Excellence in Compliance Testing

Certification Test Report

FCC ID: VEYXMODR1

FCC Rule Part: 15.247

ACS Report Number: 13-2019.W03.2A

Manufacturer: xG Technology, Inc
Model: xMod

Test Begin Date: **February 28, 2013**
Test End Date: **May 11, 2013**

Report Issue Date: May 13, 2013

ACCREDITED TESTING

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 ACLASS, ANSI, or any agency of the Federal Government.

Project Manager:

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

Reviewed by:

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

This report contains 175 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.

1.2 Product Description

The xG Technology Model xMod consists of the 900 MHz xMax transceiver which encloses an xMaxW Wi-Fi module (FCC ID: VEYXMODR1W1). The device is a self contained 802.11b/g access point and xMax modem and functions a wired/wireless bridge that allows Ethernet or Wi-Fi enabled devices to connect to an xMax network or vice-versa.

Technical Information:
Band of Operation: 904.2 MHz - 925.8 MHz
Number of Channels: 16
Modulation Format: BPSK, QPSK, 16-QAM
Antenna Type/Gain: Planar Inverted-F Antenna Array (4 Rx, 2 Tx), 0 dBi
Operating Voltage: 120 V / 60Hz

Manufacturer Information:
xG Technology, Inc
7771 West Oakland Park Blvd, Suite 231
Sunrise, FL 33351

Co-Location
The 900 MHz xMax transceiver is co-located with the xMaxW WLAN transceiver module which is described in the table below.

Table 1.2-1: xMaxW Module Information

Model	FCC ID	Manufacturer	Mode of Operation	Frequency Range (MHz)
xMaxW	VEYXMODR1W1	xG Technology	IEEE 802.11 b/g	2412 - 2462

Test Sample Serial Number(s): ACS#23 (DPM Board# 1937122700027, Main Board# 1930130100018)

Test Sample Condition: The unit was in good operating condition with no physical damages.

1.3 Test Methodology and Considerations

The xMod was evaluated for all available modulations formats while powered through the AC Mains.

The radiated emissions were performed up to the 10^{th} harmonic with both antennas transmitting simultaneously. The unit was evaluated while transmitting continuously at the maximum allowable duty cycle of 50%. Justification for the duty cycle is provided in the theory of operation.

The unit was also evaluated for inter-modulation products when transmitting simultaneously with the co-located xMaxW WLAN transceiver. All inter-modulation products created by the co-transmission of both radios were compliant with the limits of 15.209.

The RF conducted measurements were performed directly at the TX antenna ports through suitable attenuation. The maximum power and PSD were calculated using the methodologies described in KDB Publication No. 662911 D01 Multiple Transmitter Output v01r02.

The power line conducted emissions were performed for the unit in continuous transmit mode for each modulation format. The worst case configuration is reported in this document.

The unit was also evaluated for unintentional emissions. The results are documented separately in a DoC test report. In order to meet the uninentional radiated emissions requirements, the unit was modified with copper tape at the left side of the top heat sink and main board as well as with holding clamps at the edges of the bottom shield.

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 #: 587595
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:

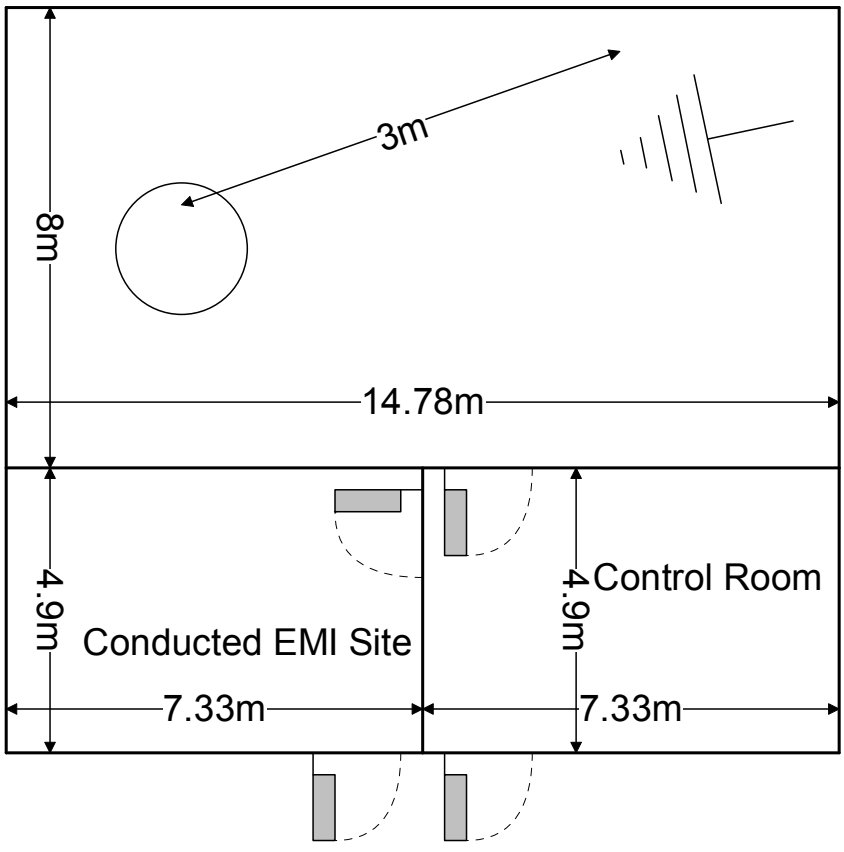

Figure 2.3.1-1: Semi-Anechoic Chamber Test Site

2.3.2 Conducted Emissions Test Site Description

The dimensions of the shielded conducted room are 7.3 x 4.9 x 3 m^3. As per ANSI C63.4 2003 requirements, the data were taken using two LISNs; a Solar Model 8028-50 50 Ω/50 µH 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:

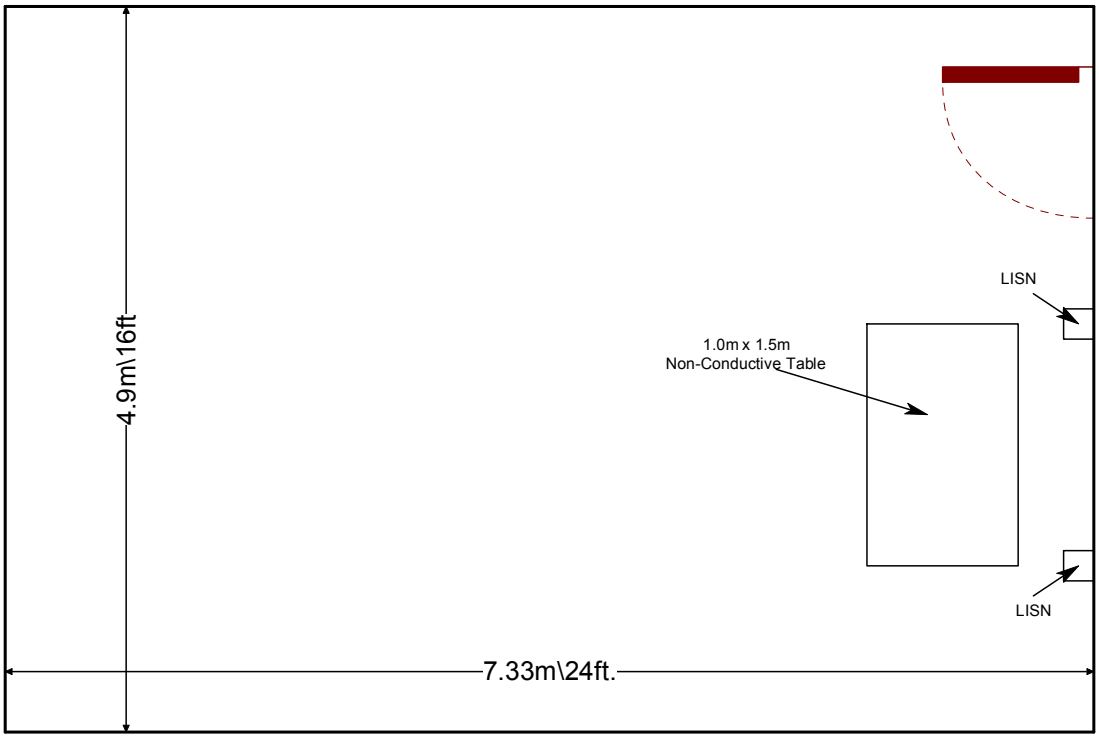

Figure 2.3.2-1: AC Mains Conducted EMI Site

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, 2013
- US Code of Federal Regulations (CFR): Title 47, Part 15, Subpart C: Radio Frequency Devices, Intentional Radiators, 2013
- KDB Publication No. 558074 D01 Meas Guidance v03r01 – Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247, April 9, 2013.
- KDB Publication No. 662911 D01 Multiple Transmitter Output v01r02 – Emissions Testing of Transmitters with Multiple Outputs in the Same Band (*e.g.,* MIMO, Smart Antenna, etc), September, 26, 2012

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

AssetID	Manufacturer	Model #	Equipment Type	Serial #	Last Calibration Date	Calibration Due Date
523	Agilent	E7405	Spectrum Analyzers	MY45103293	1/8/2013	1/8/2015
524	Chase	CBL6111	Antennas	1138	1/7/2013	1/7/2015
2007	EMCO	3115	Antennas	2419	1/18/2012	1/18/2014
2011	Hewlett-Packard	HP 8447D	Amplifiers	2443A03952	12/31/2012	12/31/2013
2022	EMCO	LISN3825/2R	LISN	1095	8/19/2011	8/19/2013
2037	ACS Boca	Chamber EMI Cable Set	Cable Set	2037	1/1/2013	1/1/2014
2044	QMI	N/A	Cables	2044	12/31/2012	12/31/2013
2045	ACS Boca	Conducted Cable Set	Cable Set	2045	12/31/2012	12/31/2013
2064	CIR Q-TEL	FHT/22-10K-13/50-3A/3A	Filter	9	12/31/2012	12/31/2013
2071	Trilithic, Inc.	4HC1400-1-KK	Filter	9643263	12/31/2012	12/31/2013
2075	Hewlett Packard	8495B	Attenuators	2626A11012	12/31/2012	12/31/2013
2076	Hewlett Packard	HP5061-5458	Cables	2076	12/29/2012	12/29/2013
2082	Teledyne Storm Products	90-010-048	Cables	2082	5/31/2012	5/31/2013
2089	Agilent Technologies, Inc.	83017A	Amplifiers	3123A00214	12/20/2012	12/20/2013
2091	Agilent Technologies, Inc.	8573A	Spectrum Analyzers	2407A03233	12/12/2011	12/12/2013
2095	ETS Lindgren	TILE4! - Version 4.2.A	Software	85242	NCR	NCR

NCR=No Calibration Required

5 SUPPORT EQUIPMENT

Table 5-1: EUT and Support Equipment

Item #	Type Device	Manufacturer	Model/Part #	Serial #
1	EUT	XG Technology	xMod	ACS#23
2	WLAN Module	XG Technology	xMod	N/A
3	EUT Power Supply	V-Infinity	ETSA190342UD	N/A
4	Ethernet Switch	NetGear	FS105	FS15A09005405
5	Ethernet Switch Power Supply	NetGear	YP-040	N/A

Table 5-2: Cable Description

Cable #	Cable Type	Length	Shield	Termination
A	Ethernet Cable	1.5m	No	EUT to Ethernet Switch
B	Power supply cable	1.83m	No	Power Supply to EUT
C	Power Cable	1.8m	No	Power Supply to AC Mains
D	Power Supply Cable	1.87m	No	Ethernet Switch to Power Supply

6 EQUIPMENT UNDER TEST SETUP BLOCK DIAGRAM

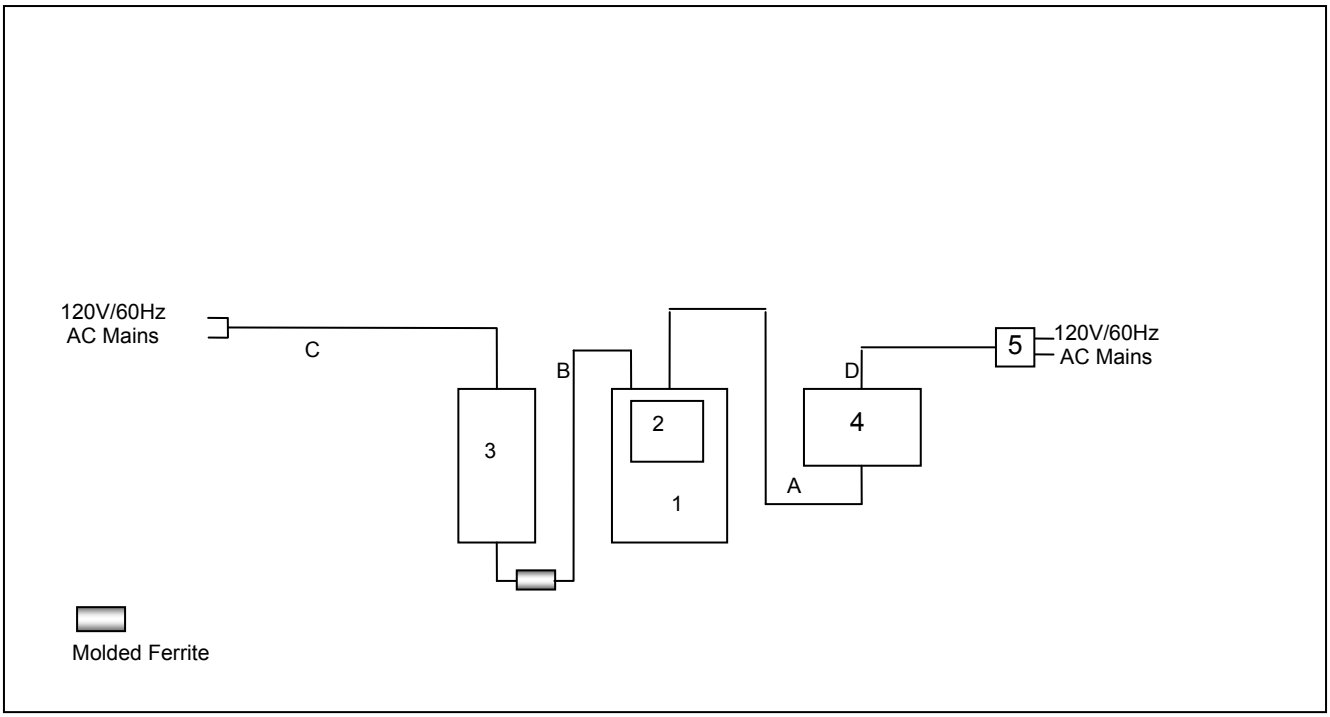

Figure 6-1: Test Setup

7 SUMMARY OF TESTS

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

7.1 Antenna Requirement – FCC: Section 15.203

The EUT uses a 4 x 2 Planar Inverted-F antenna array which uses MCX connectors at the antenna ports, thus meeting the requirements of FCC Section 15.203.

7.2 6 dB Bandwidth - FCC: Section 15.247(a)(2) 99% Bandwidth

7.2.1 Measurement Procedure

The 6dB bandwidth was measured in accordance with the FCC KDB Publication No. 558074 “Guidance for Performing Compliance Measurements on Digital Transmission Systems (47 CFR 15.247)” DTS 6-dB Signal Bandwidth Option 1. The RBW of the spectrum analyzer was set to 100 kHz and VBW 300 kHz. Span was set large enough to capture the entire emissions and >> RBW.

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.

7.2.2 Measurement Results

Results are shown below.

Table 7.2.2-1: 6dB / 99% Bandwidth (BPSK, Antenna Path 1)

Frequency [MHz]	6dB Bandwidth [kHz]	99% Bandwidth (kHz)
904.2	1320	1440
915.72	1326	1440
925.8	1338	1430

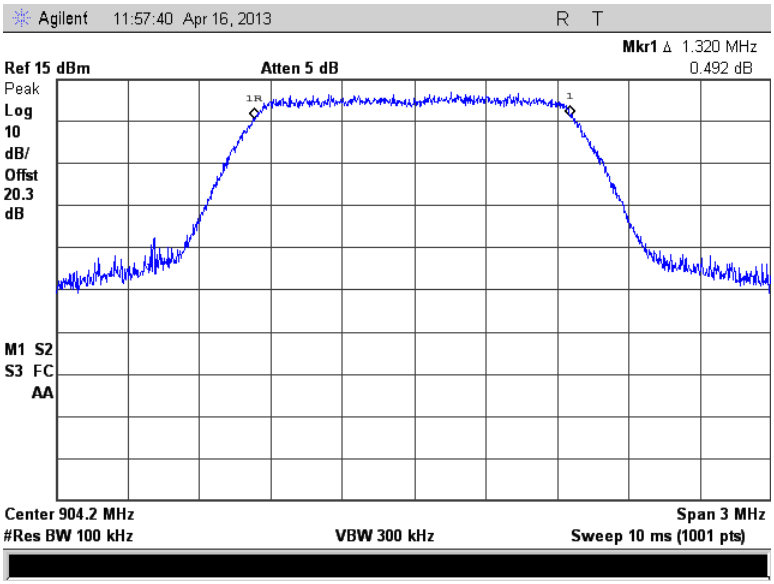

Figure 7.2.2-1: 6dB BW - Low Channel (BPSK, Antenna Path 1)

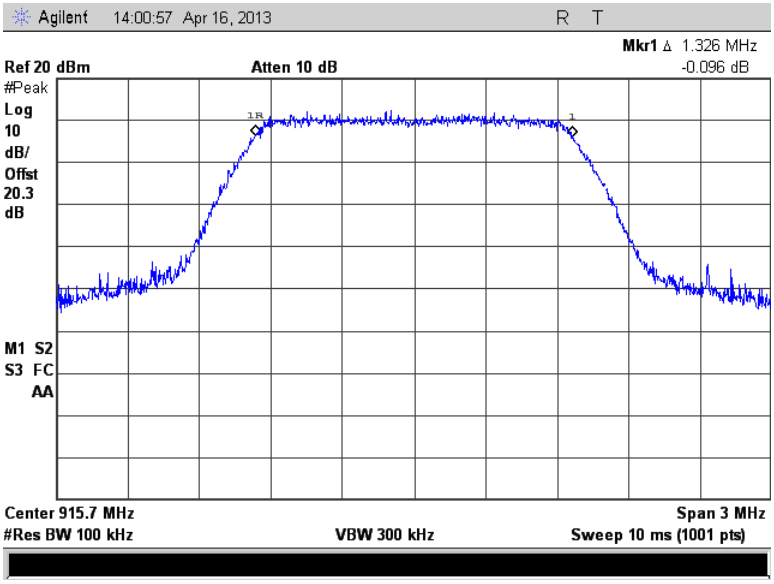

Figure 7.2.2-2: 6dB BW - Middle Channel (BPSK, Antenna Path 1)

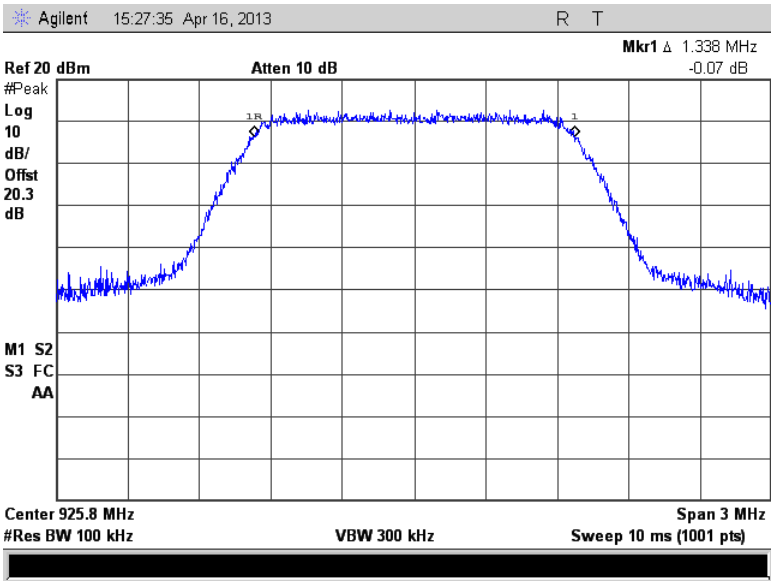

Figure 7.2.2-3: 6dB BW - High Channel (BPSK, Antenna Path 1)

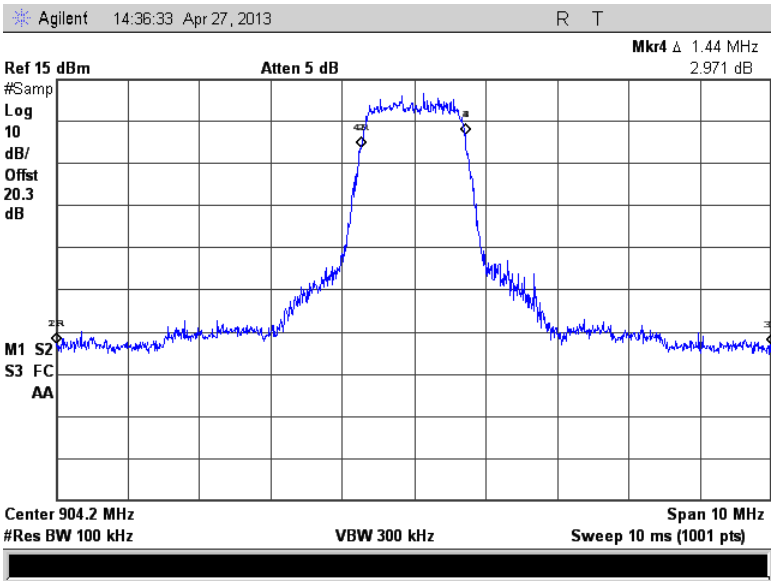

Figure 7.2.2-4: 99% OBW - Low Channel (BPSK, Antenna Path 1)

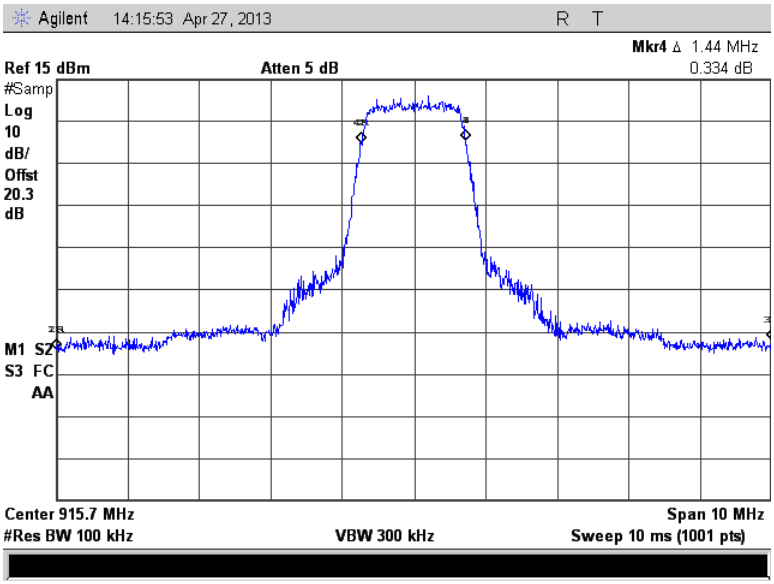

Figure 7.2.2-5: 99% OBW - Middle Channel (BPSK, Antenna Path 1)

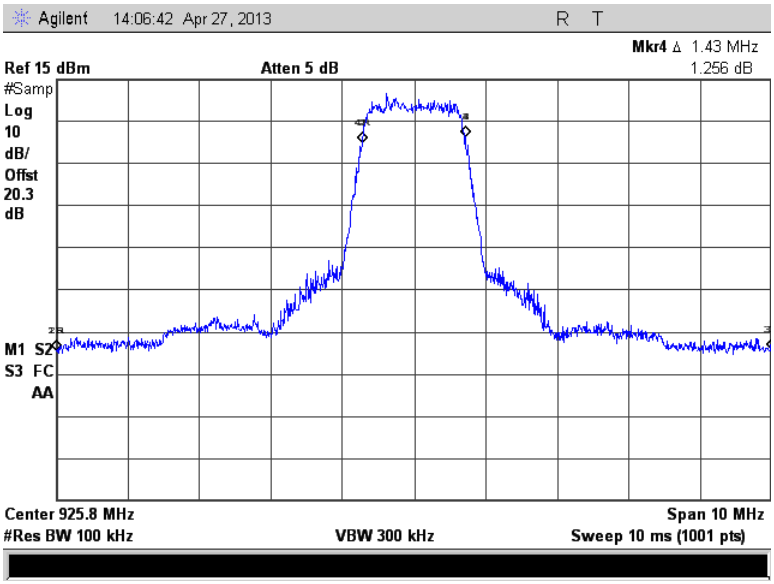

Figure 7.2.2-6: 99% OBW - High Channel (BPSK, Antenna Path 1)

Table 7.2.2-2: 6dB / 99% Bandwidth (BPSK, Antenna Path 2)

Frequency [MHz]	6dB Bandwidth [kHz]	99% Bandwidth (kHz)
904.2	1353	1440
915.72	1353	1430
925.8	1353	1430

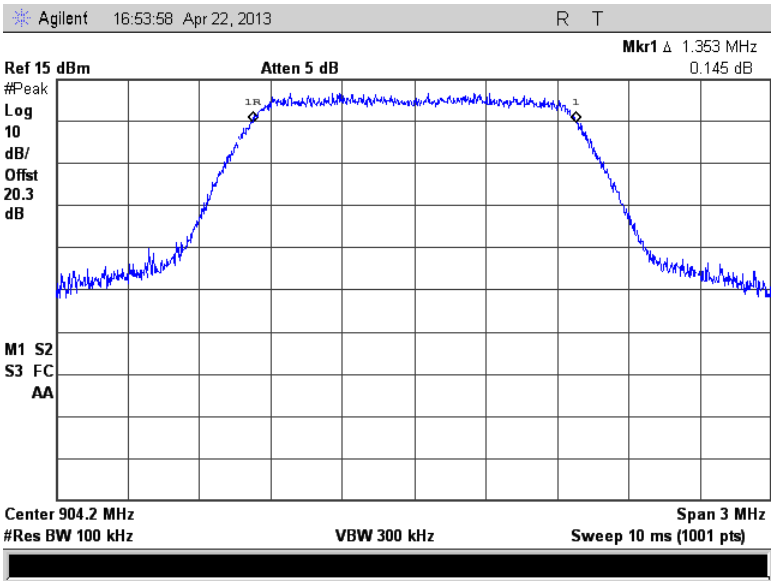

Figure 7.2.2-7: 6dB BW - Low Channel (BPSK, Antenna Path 2)

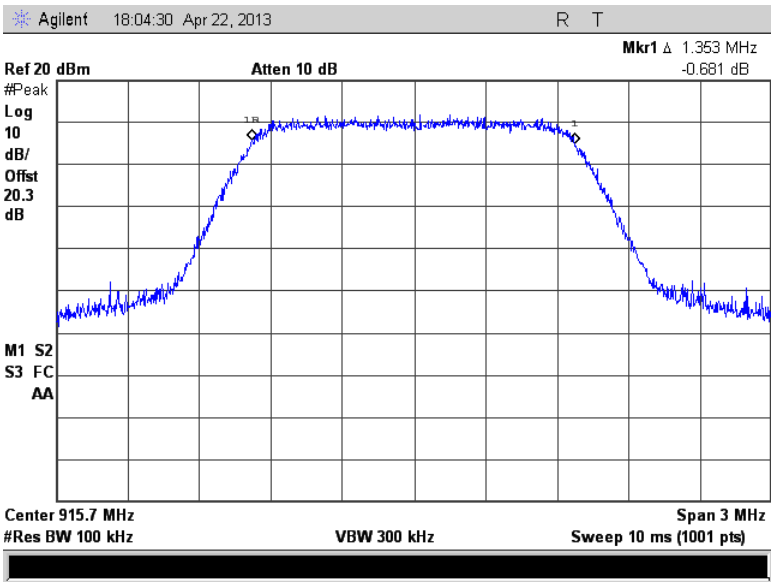

Figure 7.2.2-8: 6dB BW - Middle Channel (BPSK, Antenna Path 2)

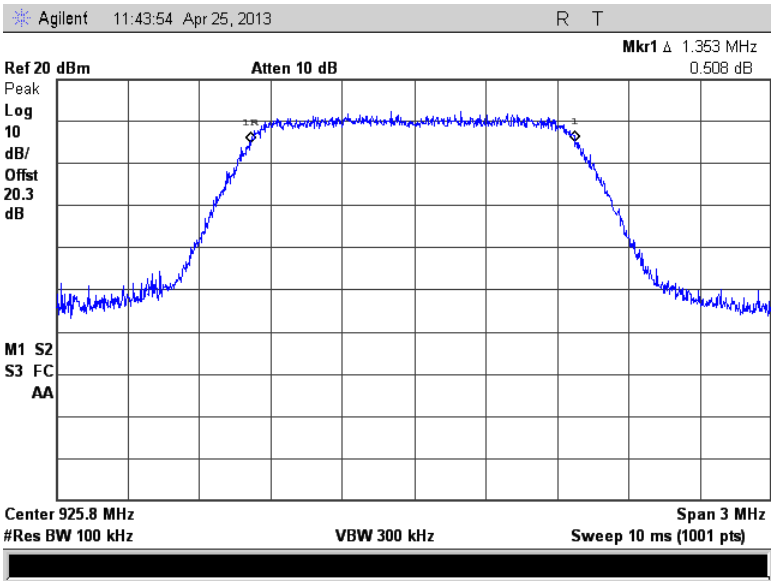

Figure 7.2.2-9: 6dB BW - High Channel (BPSK, Antenna Path 2)

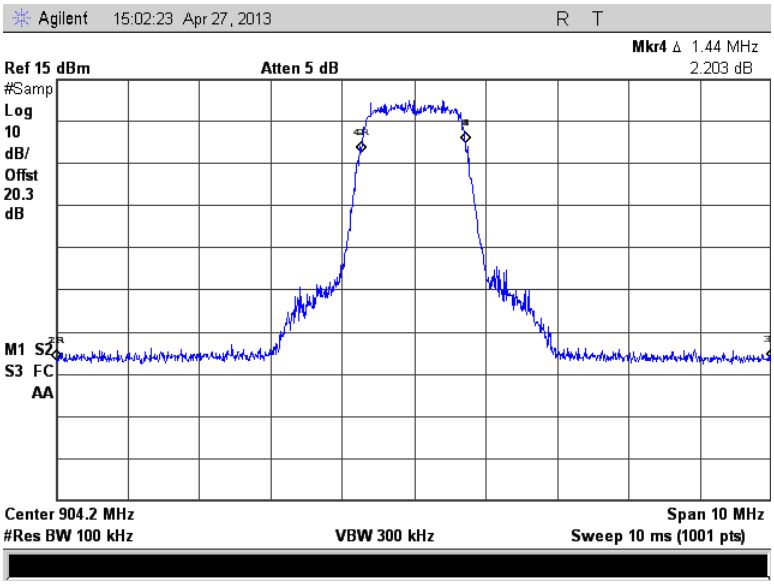

Figure 7.2.2-10: 99% OBW - Low Channel (BPSK, Antenna Path 2)

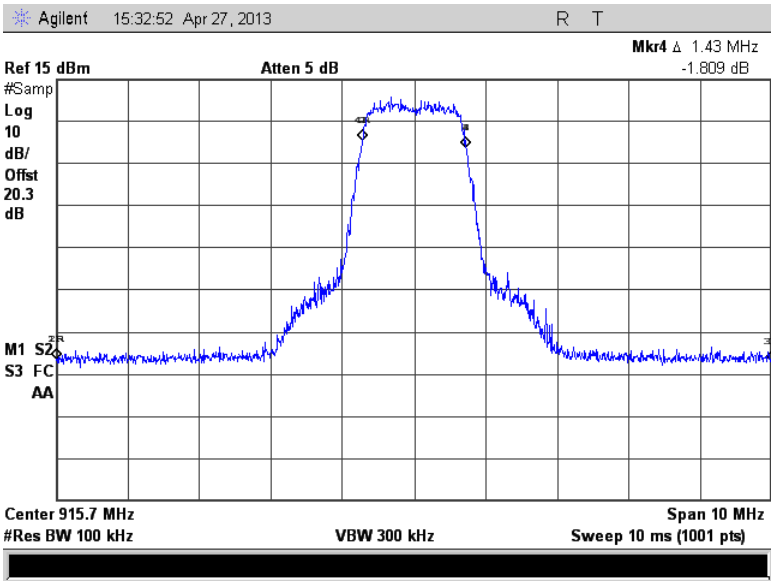

Figure 7.2.2-11: 99% OBW - Middle Channel (BPSK, Antenna Path 2)

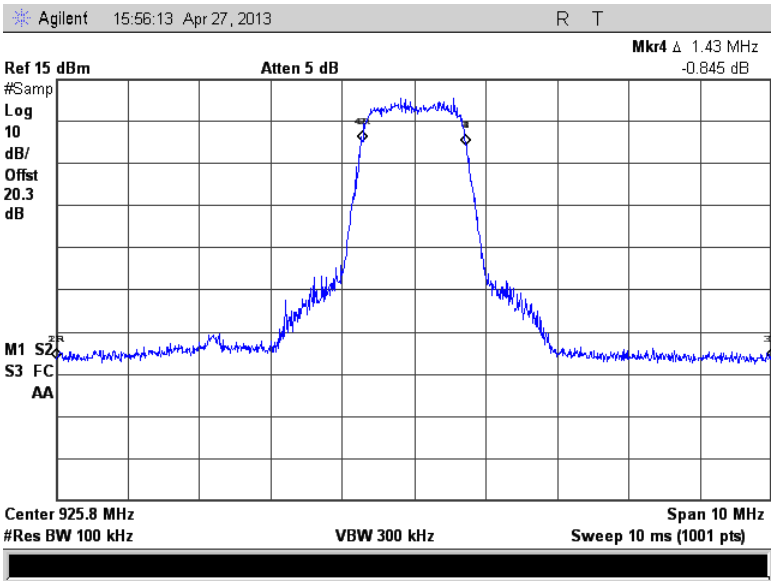

Figure 7.2.2-12: 99% OBW - High Channel (BPSK, Antenna Path 2)

Table 7.2.2-3: 6dB / 99% Bandwidth (QPSK, Antenna Path 1)

Frequency [MHz]	6dB Bandwidth [kHz]	99% Bandwidth (kHz)
904.2	1362	1430
915.72	1335	1430
925.8	1326	1430

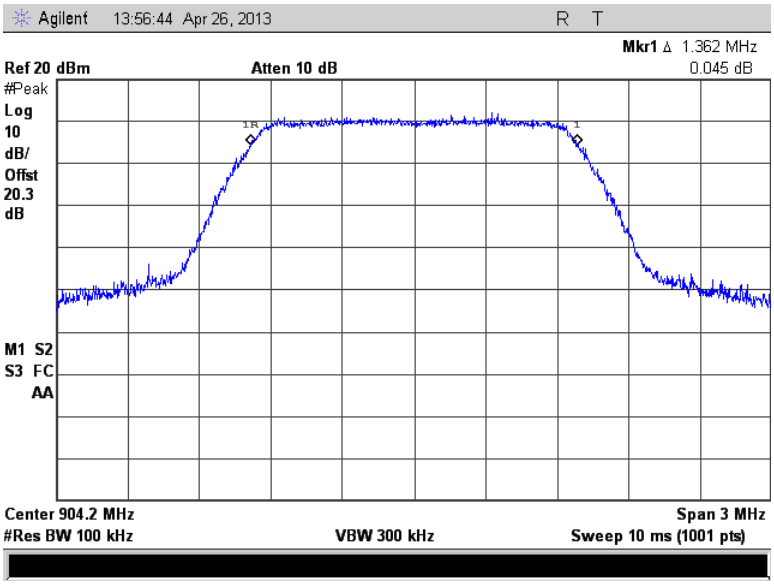

Figure 7.2.2-13: 6dB BW - Low Channel (QPSK, Antenna Path 1)

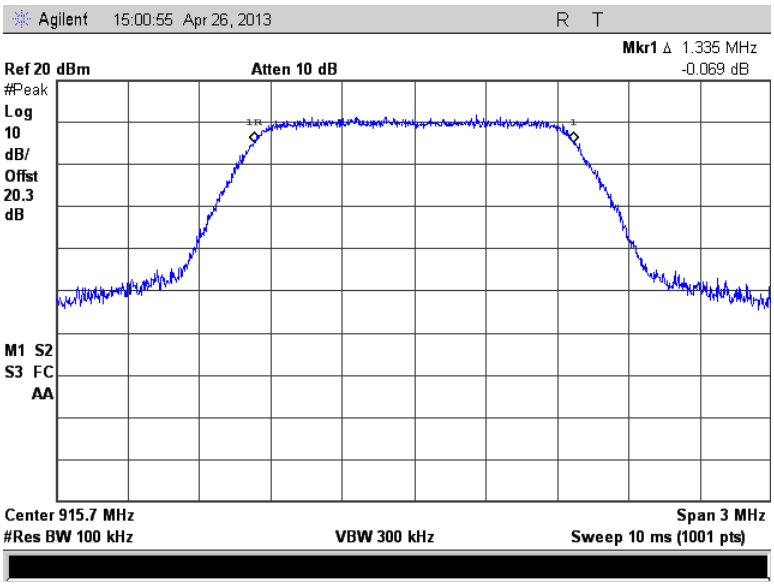

Figure 7.2.2-14: 6dB BW - Middle Channel (QPSK, Antenna Path 1)

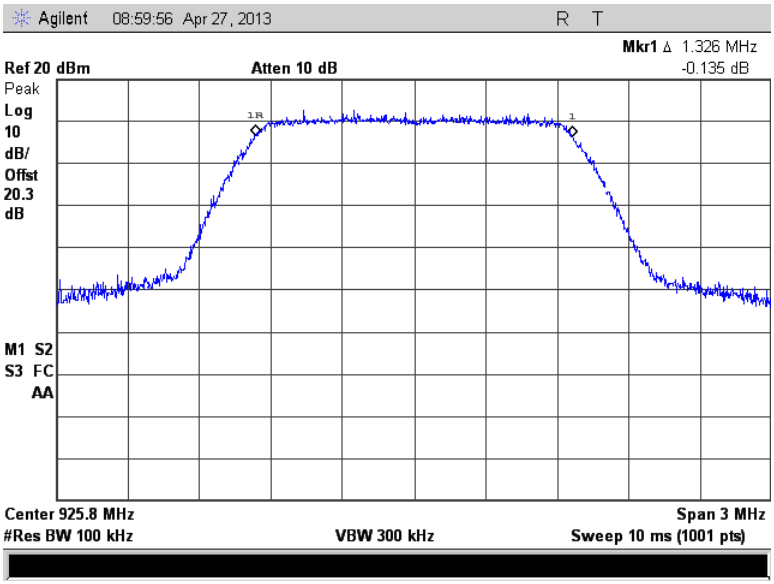

Figure 7.2.2-15: 6dB BW - High Channel (QPSK, Antenna Path 1)

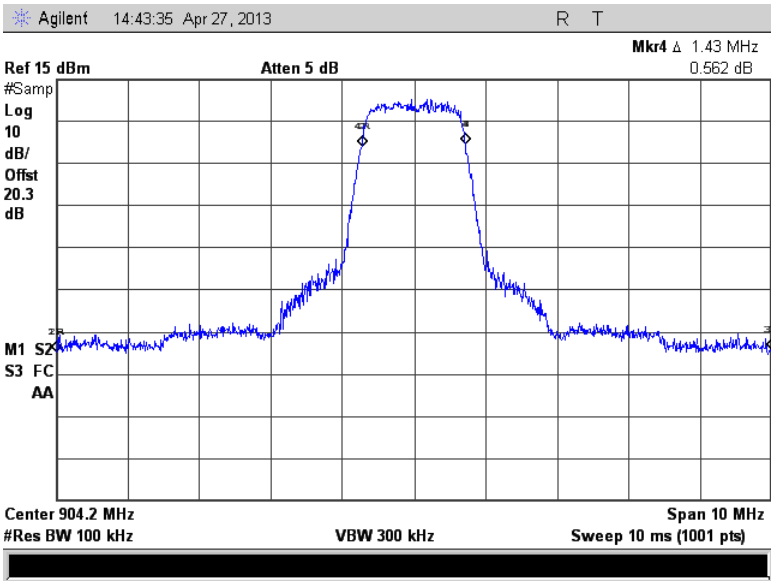

Figure 7.2.2-16: 99% OBW - Low Channel (QPSK, Antenna Path 1)

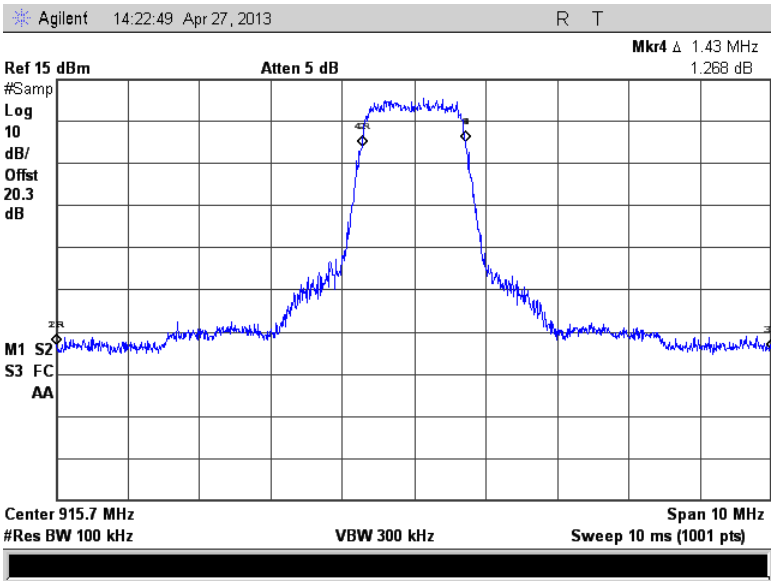

Figure 7.2.2-17: 99% OBW - Middle Channel (QPSK, Antenna Path 1)

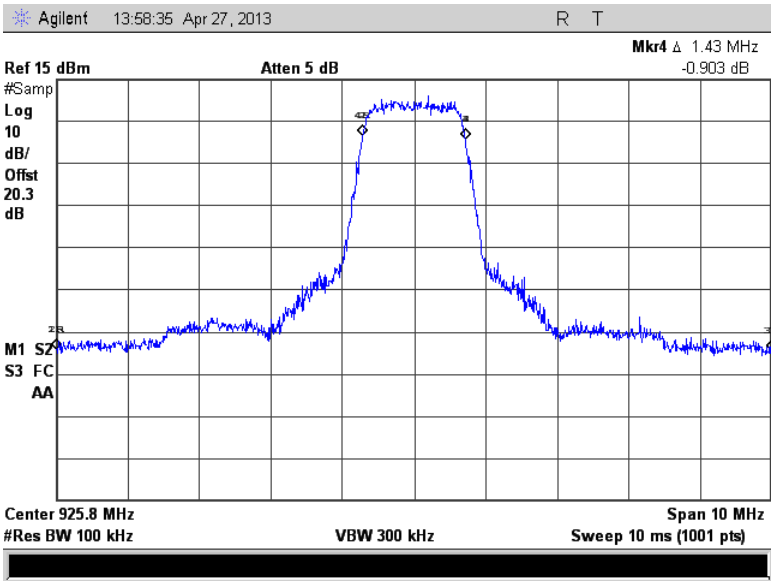

Figure 7.2.2-18: 99% OBW - High Channel (QPSK, Antenna Path 1)

Table 7.2.2-4: 6dB / 99% Bandwidth (QPSK, Antenna Path 2)

Frequency [MHz]	6dB Bandwidth [kHz]	99% Bandwidth (kHz)
904.2	1323	1440
915.72	1323	1430
925.8	1365	1430

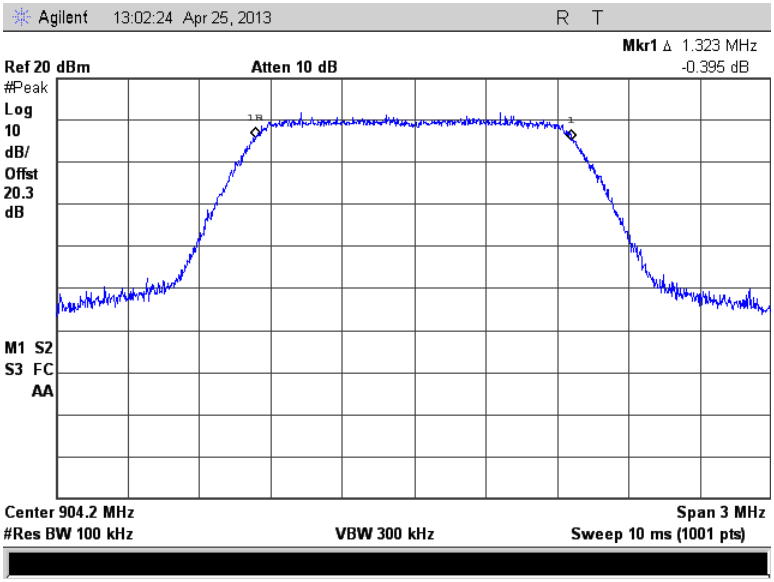

Figure 7.2.2-19: 6dB BW - Low Channel (QPSK, Antenna Path 2)

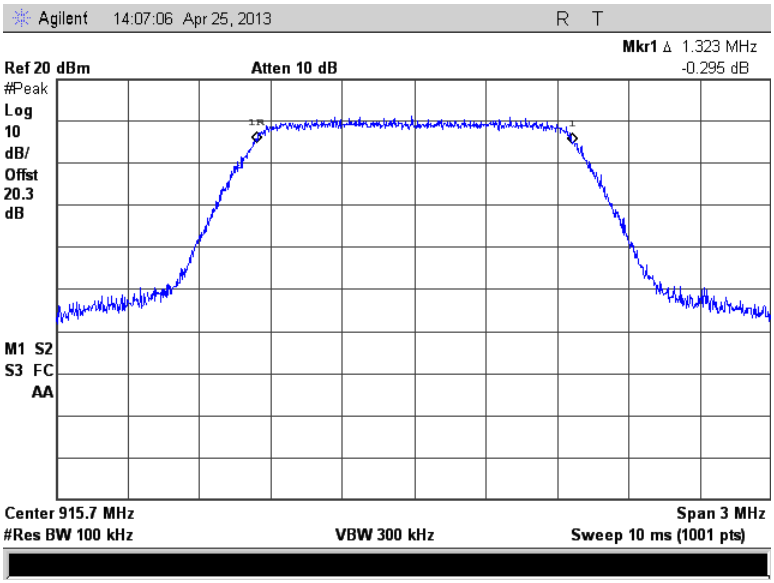

Figure 7.2.2-20: 6dB BW - Middle Channel (QPSK, Antenna Path 2)

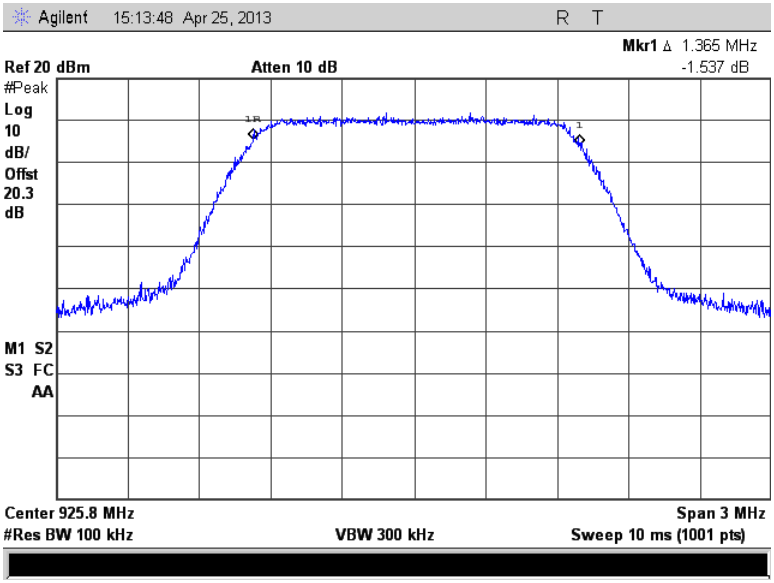

Figure 7.2.2-21: 6dB BW - High Channel (QPSK, Antenna Path 2)

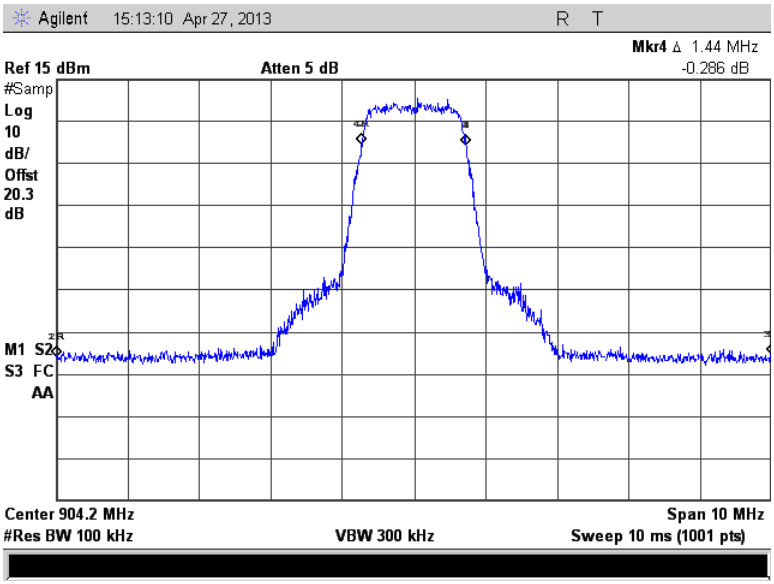

Figure 7.2.2-22: 99% OBW - Low Channel (QPSK, Antenna Path 2)

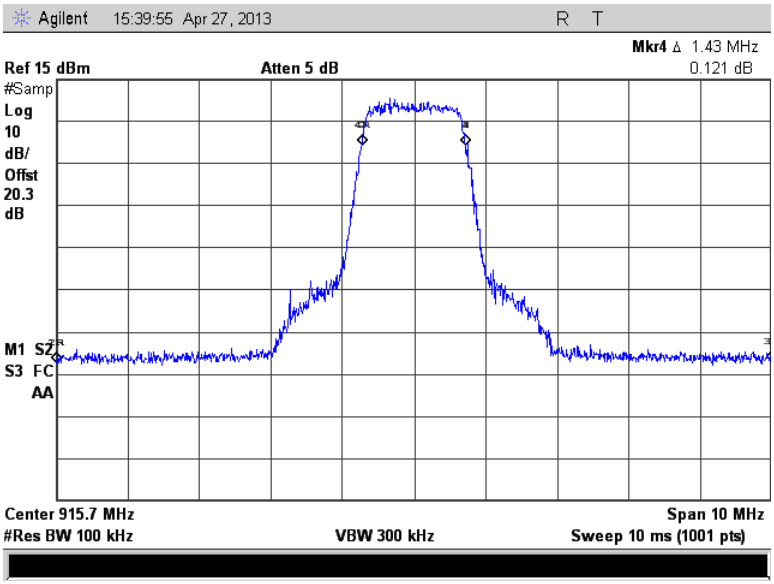

Figure 7.2.2-23: 99% OBW - Middle Channel (QPSK, Antenna Path 2)

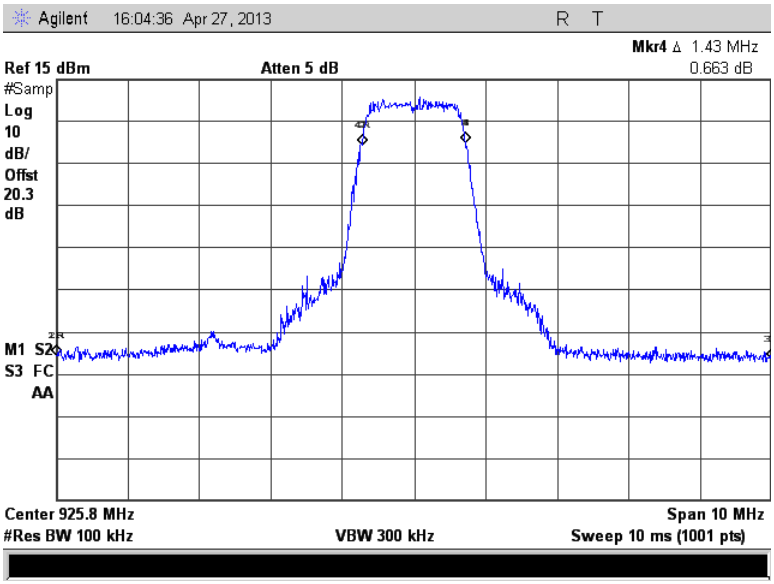

Figure 7.2.2-24: 99% OBW - High Channel (QPSK, Antenna Path 2)

Table 7.2.2-5: 6dB / 99% Bandwidth (16-QAM, Antenna Path 1)

Frequency [MHz]	6dB Bandwidth [kHz]	99% Bandwidth (kHz)
904.2	1359	1450
915.72	1347	1430
925.8	1359	1420

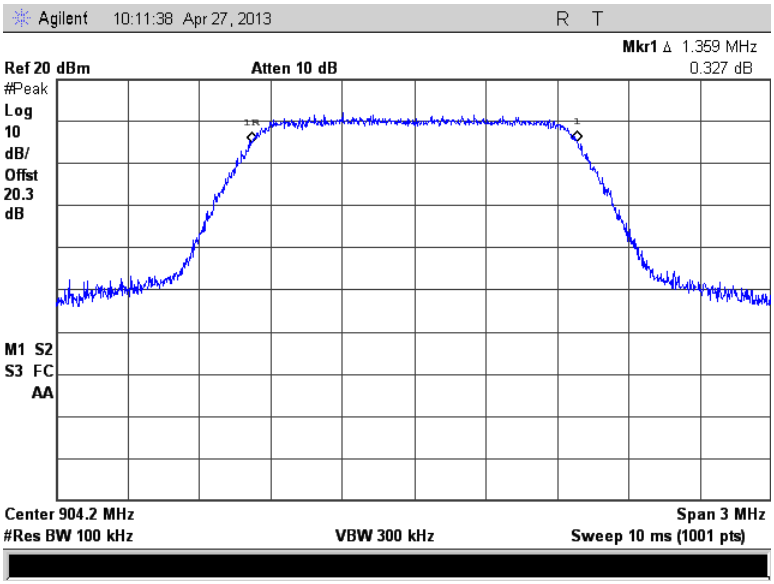

Figure 7.2.2-25: 6dB BW - Low Channel (16-QAM, Antenna Path 1)

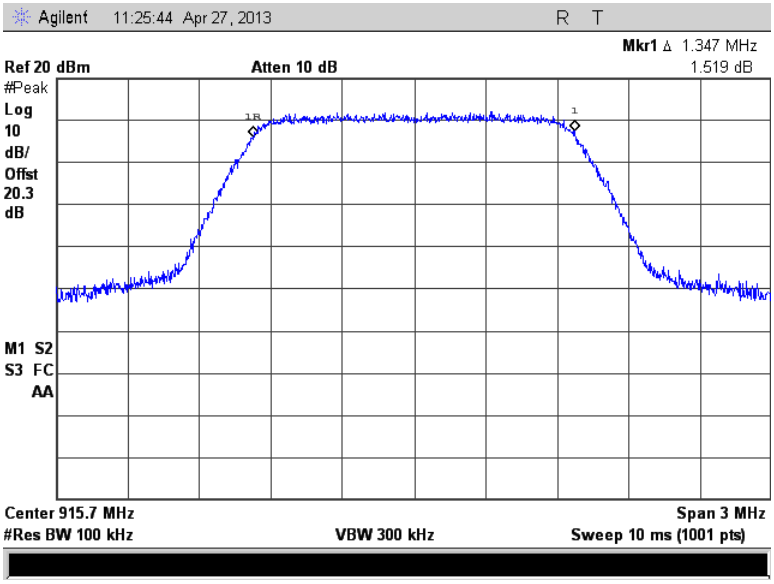

Figure 7.2.2-26: 6dB BW - Middle Channel (16-QAM, Antenna Path 1)

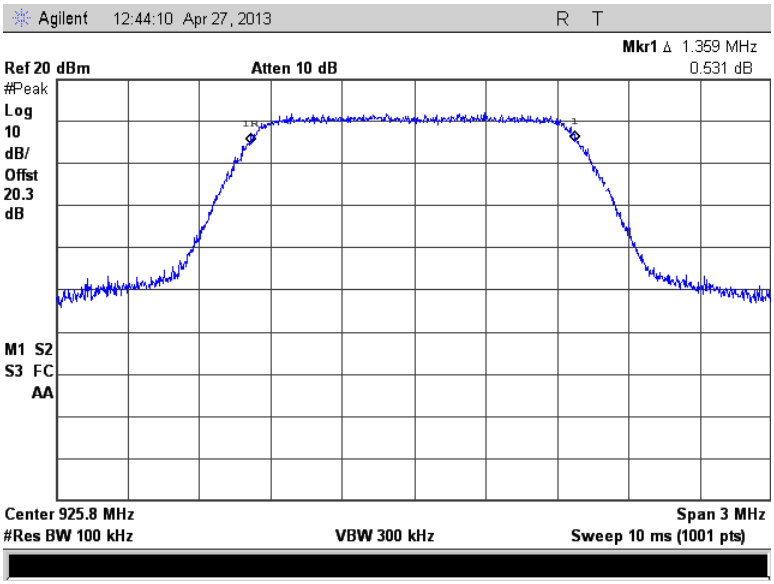

Figure 7.2.2-27: 6dB BW - High Channel (16-QAM, Antenna Path 1)

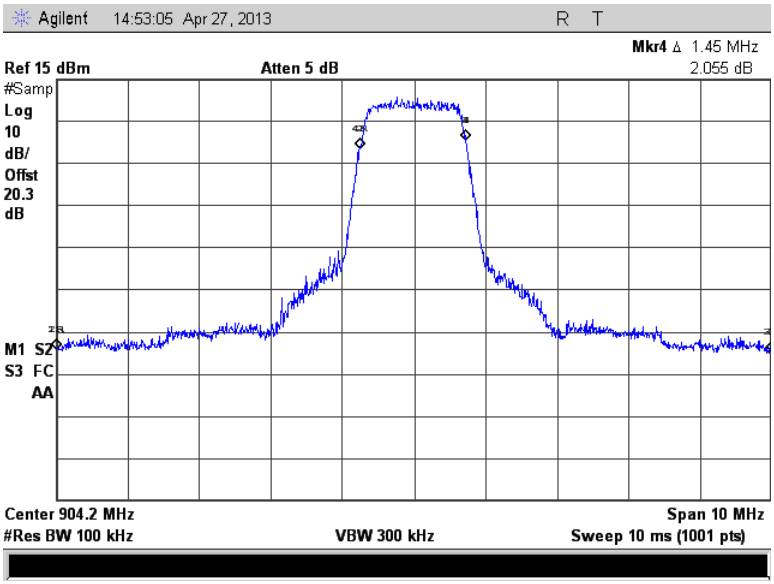

Figure 7.2.2-28: 99% OBW - Low Channel (16-QAM, Antenna Path 1)

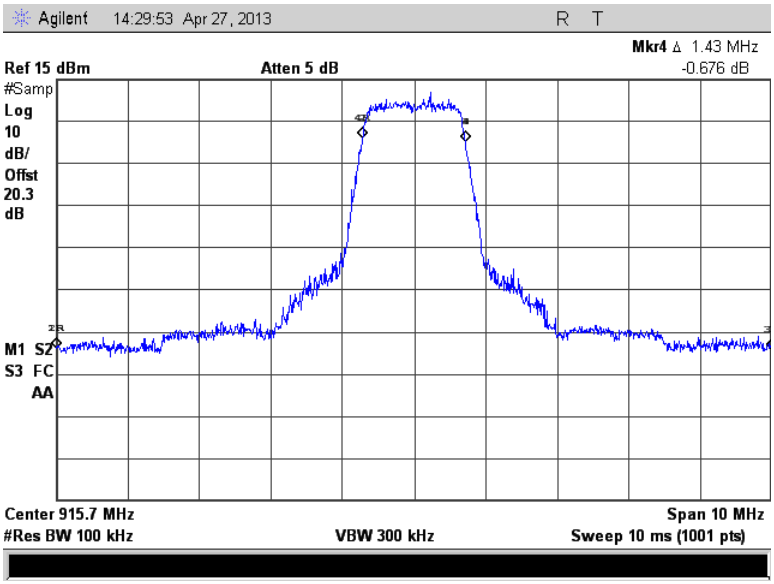

Figure 7.2.2-29: 99% OBW - Middle Channel (16-QAM, Antenna Path 1)

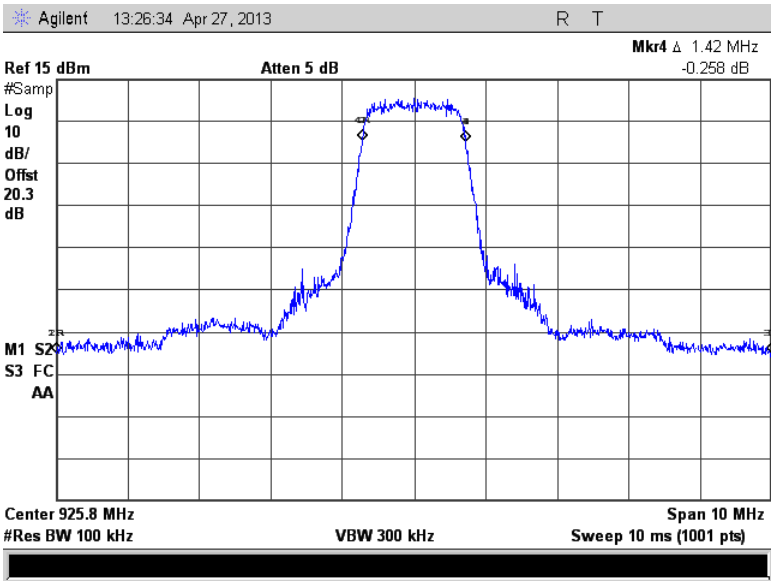

Figure 7.2.2-30: 99% OBW - High Channel (16-QAM, Antenna Path 1)

Table 7.2.2-6: 6dB / 99% Bandwidth (16-QAM, Antenna Path 2)

Frequency [MHz]	6dB Bandwidth [kHz]	99% Bandwidth (kHz)
904.2	1353	1430
915.72	1347	1440
925.8	1362	1430

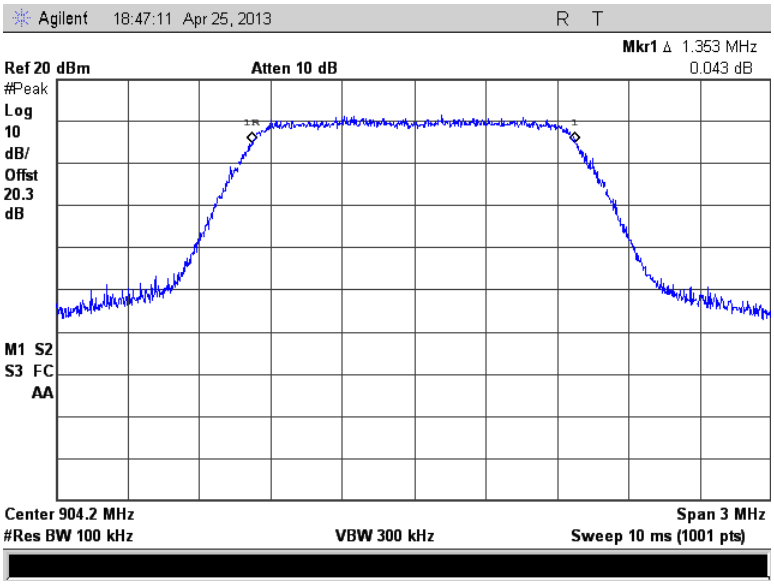

Figure 7.2.2-31: 6dB BW - Low Channel (16-QAM, Antenna Path 2)

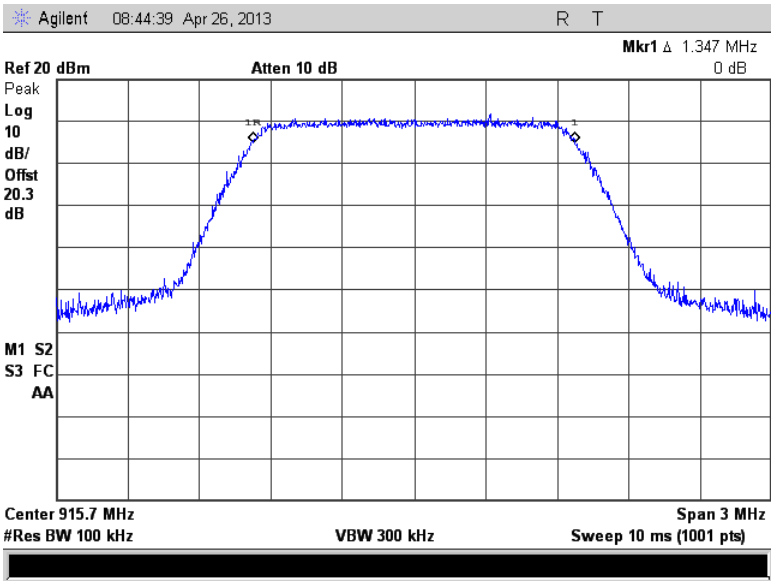

Figure 7.2.2-32: 6dB BW - Middle Channel (16-QAM, Antenna Path 2)

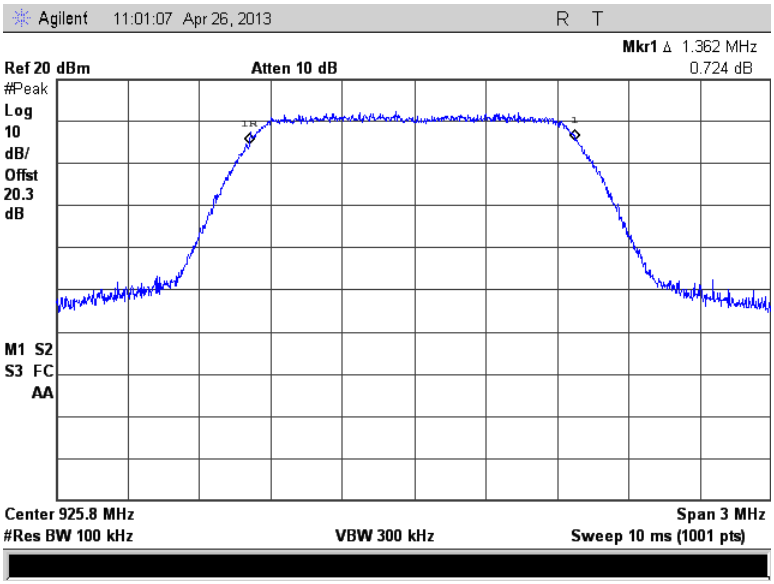

Figure 7.2.2-33: 6dB BW - High Channel (16-QAM, Antenna Path 2)

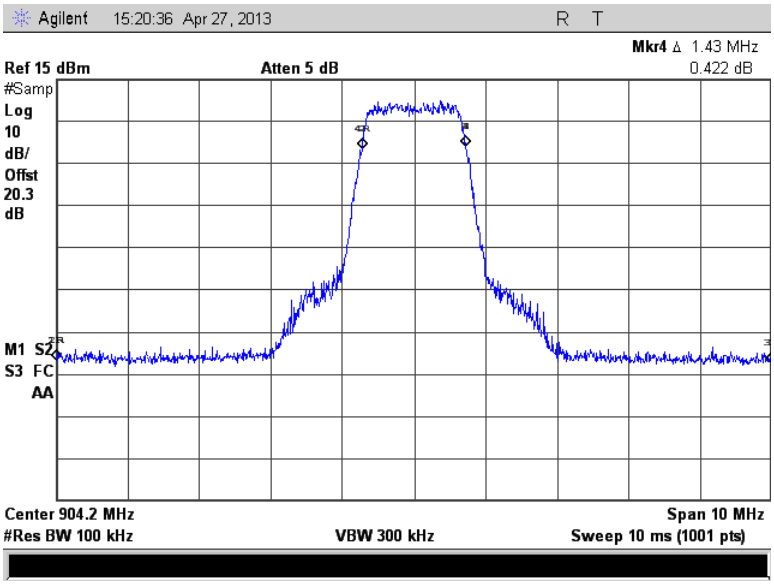

Figure 7.2.2-34: 99% OBW - Low Channel (16-QAM, Antenna Path 2)

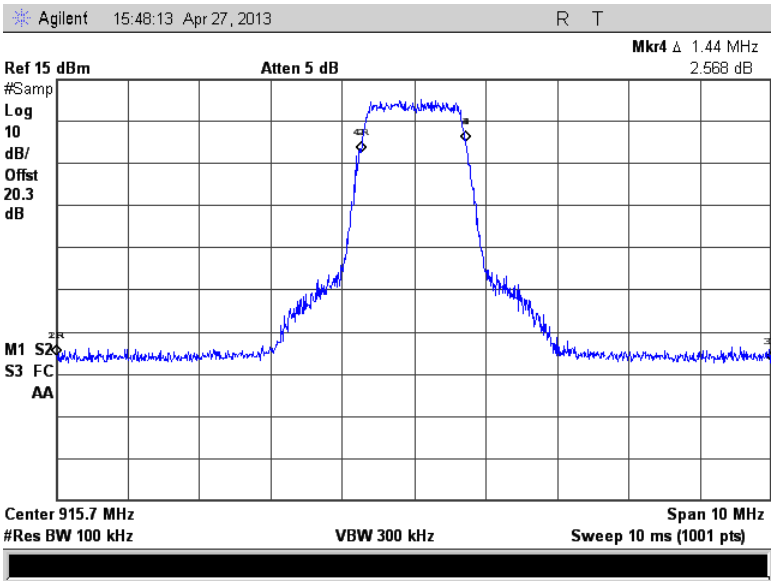

Figure 7.2.2-35: 99% OBW - Middle Channel (16-QAM, Antenna Path 2)

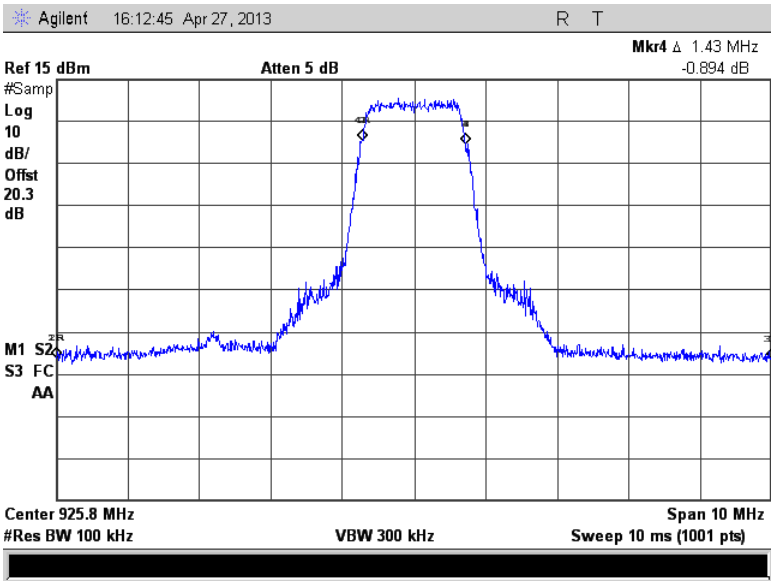

Figure 7.2.2-36: 99% OBW - High Channel (16-QAM, Antenna Path 2)

7.3 Peak Output Power - FCC Section 15.247(b)(3) IC: RSS-210 A8.4(4)

7.3.1 Measurement Procedure (Conducted Method)

The Peak Output Power was measured in accordance with the FCC KDB Publication No. 558074 "Guidance for Performing Compliance Measurements on Digital Transmission Systems (47 CFR 15.247)" Maximum Peak Conducted Output Power Section 9.1.2 Integrated Band Power Method. The RF output of the equipment under test was directly connected to the input of the Spectrum Analyzer through suitable attenuation. Data was collected with the EUT operating at maximum power per channelization.

The total output power was calculated in accordance with FCC KDB Publication No. 662911 "Emissions Testing of Transmitters with Multiple Outputs in the Same Band" in order to account for the multiple outputs by summing the output power across all transmitter outputs.

7.3.2 Measurement Results

Results are shown below.

Table 7.3.2-1: RF Output Power (BPSK)

Frequency [MHz]	TX Path 1 Level [dBm}	TX Path 2 Level [dBm]	Total Output Power [dBm]
904.2	20.66	20.52	23.6
915.72	20.43	20.44	23.45
925.8	21.42	21.16	24.3

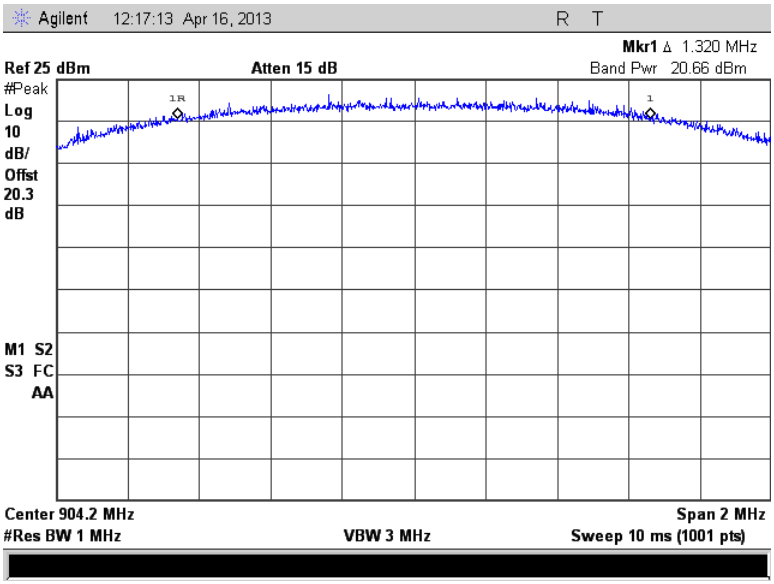

Figure 7.3.2-1: RF Output Power - Low Channel (BPSK, Antenna Path 1)

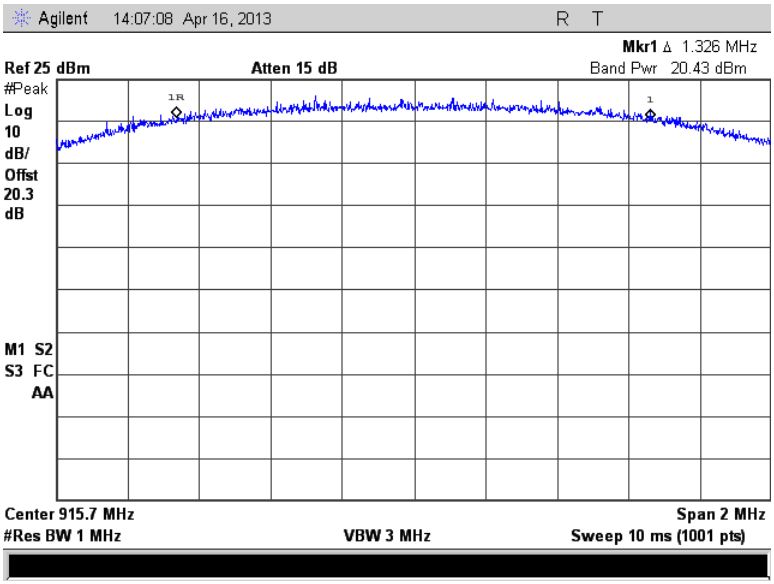

Figure 7.3.2-2: RF Output Power - Middle Channel (BPSK, Antenna Path 1)

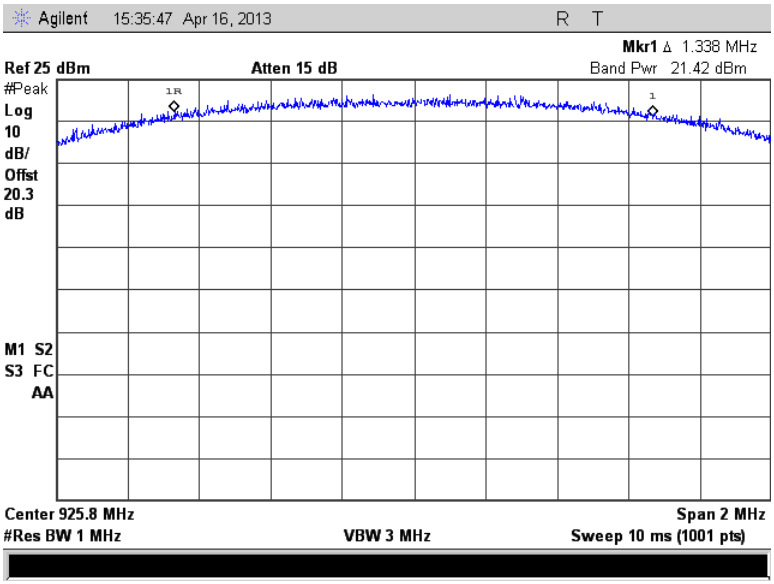

Figure 7.3.2-3: RF Output Power - High Channel (BPSK, Antenna Path 1)

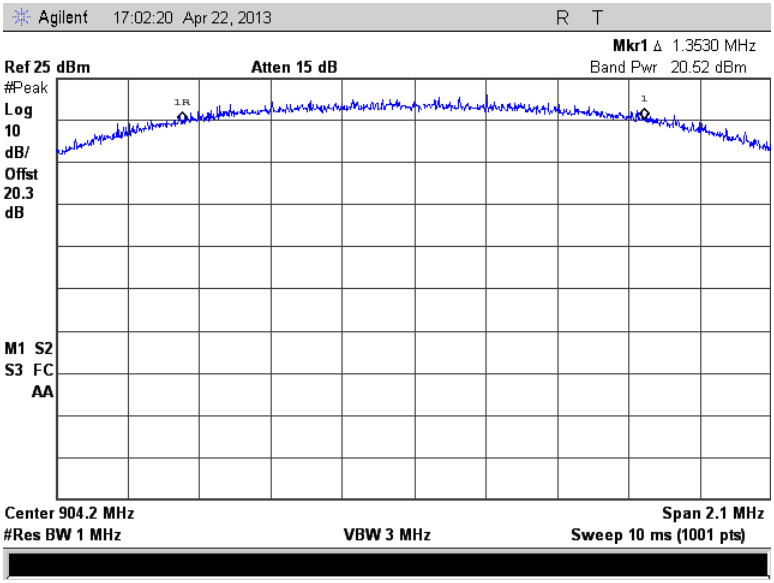

Figure 7.3.2-4: RF Output Power - Low Channel (BPSK, Antenna Path 2)

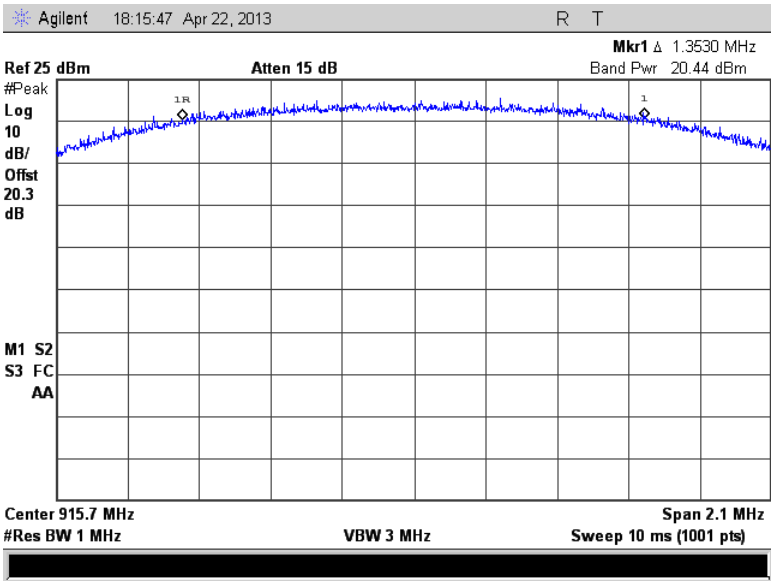

Figure 7.3.2-5: RF Output Power - Middle Channel (BPSK, Antenna Path 2)

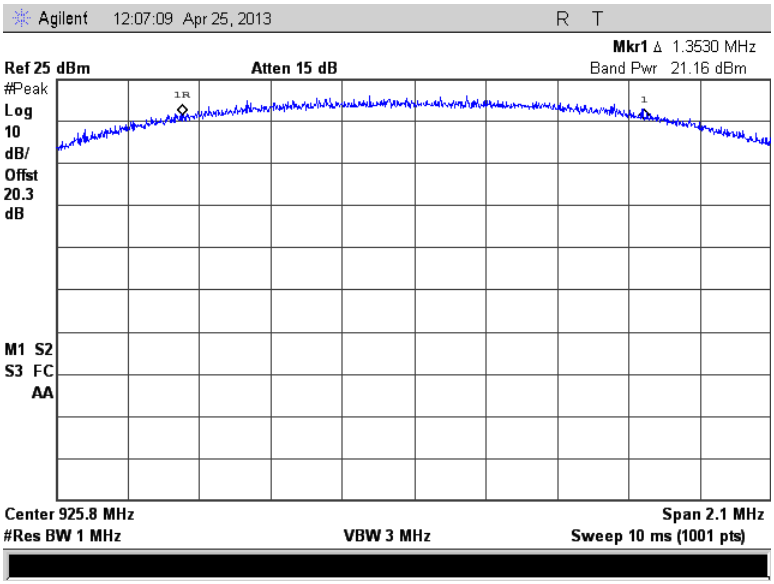

Figure 7.3.2-6: RF Output Power - High Channel (BPSK, Antenna Path 2)

Table 7.3.2-2: RF Output Power (QPSK)

Frequency [MHz]	TX Path 1 Level [dBm}	TX Path 2 Level [dBm]	Total Output Power [dBm]
904.2	20.05	19.55	22.82
915.72	20.25	19.89	23.08
925.8	20.91	20.5	23.72

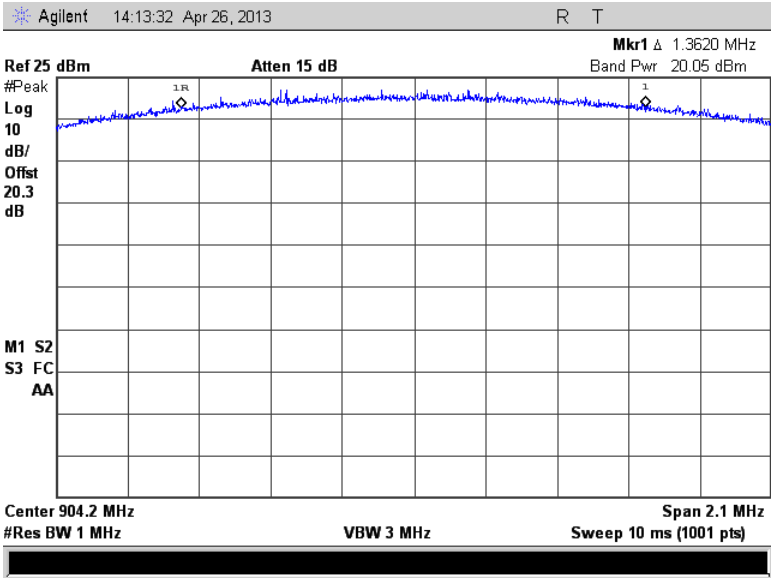

Figure 7.3.2-7: RF Output Power - Low Channel (QPSK, Antenna Path 1)

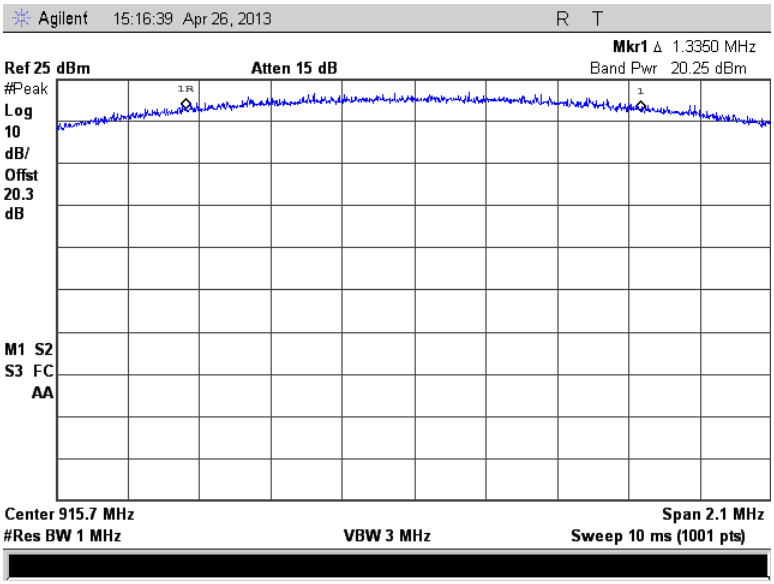

Figure 7.3.2-8: RF Output Power - Middle Channel (QPSK, Antenna Path 1)

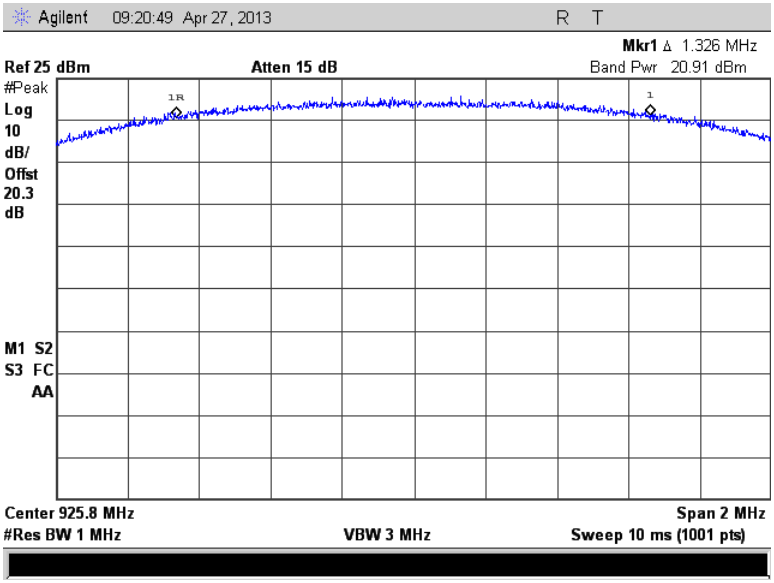

Figure 7.3.2-9: RF Output Power - High Channel (QPSK, Antenna Path 1)

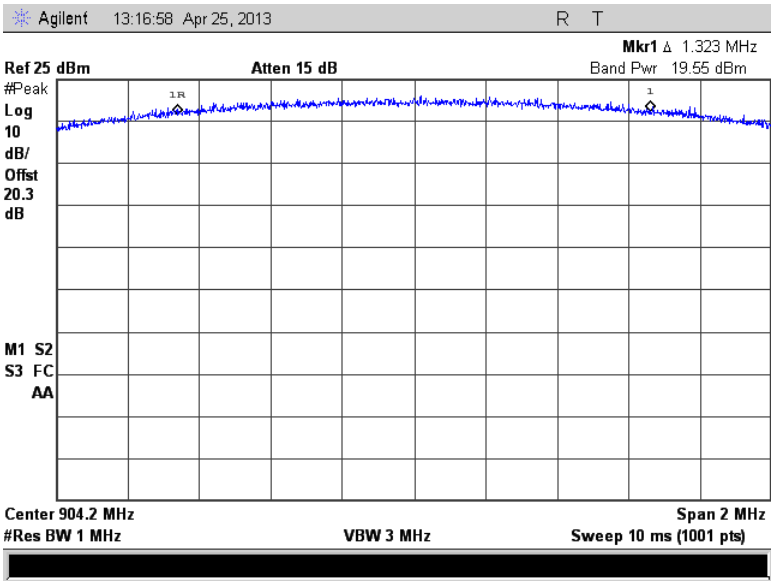

Figure 7.3.2-10: RF Output Power - Low Channel (QPSK, Antenna Path 2)

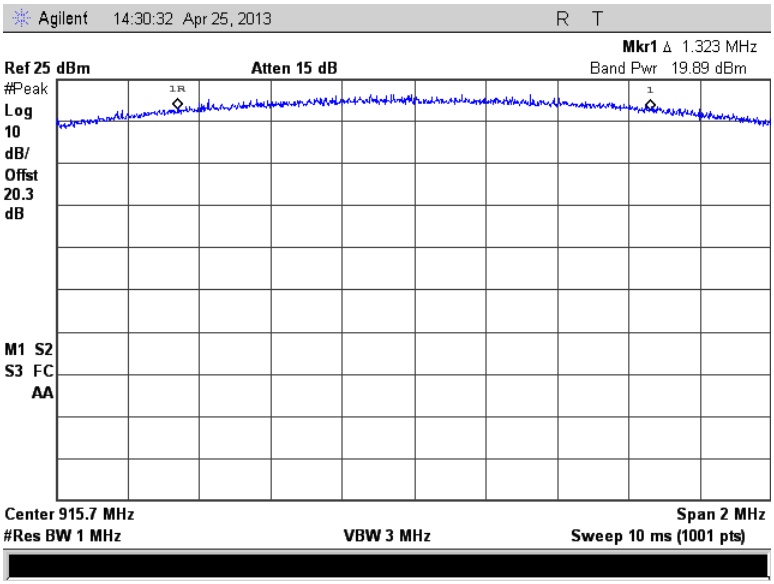

Figure 7.3.2-11: RF Output Power - Middle Channel (QPSK, Antenna Path 2)

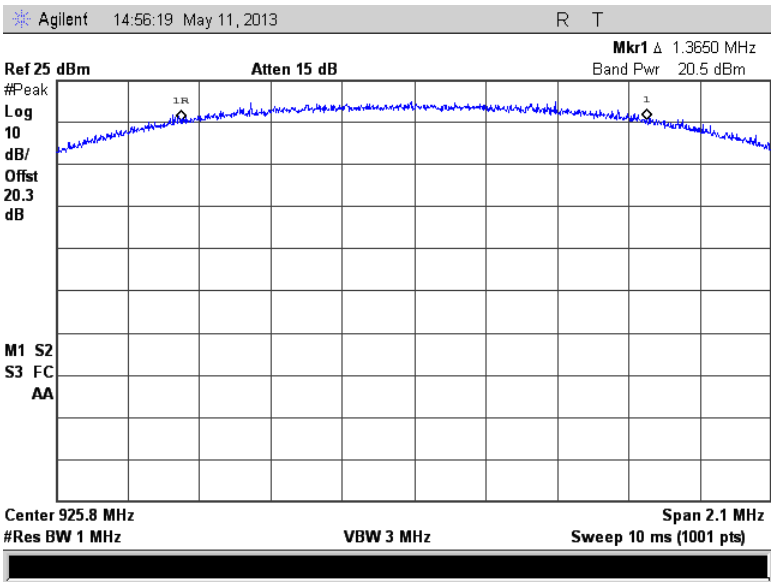

Figure 7.3.2-12: RF Output Power - High Channel (QPSK, Antenna Path 2)

Table 7.3.2-3: RF Output Power (16-QAM)

Frequency [MHz]	TX Path 1 Level [dBm}	TX Path 2 Level [dBm]	Total Output Power [dBm]
904.2	20.71	19.94	23.35
915.72	21	20.94	23.98
925.8	21.2	20.4	23.83

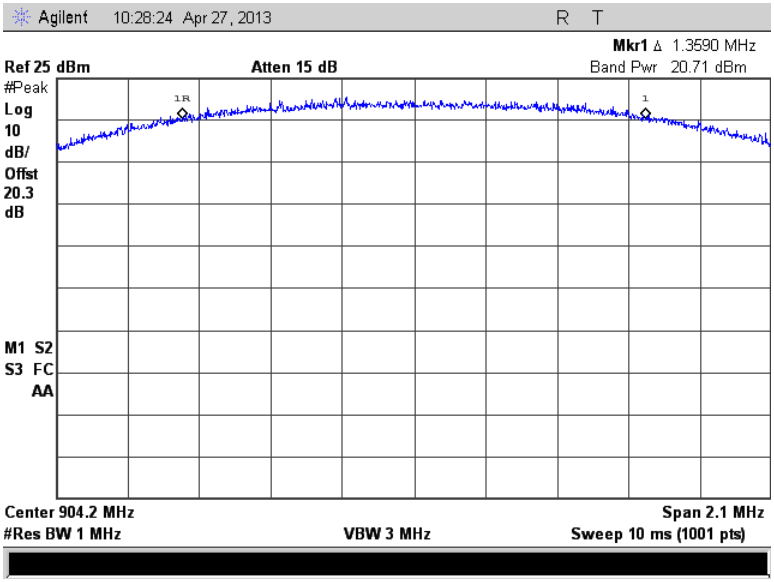

Figure 7.3.2-13: RF Output Power - Low Channel (16-QAM, Antenna Path 1)

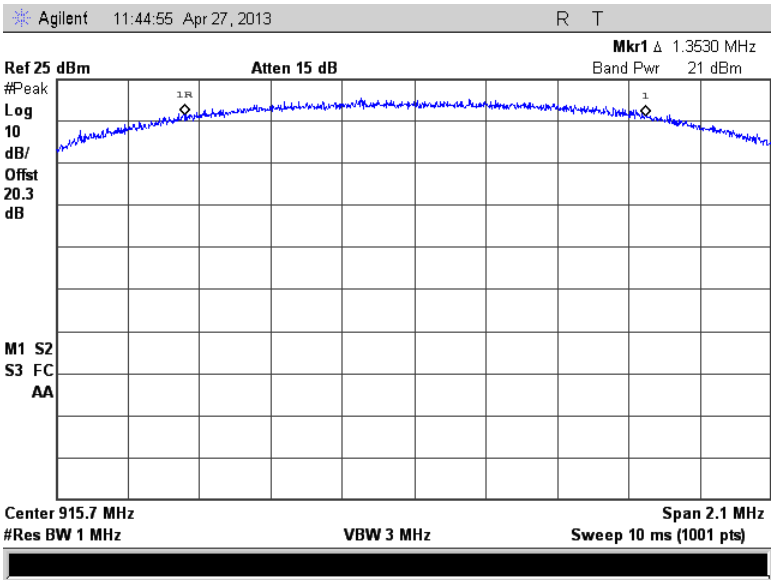

Figure 7.3.2-14: RF Output Power - Middle Channel (16-QAM, Antenna Path 1)

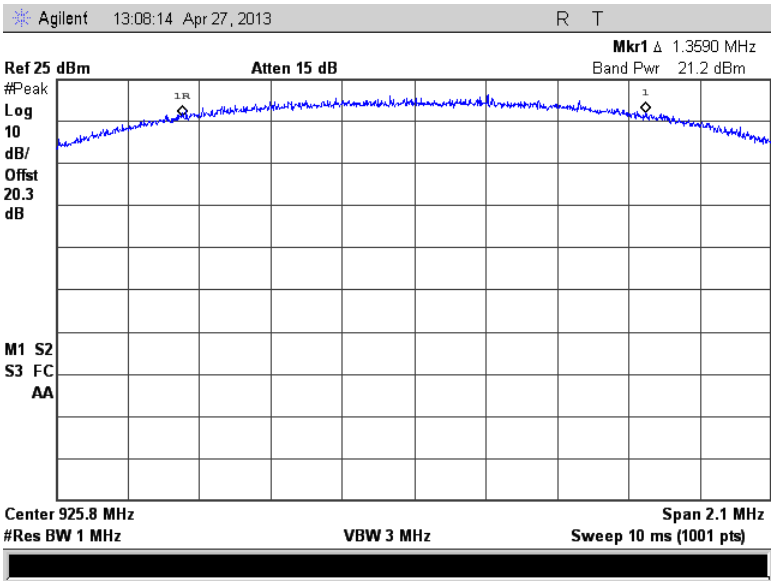

Figure 7.3.2-15: RF Output Power - High Channel (16-QAM, Antenna Path 1)

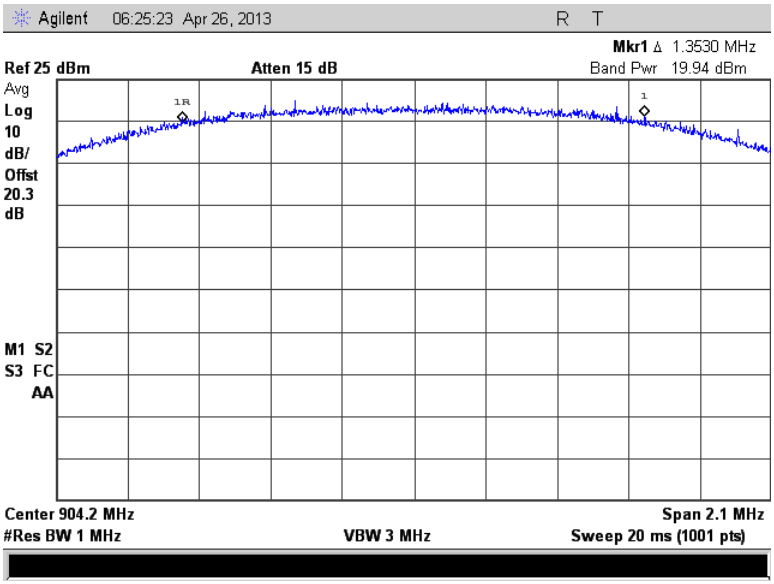

Figure 7.3.2-16: RF Output Power - Low Channel (16-QAM, Antenna Path 2)

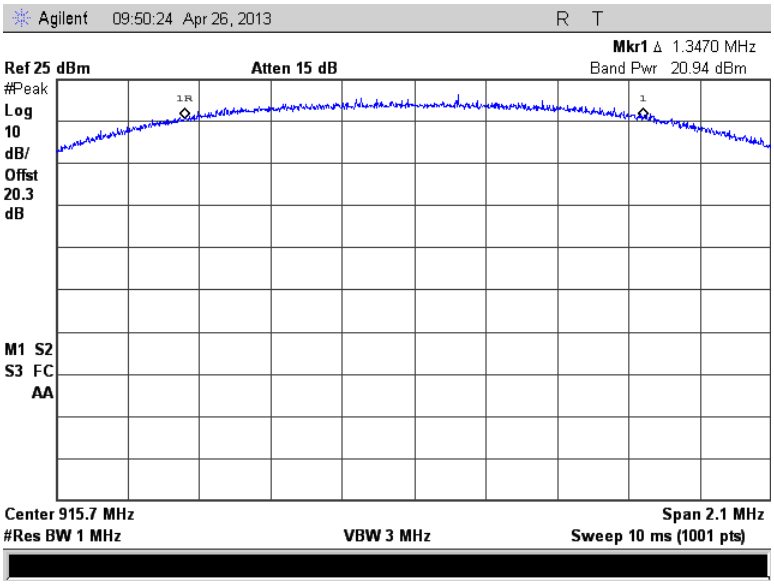

Figure 7.3.2-17: RF Output Power - Middle Channel (16-QAM, Antenna Path 2)

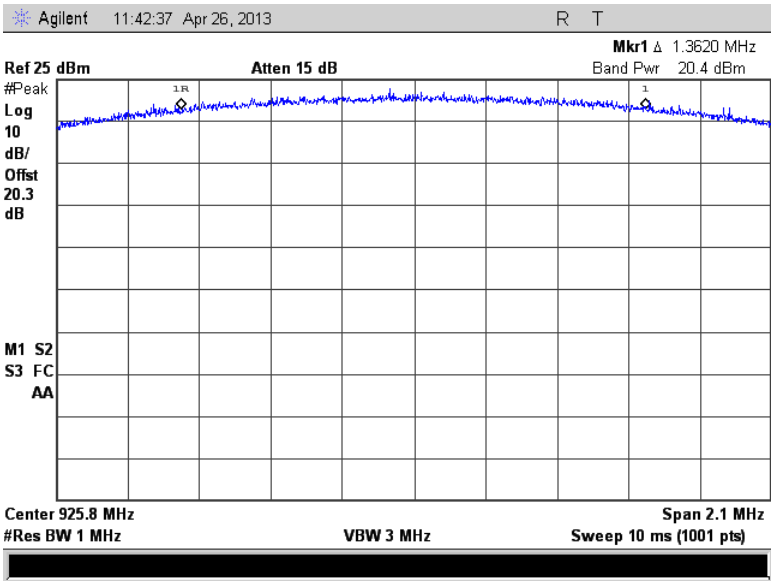

Figure 7.3.2-18: RF Output Power - High Channel (16-QAM, Antenna Path 2)

7.4 Band-Edge Compliance and Spurious Emissions-FCC 15.247(d)

7.4.1 Band-Edge Compliance of RF Conducted Emissions

7.4.1.1 Measurement Procedure

The RF output port of the EUT was directly connected to the input of the spectrum analyzer via 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, and the VBW was set to 300 kHz. The reference level was determined by measuring the PSD level in any 100 kHz bandwidth within the DTS channel bandwidth.

7.4.1.2 Measurement Results

Results are shown below.

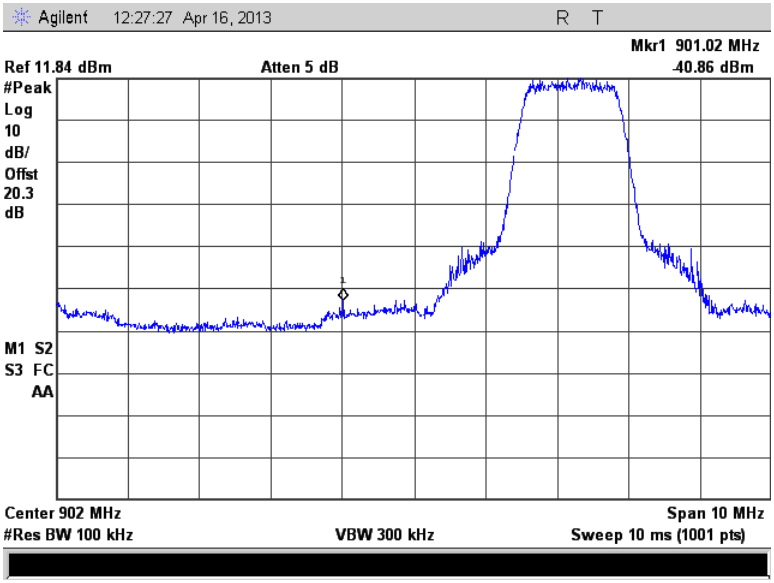

Figure 7.4.1.2-1: Lower Band-edge (BPSK, Antenna Path 1)

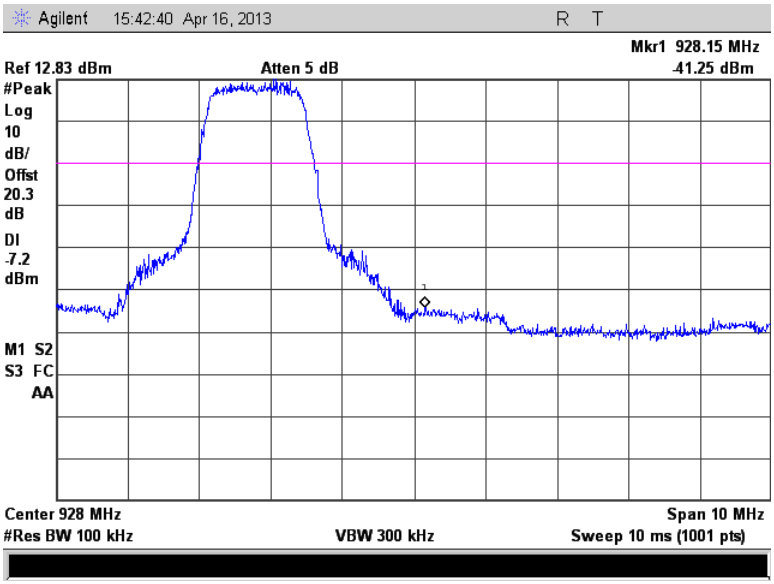

Figure 7.4.1.2-2: Upper Band-edge (BPSK, Antenna Path 1)

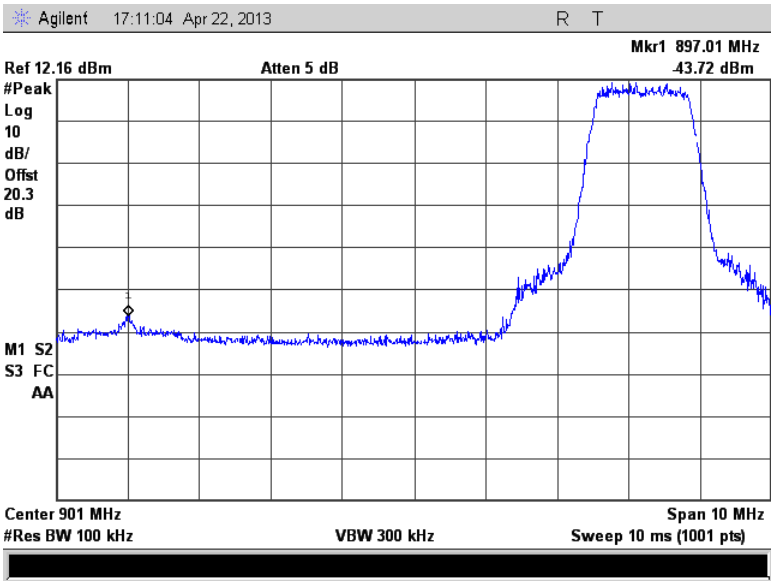

Figure 7.4.1.2-3: Lower Band-edge (BPSK, Antenna Path 2)

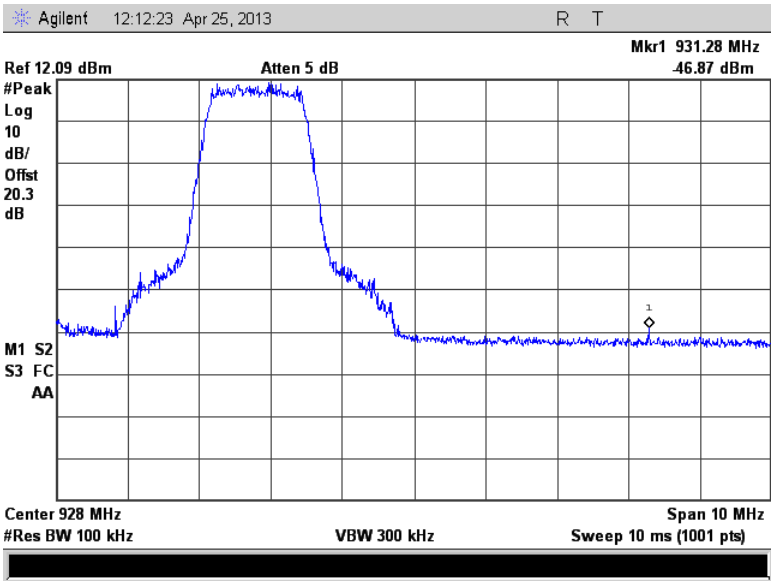

Figure 7.4.1.2-4: Upper Band-edge (BPSK, Antenna Path 2)

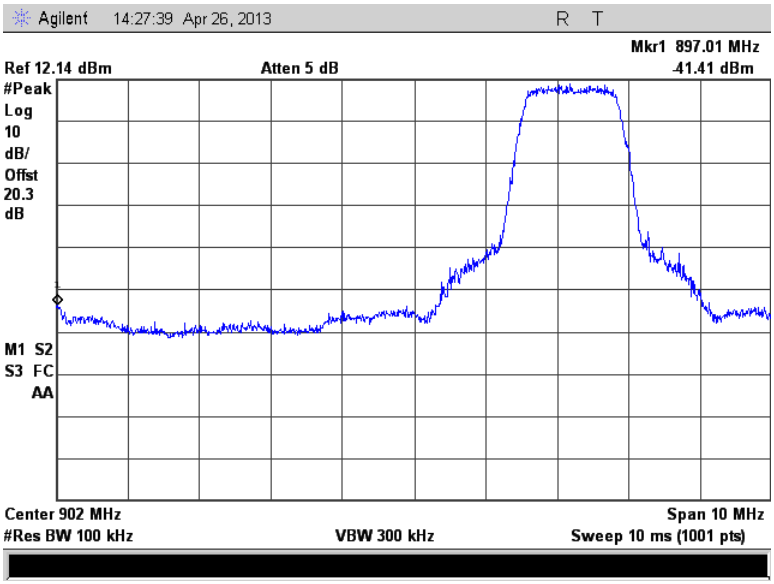

Figure 7.4.1.2-5: Lower Band-edge (QPSK, Antenna Path 1)

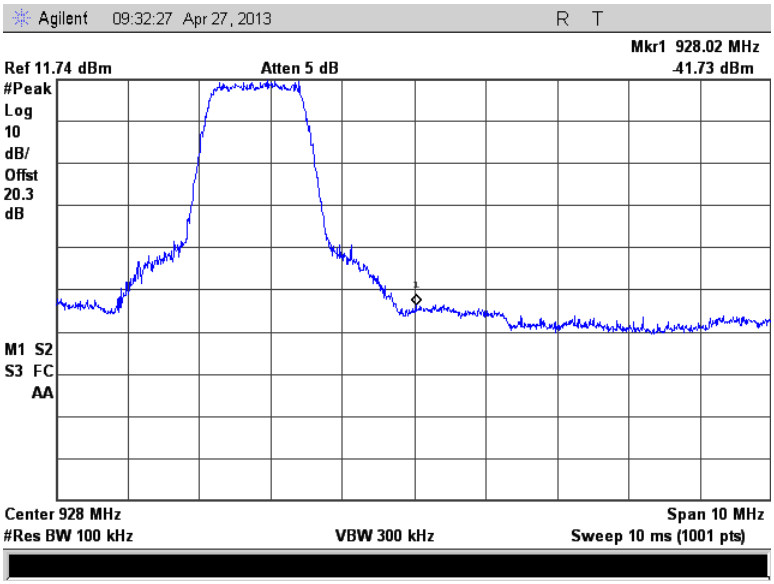

Figure 7.4.1.2-6: Upper Band-edge (QPSK, Antenna Path 1)

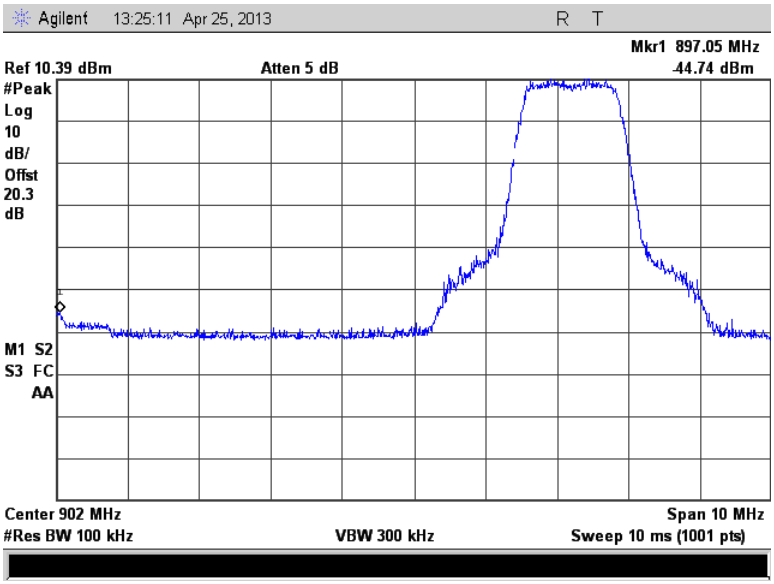

Figure 7.4.1.2-7: Lower Band-edge (QPSK, Antenna Path 2)

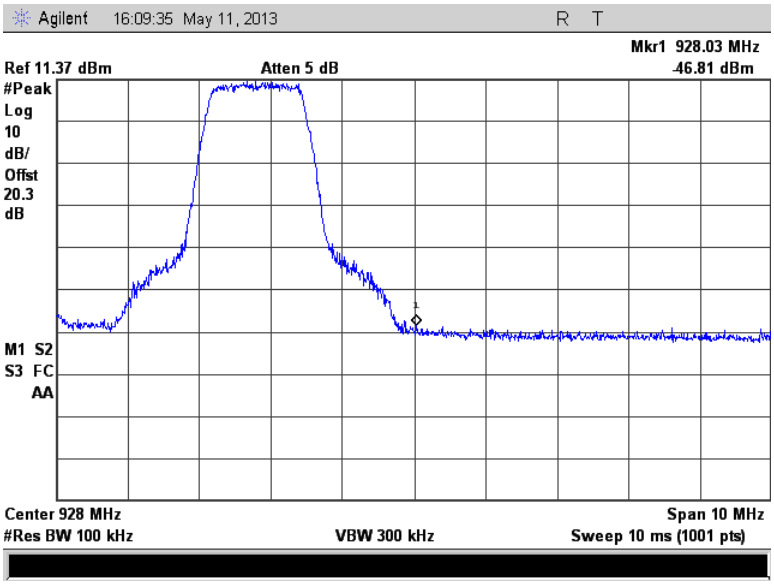

Figure 7.4.1.2-8: Upper Band-edge (QPSK, Antenna Path 2)

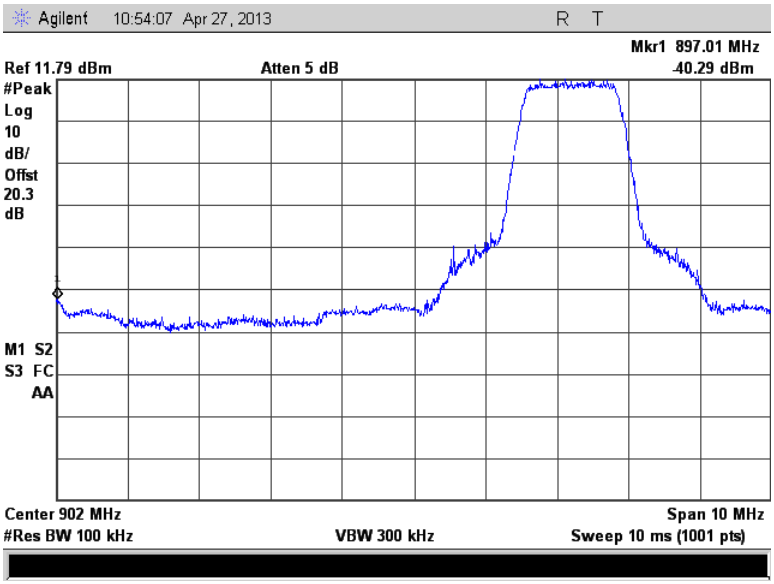

Figure 7.4.1.2-9: Lower Band-edge (16-QAM, Antenna Path 1)

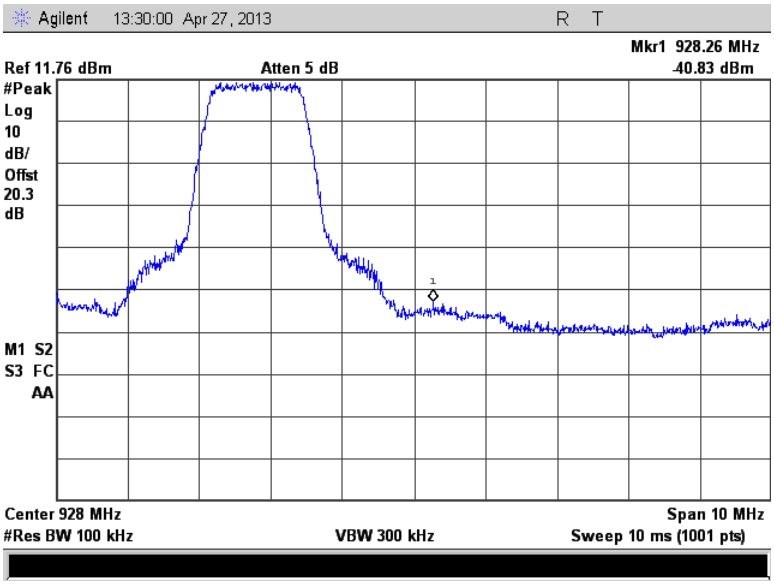

Figure 7.4.1.2-10: Upper Band-edge (16-QAM, Antenna Path 1)

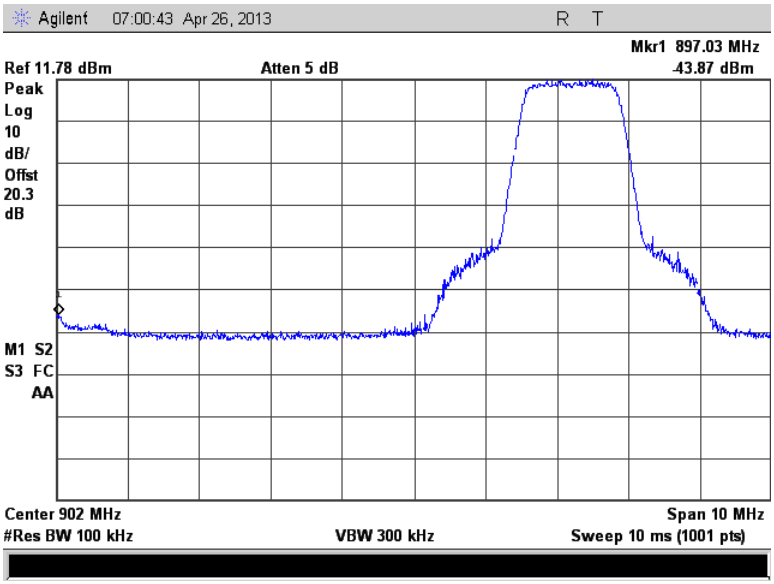

Figure 7.4.1.2-11: Lower Band-edge (16-QAM, Antenna Path 2)

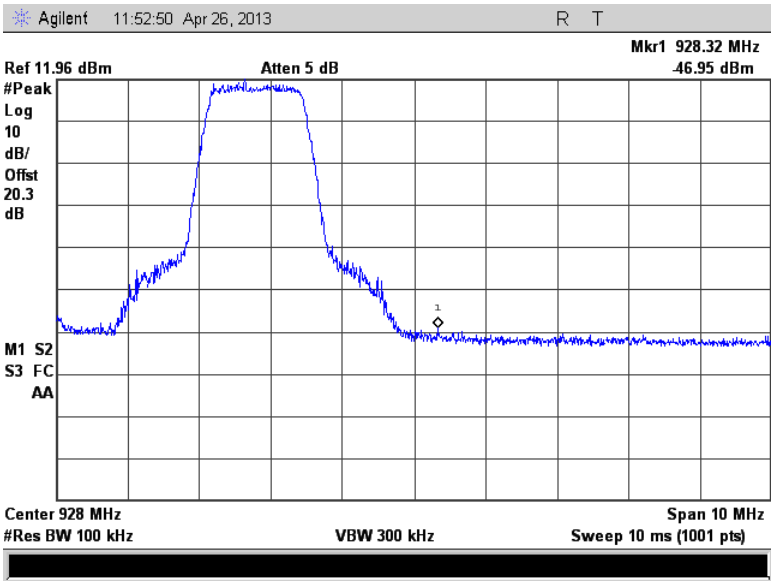

Figure 7.4.1.2-12: Upper Band-edge (16-QAM, Antenna Path 2)

7.4.2 RF Conducted Spurious Emissions

7.4.2.1 Measurement Procedure

The RF Conducted Spurious Emissions were measured in accordance with the FCC KDB Publication No. 558074 "Guidance for Performing Compliance Measurements on Digital Transmission Systems (47 CFR 15.247)". The RF output port of the equipment under test was directly connected to the input of the spectrum analyzer. The EUT was investigated for conducted spurious emissions from 30MHz to 9.5 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 and the VBW was set to 300 kHz. The peak Max Hold function of the analyzer was utilized. The reference level was determined by measuring the PSD level in any 100 kHz bandwidth within the DTS channel bandwidth.

7.4.2.2 Measurement Results

Results are shown below.

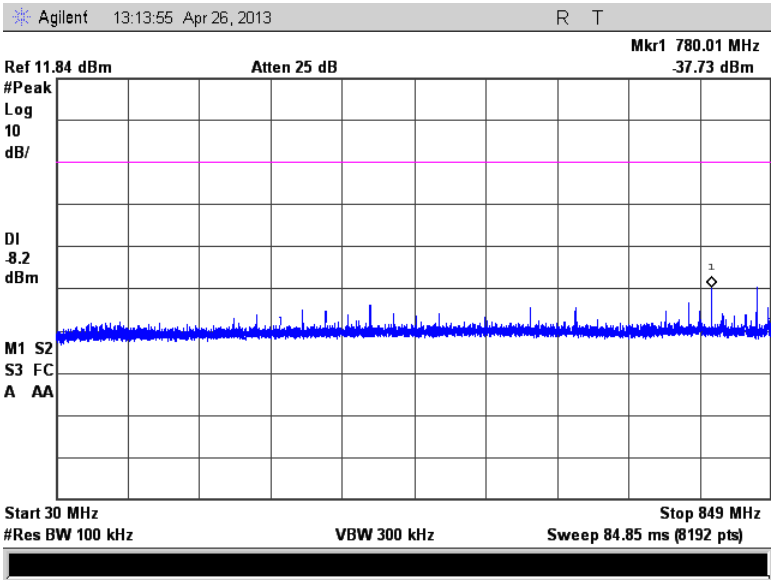

Figure 7.4.2.2-1: 30 MHz – 849 MHz – Low Channel (BPSK, Antenna Path 1)

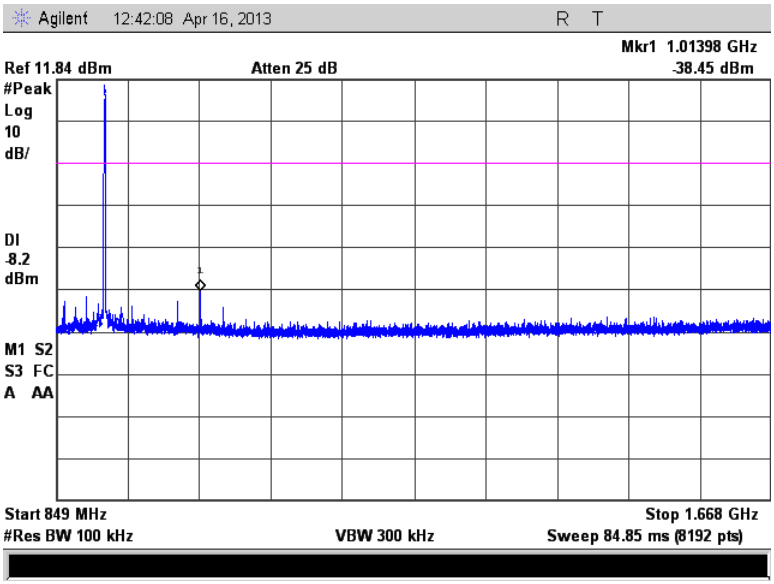

Figure 7.4.2.2-2: 849 MHz – 1.668 GHz – Low Channel (BPSK, Antenna Path 1)

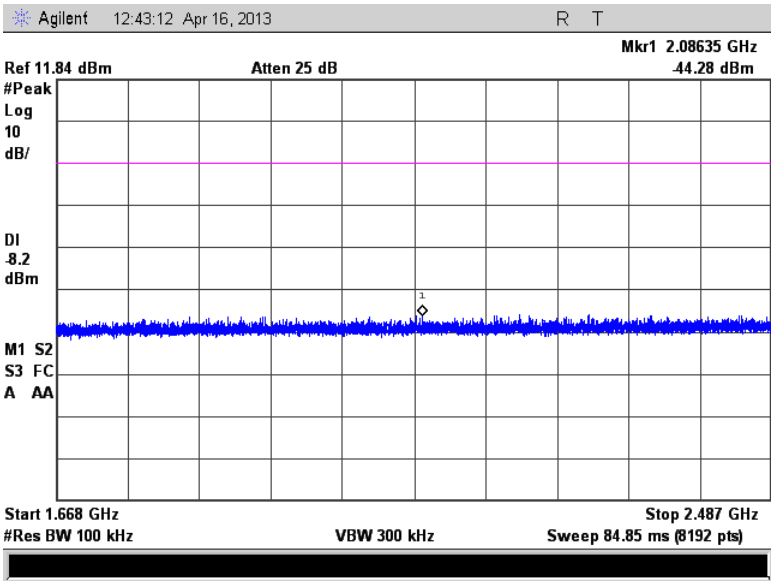

Figure 7.4.2.2-3: 1.668 GHz – 2.487 GHz – Low Channel (BPSK, Antenna Path 1)

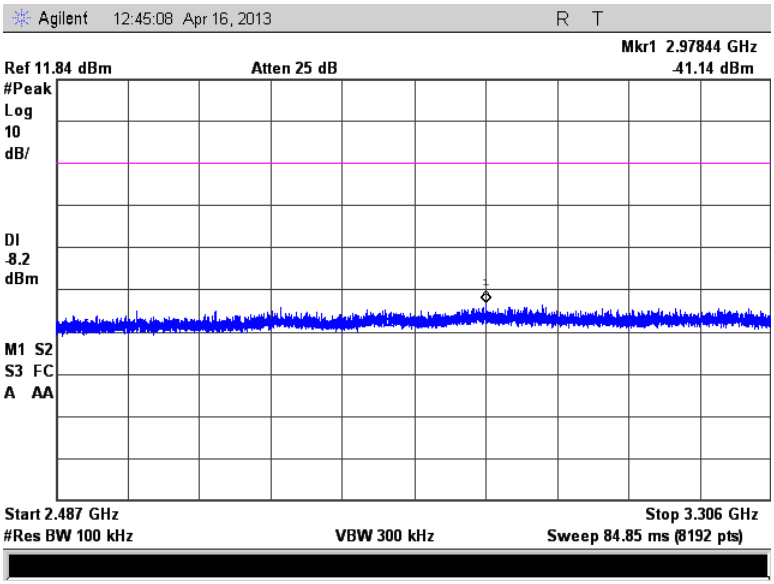

Figure 7.4.2.2-4: 2.487 GHz – 3.306 GHz – Low Channel (BPSK, Antenna Path 1)

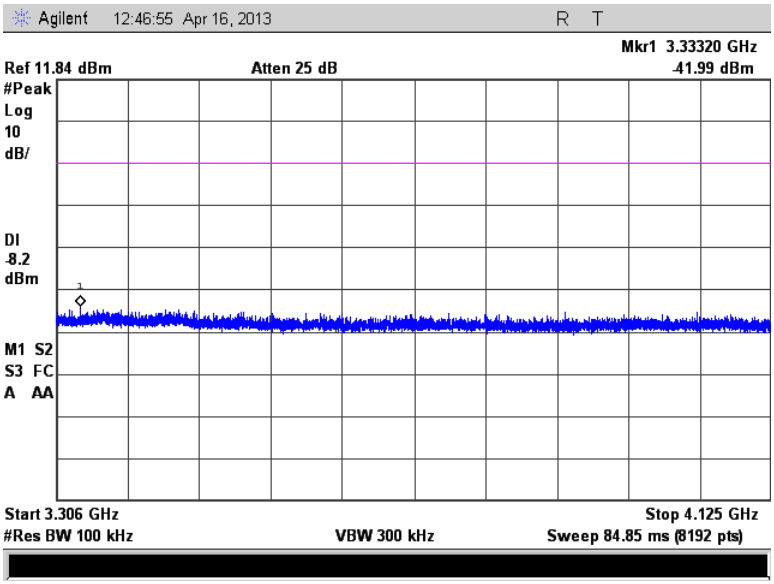

Figure 7.4.2.2-5: 3.306 GHz – 4.125 GHz – Low Channel (BPSK, Antenna Path 1)

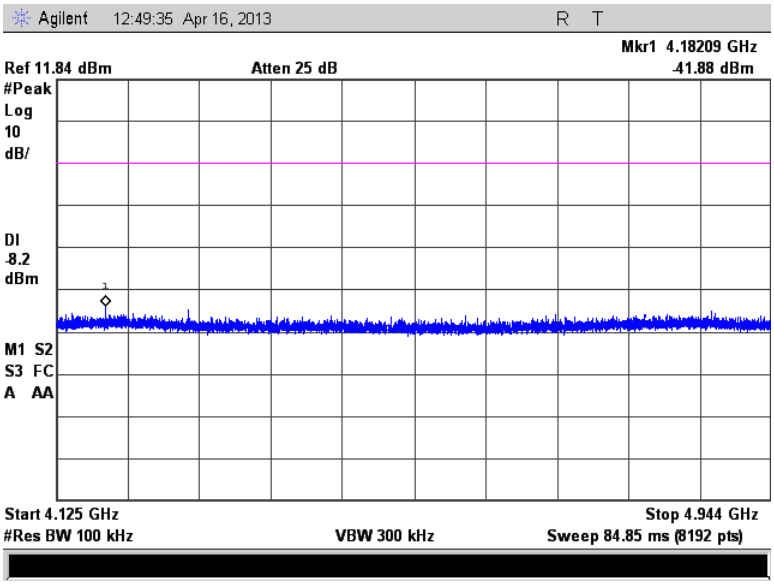

Figure 7.4.2.2-6: 4.125 GHz – 4.944 GHz – Low Channel (BPSK, Antenna Path 1)

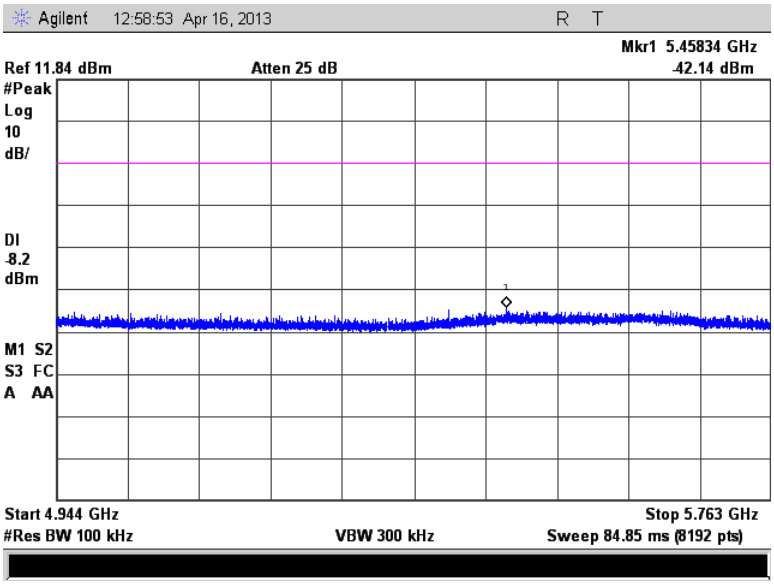

Figure 7.4.2.2-7: 4.944 GHz – 5.763 GHz – Low Channel (BPSK, Antenna Path 1)

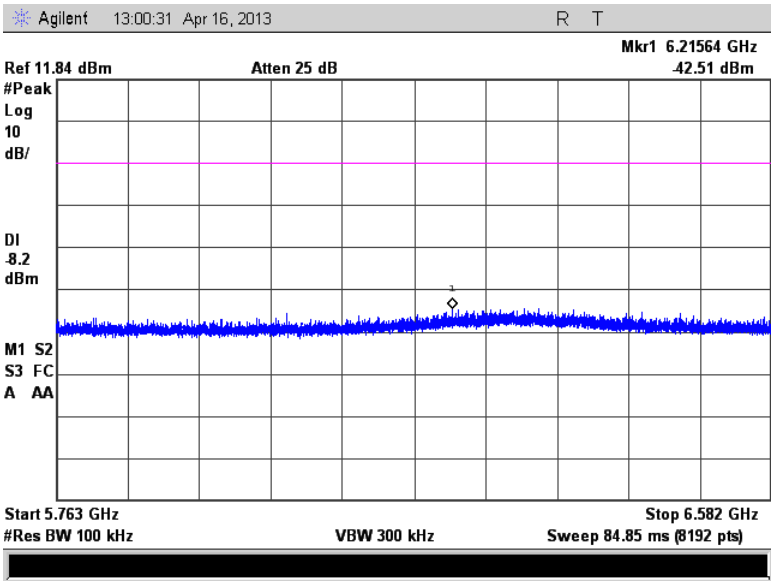

Figure 7.4.2.2-8: 5.763 GHz – 6.582 GHz – Low Channel (BPSK, Antenna Path 1)

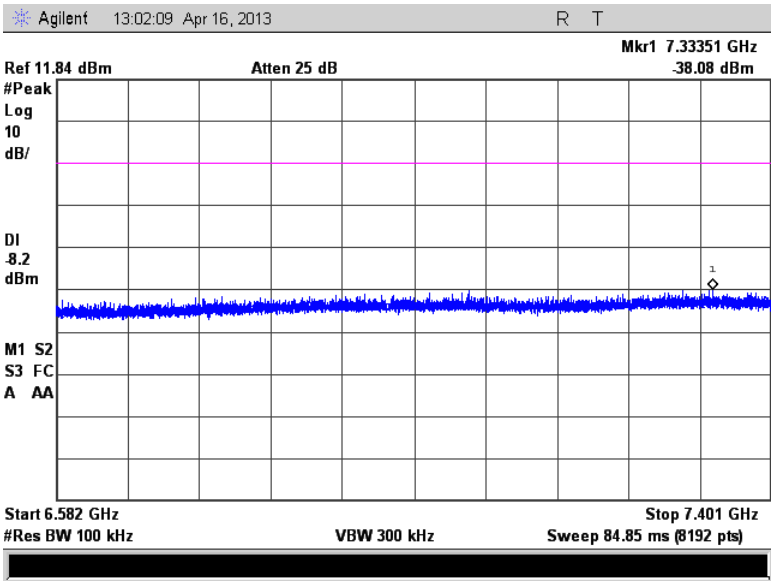

Figure 7.4.2.2-9: 6.582 GHz – 7.401 GHz – Low Channel (BPSK, Antenna Path 1)

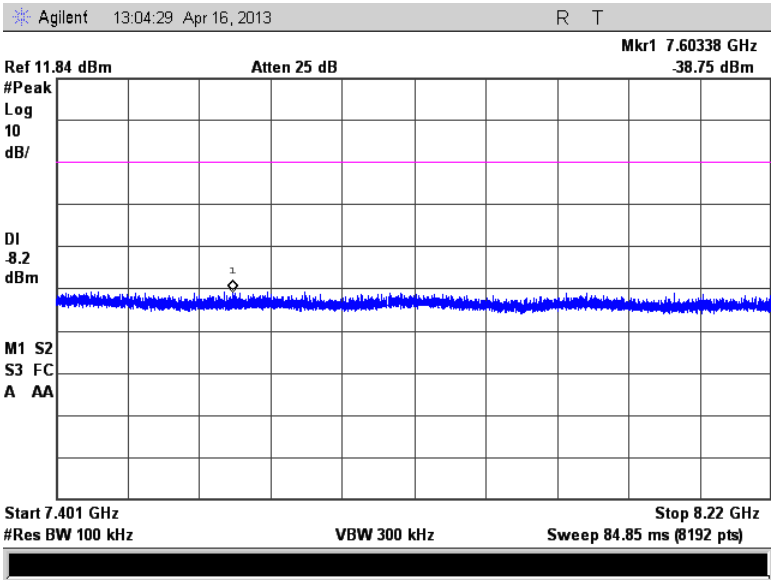

Figure 7.4.2.2-10: 7.401 GHz – 8.22 GHz – Low Channel (BPSK, Antenna Path 1)

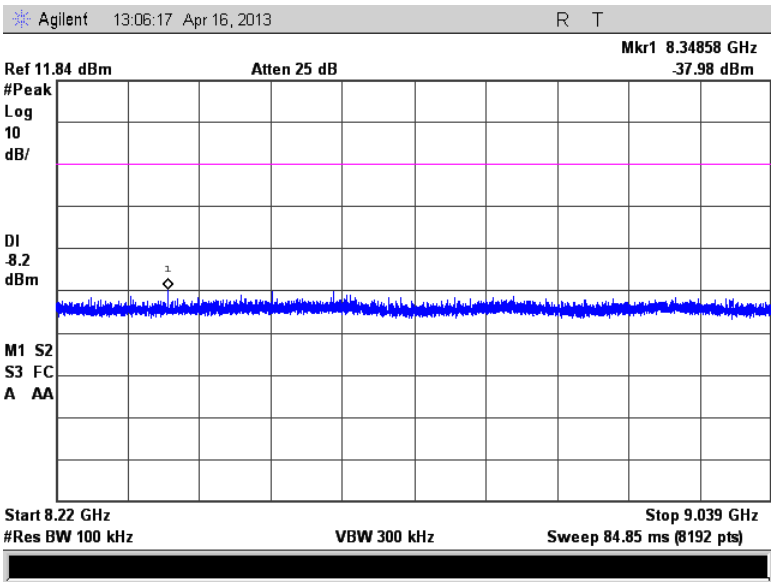

Figure 7.4.2.2-11: 8.22 GHz – 9.039 GHz – Low Channel (BPSK, Antenna Path 1)

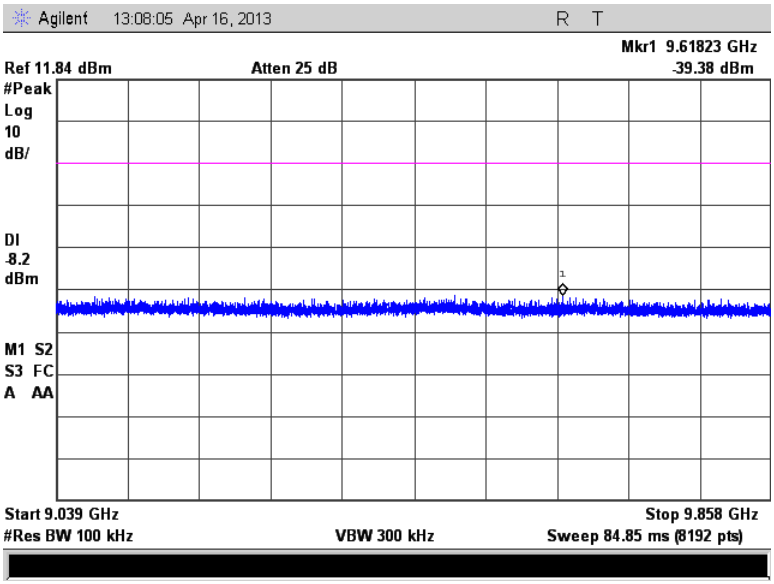

Figure 7.4.2.2-12: 9.039 GHz – 9.858 GHz – Low Channel (BPSK, Antenna Path 1)

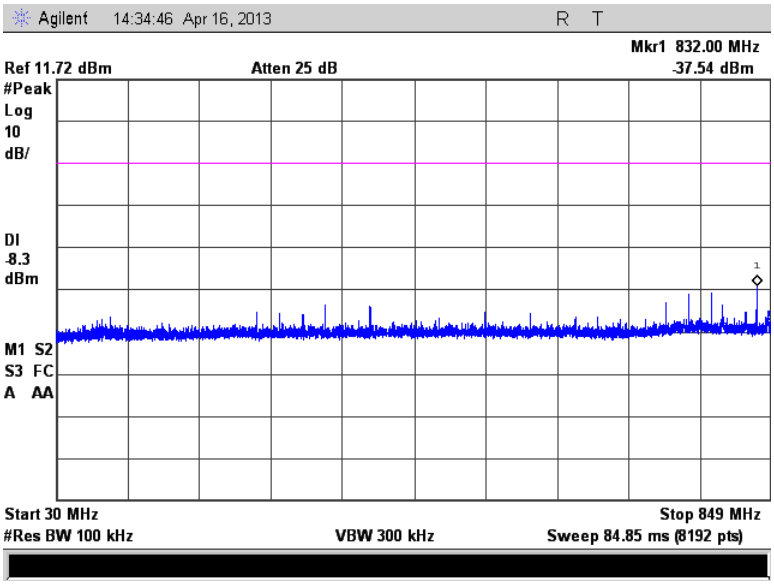

Figure 7.4.2.2-13: 30 MHz – 849 MHz – Middle Channel (BPSK, Antenna Path 1)

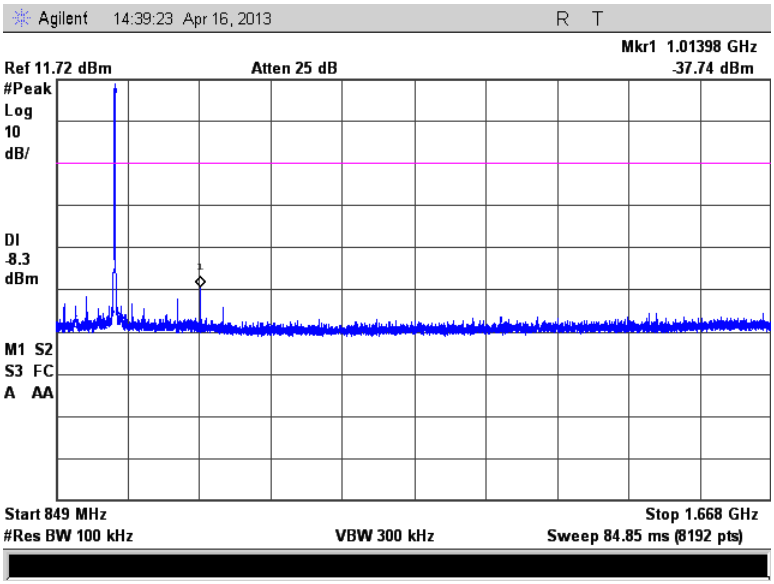

Figure 7.4.2.2-14: 849 MHz – 1.668 GHz – Middle Channel (BPSK, Antenna Path 1)

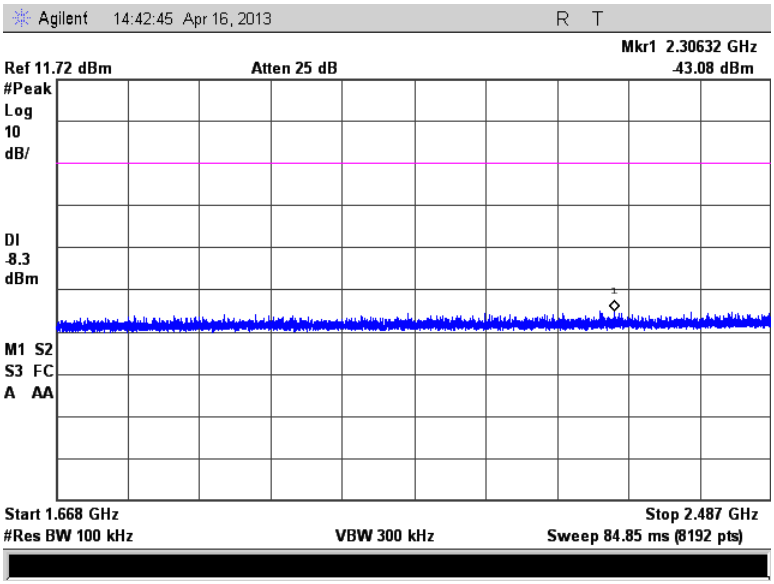

Figure 7.4.2.2-15: 1.668 GHz – 2.487 GHz – Middle Channel (BPSK, Antenna Path 1)

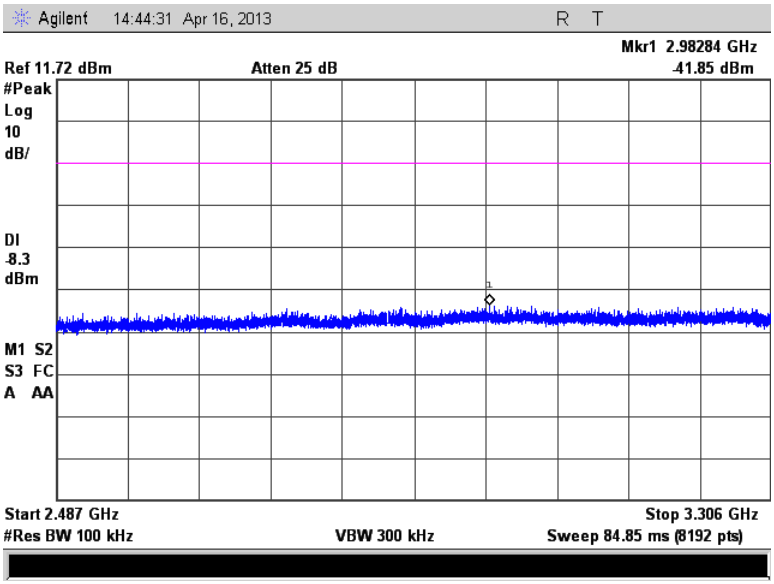

Figure 7.4.2.2-16: 2.487 GHz – 3.306 GHz – Middle Channel (BPSK, Antenna Path 1)

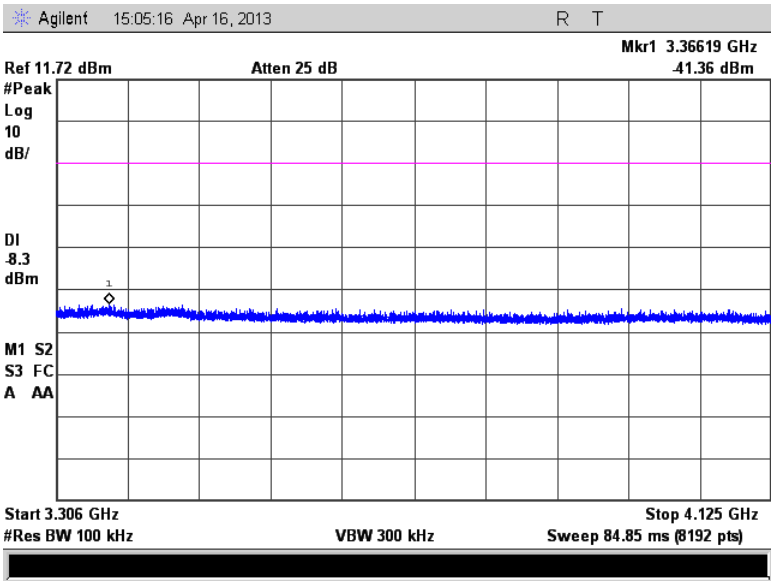

Figure 7.4.2.2-17: 3.306 GHz – 4.125 GHz – Middle Channel (BPSK, Antenna Path 1)

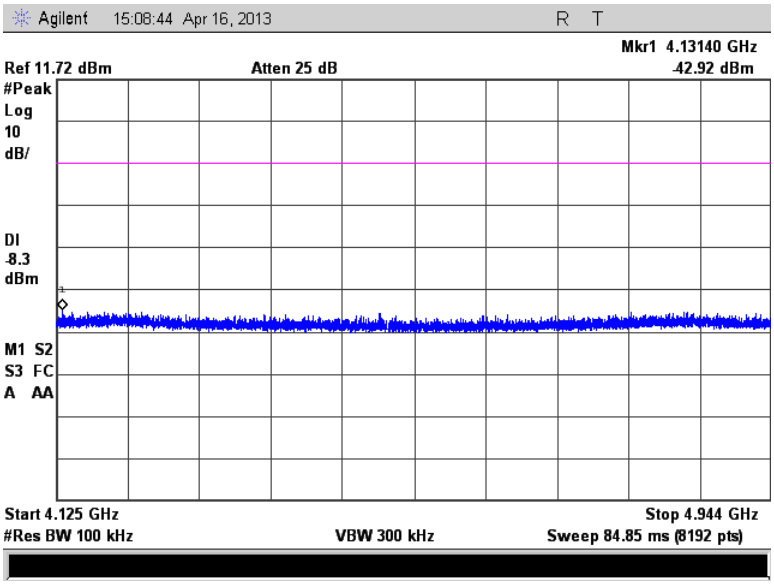

Figure 7.4.2.2-18: 4.125 GHz – 4.944 GHz – Middle Channel (BPSK, Antenna Path 1)

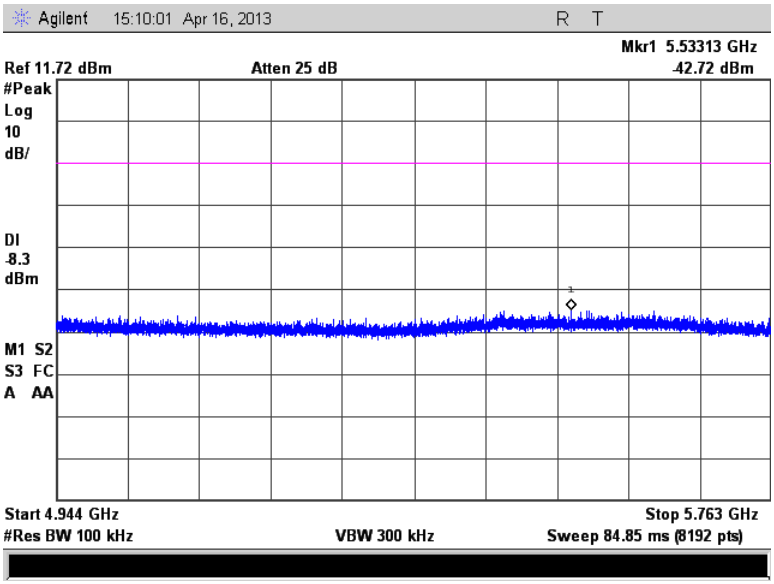

Figure 7.4.2.2-19: 4.944 GHz – 5.763 GHz – Middle Channel (BPSK, Antenna Path 1)

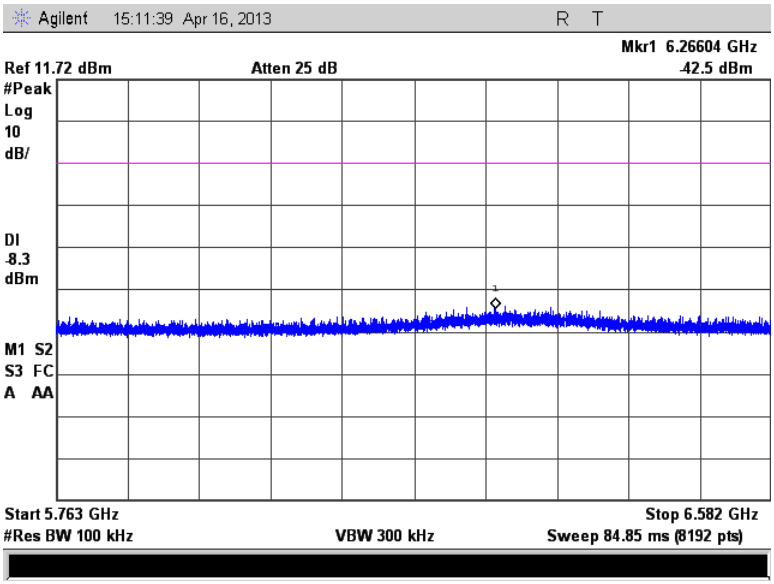

Figure 7.4.2.2-20: 5.763 GHz – 6.582 GHz – Middle Channel (BPSK, Antenna Path 1)

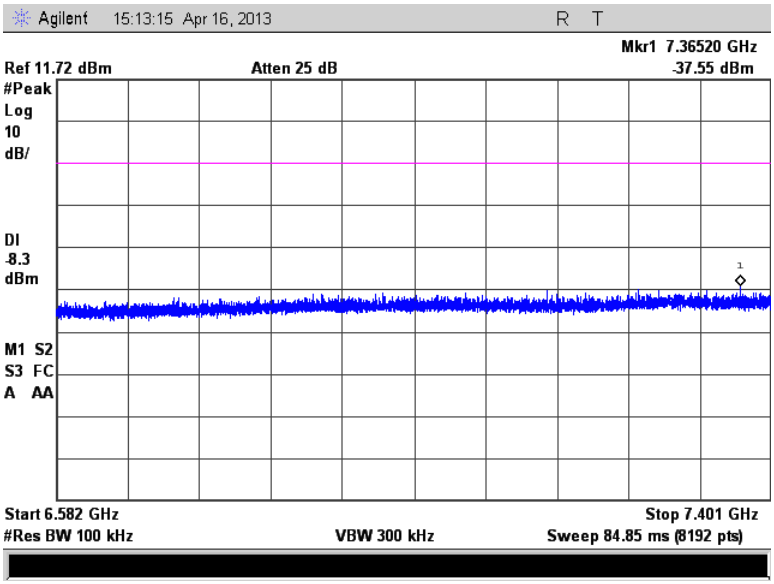

Figure 7.4.2.2-21: 6.582 GHz – 7.401 GHz – Middle Channel (BPSK, Antenna Path 1)

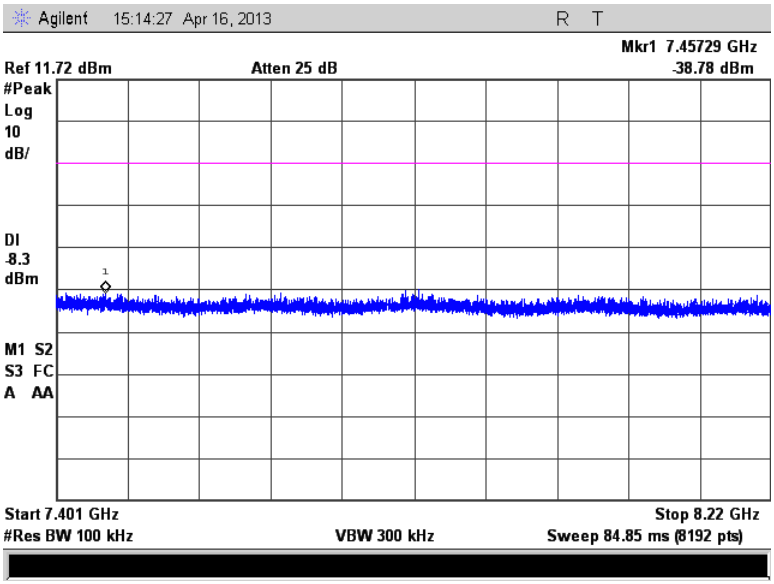

Figure 7.4.2.2-22: 7.401 GHz – 8.22 GHz – Middle Channel (BPSK, Antenna Path 1)

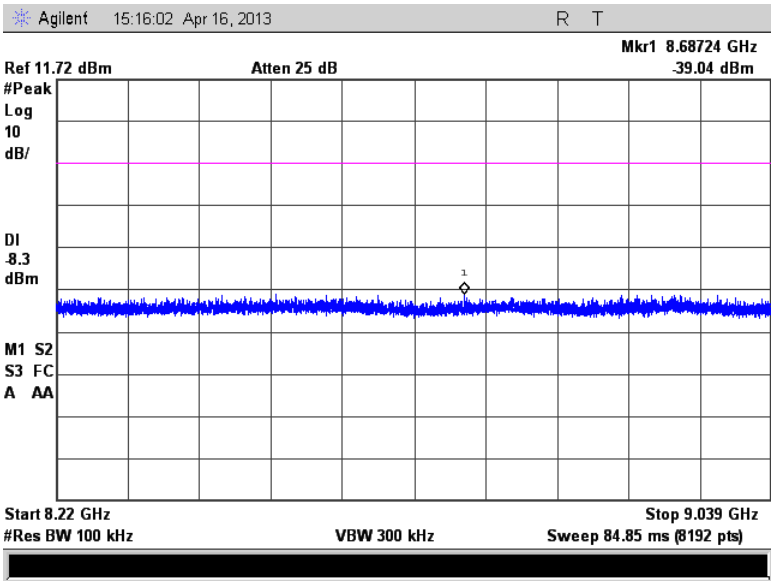

Figure 7.4.2.2-23: 8.22 GHz – 9.039 GHz – Middle Channel (BPSK, Antenna Path 1)

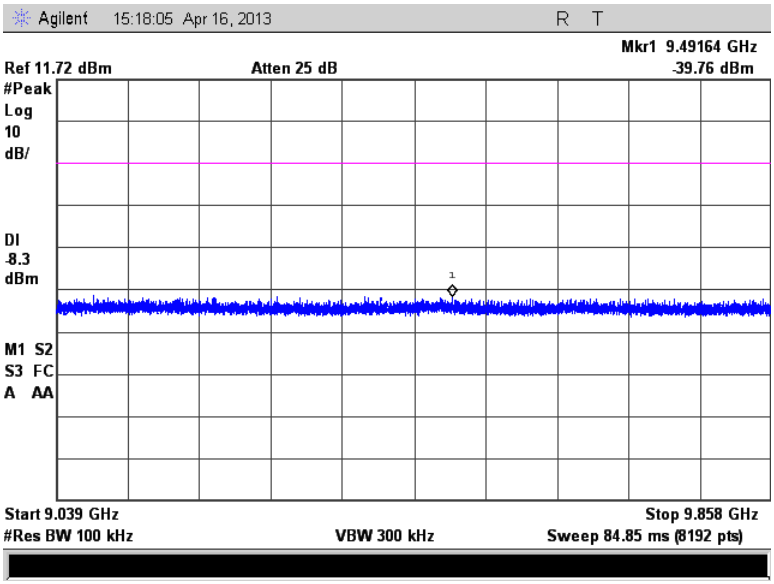

Figure 7.4.2.2-24: 9.039 GHz – 9.858 GHz – Middle Channel (BPSK, Antenna Path 1)

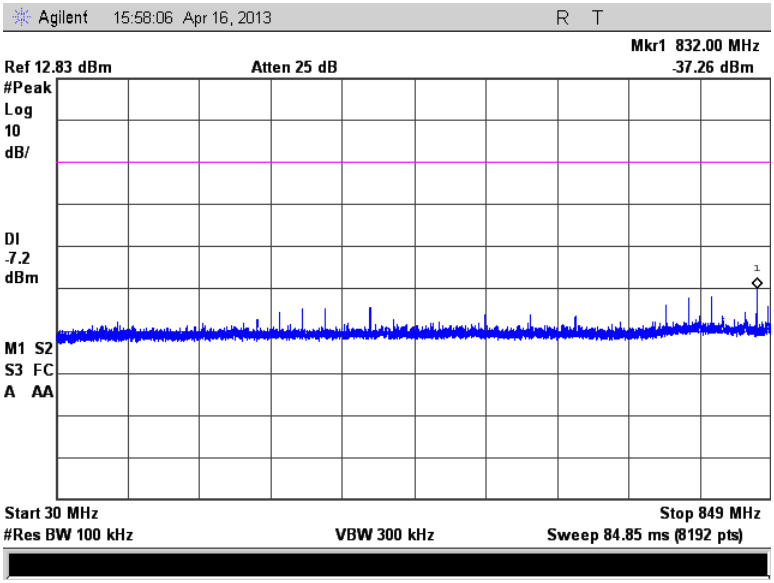

Figure 7.4.2.2-25: 30 MHz – 849 MHz – High Channel (BPSK, Antenna Path 1)

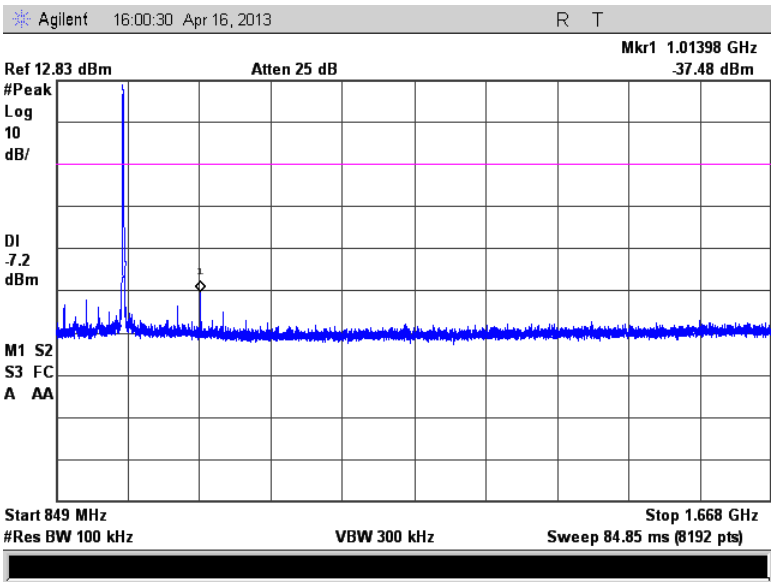

Figure 7.4.2.2-26: 849 MHz – 1.668 GHz – High Channel (BPSK, Antenna Path 1)

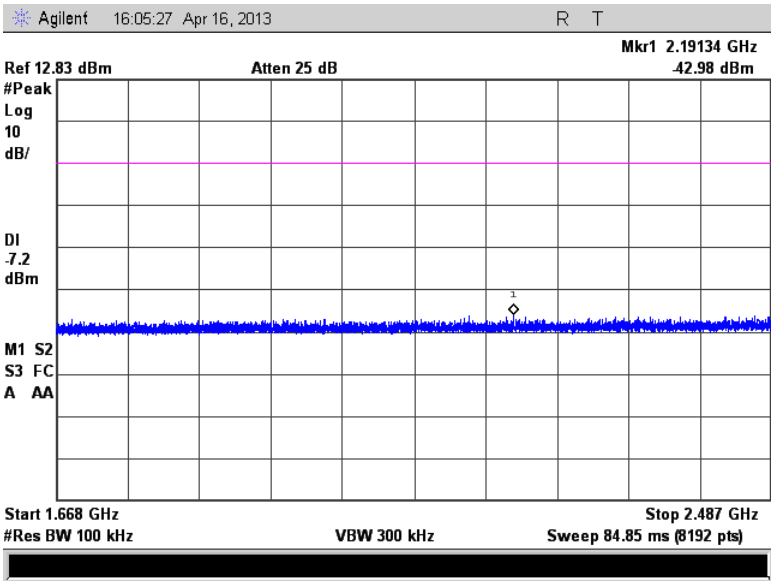

Figure 7.4.2.2-27: 1.668 GHz – 2.487 GHz – High Channel (BPSK, Antenna Path 1)

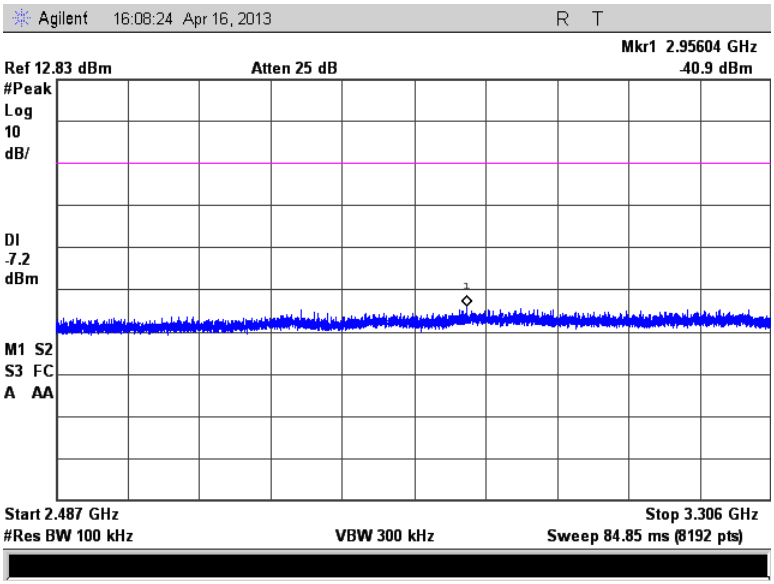

Figure 7.4.2.2-28: 2.487 GHz – 3.306 GHz – High Channel (BPSK, Antenna Path 1)

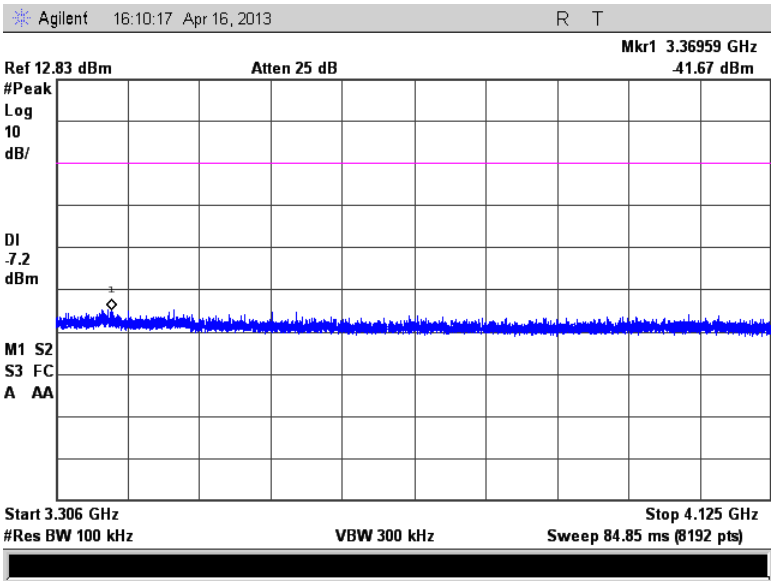

Figure 7.4.2.2-29: 3.306 GHz – 4.125 GHz – High Channel (BPSK, Antenna Path 1)

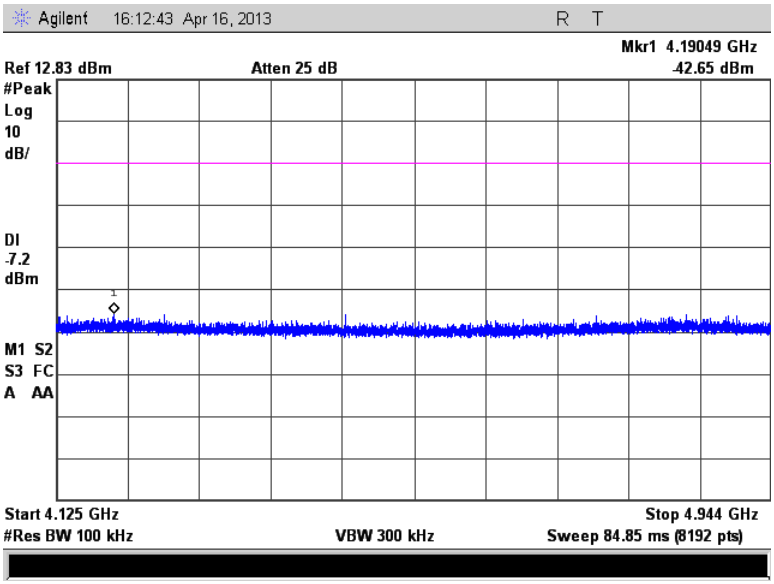

Figure 7.4.2.2-30: 4.125 GHz – 4.944 GHz – High Channel (BPSK, Antenna Path 1)

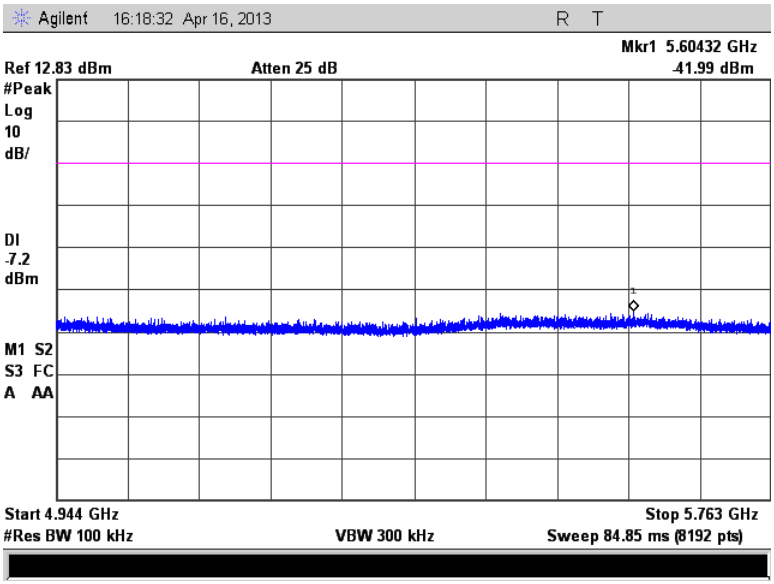

Figure 7.4.2.2-31: 4.944 GHz – 5.763 GHz – High Channel (BPSK, Antenna Path 1)

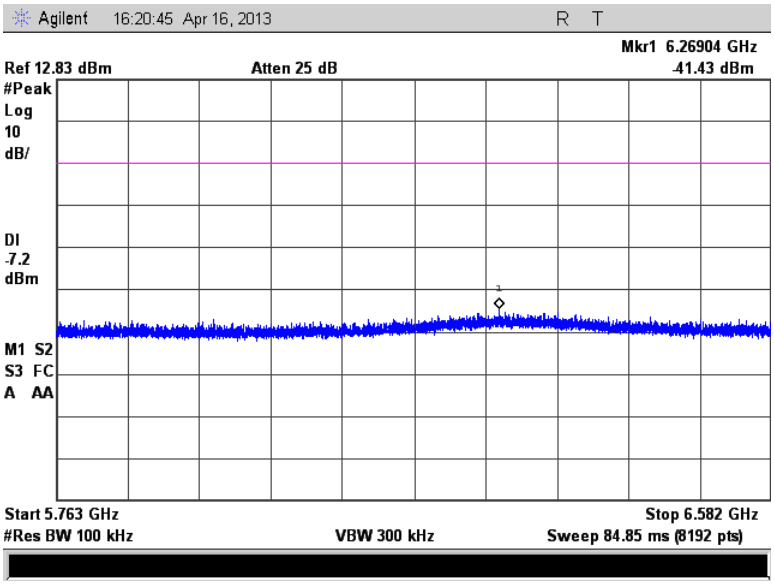

Figure 7.4.2.2-32: 5.763 GHz – 6.582 GHz – High Channel (BPSK, Antenna Path 1)

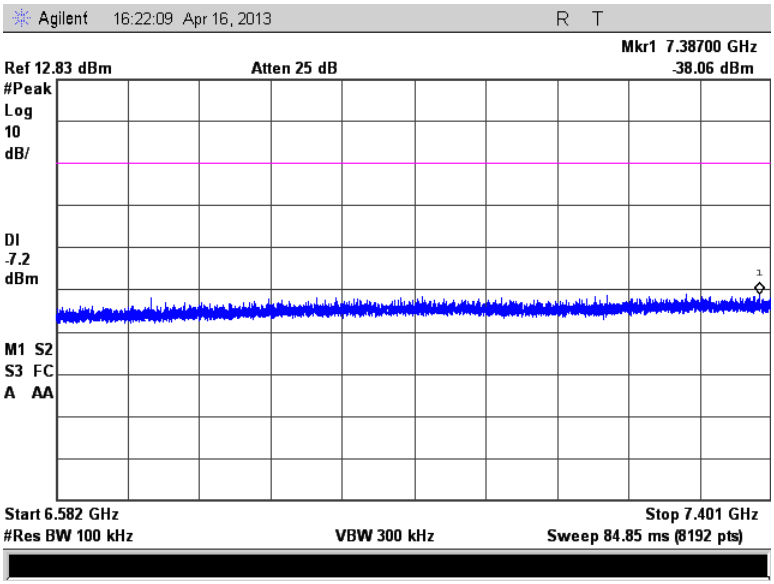

Figure 7.4.2.2-33: 6.582 GHz – 7.401 GHz – High Channel (BPSK, Antenna Path 1)

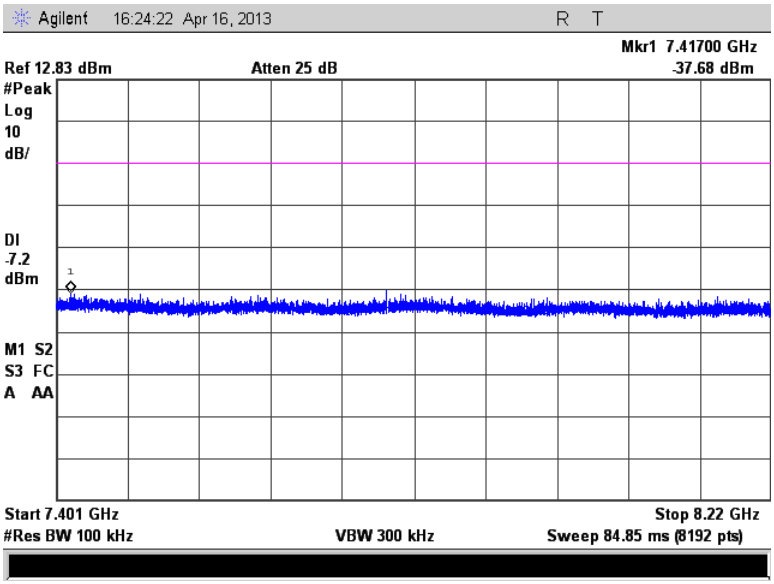

Figure 7.4.2.2-34: 7.401 GHz – 8.22 GHz – High Channel (BPSK, Antenna Path 1)

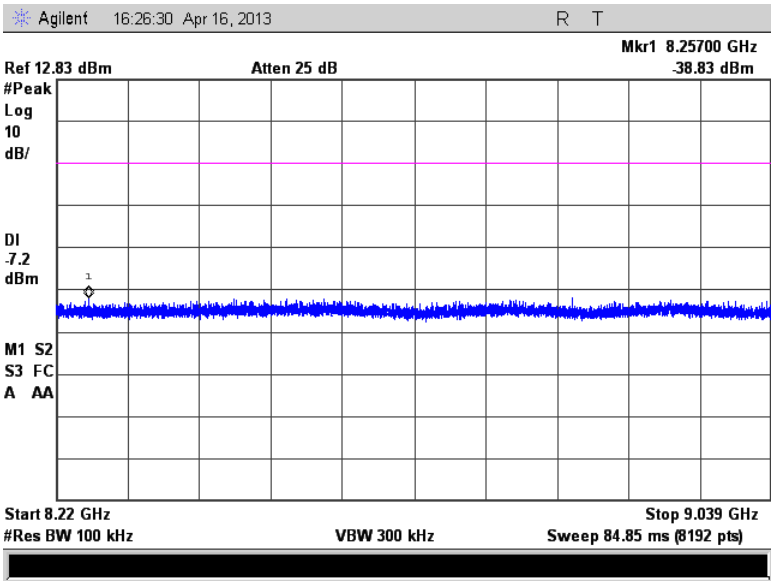

Figure 7.4.2.2-35: 8.22 GHz – 9.039 GHz – High Channel (BPSK, Antenna Path 1)

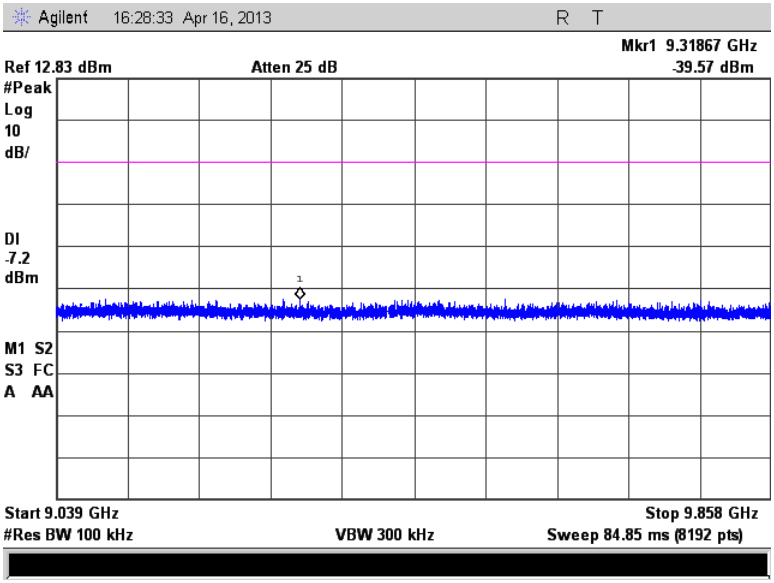

Figure 7.4.2.2-36: 9.039 GHz – 9.858 GHz – High Channel (BPSK, Antenna Path 1)

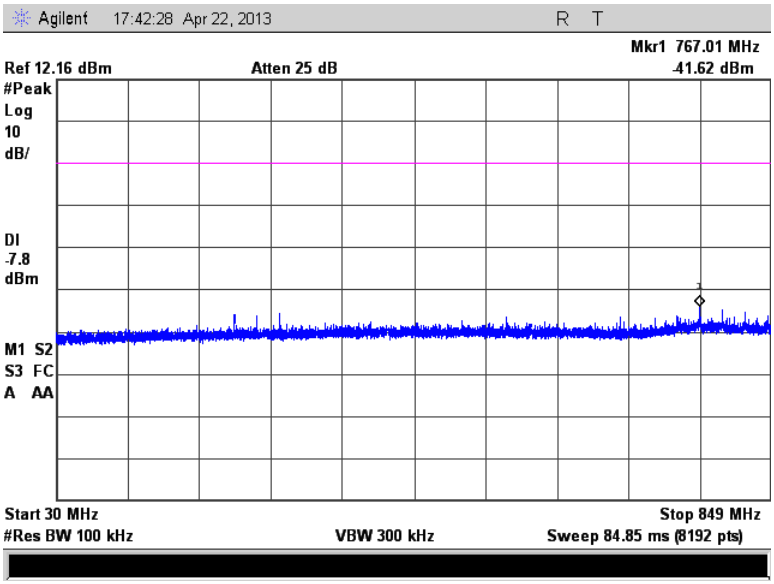

Figure 7.4.2.2-37: 30 MHz – 849 MHz – Low Channel (BPSK, Antenna Path 2)

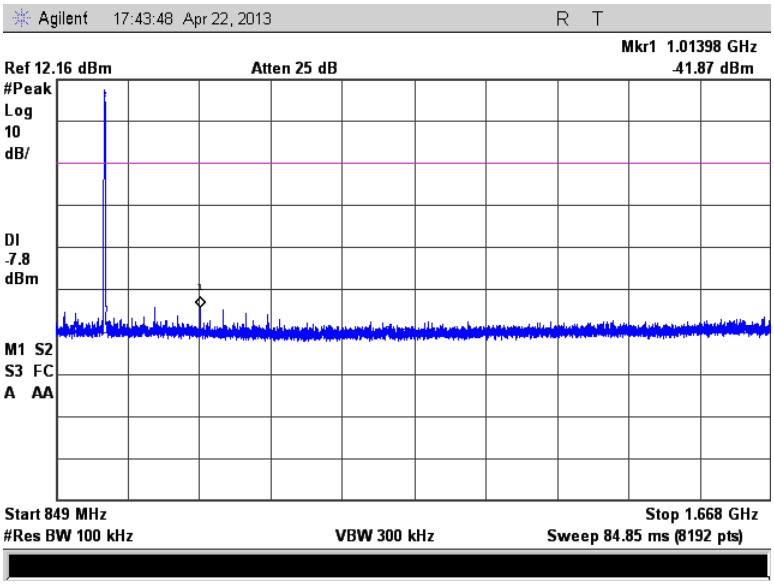

Figure 7.4.2.2-38: 849 MHz – 1.668 GHz – Low Channel (BPSK, Antenna Path 2)

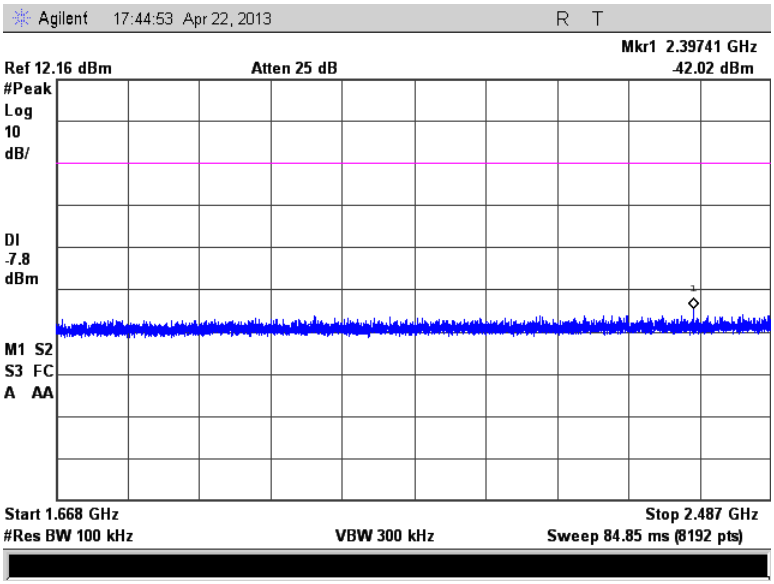

Figure 7.4.2.2-39: 1.668 GHz – 2.487 GHz – Low Channel (BPSK, Antenna Path 2)

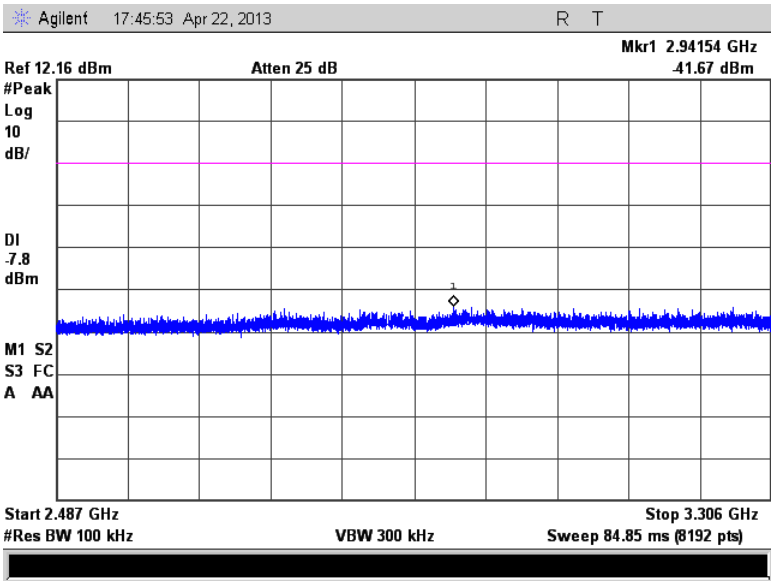

Figure 7.4.2.2-40: 2.487 GHz – 3.306 GHz – Low Channel (BPSK, Antenna Path 2)

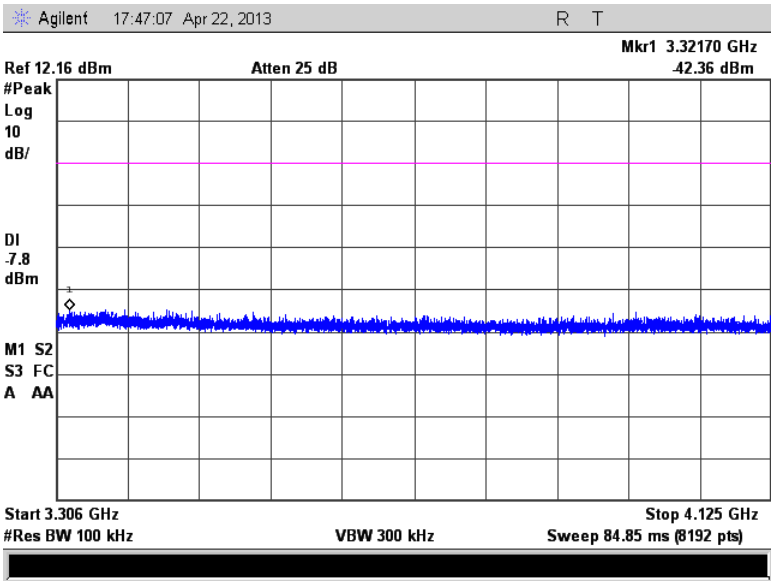

Figure 7.4.2.2-41: 3.306 GHz – 4.125 GHz – Low Channel (BPSK, Antenna Path 2)

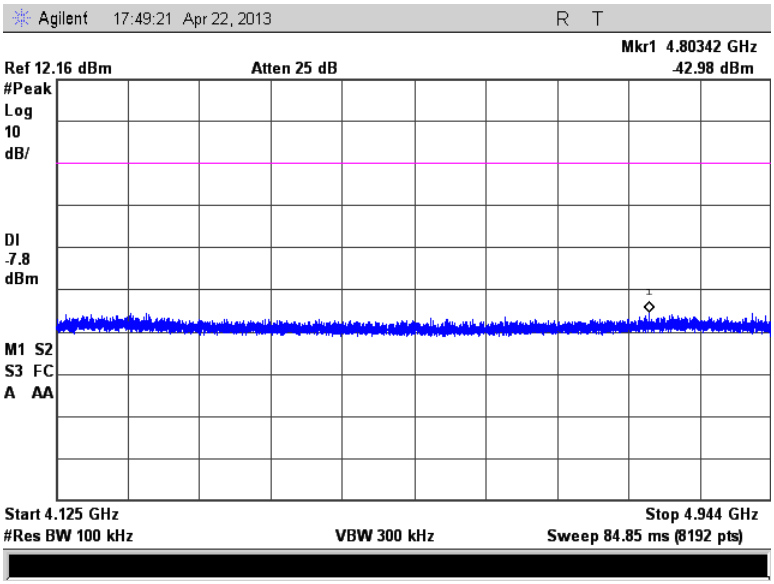

Figure 7.4.2.2-42: 4.125 GHz – 4.944 GHz – Low Channel (BPSK, Antenna Path 2)

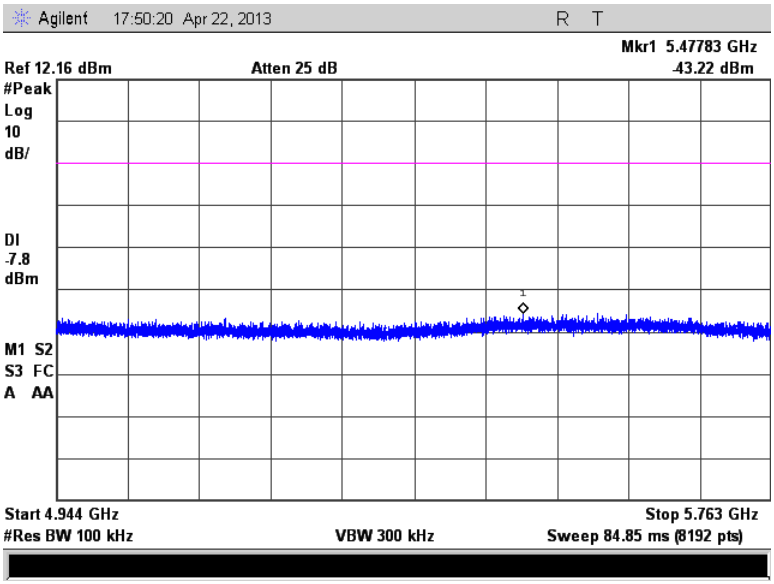

Figure 7.4.2.2-43: 4.944 GHz – 5.763 GHz – Low Channel (BPSK, Antenna Path 2)

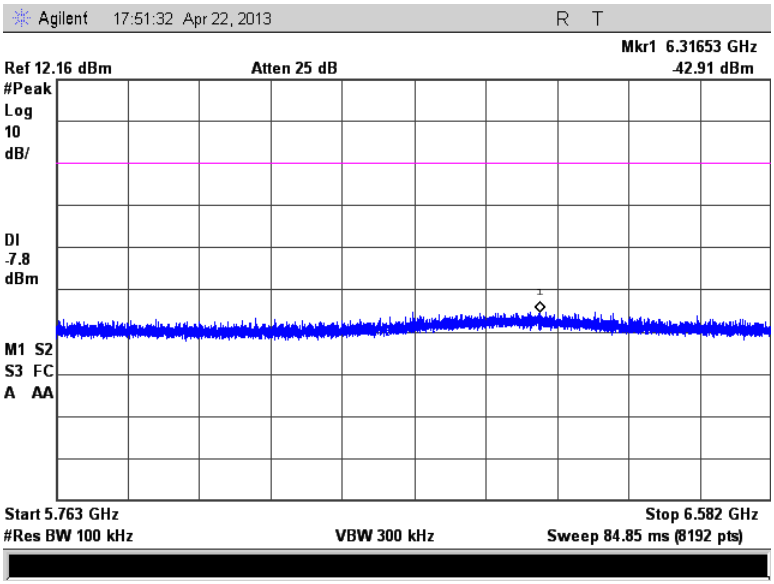

Figure 7.4.2.2-44: 5.763 GHz – 6.582 GHz – Low Channel (BPSK, Antenna Path 2)

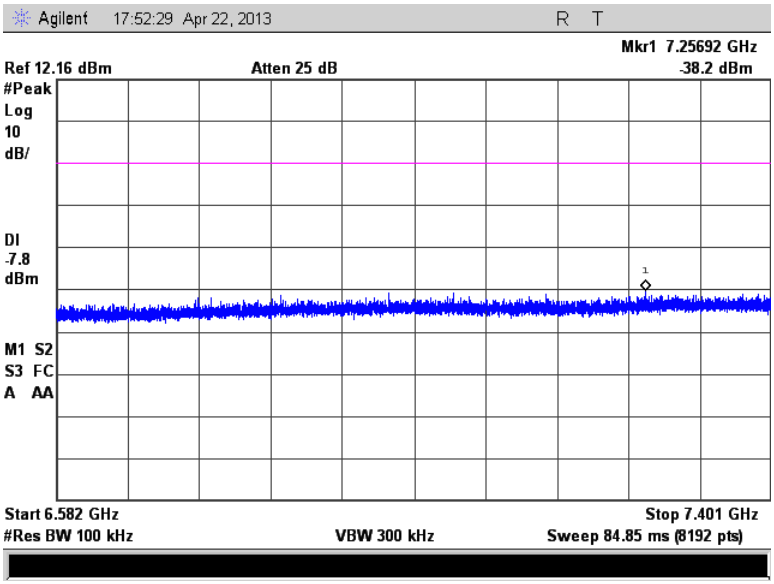

Figure 7.4.2.2-45: 6.582 GHz – 7.401 GHz – Low Channel (BPSK, Antenna Path 2)

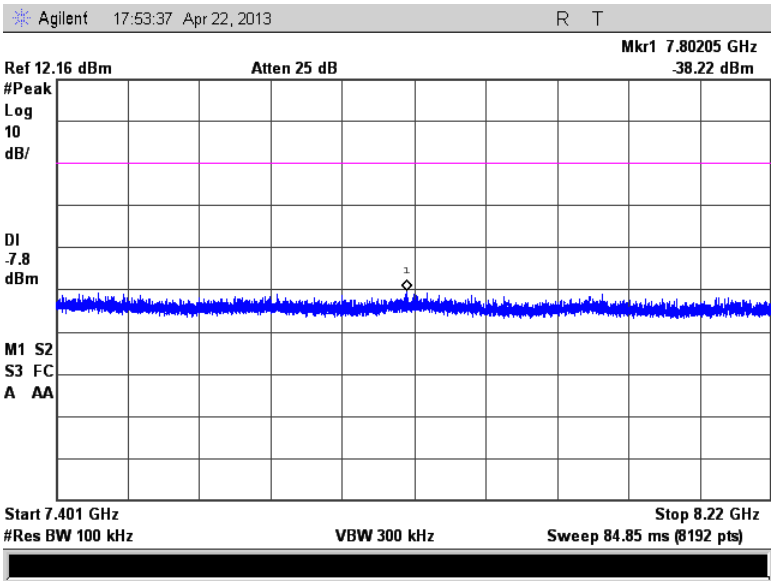

Figure 7.4.2.2-46: 7.401 GHz – 8.22 GHz – Low Channel (BPSK, Antenna Path 2)

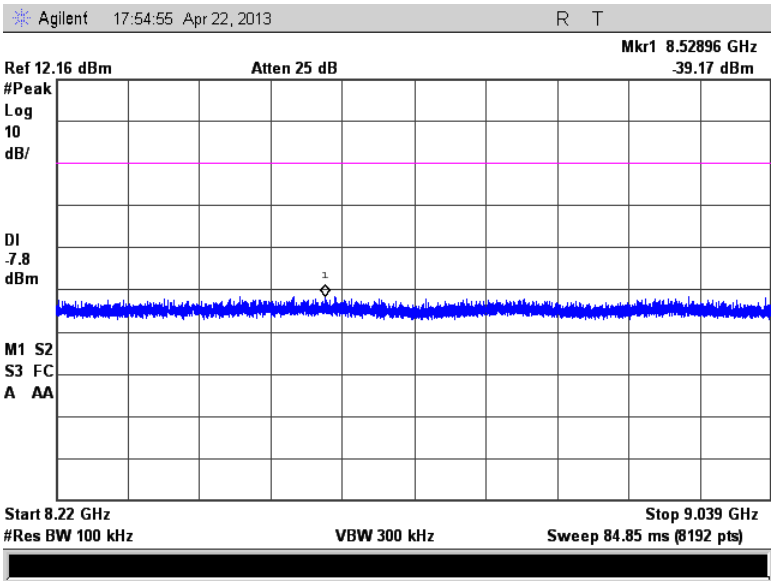

Figure 7.4.2.2-47: 8.22 GHz – 9.039 GHz – Low Channel (BPSK, Antenna Path 2)

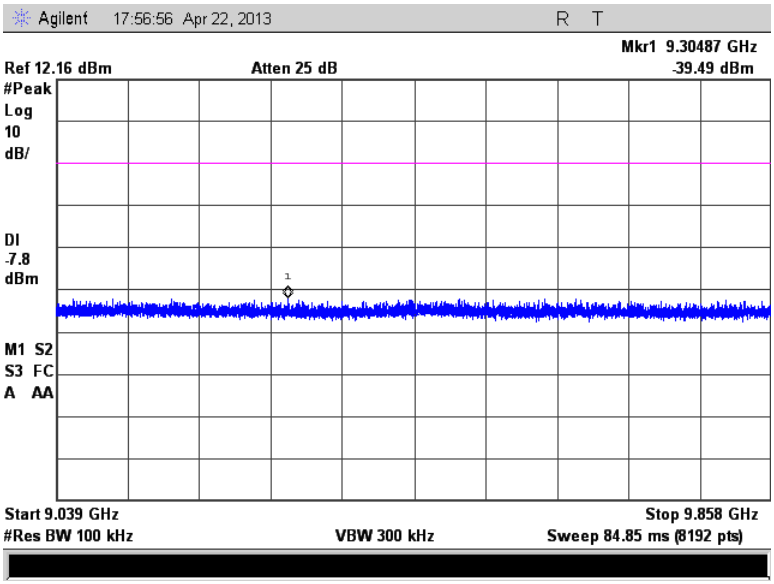

Figure 7.4.2.2-48: 9.039 GHz – 9.858 GHz – Low Channel (BPSK, Antenna Path 2)

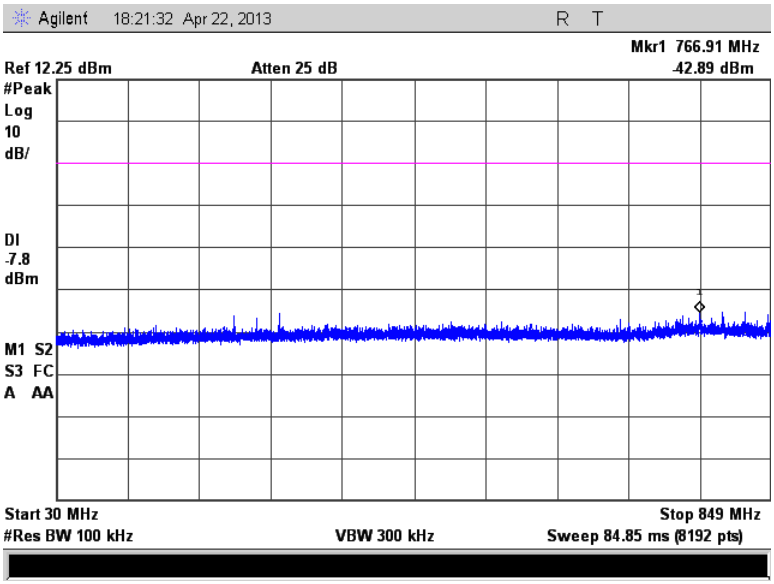

Figure 7.4.2.2-49: 30 MHz – 849 MHz – Middle Channel (BPSK, Antenna Path 2)

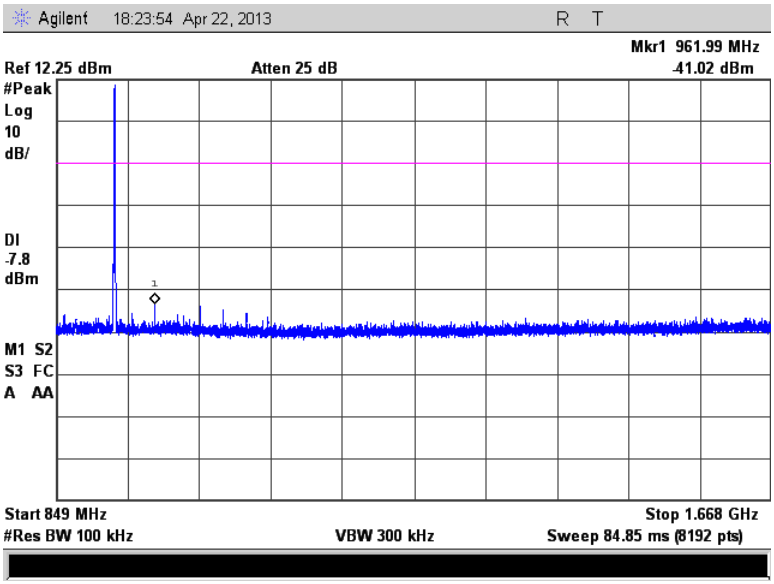

Figure 7.4.2.2-50: 849 MHz – 1.668 GHz – Middle Channel (BPSK, Antenna Path 2)

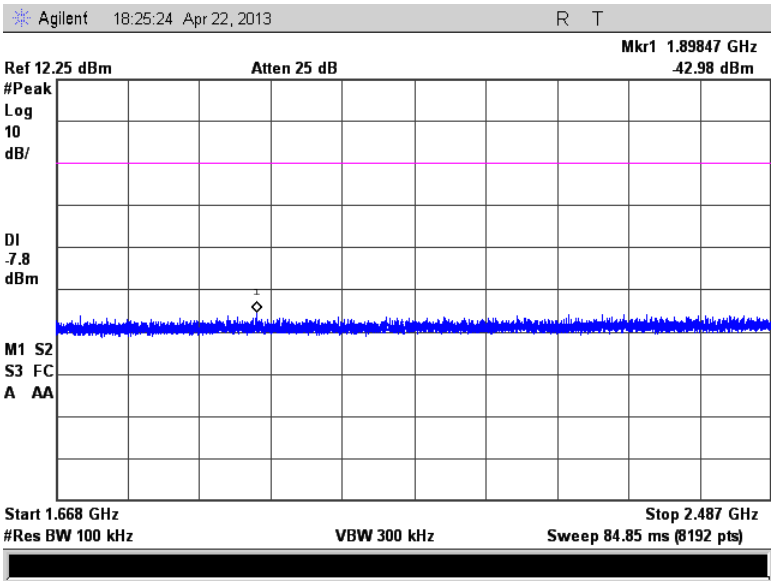

Figure 7.4.2.2-51: 1.668 GHz – 2.487 GHz – Middle Channel (BPSK, Antenna Path 2)

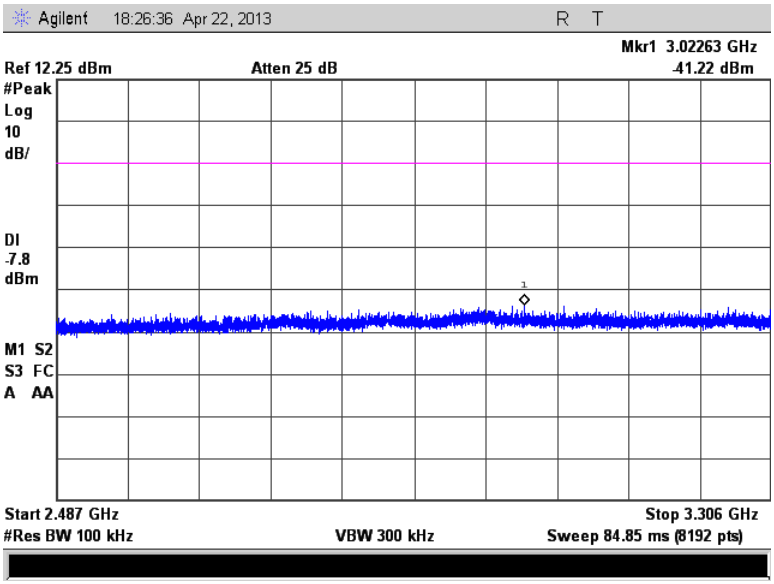

Figure 7.4.2.2-52: 2.487 GHz – 3.306 GHz – Middle Channel (BPSK, Antenna Path 2)

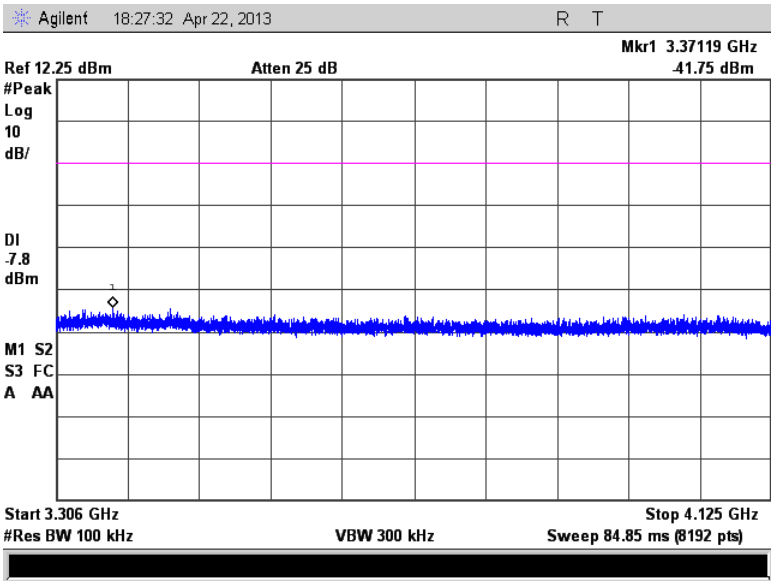

Figure 7.4.2.2-53: 3.306 GHz – 4.125 GHz – Middle Channel (BPSK, Antenna Path 2)

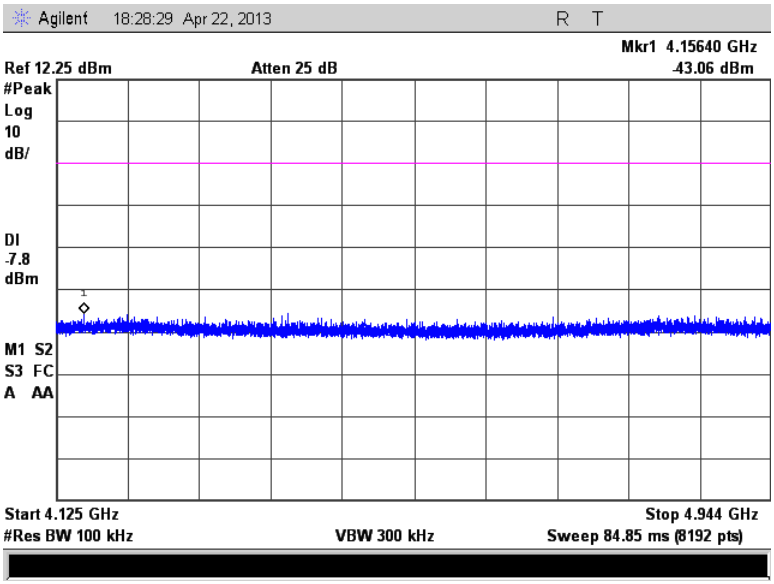

Figure 7.4.2.2-54: 4.125 GHz – 4.944 GHz – Middle Channel (BPSK, Antenna Path 2)

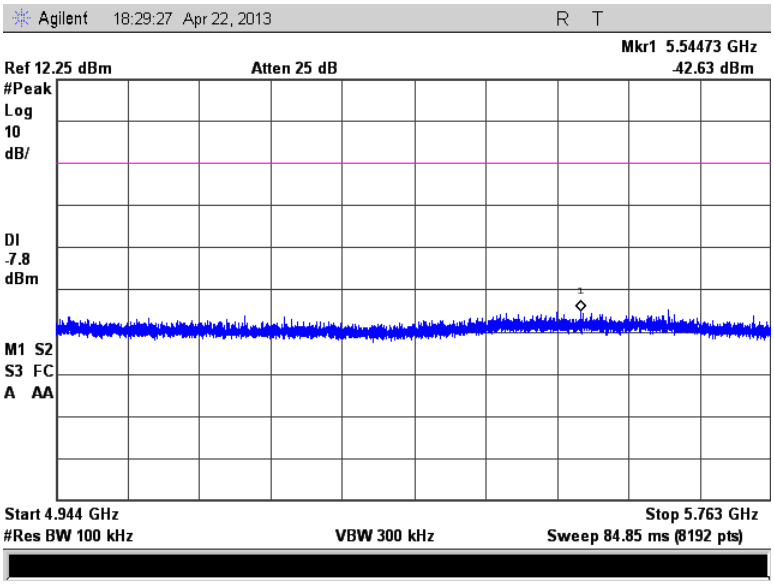

Figure 7.4.2.2-55: 4.944 GHz – 5.763 GHz – Middle Channel (BPSK, Antenna Path 2)

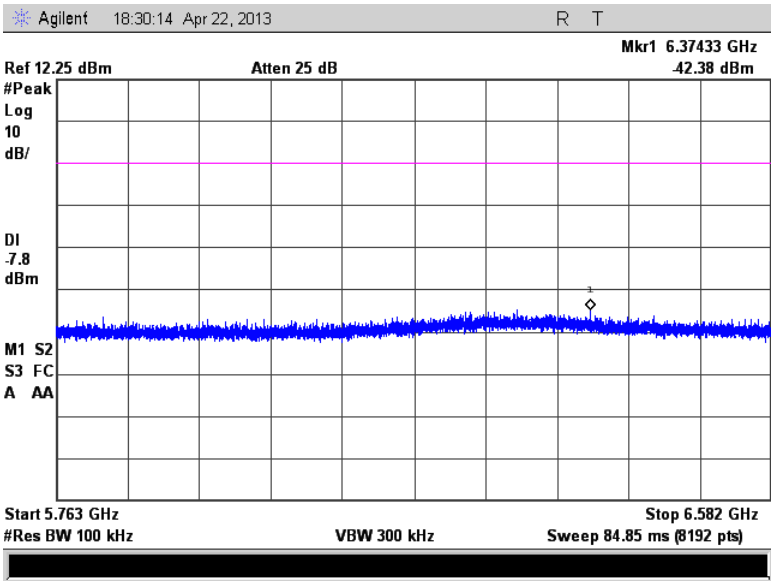

Figure 7.4.2.2-56: 5.763 GHz – 6.582 GHz – Middle Channel (BPSK, Antenna Path 2)

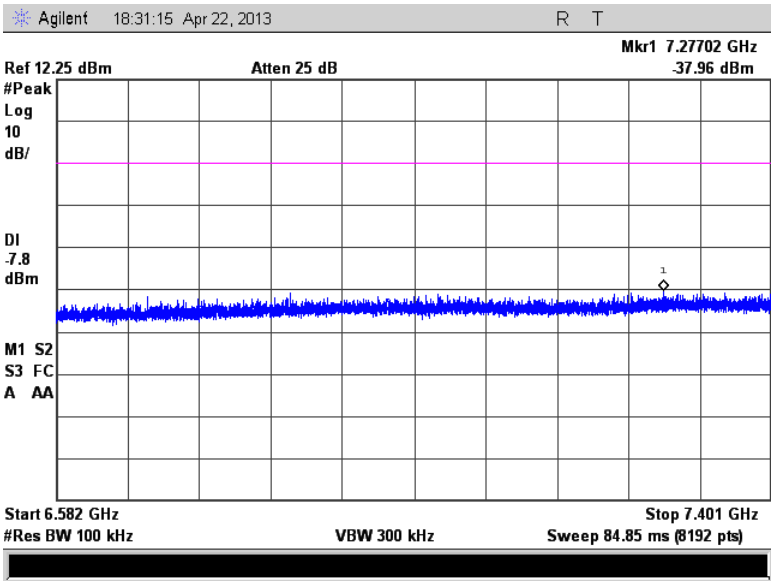

Figure 7.4.2.2-57: 6.582 GHz – 7.401 GHz – Middle Channel (BPSK, Antenna Path 2)

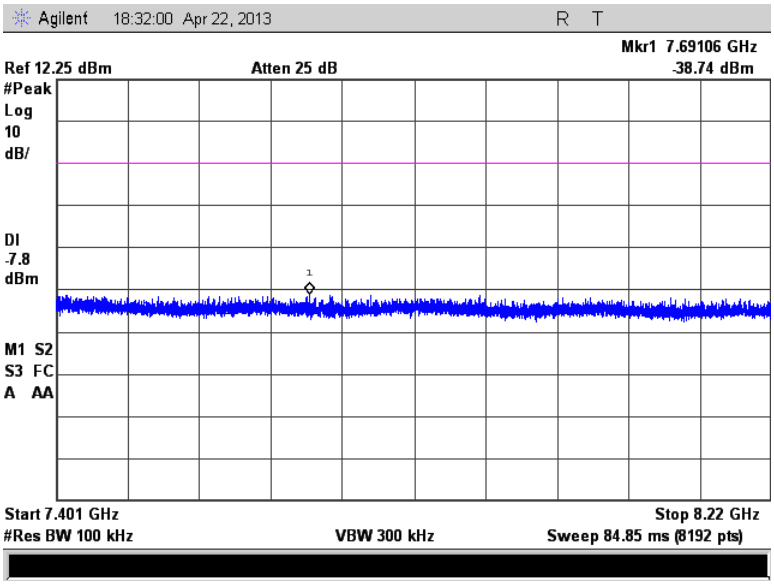

Figure 7.4.2.2-58: 7.401 GHz – 8.22 GHz – Middle Channel (BPSK, Antenna Path 2)

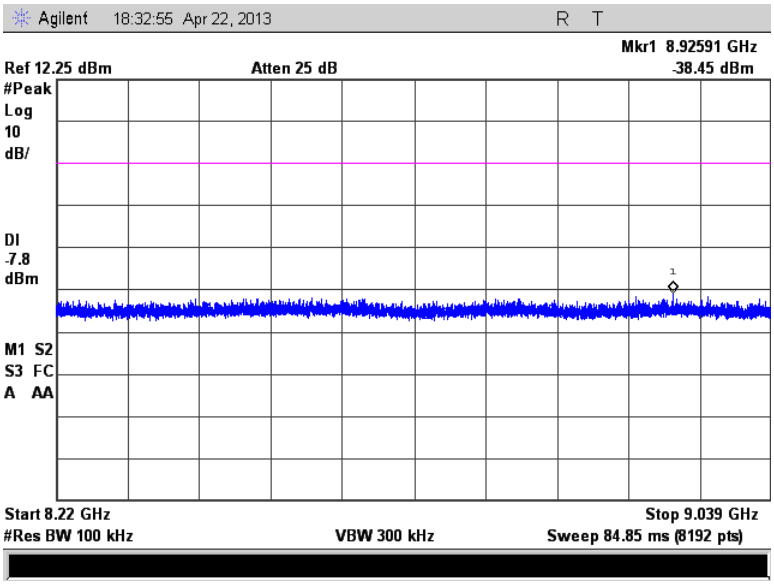

Figure 7.4.2.2-59: 8.22 GHz – 9.039 GHz – Middle Channel (BPSK, Antenna Path 2)

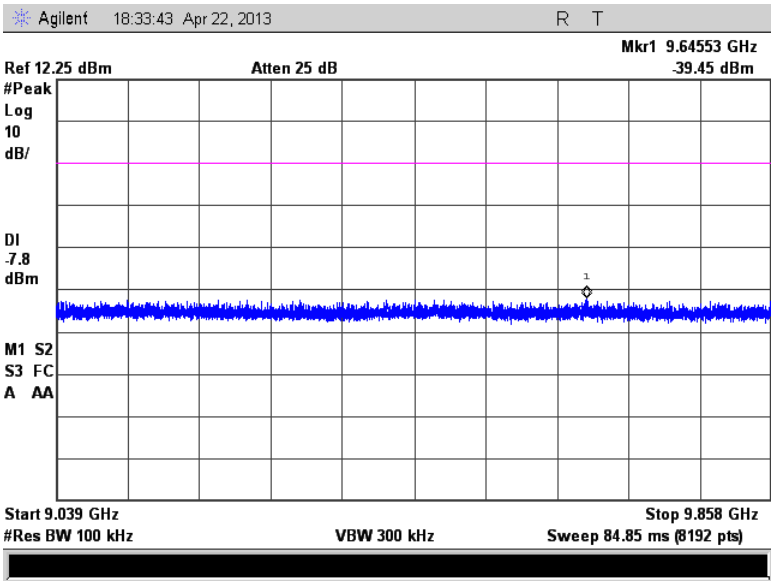

Figure 7.4.2.2-60: 9.039 GHz – 9.858 GHz – Middle Channel (BPSK, Antenna Path 2)

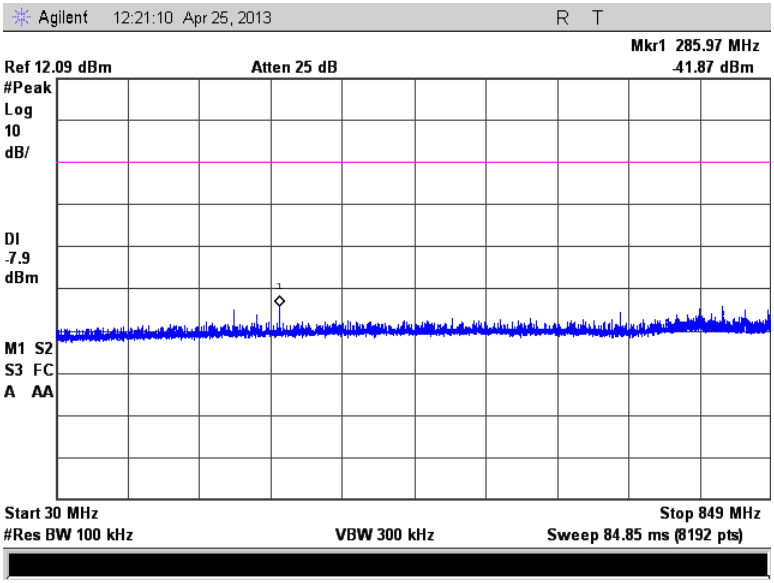

Figure 7.4.2.2-61: 30 MHz – 849 MHz – High Channel (BPSK, Antenna Path 2)

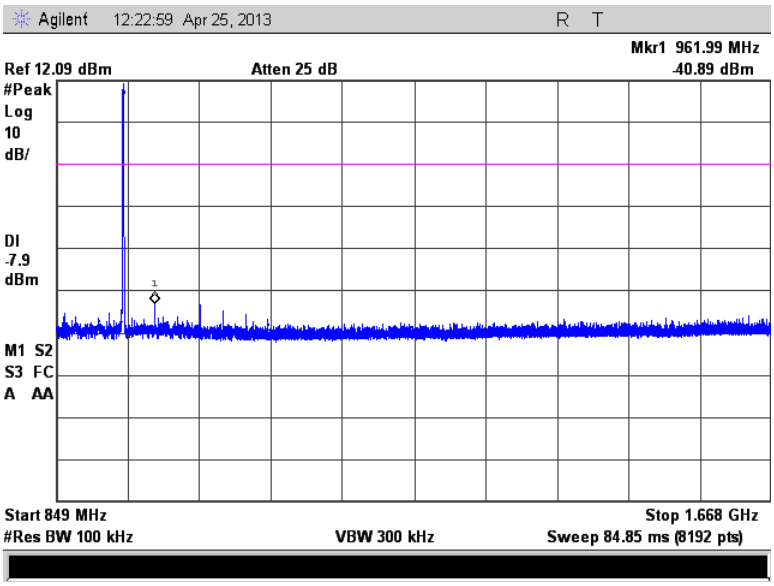

Figure 7.4.2.2-62: 849 MHz – 1.668 GHz – High Channel (BPSK, Antenna Path 2)

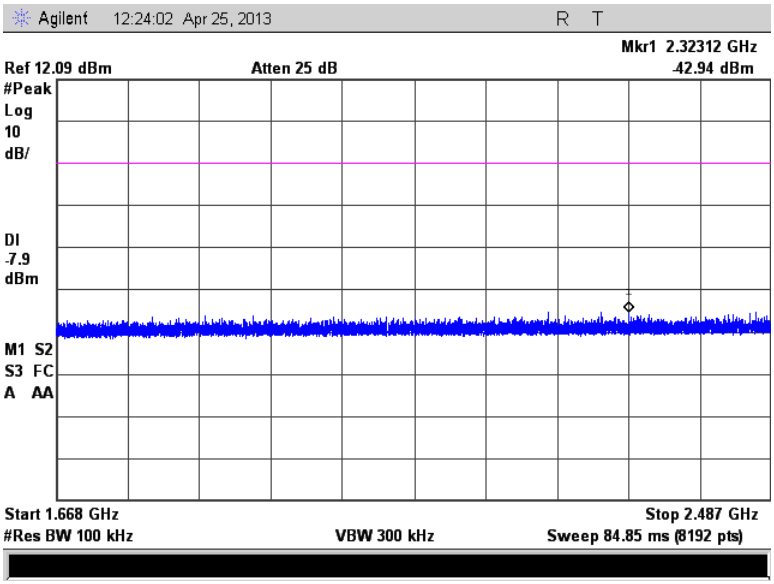

Figure 7.4.2.2-63: 1.668 GHz – 2.487 GHz – High Channel (BPSK, Antenna Path 2)

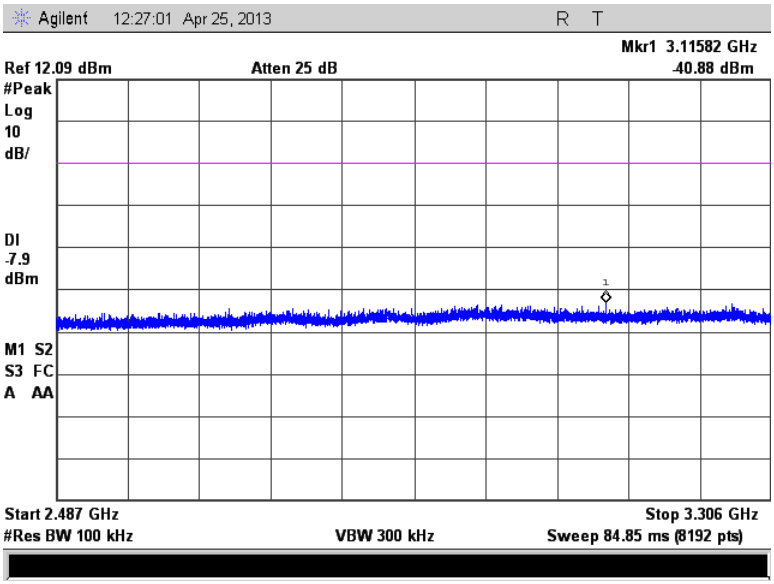

Figure 7.4.2.2-64: 2.487 GHz – 3.306 GHz – High Channel (BPSK, Antenna Path 2)

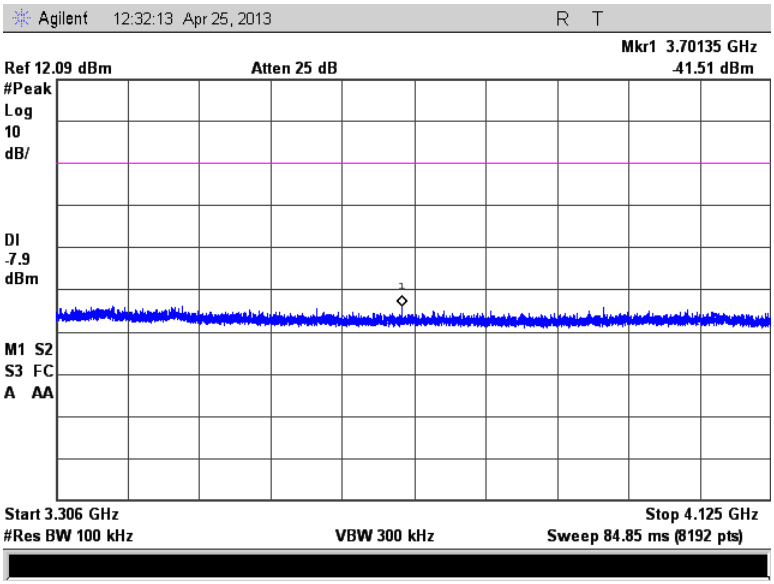

Figure 7.4.2.2-65: 3.306 GHz – 4.125 GHz – High Channel (BPSK, Antenna Path 2)

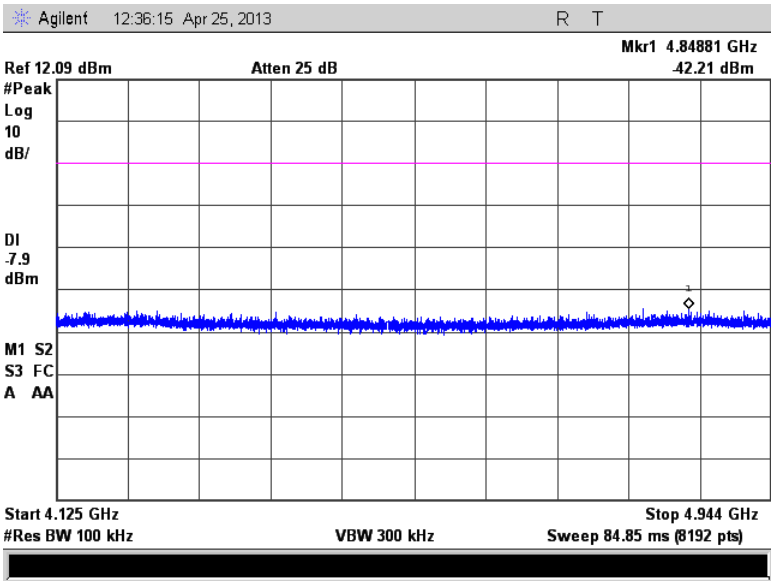

Figure 7.4.2.2-66: 4.125 GHz – 4.944 GHz – High Channel (BPSK, Antenna Path 2)

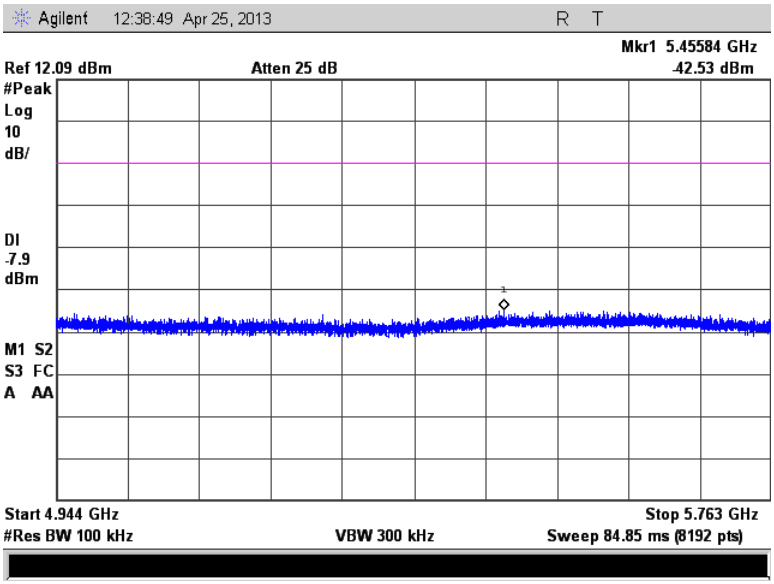

Figure 7.4.2.2-67: 4.944 GHz – 5.763 GHz – High Channel (BPSK, Antenna Path 2)

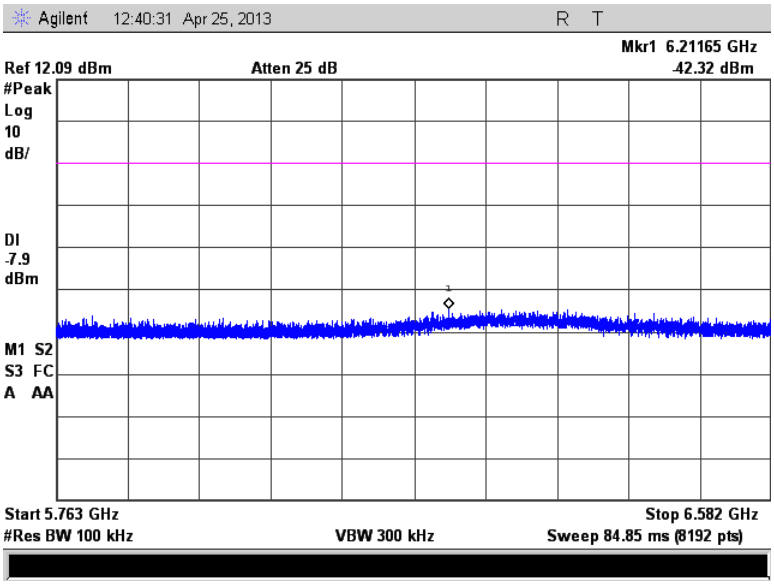

Figure 7.4.2.2-68: 5.763 GHz – 6.582 GHz – High Channel (BPSK, Antenna Path 2)

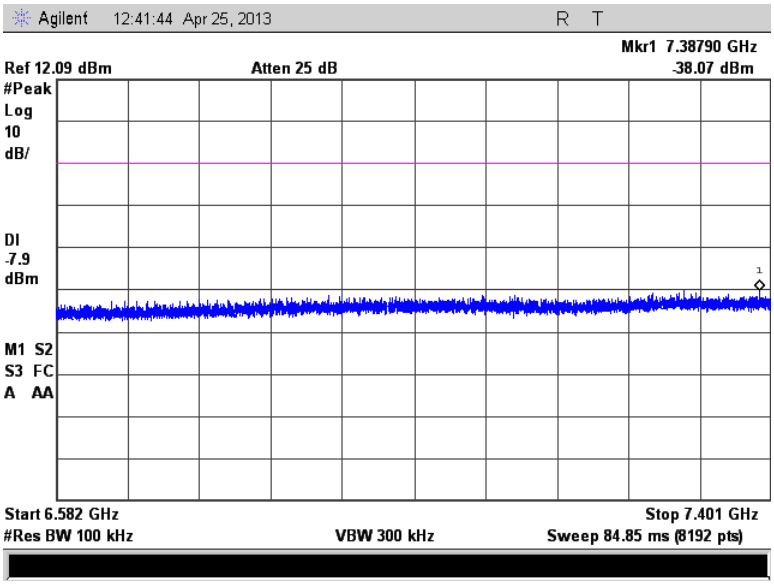

Figure 7.4.2.2-69: 6.582 GHz – 7.401 GHz – High Channel (BPSK, Antenna Path 2)

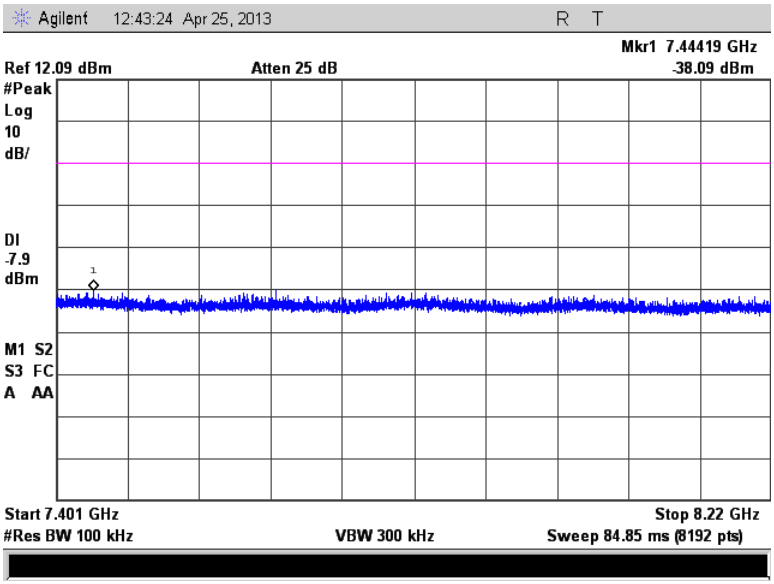

Figure 7.4.2.2-70: 7.401 GHz – 8.22 GHz – High Channel (BPSK, Antenna Path 2)

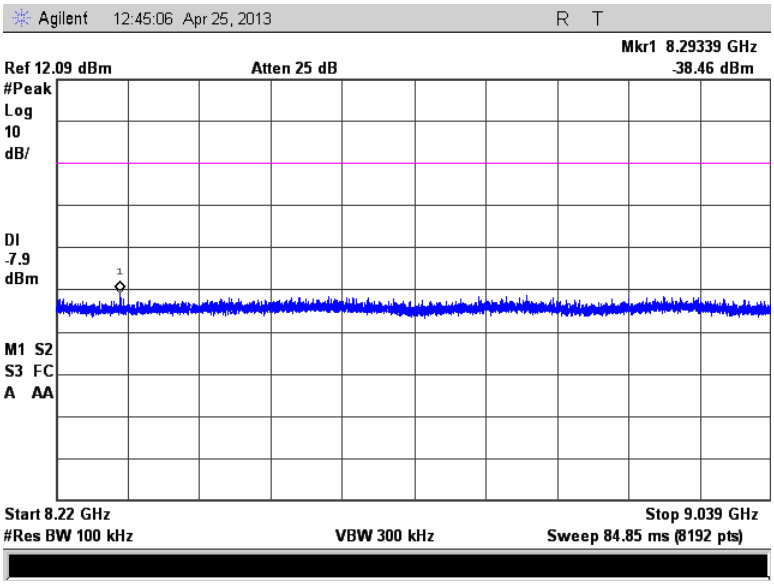

Figure 7.4.2.2-71: 8.22 GHz – 9.039 GHz – High Channel (BPSK, Antenna Path 2)

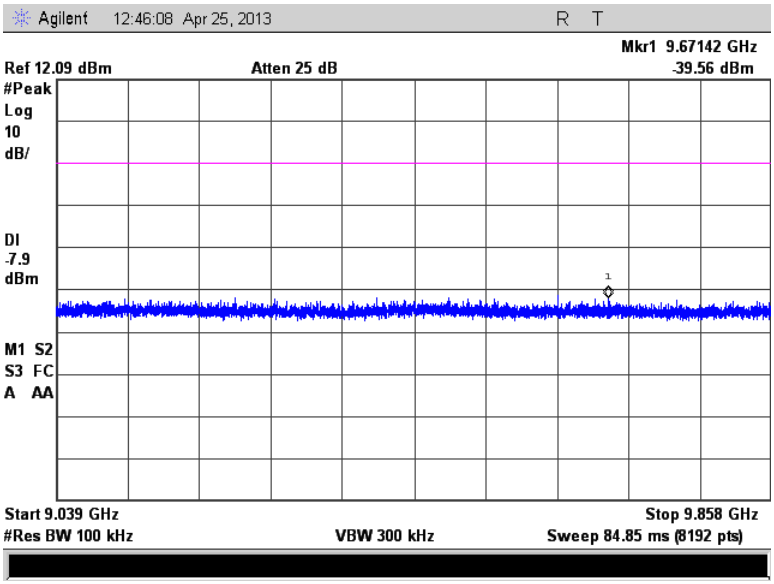

Figure 7.4.2.2-72 9.039 GHz – 9.858 GHz – High Channel (BPSK, Antenna Path 2)

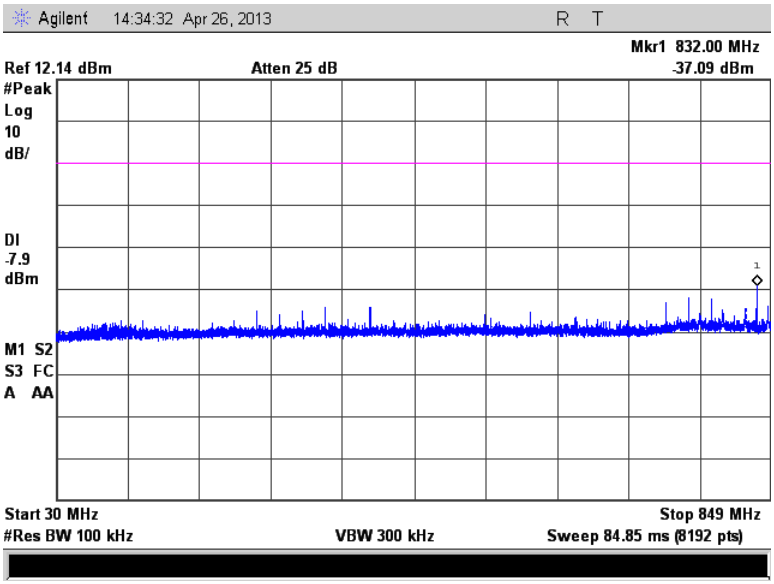

Figure 7.4.2.2-73: 30 MHz – 849 MHz – Low Channel (QPSK, Antenna Path 1)

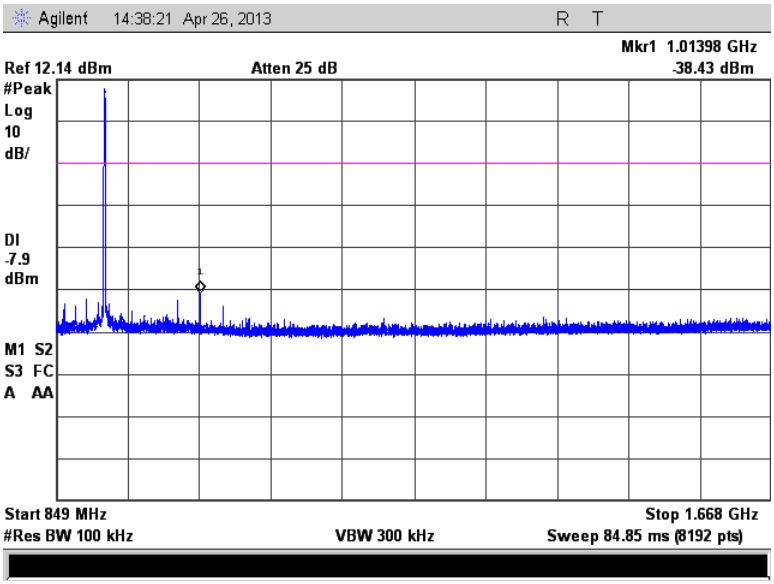

Figure 7.4.2.2-74: 849 MHz – 1.668 GHz – Low Channel (QPSK, Antenna Path 1)

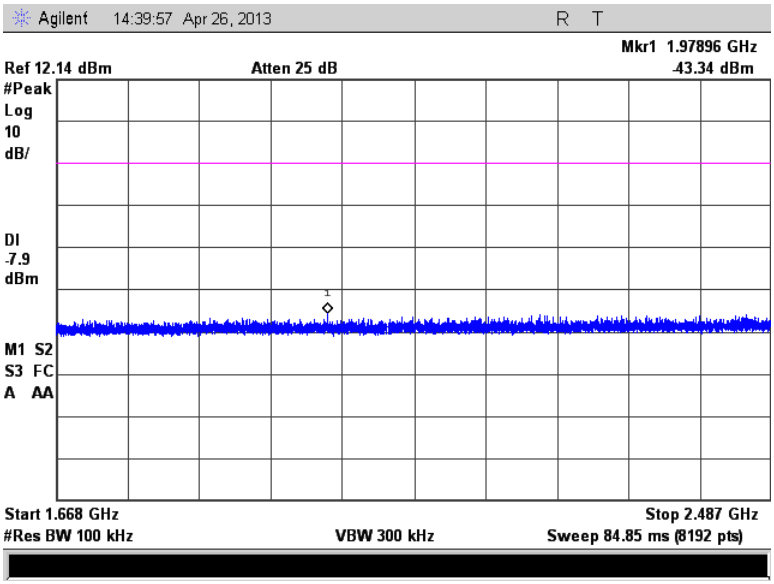

Figure 7.4.2.2-75: 1.668 GHz – 2.487 GHz – Low Channel (QPSK, Antenna Path 1)

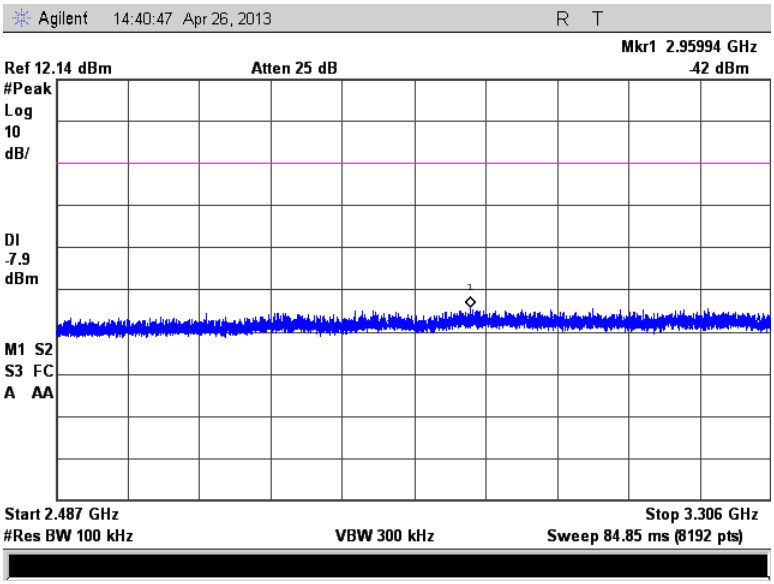

Figure 7.4.2.2-76: 2.487 GHz – 3.306 GHz – Low Channel (QPSK, Antenna Path 1)

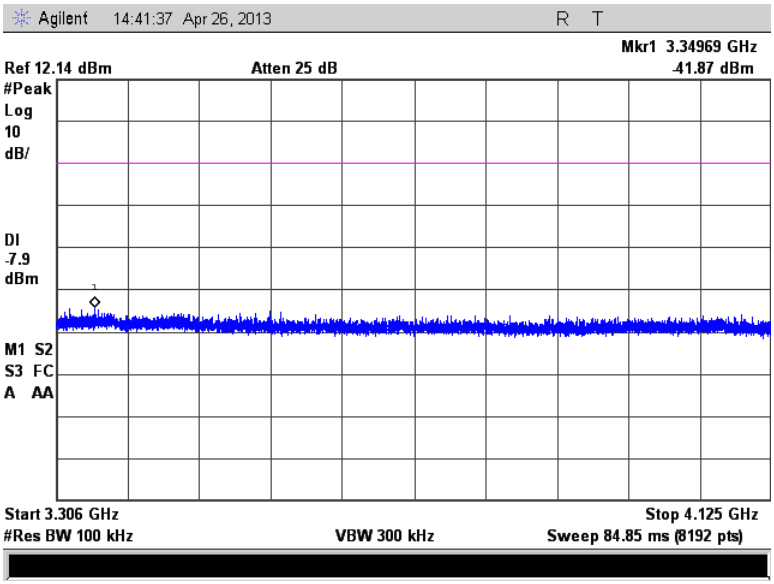

Figure 7.4.2.2-77: 3.306 GHz – 4.125 GHz – Low Channel (QPSK, Antenna Path 1)

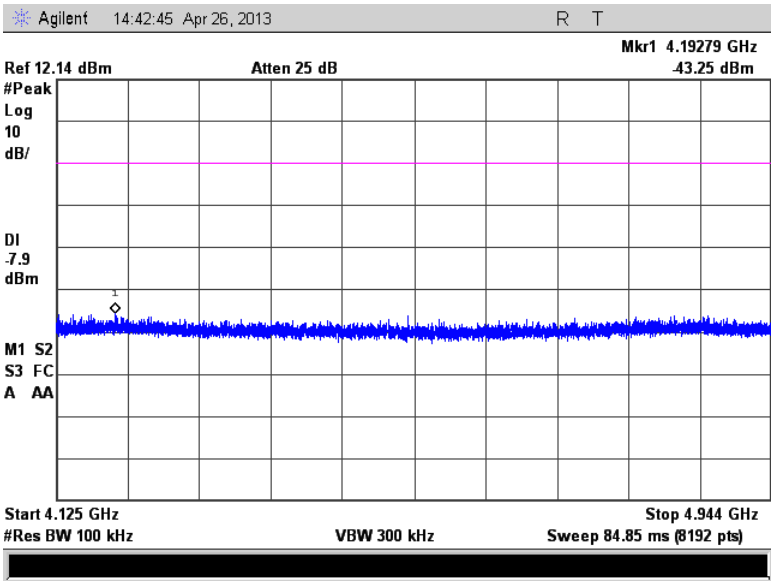

Figure 7.4.2.2-78: 4.125 GHz – 4.944 GHz – Low Channel (QPSK, Antenna Path 1)

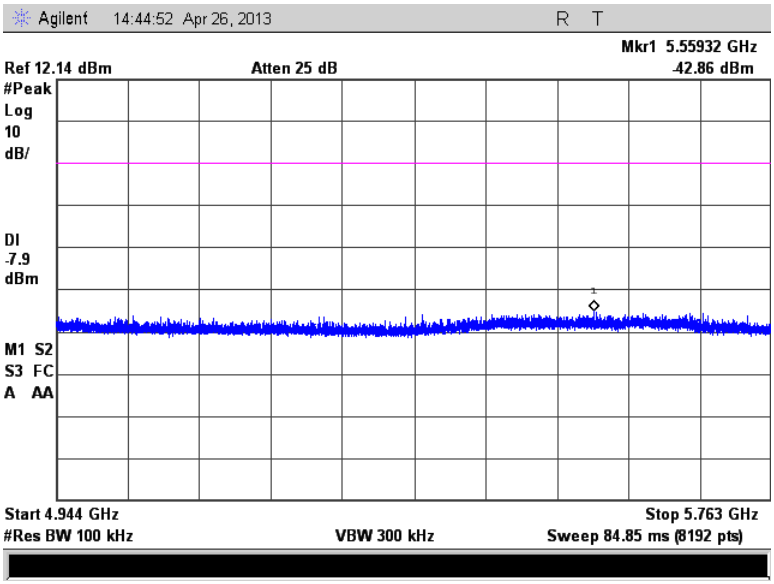

Figure 7.4.2.2-79: 4.944 GHz – 5.763 GHz – Low Channel (QPSK, Antenna Path 1)

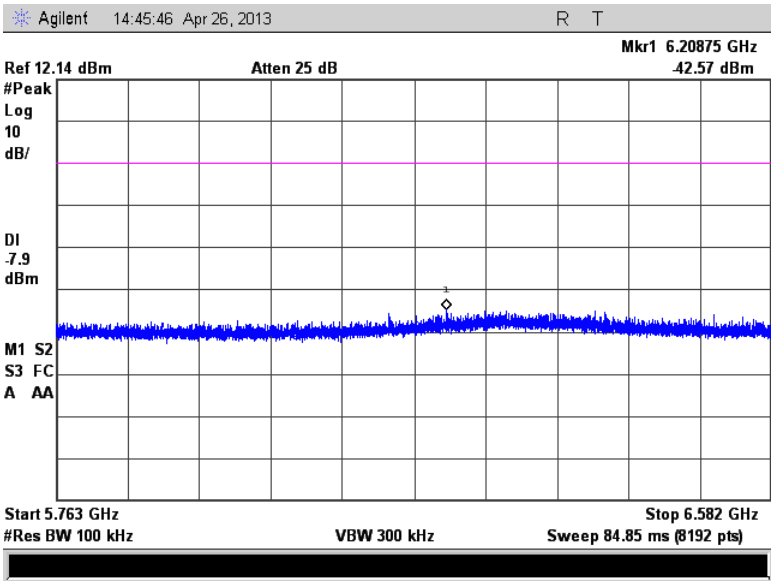

Figure 7.4.2.2-80: 5.763 GHz – 6.582 GHz – Low Channel (QPSK, Antenna Path 1)

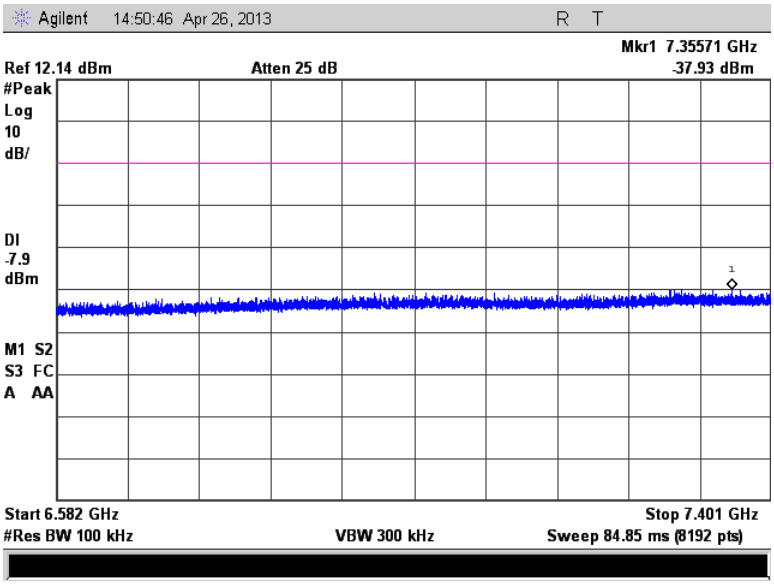

Figure 7.4.2.2-81: 6.582 GHz – 7.401 GHz – Low Channel (QPSK, Antenna Path 1)

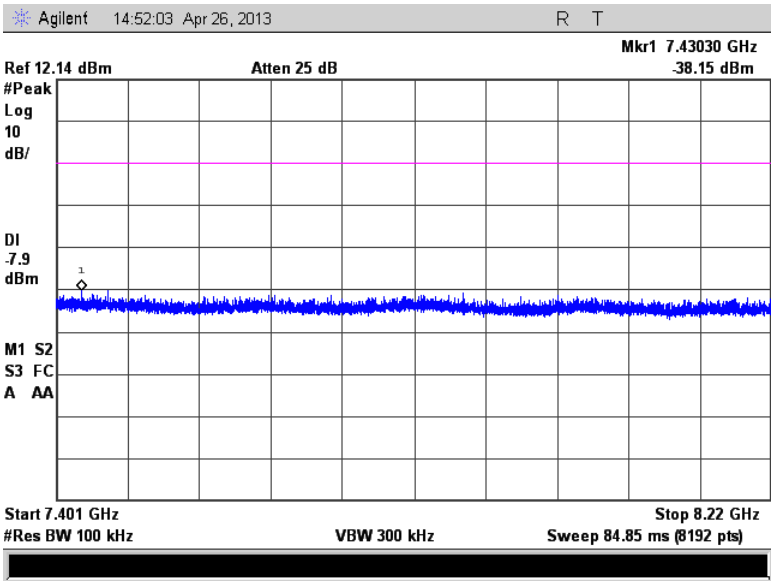

Figure 7.4.2.2-82: 7.401 GHz – 8.22 GHz – Low Channel (QPSK, Antenna Path 1)

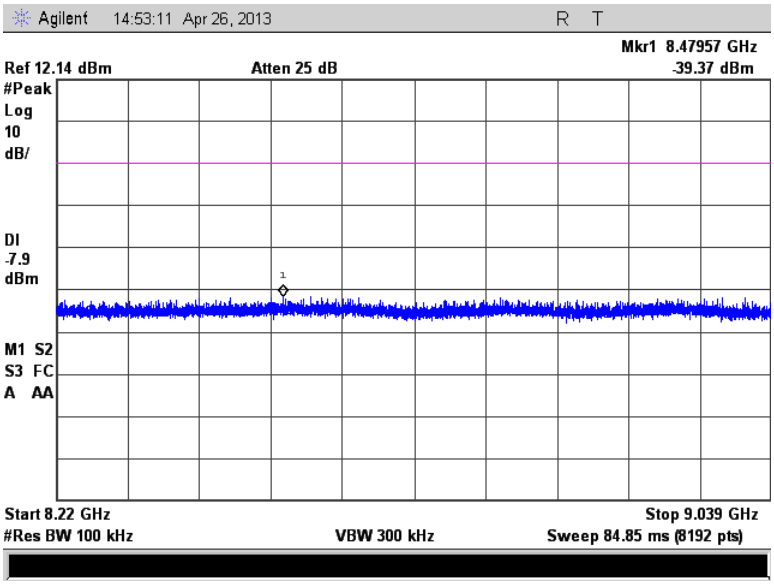

Figure 7.4.2.2-83: 8.22 GHz – 9.039 GHz – Low Channel (QPSK, Antenna Path 1)

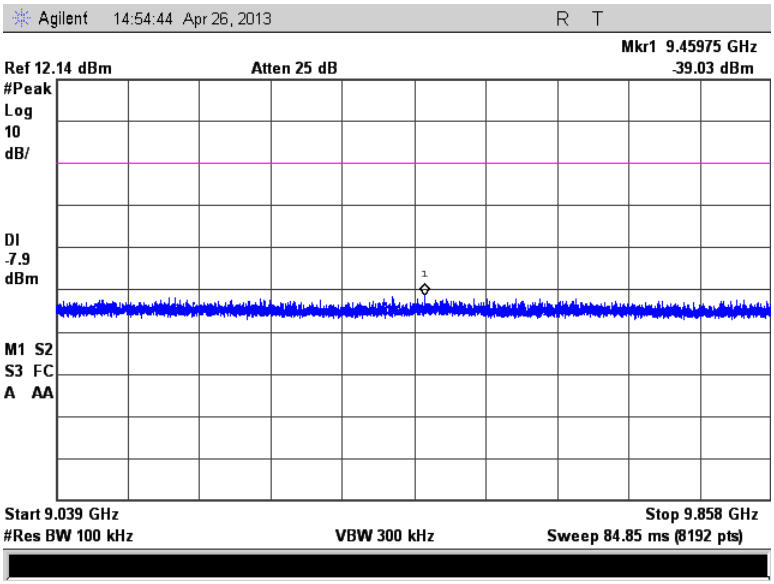

Figure 7.4.2.2-84: 9.039 GHz – 9.858 GHz – Low Channel (QPSK, Antenna Path 1)

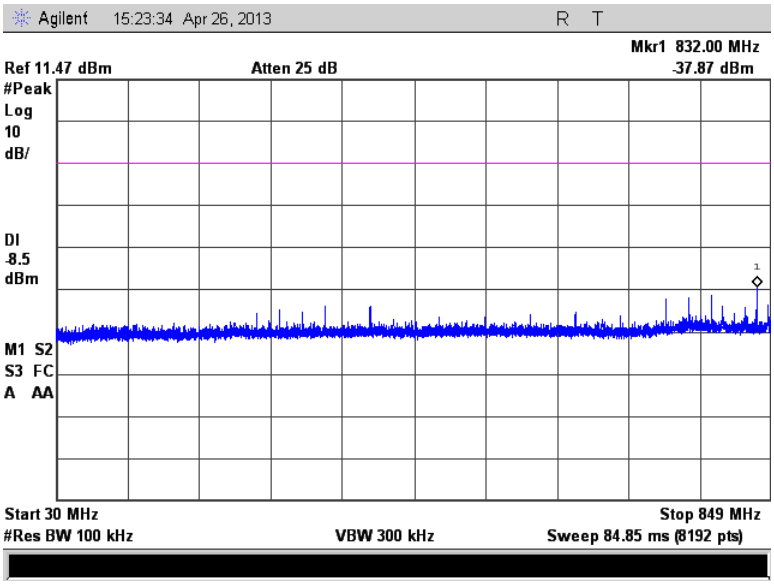

Figure 7.4.2.2-85: 30 MHz – 849 MHz – Middle Channel (QPSK, Antenna Path 1)

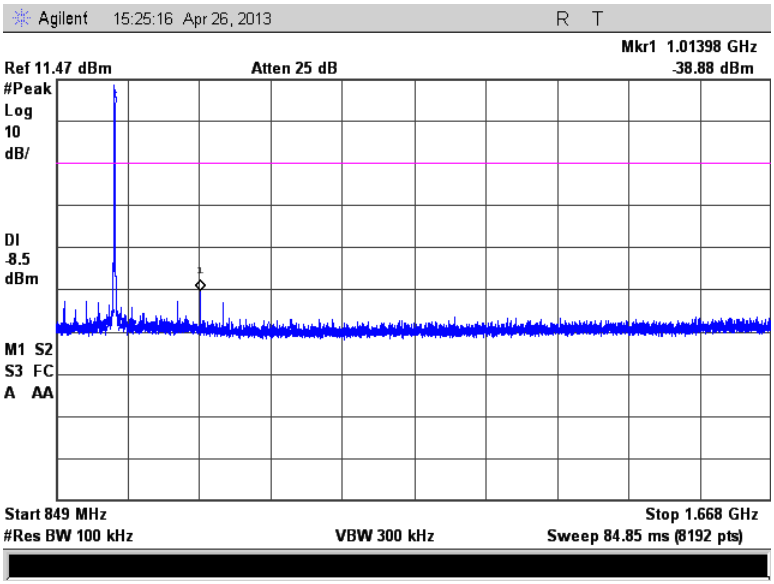

Figure 7.4.2.2-86: 849 MHz – 1.668 GHz – Middle Channel (QPSK, Antenna Path 1)

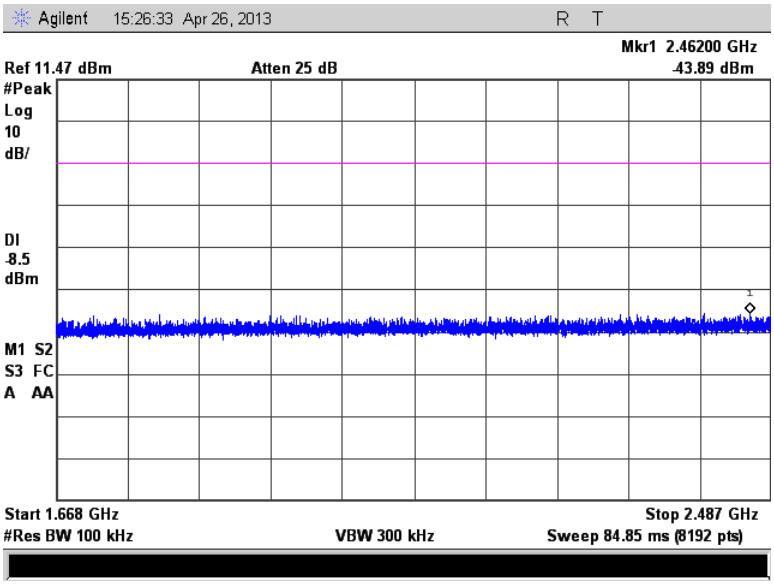

Figure 7.4.2.2-87: 1.668 GHz – 2.487 GHz – Middle Channel (QPSK, Antenna Path 1)

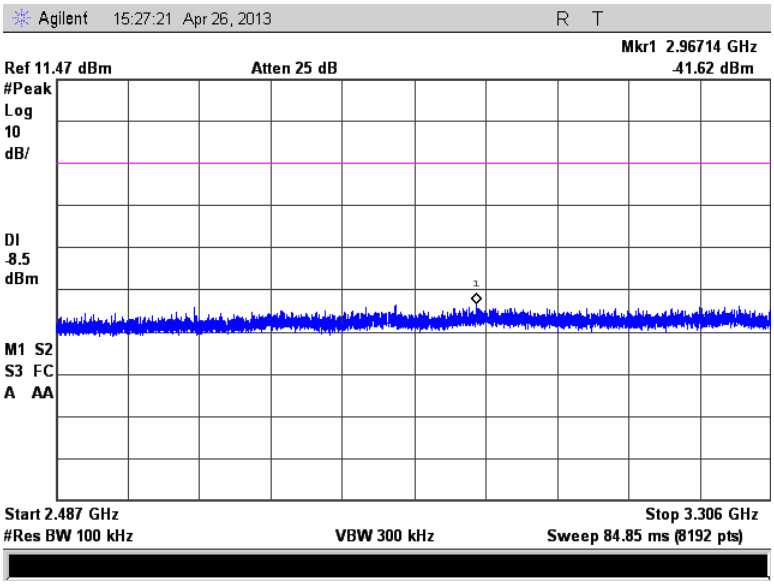

Figure 7.4.2.2-88: 2.487 GHz – 3.306 GHz – Middle Channel (QPSK, Antenna Path 1)

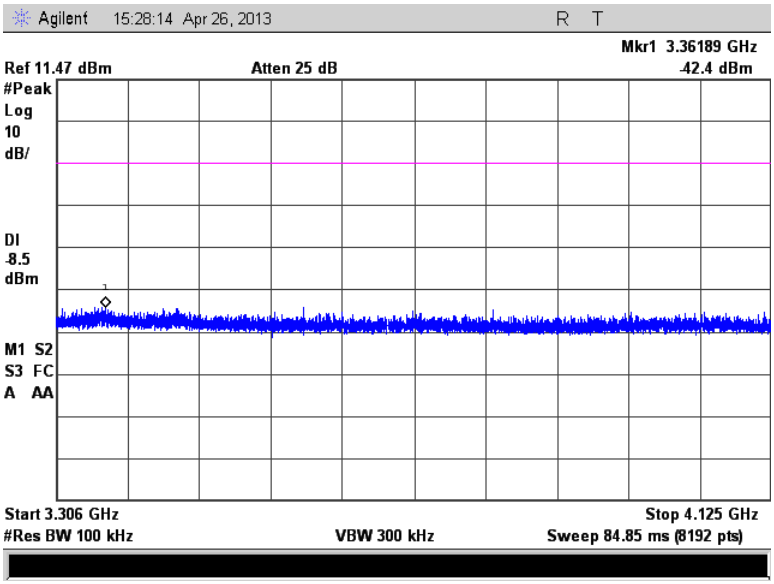

Figure 7.4.2.2-89: 3.306 GHz – 4.125 GHz – Middle Channel (QPSK, Antenna Path 1)

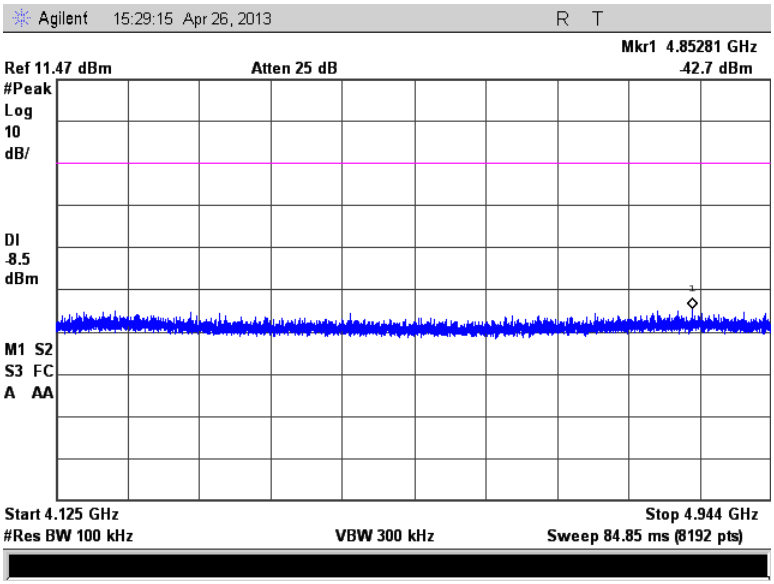

Figure 7.4.2.2-90: 4.125 GHz – 4.944 GHz – Middle Channel (QPSK, Antenna Path 1)

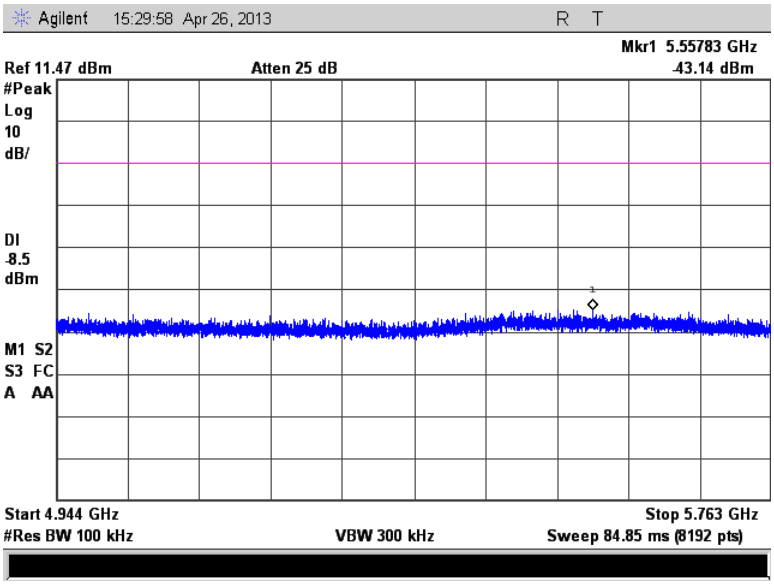

Figure 7.4.2.2-91: 4.944 GHz – 5.763 GHz – Middle Channel (QPSK, Antenna Path 1)

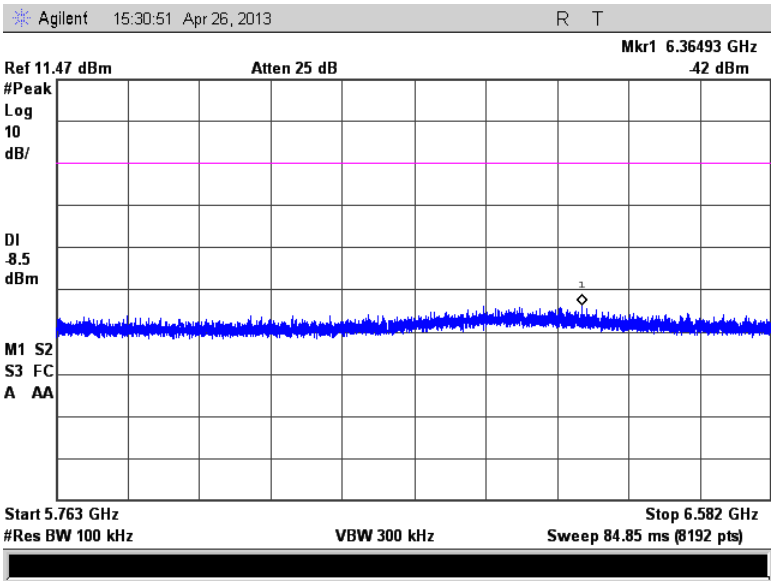

Figure 7.4.2.2-92: 5.763 GHz – 6.582 GHz – Middle Channel (QPSK, Antenna Path 1)

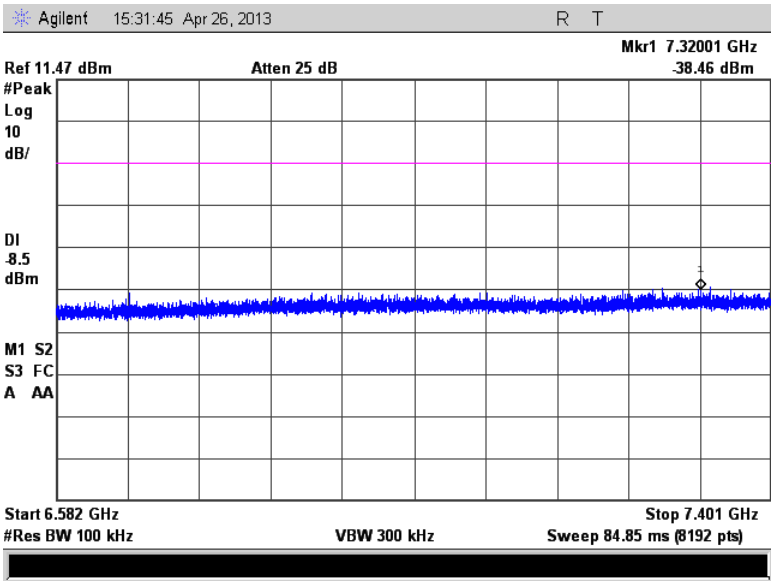

Figure 7.4.2.2-93: 6.582 GHz – 7.401 GHz – Middle Channel (QPSK, Antenna Path 1)

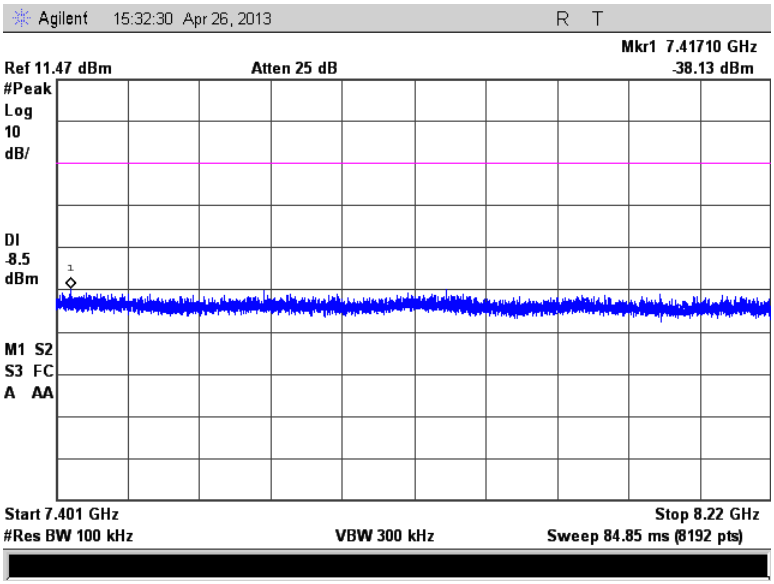

Figure 7.4.2.2-94: 7.401 GHz – 8.22 GHz – Middle Channel (QPSK, Antenna Path 1)

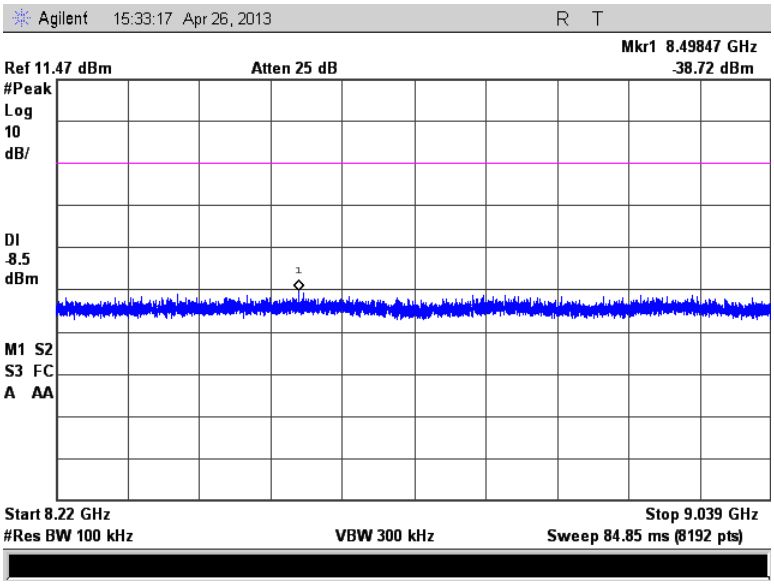

Figure 7.4.2.2-95: 8.22 GHz – 9.039 GHz – Middle Channel (QPSK, Antenna Path 1)

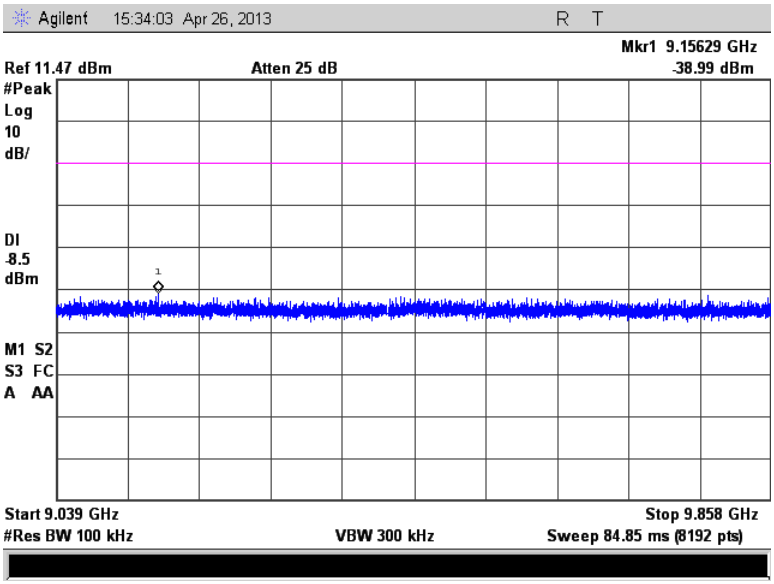

Figure 7.4.2.2-96: 9.039 GHz – 9.858 GHz – Middle Channel (QPSK, Antenna Path 1)

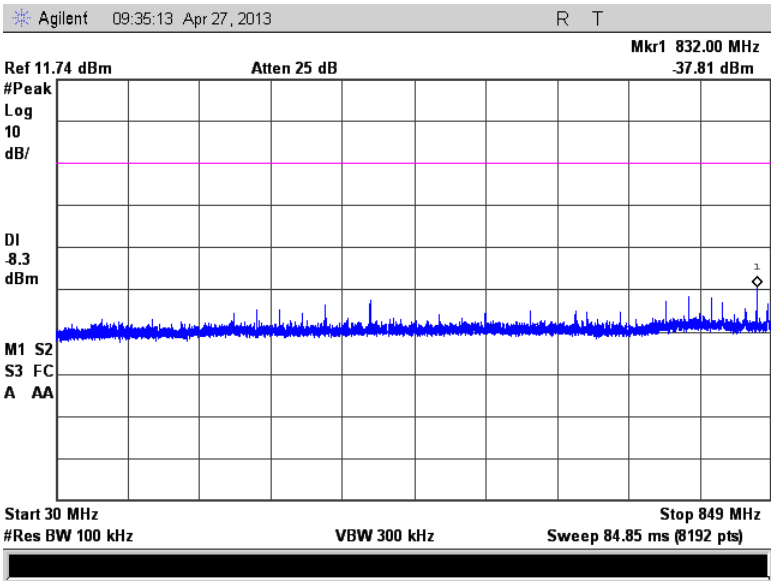

Figure 7.4.2.2-97: 30 MHz – 849 MHz – High Channel (QPSK, Antenna Path 1)

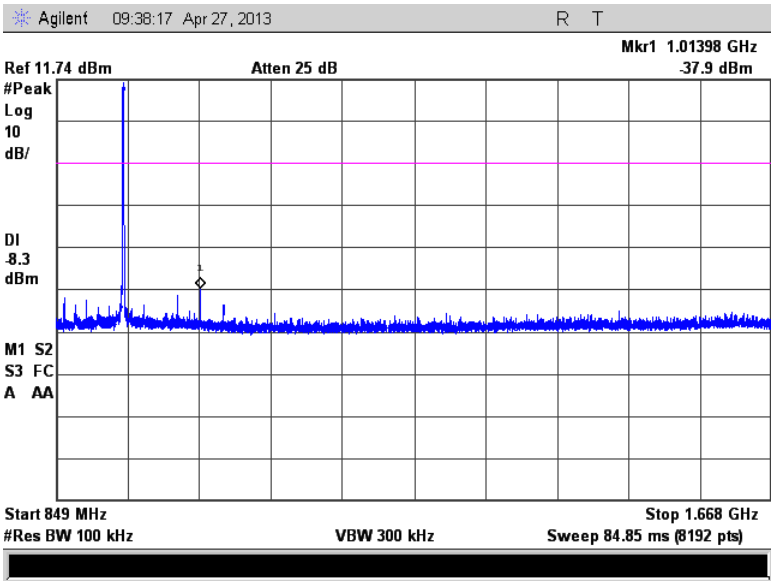

Figure 7.4.2.2-98: 849 MHz – 1.668 GHz – High Channel (QPSK, Antenna Path 1)

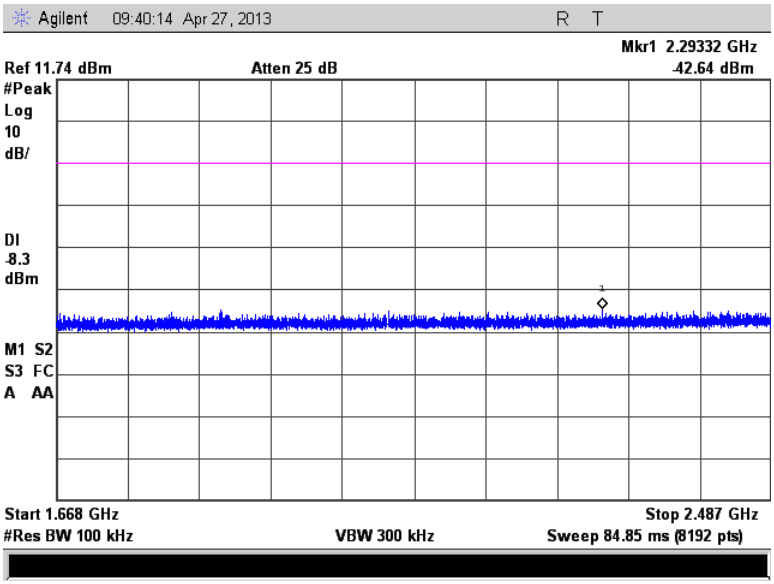

Figure 7.4.2.2-99: 1.668 GHz – 2.487 GHz – High Channel (QPSK, Antenna Path 1)

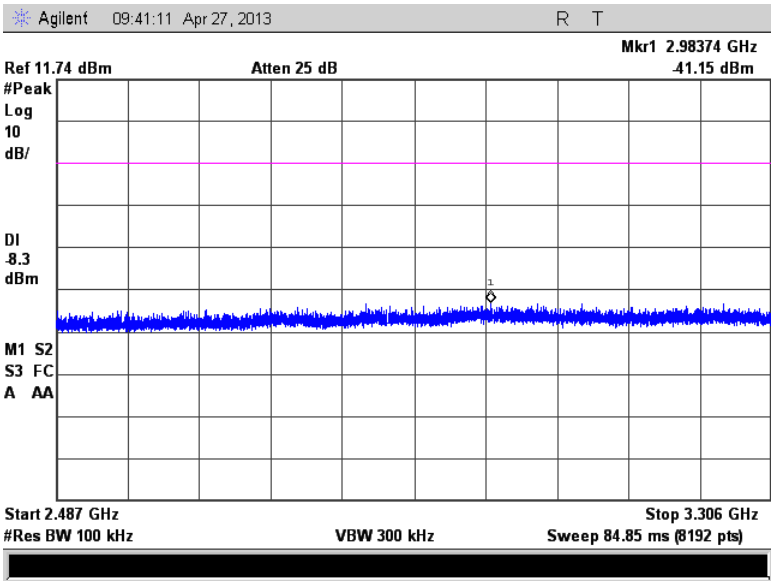

Figure 7.4.2.2-100: 2.487 GHz – 3.306 GHz – High Channel (QPSK, Antenna Path 1)

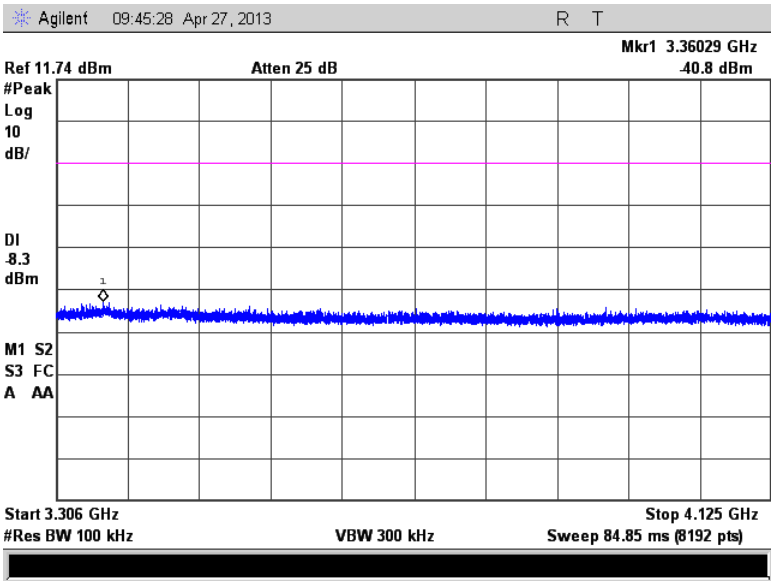

Figure 7.4.2.2-101: 3.306 GHz – 4.125 GHz – High Channel (QPSK, Antenna Path 1)

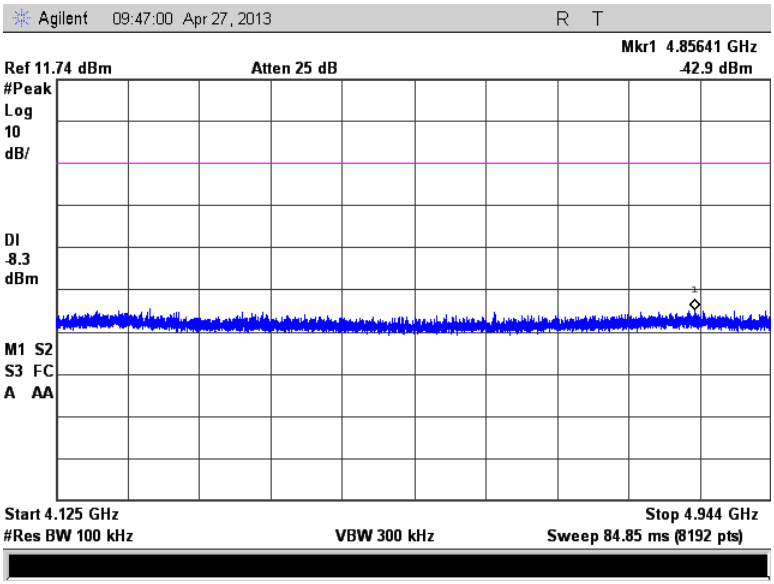

Figure 7.4.2.2-102: 4.125 GHz – 4.944 GHz – High Channel (QPSK, Antenna Path 1)

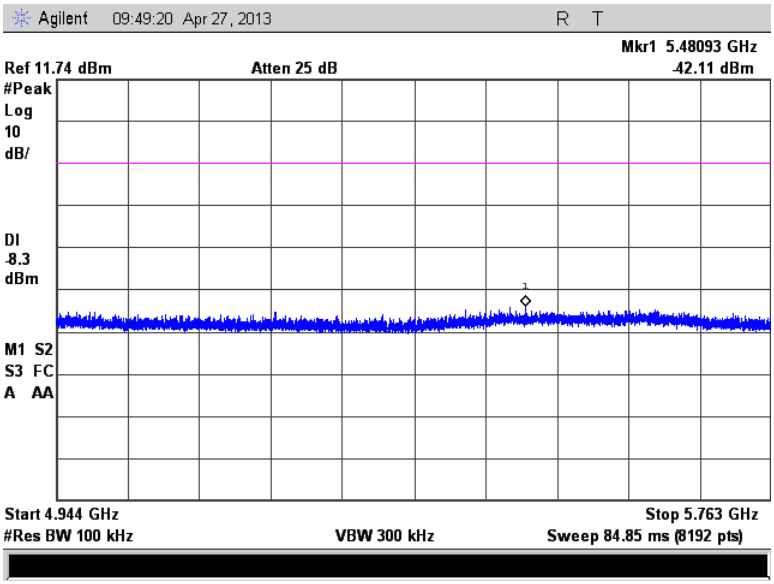

Figure 7.4.2.2-103: 4.944 GHz – 5.763 GHz – High Channel (QPSK, Antenna Path 1)

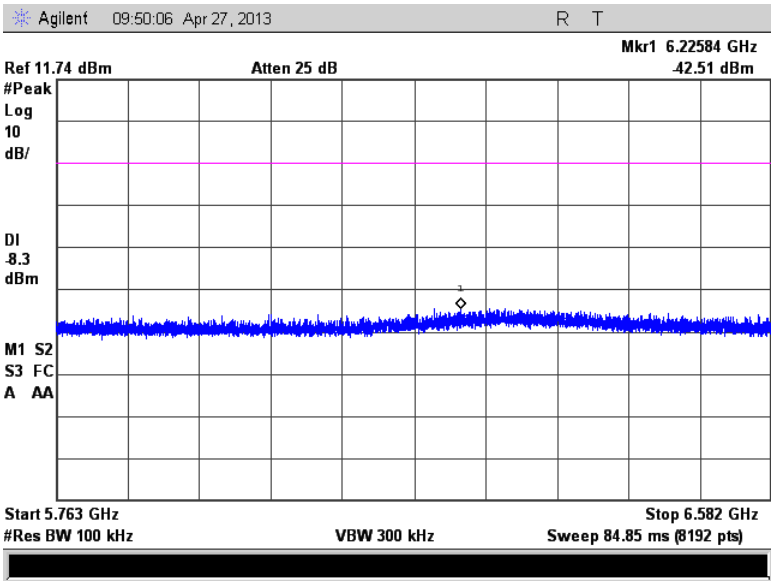

Figure 7.4.2.2-104: 5.763 GHz – 6.582 GHz – High Channel (QPSK, Antenna Path 1)

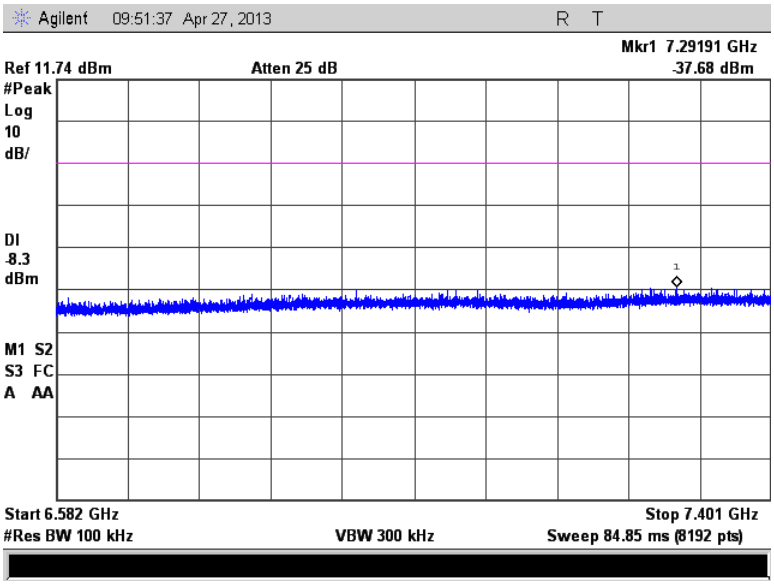

Figure 7.4.2.2-105: 6.582 GHz – 7.401 GHz – High Channel (QPSK, Antenna Path 1)

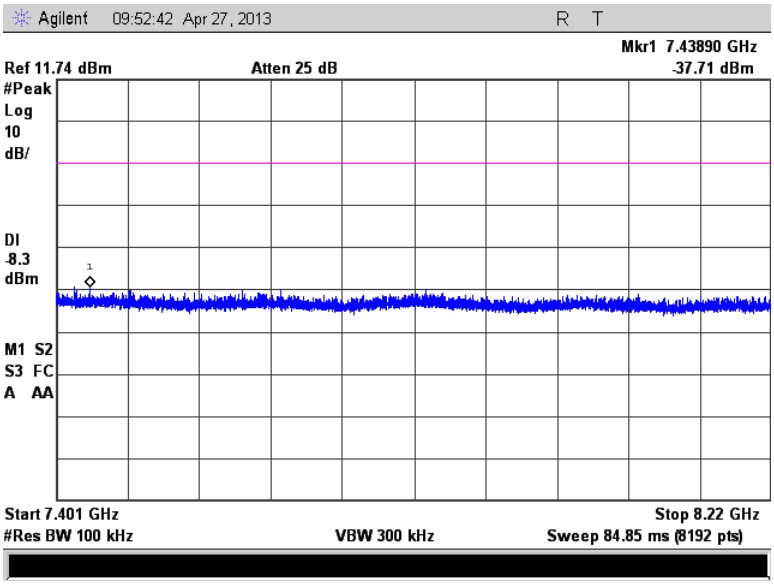

Figure 7.4.2.2-106: 7.401 GHz – 8.22 GHz – High Channel (QPSK, Antenna Path 1)

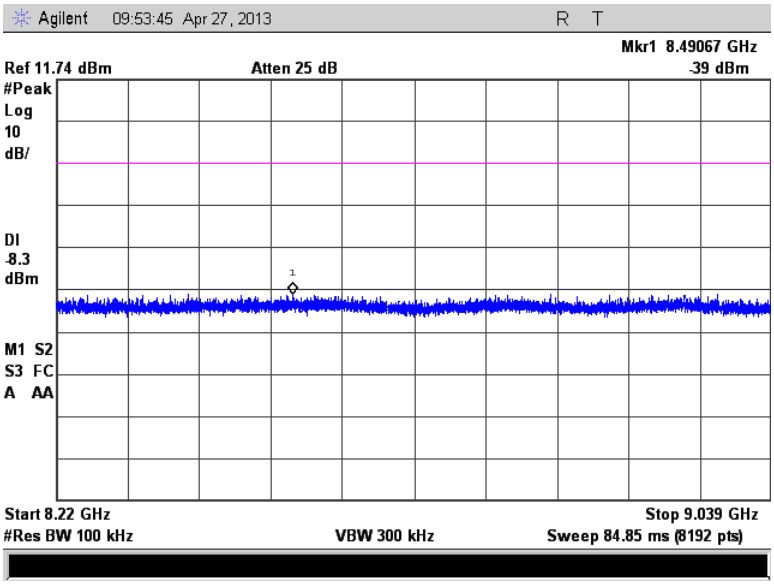

Figure 7.4.2.2-107: 8.22 GHz – 9.039 GHz – High Channel (QPSK, Antenna Path 1)

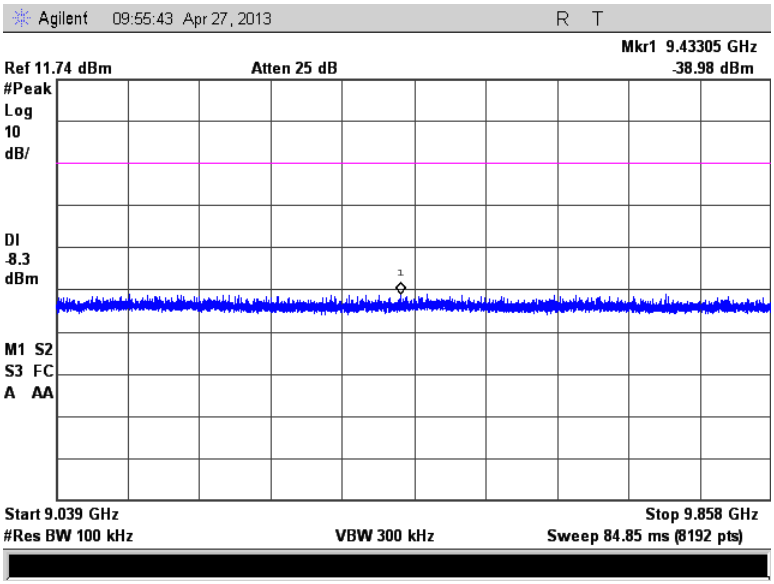

Figure 7.4.2.2-108: 9.039 GHz – 9.858 GHz – High Channel (QPSK, Antenna Path 1)

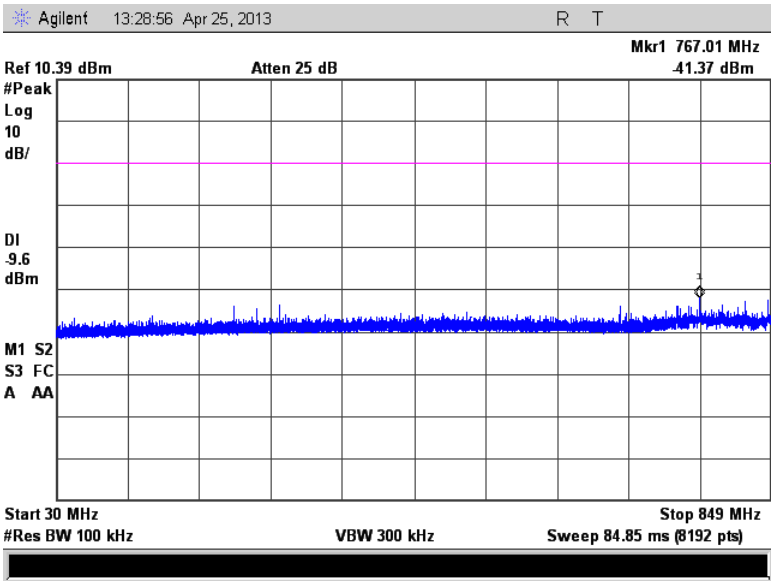

Figure 7.4.2.2-109: 30 MHz – 849 MHz – Low Channel (QPSK, Antenna Path 2)

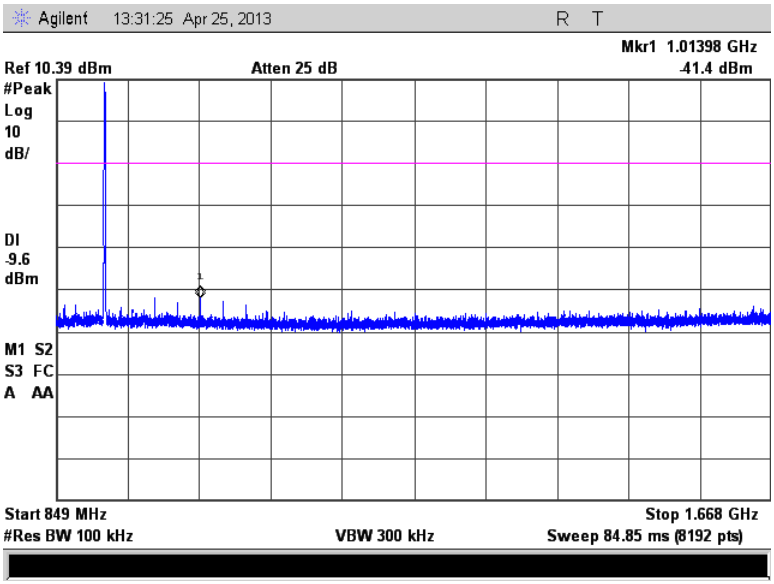

Figure 7.4.2.2-110: 849 MHz – 1.668 GHz – Low Channel (QPSK, Antenna Path 2)

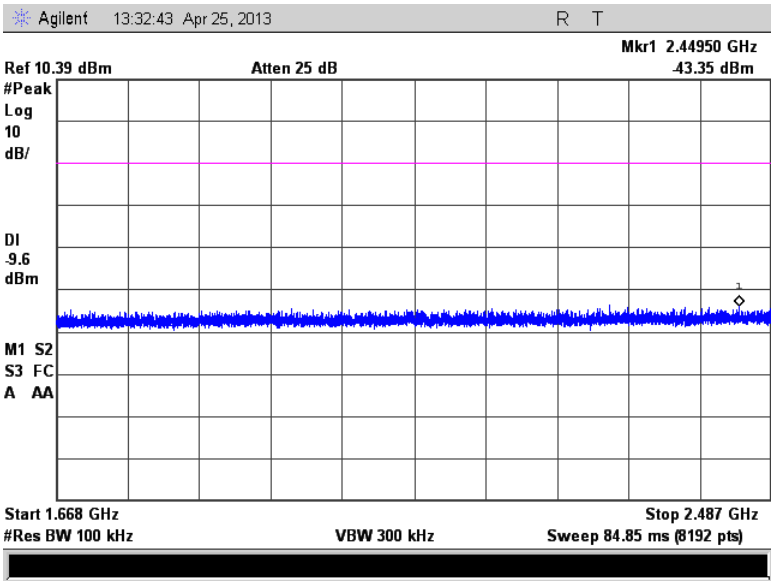

Figure 7.4.2.2-111: 1.668 GHz – 2.487 GHz – Low Channel (QPSK, Antenna Path 2)

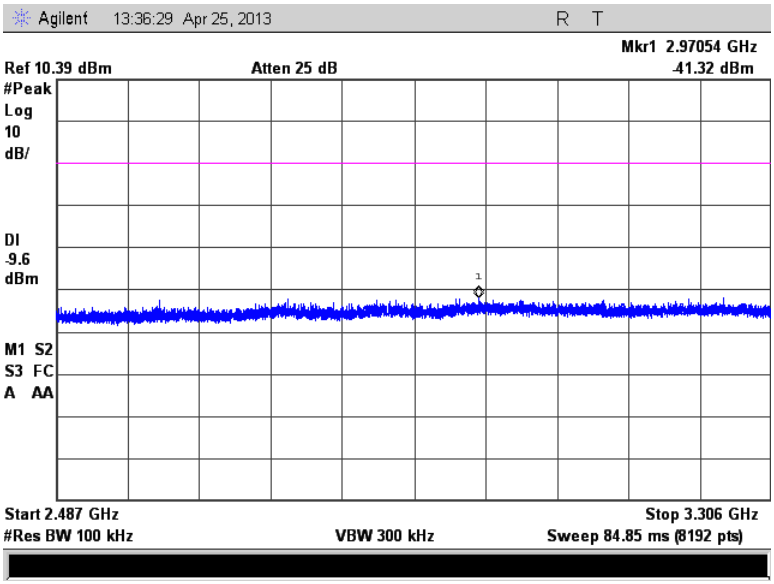

Figure 7.4.2.2-112: 2.487 GHz – 3.306 GHz – Low Channel (QPSK, Antenna Path 2)

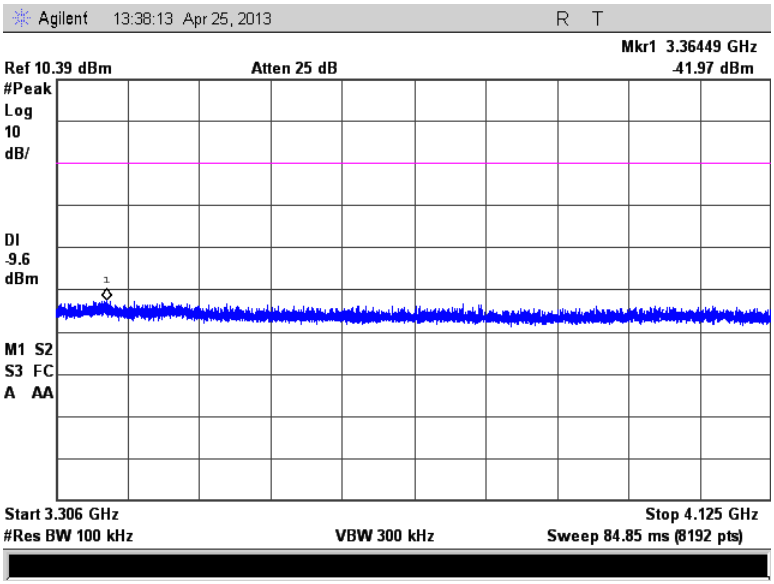

Figure 7.4.2.2-113: 3.306 GHz – 4.125 GHz – Low Channel (QPSK, Antenna Path 2)

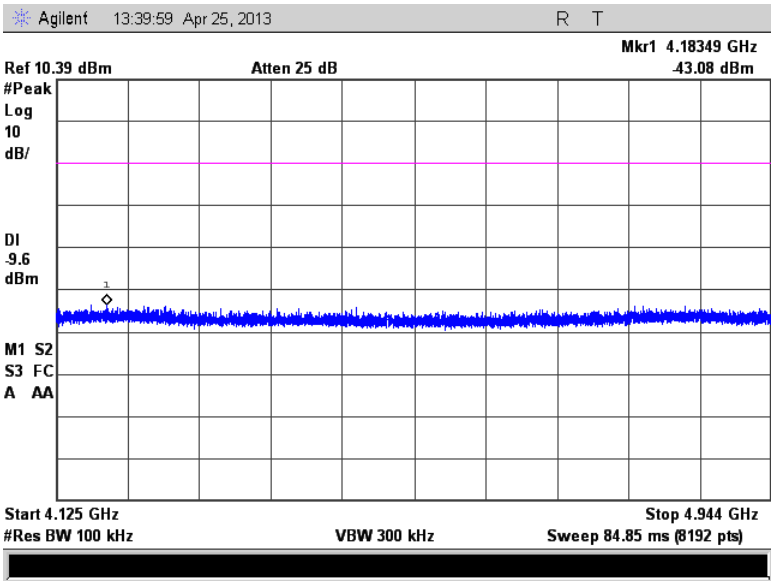

Figure 7.4.2.2-114: 4.125 GHz – 4.944 GHz – Low Channel (QPSK, Antenna Path 2)

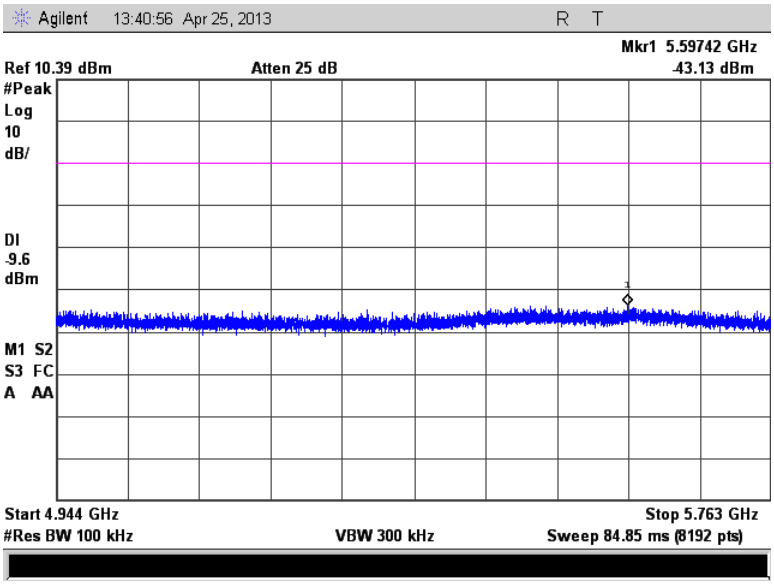

Figure 7.4.2.2-115: 4.944 GHz – 5.763 GHz – Low Channel (QPSK, Antenna Path 2)

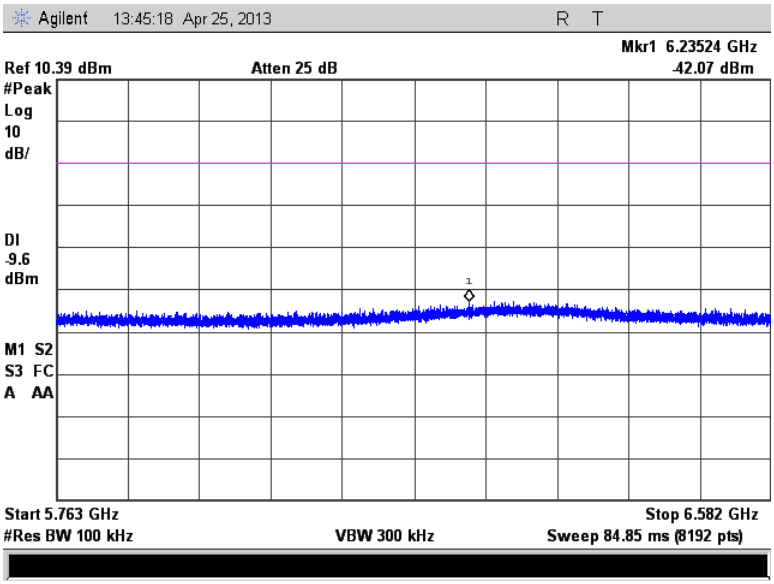

Figure 7.4.2.2-116: 5.763 GHz – 6.582 GHz – Low Channel (QPSK, Antenna Path 2)

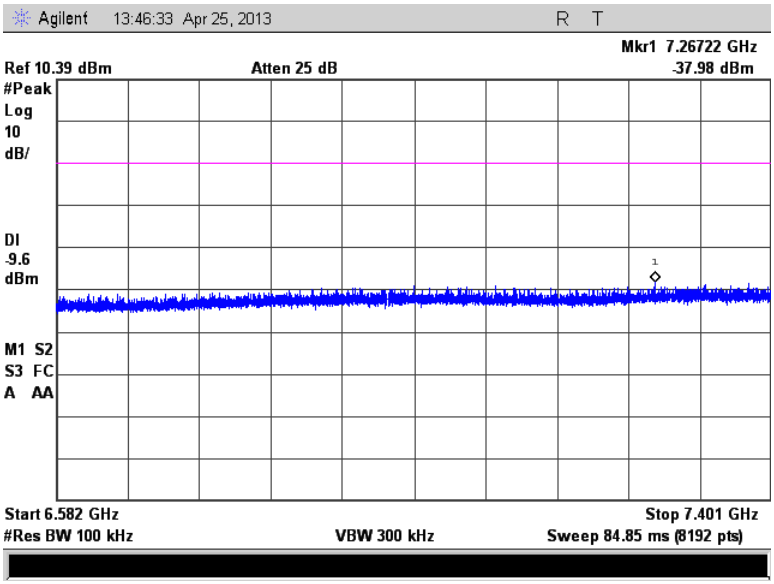

Figure 7.4.2.2-117: 6.582 GHz – 7.401 GHz – Low Channel (QPSK, Antenna Path 2)

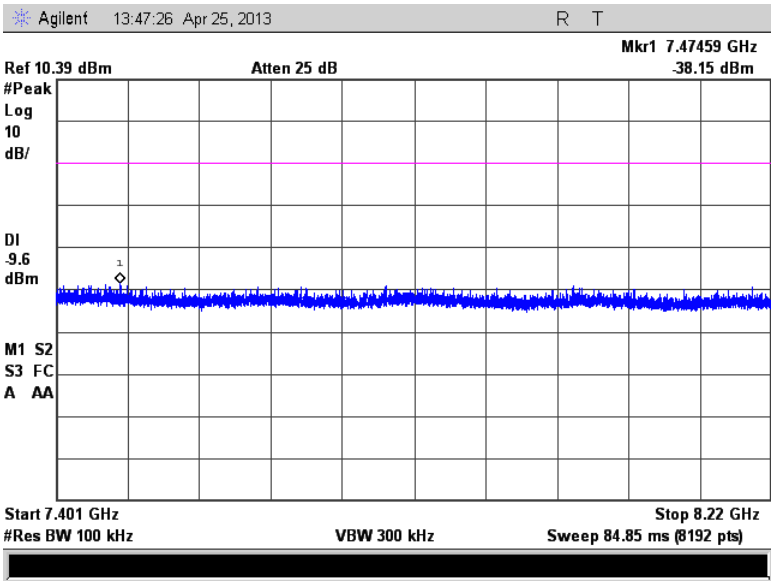

Figure 7.4.2.2-118: 7.401 GHz – 8.22 GHz – Low Channel (QPSK, Antenna Path 2)

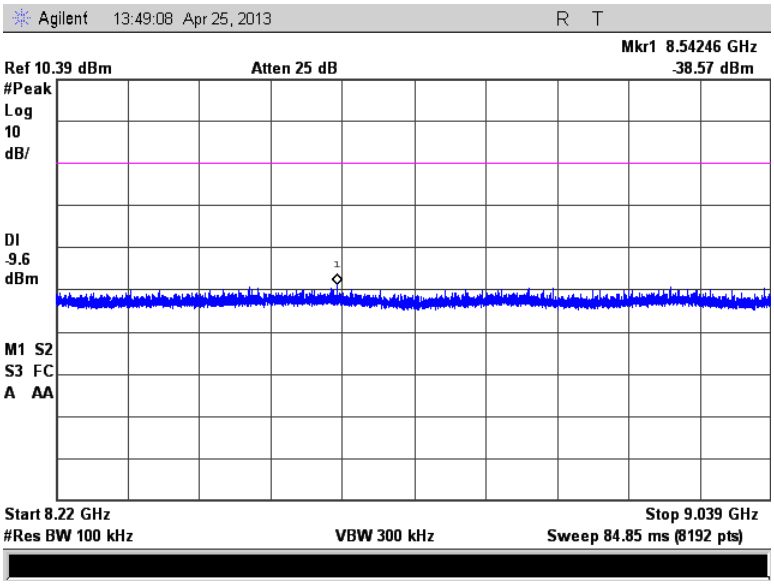

Figure 7.4.2.2-119: 8.22 GHz – 9.039 GHz – Low Channel (QPSK, Antenna Path 2)

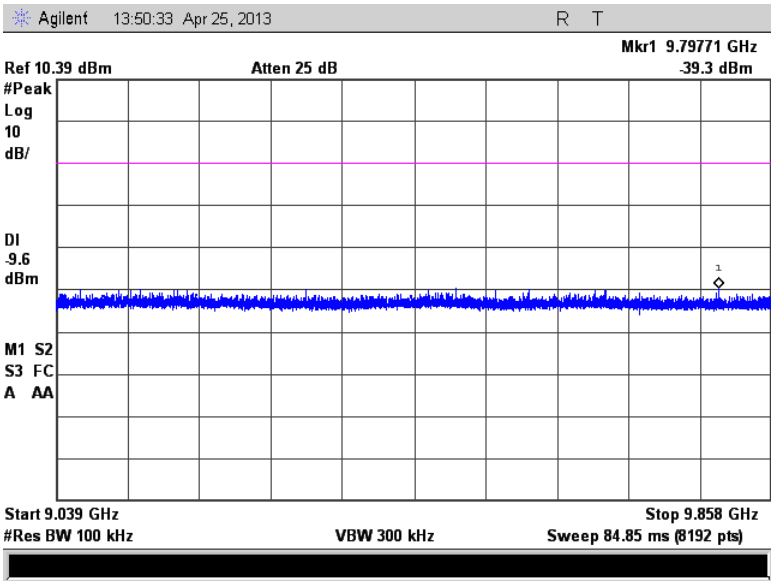

Figure 7.4.2.2-120: 9.039 GHz – 9.858 GHz – Low Channel (QPSK, Antenna Path 2)

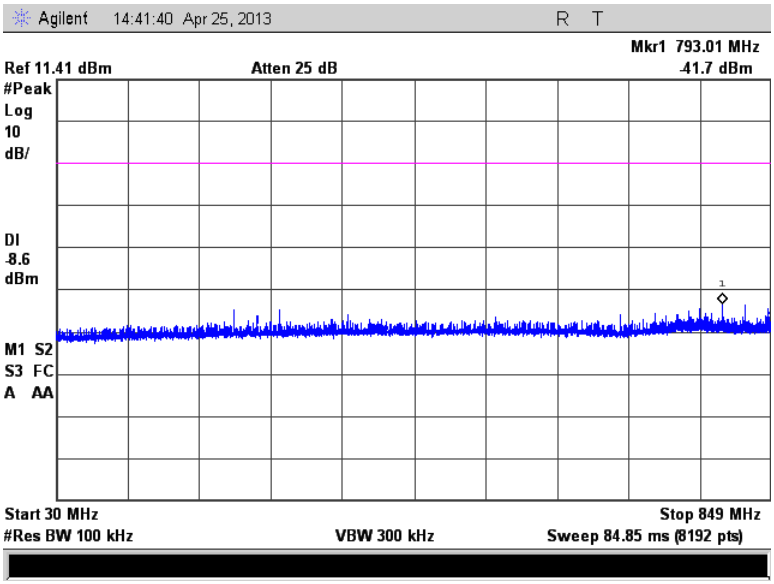

Figure 7.4.2.2-121: 30 MHz – 849 MHz – Middle Channel (QPSK, Antenna Path 2)

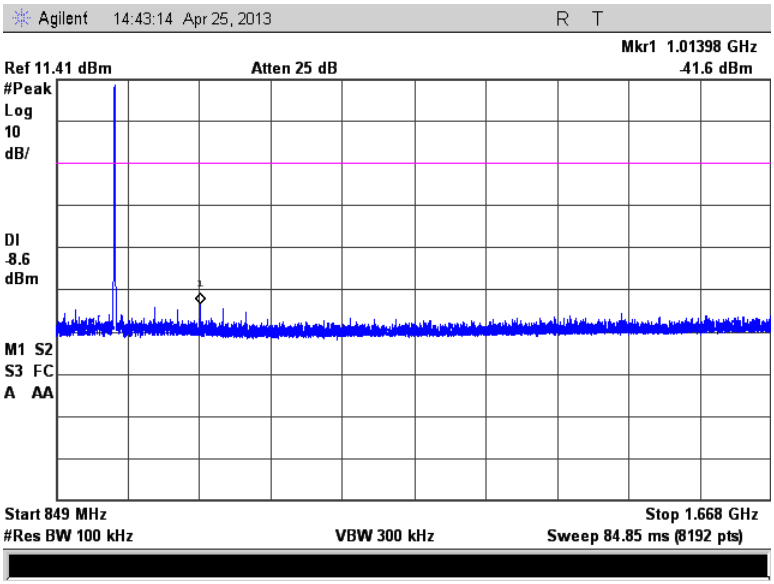

Figure 7.4.2.2-122: 849 MHz – 1.668 GHz – Middle Channel (QPSK, Antenna Path 2)

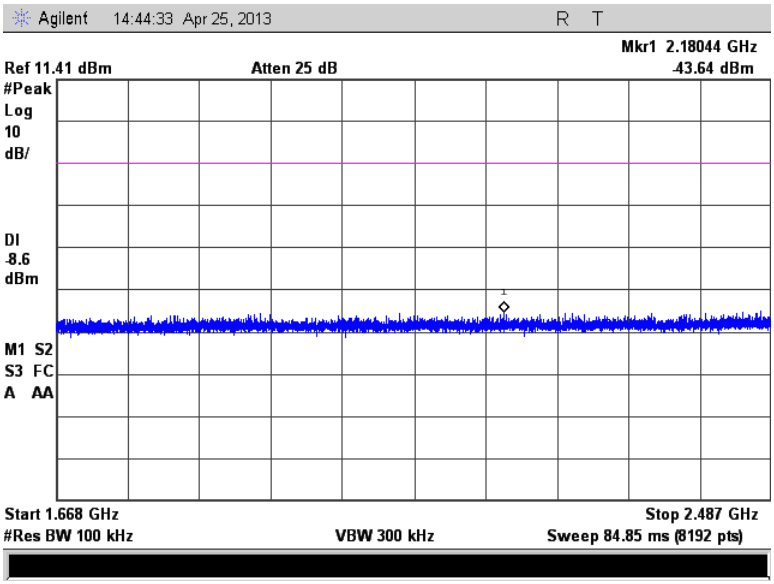

Figure 7.4.2.2-123: 1.668 GHz – 2.487 GHz – Middle Channel (QPSK, Antenna Path 2)

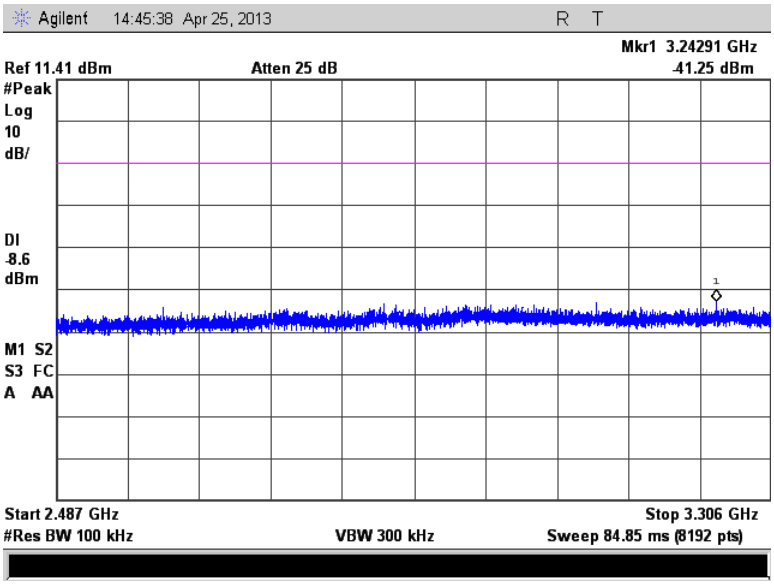

Figure 7.4.2.2-124: 2.487 GHz – 3.306 GHz – Middle Channel (QPSK, Antenna Path 2)

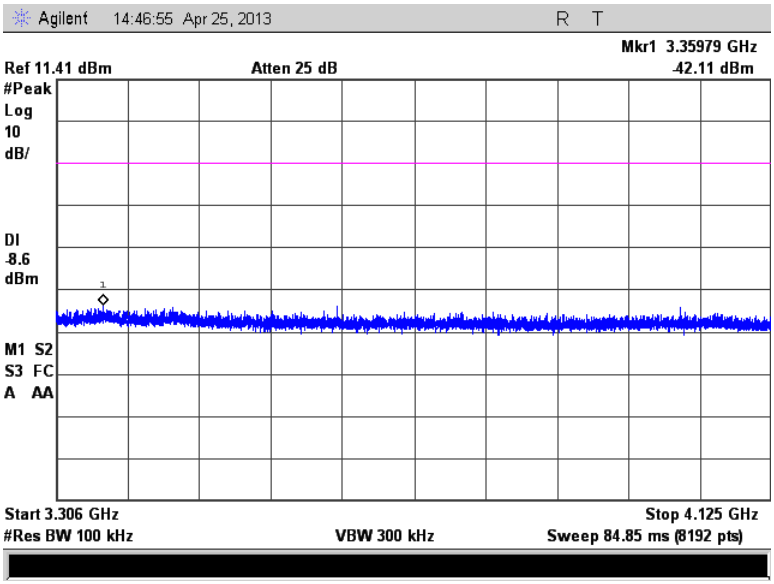

Figure 7.4.2.2-125: 3.306 GHz – 4.125 GHz – Middle Channel (QPSK, Antenna Path 2)

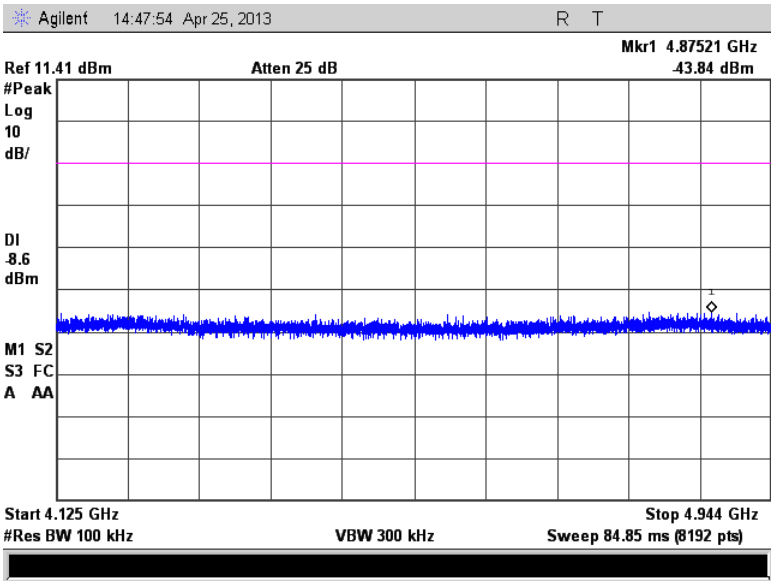

Figure 7.4.2.2-126: 4.125 GHz – 4.944 GHz – Middle Channel (QPSK, Antenna Path 2)

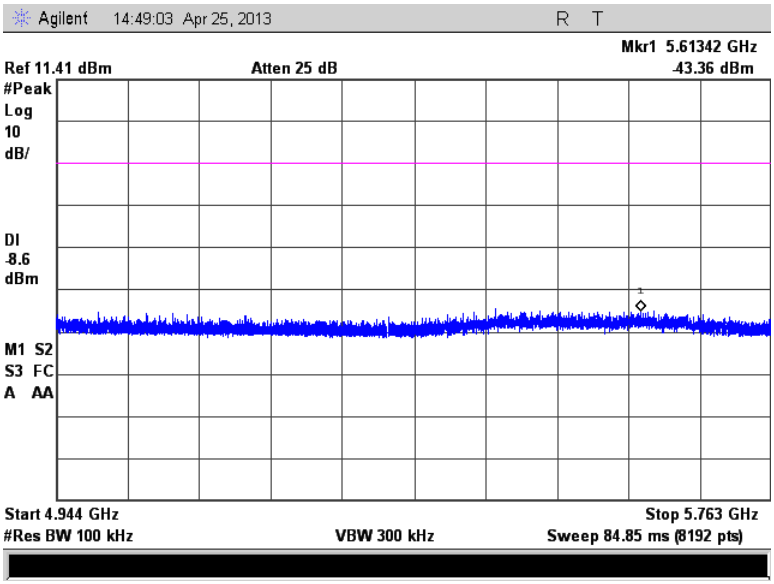

Figure 7.4.2.2-127: 4.944 GHz – 5.763 GHz – Middle Channel (QPSK, Antenna Path 2)

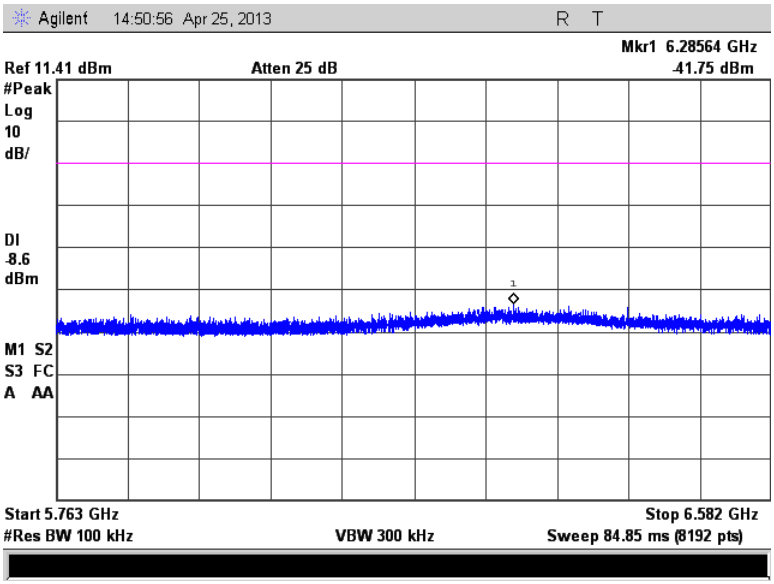

Figure 7.4.2.2-128: 5.763 GHz – 6.582 GHz – Middle Channel (QPSK, Antenna Path 2)

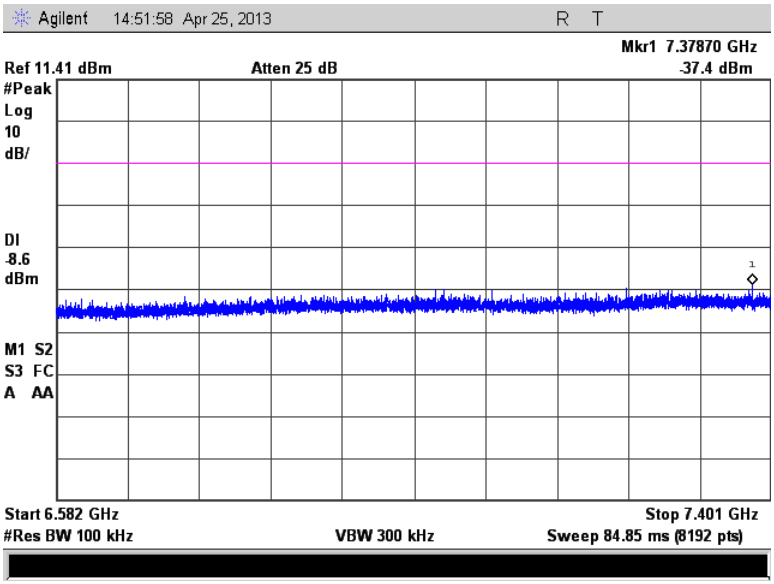

Figure 7.4.2.2-129: 6.582 GHz – 7.401 GHz – Middle Channel (QPSK, Antenna Path 2)

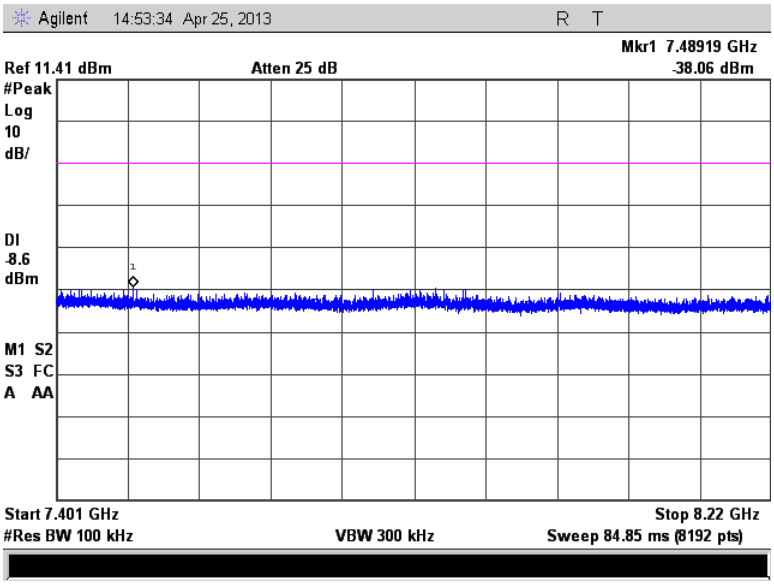

Figure 7.4.2.2-130: 7.401 GHz – 8.22 GHz – Middle Channel (QPSK, Antenna Path 2)

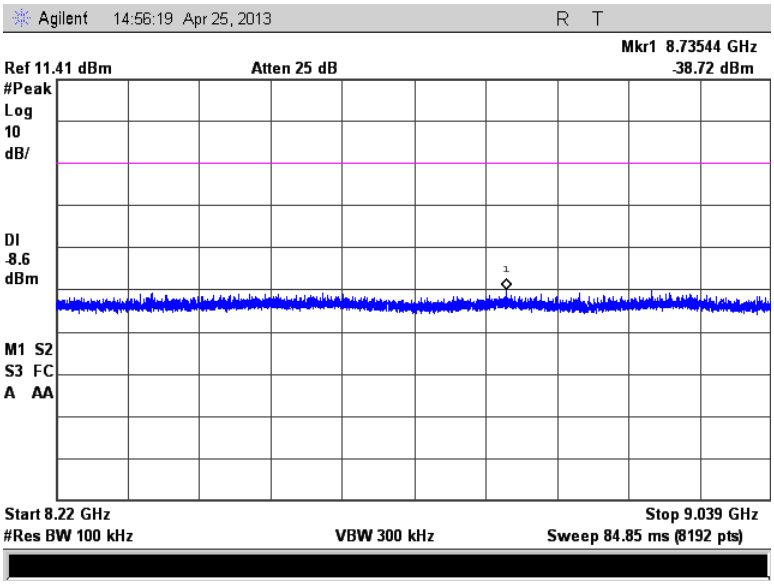

Figure 7.4.2.2-131: 8.22 GHz – 9.039 GHz – Middle Channel (QPSK, Antenna Path 2)

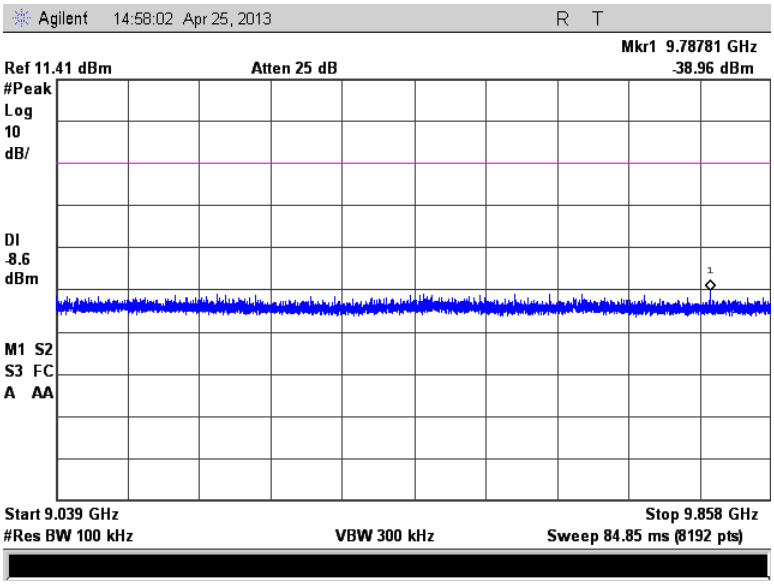

Figure 7.4.2.2-132: 9.039 GHz – 9.858 GHz – Middle Channel (QPSK, Antenna Path 2)

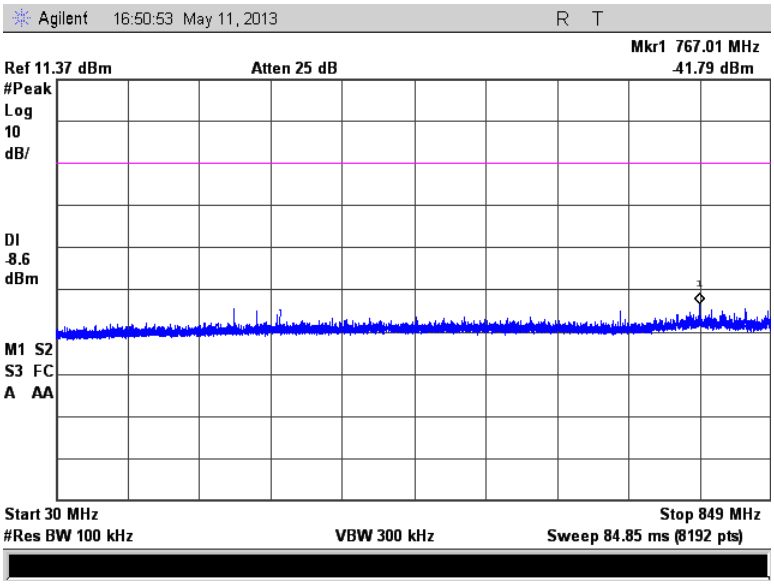

Figure 7.4.2.2-133: 30 MHz – 849 MHz – High Channel (QPSK, Antenna Path 2)

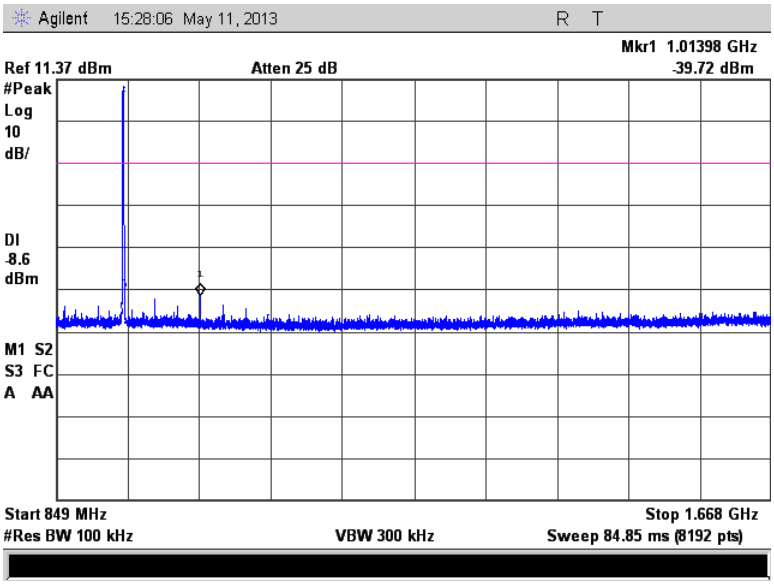

Figure 7.4.2.2-134: 849 MHz – 1.668 GHz – High Channel (QPSK, Antenna Path 2)

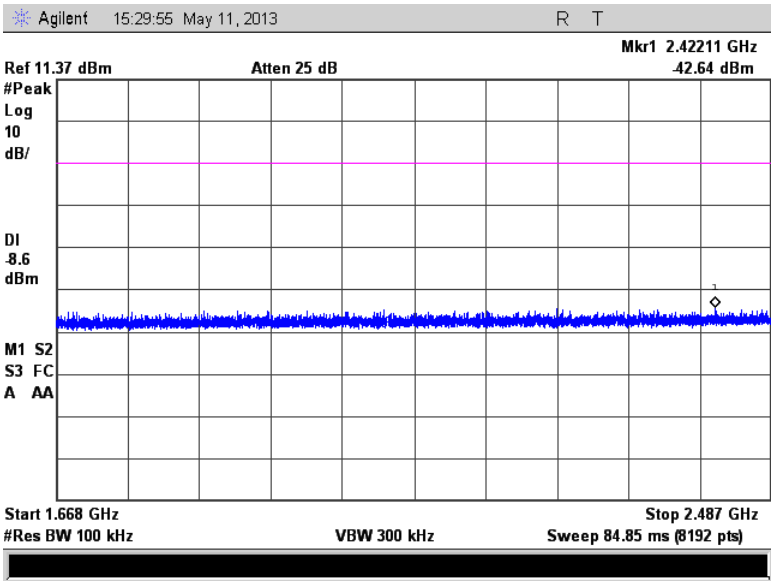

Figure 7.4.2.2-135: 1.668 GHz – 2.487 GHz – High Channel (QPSK, Antenna Path 2)

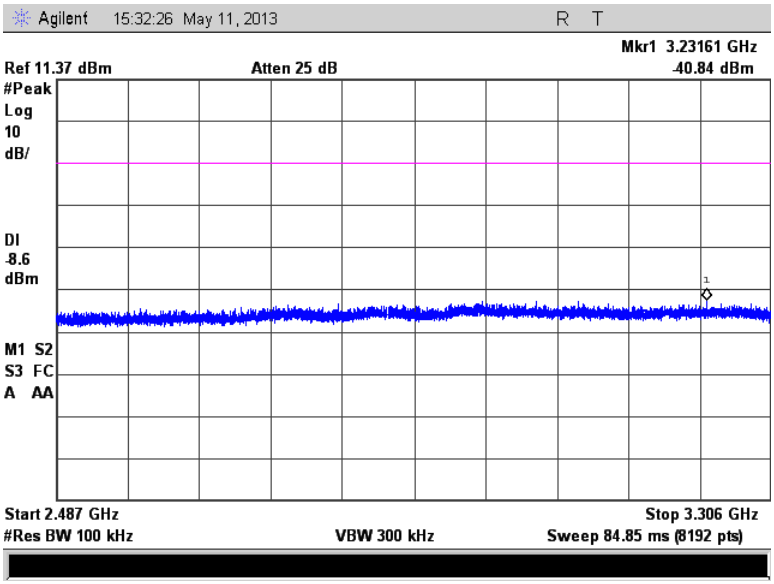

Figure 7.4.2.2-136: 2.487 GHz – 3.306 GHz – High Channel (QPSK, Antenna Path 2)

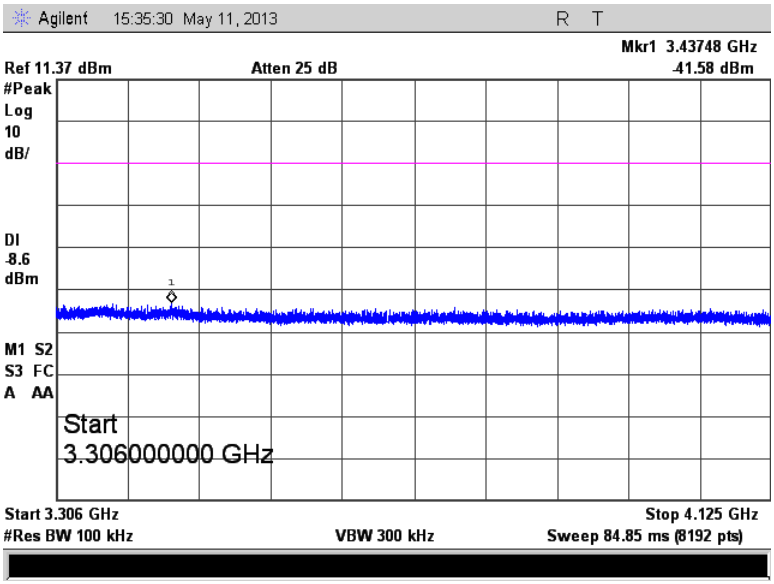

Figure 7.4.2.2-137: 3.306 GHz – 4.125 GHz – High Channel (QPSK, Antenna Path 2)

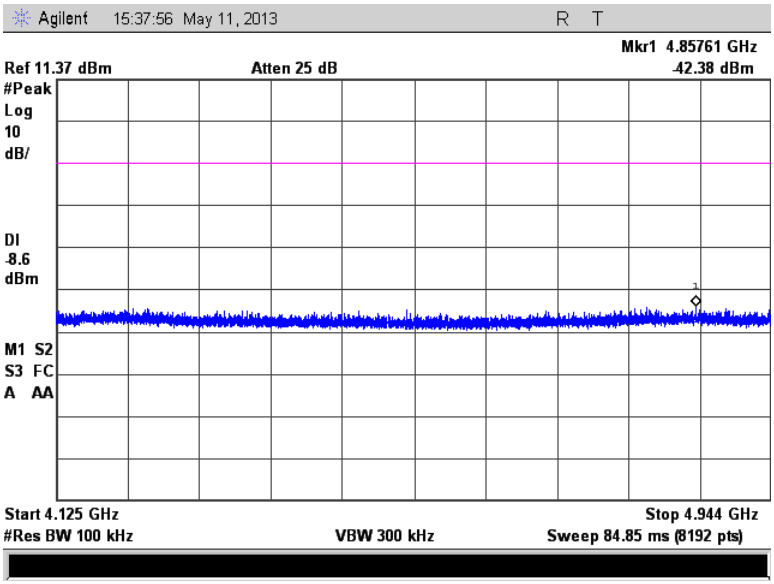

Figure 7.4.2.2-138: 4.125 GHz – 4.944 GHz – High Channel (QPSK, Antenna Path 2)

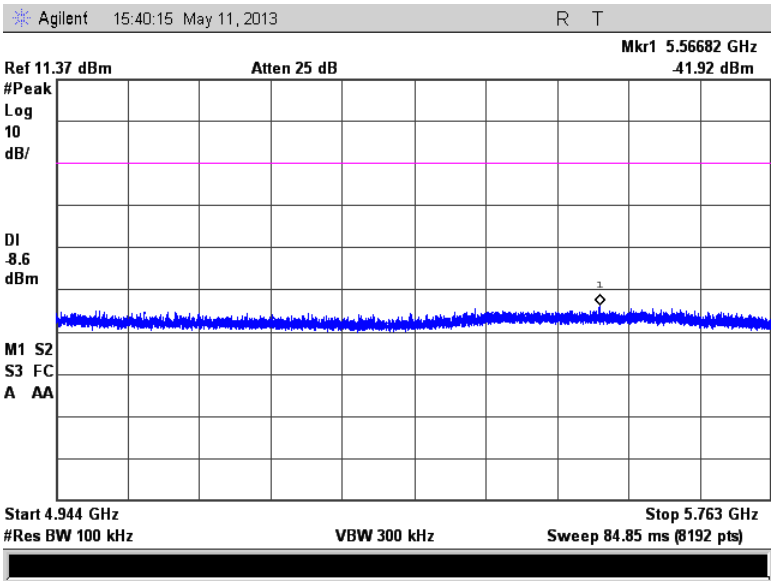

Figure 7.4.2.2-139: 4.944 GHz – 5.763 GHz – High Channel (QPSK, Antenna Path 2)

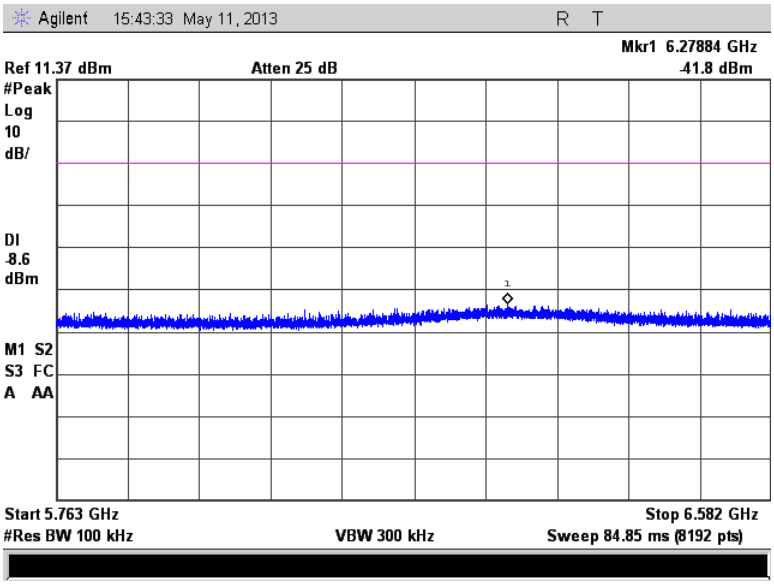

Figure 7.4.2.2-140: 5.763 GHz – 6.582 GHz – High Channel (QPSK, Antenna Path 2)

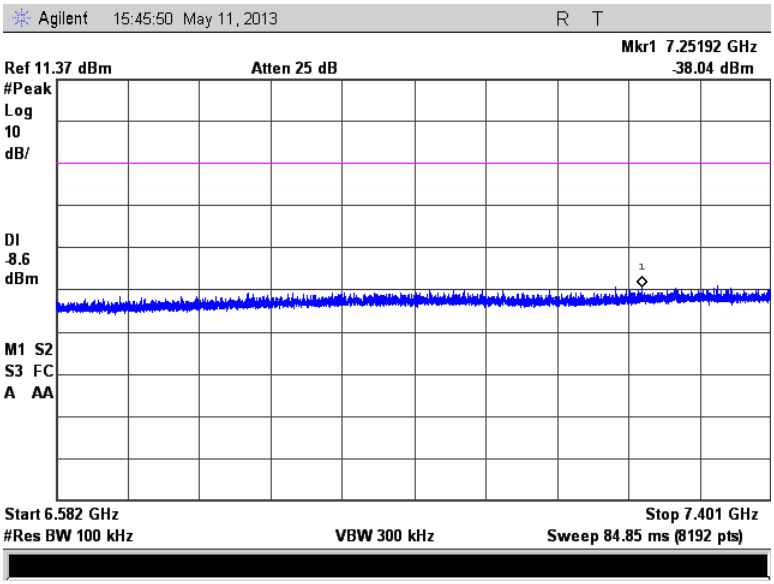

Figure 7.4.2.2-141: 6.582 GHz – 7.401 GHz – High Channel (QPSK, Antenna Path 2)

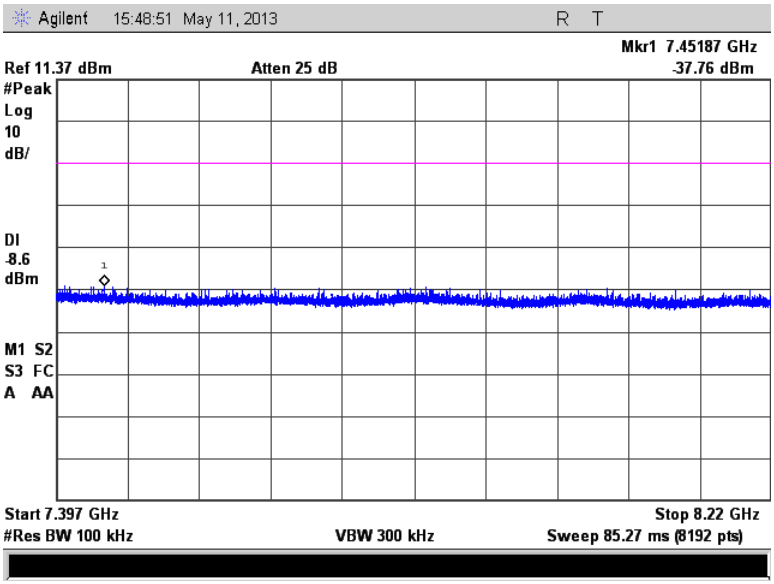

Figure 7.4.2.2-142: 7.401 GHz – 8.22 GHz – High Channel (QPSK, Antenna Path 2)

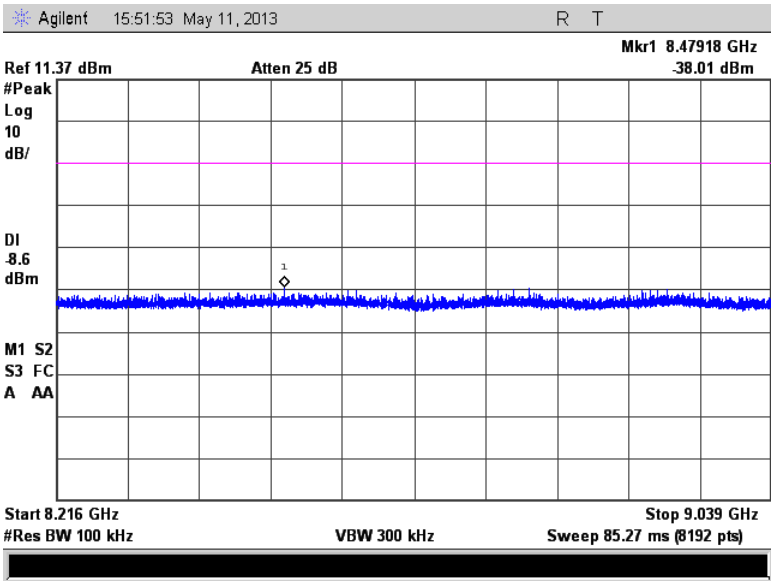

Figure 7.4.2.2-143: 8.22 GHz – 9.039 GHz – High Channel (QPSK, Antenna Path 2)

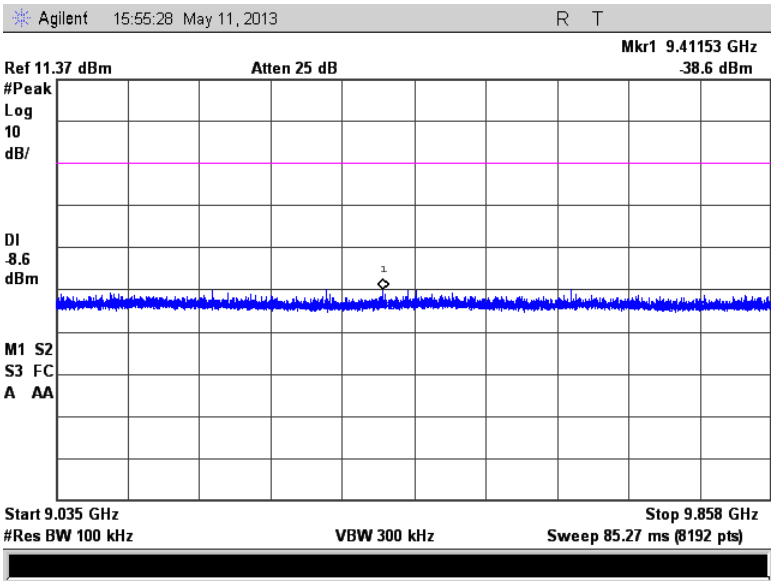

Figure 7.4.2.2-144: 9.039 GHz – 9.858 GHz – High Channel (QPSK, Antenna Path 2)

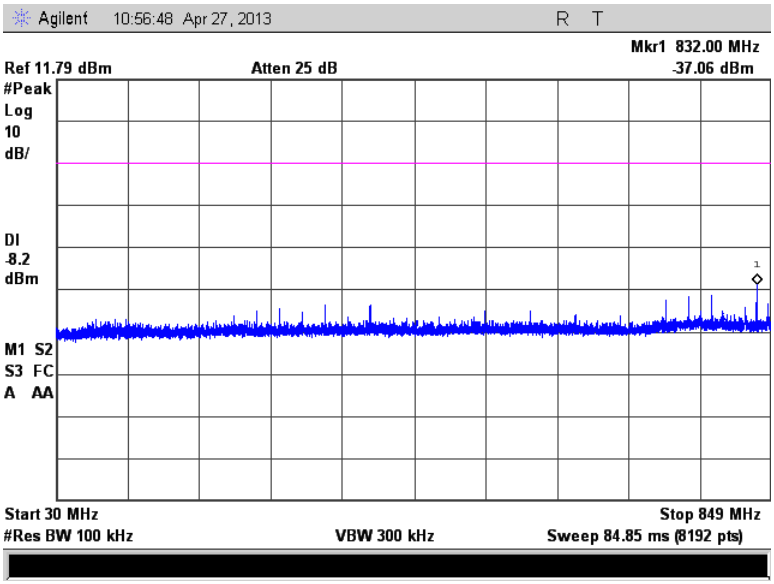

Figure 7.4.2.2-145: 30 MHz – 849 MHz – Low Channel (16-QAM, Antenna Path 1)

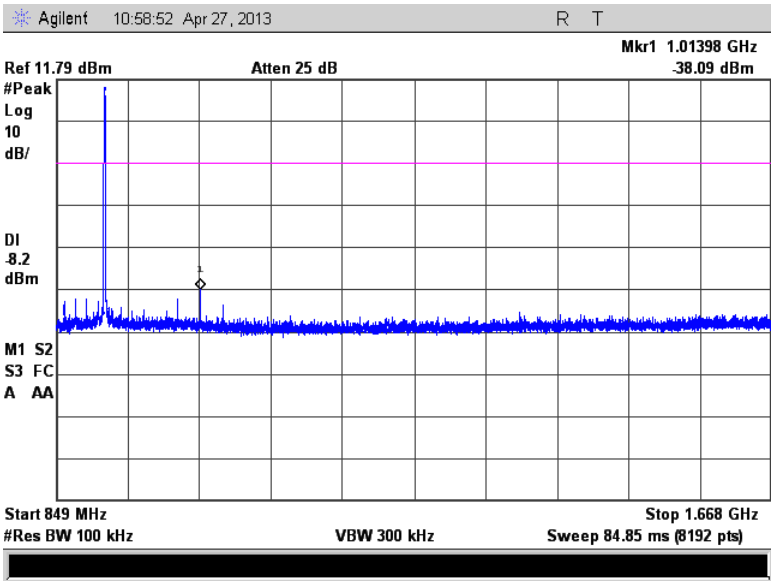

Figure 7.4.2.2-146: 849 MHz – 1.668 GHz – Low Channel (16-QAM, Antenna Path 1)

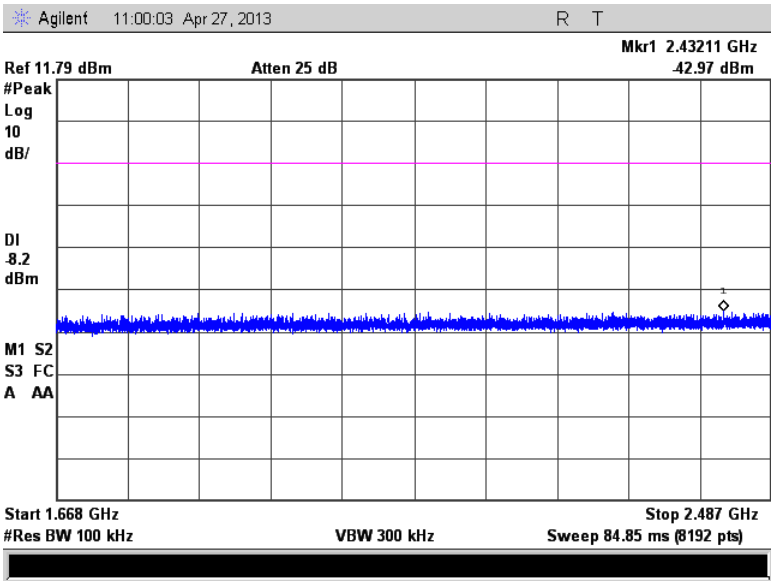

Figure 7.4.2.2-147: 1.668 GHz – 2.487 GHz – Low Channel (16-QAM, Antenna Path 1)

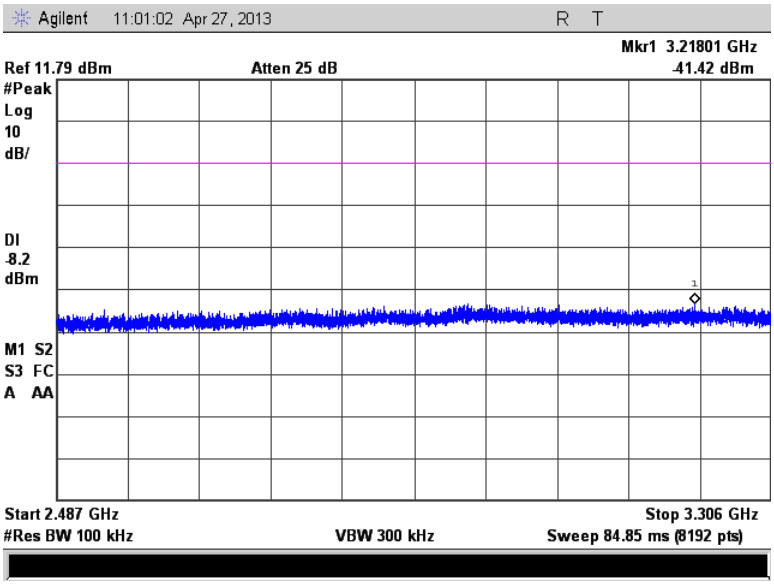

Figure 7.4.2.2-148: 2.487 GHz – 3.306 GHz – Low Channel (16-QAM, Antenna Path 1)

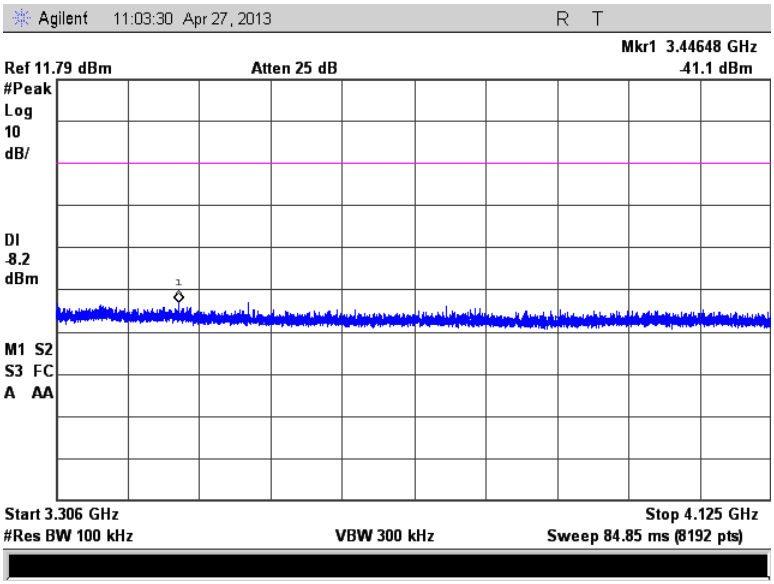

Figure 7.4.2.2-149: 3.306 GHz – 4.125 GHz – Low Channel (16-QAM, Antenna Path 1)

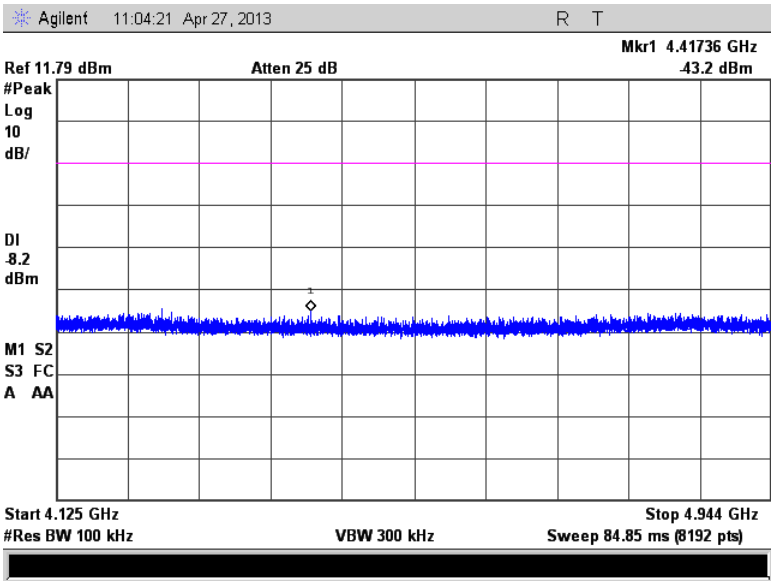

Figure 7.4.2.2-150: 4.125 GHz – 4.944 GHz – Low Channel (16-QAM, Antenna Path 1)

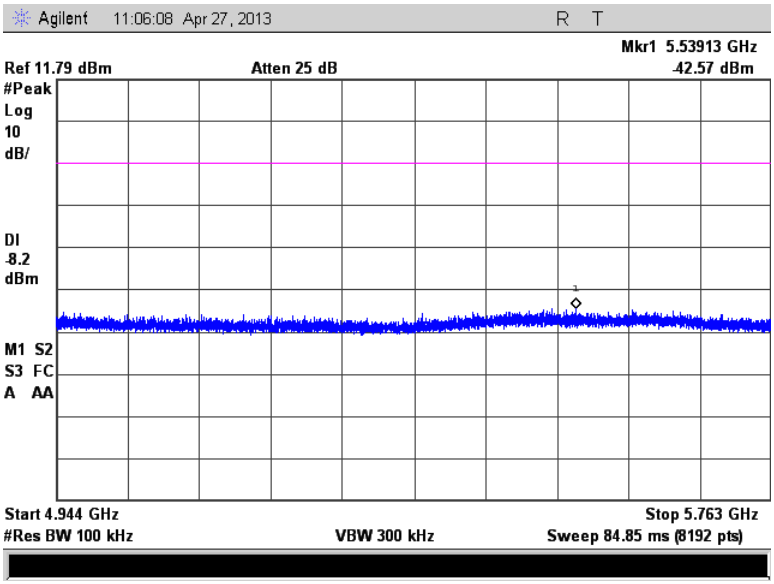

Figure 7.4.2.2-151: 4.944 GHz – 5.763 GHz – Low Channel (16-QAM, Antenna Path 1)

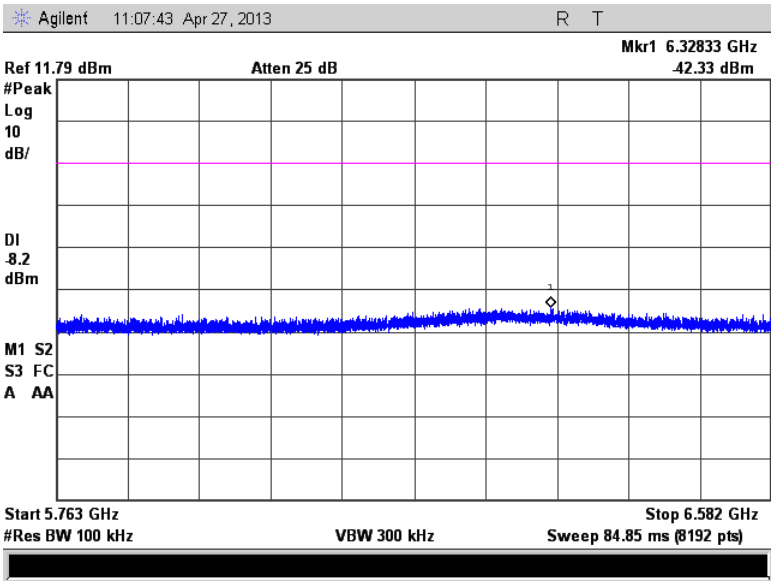

Figure 7.4.2.2-152: 5.763 GHz – 6.582 GHz – Low Channel (16-QAM, Antenna Path 1)

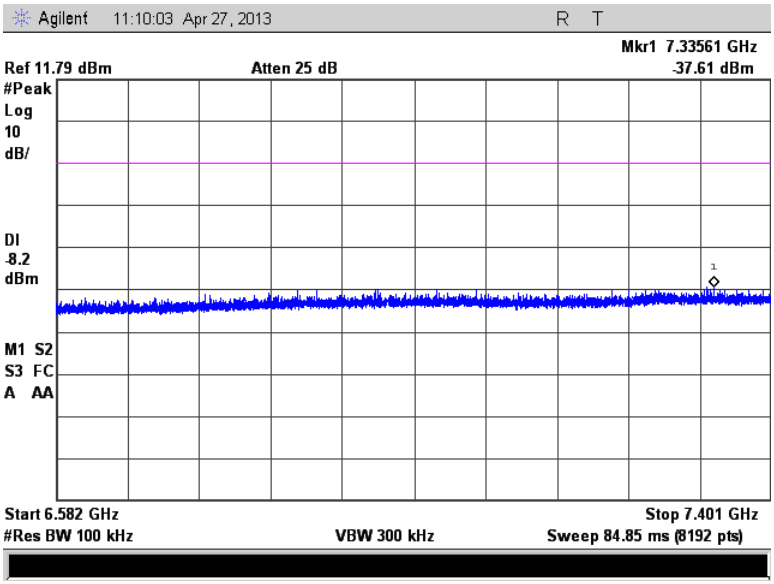

Figure 7.4.2.2-153: 6.582 GHz – 7.401 GHz – Low Channel (16-QAM, Antenna Path 1)

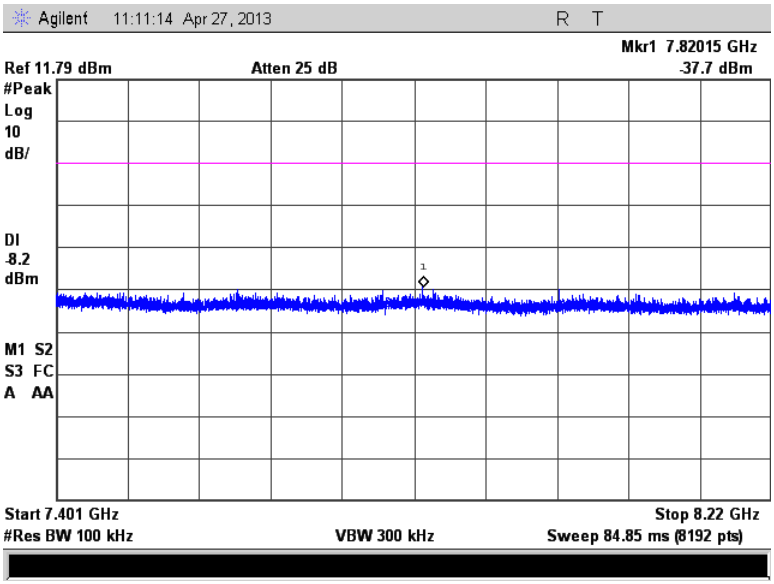

Figure 7.4.2.2-154: 7.401 GHz – 8.22 GHz – Low Channel (16-QAM, Antenna Path 1)

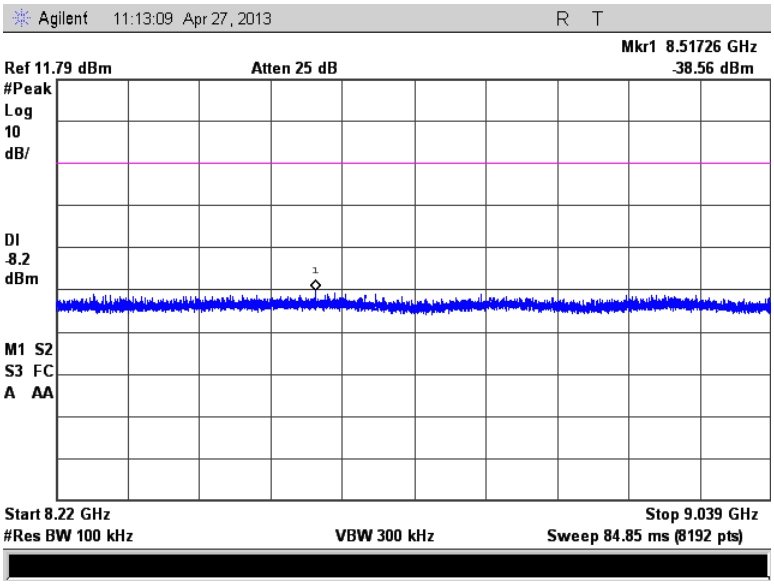

Figure 7.4.2.2-155: 8.22 GHz – 9.039 GHz – Low Channel (16-QAM, Antenna Path 1)

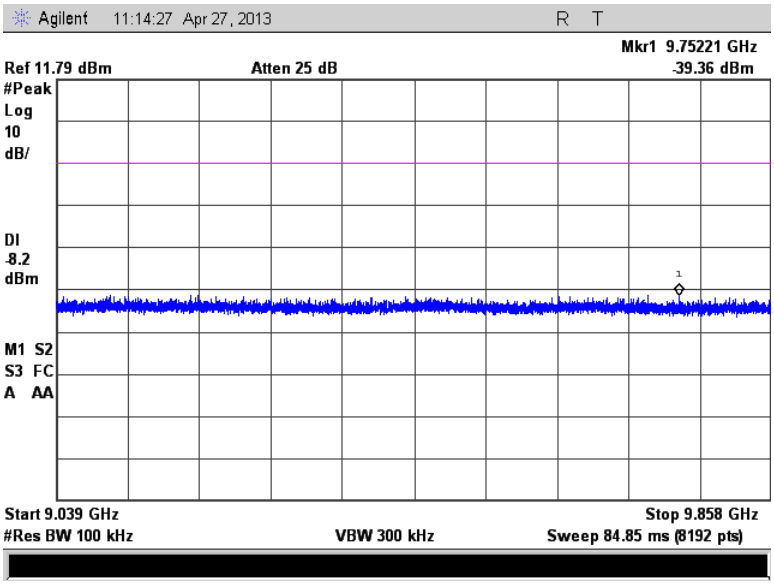

Figure 7.4.2.2-156: 9.039 GHz – 9.858 GHz – Low Channel (16-QAM, Antenna Path 1)

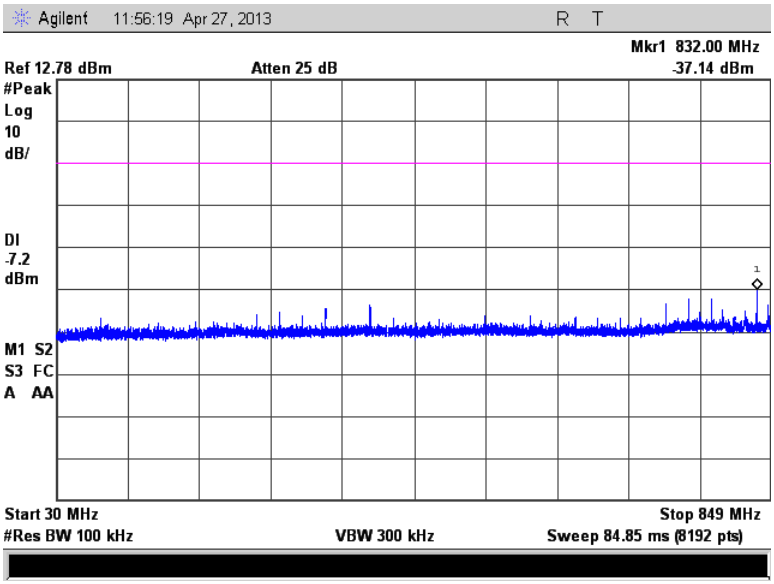

Figure 7.4.2.2-157: 30 MHz – 849 MHz – Middle Channel (16-QAM, Antenna Path 1)

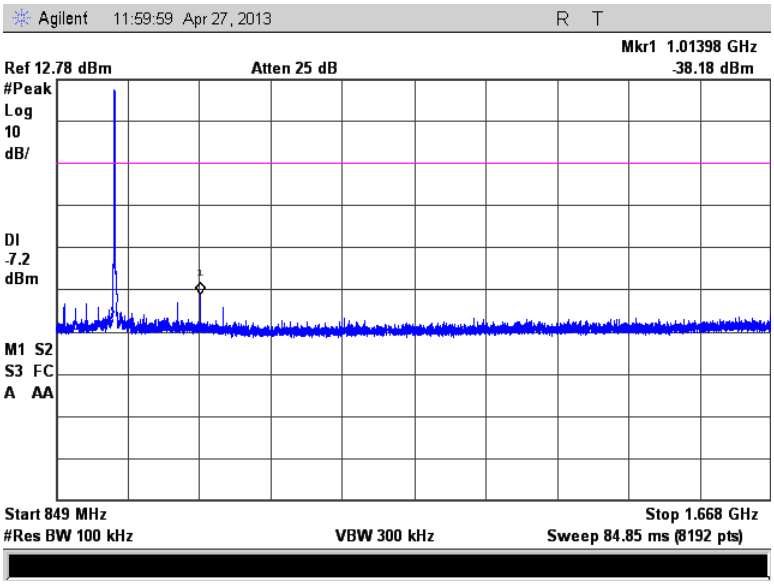

Figure 7.4.2.2-158: 849 MHz – 1.668 GHz – Middle Channel (16-QAM, Antenna Path 1)

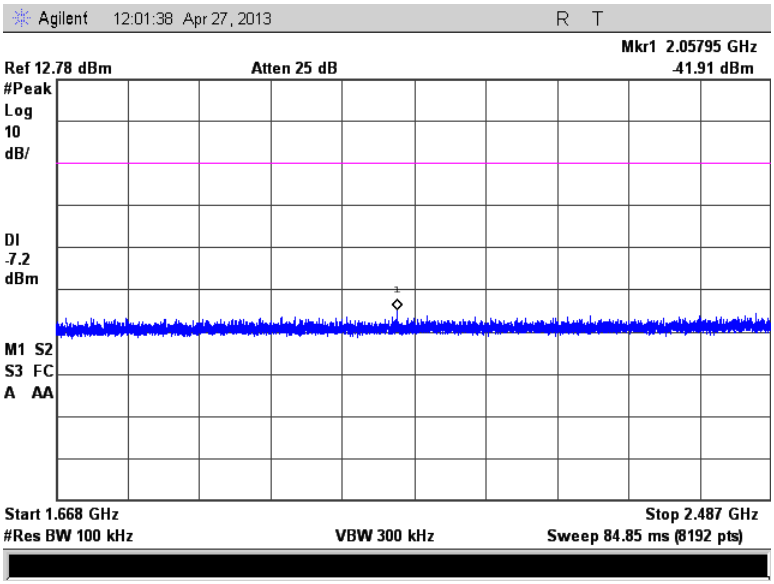

Figure 7.4.2.2-159: 1.668 GHz – 2.487 GHz – Middle Channel (16-QAM, Antenna Path 1)

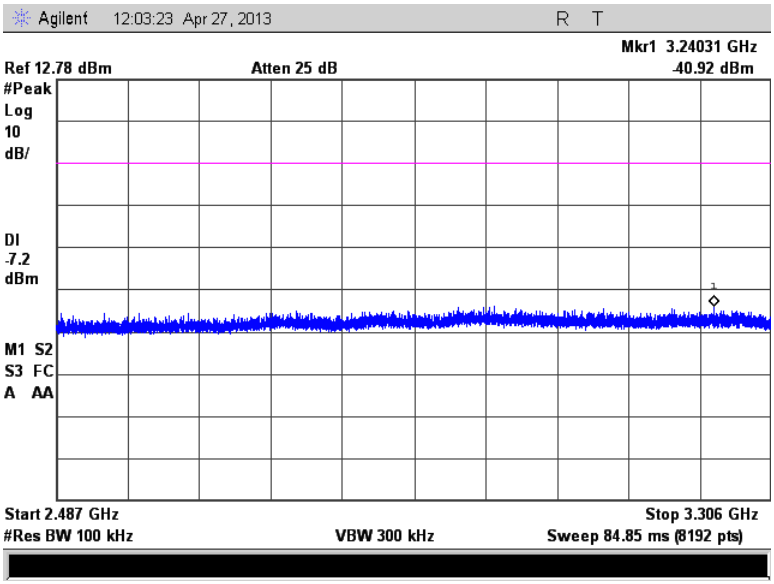

Figure 7.4.2.2-160: 2.487 GHz – 3.306 GHz – Middle Channel (16-QAM, Antenna Path 1)

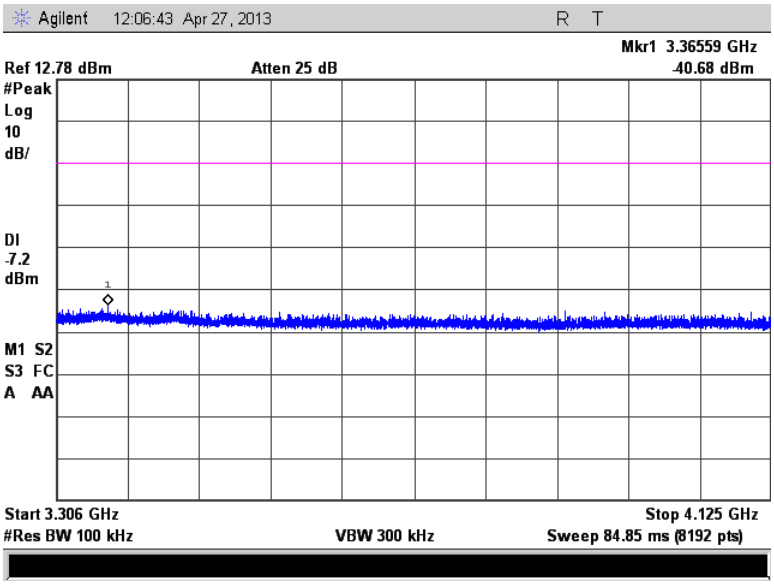

Figure 7.4.2.2-161: 3.306 GHz – 4.125 GHz – Middle Channel (16-QAM, Antenna Path 1)

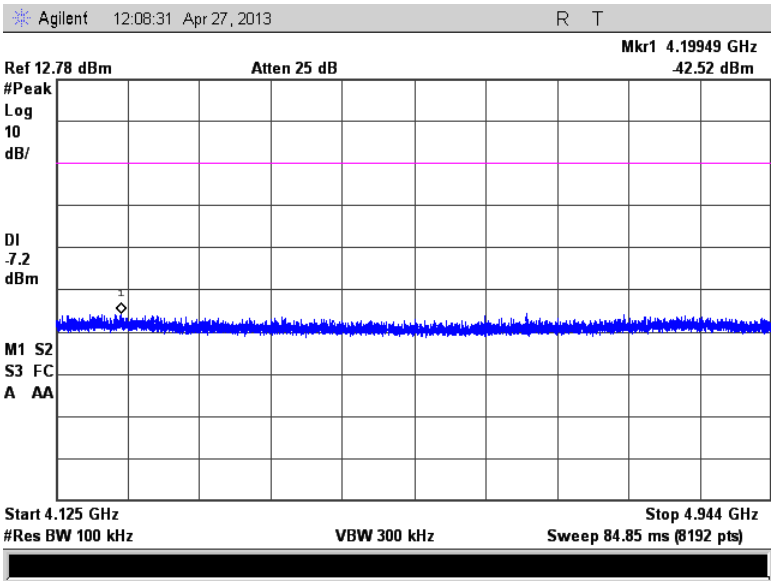

Figure 7.4.2.2-162: 4.125 GHz – 4.944 GHz – Middle Channel (16-QAM, Antenna Path 1)

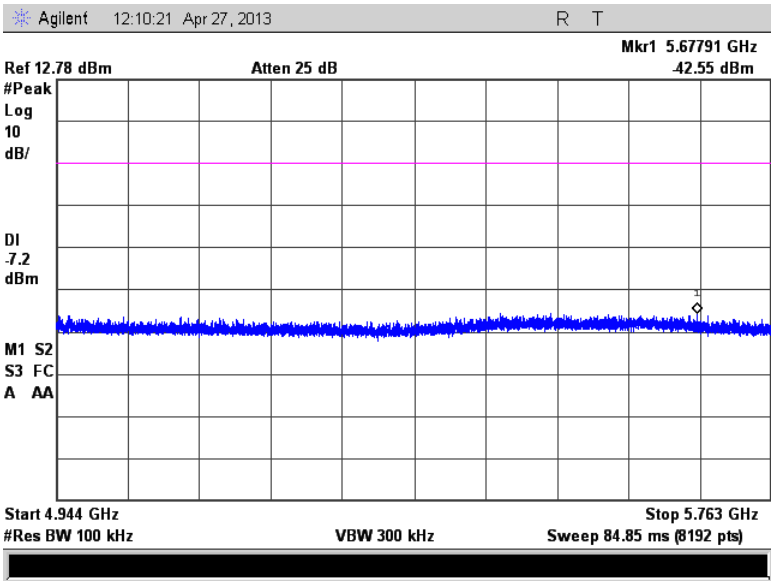

Figure 7.4.2.2-163: 4.944 GHz – 5.763 GHz – Middle Channel (16-QAM, Antenna Path 1)

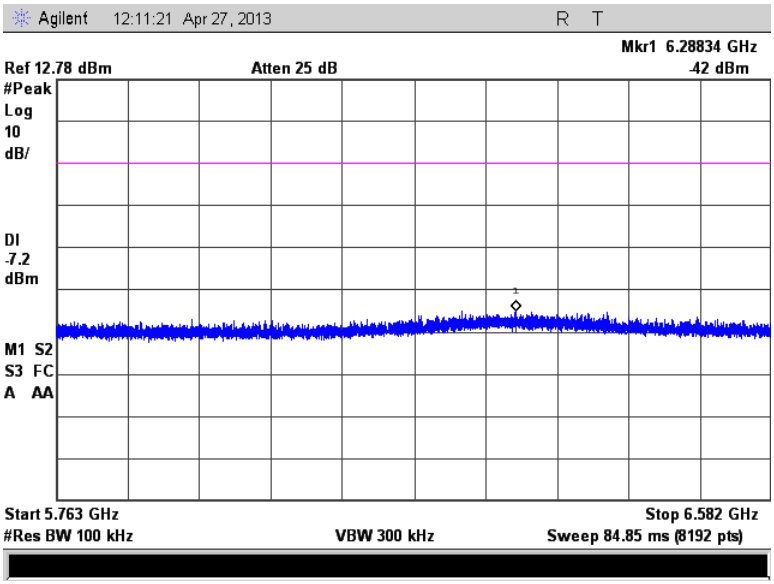

Figure 7.4.2.2-164: 5.763 GHz – 6.582 GHz – Middle Channel (16-QAM, Antenna Path 1)

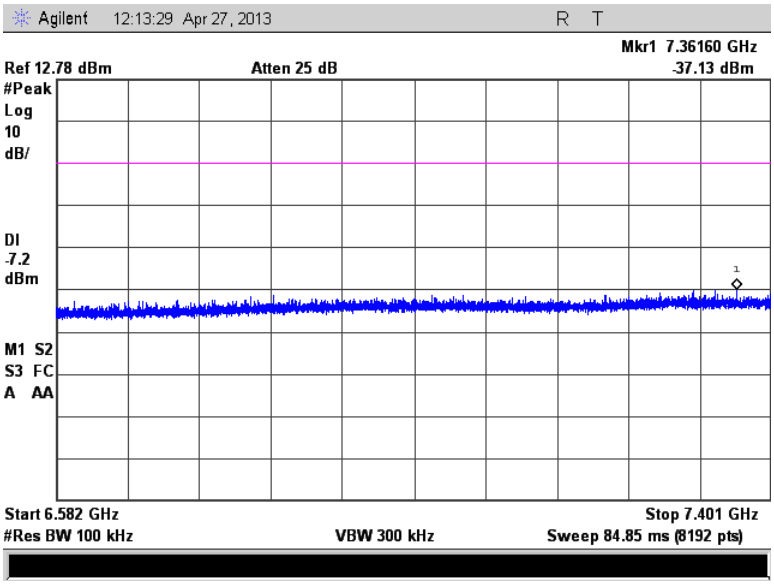

Figure 7.4.2.2-165: 6.582 GHz – 7.401 GHz – Middle Channel (16-QAM, Antenna Path 1)

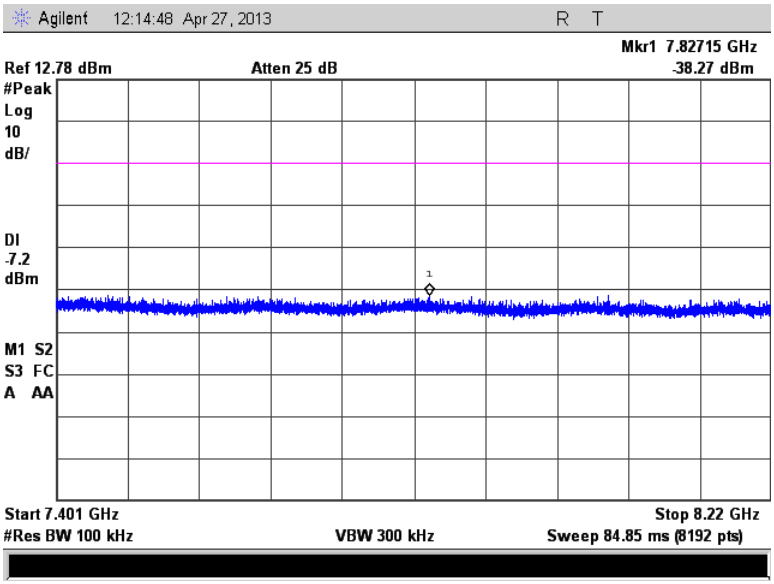

Figure 7.4.2.2-166: 7.401 GHz – 8.22 GHz – Middle Channel (16-QAM, Antenna Path 1)

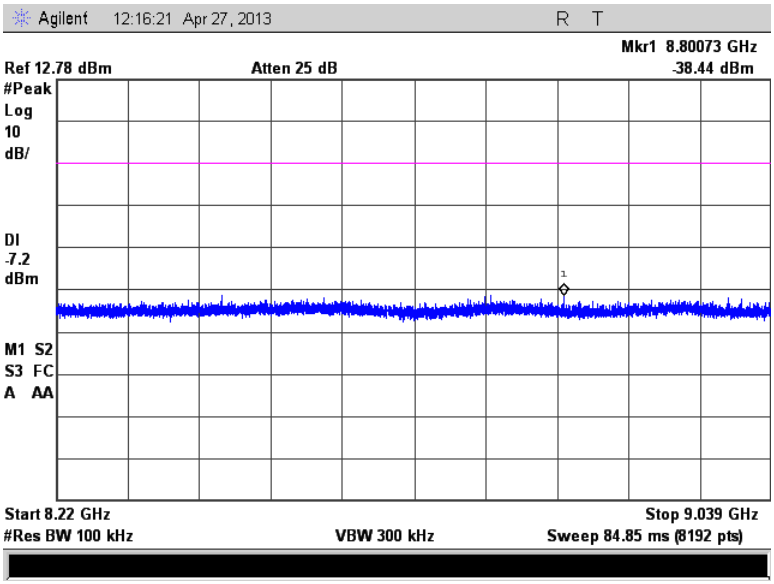

Figure 7.4.2.2-167: 8.22 GHz – 9.039 GHz – Middle Channel (16-QAM, Antenna Path 1)

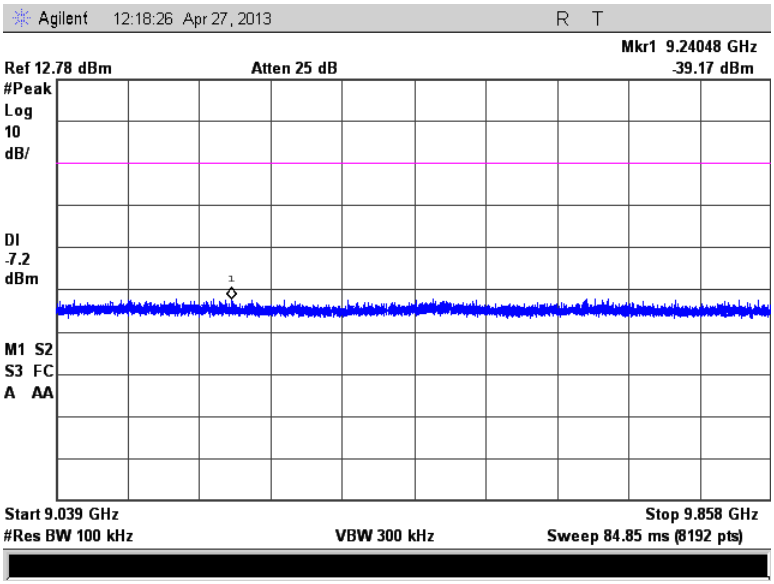

Figure 7.4.2.2-168: 9.039 GHz – 9.858 GHz – Middle Channel (16-QAM, Antenna Path 1)

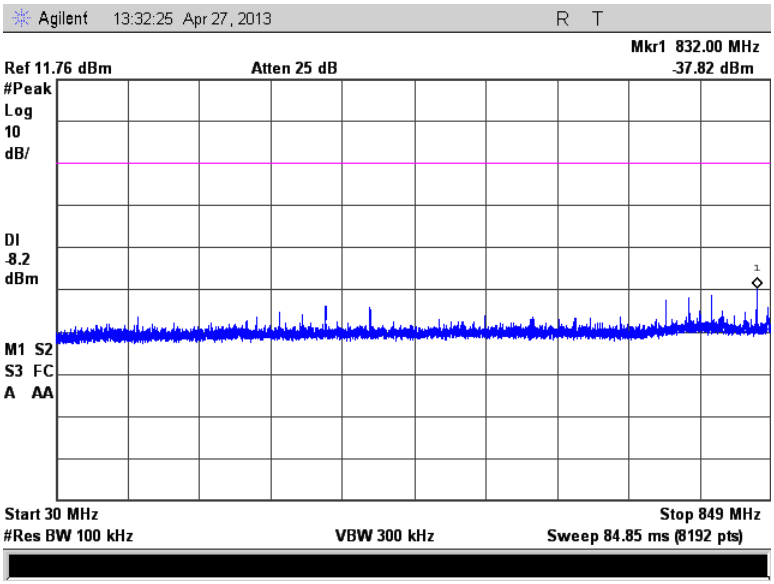

Figure 7.4.2.2-169: 30 MHz – 849 MHz – High Channel (16-QAM, Antenna Path 1)

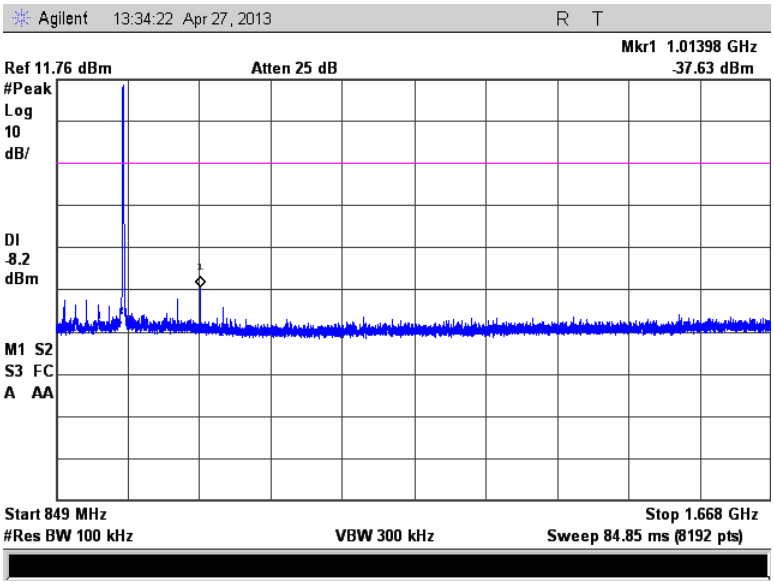

Figure 7.4.2.2-170: 849 MHz – 1.668 GHz – High Channel (16-QAM, Antenna Path 1)

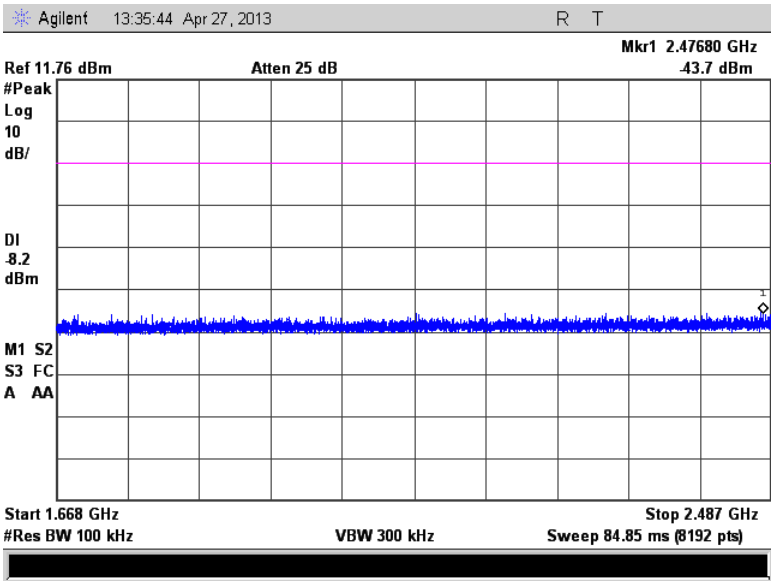

Figure 7.4.2.2-171: 1.668 GHz – 2.487 GHz – High Channel (16-QAM, Antenna Path 1)

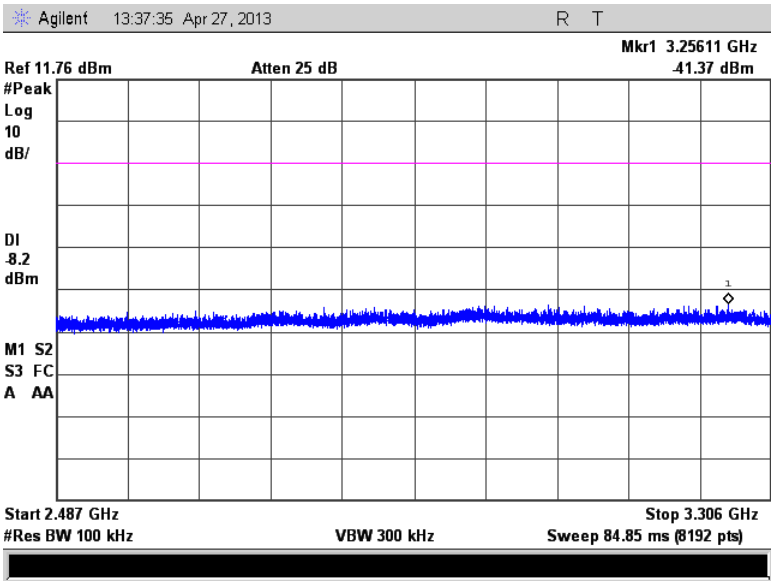

Figure 7.4.2.2-172: 2.487 GHz – 3.306 GHz – High Channel (16-QAM, Antenna Path 1)

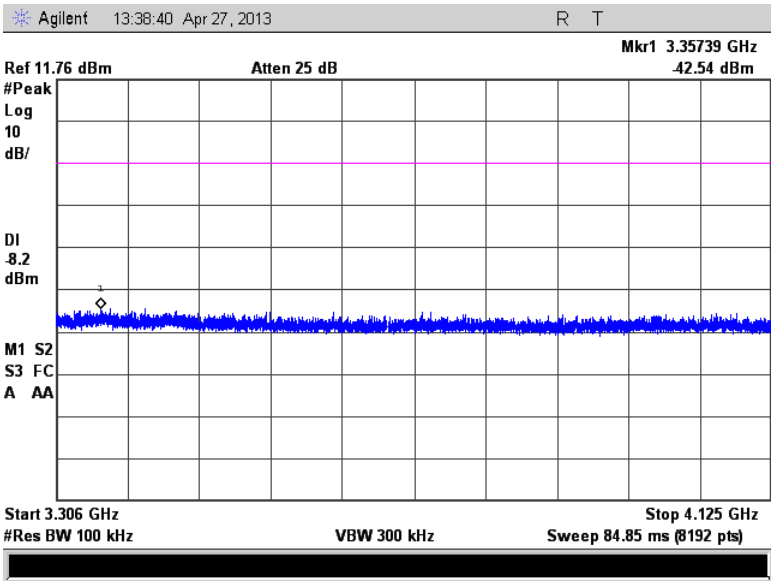

Figure 7.4.2.2-173: 3.306 GHz – 4.125 GHz – High Channel (16-QAM, Antenna Path 1)

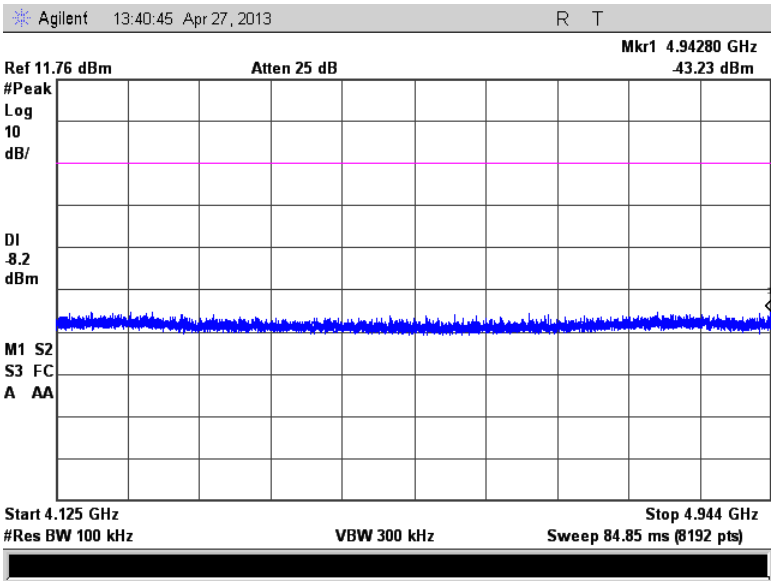

Figure 7.4.2.2-174: 4.125 GHz – 4.944 GHz – High Channel (16-QAM, Antenna Path 1)

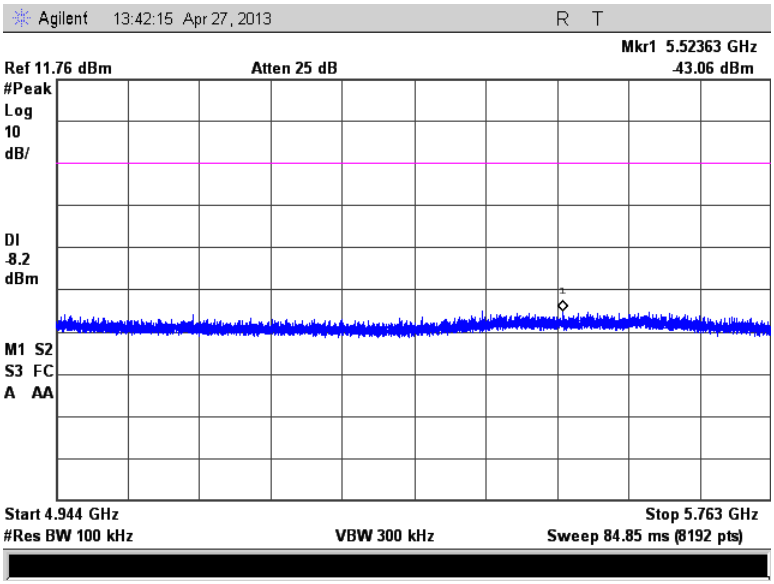

Figure 7.4.2.2-175: 4.944 GHz – 5.763 GHz – High Channel (16-QAM, Antenna Path 1)

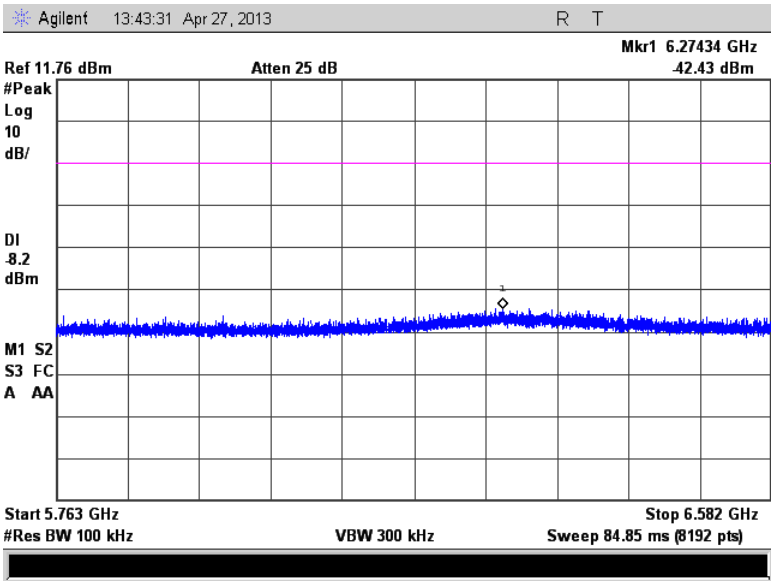

Figure 7.4.2.2-176: 5.763 GHz – 6.582 GHz – High Channel (16-QAM, Antenna Path 1)

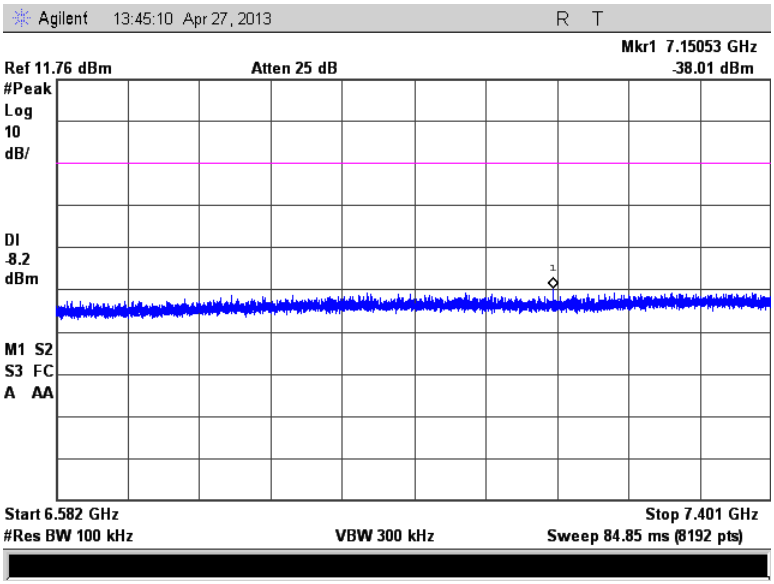

Figure 7.4.2.2-177: 6.582 GHz – 7.401 GHz – High Channel (16-QAM, Antenna Path 1)

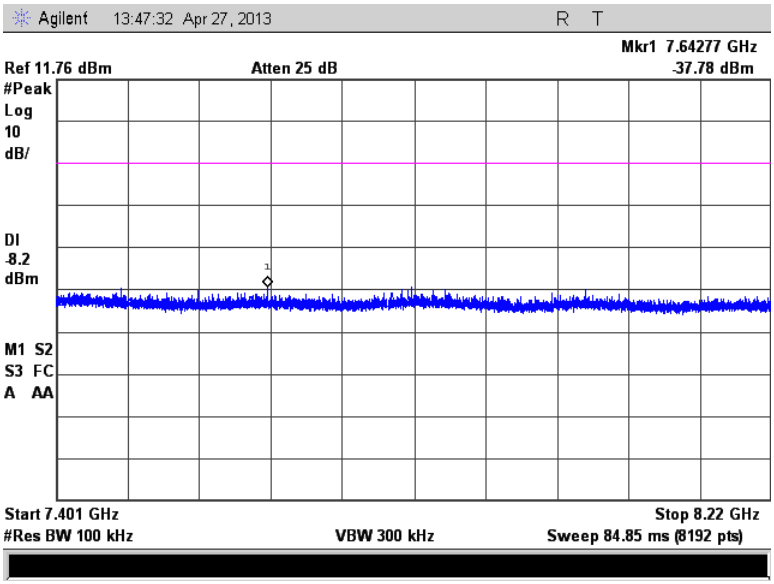

Figure 7.4.2.2-178: 7.401 GHz – 8.22 GHz – High Channel (16-QAM, Antenna Path 1)

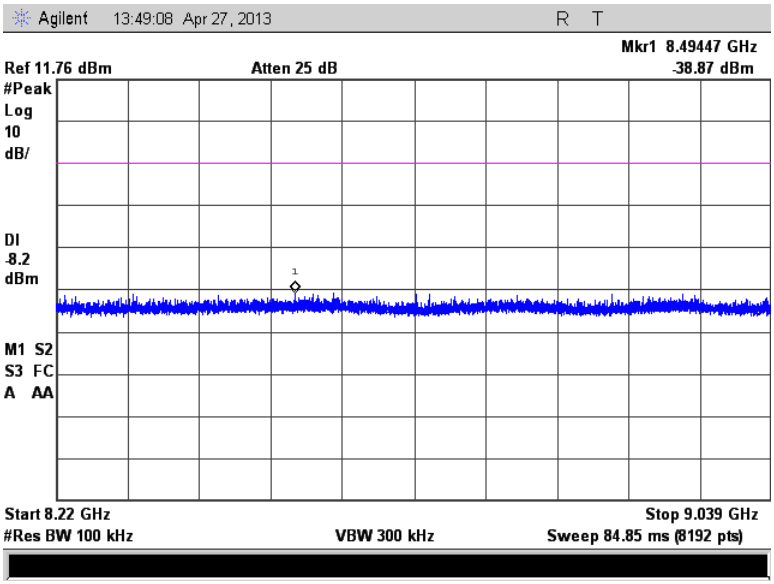

Figure 7.4.2.2-179: 8.22 GHz – 9.039 GHz – High Channel (16-QAM, Antenna Path 1)

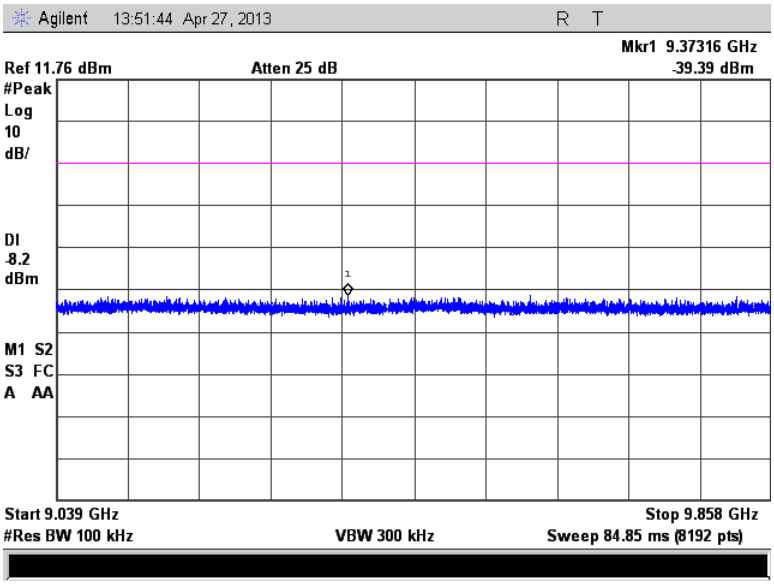

Figure 7.4.2.2-180: 9.039 GHz – 9.858 GHz – High Channel (16-QAM, Antenna Path 1)

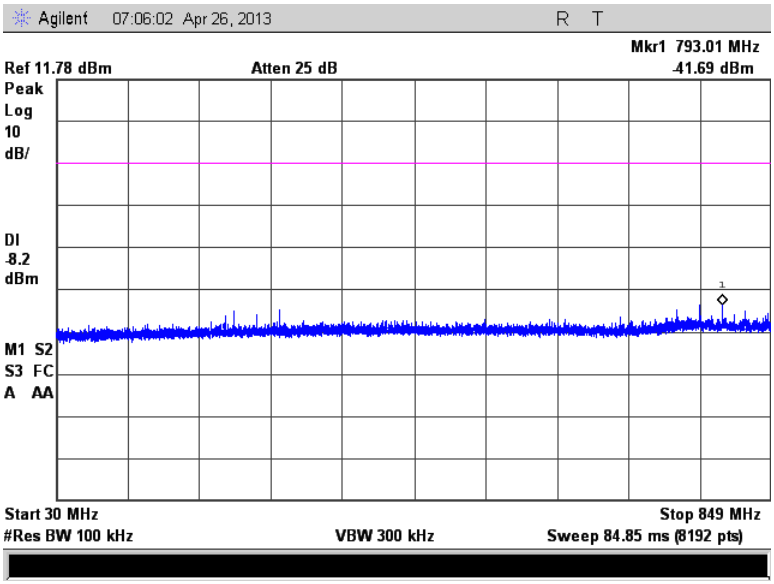

Figure 7.4.2.2-181: 30 MHz – 849 MHz – Low Channel (16-QAM, Antenna Path 2)

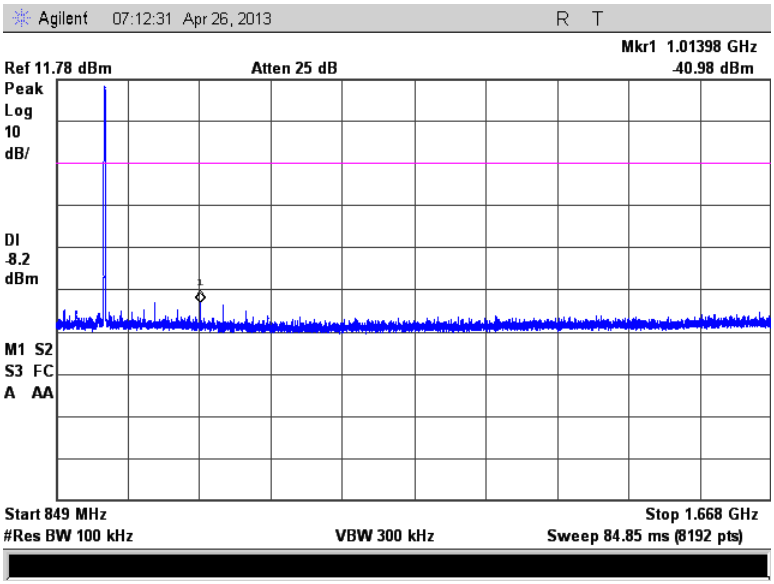

Figure 7.4.2.2-182: 849 MHz – 1.668 GHz – Low Channel (16-QAM, Antenna Path 2)

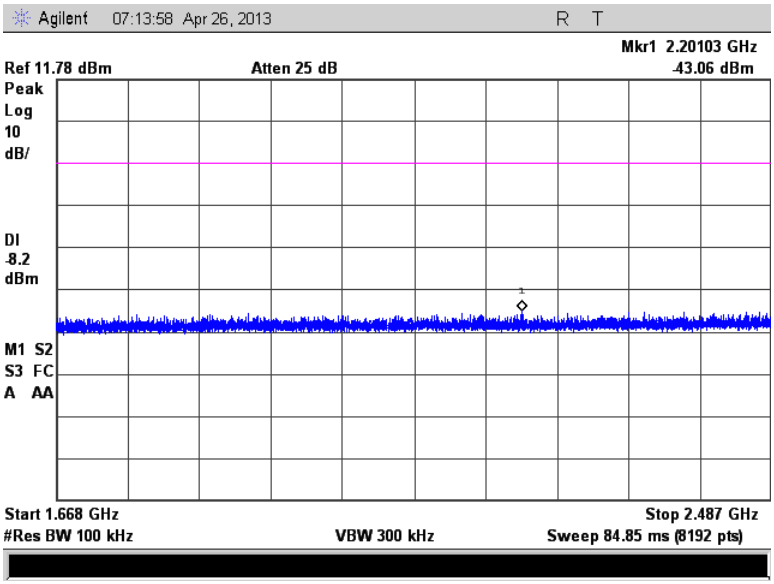

Figure 7.4.2.2-183: 1.668 GHz – 2.487 GHz – Low Channel (16-QAM, Antenna Path 2)

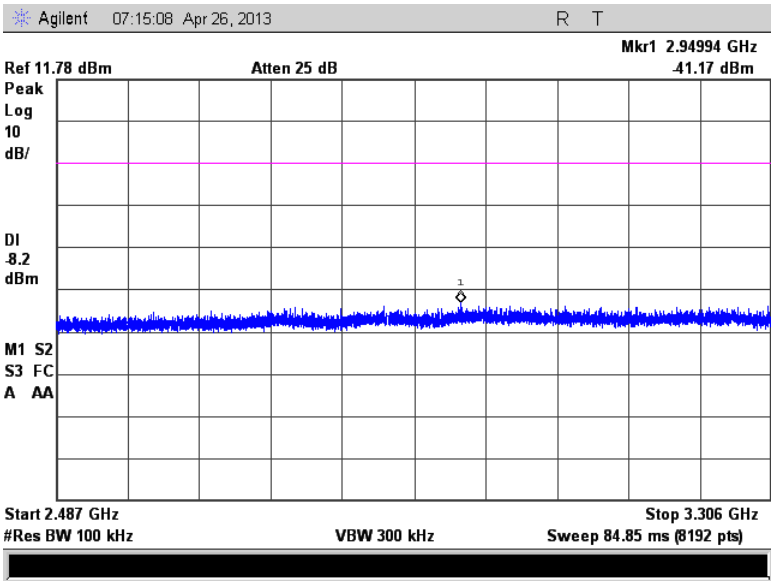

Figure 7.4.2.2-184: 2.487 GHz – 3.306 GHz – Low Channel (16-QAM, Antenna Path 2)

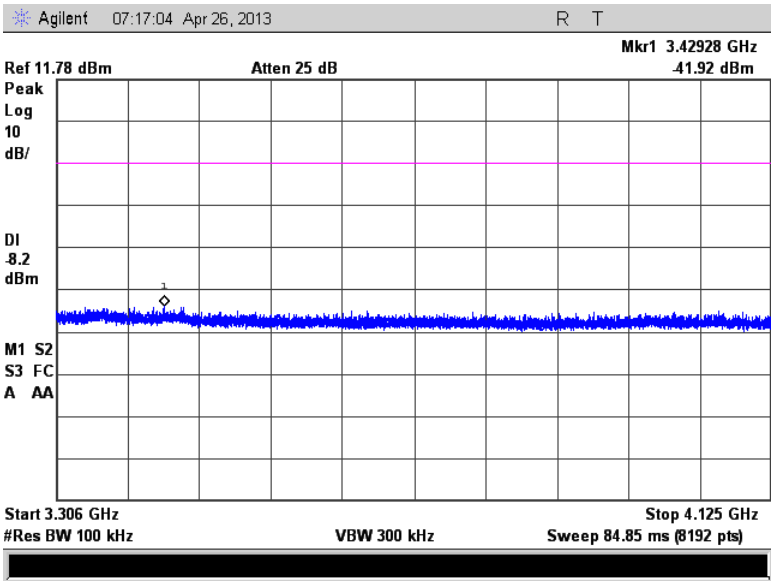

Figure 7.4.2.2-185: 3.306 GHz – 4.125 GHz – Low Channel (16-QAM, Antenna Path 2)

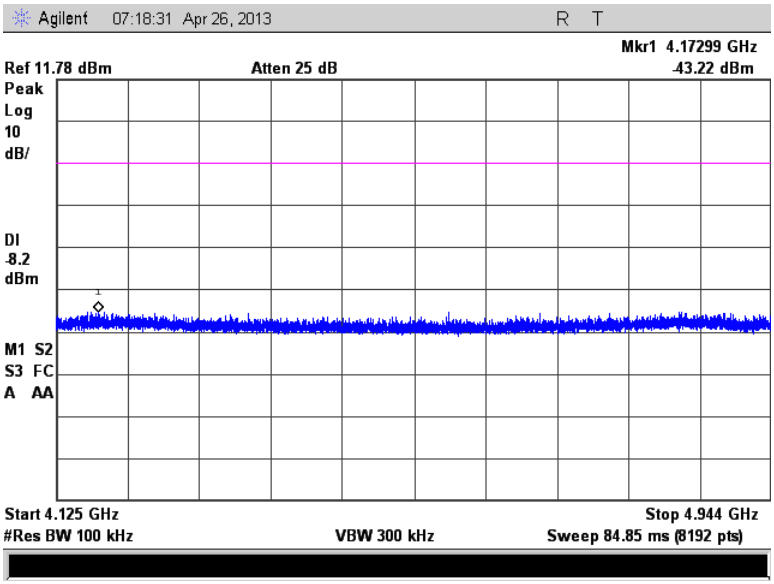

Figure 7.4.2.2-186: 4.125 GHz – 4.944 GHz – Low Channel (16-QAM, Antenna Path 2)

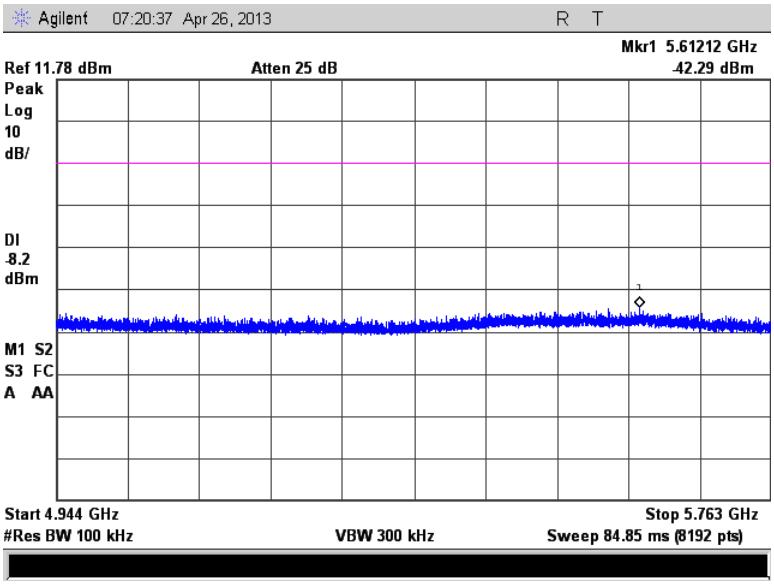

Figure 7.4.2.2-187: 4.944 GHz – 5.763 GHz – Low Channel (16-QAM, Antenna Path 2)

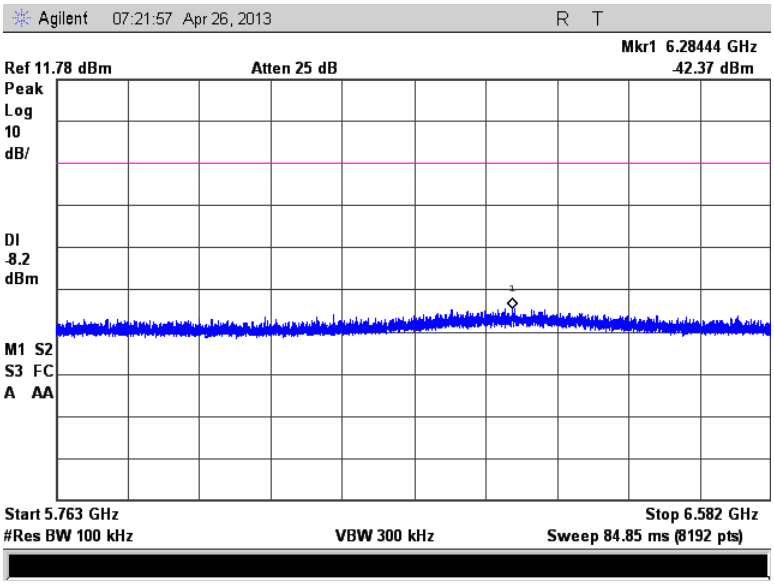

Figure 7.4.2.2-188: 5.763 GHz – 6.582 GHz – Low Channel (16-QAM, Antenna Path 2)

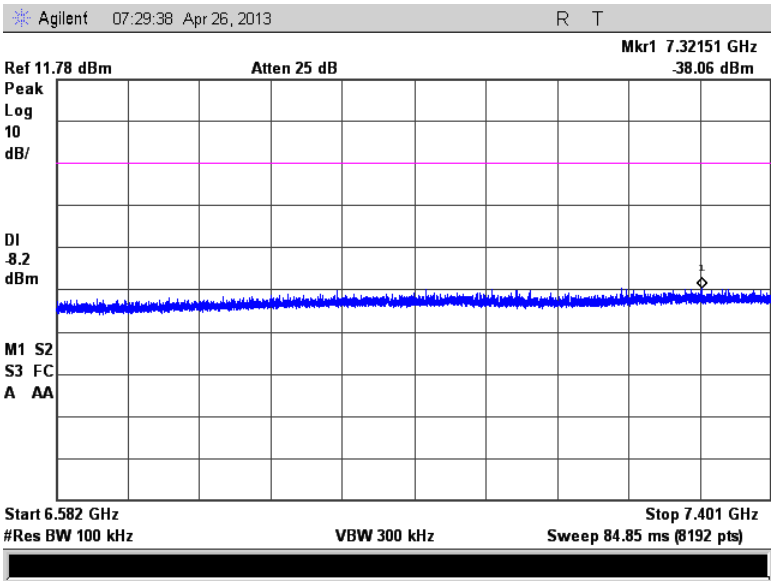

Figure 7.4.2.2-189: 6.582 GHz – 7.401 GHz – Low Channel (16-QAM, Antenna Path 2)

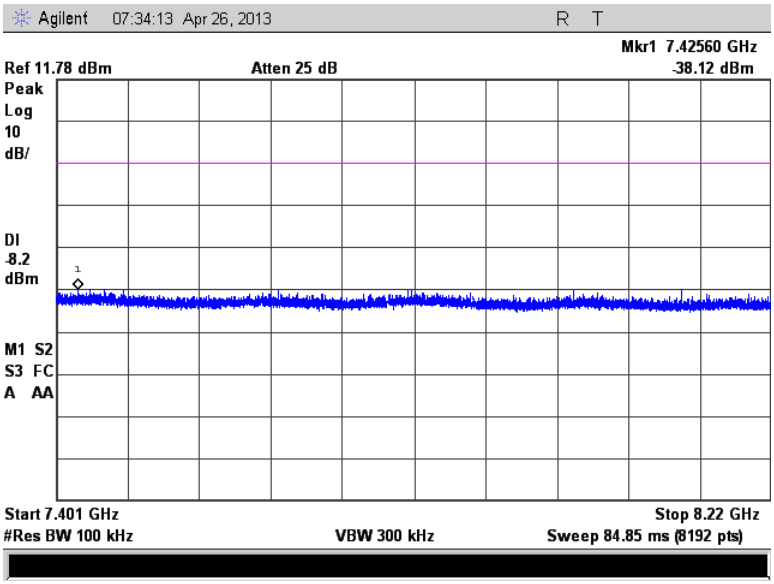

Figure 7.4.2.2-190: 7.401 GHz – 8.22 GHz – Low Channel (16-QAM, Antenna Path 2)

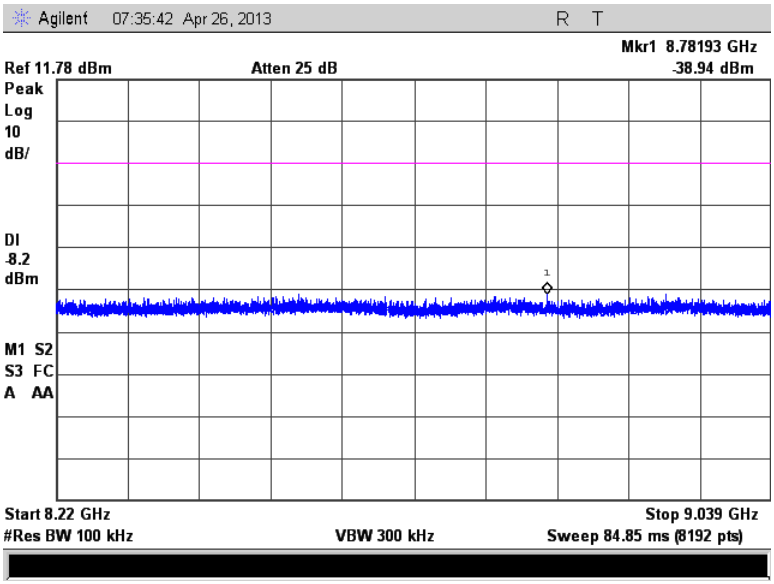

Figure 7.4.2.2-191: 8.22 GHz – 9.039 GHz – Low Channel (16-QAM, Antenna Path 2)

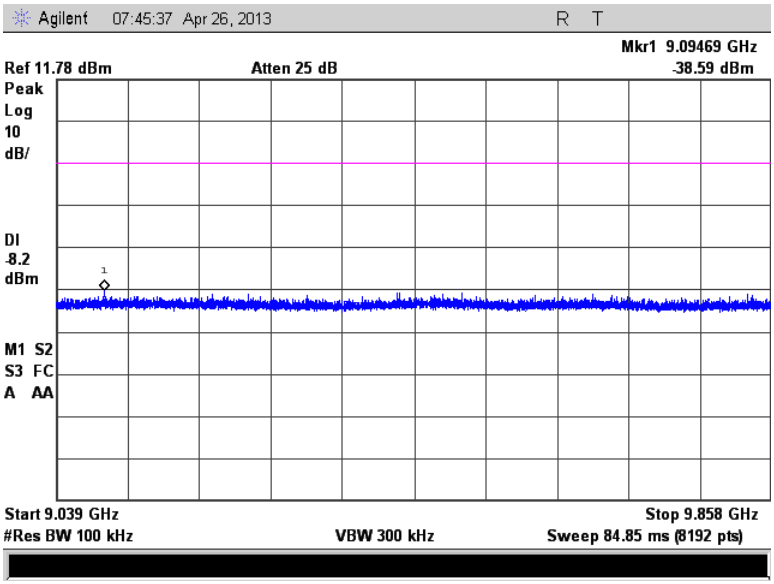

Figure 7.4.2.2-192: 9.039 GHz – 9.858 GHz – Low Channel (16-QAM, Antenna Path 2)

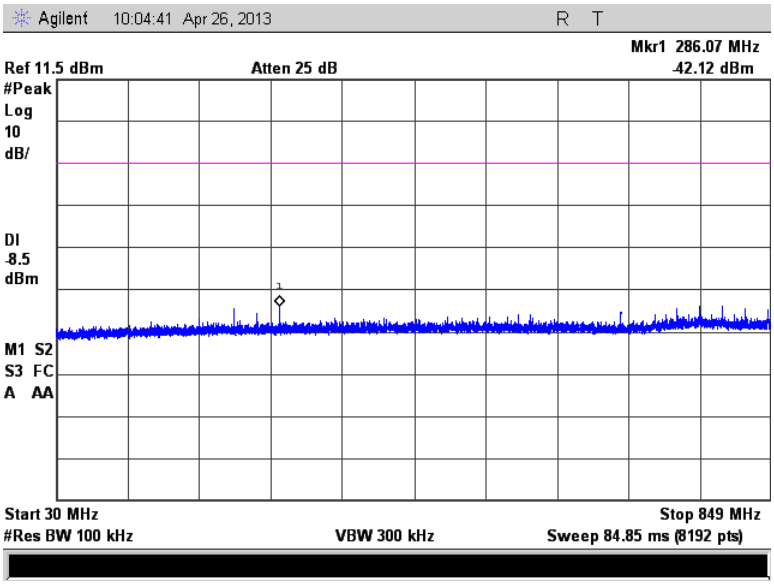

Figure 7.4.2.2-193: 30 MHz – 849 MHz – Middle Channel (16-QAM, Antenna Path 2)

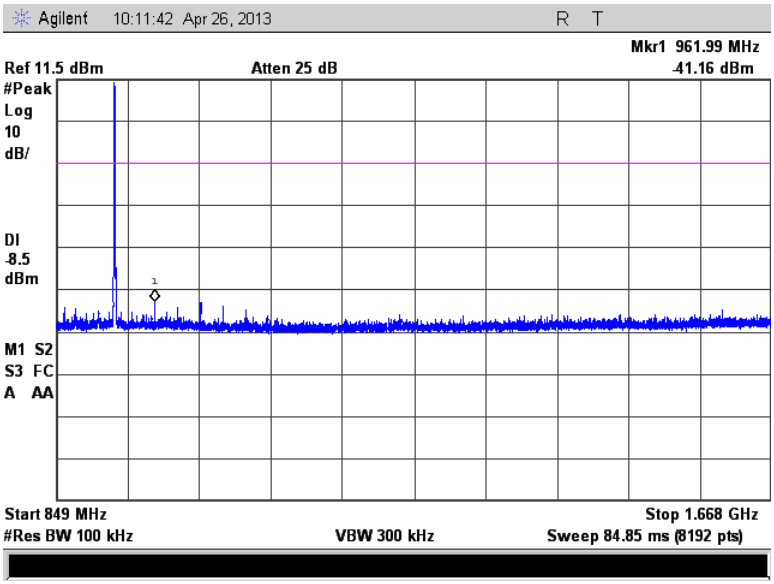

Figure 7.4.2.2-194: 849 MHz – 1.668 GHz – Middle Channel (16-QAM, Antenna Path 2)

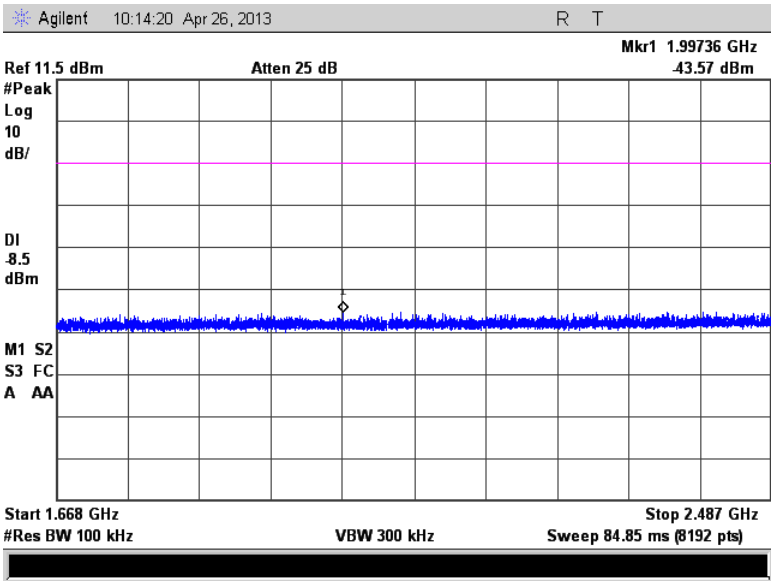

Figure 7.4.2.2-195: 1.668 GHz – 2.487 GHz – Middle Channel (16-QAM, Antenna Path 2)

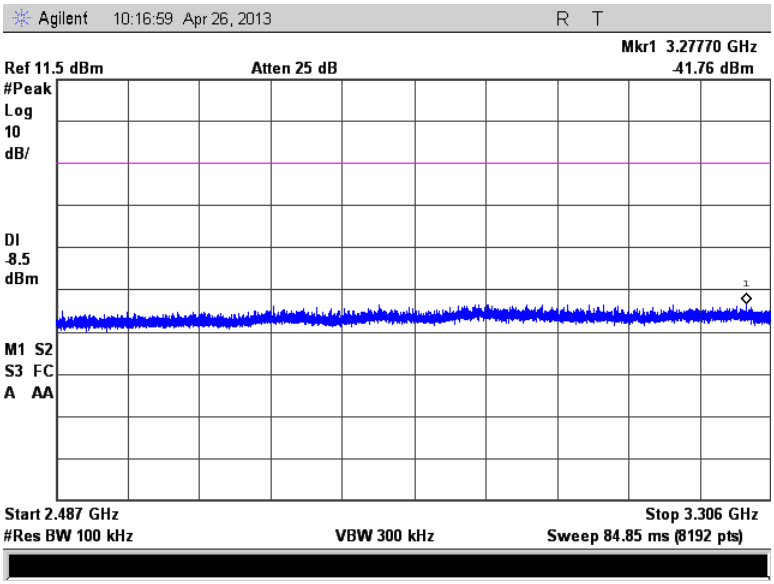

Figure 7.4.2.2-196: 2.487 GHz – 3.306 GHz – Middle Channel (16-QAM, Antenna Path 2)

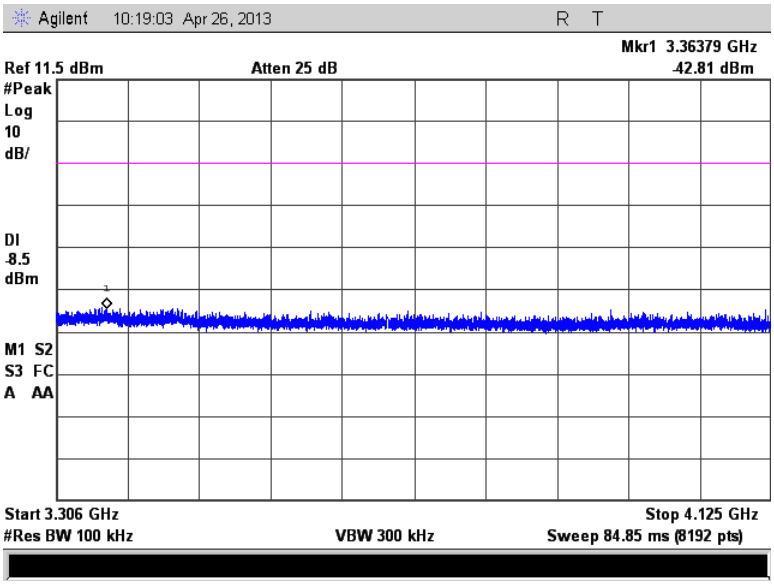

Figure 7.4.2.2-197: 3.306 GHz – 4.125 GHz – Middle Channel (16-QAM, Antenna Path 2)

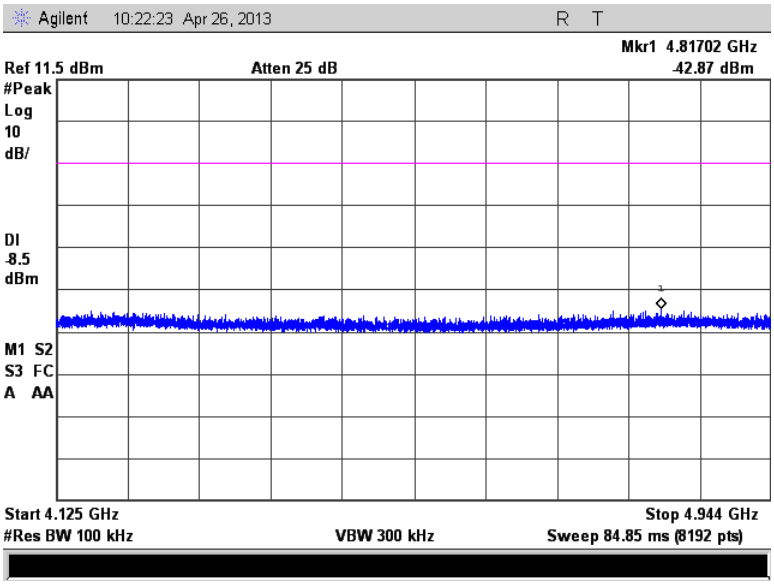

Figure 7.4.2.2-198: 4.125 GHz – 4.944 GHz – Middle Channel (16-QAM, Antenna Path 2)

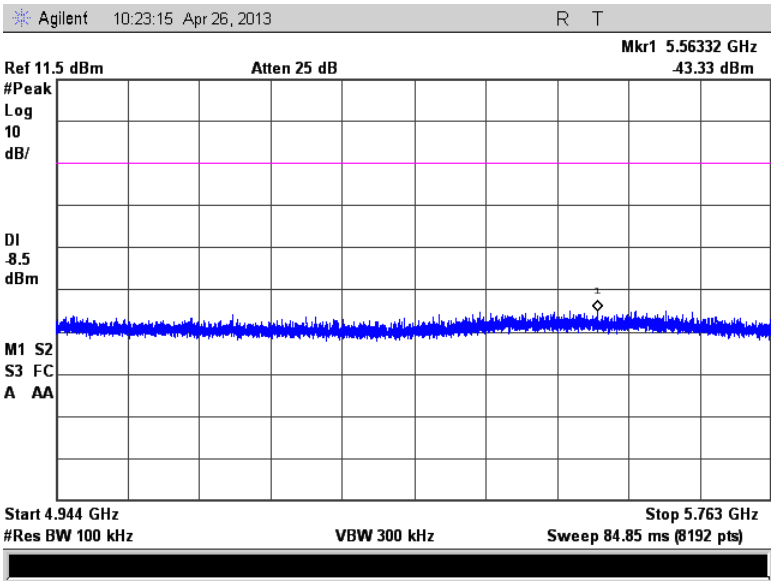

Figure 7.4.2.2-199: 4.944 GHz – 5.763 GHz – Middle Channel (16-QAM, Antenna Path 2)

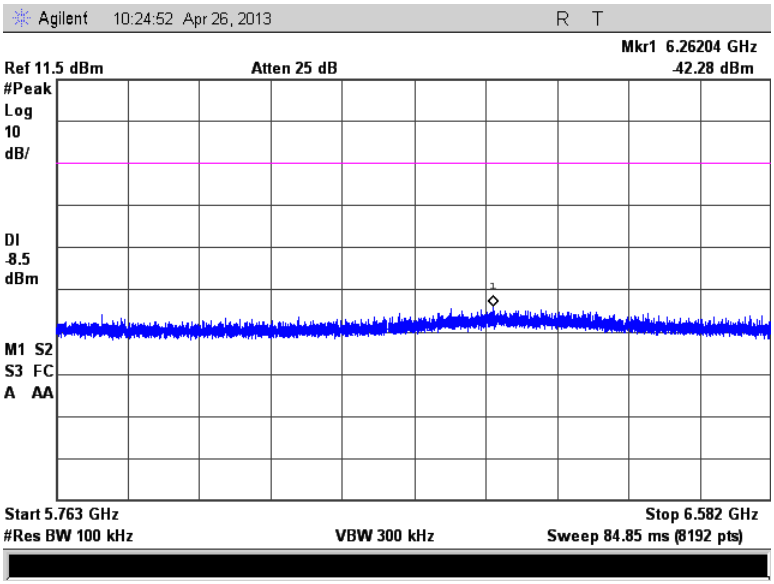

Figure 7.4.2.2-200: 5.763 GHz – 6.582 GHz – Middle Channel (16-QAM, Antenna Path 2)

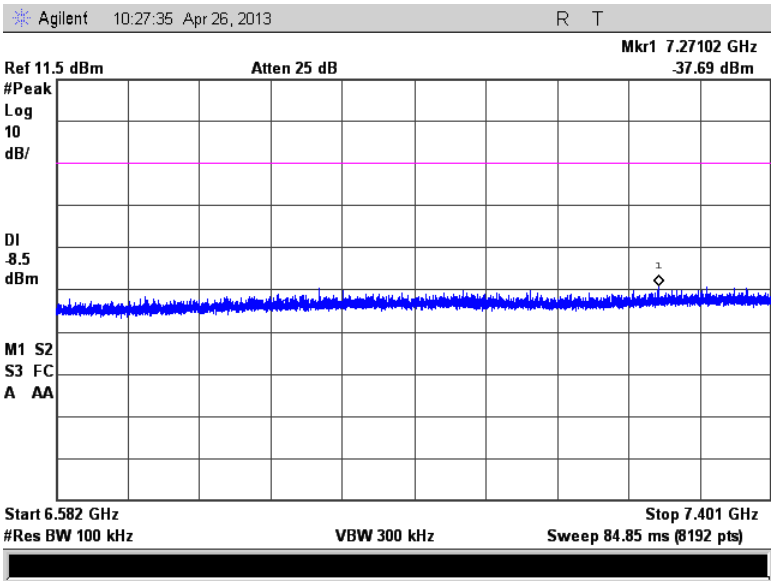

Figure 7.4.2.2-201: 6.582 GHz – 7.401 GHz – Middle Channel (16-QAM, Antenna Path 2)

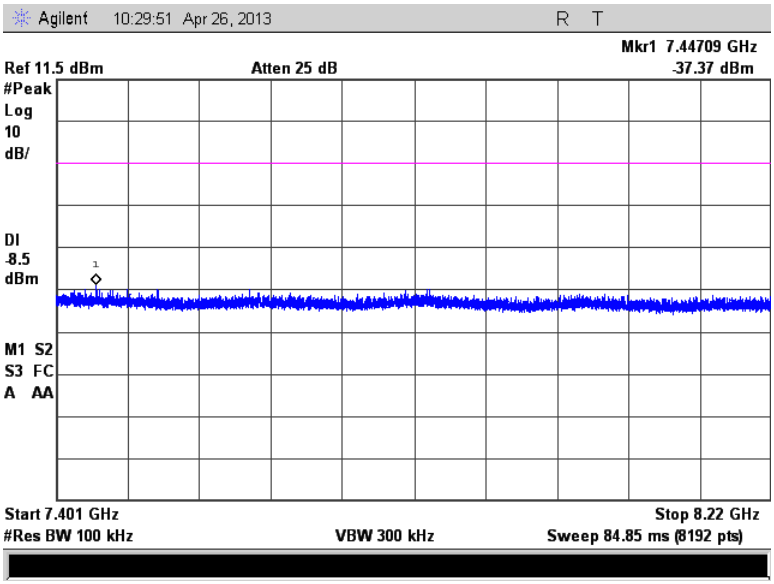

Figure 7.4.2.2-202: 7.401 GHz – 8.22 GHz – Middle Channel (16-QAM, Antenna Path 2)

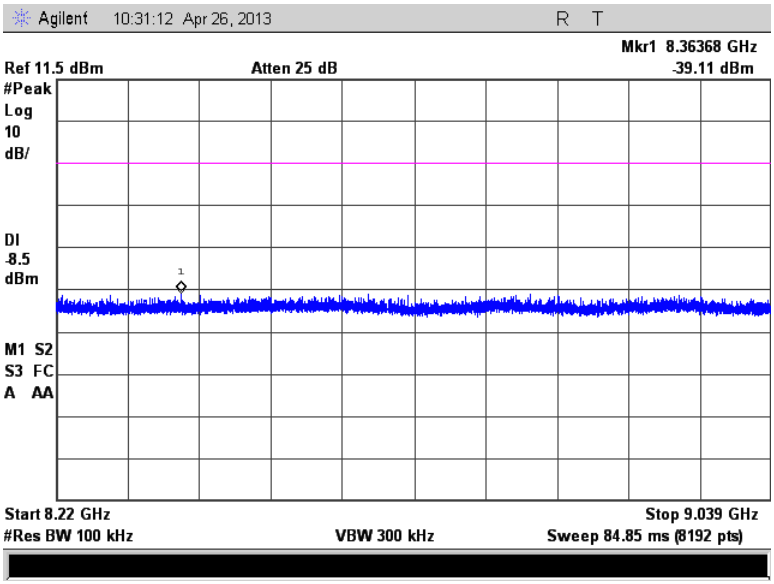

Figure 7.4.2.2-203: 8.22 GHz – 9.039 GHz – Middle Channel (16-QAM, Antenna Path 2)

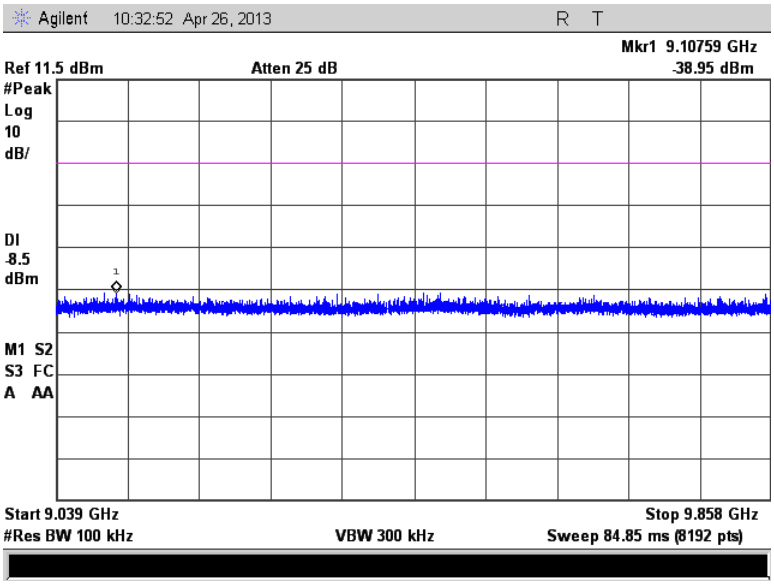

Figure 7.4.2.2-204: 9.039 GHz – 9.858 GHz – Middle Channel (16-QAM, Antenna Path 2)

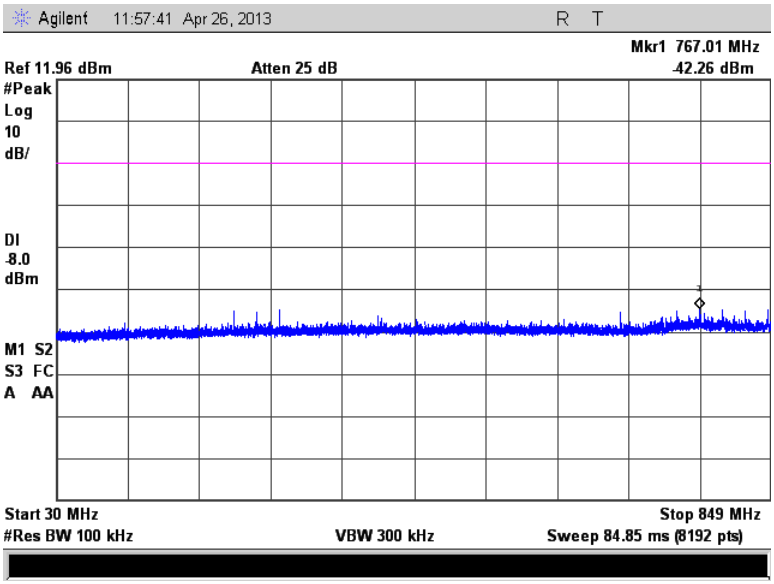

Figure 7.4.2.2-205: 30 MHz – 849 MHz – High Channel (16-QAM, Antenna Path 2)

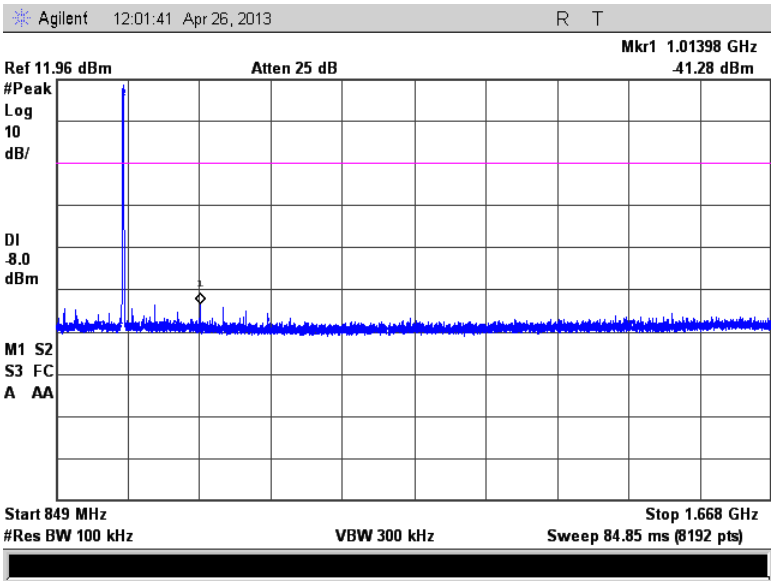

Figure 7.4.2.2-206: 849 MHz – 1.668 GHz – High Channel (16-QAM, Antenna Path 2)

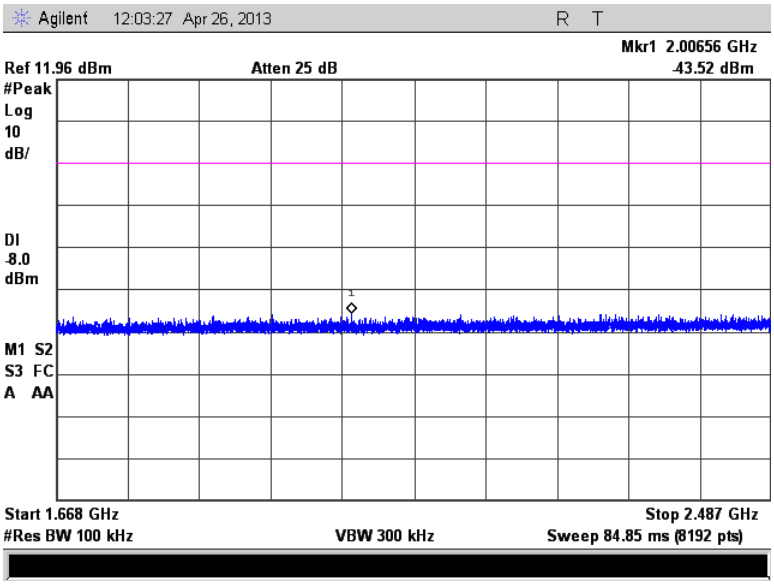

Figure 7.4.2.2-207: 1.668 GHz – 2.487 GHz – High Channel (16-QAM, Antenna Path 2)

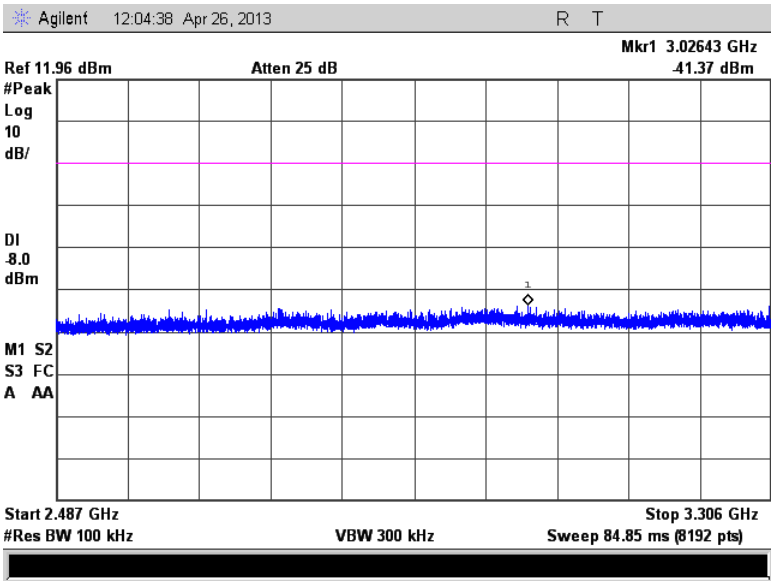

Figure 7.4.2.2-208: 2.487 GHz – 3.306 GHz – High Channel (16-QAM, Antenna Path 2)

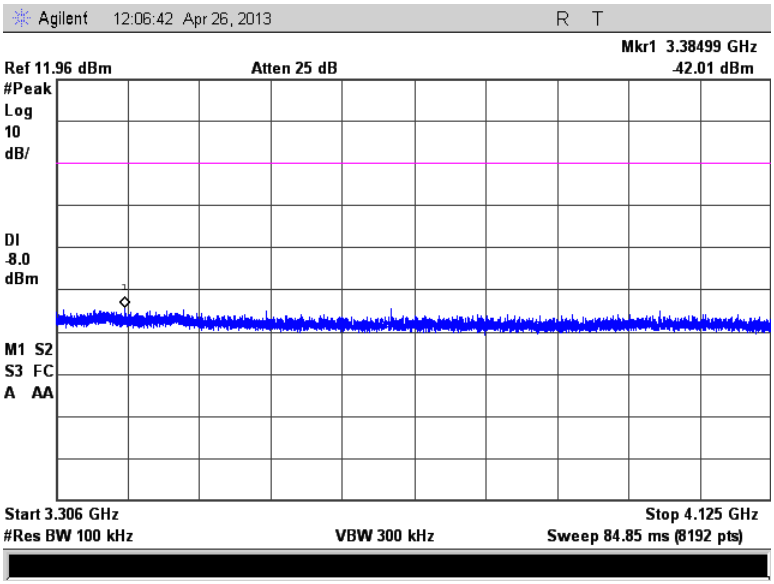

Figure 7.4.2.2-209: 3.306 GHz – 4.125 GHz – High Channel (16-QAM, Antenna Path 2)

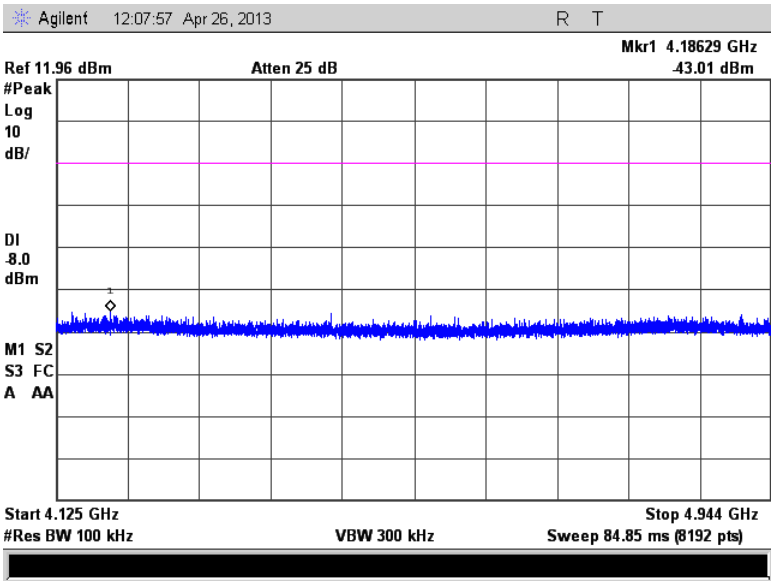

Figure 7.4.2.2-210: 4.125 GHz – 4.944 GHz – High Channel (16-QAM, Antenna Path 2)

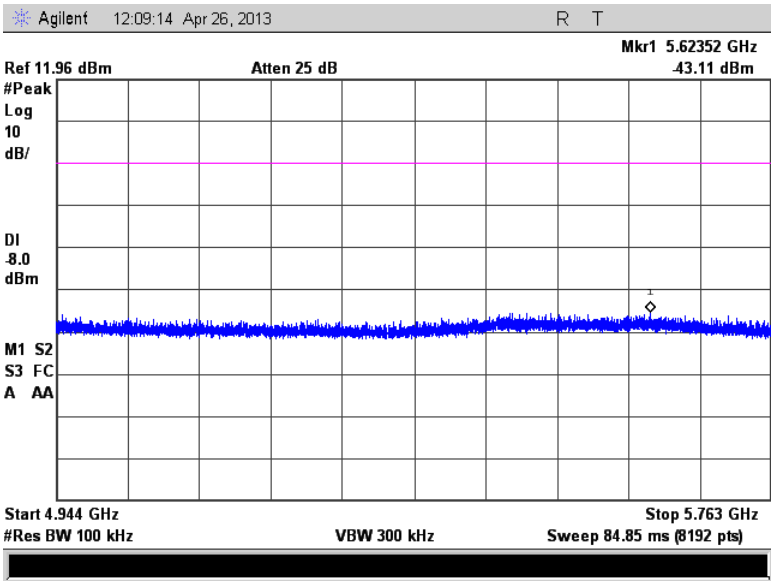

Figure 7.4.2.2-211: 4.944 GHz – 5.763 GHz – High Channel (16-QAM, Antenna Path 2)

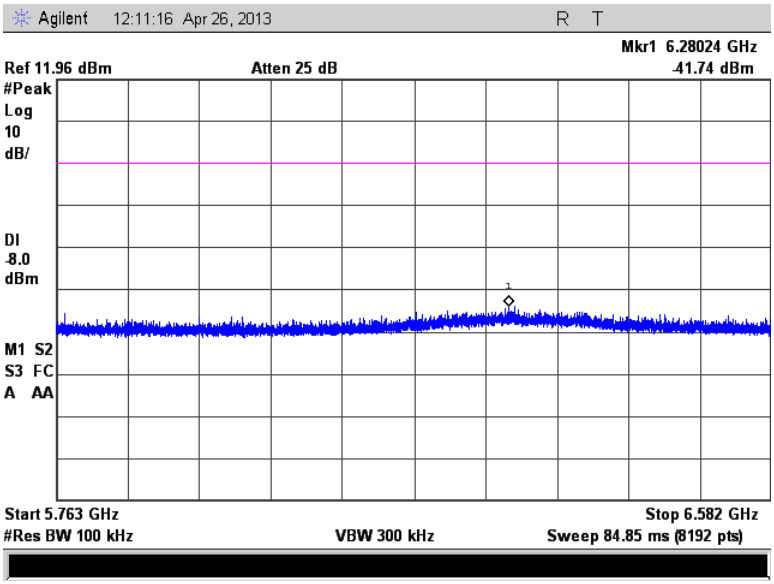

Figure 7.4.2.2-212: 5.763 GHz – 6.582 GHz – High Channel (16-QAM, Antenna Path 2)

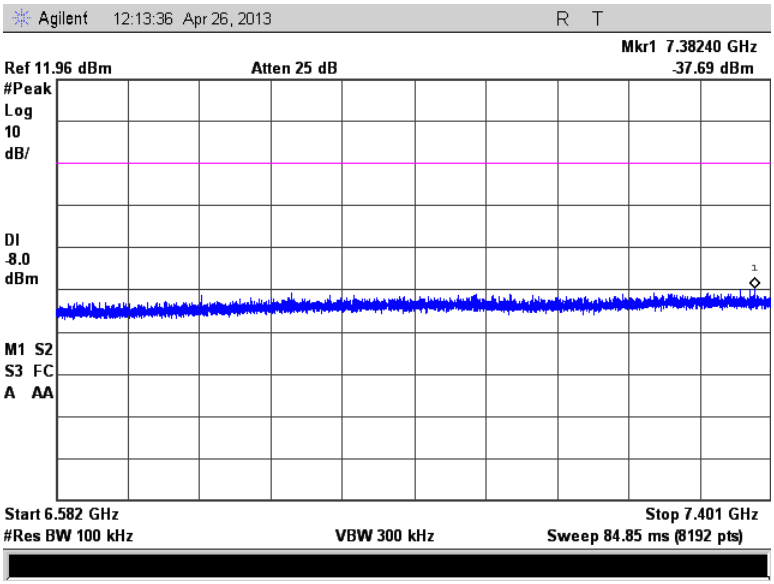

Figure 7.4.2.2-213: 6.582 GHz – 7.401 GHz – High Channel (16-QAM, Antenna Path 2)

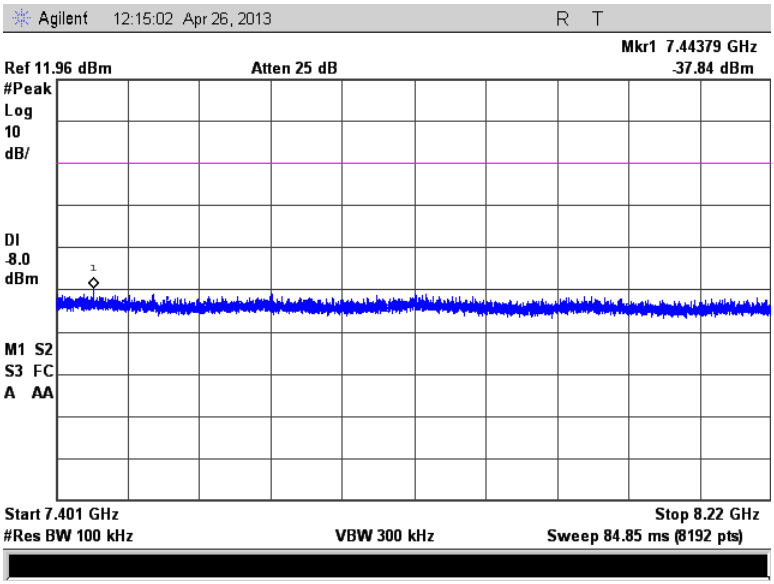

Figure 7.4.2.2-214: 7.401 GHz – 8.22 GHz – High Channel (16-QAM, Antenna Path 2)

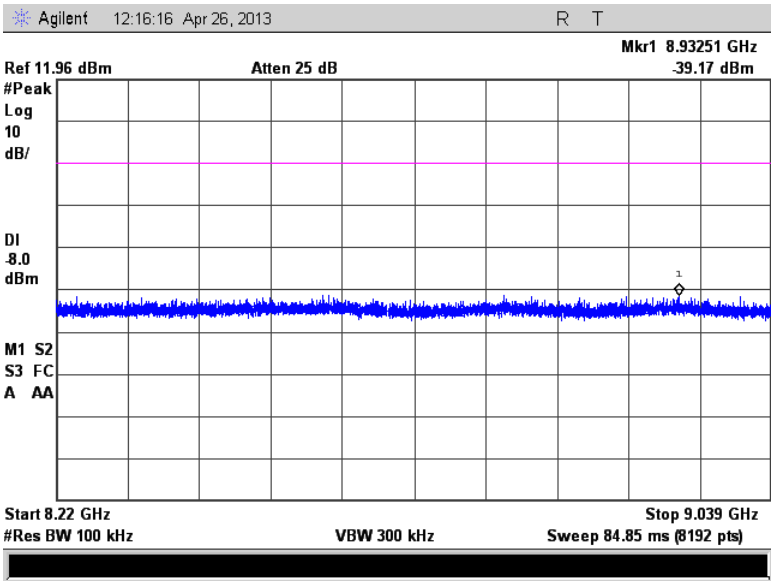

Figure 7.4.2.2-215: 8.22 GHz – 9.039 GHz – High Channel (16-QAM, Antenna Path 2)

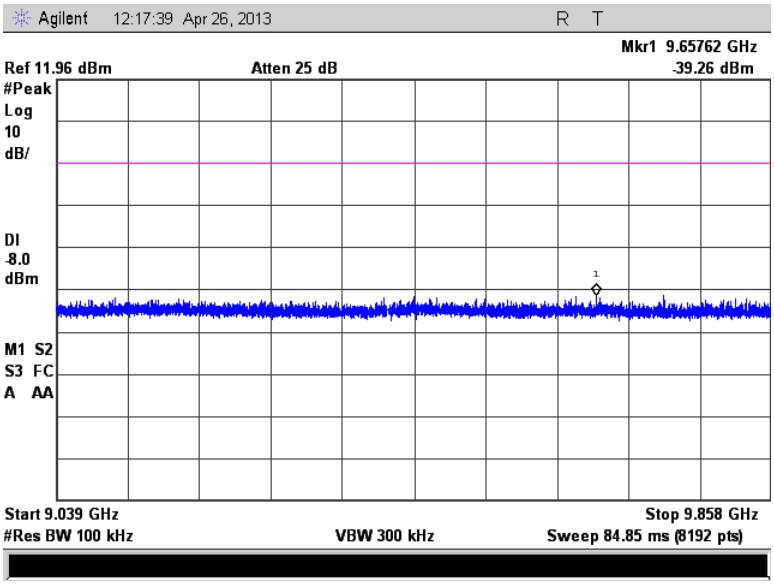

Figure 7.4.2.2-216: 9.039 GHz – 9.858 GHz – High Channel (16-QAM, Antenna Path 2)

7.4.3 Radiated Spurious Emissions - FCC Section 15.205

7.4.3.1 Measurement Procedure

Radiated emissions tests were made over the frequency range of 30MHz to 10 GHz, 10 times the highest fundamental frequency.

The EUT was rotated through 360° and the receive antenna height was varied from 1m to 4m so that the maximum radiated emissions level would be detected. For frequencies below 1000MHz, quasi-peak measurements were made using a resolution bandwidth RBW of 120 kHz and a video bandwidth VBW of 300 kHz. For frequencies above 1000MHz, peak measurements were made with RBW of 1 MHz and VBW of 3MHz.

The unit was operating at the maximum duty cycle of 50% for all available modulations. For emissions presenting the same pulsing characteristics as the fundamental, a duty cycle correction factor consisting of 20*log(50/100) dB ≈ -6.02 dB was applied to the measured peak values for the average corrected levels. For all other emissions, average measurements were performed in the linear scale, using RBW = 1 MHz and VBW = 30 Hz.

7.4.3.2 Measurement Results

Radiated spurious and band-edge emissions found in the band of 30MHz to 10 GHz are reported below.

Table 7.4.3.2-1: Radiated Spurious Emissions Tabulated Data (BPSK)

Frequency (MHz)	Level (dBuV)		Antenna Polarity	Correction Factors	Corrected Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	pk	Qpk/Avg	(H/V)	(dB)	pk	Qpk/Avg	pk	Qpk/Avg	pk	Qpk/Avg
Low Channel = 904.2 MHz										
2712.6	56.17	56.17	H	-7.64	48.53	42.51	74.0	54.0	25.5	11.5
2712.6	57.55	57.55	V	-7.64	49.91	43.89	74.0	54.0	24.1	10.1
Middle Channel = 915.72 MHz										
2747.16	57.77	57.77	H	-7.47	50.30	44.28	74.0	54.0	23.7	9.7
2747.16	57.18	57.18	V	-7.47	49.71	43.69	74.0	54.0	24.3	10.3
7325.76	46.99	35.49	H	3.06	50.05	38.55	74.0	54.0	24.0	15.5
7325.76	48.08	39.24	V	3.06	51.14	42.30	74.0	54.0	22.9	11.7
High Channel = 925.8 MHz										
2777.4	59.98	59.98	H	-7.33	52.65	46.63	74.0	54.0	21.3	7.4
2777.4	61.36	61.36	V	-7.33	54.03	48.01	74.0	54.0	20.0	6.0
7406.4	47.90	38.16	H	3.33	51.23	41.49	74.0	54.0	22.8	12.5
7406.4	51.10	44.21	V	3.33	54.43	47.54	74.0	54.0	19.6	6.5

Notes:

- **All emissions above 7406.4 MHz were attenuated below the limits and the noise floor of the measurement equipment.**
- **The third harmonic emissions showed pulsing characteristics similar to the fundamental. A duty cycle corresponding to 20*log(50/100) B ≈ -6.02 dB was applied to the peak values for the corrected average levels.**
- **The eight harmonic emissions were not pulsing but were continuous signals. Therefore, average measurements were performed in the linear scale with RBW = 1 MHz and VBW = 30 Hz.**

Table 7.4.3.2-2: Radiated Spurious Emissions Tabulated Data (QPSK)

Frequency (MHz)	Level (dBuV)		Antenna Polarity	Correction Factors	Corrected Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	pk	Qpk/Avg	(H/V)	(dB)	pk	Qpk/Avg	pk	Qpk/Avg	pk	Qpk/Avg
Low Channel = 904.2 MHz										
2712.6	55.93	55.93	H	-7.64	48.29	42.27	74.0	54.0	25.7	11.7
2712.6	57.22	57.22	V	-7.64	49.58	43.56	74.0	54.0	24.4	10.4
Middle Channel = 915.72 MHz										
2747.16	56.86	56.86	H	-7.47	49.39	43.37	74.0	54.0	24.6	10.6
2747.16	58.52	58.52	V	-7.47	51.05	45.03	74.0	54.0	23.0	9.0
7325.76	48.36	40.08	H	3.06	51.42	43.14	74.0	54.0	22.6	10.9
7325.76	49.49	42.05	V	3.06	52.55	45.11	74.0	54.0	21.5	8.9
High Channel = 925.8 MHz										
2777.4	60.40	60.40	H	-7.33	53.07	47.05	74.0	54.0	20.9	6.9
2777.4	59.05	59.05	V	-7.33	51.72	45.70	74.0	54.0	22.3	8.3
7406.4	48.90	38.60	H	3.33	52.23	41.93	74.0	54.0	21.8	12.1
7406.4	49.87	42.78	V	3.33	53.20	46.11	74.0	54.0	20.8	7.9

Notes:

- **All emissions above 7406.4 MHz were attenuated below the limits and the noise floor of the measurement equipment.**
- **The third harmonic emissions showed pulsing characteristics similar to the fundamental. A duty cycle corresponding to 20*log(50/100) B ≈ -6.02 dB was applied to the peak values for the corrected average levels.**
- **The eight harmonic emissions were not pulsing but were continuous signals. Therefore, average measurements were performed in the linear scale with RBW = 1 MHz and VBW = 30 Hz.**

Table 7.4.3.2-3: Radiated Spurious Emissions Tabulated Data (16-QAM)

Frequency (MHz)	Level (dBuV)		Antenna Polarity	Correction Factors	Corrected Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	pk	Qpk/Avg	(H/V)	(dB)	pk	Qpk/Avg	pk	Qpk/Avg	pk	Qpk/Avg
Low Channel = 904.2 MHz										
2712.6	57.26	57.26	H	-7.64	49.62	43.60	74.0	54.0	24.4	10.4
2712.6	57.02	57.02	V	-7.64	49.38	43.36	74.0	54.0	24.6	10.6
3616.8	46.48	46.48	H	-4.49	41.99	35.97	74.0	54.0	32.0	18.0
3616.8	46.82	46.82	V	-4.49	42.33	36.31	74.0	54.0	31.7	17.7
Middle Channel = 915.72 MHz										
2747.16	56.20	56.20	H	-7.47	48.73	42.71	74.0	54.0	25.3	11.3
2747.16	57.98	57.98	V	-7.47	50.51	44.49	74.0	54.0	23.5	9.5
7325.76	48.96	40.29	H	3.06	52.02	43.35	74.0	54.0	22.0	10.7
7325.76	49.88	42.98	V	3.06	52.94	46.04	74.0	54.0	21.1	8.0
High Channel = 925.8 MHz										
2777.4	58.55	58.55	H	-7.33	51.22	45.20	74.0	54.0	22.8	8.8
2777.4	59.56	59.56	V	-7.33	52.23	46.21	74.0	54.0	21.8	7.8
3703.2	44.96	44.96	H	-4.14	40.82	34.80	74.0	54.0	33.2	19.2
7406.4	49.12	42.16	H	3.33	52.45	45.49	74.0	54.0	21.5	8.5
7406.4	51.48	46.01	V	3.33	54.81	49.34	74.0	54.0	19.2	4.7

Notes:

- **All emissions above 7406.4 MHz were attenuated below the limits and the noise floor of the measurement equipment.**
- **The third harmonic emissions showed pulsing characteristics similar to the fundamental. A duty cycle corresponding to 20*log(50/100) B ≈ -6.02 dB was applied to the peak values for the corrected average levels.**
- **The eight harmonic emissions were not pulsing but were continuous signals. Therefore, average measurements were performed in the linear scale with RBW = 1 MHz and VBW = 30 Hz.**

Table 7.4.3.2-4: Radiated Spurious Emissions Tabulated Data (Other than harmonics)

Frequency (MHz)	Level (dBuV)		Antenna Polarity	Correction Factors	Corrected Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
	pk	Qpk/Avg	(H/V)	(dB)	pk	Qpk/Avg	pk	Qpk/Avg	pk	Qpk/Avg
1440	55.24	47.92	H	-9.14	46.10	38.78	74.0	54.0	27.9	15.2
1440	54.92	47.54	V	-9.14	45.78	38.40	74.0	54.0	28.2	15.6
1562.5	55.72	49.15	H	-13.01	42.71	36.14	74.0	54.0	31.3	17.9
1562.5	57.59	51.23	V	-13.01	44.58	38.22	74.0	54.0	29.4	15.8
1663.75	51.54	40.94	H	-12.41	39.13	28.53	74.0	54.0	34.9	25.5
1663.75	53.38	46.10	V	-12.41	40.97	33.69	74.0	54.0	33.0	20.3

Notes:

- **The table above reports spurious emissions other than harmonics falling within the restricted bands. These emissions were observed to be independent of the modulations and channel of operation of the transmitter.**
- **The emissions listed above do not show the same modulation characteristics as the transmitter. Therefore, no duty cycle correction factors were applied to the measurements.**
- **The average measurements were performed in the linear scale using RBW = 1 MHz and VBW = 30 Hz**

7.4.3.3 Sample Calculation:

$R_C = R_U + CF_T$

Where:

CF_T	=	Total Correction Factor (AF+CA+AG)-DC (Average Measurements Only)
R_U	=	Uncorrected Reading
R_C	=	Corrected Level
AF	=	Antenna Factor
CA	=	Cable Attenuation
AG	=	Amplifier Gain
DC	=	Duty Cycle Correction Factor

Duty Cycle Correction Factor = 20*log(50/100) ≈ -6.02 dB

Example Calculation: Peak
Corrected Level: 56.17 -7.64 = 48.53 dBµV/m
Margin: 74 dBµV/m – 48.53 dBµV/m = 25.5dB

Example Calculation: Average
Corrected Level: 56.17 - 7.64 - 6.02 = 42.51 dBµV/m
Margin: 54 dBµV/m – 42.51 dBµV/m = 11.5 dB

7.5 Power Spectral Density - FCC Section 15.247(e)

7.5.1 PSD Measurement Procedure (Conducted Method)

The power spectral density was measured in accordance with the FCC KDB Publication No. 558074 "Guidance for Performing Compliance Measurements on Digital Transmission Systems (47 CFR 15.247)" Measurement Section 10.2 Method PKPSD. The RF output port of the EUT was directly connected to the input of the spectrum analyzer. Offset values were input for cable and attenuation. The spectrum analyzer RBW was set to 3 kHz and VBW 10 kHz. Span was adjusted to 1.5 times the 6 dB bandwidth and the sweep time was set to auto.

The output PSD was corrected in accordance with FCC KDB Publication No. 662911 "Emissions Testing of Transmitters with Multiple Outputs in the Same Band" in order to account for the multiple outputs by applying the correction factor of 10*log(N) dB to the measured level, where N corresponds to the number of transmitter outputs.

7.5.2 Measurement Results

Results are shown below.

Table 7.5.2-1: Power Spectral Density (BPSK, Antenna Path 1)

Frequency (MHz)	PSD/3kHz (dBm)	10*log(2) (dB)	Total PSD/3kHz (dBm)	Limit (dBm)	Margin (dB)
904.2	-5.007	3.01	-1.997	8	9.997
915.72	-5.365	3.01	-2.355	8	10.355
925.8	-4.42	3.01	-1.41	8	9.41

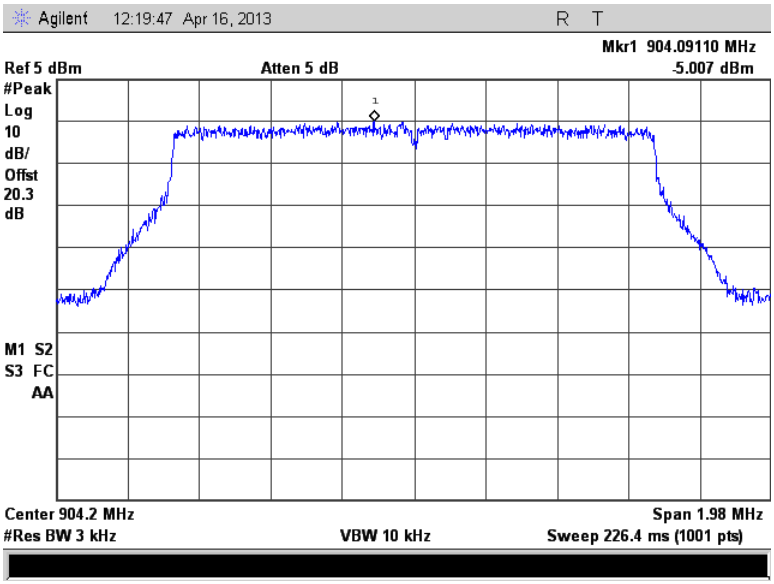

Figure 7.5.2-1: Power Spectral Density - Low Channel (BPSK, Antenna Path 1)

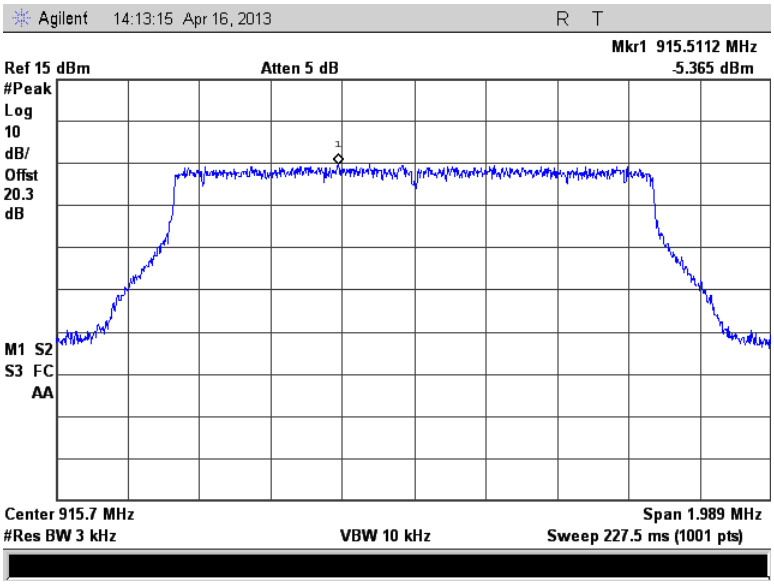

Figure 7.5.2-2: Power Spectral Density - Middle Channel (BPSK, Antenna Path 1)

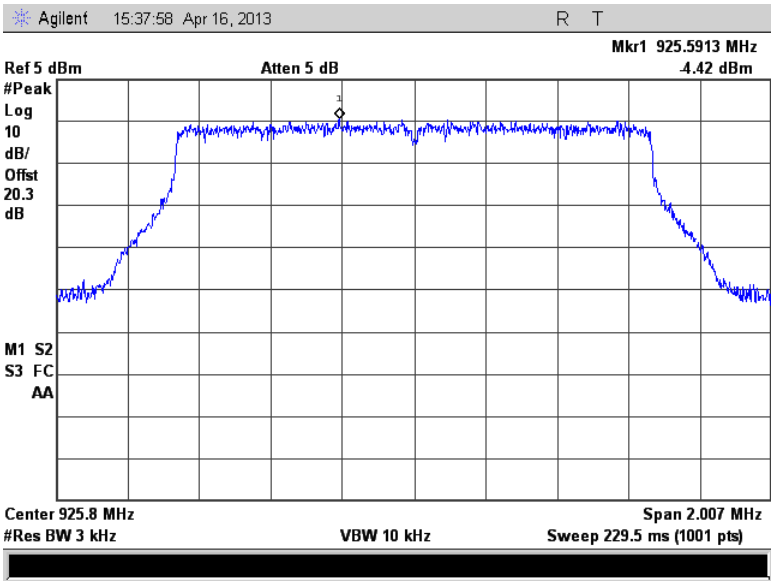

Figure 7.5.2-3: Power Spectral Density – High Channel (BPSK, Antenna Path 1)

Table 7.5.2-2: Power Spectral Density (BPSK, Antenna Path 2)

Frequency (MHz)	PSD/3kHz (dBm)	10*log(2) (dB)	Total PSD/3kHz (dBm)	Limit (dBm)	Margin (dB)
904.2	-5.386	3.01	-2.376	8	10.376
915.72	-5.36	3.01	-2.35	8	10.35
925.8	-5.126	3.01	-2.116	8	10.116

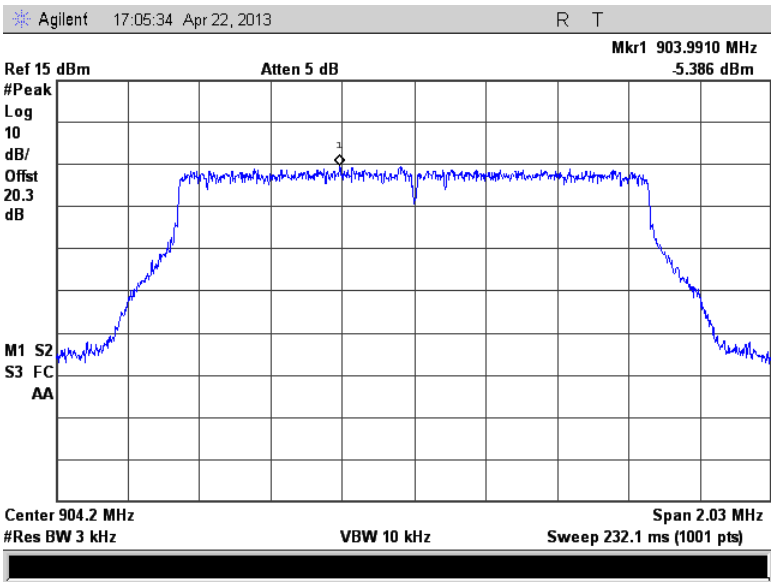

Figure 7.5.2-4: Power Spectral Density - Low Channel (BPSK, Antenna Path 2)

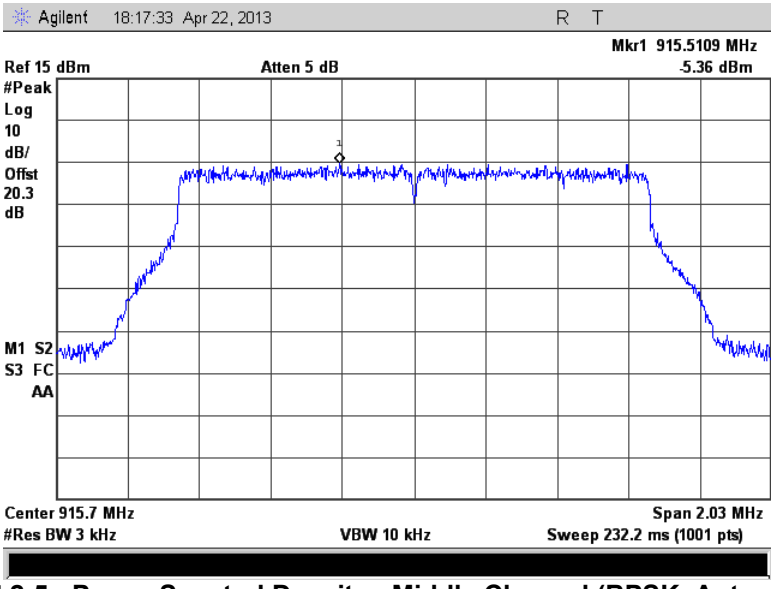

Figure 7.5.2-5: Power Spectral Density - Middle Channel (BPSK, Antenna Path 2)

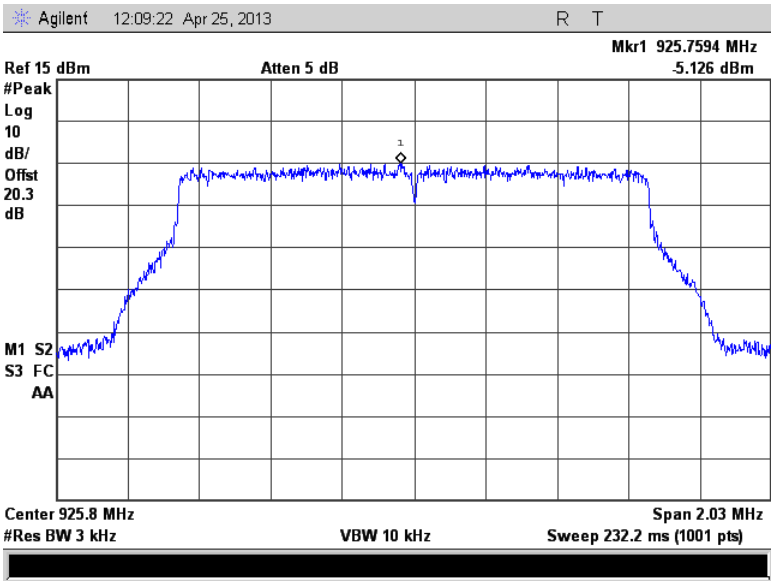

Figure 7.5.2-6: Power Spectral Density – High Channel (BPSK, Antenna Path 2)

Table 7.5.2-3: Power Spectral Density (QPSK, Antenna Path 1)

Frequency (MHz)	PSD/3kHz (dBm)	10*log(2) (dB)	Total PSD/3kHz (dBm)	Limit (dBm)	Margin (dB)
904.2	-5.292	3.01	-2.282	8	10.282
915.72	-5.43	3.01	-2.42	8	10.42
925.8	-4.806	3.01	-1.796	8	9.796

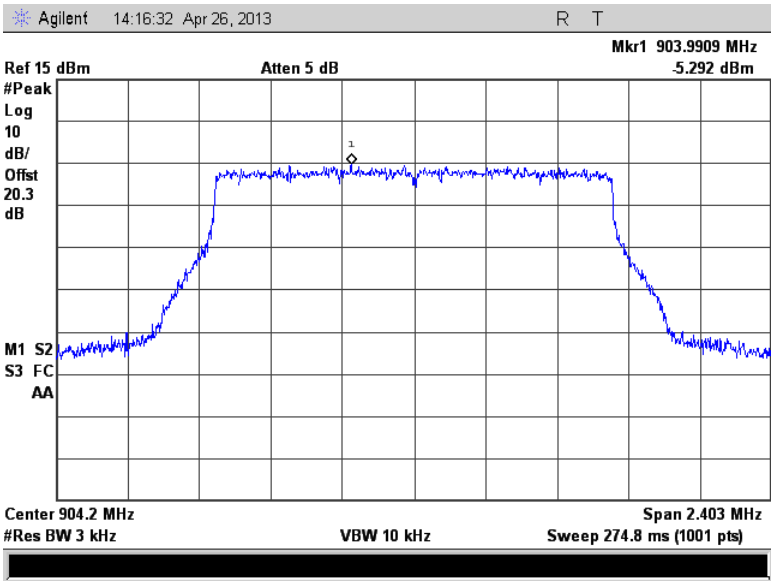

Figure 7.5.2-7: Power Spectral Density - Low Channel (QPSK, Antenna Path 1)

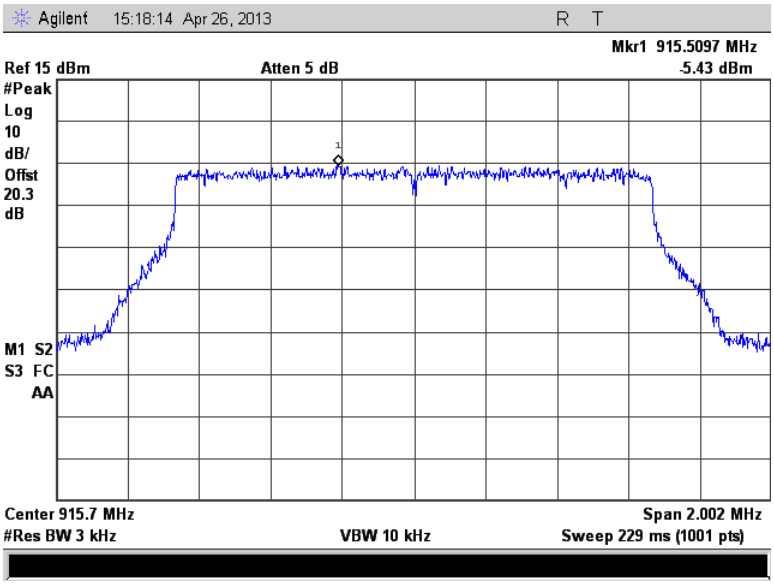

Figure 7.5.2-8: Power Spectral Density - Middle Channel (QPSK, Antenna Path 1)

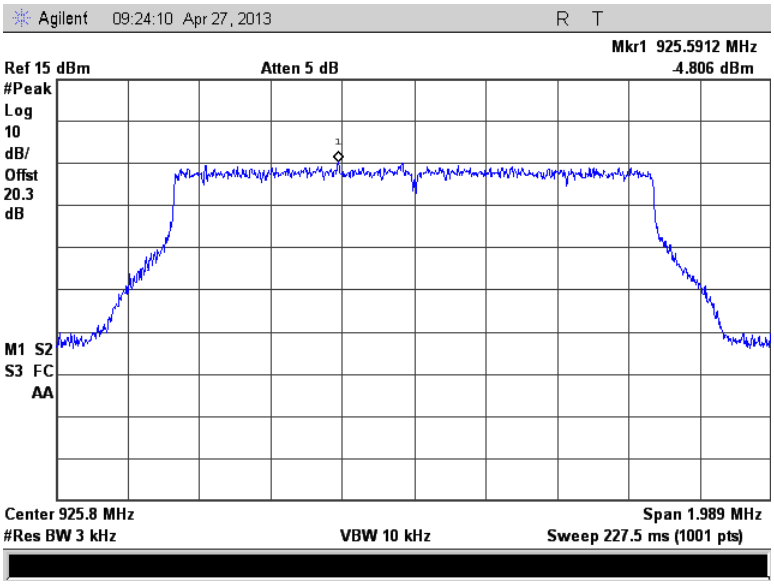

Figure 7.5.2-9: Power Spectral Density – High Channel (QPSK, Antenna Path 1)

Table 7.5.2-4: Power Spectral Density (QPSK, Antenna Path 2)

Frequency (MHz)	PSD/3kHz (dBm)	10*log(2) (dB)	Total PSD/3kHz (dBm)	Limit (dBm)	Margin (dB)
904.2	-5.759	3.01	-2.749	8	10.749
915.72	-5.356	3.01	-2.346	8	10.346
925.8	-5.244	3.01	-2.234	8	10.234

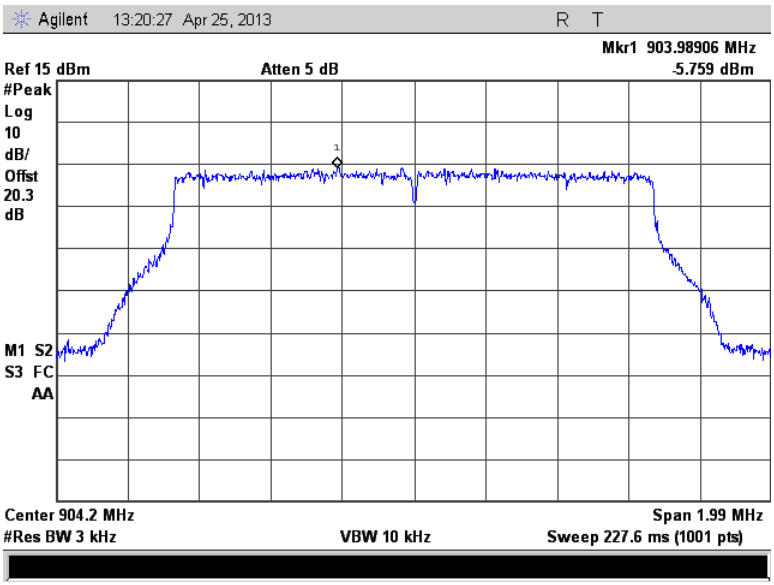

Figure 7.5.2-10: Power Spectral Density - Low Channel (QPSK, Antenna Path 2)

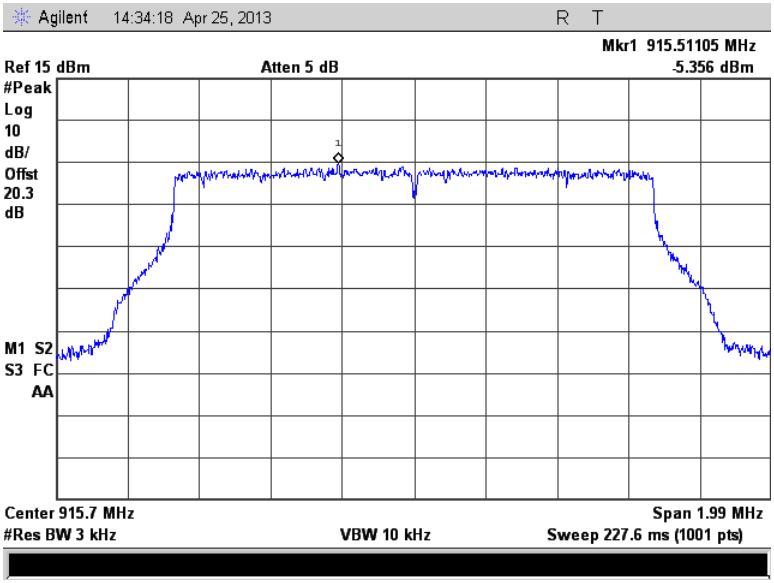

Figure 7.5.2-11: Power Spectral Density - Middle Channel (QPSK, Antenna Path 2)

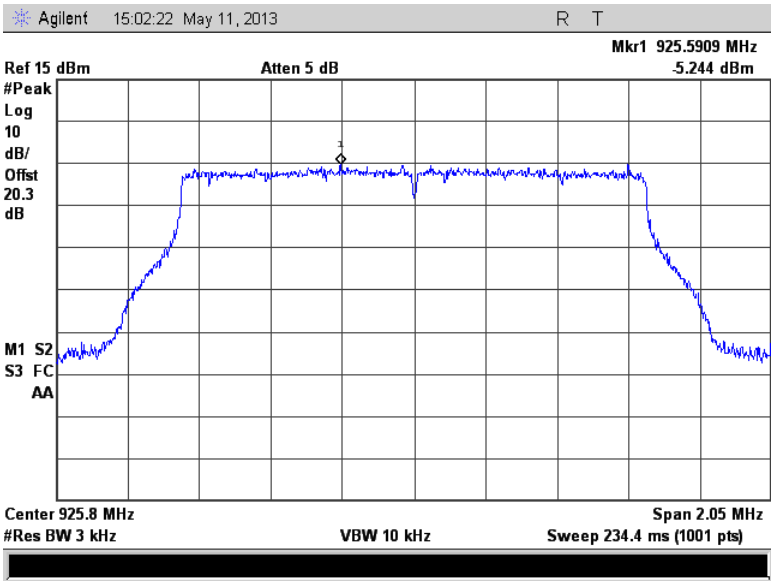

Figure 7.5.2-12: Power Spectral Density – High Channel (QPSK, Antenna Path 2)

Table 7.5.2-5: Power Spectral Density (16-QAM, Antenna Path 1)

Frequency (MHz)	PSD/3kHz (dBm)	10*log(2) (dB)	Total PSD/3kHz (dBm)	Limit (dBm)	Margin (dB)
904.2	-4.777	3.01	-1.767	8	9.767
915.72	-4.872	3.01	-1.862	8	9.862
925.8	-4.451	3.01	-1.441	8	9.441

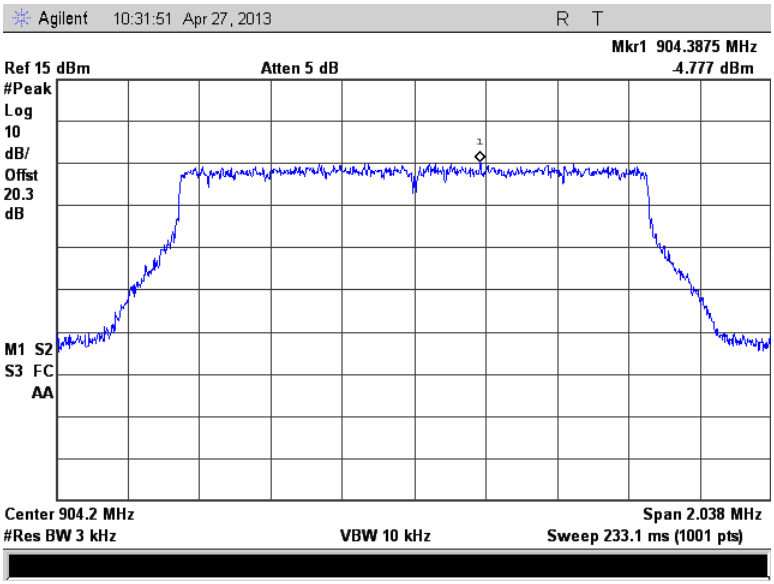

Figure 7.5.2-13: Power Spectral Density - Low Channel (16-QAM, Antenna Path 1)

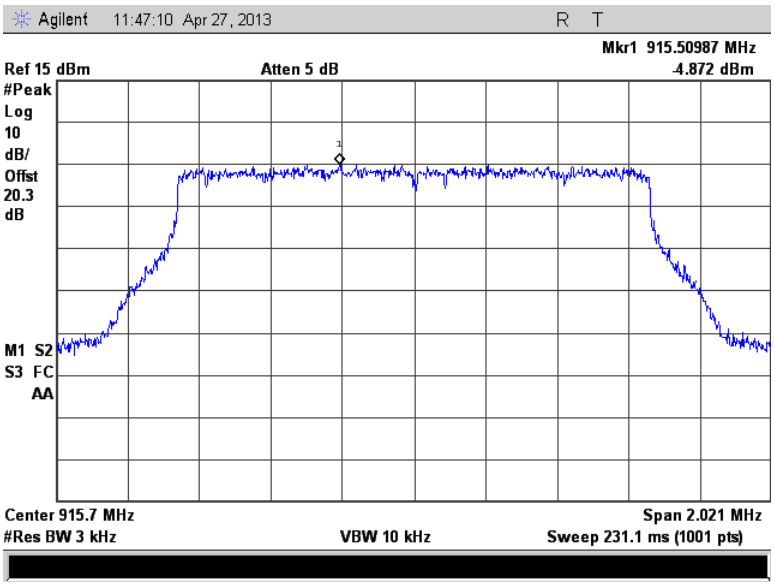

Figure 7.5.2-14: Power Spectral Density - Middle Channel (16-QAM, Antenna Path 1)

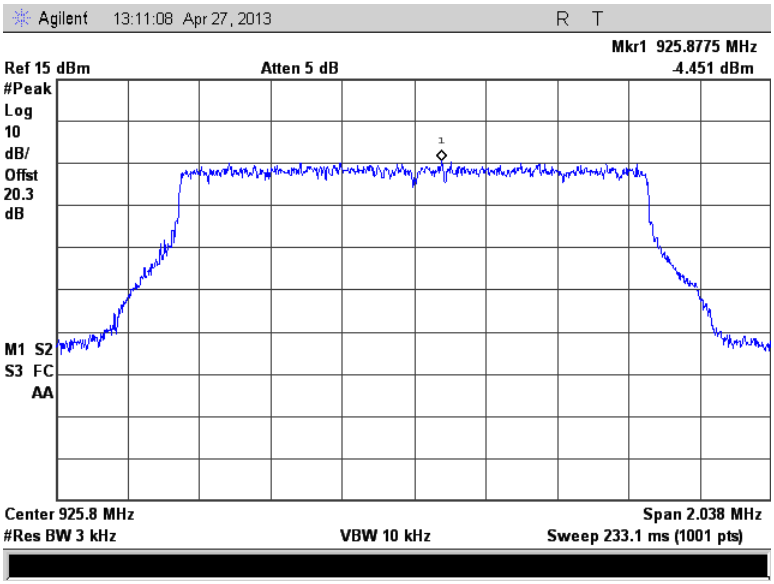

Figure 7.5.2-15: Power Spectral Density – High Channel (16-QAM, Antenna Path 1)

Table 7.5.2-6: Power Spectral Density (16-QAM, Antenna Path 2)

Frequency (MHz)	PSD/3kHz (dBm)	10*log(2) (dB)	Total PSD/3kHz (dBm)	Limit (dBm)	Margin (dB)
904.2	-4.906	3.01	-1.896	8	9.896
915.72	-5.019	3.01	-2.009	8	10.009
925.8	-4.135	3.01	-1.125	8	9.125

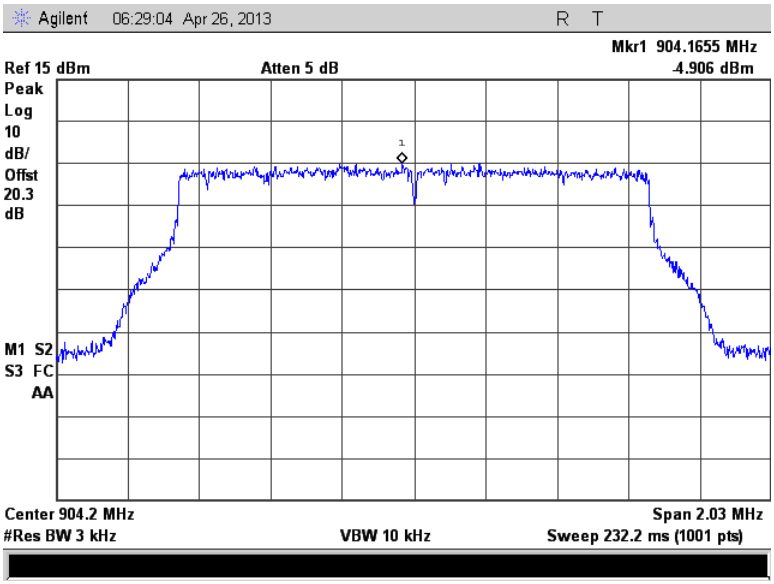

Figure 7.5.2-16: Power Spectral Density - Low Channel (16-QAM, Antenna Path 2)

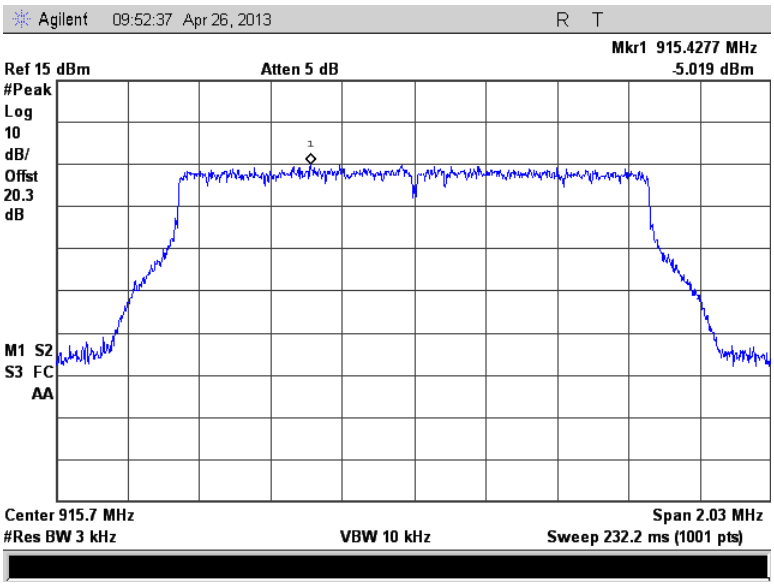

Figure 7.5.2-17: Power Spectral Density - Middle Channel (16-QAM, Antenna Path 2)

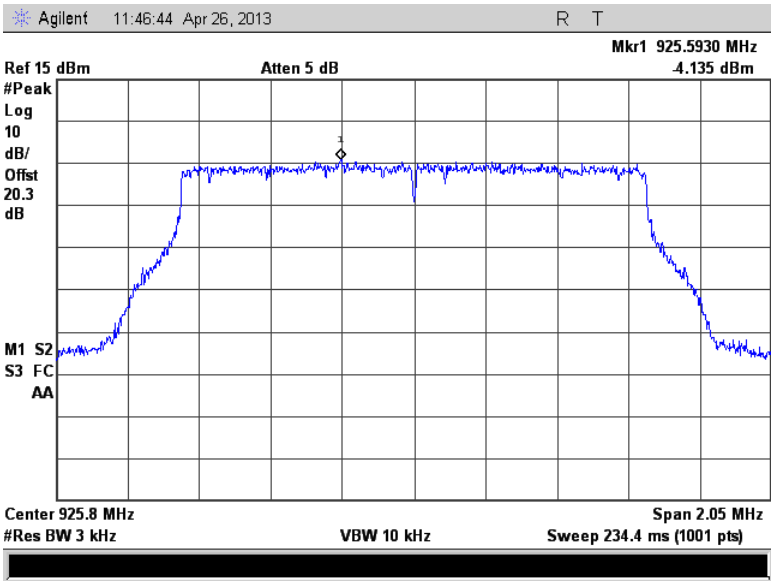

Figure 7.5.2-18: Power Spectral Density – High Channel (16-QAM, Antenna Path 2)

7.6 Power Line Conducted Emissions – FCC: Section 15.207

7.6.1 Measurement Procedure

ANSI C63.4 sections 6 and 7 were the guiding documents for this evaluation. Conducted emissions were performed from 150 kHz to 30 MHz with the spectrum analyzer's resolution bandwidth set to 9 kHz and the video bandwidth set to 30 kHz. The calculation for the conducted emissions is as follows:

Corrected Reading = Analyzer Reading + LISN Loss + Cable Loss
Margin = Applicable Limit - Corrected Reading

7.6.2 Measurement Results

Results are shown below.

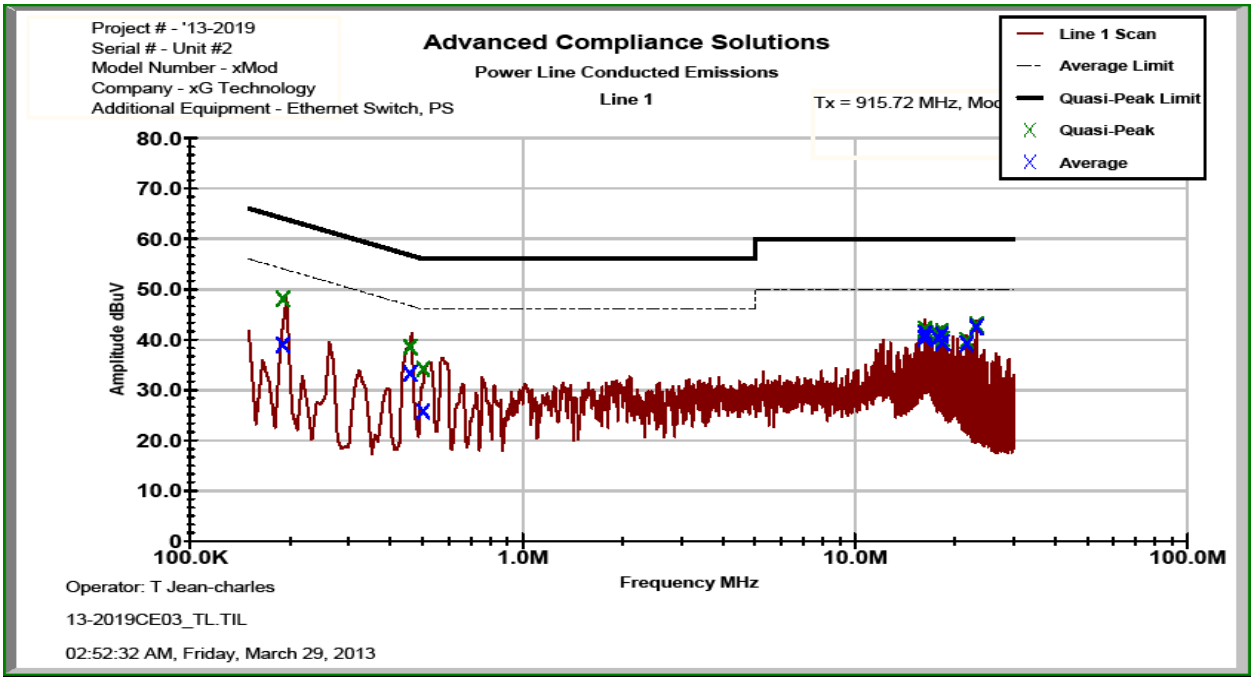

Figure 7.6.2-1: Conducted Emissions Results – Line 1

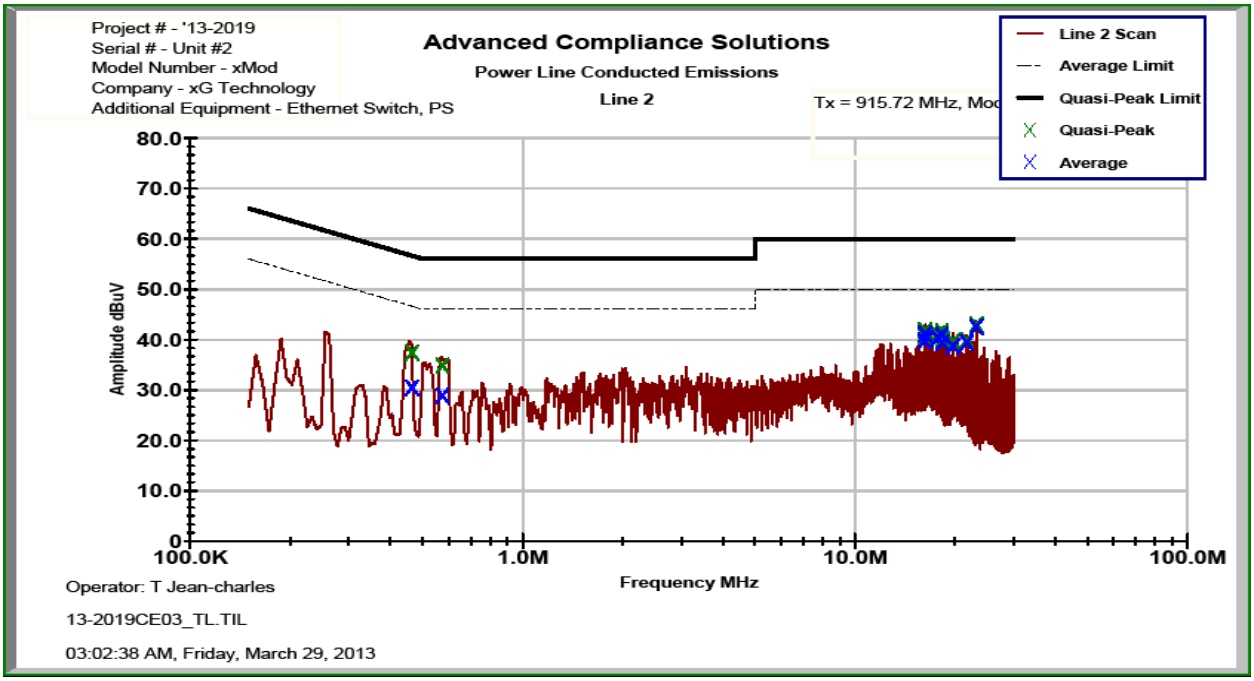

Figure 7.6.2-2: Conducted Emissions Results – Line 2

Table 7.6.2-1: Conducted EMI Results

☒ Line 1 ☒ Line 2 ☐ Line 3
☐ Line 4
☐ To Ground ☒ Floating
☐ Telecom Port _____
☒ dBµV ☐ dBµA

Plot Number: 13-2019CE03
Power Supply Description: 19 VDC

Frequency (MHz)	Uncorrected Reading		Total Correction Factor (dB)	Corrected Level		Limit		Margin (dB)	
	Quasi-Peak	Average		Quasi-Peak	Average	Quasi-Peak	Average	Quasi-Peak	Average
Line 1									
0.189775	46.913	37.801	1.29	48.20	39.09	64.05	54.05	15.8	15.0
0.458275	38.005	32.707	0.56	38.56	33.26	56.72	46.72	18.2	13.5
0.501549	33.662	25.221	0.50	34.17	25.73	56.00	46.00	21.8	20.3
16.1687	39.018	37.99	2.26	41.28	40.25	60.00	50.00	18.7	9.8
16.2308	39.808	38.945	2.26	42.07	41.21	60.00	50.00	17.9	8.8
17.6951	38.733	37.863	2.31	41.04	40.17	60.00	50.00	19.0	9.8
18.245	39.281	38.527	2.33	41.61	40.85	60.00	50.00	18.4	9.1
18.3066	37.716	36.948	2.33	40.05	39.28	60.00	50.00	20.0	10.7
21.6647	36.919	36.291	2.61	39.53	38.90	60.00	50.00	20.5	11.1
23.1308	39.828	39.345	2.66	42.48	42.00	60.00	50.00	17.5	8.0
Line 2									
0.464413	36.864	29.908	0.59	37.46	30.50	56.61	46.61	19.2	16.1
0.57355	34.288	28.359	0.52	34.81	28.88	56.00	46.00	21.2	17.1
16.1678	38.485	37.405	2.26	40.75	39.67	60.00	50.00	19.3	10.3
16.2309	39.489	38.79	2.27	41.75	41.06	60.00	50.00	18.2	8.9
17.6956	38.65	37.896	2.31	40.96	40.21	60.00	50.00	19.0	9.8
18.2452	39.199	38.499	2.33	41.53	40.83	60.00	50.00	18.5	9.2
18.3067	37.55	36.901	2.33	39.88	39.23	60.00	50.00	20.1	10.8
19.7099	37.073	36.188	2.38	39.45	38.56	60.00	50.00	20.6	11.4
21.6656	37.049	36.562	2.60	39.65	39.16	60.00	50.00	20.4	10.8
23.1313	39.842	39.402	2.64	42.49	42.05	60.00	50.00	17.5	8.0

* Note: Results are reported for the EUT configuration leading to the worst case emissions.

8 CONCLUSION

In the opinion of ACS, Inc. the xMod, manufactured by xG Technology, Inc meets the requirements of FCC Part 15 subpart C.

END REPORT