EXALT COMMUNICATIONS, INC.

5 GHz Radio Module
Model: Radio Module 5 GHz

13 March 2013
Report No.: SL12031601-EXA-009R1 rev3.0
(This report supersedes: SL12031601-EXA-009R1 rev2.0)

Modifications made to the product : None

This Test Report is Issued Under the Authority of:	
Choon Sian Ooi Test Engineer	David Zhang Test Engineer

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Test result presented in this test report is applicable to the representative sample only.

EMC Test Report
To: FCC Part 15.407 & RSS210 Issue8: 2010
SIEMIC, INC.
Accessing global markets

Laboratory Introduction

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Accreditations for Conformity Assessment

Country/Region	Accreditation Body	Scope
USA	FCC, A2LA	EMC , RF/Wireless , Telecom
Canada	IC, A2LA, NIST	EMC, RF/Wireless , Telecom
Taiwan	BSMI , NCC , NIST	EMC, RF, Telecom , Safety
Hong Kong	OFTA , NIST	RF/Wireless ,Telecom
Australia	NATA, NIST	EMC, RF, Telecom , Safety
Korea	KCC/RRA, NIST	EMI, EMS, RF , Telecom, Safety
Japan	VCCI, JATE, TELEC, RFT	EMI, RF/Wireless, Telecom
Mexico	NOM, COFETEL, Caniety	Safety, EMC , RF/Wireless, Telecom
Europe	A2LA, NIST	EMC, RF, Telecom , Safety

Accreditations for Product Certifications

Country	Accreditation Body	Scope
USA	FCC TCB, NIST	EMC , RF , Telecom
Canada	IC FCB , NIST	EMC , RF , Telecom
Singapore	iDA, NIST	EMC , RF , Telecom
EU	NB	EMC & R&TTE Directive
Japan	MIC (RCB 208)	RF , Telecom
HongKong	OFTA (US002)	RF , Telecom

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1 Executive Summary & EUT information

The purpose of this test programme was to demonstrate compliance of the Exalt Communications, Inc., 5 GHz Radio Module, and Model: Radio Module 5 GHz against the current Stipulated Standards. The 5 GHz Radio Module have demonstrated compliance with the FCC 15.407 2011.

EUT Information		
EUT Description	:	The unlicensed products are fixed point-to-point radio operating in the (5250MHz to 5350MHz) & (5470MHz to 5725MHz) bands. Two units, combined with external antennas and transmission lines, make up a complete pointto-point link. Users connect Ethernet and/or time division multiplexed (TDM) signals (T1, E1 or DS3) to carry bi-directional traffic across the link in place of traditional copper wires or fiber. The system utilizes time division duplex (TDD) radio transmission, and provides the administrator selection between one of three modulation modes, and one of three occupied bandwidths. The administrator may also select the specific operating center frequency across a frequency range that is defined by the limits of the selected occupied bandwidth. The output power may be adjusted by the installer in accordance to the connected transmission system and the specific regulations or link design. The radio is connected to a flat panel or parabolic dish antenna with coaxial transmission line, or in some cases, elliptical waveguide. The transmission system is grounded, along with any lightning arrestors that may be placed at any cable egress points. The radio is typically mounted outside on a tower, a mast on the roof of a building, or a wall on the outside of a building. Alternatively the radio could be mounted in a grounded equipment rack, and is connected to DC power, via either direct DC source or AC/DC converter, with power grounding, as required. The user's services (T1, E1, DS3, Ethernet) are directly connected, along with any diagnostic equipment. The radio chassis has a separate grounding connector, if required for separate chassis grounding.
Model No	:	Radio Module 5 GHz
Input Power	:	120 Vac
Classification Per Stipulated Test Standard	:	NII

Note: Manufacturer declares the device employ TPC feature.

2 TECHNICAL DETAILS

Purpose	Compliance testing of 5 GHz Radio Module with stipulated standard
Applicant / Client	Exalt Communications, Inc.
Manufacturer	Exalt Communications, Inc. 254 E Hacienda Avenue Campbell, CA 95008-6617 USA
Laboratory performing the tests	SIEMIC Laboratories 775 Montague Expressway Milpitas, California 95035, USA
Test report reference number	SL12031601-EXA-009R1 rev3.0
Date EUT received	01 Augst 2012
Standard applied	47 CFR §15.407 (2011)
Dates of test (from – to)	August 01-15, 2012
No of Units:	1
Equipment Category:	NII
Trade Name:	Exalt Communications, Inc.
Model :	Radio Module 5 GHz
RF Operating Frequency (ies)	**(5250MHz to 5350MHz) & (5470MHz to 5725MHz)**

Frequency Band & channel Bandwidth	Low Channel	Mid Channel	High Channel
5.2GHz band (8MHz Bandwidth)	5257MHz	5300MHz	5343MHz
5.2GHz band (16MHz Bandwidth)	5261MHz	5300MHz	5340MHz
5.2GHz band (32MHz Bandwidth)	5269MHz	5300MHz	5331MHz
5.4GHz band (8MHz Bandwidth)	5477MHz	5596MHz	5718MHz
5.4GHz band (16MHz Bandwidth)	5479MHz	5592MHz	5715MHz
5.4GHz band (32MHz Bandwidth)	5489MHz	5581MHz	5706MHz

Channel Bandwidth:	8MHz Channel Bandwidth, 16MHz Channel Bandwidth, 32MHz Channel Bandwidth
Modulation :	Mode 1:QPSK, Mode 2:16QAM, Mode 3:64QAM
FCC ID :	TTM-105P25T
IC ID :	6254A-105P25T

3 MODIFICATION

NONE

4 TEST SUMMARY

The product was tested in accordance with the following specifications. All Testing has been performed according to below product classification:

single carrier QAM modulated system

Test Results Summary

Test Standard		Description	Pass / Fail
CFR 47 Part 15.407: 2011	RSS 210 Issue 8: 2010		
15.203	-	Antenna Requirement	Pass
15.205	RSS210(A8.5)	Restricted Band of Operation	Pass
15.207(a)	RSSGen(7.2.2)	Conducted Emissions Voltage	Pass
15.407(a)	RSS210(A9.2(2))	26dB and 99% Occupied Bandwidth	Pass
15.407(b)	RSS210(A9.2(2))	Output Power	Pass
15.407(c)	RSS210(A8.4)	Antenna Gain > 6 dBi	Pass
15.209; 15.407(b)	RSS210(A9.3(a))	Radiated Spurious Emissions	Pass
15.407(a)	RSS210(A9.2(2))	Power Spectral Density	Pass
15.407 (f)	RSSGen(5.5)	RF Exposure requirement	Pass
15.207(a) (6)	-	Peak Excursion ratio	Pass
	RSSGen(4.8)	Receiver Spurious Emissions	Pass
ANSI C63.4: 2003/ RSS-Gen Issue 2: 2007 PS: All measurement uncertainties are not taken into consideration for all presented test result.			

5 MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

5.1 Antenna Requirement

Requirement(s): 47 CFR §15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Antenna requirement must meet at least one of the following:

a) Antenna must be permanently attached to the device.

b) Antenna must use a unique type of connector to attach to the device.

c) Device must be professionally installed. Installer shall be responsible for ensuring that the correct antenna is employed with the device.

The device must be professionally installed. Installer shall be responsible for ensuring that the correct antenna is employed with the device.

Tested Antenna Model: SPD6-5.2, Antenna gain 37.9dBi (Maximum gain of antenna type Parabolic Dish)

Tested Antenna Model: MT-486013/NVH, Antenna gain 29dBi (Maximum gain of antenna type Panel)

Manufacturer	Model Number	Type	Size/Diameter	Polarization	Gain (dBi)
MTI	MT-485049/NVH	Panel	1 ft	Dual	23
MTI	MT-485025/ND	Panel	1 ft	Dual	23
General Dynamics	EPD1-52	Panel	1 ft	Single	23
Mars	MA-WA58-1XMNTB	Panel	1 ft	Single	23
MTI	MA-WA56-DP25N	Panel	1 ft	Dual	23.5
RadioWaves	FPD1-5-24	Panel	1 ft	Dual	23.8
ARC	PD5823B88	Panel	1 ft	Dual	24
Laird	PA58-24	Panel	1 ft	Single	24
Laird	R2T58-24	Panel	1 ft	Single	24
RadioWaves	FP1-5-24	Panel	1 ft	Single	24.2
Mars	MA-WA56-DP25NB	Panel	1 ft	Dual	25
Mars	MA-WA55-27B	Panel	1 ft	Single	26
CommScope	UBP600-4-1	Panel	2 ft	Single	27.5
MTI	MT-466010/NVH	Panel	2 ft	Dual	28
General Dynamics	EPD2-52	Panel	2 ft	Single	28
RadioWaves	FP2-5-28	Panel	2 ft	Single	28
MTI	MA-QA56-DP28NB	Panel	2 ft	Dual	28.5
MTI	MT-486013/NVH	Panel	2 ft	Dual	29
Laird	GD5W-25P	Grid Parabolic Dish	2 ft	Single	25
Laird	GD53-25	Grid Parabolic Dish	2 ft	Single	25
Laird	GD57-25	Grid Parabolic Dish	2 ft	Single	25
Laird	HDGD58-26	Grid Parabolic Dish	2 ft	Single	26
Laird	GD58-26	Grid Parabolic Dish	2 ft	Single	26
Commscope	28T-5801-1	Grid Parabolic Dish	3 ft	Single	27

Manufacturer	Model Number	Type	Size/Diameter	Polarization	Gain (dBi)
Laird	GD53-28	Grid Parabolic Dish	3 ft	Single	28
Laird	GD57-28	Grid Parabolic Dish	3 ft	Single	28
Laird	GD5W-28P	Grid Parabolic Dish	3 ft	Single	28
CommScope	UBG600-4-1	Grid Parabolic Dish	3 ft	Single	28.5
Laird	GD58-29	Grid Parabolic Dish	3 ft	Single	29
Laird	HDGD58-29	Grid Parabolic Dish	3 ft	Single	29
RadioWaves	G3-5.2	Grid Parabolic Dish	3 ft	Single	31.1
Wireless Beehive	5.8DP-26	Solid Parabolic	1.5 ft	Dual	26
PC Tel	MPRC2449	Solid Parabolic	2 ft	Single	27.7
L-Com	HG4958DP-30D	Solid Parabolic	2 ft	Dual	28
General Dynamics	HQFD2-52	Solid Parabolic	2 ft	Dual	28.1
PC Tel	MPRD2449	Solid Parabolic	2 ft	Dual	28.1
General Dynamics	QFD2-52	Solid Parabolic	2 ft	Dual	28.4
General Dynamics	HQF2-52	Solid Parabolic	2 ft	Single	28.5
General Dynamics	QF2-52	Solid Parabolic	2 ft	Single	28.5
L-Com	HG5158DP-29D	Solid Parabolic	2 ft	Dual	28.5
RadioWaves	HPD2-5.2	Solid Parabolic	2 ft	Dual	28.6
CommScope	HPX2F-52	Solid Parabolic	2 ft	Dual	29
Laird	HDDA5W-29-DP	Solid Parabolic	2 ft	Dual	29
Laird	HDDA5W-29-SP	Solid Parabolic	2 ft	Single	29
RadioWaves	SPD2-5.2	Solid Parabolic	2 ft	Dual	29
RadioWaves	SP2-5.2	Solid Parabolic	2 ft	Single	29
Wireless Beehive	5.8DP-29	Solid Parabolic	2 ft	Dual	29
CommScope	P2F-57W	Solid Parabolic	2 ft	Single	29.3
CommScope	P2F-52	Solid Parabolic	2 ft	Single	29.4
CommScope	PX2F-52	Solid Parabolic	2 ft	Dual	29.4
ARC Wireless	DA5830SD1	Solid Parabolic	2 ft	Dual	30

Manufacturer	Model Number	Type	Size/Diameter	Polarization	Gain (dBi)
PC Tel	MPRC3649	Solid Parabolic	3 ft	Single	30.4
L-Com	HG4958DP-34D	Solid Parabolic	3 ft	Dual	31
PC Tel	MPRD3649	Solid Parabolic	3 ft	Dual	31
Wireless Beehive	5.8DP-31	Solid Parabolic	3 ft	Dual	31
General Dynamics	QFD2.5-52	Solid Parabolic	2.5 ft	Dual	31.1
General Dynamics	QF2.5-52	Solid Parabolic	2.5 ft	Single	31.1
RadioWaves	HPD3-5.2	Solid Parabolic	3 ft	Dual	31.1
General Dynamics	HQFD2.5-52	Solid Parabolic	2.5 ft	Dual	31.2
RadioWaves	HP2-5.2	Solid Parabolic	2 ft	Single	31.4
RFS Cablewave	SPF3-52CN1S	Solid Parabolic	3 ft	Single	31.4
Laird	HDDA5W-32	Solid Parabolic	3 ft	Single	32
Laird	HDDA5W-32-DP	Solid Parabolic	3 ft	Dual	32
L-Com	HG5158DP-32D	Solid Parabolic	3 ft	Dual	32
RadioWaves	SPD3-5.2	Solid Parabolic	3 ft	Dual	32.5
RadioWaves	HP3-5.2	Solid Parabolic	3 ft	Single	32.5
RadioWaves	SP3-5.2	Solid Parabolic	3 ft	Single	32.5
CommScope	PX3F-52	Solid Parabolic	3 ft	Dual	33.4
CommScope	P3F-52	Solid Parabolic	3 ft	Single	33.5
RFS Cablewave	SDF4-52BN1S1	Solid Parabolic	4 ft	Single	33.9
General Dynamics	QFD4-52	Solid Parabolic	4 ft	Dual	34.1
General Dynamics	SSP4-2357A	Solid Parabolic	4 ft	Single	34.4
RFS Cablewave	SPF4-52CN1S1R	Solid Parabolic	4 ft	Single	34.4
CommScope	HPX4F-52	Solid Parabolic	4 ft	Dual	34.5
General Dynamics	HQF4-52	Solid Parabolic	4 ft	Single	34.7
General Dynamics	HQFD4-52	Solid Parabolic	4 ft	Dual	34.8
General Dynamics	QF4-52	Solid Parabolic	4 ft	Single	34.8
RadioWaves	HPD4-5.2	Solid Parabolic	4 ft	Dual	34.8

Manufacturer	Model Number	Type	Size/Diameter	Polarization	Gain (dBi)
CommScope	P4F-52	Solid Parabolic	4 ft	Single	34.9
CommScope	PX4F-52	Solid Parabolic	4 ft	Dual	34.9
RadioWaves	SP4-5.2	Solid Parabolic	4 ft	Single	34.9
RadioWaves	SPD4-5.2	Solid Parabolic	4 ft	Dual	34.9
RadioWaves	HP4-5.2	Solid Parabolic	4 ft	Single	34.9
RFS Cablewave	DA4-W57BC1S1	Solid Parabolic	4 ft	Single	35.5
RadioWaves	SP6-57	Solid Parabolic	6 ft	Single	35.8
General Dynamics	QFD6-52	Solid Parabolic	6 ft	Dual	37.4
CommScope	P6F-52	Solid Parabolic	6 ft	Single	37.6
CommScope	PX6F-52	Solid Parabolic	6 ft	Dual	37.6
General Dynamics	HQFD6-52	Solid Parabolic	6 ft	Dual	37.8
General Dynamics	QF6-52	Solid Parabolic	6 ft	Single	37.8
CommScope	PARX6-59	Solid Parabolic	6 ft	Dual	37.9
RadioWaves	HP6-5.2	Solid Parabolic	6 ft	Single	37.9
RadioWaves	HPD6-5.2	Solid Parabolic	6 ft	Dual	37.9
RadioWaves	SP6-5.2	Solid Parabolic	6 ft	Single	37.9
RadioWaves	SPD6-5.2	Solid Parabolic	6 ft	Dual	37.9

5.2 Conducted Emissions Voltage

Requirement :

Frequency of emission (MHz)	Conducted limit (dBµV)	
	Quasi-peak	Average
0.15–0.5	66 to 56*	56 to 46*
0.5–5	56	46
5–30	60	50

*Decreases with the logarithm of the frequency.

Procedures:

1. All possible modes of operation were investigated. Only the 6 worst case emissions measured, using the correct CISPR and Average detectors, are reported. All other emissions were relatively insignificant.
2. A "-ve" margin indicates a PASS as it refers to the margin present below the limit line at the particular frequency.
3. Conducted Emissions Measurement Uncertainty
   All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 9kHz – 30MHz (Average & Quasi-peak) is ±3.5dB.
4. Environmental Conditions

Temperature	23°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar

   Test Date : August 01-15, 2012
   Tested By : Choon Sian Ooi

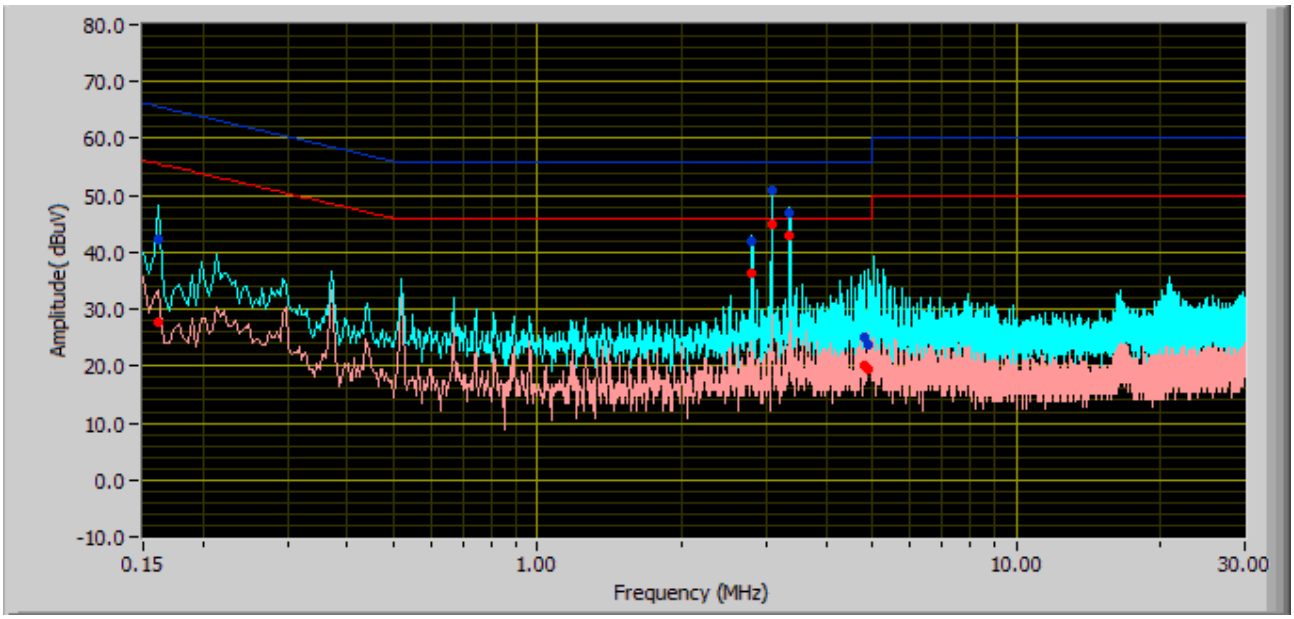
Results:

Results:

Note: 2

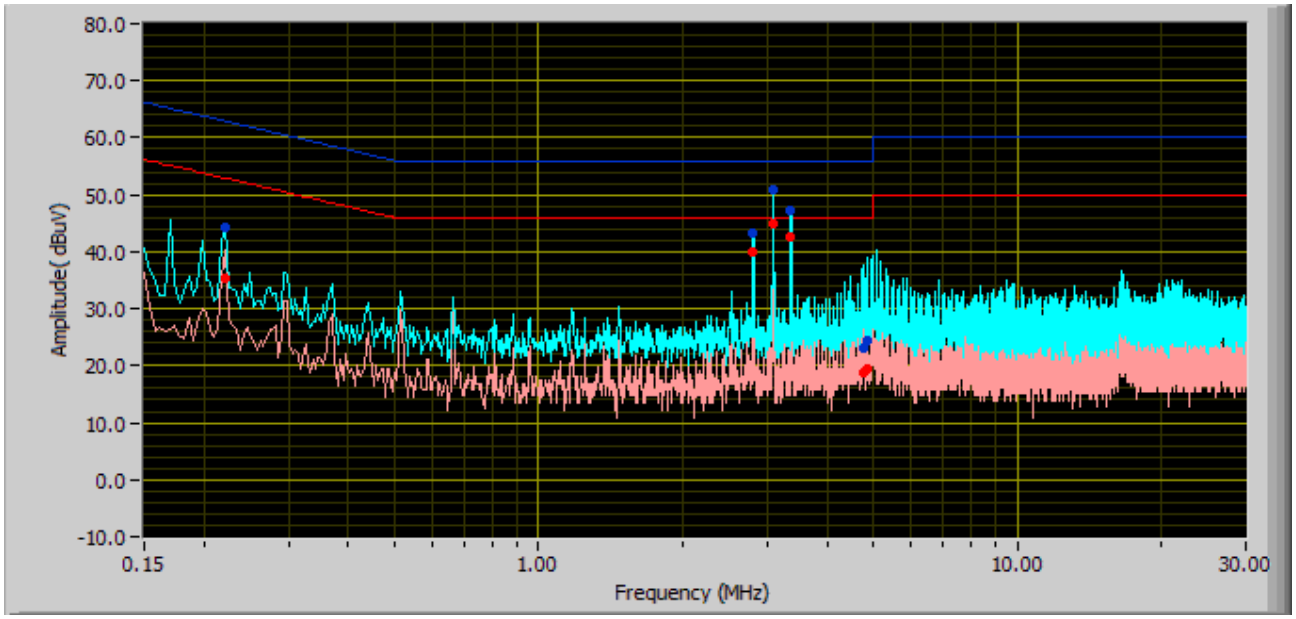
Average Limit

Quasi-Peak Limit



Phase Line Plot at 120Vac, 60Hz

Line Under Test	Frequency (MHz)	Corrected Amplitude (dBuV) QP	Limit (dBuV) QP	Margin (dB) QP	Corrected Amplitude (dBuV) AVG	Limit (dBuV) AVG	Margin (dB) AVG
Phase	3.09	50.80	56.00	-5.20	45.88	46.00	-0.12
Phase	3.37	47.03	56.00	-8.97	43.09	46.00	-2.91
Phase	2.80	42.09	56.00	-13.91	36.44	46.00	-9.56
Phase	0.16	42.22	65.54	-23.32	27.83	55.54	-27.71
Phase	4.89	23.89	56.00	-32.11	19.58	46.00	-26.42
Phase	4.81	24.96	56.00	-31.04	20.18	46.00	-25.82



Neutral Line Plot at 120Vac, 60Hz

Line Under Test	Frequency (MHz)	Corrected Amplitude (dBuV) QP	Limit (dBuV) QP	Margin (dB) QP	Corrected Amplitude (dBuV) AVG	Limit (dBuV) AVG	Margin (dB) AVG
Neutral	3.09	50.74	56.00	-5.26	45.88	46.00	-0.12
Neutral	3.37	47.39	56.00	-8.61	42.70	46.00	-3.30
Neutral	2.81	43.19	56.00	-12.81	39.99	46.00	-6.01
Neutral	4.86	24.26	56.00	-31.74	19.58	46.00	-26.42
Neutral	0.22	44.25	62.87	-18.62	35.22	52.87	-17.65
Neutral	4.79	23.10	56.00	-32.90	18.94	46.00	-27.06

5.3 26dB & 99% Occupied Bandwidth

1. Conducted Measurement
   EUT was set for low , mid, high channel with modulated mode and highest RF output power.
   The spectrum analyzer was connected to the antenna terminal.
2. Environmental Conditions

Temperature	23°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar

3. Conducted Emissions Measurement Uncertainty
   All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz – 40GHz is ±1.5dB.
4. Test Date : August 01-15, 2012
   Tested By : Choon Sian Ooi

Requirement(s): 47 CFR §15.407(a); RSS210(A9.2(2))

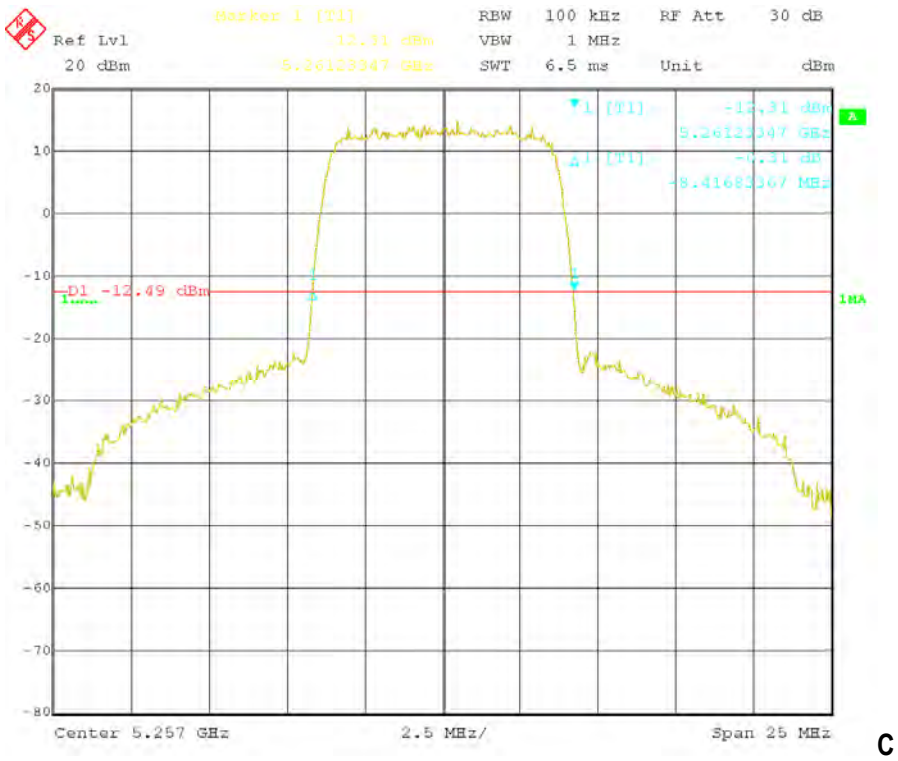
Procedures: The 26dB and 99% bandwidths were measured conducted using a spectrum analyzer at low, mid, and hi channels. (KDB 789033 D01, Section E & F)

5.3GHz Bands

Mode: 1 = QPSK , 8MHz Channel Bandwidth

Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode1	8MHz	Low Channel	8.42	7.54
	8MHz	Mid Channel	8.63	7.58
	8MHz	High Channel	8.42	7.58

Refer to the attached plots.



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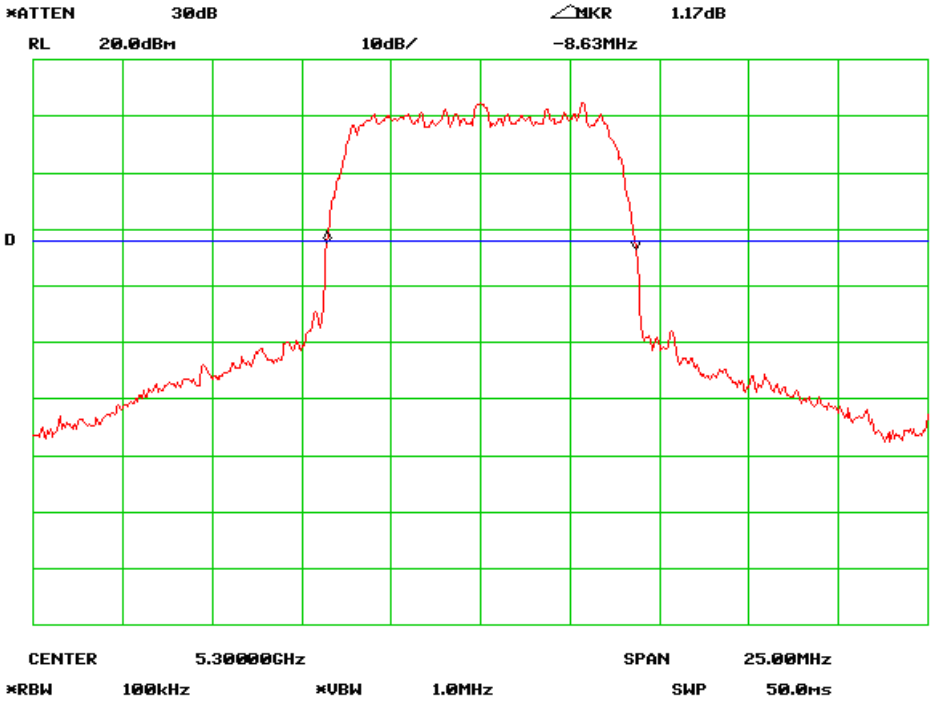
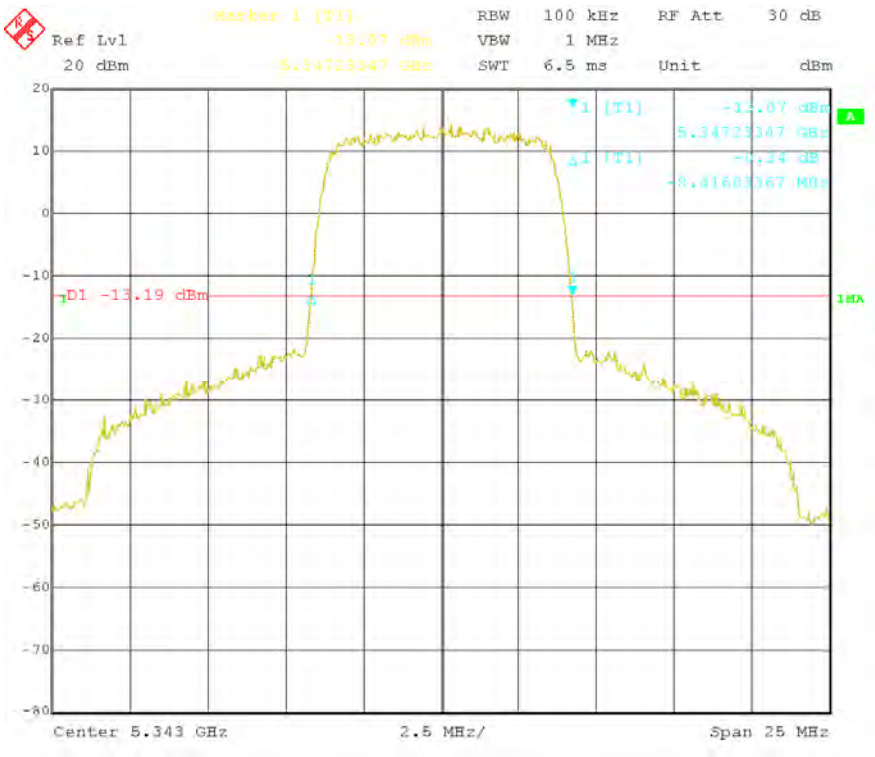
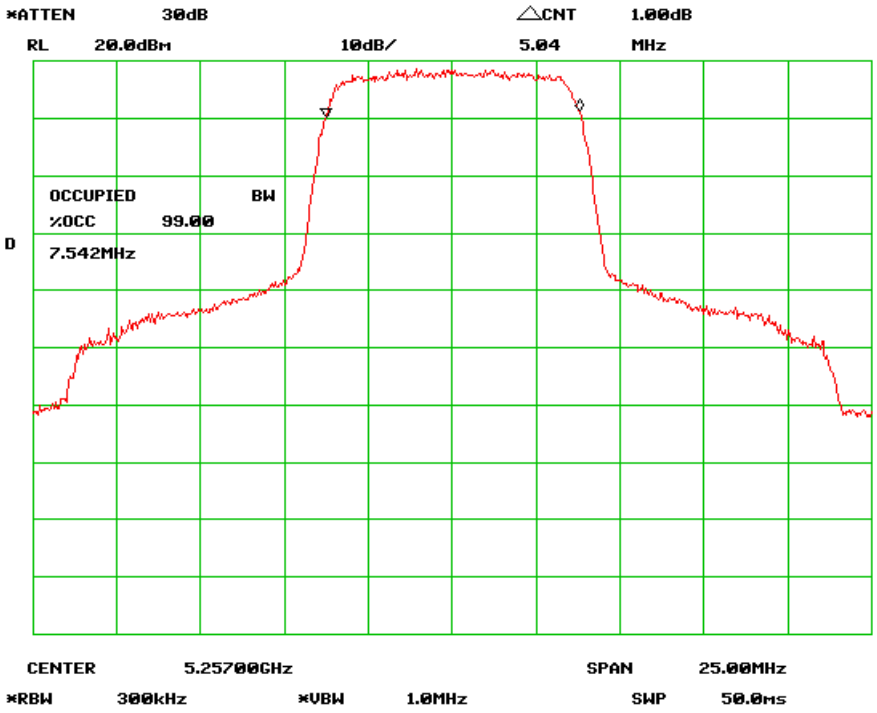
26dB-Low Channel



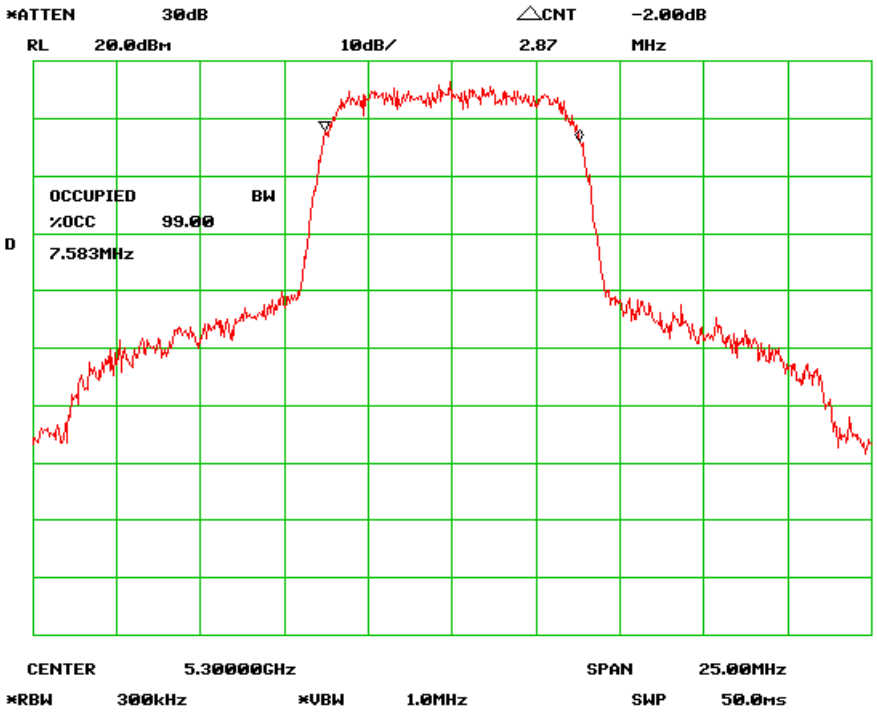
26dB-Mid Channel



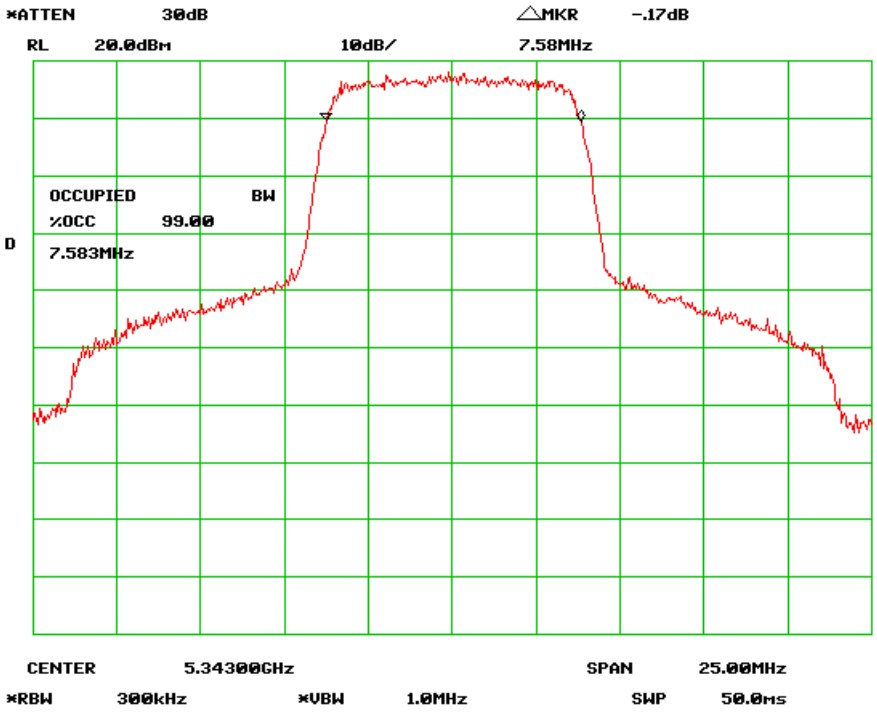
26dB-High Channel



99% Bandwidth-Low Channel



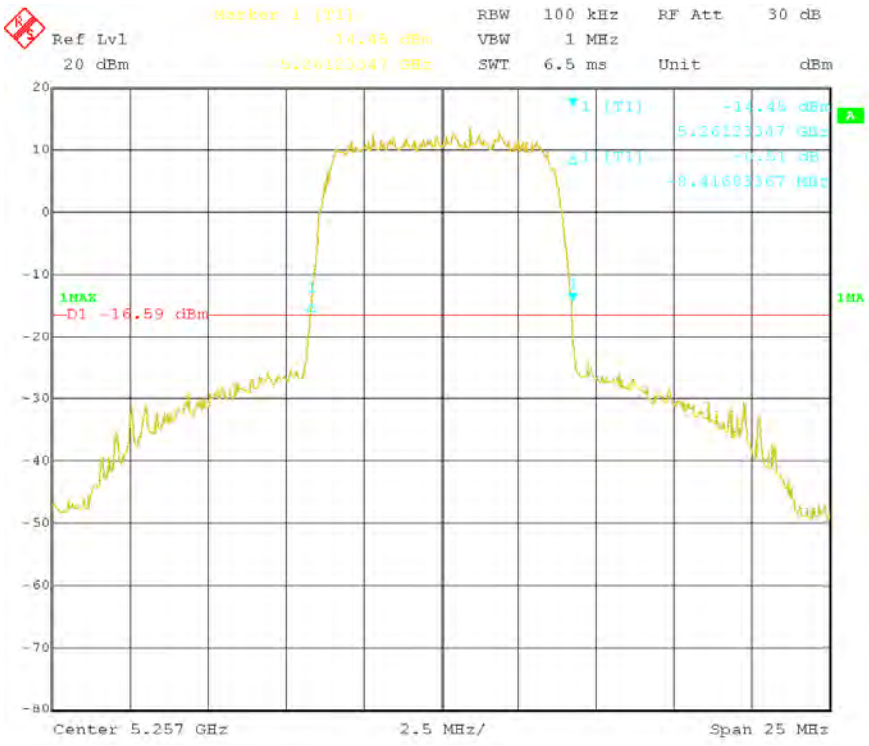
99% Bandwidth-Mid Channel



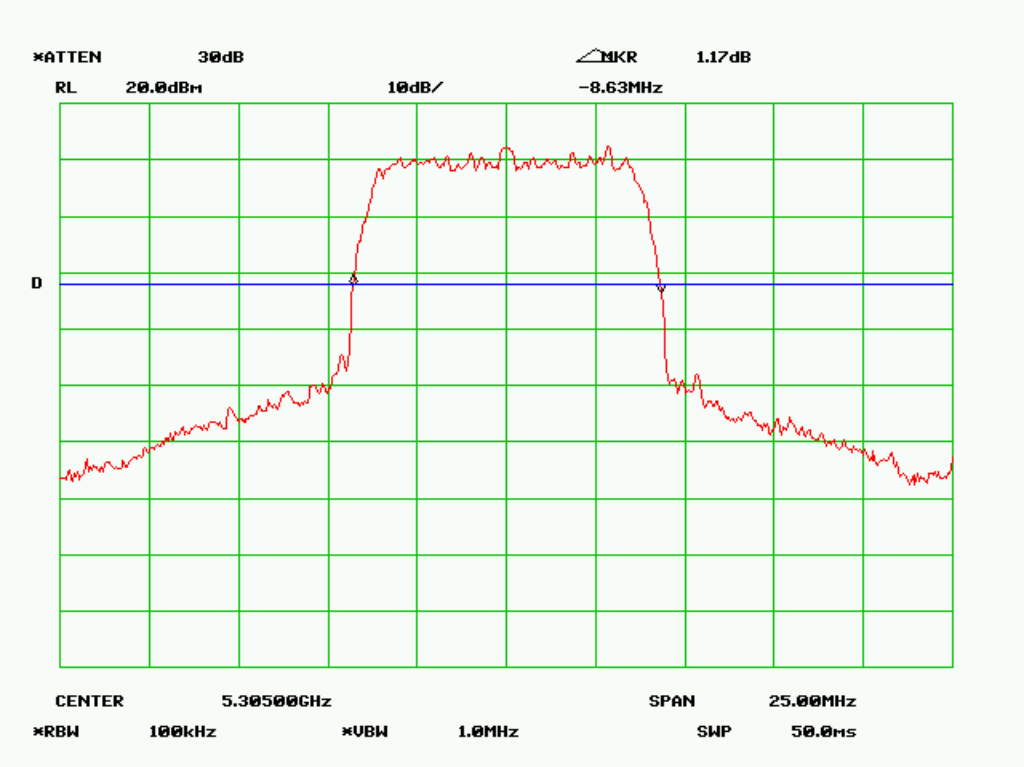
99% Bandwidth-High Channel

Mode: 2 = 16QAM, 8MHz Channel Bandwidth

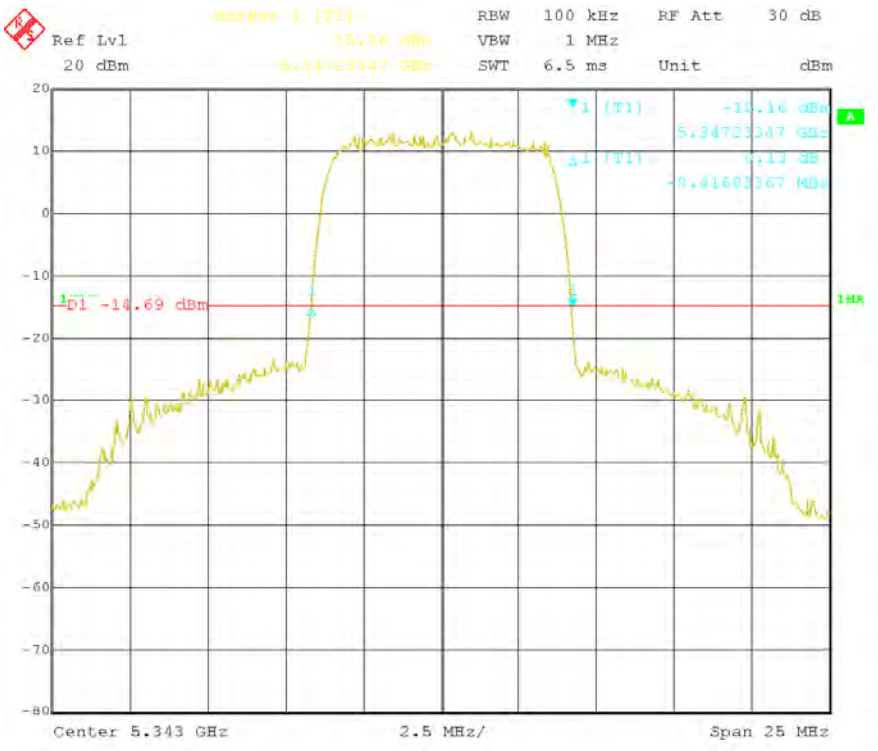
Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode 2	8MHz	Low Channel	8.42	7.54
	8MHz	Mid Channel	8.63	7.54
	8MHz	High Channel	8.42	7.50



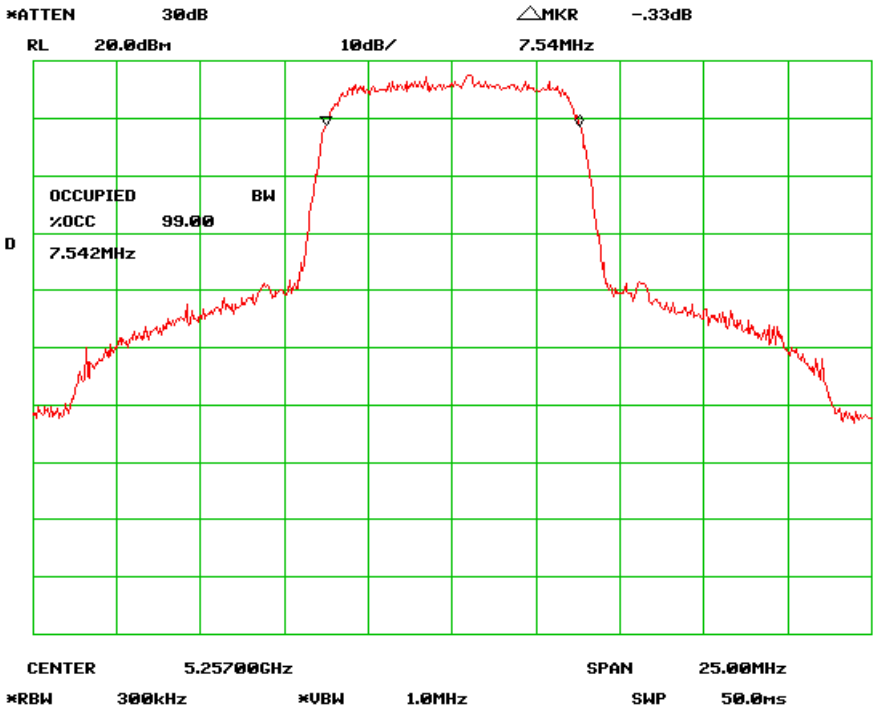
26 dB Bandwidth-Low Channel



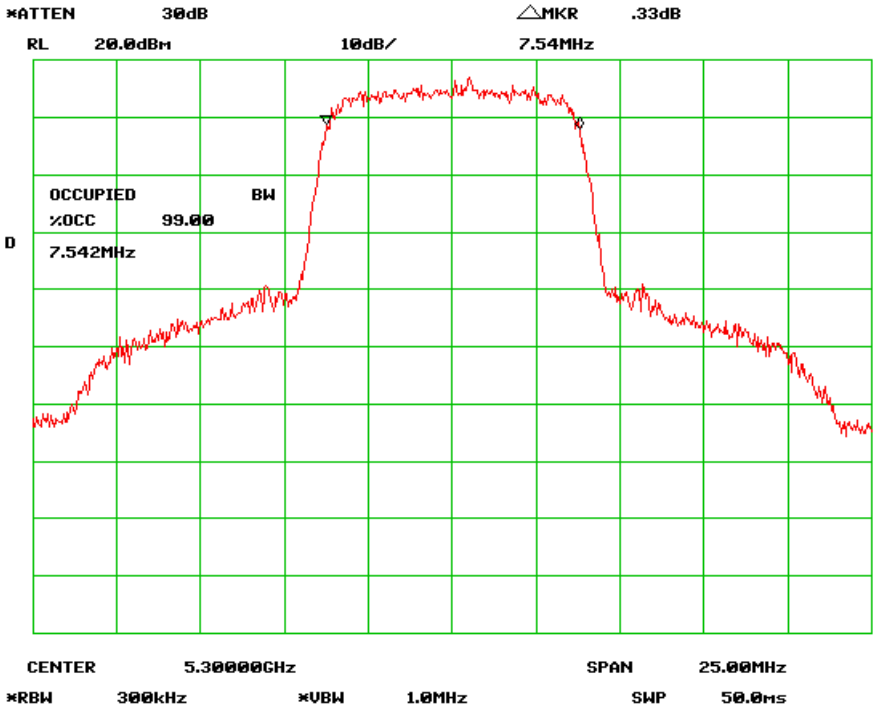
26 dB Bandwidth-Mid Channel



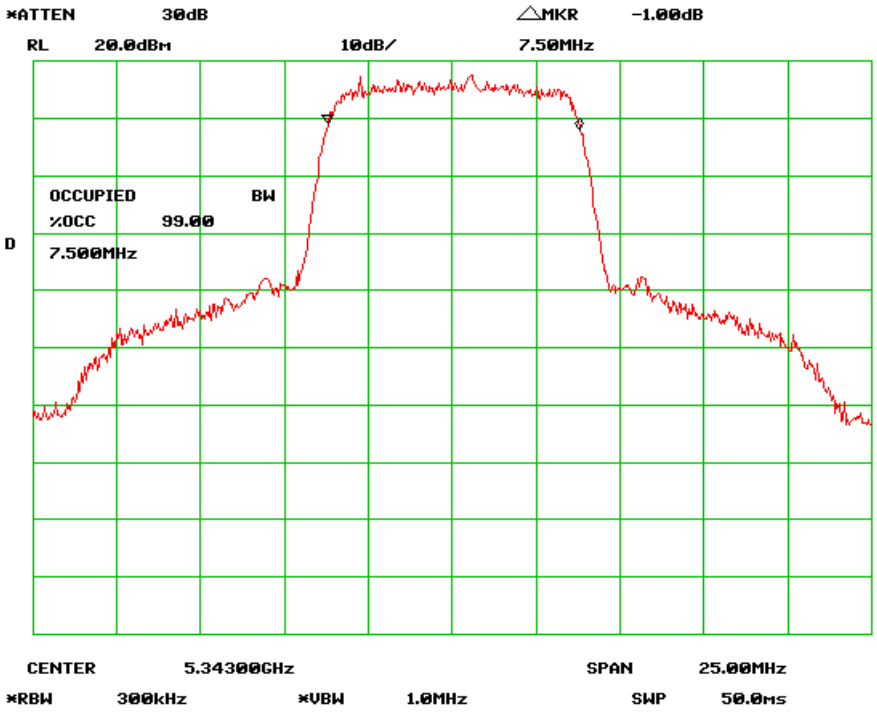
26 dB Bandwidth-High Channel



99% Bandwidth-Low Channel



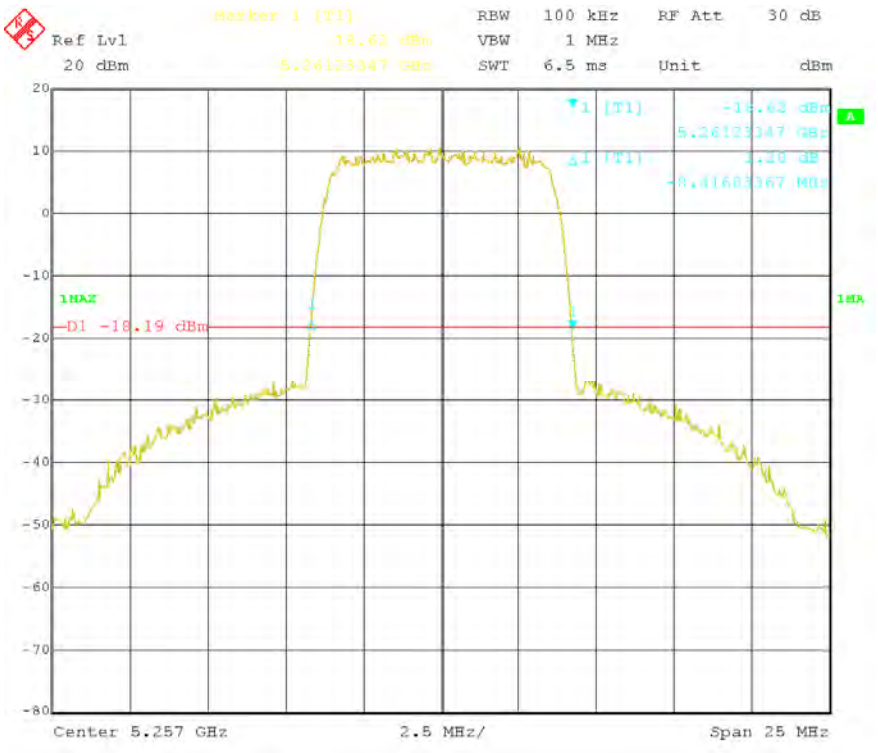
99% Bandwidth-Mid Channel



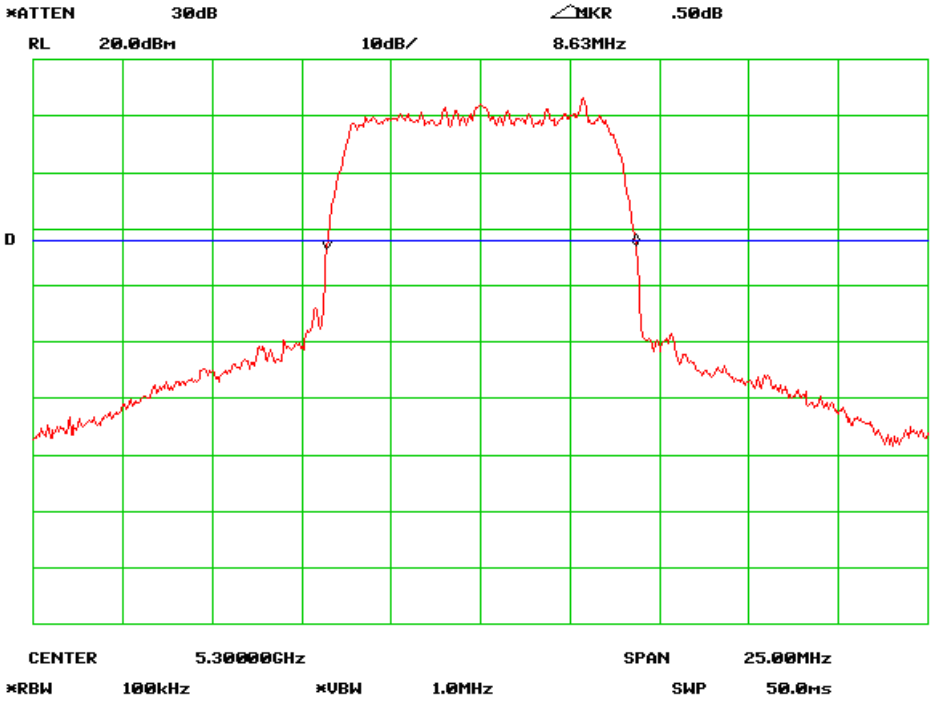
99% Bandwidth-High Channel

Mode: 3 = 64QAM, 8MHz Channel Bandwidth

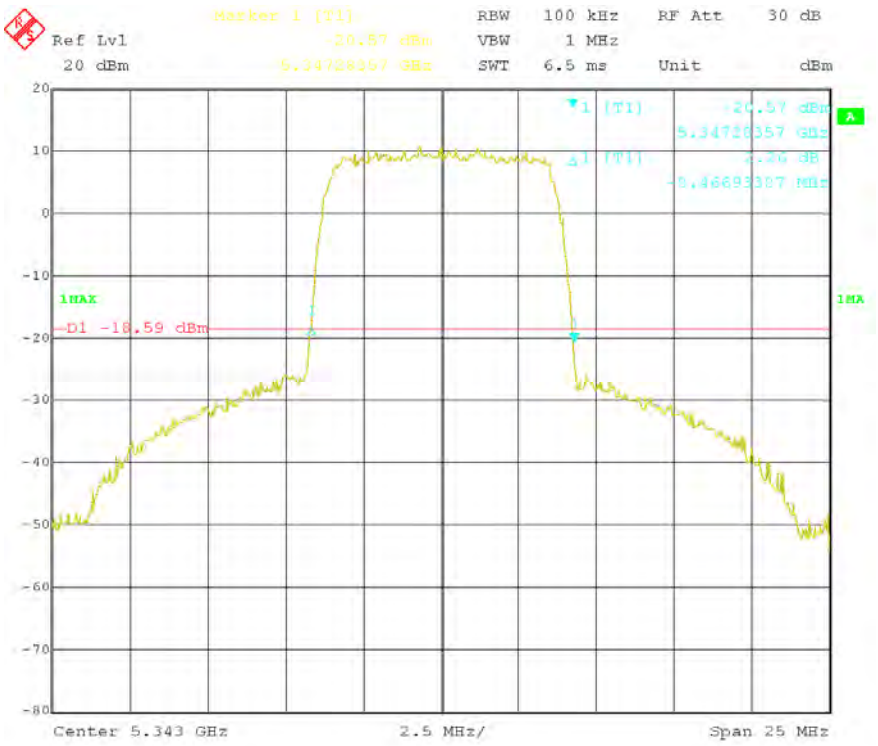
Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode 3	8MHz	Low Channel	8.42	7.54
	8MHz	Mid Channel	8.63	7.54
	8MHz	High Channel	8.47	7.58



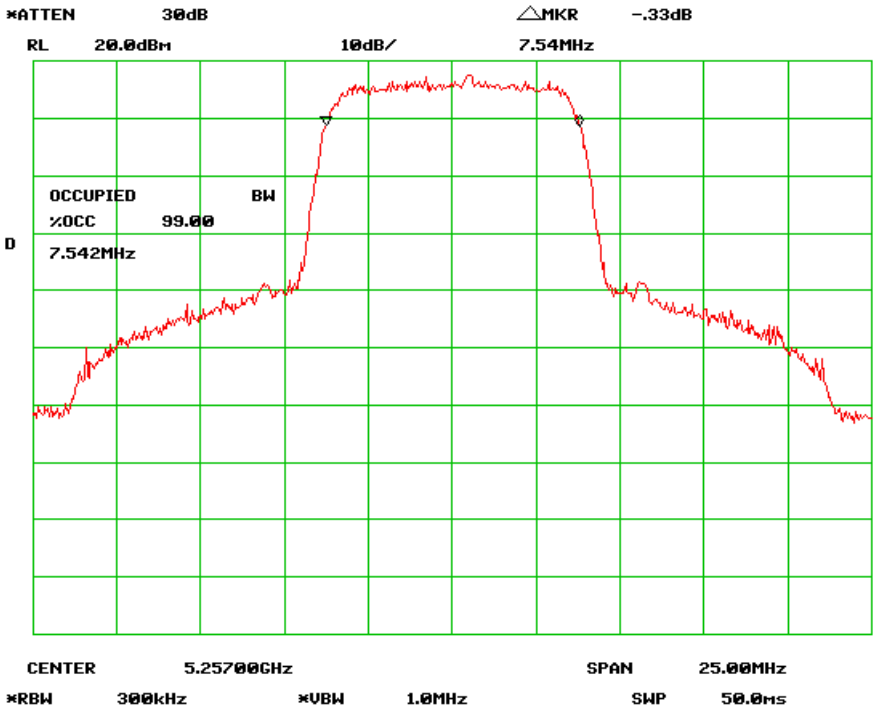
26 dB Bandwidth-Low Channel



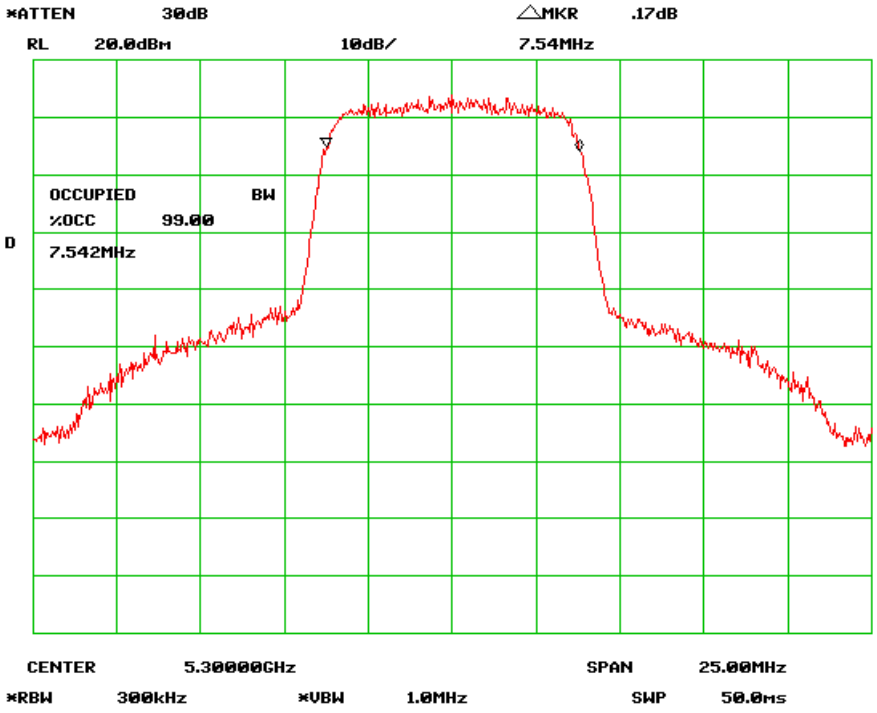
26 dB Bandwidth-Mid Channel



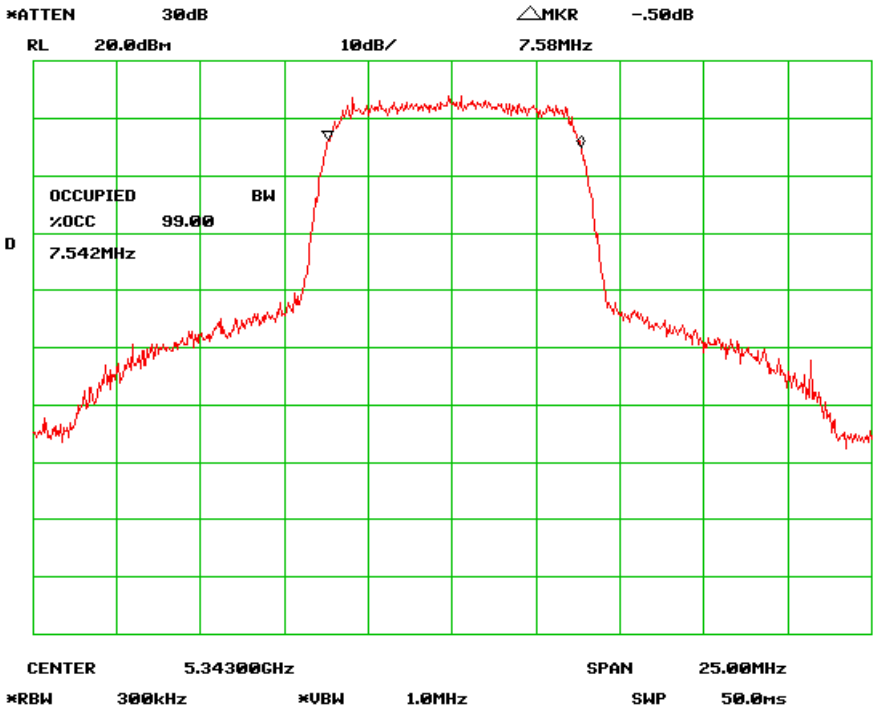
26 dB Bandwidth-High Channel



99% Bandwidth-Low Channel



99% Bandwidth-Mid Channel

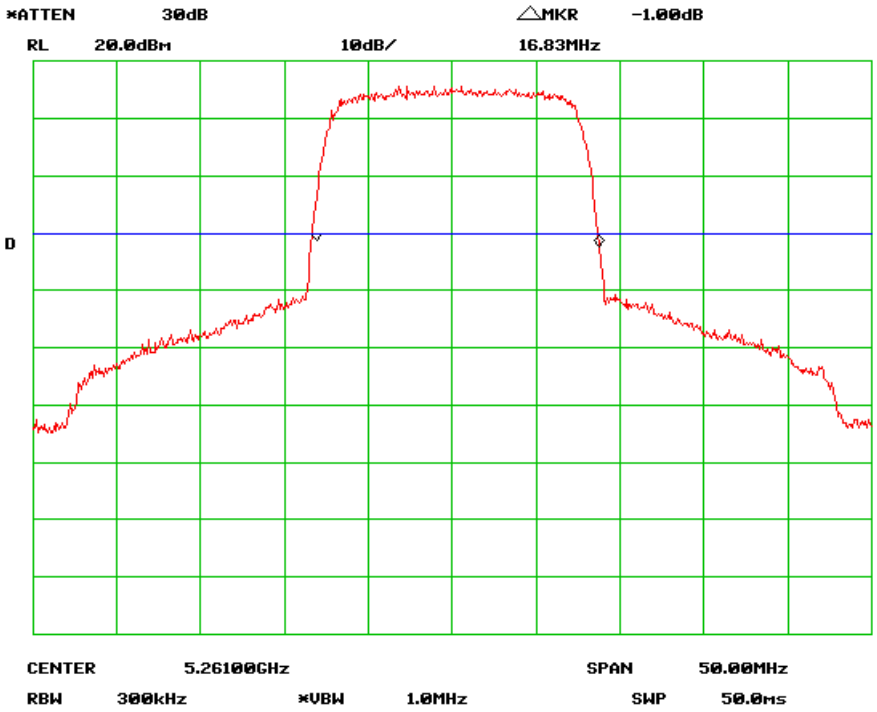


99% Bandwidth-High Channel

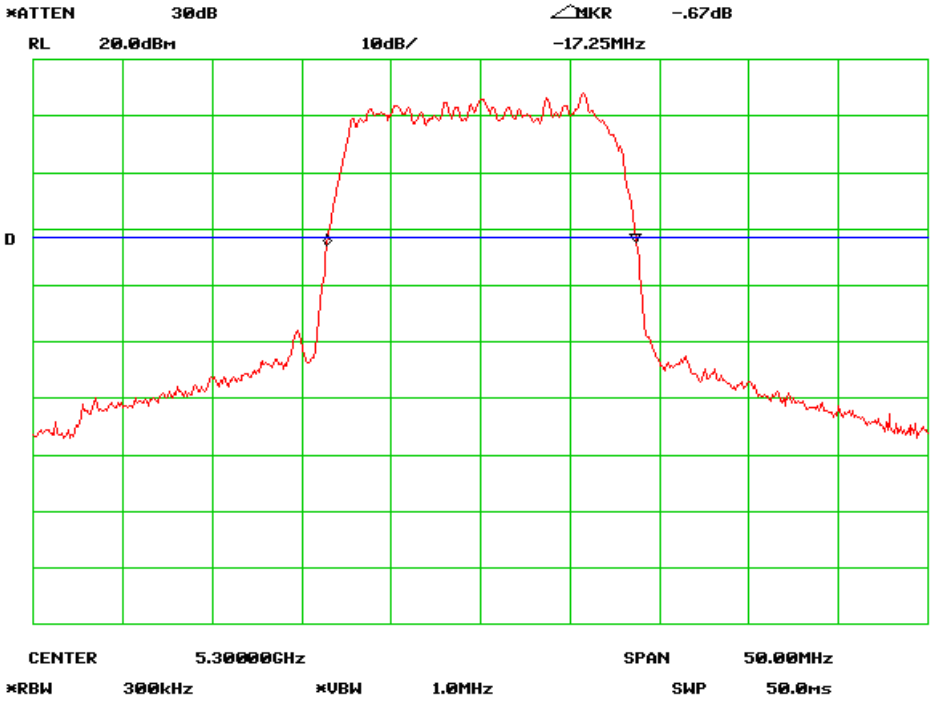
Mode: 1 = QPSK , 16MHz Channel Bandwidth

Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode 1	16MHz	Low Channel	16.83	14.90
	16MHz	Mid Channel	17.25	14.85
	16MHz	High Channel	16.83	14.90

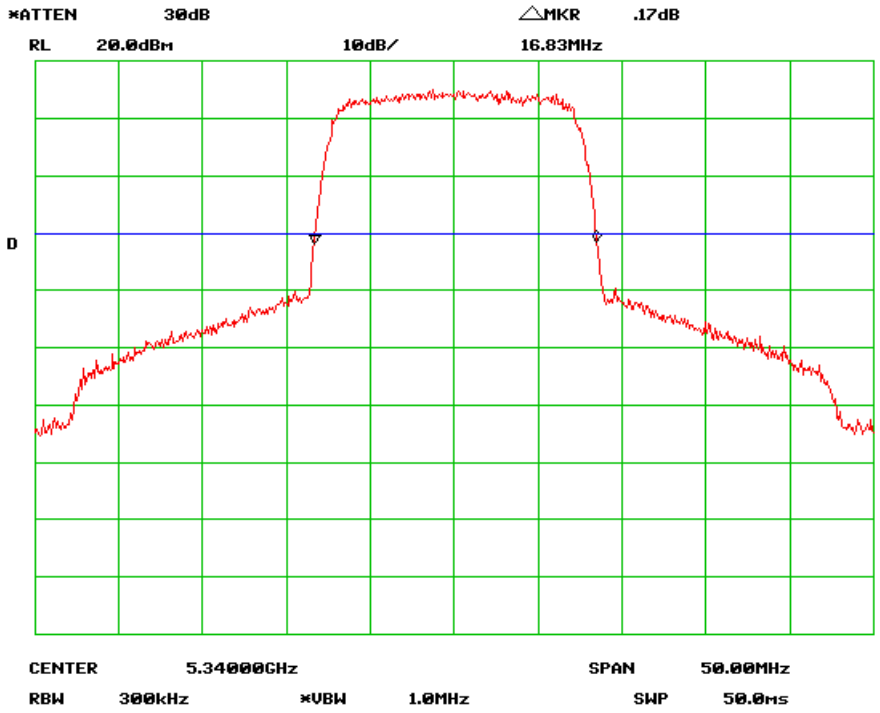
Refer to the attached plots.



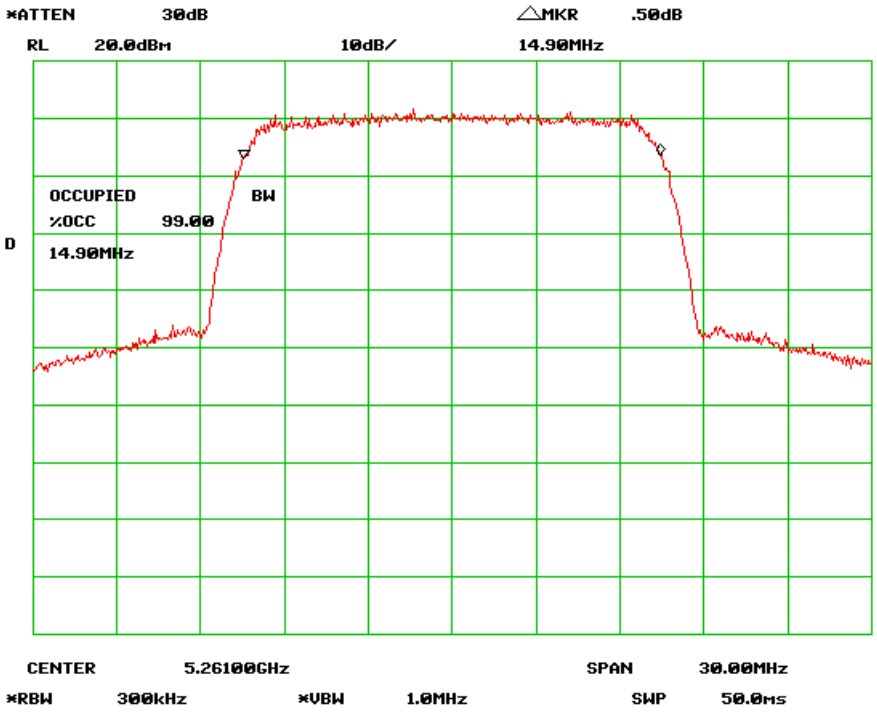
26 dB Bandwidth-Low Channel



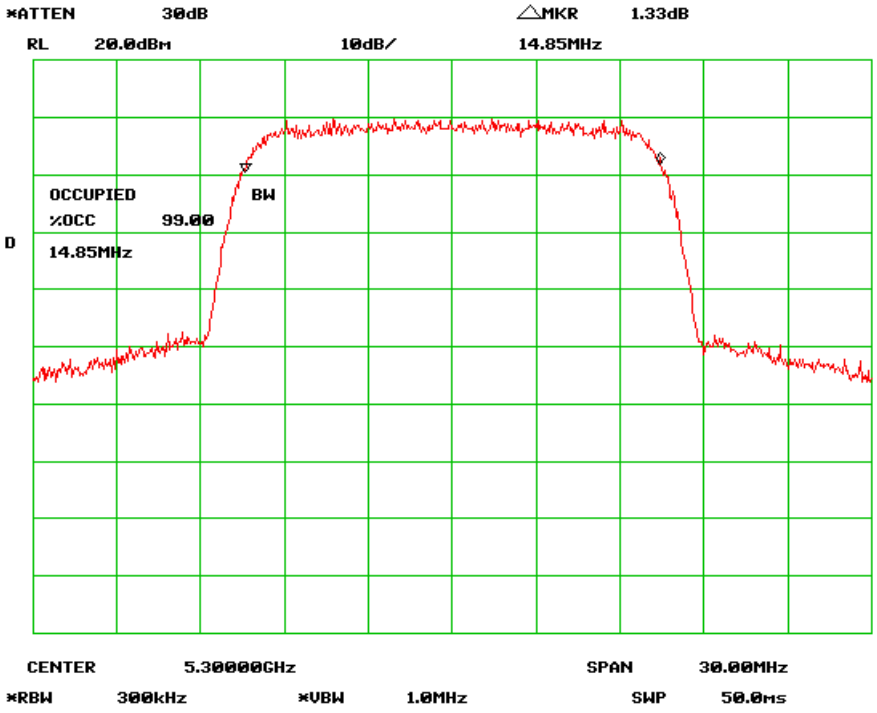
26 dB Bandwidth-Mid Channel



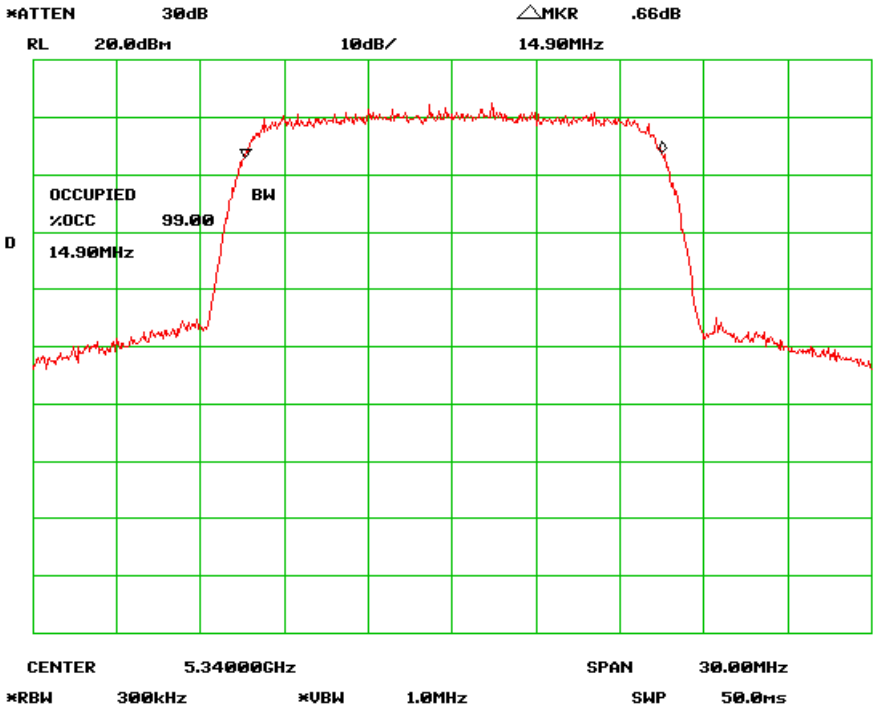
26 dB Bandwidth-High Channel



99% Bandwidth- Low Channel



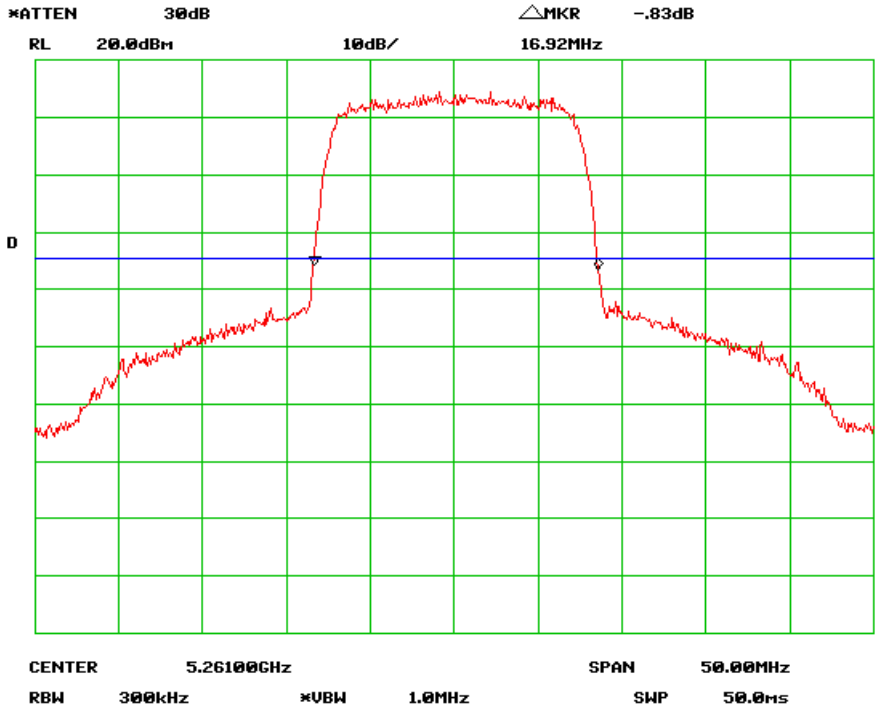
99% Bandwidth- Mid Channel



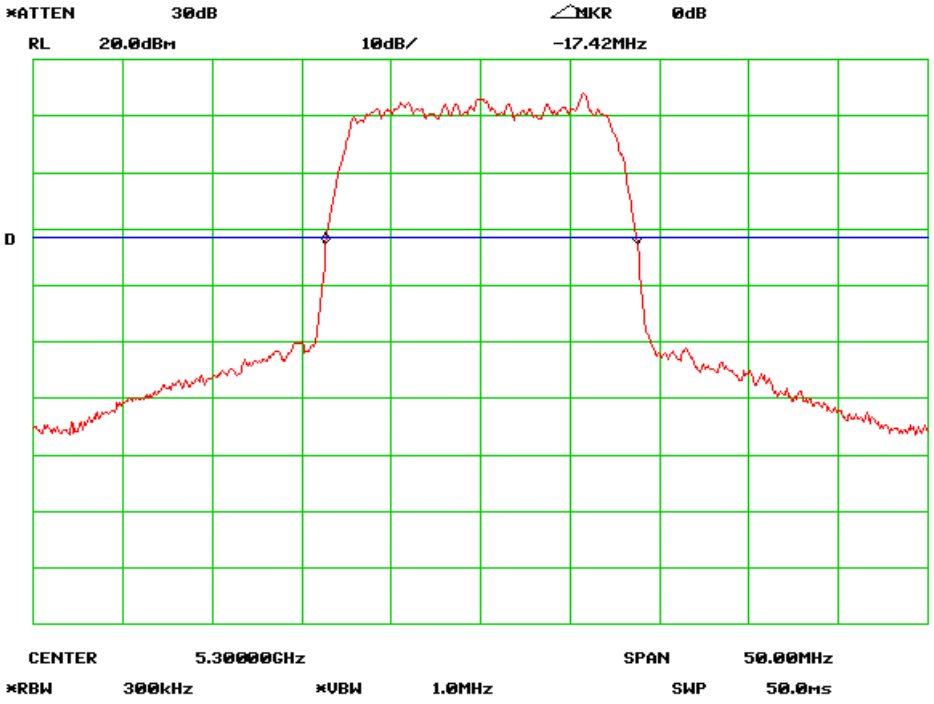
99% Bandwidth- High Channel

Mode: 2 = 16QAM, 16MHz Channel Bandwidth

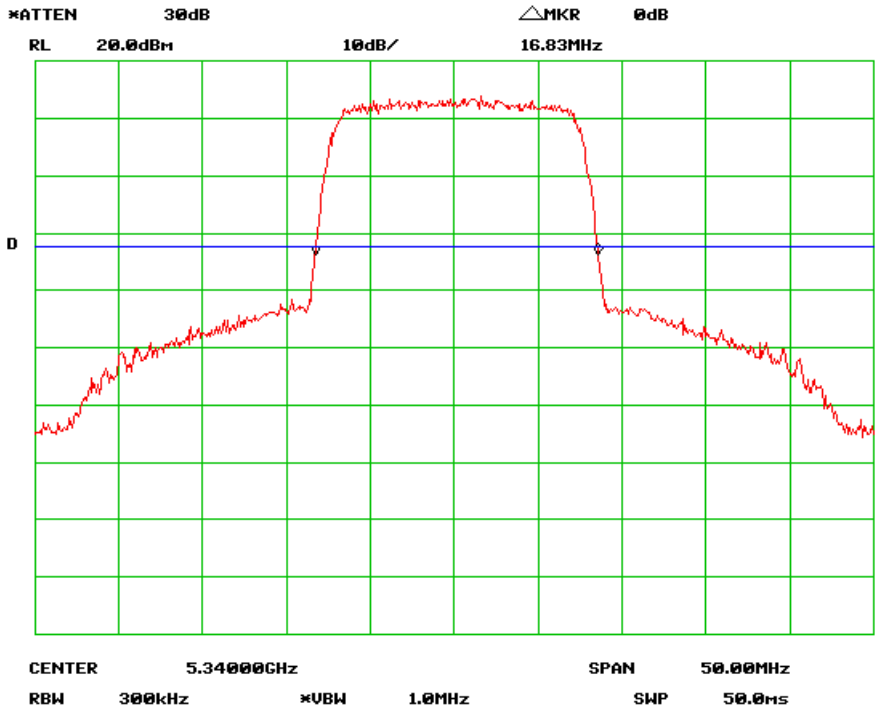
Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode 2	16MHz	Low Channel	16.92	14.85
	16MHz	Mid Channel	17.42	14.85
	16MHz	High Channel	16.83	14.90



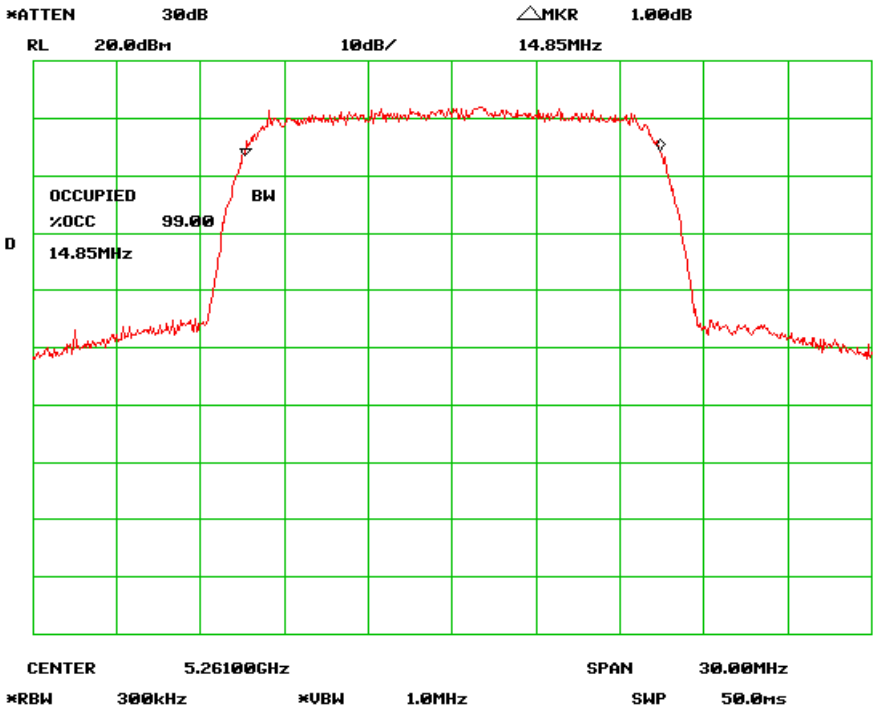
26 dB Bandwidth- Low Channel



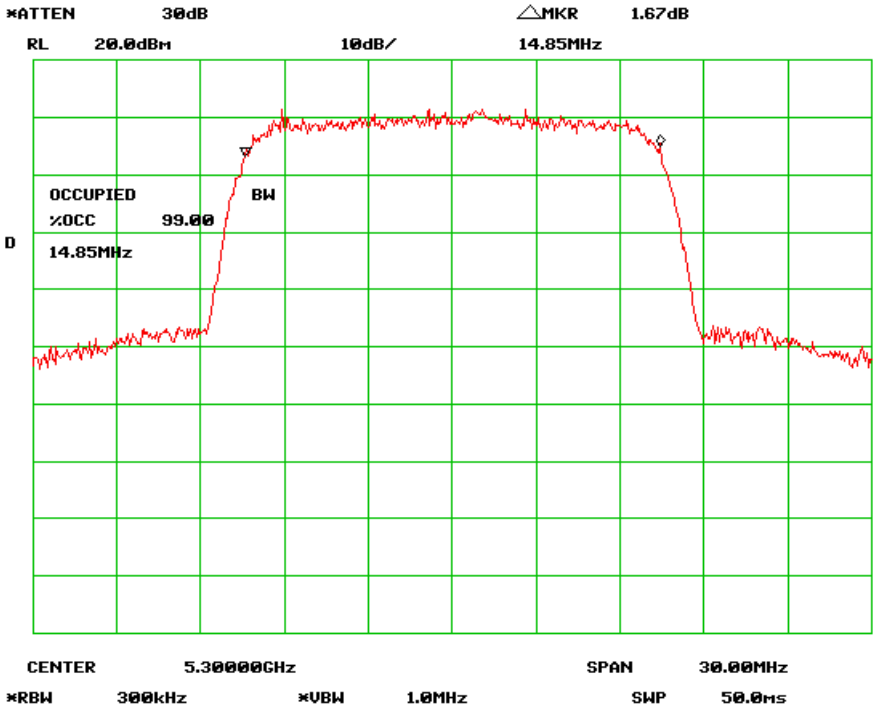
26 dB Bandwidth- Mid Channel



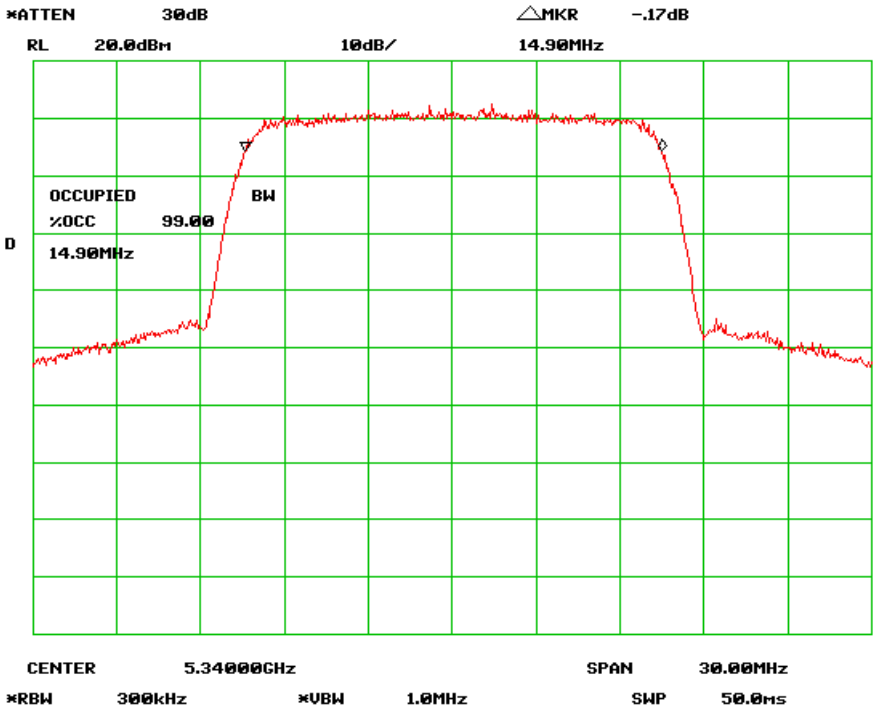
26 dB Bandwidth- High Channel



99% Bandwidth-Low Channel



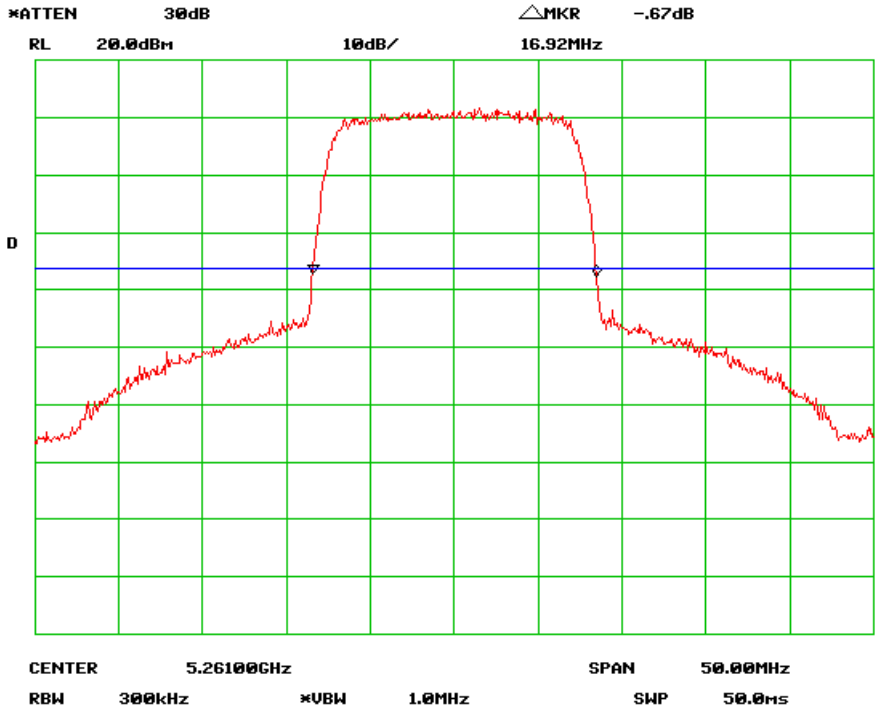
99% Bandwidth-Mid Channel



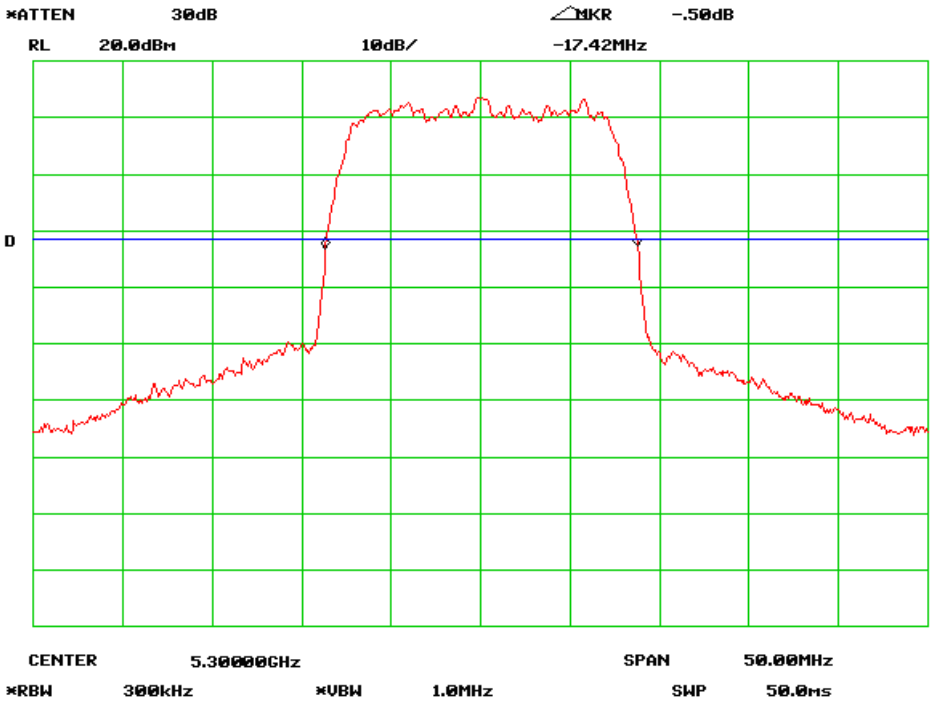
99% Bandwidth-High Channel

Mode: 3 = 64QAM, 16MHz Channel Bandwidth

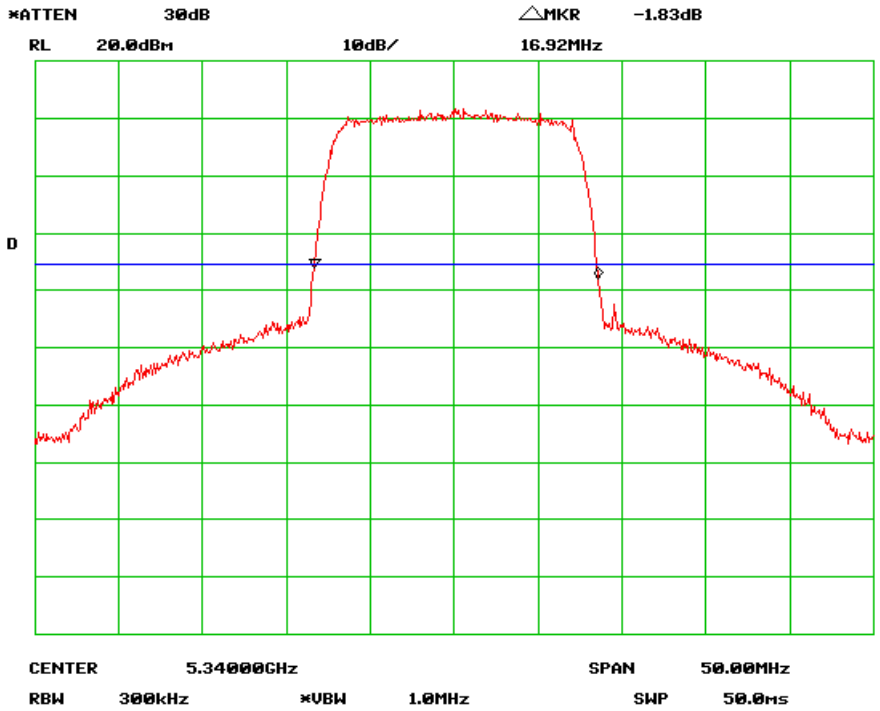
Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode 3	16MHz	Low Channel	16.92	14.85
	16MHz	Mid Channel	17.42	14.90
	16MHz	High Channel	16.92	14.85



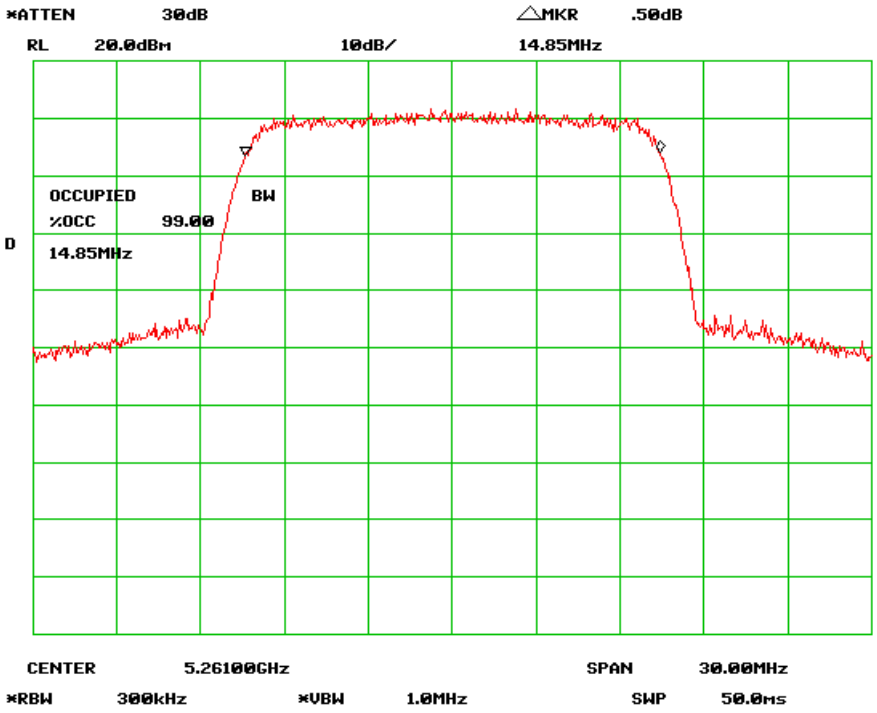
26 dB Bandwidth-Low Channel



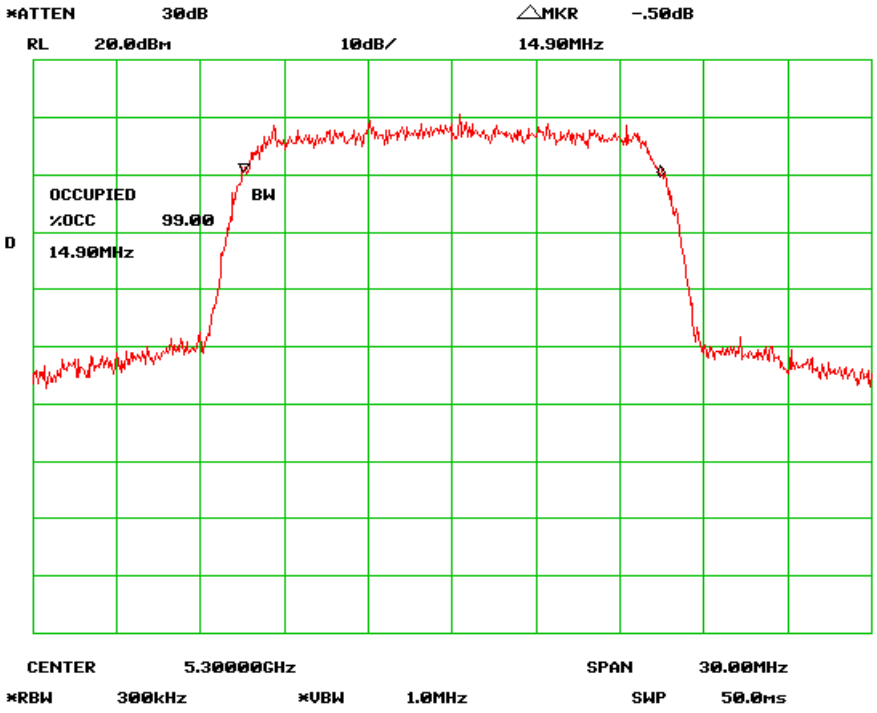
26 dB Bandwidth-Mid Channel



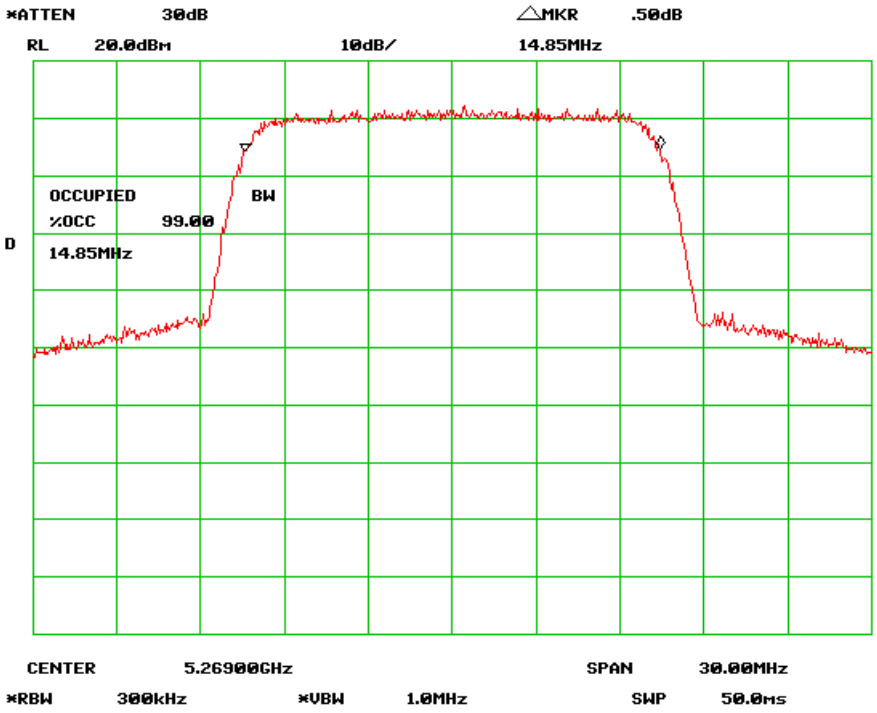
26 dB Bandwidth-High Channel



99% Bandwidth - Low Channel



99% Bandwidth - Mid Channel

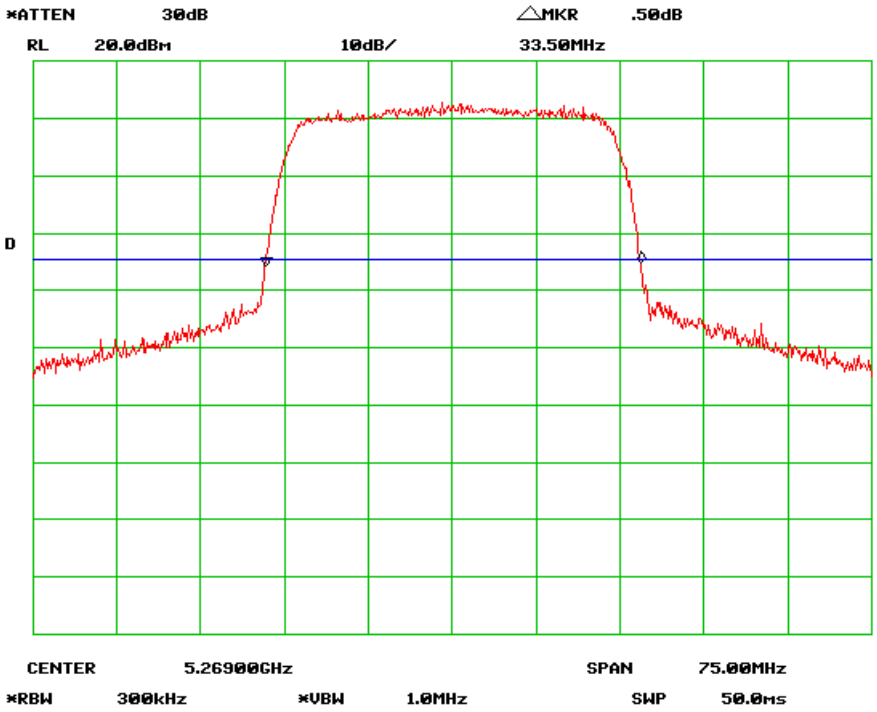


99% Bandwidth - High Channel

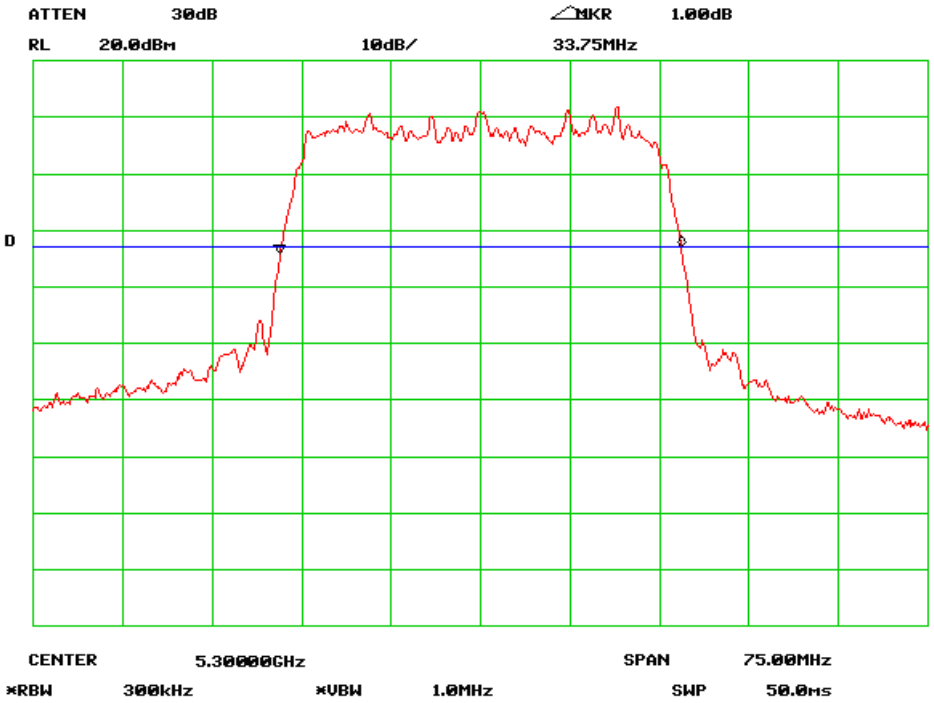
Mode: 1 = QPSK , 32MHz Channel Bandwidth

Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode 1	32MHz	Low Channel	33.50	29.92
	32MHz	Mid Channel	33.75	29.83
	32MHz	High Channel	33.75	29.92

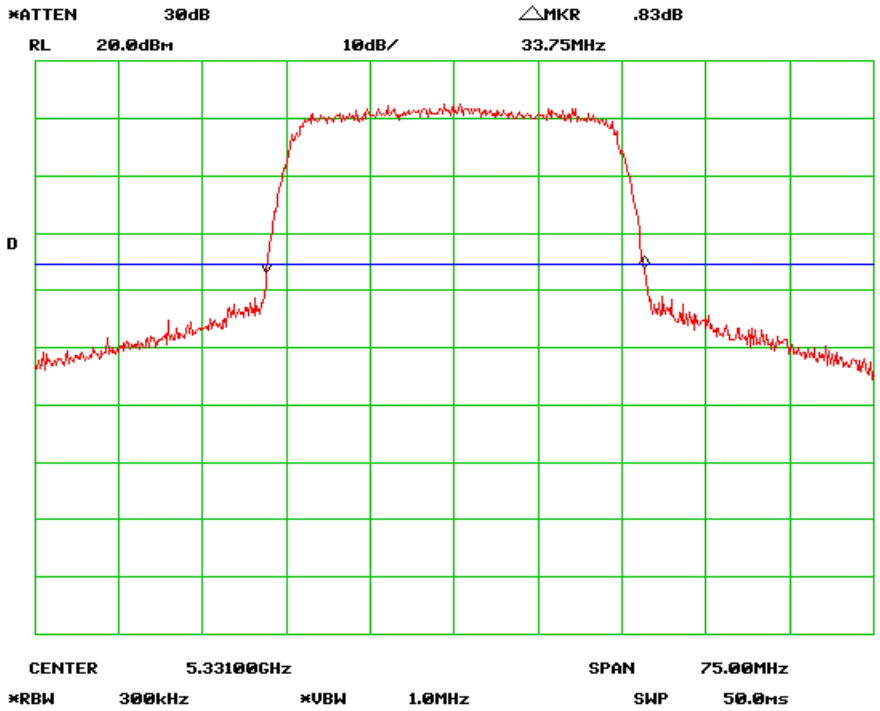
Refer to the attached plots.



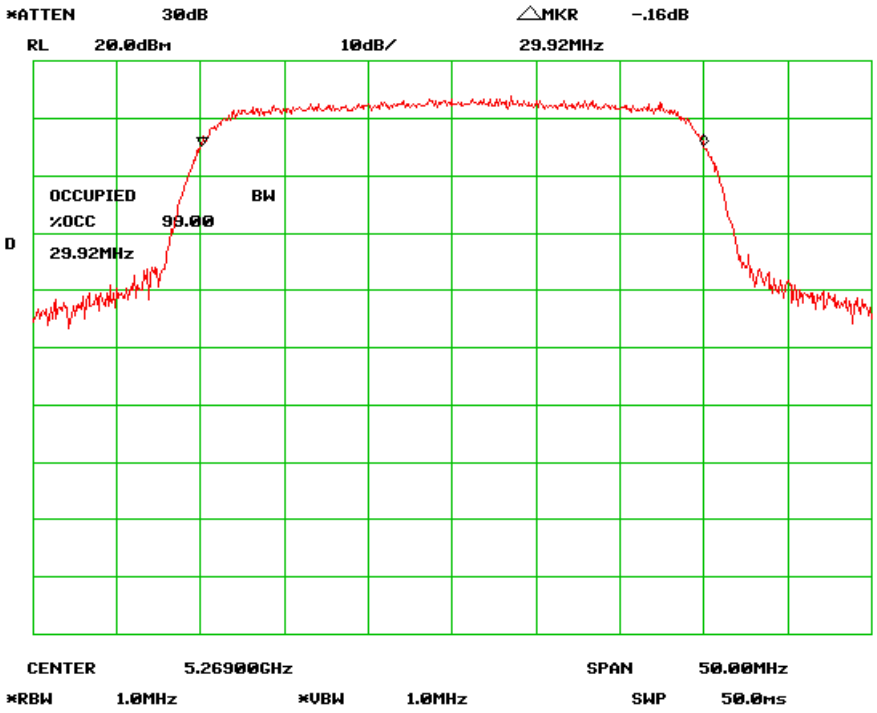
26 dB Bandwidth- Low Channel



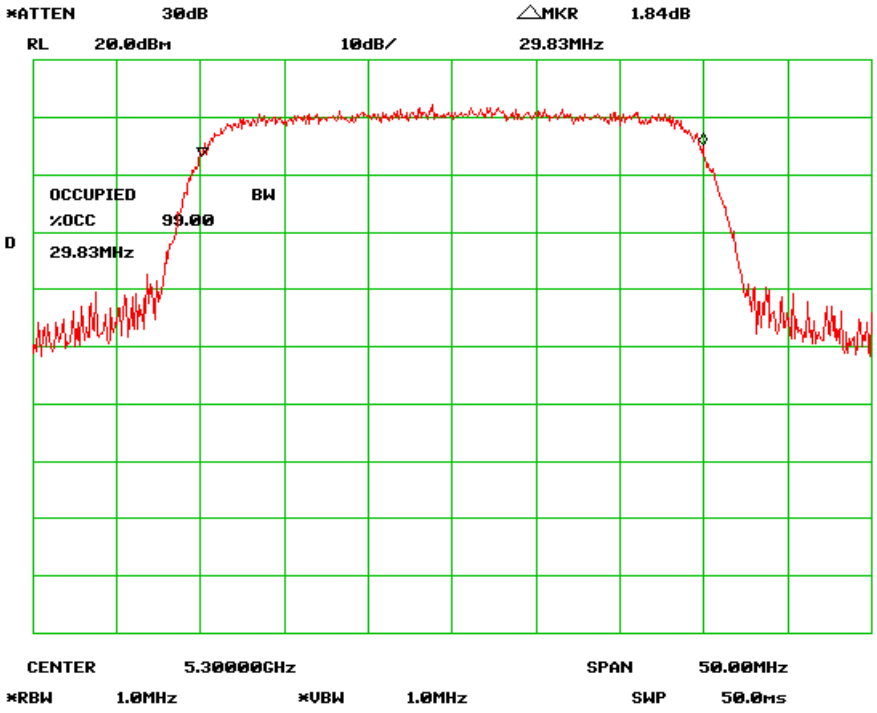
26 dB Bandwidth- Mid Channel



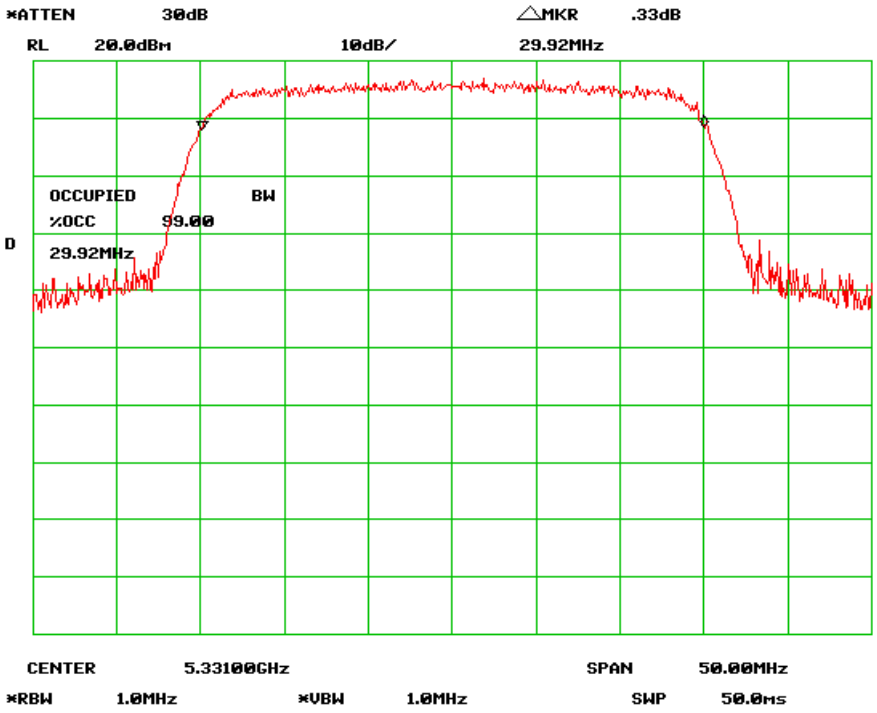
26 dB Bandwidth- High Channel



99% Bandwidth –Low Channel



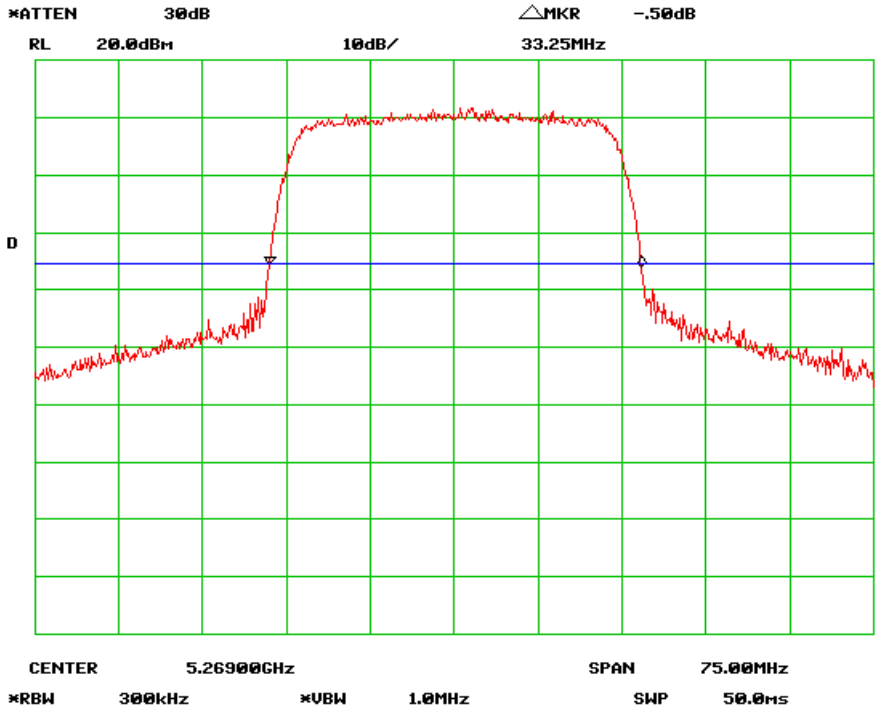
99% Bandwidth –Mid Channel



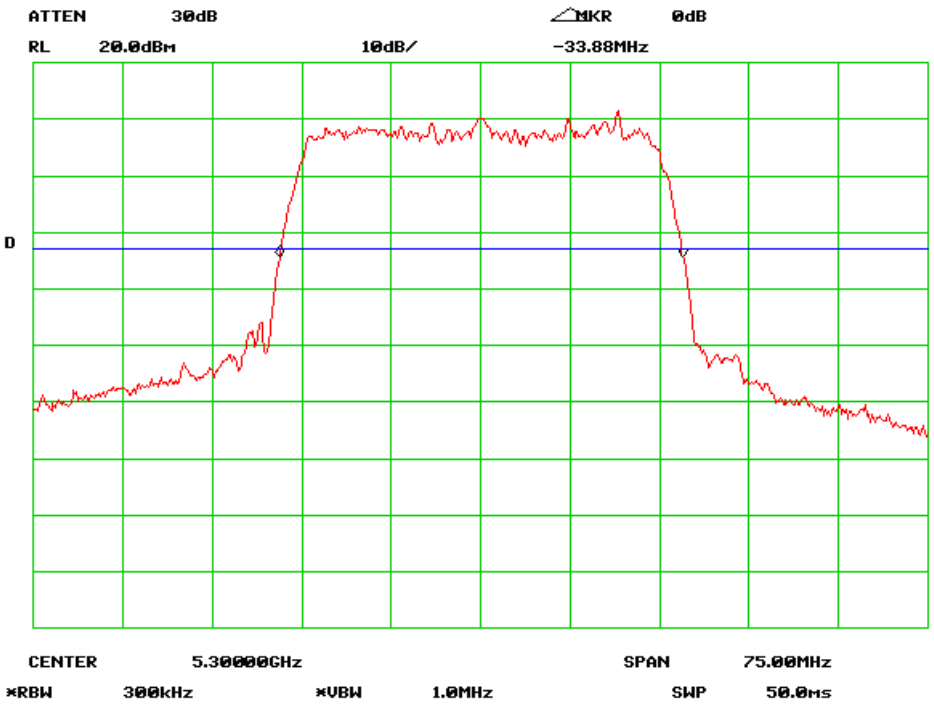
99% Bandwidth –High Channel

Mode: 2 = 16QAM, 32MHz Channel Bandwidth

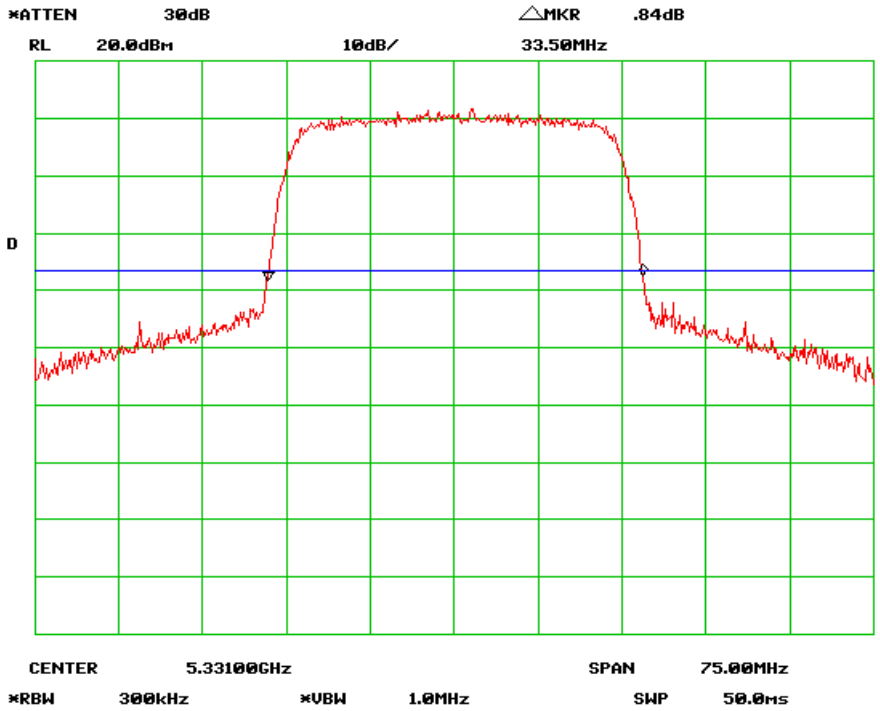
Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode 2	8MHz	Low Channel	33.85	30.85
	8MHz	Mid Channel	33.88	30.88
	8MHz	High Channel	33.84	30.84



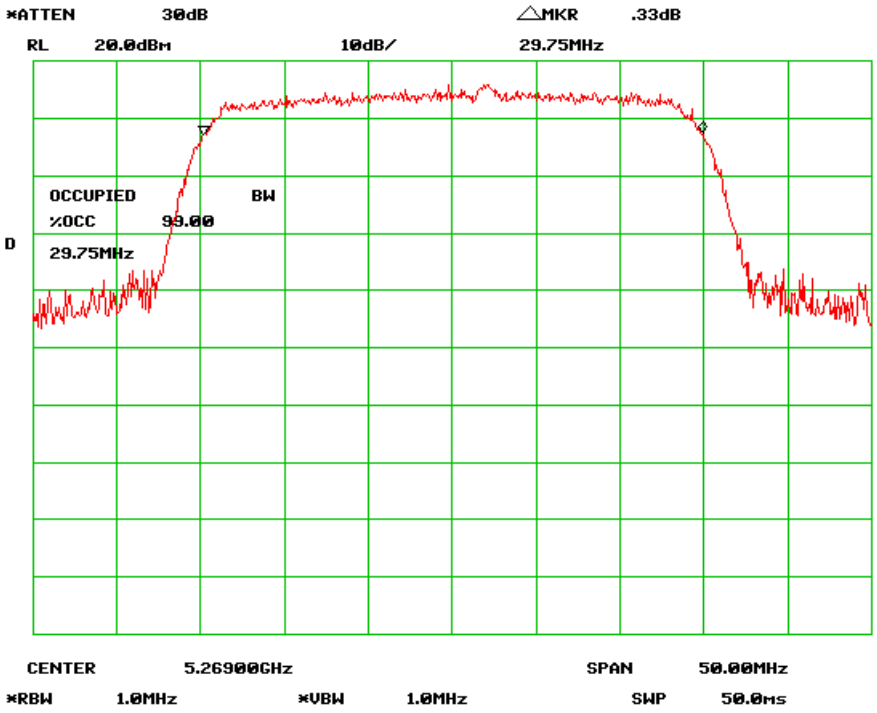
26 dB Bandwidth-Low Channel



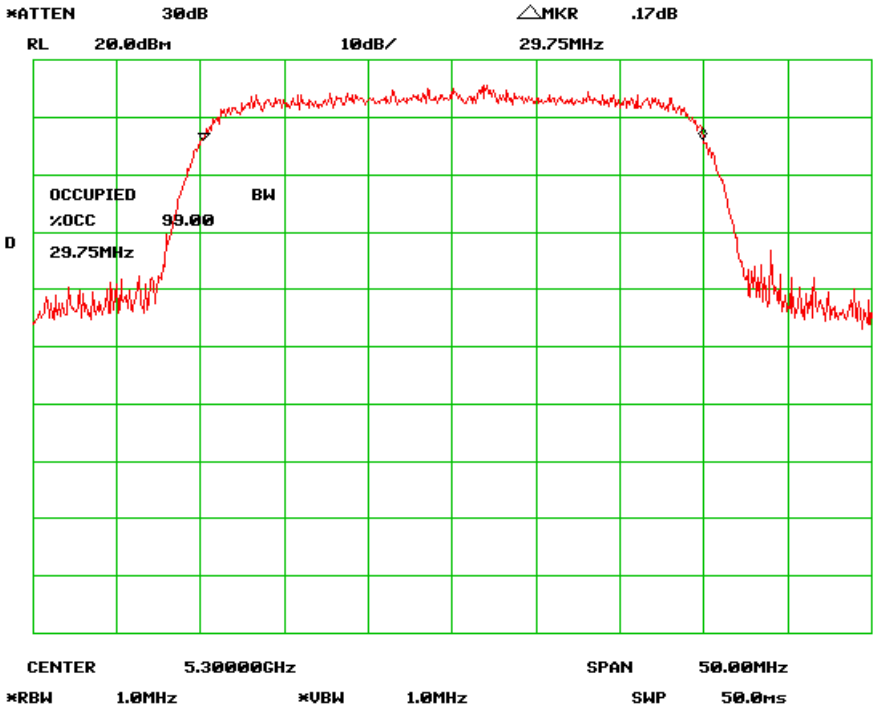
26 dB Bandwidth-Mid Channel



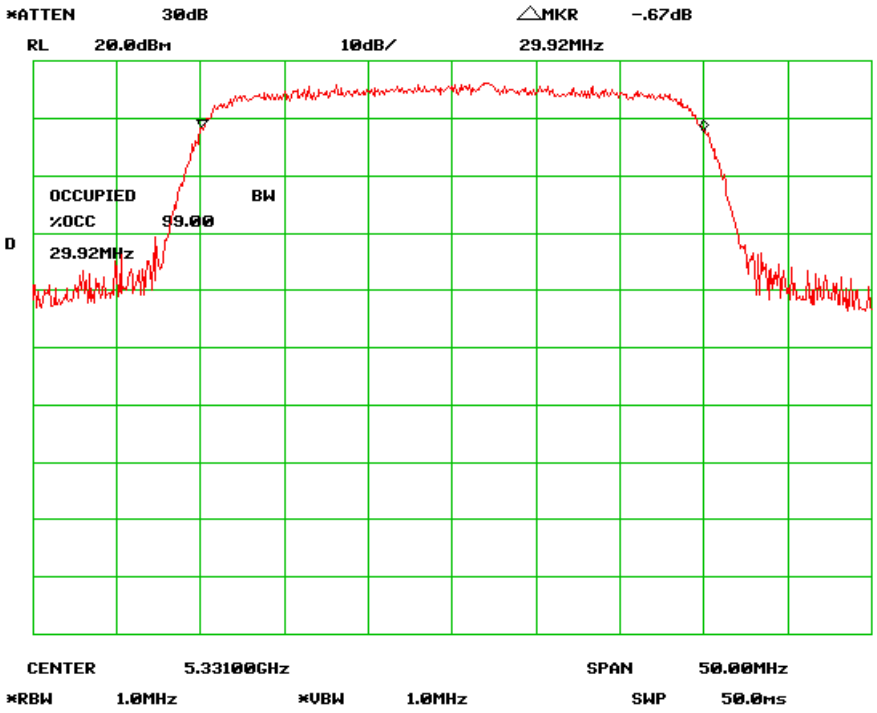
26 dB Bandwidth-High Channel



99% Bandwidth – Low Channel



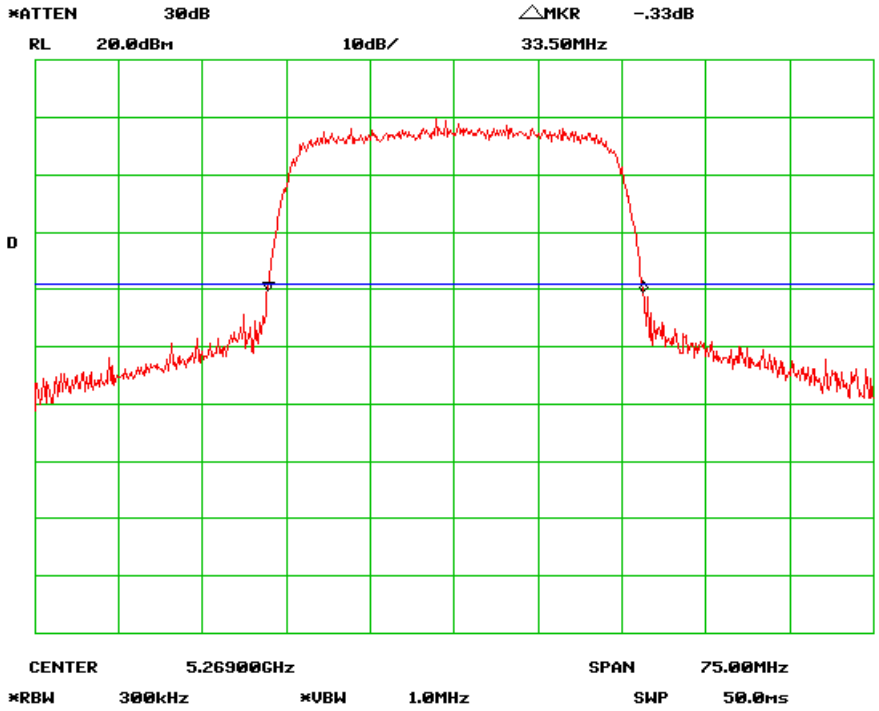
99% Bandwidth – Mid Channel



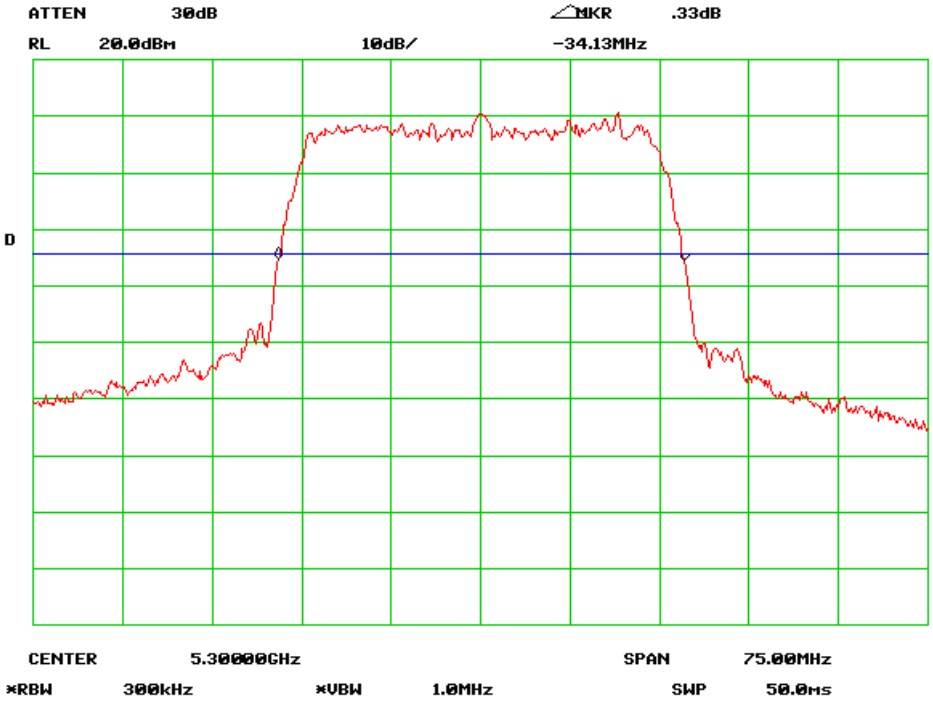
99% Bandwidth – High Channel

Mode: 3 = 64QAM, 32MHz Channel Bandwidth

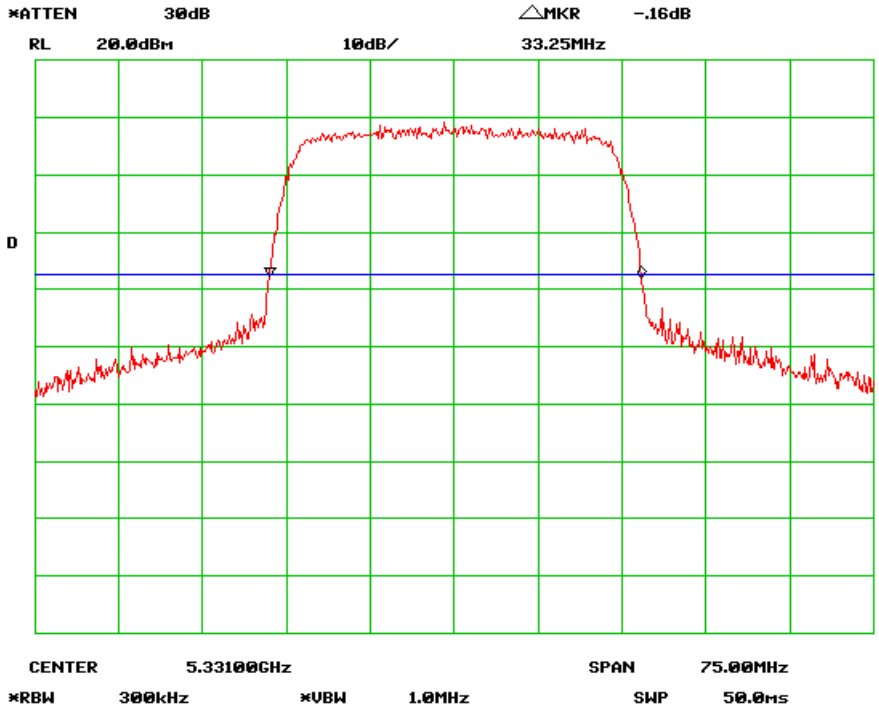
Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode 3	32MHz	Low Channel	33.50	29.83
	32MHz	Mid Channel	34.13	29.75
	32MHz	High Channel	33.25	29.83



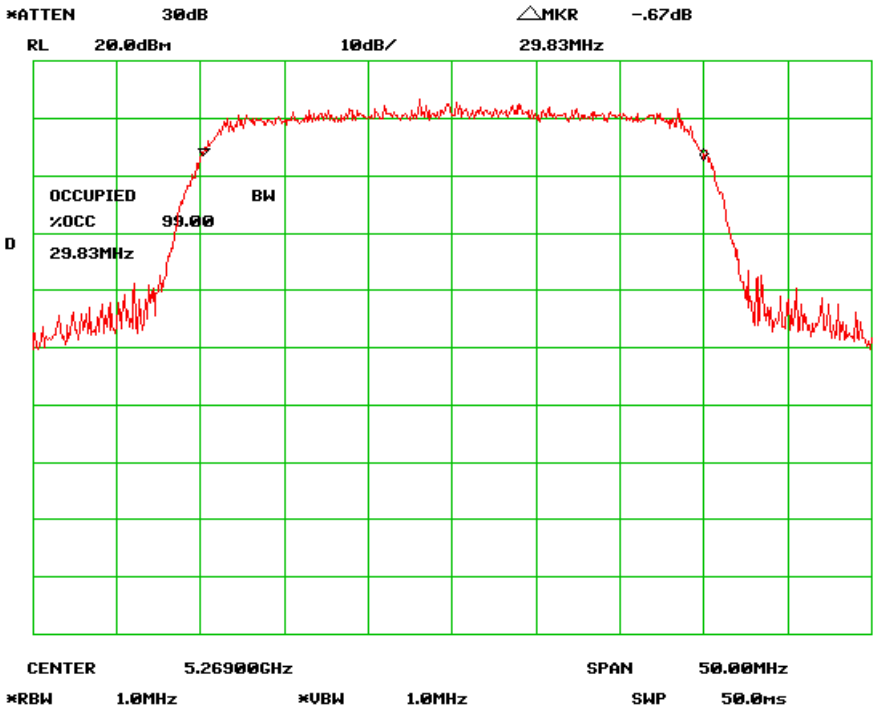
26 dB Bandwidth-Low Channel



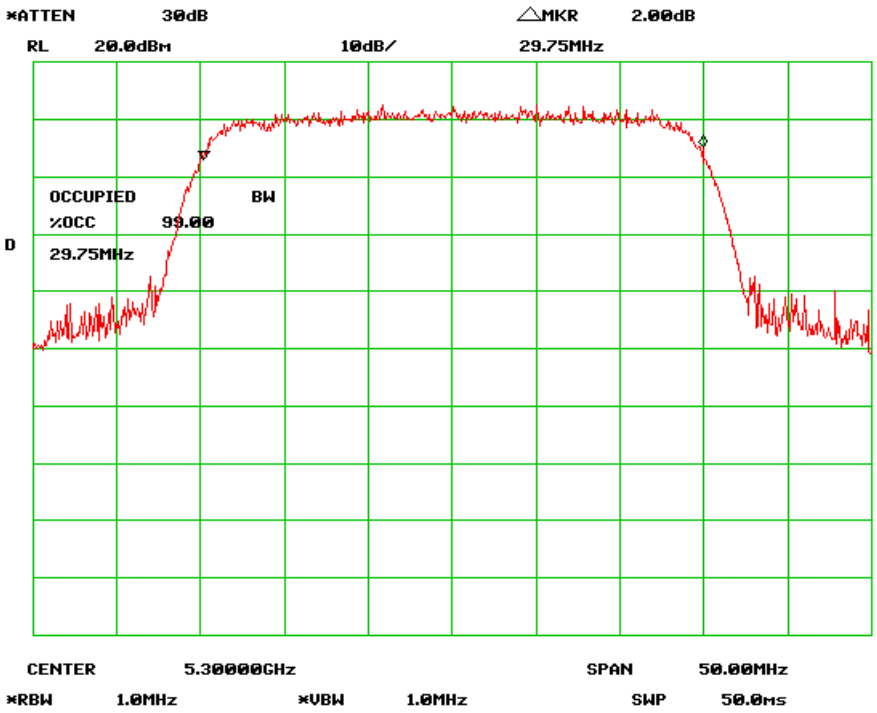
26 dB Bandwidth-Mid Channel



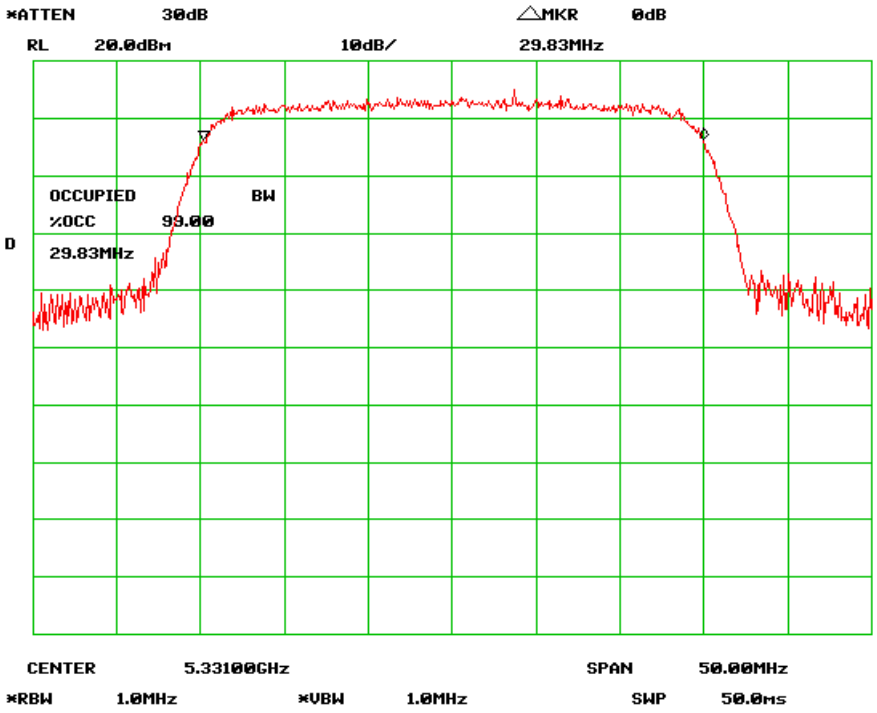
26 dB Bandwidth-High Channel



99% Bandwidth -Low Channel



99% Bandwidth -Mid Channel



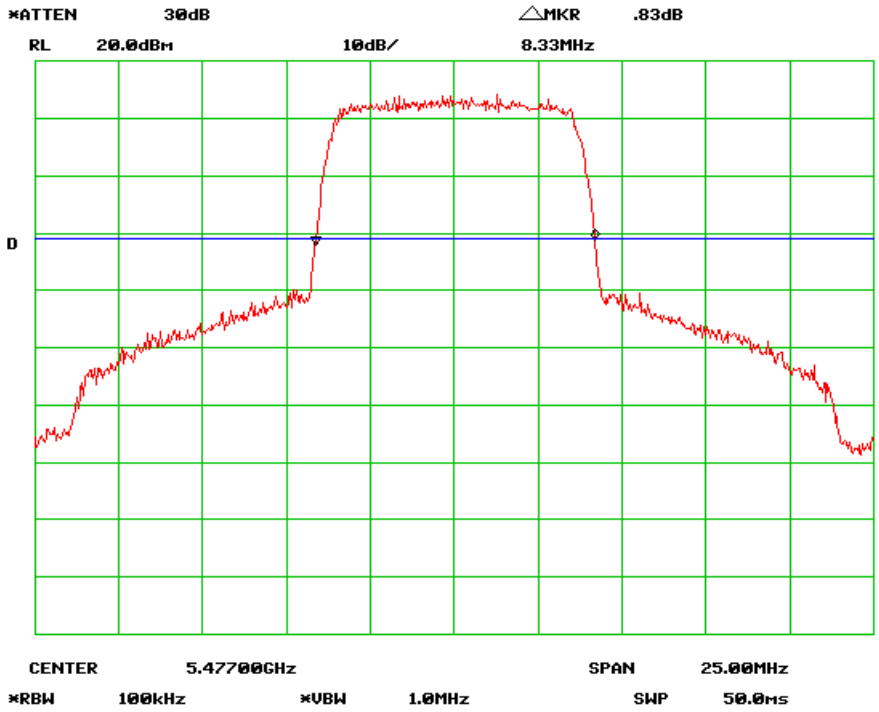
99% Bandwidth -High Channel

5.4GHz Band

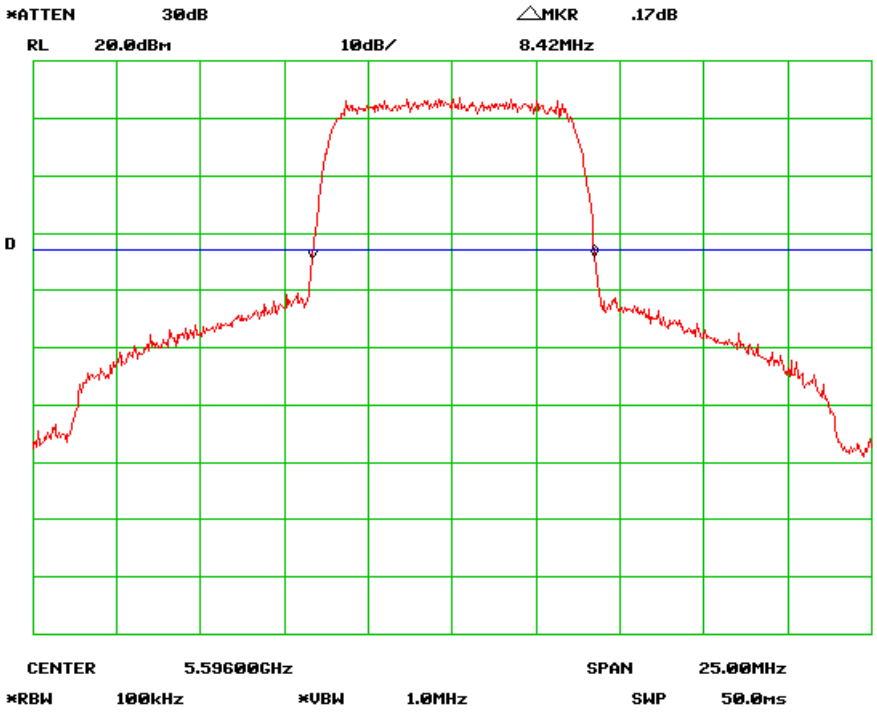
Mode: 1 = QPSK , 8MHz Channel Bandwidth

Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode 1	8MHz	Low Channel	8.33	7.54
	8MHz	Mid Channel	8.42	7.54
	8MHz	High Channel	8.46	7.58

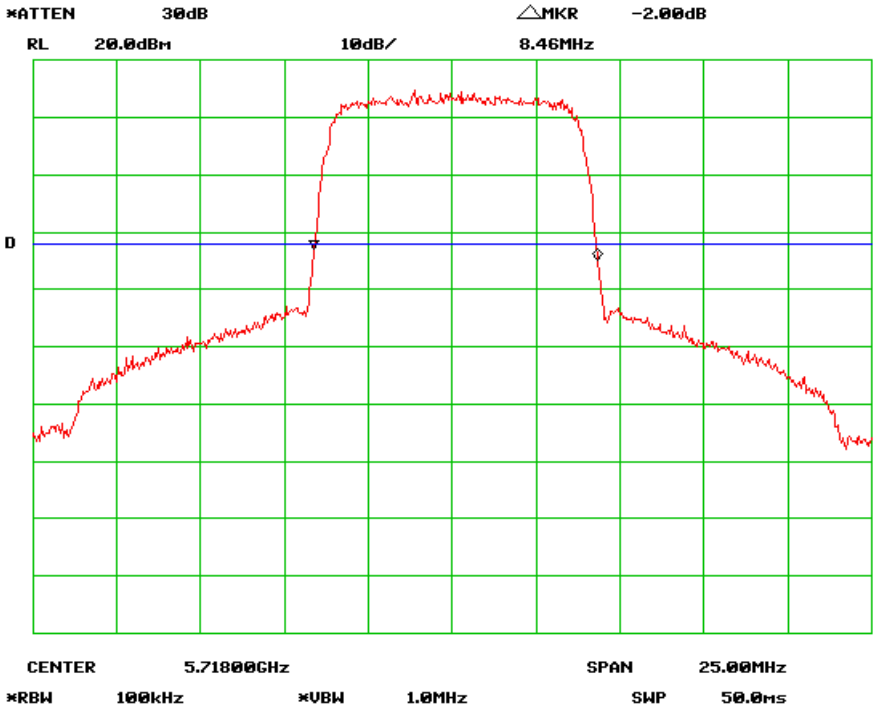
Refer to the attached plots.



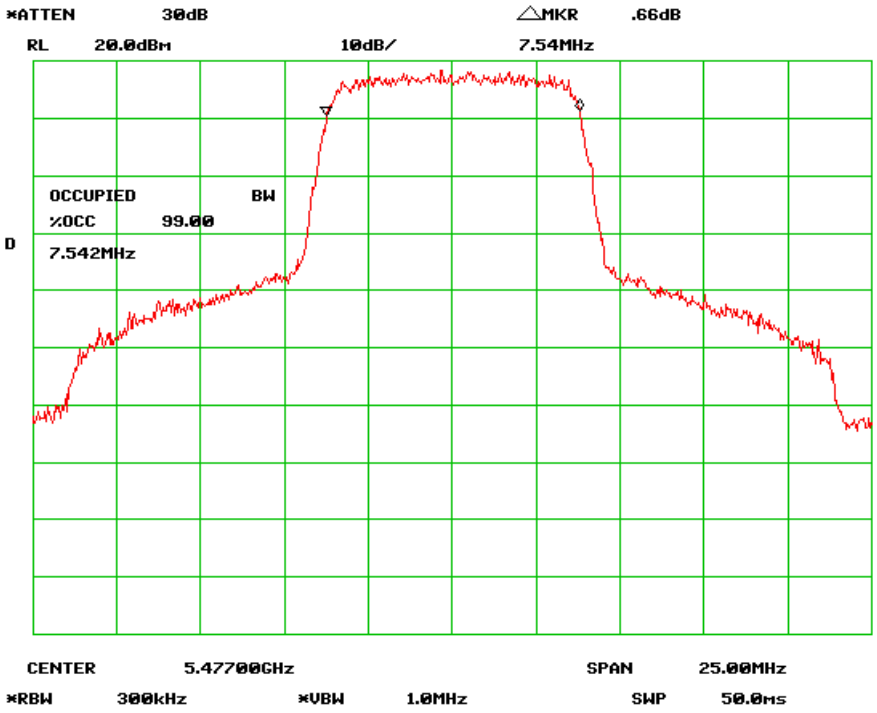
26 dB Bandwidth-Low Channel



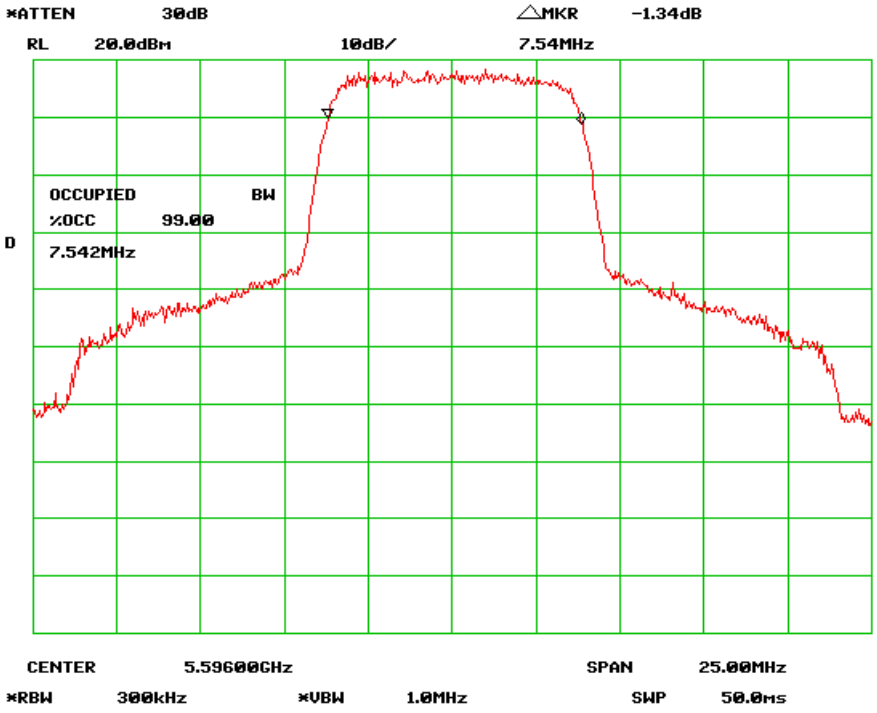
26 dB Bandwidth-Mid Channel



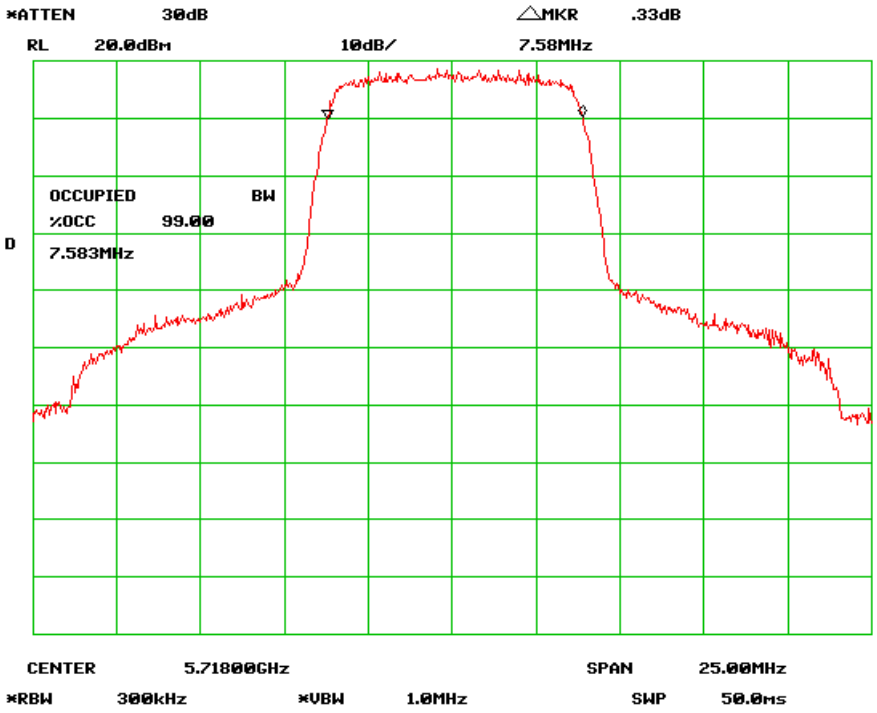
26 dB Bandwidth-High Channel



99% Bandwidth-Low Channel



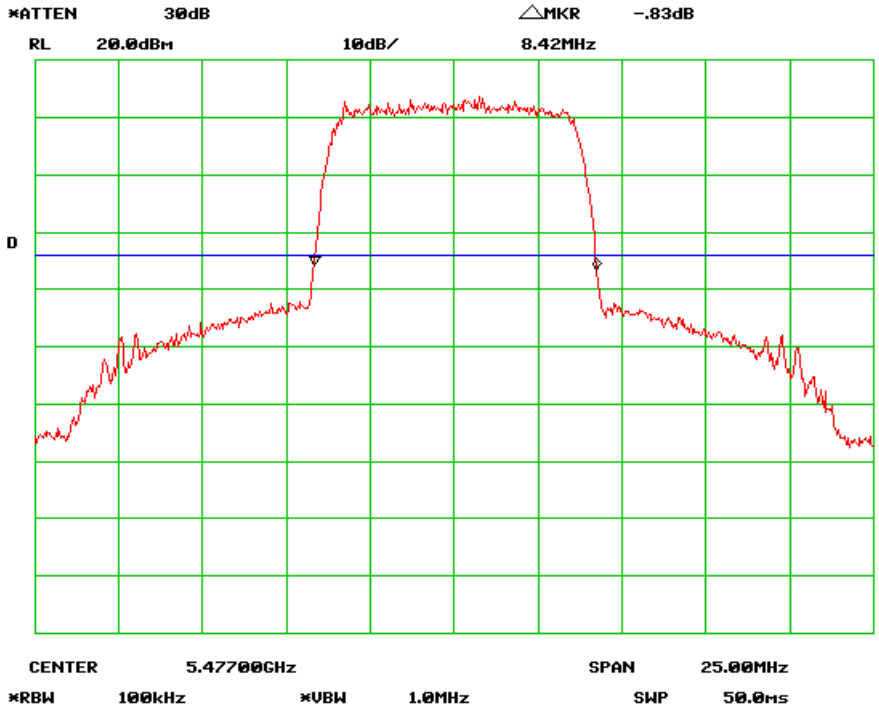
99% Bandwidth-Mid Channel



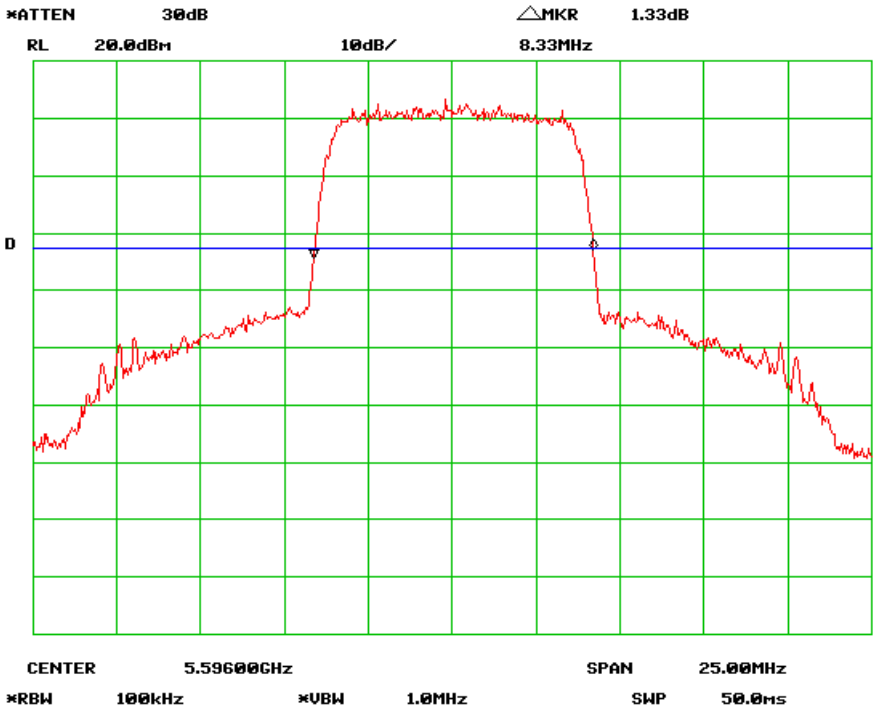
99% Bandwidth-High Channel

Mode: 2 = 16QAM, 8MHz Channel Bandwidth

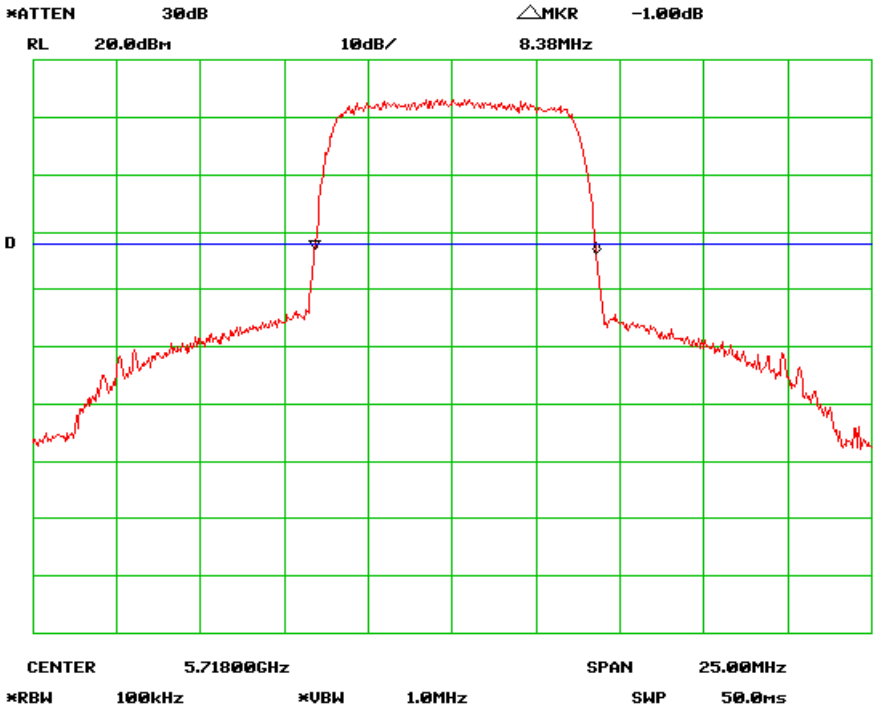
Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode 2	8MHz	Low Channel	8.42	7.54
	8MHz	Mid Channel	8.33	7.50
	8MHz	High Channel	8.38	7.58



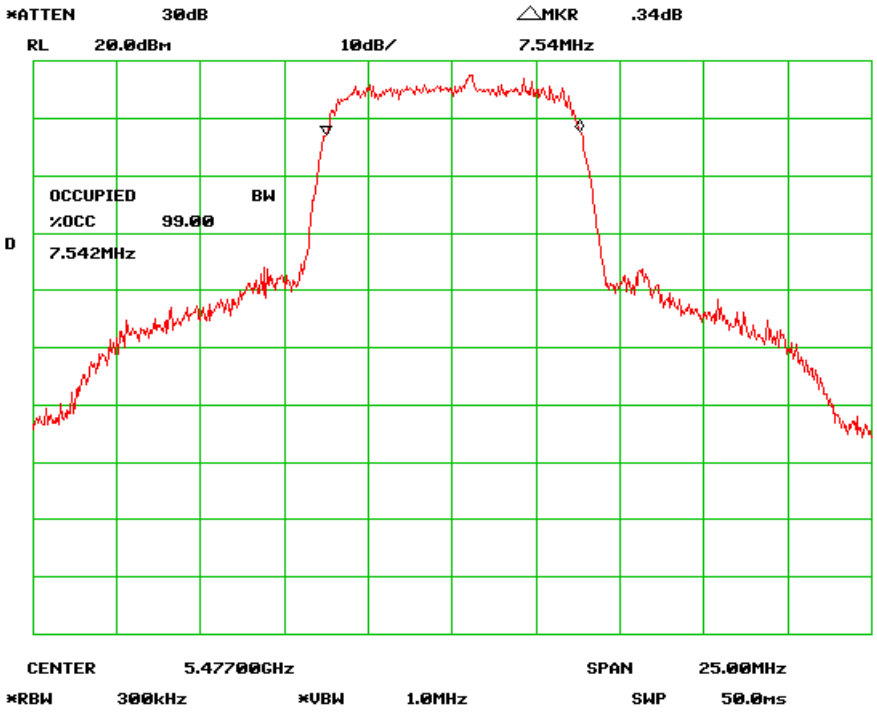
26 dB Bandwidth-Low Channel



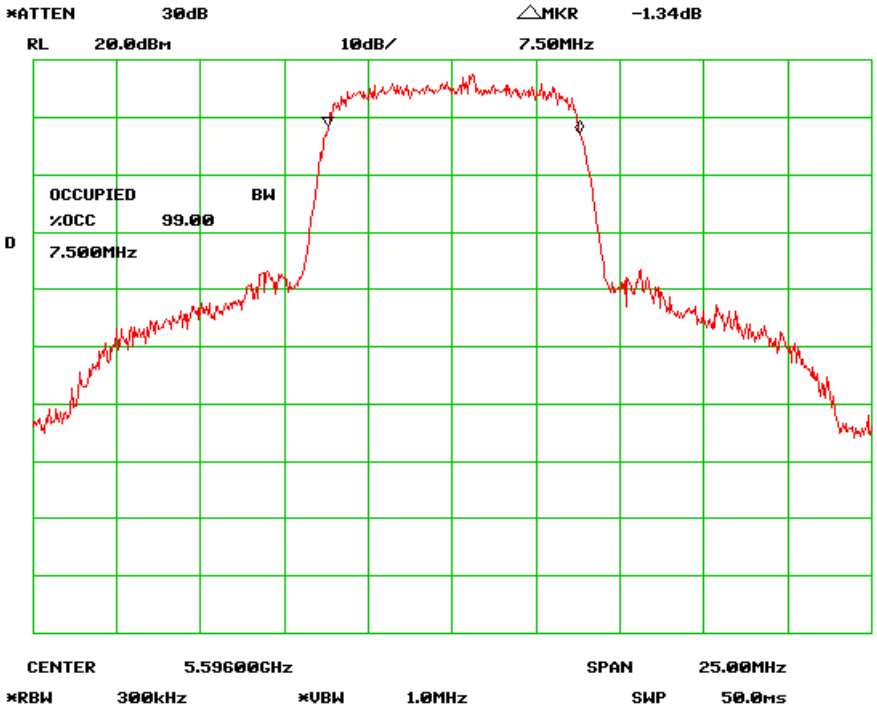
26 dB Bandwidth-Mid Channel



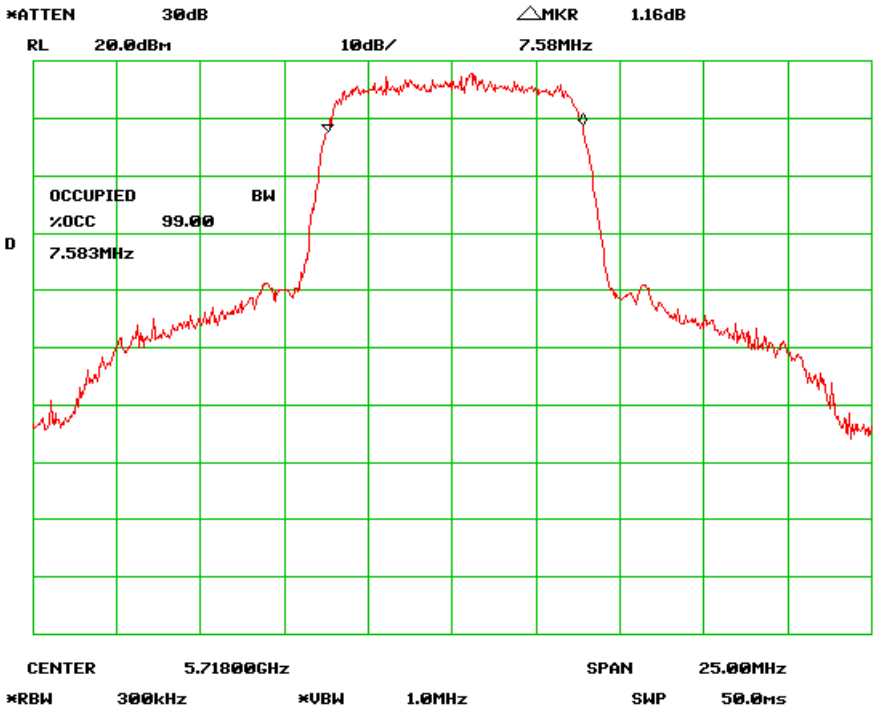
26 dB Bandwidth-High Channel



99% Bandwidth-Low Channel



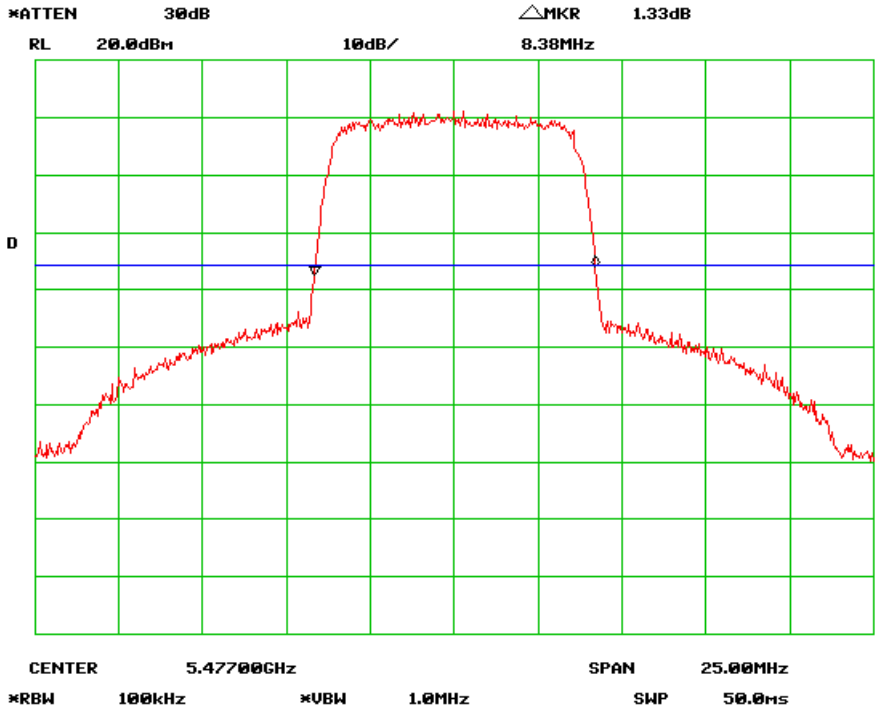
99% Bandwidth-Mid Channel



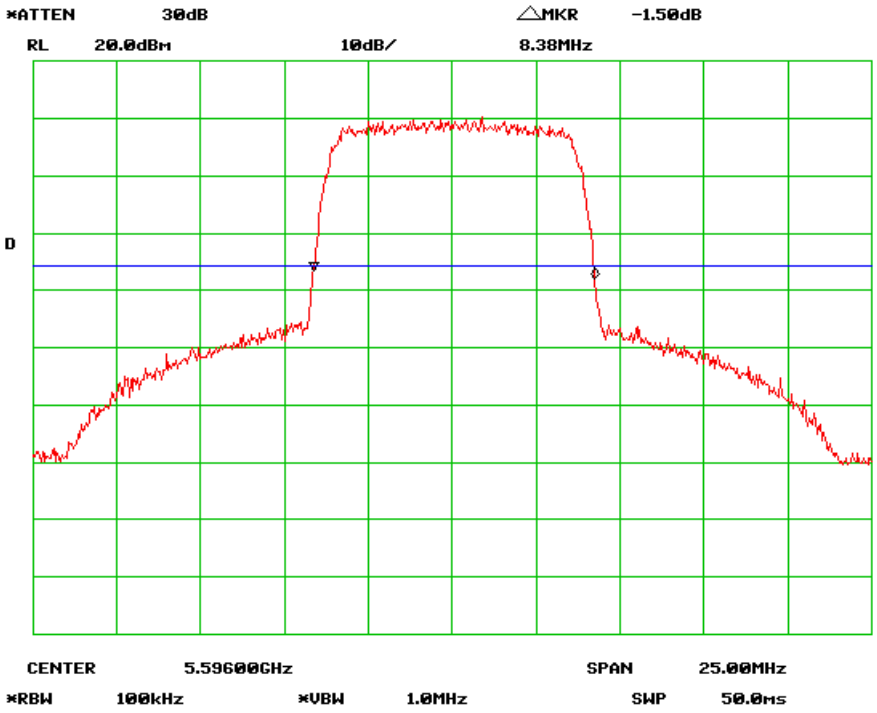
99% Bandwidth-High Channel

Mode: 3 = 64QAM, 8MHz Channel Bandwidth

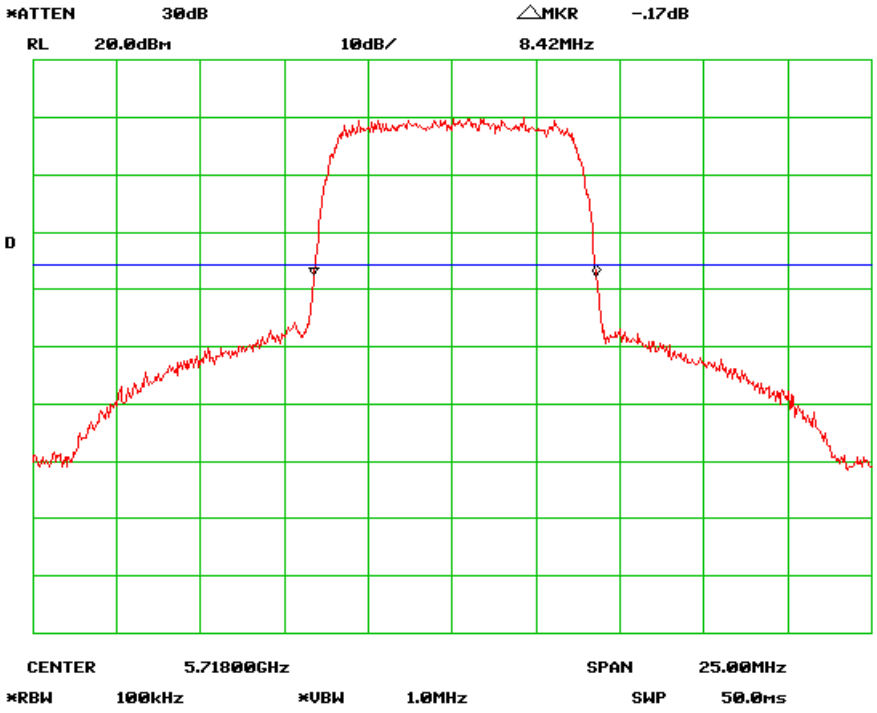
Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode 3	8MHz	Low Channel	8.38	7.54
	8MHz	Mid Channel	8.38	7.54
	8MHz	High Channel	8.42	7.58



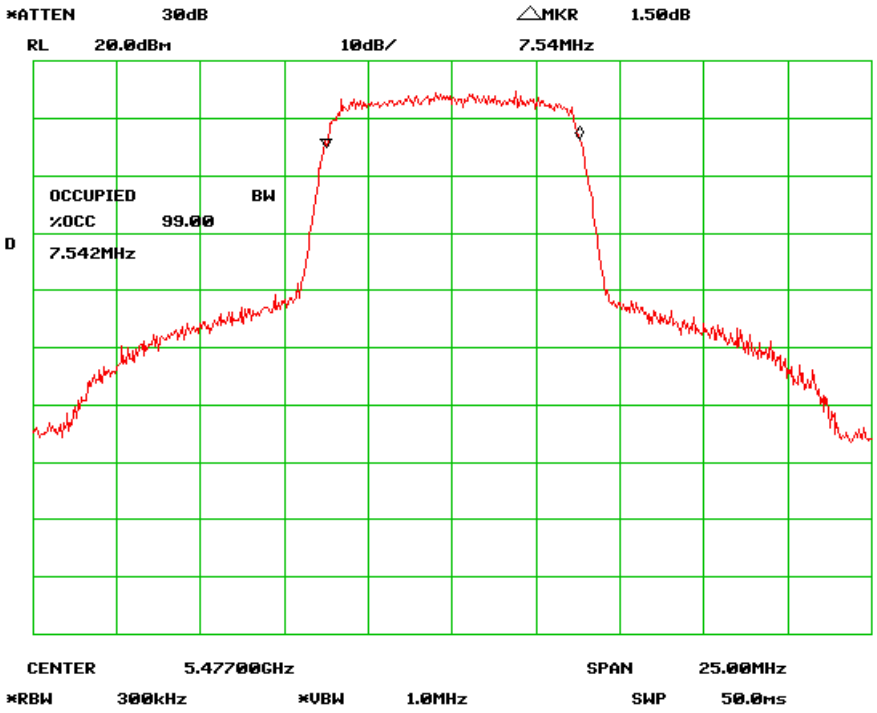
26 dB Bandwidth-Low Channel



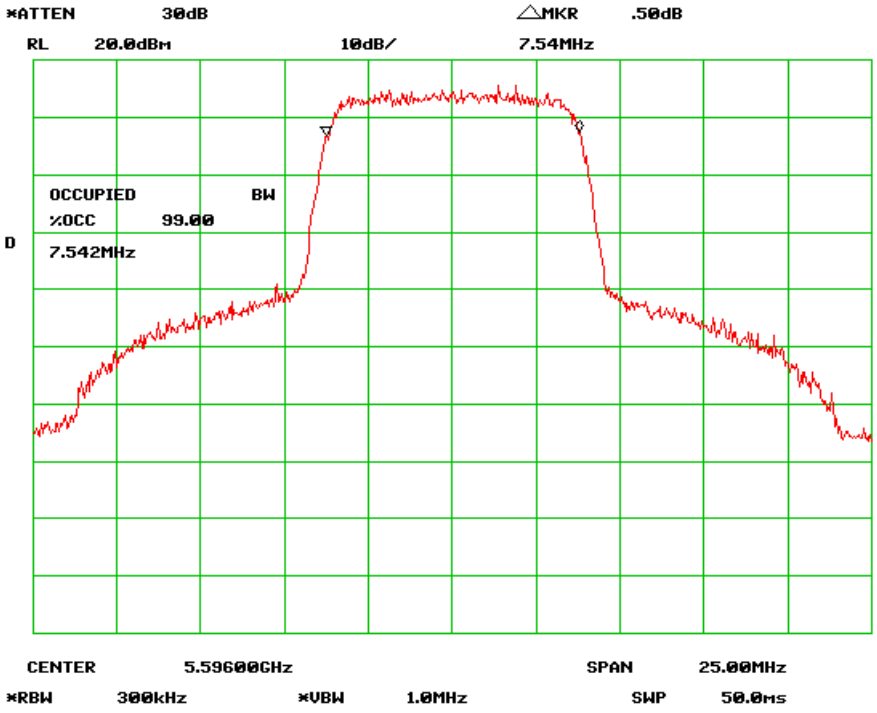
26 dB Bandwidth-Mid Channel



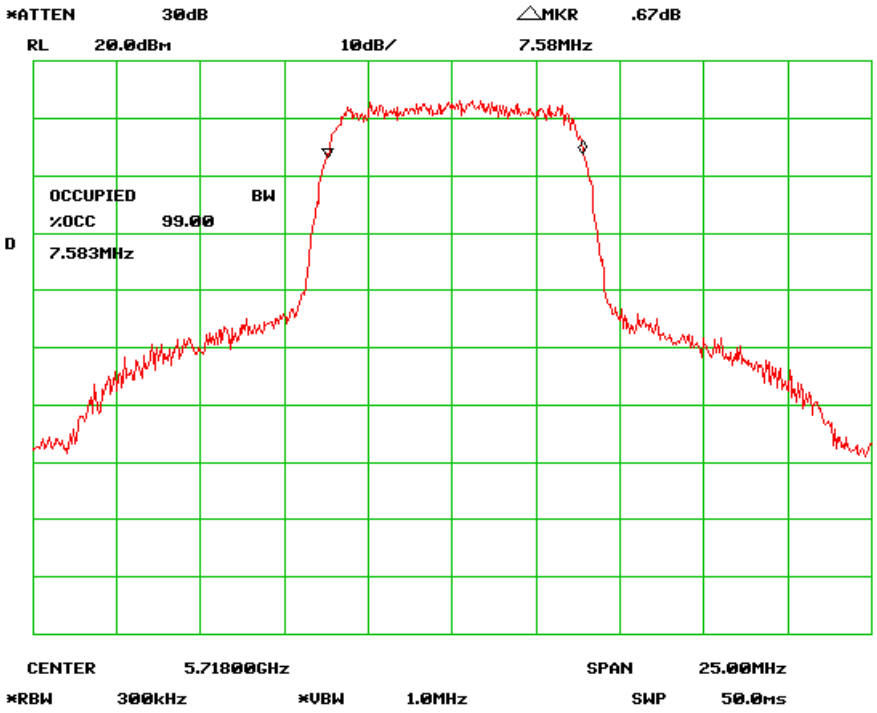
26 dB Bandwidth-High Channel



99% Bandwidth- Low Channel



99% Bandwidth- mid Channel

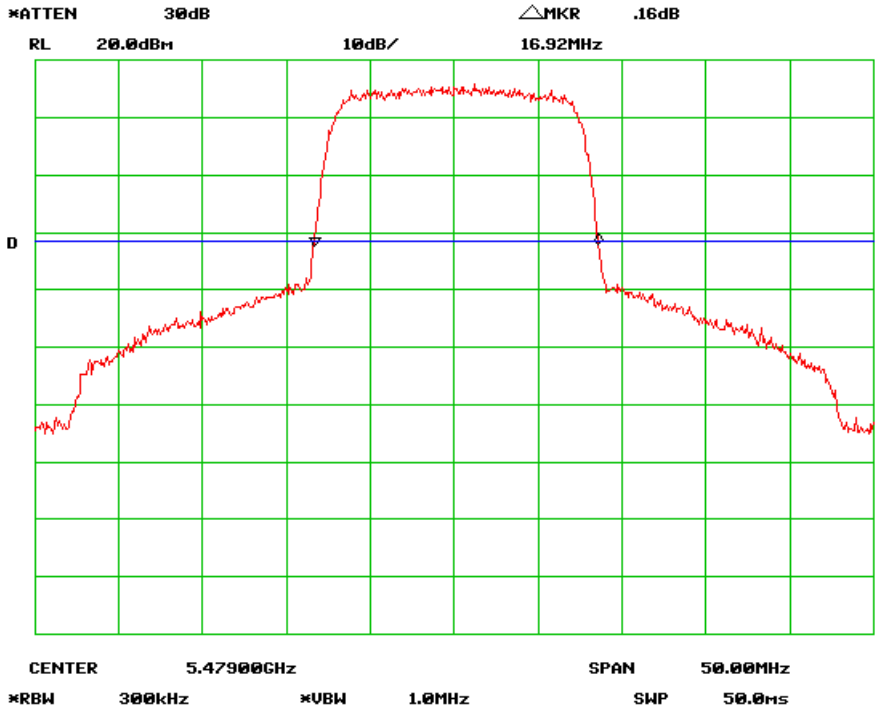


99% Bandwidth- High Channel

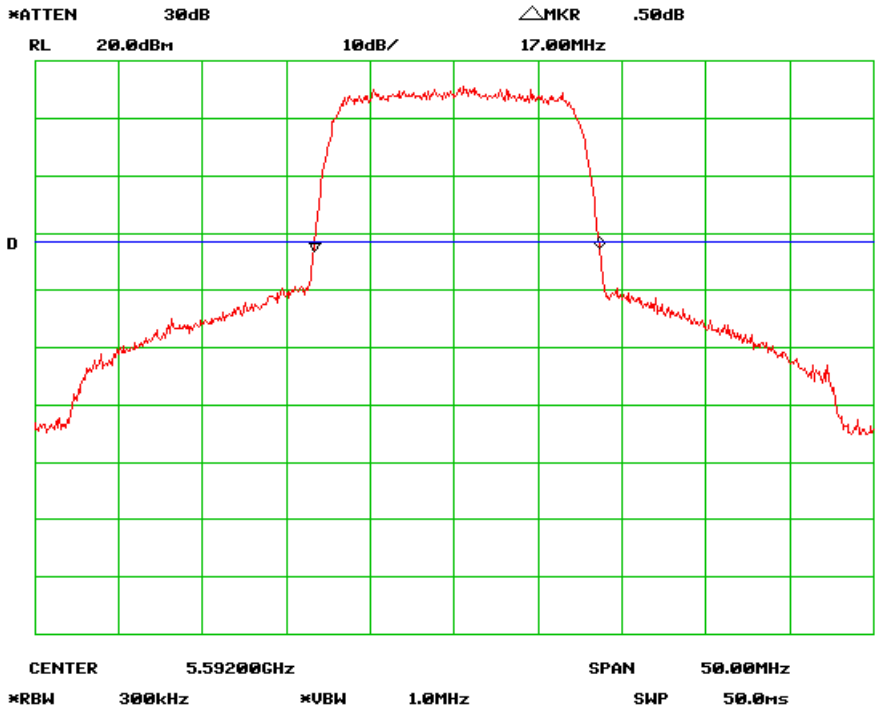
Mode: 1 = QPSK , 16MHz Channel Bandwidth

Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode 1	16MHz	Low Channel	16.92	14.92
	16MHz	Mid Channel	17.00	14.92
	16MHz	High Channel	17.08	14.92

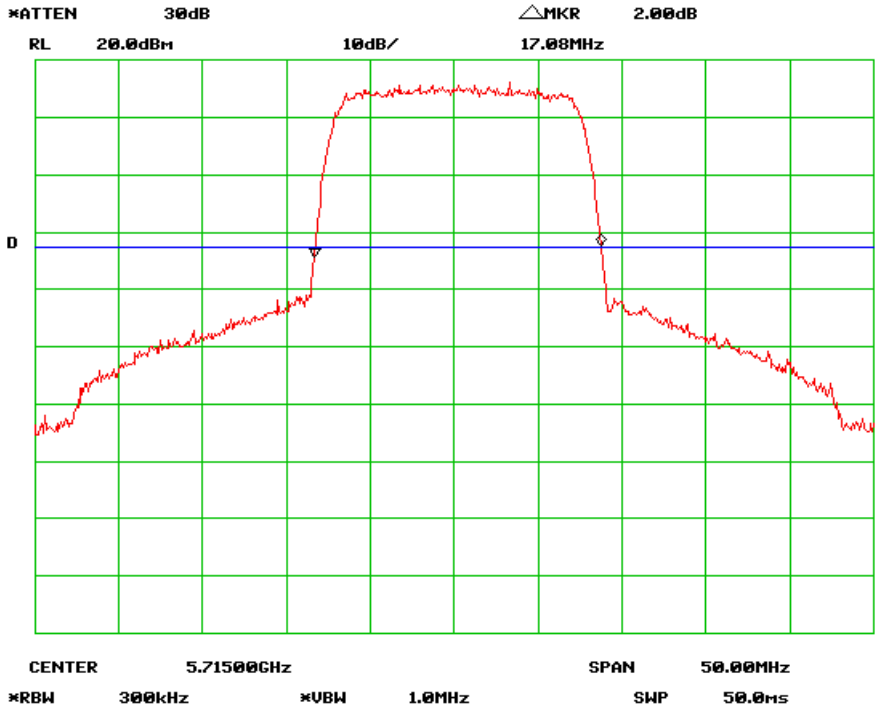
Refer to the attached plots.



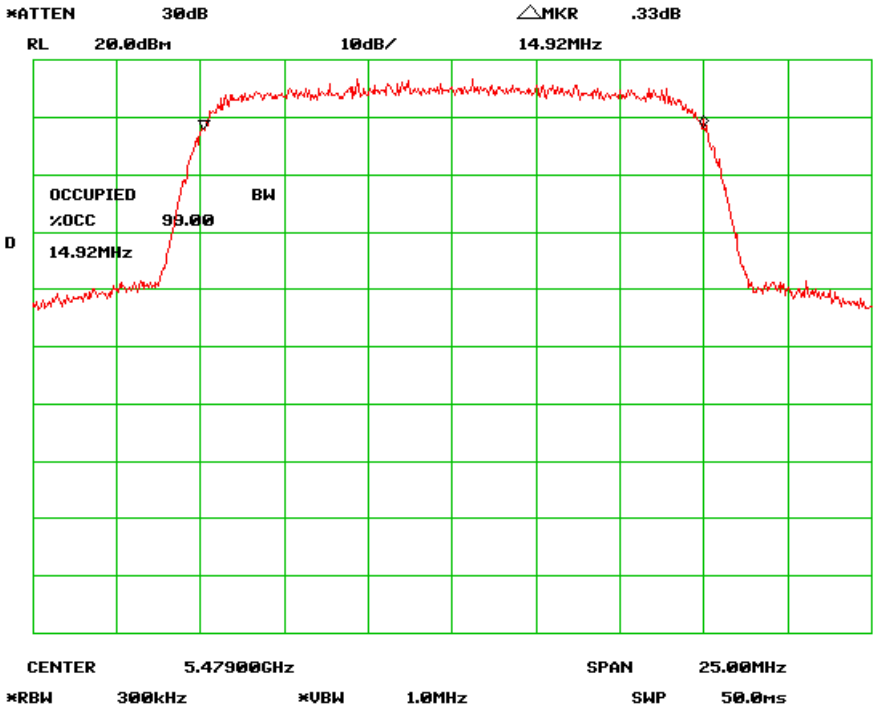
26 dB Bandwidth-Low Channel



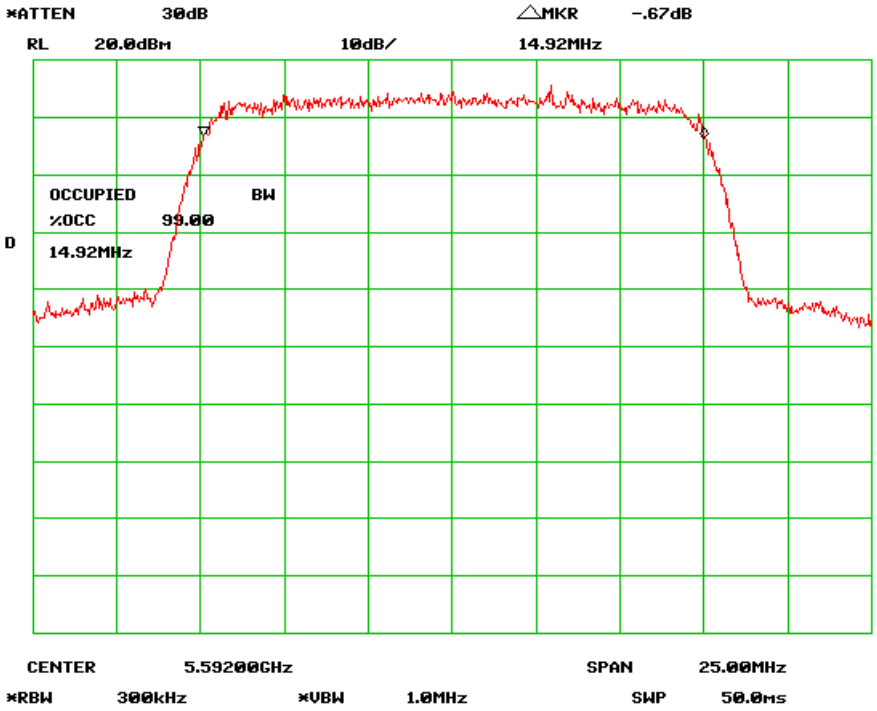
26 dB Bandwidth-Mid Channel



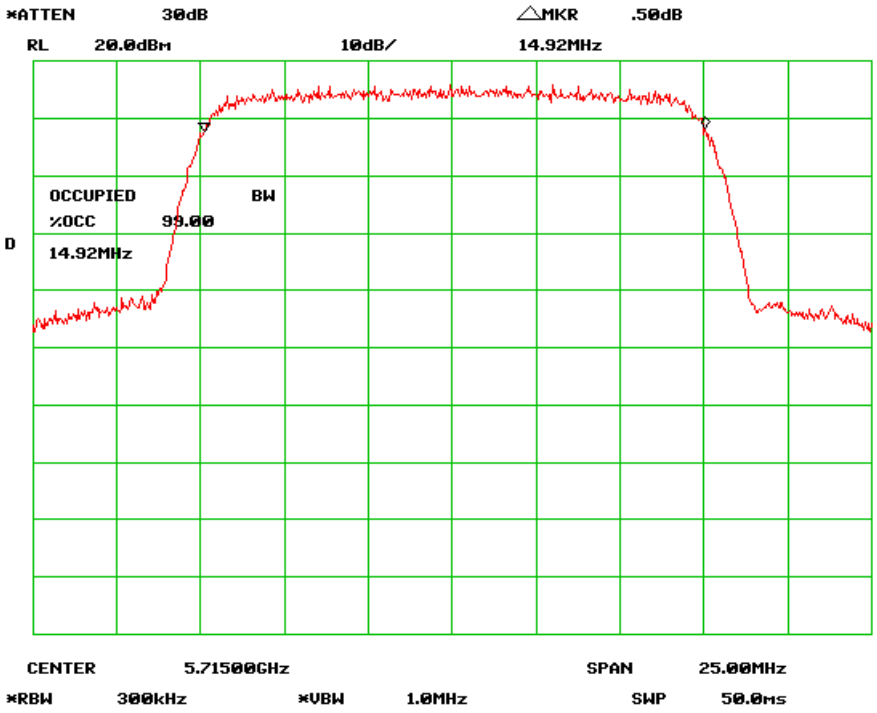
26 dB Bandwidth-High Channel



99% Bandwidth –Low Channel



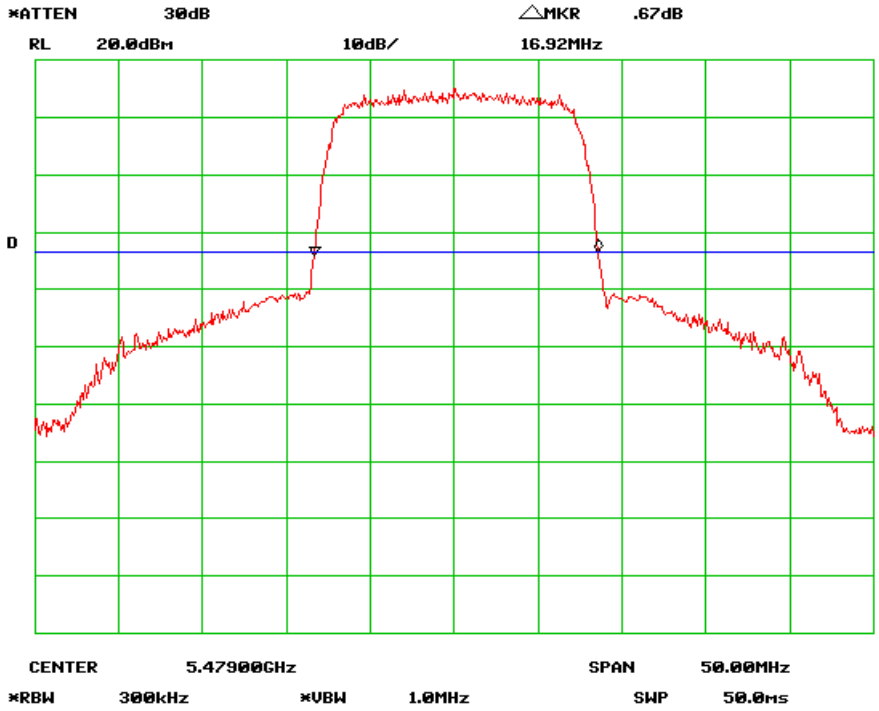
99% Bandwidth –Mid Channel



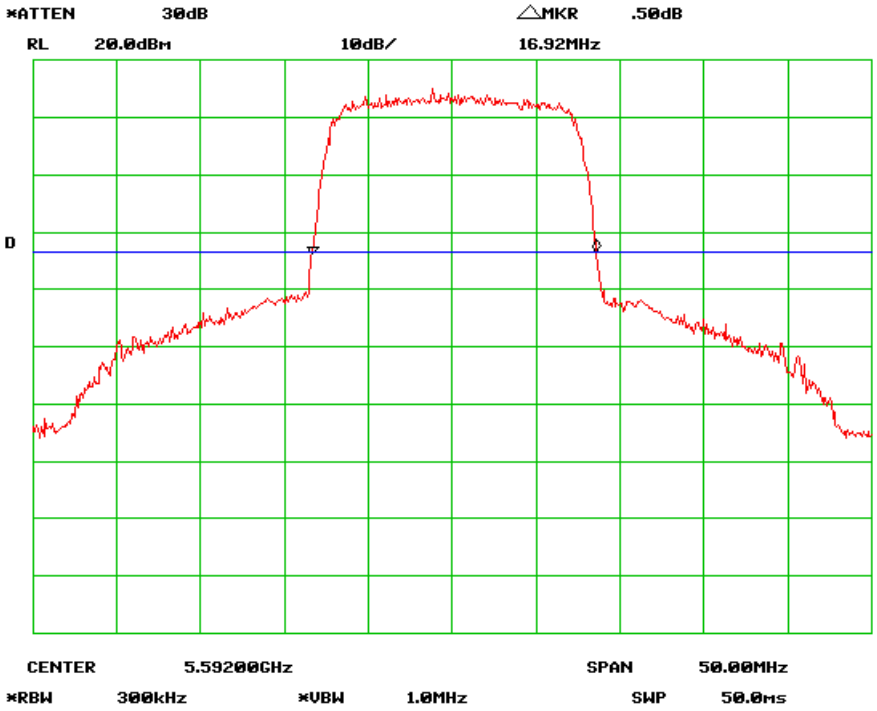
99% Bandwidth –High Channel

Mode: 2 = 16QAM, 16MHz Channel Bandwidth

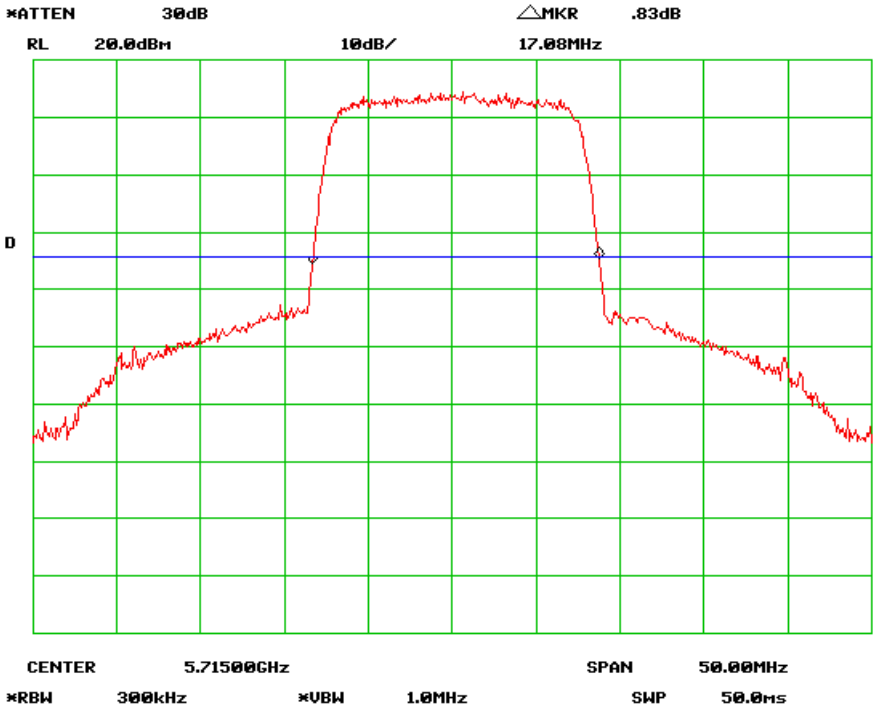
Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode 2	16MHz	Low Channel	16.92	14.88
	16MHz	Mid Channel	16.92	14.88
	16MHz	High Channel	17.08	14.88



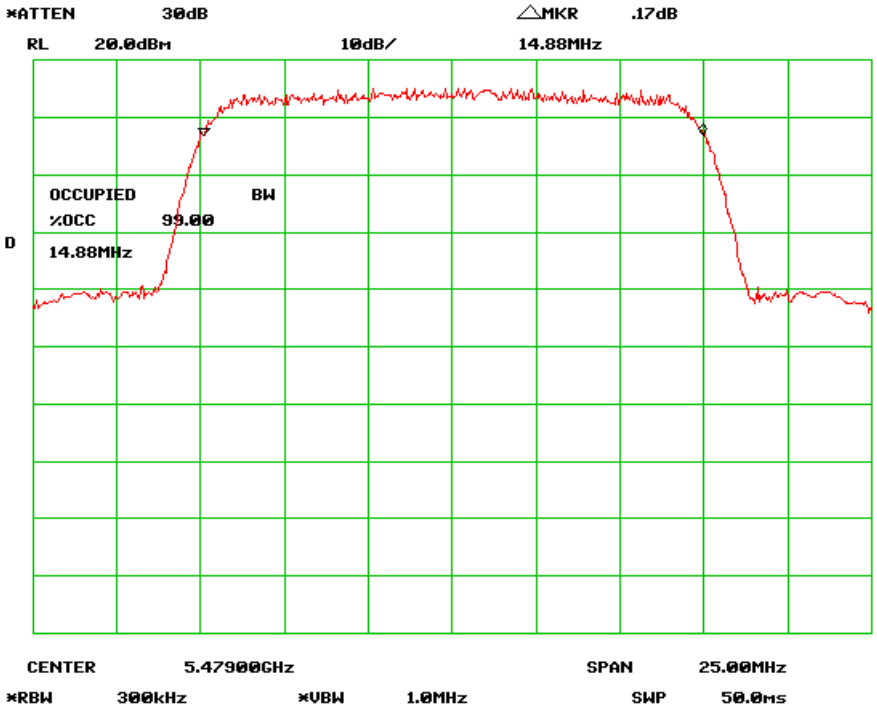
26 dB Bandwidth-Low Channel



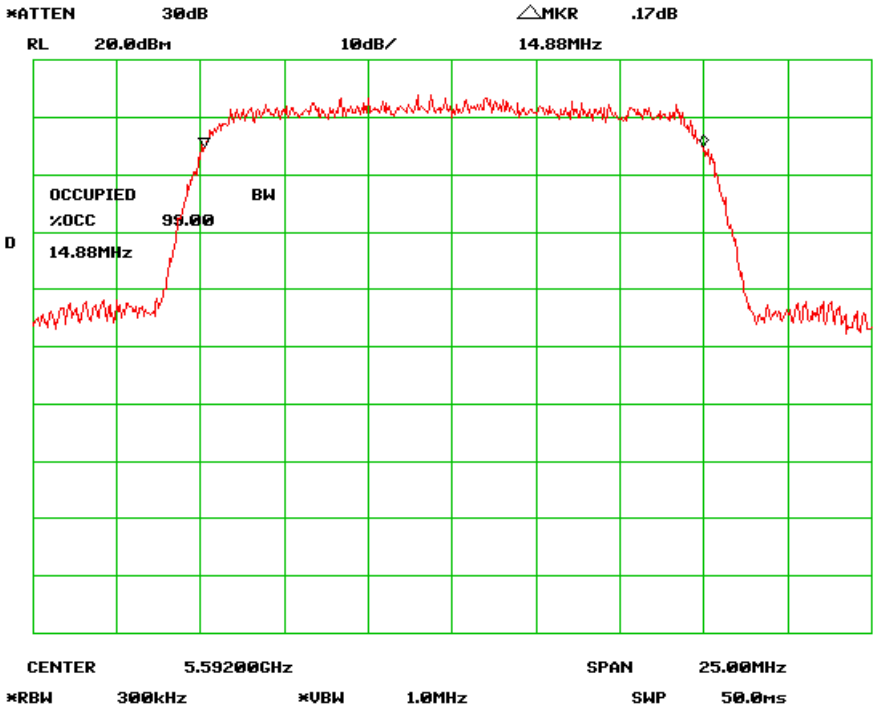
26 dB Bandwidth-Mid Channel



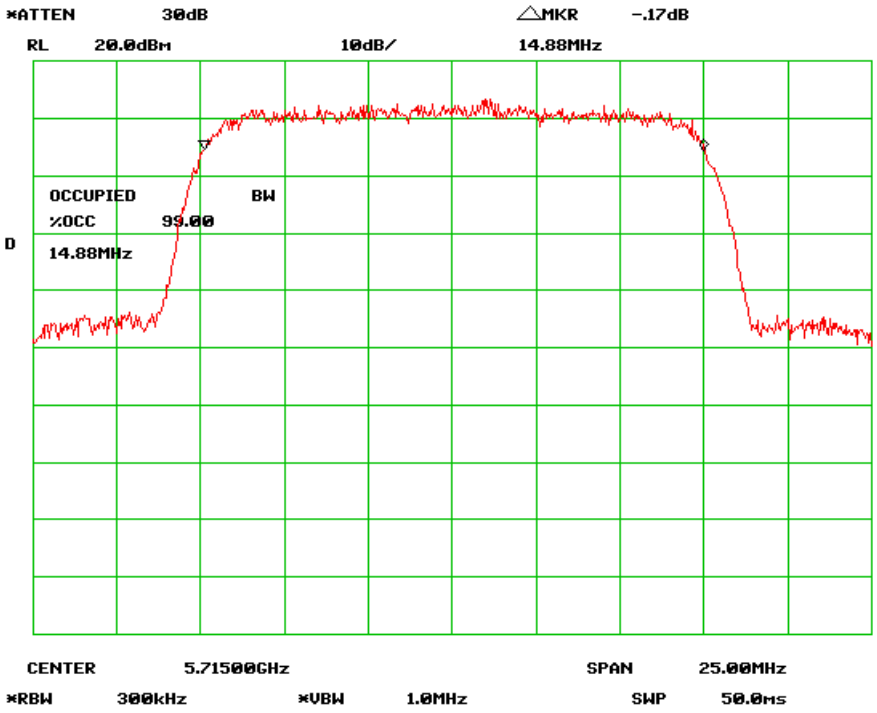
26 dB Bandwidth-High Channel



99% Bandwidth-Low Channel



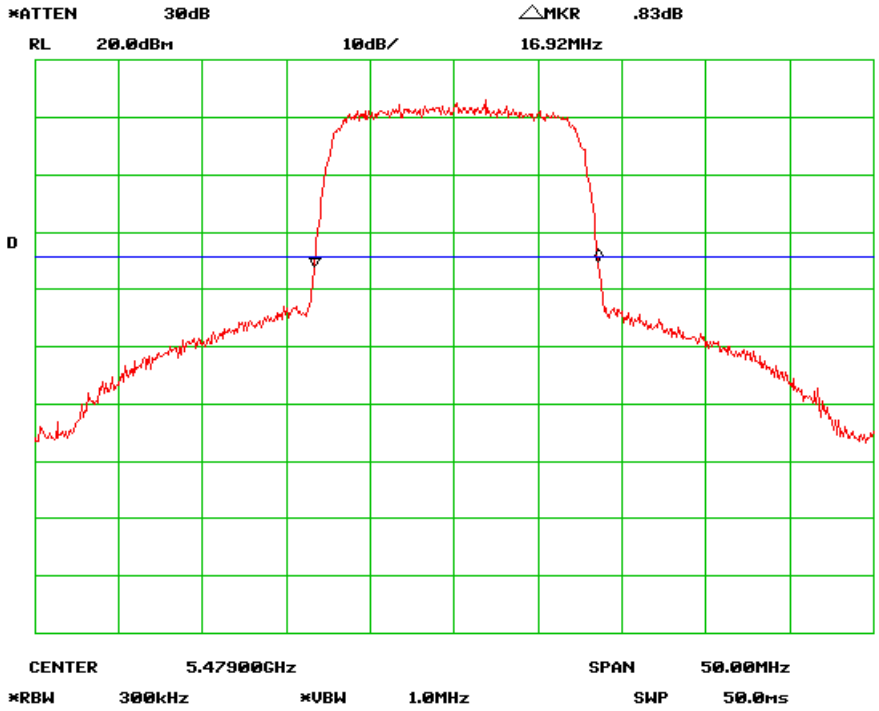
99% Bandwidth-Mid Channel



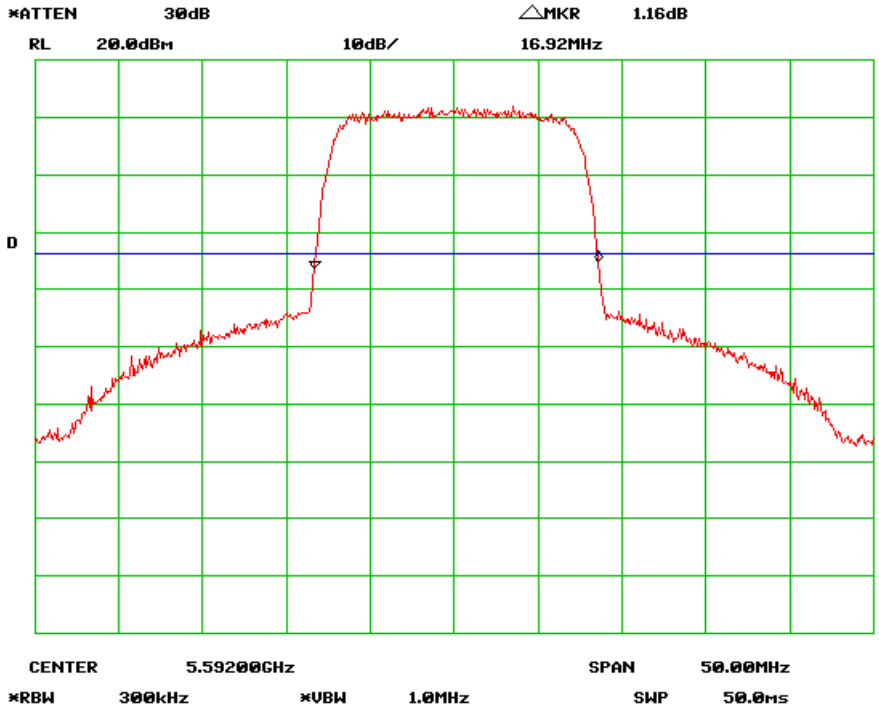
99% Bandwidth-High Channel

Mode: 3 = 64QAM, 16MHz Channel Bandwidth

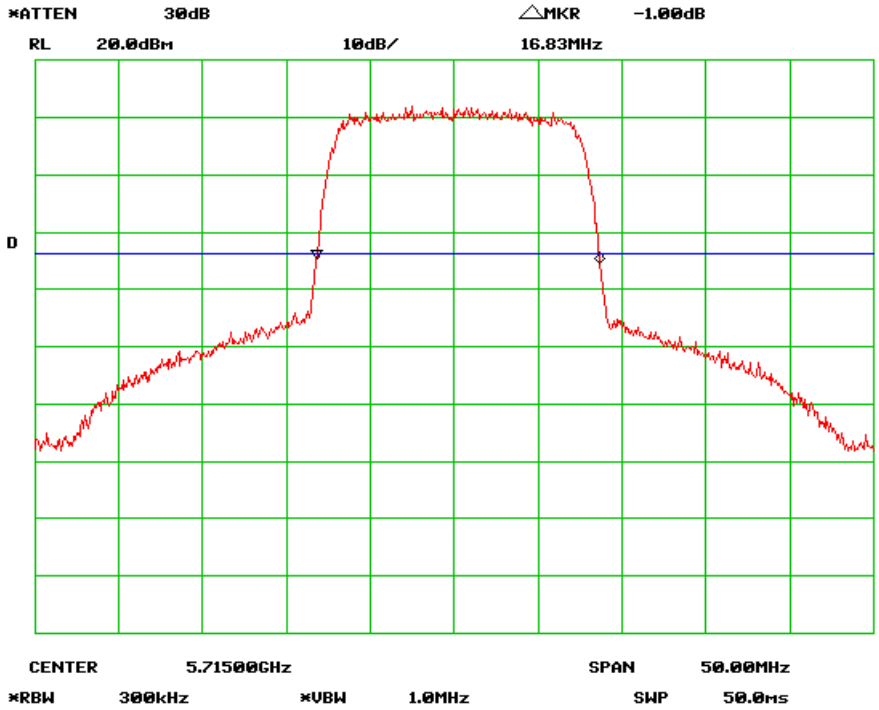
Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode 3	16MHz	Low Channel	16.92	14.88
	16MHz	Mid Channel	16.92	14.88
	16MHz	High Channel	16.83	14.92



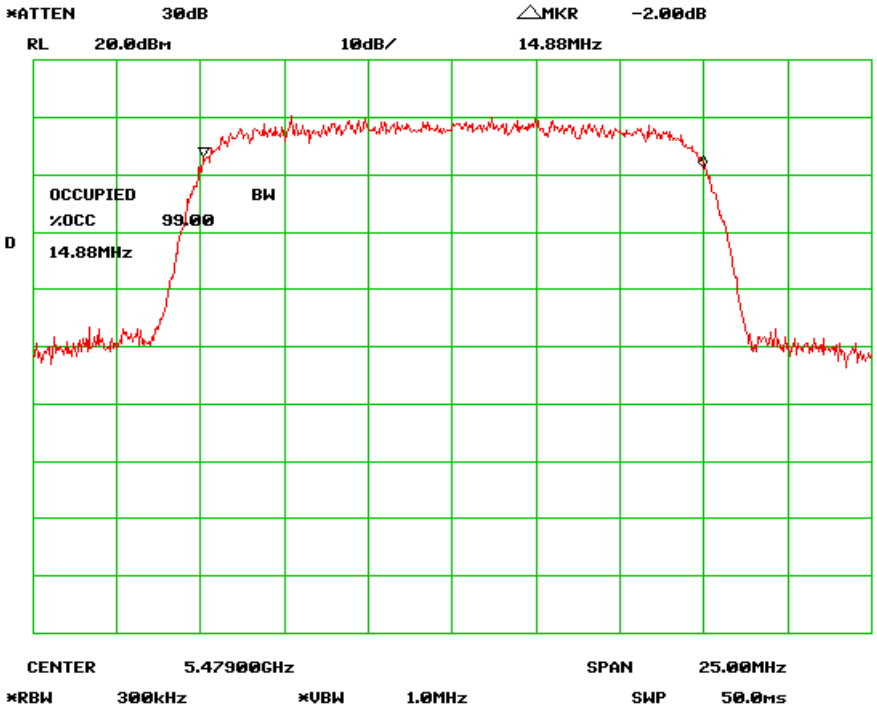
26 dB Bandwidth-Low Channel



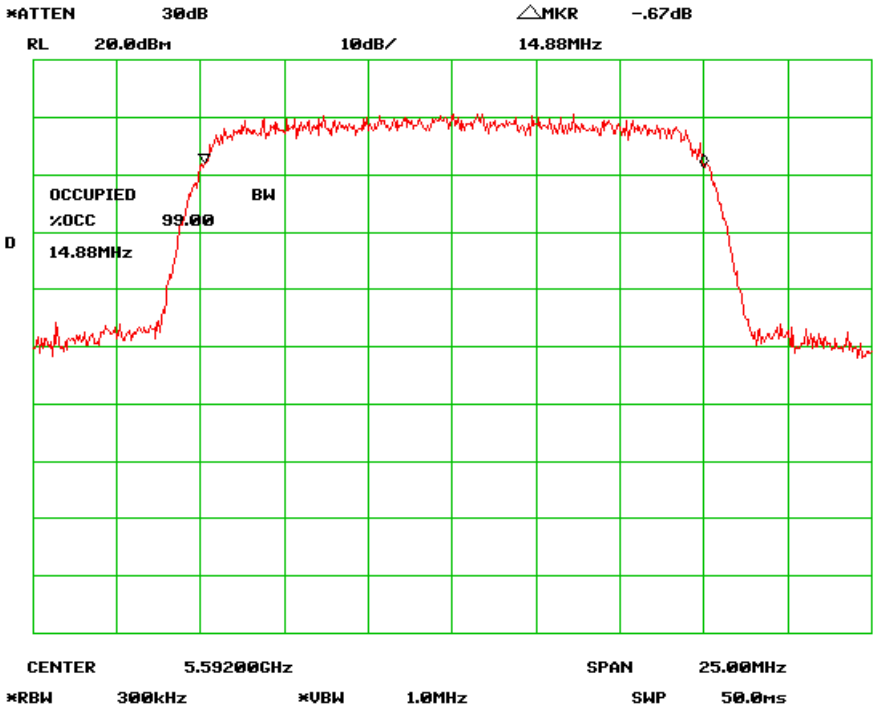
26 dB Bandwidth-Mid Channel



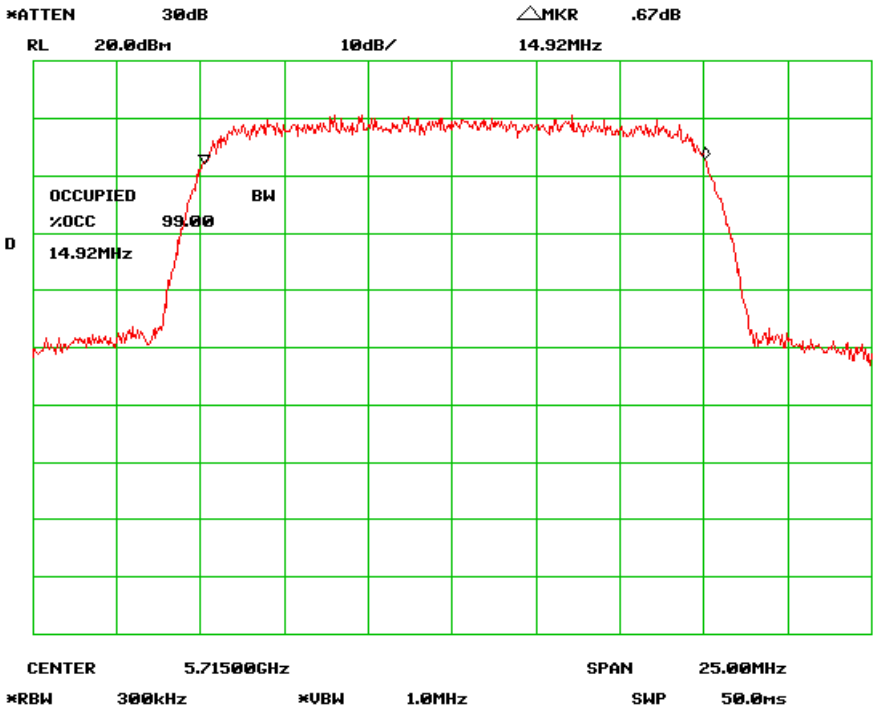
26 dB Bandwidth-High Channel



99% Bandwidth -Low Channel



99% Bandwidth -Mid Channel

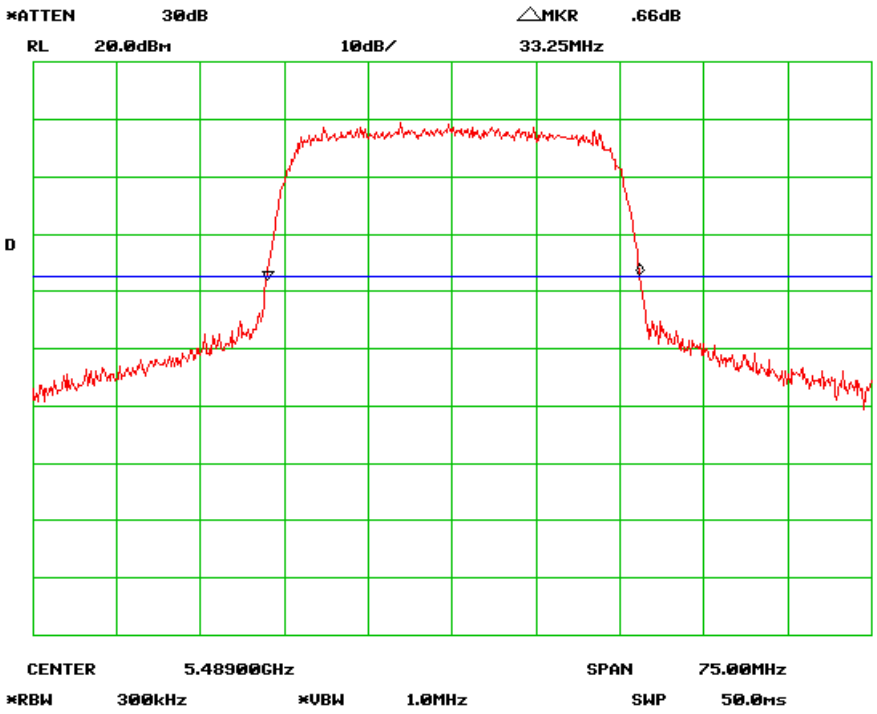


99% Bandwidth -High Channel

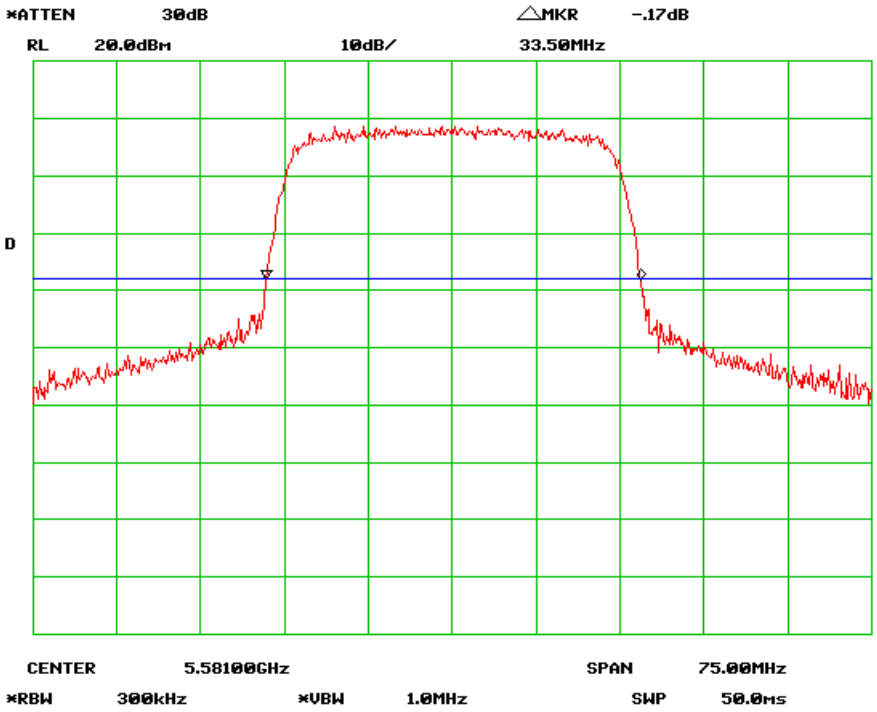
Mode: 1 = QPSK , 32MHz Channel Bandwidth

Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode 1	32MHz	Low Channel	33.25	29.92
	32MHz	Mid Channel	33.50	30.00
	32MHz	High Channel	33.75	30.08

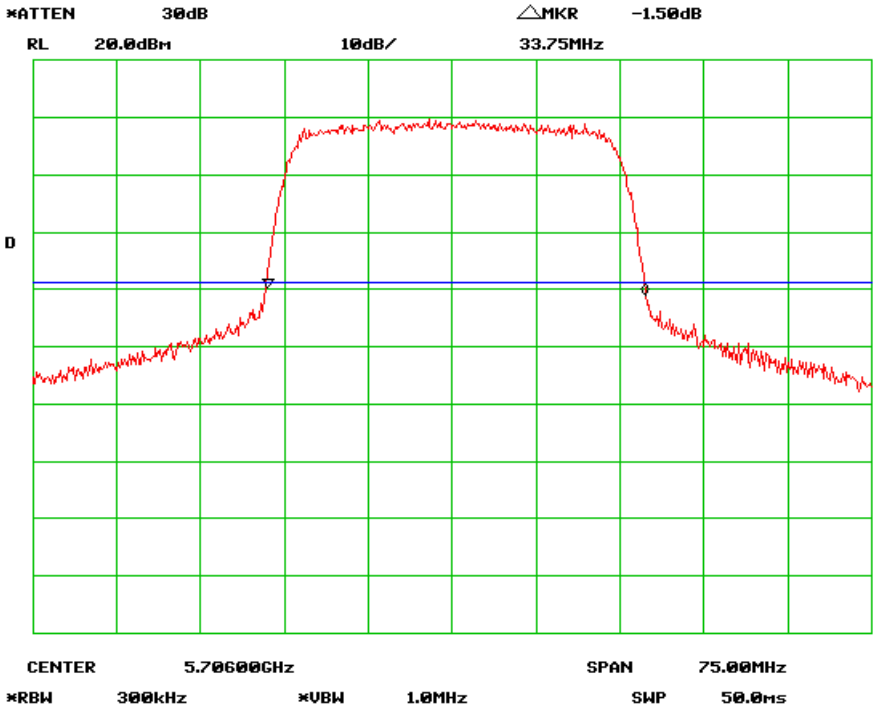
Refer to the attached plots.



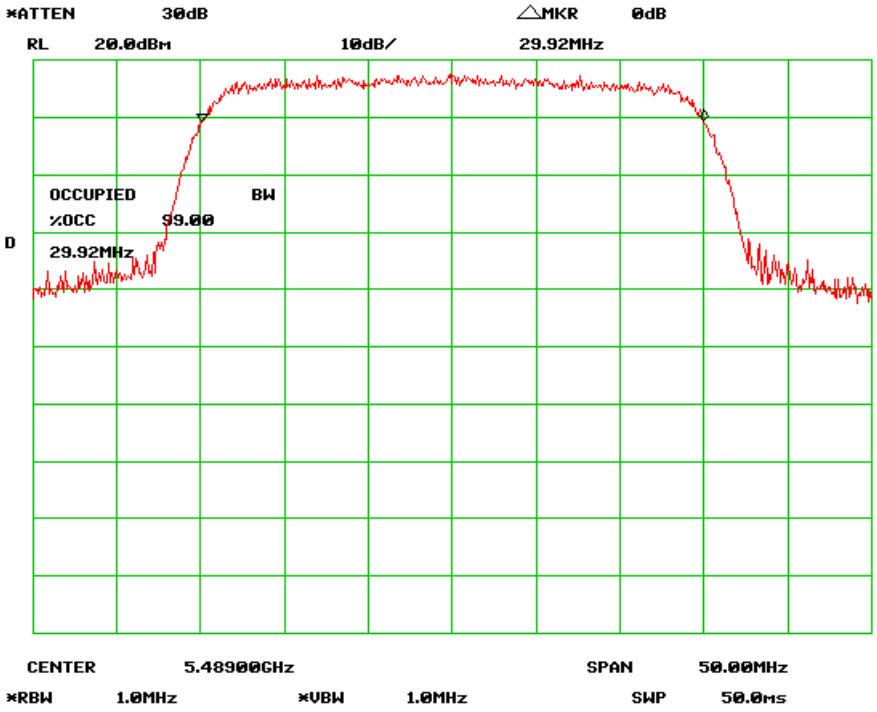
26 dB Bandwidth-Low Channel



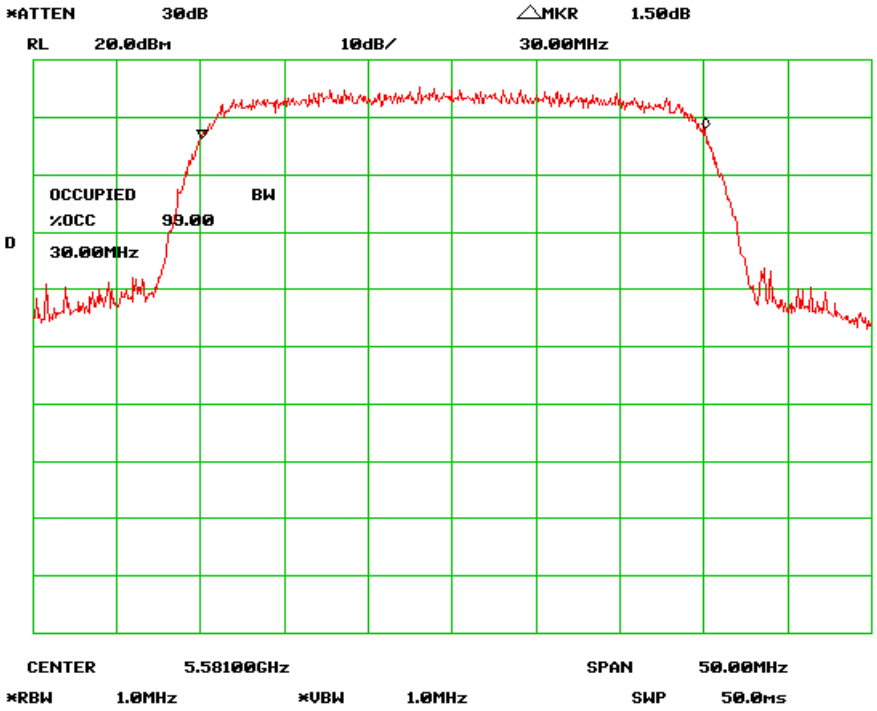
26 dB Bandwidth-Mid Channel



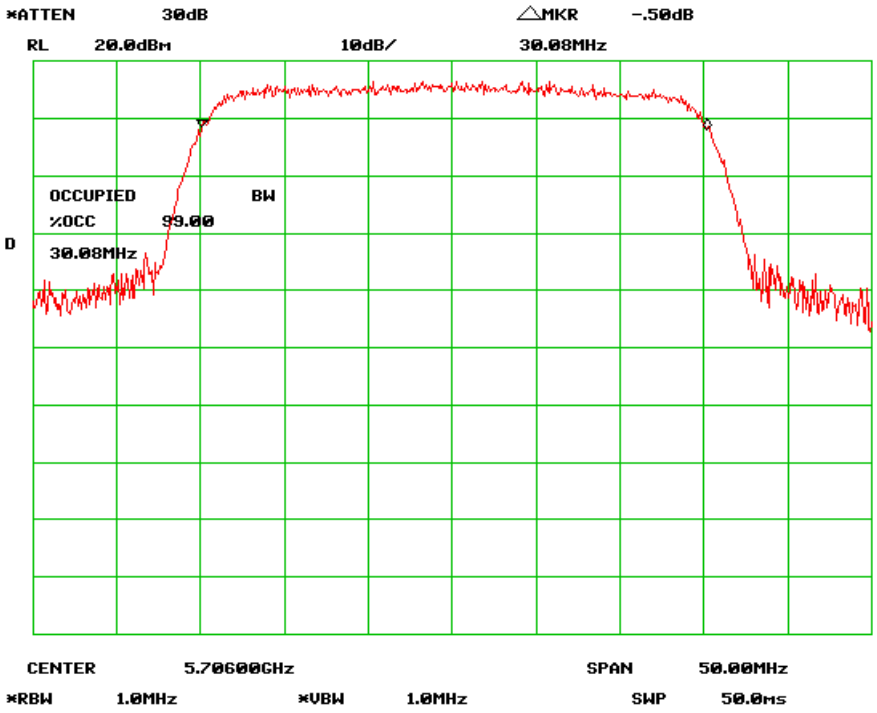
26 dB Bandwidth-High Channel



99% Bandwidth-Low Channel



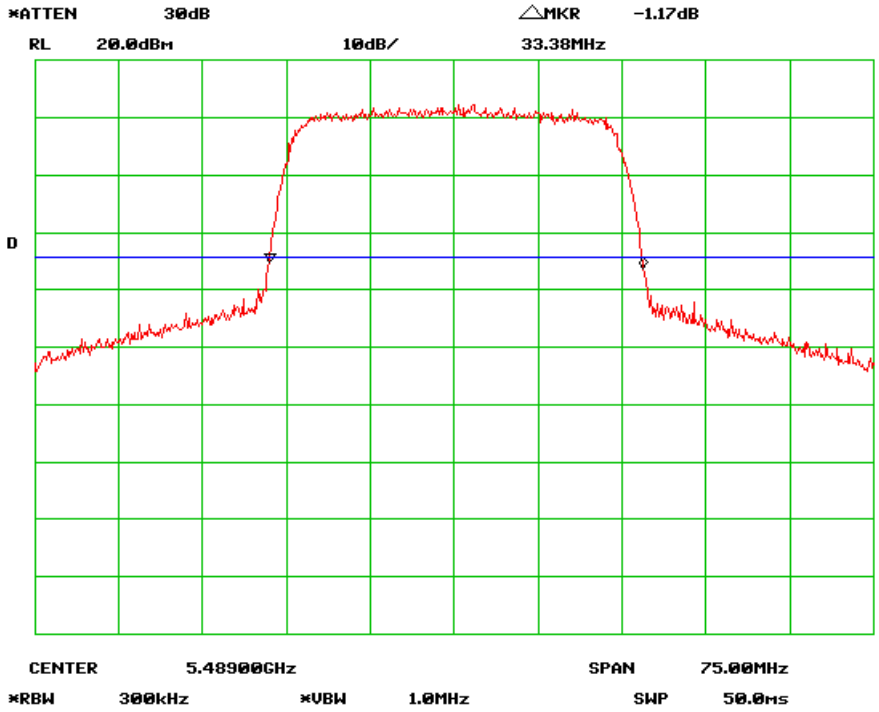
99% Bandwidth-Mid Channel



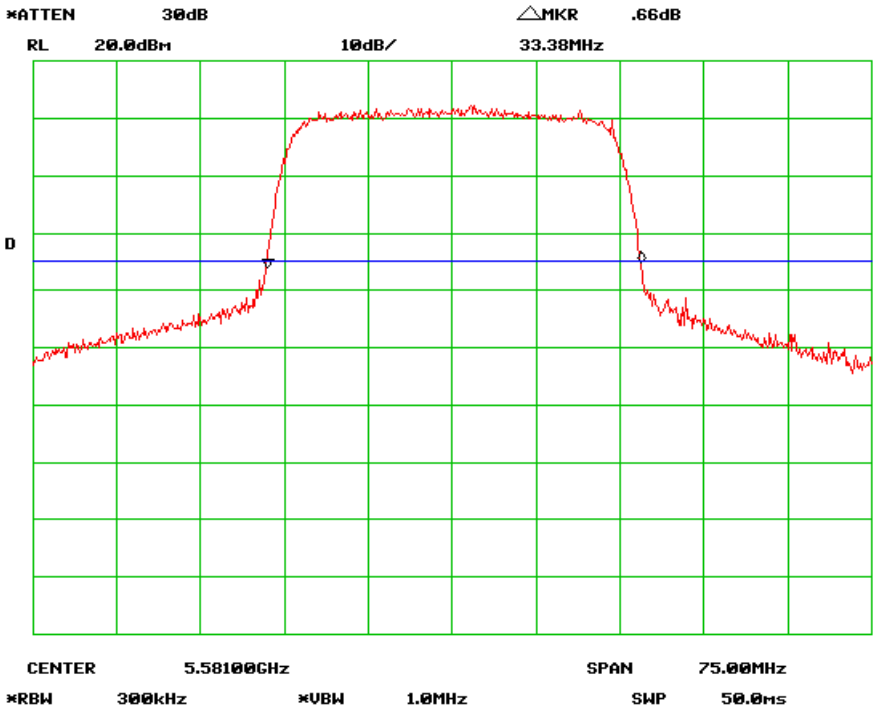
99% Bandwidth-High Channel

Mode: 2 = 16QAM, 32MHz Channel Bandwidth

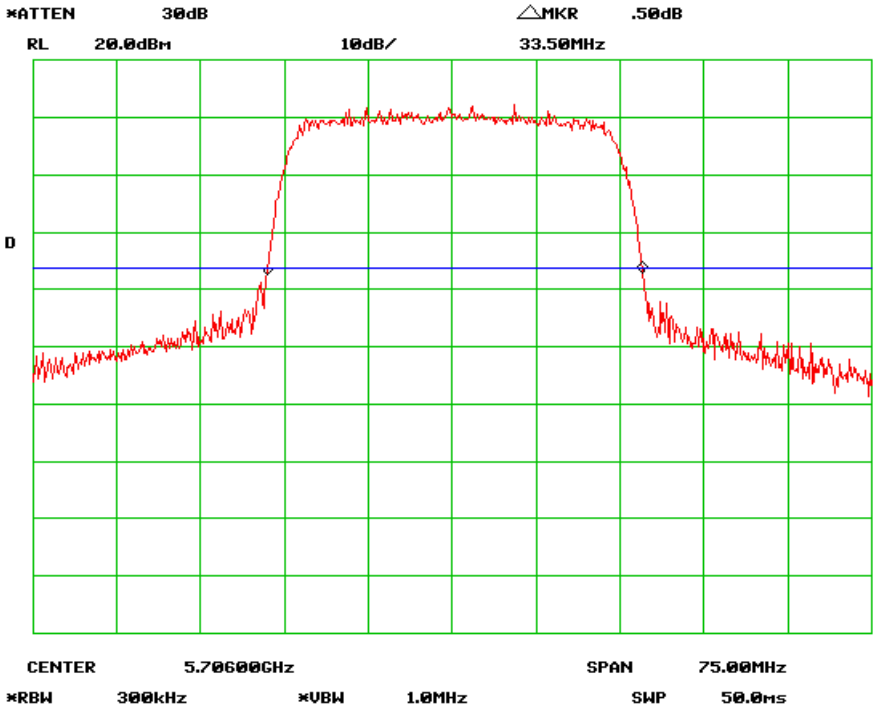
Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode 2	32MHz	Low Channel	33.38	29.92
	32MHz	Mid Channel	33.38	30.00
	32MHz	High Channel	33.50	30.00



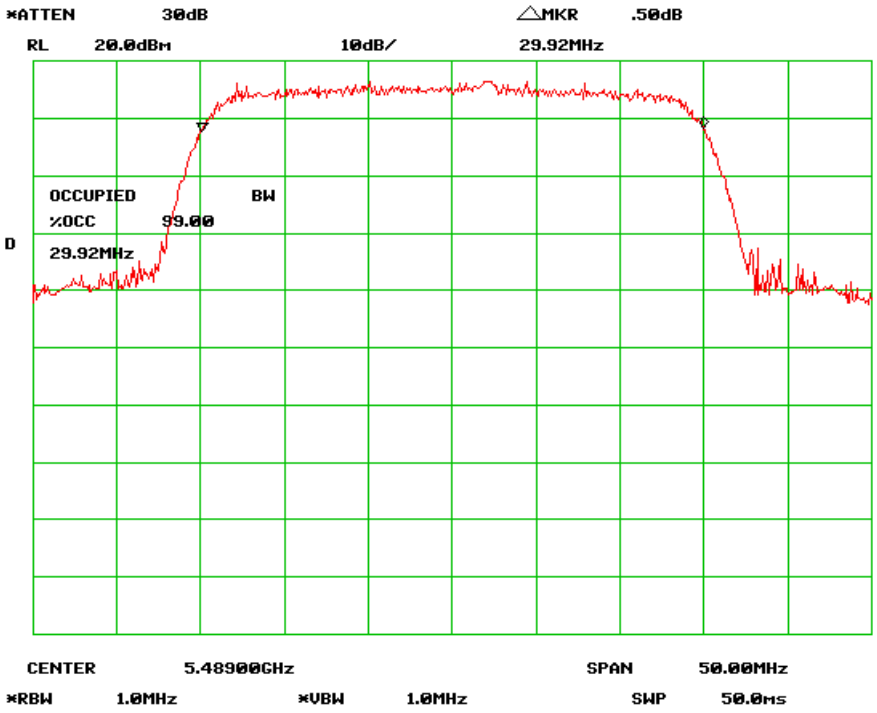
26 dB Bandwidth-Low Channel



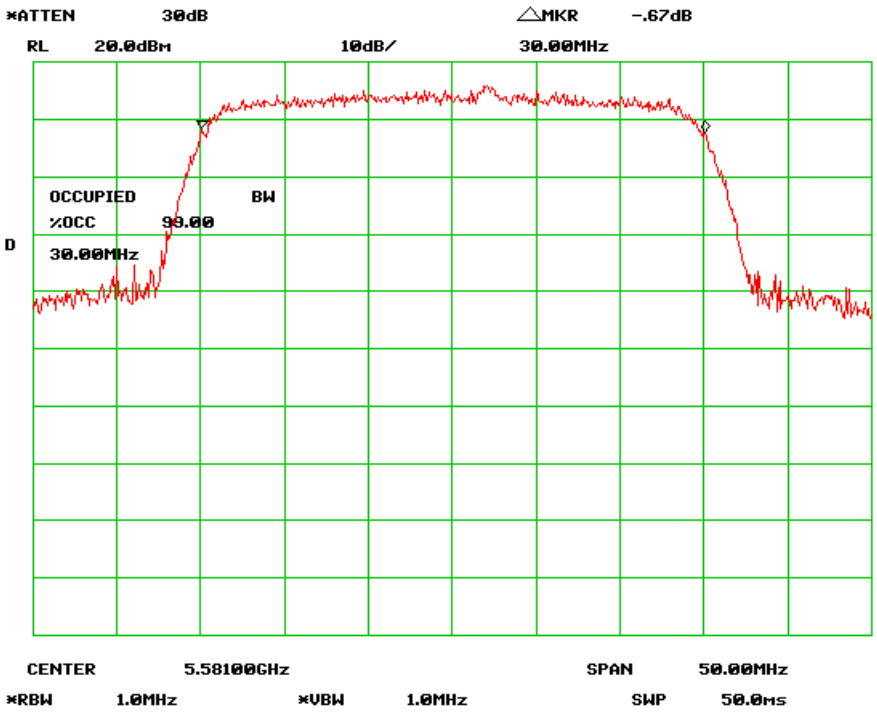
26 dB Bandwidth-Mid Channel



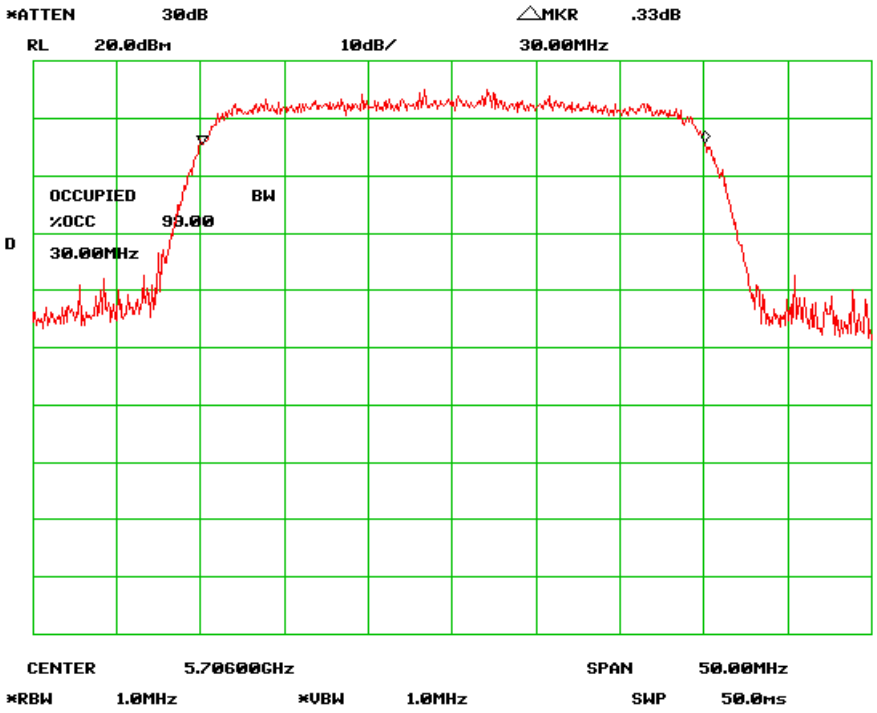
26 dB Bandwidth-High Channel



99% Bandwidth – Low Channel



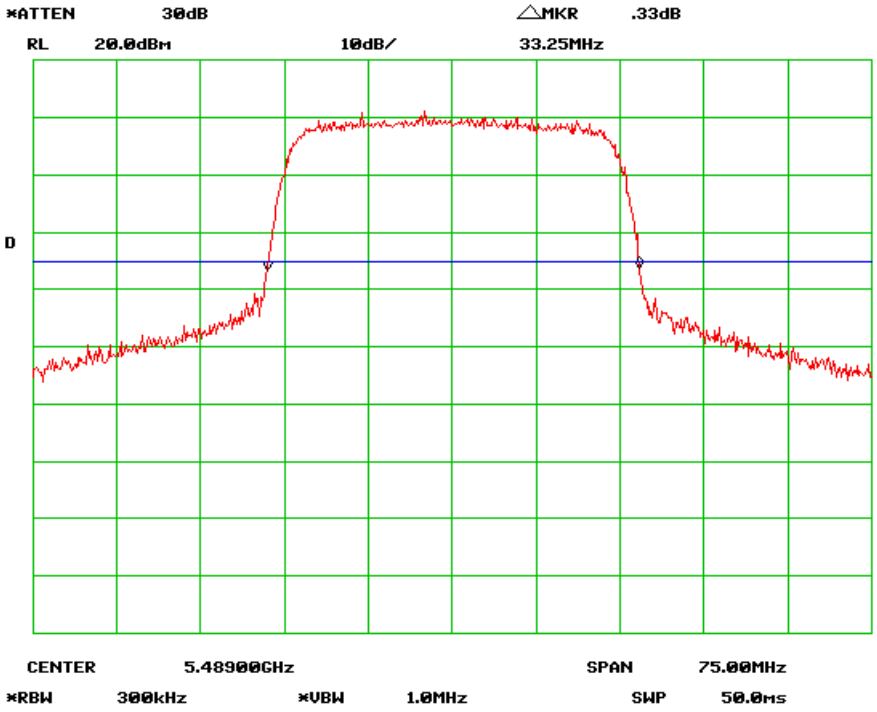
99% Bandwidth – Mid Channel



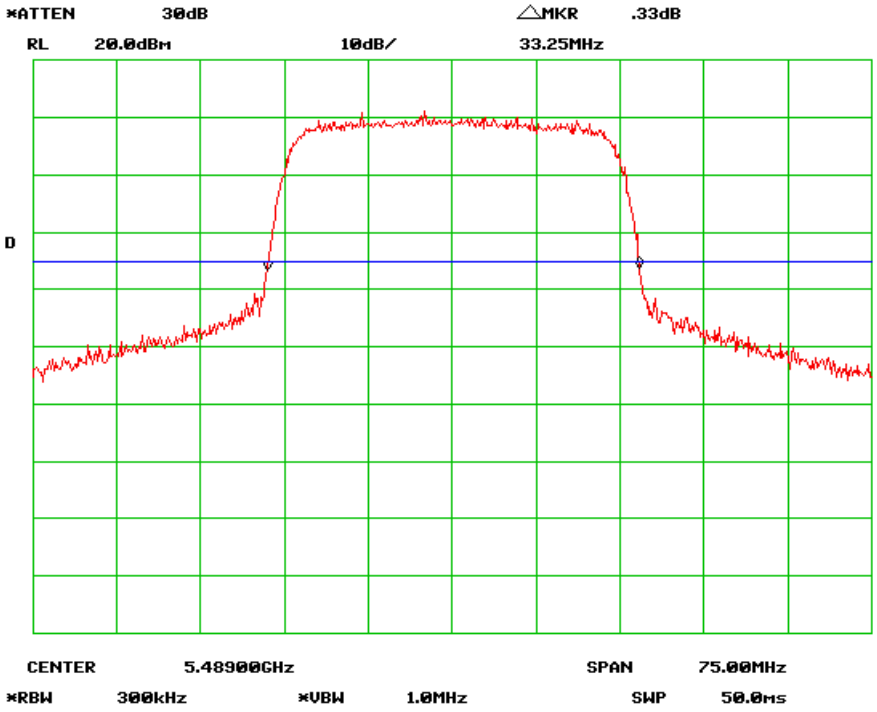
99% Bandwidth – High Channel

Mode: 3 = 64QAM, 32MHz Channel Bandwidth

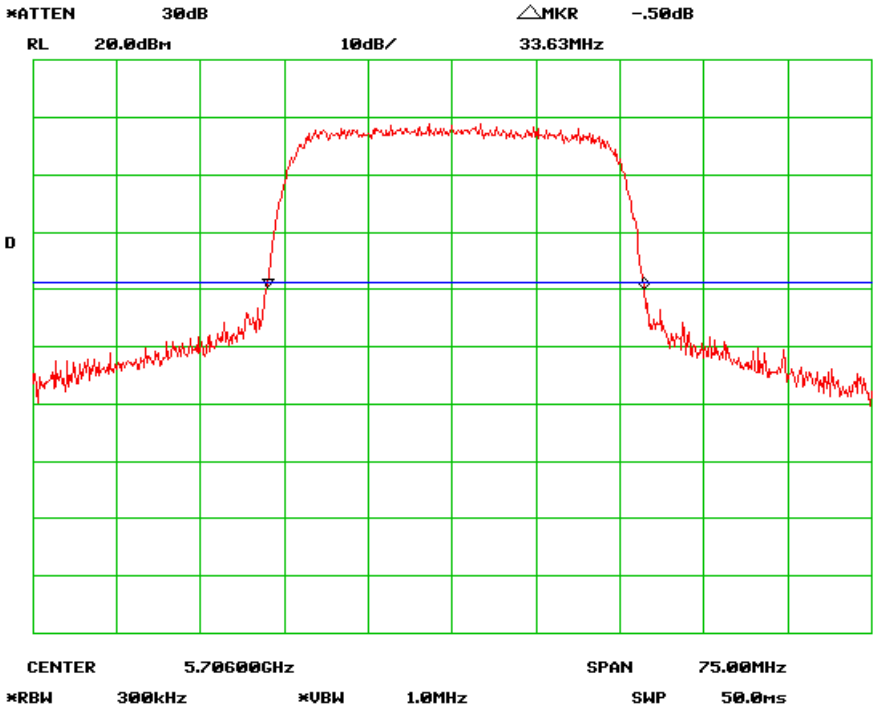
Mode	Channel Bandwidth	Mode	26 dB Channel Bandwidth (MHz)	99% Channel Bandwidth (MHz)
Mode 3	32MHz	Low Channel	33.25	29.83
	32MHz	Mid Channel	33.25	29.92
	32MHz	High Channel	33.63	30.00



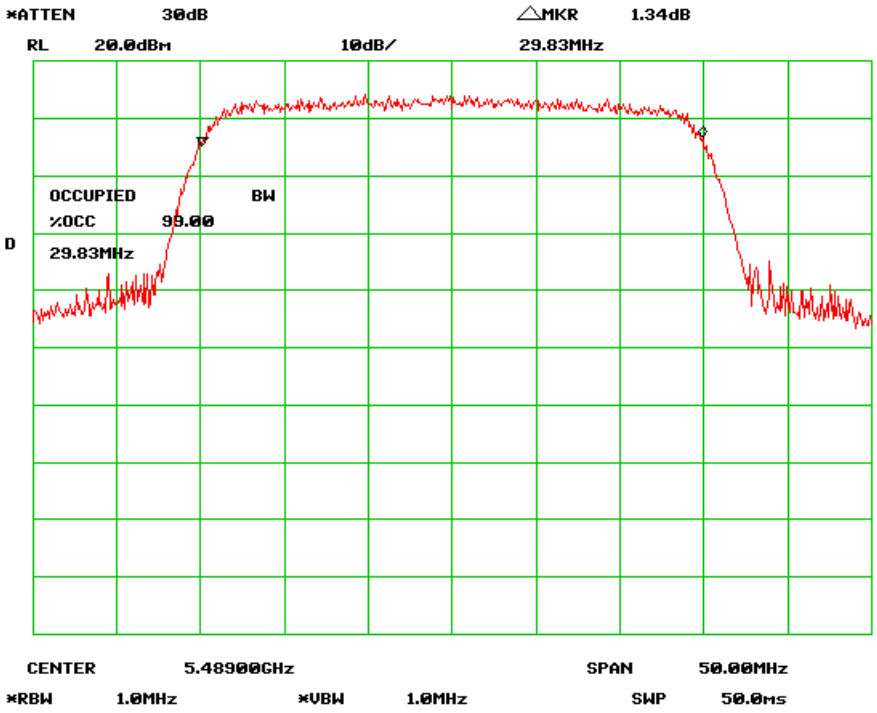
26 dB Bandwidth – Low Channel



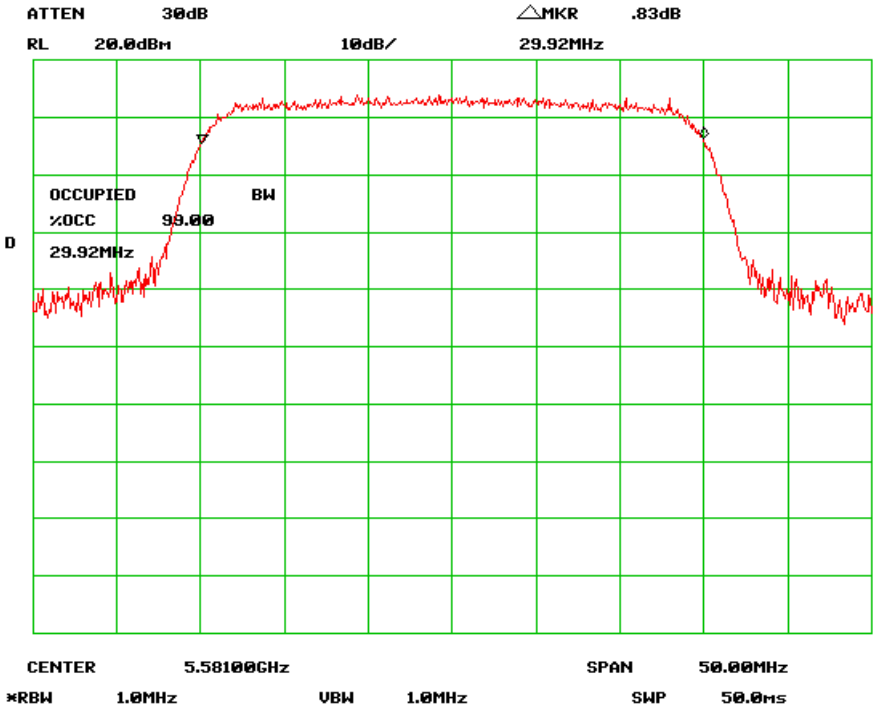
26 dB Bandwidth – Mid Channel



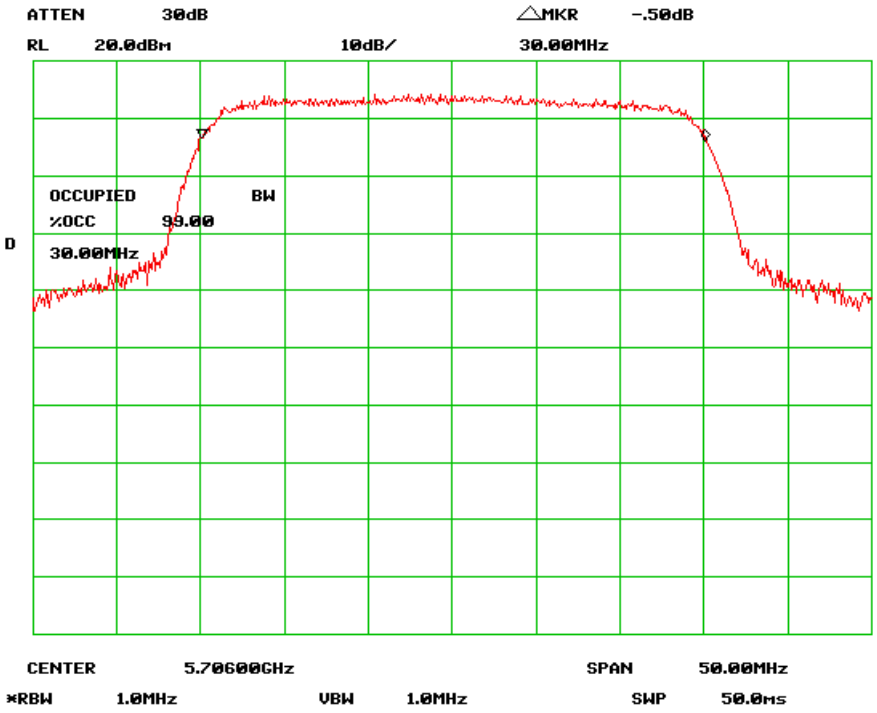
26 dB Bandwidth – High Channel



99% Bandwidth –Low Channel



99% Bandwidth –Mid Channel



99% Bandwidth –High Channel

5.4 Peak Spectral Density

1. Conducted Measurement
   EUT was set for low , mid, high channel with modulated mode and highest RF output power.
   The spectrum analyzer was connected to the antenna terminal.
2. Conducted Emissions Measurement Uncertainty
   All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz – 40GHz is ±1.5dB.
3. Environmental Conditions

Temperature	23°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar

4. Test Date : August 01-15, 2012
   Tested By : Choon Sian Ooi

Standard Requirement : 47 CFR §15.407(a); RSS210(A9.2(2))

For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Procedures: KDB 789033 D01, Section E & F

Test Result :

Refer to the attached plots.

Mode	Gain (dBi)	Antenna Gain >6dBi (Antenna Gain – 6dBi)	Max Allowable Peak Power Spectral Density (dBm)
Panel	29.0	23	-12
Parabolic Dish	37.9	31.9	-20.9

Note: Test plot is measured at Max conducted RF output power configuration when antenna gain is less than 6dBi. If higher gain antenna is used, power must be reduced to stated value on the table

Mode: 1 = QPSK, 8MHz Channel Bandwidth

802.11a	Channel Frequency (MHz)	Channel	Peak-Max-hold Spectrum (dB)	Measured Peak Spectral Density (dBm/MHz)	Measured Peak Excursion ratio (dB)	Peak Excursion Ratio Limit (dB)
5.25–5.35 GHz	5257	Low	15.30	10.39	4.91	13
	5300	Mid	15.67	10.98	4.69	13
	5343	High	15.53	10.37	5.16	13
5.47–5.725 GHz	5477	Low	16.41	10.92	5.49	13
	5596	Mid	15.38	10.78	4.60	13
	5718	High	15.14	10.50	4.64	13

Mode: 2 = 16QAM, 8MHz Channel Bandwidth

802.11a	Channel Frequency (MHz)	Channel	Peak-Max-hold Spectrum (dB)	Measured Peak Spectral Density (dBm/MHz)	Measured Peak Excursion ratio (dB)	Peak Excursion Ratio Limit (dB)
5.25–5.35 GHz	5257	Low	19.05	10.15	8.90	13
	5300	Mid	18.23	10.58	7.65	13
	5343	High	19.14	10.33	8.81	13
5.47–5.725 GHz	5477	Low	18.99	10.97	8.02	13
	5596	Mid	18.59	10.42	8.17	13
	5718	High	19.08	10.37	8.71	13

Mode: 3 = 64QAM, 8MHz Channel Bandwidth

802.11a	Channel Frequency (MHz)	Channel	Peak-Max-hold Spectrum (dB)	Measured Peak Spectral Density (dBm/MHz)	Measured Peak Excursion ratio (dB)	Peak Excursion Ratio Limit (dB)
5.25–5.35 GHz	5257	Low	17.96	10.69	7.27	13
	5300	Mid	17.72	10.08	7.64	13
	5343	High	16.84	10.31	6.53	13
5.47–5.725 GHz	5477	Low	17.93	10.94	6.99	13
	5596	Mid	17.34	10.77	6.57	13
	5718	High	17.13	10.90	6.23	13

Mode: 1 = QPSK, 16MHz Channel Bandwidth

802.11a	Channel Frequency (MHz)	Channel	Peak-Max-hold Spectrum (dB)	Measured Peak Spectral Density (dBm/MHz)	Measured Peak Excursion ratio (dB)	Peak Excursion Ratio Limit (dB)
5.25–5.35 GHz	5261	Low	17.59	10.39	7.20	13
	5300	Mid	17.09	10.26	6.83	13
	5340	High	16.94	10.88	6.06	13
5.47–5.725 GHz	5479	Low	16.70	10.86	5.84	13
	5592	Mid	18.44	10.40	8.04	13
	5715	High	18.36	10.82	7.54	13

Mode: 2 = 16QAM, 16MHz Channel Bandwidth

802.11a	Channel Frequency (MHz)	Channel	Peak-Max-hold Spectrum (dB)	Measured Peak Spectral Density (dBm/MHz)	Measured Peak Excursion ratio (dB)	Peak Excursion Ratio Limit (dB)
5.25–5.35 GHz	5261	Low	18.81	10.73	8.08	13
	5300	Mid	17.27	10.92	6.35	13
	5340	High	18.28	10.65	7.63	13
5.47–5.725 GHz	5479	Low	19.68	10.51	9.17	13
	5592	Mid	19.11	10.98	8.13	13
	5715	High	19.67	10.41	9.26	13

Mode: 3 = 64QAM, 16MHz Channel Bandwidth

802.11a	Channel Frequency (MHz)	Channel	Peak-Max-hold Spectrum (dB)	Measured Peak Spectral Density (dBm/MHz)	Measured Peak Excursion ratio (dB)	Peak Excursion Ratio Limit (dB)
5.25–5.35 GHz	5261	Low	16.09	9.62	6.47	13
	5300	Mid	15.51	9.53	5.98	13
	5340	High	16.40	9.98	6.42	13
5.47–5.725 GHz	5479	Low	17.49	9.95	7.54	13
	5592	Mid	17.25	9.73	7.52	13
	5715	High	17.34	10.06	7.28	13

Mode: 1 = QPSK, 32MHz Channel Bandwidth

802.11a	Channel Frequency (MHz)	Channel	Peak-Max-hold Spectrum (dB)	Measured Peak Spectral Density (dBm/MHz)	Measured Peak Excursion ratio (dB)	Peak Excursion Ratio Limit (dB)
5.25–5.35 GHz	5269	Low	14.24	8.52	5.72	13
	5300	Mid	15.34	8.50	6.84	13
	5331	High	13.34	8.28	5.06	13
5.47–5.725 GHz	5489	Low	15.90	7.42	8.48	13
	5581	Mid	16.10	7.83	8.27	13
	5706	High	16.50	8.13	8.37	13

Mode: 2 = 16QAM, 32MHz Channel Bandwidth

802.11a	Channel Frequency (MHz)	Channel	Peak-Max-hold Spectrum (dB)	Measured Peak Spectral Density (dBm/MHz)	Measured Peak Excursion ratio (dB)	Peak Excursion Ratio Limit (dB)
5.25–5.35 GHz	5269	Low	16.29	9.46	6.83	13
	5300	Mid	15.99	9.22	6.77	13
	5331	High	16.22	9.11	7.11	13
5.47–5.725 GHz	5489	Low	17.23	9.03	8.20	13
	5581	Mid	16.70	9.21	7.49	13
	5706	High	15.61	8.37	7.24	13

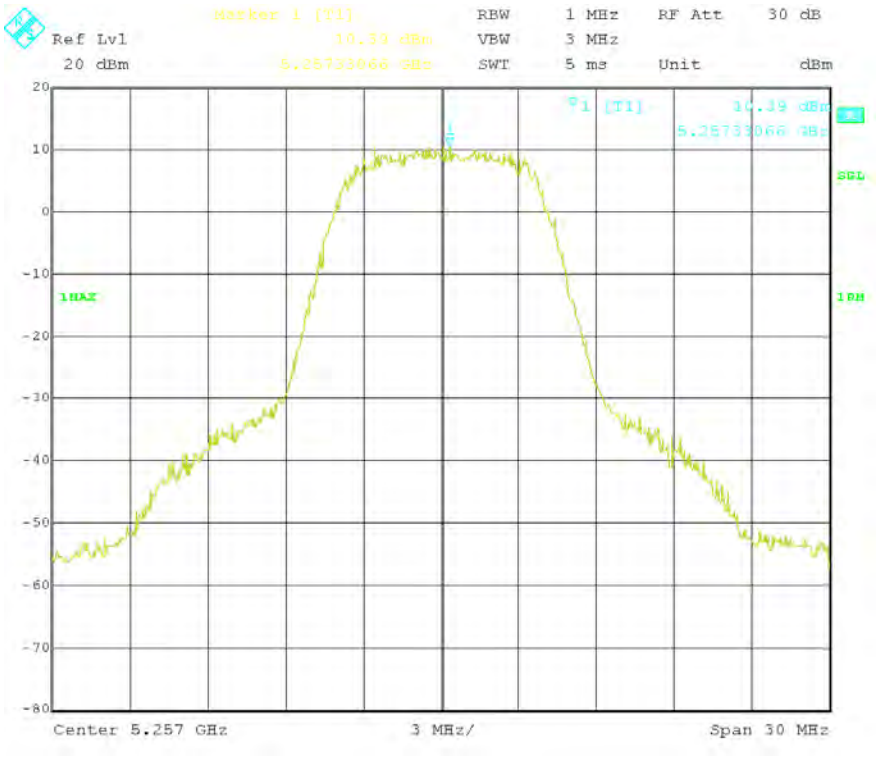
Mode: 3 = 64QAM, 32MHz Channel Bandwidth

802.11a	Channel Frequency (MHz)	Channel	Peak-Max-hold Spectrum (dB)	Measured Peak Spectral Density (dBm/MHz)	Measured Peak Excursion ratio (dB)	Peak Excursion Ratio Limit (dB)
5.25–5.35 GHz	5269	Low	14.56	7.33	7.23	13
	5300	Mid	13.58	6.73	6.85	13
	5331	High	14.78	6.67	8.11	13
5.47–5.725 GHz	5489	Low	15.10	7.42	7.68	13
	5581	Mid	14.80	7.83	6.97	13
	5706	High	14.68	7.83	6.85	13

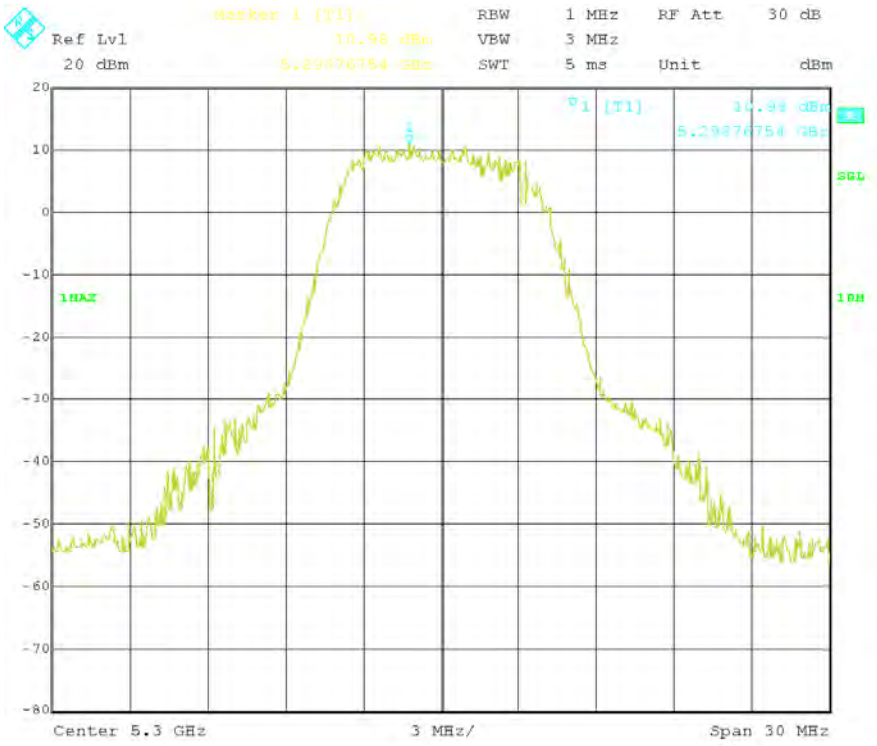
5.2GHz Band

Mode: 1 = QPSK, 8MHz Channel Bandwidth

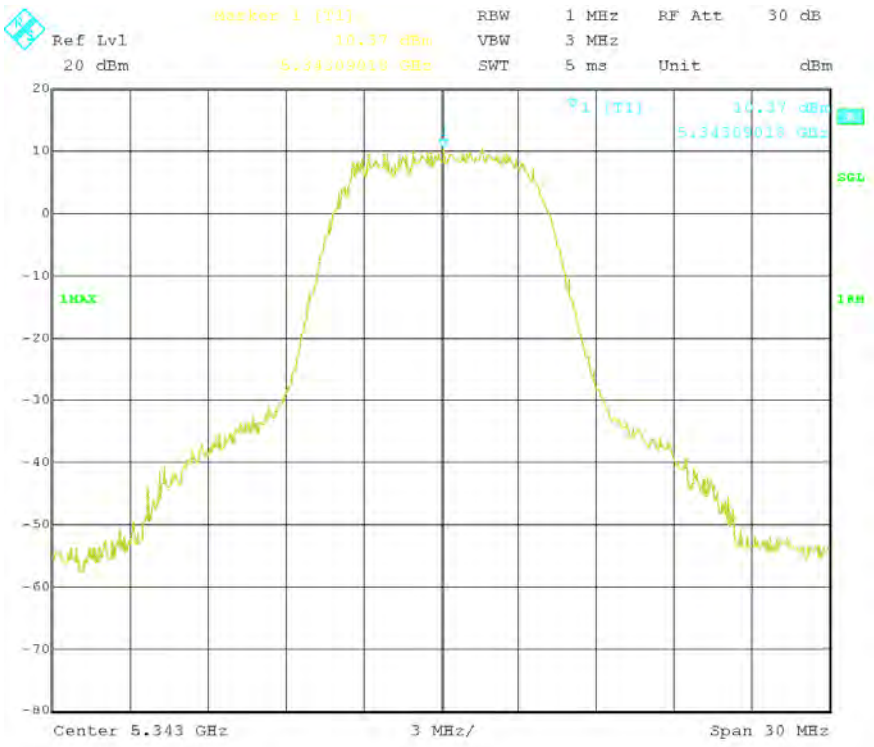
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode1	8MHz	Low Channel	10.39
	8MHz	Mid Channel	10.98
	8MHz	High Channel	10.37



Low Channel



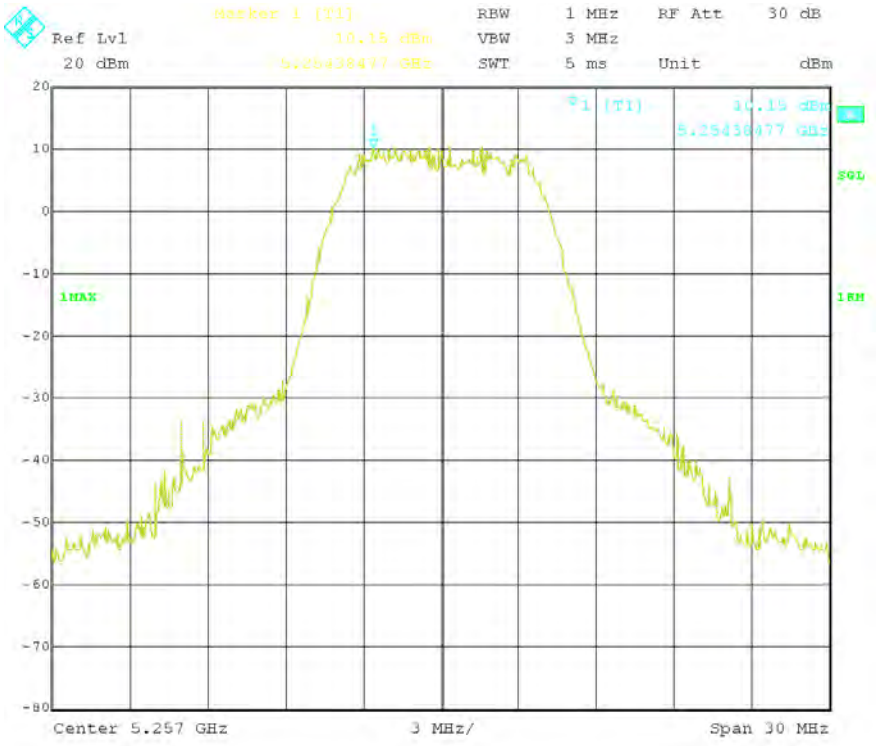
Mid Channel



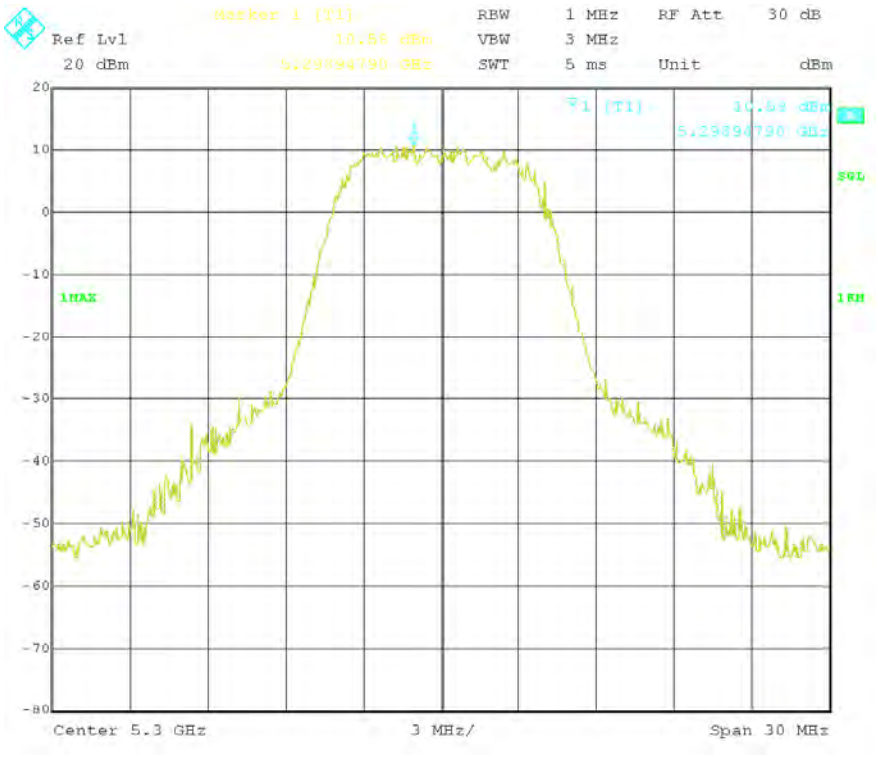
High Channel

Mode: 2 = 16QAM, 8MHz Channel Bandwidth

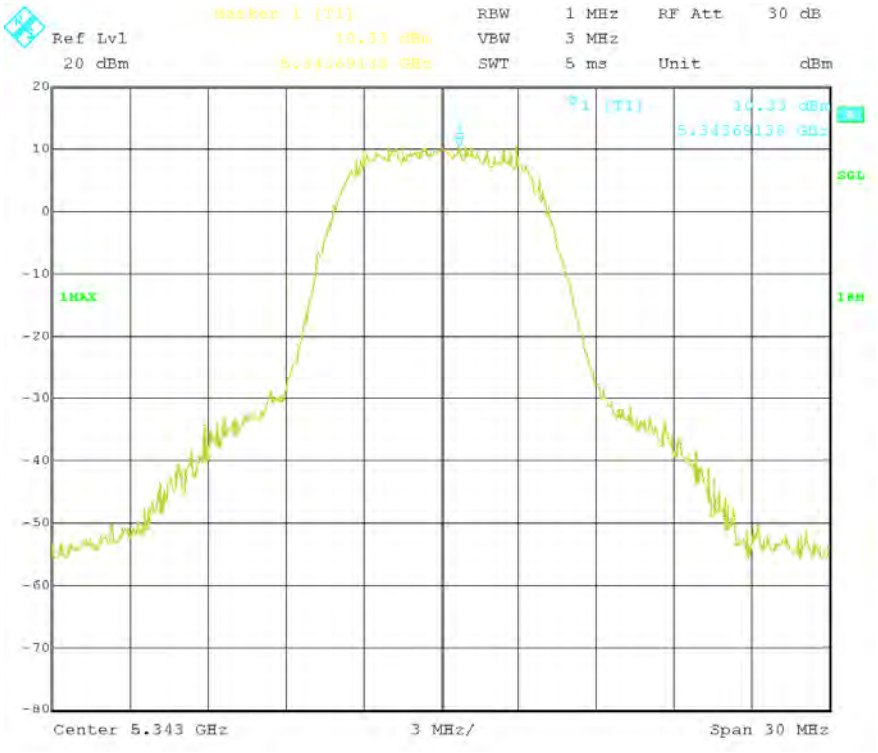
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode1	8MHz	Low Channel	10.15
	8MHz	Mid Channel	10.58
	8MHz	High Channel	10.33



Low Channel



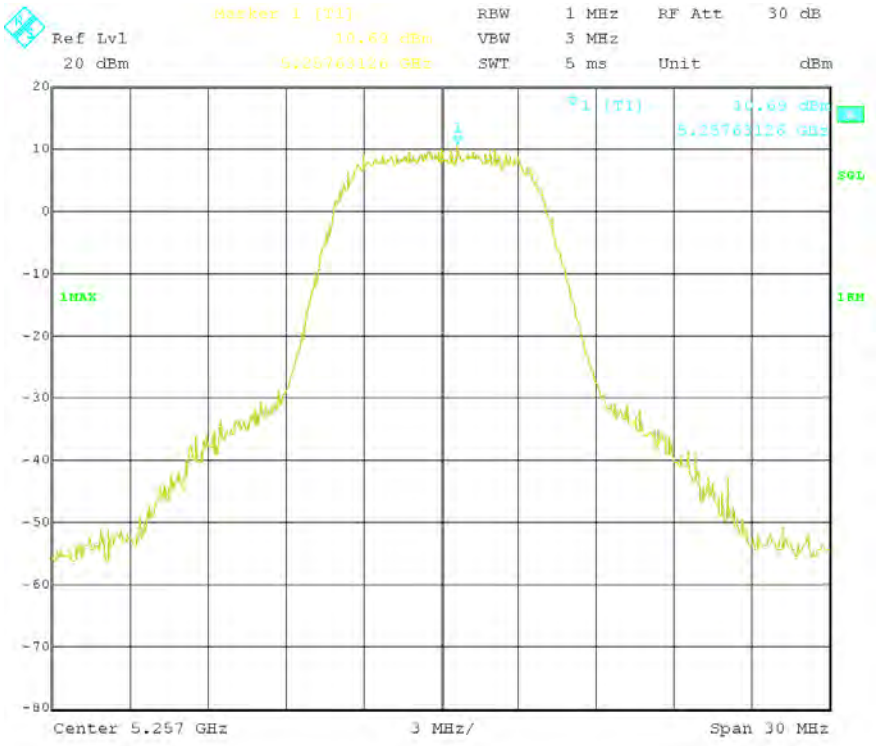
Mid Channel



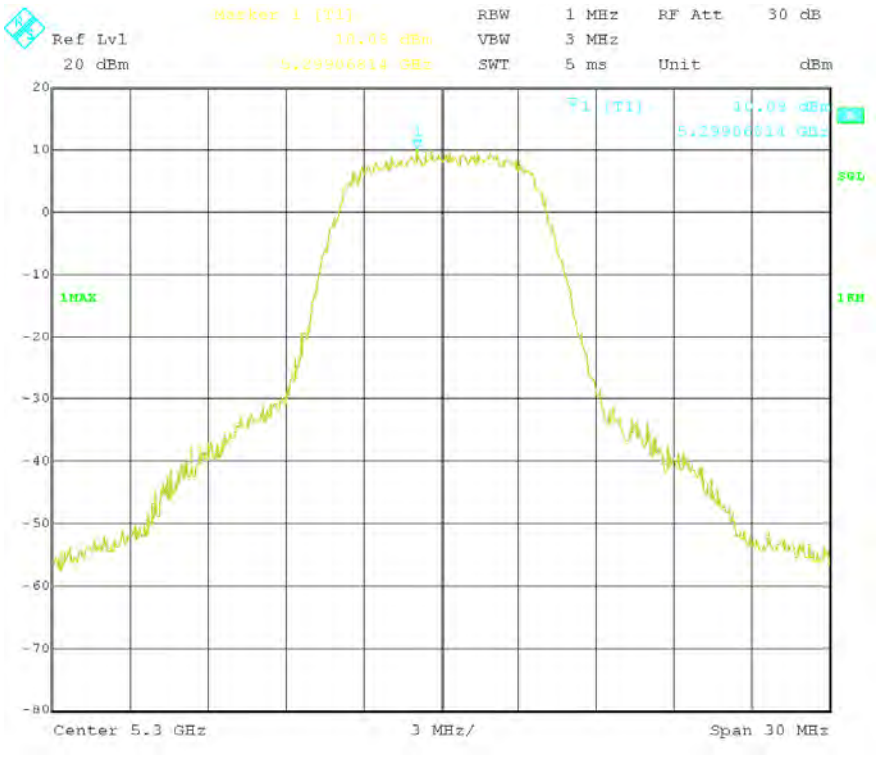
High Channel

Mode: 3 = 64QAM, 8MHz Channel Bandwidth

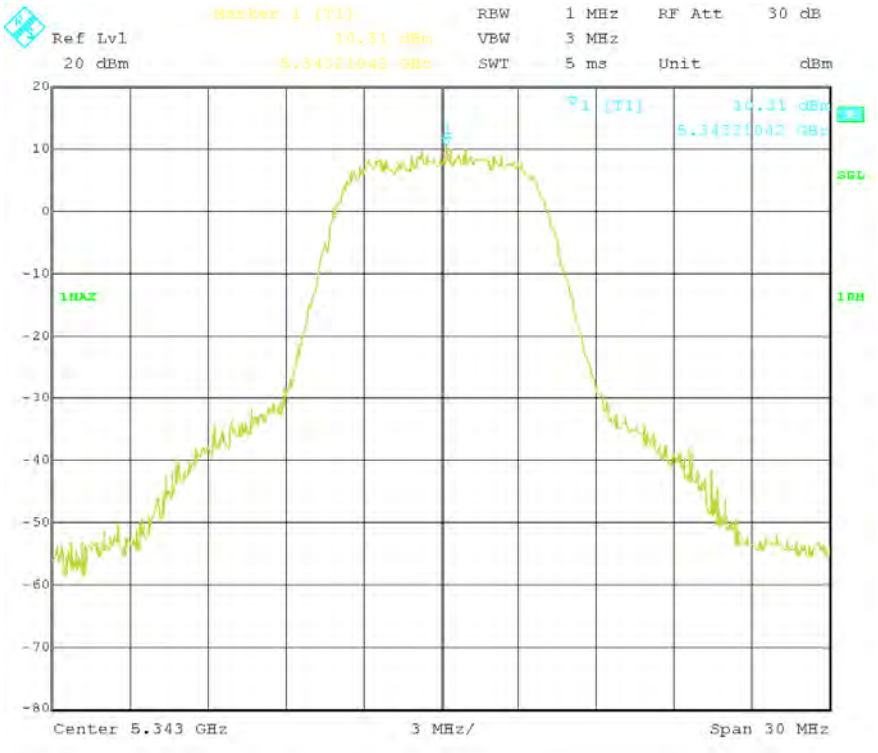
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode1	8MHz	Low Channel	10.69
	8MHz	Mid Channel	10.08
	8MHz	High Channel	10.31



Low Channel



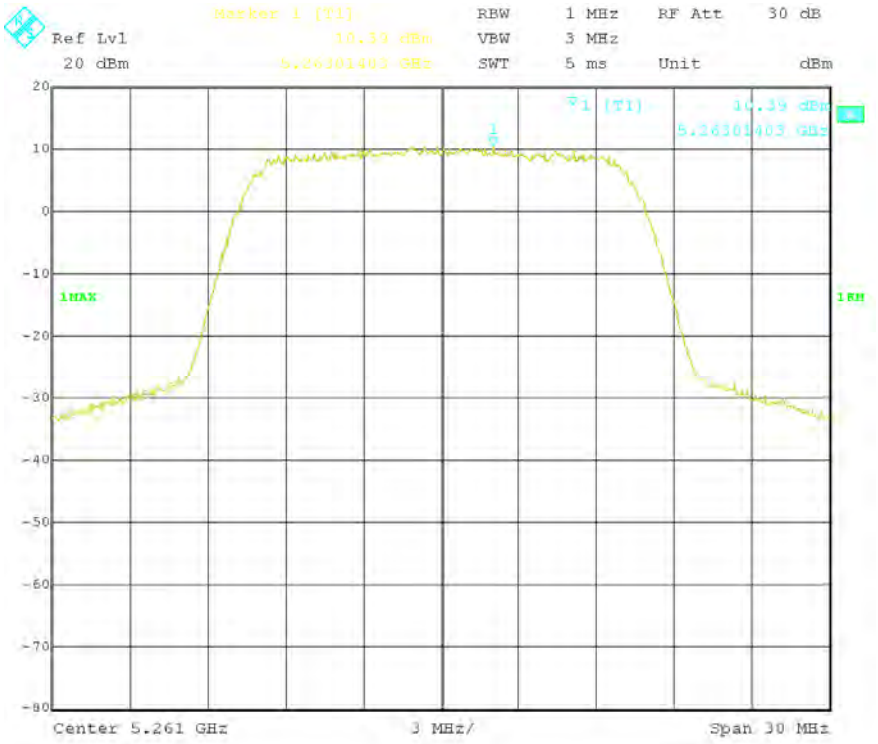
Mid Channel



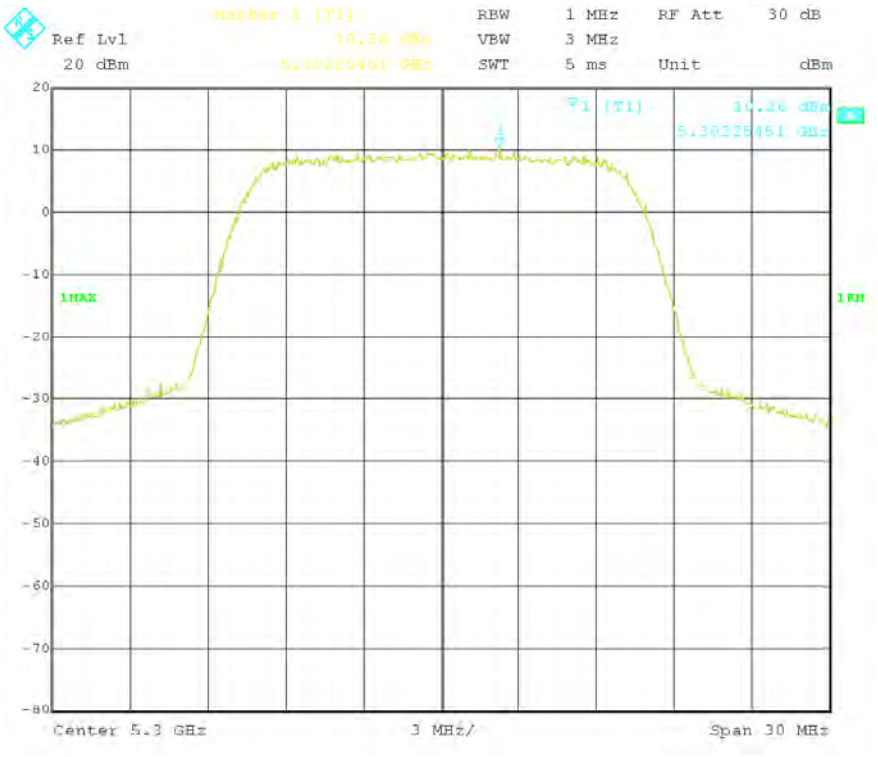
High Channel

Mode: 1 = QPSK, 16MHz Channel Bandwidth

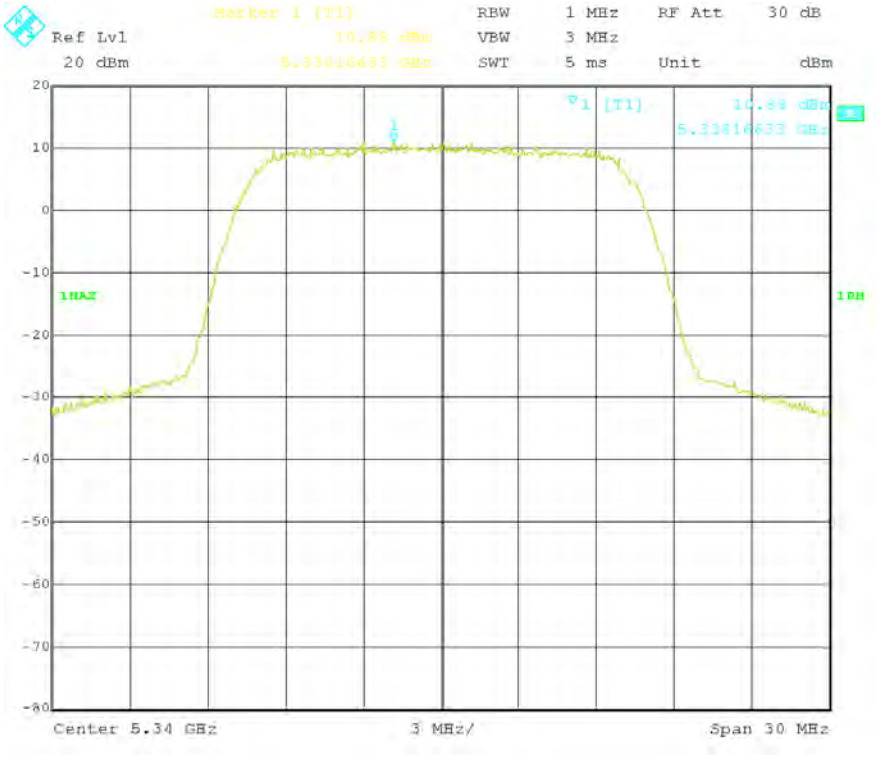
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode1	16MHz	Low Channel	10.39
	16MHz	Mid Channel	10.26
	16MHz	High Channel	10.88



Low Channel



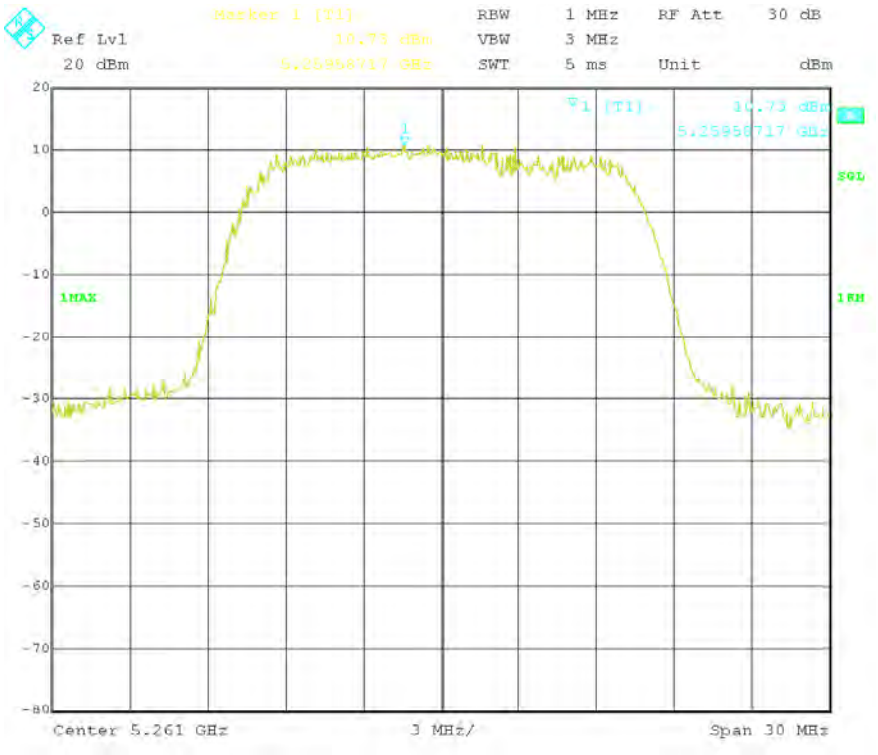
Mid Channel



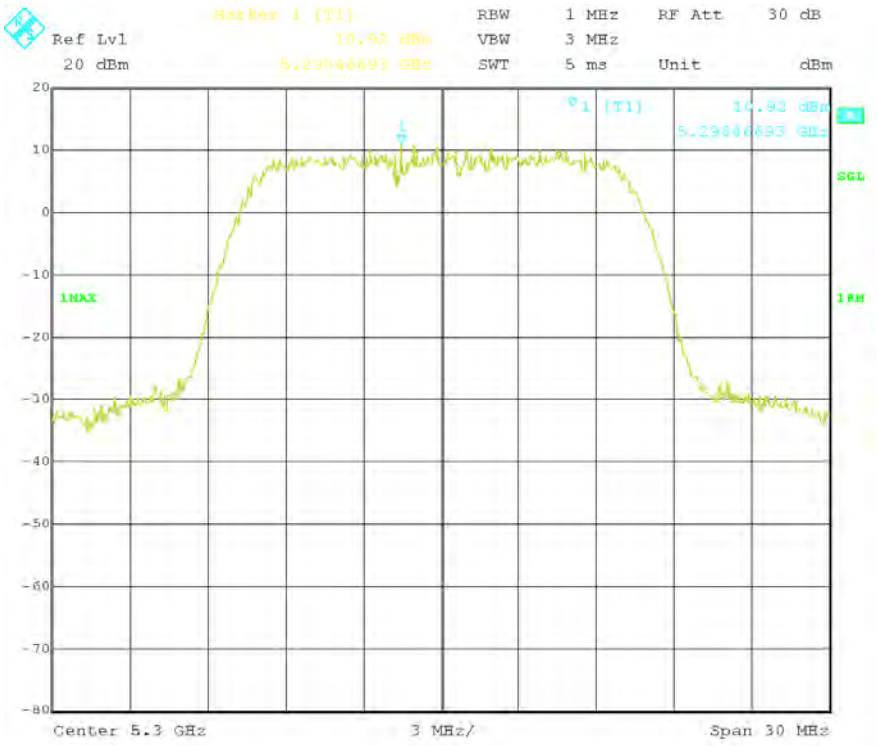
High Channel

Mode: 2 = 16QAM, 16MHz Channel Bandwidth

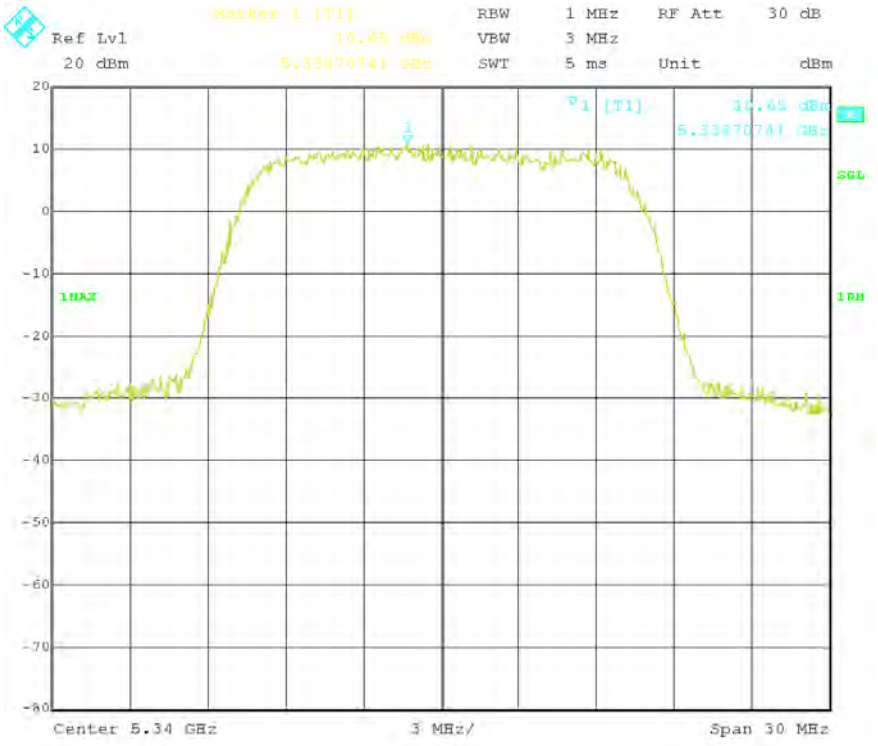
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode1	16MHz	Low Channel	10.73
	16MHz	Mid Channel	10.92
	16MHz	High Channel	10.65



Low Channel



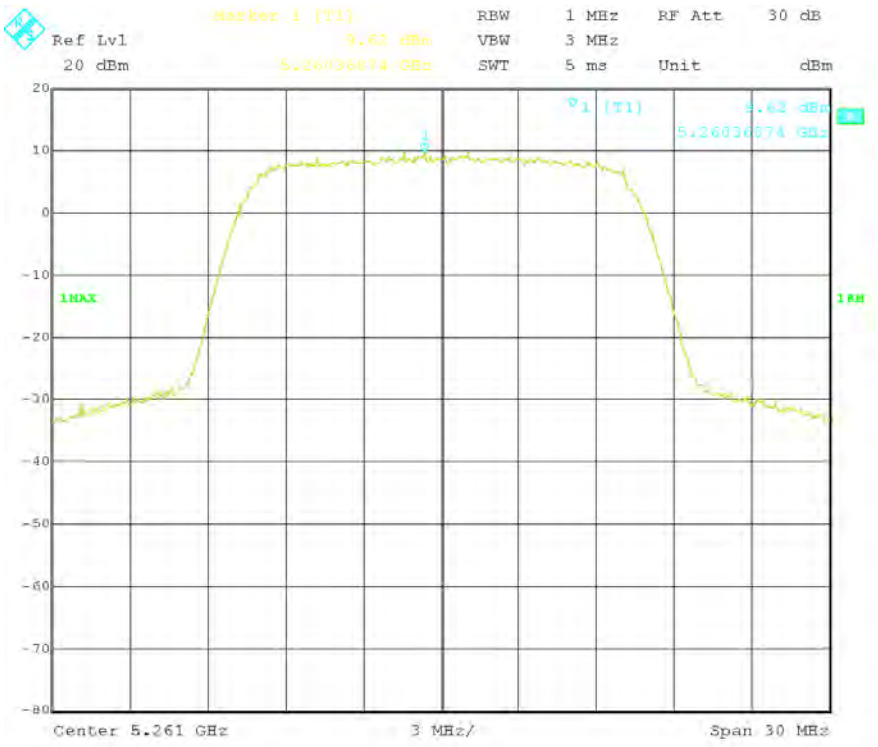
Mid Channel



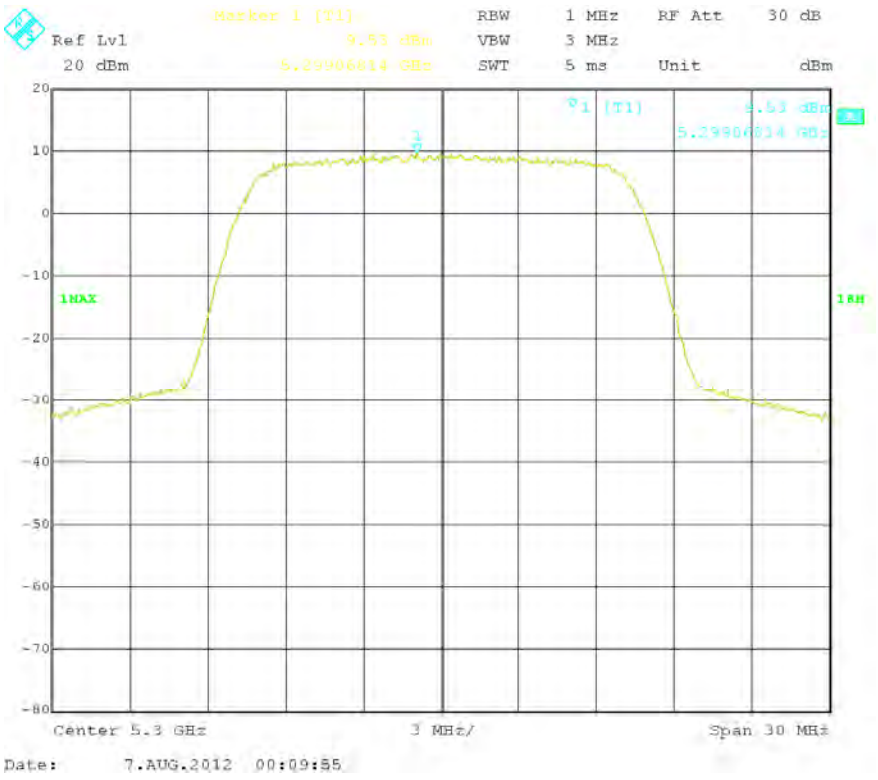
High Channel

Mode: 3 = 64QAM, 16MHz Channel Bandwidth

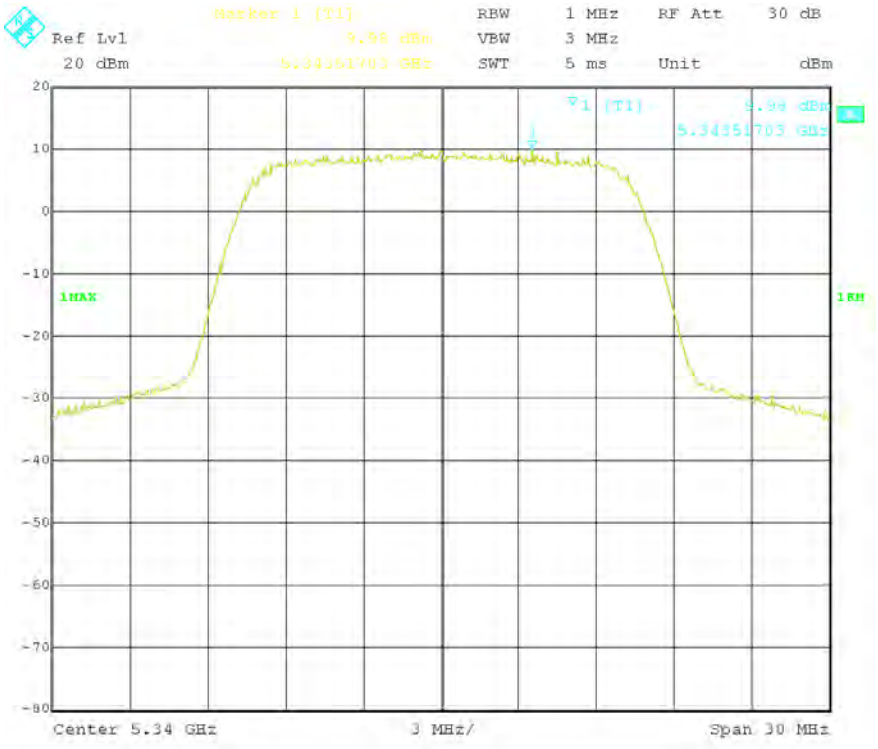
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode1	16MHz	Low Channel	9.62
	16MHz	Mid Channel	9.53
	16MHz	High Channel	9.98



Low Channel



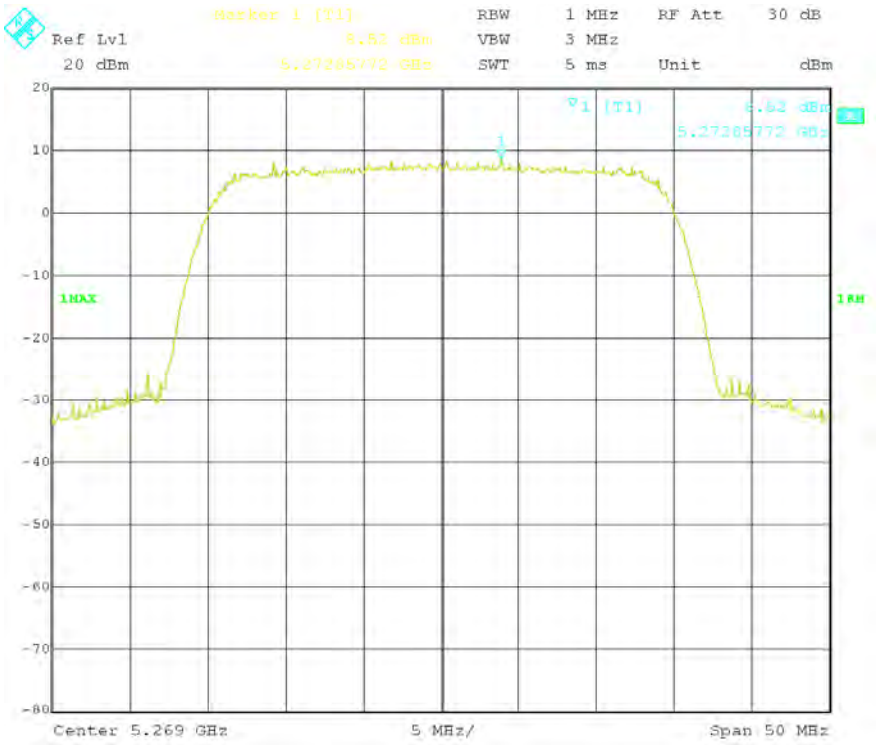
Mid Channel



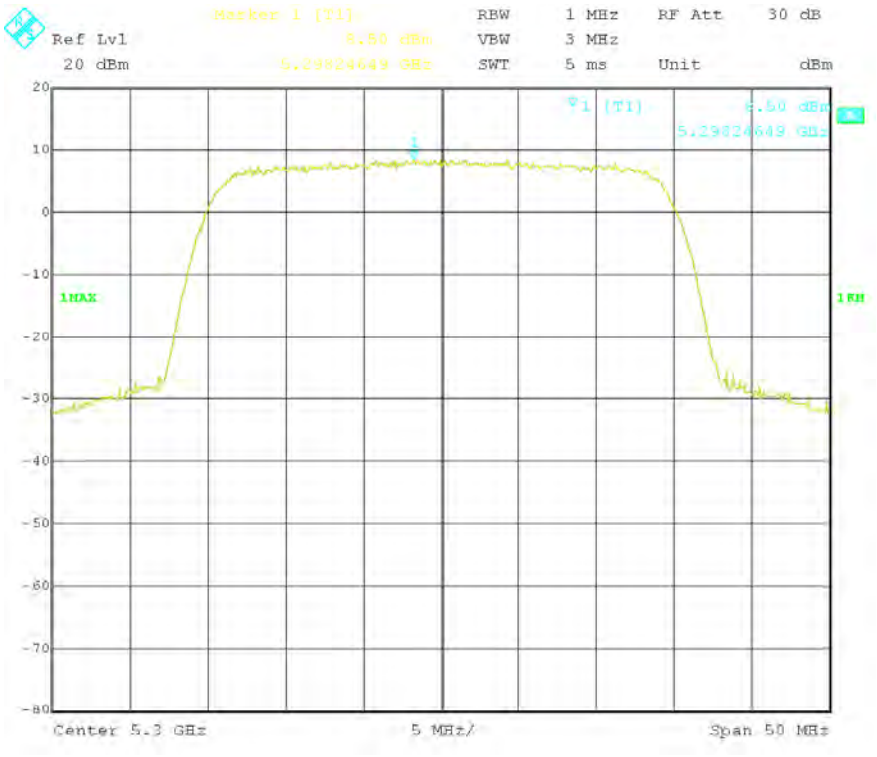
High Channel

Mode: 1 = QPSK, 32MHz Channel Bandwidth

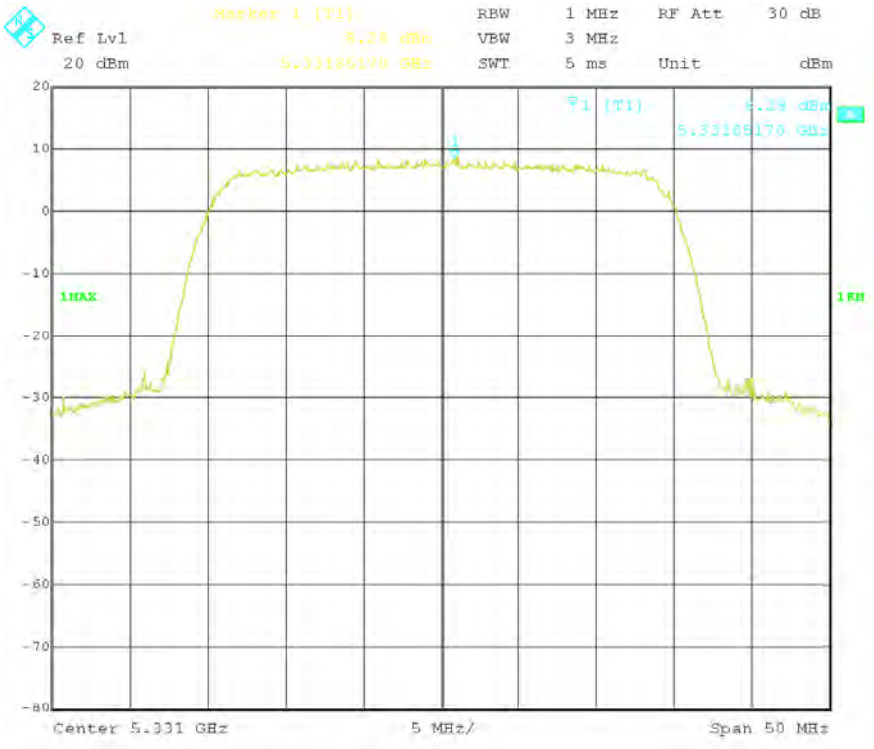
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode1	32MHz	Low Channel	8.52
	32MHz	Mid Channel	8.50
	32MHz	High Channel	8.28



Low Channel



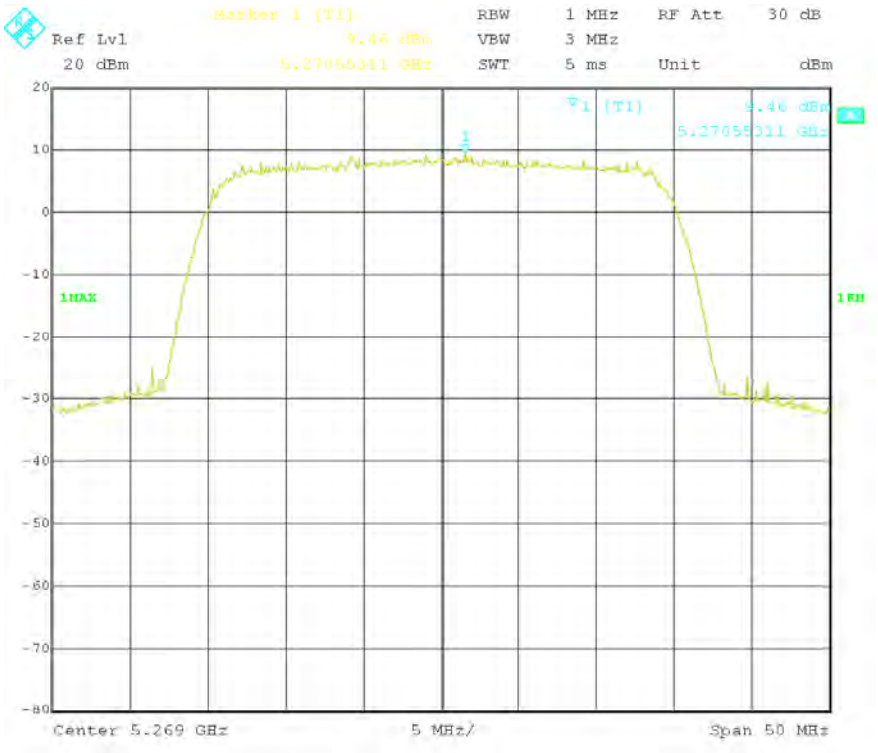
Mid Channel



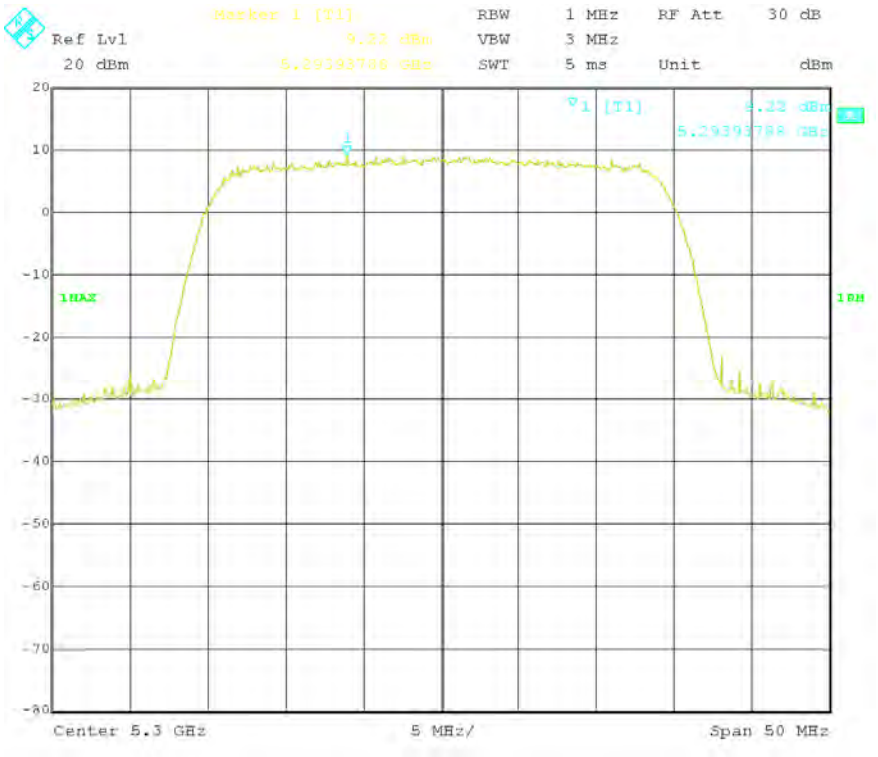
High Channel

Mode: 2 = 16QAM, 32MHz Channel Bandwidth

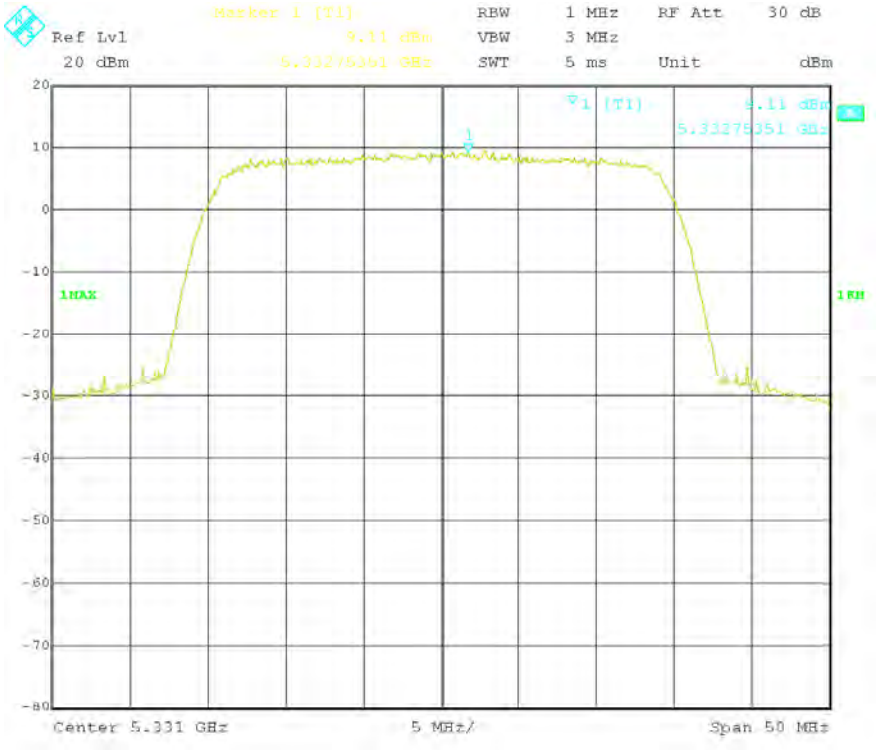
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode1	32MHz	Low Channel	9.46
	32MHz	Mid Channel	9.22
	32MHz	High Channel	9.11



Low Channel



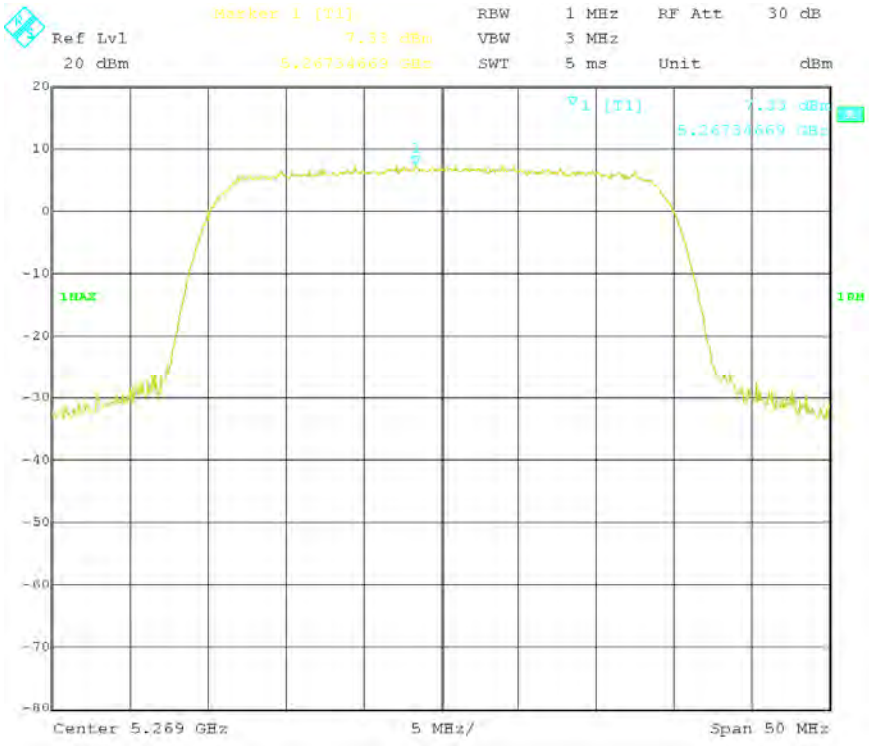
Mid Channel



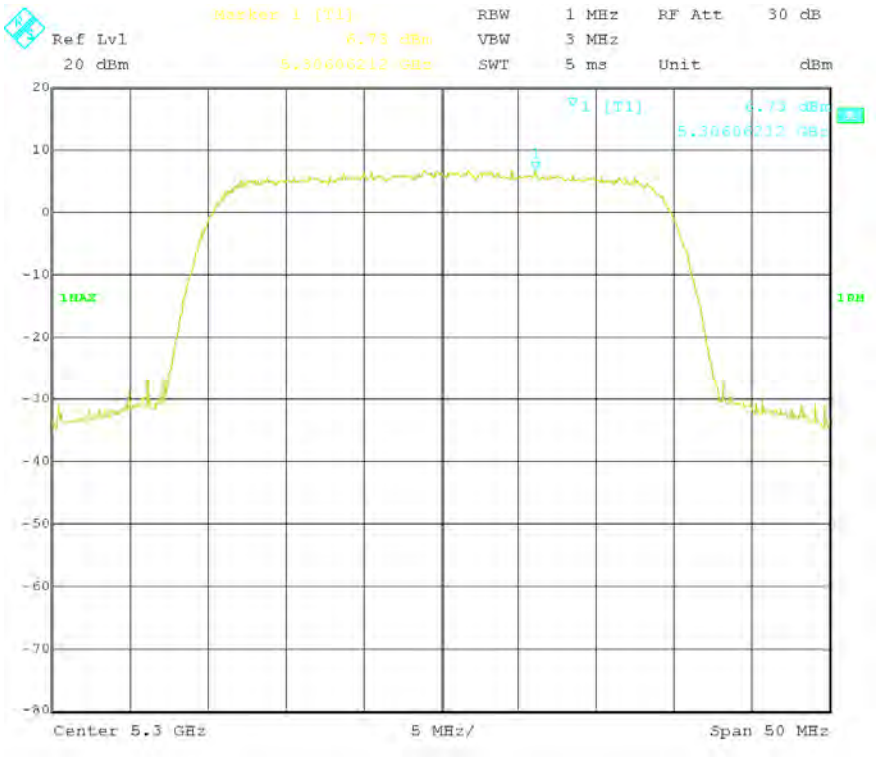
High Channel

Mode: 3 = 64QAM, 32MHz Channel Bandwidth

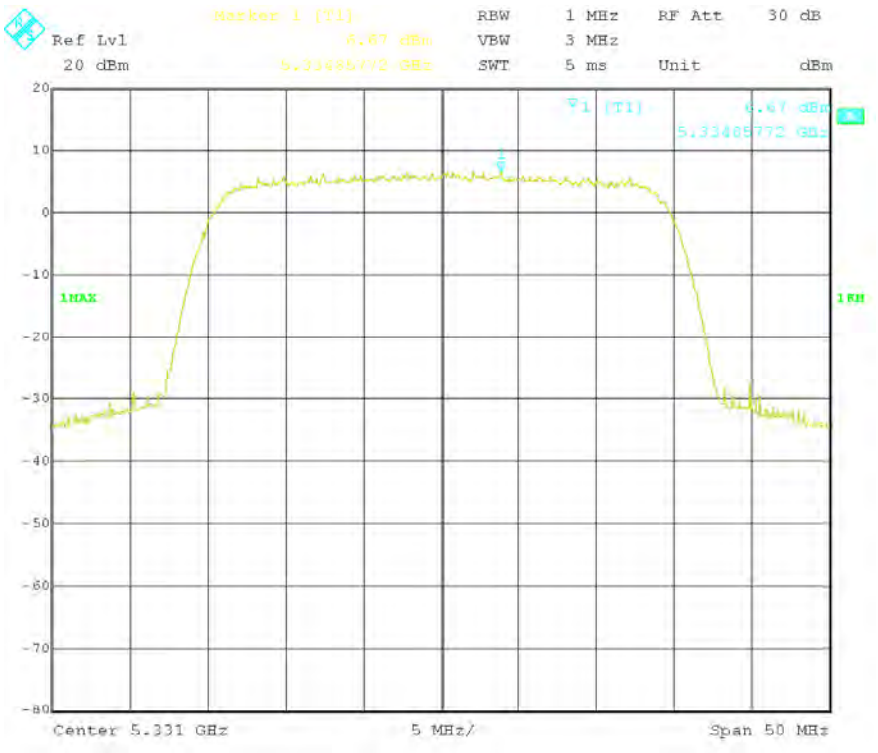
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode 3	32MHz	Low Channel	7.33
	32MHz	Mid Channel	6.73
	32MHz	High Channel	6.67



Low Channel



Mid Channel

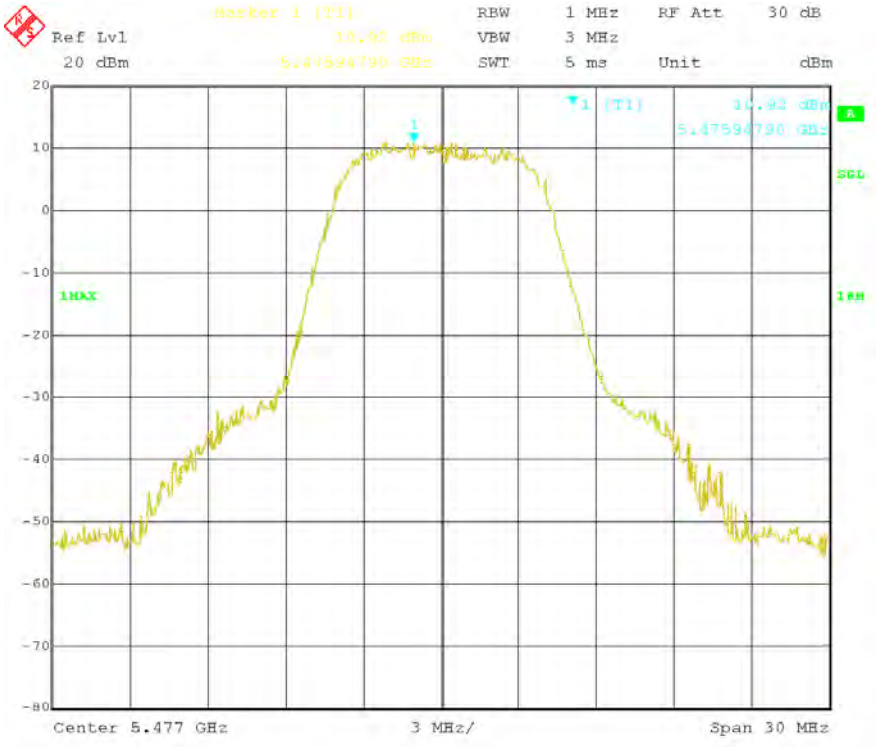


High Channel

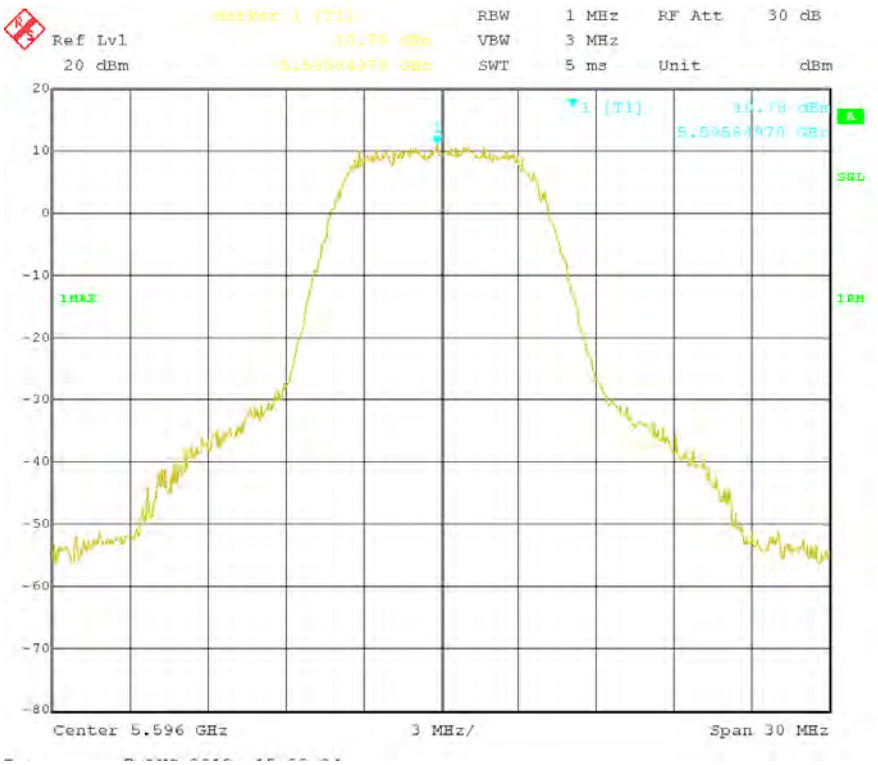
5.4GHz Band

Mode: 1 = QPSK, 8MHz Channel Bandwidth

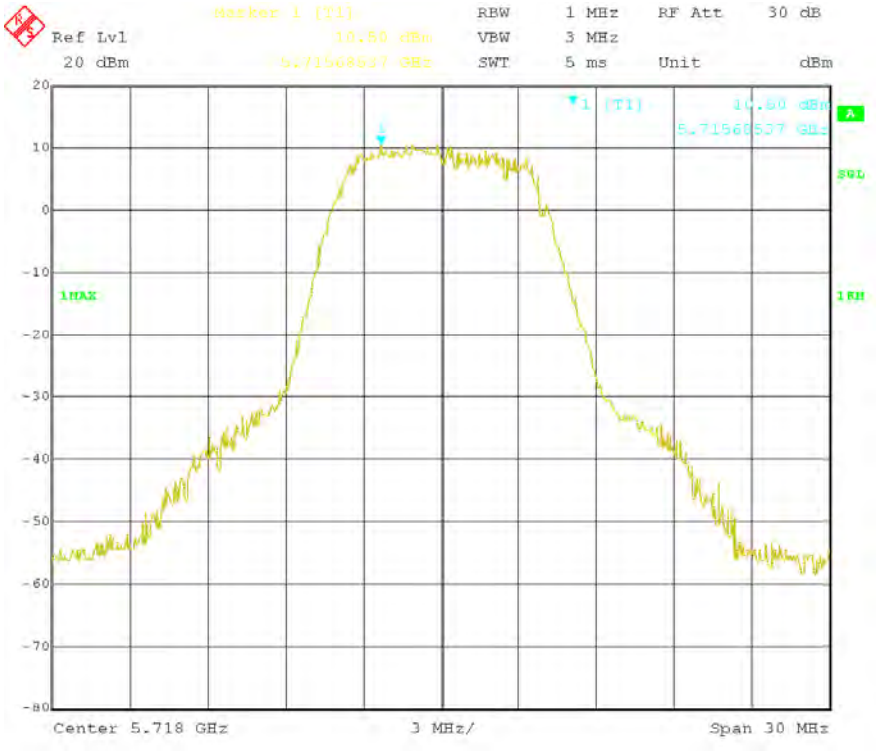
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode 1	8MHz	Low Channel	10.92
	8MHz	Mid Channel	10.78
	8MHz	High Channel	10.50



Low Channel



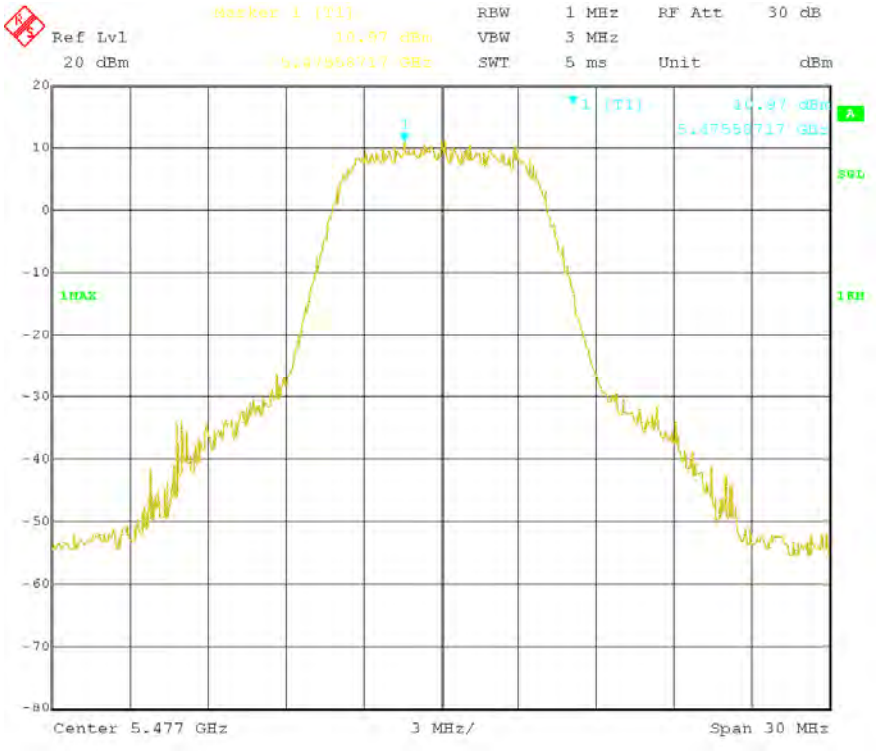
Mid Channel



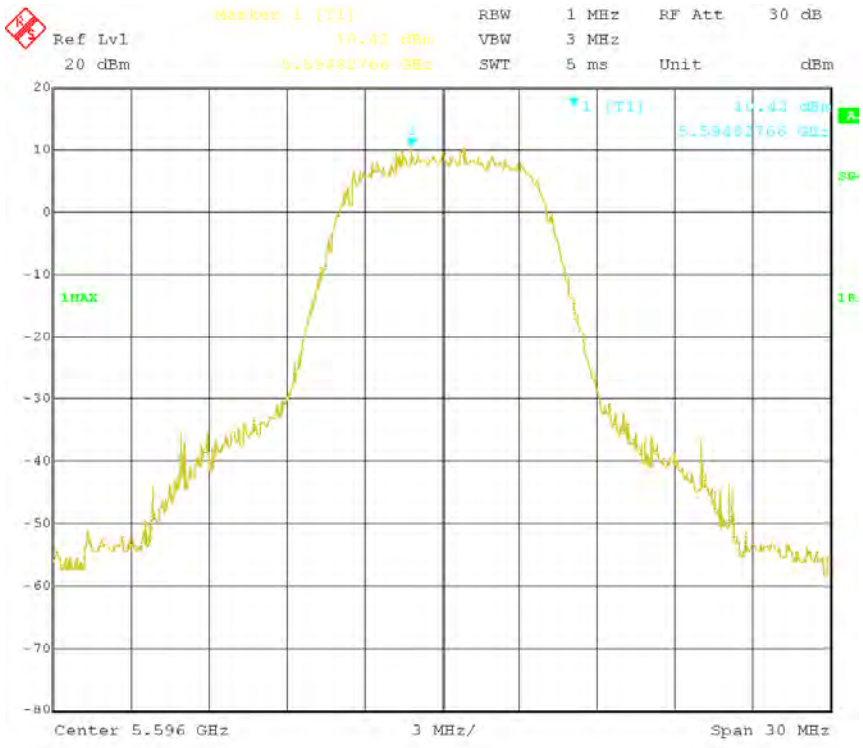
High Channel

Mode: 2 = 16QAM, 8MHz Channel Bandwidth

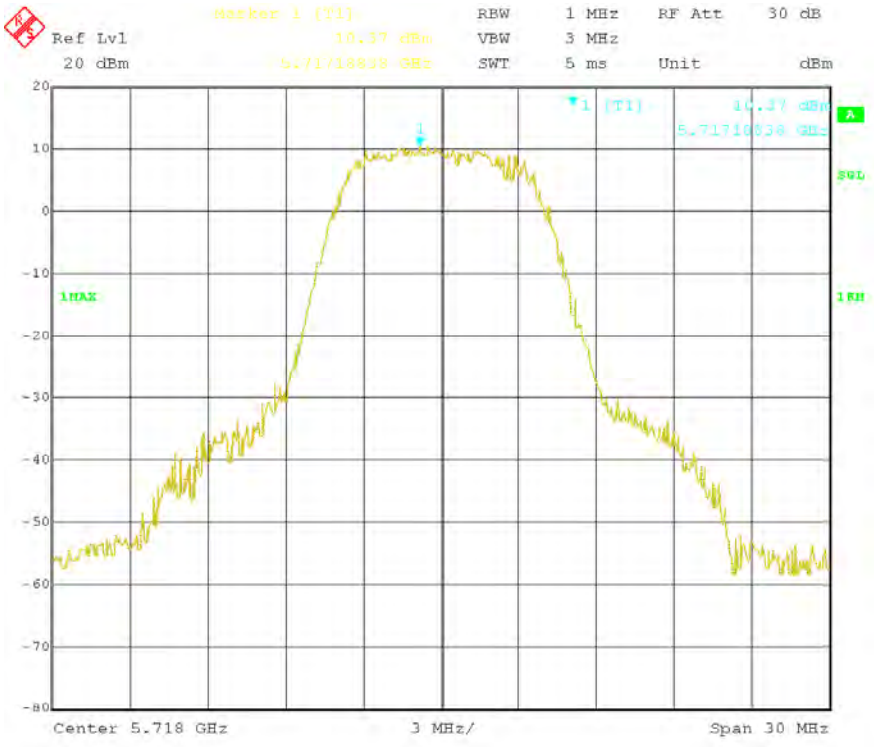
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode 1	8MHz	Low Channel	10.97
	8MHz	Mid Channel	10.42
	8MHz	High Channel	10.37



Low Channel



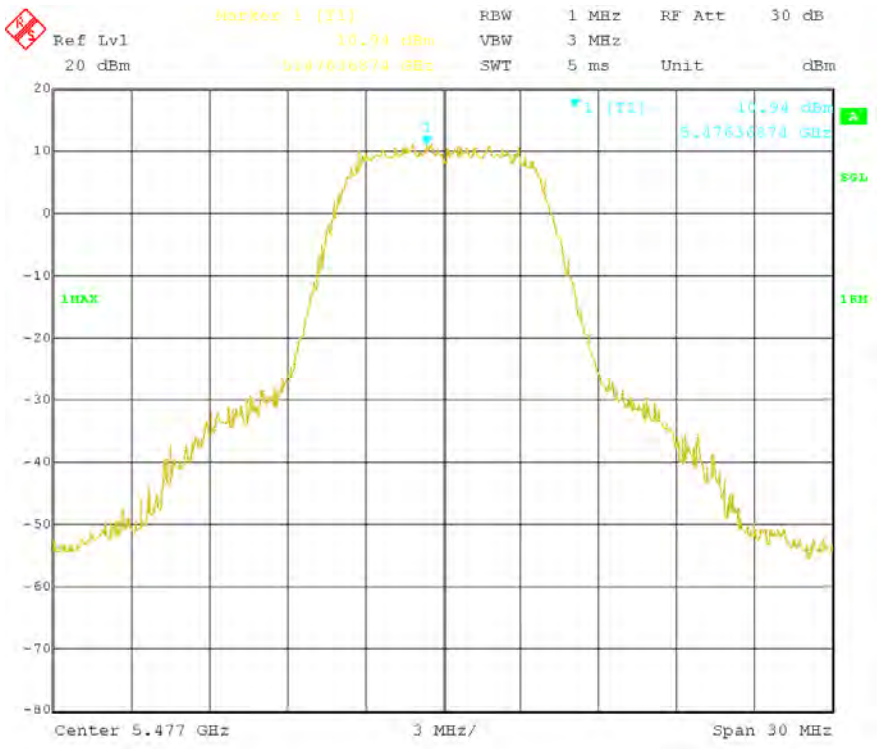
Mid Channel



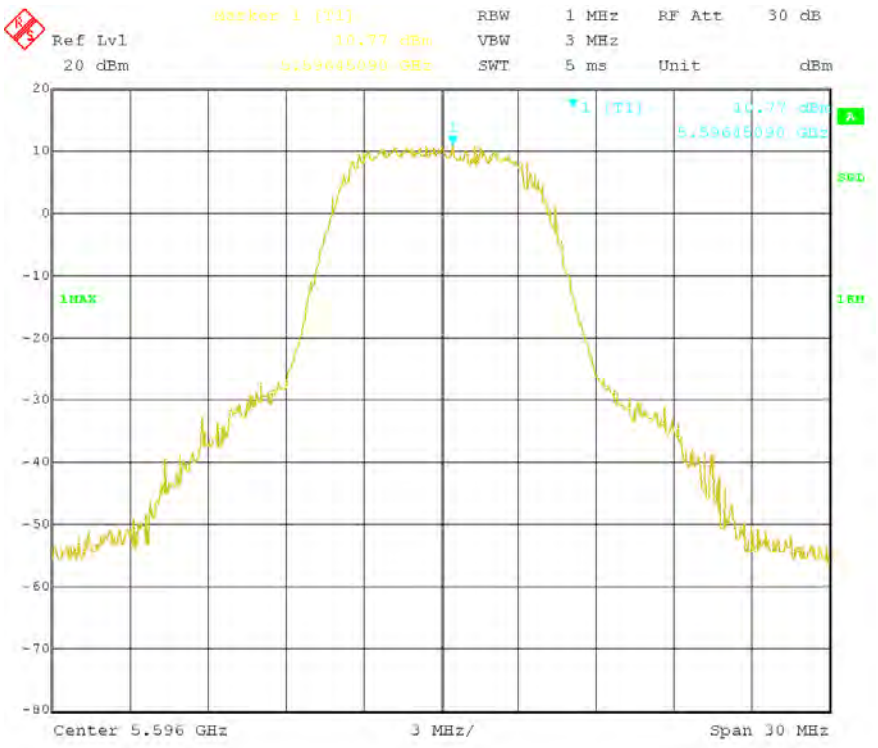
High Channel

Mode: 3 = 64QAM, 8MHz Channel Bandwidth

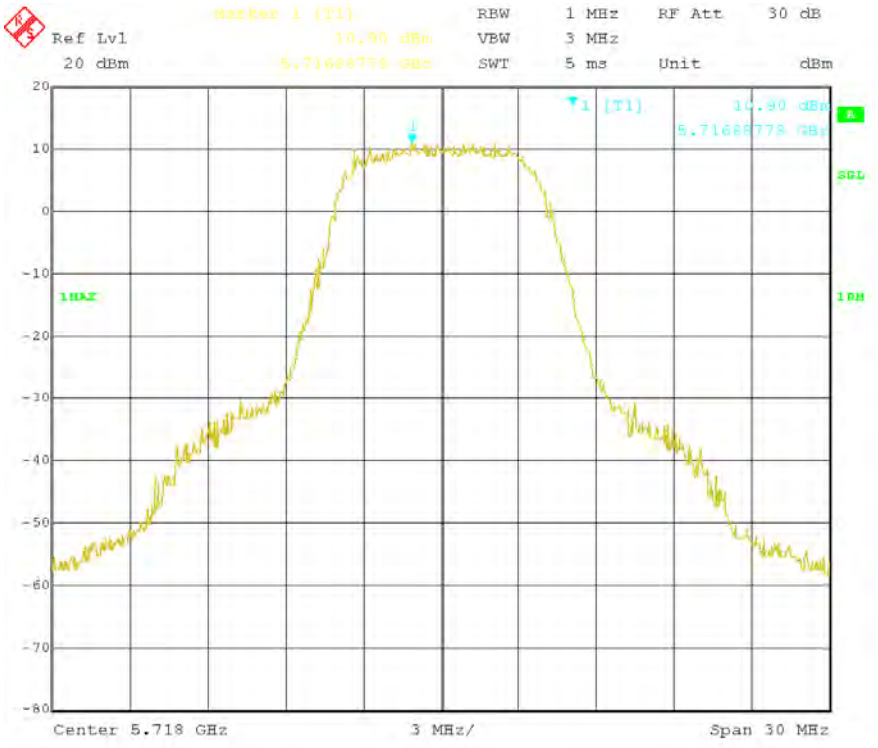
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode 1	8MHz	Low Channel	10.94
	8MHz	Mid Channel	10.77
	8MHz	High Channel	10.90



Low Channel



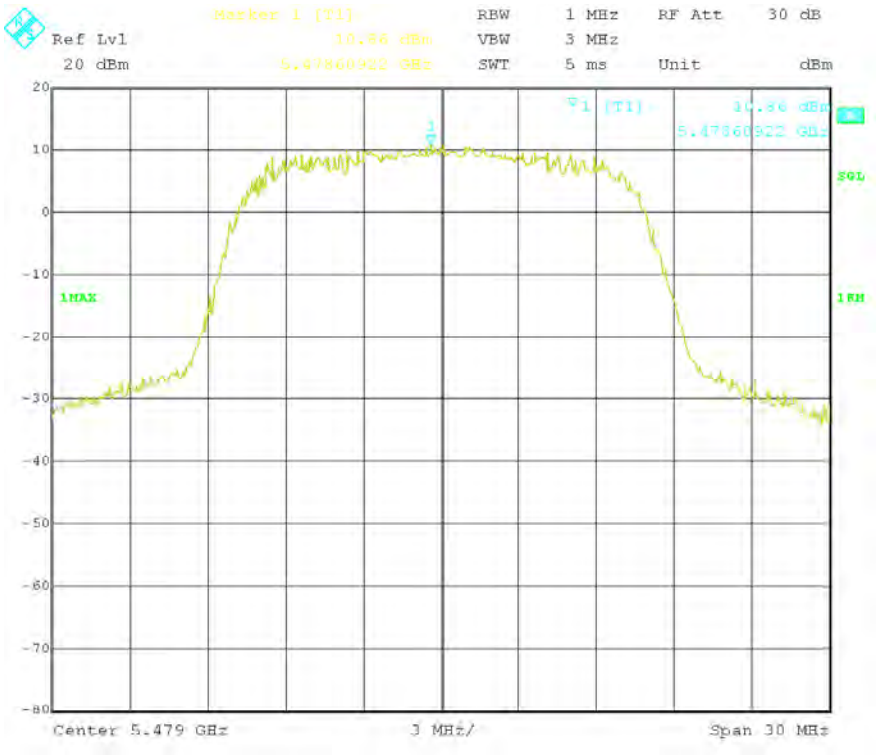
Mid Channel



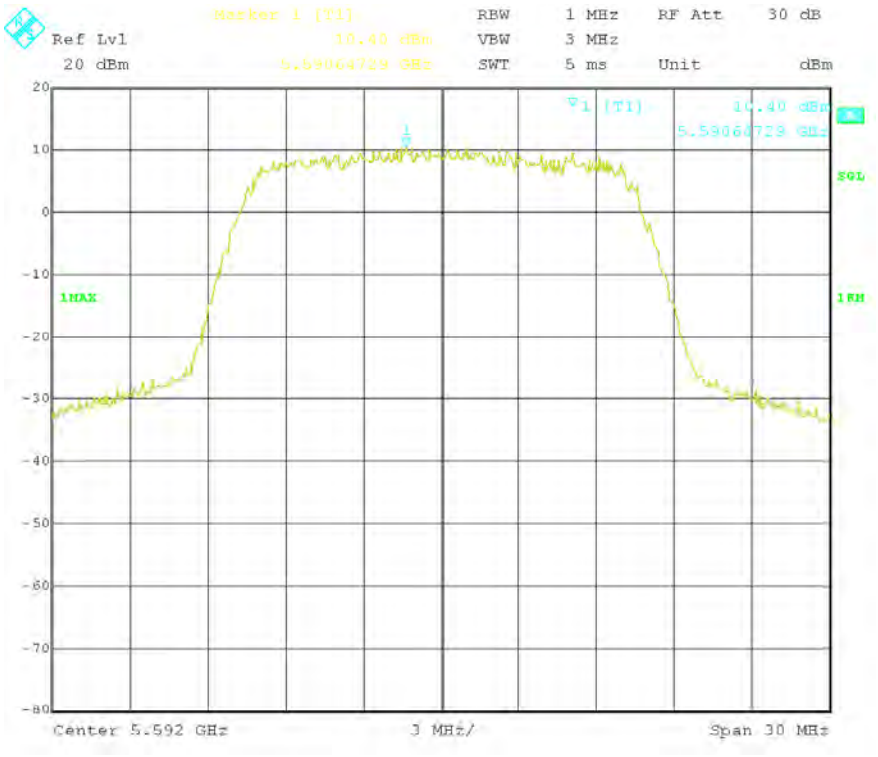
High Channel

Mode: 1 = QPSK, 16MHz Channel Bandwidth

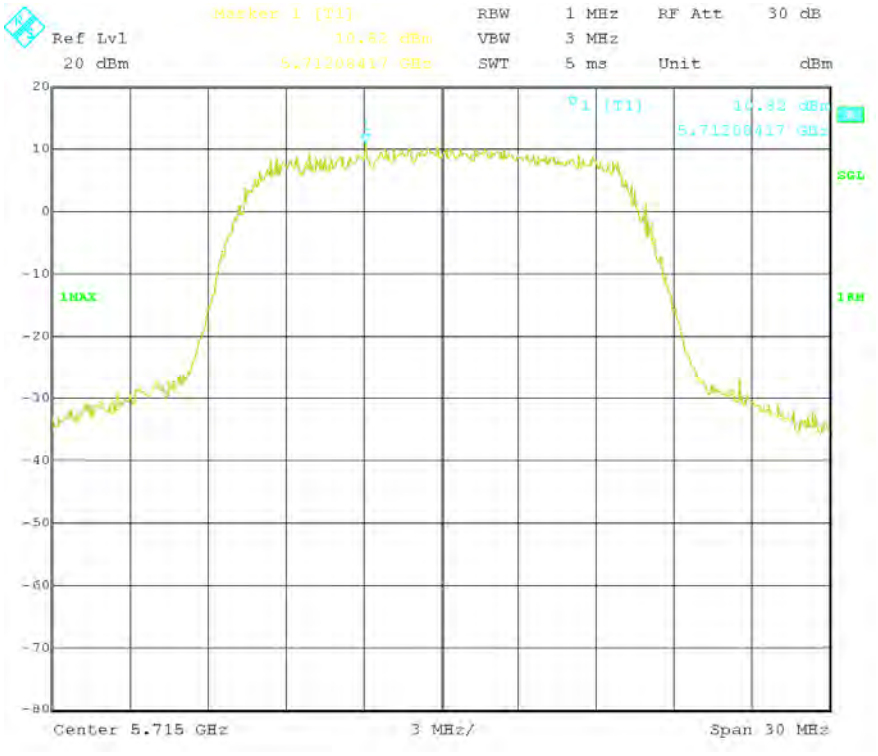
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode 1	16MHz	Low Channel	10.86
	16MHz	Mid Channel	10.40
	16MHz	High Channel	10.82



Low Channel



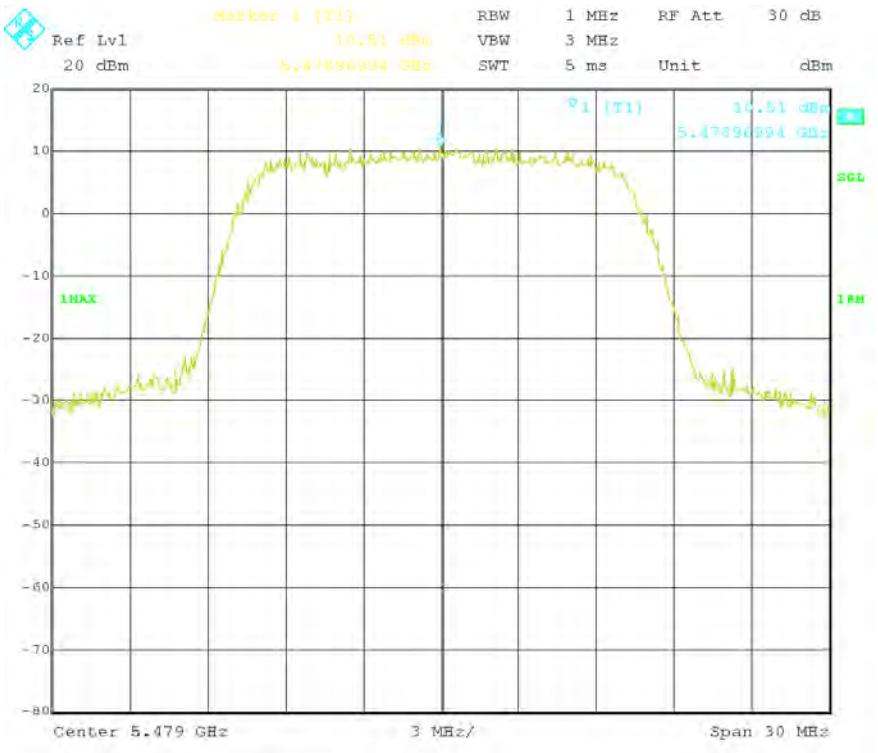
Mid Channel



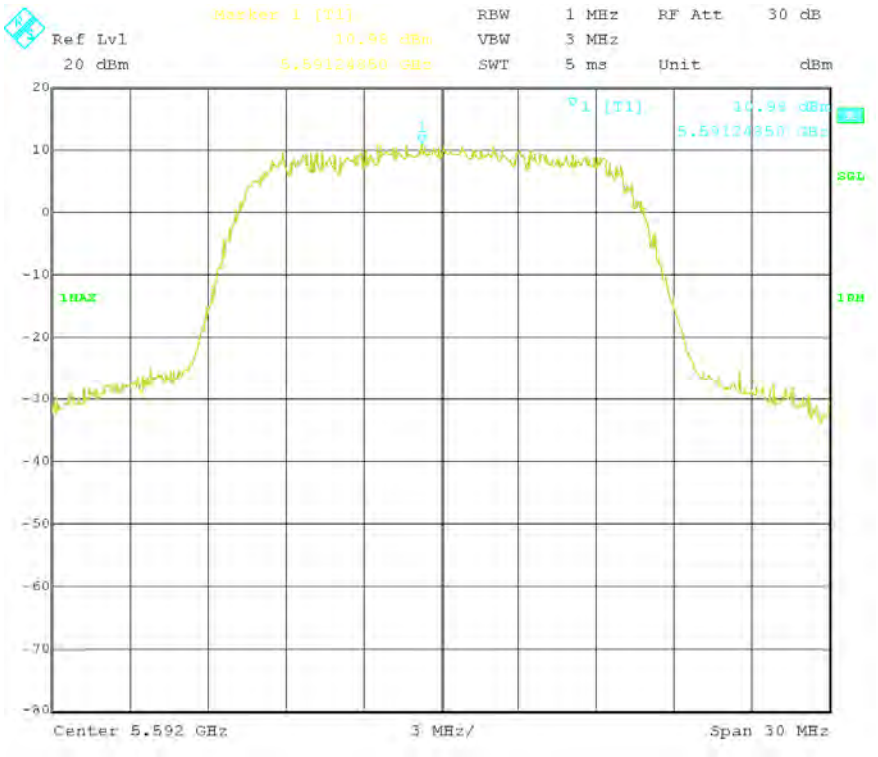
High Channel

Mode: 2 = 16QAM, 16MHz Channel Bandwidth

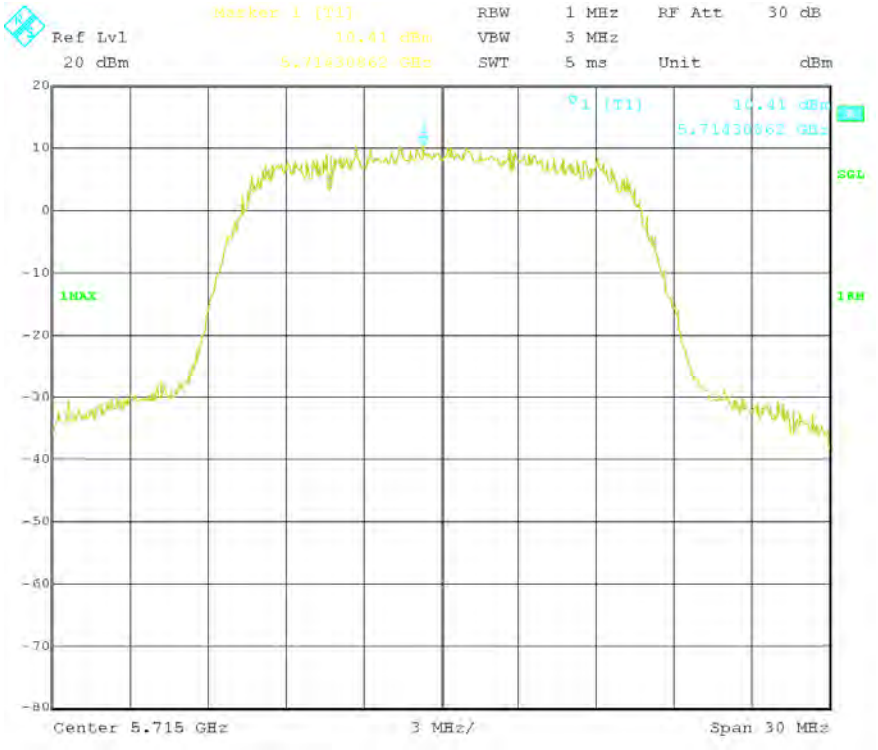
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode 2	16MHz	Low Channel	10.51
	16MHz	Mid Channel	10.98
	16MHz	High Channel	10.41



Low Channel



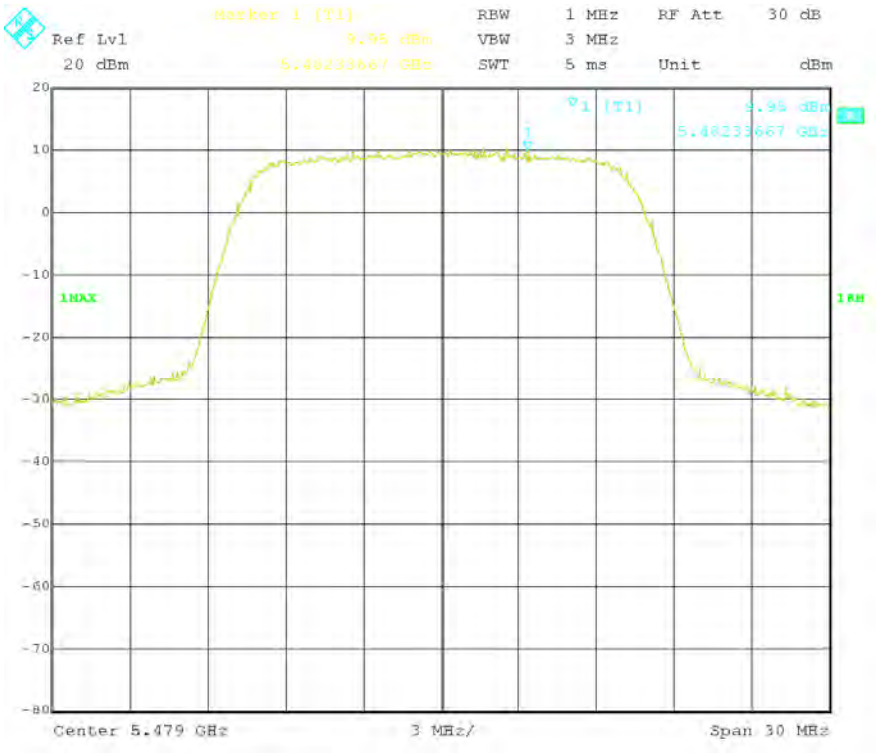
Mid Channel



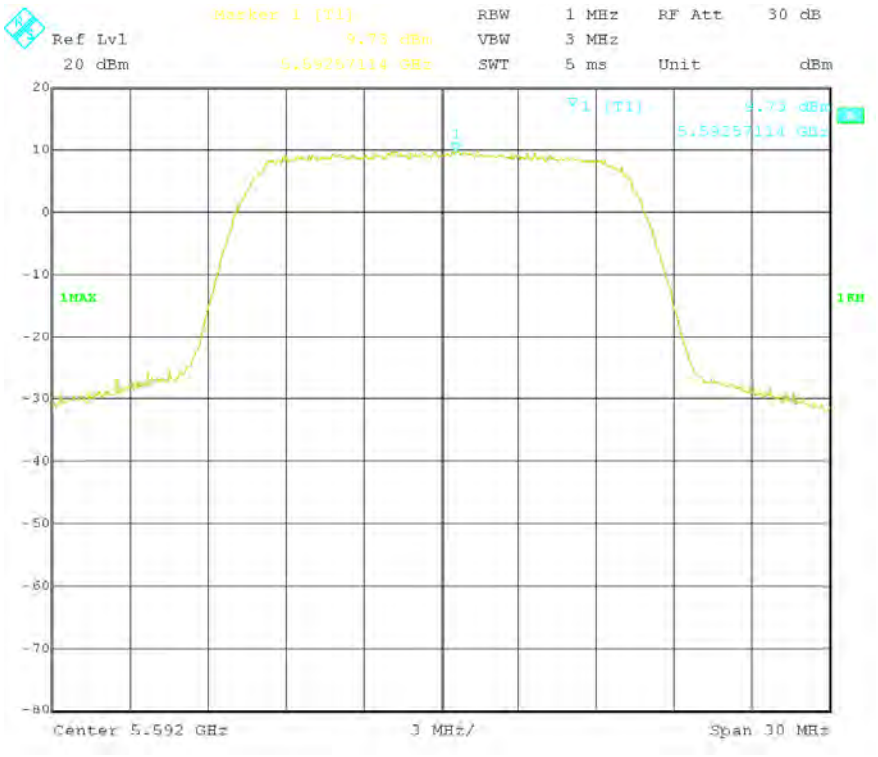
High Channel

Mode: 3 = 64QAM, 16MHz Channel Bandwidth

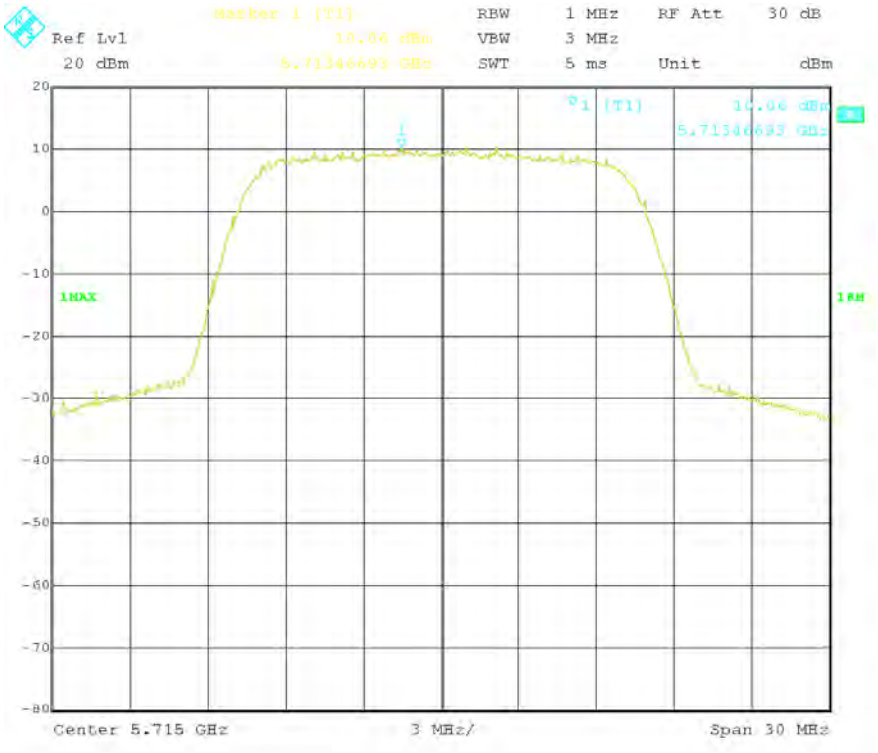
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode 3	16MHz	Low Channel	9.95
	16MHz	Mid Channel	9.73
	16MHz	High Channel	10.06



Low Channel



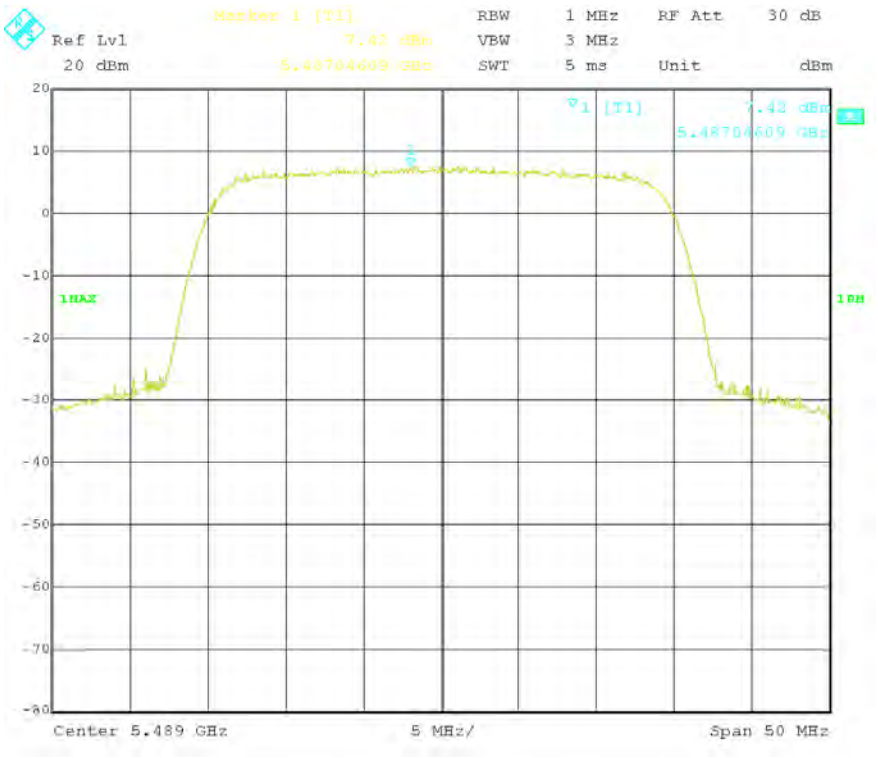
Mid Channel



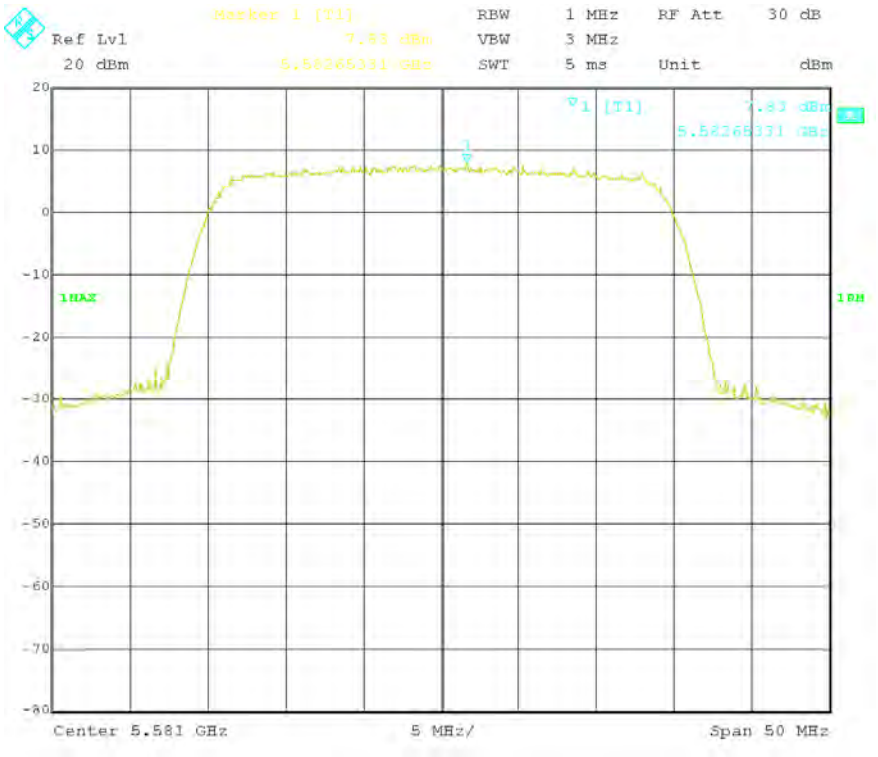
High Channel

Mode: 1 = QPSK, 32MHz Channel Bandwidth

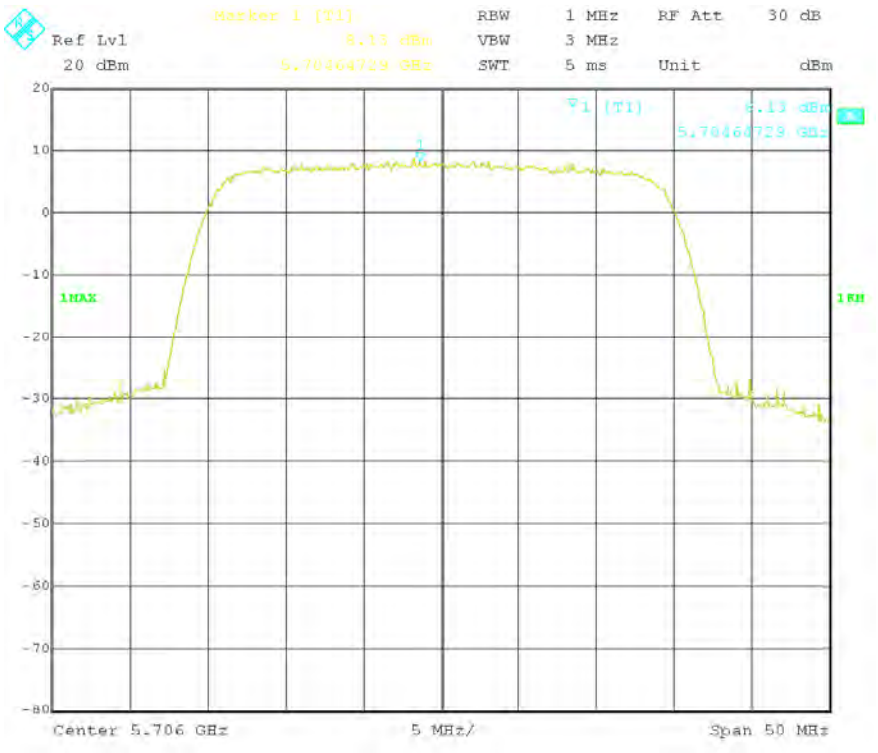
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode 3	16MHz	Low Channel	7.42
	16MHz	Mid Channel	7.83
	16MHz	High Channel	8.13



Low Channel



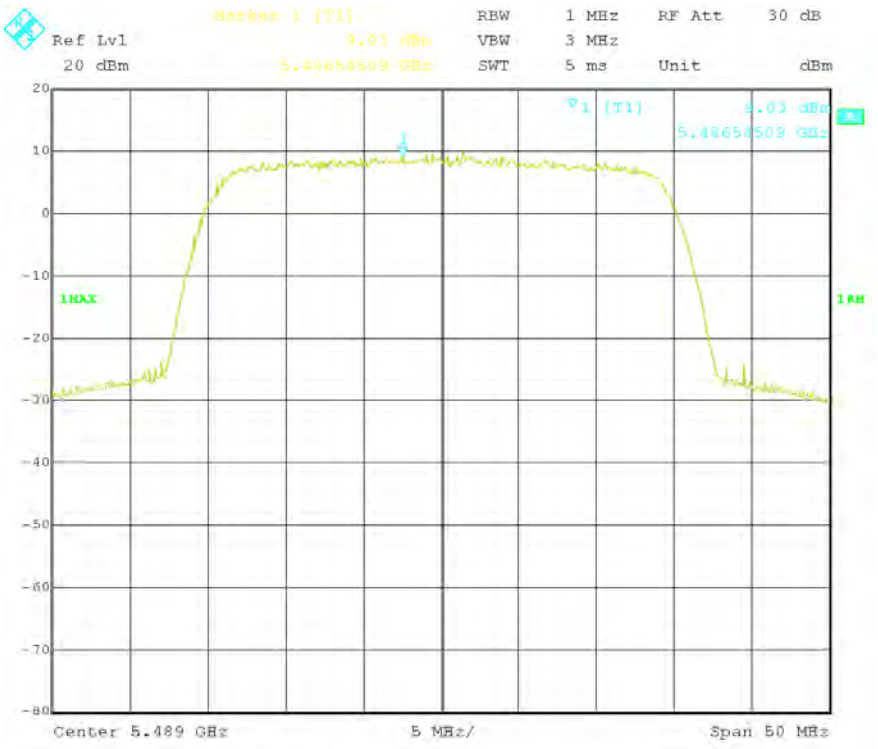
Mid Channel



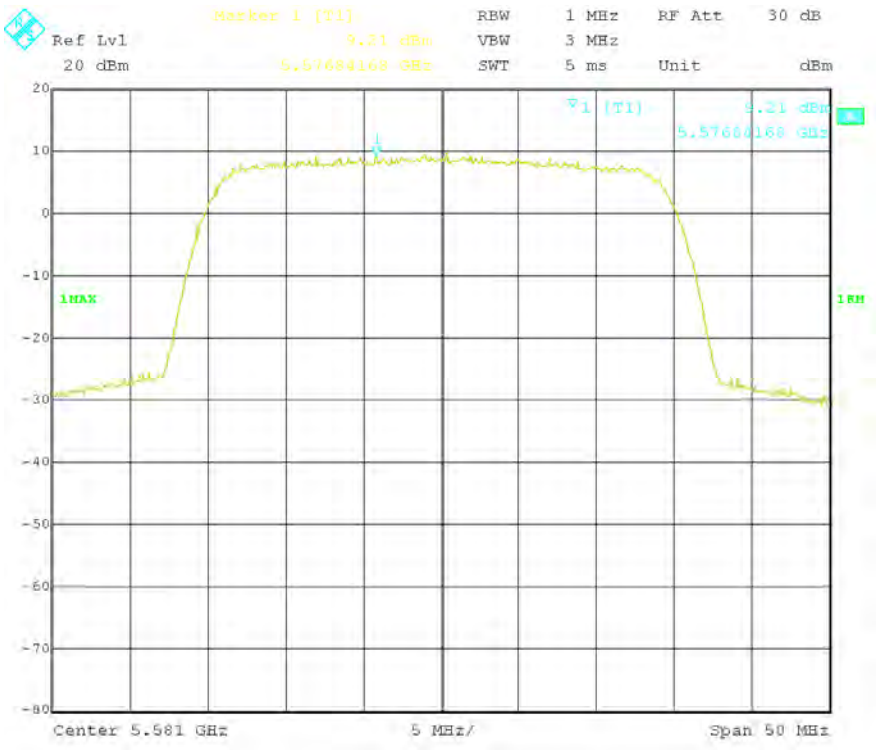
High Channel

Mode: 2 = 16QAM, 32MHz Channel Bandwidth

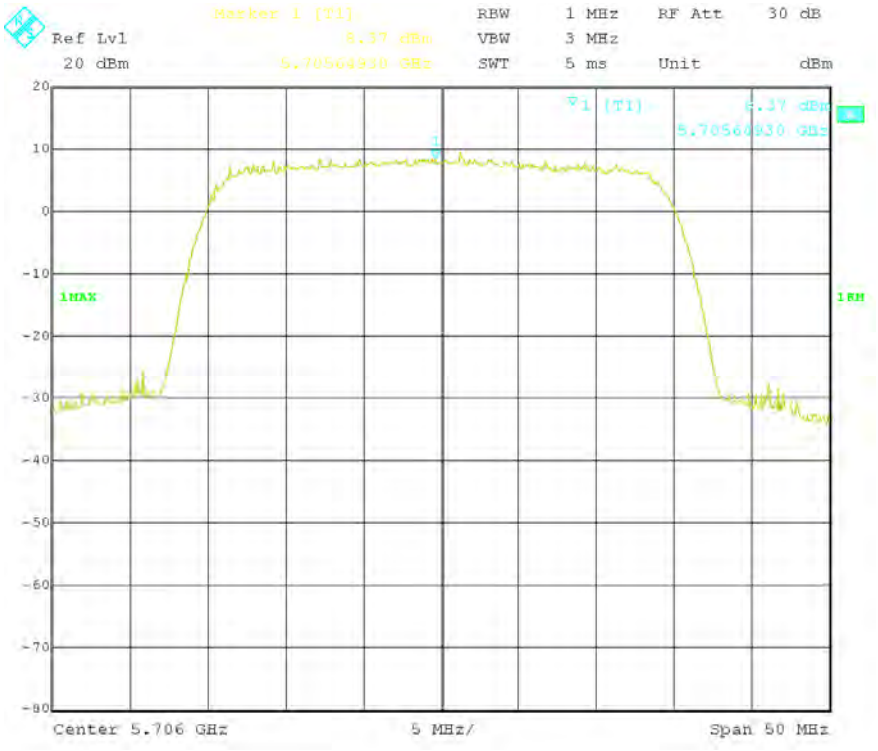
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode 2	32MHz	Low Channel	9.03
	32MHz	Mid Channel	9.21
	32MHz	High Channel	8.37



Low Channel



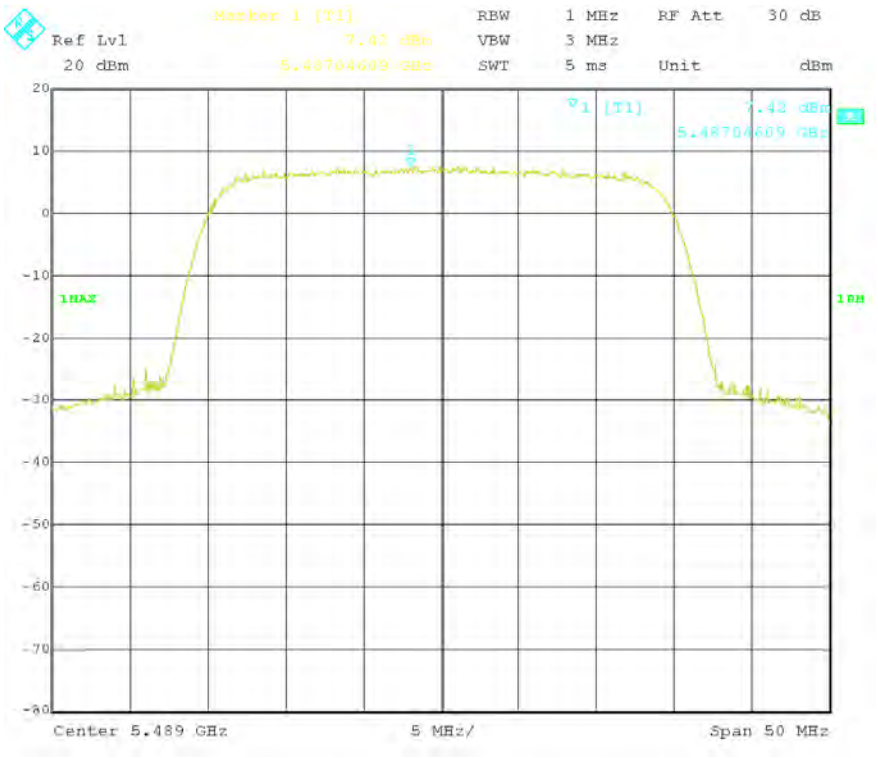
Mid Channel



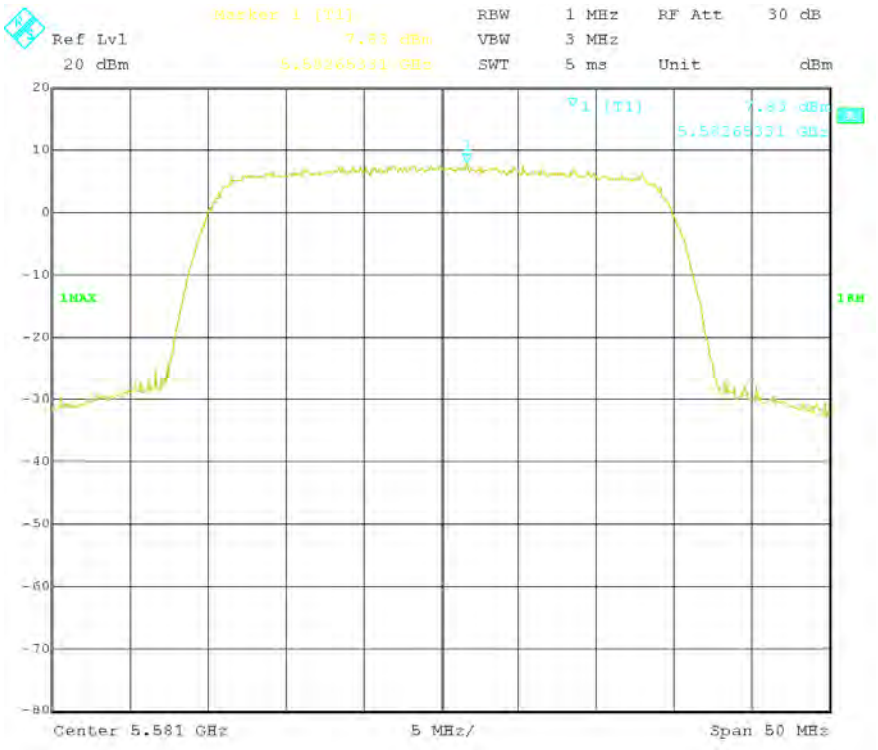
High Channel

Mode: 3= 64QAM, 32MHz Channel Bandwidth

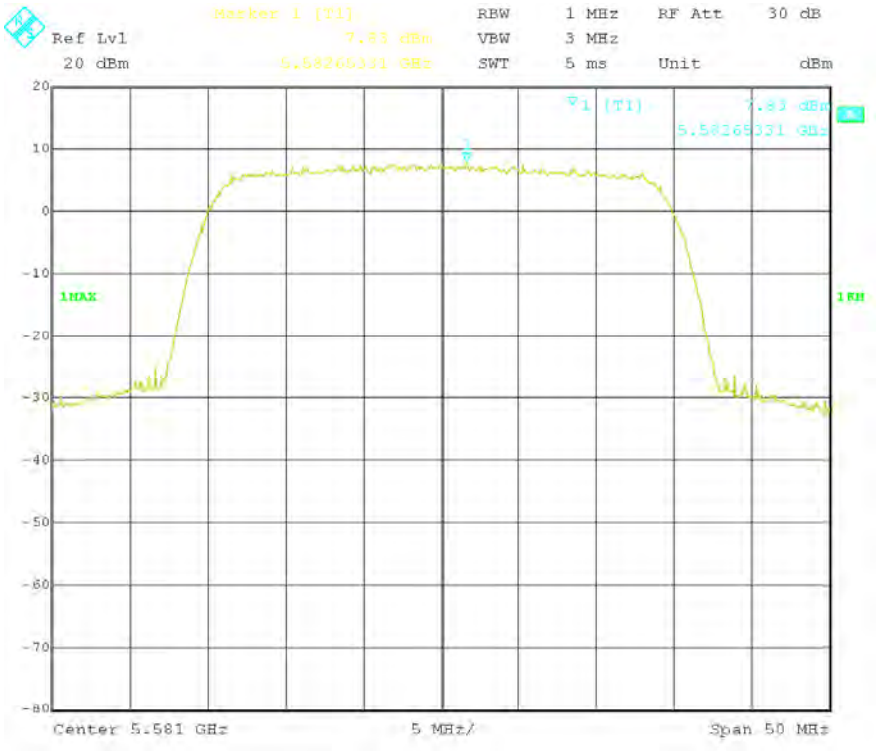
Mode	Channel Bandwidth	Mode	PPSD (dBm)
Mode 3	32MHz	Low Channel	7.42
	32MHz	Mid Channel	7.83
	32MHz	High Channel	7.83



Low Channel



Mid Channel



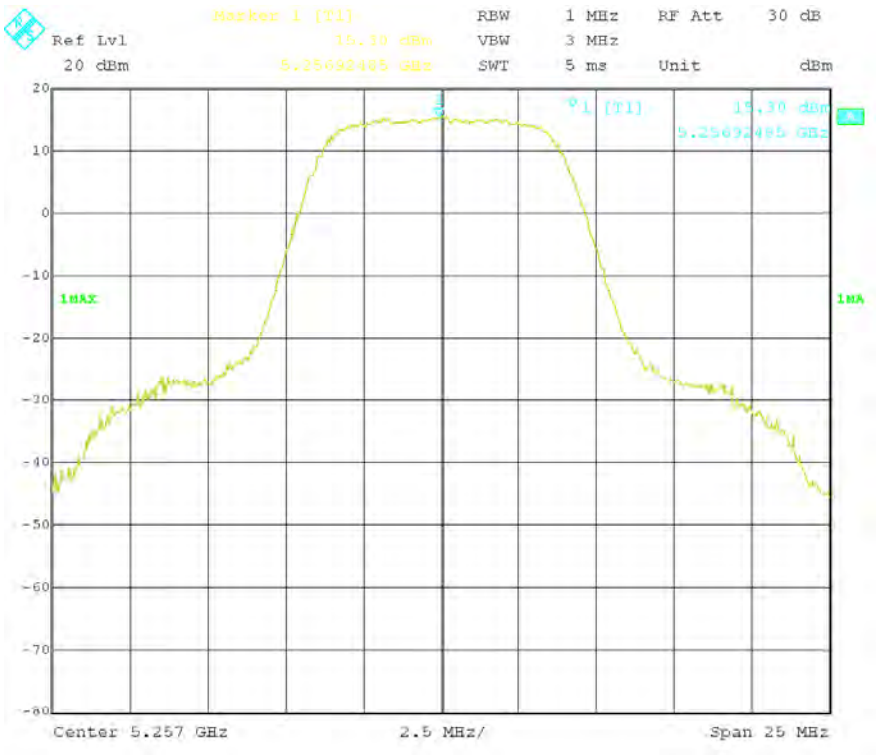
High Channel

Peak Max hold Spectrum

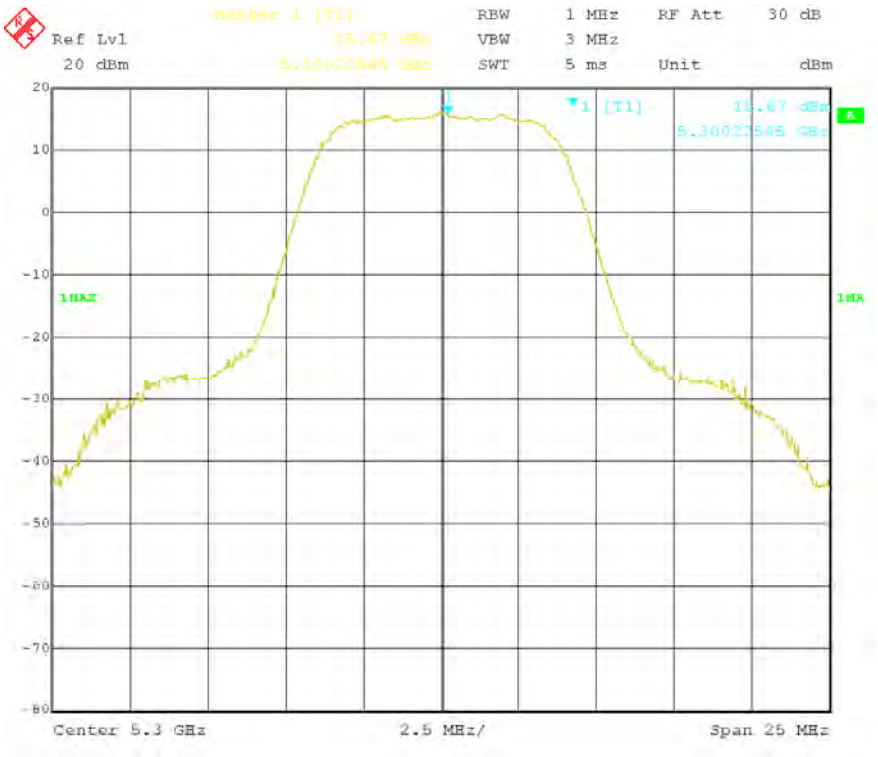
5.2GHz Band

Mode: 1 = QPSK, 8MHz Channel Bandwidth

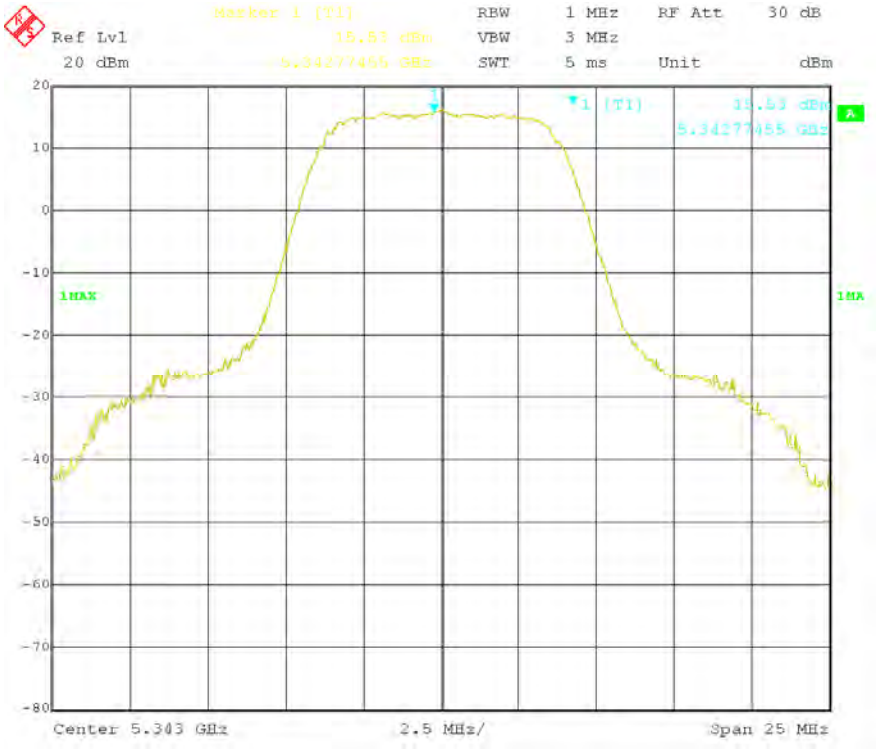
Mode	Channel Bandwidth	Mode	Peak Max hold Spectrum (dBm)
Mode1	8MHz	Low Channel	15.30
	8MHz	Mid Channel	15.67
	8MHz	High Channel	15.53



Low Channel



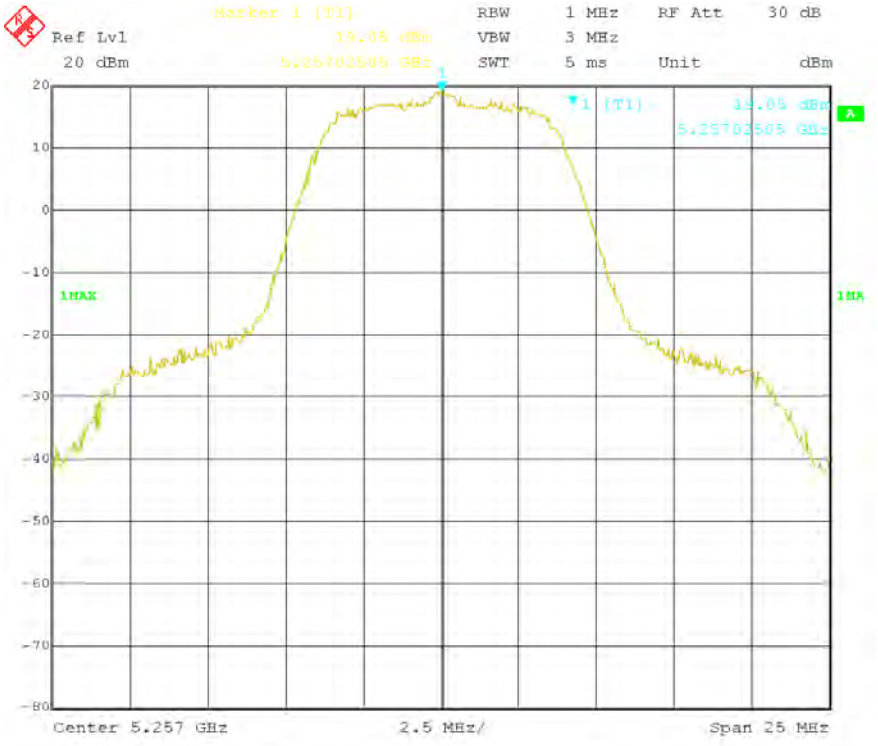
Mid Channel



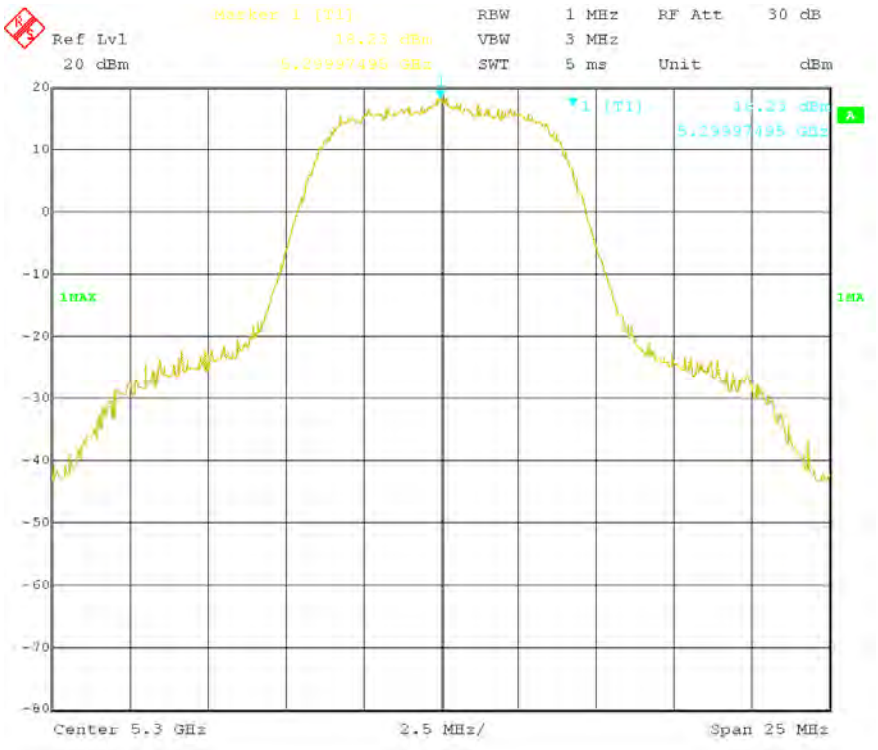
High Channel

Mode: 2 = 16QAM, 8MHz Channel Bandwidth

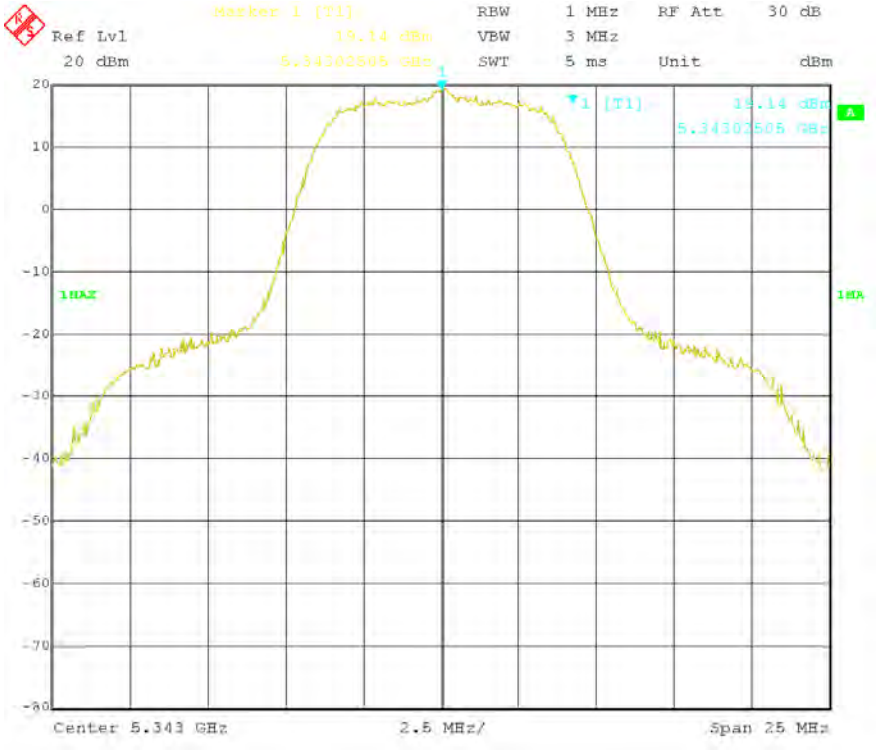
Mode	Channel Bandwidth	Mode	Peak Max hold Spectrum (dBm)
Mode1	8MHz	Low Channel	19.05
	8MHz	Mid Channel	18.23
	8MHz	High Channel	19.14



Low Channel



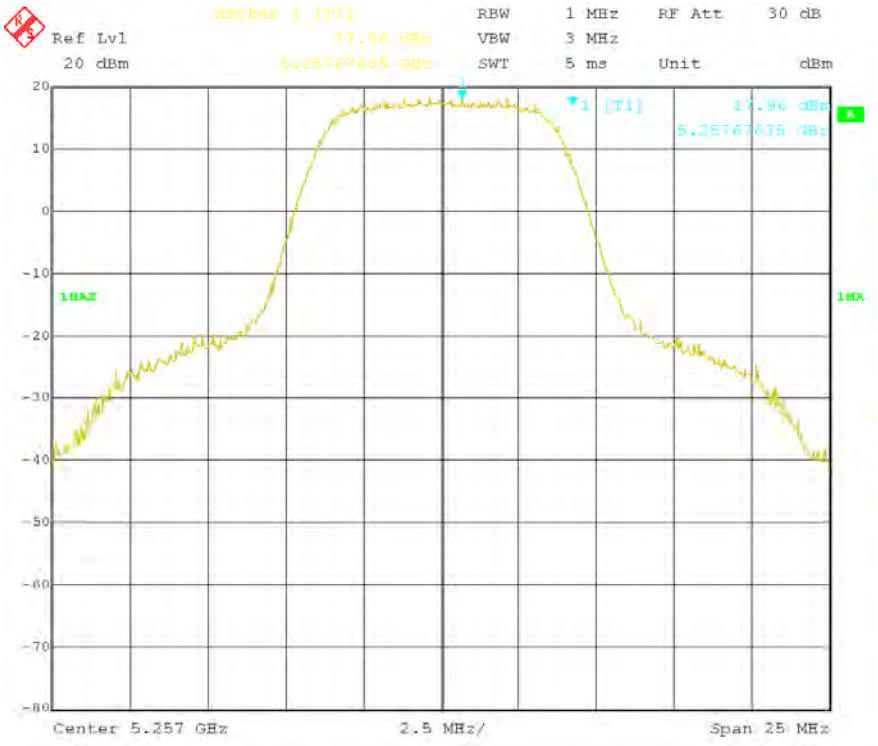
Mid Channel



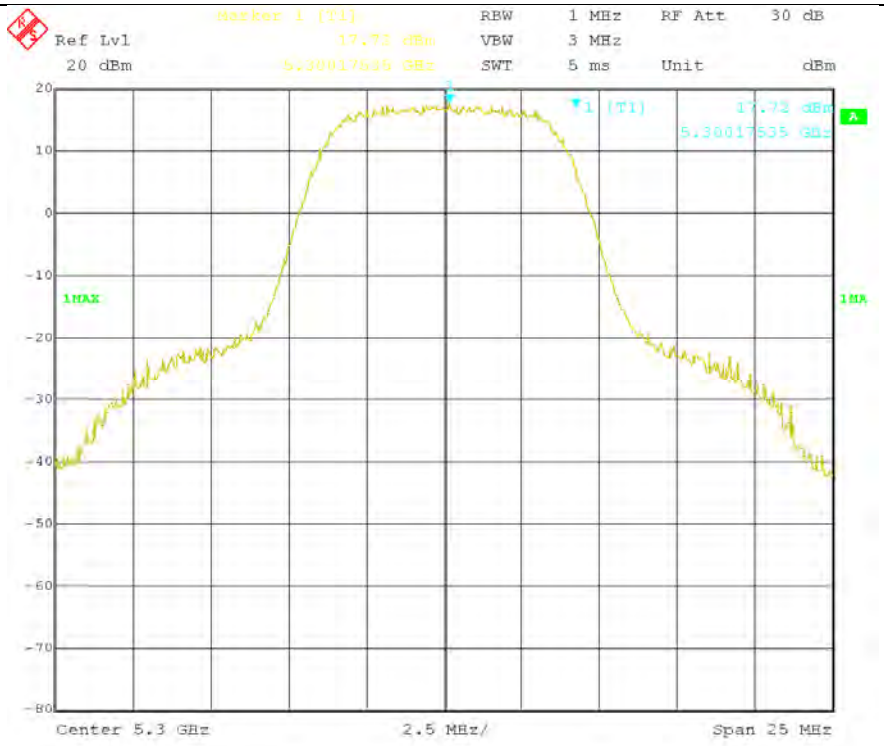
High Channel

Mode: 3 = 64QAM, 8MHz Channel Bandwidth

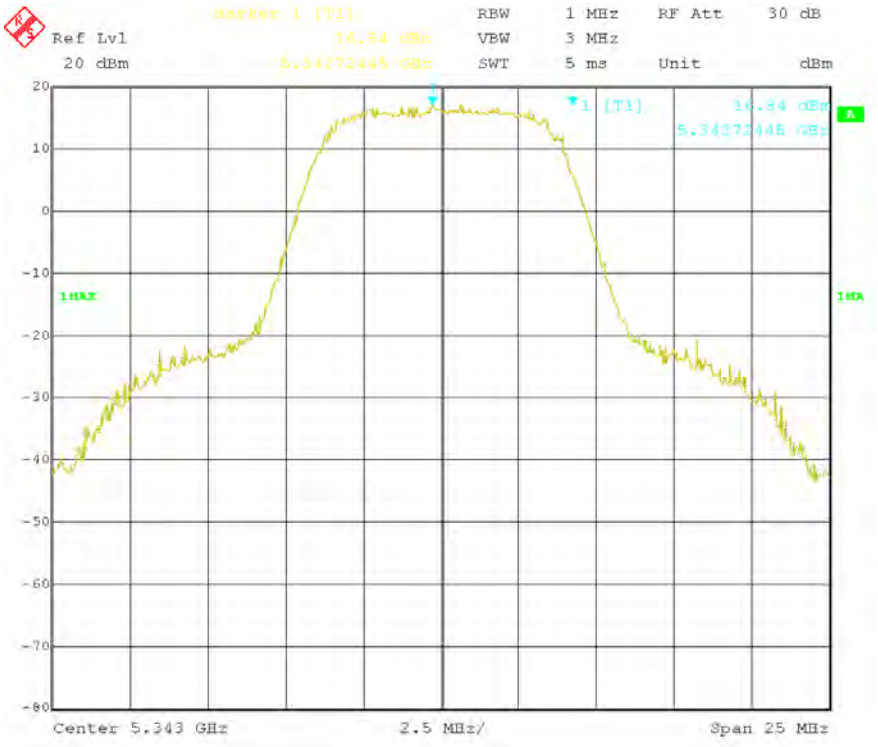
Mode	Channel Bandwidth	Mode	Peak Max hold Spectrum (dBm)
Mode1	8MHz	Low Channel	17.96
	8MHz	Mid Channel	17.72
	8MHz	High Channel	16.84



Low Channel



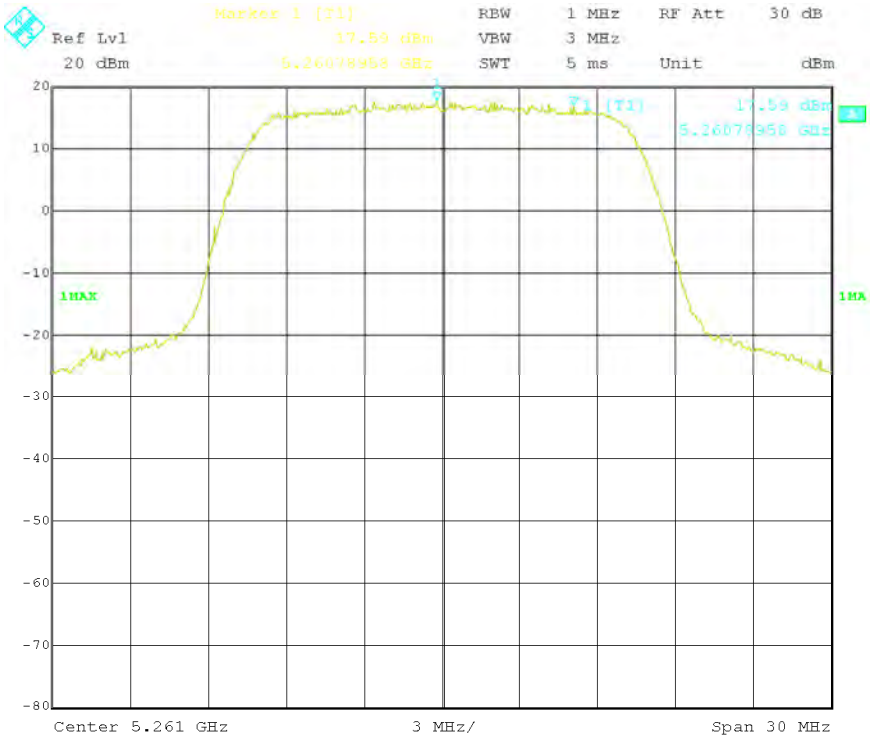
Mid Channel



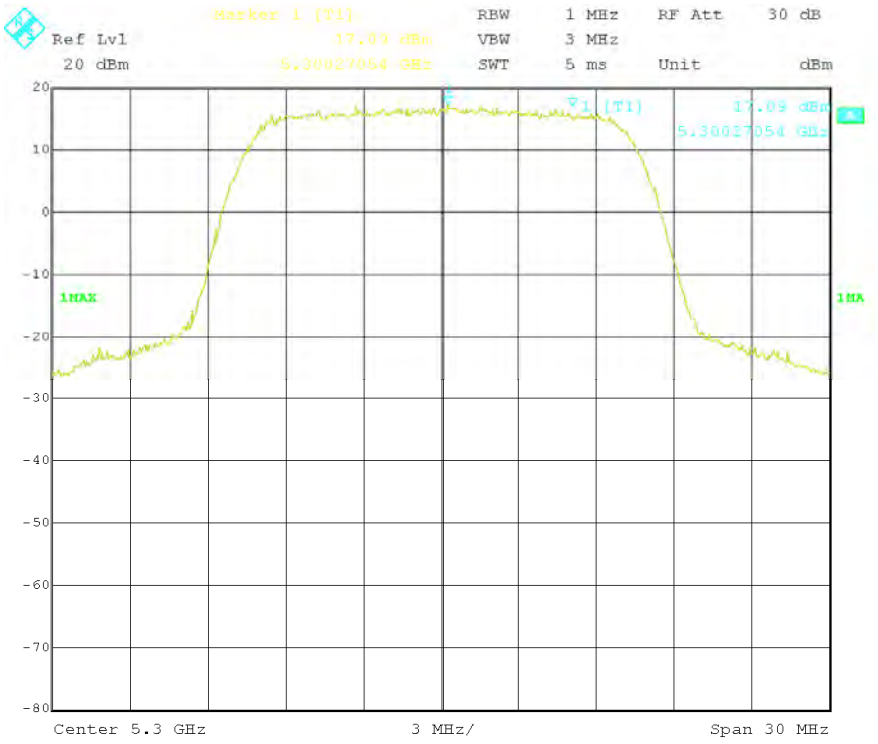
High Channel

Mode: 1 = QPSK, 16MHz Channel Bandwidth

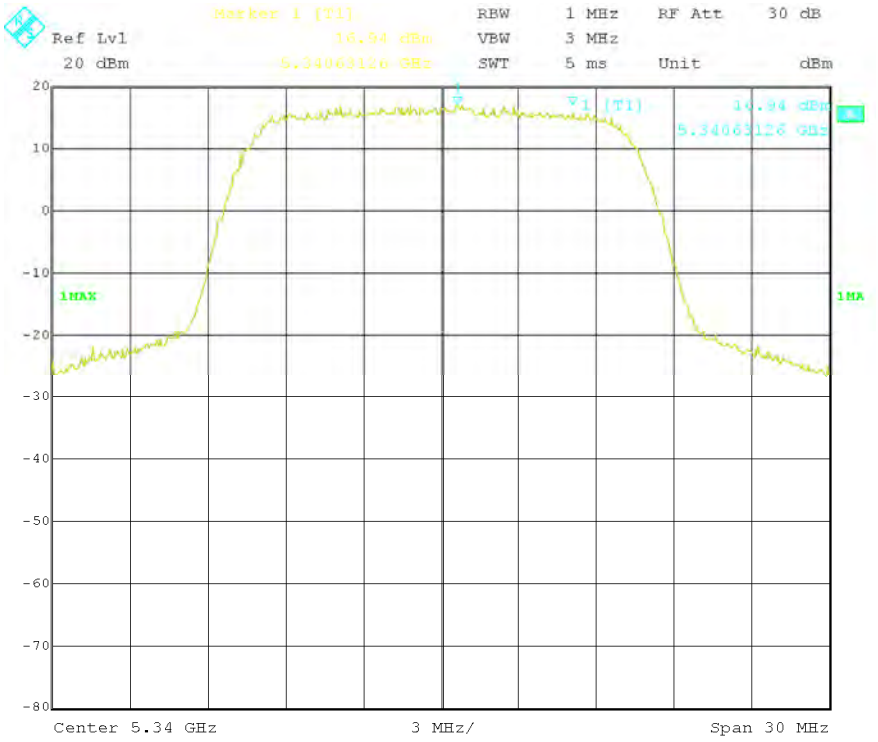
Mode	Channel Bandwidth	Mode	Peak Max hold Spectrum (dBm)
Mode1	16MHz	Low Channel	17.59
	16MHz	Mid Channel	17.09
	16MHz	High Channel	16.94



Low Channel



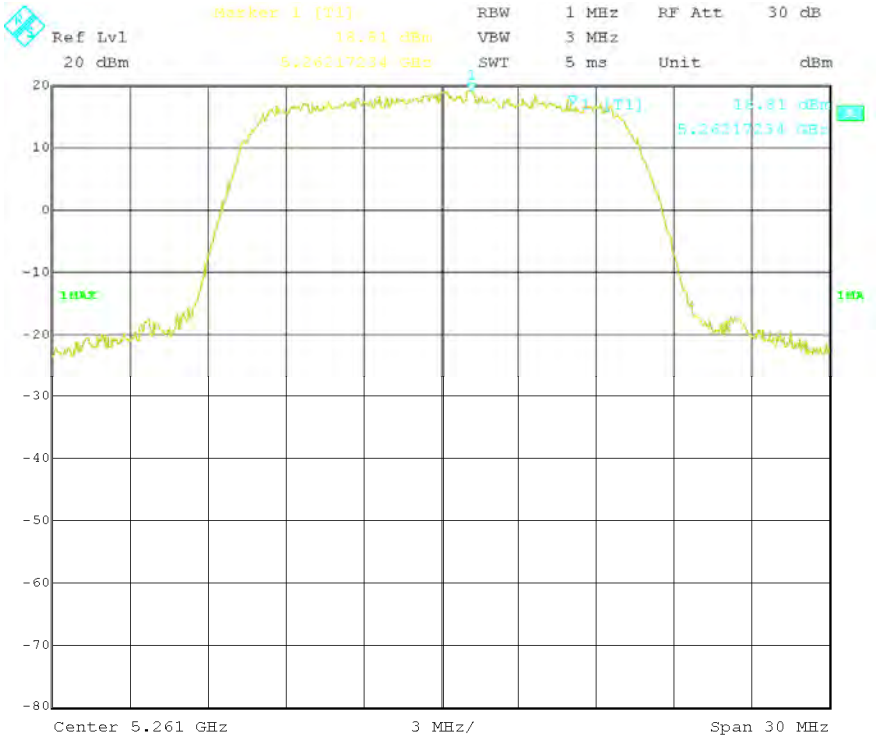
Mid Channel



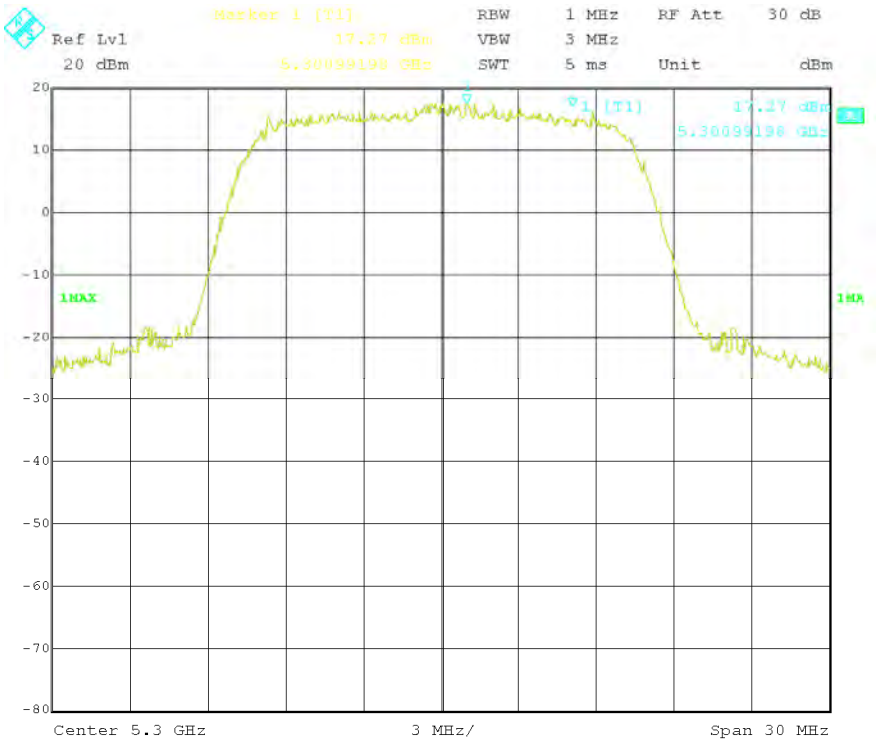
High Channel

Mode: 2 = 16QAM, 16MHz Channel Bandwidth

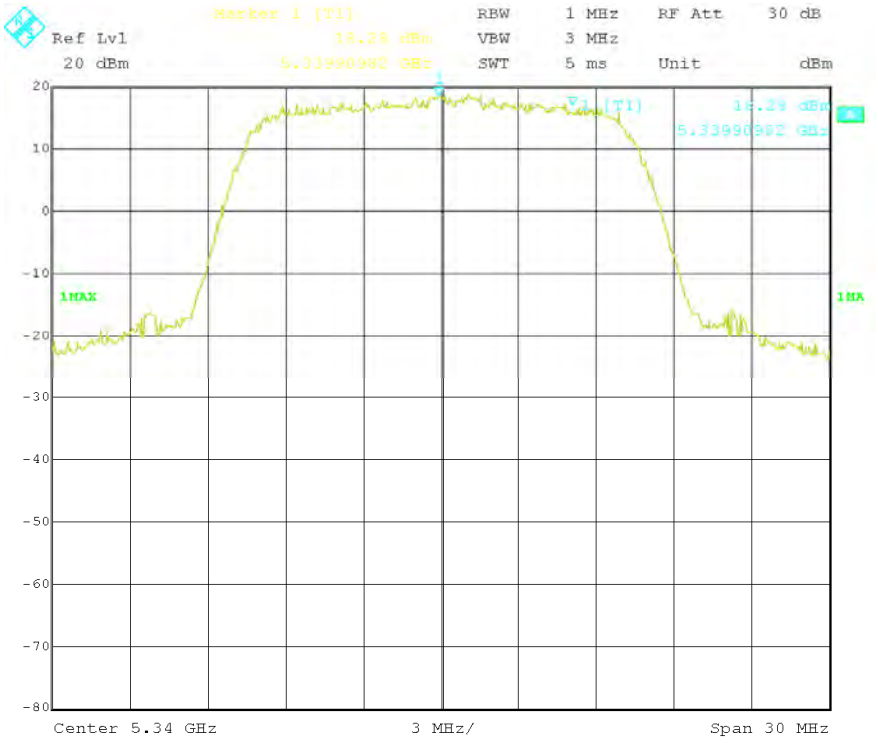
Mode	Channel Bandwidth	Mode	Peak Max hold Spectrum (dBm)
Mode1	16MHz	Low Channel	18.81
	16MHz	Mid Channel	17.27
	16MHz	High Channel	18.28



Low Channel



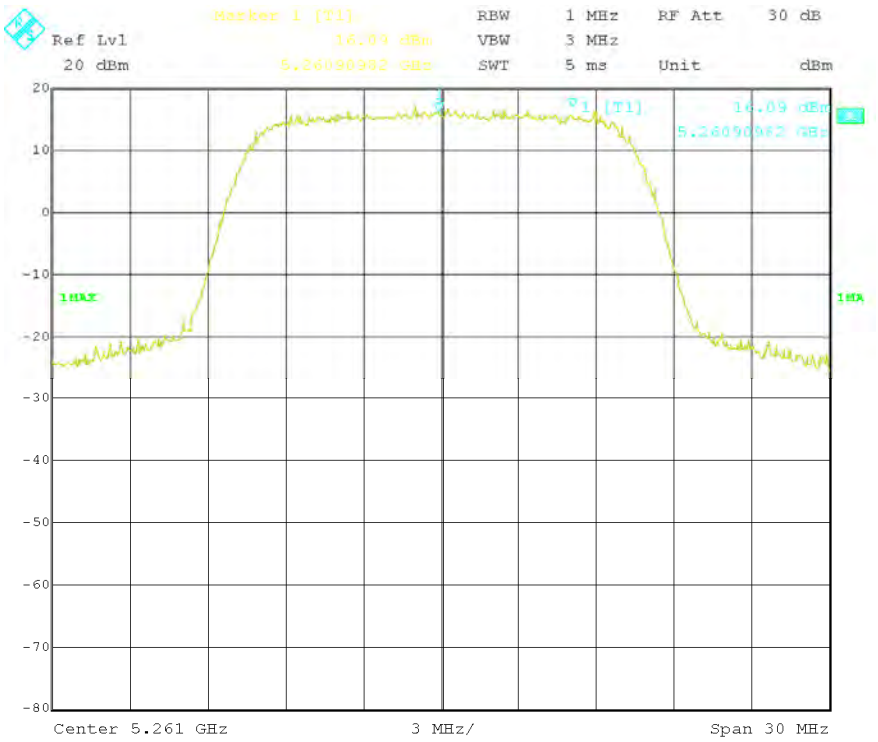
Mid Channel



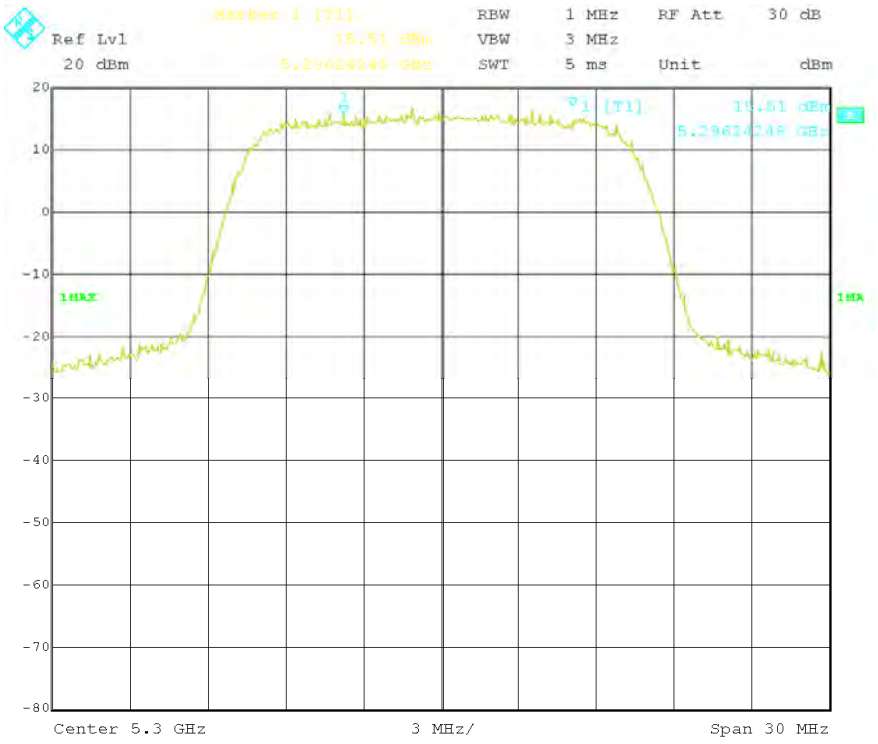
High Channel

Mode: 3 = 64QAM, 16MHz Channel Bandwidth

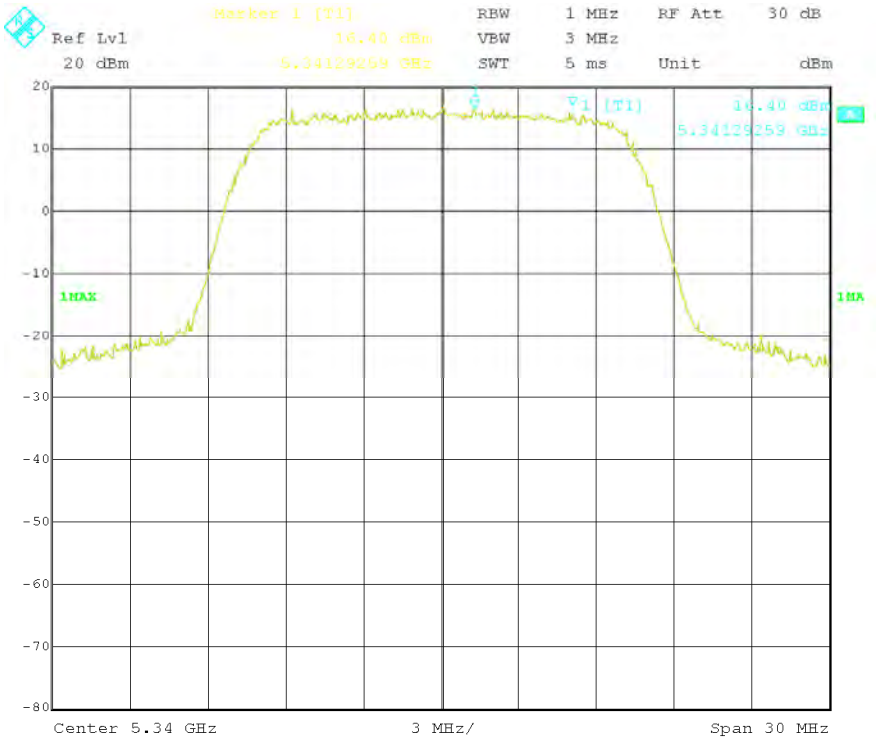
Mode	Channel Bandwidth	Mode	Peak Max hold Spectrum (dBm)
Mode1	16MHz	Low Channel	16.09
	16MHz	Mid Channel	15.51
	16MHz	High Channel	16.40



Low Channel



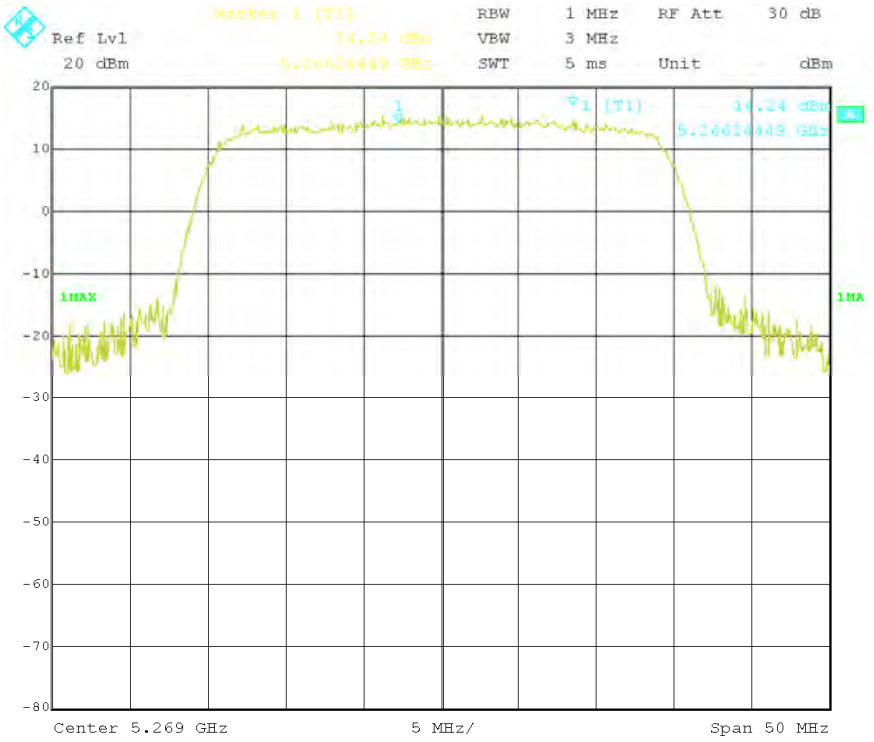
Mid Channel



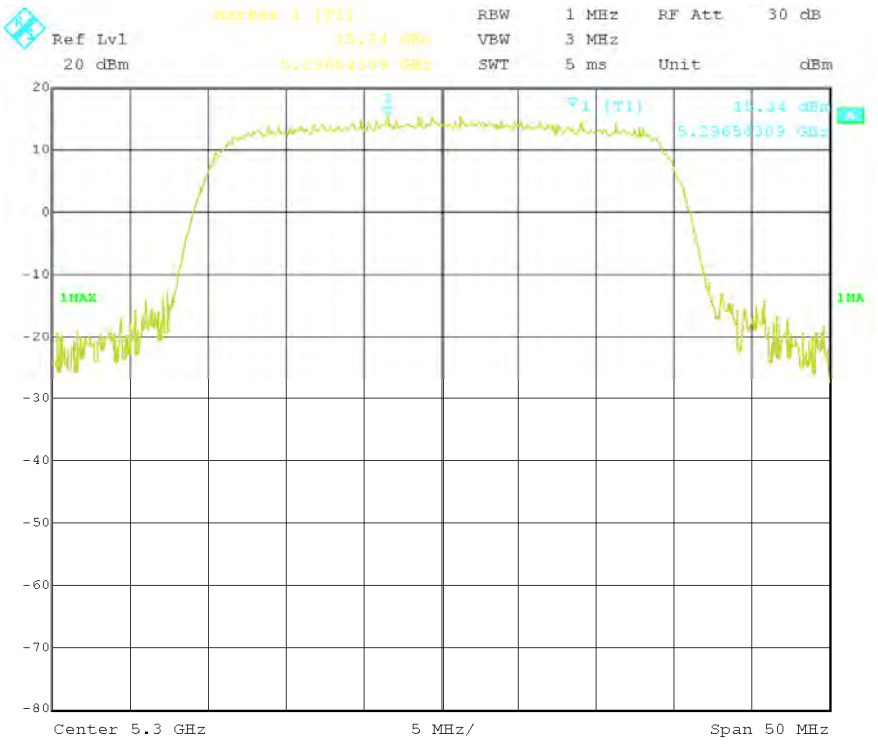
High Channel

Mode: 1 = QPSK, 32MHz Channel Bandwidth

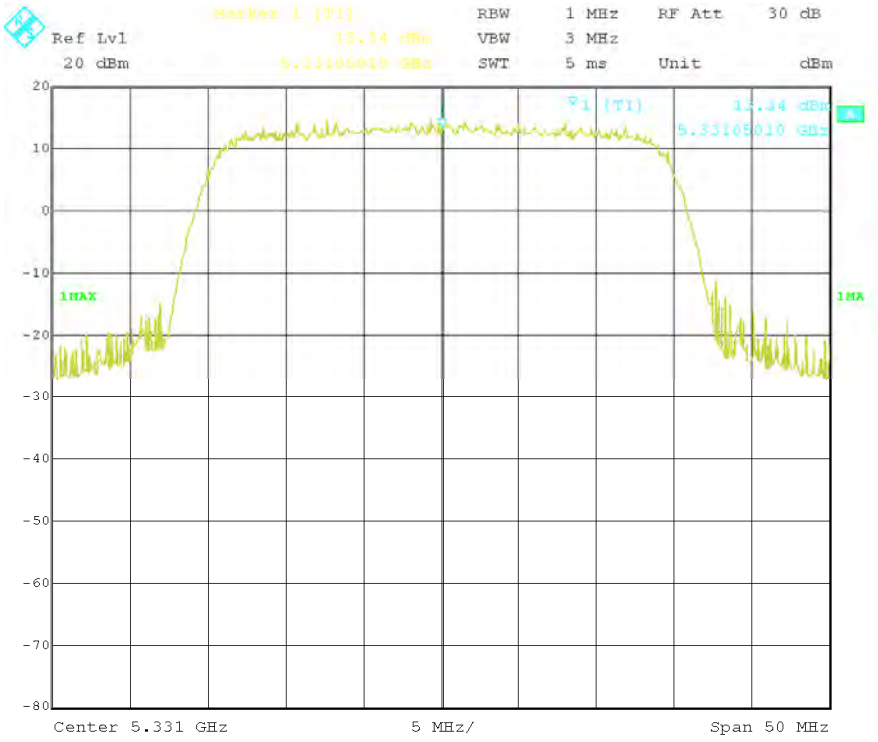
Mode	Channel Bandwidth	Mode	Peak Max hold Spectrum (dBm)
Mode1	32MHz	Low Channel	14.24
	32MHz	Mid Channel	15.34
	32MHz	High Channel	13.34



Low Channel



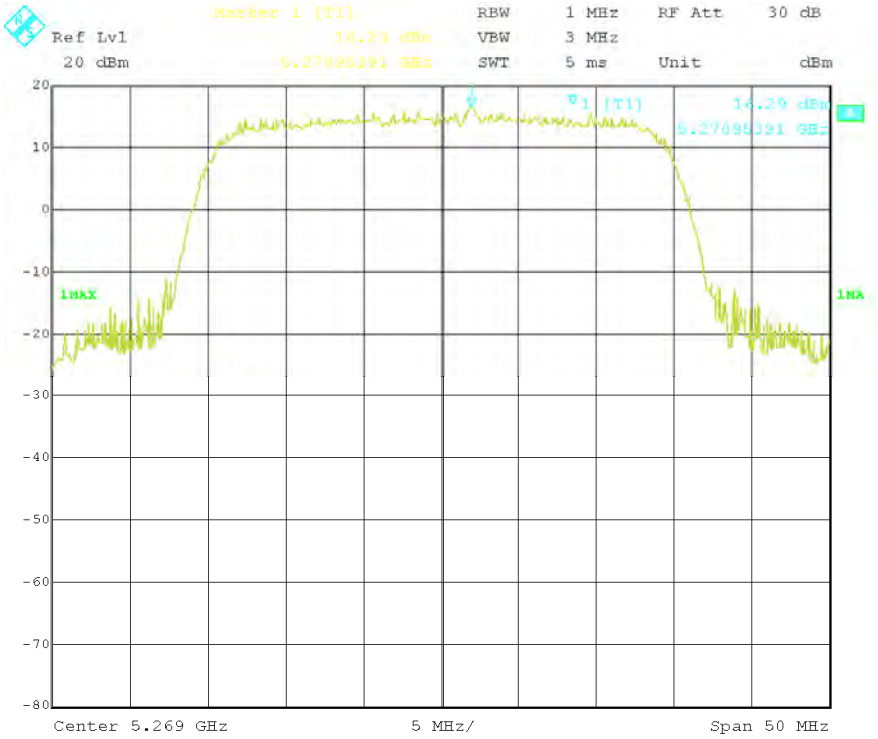
Mid Channel



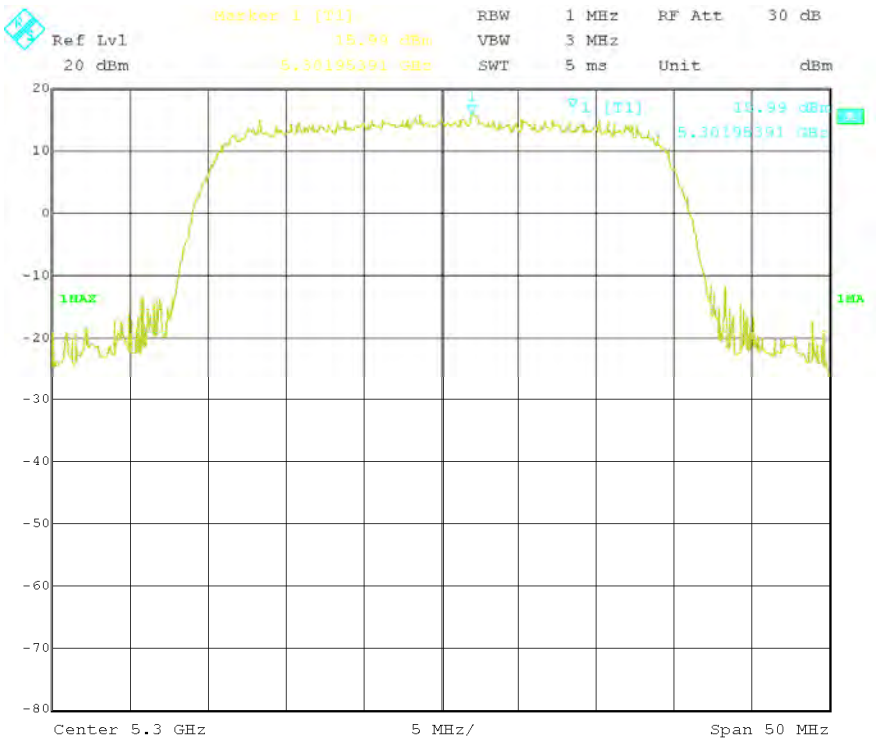
High Channel

Mode: 2 = 16QAM, 32MHz Channel Bandwidth

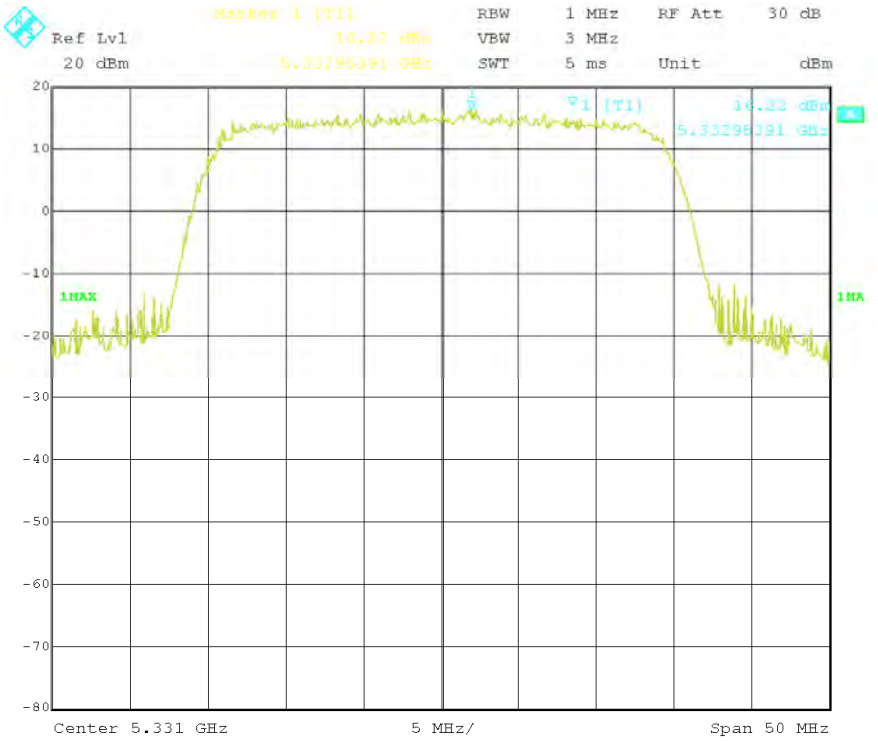
Mode	Channel Bandwidth	Mode	Peak Max hold Spectrum (dBm)
Mode1	32MHz	Low Channel	16.29
	32MHz	Mid Channel	15.99
	32MHz	High Channel	16.22



Low Channel



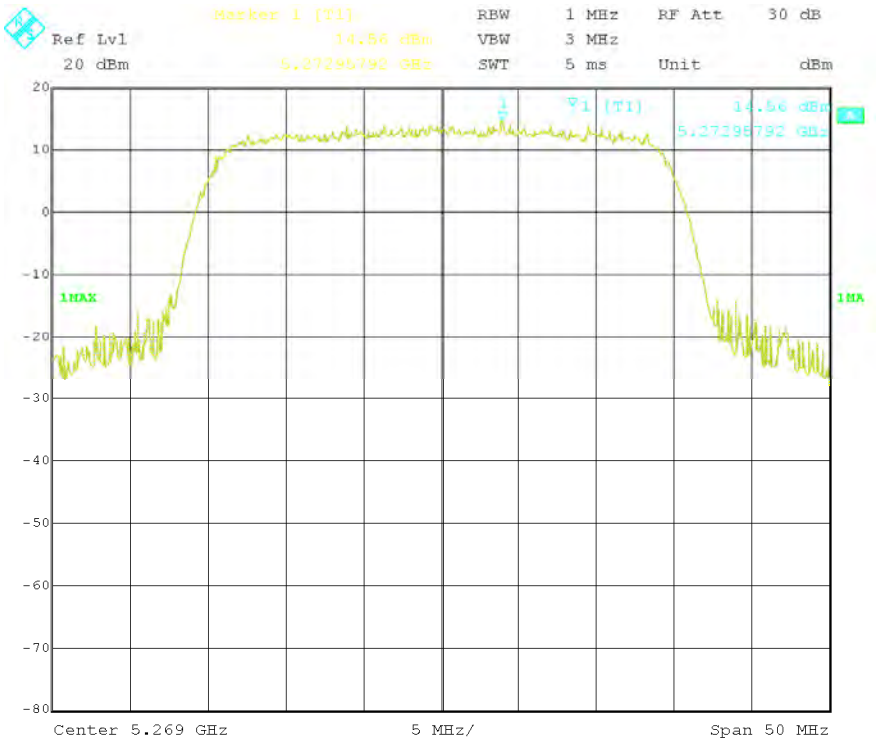
Mid Channel



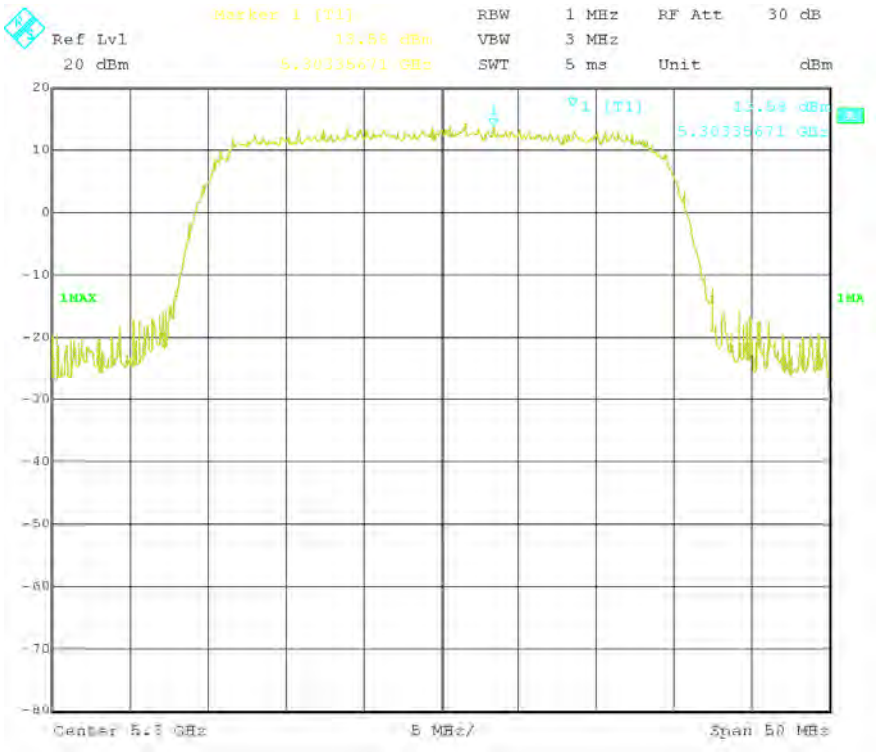
High Channel

Mode: 3 = 64QAM, 32MHz Channel Bandwidth

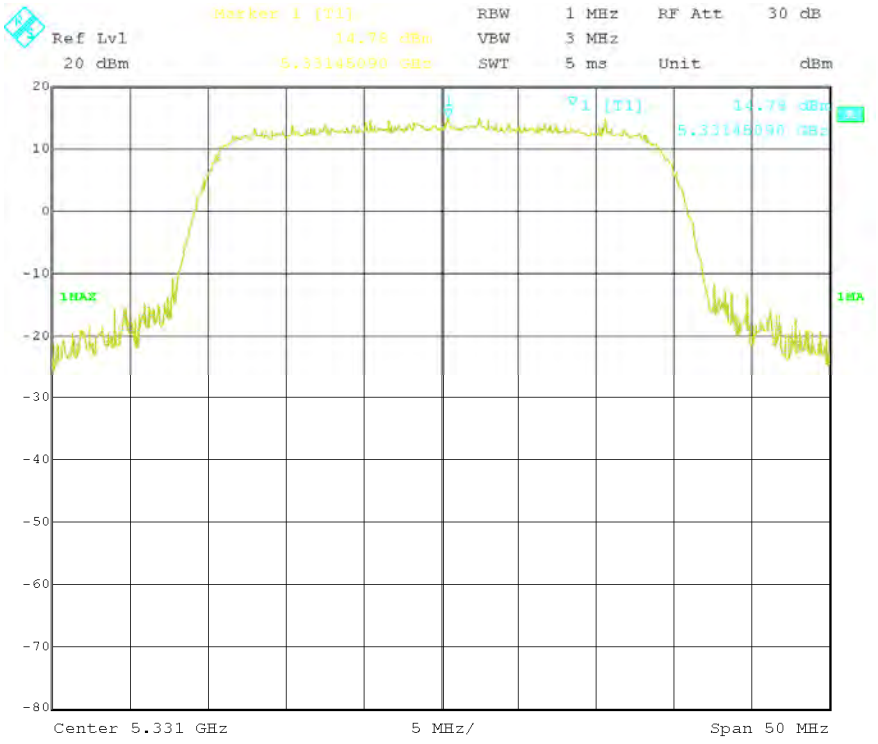
Mode	Channel Bandwidth	Mode	Peak Max hold Spectrum (dBm)
Mode 3	32MHz	Low Channel	14.56
	32MHz	Mid Channel	13.58
	32MHz	High Channel	14.78



Low Channel



Mid Channel

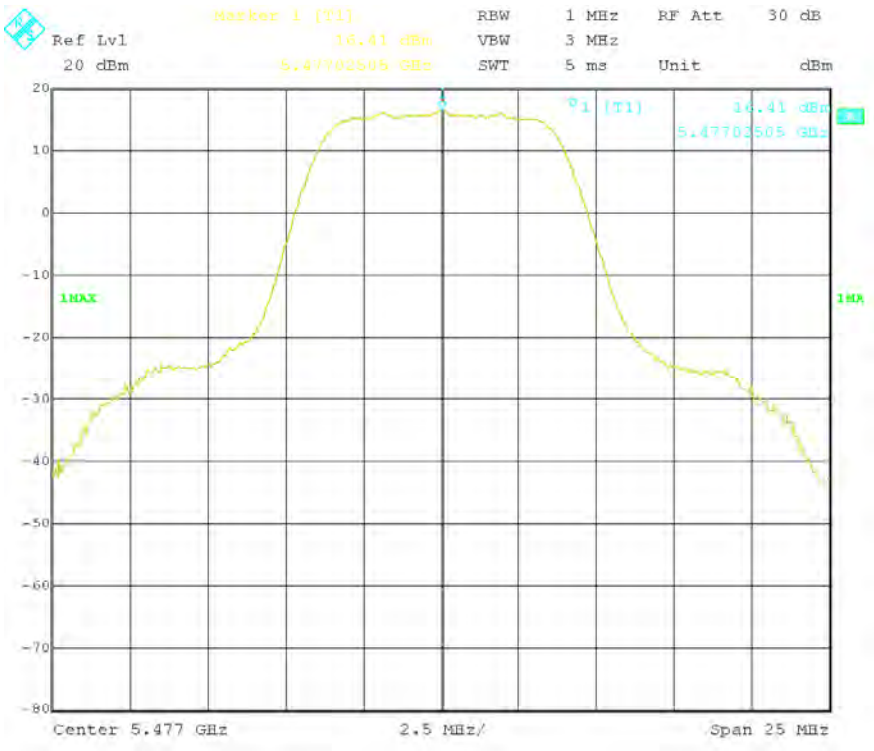


High Channel

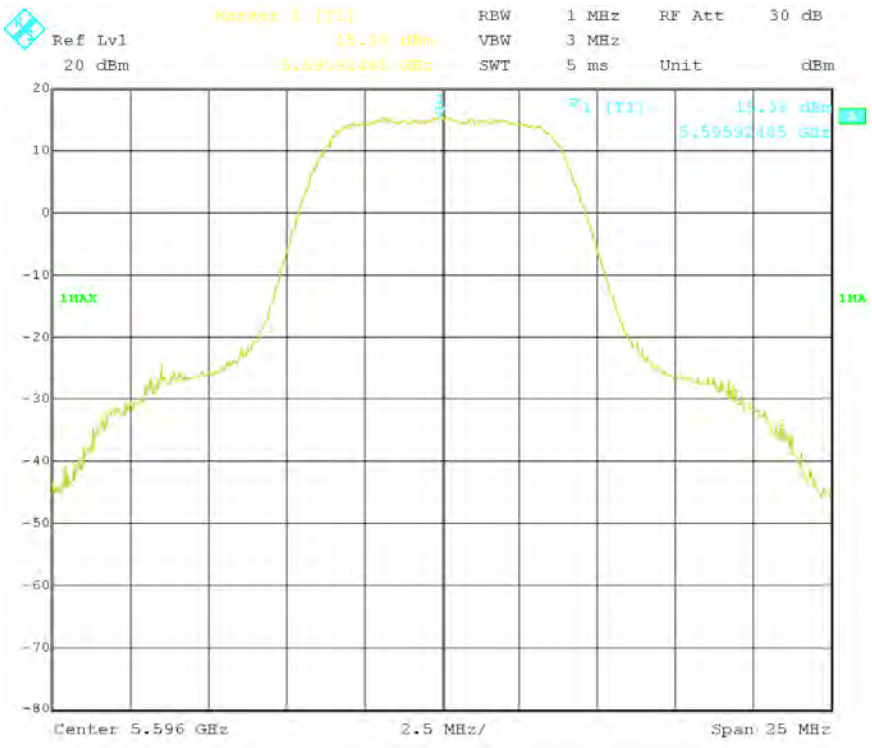
5.4GHz Band

Mode: 1 = QPSK, 8MHz Channel Bandwidth

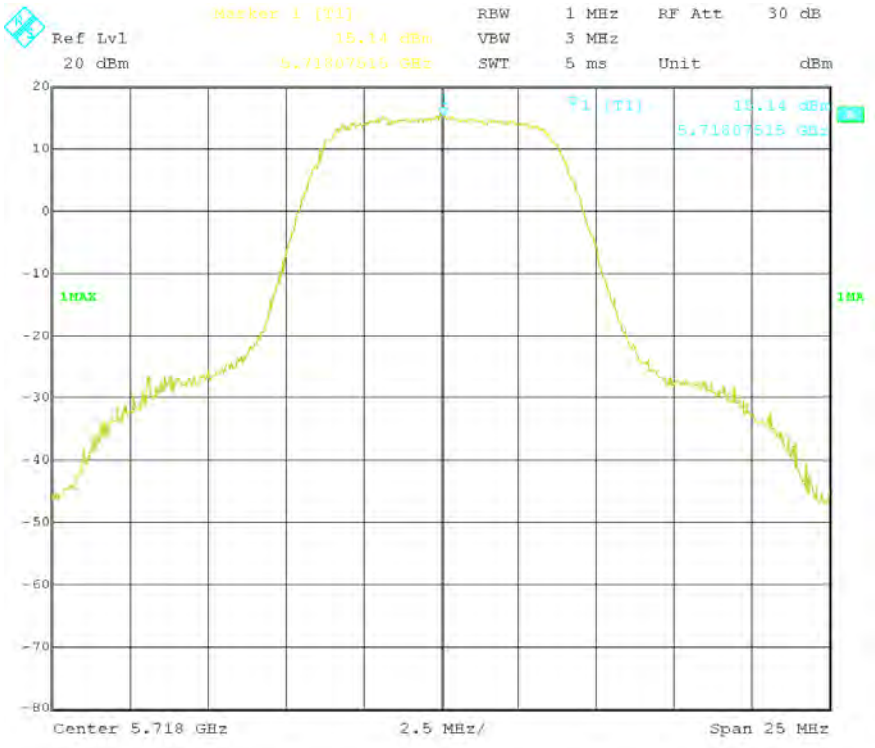
Mode	Channel Bandwidth	Mode	Peak Max hold Spectrum (dBm)
Mode 1	8MHz	Low Channel	16.41
	8MHz	Mid Channel	15.38
	8MHz	High Channel	15.14



Low Channel



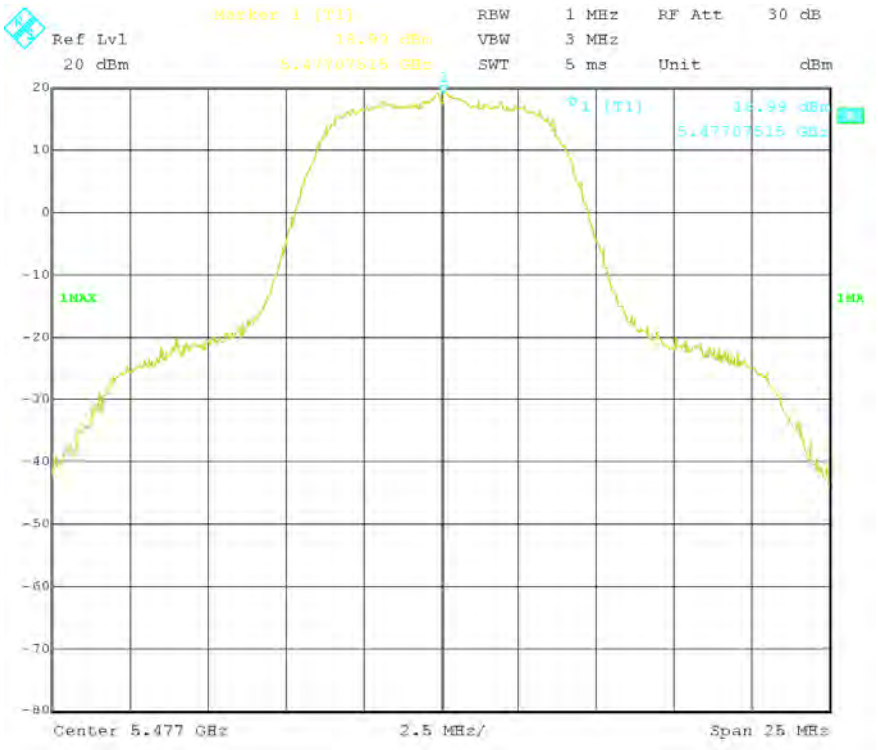
Mid Channel



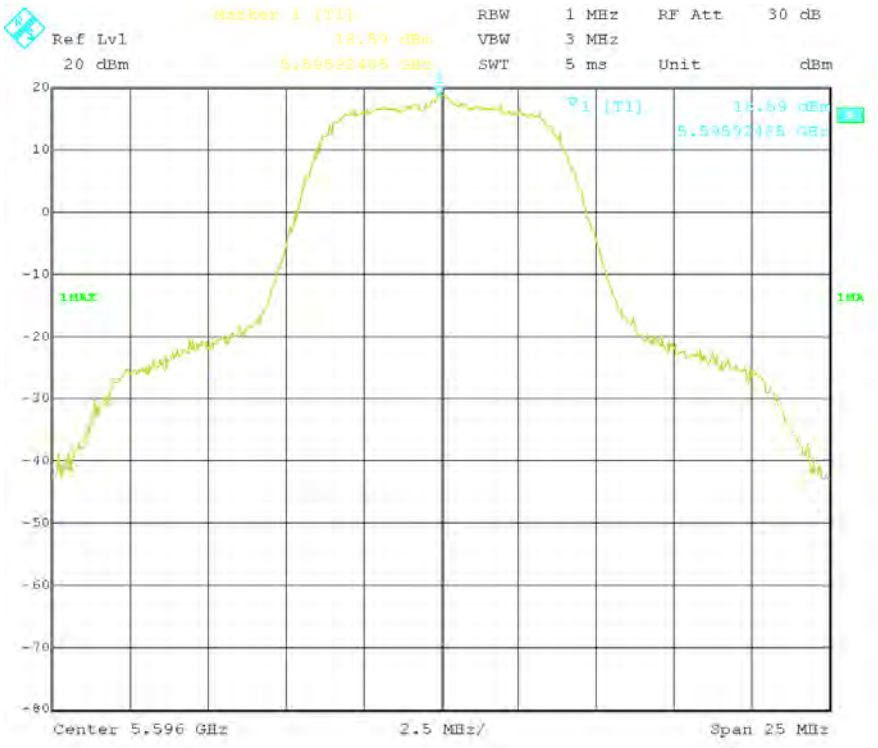
High Channel

Mode: 2 = 16QAM, 8MHz Channel Bandwidth

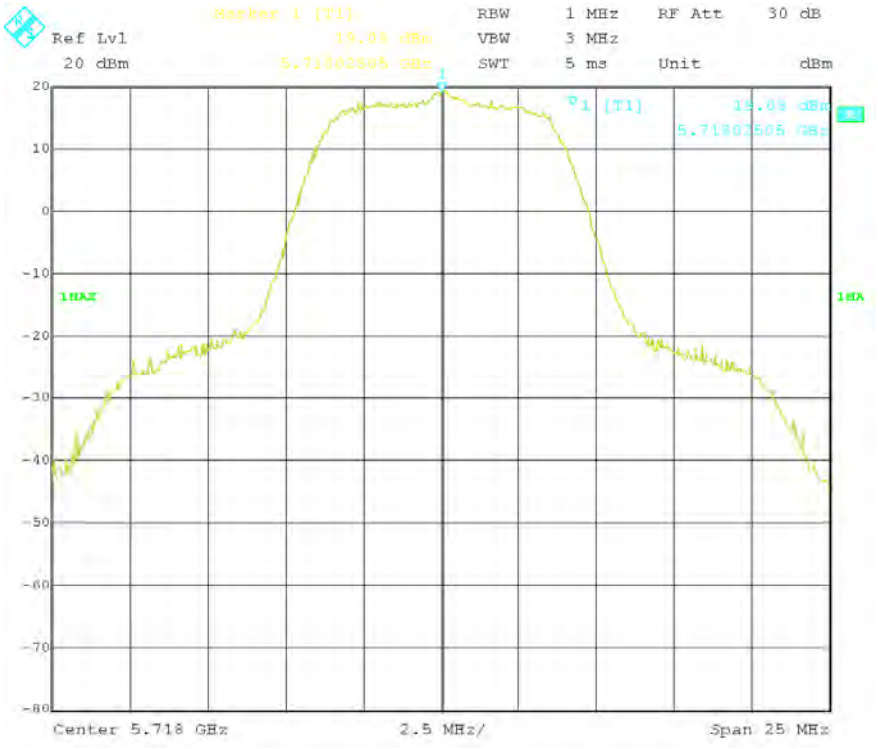
Mode	Channel Bandwidth	Mode	Peak Max hold Spectrum (dBm)
Mode 1	8MHz	Low Channel	18.99
	8MHz	Mid Channel	18.59
	8MHz	High Channel	19.08



Low Channel



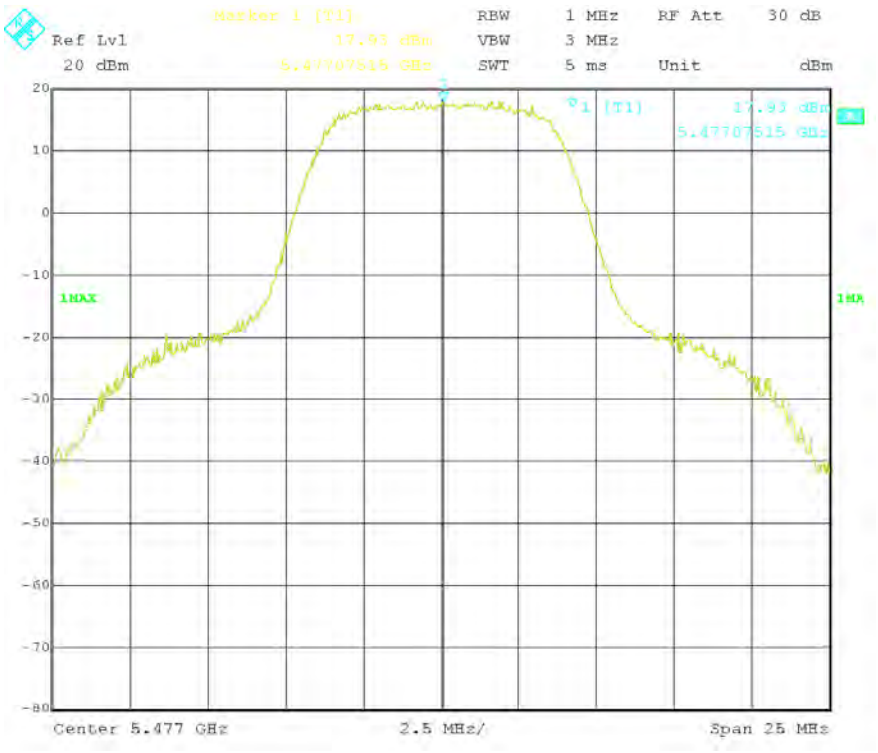
Mid Channel



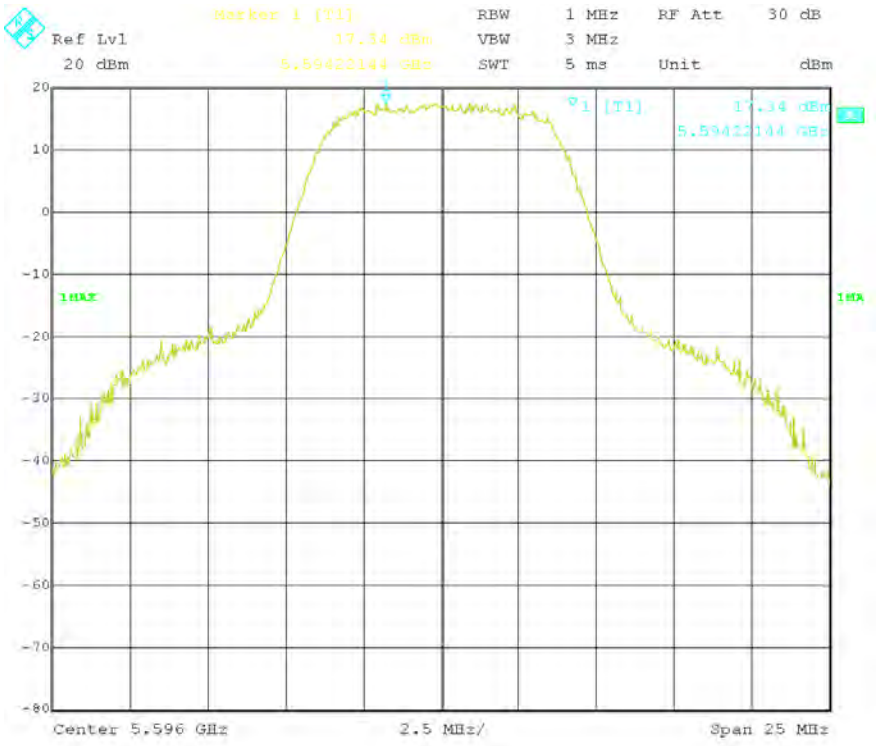
High Channel

Mode: 3 = 64QAM, 8MHz Channel Bandwidth

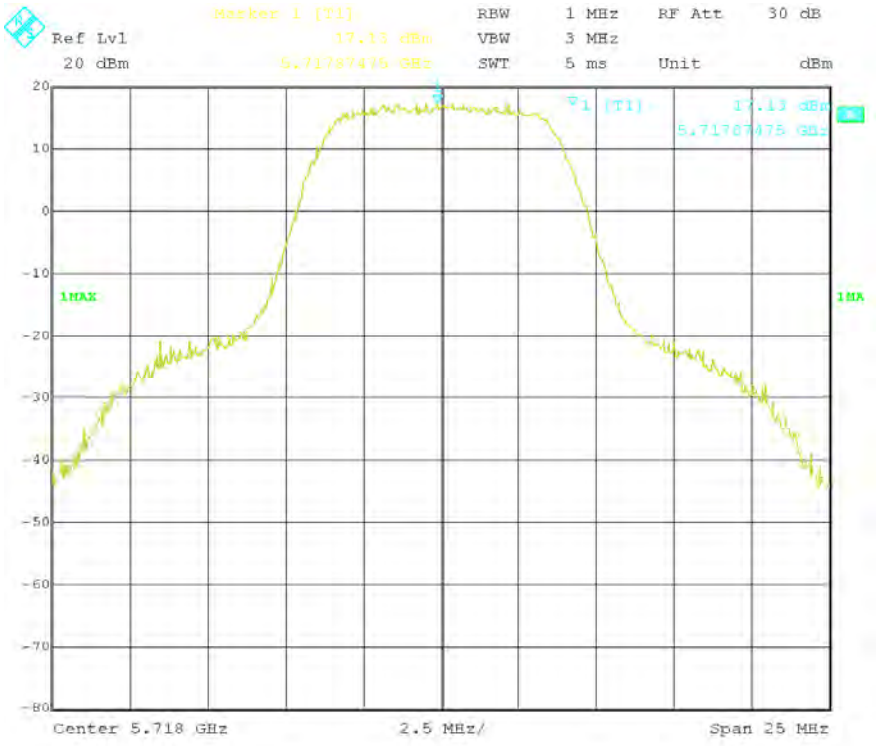
Mode	Channel Bandwidth	Mode	Peak Max hold Spectrum (dBm)
Mode 1	8MHz	Low Channel	17.93
	8MHz	Mid Channel	17.34
	8MHz	High Channel	17.13



Low Channel



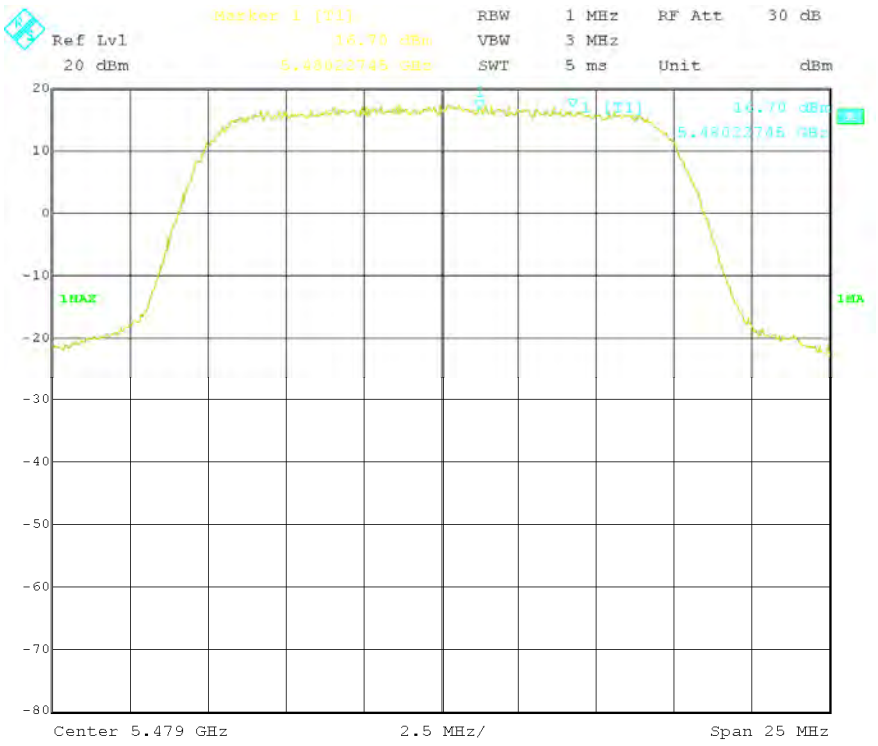
Mid Channel



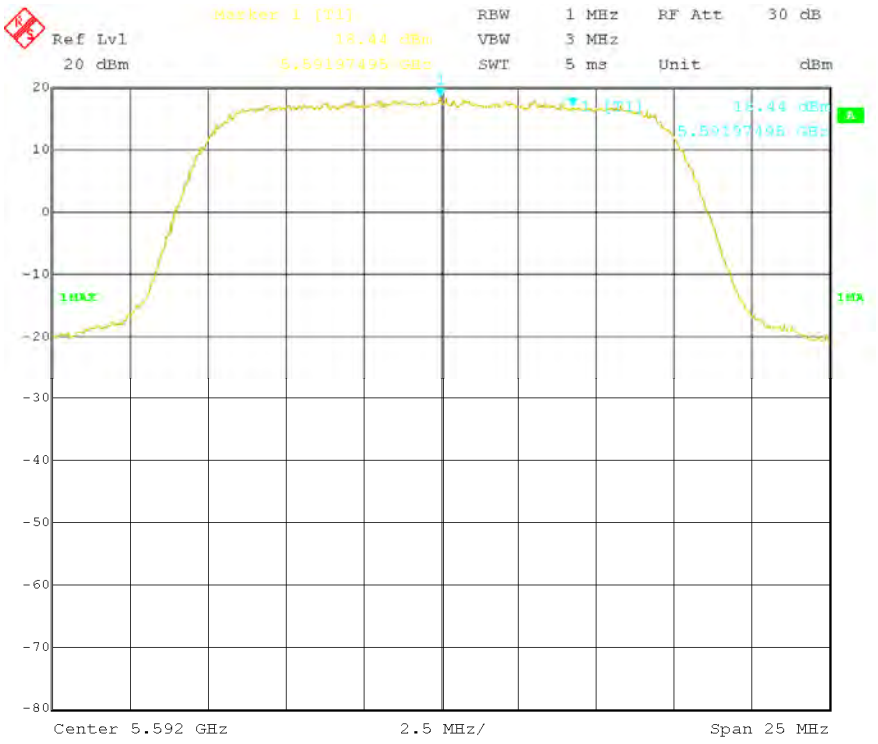
High Channel

Mode: 1 = QPSK, 16MHz Channel Bandwidth

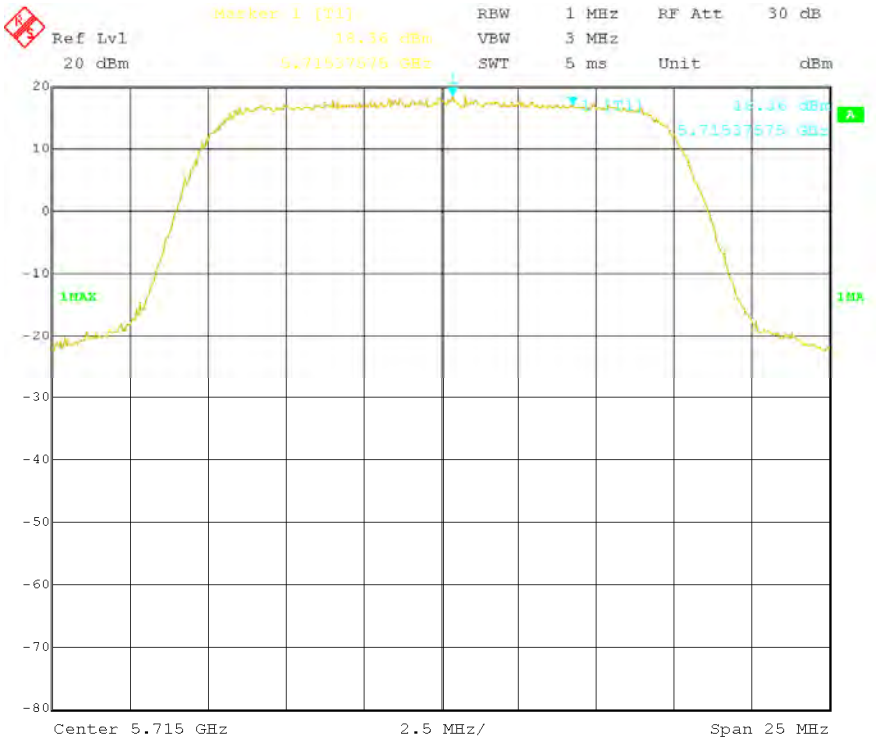
Mode	Channel Bandwidth	Mode	Peak Max hold Spectrum (dBm)
Mode 1	16MHz	Low Channel	16.70
	16MHz	Mid Channel	18.44
	16MHz	High Channel	18.36



Low Channel



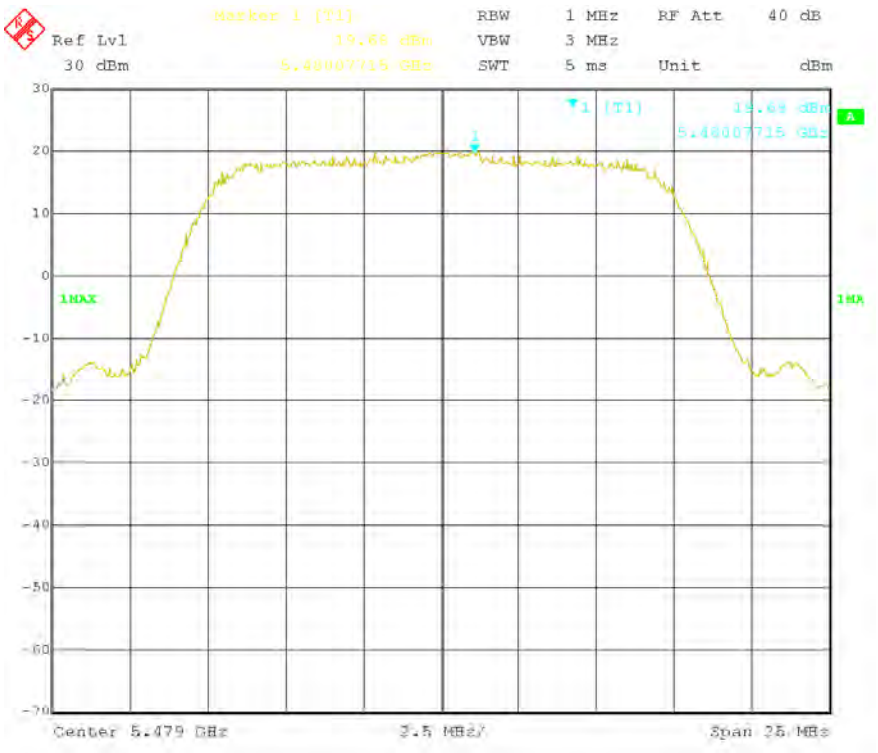
Mid Channel



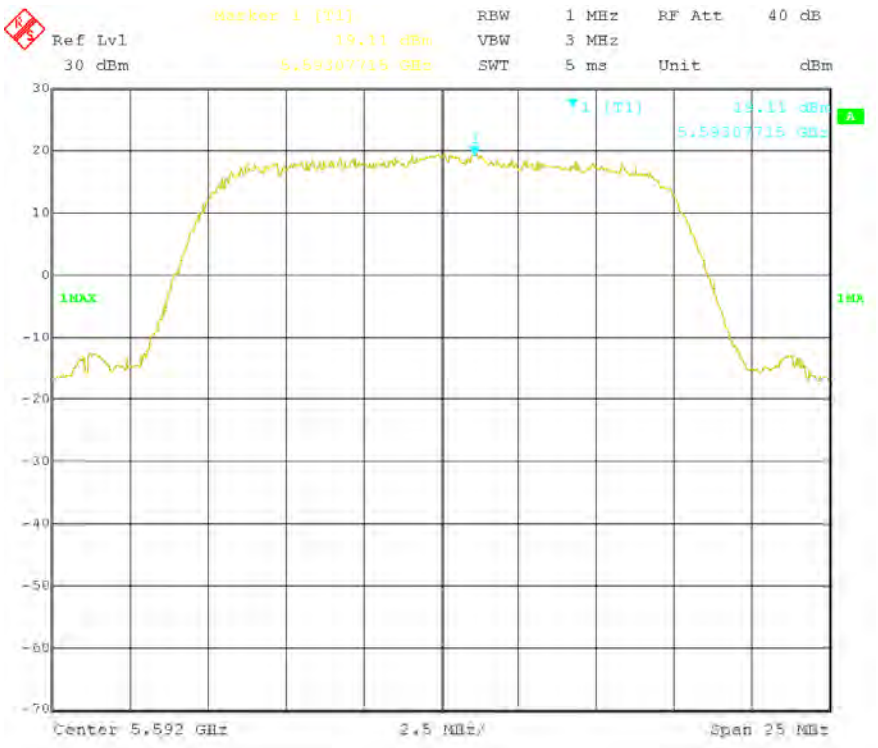
High Channel

Mode: 2 = 16QAM, 16MHz Channel Bandwidth

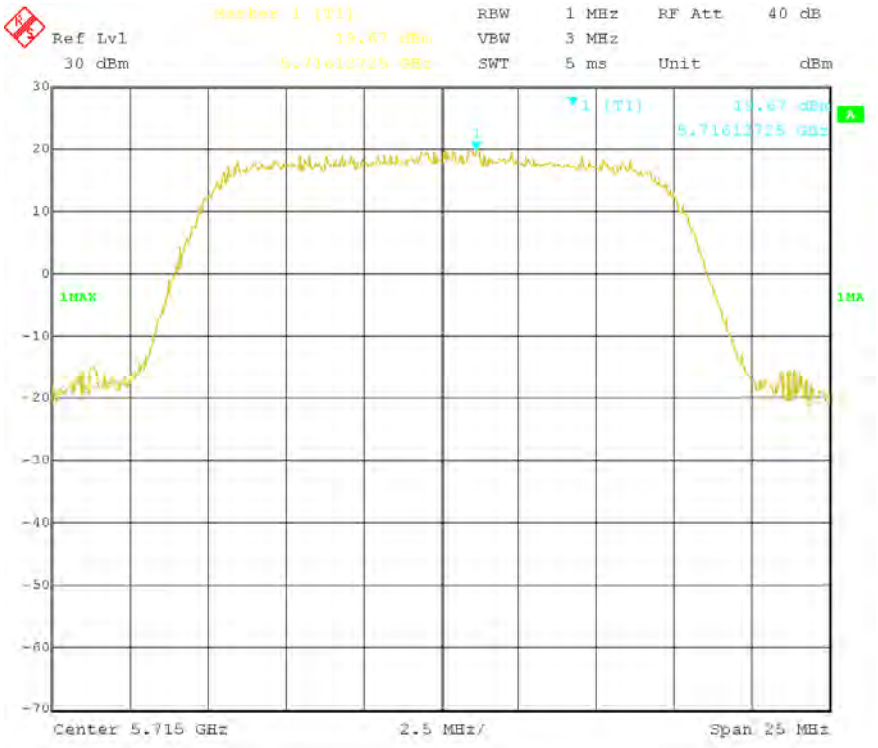
Mode	Channel Bandwidth	Mode	Peak Max hold Spectrum (dBm)
Mode 2	16MHz	Low Channel	19.68
	16MHz	Mid Channel	19.11
	16MHz	High Channel	19.67



Low Channel



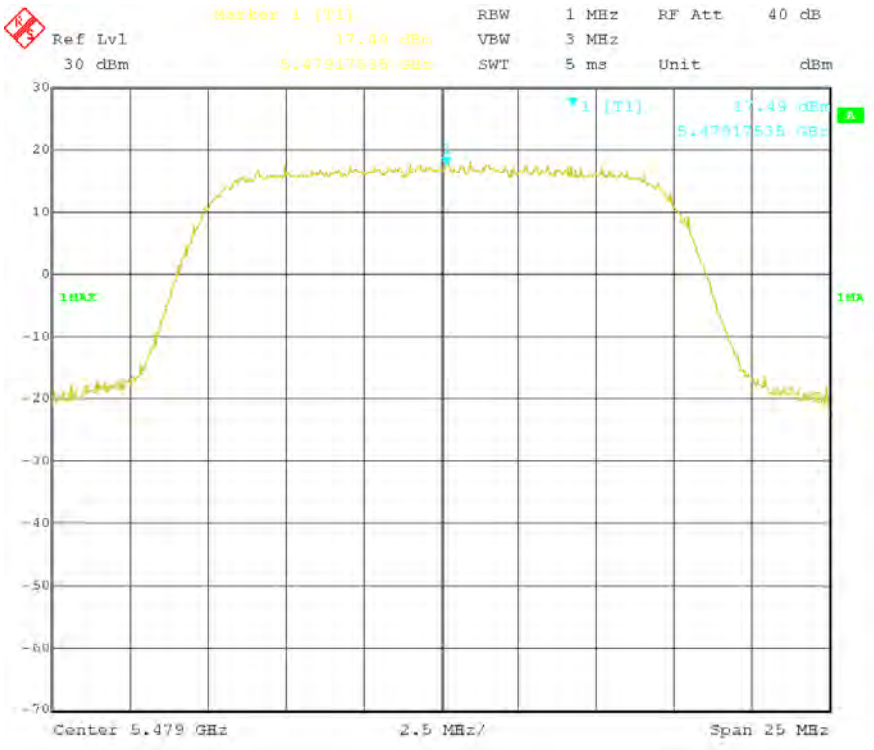
Mid Channel



High Channel

Mode: 3 = 64QAM, 16MHz Channel Bandwidth

Mode	Channel Bandwidth	Mode	Peak Max hold Spectrum (dBm)
Mode 3	16MHz	Low Channel	17.49
	16MHz	Mid Channel	17.25
	16MHz	High Channel	17.34



Low Channel