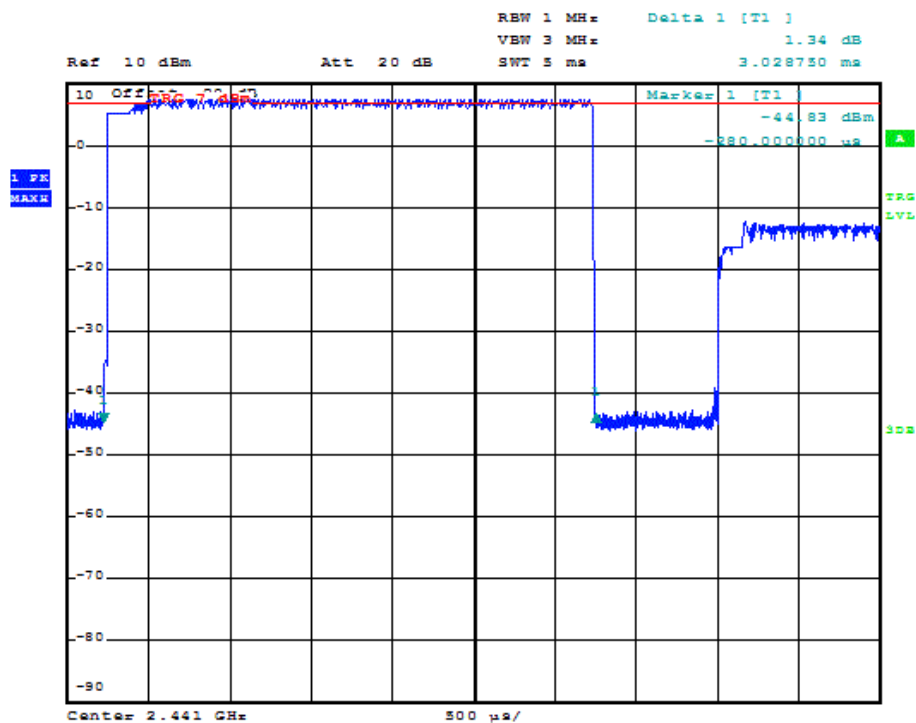
Date: 1.JUL.2014 19:01:32

Figure 7.2.3.2-1: Channel Dwell Time – DH1



Date: 1.JUL.2014 18:58:40

Figure 7.2.3.2-2: Channel Dwell Time – DH3



Date: 1.JUL.2014 18:43:02

Figure 7.2.3.2-3: Channel Dwell Time – DH5

7.2.4 20dB / 99% Bandwidth - FCC: Section 15.247(a)(1)(i) IC: RSS-210 A8.1(a)

7.2.4.1 Measurement Procedure

The RF output port of the EUT was directly connected to the input of the spectrum analyzer. The spectrum analyzer span was set to 2 to 3 times the estimated bandwidth of the emission. The RBW was to $\geq 1\%$ of the estimated emission bandwidth. The trace was set to max hold with a peak detector active. The Delta function of the analyzer was utilized to determine the 20 dB bandwidth of the emission.

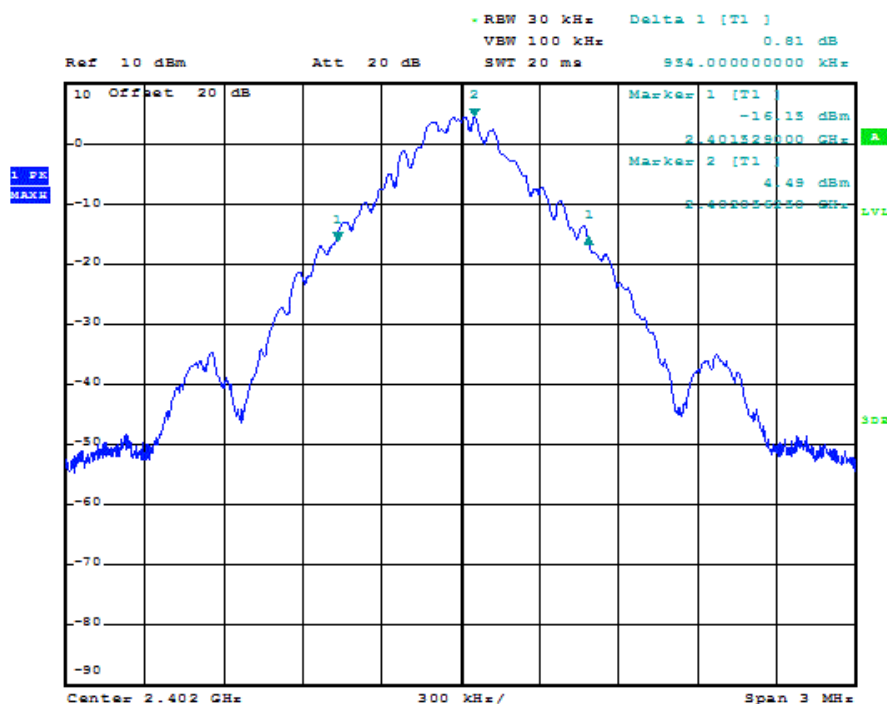
The 99% occupied bandwidth was measured with the spectrum analyzer span set to fully display the emission, including the emissions skirts. The RBW was to 1% of the span. . The occupied 99% bandwidth was measured by using a delta marker at the lower and upper frequencies leading to 0.5% of the total power.

7.2.4.2 Measurement Results

Results are shown below:

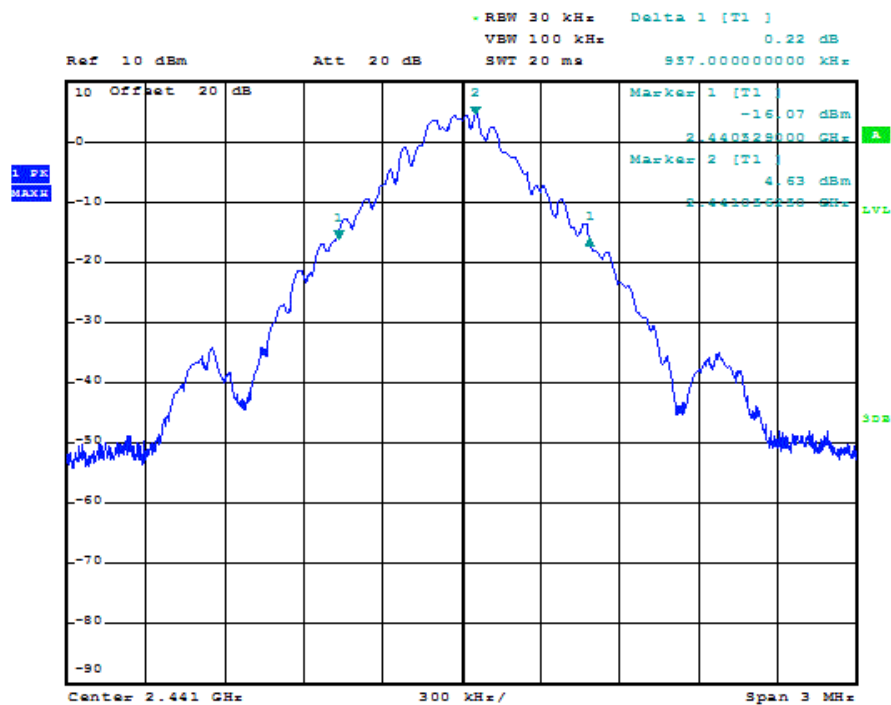
Table 7.2.4.2-1: 20dB / 99% Bandwidth

Frequency [MHz]	20dB Bandwidth [kHz]	99% Bandwidth [kHz]
2402	954.00	875.25
2441	957.00	878.25
2480	957.75	867.00



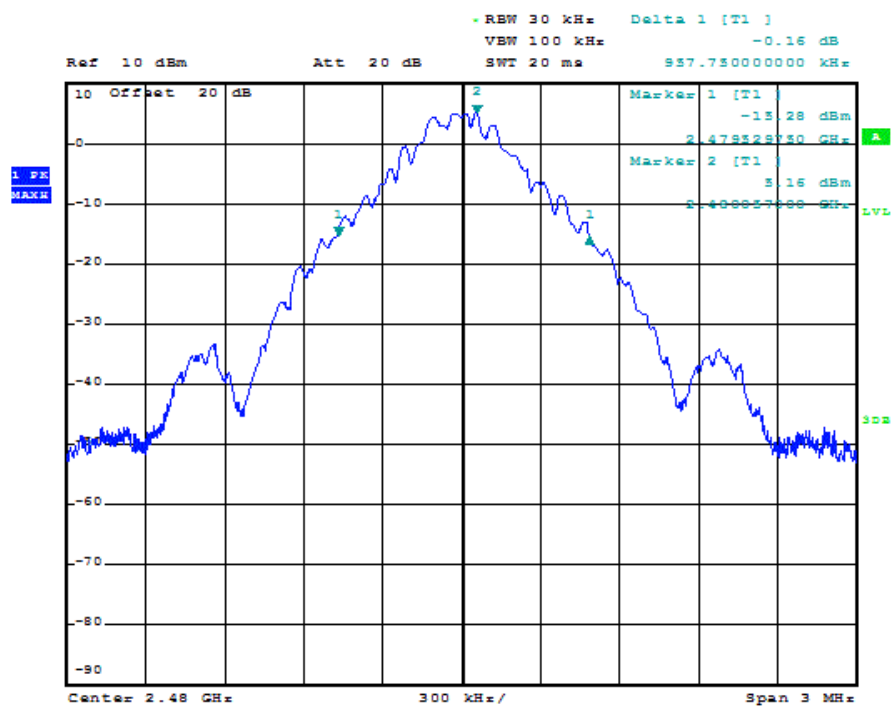
Date: 1.JUL.2014 19:20:03

Figure 7.2.4.2-1: 20dB BW Low Channel (GFSK)



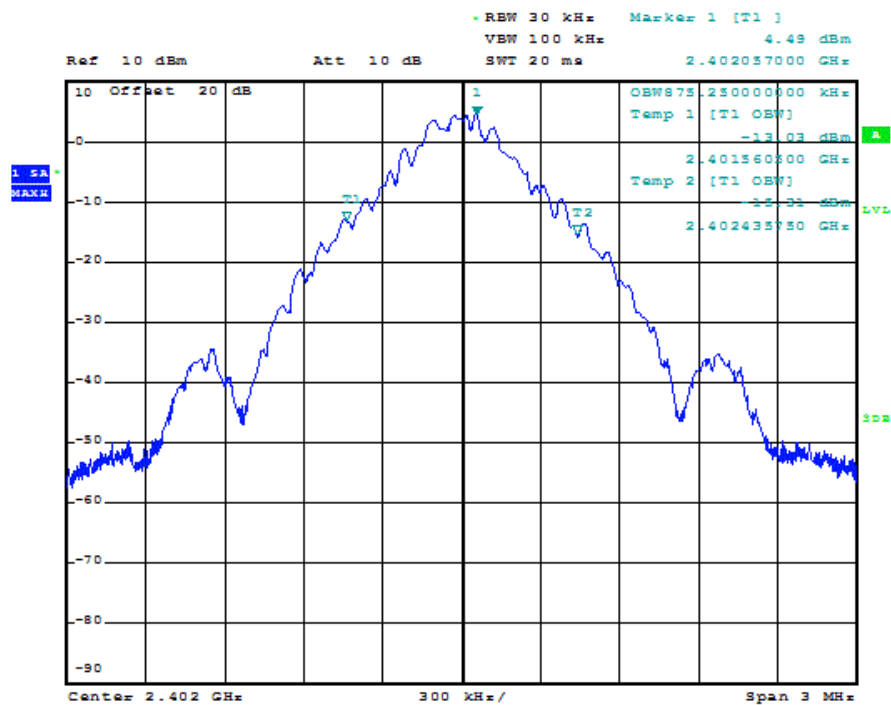
Date: 1.JUL.2014 19:26:05

Figure 7.2.4.2-2: 20dB BW Middle Channel (GFSK)



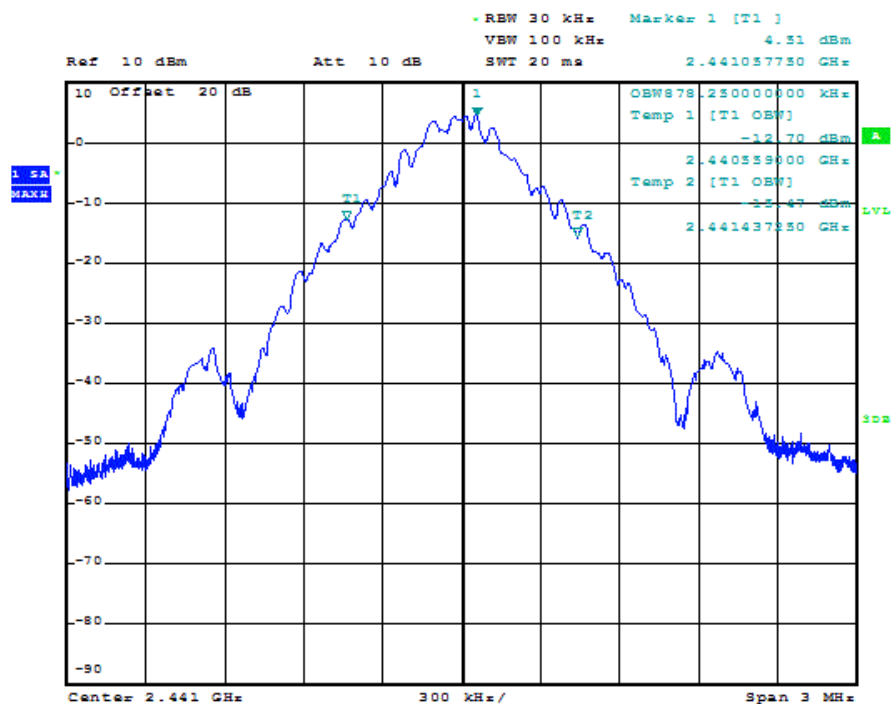
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Figure 7.2.4.2-3: 20dB BW High Channel (GFSK)



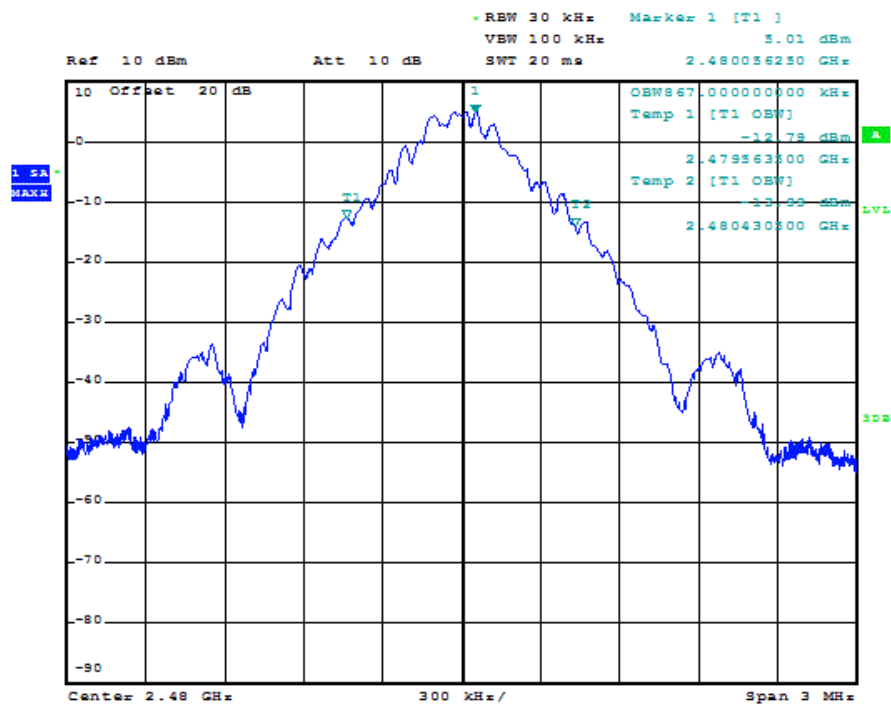
Date: 1.JUL.2014 20:15:07

Figure 7.2.4.2-4: 99% OBW Low Channel (GFSK)



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Figure 7.2.4.2-5: 99% OBW Middle Channel (GFSK)

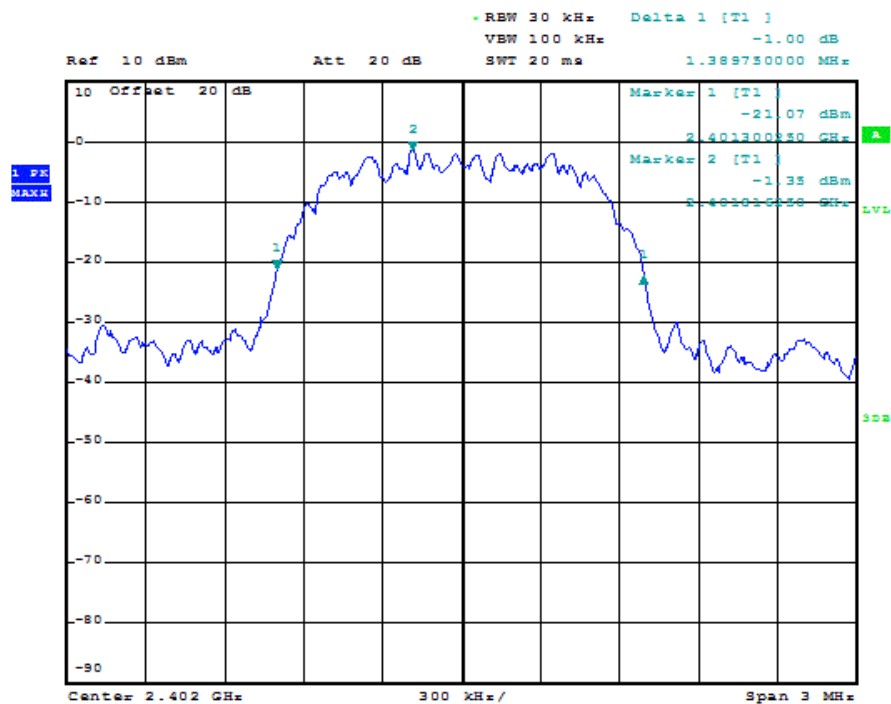


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Figure 7.2.4.2-6: 99% OBW High Channel (GFSK)

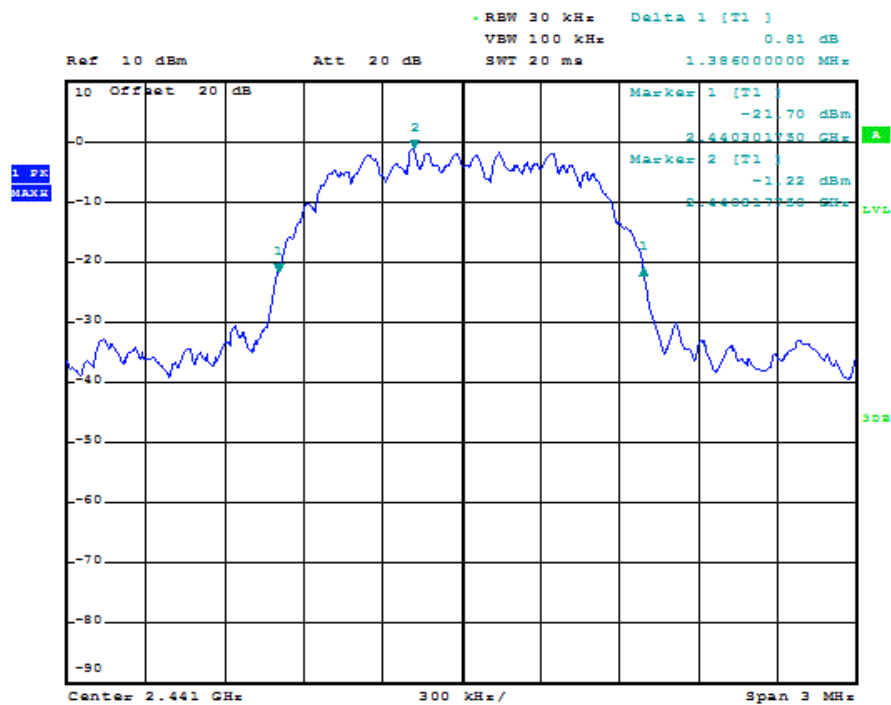
Table 7.2.4.2-2: 20dB / 99% Bandwidth ($\pi/4$ DQPSK)

Frequency [MHz]	20dB Bandwidth [kHz]	99% Bandwidth [kHz]
2402	1389.75	1235.25
2441	1386.00	1233.00
2480	1392.00	1247.25

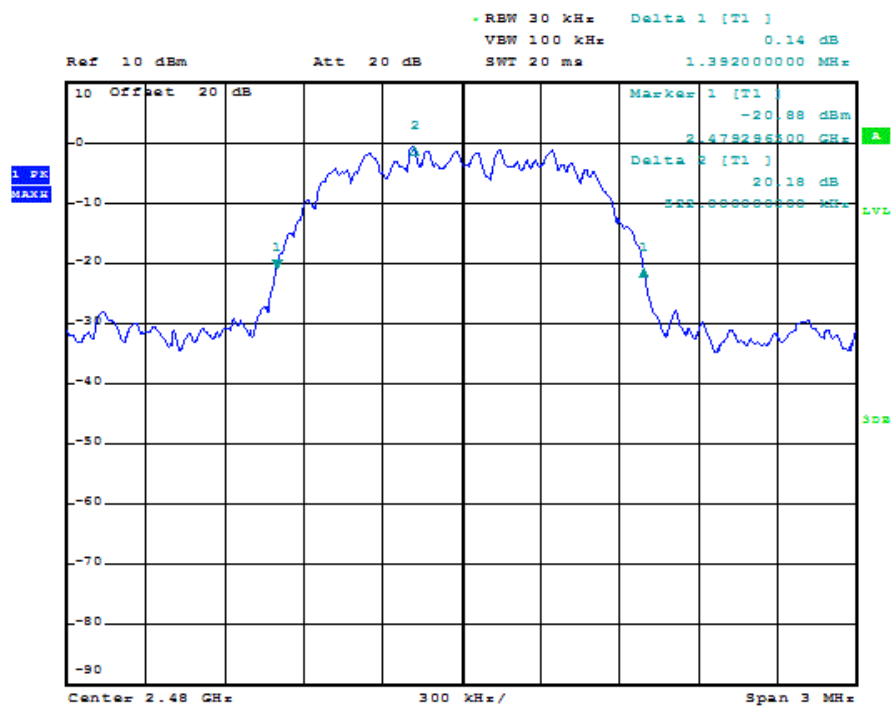


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Figure 7.2.4.2-7: 20dB BW Low Channel ($\pi/4$ DQPSK)

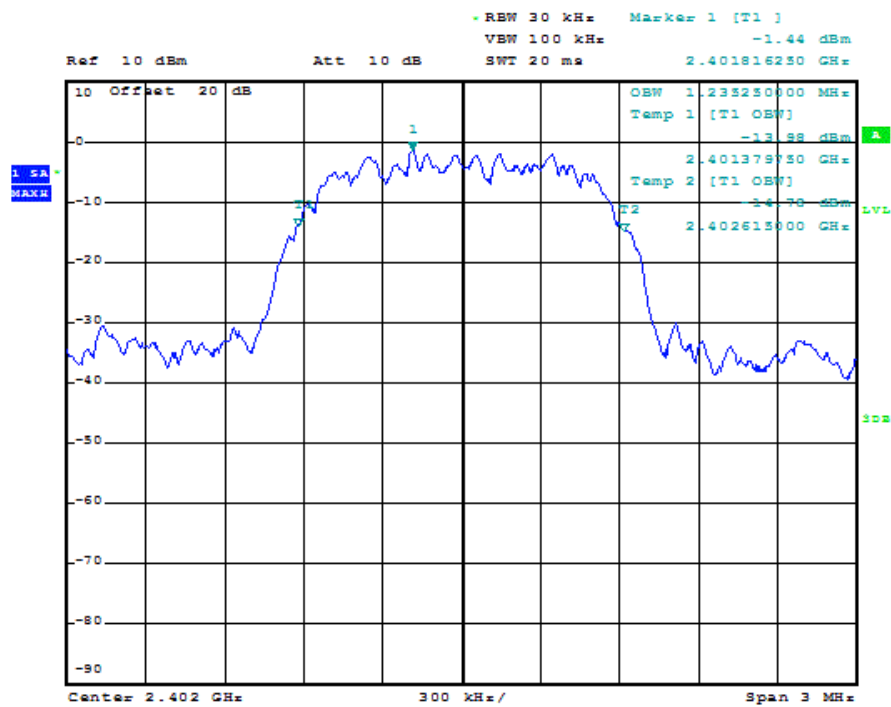


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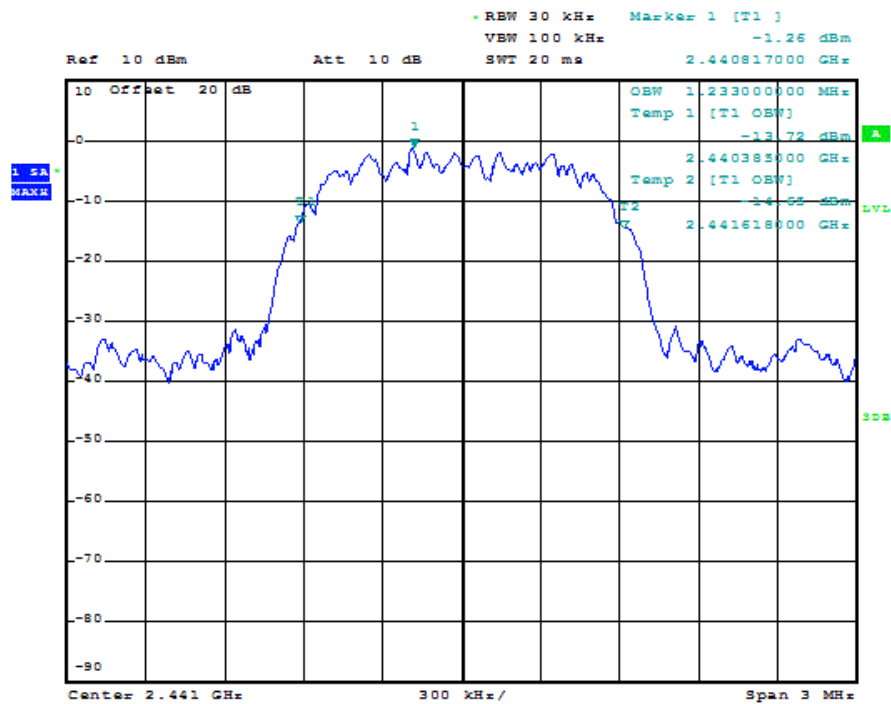
Figure 7.2.4.2-8: 20dB BW Middle Channel ($\pi/4$ DQPSK)

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Figure 7.2.4.2-9: 20dB BW High Channel ($\pi/4$ DQPSK)

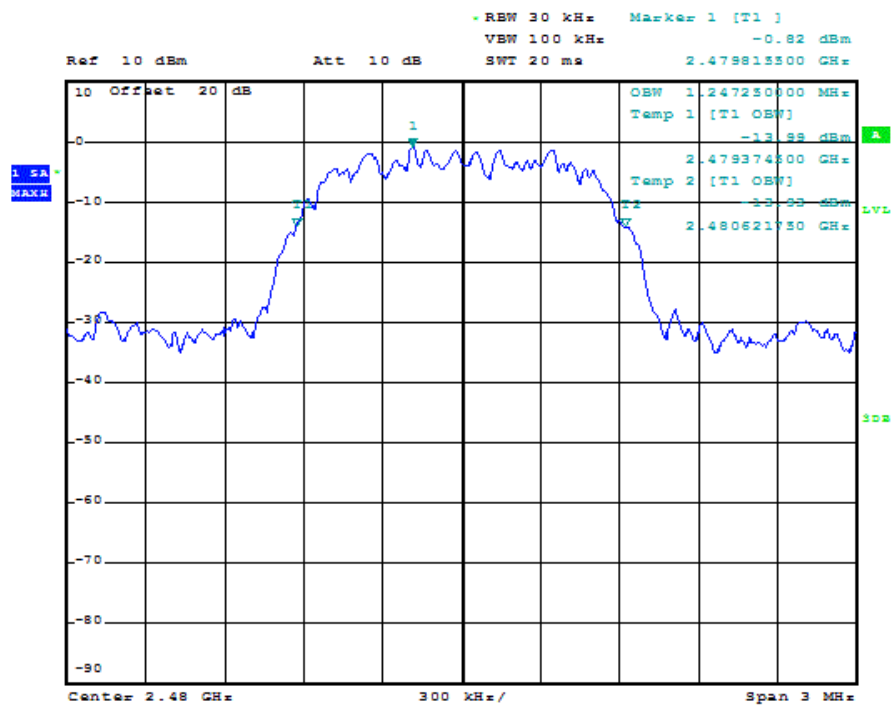


Date: 1.JUL.2014 20:37:29

Figure 7.2.4.2-10: 99% OBW Low Channel ($\pi/4$ DQPSK)

Date: 1.JUL.2014 20:39:38

Figure 7.2.4.2-11: 99% OBW Middle Channel ($\pi/4$ DQPSK)

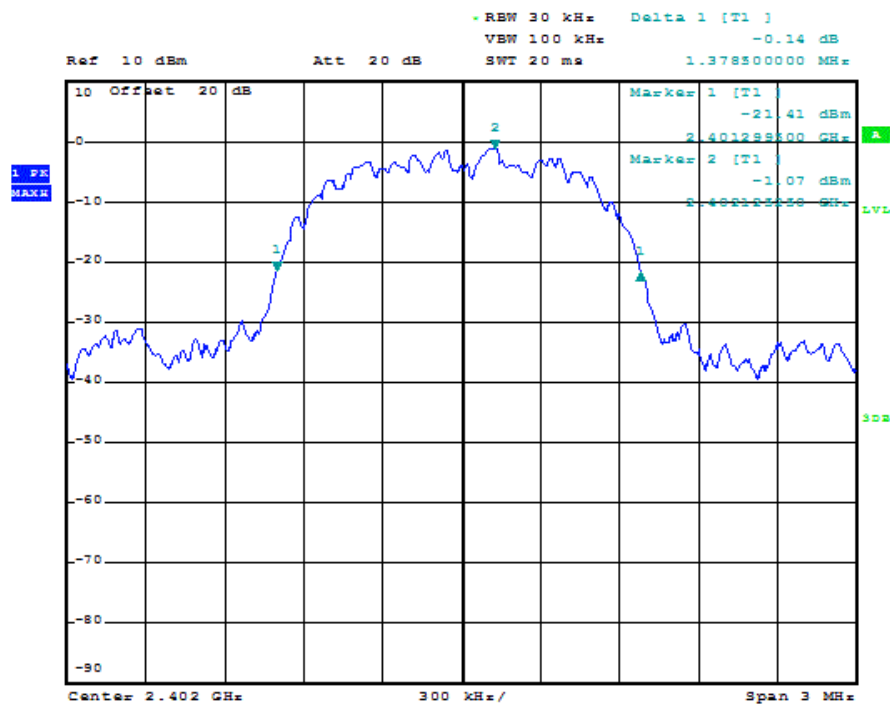


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Figure 7.2.4.2-12: 99% OBW High Channel ($\pi/4$ DQPSK)

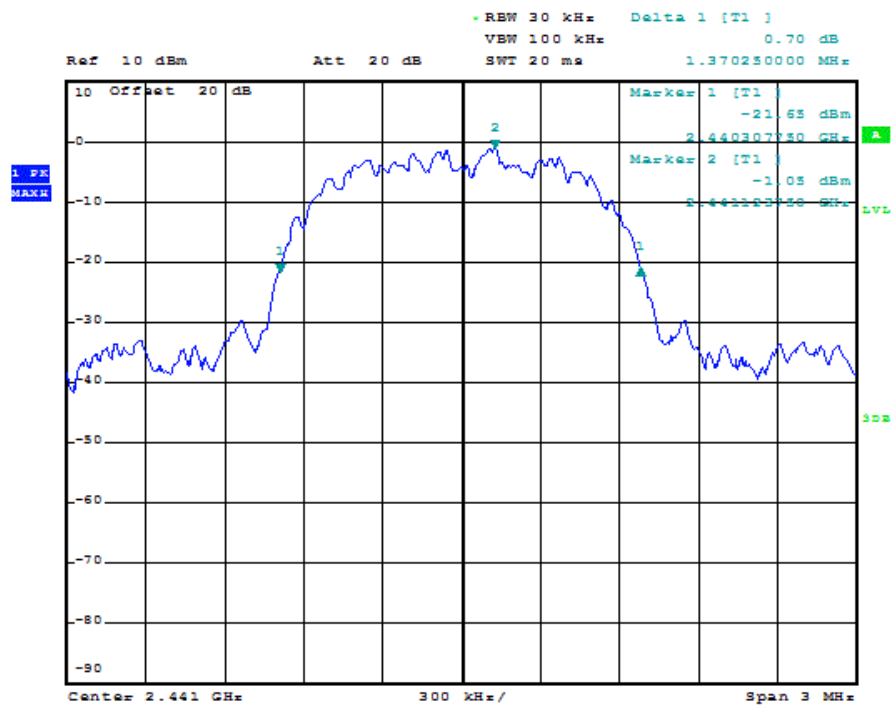
Table 7.2.4.2-3: 20dB / 99% Bandwidth (8DPSK)

Frequency [MHz]	20dB Bandwidth [kHz]	99% Bandwidth [kHz]
2402	1378.50	1237.50
2441	1370.25	1233.75
2480	1386.00	1247.25



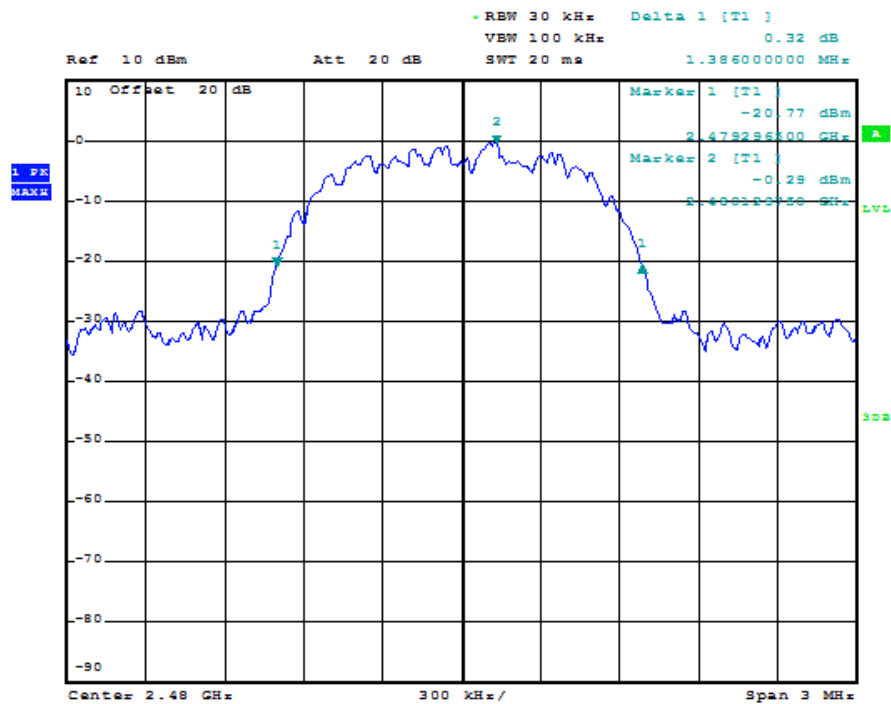
Date: 1.JUL.2014 21:13:52

Figure 7.2.4.2-13: 20dB BW Low Channel (8DPSK)



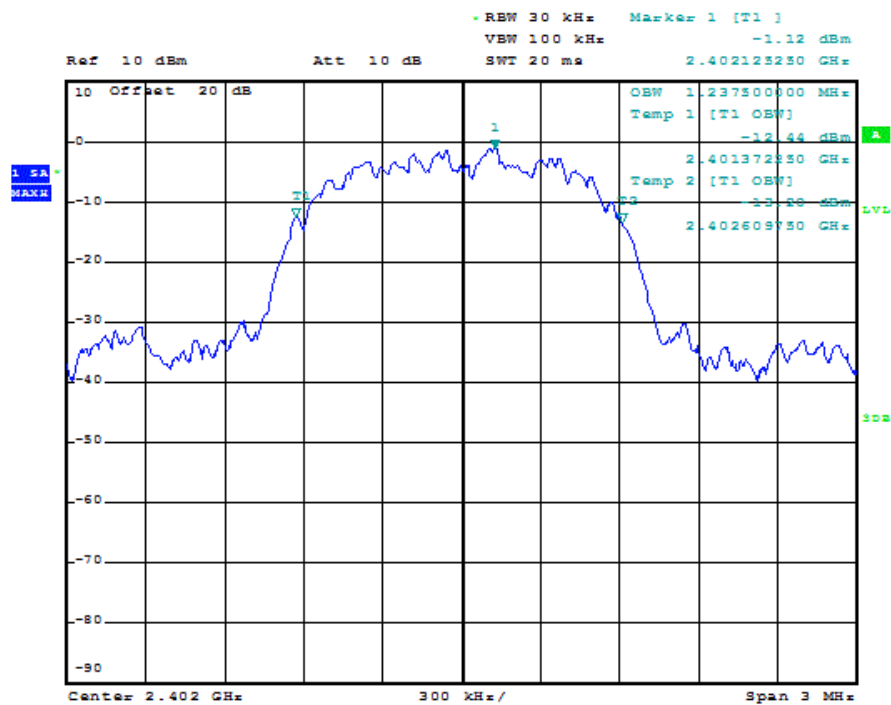
Date: 1.JUL.2014 20:57:23

Figure 7.2.4.2-14: 20dB BW Middle Channel (8DPSK)



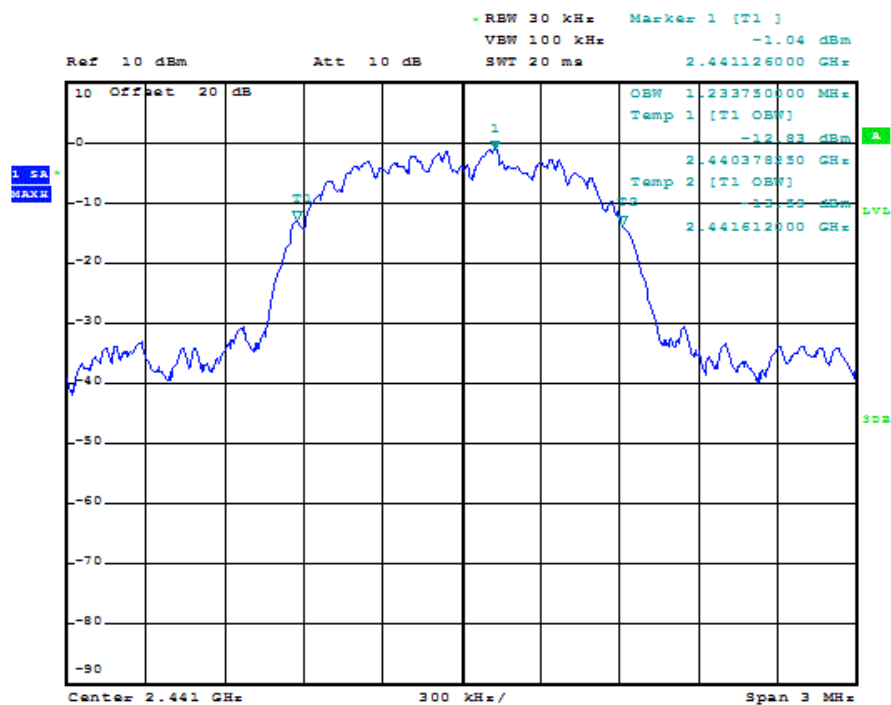
Date: 1.JUL.2014 20:52:24

Figure 7.2.4.2-15: 20dB BW High Channel (8DPSK)



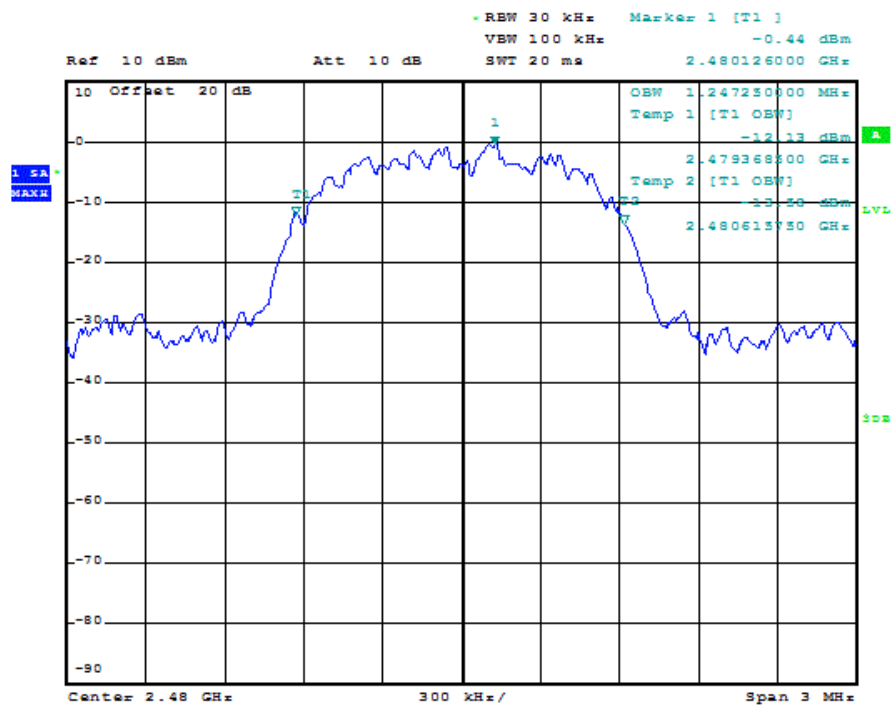
Date: 1.JUL.2014 20:33:34

Figure 7.2.4.2-16: 99% OBW Low Channel (8DPSK)



Date: 1.JUL.2014 20:30:44

Figure 7.2.4.2-17: 99% OBW Middle Channel (8DPSK)



Date: 1.JUL.2014 20:27:58

Figure 7.2.4.2-18: 99% OBW High Channel (8DPSK)

7.3 Band-Edge Compliance and Spurious Emissions-FCC 15.247(d) IC: RSS-210 A8.5

7.3.1 Band-Edge Compliance of RF Conducted Emissions

7.3.1.1 Measurement Procedure

The RF output port of the EUT was connected to the input of the spectrum analyzer through suitable attenuation. The EUT was investigated at the lowest and highest channel available to determine band-edge compliance. For each measurement the spectrum analyzer's RBW was set to 100 kHz, which is $\geq 1\%$ of the span, and the VBW was set to ≥ 300 kHz.

7.3.1.2 Measurement Results

Table 7.3.1.2-1: Conducted Band Edge - GFSK

	Measured Delta (dB)		Requirements	Band Edge	
	Single TX	Hopping Mode		Single TX	Hopping Mode
Lower Band-Edge	55.99	56.98	> 20 dB	Passed	Passed
Upper Band-Edge	55.90	56.40	>20dB	Passed	Passed

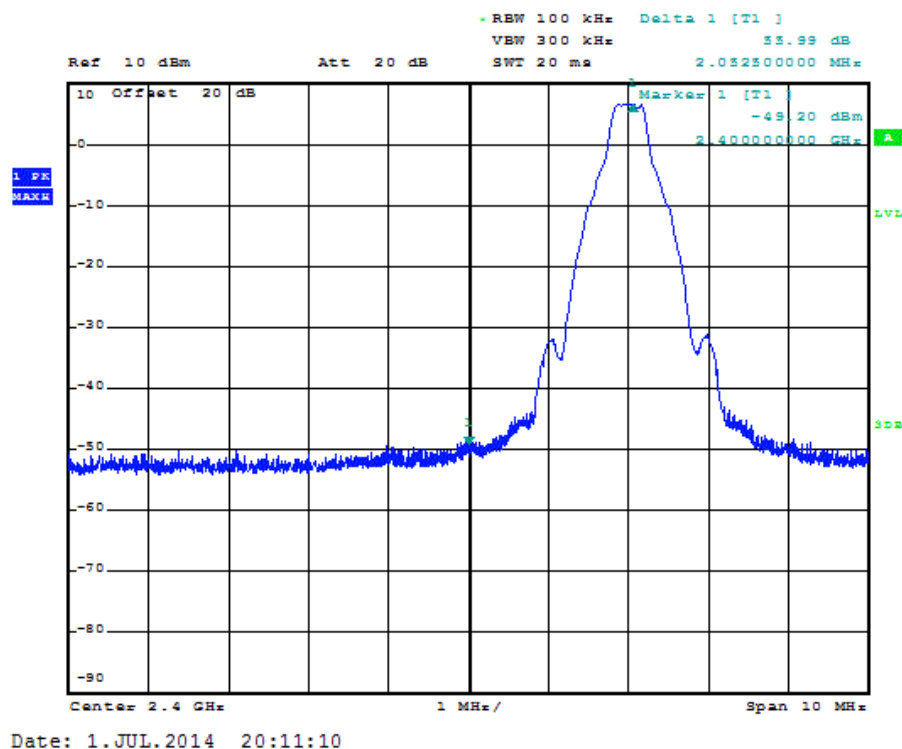


Figure 7.3.1.2-1: Lower Band-edge (GFSK)

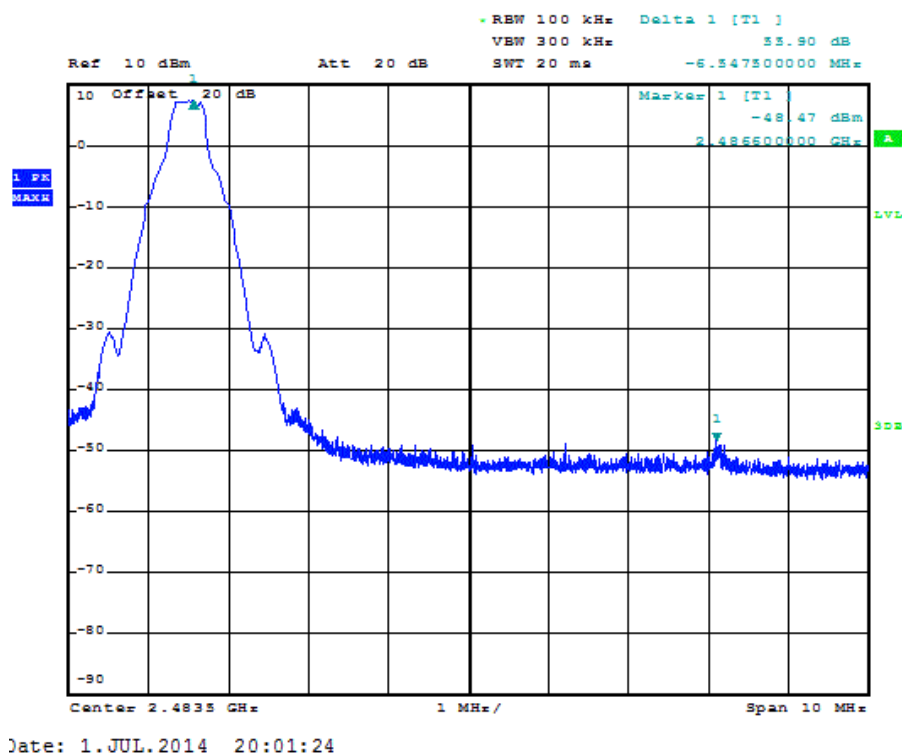


Figure 7.3.1.2-2: Upper Band-edge (GFSK)

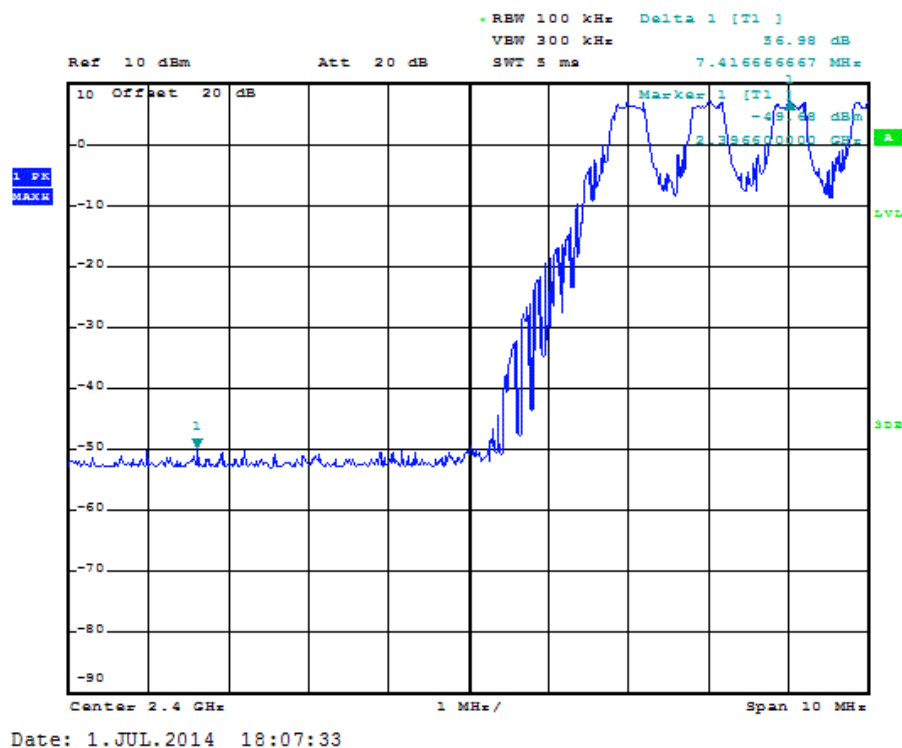
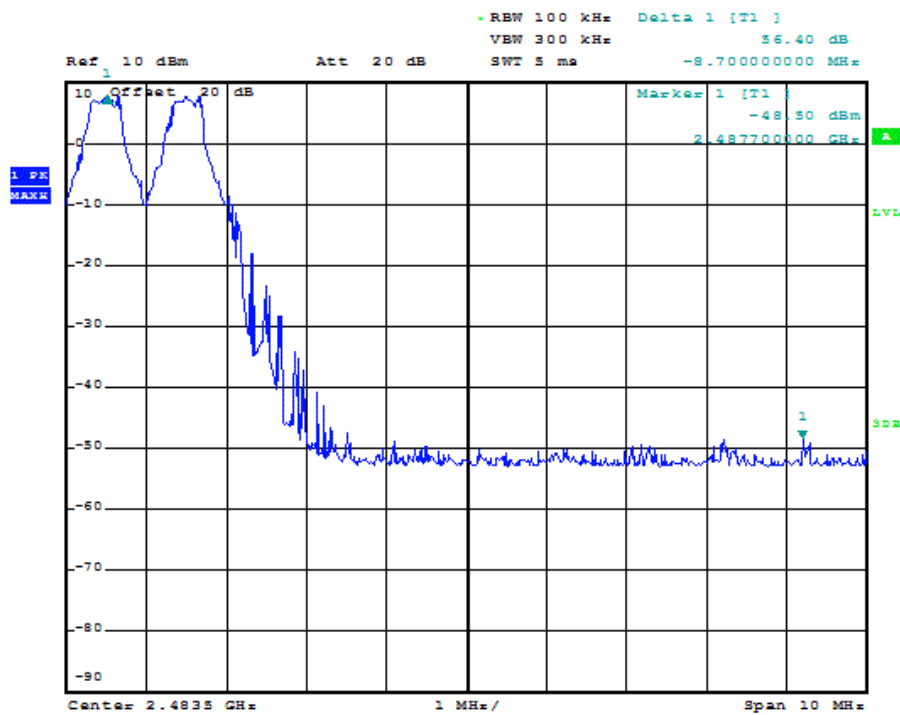


Figure 7.3.1.2-3: Lower Band-edge – Hopping Mode (GFSK)

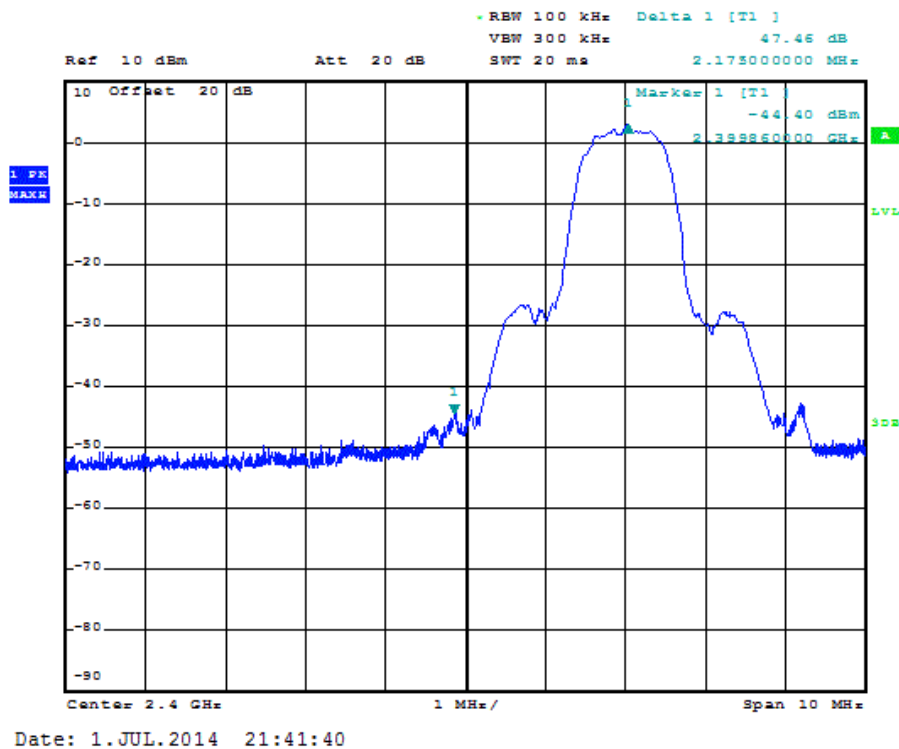


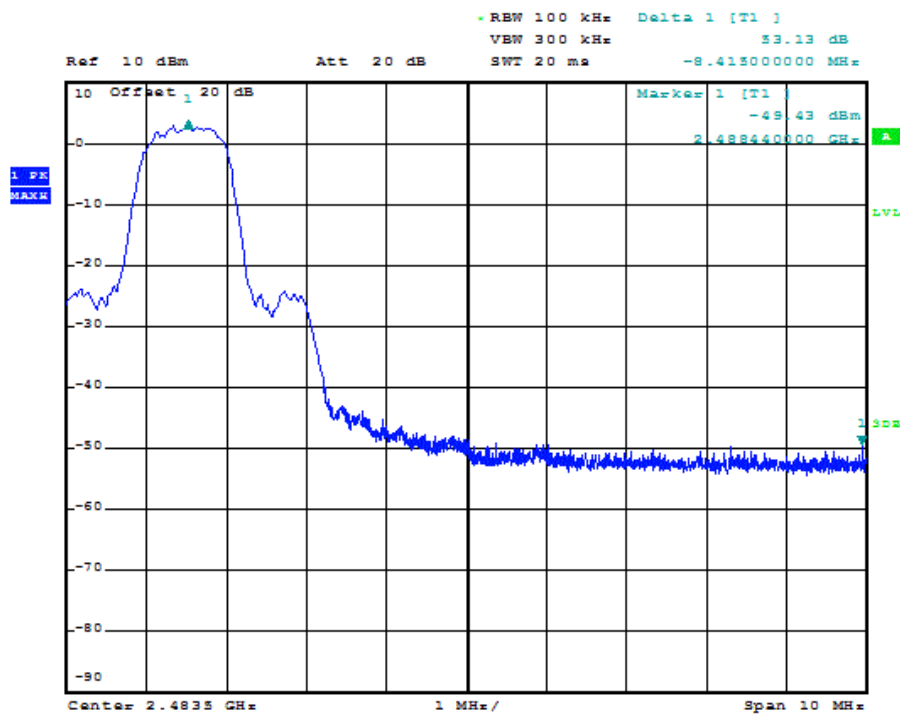
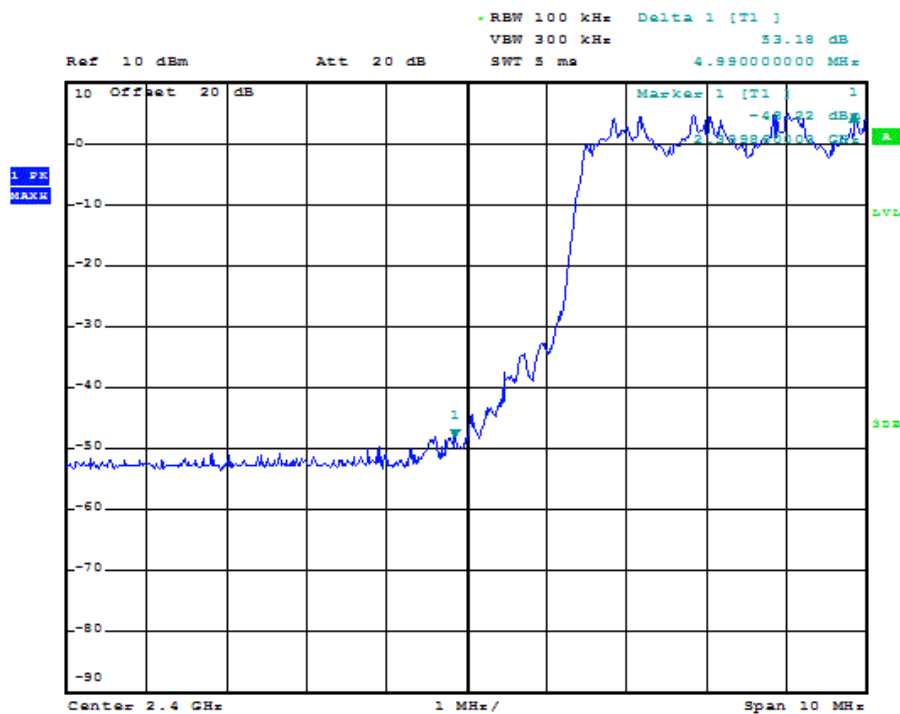
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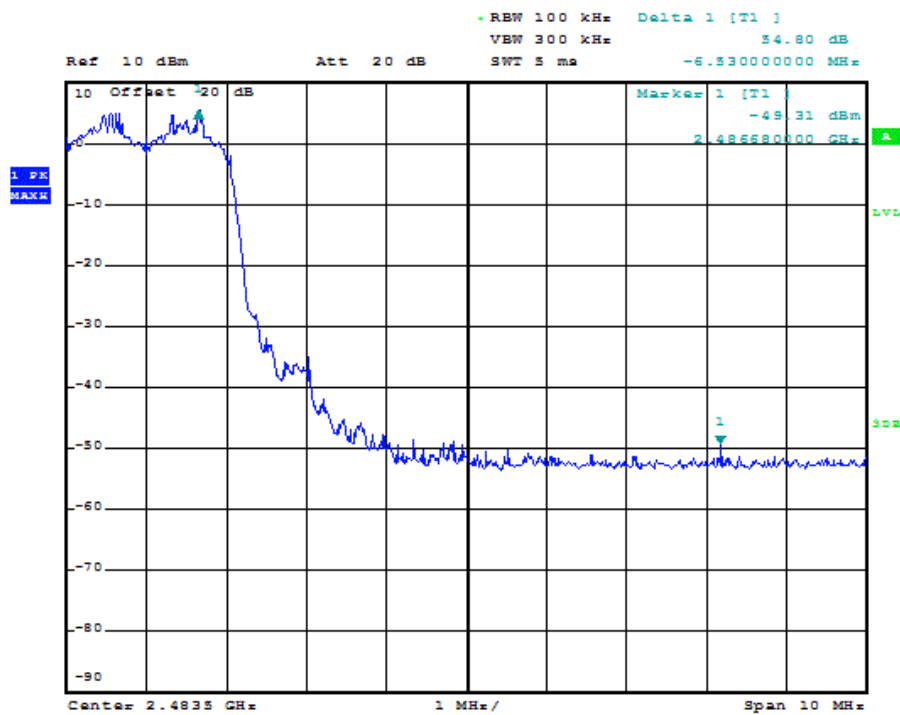
Figure 7.3.1.2-4: Upper Band-edge – Hopping Mode (GFSK)

Table 7.3.1.2-2: Conducted Band Edge - $\pi/4$ DQPSK

	Measured Delta (dB)		Requirements	Band Edge	
	Single TX	Hopping Mode		Single TX	Hopping Mode
Lower Band-Edge	47.46	53.18	> 20 dB	Passed	Passed
Upper Band-Edge	53.13	54.80	> 20 dB	Passed	Passed

Figure 7.3.1.2-5: Lower Band-edge ($\pi/4$ DQPSK)

Figure 7.3.1.2-6: Upper Band-edge ($\pi/4$ DQPSK)Figure 7.3.1.2-7: Lower Band-edge – Hopping Mode ($\pi/4$ DQPSK)

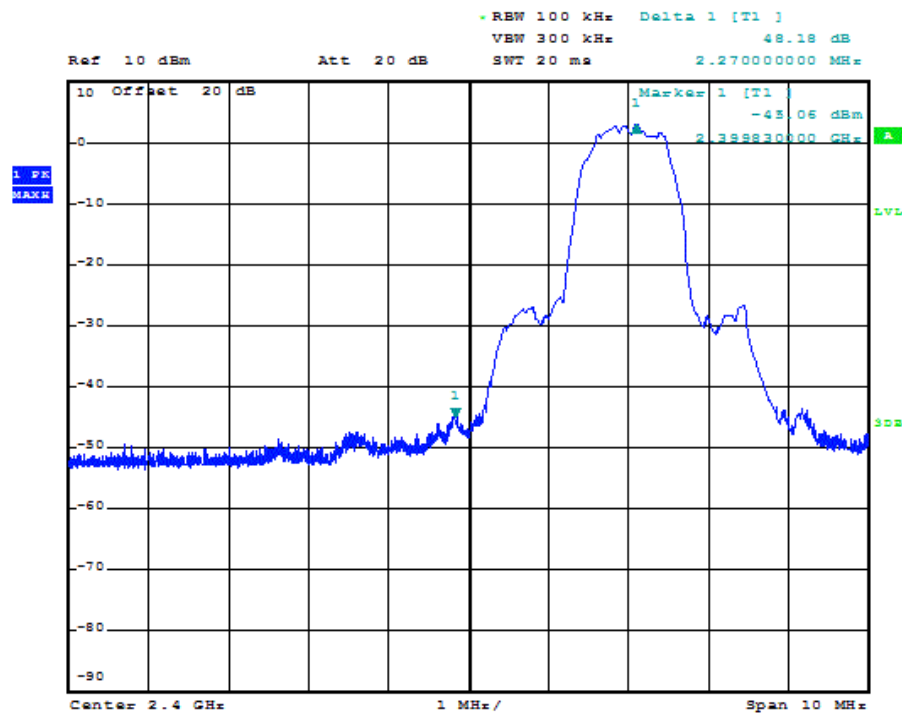


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Figure 7.3.1.2-8: Upper Band-edge – Hopping Mode ($\pi/4$ DQPSK)

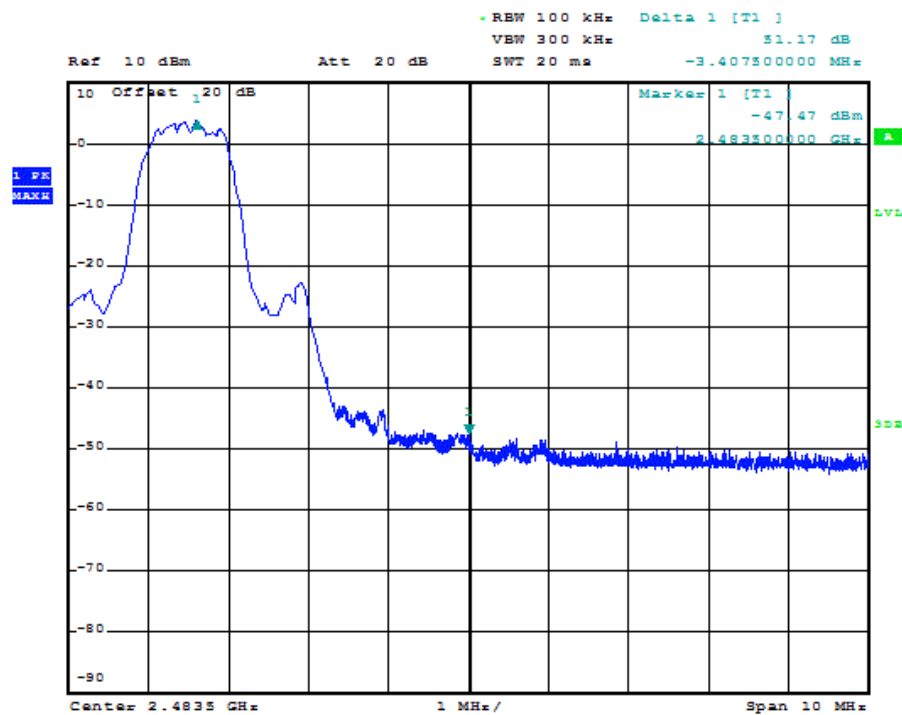
Table 7.3.1.2-3: Conducted Band Edge – 8DPSK

	Measured Delta (dB)		Requirements	Band Edge	
	Single TX	Hopping Mode		Single TX	Hopping Mode
Lower Band-Edge	48.18	52.18	> 20 dB	Passed	Passed
Upper Band-Edge	51.17	54.71	> 20 dB	Passed	Passed



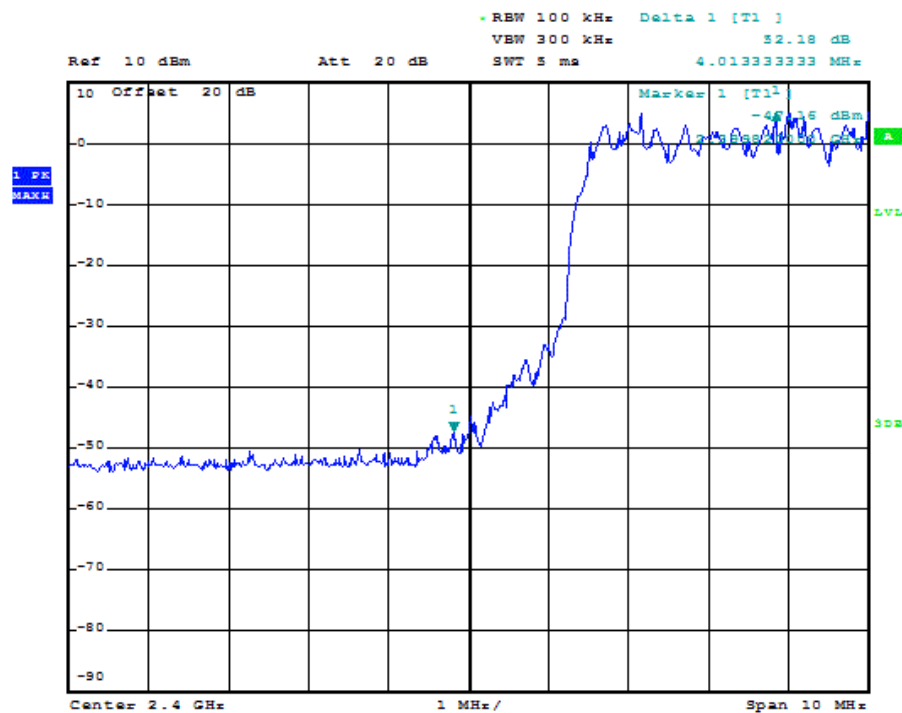
Date: 1.JUL.2014 21:37:30

Figure 7.3.1.2-9: Lower Band-edge (8DPSK)



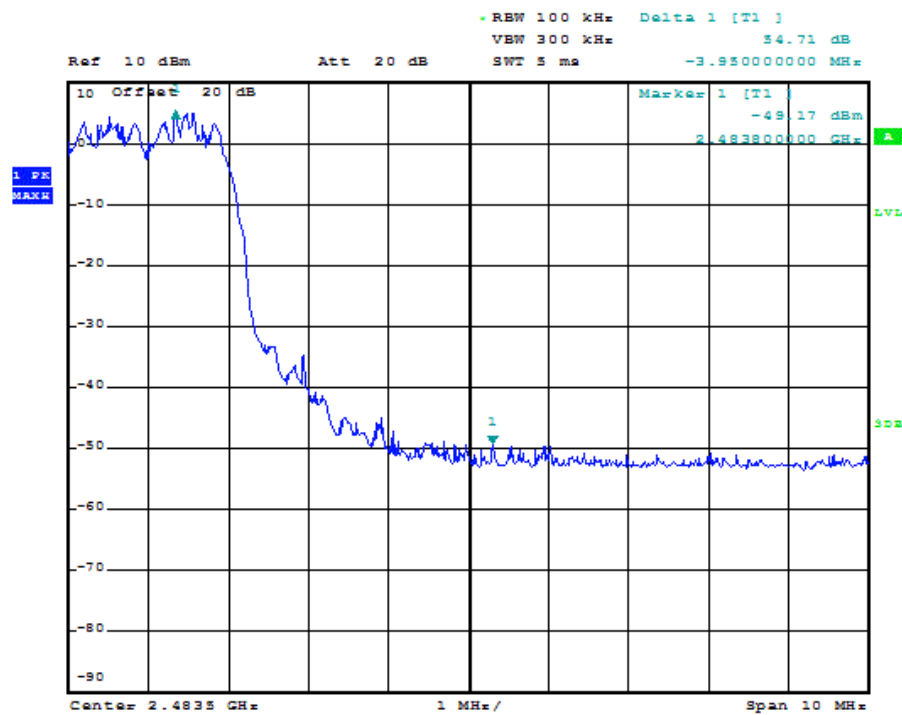
Date: 1.JUL.2014 21:29:44

Figure 7.3.1.2-10: Upper Band-edge (8DPSK)



Date: 1.JUL.2014 18:32:50

Figure 7.3.1.2-11: Lower Band-edge – Hopping Mode (8DPSK)



Date: 1.JUL.2014 18:35:51

Figure 7.3.1.2-12: Upper Band-edge – Hopping Mode (8DPSK)

7.3.2 RF Conducted Spurious Emissions

7.3.2.1 Measurement Procedure

The RF output port of the EUT was connected to the spectrum analyzer. The EUT was investigated for conducted spurious emissions from 30MHz to 26 GHz, 10 times the highest fundamental frequency. Measurements were made at the low, center and high channels of the EUT. For each measurement, the spectrum analyzer's RBW was set to 100 kHz. A peak detector function was used with the trace set to max hold. The levels were corrected for cable and attenuator losses.

7.3.2.2 Measurement Results

Results are shown below:

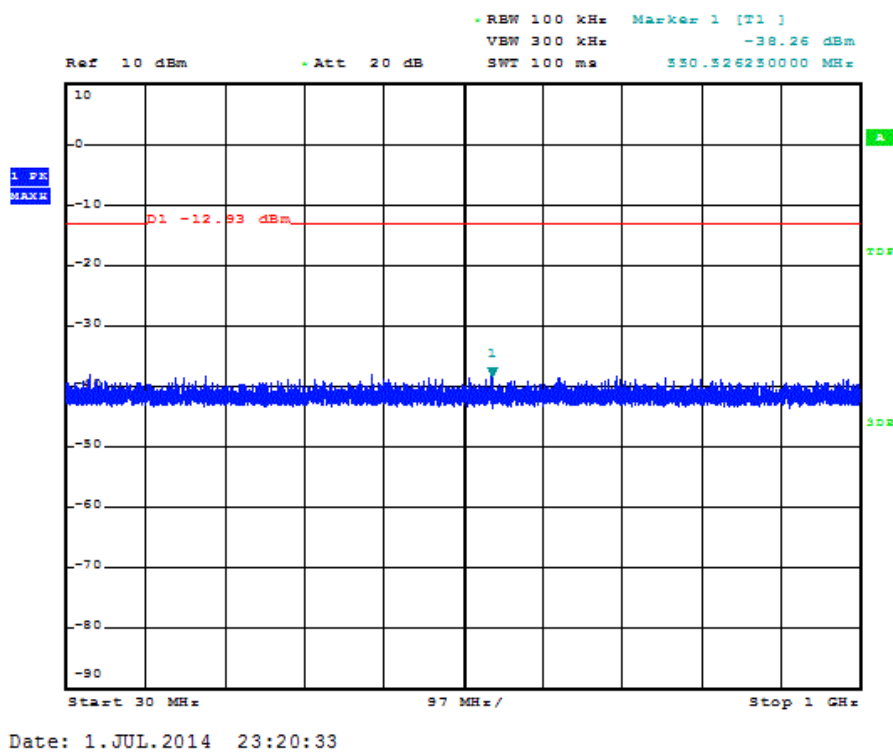
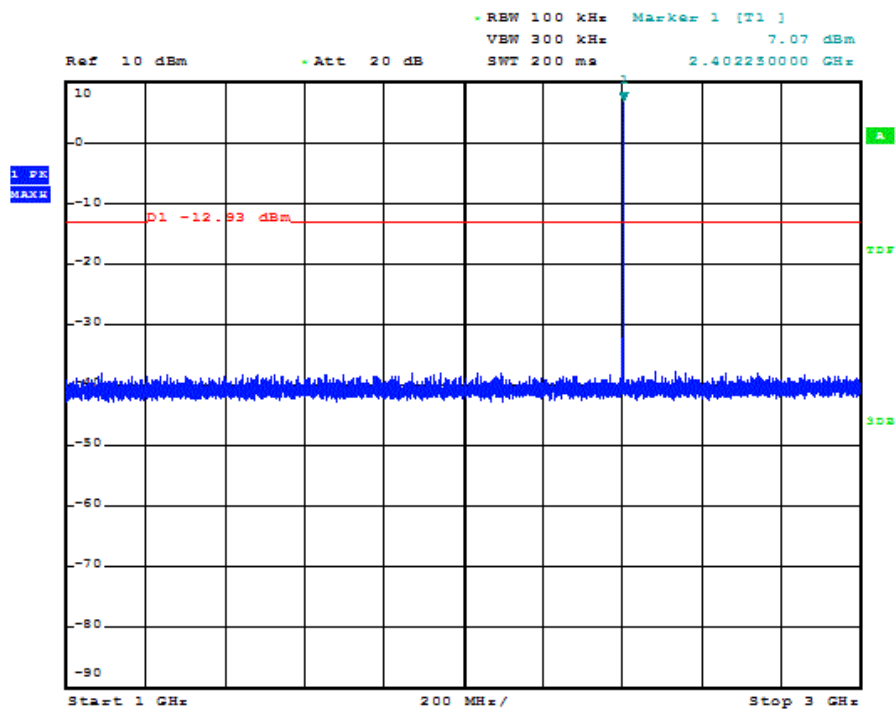
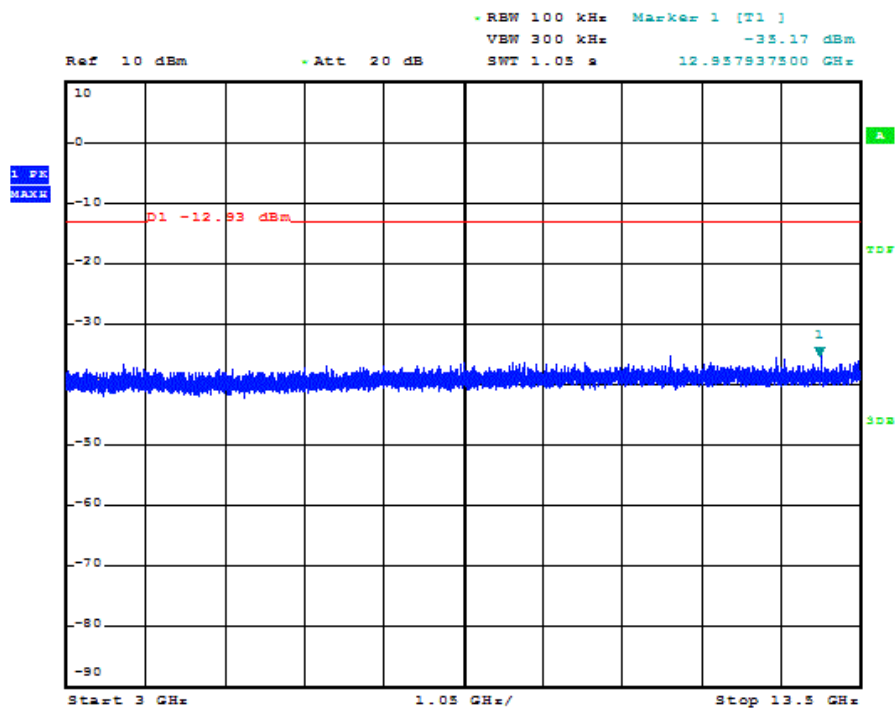


Figure 7.3.2.2-1: 30 MHz – 1 GHz – Low Channel (GFSK)



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Figure 7.3.2.2-2: 1 GHz –3 GHz – Low Channel (GFSK)



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Figure 7.3.2.2-3: 3 GHz –13.5 GHz – Low Channel (GFSK)

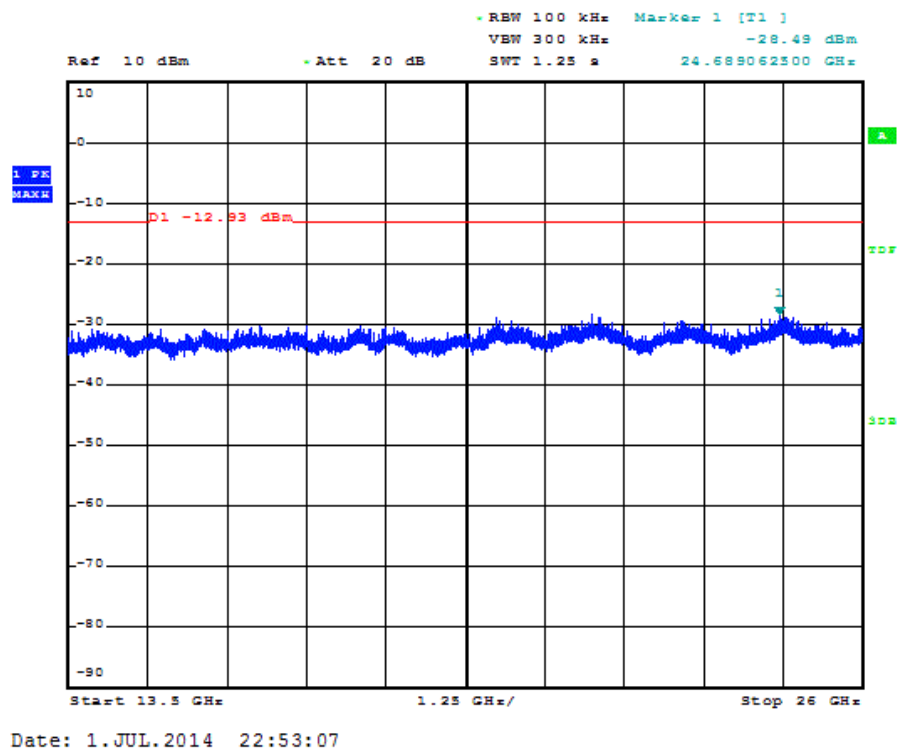


Figure 7.3.2.2-4: 13.5 GHz –26 GHz – Low Channel (GFSK)

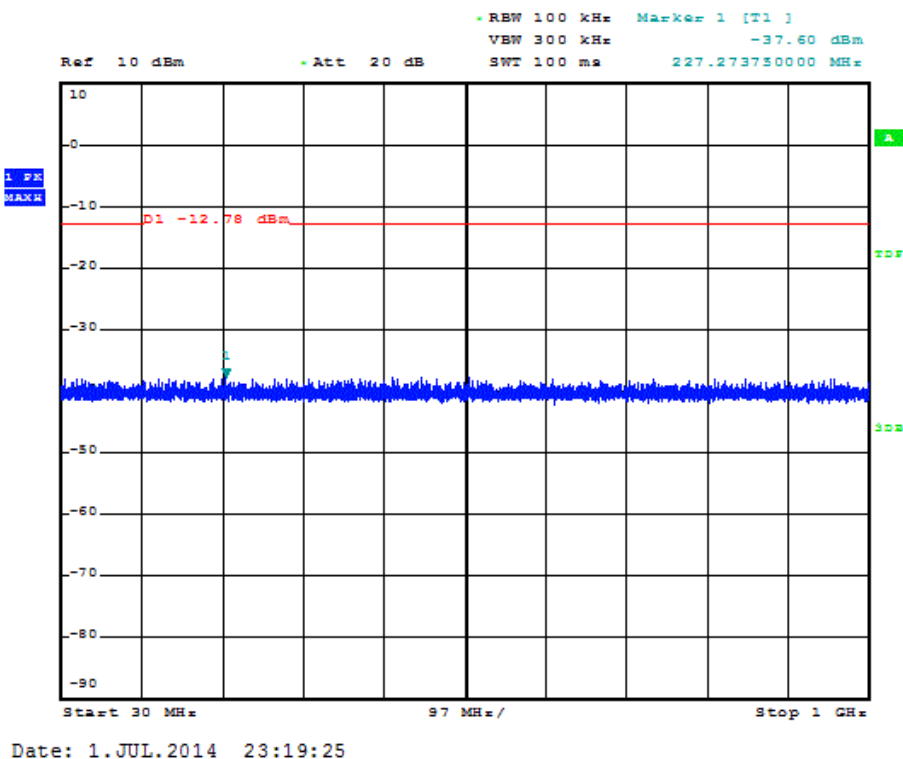
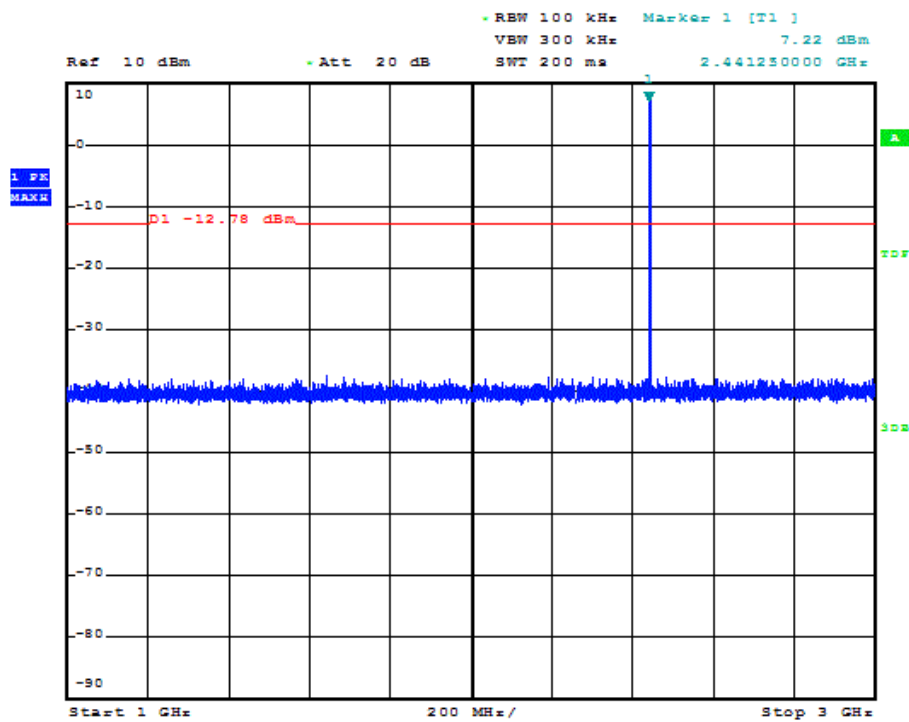
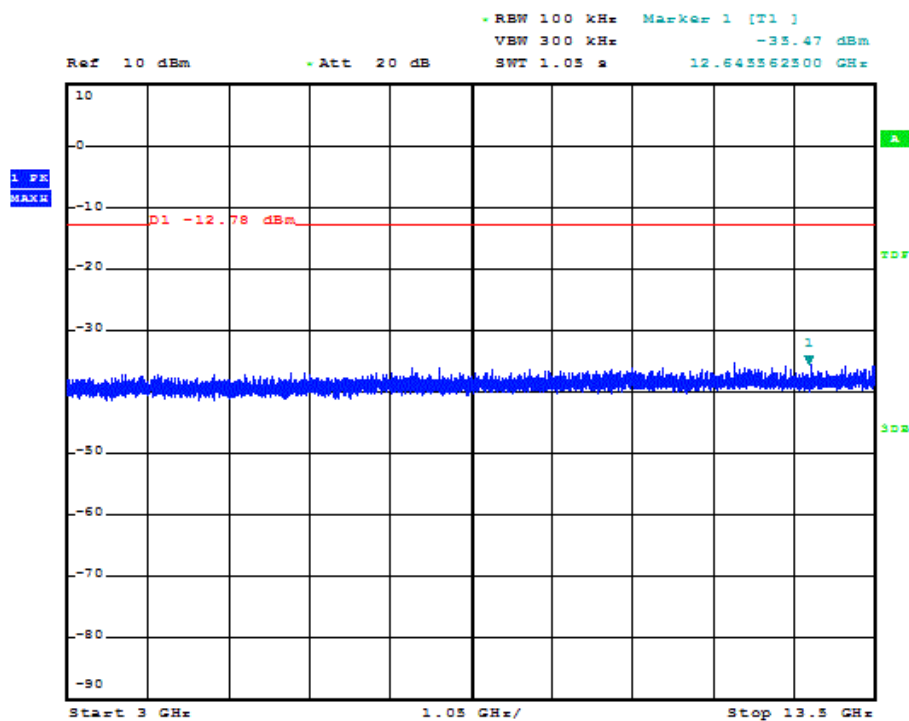


Figure 7.3.2.2-5: 30 MHz – 1 GHz –Middle Channel (GFSK)



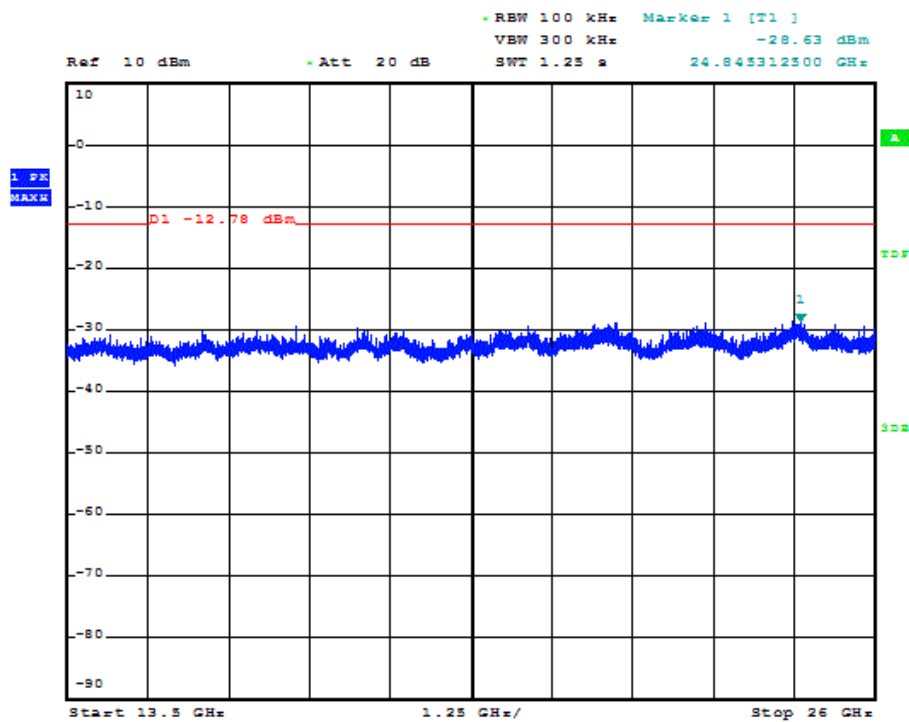
Date: 1.JUL.2014 22:57:09

Figure 7.3.2.2-6: 1 GHz –3 GHz – Middle Channel (GFSK)



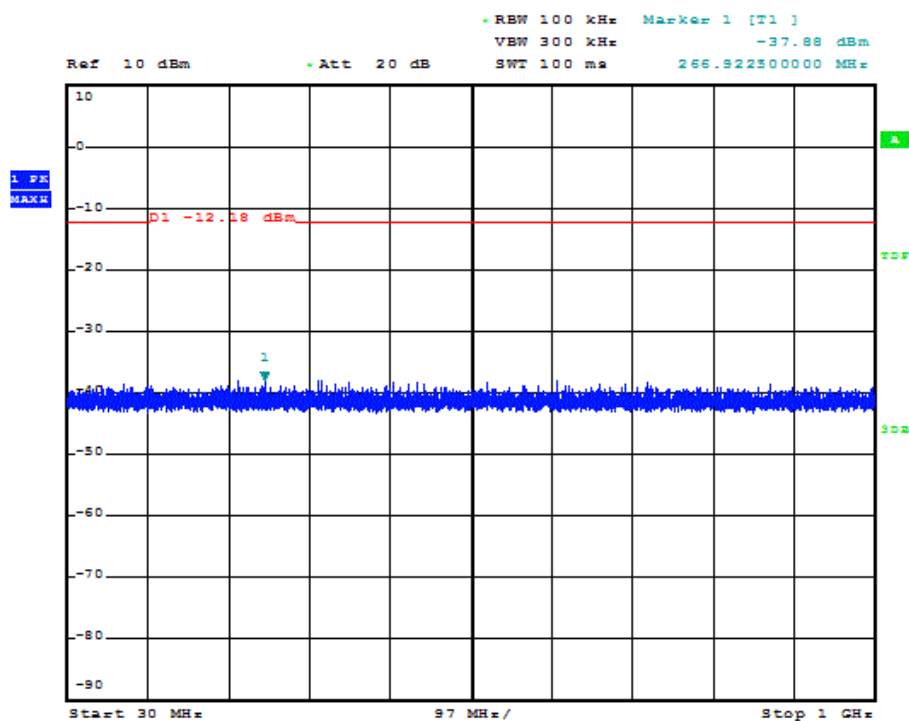
Date: 1.JUL.2014 22:59:44

Figure 7.3.2.2-7: 3 GHz –13.5 GHz – Middle Channel (GFSK)



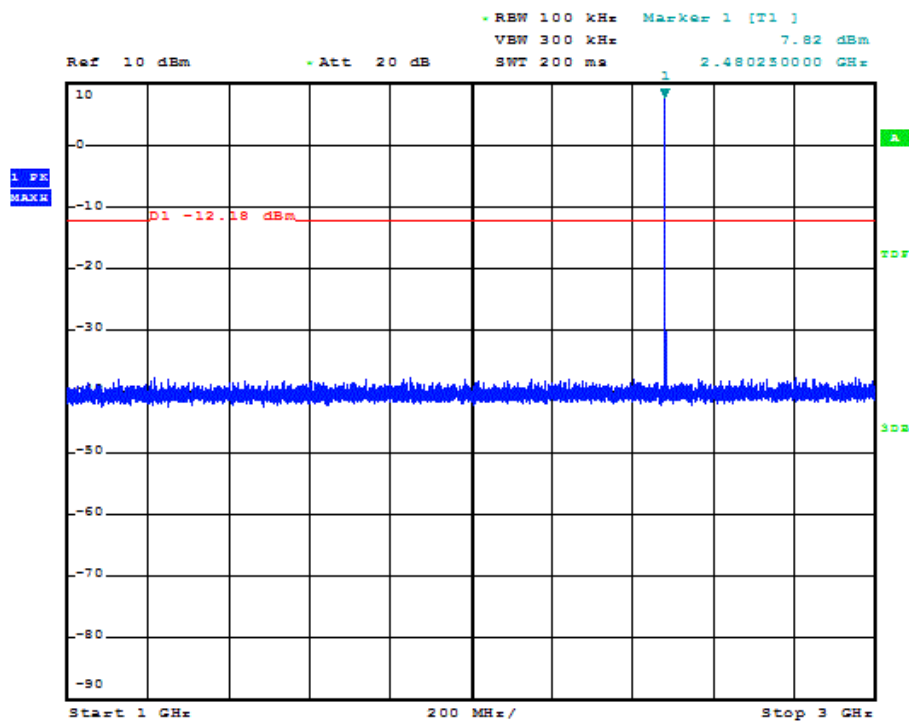
Date: 1.JUL.2014 23:02:09

Figure 7.3.2.2-8: 13.5 GHz – 26 GHz – Middle Channel (GFSK)



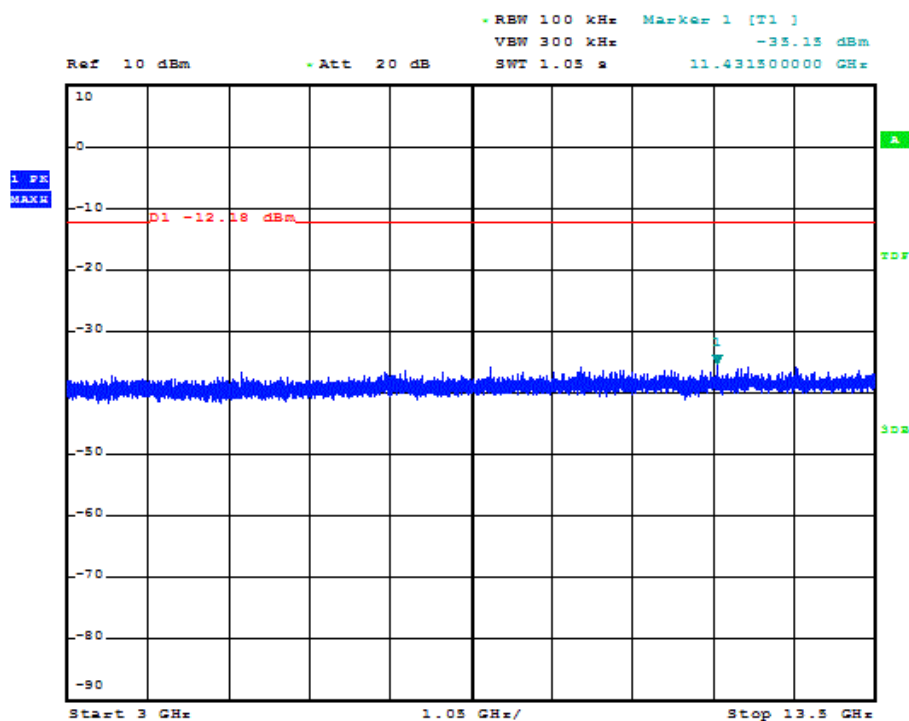
Date: 1.JUL.2014 23:12:47

Figure 7.3.2.2-9: 30 MHz – 1 GHz – High Channel (GFSK)



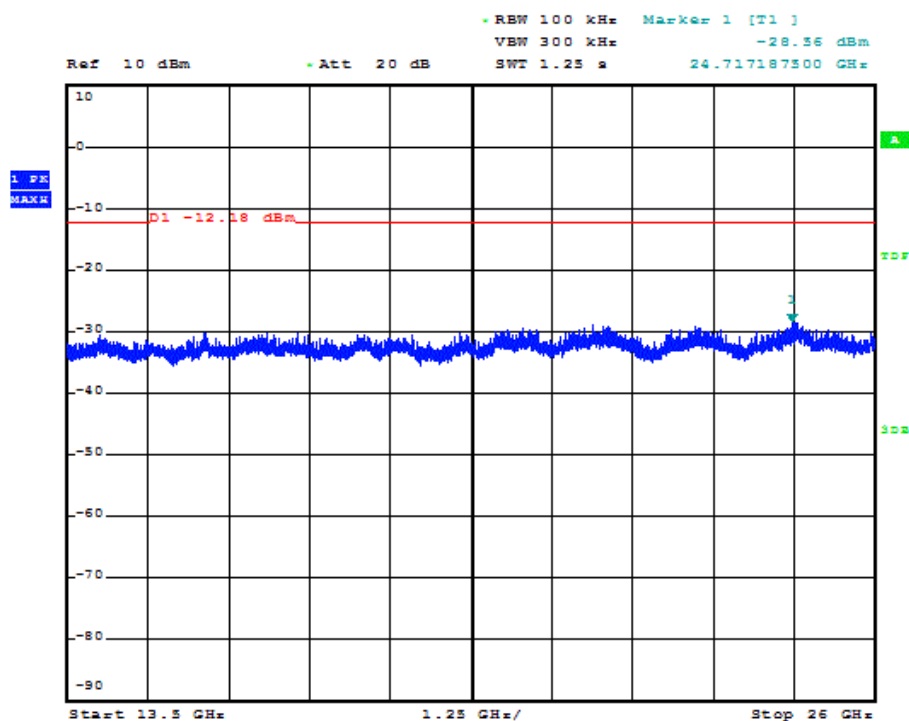
Date: 1.JUL.2014 23:06:27

Figure 7.3.2.2-10: 1 GHz –3 GHz –High Channel (GFSK)



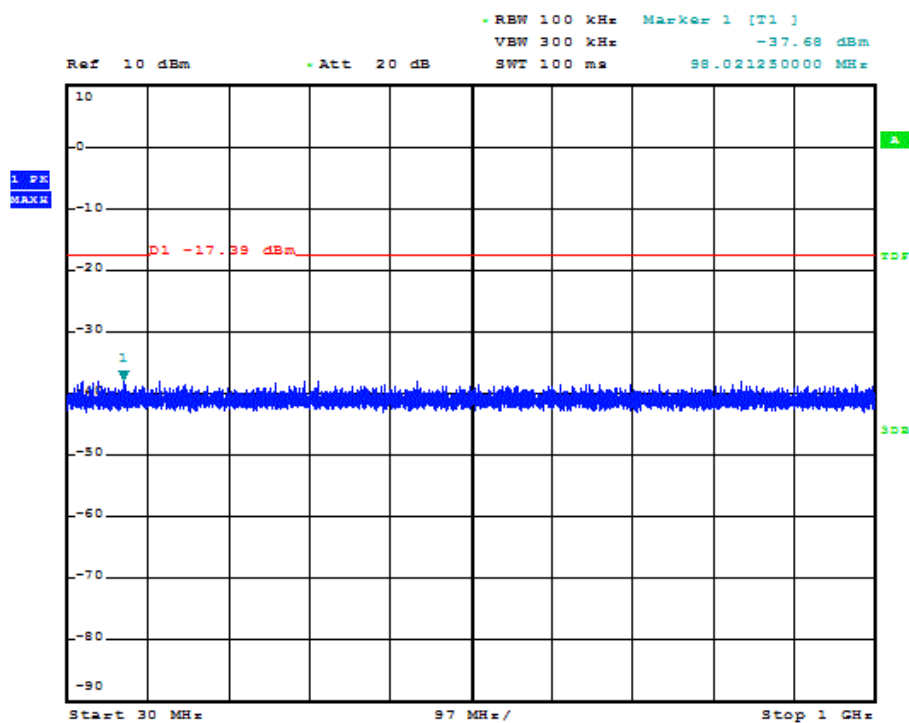
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Figure 7.3.2.2-11: 3 GHz –13.5 GHz – High Channel (GFSK)



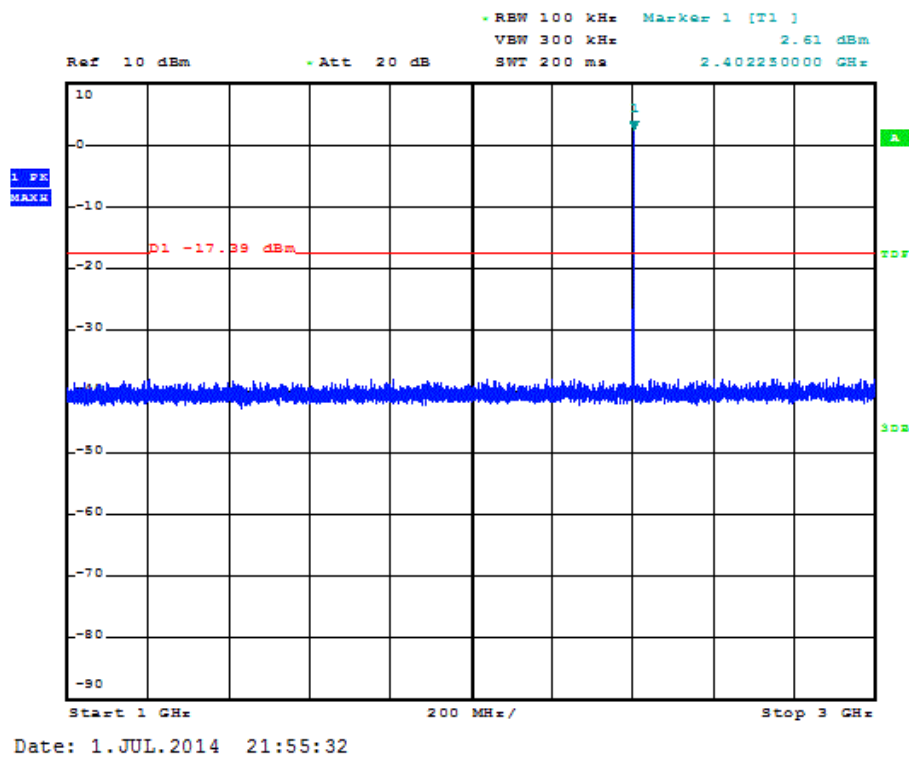
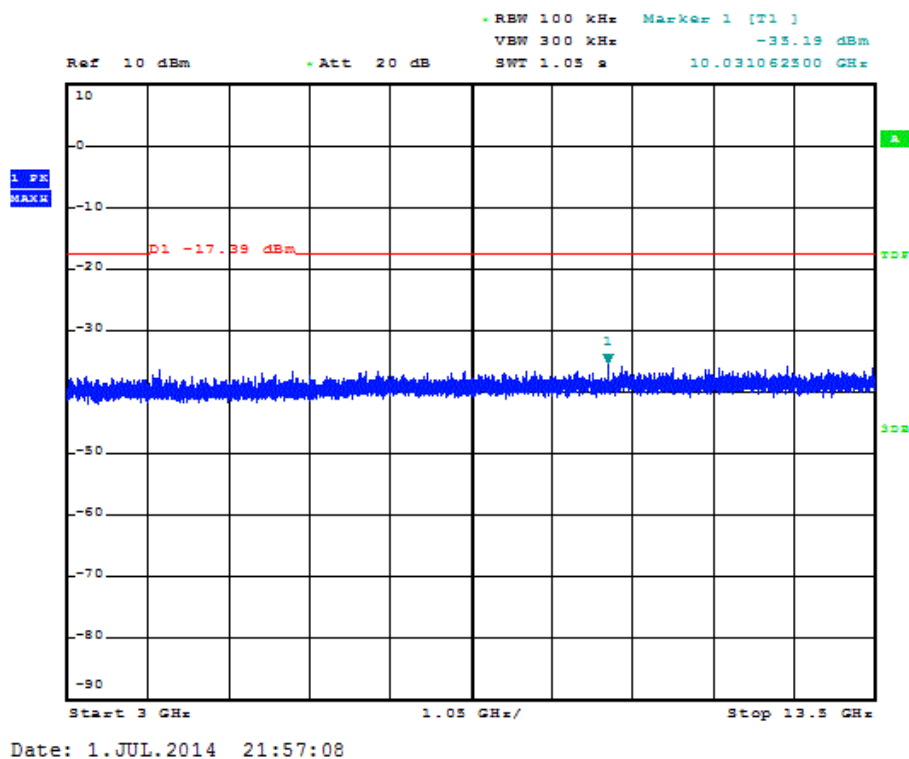
Date: 1.JUL.2014 23:11:26

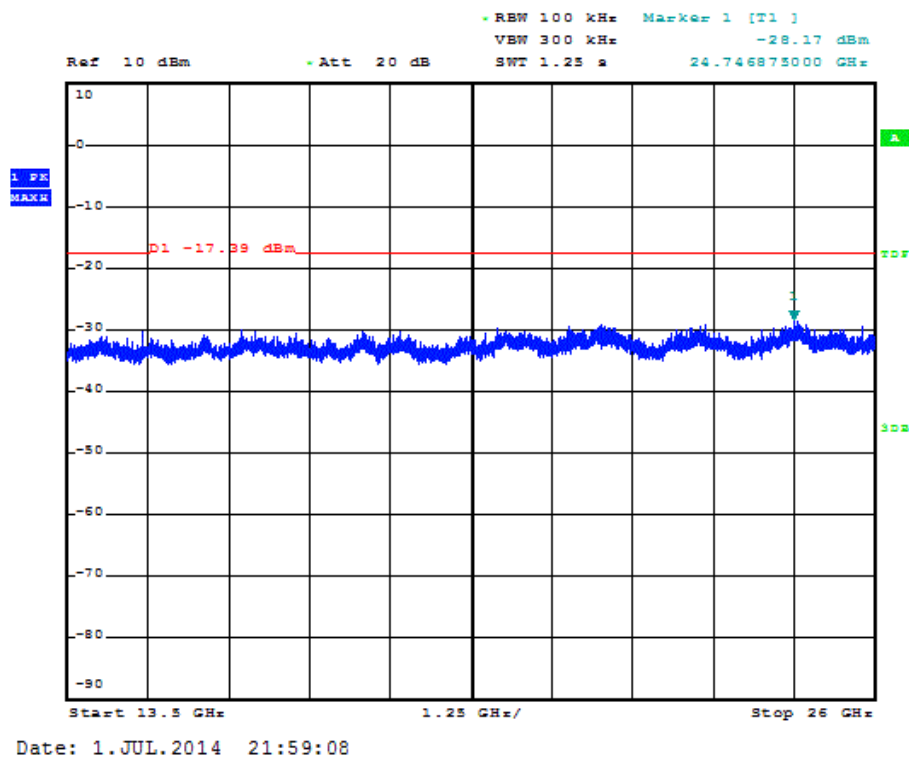
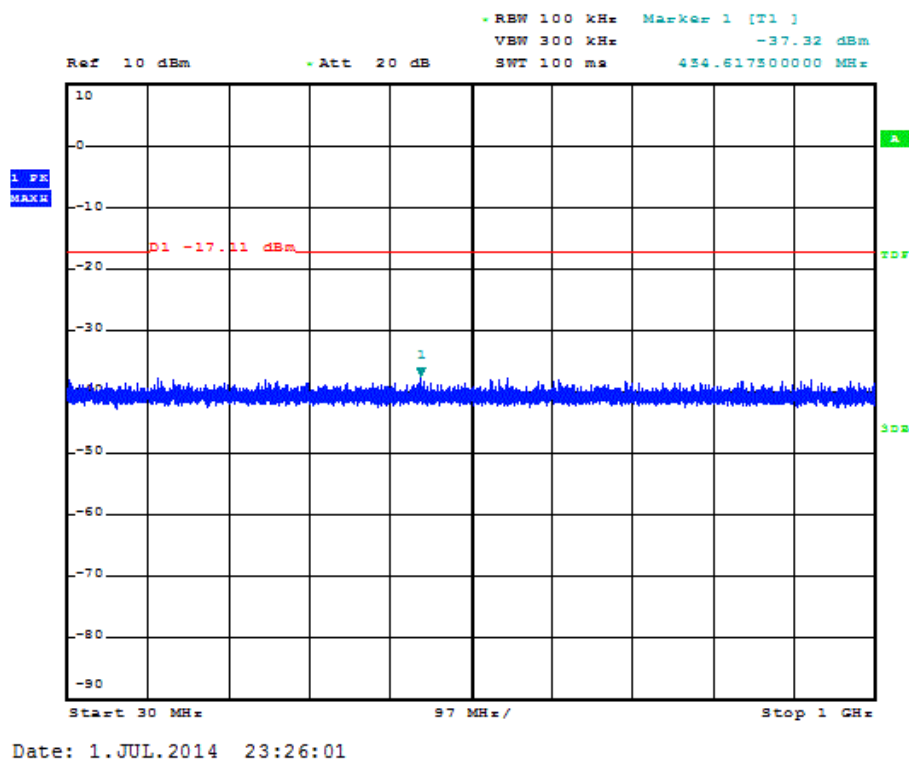
Figure 7.3.2.2-12: 13.5 GHz –26 GHz – High Channel (GFSK)

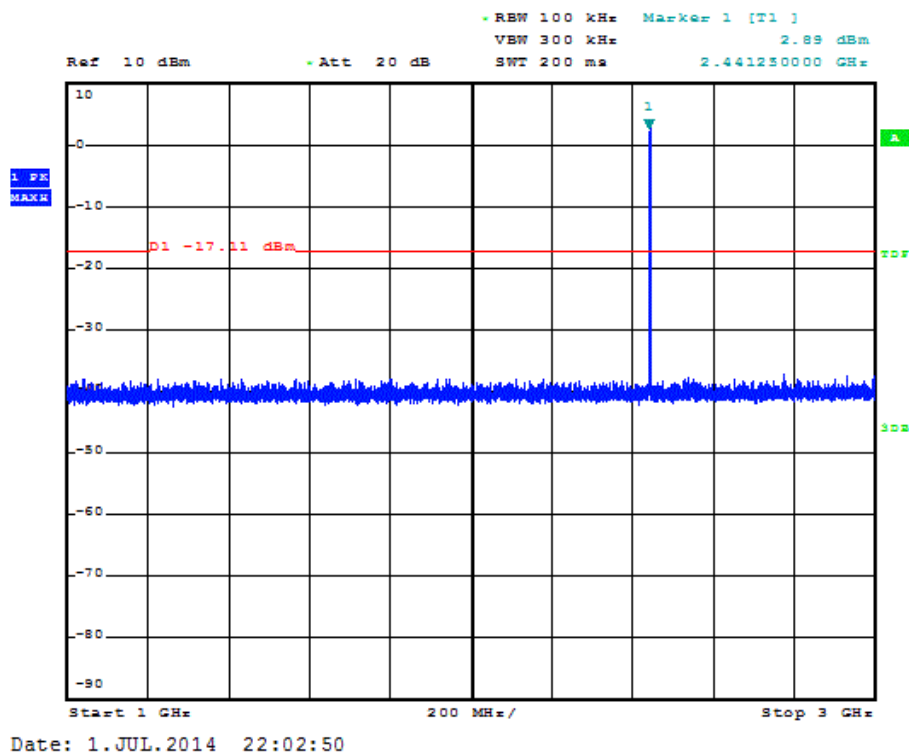
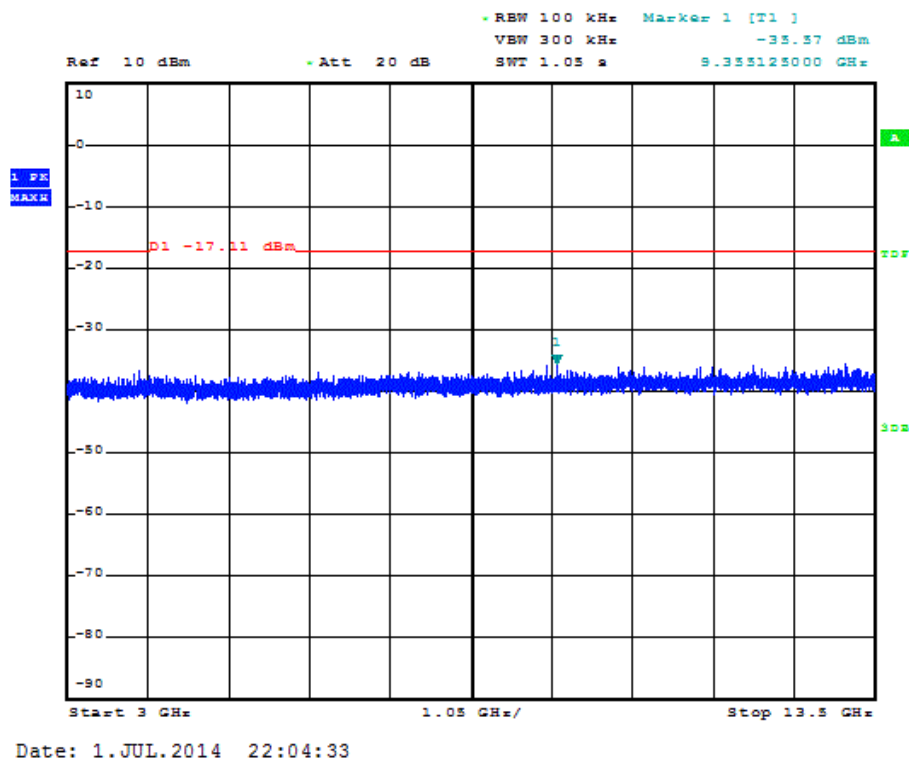


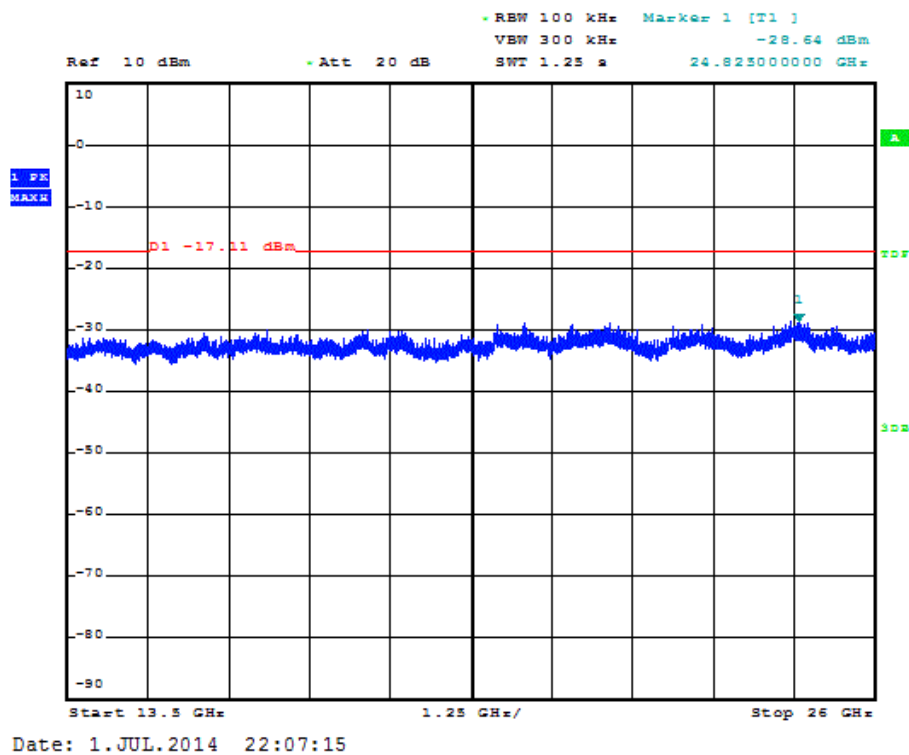
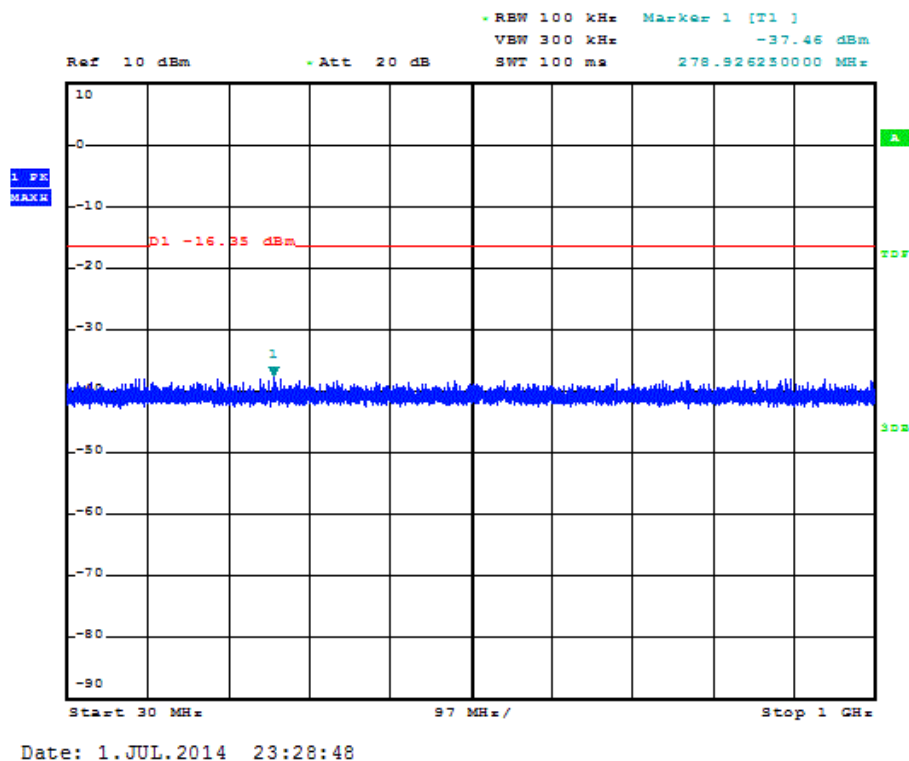
Date: 1.JUL.2014 23:22:47

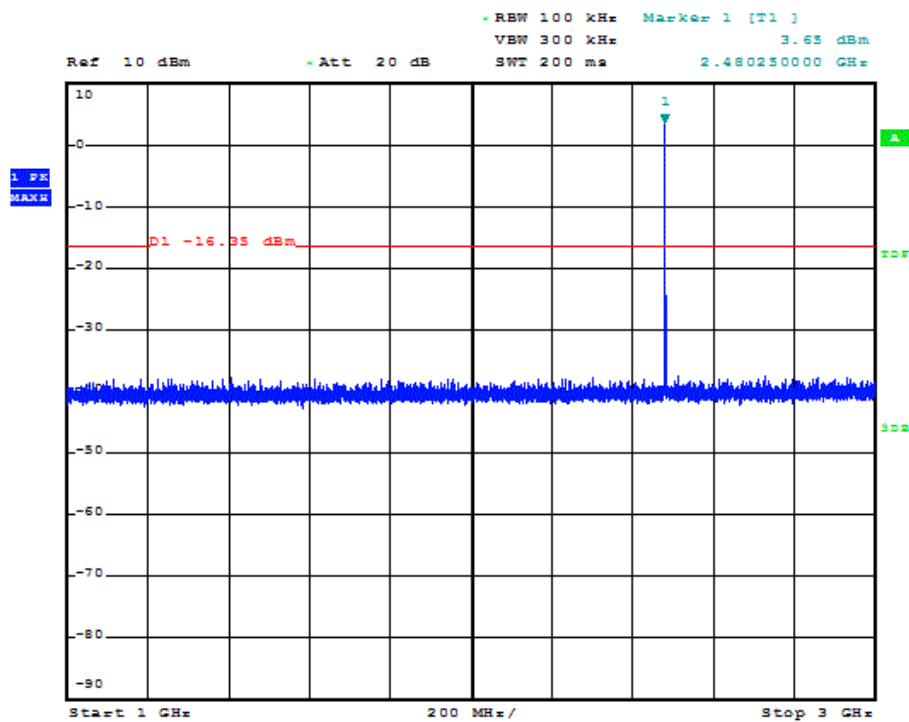
Figure 7.3.2.2-13: 30 MHz – 1 GHz – Low Channel ($\pi/4$ DQPSK)

Figure 7.3.2.2-14: 1 GHz –3 GHz – Low Channel ($\pi/4$ DQPSK)Figure 7.3.2.2-15: 3 GHz –13.5 GHz – Low Channel ($\pi/4$ DQPSK)

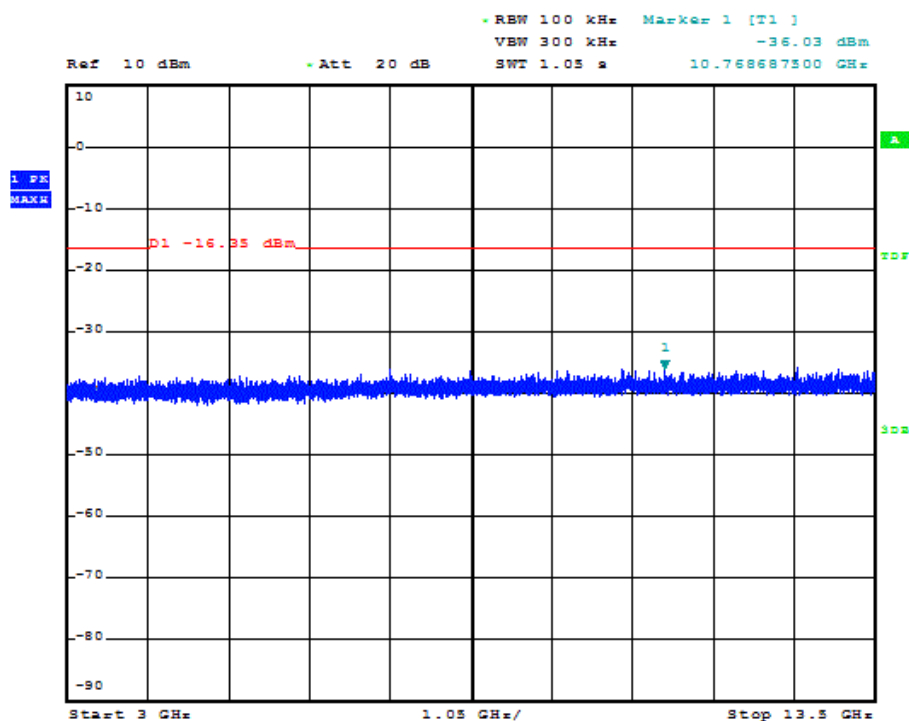
Figure 7.3.2.2-16: 13.5 GHz –26 GHz – Low Channel ($\pi/4$ DQPSK)Figure 7.3.2.2-17: 30 MHz – 1 GHz –Middle Channel ($\pi/4$ DQPSK)

Figure 7.3.2.2-18: 1 GHz –3 GHz – Middle Channel ($\pi/4$ DQPSK)Figure 7.3.2.2-19: 3 GHz –13.5 GHz – Middle Channel ($\pi/4$ DQPSK)

Figure 7.3.2.2-20: 13.5 GHz –26 GHz – Middle Channel ($\pi/4$ DQPSK)Figure 7.3.2.2-21: 30 MHz – 1 GHz – High Channel ($\pi/4$ DQPSK)

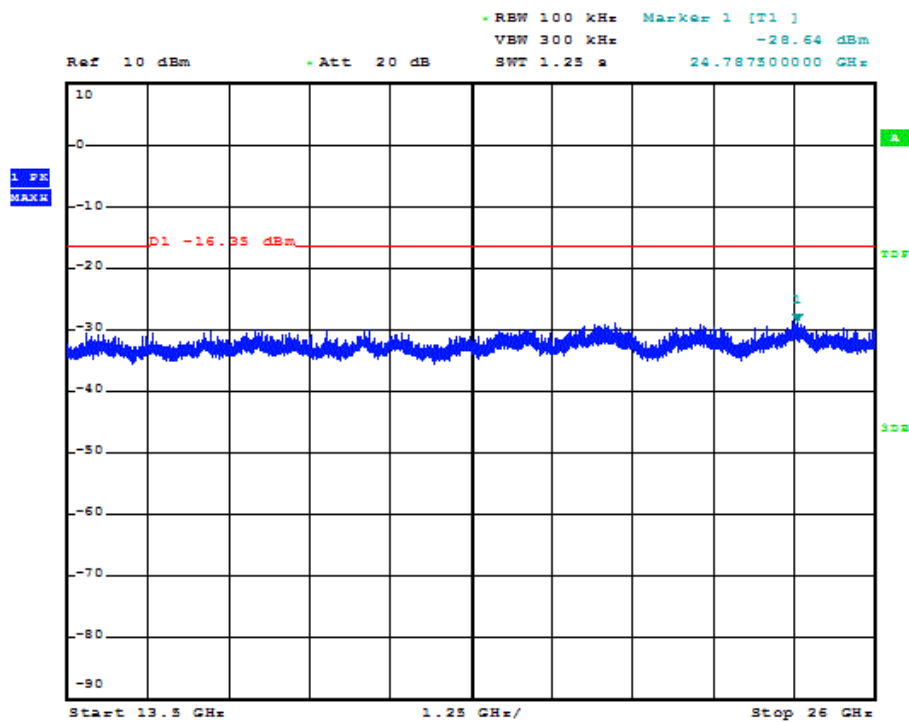


Date: 1.JUL.2014 22:13:33

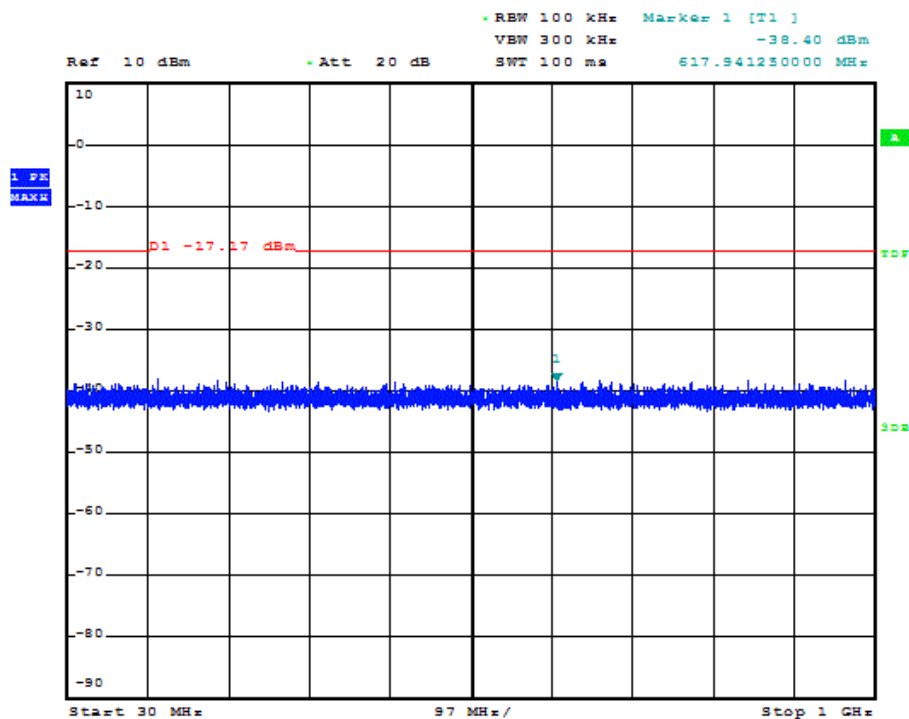
Figure 7.3.2.2-22: 1 GHz –3 GHz –High Channel ($\pi/4$ DQPSK)

Date: 1.JUL.2014 22:15:16

Figure 7.3.2.2-23: 3 GHz –13.5 GHz – High Channel ($\pi/4$ DQPSK)

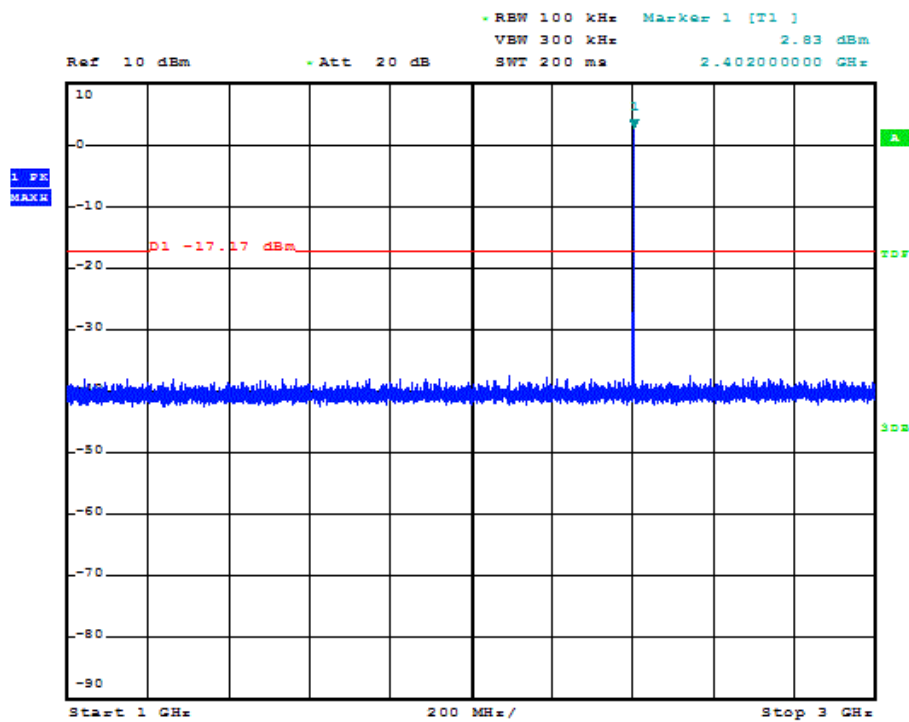


Date: 1.JUL.2014 22:17:54

Figure 7.3.2.2-24: 13.5 GHz – 26 GHz – High Channel ($\pi/4$ DQPSK)

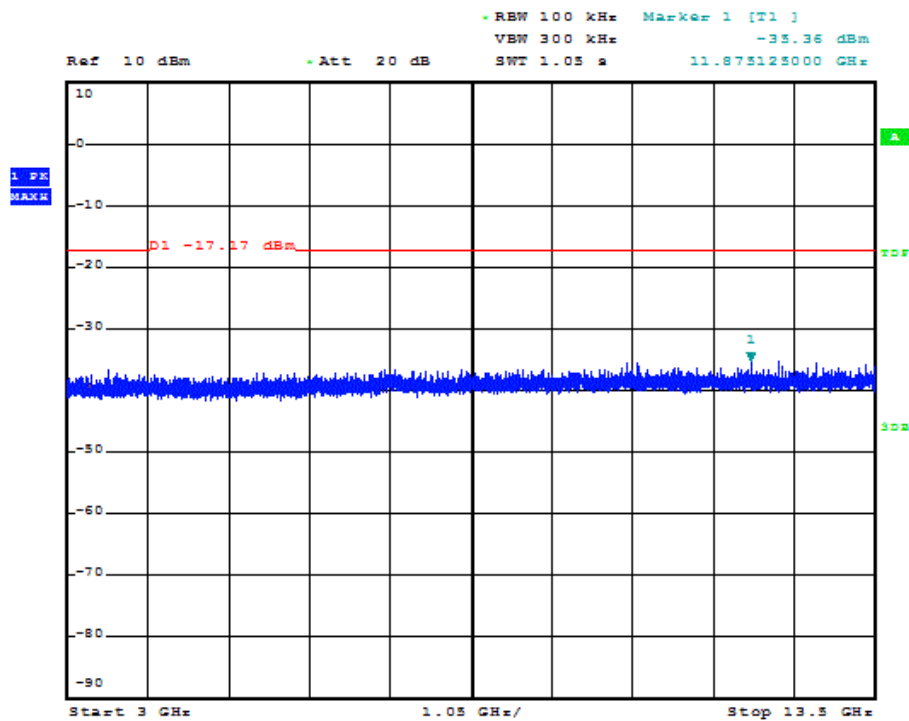
Date: 1.JUL.2014 23:30:23

Figure 7.3.2.2-25: 30 MHz – 1 GHz – Low Channel (8DPSK)



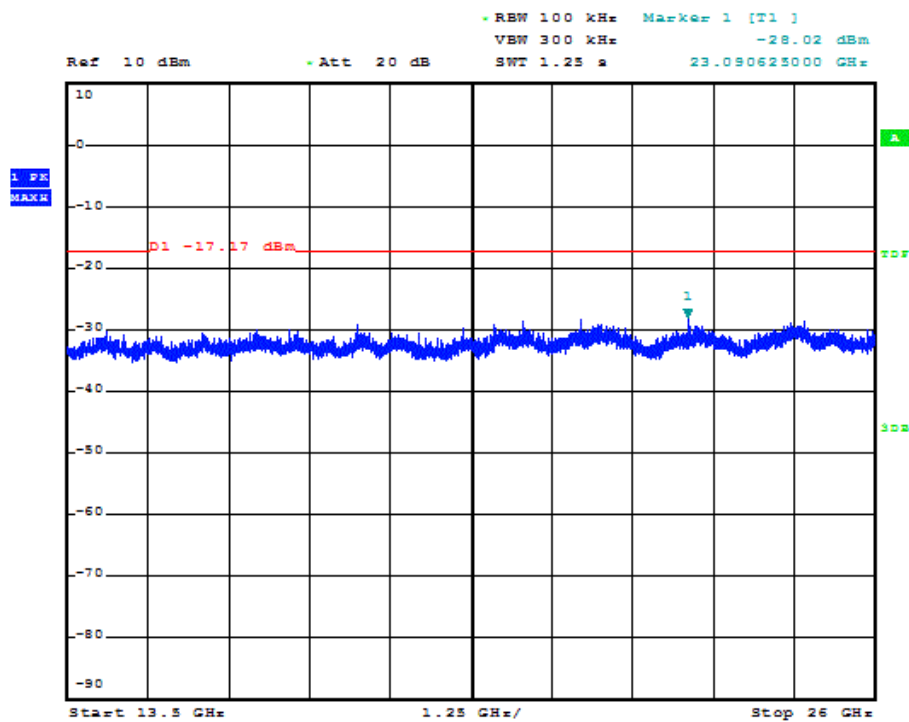
Date: 1.JUL.2014 22:21:20

Figure 7.3.2.2-26: 1 GHz –3 GHz – Low Channel (8DPSK)



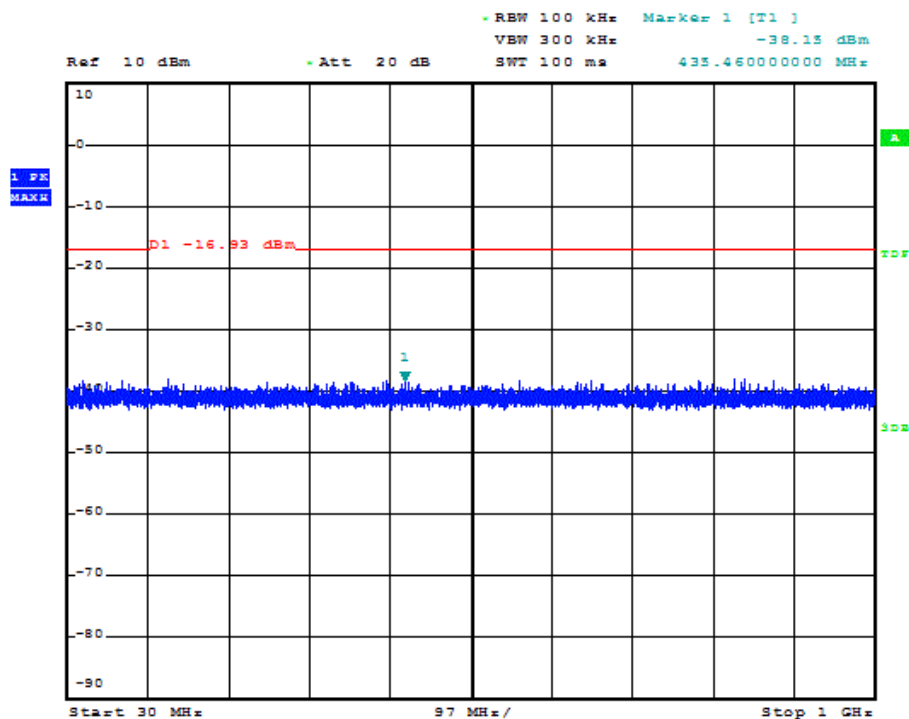
Date: 1.JUL.2014 22:23:07

Figure 7.3.2.2-27: 3 GHz –13.5 GHz – Low Channel (8DPSK)



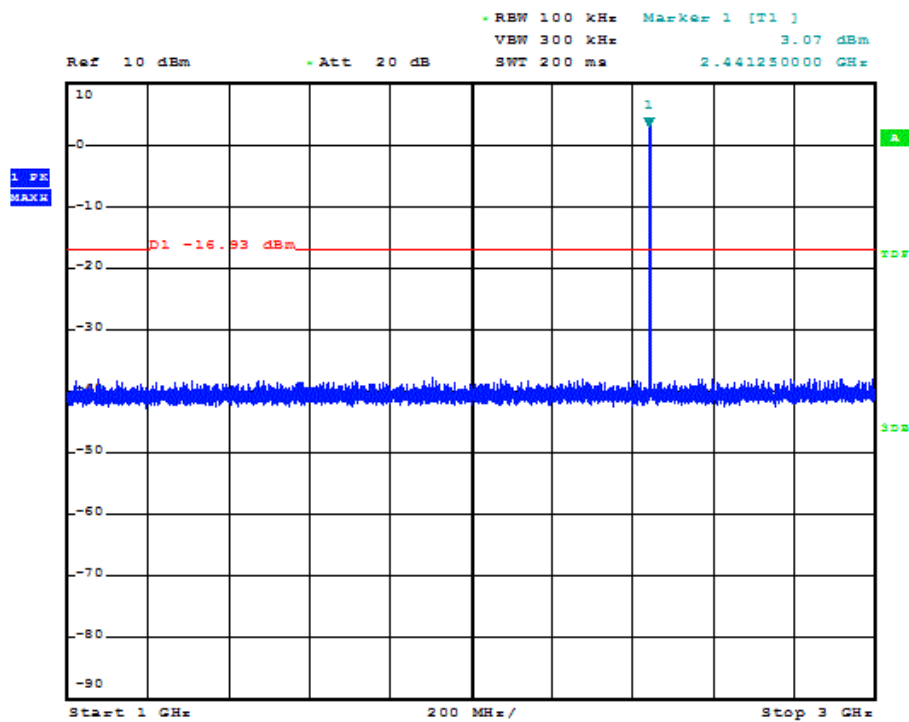
Date: 1.JUL.2014 22:26:27

Figure 7.3.2.2-28: 13.5 GHz –26 GHz – Low Channel (8DPSK)



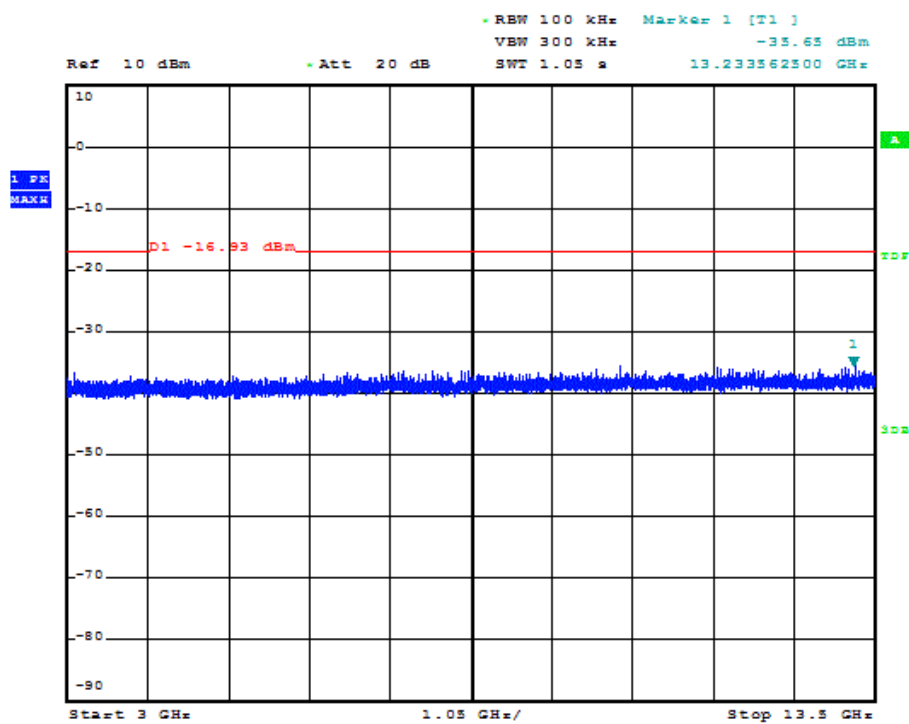
Date: 1.JUL.2014 23:32:15

Figure 7.3.2.2-29: 30 MHz – 1 GHz –Middle Channel (8DPSK)



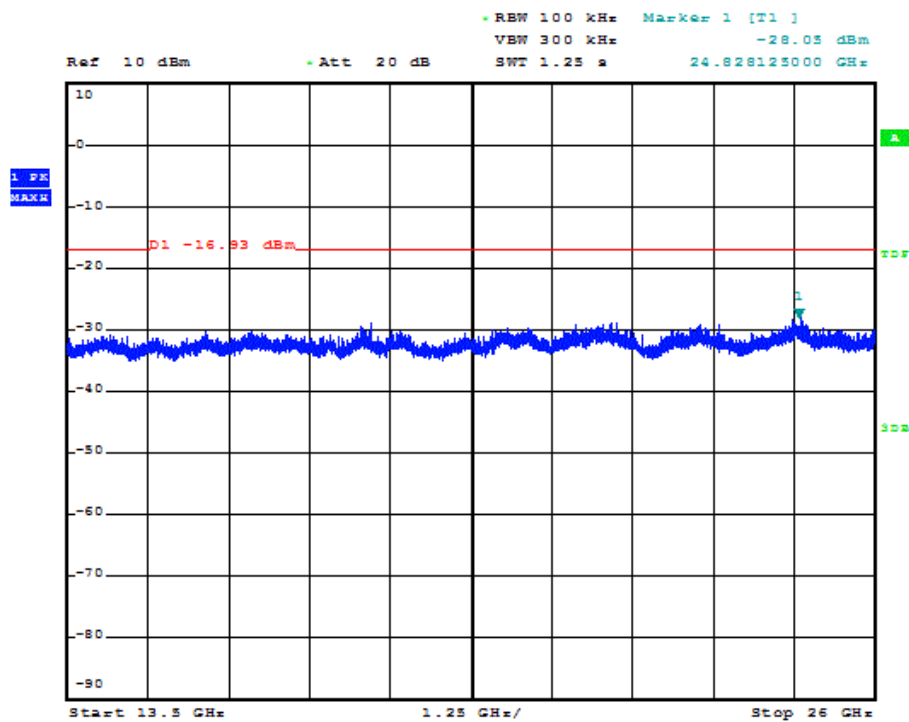
Date: 1.JUL.2014 22:29:06

Figure 7.3.2.2-30: 1 GHz –3 GHz – Middle Channel (8DPSK)



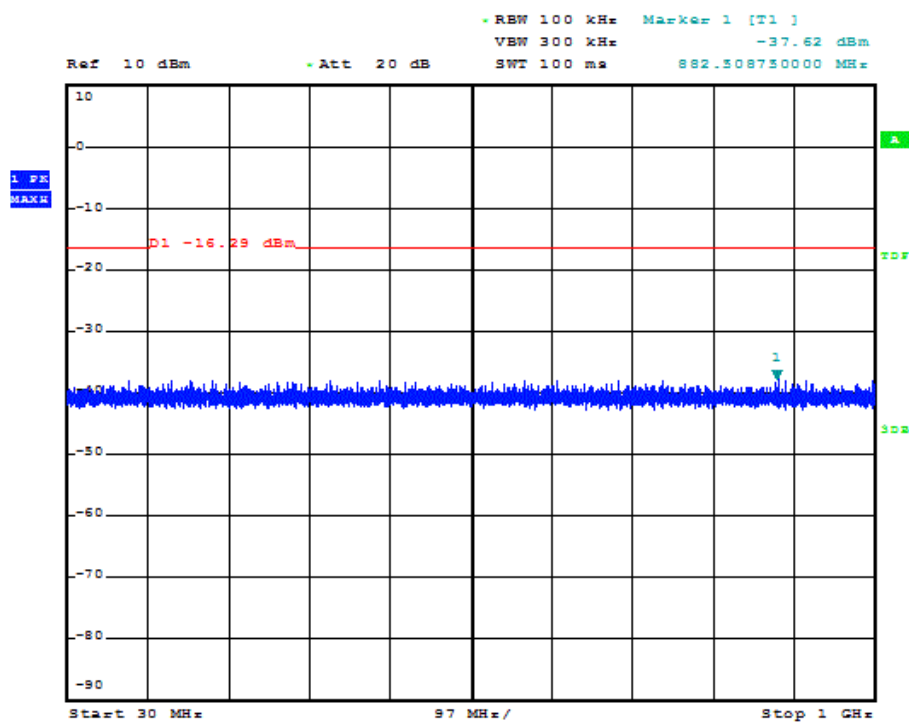
Date: 1.JUL.2014 22:32:21

Figure 7.3.2.2-31: 3 GHz –13.5 GHz – Middle Channel (8DPSK)



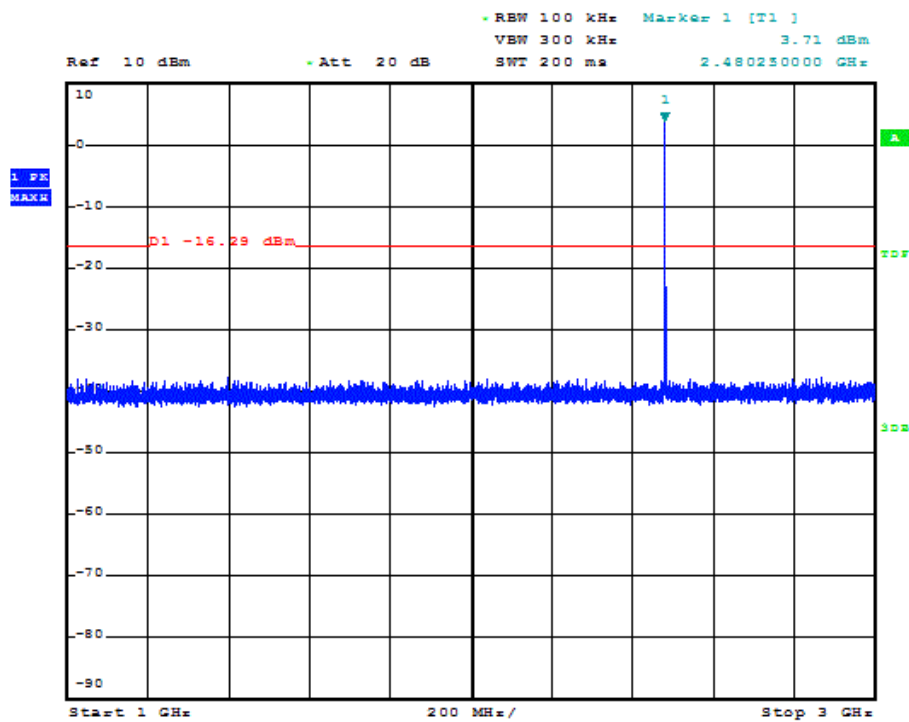
Date: 1.JUL.2014 22:36:24

Figure 7.3.2.2-32: 13.5 GHz –26 GHz – Middle Channel (8DPSK)



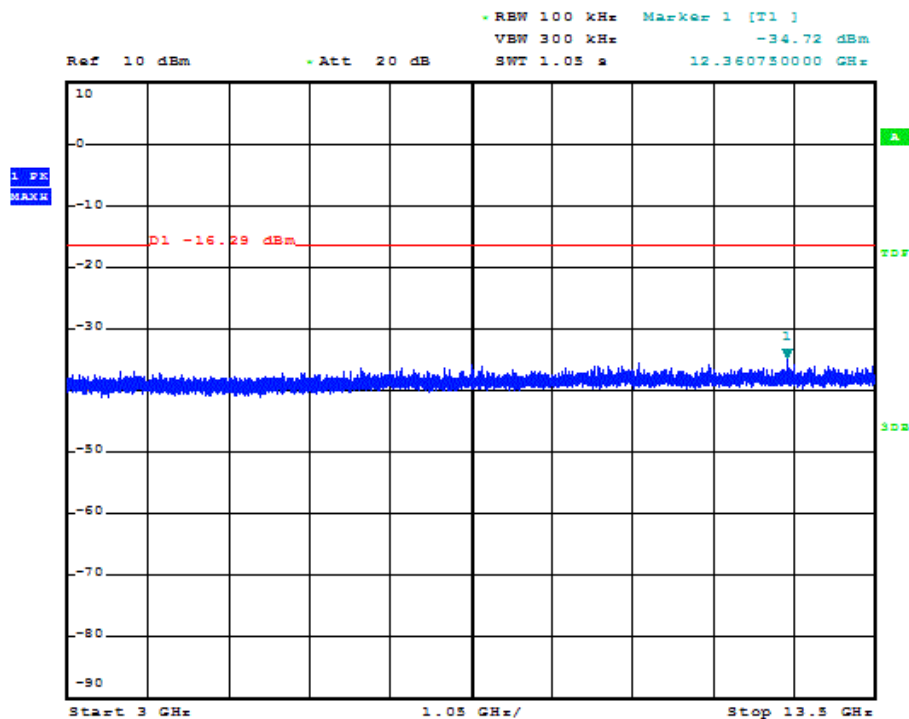
Date: 1.JUL.2014 23:35:27

Figure 7.3.2.2-33: 30 MHz – 1 GHz – High Channel (8DPSK)



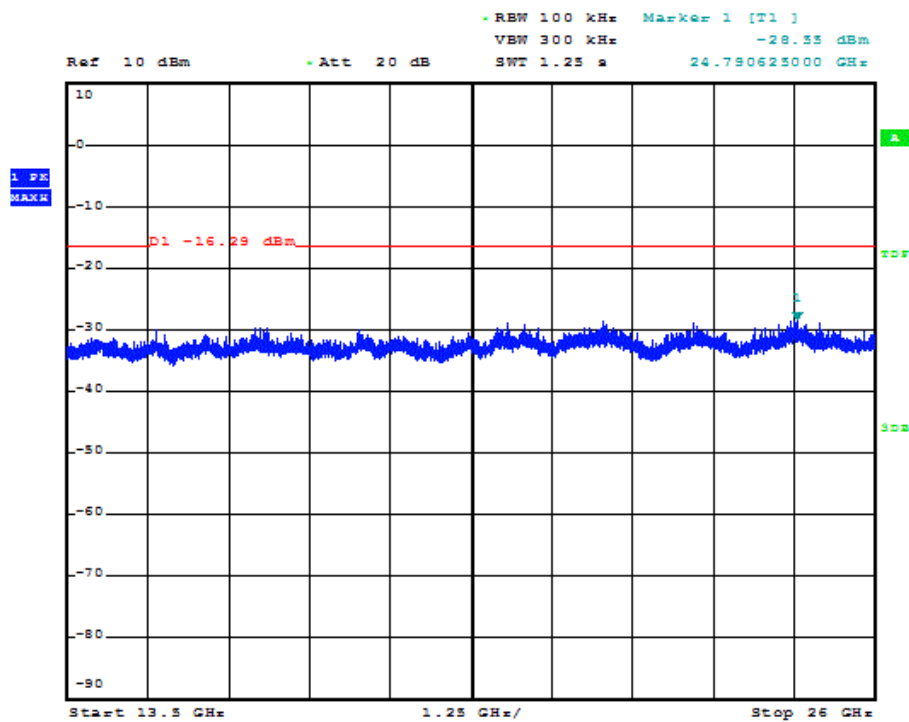
Date: 1.JUL.2014 22:39:24

Figure 7.3.2.2-34: 1 GHz –3 GHz –High Channel (8DPSK)



Date: 1.JUL.2014 22:43:13

Figure 7.3.2.2-35: 3 GHz –13.5 GHz – High Channel (8DPSK)



Date: 1.JUL.2014 22:45:35

Figure 7.3.2.2-36: 13.5 GHz –26 GHz – High Channel (8DPSK)

8 CONCLUSION

In the opinion of ACS, Inc., the models H97TGD9PW1AN & NUR1065A manufactured by Motorola Solutions meet the requirements of FCC Part 15 subpart C and Industry Canada's Radio Standards Specification RSS-210 for the specific tests documented.

END REPORT