

**FCC 47 CFR PART 22 SUBPART H AND PART 24 SUBPART E
&
INDUSTRY CANADA RSS-132 & RSS-133**

TEST REPORT

For

Computer

**FCC Model No.: AIM8I, AIM8Ixxxxxxxxxxxxxxxxxx,
AIM-x5ATxxxxxxxxxxxxxx**

**(where "x" may be any alphanumeric character, "-" or blank for
marketing purpose and no impact safety related critical components
and constructions)**

**IC Model No.: AIM8I, AIM-25AT, AIM-35AT, AIM-55AT, AIM-65AT,
AIM-75AT**

Trade Name: ADVANTECH

Issued to

**Advantech Co.Ltd.
No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District, Taipei 114,
Taiwan, R.O.C.**

Issued by

**Compliance Certification Services Inc.
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)
<http://www.ccsrf.com>
service@ccsrf.com
Issued Date: May 28, 2017**



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Revision History

Rev.		Issue Date		Revisions	Effect Page	Revised By
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1. TEST RESULT CERTIFICATION

Applicant: Advantech Co.Ltd.
No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District,
Taipei 114, Taiwan, R.O.C.

Manufacturer: Advantech Co.Ltd.
No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District,
Taipei 114, Taiwan, R.O.C.

Equipment Under Test: Computer

Trade Name: ADVANTECH

FCC Model No.: AIM8I, AIM8Ixxxxxxxxxxxxxxxx, AIM-x5ATxxxxxxxxxxxx
(where "x" may be any alphanumeric character, "-" or blank
for marketing purpose and no impact safety related critical
components and constructions)

IC Model No.: AIM8I, AIM-25AT, AIM-35AT, AIM-55AT, AIM-65AT, AIM-75AT

Date of Test: April 6 ~ May 18, 2017

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR PART 22 SUBPART H AND PART 24 SUBPART E & IC RSS-132 Issue 3: January, 2013 and IC RSS-133 Issue 6: January, 2013	No non-compliance noted

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA/EIA-603-C and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rule FCC PART 22 Subpart H, PART 24 Subpart E and IC RSS-132 Issue 3 and IC RSS-133 Issue 6.

The test results of this report relate only to the tested sample identified in this report.

Approved by:

Tested by:



Sam Chuang
Manager
Compliance Certification Services Inc.

Timmy Wang
Engineer
Compliance Certification Services Inc.

2. EUT DESCRIPTION

Product	Computer	
FCC Model No.	AIM8I, AIM8Ixxxxxxxxxxxxxxxx, AIM-x5ATxxxxxxxxxxxxx (where "x" may be any alphanumeric character, "-" or blank for marketing purpose and no impact safety related critical components and constructions)	
IC Model No.	AIM8I, AIM-25AT, AIM-35AT, AIM-55AT, AIM-65AT, AIM-75AT	
Model Discrepancy	All models are electrically identical, different model names are for marketing purpose	
Model:	ADVANTECH	
Received Date	March 28, 2017	
Power Supply	1. VDC from Power Adapter Chicony / A16-018N1A I/P: 100-240Vac, 1A, 50-60Hz O/P: 5.15Vdc, 3A, 9.1Vdc, 2A, 18W 2. Battery ADVANTECH / AIM-BAT-8 Rating: 3.8V, 4900, 18.62Wh	
Frequency Range	LTE Band 2 Channel Bandwidth: 1.4MHz	1850.7MHz ~1909.2MHz
	LTE Band 2 Channel Bandwidth: 3MHz	1851.5MHz ~ 1908.4MHz
	LTE Band 2 Channel Bandwidth: 5MHz	1852.5MHz ~1907.5MHz
	LTE Band 2 Channel Bandwidth: 10MHz	1855MHz ~1905MHz
	LTE Band 2 Channel Bandwidth: 15MHz	1857.5MHz ~1902.5MHz
	LTE Band 2 Channel Bandwidth: 20MHz	1860MHz ~1900MHz
	LTE Band 5 Channel Bandwidth: 1.4MHz	824.7MHz ~848.2MHz
	LTE Band 5 Channel Bandwidth: 3MHz	825.5MHz ~ 847.4MHz
	LTE Band 5 Channel Bandwidth: 5MHz	826.5MHz ~846.5MHz
	LTE Band 5 Channel Bandwidth: 10MHz	829MHz ~844MHz
Modulation Technique	LTE Band 2	QPSK, 16QAM
	LTE Band 5	QPSK, 16QAM

Maximum EIRP Power	LTE Band 2 Channel Bandwidth: 1.4MHz	QPSK: 28.06 dBm 16QAM: 28.48 dBm
	LTE Band 2 Channel Bandwidth: 3MHz	QPSK : 27.61 dBm 16QAM: 27.91 dBm
	LTE Band 2 Channel Bandwidth: 5MHz	QPSK: 27.56 dBm 16QAM: 28.22 dBm
	LTE Band 2 Channel Bandwidth: 10MHz	QPSK: 28.56 dBm 16QAM: 28.66 dBm
	LTE Band 2 Channel Bandwidth: 15MHz	QPSK: 28.41 dBm 16QAM: 29.05 dBm
	LTE Band 2 Channel Bandwidth: 20MHz	QPSK: 27.64 dBm 16QAM: 27.91 dBm
Maximum EIRP Power	LTE Band 5 Channel Bandwidth: 1.4MHz	QPSK: 22.73m 16QAM: 22.95 dBm
	LTE Band 5 Channel Bandwidth: 3MHz	QPSK: 22.72 dBm 16QAM: 22.43 dBm
	LTE Band 5 Channel Bandwidth: 5MHz	QPSK: 22.91 dBm 16QAM: 21.52 dBm
	LTE Band 5 Channel Bandwidth: 10MHz	QPSK: 21.52 dBm 16QAM: 21.21 dBm
Antenna Specification	PIFA Antenna LTE Band 2: Gain: -1.98dBi LTE Band 5: Gain: -1.91dBi	

Remark: The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.

3. TEST METHODOLOGY

Both conducted and radiated testing were performed according to the procedures document on chapter 13 of ANSI C63.10: 2013, TIA/EIA-603-C: 2004 and FCC CFR 47, Part 2 and Part 22 Subpart H & Part 24 Subpart E.

The tests documented in this report were performed in accordance with IC RSS-132, SPSR503, RSS-133, SPSR510 and ANSI C63.10: 2013 for IC, ANSI C63.10: 2009 for FCC and TIA/EIA-603-C.

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

3.3 DESCRIPTION OF TEST MODES

The EUT (Model: AIM-8I) had been tested under operating condition.

Software used to control the EUT for staying in continuous transmitting mode was programmed.

LTE Band 2: 1850MHz ~ 1910MHz

Three channels had been tested for each channel bandwidth.

Channel Bandwidth	1.4MHz		3MHz		5MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low channel (L)	18607	1850.7	18615	1851.5	18625	1852.5
Middle channel (M)	18900	1880	18900	1880.0	18900	1880
High channel (H)	19192	1909.2	19184	1908.4	19175	1907.5
Channel Bandwidth	10MHz		15MHz		20MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low channel (L)	18650	1855	18675	1857.5	18700	1860
Middle channel (M)	18900	1880	18900	1880.0	18900	1880
High channel (H)	19150	1905	19125	1902.5	19100	1900

LTE Band 5: 824MHz ~ 849MHz

Three channels had been tested for each channel bandwidth.

Channel Bandwidth	1.4MHz		3MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low channel (L)	20407	824.7	20415	825.5
Middle channel (M)	20525	836.5	20525	836.5
High channel (H)	20642	848.2	20634	847.4
Channel Bandwidth	5MHz		10MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low channel (L)	20425	826.5	20450	829
Middle channel (M)	20525	836.5	20525	836.5
High channel (H)	20625	846.5	20600	844

For test mode:

The conducted power be measured in 1, 50% and 100% RB allocation, offset to upper edge, centered and lower edge of the channel bandwidth of each required channel.

	QPSK	Worst Mode	16QAM	Worst Mode
Band2	1.4M	1 RB ALLOCATED AT THE UPPER EDGE	1.4M	1 RB ALLOCATED AT THE UPPER EDGE
	5M	1 RB ALLOCATED AT THE UPPER EDGE	5M	1 RB ALLOCATED AT THE UPPER EDGE
	10M	1 RB ALLOCATED AT THE UPPER EDGE	10M	1 RB ALLOCATED AT THE CENTERED
	20M	1 RB ALLOCATED AT THE UPPER EDGE	20M	1 RB ALLOCATED AT THE UPPER EDGE
Band5	1.4M	1 RB ALLOCATED AT THE UPPER EDGE	1.4M	1 RB ALLOCATED AT THE CENTERED
	5M	1 RB ALLOCATED AT THE LOWER EDGE	5M	1 RB ALLOCATED AT THE LOWER EDGE
	10M	1 RB ALLOCATED AT THE LOWER EDGE	10M	1 RB ALLOCATED AT THE LOWER EDGE

3.4 THE WORST MODE OF MEASUREMENT

Radiated Emission Measurement	
Test Condition	Band edge, Emission for Unwanted and Fundamental
Voltage/Hz	120V/60Hz
Test Mode	Mode 1:EUT power by AC adapter via power cable. Mode 2:EUT power by Battery.
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4
Position	☐ Placed in fixed position. ☒ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☐ Placed in fixed position at Z-Plane (H-Plane)

Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Voltage/Hz	120V/60Hz
Test Mode	Mode 1:EUT power by AC adapter via power cable. Mode 2:EUT power by Battery.
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:

1. The worst mode was record in this test report.
2. The EUT pre-scanned in three axis ,X,Y, Z for radiated measurement. The worst cases (X-Plane) were recorded in this report.
3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.

4. INSTRUMENT CALIBRATION

4.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

4.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

Remark: Each piece of equipment is scheduled for calibration once a year and Loop Antenna is scheduled for calibration once three years.

Conducted Emissions Test Site					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Power Meter	Anritsu	ML2495A	1012009	07/04/2016	07/03/2017
Power Sensor	Anritsu	MA2411B	917072	07/04/2016	07/03/2017
Base Station	R&S	CMU 200	101245	07/29/2016	07/28/2017
Base Station	Anritsu	MT-8820C	6200938900	07/26/2016	07/25/2017
Spectrum Analyzer	R&S	FSV 40	101073	10/05/2016	10/04/2017

Wugu 966 Chamber A					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Bilog Antenna	Sunol Sciences	JB3	A030105	07/03/2016	07/02/2017
Horn Antenna	EMCO	3117	00055165	02/20/2017	02/19/2018
Pre-Amplifier	EMCI	EMC 012635	980151	06/23/2016	06/22/2017
Pre-Amplifier	EMEC	EM330	060609	06/08/2016	06/07/2017
Spectrum Analyzer	Agilent	E4446A	US42510252	12/05/2016	12/04/2017
Loop Ant	COM-POWER	AL-130	121051	03/02/2017	03/1/2018
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R
Software	EZ-EMC (CCS-3A1RE)				

4.3 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
3M Semi Anechoic Chamber / 30M~200M	+/- 4.0138
3M Semi Anechoic Chamber / 200M~1000M	+/- 3.9483
3M Semi Anechoic Chamber / 1G~8G	+/- 2.5975
3M Semi Anechoic Chamber / 8G~18G	+/- 2.6112
3M Semi Anechoic Chamber / 18G~26G	+/- 2.7389
3M Semi Anechoic Chamber / 26G~40G	+/- 2.9683

Remark: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

☐ No.199, Chunghsen Road, Hsintien City, Taipei Hsien, Taiwan, R.O.C.

Tel: 886-2-2217-0894 / Fax: 886-2-2217-1029

☒ No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)

Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045

☐ No.81-1, Lane 210, Bade 2nd Rd., Lujhu Township, Taoyuan County 33841, TAIWAN, R.O.C.

Tel: 886-3-324-0332 / Fax: 886-3-324-5235

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10: 2013 and CISPR Publication 22.

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

5.3 LABORATORY ACCREDITATIONS AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by American Association for Laboratory Accreditation Program for the specific scope accreditation under Lab Code: 0824-01 to perform Electromagnetic Interference tests according to FCC Part 15 and CISPR 22 requirements. In addition, the test facilities are listed with Industry Canada, Certification and Engineering Bureau, IC 2324G-1 for 3M Semi Anechoic Chamber A, 2324G-2 for 3M Semi Anechoic Chamber B.

5.4 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3M Semi Anechoic Chamber (FCC MRA: TW1039) to perform FCC Part 15 measurements	 FCC MRA: TW1039
Taiwan	TAF	LP0002, RTTE01, FCC Method-47 CFR Part 15 Subpart C, D, E, RSS-210, RSS-310 IDA TS SRD, AS/NZS 4268, AS/NZS 4771, TS 12.1 & 12.2, ETSI EN 300 440-1, ETSI EN 300 440-2, ETSI EN 300 328, ETSI EN 300 220-1, ETSI EN 300 220-2, ETSI EN 301 893, ETSI EN 301 489-1/3/7/17 FCC OET Bulletin 65 + Supplement C, EN 50360, EN 50361, EN 50371, RSS 102, EN 50383, EN 50385, EN 50392, IEC 62209, CNS 14958-1, CNS 14959 FCC Method -47 CFR Part 15 Subpart B IEC / EN 61000-3-2, IEC / EN 61000-3-3, IEC / EN 61000-4-2/3/4/5/6/8/11	
Canada	Industry Canada	3M Semi Anechoic Chamber (IC 2324G-1 / IC 2324G-2) to perform	 IC 2324G-1 IC 2324G-2

* No part of this report may be used to claim or imply product endorsement by A2LA or any agency of the US Government.

6. SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix II for the actual connections between EUT and support equipment.

6.2 SUPPORT EQUIPMENT

No	Equipment	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
	N/A						

Remark:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

7. FCC PART 22 & 24 REQUIREMENTS & INDUSTRY CANADA RSS-132 & RSS-133

7.1 OUTPUT POWER MEASUREMENT

Test Procedures

CONDUCTED POWER MEASUREMENT:

1. The transmitter output power was connected to the call box.
2. Set EUT at maximum output power via call box.
3. Set Call box at lowest, middle and highest channels for each band and modulation.

TEST RESULTS**LTE Band 5**

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Average power(dBm)	Output Power (W)
5	10	20450	829.0	QPSK	1	0	0	23.5	0.22387
					1	24	0	23.4	0.21878
					1	49	0	23.3	0.21478
					25	0	1	22.5	0.17824
					25	12	1	22.5	0.17742
					25	24	1	22.4	0.17219
				16QAM	50	0	1	22.6	0.18030
					1	0	1	22.5	0.17783
					1	24	1	22.5	0.17742
					1	49	1	22.4	0.17219
					25	0	2	21.6	0.14454
					25	12	2	21.6	0.14388
					25	24	2	21.3	0.13583
		20525	836.5	QPSK	50	0	2	21.5	0.14125
					1	0	0	23.4	0.21878
					1	24	0	23.3	0.21330
					1	49	0	23.1	0.20417
					25	0	1	22.5	0.17783
					25	12	1	22.4	0.17219
					25	24	1	22.2	0.16596
				16QAM	50	0	1	22.5	0.17579
					1	0	1	22.4	0.17498
					1	24	1	22.3	0.17100
					1	49	1	22.2	0.16558
					25	0	2	21.5	0.14093
					25	12	2	21.3	0.13490
		20600	844.0	QPSK	25	24	2	21.2	0.13032
					50	0	2	21.1	0.12882
				16QAM	1	0	0	23.3	0.21429
					1	24	0	23.2	0.21086
					1	49	0	23.0	0.20137
					25	0	1	22.4	0.17219
					25	12	1	22.3	0.16788
					25	24	1	22.1	0.16144
					50	0	1	22.4	0.17179
				16QAM	1	0	1	22.3	0.17140
					1	24	1	22.3	0.16827
					1	49	1	22.1	0.16181
					25	0	2	21.3	0.13614
					25	12	2	21.3	0.13335
					25	24	2	21.1	0.12853
					50	0	2	21.1	0.12882

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Average power(dBm)	Output Power (W)
5	5	20425	826.5	QPSK	1	0	0	23.5	0.22131
					1	12	0	23.4	0.21627
					1	24	0	23.3	0.21232
					12	0	1	22.5	0.17620
					12	6	1	22.4	0.17539
					12	11	1	22.3	0.17022
					25	0	1	22.5	0.17824
				16QAM	1	0	1	22.5	0.17579
					1	12	1	22.4	0.17539
					1	24	1	22.3	0.17022
					12	0	2	21.6	0.14289
					12	6	2	21.5	0.14223
					12	11	2	21.3	0.13428
					25	0	2	21.5	0.13964
		20525	836.5	QPSK	1	0	0	23.4	0.21677
					1	12	0	23.3	0.21135
					1	24	0	23.1	0.20230
					12	0	1	22.5	0.17620
					12	6	1	22.3	0.17061
					12	11	1	22.2	0.16444
					25	0	1	22.4	0.17418
				16QAM	1	0	1	22.4	0.17338
					1	12	1	22.3	0.16943
					1	24	1	22.2	0.16406
					12	0	2	21.5	0.13964
					12	6	2	21.3	0.13366
					12	11	2	21.1	0.12912
					25	0	2	21.1	0.12764
		20625	846.5	QPSK	1	0	0	23.2	0.21086
					1	12	0	23.2	0.20749
					1	24	0	23.0	0.19815
					12	0	1	22.3	0.16943
					12	6	1	22.2	0.16520
					12	11	1	22.0	0.15885
					25	0	1	22.3	0.16904
				16QAM	1	0	1	22.3	0.16866
					1	12	1	22.2	0.16558
					1	24	1	22.0	0.15922
					12	0	2	21.3	0.13397
					12	6	2	21.2	0.13122
					12	11	2	21.0	0.12647
					25	0	2	21.0	0.12677

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Average power(dBm)	Output Power (W)
5	3	20415	825.5	QPSK	1	0	0	23.4	0.22029
					1	7	0	23.3	0.21528
					1	14	0	23.3	0.21135
					8	0	1	22.4	0.17539
					8	4	1	22.4	0.17458
					8	7	1	22.3	0.16943
					15	0	1	22.5	0.17742
				16QAM	1	0	1	22.4	0.17498
					1	7	1	22.4	0.17458
					1	14	1	22.3	0.16943
					8	0	2	21.5	0.14223
					8	4	2	21.5	0.14158
					8	7	2	21.3	0.13366
					15	0	2	21.4	0.13900
		20525	836.5	QPSK	1	0	0	23.4	0.21627
					1	7	0	23.2	0.21086
					1	14	0	23.1	0.20184
					8	0	1	22.5	0.17579
					8	4	1	22.3	0.17022
					8	7	1	22.2	0.16406
					15	0	1	22.4	0.17378
				16QAM	1	0	1	22.4	0.17298
					1	7	1	22.3	0.16904
					1	14	1	22.1	0.16368
					8	0	2	21.4	0.13932
					8	4	2	21.3	0.13335
					8	7	2	21.1	0.12882
					15	0	2	21.1	0.12735
		20634	847.4	QPSK	1	0	0	23.2	0.20989
					1	7	0	23.2	0.20654
					1	14	0	23.0	0.19724
					8	0	1	22.3	0.16866
					8	4	1	22.2	0.16444
					8	7	1	22.0	0.15812
					15	0	1	22.3	0.16827
				16QAM	1	0	1	22.3	0.16788
					1	7	1	22.2	0.16482
					1	14	1	22.0	0.15849
					8	0	2	21.3	0.13335
					8	4	2	21.2	0.13062
					8	7	2	21.0	0.12589
					15	0	2	21.0	0.12618

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Average power(dBm)	Output Power (W)
5	1.4	20407	824.7	QPSK	1	0	0	23.4	0.21878
					1	2	0	23.3	0.21380
					1	5	0	23.2	0.20989
					3	0	1	22.4	0.17418
					3	1	1	22.4	0.17338
					3	2	1	22.3	0.16827
					6	0	1	22.5	0.17620
				16QAM	1	0	1	22.4	0.17378
					1	2	1	22.4	0.17338
					1	5	1	22.3	0.16827
					3	0	2	21.5	0.14125
					3	1	2	21.5	0.14060
					3	2	2	21.2	0.13274
					6	0	2	21.4	0.13804
		20525	836.5	QPSK	1	0	0	23.3	0.21577
					1	2	0	23.2	0.21038
					1	5	0	23.0	0.20137
					3	0	1	22.4	0.17539
					3	1	1	22.3	0.16982
					3	2	1	22.1	0.16368
					6	0	1	22.4	0.17338
				16QAM	1	0	1	22.4	0.17258
					1	2	1	22.3	0.16866
					1	5	1	22.1	0.16331
					3	0	2	21.4	0.13900
					3	1	2	21.2	0.13305
					3	2	2	21.1	0.12853
					6	0	2	21.0	0.12706
		20642	848.2	QPSK	1	0	0	23.2	0.20893
					1	2	0	23.1	0.20559
					1	5	0	22.9	0.19634
					3	0	1	22.3	0.16788
					3	1	1	22.1	0.16368
					3	2	1	22.0	0.15740
					6	0	1	22.2	0.16749
				16QAM	1	0	1	22.2	0.16711
					1	2	1	22.2	0.16406
					1	5	1	22.0	0.15776
					3	0	2	21.2	0.13274
					3	1	2	21.1	0.13002
					3	2	2	21.0	0.12531
					6	0	2	21.0	0.12560

LTE Band 2

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Average power(dBm)	Output Power (W)
2	20	18700	1860.0	QPSK	1	0	0	23.6	0.22961
					1	49	0	23.5	0.22387
					1	99	0	23.5	0.22542
					50	0	1	22.6	0.18365
					50	24	1	22.6	0.18113
					50	49	1	22.6	0.18072
					100	0	1	22.6	0.18323
				16QAM	1	0	1	22.7	0.18535
					1	49	1	22.6	0.18365
					1	99	1	22.6	0.18323
					50	0	2	21.6	0.14588
					50	24	2	21.5	0.14158
					50	49	2	21.6	0.14421
					100	0	2	21.6	0.14488
		18900	1880.0	QPSK	1	0	0	23.9	0.24717
					1	49	0	23.8	0.24099
					1	99	0	23.4	0.21827
					50	0	1	23.0	0.19724
					50	24	1	22.8	0.19187
					50	49	1	22.4	0.17418
					100	0	1	23.0	0.20045
				16QAM	1	0	1	22.9	0.19634
					1	49	1	22.8	0.19187
					1	99	1	22.4	0.17458
					50	0	2	22.0	0.15668
					50	24	2	21.9	0.15346
					50	49	2	21.4	0.13836
					100	0	2	21.4	0.13804
		19100	1900.0	QPSK	1	0	0	23.6	0.23014
					1	49	0	23.5	0.22439
					1	99	0	23.5	0.22336
					50	0	1	22.8	0.18880
					50	24	1	22.5	0.17865
					50	49	1	22.5	0.17824
					100	0	1	22.6	0.18365
				16QAM	1	0	1	22.7	0.18793
					1	49	1	22.5	0.17947
					1	99	1	22.5	0.17824
					50	0	2	21.7	0.14825
					50	24	2	21.6	0.14421
					50	49	2	21.6	0.14388
					100	0	2	21.5	0.14125

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Average power(dBm)	Output Power (W)
2	15	18675	1857.5	QPSK	1	0	0	23.6	0.22803
					1	37	0	23.5	0.22233
					1	74	0	23.5	0.22387
					36	0	1	22.6	0.18239
					36	18	1	22.6	0.17989
					36	35	1	22.5	0.17947
					75	0	1	22.6	0.18197
				16QAM	1	0	1	22.7	0.18408
					1	37	1	22.6	0.18239
					1	74	1	22.6	0.18197
					36	0	2	21.6	0.14488
					36	18	2	21.5	0.14060
					36	35	2	21.6	0.14322
					75	0	2	21.6	0.14388
		18900	1880.0	QPSK	1	0	0	23.9	0.24378
					1	37	0	23.8	0.23768
					1	74	0	23.3	0.21528
					36	0	1	22.9	0.19454
					36	18	1	22.8	0.18923
					36	35	1	22.4	0.17179
					75	0	1	23.0	0.19770
				16QAM	1	0	1	22.9	0.19364
					1	37	1	22.8	0.18923
					1	74	1	22.4	0.17219
					36	0	2	21.9	0.15453
					36	18	2	21.8	0.15136
					36	35	2	21.4	0.13646
					75	0	2	21.3	0.13614
	15	19125	1902.5	QPSK	1	0	0	23.6	0.22646
					1	37	0	23.4	0.22080
					1	74	0	23.4	0.21979
					36	0	1	22.7	0.18578
					36	18	1	22.5	0.17579
					36	35	1	22.4	0.17539
					75	0	1	22.6	0.18072
				16QAM	1	0	1	22.7	0.18493
					1	37	1	22.5	0.17660
					1	74	1	22.4	0.17539
					36	0	2	21.6	0.14588
					36	18	2	21.5	0.14191
					36	35	2	21.5	0.14158
					75	0	2	21.4	0.13900

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Average power(dBm)	Output Power (W)
2	10	18650	1855.0	QPSK	1	0	0	23.6	0.22751
					1	24	0	23.5	0.22182
					1	49	0	23.5	0.22336
					25	0	1	22.6	0.18197
					25	12	1	22.5	0.17947
					25	24	1	22.5	0.17906
					50	0	1	22.6	0.18155
				16QAM	1	0	1	22.6	0.18365
					1	24	1	22.6	0.18197
					1	49	1	22.6	0.18155
					25	0	2	21.6	0.14454
					25	12	2	21.5	0.14028
					25	24	2	21.6	0.14289
					50	0	2	21.6	0.14355
		18900	1880.0	QPSK	1	0	0	23.9	0.24322
					1	24	0	23.8	0.23714
					1	49	0	23.3	0.21478
					25	0	1	22.9	0.19409
					25	12	1	22.8	0.18880
					25	24	1	22.3	0.17140
					50	0	1	23.0	0.19724
				16QAM	1	0	1	22.9	0.19320
					1	24	1	22.8	0.18880
					1	49	1	22.4	0.17179
					25	0	2	21.9	0.15417
					25	12	2	21.8	0.15101
					25	24	2	21.3	0.13614
					50	0	2	21.3	0.13583
		19150	1905.0	QPSK	1	0	0	23.5	0.22594
					1	24	0	23.4	0.22029
					1	49	0	23.4	0.21928
					25	0	1	22.7	0.18535
					25	12	1	22.4	0.17539
					25	24	1	22.4	0.17498
					50	0	1	22.6	0.18030
				16QAM	1	0	1	22.7	0.18450
					1	24	1	22.5	0.17620
					1	49	1	22.4	0.17498
					25	0	2	21.6	0.14555
					25	12	2	21.5	0.14158
					25	24	2	21.5	0.14125
					50	0	2	21.4	0.13868

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Average power(dBm)	Output Power (W)
2	5	18625	1852.5	QPSK	1	0	0	23.6	0.22646
					1	12	0	23.4	0.22080
					1	24	0	23.5	0.22233
					12	0	1	22.6	0.18113
					12	6	1	22.5	0.17865
					12	11	1	22.5	0.17824
					25	0	1	22.6	0.18072
				16QAM	1	0	1	22.6	0.18281
					1	12	1	22.6	0.18113
					1	24	1	22.6	0.18072
					12	0	2	21.6	0.14388
					12	6	2	21.5	0.13964
					12	11	2	21.5	0.14223
					25	0	2	21.6	0.14289
		18900	1880.0	QPSK	1	0	0	23.8	0.24210
					1	12	0	23.7	0.23605
					1	24	0	23.3	0.21380
					12	0	1	22.9	0.19320
					12	6	1	22.7	0.18793
					12	11	1	22.3	0.17061
					25	0	1	22.9	0.19634
				16QAM	1	0	1	22.8	0.19231
					1	12	1	22.7	0.18793
					1	24	1	22.3	0.17100
					12	0	2	21.9	0.15346
					12	6	2	21.8	0.15031
					12	11	2	21.3	0.13552
					25	0	2	21.3	0.13521
		19175	1907.5	QPSK	1	0	0	23.5	0.22439
					1	12	0	23.4	0.21878
					1	24	0	23.4	0.21777
					12	0	1	22.7	0.18408
					12	6	1	22.4	0.17418
					12	11	1	22.4	0.17378
					25	0	1	22.5	0.17906
				16QAM	1	0	1	22.6	0.18323
					1	12	1	22.4	0.17498
					1	24	1	22.4	0.17378
					12	0	2	21.6	0.14454
					12	6	2	21.5	0.14060
					12	11	2	21.5	0.14028
					25	0	2	21.4	0.13772

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Average power(dBm)	Output Power (W)
2	3	18615	1851.5	QPSK	1	0	0	23.5	0.22387
					1	7	0	23.4	0.21827
					1	14	0	23.4	0.21979
					8	0	1	22.5	0.17906
					8	4	1	22.5	0.17660
					8	7	1	22.5	0.17620
					15	0	1	22.5	0.17865
				16QAM	1	0	1	22.6	0.18072
					1	7	1	22.5	0.17906
					1	14	1	22.5	0.17865
					8	0	2	21.5	0.14223
					8	4	2	21.4	0.13804
					8	7	2	21.5	0.14060
					15	0	2	21.5	0.14125
		18900	1880.0	QPSK	1	0	0	23.8	0.23988
					1	7	0	23.7	0.23388
					1	14	0	23.3	0.21184
					8	0	1	22.8	0.19143
					8	4	1	22.7	0.18621
					8	7	1	22.3	0.16904
					15	0	1	22.9	0.19454
				16QAM	1	0	1	22.8	0.19055
					1	7	1	22.7	0.18621
					1	14	1	22.3	0.16943
					8	0	2	21.8	0.15205
					8	4	2	21.7	0.14894
					8	7	2	21.3	0.13428
					15	0	2	21.3	0.13397
		19184	1908.4	QPSK	1	0	0	23.5	0.22182
					1	7	0	23.4	0.21627
					1	14	0	23.3	0.21528
					8	0	1	22.6	0.18197
					8	4	1	22.4	0.17219
					8	7	1	22.4	0.17179
					15	0	1	22.5	0.17701
				16QAM	1	0	1	22.6	0.18113
					1	7	1	22.4	0.17298
					1	14	1	22.4	0.17179
					8	0	2	21.6	0.14289
					8	4	2	21.4	0.13900
					8	7	2	21.4	0.13868
					15	0	2	21.3	0.13614

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Average power(dBm)	Output Power (W)
2	1.4	18607	1850.7	QPSK	1	0	0	23.5	0.22336
					1	2	0	23.4	0.21777
					1	5	0	23.4	0.21928
					3	0	1	22.5	0.17865
					3	1	1	22.5	0.17620
					3	2	1	22.5	0.17579
					6	0	1	22.5	0.17824
				16QAM	1	0	1	22.6	0.18030
					1	2	1	22.5	0.17865
					1	5	1	22.5	0.17824
					3	0	2	21.5	0.14191
					3	1	2	21.4	0.13772
					3	2	2	21.5	0.14028
					6	0	2	21.5	0.14093
		18900	1880.0	QPSK	1	0	0	23.8	0.23933
					1	2	0	23.7	0.23335
					1	5	0	23.3	0.21135
					3	0	1	22.8	0.19099
					3	1	1	22.7	0.18578
					3	2	1	22.3	0.16866
					6	0	1	22.9	0.19409
				16QAM	1	0	1	22.8	0.19011
					1	2	1	22.7	0.18578
					1	5	1	22.3	0.16904
					3	0	2	21.8	0.15171
					3	1	2	21.7	0.14859
					3	2	2	21.3	0.13397
					6	0	2	21.3	0.13366
		19192	1909.2	QPSK	1	0	0	23.4	0.22080
					1	2	0	23.3	0.21528
					1	5	0	23.3	0.21429
					3	0	1	22.6	0.18113
					3	1	1	22.3	0.17140
					3	2	1	22.3	0.17100
					6	0	1	22.5	0.17620
				16QAM	1	0	1	22.6	0.18030
					1	2	1	22.4	0.17219
					1	5	1	22.3	0.17100
					3	0	2	21.5	0.14223
					3	1	2	21.4	0.13836
					3	2	2	21.4	0.13804
					6	0	2	21.3	0.13552

7.2 ERP & EIRP MEASUREMENT

LIMIT

According to FCC §2.1046

FCC 22.913(b):

The Effective Radiated Power (ERP) of mobile transmitters must not exceed 7 Watts.

FCC 24.232(b):

The equivalent Isotropic Radiated Power (EIRP) must not exceed 2 Watts.

According to RSS-132, section 5.4

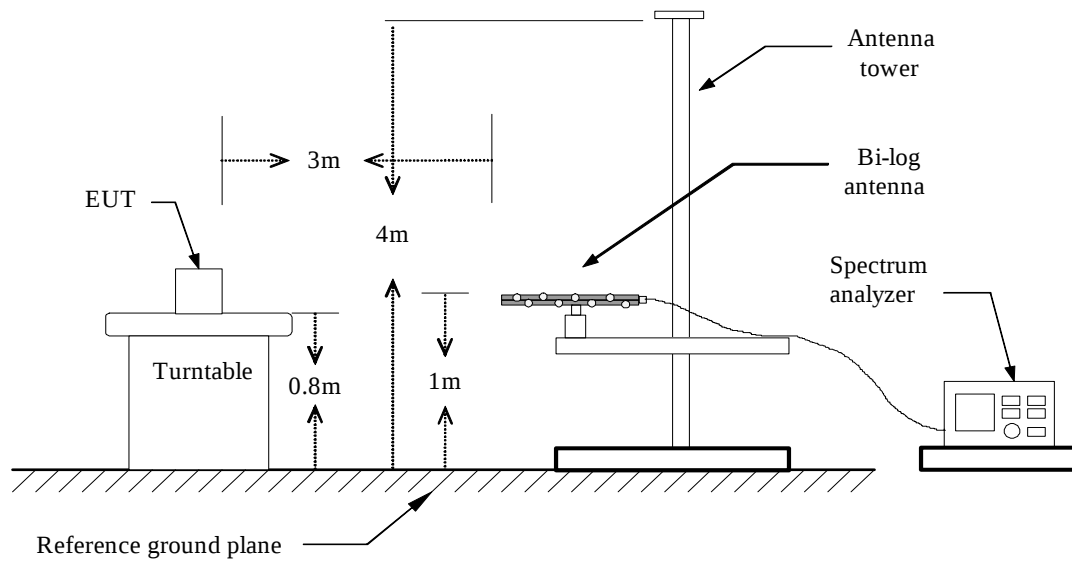
The transmitter output power shall be measured in terms of average power. The equivalent isotropically radiated power (e.i.r.p.) for mobile equipment shall not exceed 11.5 watts. Refer to SRSP-503 for base station e.i.r.p. limits.

According to RSS-133, section 6.4

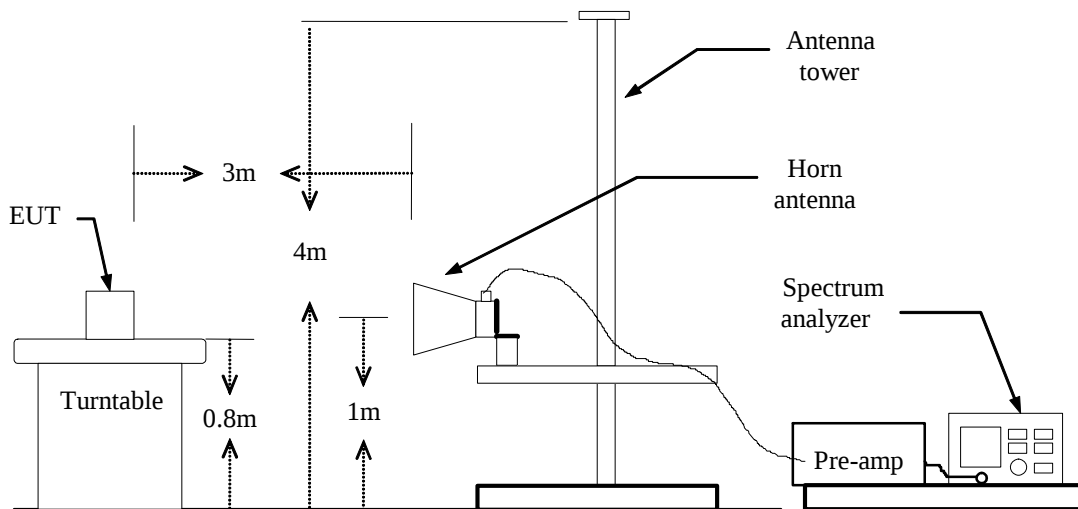
The equivalent isotropically radiated power (e.i.r.p.) for transmitters shall not exceed the limits given in SRSP-510. Moreover, base station transmitters operating in the band 1930-1995 MHz shall not have output power exceeding 100 watts.

Test Configuration

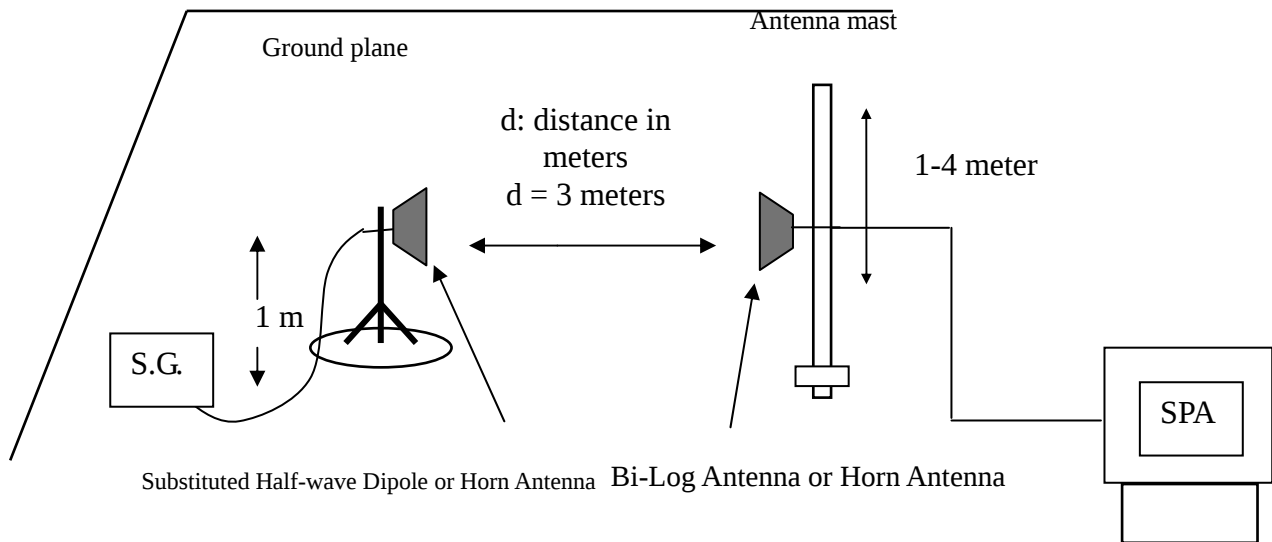
Below 1 GHz



Above 1 GHz



For Substituted Method Test Set-UP



TEST PROCEDURE

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.

During the measurement of the EUT, the resolution bandwidth was set to 5MHz and the average bandwidth was set to 50MHz. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna. The reading was recorded and the field strength (E in dBuV/m) was calculated.

ERP in frequency band 824-849MHz, and EIRP in frequency band 1851.25 –1910MHz were measured using a substitution method. The EUT was replaced by half-wave dipole (824-849MHz) or horn antenna (1851.25-1910MHz) connected to a signal generator. The spectrum analyzer reading was recorded and ERP/EIRP was calculated as follows:

$$\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)} - 2.15$$

$$\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)}$$

TEST RESULTS

No non-compliance noted.

LTE BAND 5

BW: 1.4MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						ERP (dBm)	ERP (W)	ERP (dBm)	ERP (W)
5	1.4	Lowest	QPSK	1	0	22.73	0.187	19.64	0.092
		Middle		1	0	21.77	0.150	21.65	0.146
		Highest		1	0	22.10	0.162	20.78	0.119
		Lowest	16 QAM	1	0	22.71	0.186	19.54	0.089
		Middle		1	0	22.95	0.197	21.27	0.133
		Highest		1	0	22.28	0.169	20.83	0.121

BW: 3MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						ERP (dBm)	ERP (W)	ERP (dBm)	ERP (W)
5	3	Lowest	QPSK	1	0	22.72	0.187	19.21	0.083
		Middle		1	0	22.65	0.184	20.25	0.105
		Highest		1	0	22.35	0.171	20.99	0.125
		Lowest	16 QAM	1	0	22.15	0.164	19.14	0.082
		Middle		1	0	22.38	0.172	20.11	0.102
		Highest		1	0	22.43	0.174	21	0.125

BW: 5MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						ERP (dBm)	ERP (W)	ERP (dBm)	ERP (W)
5	5	Lowest	QPSK	1	0	22.91	0.195	19.75	0.094
		Middle		1	0	22.24	0.167	20.29	0.106
		Highest		1	0	21.93	0.155	20.75	0.118
		Lowest	16 QAM	1	0	20.28	0.106	19.67	0.092
		Middle		1	0	19.89	0.097	20.65	0.116
		Highest		1	0	20.21	0.104	21.52	0.141

BW: 10MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						ERP (dBm)	ERP (W)	ERP (dBm)	ERP (W)
5	10	Lowest	QPSK	1	0	19.63	0.091	18.80	0.075
		Middle		1	0	19.99	0.099	20.11	0.102
		Highest		1	0	20.68	0.116	21.52	0.141
		Lowest	16 QAM	1	0	19.54	0.089	19.11	0.081
		Middle		1	0	19.97	0.099	20.27	0.106
		Highest		1	0	20.34	0.108	21.21	0.132

LTE BAND 2**BW: 1.4MHz / RB=1, RB Offset=0**

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
2	1.4	Lowest	QPSK	1	0	13.88	0.024	27.69	0.587
		Middle		1	0	14.58	0.028	27.59	0.574
		Highest		1	0	14.86	0.030	28.06	0.639
		Lowest	16 QAM	1	0	14.82	0.030	28.32	0.679
		Middle		1	0	14.94	0.031	28.30	0.676
		Highest		1	0	15.35	0.034	28.48	0.704

BW: 3MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
2	3	Lowest	QPSK	1	0	14.31	0.026	27.21	0.526
		Middle		1	0	14.07	0.025	27.61	0.576
		Highest		1	0	14.37	0.027	27.32	0.539
		Lowest	16 QAM	1	0	14.59	0.028	27.91	0.618
		Middle		1	0	14.41	0.027	27.83	0.606
		Highest		1	0	14.80	0.030	27.73	0.592

BW: 5MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
2	5	Lowest	QPSK	1	0	14.26	0.026	27.41	0.550
		Middle		1	0	14.55	0.028	27.56	0.570
		Highest		1	0	14.52	0.028	27.47	0.558
		Lowest	16 QAM	1	0	14.46	0.027	28.22	0.663
		Middle		1	0	14.92	0.031	27.96	0.625
		Highest		1	0	14.89	0.030	27.97	0.626

BW: 10MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
2	10	Lowest	QPSK	1	0	13.78	0.023	26.17	0.413
		Middle		1	0	14.29	0.026	27.80	0.602
		Highest		1	0	15.04	0.031	28.56	0.717
		Lowest	16 QAM	1	0	14.28	0.026	27.47	0.558
		Middle		1	0	14.95	0.031	27.77	0.598
		Highest		1	0	15.24	0.033	28.66	0.734

BW: 15MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
2	15	Lowest	QPSK	1	0	14.23	0.026	26.40	0.436
		Middle		1	0	14.30	0.026	27.82	0.605
		Highest		1	0	15.25	0.033	28.41	0.693
		Lowest	16 QAM	1	0	15.09	0.032	27.17	0.521
		Middle		1	0	14.98	0.031	28.23	0.665
		Highest		1	0	15.75	0.037	29.05	0.803

BW: 20MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
2	20	Lowest	QPSK	1	0	14.23	0.026	26.06	0.403
		Middle		1	0	14.24	0.026	27.64	0.580
		Highest		1	0	13.94	0.024	27.27	0.533
		Lowest	16 QAM	1	0	13.74	0.023	26.19	0.415
		Middle		1	0	14.36	0.027	27.91	0.618
		Highest		1	0	15.37	0.034	26.84	0.483

7.3 FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

LIMIT

According to FCC §2.1055, FCC §22.355, .FCC §24.235.

Frequency Tolerance: +/- 2.5ppm_

According to RSS-132 section 5.3 ,

The carrier frequency shall not depart from the reference frequency, in excess of ± 2.5 ppm for mobile stations and ± 1.0 ppm for base stations.

In lieu of meeting the above stability values, the test report may show that the frequency stability is sufficient to ensure that the emission bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.

According to RSS -133 section 6.3

The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations and ± 1.5 ppm for base stations.

In lieu of meeting the above stability values, the test report may show that the frequency stability is sufficient to ensure that the occupied bandwidth stays within each of the sub-bands (see Section 5.1) when tested to the temperature and supply voltage variations specified in RSS-Gen.

Test Procedure

Use Anritsu 8820 with frequency Error measurement capability.

Temp = -30 to +50°C

Voltage= 85% to 115% of the nominal value for AC powered equipment.

NOTE: *The frequency error was recorded frequency error from the communication simulator.*

TEST RESULTS

No non-compliance noted.

Test Results**FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT:****LTE Band 5**

Reference Frequency: LTE Band 5 Max Bandwidth QPSK, 836.5 MHz				
Limit: ± 2.5 ppm = 2091.25Hz				
Power Supply	Environment	Frequency Error	Frequency Error	Limit (ppm)
Vdc	Temperature (°C)	(Hz)	(ppm)	(ppm)
120	50	0.01	0.000006	+/- 2.5
120	40	0.00	-0.000004	
120	30	0.01	0.000007	
120	20	0.00	0.000006	
120	10	0.00	0.000005	
120	0	0.01	0.000010	
120	-10	0.01	0.000008	
120	-20	0.02	0.000024	

Reference Frequency: LTE Band 5 Max Bandwidth 16QAM, 836.5 MHz				
Limit: ± 2.5 ppm = 2091.25Hz				
Power Supply	Environment	Frequency Error	Frequency Error	Limit (ppm)
Vdc	Temperature (°C)	(Hz)	(ppm)	(ppm)
120	50	0.01	0.000011	+/- 2.5
120	40	-0.02	-0.000023	
120	30	-0.01	-0.000007	
120	20	-0.01	-0.000010	
120	10	0.01	0.000010	
120	0	0.01	0.000010	
120	-10	0.01	0.000013	
120	-20	0.01	0.000010	

LTE Band 2

Reference Frequency: LTE Band 2 Max Bandwidth QPSK, 1880 MHz				
Limit: ± 2.5 ppm = 4700Hz				
Power Supply	Environment	Frequency Error	Frequency Error	Limit (ppm)
Vdc	Temperature (°C)	(Hz)	(ppm)	(ppm)
120	50	0.02	0.000011	+/- 2.5
120	40	0.00	0.000000	
120	30	0.03	0.000016	
120	20	0.00	0.000003	
120	10	0.01	0.000005	
120	0	0.01	0.000005	
120	-10	0.04	0.000021	
120	-20	0.02	0.000011	

Reference Frequency: LTE Band 2 Max Bandwidth 16QAM, 1880 MHz				
Limit: ± 2.5 ppm = 4700Hz				
Power Supply	Environment	Frequency Error	Frequency Error	Limit (ppm)
Vdc	Temperature (°C)	(Hz)	(ppm)	(ppm)
120	50	0.01	0.000005	+/- 2.5
120	40	-0.02	-0.000010	
120	30	-0.01	-0.000005	
120	20	0.01	0.000005	
120	10	0.02	0.000011	
120	0	0.02	0.000011	
120	-10	0.01	0.000005	
120	-20	0.03	0.000016	

FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT:**LTE Band 5**

Reference Frequency: LTE Band 5 Max Bandwidth QPSK, 836.5 MHz				
Limit: ± 2.5 ppm = 2091.25Hz				
Power Supply	Environment	Frequency Error	Frequency Error	Limit (ppm)
Vdc	Temperature (°C)	(Hz)	(ppm)	(ppm)
102	20	0.00	0.000004	+/- 2.5
120	20	0.00	0.000006	
138	20	0.01	0.000008	

Reference Frequency: LTE Band 5 Max Bandwidth 16QAM, 836.5 MHz				
Limit: ± 2.5 ppm = 2091.25Hz				
Power Supply	Environment	Frequency Error	Frequency Error	Limit (ppm)
Vdc	Temperature (°C)	(Hz)	(ppm)	(ppm)
102	20	-0.01	-0.000008	+/- 2.5
120	20	-0.01	-0.000010	
138	20	0.01	0.000008	

LTE Band 2

Reference Frequency: LTE Band 2 Max Bandwidth QPSK, 1880 MHz				
Limit: ± 2.5 ppm = 4700Hz				
Power Supply	Environment	Frequency Error	Frequency Error	Limit (ppm)
Vdc	Temperature (°C)	(Hz)	(ppm)	(ppm)
102	20	0.00	0.000002	+/- 2.5
120	20	0.00	0.000003	
138	20	0.01	0.000003	

Reference Frequency: LTE Band 2 Max Bandwidth 16QAM, 1880 MHz				
Limit: ± 2.5 ppm = 4700Hz				
Power Supply	Environment	Frequency Error	Frequency Error	Limit (ppm)
Vdc	Temperature (°C)	(Hz)	(ppm)	(ppm)
102	20	-0.01	-0.000003	+/- 2.5
120	20	0.01	0.000005	
138	20	0.01	0.000003	

7.4 OCCUPIED BANDWIDTH MEASUREMENT

LIMIT

For Reporting purposes only.

TEST PROCEDURES

KDB 971168 D01 v02r02 - Section 4.2

1. The occupied bandwidth was measured with the spectrum analyzer at the lowest, middle and highest channels in each band and different modulation. The 99% and -26dB bandwidth was measured and recorded.
2. RBW = 1-5% of the expected OBW
3. VBW $\geq 3 \times$ RBW
4. Detector = Peak
5. Trace mode = max. hold

TEST RESULTS

No non-compliance noted

LTE Band 5**CHANNEL BANDWIDTH: 1.4MHz / QPSK**

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
20525	836.5	1.1027

CHANNEL BANDWIDTH: 1.4MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
20525	836.5	1.1027

CHANNEL BANDWIDTH: 3MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
20525	836.50	2.6830

CHANNEL BANDWIDTH: 3MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
20525	836.50	2.6830

CHANNEL BANDWIDTH: 5MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
20525	836.50	4.4717

CHANNEL BANDWIDTH: 5MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
20525	836.50	4.4717

CHANNEL BANDWIDTH: 10MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
20525	836.50	8.9146

CHANNEL BANDWIDTH: 10MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
20525	836.50	8.9146

LTE Band 2**CHANNEL BANDWIDTH: 1.4MHz / QPSK**

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
18900	1880	1.1070

CHANNEL BANDWIDTH: 1.4MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
18900	1880	1.1070

CHANNEL BANDWIDTH: 3MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
18900	1880.00	2.6743

CHANNEL BANDWIDTH: 3MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
18900	1880.00	2.6830

CHANNEL BANDWIDTH: 5MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
18900	1880.00	4.4717

CHANNEL BANDWIDTH: 5MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
18900	1880.00	4.4717

CHANNEL BANDWIDTH: 10MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
18900	1880.00	8.9725

CHANNEL BANDWIDTH: 10MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
18900	1880.00	8.9146

CHANNEL BANDWIDTH: 15MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
18900	1880.00	13.5021

CHANNEL BANDWIDTH: 15MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
18900	1880.00	13.5021

CHANNEL BANDWIDTH: 20MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
18900	1880.00	18.1765

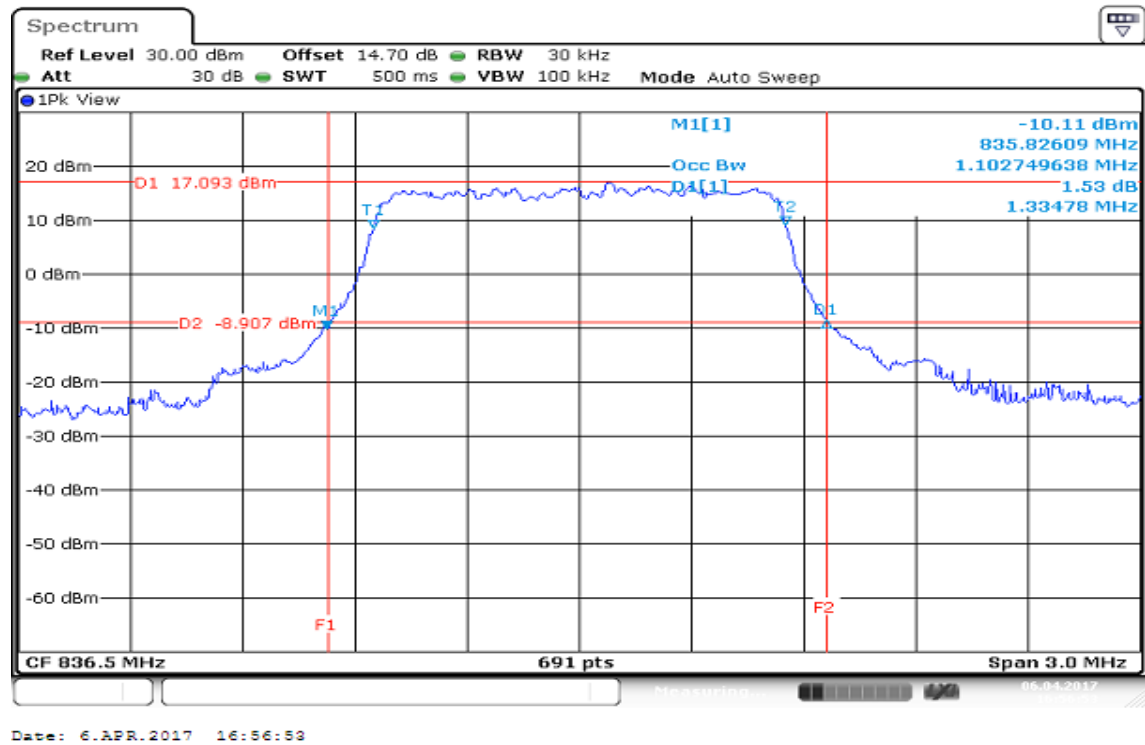
CHANNEL BANDWIDTH: 20MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
18900	1880.00	18.1765

LTE Band 5

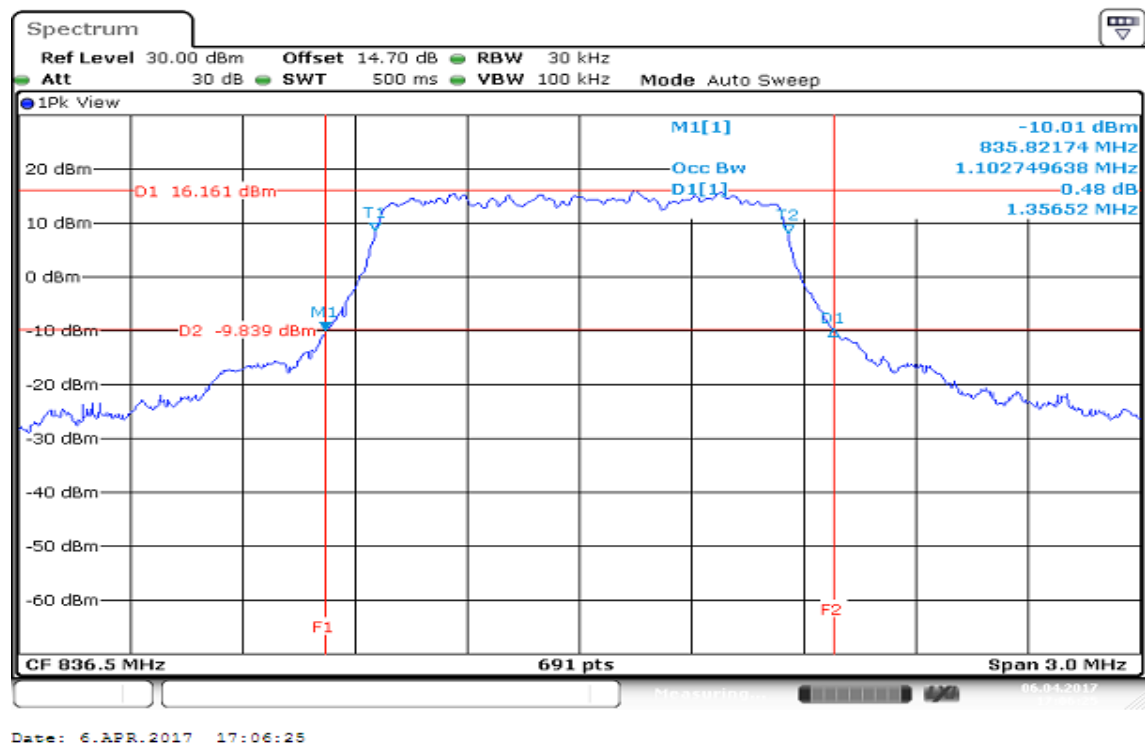
CHANNEL BANDWIDTH: 1.4MHz / QPSK

CH Mid



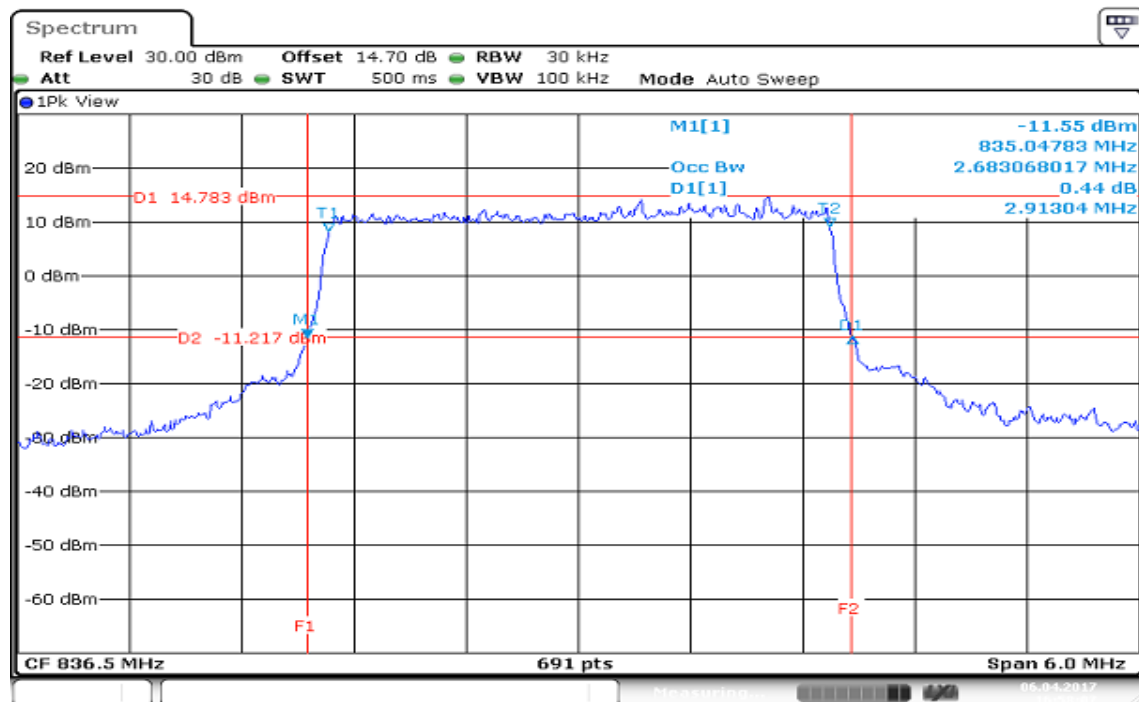
CHANNEL BANDWIDTH: 1.4MHz / 16QAM

CH Mid



CHANNEL BANDWIDTH: 3MHz / QPSK

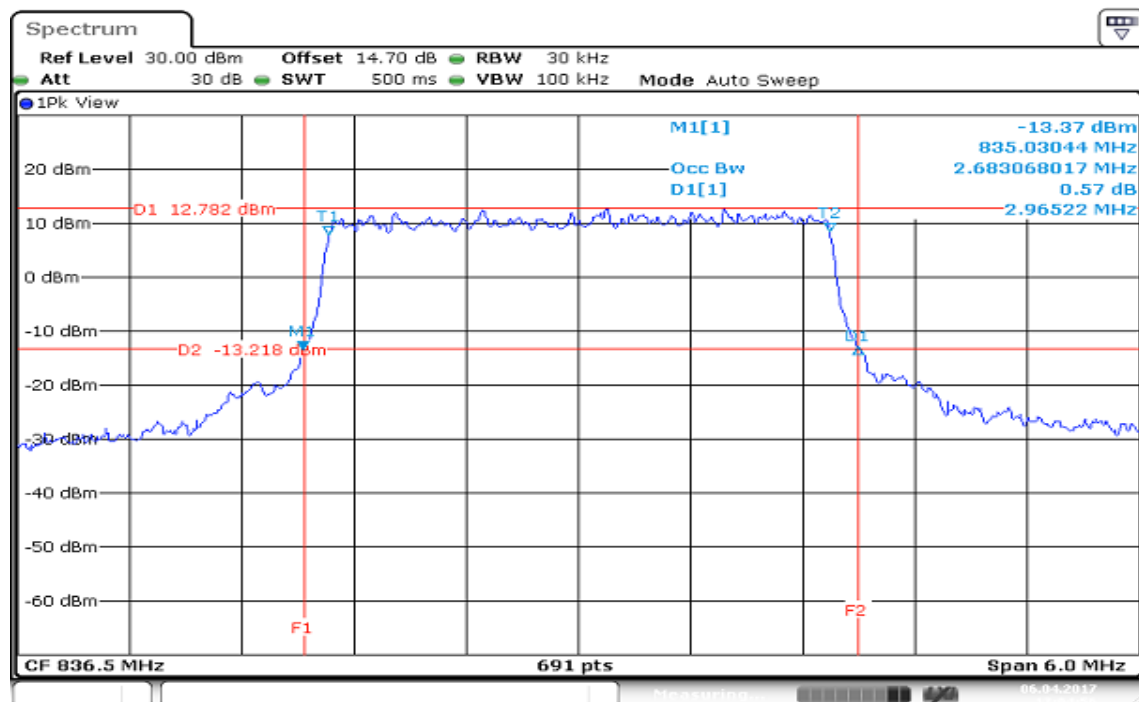
CH Mid



Date: 6.APR.2017 16:58:07

CHANNEL BANDWIDTH: 3MHz / 16QAM

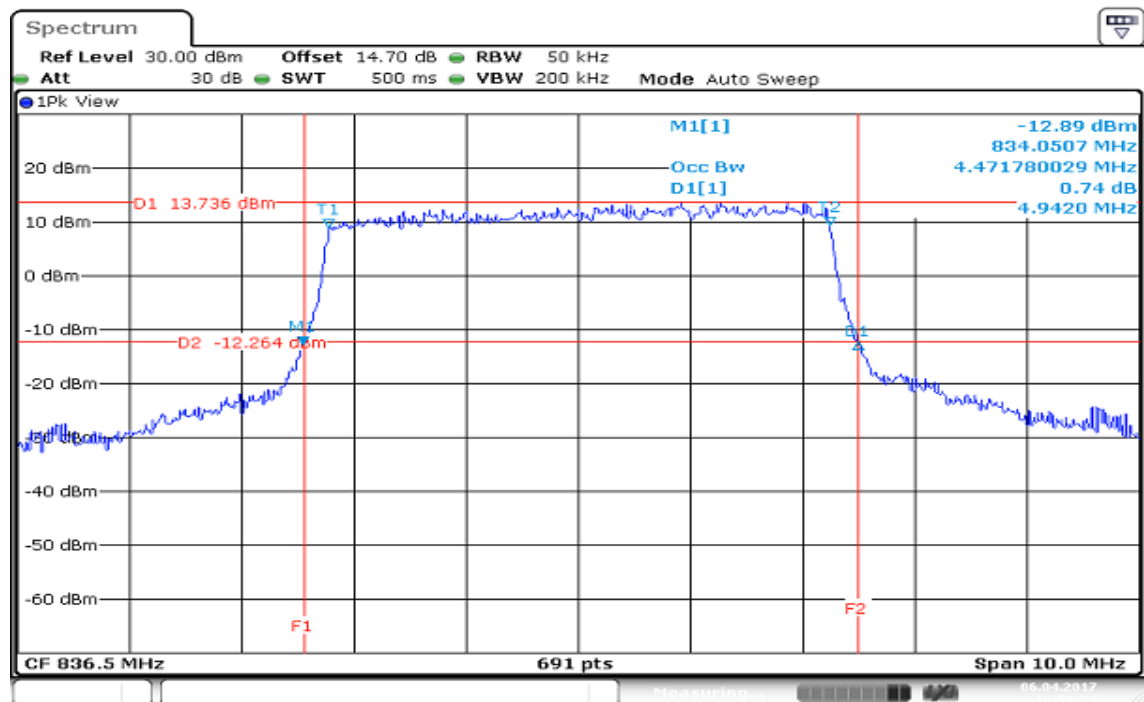
CH Mid



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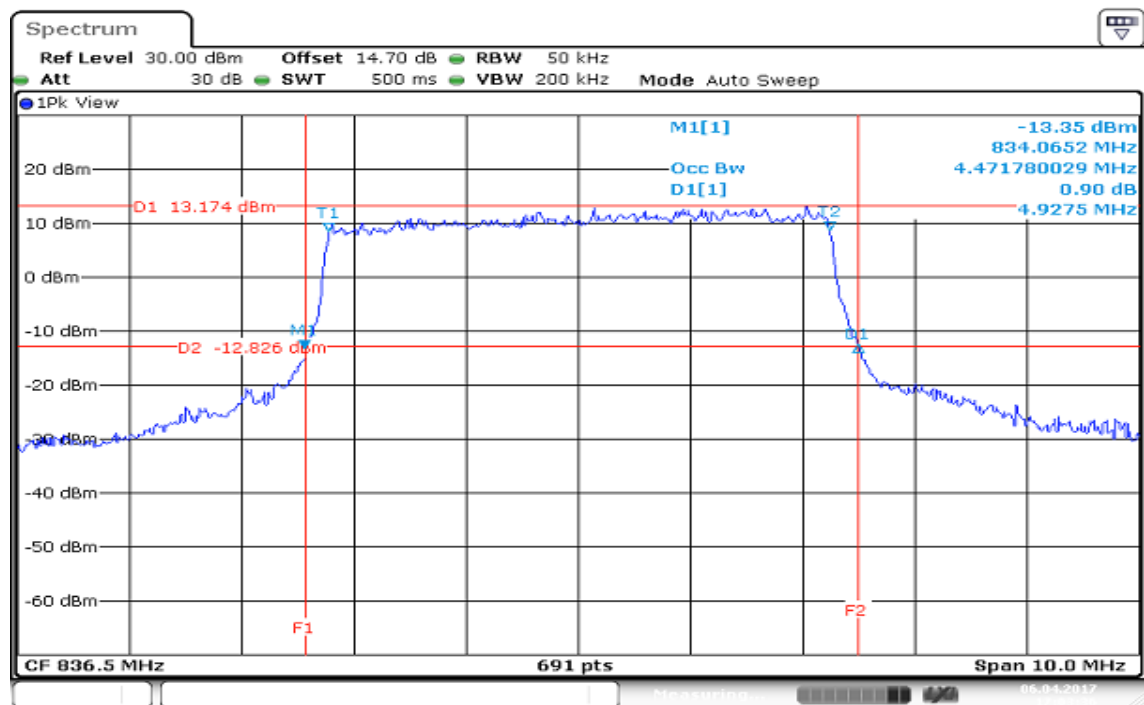
CHANNEL BANDWIDTH: 5MHz / QPSK

CH Mid



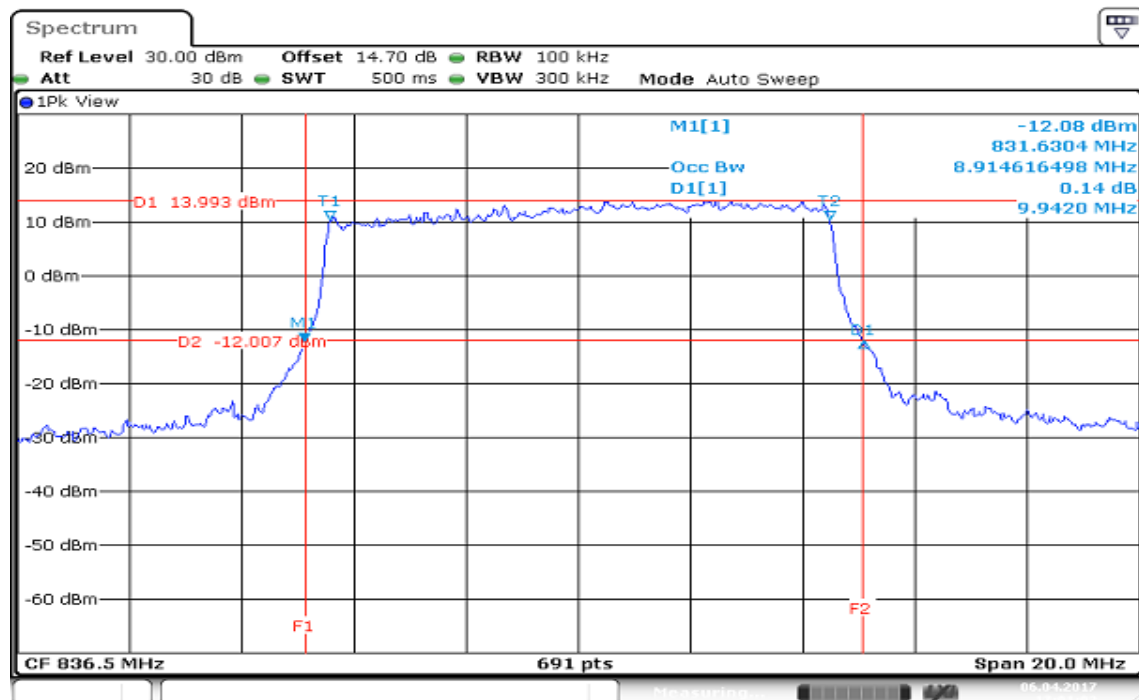
CHANNEL BANDWIDTH: 5MHz / 16QAM

CH Mid



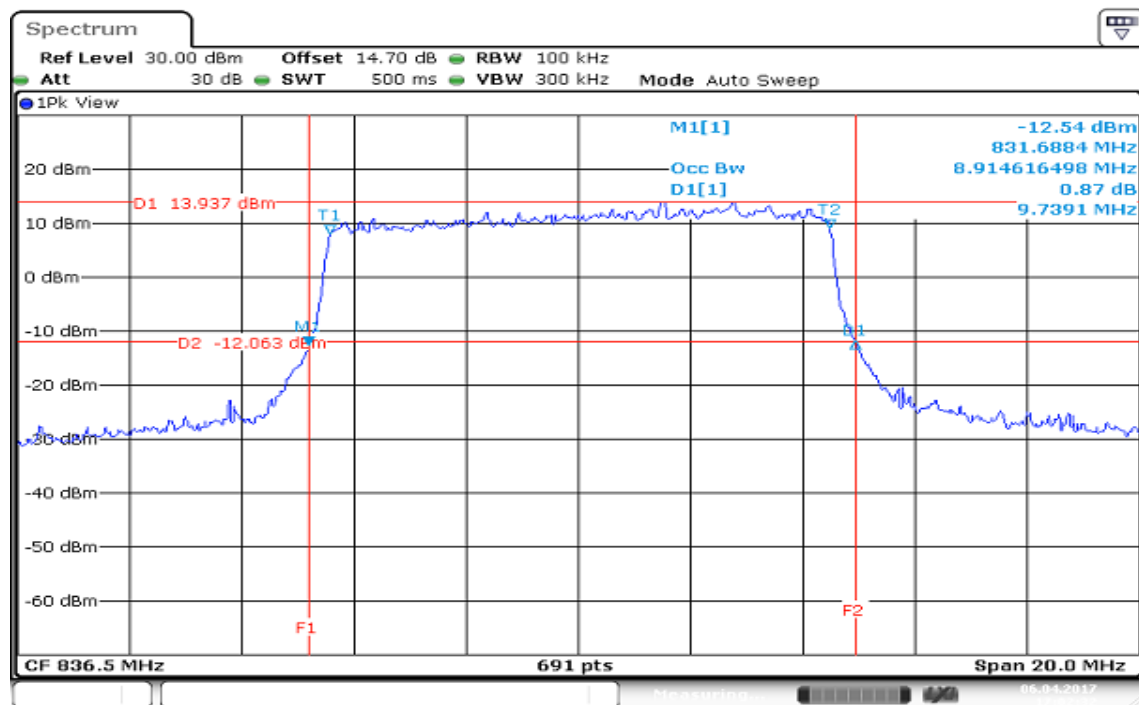
CHANNEL BANDWIDTH: 10MHz / QPSK

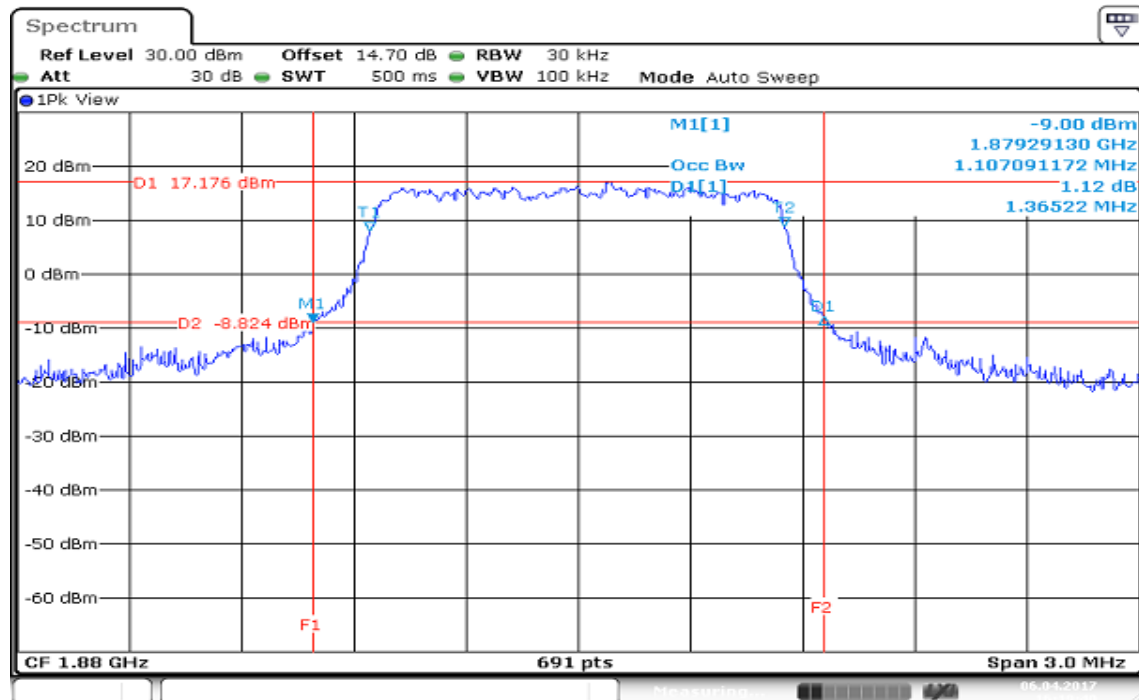
CH Mid



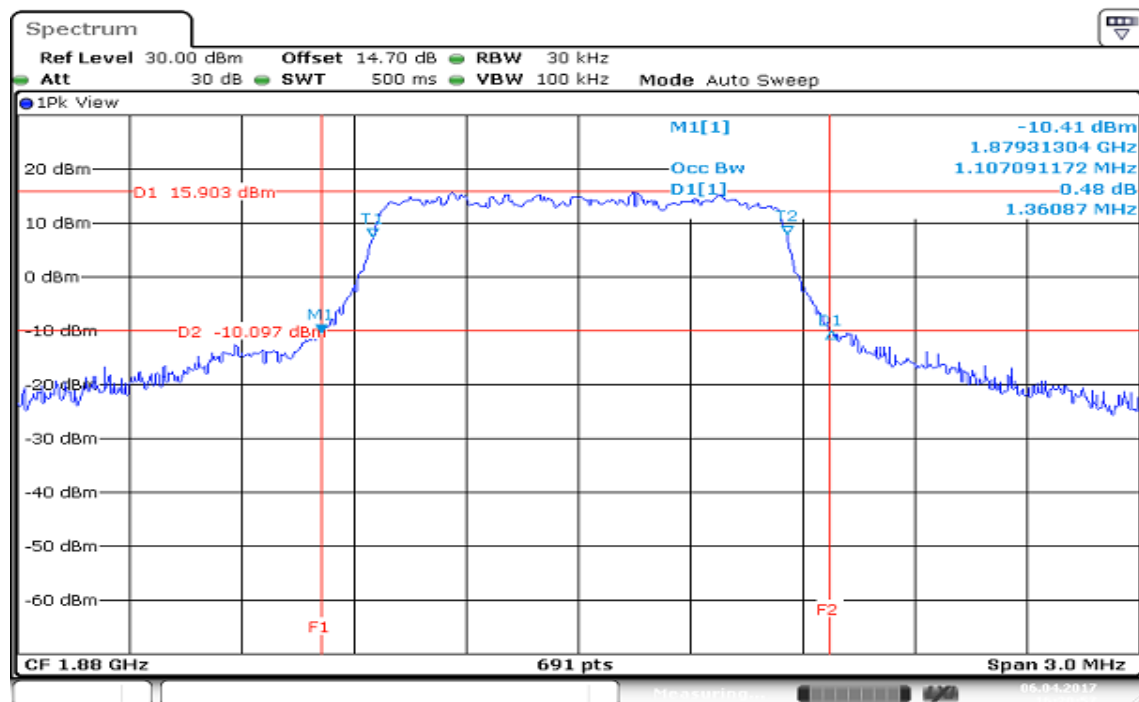
CHANNEL BANDWIDTH: 10MHz / 16QAM

CH Mid



LTE Band 2**CHANNEL BANDWIDTH: 1.4MHz / QPSK****CH Mid**

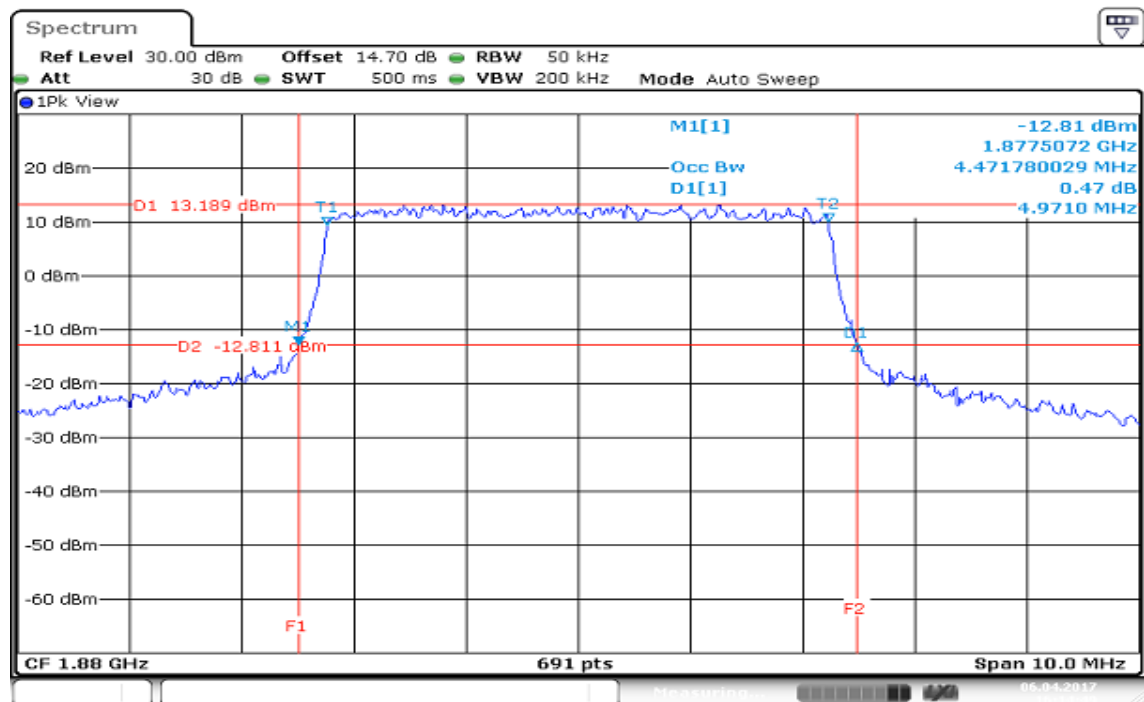
Date: 6.APR.2017 16:19:41

CHANNEL BANDWIDTH: 1.4MHz / 16QAM**CH Mid**

Date: 6.APR.2017 16:20:58

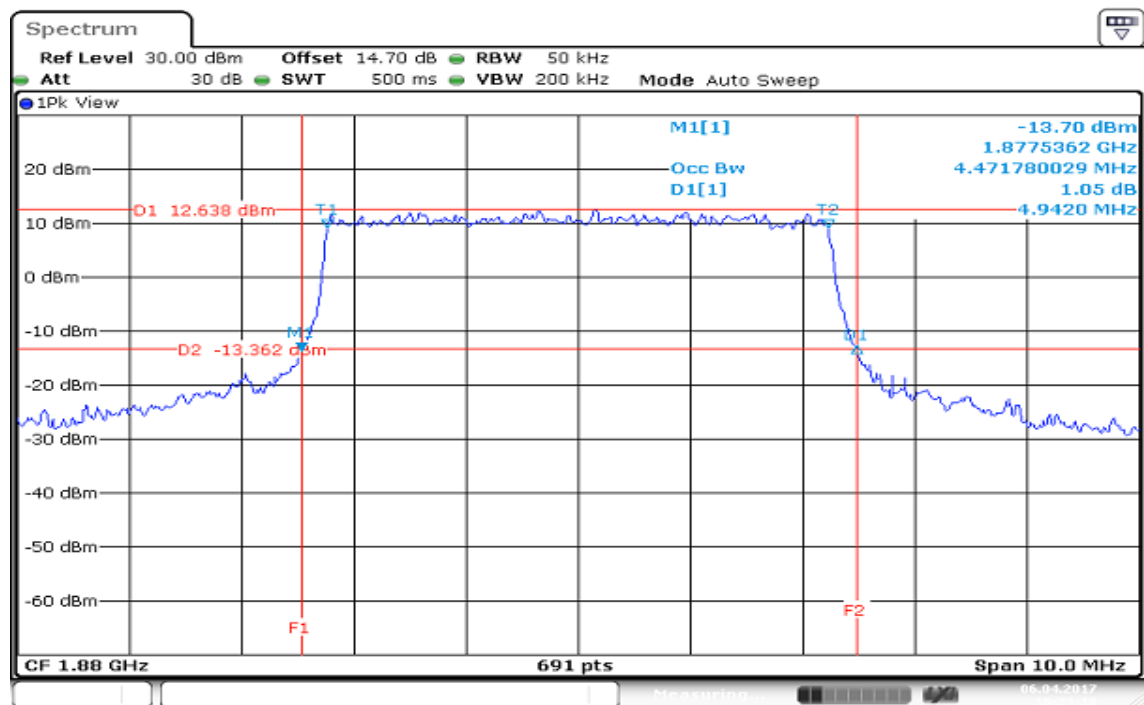
CHANNEL BANDWIDTH: 5MHz / QPSK

CH Mid



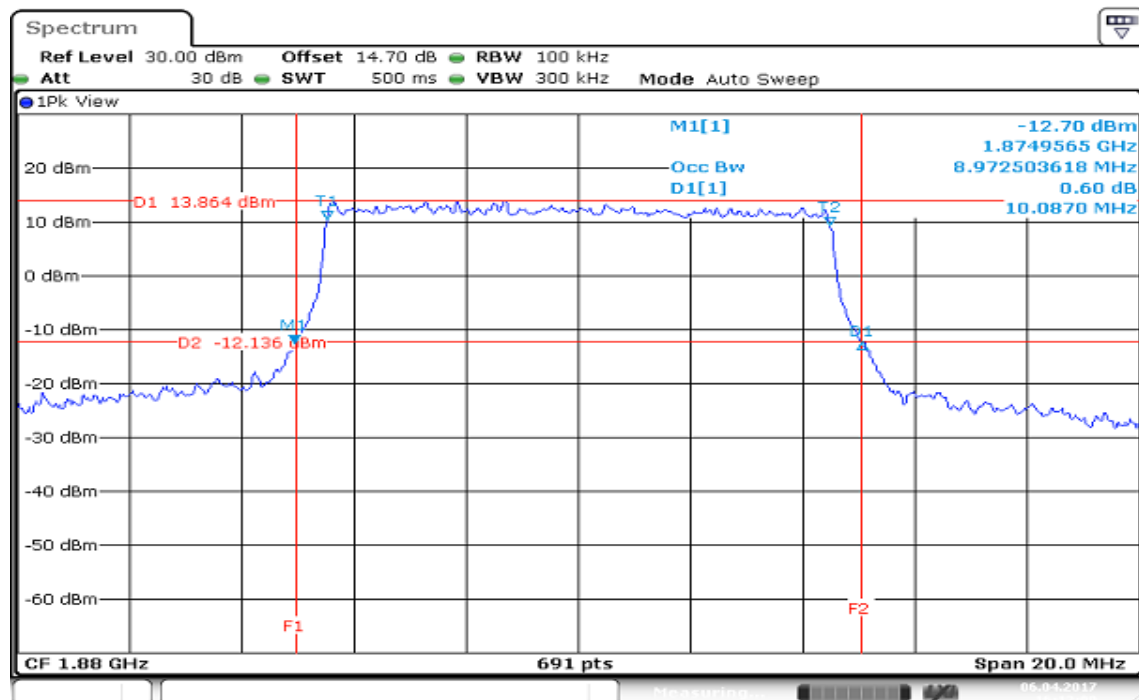
CHANNEL BANDWIDTH: 5MHz / 16QAM

CH Mid



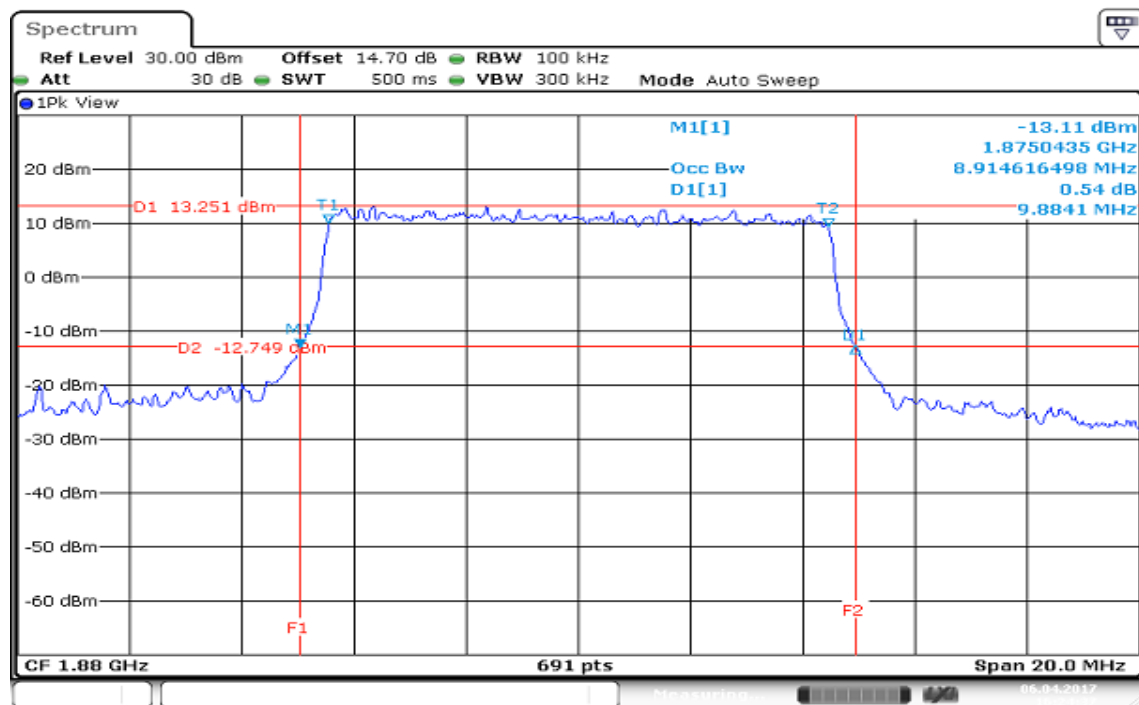
CHANNEL BANDWIDTH: 10MHz / QPSK

CH Mid



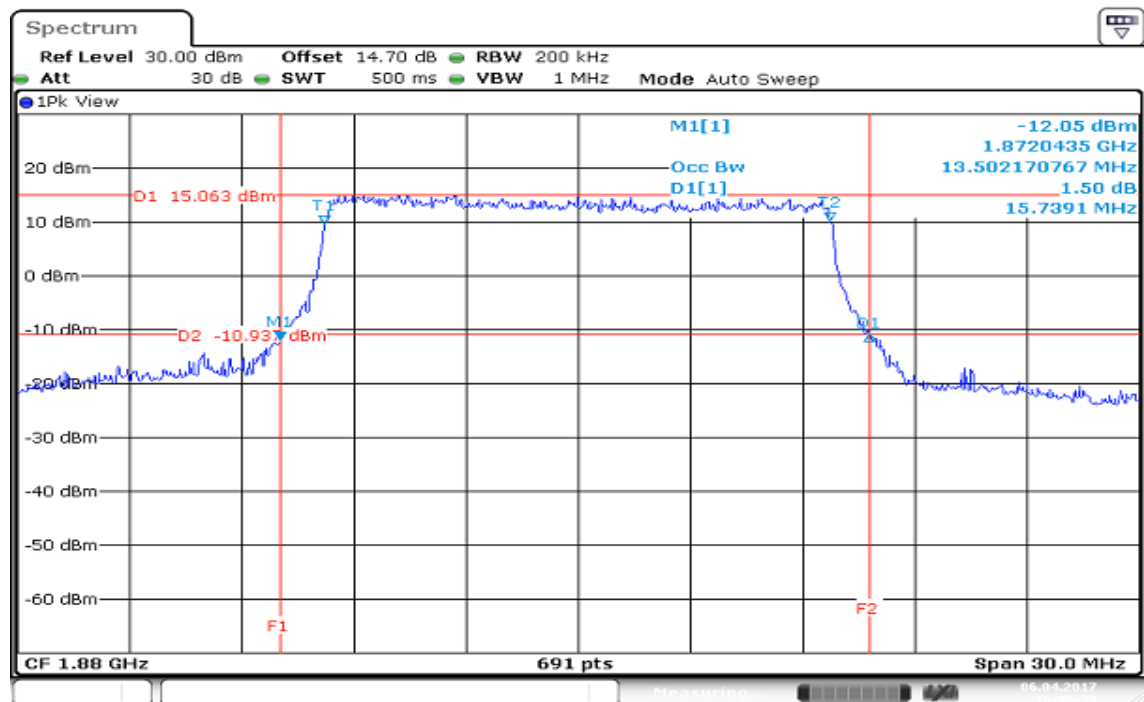
CHANNEL BANDWIDTH: 10MHz / 16QAM

CH Mid



CHANNEL BANDWIDTH: 15MHz / QPSK

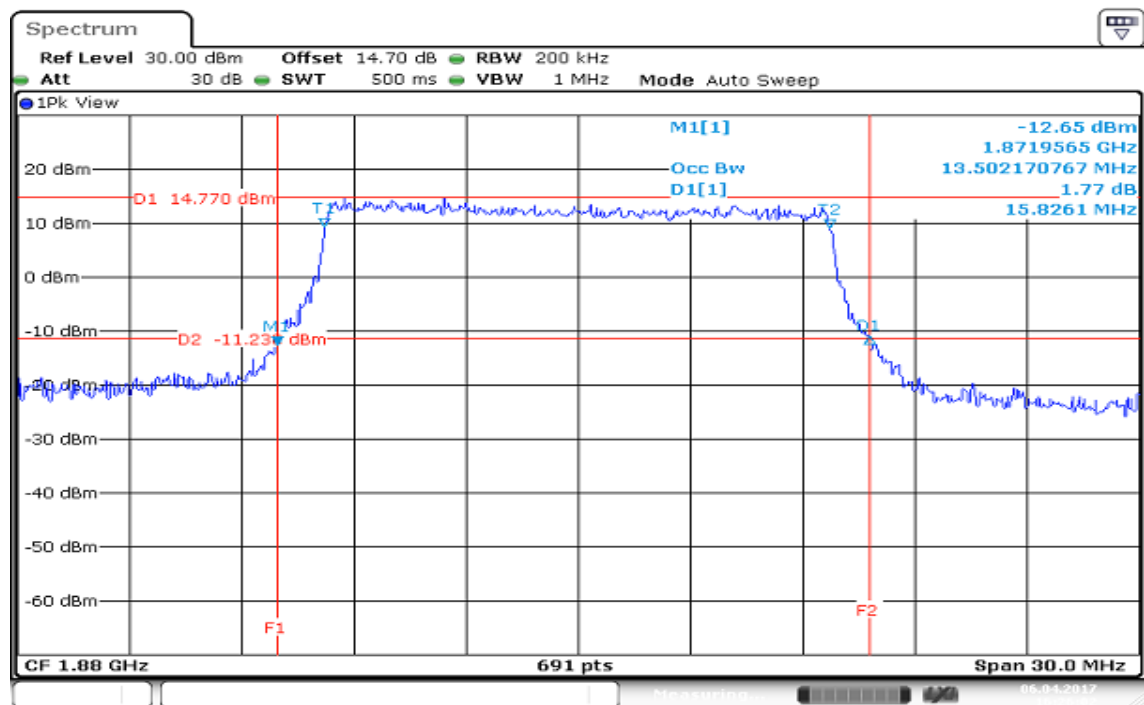
CH Mid



Date: 6.APR.2017 16:06:38

CHANNEL BANDWIDTH: 15MHz / 16QAM

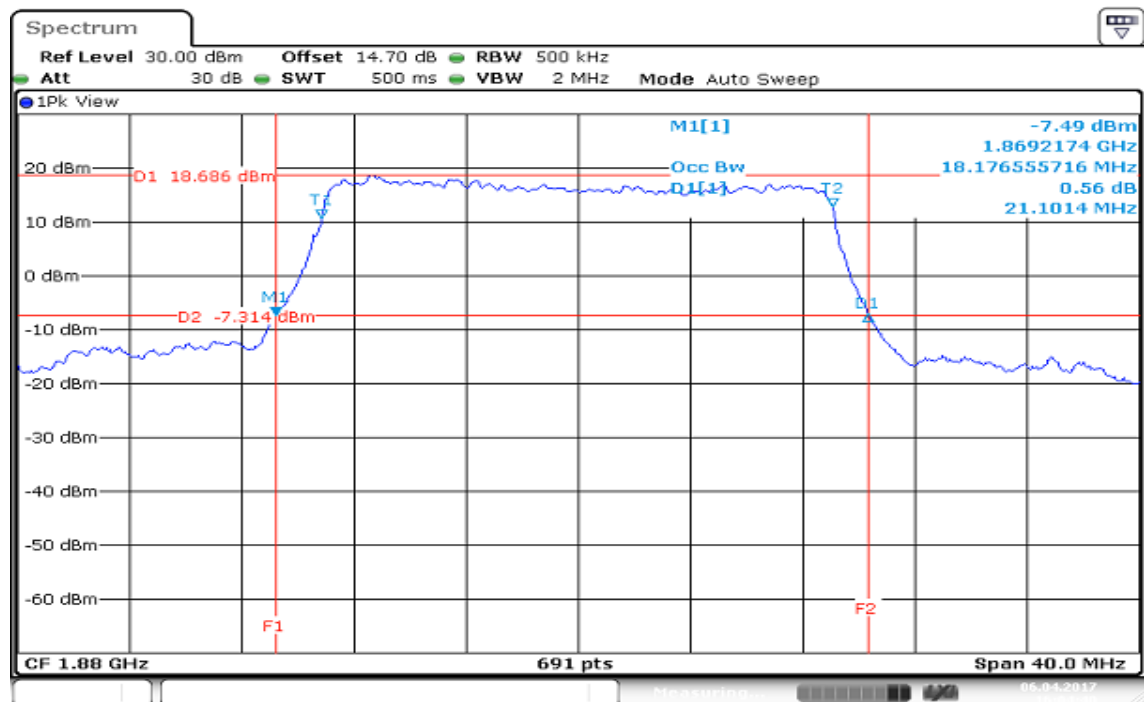
CH Mid



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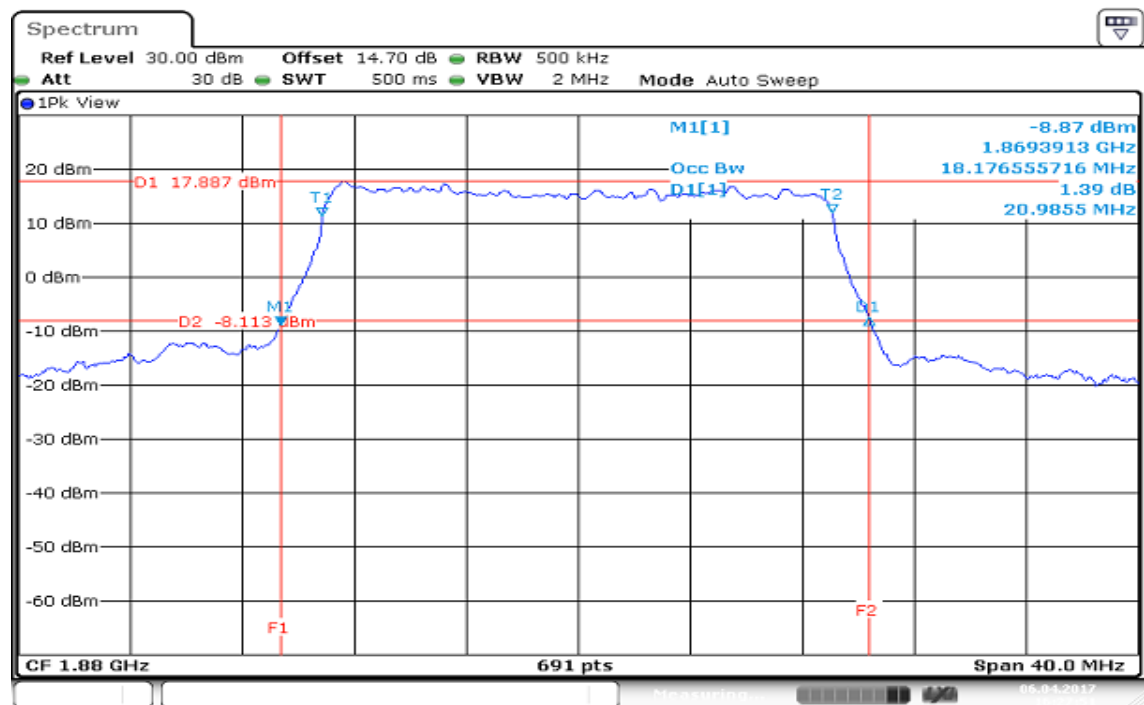
CHANNEL BANDWIDTH: 20MHz / QPSK

CH Mid



CHANNEL BANDWIDTH: 20MHz / 16QAM

CH Mid



7.5 PEAK TO AVERAGE POWER RATIO

Limit

In measuring transmissions in this band using an average power technique, the peak to average power ratio (PAPR) of the transmission may not exceed 13 dB.

Test Procedures

1. According to RSS-132 section 5.4 and RSS-133 section 6.4
2. The EUT was connect to spectrum analyzer and call box.
3. Set the CCDF function in spectrum analyzer.
4. The highest RF output power were measured and recorded the maximum PAPR level associated with a probability of 0.1%.
5. Record the Peak to Average Power Ratio.

Test Results

LTE Band 5

CHANNEL BANDWIDTH: 1.4MHz / QPSK / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
20525	836.5	5.19

CHANNEL BANDWIDTH: 1.4MHz / 16QAM / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
20525	836.5	6.43

CHANNEL BANDWIDTH: 3MHz / QPSK / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
20525	836.50	4.78

CHANNEL BANDWIDTH: 3MHz / 16QAM / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
20525	836.50	5.88

CHANNEL BANDWIDTH: 5MHz / QPSK / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
20525	836.50	5.36

CHANNEL BANDWIDTH: 5MHz / 16QAM / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
20525	836.50	6.20

CHANNEL BANDWIDTH: 10MHz / QPSK / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
20525	836.50	4.87

CHANNEL BANDWIDTH: 10MHz / 16QAM / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
20525	836.50	5.83

CHANNEL BANDWIDTH: 1.4MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
20525	836.5	5.48

CHANNEL BANDWIDTH: 1.4MHz / 16QAM / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
20525	836.5	6.03

CHANNEL BANDWIDTH: 3MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
20525	836.50	4.99

CHANNEL BANDWIDTH: 3MHz / 16QAM / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
20525	836.50	5.97

CHANNEL BANDWIDTH: 5MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
20525	836.50	4.93

CHANNEL BANDWIDTH: 5MHz / 16QAM / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
20525	836.50	6.03

CHANNEL BANDWIDTH: 10MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
20525	836.50	4.87

CHANNEL BANDWIDTH: 10MHz / 16QAM / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
20525	836.50	5.74

LTE Band 2**CHANNEL BANDWIDTH: 1.4MHz / QPSK / 1RB**

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880	4.12

CHANNEL BANDWIDTH: 1.4MHz / 16QAM / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880	4.75

CHANNEL BANDWIDTH: 3MHz / QPSK / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	3.88

CHANNEL BANDWIDTH: 3MHz / 16QAM / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	4.78

CHANNEL BANDWIDTH: 5MHz / QPSK / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	3.86

CHANNEL BANDWIDTH: 5MHz / 16QAM / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	4.90

CHANNEL BANDWIDTH: 10MHz / QPSK / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	3.45

CHANNEL BANDWIDTH: 10MHz / 16QAM / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	4.00

CHANNEL BANDWIDTH: 15MHz / QPSK / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	3.13

CHANNEL BANDWIDTH: 15MHz / 16QAM / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	3.94

CHANNEL BANDWIDTH: 20MHz / QPSK / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	2.87

CHANNEL BANDWIDTH: 20MHz / 16QAM / 1RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	3.88

CHANNEL BANDWIDTH: 1.4MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880	4.46

CHANNEL BANDWIDTH: 1.4MHz / 16QAM / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880	5.45

CHANNEL BANDWIDTH: 3MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	4.58

CHANNEL BANDWIDTH: 3MHz / 16QAM / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	5.68

CHANNEL BANDWIDTH: 5MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	4.52

CHANNEL BANDWIDTH: 5MHz / 16QAM / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	5.51

CHANNEL BANDWIDTH: 10MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	4.67

CHANNEL BANDWIDTH: 10MHz / 16QAM / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	6.35

CHANNEL BANDWIDTH: 15MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	4.75

CHANNEL BANDWIDTH: 15MHz / 16QAM / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	5.57

CHANNEL BANDWIDTH: 20MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	4.81

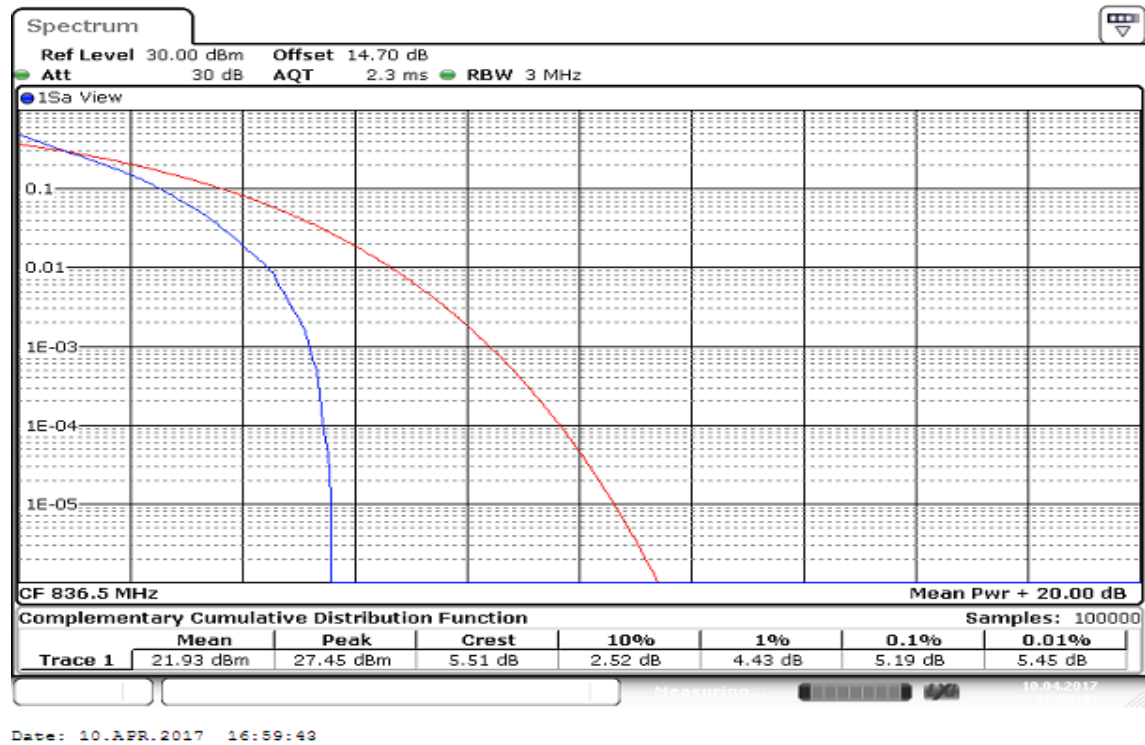
CHANNEL BANDWIDTH: 20MHz / 16QAM / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
18900	1880.00	5.71

LTE Band 5

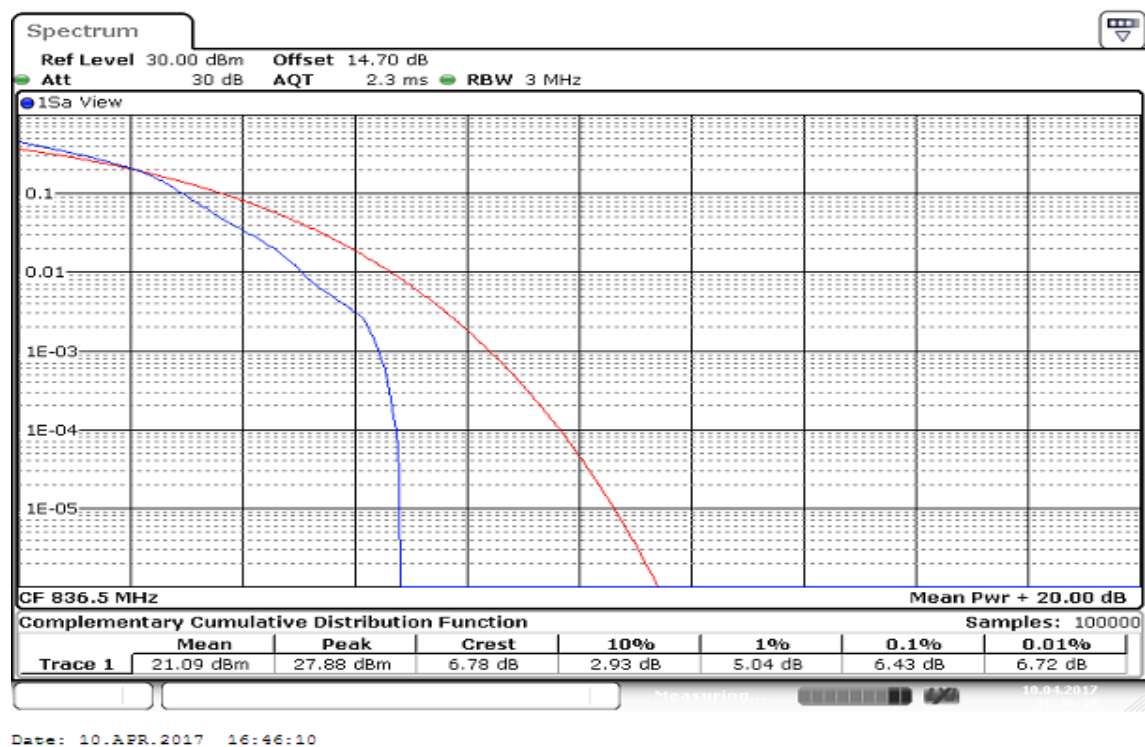
CHANNEL BANDWIDTH: 1.4MHz / QPSK / 1RB

CH Mid



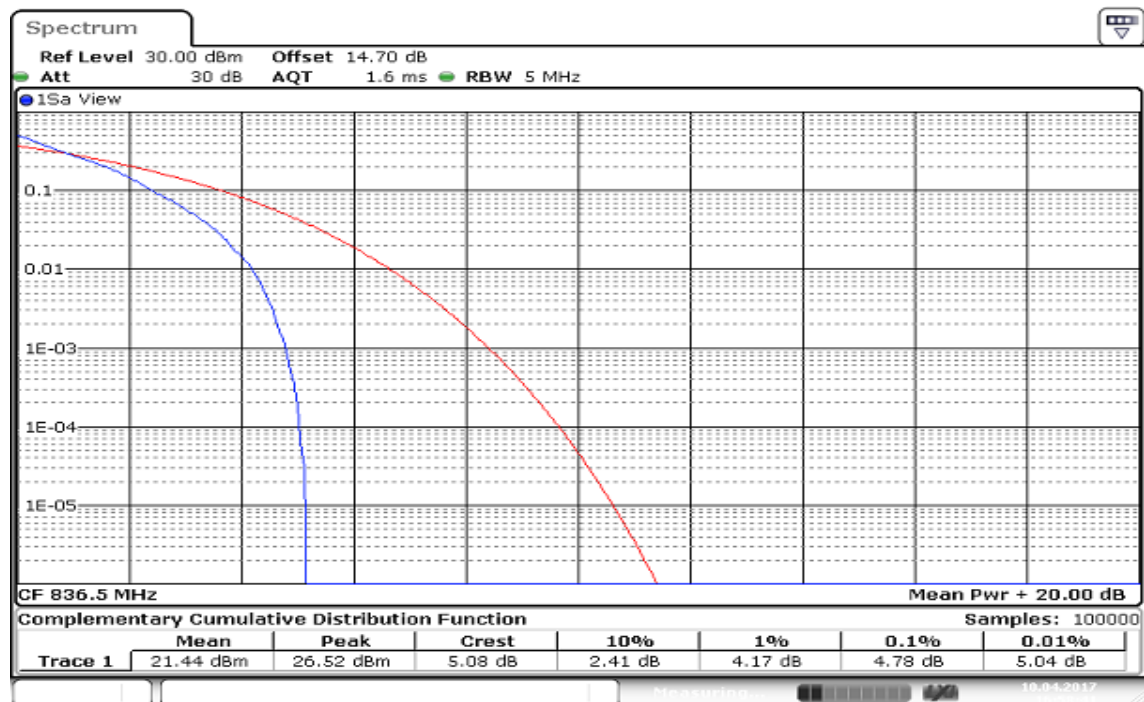
CHANNEL BANDWIDTH: 1.4MHz / 16QAM / 1RB

CH Mid



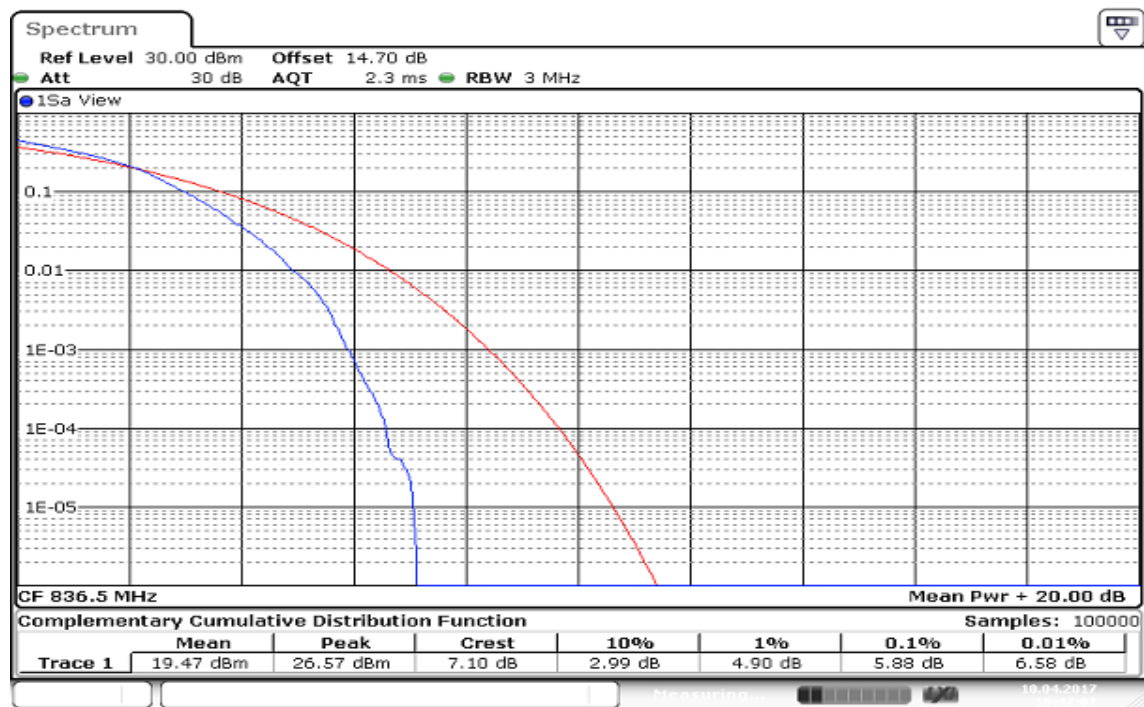
CHANNEL BANDWIDTH: 3MHz / QPSK / 1RB

CH Mid



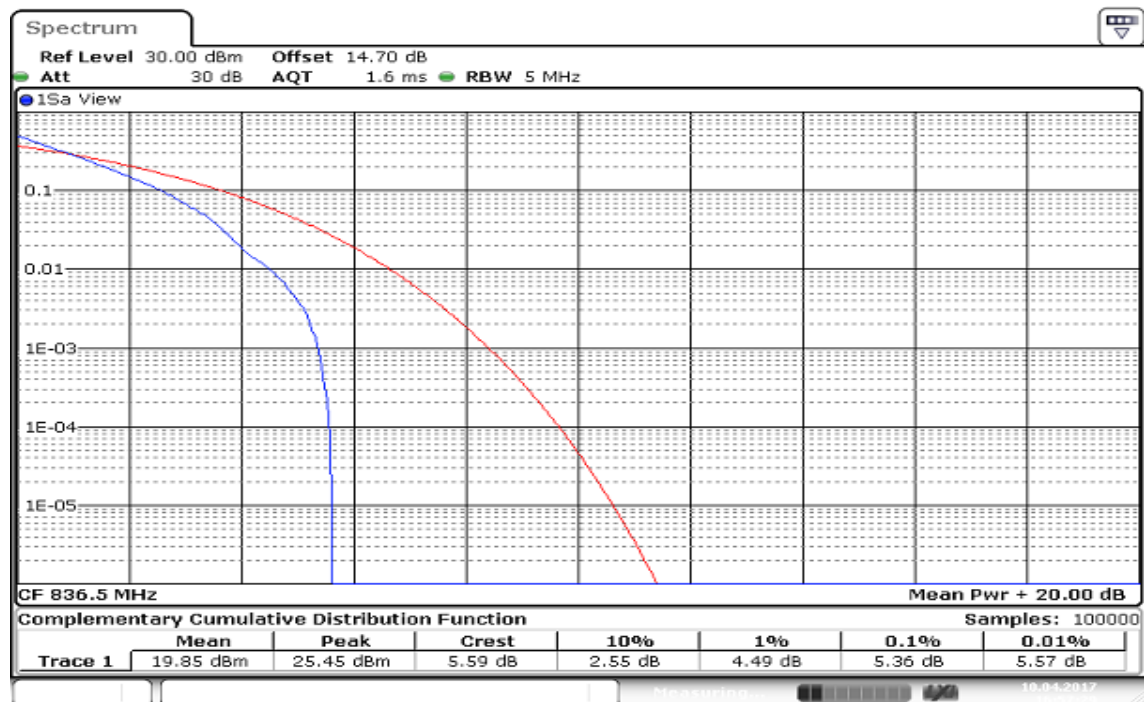
CHANNEL BANDWIDTH: 3MHz / 16QAM / 1RB

CH Mid



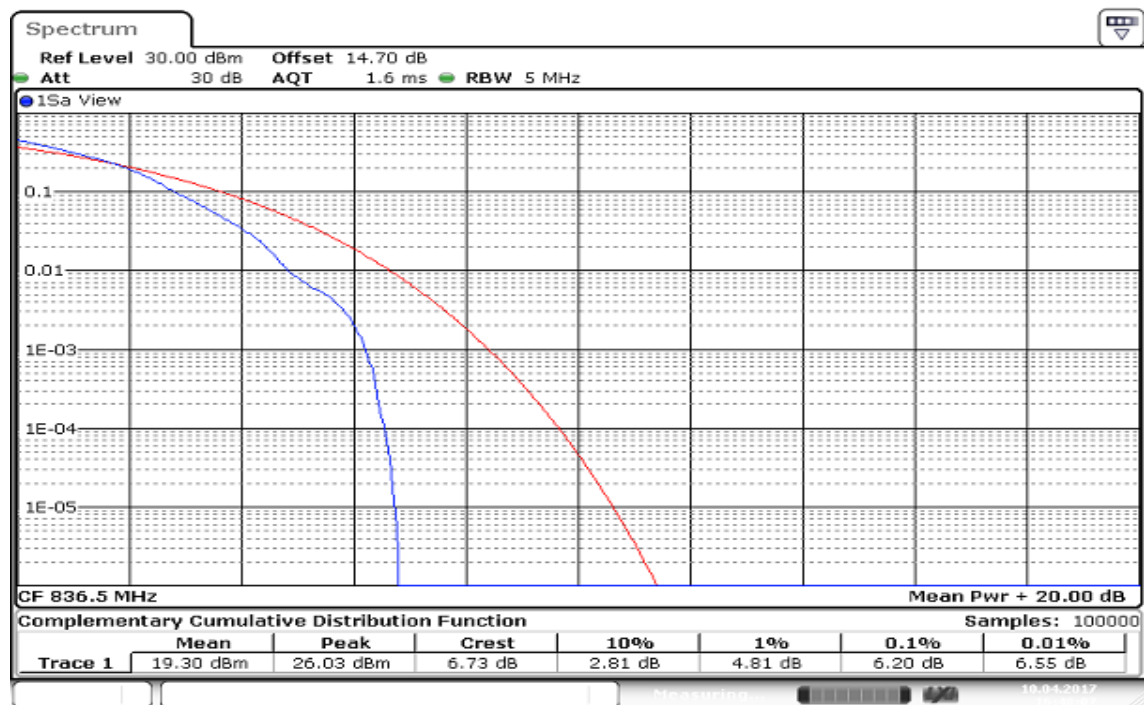
CHANNEL BANDWIDTH: 5MHz / QPSK / 1RB

CH Mid



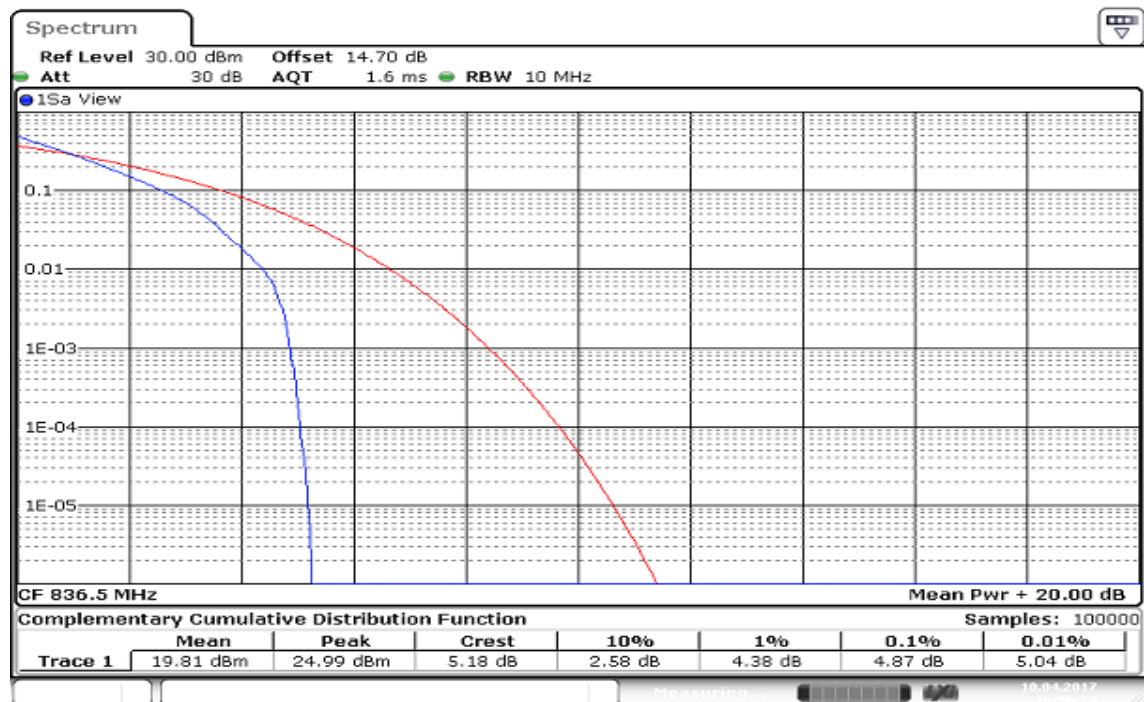
CHANNEL BANDWIDTH: 5MHz / 16QAM / 1RB

CH Mid



CHANNEL BANDWIDTH: 10MHz / QPSK / 1RB

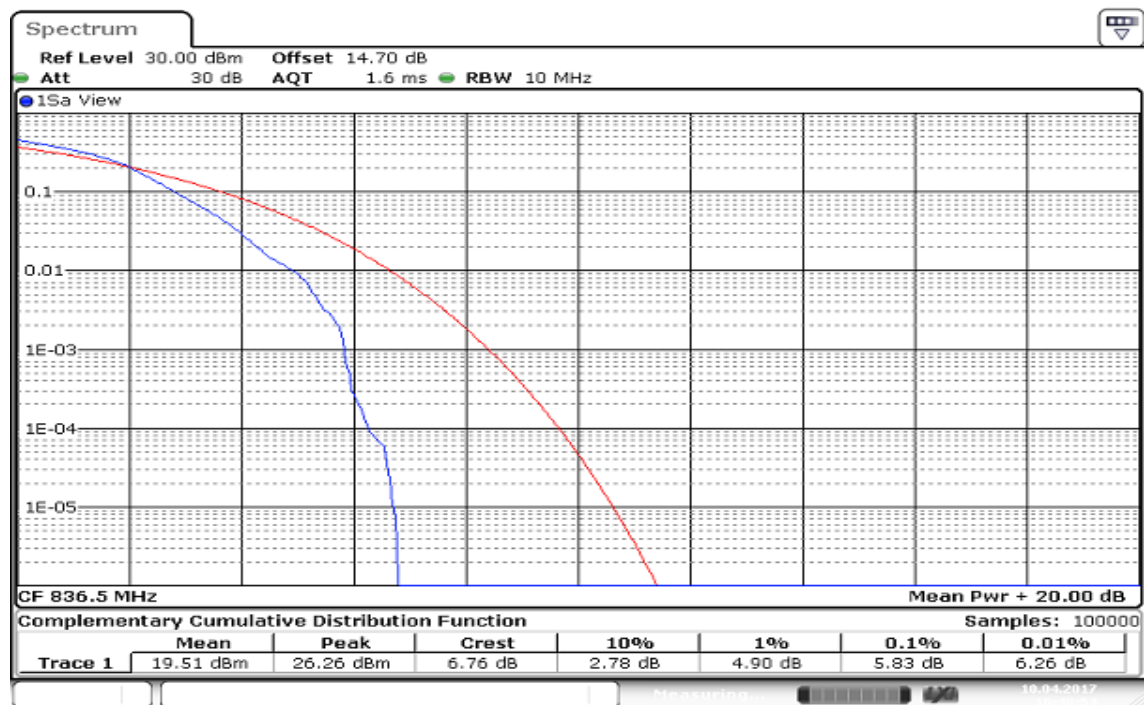
CH Mid



Date: 10.APR.2017 16:56:14

CHANNEL BANDWIDTH: 10MHz / 16QAM / 1RB

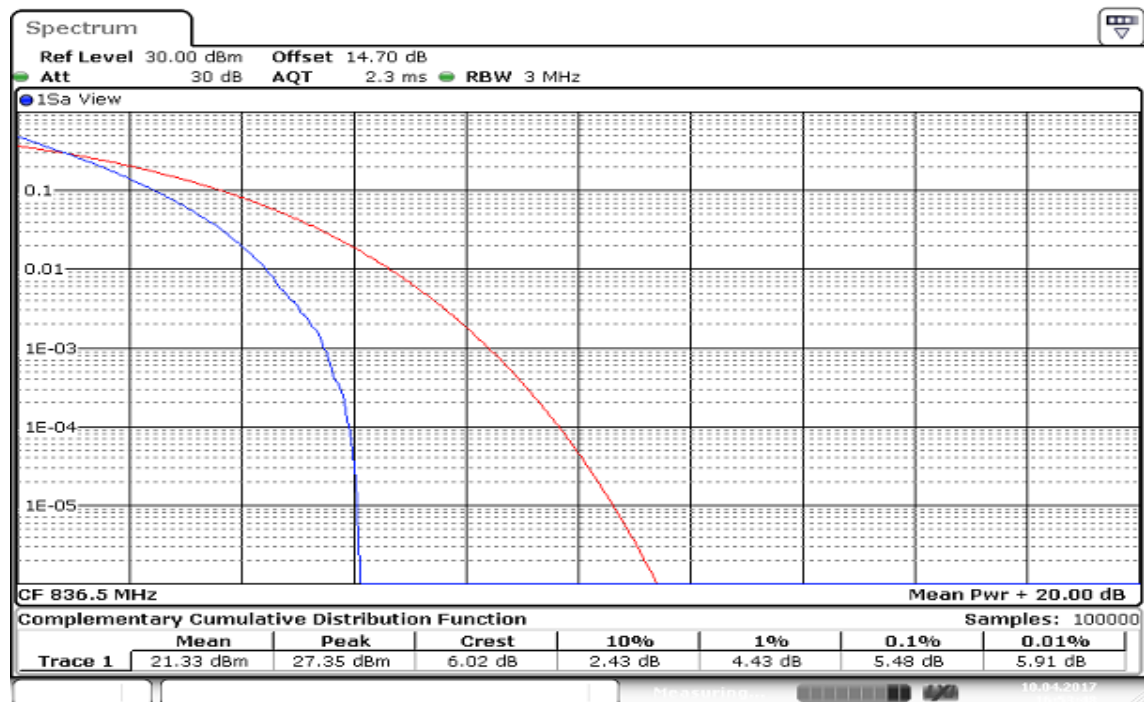
CH Mid



Date: 10.APR.2017 16:48:54

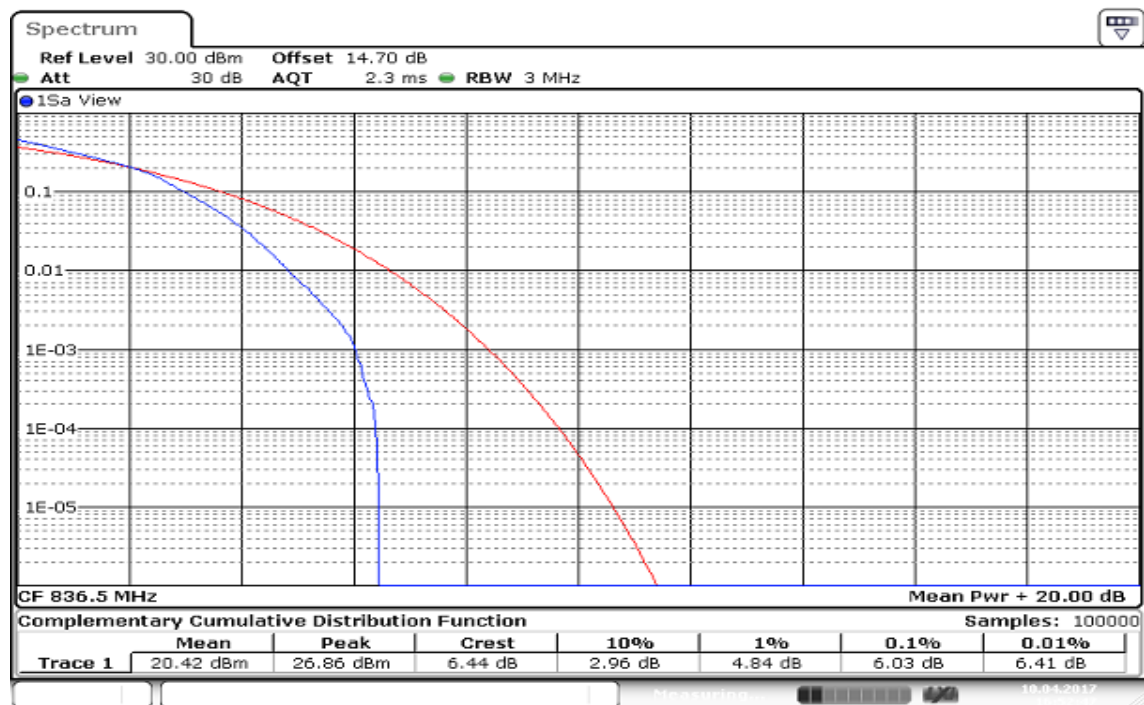
CHANNEL BANDWIDTH: 1.4MHz / QPSK / 100%RB

CH Mid



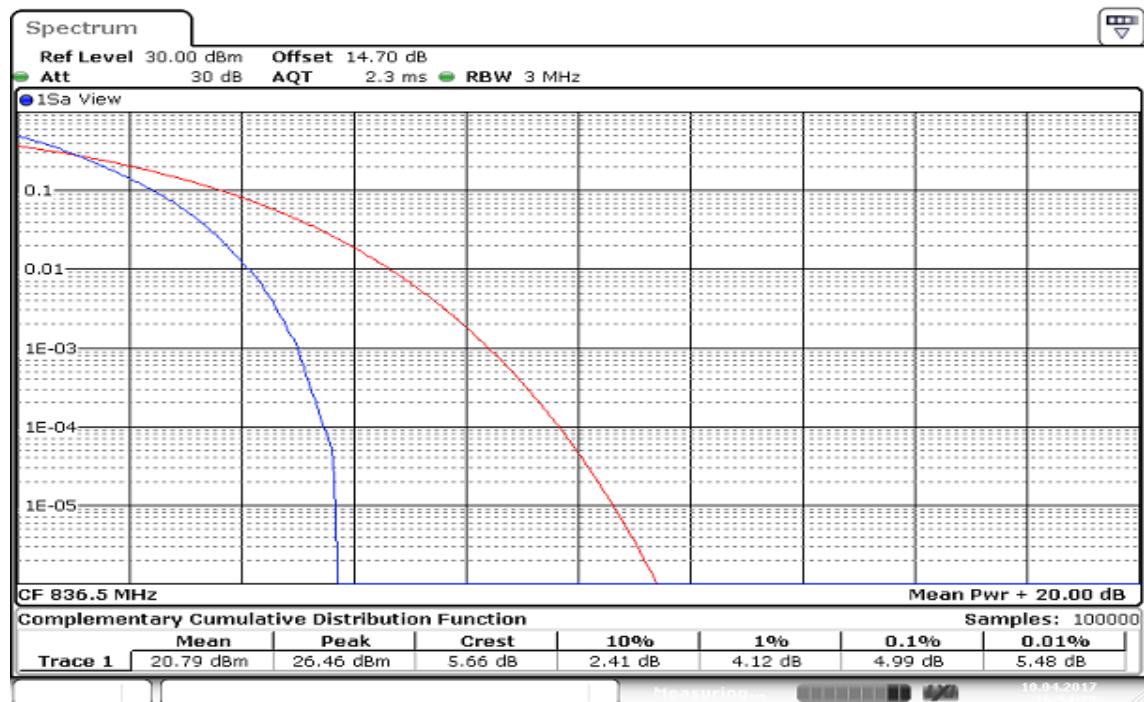
CHANNEL BANDWIDTH: 1.4MHz / 16QAM / 100%RB

CH Mid



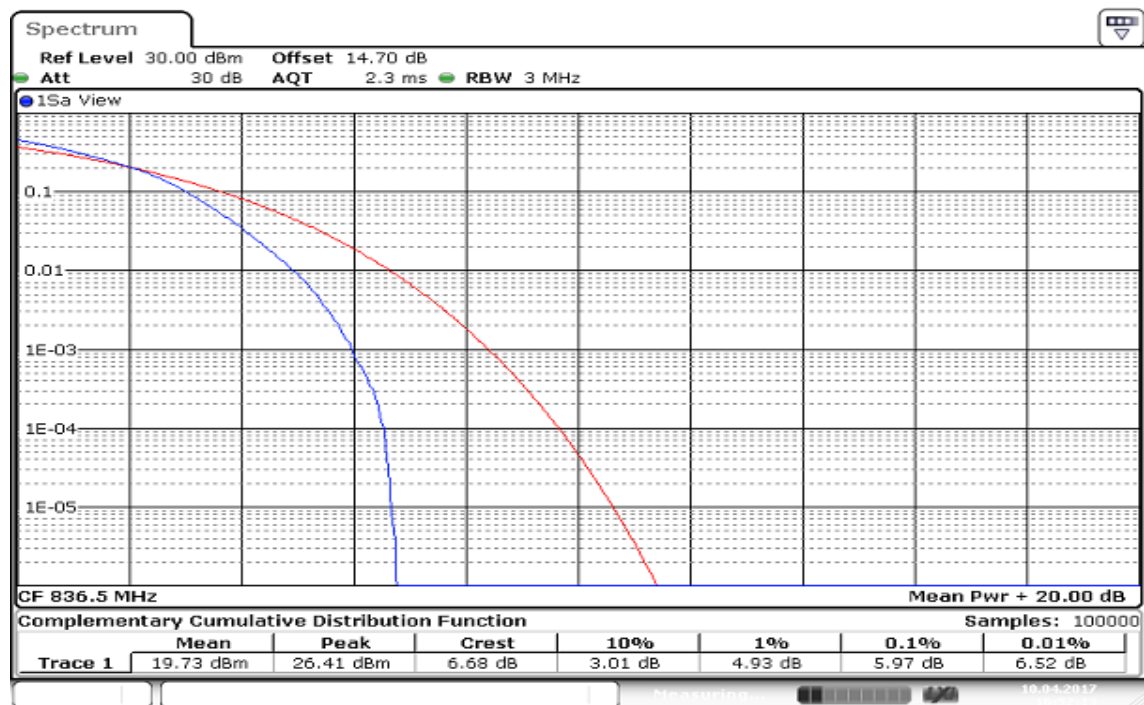
CHANNEL BANDWIDTH: 3MHz / QPSK / 100%RB

CH Mid



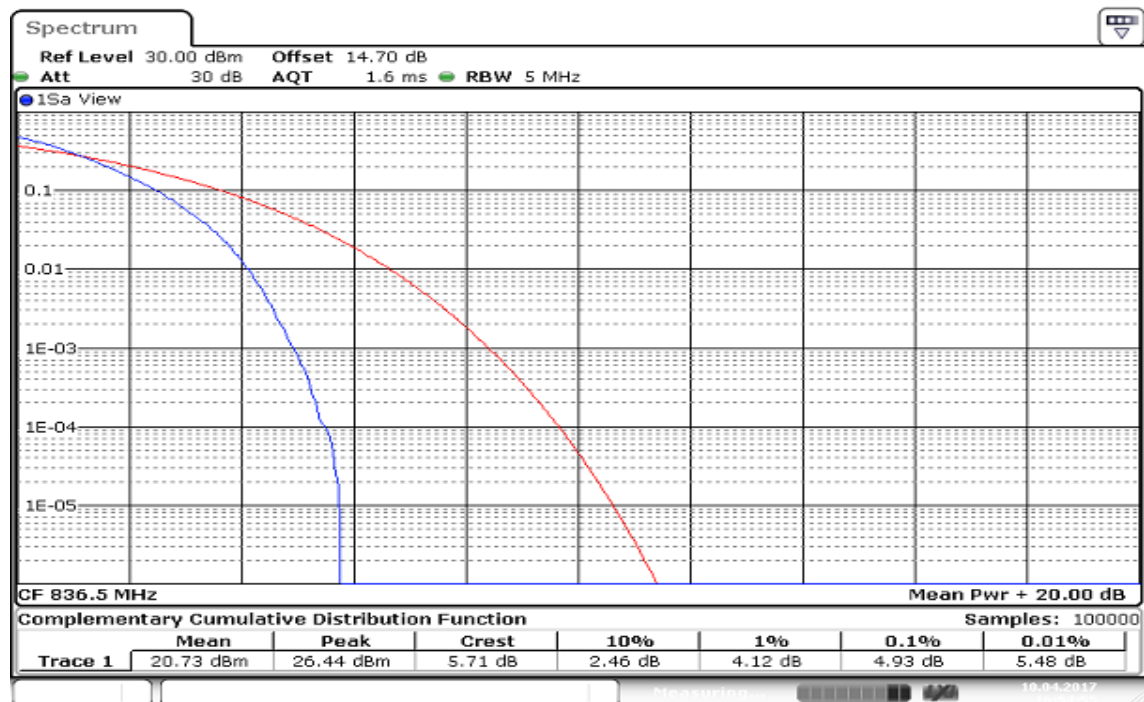
CHANNEL BANDWIDTH: 3MHz / 16QAM / 100%RB

CH Mid



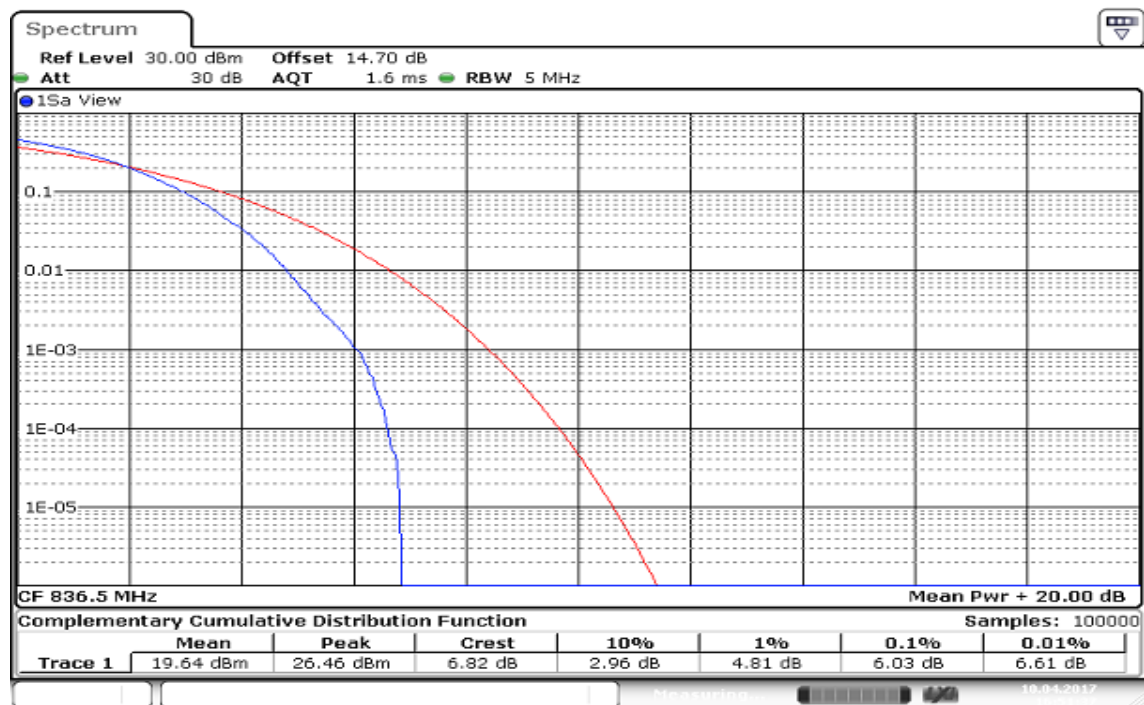
CHANNEL BANDWIDTH: 5MHz / QPSK / 100%RB

CH Mid



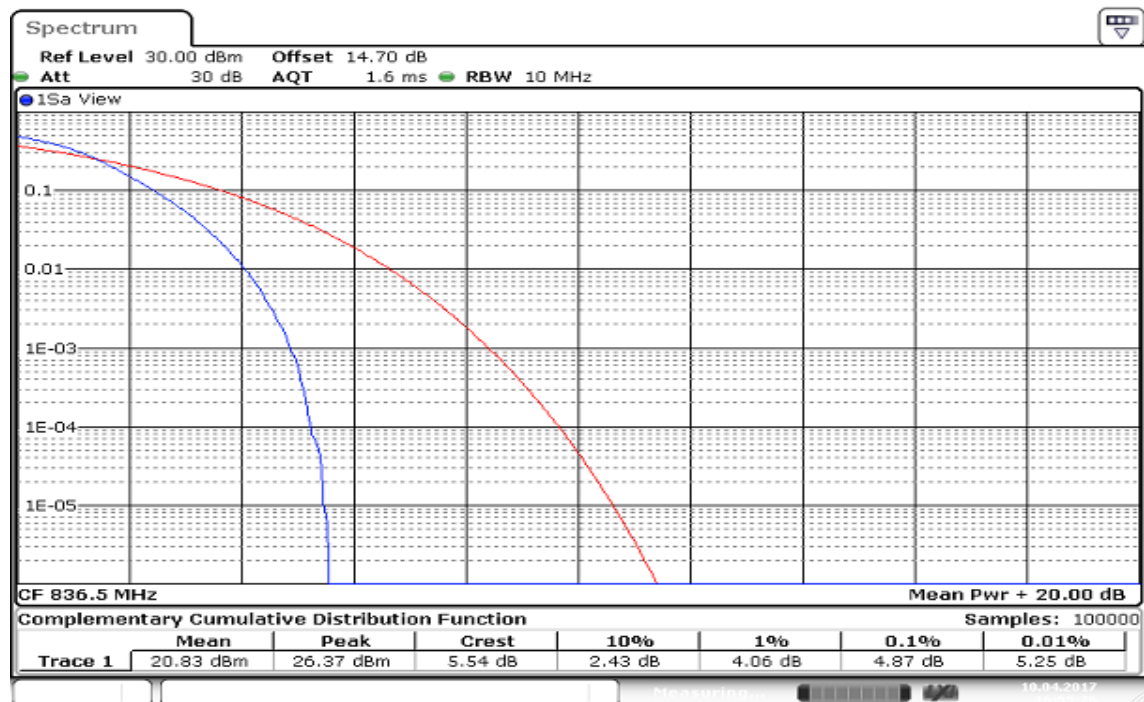
CHANNEL BANDWIDTH: 5MHz / 16QAM / 100%RB

CH Mid



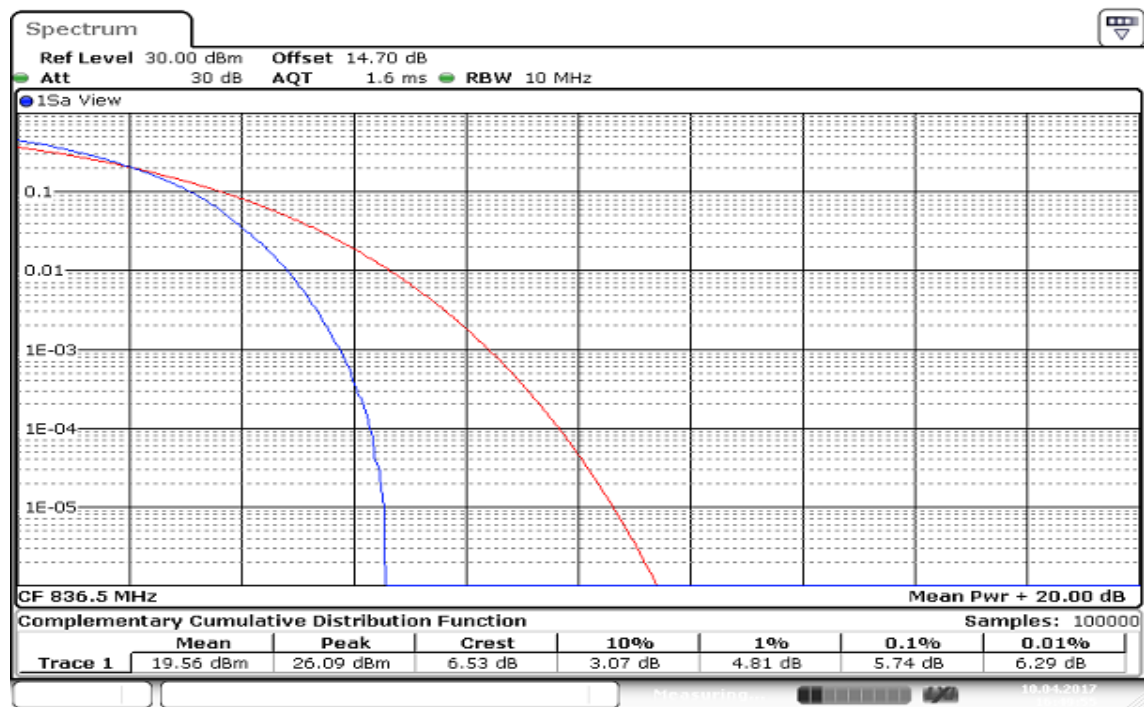
CHANNEL BANDWIDTH: 10MHz / QPSK / 100%RB

CH Mid



CHANNEL BANDWIDTH: 10MHz / 16QAM / 100%RB

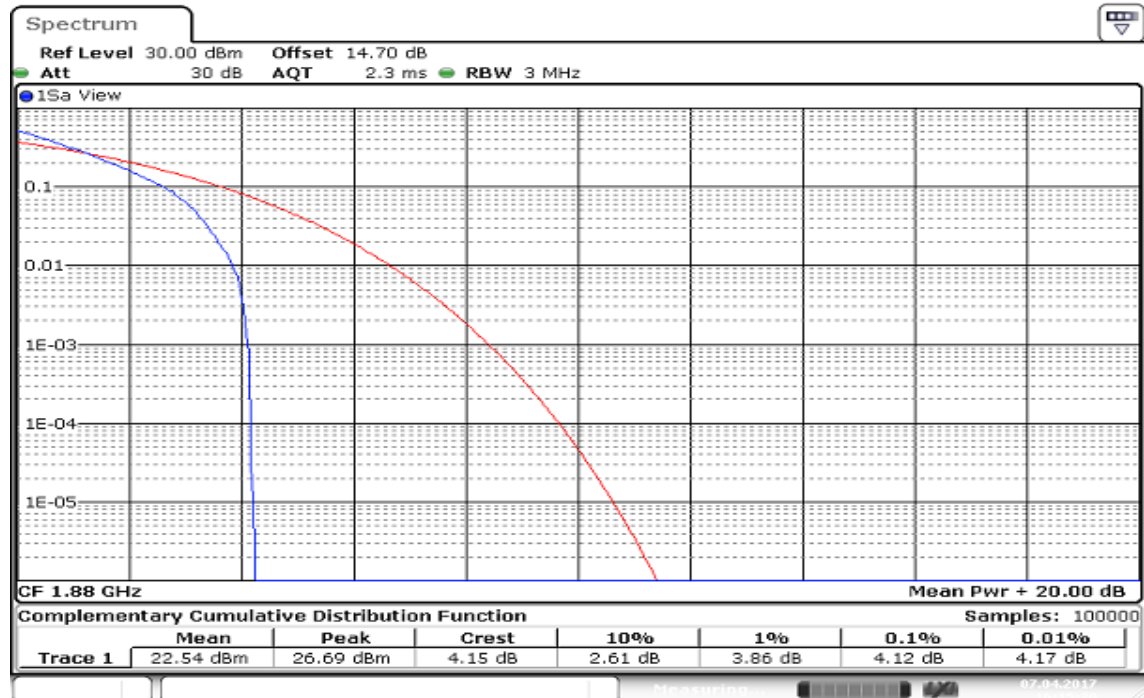
CH Mid



LTE Band 2

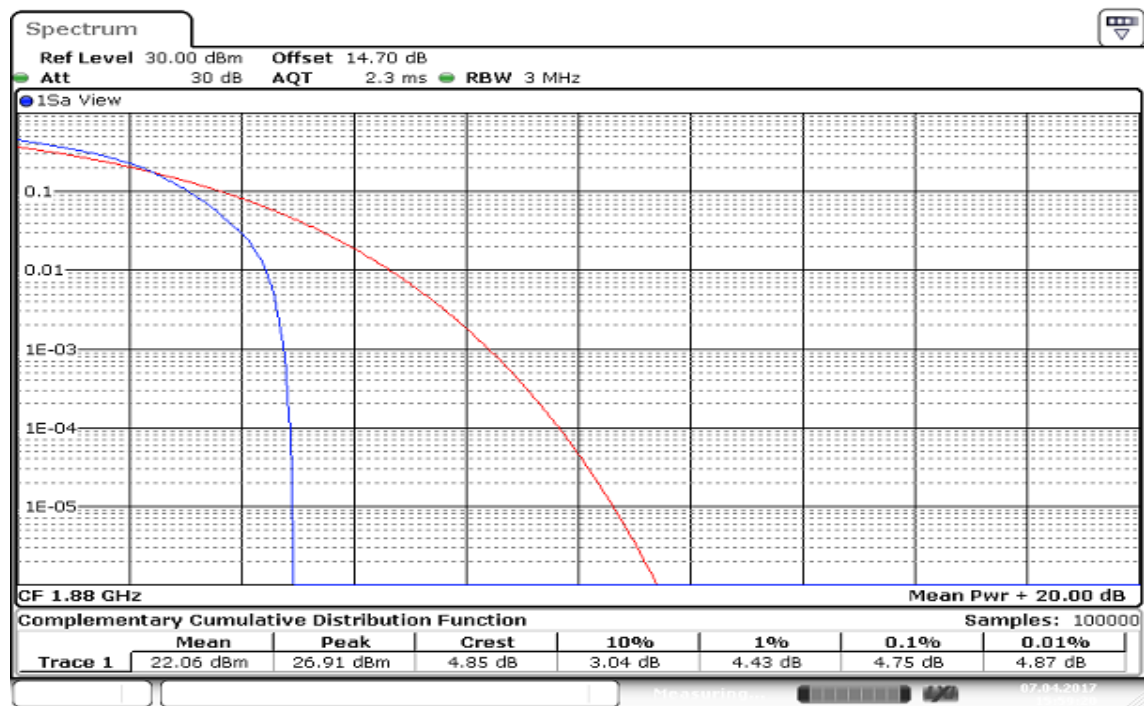
CHANNEL BANDWIDTH: 1.4MHz / QPSK / 1RB

CH Mid



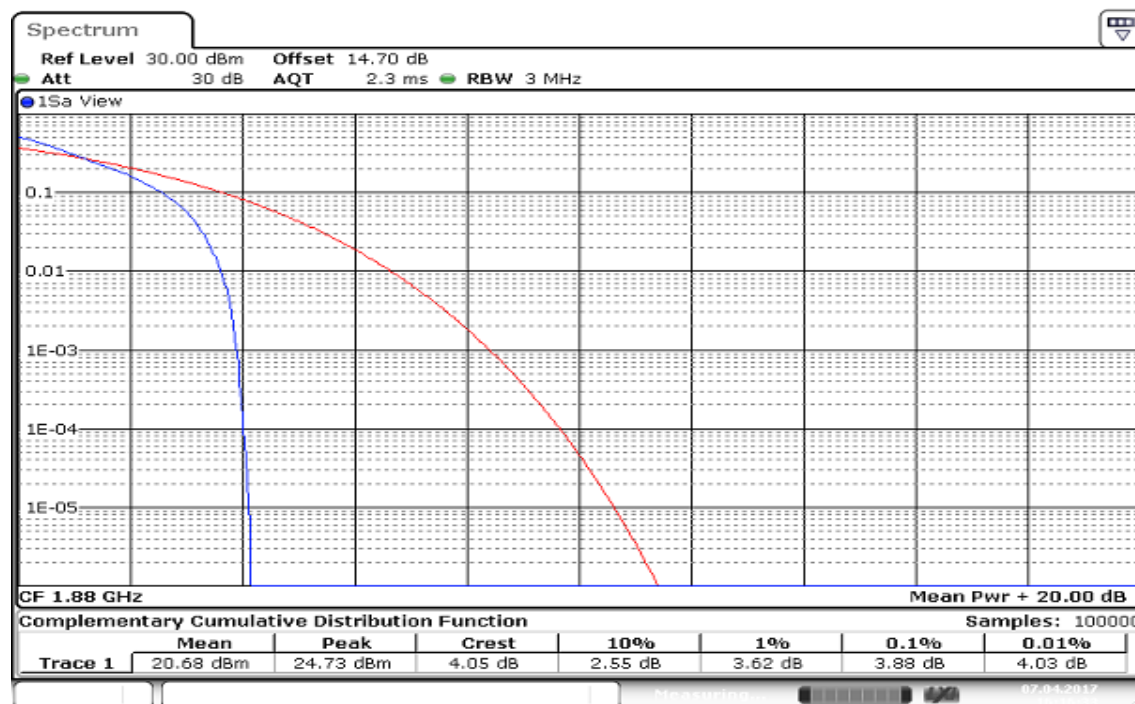
CHANNEL BANDWIDTH: 1.4MHz / 16QAM / 1RB

CH Mid



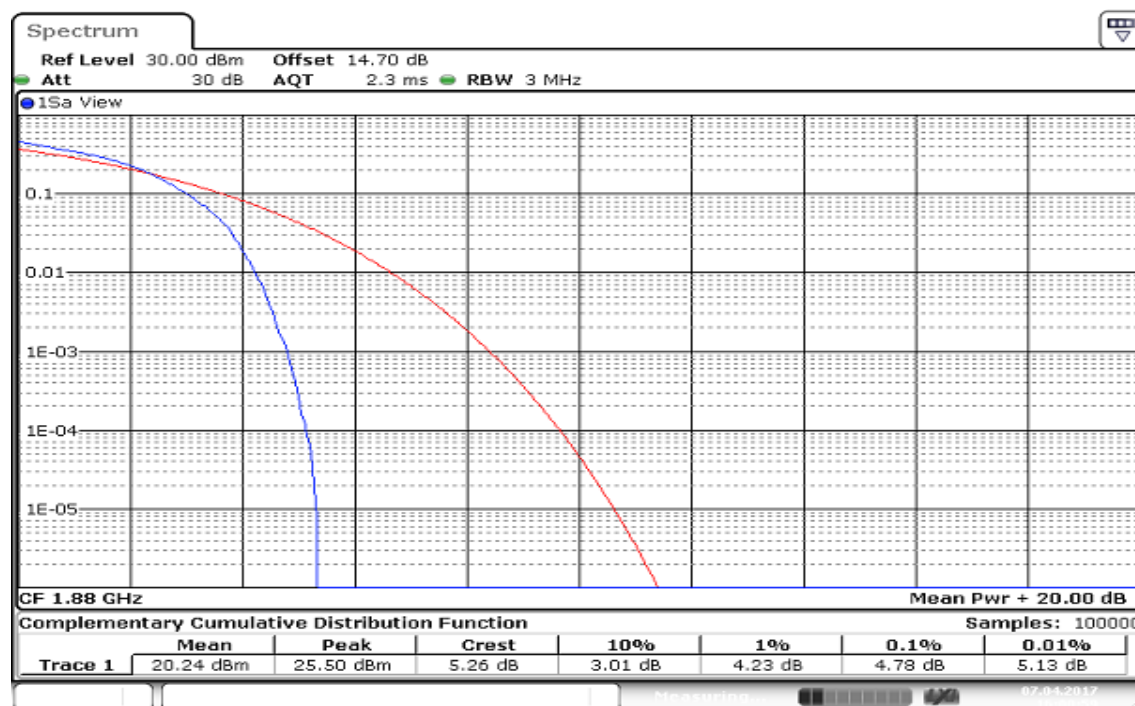
CHANNEL BANDWIDTH: 3MHz / QPSK / 1RB

CH Mid



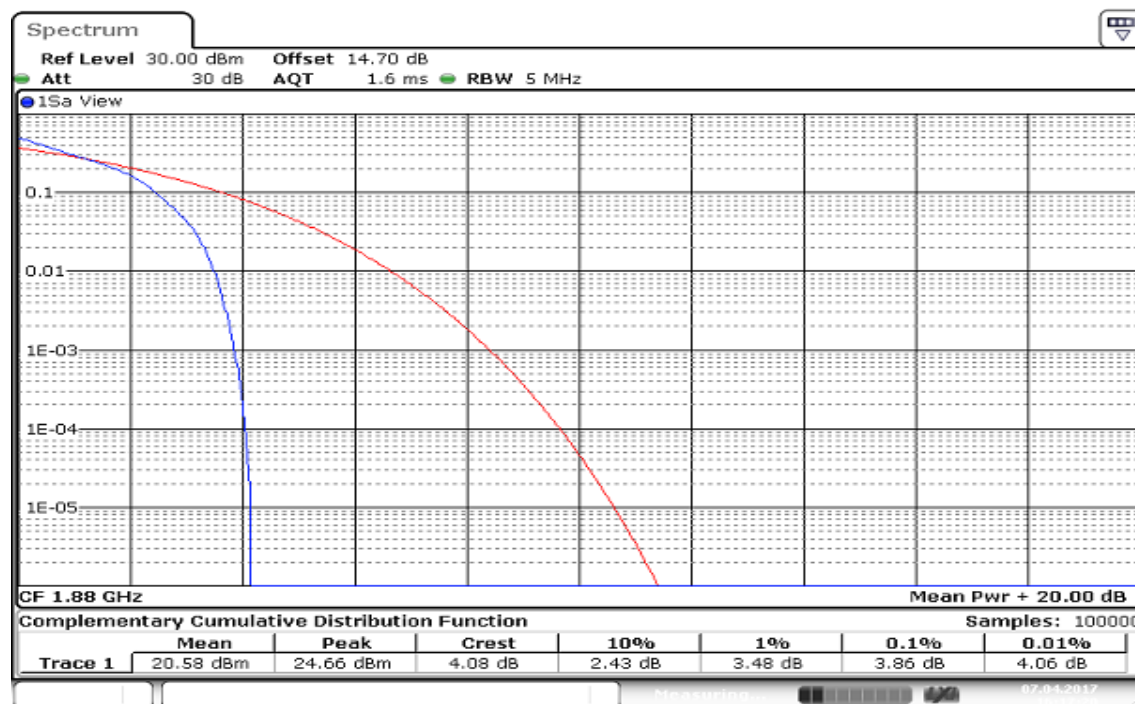
CHANNEL BANDWIDTH: 3MHz / 16QAM / 1RB

CH Mid



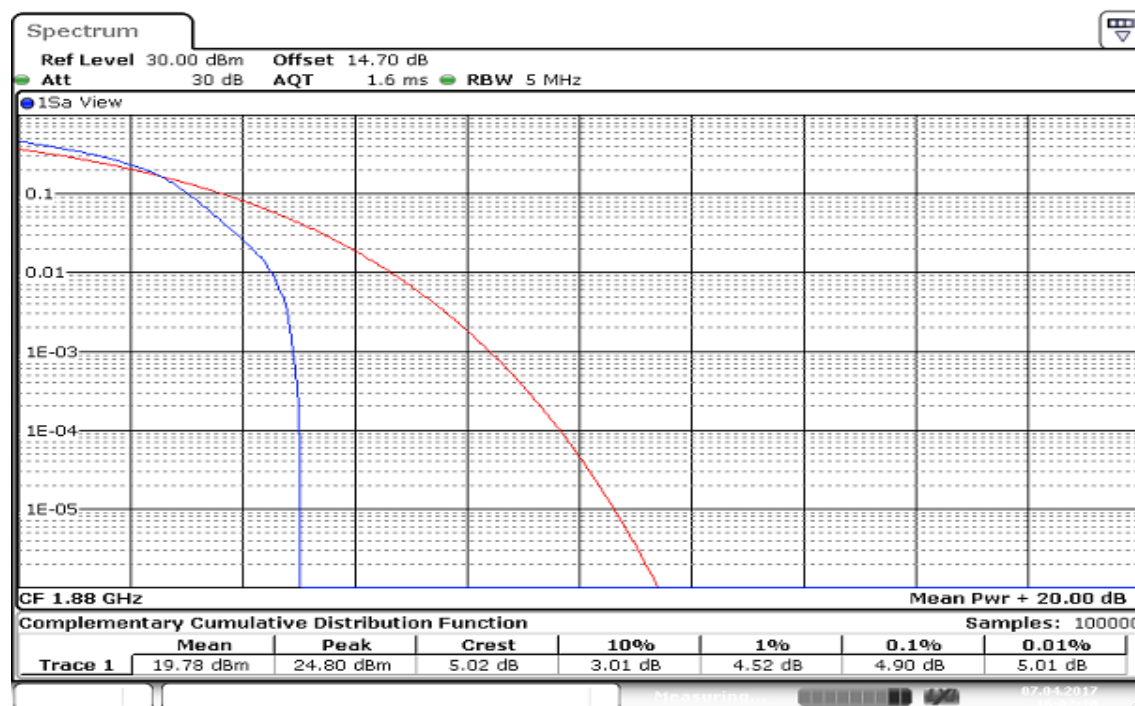
CHANNEL BANDWIDTH: 5MHz / QPSK / 1RB

CH Mid



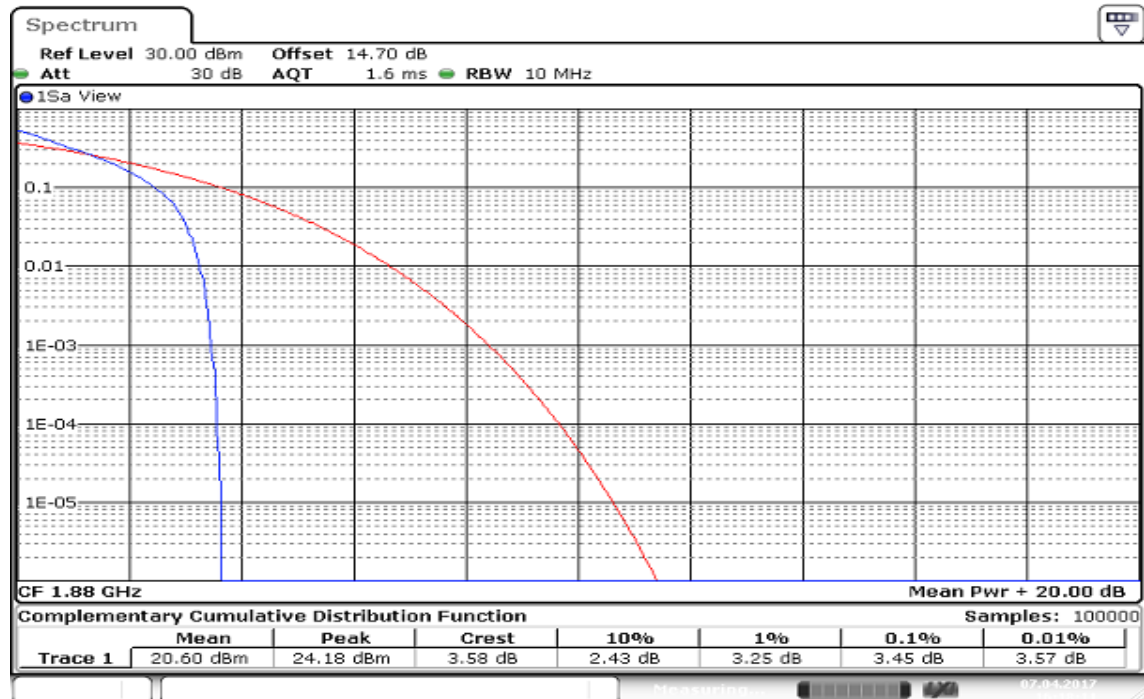
CHANNEL BANDWIDTH: 5MHz / 16QAM / 1RB

CH Mid



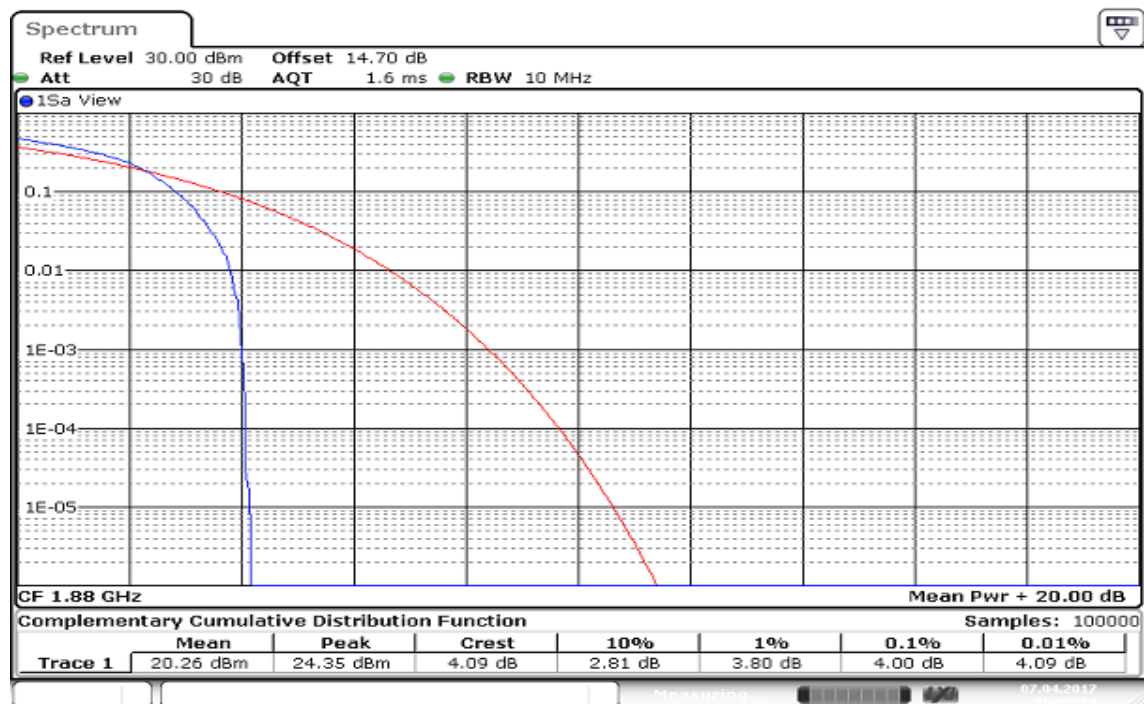
CHANNEL BANDWIDTH: 10MHz / QPSK / 1RB

CH Mid



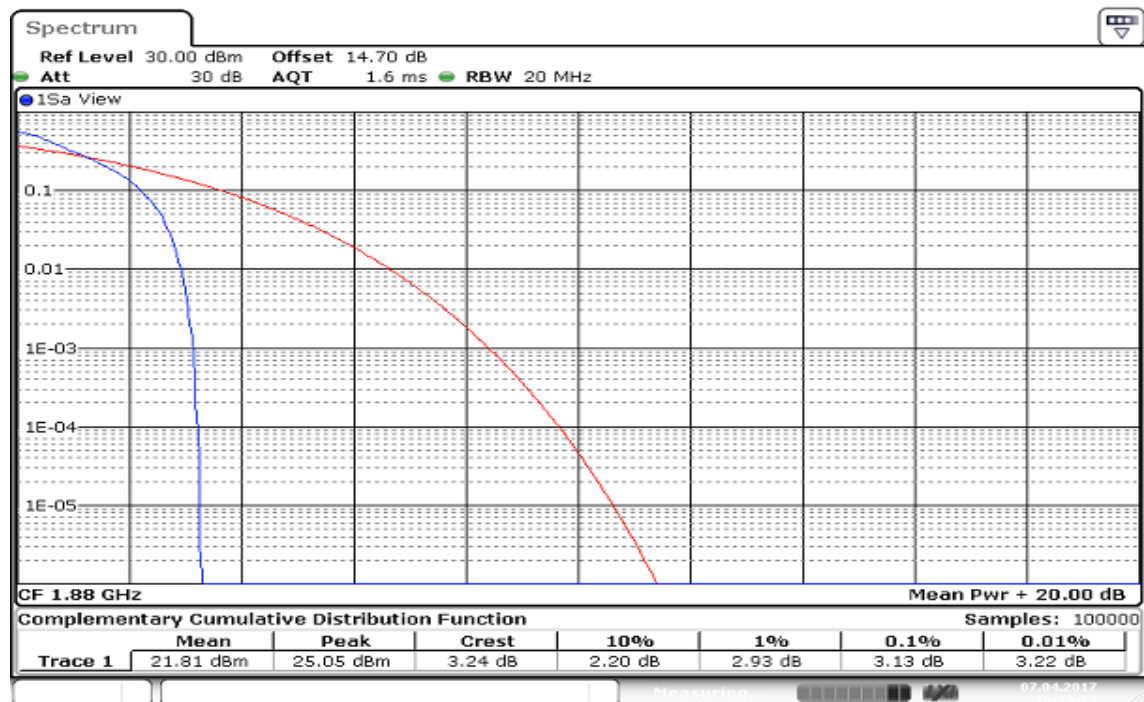
CHANNEL BANDWIDTH: 10MHz / 16QAM / 1RB

CH Mid



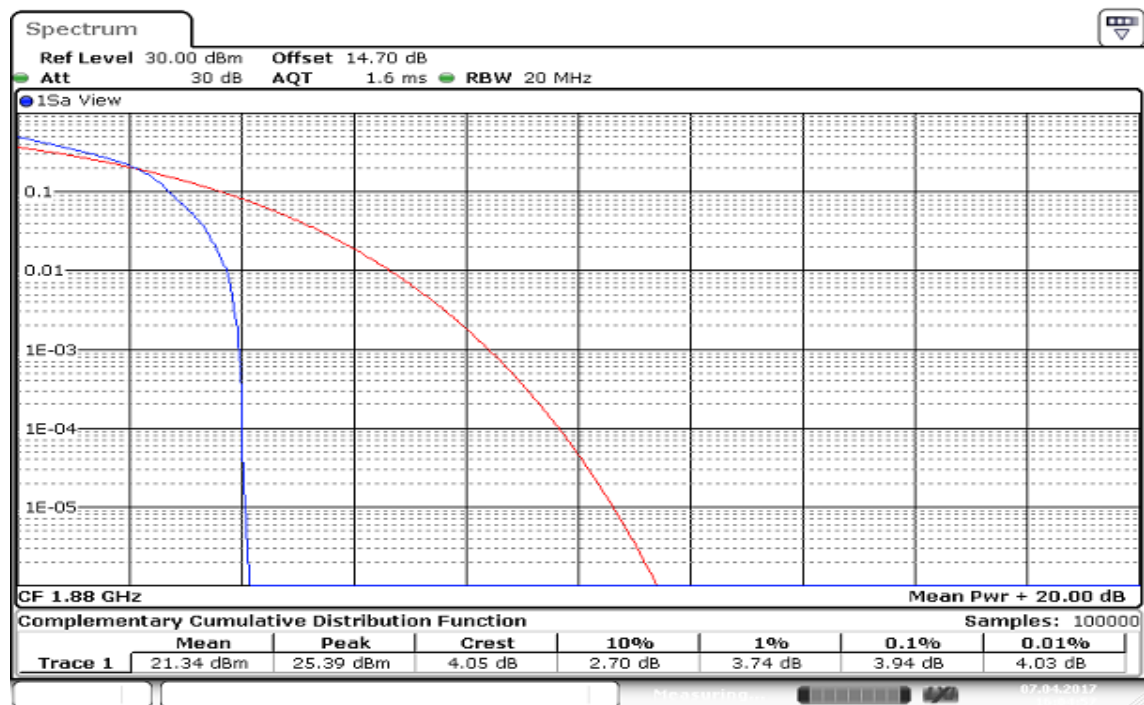
CHANNEL BANDWIDTH: 15MHz / QPSK / 1RB

CH Mid



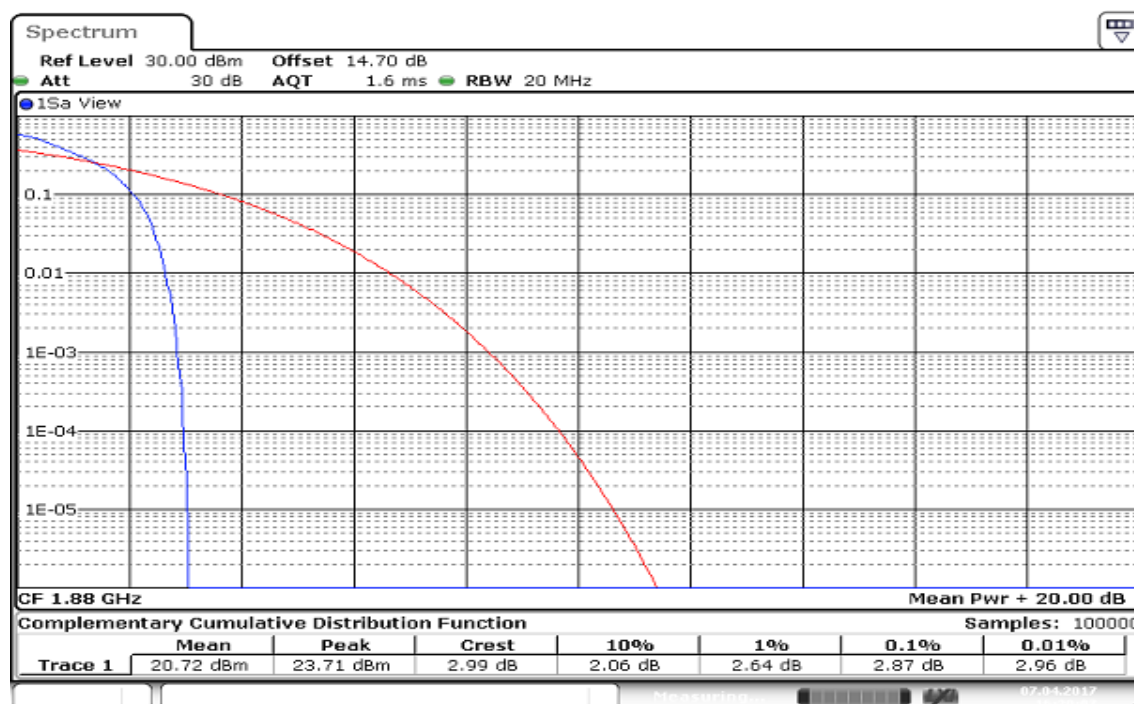
CHANNEL BANDWIDTH: 15MHz / 16QAM / 1RB

CH Mid



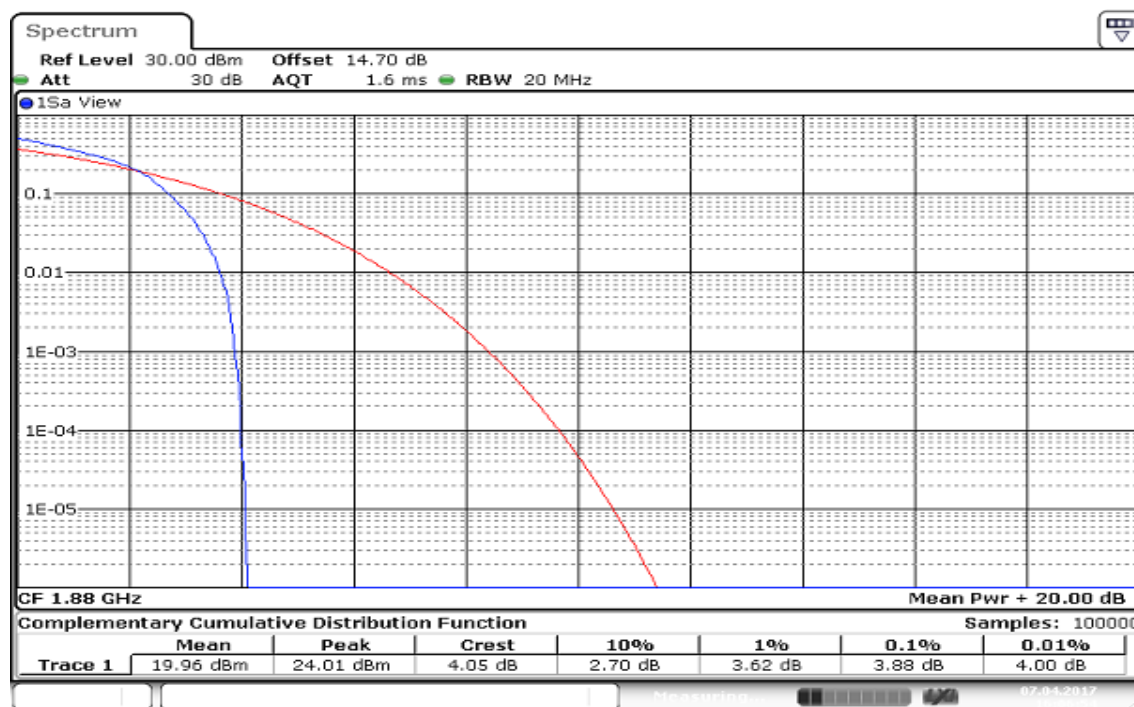
CHANNEL BANDWIDTH: 20MHz / QPSK / 1RB

CH Mid



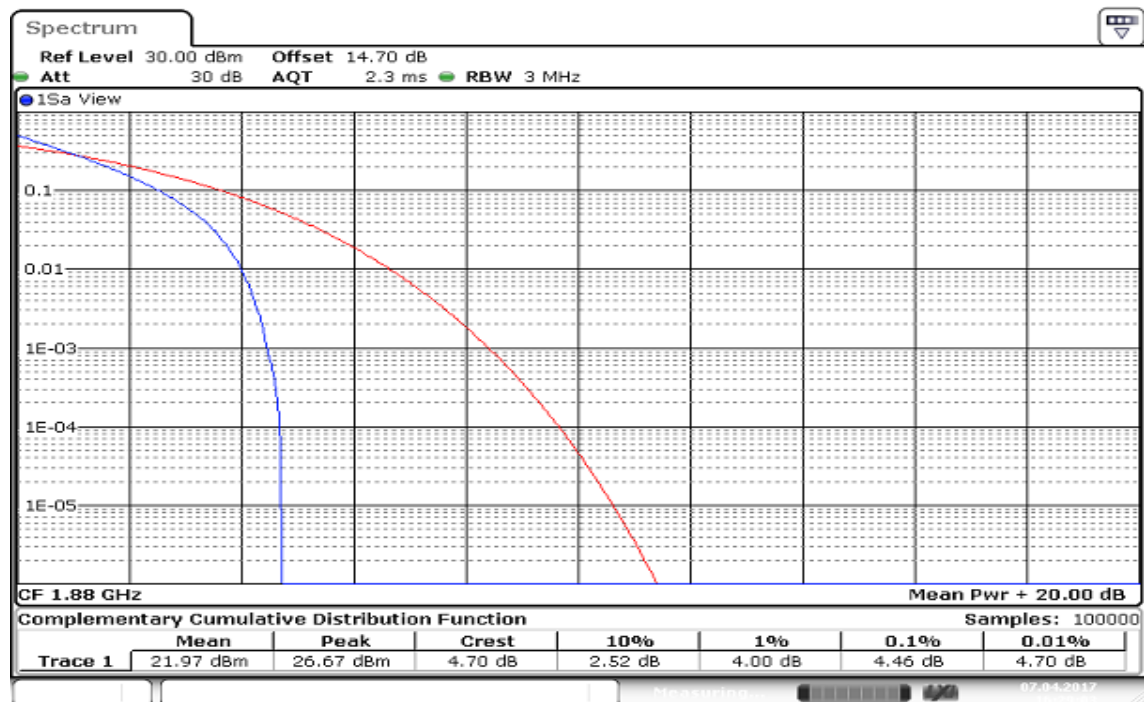
CHANNEL BANDWIDTH: 20MHz / 16QAM / 1RB

CH Mid



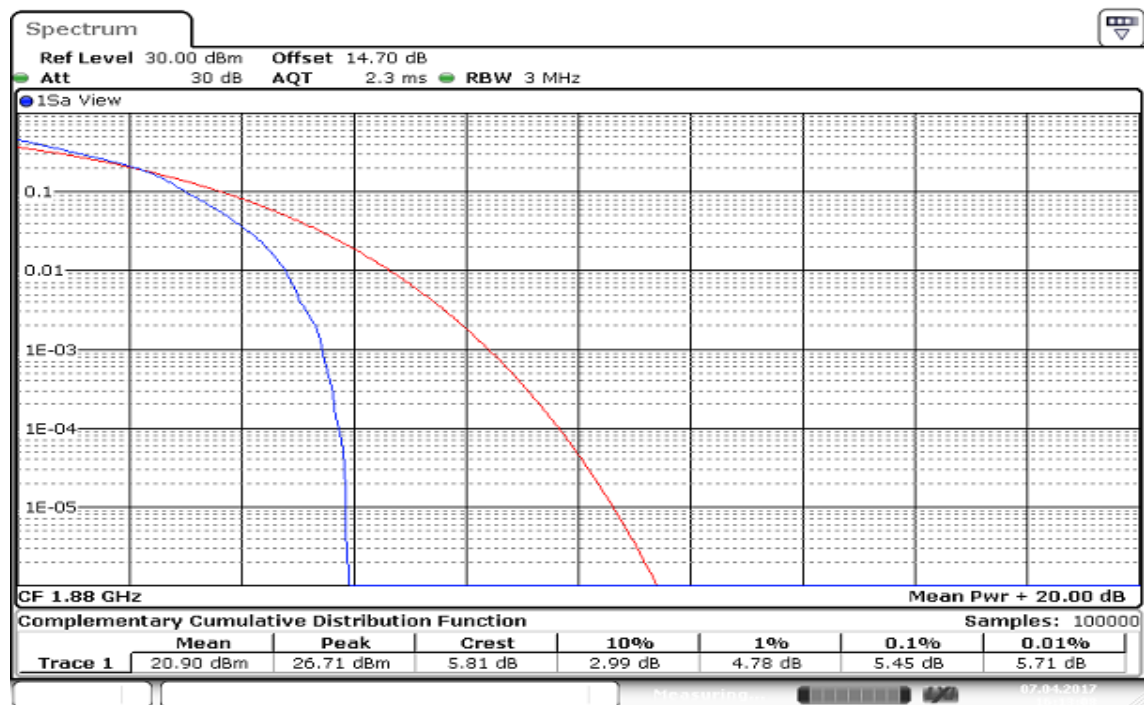
CHANNEL BANDWIDTH: 1.4MHz / QPSK / 100%RB

CH Mid



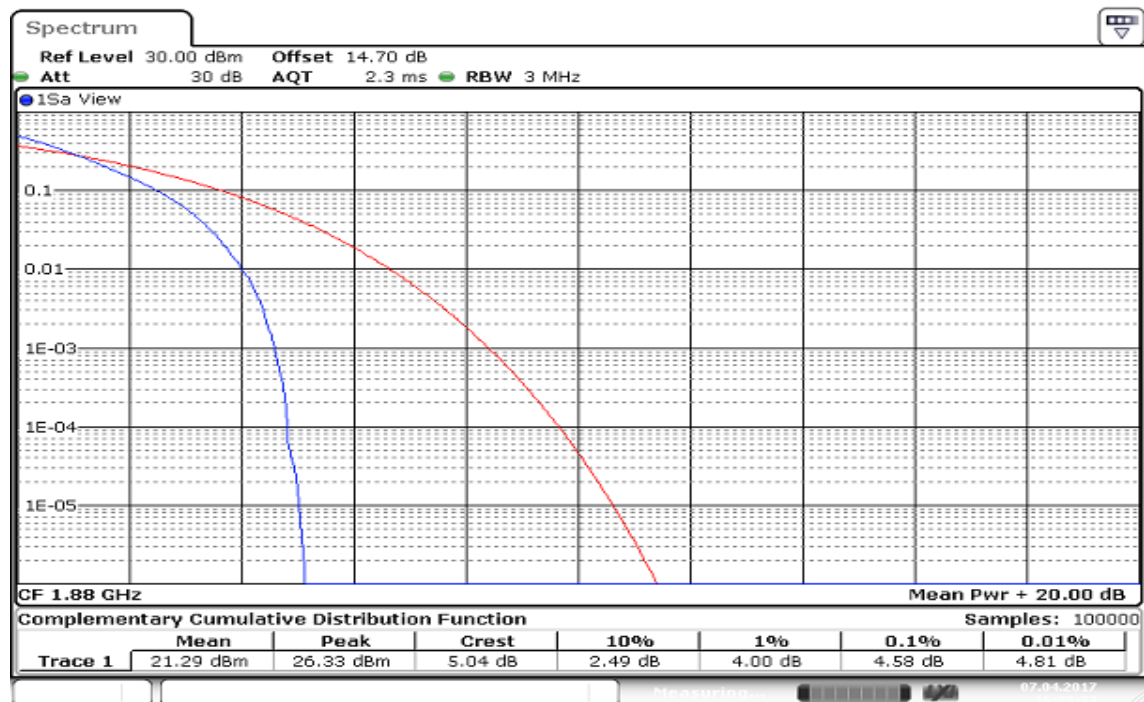
CHANNEL BANDWIDTH: 1.4MHz / 16QAM / 100%RB

CH Mid



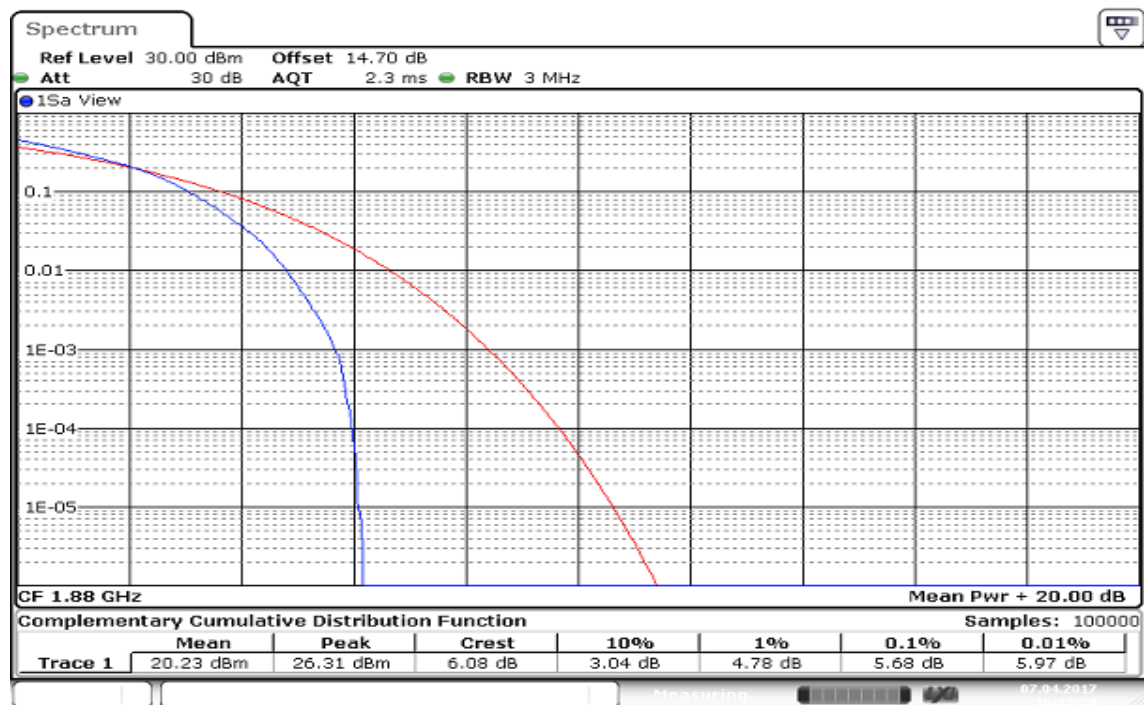
CHANNEL BANDWIDTH: 3MHz / QPSK / 100%RB

CH Mid



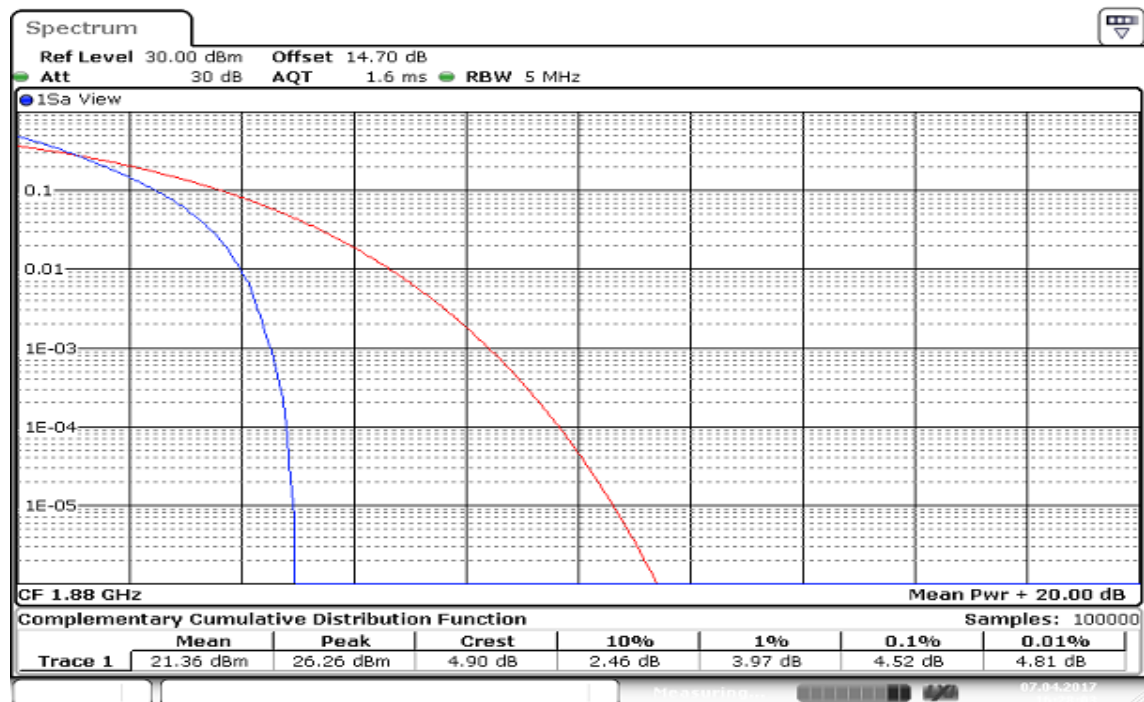
CHANNEL BANDWIDTH: 3MHz / 16QAM / 100%RB

CH Mid



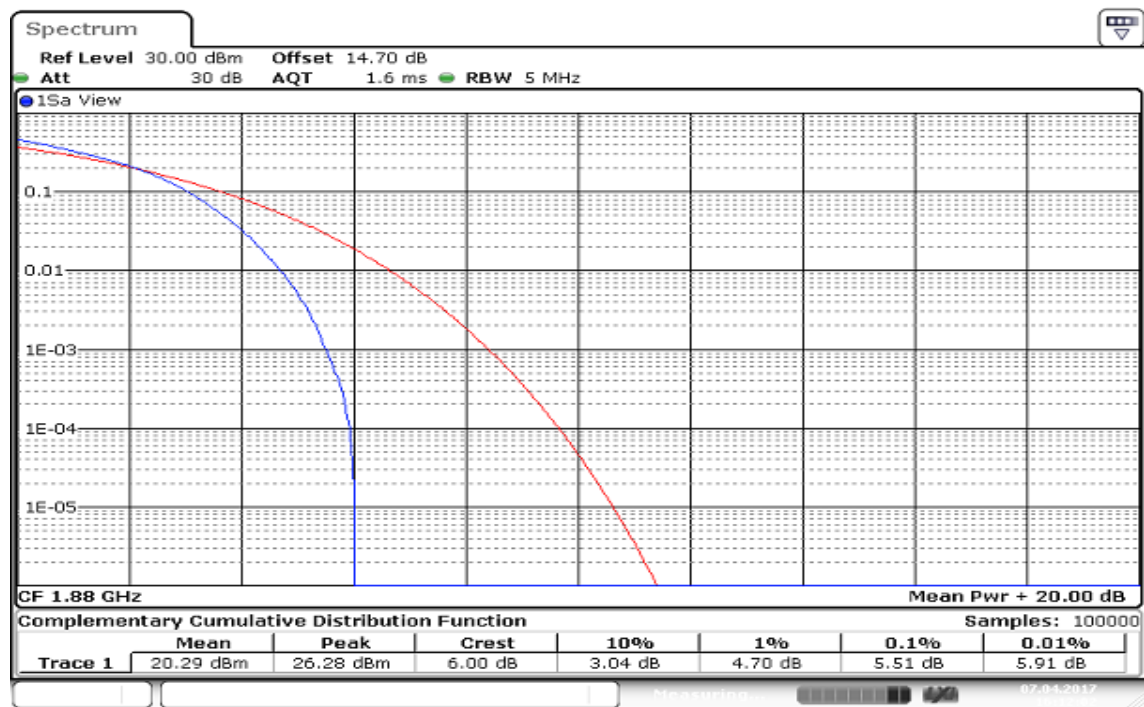
CHANNEL BANDWIDTH: 5MHz / QPSK / 100%RB

CH Mid



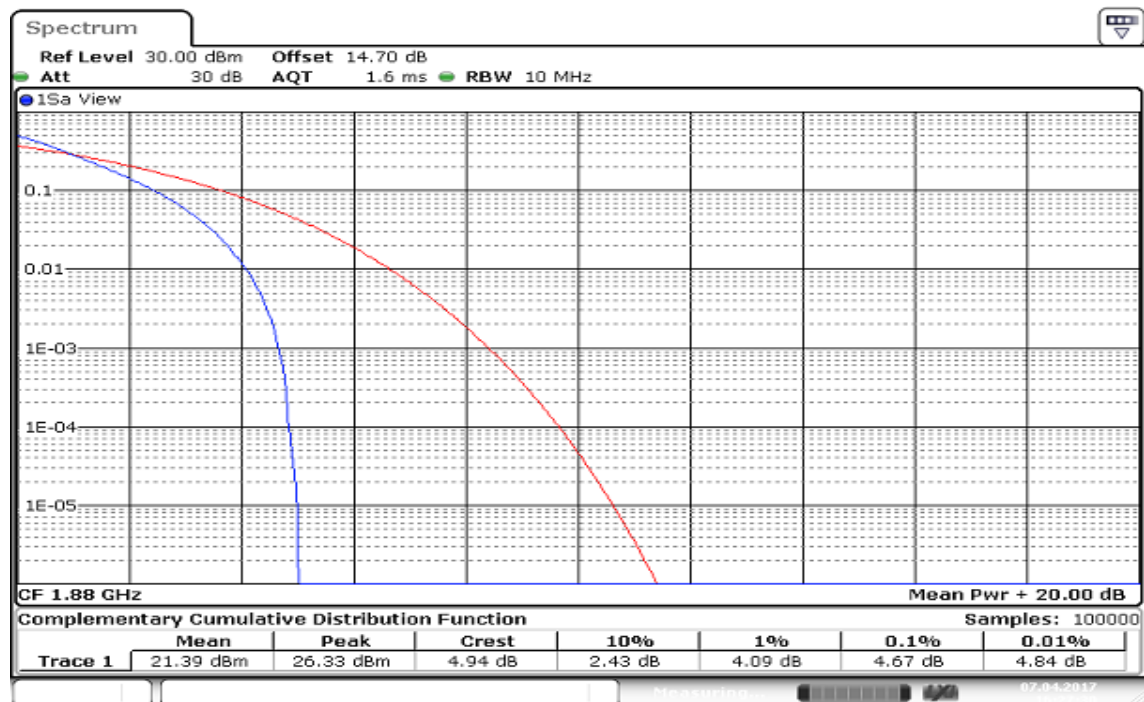
CHANNEL BANDWIDTH: 5MHz / 16QAM / 100%RB

CH Mid



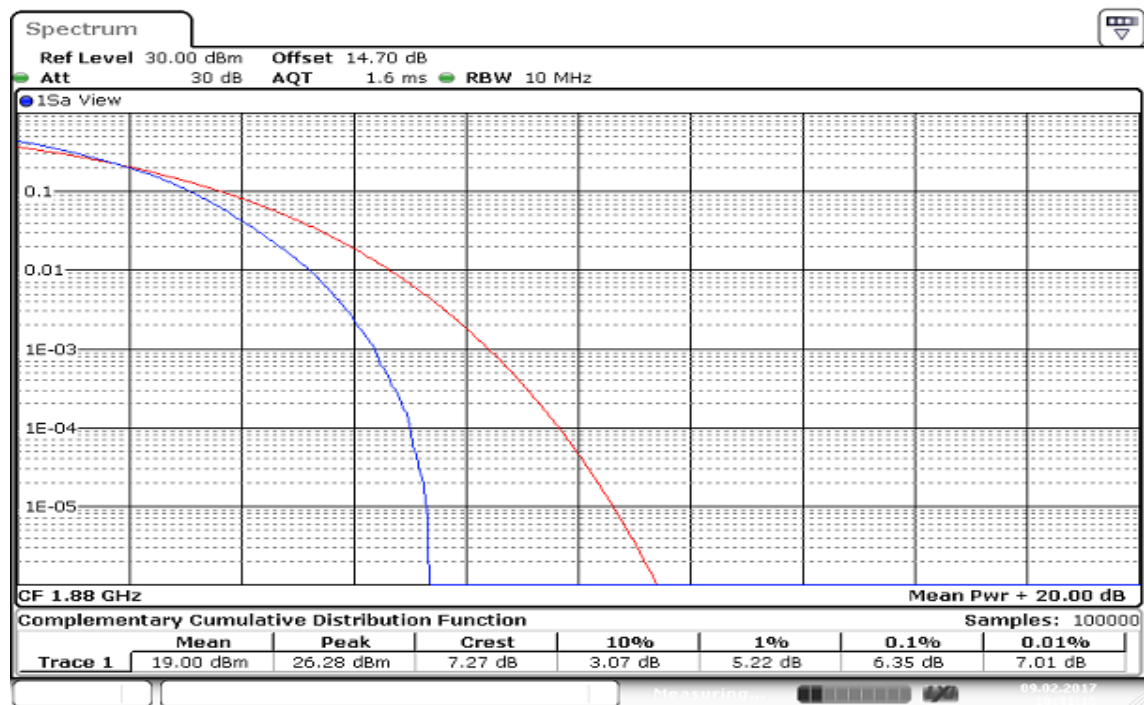
CHANNEL BANDWIDTH: 10MHz / QPSK / 100%RB

CH Mid



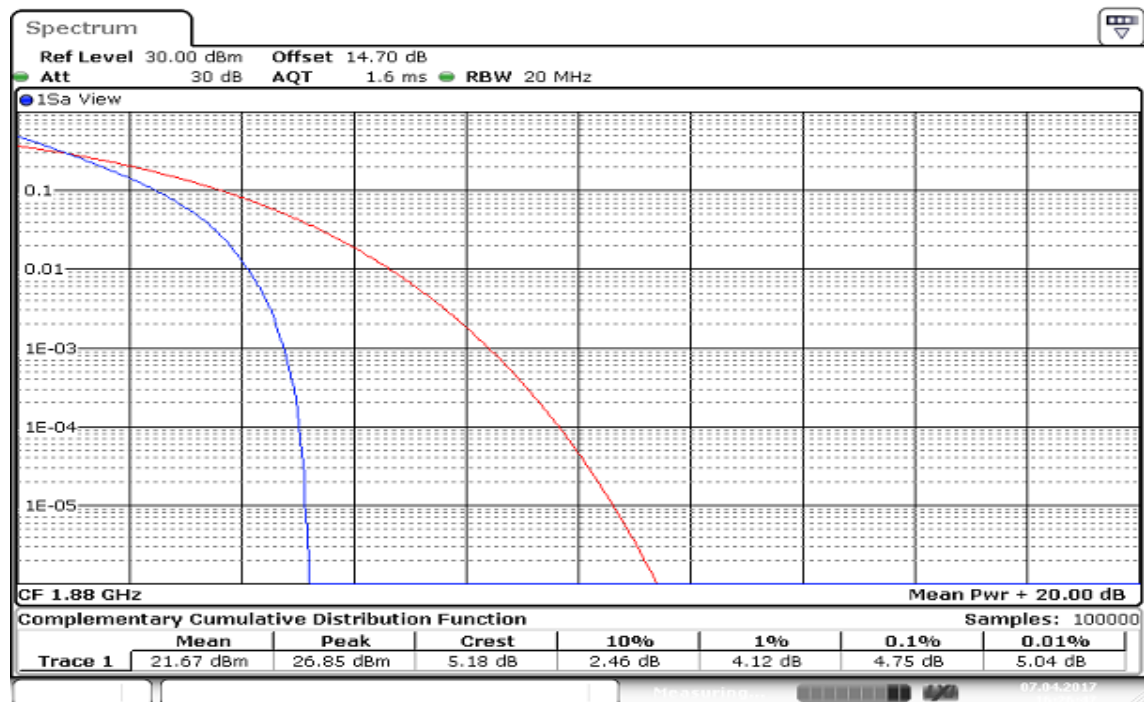
CHANNEL BANDWIDTH: 10MHz / 16QAM / 100%RB

CH Mid



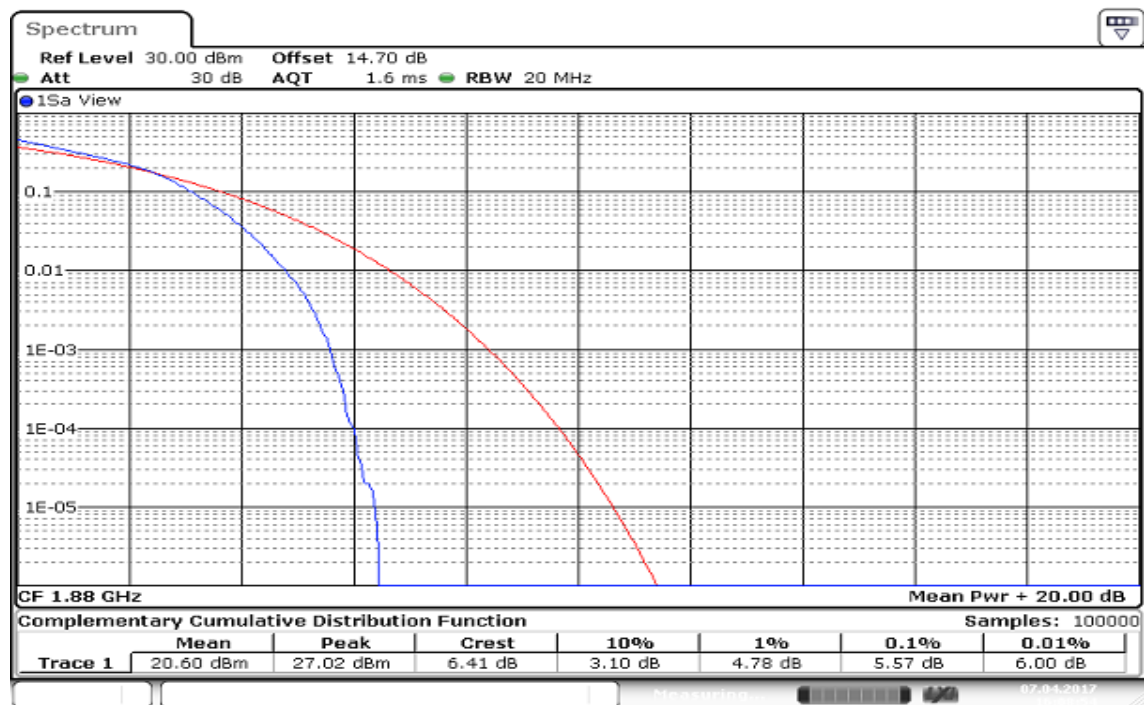
CHANNEL BANDWIDTH: 15MHz / QPSK / 100%RB

CH Mid



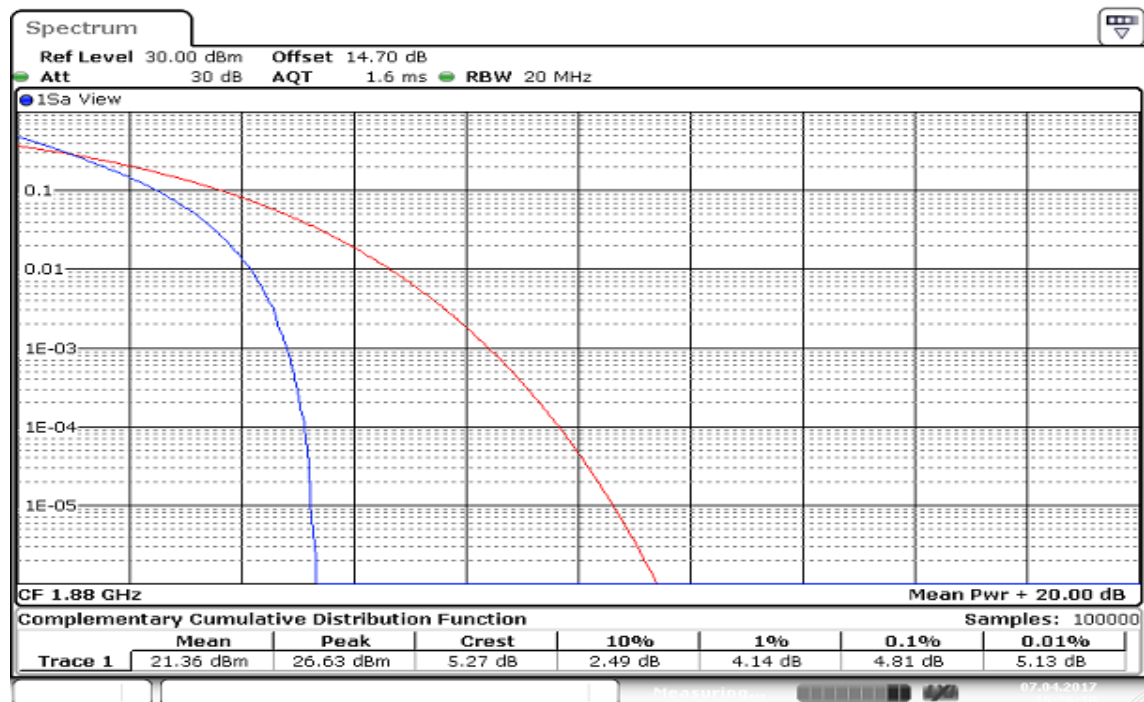
CHANNEL BANDWIDTH: 15MHz / 16QAM / 100%RB

CH Mid



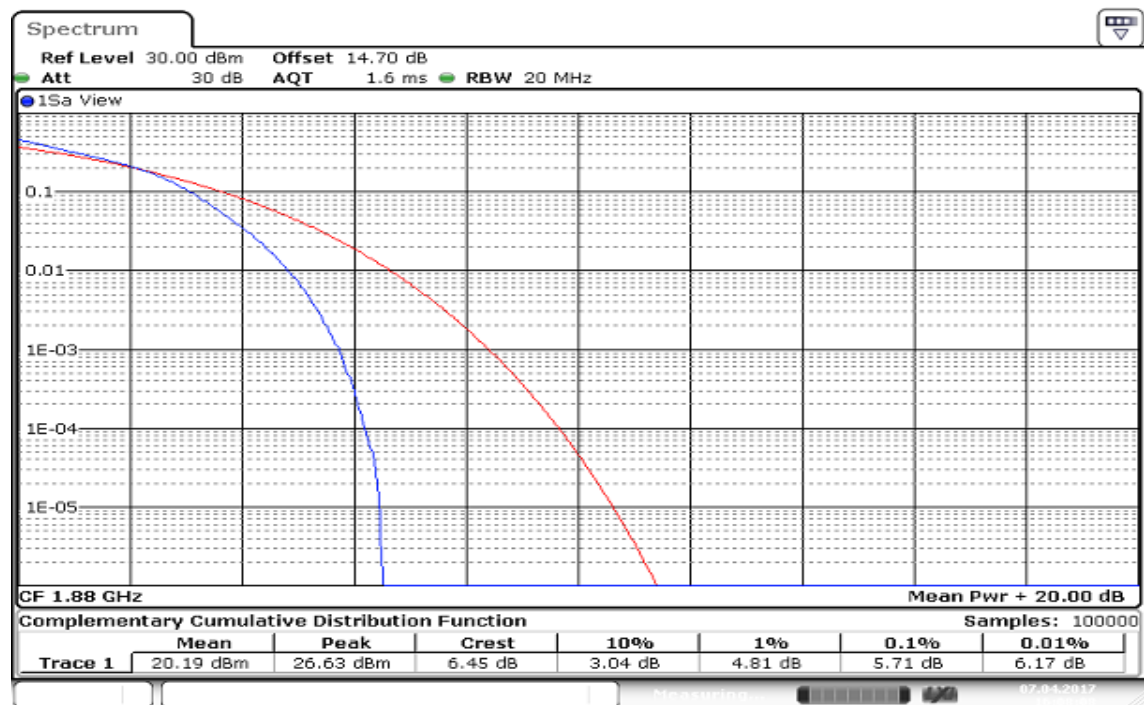
CHANNEL BANDWIDTH: 20MHz / QPSK / 100%RB

CH Mid



CHANNEL BANDWIDTH: 20MHz / 16QAM / 100%RB

CH Mid



7.6 BAND EDGE MEASUREMENT

Limit

FCC §22.917(a), Band 5

For operations in the 824-849 MHz band , Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

FCC §24.238(a), Band 2

For operations in the 1850-1910 and 1930-1950 MHz band , Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

RSS-132 section 5.5 and RSS-133 section 6.5

In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts).

Test Procedures

KDB 971168 D01 v02r02 - Section 6.0

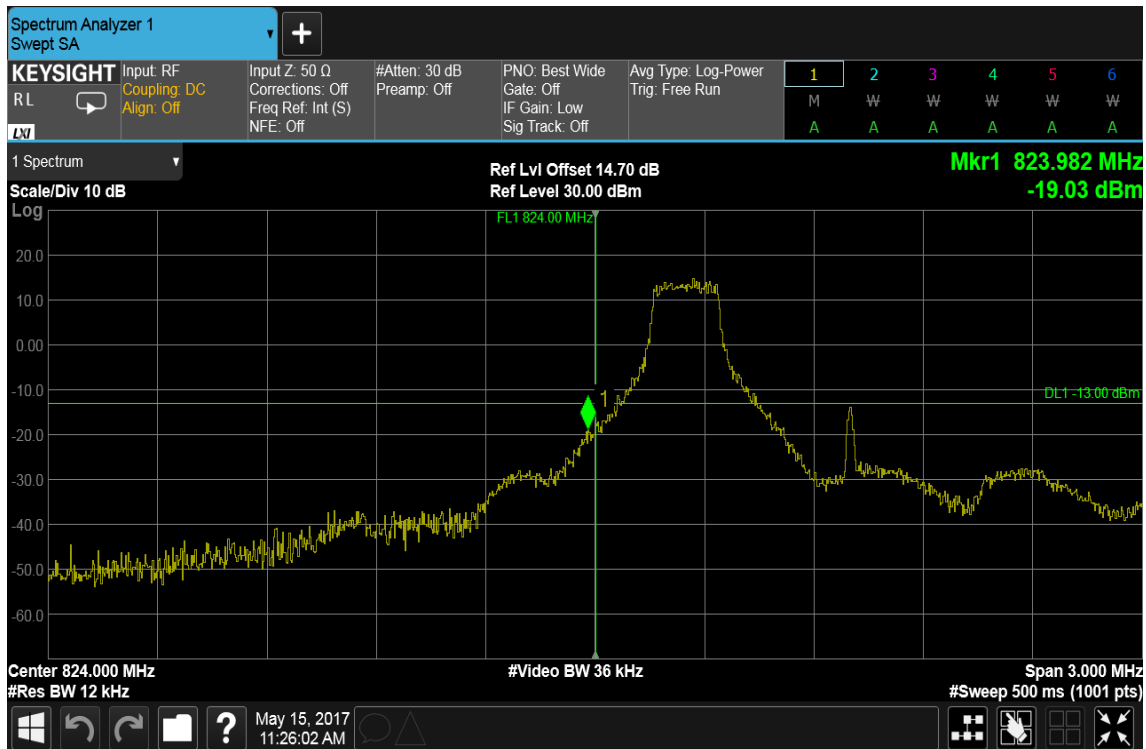
1. RBW $\geq$ 1% of the emission bandwidth
2. VBW $\geq$ 3 x RBW
3. Span was set large enough so as to capture all out of emissions near the band edge.

Test Results:

LTE Band 5

CHANNEL BANDWIDTH: 1.4MHz / QPSK / 1 RB ALLOCATED

LOWER BAND EDGE

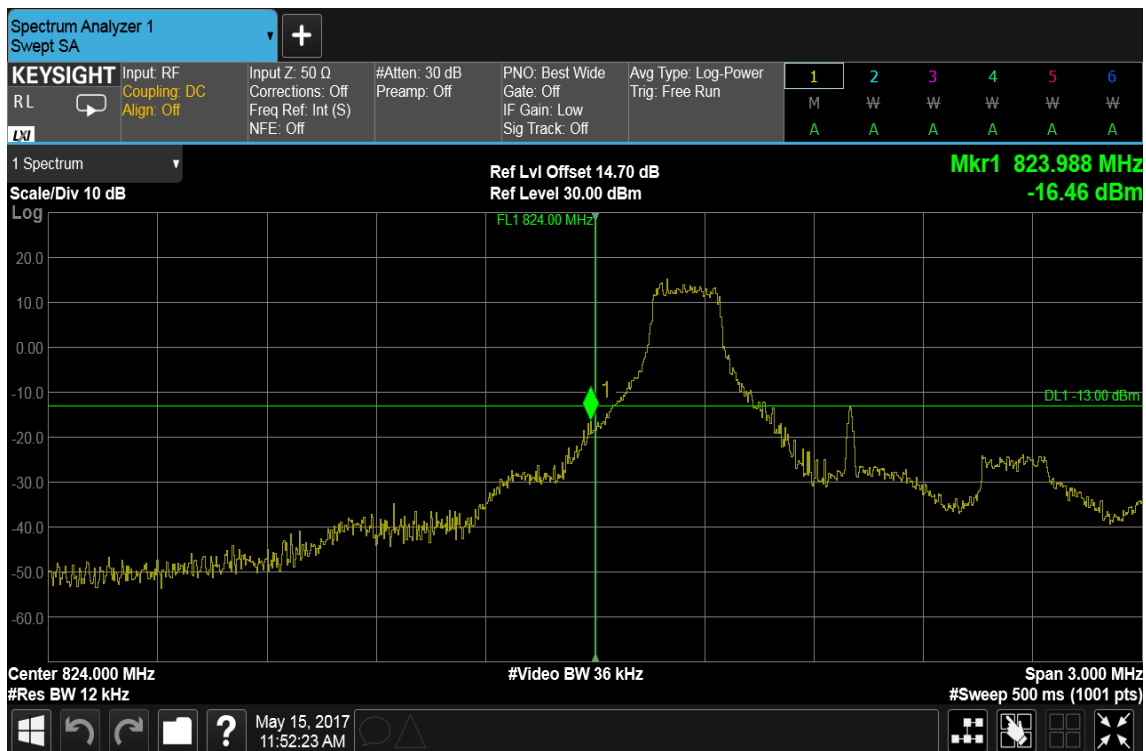


HIGHER BAND EDGE

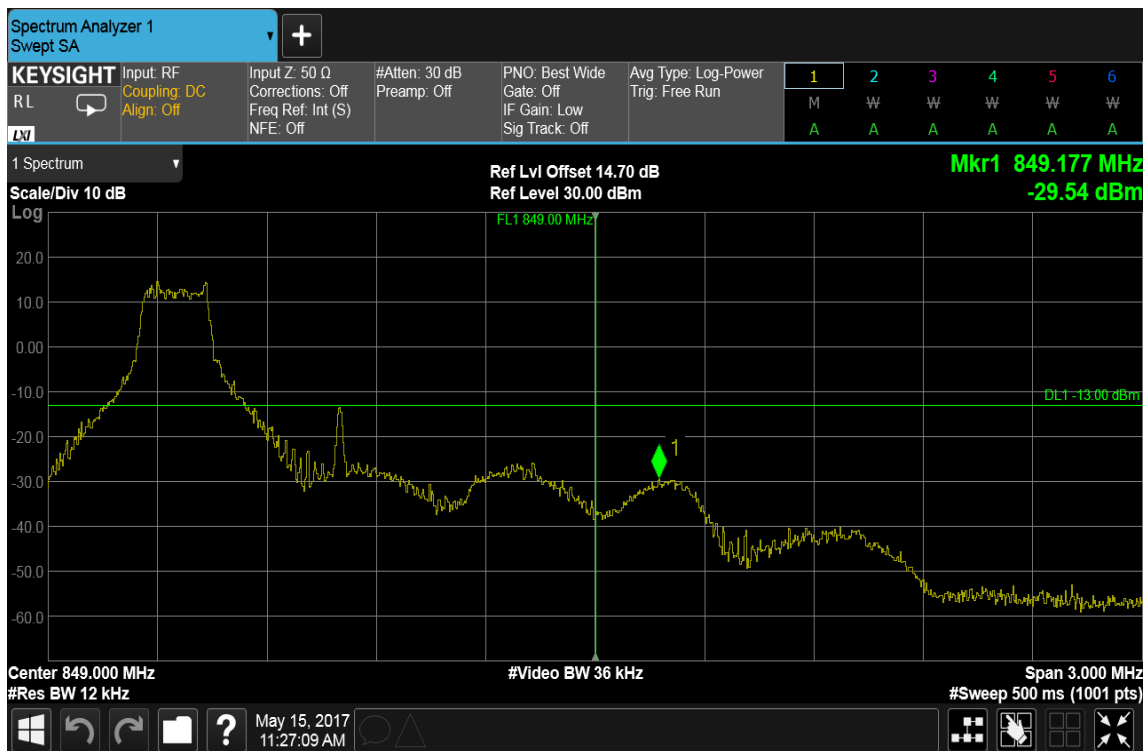


CHANNEL BANDWIDTH: 1.4MHz / 16QAM / 1 RB ALLOCATED

LOWER BAND EDGE

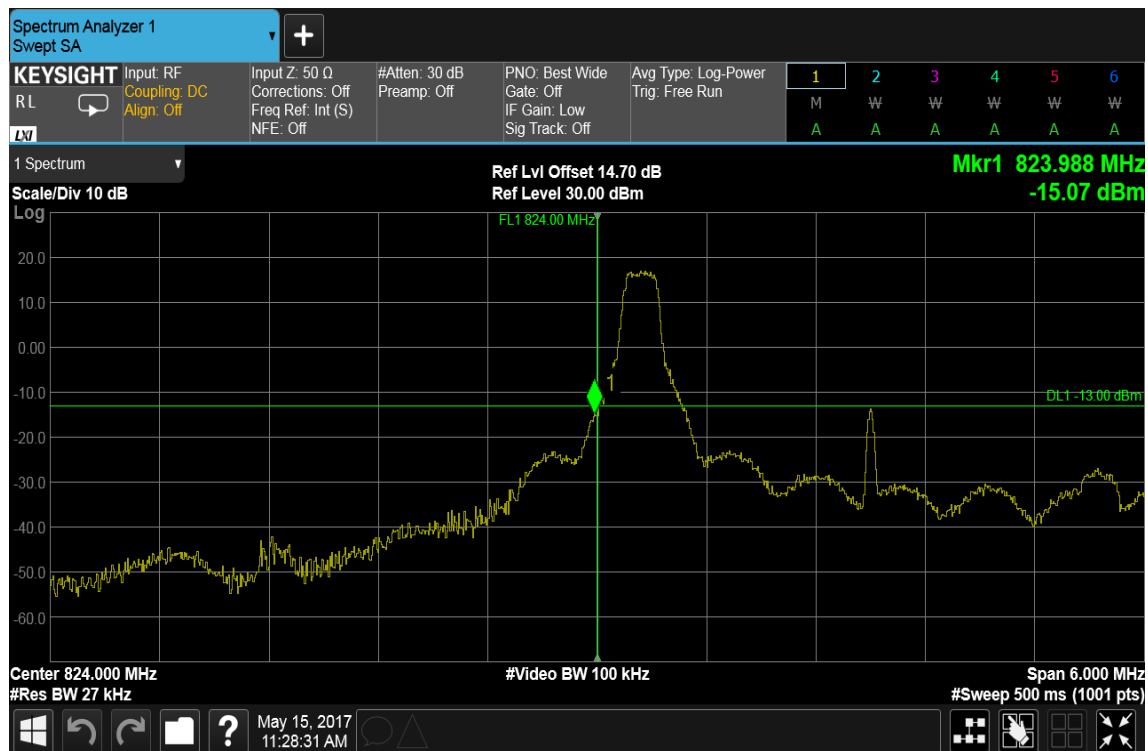


HIGHER BAND EDGE

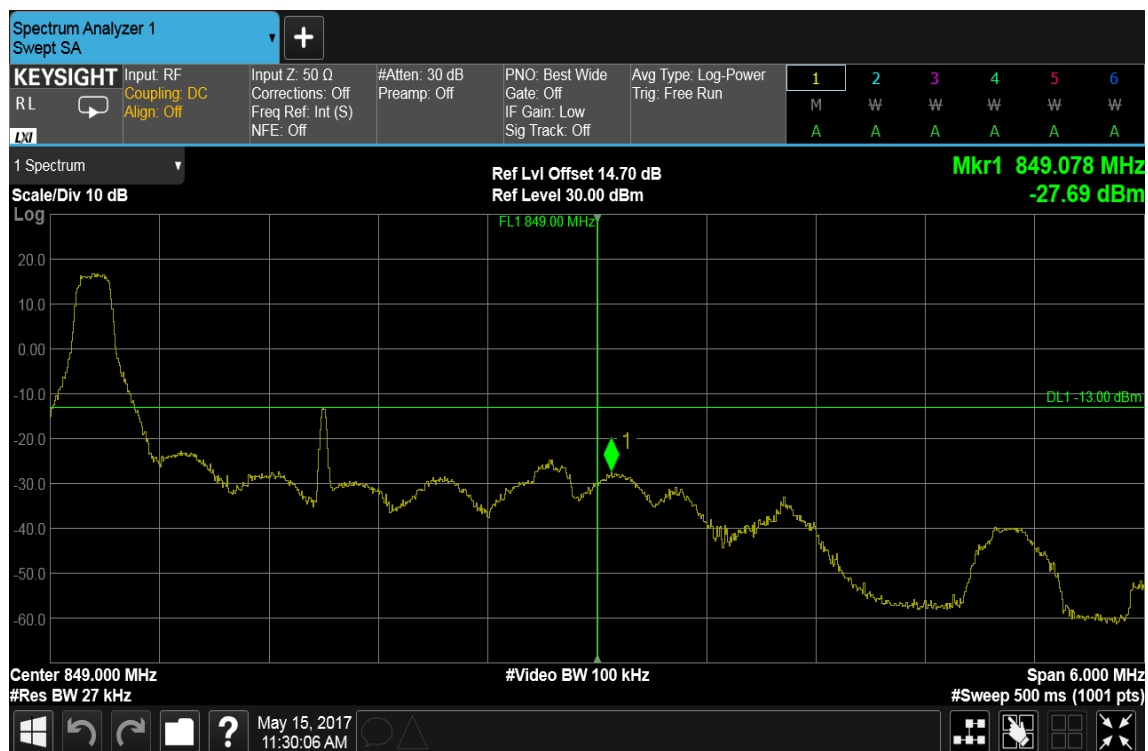


CHANNEL BANDWIDTH: 3MHz / QPSK / 1 RB ALLOCATED

LOWER BAND EDGE

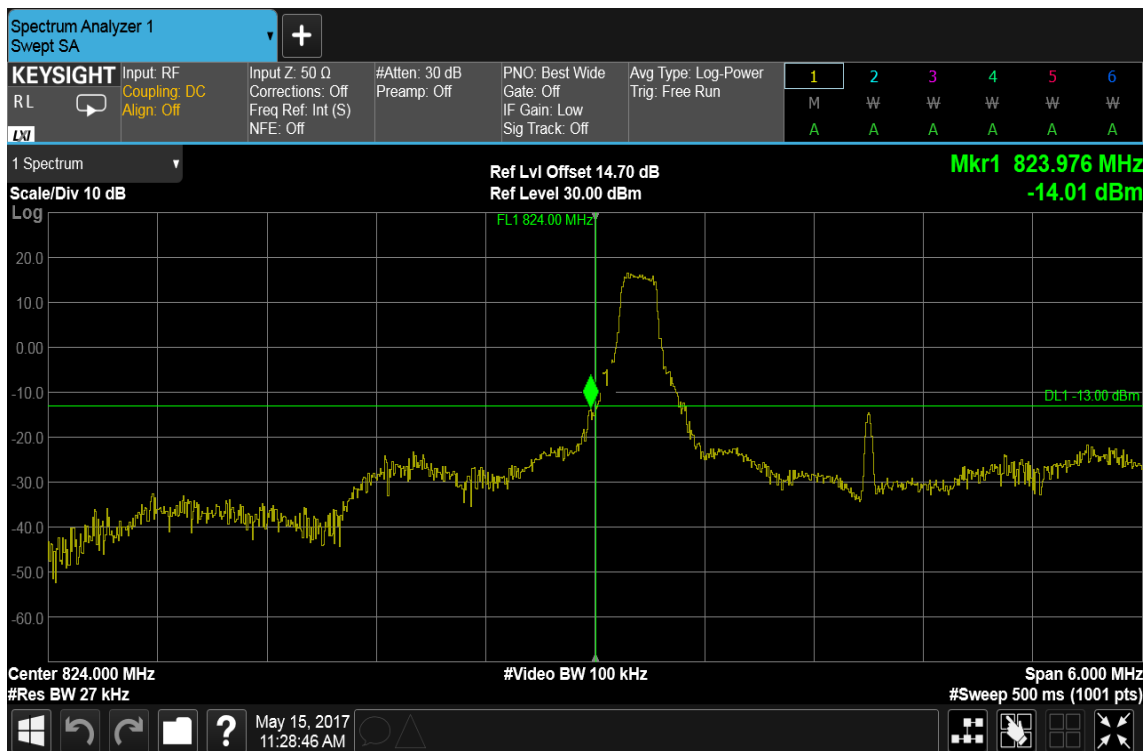


HIGHER BAND EDGE



CHANNEL BANDWIDTH: 3MHz / 16QAM / 1 RB ALLOCATED

LOWER BAND EDGE

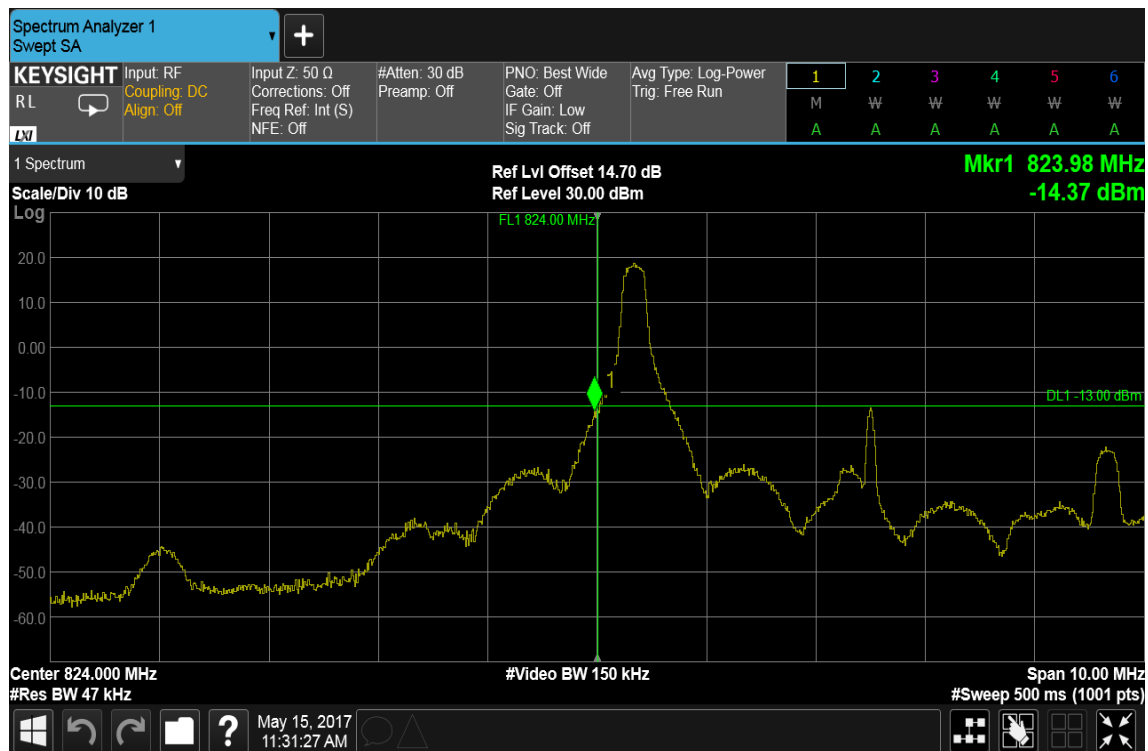


HIGHER BAND EDGE



CHANNEL BANDWIDTH: 5MHz / QPSK / 1 RB ALLOCATED

LOWER BAND EDGE

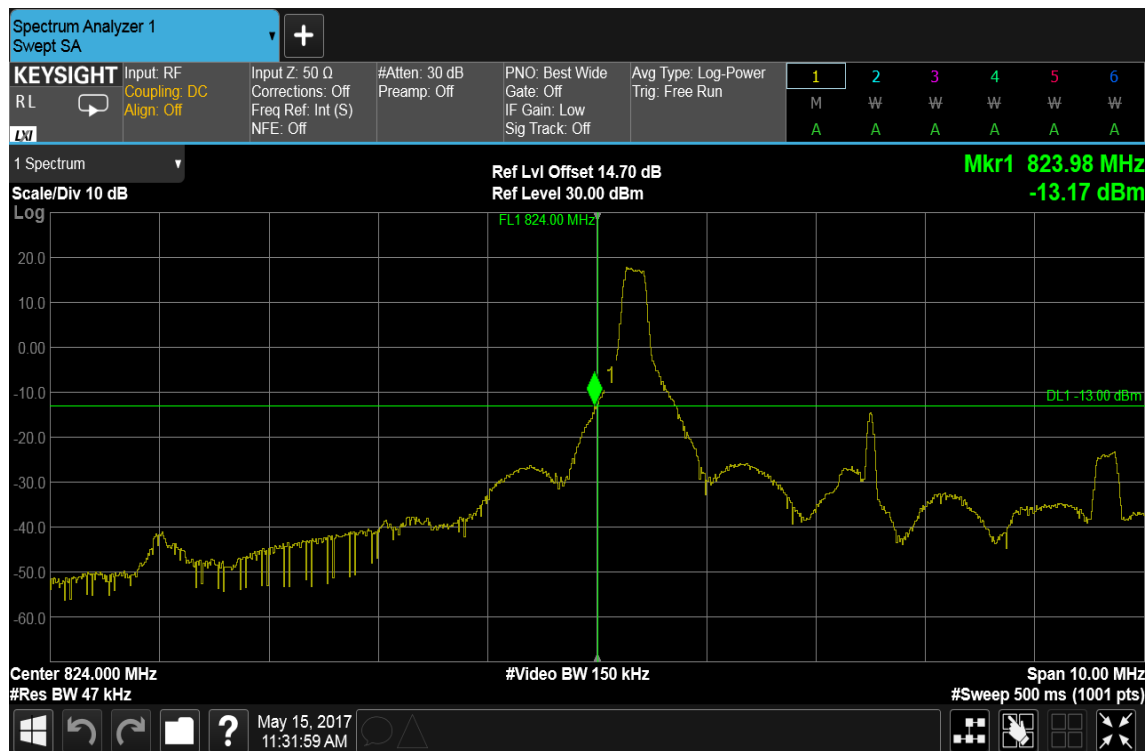


HIGHER BAND EDGE



CHANNEL BANDWIDTH: 5MHz / 16QAM / 1 RB ALLOCATED

LOWER BAND EDGE

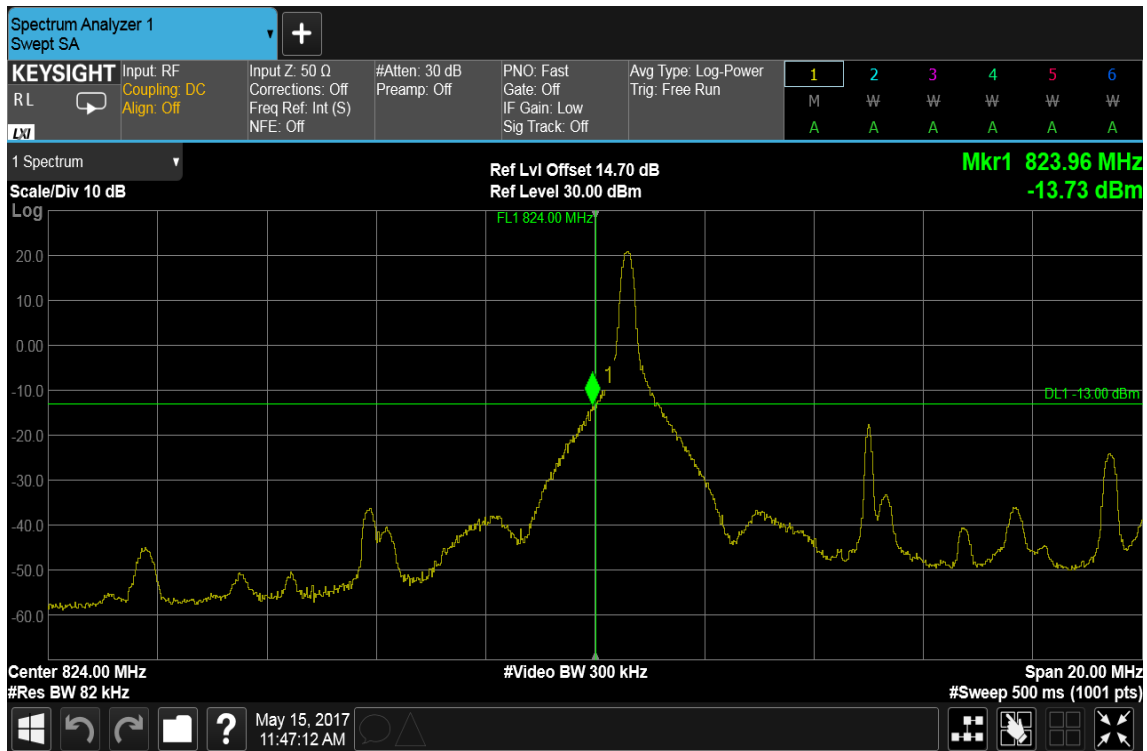


HIGHER BAND EDGE

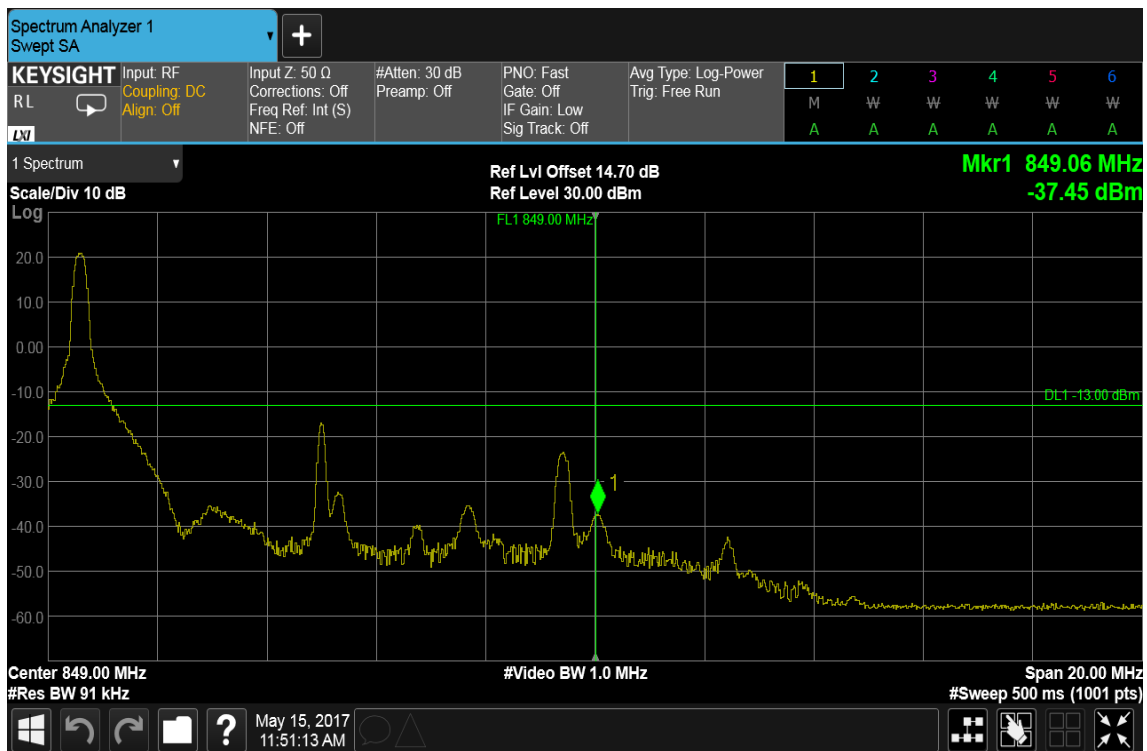


CHANNEL BANDWIDTH: 10MHz / QPSK / 1 RB ALLOCATED

LOWER BAND EDGE

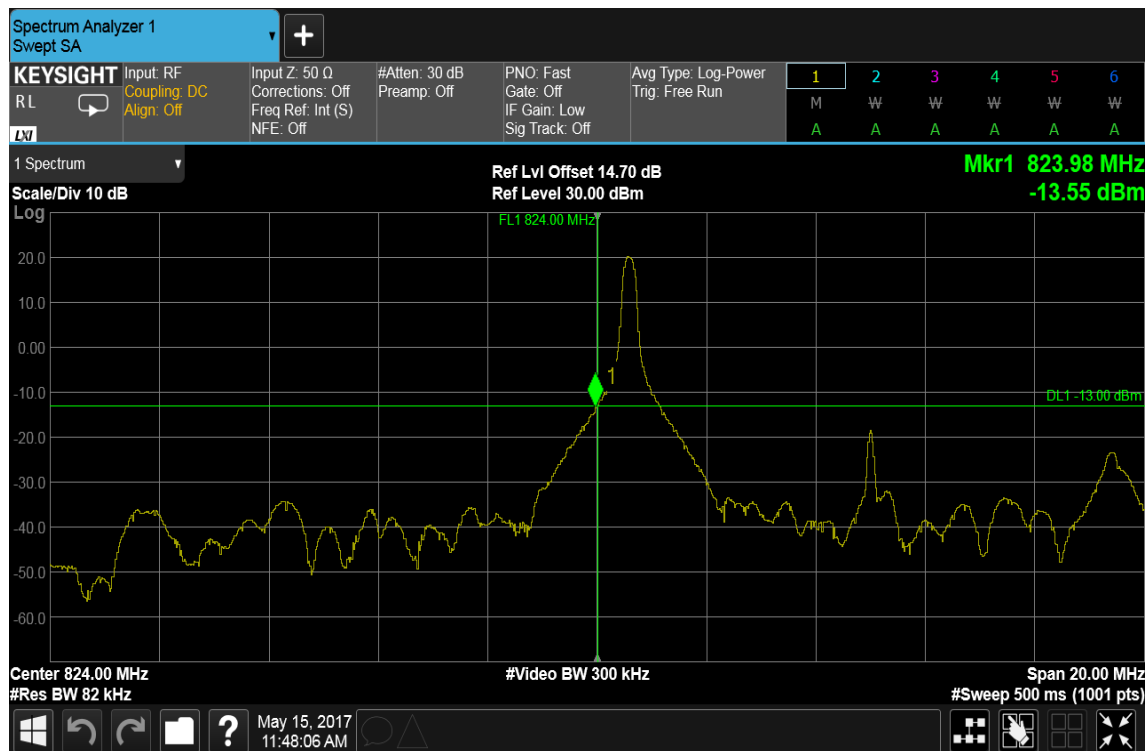


HIGHER BAND EDGE

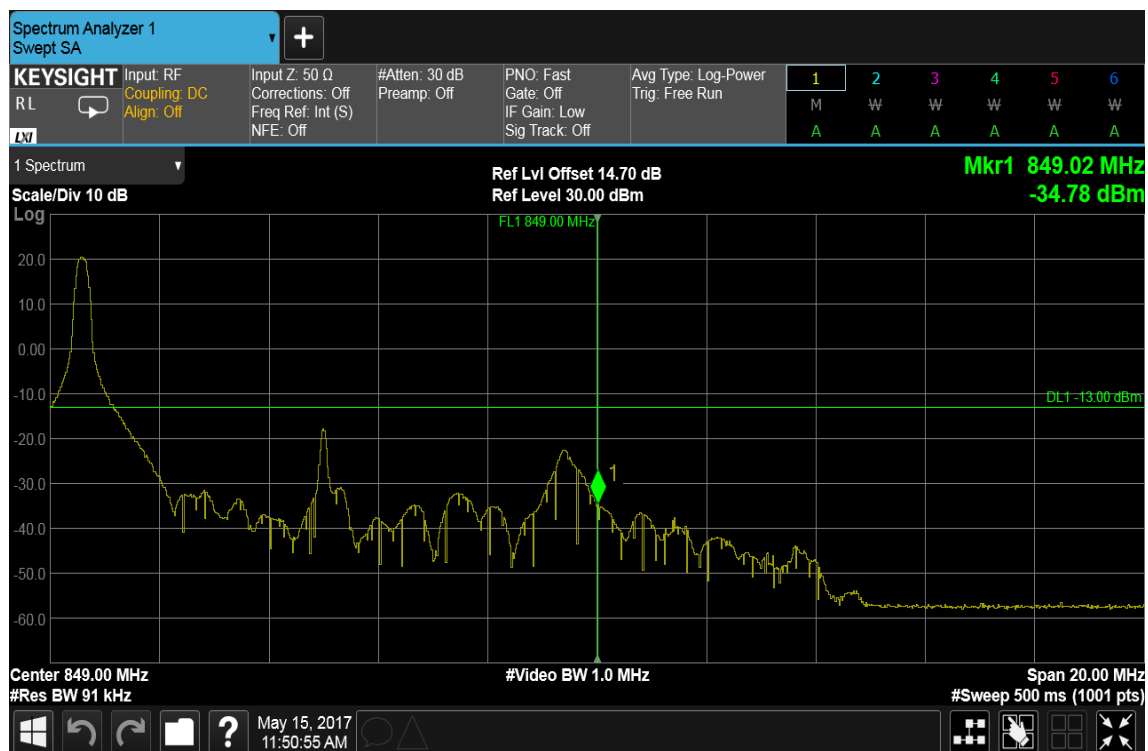


CHANNEL BANDWIDTH: 10MHz / 16QAM / 1 RB ALLOCATED

LOWER BAND EDGE

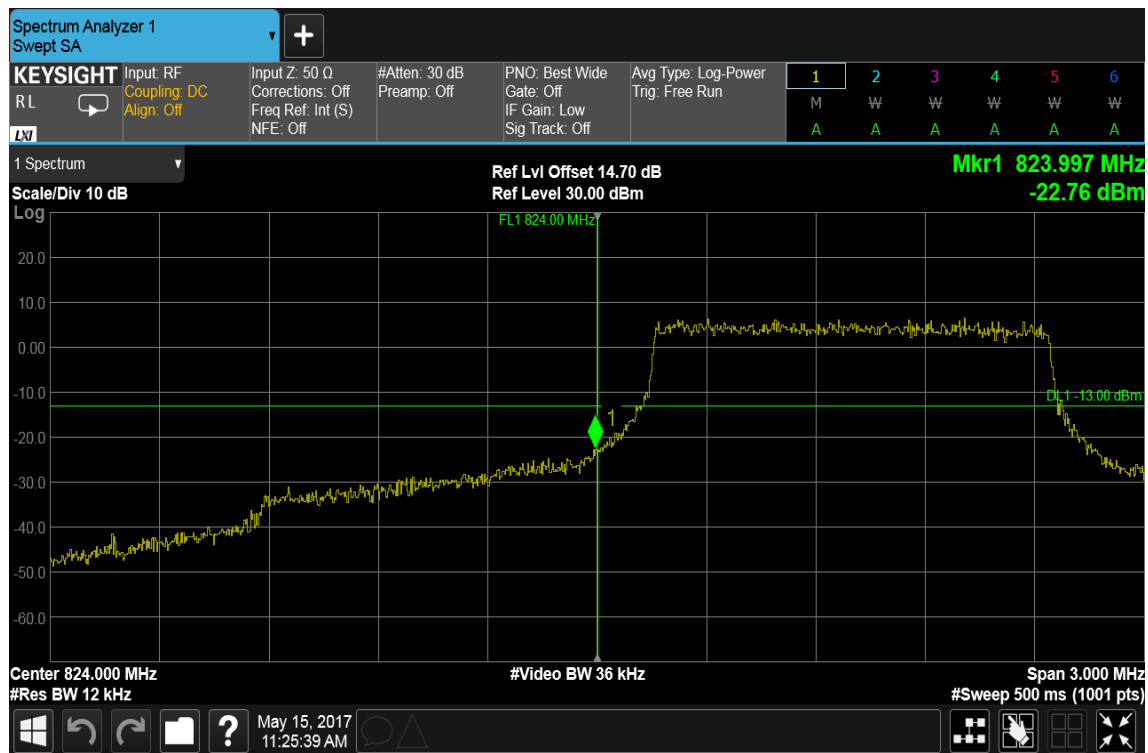


HIGHER BAND EDGE

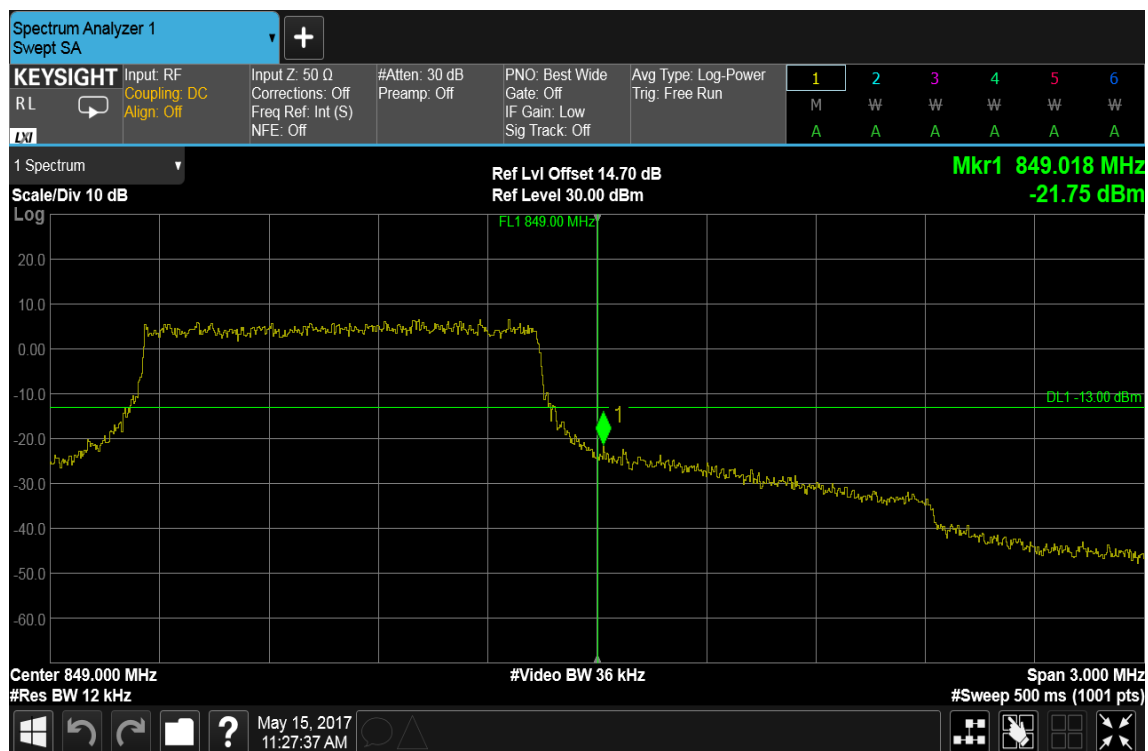


CHANNEL BANDWIDTH: 1.4MHz / QPSK / 100%RB ALLOCATED

LOWER BAND EDGE

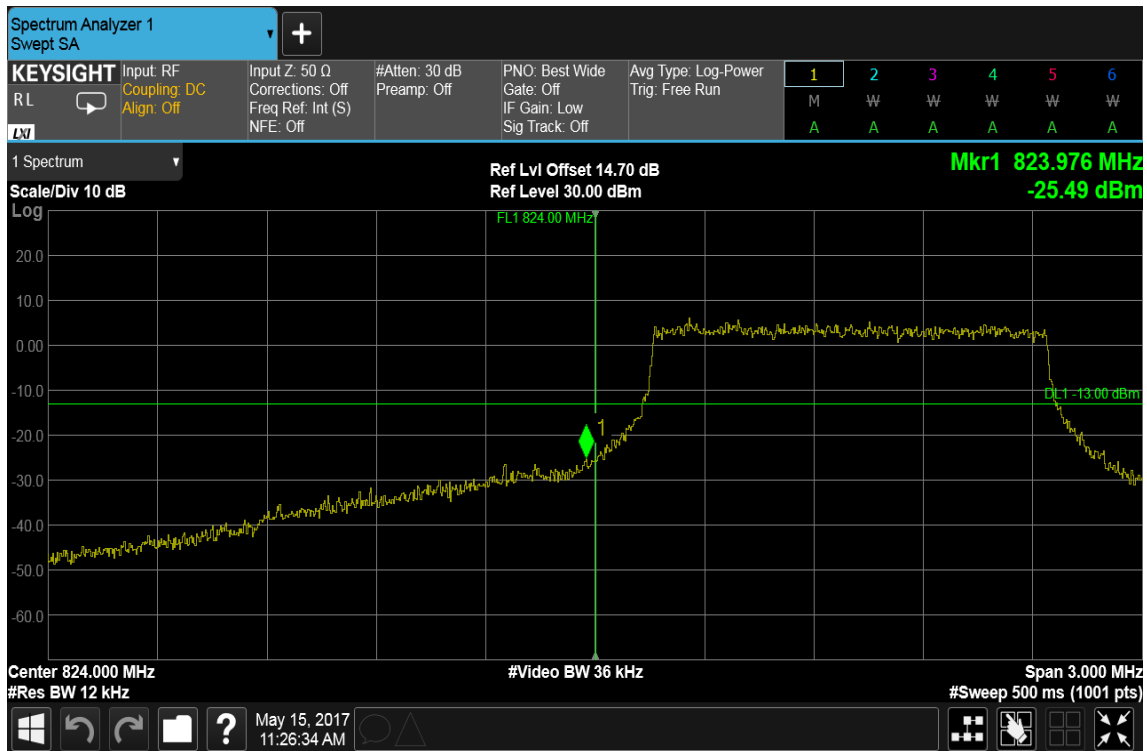


HIGHER BAND EDGE

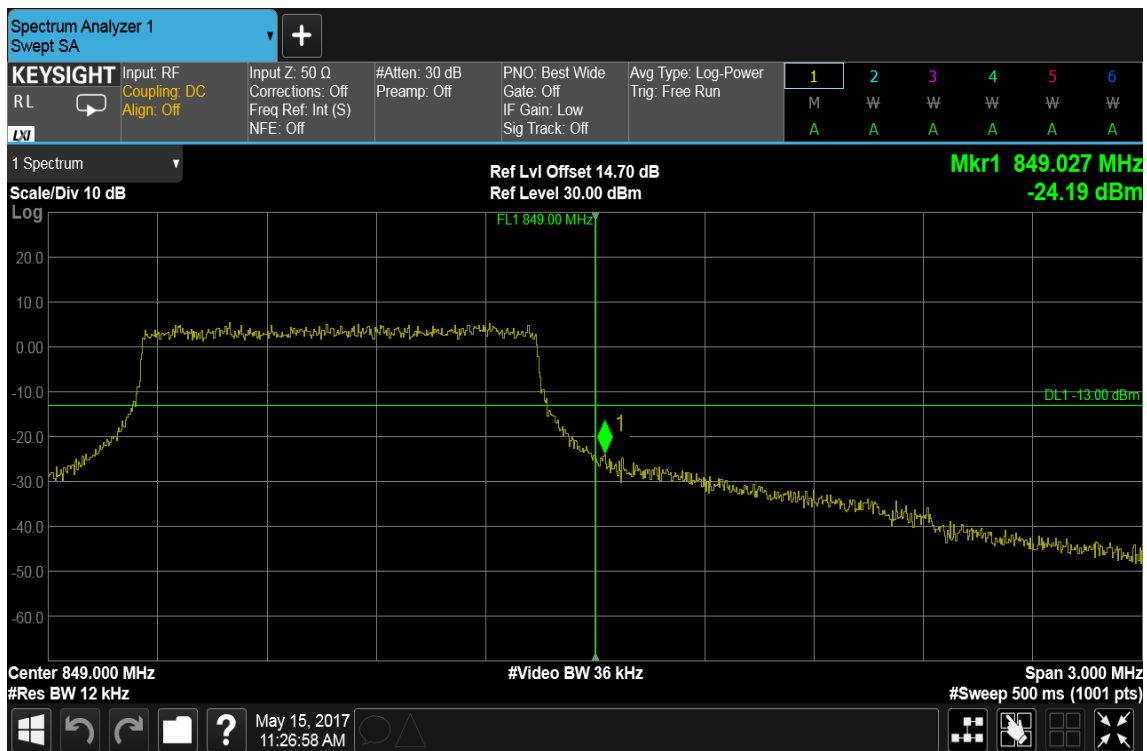


CHANNEL BANDWIDTH: 1.4MHz / 16QAM / 100%RB ALLOCATED

LOWER BAND EDGE

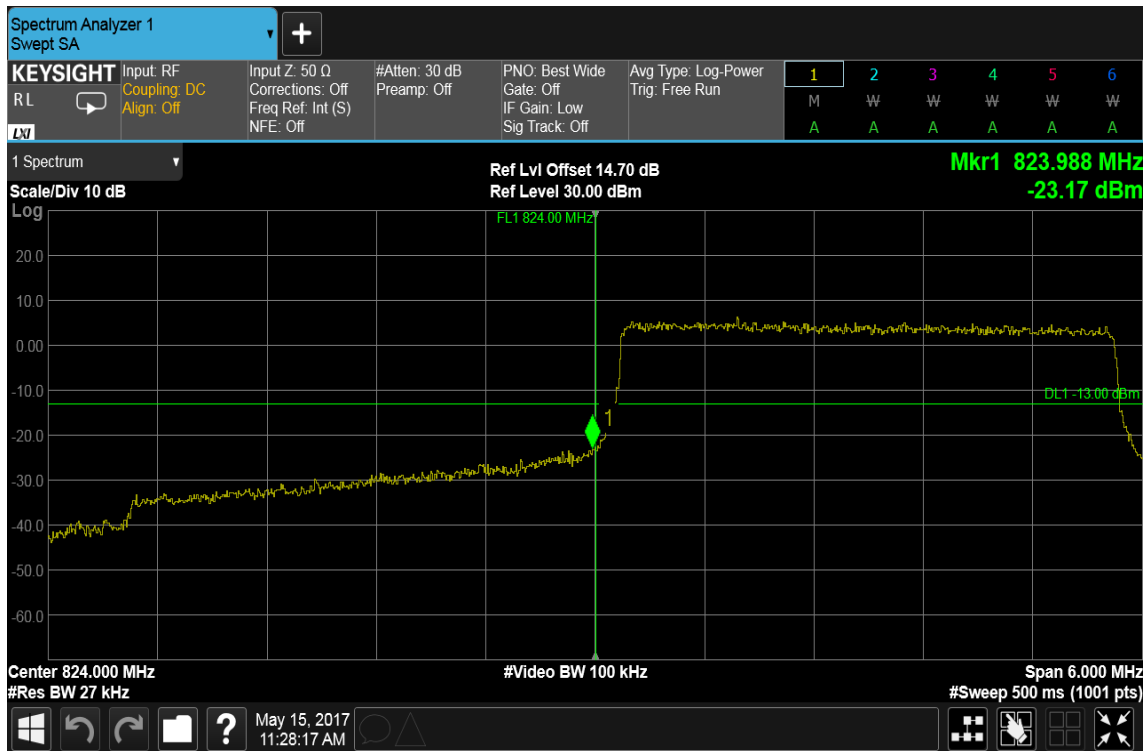


HIGHER BAND EDGE

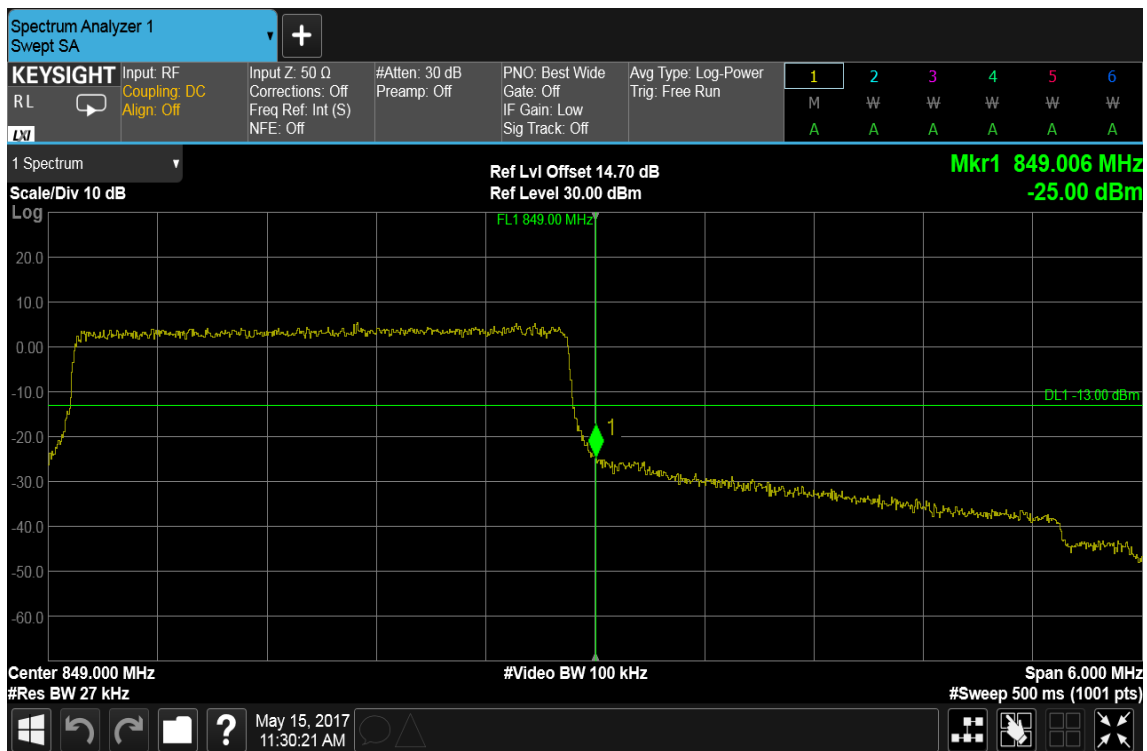


CHANNEL BANDWIDTH: 3MHz / QPSK / 100%RB ALLOCATED

LOWER BAND EDGE

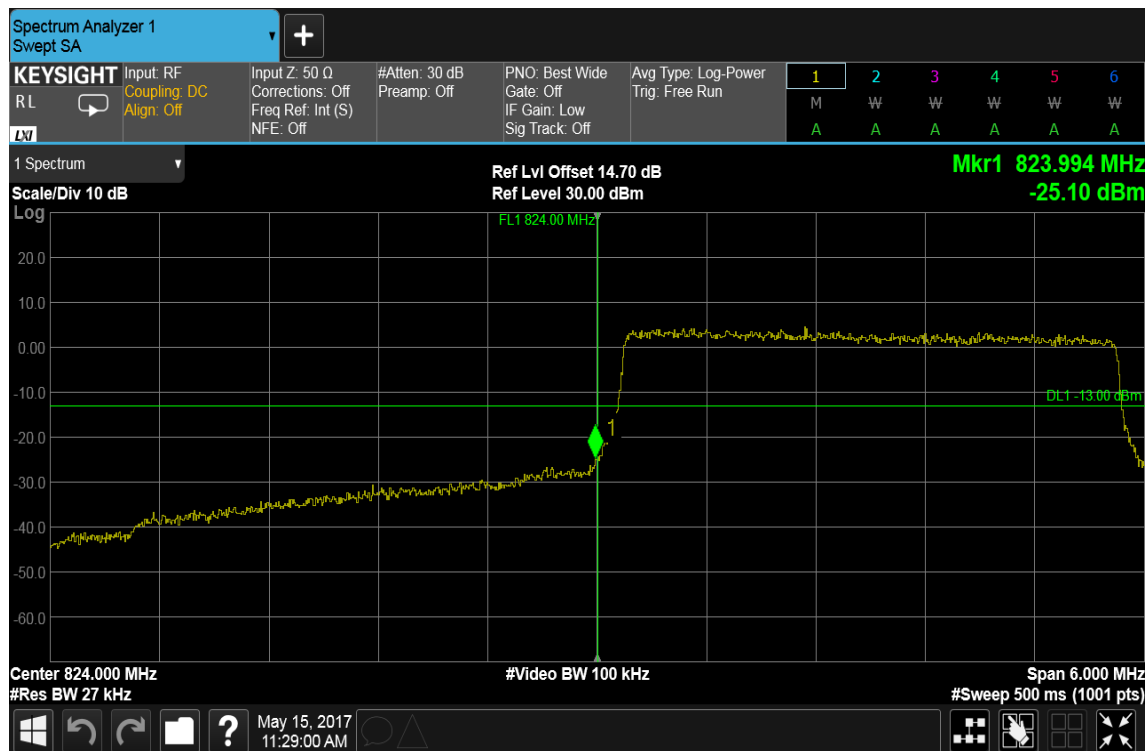


HIGHER BAND EDGE

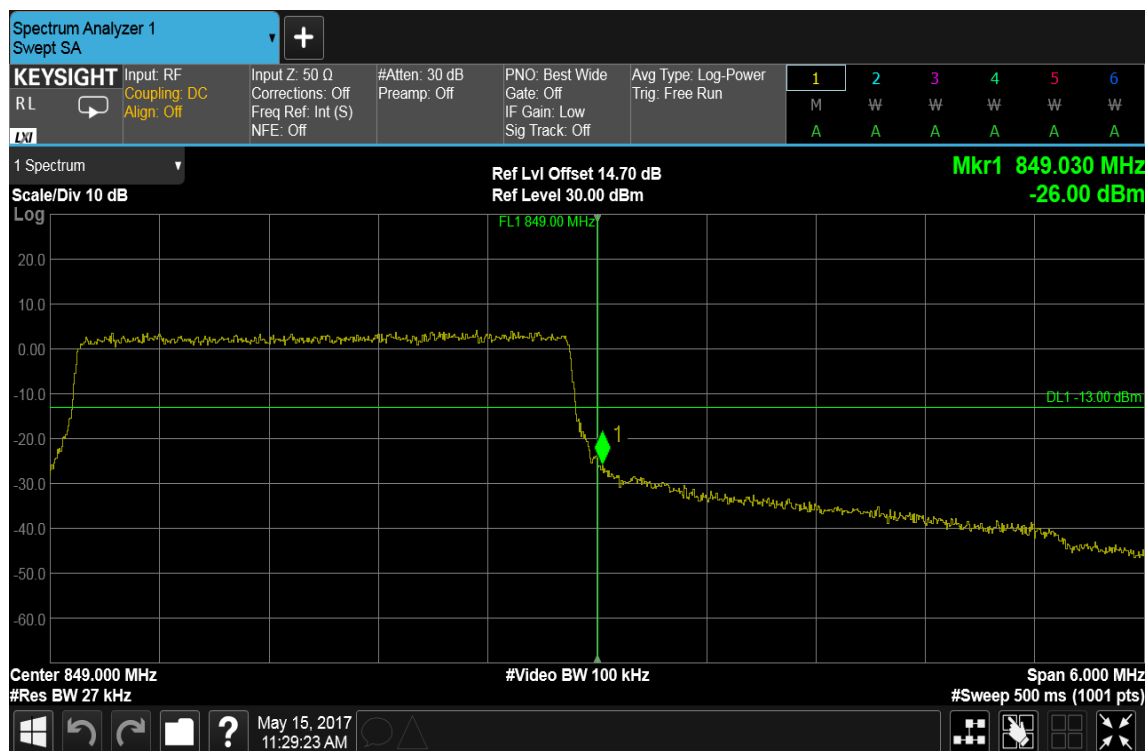


CHANNEL BANDWIDTH: 3MHz / 16QAM / 100%RB ALLOCATED

LOWER BAND EDGE

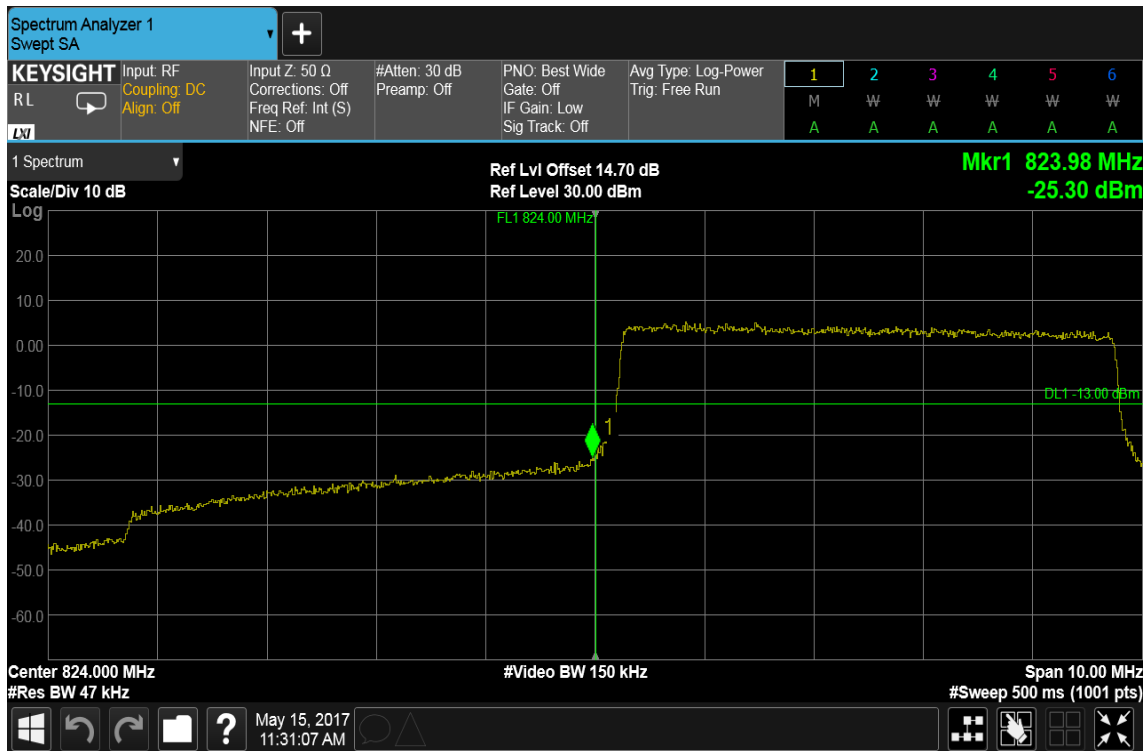


HIGHER BAND EDGE

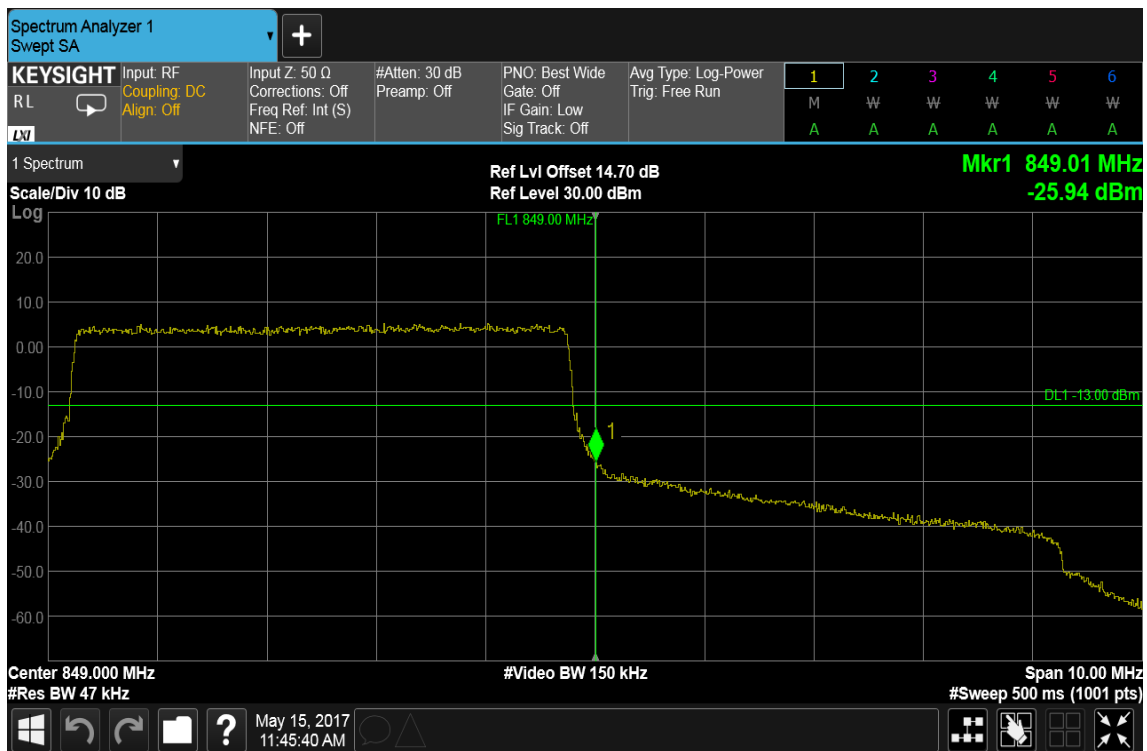


CHANNEL BANDWIDTH: 5MHz / QPSK / 100%RB ALLOCATED

LOWER BAND EDGE

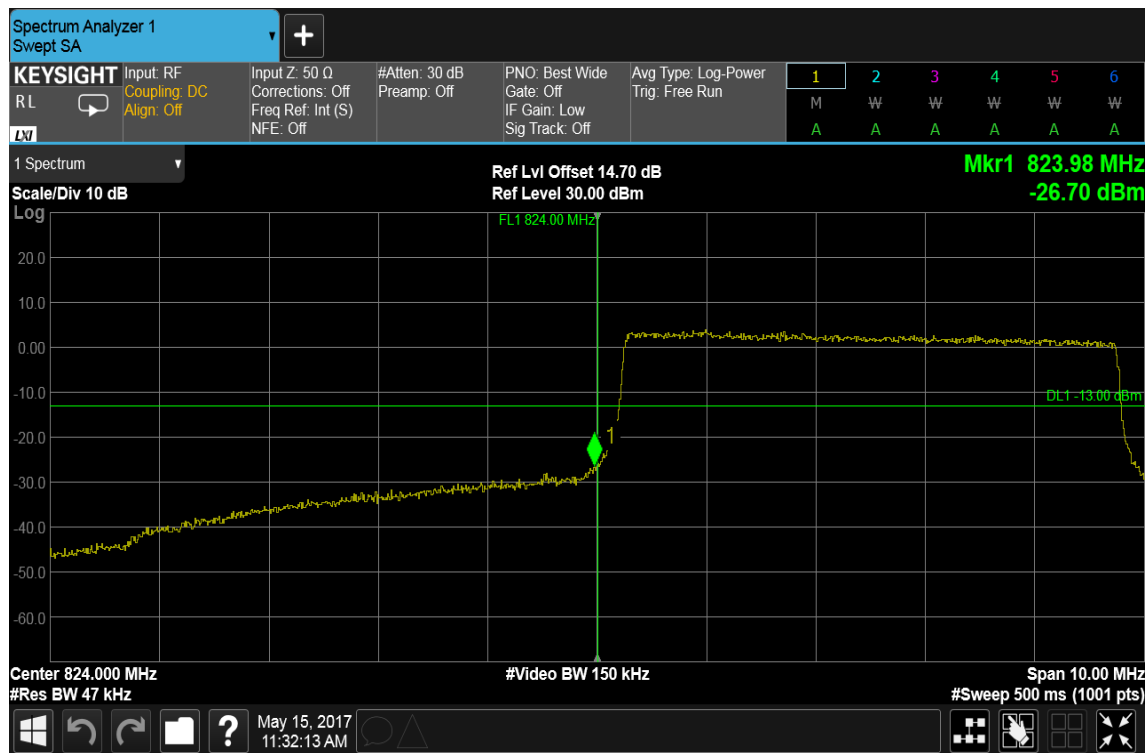


HIGHER BAND EDGE

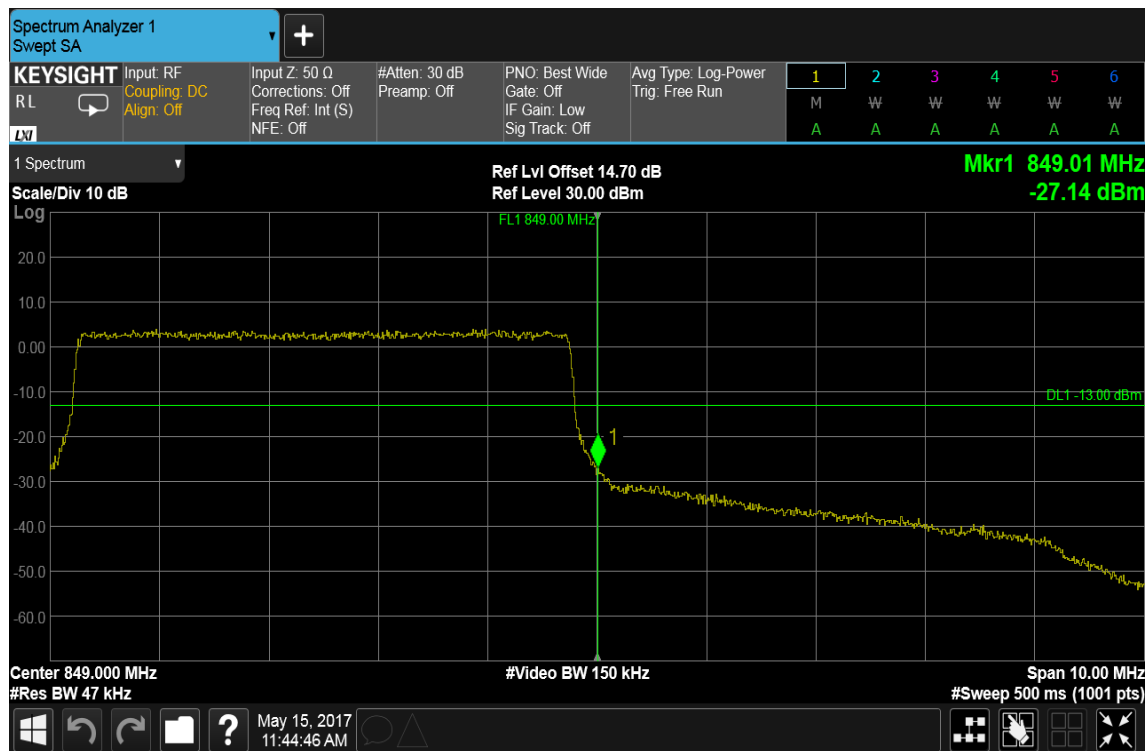


CHANNEL BANDWIDTH: 5MHz / 16QAM / 100%RB ALLOCATED

LOWER BAND EDGE

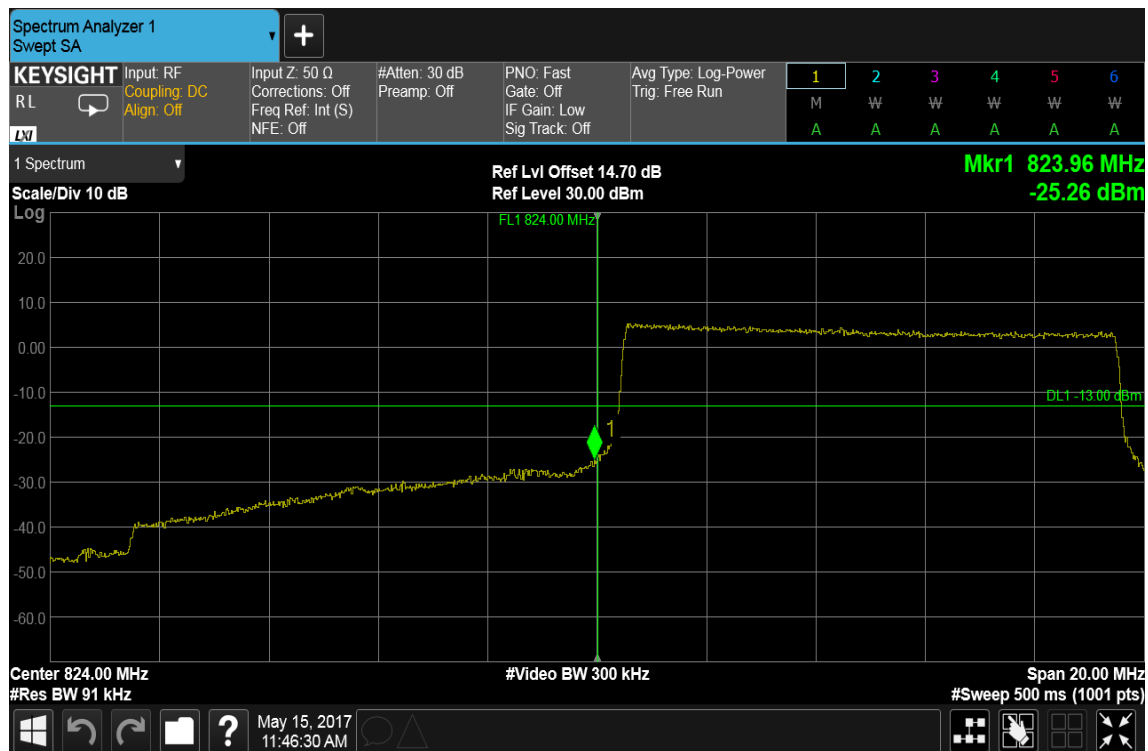


HIGHER BAND EDGE

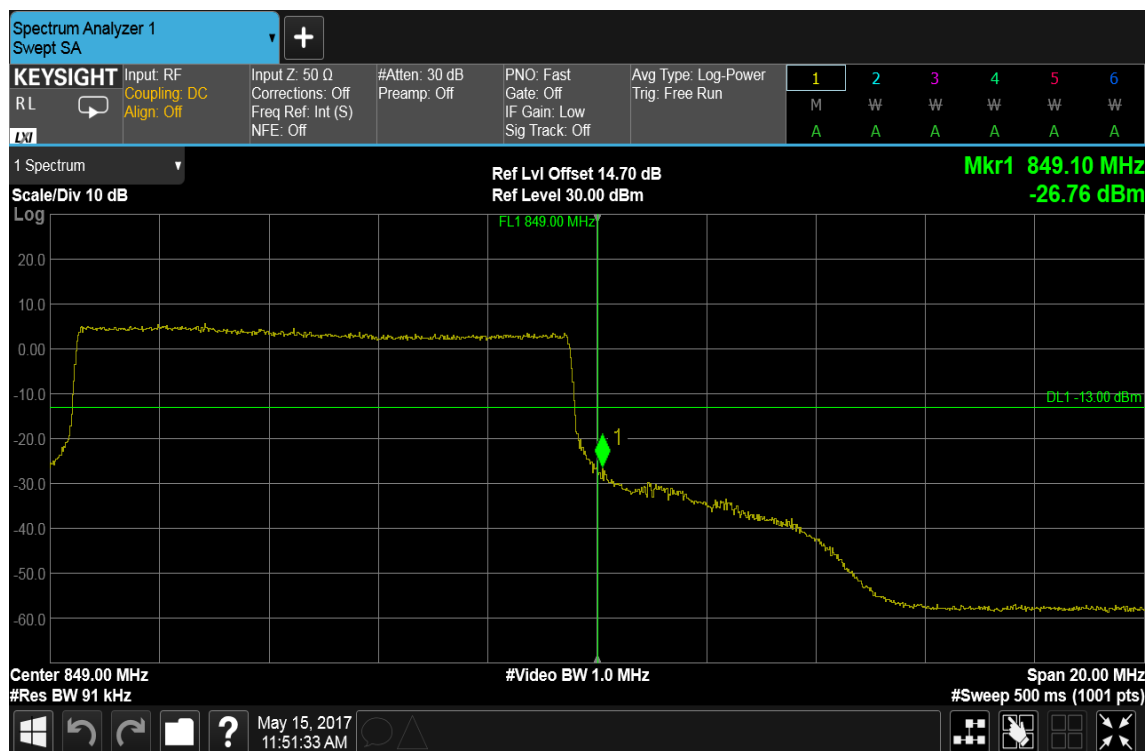


CHANNEL BANDWIDTH: 10MHz / QPSK / 100%RB ALLOCATED

LOWER BAND EDGE

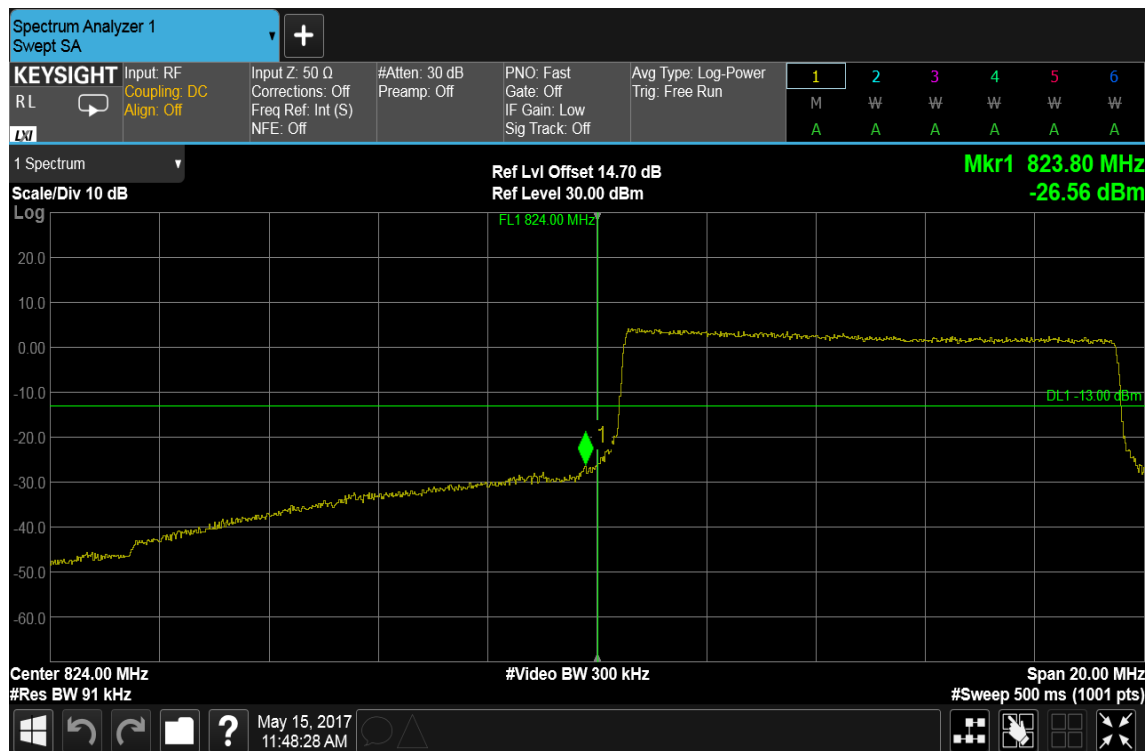


HIGHER BAND EDGE



CHANNEL BANDWIDTH: 10MHz / 16QAM / 100%RB ALLOCATED

LOWER BAND EDGE



HIGHER BAND EDGE

