TEST REPORT

Reference No.	:	WTS18S07118477-1W
FCC ID	:	2AG32EG7035LM11
Applicant	:	Baicells Technologies Co., Ltd.
Address	:	3F, Hui Yuan Development Building, No.1 Shangdi Information Industry Base, Haidian Dist., Beijing, China
Manufacturer	:	The same as above
Address	:	The same as above
Product	:	LTE Outdoor CPE
Model(s)	:	EG7035L-M11
Brand Name	:	BaiCells
Standards	:	FCC CFR Title 47 Part 2 FCC CFR Title 47 Part 90 Subpart Z: 2017
Date of Receipt sample	:	2018-07-18
Date of Test	:	2018-07-19 to 2018-07-31
Date of Issue	:	2018-08-03
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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2 Laboratories Introduction

Waltek Services (Shenzhen) Co., Ltd is a professional third-party testing and certification laboratory with multi-year product testing and certification experience, established strictly in accordance with ISO/IEC 17025 requirements, and accredited by ILAC (International Laboratory Accreditation Cooperation) member. A2LA (American Association for Laboratory Accreditation) of USA, Meanwhile, Waltek has got recognition as registration and accreditation laboratory from EMSD (Electrical and Mechanical Services Department), and American Energy star, FCC(The Federal Communications Commission), CEC(California energy efficiency), IC(Industry Canada). It's the strategic partner and data recognition laboratory of international authoritative organizations, such as Intertek(ETL-SEMKO), TÜV Rheinland, TÜV SÜD, etc.

Waltek Services (Shenzhen) Co., Ltd is one of the largest and the most comprehensive third party testing laboratory in China. Our test capability covered four large fields: safety test. Electro Magnetic Compatibility (EMC), and energy performance, wireless radio. As a professional, comprehensive, justice international test organization, we still keep the scientific and rigorous work attitude to help each client satisfy the international standards and assist their product enter into globe market smoothly.

Test Facility:

A. Accreditations for Conformity Assessment (International)

Country/Region	Accreditation Body	Scope	Note
USA	**A2LA (Certificate No.: 4243.01)**	FCC ID \ DOC \ VOC	1
Canada		IC ID \ VOC	2
Japan		MIC-T \ MIC-R	-
Europe		EMCD \ RED	-
Taiwan		NCC	-
Hong Kong		OFCA	-
Australia		RCM	-
India	**International Services**	WPC	-
Thailand		NTC	-
Singapore		IDA	-

Note:

1. FCC Designation No.: CN1201. Test Firm Registration No.: 523476.
2. IC Canada Registration No.: 7760A

B. TCBs and Notify Bodies Recognized Testing Laboratory.

Recognized Testing Laboratory of …	Notify body number
TUV Rheinland	Optional.
Intertek	
TUV SUD	
SGS	
Phoenix Testlab GmbH	0700
Element Materials Technology Warwick Ltd	0891
Timco Engineering, Inc.	1177
Eurofins Product Service GmbH	0681

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4 Revision History

Test report No.	Date of Receipt sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTS18S07118477-1W	2018-07-18	2018-07-19 to 2018-07-31	2018-08-03	original	-	Valid

5 General Information

5.1 General Description of E.U.T.

Product:	LTE Outdoor CPE
Model(s):	EG7035L-M11
Model Description:	N/A
Storage Location:	Internal Storage
Note:	N/A

5.2 Details of E.U.T.

Operation Frequency:	LTE Band 43: 3652.5~3697.5MHz WiFi 802.11b/g/n HT20: 2412~2462MHz
Type of Modulation:	LTE: QPSK, 16QAM WiFi: CCK, OFDM
Antenna installation:	LTE: Internal antenna WiFi: Internal antenna
Antenna Gain:	LTE: 10dBi WiFi: 0dBi
Ratings:	DC 24V, 0.5A
Number of transmitter chains:	LTE: TX*RX
Directional gain =GANT	

5.3 Channel List

Normal

5MHz		10MHz	
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
Low	3652.5	Low	3655
Middle	3675	Middle	3675
High	3697.5	High	3695
15MHz		**20MHz**	
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
Low	3657.5	Low	3660
Middle	3675	Middle	3675
High	3692.5	High	3690

5.4 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

Test Mode	Description

Data Mode (QPSK)	Keep the EUT in data communicating mode (QPSK). (5MHz, 10MHz, 15MHz, 20MHz)
Data Mode (16QAM)	Keep the EUT in data communicating mode (16QAM). (5MHz, 10MHz, 15MHz, 20MHz)

5.5 Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

☐ Yes ☒ No

If Yes, list the related test items and lab information:

Test Lab: N/A

Lab address: N/A

Test items: N/A

6 Test Summary

Test Items	Test Requirement	Result
	FCC	
RF Output Power	Part 2.1046 Part 90.1321	PASS
Modulation Characteristics	Part 2.1047	PASS
99% & -26 dB Occupied Bandwidth	Part 2.1049 Part 90.209	PASS
Emission Mask	Part 90.210(b)	PASS
Spurious Emissions at Antenna Terminal	Part 2.1051 Part 90.1323	PASS
Field Strength of Spurious Radiation	Part 2.1053 Part 90.1323	PASS
Frequency stability vs. temperature	Part 2.1055(a)(1)(b) Part 90.213(a)	PASS
Frequency stability vs. voltage	Part 2.1055(d)(1)(2) Part 90.213(a)	PASS

Pass: The EUT complies with the essential requirements in the standard.

Note 1: According to FCC KDB 971168 D01 Power Means License Digital Systems v03.

Note 2: EUT was on continue transmit mode, the duty cycle was 100%.

7 Equipment Used during Test

7.1 Equipments List

Conducted Emissions Test Site 1#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMI Test Receiver	R&S	ESCI	100947	2017-09-12	2018-09-11
2.	LISN	R&S	ENV216	101215	2017-09-12	2018-09-11
3.	Cable	Top	TYPE16(3.5M)	-	2017-09-12	2018-09-11
Conducted Emissions Test Site 2#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMI Test Receiver	R&S	ESCI	101155	2017-09-12	2018-09-11
2.	LISN	SCHWARZBECK	NSLK 8128	8128-289	2017-09-12	2018-09-11
3.	Limiter	York	MTS-IMP-136	261115-001-0024	2017-09-12	2018-09-11
4.	Cable	LARGE	RF300	-	2017-09-12	2018-09-11
3m Semi-anechoic Chamber for Radiation Emissions Test site 1#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1	Spectrum Analyzer	R&S	FSP	100091	2018-04-29	2019-04-28
2	Active Loop Antenna	Beijing Dazhi	ZN30900A	-	2018-04-09	2019-04-08
3	Trilog Broadband Antenna	SCHWARZBECK	VULB9163	336	2018-04-09	2019-04-08
4	Coaxial Cable (below 1GHz)	Top	TYPE16(13M)	-	2017-09-12	2018-09-11
5	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	667	2018-04-09	2019-04-08
6	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9170	335	2018-04-09	2019-04-08
7	Broadband Preamplifier	COMPLIANCE DIRECTION	PAP-1G18	2004	2018-04-13	2019-04-12
8	Coaxial Cable (above 1GHz)	Top	1GHz-25GHz	EW02014-7	2018-04-13	2019-04-12
9	Universal Radio Communication Tester	R&S	CMU 200	112461	2018-04-13	2019-04-12
10	Signal Generator	R&S	SMR20	100046	2017-09-12	2018-09-11
11	Smart Antenna	SCHWARZBECK	HA08	-	2018-04-09	2019-04-08
3m Semi-anechoic Chamber for Radiation Emissions Test site 2#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No**	**Last Calibration Date**	**Calibration Due Date**

1	Test Receiver	R&S	ESCI	101296	2018-04-13	2019-04-12
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	2018-04-09	2019-04-08
3	Amplifier	Compliance pirection systems inc	PAP-0203	22024	2018-04-13	2019-04-12
4	Cable	HUBER+SUHNER	CBL2	525178	2018-04-13	2019-04-12
RF Conducted Testing						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMC Analyzer (9k~26.5GHz)	Agilent	E7405A	MY45114943	2017-09-12	2018-09-11
2.	Spectrum Analyzer (9k-6GHz)	R&S	FSL6	100959	2017-09-12	2018-09-11
3.	Universal Radio Communication Tester	R&S	CMU 200	112461	2018-04-13	2019-04-12
4	Signal Analyzer (9k~26.5GHz)	Agilent	N9010A	MY50520207	2017-09-12	2018-09-11

7.2 Measurement Uncertainty

Parameter	Uncertainty
Conducted Emission	± 3.64 dB(AC mains 150KHz~30MHz)
Radiated Spurious Emissions	± 5.08 dB (Bilog antenna 30M~1000MHz)
	± 5.47 dB (Horn antenna 1000M~25000MHz)
Radio Frequency	± 1 x 10^{-7}Hz
RF Power	± 0.42 dB
RF Power Density	± 0.7dB
Conducted Spurious Emissions	± 2.76 dB (9kHz~26500MHz)
Confidence interval：95%. Confidence factor:k=2	

7.3 Test Equipment Calibration

All the test equipments used are valid and calibrated by CEPREI Certification Body that address is No.110 Dongguan Zhuang RD. Guangzhou, P.R.China.

8 Transmit Output Power and PSD

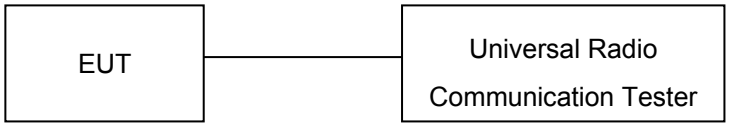
Test Requirement:	FCC part90.1321(a)
Test Method:	FCC part2.1046
	ANSI C63.26-2015
Test Mode:	Data communicating mode
Limit:	FCC: (a) Base and fixed stations are limited to 25 watts/25 MHz equivalent isotropically radiated power (EIRP). In any event, the peak EIRP powerdensity shall not exceed 1 Watt in any one-megahertz slice of spectrum. (b) In addition to the provisions in paragraph (a) of this section, transmitters operating in the 3650-3700 MHz band that emit multipledirectional beams, simultaneously or sequentially, for the purpose of directing signals to individual receivers or to groups of receivers provided theemissions comply with the following: (1) Different information must be transmitted to each receiver. (2) If the transmitter employs an antenna system that emits multiple directional beams but does not emit multiple directional beamssimultaneously, the total output power conducted to the array or arrays that comprise the device, *i.e.*, the sum of the power supplied to allantennas, antenna elements, staves, etc. and summed across all carriers or frequency channels, shall not exceed the limit specified in paragraph(a) of this section, as applicable. The directional antenna gain shall be computed as follows: (i) The directional gain, in dBi, shall be calculated as the sum of 10 log (number of array elements or staves) plus the directional gain, in dBi,of the individual element or stave having the highest gain. (ii) A lower value for the directional gain than that calculated in paragraph (b)(2)(i) of this section will be accepted if sufficient evidence ispresented, *e.g.*, due to shading of the array or coherence loss in the beam-forming. (3) If a transmitter employs an antenna that operates simultaneously on multiple directional beams using the same or different frequencychannels and if transmitted beams overlap, the power shall be reduced to ensure that the aggregate power from the overlapping beams does notexceed the limit specified in paragraph (b)(2) of this section. In addition, the aggregate power transmitted simultaneously on all beams shall notexceed the limit specified in paragraph (b)(2) of this section by more than 8 dB. (4) Transmitters that emit a single directional beam shall operate under the provisions of paragraph (b)(2) of this section.

8.1 EUT Operation

Operating Environment :	
Temperature:	22.4 °C
Humidity:	52.2 % RH
Atmospheric Pressure:	101.3kPa

8.2 Test Procedure

Conducted method: The RF output of the transmitter was connected to the wireless test set and the spectrum analyzer through sufficient attenuation.



8.3 Test Result

Transmit Output Power						
5MHz Bandwidth						
Modulation	Test Channel	RB Size/ RB Offset	Total Power (dBm/5MHz)	Antenna Gain (dBi)	EIRP (dBm/5MHz)	EIRP Limit(dBm/5MHz)
QPSK	Low	1/LOW	23.12	10	33.12	37.01
		1/MID	23.12	10	33.12	
		1/HIGH	23.08	10	33.08	
		12/LOW	23.24	10	33.24	
		12/MID	23.28	10	33.28	
		12/HIGH	23.24	10	33.24	
		25/LOW	23.23	10	33.23	
	Middle	1/LOW	22.56	10	32.56	37.01
		1/MID	22.57	10	32.57	
		1/HIGH	22.56	10	32.56	
		12/LOW	22.57	10	32.57	
		12/MID	22.62	10	32.62	
		12/HIGH	22.61	10	32.61	
		25/LOW	22.59	10	32.59	
	High	1/LOW	22.5	10	32.5	37.01
		1/MID	22.45	10	32.45	
		1/HIGH	22.38	10	32.38	
		12/LOW	22.55	10	32.55	
		12/MID	22.53	10	32.53	
		12/HIGH	22.48	10	32.48	
		25/LOW	22.48	10	32.48	
16QAM	Low	1/LOW	23.12	10	33.12	37.01
		1/MID	23.14	10	33.14	
		1/HIGH	23.12	10	33.12	
		12/LOW	22.98	10	32.98	
		12/MID	22.97	10	32.97	
		12/HIGH	23	10	33	
		25/LOW	23.03	10	33.03	
	Middle	1/LOW	22.49	10	32.49	37.01
		1/MID	22.49	10	32.49	
		1/HIGH	22.51	10	32.51	
		12/LOW	22.53	10	32.53	
		12/MID	22.52	10	32.52	
		12/HIGH	22.52	10	32.52	
		25/LOW	22.54	10	32.54	

	High	1/LOW	22.34	10	32.34	**37.01**
		1/MID	22.28	10	32.28	
		1/HIGH	22.24	10	32.24	
		12/LOW	22.44	10	32.44	
		12/MID	22.41	10	32.41	
		12/HIGH	22.38	10	32.38	
		25/LOW	22.26	10	32.26	
10MHz Bandwidth						
Modulation	**Test Channel**	**RB Size/ RB Offset**	**Total Power (dBm/10MHz)**	**Antenna Gain (dBi)**	**EIRP (dBm/10MHz)**	**EIRP Limit(dBm/10MHz)**
QPSK	Low	1/LOW	22.72	10	32.72	**40.02**
		1/MID	22.69	10	32.69	
		1/HIGH	22.65	10	32.65	
		25/LOW	22.92	10	32.92	
		25/MID	22.88	10	32.88	
		25/HIGH	22.86	10	32.86	
		50/LOW	22.86	10	32.86	
	Middle	1/LOW	22.21	10	32.21	**40.02**
		1/MID	22.22	10	32.22	
		1/HIGH	22.21	10	32.21	
		25/LOW	22.38	10	32.38	
		25/MID	22.36	10	32.36	
		25/HIGH	22.35	10	32.35	
		50/LOW	22.25	10	32.25	
	High	1/LOW	22.2	10	32.2	**40.02**
		1/MID	22.24	10	32.24	
		1/HIGH	22.02	10	32.02	
		25/LOW	22.36	10	32.36	
		25/MID	22.29	10	32.29	
		25/HIGH	22.22	10	32.22	
		50/LOW	22.2	10	32.2	
16QAM	Low	1/LOW	22.76	10	32.76	**40.02**
		1/MID	22.72	10	32.72	
		1/HIGH	22.71	10	32.71	
		25/LOW	22.82	10	32.82	
		25/MID	22.78	10	32.78	
		25/HIGH	22.77	10	32.77	
		50/LOW	22.75	10	32.75	
	Middle	1/LOW	21.93	10	31.93	
		1/MID	21.93	10	31.93	
		1/HIGH	21.95	10	31.95	
		25/LOW	22.2	10	32.2	
		25/MID	22.21	10	32.21	

		25/HIGH	22.19	10	32.19	
		50/LOW	22.17	10	32.17	
	High	1/LOW	22.17	10	32.17	**40.02**
		1/MID	22.11	10	32.11	
		1/HIGH	21.99	10	31.99	
		25/LOW	22.31	10	32.31	
		25/MID	22.26	10	32.26	
		25/HIGH	22.17	10	32.17	
		50/LOW	22.14	10	32.14	
15MHz Bandwidth						
Modulation	**Test Channel**	**RB Size/ RB Offset**	**Total Power (dBm/15MHz)**	**Antenna Gain (dBi)**	**EIRP (dBm/15MHz)**	**EIRP Limit(dBm/15MHz)**
QPSK	Low	1/LOW	22.12	10	32.12	**41.78**
		1/MID	22.1	10	32.1	
		1/HIGH	22.05	10	32.05	
		36/LOW	22.34	10	32.34	
		36/MID	22.31	10	32.31	
		36/HIGH	22.27	10	32.27	
		75/LOW	22.24	10	32.24	
	Middle	1/LOW	21.62	10	31.62	**41.78**
		1/MID	21.66	10	31.66	
		1/HIGH	21.68	10	31.68	
		36/LOW	21.86	10	31.86	
		36/MID	21.83	10	31.83	
		36/HIGH	21.86	10	31.86	
		75/LOW	21.88	10	31.88	
	High	1/LOW	21.71	10	31.71	**41.78**
		1/MID	21.64	10	31.64	
		1/HIGH	21.54	10	31.54	
		36/LOW	21.93	10	31.93	
		36/MID	21.85	10	31.85	
		36/HIGH	21.78	10	31.78	
		75/LOW	21.83	10	31.83	
16QAM	Low	1/LOW	22.12	10	32.12	**41.78**
		1/MID	22.1	10	32.1	
		1/HIGH	22.08	10	32.08	
		36/LOW	22.27	10	32.27	
		36/MID	22.25	10	32.25	
		36/HIGH	22.21	10	32.21	
		75/LOW	22.2	10	32.2	
	Middle	1/LOW	21.74	10	31.74	**41.78**
		1/MID	21.74	10	31.74	
		1/HIGH	21.76	10	31.76	

		36/LOW	21.7	10	31.7	
		36/MID	21.72	10	31.72	
		36/HIGH	21.74	10	31.74	
		75/LOW	21.67	10	31.67	
	High	1/LOW	21.8	10	31.8	**41.78**
		1/MID	21.68	10	31.68	
		1/HIGH	21.61	10	31.61	
		36/LOW	21.88	10	31.88	
		36/MID	21.86	10	31.86	
		36/HIGH	21.71	10	31.71	
		75/LOW	21.77	10	31.77	
20MHz Bandwidth						
Modulation	**Test Channel**	**RB Size/ RB Offset**	**Total Power (dBm/20MHz)**	**Antenna Gain (dBi)**	**EIRP (dBm/20MHz)**	**EIRP Limit(dBm/20MHz)**
QPSK	Low	1/LOW	**23.65**	10	33.65	**43.03**
		1/MID	23.53	10	33.53	
		1/HIGH	23.48	10	33.48	
		50/LOW	23.5	10	33.5	
		50/MID	23.45	10	33.45	
		50/HIGH	23.39	10	33.39	
		100/LOW	23.44	10	33.44	
	Middle	1/LOW	23	10	33	**43.03**
		1/MID	23.01	10	33.01	
		1/HIGH	22.99	10	32.99	
		50/LOW	22.87	10	32.87	
		50/MID	22.87	10	32.87	
		50/HIGH	22.88	10	32.88	
		100/LOW	22.92	10	32.92	
	High	1/LOW	23.09	10	33.09	**43.03**
		1/MID	22.98	10	32.98	
		1/HIGH	22.85	10	32.85	
		50/LOW	22.98	10	32.98	
		50/MID	22.91	10	32.91	
		50/HIGH	22.8	10	32.8	
		100/LOW	22.82	10	32.82	
16QAM	Low	1/LOW	23.54	10	33.54	**43.03**
		1/MID	23.42	10	33.42	
		1/HIGH	23.38	10	33.38	
		50/LOW	23.45	10	33.45	
		50/MID	22.41	10	32.41	
		50/HIGH	23.36	10	33.36	
		100/LOW	23.38	10	33.38	
	Middle	1/LOW	22.74	10	32.74	**43.03**

		1/MID	22.73	10	32.73	
		1/HIGH	22.73	10	32.73	
		50/LOW	22.74	10	32.74	
		50/MID	22.76	10	32.76	
		50/HIGH	22.77	10	32.77	
		100/LOW	22.77	10	32.77	
	High	1/LOW	22.92	10	32.92	**43.03**
		1/MID	22.76	10	32.76	
		1/HIGH	22.69	10	32.69	
		50/LOW	22.81	10	32.81	
		50/MID	22.74	10	32.74	
		50/HIGH	22.64	10	32.64	
		100/LOW	22.68	10	32.68	

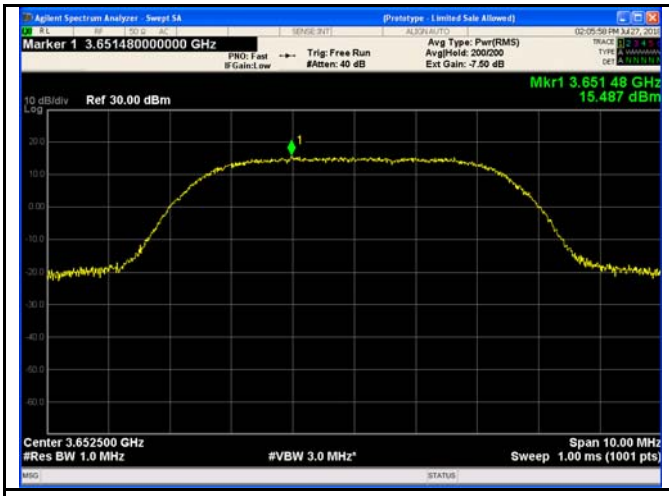
Note: Limit=44dBm+10log(bandwidth/25MHz)

Remark: Directional antenna Gain= Antenna Gain=10 dBi

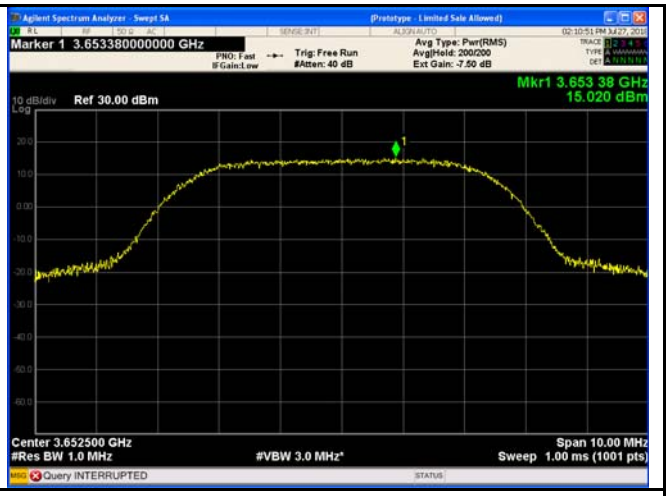
PSD (Full RB Size)						
Bandwidth (MHz)	**Modulation**	**Test Channel**	**Total PSD (dBm/MHz)**	**Antenna Gain (dBi)**	**EIRP density (dBm/MHz)**	**EIRP density Limit (dBm/MHz)**
5	QPSK	Low	15.49	10	25.49	30.0
		Middle	15.67	10	25.67	
		High	15.09	10	25.09	
	16QAM	Low	15.02	10	25.02	
		Middle	15.42	10	25.42	
		High	14.56	10	24.56	
Bandwidth (MHz)	**Modulation**	**Test Channel**	**Total PSD (dBm/MHz)**	**Antenna Gain (dBi)**	**EIRP density (dBm/MHz)**	**EIRP density Limit (dBm/MHz)**
10	QPSK	Low	11.86	10	21.86	30.0
		Middle	11.99	10	21.99	
		High	12.07	10	22.07	
	16QAM	Low	12.00	10	22.00	
		Middle	12.39	10	22.39	
		High	11.88	10	21.88	
Bandwidth (MHz)	**Modulation**	**Test Channel**	**Total PSD (dBm/MHz)**	**Antenna Gain (dBi)**	**EIRP density (dBm/MHz)**	**EIRP density Limit (dBm/MHz)**
15	QPSK	Low	9.84	10	19.84	30.0
		Middle	9.94	10	19.94	
		High	9.92	10	19.92	
	16QAM	Low	9.79	10	19.79	
		Middle	10.37	10	20.37	
		High	9.78	10	19.78	
Bandwidth (MHz)	**Modulation**	**Test Channel**	**Total PSD (dBm/MHz)**	**Antenna Gain (dBi)**	**EIRP density (dBm/MHz)**	**EIRP density Limit (dBm/MHz)**
20	QPSK	Low	8.95	10	18.95	30.0
		Middle	9.05	10	19.05	
		High	9.08	10	19.08	
	16QAM	Low	9.06	10	19.06	
		Middle	9.16	10	19.16	
		High	9.00	10	19.00	

Remark: Directional antenna Gain= Antenna Gain=10dBi

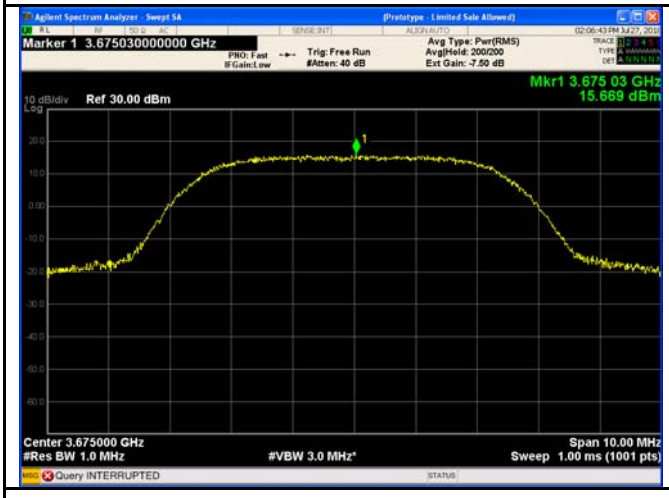
Test Plots for PSD



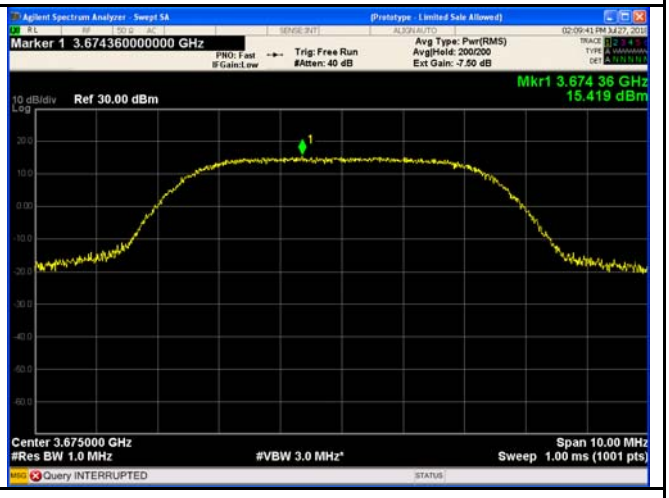
5MHz - Low CH QPSK



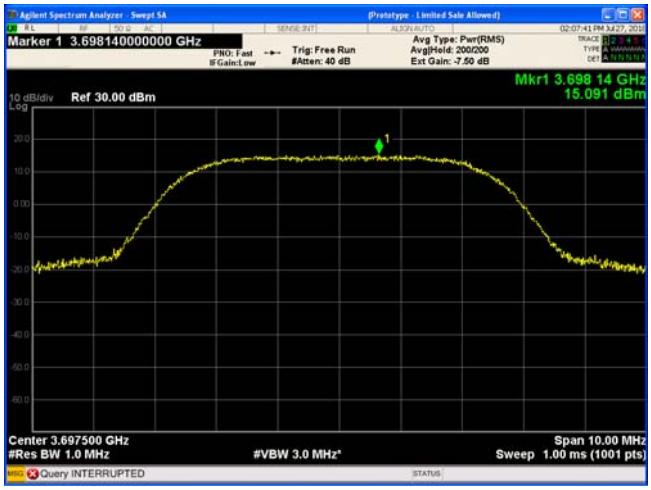
5MHz - Low CH 16QAM



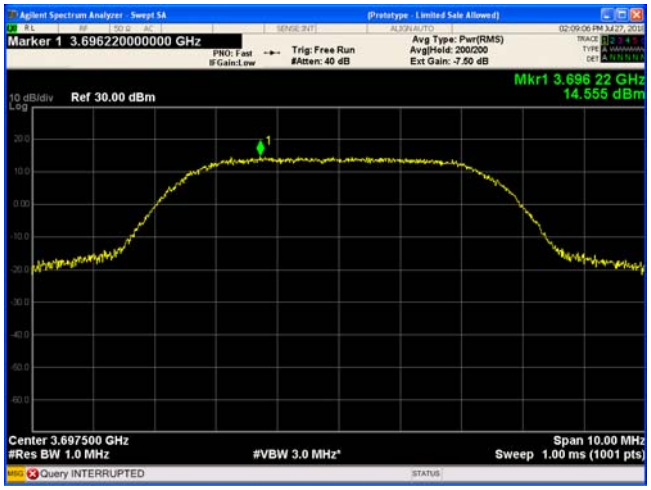
5MHz - Middle CH QPSK



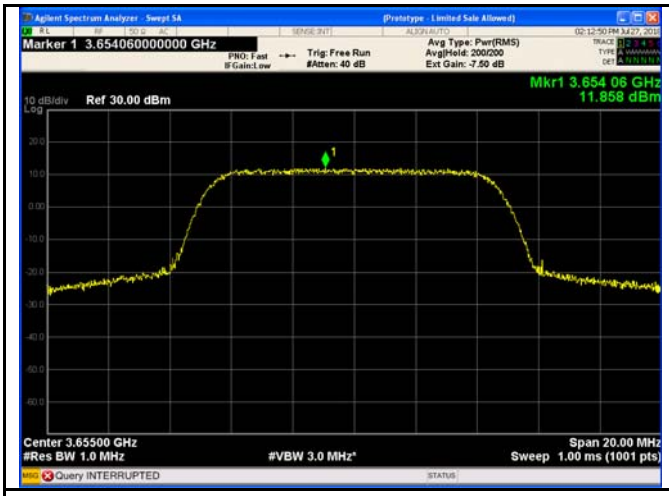
5MHz - Middle CH 16QAM



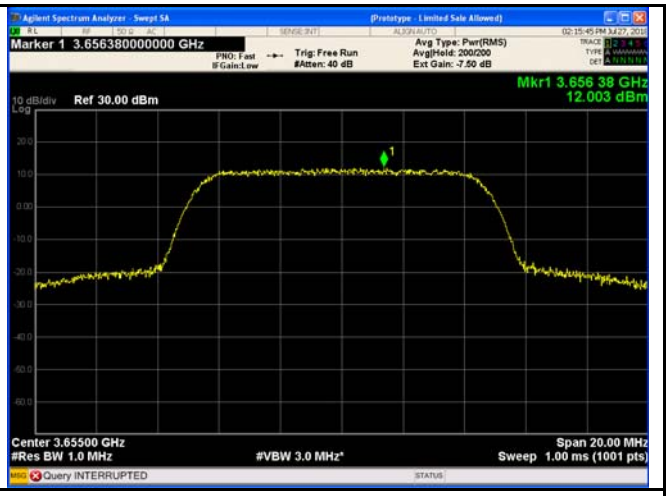
5MHz - High CH QPSK



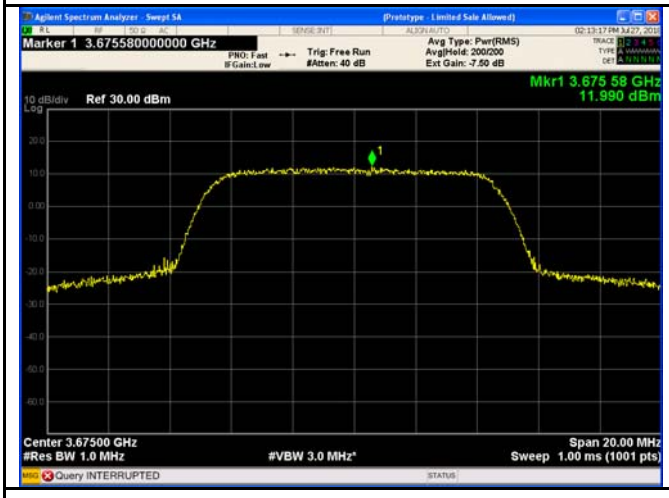
5MHz - High CH 16QAM



10MHz - Low CH QPSK



10MHz - Low CH 16QAM

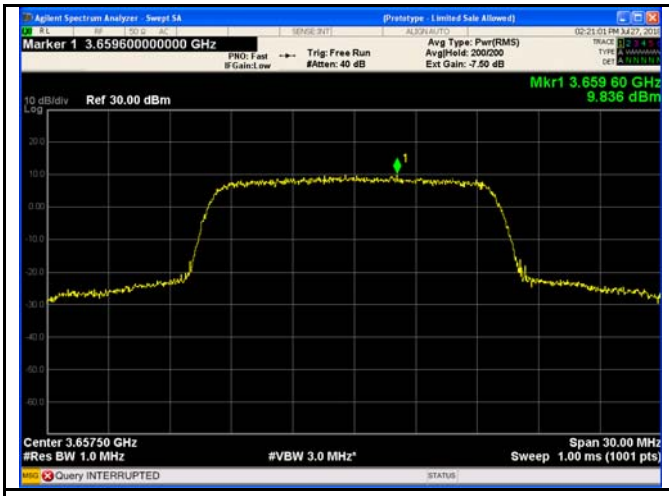


10MHz - Middle CH QPSK

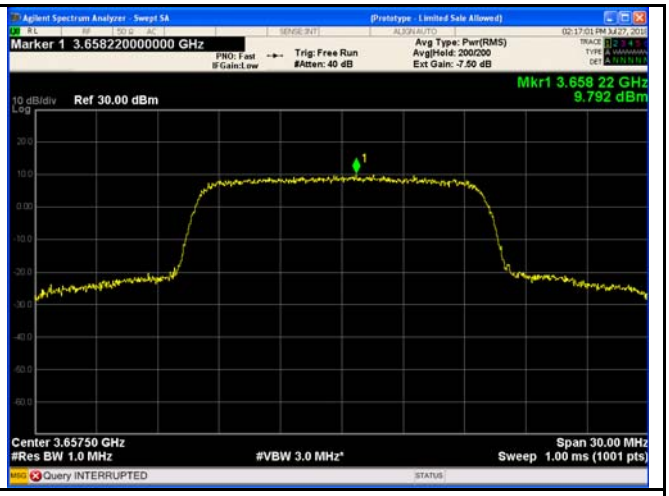
10MHz - Middle CH 16QAM

10MHz - High CH QPSK

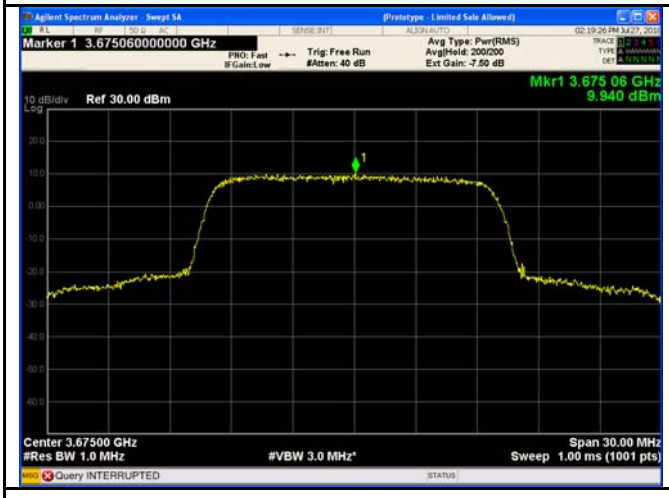
10MHz - High CH 16QAM



15MHz - Low CH QPSK

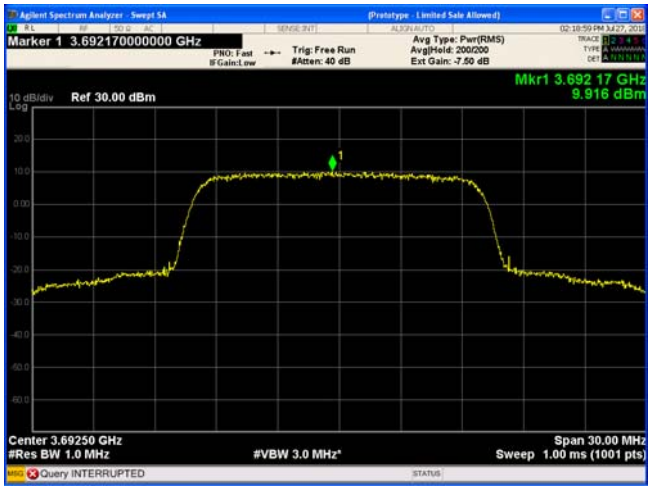


15MHz - Low CH 16QAM

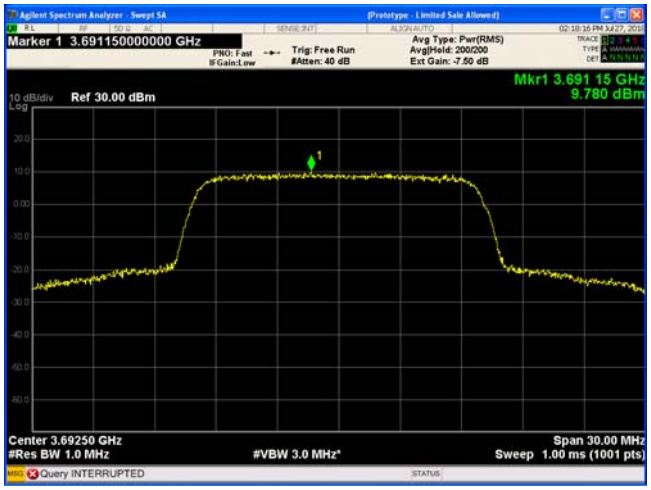


15MHz - Middle CH QPSK

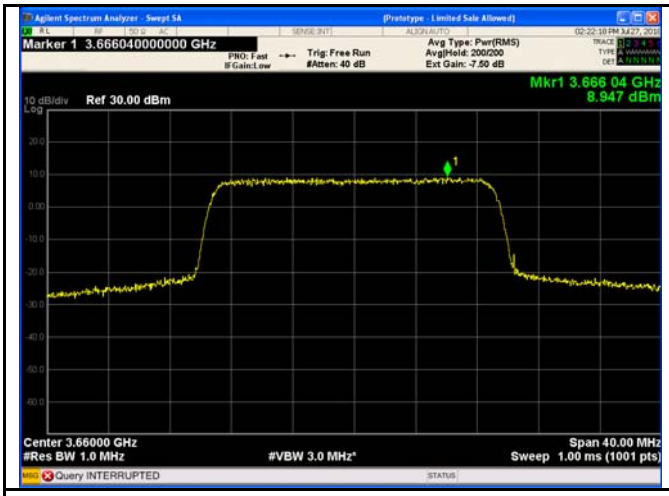
15MHz - Middle CH 16QAM



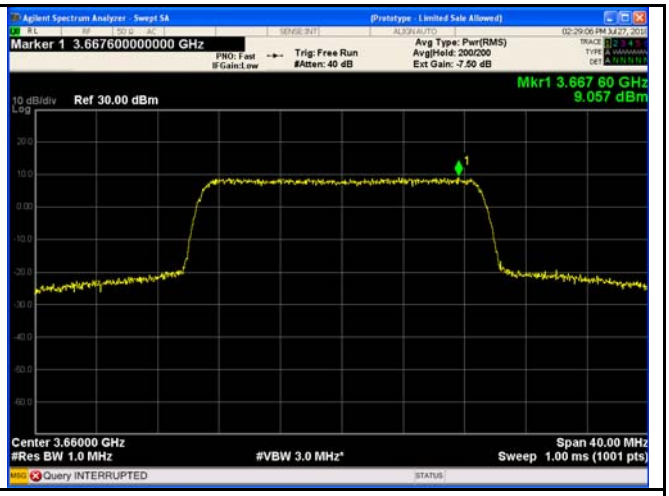
15MHz - High CH QPSK



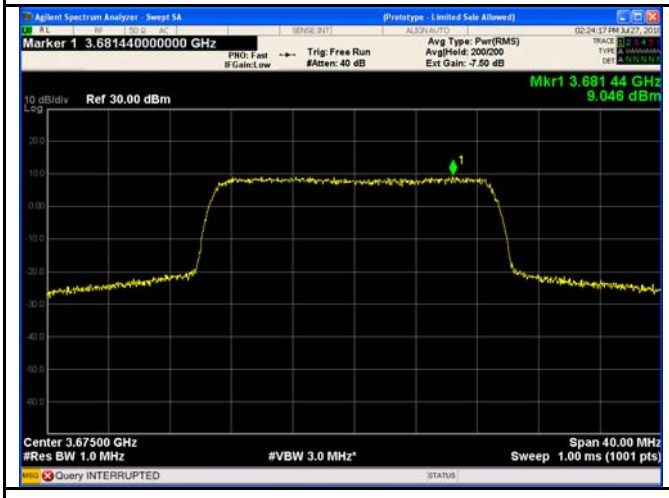
15MHz - High CH 16QAM



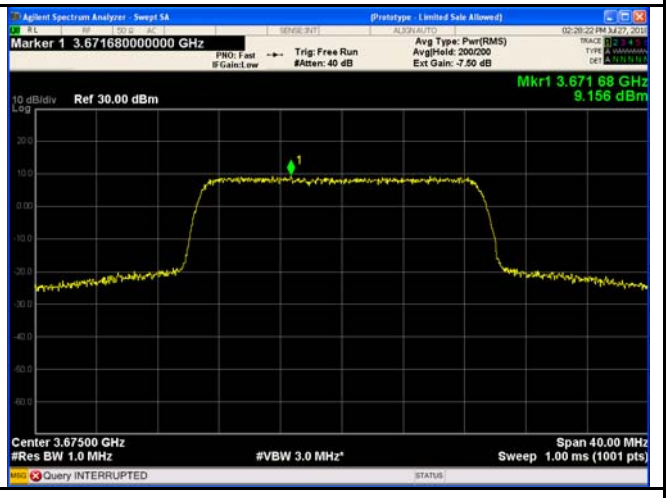
20MHz - Low CH QPSK



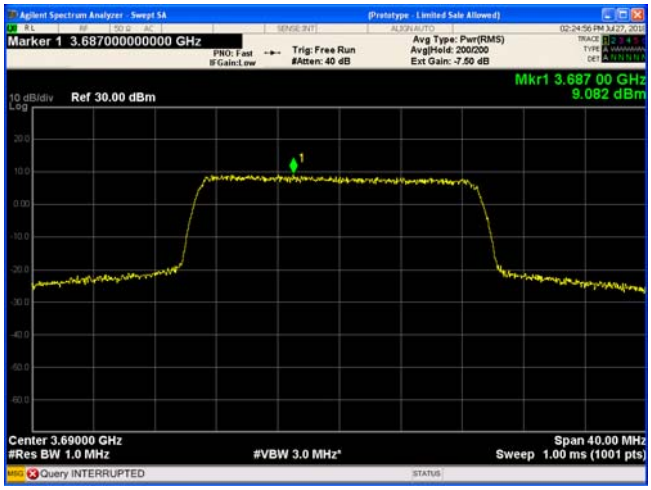
20MHz - Low CH 16QAM



20MHz - Middle CH QPSK



20MHz - Middle CH 16QAM



20MHz - High CH QPSK

20MHz - High CH 16QAM

9 Occupy Bandwidth

Test Requirement:	FCC part 90.209
Test Method:	FCC part 2.1049
	ANSI/TIA-603-E-2016
Test Mode:	Data communicating mode

9.1 EUT Operation

Operating Environment :

Temperature:	22.4 °C
Humidity:	52.3% RH
Atmospheric Pressure:	101.3kPa

9.2 Test Procedure

1. The EUT's output RF connector was connected with a short cable to the spectrum analyzer.

2. The transmitter shall be operated at its maximum carrier powermeasured under normal test conditions.

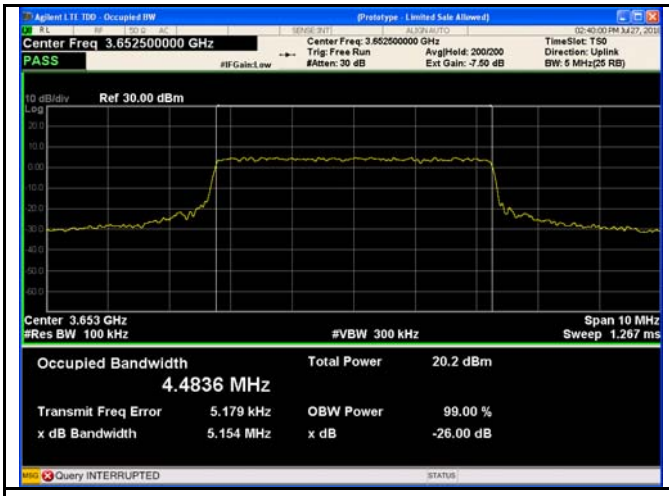
3. The span of the analyzer shall be set to capture all products of themodulation process, including the emission skirts.

4. The resolution bandwidth (RBW) shall be in the range of 1% to 5% ofthe occupied bandwidth (OBW) and video bandwidth (VBW) shall beapproximately 3x RBW.

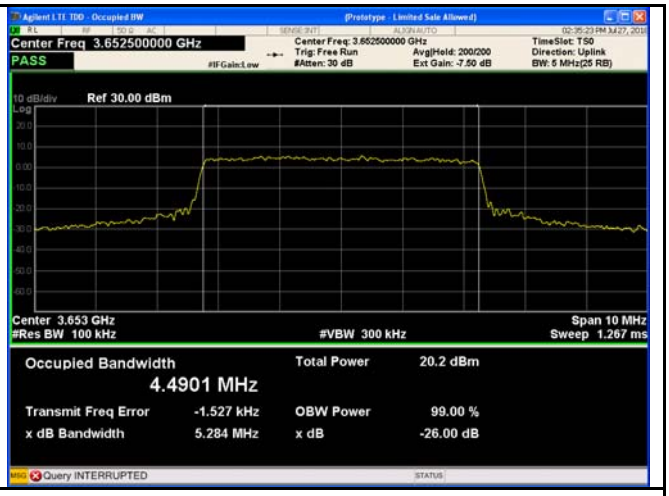
9.3 Test Result

Bandwidth (MHz)	Modulation	Test Channel	26dB Occupy bandwidth (MHz)	99% Occupy bandwidth (MHz)
5	QPSK	Low	5.154	4.484
		Middle	5.424	4.481
		High	5.239	4.486
	16QAM	Low	5.284	4.490
		Middle	5.126	4.496
		High	5.087	4.488
Bandwidth (MHz)	**Modulation**	**Test Channel**	**26dB Occupy bandwidth (MHz)**	**99% Occupy bandwidth (MHz)**
10	QPSK	Low	9.749	8.929
		Middle	9.638	8.926
		High	9.944	8.911
	16QAM	Low	9.746	8.921
		Middle	9.663	8.922
		High	9.964	8.913
Bandwidth (MHz)	**Modulation**	**Test Channel**	**26dB Occupy bandwidth (MHz)**	**99% Occupy bandwidth (MHz)**
15	QPSK	Low	14.46	13.373
		Middle	14.30	13.346
		High	14.38	13.372
	16QAM	Low	14.15	13.408
		Middle	14.35	13.406
		High	14.28	13.401
Bandwidth (MHz)	**Modulation**	**Test Channel**	**26dB Occupy bandwidth (MHz)**	**99% Occupy bandwidth (MHz)**
20	QPSK	Low	18.98	17.849
		Middle	18.84	17.871
		High	19.36	17.895
	16QAM	Low	19.18	17.905
		Middle	19.12	17.865
		High	19.48	17.863

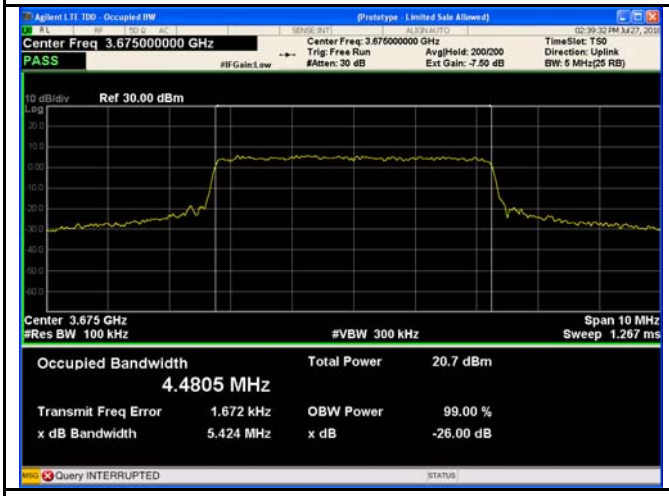
Test Plots



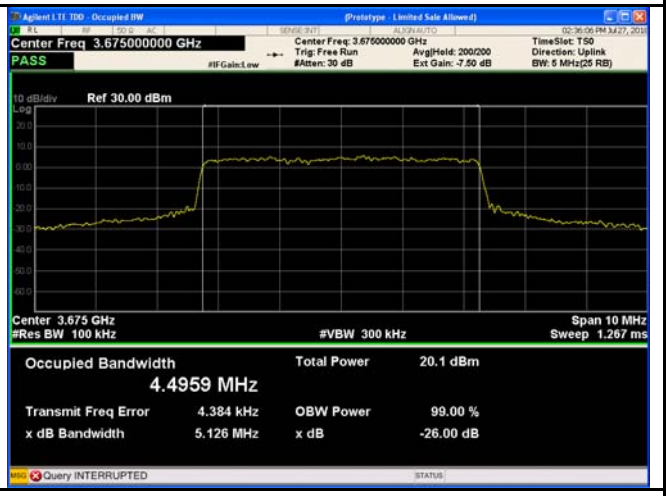
5MHz - Low CH QPSK



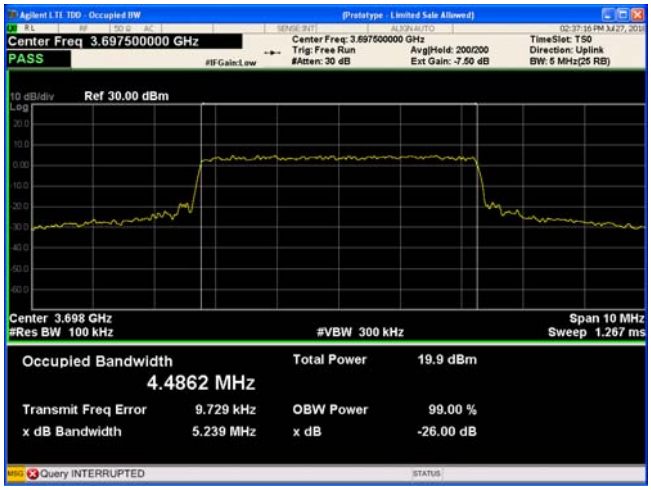
5MHz - Low CH 16QAM



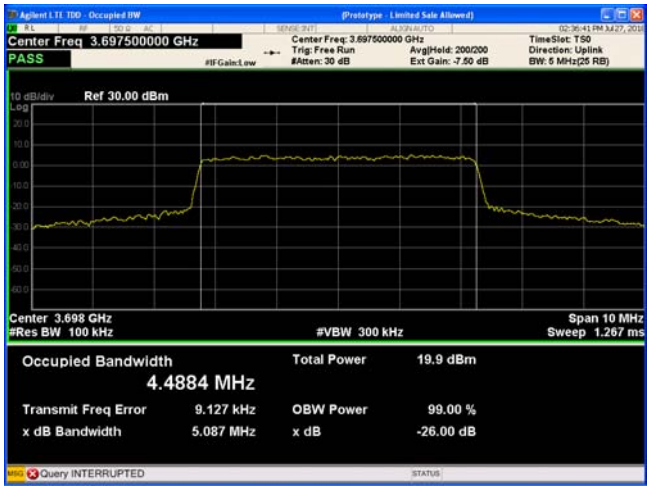
5MHz - Middle CH QPSK



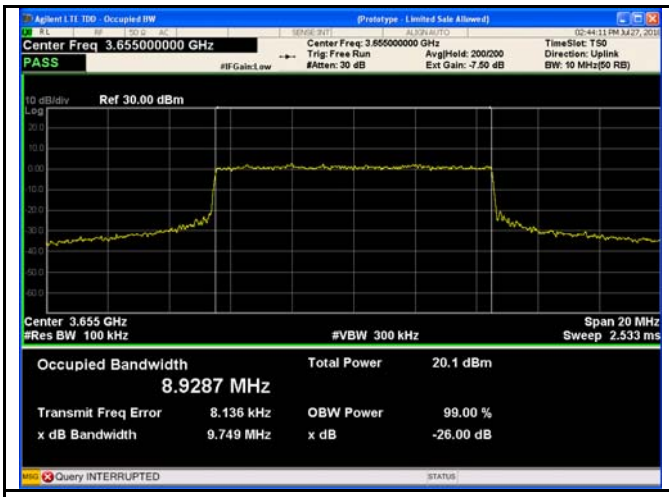
5MHz - Middle CH 16QAM



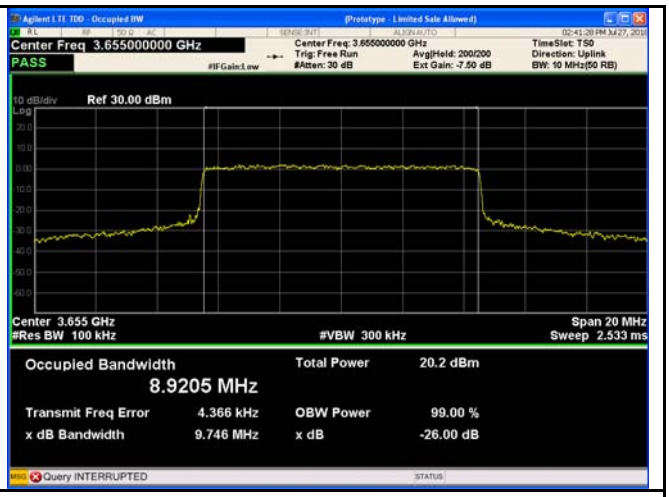
5MHz - High CH QPSK



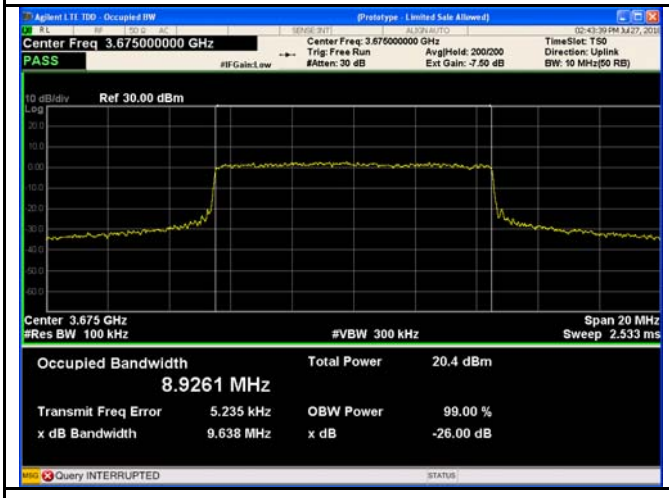
5MHz - High CH 16QAM



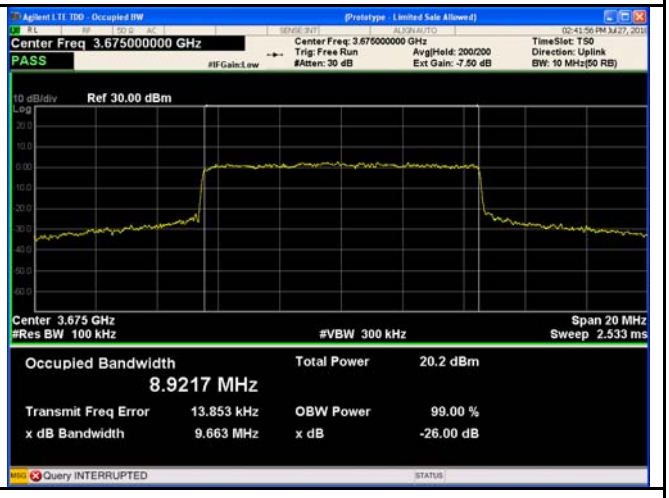
10MHz - Low CH QPSK



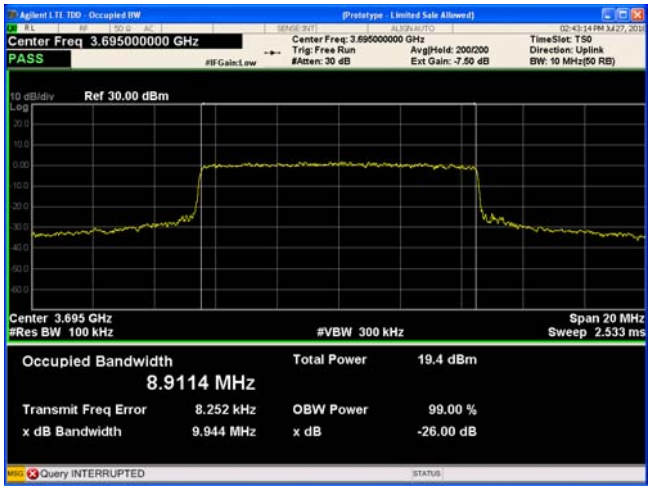
10MHz - Low CH 16QAM



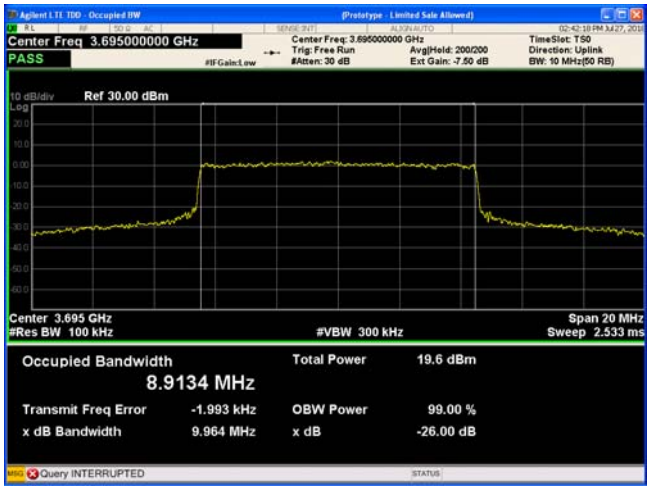
10MHz - Middle CH QPSK



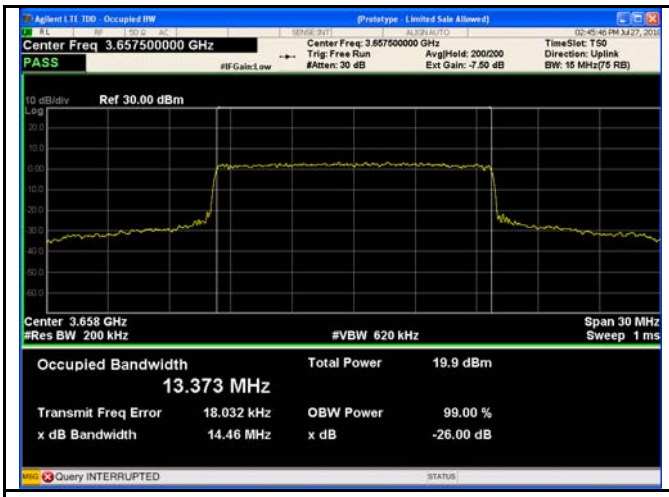
10MHz - Middle CH 16QAM



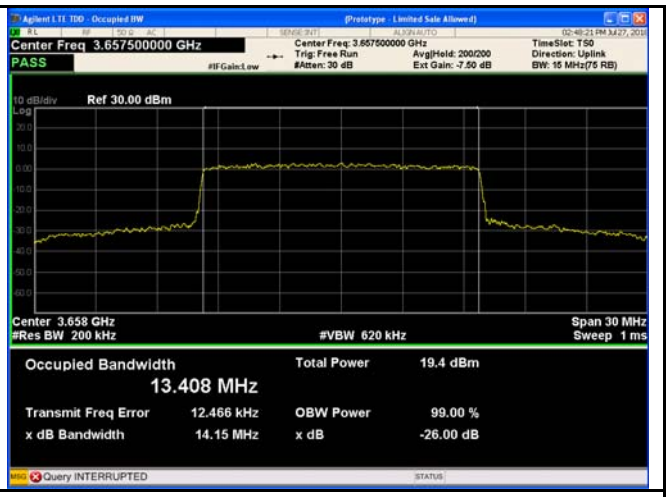
10MHz - High CH QPSK



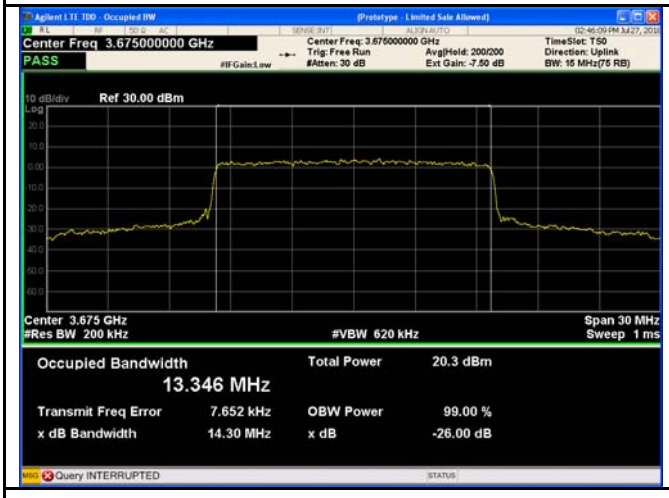
10MHz - High CH 16QAM



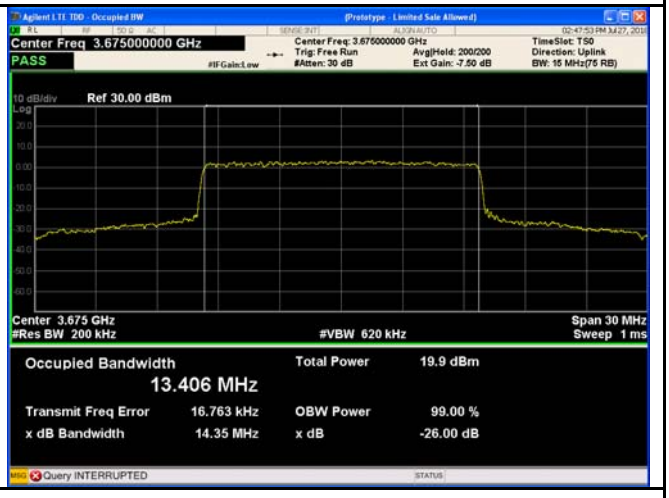
15MHz - Low CH QPSK



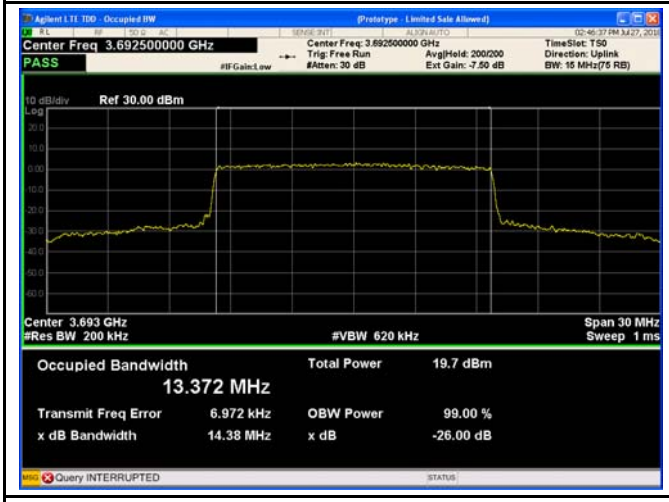
15MHz - Low CH 16QAM



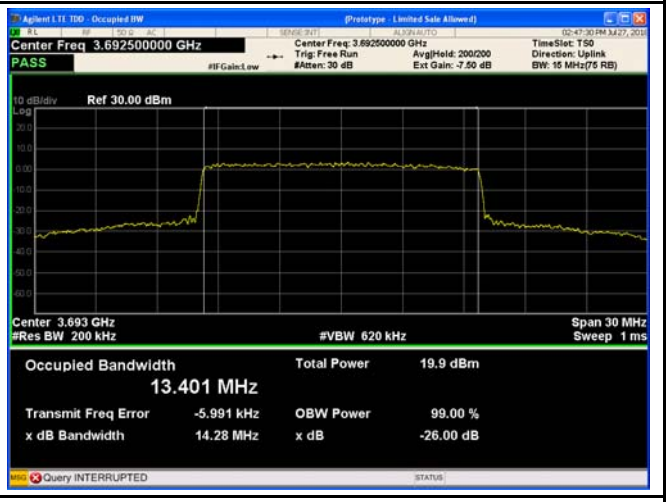
15MHz - Middle CH QPSK



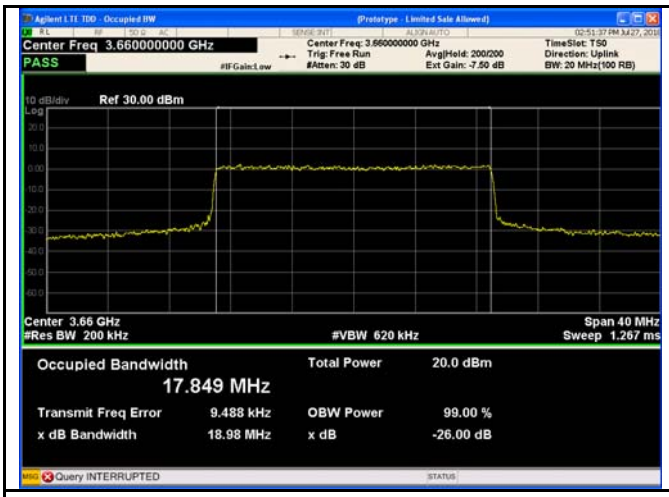
15MHz - Middle CH 16QAM



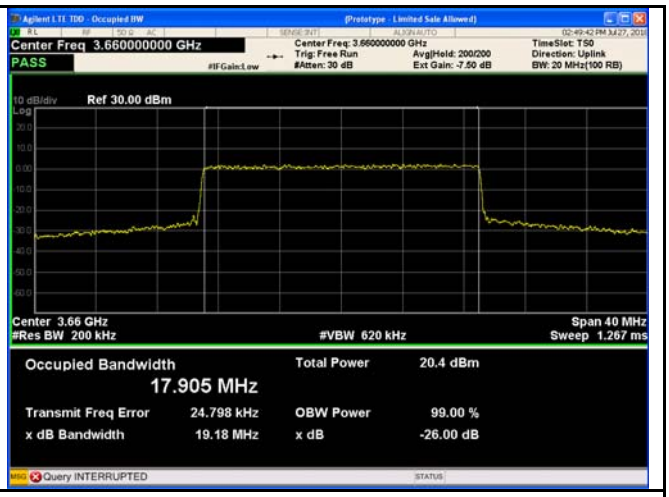
15MHz - High CH QPSK



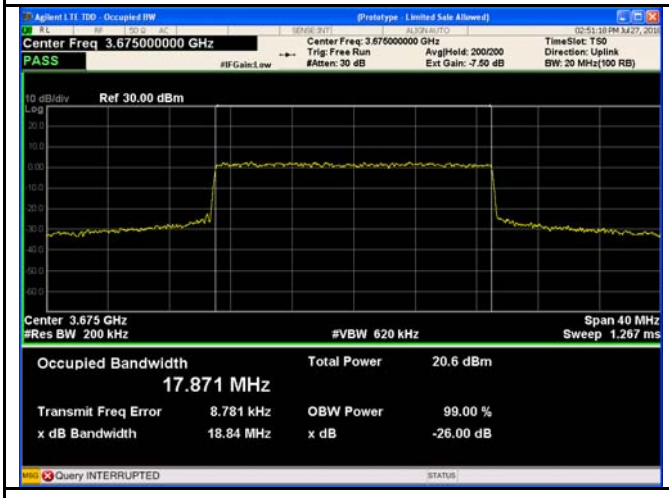
15MHz - High CH 16QAM



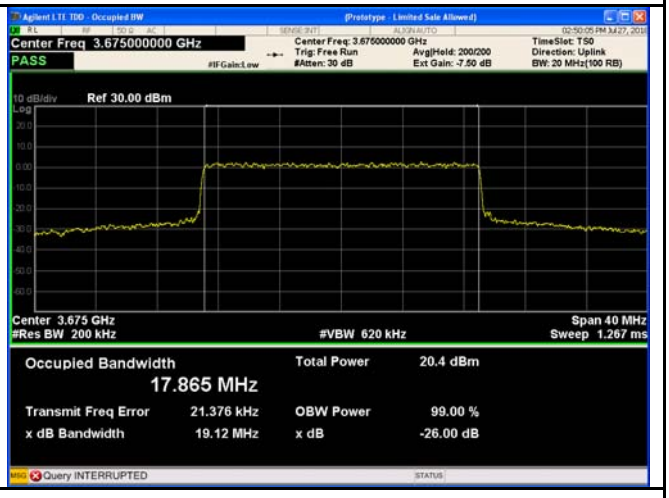
20MHz - Low CH QPSK



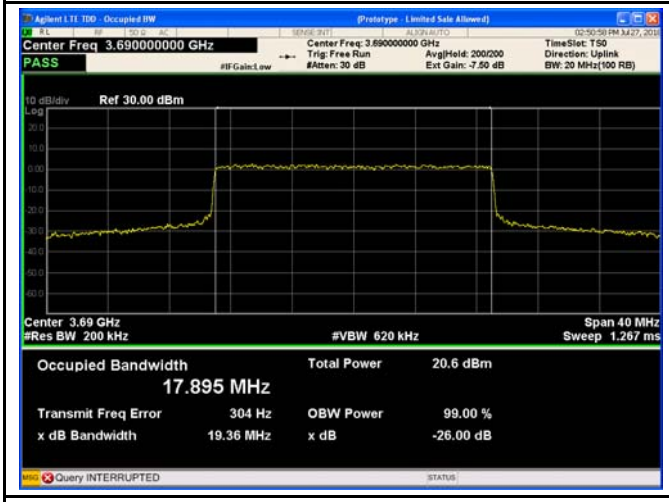
20MHz - Low CH 16QAM



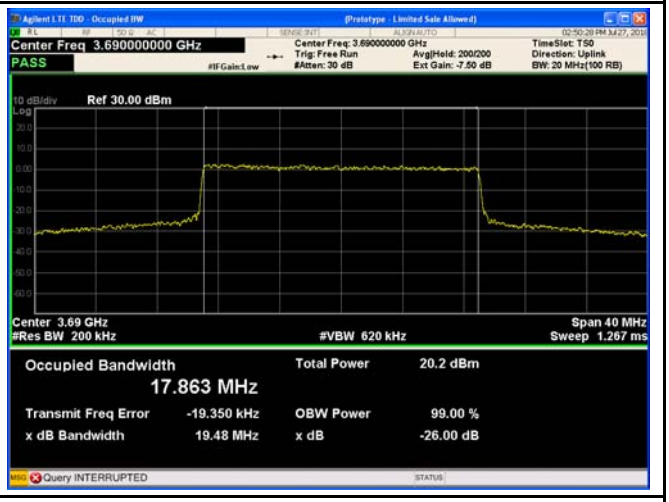
20MHz - Middle CH QPSK



20MHz - Middle CH 16QAM



20MHz - High CH QPSK



20MHz - High CH 16QAM

10 Emission Mask

Test Requirement:	FCC part 90.210(b)
Test Mode:	ANSI/TIA-603-E-2016 Data communicating mode
Limit:	Emission Mask B. For transmitters that are equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows: (1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB. (2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB. (3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (P) dB

10.1 EUT Operation

Operating Environment :

Temperature:	22.5 °C
Humidity:	52.3% RH
Atmospheric Pressure:	101.3kPa

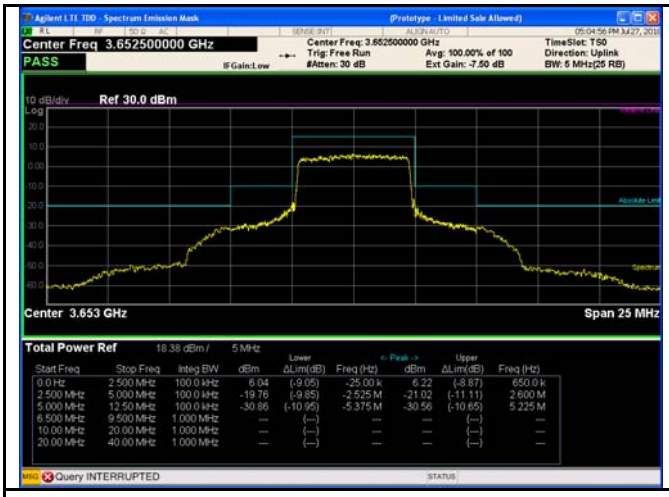
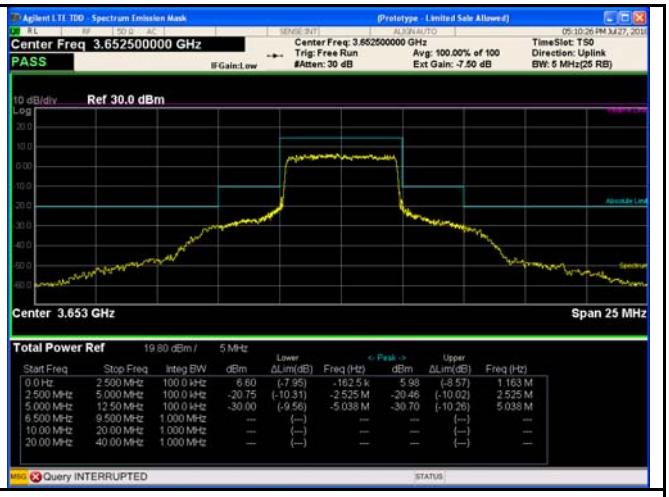
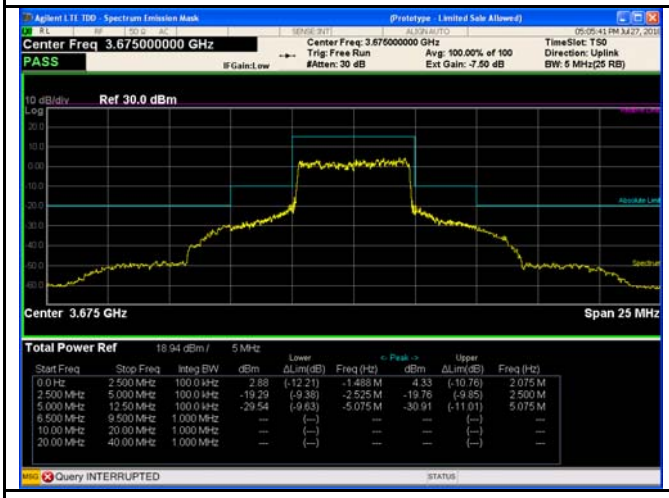
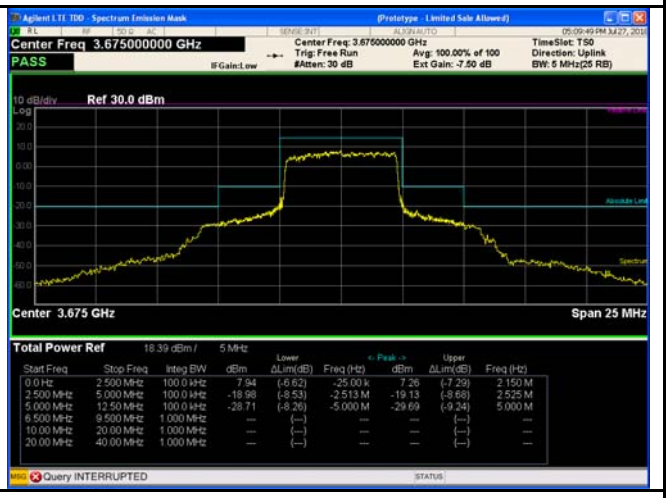
10.2 Test Procedure

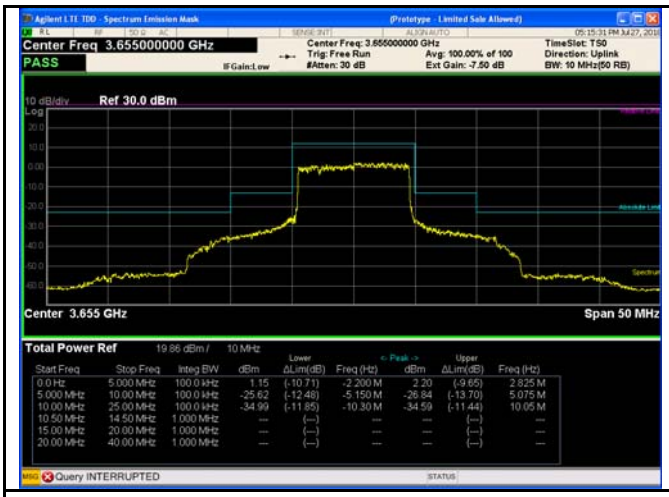
1. The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.
2. RBW=100kHz, VBW=1MHz, Detector mode= RMS,
Trace mode: Power averaging over 100 sweeps

Note: For FCC part 90.210(b) 3, more than 250 percent emission was considered in radiated emission test items.

10.3 Test Result

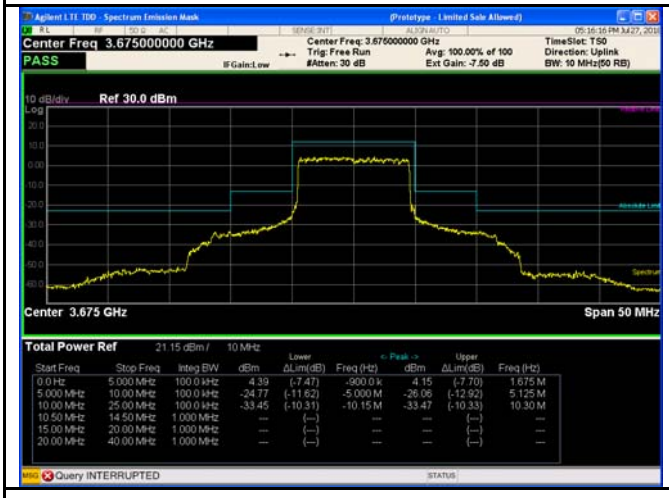
Test Plots

	
5MHz - Low CH QPSK	5MHz - Low CH 16QAM
	
5MHz - Middle CH QPSK	5MHz - Middle CH 16QAM
	
5MHz - High CH QPSK	5MHz - High CH 16QAM

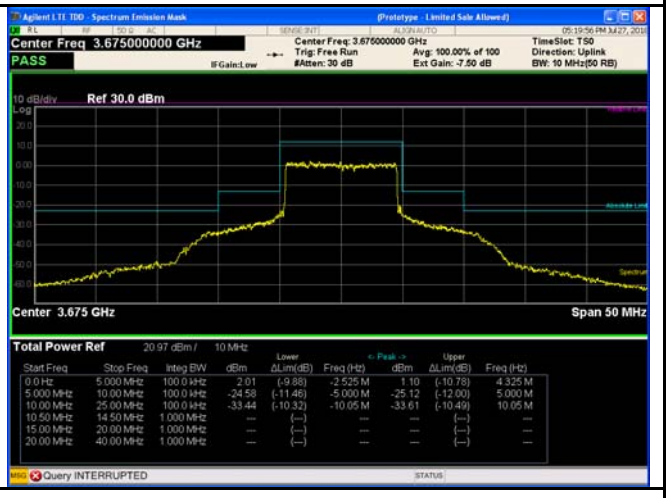


10MHz - Low CH QPSK

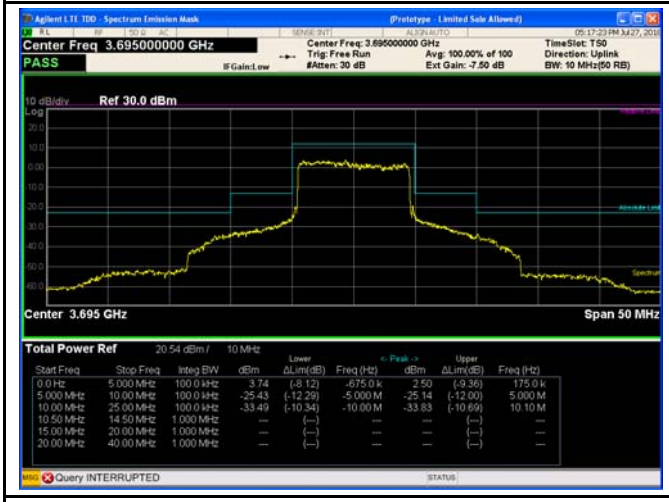
10MHz - Low CH 16QAM



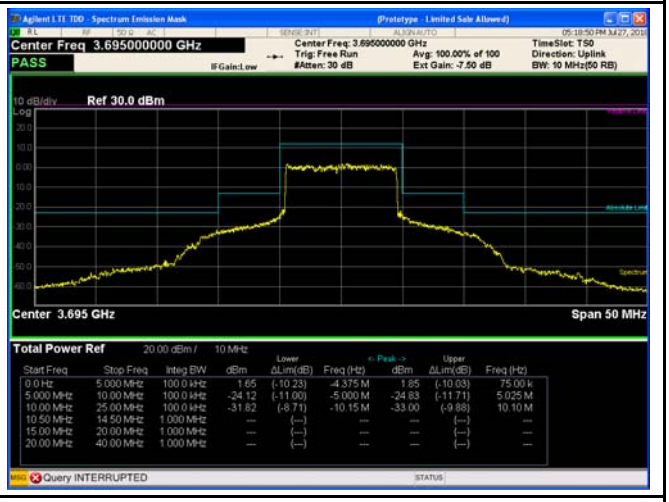
10MHz - Middle CH QPSK



10MHz - Middle CH 16QAM



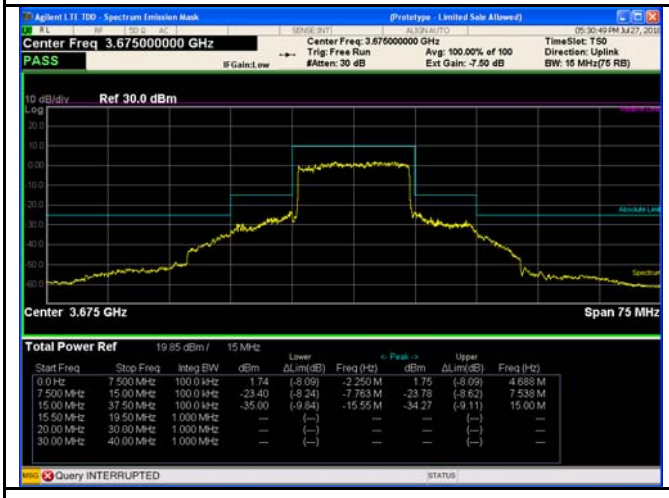
10MHz - High CH QPSK



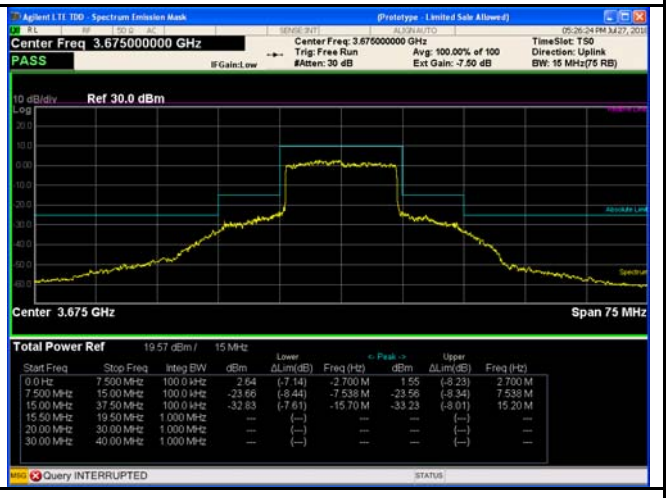
10MHz - High CH 16QAM

15MHz - Low CH QPSK

15MHz - Low CH 16QAM



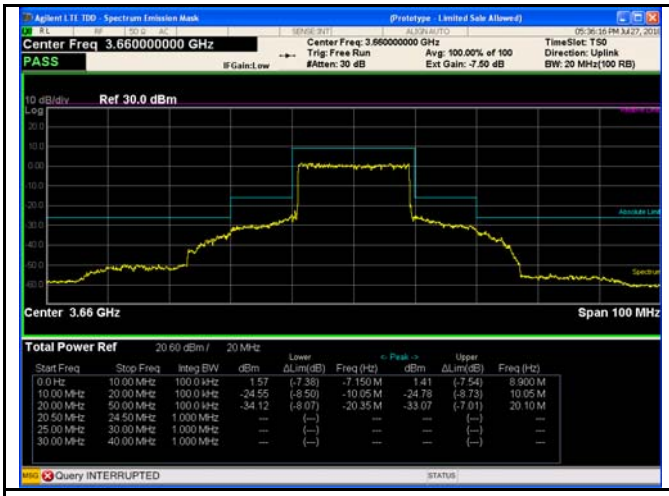
15MHz - Middle CH QPSK



15MHz - Middle CH 16QAM

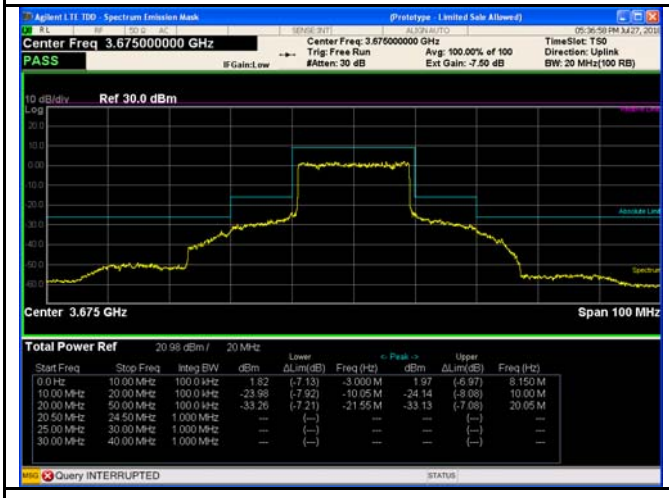
15MHz - High CH QPSK

15MHz - High CH 16QAM



20MHz - Low CH QPSK

20MHz - Low CH 16QAM



20MHz - Middle CH QPSK

20MHz - Middle CH 16QAM

20MHz - High CH QPSK

20MHz - High CH 16QAM

11 Out of band emission at antenna terminals

Test Requirement: FCC part90.1323

Test Method: FCC part2.1051

ANSI/TIA-603-E-2016

Test Mode: Data communicating mode

Limit: -13dBm

11.1 EUT Operation

Operating Environment :

Temperature: 23.5 °C

Humidity: 52.2 % RH

Atmospheric Pressure: 101.4kPa

11.2 Test Procedure

1. The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.
2. The resolution bandwidth of the spectrum analyzer was set at 100 kHz when below 1GHz, 1MHz when above 1 GHz; sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.
3. For the out of band: Set the RBW=100 kHz, VBW=300 kHz when below 1 GHz, RBW =1 MHz, VBW=3 MHz when above 1 GHz, Start=30MHz, Stop= 10th harmonic.
4. Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.

11.3 Test Result

The permit frequency range of Part 90Z is from 3650-3700MHz. according the frequency table of the device on page 7. Notes as below:

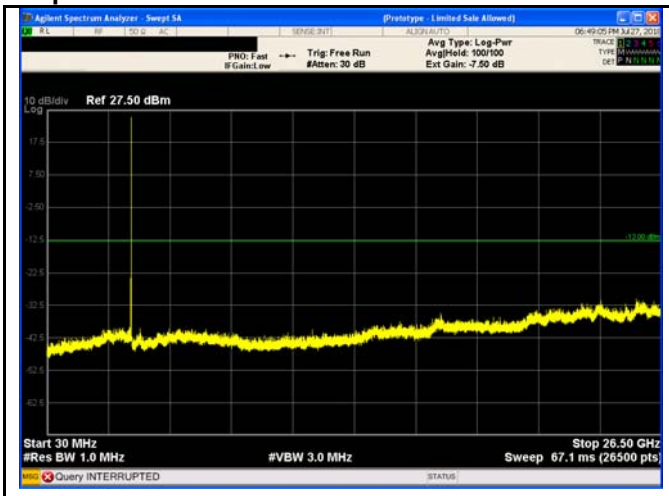
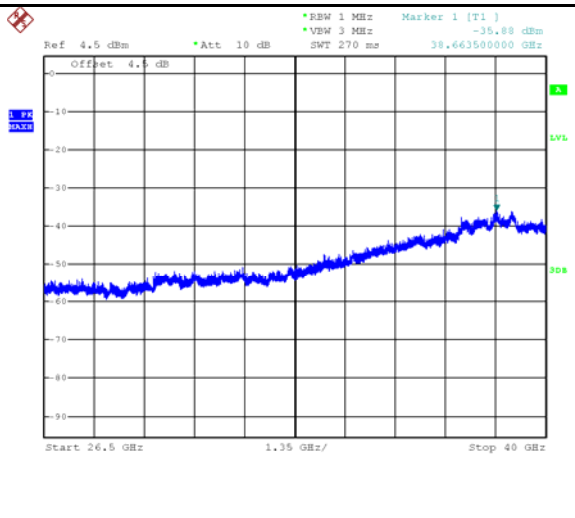
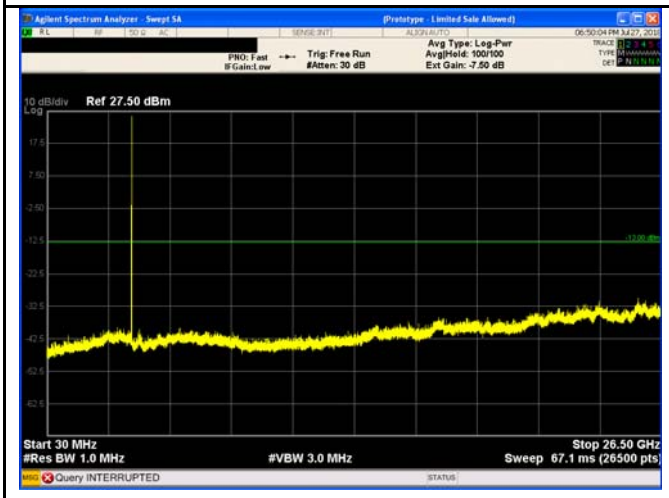
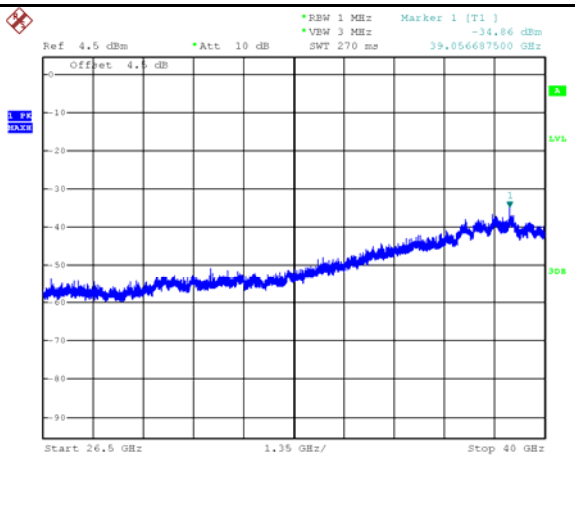
1. The frequency star and stop for band edge test instruction as below:

bandwidth	Left > 1MHz	Left 1MHz immediately	Low channel	High channel	Right 1MHz immediately	Right > 1MHz
5MHz	3646.5-3649	3649-3650	3652.5	3697.5	3700-3701	3701-3703.5
10MHz	3644-3649	3649-3650	3655	3695	3700-3701	3701-3706
15MHz	3641.5-3649	3649-3650	3657.5	3692.5	3700-3701	3701-3708.5
20MHz	3639-3649	3649-3650	3660	3690	3700-3701	3701-3711

Note 1:
For **low** channel, we test left 1 MHz immediately and more than 1MHz away (5 MHz for 10 MHz bandwidth & 10MHz for 20MHz bandwidth) from the permit left band 3650 MHz; the emission above right of 3700MHz has no intentional.
For **high** channel, we test right 1 MHz immediately and more than 1MHz away (5 MHz for 10 MHz bandwidth & 10MHz for 20MHz bandwidth) from the permit right band 3700 MHz; the emission below left of 3650MHz has no intentional.
Note 2. The RBW and the limit instruction as below: (The general limit = -13dBm)
For RBW=25kHz, the limit= -13dBm – 10log(1MHz/25kHz)= -29dBm
(The spectrum of N9020A only display the RBW=27kHz, and RBW=25kHz limit is lower than RBW=27kHz.)
For RBW=50kHz, the limit= -13dBm – 10log(1MHz/50kHz)= -26dBm
(The spectrum of N9020A only display the RBW=51kHz, and RBW=50kHz limit is lower than RBW=51kHz.)
For For RBW=75kHz, the limit = -13dBm – 10log(1MHz/75kHz)= -24dBm
For RBW=100kHz, the limit = -13dBm – 10log(1MHz/100kHz)= -23dBm
For RBW=150kHz, the limit= -13dBm – 10log(1MHz/150kHz)= -21dBm
For RBW=200kHz, the limit= -13dBm - 10log(1MHz/200kHz)= -20dBm

Test Plots (Worst case)

Spurious emission

<table>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>5MHz - Low CH 30MHz~26.5GHz</td><td>5MHz - Low CH 26.5GHz~40GHz</td></tr>
<tr><td> 
</td><td> 
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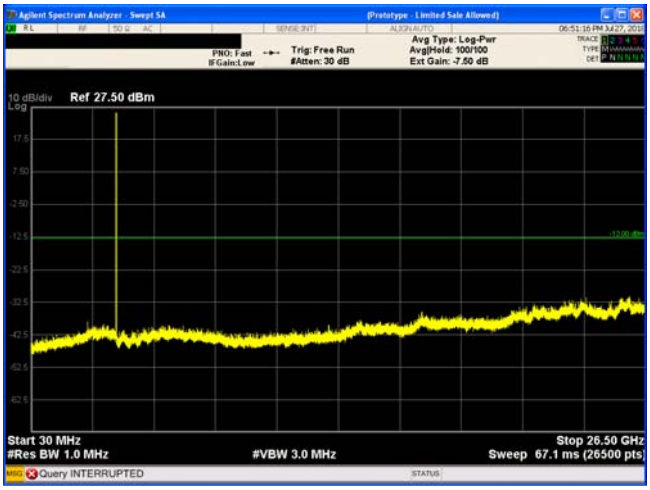
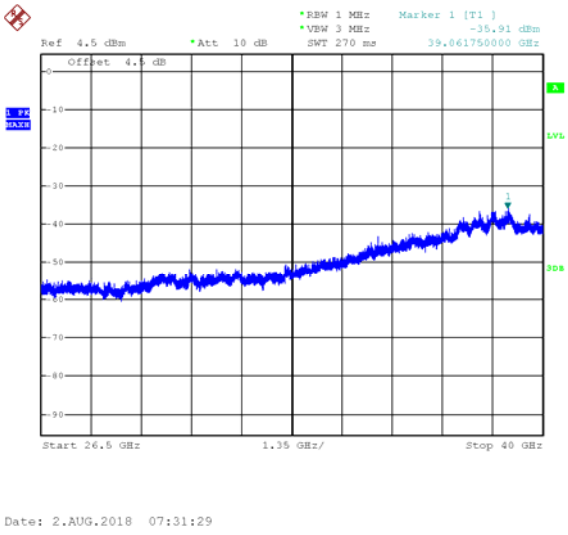
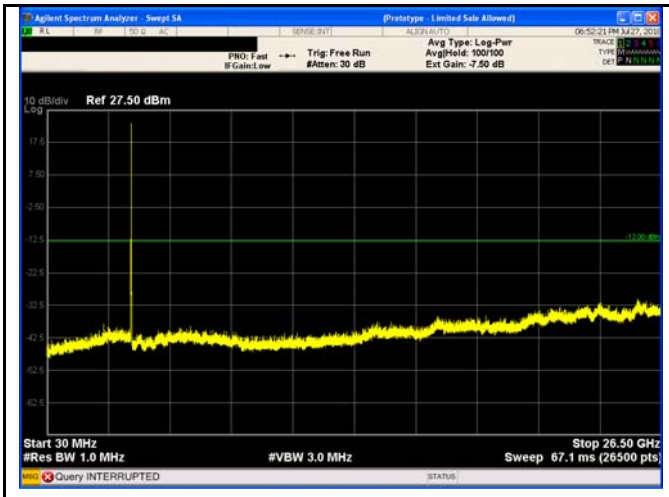
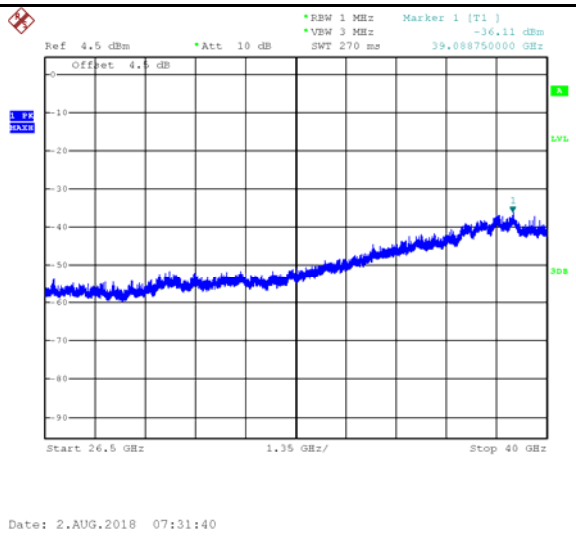
<tr><td>5MHz - Middle CH 30MHz~26.5GHz</td><td>5MHz - Middle CH 26.5GHz~40GHz</td></tr>
</table>

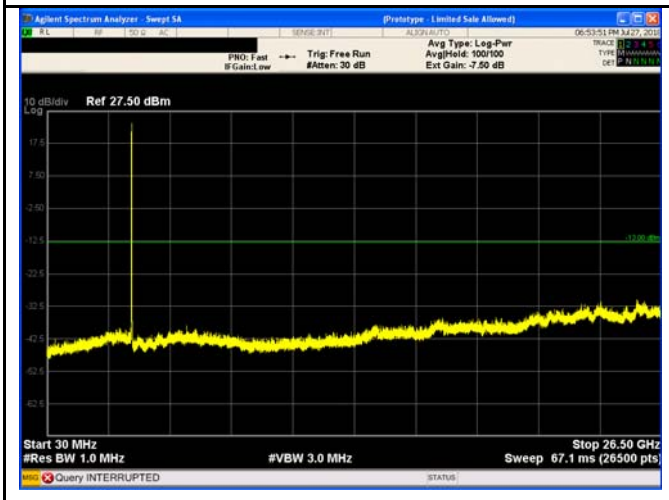
	
5MHz - High CH 30MHz~26.5GHz	5MHz - High CH 26.5GHz~40GHz



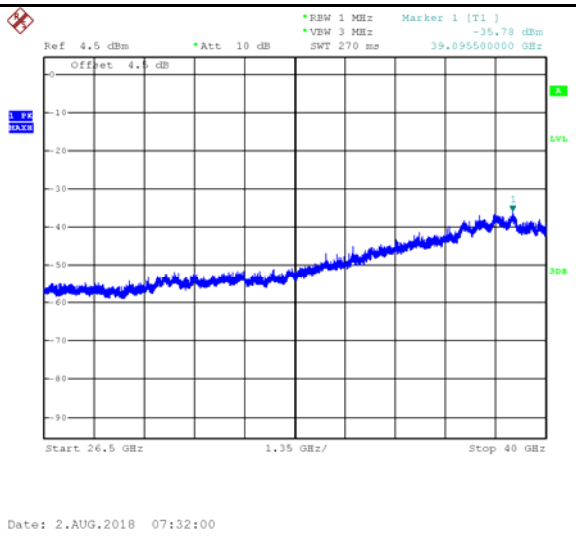
10MHz - Low CH 30MHz~26.5GHz



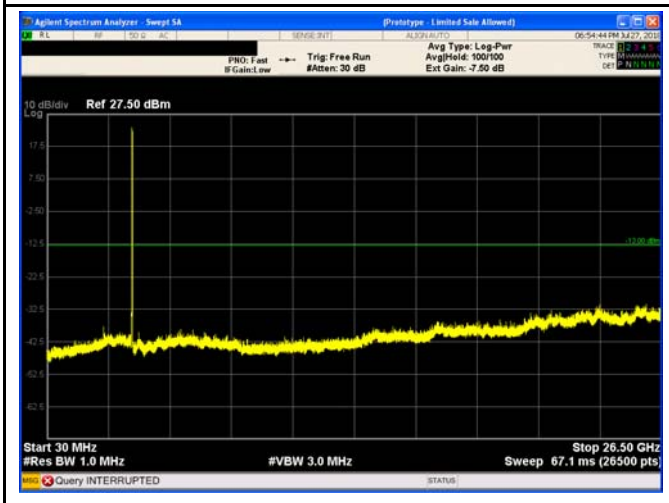
10MHz - Low CH 26.5GHz~40GHz



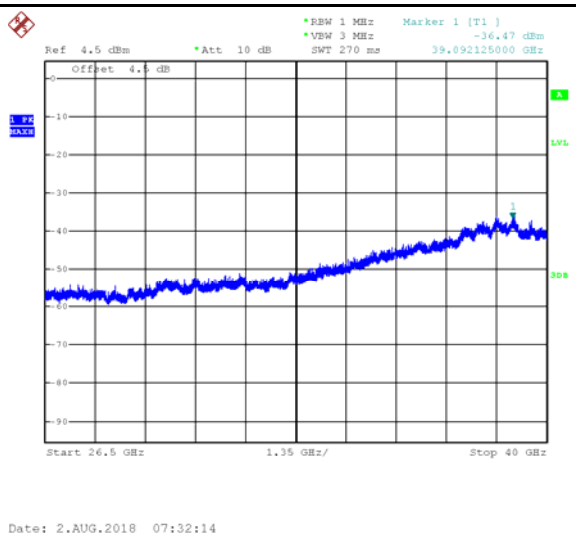
10MHz - Middle CH 30MHz~26.5GHz



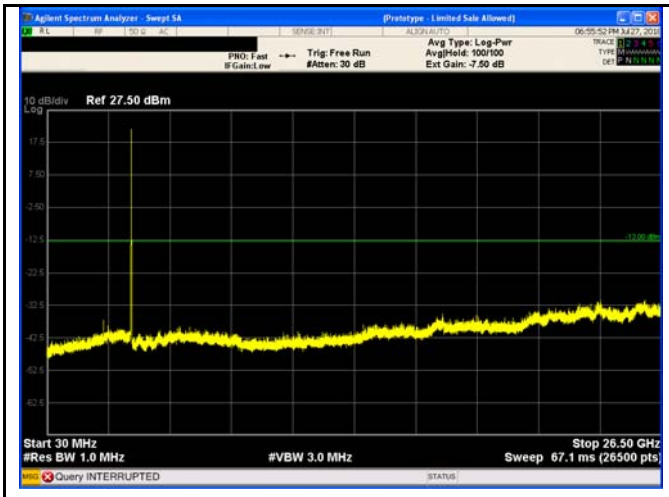
10MHz - Middle CH 26.5GHz~40GHz



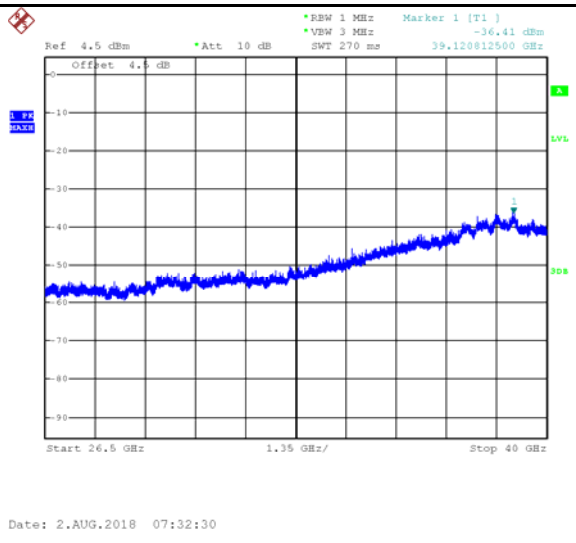
10MHz - High CH 30MHz~26.5GHz



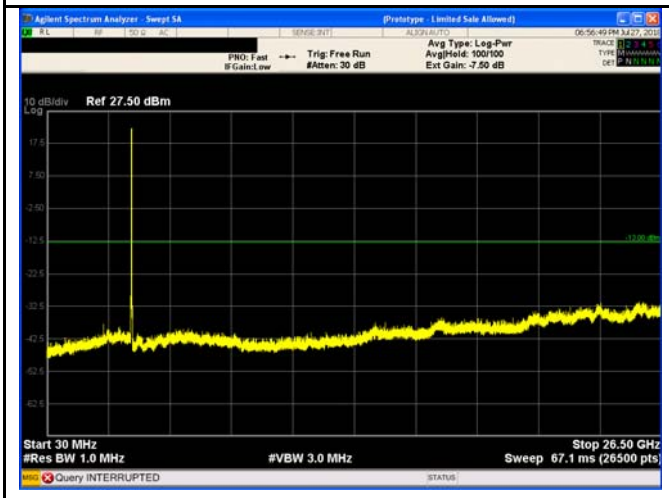
10MHz - High CH 26.5GHz~40GHz



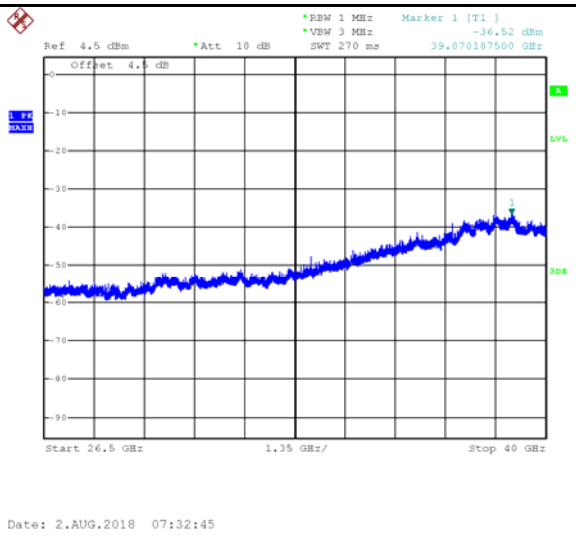
15MHz - Low CH 30MHz~26.5GHz



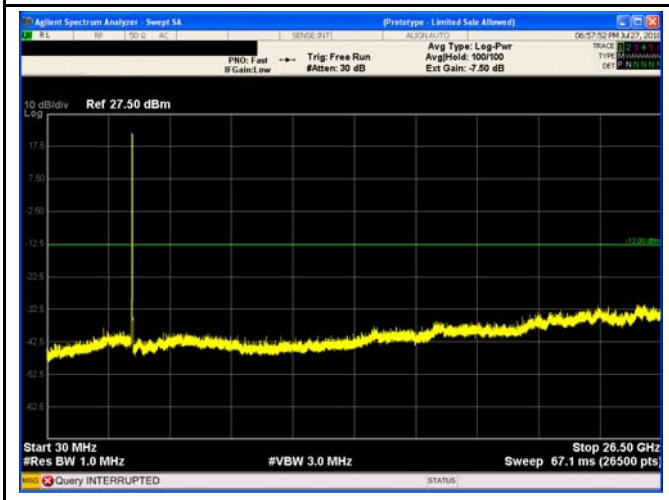
15MHz - Low CH 26.5GHz~40GHz



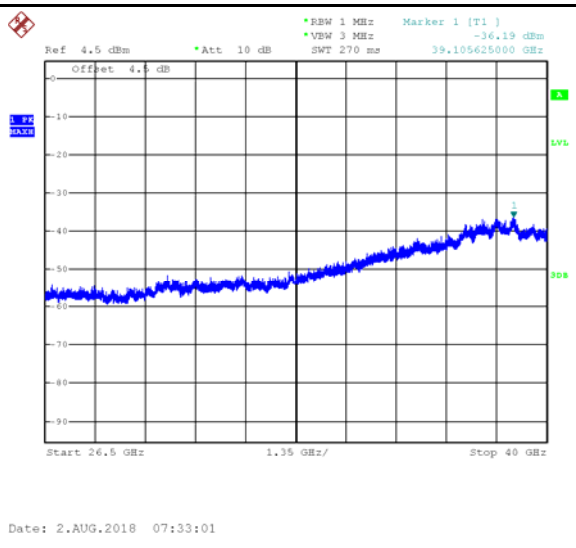
15MHz - Middle CH 30MHz~26.5GHz



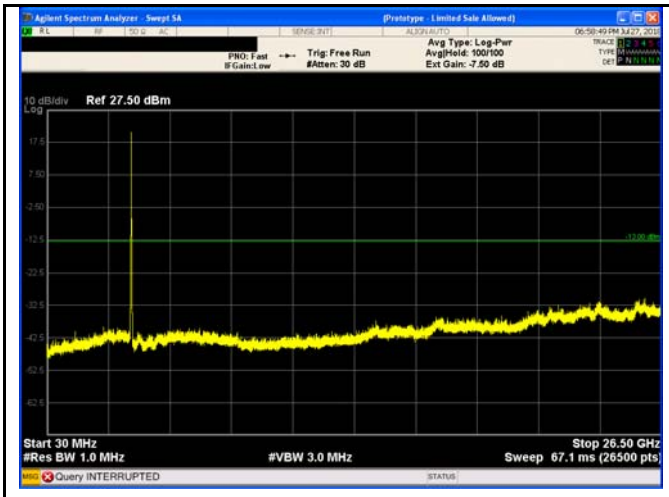
15MHz - Middle CH 26.5GHz~40GHz



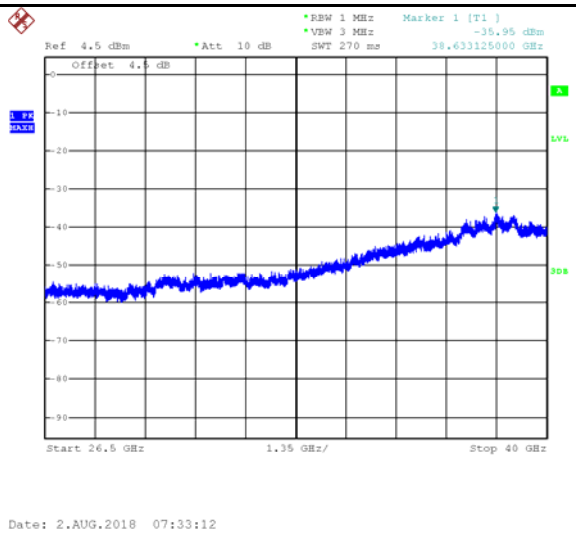
15MHz - High CH 30MHz~26.5GHz



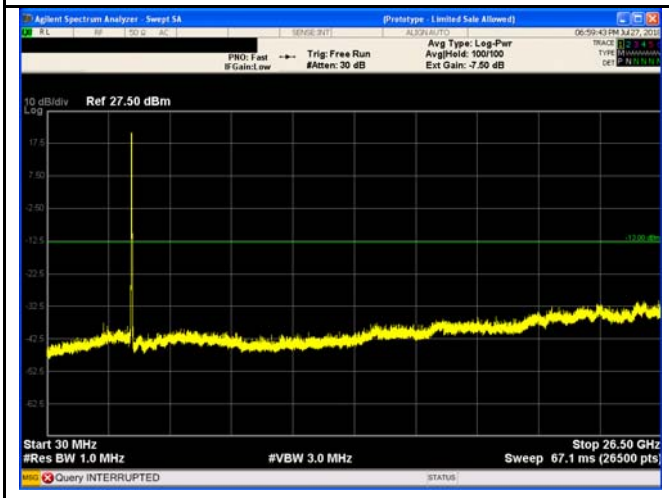
15MHz - High CH 26.5GHz~40GHz



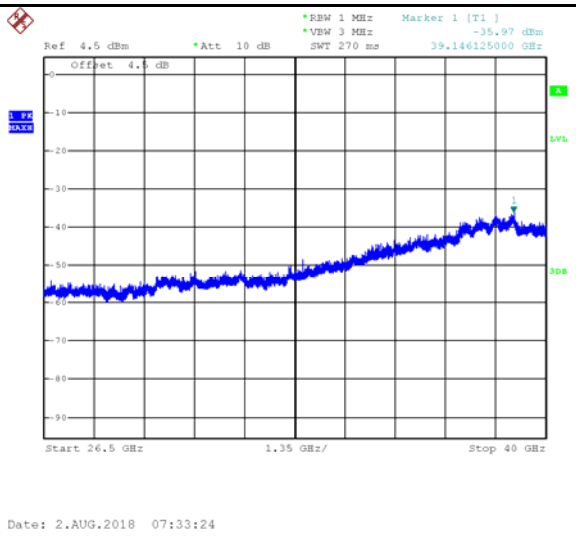
20MHz - Low CH 30MHz~26.5GHz



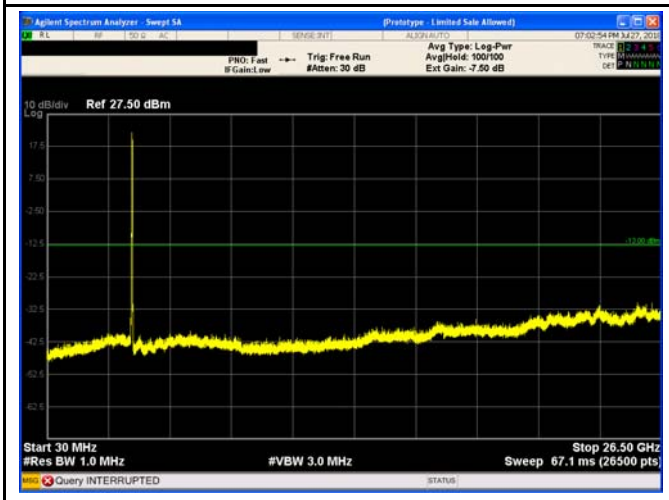
20MHz - Low CH 26.5GHz~40GHz



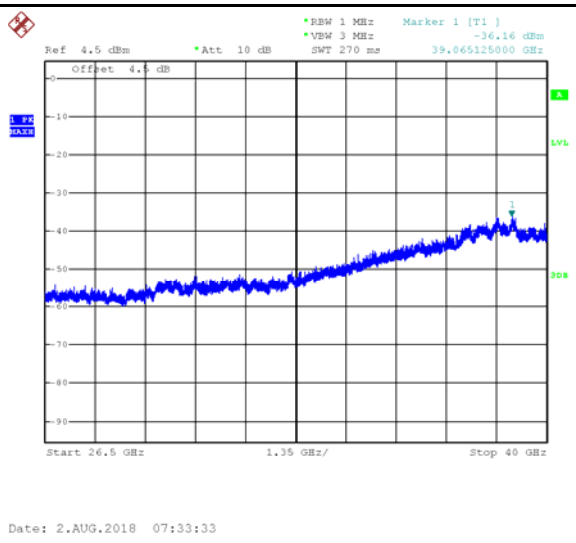
20MHz - Middle CH 30MHz~26.5GHz



20MHz - Middle CH 26.5GHz~40GHz

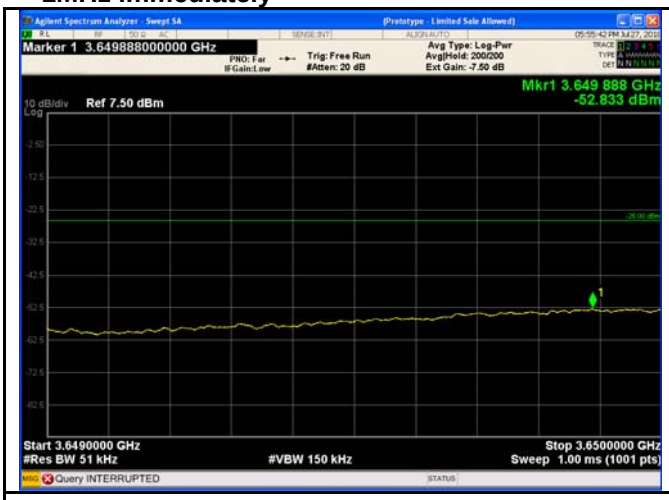


20MHz - High CH 30MHz~26.5GHz

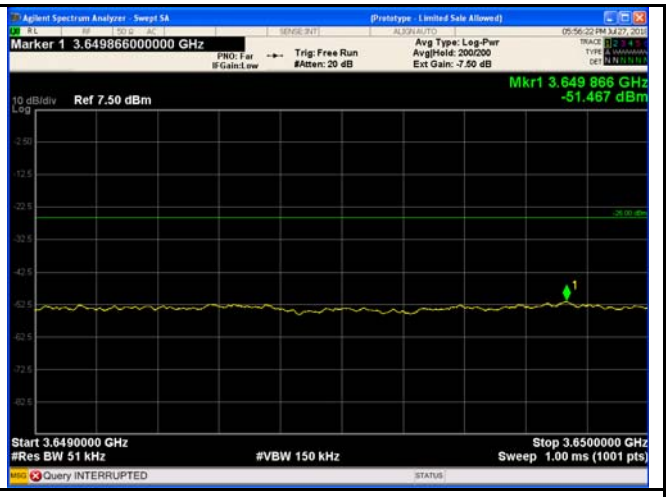


20MHz - High CH 26.5GHz~40GHz

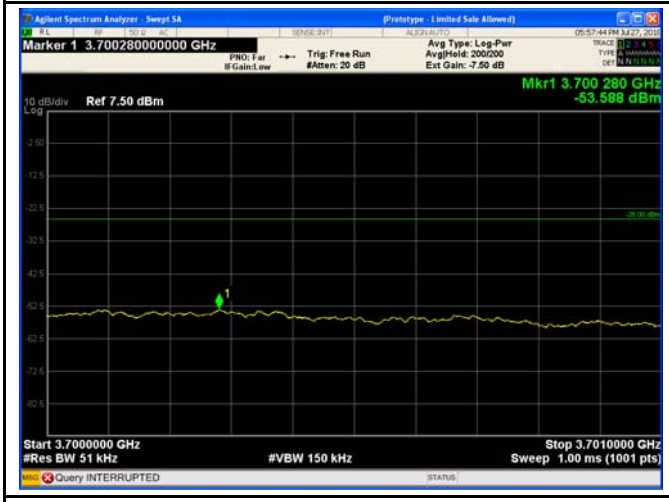
Band edge emission
1MHz immediately



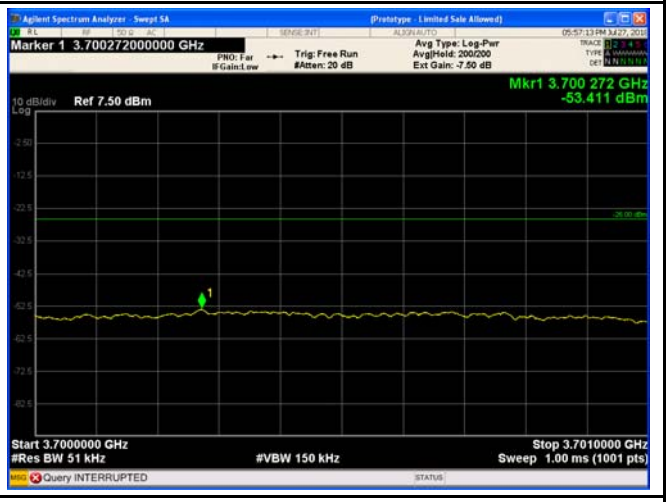
5MHz – 3649MHz-3650MHz Low CH QPSK



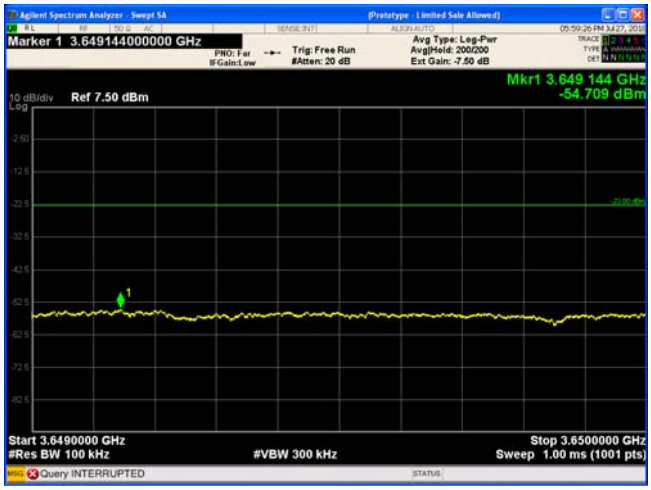
5MHz –3649MHz-3650MHz Low CH 16QAM



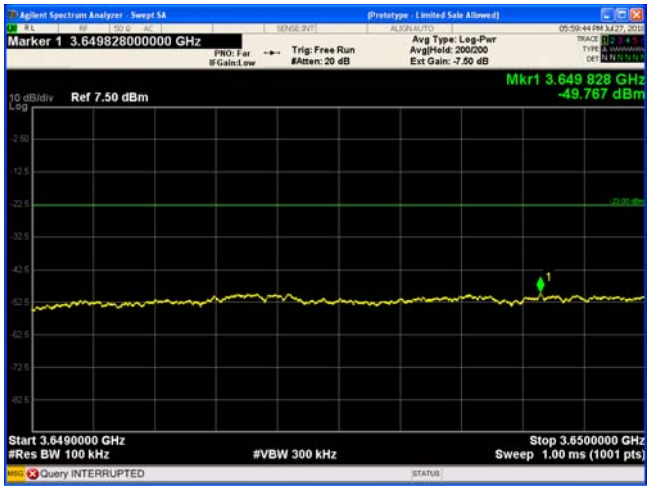
5MHz - 3700MHz -3701MHz High CH QPSK



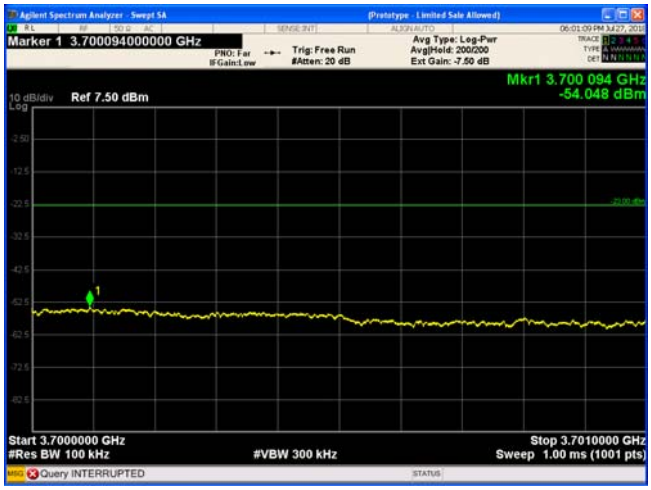
5MHz - 3700MHz -3701MHz High CH 16QAM



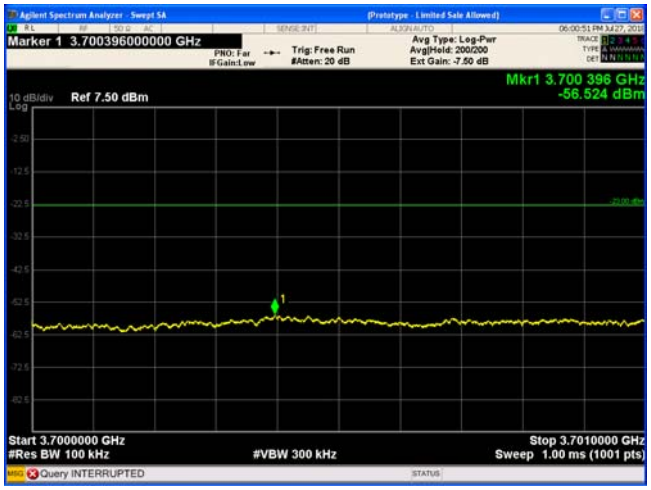
10MHz – 3649MHz-3650MHz Low CH QPSK



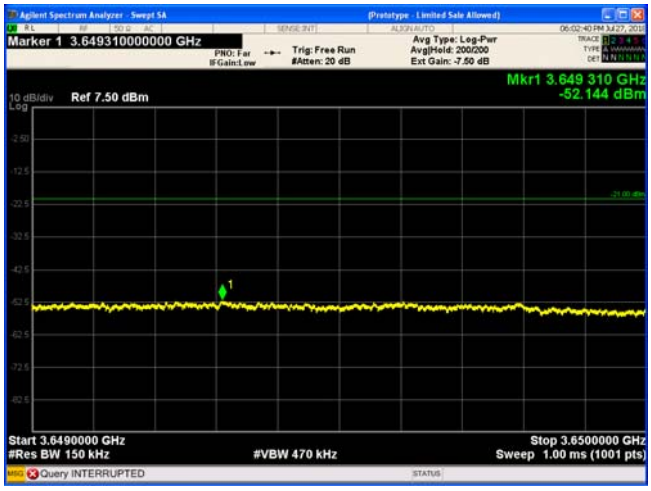
10MHz –3649MHz-3650MHz Low CH 16QAM



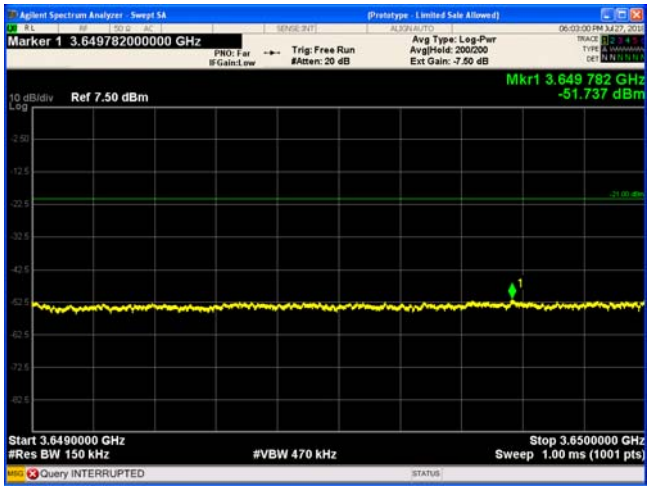
10MHz - 3700MHz -3701MHz High CH QPSK



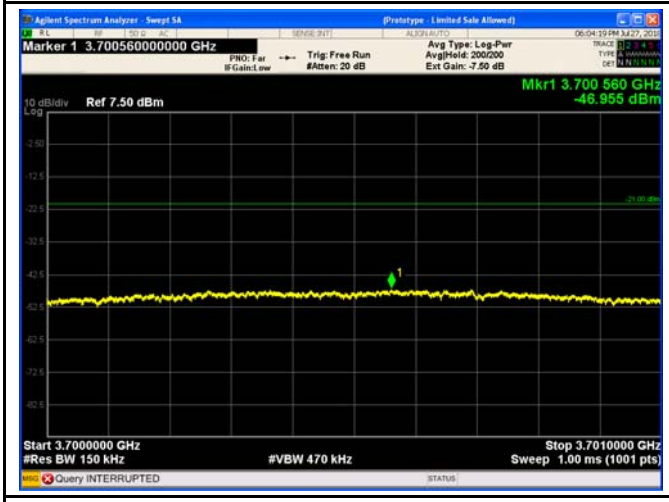
10MHz - 3700MHz -3701MHz High CH 16QAM



15MHz – 3649MHz-3650MHz Low CH QPSK

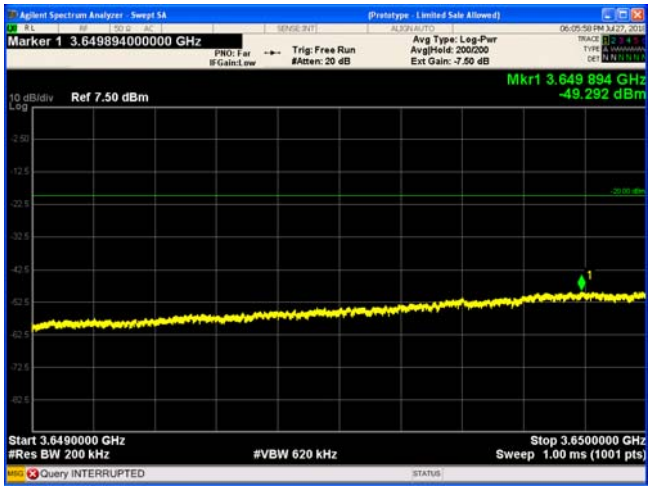


15MHz –3649MHz-3650MHz Low CH 16QAM

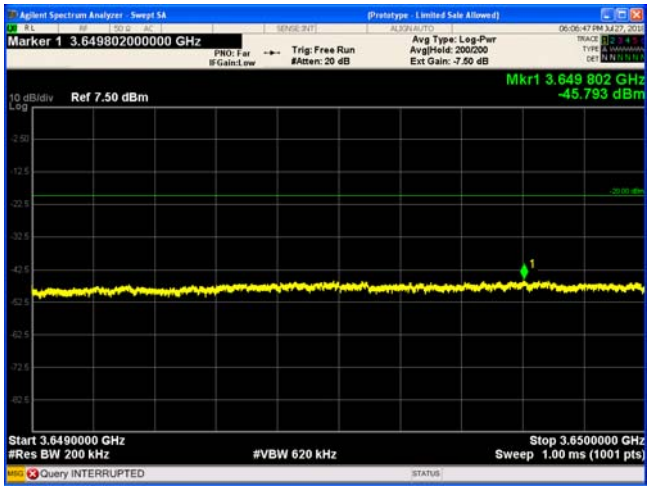


15MHz - 3700MHz -3701MHz High CH QPSK

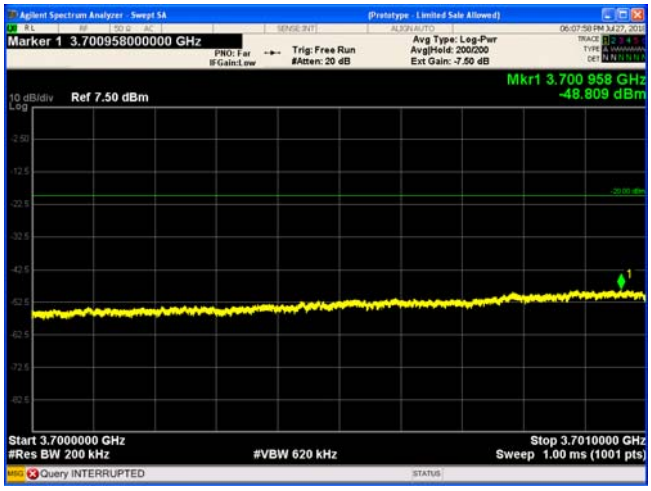
15MHz - 3700MHz -3701MHz High CH 16QAM



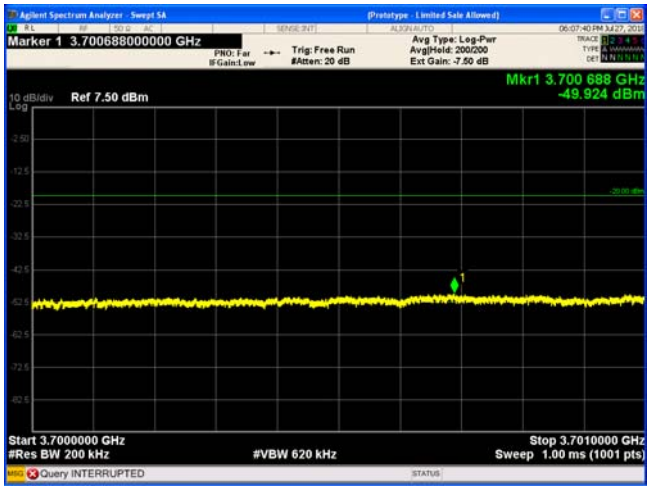
20MHz – 3649MHz-3650MHz Low CH QPSK



20MHz –3649MHz-3650MHz Low CH 16QAM

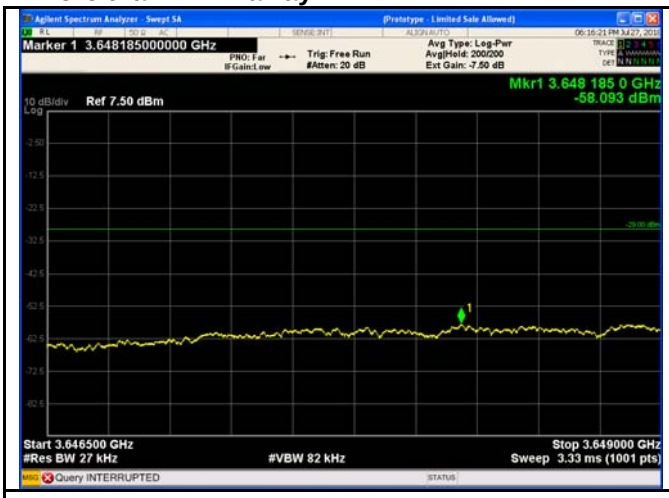


20MHz - 3700MHz -3701MHz High CH QPSK

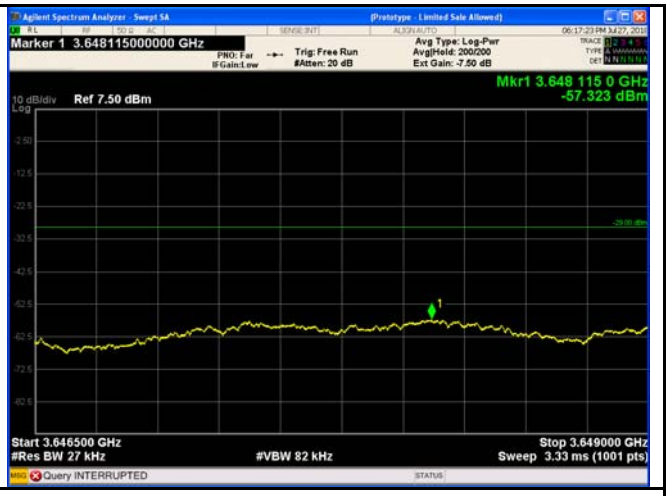


20MHz - 3700MHz -3701MHz High CH 16QAM

more than 1MHz away



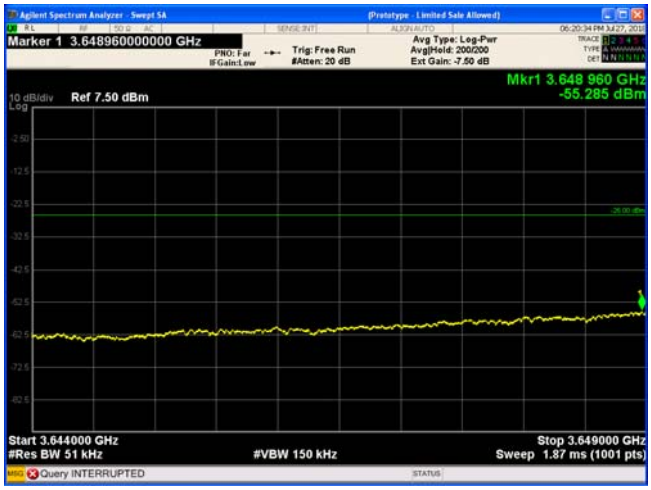
5MHz – 3646.5MHz-3649MHz Low CH QPSK



5MHz –3646.5MHz-3649MHz Low CH 16QAM

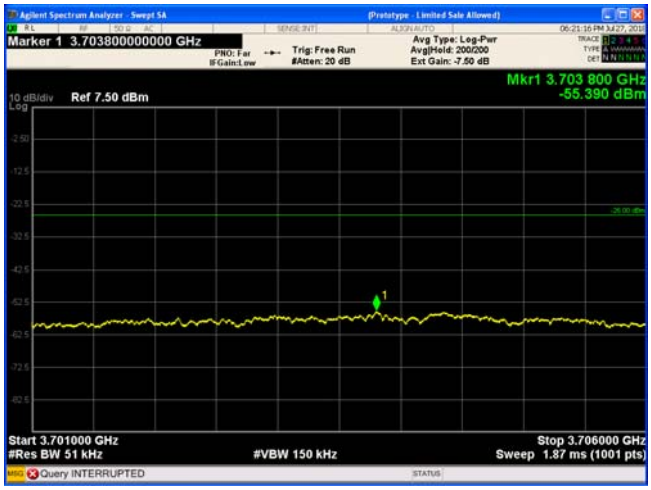
5MHz - 3701MHz -3703.5MHz High CH QPSK

5MHz - 3701MHz -3703.5MHz High CH 16QAM



10MHz – 3644MHz-3649MHz Low CH QPSK

10MHz –3644MHz-3649MHz Low CH 16QAM

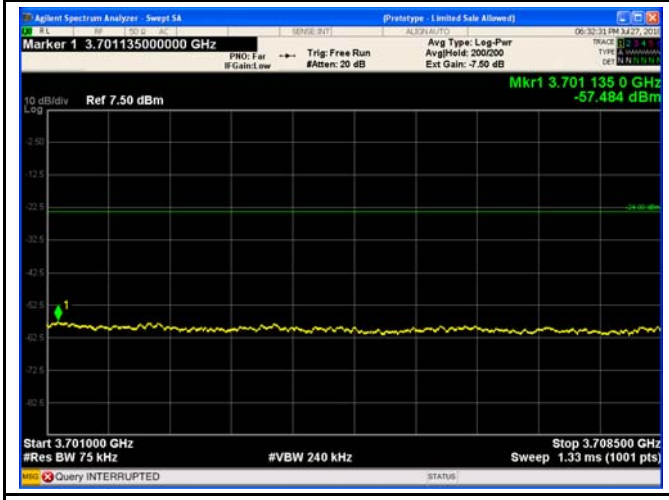


10MHz - 3701MHz -3706MHz High CH QPSK

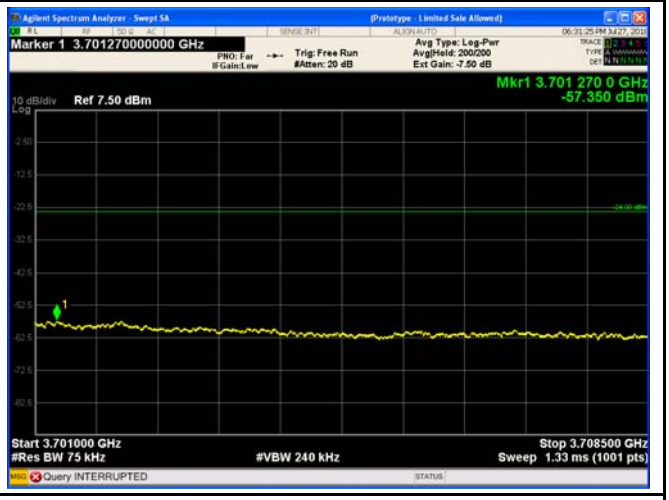
10MHz - 3701MHz -3706MHz High CH 16QAM

15MHz – 3641.5MHz-3649MHz Low CH QPSK

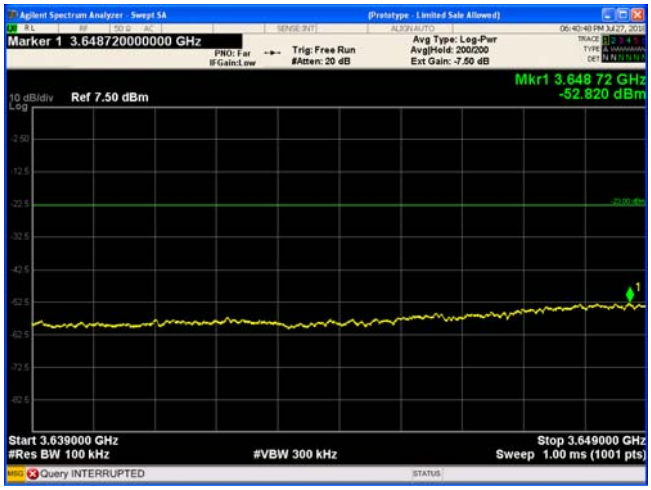
15MHz –3641.5MHz-3649MHz Low CH 16QAM



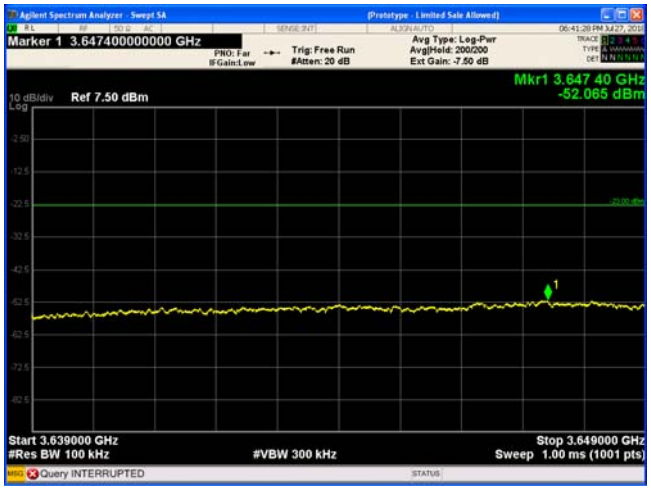
15MHz - 3701MHz -3708.5MHz High CH QPSK



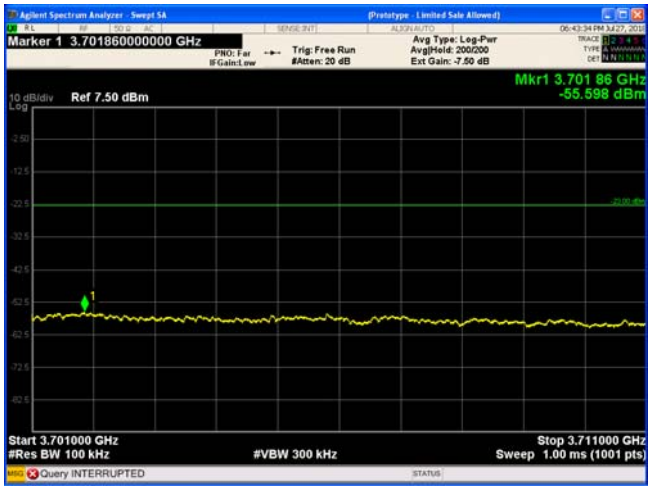
15MHz - 3701MHz -3708.5MHz High CH 16QAM



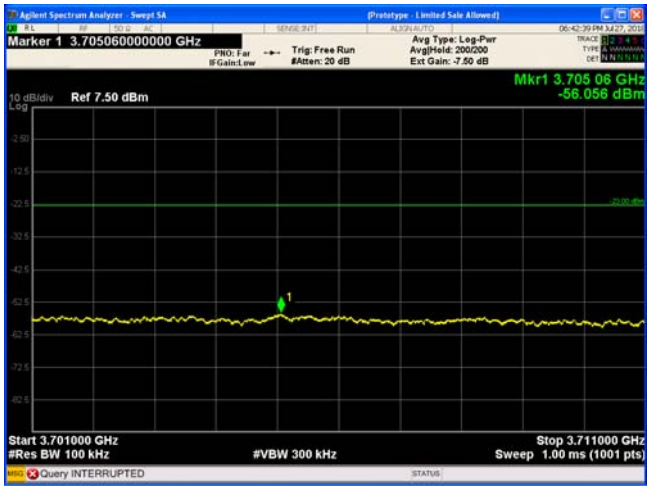
20MHz – 3639MHz-3649MHz Low CH QPSK



20MHz –3639MHz-3649MHz Low CH 16QAM



20MHz - 3701MHz -3711MHz High CH QPSK



20MHz - 3701MHz -3711MHz High CH 16QAM

12 Field strength of spurious radiation measurement

Test Requirement:	FCC part90.1323
Test Method:	FCC part2.1051
	ANSI C63.26-2015
Test Mode:	Data communicating mode
Limit:	-13dBm

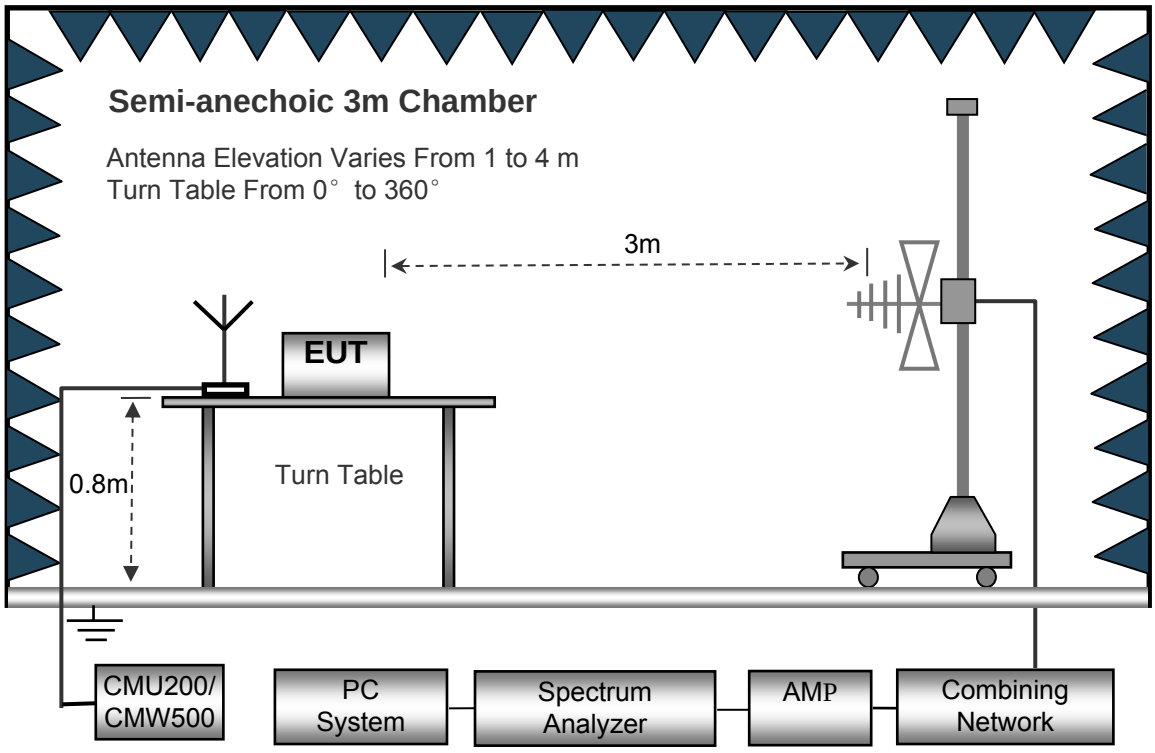
12.1 EUT Operation

Operating Environment :

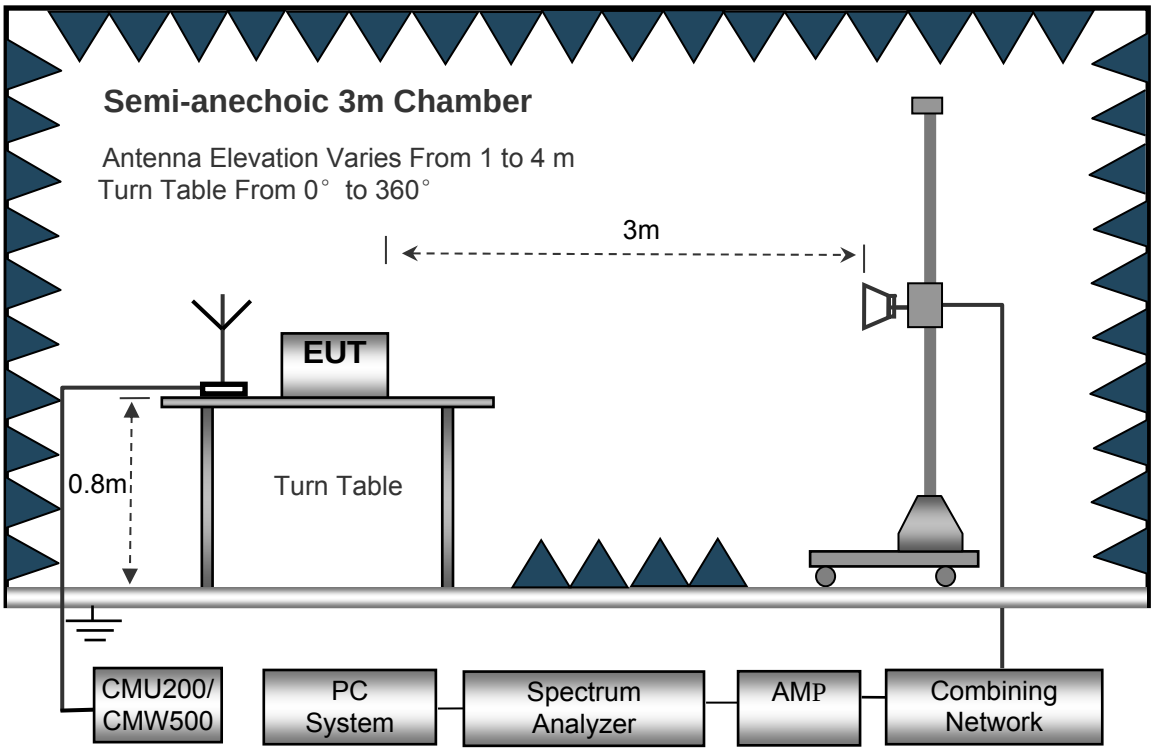
Temperature:	23.5 °C
Humidity:	52.2 % RH
Atmospheric Pressure:	101.3kPa

12.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site.
The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.



12.3 Spectrum Analyzer Setup

30MHz ~ 1GHz

Sweep Speed ..... Auto
Detector ..... PK
Resolution Bandwidth 100kHz
Video Bandwidth 300kHz

Above 1GHz

Sweep Speed ..... Auto
Detector ..... PK
Resolution Bandwidth 1MHz
Video Bandwidth 3MHz
Detector ..... Ave.
Resolution Bandwidth 1MHz
Video Bandwidth 10Hz

12.4 Test Procedure

1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.
2. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.
3. The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.
4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.
   ERP / EIRP = S.G. output (dBm) + Antenna Gain(dB/dBi) – Cable Loss (dB)

12.5 Test Result

30MHz-18GHz

Remark: During the test, pre-scan the QPSK, 64QAM modulation, and found the QPSK modulation and 10MHz bandwitch is the worst case.

Frequency	Receiver Reading	Turn table Angle	RX Antenna		Substituted			Absolute Level	Result	
			Height	Polar	SG Level	Cable	Antenna Gain		Limit	Margin
(MHz)	(dBμV)	Degree	(m)	(H/V)	(dBm)	(dB)	(dB)	(dBm)	(dBm)	(dB)
Low channel										
223.12	41.82	222	1.4	H	-68.69	0.15	0.00	-68.84	-13.00	-55.84
223.12	30.90	244	1.9	V	-76.69	0.15	0.00	-76.84	-13.00	-63.84
7310.00	65.54	252	1.4	H	-43.70	2.79	12.70	-33.79	-13.00	-20.79
7310.00	59.41	127	1.0	V	-49.36	2.79	12.70	-39.45	-13.00	-26.45
7515.00	53.83	304	1.4	H	-52.71	3.12	11.50	-44.33	-13.00	-31.33
7515.00	45.30	10	1.1	V	-60.13	3.12	11.50	-51.75	-13.00	-38.75
Middle channel										
223.12	41.78	32	1.4	H	-68.73	0.15	0.00	-68.88	-13.00	-55.88
223.12	30.32	96	1.2	V	-77.27	0.15	0.00	-77.42	-13.00	-64.42
7350.00	59.13	107	1.3	H	-50.11	2.37	12.50	-39.98	-13.00	-26.98
7350.00	53.31	210	1.3	V	-55.46	2.37	12.50	-45.33	-13.00	-32.33
11025.00	47.08	141	1.4	H	-59.46	3.12	11.50	-51.08	-13.00	-38.08
11025.00	37.47	138	1.9	V	-67.96	3.12	11.50	-59.58	-13.00	-46.58
High channel										
223.12	42.47	284	1.1	H	-68.04	0.15	0.00	-68.19	-13.00	-55.19
223.12	31.05	310	1.4	V	-76.54	0.15	0.00	-76.69	-13.00	-63.69
7390.00	51.73	156	1.7	H	-57.68	2.37	12.50	-47.55	-13.00	-34.55
7390.00	45.48	92	1.5	V	-63.29	2.37	12.50	-53.16	-13.00	-40.16
11085.00	40.83	209	1.9	H	-64.40	3.12	11.50	-56.02	-13.00	-43.02
11085.00	29.80	44	1.6	V	-75.09	3.12	11.50	-66.71	-13.00	-53.71

Remark:

Test Frequency: 18GHz~40GHz

The measurements were more than 20 dB below the limit and not recorded.

13 Frequency stability V.S. Temperature measurement

Test Requirement: FCC Part90.213(a)

Test Method: FCC Part2.1055(a)(1)(b)

ANSI/TIA-603-E-2016

Test Mode: Data communicating mode

Limit: FCC:

Frequency range (MHz)	Fixed and base stations (±ppm)	Mobile stations (±ppm)	
		Over 2 watts output power	2 watts or less output power
Below 25	100	100	200
25–50	20	20	50
72–76	5		50
150–174	5	5	50
216–220	1.0		1.0
220–222	0.1	1.5	1.5
421–512	2.5	5	5
806–809	1.0	1.5	1.5
809–824	1.5	2.5	2.5
851–854	1.0	1.5	1.5
854–869	1.5	2.5	2.5
896–901	0.1	1.5	1.5
902–928	2.5	2.5	2.5
902–928	2.5	2.5	2.5
929–930	1.5		
935–940	0.1	1.5	1.5
1427–1435	300	300	300
Above 2450			

13.1 EUT Operation

Operating Environment :

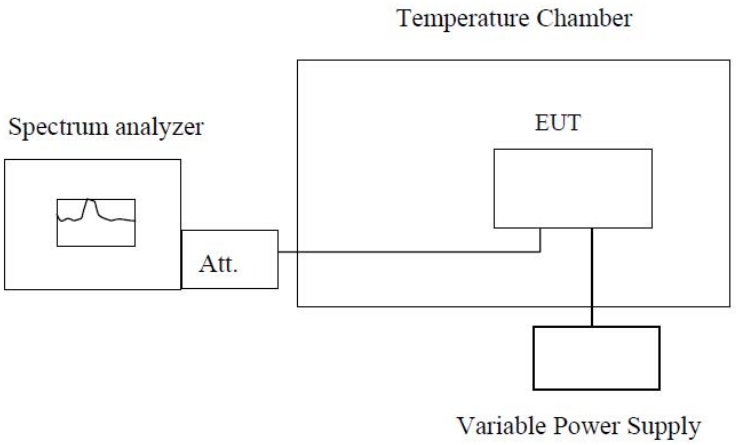
Temperature: 23.5 °C

Humidity: 52.3 % RH

Atmospheric Pressure: 101.3kPa

13.2 Test Procedure

1. The equipment under test was connected to an external DC power supply and input rated voltage.
2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.
3. The EUT was placed inside the temperature chamber.
4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25℃ operating frequency as reference frequency.
5. Turn EUT off and set the chamber temperature to –30℃. After the temperature stabilized for approximately 30 minutes recorded the frequency.
6. Repeat step measure with 10℃ increased per stage until the highest temperature of +50℃ reached.



Note : Measurement setup for testing on Antenna connector

13.3 Test Result

Remark: All three channels of all modulations have been tested, but only the worst channel and the worst modulation show in this test item.

Test Frequency: 3652.5MHz QPSK 5MHz			
Temperature (℃)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
-40	120	37	0.0101
-25		36	0.0099
-10		32	0.0088
0		36	0.0099
10		29	0.0079
20		32	0.0088
30		32	0.0088
40		39	0.0107
55		41	0.0112

Test Frequency: 3655MHz QPSK 10MHz			
Temperature (℃)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
-40	120	62	0.0170
-25		68	0.0186
-10		70	0.0192
0		63	0.0172
10		55	0.0150
20		69	0.0189
30		63	0.0172
40		70	0.0192
55		65	0.0178

Test Frequency: 3657.5MHz QPSK 15MHz			
Temperature (℃)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
-40	120	88	0.0241
-25		105	0.0287
-10		102	0.0279
0		97	0.0265
10		98	0.0268
20		102	0.0279
30		98	0.0268
40		103	0.0282
55		104	0.0284

Test Frequency: 3660MHz QPSK 20MHz			
Temperature (℃)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
-40	120	41	0.0112
-25		48	0.0131
-10		38	0.0104
0		47	0.0128
10		43	0.0117
20		52	0.0142
30		43	0.0117
40		53	0.0145
55		41	0.0112

14 Frequency stability V.S. Voltage measurement

Test Requirement: FCC Part90.213(a)

Test Method: FCC Part2.1055(a)(1)(b)

ANSI/TIA-603-E-2016

Test Mode: Data communicating mode

Limit: FCC:

Frequency range (MHz)	Fixed and base stations (±ppm)	Mobile stations (±ppm)	
		Over 2 watts output power	2 watts or less output power
Below 25	100	100	200
25–50	20	20	50
72–76	5		50
150–174	5	5	50
216–220	1.0		1.0
220–222	0.1	1.5	1.5
421–512	2.5	5	5
806–809	1.0	1.5	1.5
809–824	1.5	2.5	2.5
851–854	1.0	1.5	1.5
854–869	1.5	2.5	2.5
896–901	0.1	1.5	1.5
902–928	2.5	2.5	2.5
902–928	2.5	2.5	2.5
929–930	1.5		
935–940	0.1	1.5	1.5
1427–1435	300	300	300
Above 2450			

14.1 EUT Operation

Operating Environment :

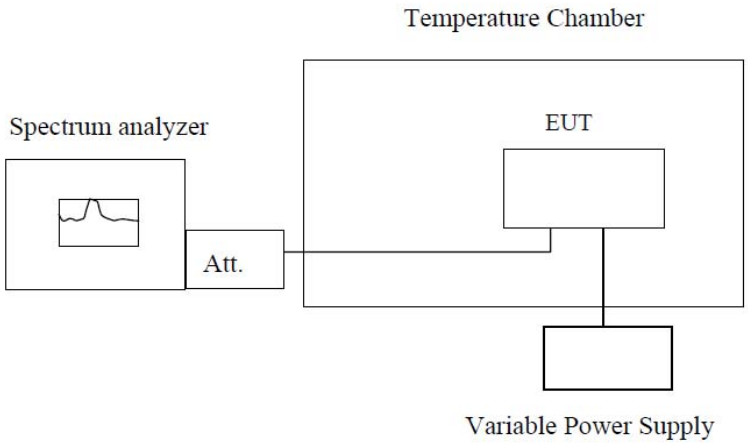
Temperature: 22.9 °C

Humidity: 52.0 % RH

Atmospheric Pressure: 101.3kPa

14.2 Test Procedure

1. Set chamber temperature to 25℃. Use a variable DC power source to power the EUT and set the voltage to rated voltage.
2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.
3. Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.



Note : Measurement setup for testing on Antenna connector

14.3 Test Result

Remark: All three channels of all modulations have been tested, but only the worst channel and the worst modulation show in this test item.

Test Frequency: 3652.5MHz QPSK 5MHz			
Temperature (℃)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
25	105	95	0.0260
	120	102	0.0279
	144	98	0.0268

Test Frequency: 3655MHz QPSK 10MHz			
Temperature (℃)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
25	105	106	0.0290
	120	96	0.0263
	144	103	0.0282

Test Frequency: 3657.5MHz QPSK 15MHz			
Temperature (℃)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
25	105	104	0.0284
	120	108	0.0295
	144	110	0.0301

Test Frequency: 3660MHz QPSK 20MHz			
Temperature (℃)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
25	105	112	0.0306
	120	110	0.0301
	144	107	0.0292

15 Photographs of test setup and EUT.

Note: Please refer to appendix: WTS18S07118477W _Photo.

====== End of Report ======