

Digital Path

ADDENDUM TO TEST REPORT 96184-10

GEN6 CPE
Models: 2x-24 and 2x-29

Tested To The Following Standards:

FCC Part 15 Subpart C Section(s)
15.207 & 15.247

Report No.: 96184-10A

Date of issue: May 6, 2015



This test report bears the accreditation symbol indicating that the testing performed herein meets the test and reporting requirements of ISO/IEC 17025 under the applicable scope of EMC testing for CKC Laboratories, Inc.

We strive to create long-term, trust based relationships by providing sound, adaptive, customer first testing services. We embrace each of our customers' unique EMC challenges, not as an interruption to set processes, but rather as the reason we are in business.

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ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

Digital Path
275 Air Park Blvd, Suite 500
Chico, CA 95973

REPORT PREPARED BY:

Terri Rayle
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

REPRESENTATIVE: Brock Eastman
Customer Reference Number: DP-CA-102

Project Number: 96184

DATE OF EQUIPMENT RECEIPT:

February 17, 2015

DATE(S) OF TESTING:

February 17-20 & March 1, 2015

Revision History

Original: Testing of GEN6 CPE, Models: 2x-24 and 2x-29 to FCC Part 15 Subpart C Section(s) 15.207 & 15.247.
Addendum A: Added a manufacturer's declaration statement to the Conditions During Testing, replaced data for spurious emissions, added a voltage varied statement in the Test Conditions and corrected tables for the Peak Power and PSD sections.

Report Authorization

The test data contained in this report documents the observed testing parameters pertaining to and are relevant for only the sample equipment tested in the agreed upon operational mode(s) and configuration(s) as identified herein. Compliance assessment remains the client's responsibility. This report may not be used to claim product endorsement by A2LA or any government agencies. This test report has been authorized for release under quality control from CKC Laboratories, Inc.



Steve Behm
Director of Quality Assurance & Engineering Services
CKC Laboratories, Inc.

Test Facility Information



Our laboratories are configured to effectively test a wide variety of product types. CKC utilizes first class test equipment, anechoic chambers, data acquisition and information services to create accurate, repeatable and affordable test results.

TEST LOCATION(S):
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Software Versions

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.00.14
Immunity	5.00.07

Site Registration & Accreditation Information

Location	CB #	TAIWAN	CANADA	FCC	JAPAN
Mariposa A	US0103	SL2-IN-E-1147R	3082A-2	90477	A-0136
Mariposa D	US0103	SL2-IN-E-1147R	3082A-1	784962	A-0136

SUMMARY OF RESULTS

Standard / Specification: FCC Part 15 Subpart C

Test Procedure	Description	Modifications*	Results
15.207	Conducted Emissions	NA	Pass
15.247(a)(2)	Occupied Bandwidth	NA	Pass
15.247(b)(3)	Peak Power	NA	Pass
15.247(d)	Spurious Emissions and Band Edge	NA	Pass
15.247(e)	Power Spectral Density	NA	Pass

Modifications* During Testing

This list is a summary of the modifications made to the equipment during testing.

Summary of Conditions

No modifications were made during testing.

***Modifications listed above must be incorporated into all production units.**

Conditions During Testing

This list is a summary of the conditions noted to the equipment during testing.

Summary of Conditions

The manufacturer declares that the EUT is intended exclusively for fixed point-to-point operation.

The EUT utilizes two RF chains simultaneously.

Chain 0 represents transmission for the Horizontal Polarity.

Chain 1 represents transmissions for the Vertical Polarity.

Two Configurations were tested: to include the two possible antennas used with the EUT.

Only one antenna can be used with the EUT at one time.

Both configurations utilize the same PCB. The only difference between the configurations is the antenna used.

Model 2x-24 represents use of the 24dBi antenna. Model 2x-29 represents use of the 29dBi antenna.

This project is testing two different bands of operation: 5.15-5.25GHz, and 5.725-5.85GHz.

FCC Part 15.407 covers the 5.15-5.25GHz band and the testing is contained in a different report.

FCC Part 15.247 covers the 5.725-5.85GHz.

For each band, testing was performed on two antennas: A 16" dish (24dBi) and a 24" dish (29dBi).

For the 24dBi antenna power setting of 24dBm is used to comply with the limits.

For the 29dBi antenna, a power setting of 20dBm is used to comply with the limits.

For each band, testing was performed in two operating bandwidths: 5MHz and 10MHz.

The screen captured dates on the plots are incorrect. Actual testing dates are noted on the section's datasheet.

EQUIPMENT UNDER TEST (EUT)

EQUIPMENT UNDER TEST

GEN6 CPE

Manuf: Digital Path
Model: 2x-24 and 2x-29
Serial: C6:A6

POE Power Adapter

Manuf: HP
Model: FAS24000050-C44
Serial: NA

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

AC/DC power Adapter

Manuf: HP
Model: Series PPP012H-S
Serial: F12941126327228

Laptop Computer

Manuf: HP
Model: Probook 6565b
Serial: NA

FCC PART 15 SUBPART C

15.207 AC Conducted Emissions

Test Data

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **Digital Path**
 Specification: **15.207 AC Mains - Average**
 Work Order #: **96184** Date: **2/17/2015**
 Test Type: **Conducted Emissions** Time: **7:17:13 PM**
 Equipment: **GEN6 CPE** Sequence#: **7**
 Manufacturer: Digital Path Tested By: Eddie Mariscal
 Model: 2x 120V 60Hz
 S/N: C6:A6

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015
T1	ANP05624	Attenuator	PE7010-10	1/15/2015	1/15/2017
T2	ANP06232	Cable	CXTA04A-35	9/5/2014	9/5/2016
T3	AN02609	High Pass Filter	HE9615-150K-50-720B	3/25/2014	3/25/2016
	AN00374	50uH LISN-White (dB)	8028-TS-50-BNC	3/15/2014	3/15/2015
T4	AN00374	50uH LISN-Black (dB)	8028-TS-50-BNC	3/15/2014	3/15/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
GEN6 CPE*	Digital Path	2x	C6:A6
POE Power Adapter	HP	FAS24000050-C44	NA

Support Devices:

Function	Manufacturer	Model #	S/N
AC/DC power Adapter	HP	Series PPP012H-S	F12941126327228
Laptop Computer	HP	Probook 6565b	NA

Test Conditions / Notes:

AC Conducted Emissions

The EUT is configured to operate at the middle channel (5790MHz), transmitting continuously.

Software Used: art2_ver2_28_6BIN

Frequency Range of Interest: 0.15 - 30MHz

RBW = 9kHz; VBW > RBW

TX Power setting: 24dBm

Bandwidth setting = 5MHz

Data rate = 19.5Mbps

Environmental Conditions:

Temperature: 18.3°C

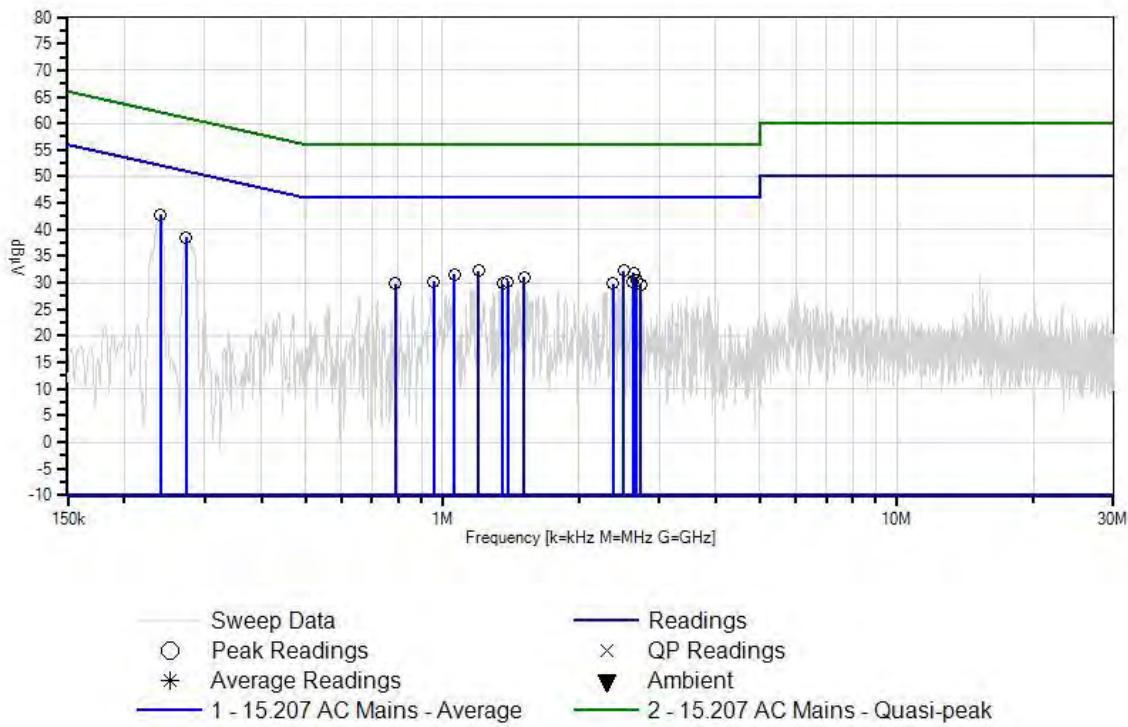
Humidity: 41 %

Atmospheric Pressure: 97.8 kPa

Ext Attn: 0 dB

#	Freq MHz	Rdng dB μ V	Reading listed by margin.				Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
			T1 dB	T2 dB	T3 dB	T4 dB					
1	240.174k	32.7	+9.9	+0.0	+0.2	+0.1	+0.0	42.9	52.1	-9.2	Black
2	273.625k	28.3	+9.9	+0.0	+0.2	+0.1	+0.0	38.5	51.0	-12.5	Black
3	1.200M	22.0	+9.9	+0.1	+0.2	+0.1	+0.0	32.3	46.0	-13.7	Black
4	2.510M	22.0	+9.9	+0.1	+0.1	+0.1	+0.0	32.2	46.0	-13.8	Black
5	2.638M	21.7	+9.9	+0.1	+0.1	+0.1	+0.0	31.9	46.0	-14.1	Black
6	1.064M	21.3	+9.9	+0.1	+0.2	+0.1	+0.0	31.6	46.0	-14.4	Black
7	1.515M	20.8	+9.9	+0.1	+0.2	+0.1	+0.0	31.1	46.0	-14.9	Black
8	2.680M	20.3	+9.9	+0.1	+0.1	+0.1	+0.0	30.5	46.0	-15.5	Black
9	958.007k	20.0	+9.9	+0.1	+0.2	+0.1	+0.0	30.3	46.0	-15.7	Black
10	1.396M	20.0	+9.9	+0.1	+0.2	+0.1	+0.0	30.3	46.0	-15.7	Black
11	2.625M	19.9	+9.9	+0.1	+0.1	+0.1	+0.0	30.1	46.0	-15.9	Black
12	789.214k	19.6	+9.9	+0.1	+0.2	+0.1	+0.0	29.9	46.0	-16.1	Black
13	2.378M	19.7	+9.9	+0.1	+0.1	+0.1	+0.0	29.9	46.0	-16.1	Black
14	1.358M	19.5	+9.9	+0.1	+0.2	+0.1	+0.0	29.8	46.0	-16.2	Black
15	2.736M	19.4	+9.9	+0.1	+0.1	+0.1	+0.0	29.6	46.0	-16.4	Black

CKC Laboratories, Inc. Date: 2/17/2015 Time: 7:17:13 PM Digital Path WO#: 96184
 15.207 AC Mains - Average Test Lead: Black 120V 60Hz Sequence#: 7 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **Digital Path**
 Specification: **15.207 AC Mains - Average**
 Work Order #: **96184** Date: 2/17/2015
 Test Type: **Conducted Emissions** Time: 7:15:19 PM
 Equipment: **GEN6 CPE** Sequence#: 6
 Manufacturer: Digital Path Tested By: Eddie Mariscal
 Model: 2x 120V 60Hz
 S/N: C6:A6

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015
T1	ANP05624	Attenuator	PE7010-10	1/15/2015	1/15/2017
T2	ANP06232	Cable	CXTA04A-35	9/5/2014	9/5/2016
T3	AN02609	High Pass Filter	HE9615-150K-50-720B	3/25/2014	3/25/2016
T4	AN00374	50uH LISN-White (dB)	8028-TS-50-BNC	3/15/2014	3/15/2015
	AN00374	50uH LISN-Black (dB)	8028-TS-50-BNC	3/15/2014	3/15/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
GEN6 CPE*	Digital Path	2x	C6:A6
POE Power Adapter	HP	FAS24000050-C44	NA

Support Devices:

Function	Manufacturer	Model #	S/N
AC/DC power Adapter	HP	Series PPP012H-S	F12941126327228
Laptop Computer	HP	Probook 6565b	NA

Test Conditions / Notes:

AC Conducted Emissions
 The EUT is configured to operate at the middle channel (5790MHz), transmitting continuously.

Software Used: art2_ver2_28_6BIN

Frequency Range of Interest: 0.15 - 30MHz
 RBW = 9kHz; VBW > RBW
 TX Power setting: 24dBm
 Bandwidth setting = 5MHz
 Data rate = 19.5Mbps

Environmental Conditions:

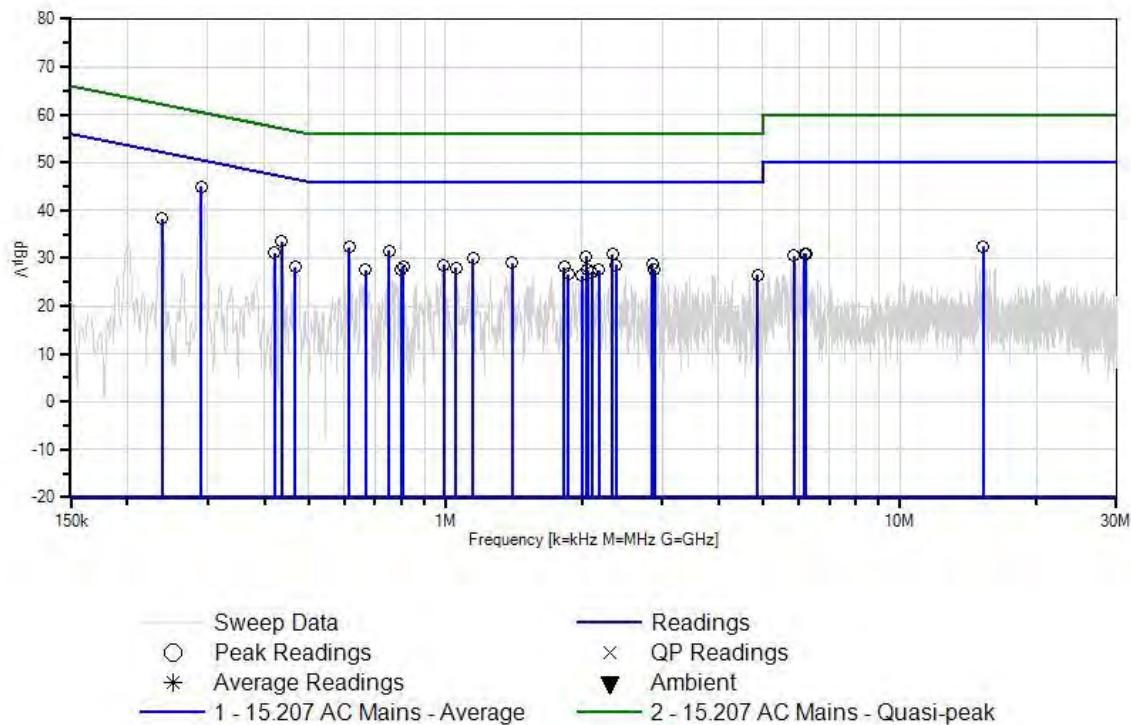
Temperature: 18.3°C
 Humidity: 41 %
 Atmospheric Pressure: 97.8 kPa

Ext Attn: 0 dB

Measurement Data:			Reading listed by margin.				Test Lead: White				
#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	291.078k	34.9	+9.9	+0.0	+0.1	+0.1	+0.0	45.0	50.5	-5.5	White
2	436.519k	23.3	+9.9	+0.0	+0.2	+0.1	+0.0	33.5	47.1	-13.6	White
3	615.412k	22.0	+9.9	+0.1	+0.2	+0.1	+0.0	32.3	46.0	-13.7	White
4	238.719k	28.0	+9.9	+0.0	+0.2	+0.1	+0.0	38.2	52.1	-13.9	White
5	751.399k	21.3	+9.9	+0.1	+0.2	+0.1	+0.0	31.6	46.0	-14.4	White
6	2.336M	20.6	+9.9	+0.1	+0.1	+0.1	+0.0	30.8	46.0	-15.2	White
7	2.042M	20.1	+9.9	+0.1	+0.1	+0.1	+0.0	30.3	46.0	-15.7	White
8	1.154M	19.6	+9.9	+0.1	+0.2	+0.1	+0.0	29.9	46.0	-16.1	White
9	421.248k	20.9	+9.9	+0.0	+0.2	+0.1	+0.0	31.1	47.4	-16.3	White
10	1.405M	18.8	+9.9	+0.1	+0.2	+0.1	+0.0	29.1	46.0	-16.9	White
11	2.859M	18.7	+9.9	+0.1	+0.1	+0.1	+0.0	28.9	46.0	-17.1	White
12	992.029k	18.3	+9.9	+0.1	+0.2	+0.1	+0.0	28.6	46.0	-17.4	White
13	2.378M	18.4	+9.9	+0.1	+0.1	+0.1	+0.0	28.6	46.0	-17.4	White
14	15.238M	21.9	+9.9	+0.3	+0.1	+0.2	+0.0	32.4	50.0	-17.6	White
15	810.303k	18.0	+9.9	+0.1	+0.2	+0.1	+0.0	28.3	46.0	-17.7	White
16	1.830M	17.9	+9.9	+0.1	+0.2	+0.1	+0.0	28.2	46.0	-17.8	White
17	1.056M	17.7	+9.9	+0.1	+0.2	+0.1	+0.0	28.0	46.0	-18.0	White
18	799.395k	17.4	+9.9	+0.1	+0.2	+0.1	+0.0	27.7	46.0	-18.3	White
19	667.043k	17.3	+9.9	+0.1	+0.2	+0.1	+0.0	27.6	46.0	-18.4	White
20	468.516k	17.9	+9.9	+0.0	+0.2	+0.1	+0.0	28.1	46.5	-18.4	White
21	2.889M	17.4	+9.9	+0.1	+0.1	+0.1	+0.0	27.6	46.0	-18.4	White
22	2.059M	17.4	+9.9	+0.1	+0.1	+0.1	+0.0	27.6	46.0	-18.4	White
23	2.179M	17.3	+9.9	+0.1	+0.1	+0.1	+0.0	27.5	46.0	-18.5	White
24	2.102M	16.9	+9.9	+0.1	+0.1	+0.1	+0.0	27.1	46.0	-18.9	White

25	6.220M	20.7	+9.9	+0.2	+0.1	+0.1	+0.0	31.0	50.0	-19.0	White
26	6.184M	20.6	+9.9	+0.2	+0.1	+0.1	+0.0	30.9	50.0	-19.1	White
27	1.868M	16.5	+9.9	+0.1	+0.1	+0.1	+0.0	26.7	46.0	-19.3	White
28	4.875M	16.2	+9.9	+0.2	+0.1	+0.1	+0.0	26.5	46.0	-19.5	White
29	5.842M	20.2	+9.9	+0.2	+0.1	+0.1	+0.0	30.5	50.0	-19.5	White
30	2.000M	16.2	+9.9	+0.1	+0.1	+0.1	+0.0	26.4	46.0	-19.6	White

CKC Laboratories, Inc. Date: 2/17/2015 Time: 7:15:19 PM Digital Path WO#: 96184
 15.207 AC Mains - Average Test Lead: White 120V 60Hz Sequence#: 6 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **Digital Path**
 Specification: **15.207 AC Mains - Average**
 Work Order #: **96184** Date: 2/17/2015
 Test Type: **Conducted Emissions** Time: 18:58:06
 Equipment: **GEN6 CPE** Sequence#: 6
 Manufacturer: Digital Path Tested By: Eddie Mariscal
 Model: 2x-29 120V 60Hz
 S/N: C6:A6

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015
T1	ANP05624	Attenuator	PE7010-10	1/15/2015	1/15/2017
T2	ANP06232	Cable	CXTA04A-35	9/5/2014	9/5/2016
T3	AN02609	High Pass Filter	HE9615-150K-50-720B	3/25/2014	3/25/2016
	AN00374	50uH LISN-White (dB)	8028-TS-50-BNC	3/15/2014	3/15/2015
T4	AN00374	50uH LISN-Black (dB)	8028-TS-50-BNC	3/15/2014	3/15/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
POE Power Adapter	HP	FAS24000050-C44	NA
GEN6 CPE*	Digital Path	2x-29	C6:A6

Support Devices:

Function	Manufacturer	Model #	S/N
AC/DC power Adapter	HP	Series PPP012H-S	F12941126327228
Laptop Computer	HP	Probook 6565b	NA

Test Conditions / Notes:

AC Conducted Emissions
The EUT is configured to operate at the middle channel (5790MHz), transmitting continuously.
Software Used: art2_ver2_28_6BIN
Frequency Range of Interest: 0.15 - 30MHz
RBW = 9kHz; VBW > RBW
TX Power setting: 24dBm
Bandwidth setting = 10MHz
Data rate = 13Mbps
Environmental Conditions:
Temperature: 18.3°C
Humidity: 41 %
Atmospheric Pressure: 97.8 kPa

Ext Attn: 0 dB

Measurement Data:

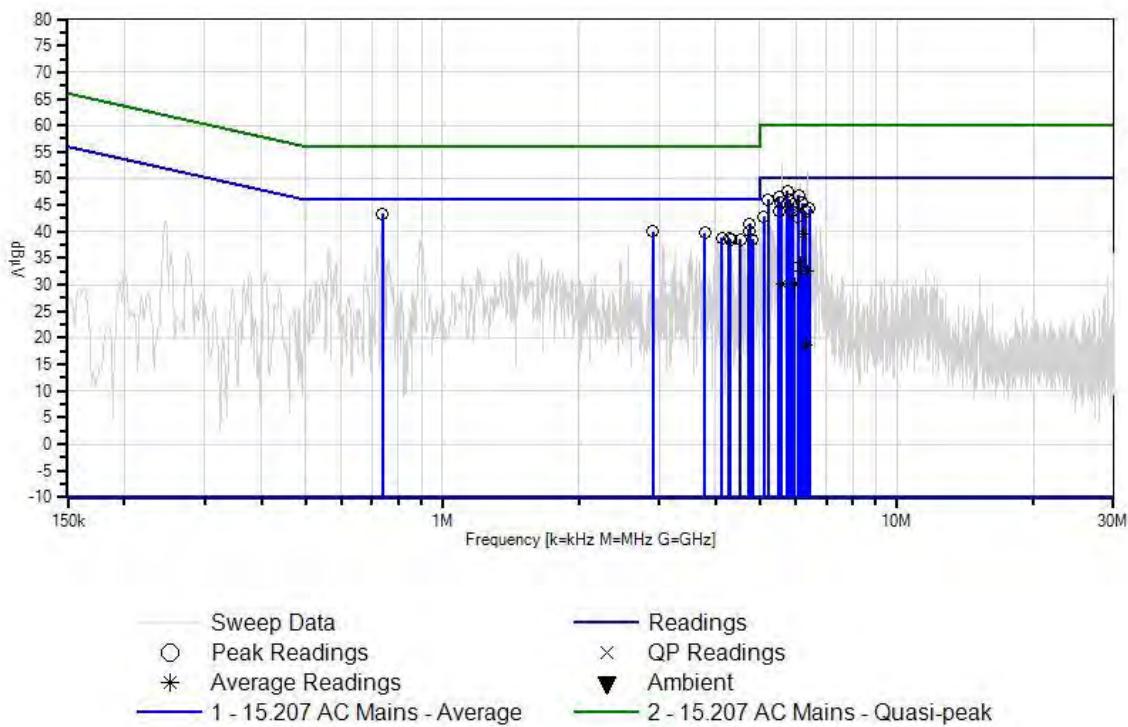
Reading listed by margin.

Test Lead: Black

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	5.752M	37.3	+9.9	+0.2	+0.1	+0.1	+0.0	47.6	50.0	-2.4	Black
2	739.036k	33.1	+9.9	+0.1	+0.2	+0.1	+0.0	43.4	46.0	-2.6	Black
3	6.094M	36.5	+9.9	+0.2	+0.1	+0.2	+0.0	46.9	50.0	-3.1	Black
4	5.499M	36.3	+9.9	+0.2	+0.1	+0.1	+0.0	46.6	50.0	-3.4	Black
5	5.220M	35.7	+9.9	+0.2	+0.1	+0.1	+0.0	46.0	50.0	-4.0	Black
6	5.815M	35.5	+9.9	+0.2	+0.1	+0.2	+0.0	45.9	50.0	-4.1	Black
7	4.756M	31.2	+9.9	+0.2	+0.1	+0.1	+0.0	41.5	46.0	-4.5	Black
8	5.562M	35.2	+9.9	+0.2	+0.1	+0.1	+0.0	45.5	50.0	-4.5	Black
9	6.193M	35.0	+9.9	+0.2	+0.1	+0.2	+0.0	45.4	50.0	-4.6	Black
10	5.905M	34.8	+9.9	+0.2	+0.1	+0.2	+0.0	45.2	50.0	-4.8	Black
11	6.436M	33.9	+9.9	+0.2	+0.1	+0.2	+0.0	44.3	50.0	-5.7	Black
12	4.726M	29.8	+9.9	+0.2	+0.1	+0.1	+0.0	40.1	46.0	-5.9	Black
13	2.906M	29.8	+9.9	+0.1	+0.1	+0.1	+0.0	40.0	46.0	-6.0	Black
14	5.878M	33.5	+9.9	+0.2	+0.1	+0.2	+0.0	43.9	50.0	-6.1	Black
15	3.782M	29.6	+9.9	+0.1	+0.1	+0.1	+0.0	39.8	46.0	-6.2	Black
16	5.526M	33.5	+9.9	+0.2	+0.1	+0.1	+0.0	43.8	50.0	-6.2	Black
17	6.310M	33.4	+9.9	+0.2	+0.1	+0.2	+0.0	43.8	50.0	-6.2	Black
18	5.096M	32.6	+9.9	+0.2	+0.1	+0.1	+0.0	42.9	50.0	-7.1	Black
19	4.126M	28.6	+9.9	+0.1	+0.1	+0.1	+0.0	38.8	46.0	-7.2	Black
20	4.275M	28.6	+9.9	+0.1	+0.1	+0.1	+0.0	38.8	46.0	-7.2	Black
21	6.058M	32.4	+9.9	+0.2	+0.1	+0.2	+0.0	42.8	50.0	-7.2	Black
22	4.313M	28.3	+9.9	+0.1	+0.1	+0.1	+0.0	38.5	46.0	-7.5	Black
23	4.530M	28.2	+9.9	+0.2	+0.1	+0.1	+0.0	38.5	46.0	-7.5	Black
24	4.811M	28.2	+9.9	+0.2	+0.1	+0.1	+0.0	38.5	46.0	-7.5	Black

25	6.249M	29.2	+9.9	+0.2	+0.1	+0.2	+0.0	39.6	50.0	-10.4	Black
Ave											
^	6.249M	44.4	+9.9	+0.2	+0.1	+0.2	+0.0	54.8	50.0	+4.8	Black
27	6.121M	23.8	+9.9	+0.2	+0.1	+0.2	+0.0	34.2	50.0	-15.8	Black
Ave											
^	6.121M	38.5	+9.9	+0.2	+0.1	+0.2	+0.0	48.9	50.0	-1.1	Black
29	6.157M	22.3	+9.9	+0.2	+0.1	+0.2	+0.0	32.7	50.0	-17.3	Black
Ave											
^	6.157M	37.9	+9.9	+0.2	+0.1	+0.2	+0.0	48.3	50.0	-1.7	Black
31	6.373M	22.3	+9.9	+0.2	+0.1	+0.2	+0.0	32.7	50.0	-17.3	Black
Ave											
^	6.373M	41.0	+9.9	+0.2	+0.1	+0.2	+0.0	51.4	50.0	+1.4	Black
33	5.968M	19.9	+9.9	+0.2	+0.1	+0.2	+0.0	30.3	50.0	-19.7	Black
Ave											
^	5.968M	37.9	+9.9	+0.2	+0.1	+0.2	+0.0	48.3	50.0	-1.7	Black
35	5.589M	19.8	+9.9	+0.2	+0.1	+0.1	+0.0	30.1	50.0	-19.9	Black
Ave											
^	5.589M	42.7	+9.9	+0.2	+0.1	+0.1	+0.0	53.0	50.0	+3.0	Black
37	6.337M	8.3	+9.9	+0.2	+0.1	+0.2	+0.0	18.7	50.0	-31.3	Black
Ave											
^	6.337M	37.9	+9.9	+0.2	+0.1	+0.2	+0.0	48.3	50.0	-1.7	Black

CKC Laboratories, Inc. Date: 2/17/2015 Time: 18:58:06 Digital Path WO#: 96184
 15.207 AC Mains - Average Test Lead: Black 120V 60Hz Sequence#: 6 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **Digital Path**
 Specification: **15.207 AC Mains - Average**
 Work Order #: **96184** Date: 2/17/2015
 Test Type: **Conducted Emissions** Time: 18:48:55
 Equipment: **GEN6 CPE** Sequence#: 5
 Manufacturer: Digital Path Tested By: Eddie Mariscal
 Model: 2x 120V 60Hz
 S/N: C6:A6

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015
T1	ANP05624	Attenuator	PE7010-10	1/15/2015	1/15/2017
T2	ANP06232	Cable	CXTA04A-35	9/5/2014	9/5/2016
T3	AN02609	High Pass Filter	HE9615-150K-50-720B	3/25/2014	3/25/2016
T4	AN00374	50uH LISN-White (dB)	8028-TS-50-BNC	3/15/2014	3/15/2015
	AN00374	50uH LISN-Black (dB)	8028-TS-50-BNC	3/15/2014	3/15/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
GEN6 CPE*	Digital Path	2x	C6:A6
POE Power Adapter	HP	FAS24000050-C44	NA

Support Devices:

Function	Manufacturer	Model #	S/N
AC/DC power Adapter	HP	Series PPP012H-S	F12941126327228
Laptop Computer	HP	Probook 6565b	NA

Test Conditions / Notes:

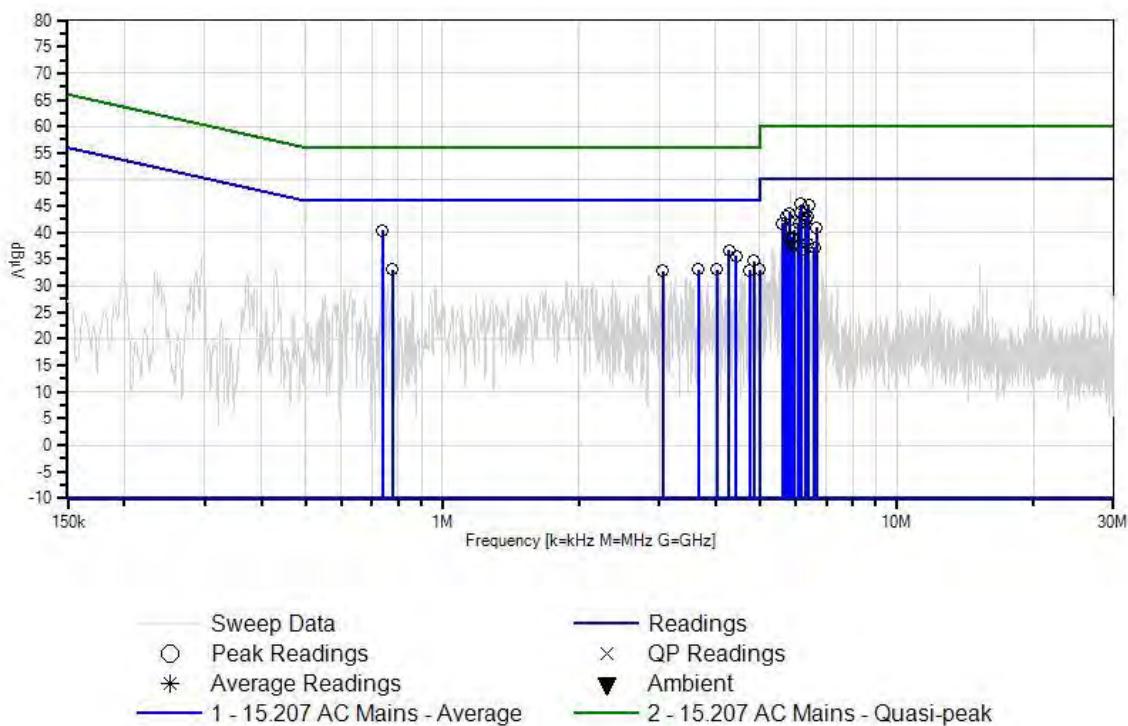
AC Conducted Emissions The EUT is configured to operate at the middle channel (5790MHz), transmitting continuously.
Software Used: art2_ver2_28_6BIN
Frequency Range of Interest: 0.15 - 30MHz RBW = 9kHz; VBW > RBW TX Power setting: 24dBm Bandwidth setting = 10MHz Data rate = 13Mbps
Environmental Conditions: Temperature: 18.3°C Humidity: 41 % Atmospheric Pressure: 97.8 kPa

Ext Attn: 0 dB

Measurement Data:			Reading listed by margin.				Test Lead: White					
#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant	
1	6.157M	35.1	+9.9	+0.2	+0.1	+0.1	+0.0	45.4	50.0	-4.6	White	
2	6.409M	35.0	+9.9	+0.2	+0.1	+0.1	+0.0	45.3	50.0	-4.7	White	
3	739.037k	30.1	+9.9	+0.1	+0.2	+0.1	+0.0	40.4	46.0	-5.6	White	
4	6.121M	33.6	+9.9	+0.2	+0.1	+0.1	+0.0	43.9	50.0	-6.1	White	
5	5.815M	33.4	+9.9	+0.2	+0.1	+0.1	+0.0	43.7	50.0	-6.3	White	
6	6.346M	32.8	+9.9	+0.2	+0.1	+0.1	+0.0	43.1	50.0	-6.9	White	
7	5.716M	32.7	+9.9	+0.2	+0.1	+0.1	+0.0	43.0	50.0	-7.0	White	
8	6.310M	32.3	+9.9	+0.2	+0.1	+0.1	+0.0	42.6	50.0	-7.4	White	
9	5.598M	31.4	+9.9	+0.2	+0.1	+0.1	+0.0	41.7	50.0	-8.3	White	
10	6.094M	31.4	+9.9	+0.2	+0.1	+0.1	+0.0	41.7	50.0	-8.3	White	
11	6.661M	30.6	+9.9	+0.2	+0.1	+0.1	+0.0	40.9	50.0	-9.1	White	
12	4.279M	26.5	+9.9	+0.1	+0.1	+0.1	+0.0	36.7	46.0	-9.3	White	
13	5.968M	30.3	+9.9	+0.2	+0.1	+0.1	+0.0	40.6	50.0	-9.4	White	
14	4.441M	25.3	+9.9	+0.2	+0.1	+0.1	+0.0	35.6	46.0	-10.4	White	
15	5.905M	28.8	+9.9	+0.2	+0.1	+0.1	+0.0	39.1	50.0	-10.9	White	
16	5.878M	28.7	+9.9	+0.2	+0.1	+0.1	+0.0	39.0	50.0	-11.0	White	
17	5.788M	28.6	+9.9	+0.2	+0.1	+0.1	+0.0	38.9	50.0	-11.1	White	
18	4.845M	24.3	+9.9	+0.2	+0.1	+0.1	+0.0	34.6	46.0	-11.4	White	
19	6.373M	27.6	+9.9	+0.2	+0.1	+0.1	+0.0	37.9	50.0	-12.1	White	
20	5.932M	27.4	+9.9	+0.2	+0.1	+0.1	+0.0	37.7	50.0	-12.3	White	
21	6.589M	26.9	+9.9	+0.2	+0.1	+0.1	+0.0	37.2	50.0	-12.8	White	
22	6.625M	26.9	+9.9	+0.2	+0.1	+0.1	+0.0	37.2	50.0	-12.8	White	
23	5.842M	26.8	+9.9	+0.2	+0.1	+0.1	+0.0	37.1	50.0	-12.9	White	
Ave		5.842M	37.5	+9.9	+0.2	+0.1	+0.1	+0.0	47.8	50.0	-2.2	White

25	776.852k	22.7	+9.9	+0.1	+0.2	+0.1	+0.0	33.0	46.0	-13.0	White
26	4.998M	22.7	+9.9	+0.2	+0.1	+0.1	+0.0	33.0	46.0	-13.0	White
27	4.028M	22.8	+9.9	+0.1	+0.1	+0.1	+0.0	33.0	46.0	-13.0	White
28	3.658M	22.8	+9.9	+0.1	+0.1	+0.1	+0.0	33.0	46.0	-13.0	White
29	4.751M	22.6	+9.9	+0.2	+0.1	+0.1	+0.0	32.9	46.0	-13.1	White
30	6.184M	26.5	+9.9	+0.2	+0.1	+0.1	+0.0	36.8	50.0	-13.2	White
31	3.059M	22.6	+9.9	+0.1	+0.1	+0.1	+0.0	32.8	46.0	-13.2	White

CKC Laboratories, Inc. Date: 2/17/2015 Time: 18:48:55 Digital Path WO#: 96184
 15.207 AC Mains - Average Test Lead: White 120V 60Hz Sequence#: 5 Ext ATTN: 0 dB



Test Setup Photos



15.247(a)(2) Occupied Bandwidth

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **Digital Path**
 Specification: **15.247(a)(2) 6dB Bandwidth**
 Work Order #: **96184** Date: **2/20/2015**
 Test Type: **Conducted Emissions** Time: **11:36:47**
 Equipment: **GEN6 CPE** Sequence#: **1**
 Manufacturer: Digital Path Tested By: Eddie Mariscal
 Model: 2x-29
 S/N: C6:A6

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T2	ANP01391	Attenuator	85053-60001	12/8/2014	12/8/2016
T3	AN03362	Cable	32026-2-29094K-48TC	12/8/2014	12/8/2016
	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
GEN6 CPE*	Digital Path	2x-29	C6:A6
POE Power Adapter	HP	FAS24000050-C44	NA

Support Devices:

Function	Manufacturer	Model #	S/N
AC/DC power Adapter	HP	Series PPP012H-S	F12941126327228
Laptop Computer	HP	Probook 6565b	NA

Test Conditions / Notes:

The EUT is directly connected to the spectrum analyzer for conducted measurements.
 The EUT is set to transmit at 100% duty cycle, operating in the band 5.725-5.85GHz.

Tested in accordance with KDB 558074 Section 8.2.

Chain 0 and Chain 1, labeled appropriately
 Channel Bandwidth: 5MHz and 10MHz, labeled appropriately
 Data rate: 19.5Mbps for 5MHz channel bandwidth; 13Mbps for 10MHz channel bandwidth
 Tx Power setting: 24dBm for the 16" dish; 20dBm for the 24" dish.

Cable loss and attenuator loss were taken into account in the plots below.

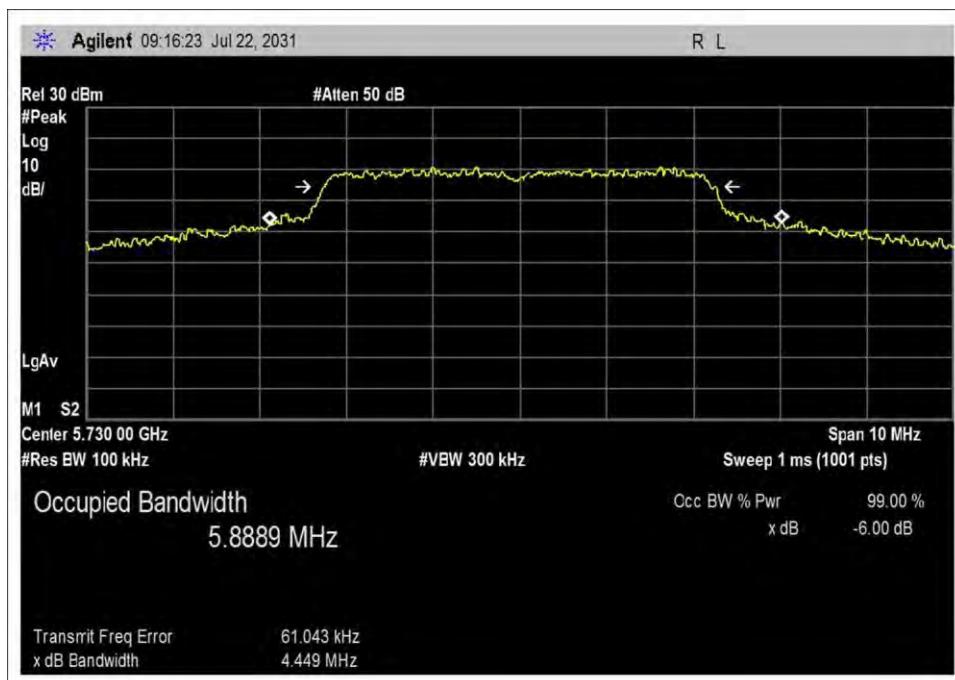
Environmental Conditions:

Temperature: 19°C

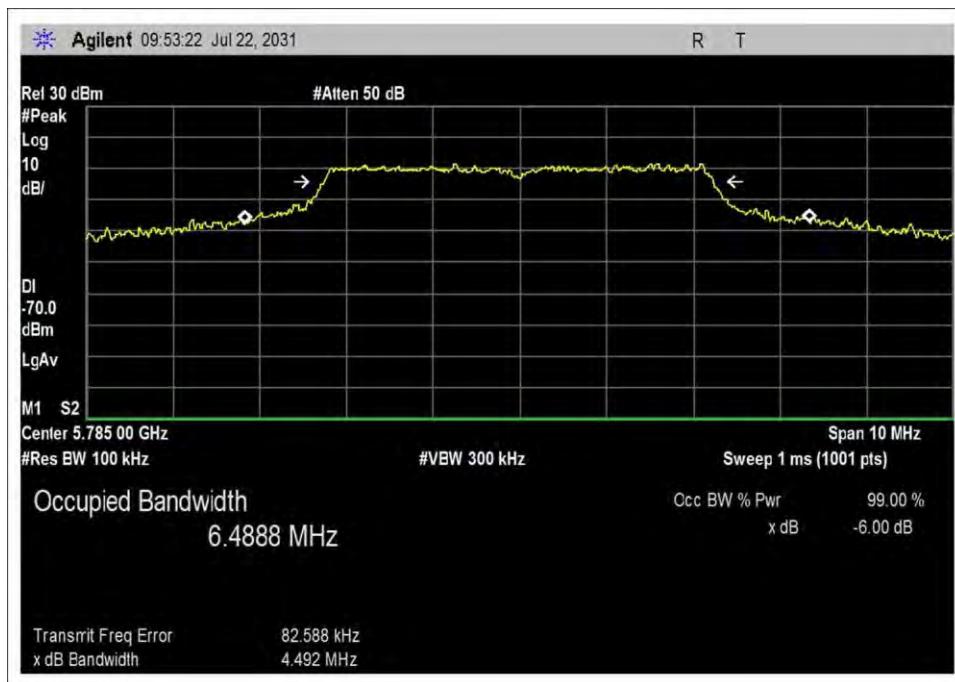
Relative Humidity: 40%

Atmospheric Pressure: 97.8kPa

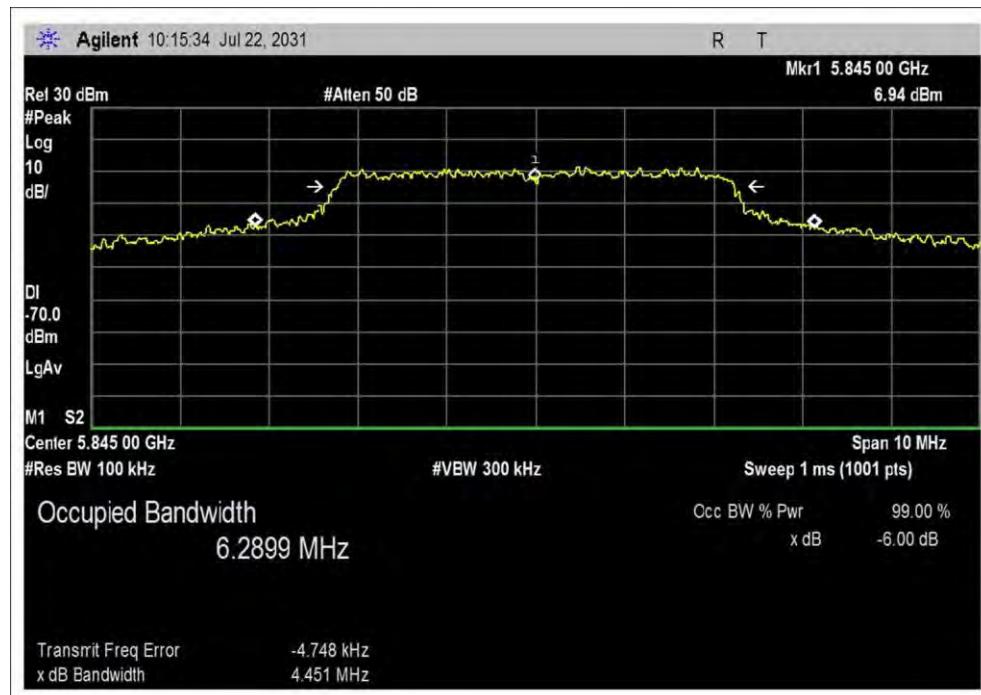
Test Data



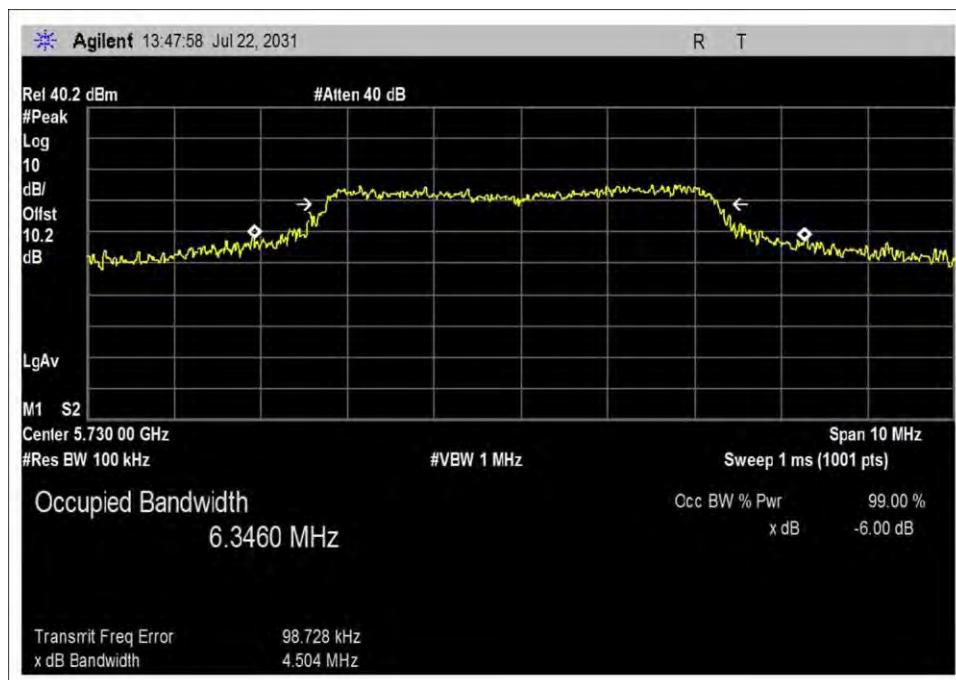
5MHz, Low, Chain 0



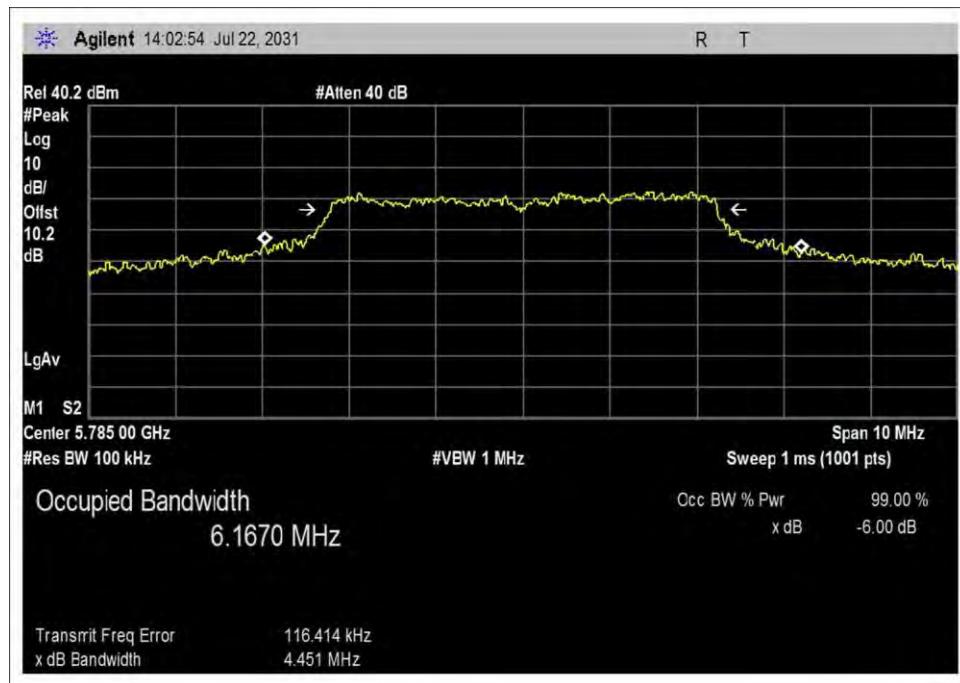
5MHz, Mid, Chain 0



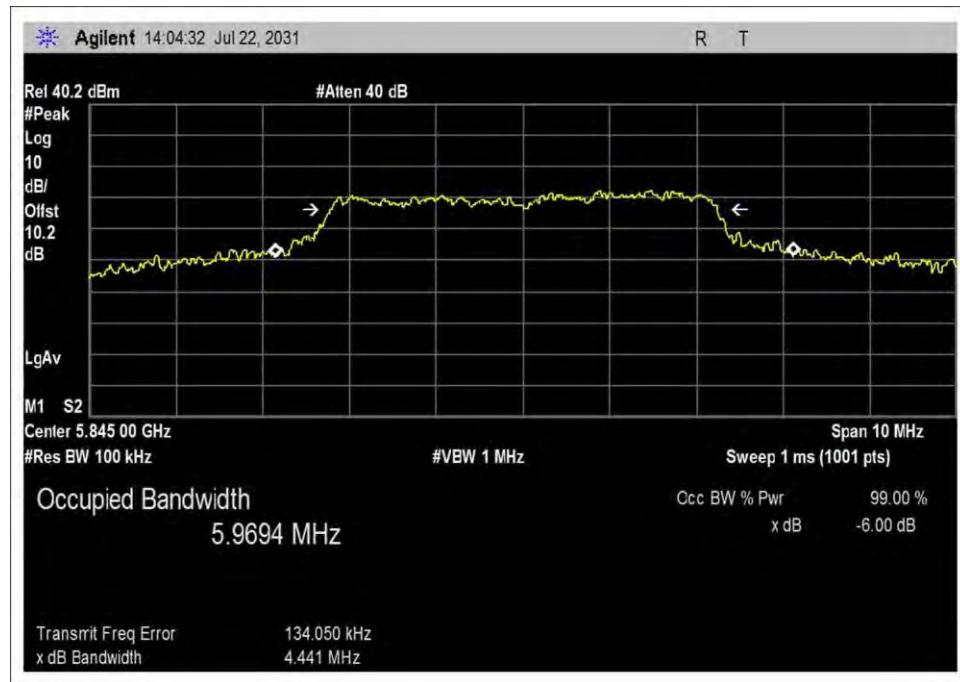
5MHz, High, Chain 0



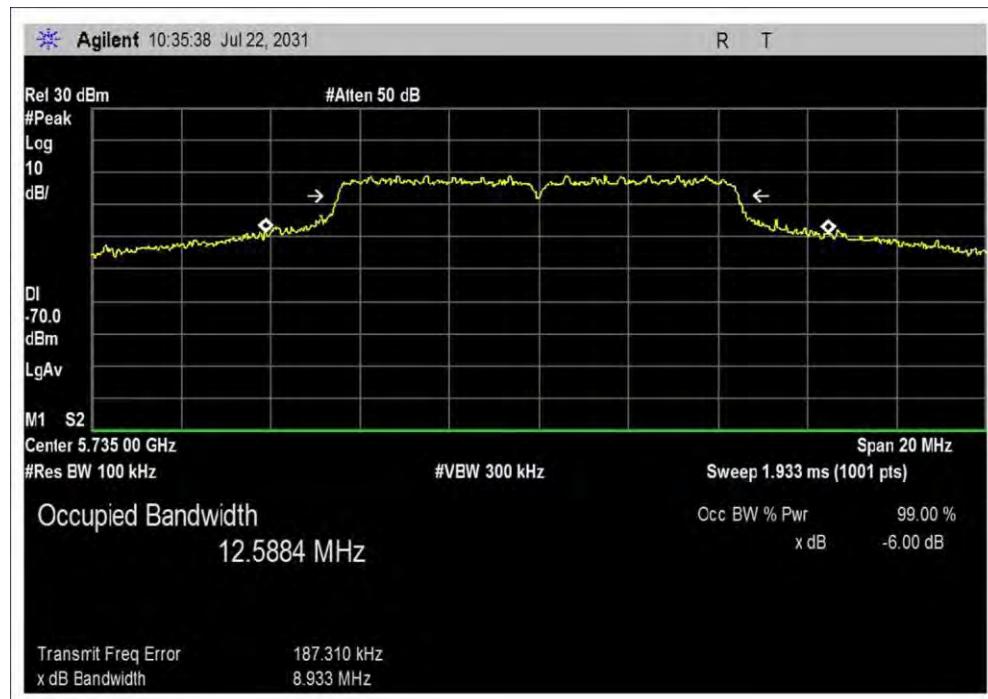
5MHz, Low, Chain 1



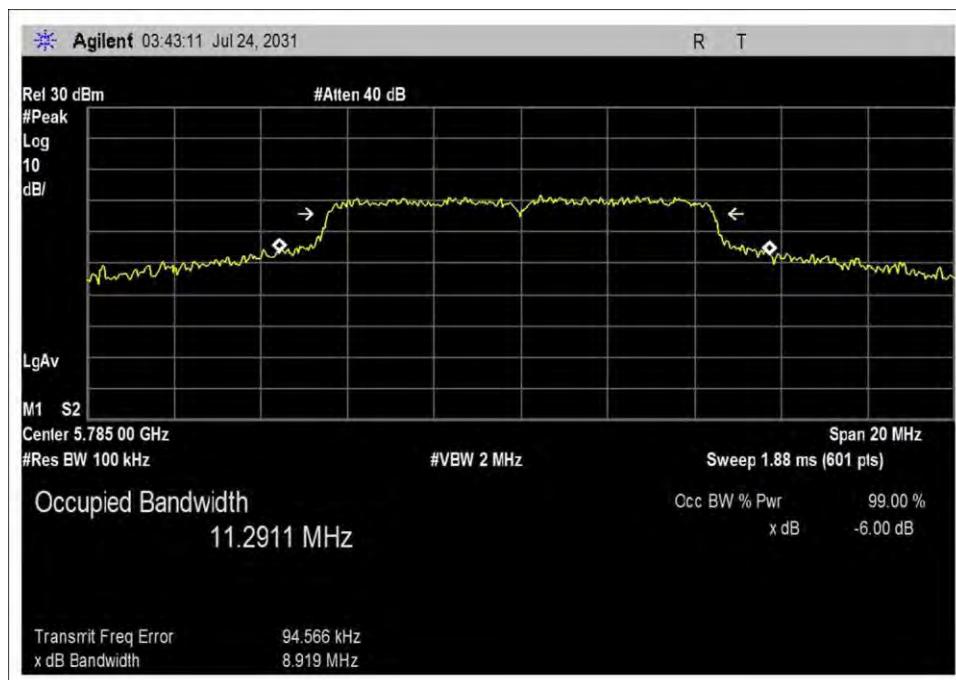
5MHz, Mid, Chain 1



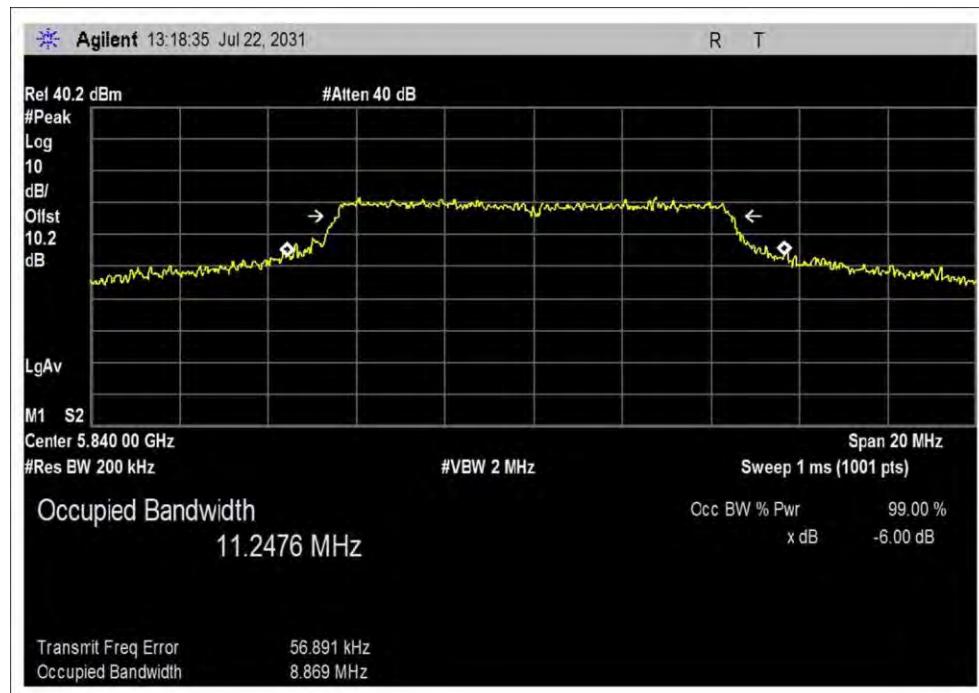
5MHz, High, Chain 1



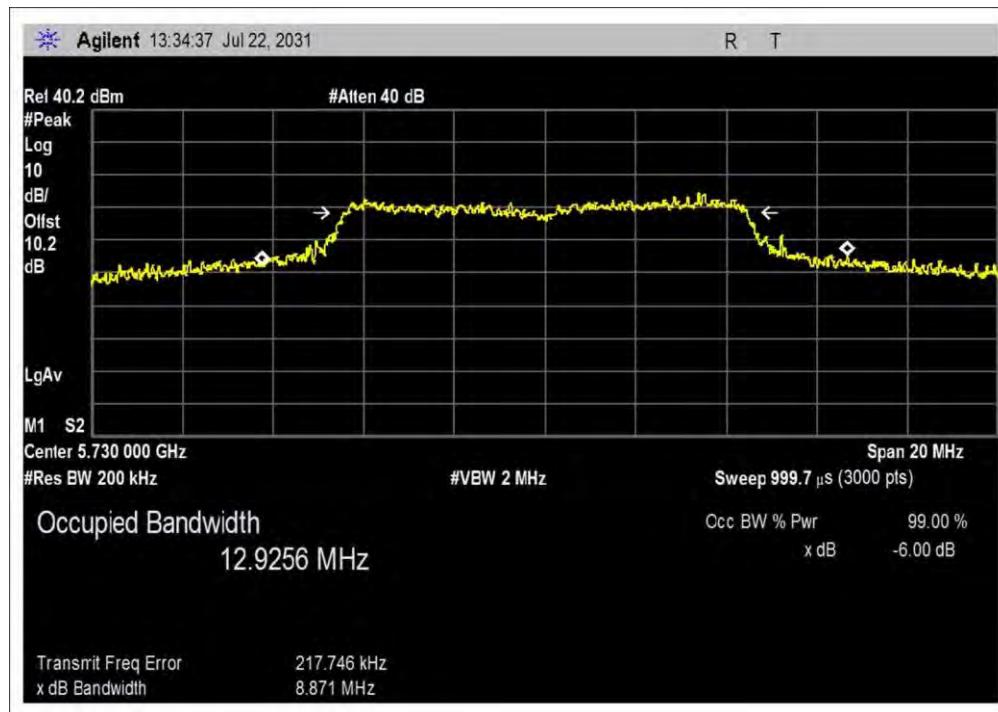
10MHz, Low, Chain 0



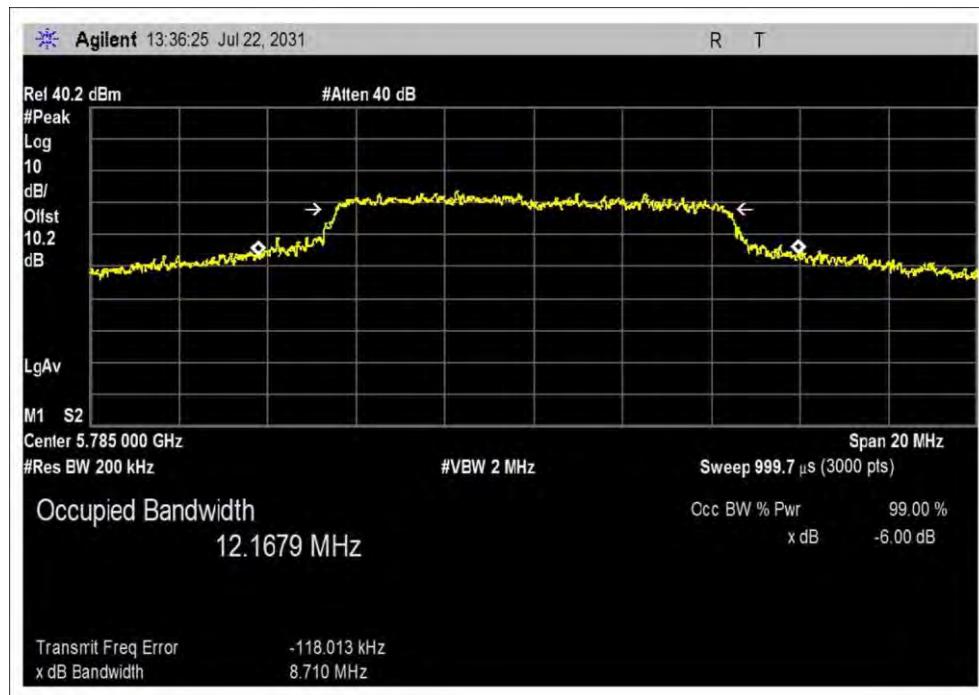
10MHz, Mid, Chain 0



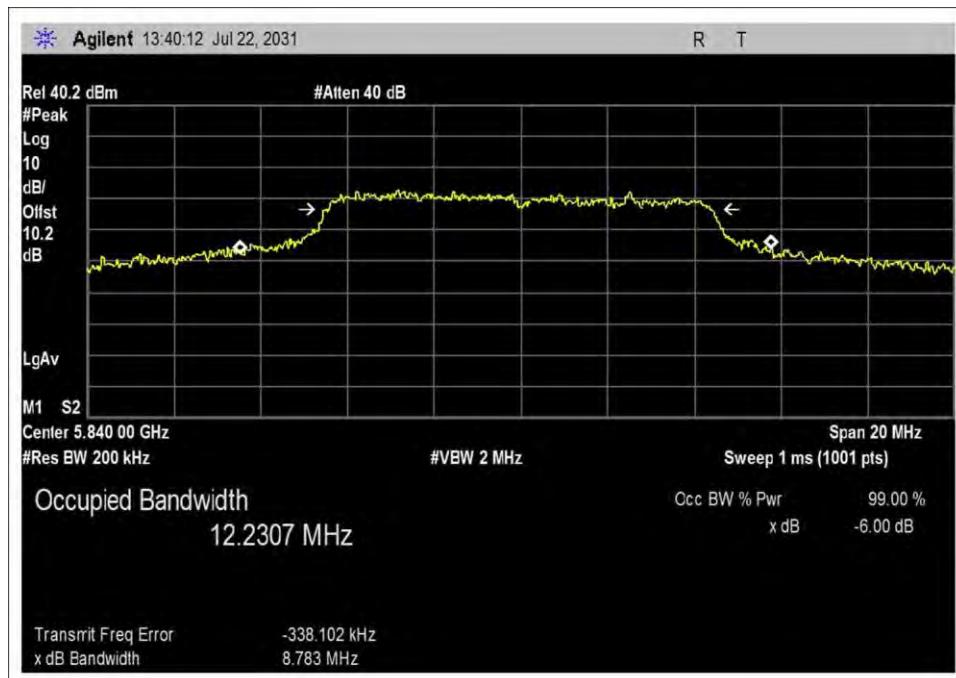
10MHz, High, Chain 0



10MHz, Low, Chain 1

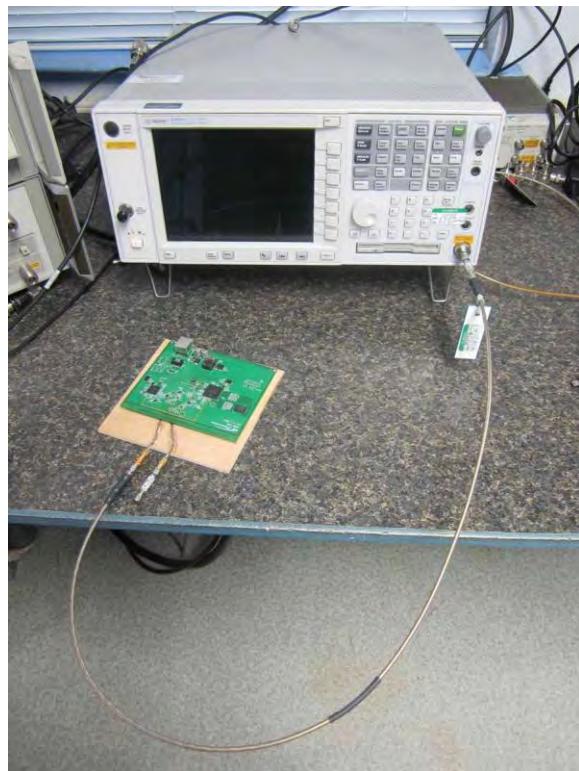


10MHz, Mid, Chain 1



10MHz, High, Chain 1

Test Setup Photo



15.247(b)(3) Peak Power

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **Digital Path**
 Specification: **15.247(b)(3) Peak Power**
 Work Order #: **96184** Date: **2/20/2015**
 Test Type: **Conducted Emissions** Time: **11:58:45**
 Equipment: **GEN6 CPE** Sequence#: **1**
 Manufacturer: Digital Path Tested By: Eddie Mariscal
 Model: 2x-29
 S/N: C6:A6

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T2	ANP01391	Attenuator	85053-60001	12/8/2014	12/8/2016
T3	AN03362	Cable	32026-2-29094K-48TC	12/8/2014	12/8/2016
	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
GEN6 CPE*	Digital Path	2x-29	C6:A6
GEN6 CPE*	Digital Path	2x-24	C6:A6
POE Power Adapter	HP	FAS24000050-C44	NA

Support Devices:

Function	Manufacturer	Model #	S/N
AC/DC power Adapter	HP	Series PPP012H-S	F12941126327228
Laptop Computer	HP	Probook 6565b	NA

Test Conditions / Notes:

The EUT is directly connected to the spectrum analyzer for conducted measurements.

The EUT is set to transmit at 100% duty cycle, operating in the band 5.725-5.85GHz.

Tested in accordance with KDB 558074 Section 9.2.2.2.

Voltage was varied IAW FCC 15.31(e) with no change in power noted.

The transmit signals of the EUT are completely uncorrelated as defined in KDB 662911 D01.

The manufacturer declares that the two transmit chains of the EUT transmit unique data in orthogonal polarities. Therefore, each transmit chain shall be assessed individually.

Chain 0 and Chain 1, labeled appropriately

Channel Bandwidth: 5MHz and 10MHz, labeled appropriately

Data rate: 19.5Mbps for 5MHz channel bandwidth; 13Mbps for 10MHz channel bandwidth

Tx Power setting: 24dBm for the 24dBi antenna; 20dBm for the 29dBi antenna.

Cable loss and attenuator loss were taken into account in the plots below.

Environmental Conditions:

Temperature: 19°C

Relative Humidity: 40%

Atmospheric Pressure: 97.8kPa

Test Data

Antenna: 24dBi

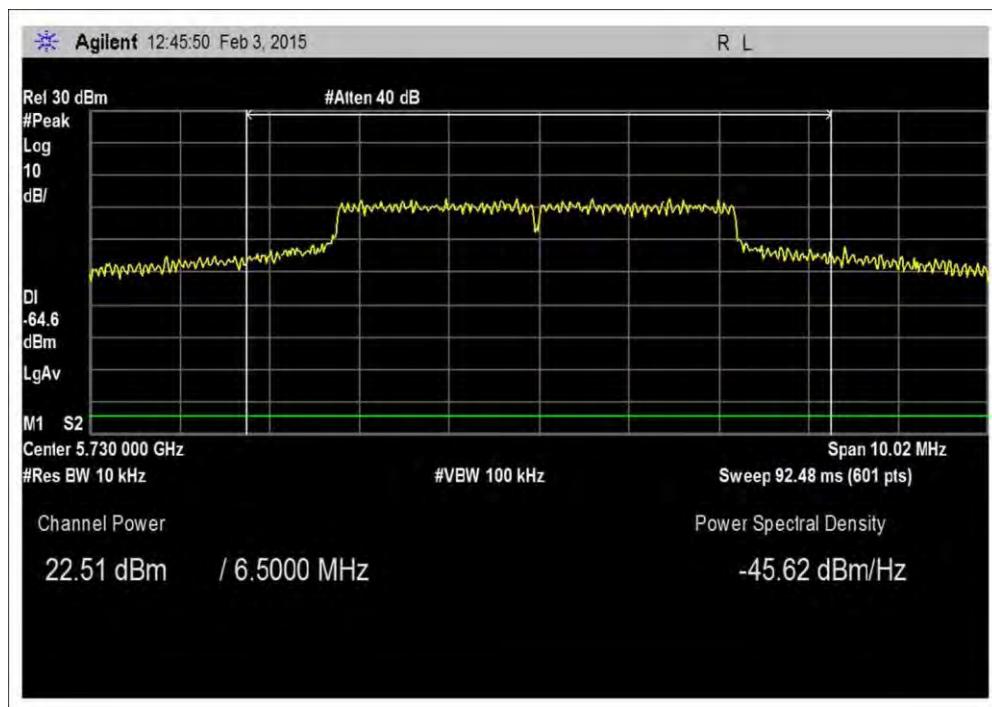
Max Conducted Output Power – (dBm)

Channel	Chain 0 5MHz BW	Chain 1 5MHz BW	Chain 0 10MHz BW	Chain 1 10MHz BW	Limit	Results
Low	22.51	20.87	19.54	22.87	30.00	Pass
Mid	22.56	21.53	18.92	23.32	30.00	Pass
High	22.62	21.79	18.57	23.30	30.00	Pass

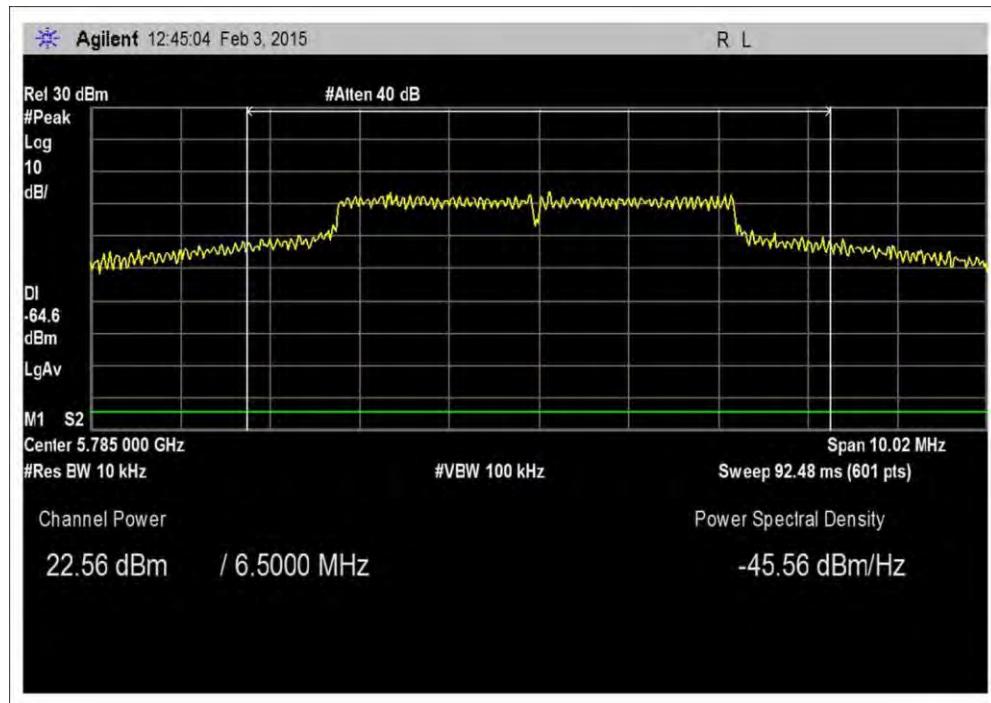
Antenna: 29dBi

Max Conducted Output Power – (dBm)

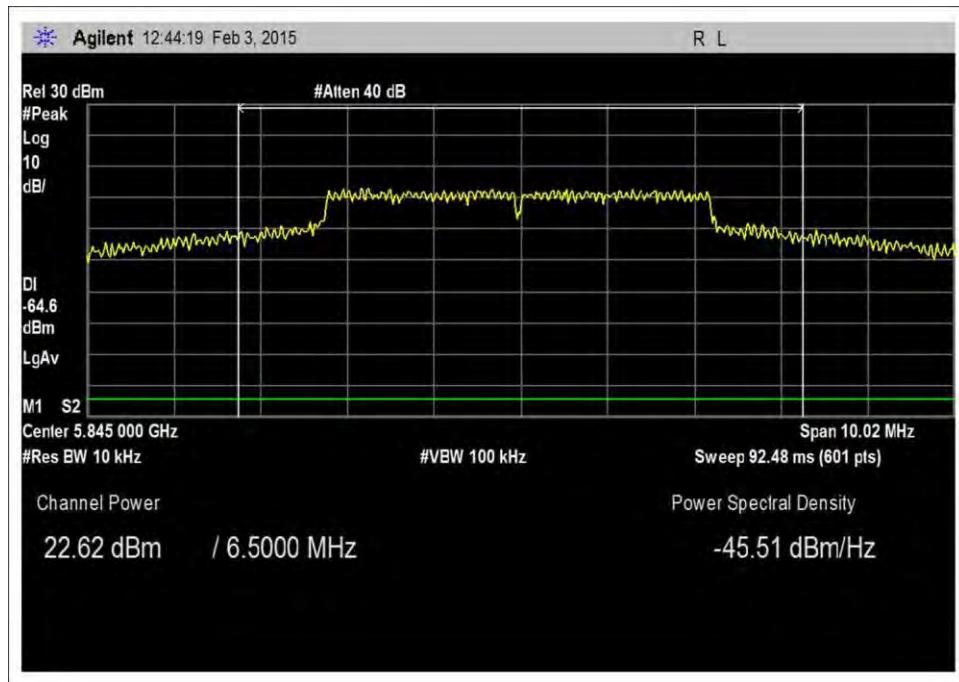
Channel	Chain 0 5MHz BW	Chain 1 5MHz BW	Chain 0 10MHz BW	Chain 1 10MHz BW	Limit (dBm)	Results
Low	20.53	20.41	17.75	22.03	30.00	Pass
Mid	21.73	20.49	17.57	22.32	30.00	Pass
High	22.24	21.15	17.10	22.44	30.00	Pass



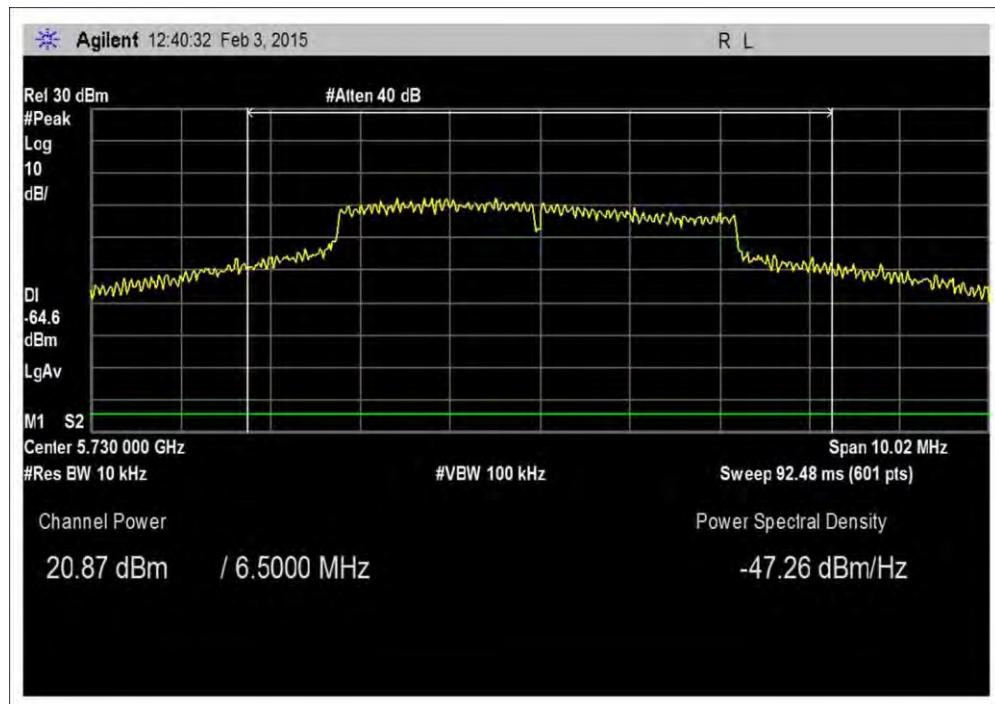
24dBi Antenna, 5MHz, Low, Chain 0



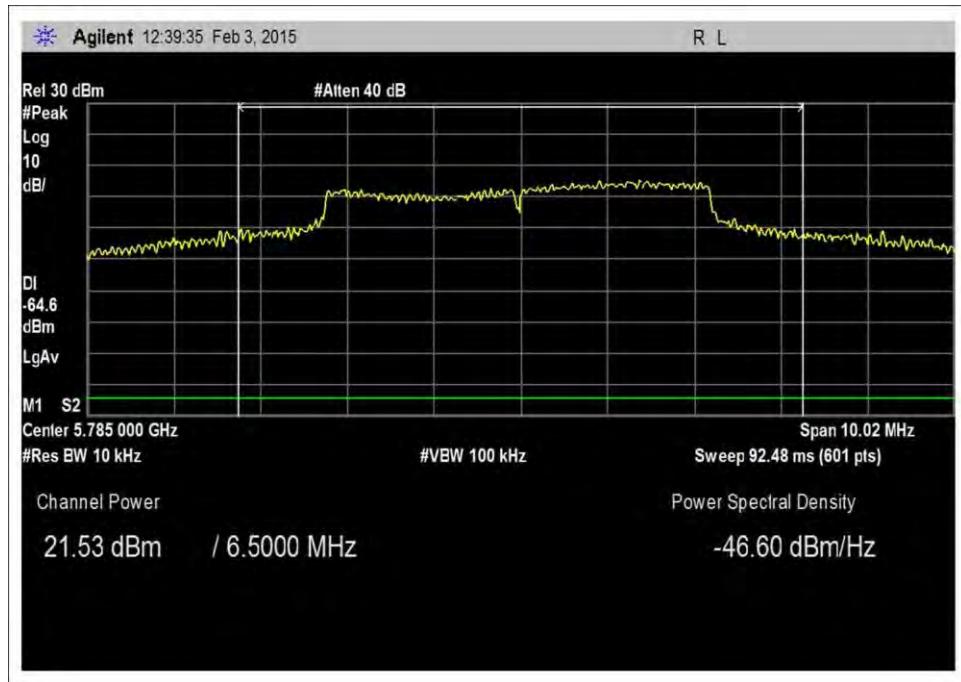
24dBi Antenna, 5MHz, Mid, Chain 0



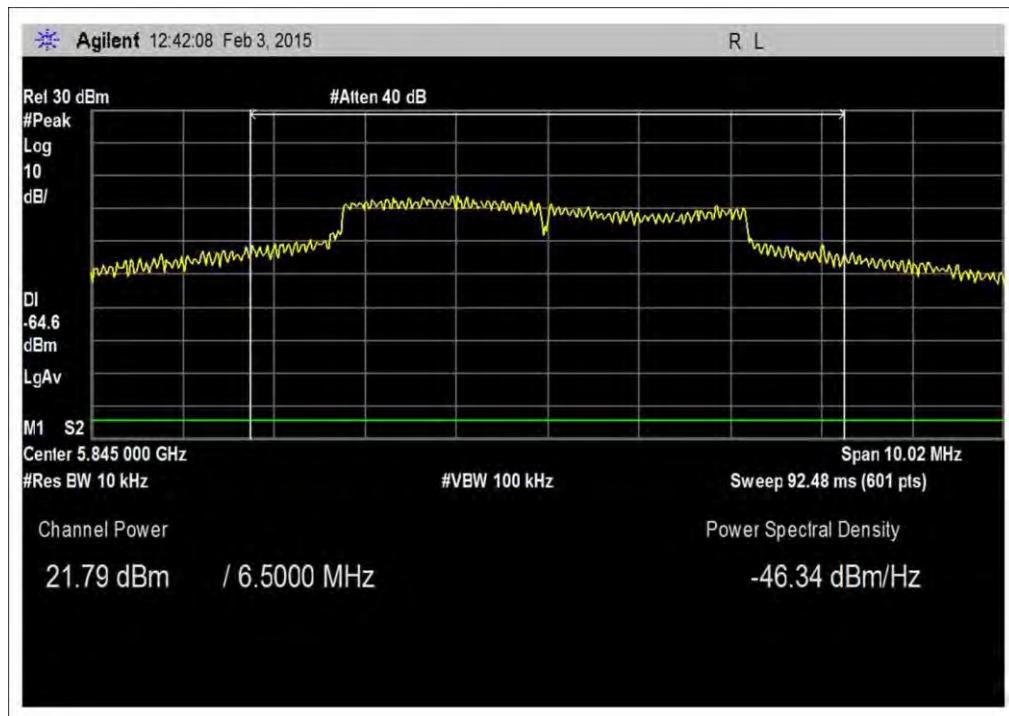
24dBi Antenna, 5MHz, High, Chain 0



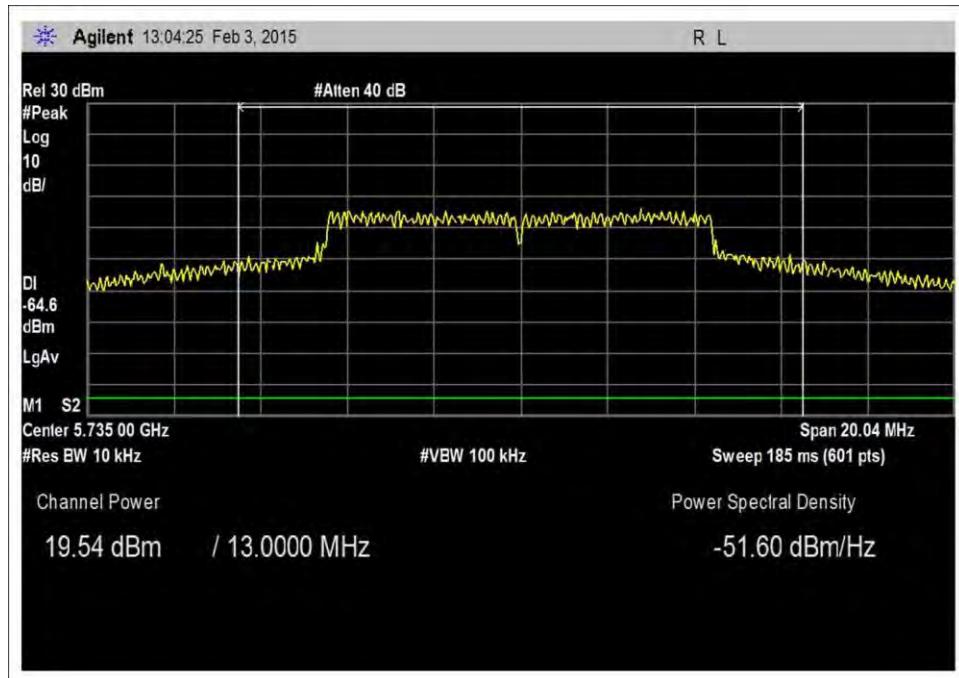
24dBi Antenna, 5MHz, Low, Chain 1



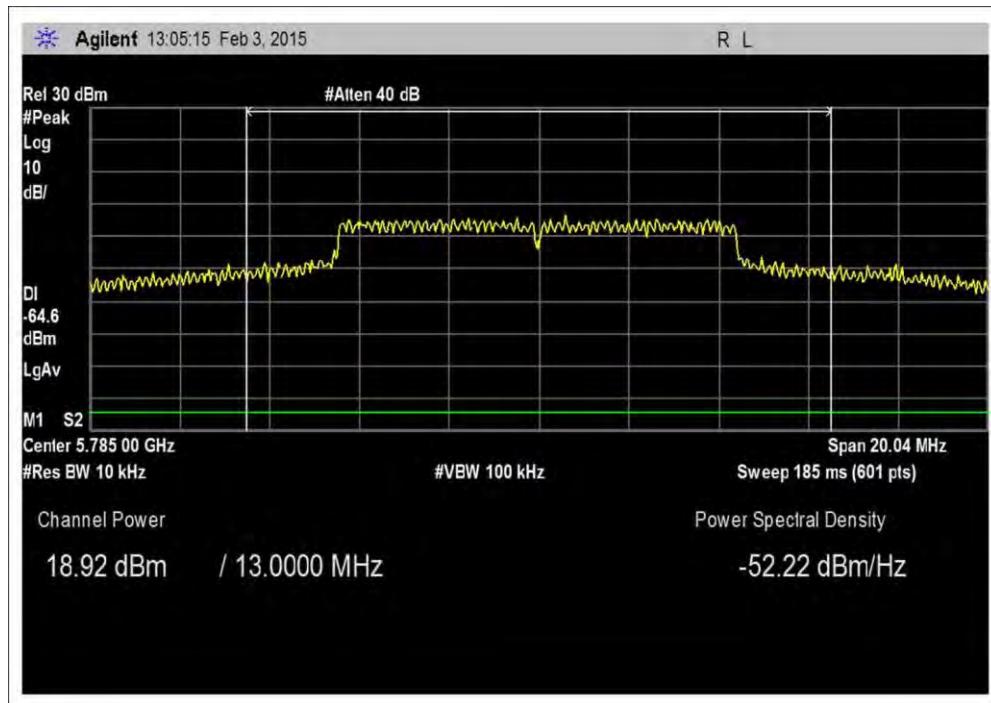
24dBi Antenna, 5MHz, Mid, Chain 1



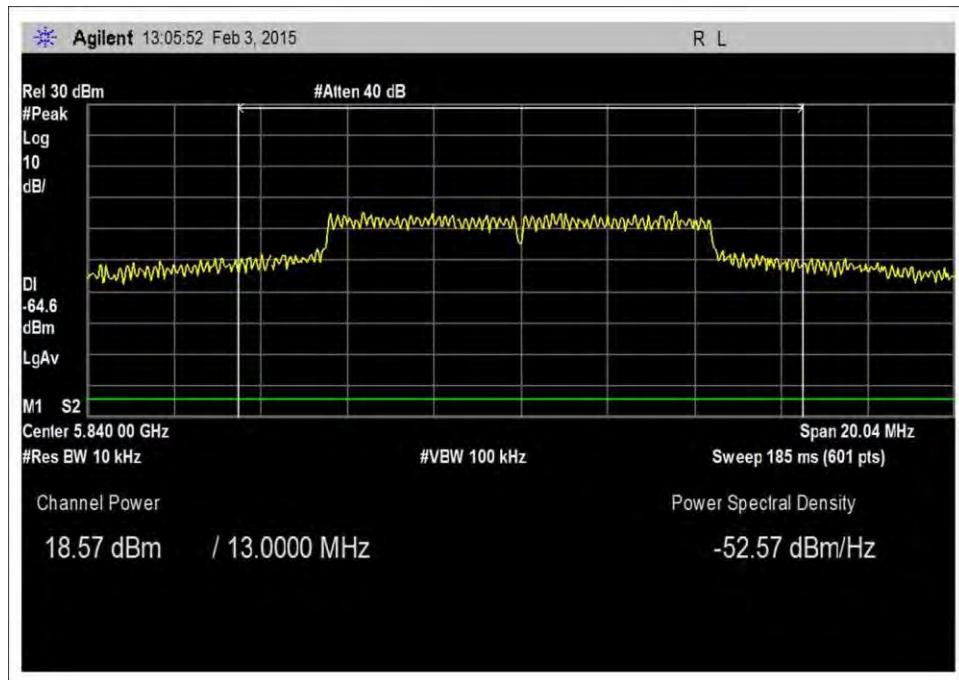
24dBi Antenna, 5MHz, High, Chain 1



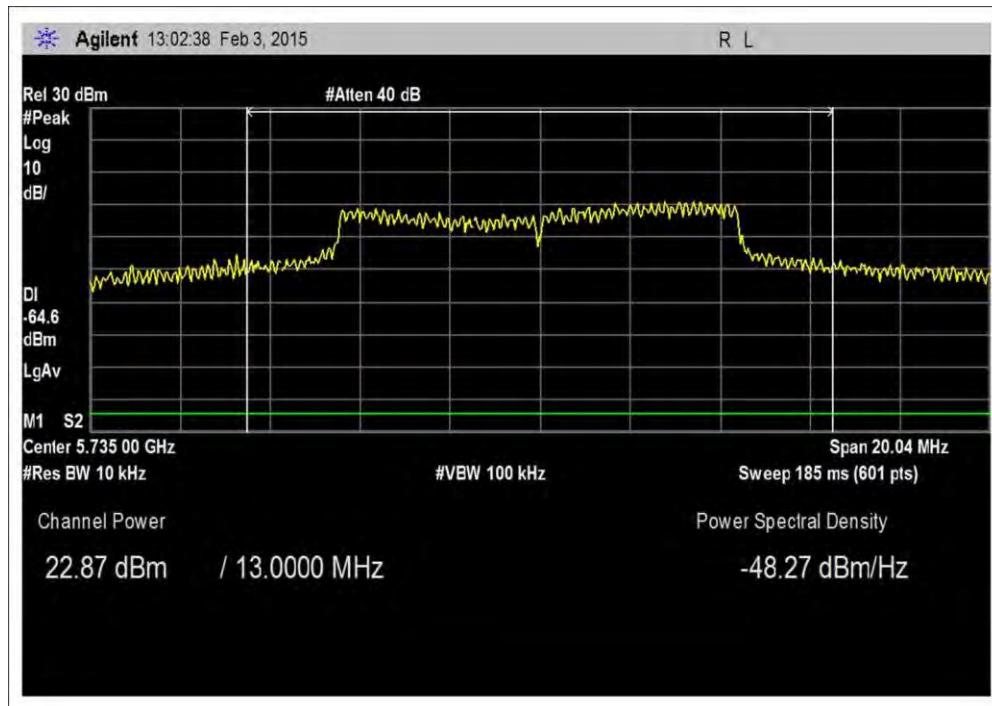
24dBi Antenna, 10MHz, Low, Chain 0



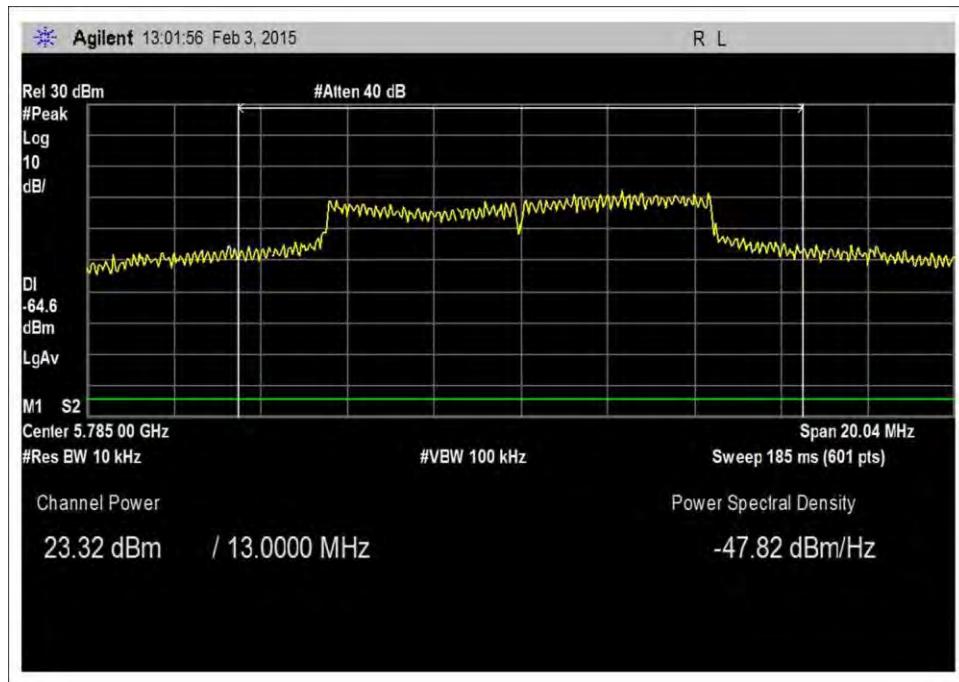
24dBi Antenna, 10MHz, Mid, Chain 0



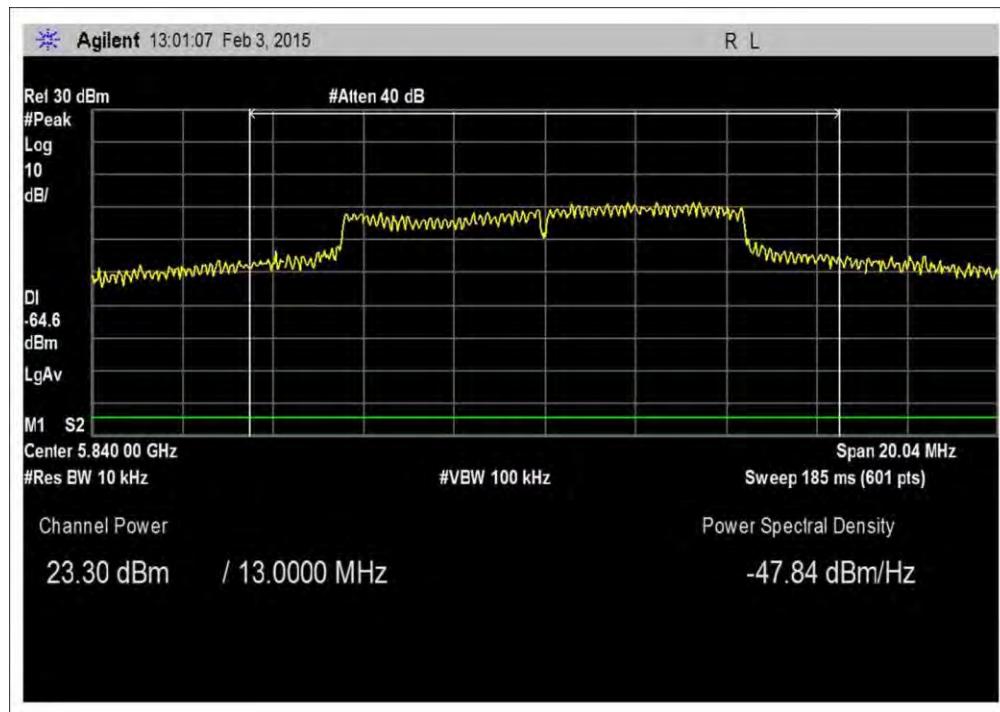
24dBi Antenna, 10MHz, High, Chain 0



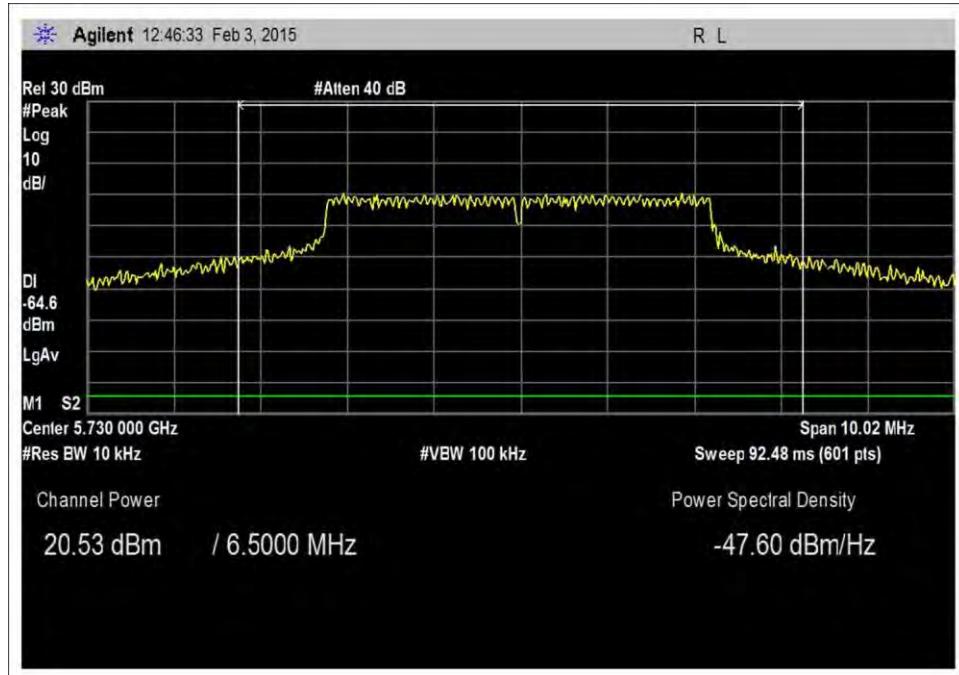
24dBi Antenna, 10MHz, Low, Chain 1



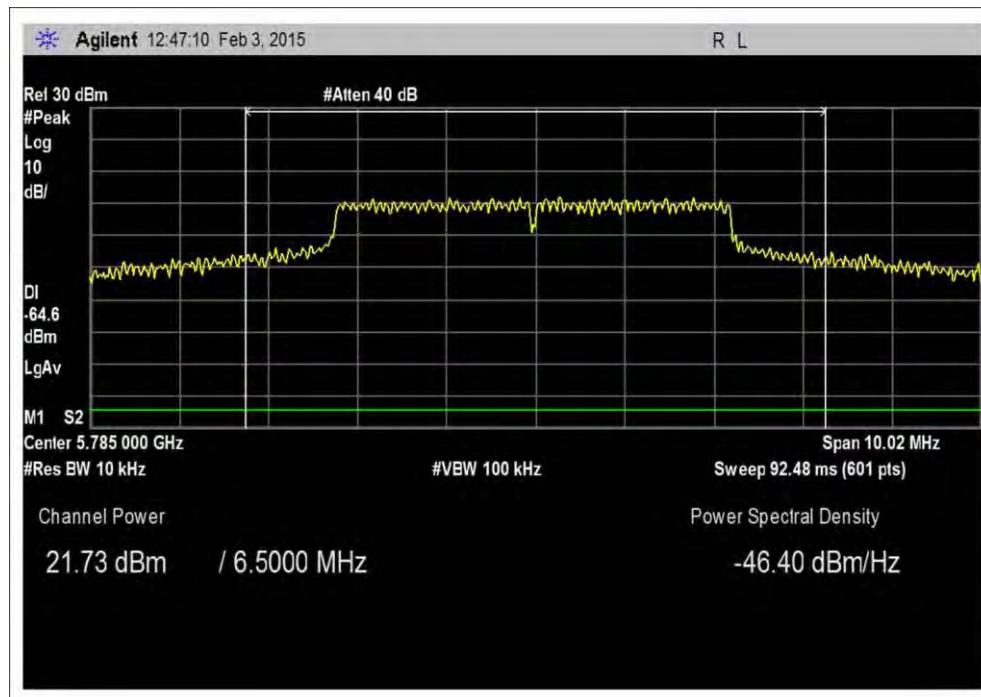
24dBi Antenna, 10MHz, Mid, Chain 1



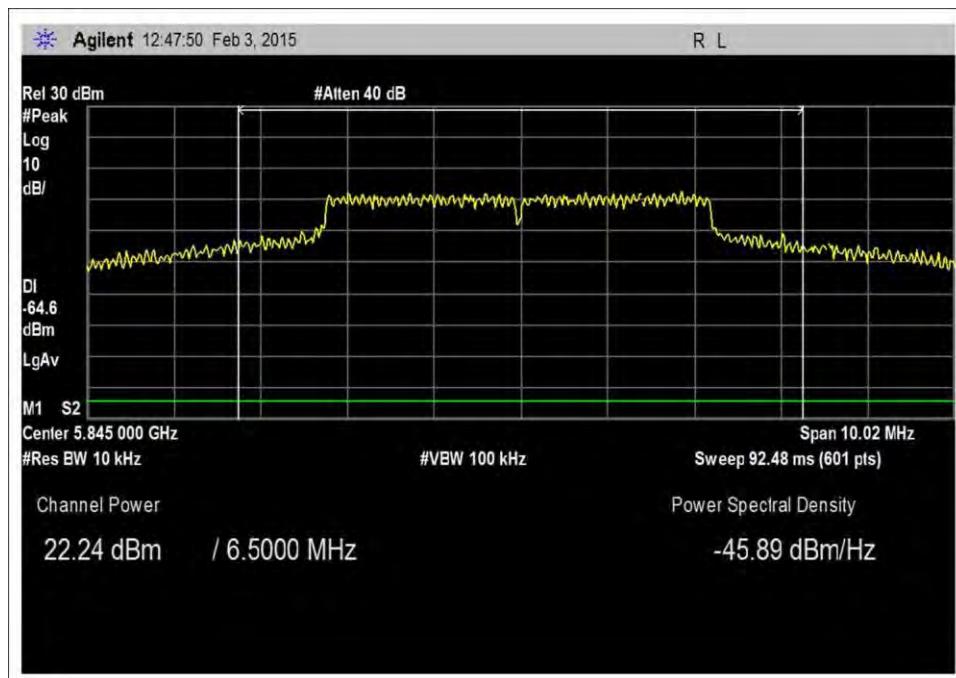
24dBi Antenna, 10MHz, High, Chain 1



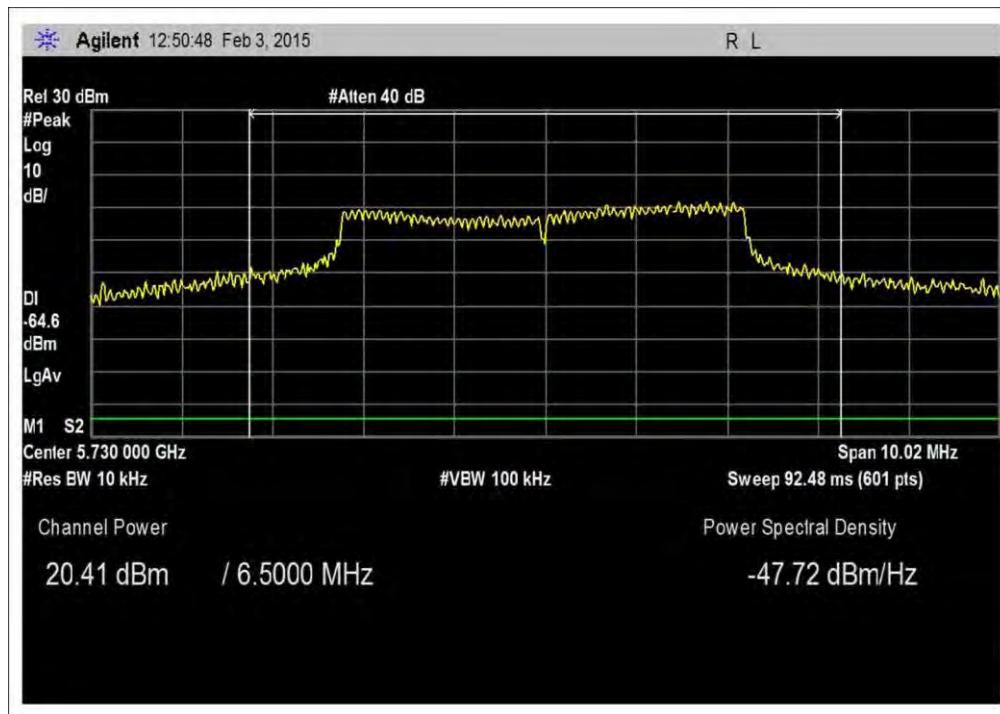
29dBi Antenna, 5MHz, Low, Chain 0



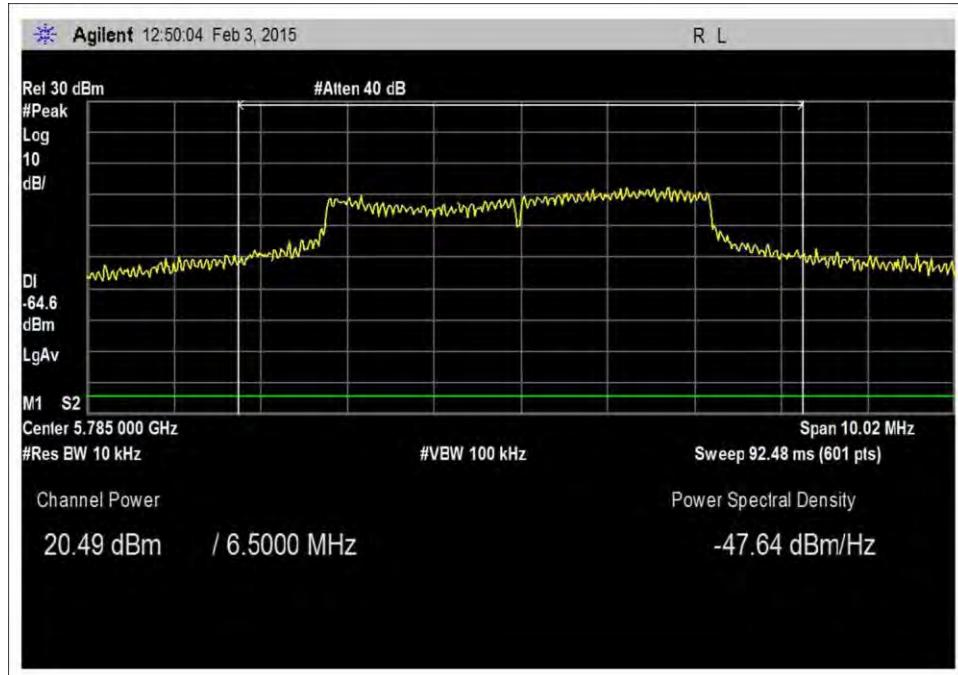
29dBi Antenna, 5MHz, Mid, Chain 0



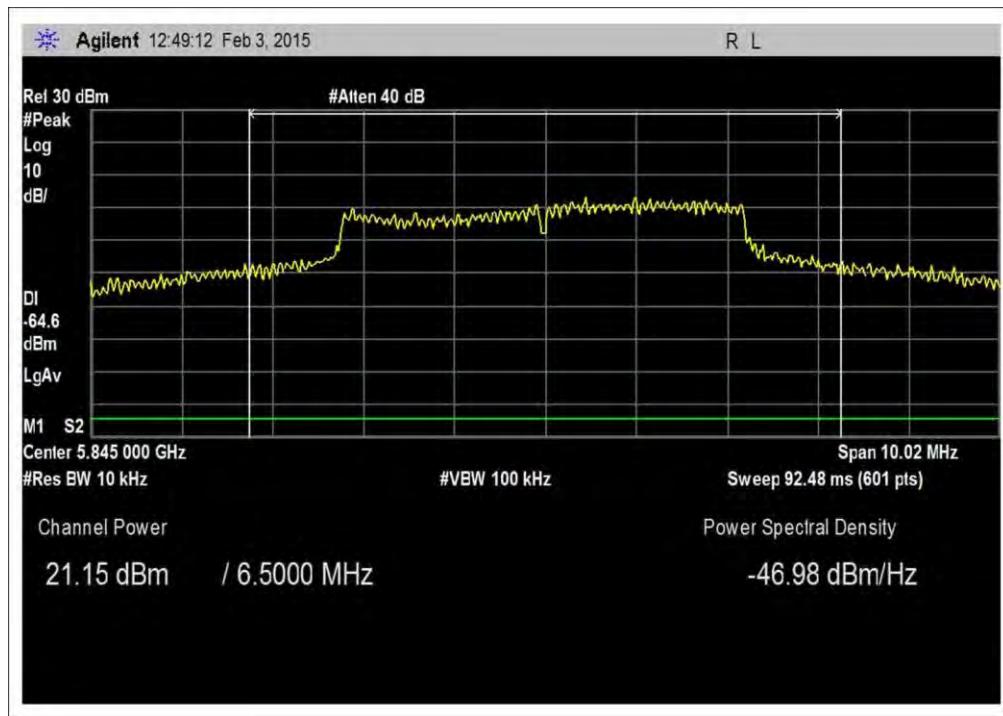
29dBi Antenna, 5MHz, High, Chain 0



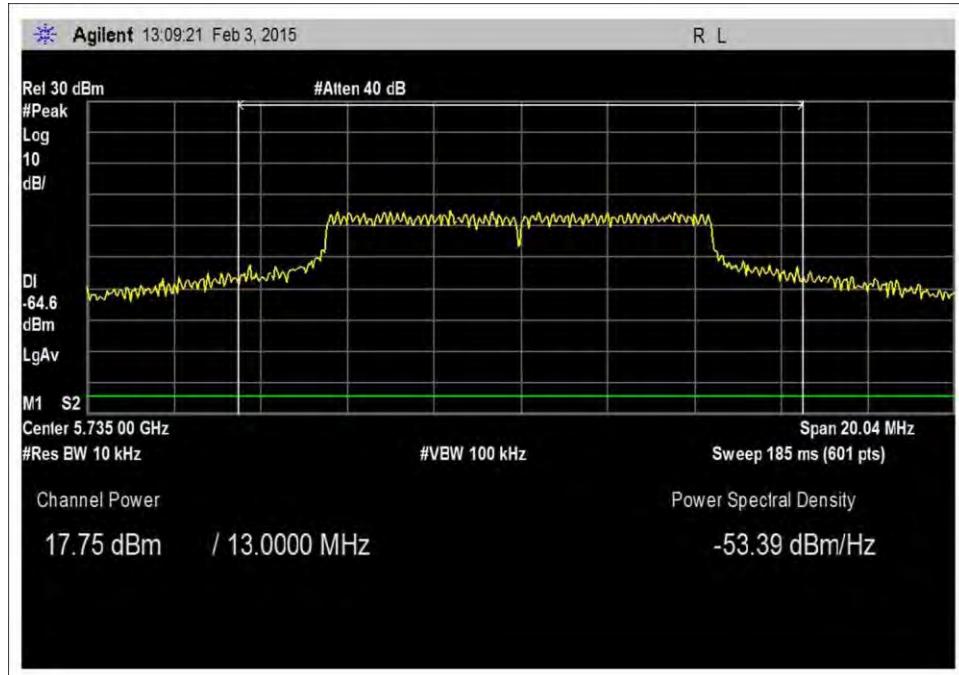
29dBi Antenna, 5MHz, Low, Chain 1



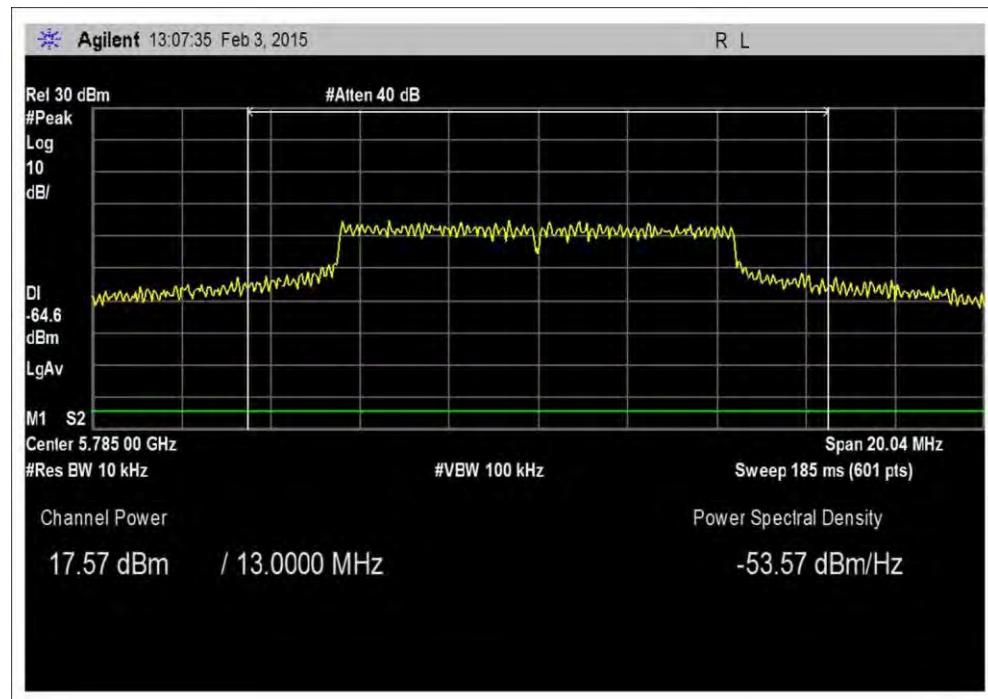
29dBi Antenna, 5MHz, Mid, Chain 1



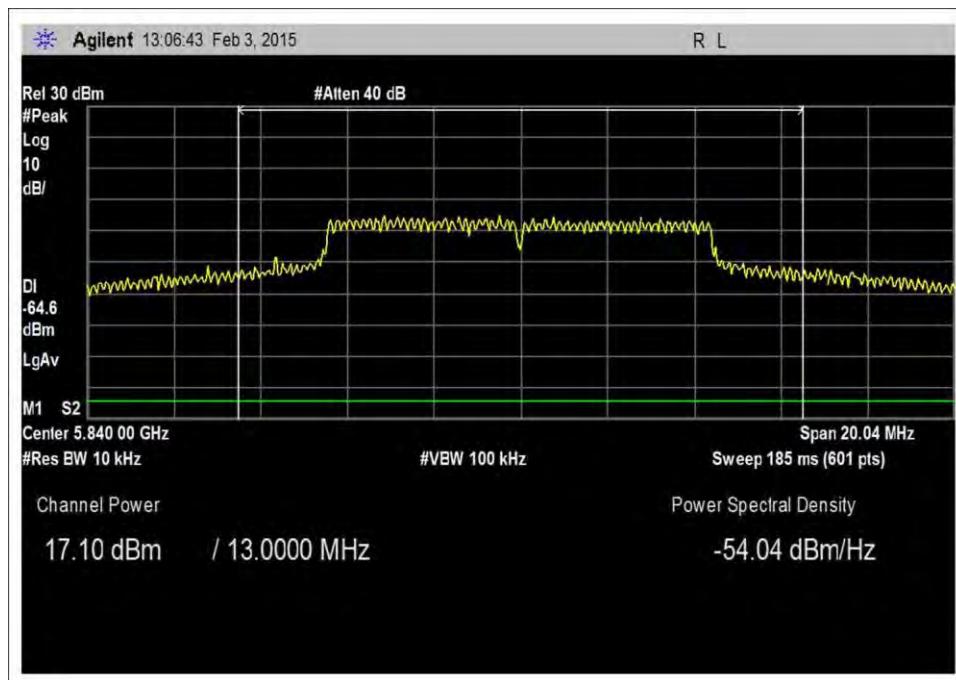
29dBi Antenna, 5MHz, High, Chain 1



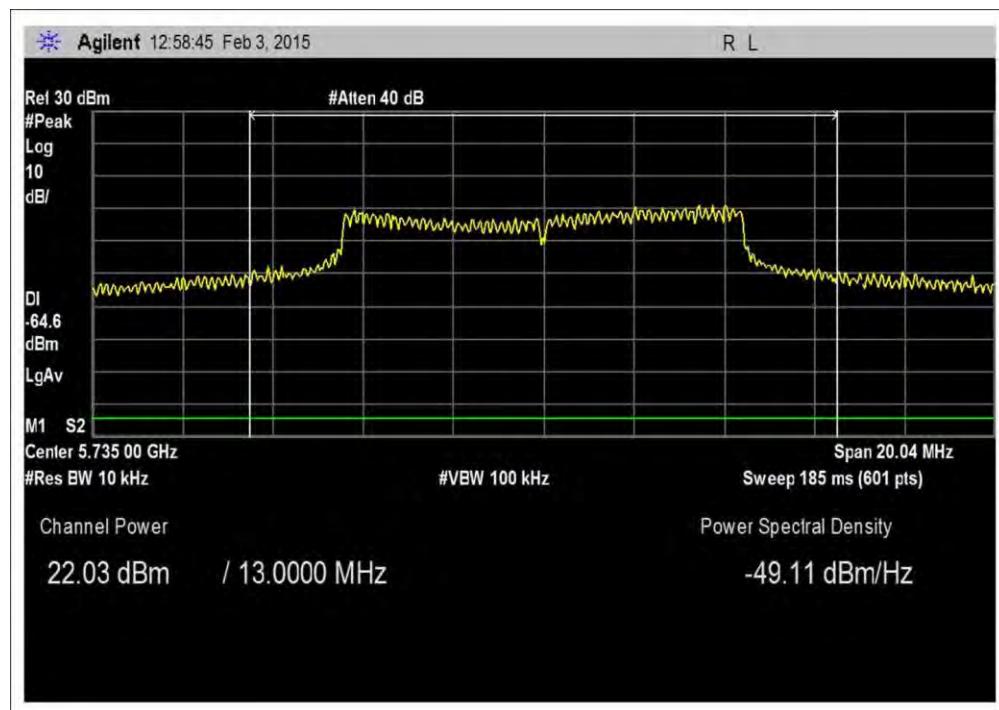
29dBi Antenna, 10MHz, Low, Chain 0



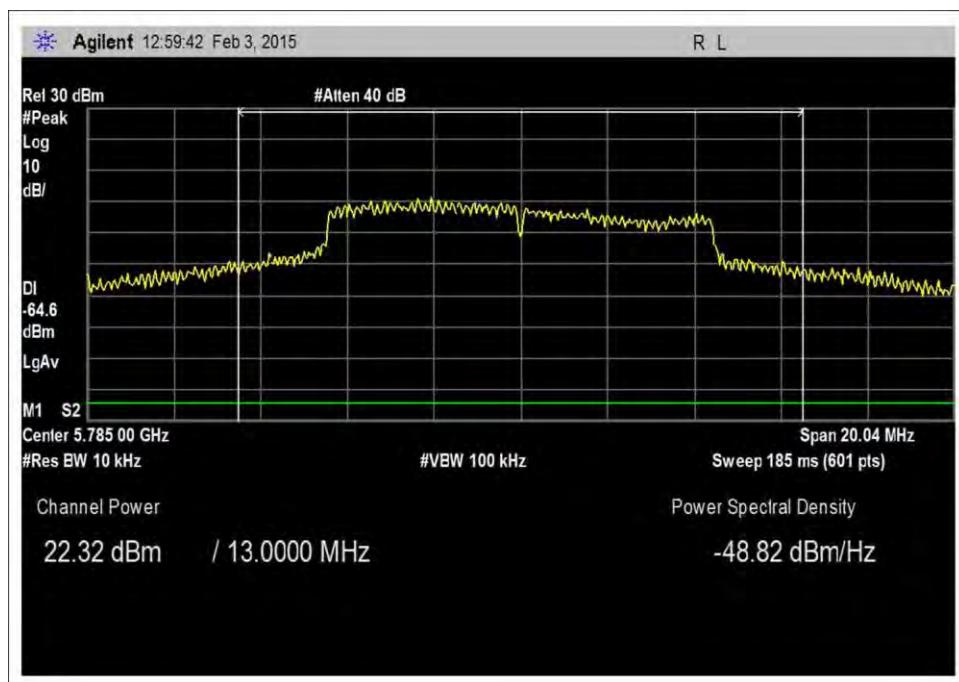
29dBi Antenna, 10MHz, Mid, Chain 0



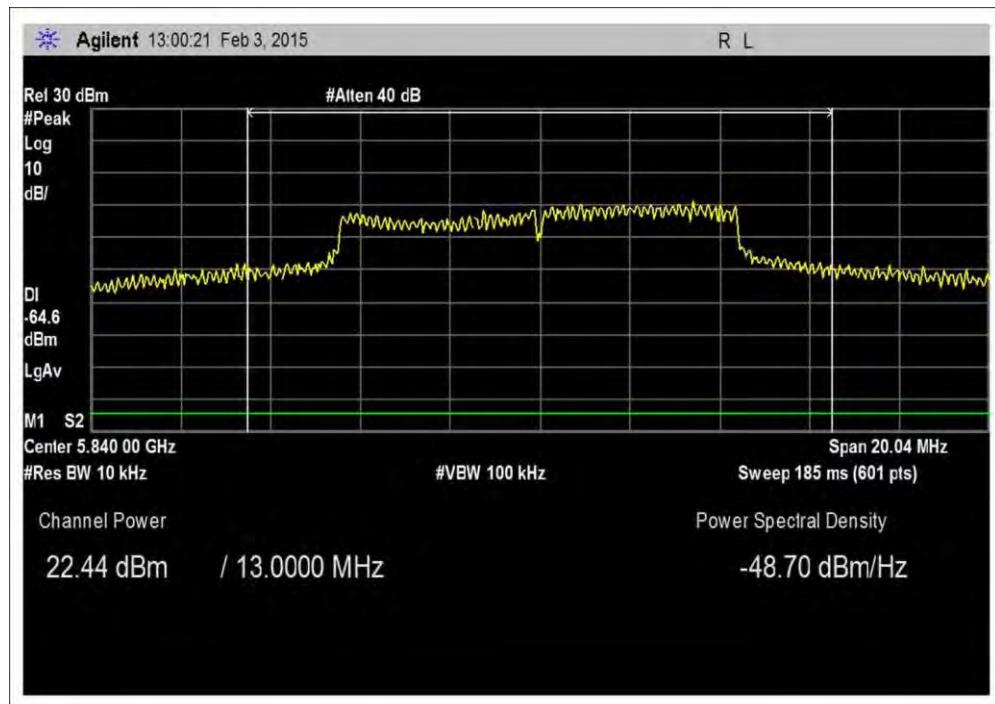
29dBi Antenna, 10MHz, High, Chain 0



29dBi Antenna, 10MHz, Low, Chain 1

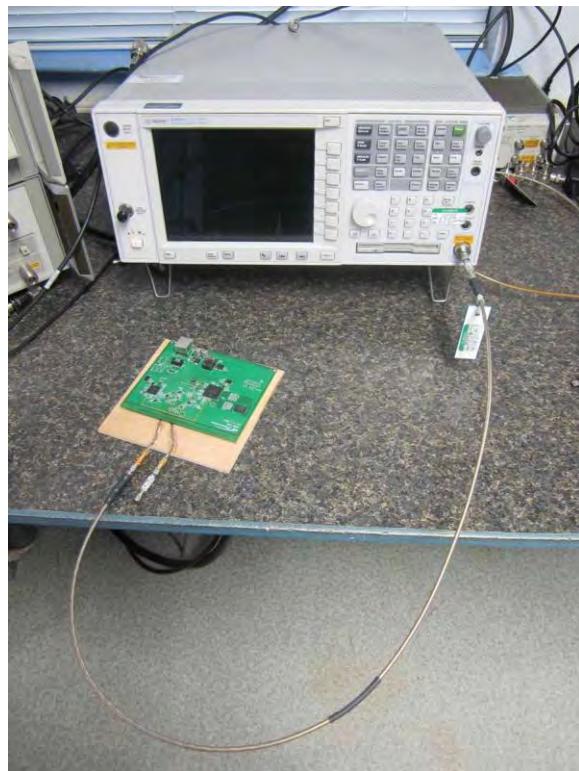


29dBi Antenna, 10MHz, Mid, Chain 1



29dBi Antenna, 10MHz, High, Chain 1

Test Setup Photo



15.247(d) Spurious Emissions and Band Edge

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **Digital Path**
 Specification: **15.247 Radiated Spurious Emissions**
 Work Order #: **96184** Date: **3/1/2015**
 Test Type: **Maximized Emissions** Time: **20:36:47**
 Equipment: **GEN6 CPE** Sequence#: **3**
 Manufacturer: Digital Path Tested By: Eddie Mariscal
 Model: 2x-29
 S/N: C6:A6

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00327	Horn Antenna	3115	3/18/2014	3/18/2016
T2	AN03155	Preamp	83017A	6/26/2013	6/26/2015
T3	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015
T4	AN03355	Cable	32026-2-29094K-48TC	12/8/2014	12/8/2016
T5	AN03361	Cable	32022-2-29094-48TC	12/8/2014	12/8/2016
T6	AN03362	Cable	32022-2-29094-48TC	12/8/2014	12/8/2016
T7	ANP05904	Cable	32022-2-29094K-144TC	12/8/2014	12/8/2016
T8	AN02118	High Pass Filter	84300-80039	12/9/2014	12/9/2016
	AN01413	Horn Antenna	84125-80008	11/25/2014	11/25/2016
	ANP01991	Band Pass Filter	BPF-L-102-631-11484	12/8/2014	12/8/2016
	AN03158A	Horn Antenna-ANSI C63.5 Calibration	GH-28-25	1/14/2015	1/14/2017
T9	AN00226	Loop Antenna	6502	3/28/2014	3/28/2016
T10	AN01991	Biconilog Antenna	CBL6111C	3/7/2014	3/7/2016
T11	AN00449	Preamp-Bottom Amp (dB)	8447F	4/7/2014	4/7/2016
T12	ANP05922	Cable	RG/214	9/5/2014	9/5/2016
T13	ANP06232	Cable	CXTA04A-35	9/5/2014	9/5/2016

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
POE Power Adapter	HP	FAS24000050-C44	None
GEN6 CPE*	Digital Path	2x-29	C6:A6

Support Devices:

Function	Manufacturer	Model #	S/N
AC/DC power Adapter	HP	Series PPP012H-S	F12941126327228
Laptop Computer	HP	Probook 6565b	None

Test Conditions / Notes:

The EUT is set atop a wooden non-conductive turntable of height 80cm. The EUT is set to transmit at 100% duty

cycle.

Tested IAW ANSI C63.10(2013) Section 6.4 - 6.6.

Chain 0 and Chain 1 operating simultaneously.

Channel Bandwidth: 5MHz

Data rate: 19.5Mbps

Frequency Range of Interest: 9kHz - 40GHz
 9 - 150kHz: RBW = 200Hz; VBW > RBW
 0.15-30MHz; RBW = 9kHz; VBW > RBW
 30-1000MHz; RBW = 120kHz; VBW > RBW
 1-40GHz; RBW = 1MHz; VBW > RBW

Environmental Conditions:

Temperature: 19°C

Relative Humidity: 40%

Atmospheric Pressure: 97.8kPa

Ext Attn: 0 dB

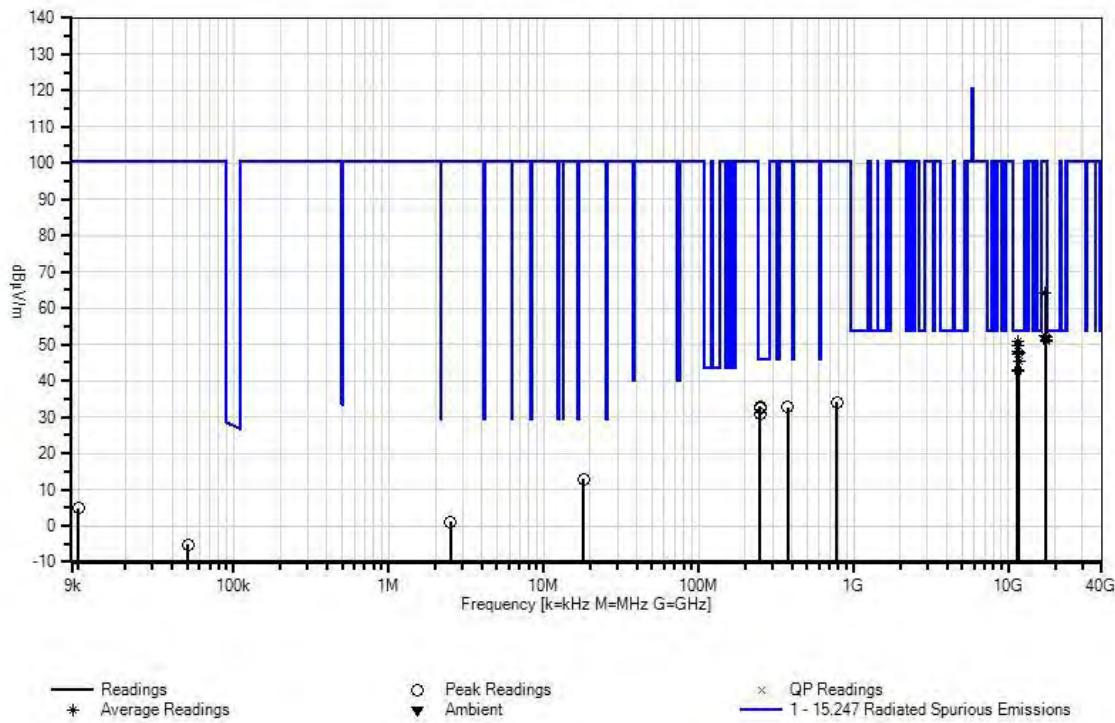
#	Freq	Rdng	Reading listed by margin.				Test Distance: 3 Meters				
			T1	T2	T3	T4	Dist	Corr	Spec	Margin	
			T5	T6	T7	T8				Polar	
			T9	T10	T11	T12					
			T13								
	MHz	dB μ V	dB	dB	dB	dB	Table	dB μ V/m	dB μ V/m	dB	
										Ant	
1	11577.333	35.6	+36.7	-32.4	+0.0	+2.0	+0.0	51.0	54.0	-3.0	Horiz
		M	+1.7	+1.7	+5.5	+0.2					
		Ave	+0.0	+0.0	+0.0	+0.0					Operating at 5790MHz
			+0.0								
^	11577.333	41.2	+36.7	-32.4	+0.0	+2.0	+0.0	56.6	54.0	+2.6	Horiz
		M	+1.7	+1.7	+5.5	+0.2					
		Ave	+0.0	+0.0	+0.0	+0.0					Operating at 5790MHz
			+0.0								
3	11461.800	34.4	+36.9	-32.4	+0.0	+1.9	+0.0	49.8	54.0	-4.2	Horiz
		M	+1.7	+1.7	+5.4	+0.2					
		Ave	+0.0	+0.0	+0.0	+0.0					Operating at 5730MHz
			+0.0								
^	11461.800	45.4	+36.9	-32.4	+0.0	+1.9	+0.0	60.8	54.0	+6.8	Horiz
		M	+1.7	+1.7	+5.4	+0.2					
		Ave	+0.0	+0.0	+0.0	+0.0					Operating at 5730MHz
			+0.0								
5	11460.000	32.7	+36.9	-32.4	+0.0	+1.9	+0.0	48.1	54.0	-5.9	Horiz
		M	+1.7	+1.7	+5.4	+0.2					
		Ave	+0.0	+0.0	+0.0	+0.0					Operating at 5730MHz
			+0.0								
^	11460.000	41.7	+36.9	-32.4	+0.0	+1.9	+0.0	57.1	54.0	+3.1	Horiz
		M	+1.7	+1.7	+5.4	+0.2					
		Ave	+0.0	+0.0	+0.0	+0.0					Operating at 5730MHz
			+0.0								

7	11690.000	32.6	+36.3	-32.4	+0.0	+2.0	+0.0	47.6	54.0	-6.4	Vert
	M		+1.7	+1.7	+5.5	+0.2					
	Ave		+0.0	+0.0	+0.0	+0.0					Operating at 5845MHz
			+0.0								
^	11690.000	39.8	+36.3	-32.4	+0.0	+2.0	+0.0	54.8	54.0	+0.8	Vert
	M		+1.7	+1.7	+5.5	+0.2					
			+0.0	+0.0	+0.0	+0.0					Operating at 5845MHz
			+0.0								
9	11580.000	32.0	+36.7	-32.4	+0.0	+2.0	+0.0	47.4	54.0	-6.6	Horiz
	M		+1.7	+1.7	+5.5	+0.2					
	Ave		+0.0	+0.0	+0.0	+0.0					Operating at 5790MHz
			+0.0								
^	11580.000	43.8	+36.7	-32.4	+0.0	+2.0	+0.0	59.2	54.0	+5.2	Horiz
	M		+1.7	+1.7	+5.5	+0.2					
			+0.0	+0.0	+0.0	+0.0					Operating at 5790MHz
			+0.0								
11	11686.800	30.5	+36.3	-32.4	+0.0	+2.0	+0.0	45.5	54.0	-8.5	Horiz
	M		+1.7	+1.7	+5.5	+0.2					
	Ave		+0.0	+0.0	+0.0	+0.0					Operating at 5845MHz
			+0.0								
^	11686.800	37.2	+36.3	-32.4	+0.0	+2.0	+0.0	52.2	54.0	-1.8	Horiz
	M		+1.7	+1.7	+5.5	+0.2					
			+0.0	+0.0	+0.0	+0.0					Operating at 5845MHz
			+0.0								
13	11580.000	27.6	+36.7	-32.4	+0.0	+2.0	+0.0	43.0	54.0	-11.0	Vert
	M		+1.7	+1.7	+5.5	+0.2					
	Ave		+0.0	+0.0	+0.0	+0.0					Operating at 5790MHz
			+0.0								
^	11580.000	36.2	+36.7	-32.4	+0.0	+2.0	+0.0	51.6	54.0	-2.4	Vert
	M		+1.7	+1.7	+5.5	+0.2					
			+0.0	+0.0	+0.0	+0.0					Operating at 5790MHz
			+0.0								
15	11460.000	27.4	+36.9	-32.4	+0.0	+1.9	+0.0	42.8	54.0	-11.2	Vert
	M		+1.7	+1.7	+5.4	+0.2					
	Ave		+0.0	+0.0	+0.0	+0.0					Operating at 5730MHz
			+0.0								
^	11460.000	38.7	+36.9	-32.4	+0.0	+1.9	+0.0	54.1	54.0	+0.1	Vert
	M		+1.7	+1.7	+5.4	+0.2					
			+0.0	+0.0	+0.0	+0.0					Operating at 5730MHz
			+0.0								
17	250.003M	41.5	+0.0	+0.0	+0.0	+0.0	+0.0	33.0	46.0	-13.0	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+12.6	-22.5	+0.1					Operating at 5790MHz
			+1.3								

18	250.017M	41.1	+0.0	+0.0	+0.0	+0.0	+0.0	32.6	46.0	-13.4	Horiz
			+0.0	+0.0	+0.0	+0.0				Operating at	
			+0.0	+12.6	-22.5	+0.1				5210MHz	
			+1.3								
19	250.030M	39.4	+0.0	+0.0	+0.0	+0.0	+0.0	30.9	46.0	-15.1	Vert
			+0.0	+0.0	+0.0	+0.0				Operating at	
			+0.0	+12.6	-22.5	+0.1				5790MHz	
			+1.3								
20	17190.000	42.0	+39.8	-32.2	+0.0	+2.4	+0.0	64.2	100.4	-36.2	Vert
	M		+2.0	+2.1	+7.1	+1.0					
	Ave		+0.0	+0.0	+0.0	+0.0				Operating at	
			+0.0							5730MHz	
21	17190.000	30.1	+39.8	-32.2	+0.0	+2.4	+0.0	52.3	100.4	-48.1	Horiz
	M		+2.0	+2.1	+7.1	+1.0					
	Ave		+0.0	+0.0	+0.0	+0.0				Operating at	
			+0.0							5730MHz	
^	17190.000	44.1	+39.8	-32.2	+0.0	+2.4	+0.0	66.3	100.4	-34.1	Horiz
	M		+2.0	+2.1	+7.1	+1.0					
	Ave		+0.0	+0.0	+0.0	+0.0				Operating at	
			+0.0							5730MHz	
23	17190.000	30.0	+39.8	-32.2	+0.0	+2.4	+0.0	52.2	100.4	-48.2	Vert
	M		+2.0	+2.1	+7.1	+1.0					
	Ave		+0.0	+0.0	+0.0	+0.0				Operating at	
			+0.0							5730MHz	
24	17370.000	30.0	+40.0	-32.2	+0.0	+2.4	+0.0	52.2	100.4	-48.2	Horiz
	M		+2.0	+2.1	+7.1	+0.8					
	Ave		+0.0	+0.0	+0.0	+0.0				Operating at	
			+0.0							5790MHz	
^	17370.000	38.0	+40.0	-32.2	+0.0	+2.4	+0.0	60.2	100.4	-40.2	Horiz
	M		+2.0	+2.1	+7.1	+0.8					
	Ave		+0.0	+0.0	+0.0	+0.0				Operating at	
			+0.0							5790MHz	
26	17370.000	30.0	+40.0	-32.2	+0.0	+2.4	+0.0	52.2	100.4	-48.2	Vert
	M		+2.0	+2.1	+7.1	+0.8					
	Ave		+0.0	+0.0	+0.0	+0.0				Operating at	
			+0.0							5790MHz	
^	17370.000	38.7	+40.0	-32.2	+0.0	+2.4	+0.0	60.9	100.4	-39.5	Vert
	M		+2.0	+2.1	+7.1	+0.8					
	Ave		+0.0	+0.0	+0.0	+0.0				Operating at	
			+0.0							5790MHz	

28	17535.000	28.9	+40.3	-32.2	+0.0	+2.4	+0.0	51.1	100.4	-49.3	Horiz
	M		+2.0	+2.0	+7.1	+0.6					
	Ave		+0.0	+0.0	+0.0	+0.0					Operating at 5845MHz
			+0.0								
^	17535.000	36.8	+40.3	-32.2	+0.0	+2.4	+0.0	59.0	100.4	-41.4	Horiz
	M		+2.0	+2.0	+7.1	+0.6					
	Ave		+0.0	+0.0	+0.0	+0.0					Operating at 5845MHz
			+0.0								
30	17535.000	28.6	+40.3	-32.2	+0.0	+2.4	+0.0	50.8	100.4	-49.6	Vert
	M		+2.0	+2.0	+7.1	+0.6					
	Ave		+0.0	+0.0	+0.0	+0.0					Operating at 5845MHz
			+0.0								
^	17535.000	39.1	+40.3	-32.2	+0.0	+2.4	+0.0	61.3	100.4	-39.1	Vert
	M		+2.0	+2.0	+7.1	+0.6					
	Ave		+0.0	+0.0	+0.0	+0.0					Operating at 5845MHz
			+0.0								
32	779.950M	33.0	+0.0	+0.0	+0.0	+0.0	+0.0	34.1	100.4	-66.3	Vert
			+0.0	+0.0	+0.0	+0.0					Operating at 5790MHz
			+0.0	+21.6	-23.1	+0.2					
			+2.4								
33	375.000M	38.4	+0.0	+0.0	+0.0	+0.0	+0.0	32.7	100.4	-67.7	Vert
			+0.0	+0.0	+0.0	+0.0					Operating at 5790MHz
			+0.0	+15.5	-22.9	+0.1					
			+1.6								
34	18.100M	43.9	+0.0	+0.0	+0.0	+0.0	-40.0	12.9	100.4	-87.5	Vert
			+0.0	+0.0	+0.0	+0.0					Operating at 5790MHz
			+8.7	+0.0	+0.0	+0.0					
			+0.3								
35	10.000k	67.4	+0.0	+0.0	+0.0	+0.0	-80.0	4.8	100.4	-95.6	Vert
			+0.0	+0.0	+0.0	+0.0					Operating at 5790MHz
			+17.4	+0.0	+0.0	+0.0					
			+0.0								
36	2.502M	30.9	+0.0	+0.0	+0.0	+0.0	-40.0	1.1	100.4	-99.3	Vert
			+0.0	+0.0	+0.0	+0.0					Operating at 5790MHz
			+10.1	+0.0	+0.0	+0.0					
			+0.1								
37	50.750k	63.6	+0.0	+0.0	+0.0	+0.0	-80.0	-5.1	100.4	-105.5	Vert
			+0.0	+0.0	+0.0	+0.0					Operating at 5790MHz
			+11.3	+0.0	+0.0	+0.0					
			+0.0								
38	50.770k	63.5	+0.0	+0.0	+0.0	+0.0	-80.0	-5.2	100.4	-105.6	Vert
			+0.0	+0.0	+0.0	+0.0					Operating at 5210MHz
			+11.3	+0.0	+0.0	+0.0					
			+0.0								

CKC Laboratories, Inc. Date: 3/1/2015 Time: 20:36:47 Digital Path WO#: 96184
 15.247 Radiated Spurious Emissions Test Distance: 3 Meters Sequence#: 3 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **Digital Path**
 Specification: **15.247 Radiated Spurious Emissions**
 Work Order #: **96184** Date: 3/1/2015
 Test Type: **Maximized Emissions** Time: 19:42:06
 Equipment: **GEN6 CPE** Sequence#: 3
 Manufacturer: Digital Path Tested By: Eddie Mariscal
 Model: 2x-29
 S/N: C6:A6

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00327	Horn Antenna	3115	3/18/2014	3/18/2016
T2	AN03155	Preamp	83017A	6/26/2013	6/26/2015
T3	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015
T4	AN03355	Cable	32026-2-29094K- 48TC	12/8/2014	12/8/2016
T5	AN03361	Cable	32022-2-29094- 48TC	12/8/2014	12/8/2016
T6	AN03362	Cable	32022-2-29094- 48TC	12/8/2014	12/8/2016
T7	ANP05904	Cable	32022-2-29094K- 144TC	12/8/2014	12/8/2016
T8	AN02118	High Pass Filter	84300-80039	12/9/2014	12/9/2016
AN01413	Horn Antenna		84125-80008	11/25/2014	11/25/2016
ANP01991	Band Pass Filter		BPF-L-102-631- 11484	12/8/2014	12/8/2016
AN03158A	Horn Antenna-ANSI C63.5 Calibration		GH-28-25	1/14/2015	1/14/2017
AN00226	Loop Antenna		6502	3/28/2014	3/28/2016
AN01991	Biconilog Antenna		CBL6111C	3/7/2014	3/7/2016
AN00449	Preamp-Bottom Amp (dB)		8447F	4/7/2014	4/7/2016

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
POE Power Adapter	HP	FAS24000050-C44	None
GEN6 CPE*	Digital Path	2x-29	C6:A6

Support Devices:

Function	Manufacturer	Model #	S/N
AC/DC power Adapter	HP	Series PPP012H-S	F12941126327228
Laptop Computer	HP	Probook 6565b	None

Test Conditions / Notes:

The EUT is set atop a wooden non-conductive turntable of height 80cm. The EUT is set to transmit at 100% duty cycle.

Tested IAW ANSI C63.10(2013) Section 6.4 - 6.6.

Chain 0 and Chain 1 operating simultaneously.

Channel Bandwidth: 10MHz

Data rate: 13Mbps

Frequency Range of Interest: 9kHz - 40GHz

9 - 150kHz: RBW = 200Hz; VBW > RBW

0.15-30MHz; RBW = 9kHz; VBW > RBW

30-1000MHz; RBW = 120kHz; VBW > RBW

1-40GHz; RBW = 1MHz; VBW > RBW

Environmental Conditions:

Temperature: 19°C

Relative Humidity: 40%

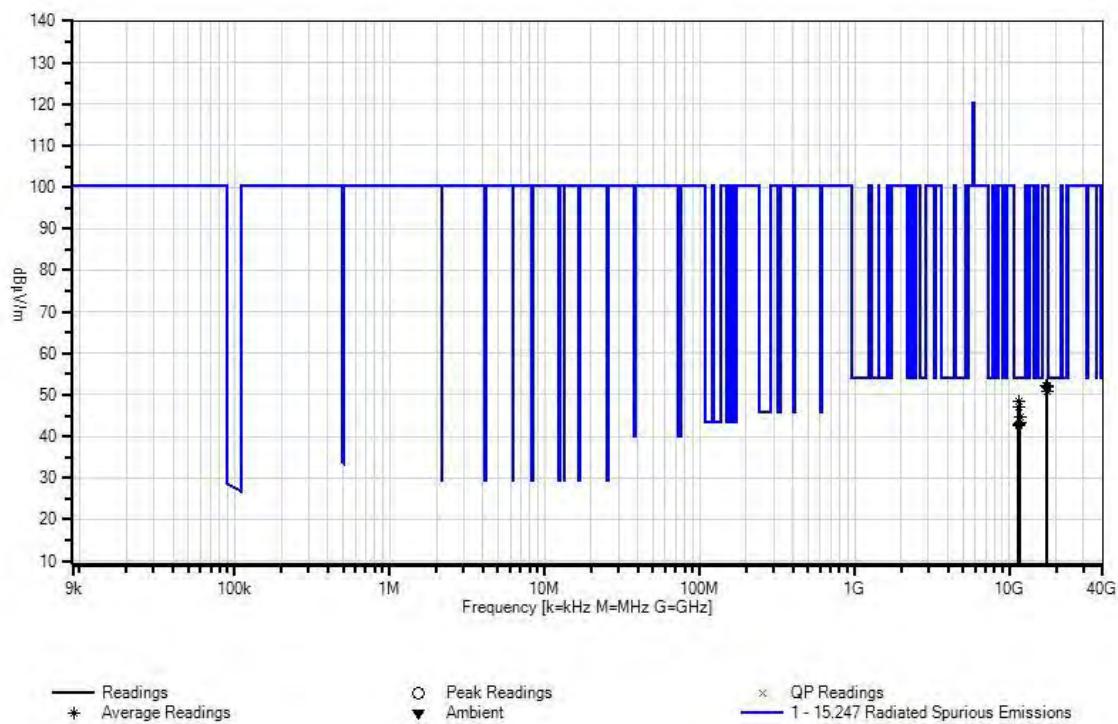
Atmospheric Pressure: 97.8kPa

Ext Attn: 0 dB

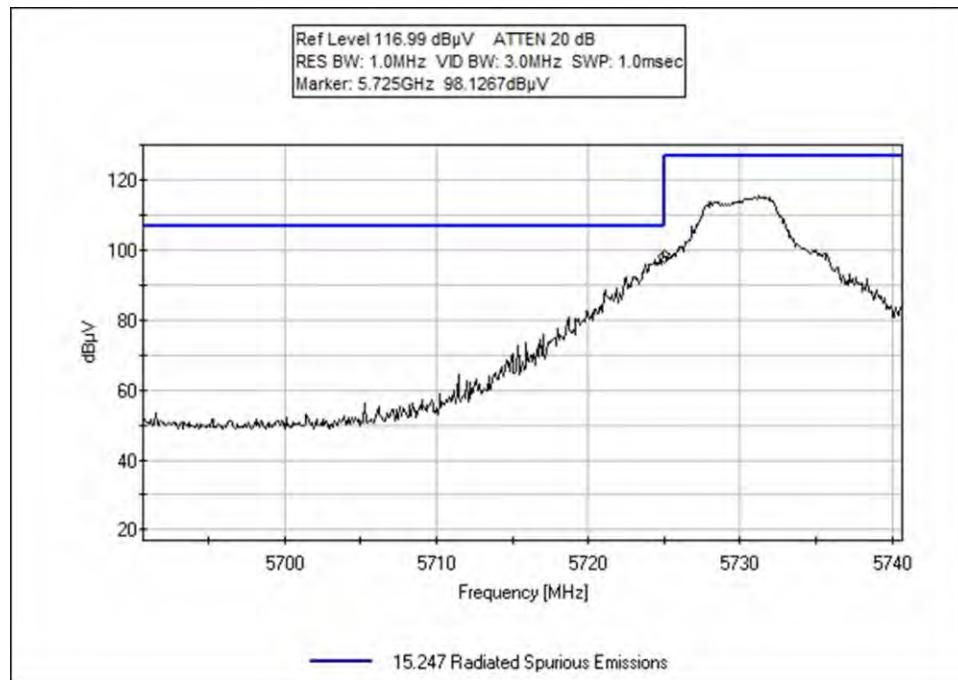
#	Freq MHz	Rdng dB μ V	Reading listed by margin.				Test Distance: 3 Meters				
			T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar
			T5 dB	T6 dB	T7 dB	T8 dB					Ant
1	11585.667	33.1	+36.6	-32.4	+0.0	+2.0	+0.0	48.4	54.0	-5.6	Horiz
	M		+1.7	+1.7	+5.5	+0.2					
	Ave										Operating at 5790MHz
^	11585.667	39.6	+36.6	-32.4	+0.0	+2.0	+0.0	54.9	54.0	+0.9	Horiz
	M		+1.7	+1.7	+5.5	+0.2					
											Operating at 5790MHz
3	11472.000	31.6	+36.9	-32.4	+0.0	+1.9	+0.0	47.0	54.0	-7.0	Horiz
	M		+1.7	+1.7	+5.4	+0.2					
	Ave										Operating at 5735MHz
^	11472.000	37.9	+36.9	-32.4	+0.0	+1.9	+0.0	53.3	54.0	-0.7	Horiz
	M		+1.7	+1.7	+5.4	+0.2					
											Operating at 5735MHz
5	11680.300	29.6	+36.4	-32.4	+0.0	+2.0	+0.0	44.7	54.0	-9.3	Vert
	M		+1.7	+1.7	+5.5	+0.2					
	Ave										Operating at 5840MHz
^	11680.300	38.6	+36.4	-32.4	+0.0	+2.0	+0.0	53.7	54.0	-0.3	Vert
	M		+1.7	+1.7	+5.5	+0.2					
											Operating at 5840MHz

7	11680.000	28.3	+36.4	-32.4	+0.0	+2.0	+0.0	43.4	54.0	-10.6	Horiz
	M		+1.7	+1.7	+5.5	+0.2					
	Ave										Operating at 5840MHz
^	11680.000	36.2	+36.4	-32.4	+0.0	+2.0	+0.0	51.3	54.0	-2.7	Horiz
	M		+1.7	+1.7	+5.5	+0.2					
	Ave										Operating at 5840MHz
9	11470.000	27.5	+36.9	-32.4	+0.0	+1.9	+0.0	42.9	54.0	-11.1	Vert
	M		+1.7	+1.7	+5.4	+0.2					
	Ave										Operating at 5735MHz
^	11470.000	36.9	+36.9	-32.4	+0.0	+1.9	+0.0	52.3	54.0	-1.7	Vert
	M		+1.7	+1.7	+5.4	+0.2					
	Ave										Operating at 5735MHz
11	11580.000	27.3	+36.7	-32.4	+0.0	+2.0	+0.0	42.7	54.0	-11.3	Vert
	M		+1.7	+1.7	+5.5	+0.2					
	Ave										Operating at 5790MHz
^	11580.000	38.6	+36.7	-32.4	+0.0	+2.0	+0.0	54.0	54.0	+0.0	Vert
	M		+1.7	+1.7	+5.5	+0.2					
	Ave										Operating at 5790MHz
13	17205.000	30.1	+39.8	-32.2	+0.0	+2.4	+0.0	52.3	100.4	-48.1	Vert
	M		+2.0	+2.1	+7.1	+1.0					
	Ave										Operating at 5735MHz
^	17205.000	38.1	+39.8	-32.2	+0.0	+2.4	+0.0	60.3	100.4	-40.1	Vert
	M		+2.0	+2.1	+7.1	+1.0					
	Ave										Operating at 5735MHz
15	17370.000	30.0	+40.0	-32.2	+0.0	+2.4	+0.0	52.2	100.4	-48.2	Horiz
	M		+2.0	+2.1	+7.1	+0.8					
	Ave										Operating at 5790MHz
^	17370.000	39.6	+40.0	-32.2	+0.0	+2.4	+0.0	61.8	100.4	-38.6	Horiz
	M		+2.0	+2.1	+7.1	+0.8					
	Ave										Operating at 5790MHz
17	17205.000	30.0	+39.8	-32.2	+0.0	+2.4	+0.0	52.2	100.4	-48.2	Horiz
	M		+2.0	+2.1	+7.1	+1.0					
	Ave										Operating at 5735MHz
^	17205.000	39.2	+39.8	-32.2	+0.0	+2.4	+0.0	61.4	100.4	-39.0	Horiz
	M		+2.0	+2.1	+7.1	+1.0					
	Ave										Operating at 5735MHz
19	17370.000	29.8	+40.0	-32.2	+0.0	+2.4	+0.0	52.0	100.4	-48.4	Vert
	M		+2.0	+2.1	+7.1	+0.8					
	Ave										Operating at 5790MHz

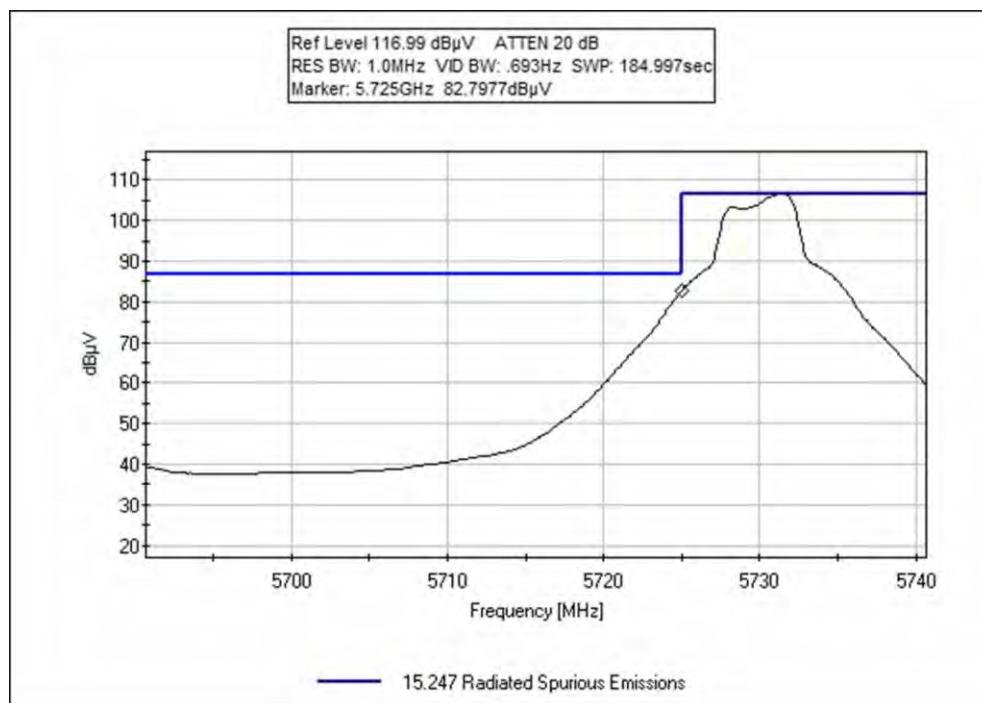
^	17370.000	37.2	+40.0	-32.2	+0.0	+2.4	+0.0	59.4	100.4	-41.0	Vert
M											
			+2.0	+2.1	+7.1	+0.8					Operating at 5790MHz
21	17520.000	28.6	+40.2	-32.2	+0.0	+2.4	+0.0	50.7	100.4	-49.7	Horiz
M											
Ave											
			+2.0	+2.0	+7.1	+0.6					Operating at 5840MHz
^	17520.000	39.0	+40.2	-32.2	+0.0	+2.4	+0.0	61.1	100.4	-39.3	Horiz
M											
Ave											
			+2.0	+2.0	+7.1	+0.6					Operating at 5840MHz
23	17520.000	28.6	+40.2	-32.2	+0.0	+2.4	+0.0	50.7	100.4	-49.7	Vert
M											
Ave											
			+2.0	+2.0	+7.1	+0.6					Operating at 5840MHz
^	17520.000	39.2	+40.2	-32.2	+0.0	+2.4	+0.0	61.3	100.4	-39.1	Vert
M											
Ave											
			+2.0	+2.0	+7.1	+0.6					Operating at 5840MHz

CKC Laboratories, Inc. Date: 3/1/2015 Time: 19:42:06 Digital Path WO#: 96184
15.247 Radiated Spurious Emissions Test Distance: 3 Meters Sequence#: 3 Ext ATTN: 0 dB


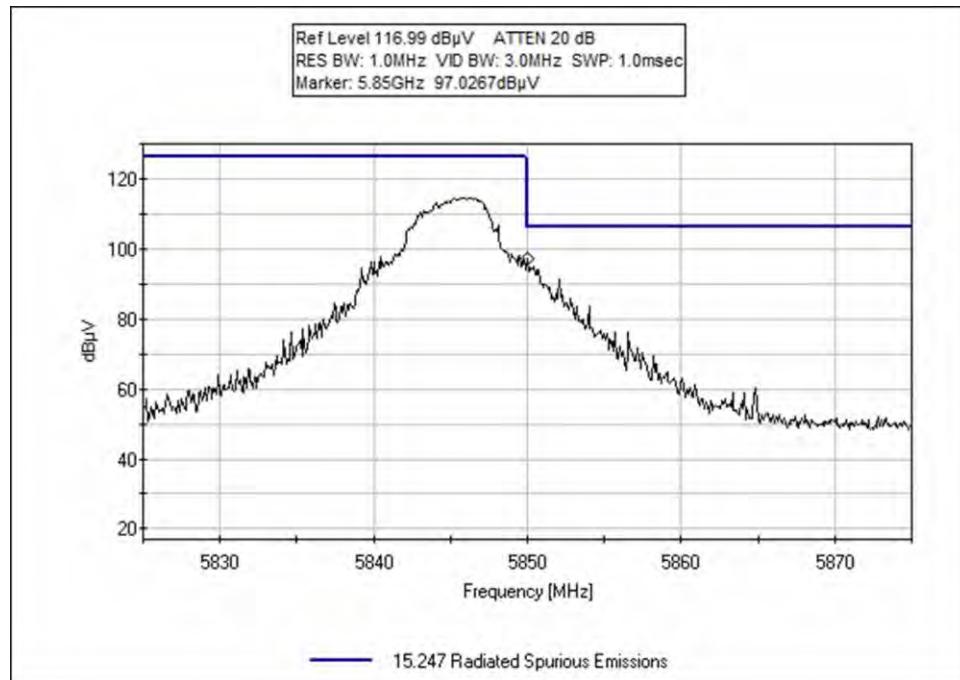
Band Edge



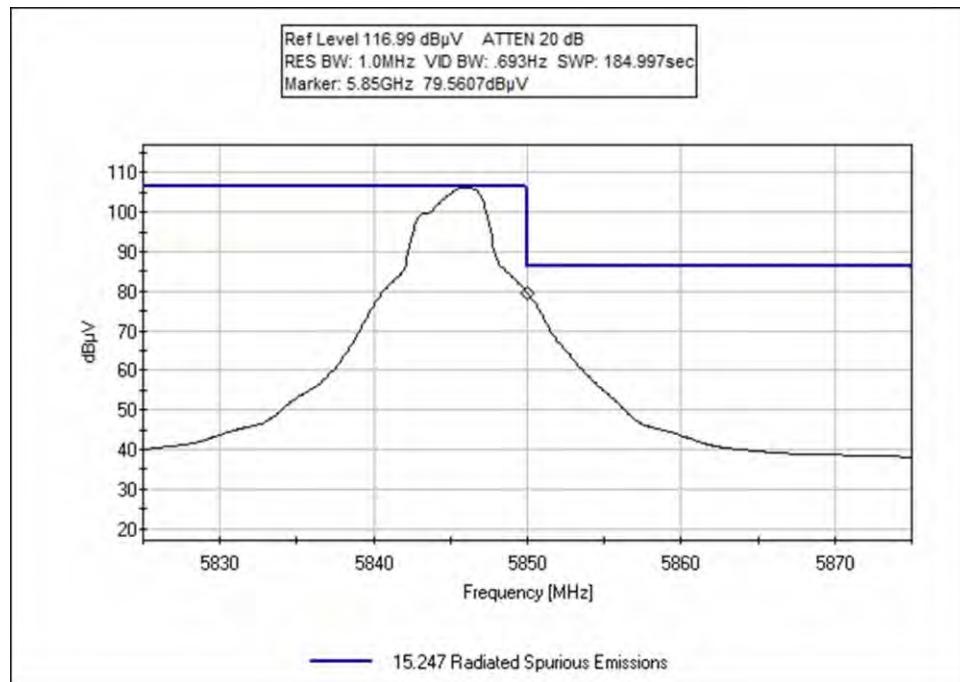
5MHz, Low, Peak



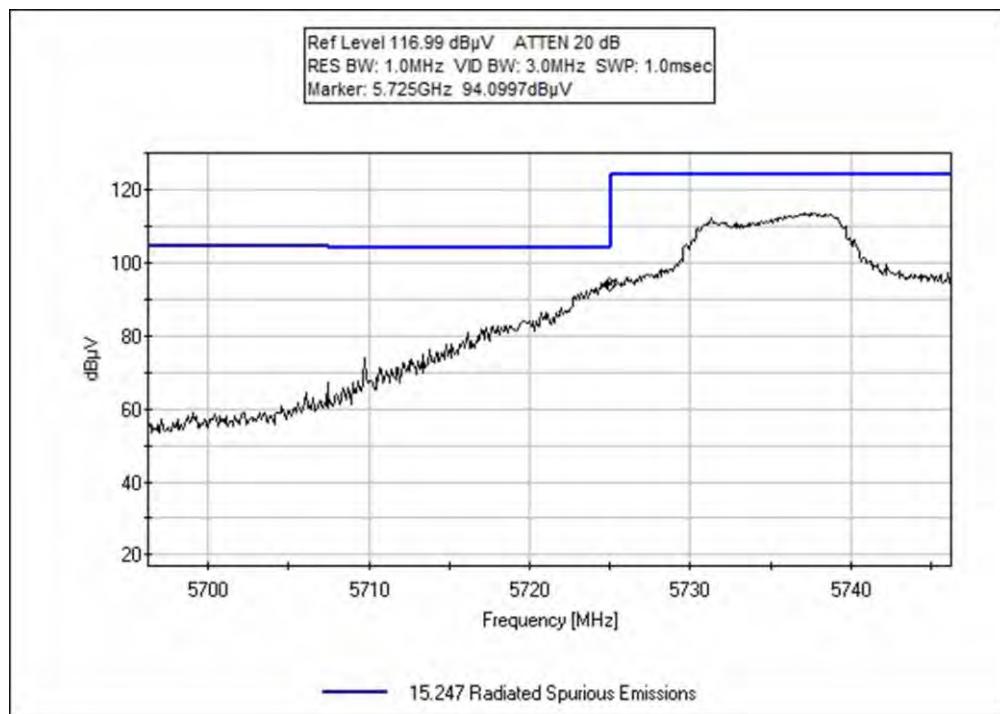
5MHz, Low, Average



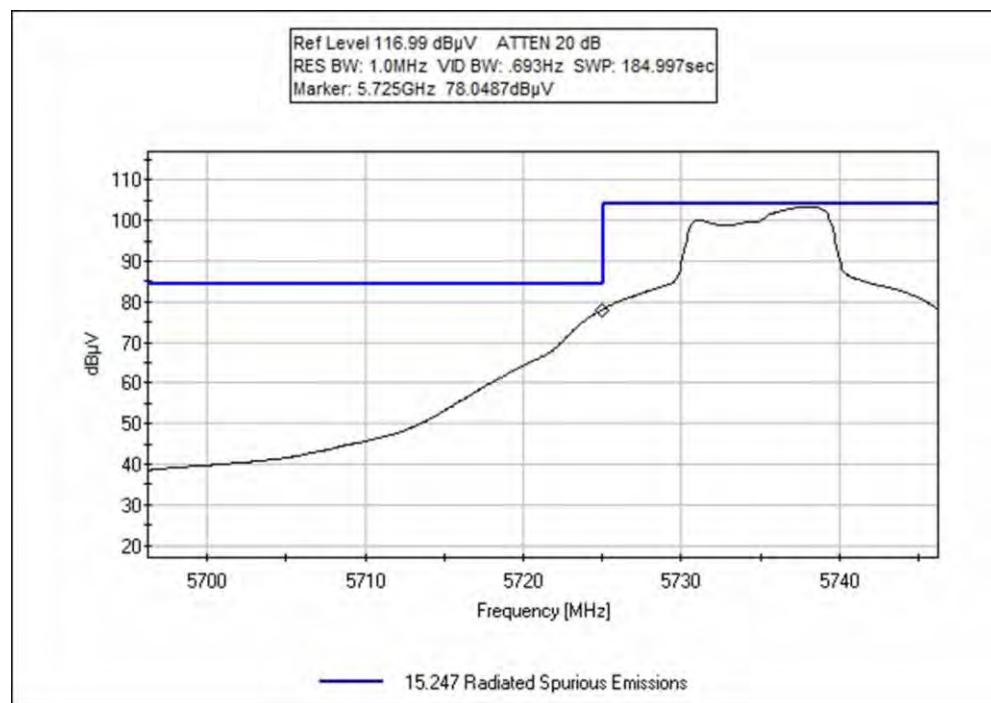
5MHz, High, Peak



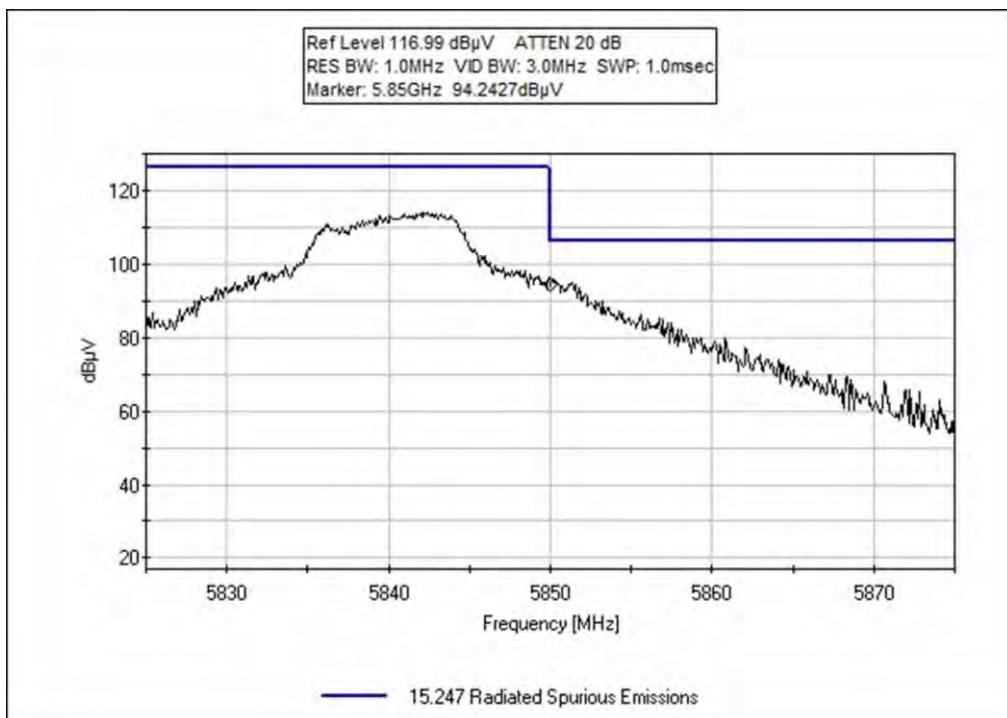
5MHz, High, Average



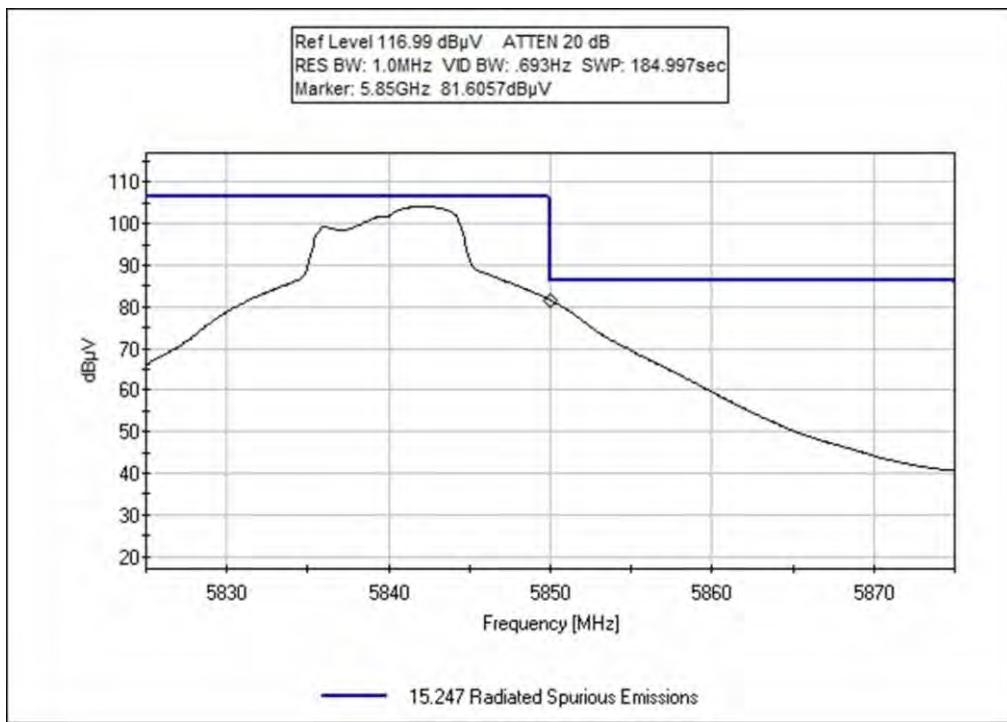
10MHz, Low, Peak



10MHz, Low, Average

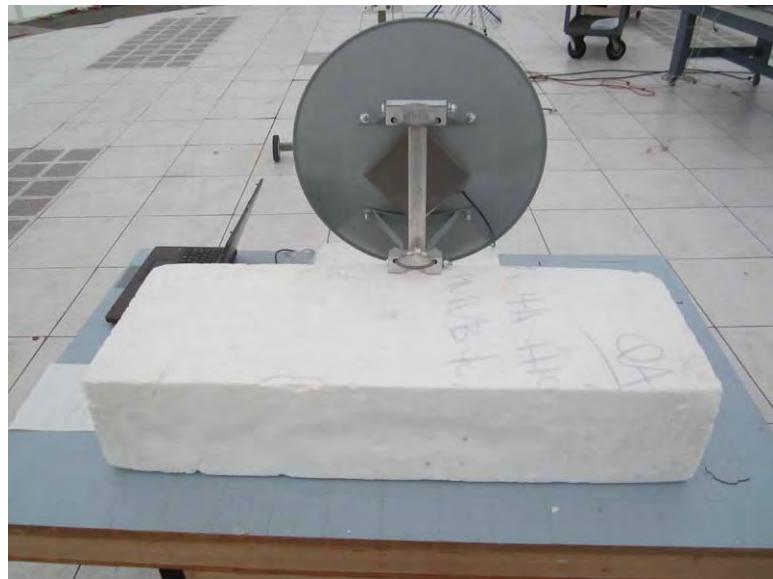
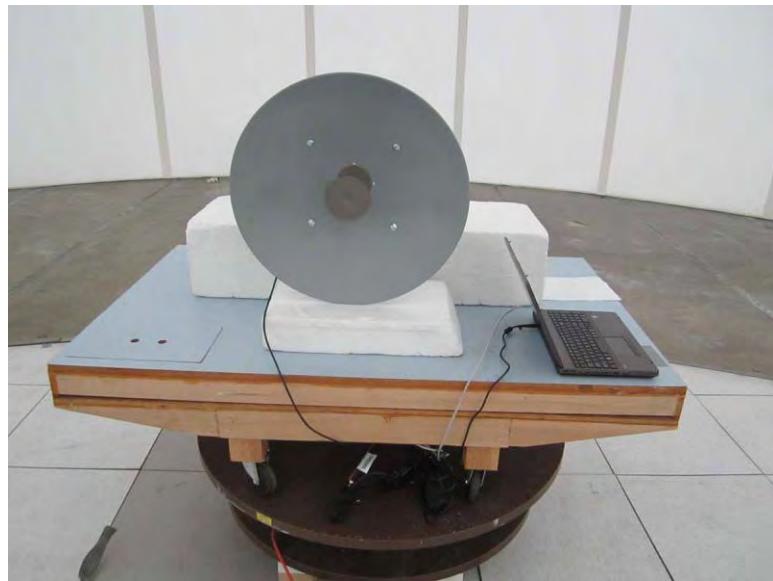


10MHz, High, Peak



10MHz, High, Average

Test Setup Photos



15.247(e) Power Spectral Density

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Dr. • Mariposa, CA 95338 • (209) 966-5240

Customer: **Digital Path**
 Specification: **15.247 (e) Power Spectral Density**
 Work Order #: **96184** Date: **2/20/2015**
 Test Type: **Conducted Emissions** Time: **11:36:47**
 Equipment: **GEN6 CPE** Sequence#: **1**
 Manufacturer: Digital Path Tested By: Eddie Mariscal
 Model: 2x-29
 S/N: C6:A6

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T2	ANP01391	Attenuator	85053-60001	12/8/2014	12/8/2016
T3	AN03362	Cable	32026-2-29094K-48TC	12/8/2014	12/8/2016
	AN02668	Spectrum Analyzer	E4446A	8/4/2014	8/4/2015

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
GEN6 CPE*	Digital Path	2x-29	C6:A6
GEN6 CPE*	Digital Path	2x-24	C6:A6
POE Power Adapter	HP	FAS24000050-C44	NA

Support Devices:

Function	Manufacturer	Model #	S/N
AC/DC power Adapter	HP	Series PPP012H-S	F12941126327228
Laptop Computer	HP	Probook 6565b	NA

Test Conditions / Notes:

The EUT is directly connected to the spectrum analyzer for conducted measurements.
 The EUT is set to transmit at 100% duty cycle, operating in the band 5.725-5.85GHz.

Tested in accordance with KDB 558074 Section 10.3.

The transmit signals of the EUT are completely uncorrelated as defined in KDB 662911 D01. The manufacturer declares that the two transmit chains of the EUT transmit unique data in orthogonal polarities. Therefore, each transmit chain shall be assessed individually.

Chain 0 and Chain 1, labeled appropriately

Channel Bandwidth: 5MHz and 10MHz, labeled appropriately

Data rate: 19.5Mbps for 5MHz channel bandwidth; 13Mbps for 10MHz channel bandwidth

Tx Power setting: 24dBm for the 24dBi antenna; 20dBm for the 29dBi antenna.

Cable loss and attenuator loss were taken into account in the plots below.

Environmental Conditions:

Temperature: 19°C

Relative Humidity: 40%

Atmospheric Pressure: 97.8kPa

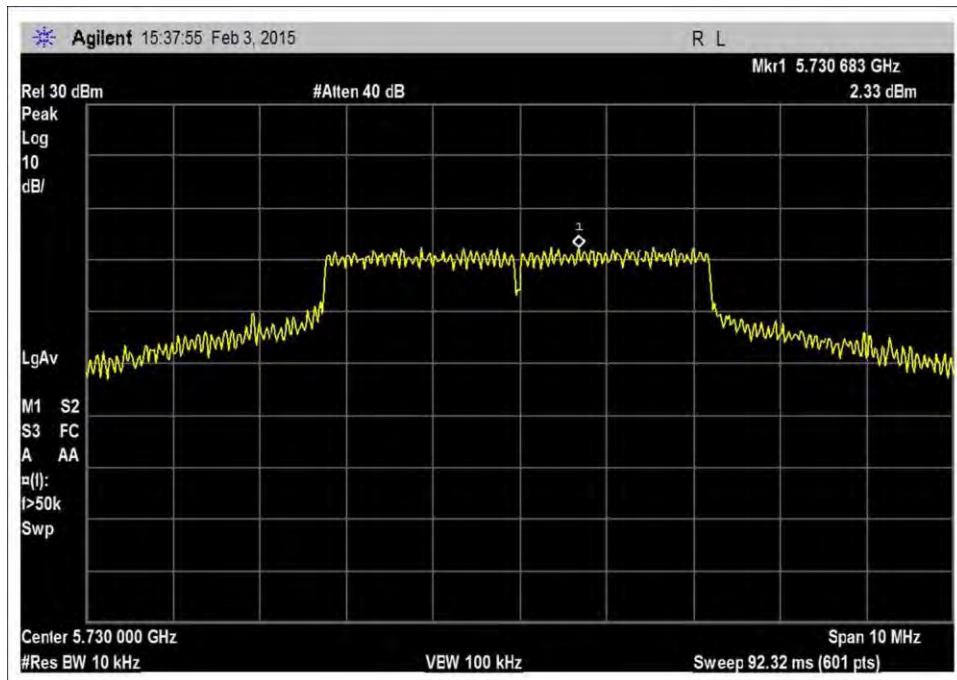
Test Data

Antenna: 24dBi

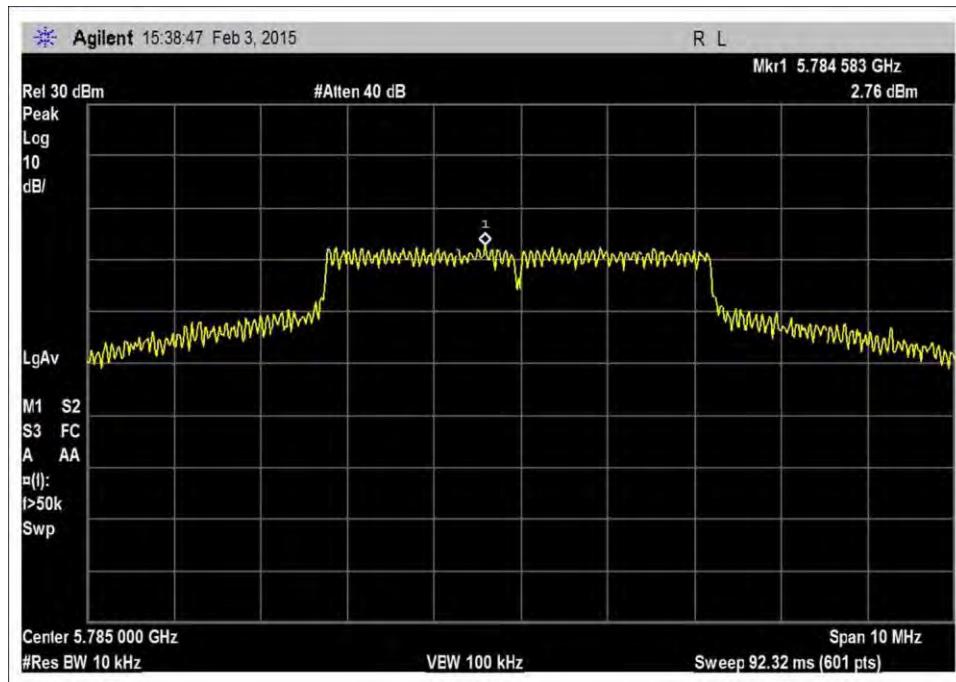
Max Conducted Power Spectral Density						
Channel	Chain 0 5MHz BW (dBm/10kHz)	Chain 1 5MHz BW (dBm/10kHz)	Chain 0 10MHz BW (dBm/10kHz)	Chain 1 10MHz BW (dBm/10kHz)	Limit (dBm/3kHz)	Results
Low	2.33	2.93	1.05	2.18	8.00	Pass
Mid	2.76	3.69	1.16	2.38	8.00	Pass
High	2.81	4.51	1.21	2.22	8.00	Pass

Antenna: 29dBi

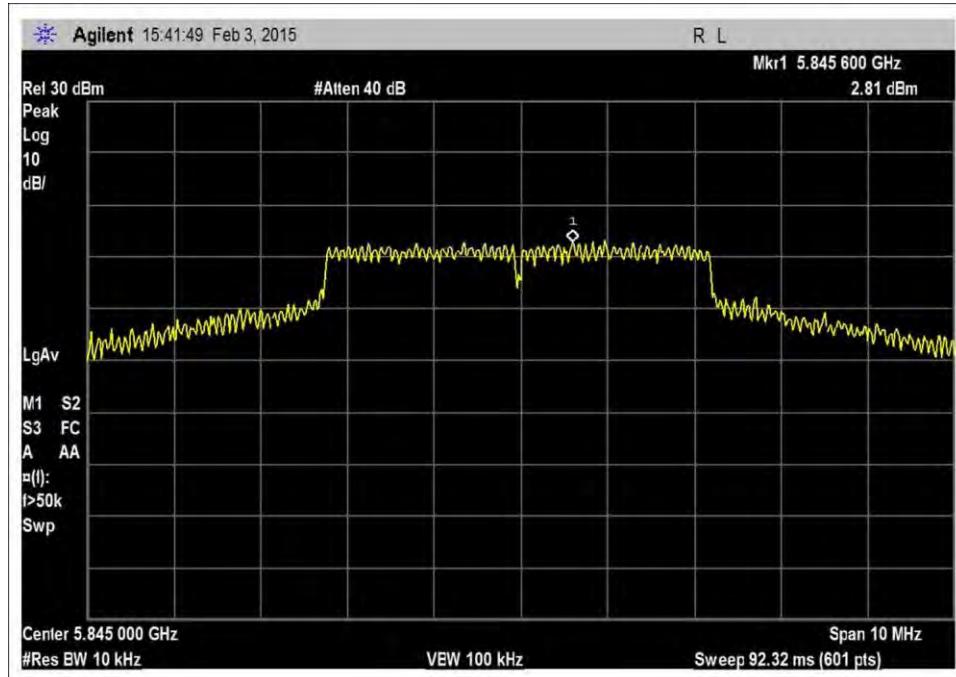
Max Conducted Power Spectral Density – 5MHz BW						
Channel	Chain 0 5MHz BW (dBm/10kHz)	Chain 1 5MHz BW (dBm/10kHz)	Chain 0 10MHz BW (dBm/10kHz)	Chain 1 10MHz BW (dBm/10kHz)	Limit (dBm/3kHz)	Results
Low	1.50	0.86	-0.48	2.61	8.00	Pass
Mid	1.47	2.10	0.46	0.91	8.00	Pass
High	2.08	2.33	1.04	0.64	8.00	Pass



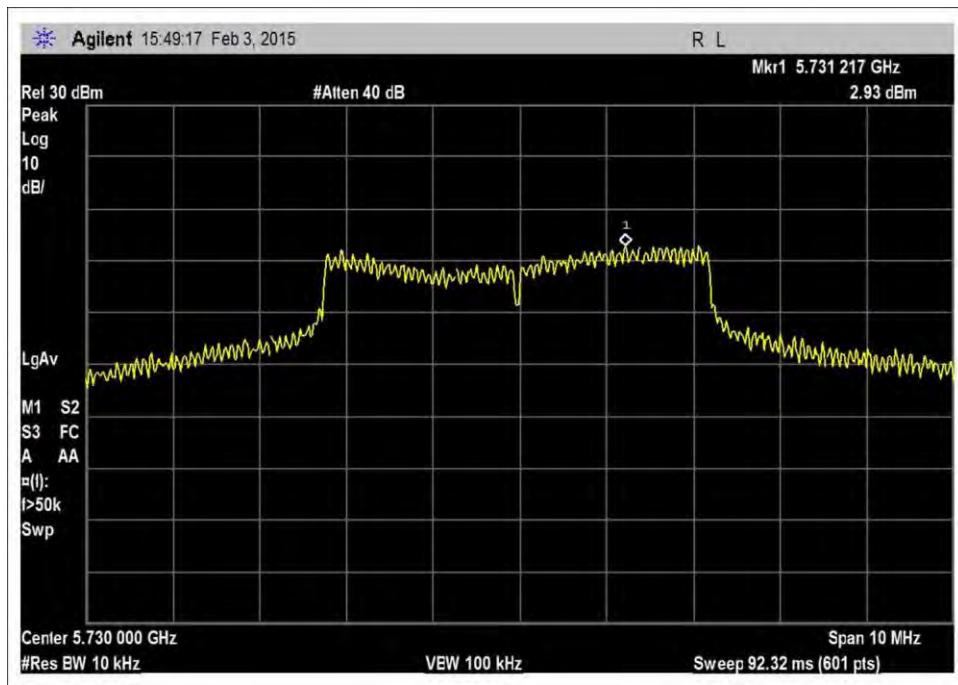
24dBi Antenna, 5MHz, Low, Chain 0



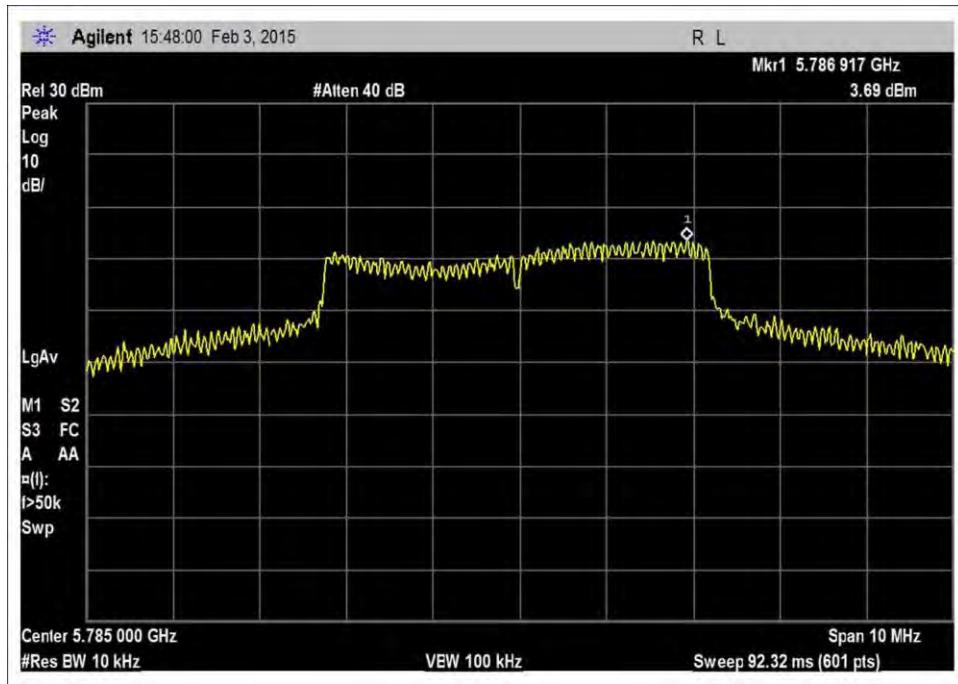
24dBi Antenna, 5MHz, Mid, Chain 0



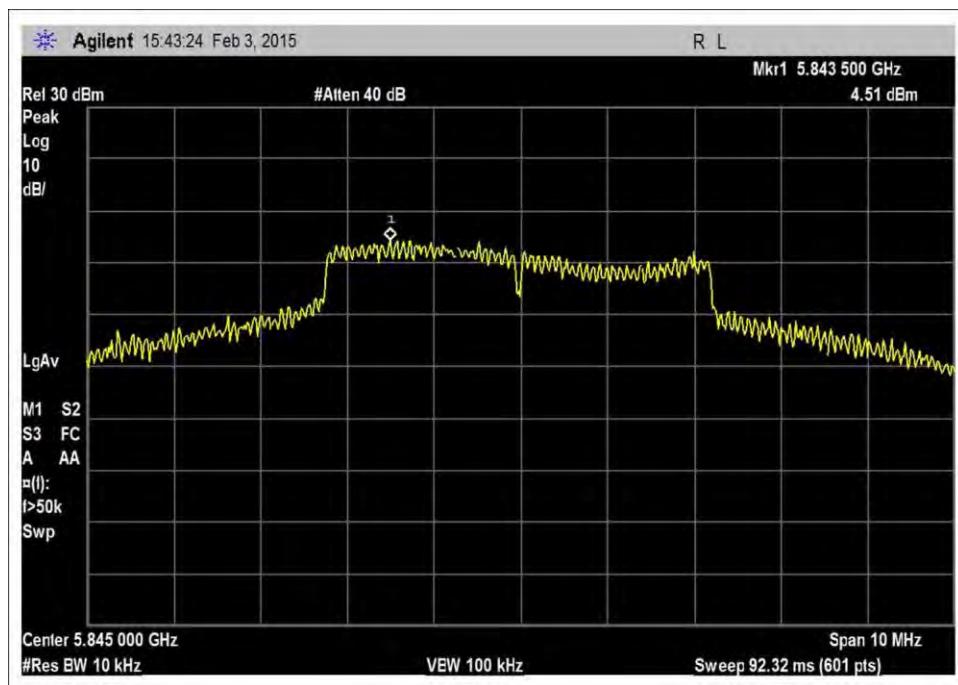
24dBi Antenna, 5MHz, High, Chain 0



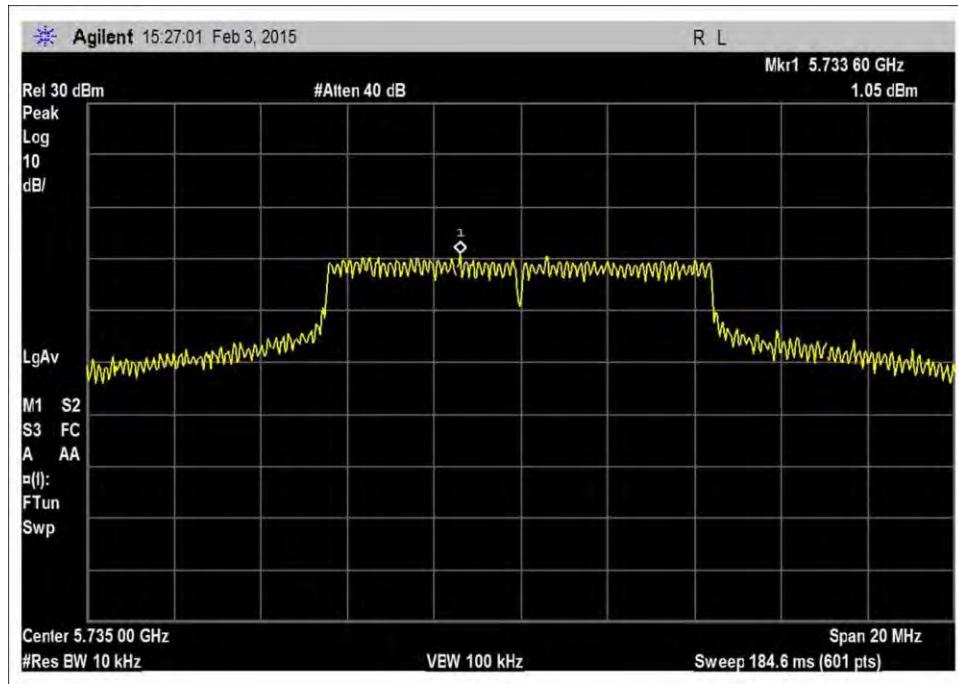
24dBi Antenna, 5MHz, Low, Chain 1



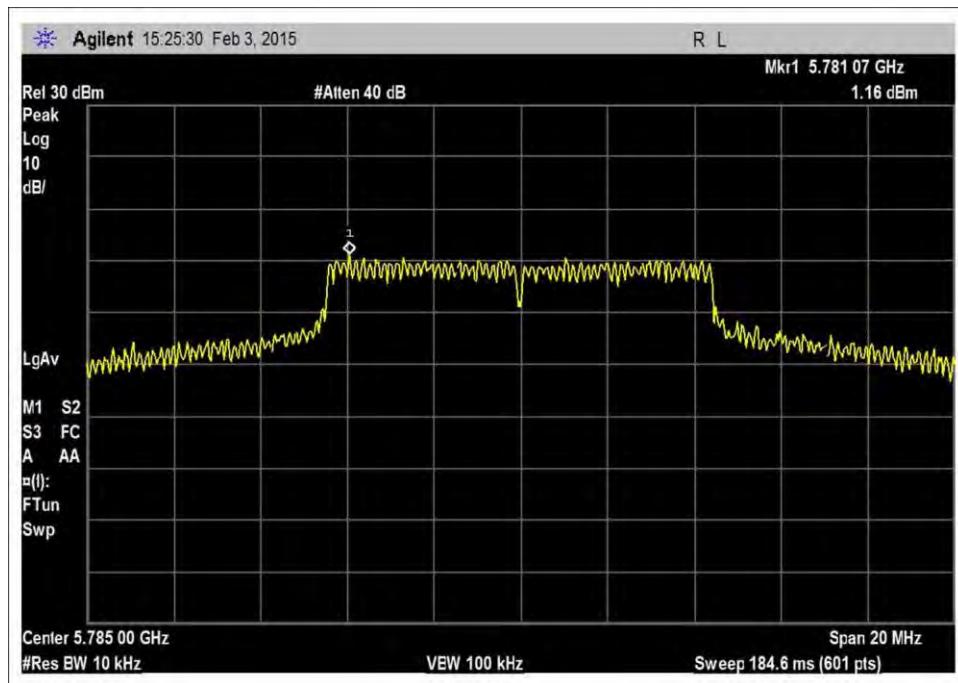
24dBi Antenna, 5MHz, Mid, Chain 1



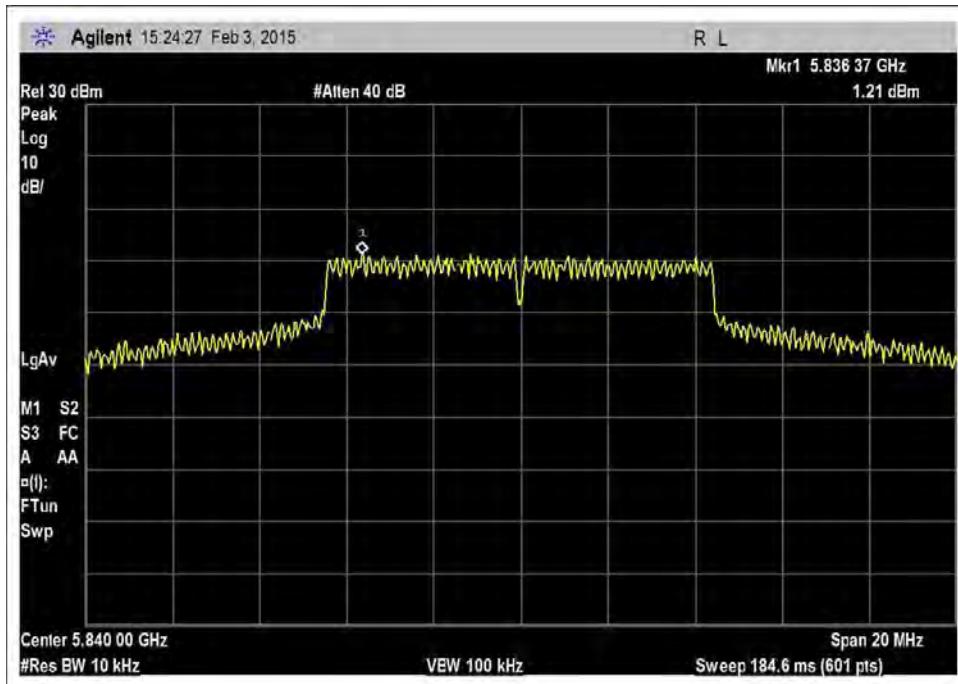
24dBi Antenna, 5MHz, High, Chain 1



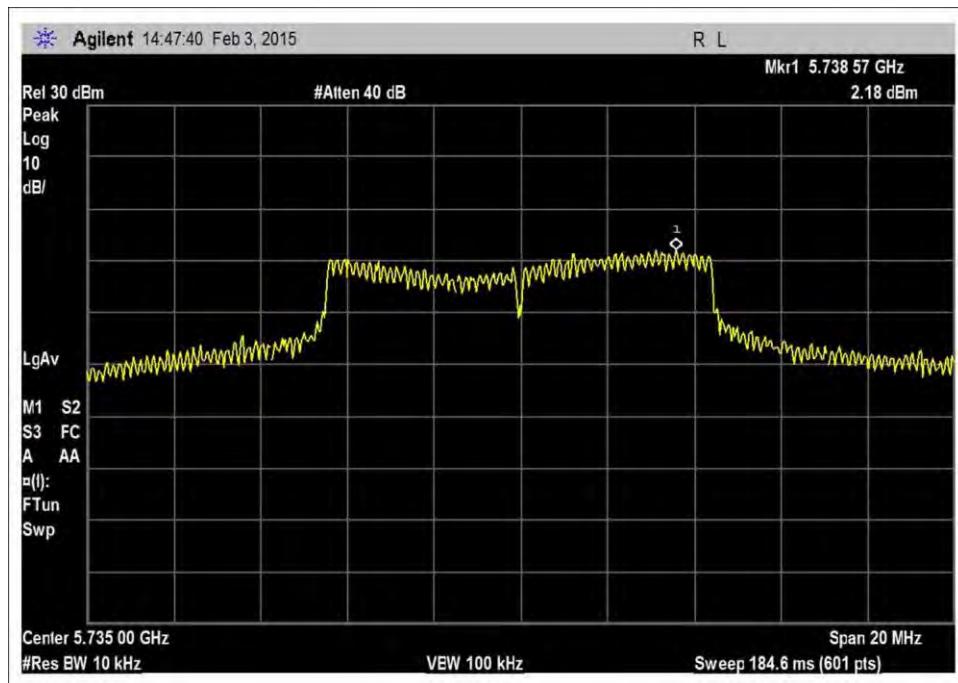
24dBi Antenna, 10MHz, Low, Chain 0



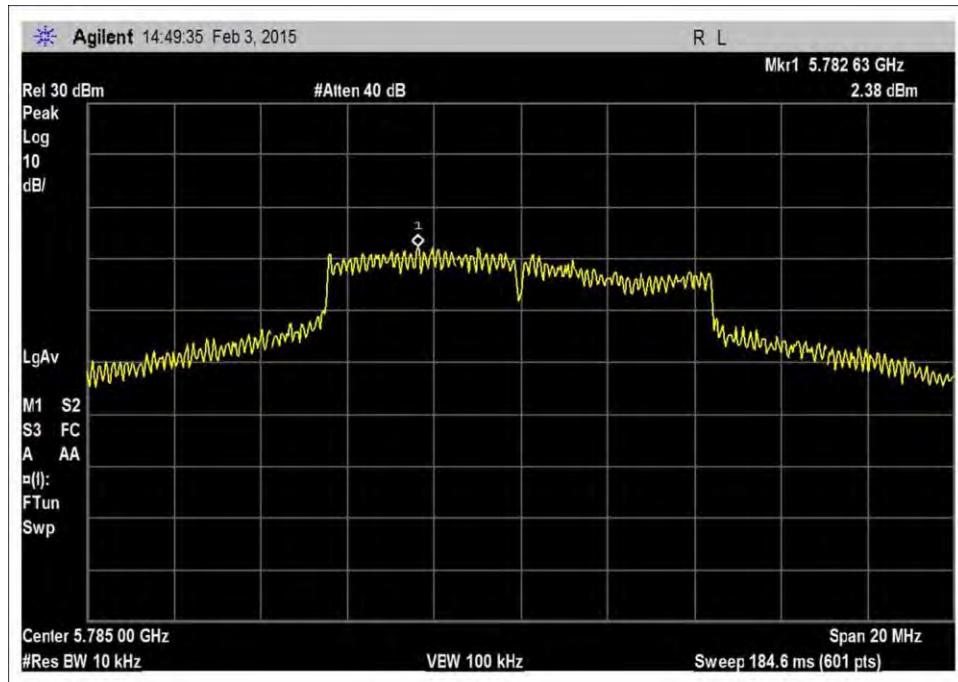
24dBi Antenna, 10MHz, Mid, Chain 0



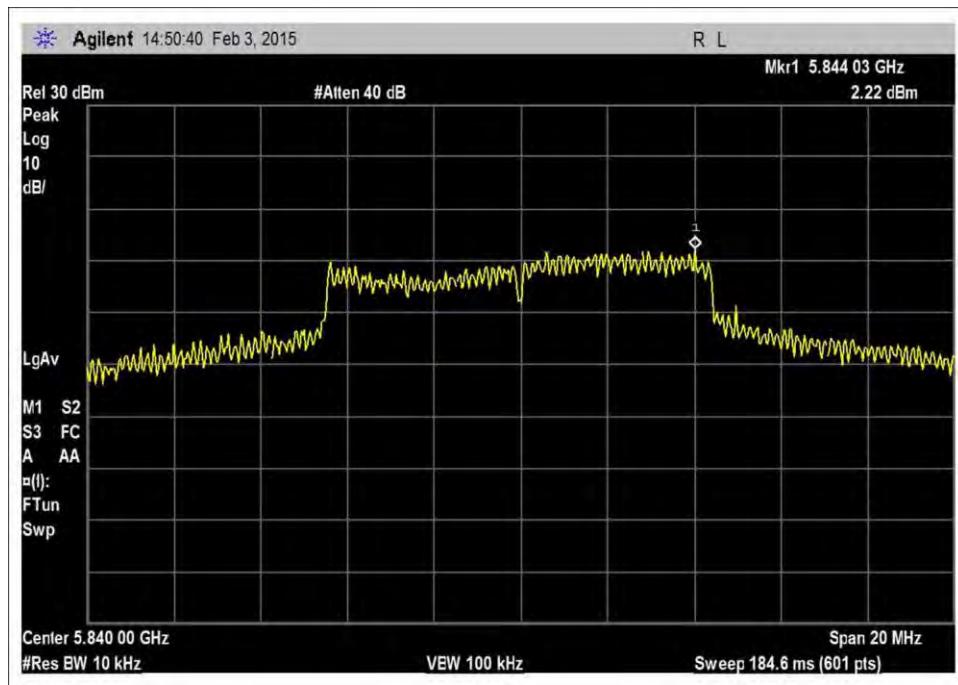
24dBi Antenna, 10MHz, High, Chain 0



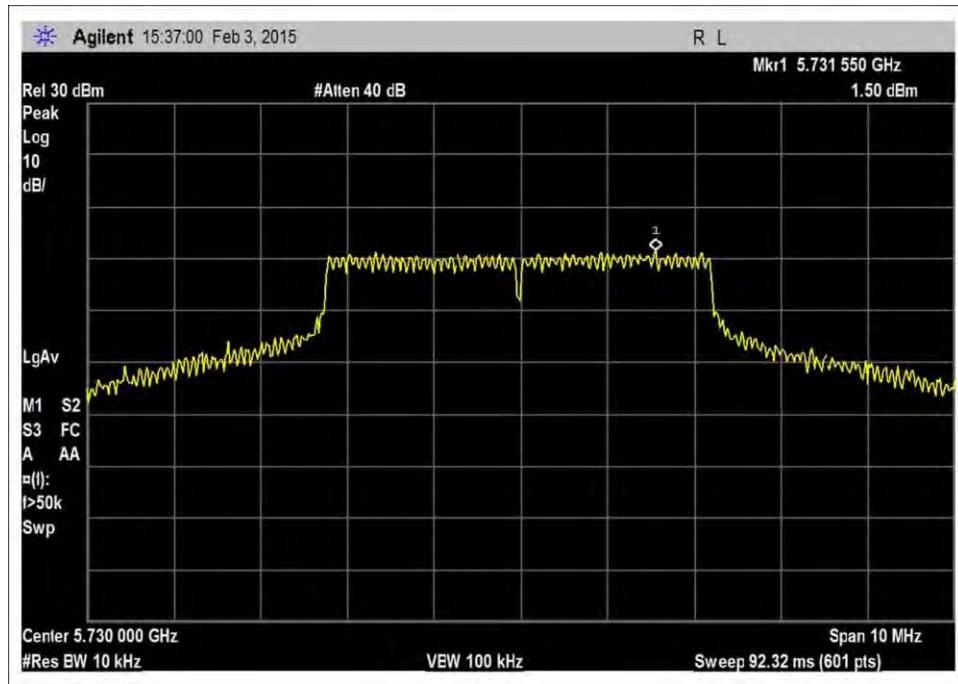
dB_i Antenna, 10MHz, Low, Chain 1



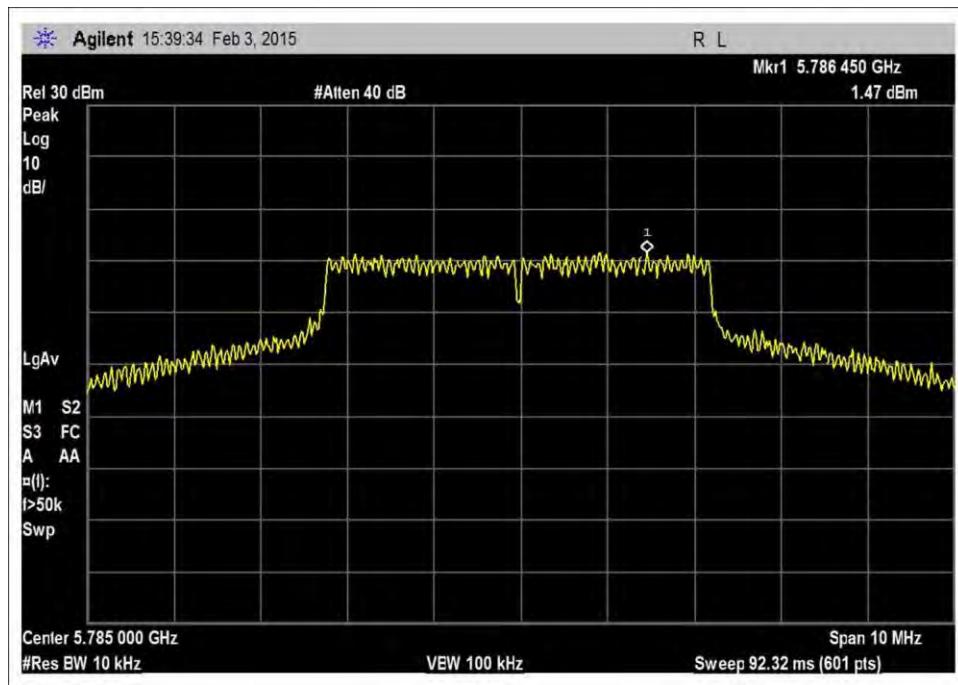
24dBi Antenna, 10MHz, Mid, Chain 1



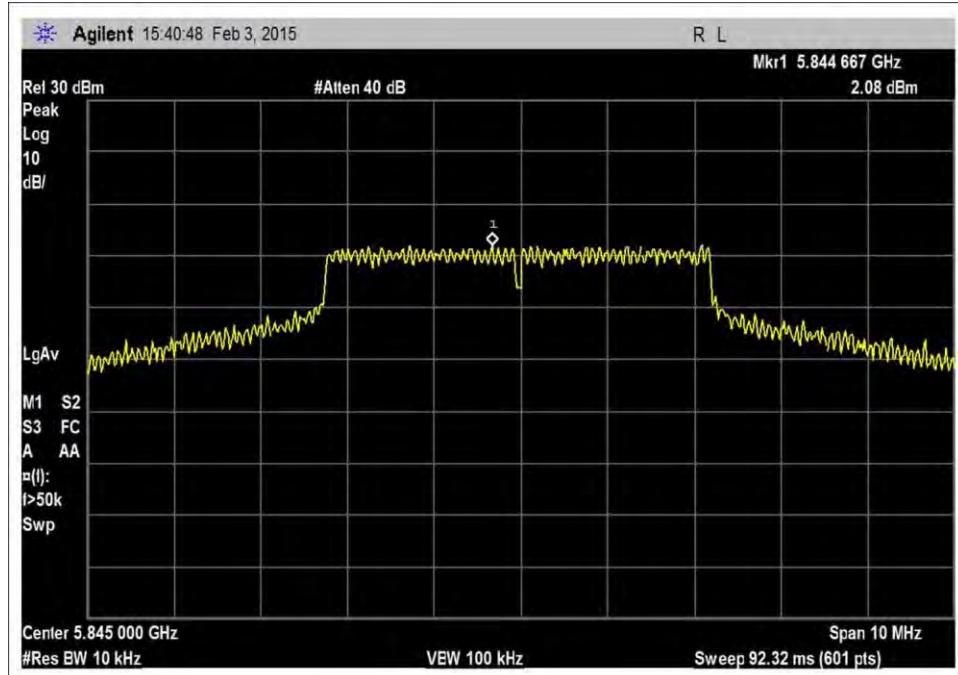
24dBi Antenna, 10MHz, High, Chain 1



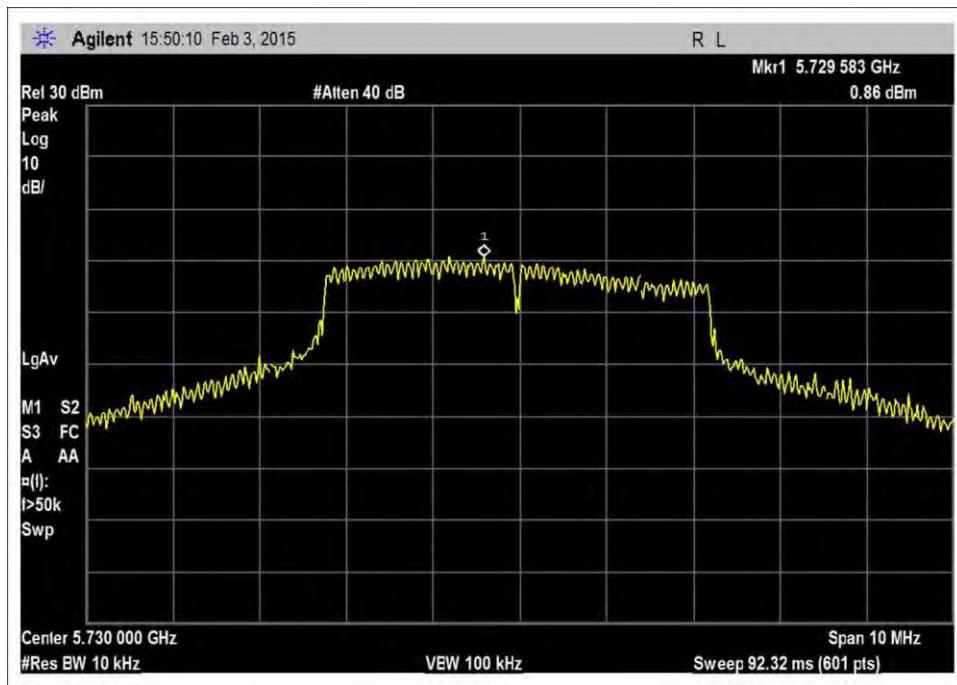
29dBi Antenna, 5MHz, Low, Chain 0



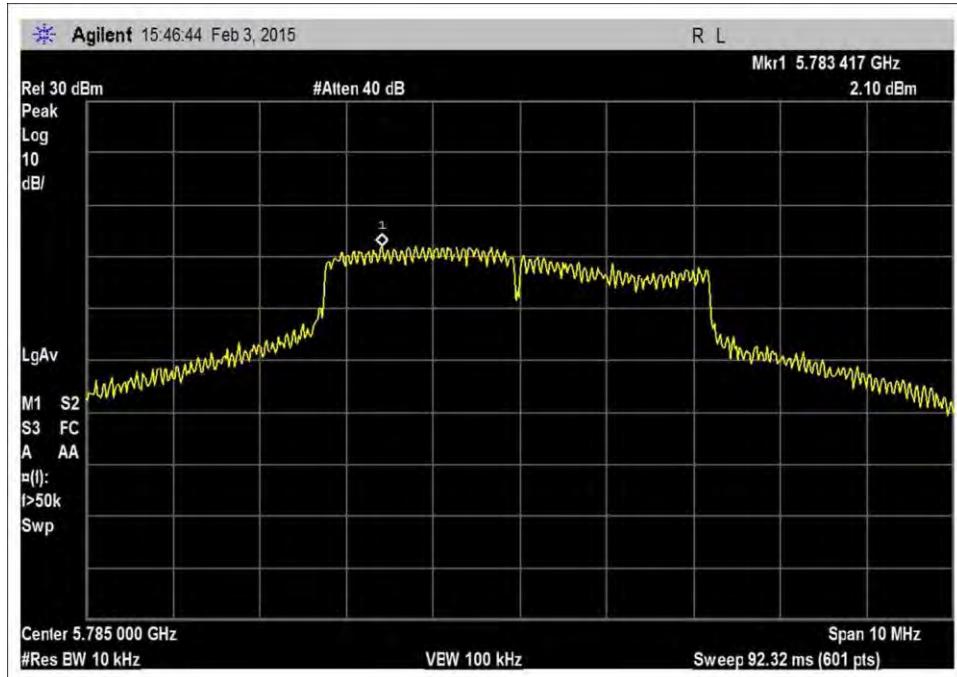
29dBi Antenna, 5MHz, Mid, Chain 0



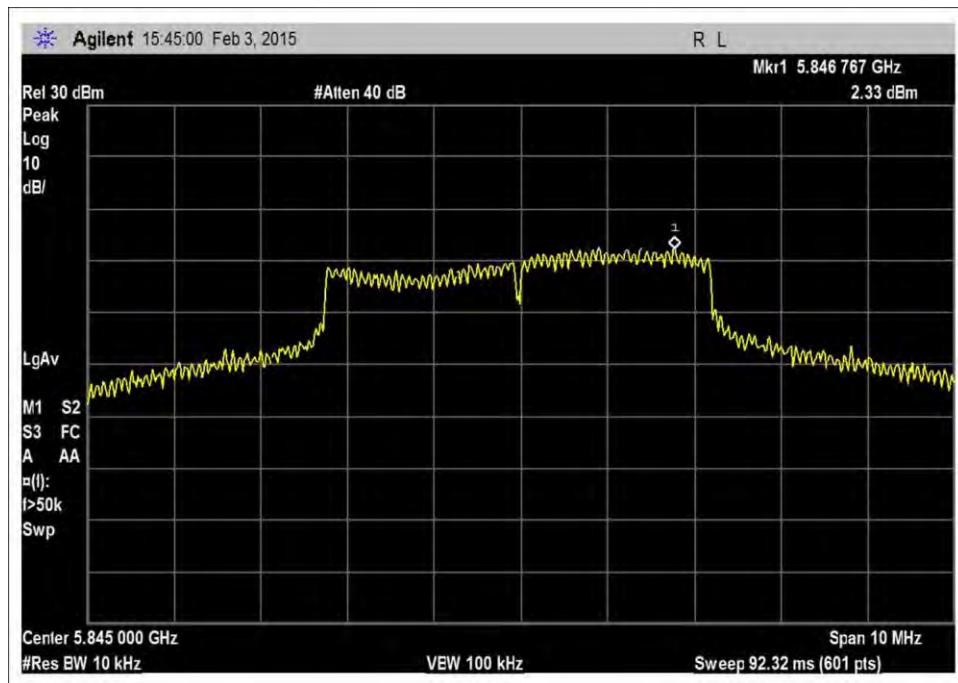
29dBi Antenna, 5MHz, High, Chain 0



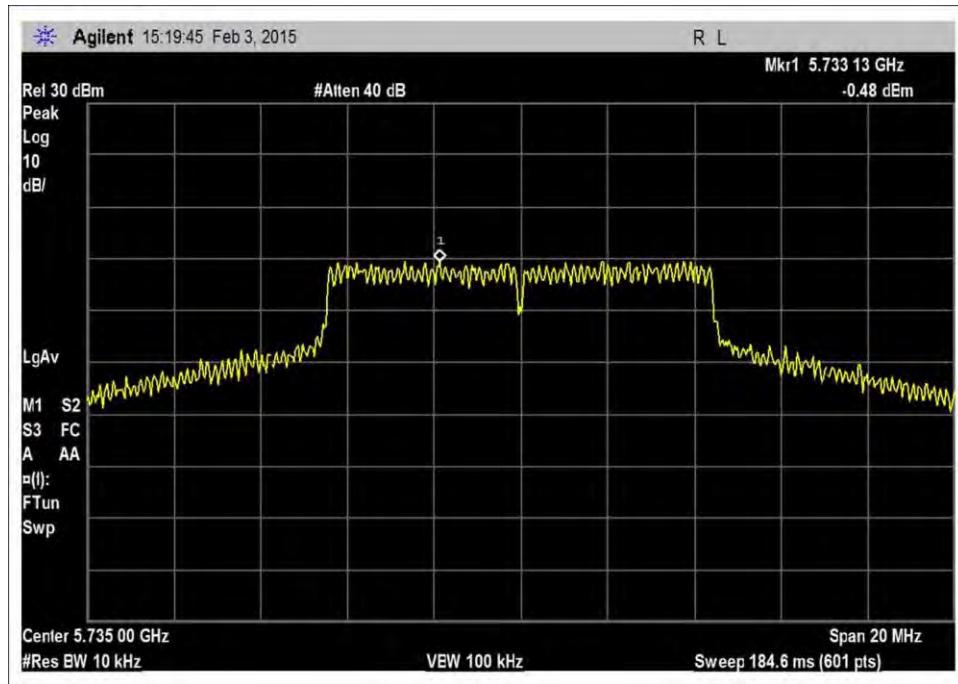
29dBi Antenna, 5MHz, Low, Chain 1



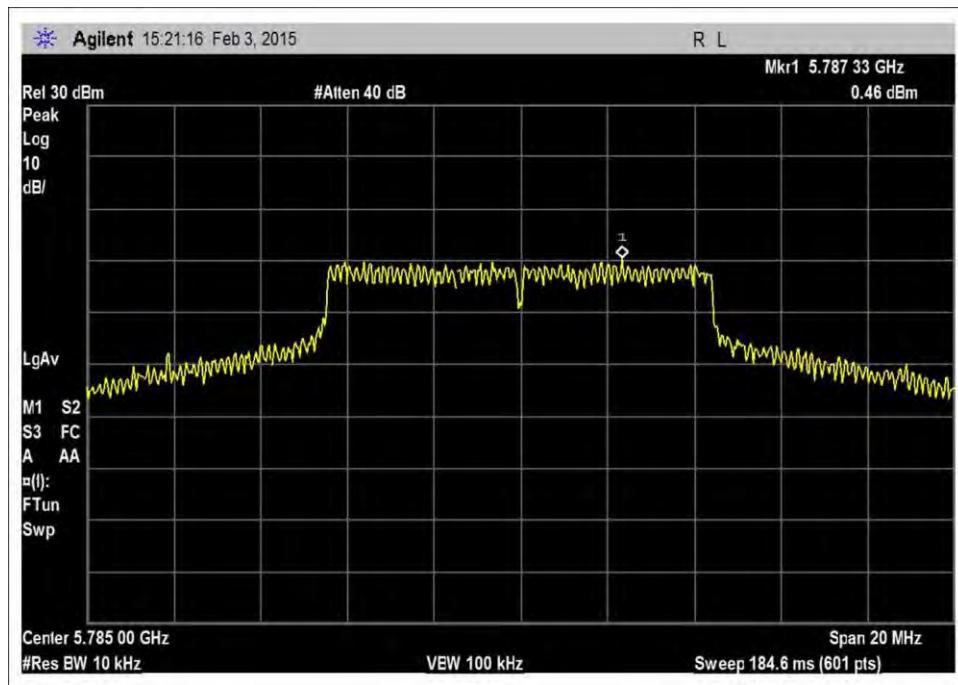
29dBi Antenna, 5MHz, Mid, Chain 1



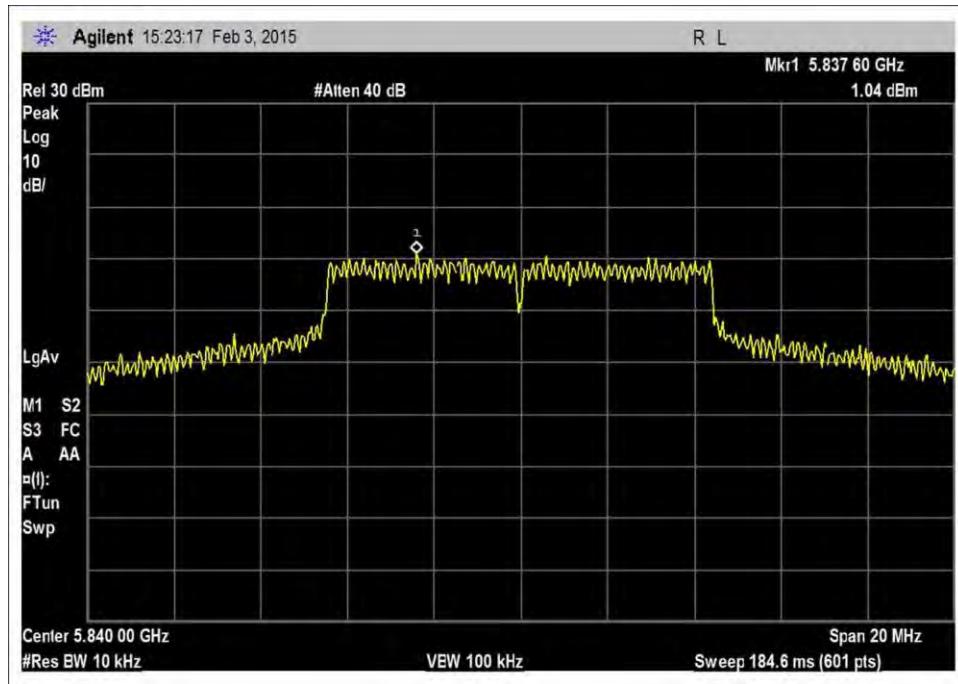
29dBi Antenna, 5MHz, High, Chain 1



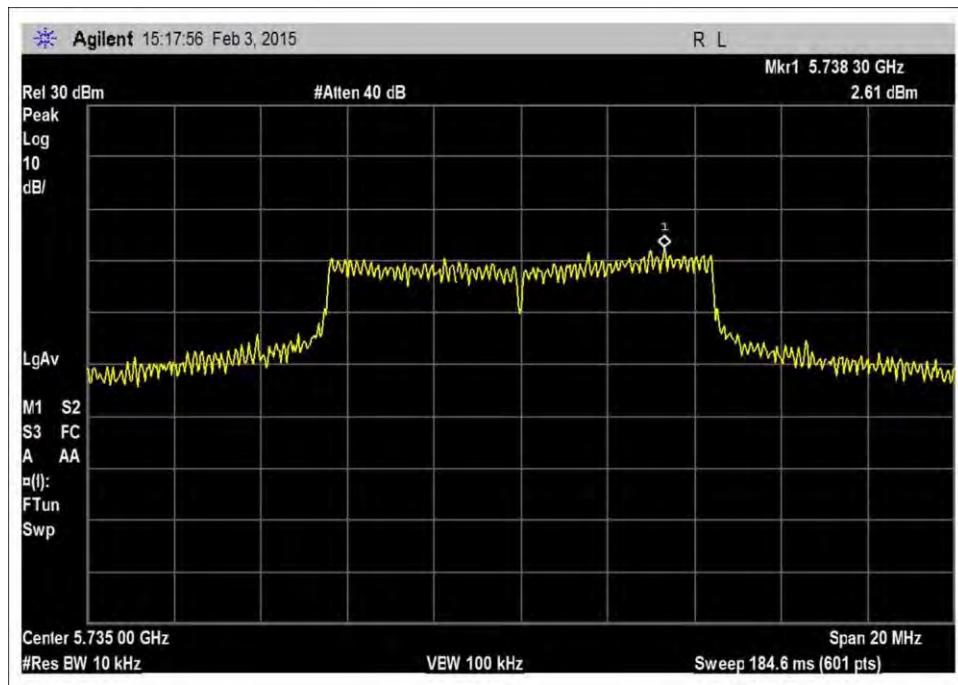
29dBi Antenna, 10MHz, Low, Chain 0



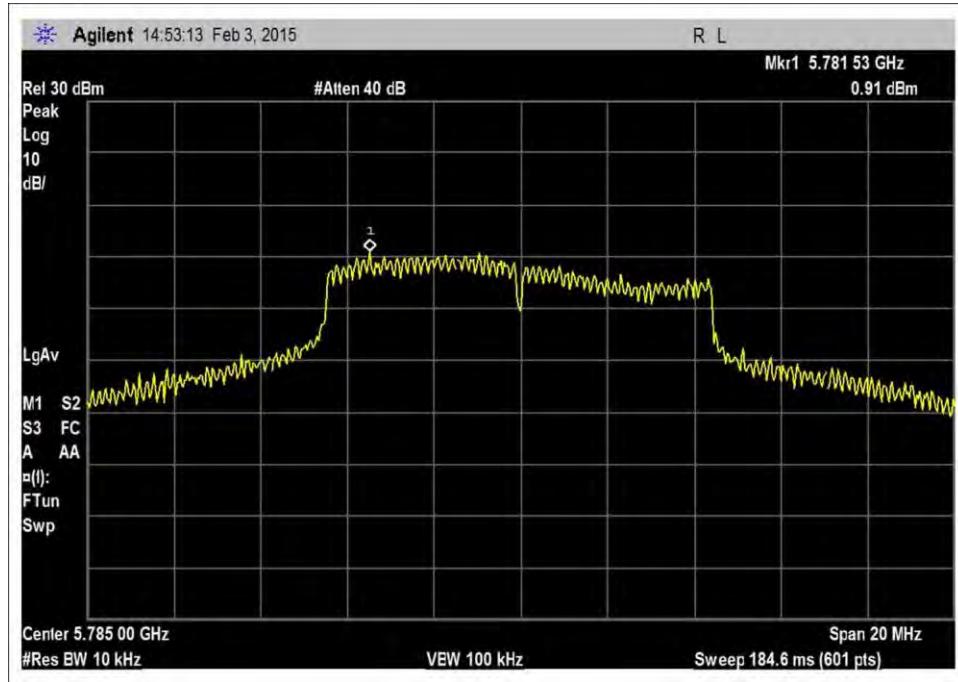
29dBi Antenna, 10MHz, Mid, Chain 0



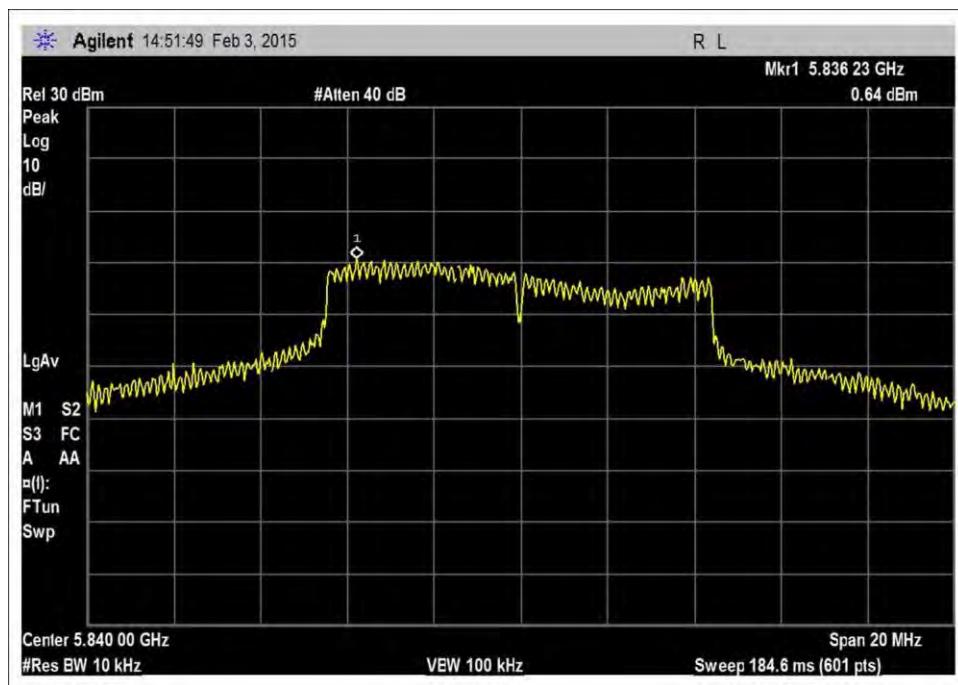
29dBi Antenna, 10MHz, High, Chain 0



29dBi Antenna, 10MHz, Low, Chain 1

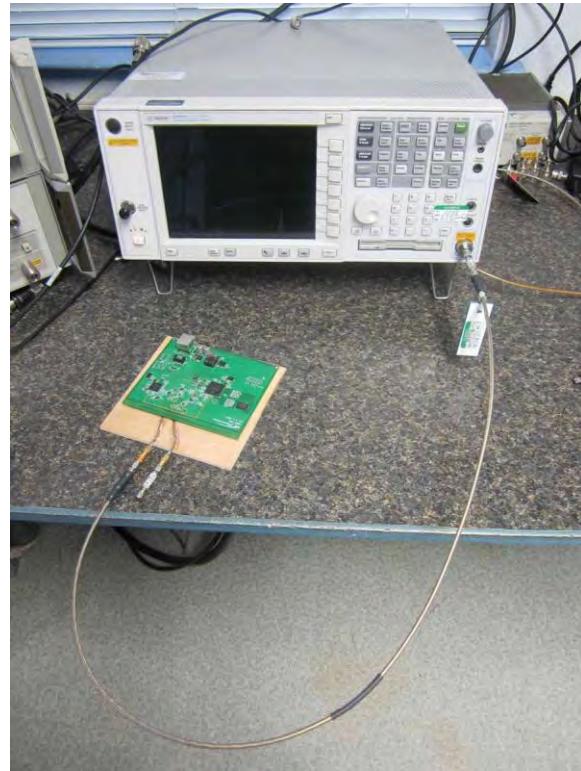


29dBi Antenna, 10MHz, Mid, Chain 1



29dBi Antenna, 10MHz, High, Chain 1

Test Setup Photo



SUPPLEMENTAL INFORMATION

Measurement Uncertainty

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2.

Emissions Test Details

TESTING PARAMETERS

Unless otherwise indicated, the following configuration parameters are used for equipment setup: The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dB μ V/m, the spectrum analyzer reading in dB μ V was corrected by using the following formula. This reading was then compared to the applicable specification limit.

SAMPLE CALCULATIONS	
Meter reading	(dB μ V)
+ Antenna Factor	(dB)
+ Cable Loss	(dB)
- Distance Correction	(dB)
- Preamplifier Gain	(dB)
= Corrected Reading	(dB μ V/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. Unless otherwise specified, the following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used.

MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "positive peak" detector mode. Whenever a "quasi-peak" or "average" reading was recorded, the measurement was annotated with a "QP" or an "Ave" on the appropriate rows of the data sheets. In cases where quasi-peak or average limits were employed and data exists for multiple measurement types for the same frequency then the peak measurement was retained in the report for reference, however the numbering for the affected row was removed and an arrow or carrot ("") was placed in the far left-hand column indicating that the row above takes precedence for comparison to the limit. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the spectrum analyzer or receiver recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature called "peak hold," the measurement device had the ability to measure intermittent or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

Quasi-peak measurements were taken using the quasi-peak detector when the true peak values exceeded or were within 2 dB of a quasi-peak specification limit. Additional QP measurements may have been taken at the discretion of the operator.

Average

Average measurements were taken using the average detector when the true peak values exceeded or were within 2 dB of an average specification limit. Additional average measurements may have been taken at the discretion of the operator. If the specification or test procedure requires trace averaging, then the averaging was performed using 100 samples or as required by the specification. All other average measurements are performed using video bandwidth averaging. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.