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March 2, 2017

CommScope
250 Apollo Drive
Chelmsford, MA 01824

Dear Kevin Craig,

Enclosed is the EMC Wireless test report for compliance testing of the CommScope, OneCell Outdoor Radio Point, 57 V as tested to the requirements of the FCC Certification rules under Title 47 of the CFR Part 24 Subpart E for Broadband PCS Devices.

Thank you for using the services of MET Laboratories, Inc. If you have any questions regarding these results or if MET can be of further service to you, please contact me.

Sincerely yours,
MET LABORATORIES, INC.

Jennifer Warnell
Documentation Department

Reference: (\CommScope\EMC88882-FCC24 REV. 4)

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Electromagnetic Compatibility Criteria Test Report

for the

**CommScope
OneCell Outdoor Radio Point, 57 V**

**Tested under
FCC Certification Rules
Title 47 of the CFR,
Part 24 Subpart E for Broadband PCS Devices**

MET Report: EMC88882-FCC24 REV. 4

March 2, 2017

Prepared For:

**CommScope
250 Apollo Drive
Chelmsford, MA 01824**

**Prepared By:
MET Laboratories, Inc.
914 W. Patapsco Ave
Baltimore, MD 21230**



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Deepak Giri
Project Engineer, Electromagnetic Compatibility Lab

Jennifer Warnell
Documentation Department

Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of Part 24 Subpart E of the FCC Rules under normal use and maintenance.

Asad Bajwa,
Director, Electromagnetic Compatibility Lab



Report Status Sheet

Revision	Report Date	Reason for Revision
Ø	November 22, 2016	Initial Issue.
1	January 16, 2017	Added 5 MHz and 10 MHz Data
2	January 16, 2017	References to CFR Title 47 Part 22 Subpart H Removed
3	February 24, 2017	Editorial corrections.



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List of Terms and Abbreviations

AC	Alternating Current
ACF	Antenna Correction Factor
Cal	Calibration
<i>d</i>	Measurement Distance
dB	Decibels
dB μ A	Decibels above one microamp
dB μ V	Decibels above one microvolt
dB μ A/m	Decibels above one microamp per meter
dB μ V/m	Decibels above one microvolt per meter
DC	Direct Current
E	Electric Field
DSL	Digital Subscriber Line
ESD	Electrostatic Discharge
EUT	Equipment Under Test
<i>f</i>	Frequency
FCC	Federal Communications Commission
GRP	Ground Reference Plane
H	Magnetic Field
HCP	Horizontal Coupling Plane
Hz	Hertz
IEC	International Electrotechnical Commission
kHz	kilohertz
kPa	kilopascal
kV	kilovolt
LISN	Line Impedance Stabilization Network
MHz	Megahertz
μ H	microhenry
μ	microfarad
μ s	microseconds
NEBS	Network Equipment-Building System
PRF	Pulse Repetition Frequency
RF	Radio Frequency
RMS	Root-Mean-Square
TWT	Traveling Wave Tube
V/m	Volts per meter
VCP	Vertical Coupling Plane



I. Executive Summary



A. Purpose of Test

An EMC evaluation was performed to determine compliance of the CommScope OneCell Outdoor Radio Point, 57 V, with the requirements of Part 24 Subpart E. All references are to the most current version of Title 47 of the Code of Federal Regulations in effect. In accordance with §2.1033, the following data is presented in support of the Certification of the OneCell Outdoor Radio Point, 57 V. CommScope should retain a copy of this document which should be kept on file for at least two years after the manufacturing of the OneCell Outdoor Radio Point, 57 V, has been **permanently** discontinued.

B. Executive Summary

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 24 Subpart E, in accordance with CommScope, purchase order number 60220.

FCC Reference	Description	Compliance
§2.1046; §24.232	RF Power Output (EIRP)	Compliant
§2.1047	Modulation Characteristics	Not Applicable
§2.1049; §24.232(d)	Occupied Bandwidth	Compliant
§2.1051; §24.238	Conducted Spurious Emissions at Antenna Terminals and Band Edge	Compliant
§2.1053; §24.238	Radiated Spurious Emissions from the Cabinet	Compliant
§2.1055, §24.238	Frequency stability	Compliant
§24.323 (d)	Peak to Average Ration	Compliant

Table 1. Executive Summary of EMC Compliance Testing

II. Equipment Configuration

A. Overview

MET Laboratories, Inc. was contracted by CommScope to perform testing on the OneCell Outdoor Radio Point, 57 V, under CommScope's purchase order number 60220.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the CommScope, OneCell Outdoor Radio Point, 57 V.

The results obtained relate only to the item(s) tested.

Model(s) Tested:	OneCell Outdoor Radio Point, 57 V	
Model(s) Covered:	OneCell Outdoor Radio Point, 57 V	
Filing Status:	Original	
EUT Specifications:	Primary Power: 57 VDC	
	FCC ID: QHYRP-A2114	
	Type of Modulations:	QPSK, 16QAM, 64 QAM
	Equipment Code:	PCB
	RF Power Output	Band 2 - 23.7dBm Band 25 – 23.7 dBm
	EUT Frequency Ranges:	Band 2- 1932.5 – 1987.5MHz Band 25- 1932.5 - 1992.5 MHz
Analysis:	The results obtained relate only to the item(s) tested.	
Environmental Test Conditions:	Temperature: 15-35° C	
	Relative Humidity: 30-60%	
	Barometric Pressure: 860-1060 mbar	
Evaluated by:	Deepak Giri	
Date(s):	March 2, 2017	

B. References

CFR 47, Part 24, Subpart E	Federal Communication Commission, Code of Federal Regulations, Title 47, Part 24: Rules and Regulations for Personal Communications Services
ANSI C63.4:20014	Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical And Electronic Equipment in the Range of 9 kHz to 40 GHz
ISO/IEC 17025:2005	General Requirements for the Competence of Testing and Calibration Laboratories
ANSI/TIA-603- – D-2010	Land Mobile FM or PM Communication Equipment Measurement and Performance Standards
KDB 971168 v02r02	Power Measurement License Digital System

C. Test Site

All testing was performed at MET Laboratories, Inc., 914 W. Patapsco Ave, Baltimore, MD 21230. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

Radiated Emissions measurements were performed in a 3 meter semi-anechoic chamber (equivalent to an Open Area Test Site). In accordance with §2.948(a)(3), a complete site description is contained at MET Laboratories.

D. Description of Test Sample

The OneCell Outdoor Radio Point, 57 V, Equipment Under Test (EUT), is an LTE Quad band Radio Access Point. It is used to provide outdoor coverage for the LTE cellular users.

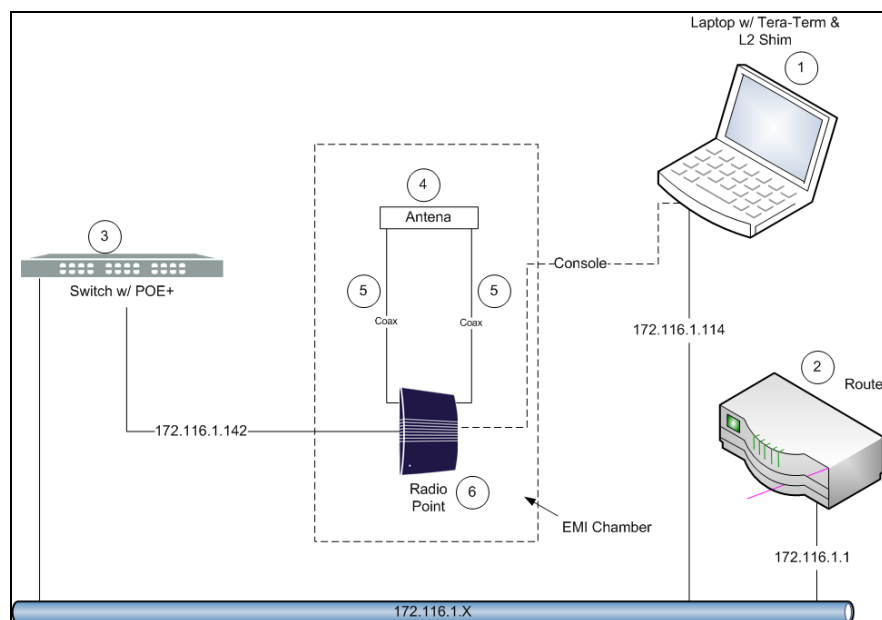


Figure 1. Block Diagram of Equipment Configuration

E. Equipment Configuration

Ref. ID	Name/Description	Model Number	Part Number	Serial Number
6	OneCell® Radio Point	RP-A2114	800250	--
4	Radio Point Antenna	CMZAX-DM20-CPUSEI53	N/A	L351503050194

Table 2. Equipment Configuration

F. Support Equipment

Ref. ID	Name / Description	Manufacturer	Model Number	Customer Supplied Calibration Data
1	Laptop	--	--	--
2	Ethernet Router	Linksys	EA2700	--
3	Ethernet Switch	Linksys	LG308P	--
5	Coax Cable	Huber-Suhner	--	--

Table 3. Support Equipment

G. Ports and Cabling Information

Ref. ID	Port Name on EUT	Cable Description or Reason for No Cable	Qty.	Max Length	Shielded? (Y/N)	Termination Box ID & Port Name
1	Ethernet/Power	Cat5 cable	1	10	N	Port 1 Ethernet Switch
2	Antenna port J1	Coax	1	--	Y	Antenna
3	Antenna port J2	Coax	1	--	Y	Antenna
4	Console	Signal	1	--	N	--

Table 4. Ports and Cabling Information

H. Mode of Operation

The EUT will be configured to operate in a specific band of interest using Tera Term Scripts and transmit test models supplied by the chip vendor per the 3GPP standard TS 36.141 Release 10.10. The test models will cover all of the test modes, 5, 10, 15 & 20 MHz bandwidth as well as the three modulation types, QPSK, 16QAM & 64 QAM. The EUT transmitter will provide a continuous transmit signal without manual intervention on it has been configured. For conducted testing the EUT will be controlled by a serial interface. For radiated test the EUT will be controlled by the Ethernet. Interface.

The EUT will require a reboot whenever band or bandwidth is changed.

Supported Frequency Bands and Bandwidths						
Frequency Band	Duplex	Uplink RX Frequency (MHz)	Downlink TX Frequency (MHz)	MAX Bandwidth (MHz)	MAX Output Power (dBm)	FCC PART
10	FDD	1710-1770	2110-2170	20	25	27
25	FDD	1850-1915	1930-1995	20	24	24
12	FDD	699-716	729-746	15	27	27
2	FDD	1850-1910	1930-1990	20	24	24
4	FDD	1710-1755	2110-2155	20	25	27
13	FDD	777-787	746-756	10	26	27
17	FDD	704-716	734-746	10	26	27

I. Method of Monitoring EUT Operation

The frequency of highest disturbance, with respect to the limit, was found by investigating disturbances at a number of significant frequencies. This provides confidence that the probable frequency of maximum disturbance has been found and that the associated cable, EUT arrangement and mode of operation has been identified.

J. Modifications

a) Modifications to EUT

No modifications were made to the EUT.

b) Modifications to Test Standard

No modifications were made to the test standard.

K. Disposition of EUT

The test sample including all support equipment submitted to the Electro-Magnetic Compatibility Lab for testing was returned to CommScope upon completion of testing.



III. Electromagnetic Compatibility Criteria for Intentional Radiators



Electromagnetic Compatibility Criteria for Intentional Radiators

§ 2.1046 RF Power Output

Test Requirements: § 2.1046 Measurements required: RF power output:

§ 2.1046 (a) For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in § 2.1033(c)(8). The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.

§ 2.1046 (b) For single sideband, independent sideband, and single channel, controlled carrier radiotelephone transmitters, the procedure specified in paragraph (a) of this section shall be employed and, in addition, the transmitter shall be modulated during the test as specified and as applicable in § 2.1046 (b) (1-5). In all tests, the input level of the modulating signal shall be such as to develop rated peak envelope power or carrier power, as appropriate, for the transmitter.

§ 2.1046 (c) For measurements conducted pursuant to paragraphs (a) and (b) of this section, all calculations and methods used by the applicant for determining carrier power or peak envelope power, as appropriate, on the basis of measured power in the radio frequency load attached to the transmitter output terminals shall be shown. Under the test conditions specified, no components of the emission spectrum shall exceed the limits specified in the applicable rule parts as necessary for meeting occupied bandwidth or emission limitations.

§ 24.232 Power and antenna height limits.

§ 24.232 (a): (1) Base stations with an emission bandwidth of 1 MHz or less are limited to 1640 watts equivalent isotropically radiated power (EIRP) with an antenna height up to 300 meters HAAT, except as described in paragraph (b) below.

(2) Base stations with an emission bandwidth greater than 1 MHz are limited to 1640 watts/MHz equivalent isotropically radiated power (EIRP) with an antenna height up to 300 meters HAAT.

Test Procedures: As required by 47 CFR 2.1046, RF power output measurements were made at the RF output terminals using an attenuator and spectrum analyzer or power meter. The spectrum analyzer was used in accordance with the licensed measurement guidance procedures. The “Channel Power” measurement feature of the spectrum analyzer was used.

Test Results: The EUT complies with the requirements of this section.

Test Engineer(s): Deepak Giri

Test Date(s): 10/27/16, 10/29/16, 12/09/16, and 12/13/16



Band 2 Frequency Range 1930-1990 MHz downlink															
Band	Freq.	BW	Modulation	Max. RMS Power Port 1 dBm	Max. RMS Power Port 2 dBm	Peak Power Port 1 dBm	Peak Power Port 2 dBm	PAPR Port 1 dB (limit: 13dB)	PAPR Port 2 dB (limit: 13dB)	Total Max. RMS Output Power	Directional Gain dBi	Limit dBm	EIRP dBm	Margin dB	Result
2	1932.5	5	QPSK	19.27	19.59	25.01	25.63	5.74	6.04	22.5	12.3	62.1	34.8	-27.3	Pass
2	1932.5	5	16QAM	19.28	19.67	25.22	25.9	5.94	6.23	22.5	12.3	62.1	34.8	-27.3	Pass
2	1932.5	5	64QAM	19.36	19.61	26.15	26.07	6.79	6.46	22.5	12.3	62.1	34.8	-27.3	Pass
2	1960	5	QPSK	19.86	19.06	24.8	24.83	4.94	5.77	22.5	12.3	62.1	34.8	-27.3	Pass
2	1960	5	16QAM	19.84	19.02	24.83	24.82	4.99	5.8	22.5	12.3	62.1	34.8	-27.3	Pass
2	1960	5	64QAM	19.8	19.12	24.81	24.83	5.01	5.71	23.5	12.3	62.1	35.8	-26.3	Pass
2	1987.5	5	QPSK	19.72	19.77	25.51	25.44	5.79	5.67	22.8	12.3	62.1	35.1	-27	Pass
2	1987.5	5	16QAM	19.74	19.55	25.47	25.45	5.73	5.9	22.7	12.3	62.1	35	-27.1	Pass
2	1987.5	5	64QAM	19.66	19.65	25.45	25.48	5.79	5.83	22.7	12.3	62.1	35	-27.1	Pass
2	1935	10	QPSK	20.02	19.94	26.28	26.78	6.26	6.84	23.5	12.3	62.1	35.8	-26.3	Pass
2	1935	10	16QAM	19.41	20.29	26.58	26.29	7.17	6	22.9	12.3	62.1	35.2	-26.9	Pass
2	1935	10	64QAM	20.18	19.82	26.64	26.88	6.46	7.06	23.1	12.3	62.1	35.4	-26.7	Pass
2	1960	10	QPSK	20.45	19.49	25.94	26.29	5.49	6.8	23.1	12.3	62.1	35.4	-26.7	Pass
2	1960	10	16QAM	19.76	20.19	25.67	25.55	5.91	5.36	23	12.3	62.1	35.3	-26.8	Pass
2	1960	10	64QAM	20.67	20.48	25.8	26.3	5.13	5.82	23.6	12.3	62.1	35.9	-26.2	Pass
2	1985	10	QPSK	20.54	19.09	26.36	25.42	5.82	6.33	22.9	12.3	62.1	35.2	-26.9	Pass
2	1985	10	16QAM	19.6	19.98	25.56	25.27	5.96	5.29	22.9	12.3	62.1	35.2	-26.9	Pass
2	1985	10	64QAM	20.04	19.2	25.27	25.78	5.23	6.58	22.7	12.3	62.1	35	-27.1	Pass

Table 5. RF Output Power, Test Results, Band 2, 5 and 10 MHz



Band 2 Frequency 1930-1990 MHz downlink															
Band	Freq.	BW	Modulation	Max. RMS Power Port 1 dBm	Max. RMS Power Port 2 dBm	Peak Power Port 1 dBm	Peak Power Port 2 dBm	PAPR Port 1 dB (limit: 13dB)	PAPR Port 2 dB (limit: 13dB)	Total Max. RMS Output Power	Directional Gain dBi	Limit dBm	EIRP dBm	Margin dB	Result
2	1937.5	15	QPSK	20.89	19.97	27.18	26.93	6.29	6.96	23.5	12.3	62.1	35.8	-26.3	Pass
2	1937.5	15	16QAM	20.39	20.38	26.51	27	6.12	6.62	23.4	12.3	62.1	35.7	-26.4	Pass
2	1937.5	15	64QAM	19.85	20.34	26.74	26.72	6.89	6.38	23.2	12.3	62.1	35.5	-26.6	Pass
2	1960	15	QPSK	19.88	19.66	25.99	25.96	6.11	6.3	22.8	12.3	62.1	35.1	-27	Pass
2	1960	15	16QAM	19.95	19.84	26.34	26.48	6.39	6.64	23	12.3	62.1	35.3	-26.8	Pass
2	1960	15	64QAM	19.37	20.34	26.5	26.41	7.13	6.07	23.5	12.3	62.1	35.8	-26.3	Pass
2	1982.5	15	QPSK	20.57	20.12	26.01	27.21	5.44	7.09	23.4	12.3	62.1	35.7	-26.4	Pass
2	1982.5	15	16QAM	19.75	20.13	26.46	26.68	6.71	6.55	23	12.3	62.1	35.3	-26.8	Pass
2	1982.5	15	64QAM	20.4	20.12	26.68	26.87	6.28	6.75	23.3	12.3	62.1	35.6	-26.5	Pass
2	1940	20	QPSK	20.48	20.54	26.6	26.27	6.12	5.73	23.5	12.3	62.1	35.8	-26.3	Pass
2	1940	20	16QAM	19.82	20.06	26.71	26.72	6.89	6.66	23	12.3	62.1	35.3	-26.8	Pass
2	1940	20	64QAM	20.56	20.25	26.68	26.54	6.12	6.29	23.5	12.3	62.1	35.8	-26.3	Pass
2	1960	20	QPSK	20.02	19.33	26.56	26	6.54	6.67	22.7	12.3	62.1	35	-27.1	Pass
2	1960	20	16QAM	20.09	19.01	25.96	26.15	5.87	7.14	22.6	12.3	62.1	34.9	-27.2	Pass
2	1960	20	64QAM	19.45	19.83	26.05	26.29	6.6	6.46	22.7	12.3	62.1	35	-27.1	Pass
2	1980	20	QPSK	20.47	19.84	26.73	26.01	6.26	6.17	23.2	12.3	62.1	35.5	-26.6	Pass
2	1980	20	16QAM	19.94	20.08	26.63	26.49	6.69	6.41	23.1	12.3	62.1	35.4	-26.7	Pass
2	1980	20	64QAM	20.03	20.17	26.4	26.54	6.37	6.37	23.2	12.3	62.1	35.5	-26.6	Pass

Table 6. RF Output Power, Test Results, Band 2, 15 and 20 MHz



Band 25 Frequency Range 1930-1995 MHz downlink															
Band	Freq.	BW	Modulation	Max. RMS Power Port 1 dBm	Max. RMS Power Port 2 dBm	Peak Power Port 1 dBm	Peak Power Port 2 dBm	PAPR Port 1 dB (limit: 13dB)	PAPR Port 2 dB (limit: 13dB)	Total Max. RMS Output Power	Directional Gain dBi	Limit dBm	EIRP dBm	Margin dB	Result
25	1932.5	5	QPSK	19.35	19.62	25.79	25.17	6.44	5.55	22.5	12.3	62.1	34.8	-27.3	Pass
25	1932.5	5	16QAM	19.31	19.58	25.94	25.37	6.63	5.79	22.5	12.3	62.1	34.8	-27.3	Pass
25	1932.5	5	64QAM	19.33	19.62	26.25	25.42	6.92	5.8	22.5	12.3	62.1	34.8	-27.3	Pass
25	1962.5	5	QPSK	19.18	19.32	24.6	24.3	5.42	4.98	22.3	12.3	62.1	34.6	-27.5	Pass
25	1962.5	5	16QAM	19.16	19.04	25.5	24.93	6.34	5.89	22.2	12.3	62.1	34.5	-27.6	Pass
25	1962.5	5	64QAM	19.14	19.39	25.8	25.12	6.66	5.73	22.3	12.3	62.1	34.6	-27.5	Pass
25	1992.5	5	QPSK	20.22	19.83	25.51	25.74	5.29	5.91	23.1	12.3	62.1	35.4	-26.7	Pass
25	1992.5	5	16QAM	20.22	20.11	24.94	25.74	4.72	5.63	23.2	12.3	62.1	35.5	-26.6	Pass
25	1992.5	5	64QAM	19.92	20.89	25.72	25.75	5.8	4.86	23.5	12.3	62.1	35.8	-26.3	Pass
25	1935	10	QPSK	20.45	19.98	25.34	25.9	4.89	5.92	23.3	12.3	62.1	35.6	-26.5	Pass
25	1935	10	16QAM	20.28	19.76	26.48	26.46	6.2	6.7	23.1	12.3	62.1	35.4	-26.7	Pass
25	1935	10	64QAM	20.76	20	26.88	26.23	6.12	6.23	23.5	12.3	62.1	35.8	-26.3	Pass
25	1962.5	10	QPSK	19.98	20.13	25.71	25.89	5.73	5.76	23.1	12.3	62.1	35.4	-26.7	Pass
25	1962.5	10	16QAM	19.63	19.87	26.28	26.05	6.65	6.18	22.8	12.3	62.1	35.1	-27	Pass
25	1962.5	10	64QAM	19.77	20.12	26.25	26.32	6.48	6.2	23	12.3	62.1	35.3	-26.8	Pass
25	1990	10	QPSK	19.99	20.04	25.93	25.83	5.94	5.79	23.1	12.3	62.1	35.4	-26.7	Pass
25	1990	10	16QAM	20.68	20.39	25.87	26.18	5.19	5.79	23.6	12.3	62.1	35.9	-26.2	Pass
25	1990	10	64QAM	20.44	20.54	25.65	26.1	5.21	5.56	23.6	12.3	62.1	35.9	-26.2	Pass

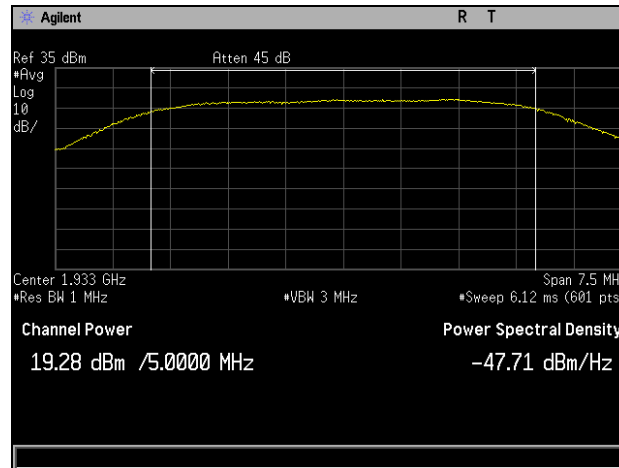
Table 7. RF Output Power, Test Results, Band 25, 5 and 10 MHz



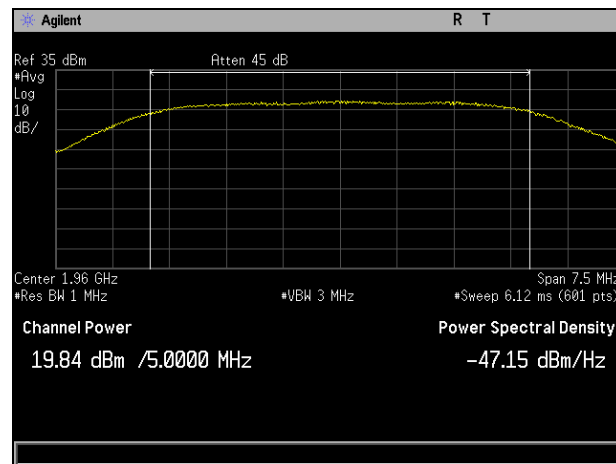
Band 25 Frequency Range 1930-1995 MHz downlink															
Band	Freq.	BW	Modulation	Max. RMS Power Port 1 dBm	Max. RMS Power Port 2 dBm	Peak Power Port 1 dBm	Peak Power Port 2 dBm	PAPR Port 1 dB (limit: 13dB)	PAPR Port 2 dB (limit: 13dB)	Total Max. RMS Output Power	Directional Gain dBi	Limit dBm	EIRP dBm	Margin dB	Result
25	1937.5	15	QPSK	20.33	20.65	23.95	23.58	3.62	2.93	23.6	12.3	62.1	35.9	-26.2	Pass
25	1937.5	15	16QAM	20.7	20.44	24.11	23.86	3.41	3.42	23.6	12.3	62.1	35.9	-26.2	Pass
25	1937.5	15	64QAM	20.16	20.52	23.63	23.39	3.47	2.87	23.4	12.3	62.1	35.7	-26.4	Pass
25	1962.5	15	QPSK	19.54	19.09	22.52	22.89	2.98	3.8	22.4	12.3	62.1	34.7	-27.4	Pass
25	1962.5	15	16QAM	19.73	19.37	22.57	22.4	2.84	3.03	22.6	12.3	62.1	34.9	-27.2	Pass
25	1962.5	15	64QAM	19.3	19.68	22.67	22.71	3.37	3.03	22.6	12.3	62.1	34.9	-27.2	Pass
25	1987.5	15	QPSK	19.86	19.58	23.42	23.64	3.56	4.06	22.8	12.3	62.1	35.1	-27	Pass
25	1987.5	15	16QAM	20.22	20.13	23.52	23.56	3.3	3.43	23.2	12.3	62.1	35.5	-26.6	Pass
25	1987.5	15	64QAM	19.97	19.92	23.46	23.39	3.49	3.47	23	12.3	62.1	35.3	-26.8	Pass
25	1940	20	QPSK	20.15	20.04	23.37	23.95	3.22	3.91	23.2	12.3	62.1	35.5	-26.6	Pass
25	1940	20	16QAM	20.21	19.93	23.58	23.53	3.37	3.6	23.1	12.3	62.1	35.4	-26.7	Pass
25	1940	20	64QAM	20.07	19.98	23.72	23.55	3.65	3.57	23.1	12.3	62.1	35.4	-26.7	Pass
25	1962.5	20	QPSK	20.28	20.12	23.35	22.92	3.07	2.8	23.3	12.3	62.1	35.6	-26.5	Pass
25	1962.5	20	16QAM	20.17	20.07	23.68	23.47	3.51	3.4	23.2	12.3	62.1	35.5	-26.6	Pass
25	1962.5	20	64QAM	20.35	20.06	23.04	23.49	2.69	3.43	23.3	12.3	62.1	35.6	-26.5	Pass
25	1985	20	QPSK	20.17	20.52	23.78	23.48	3.61	2.96	23.4	12.3	62.1	35.7	-26.4	Pass
25	1985	20	16QAM	20.42	20.85	23.62	23.78	3.2	2.93	23.7	12.3	62.1	36	-26.1	Pass
25	1985	20	64QAM	20.37	20.27	23.83	23.75	3.46	3.48	23.4	12.3	62.1	35.7	-26.4	Pass

Table 8. RF Output Power, Test Results, Band 25, 15 and 20 MHz

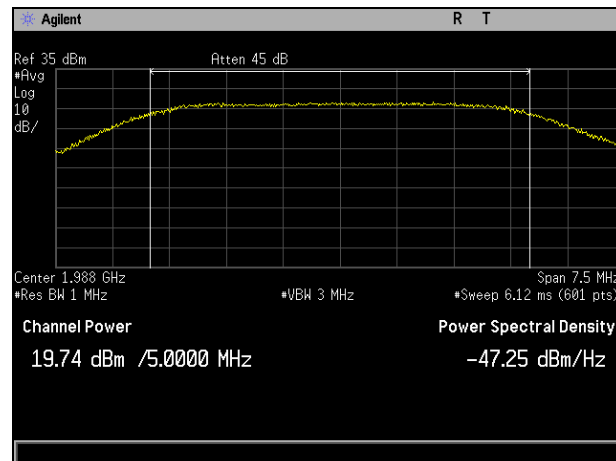
RF Power Output, Band 2, 5 MHz Channel



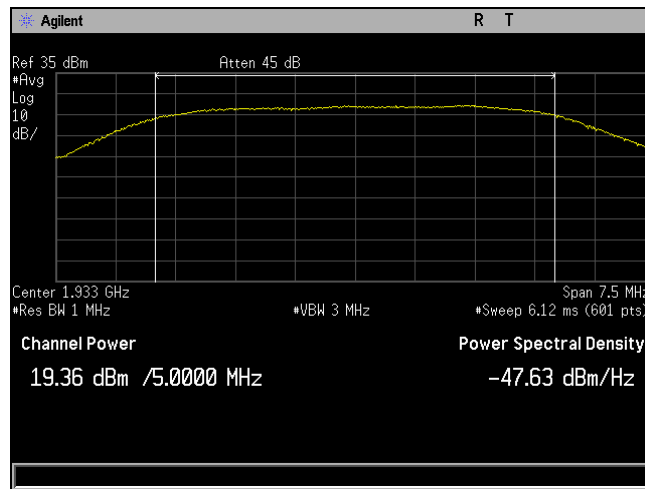
Plot 1. RF Output Power, QAM-16, 1933 MHz, Low Channel, Band 2, Port 1, Average



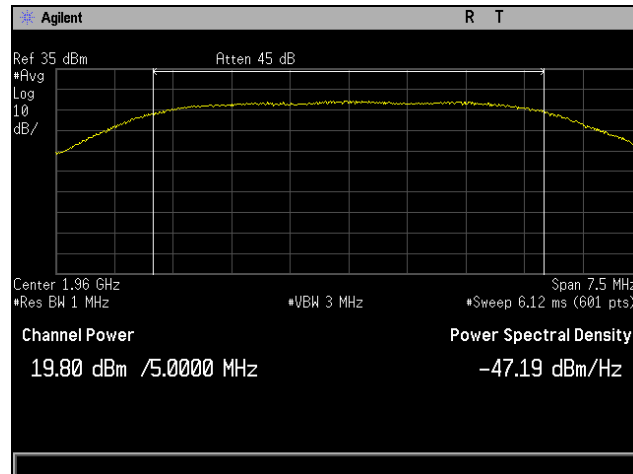
Plot 2. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Band 2, Port 1, Average



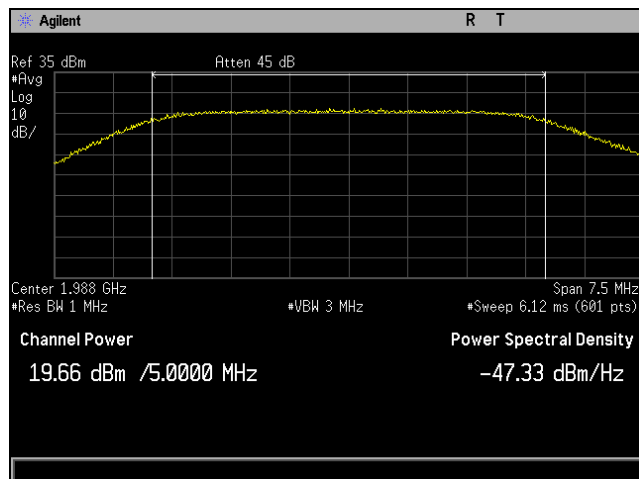
Plot 3. RF Output Power, QAM-16, 1988 MHz, High Channel, Band 2, Port 1, Average



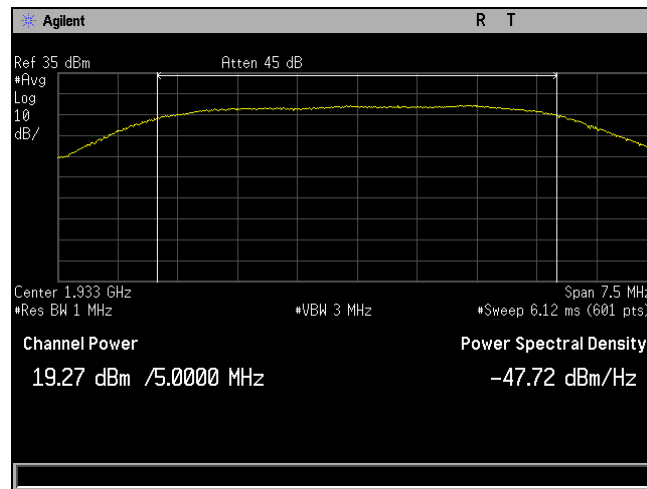
Plot 4. RF Output Power, QAM-64, 1933 MHz, Low Channel, Band 2, Port 1, Average



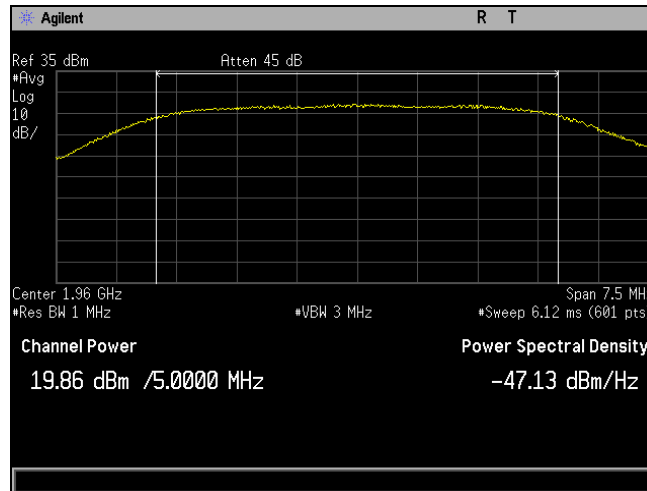
Plot 5. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Band 2, Port 1, Average



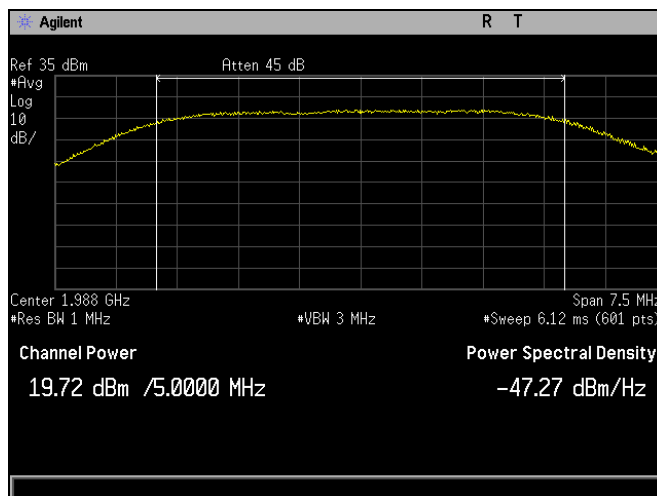
Plot 6. RF Output Power, QAM-64, 1988 MHz, High Channel, Band 2, Port 1, Average



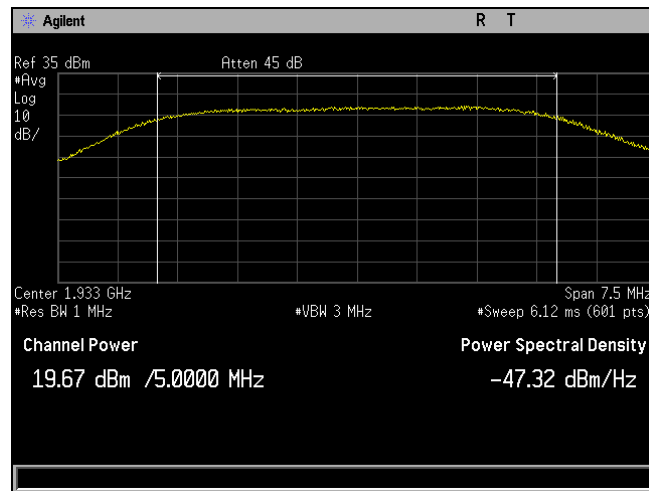
Plot 7. RF Output Power, QPSK, 1933 MHz, Low Channel, Band 2, Port 1, Average



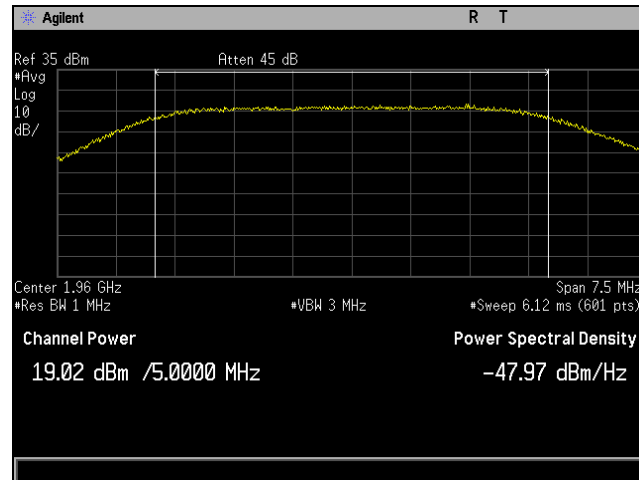
Plot 8. RF Output Power, QPSK, 1960 MHz, Mid Channel, Band 2, Port 1, Average



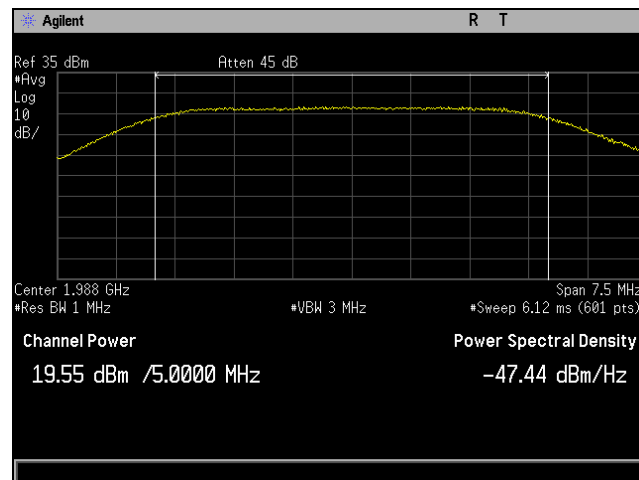
Plot 9. RF Output Power, QPSK, 1988 MHz, High Channel, Band 2, Port 1, Average



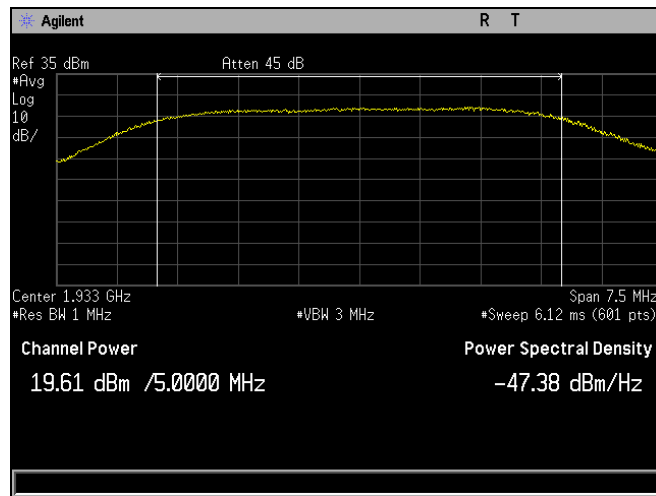
Plot 10. RF Output Power, QAM-16, 1933 MHz, Low Channel, Band 2, Port 2, Average



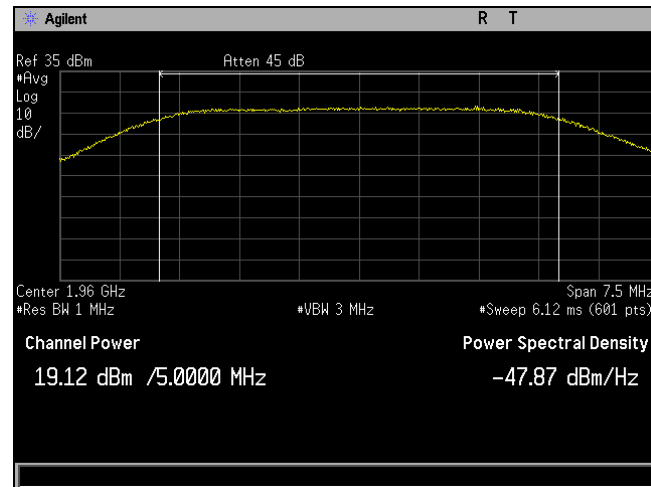
Plot 11. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Band 2, Port 2, Average



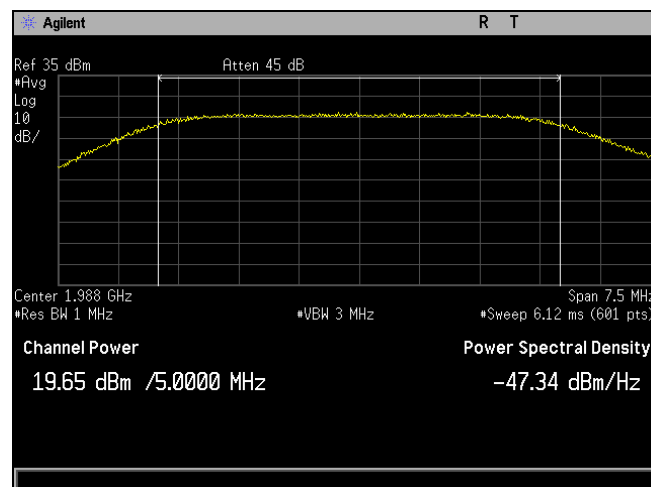
Plot 12. RF Output Power, QAM-16, 1988 MHz, High Channel, Band 2, Port 2, Average



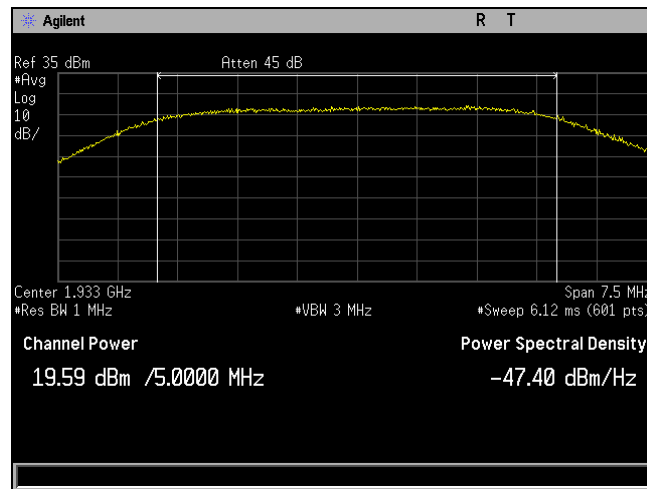
Plot 13. RF Output Power, QAM-64, 1933 MHz, Low Channel, Band 2, Port 2, Average



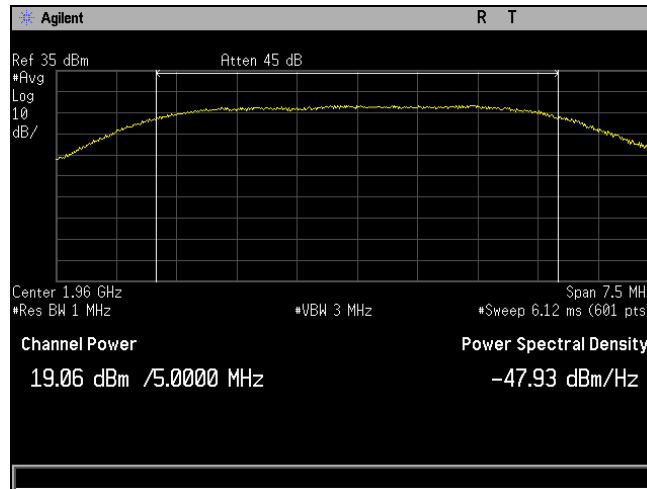
Plot 14. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Band 2, Port 2, Average



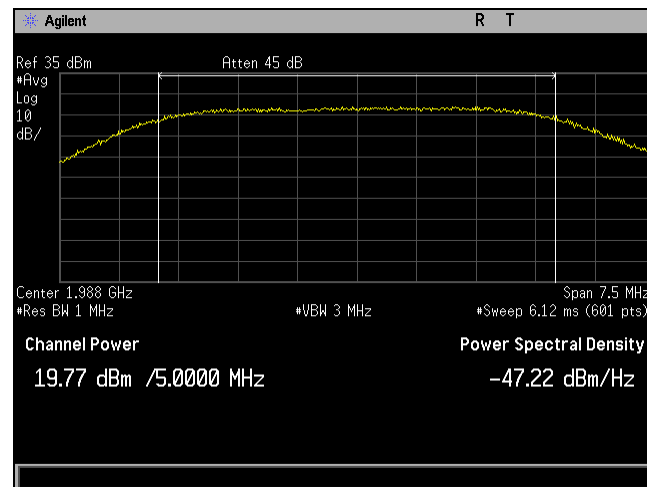
Plot 15. RF Output Power, QAM-64, 1988 MHz, High Channel, Band 2, Port 2, Average



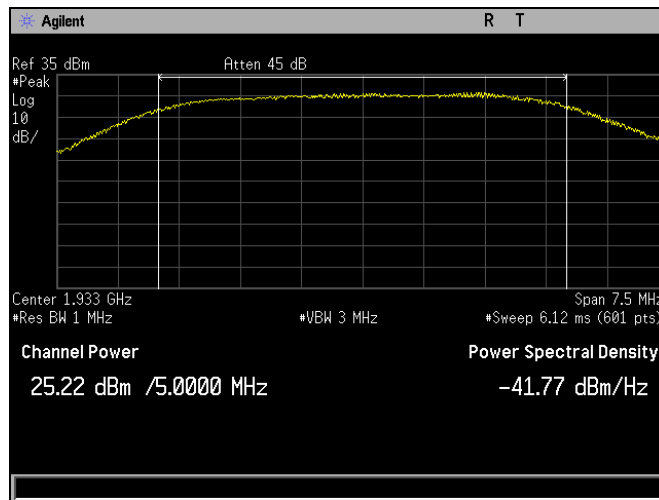
Plot 16. RF Output Power, QPSK, 1933 MHz, Low Channel, Band 2, Port 2, Average



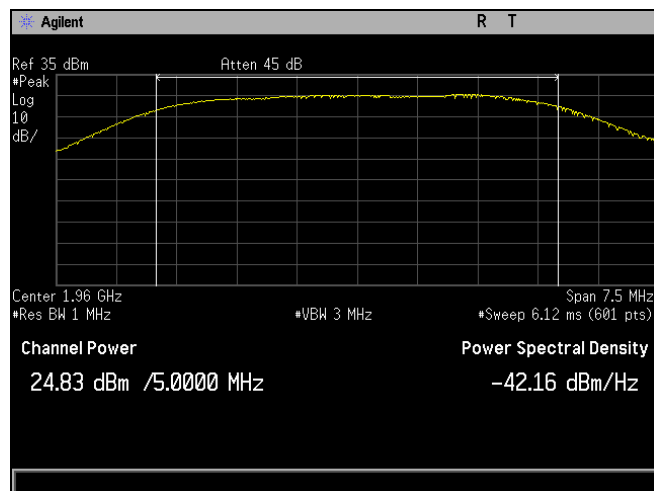
Plot 17. RF Output Power, QPSK, 1960 MHz, Mid Channel, Band 2, Port 2, Average



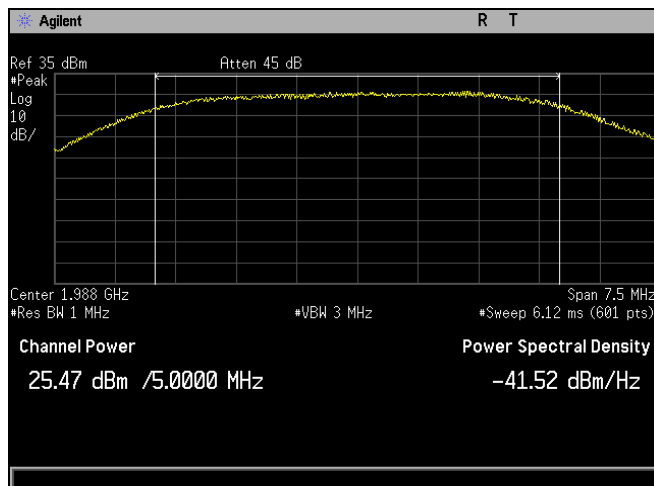
Plot 18. RF Output Power, QPSK, 1988 MHz, High Channel, Band 2, Port 2, Average



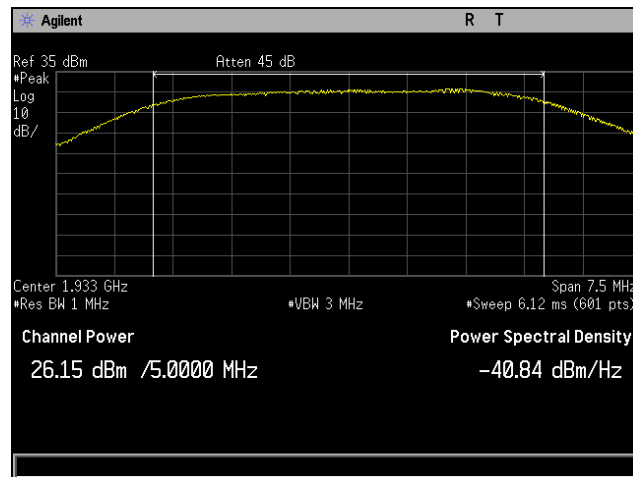
Plot 19. RF Output Power, QAM-16, 1933 MHz, Low Channel, Band 2, Port 1, Peak



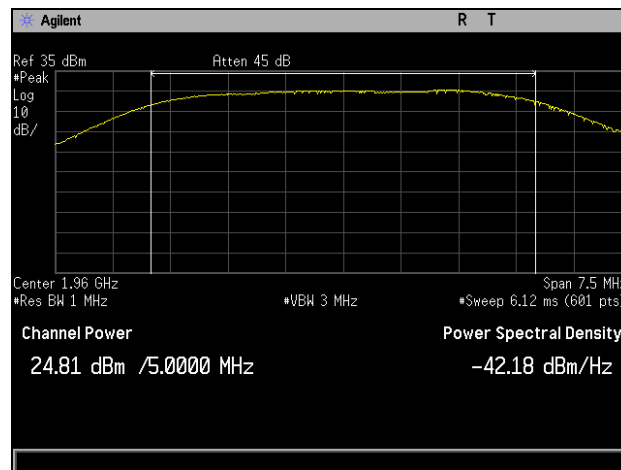
Plot 20. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Band 2, Port 1, Peak



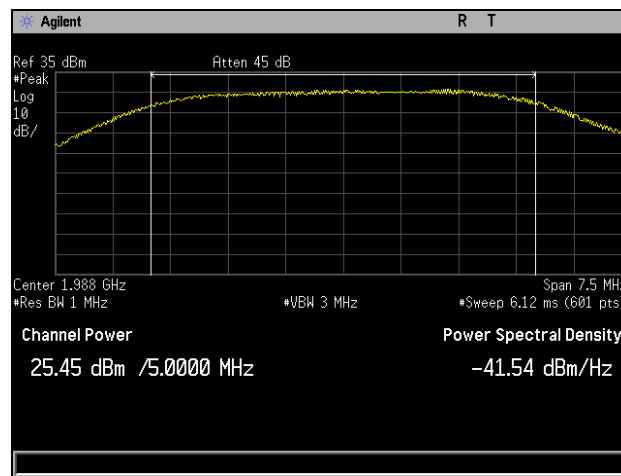
Plot 21. RF Output Power, QAM-16, 1988 MHz, High Channel, Band 2, Port 1, Peak



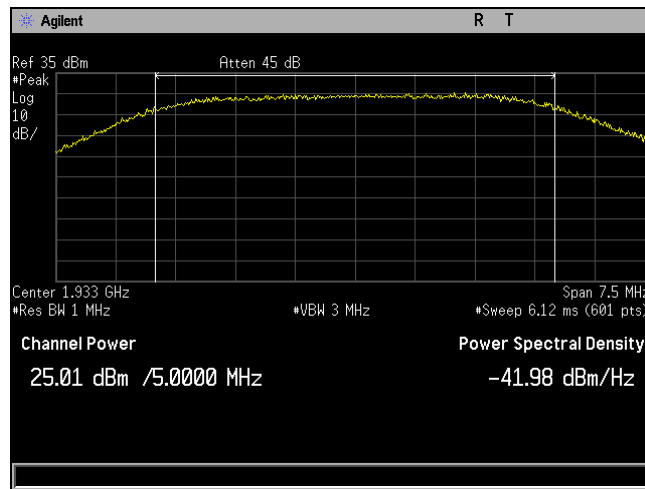
Plot 22. RF Output Power, QAM-64, 1933 MHz, Low Channel, Band 2, Port 1, Peak



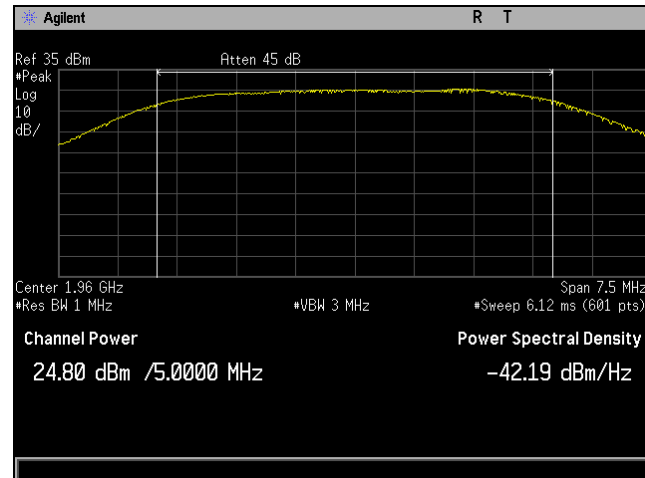
Plot 23. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Band 2, Port 1, Peak



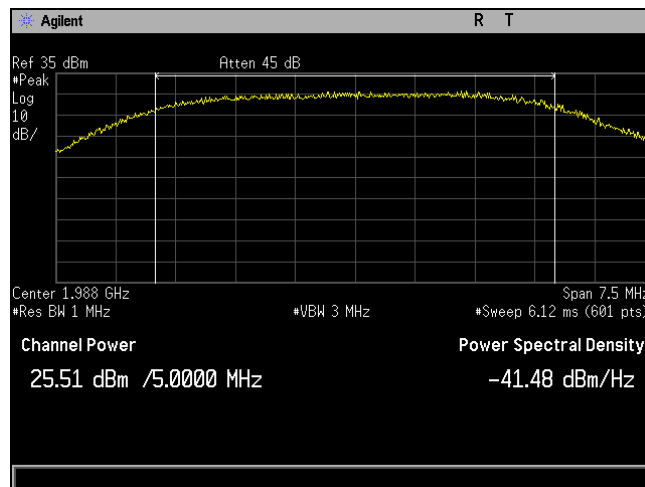
Plot 24. RF Output Power, QAM-64, 1988 MHz, High Channel, Band 2, Port 1, Peak



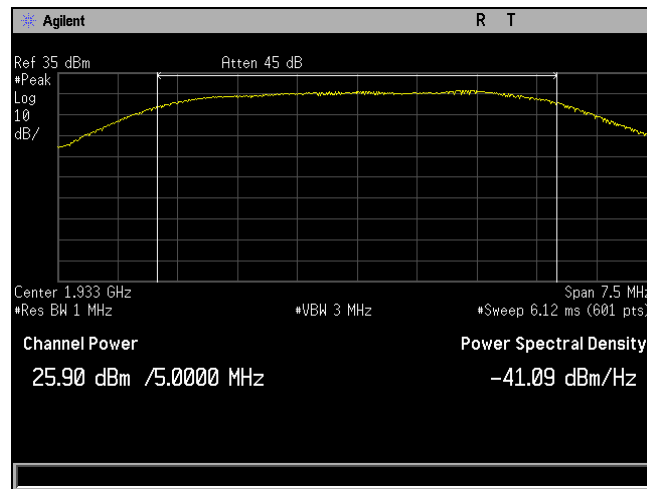
Plot 25. RF Output Power, QPSK, 1933 MHz, Low Channel, Band 2, Port 1, Peak



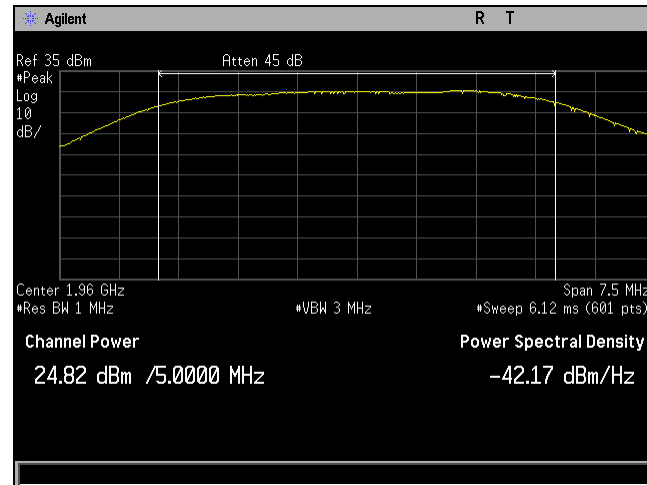
Plot 26. RF Output Power, QPSK, 1960 MHz, Mid Channel, Band 2, Port 1, Peak



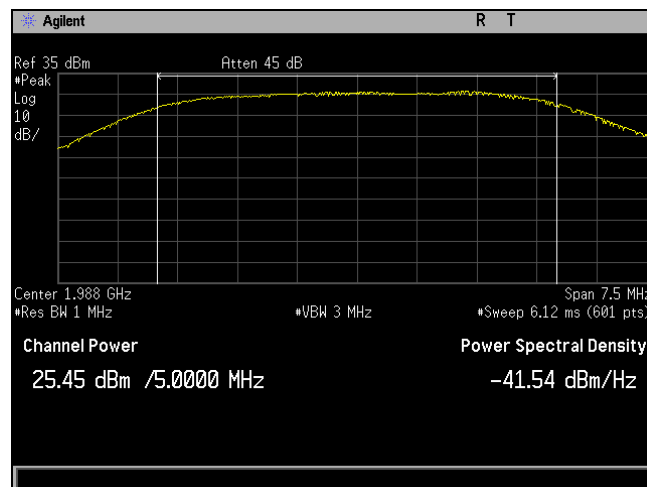
Plot 27. RF Output Power, QPSK, 1988 MHz, High Channel, Band 2, Port 1, Peak



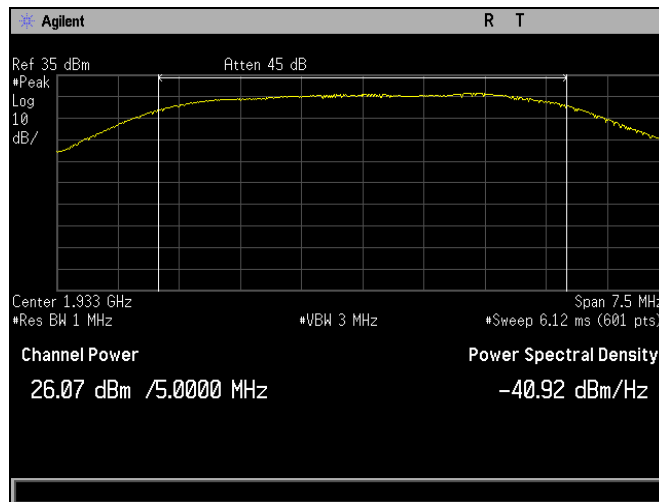
Plot 28. RF Output Power, QAM-16, 1933 MHz, Low Channel, Band 2, Port 2, Peak



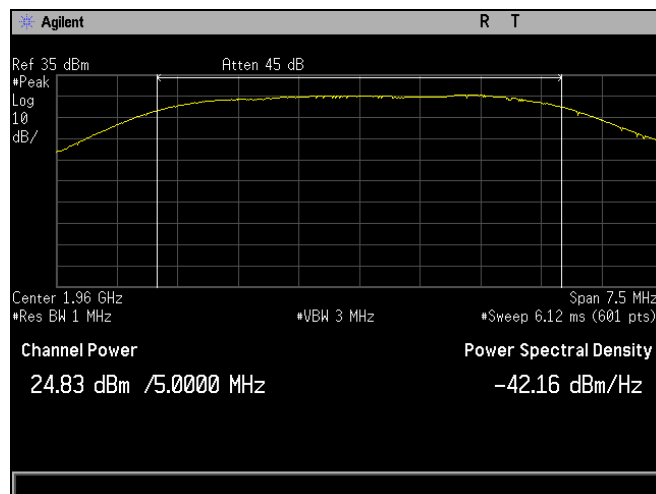
Plot 29. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Band 2, Port 2, Peak



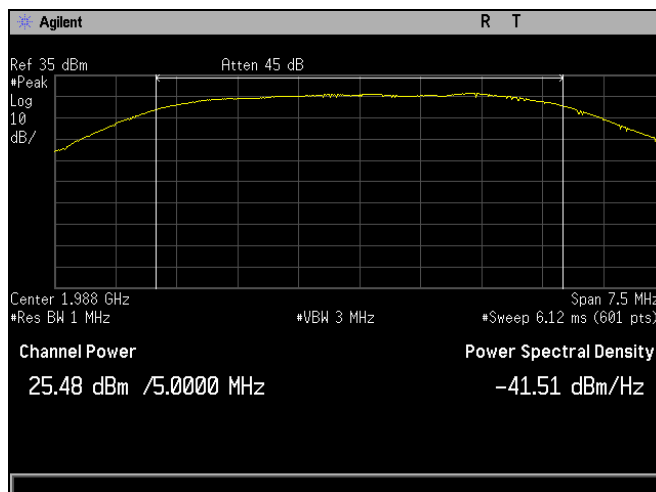
Plot 30. RF Output Power, QAM-16, 1988 MHz, High Channel, Band 2, Port 2, Peak



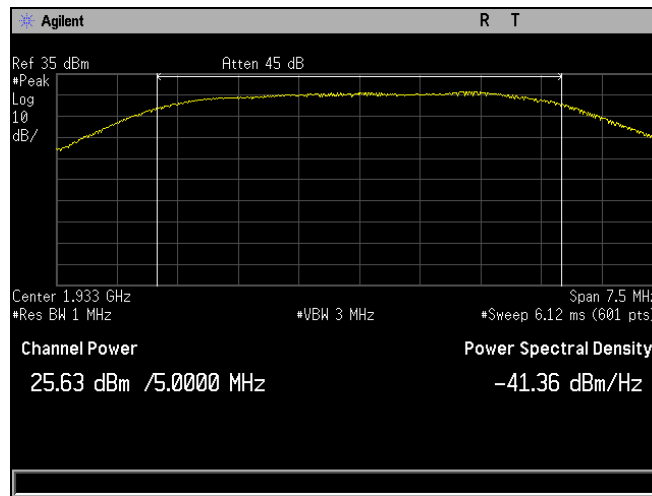
Plot 31. RF Output Power, QAM-64, 1933 MHz, Low Channel, Band 2, Port 2, Peak



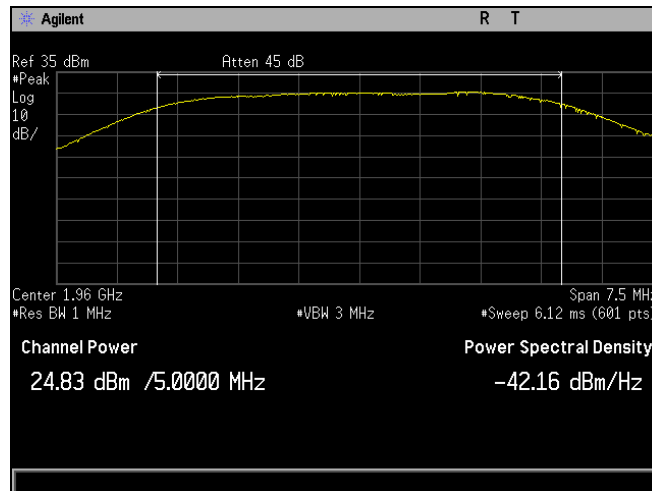
Plot 32. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Band 2, Port 2, Peak



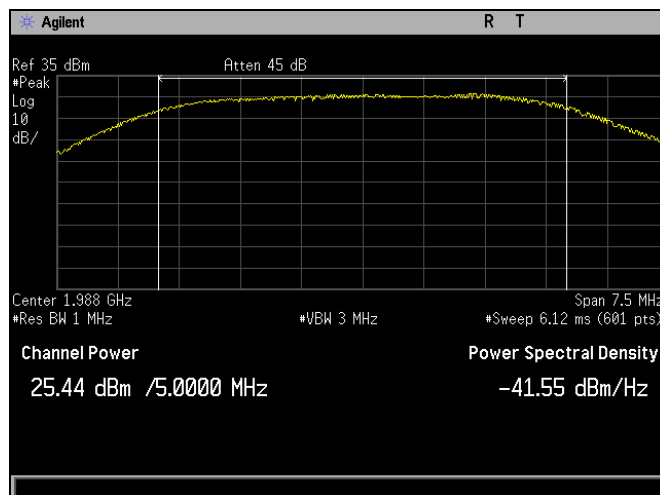
Plot 33. RF Output Power, QAM-64, 1988 MHz, High Channel, Band 2, Port 2, Peak



Plot 34. RF Output Power, QPSK, 1933 MHz, Low Channel, Band 2, Port 2, Peak

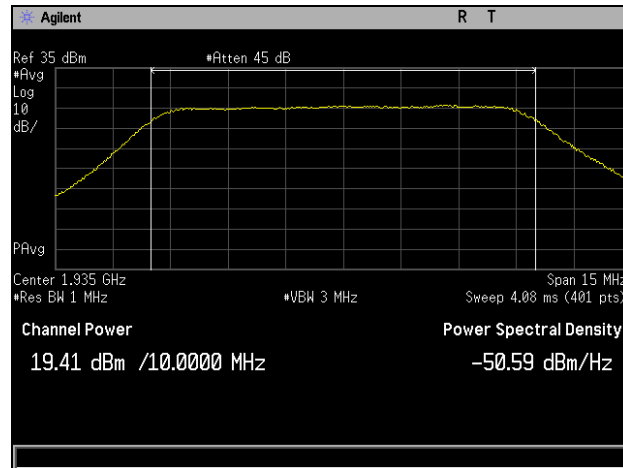


Plot 35. RF Output Power, QPSK, 1960 MHz, Mid Channel, Band 2, Port 2, Peak

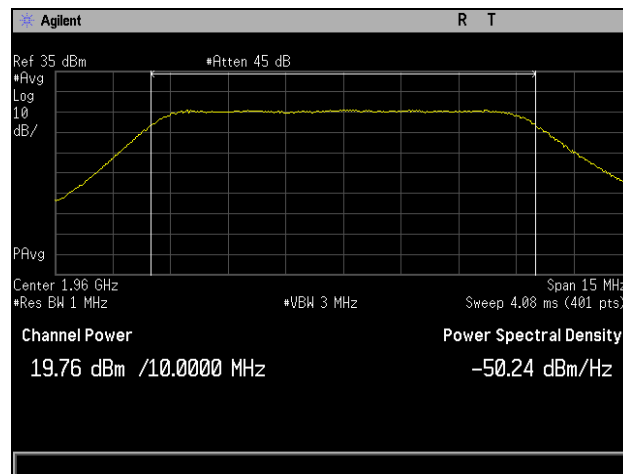


Plot 36. RF Output Power, QPSK, 1988 MHz, Mid Channel, Band 2, Port 2, Peak

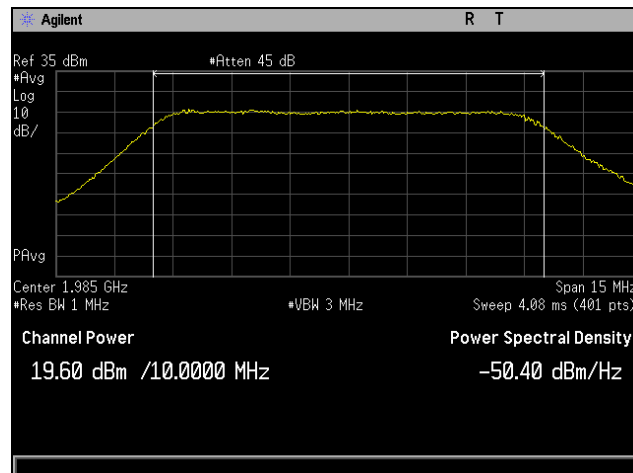
RF Power Output, Band 2, 10 MHz Channel



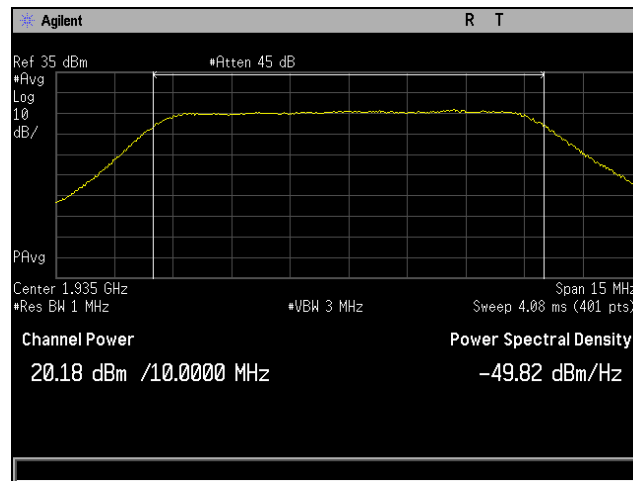
Plot 37. RF Output Power, QAM-16, 1935 MHz, Low Channel, Band 2, Port 1, Average



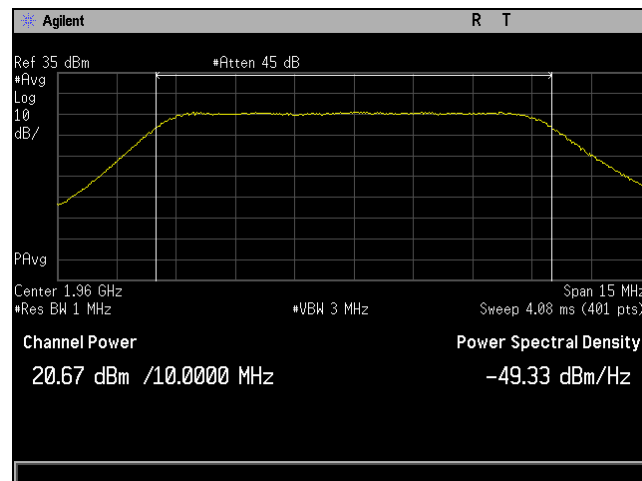
Plot 38. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Band 2, Port 1, Average



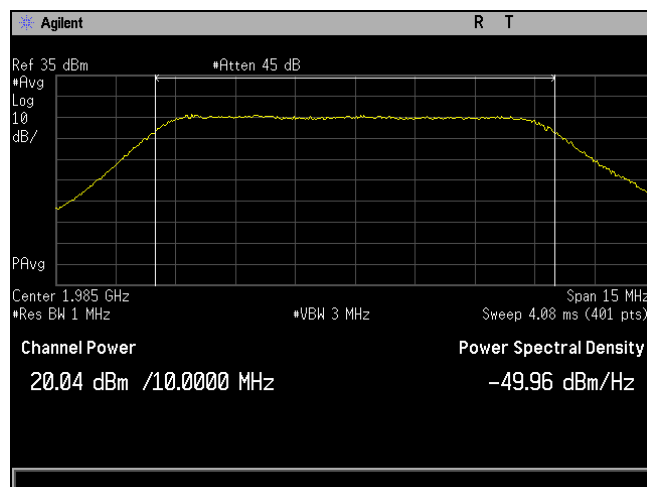
Plot 39. RF Output Power, QAM-16, 1985 MHz, High Channel, Band 2, Port 1, Average



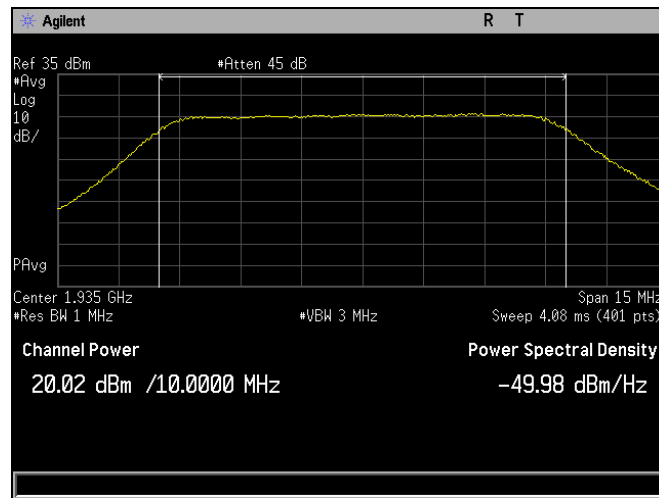
Plot 40. RF Output Power, QAM-64, 1935 MHz, Low Channel, Band 2, Port 1, Average



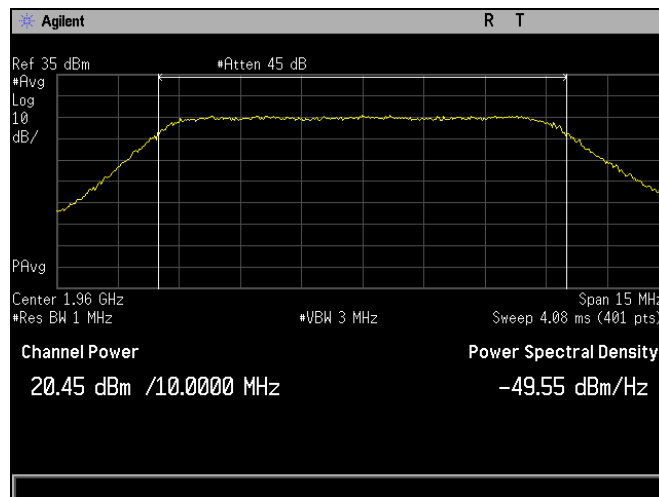
Plot 41. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Band 2, Port 1, Average



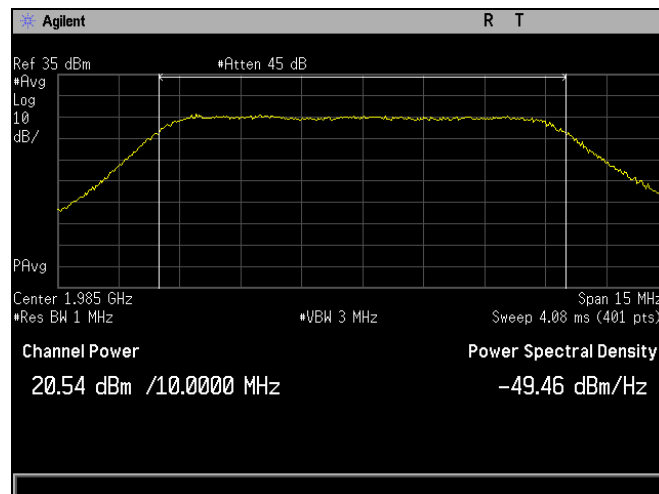
Plot 42. RF Output Power, QAM-64, 1985 MHz, High Channel, Band 2, Port 1, Average



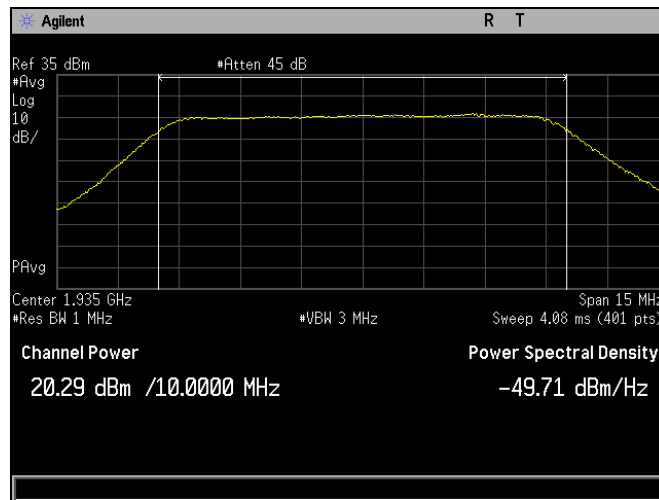
Plot 43. RF Output Power, QPSK, 1935 MHz, Low Channel, Band 2, Port 1, Average



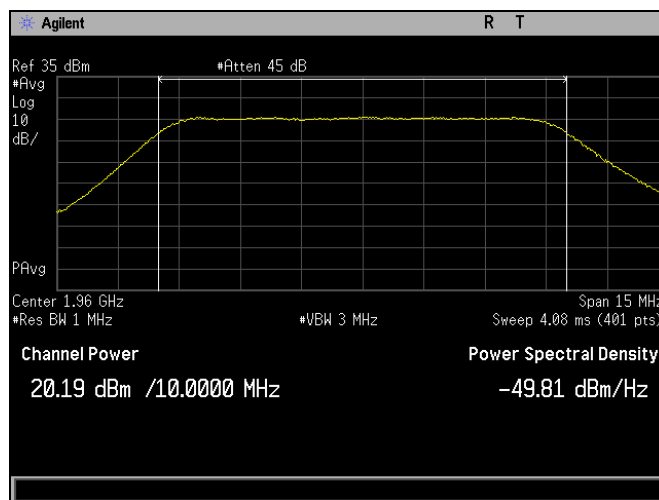
Plot 44. RF Output Power, QPSK, 1960 MHz, Mid Channel, Band 2, Port 1, Average



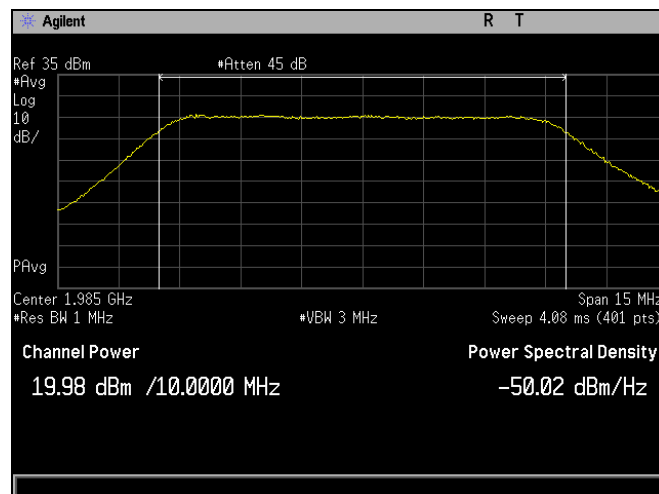
Plot 45. RF Output Power, QPSK, 1985 MHz, High Channel, Band 2, Port 1, Average



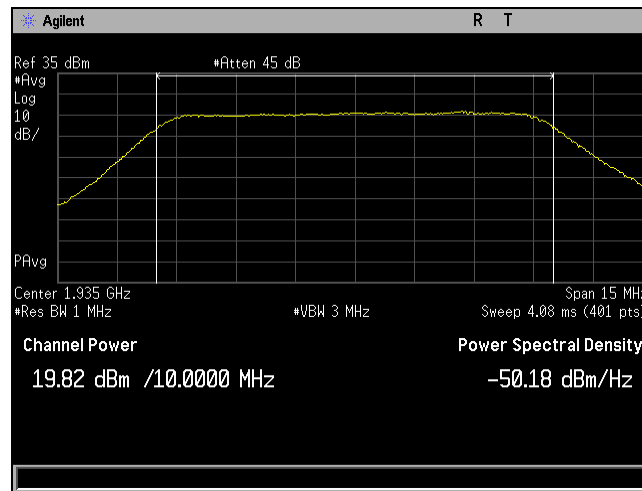
Plot 46. RF Output Power, QAM-16, 1935 MHz, Low Channel, Band 2, Port 2, Average



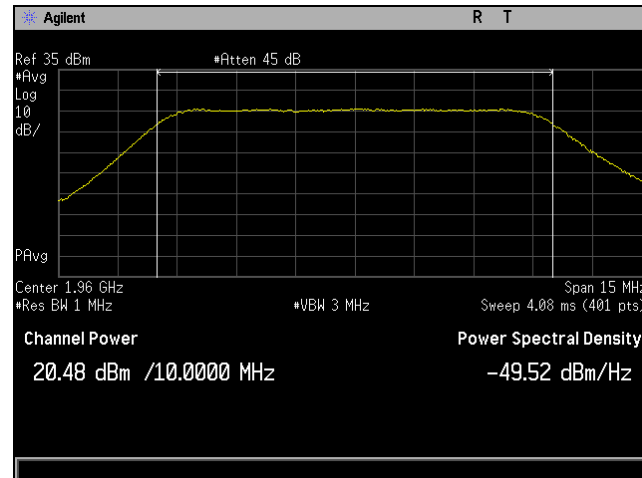
Plot 47. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Band 2, Port 2, Average



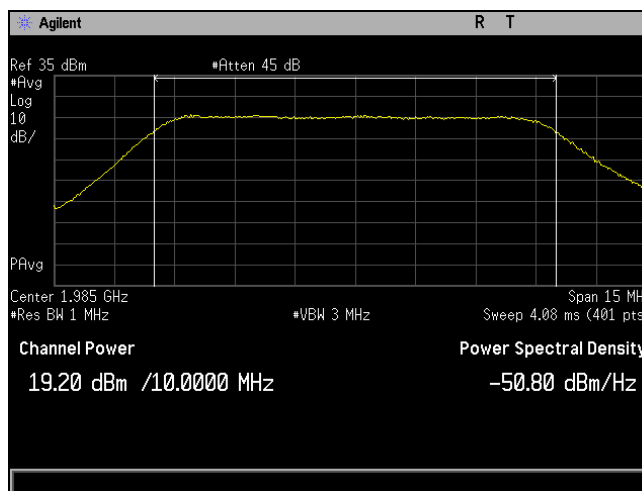
Plot 48. RF Output Power, QAM-16, 1985 MHz, High Channel, Band 2, Port 2, Average



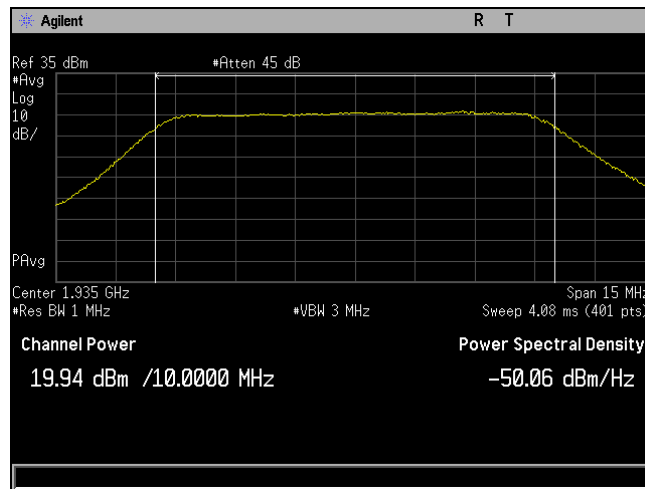
Plot 49. RF Output Power, QAM-64, 1935 MHz, Low Channel, Band 2, Port 2, Average



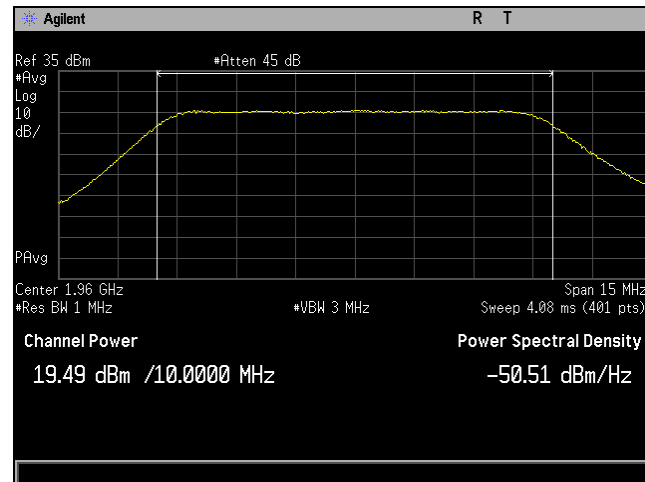
Plot 50. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Band 2, Port 2, Average



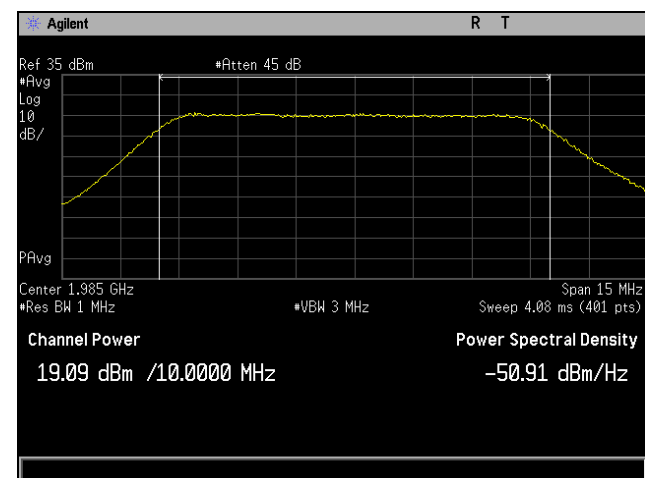
Plot 51. RF Output Power, QAM-64, 1985 MHz, High Channel, Band 2, Port 2, Average



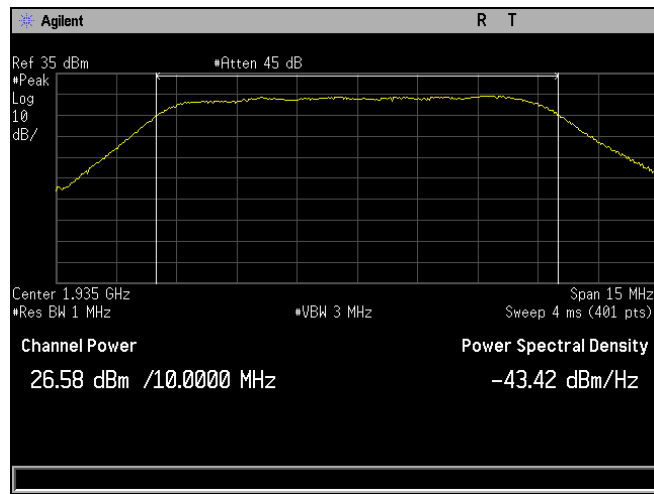
Plot 52. RF Output Power, QPSK, 1935 MHz, Low Channel, Band 2, Port 2, Average



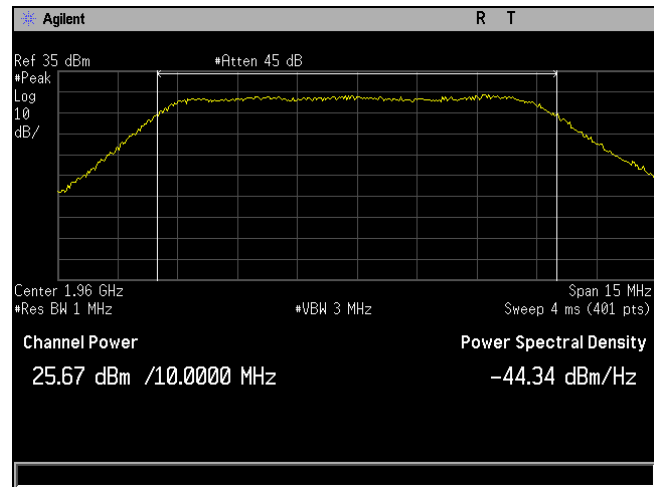
Plot 53. RF Output Power, QPSK, 1960 MHz, Mid Channel, Band 2, Port 2, Average



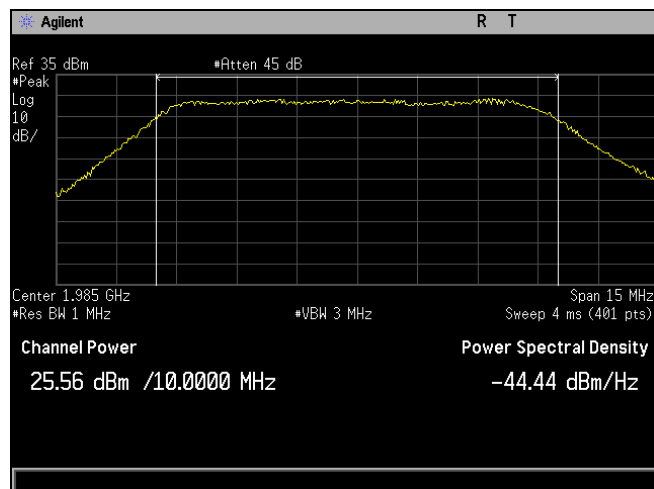
Plot 54. RF Output Power, QPSK, 1985 MHz, High Channel, Band 2, Port 2, Average



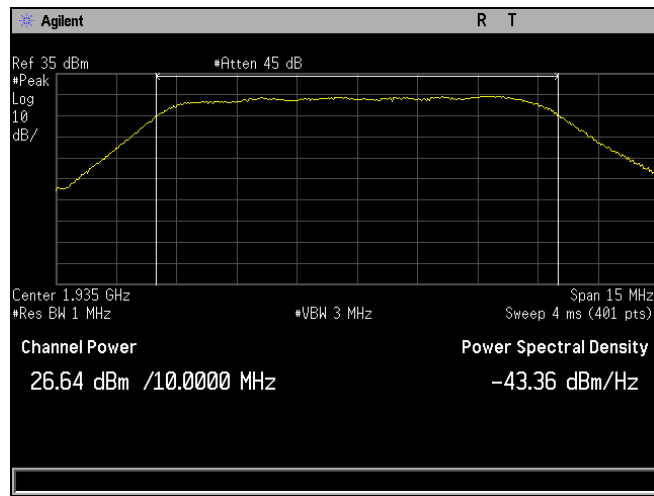
Plot 55. RF Output Power, QAM-16, 1935 MHz, Low Channel, Band 2, Port 1, Peak



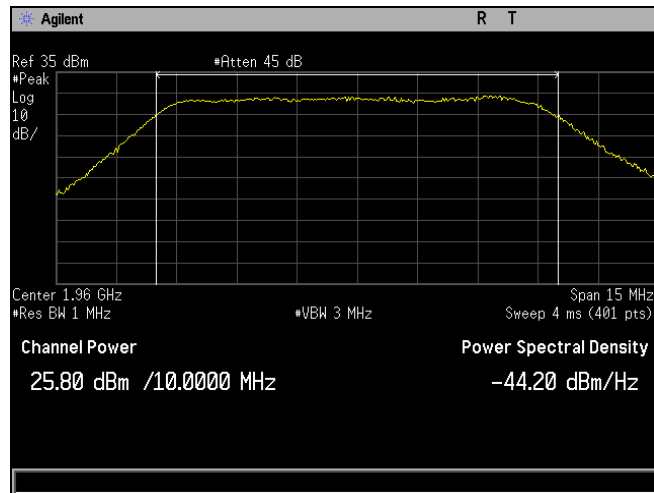
Plot 56. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Band 2, Port 1, Peak



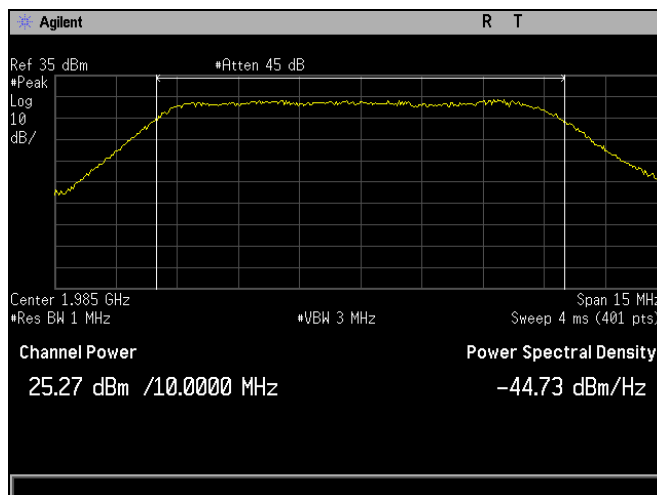
Plot 57. RF Output Power, QAM-16, 1985 MHz, High Channel, Band 2, Port 1, Peak



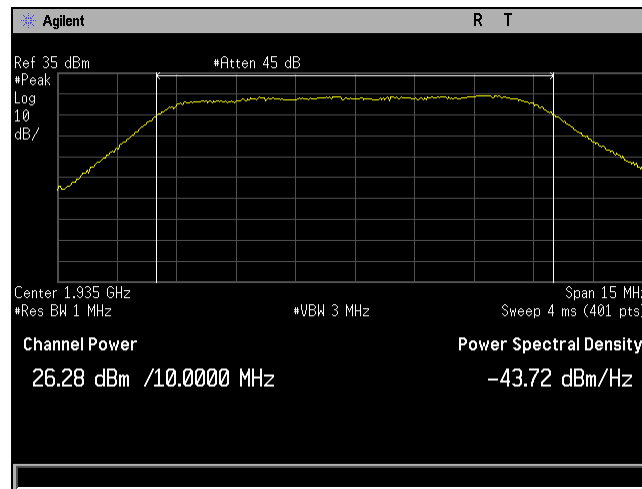
Plot 58. RF Output Power, QAM-64, 1935 MHz, Low Channel, Band 2, Port 1, Peak



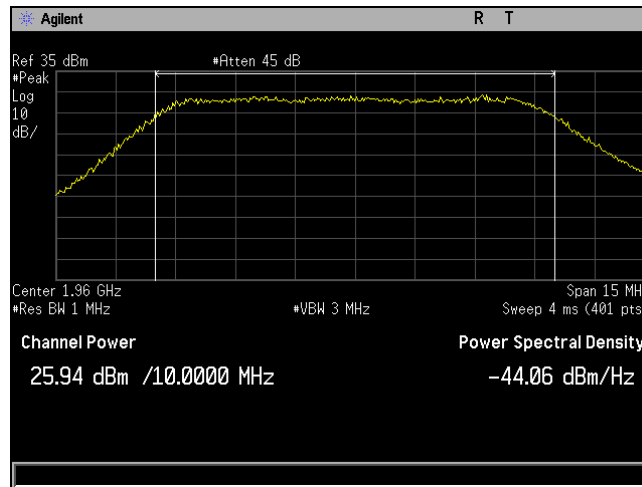
Plot 59. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Band 2, Port 1, Peak



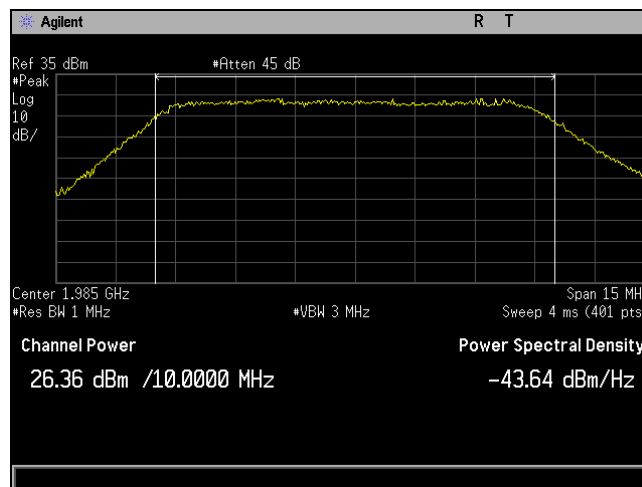
Plot 60. RF Output Power, QAM-64, 1985 MHz, High Channel, Band 2, Port 1, Peak



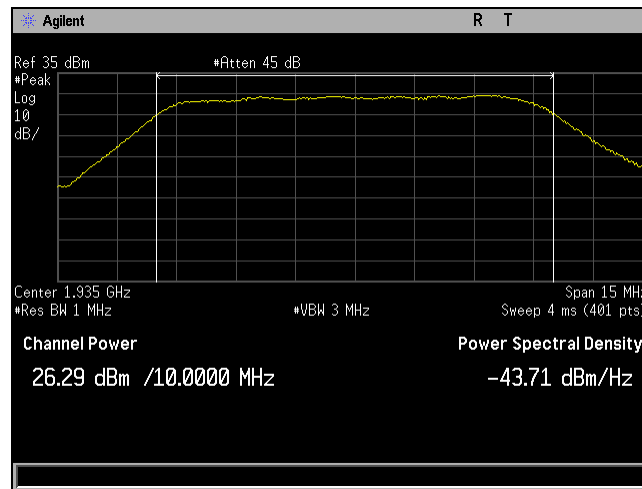
Plot 61. RF Output Power, QPSK, 1935 MHz, Low Channel, Band 2, Port 1, Peak



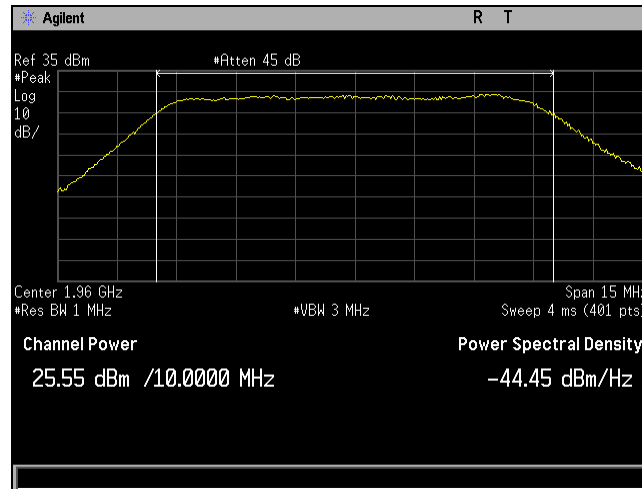
Plot 62. RF Output Power, QPSK, 1960 MHz, Mid Channel, Band 2, Port 1, Peak



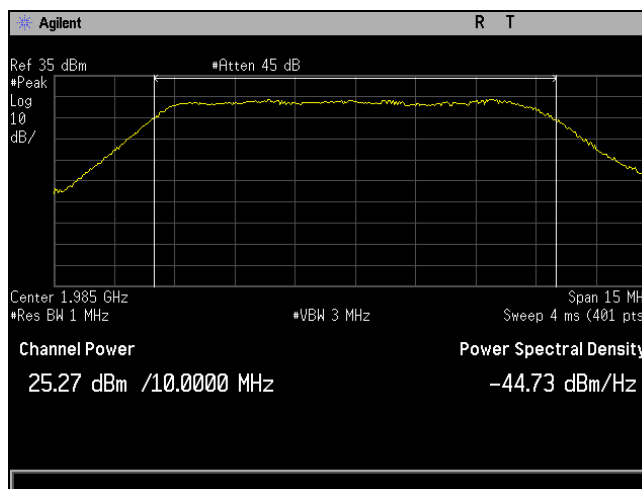
Plot 63. RF Output Power, QPSK, 1985 MHz, High Channel, Band 2, Port 1, Peak



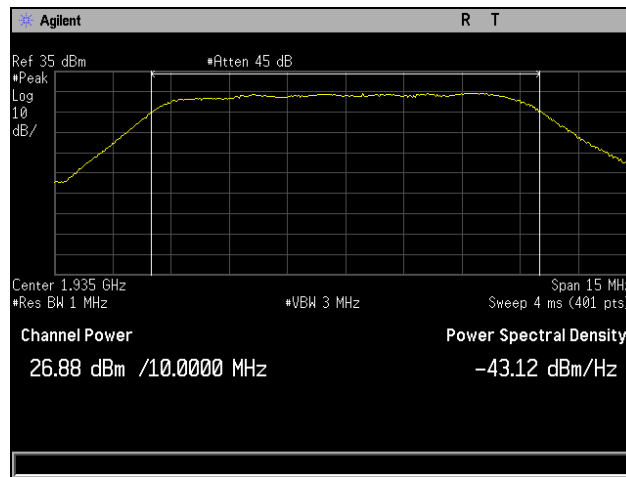
Plot 64. RF Output Power, QAM-16, 1935 MHz, Low Channel, Band 2, Port 2, Peak



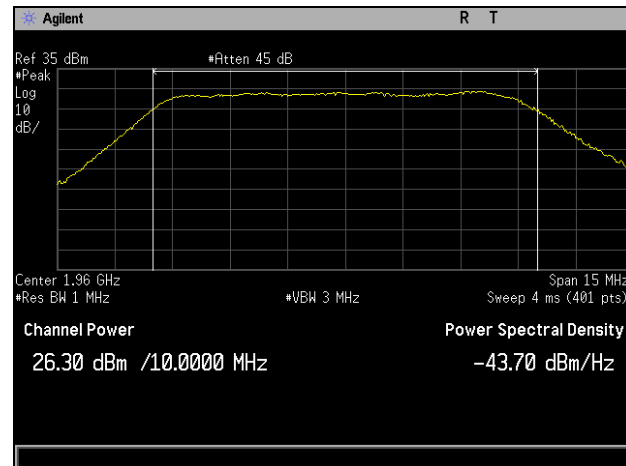
Plot 65. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Band 2, Port 2, Peak



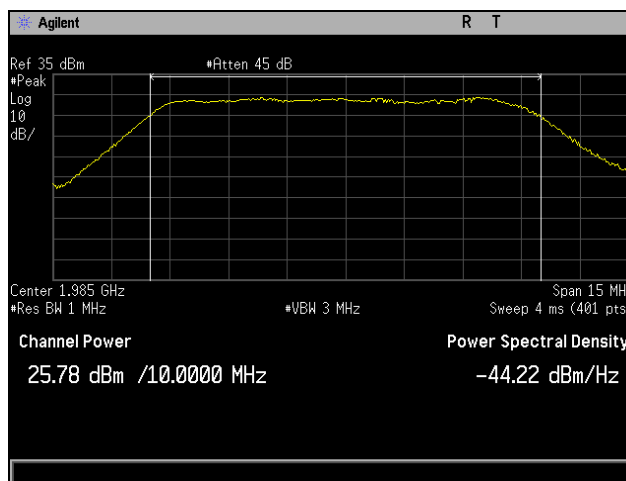
Plot 66. RF Output Power, QAM-16, 1985 MHz, High Channel, Band 2, Port 2, Peak



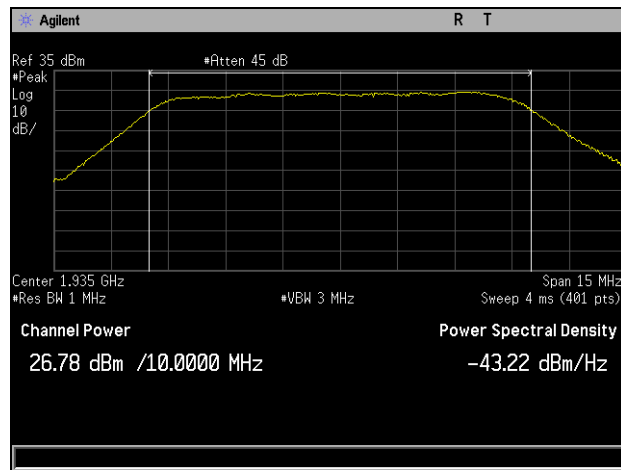
Plot 67. RF Output Power, QAM-64, 1935 MHz, Low Channel, Band 2, Port 2, Peak



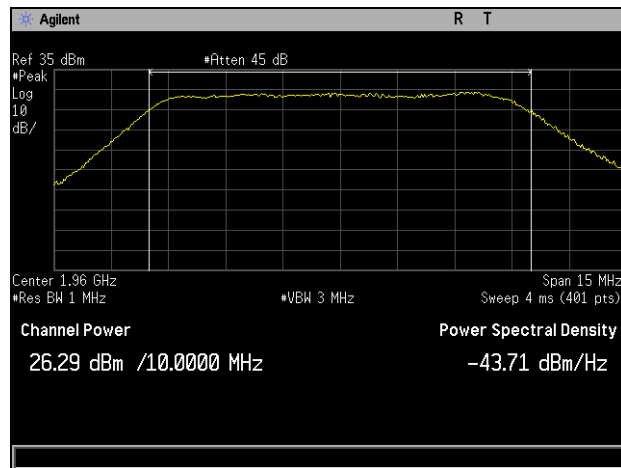
Plot 68. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Band 2, Port 2, Peak



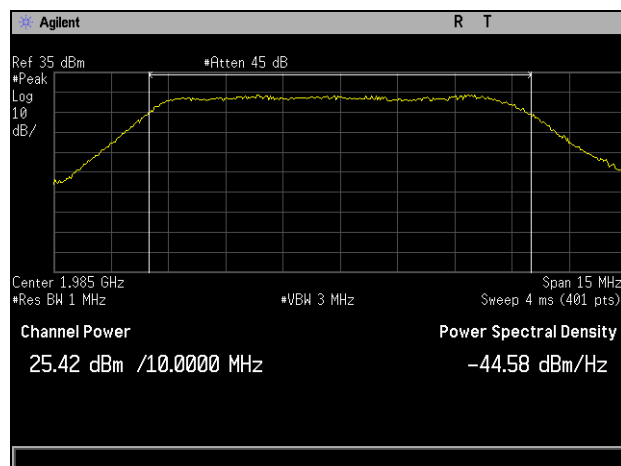
Plot 69. RF Output Power, QAM-64, 1985 MHz, High Channel, Band 2, Port 2, Peak



Plot 70. RF Output Power, QPSK, 1935 MHz, Low Channel, Band 2, Port 2, Peak

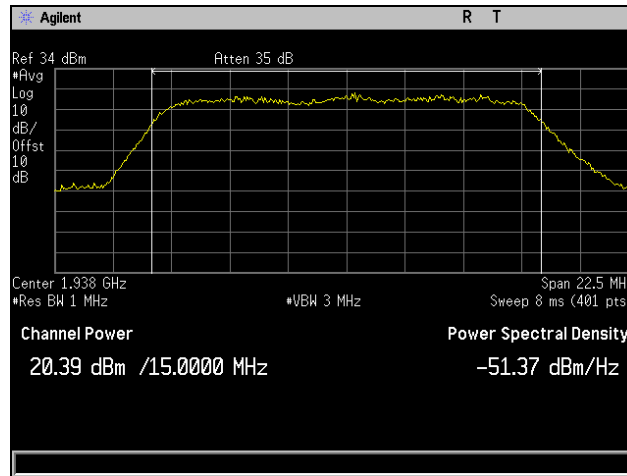


Plot 71. RF Output Power, QPSK, 1960 MHz, Mid Channel, Band 2, Port 2, Peak

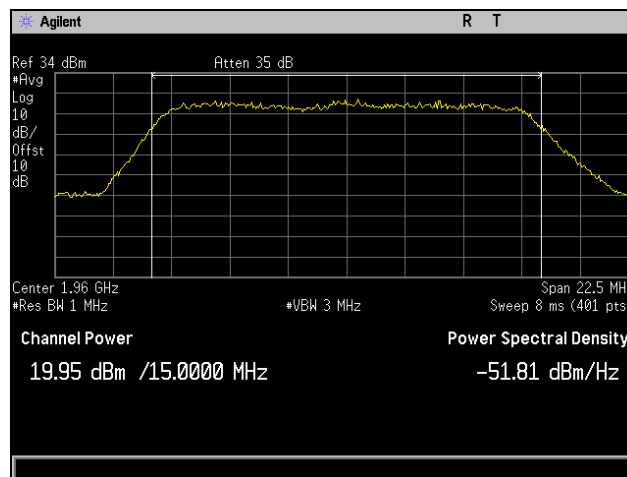


Plot 72. RF Output Power, QPSK, 1985 MHz, High Channel, Band 2, Port 2, Peak

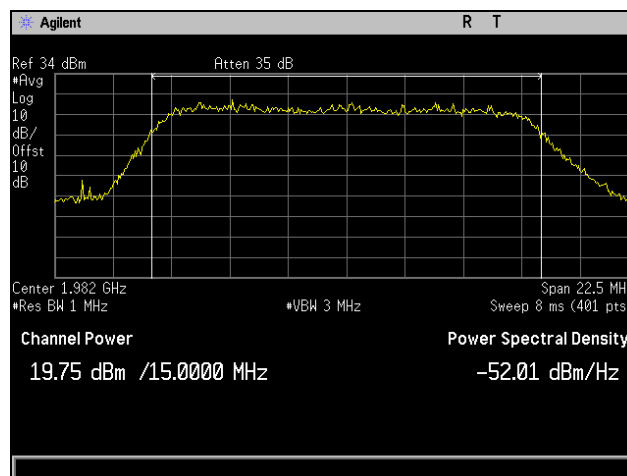
RF Power Output, Band 2, 15 MHz Channel



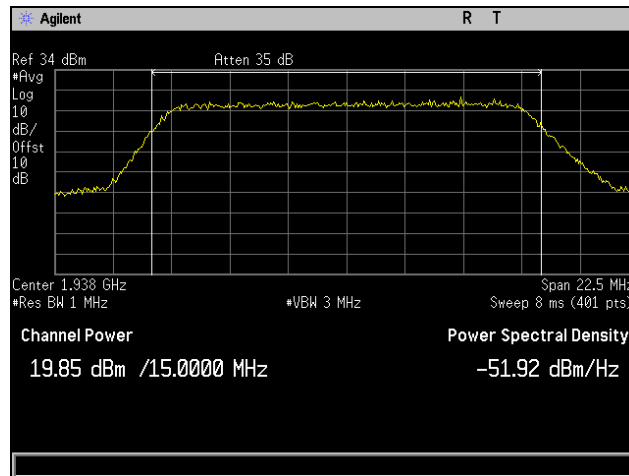
Plot 73. RF Output Power, QAM-16, 1937.5 MHz, Low Channel, Band 2, Average



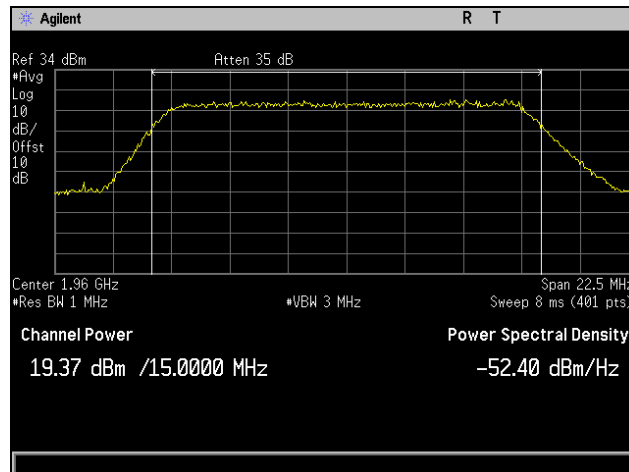
Plot 74. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Band 2, Average



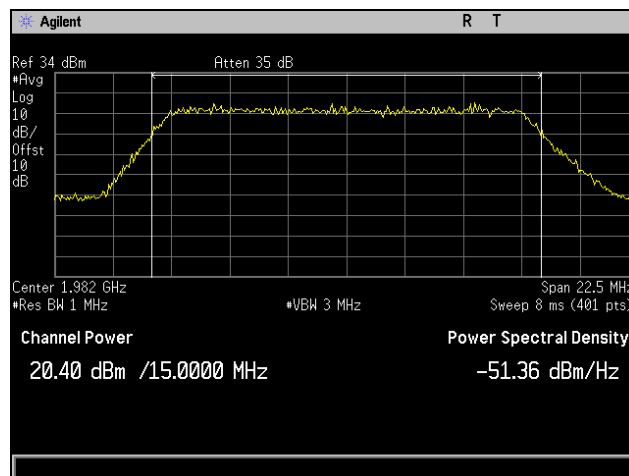
Plot 75. RF Output Power, QAM-16, 1982.5 MHz, High Channel, Band 2, Average



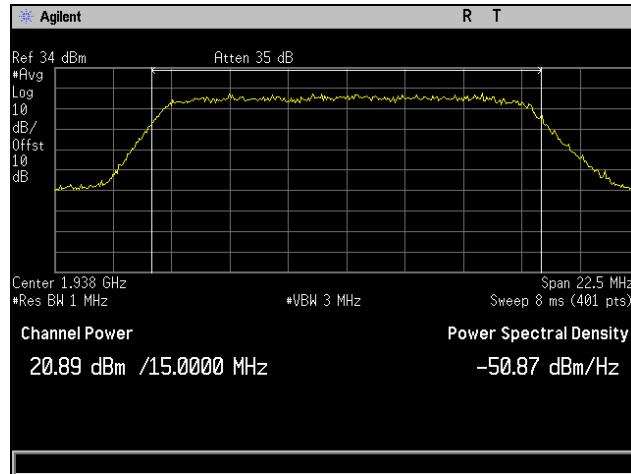
Plot 76. RF Output Power, QAM-64, 1937.5 MHz, Low Channel, Band 2, Average



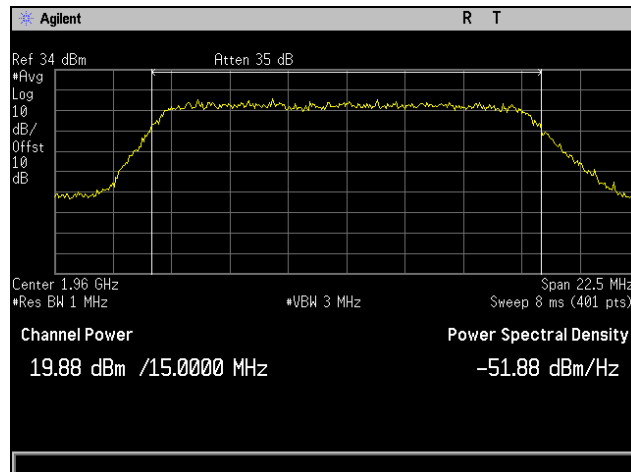
Plot 77. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Band 2, Average



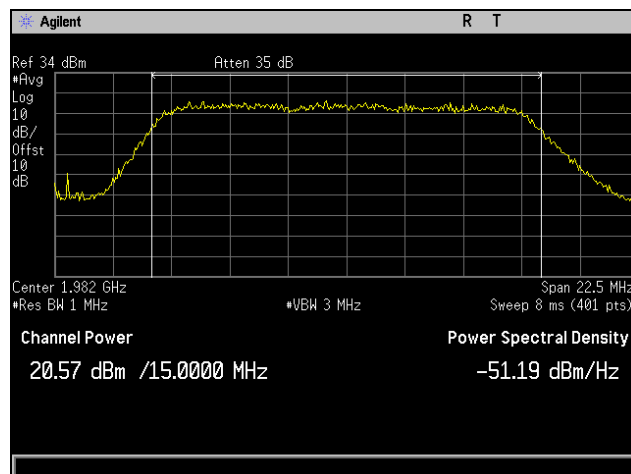
Plot 78. RF Output Power, QAM-64, 1982.5 MHz, High Channel, Band 2, Average



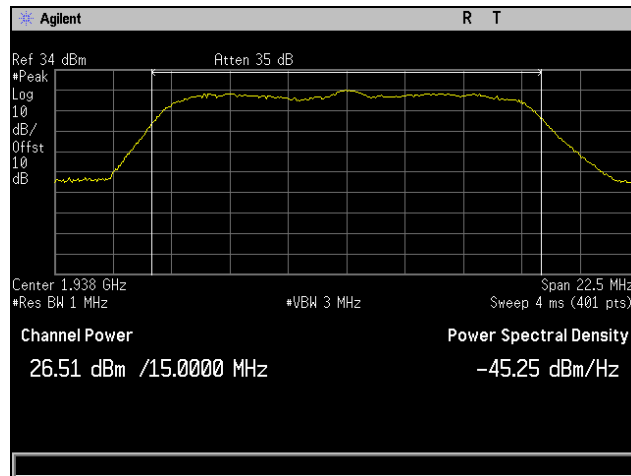
Plot 79. RF Output Power, QPSK, 1937.5 MHz, Low Channel, Band 2, Average



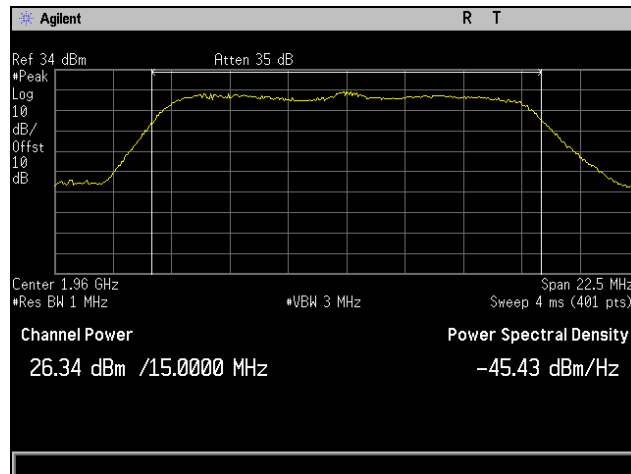
Plot 80. RF Output Power, QPSK, 1960 MHz, Mid Channel, Band 2, Average



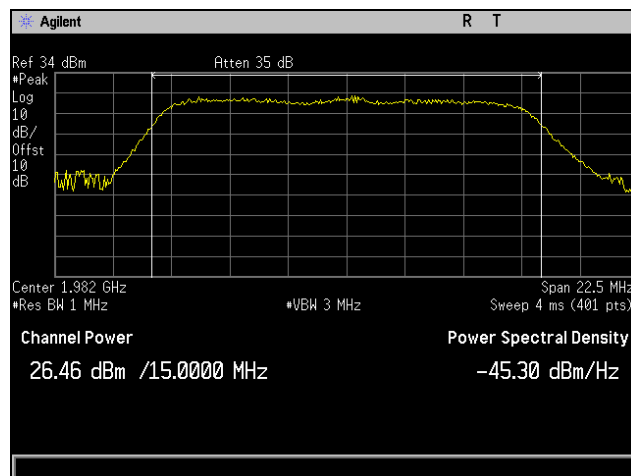
Plot 81. RF Output Power, QPSK, 1982.5 MHz, High Channel, Band 2, Average



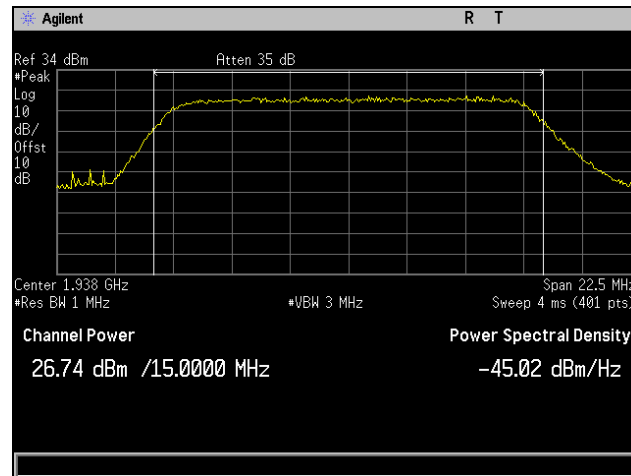
Plot 82. RF Output Power, QAM-16, 1937.5 MHz, Low Channel, Port 1, Band 2, Peak



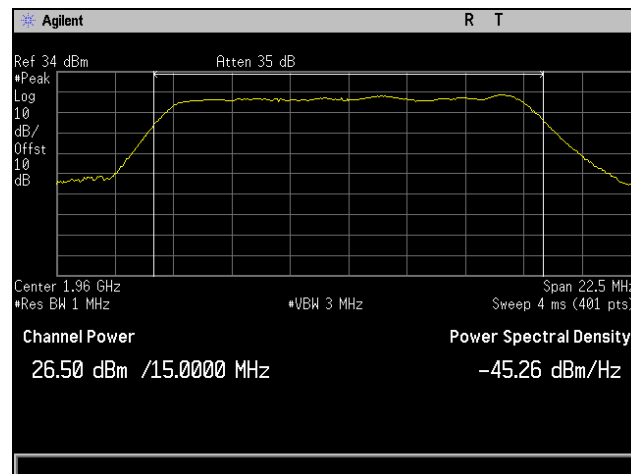
Plot 83. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Port 1, Band 2, Peak



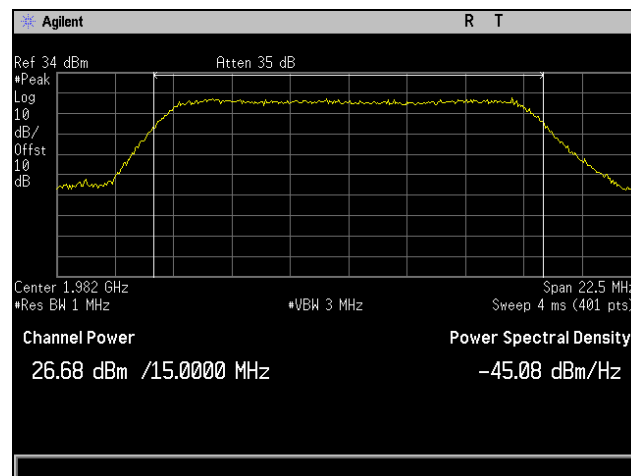
Plot 84. RF Output Power, QAM-16, 1982.5 MHz, High Channel, Port 1, Band 2, Peak



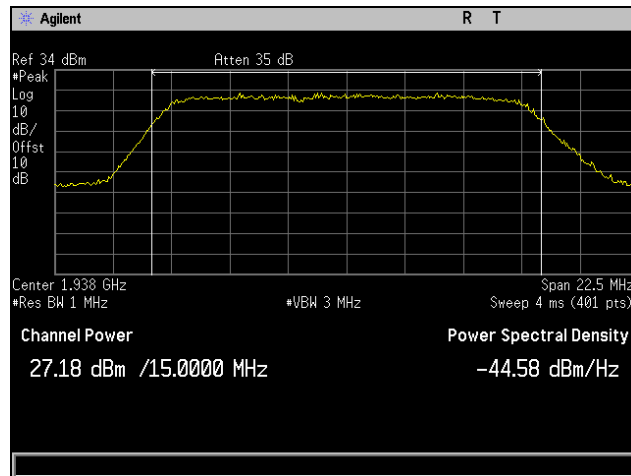
Plot 85. RF Output Power, QAM-64, 1937.5 MHz, Low Channel, Port 1, Band 2, Peak



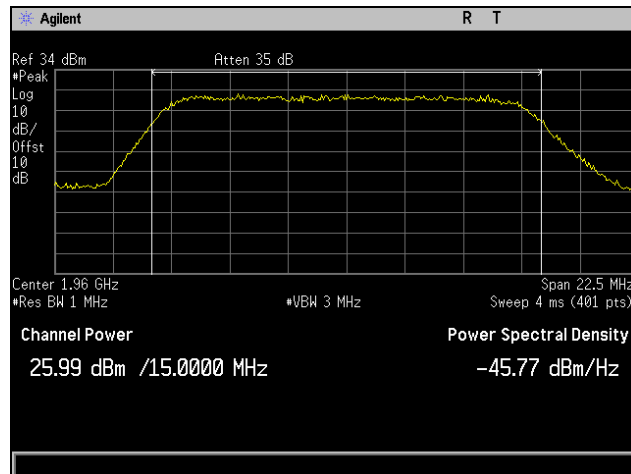
Plot 86. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Port 1, Band 2, Peak



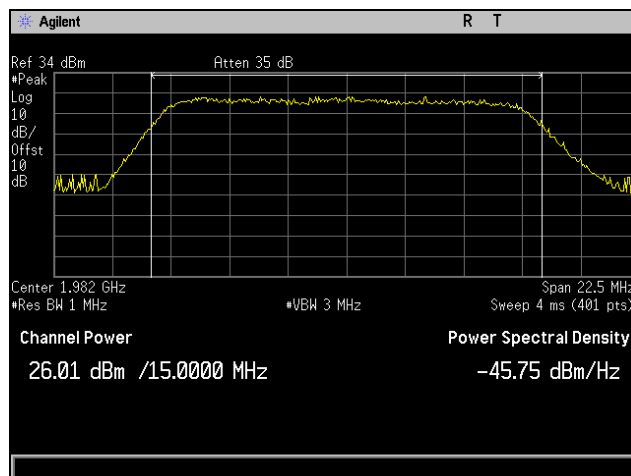
Plot 87. RF Output Power, QAM-64, 1982.5 MHz, High Channel, Port 1, Band 2, Peak



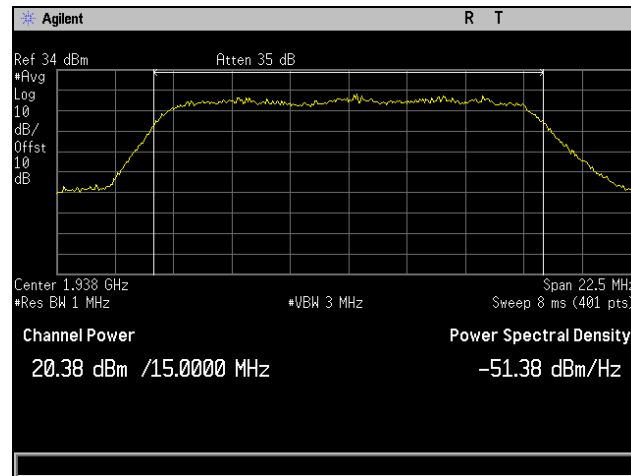
Plot 88. RF Output Power, QPSK, 1937.5 MHz, Low Channel, Port 1, Band 2, Peak



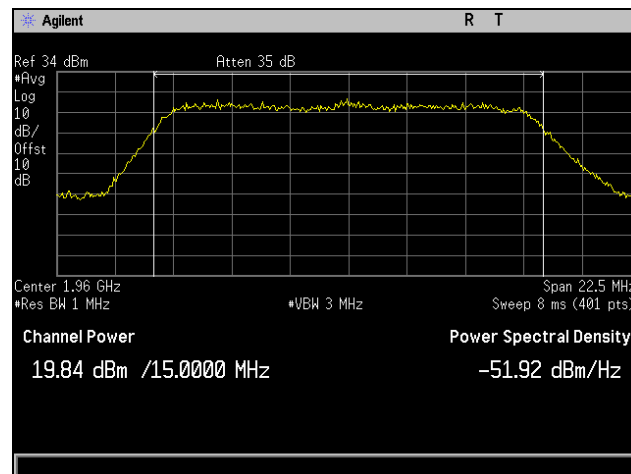
Plot 89. RF Output Power, QPSK, 1960 MHz, Mid Channel, Port 1, Band 2, Peak



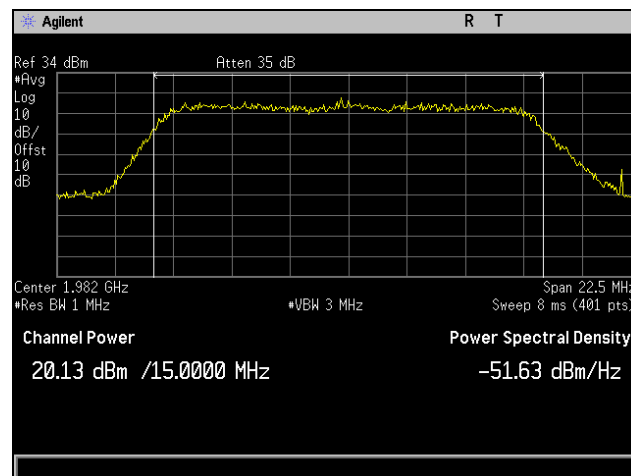
Plot 90. RF Output Power, QPSK, 1982.5 MHz, High Channel, Port 1, Band 2, Peak



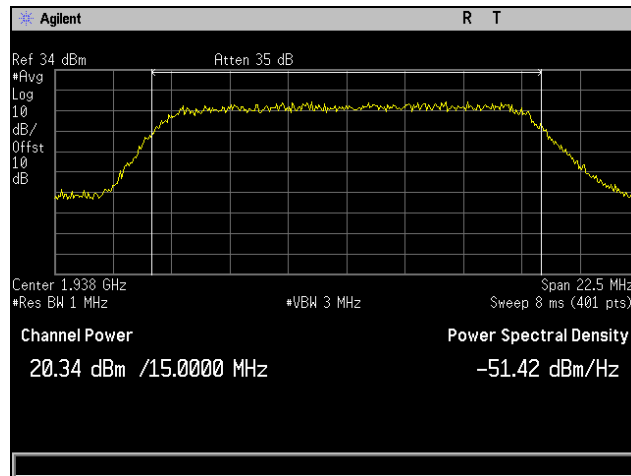
Plot 91. RF Output Power, QAM-16, 1937.5 MHz, Low Channel, Port 2, Band 2, Average



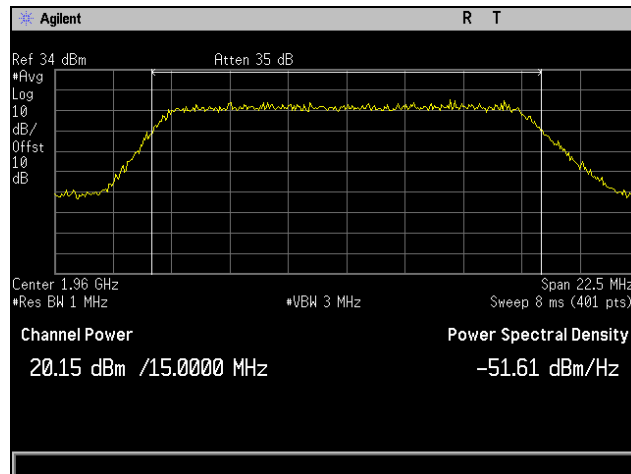
Plot 92. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Port 2, Band 2, Average



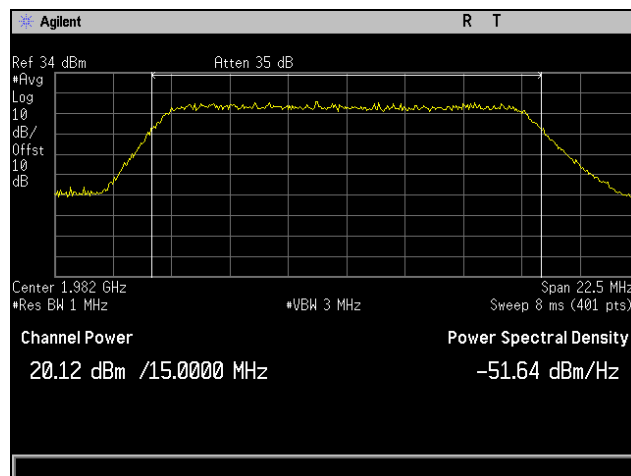
Plot 93. RF Output Power, QAM-16, 1982.5 MHz, High Channel, Port 2, Band 2, Average



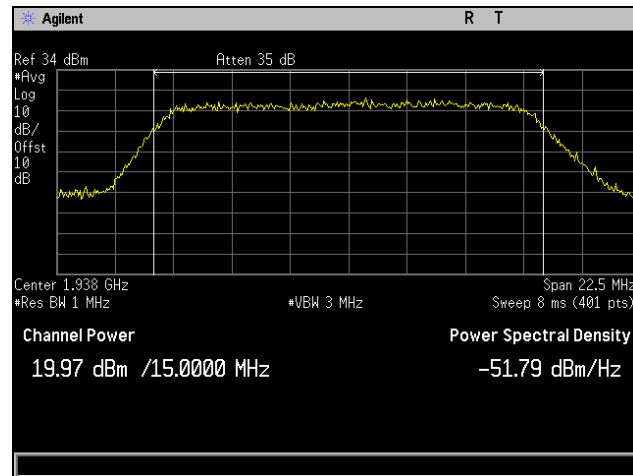
Plot 94. RF Output Power, QAM-64, 1937.5 MHz, Low Channel, Port 2, Band 2, Average



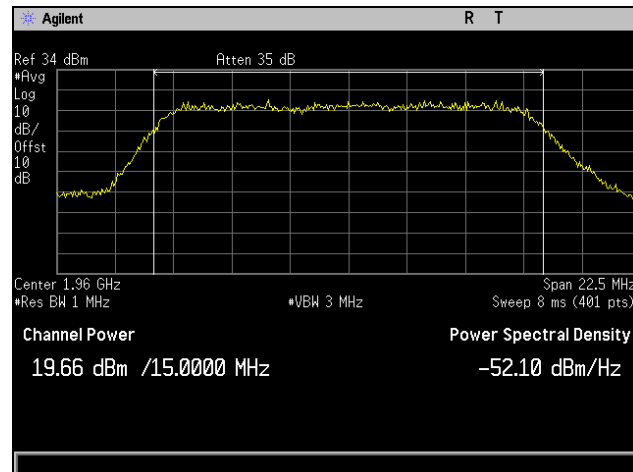
Plot 95. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Port 2, Band 2, Average



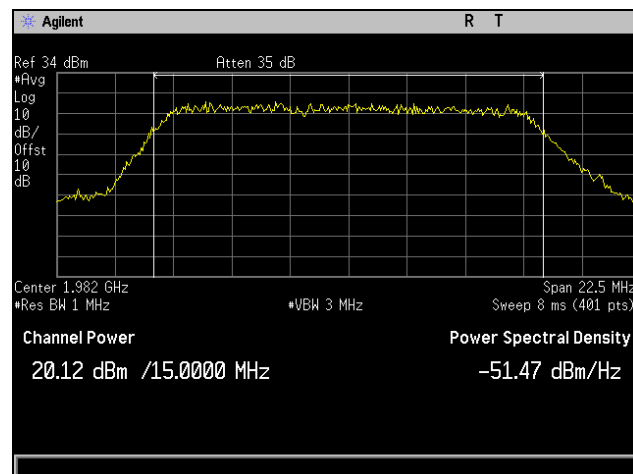
Plot 96. RF Output Power, QAM-64, 1982.5 MHz, High Channel, Port 2, Band 2, Average



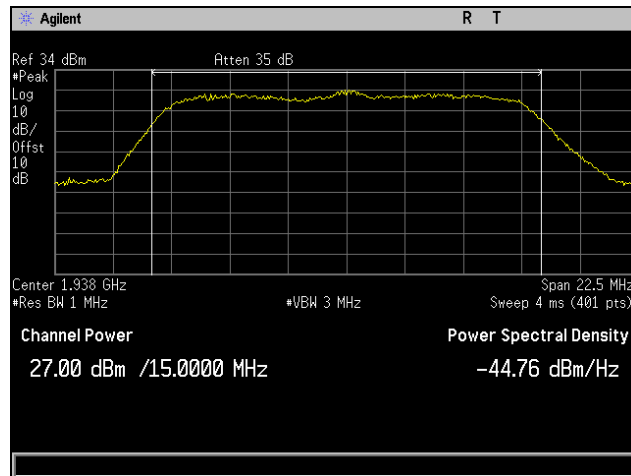
Plot 97. RF Output Power, QPSK, 1937.5 MHz, Low Channel, Port 2, Band 2, Average



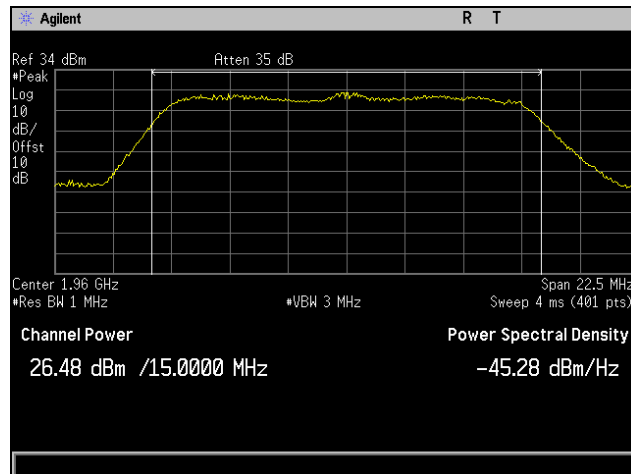
Plot 98. RF Output Power, QPSK, 1960 MHz, Mid Channel, Port 2, Band 2, Average



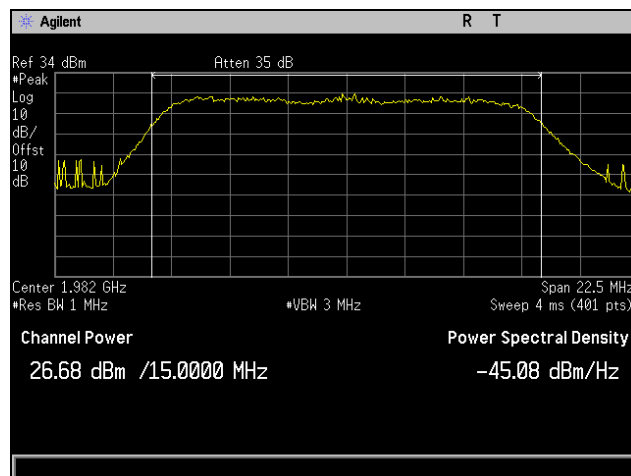
Plot 99. RF Output Power, QPSK, 1982.5 MHz, High Channel, Port 2, Band 2, Average



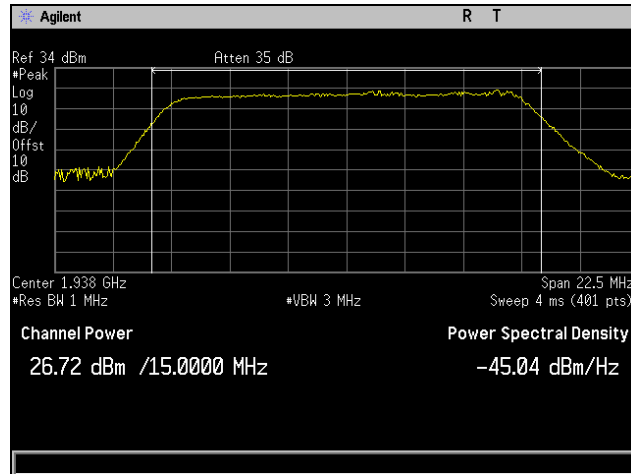
Plot 100. RF Output Power, QAM-16, 1937.5 MHz, Low Channel, Port 2, Band 2, Peak



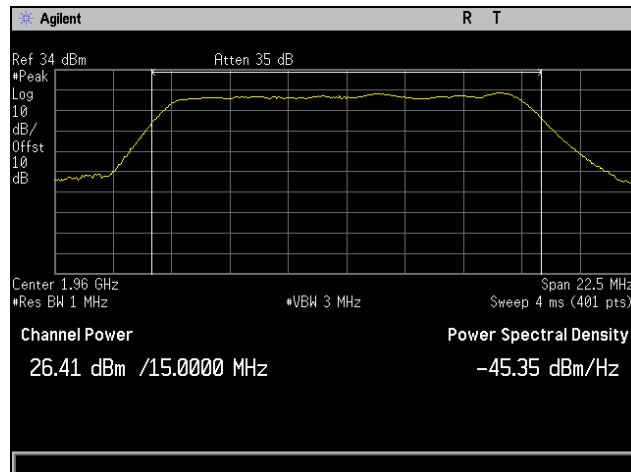
Plot 101. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Port 2, Band 2, Peak



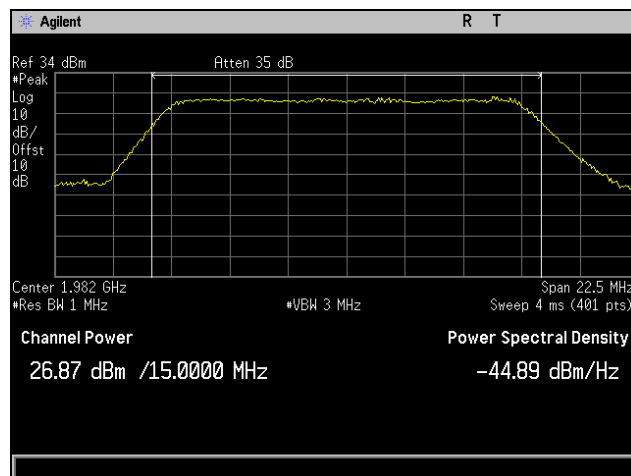
Plot 102. RF Output Power, QAM-16, 1982.5 MHz, High Channel, Port 2, Band 2, Peak



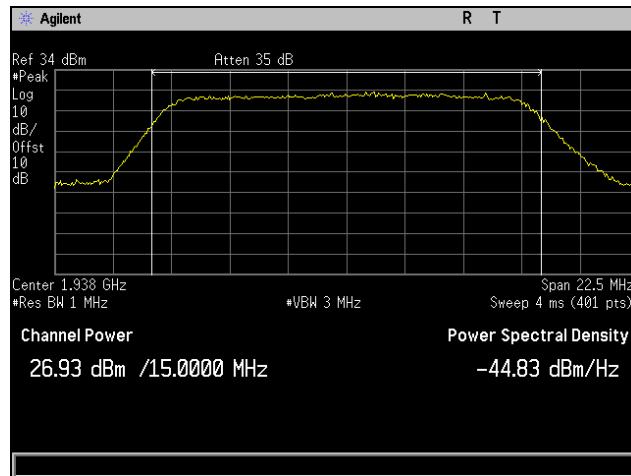
Plot 103. RF Output Power, QAM-64, 1937.5 MHz, Low Channel, Port 2, Band 2, Peak



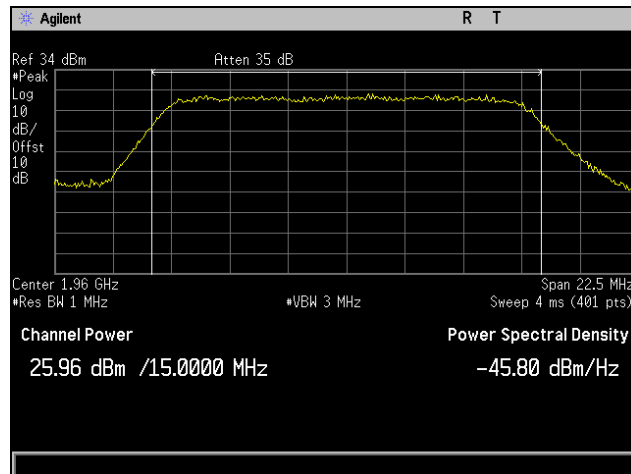
Plot 104. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Port 2, Band 2, Peak



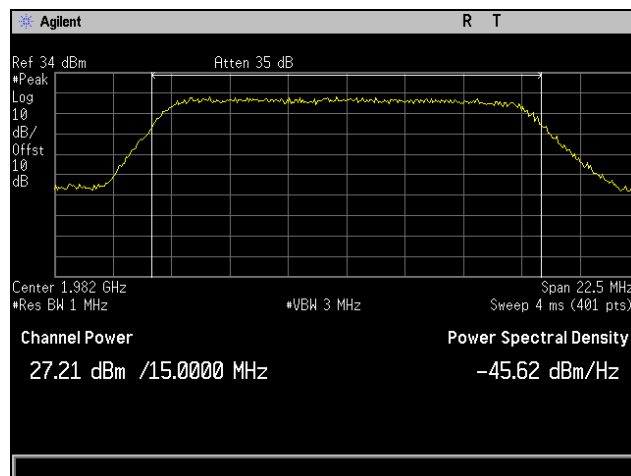
Plot 105. RF Output Power, QAM-64, 1982.5 MHz, High Channel, Port 2, Band 2, Peak



Plot 106. RF Output Power, QPSK, 1937.5 MHz, Low Channel, Port 2, Band 2, Peak

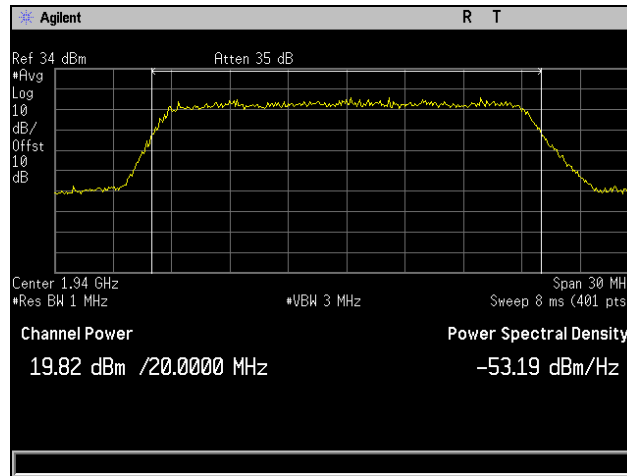


Plot 107. RF Output Power, QPSK, 1960 MHz, Mid Channel, Port 2, Band 2, Peak

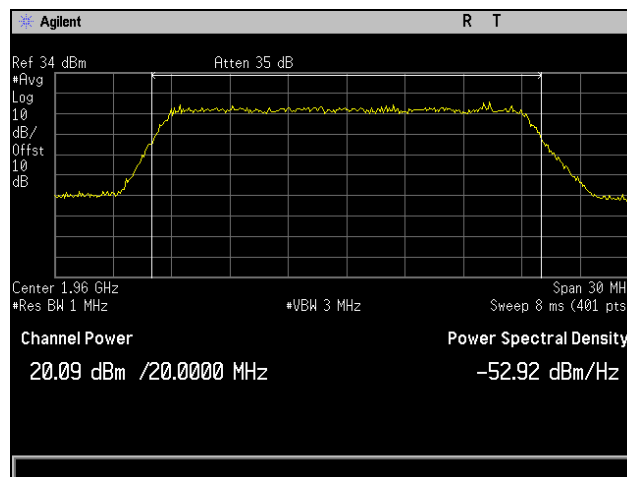


Plot 108. RF Output Power, QPSK, 1982.5 MHz, High Channel, Port 2, Band 2, Peak

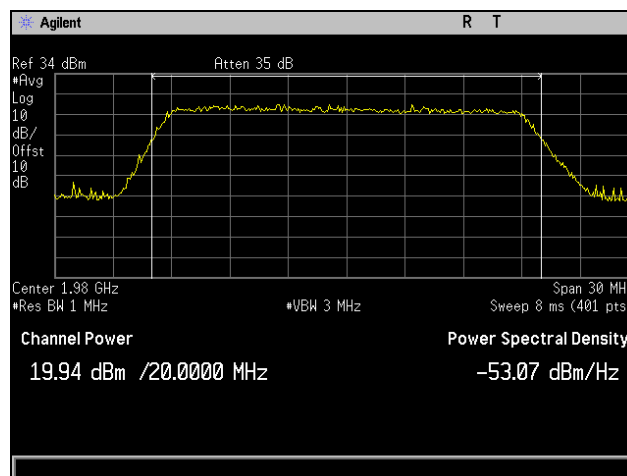
Output Power, Band 2, 20 MHz Channel



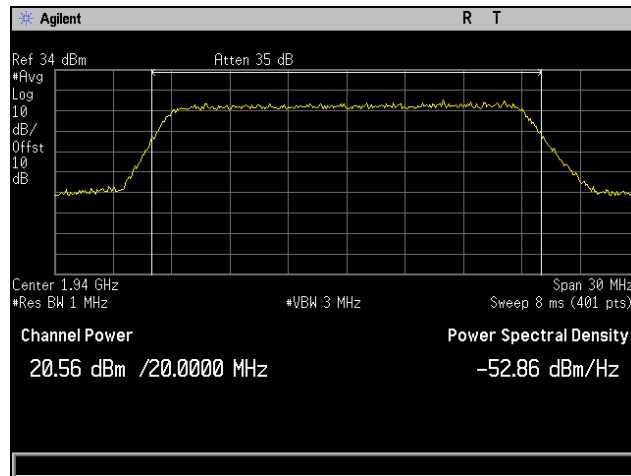
Plot 109. RF Output Power, QAM-16, 1940 MHz, Low Channel, Port 1, Band 2, Average



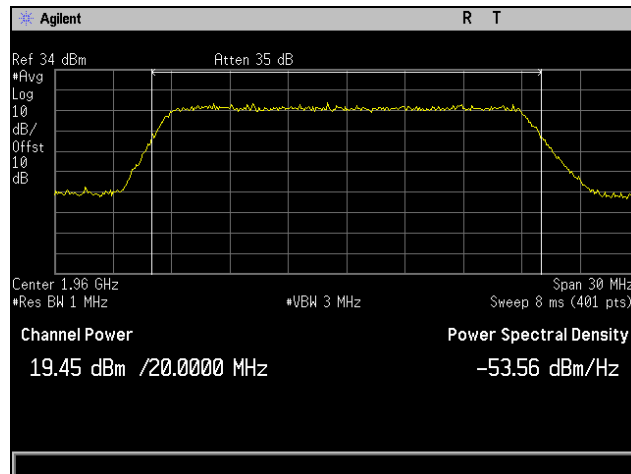
Plot 110. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Port 1, Band 2, Average



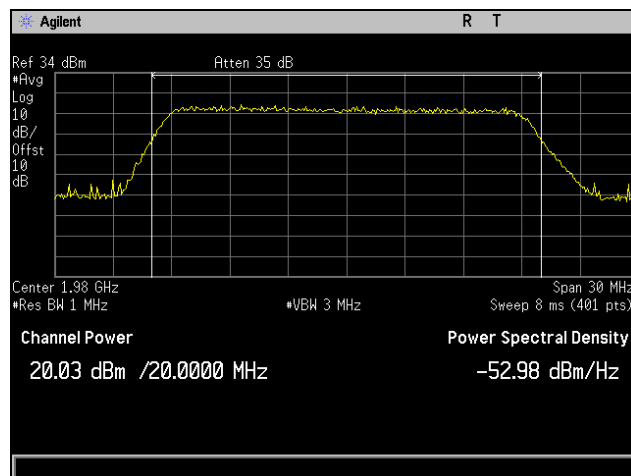
Plot 111. RF Output Power, QAM-16, 1980 MHz, High Channel, Port 1, Band 2, Average



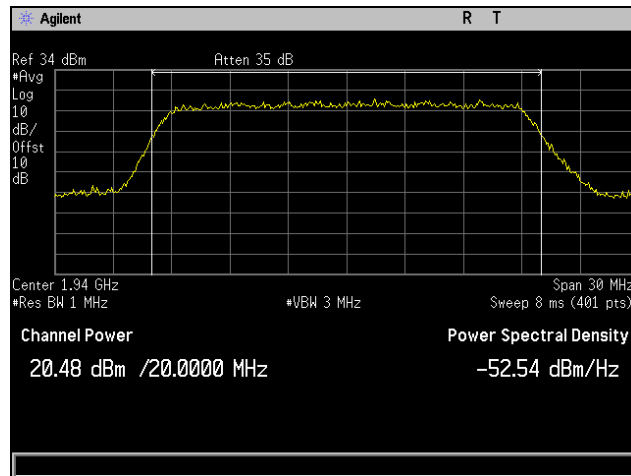
Plot 112. RF Output Power, QAM-64, 1940 MHz, Low Channel, Port 1, Band 2, Average



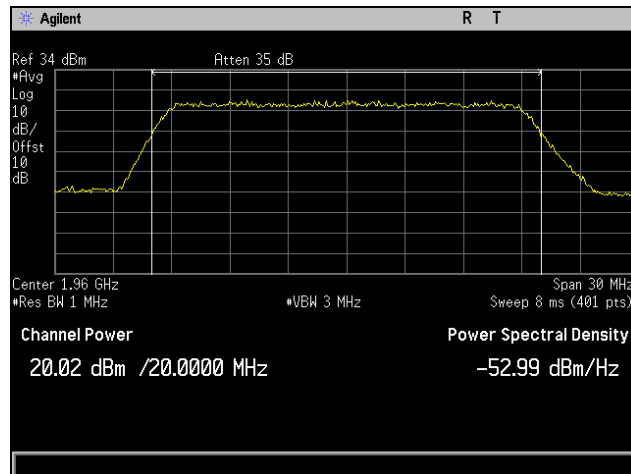
Plot 113. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Port 1, Band 2, Average



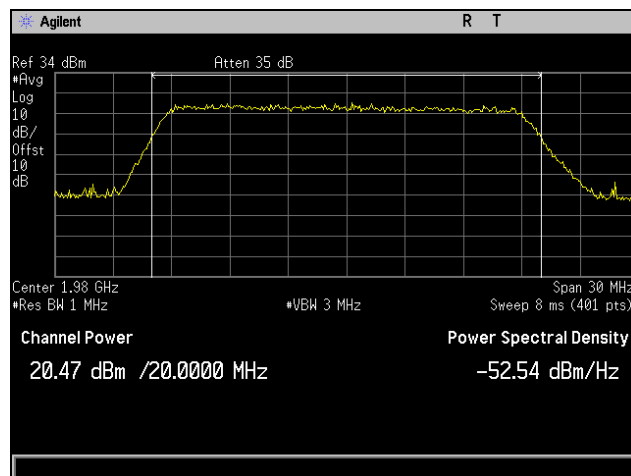
Plot 114. RF Output Power, QAM-64, 1980 MHz, High Channel, Port 1, Band 2, Average



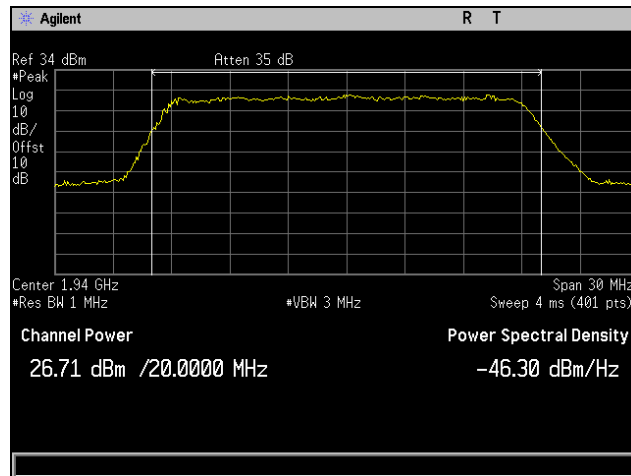
Plot 115. RF Output Power, QPSK, 1940 MHz, Low Channel, Port 1, Band 2, Average



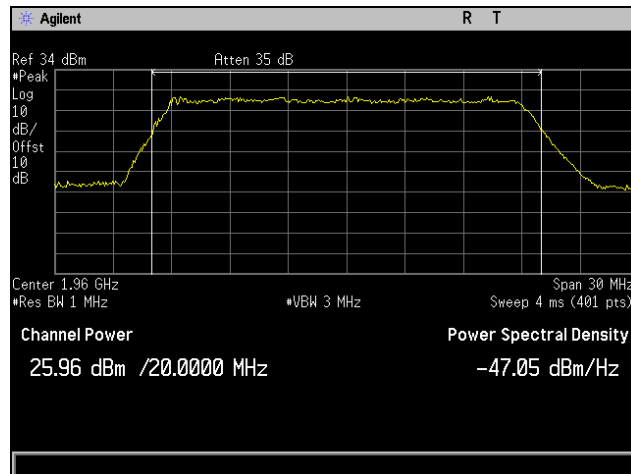
Plot 116. RF Output Power, QPSK, 1960 MHz, Mid Channel, Port 1, Band 2, Average



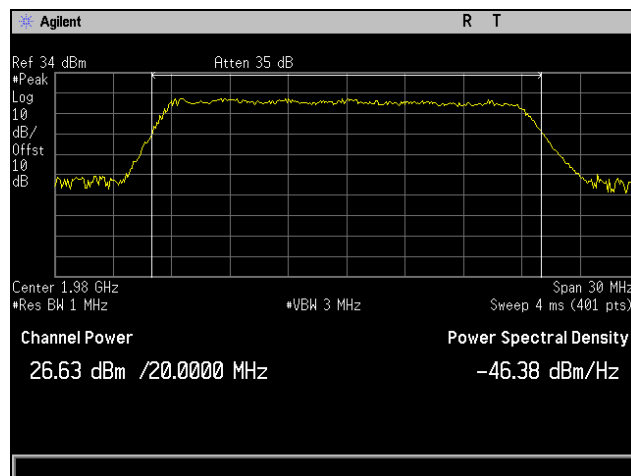
Plot 117. RF Output Power, QPSK, 1980 MHz, High Channel, Port 1, Band 2, Average



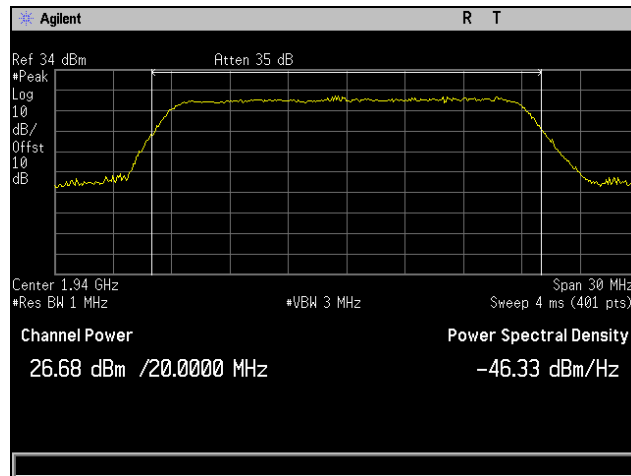
Plot 118. RF Output Power, QAM-16, 1940 MHz, Low Channel, Port 1, Band 2, Peak



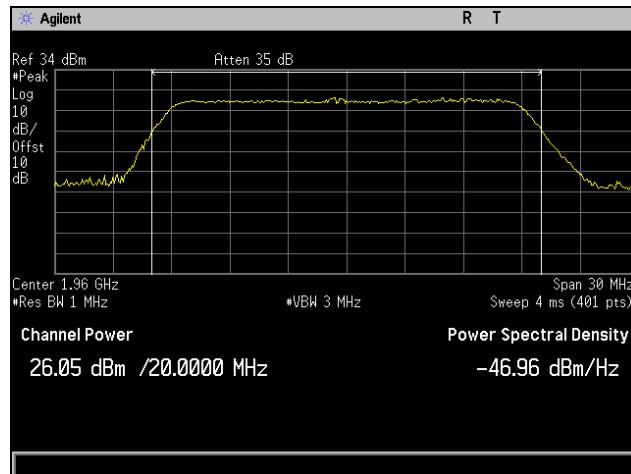
Plot 119. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Port 1, Band 2, Peak



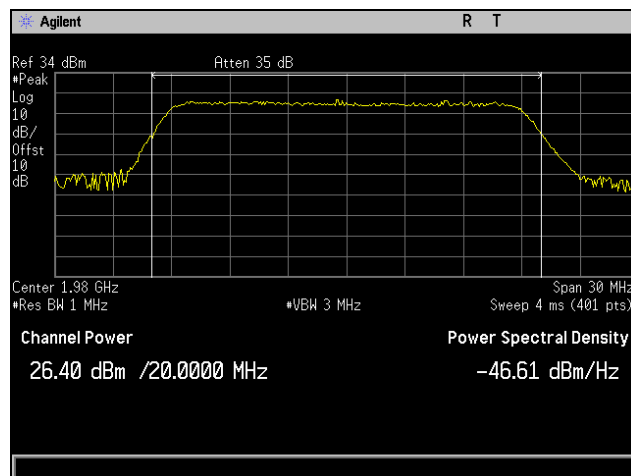
Plot 120. RF Output Power, QAM-16, 1980 MHz, High Channel, Port 1, Band 2, Peak



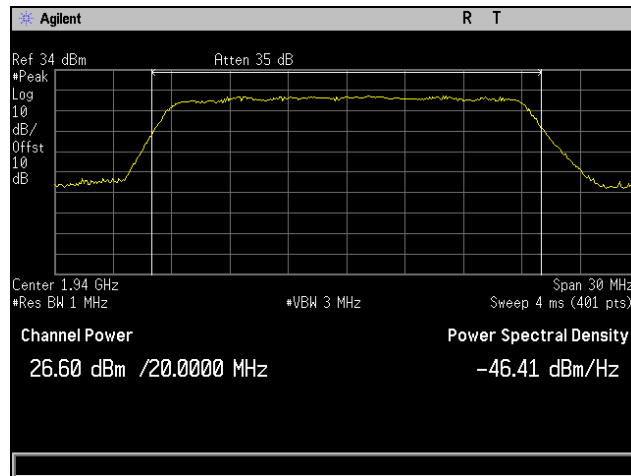
Plot 121. RF Output Power, QAM-64, 1940 MHz, Low Channel, Port 1, Band 2, Peak



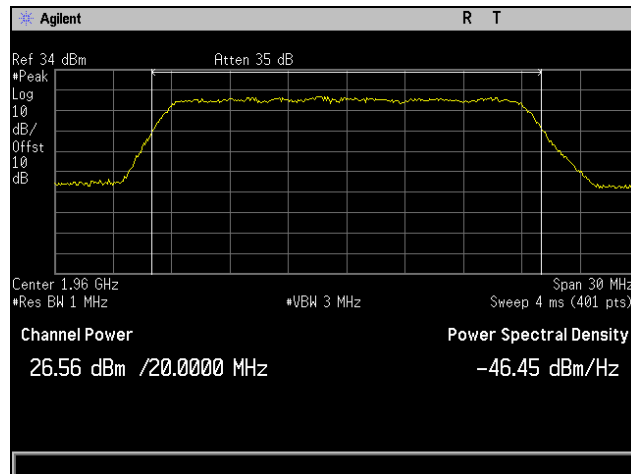
Plot 122. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Port 1, Band 2, Peak



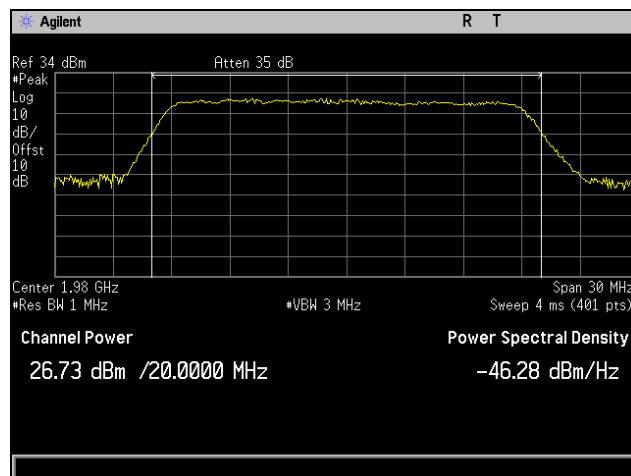
Plot 123. RF Output Power, QAM-64, 1980 MHz, High Channel, Port 1, Band 2, Peak



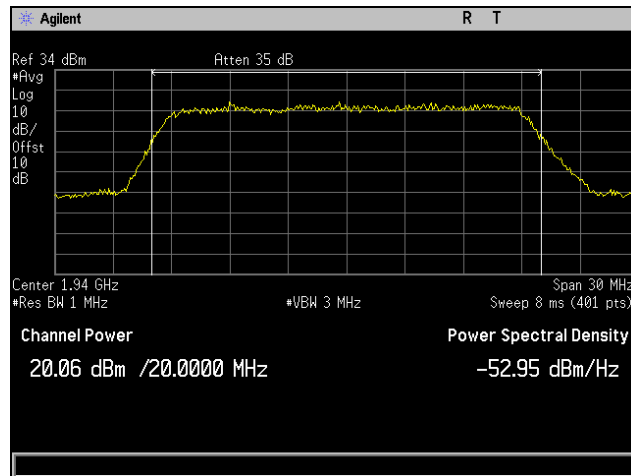
Plot 124. RF Output Power, QPSK, 1940 MHz, Low Channel, Port 1, Band 2, Peak



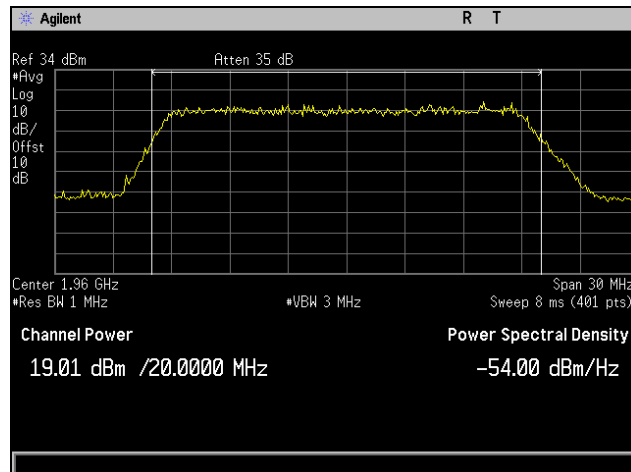
Plot 125. RF Output Power, QPSK, 1960 MHz, Mid Channel, Port 1, Band 2, Peak



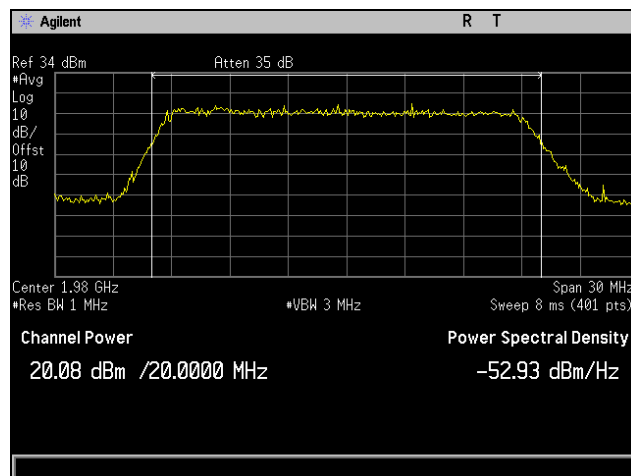
Plot 126. RF Output Power, QPSK, 1980 MHz, High Channel, Port 1, Band 2, Peak



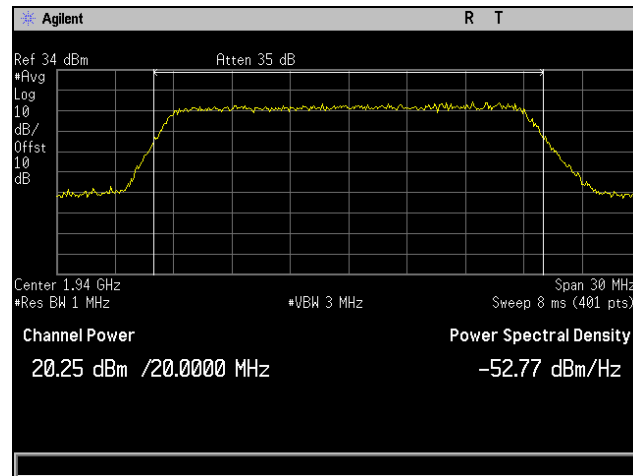
Plot 127. RF Output Power, QAM-16, 1940 MHz, Low Channel, Port 2, Band 2, Average



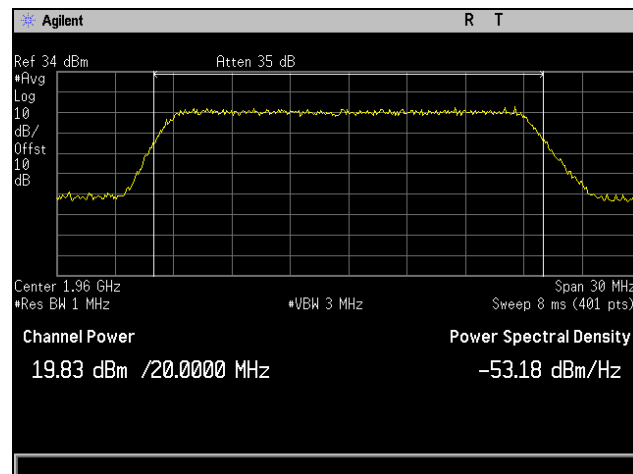
Plot 128. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Port 2, Band 2, Average



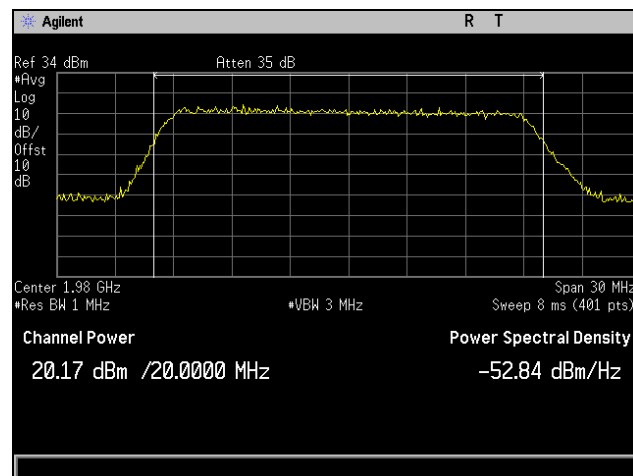
Plot 129. RF Output Power, QAM-16, 1980 MHz, High Channel, Port 2, Band 2, Average



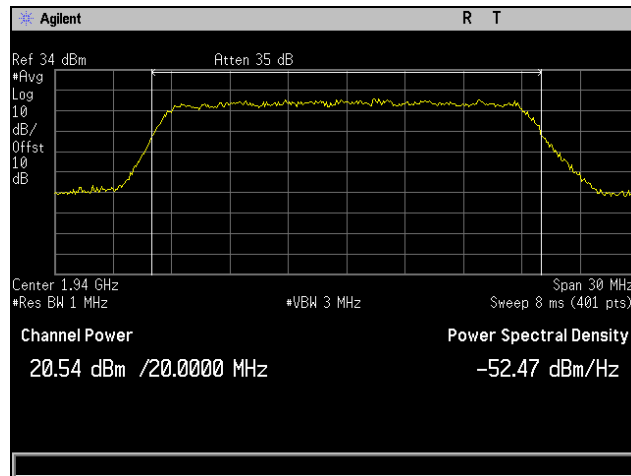
Plot 130. RF Output Power, QAM-64, 1940 MHz, Low Channel, Port 2, Band 2, Average



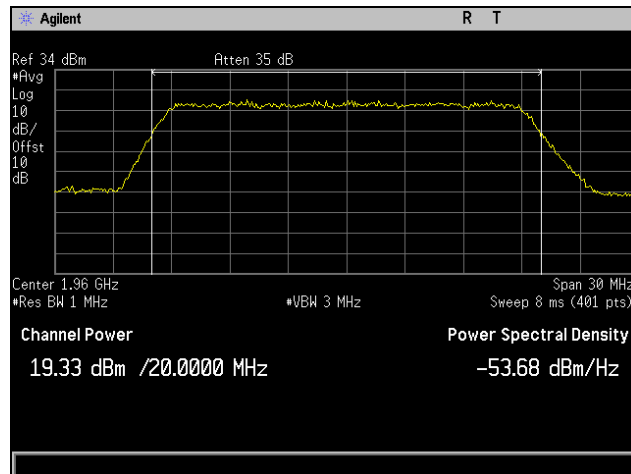
Plot 131. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Port 2, Band 2, Average



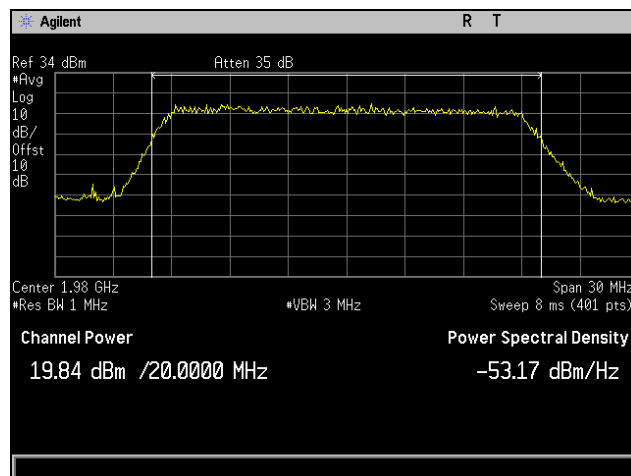
Plot 132. RF Output Power, QAM-64, 1980 MHz, High Channel, Port 2, Band 2, Average



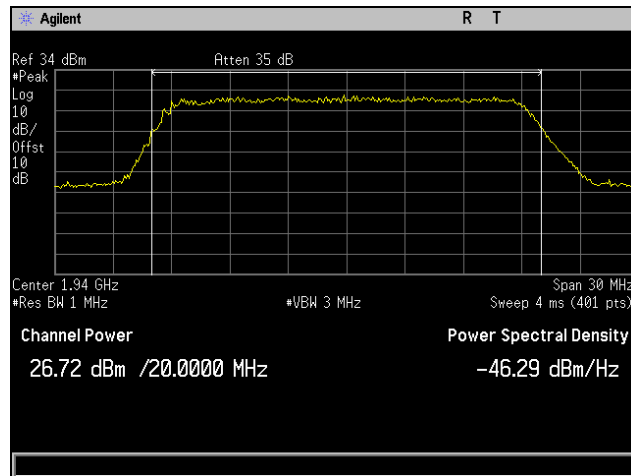
Plot 133. RF Output Power, QPSK, 1940 MHz, Low Channel, Port 2, Band 2, Average



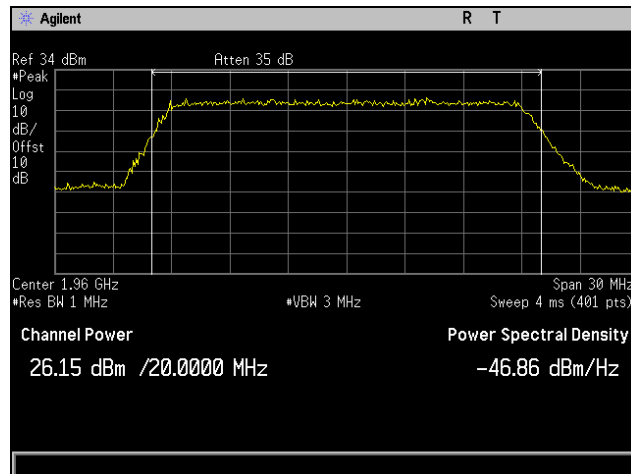
Plot 134. RF Output Power, QPSK, 1960 MHz, Mid Channel, Port 2, Band 2, Average



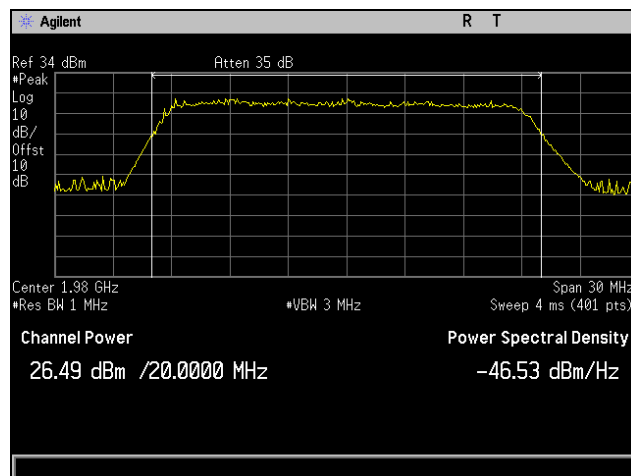
Plot 135. RF Output Power, QPSK, 1980 MHz, High Channel, Port 2, Band 2, Average



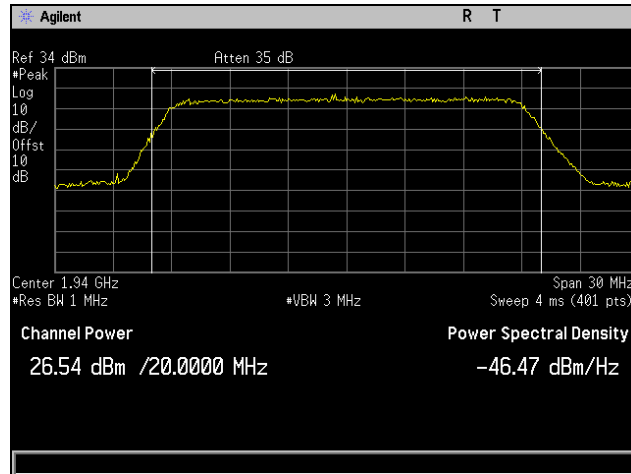
Plot 136. RF Output Power, QAM-16, 1940 MHz, Low Channel, Port 2, Band 2, Peak



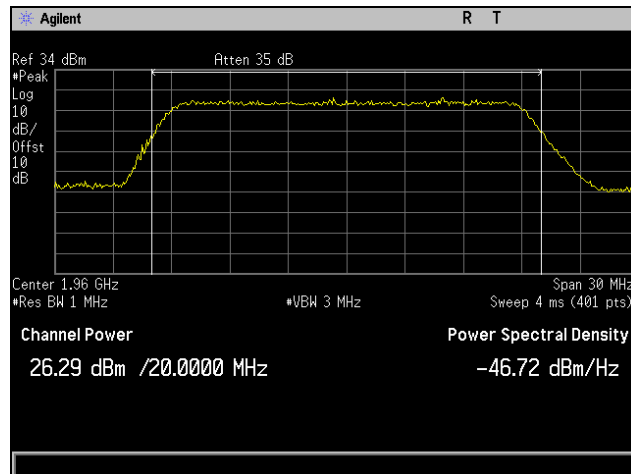
Plot 137. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Port 2, Band 2, Peak



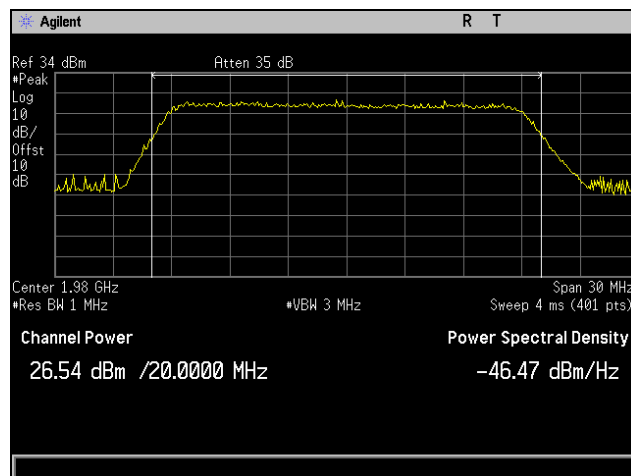
Plot 138. RF Output Power, QAM-16, 1980 MHz, High Channel, Port 2, Band 2, Peak



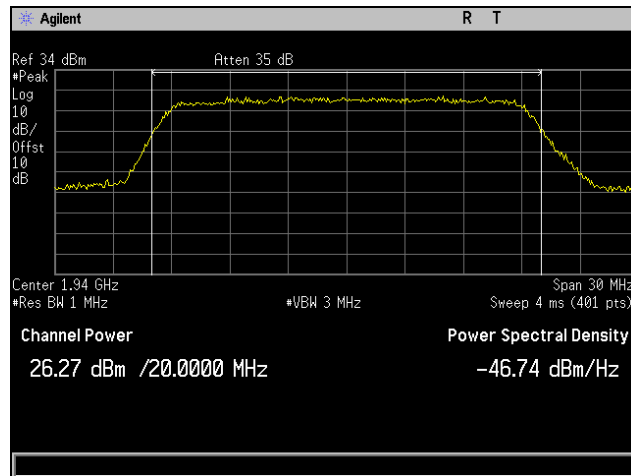
Plot 139. RF Output Power, QAM-64, 1940 MHz, Low Channel, Port 2, Band 2, Peak



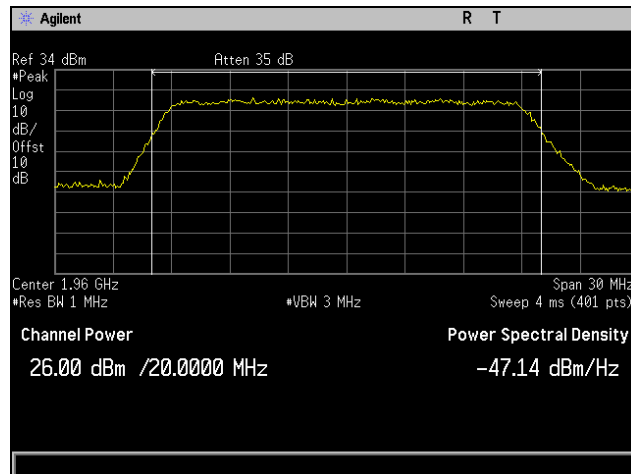
Plot 140. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Port 2, Band 2, Peak



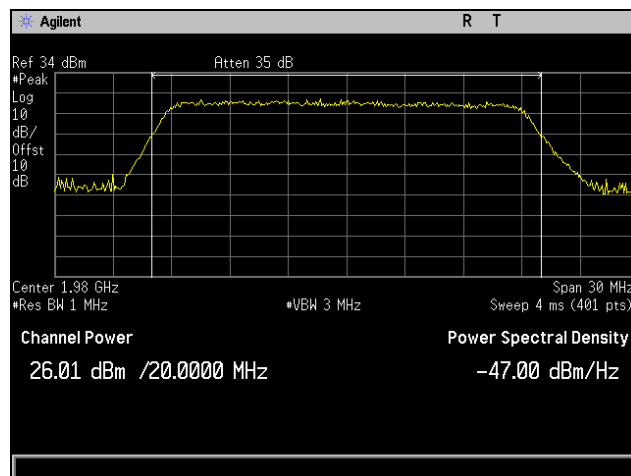
Plot 141. RF Output Power, QAM-64, 1980 MHz, High Channel, Port 2, Band 2, Peak



Plot 142. RF Output Power, QPSK, 1940 MHz, Low Channel, Port 2, Band 2, Peak

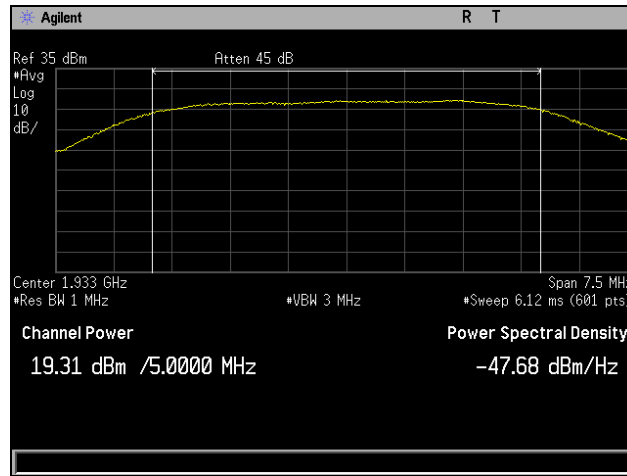


Plot 143. RF Output Power, QPSK, 1960 MHz, Mid Channel, Port 2, Band 2, Peak

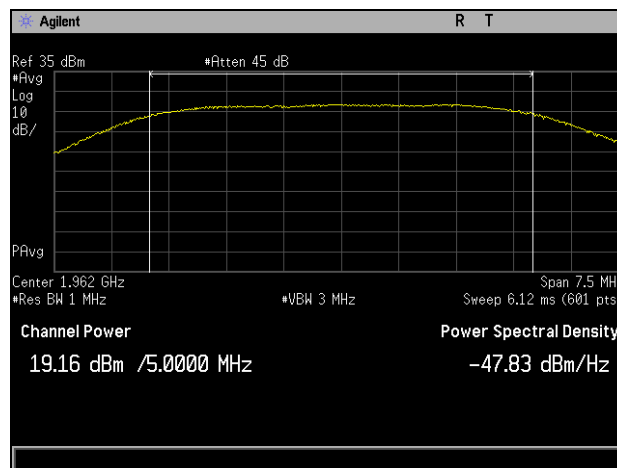


Plot 144. RF Output Power, QPSK, 1980 MHz, High Channel, Port 2, Band 2, Peak

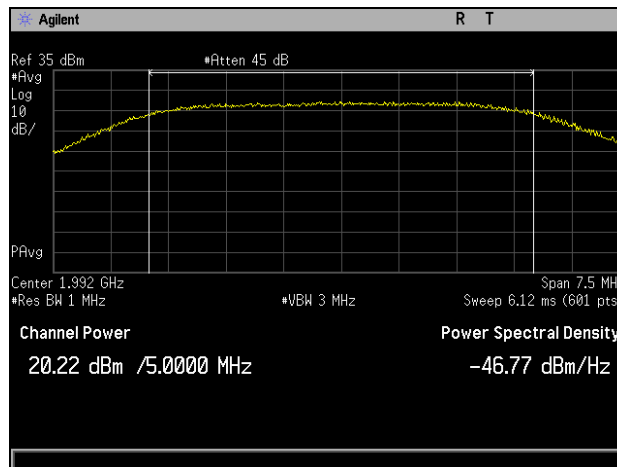
RF Power Output, Band 25



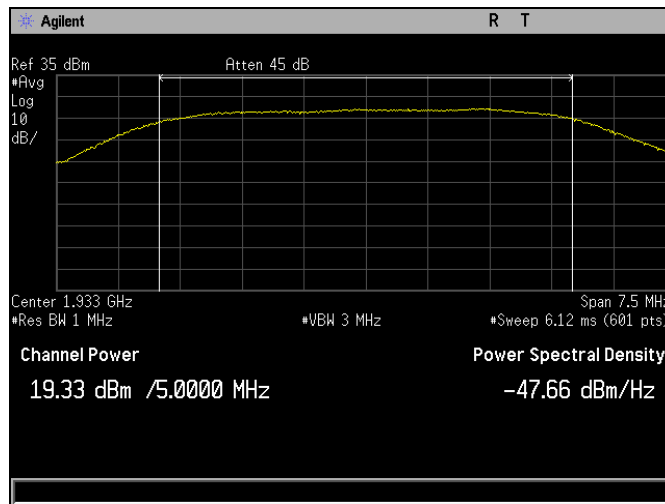
Plot 145. RF Output Power, QAM-16, 1933 MHz, Low Channel, Band 25, Average, Port 1, 5



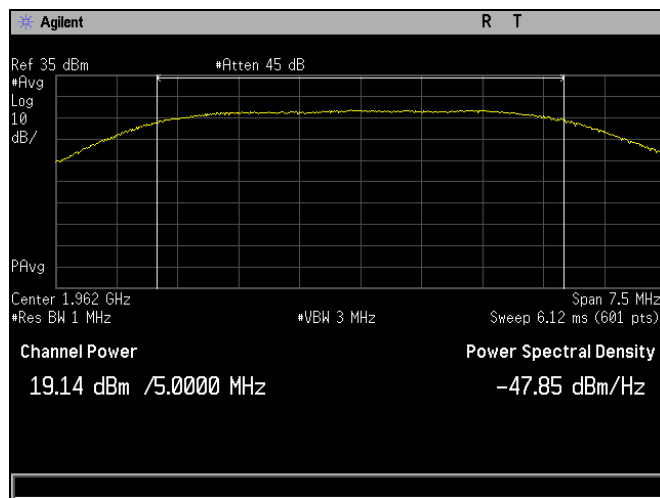
Plot 146. RF Output Power, QAM-16, 1962 MHz, Mid Channel, Band 25, Average, Port 1, 5



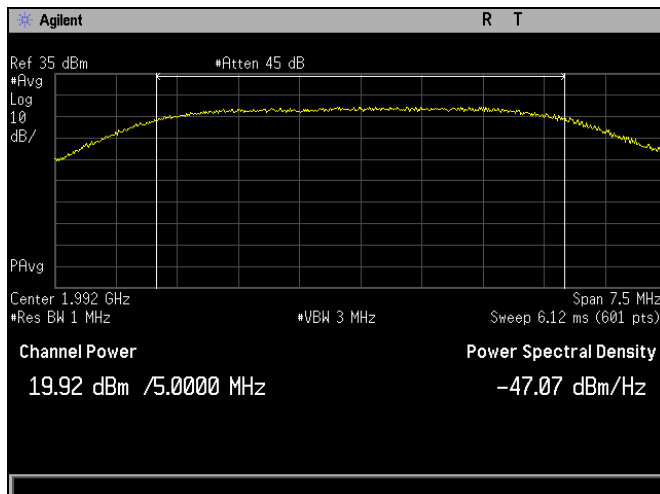
Plot 147. RF Output Power, QAM-16, 1992 MHz, High Channel, Band 25, Average, Port 1, 5



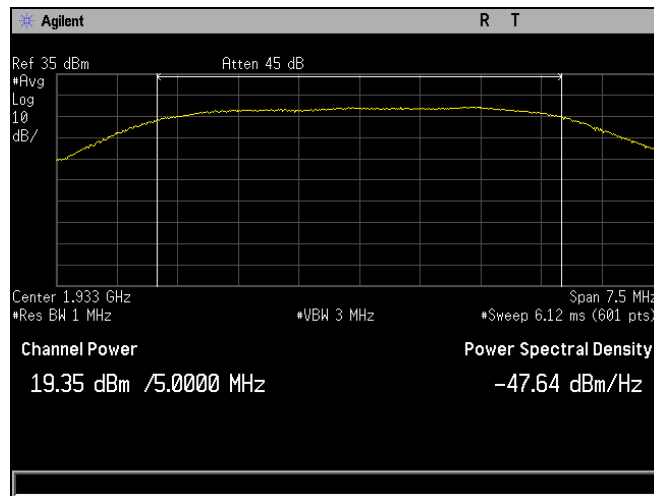
Plot 148. RF Output Power, QAM-64, 1933 MHz, Low Channel, Band 25, Average, Port 1, 5



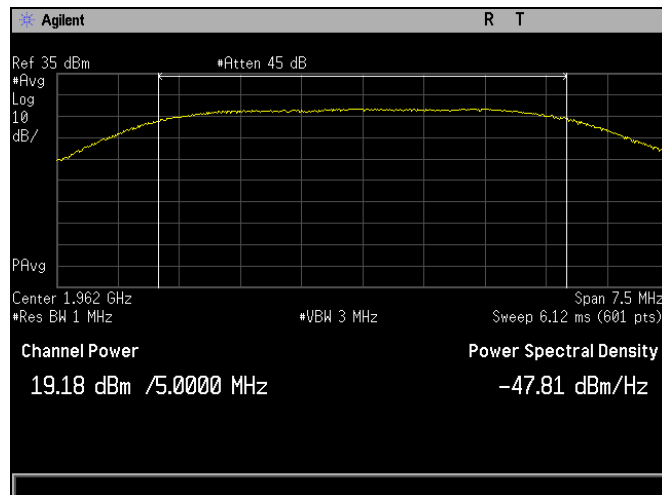
Plot 149. RF Output Power, QAM-64, 1962 MHz, Mid Channel, Band 25, Average, Port 1, 5



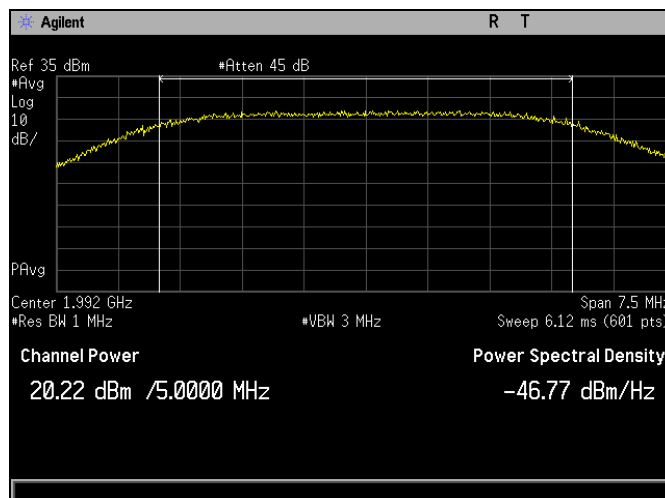
Plot 150. RF Output Power, QAM-64, 1992 MHz, High Channel, Band 25, Average, Port 1, 5



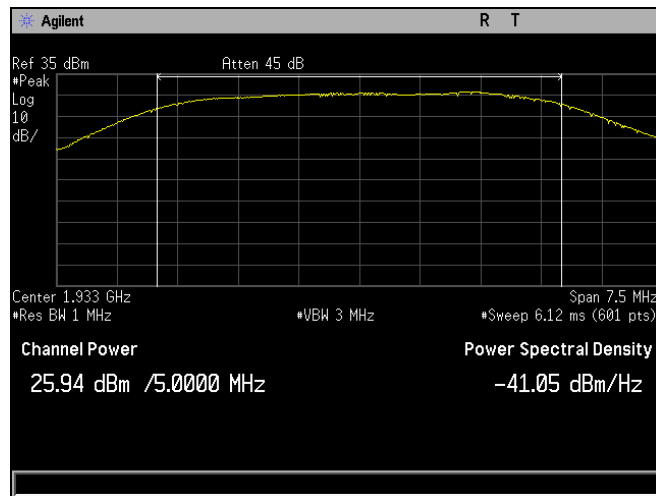
Plot 151. RF Output Power, QPSK, 1933 MHz, Low Channel, Band 25, Average, Port 1, 5



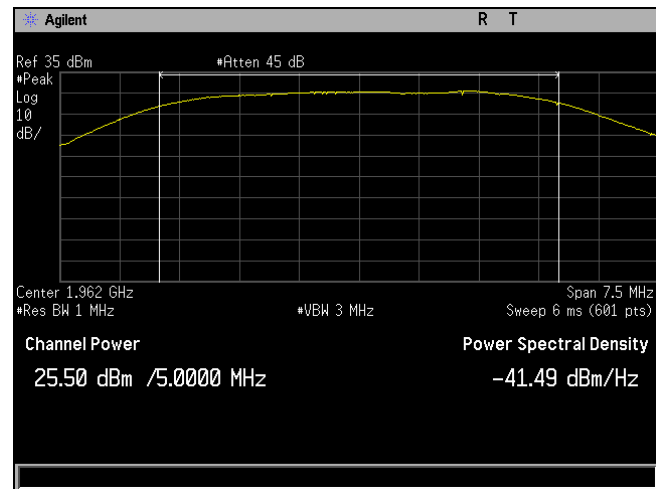
Plot 152. RF Output Power, QPSK, 1962 MHz, Mid Channel, Band 25, Average, Port 1, 5



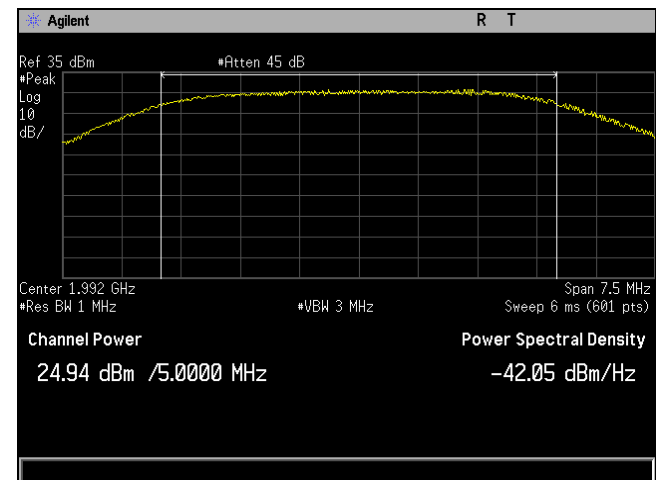
Plot 153. RF Output Power, QPSK, 1992 MHz, High Channel, Band 25, Average, Port 1, 5



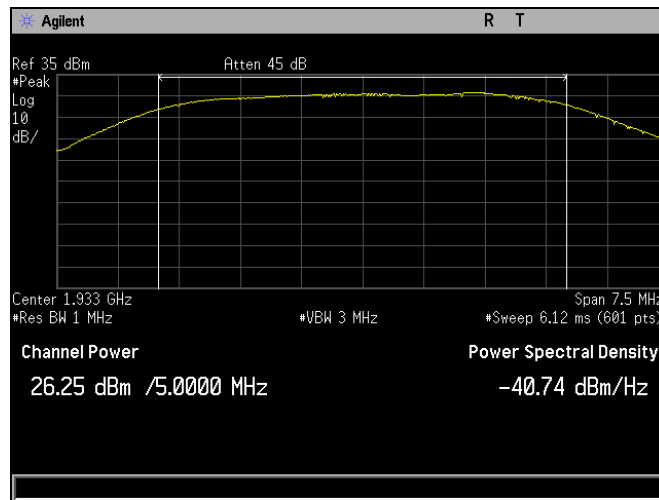
Plot 154. RF Output Power, QAM-16, 1933 MHz, Low Channel, Band 25, Peak, Port 1, 5



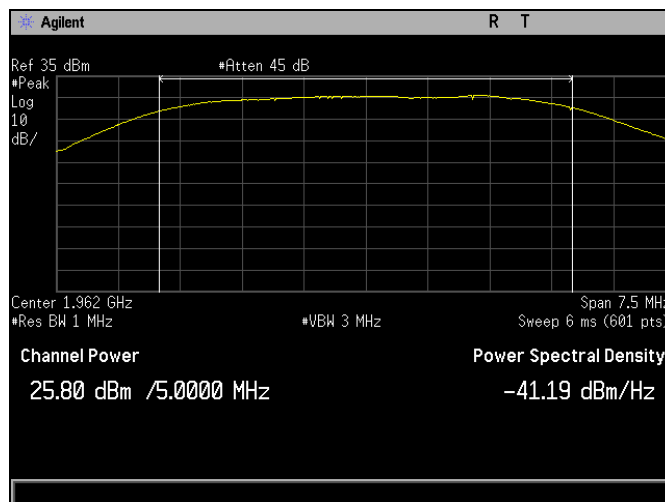
Plot 155. RF Output Power, QAM-16, 1962 MHz, Mid Channel, Band 25, Peak, Port 1, 5



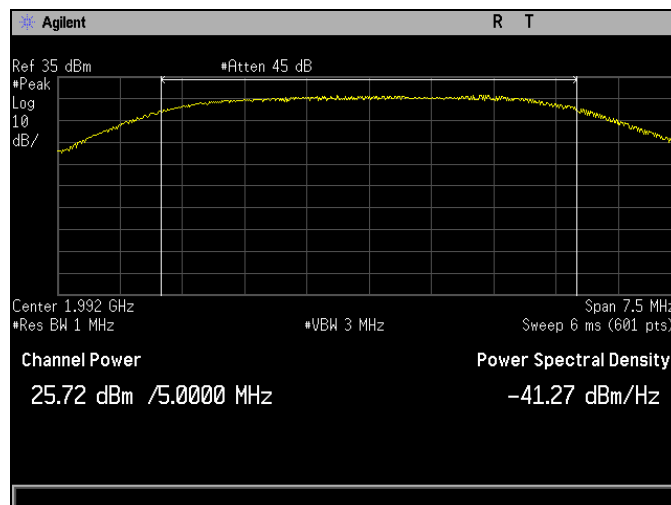
Plot 156. RF Output Power, QAM-16, 1992 MHz, High Channel, Band 25, Peak, Port 1, 5



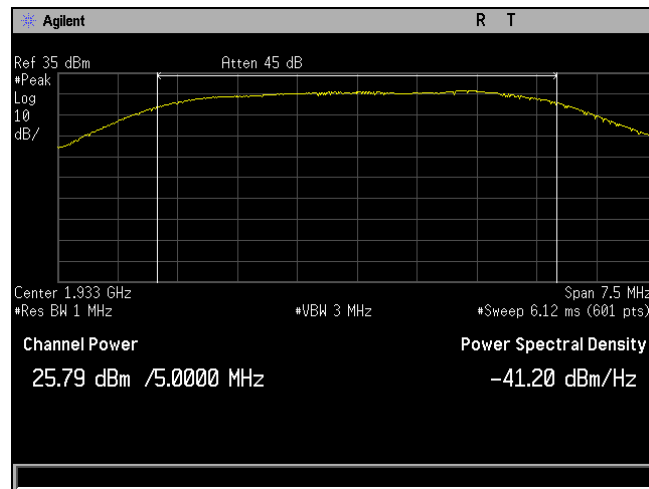
Plot 157. RF Output Power, QAM-64, 1933 MHz, Low Channel, Band 25, Peak, Port 1, 5



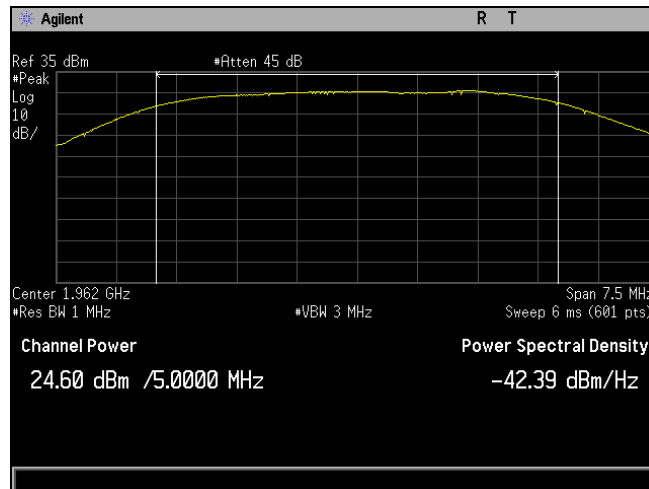
Plot 158. RF Output Power, QAM-64, 1962 MHz, Mid Channel, Band 25, Peak, Port 1, 5



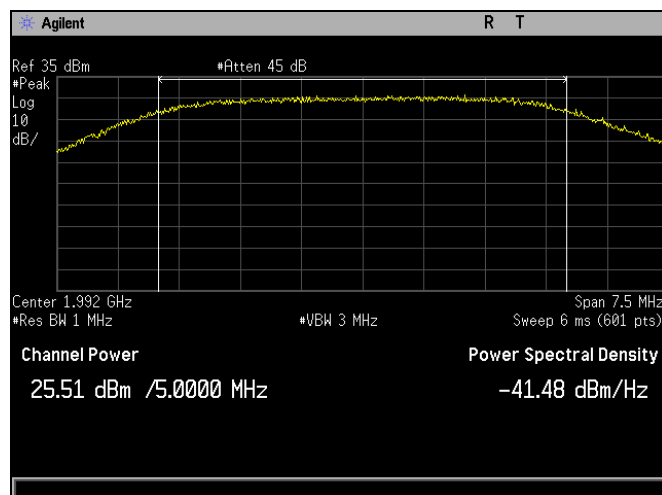
Plot 159. RF Output Power, QAM-64, 1992 MHz, High Channel, Band 25, Peak, Port 1, 5



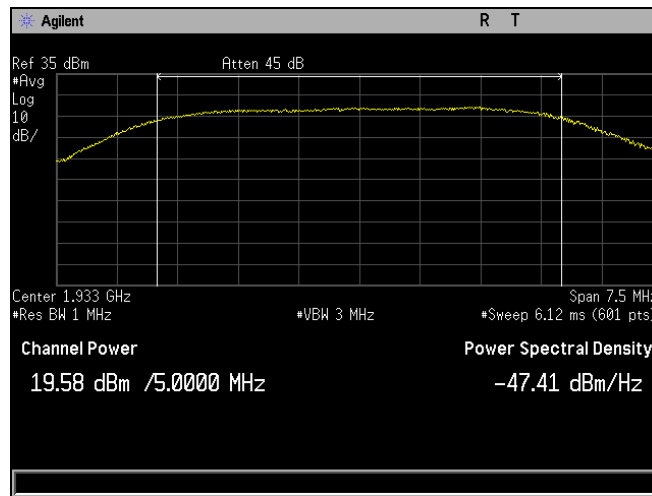
Plot 160. RF Output Power, QPSK, 1933 MHz, Low Channel, Band 25, Peak, Port 1, 5



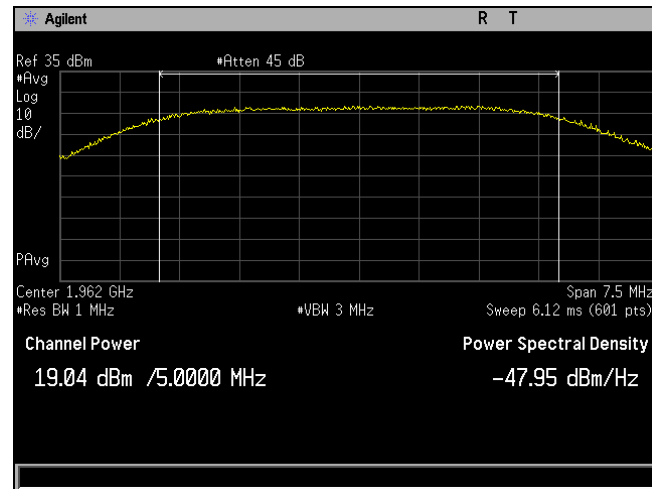
Plot 161. RF Output Power, QPSK, 1962 MHz, Mid Channel, Band 25, Peak, Port 1, 5



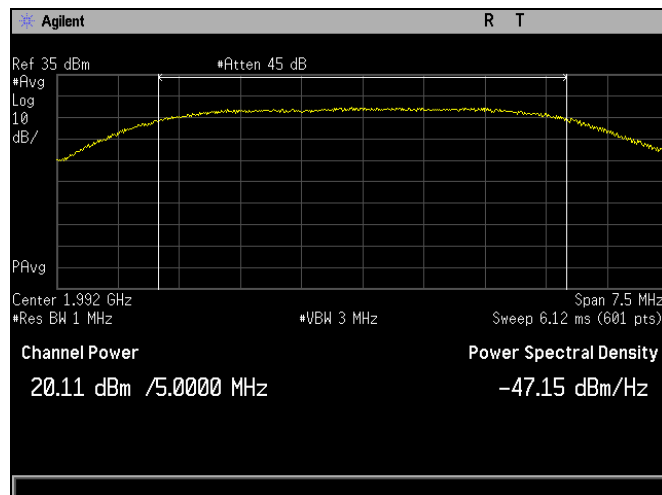
Plot 162. RF Output Power, QPSK, 1992 MHz, High Channel, Band 25, Peak, Port 1, 5



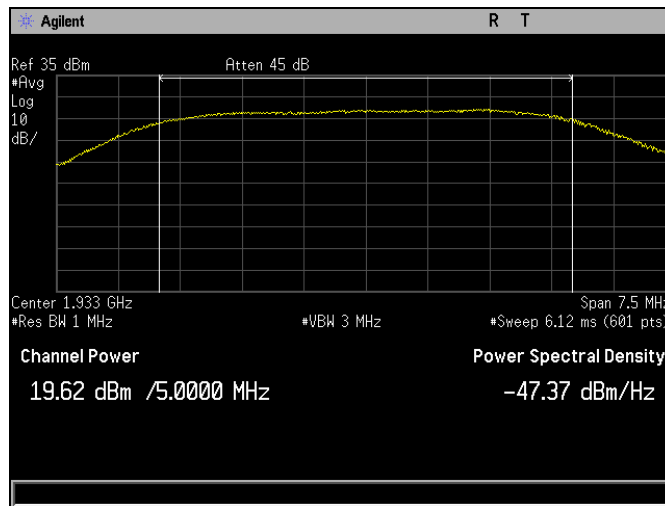
Plot 163. RF Output Power, QAM-16, 1933 MHz, Low Channel, Band 25, Average, Port 2, 5



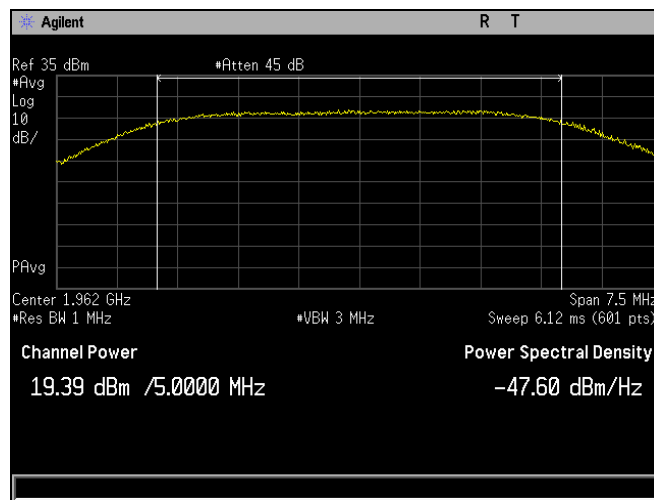
Plot 164. RF Output Power, QAM-16, 1962 MHz, Mid Channel, Band 25, Average, Port 2, 5



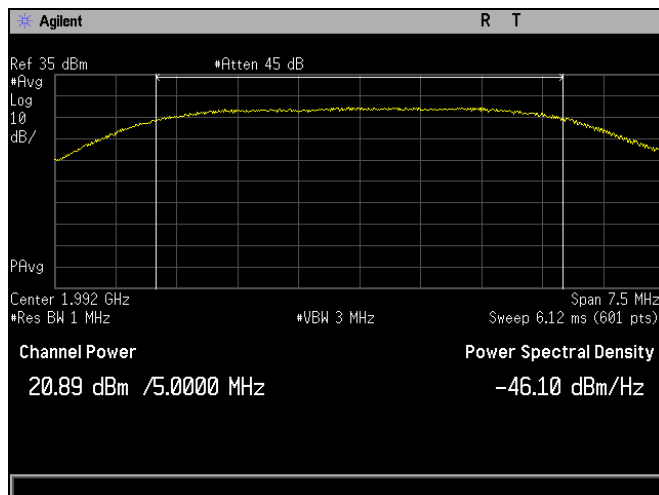
Plot 165. RF Output Power, QAM-16, 1992 MHz, High Channel, Band 25, Average, Port 2, 5



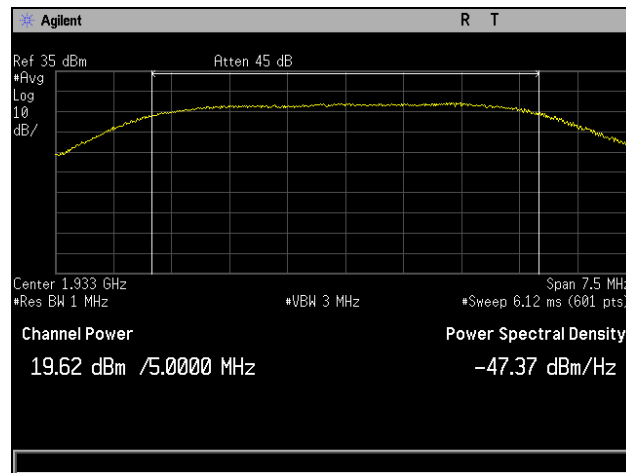
Plot 166. RF Output Power, QAM-64, 1933 MHz, Low Channel, Band 25, Average, Port 2, 5



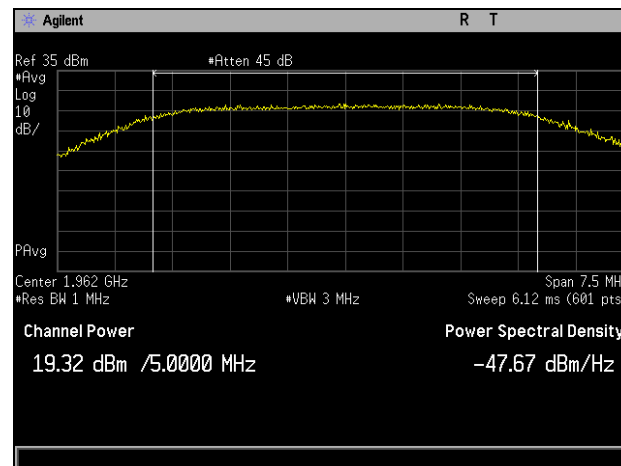
Plot 167. RF Output Power, QAM-64, 1962 MHz, Mid Channel, Band 25, Average, Port 2, 5



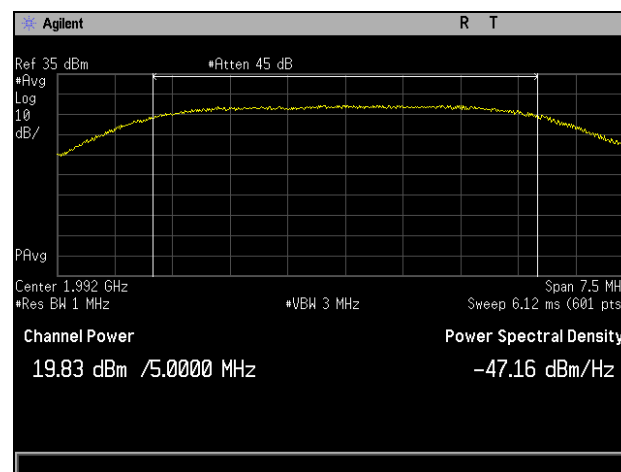
Plot 168. RF Output Power, QAM-64, 1992 MHz, High Channel, Band 25, Average, Port 2, 5



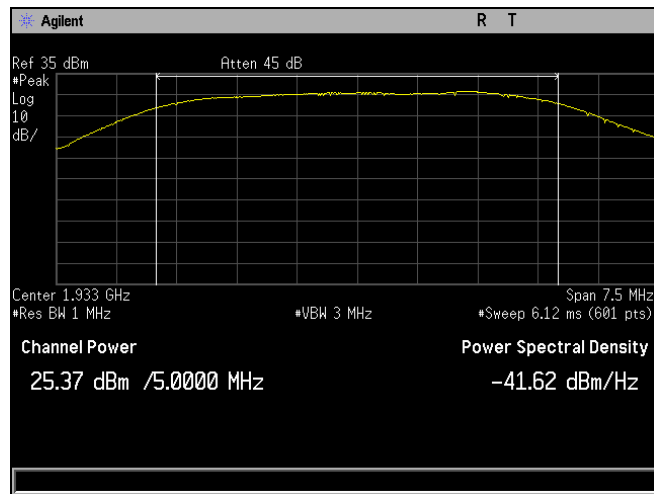
Plot 169. RF Output Power, QPSK, 1933 MHz, Low Channel, Band 25, Average, Port 2, 5



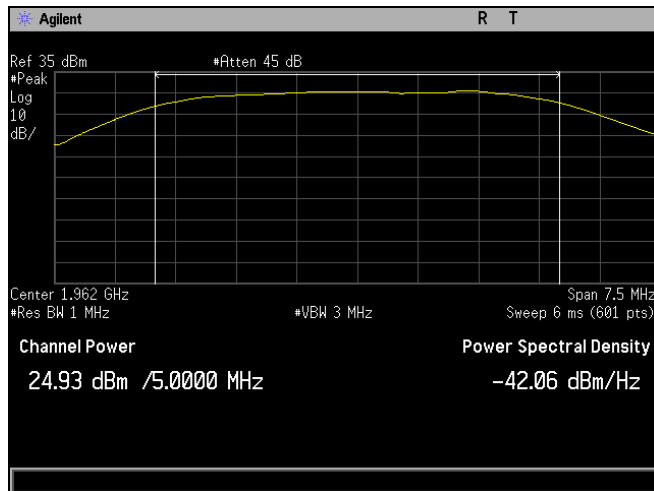
Plot 170. RF Output Power, QPSK, 1962 MHz, Mid Channel, Band 25, Average, Port 2, 5



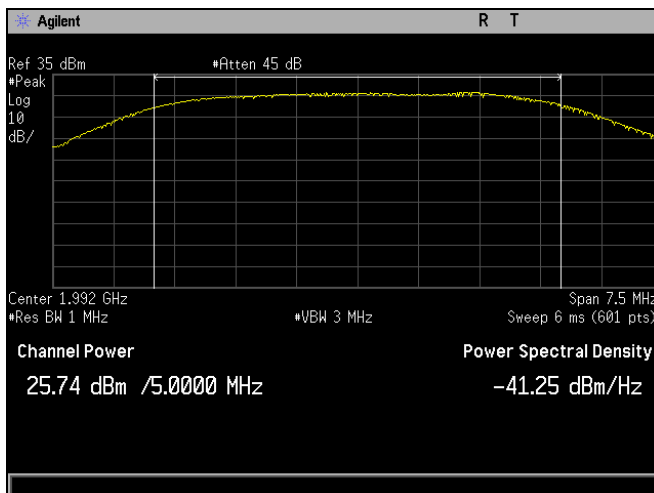
Plot 171. RF Output Power, QPSK, 1992 MHz, High Channel, Band 25, Average, Port 2, 5



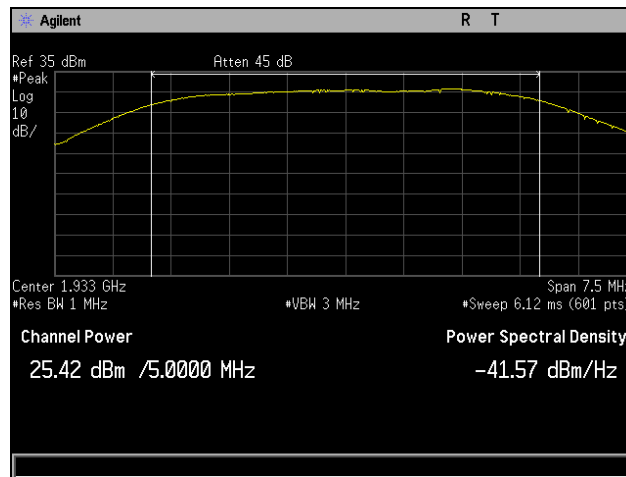
Plot 172. RF Output Power, QAM-16, 1933 MHz, Low Channel, Band 25, Peak, Port 2, 5



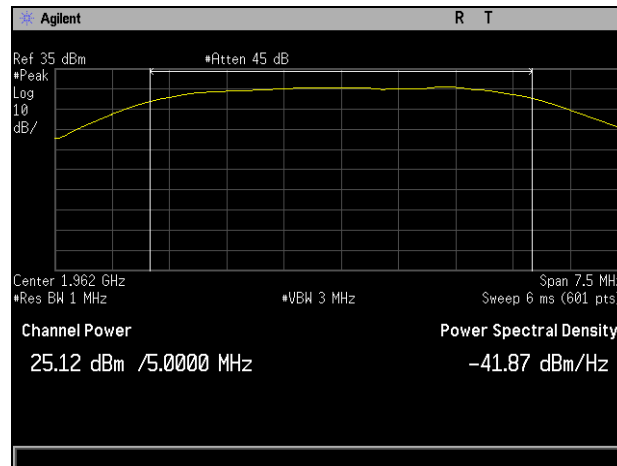
Plot 173. RF Output Power, QAM-16, 1962 MHz, Mid Channel, Band 25, Peak, Port 2, 5



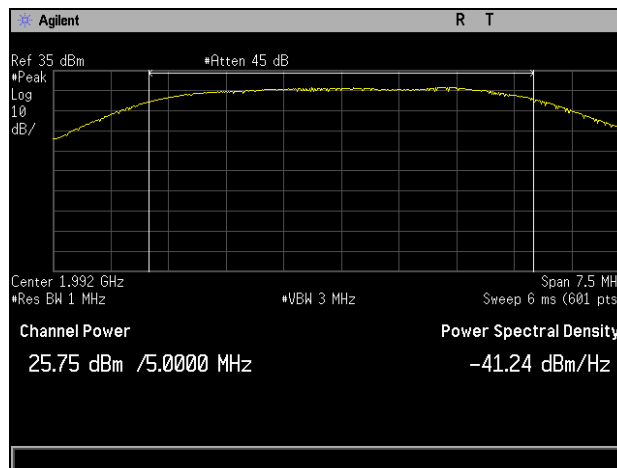
Plot 174. RF Output Power, QAM-16, 1992 MHz, High Channel, Band 25, Peak, Port 2, 5



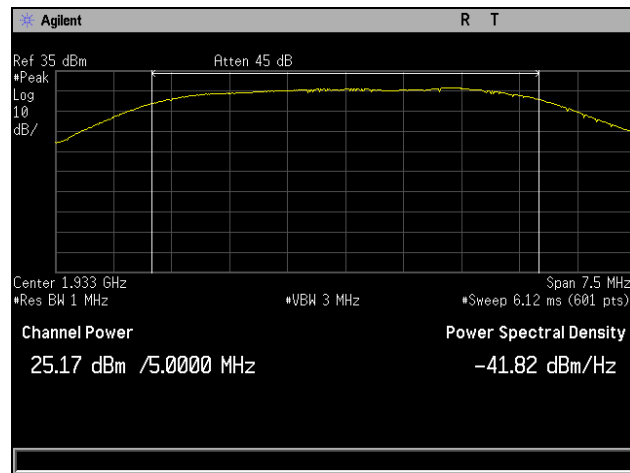
Plot 175. RF Output Power, QAM-64, 1933 MHz, Low Channel, Band 25, Peak, Port 2, 5



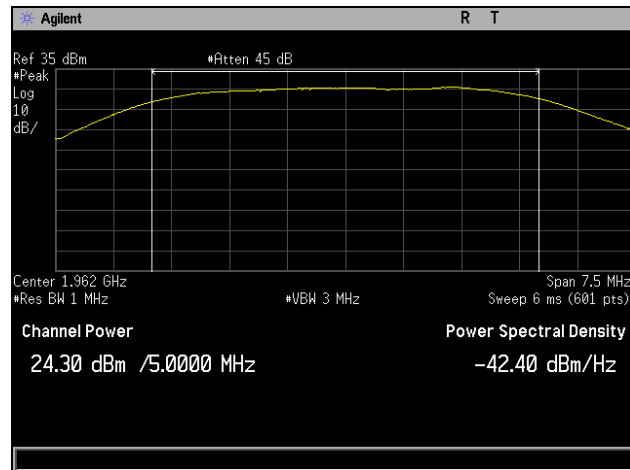
Plot 176. RF Output Power, QAM-64, 1962 MHz, Mid Channel, Band 25, Peak, Port 2, 5



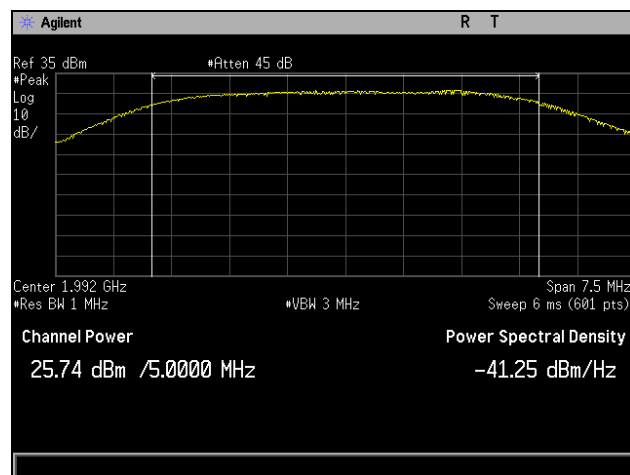
Plot 177. RF Output Power, QAM-64, 1992 MHz, High Channel, Band 25, Peak, Port 2, 5



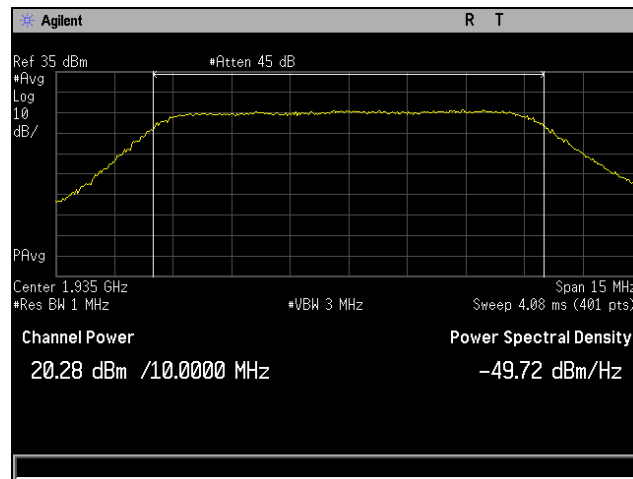
Plot 178. RF Output Power, QPSK, 1933 MHz, Low Channel, Band 25, Peak, Port 2, 5



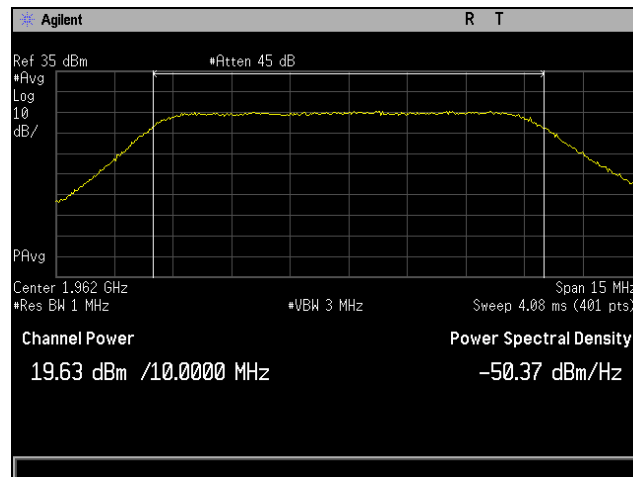
Plot 179. RF Output Power, QPSK, 1962 MHz, Mid Channel, Band 25, Peak, Port 2, 5



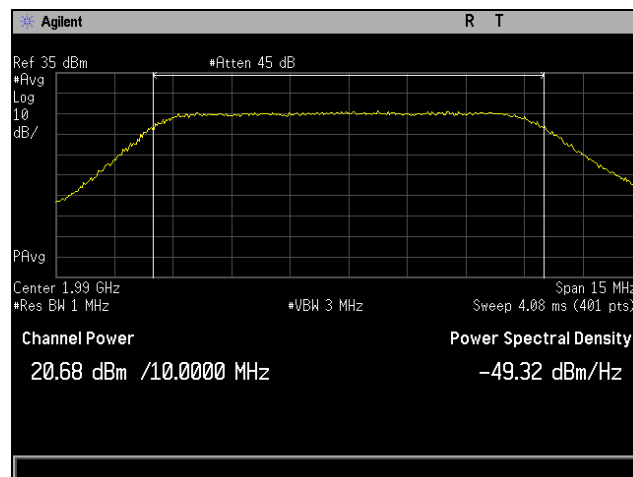
Plot 180. RF Output Power, QPSK, 1992 MHz, High Channel, Band 25, Peak, Port 2, 5



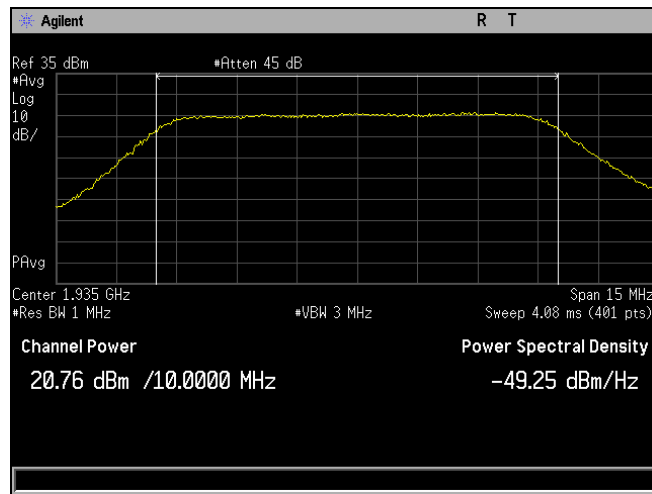
Plot 181. RF Output Power, QAM-16, 1935 MHz, Low Channel, Band 25, Average, Port 1, 10



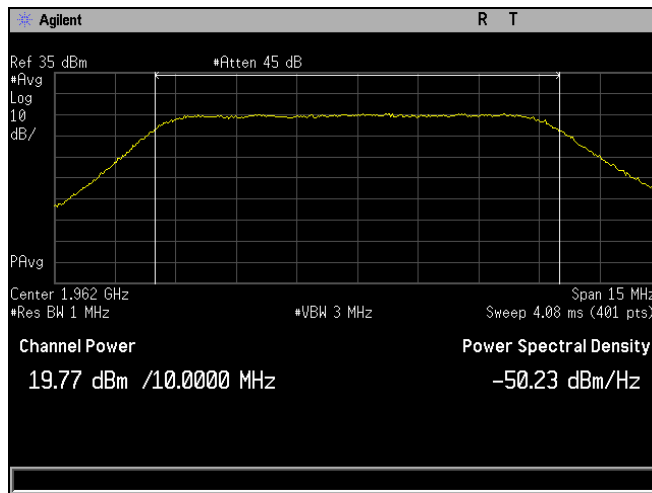
Plot 182. RF Output Power, QAM-16, 1962 MHz, Mid Channel, Band 25, Average, Port 1, 10



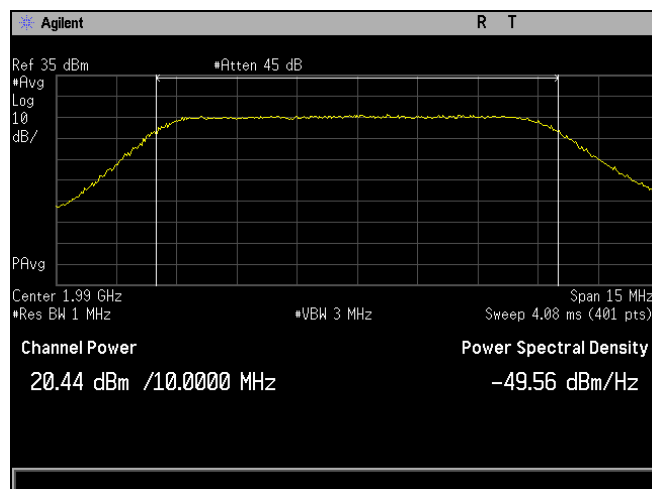
Plot 183. RF Output Power, QAM-16, 1990 MHz, High Channel, Band 25, Average, Port 1, 10



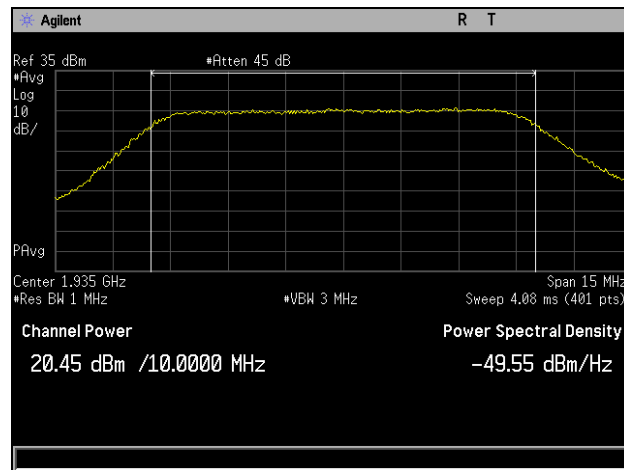
Plot 184. RF Output Power, QAM-64, 1935 MHz, Low Channel, Band 25, Average, Port 1, 10



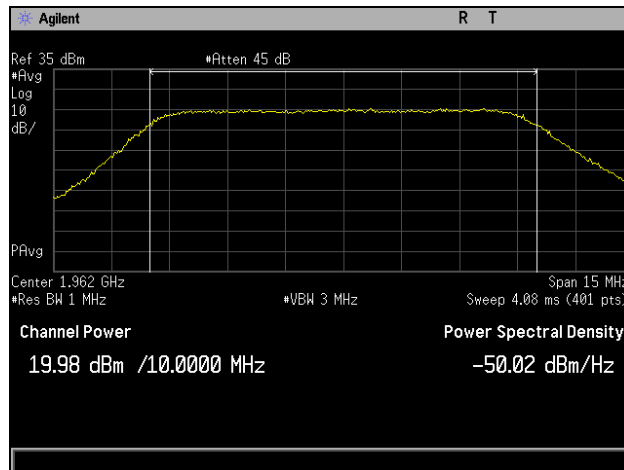
Plot 185. RF Output Power, QAM-64, 1962 MHz, Mid Channel, Band 25, Average, Port 1, 10



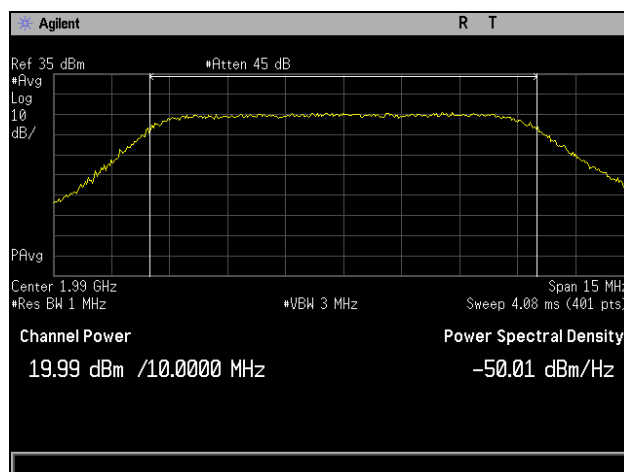
Plot 186. RF Output Power, QAM-64, 1990 MHz, High Channel, Band 25, Average, Port 1, 10



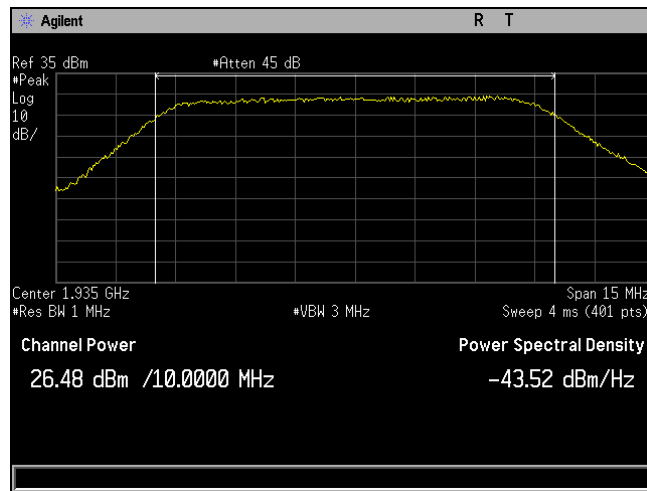
Plot 187. RF Output Power, QPSK, 1935 MHz, Low Channel, Band 25, Average, Port 1, 10



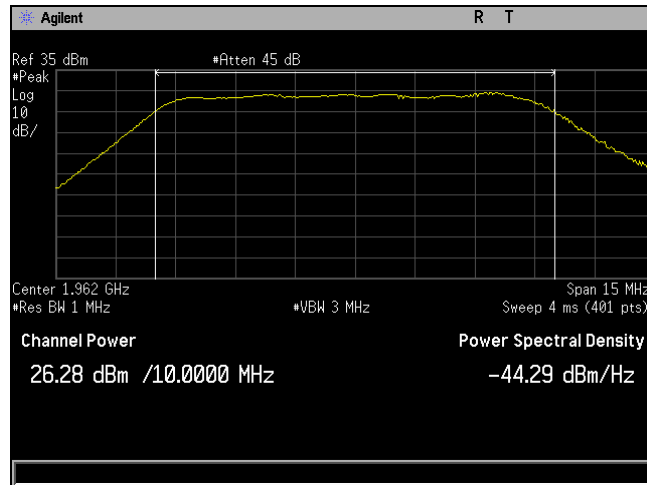
Plot 188. RF Output Power, QPSK, 1962 MHz, High Channel, Band 25, Average, Port 1, 10



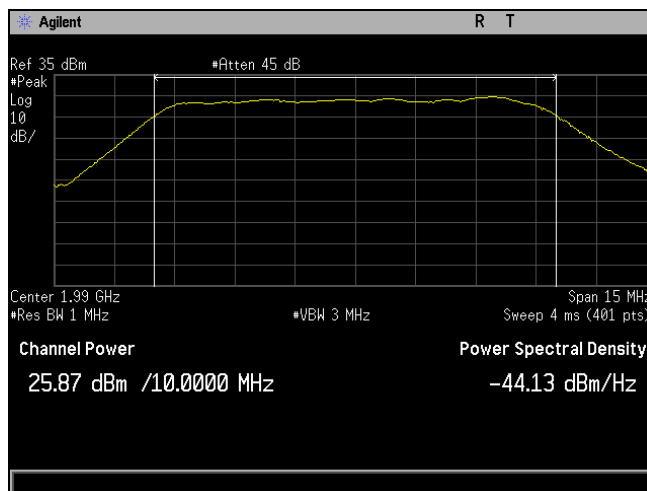
Plot 189. RF Output Power, QPSK, 1990 MHz, High Channel, Band 25, Average, Port 1, 10



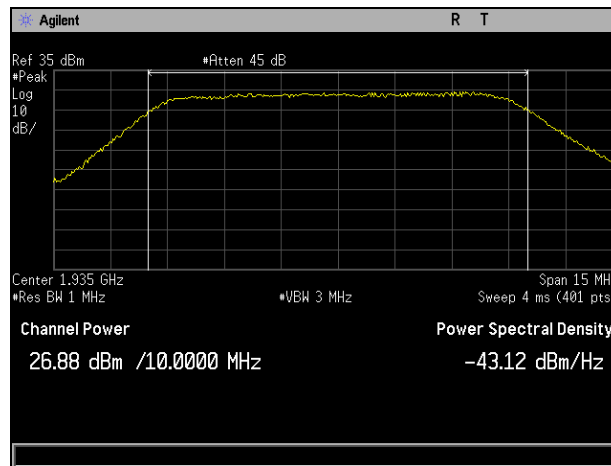
Plot 190. RF Output Power, QAM-16, 1935 MHz, Low Channel, Band 25, Peak, Port 1, 10



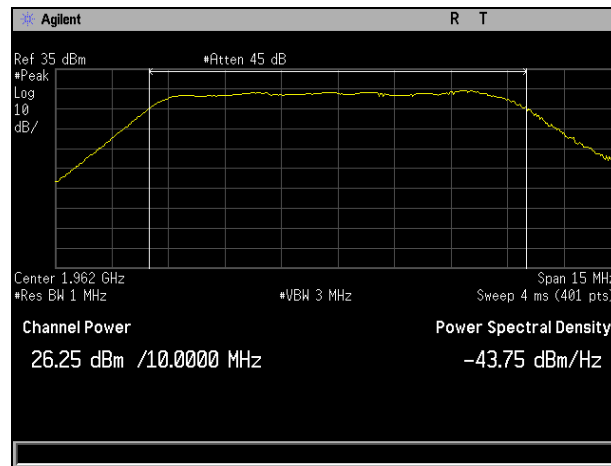
Plot 191. RF Output Power, QAM-16, 1962 MHz, Mid Channel, Band 25, Peak, Port 1, 10



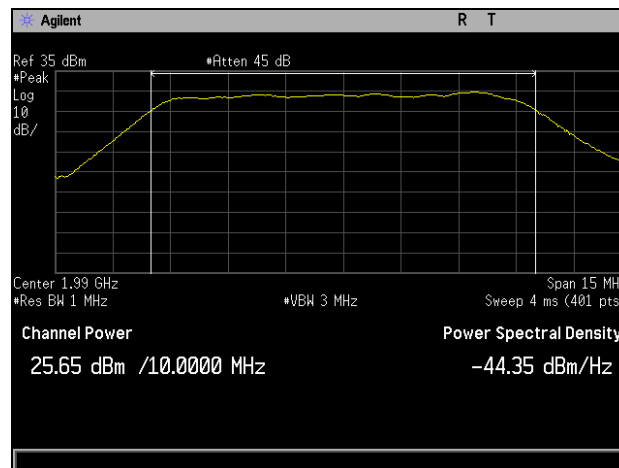
Plot 192. RF Output Power, QAM-16, 1990 MHz, High Channel, Band 25, Peak, Port 1, 10



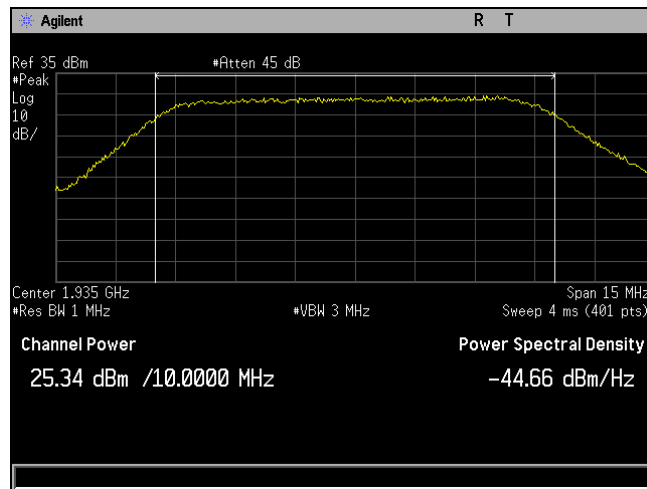
Plot 193. RF Output Power, QAM-64, 1935 MHz, Low Channel, Band 25, Peak, Port 1, 10



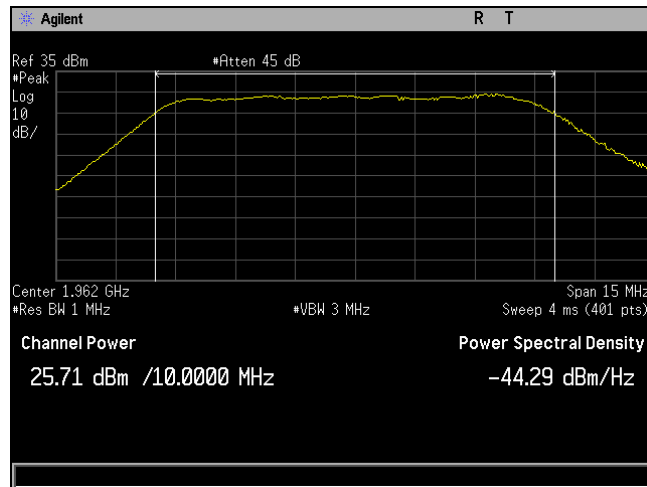
Plot 194. RF Output Power, QAM-64, 1962 MHz, Mid Channel, Band 25, Peak, Port 1, 10



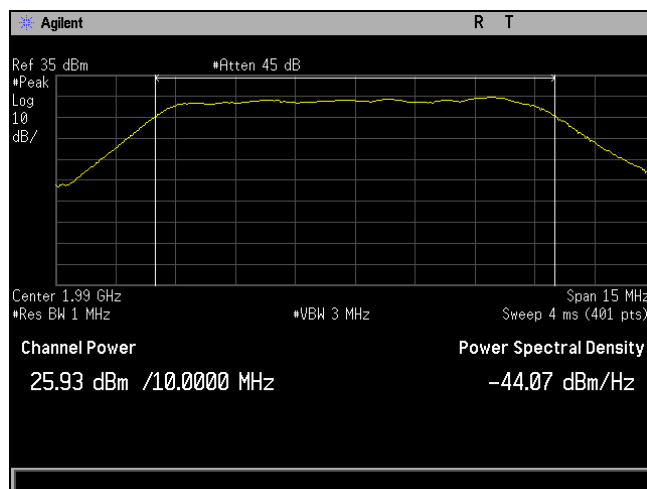
Plot 195. RF Output Power, QAM-64, 1990 MHz, High Channel, Band 25, Peak, Port 1, 10



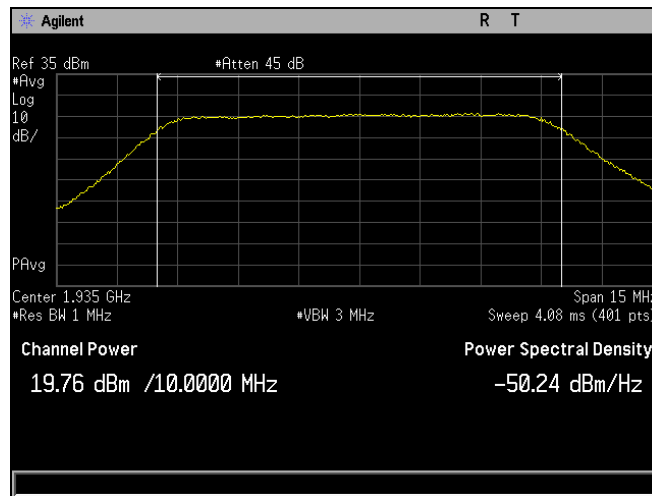
Plot 196. RF Output Power, QPSK, 1935 MHz, Low Channel, Band 25, Peak, Port 1, 10



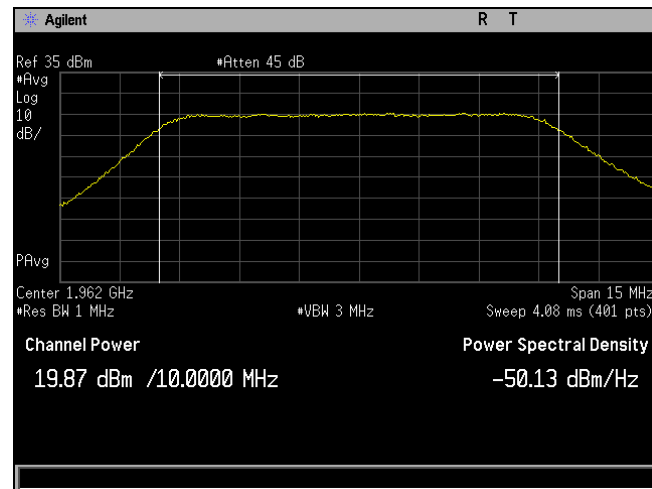
Plot 197. RF Output Power, QPSK, 1962 MHz, Mid Channel, Band 25, Peak, Port 1, 10



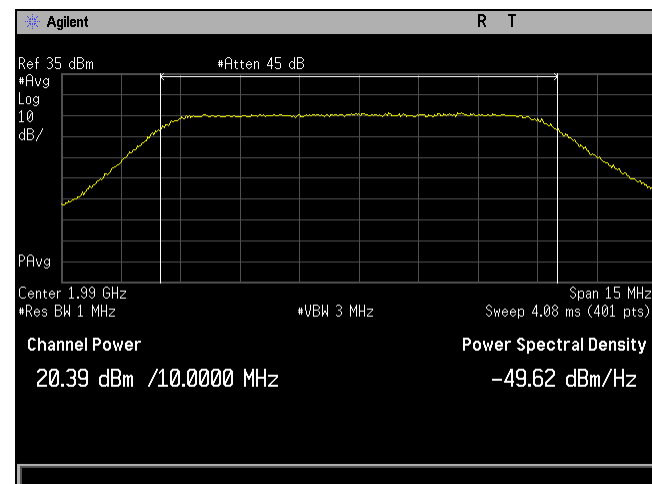
Plot 198. RF Output Power, QPSK, 1990 MHz, High Channel, Band 25, Peak, Port 1, 10



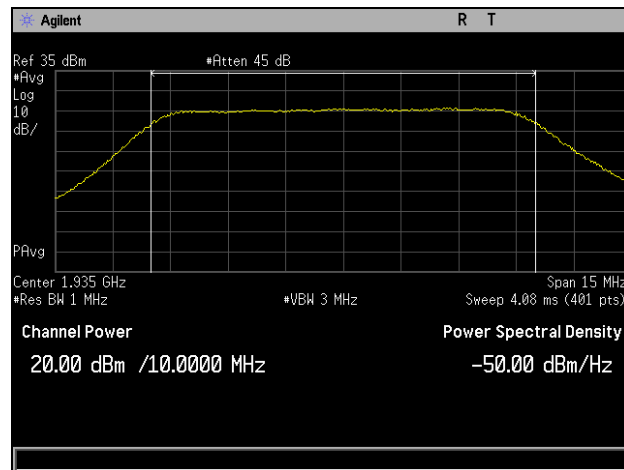
Plot 199. RF Output Power, QAM-16, 1935 MHz, Low Channel, Band 25, Average, Port 2, 10



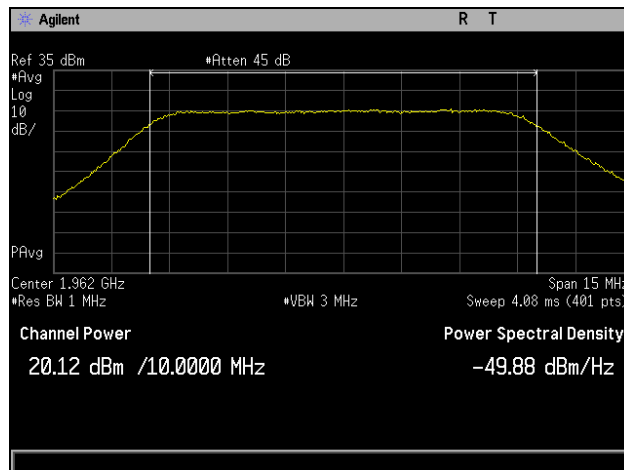
Plot 200. RF Output Power, QAM-16, 1962 MHz, Mid Channel, Band 25, Average, Port 2, 10



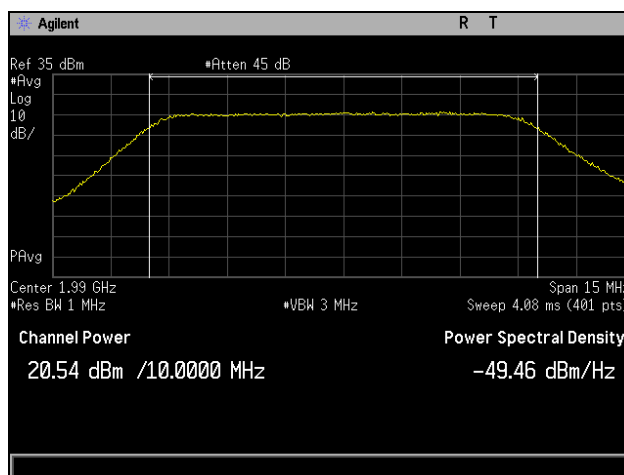
Plot 201. RF Output Power, QAM-16, 1990 MHz, High Channel, Band 25, Average, Port 2, 10



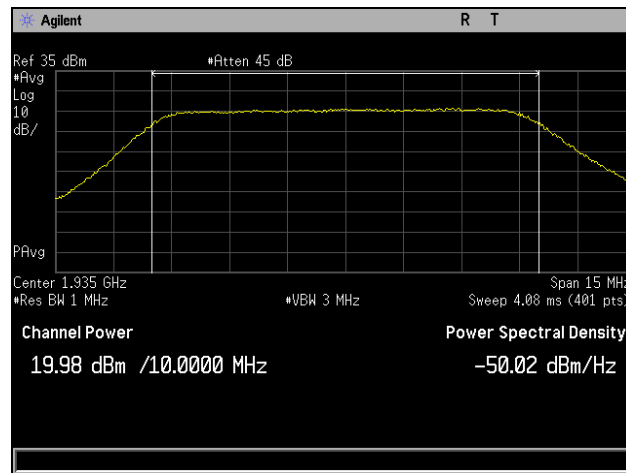
Plot 202. RF Output Power, QAM-64, 1935 MHz, Low Channel, Band 25, Average, Port 2, 10



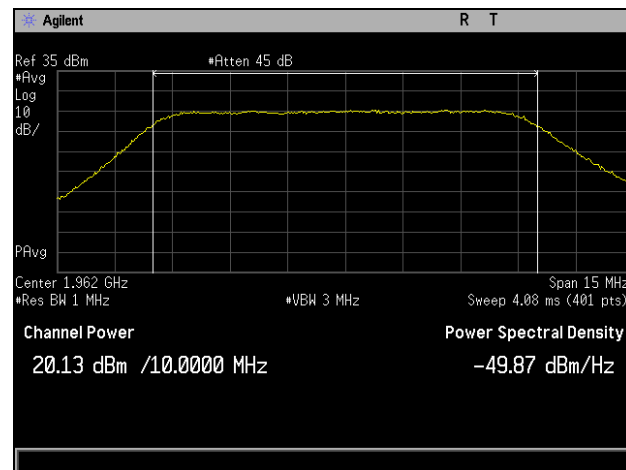
Plot 203. RF Output Power, QAM-64, 1962 MHz, Mid Channel, Band 25, Average, Port 2, 10



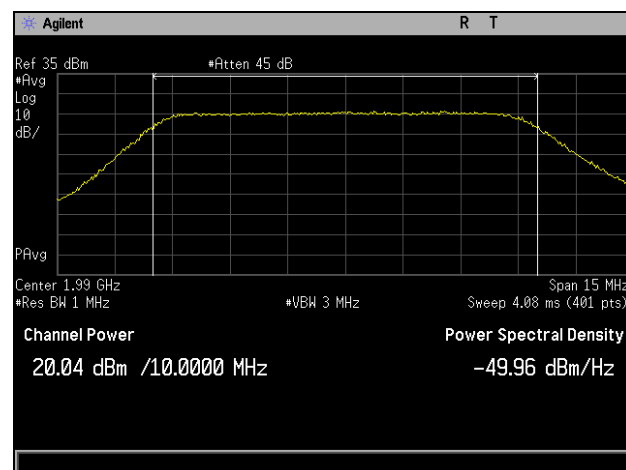
Plot 204. RF Output Power, QAM-64, 1990 MHz, High Channel, Band 25, Average, Port 2, 10



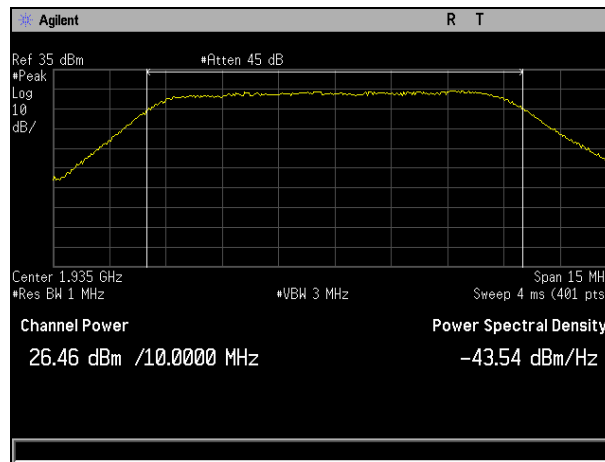
Plot 205. RF Output Power, QPSK, 1935 MHz, Low Channel, Band 25, Average, Port 2, 10



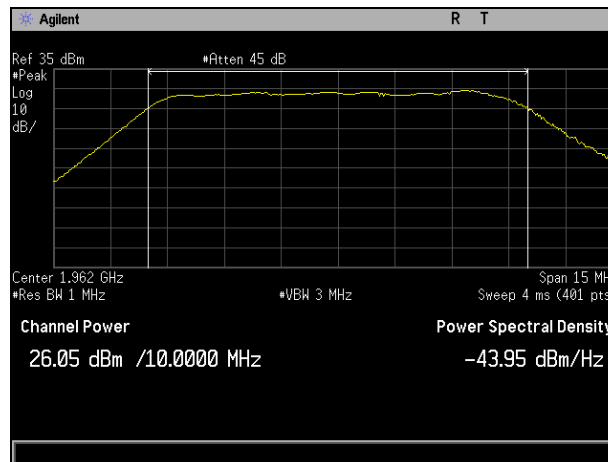
Plot 206. RF Output Power, QPSK, 1962 MHz, Mid Channel, Band 25, Average, Port 2, 10



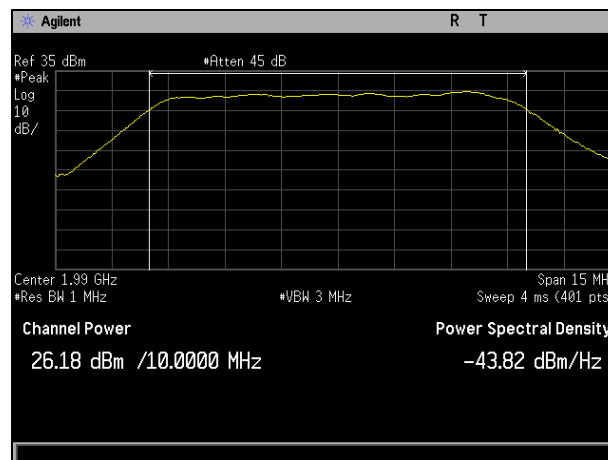
Plot 207. RF Output Power, QPSK, 1990 MHz, High Channel, Band 25, Average, Port 2, 10



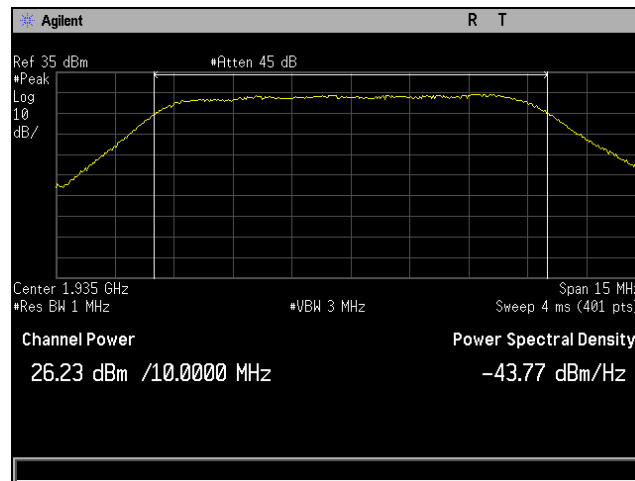
Plot 208. RF Output Power, QAM-16, 1935 MHz, Low Channel, Band 25, Peak, Port 2, 10



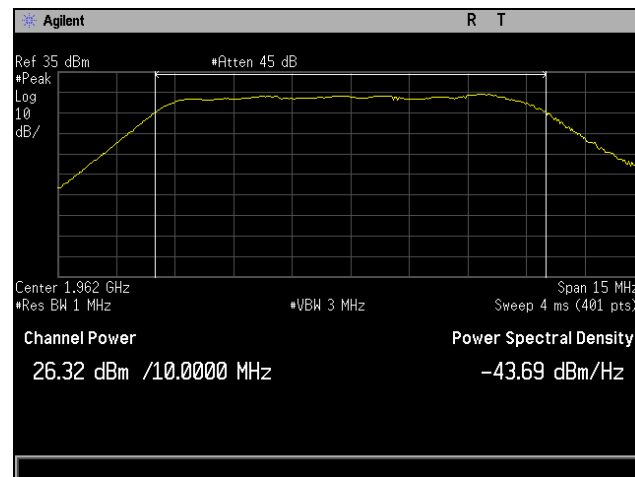
Plot 209. RF Output Power, QAM-16, 1962 MHz, Mid Channel, Band 25, Peak, Port 2, 10



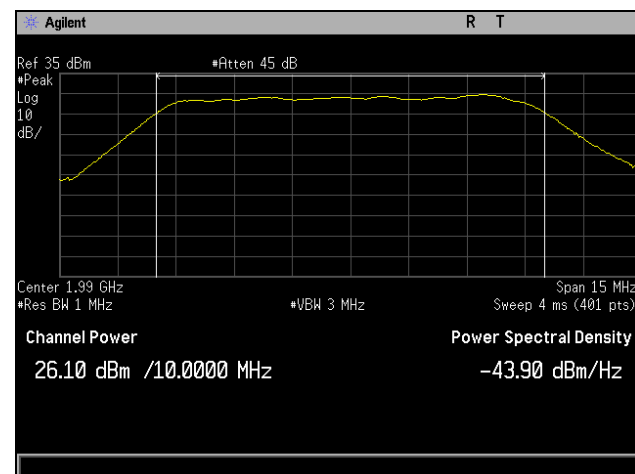
Plot 210. RF Output Power, QAM-16, 1990 MHz, High Channel, Band 25, Peak, Port 2, 10



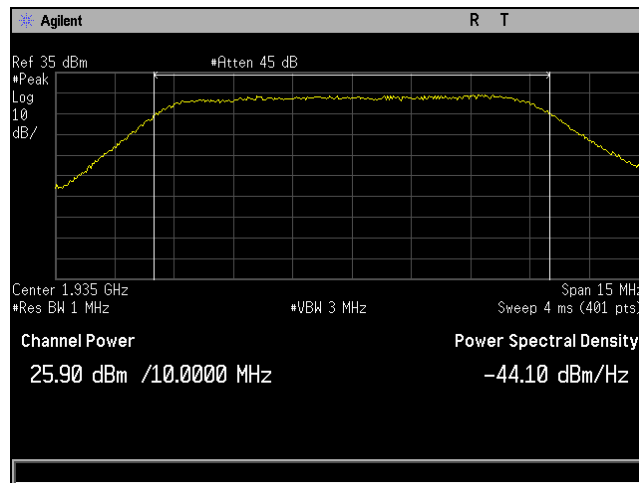
Plot 211. RF Output Power, QAM-64, 1935 MHz, Low Channel, Band 25, Peak, Port 2, 10



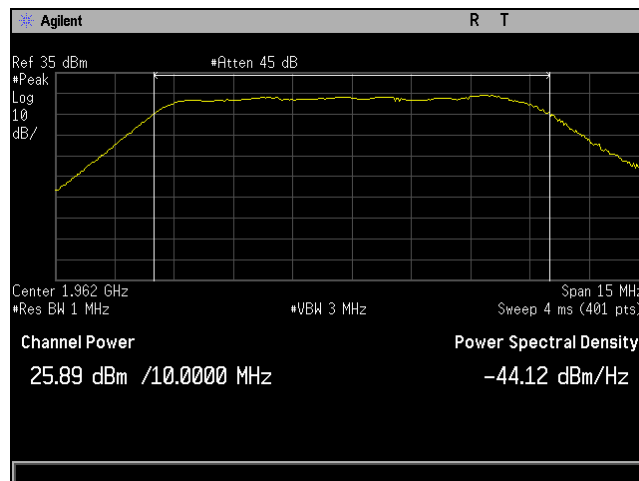
Plot 212. RF Output Power, QAM-64, 1962 MHz, Mid Channel, Band 25, Peak, Port 2, 10



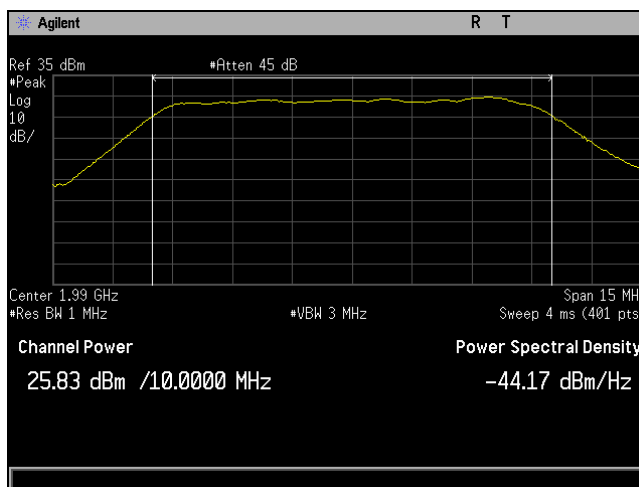
Plot 213. RF Output Power, QAM-64, 1990 MHz, High Channel, Band 25, Peak, Port 2, 10



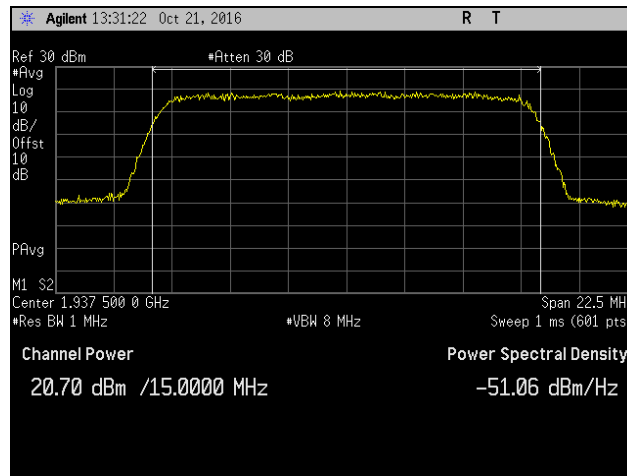
Plot 214. RF Output Power, QPSK, 1935 MHz, Low Channel, Band 25, Peak, Port 2, 10



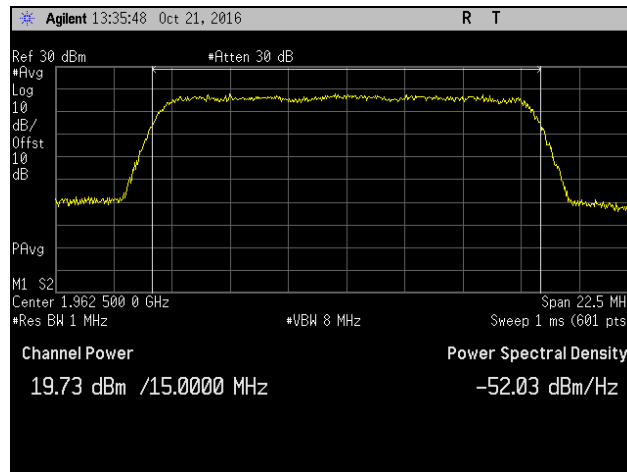
Plot 215. RF Output Power, QPSK, 1962 MHz, Mid Channel, Band 25, Peak, Port 2, 10



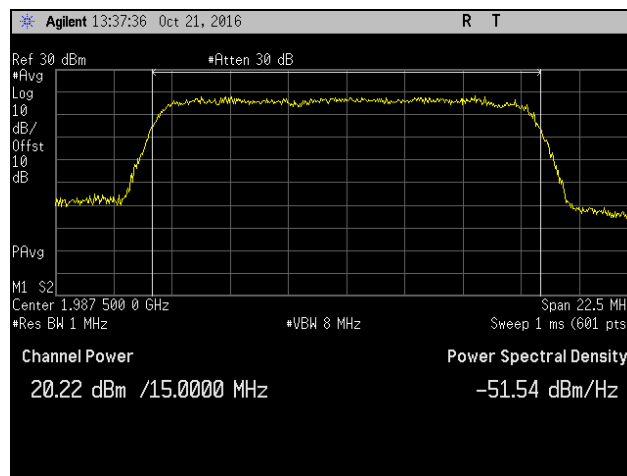
Plot 216. RF Output Power, QPSK, 1990 MHz, High Channel, Band 25, Peak, Port 2, 10



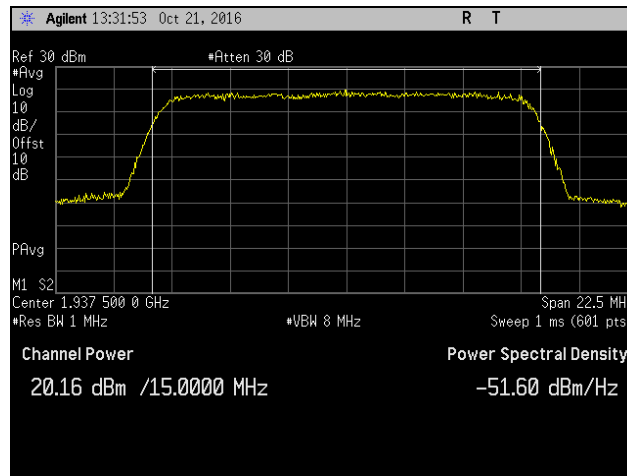
Plot 217. RF Output Power, QAM-16, 1937.5 MHz, Low Channel, Band 25, Average, Port 1, 15



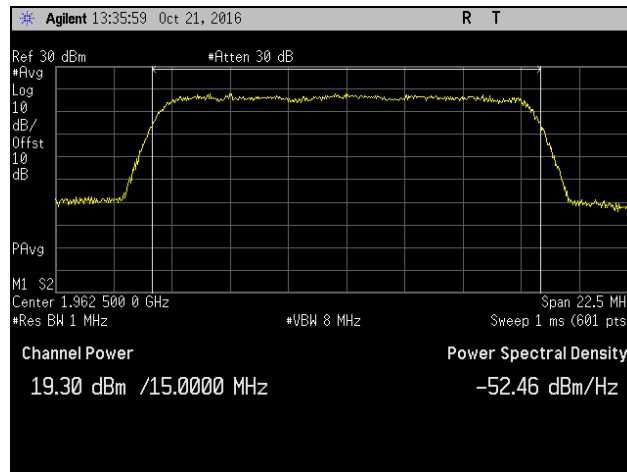
Plot 218. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Band 25, Average, Port 1, 15



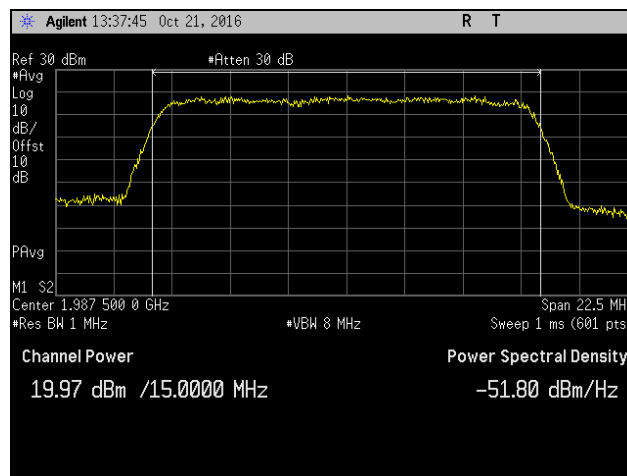
Plot 219. RF Output Power, QAM-16, 1982.5 MHz, High Channel, Band 25, Average, Port 1, 15



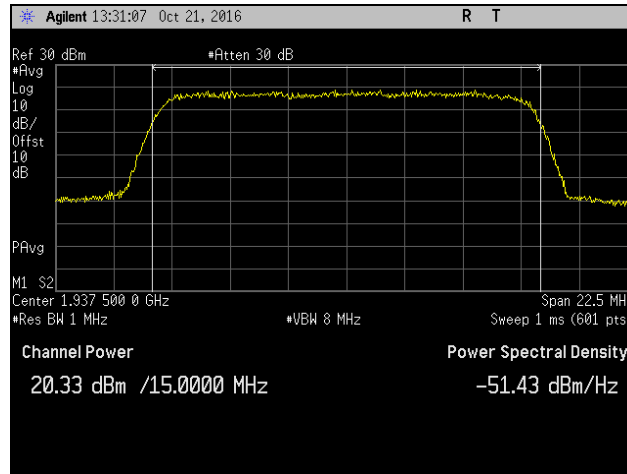
Plot 220. RF Output Power, QAM-64, 1937.5 MHz, Low Channel, Band 25, Average, Port 1, 15



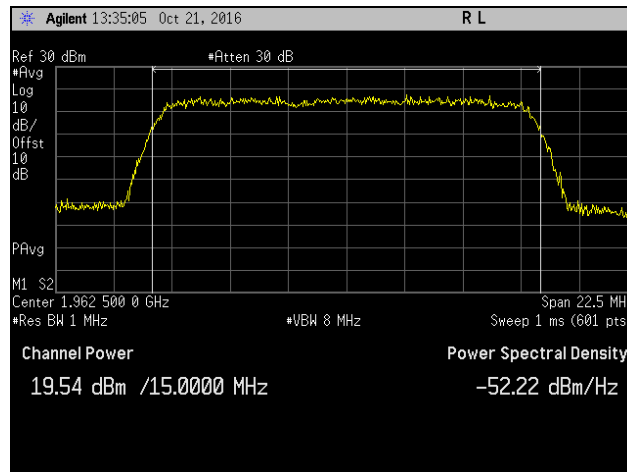
Plot 221. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Band 25, Average, Port 1, 15



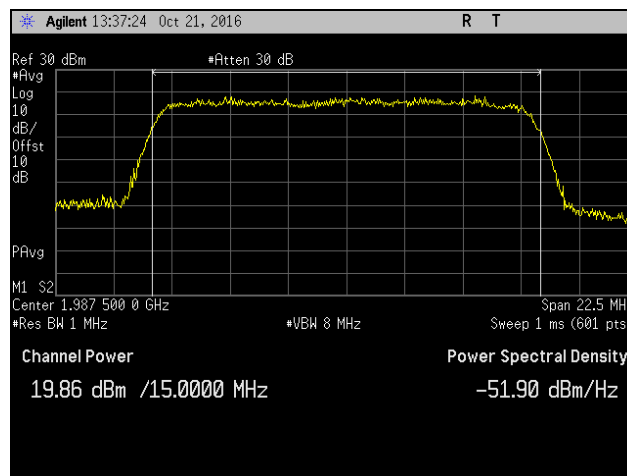
Plot 222. RF Output Power, QAM-64, 1982.5 MHz, High Channel, Band 25, Average, Port 1, 15



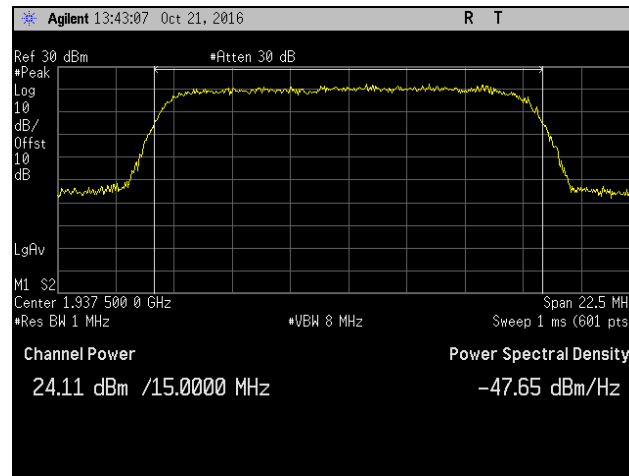
Plot 223. RF Output Power, QPSK, 1937.5 MHz, Low Channel, Band 25, Average, Port 1, 15



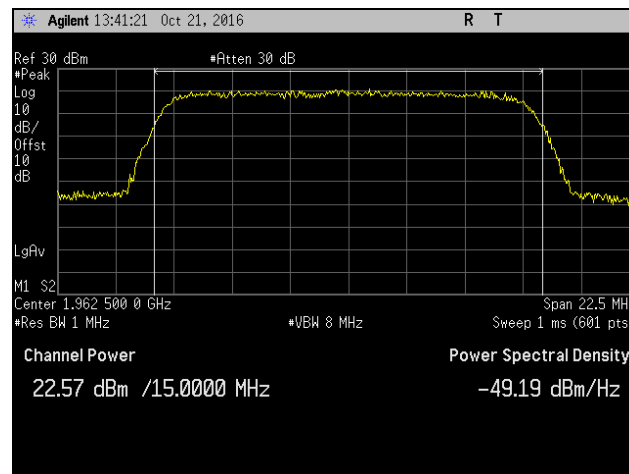
Plot 224. RF Output Power, QPSK, 1960 MHz, Mid Channel, Band 25, Average, Port 1, 15



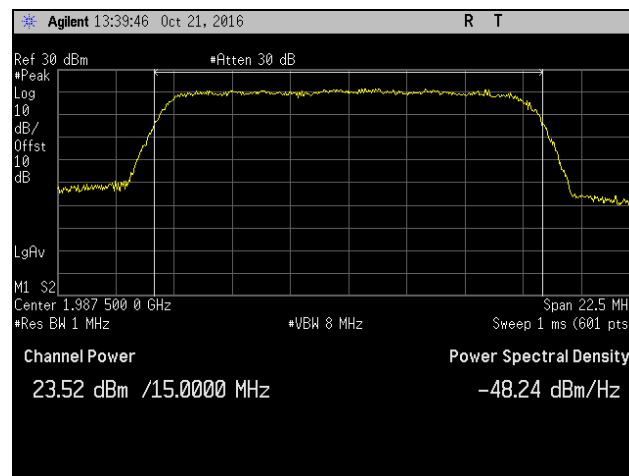
Plot 225. RF Output Power, QPSK, 1982.5 MHz, High Channel, Band 25, Average, Port 1, 15



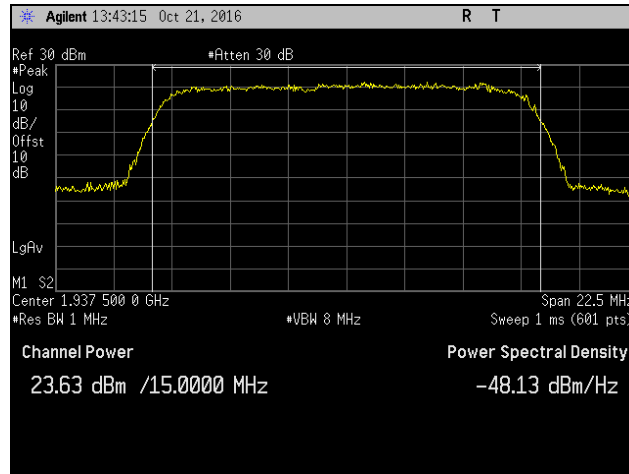
Plot 226. RF Output Power, QAM-16, 1937.5 MHz, Low Channel, Band 25, Peak, Port 1, 15



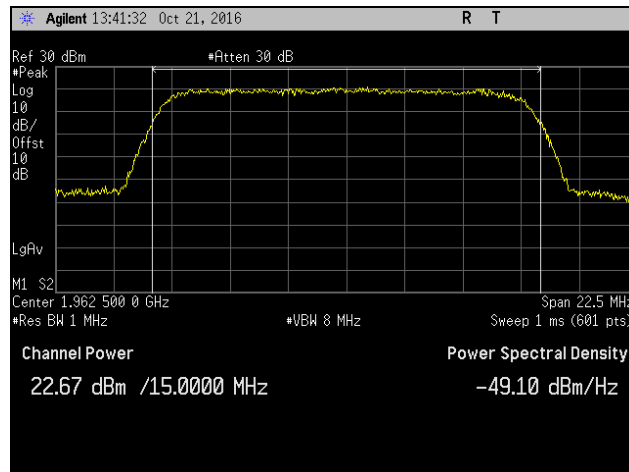
Plot 227. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Band 25, Peak, Port 1, 15



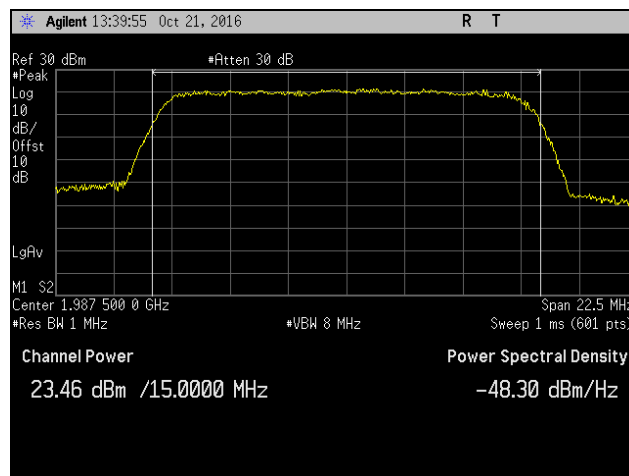
Plot 228. RF Output Power, QAM-16, 1982.5 MHz, High Channel, Band 25, Peak, Port 1, 15



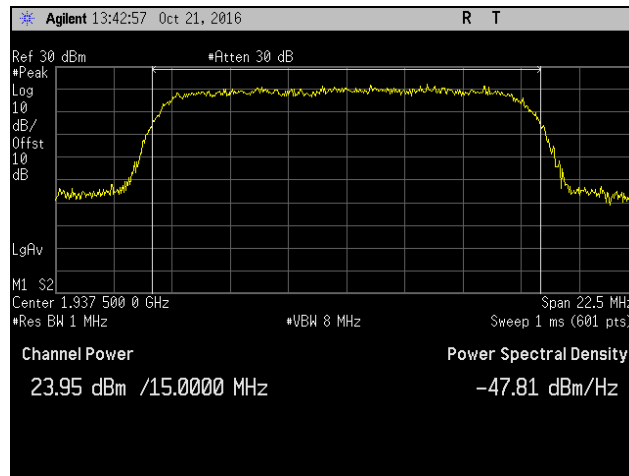
Plot 229. RF Output Power, QAM-64, 1937.5 MHz, Low Channel, Band 25, Peak, Port 1, 15



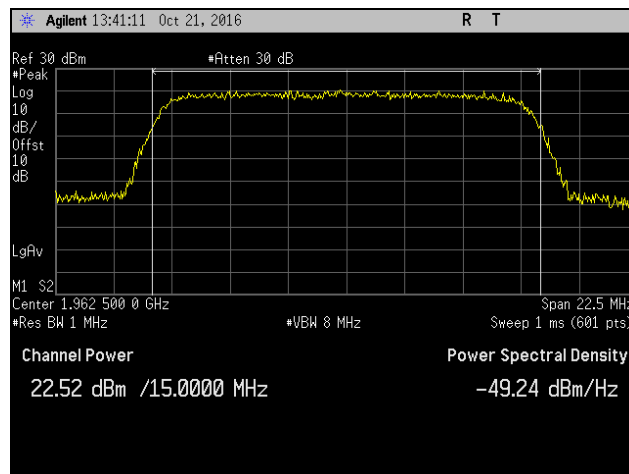
Plot 230. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Band 25, Peak, Port 1, 15



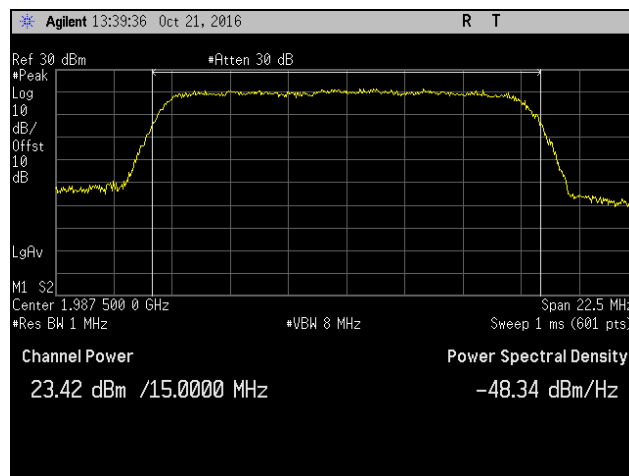
Plot 231. RF Output Power, QAM-64, 1982.5 MHz, High Channel, Band 25, Peak, Port 1, 15



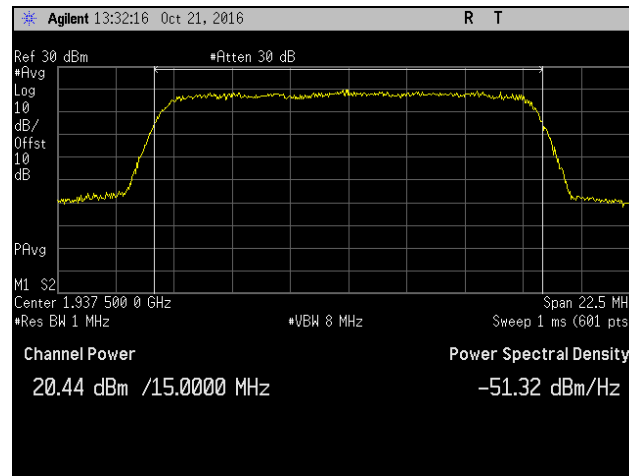
Plot 232. RF Output Power, QPSK, 1937.5 MHz, Low Channel, Band 25, Peak, Port 1, 15



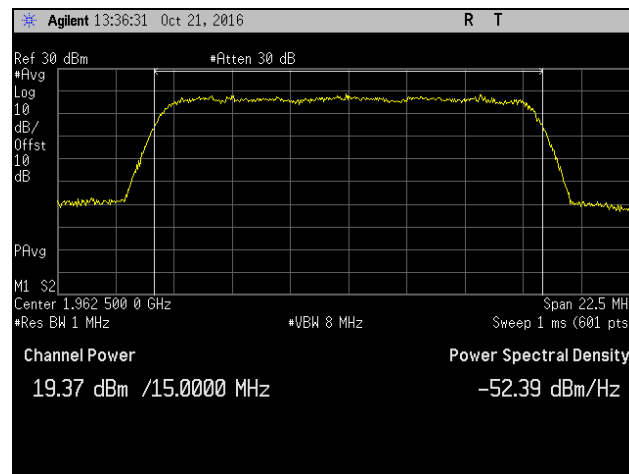
Plot 233. RF Output Power, QPSK, 1960 MHz, Mid Channel, Band 25, Peak, Port 1, 15



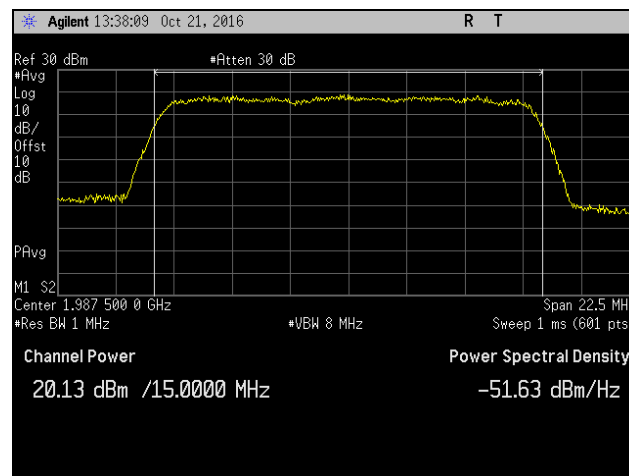
Plot 234. RF Output Power, QPSK, 1982.5 MHz, High Channel, Band 25, Peak, Port 1, 15



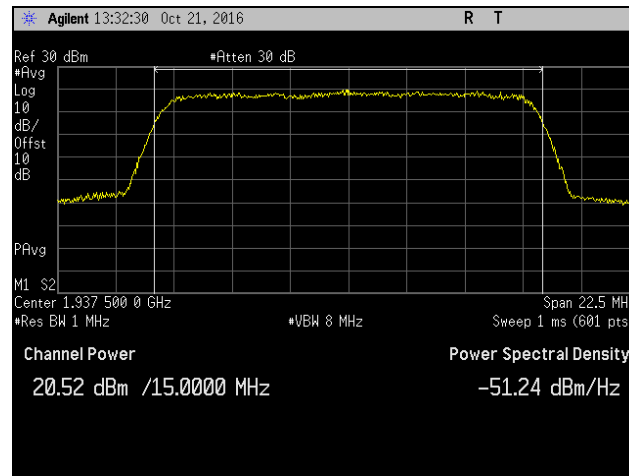
Plot 235. RF Output Power, QAM-16, 1937.5 MHz, Low Channel, Band 25, Average, Port 2, 15



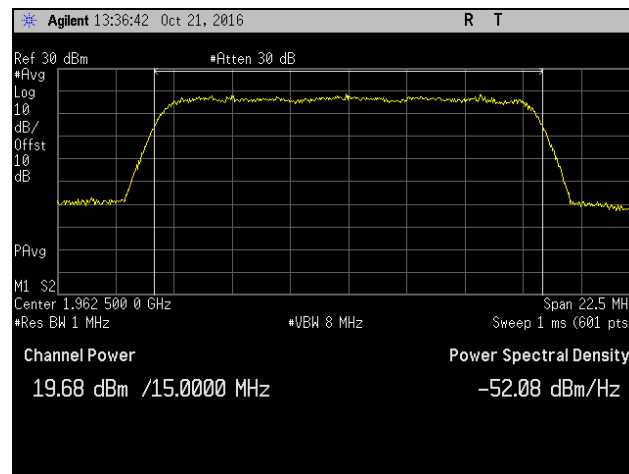
Plot 236. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Band 25, Average, Port 2, 15



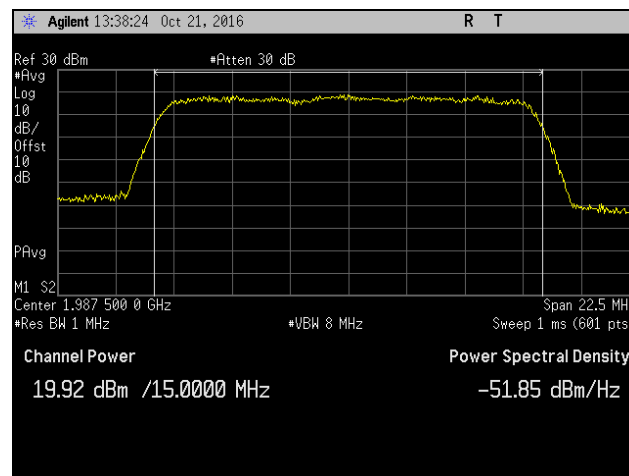
Plot 237. RF Output Power, QAM-16, 1982.5 MHz, High Channel, Band 25, Average, Port 2, 15



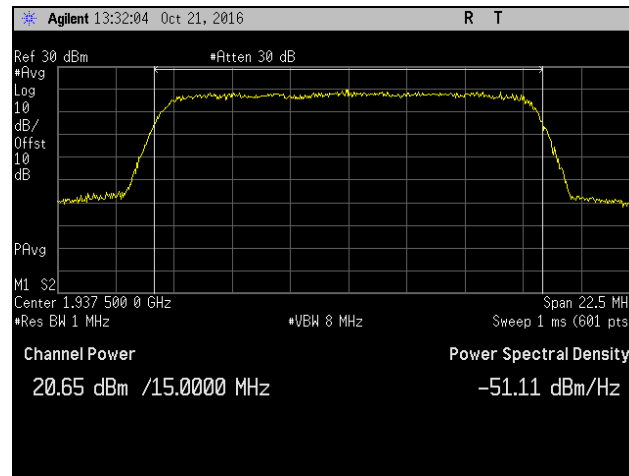
Plot 238. RF Output Power, QAM-64, 1937.5 MHz, Low Channel, Band 25, Average, Port 2, 15



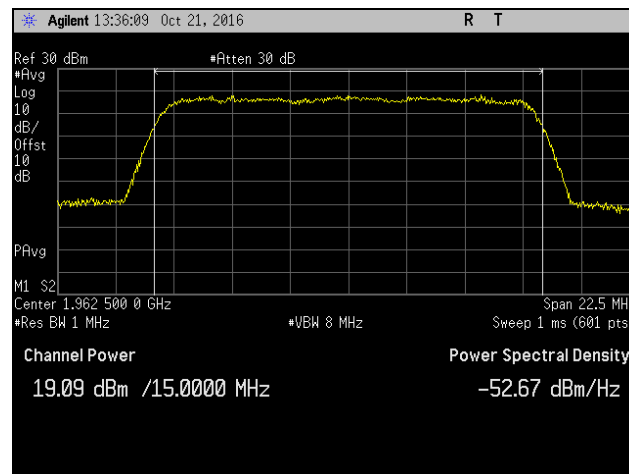
Plot 239. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Band 25, Average, Port 2, 15



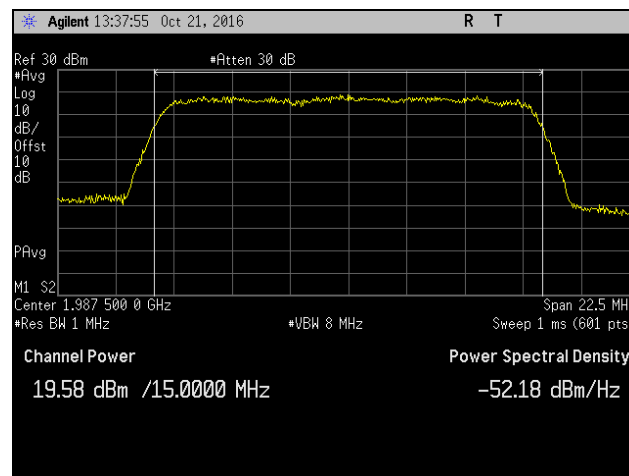
Plot 240. RF Output Power, QAM-64, 1982.5 MHz, High Channel, Band 25, Average, Port 2, 15



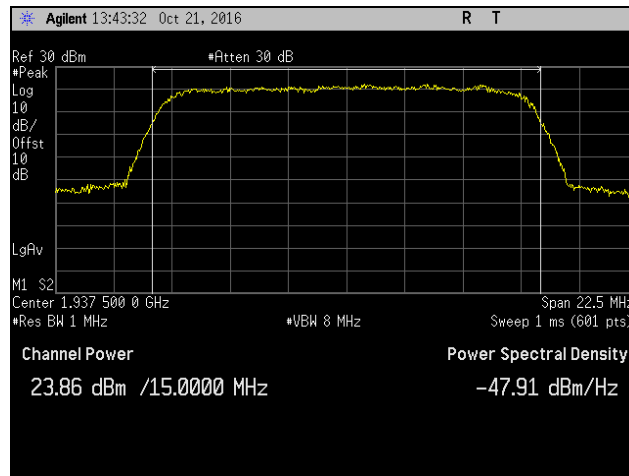
Plot 241. RF Output Power, QPSK, 1937.5 MHz, Low Channel, Band 25, Average, Port 2, 15



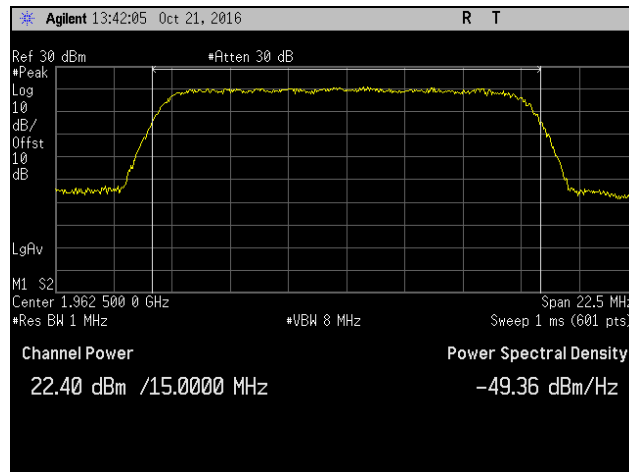
Plot 242. RF Output Power, QPSK, 1960 MHz, Mid Channel, Band 25, Average, Port 2, 15



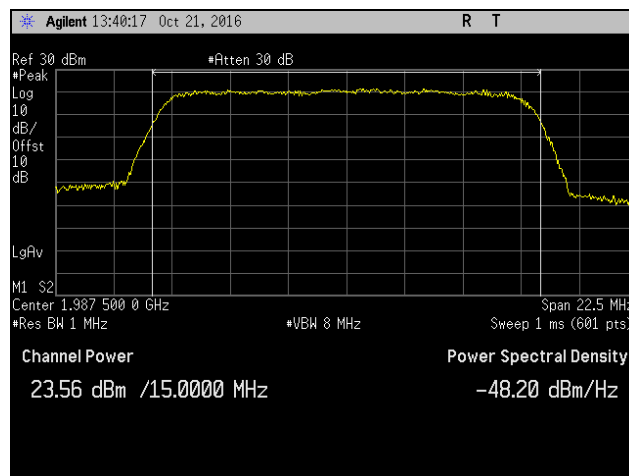
Plot 243. RF Output Power, QPSK, 1982.5 MHz, High Channel, Band 25, Average, Port 2, 15



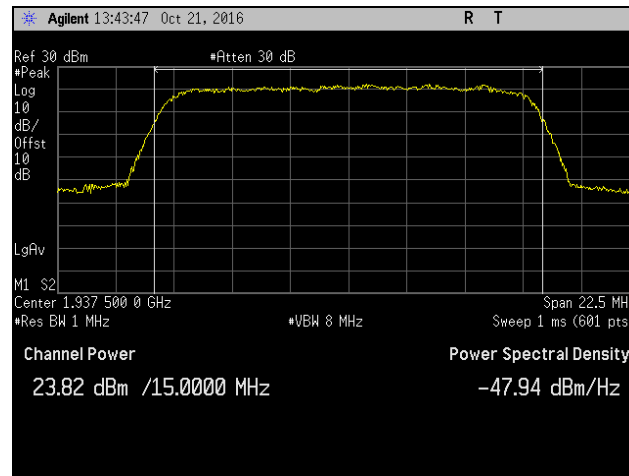
Plot 244. RF Output Power, QAM-16, 1937.5 MHz, Low Channel, Band 25, Peak, Port 2, 15



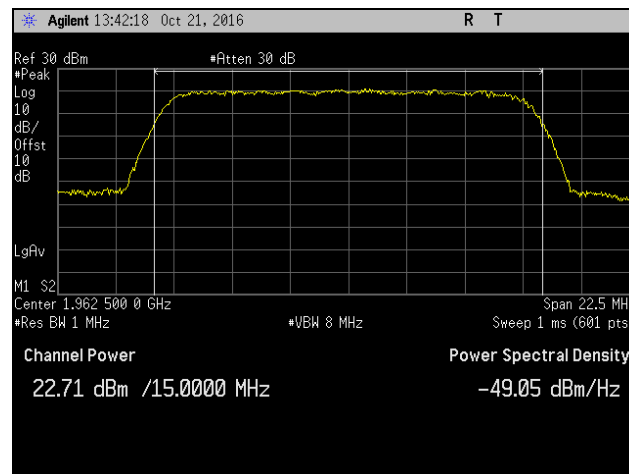
Plot 245. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Band 25, Peak, Port 2, 15



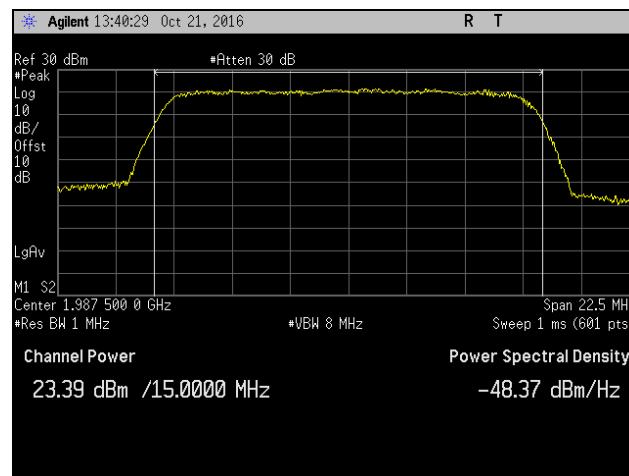
Plot 246. RF Output Power, QAM-16, 1982.5 MHz, High Channel, Band 25, Peak, Port 2, 15



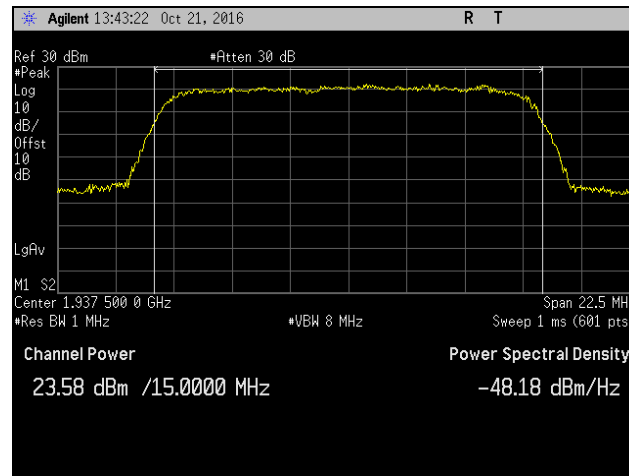
Plot 247. RF Output Power, QAM-64, 1937.5 MHz, Low Channel, Band 25, Peak, Port 2, 15



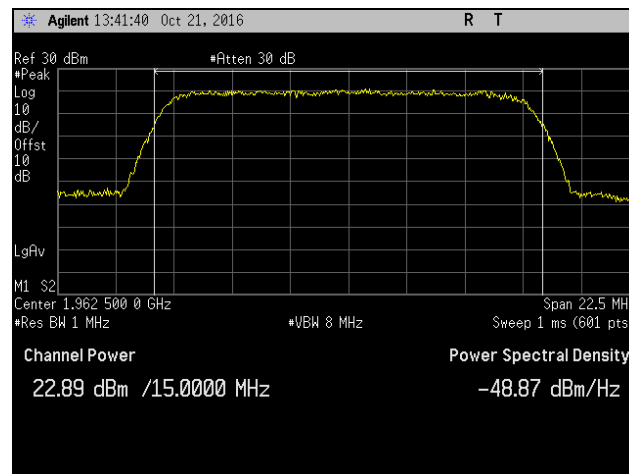
Plot 248. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Band 25, Peak, Port 2, 15



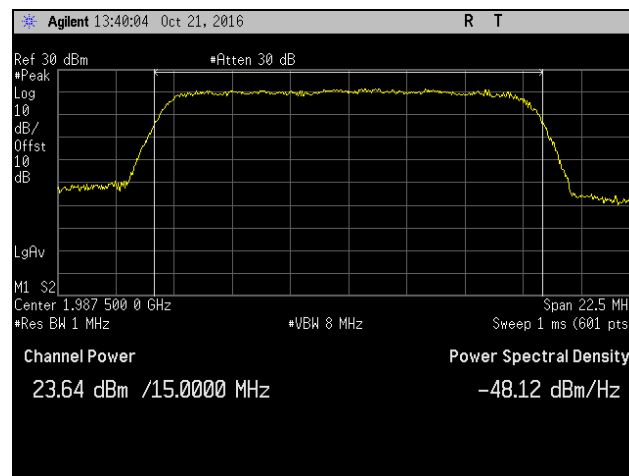
Plot 249. RF Output Power, QAM-64, 1982.5 MHz, High Channel, Band 25, Peak, Port 2, 15



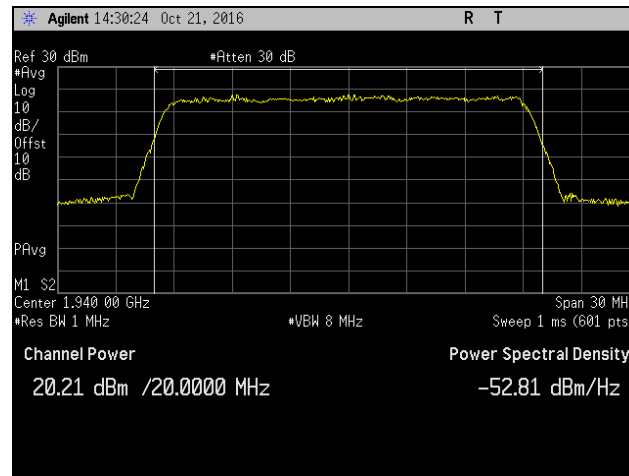
Plot 250. RF Output Power, QPSK, 1937.5 MHz, Low Channel, Band 25, Peak, Port 2, 15



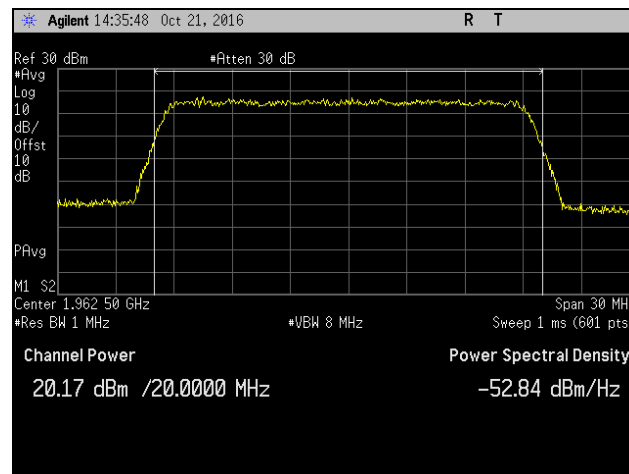
Plot 251. RF Output Power, QPSK, 1960 MHz, Mid Channel, Band 25, Peak, Port 2, 15



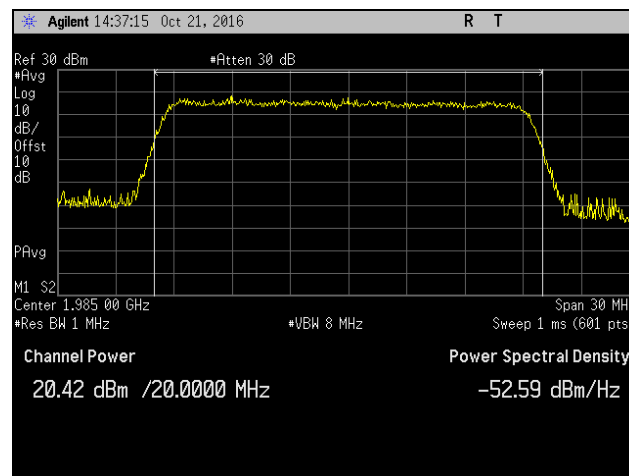
Plot 252. RF Output Power, QPSK, 1982.5 MHz, High Channel, Band 25, Peak, Port 2, 15



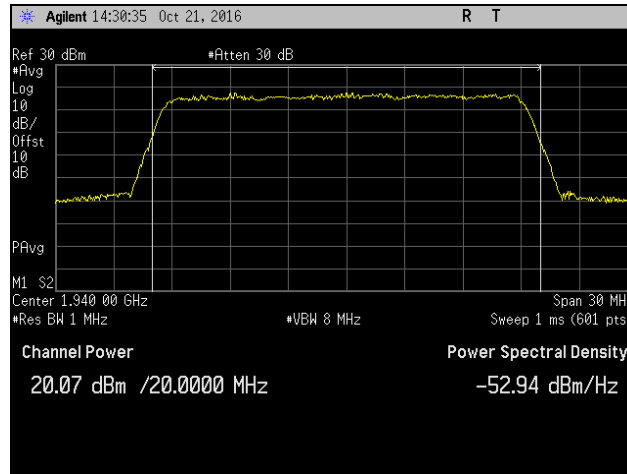
Plot 253. RF Output Power, QAM-16, 1940 MHz, Low Channel, Port 1, Band 25, Average, 20



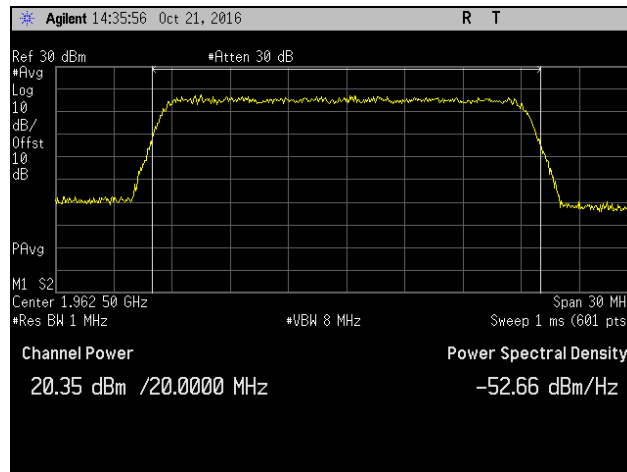
Plot 254. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Port 1, Band 25, Average, 20



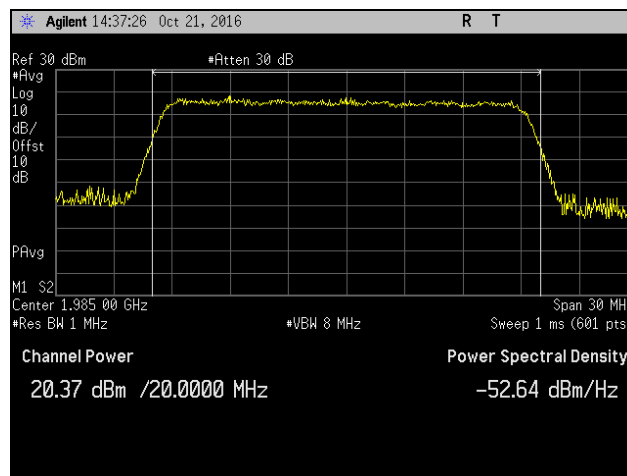
Plot 255. RF Output Power, QAM-16, 1980 MHz, High Channel, Port 1, Band 25, Average, 20



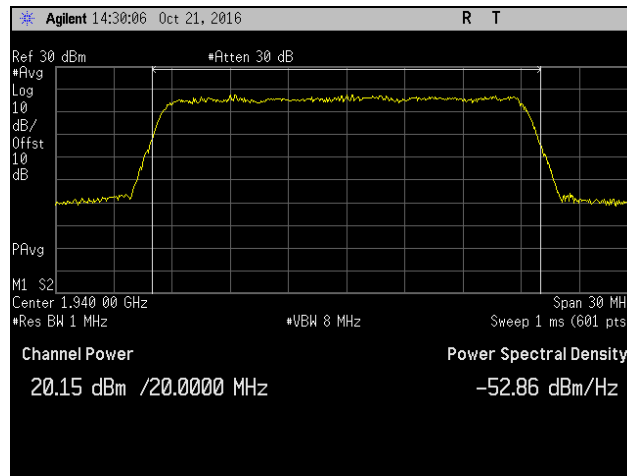
Plot 256. RF Output Power, QAM-64, 1940 MHz, Low Channel, Port 1, Band 25, Average, 20



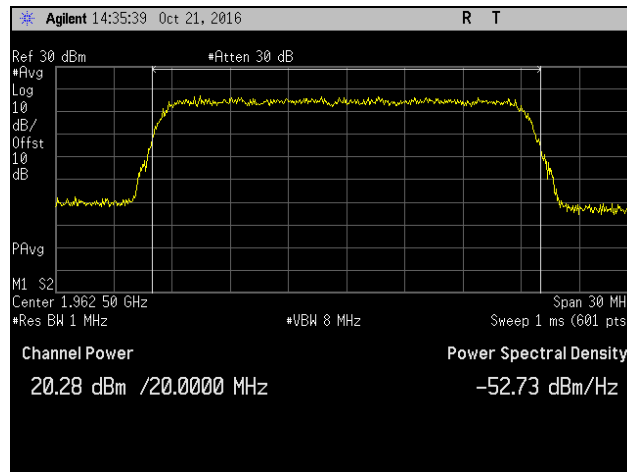
Plot 257. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Port 1, Band 25, Average, 20



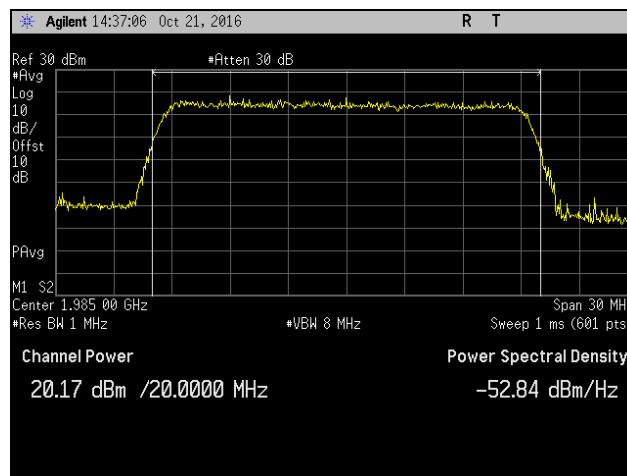
Plot 258. RF Output Power, QAM-64, 1980 MHz, High Channel, Port 1, Band 25, Average



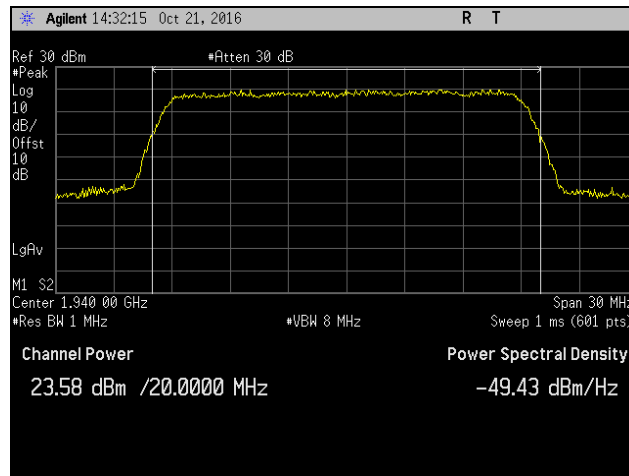
Plot 259. RF Output Power, QPSK, 1940 MHz, Low Channel, Port 1, Band 25, Average, 20



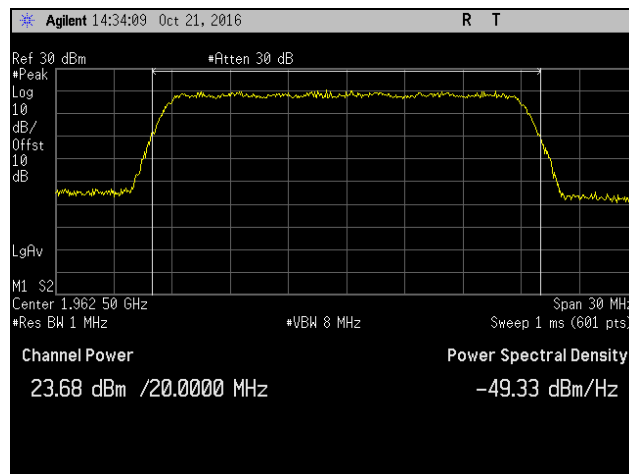
Plot 260. RF Output Power, QPSK, 1960 MHz, Mid Channel, Port 1, Band 25, Average, 20



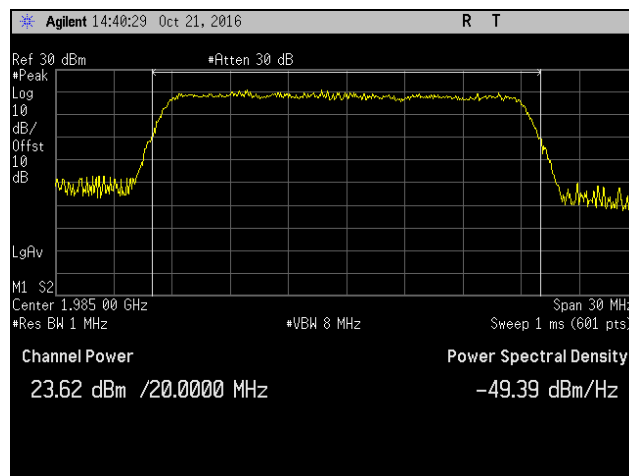
Plot 261. RF Output Power, QPSK, 1980 MHz, High Channel, Port 1, Band 25, Average, 20



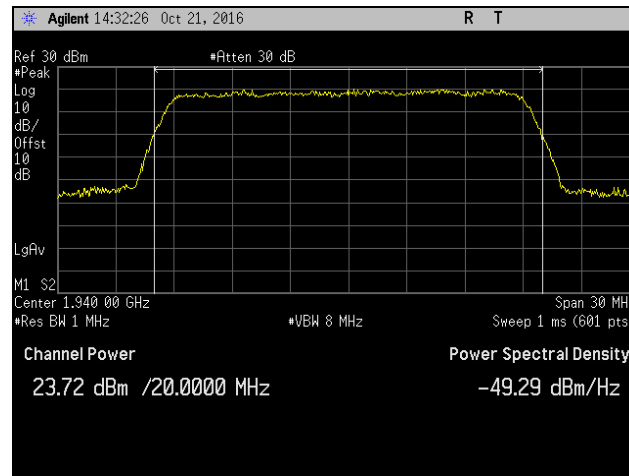
Plot 262. RF Output Power, QAM-16, 1940 MHz, Low Channel, Port 1, Band 25, Peak, 20



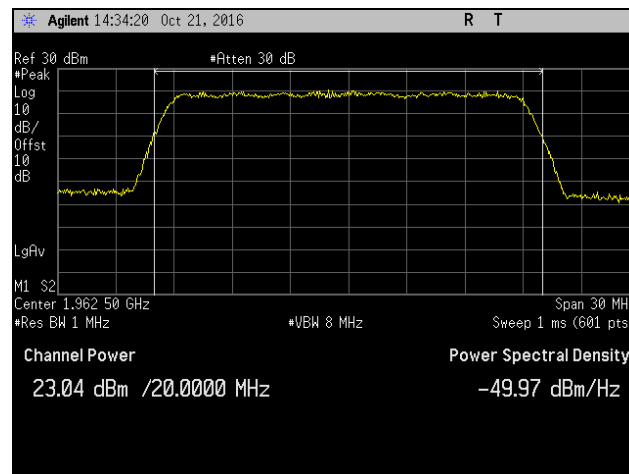
Plot 263. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Port 1, Band 25, Peak, 20



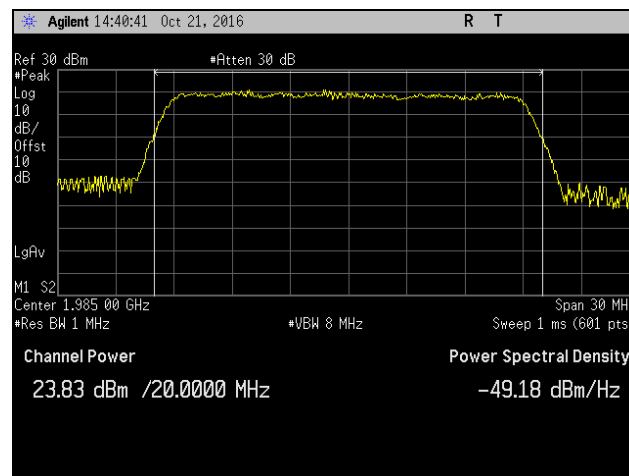
Plot 264. RF Output Power, QAM-16, 1980 MHz, High Channel, Port 1, Band 25, Peak, 20



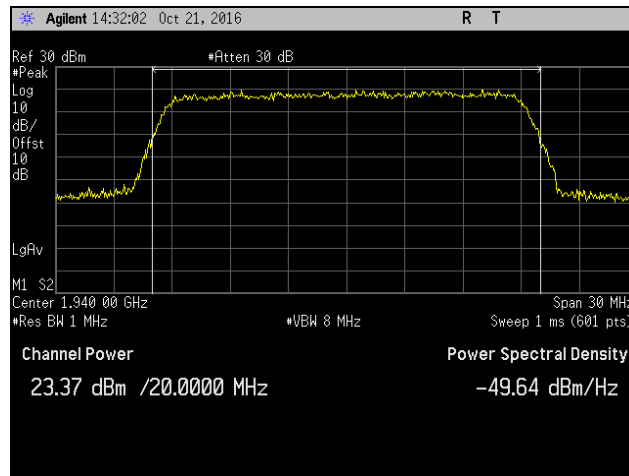
Plot 265. RF Output Power, QAM-64, 1940 MHz, Low Channel, Port 1, Band 25, Peak, 20



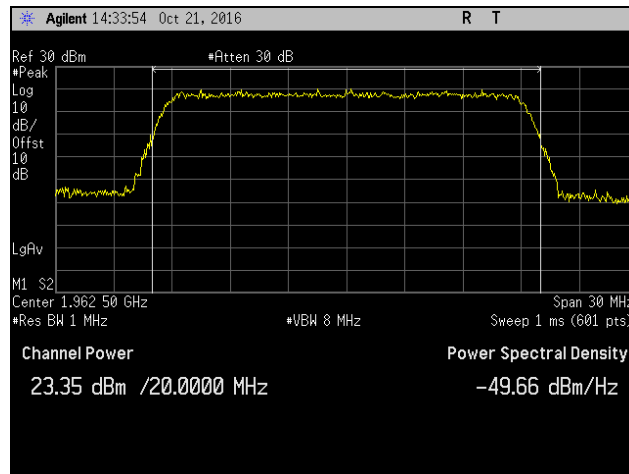
Plot 266. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Port 1, Band 25, Peak, 20



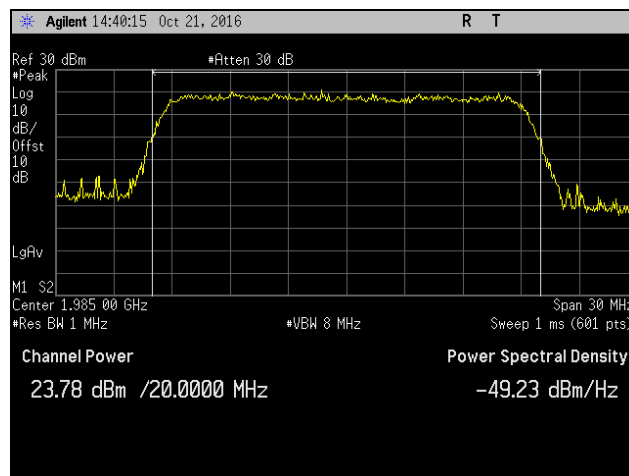
Plot 267. RF Output Power, QAM-64, 1980 MHz, High Channel, Port 1, Band 25, Peak, 20



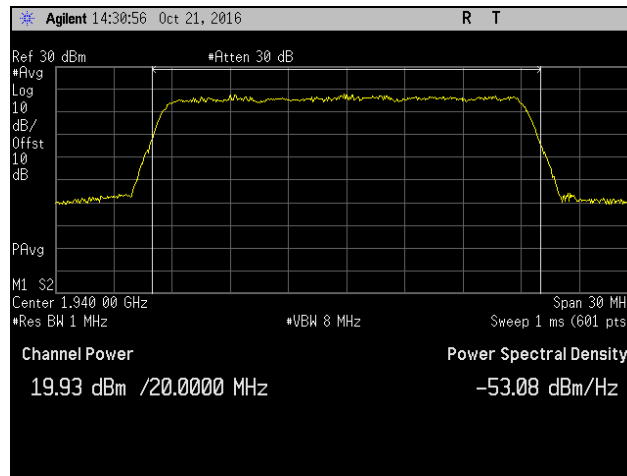
Plot 268. RF Output Power, QPSK, 1940 MHz, Low Channel, Port 1, Band 25, Peak, 20



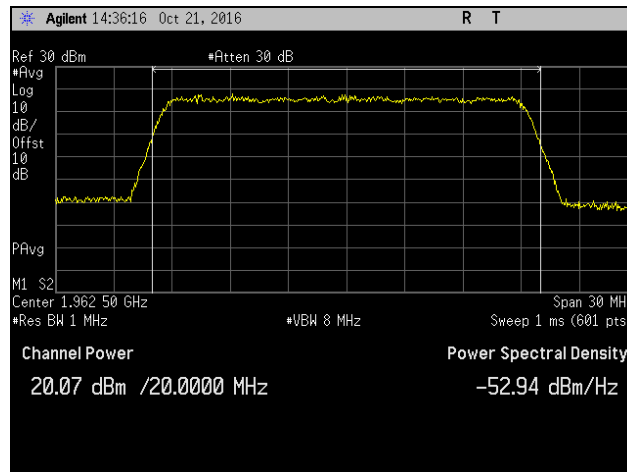
Plot 269. RF Output Power, QPSK, 1960 MHz, Mid Channel, Port 1, Band 25, Peak, 20



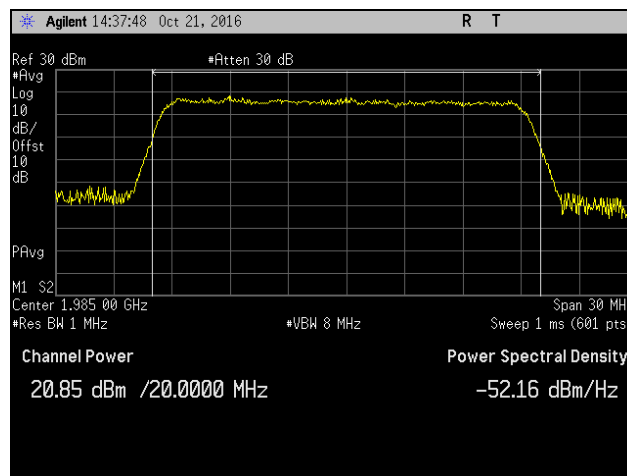
Plot 270. RF Output Power, QPSK, 1980 MHz, High Channel, Port 1, Band 25, Peak, 20



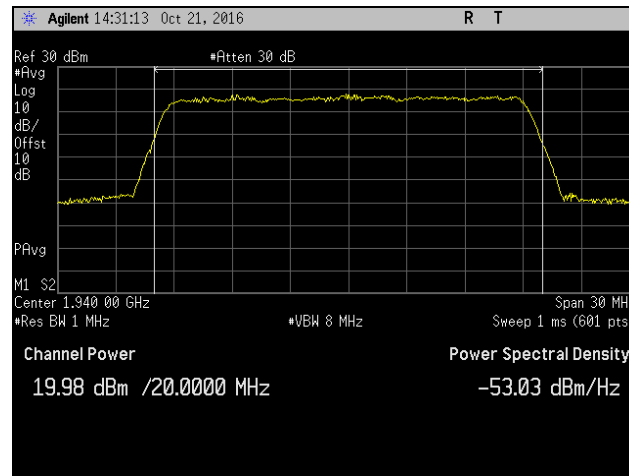
Plot 271. RF Output Power, QAM-16, 1940 MHz, Low Channel, Port 2, Band 25, Average, 20



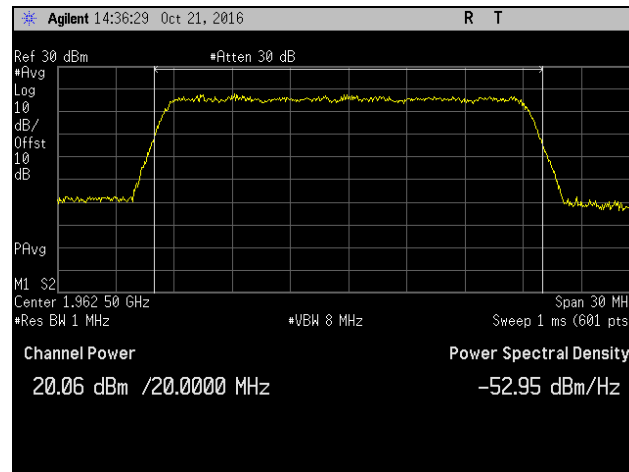
Plot 272. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Port 2, Band 25, Average, 20



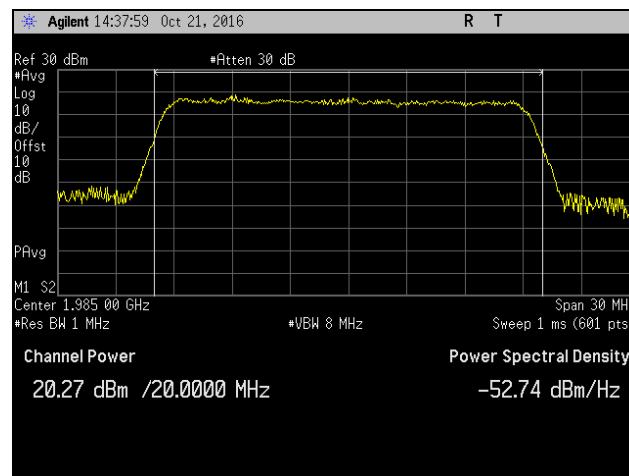
Plot 273. RF Output Power, QAM-16, 1980 MHz, High Channel, Port 2, Band 25, Average, 20



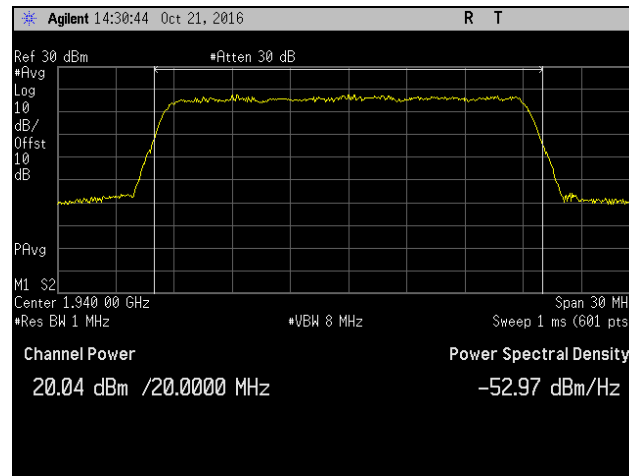
Plot 274. RF Output Power, QAM-64, 1940 MHz, Low Channel, Port 2, Band 25, Average, 20



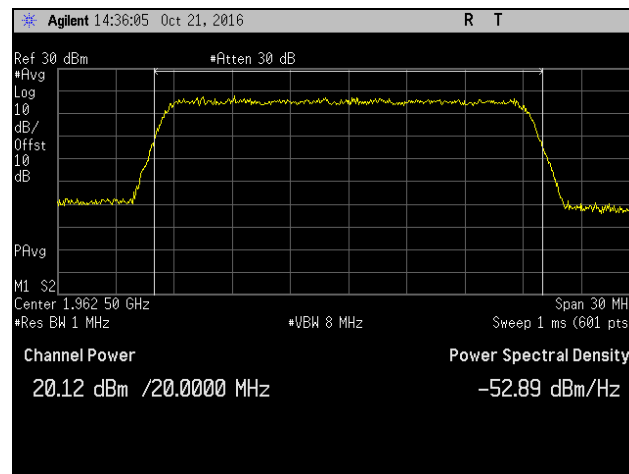
Plot 275. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Port 2, Band 25, Average, 20



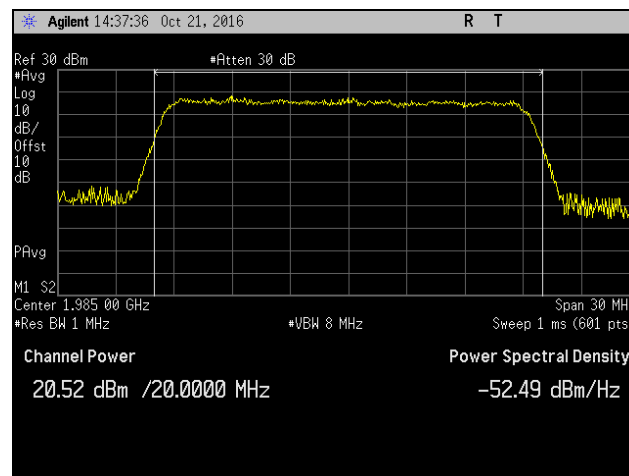
Plot 276. RF Output Power, QAM-64, 1980 MHz, High Channel, Port 2, Band 25, Average, 20



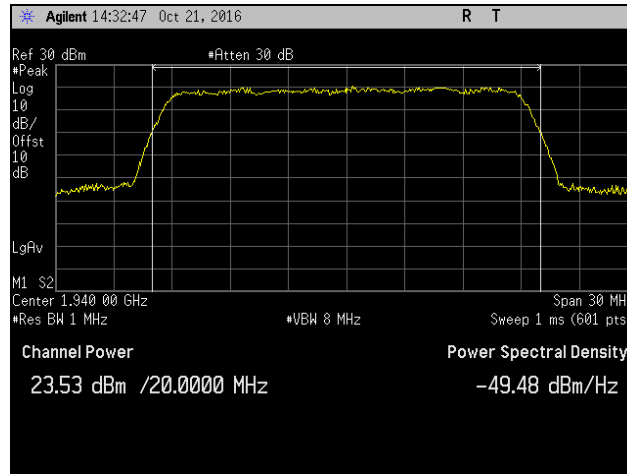
Plot 277. RF Output Power, QPSK, 1940 MHz, Low Channel, Port 2, Band 25, Average, 20



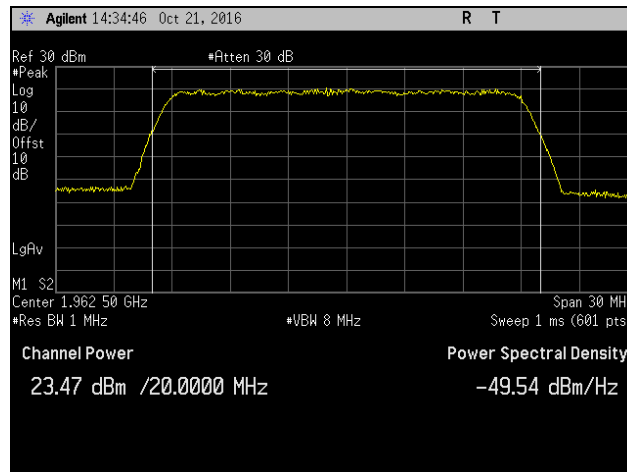
Plot 278. RF Output Power, QPSK, 1960 MHz, Mid Channel, Port 2, Band 25, Average, 20



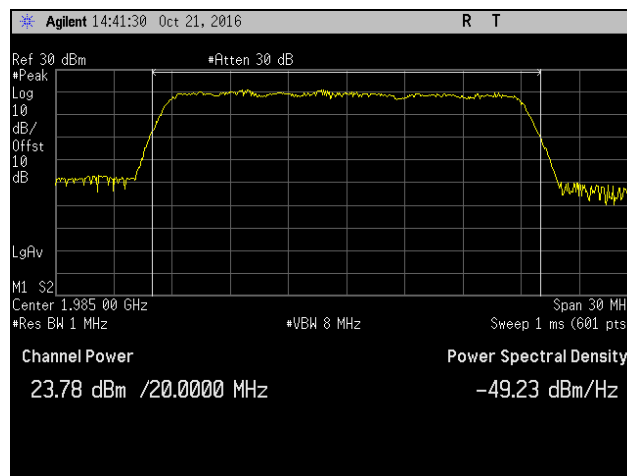
Plot 279. RF Output Power, QPSK, 1980 MHz, High Channel, Port 2, Band 25, Average, 20



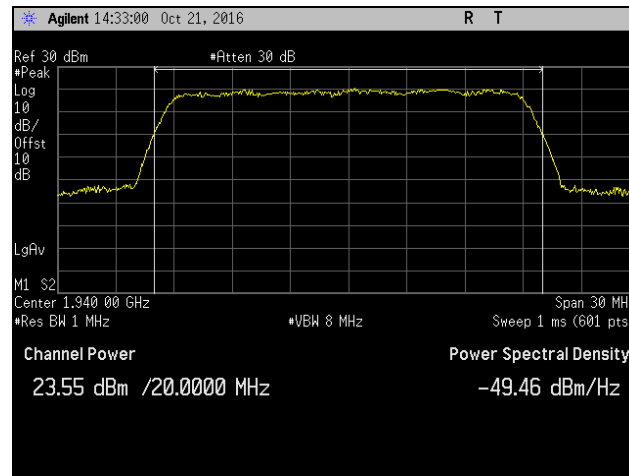
Plot 280. RF Output Power, QAM-16, 1940 MHz, Low Channel, Port 2, Band 25, Peak, 20



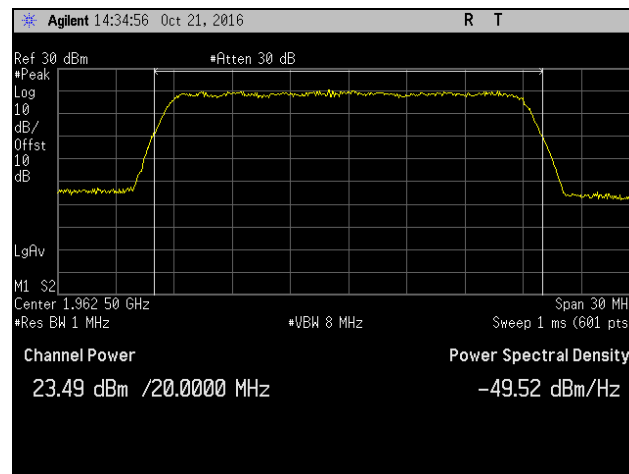
Plot 281. RF Output Power, QAM-16, 1960 MHz, Mid Channel, Port 2, Band 25, Peak, 20



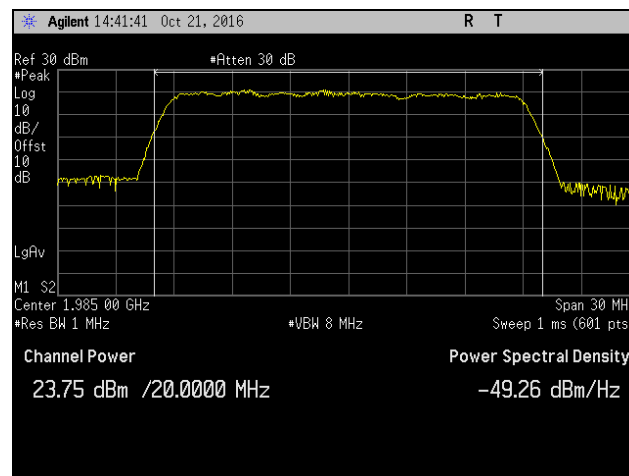
Plot 282. RF Output Power, QAM-16, 1980 MHz, High Channel, Port 2, Band 25, Peak, 20



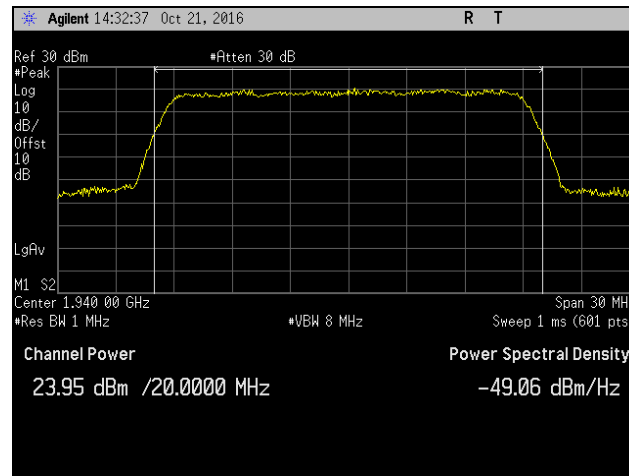
Plot 283. RF Output Power, QAM-64, 1940 MHz, Low Channel, Port 2, Band 25, Peak, 20



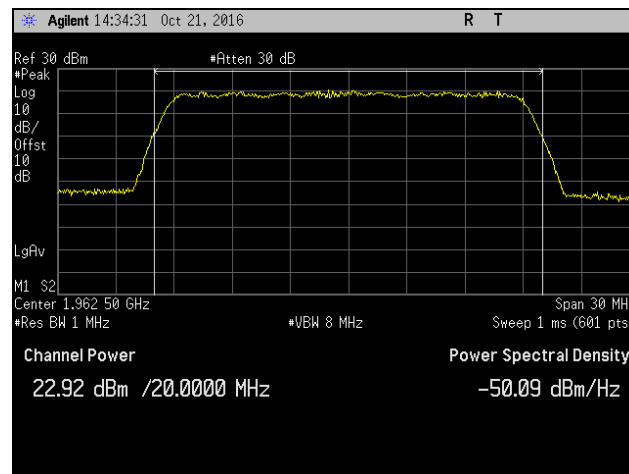
Plot 284. RF Output Power, QAM-64, 1960 MHz, Mid Channel, Port 2, Band 25, Peak, 20



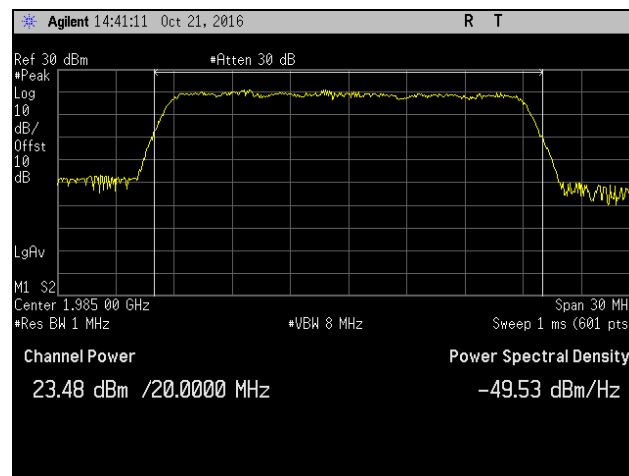
Plot 285. RF Output Power, QAM-64, 1980 MHz, High Channel, Port 2, Band 25, Peak, 20



Plot 286. RF Output Power, QPSK, 1940 MHz, Low Channel, Port 2, Band 25, Peak, 20



Plot 287. RF Output Power, QPSK, 1960 MHz, Mid Channel, Port 2, Band 25, Peak, 20



Plot 288. RF Output Power, QPSK, 1980 MHz, High Channel, Port 2, Band 25, Peak, 20

§ 2.1049 Occupied Bandwidth

Test Requirement(s): **§ 2.1049 Measurements required: Occupied bandwidth:** The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured under the specified conditions of § 2.1049 (a) through (i) as applicable.

Test Procedures: As required by 47 CFR 2.1049, *occupied bandwidth measurements* were made at the RF output terminals using a Spectrum Analyzer.

A laptop was connected to EUT to control the RF frequency channel. The EUT was connected to a Spectrum Analyzer via attenuator. The RBW of the Spectrum Analyzer was set in accordance with the licensed measurement guidance procedures. Measurements were carried out at the low, mid, and high channels of the TX band.

Test Results: Equipment complies with FCC requirements.

Test Engineer(s): Deepak Giri

Test Date(s): 10/27/16, 10/29/16, 12/07/16, 12/09/16, 12/12/16, and 12/13/16

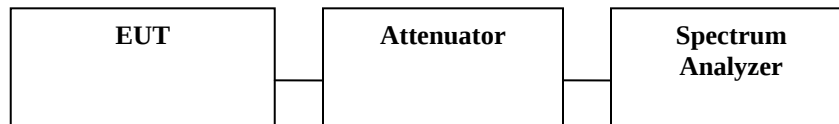


Figure 2. Occupied Bandwidth Test Setup



Port	Band	Center Frequency MHz	Bandwidth	Modulation	26 dB OBW	99%
1	2	1932.5	5	QPSK	5.023	4.5029
1	2	1932.5	5	16QAM	4.978	4.5
1	2	1932.5	5	64QAM	5.03	4.515
1	2	1960	5	QPSK	4.96	4.5
1	2	1960	5	16QAM	5.017	4.5081
1	2	1960	5	64QAM	5.017	4.508
1	2	1987.5	5	QPSK	4.9	4.4
1	2	1987.5	5	16QAM	4.9	4.4
1	2	1987.5	5	64QAM	4.9	4.4
1	2	1935	10	QPSK	9.7	8.9
1	2	1935	10	16QAM	9.7	8.9
1	2	1935	10	64QAM	9.7	8.9
1	2	1960	10	QPSK	9.7	8.9
1	2	1960	10	16QAM	9.7	8.9
1	2	1960	10	64QAM	9.8	8.9
1	2	1985	10	QPSK	9.7	8.9
1	2	1985	10	16QAM	9.7	8.9
1	2	1985	10	64QAM	9.7	8.9
2	2	1932.5	5	QPSK	4.9	4.5
2	2	1932.5	5	16QAM	5.03	4.512
2	2	1932.5	5	64QAM	5.037	4.516
2	2	1960	5	QPSK	5.017	4.5098
2	2	1960	5	16QAM	5.017	4.5098
2	2	1960	5	64QAM	5.017	4.5097
2	2	1987.5	5	QPSK	5.015	4.498
2	2	1987.5	5	16QAM	5.021	4.5046
2	2	1987.5	5	64QAM	5.022	4.5048
2	2	1935	10	QPSK	9.792	8.9629
2	2	1935	10	16QAM	9.792	8.9623
2	2	1935	10	64QAM	9.799	8.9648
2	2	1960	10	QPSK	9.805	8.9707
2	2	1960	10	16QAM	9.792	8.969
2	2	1960	10	64QAM	9.792	8.968
2	2	1985	10	QPSK	9.78	8.96
2	2	1985	10	16QAM	9.779	8.9616
2	2	1985	10	64QAM	9.779	8.9602

Table 9. Occupied Bandwidth, Test Results, Band 2, 5 and 10 MHz



Port	Band	Center Frequency MHz	Bandwidth	Modulation	26 dB OBW	99%
1	2	1937.5	15	QPSK	14.798	13.509
1	2	1937.5	15	16QAM	14.898	13.524
1	2	1937.5	15	64QAM	14.967	13.464
1	2	1960	15	QPSK	14.773	13.536
1	2	1960	15	16QAM	14.786	13.484
1	2	1960	15	64QAM	14.795	13.454
1	2	1982.5	15	QPSK	14.654	13.494
1	2	1982.5	15	16QAM	14.754	13.555
1	2	1982.5	15	64QAM	14.9	13.484
1	2	1940	20	QPSK	19.375	17.858
1	2	1940	20	16QAM	19.657	17.9288
1	2	1940	20	64QAM	19.798	17.903
1	2	1960	20	QPSK	19.623	17.919
1	2	1960	20	16QAM	19.57	17.983
1	2	1960	20	64QAM	19.772	17.919
1	2	1980	20	QPSK	19.719	17.932
1	2	1980	20	16QAM	19.592	17.974
1	2	1980	20	64QAM	19.802	17.952
2	2	1937.5	15	QPSK	14.937	13.51
2	2	1937.5	15	16QAM	14.938	13.51
2	2	1937.5	15	64QAM	15.064	13.476
2	2	1960	15	QPSK	14.864	13.525
2	2	1960	15	16QAM	14.885	13.509
2	2	1960	15	64QAM	14.961	13.501
2	2	1982.5	15	QPSK	14.849	13.542
2	2	1982.5	15	16QAM	14.945	13.548
2	2	1982.5	15	64QAM	15.028	13.5326
2	2	1940	20	QPSK	19.653	17.902
2	2	1940	20	16QAM	19.66	17.926
2	2	1940	20	64QAM	19.813	17.911
2	2	1960	20	QPSK	19.624	17.939
2	2	1960	20	16QAM	19.671	17.966
2	2	1960	20	64QAM	19.839	17.936
2	2	1980	20	QPSK	19.719	17.927
2	2	1980	20	16QAM	19.771	18.003
2	2	1980	20	64QAM	19.832	17.963

Table 10. Occupied Bandwidth, Test Results, Band 2, 15 and 20 MHz



Port	Band	Center Frequency MHz	Bandwidth	Modulation	26 dB OBW	99%
1	25	1932.5	5	QPSK	4.997	4.5032
1	25	1932.5	5	16QAM	4.946	4.49
1	25	1932.5	5	64QAM	4.994	4.4898
1	25	1962.5	5	QPSK	5.026	4.5077
1	25	1962.5	5	16QAM	5.029	4.5134
1	25	1962.5	5	64QAM	5.034	4.5125
1	25	1992.5	5	QPSK	5.015	4.5009
1	25	1992.5	5	16QAM	5.036	4.51
1	25	1992.5	5	64QAM	5.034	4.5054
1	25	1935	10	QPSK	9.713	8.946
1	25	1935	10	16QAM	9.756	8.9543
1	25	1935	10	64QAM	9.756	8.954
1	25	1962.5	10	QPSK	9.612	8.9572
1	25	1962.5	10	16QAM	9.781	8.9675
1	25	1962.5	10	64QAM	9.775	8.9615
1	25	1990	10	QPSK	9.724	8.9448
1	25	1990	10	16QAM	9.767	8.9474
1	25	1990	10	64QAM	9.784	8.9523
2	25	1932.5	5	QPSK	4.94	4.4942
2	25	1932.5	5	16QAM	4.979	4.489
2	25	1932.5	5	64QAM	4.99	4.487
2	25	1962.5	5	QPSK	5.028	4.5132
2	25	1962.5	5	16QAM	5.034	4.5166
2	25	1962.5	5	64QAM	5.034	4.5161
2	25	1992.5	5	QPSK	5.038	4.504
2	25	1992.5	5	16QAM	5.016	4.49
2	25	1992.5	5	64QAM	5.017	4.515
2	25	1935	10	QPSK	9.775	8.9521
2	25	1935	10	16QAM	9.775	8.9499
2	25	1935	10	64QAM	9.775	8.9612
2	25	1962.5	10	QPSK	9.773	8.9566
2	25	1962.5	10	16QAM	9.79	8.9585
2	25	1962.5	10	64QAM	9.79	8.9567
2	25	1990	10	QPSK	9.789	8.9516
2	25	1990	10	16QAM	9.782	8.9485
2	25	1990	10	64QAM	9.782	8.9482

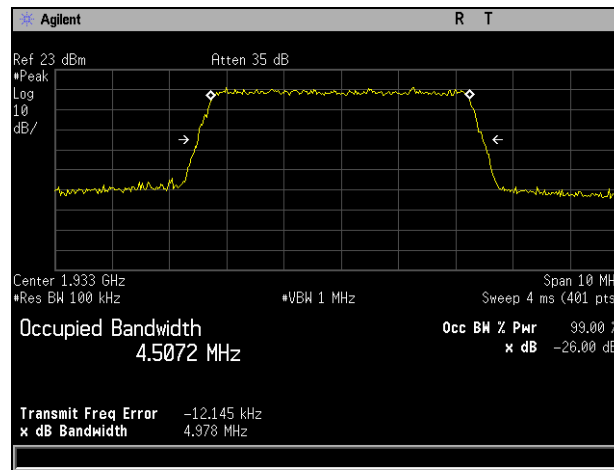
Table 11. Occupied Bandwidth, Test Results, Band 25, 5 and 10 MHz



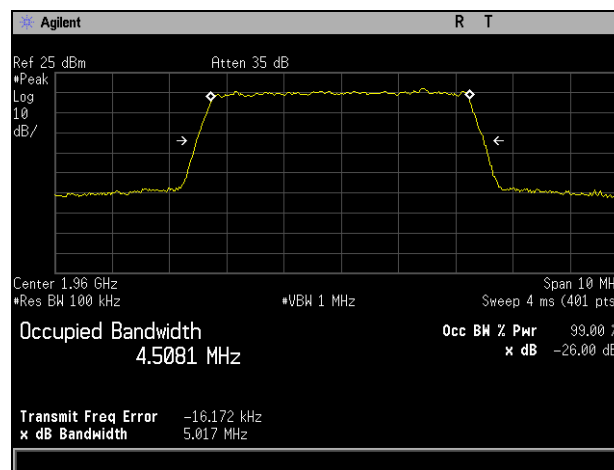
Port	Band	Center Frequency MHz	Bandwidth	Modulation	26 dB OBW	99%
1	25	1937.5	15	QPSK	14.583	13.43
1	25	1937.5	15	16QAM	14.599	13.4404
1	25	1937.5	15	64QAM	14.589	13.4236
1	25	1962.5	15	QPSK	14.504	13.4176
1	25	1962.5	15	16QAM	14.691	13.455
1	25	1962.5	15	64QAM	14.614	13.4588
1	25	1987.5	15	QPSK	14.645	13.45
1	25	1987.5	15	16QAM	14.68	13.4818
1	25	1987.5	15	64QAM	14.662	13.4777
1	25	1940	20	QPSK	19.447	17.8816
1	25	1940	20	16QAM	19.524	17.87
1	25	1940	20	64QAM	19.54	17.88
1	25	1962.5	20	QPSK	19.28	17.906
1	25	1962.5	20	16QAM	19.53	17.9
1	25	1962.5	20	64QAM	19.535	17.909
1	25	1985	20	QPSK	19.627	17.905
1	25	1985	20	16QAM	19.627	17.905
1	25	1985	20	64QAM	19.627	17.9045
2	25	1937.5	15	QPSK	14.695	13.45
2	25	1937.5	15	16QAM	14.965	13.45
2	25	1937.5	15	64QAM	14.613	13.45
2	25	1962.5	15	QPSK	14.7	13.46
2	25	1962.5	15	16QAM	14.73	13.46
2	25	1962.5	15	64QAM	14.73	13.47
2	25	1987.5	15	QPSK	14.57	13.47
2	25	1987.5	15	16QAM	14.6	13.46
2	25	1987.5	15	64QAM	14.64	13.46
2	25	1940	20	QPSK	19.62	17.87
2	25	1940	20	16QAM	19.61	17.87
2	25	1940	20	64QAM	19.61	17.87
2	25	1962.5	20	QPSK	19.53	17.9
2	25	1962.5	20	16QAM	19.55	17.9
2	25	1962.5	20	64QAM	19.58	17.91
2	25	1985	20	QPSK	19.63	17.9
2	25	1985	20	16QAM	19.63	17.9
2	25	1985	20	64QAM	19.63	17.9

Table 12. Occupied Bandwidth, Test Results, Band 25, 15 and 20 MHz

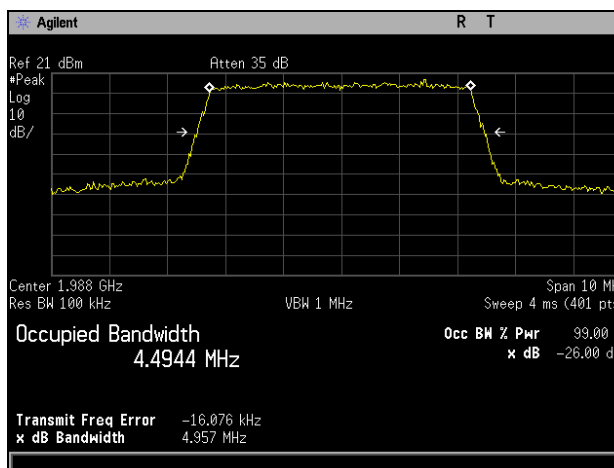
Occupied Bandwidth, Band 2, 5 MHz Channel, Port 1



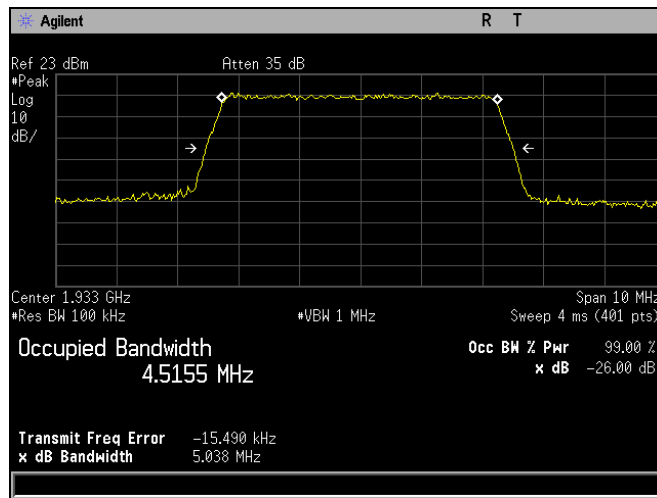
Plot 289. Occupied Bandwidth, QAM-16, Low Channel, Port 1, Band 2



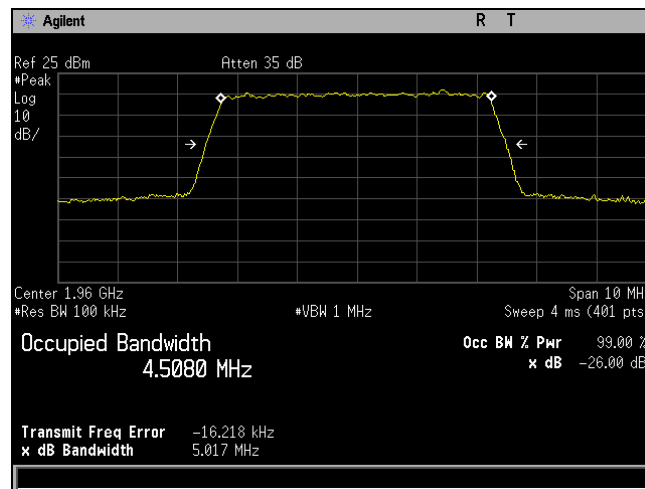
Plot 290. Occupied Bandwidth, QAM-16, Mid Channel, Port 1, Band 2



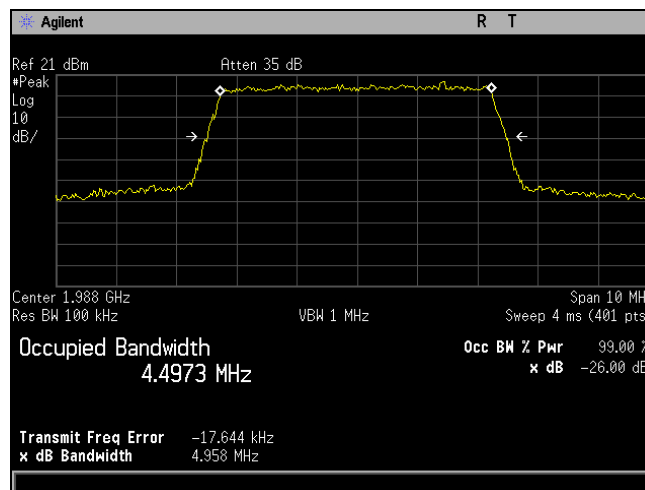
Plot 291. Occupied Bandwidth, QAM-16, High Channel, Port 1, Band 2



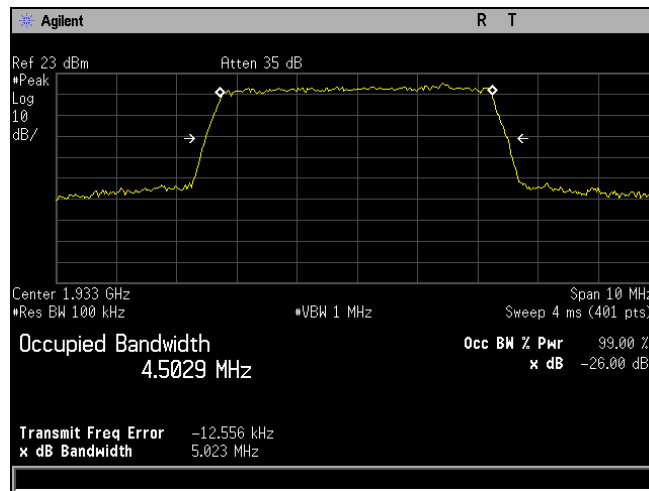
Plot 292. Occupied Bandwidth, QAM-64, Low Channel, Port 1, Band 2



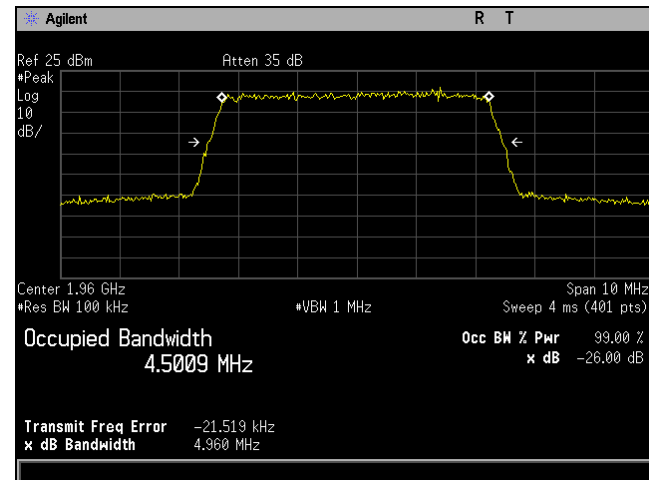
Plot 293. Occupied Bandwidth, QAM-64, Mid Channel, Port 1, Band 2



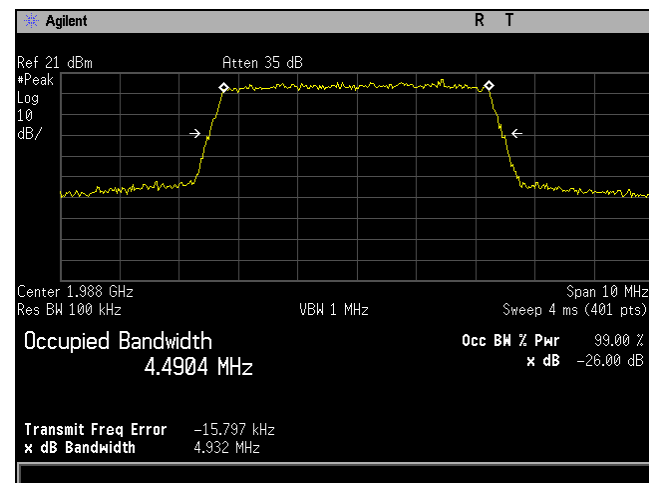
Plot 294. Occupied Bandwidth, QAM-64, High Channel, Port 1, Band 2



Plot 295. Occupied Bandwidth, QPSK, Low Channel, Port 1, Band 2

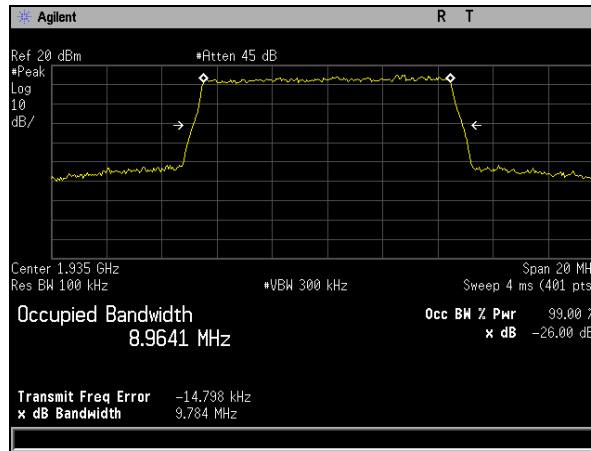


Plot 296. Occupied Bandwidth, QPSK, Mid Channel, Port 1, Band 2

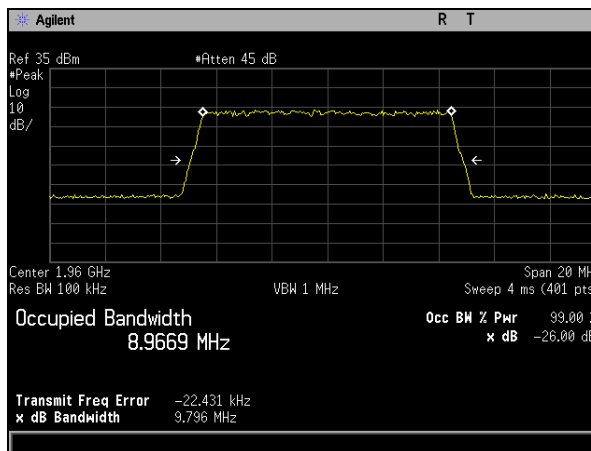


Plot 297. Occupied Bandwidth, QPSK, High Channel, Port 1, Band 2

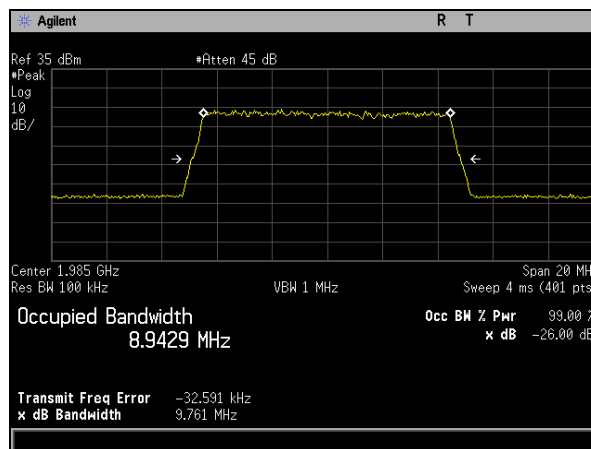
Occupied Bandwidth, Band 2, 10 MHz Channel, Port 1



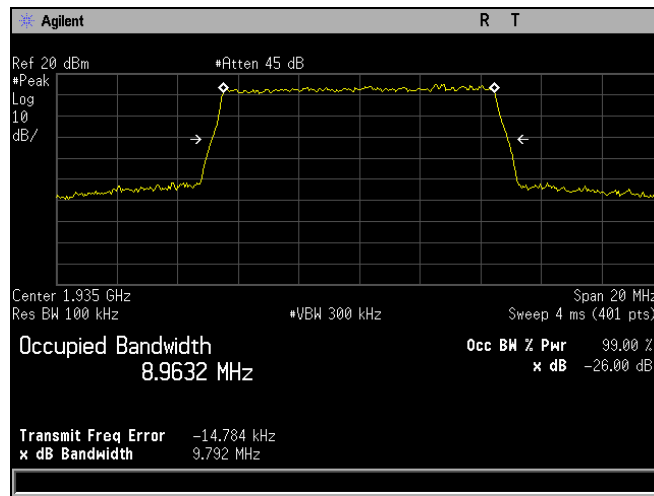
Plot 298. Occupied Bandwidth, QAM-16, Low Channel, Port 1, Band 2



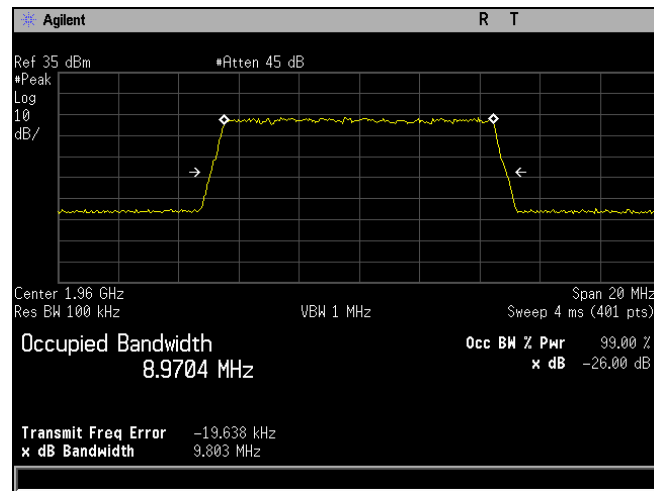
Plot 299. Occupied Bandwidth, QAM-16, Mid Channel, Port 1, Band 2



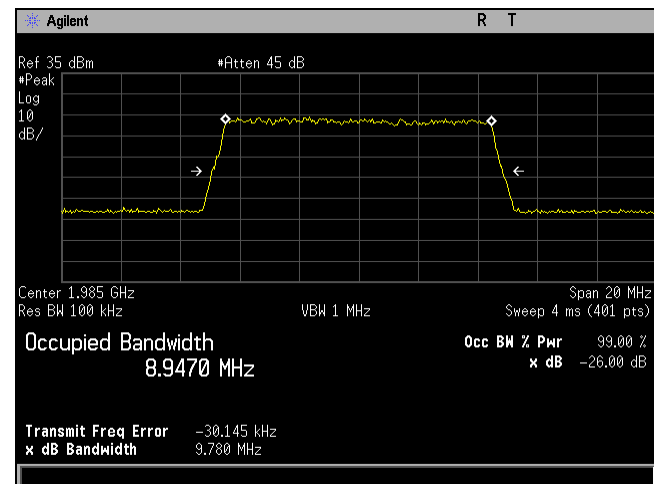
Plot 300. Occupied Bandwidth, QAM-16, High Channel, Port 1, Band 2



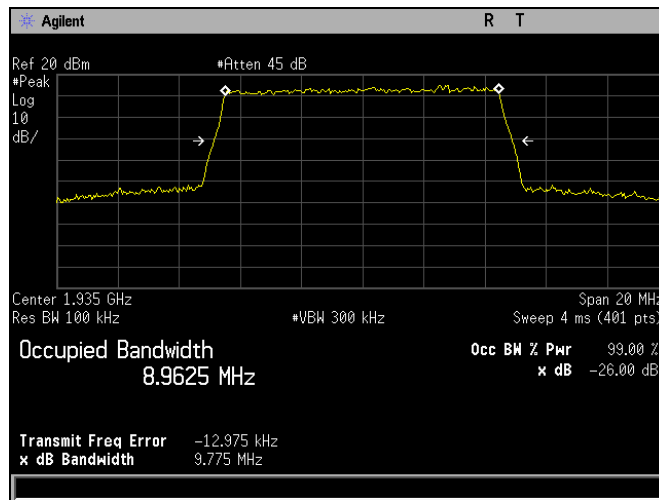
Plot 301. Occupied Bandwidth, QAM-64, Low Channel, Port 1, Band 2



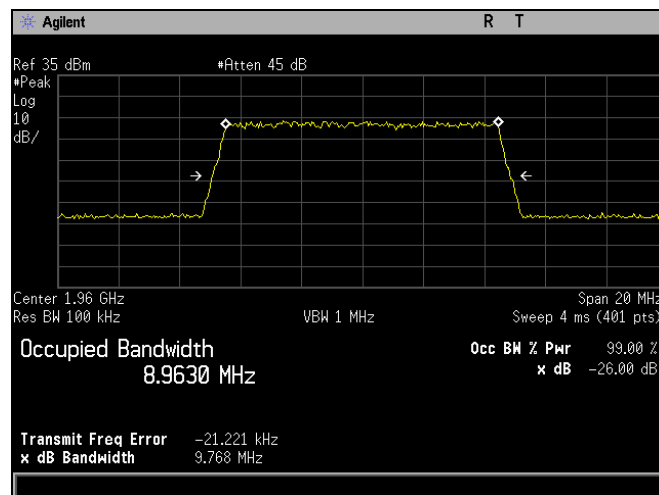
Plot 302. Occupied Bandwidth, QAM-64, Mid Channel, Port 1, Band 2



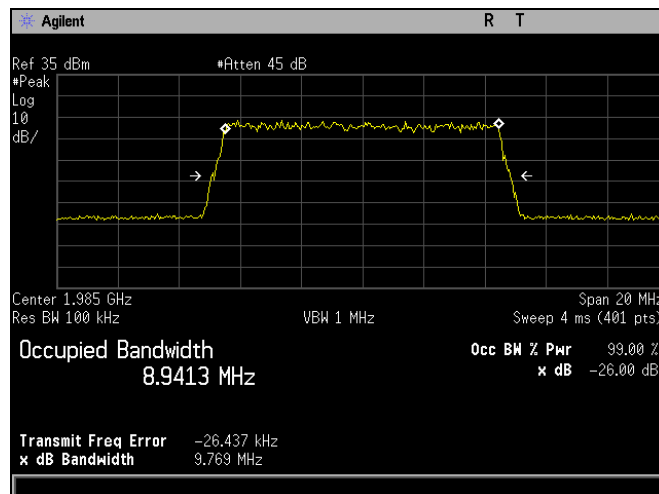
Plot 303. Occupied Bandwidth, QAM-64, High Channel, Port 1, Band 2



Plot 304. Occupied Bandwidth, QPSK, Low Channel, Port 1, Band 2

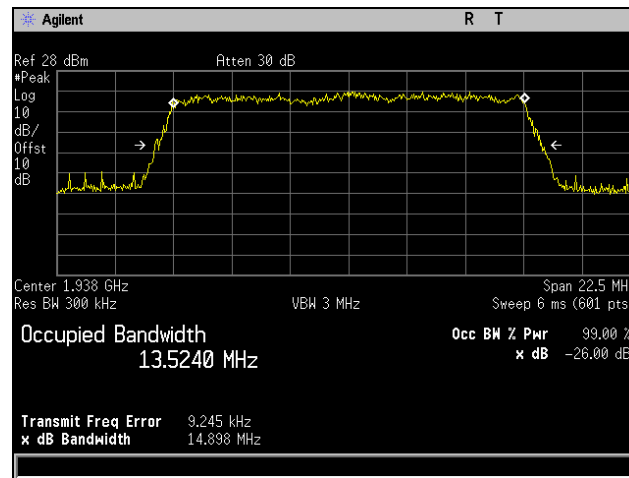


Plot 305. Occupied Bandwidth, QPSK, Mid Channel, Port 1, Band 2

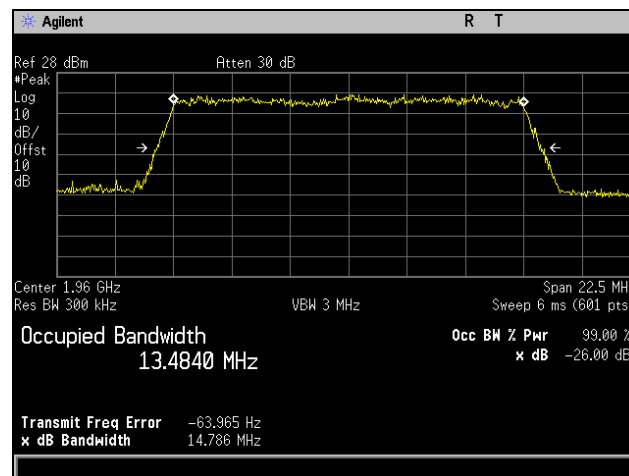


Plot 306. Occupied Bandwidth, QPSK, High Channel, Port 1, Band 2

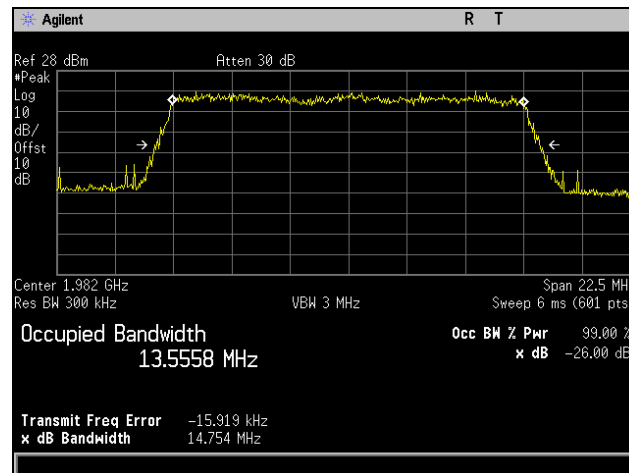
Occupied Bandwidth, Band 2, 15 MHz Channel, Port 1



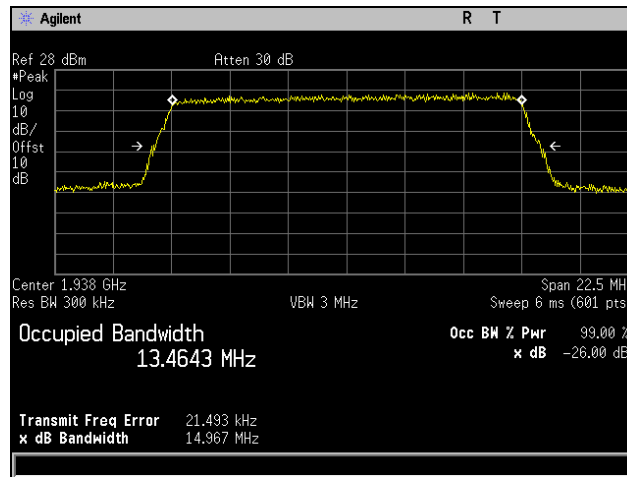
Plot 307. Occupied Bandwidth, QAM-16, Low Channel, Port 1, Band 2



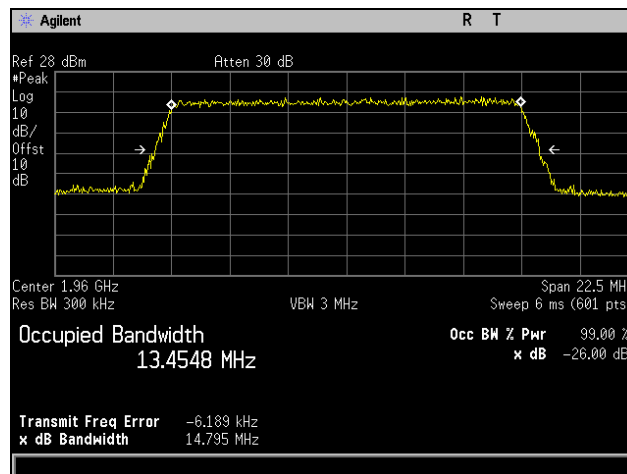
Plot 308. Occupied Bandwidth, QAM-16, Mid Channel, Port 1, Band 2



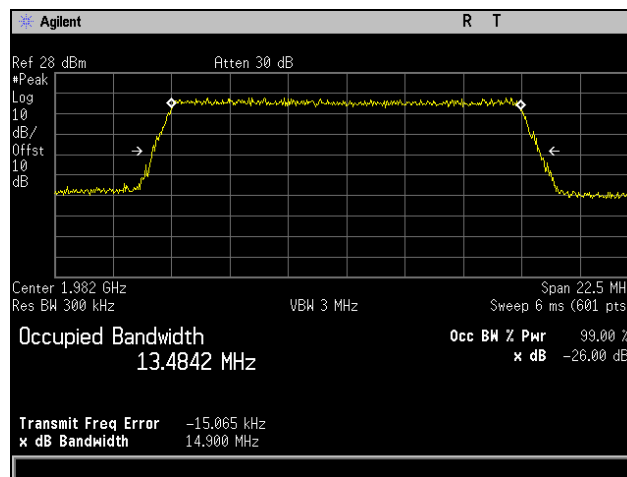
Plot 309. Occupied Bandwidth, QAM-16, High Channel, Port 1, Band 2



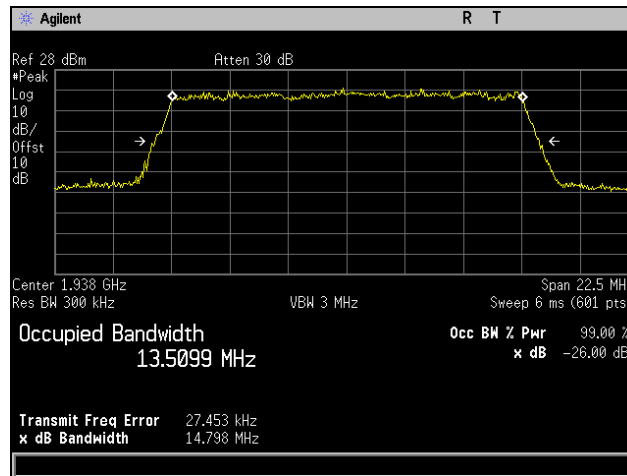
Plot 310. Occupied Bandwidth, QAM-64, Low Channel, Port 1, Band 2



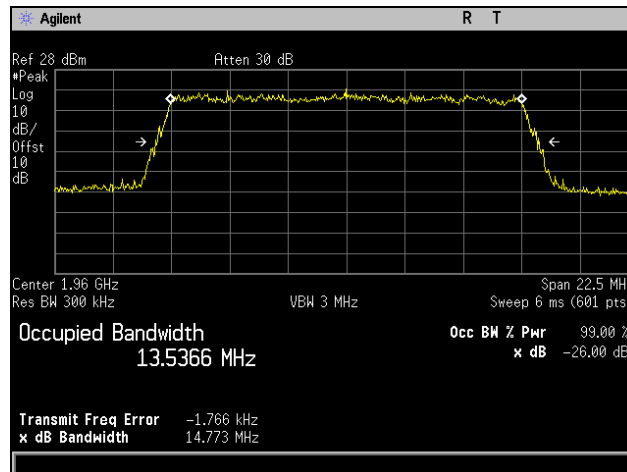
Plot 311. Occupied Bandwidth, QAM-64, Low Channel, Port 1, Band 2



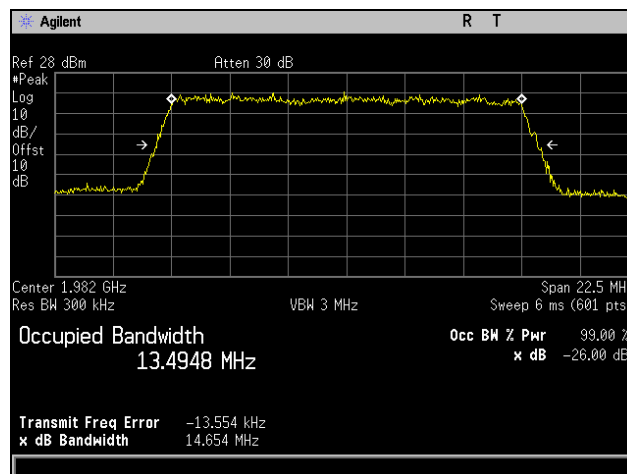
Plot 312. Occupied Bandwidth, QAM-64, High Channel, Port 1, Band 2



Plot 313. Occupied Bandwidth, QPSK, Low Channel, Port 1, Band 2

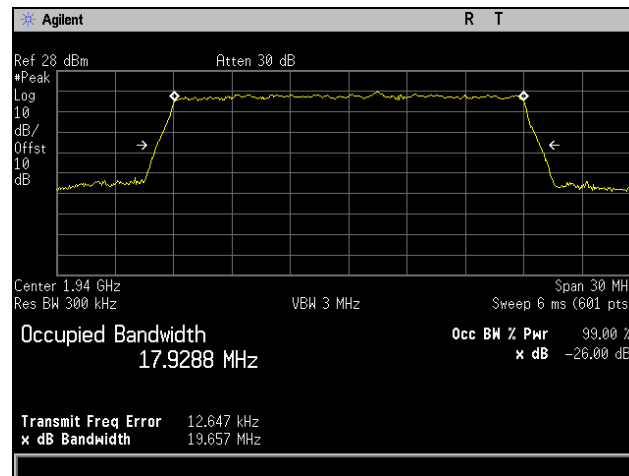


Plot 314. Occupied Bandwidth, QPSK, Mid Channel, Port 1, Band 2

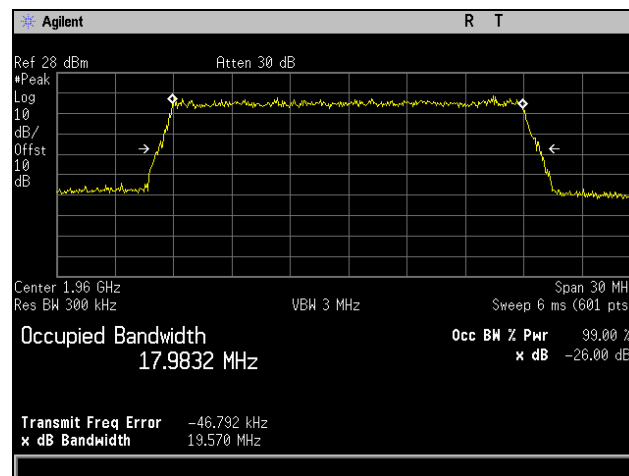


Plot 315. Occupied Bandwidth, QPSK, High Channel, Port 1, Band 2

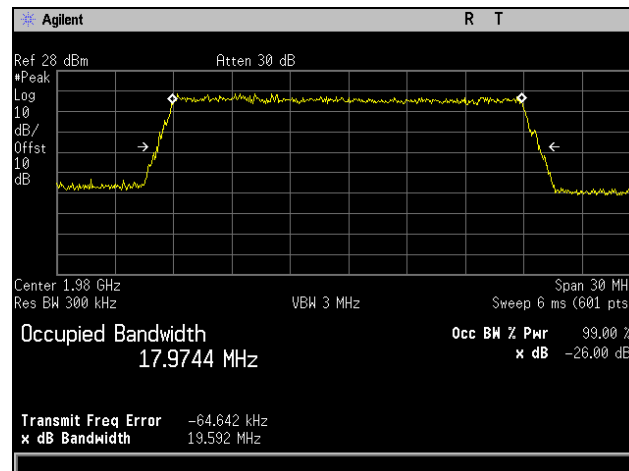
Occupied Bandwidth, Band 2, 20 MHz Channel, Port 1



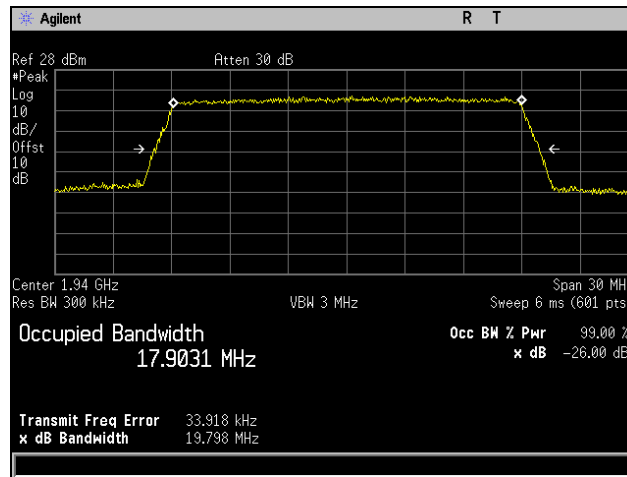
Plot 316. Occupied Bandwidth, QAM-16, Low Channel, Port 1, Band 2



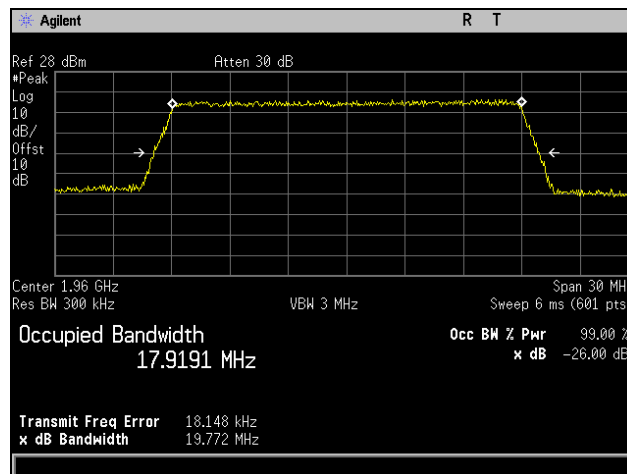
Plot 317. Occupied Bandwidth, QAM-16, Mid Channel, Port 1, Band 2



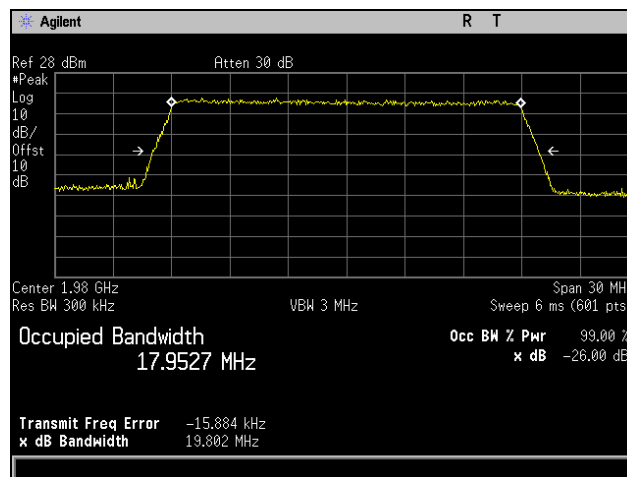
Plot 318. Occupied Bandwidth, QAM-16, High Channel, Port 1, Band 2



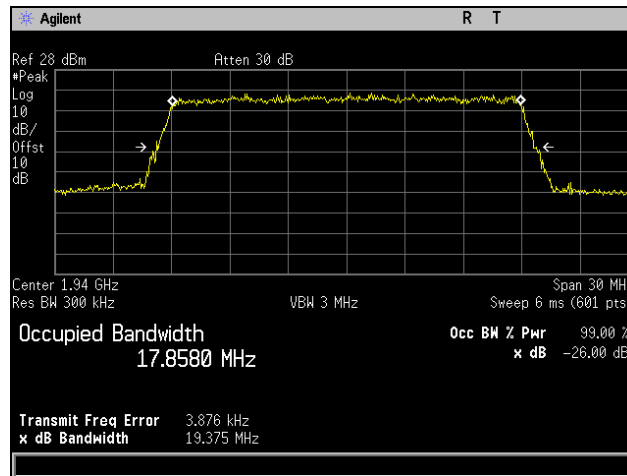
Plot 319. Occupied Bandwidth, QAM-64, Low Channel, Port 1, Band 2



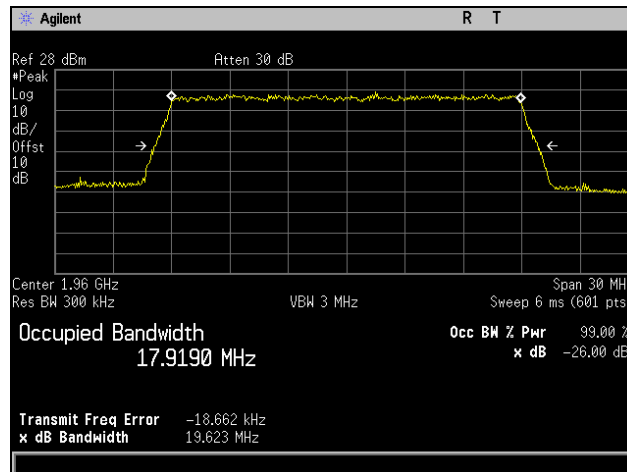
Plot 320. Occupied Bandwidth, QAM-64, Low Channel, Port 1, Band 2



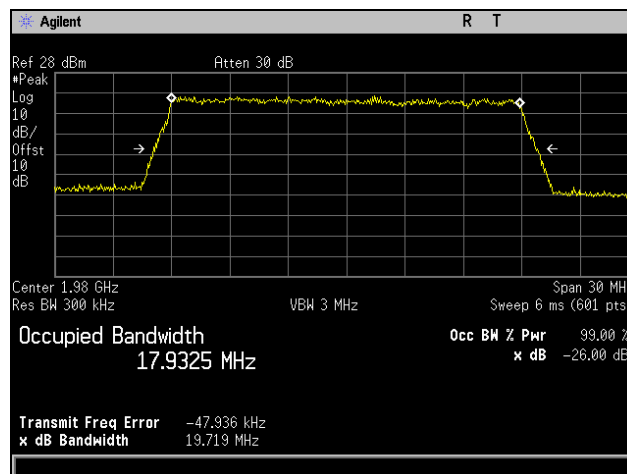
Plot 321. Occupied Bandwidth, QAM-64, High Channel, Port 1, Band 2



Plot 322. Occupied Bandwidth, QPSK, Low Channel, Port 1, Band 2

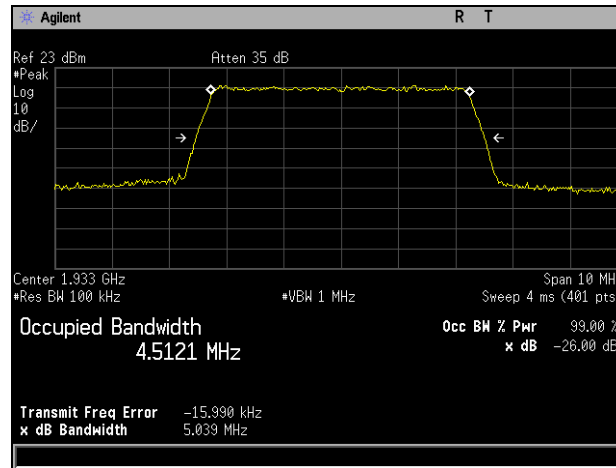


Plot 323. Occupied Bandwidth, QPSK, Mid Channel, Port 1, Band 2

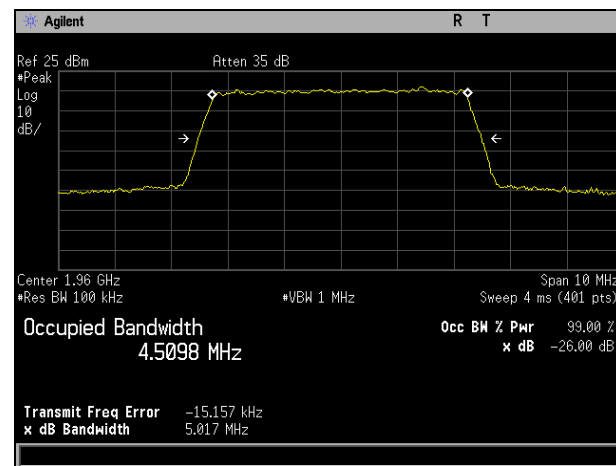


Plot 324. Occupied Bandwidth, QPSK, High Channel, Port 1, Band 2

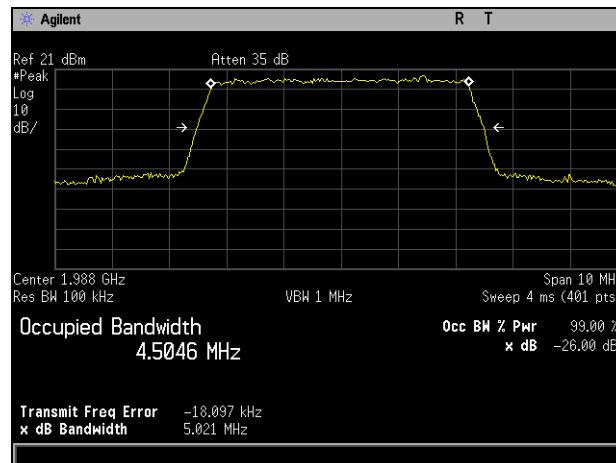
Occupied Bandwidth, Band 2, 5 MHz Channel, Port 2



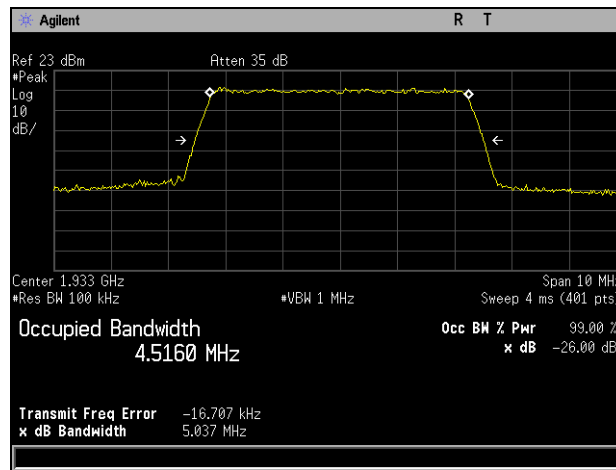
Plot 325. Occupied Bandwidth, QAM-16, Low Channel, Port 2, Band 2



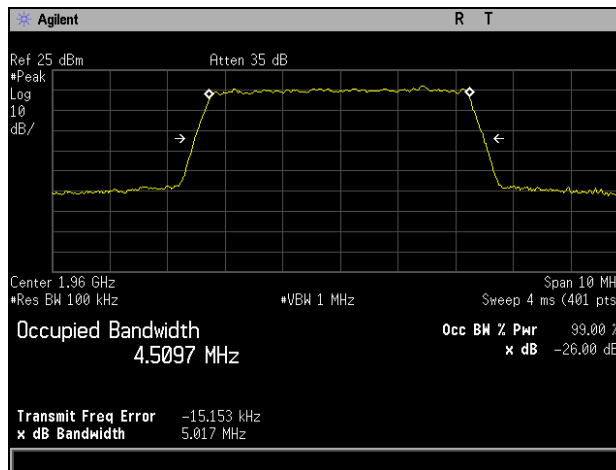
Plot 326. Occupied Bandwidth, QAM-16, Mid Channel, Port 2, Band 2



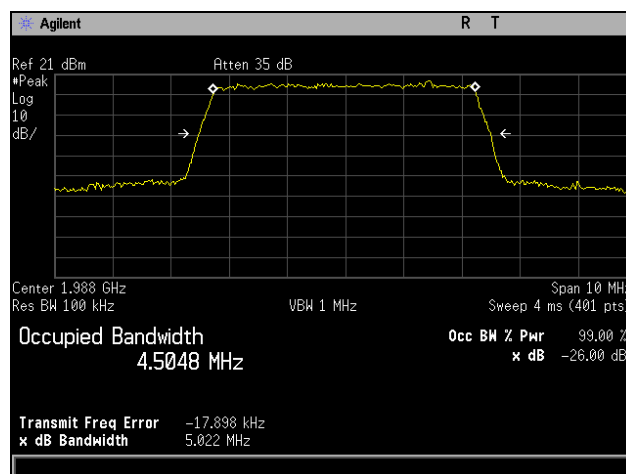
Plot 327. Occupied Bandwidth, QAM-16, High Channel, Port 2, Band 2



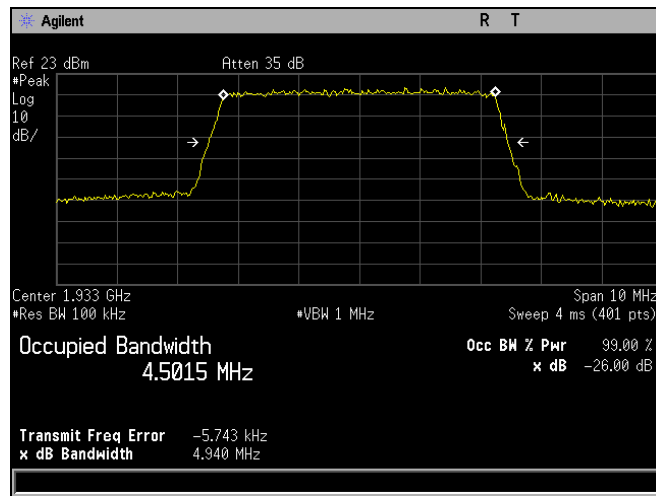
Plot 328. Occupied Bandwidth, QAM-64, Low Channel, Port 2, Band 2



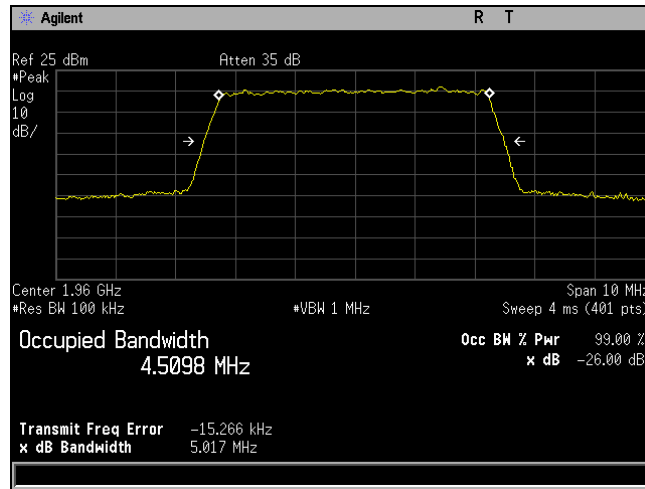
Plot 329. Occupied Bandwidth, QAM-64, Mid Channel, Port 2, Band 2



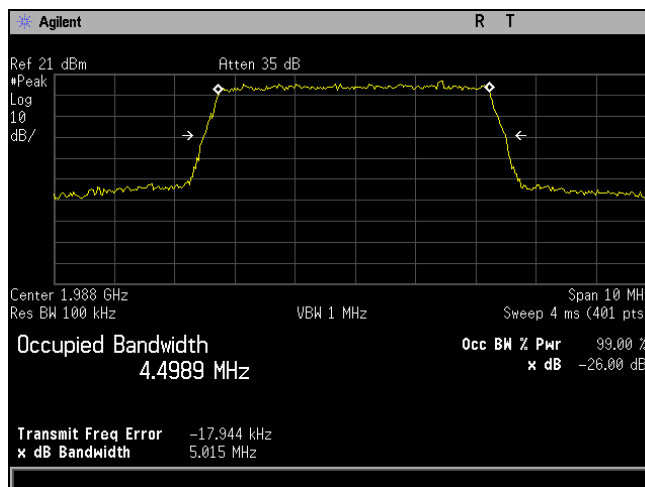
Plot 330. Occupied Bandwidth, QAM-64, High Channel, Port 2, Band 2



Plot 331. Occupied Bandwidth, QPSK, Low Channel, Port 2, Band 2

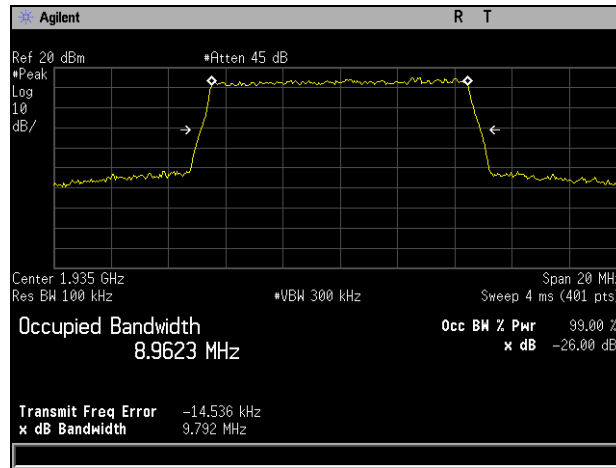


Plot 332. Occupied Bandwidth, QPSK, Mid Channel, Port 2, Band 2

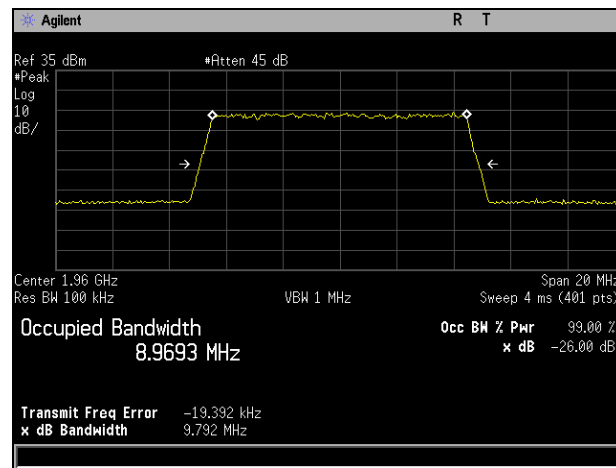


Plot 333. Occupied Bandwidth, QPSK, High Channel, Port 2, Band 2

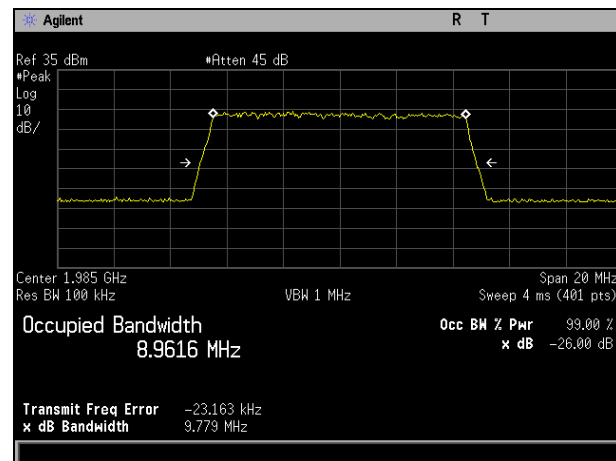
Occupied Bandwidth, Band 2, 10 MHz Channel, Port 2



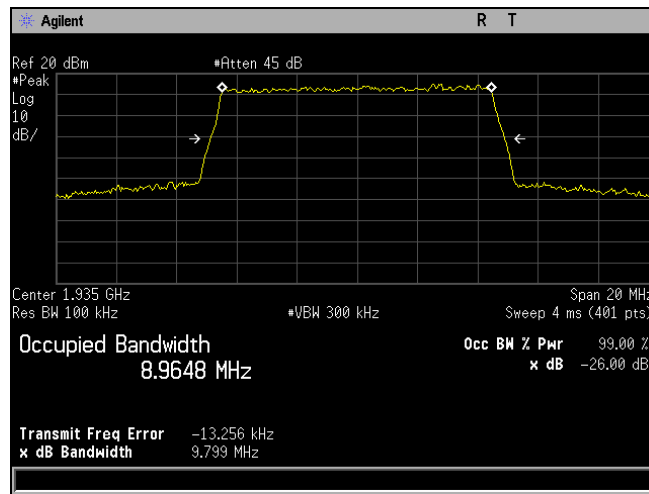
Plot 334. Occupied Bandwidth, QAM-16, Low Channel, Port 2, Band 2



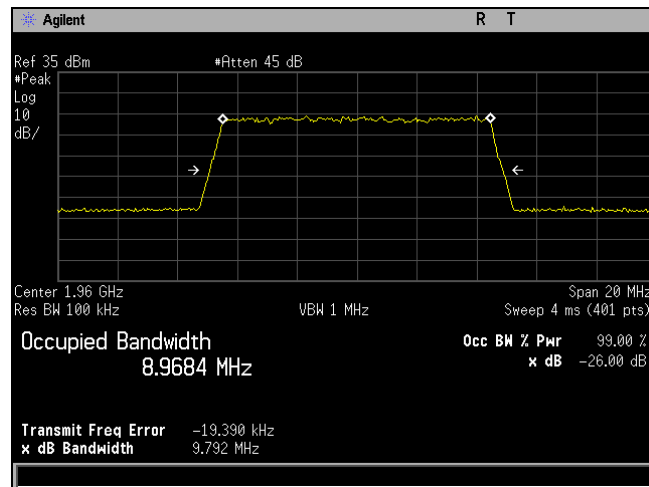
Plot 335. Occupied Bandwidth, QAM-16, Mid Channel, Port 2, Band 2



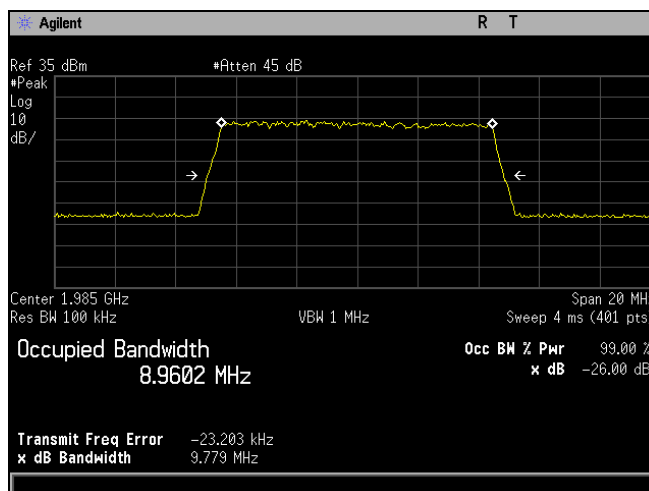
Plot 336. Occupied Bandwidth, QAM-16, High Channel, Port 2, Band 2



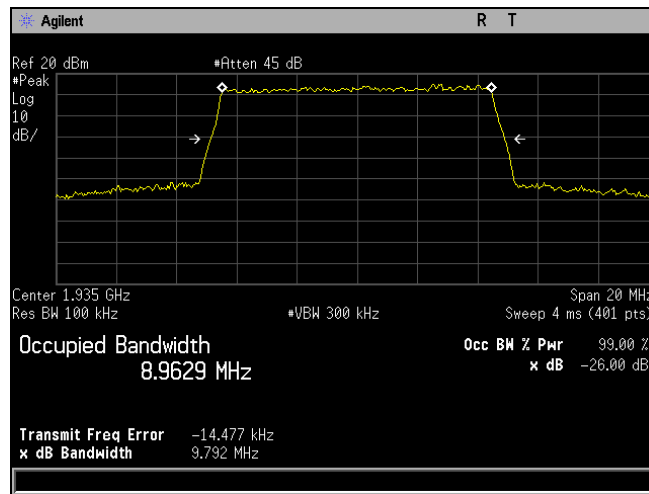
Plot 337. Occupied Bandwidth, QAM-64, Low Channel, Port 2, Band 2



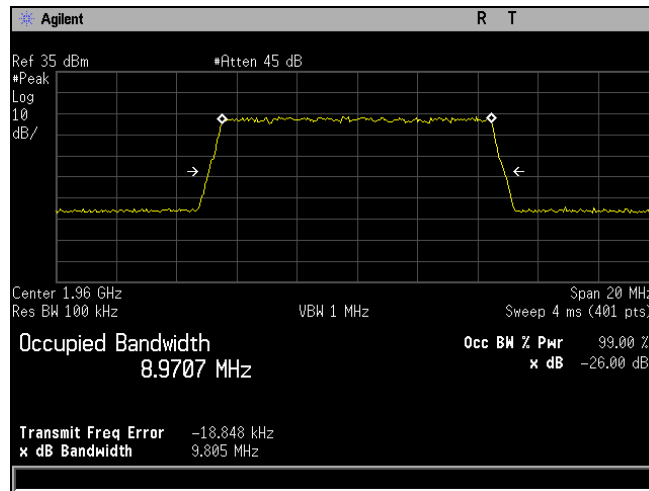
Plot 338. Occupied Bandwidth, QAM-64, Mid Channel, Port 2, Band 2



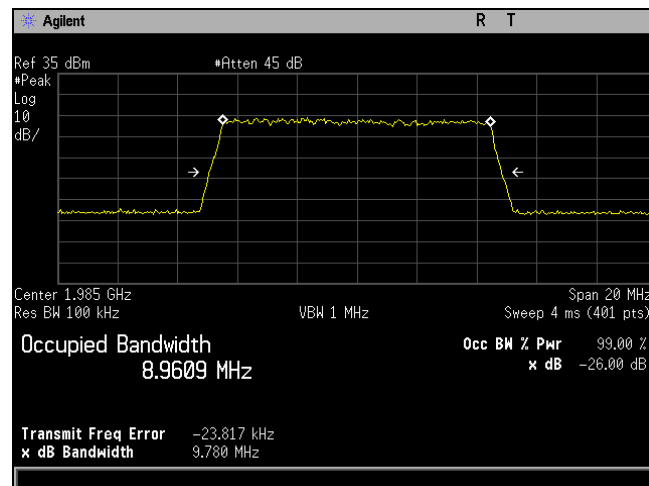
Plot 339. Occupied Bandwidth, QAM-64, High Channel, Port 2, Band 2



Plot 340. Occupied Bandwidth, QPSK, Low Channel, Port 2, Band 2

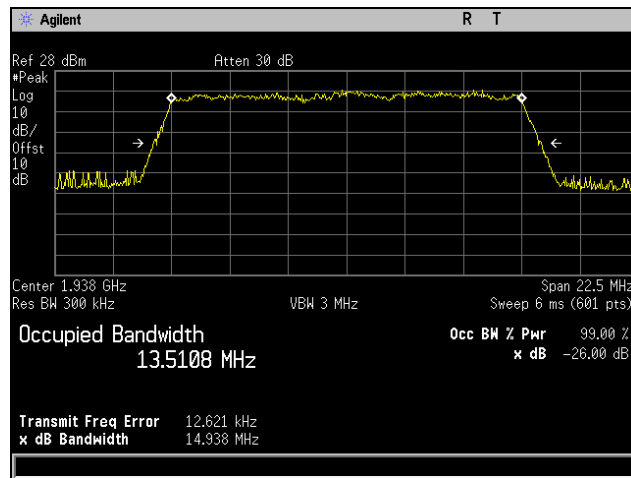


Plot 341. Occupied Bandwidth, QPSK, Mid Channel, Port 2, Band 2

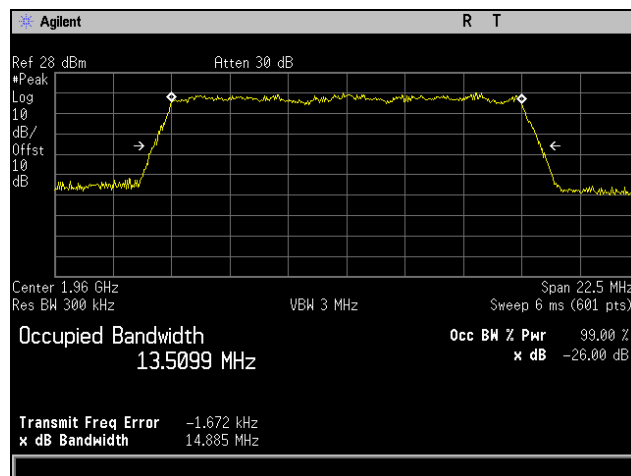


Plot 342. Occupied Bandwidth, QPSK, High Channel, Port 2, Band 2

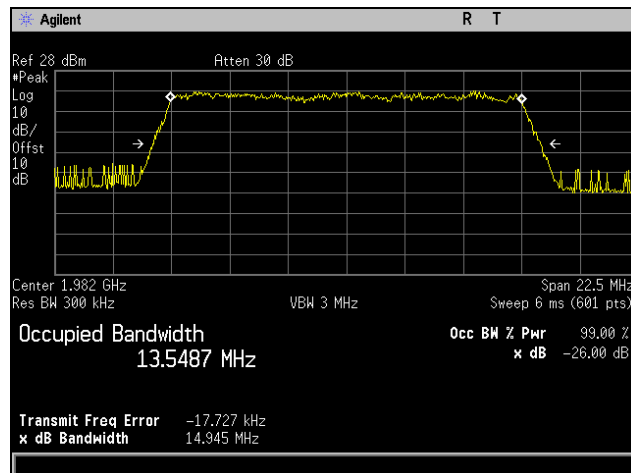
Occupied Bandwidth, Band 2, 15 MHz Channel, Port 2



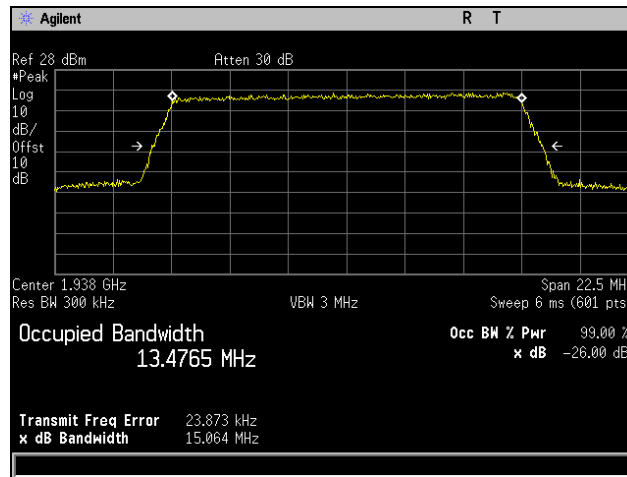
Plot 343. Occupied Bandwidth, QAM-16, Low Channel, Port 2, Band 2



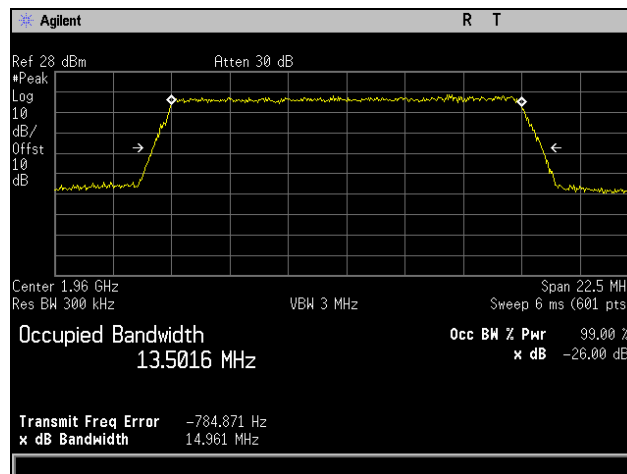
Plot 344. Occupied Bandwidth, QAM-16, Mid Channel, Port 2, Band 2



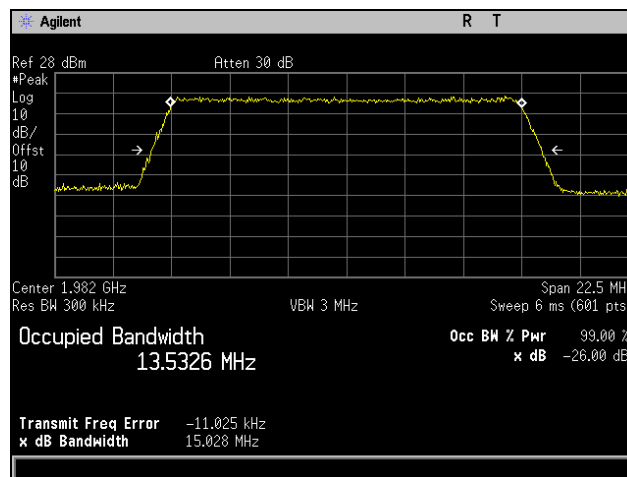
Plot 345. Occupied Bandwidth, QAM-16, High Channel, Port 2, Band 2



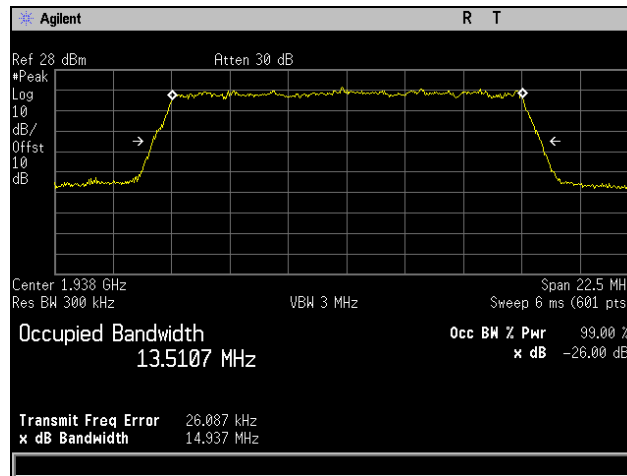
Plot 346. Occupied Bandwidth, QAM-64, Low Channel, Port 2, Band 2



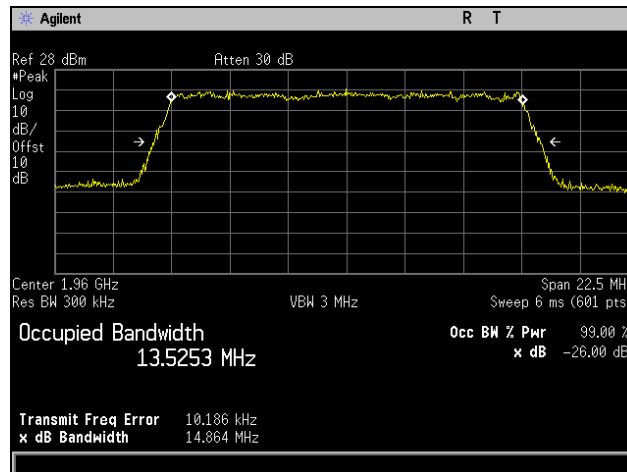
Plot 347. Occupied Bandwidth, QAM-64, Low Channel, Port 2, Band 2



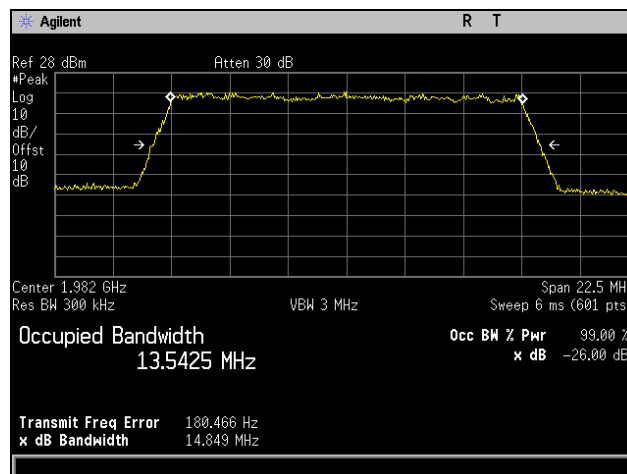
Plot 348. Occupied Bandwidth, QAM-64, High Channel, Port 2, Band 2



Plot 349. Occupied Bandwidth, QPSK, Low Channel, Port 2, Band 2

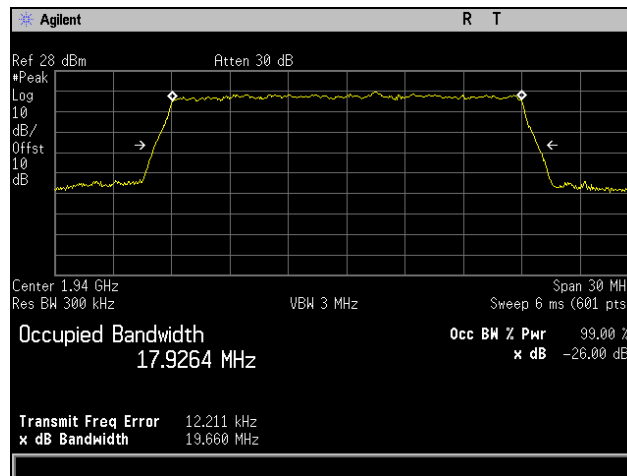


Plot 350. Occupied Bandwidth, QPSK, Mid Channel, Port 2, Band 2

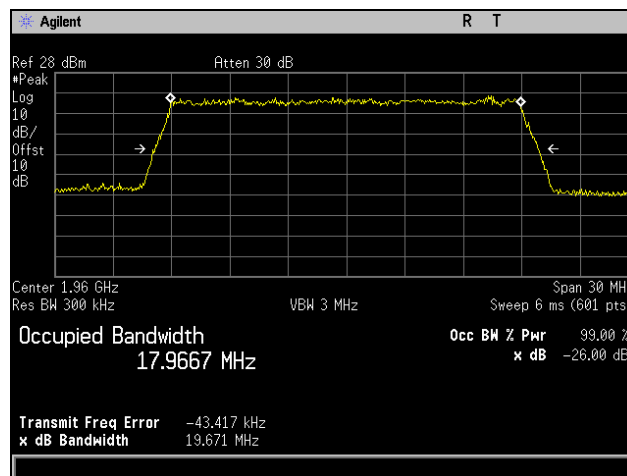


Plot 351. Occupied Bandwidth, QPSK, High Channel, Port 2, Band 2

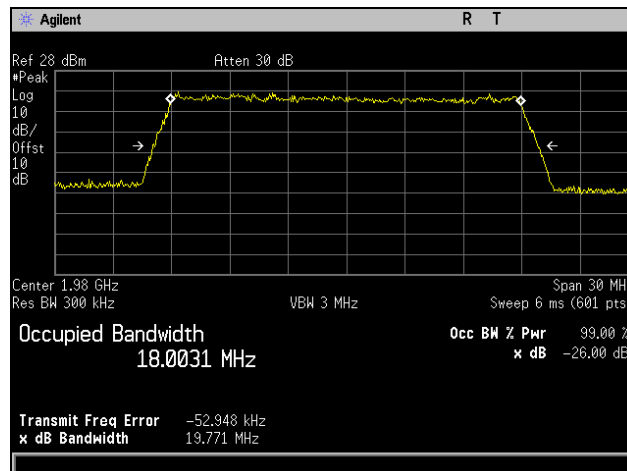
Occupied Bandwidth, Band 2, 20 MHz Channel , Port 2



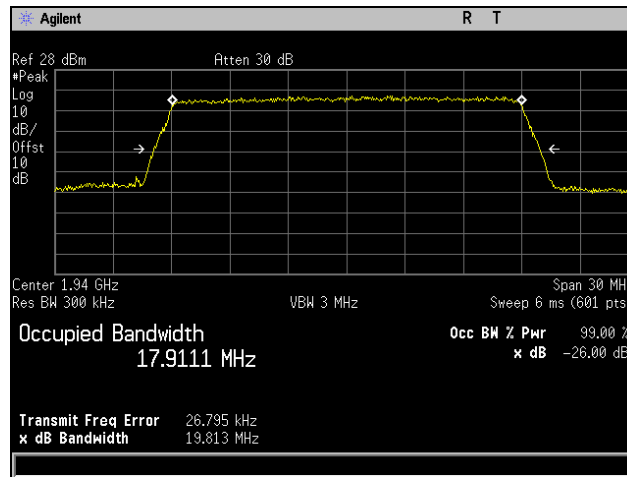
Plot 352. Occupied Bandwidth, QAM-16, Low Channel, Port 2, Band 2



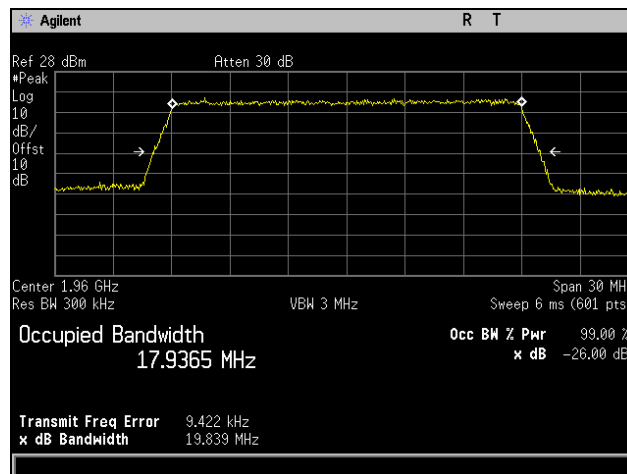
Plot 353. Occupied Bandwidth, QAM-16, Mid Channel, Port 2, Band 2



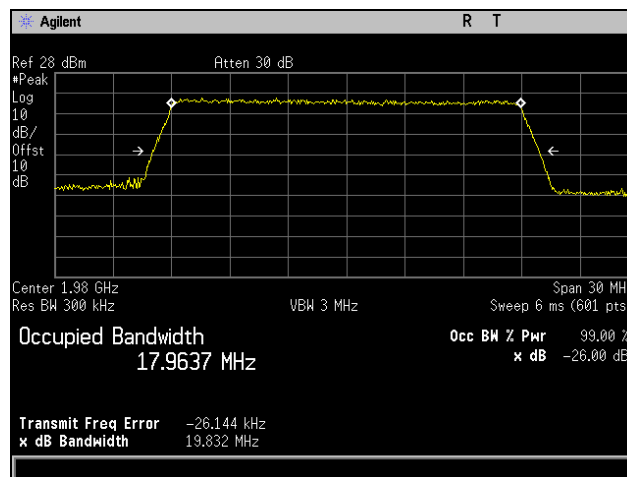
Plot 354. Occupied Bandwidth, QAM-16, High Channel, Port 2, Band 2



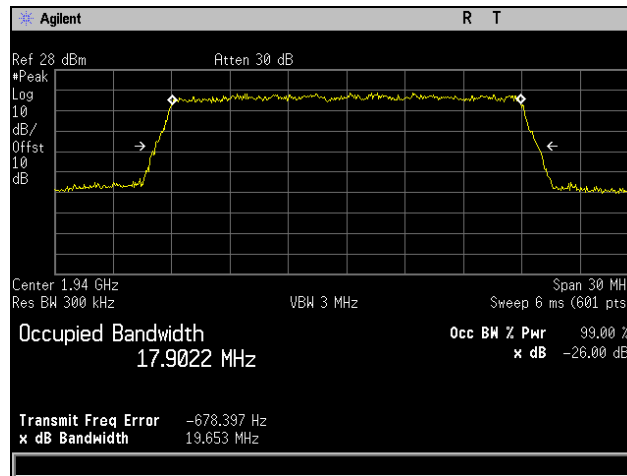
Plot 355. Occupied Bandwidth, QAM-64, Low Channel, Port 2, Band 2



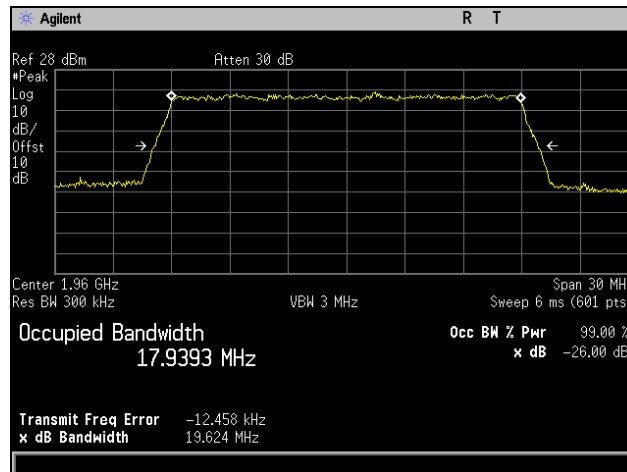
Plot 356. Occupied Bandwidth, QAM-64, Low Channel, Port 2, Band 2



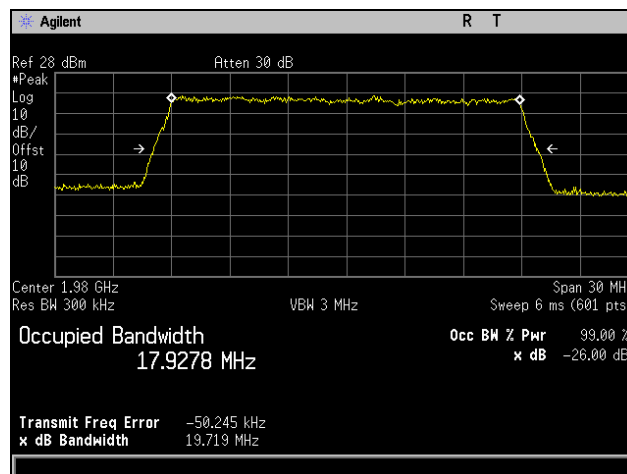
Plot 357. Occupied Bandwidth, QAM-64, High Channel, Port 2, Band 2



Plot 358. Occupied Bandwidth, QPSK, Low Channel, Port 2, Band 2

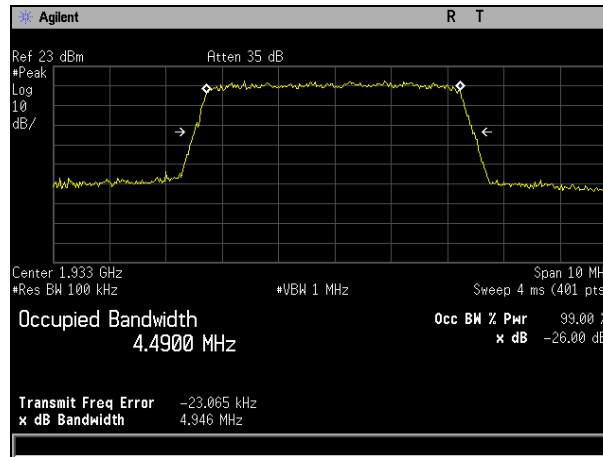


Plot 359. Occupied Bandwidth, QPSK, Mid Channel, Port 2, Band 2

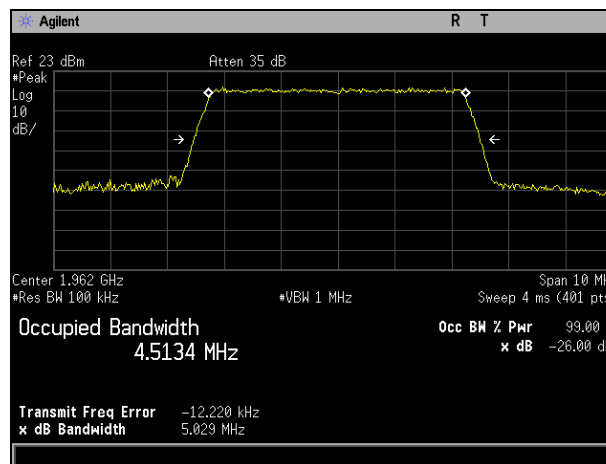


Plot 360. Occupied Bandwidth, QPSK, High Channel, Port 2, Band 2

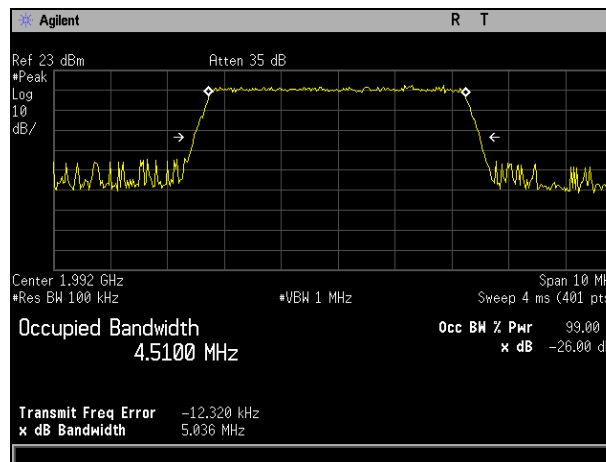
Occupied Bandwidth, Band 25, 5 MHz Channel, Port 1



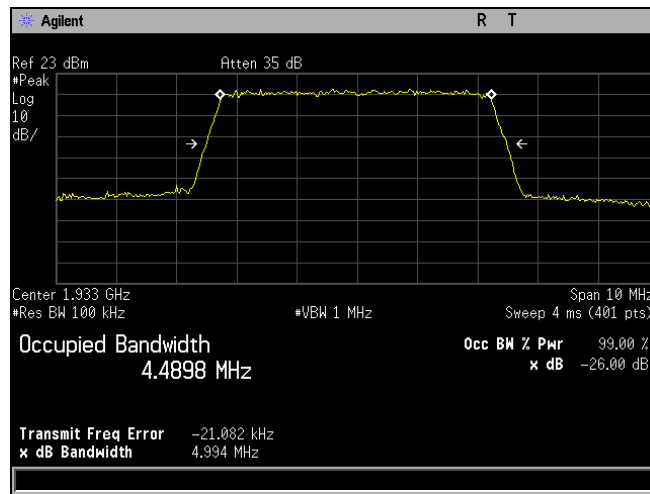
Plot 361. Occupied Bandwidth, QAM-16, Low Channel, Port 1, Band 25



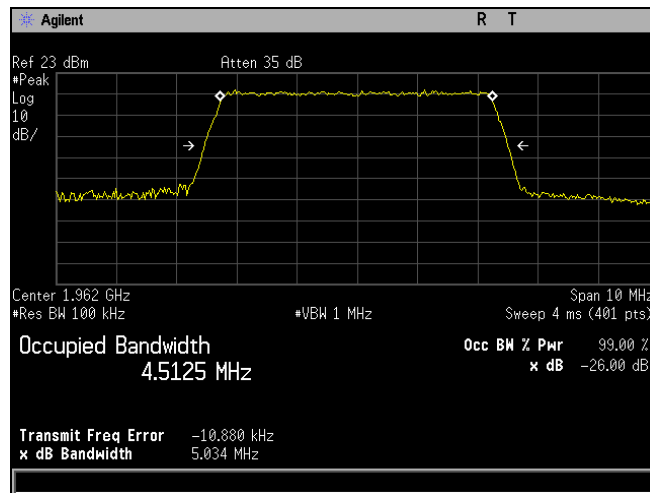
Plot 362. Occupied Bandwidth, QAM-16, Mid Channel, Port 1, Band 25



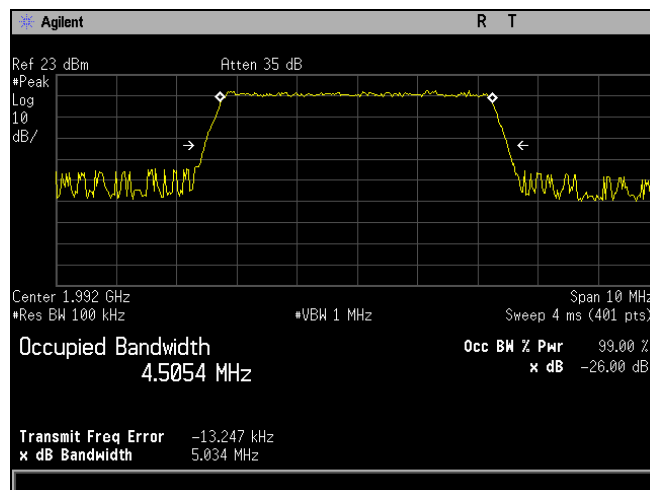
Plot 363. Occupied Bandwidth, QAM-16, High Channel, Port 1, Band 25



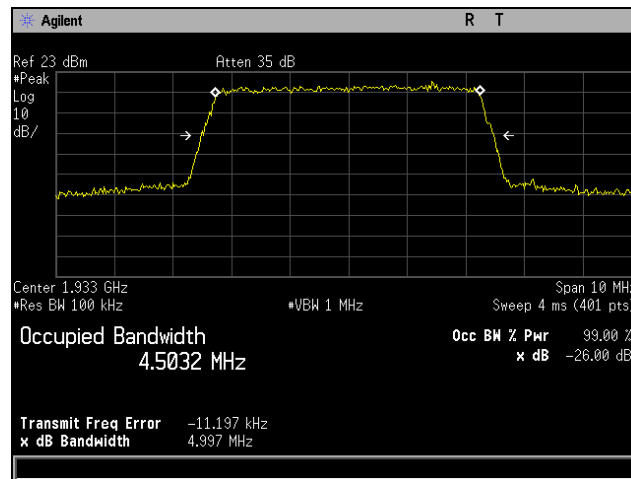
Plot 364. Occupied Bandwidth, QAM-64, Low Channel, Port 1, Band 25



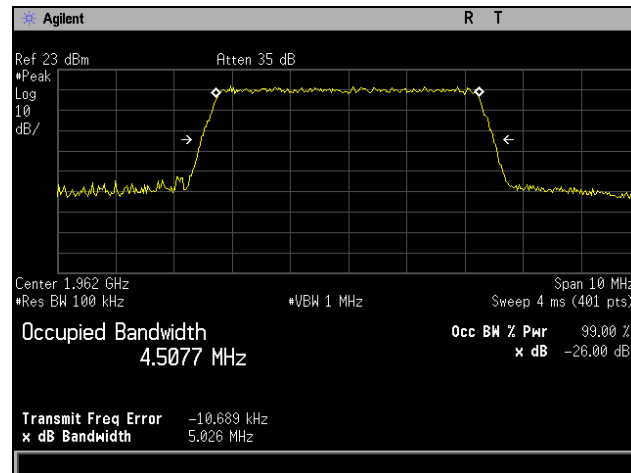
Plot 365. Occupied Bandwidth, QAM-64, Mid Channel, Port 1, Band 25



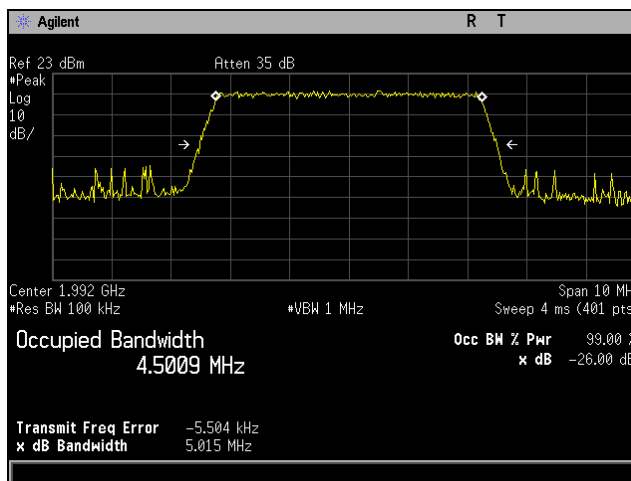
Plot 366. Occupied Bandwidth, QAM-64, High Channel, Port 1, Band 25



Plot 367. Occupied Bandwidth, QPSK, Low Channel, Port 1, Band 25

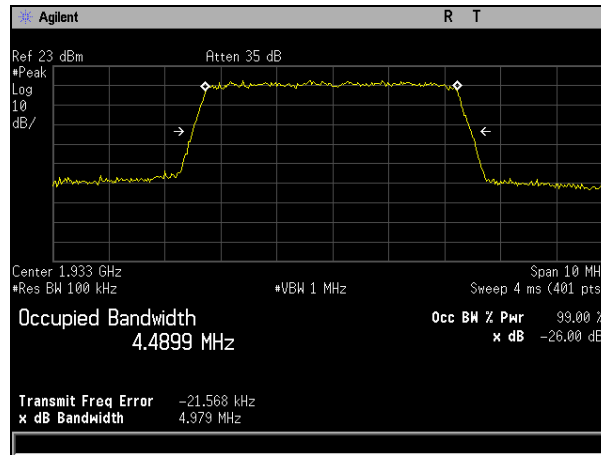


Plot 368. Occupied Bandwidth, QPSK, Mid Channel, Port 1, Band 25

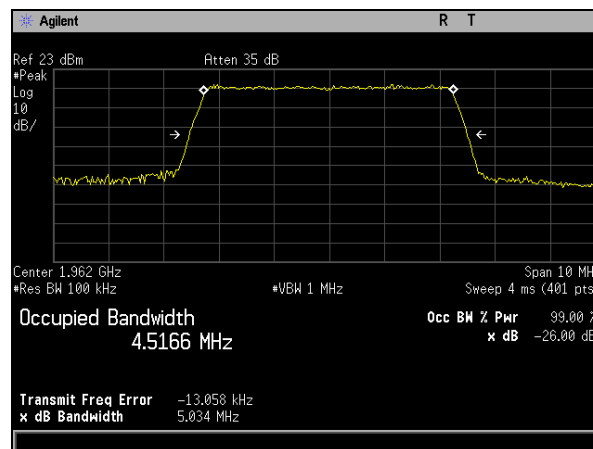


Plot 369. Occupied Bandwidth, QPSK, High Channel, Port 1, Band 25

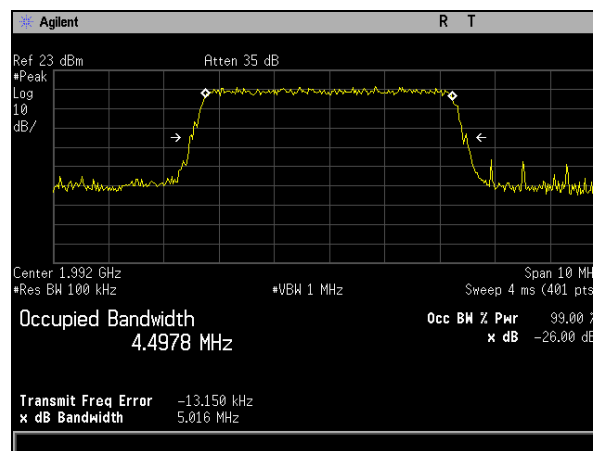
Occupied Bandwidth, Band 25, 5 MHz Channel, Port 2



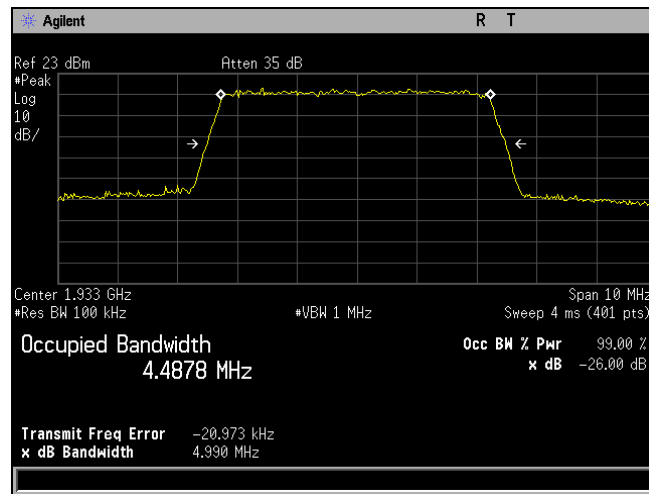
Plot 370. Occupied Bandwidth, QAM-16, Low Channel, Port 2, Band 25



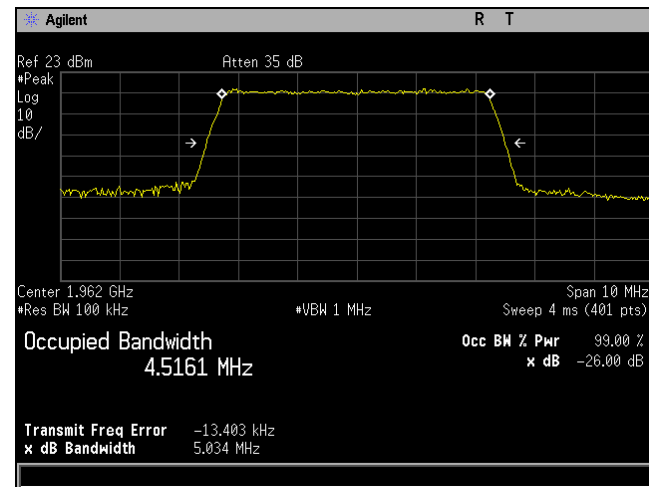
Plot 371. Occupied Bandwidth, QAM-16, Mid Channel, Port 2, Band 25



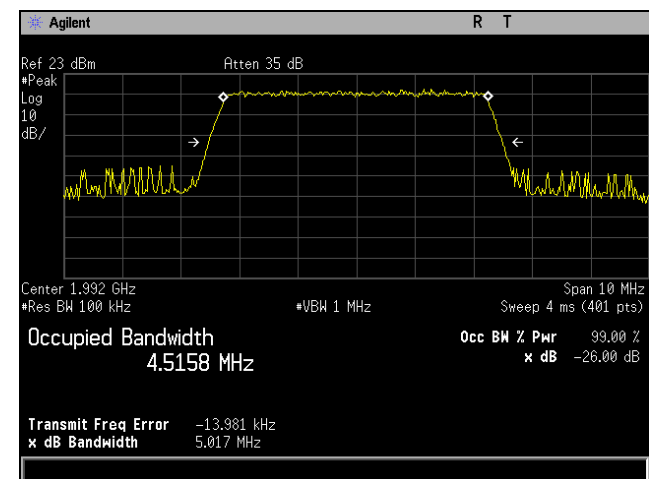
Plot 372. Occupied Bandwidth, QAM-16, High Channel, Port 2, Band 25



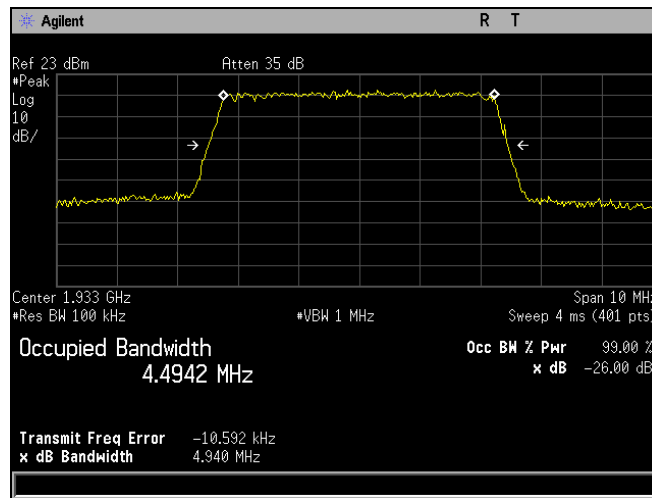
Plot 373. Occupied Bandwidth, QAM-64, Low Channel, Port 2, Band 25



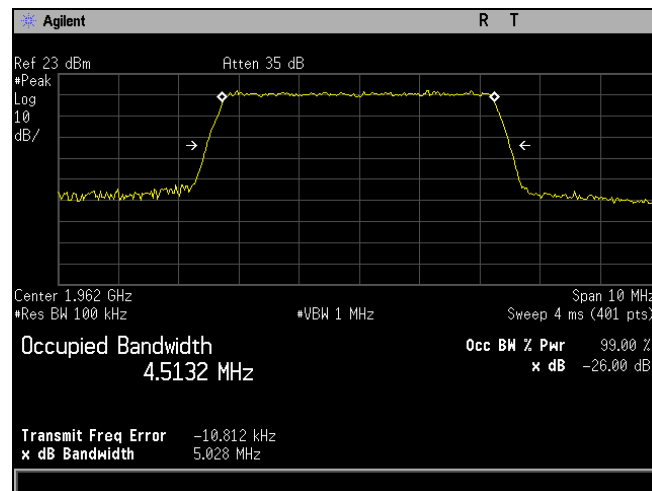
Plot 374. Occupied Bandwidth, QAM-64, Mid Channel, Port 2, Band 25



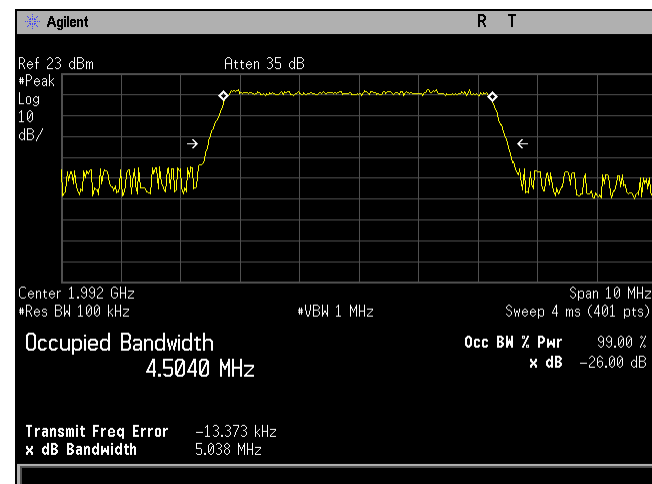
Plot 375. Occupied Bandwidth, QAM-64, High Channel, Port 2, Band 25



Plot 376. Occupied Bandwidth, QPSK, Low Channel, Port 2, Band 25

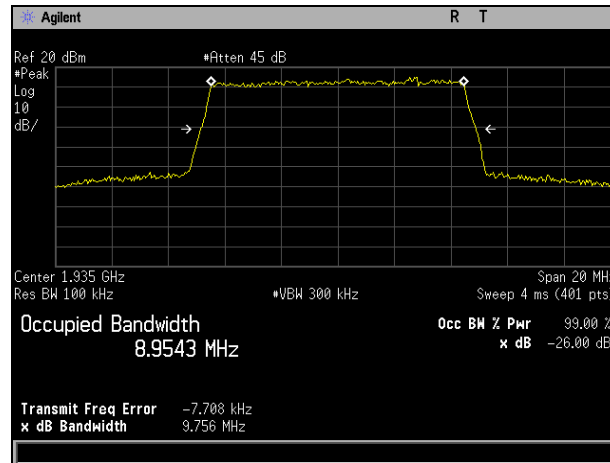


Plot 377. Occupied Bandwidth, QPSK, Mid Channel, Port 2, Band 25

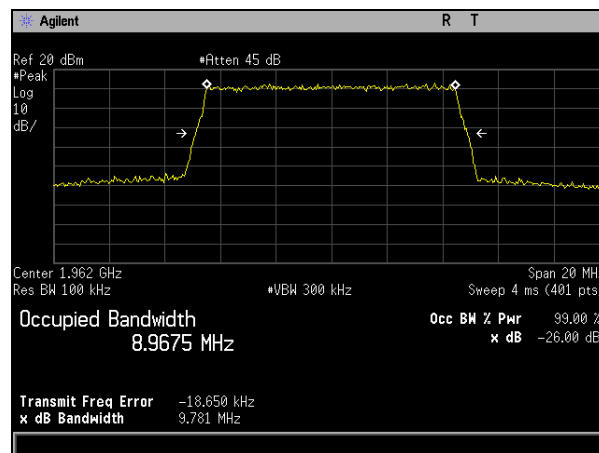


Plot 378. Occupied Bandwidth, QPSK, High Channel, Port 2, Band 25

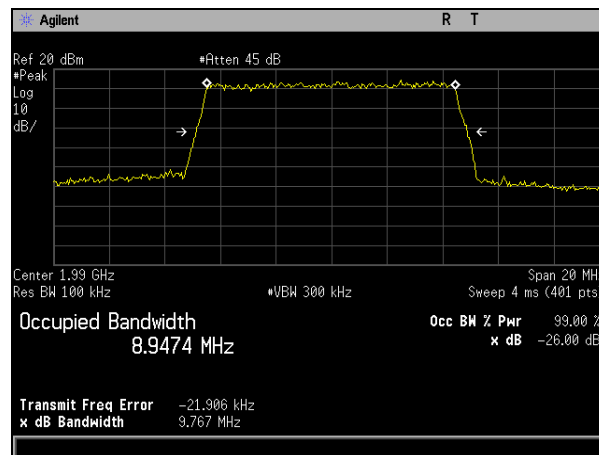
Occupied Bandwidth, Band 25, 10 MHz Channel, Port 1



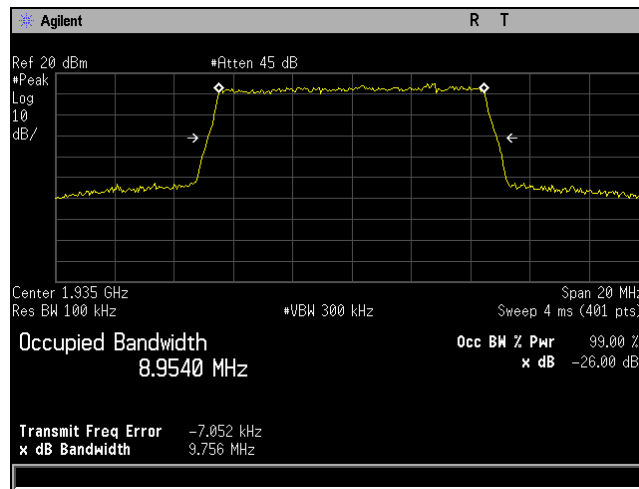
Plot 379. Occupied Bandwidth, QAM-16, Low Channel, Port 1, Band 25



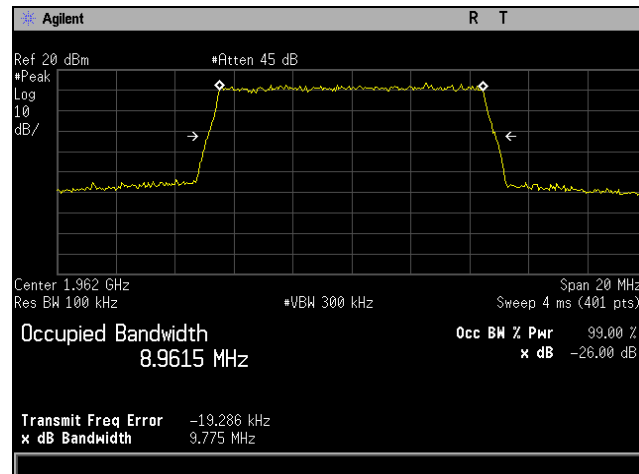
Plot 380. Occupied Bandwidth, QAM-16, Mid Channel, Port 1, Band 25



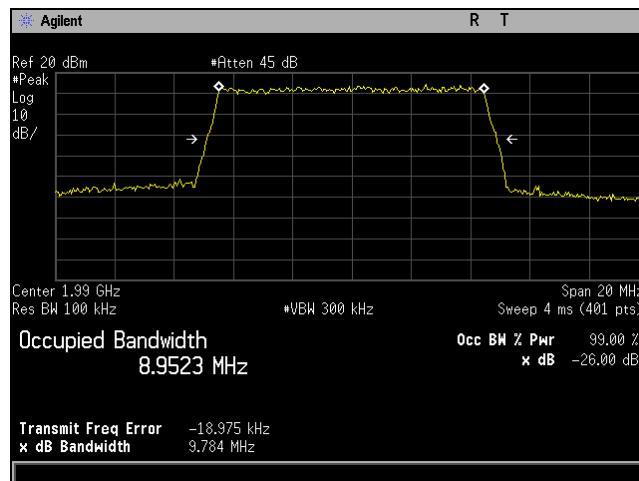
Plot 381. Occupied Bandwidth, QAM-16, High Channel, Port 1, Band 25



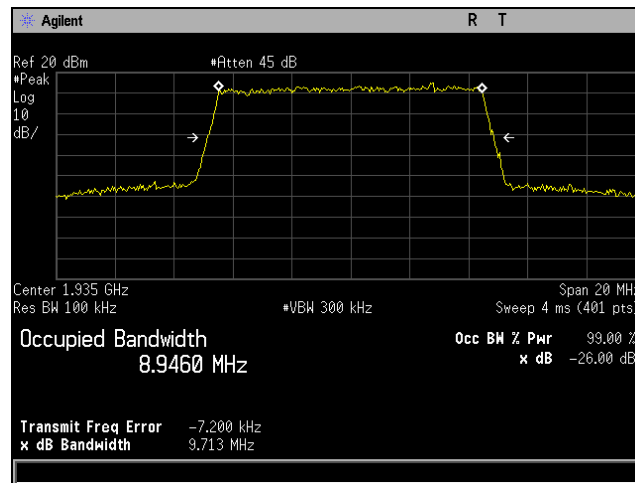
Plot 382. Occupied Bandwidth, QAM-64, Low Channel, Port 1, Band 25



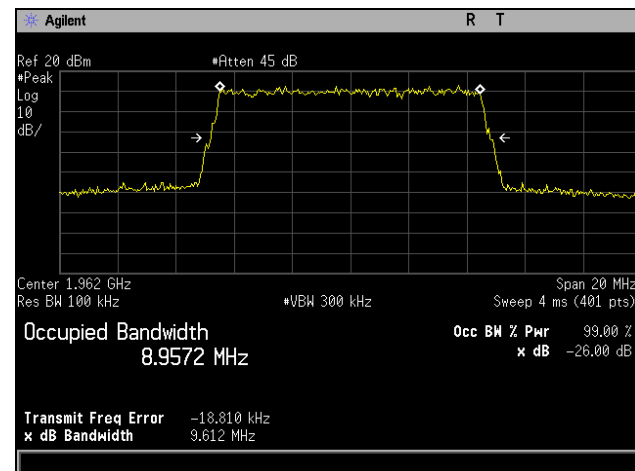
Plot 383. Occupied Bandwidth, QAM-64, Mid Channel, Port 1, Band 25



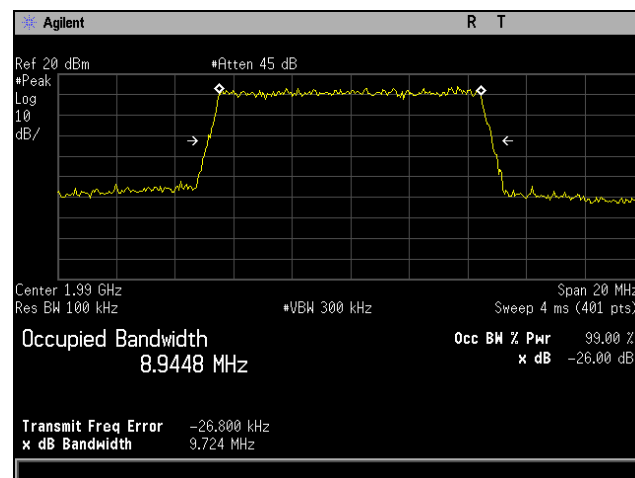
Plot 384. Occupied Bandwidth, QAM-64, High Channel, Port 1, Band 25



Plot 385. Occupied Bandwidth, QPSK, Low Channel, Port 1, Band 25

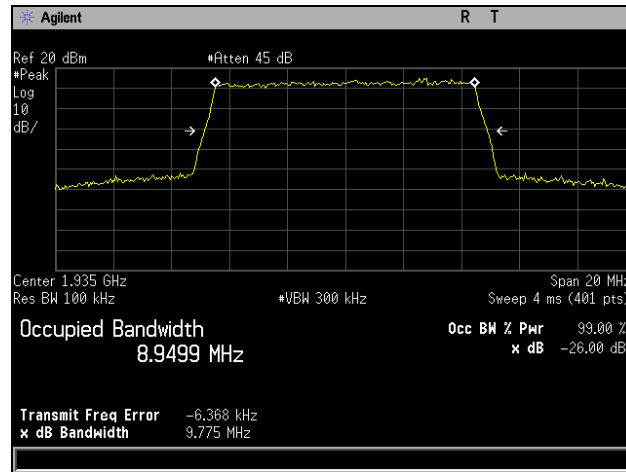


Plot 386. Occupied Bandwidth, QPSK, Mid Channel, Port 1, Band 25

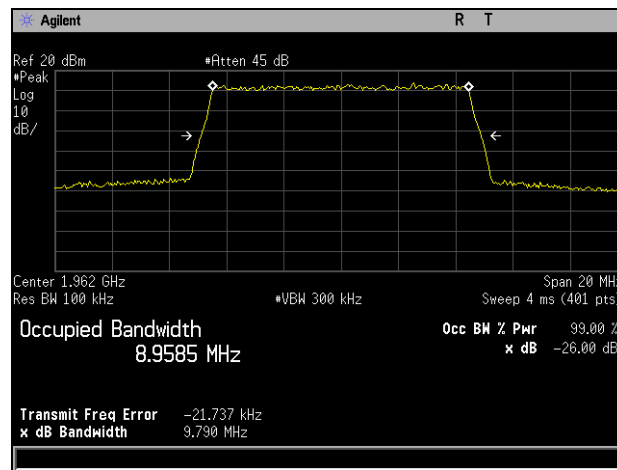


Plot 387. Occupied Bandwidth, QPSK, High Channel, Port 1, Band 25

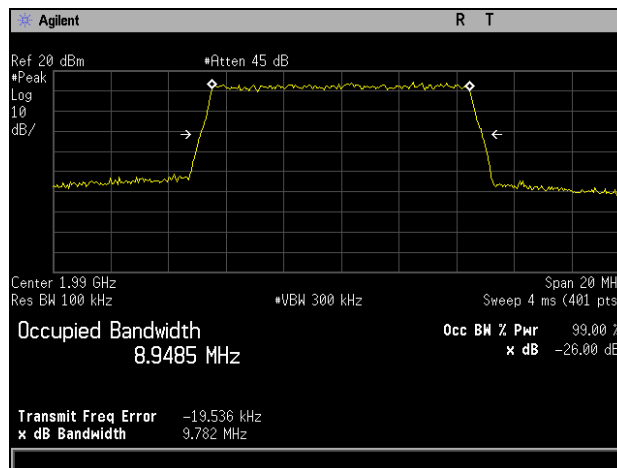
Occupied Bandwidth, Band 25, 10 MHz Channel, Port 2



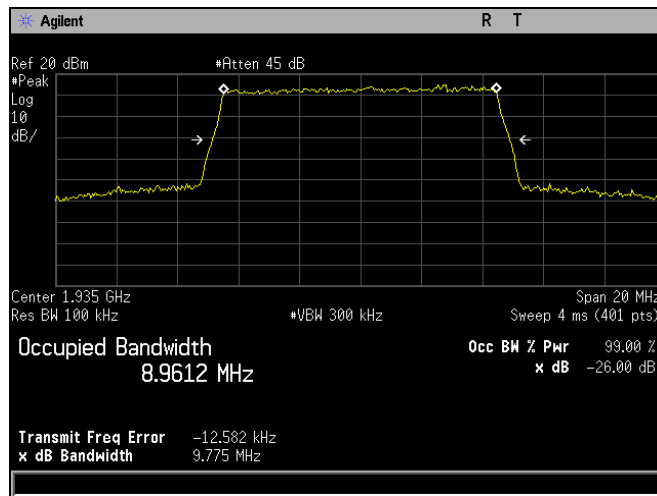
Plot 388. Occupied Bandwidth, QAM-16, Low Channel, Port 2, Band 25



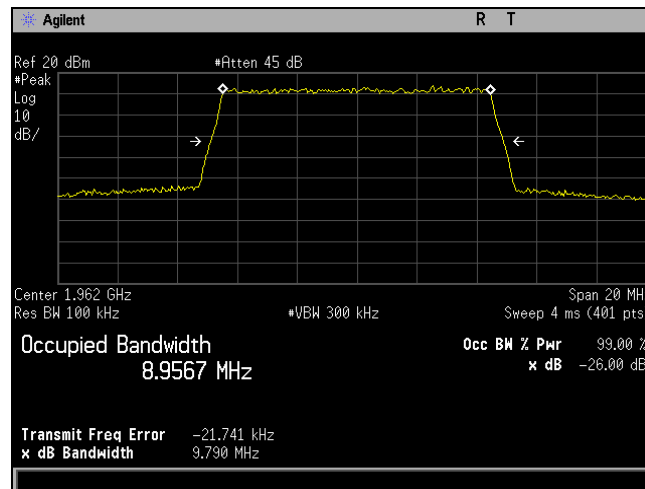
Plot 389. Occupied Bandwidth, QAM-16, Mid Channel, Port 2, Band 25



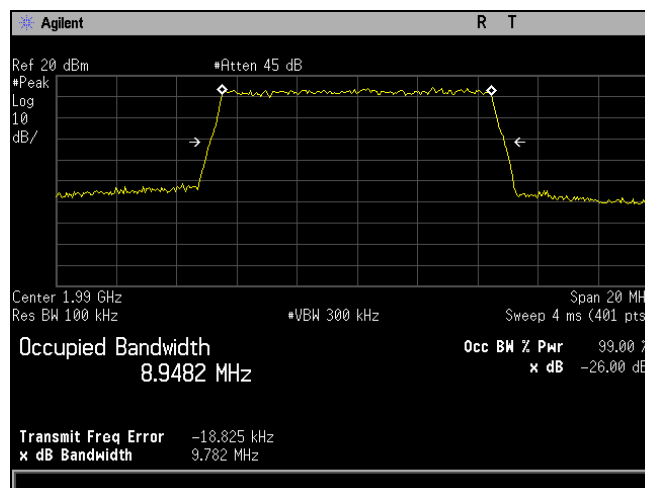
Plot 390. Occupied Bandwidth, QAM-16, High Channel, Port 2, Band 25



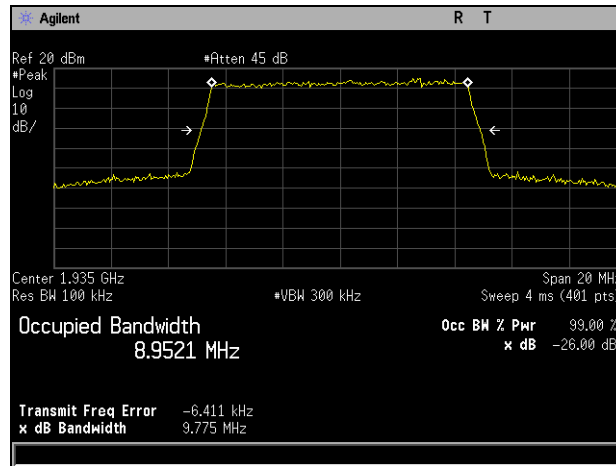
Plot 391. Occupied Bandwidth, QAM-64, Low Channel, Port 2, Band 25



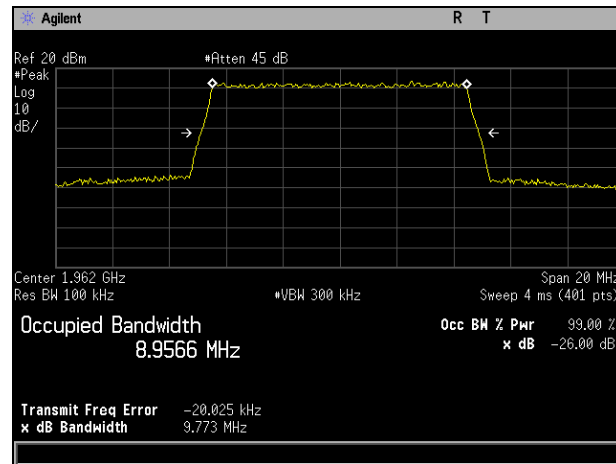
Plot 392. Occupied Bandwidth, QAM-64, Mid Channel, Port 2, Band 25



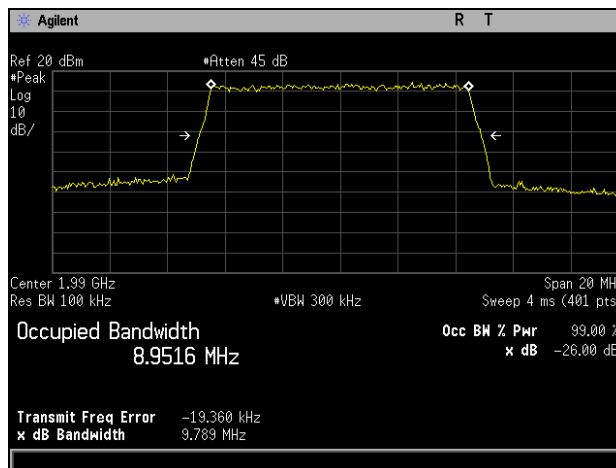
Plot 393. Occupied Bandwidth, QAM-64, High Channel, Port 2, Band 25



Plot 394. Occupied Bandwidth, QPSK, Low Channel, Port 2, Band 25

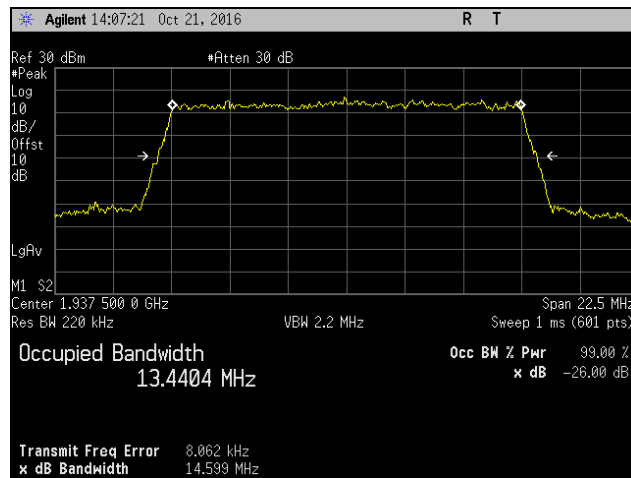


Plot 395. Occupied Bandwidth, QPSK, Mid Channel, Port 2, Band 25

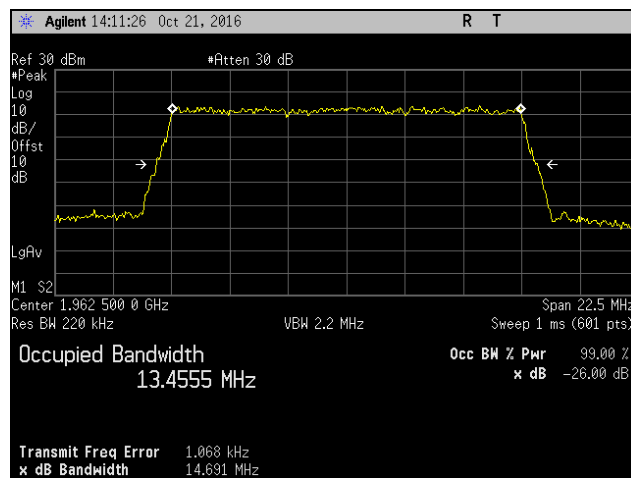


Plot 396. Occupied Bandwidth, QPSK, High Channel, Port 2, Band 25

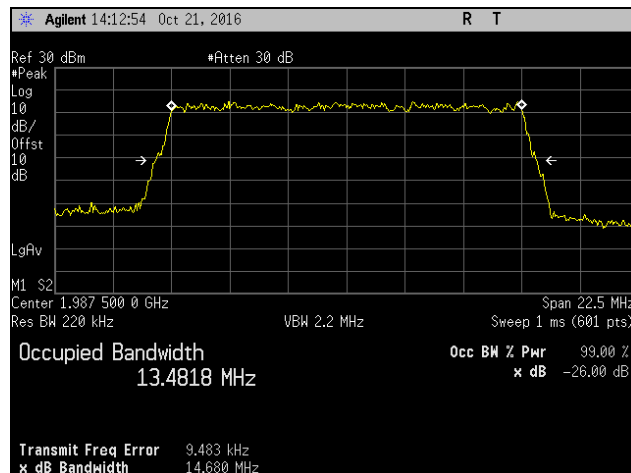
Occupied Bandwidth, Band 25, 15 MHz Channel, Port 1



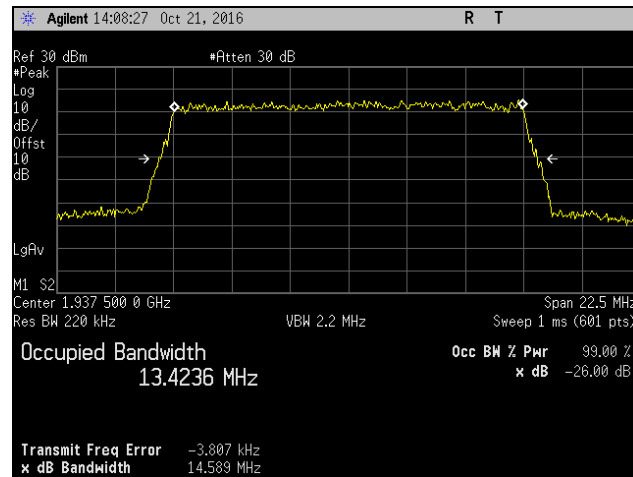
Plot 397. Occupied Bandwidth, QAM-16, Low Channel, Port 1, Band 25



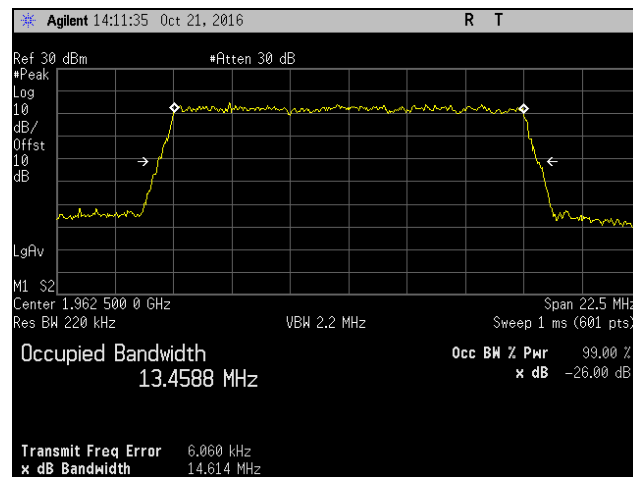
Plot 398. Occupied Bandwidth, QAM-16, Mid Channel, Port 1, Band 25



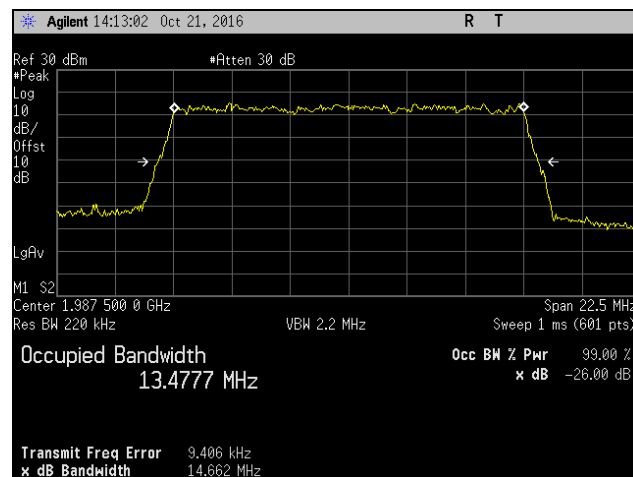
Plot 399. Occupied Bandwidth, QAM-16, High Channel, Port 1, Band 25



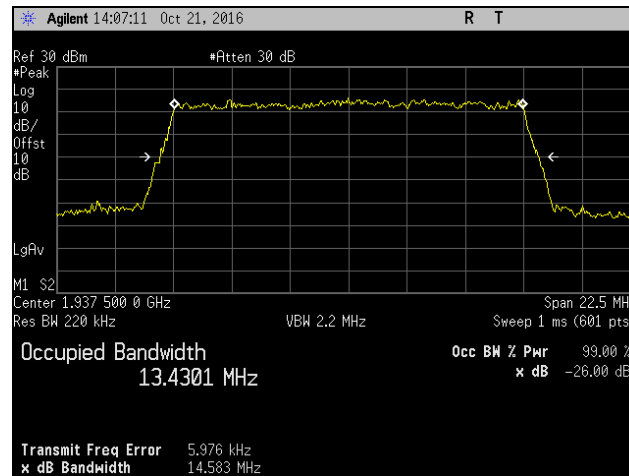
Plot 400. Occupied Bandwidth, QAM-64, Low Channel, Port 1, Band 25



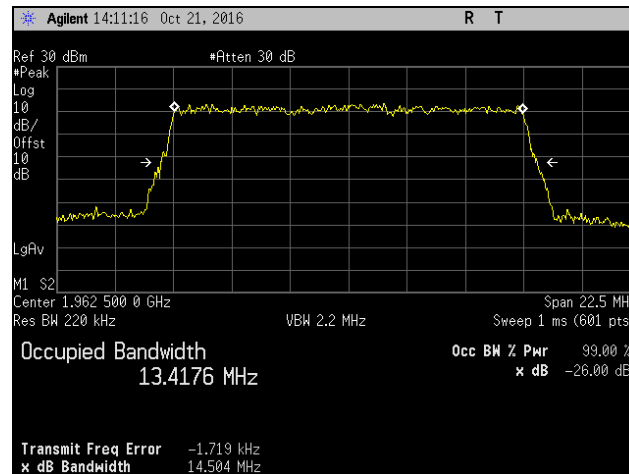
Plot 401. Occupied Bandwidth, QAM-64, Low Channel, Port 1, Band 25



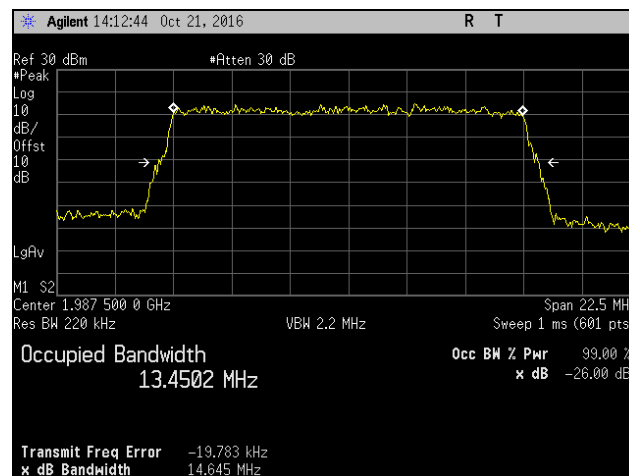
Plot 402. Occupied Bandwidth, QAM-64, High Channel, Port 1, Band 25



Plot 403. Occupied Bandwidth, QPSK, Low Channel, Port 1, Band 25

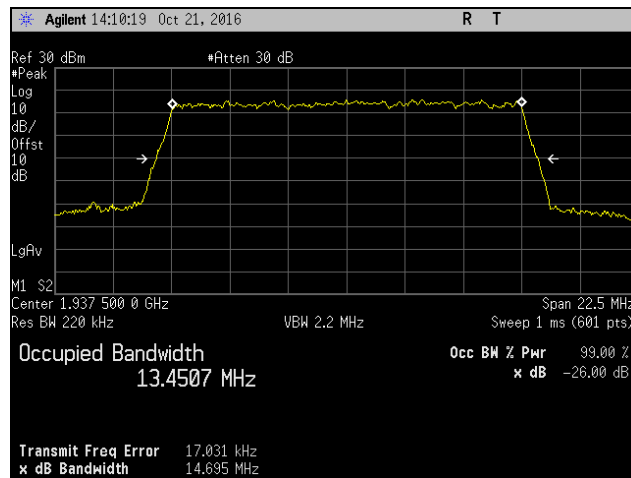


Plot 404. Occupied Bandwidth, QPSK, Mid Channel, Port 1, Band 25

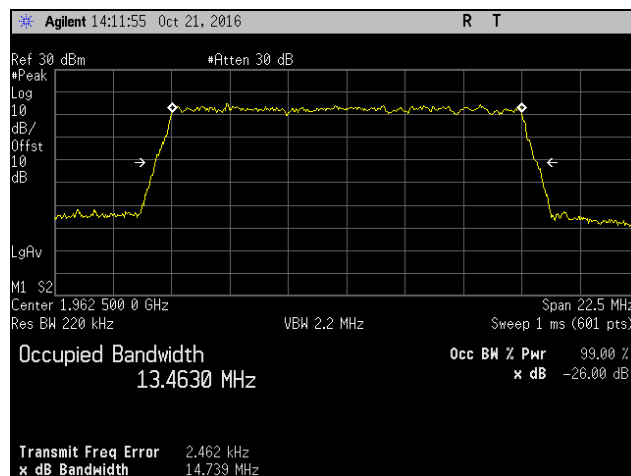


Plot 405. Occupied Bandwidth, QPSK, High Channel, Port 1, Band 25

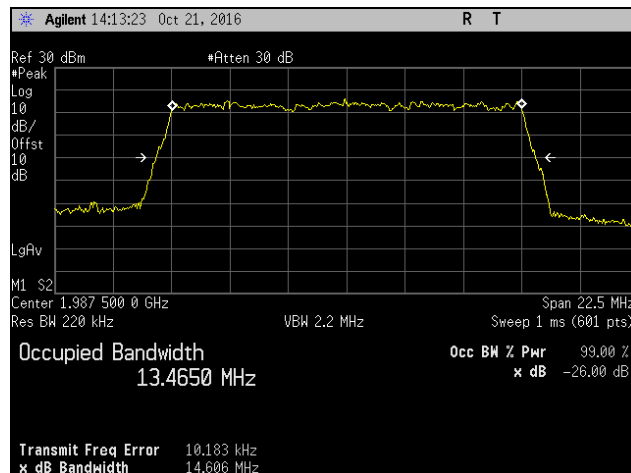
Occupied Bandwidth, Band 25, 15 MHz Channel, Port 2



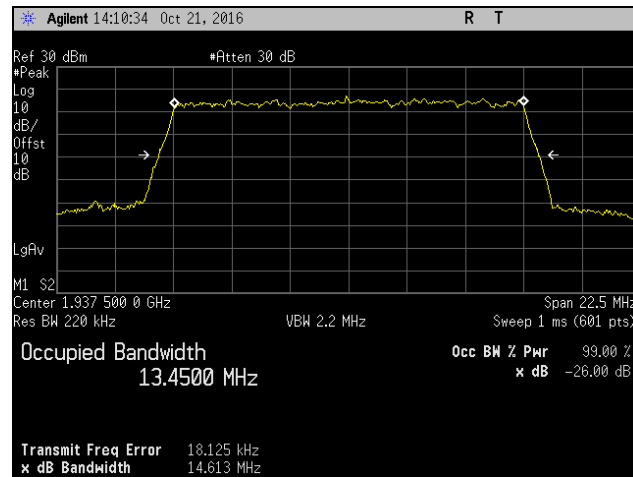
Plot 406. Occupied Bandwidth, QAM-16, Low Channel, Port 2, Band 25



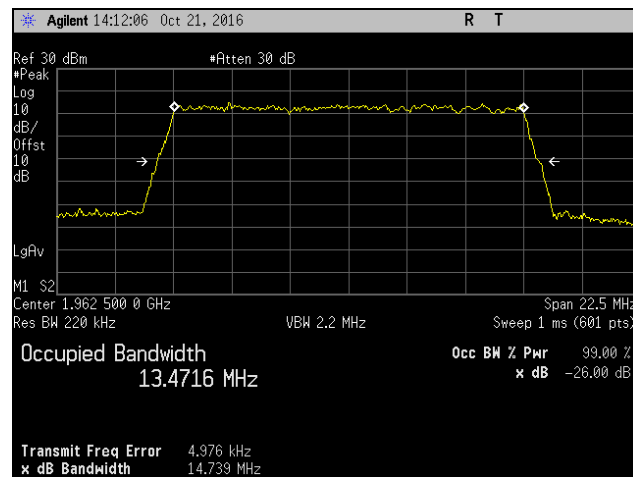
Plot 407. Occupied Bandwidth, QAM-16, Mid Channel, Port 2, Band 25



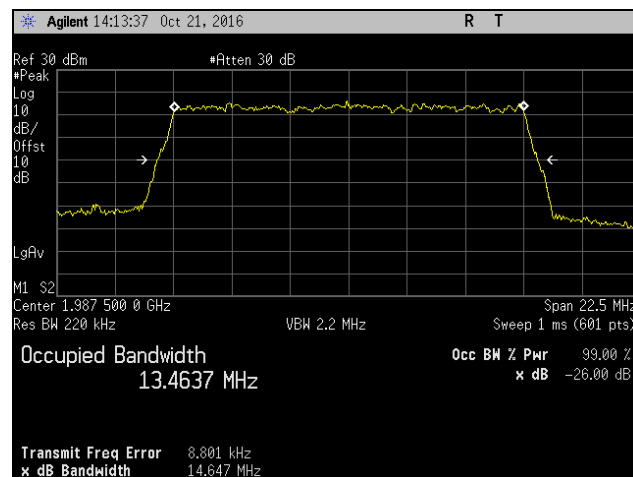
Plot 408. Occupied Bandwidth, QAM-16, High Channel, Port 2, Band 25



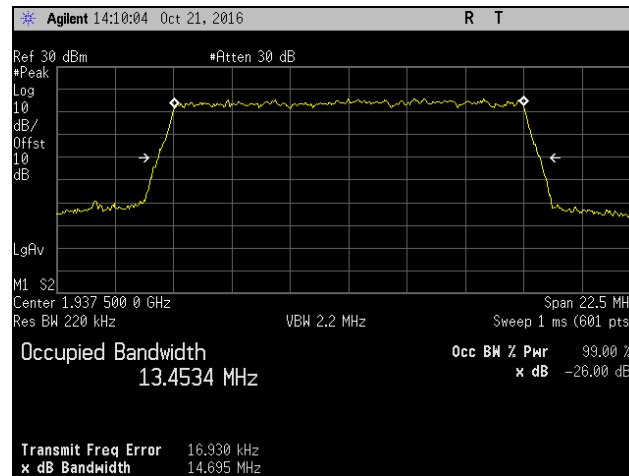
Plot 409. Occupied Bandwidth, QAM-64, Low Channel, Port 2, Band 25



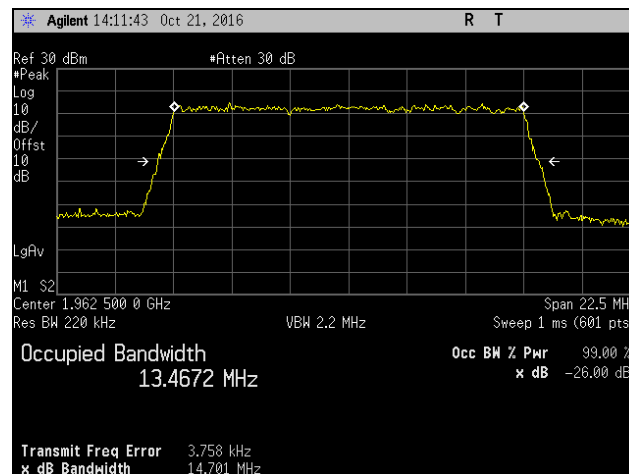
Plot 410. Occupied Bandwidth, QAM-64, Low Channel, Port 2, Band 25



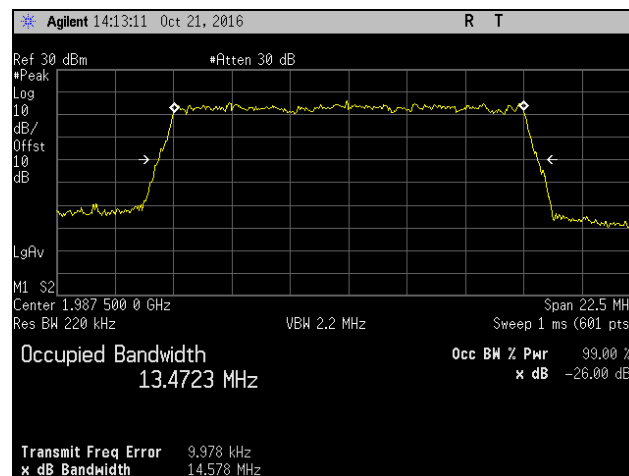
Plot 411. Occupied Bandwidth, QAM-64, High Channel, Port 2, Band 25



Plot 412. Occupied Bandwidth, QPSK, Low Channel, Port 2, Band 25

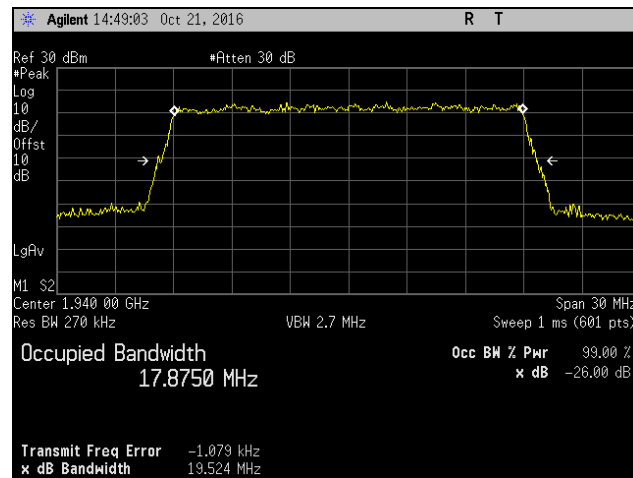


Plot 413. Occupied Bandwidth, QPSK, Mid Channel, Port 2, Band 25

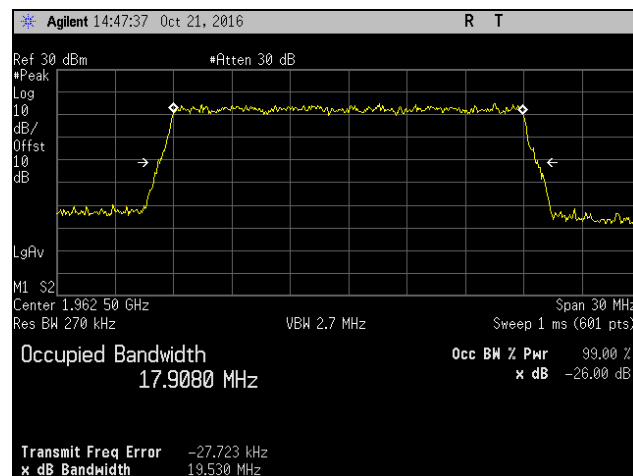


Plot 414. Occupied Bandwidth, QPSK, High Channel, Port 2, Band 25

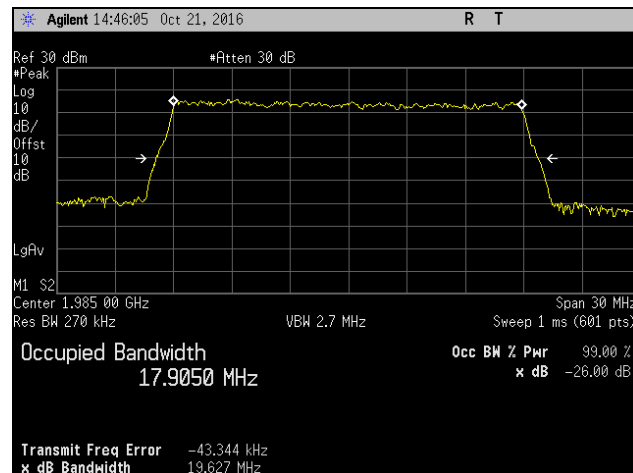
Occupied Bandwidth, Band 25, 20 MHz Channel, Port 1



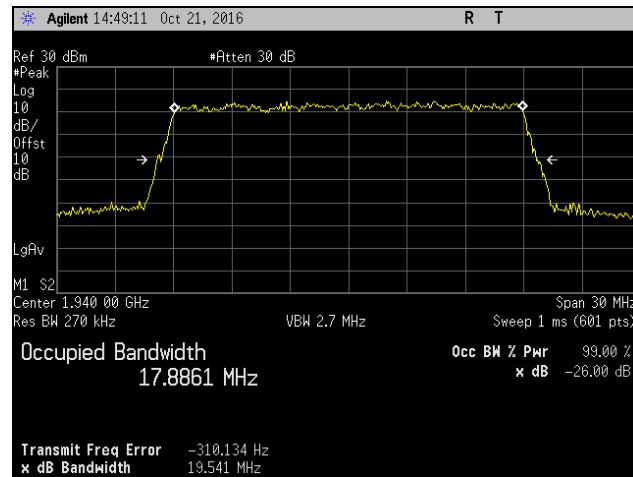
Plot 415. Occupied Bandwidth, QAM-16, Low Channel, Port 1, Band 25



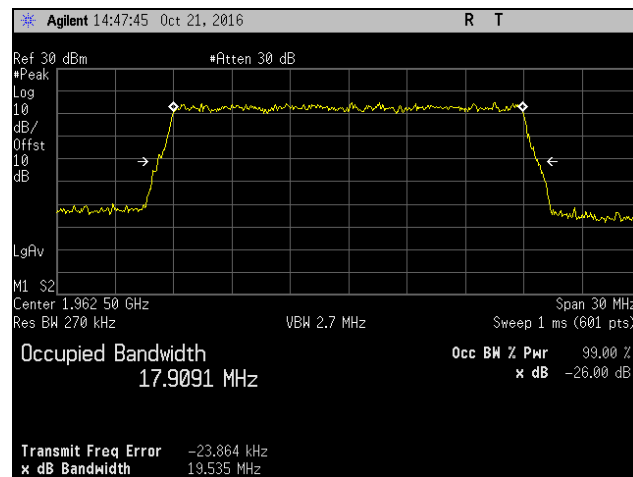
Plot 416. Occupied Bandwidth, QAM-16, Mid Channel, Port 1, Band 25



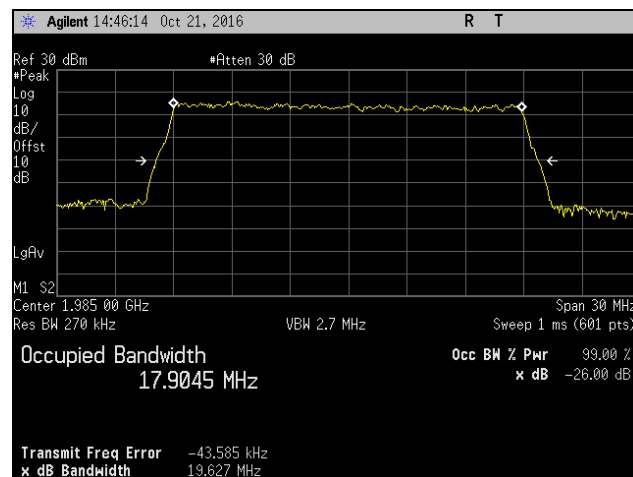
Plot 417. Occupied Bandwidth, QAM-16, High Channel, Port 1, Band 25



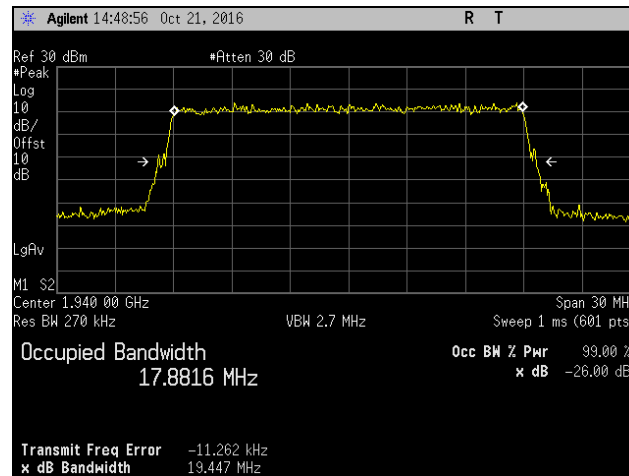
Plot 418. Occupied Bandwidth, QAM-64, Low Channel, Port 1, Band 25



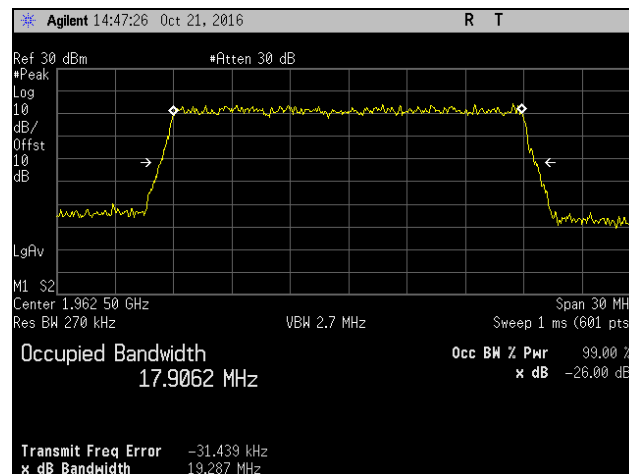
Plot 419. Occupied Bandwidth, QAM-64, Low Channel, Port 1, Band 25



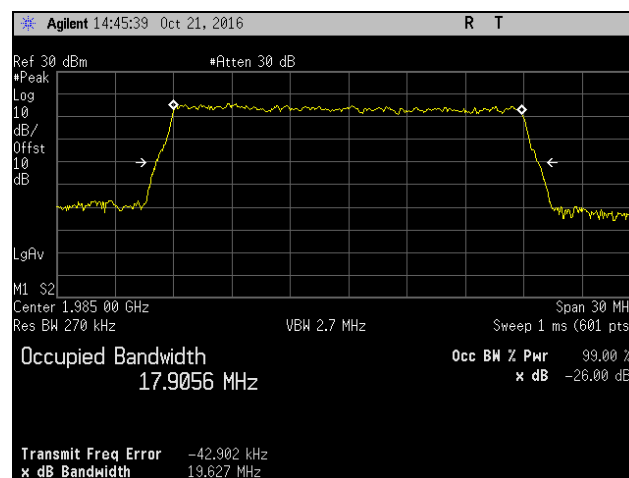
Plot 420. Occupied Bandwidth, QAM-64, High Channel, Port 1, Band 25



Plot 421. Occupied Bandwidth, QPSK, Low Channel, Port 1, Band 25

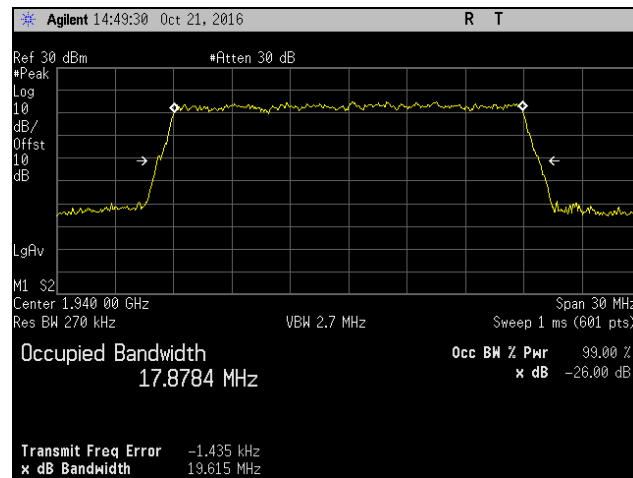


Plot 422. Occupied Bandwidth, QPSK, Mid Channel, Port 1, Band 25

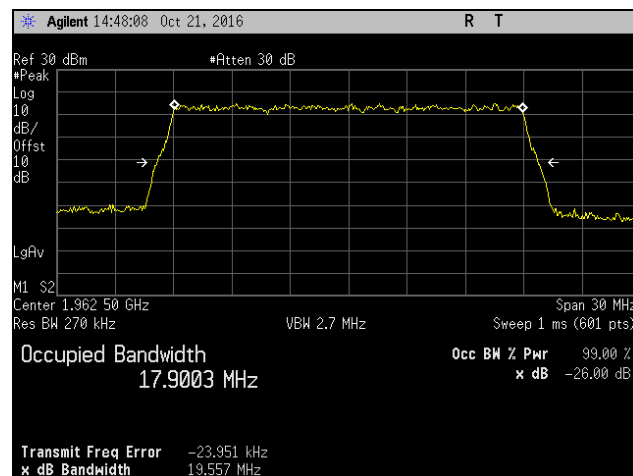


Plot 423. Occupied Bandwidth, QPSK, High Channel, Port 1, Band 25

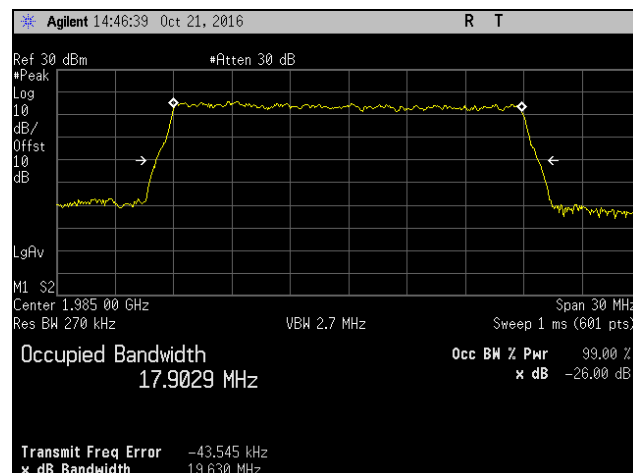
Occupied Bandwidth, Band 25, 20 MHz Channel, Port 2



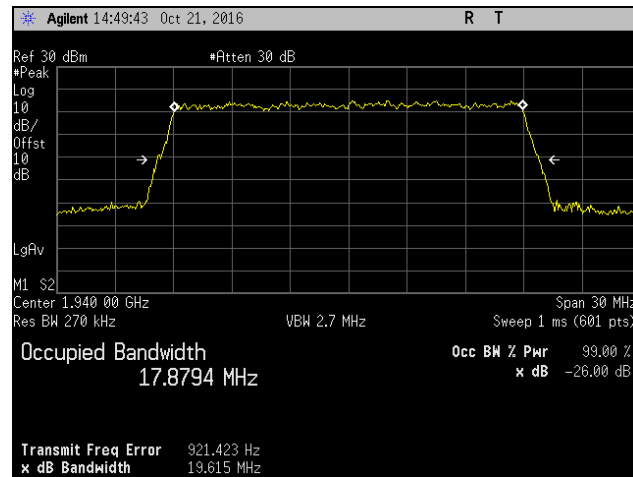
Plot 424. Occupied Bandwidth, QAM-16, Low Channel, Port 2, Band 25



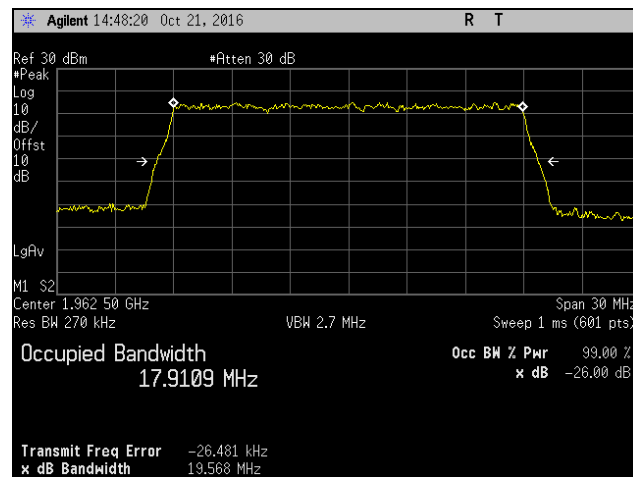
Plot 425. Occupied Bandwidth, QAM-16, Mid Channel, Port 2, Band 25



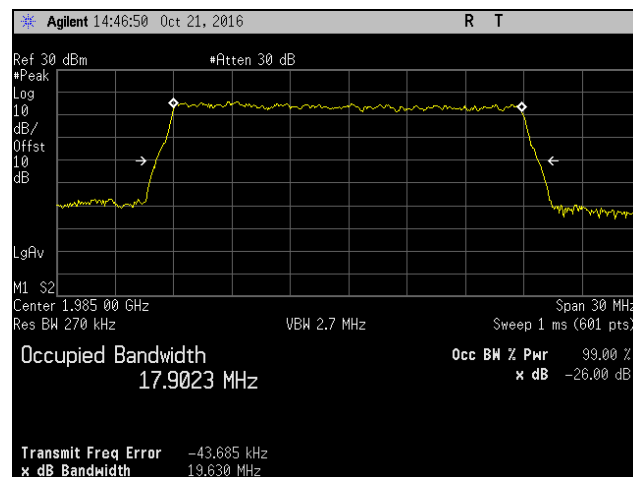
Plot 426. Occupied Bandwidth, QAM-16, High Channel, Port 2, Band 25



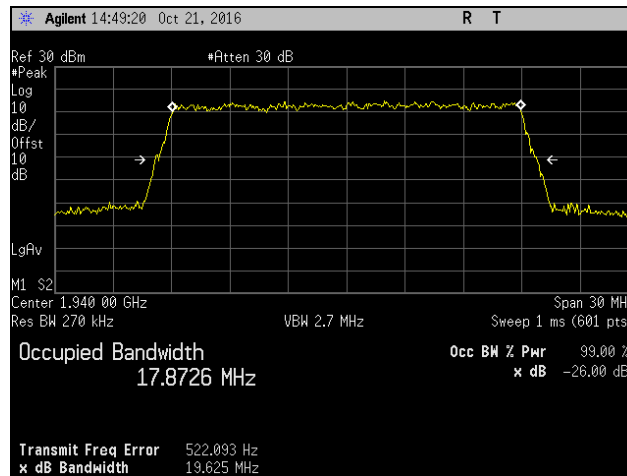
Plot 427. Occupied Bandwidth, QAM-64, Low Channel, Port 2, Band 25



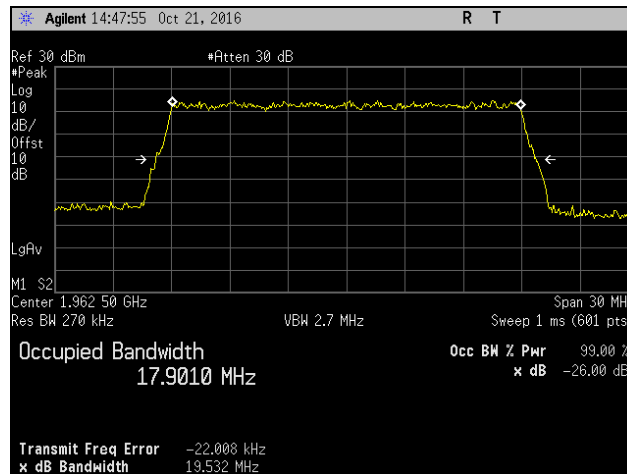
Plot 428. Occupied Bandwidth, QAM-64, Low Channel, Port 2, Band 25



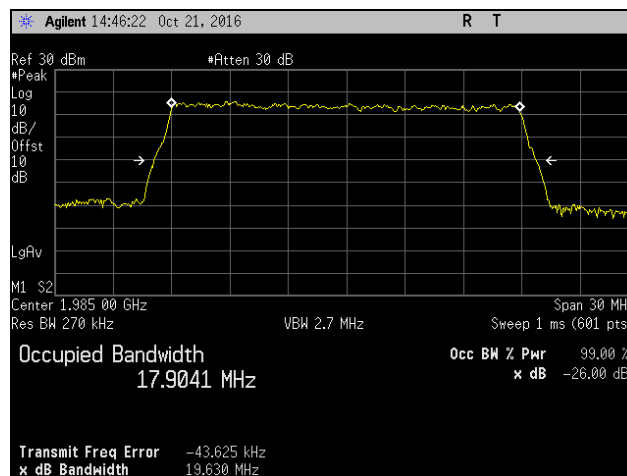
Plot 429. Occupied Bandwidth, QAM-64, High Channel, Port 2, Band 25



Plot 430. Occupied Bandwidth, QPSK, Low Channel, Port 2, Band 25



Plot 431. Occupied Bandwidth, QPSK, Mid Channel, Port 2, Band 25



Plot 432. Occupied Bandwidth, QPSK, High Channel, Port 2, Band 25



Electromagnetic Compatibility Criteria for Intentional Radiators

§ 2.1053 Radiated Spurious Emissions

Test Requirement(s): § 2.1053 Measurements required: Field strength of spurious radiation.

§ 2.1053 (a) Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data shall be supplied showing the magnitude of each harmonic and other spurious emission. For this test, single sideband, independent sideband, and controlled carrier transmitters shall be modulated under the conditions specified in paragraph (c) of § 2.1049, as appropriate. For equipment operating on frequencies below 890 MHz, an open field test is normally required with the measuring instrument antenna located in the far-field at all test frequencies. In the event it is either impractical or impossible to make open field measurements (e.g. a broadcast transmitter installed in a building) measurements will be accepted of the equipment as installed. Such measurements must be accompanied by a description of the site where the measurements were made showing the location of any possible source of reflections which might distort the field strength measurements. Information submitted shall include the relative radiated power of each spurious emission with reference to the rated power output of the transmitter, assuming all emissions are radiated from half-wave dipole antennas.

§ 2.1053 (b): The measurements specified in paragraph (a) of this section shall be made for the following equipment:

- (1) Those in which the spurious emissions are required to be 60 dB or more below the mean power of the transmitter.
- (2) All equipment operating on frequencies higher than 25 MHz.
- (3) All equipment where the antenna is an integral part of, and attached directly to the transmitter.
- (4) Other types of equipment as required, when deemed necessary by the Commission.

§ 22.917 Emission limitations Cellular equipment: The rules in this section govern the spectral characteristics of emissions in the Cellular Radiotelephone Service.

§ 22.917 (a): Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$.

Test Procedures: As required by 47 CFR 2.1053, *field strength of radiated spurious measurements* was made in accordance with the procedures of ANSI/TIA-603-D-2010 "Land Mobile FM or PM Communications Equipment Measurement and Performance Standards".

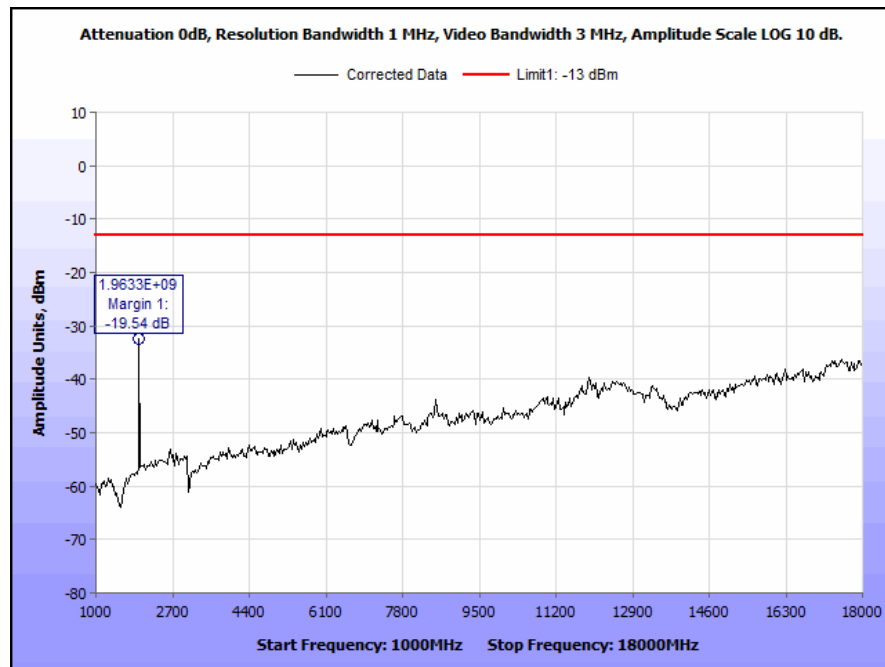
Radiated emission measurements were performed inside a 3 meter semi-anechoic chamber. The EUT's RF ports were terminated to 50ohm load. The EUT was tested using both modulations and at the low, mid, and high channels. The EUT was rotated about 360° and the receiving antenna scanned from 1-4m in order to capture the maximum emission. The plots are corrected for cable loss, antenna correction factor, and distance correction. The field strength was mathematically corrected to an E.I.R.P. Harmonic emissions up to the 10th or 40GHz, which ever was the lesser, were investigated.

The spectrum analyzer was set to 1MHz RBW and 3MHz VBW. The spectrum was investigated from 30MHz to the 10th harmonic of the carrier: only noise floor was observed below 1 GHz and above 18 GHz. Plots shown below represent worst case for each band.

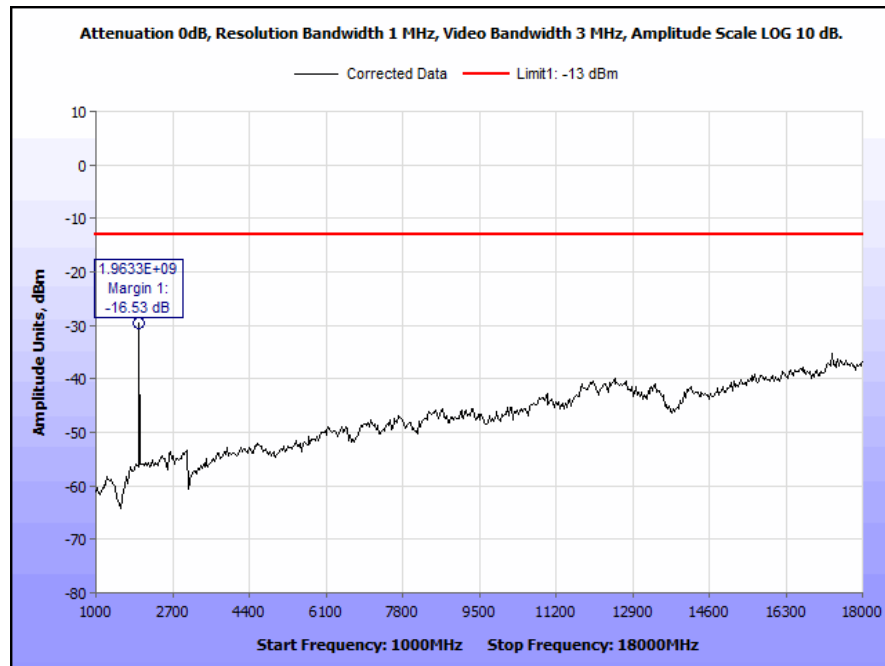
Test Results: The EUT complies with the requirements of this section.

Test Engineer: Deepak Giri

Test Date(s): 10/27/16



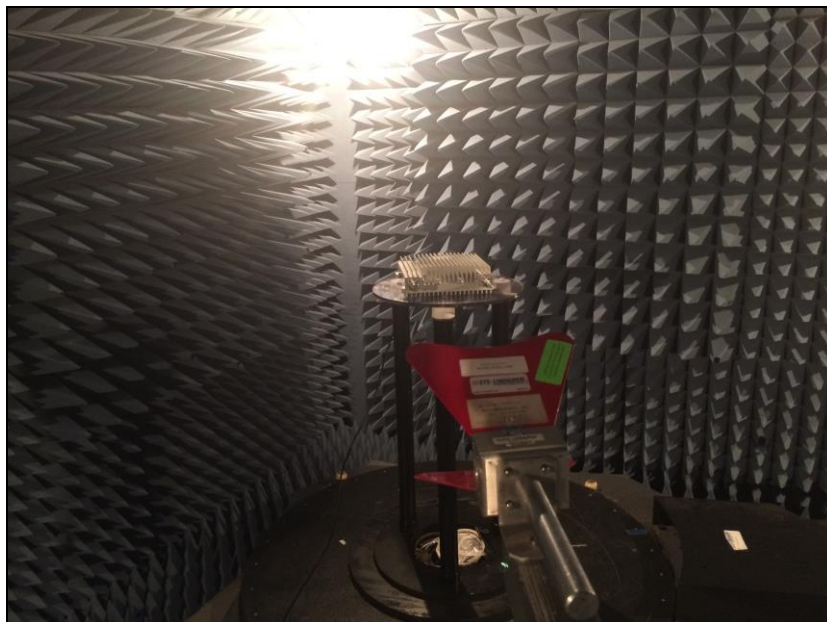
Plot 433. Radiated Spurious Emissions, 1 GHz – 18 GHz, Band 2



Plot 434. Radiated Spurious Emissions, 1 GHz – 18 GHz, Band 25



Photograph 1. Radiated Spurious Emissions 30 MHz – 1 GHz, Test Setup



Photograph 2. Radiated Spurious Emissions Above 1 GHz, Test Setup



Electromagnetic Compatibility Criteria for Intentional Radiators

§ 2.1051 Spurious Emissions at Antenna Terminals

Test Requirement(s): § 2.1051 **Measurements required: Spurious emissions at antenna terminals:** The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in § 2.1049 as appropriate. The magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified.

§ 22.917 The rules in this section govern the spectral characteristics of emissions in the Cellular Radiotelephone Service.

§ 22.917 (a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

§ 22.917 (b) *Measurement procedure.* Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 30 kHz or more. In the 60 kHz bands immediately outside and adjacent to the authorized frequency range or channel, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy approved the measured power is integrated over the full required measurement bandwidth (i.e., 30 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

§24.238 **Emission limitations for Broadband PCS equipment:** The rules in this section govern the spectral characteristics of emissions in the Broadband Personal Communications Service.

§ 24.238 (a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

§ 24.238 (b) *Measurement procedure.* Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e., 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Test Procedures: As required by 47 CFR §2.1051, *spurious emissions at antenna terminal measurements* were made at the RF output terminals using a Spectrum Analyzer.

A laptop was connected to EUT to control the RF power output and frequency channel. The EUT was connected to a Spectrum Analyzer through an attenuator. The Spectrum Analyzer was set to sweep 30 MHz and up to 10th harmonic of the fundamental or 40 GHz whichever is the lesser. Measurements were made in all applicable frequency bands. QPSK Modulation (worst case) was used to obtain the plots below.

Test Results: Equipment complies with these requirements.

Test Engineer(s): Deepak Giri

Test Date(s): 10/27/16, 10/29/16, 12/09/16, 12/12/16, and 12/13/16

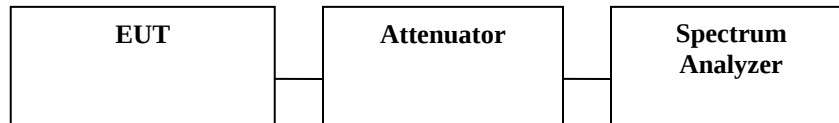
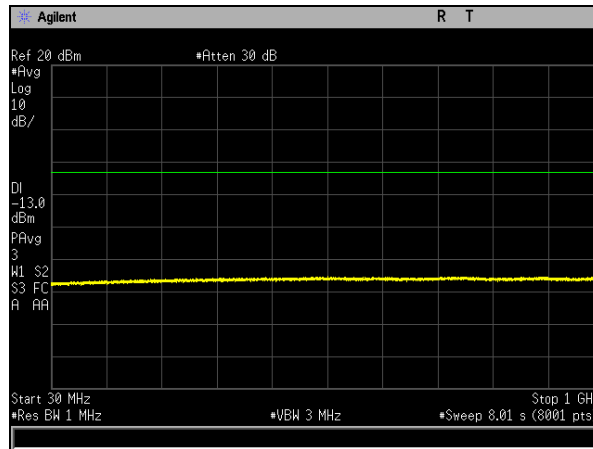
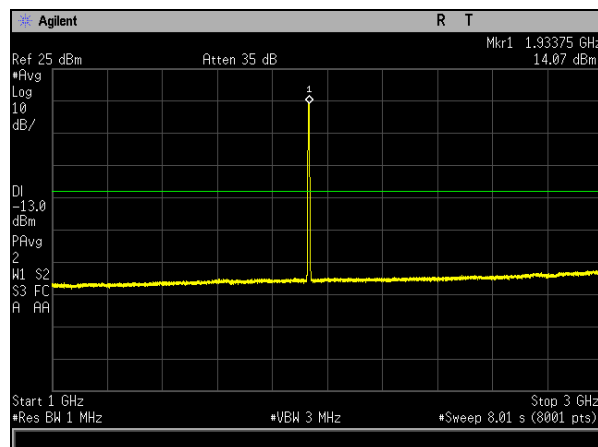


Figure 3. Spurious Emissions at Antenna Terminals Test Setup

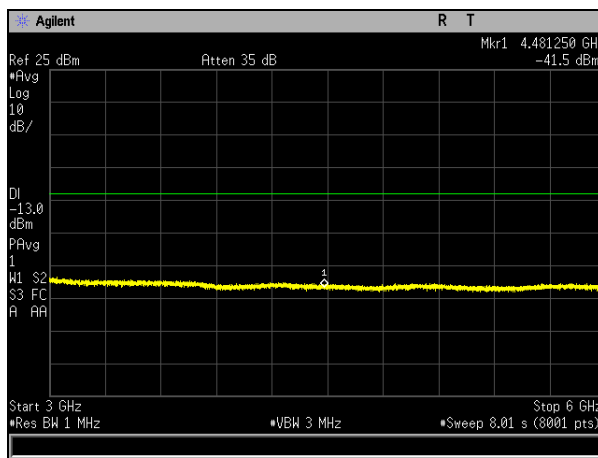
Conducted Spurious Emissions, Band 2, 5



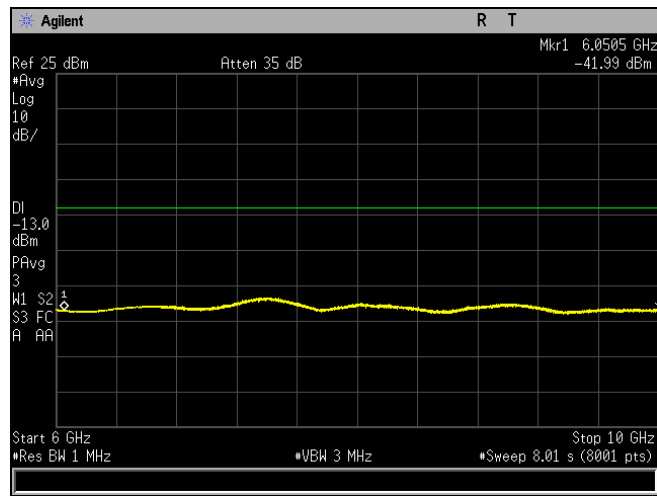
Plot 435. Conducted Spurious Emissions, Band 2, 30 MHz – 1 GHz, Low Channel, 5



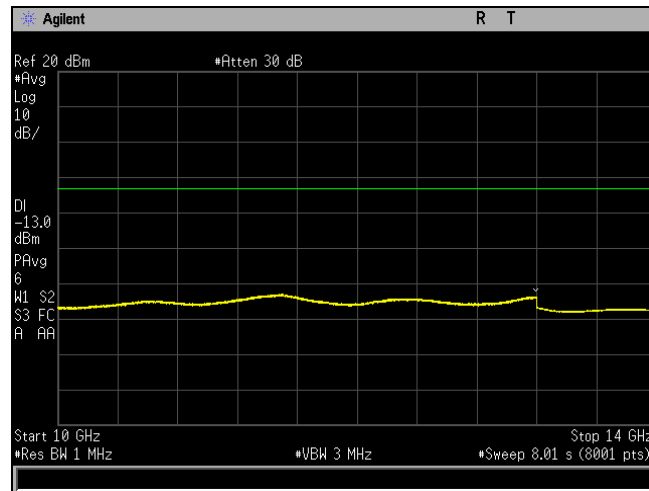
Plot 436. Conducted Spurious Emissions, Band 2, 1 GHz – 3 GHz, Low Channel, 5



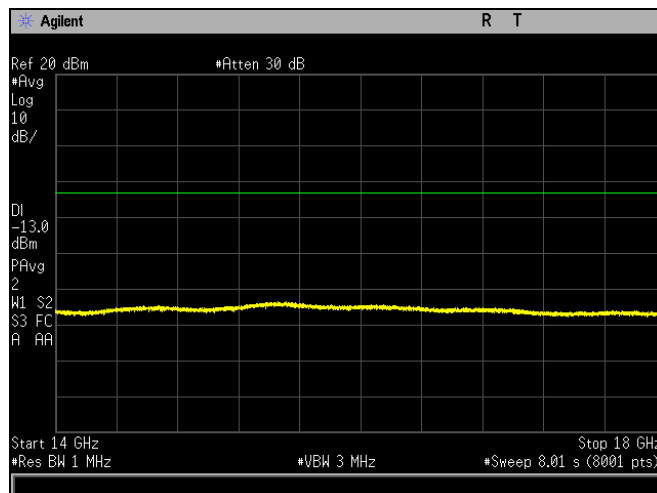
Plot 437. Conducted Spurious Emissions, Band 2, 3 GHz – 6 GHz, Low Channel, 5



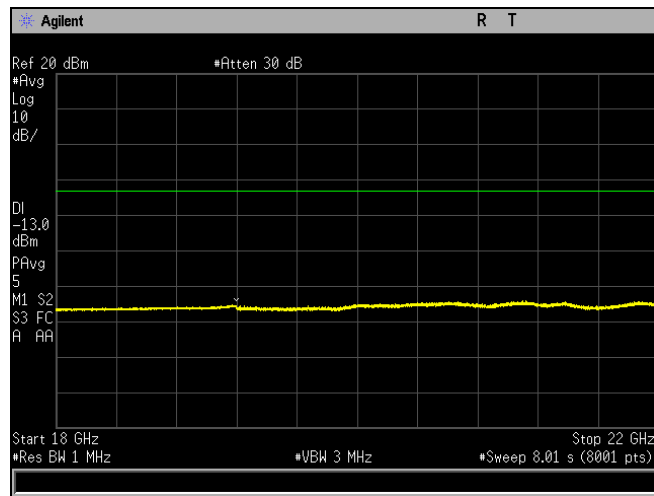
Plot 438. Conducted Spurious Emissions, Band 2, 6 GHz – 10 GHz, Low Channel, 5



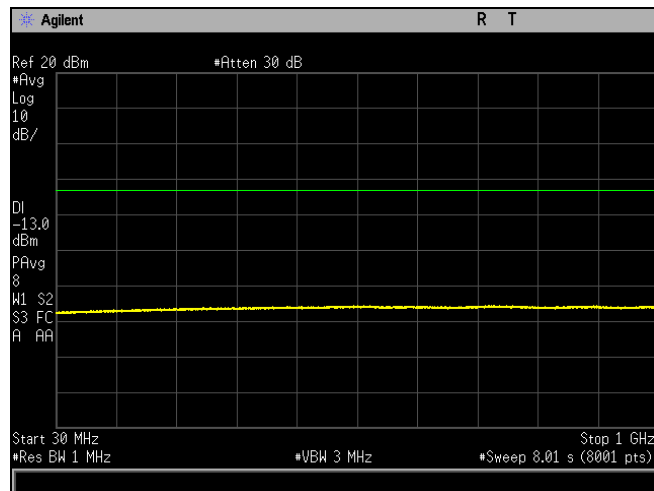
Plot 439. Conducted Spurious Emissions, Band 2, 10 GHz – 14 GHz, Low Channel, 5



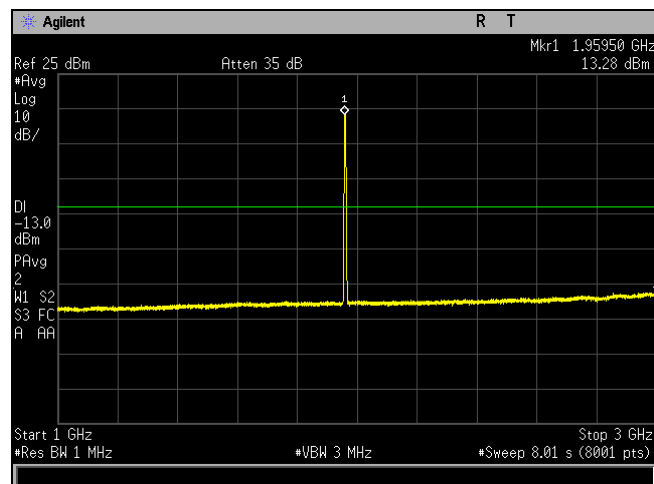
Plot 440. Conducted Spurious Emissions, Band 2, 14 GHz – 18 GHz, Low Channel, 5



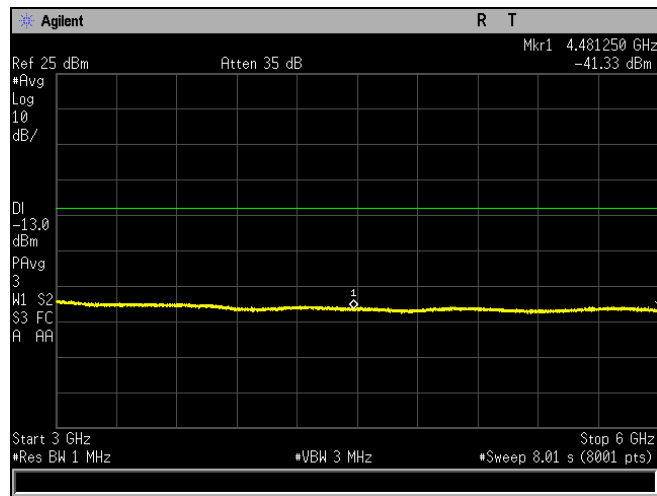
Plot 441. Conducted Spurious Emissions, Band 2, 18 GHz – 22 GHz, Low Channel, 5



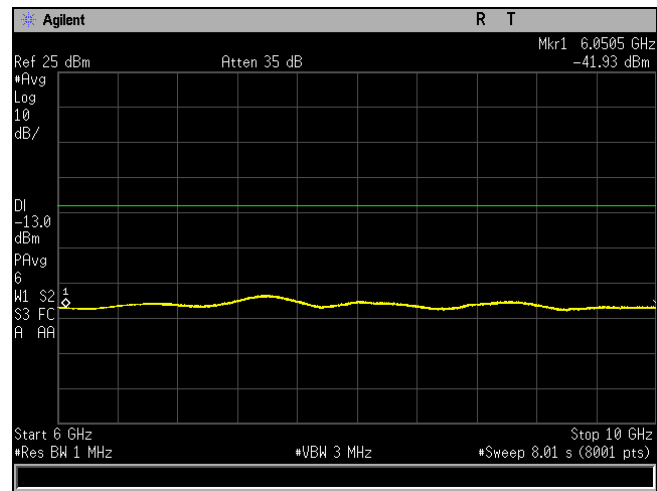
Plot 442. Conducted Spurious Emissions, Band 2, 30 MHz – 1 GHz, Mid Channel, 5



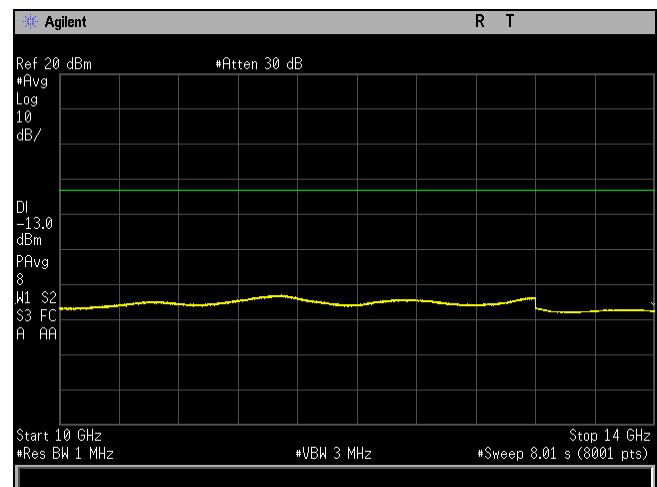
Plot 443. Conducted Spurious Emissions, Band 2, 1 GHz – 3 GHz, Mid Channel, 5



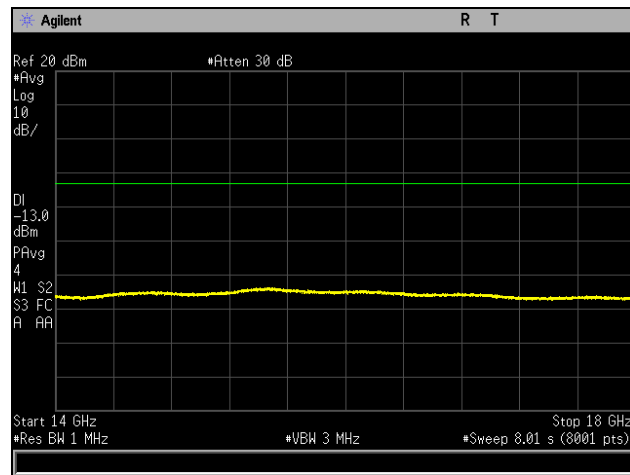
Plot 444. Conducted Spurious Emissions, Band 2, 3 GHz – 6 GHz, Mid Channel, 5



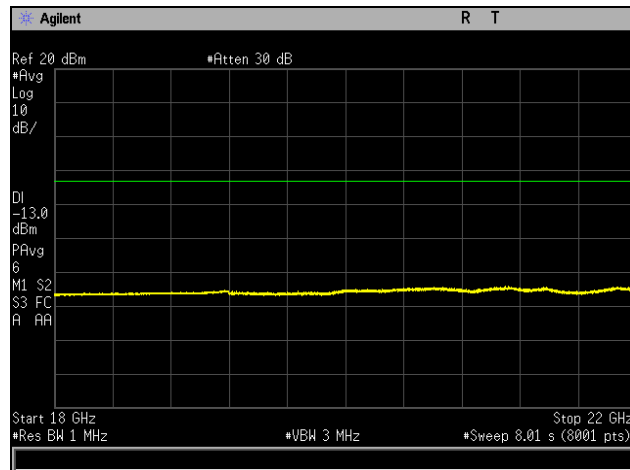
Plot 445. Conducted Spurious Emissions, Band 2, 6 GHz – 10 GHz, Mid Channel, 5



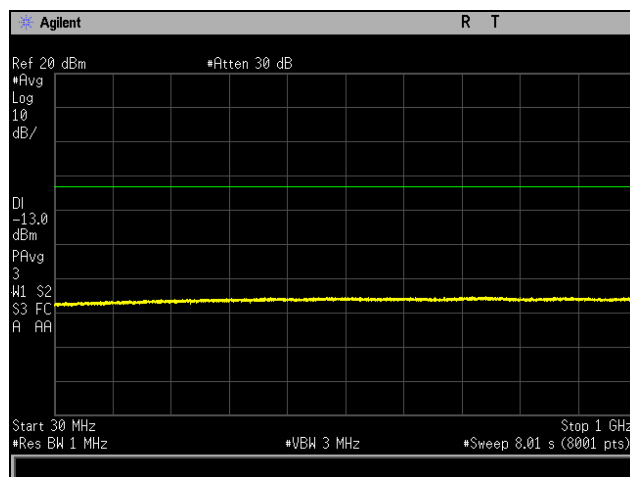
Plot 446. Conducted Spurious Emissions, Band 2, 10 GHz – 14 GHz, Mid Channel, 5



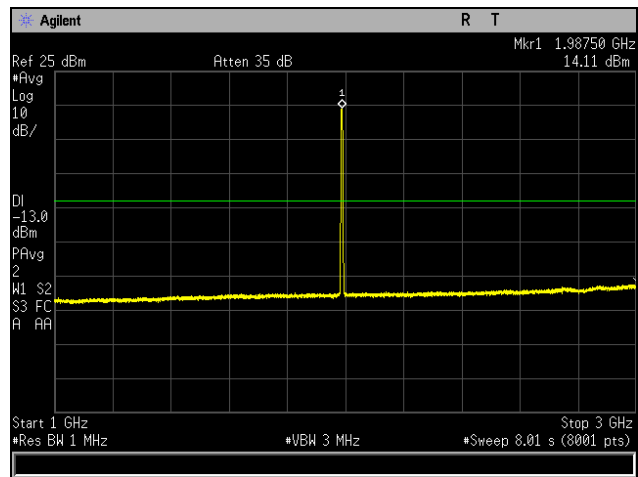
Plot 447. Conducted Spurious Emissions, Band 2, 14 GHz – 18 GHz, Mid Channel, 5



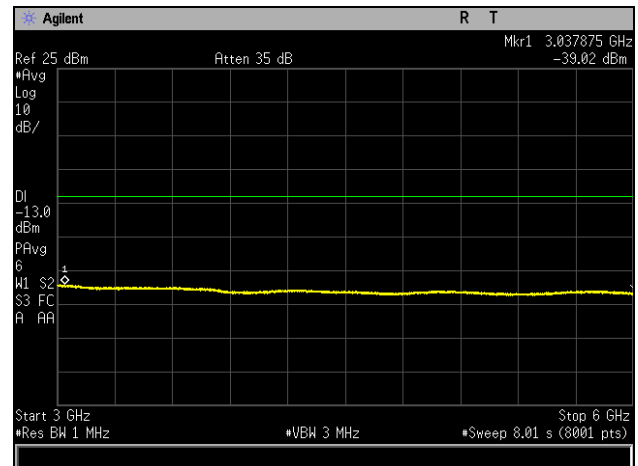
Plot 448. Conducted Spurious Emissions, Band 2, 18 GHz – 22 GHz, Mid Channel, 5



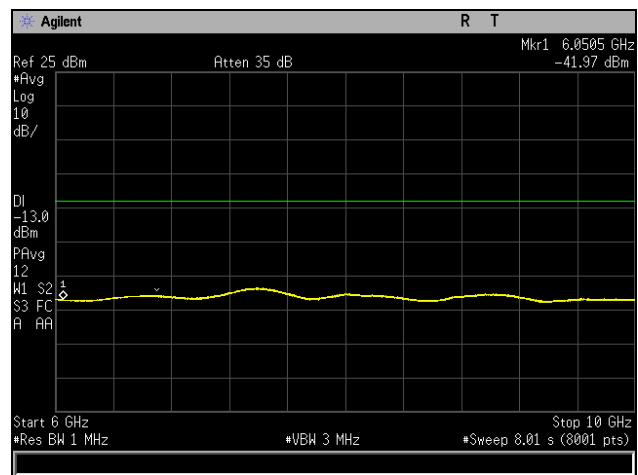
Plot 449. Conducted Spurious Emissions, Band 2, 30 MHz – 1 GHz, High Channel, 5



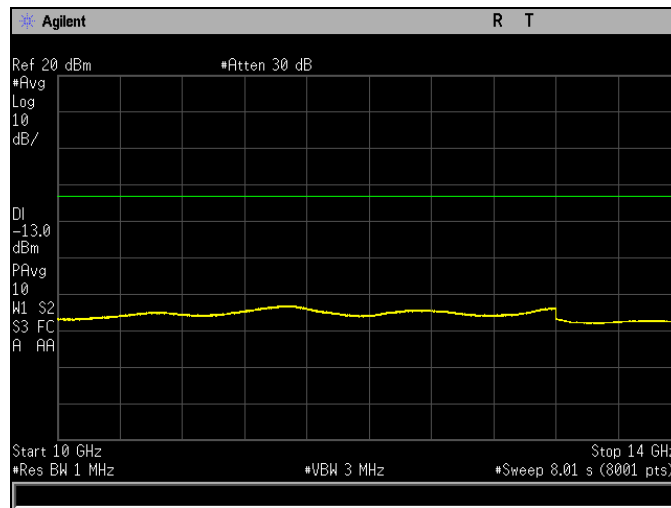
Plot 450. Conducted Spurious Emissions, Band 2, 1 GHz – 3 GHz, High Channel, 5



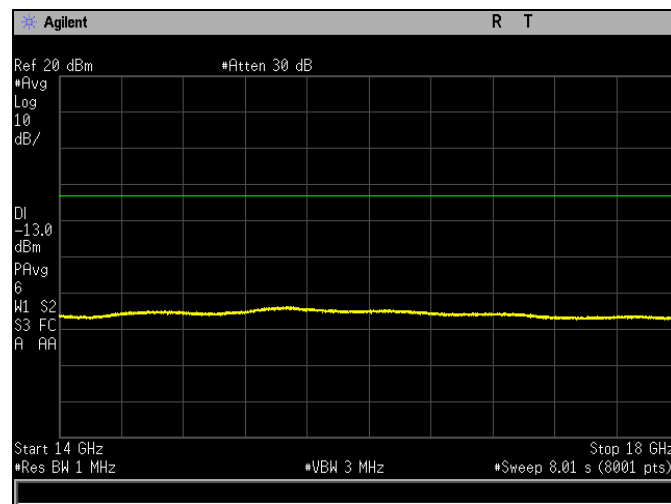
Plot 451. Conducted Spurious Emissions, Band 2, 3 GHz – 6 GHz, High Channel, 5



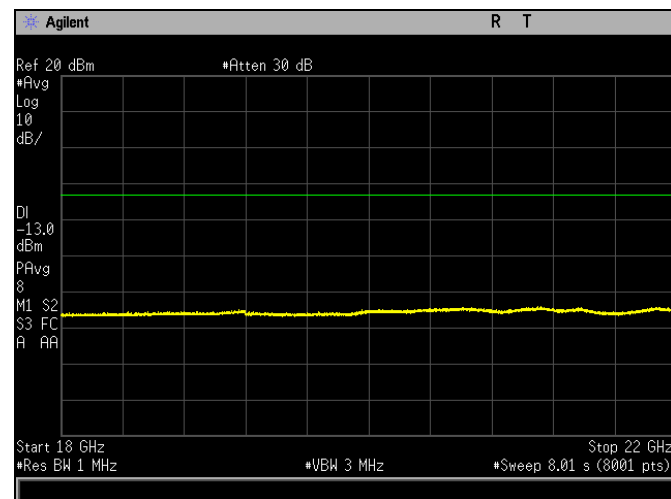
Plot 452. Conducted Spurious Emissions, Band 2, 6 GHz – 10 GHz, High Channel, 5



Plot 453. Conducted Spurious Emissions, Band 2, 10 GHz – 14 GHz, High Channel, 5

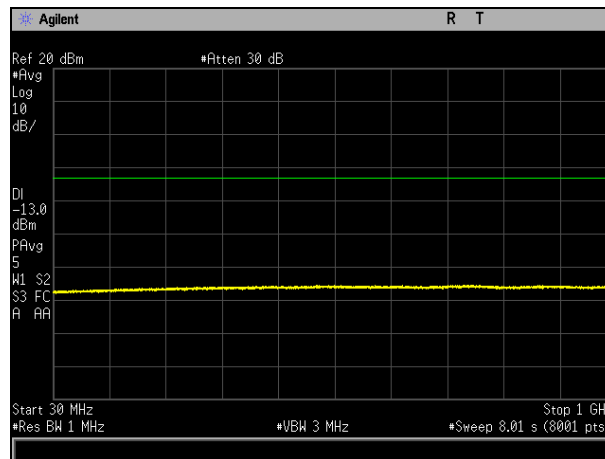


Plot 454. Conducted Spurious Emissions, Band 2, 14 GHz – 18 GHz, High Channel, 5

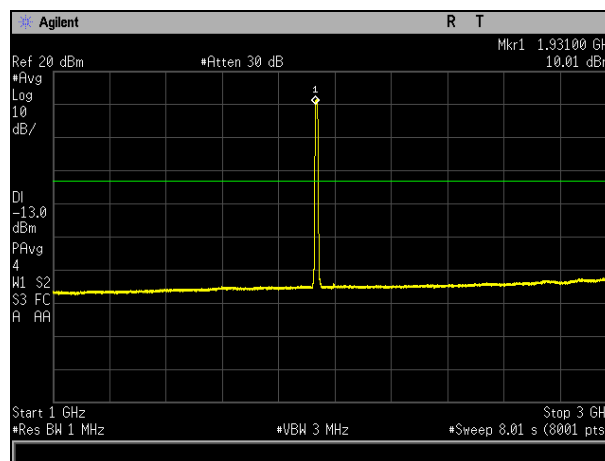


Plot 455. Conducted Spurious Emissions, Band 2, 18 GHz – 22 GHz, High Channel, 5

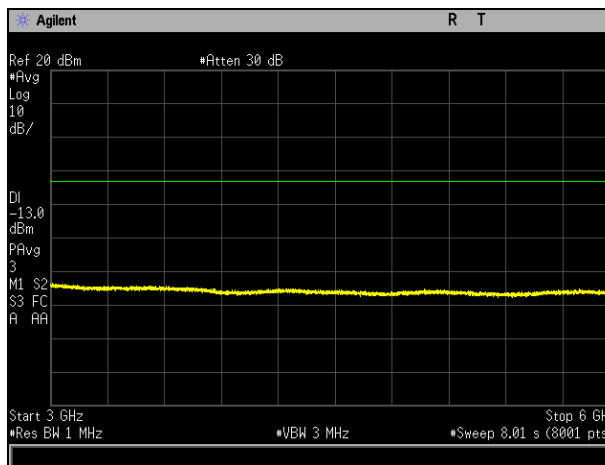
Conducted Spurious Emissions, Band 2, 10



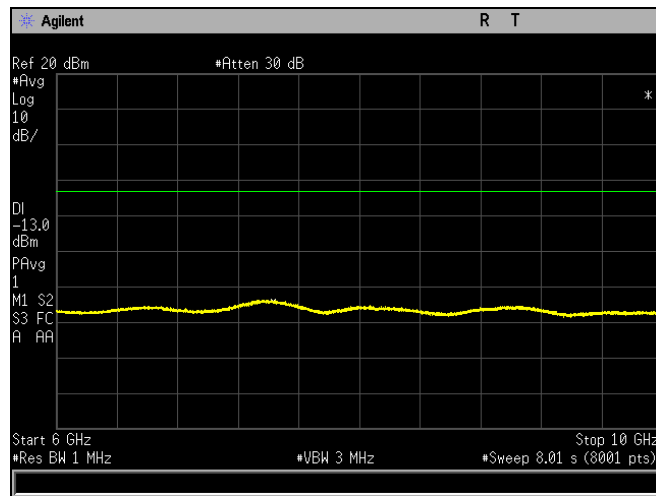
Plot 456. Conducted Spurious Emissions, Band 2, 30 MHz – 1 GHz, Low Channel, 10



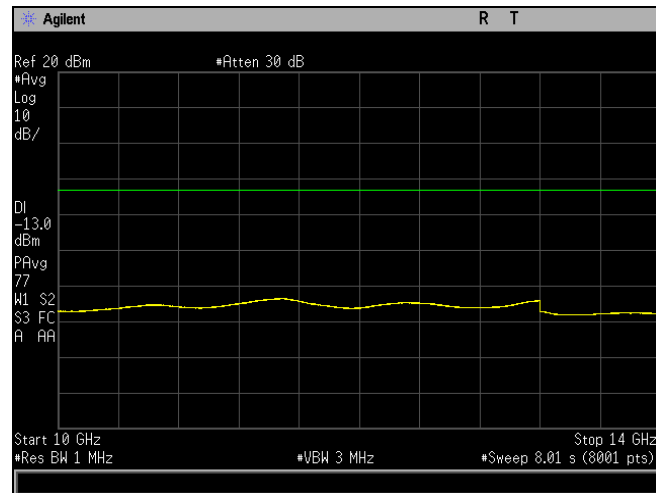
Plot 457. Conducted Spurious Emissions, Band 2, 1 GHz – 3 GHz, Low Channel, 10



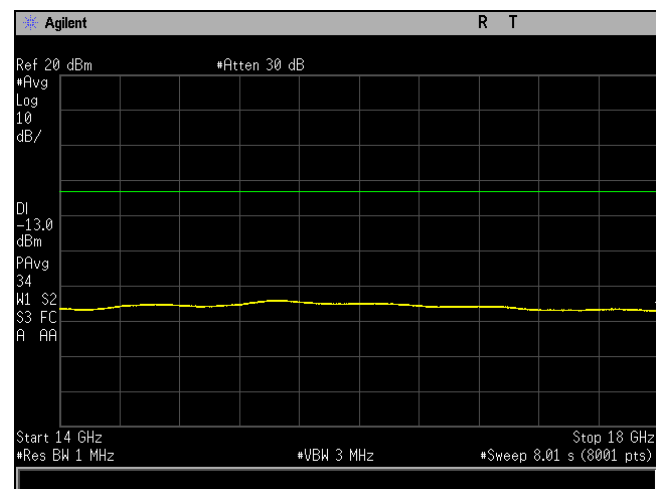
Plot 458. Conducted Spurious Emissions, Band 2, 3 GHz – 6 GHz, Low Channel, 10



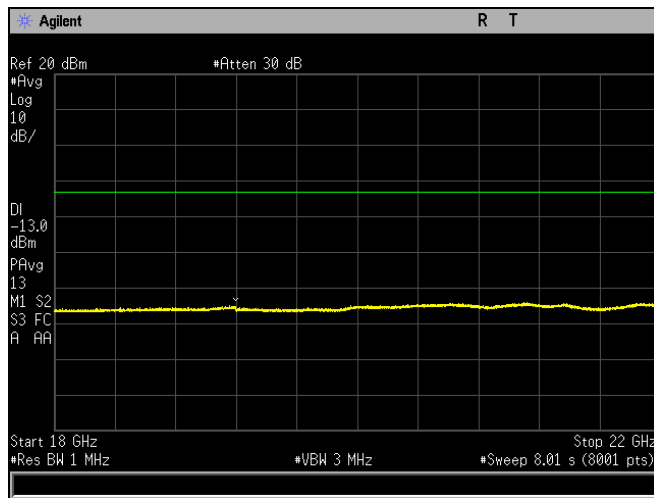
Plot 459. Conducted Spurious Emissions, Band 2, 6 GHz – 10 GHz, Low Channel, 10



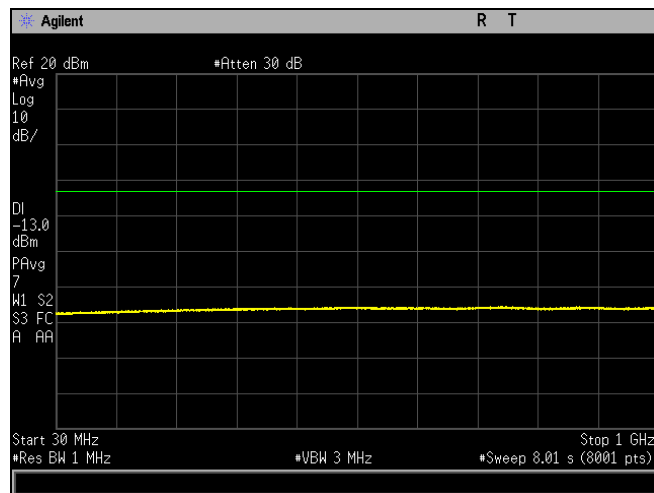
Plot 460. Conducted Spurious Emissions, Band 2, 10 GHz – 14 GHz, Low Channel, 10



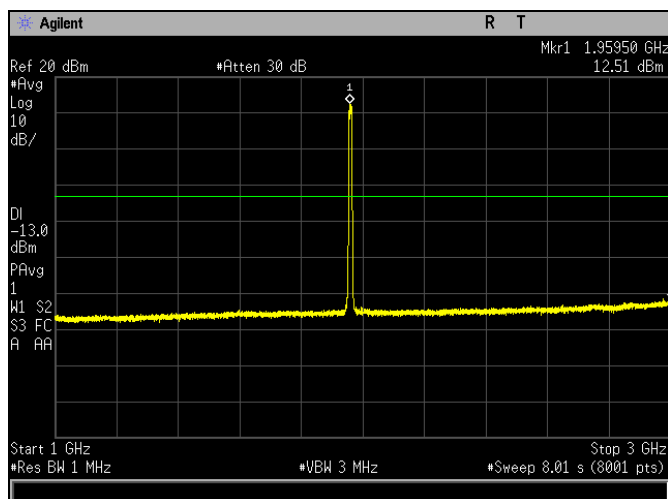
Plot 461. Conducted Spurious Emissions, Band 2, 14 GHz – 18 GHz, Low Channel, 10



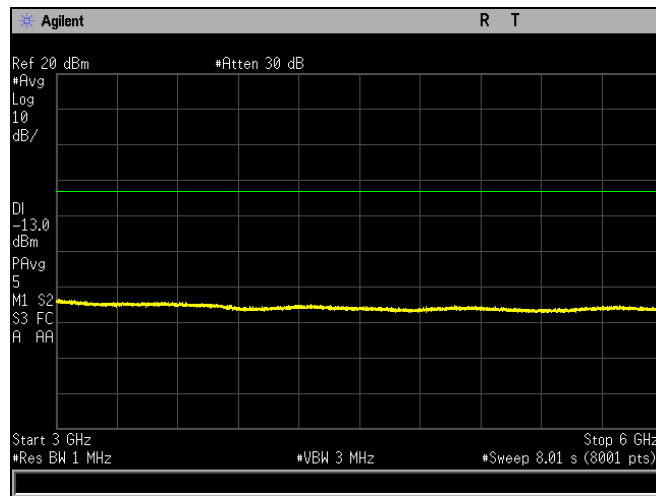
Plot 462. Conducted Spurious Emissions, Band 2, 18 GHz – 22 GHz, Low Channel, 10



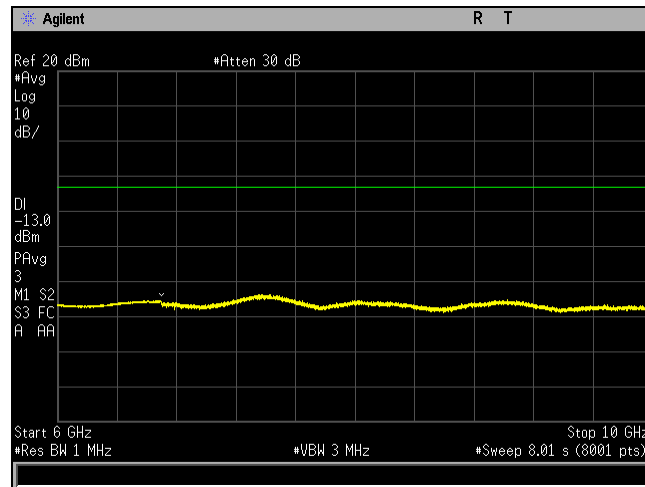
Plot 463. Conducted Spurious Emissions, Band 2, 30 MHz – 1 GHz, Mid Channel, 10



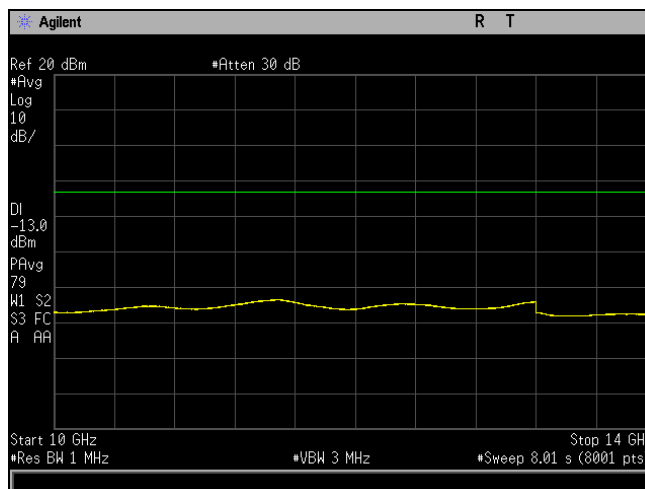
Plot 464. Conducted Spurious Emissions, Band 2, 1 GHz – 3 GHz, Mid Channel, 10



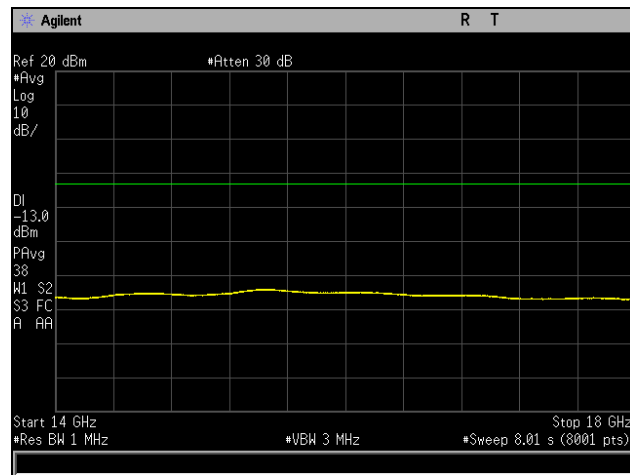
Plot 465. Conducted Spurious Emissions, Band 2, 3 GHz – 6 GHz, Mid Channel, 10



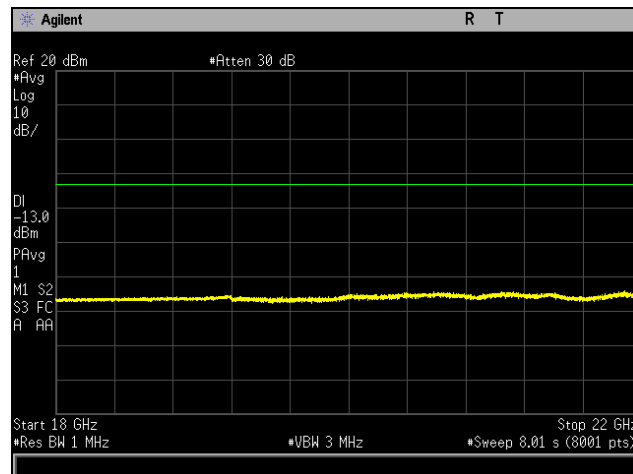
Plot 466. Conducted Spurious Emissions, Band 2, 6 GHz – 10 GHz, Mid Channel, 10



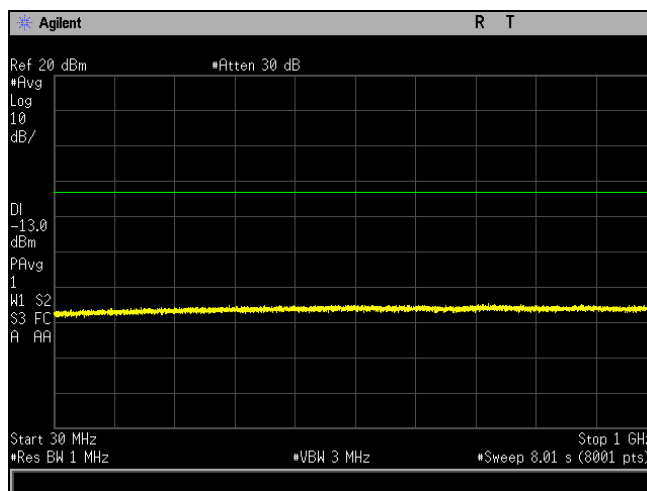
Plot 467. Conducted Spurious Emissions, Band 2, 10 GHz – 14 GHz, Mid Channel, 10



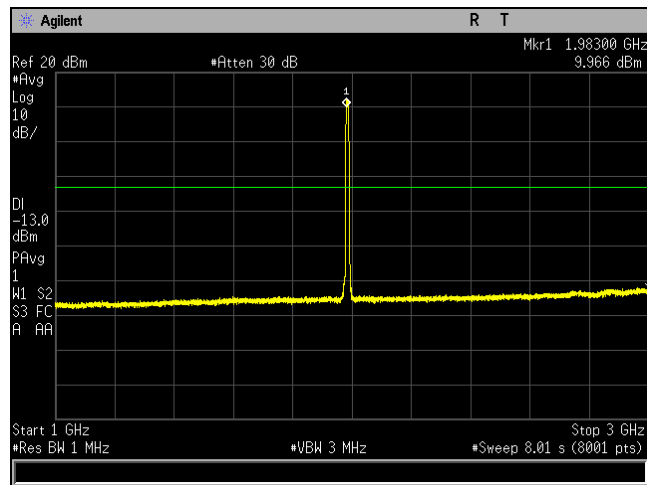
Plot 468. Conducted Spurious Emissions, Band 2, 14 GHz – 18 GHz, Mid Channel, 10



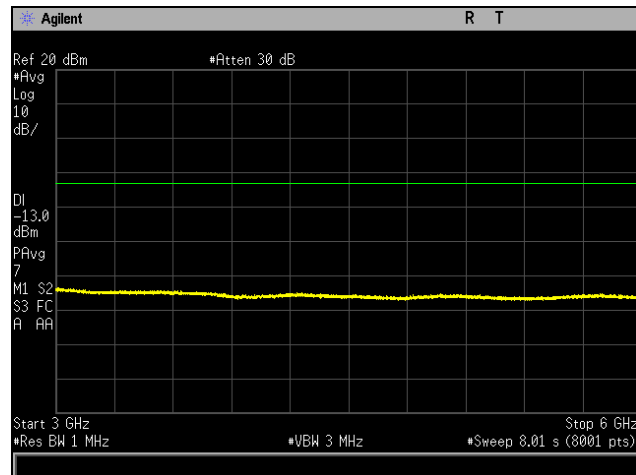
Plot 469. Conducted Spurious Emissions, Band 2, 18 GHz – 22 GHz, Mid Channel, 10



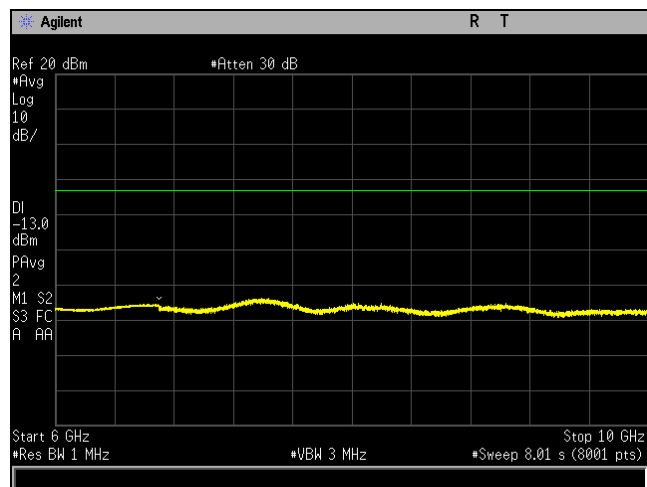
Plot 470. Conducted Spurious Emissions, Band 2, 30 MHz – 1 GHz, High Channel, 10



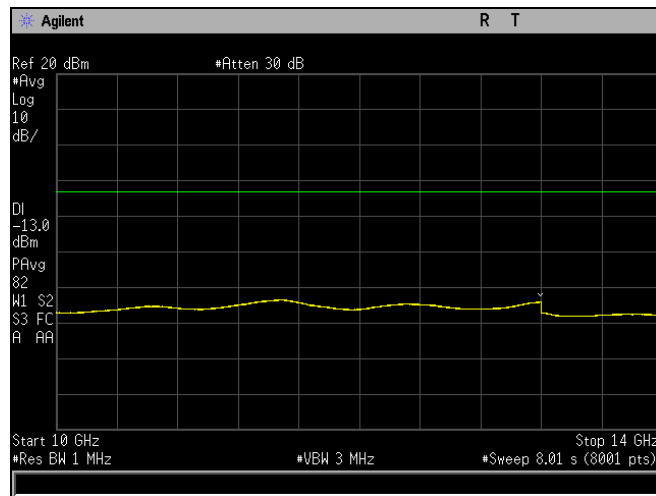
Plot 471. Conducted Spurious Emissions, Band 2, 1 GHz – 3 GHz, High Channel, 10



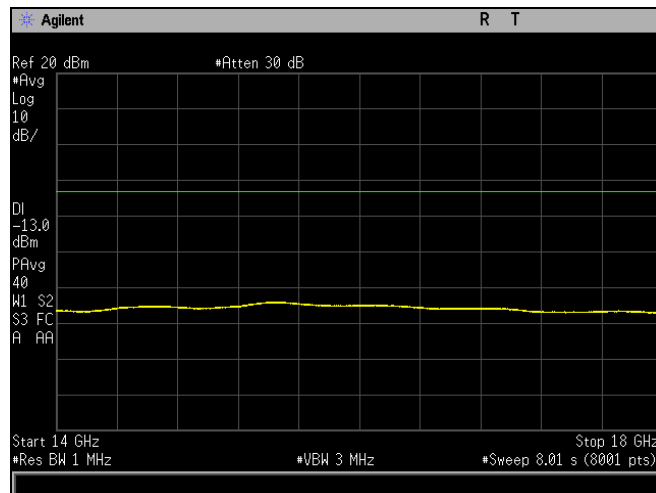
Plot 472. Conducted Spurious Emissions, Band 2, 3 GHz – 6 GHz, High Channel, 10



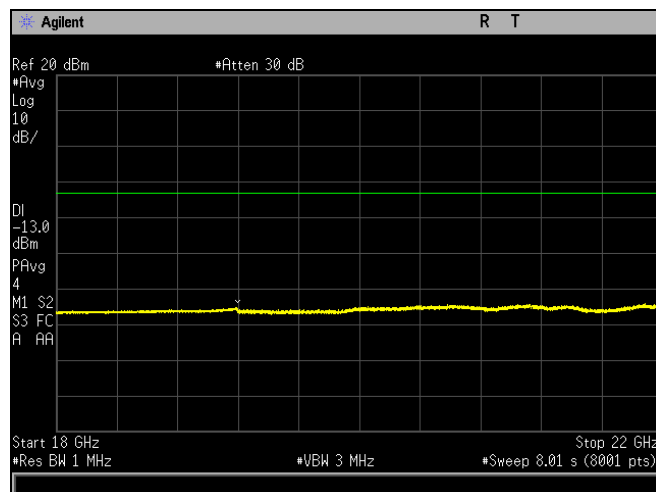
Plot 473. Conducted Spurious Emissions, Band 2, 6 GHz – 10 GHz, High Channel, 10



Plot 474. Conducted Spurious Emissions, Band 2, 10 GHz – 14 GHz, High Channel, 10

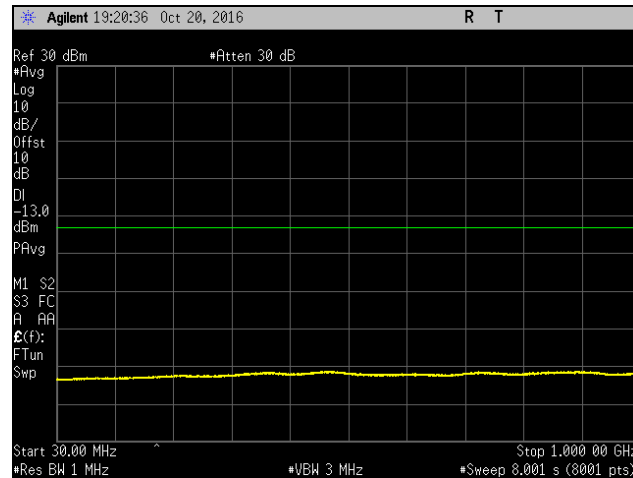


Plot 475. Conducted Spurious Emissions, Band 2, 14 GHz – 18 GHz, High Channel, 10

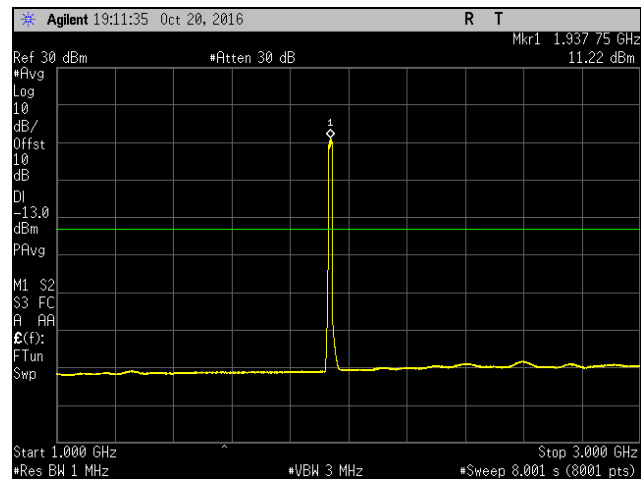


Plot 476. Conducted Spurious Emissions, Band 2, 18 GHz – 22 GHz, High Channel, 10

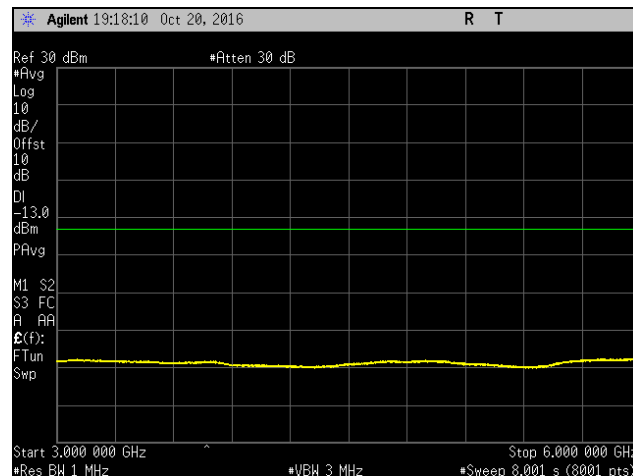
Conducted Spurious Emissions, Band 2, 15



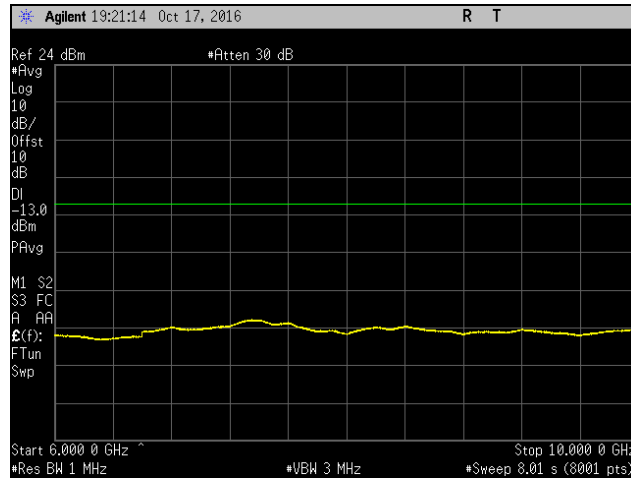
Plot 477. Conducted Spurious Emissions, Band 2, 30 MHz – 1 GHz, Low Channel, 15



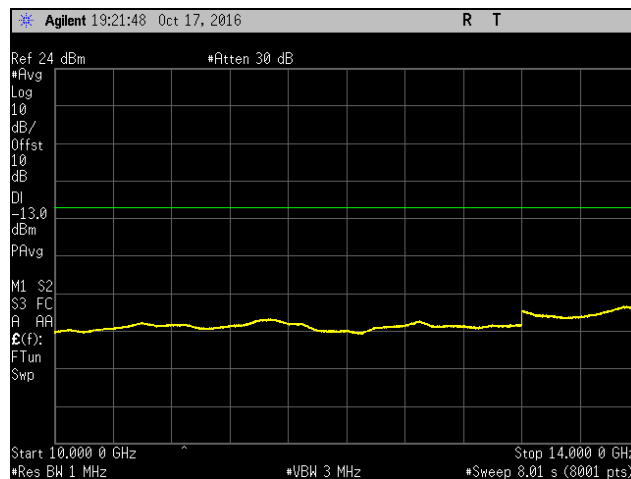
Plot 478. Conducted Spurious Emissions, Band 2, 1 GHz – 3 GHz, Low Channel, 15



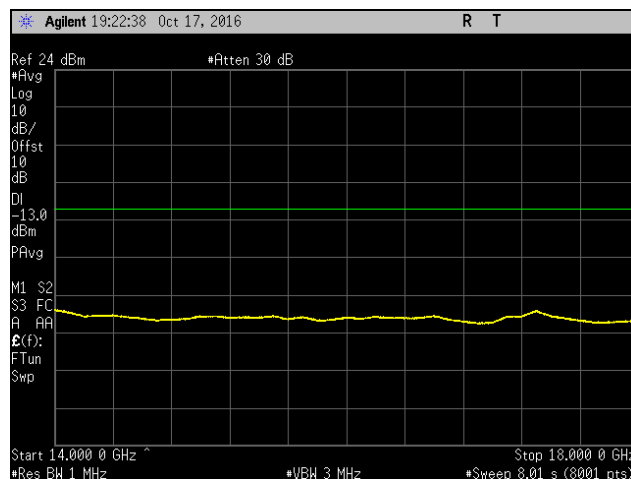
Plot 479. Conducted Spurious Emissions, Band 2, 3 GHz – 6 GHz, Low Channel, 15



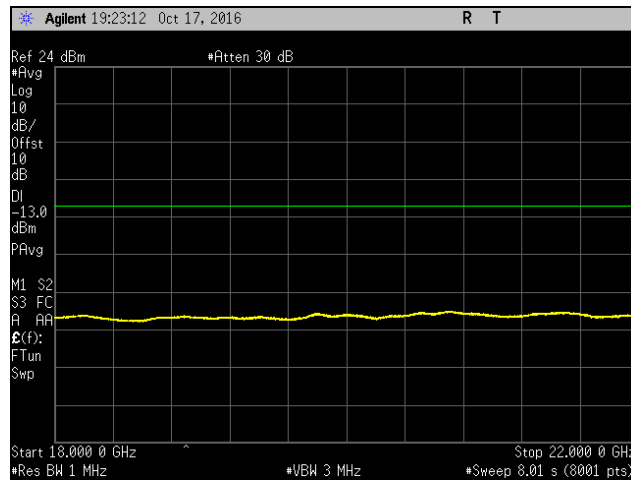
Plot 480. Conducted Spurious Emissions, Band 2, 6 GHz – 10 GHz, Low Channel, 15



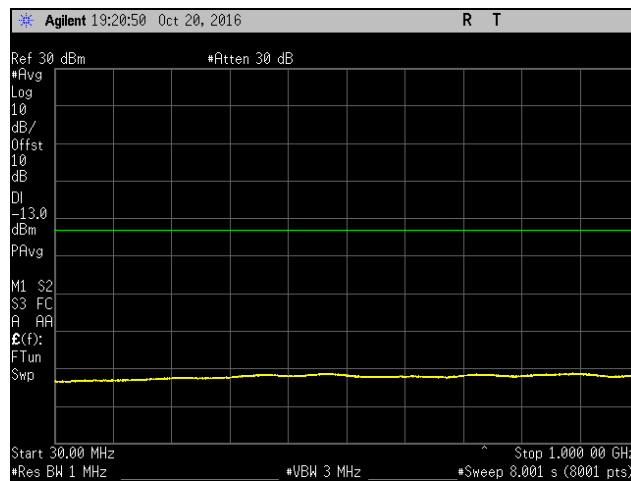
Plot 481. Conducted Spurious Emissions, Band 2, 10 GHz – 14 GHz, Low Channel, 15



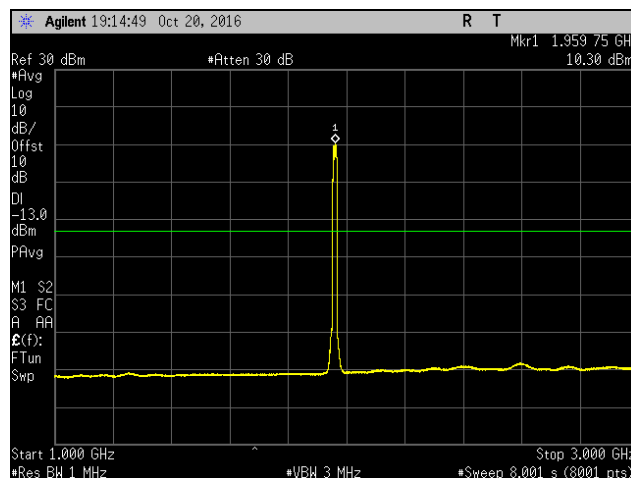
Plot 482. Conducted Spurious Emissions, Band 2, 14 GHz – 18 GHz, Low Channel, 15



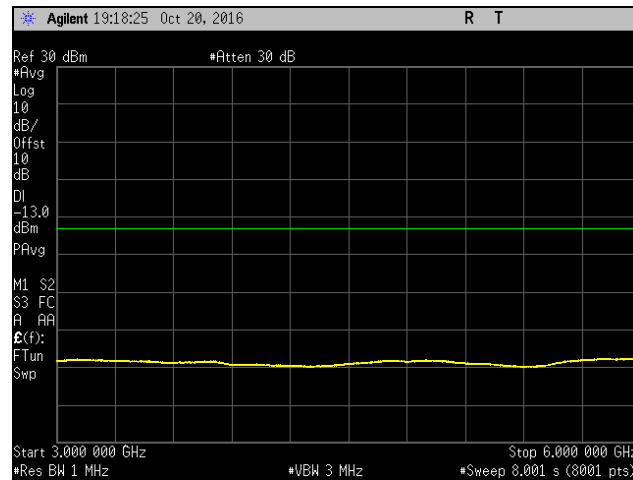
Plot 483. Conducted Spurious Emissions, Band 2, 18 GHz – 22 GHz, Low Channel, 15



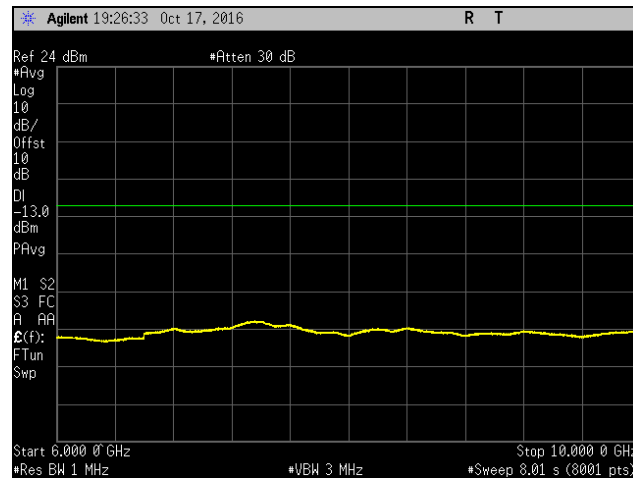
Plot 484. Conducted Spurious Emissions, Band 2, 30 MHz – 1 GHz, Mid Channel, 15



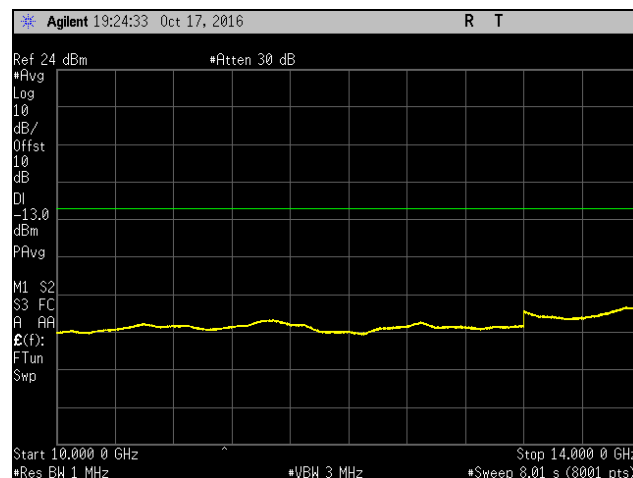
Plot 485. Conducted Spurious Emissions, Band 2, 1 GHz – 3 GHz, Mid Channel, 15



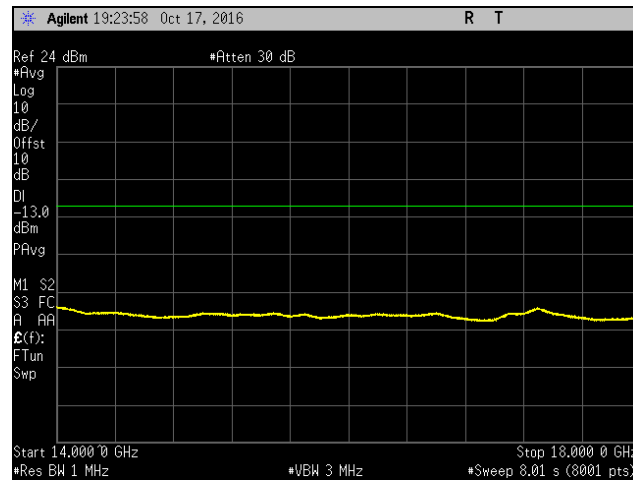
Plot 486. Conducted Spurious Emissions, Band 2, 3 GHz – 6 GHz, Mid Channel, 15



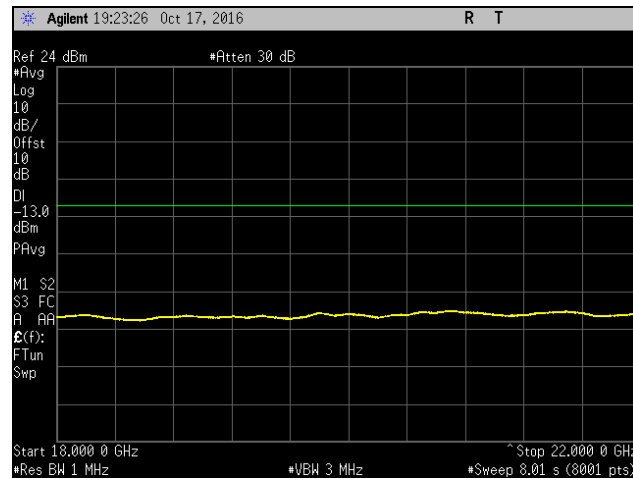
Plot 487. Conducted Spurious Emissions, Band 2, 6 GHz – 10 GHz, Mid Channel, 15



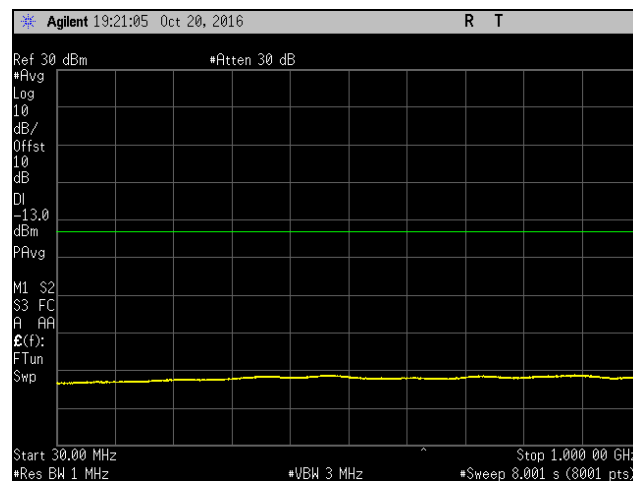
Plot 488. Conducted Spurious Emissions, Band 2, 10 GHz – 14 GHz, Mid Channel, 15



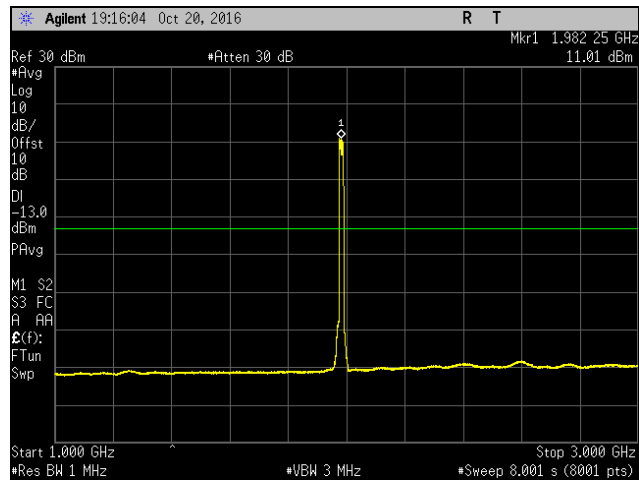
Plot 489. Conducted Spurious Emissions, Band 2, 14 GHz – 18 GHz, Mid Channel, 15



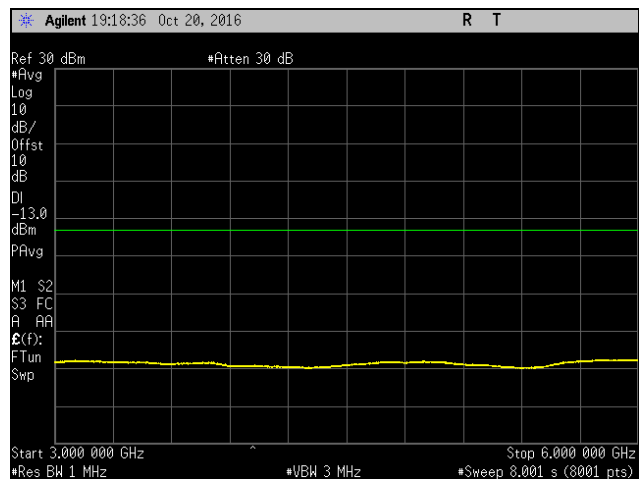
Plot 490. Conducted Spurious Emissions, Band 2, 18 GHz – 22 GHz, Mid Channel, 15



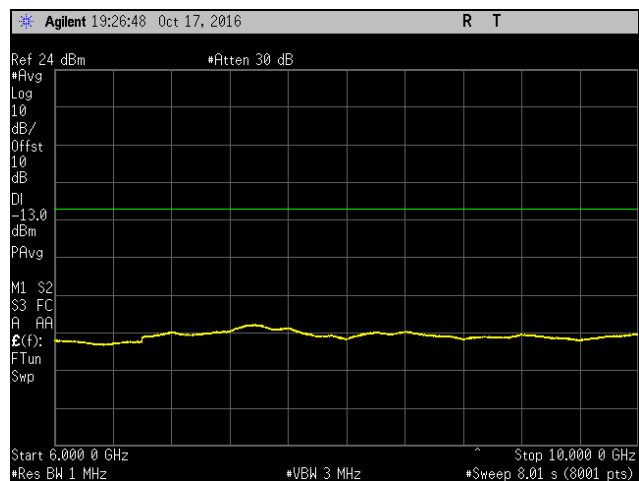
Plot 491. Conducted Spurious Emissions, Band 2, 30 MHz – 1 GHz, High Channel, 15



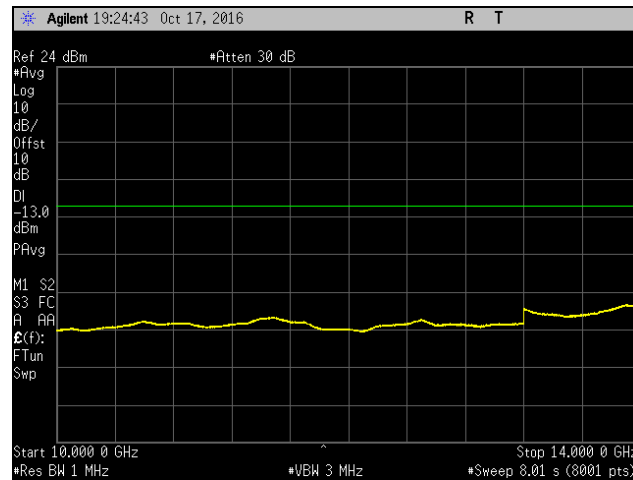
Plot 492. Conducted Spurious Emissions, Band 2, 1 GHz – 3 GHz, High Channel, 15



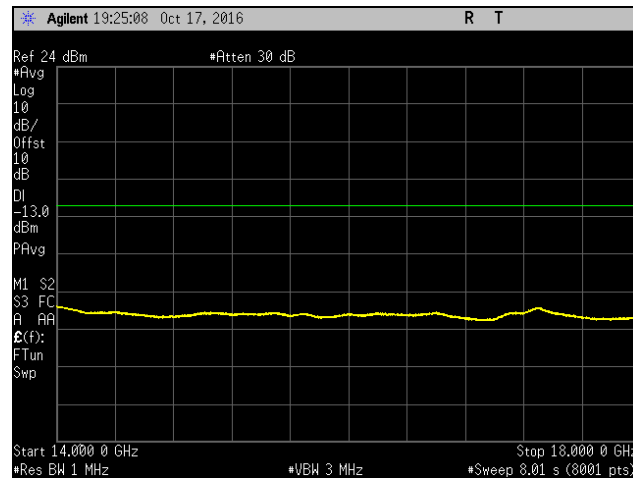
Plot 493. Conducted Spurious Emissions, Band 2, 3 GHz – 6 GHz, High Channel, 15



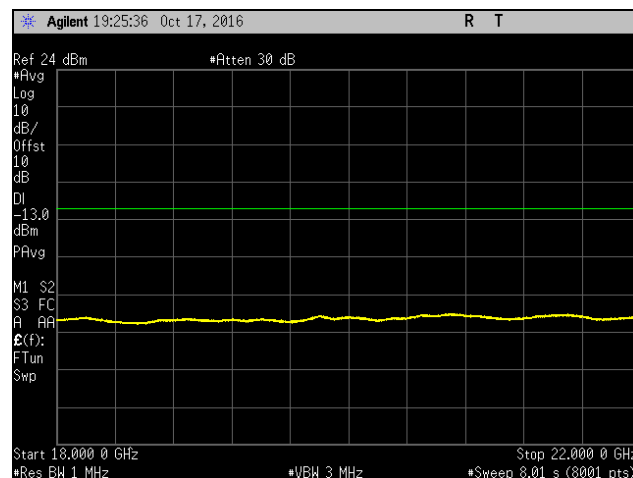
Plot 494. Conducted Spurious Emissions, Band 2, 6 GHz – 10 GHz, High Channel, 15



Plot 495. Conducted Spurious Emissions, Band 2, 10 GHz – 14 GHz, High Channel, 15

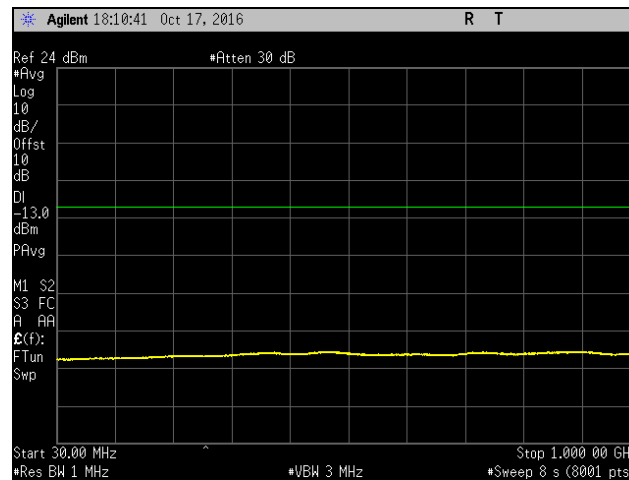


Plot 496. Conducted Spurious Emissions, Band 2, 14 GHz – 18 GHz, High Channel, 15

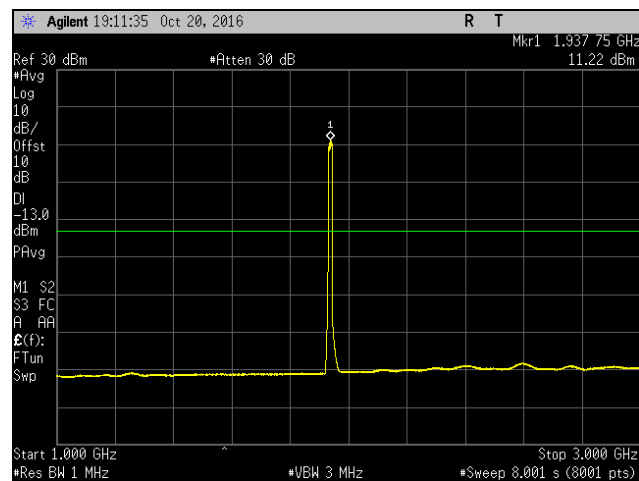


Plot 497. Conducted Spurious Emissions, Band 2, 18 GHz – 22 GHz, High Channel, 15

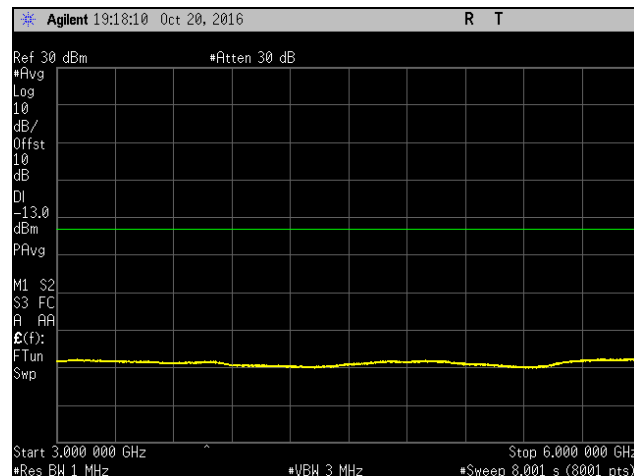
Conducted Spurious Emissions, Band 2, 20



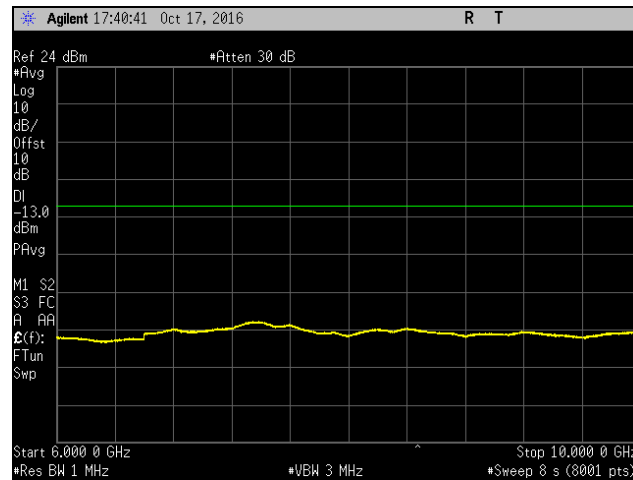
Plot 498. Conducted Spurious Emissions, Band 2, 30 MHz – 1 GHz, Low Channel, 20



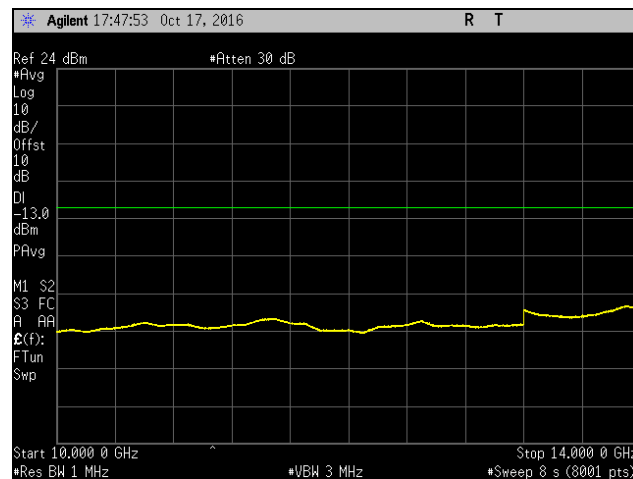
Plot 499. Conducted Spurious Emissions, Band 2, 1 GHz – 3 GHz, Low Channel, 20



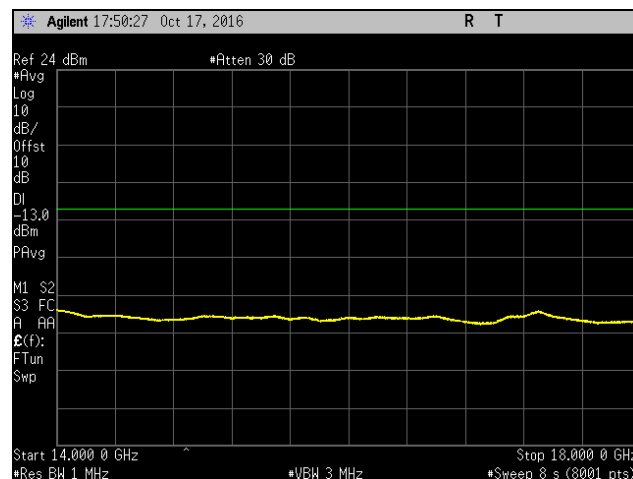
Plot 500. Conducted Spurious Emissions, Band 2, 3 GHz – 6 GHz, Low Channel, 20



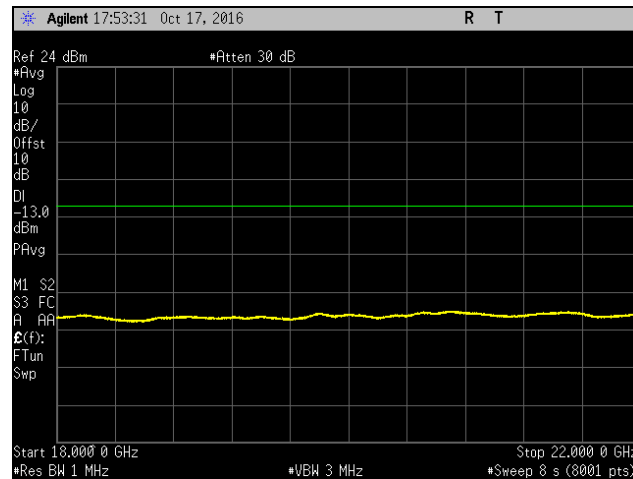
Plot 501. Conducted Spurious Emissions, Band 2, 6 GHz – 10 GHz, Low Channel, 20



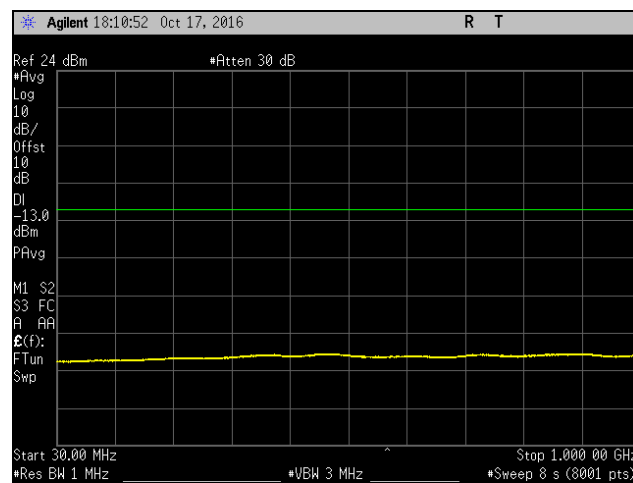
Plot 502. Conducted Spurious Emissions, Band 2, 10 GHz – 14 GHz, Low Channel, 20



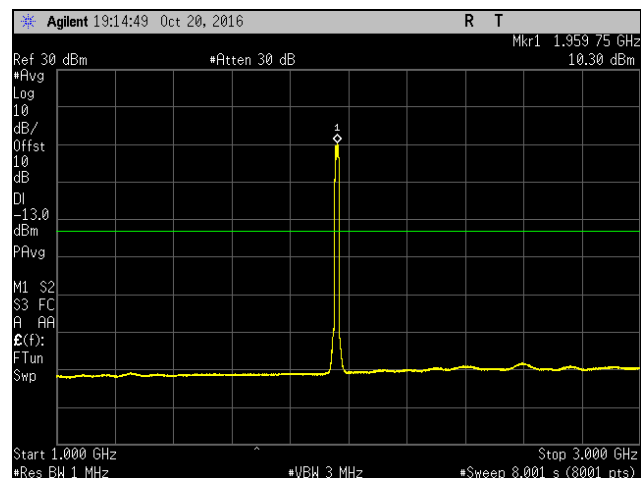
Plot 503. Conducted Spurious Emissions, Band 2, 14 GHz – 18 GHz, Low Channel, 20



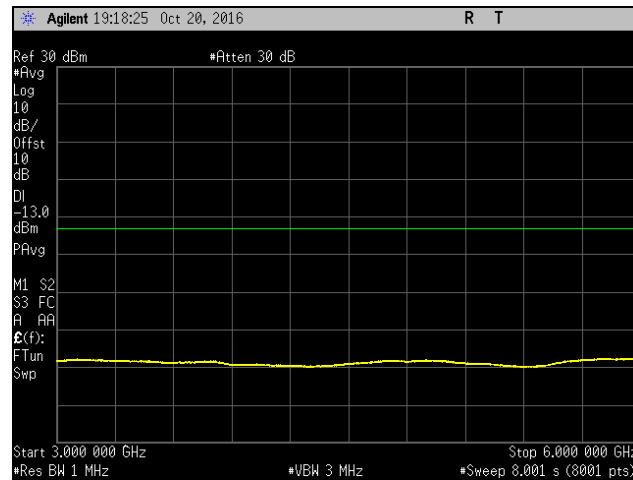
Plot 504. Conducted Spurious Emissions, Band 2, 18 GHz – 22 GHz, Low Channel, 20



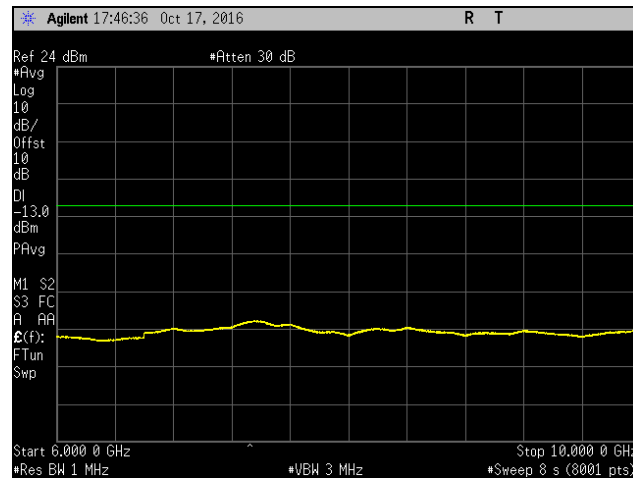
Plot 505. Conducted Spurious Emissions, Band 2, 30 MHz – 1 GHz, Mid Channel, 20



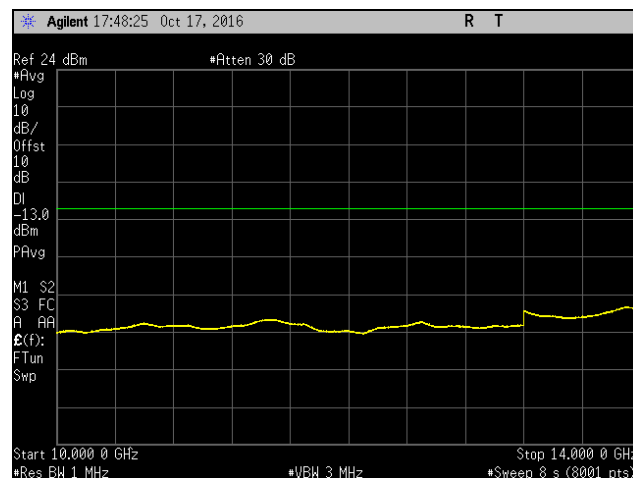
Plot 506. Conducted Spurious Emissions, Band 2, 1 GHz – 3 GHz, Mid Channel, 20



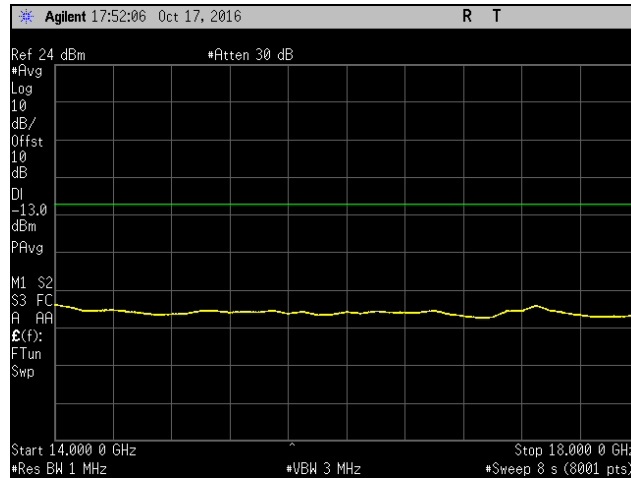
Plot 507. Conducted Spurious Emissions, Band 2, 3 GHz – 6 GHz, Mid Channel, 20



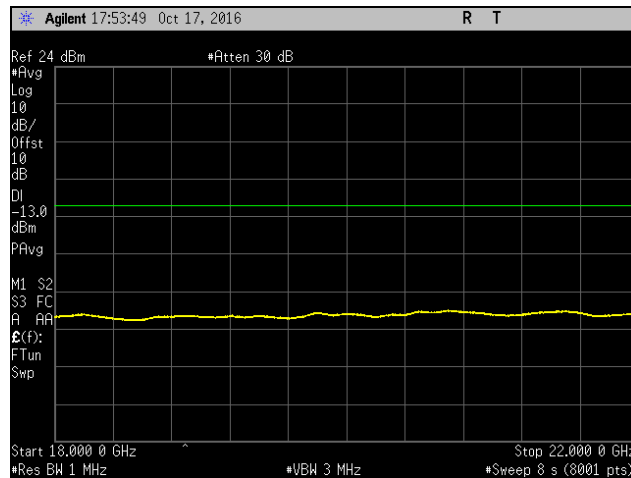
Plot 508. Conducted Spurious Emissions, Band 2, 6 GHz – 10 GHz, Mid Channel, 20



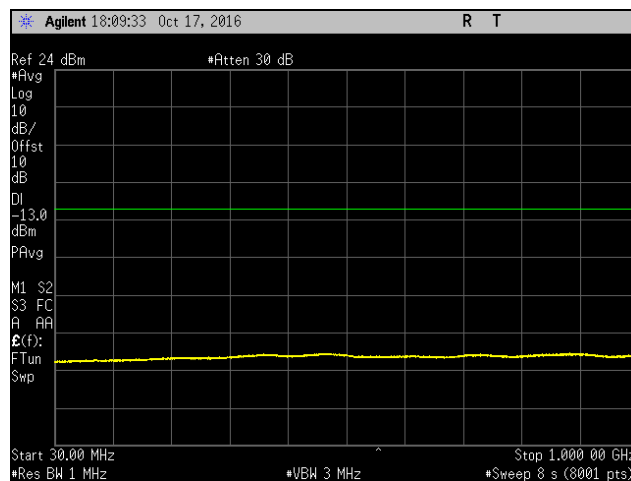
Plot 509. Conducted Spurious Emissions, Band 2, 10 GHz – 14 GHz, Mid Channel, 20



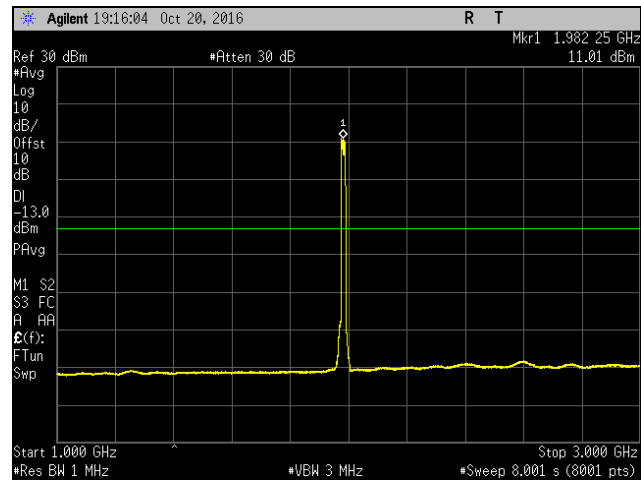
Plot 510. Conducted Spurious Emissions, Band 2, 14 GHz – 18 GHz, Mid Channel, 20



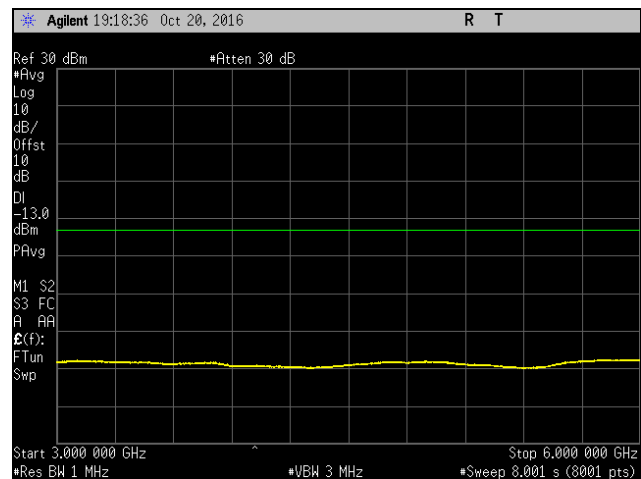
Plot 511. Conducted Spurious Emissions, Band 2, 18 GHz – 22 GHz, Mid Channel, 20



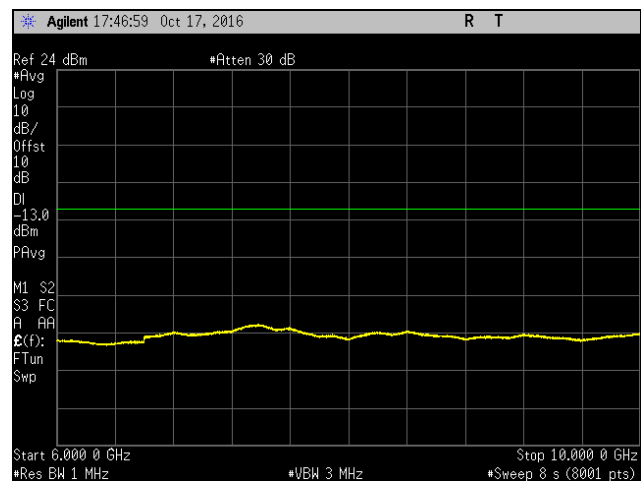
Plot 512. Conducted Spurious Emissions, Band 2, 30 MHz – 1 GHz, High Channel, 20



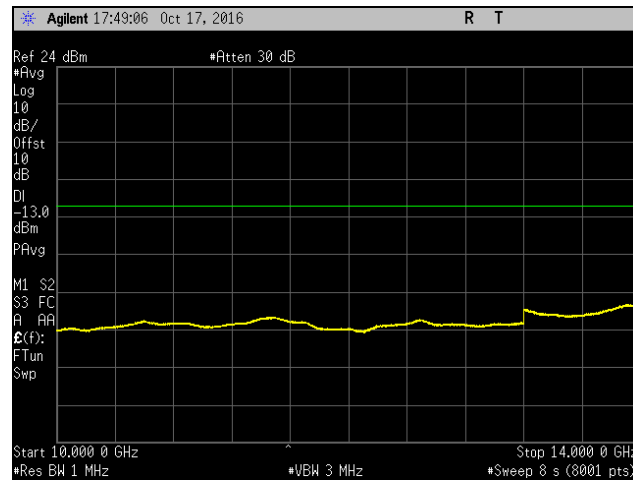
Plot 513. Conducted Spurious Emissions, Band 2, 1 GHz – 3 GHz, High Channel, 20



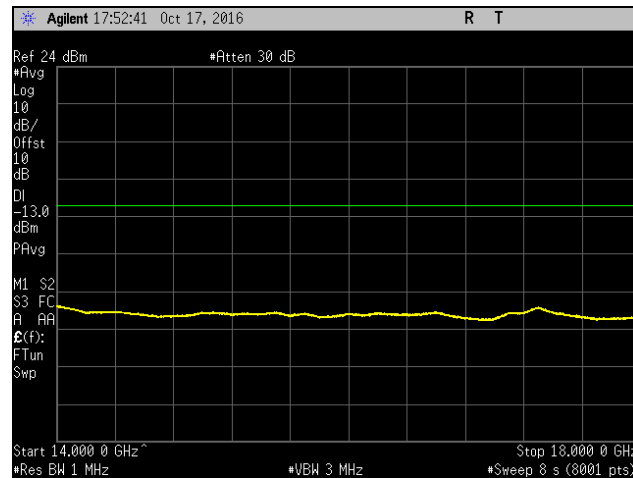
Plot 514. Conducted Spurious Emissions, Band 2, 3 GHz – 6 GHz, High Channel, 20



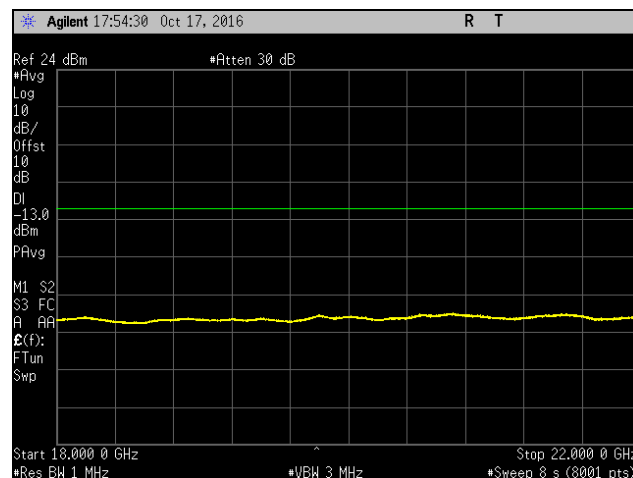
Plot 515. Conducted Spurious Emissions, Band 2, 6 GHz – 10 GHz, High Channel, 20



Plot 516. Conducted Spurious Emissions, Band 2, 10 GHz – 14 GHz, High Channel, 20

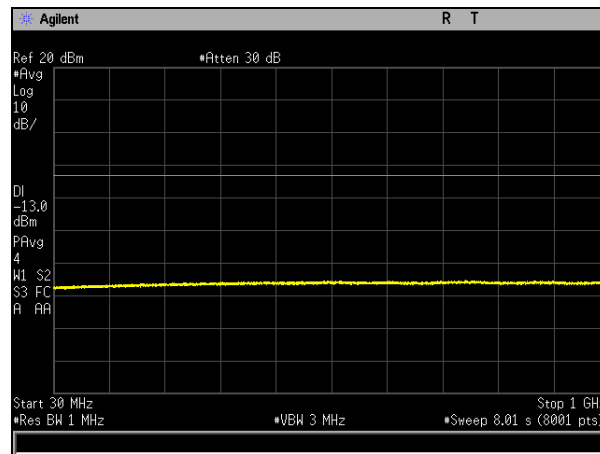


Plot 517. Conducted Spurious Emissions, Band 2, 14 GHz – 18 GHz, High Channel, 20

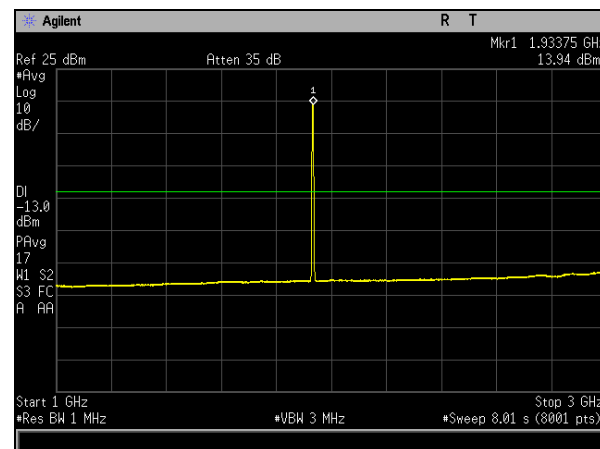


Plot 518. Conducted Spurious Emissions, Band 2, 18 GHz – 22 GHz, High Channel, 20

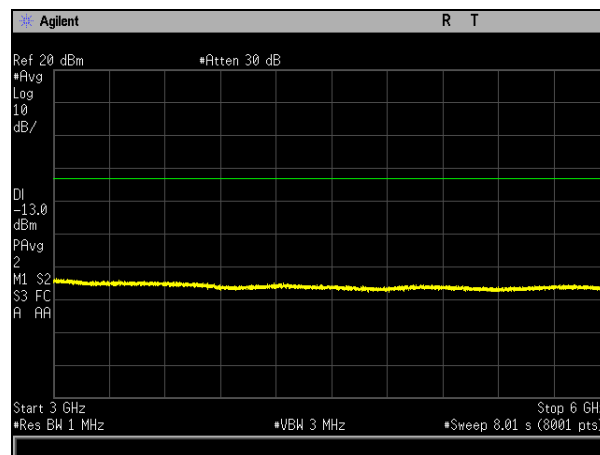
Conducted Spurious Emissions, Band 25, 5



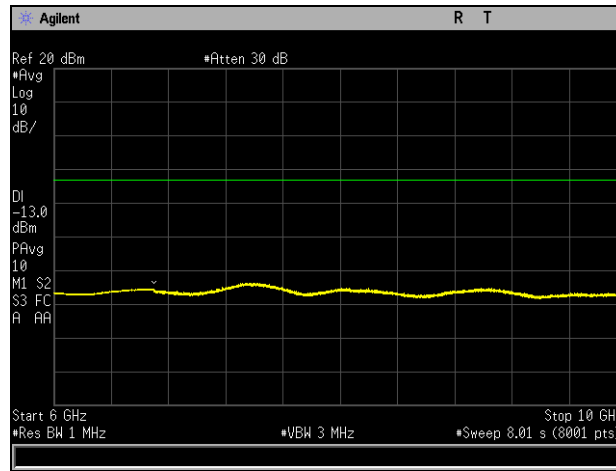
Plot 519. Conducted Spurious Emissions, Band 25, 30 MHz – 1 GHz, Low Channel, 5



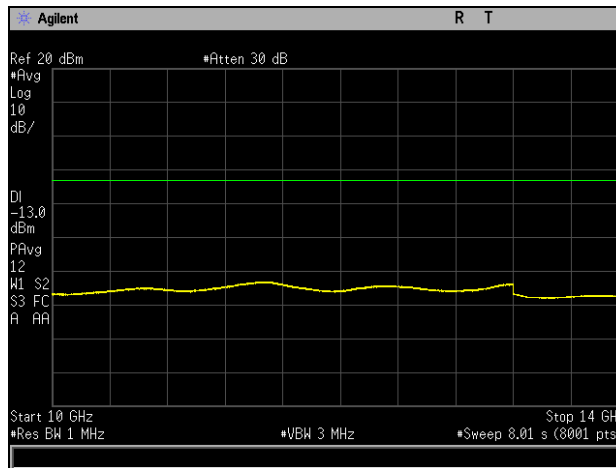
Plot 520. Conducted Spurious Emissions, Band 25, 1 GHz – 3 GHz, Low Channel, 5



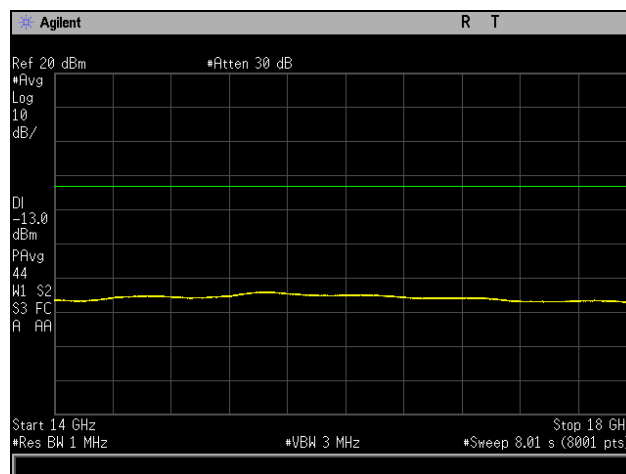
Plot 521. Conducted Spurious Emissions, Band 25, 3 GHz – 6 GHz, Low Channel, 5



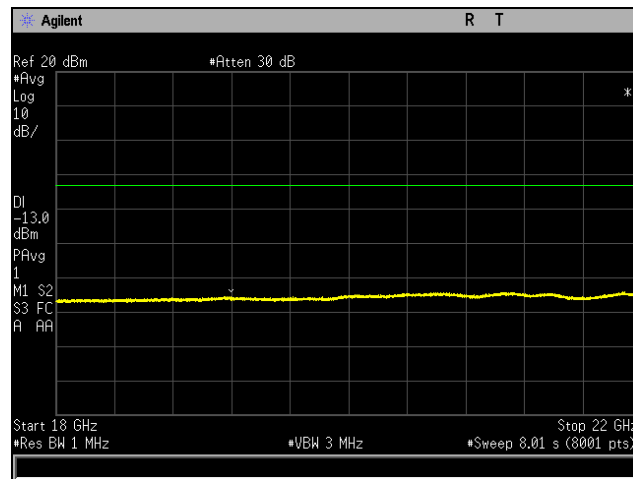
Plot 522. Conducted Spurious Emissions, Band 25, 6 GHz – 10 GHz, Low Channel, 5



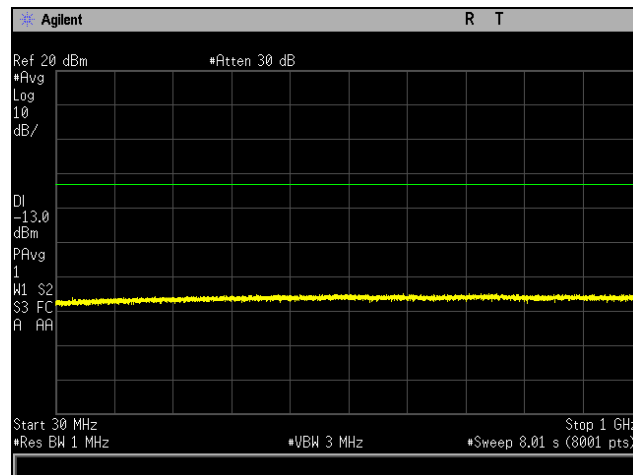
Plot 523. Conducted Spurious Emissions, Band 25, 10 GHz – 14 GHz, Low Channel, 5



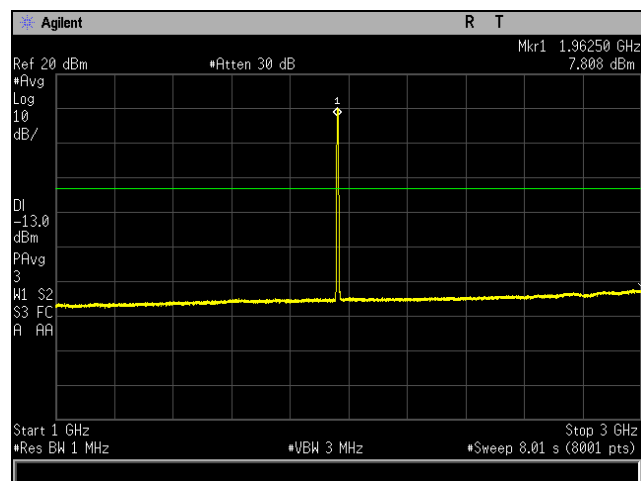
Plot 524. Conducted Spurious Emissions, Band 25, 14 GHz – 18 GHz, Low Channel, 5



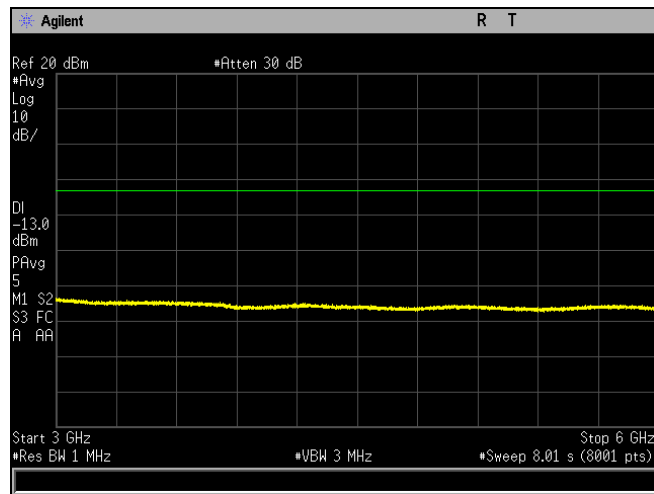
Plot 525. Conducted Spurious Emissions, Band 25, 18 GHz – 22 GHz, Low Channel, 5



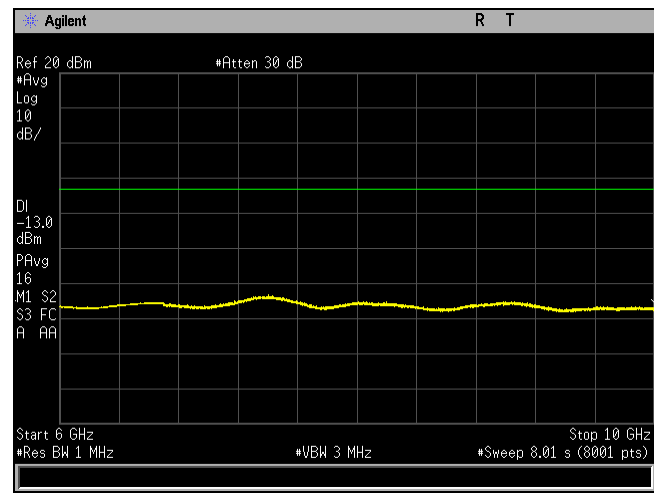
Plot 526. Conducted Spurious Emissions, Band 25, 30 MHz – 1 GHz, Mid Channel, 5



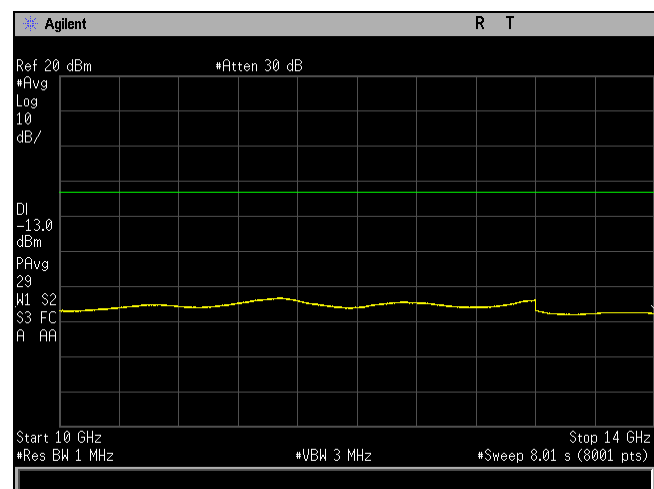
Plot 527. Conducted Spurious Emissions, Band 25, 1 GHz – 3 GHz, Mid Channel, 5



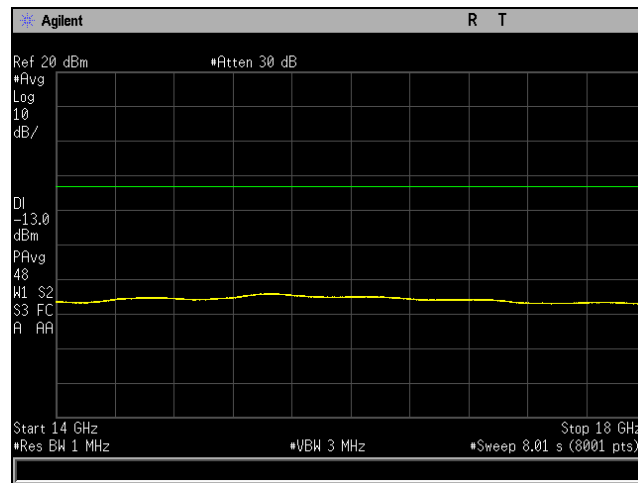
Plot 528. Conducted Spurious Emissions, Band 25, 3 GHz – 6 GHz, Mid Channel, 5



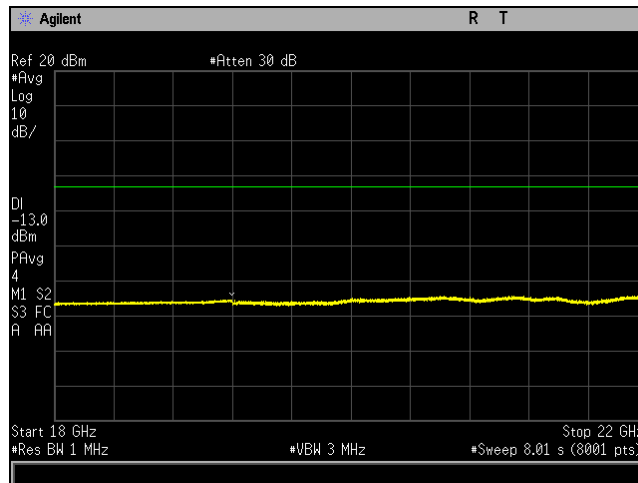
Plot 529. Conducted Spurious Emissions, Band 25, 6 GHz – 10 GHz, Mid Channel, 5



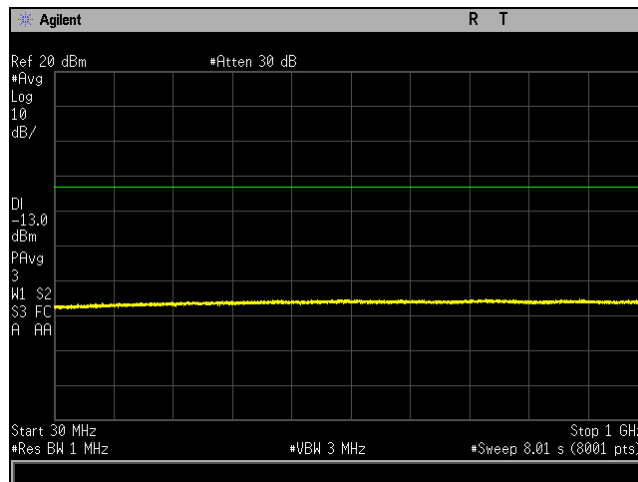
Plot 530. Conducted Spurious Emissions, Band 25, 10 GHz – 14 GHz, Mid Channel, 5



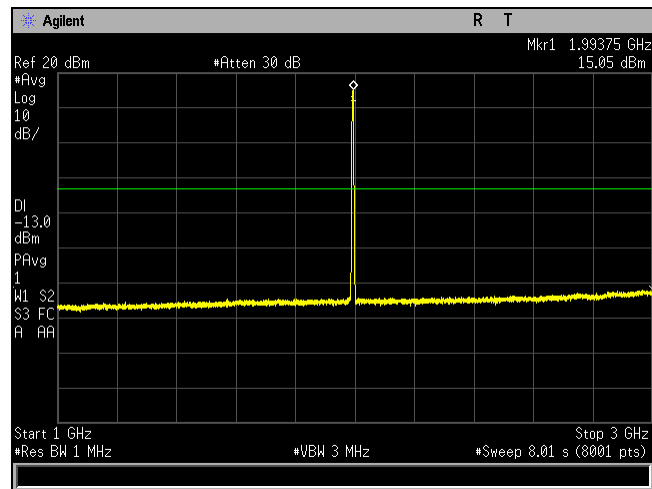
Plot 531. Conducted Spurious Emissions, Band 25, 14 GHz – 18 GHz, Mid Channel, 5



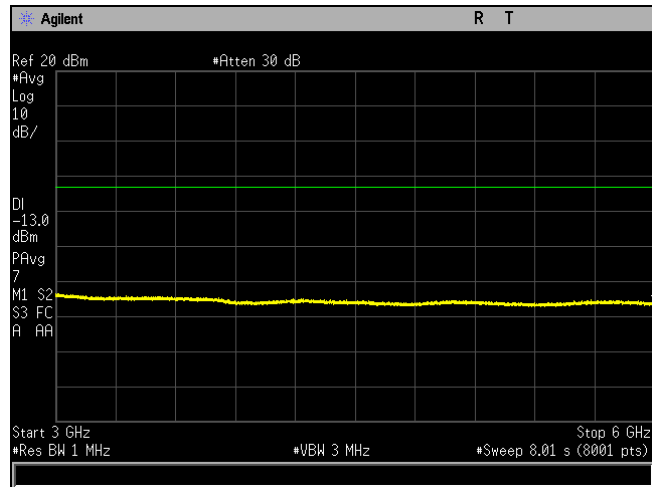
Plot 532. Conducted Spurious Emissions, Band 25, 18 GHz – 22 GHz, Mid Channel, 5



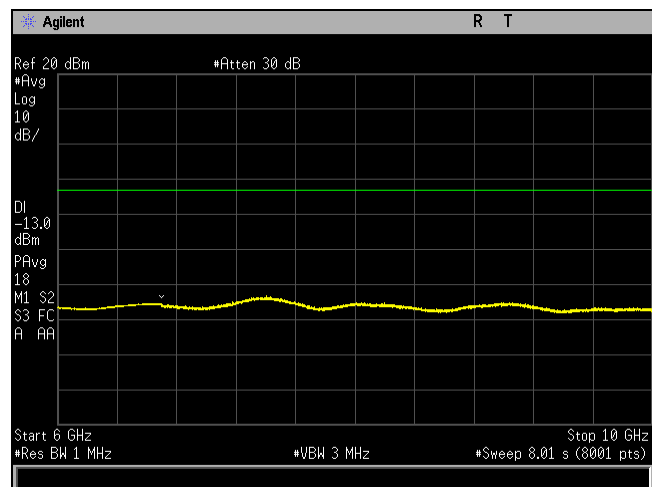
Plot 533. Conducted Spurious Emissions, Band 25, 30 MHz – 1 GHz, High Channel, 5



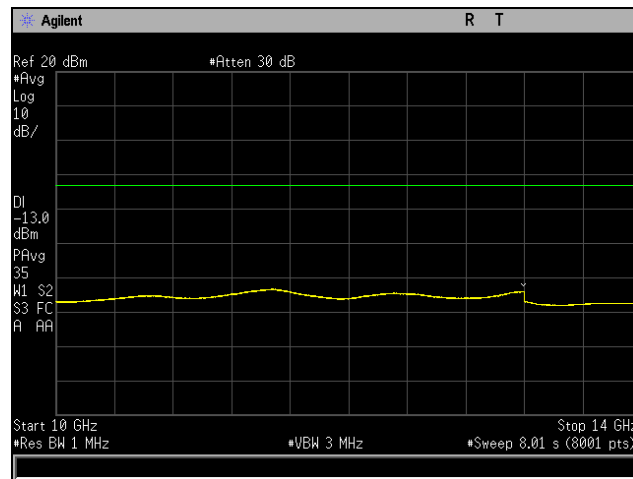
Plot 534. Conducted Spurious Emissions, Band 25, 1 GHz – 3 GHz, High Channel, 5



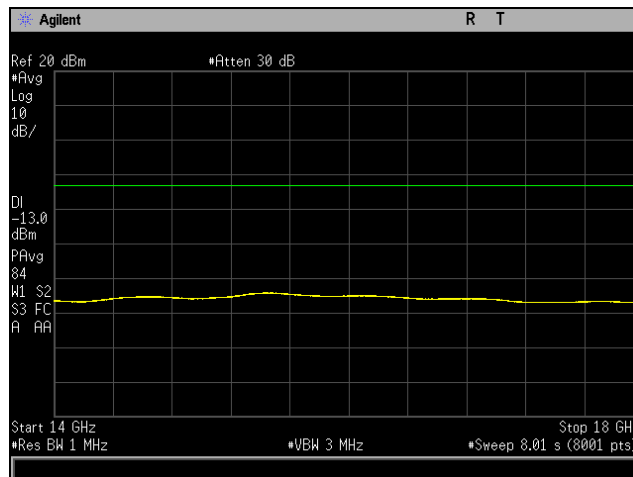
Plot 535. Conducted Spurious Emissions, Band 25, 3 GHz – 6 GHz, High Channel, 5



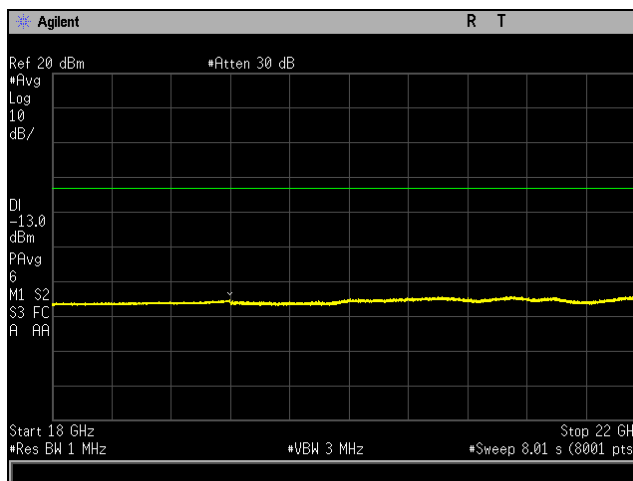
Plot 536. Conducted Spurious Emissions, Band 25, 6 GHz – 10 GHz, High Channel, 5



Plot 537. Conducted Spurious Emissions, Band 25, 10 GHz – 14 GHz, High Channel, 5

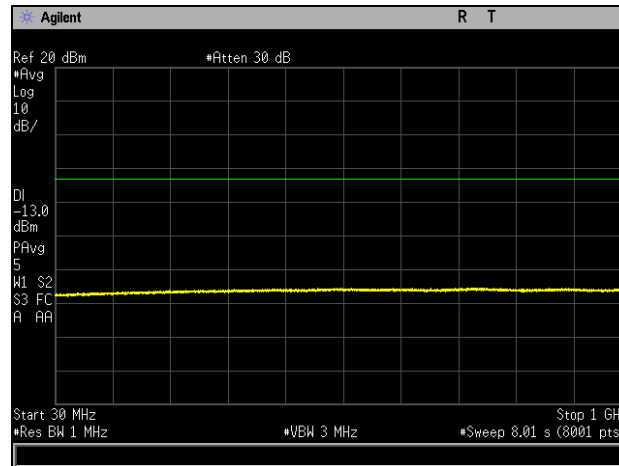


Plot 538. Conducted Spurious Emissions, Band 25, 14 GHz – 18 GHz, High Channel, 5

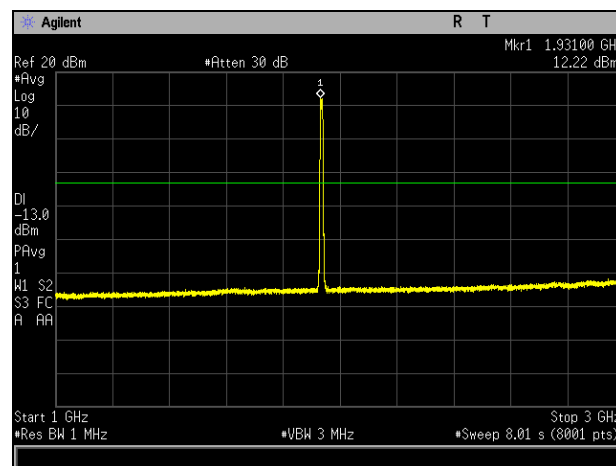


Plot 539. Conducted Spurious Emissions, Band 25, 18 GHz – 22 GHz, High Channel, 5

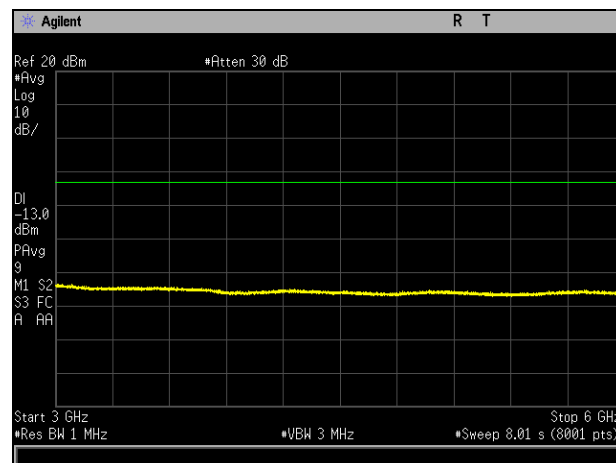
Conducted Spurious Emissions, Band 25, 10



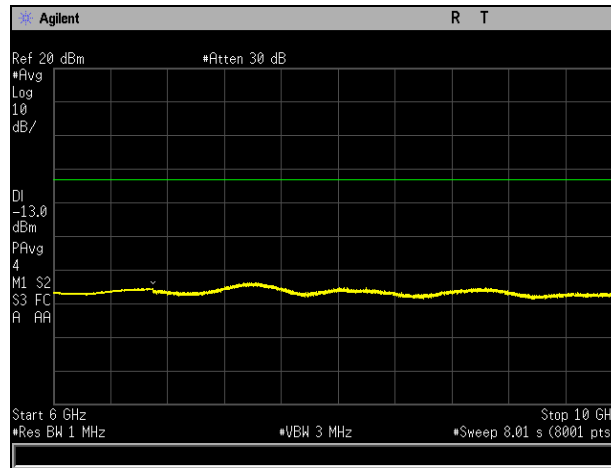
Plot 540. Conducted Spurious Emissions, Band 25, 30 MHz – 1 GHz, Low Channel, 10



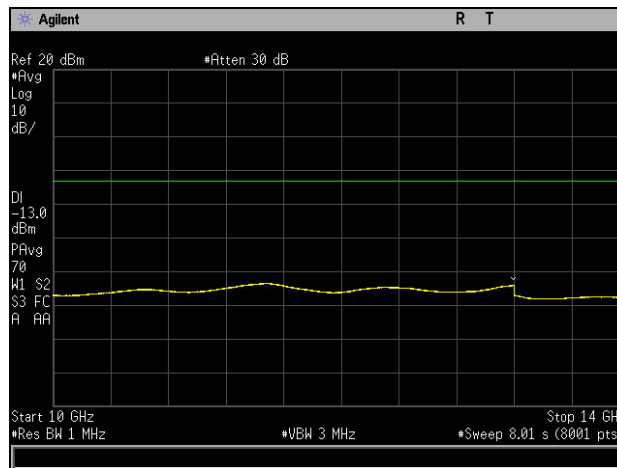
Plot 541. Conducted Spurious Emissions, Band 25, 1 GHz – 3 GHz, Low Channel, 10



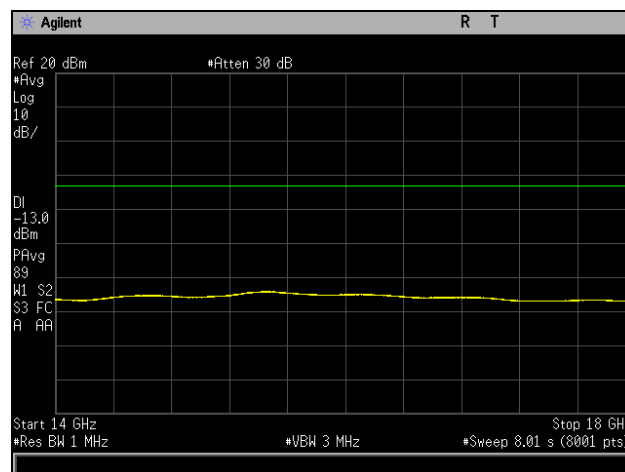
Plot 542. Conducted Spurious Emissions, Band 25, 3 GHz – 6 GHz, Low Channel, 10



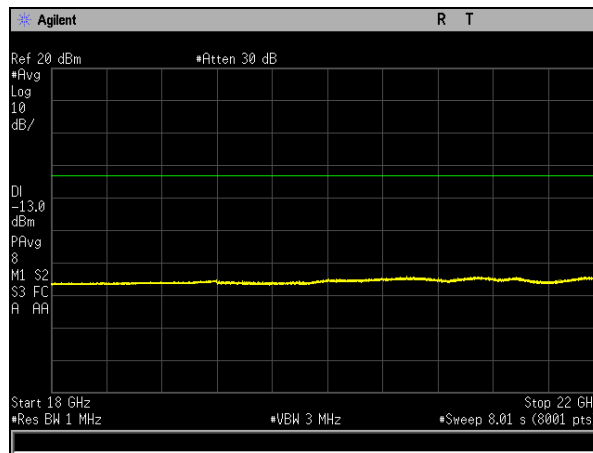
Plot 543. Conducted Spurious Emissions, Band 25, 6 GHz – 10 GHz, Low Channel, 10



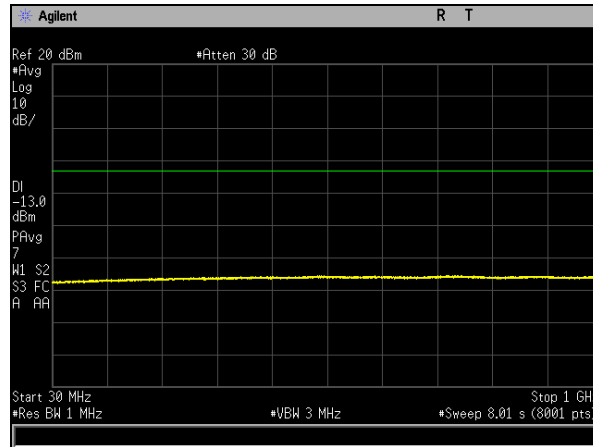
Plot 544. Conducted Spurious Emissions, Band 25, 10 GHz – 14 GHz, Low Channel, 10



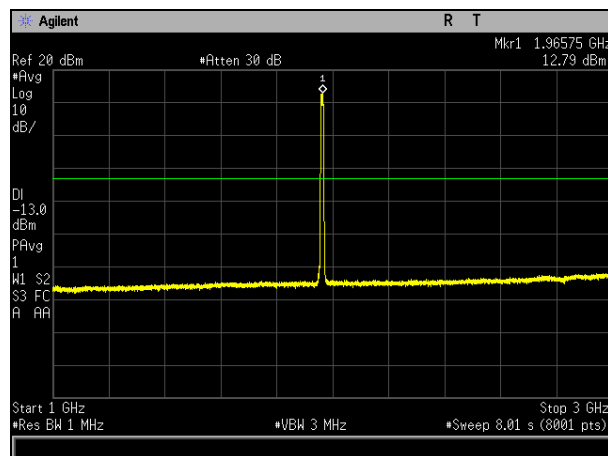
Plot 545. Conducted Spurious Emissions, Band 25, 14 GHz – 18 GHz, Low Channel, 10



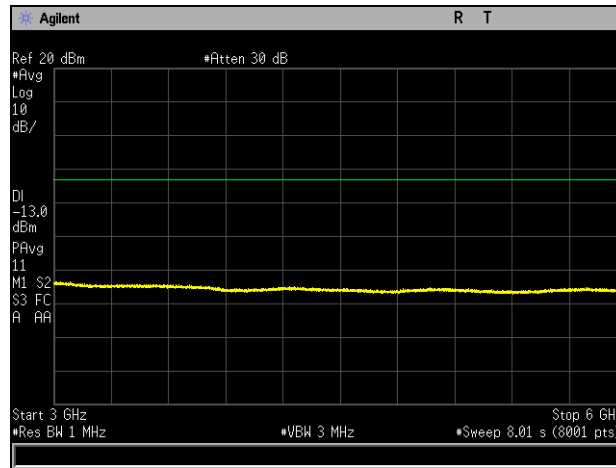
Plot 546. Conducted Spurious Emissions, Band 25, 18 GHz – 22 GHz, Low Channel, 10



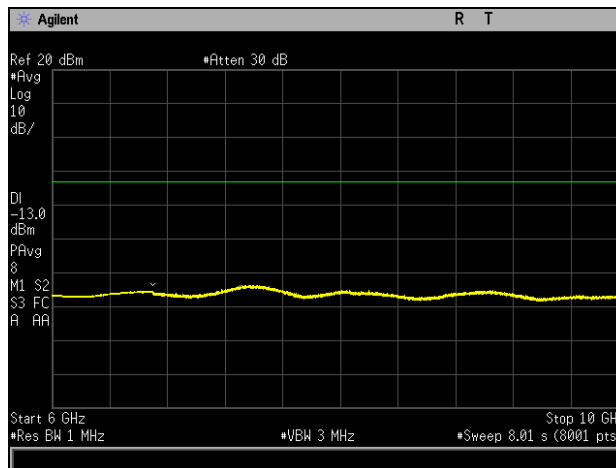
Plot 547. Conducted Spurious Emissions, Band 25, 30 MHz – 1 GHz, Mid Channel, 10



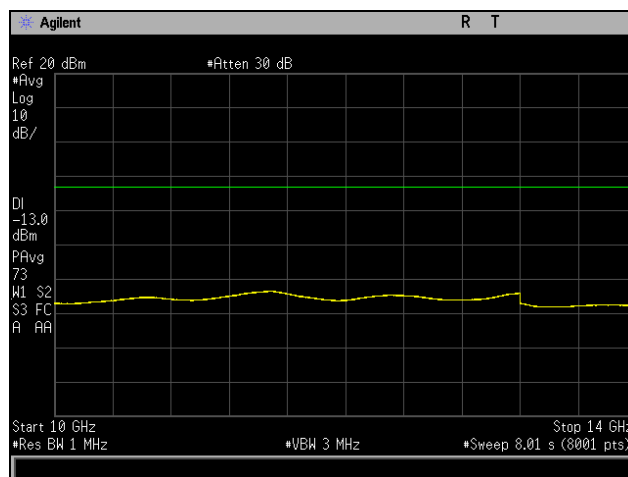
Plot 548. Conducted Spurious Emissions, Band 25, 1 GHz – 3 GHz, Mid Channel, 10



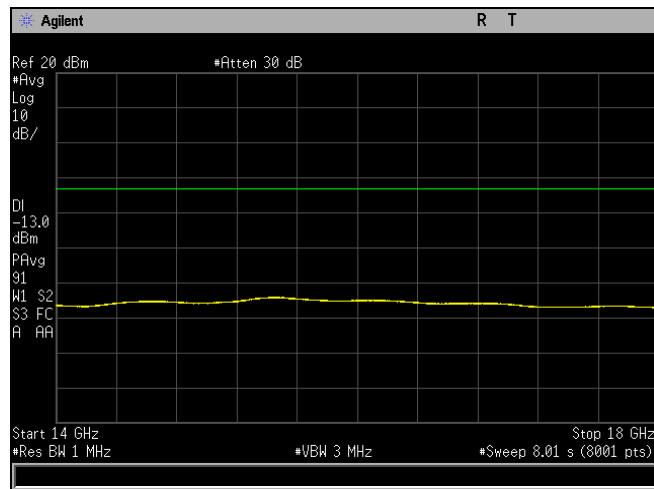
Plot 549. Conducted Spurious Emissions, Band 25, 3 GHz – 6 GHz, Mid Channel, 10



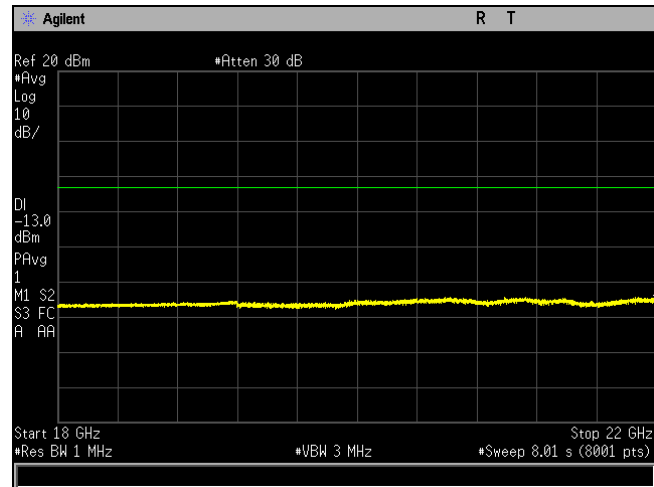
Plot 550. Conducted Spurious Emissions, Band 25, 6 GHz – 10 GHz, Mid Channel, 10



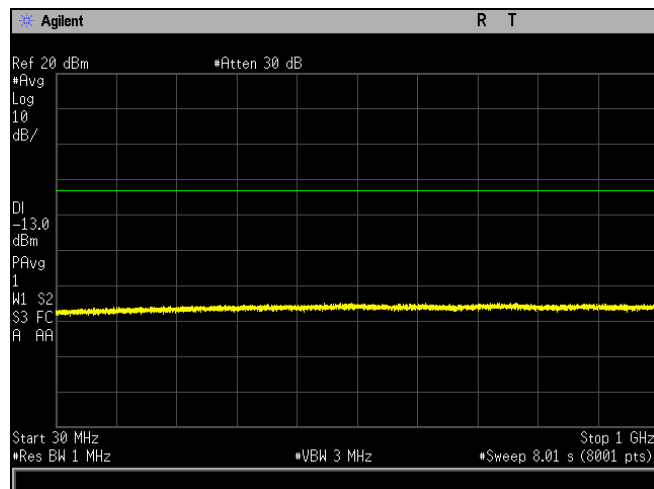
Plot 551. Conducted Spurious Emissions, Band 25, 10 GHz – 14 GHz, Mid Channel, 10



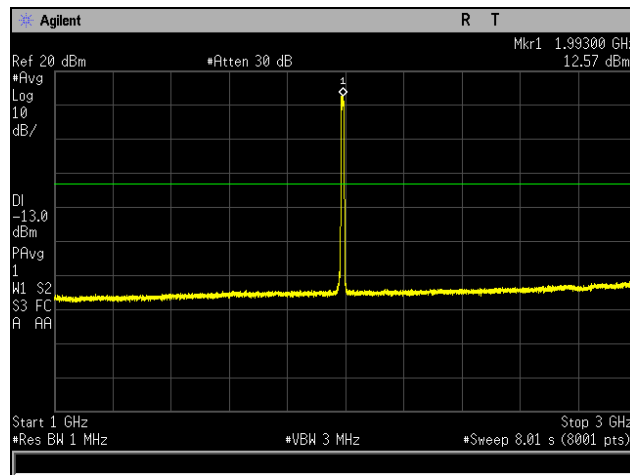
Plot 552. Conducted Spurious Emissions, Band 25, 14 GHz – 18 GHz, Mid Channel, 10



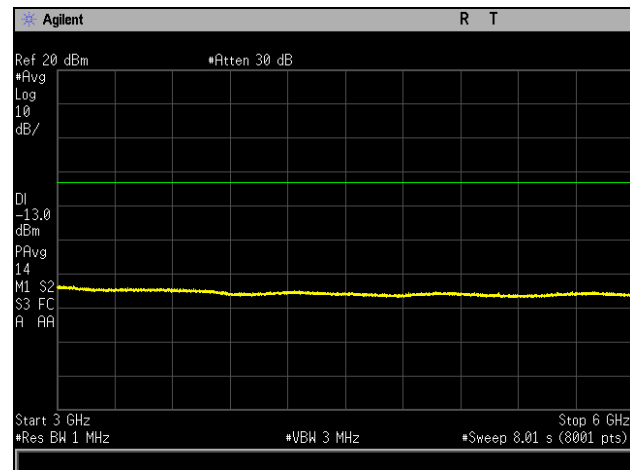
Plot 553. Conducted Spurious Emissions, Band 25, 18 GHz – 22 GHz, Mid Channel, 10



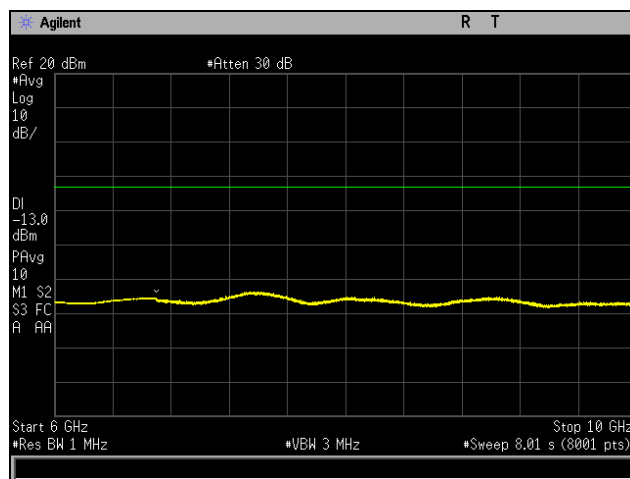
Plot 554. Conducted Spurious Emissions, Band 25, 30 MHz – 1 GHz, High Channel, 10



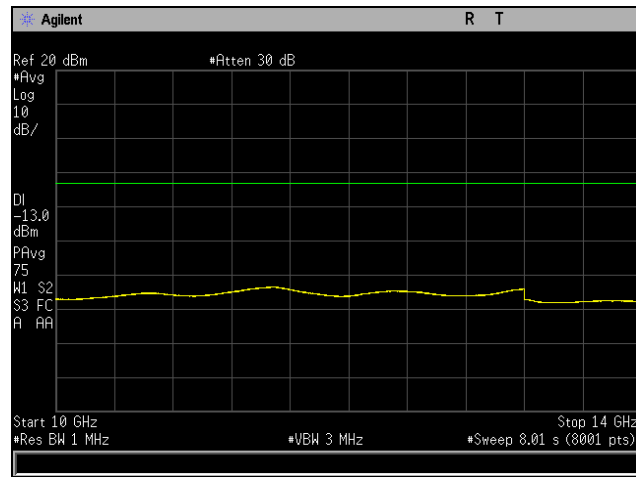
Plot 555. Conducted Spurious Emissions, Band 25, 1 GHz – 3 GHz, High Channel, 10



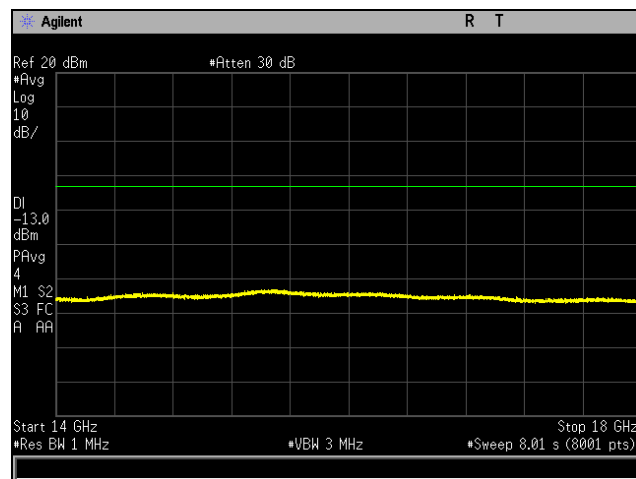
Plot 556. Conducted Spurious Emissions, Band 25, 3 GHz – 6 GHz, High Channel, 10



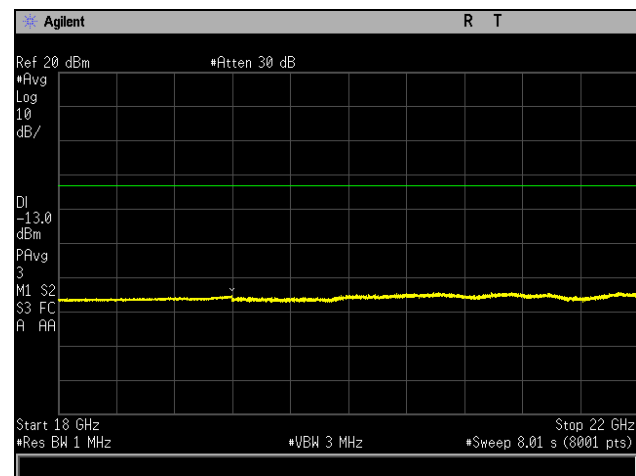
Plot 557. Conducted Spurious Emissions, Band 25, 6 GHz – 10 GHz, High Channel, 10



Plot 558. Conducted Spurious Emissions, Band 25, 10 GHz – 14 GHz, High Channel, 10

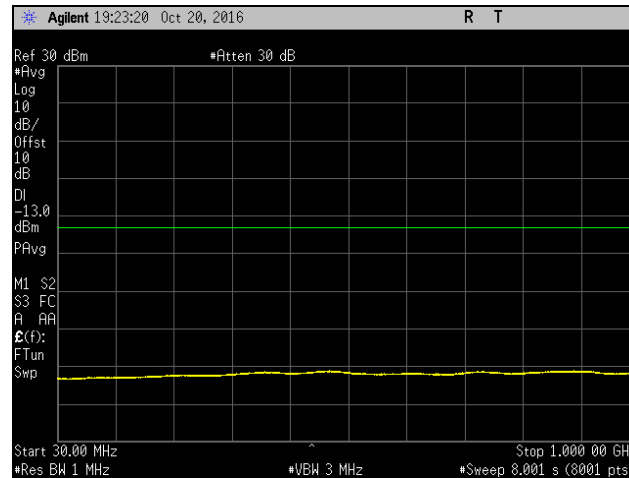


Plot 559. Conducted Spurious Emissions, Band 25, 14 GHz – 18 GHz, High Channel, 10

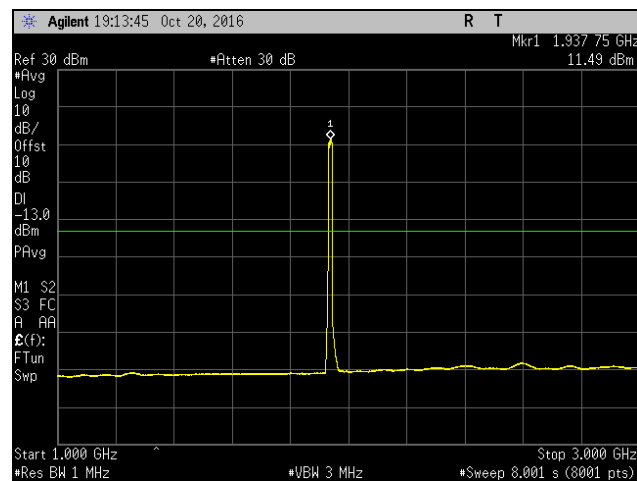


Plot 560. Conducted Spurious Emissions, Band 25, 18 GHz – 22 GHz, High Channel, 10

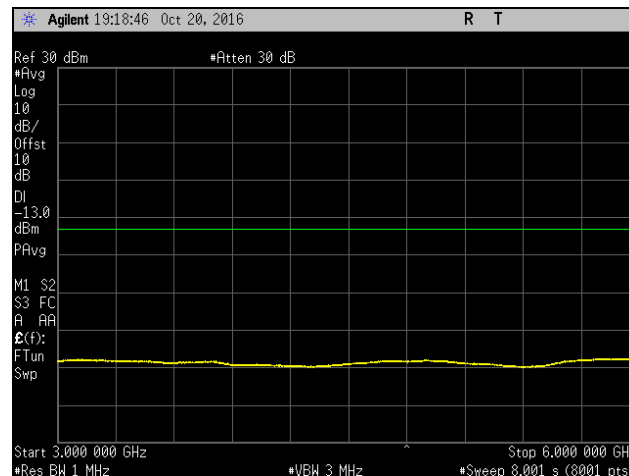
Conducted Spurious Emissions, Band 25, 15



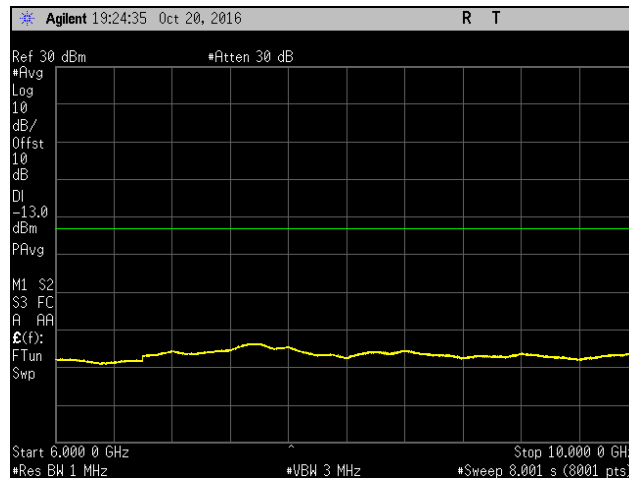
Plot 561. Conducted Spurious Emissions, Band 25, 30 MHz – 1 GHz, Low Channel, 15



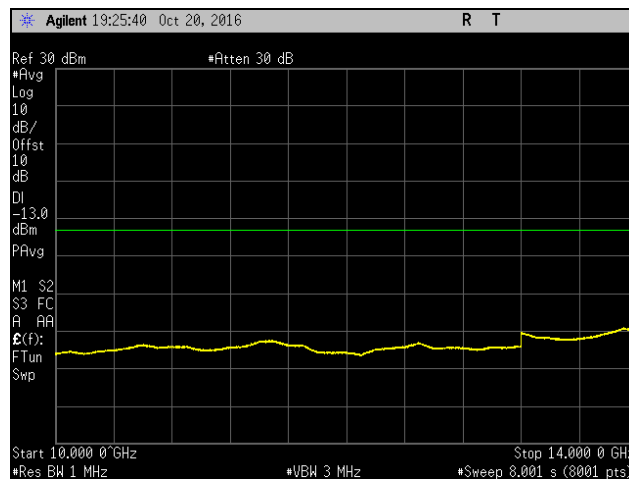
Plot 562. Conducted Spurious Emissions, Band 25, 1 GHz – 3 GHz, Low Channel, 15



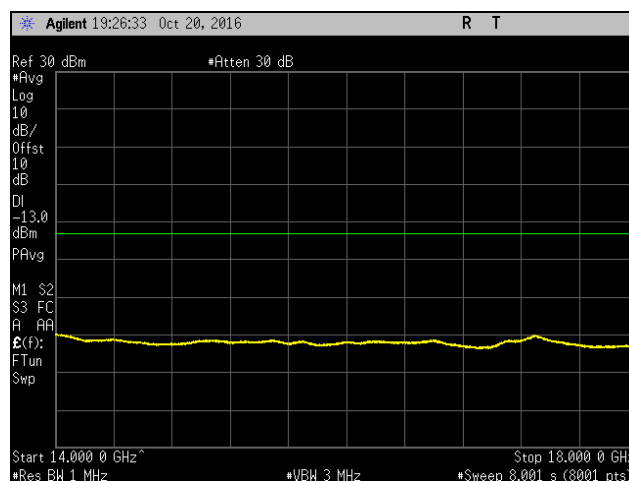
Plot 563. Conducted Spurious Emissions, Band 25, 3 GHz – 6 GHz, Low Channel, 15



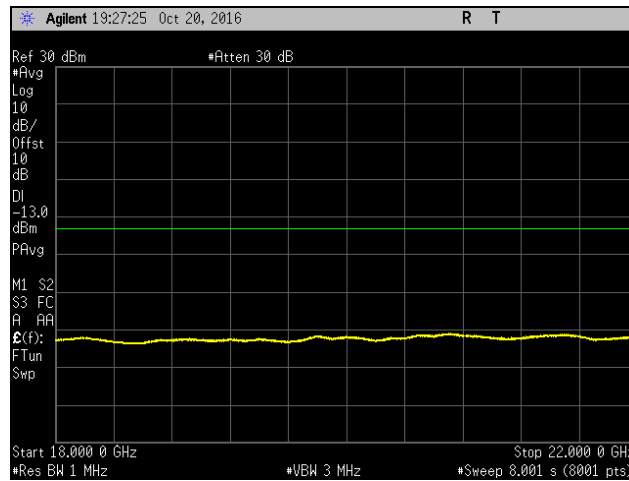
Plot 564. Conducted Spurious Emissions, Band 25, 6 GHz – 10 GHz, Low Channel, 15



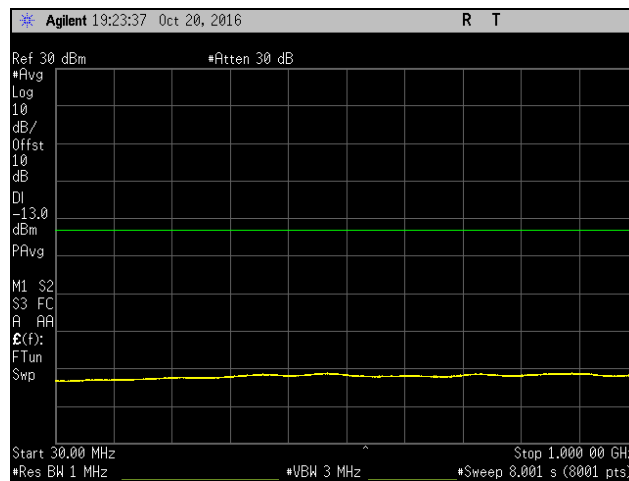
Plot 565. Conducted Spurious Emissions, Band 25, 10 GHz – 14 GHz, Low Channel, 15



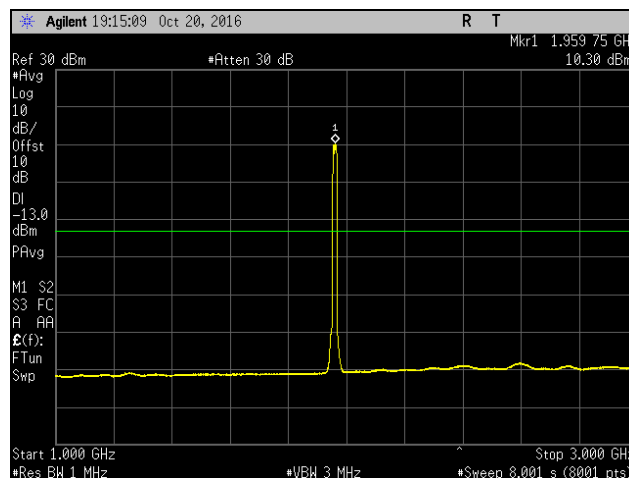
Plot 566. Conducted Spurious Emissions, Band 25, 14 GHz – 18 GHz, Low Channel, 15



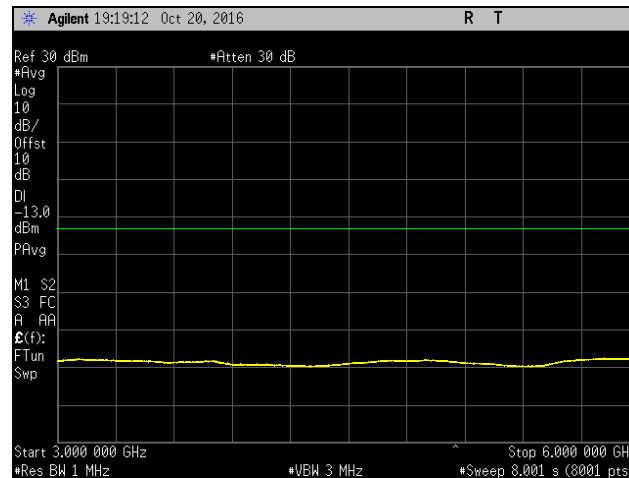
Plot 567. Conducted Spurious Emissions, Band 25, 18 GHz – 22 GHz, Low Channel, 15



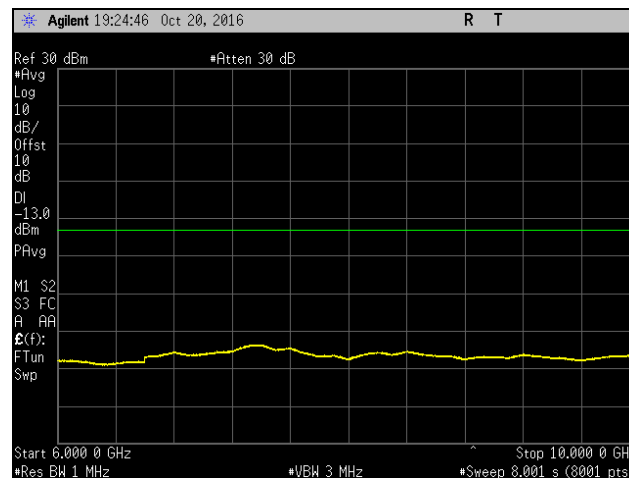
Plot 568. Conducted Spurious Emissions, Band 25, 30 MHz – 1 GHz, Mid Channel, 15



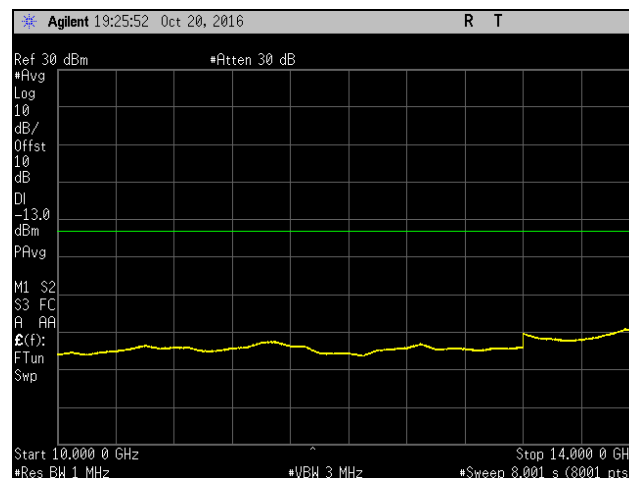
Plot 569. Conducted Spurious Emissions, Band 25, 1 GHz – 3 GHz, Mid Channel, 15



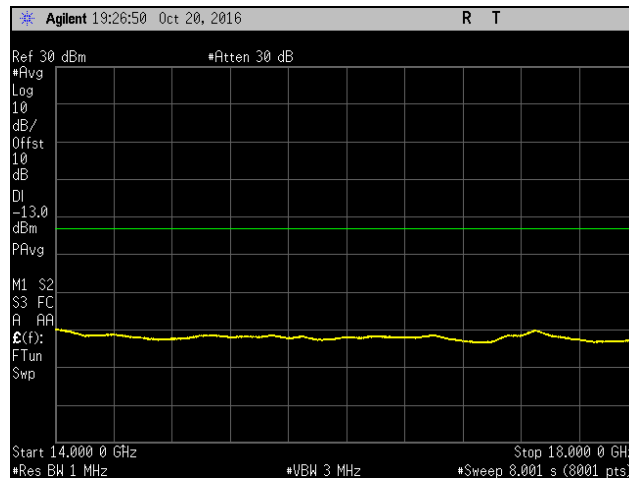
Plot 570. Conducted Spurious Emissions, Band 25, 3 GHz – 6 GHz, Mid Channel, 15



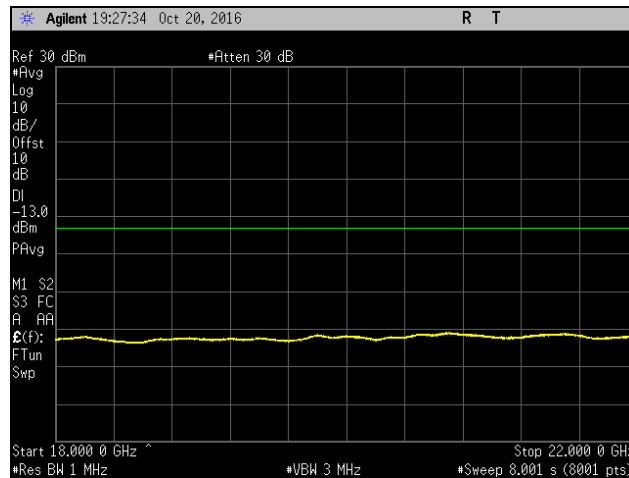
Plot 571. Conducted Spurious Emissions, Band 25, 6 GHz – 10 GHz, Mid Channel, 15



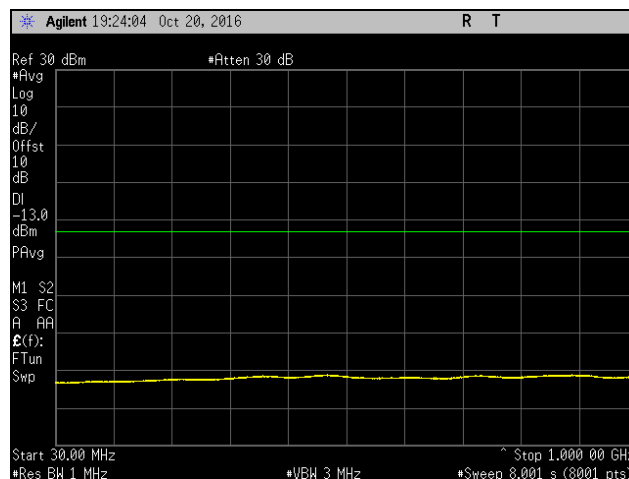
Plot 572. Conducted Spurious Emissions, Band 25, 10 GHz – 14 GHz, Mid Channel, 15



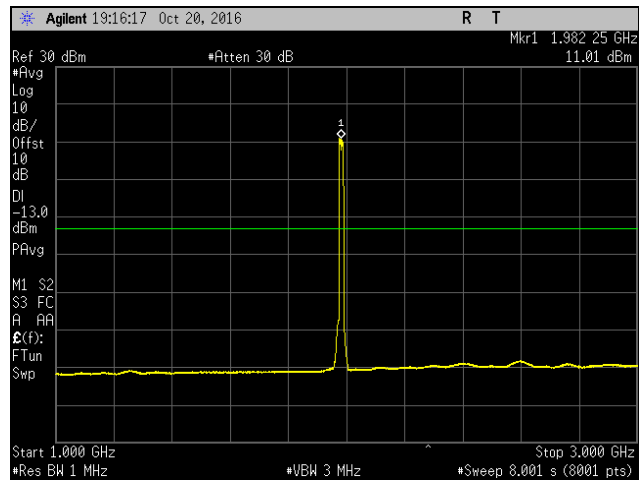
Plot 573. Conducted Spurious Emissions, Band 25, 14 GHz – 18 GHz, Mid Channel, 15



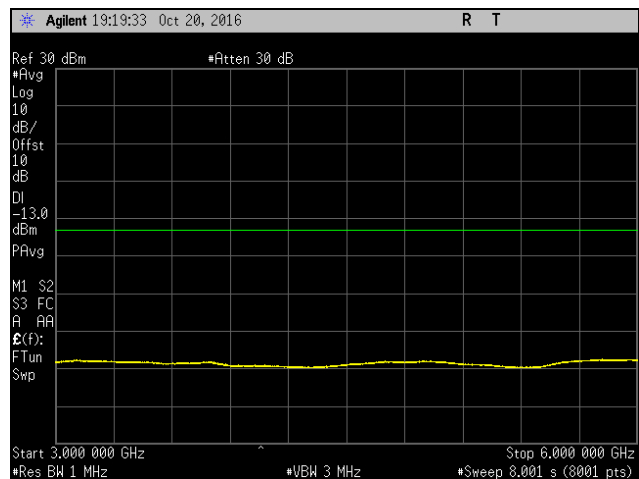
Plot 574. Conducted Spurious Emissions, Band 25, 18 GHz – 22 GHz, Mid Channel, 15



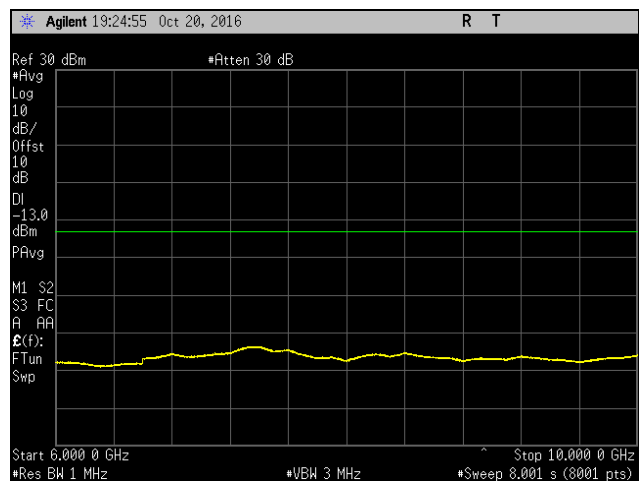
Plot 575. Conducted Spurious Emissions, Band 25, 30 MHz – 1 GHz, High Channel, 15



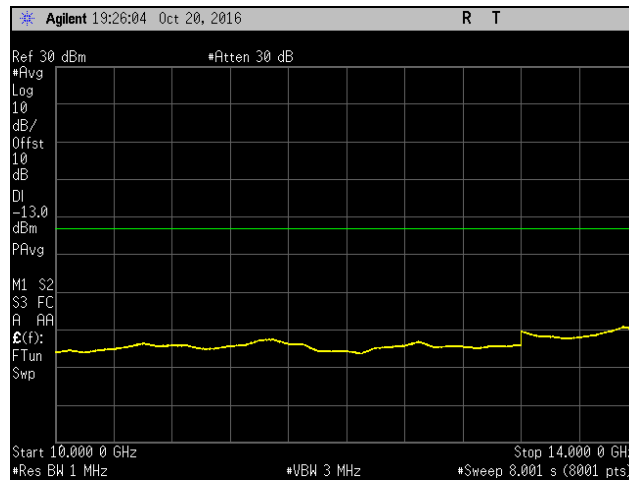
Plot 576. Conducted Spurious Emissions, Band 25, 1 GHz – 3 GHz, High Channel, 15



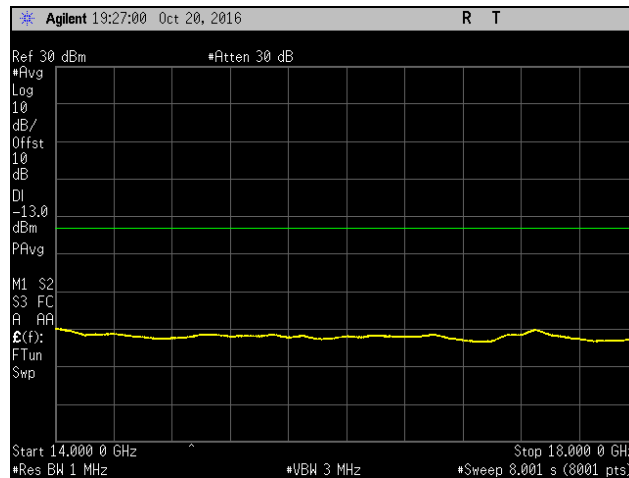
Plot 577. Conducted Spurious Emissions, Band 25, 3 GHz – 6 GHz, High Channel, 15



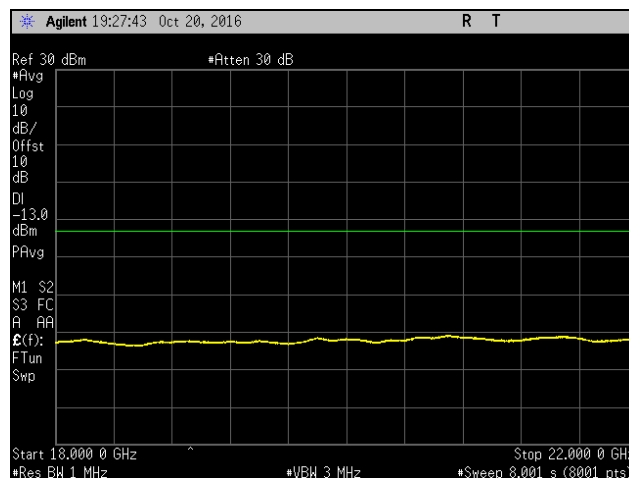
Plot 578. Conducted Spurious Emissions, Band 25, 6 GHz – 10 GHz, High Channel, 15



Plot 579. Conducted Spurious Emissions, Band 25, 10 GHz – 14 GHz, High Channel, 15

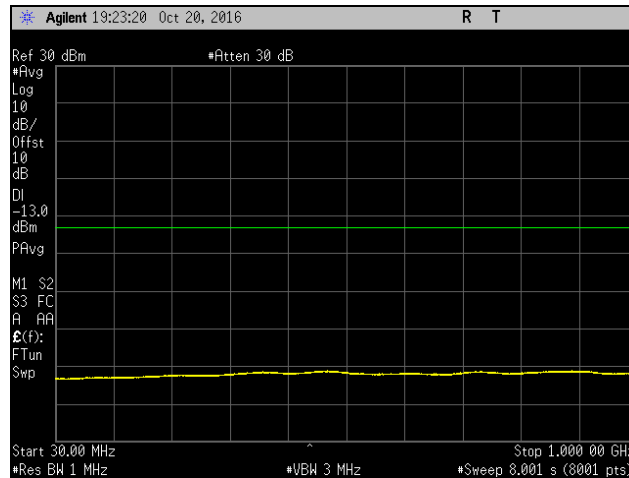


Plot 580. Conducted Spurious Emissions, Band 25, 14 GHz – 18 GHz, High Channel, 15

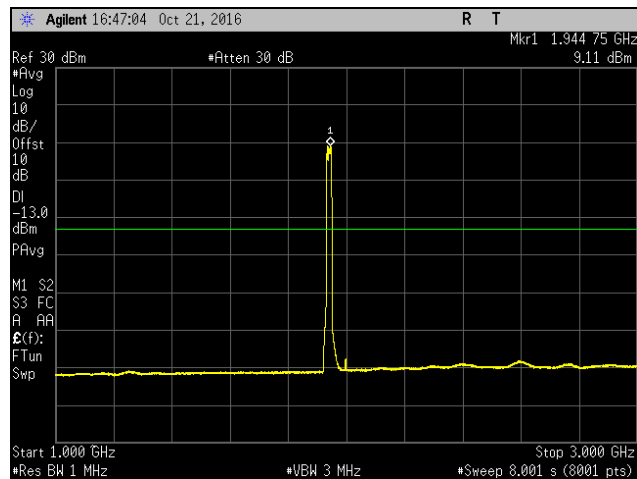


Plot 581. Conducted Spurious Emissions, Band 25, 18 GHz – 22 GHz, High Channel, 15

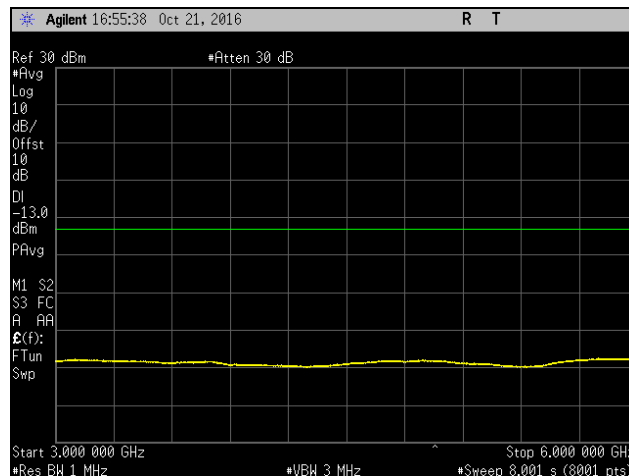
Conducted Spurious Emissions, Band 25, 20



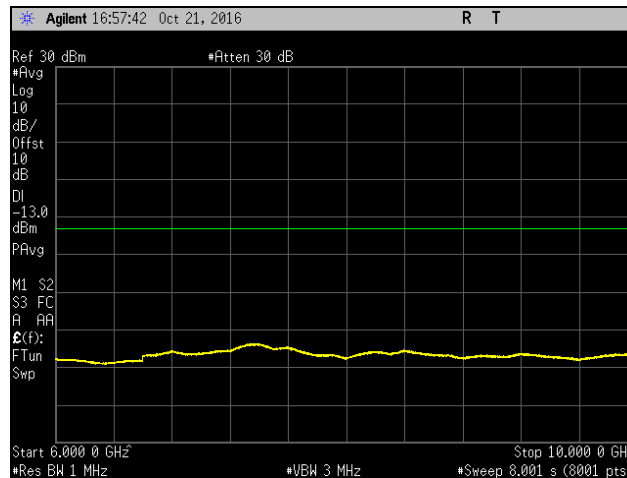
Plot 582. Conducted Spurious Emissions, Band 25, 30 MHz – 1 GHz, Low Channel, 20



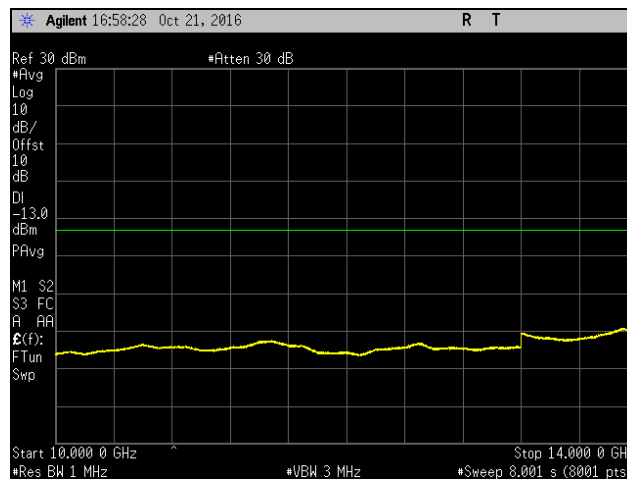
Plot 583. Conducted Spurious Emissions, Band 25, 1 GHz – 3 GHz, Low Channel, 20



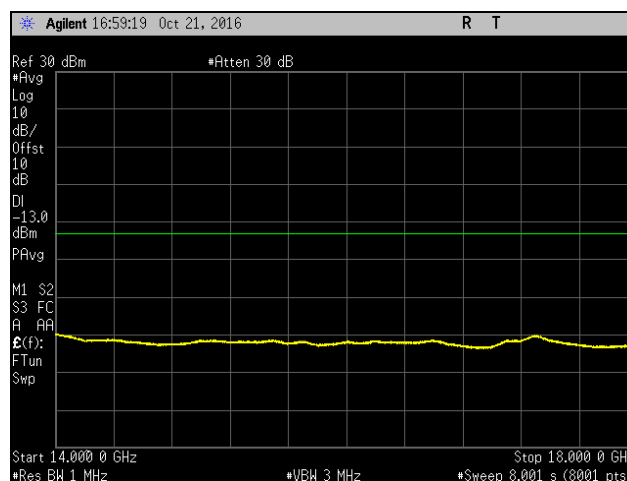
Plot 584. Conducted Spurious Emissions, Band 25, 3 GHz – 6 GHz, Low Channel, 20



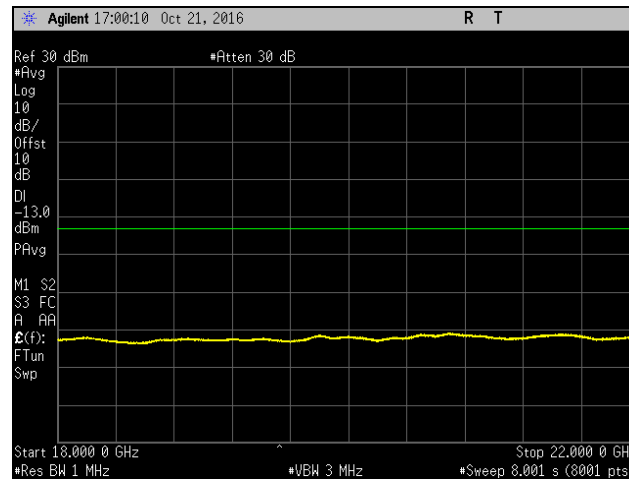
Plot 585. Conducted Spurious Emissions, Band 25, 6 GHz – 10 GHz, Low Channel, 20



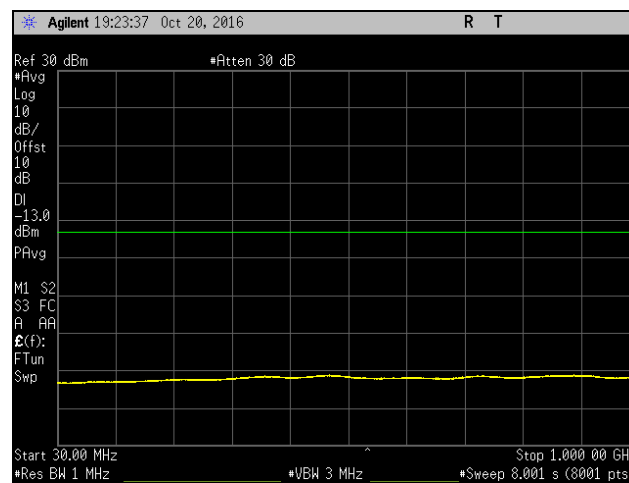
Plot 586. Conducted Spurious Emissions, Band 25, 10 GHz – 14 GHz, Low Channel, 20



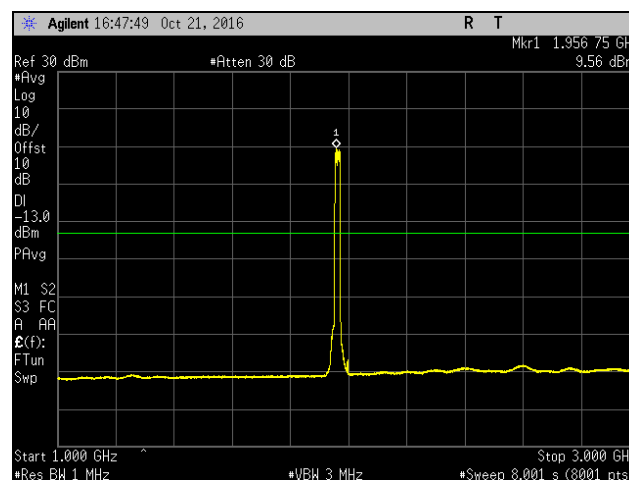
Plot 587. Conducted Spurious Emissions, Band 25, 14 GHz – 18 GHz, Low Channel, 20



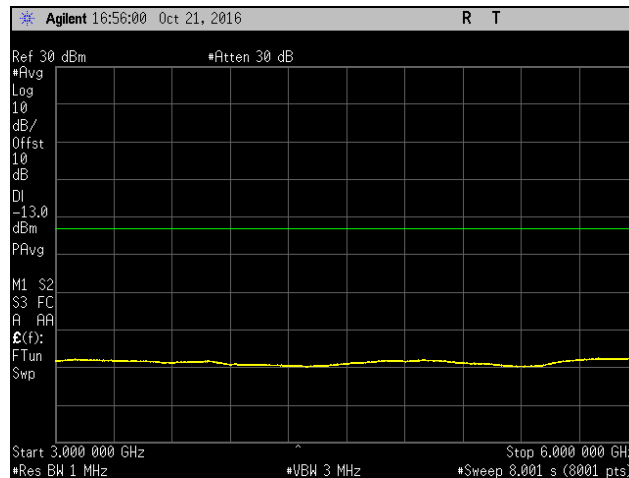
Plot 588. Conducted Spurious Emissions, Band 25, 18 GHz – 22 GHz, Low Channel, 20



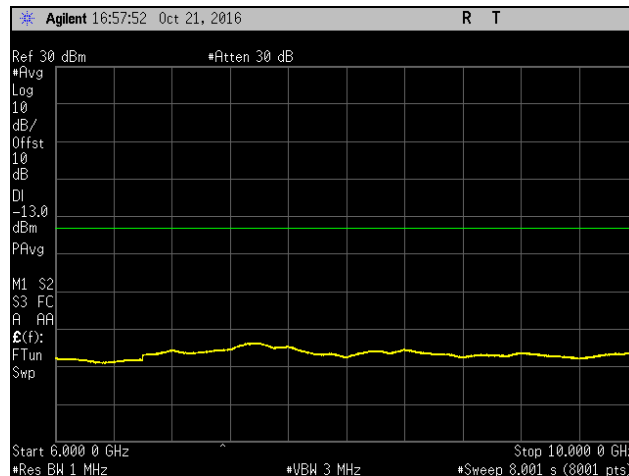
Plot 589. Conducted Spurious Emissions, Band 25, 30 MHz – 1 GHz, Mid Channel, 20



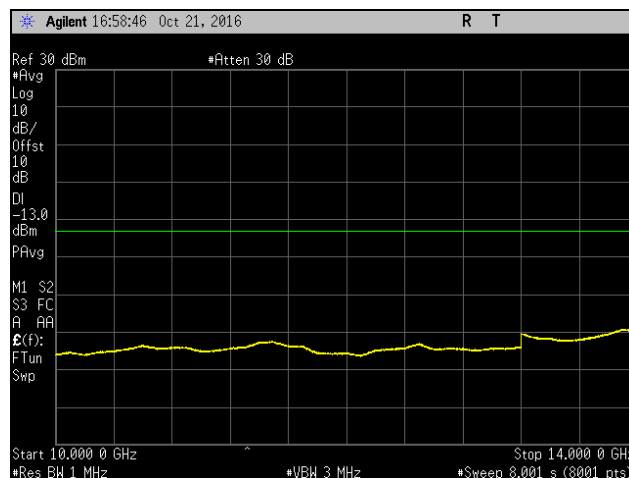
Plot 590. Conducted Spurious Emissions, Band 25, 1 GHz – 3 GHz, Mid Channel, 20



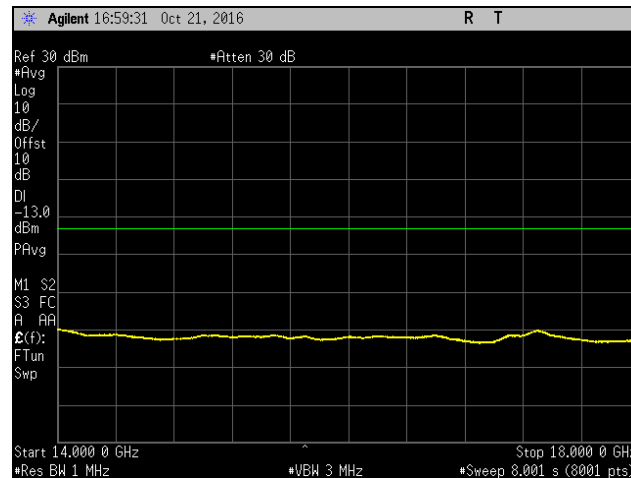
Plot 591. Conducted Spurious Emissions, Band 25, 3 GHz – 6 GHz, Mid Channel, 20



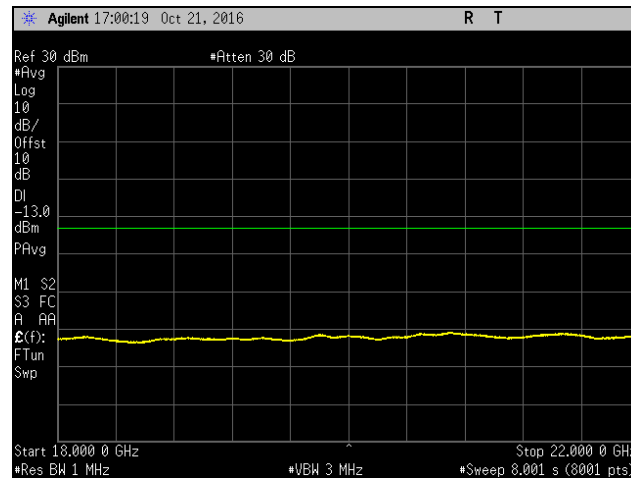
Plot 592. Conducted Spurious Emissions, Band 25, 6 GHz – 10 GHz, Mid Channel, 20



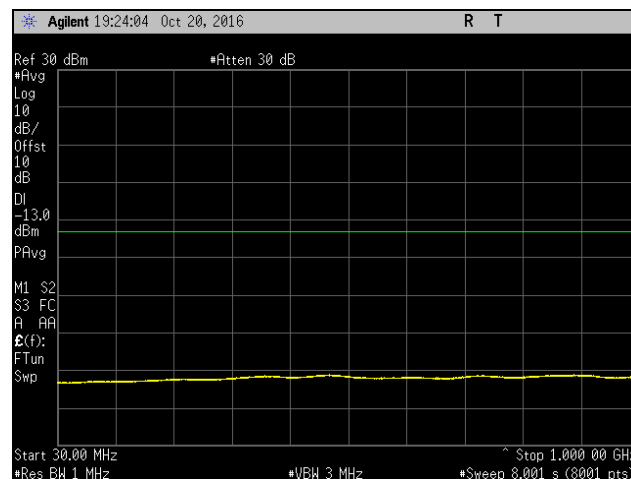
Plot 593. Conducted Spurious Emissions, Band 25, 10 GHz – 14 GHz, Mid Channel, 20



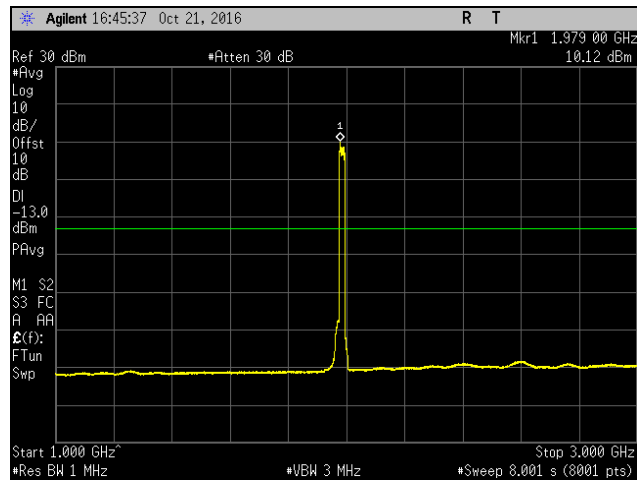
Plot 594. Conducted Spurious Emissions, Band 25, 14 GHz – 18 GHz, Mid Channel, 20



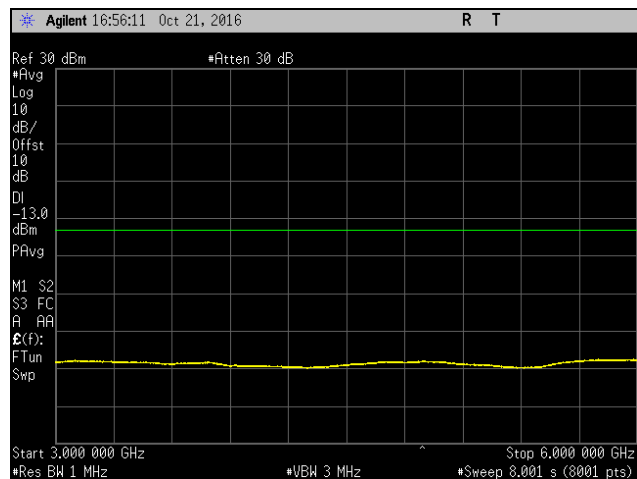
Plot 595. Conducted Spurious Emissions, Band 25, 18 GHz – 22 GHz, Mid Channel, 20



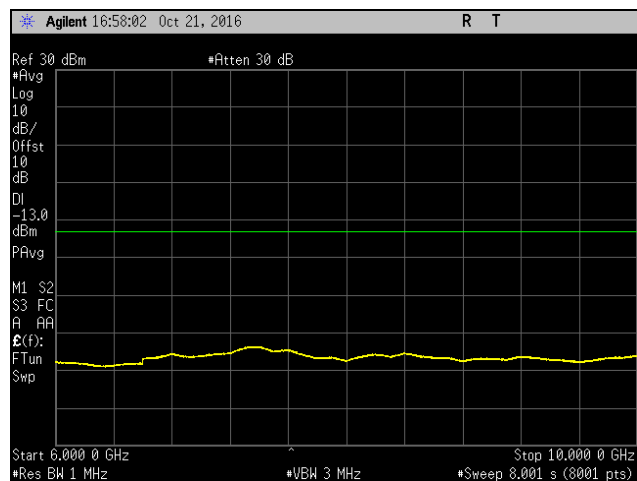
Plot 596. Conducted Spurious Emissions, Band 25, 30 MHz – 1 GHz, High Channel, 20



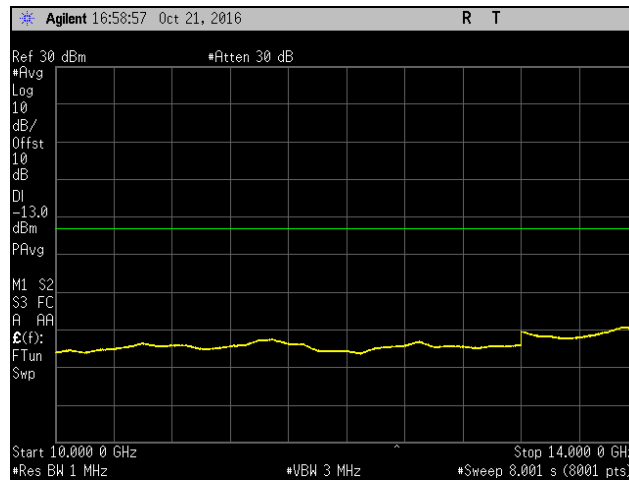
Plot 597. Conducted Spurious Emissions, Band 25, 1 GHz – 3 GHz, High Channel, 20



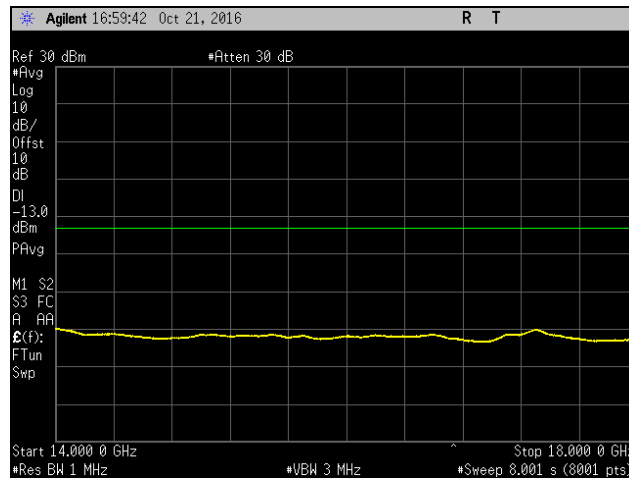
Plot 598. Conducted Spurious Emissions, Band 25, 3 GHz – 6 GHz, High Channel, 20



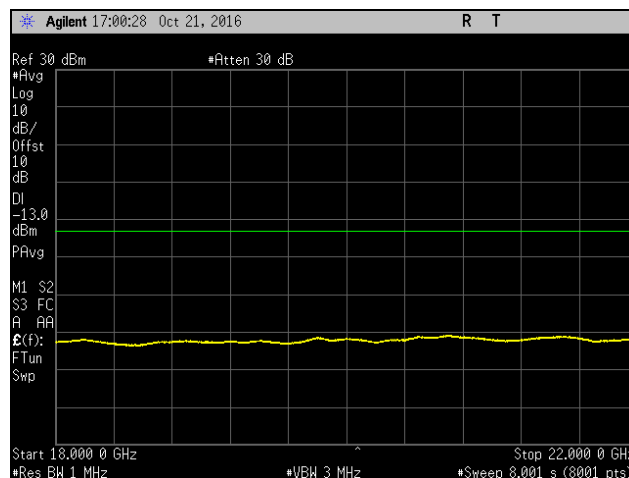
Plot 599. Conducted Spurious Emissions, Band 25, 6 GHz – 10 GHz, High Channel, 20



Plot 600. Conducted Spurious Emissions, Band 25, 10 GHz – 14 GHz, High Channel, 20

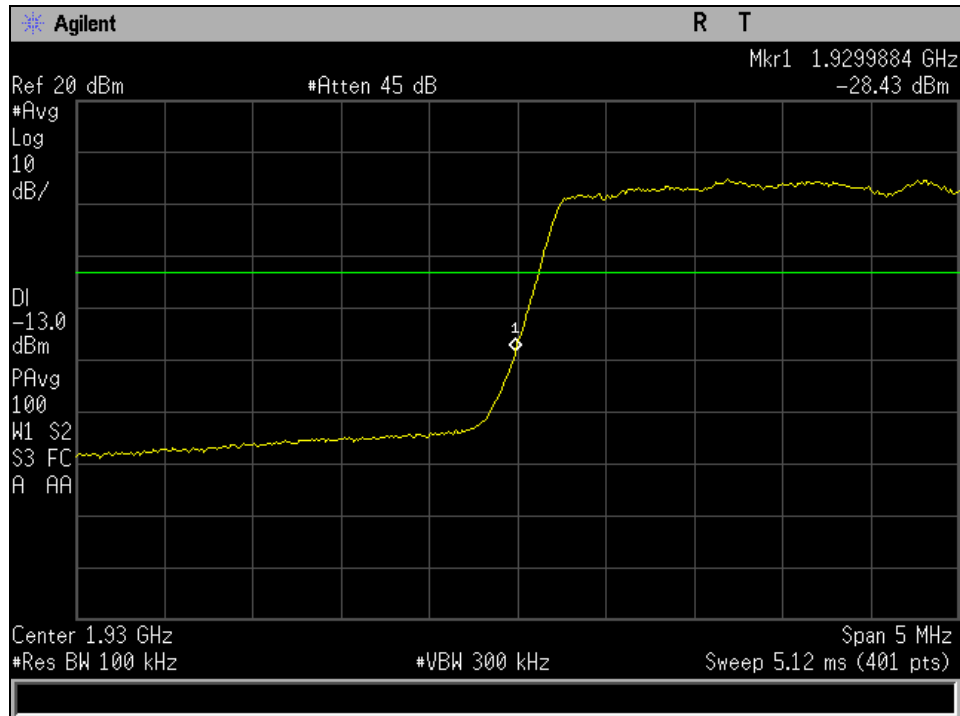


Plot 601. Conducted Spurious Emissions, Band 25, 14 GHz – 18 GHz, High Channel, 20

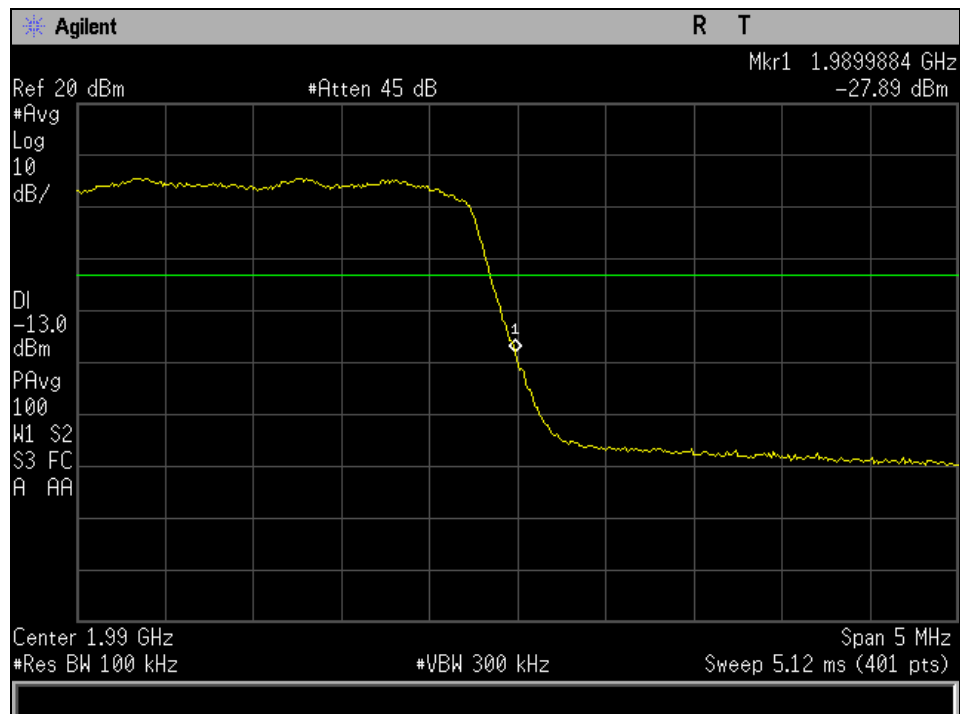


Plot 602. Conducted Spurious Emissions, Band 25, 18 GHz – 22 GHz, High Channel, 20

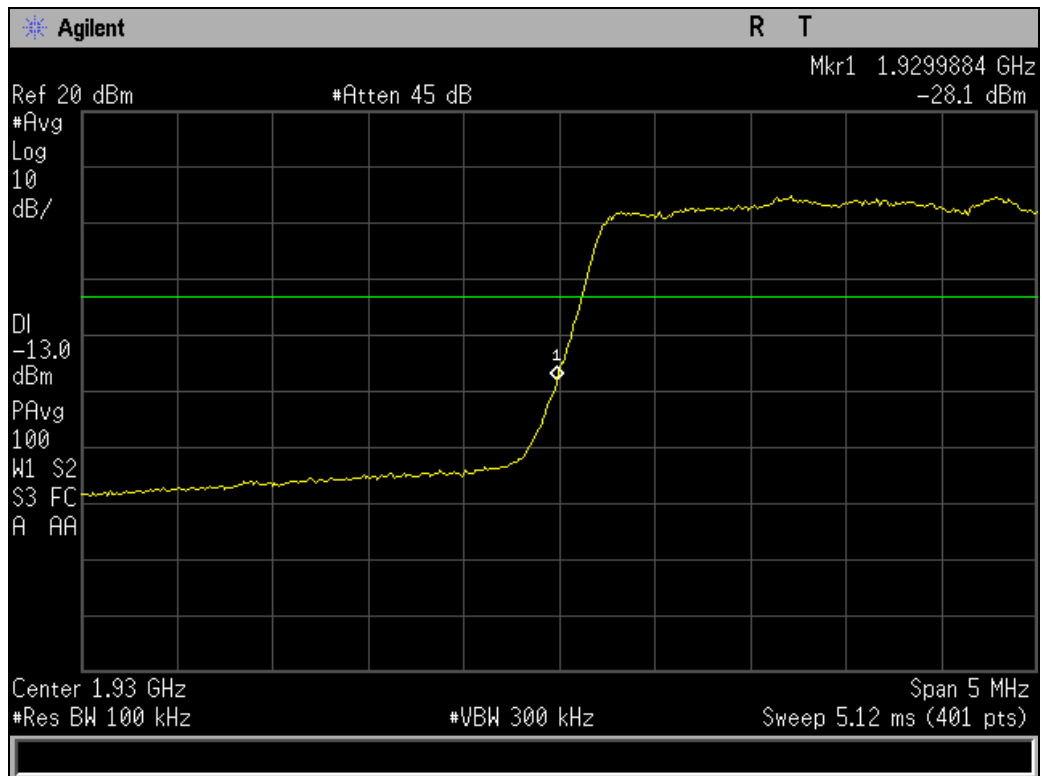
Band Edge, Band 2, 5, Port 1



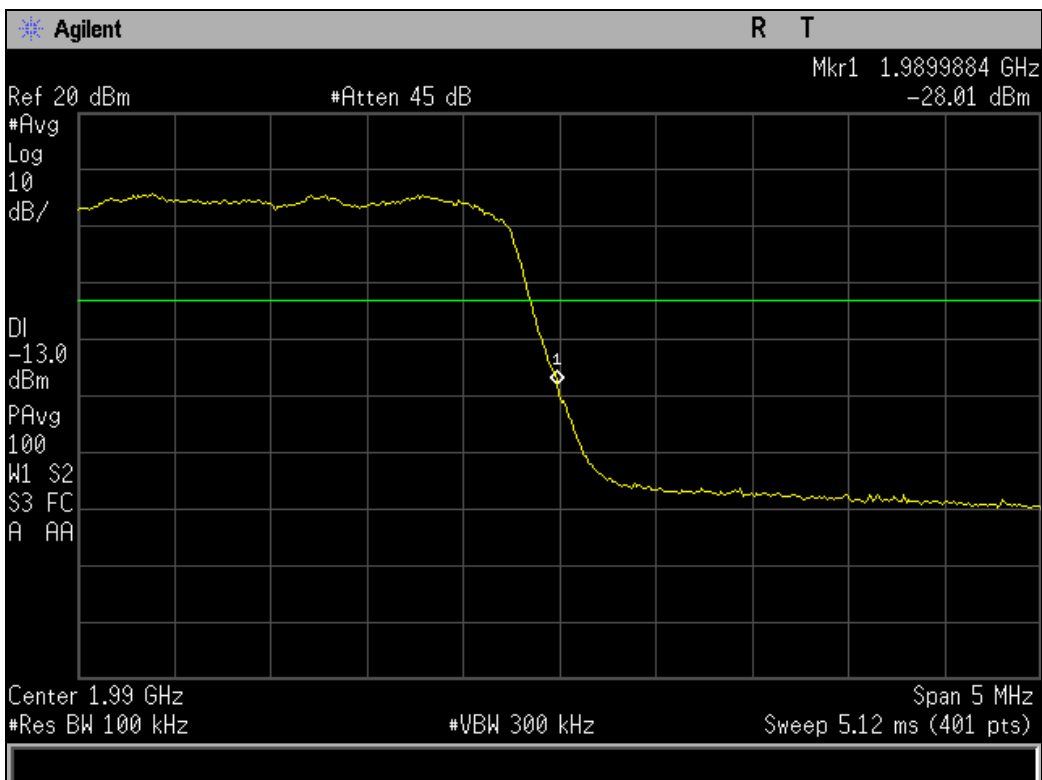
Plot 603. Conducted Band Edge, Band 2, QAM-16, Low Channel, 5, Port 1



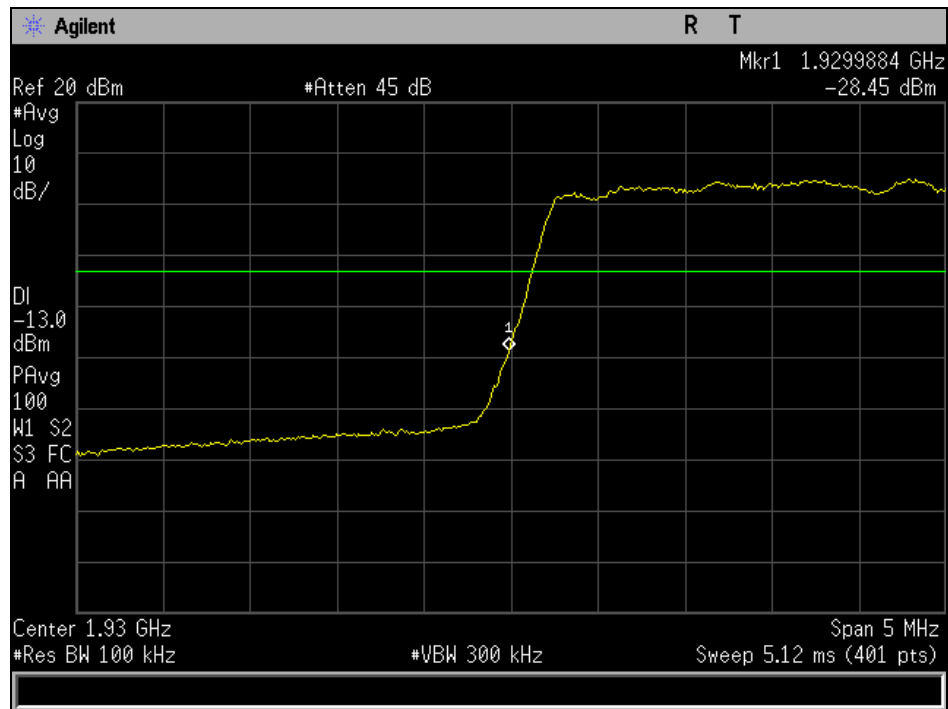
Plot 604. Conducted Band Edge, Band 2, QAM-16, High Channel, 5, Port 1



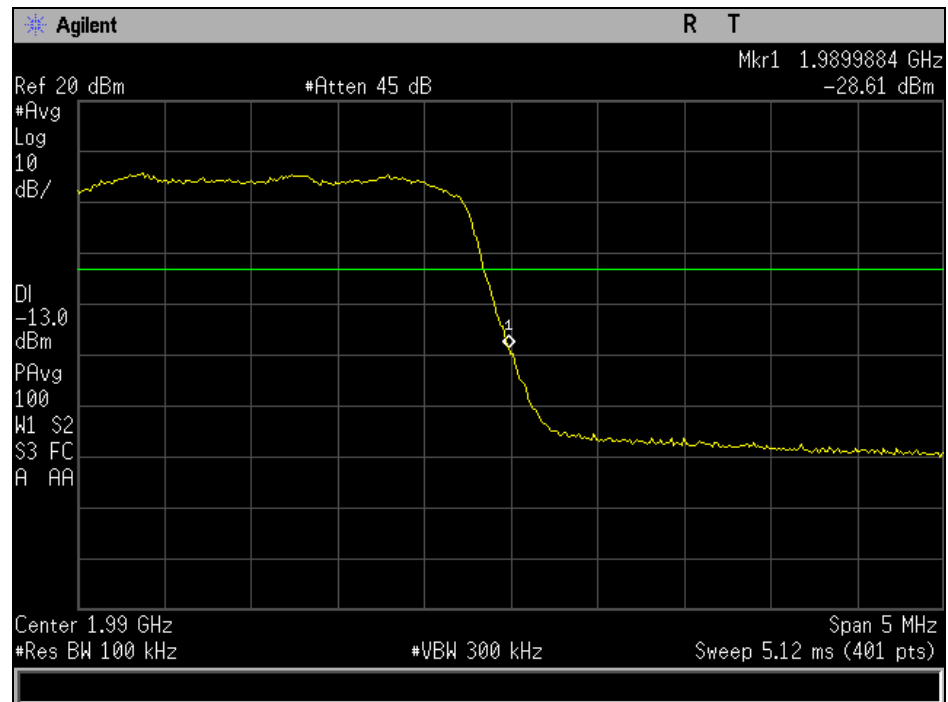
Plot 605. Conducted Band Edge, Band 2, QAM-64, Low Channel, 5, Port 1



Plot 606. Conducted Band Edge, Band 2, QAM-64, High Channel, 5, Port 1

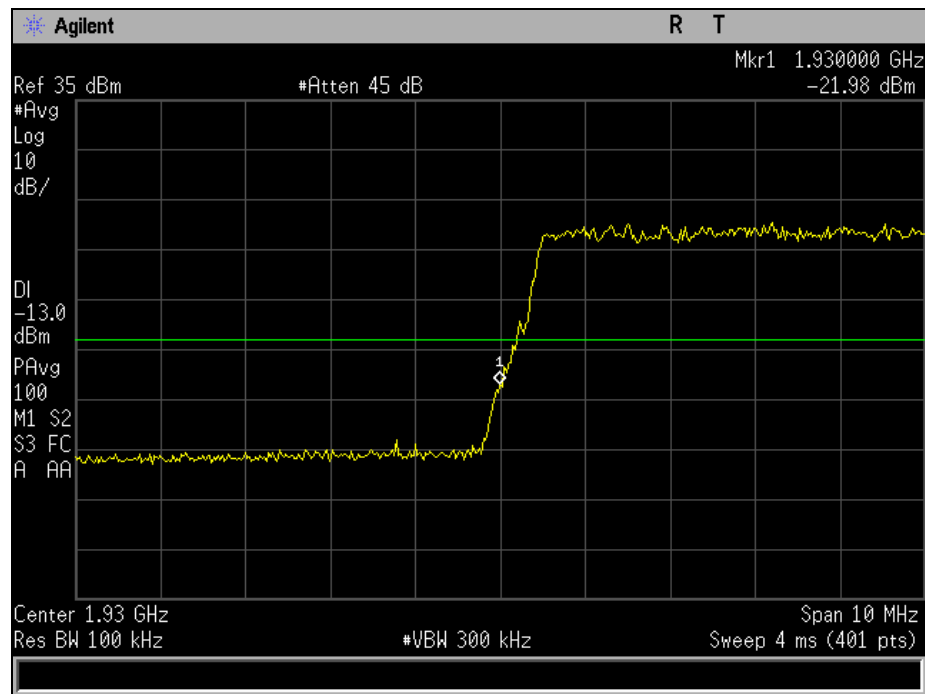


Plot 607. Conducted Band Edge, Band 2, QPSK, Low Channel, 5, Port 1

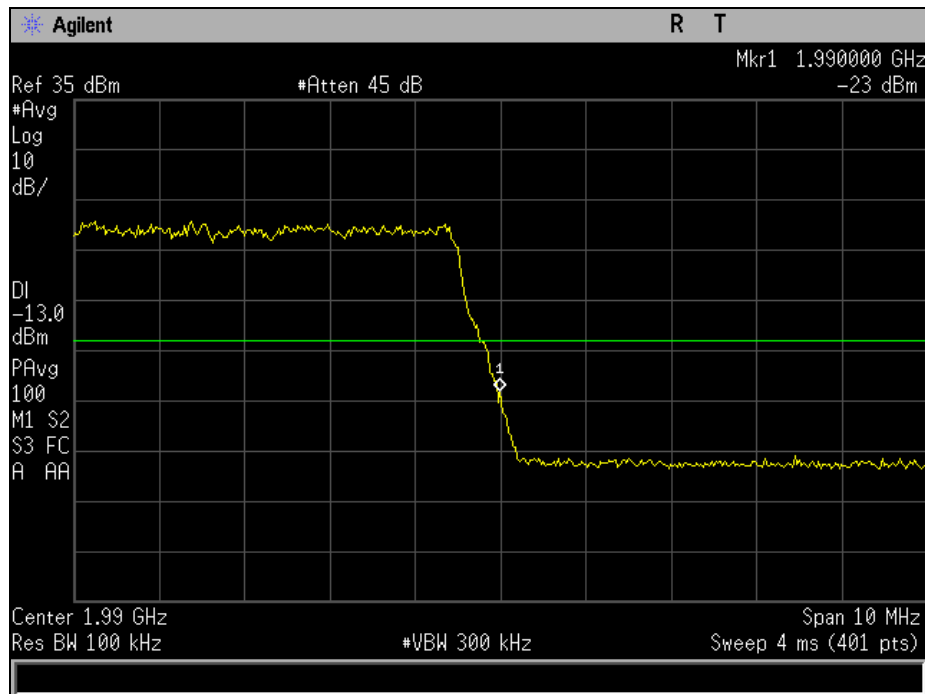


Plot 608. Conducted Band Edge, Band 2, QPSK, High Channel, 5, Port 1

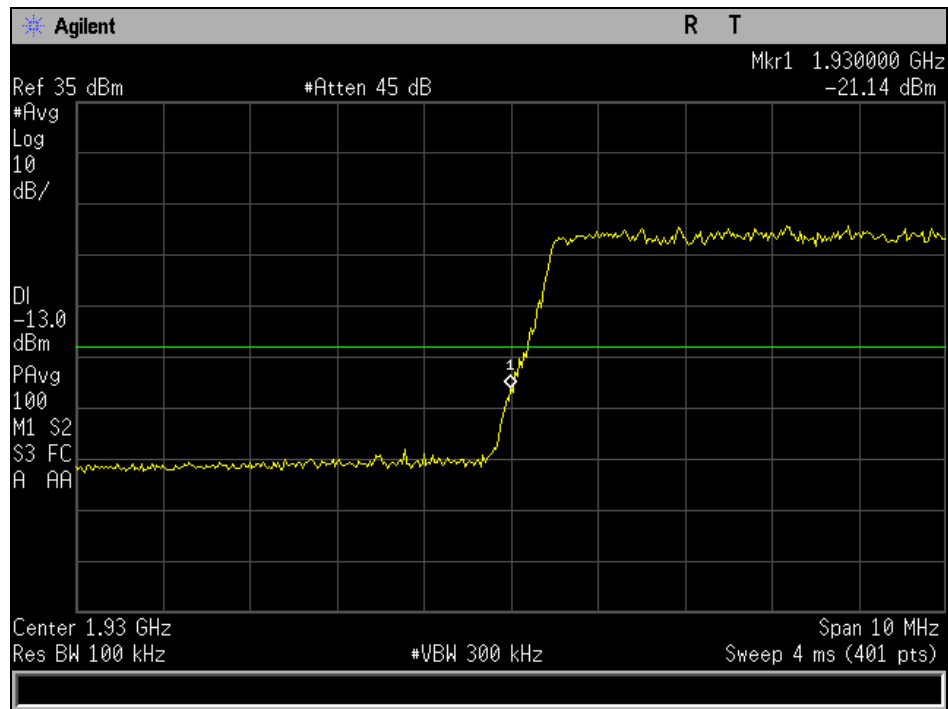
Band Edge, Band 2, 10, Port 1



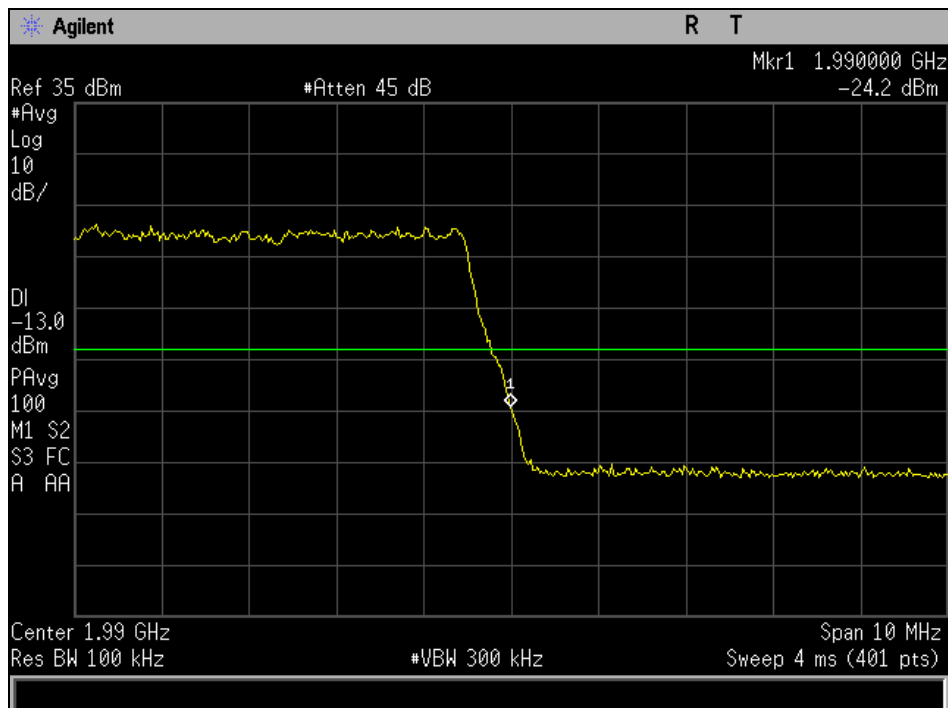
Plot 609. Conducted Band Edge, Band 2, QAM-16, Low Channel, 10, Port 1



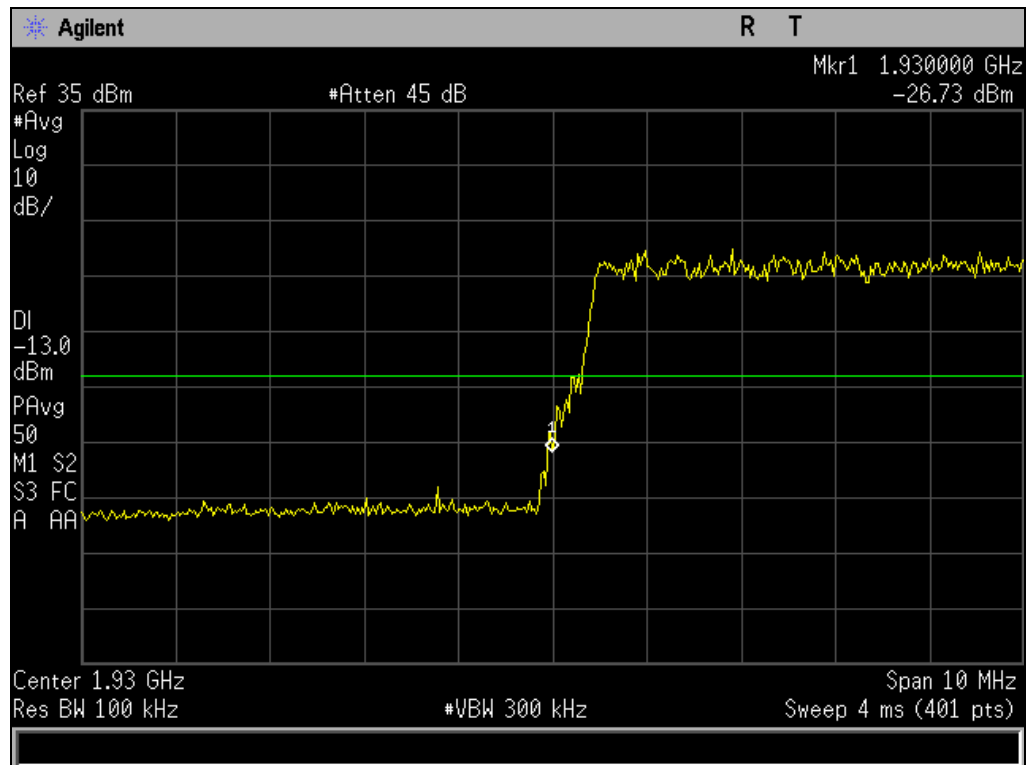
Plot 610. Conducted Band Edge, Band 2, QAM-16, High Channel, 10, Port 1



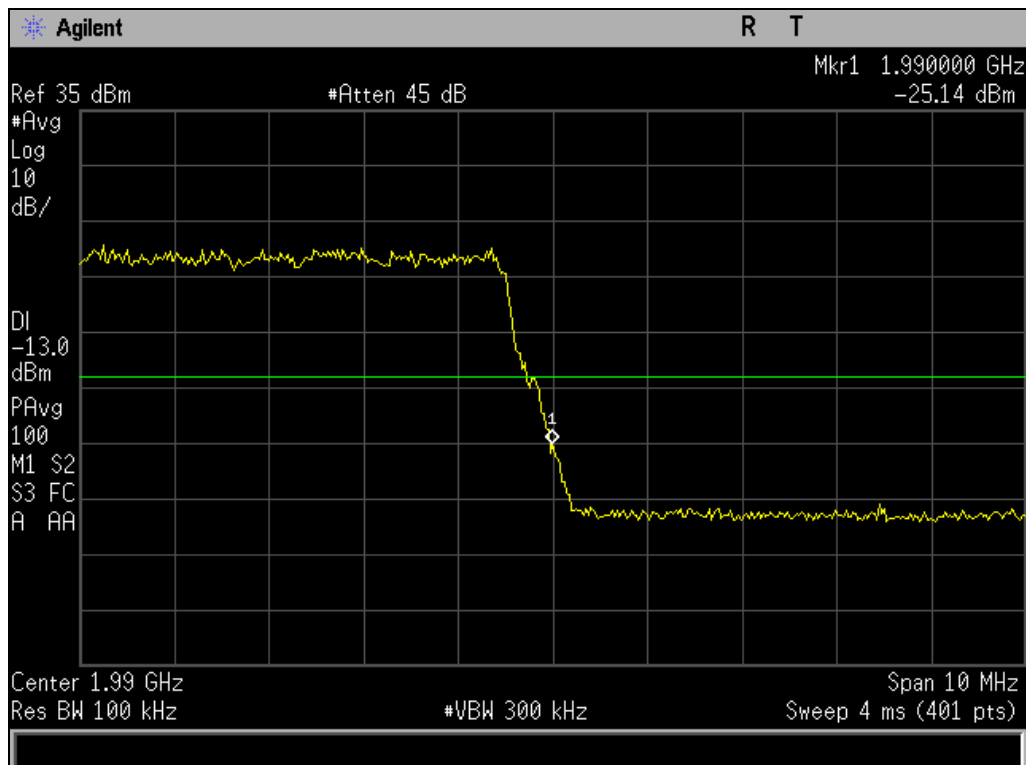
Plot 611. Conducted Band Edge, Band 2, QAM-64, Low Channel, 10, Port 1



Plot 612. Conducted Band Edge, Band 2, QAM-64, High Channel, 10, Port 1

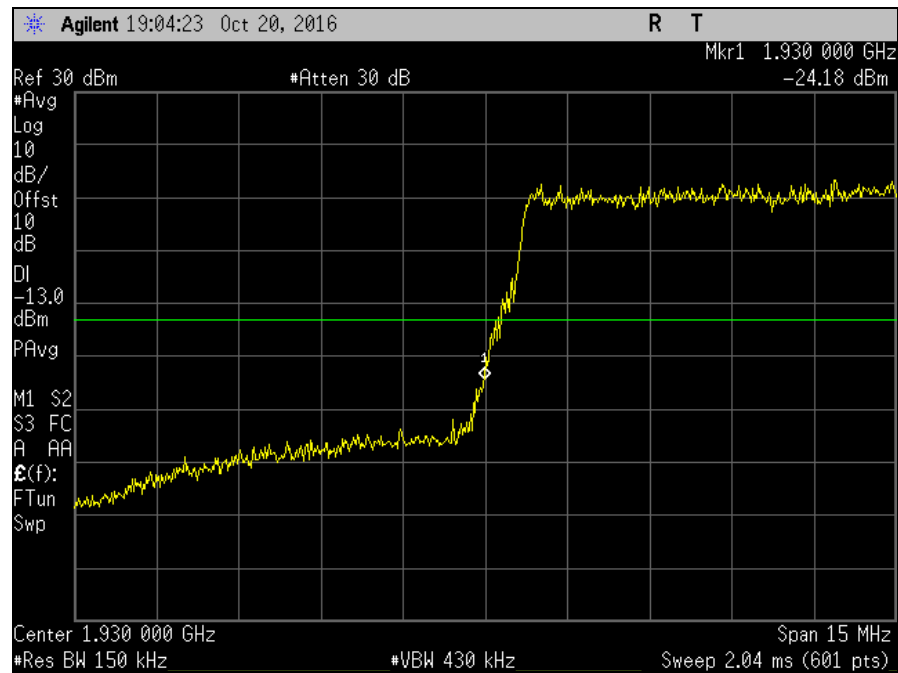


Plot 613. Conducted Band Edge, Band 2, QPSK, Low Channel, 10, Port 1

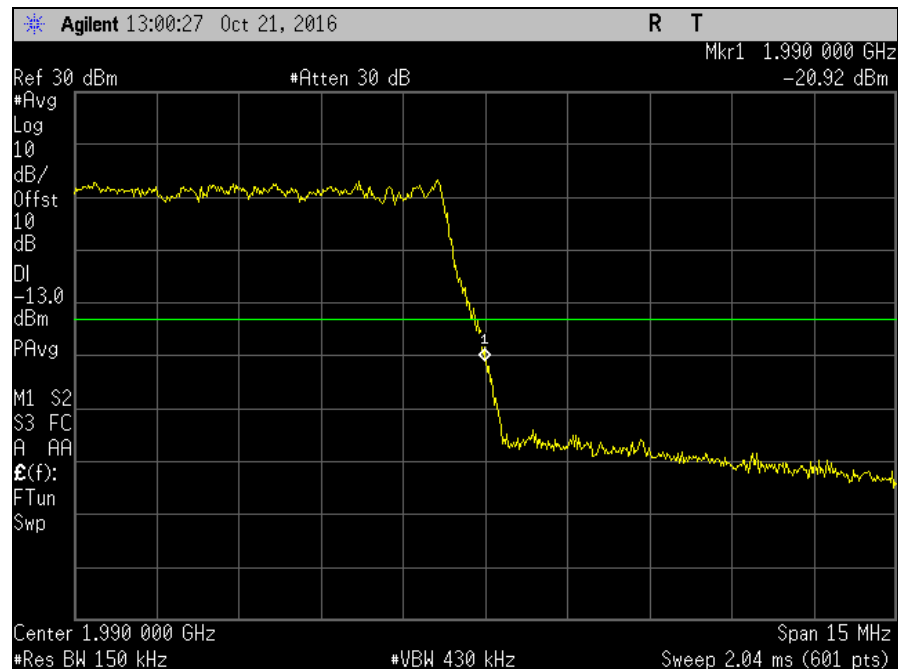


Plot 614. Conducted Band Edge, Band 2, QPSK, High Channel, 10, Port 1

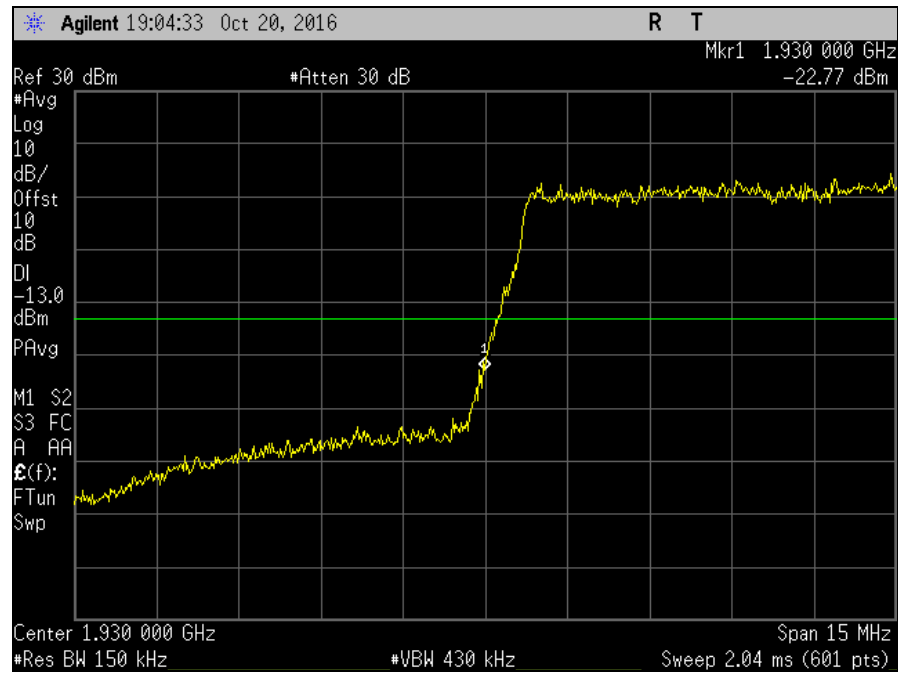
Band Edge, Band 2, 15, Port 1



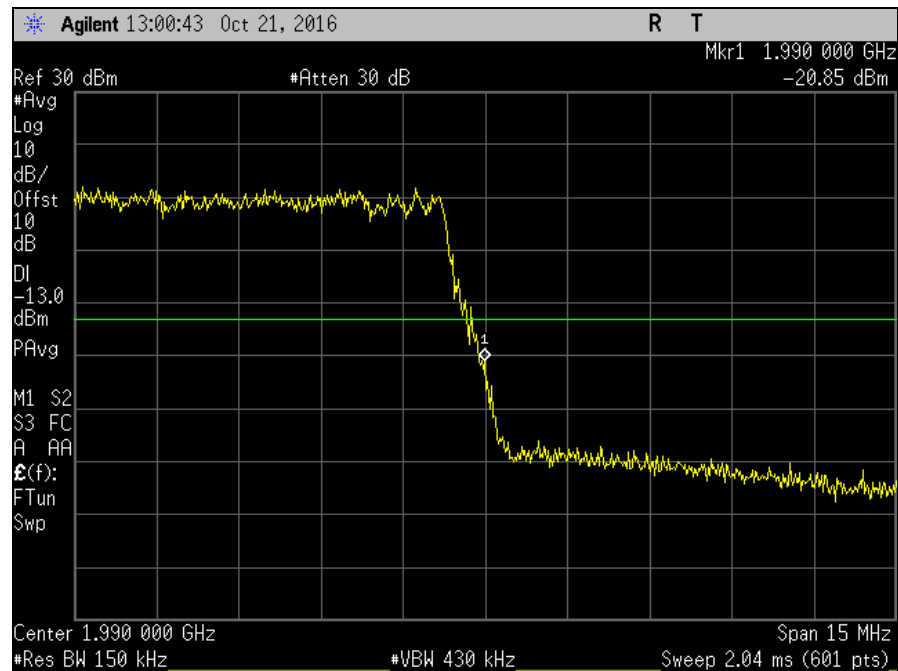
Plot 615. Conducted Band Edge, Band 2, QAM-16, Low Channel, 15, Port 1



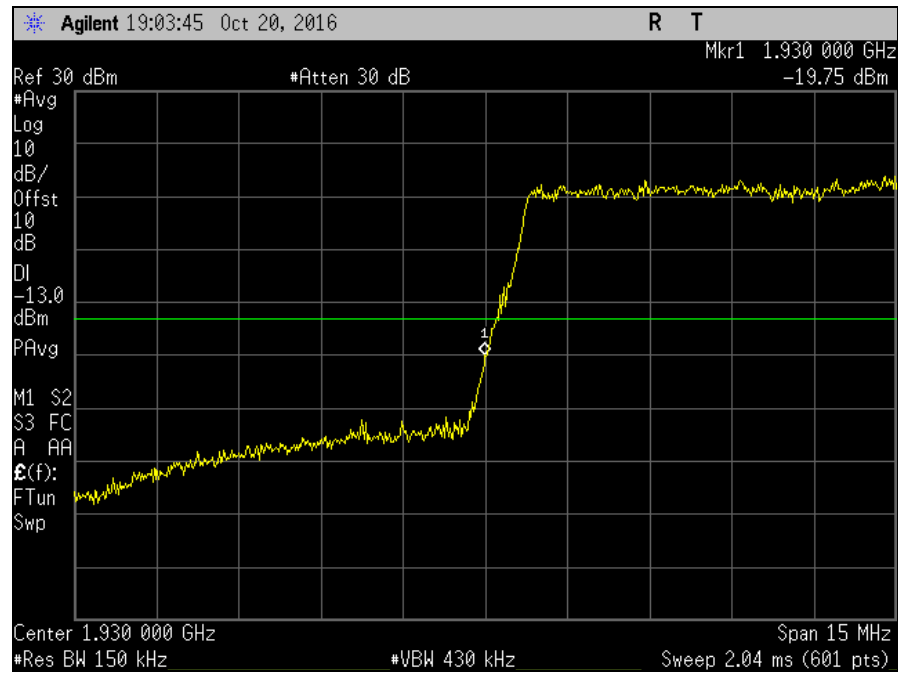
Plot 616. Conducted Band Edge, Band 2, QAM-16, High Channel, 15, Port 1



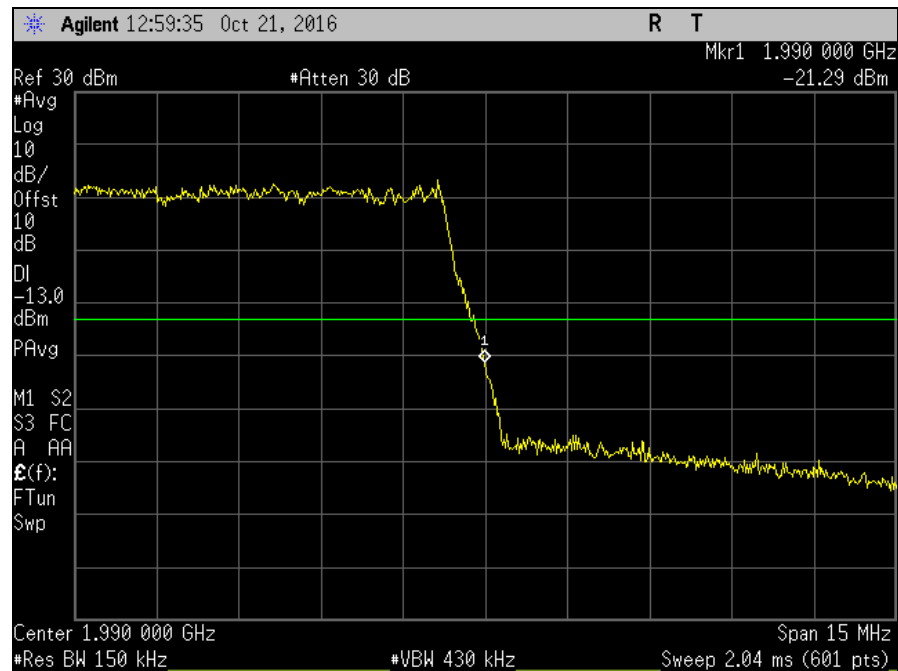
Plot 617. Conducted Band Edge, Band 2, QAM-64, Low Channel, 15, Port 1



Plot 618. Conducted Band Edge, Band 2, QAM-64, High Channel, 15, Port 1

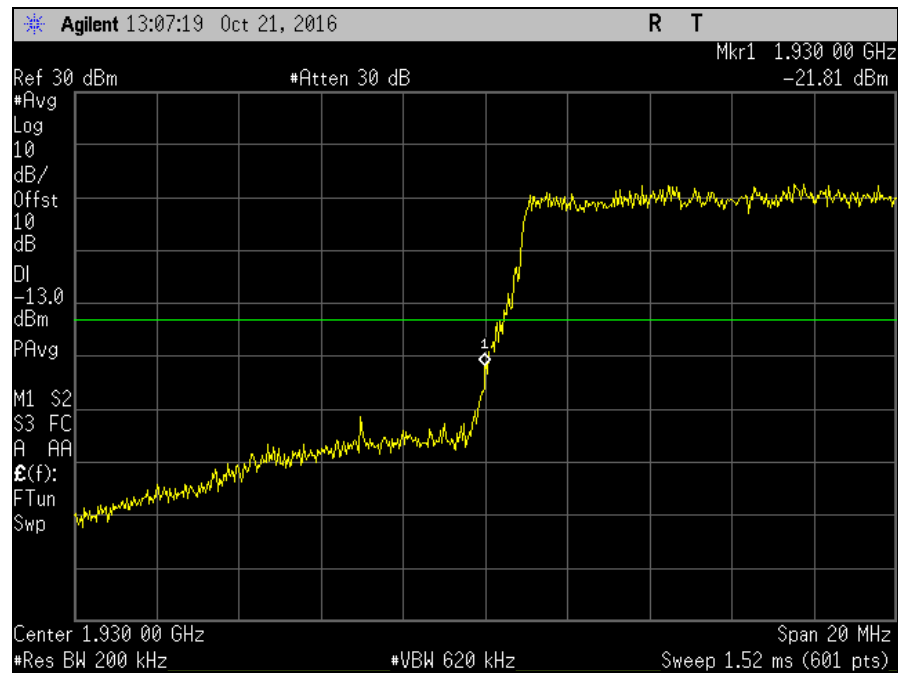


Plot 619. Conducted Band Edge, Band 2, QPSK, Low Channel, 15, Port 1

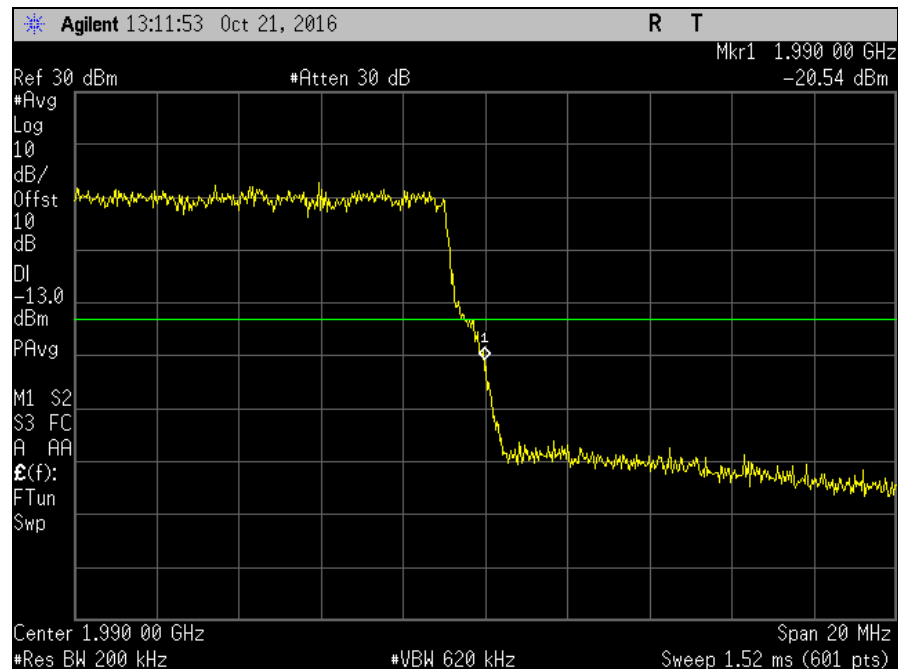


Plot 620. Conducted Band Edge, Band 2, QPSK, High Channel, 15, Port 1

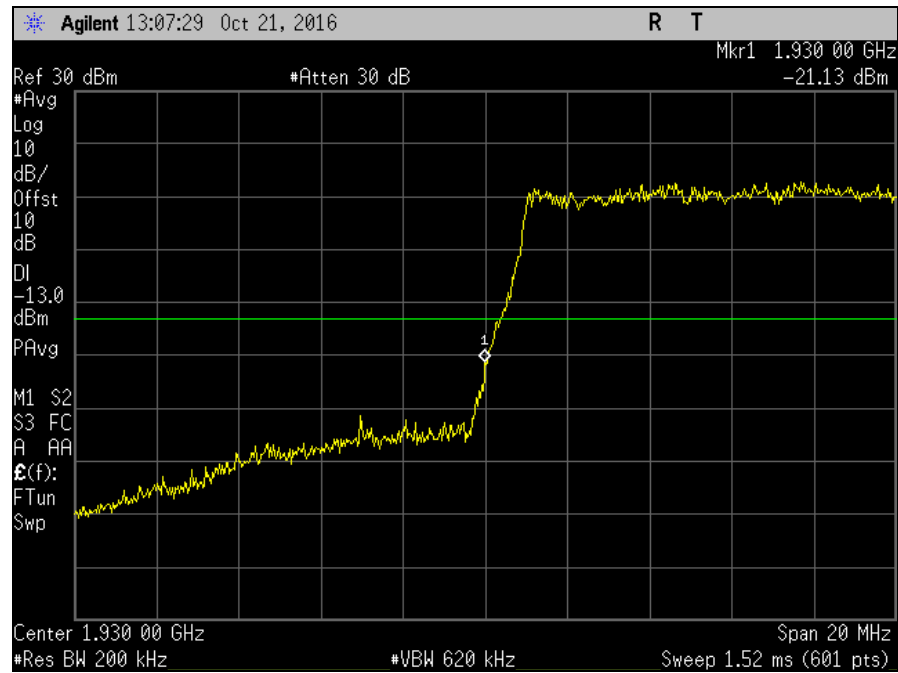
Band Edge, Band 2, 20, Port 1



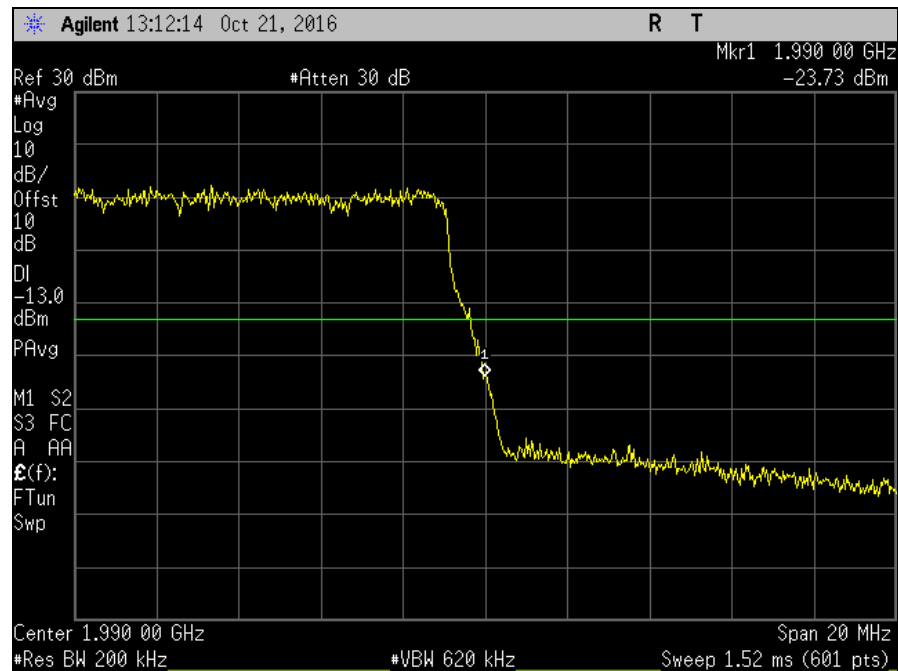
Plot 621. Conducted Band Edge, Band 2, QAM-16, Low Channel, 20, Port 1



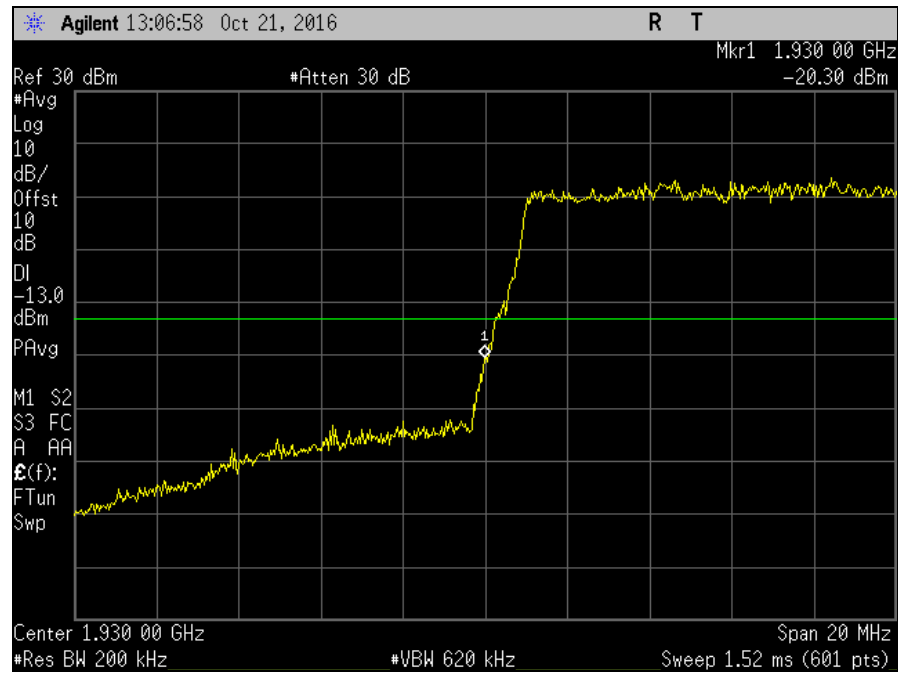
Plot 622. Conducted Band Edge, Band 2, QAM-16, High Channel, 20, Port 1



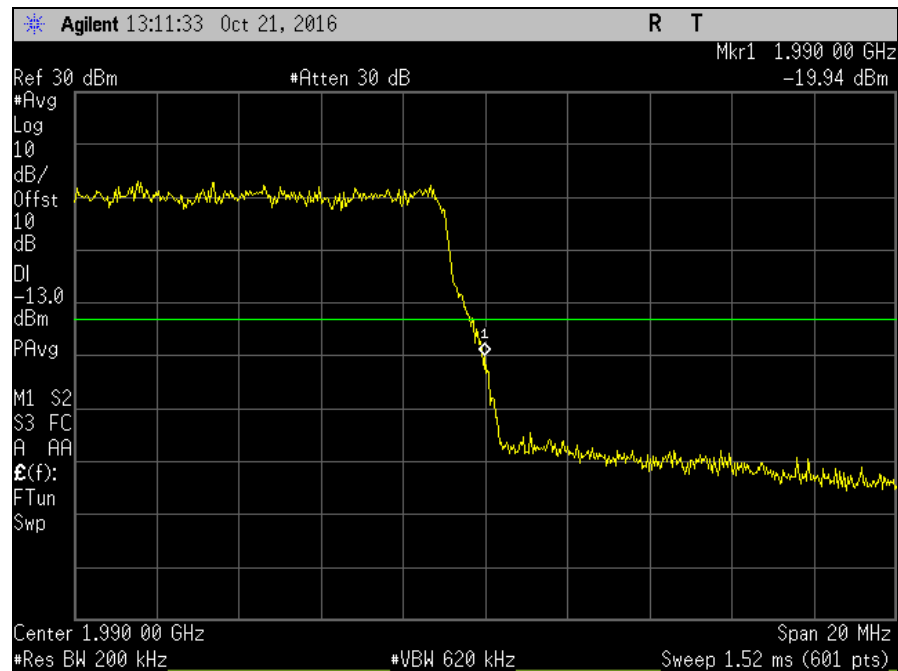
Plot 623. Conducted Band Edge, Band 2, QAM-64, Low Channel, 20, Port 1



Plot 624. Conducted Band Edge, Band 2, QAM-64, High Channel, 20, Port 1

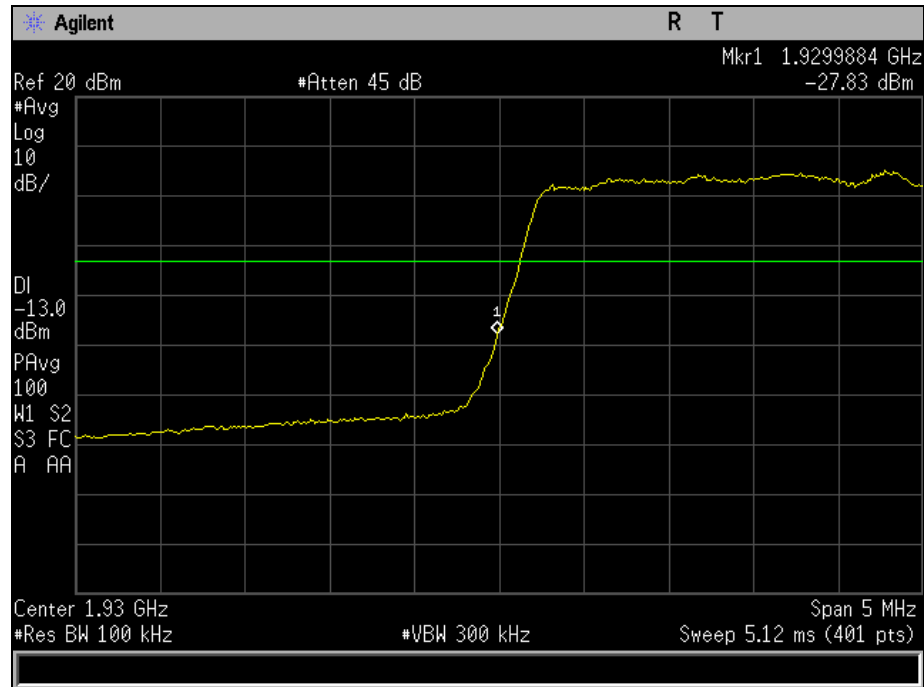


Plot 625. Conducted Band Edge, Band 2, QPSK, Low Channel, 20, Port 1

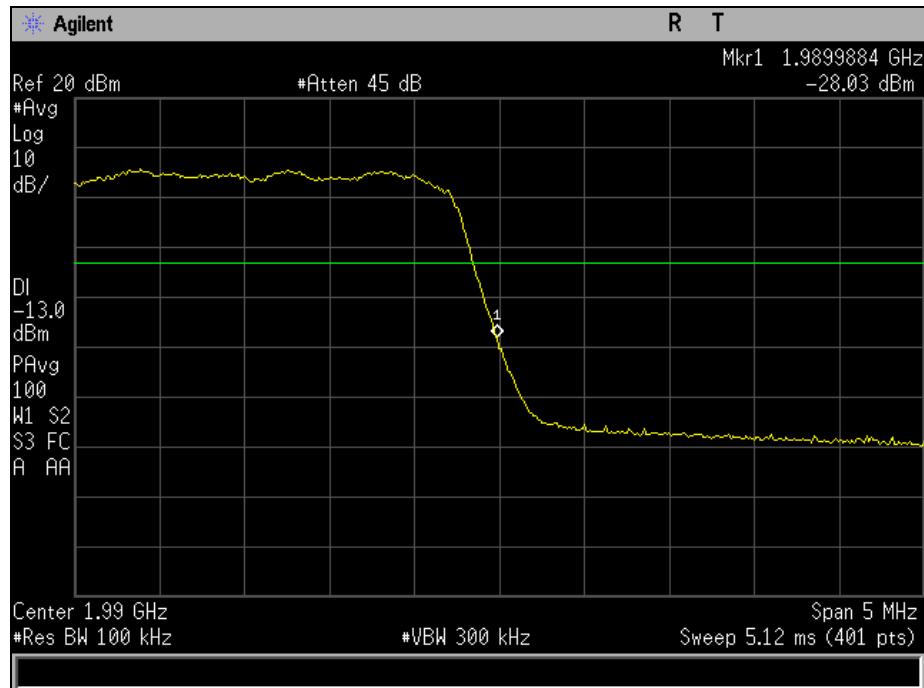


Plot 626. Conducted Band Edge, Band 2, QPSK, High Channel, 20, Port 1

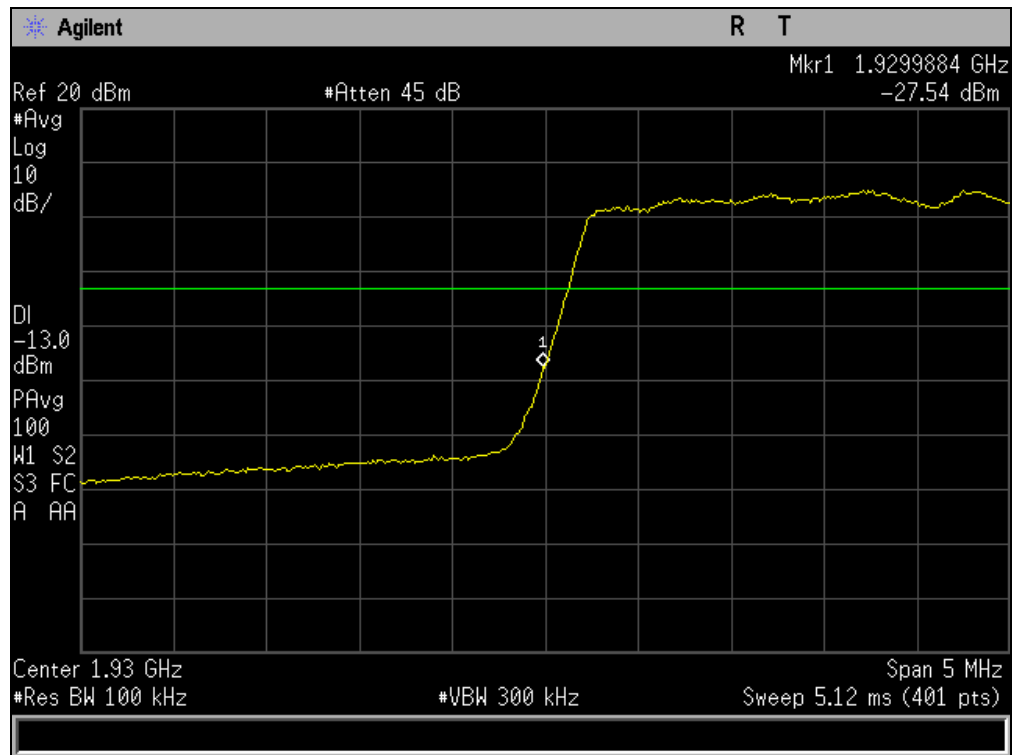
Band Edge, Band 2, 5, Port 2



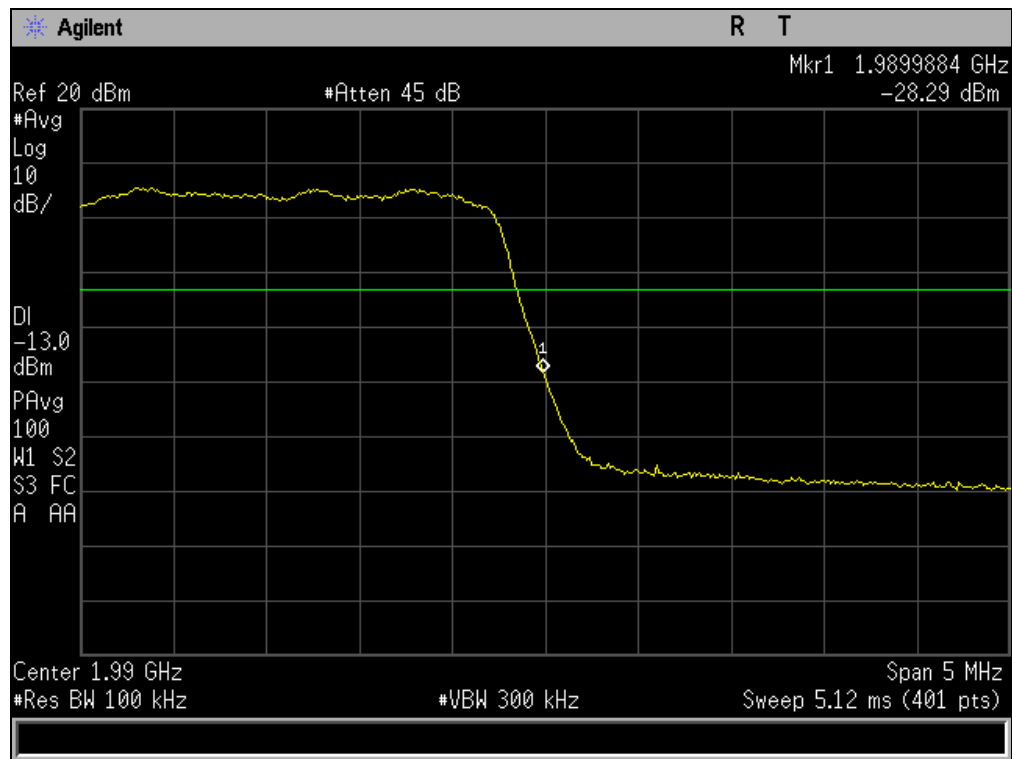
Plot 627. Conducted Band Edge, Band 2, QAM-16, Low Channel, 5, Port 2



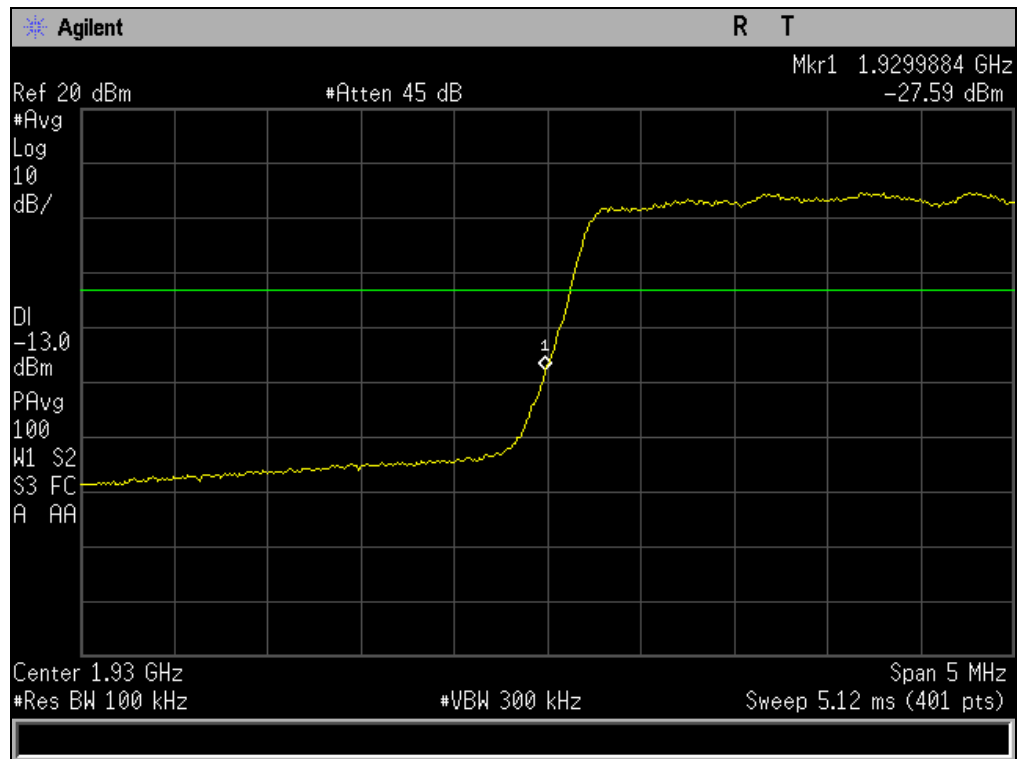
Plot 628. Conducted Band Edge, Band 2, QAM-16, High Channel, 5, Port 2



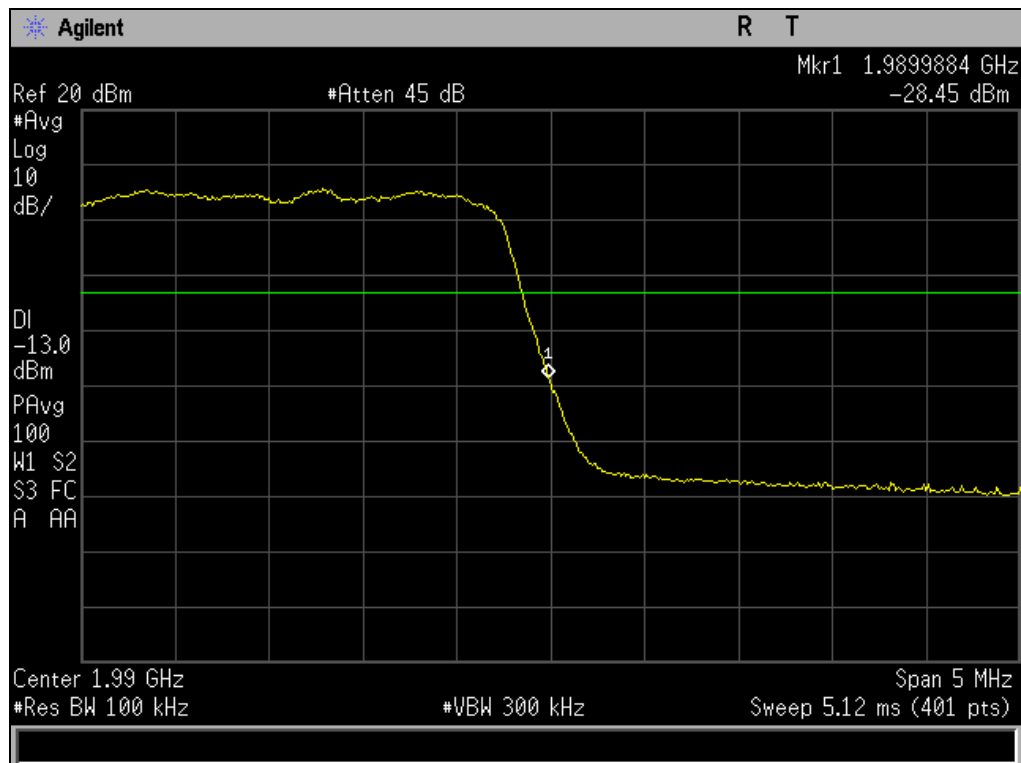
Plot 629. Conducted Band Edge, Band 2, QAM-64, Low Channel, 5, Port 2



Plot 630. Conducted Band Edge, Band 2, QAM-64, High Channel, 5, Port 2

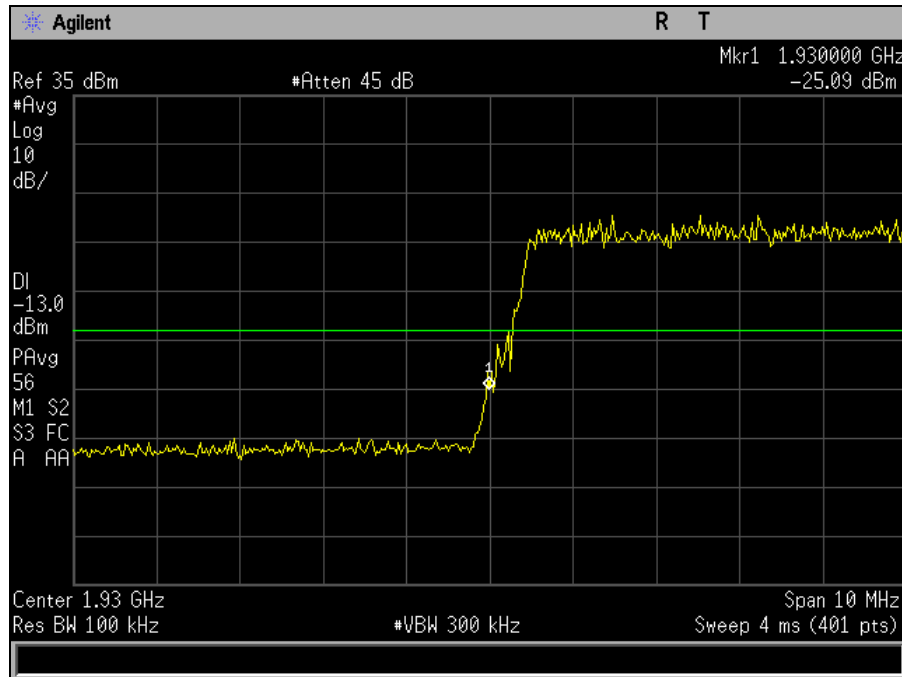


Plot 631. Conducted Band Edge, Band 2, QPSK, Low Channel, 5, Port 2

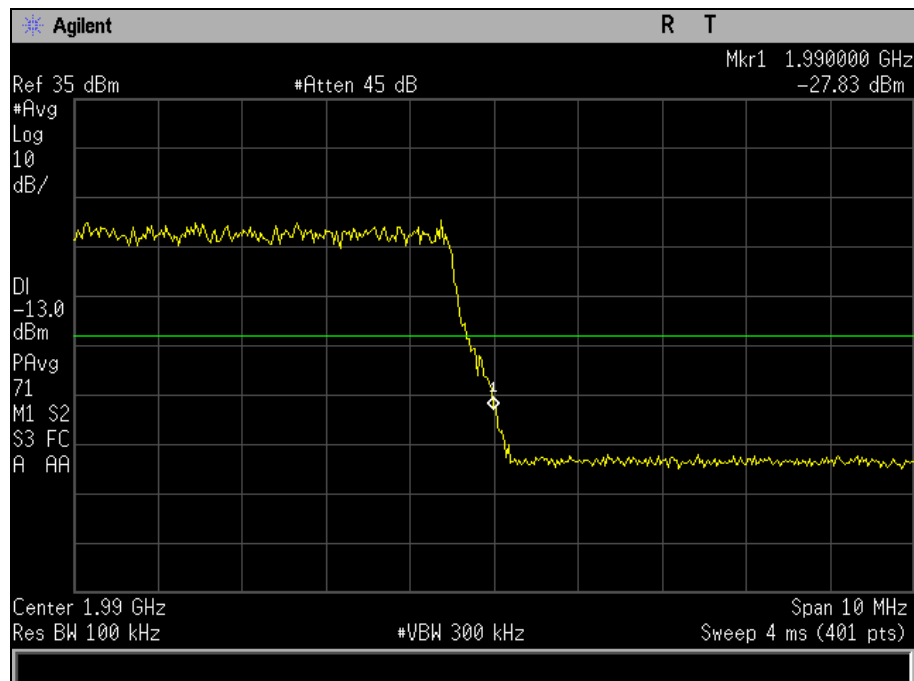


Plot 632. Conducted Band Edge, Band 2, QPSK, High Channel, 5, Port 2

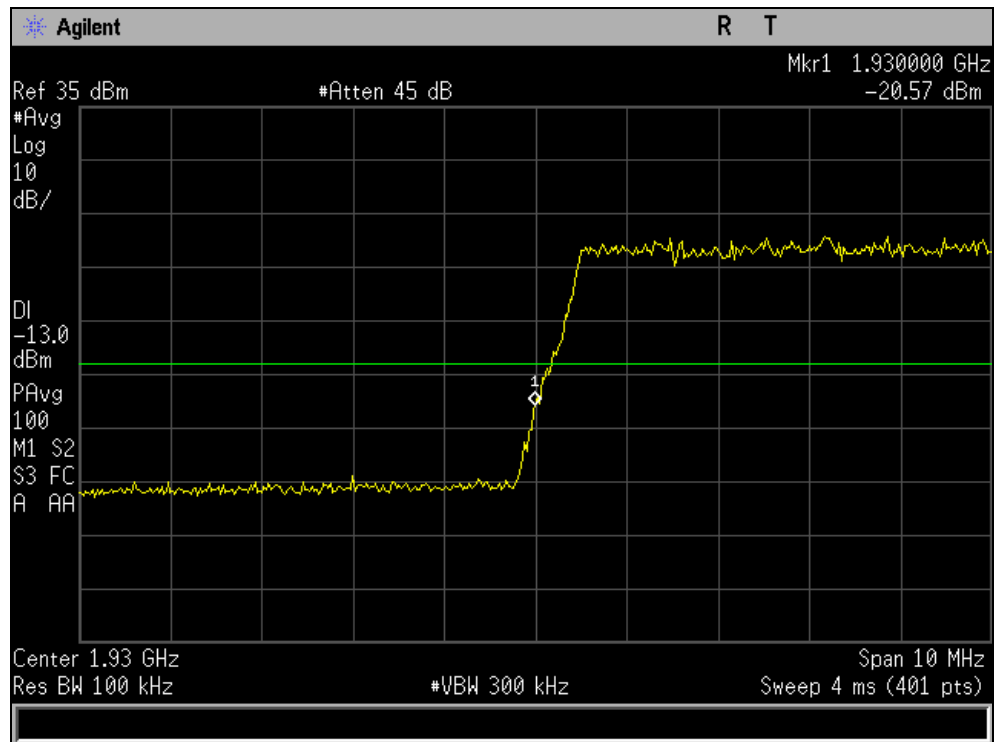
Band Edge, Band 2, 10, Port 2



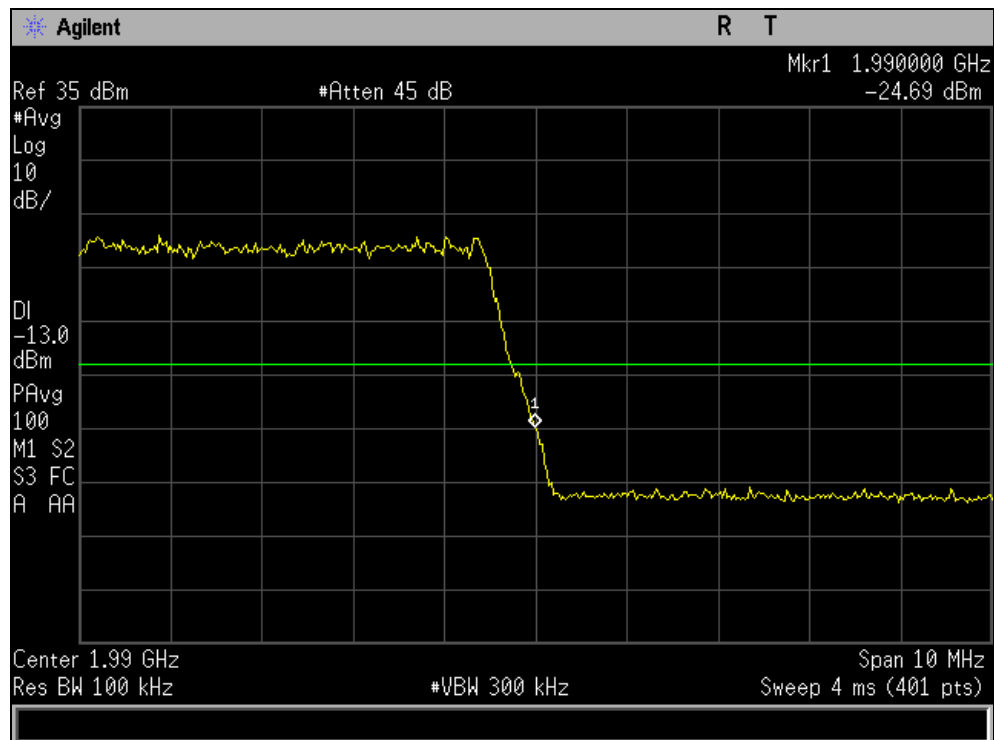
Plot 633. Conducted Band Edge, Band 2, QAM-16, Low Channel, 10, Port 2



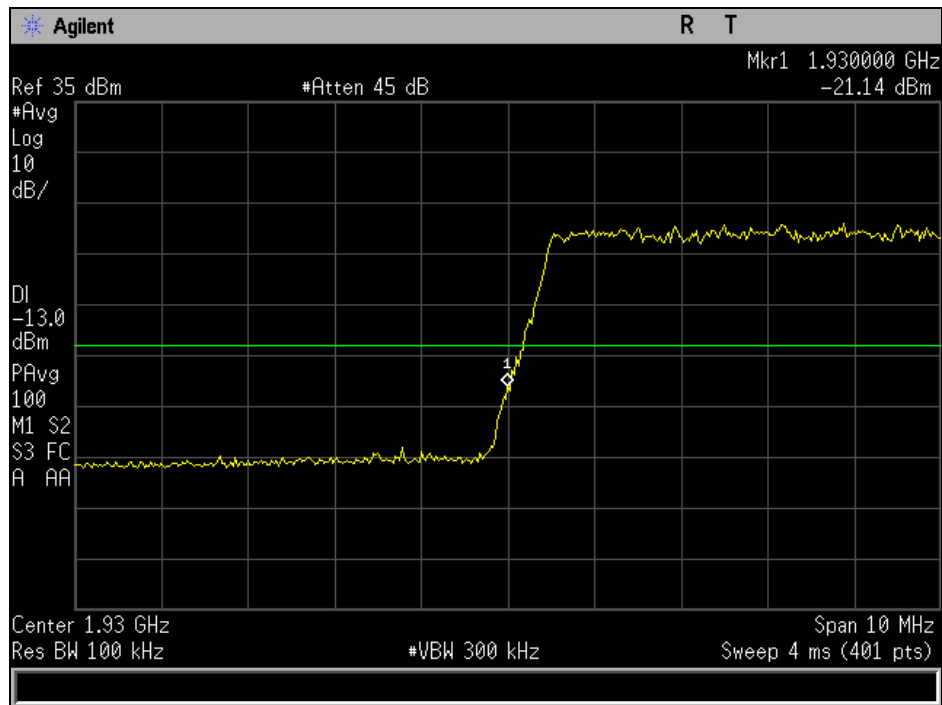
Plot 634. Conducted Band Edge, Band 2, QAM-16, High Channel, 10, Port 2



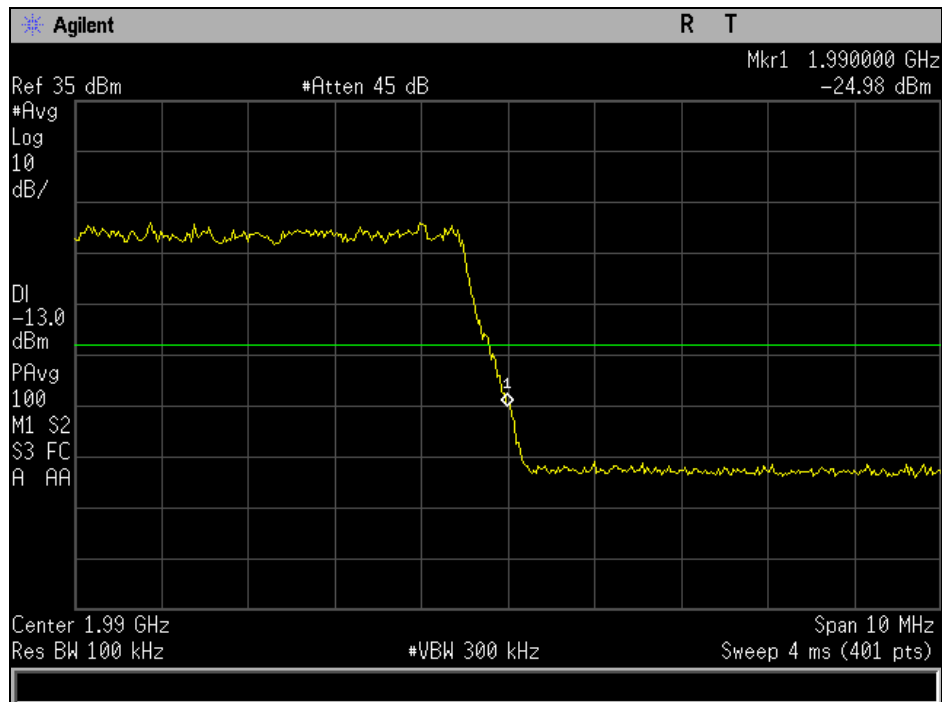
Plot 635. Conducted Band Edge, Band 2, QAM-64, Low Channel, 10, Port 2



Plot 636. Conducted Band Edge, Band 2, QAM-64, High Channel, 10, Port 2

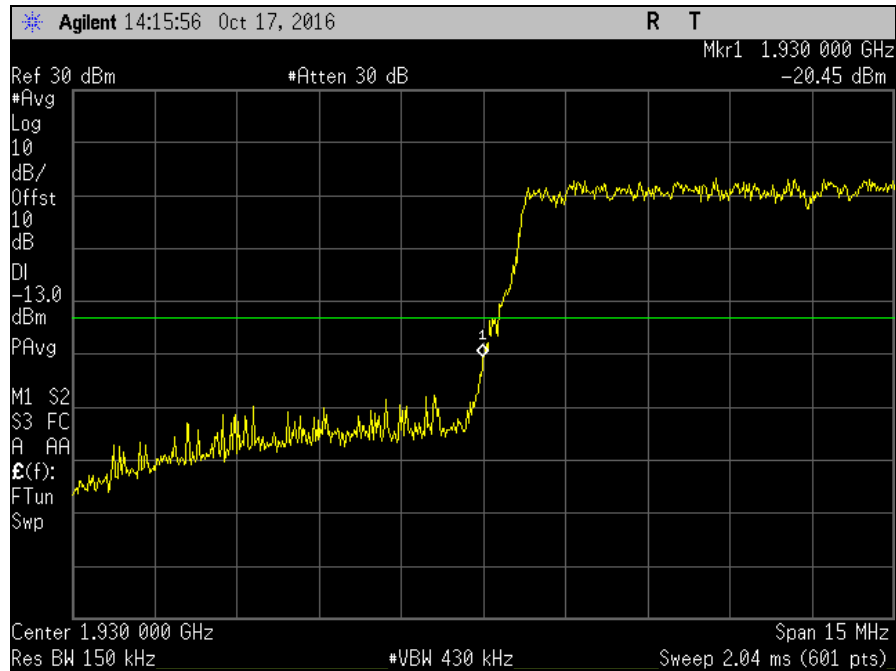


Plot 637. Conducted Band Edge, Band 2, QPSK, Low Channel, 10, Port 2

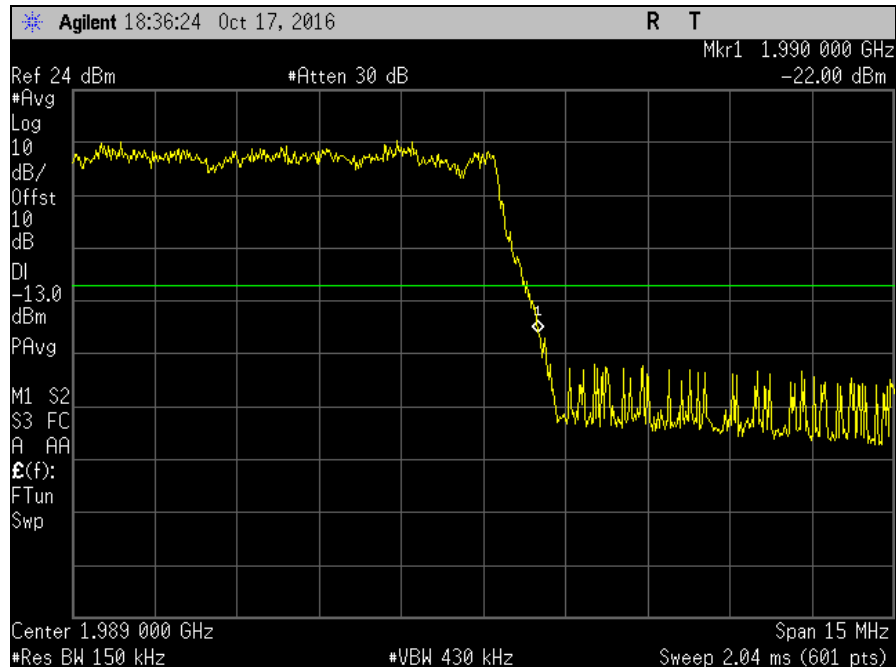


Plot 638. Conducted Band Edge, Band 2, QPSK, High Channel, 10, Port 2

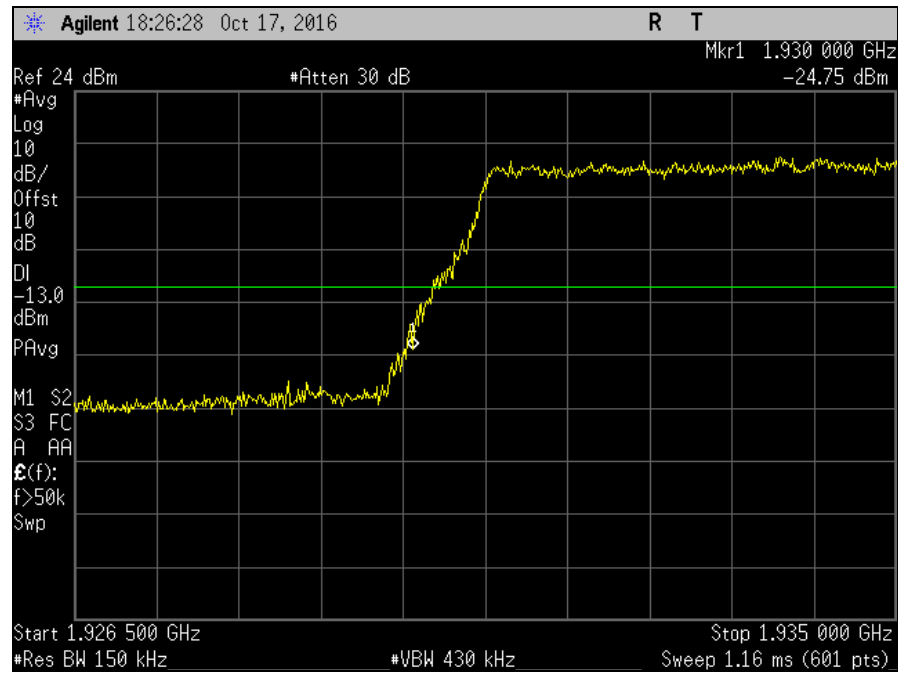
Band Edge, Band 2, 15, Port 2



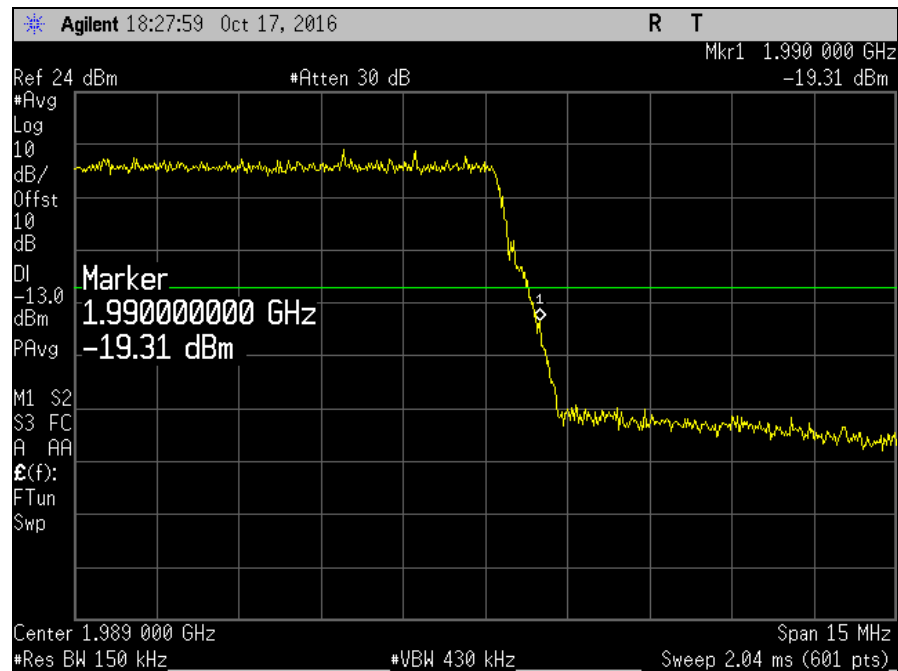
Plot 639. Conducted Band Edge, Band 2, QAM-16, Low Channel, 15, Port 2



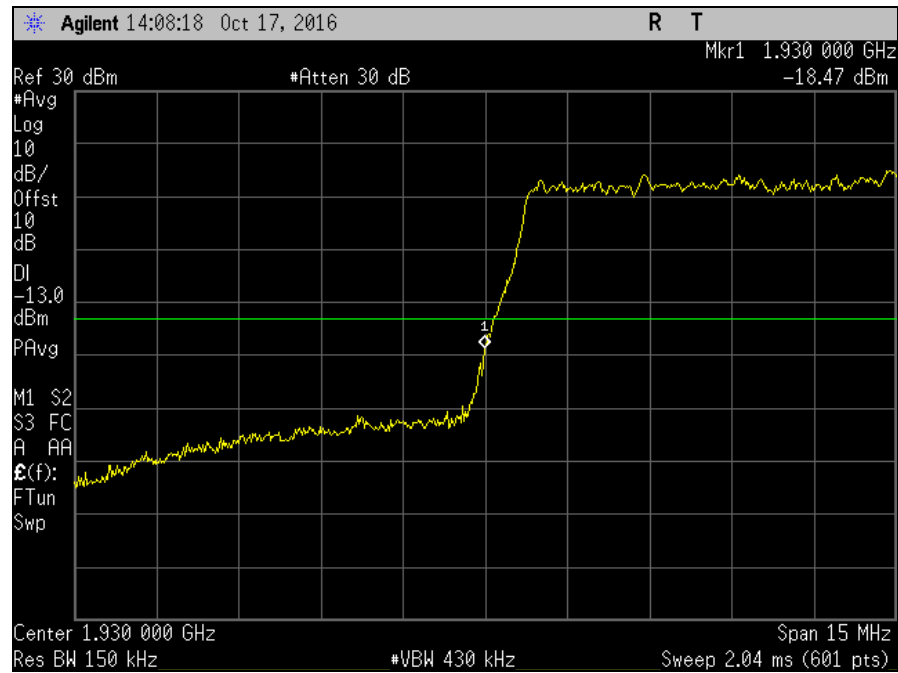
Plot 640. Conducted Band Edge, Band 2, QAM-16, High Channel, 15, Port 2



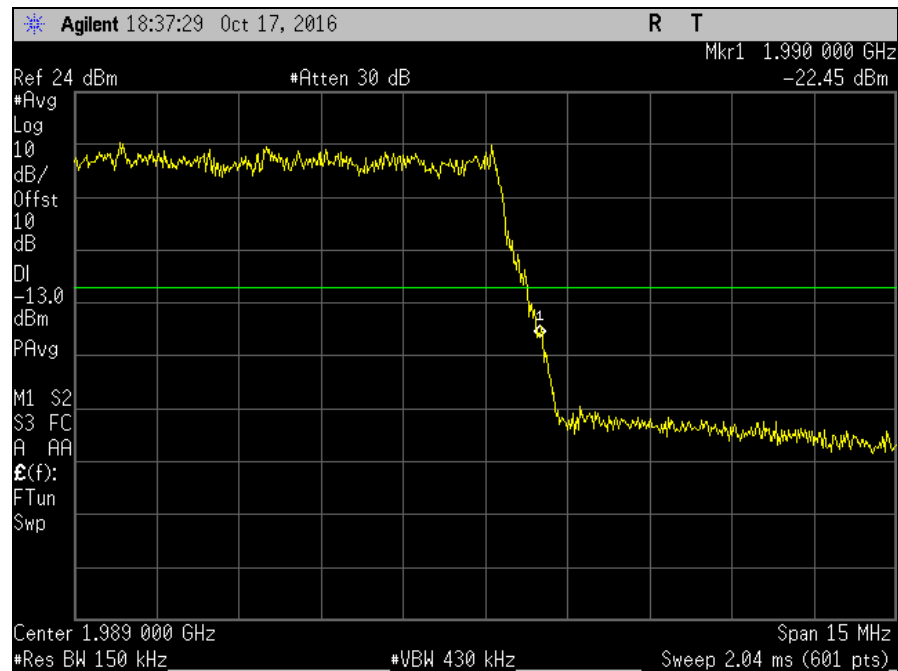
Plot 641. Conducted Band Edge, Band 2, QAM-64, Low Channel, 15, Port 2



Plot 642. Conducted Band Edge, Band 2, QAM-64, High Channel, 15, Port 2

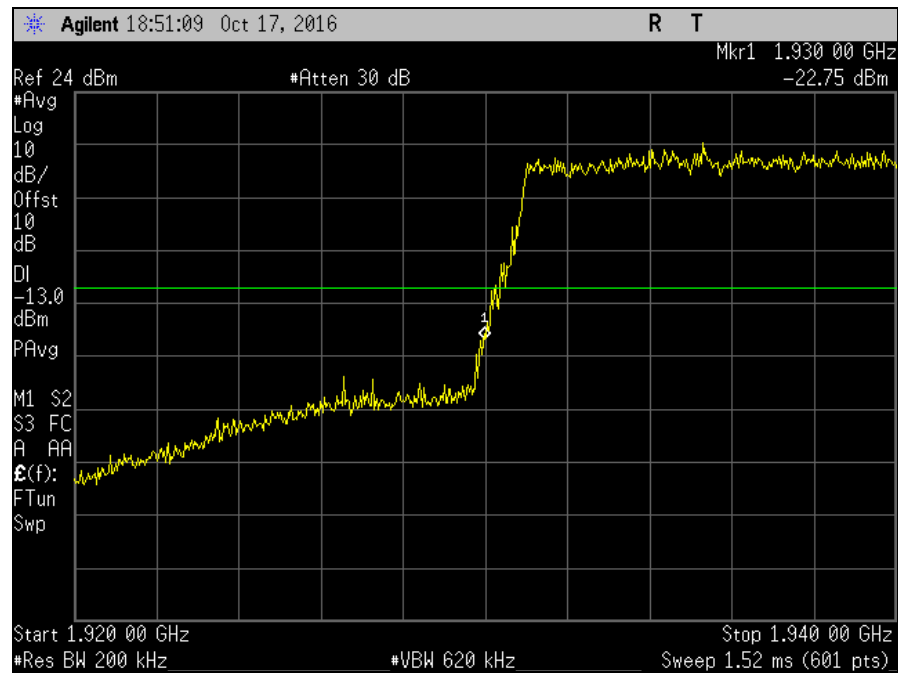


Plot 643. Conducted Band Edge, Band 2, QPSK, Low Channel, 15, Port 2

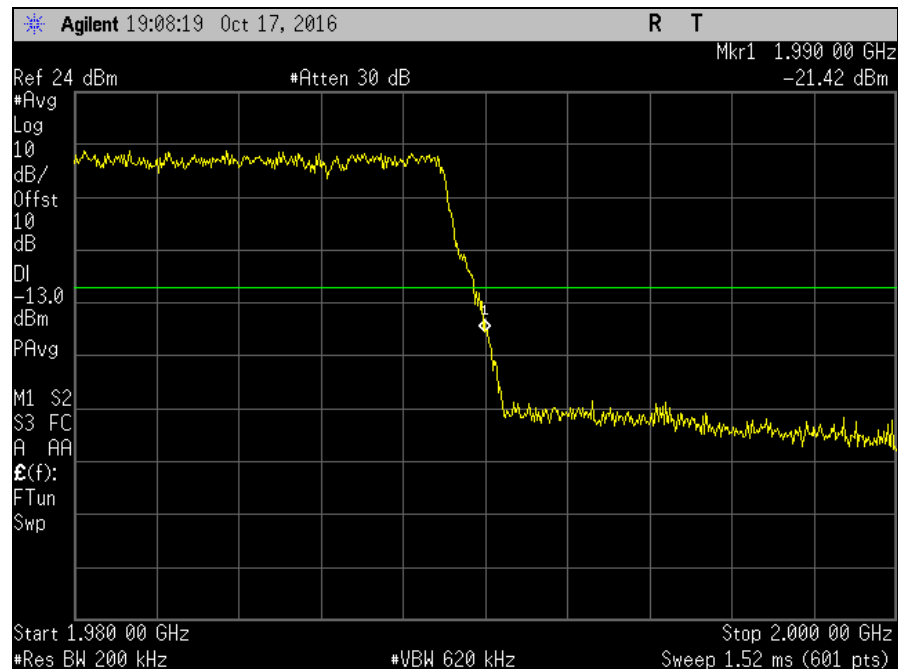


Plot 644. Conducted Band Edge, Band 2, QPSK, High Channel, 15, Port 2

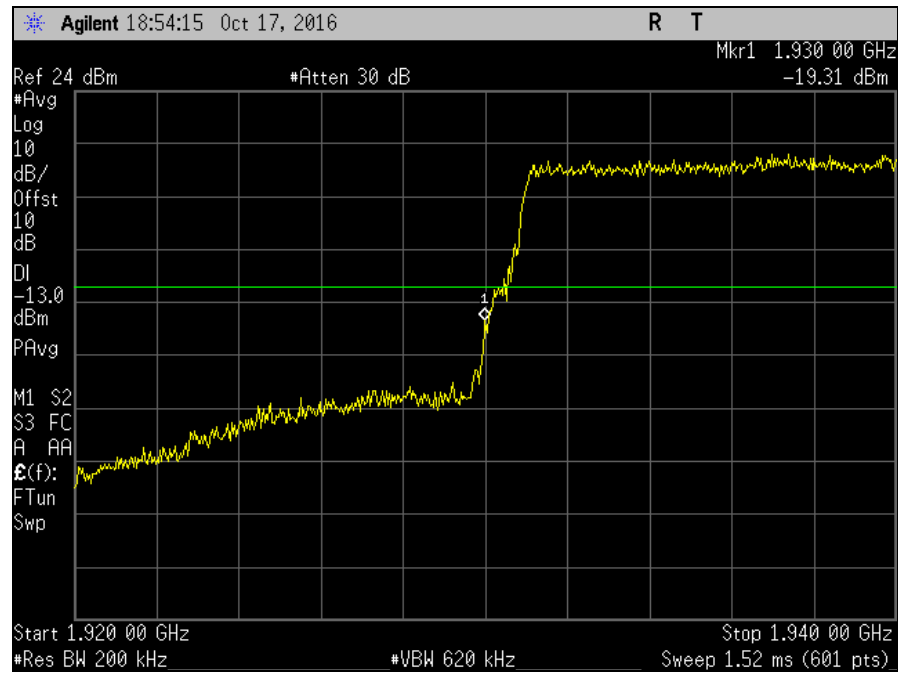
Band Edge, Band 2, 20, Port 2



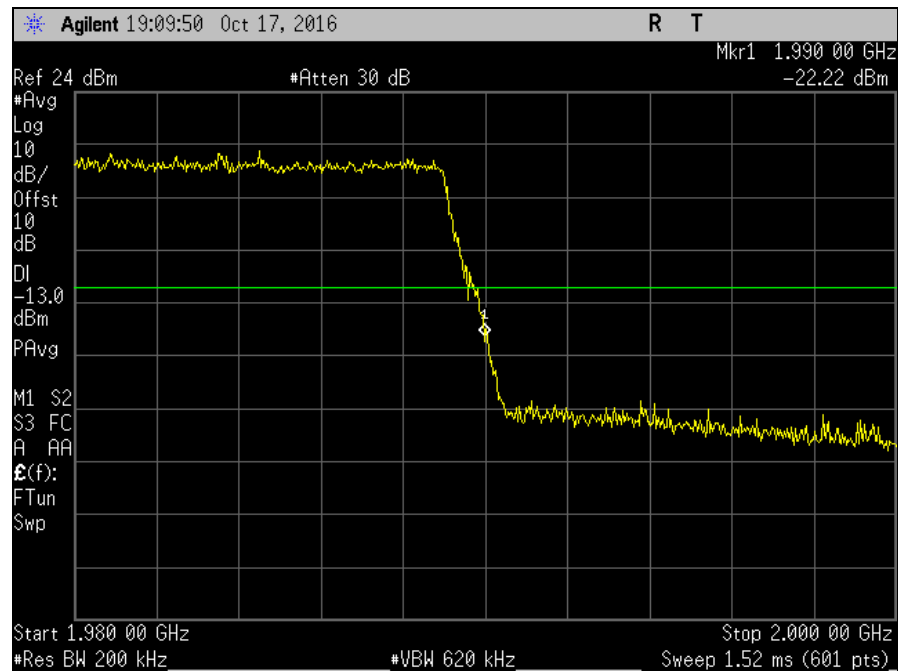
Plot 645. Conducted Band Edge, Band 2, QAM-16, Low Channel, 20, Port 2



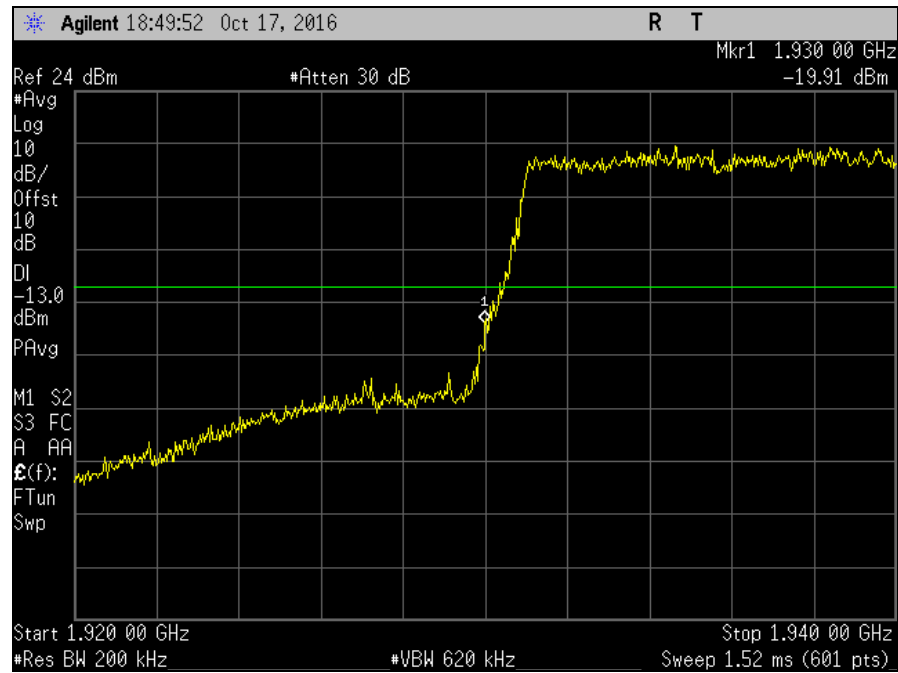
Plot 646. Conducted Band Edge, Band 2, QAM-16, High Channel, 20, Port 2



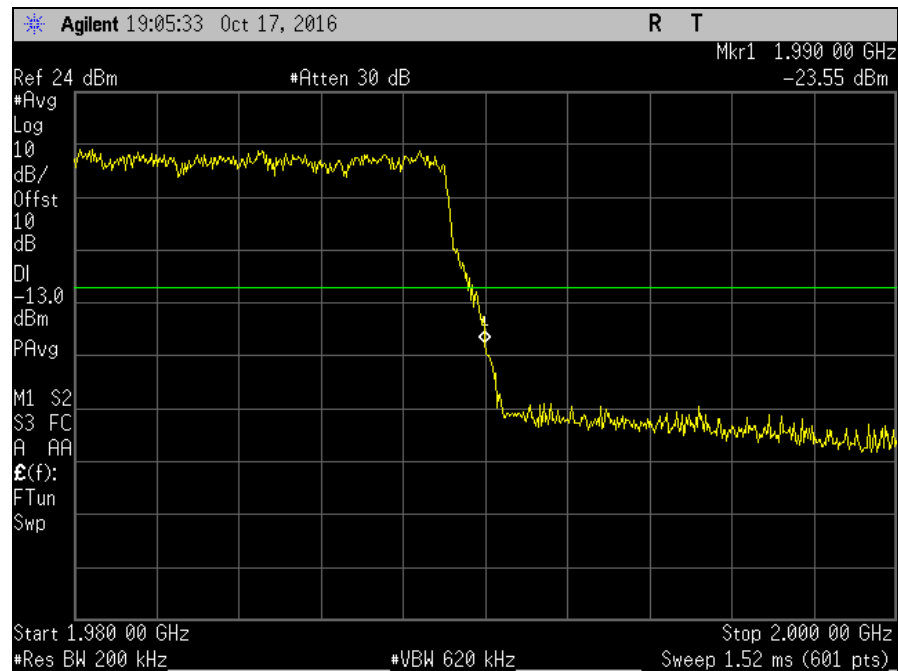
Plot 647. Conducted Band Edge, Band 2, QAM-64, Low Channel, 20, Port 2



Plot 648. Conducted Band Edge, Band 2, QAM-64, High Channel, 20, Port 2

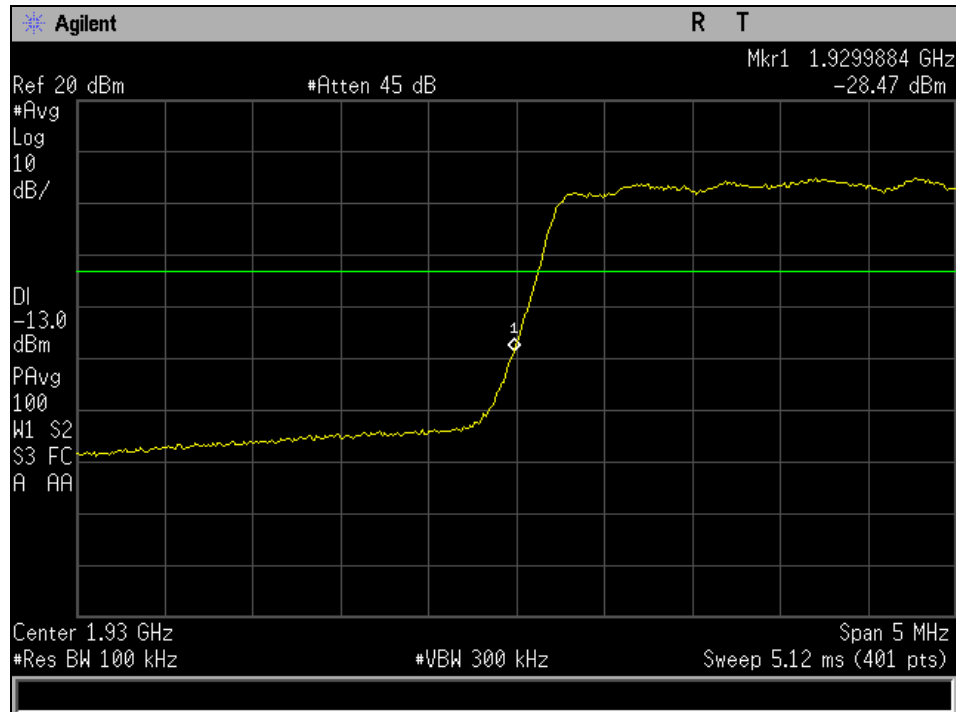


Plot 649. Conducted Band Edge, Band 2, QPSK, Low Channel, 20, Port 2

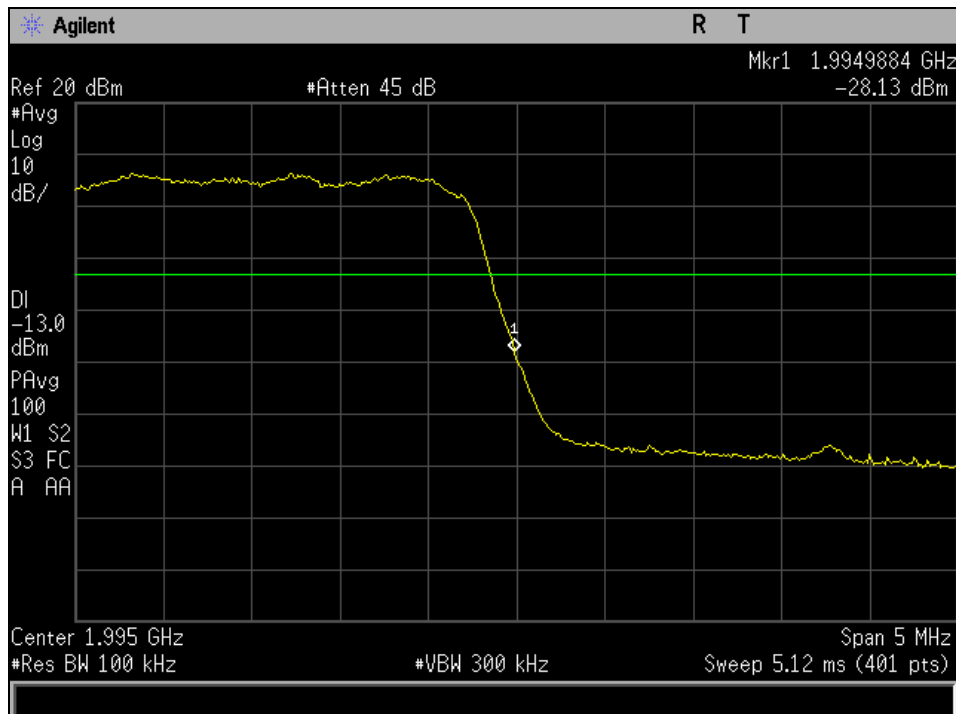


Plot 650. Conducted Band Edge, Band 2, QPSK, High Channel, 20, Port 2

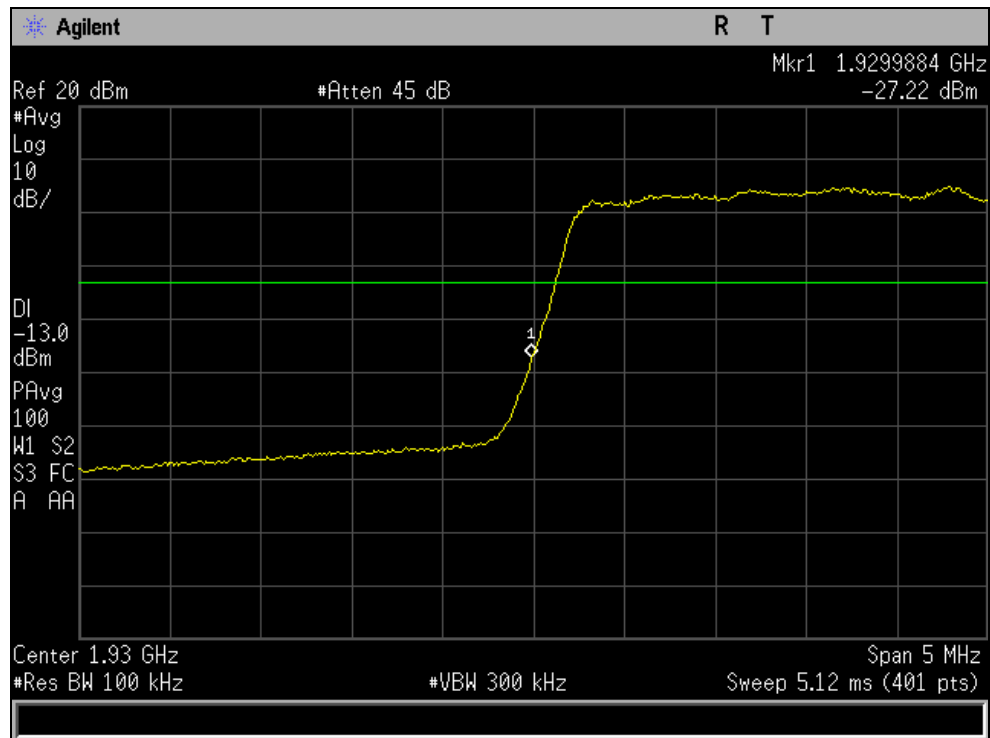
Band Edge, Band 25, 5, Port 1



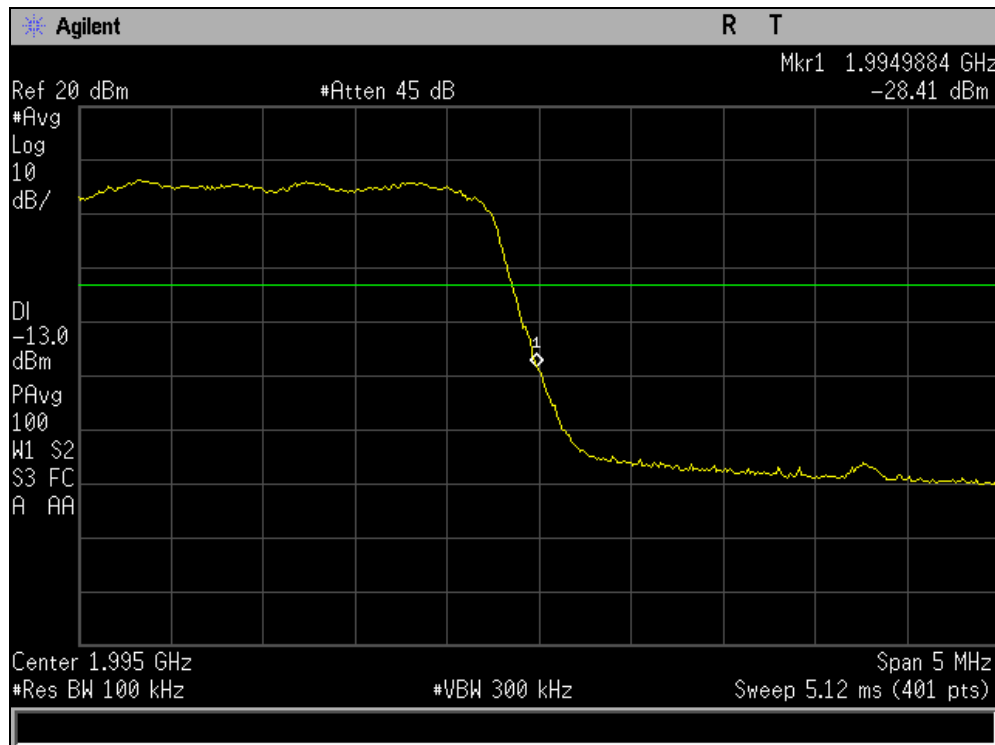
Plot 651. Conducted Band Edge, Band 25, QAM-16, Low Channel, 5, Port 1



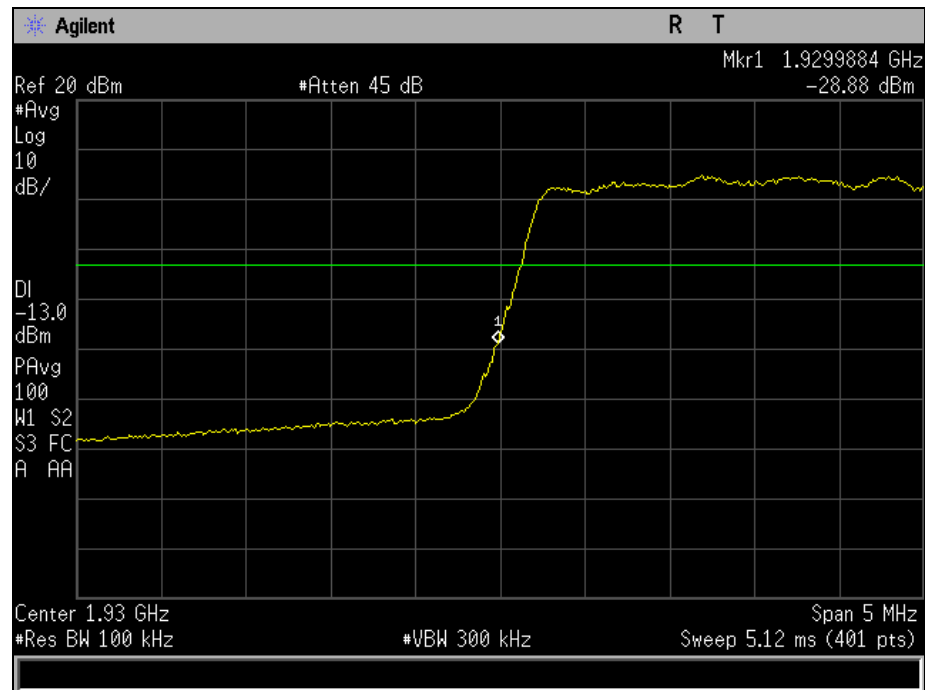
Plot 652. Conducted Band Edge, Band 25, QAM-16, High Channel, 5, Port 1



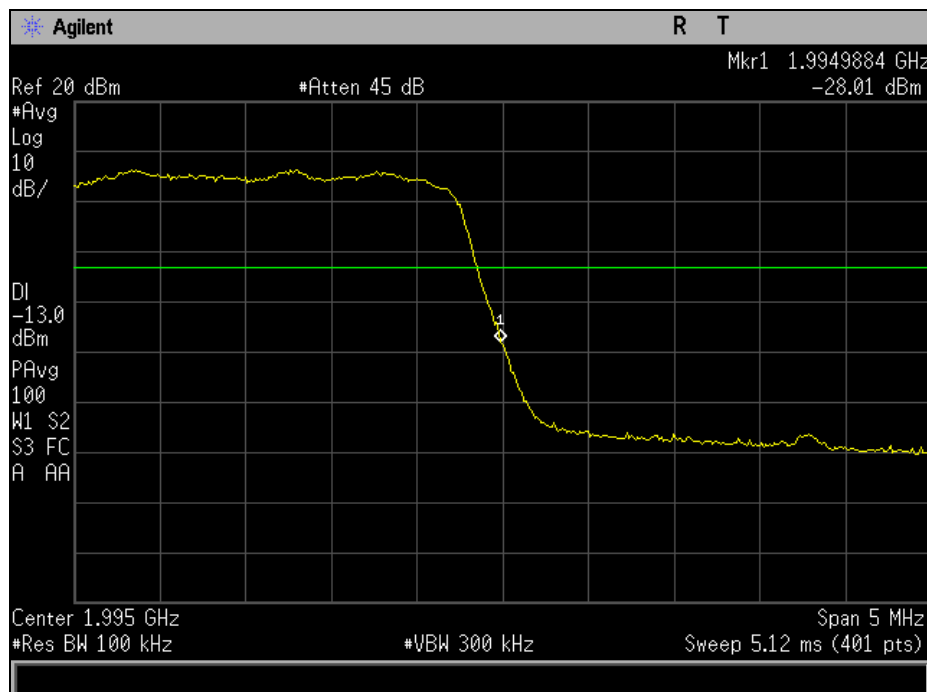
Plot 653. Conducted Band Edge, Band 25, QAM-64, Low Channel, 5, Port 1



Plot 654. Conducted Band Edge, Band 25, QAM-64, High Channel, 5, Port 1

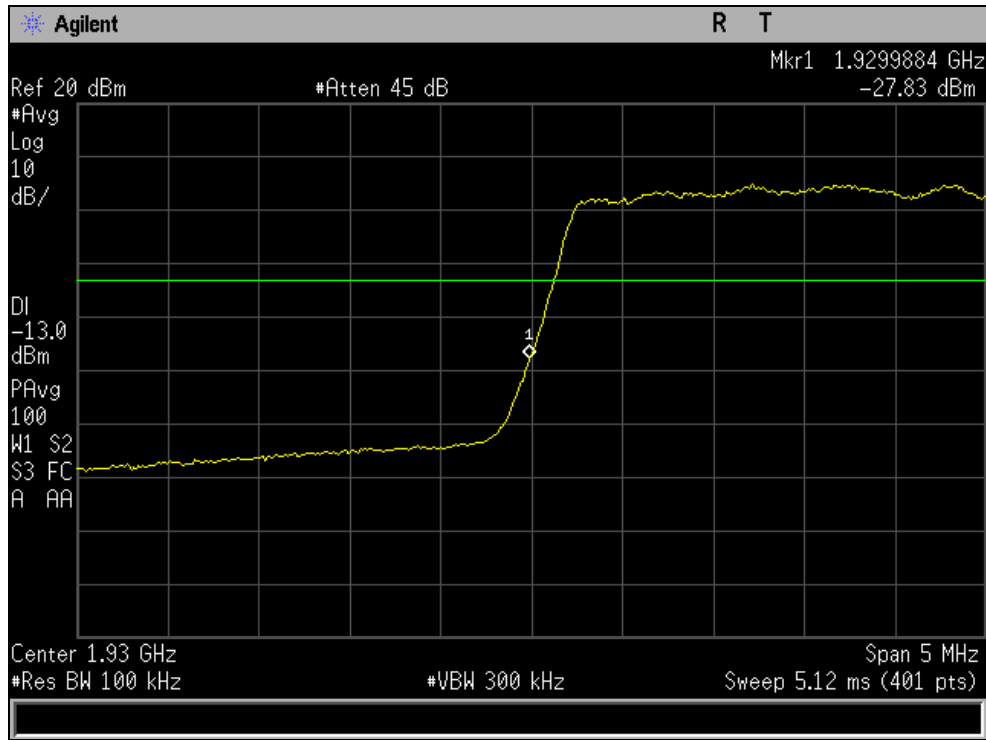


Plot 655. Conducted Band Edge, Band 25, QPSK, Low Channel, 5, Port 1

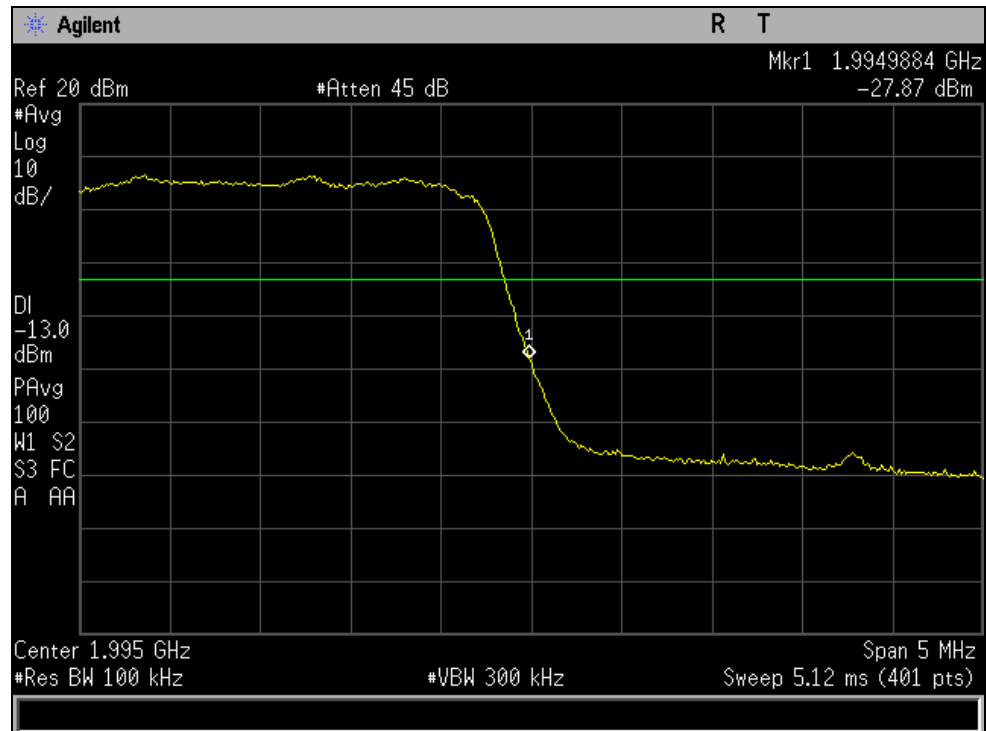


Plot 656. Conducted Band Edge, Band 25, QPSK, High Channel, 5, Port 1

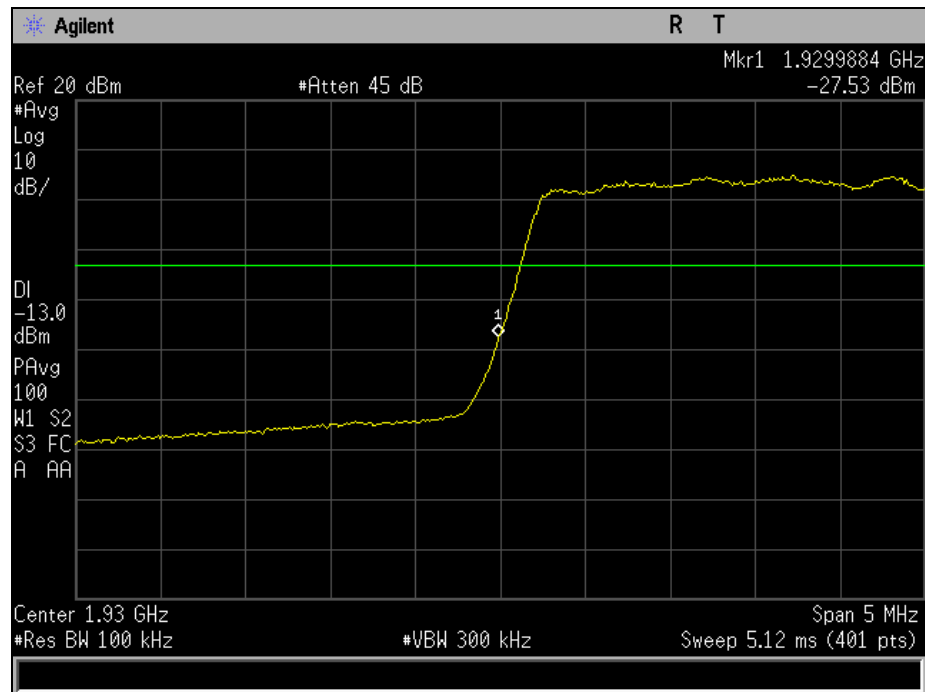
Band Edge, Band 25, 5, Port 2



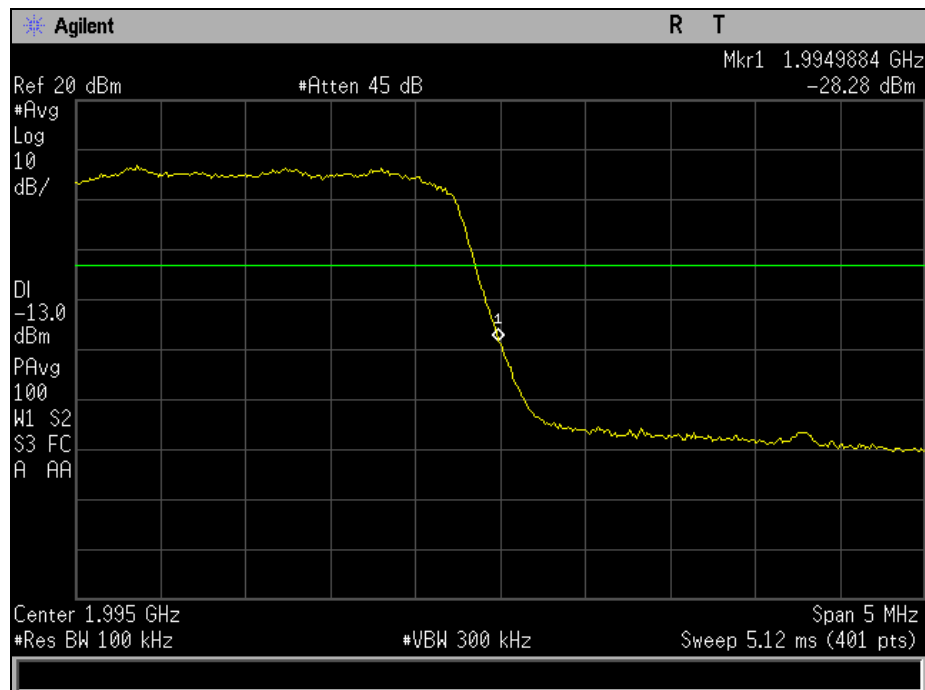
Plot 657. Conducted Band Edge, Band 25, QAM-16, Low Channel, 5, Port 2



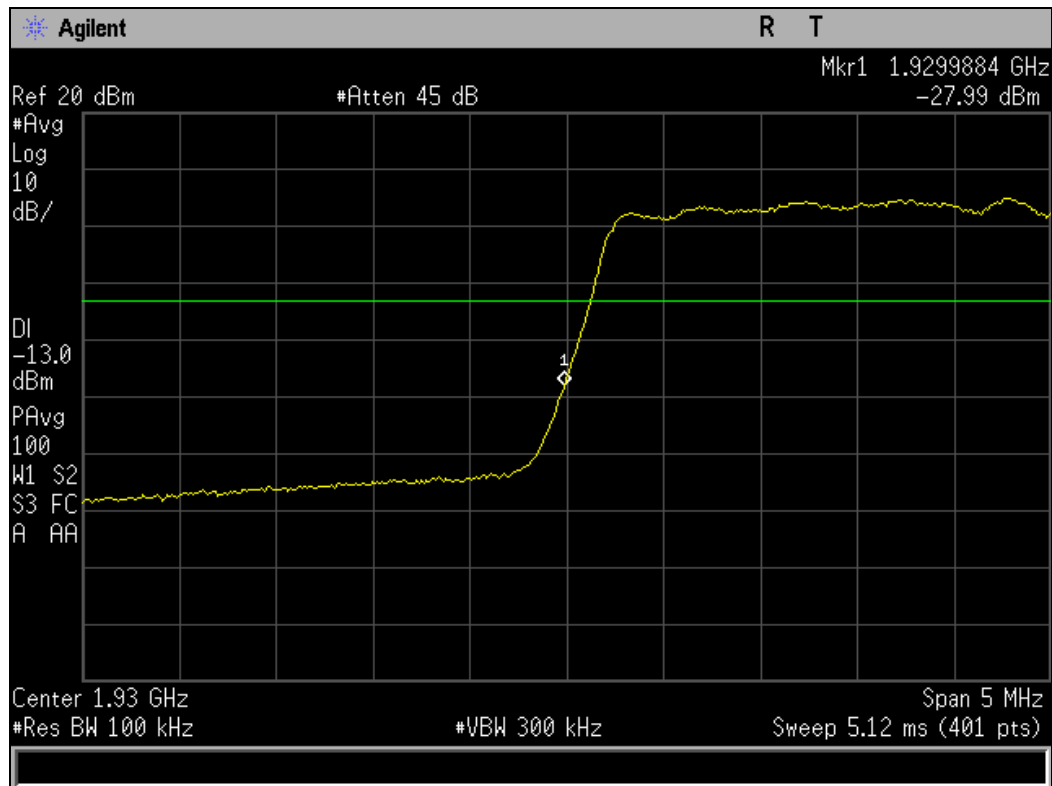
Plot 658. Conducted Band Edge, Band 25, QAM-16, High Channel, 5, Port 2



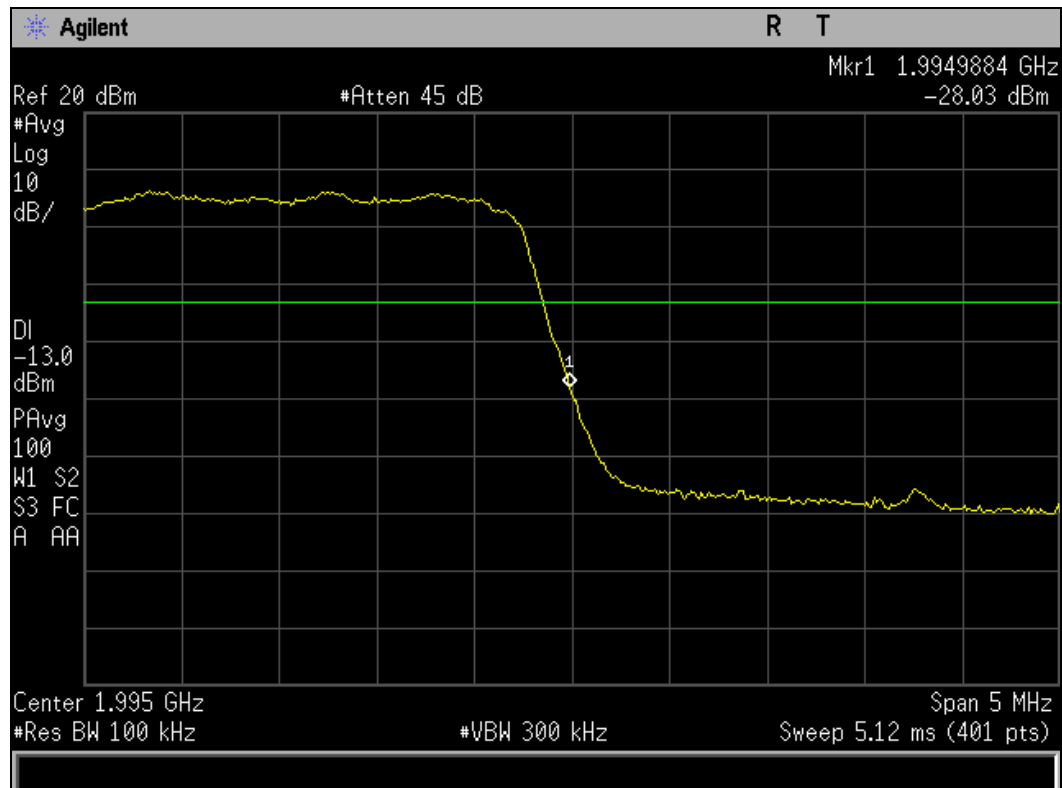
Plot 659. Conducted Band Edge, Band 25, QAM-64, Low Channel, 5, Port 2



Plot 660. Conducted Band Edge, Band 25, QAM-64, High Channel, 5, Port 2

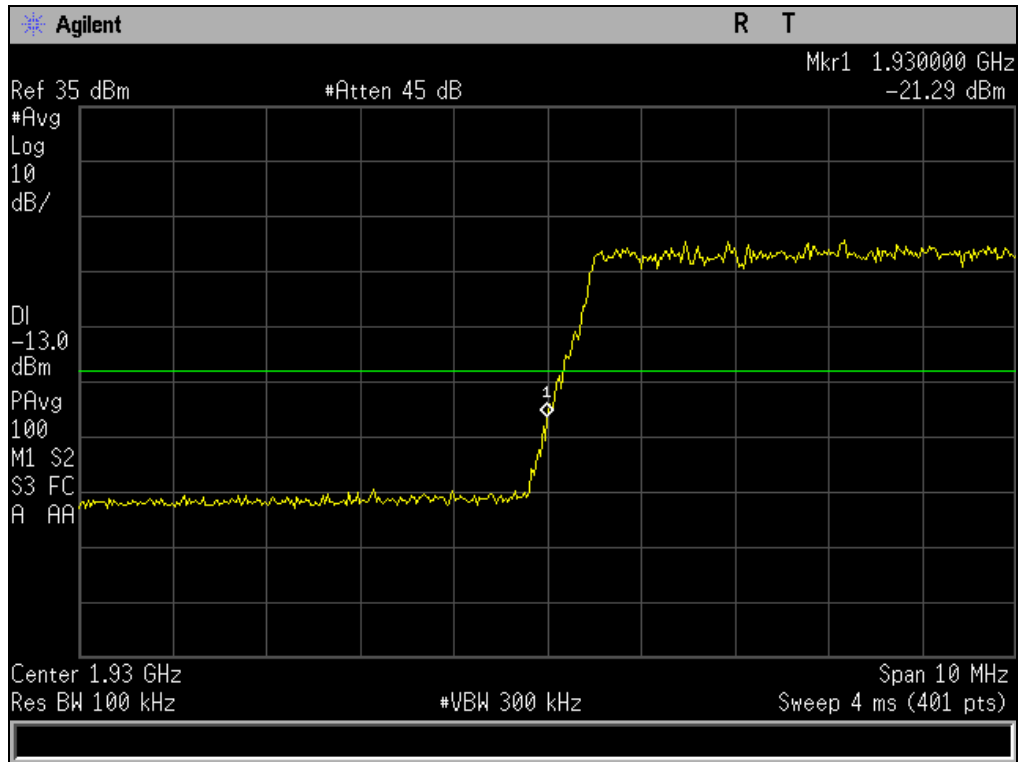


Plot 661. Conducted Band Edge, Band 25, QPSK, Low Channel, 5, Port 2

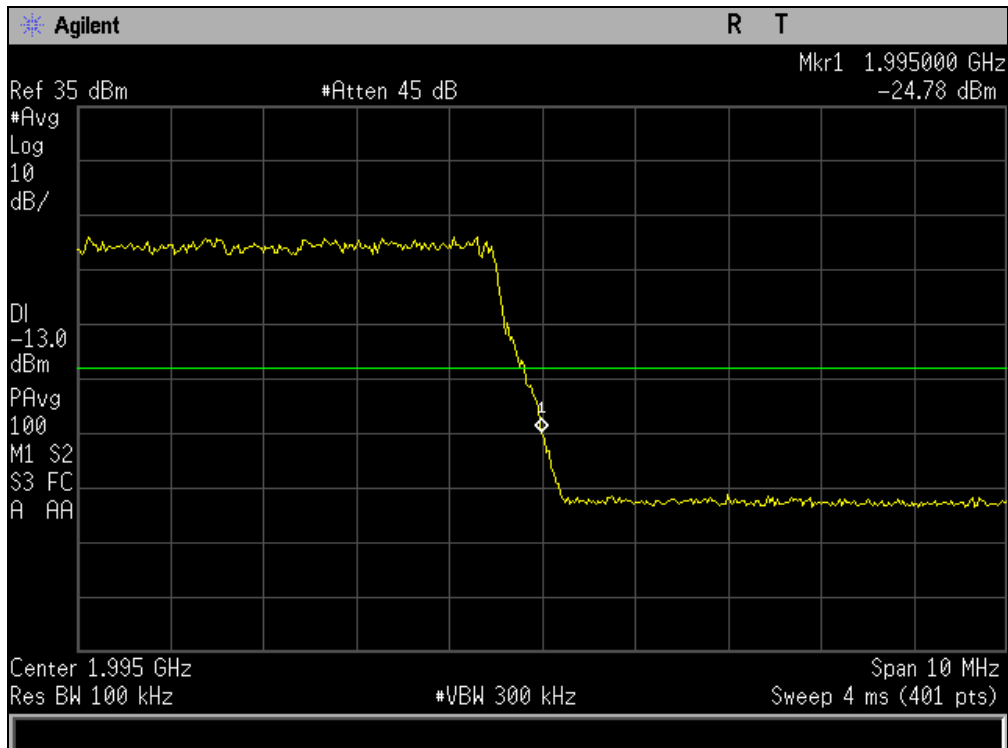


Plot 662. Conducted Band Edge, Band 25, QPSK, High Channel, 5, Port 2

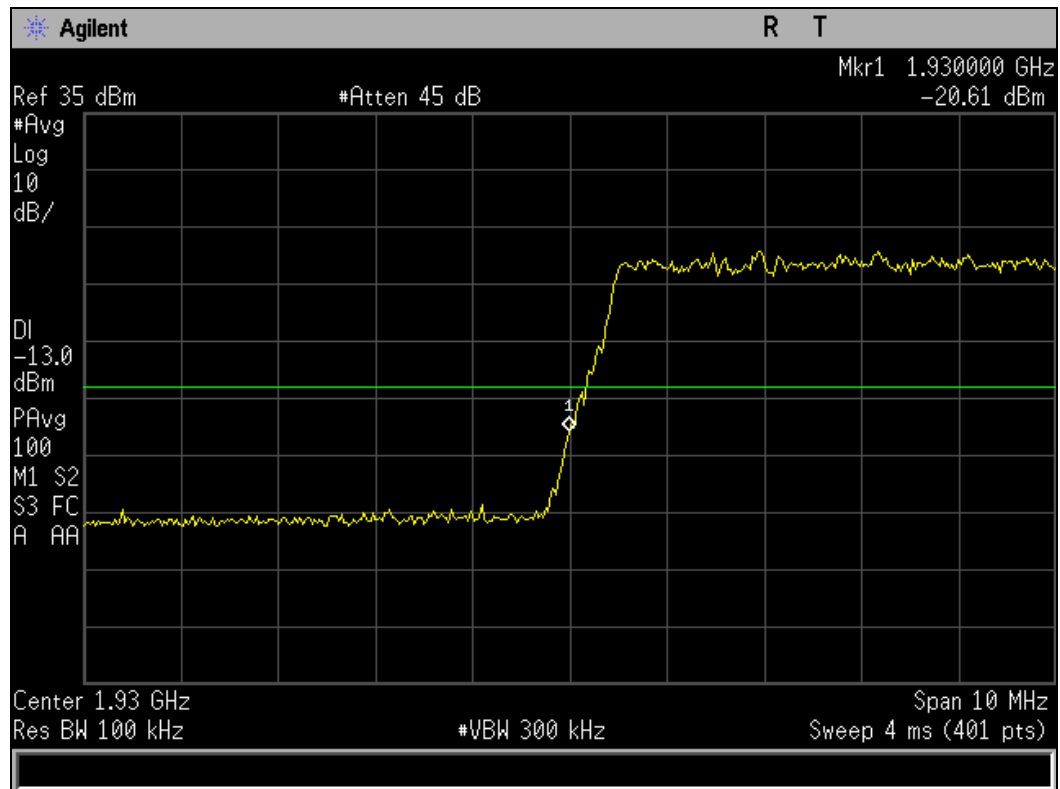
Band Edge, Band 25, 10, Port 1



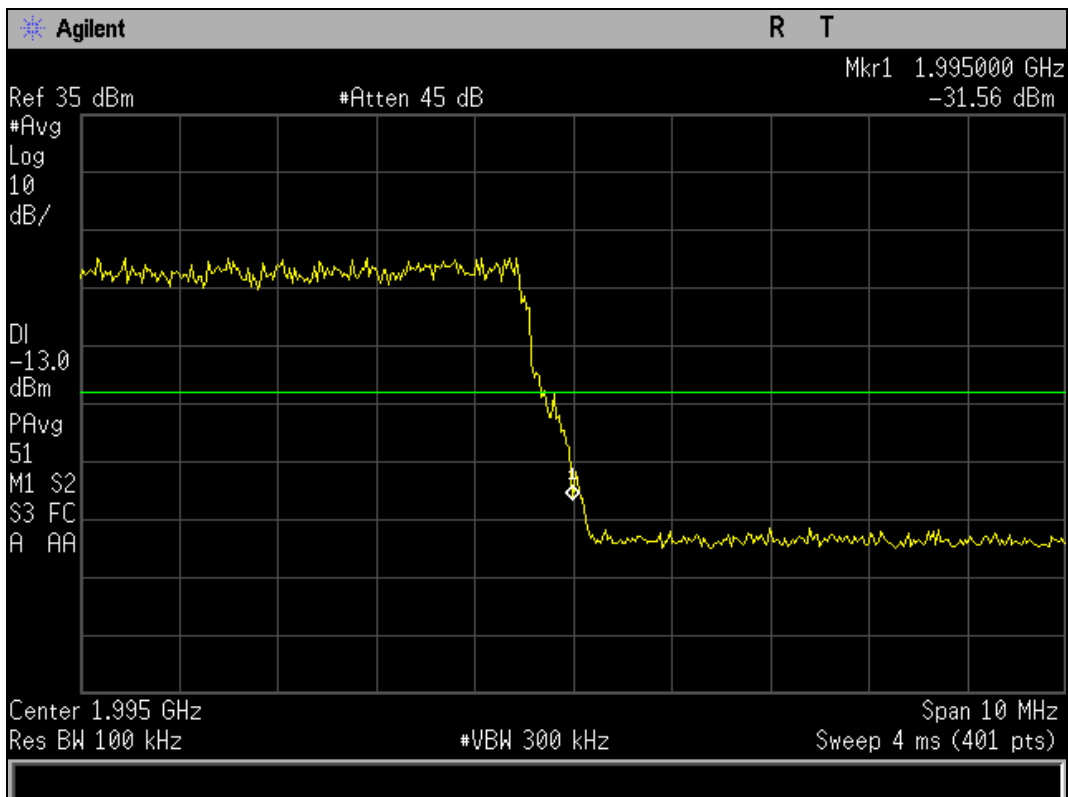
Plot 663. Conducted Band Edge, Band 25, QAM-16, Low Channel, 10, Port 1



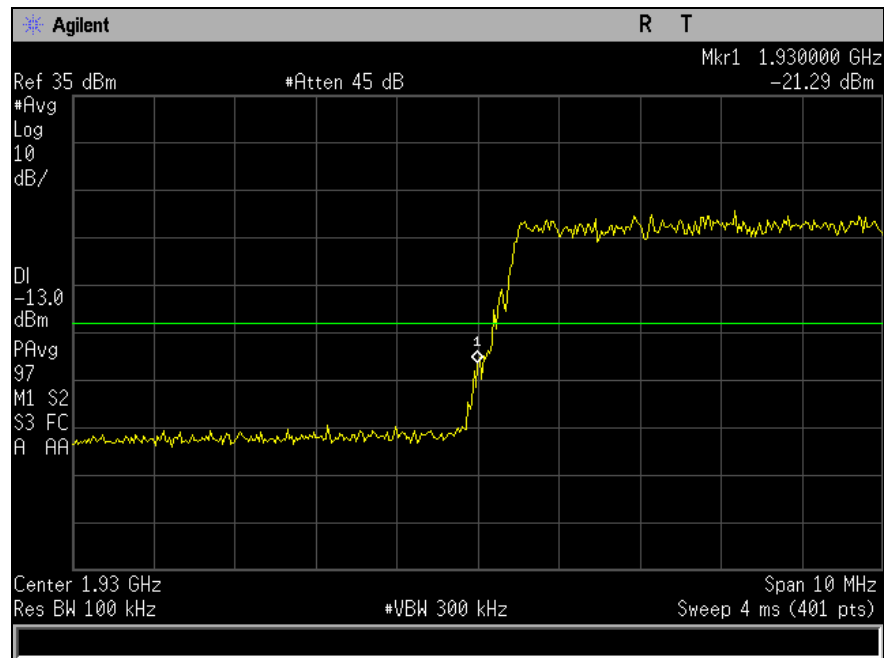
Plot 664. Conducted Band Edge, Band 25, QAM-16, High Channel, 10, Port 1



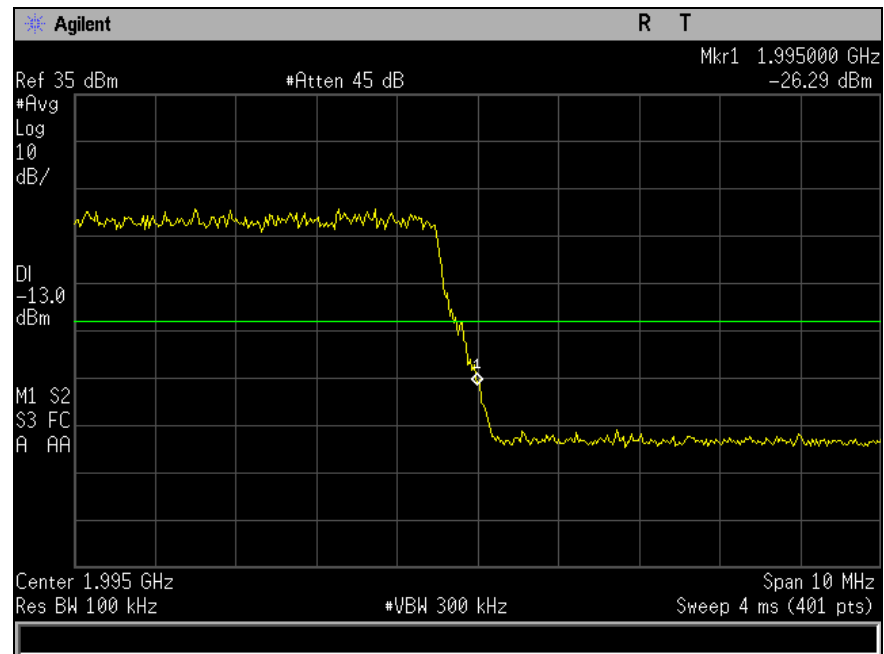
Plot 665. Conducted Band Edge, Band 25, QAM-64, Low Channel, 10, Port 1



Plot 666. Conducted Band Edge, Band 25, QAM-64, High Channel, 10, Port 1

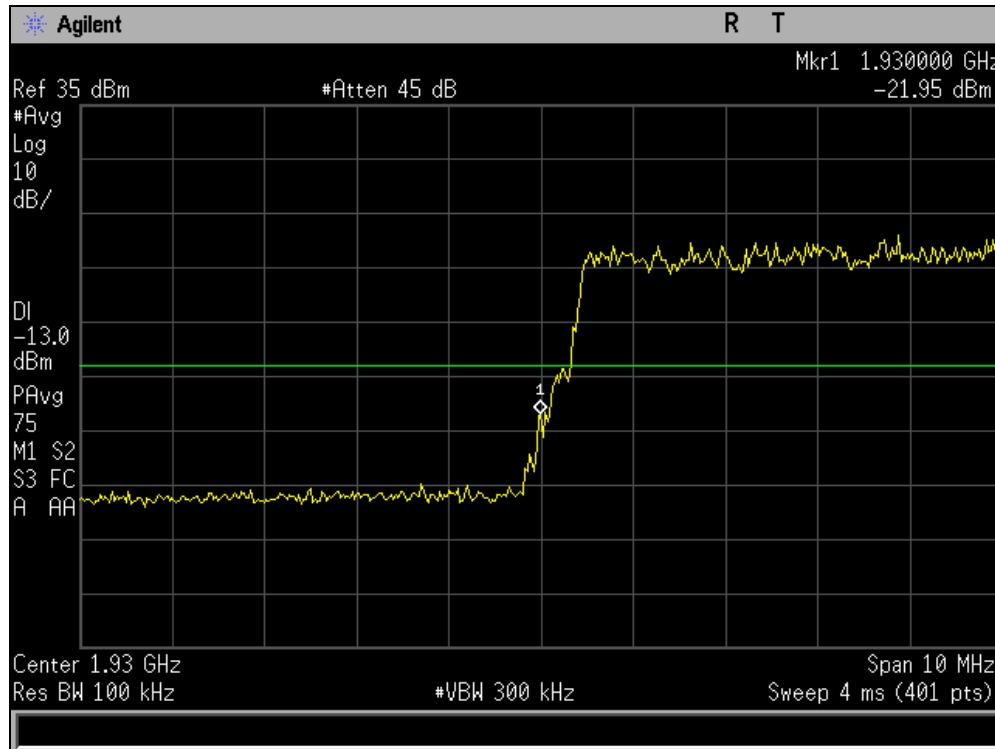


Plot 667. Conducted Band Edge, Band 25, QPSK, Low Channel, 10, Port 1

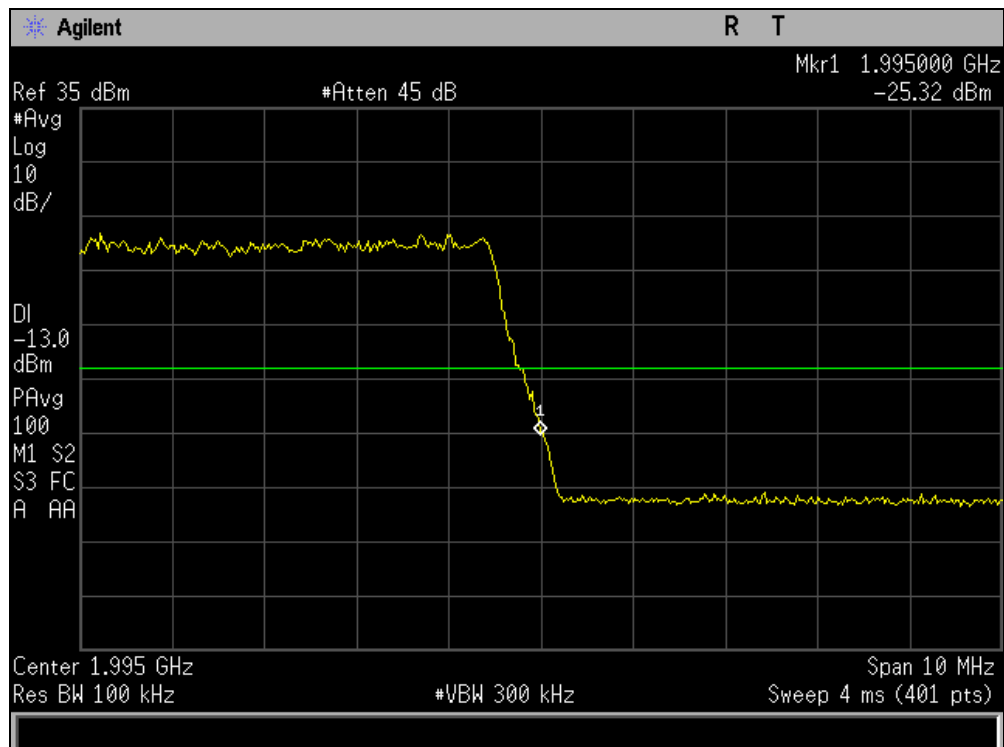


Plot 668. Conducted Band Edge, Band 25, QPSK, High Channel, 10, Port 1

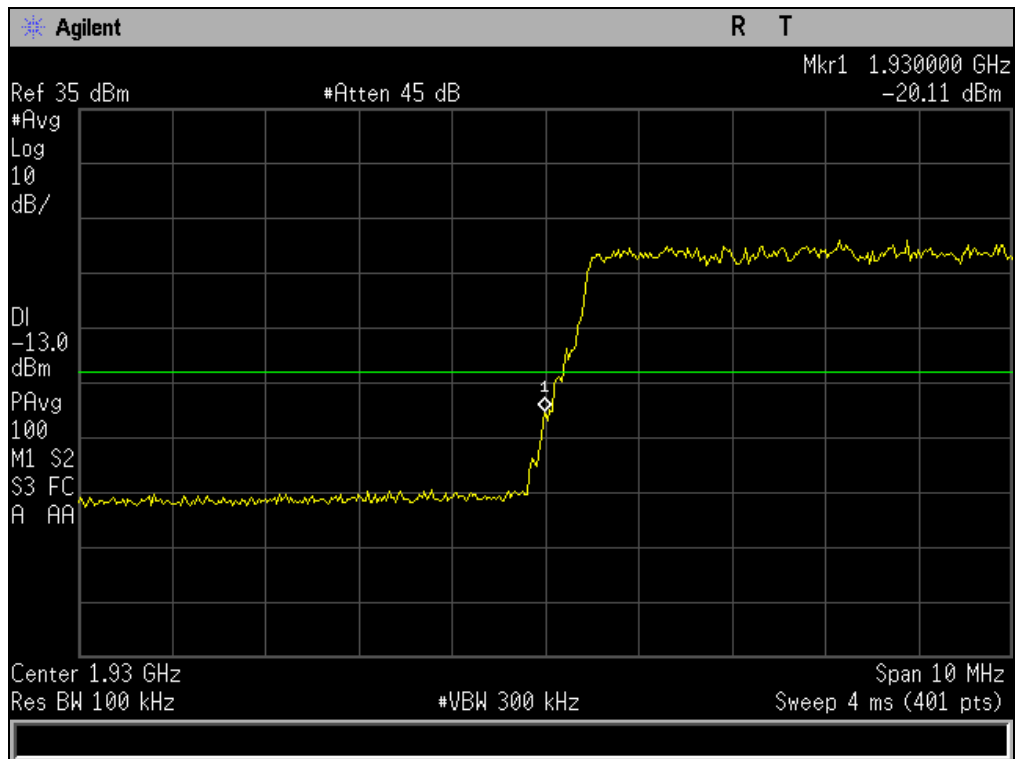
Band Edge, Band 25, 10, Port 2



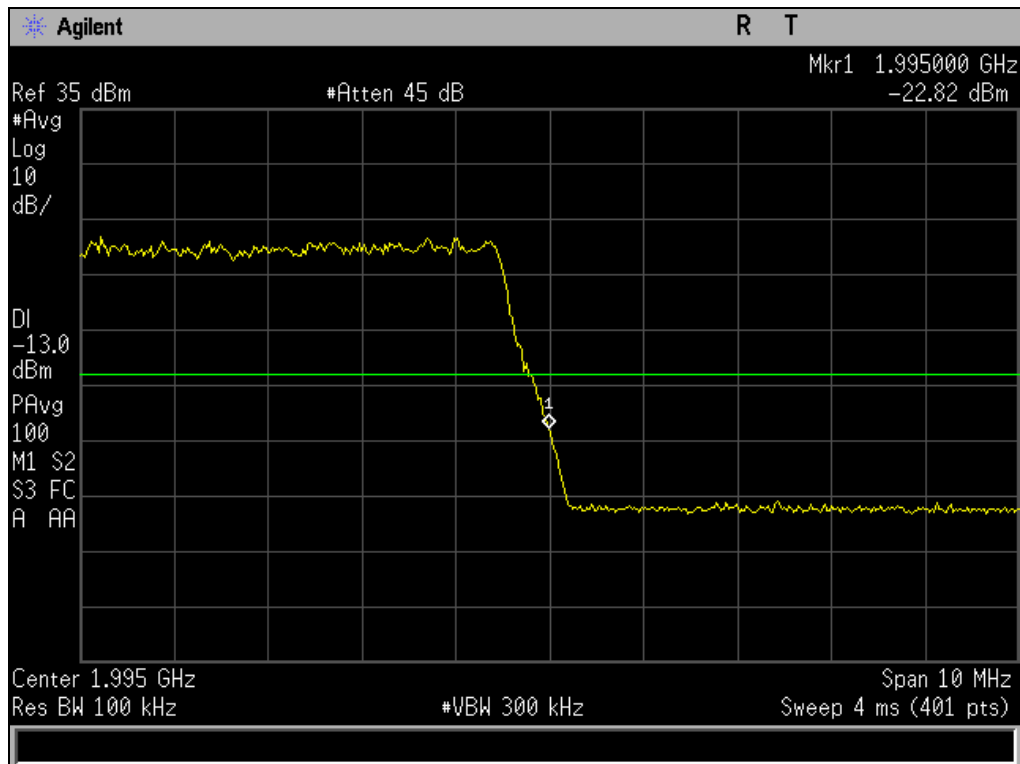
Plot 669. Conducted Band Edge, Band 25, QAM-16, Low Channel, 10, Port 2



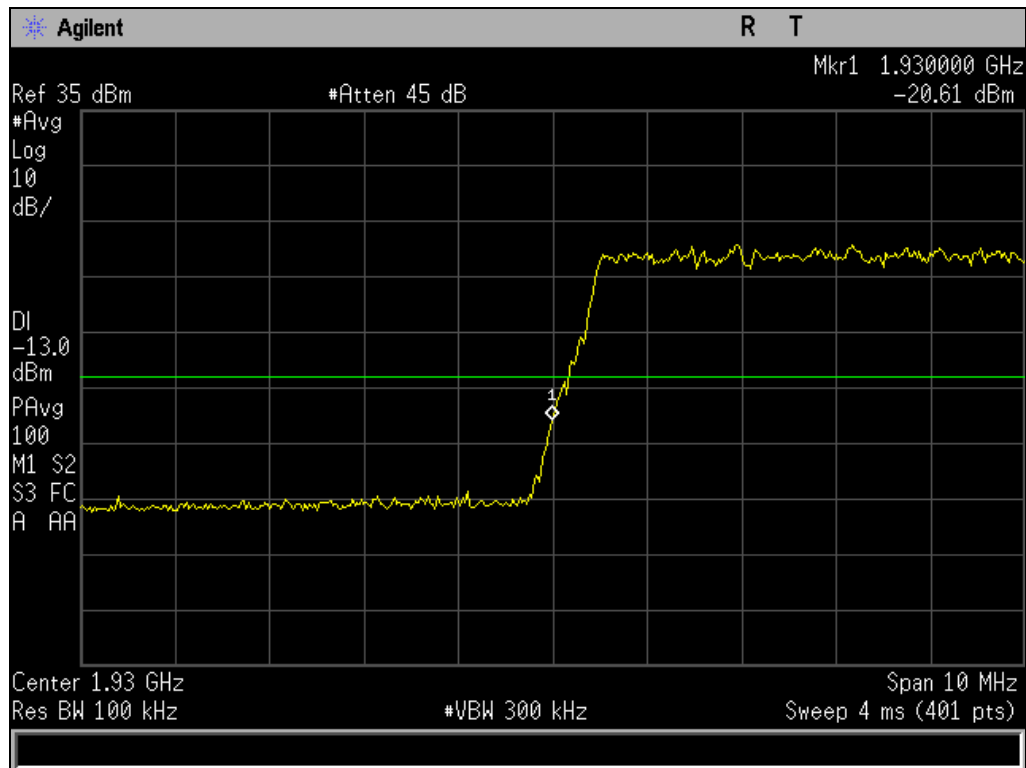
Plot 670. Conducted Band Edge, Band 25, QAM-16, High Channel, 10, Port 2



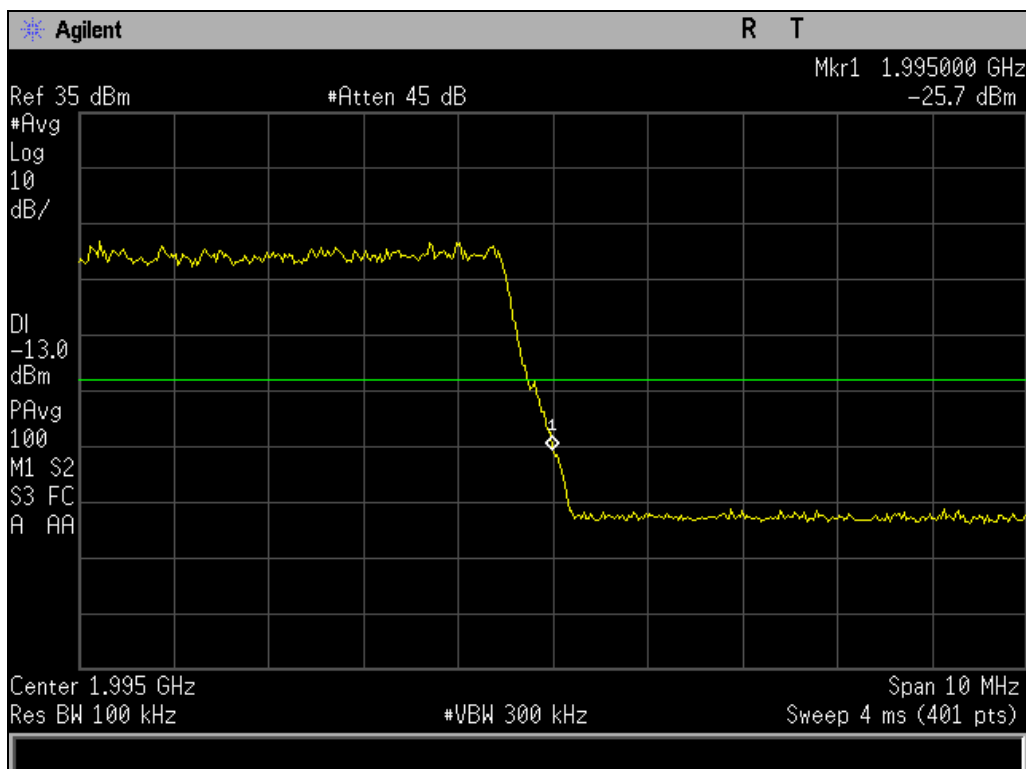
Plot 671. Conducted Band Edge, Band 25, QAM-64, Low Channel, 10, Port 2



Plot 672. Conducted Band Edge, Band 25, QAM-64, High Channel, 10, Port 2

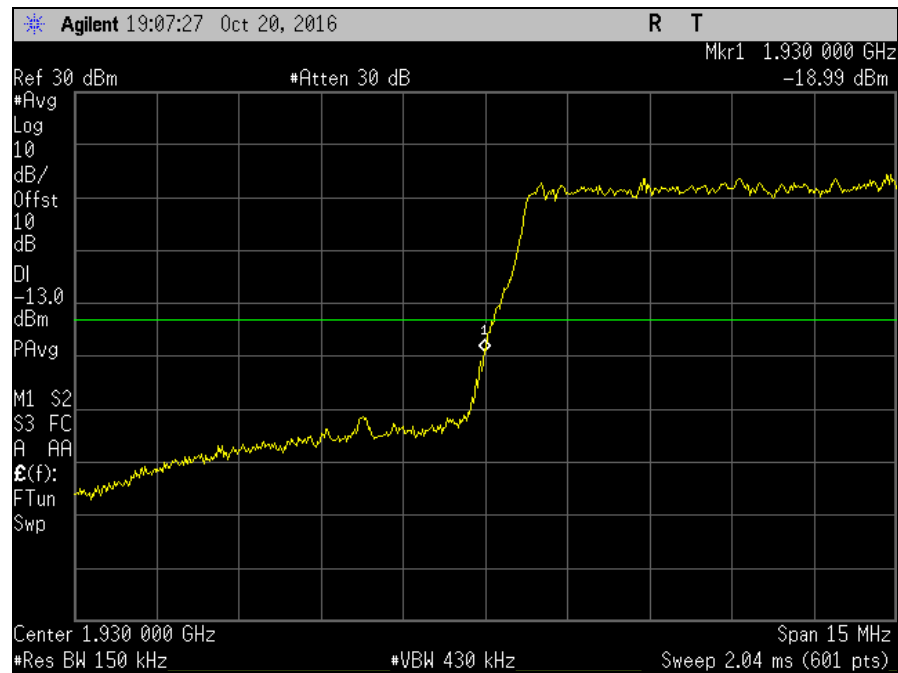


Plot 673. Conducted Band Edge, Band 25, QPSK, Low Channel, 10, Port 2

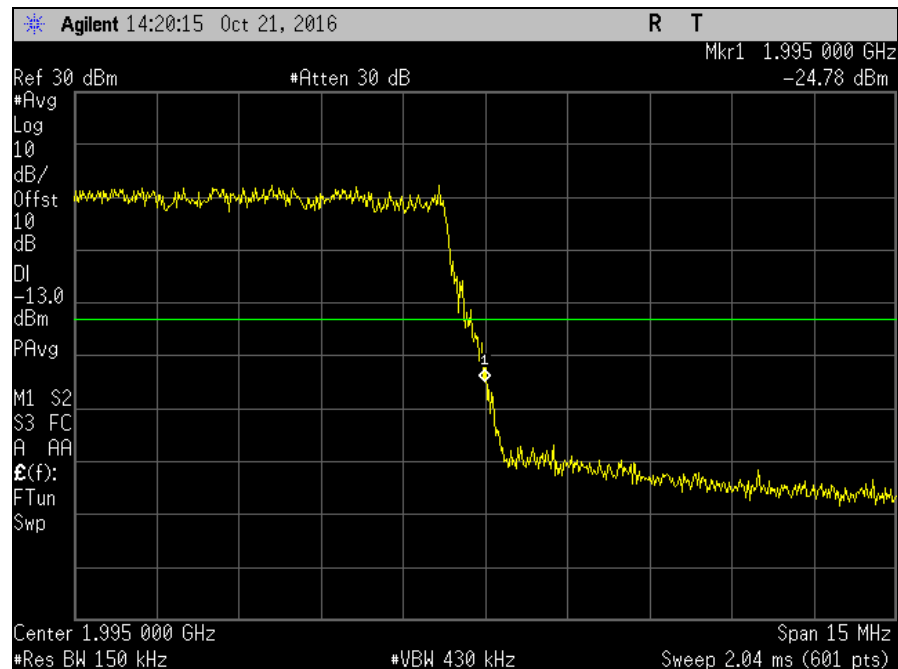


Plot 674. Conducted Band Edge, Band 25, QPSK, High Channel, 10, Port 2

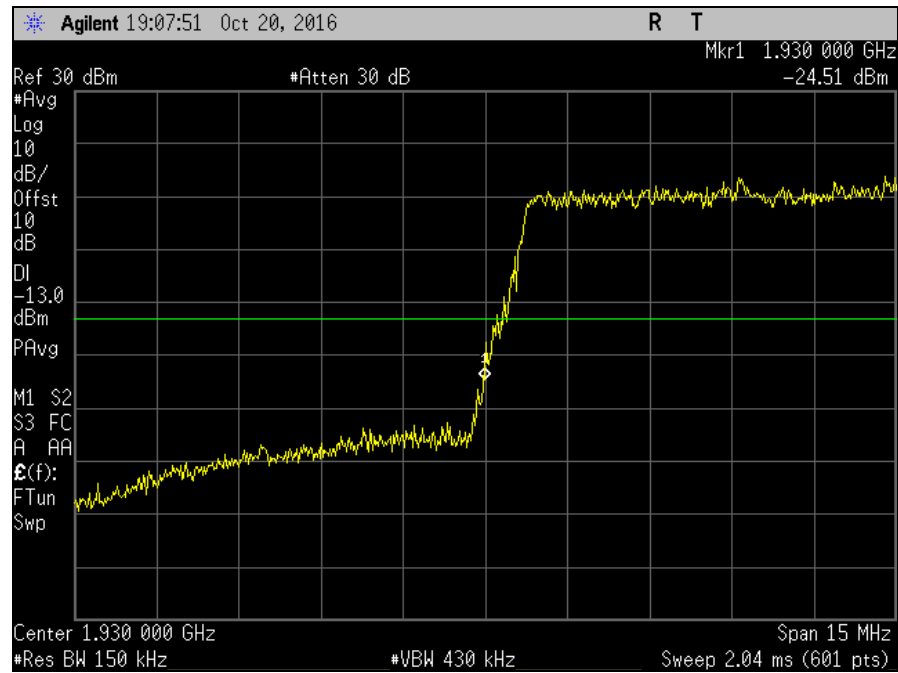
Band Edge, Band 25, 15, Port 1



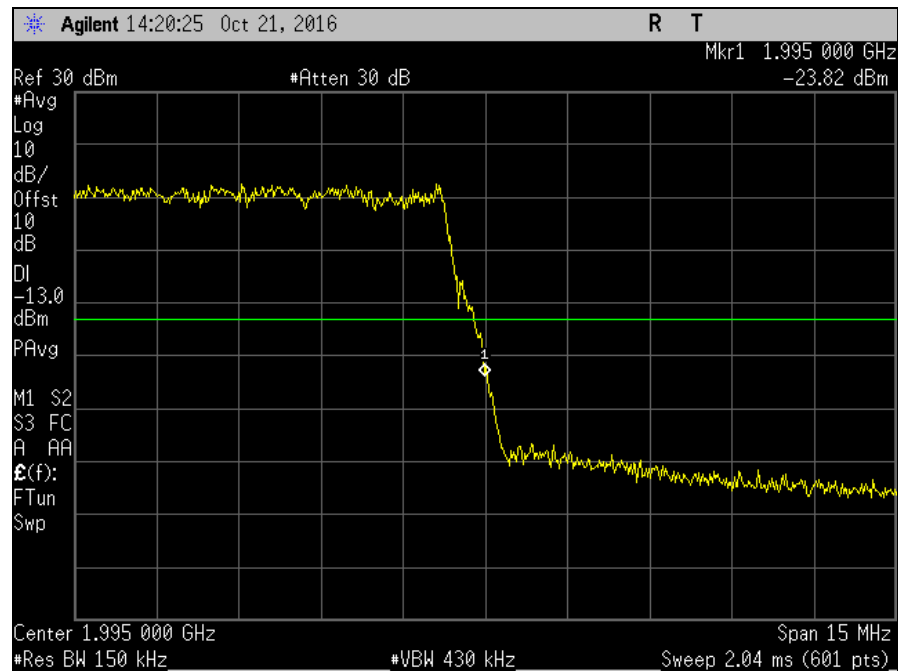
Plot 675. Conducted Band Edge, Band 25, QAM-16, Low Channel, 15, Port 1



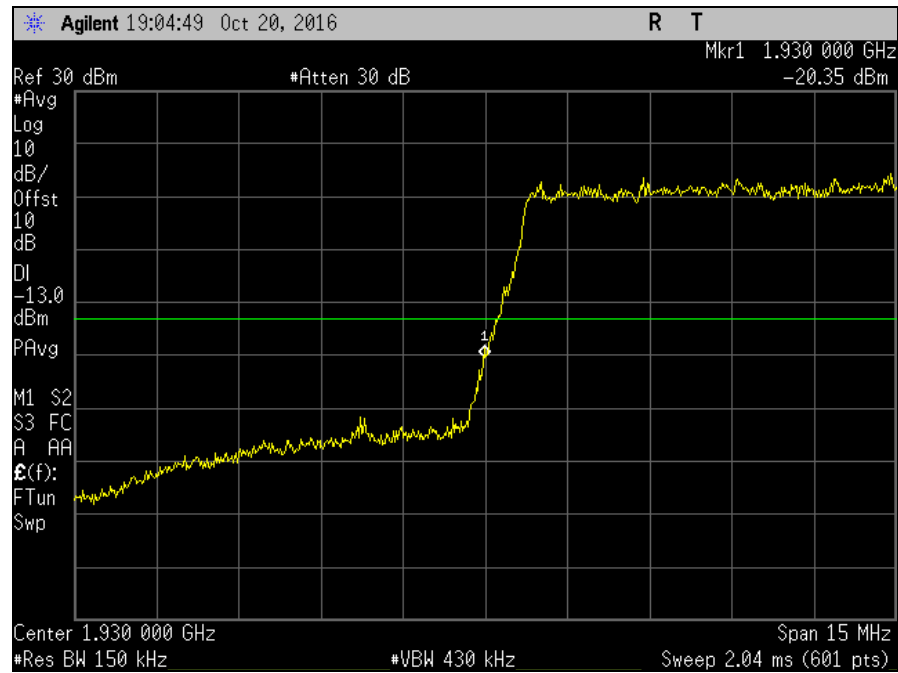
Plot 676. Conducted Band Edge, Band 25, QAM-16, High Channel, 15, Port 1



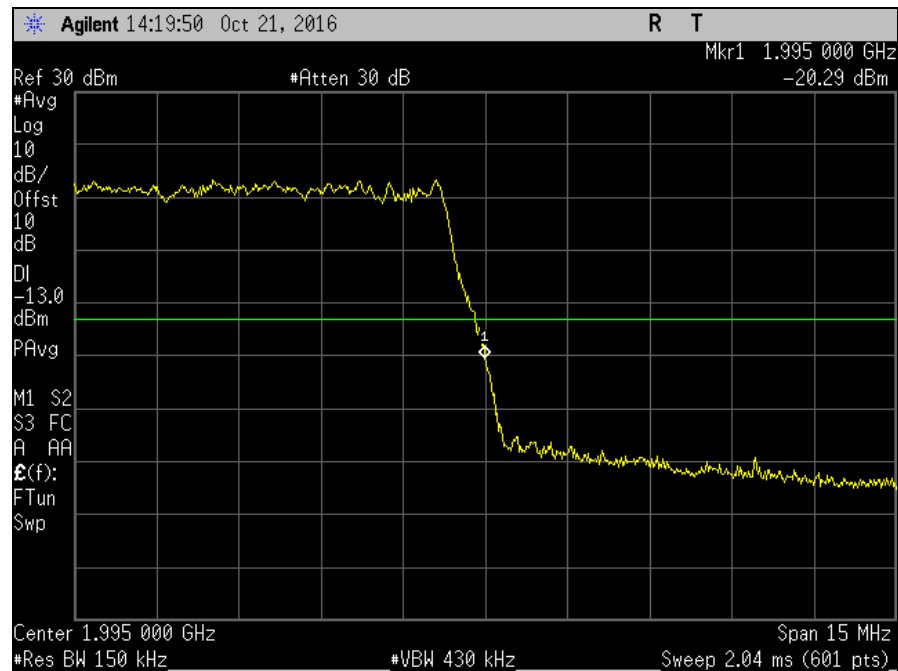
Plot 677. Conducted Band Edge, Band 25, QAM-64, Low Channel, 15, Port 1



Plot 678. Conducted Band Edge, Band 25, QAM-64, High Channel, 15, Port 1

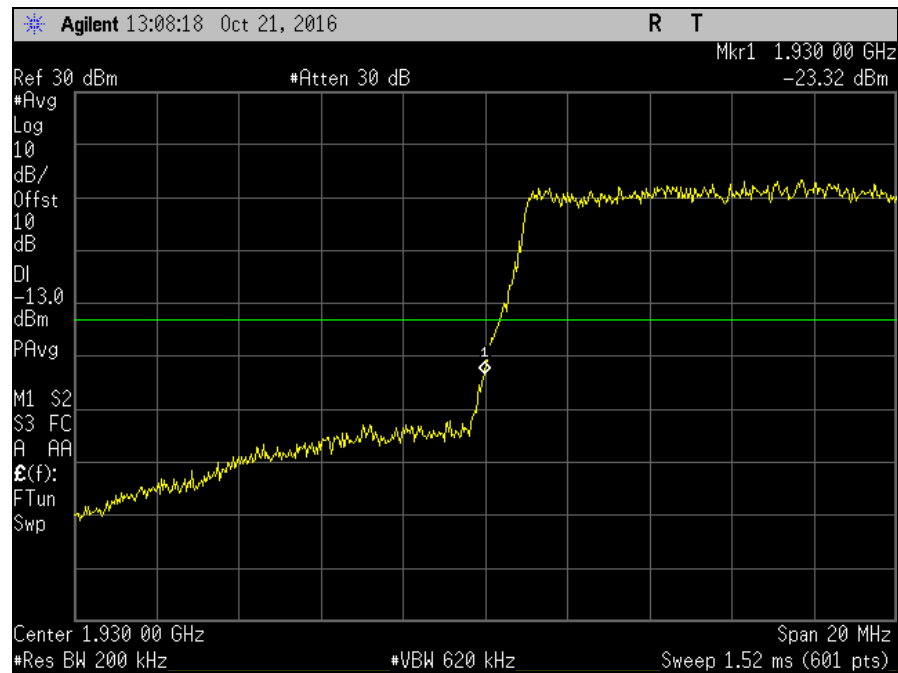


Plot 679. Conducted Band Edge, Band 25, QPSK, Low Channel, 15, Port 1

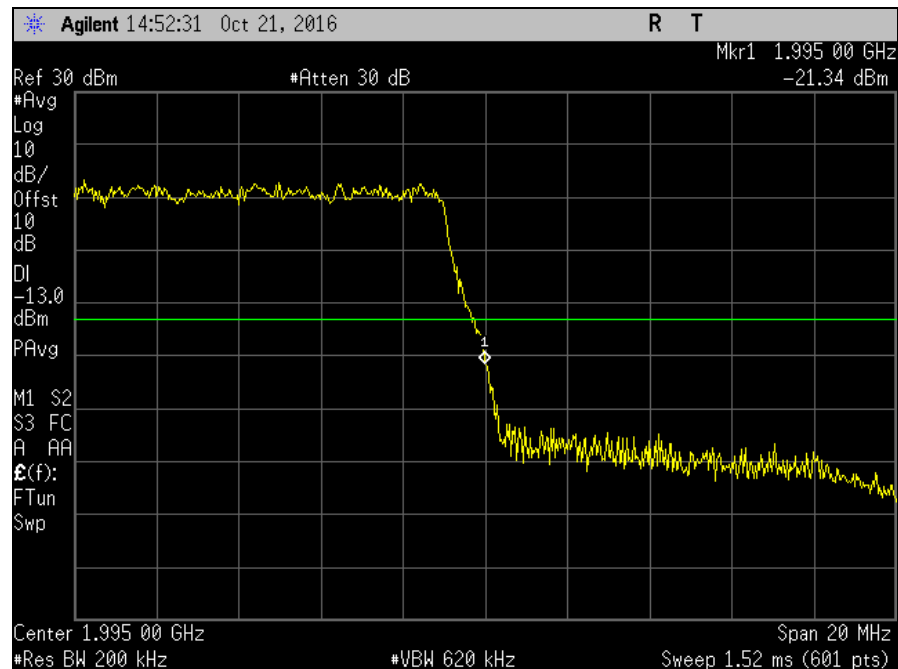


Plot 680. Conducted Band Edge, Band 25, QPSK, High Channel, 15, Port 1

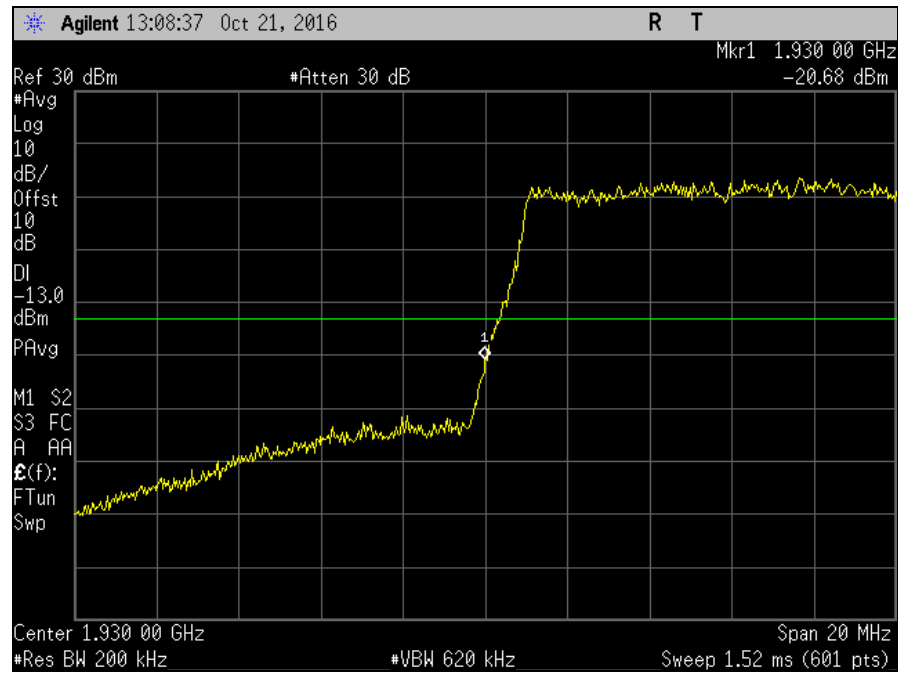
Band Edge, Band 25, 20, Port 1



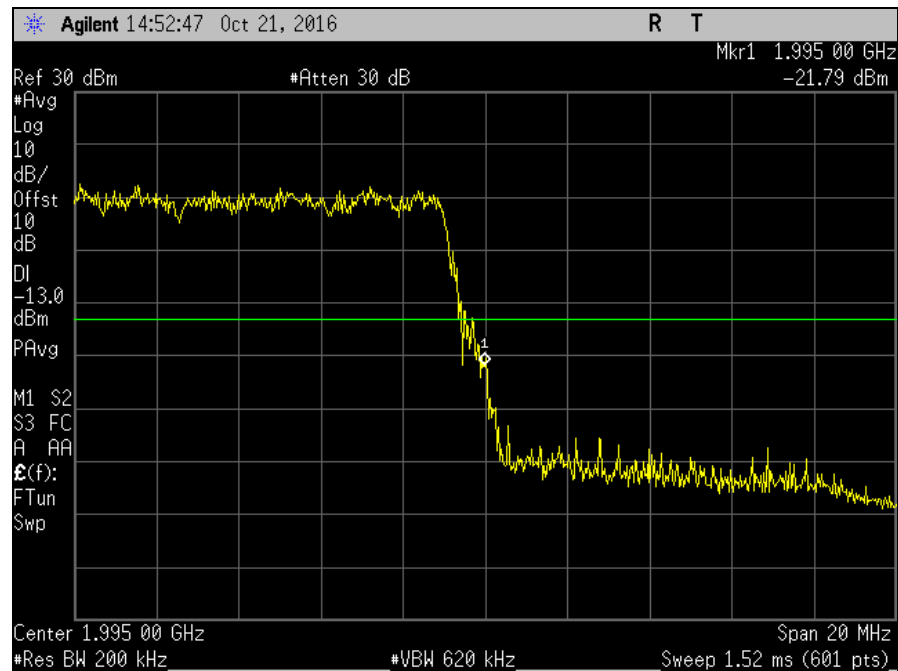
Plot 681. Conducted Band Edge, Band 25, QAM-16, Low Channel, 20, Port 1



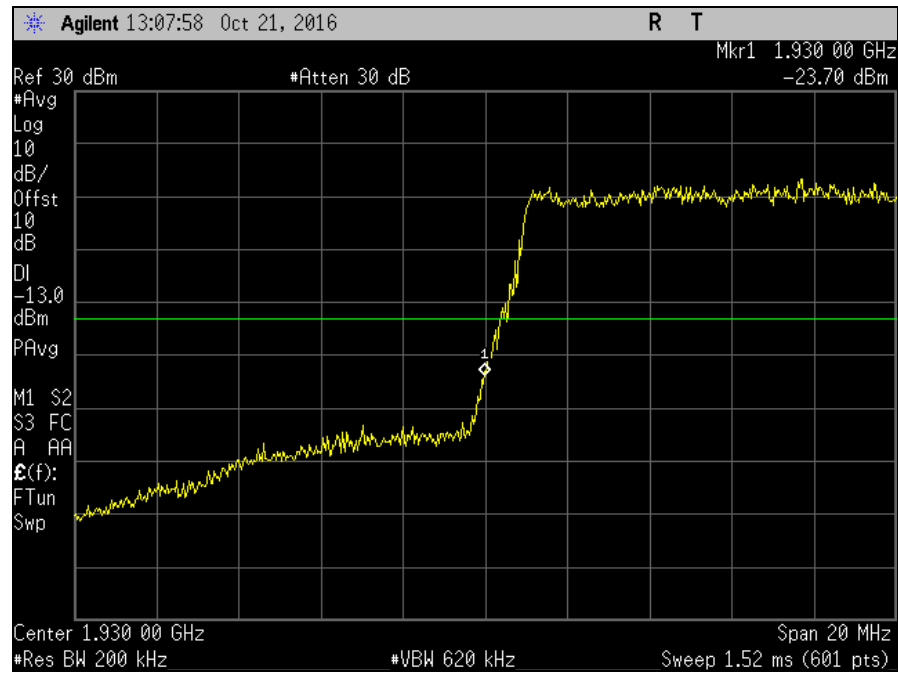
Plot 682. Conducted Band Edge, Band 25, QAM-16, High Channel, 20, Port 1



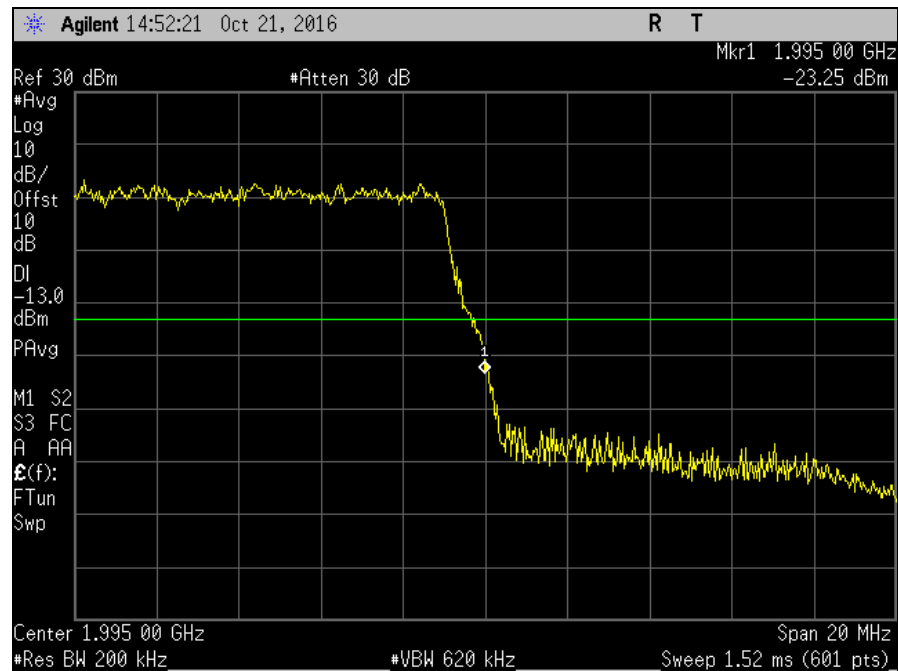
Plot 683. Conducted Band Edge, Band 25, QAM-64, Low Channel, 20, Port 1



Plot 684. Conducted Band Edge, Band 25, QAM-64, High Channel, 20, Port 1

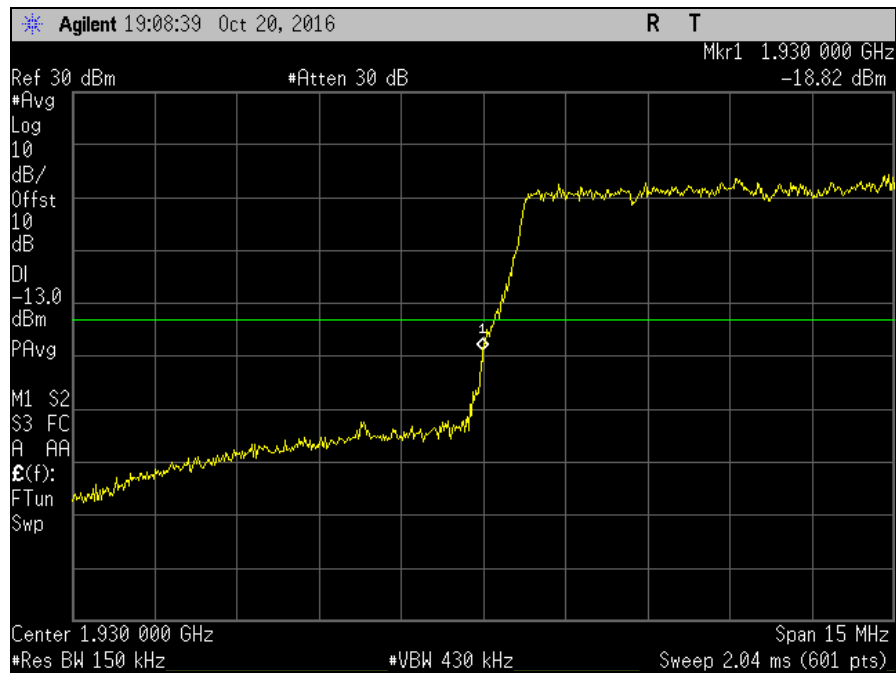


Plot 685. Conducted Band Edge, Band 25, QPSK, Low Channel, 20, Port 1

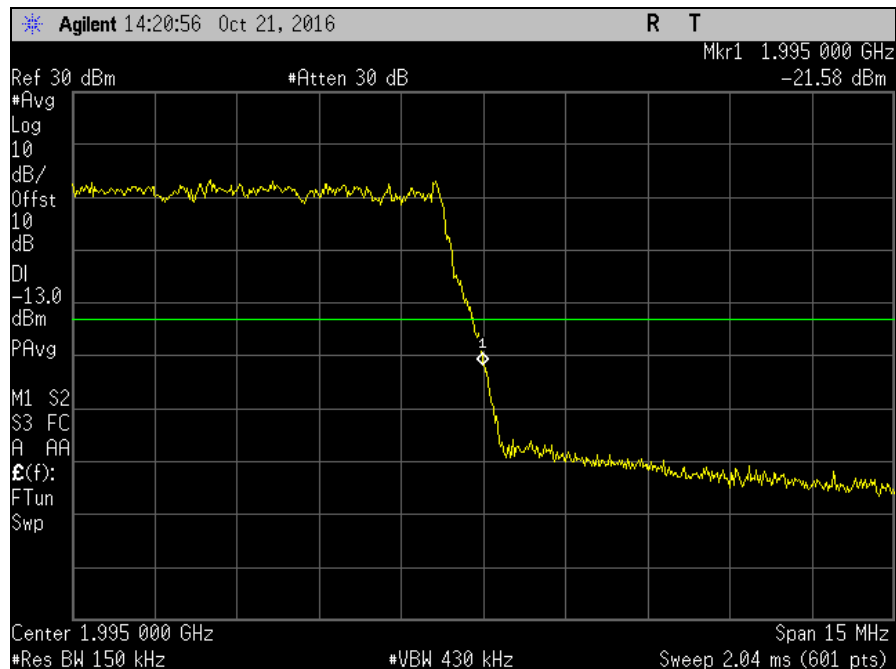


Plot 686. Conducted Band Edge, Band 25, QPSK, High Channel, 20, Port 1

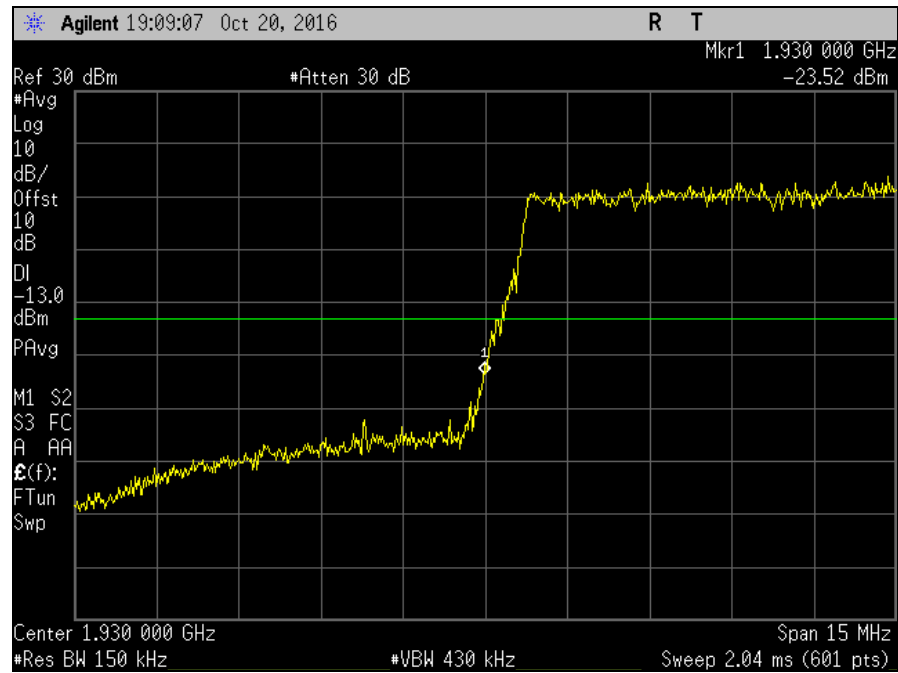
Band Edge, Band 25, 15, Port 2



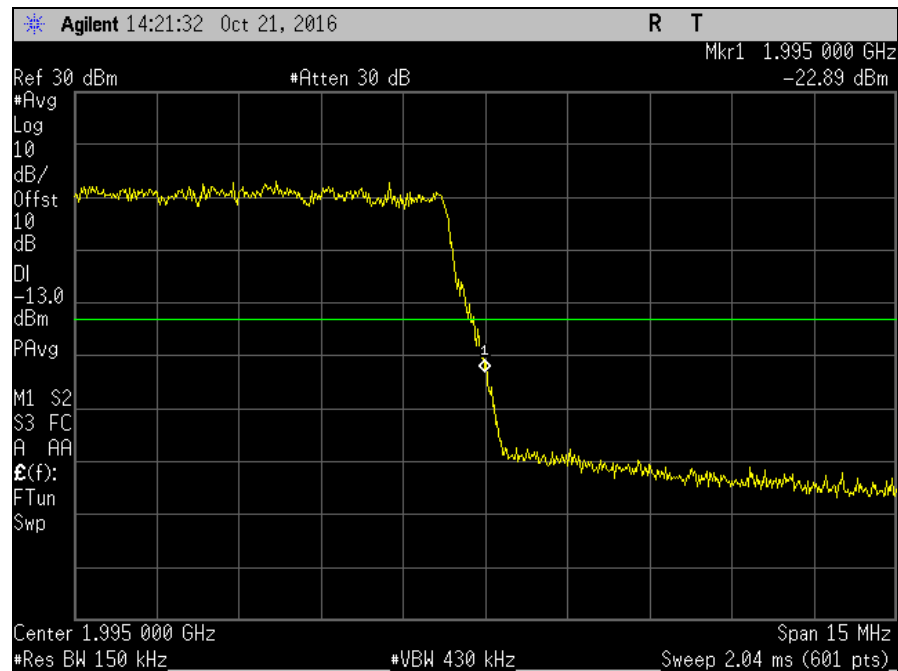
Plot 687. Conducted Band Edge, Band 25, QAM-16, Low Channel, 15, Port 2



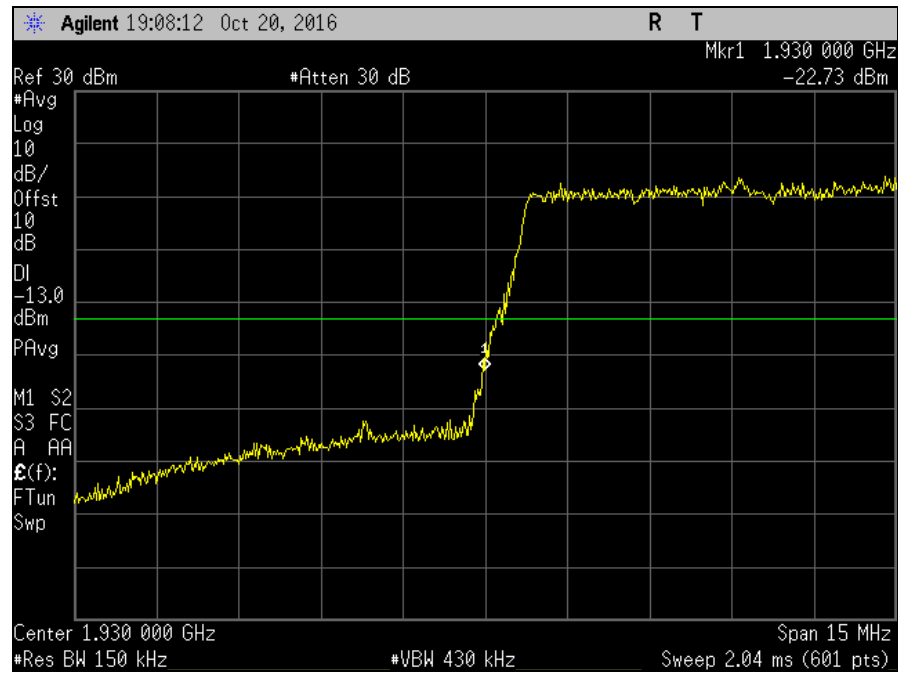
Plot 688. Conducted Band Edge, Band 25, QAM-16, High Channel, 15, Port 2



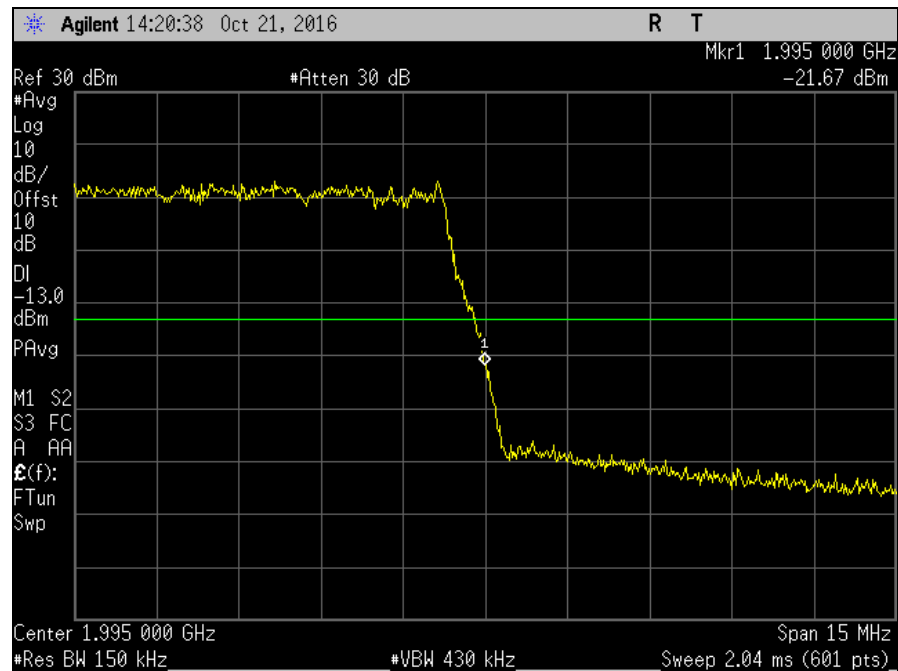
Plot 689. Conducted Band Edge, Band 25, QAM-64, Low Channel, 15, Port 2



Plot 690. Conducted Band Edge, Band 25, QAM-64, High Channel, 15, Port 2

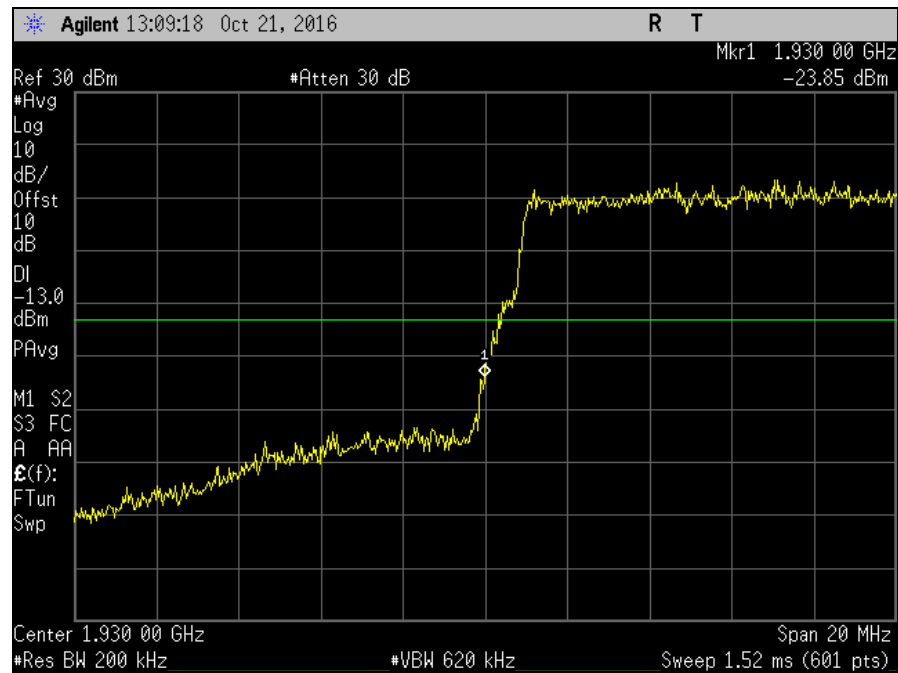


Plot 691. Conducted Band Edge, Band 25, QPSK, Low Channel, 15, Port 2

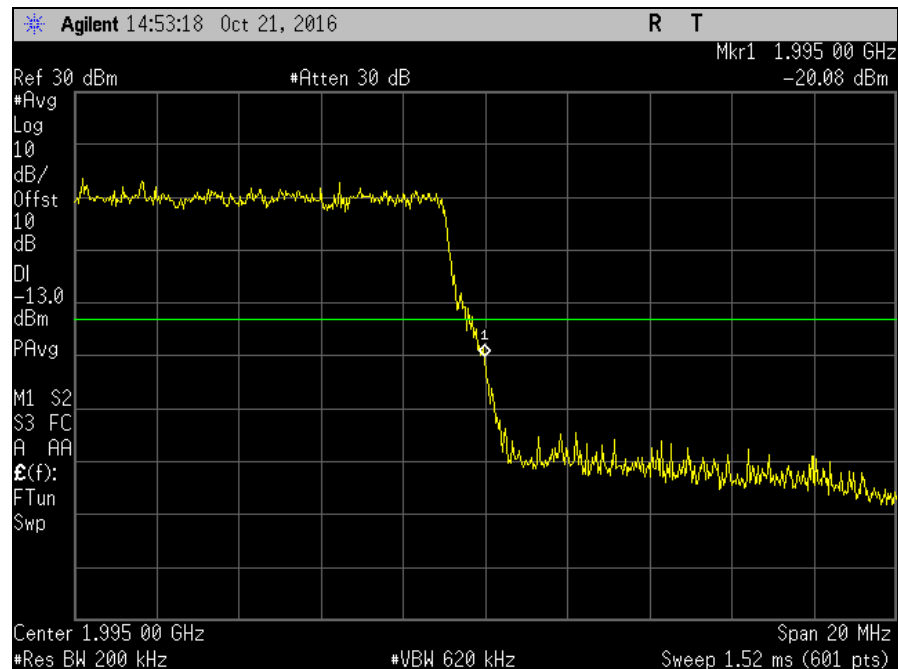


Plot 692. Conducted Band Edge, Band 25, QPSK, High Channel, 15, Port 2

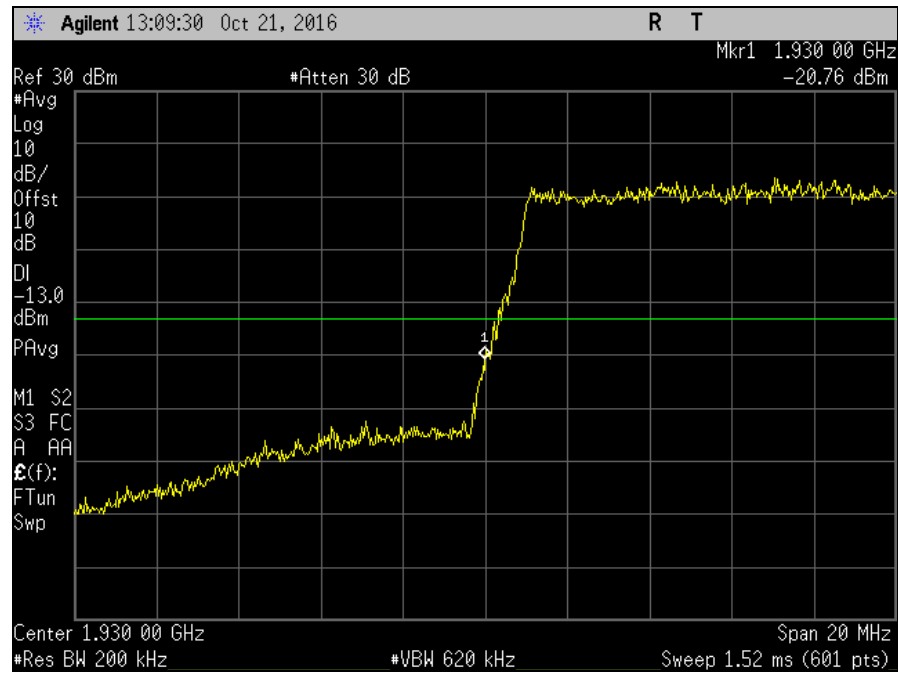
Band Edge, Band 25, 20, Port 2



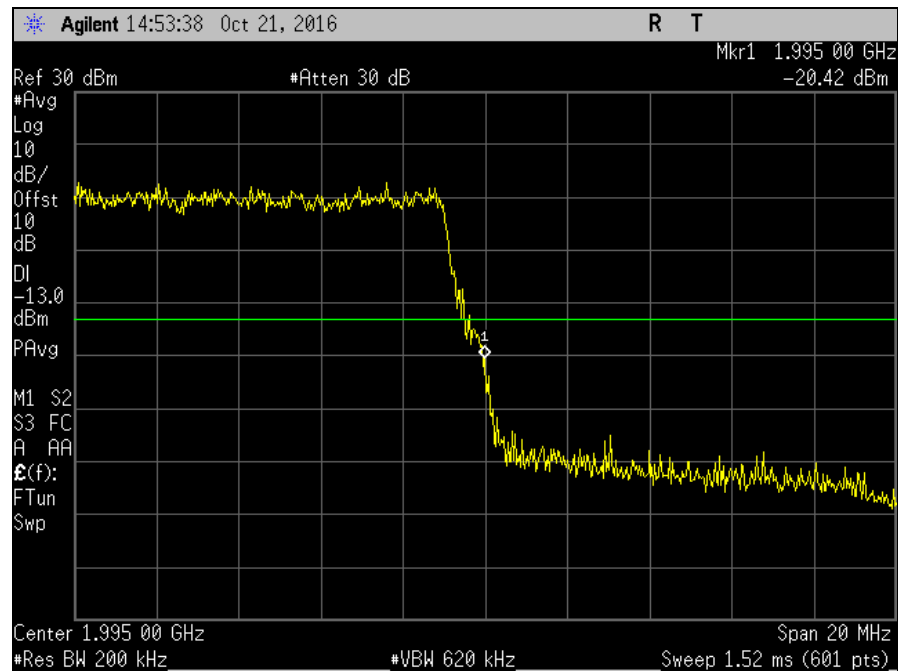
Plot 693. Conducted Band Edge, Band 25, QAM-16, Low Channel, 20, Port 2



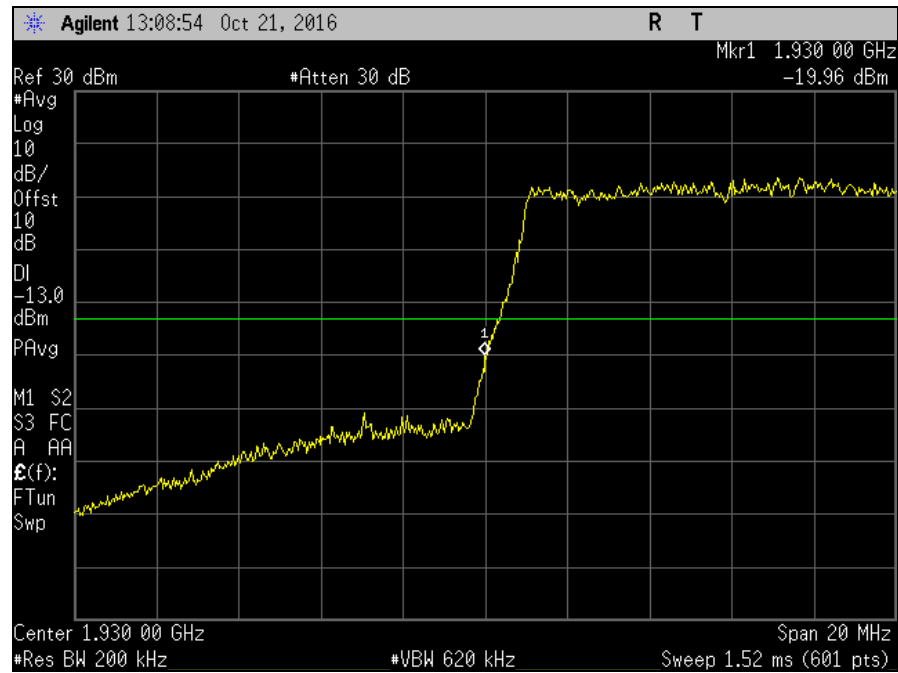
Plot 694. Conducted Band Edge, Band 25, QAM-16, High Channel, 20, Port 2



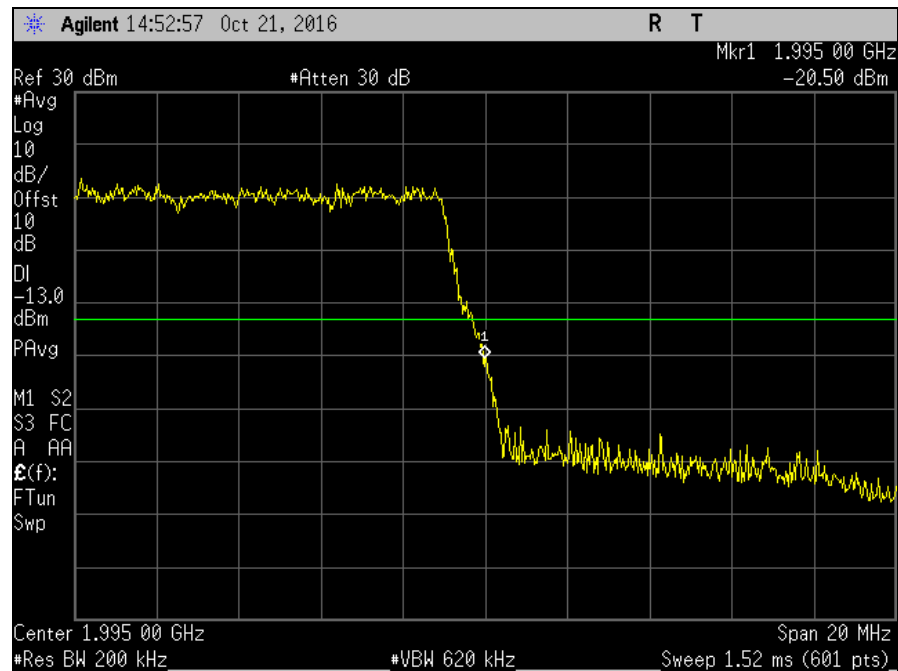
Plot 695. Conducted Band Edge, Band 25, QAM-64, Low Channel, 20, Port 2



Plot 696. Conducted Band Edge, Band 25, QAM-64, High Channel, 20, Port 2



Plot 697. Conducted Band Edge, Band 25, QPSK, Low Channel, 20, Port 2



Plot 698. Conducted Band Edge, Band 25, QPSK, High Channel, 20, Port 2



Electromagnetic Compatibility Criteria for Intentional Radiators

§2.1049 Frequency Stability 2.1049

Test Requirement(s): §2.1049 §24.238

Test Procedures: The EUT was placed inside a temperature chamber and Frequency measurements were made at the extremes of the specified temperature range and at intervals of than 10° centigrade through the range. The operating voltage is varied to +/- 15 % of the nominal voltage at normal temperature. The frequency deviations are then compared to frequency of normal operation and shall not exceed 1ppm.

Test Results: Equipment complies with this section. Refer to FCC ID: QHYRP-A2014. **Different antenna is used for this test to above FCC labeled EUT.** For that matter, the equipment is compliant by similarity with the requirement of frequency stability over temperature and voltage variation.



Maximum Permissible Exposure

RF Exposure Requirements: §1.1307(b)(1) and §1.1307(b)(2): Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines.

RF Radiation Exposure Limit: §1.1310: As specified in this section, the Maximum Permissible Exposure (MPE) Limit shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in Sec. 1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of Sec. 2.1093 of this chapter.

MPE Limit: EUT's operating frequencies @ 869-894 MHz and 1930-1990 MHz; **Limit for Uncontrolled exposure: 1 mW/cm² or 10 W/m²**

Equation from page 18 of OET 65, Edition 97-01

$$S = PG / 4\pi R^2 \quad \text{or} \quad R = \sqrt{PG / 4\pi S}$$

where, S = Power Density (mW/cm²)
P = Power Input to antenna (mW)
G = Antenna Gain (numeric value)
R = Distance (cm)

Test Results:

FCC									
Frequency (MHz)	Con. Pwr. (dBm)	Con. Pwr. (mW)	Ant. Gain (dBi)	Ant. Gain numeric	Pwr. Density (mW/cm ²)	Limit (mW/cm ²)	Margin	Distance (cm)	Result
1937.5	20.89	122.744	12.3	16.982	0.4147	1	0.5853	20	Pass

Table 13. MPE, Band 2

The safe distance where Power Density is less than the MPE Limit listed above was found to be 20 cm.

FCC									
Frequency (MHz)	Con. Pwr. (dBm)	Con. Pwr. (mW)	Ant. Gain (dBi)	Ant. Gain numeric	Pwr. Density (mW/cm ²)	Limit (mW/cm ²)	Margin	Distance (cm)	Result
1980	20.85	121.619	12.3	16.982	0.41089	1	0.58911	20	Pass

Table 14. MPE, Band 25



IV. Test Equipment



Test Equipment

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ISO/IEC 17025:2005.

MET Asset #	Equipment	Manufacturer	Model	Last Cal Date	Cal Due Date
1T4442	PRE-AMPLIFIER, MICROWAVE	MITEQ	AFS42-01001800-30-10P	SEE NOTE	
1T4483	ANTENNA; HORN	ETS-LINDGREN	3117	10/08/2015	04/08/2017
1T4771	PSA SPECTRUM ANALYZER	AGILENT TECHNOLOGIES	E4446A	01/25/2015	07/25/2016
1T4149	HIGH-FREQUENCY ANECHOIC CHAMBER	RAY PROOF	81	NOT REQUIRED	
1T4300	SEMI-ANECHOIC CHAMBER # 1 (NSA)	EMC TEST SYSTEMS	NONE	02/06/2015	02/06/2018
1T4751	ANTENNA - BILOG	SUNOL SCIENCES	JB6	02/26/2016	08/26/2017
1T4409	EMI RECEIVER	ROHDE & SCHWARZ	ESIB7	10/29/2014	10/29/2016
1T4859	DIGITAL BAROMETER, HYGROMETER, THERMOMETER	CONTROL COMPANY	15-078-198, FB70423, 245CD	02/10/2016	02/10/2018
1T4505	TEMPERATURE CHAMBER	TESTEQUITY	115	2/11/2016	2/11/2017

Note: Functionally tested equipment is verified using calibrated instrumentation at the time of testing.



CommScope
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Electromagnetic Compatibility
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