FCC Test Report

FCC ID	:	**MXF-WLTCS106**
Equipment	:	**WiMAX Gateway**
Model No.	:	**WLTCS-106**
Brand Name	:	**Gemtek**
Applicant	:	**Gemtek Technology Co., Ltd.**
Address	:	**No. 15-1 Zhanghua Road, Hsinchu Industrial Park, Hukou, Hsinchu, Taiwan, 30352.**
Standard	:	**47 CFR FCC Part 90 Subpart Z**
Received Date	:	**Dec. 18, 2013**
Tested Date	:	**Jan. 08 ~ Jan. 23, 2014**

We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Approved & Reviewed by:

Gary Chang / Manager

Testing Laboratory
2732

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Release Record

Report No.	Version	Description	Issued Date
FW3D1801	Rev. 01	Initial issue	Feb. 27, 2014
FW3D1801	Rev. 02	Modified information of test standard	Mar. 07, 2014

Summary of Test Results

FCC Rules	Test Items	Measured	Result
2.1046 / 90.1321	Equivalent Isotropically Radiated Power and power density	Power[dBm]: 38.755	Pass
2.1053 / 90.1323	Radiated Emissions	Meet the requirement of limit	Pass
2.1051 / 90.1323	Conducted Emissions	Meet the requirement of limit	Pass
90.210	Emission Mask	Meet the requirement of limit	Pass
2.1049(h) / 90.1323	26dBc Bandwidth	Meet the requirement of limit	Pass
2.1055 / 90.213	Frequency Stability	Meet the requirement of limit	Pass

1 General Description

1.1 Information

1.1.1 Specification of the Equipment under Test (EUT)

Operating Frequency (MHz)	Channel Bandwidth: 5MHz: 3652.5~3697.5 Channel Bandwidth: 7MHz: 3653.5~3696.5 Channel Bandwidth: 10MHz: 3655.0~3695.0
Uplink Modulation Type	QPSK 1/2, QPSK 3/4, 16QAM 1/2, 16QAM 3/4
Downlink Modulation Type	QPSK 1/2, QPSK 3/4, 16QAM 1/2, 16QAM 3/4, 64QAM 1/2, 64QAM 2/3, 64QAM 3/4, 64QAM 5/6
Modulation Technology	OFDMA
H/W Version	Main board: WLTCS-100_V02 Daughter board: WLTFSR-115GN_B42_B43_V00A
S/W Version	01.01.02.015

1.1.2 Maximum EIRP & Emission Designator

Channel Bandwidth	Modulation	Maximum EIRP (W)	Emission Designator
5MHz	QPSK	3.582	4M98G7D
5MHz	16QAM	3.231	4M96W7D
7MHz	QPSK	5.254	6M84G7D
7MHz	16QAM	4.783	7M24W7D
10MHz	QPSK	7.508	10M04G7D
10MHz	16QAM	5.899	9M98W7D

1.1.3 Antenna Details

Ant. No.	Type	Gain (dBi)	Connector
1	Outdoor patch ant.	15	MHF

1.1.4 EUT Operational Condition

Power Supply Type	56Vdc from POE		
Test Software	telnet, Version: 6.1.7601		
Operational Voltage	☒ Vnom (110 V)	☒ Vmax (126.5 V)	☒ Vmin (93.5 V)
Operational Climatic	☒ Tnom (20℃)	☒ Tmax (55℃)	☒ Tmin (-30℃)

1.1.5 Accessories

Accessories		
No.	**Equipment**	**Description**
1	POE	Brand Name: PHIHONG Model Name: PSM25R-560 Power Rating: I/P: 100-240Vac, 50-60Hz, 0.5A O/P: 56Vdc, 0.45A Power Line: AC: 1.7m non-shielded cable with one core DC: 1m non-shielded cable w/o core

1.1.6 Operating Channel List

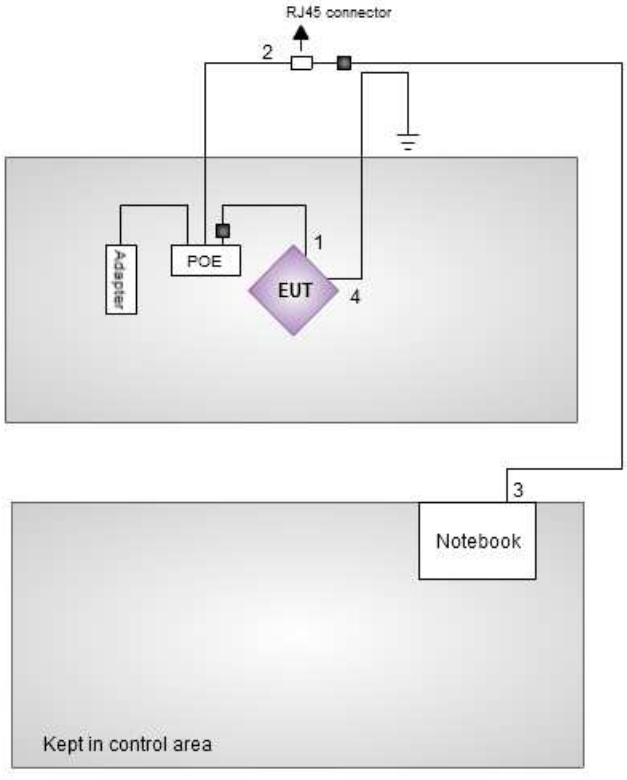
Channel Bandwidth (MHz)	Frequency (MHz)
5	3652.5
5	3675.0
5	3697.5
7	3653.5
7	3675.0
7	3696.5
10	3655.0
10	3675.0
10	3695.0

1.2 Local Support Equipment List

Support Equipment List						
No.	Equipment	Brand	Model	S/N	FCC ID	Signal cable / Length (m)
1	Notebook	DELL	E6430	---	FCC DoC	RJ45, 10m non-shielded

1.3 Test Setup Chart

Test Setup Diagram



1. RJ45, 1m non-shielded
2. RJ45, 1m non-shielded
3. RJ45, 8m non-shielded
4. Ground cable, 1.5m

1.4 The Equipment List

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101498	Jan. 24, 2013	Jan. 23, 2014
Receiver	R&S	ESR3	101657	Jan. 30,2013	Jan. 29, 2014
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jan. 03, 2014	Jan. 02, 2015
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Feb. 18, 2013	Feb. 17, 2014
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Dec. 27, 2013	Dec. 26, 2014
Amplifier	Burgeon	BPA-530	100219	Nov. 22, 2013	Nov. 21, 2014
Amplifier	Agilent	83017A	MY39501308	Dec. 16, 2013	Dec. 15, 2014
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 16, 2013	Dec. 15, 2014
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 16, 2013	Dec. 15, 2014
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 16, 2013	Dec. 15, 2014
RF Cable-R03m	Woken	CFD400NL-LW	CFD400NL-001	Dec. 16, 2013	Dec. 15, 2014
RF Cable-R10m	Woken	CFD400NL-LW	CFD400NL-002	Dec. 16, 2013	Dec. 15, 2014
control	EM Electronics	EM1000	60612	N/A	N/A
Note: Calibration Interval of instruments listed above is one year.					

Loop Antenna	R&S	HFH2-Z2	100330	Nov. 15, 2012	Nov. 14, 2014
Amplifier	EM	EM18G40G	060572	Jun. 20, 2013	Jun. 19, 2015
Note: Calibration Interval of instruments listed above is two year.					

Test Item	RF Conducted				
Test Site	RF Conducted (TH01-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	Agilent	N9010A	MY53400091	Oct. 07, 2013	Oct. 06, 2014
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Dec. 11, 2013	Dec. 10, 2014
Power Meter	Anritsu	ML2495A	1241002	Oct. 24, 2013	Oct. 23, 2014
Power Sensor	Anritsu	MA2411B	1027366	Oct. 24, 2013	Oct. 23, 2014
Note: Calibration Interval of instruments listed above is one year.					

1.5 Test Standards

According to the specification of EUT, the EUT must comply with following standards.

47 CFR FCC Part 90 Subpart Z
KDB 965270 D01 PwrMeas Part 90 Z Equipment v01
KDB 971168 D01 Power Meas License Digital Systems v02r01
KDB 412172 D01 Determining ERP and EIRP v01
ANSI C63.4-2003
ANSI / TIA / EIA-603-C -2004

Note: The EUT has been tested and complied with FCC part 15B requirement. FCC Part 15B test results are issued to another report.

1.6 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Measurement Uncertainty	
Parameters	**Uncertainty**
Bandwidth	±53.905 Hz
Conducted power	±0.738 dB
Frequency error	±53.905 Hz
Temperature	±0.3 ^{o}C
Conducted emission	±2.946 dB
AC conducted emission	±2.43 dB
Radiated emission	±2.49 dB

2 Test Configuration

2.1 Testing Condition and Location Information

Test Item	Test Site	Ambient Condition	Tested By
RF conducted	TH01-WS	22℃ / 61%	Mark Liao
Radiated Emissions	03CH01-WS	22℃ / 63%	Haru Yang

- FCC site registration No.: 657002
- IC site registration No.: 10807A-1

2.2 The Worst Test Modes and Channel Details

Test item	Channel Bandwidth	Modulation	Test channel (MHz)
Equivalent Isotropically Radiated Power Peak EIRP Power Density	5 MHz 7 MHz 10 MHz	QPSK / 16QAM QPSK / 16QAM QPSK / 16QAM	3652.5 / 3675.0 / 3697.5 3653.5 / 3675.0 / 3696.5 3655.0 / 3675.0 / 3695.0
Radiated Emission ≤ 1GHz	5 MHz 7 MHz 10 MHz	QPSK QPSK QPSK	3652.5 3653.5 3675.0
Radiated Emission > 1GHz	5 MHz 7 MHz 10 MHz	QPSK QPSK QPSK	3652.5 / 3675.0 / 3697.5 3653.5 / 3675.0 / 3696.5 3655.0 / 3675.0 / 3695.0
Conducted Emissions Emission Mask 26dBc Bandwidth	5 MHz 7 MHz 10 MHz	QPSK / 16QAM QPSK / 16QAM QPSK / 16QAM	3652.5 / 3675.0 / 3697.5 3653.5 / 3675.0 / 3696.5 3655.0 / 3675.0 / 3695.0
Frequency Stability	---	Un-modulation	3675.0

Note:
1. The device supports TX antenna diversity function (Ant. 0 & Ant. 1). After pretest, **Ant. 1** has the worst emission value, therefore the following test results came out from this.

3 Test Results

3.1 Equivalent Isotropically Radiated Power and Peak EIRP Power Density

3.1.1 Limit of Equivalent Isotropically Radiated Power and Peak EIRP Power Density

Base and fixed stations are limited to 25 watts/25 MHz equivalent isotropically radiated power (EIRP), the peak EIRP power density shall not exceed 1 Watt in any one-mega hertz slice of spectrum.

Mobile and portable stations are limited to 1 watt/25 MHz EIRP. The peak EIRP density shall not exceed 40 milli watts in any one-megahertz slice of spectrum.

3.1.2 Test Procedures

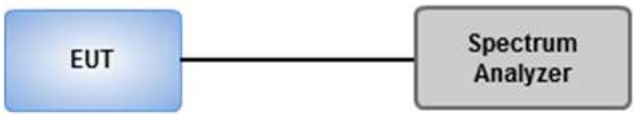
For EIRP

1. Connect the DUT transmitter output to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.
2. Tune the analyzer to the nominal center frequency of the emission bandwidth.
3. Set the span to twice the nominal EBW (span = 2 x EBW).
4. Set the resolution bandwidth (RBW) to approximately 1% of EBW.
5. Set the video bandwidth (VBW) to ≥ 3 x RBW.
6. Select the average power (RMS) display detector.
7. Set the number of measurement points to ≥ 1001.
8. Use auto-coupled sweep time.
9. Perform measurement over an interval of time when the transmission is continuous and at its maximum power level.
10. Utilize trace averaging over 100 traces in the power averaging.
11. Use the Band/Channel Power function to determine the integrated power over the full EBW.
12. Record the band power level.
13. Adjust the recorded level by applying appropriate correction factors for the measurement set-up.
14. Determine the EIRP by adding the effective antenna gain to the adjusted power level.

For Peak EIRP Power Density

1. Connect the transmitter to the spectrum analyzer via coaxial cable (i.e., conducted measurement) while ensuring proper impedance matching.
2. Tune the analyzer to the nominal center frequency of the emission bandwidth.
3 Set the span to twice the nominal EBW (span = 2 x EBW).
4 Set the resolution bandwidth (RBW) to 1 MHz.
5 Set the video bandwidth (VBW) to ≥ 3 x RBW.
6 Select the average power (RMS) display detector.
7 Set the number of measurement points to ≥ 1001.
8 Use auto-coupled sweep time.
9 Perform the measurement over an interval of time when the transmission is continuous and at its maximum power level.
10 Utilize trace averaging over 100 traces in the power averaging.
11 Find the maximum trace amplitude (peak search) and record.
12 Adjust the recorded level by applying appropriate correction factors for the measurement set-up.
13 Determine the EIRP by adding the effective antenna gain to the adjusted power level.

3.1.3 Test Setup



3.1.4 Test Result of EIRP and Peak EIRP Density

EIRP							
Channel Bandwidth	Modulation	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	E.I.R.P (dBm)	E.I.R.P (W)	Limit (W/MHz)
5	QPSK	3652.5	20.541	15	35.541	3.582	5
5	QPSK	3675.0	20.493	15	35.493	3.542	5
5	QPSK	3697.5	20.505	15	35.505	3.552	5

EIRP							
Channel Bandwidth	Modulation	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	E.I.R.P (dBm)	E.I.R.P (W)	Limit (W/MHz)
5	16QAM	3652.5	20.093	15	35.093	3.231	5
5	16QAM	3675.0	20.064	15	35.064	3.209	5
5	16QAM	3697.5	20.040	15	35.040	3.192	5

Peak EIRP Density							
Channel Bandwidth	Modulation	Frequency (MHz)	Conducted Power Density (dBm)	Antenna Gain (dBi)	Peak E.I.R.P Density (dBm)	Peak E.I.R.P Density (W)	Limit (W/MHz)
5	QPSK	3652.5	14.681	15	29.681	0.929	1
5	QPSK	3675.0	14.609	15	29.609	0.914	1
5	QPSK	3697.5	14.529	15	29.529	0.897	1

Peak EIRP density							
Channel Bandwidth	Modulation	Frequency (MHz)	Conducted Power Density (dBm)	Antenna Gain (dBi)	Peak E.I.R.P Density (dBm)	Peak E.I.R.P Density (W)	Limit (W/MHz)
5	16QAM	3652.5	14.665	15	29.665	0.926	1
5	16QAM	3675.0	14.613	15	29.613	0.915	1
5	16QAM	3697.5	14.481	15	29.481	0.887	1

Test item	Conducted Power	
	QPSK / Worst Plots	16QAM / Worst Plots
		

Test item	Conducted Power Density	
	QPSK / Worst Plots	16QAM / Worst Plots
		

EIRP							
Channel Bandwidth	Modulation	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	E.I.R.P (dBm)	E.I.R.P (W)	Limit (W/MHz)
7	QPSK	3653.5	22.205	15	37.205	5.254	7
7	QPSK	3675.0	22.198	15	37.198	5.246	7
7	QPSK	3696.5	21.236	15	36.236	4.203	7

EIRP							
Channel Bandwidth	Modulation	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	E.I.R.P (dBm)	E.I.R.P (W)	Limit (W/MHz)
7	16QAM	3653.5	21.797	15	36.797	4.783	7
7	16QAM	3675.0	21.771	15	36.771	4.754	7
7	16QAM	3696.5	20.548	15	35.548	3.588	7

Peak EIRP Density							
Channel Bandwidth	Modulation	Frequency (MHz)	Conducted Power Density (dBm)	Antenna Gain (dBi)	Peak E.I.R.P Density (dBm)	Peak E.I.R.P Density (W)	Limit (W/MHz)
7	QPSK	3653.5	14.924	15	29.924	0.983	1
7	QPSK	3675.0	14.866	15	29.866	0.970	1
7	QPSK	3696.5	13.930	15	28.930	0.782	1

Peak EIRP density							
Channel Bandwidth	Modulation	Frequency (MHz)	Conducted Power Density (dBm)	Antenna Gain (dBi)	Peak E.I.R.P Density (dBm)	Peak E.I.R.P Density (W)	Limit (W/MHz)
7	16QAM	3653.5	14.901	15	29.901	0.977	1
7	16QAM	3675.0	14.851	15	29.851	0.966	1
7	16QAM	3696.5	14.647	15	29.647	0.922	1

Test item	Conducted Power	
	QPSK / Worst Plots	16QAM / Worst Plots
		

Test item	Conducted Power Density	
	QPSK / Worst Plots	16QAM / Worst Plots
		

EIRP							
Channel Bandwidth	Modulation	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	E.I.R.P (dBm)	E.I.R.P (W)	Limit (W/MHz)
10	QPSK	3655.0	23.401	15	38.401	6.920	10
10	QPSK	3675.0	23.755	15	38.755	7.508	10
10	QPSK	3695.0	22.638	15	37.638	5.805	10

EIRP							
Channel Bandwidth	Modulation	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	E.I.R.P (dBm)	E.I.R.P (W)	Limit (W/MHz)
10	16QAM	3655.0	22.708	15	37.708	5.899	10
10	16QAM	3675.0	22.599	15	37.599	5.753	10
10	16QAM	3695.0	22.484	15	37.484	5.603	10

Peak EIRP Density							
Channel Bandwidth	Modulation	Frequency (MHz)	Conducted Power Density (dBm)	Antenna Gain (dBi)	Peak E.I.R.P Density (dBm)	Peak E.I.R.P Density (W)	Limit (W/MHz)
10	QPSK	3655.0	14.909	15	29.909	0.979	1
10	QPSK	3675.0	14.954	15	29.954	0.989	1
10	QPSK	3695.0	14.145	15	29.145	0.821	1

Peak EIRP density							
Channel Bandwidth	Modulation	Frequency (MHz)	Conducted Power Density (dBm)	Antenna Gain (dBi)	Peak E.I.R.P Density (dBm)	Peak E.I.R.P Density (W)	Limit (W/MHz)
10	16QAM	3655.0	14.237	15	29.237	0.839	1
10	16QAM	3675.0	13.885	15	28.885	0.774	1
10	16QAM	3695.0	13.959	15	28.959	0.787	1

Test item	Conducted Power	
	QPSK / Worst Plots	16QAM / Worst Plots
		

Test item	Conducted Power Density	
	QPSK / Worst Plots	16QAM / Worst Plots
		

3.2 Radiated Emissions

3.2.1 Limit of Radiated Emissions

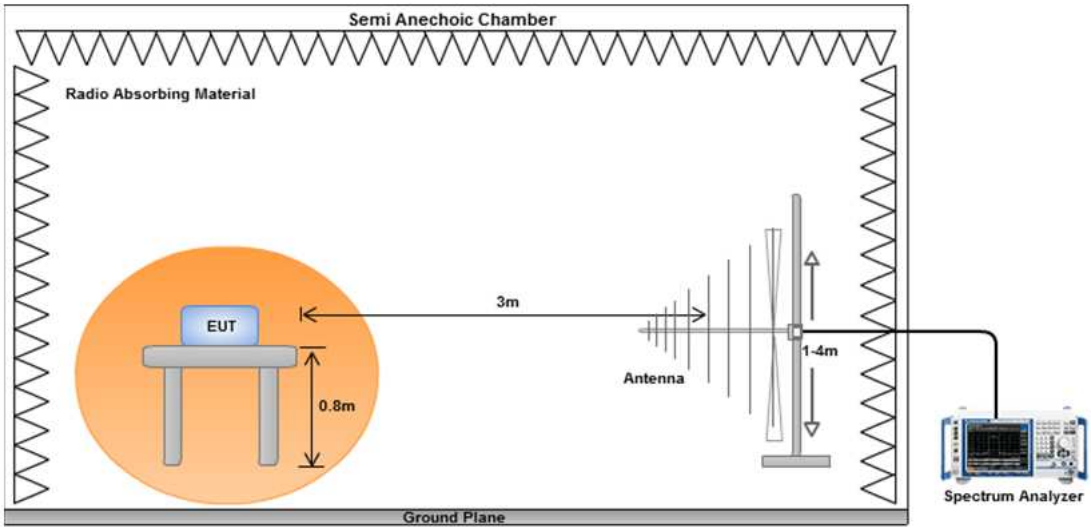
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB equal to -13dBm.

3.2.2 Test Procedures

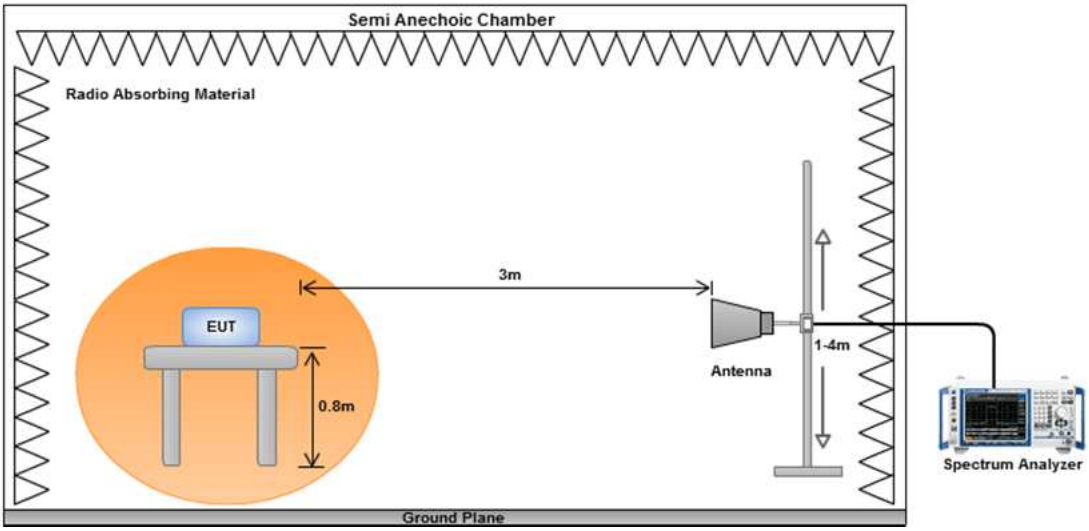
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at a height of 0.8 m test table above the ground plane.
2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.
4. After finding the max radiated emission, substitution method will be used for getting effective radiated power. EUT will be removed and substitution antenna will be placed at same position. Signal generator will output CW signal to substitution antenna through a RF cable. Rotate turntable and move antenna to find maximum radiated emission. Adjust output power of signal generator to let the maximum radiated emission is same as step 3. Record the output power level.
5. E.I.R.P = output power of step 4 + gain of substitution antenna – cable loss of RF cable.

3.2.3 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz



3.2.4 Test Result of Radiated Emissions below 1GHz

CB	5MHz						
Mode	Wimax , Channel : 3652.5MHz ,QPSK						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
53.28	H	-53.53	-13	-40.53	-47.41	-45.24	-8.29
178.41	H	-43.45	-13	-30.45	-34.45	-46.9	3.45
224.97	H	-49.23	-13	-36.23	-38.89	-55	5.77
325.85	H	-49.29	-13	-36.29	-42.03	-54.86	5.57
425.76	H	-45.06	-13	-32.06	-39.2	-50.31	5.25
676.02	H	-49.46	-13	-36.46	-47.81	-53.75	4.29
45.52	V	-39.82	-13	-26.82	-33.12	-29.31	-10.51
172.59	V	-44.05	-13	-31.05	-40.51	-46.64	2.59
201.69	V	-40.65	-13	-27.65	-34.08	-46.58	5.93
369.5	V	-44.73	-13	-31.73	-39.95	-50.26	5.53
425.76	V	-44.47	-13	-31.47	-41.51	-49.72	5.25
497.54	V	-47.88	-13	-34.88	-45.73	-53.05	5.17

CB	7MHz						
Mode	Wimax , Channel : 3653.5MHz ,QPSK						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
176.47	H	-45.95	-13	-32.95	-37.05	-49.12	3.17
224.97	H	-48.77	-13	-35.77	-38.43	-54.54	5.77
275.41	H	-49.25	-13	-36.25	-40.96	-54.83	5.58
325.85	H	-49.15	-13	-36.15	-41.89	-54.72	5.57
425.76	H	-45.43	-13	-32.43	-39.57	-50.68	5.25
676.02	H	-49.94	-13	-36.94	-48.29	-54.23	4.29
59.1	V	-44.22	-13	-31.22	-36.84	-37.41	-6.81
154.16	V	-36.96	-13	-23.96	-34.47	-37.49	0.53
173.56	V	-34.02	-13	-21.02	-30.36	-36.76	2.74
384.05	V	-45.79	-13	-32.79	-41.44	-51.29	5.5
425.76	V	-44.58	-13	-31.58	-41.62	-49.83	5.25
500.45	V	-48.08	-13	-35.08	-46.04	-53.26	5.18

CB	10MHz						
Mode	Wimax , Channel : 3675MHz ,QPSK						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
176.47	H	-38.39	-13	-25.39	-29.49	-41.56	3.17
224.97	H	-48.07	-13	-35.07	-37.73	-53.84	5.77
241.46	H	-48.23	-13	-35.23	-38.65	-53.89	5.66
325.85	H	-49.31	-13	-36.31	-42.05	-54.88	5.57
425.76	H	-44.96	-13	-31.96	-39.1	-50.21	5.25
676.02	H	-49.62	-13	-36.62	-47.97	-53.91	4.29
60.07	V	-44.2	-13	-31.2	-31.2	-37.64	-6.56
177.44	V	-41.82	-13	-28.82	-28.82	-45.13	3.31
191.02	V	-41.87	-13	-28.87	-28.87	-46.8	4.93
264.74	V	-43.37	-13	-30.37	-30.37	-48.96	5.59
425.76	V	-44.04	-13	-31.04	-31.04	-49.29	5.25
633.34	V	-42.91	-13	-29.91	-29.91	-47.22	4.31

3.2.5 Test Result of Radiated Emissions above 1GHz

CB	5MHz						
Mode	Wimax , Channel : 3652.5MHz ,QPSK						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
7305.00	H	-39.17	-13.00	-26.17	-61.05	-42.16	2.99
10957.50	H	-36.67	-13.00	-23.67	-61.84	-39.59	2.92
14610.00	H	-41.12	-13.00	-28.12	-65.37	-43.07	1.95
7305.00	V	-43.51	-13.00	-30.51	-63.53	-46.50	2.99
10957.50	V	-39.20	-13.00	-26.20	-62.07	-42.12	2.92
14610.00	V	-42.97	-13.00	-29.97	-65.77	-44.92	1.95
Mode	Wimax , Channel : 3675MHz ,QPSK						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
7350.00	H	-38.78	-13.00	-25.78	-60.50	-41.57	2.79
11025.00	H	-37.56	-13.00	-24.56	-62.61	-40.74	3.18
14700.00	H	-40.42	-13.00	-27.42	-65.37	-43.14	2.72
7350.00	V	-45.54	-13.00	-32.54	-65.31	-48.33	2.79
11025.00	V	-39.37	-13.00	-26.37	-62.20	-42.55	3.18
14700.00	V	-42.14	-13.00	-29.14	-65.75	-44.86	2.72
Mode	Wimax , Channel : 3697.5MHz ,QPSK						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
7395.00	H	-39.28	-13.00	-26.28	-60.85	-42.08	2.80
11092.50	H	-36.70	-13.00	-23.70	-61.49	-39.82	3.12
14790.00	H	-39.72	-13.00	-26.72	-65.37	-42.67	2.95
7395.00	V	-45.03	-13.00	-32.03	-64.55	-47.83	2.80
11092.50	V	-40.64	-13.00	-27.64	-63.48	-43.76	3.12
14790.00	V	-41.07	-13.00	-28.07	-65.47	-44.02	2.95

CB	7MHz						
Mode	Wimax , Channel : 3653.5MHz ,QPSK						
Frequency (MHz)	**Antenna Polarity**	**E.R.P (dBm)**	**Limit (dBm)**	**Margin (dB)**	**S.A Reading (dBm)**	**S.G Power Vaule (dBm)**	**Correction Factor (dB)**
7307.00	H	-37.97	-13.00	-24.97	-59.83	-40.75	2.78
10960.50	H	-33.59	-13.00	-20.59	-58.76	-36.78	3.19
14614.00	H	-39.57	-13.00	-26.57	-63.85	-42.07	2.50
7307.00	V	-42.84	-13.00	-29.84	-62.85	-45.62	2.78
10960.50	V	-41.01	-13.00	-28.01	-63.87	-44.20	3.19
14614.00	V	-40.82	-13.00	-27.82	-63.66	-43.32	2.50
Mode	Wimax , Channel : 3675MHz ,QPSK						
Frequency (MHz)	**Antenna Polarity**	**E.R.P (dBm)**	**Limit (dBm)**	**Margin (dB)**	**S.A Reading (dBm)**	**S.G Power Vaule (dBm)**	**Correction Factor (dB)**
7350.00	H	-38.20	-13.00	-25.20	-59.92	-40.99	2.79
11025.00	H	-33.81	-13.00	-20.81	-58.86	-36.99	3.18
14700.00	H	-38.75	-13.00	-25.75	-63.70	-41.47	2.72
7350.00	V	-43.53	-13.00	-30.53	-63.30	-46.32	2.79
11025.00	V	-40.76	-13.00	-27.76	-63.59	-43.94	3.18
14700.00	V	-40.52	-13.00	-27.52	-64.13	-43.24	2.72
Mode	Wimax , Channel : 3696.5MHz ,QPSK						
Frequency (MHz)	**Antenna Polarity**	**E.R.P (dBm)**	**Limit (dBm)**	**Margin (dB)**	**S.A Reading (dBm)**	**S.G Power Vaule (dBm)**	**Correction Factor (dB)**
7393.00	H	-38.04	-13.00	-25.04	-59.62	-40.84	2.80
11089.50	H	-33.93	-13.00	-20.93	-58.73	-37.05	3.12
14786.00	H	-36.91	-13.00	-23.91	-62.53	-39.85	2.94
7393.00	V	-43.35	-13.00	-30.35	-62.89	-46.15	2.80
11089.50	V	-39.53	-13.00	-26.53	-62.37	-42.65	3.12
14786.00	V	-39.48	-13.00	-26.48	-63.85	-42.42	2.94

CB	10MHz						
Mode	Wimax , Channel : 3655MHz ,QPSK						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
7310.00	H	-38.63	-13.00	-25.63	-60.49	-41.41	2.78
10965.00	H	-35.62	-13.00	-22.62	-60.79	-38.81	3.19
14620.00	H	-39.82	-13.00	-26.82	-64.15	-42.33	2.51
7310.00	V	-43.42	-13.00	-30.42	-63.41	-46.20	2.78
10965.00	V	-37.99	-13.00	-24.99	-60.85	-41.18	3.19
14620.00	V	-41.58	-13.00	-28.58	-64.47	-44.09	2.51
Mode	Wimax , Channel : 3675MHz ,QPSK						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
7350.00	H	-38.52	-13.00	-25.52	-60.24	-41.31	2.79
11025.00	H	-35.37	-13.00	-22.37	-60.42	-38.55	3.18
14700.00	H	-39.99	-13.00	-26.99	-64.94	-42.71	2.72
7350.00	V	-44.05	-13.00	-31.05	-63.82	-46.84	2.79
11025.00	V	-38.75	-13.00	-25.75	-61.58	-41.93	3.18
14700.00	V	-40.62	-13.00	-27.62	-64.23	-43.34	2.72
Mode	Wimax , Channel : 3695MHz ,QPSK						
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
7390.00	H	-39.11	-13.00	-26.11	-60.70	-41.91	2.80
11085.00	H	-36.02	-13.00	-23.02	-60.84	-39.14	3.12
14780.00	H	-38.18	-13.00	-25.18	-63.75	-41.11	2.93
7390.00	V	-43.30	-13.00	-30.30	-62.85	-46.10	2.80
11085.00	V	-38.92	-13.00	-25.92	-61.76	-42.04	3.12
14780.00	V	-39.51	-13.00	-26.51	-63.83	-42.44	2.93

3.3 Conducted Emissions

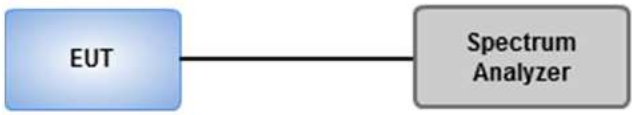
3.3.1 Limit of Conducted Emissions

The power of any emission outside of the authorized operating frequencyranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB equal to -13dBm.

3.3.2 Test Procedures

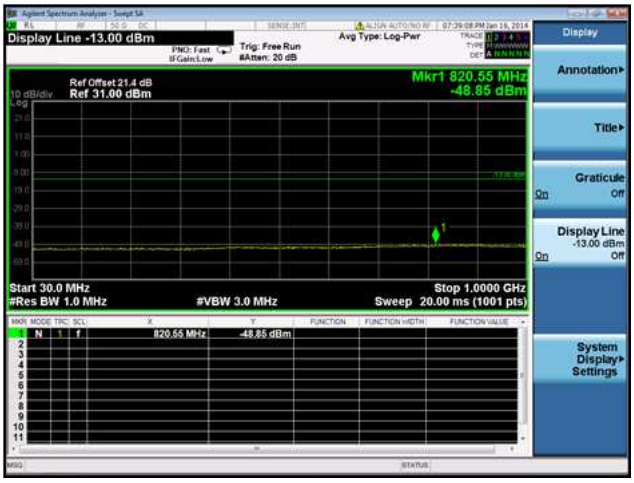
1. Lowest, middle and highest operating channels are tested for this item.
2. Scan frequency range is from 30MHz~40GHz.
3. Set RBW = 1MHz, VBW = 3MHz, detector = RMS, sweep time = auto.
4. Record the max trace value and capture the test plot of each sub frequency band.

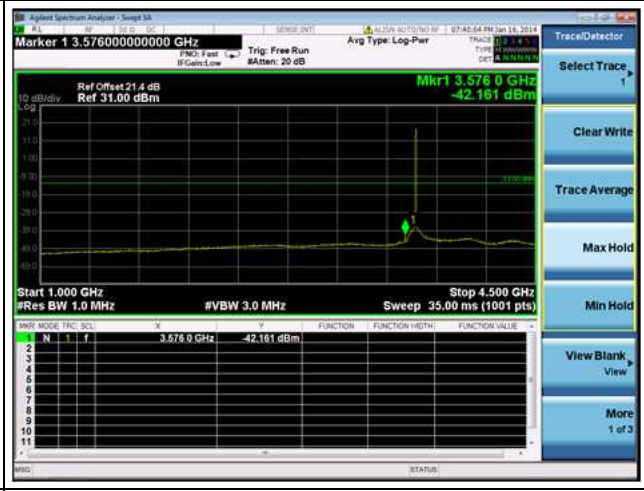
3.3.3 Test Setup

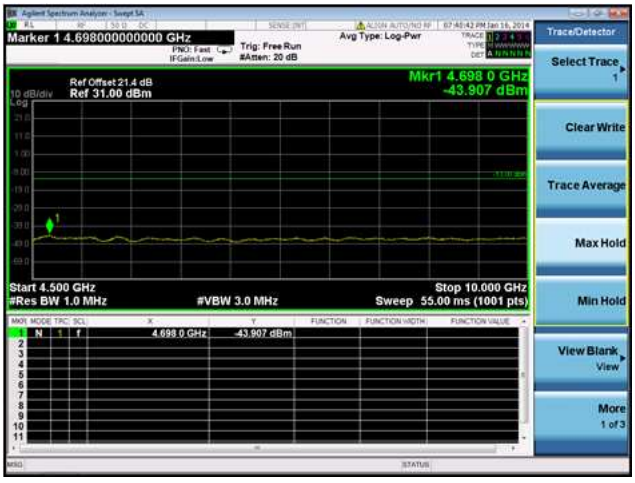


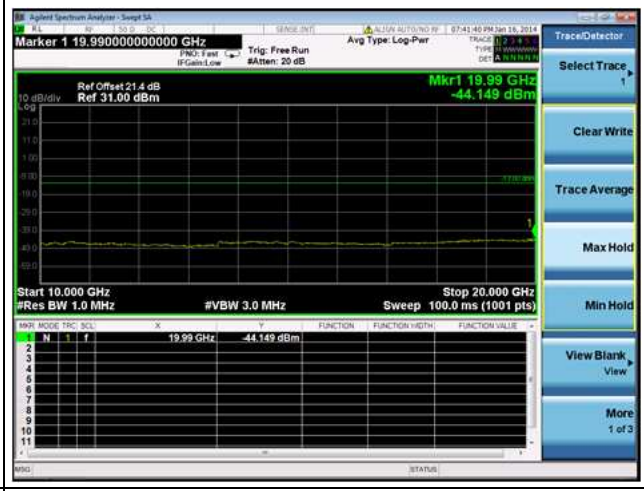
3.3.4 Test Result of Conducted Emissions

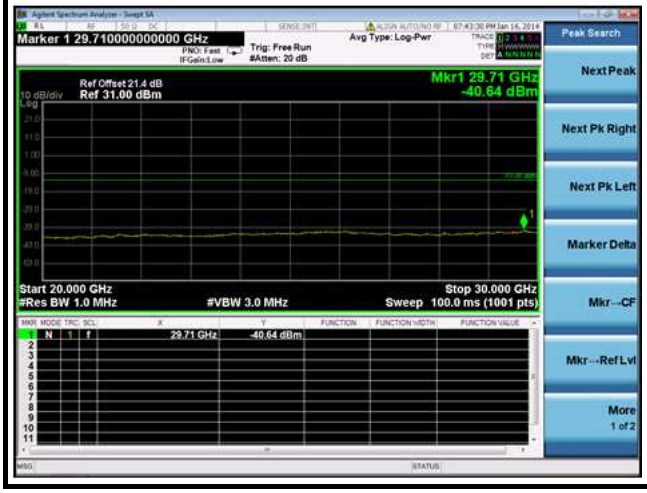
Mode	QPSK, CB: 5MHz	Channel	3652.5 MHz

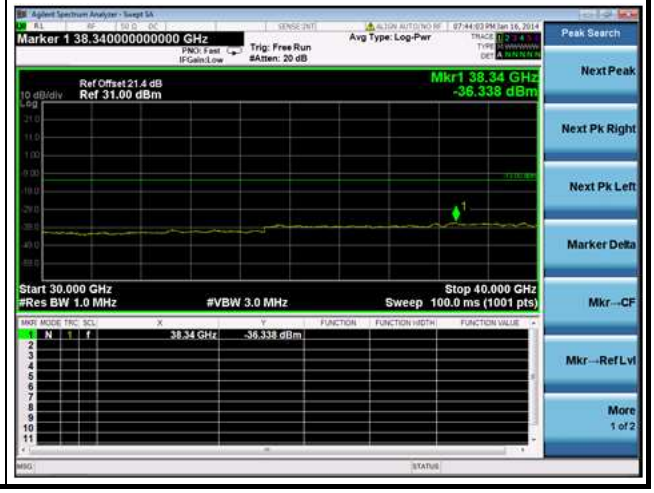




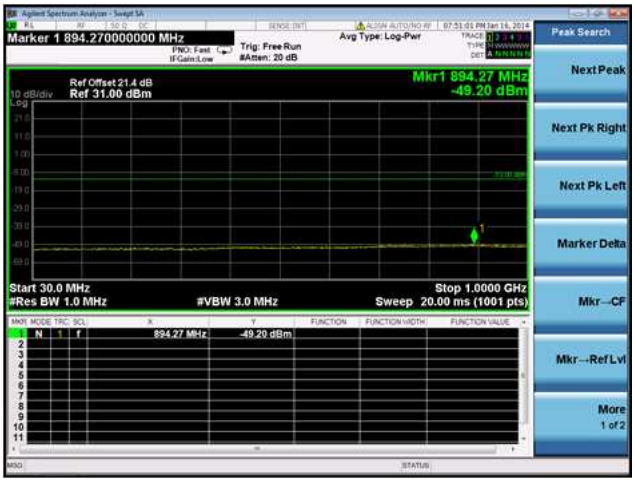


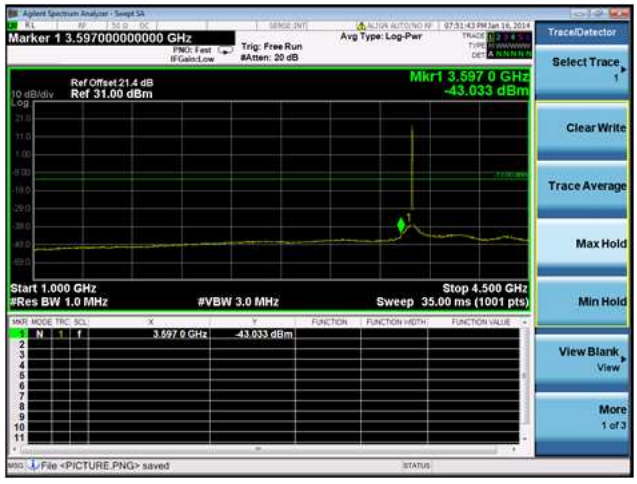


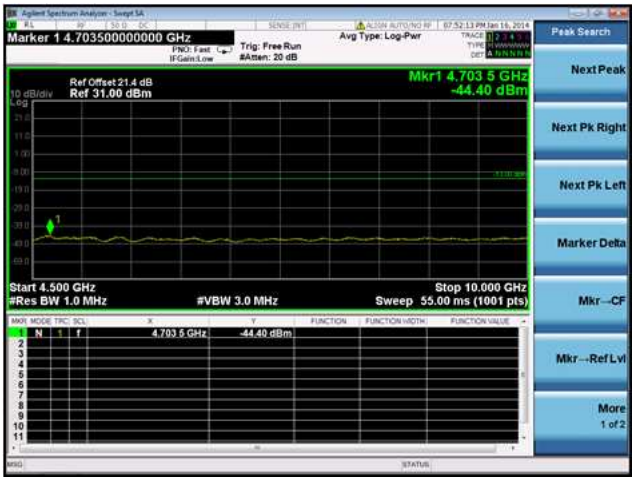


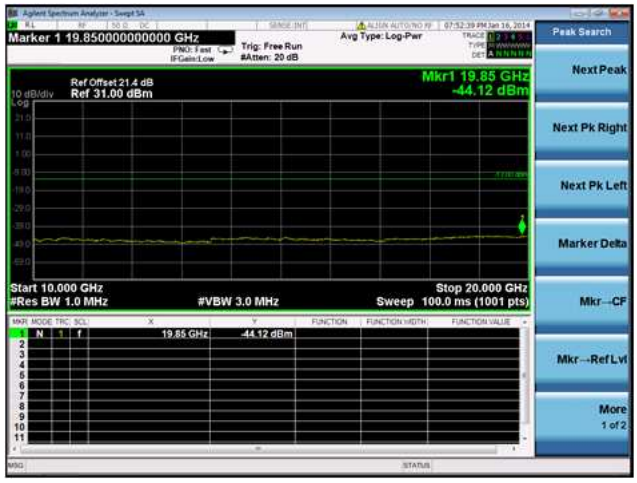


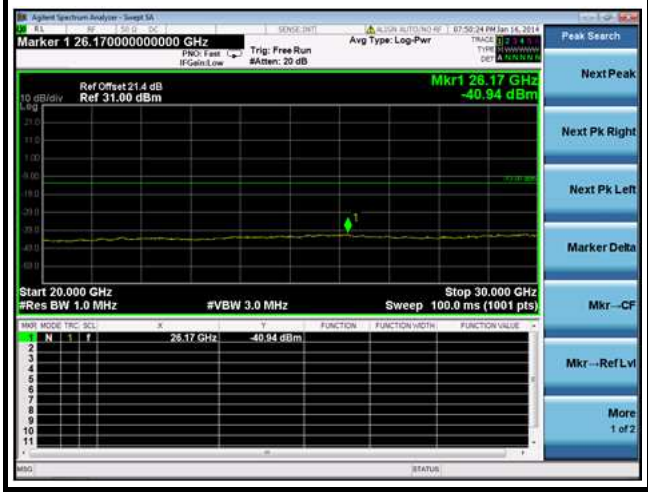
Mode	QPSK, CB: 5MHz	Channel	3675.0 MHz

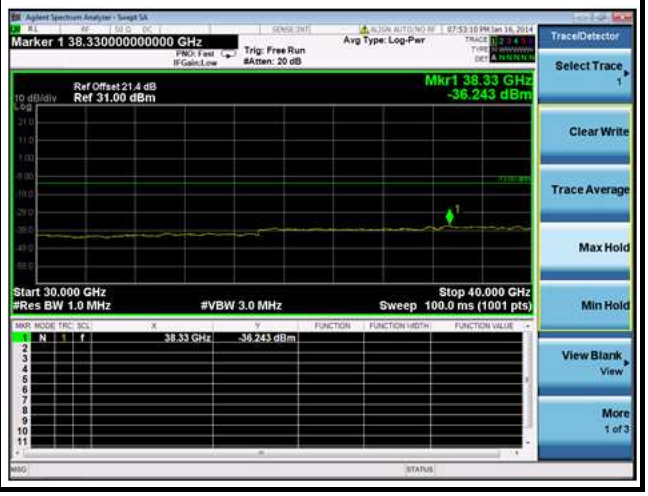




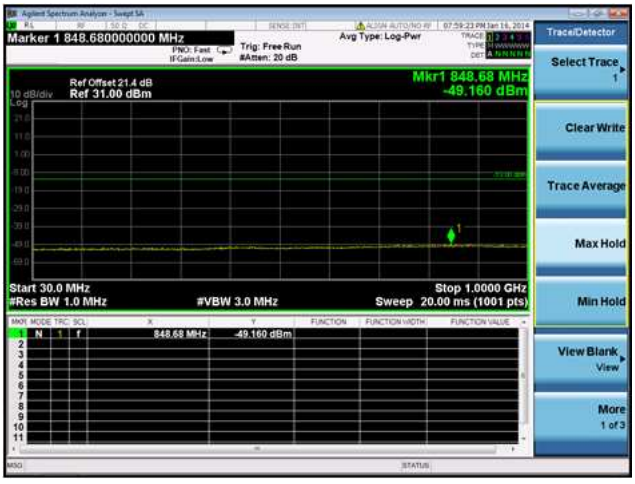


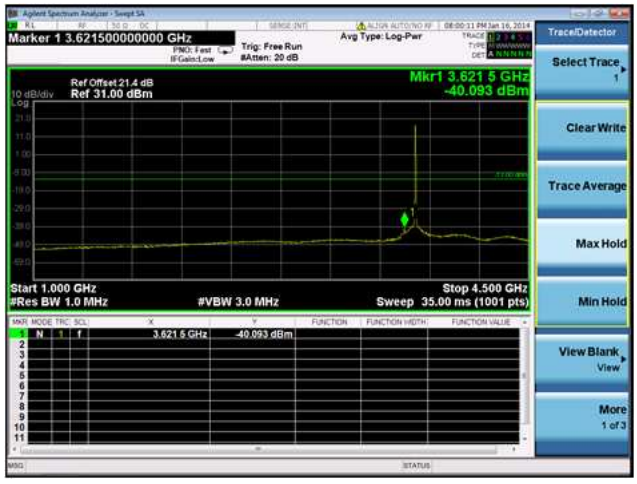


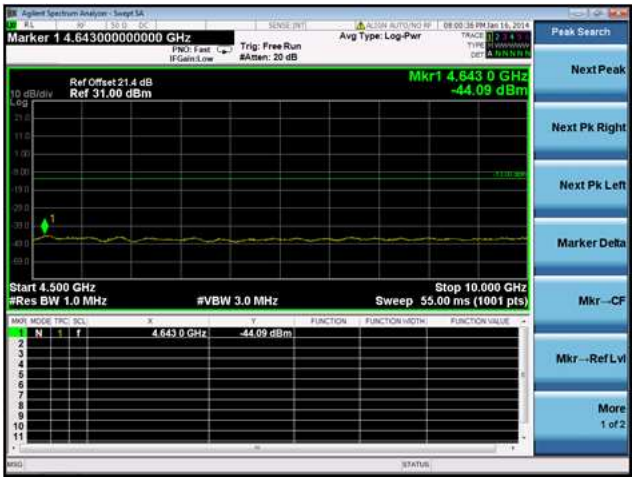


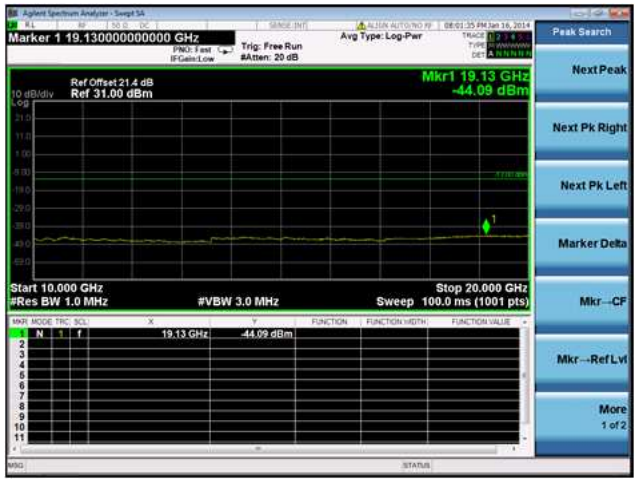


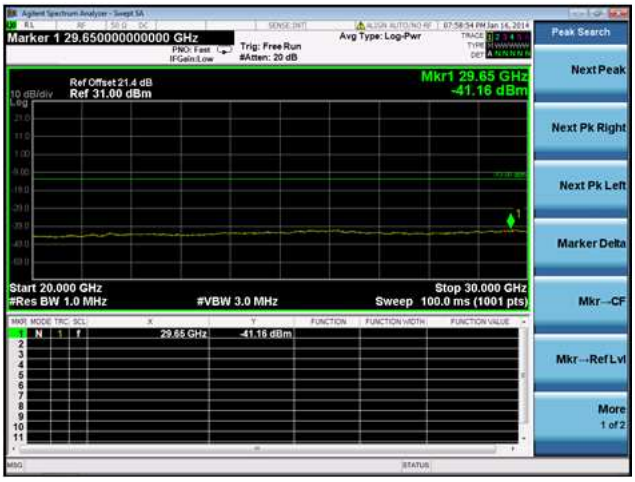
Mode	QPSK, CB: 5MHz	Channel	3697.5 MHz

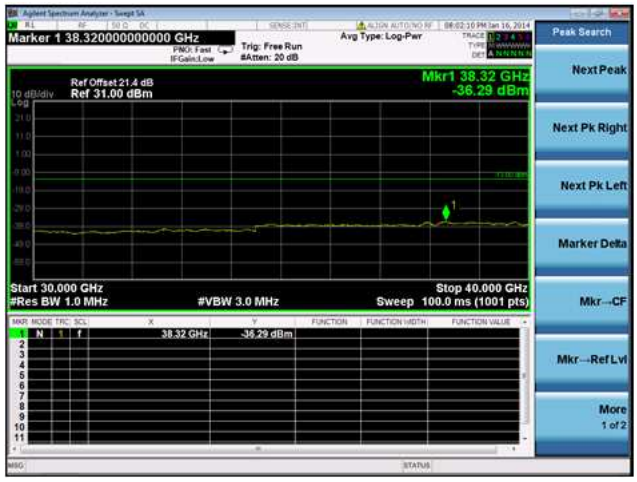




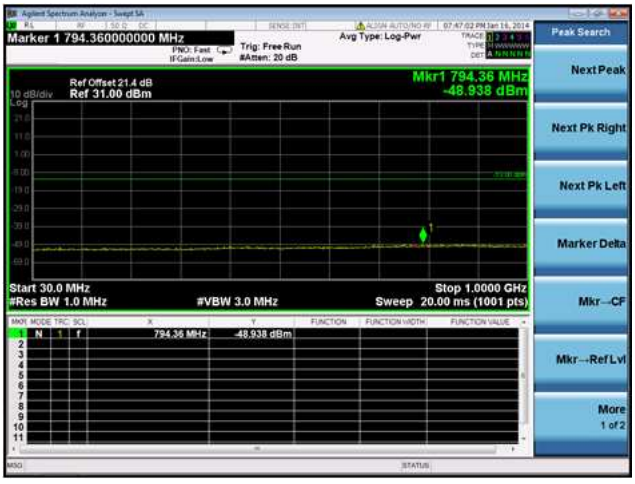


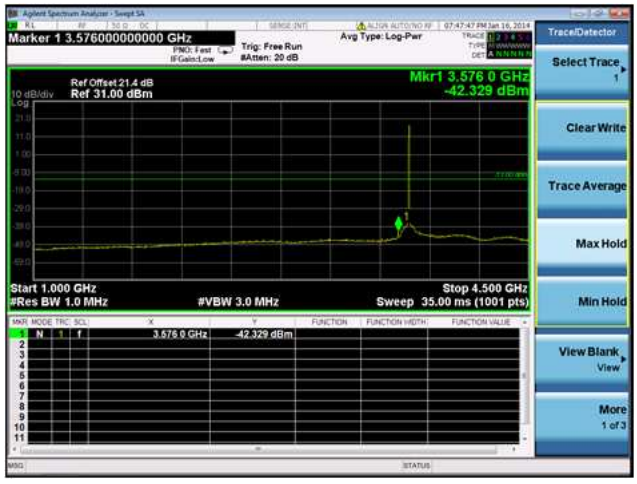


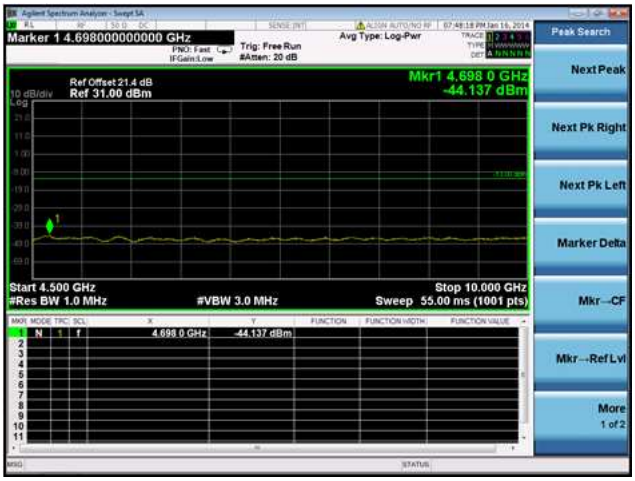


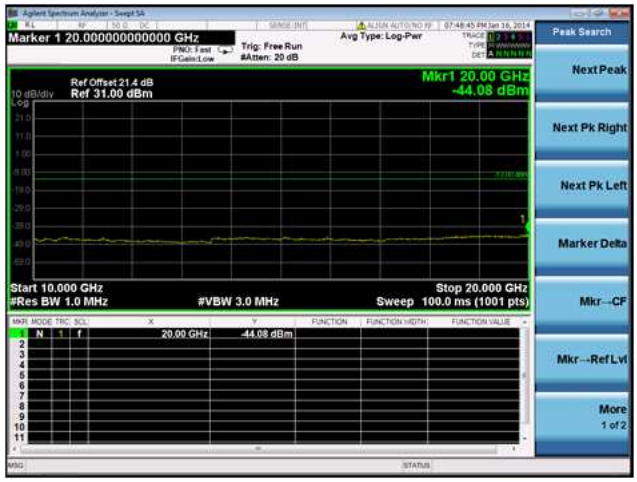


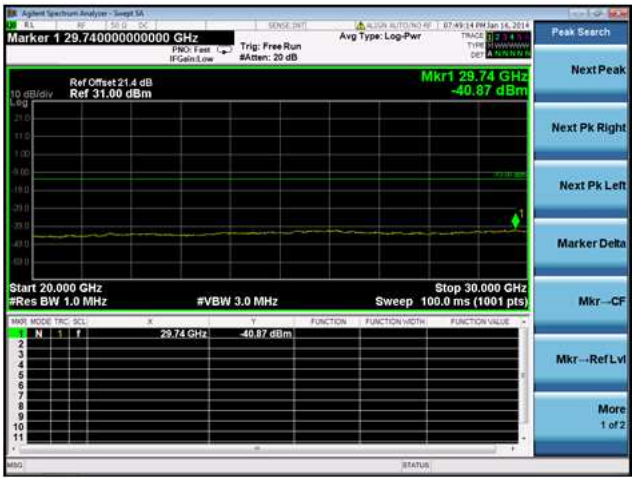
Mode	16QAM, CB: 5MHz	Channel	3652.5 MHz

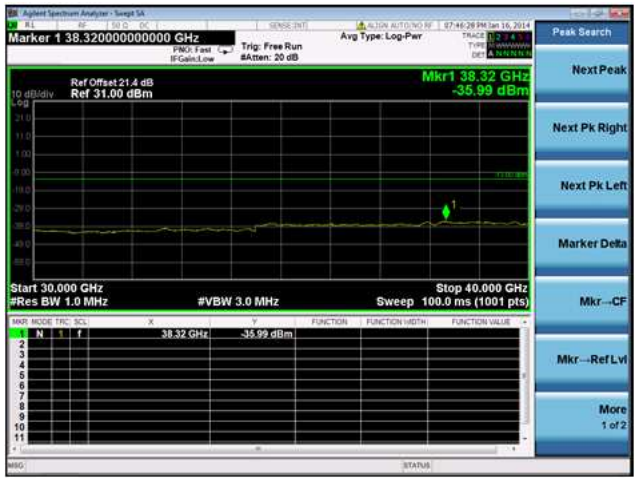




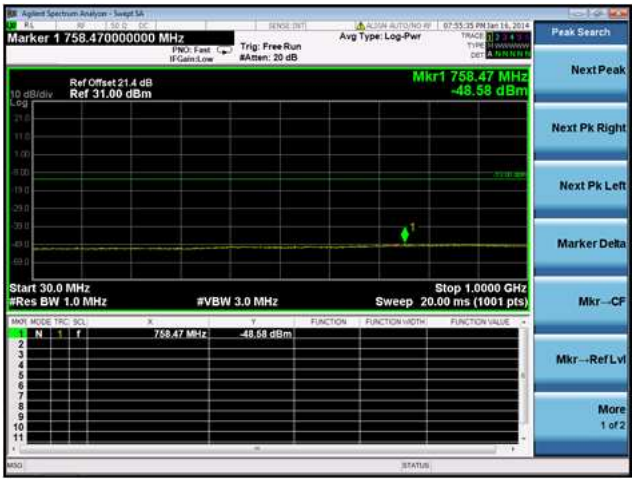


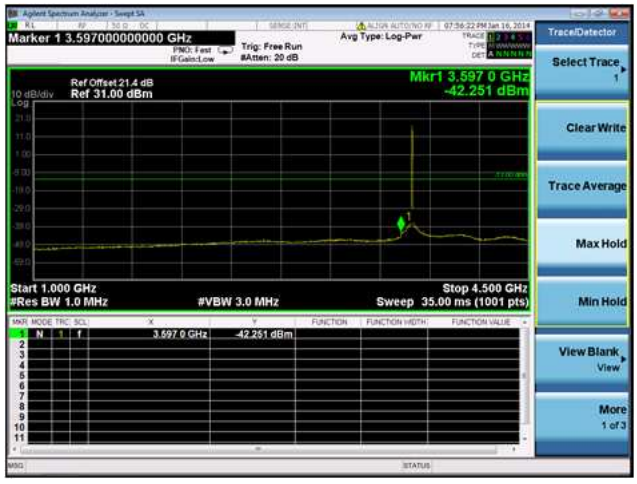


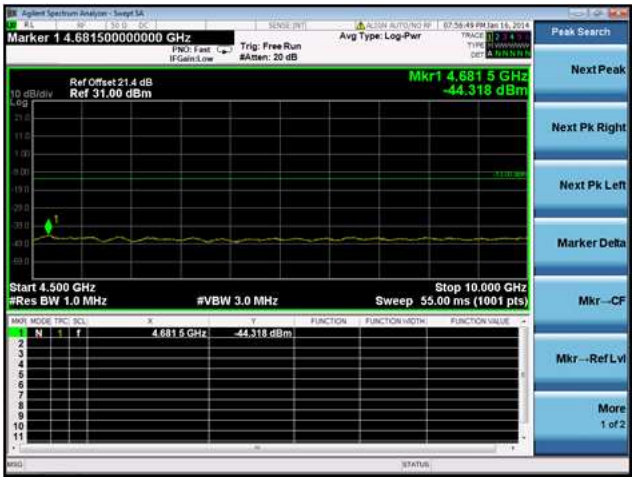


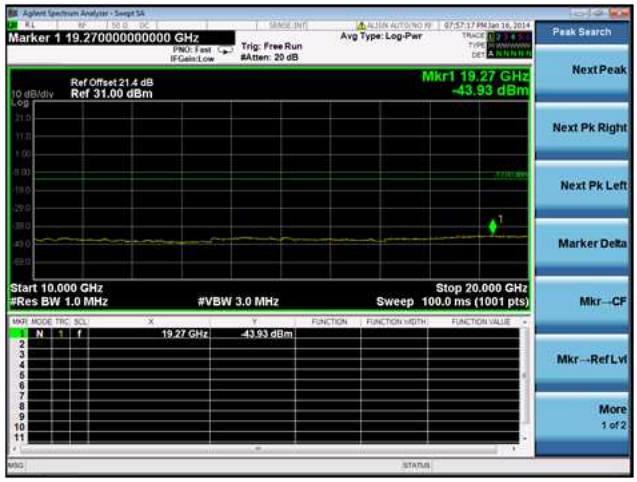


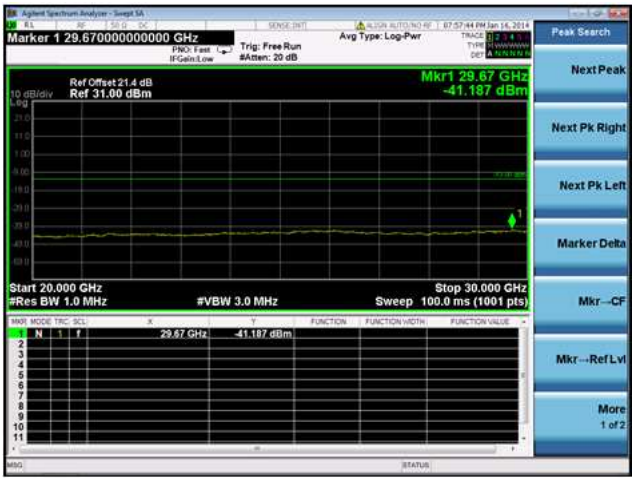
Mode	16QAM, CB: 5MHz	Channel	3675.0 MHz

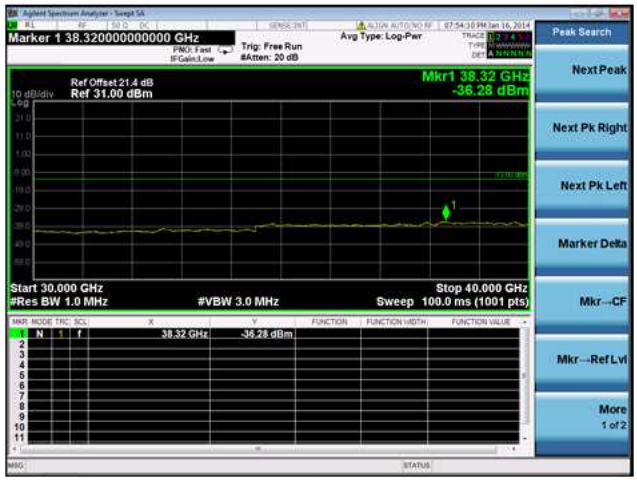




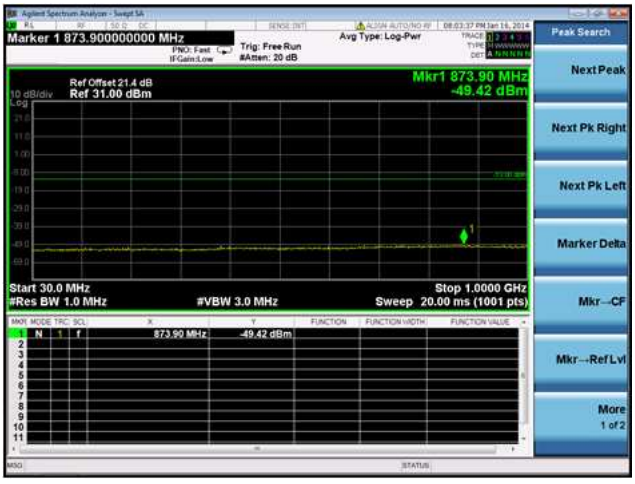


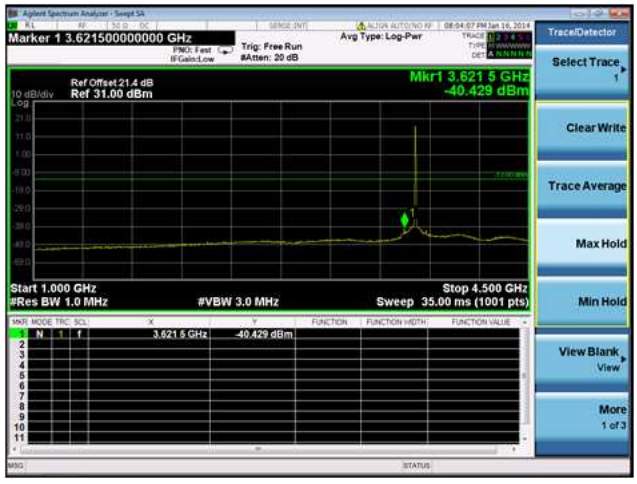


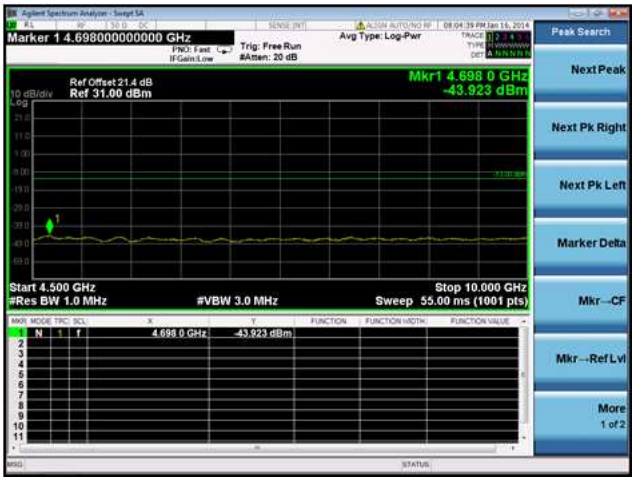


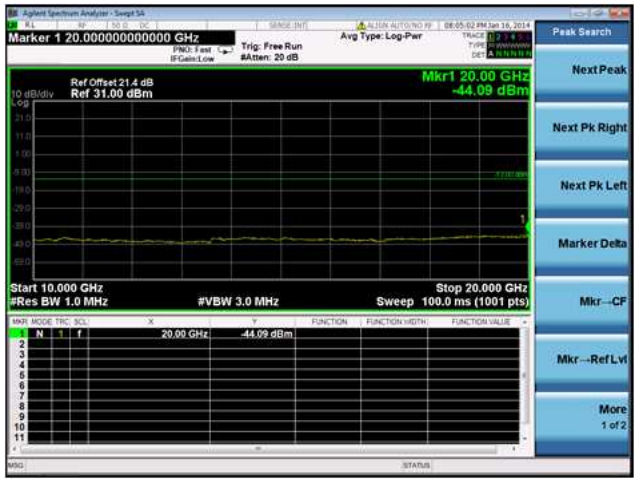


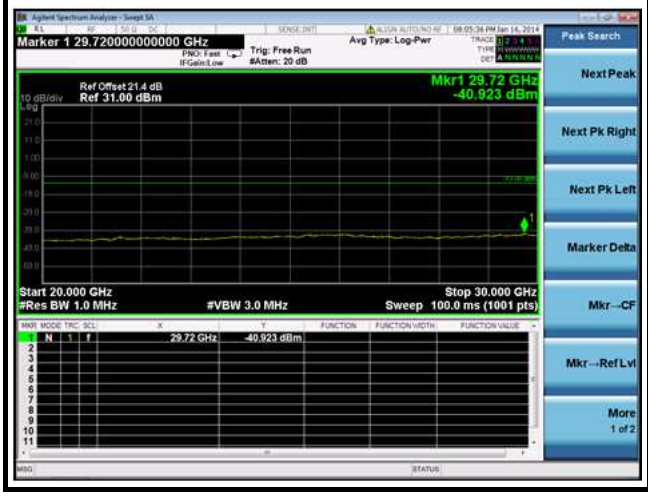
Mode	16QAM, CB: 5MHz	Channel	3697.5 MHz

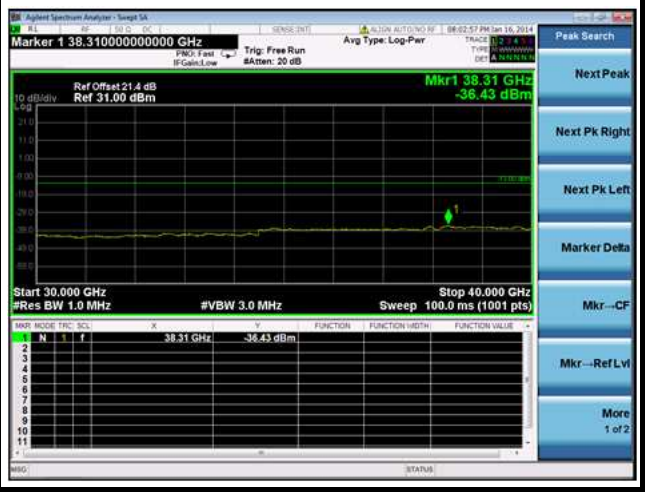




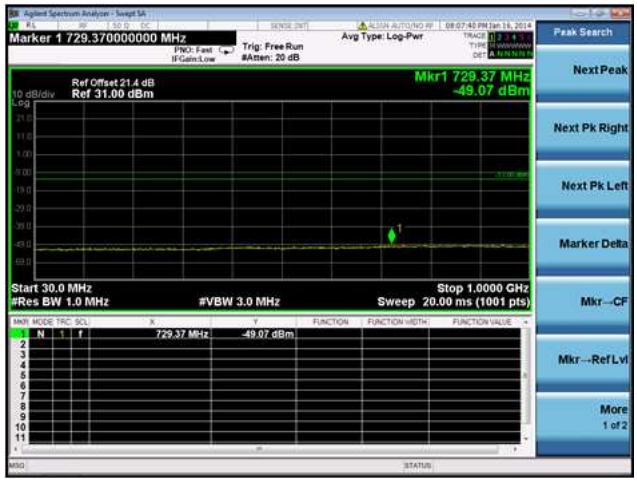


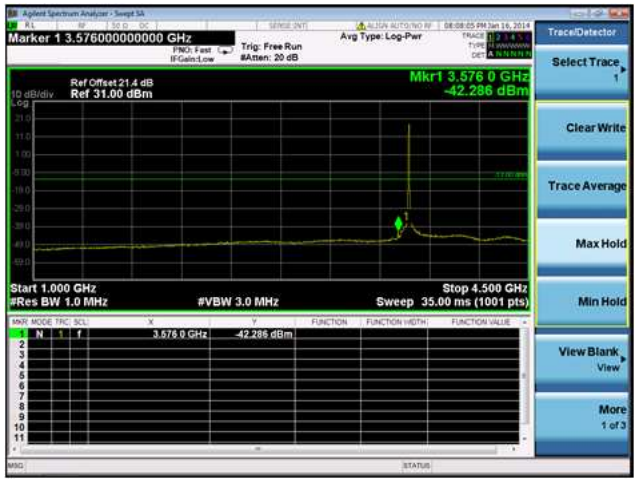


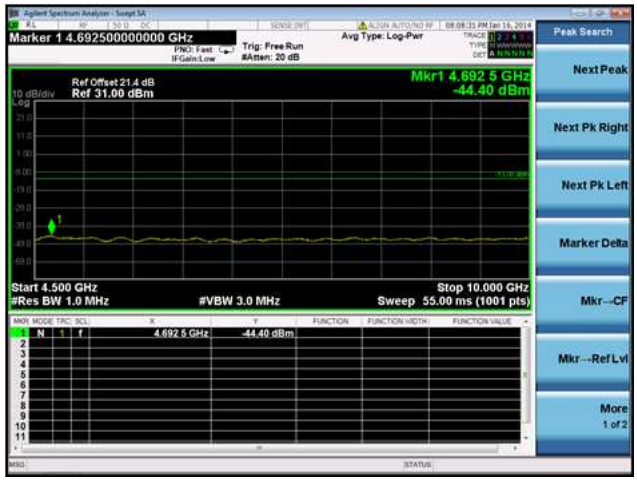


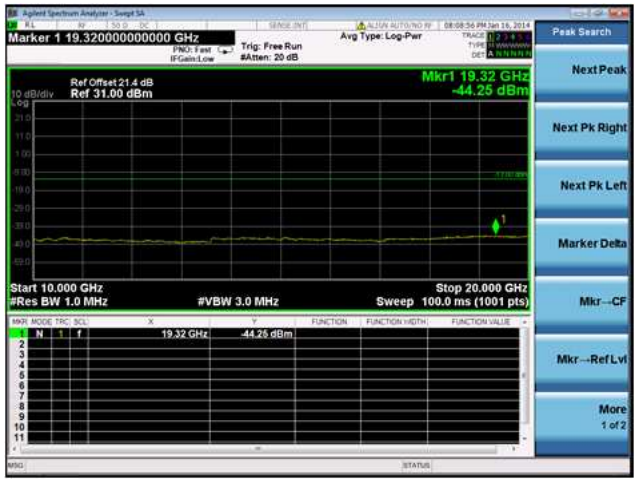


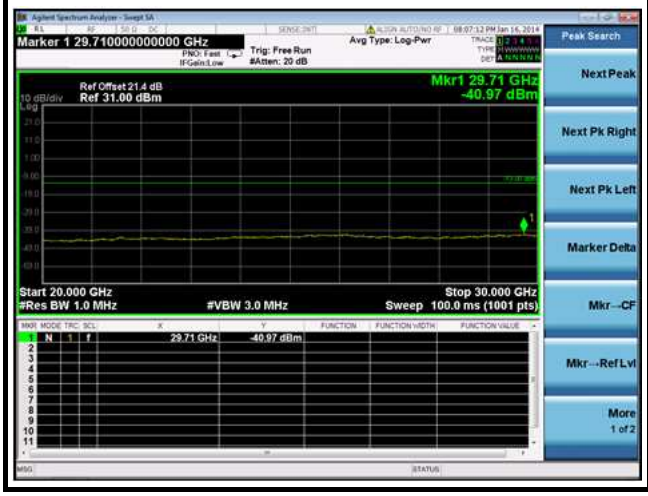
Mode	QPSK, CB: 7MHz	Channel	3653.5 MHz

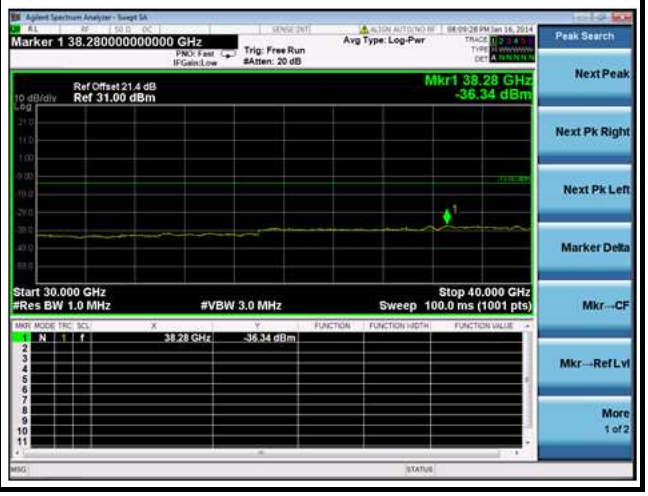




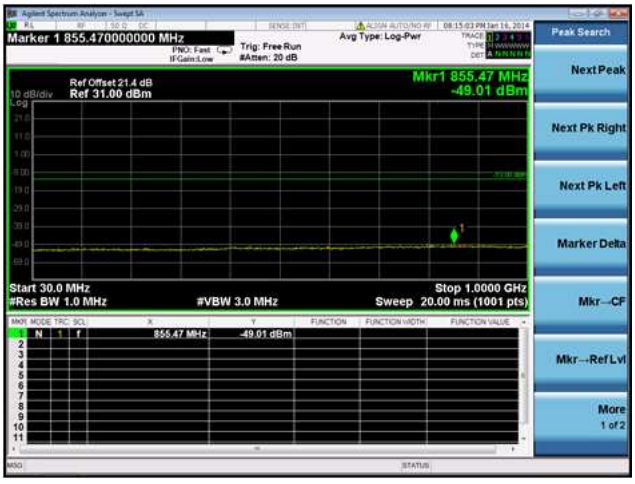


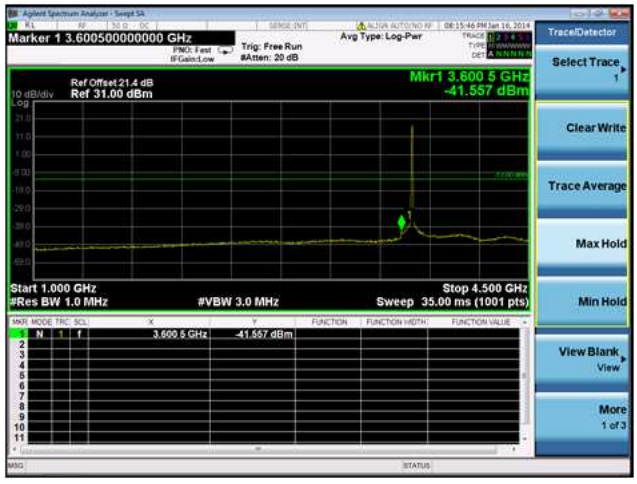


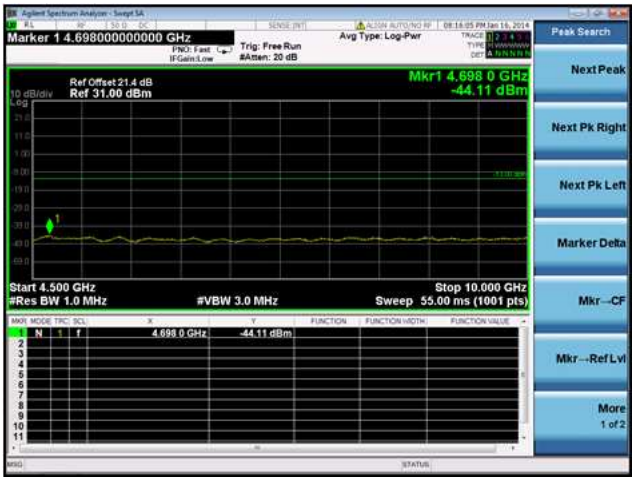


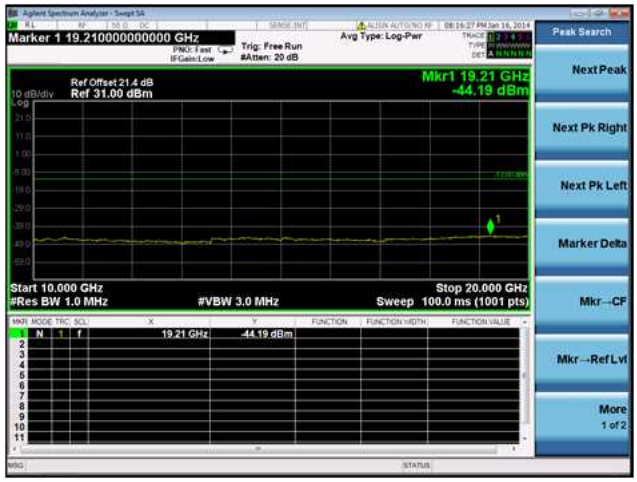


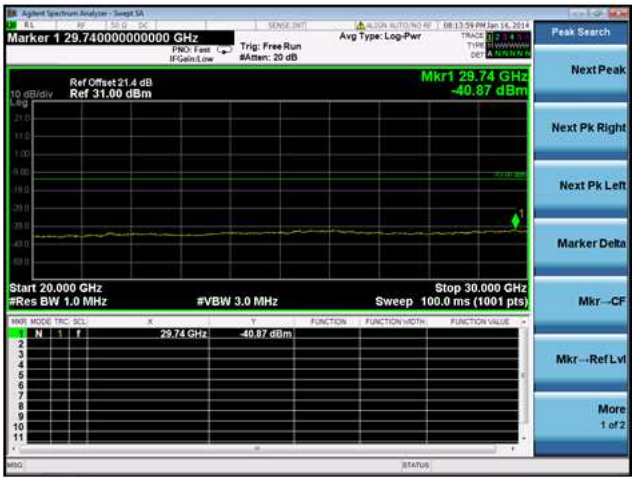
Mode	QPSK, CB: 7MHz	Channel	3675.0 MHz

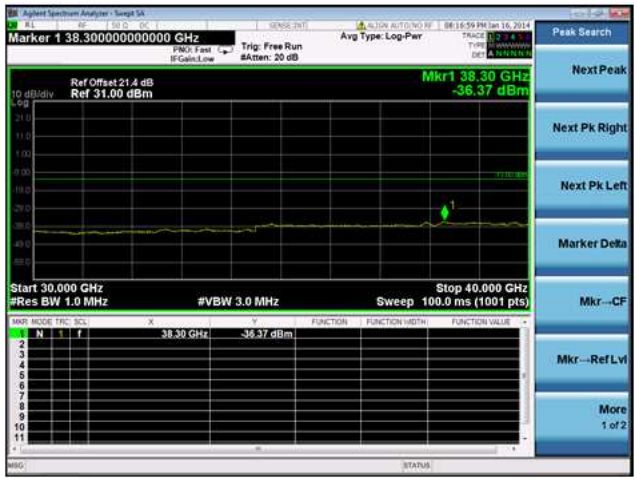




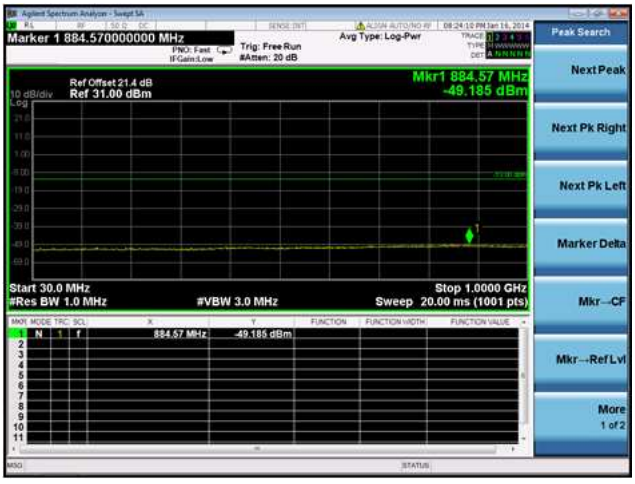


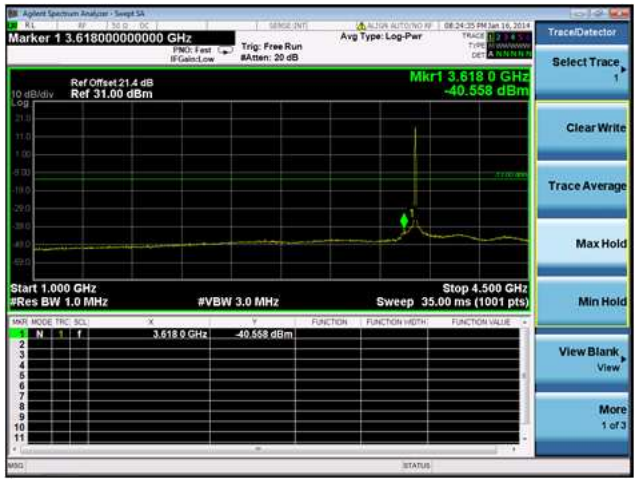


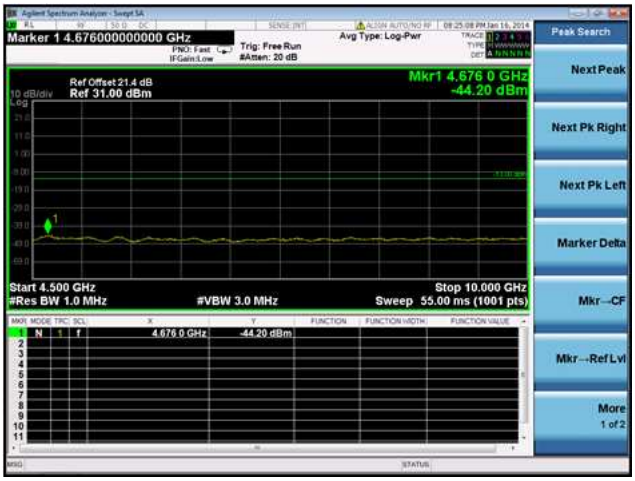


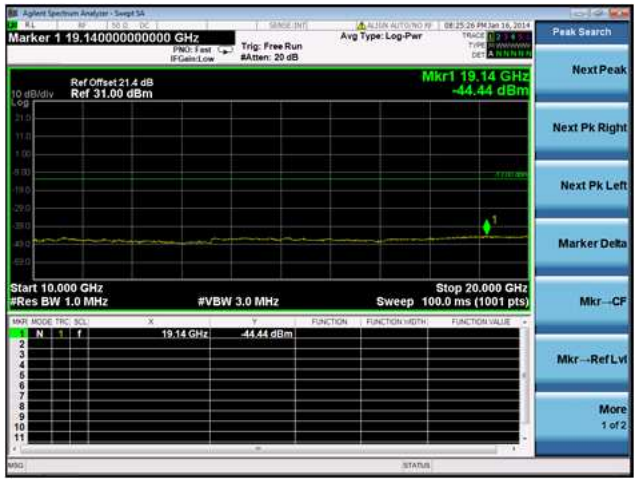


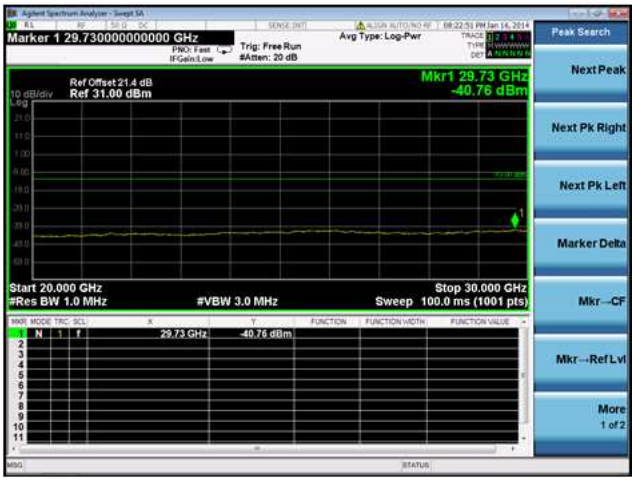
Mode	QPSK, CB: 7MHz	Channel	3696.5 MHz

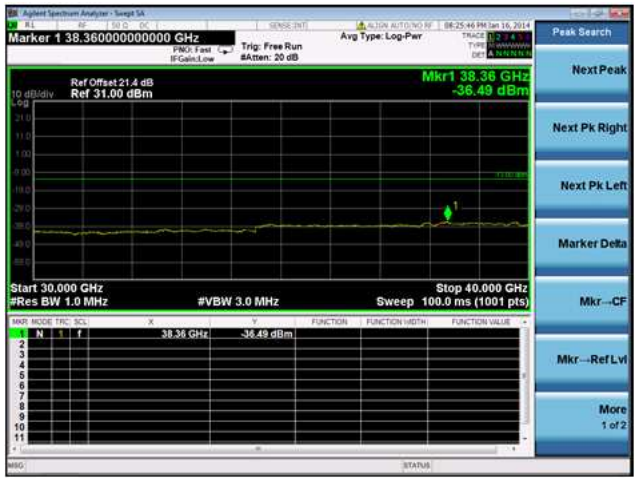




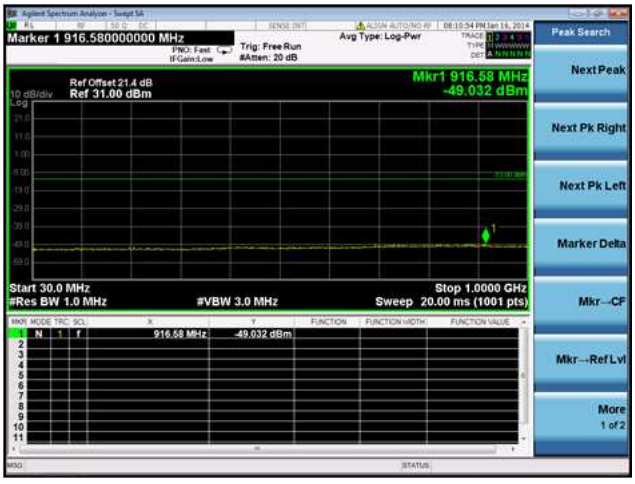


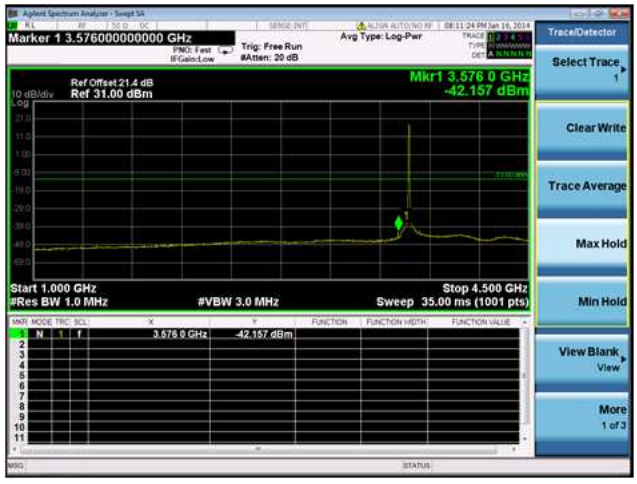


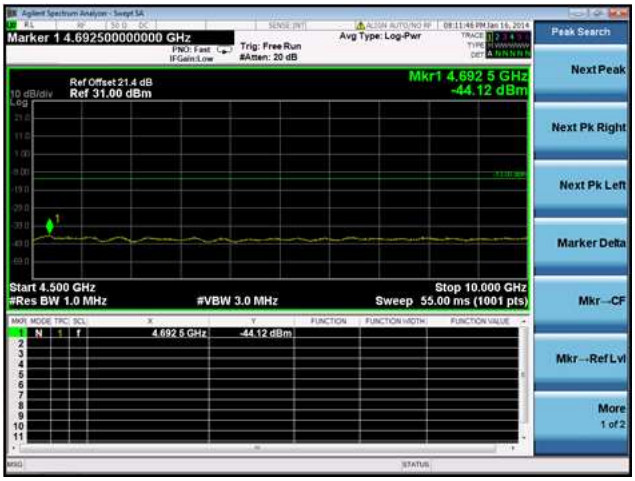


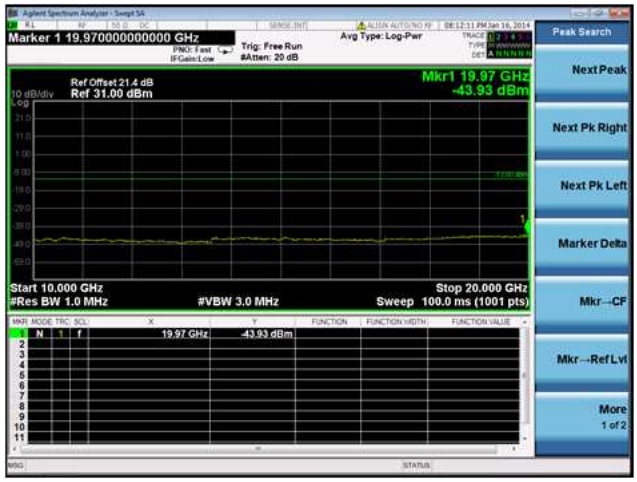


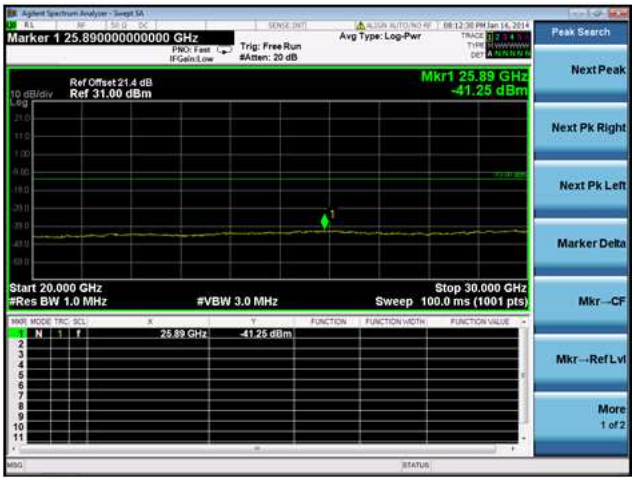
Mode	16QAM, CB: 7MHz	Channel	3653.5 MHz

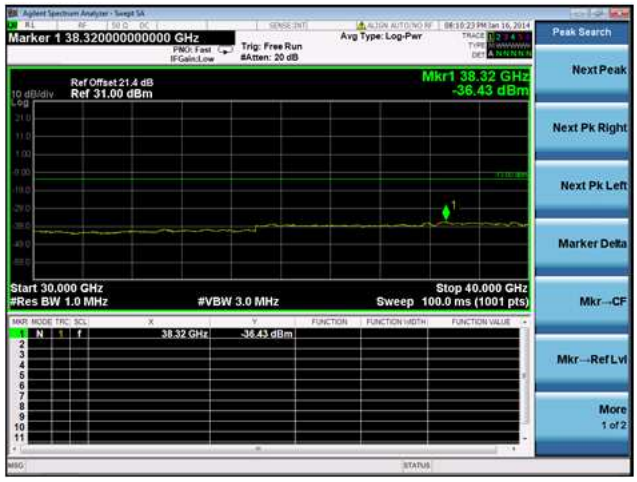




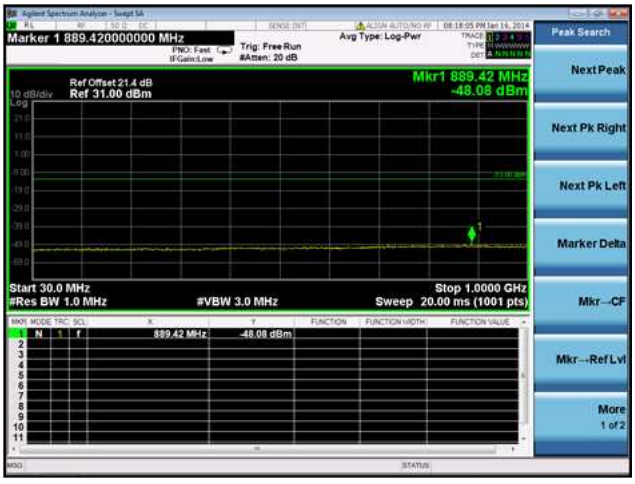


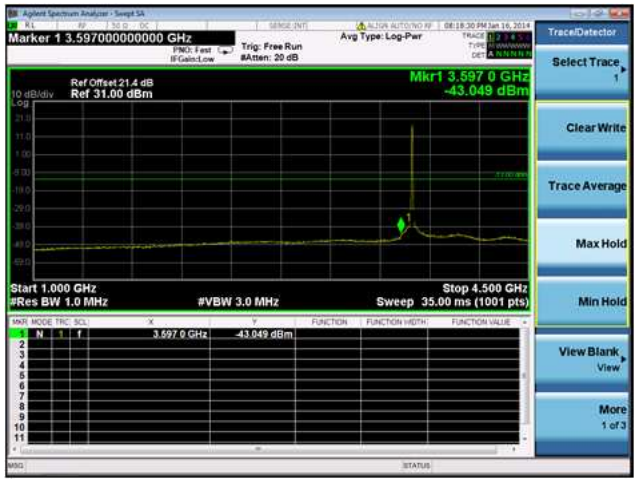


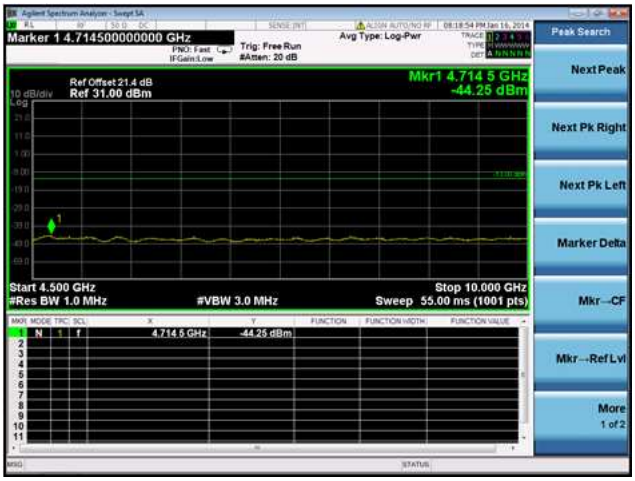


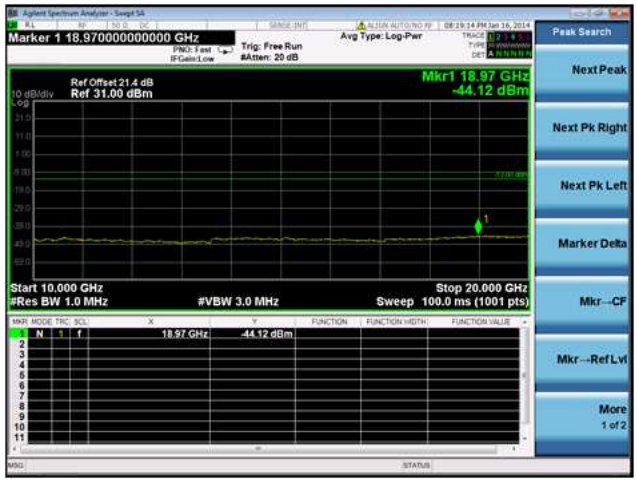


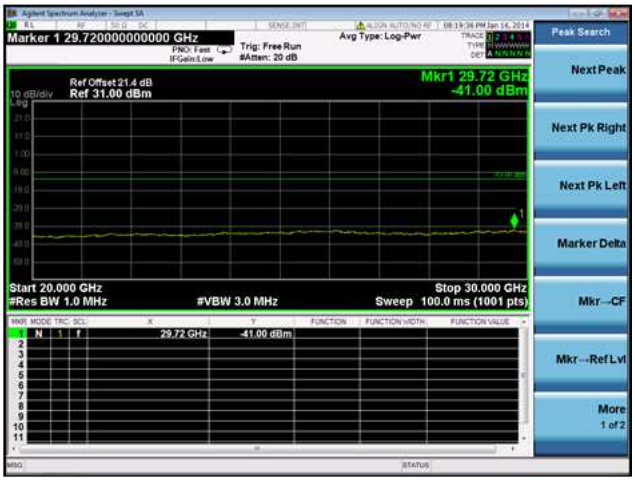
Mode	16QAM, CB: 7MHz	Channel	3675.0 MHz

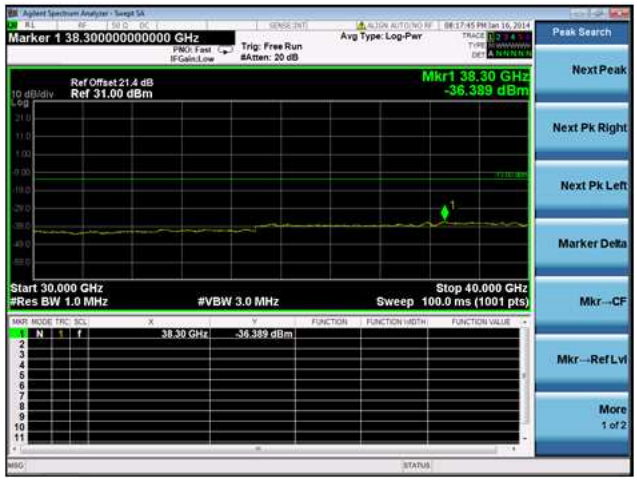




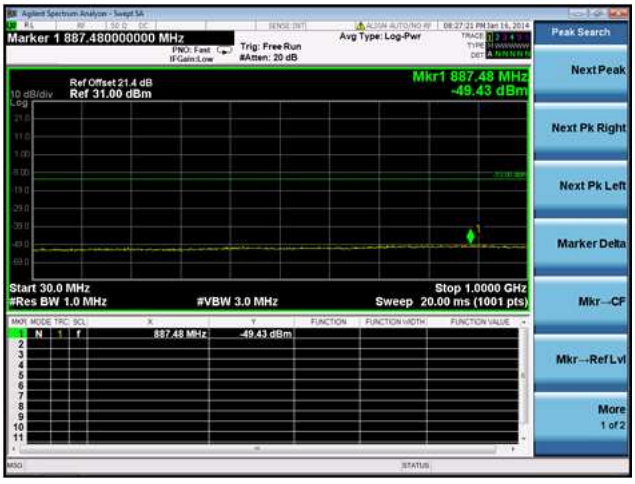


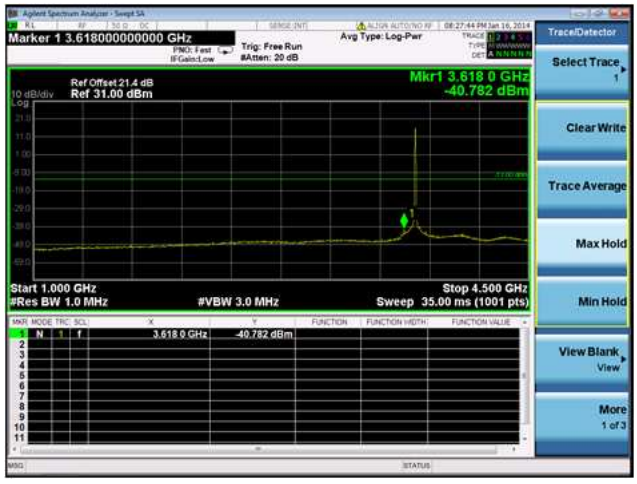


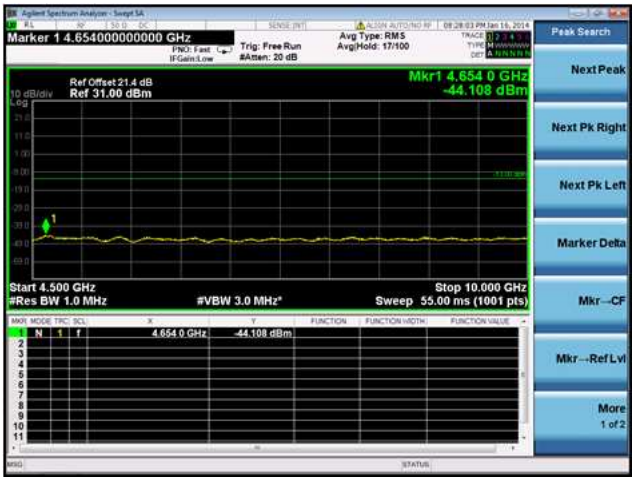


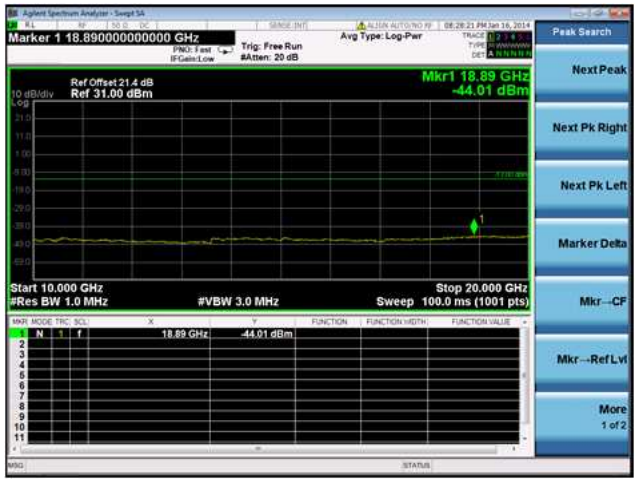


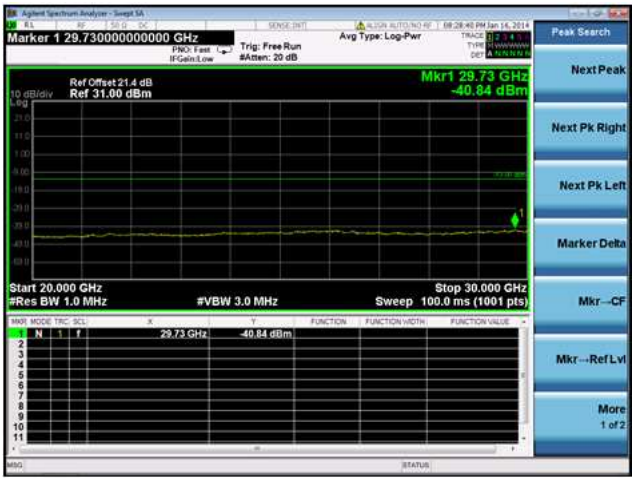
Mode	16QAM, CB: 7MHz	Channel	3696.5 MHz

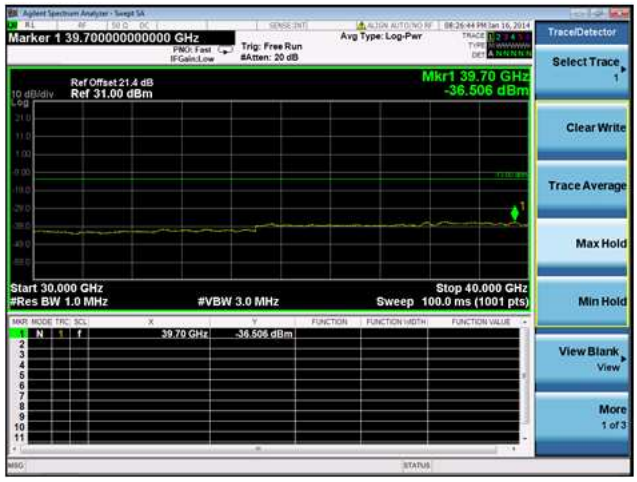




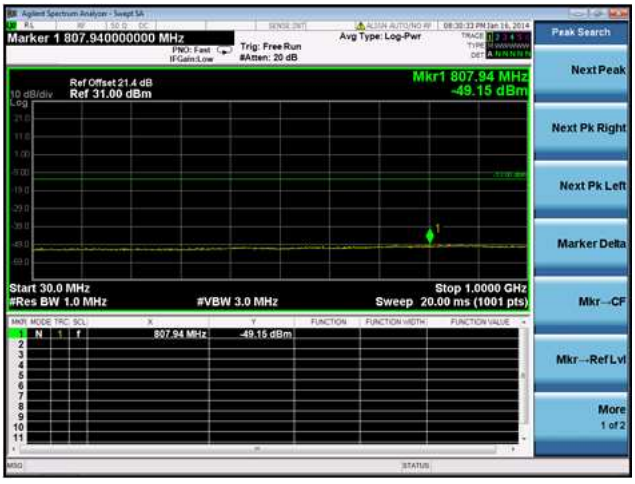


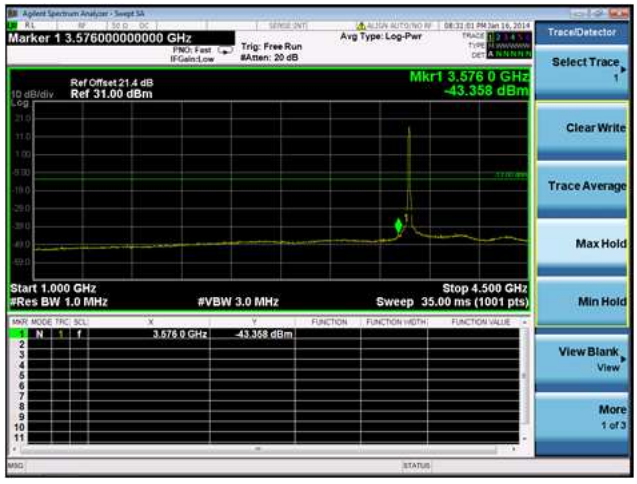


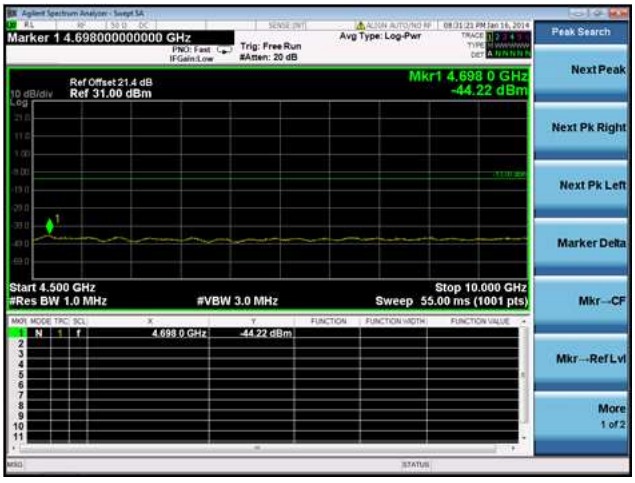


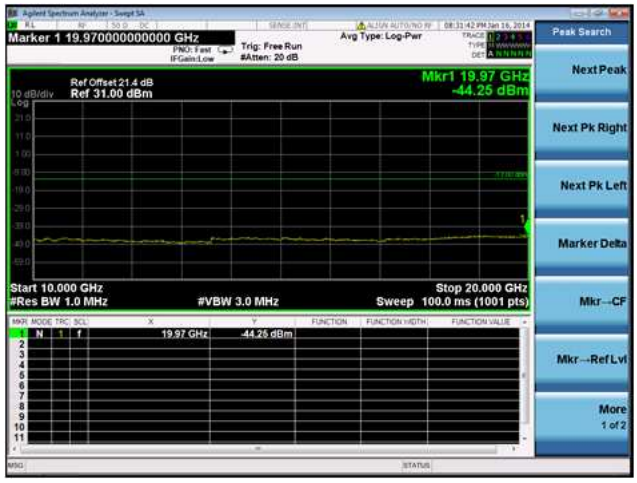


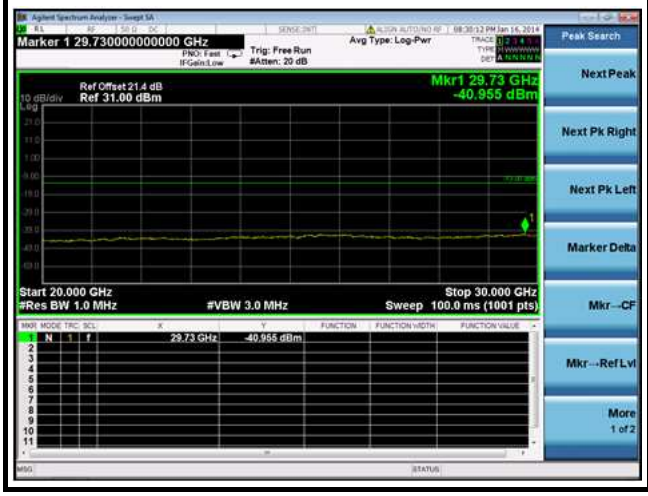
Mode	QPSK, CB: 10MHz	Channel	3655.0 MHz

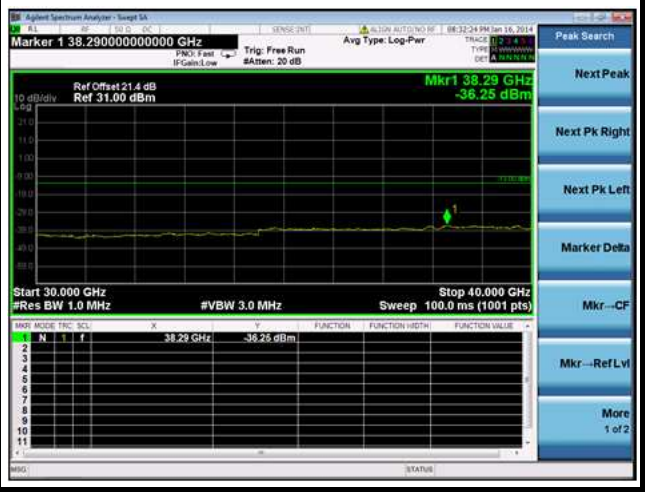




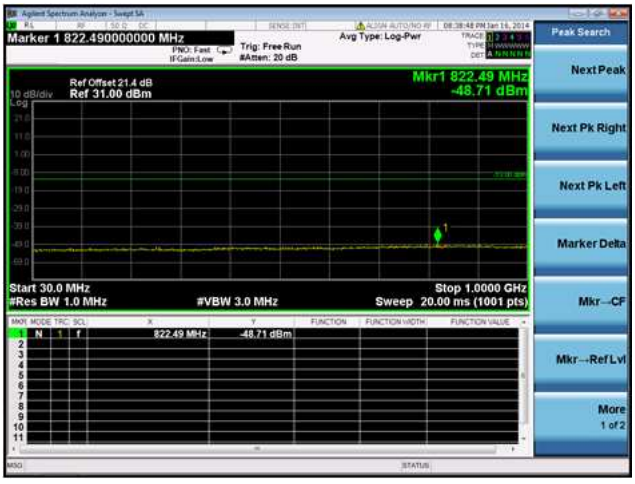


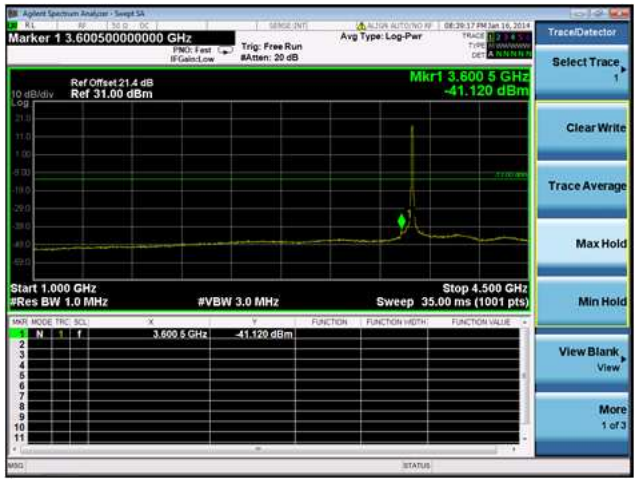


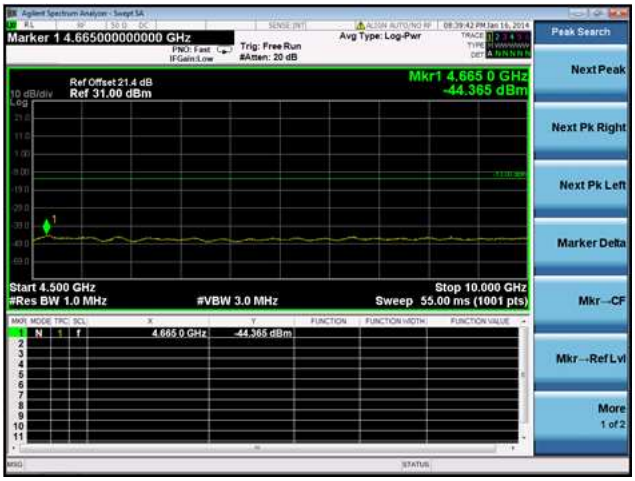


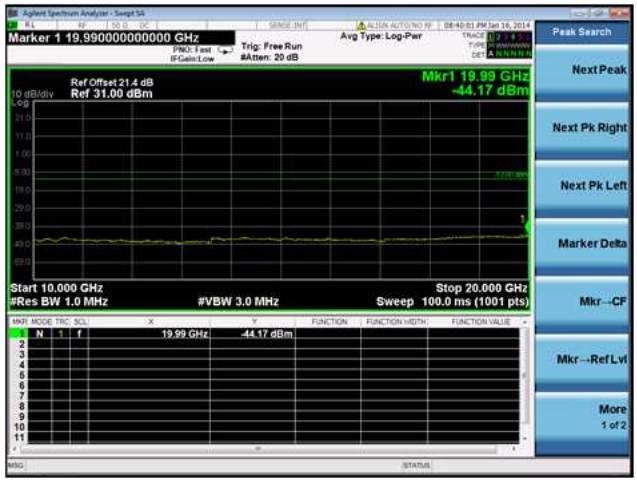


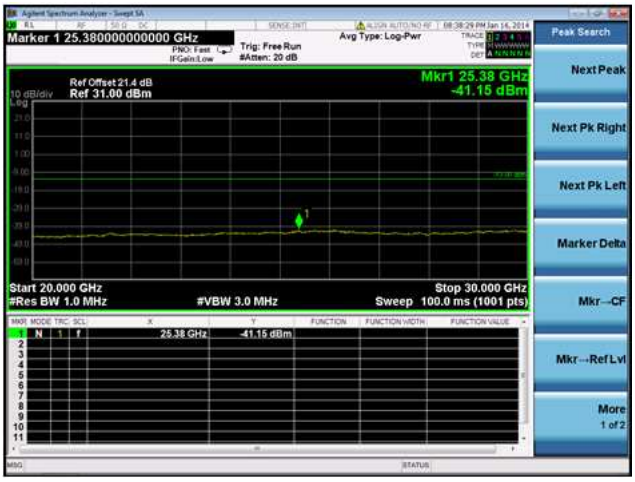
Mode	QPSK, CB: 10MHz	Channel	3675.0 MHz

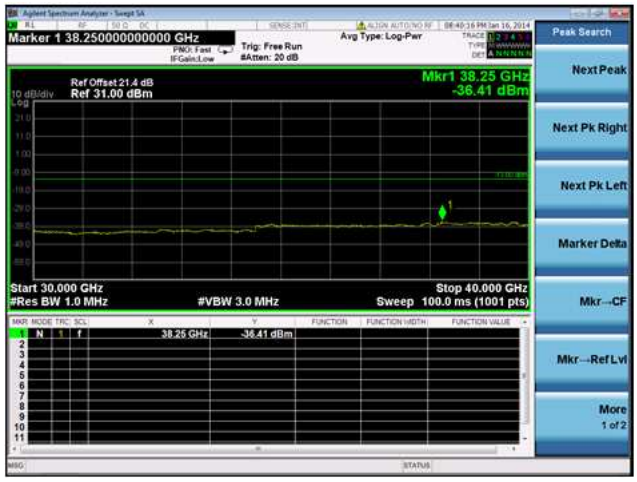




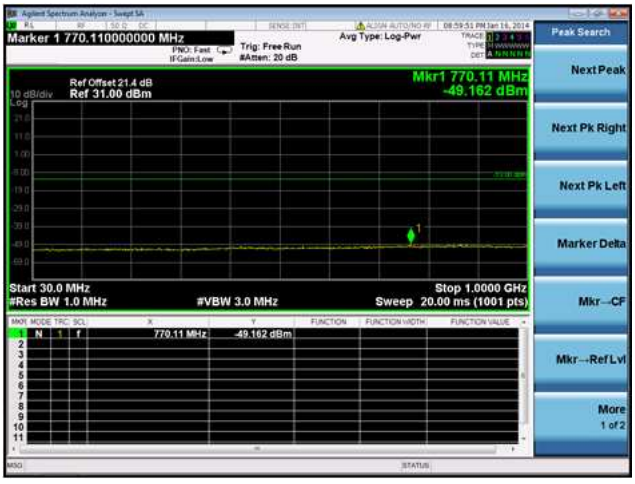


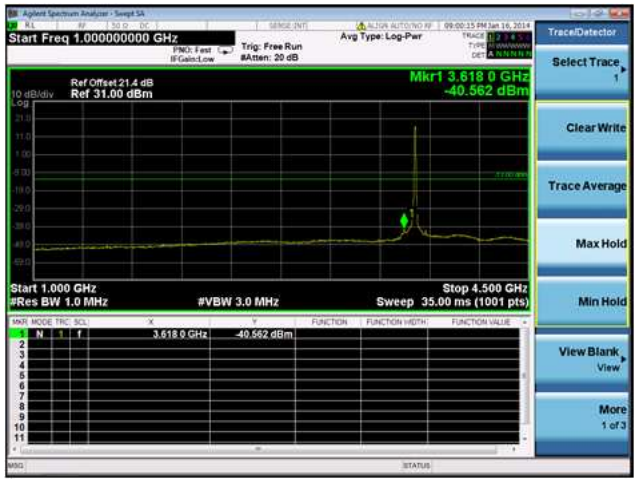


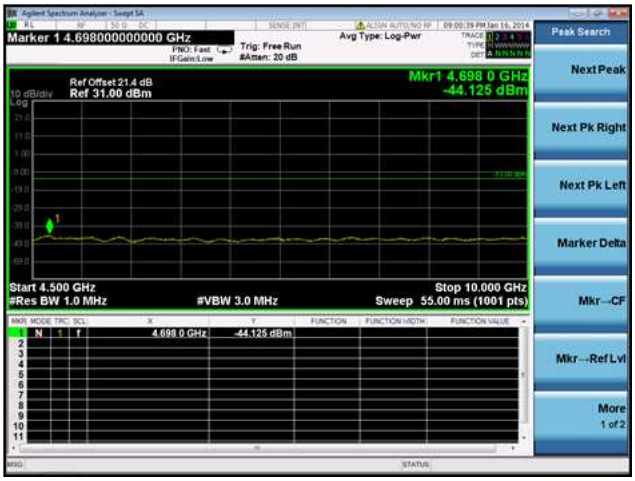


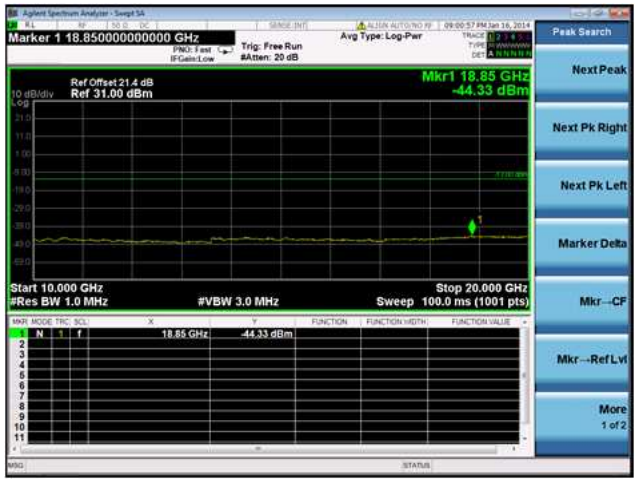


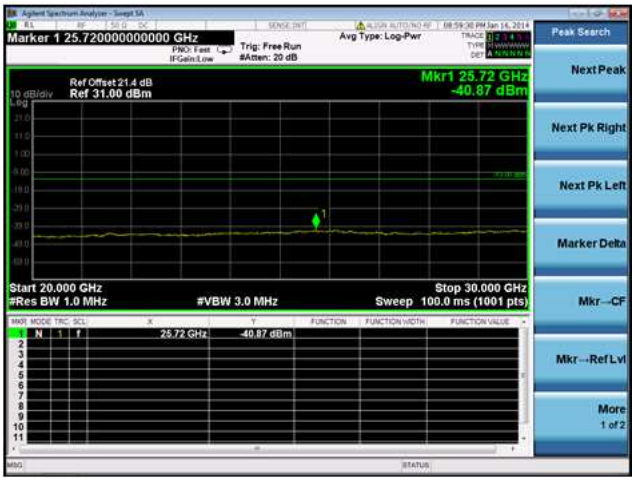
Mode	QPSK, CB: 10MHz	Channel	3695.0 MHz

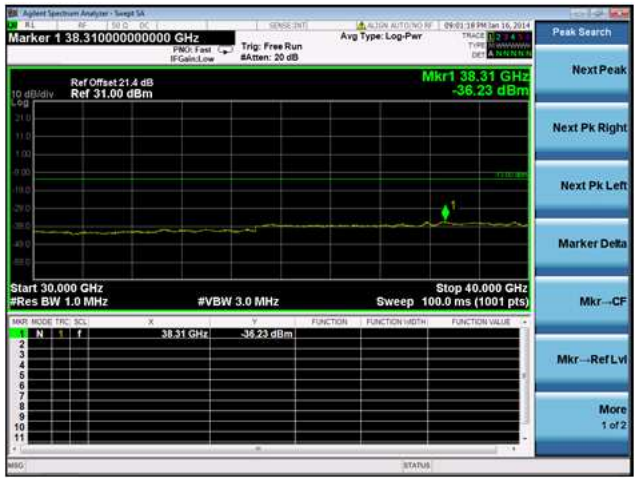




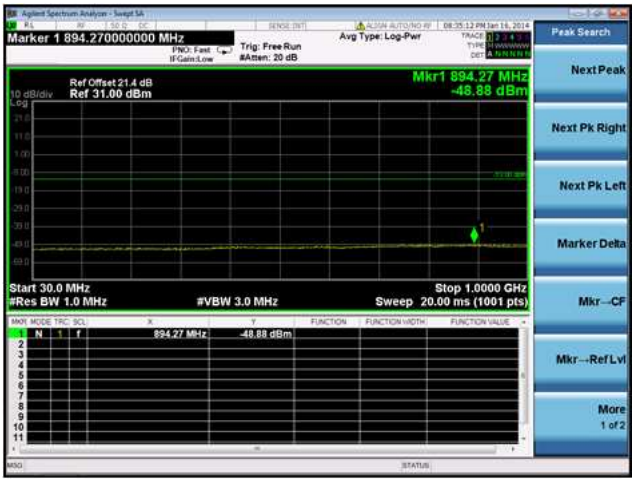


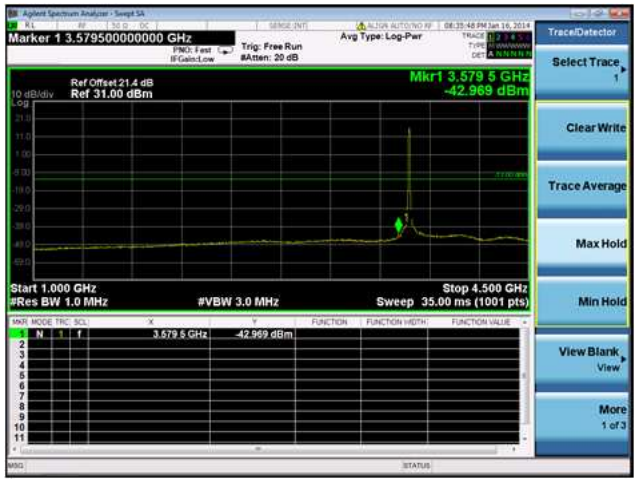


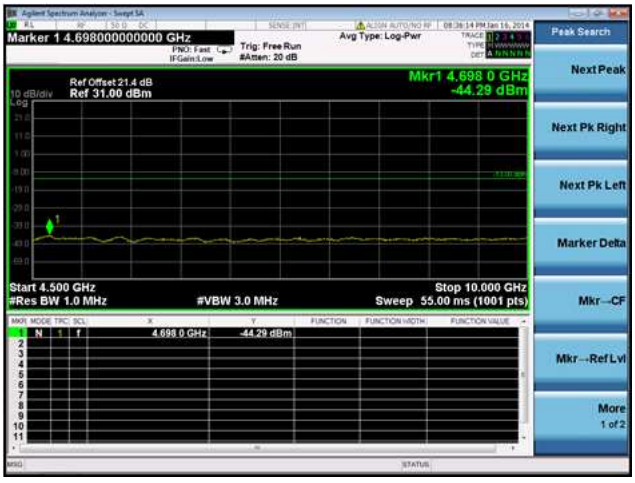


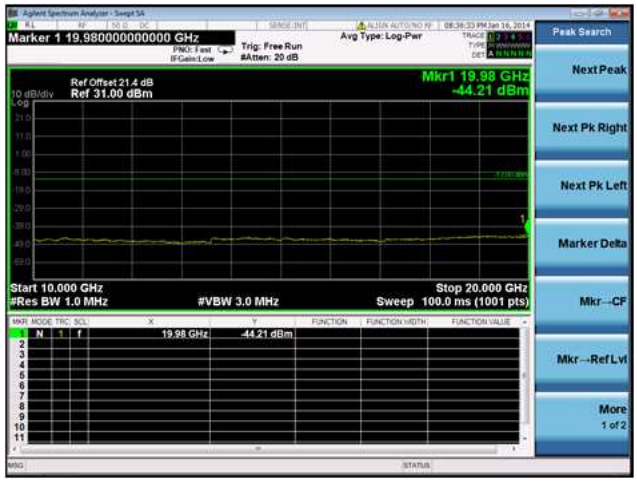


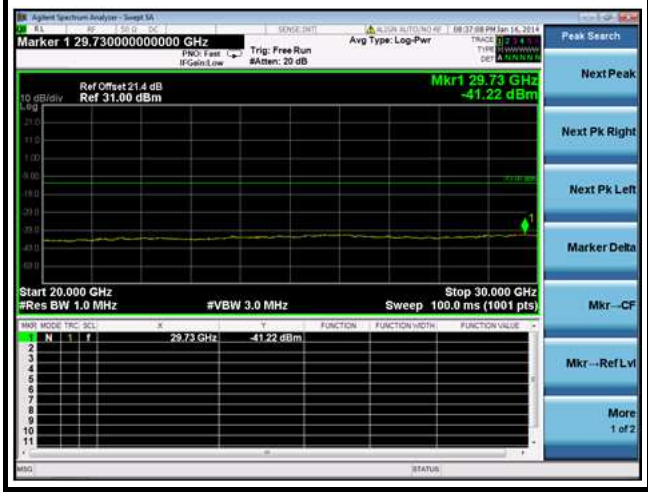
Mode	16QAM, CB: 10MHz	Channel	3655.0 MHz

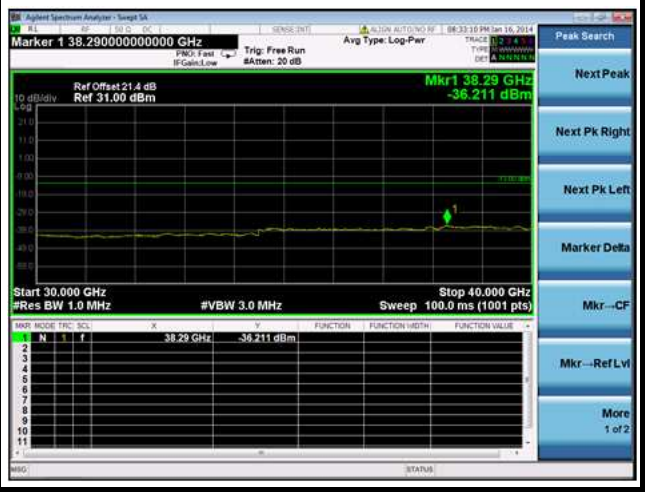




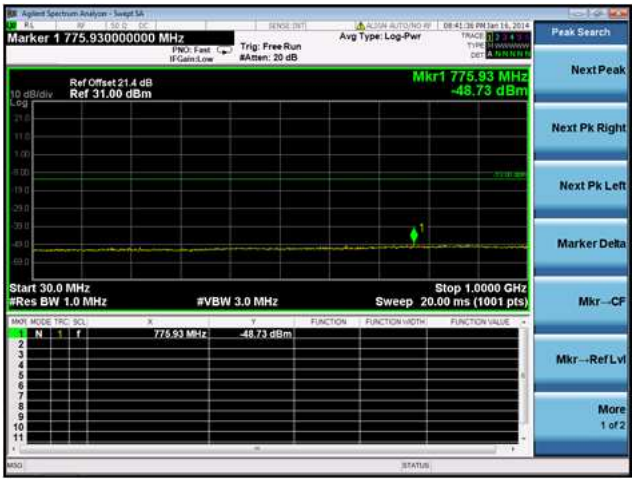


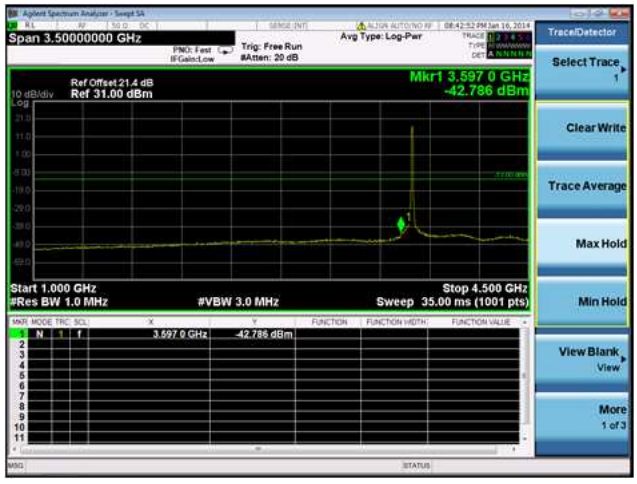


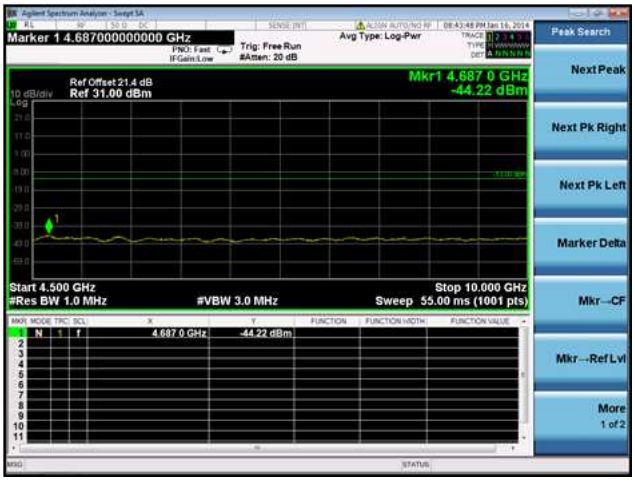


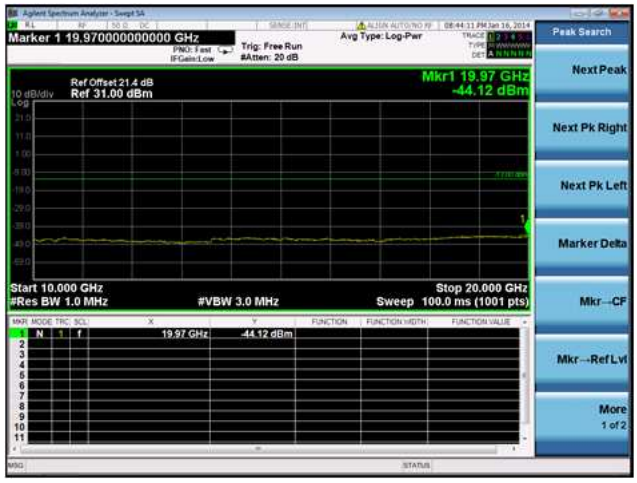


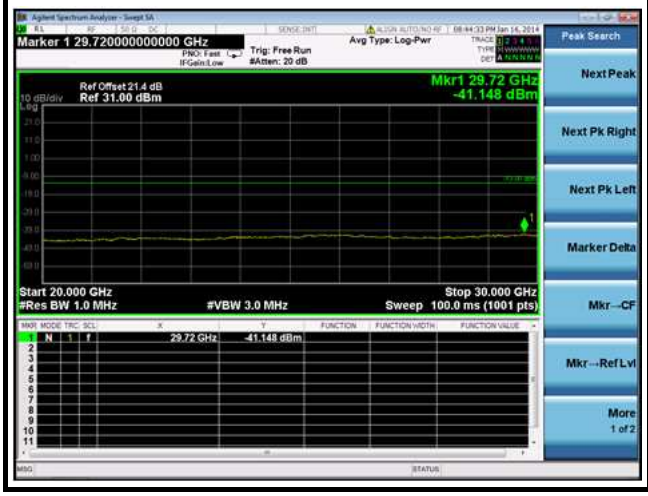
Mode	16QAM, CB: 10MHz	Channel	3675.0 MHz

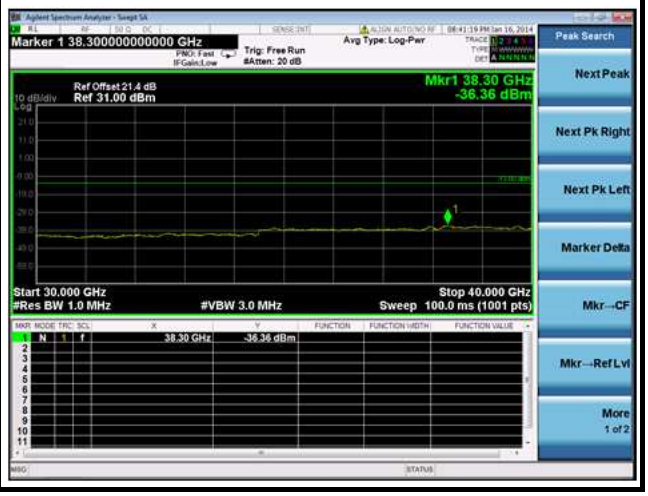












Mode	16QAM, CB: 10MHz	Channel	3695.0 MHz