FCC TEST REPORT and IC TEST REPORT

For

IPC

Model: AR-V5403FLAT-LTE

Trade Name: Acrosser

Issued to

Acrosser Technology Co., LTD.
10F., No. 12, Lane 609, Sec. 5, Chongsin Rd., Sanchong Dist.,
New Taipei City 241, Taiwan, R.O.C.

Issued by

Compliance Certification Services Inc.
No.11, Wu-Gong 6th Rd., Wugu Industrial Park,
New Taipei City 248, Taiwan (R.O.C.)
http://www.ccsrf.com
service@ccsrf.com
Issued Date: October 23, 2012

Testing Laboratory
1309

Revision History

Rev.		Issue Date		Revisions	Effect Page	Revised By
00		September 28, 2012		Initial Issue	ALL	Gina Lo
01		October 23, 2012		Add LTE Band 4 Channel Bandwidth: 20MHz test data.	ALL	Gina Lo

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1. TEST RESULT CERTIFICATION

Applicant: Acrosser Technology Co., LTD.
10F., No. 12, Lane 609, Sec. 5, Chongsin Rd., Sanchong Dist.,
New Taipei City 241, Taiwan, R.O.C.

Equipment Under Test: IPC

Trade Name: Acrosser

Model: AR-V5403FLAT-LTE

Date of Test: September 20 ~ October 20, 2012

FCC PART 27, SUBPART C, L, FCC PART 2	
OPERATING BAND: 704~716 MHz	
Standard	**TEST TYPE AND LIMIT**
2.1046 27.50(C)(10)	Maximum Peak Output Power Limit: max. 3 watts e.r.p peak power
2.1055 27.54	Frequency Stability
2.1049 27.53(g)	Occupied Bandwidth
27.50(d)(5)	Peak to average ratio
27.53(g)	Band Edge Measurements
2.1051 27.53(g)	Conducted Spurious Emissions
2.1053 27.53(g)	Radiated Spurious Emissions

OPERATING BAND: 1710~1755 MHz	
Standard	**TEST TYPE AND LIMIT**
2.1046 27.50(d)(4)	Maximum Peak Output Power Limit: max. 1 watts e.i.r.p peak power
2.1055 27.54	Frequency Stability
2.1049 27.53(h)	Occupied Bandwidth
27.50(d)(5)	Peak to average ratio
27.53(h)	Band Edge Measurements
2.1051 27.53(h)	Conducted Spurious Emissions
2.1053 27.53(h)	Radiated Spurious Emissions

Note: 1. The test result judgment is decided by the limit of test standard
2. The information of measurement uncertainty is available upon the customer's request.

Deviation from Applicable Standard
None

The above equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved by

Miller Lee
Section Manager
Compliance Certification Services Inc.

Reviewed by

Gina Lo
Section Manager
Compliance Certification Services Inc.

2. EUT DESCRIPTION

Product	IPC	
Model Number	AR-V5403FLAT-LTE	
Model Discrepancy	N/A	
Trade	Acrosser	
Received Date	September 17, 2012	
Power Source	Powered by DC 30V	
Modulation Technology	LTE Band 17	QPSK, 16QAM
	LTE Band 4	QPSK, 16QAM
Frequency Range	LTE Band 17 Channel Bandwidth: 5MHz	706.5MHz ~ 713.5MHz
	LTE Band 17 Channel Bandwidth: 10MHz	709MHz ~ 711MHz
	LTE Band 4 Channel Bandwidth: 5MHz	1712.5MHz ~1752.5MHz
	LTE Band 4 Channel Bandwidth: 10MHz	1715.0MHz ~1750.0MHz
	LTE Band 4 Channel Bandwidth: 20MHz	1710MHz ~1755MHz
Maximum ERP Power	LTE Band 17 Channel Bandwidth: 5MHz	QPSK: 17.74dBm 16QAM: 9.83dBm
	LTE Band 17 Channel Bandwidth: 10MHz	QPSK : 17.74dBm 16QAM: 10.60dBm
Maximum EIRP Power	LTE Band 4 Channel Bandwidth: 5MHz	QPSK: 17.77dBm 16QAM: 18.02dBm
	LTE Band 4 Channel Bandwidth: 10MHz	QPSK: 17.69dBm 16QAM: 17.69dBm
	LTE Band 4 Channel Bandwidth: 20MHz	QPSK: 17.69 dBm 16QAM: 14.89dBm
Category	LTE: 3	
Antenna Specification	LTE Band 4: 3-cable Multiband Antenna / Gain: 5dBi LTE Band 17: 3-cable Multiband Antenna / Gain: 2dBi LTE Band 4: 3-cable Multiband Antenna / Gain: 5dBi	

Note: *1. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.*

3. TEST METHODOLOGY

3.1 DESCRIPTION OF TEST TYPE

The EUT (model: AR-V5403FLAT-LTE) had been tested under operating condition.

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

LTE Band 17: 704MHz ~ 716MHz

Three channels had been tested for each channel bandwidth.

Channel Bandwidth	5MHz		10MHz	
	Channel	Frequency(MHz)	Channel	Frequency(MHz)
Low channel (L)	23755	706.5	23780	709.0
Middle channel (M)	23790	710.0	23790	710.0
High channel (H)	23825	713.5	23800	711.0

LTE Band 4: 1710MHz ~ 1755MHz

Three channels had been tested for each channel bandwidth.

Channel Bandwidth	5MHz		10MHz		20MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low channel (L)	19975	1712.5	20000	1715.0	20050	1720.00
Middle channel (M)	20175	1732.5	20175	1732.5	20175	1732.50
High channel (H)	20375	1752.5	20350	1750.0	20300	1745.00

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.*

Conducted Emissions Test Site				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY43360131	03/21/2013

3M Semi Anechoic Chamber				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	US42510268	11/15/2012
EMI Test Receiver	R&S	ESCI	100064	02/16/2013
Pre-Amplifier	Mini-Circults	ZFL-1000LN	SF350700823	01/13/2013
Pre-Amplifier	MITEQ	AFS44-00102650-42-10P-44	1415367	11/20/2012
Bilog Antenna	Sunol Sciences	JB3	A030105	10/02/2013
Bilog Antenna	Sunol Sciences	JB3	A030205	10/02/2013
Horn Antenna	EMCO	3117	00055165	02/14/2013
Horn Antenna	EMCO	3117	00055167	02/14/2013
Horn Antenna	EMCO	3116	00026370	10/12/2012
Loop Antenna	EMCO	6502	8905/2356	06/10/2013
Turn Table	CCS	CC-T-1F	N/A	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R
Site NSA	CCS	N/A	N/A	12/23/2012
Test S/W	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 Industrial Park, Taipei Hsien 248, Taiwan
Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045

☐ No.81-1, Lane 210, Bade 2nd Rd., Luchu Hsiang, Taoyuan Hsien 338, Taiwan
Tel: 886-3-324-0332 / Fax: 886-3-324-5235

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 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 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	TAF Testing Laboratory 1309
Canada	Industry Canada	3M Semi Anechoic Chamber (IC 2324G-1 / IC 2324G-2) to perform	Canada 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 I for the actual connections between EUT and support equipment.

6.2 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
1.	LCD Monitor	DELL	3008WFP	CN-0XK290-71618-846-169L	FCC DoC	Unshielded, 1.8m	Shielded, 1.8m
2.	USB Mouse	DELL	MO56UO	408031121	FCC DoC	Shielded, 1.8m	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. TEST PROCEDURE AND RESULT

7.1 OUTPUT POWER MEASUREMENT

LIMITS

Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz

band are limited to 1 watt EIRP.

Portable stations (hand-held devices) operating in the 698–746 MHz band are limited

to 3 watts ERP

TEST PROCEDURES

EIRP / ERP MEASUREMENT:

1. The EUT was set up for the maximum power with LTE link data modulation. The power was measured with Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high operational frequency range). RWB and VBW is 10MHz for LTE.
2. E.I.R.P power measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
3. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step a. Record the power level of S.G d. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn
4. E.R.P = E.I.R.P- 2.15 dB

CONDUCTED POWER MEASUREMENT:

1. The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.
2. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

TEST RESULTS

LTE Band 17

Channel Bandwidth: 5MHz

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
706.5	23755	22.83	0.19187
710.0	23790	22.93	0.19634
713.5	23825	22.65	0.18408

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
706.5	23755	22.95	0.19724
710.0	23790	22.96	0.19770
713.5	23825	23.02	0.20045

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
706.5	23755	21.79	0.15101
710.0	23790	21.77	0.15031
713.5	23825	21.87	0.15382

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
706.5	23755	21.81	0.15171
710.0	23790	21.78	0.15066
713.5	23825	21.78	0.15066

Remarks:

1. Output Power (dBm) = Raw Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Power Splitter Loss (dB) + Cable Loss (dB) + 20dB Attenuator.
3. The value in bold is the worst.

Channel Bandwidth: 5MHz

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
706.5	23755	21.55	0.14289
710.0	23790	21.50	0.14125
713.5	23825	21.53	0.14223

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
706.5	23755	21.87	0.15382
710.0	23790	22.02	0.15922
713.5	23825	21.78	0.15066

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
706.5	23755	20.98	0.12531
710.0	23790	20.91	0.12331
713.5	23825	20.92	0.12359

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
706.5	23755	20.96	0.12474
710.0	23790	20.95	0.12445
713.5	23825	20.87	0.12218

Remarks:

1. Output Power (dBm) = Raw Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Power Splitter Loss (dB) + Cable Loss (dB) + 20dB Attenuator.
3. The value in bold is the worst.

LTE Band 17

Channel Bandwidth: 10MHz

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
709.0	23780	22.73	0.18750
710.0	23790	22.89	0.19454
711.0	23800	22.84	0.19231

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
709.0	23780	22.93	0.19634
710.0	23790	22.88	0.19409
711.0	23800	22.83	0.19187

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
709.0	23780	21.60	0.14454
710.0	23790	21.72	0.14859
711.0	23800	21.75	0.14962

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
709.0	23780	21.79	0.15101
710.0	23790	21.75	0.14962
711.0	23800	21.62	0.14521

Remarks:

1. Output Power (dBm) = Raw Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Power Splitter Loss (dB) + Cable Loss (dB) + 20dB Attenuator.
3. The value in bold is the worst.

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
709.0	23780	21.29	0.13459
710.0	23790	21.47	0.14028
711.0	23800	21.34	0.13614

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
709.0	23780	21.73	0.14894
710.0	23790	21.61	0.14488
711.0	23800	21.62	0.14521

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
709.0	23780	20.59	0.11455
710.0	23790	20.57	0.11402
711.0	23800	20.53	0.11298

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
709.0	23780	20.80	0.12023
710.0	23790	20.85	0.12162
711.0	23800	20.76	0.11912

Remarks:

1. Output Power (dBm) = Raw Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Power Splitter Loss (dB) + Cable Loss (dB) + 20dB Attenuator.
3. The value in bold is the worst.

LTE Band 4

Channel Bandwidth: 5MHz

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	22.81	0.19099
1732.5	20175	23.06	0.20230
1752.5	20375	22.09	0.16181

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	22.56	0.18030
1732.5	20175	23.10	0.20417
1752.5	20375	23.03	0.20091

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	21.85	0.15311
1732.5	20175	22.13	0.16331
1752.5	20375	21.87	0.15382

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	21.85	0.15311
1732.5	20175	22.03	0.15959
1752.5	20375	21.90	0.15488

Remarks:

1. Output Power (dBm) = Raw Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Power Splitter Loss (dB) + Cable Loss (dB) + 20dB Attenuator.
3. The value in bold is the worst.

Channel Bandwidth: 5MHz

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	21.78	0.15066
1732.5	20175	21.96	0.15704
1752.5	20375	21.99	0.15812

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	21.73	0.14894
1732.5	20175	21.95	0.15668
1752.5	20375	22.16	0.16444

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	20.90	0.12303
1732.5	20175	21.14	0.13002
1752.5	20375	21.00	0.12589

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	20.98	0.12531
1732.5	20175	21.27	0.13397
1752.5	20375	21.08	0.12823

Remarks:

1. Output Power (dBm) = Raw Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Power Splitter Loss (dB) + Cable Loss (dB) + 20dB Attenuator.
3. The value in bold is the worst.

LTE Band 4

Channel Bandwidth: 10MHz

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	22.65	0.18408
1732.5	20175	22.84	0.19231
1750.0	20350	22.90	0.19498

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	21.90	0.15488
1732.5	20175	22.94	0.19679
1750.0	20350	22.82	0.19143

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	21.80	0.15136
1732.5	20175	22.20	0.16596
1750.0	20350	22.04	0.15996

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	21.63	0.14555
1732.5	20175	21.90	0.15488
1750.0	20350	21.98	0.15776

Remarks:

1. Output Power (dBm) = Raw Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Power Splitter Loss (dB) + Cable Loss (dB) + 20dB Attenuator.
3. The value in bold is the worst.

Conducted Output Power (16QAM RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	21.62	0.14521
1732.5	20175	21.91	0.15524
1750.0	20350	21.73	0.14894

Conducted Output Power (16QAM RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	21.61	0.14488
1732.5	20175	22.26	0.16827
1750.0	20350	21.88	0.15417

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	20.68	0.11695
1732.5	20175	20.97	0.12503
1750.0	20350	21.05	0.12735

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	20.65	0.11614
1732.5	20175	20.84	0.12134
1750.0	20350	20.89	0.12274

Remarks:

1. Output Power (dBm) = Raw Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Power Splitter Loss (dB) + Cable Loss (dB) + 20dB Attenuator.
3. The value in bold is the worst.

LTE Band 4

Channel Bandwidth: 20MHz

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	21.36	0.13677
1732.50	20175	21.27	0.13397
1745.00	20300	21.57	0.14355

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	21.25	0.13335
1732.50	20175	21.24	0.13305
1745.00	20300	21.18	0.13122

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	20.25	0.10593
1732.50	20175	20.21	0.10495
1745.00	20300	20.33	0.10789

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	20.30	0.10715
1732.50	20175	20.33	0.10789
1745.00	20300	20.43	0.11041

Remarks:

1. Output Power (dBm) = Raw Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Power Splitter Loss (dB) + Cable Loss (dB) + 20dB Attenuator.
3. The value in bold is the worst.

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	20.84	0.12134
1732.50	20175	20.98	0.12531
1745.00	20300	21.03	0.12677

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	20.83	0.12106
1732.50	20175	20.76	0.11912
1745.00	20300	20.65	0.11614

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	19.34	0.08590
1732.50	20175	19.32	0.08551
1745.00	20300	19.42	0.08750

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	19.29	0.08492
1732.50	20175	19.33	0.08570
1745.00	20300	19.47	0.08851

Remarks:

1. Output Power (dBm) = Raw Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Power Splitter Loss (dB) + Cable Loss (dB) + 20dB Attenuator.
3. The value in bold is the worst.

ERP POWER

LTE Band 17

Channel Bandwidth: 5MHz / QPSK

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
23755	706.5	V	12.3	0.07	5.37	17.6	38.45	-20.85
	706.5	H	14.2	4.34	5.37	15.23	38.45	-23.22
23790	710.0	V	16.1	3.73	5.37	***17.74**	38.45	-20.71
	710.0	H	11.8	1.97	5.37	15.2	38.45	-23.25
23825	713.5	V	22.27	11.36	5.56	16.47	38.45	-21.98
	713.5	H	13.93	5.42	5.42	13.93	38.45	-24.52

Channel Bandwidth: 5MHz / 16QAM

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
23755	706.5	V	1.77	3.13	6.32	4.96	38.45	-33.49
	706.5	H	6.64	3.13	6.32	***9.83**	38.45	-28.62
23790	710.0	V	3.59	3.15	6.35	6.79	38.45	-31.66
	710.0	H	3.21	3.15	6.34	6.40	38.45	-32.05
23825	713.5	V	5.58	3.15	6.35	8.78	38.45	-29.67
	713.5	H	5.58	3.15	6.35	8.78	38.45	-29.67

Remark:

1. Output Power (dBm) = Raw Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = S.G Level + Gain of Substitution horn + TX cable loss.
3. The value in bold is the worst.

Channel Bandwidth: 10MHz / QPSK

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
23780	709.0	V	13.72	6.64	6.21	13.29	38.45	-25.16
	709.0	H	13.72	7.5	6.24	12.46	38.45	-25.99
23790	710.0	V	17.74	5.37	5.37	***17.74**	38.45	-20.71
	710.0	H	15.2	5.37	5.37	15.2	38.45	-23.25
23800	711.0	V	13.72	6.18	6.2	13.74	38.45	-24.71
	711.0	H	13.72	7.59	6.24	12.37	38.45	-26.08

Channel Bandwidth: 10MHz / 16QAM

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
23780	709.0	V	2.87	3.15	6.35	6.07	38.45	-32.38
	709.0	H	3.97	3.15	6.36	7.18	38.45	-31.27
23790	710.0	V	3.21	3.15	6.38	6.44	38.45	-32.01
	710.0	H	2.64	3.15	6.36	5.85	38.45	-32.60
23800	711.0	V	3.36	3.15	6.38	6.59	38.45	-31.86
	711.0	H	7.35	3.15	6.4	***10.60**	38.45	-27.85

Remark:

1. Output Power (dBm) = Raw Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = S.G Level + Gain of Substitution horn + TX cable loss.
3. The value in bold is the worst.

EIRP POWER

LTE Band 4

Channel Bandwidth: 5MHz / QPSK

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
19975	1712.5	V	16.27	5.14	5.91	17.04	33.00	-15.96
	1712.5	H	13.47	5.14	5.91	14.24	33.00	-18.76
20175	1732.5	V	17.02	5.17	5.88	17.73	33.00	-15.27
	1732.5	H	14.13	5.17	5.88	14.84	33.00	-18.16
20375	1752.5	V	17.14	5.21	5.84	***17.77**	33.00	-15.23
	1752.5	H	15.07	5.21	5.84	15.70	33.00	-17.30

Channel Bandwidth: 5MHz / 16QAM

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
19975	1712.5	V	16.92	5.14	5.91	17.69	33.00	-15.31
	1712.5	H	11.66	5.14	5.91	12.43	33.00	-20.57
20175	1732.5	V	16.67	5.17	5.88	17.38	33.00	-15.62
	1732.5	H	12.31	5.17	5.88	13.02	33.00	-19.98
20375	1752.5	V	17.37	5.2	5.85	***18.02**	33.00	-14.98
	1752.5	H	13.34	5.2	5.85	13.99	33.00	-19.01

Channel Bandwidth: 10MHz / QPSK

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
20000	1715.0	V	18.69	7.45	5.87	17.11	38.45	-21.34
	1715.0	H	10.7	2.24	5.89	14.35	38.45	-24.1
20175	1732.5	V	18.69	6.81	5.87	17.75	38.45	-20.7
	1732.5	H	10.7	1.66	5.89	14.93	38.45	-23.52
20350	1750.0	V	18.7	6.87	5.86	***17.69**	38.45	-20.76
	1750.0	H	10.7	1.65	5.9	14.95	38.45	-23.5

Channel Bandwidth: 10MHz / 16QAM

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
20000	1715.0	V	18.69	7.45	5.87	17.11	38.45	-21.34
	1715.0	H	10.7	2.24	5.89	14.35	38.45	-24.1
20175	1732.5	V	18.69	6.81	5.87	17.75	38.45	-20.7
	1732.5	H	10.7	1.66	5.89	14.93	38.45	-23.52
20350	1750.0	V	18.7	6.87	5.86	***17.69**	38.45	-20.76
	1750.0	H	10.7	1.65	5.9	14.95	38.45	-23.5

Channel Bandwidth: 20MHz / QPSK

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
20050	1720.00	V	18.69	7.45	5.87	17.11	38.45	-21.34
	1720.00	H	10.7	2.24	5.89	14.35	38.45	-24.1
20175	1732.50	V	18.69	6.81	5.87	17.75	38.45	-20.7
	1732.50	H	10.7	1.66	5.89	14.93	38.45	-23.52
20300	1745.00	V	18.7	6.87	5.86	***17.69**	38.45	-20.76
	1745.00	H	10.7	1.65	5.9	14.95	38.45	-23.5

Channel Bandwidth: 20MHz / 16QAM

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
20050	1720.00	V	13.77	5.15	5.9	14.52	33.00	-18.48
	1720.00	H	9.51	5.15	5.9	10.26	33.00	-22.74
20175	1732.50	V	13.48	5.16	5.89	14.21	33.00	-18.79
	1732.50	H	9.53	5.18	5.87	10.22	33.00	-22.78
20300	1745.00	V	14.2	5.18	5.87	***14.89**	33.00	-18.11
	1745.00	H	10.06	5.18	5.87	10.75	33.00	-22.25

Remark:

1. Output Power (dBm) = Raw Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = S.G Level + Gain of Substitution horn + TX cable loss.
3. The value in bold is the worst.

7.2 FREQUENCY STABILITY MEASUREMENT

LIMIT

According to the FCC part 27.54 shall be tested the frequency stability. The rule is defined that" The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation. The test extreme voltage is according to the 2.1055(d)(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment and the extreme temperature rule is comply with the 1055(a)(1) –30℃~50℃.

TEST PROCEDURE

1. Because of the measure the carrier frequency under the condition of the AFC lock, it shall be used the mobile station in the LTE link mode. This is accomplished with the use of the communication simulator station. The oven room could control the temperatures and humidity.
2. Power must be removed when changing from one temperature to another or one voltage to another voltage. Power warm up is at least 15 min and power applied should perform before recording frequency error.
3. Laptop pc is connected the external power supply to control the AC input power. The various Volts from the minimum 126.5 Volts to 93.5 Volts. Each step shall be record the frequency error rate.
4. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing.
5. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

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

TEST RESULTS

FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT:

LTE Band 17

Reference Frequency: LTE Band 17 710 MHz @ 20°C						
Limit: ± 2.5 ppm = 1775Hz						
Power Supply Vdc	Environment Temperature (°C)	5M Frequency (Hz)	Delta (Hz)	10M Frequency (Hz)	Delta (Hz)	Limit (Hz)
30	50	709999988	-3	709999999	8	1775
30	40	709999997	6	709999997	6	
30	30	710000013	22	709999999	8	
30	20	709999991	0	709999991	0	
30	10	710000018	27	710000005	14	
30	0	710000019	28	709999998	7	
30	-10	710000011	20	709999996	5	
30	-20	710000024	33	709999994	3	
30	-30	710000007	16	709999989	-2	

LTE Band 4

Reference Frequency: LTE Band 4 1732.5 MHz @ 20°C						
Limit: ± 2.5 ppm = 4331Hz						
Power Supply Vdc	Environment Temperature (°C)	5M Frequency (Hz)	Delta (Hz)	10M Frequency (Hz)	Delta (Hz)	Limit (Hz)
30	50	173249988	-3	173249999	1	4331
30	40	173249997	6	173249997	-1	
30	30	173250013	22	173249999	1	
30	20	173249991	0	173249998	0	
30	10	173250018	27	173249995	-3	
30	0	173250019	28	173249998	0	
30	-10	173250011	20	173249996	-2	
30	-20	173250024	33	173249994	-4	
30	-30	173250007	16	173249989	-9	

FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT:

LTE Band 17

Reference Frequency: LTE Band 17 710 MHz @ 20°C						
Limit: ± 2.5 ppm = 1775Hz						
Power Supply Vdc	Environment Temperature (°C)	5M Frequency (Hz)	Delta (Hz)	10M Frequency (Hz)	Delta (Hz)	Limit (Hz)
32	20	709999980	-11	709999999	8	1775
30		709999991	0	709999991	0	
25.5		709999977	-14	709999993	2	

LTE Band 4

Reference Frequency: LTE Band 4 1732.5 MHz @ 20°C						
Limit: ± 2.5 ppm = 4331Hz						
Power Supply Vdc	Environment Temperature (°C)	5M Frequency (Hz)	Delta (Hz)	10M Frequency (Hz)	Delta (Hz)	Limit (Hz)
32	20	173249980	-11	173249999	1	4331
30		173249991	0	173249998	0	
25.5		173249977	-14	173249993	-5	

7.3 OCCUPIED BANDWIDTH MEASUREMENT

LIMITS

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

TEST PROCEDURES

1. The EUT makes a phone call to the communication simulator. The power was measured with Spectrum Analyzer. All measurements were done at 3 channels. (low, middle and high operational frequency range.)
2. The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
3. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

TEST RESULTS

LTE Band 17

CHANNEL BANDWIDTH: 5MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	706.5	4.5254
Mid	710.0	4.5238
High	713.5	4.5136

CHANNEL BANDWIDTH: 5MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	706.5	4.5037
Mid	710.0	4.5167
High	713.5	4.5009

CHANNEL BANDWIDTH: 10MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	709.0	9.9321
Mid	710.0	8.9628
High	711.0	8.9282

CHANNEL BANDWIDTH: 10MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	709.0	8.9345
Mid	710.0	8.9230
High	711.0	8.9227

LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1712.5	4.5141
Mid	1732.5	4.5227
High	1752.5	4.5168

CHANNEL BANDWIDTH: 5MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1712.5	4.4975
Mid	1732.5	4.4975
High	1752.5	4.500

CHANNEL BANDWIDTH: 10MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1715.0	8.9321
Mid	1732.5	8.9367
High	1750.0	8.9278

CHANNEL BANDWIDTH: 10MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1715.0	8.9425
Mid	1732.5	8.9378
High	1750.0	8.8960

CHANNEL BANDWIDTH: 20MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1715.0	17.8548
Mid	1732.5	17.8380
High	1750.0	17.8090

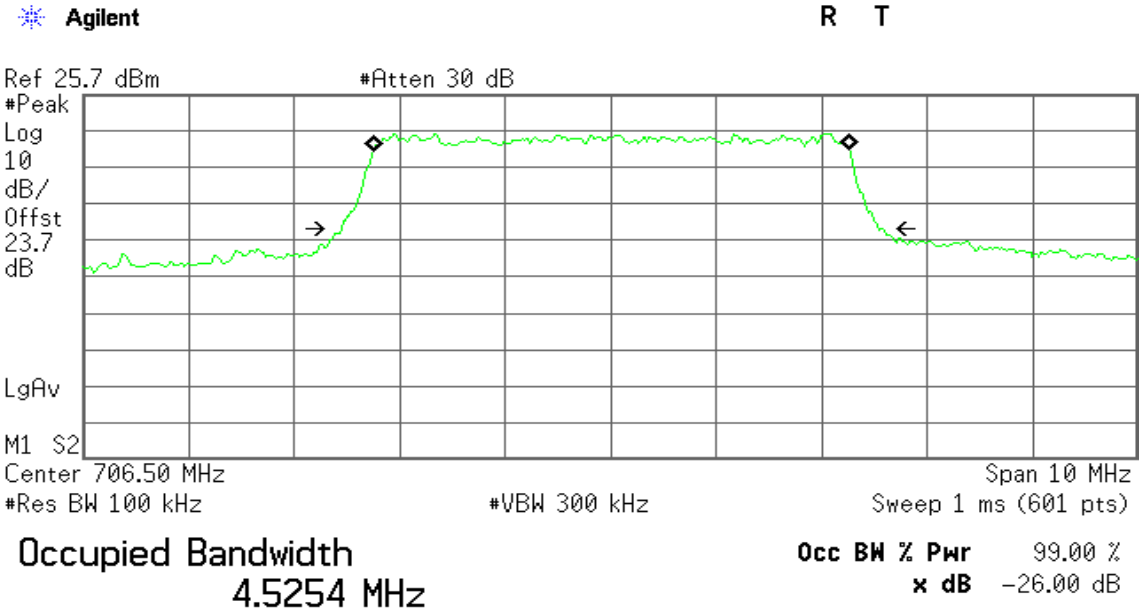
CHANNEL BANDWIDTH: 20MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1715.0	17.8161
Mid	1732.5	17.8167
High	1750.0	17.8100

LTE Band 17

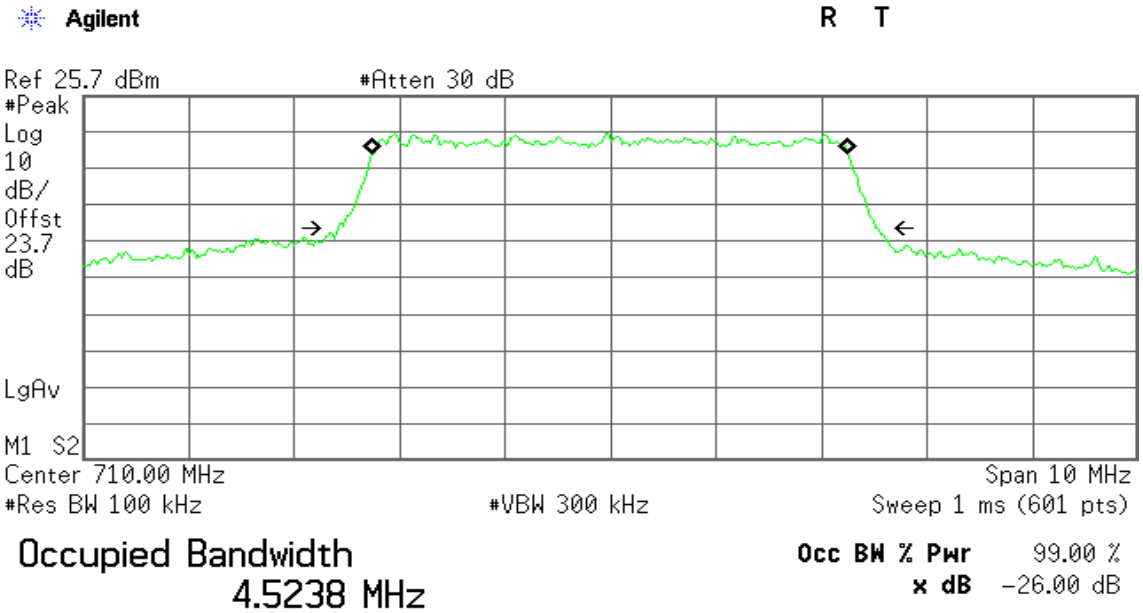
CHANNEL BANDWIDTH: 5MHz / QPSK

CH Low



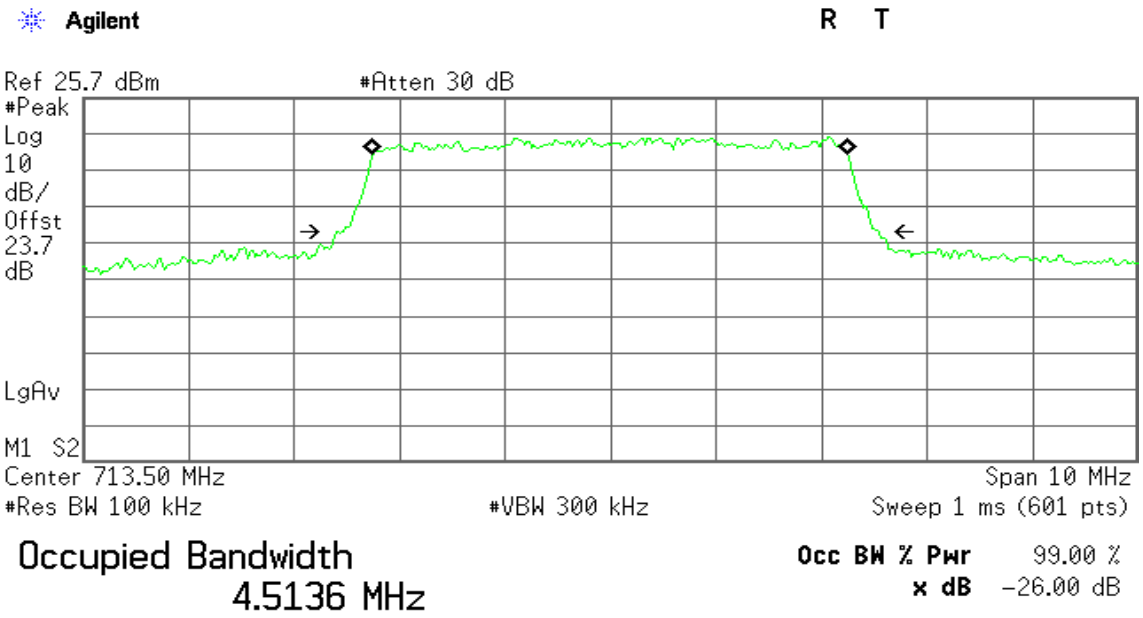
Transmit Freq Error 5.005 kHz
x dB Bandwidth 5.097 MHz

CH Mid



Transmit Freq Error -5.725 kHz
x dB Bandwidth 5.124 MHz

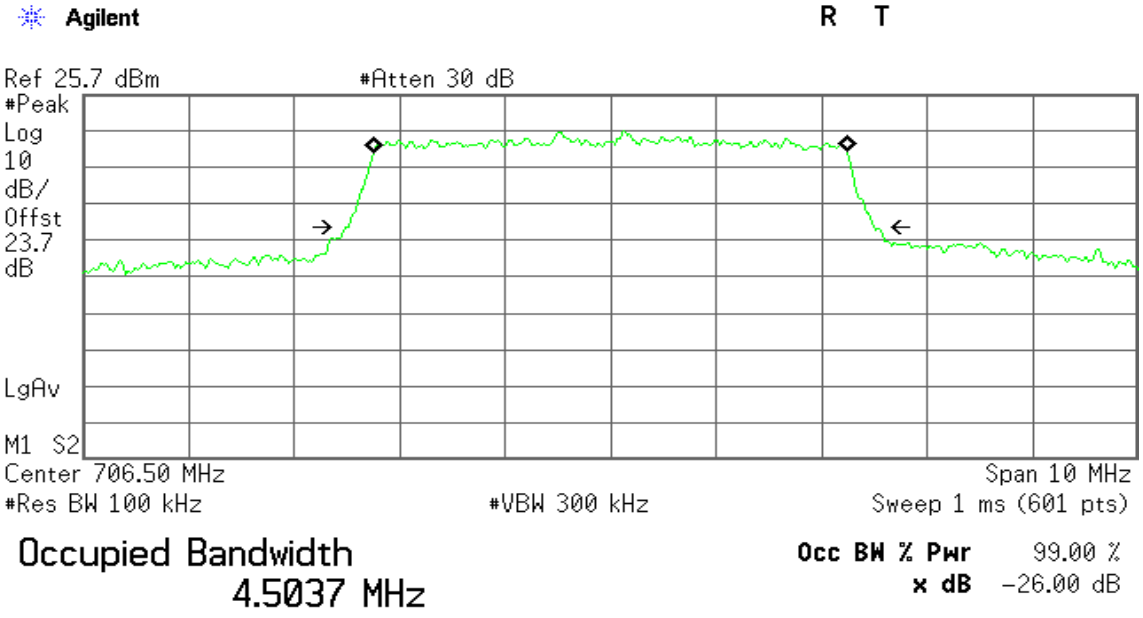
CH High



Transmit Freq Error -2.112 kHz
x dB Bandwidth 5.139 MHz

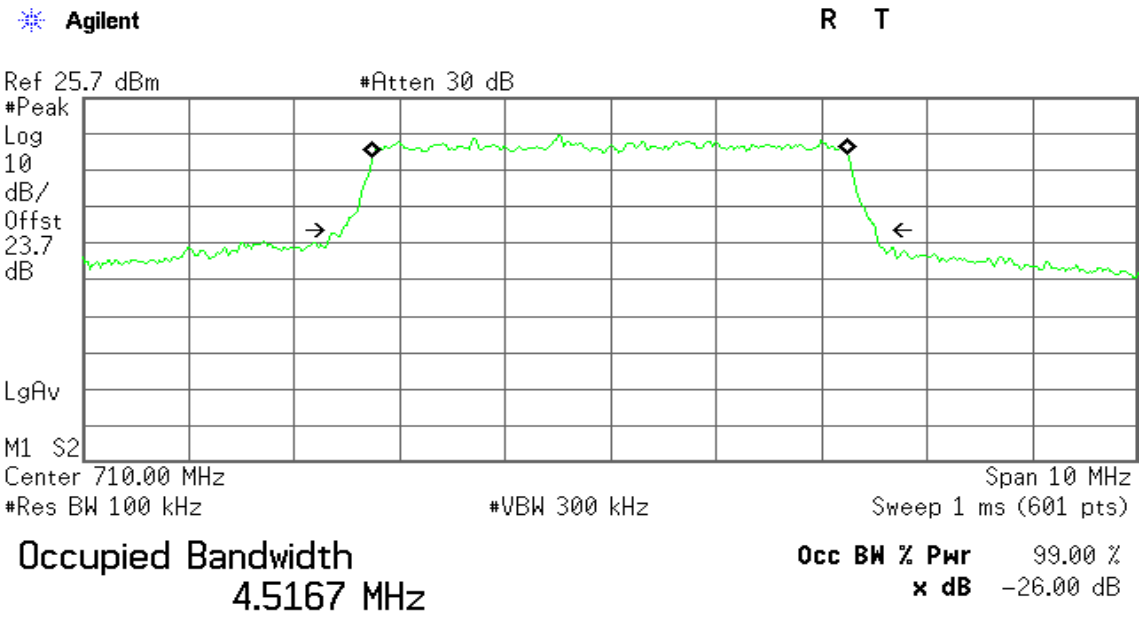
CHANNEL BANDWIDTH: 5MHz / 16QAM

CH Low



Transmit Freq Error -1.791 kHz
x dB Bandwidth 4.983 MHz

CH Mid

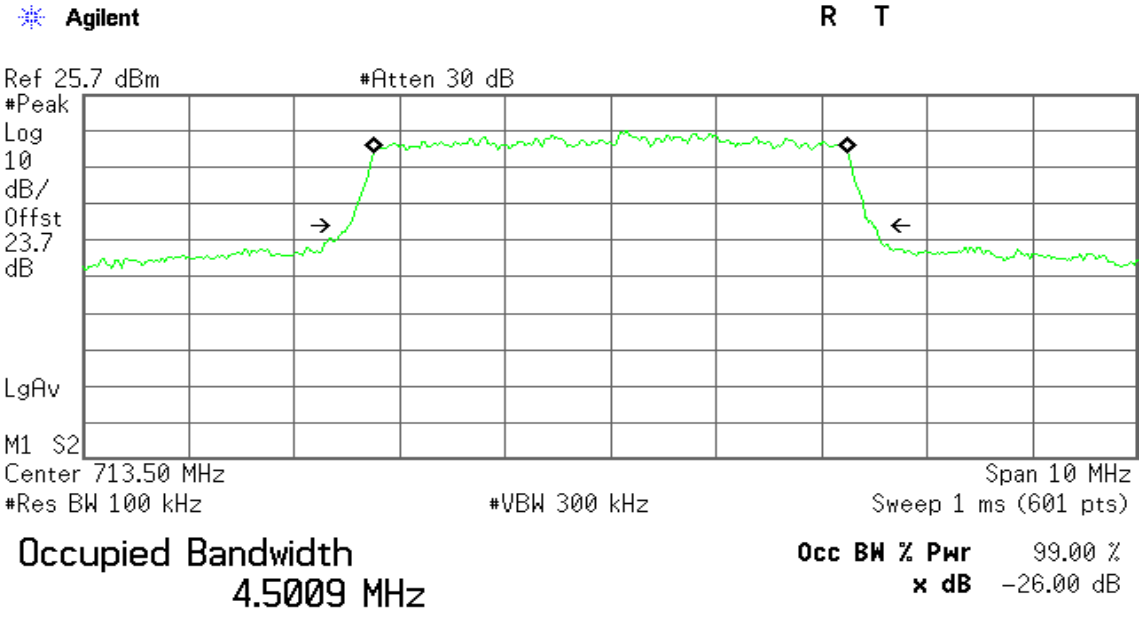


Occupied Bandwidth
4.5167 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -3.241 kHz
x dB Bandwidth 5.063 MHz

CH High



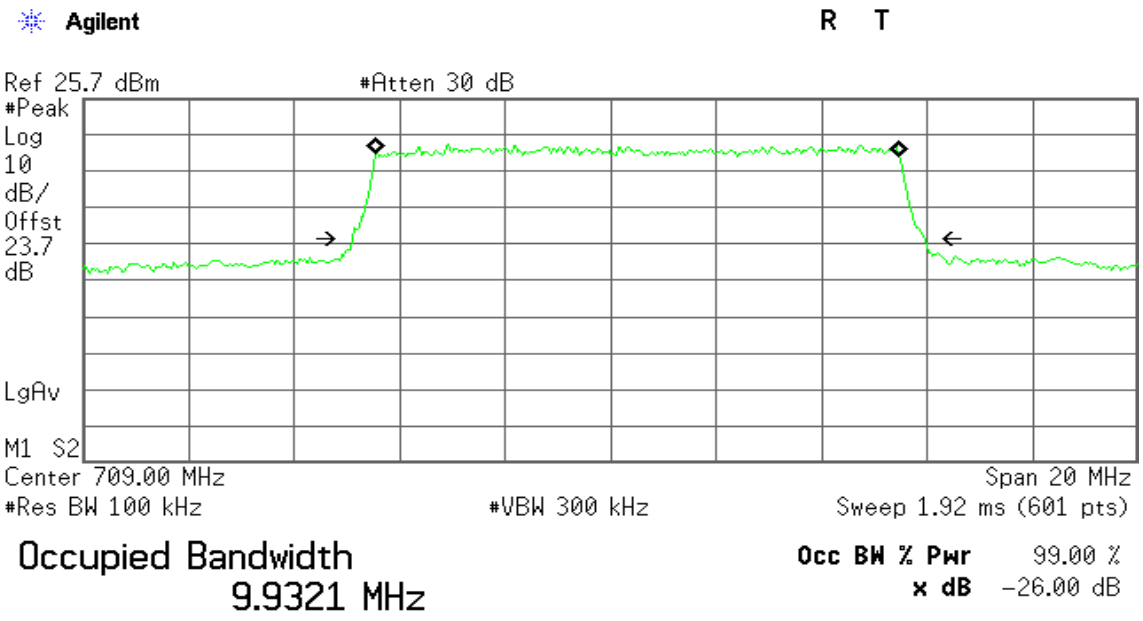
Occupied Bandwidth
4.5009 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 819.512 Hz
x dB Bandwidth 4.990 MHz

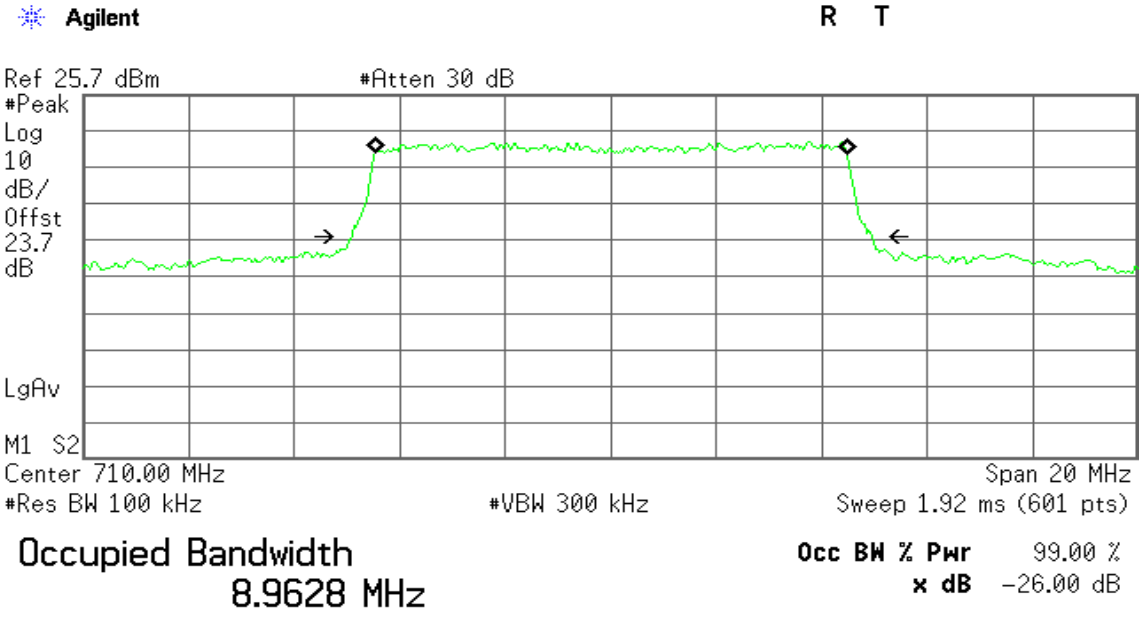
CHANNEL BANDWIDTH: 10MHz / QPSK

CH Low



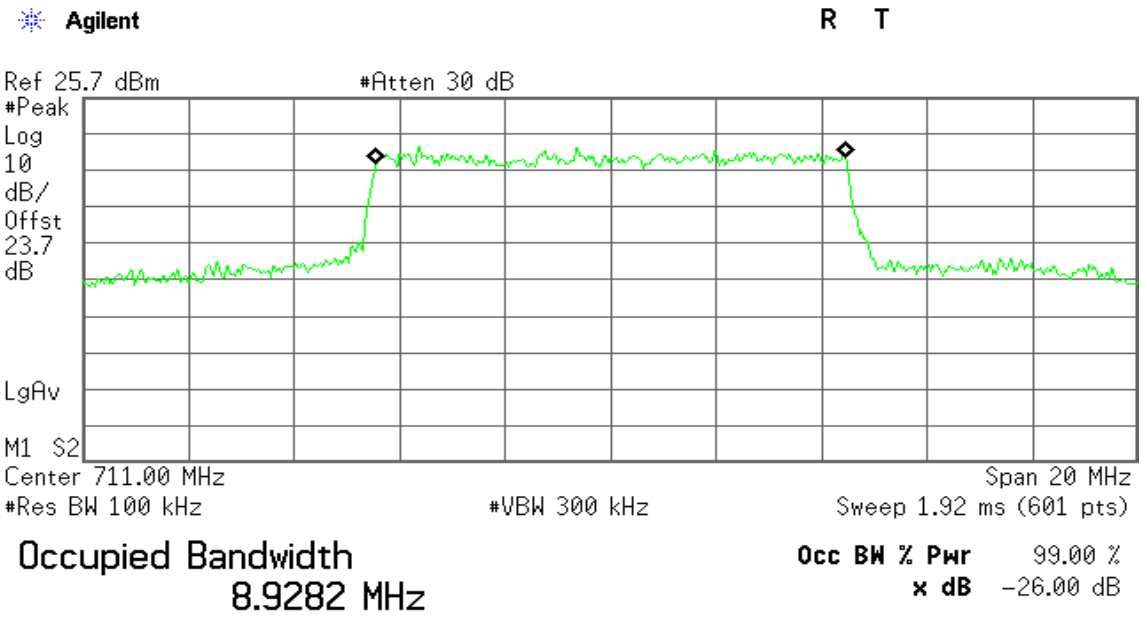
Transmit Freq Error	506.589 kHz
x dB Bandwidth	10.860 MHz

CH Mid



Transmit Freq Error	2.867 kHz
x dB Bandwidth	9.883 MHz

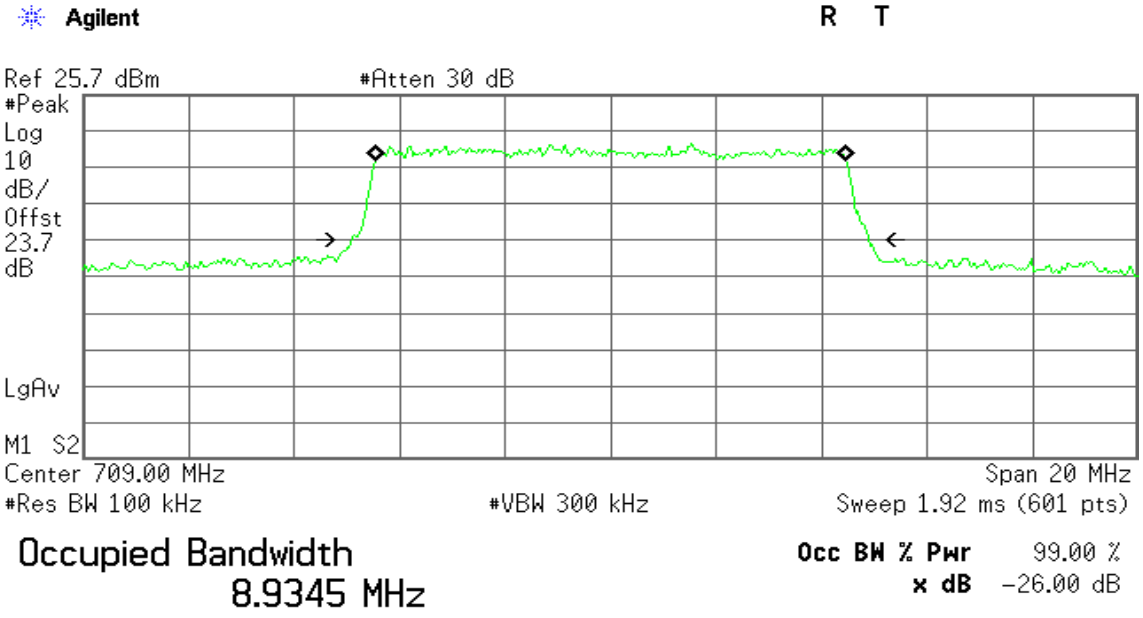
CH High



Transmit Freq Error 10.861 kHz
x dB Bandwidth 9.552 MHz

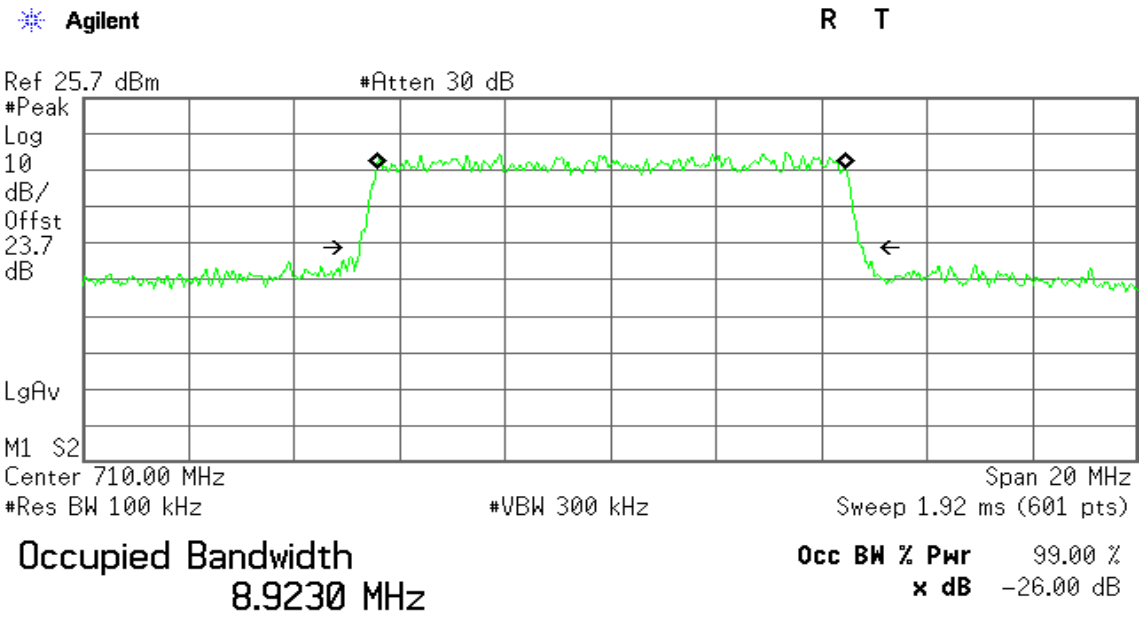
CHANNEL BANDWIDTH: 10MHz / 16QAM

CH Low



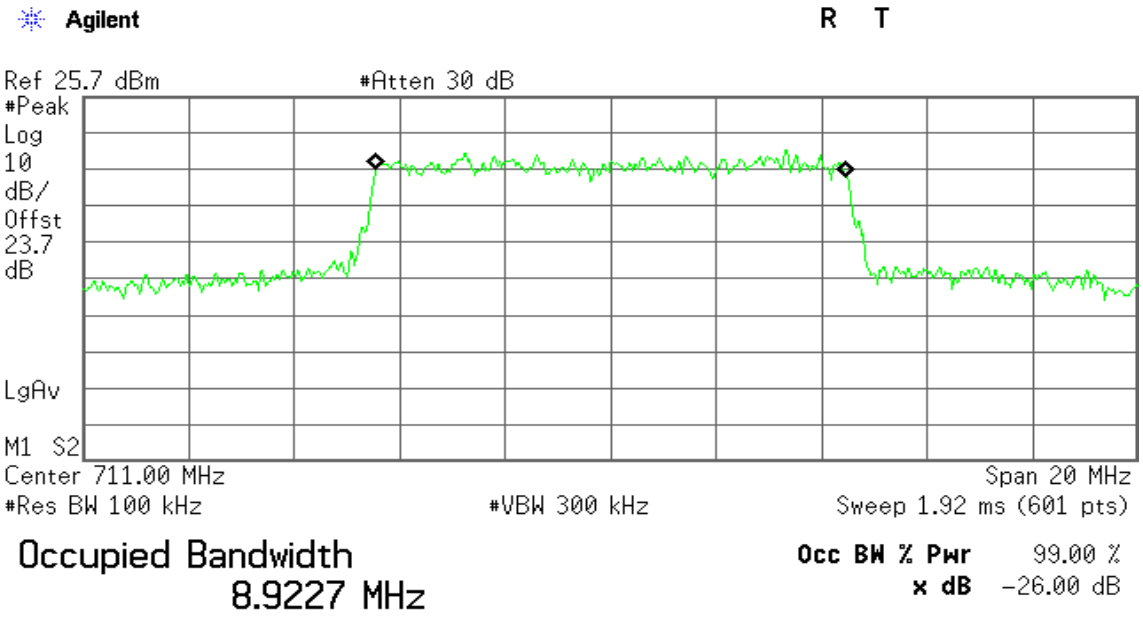
Transmit Freq Error 2.499 kHz
x dB Bandwidth 9.817 MHz

CH Mid



Transmit Freq Error 13.644 kHz
Occupied Bandwidth 9.569 MHz

CH High

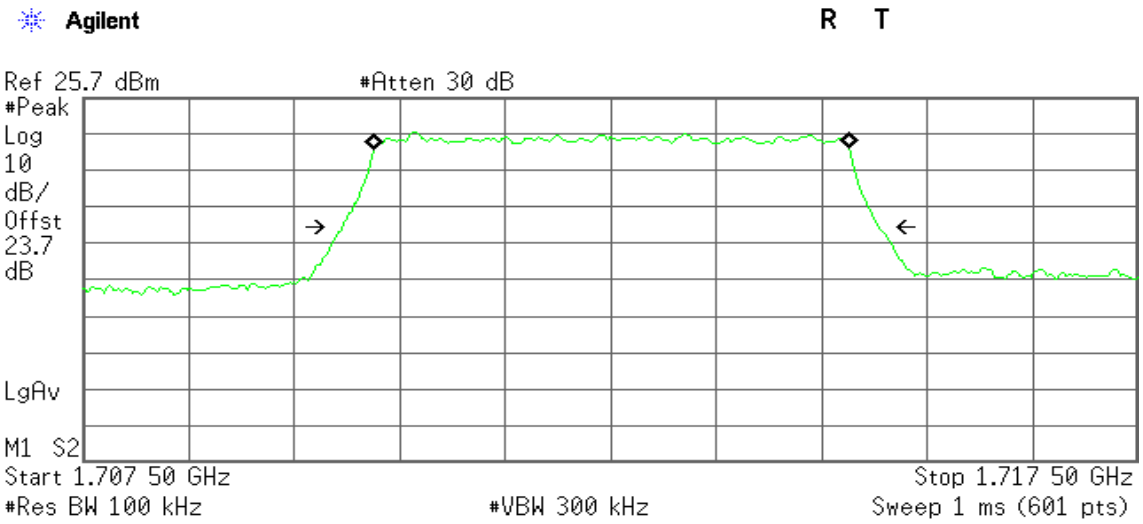


Transmit Freq Error 7.430 kHz
x dB Bandwidth 9.608 MHz

LTE Band 4

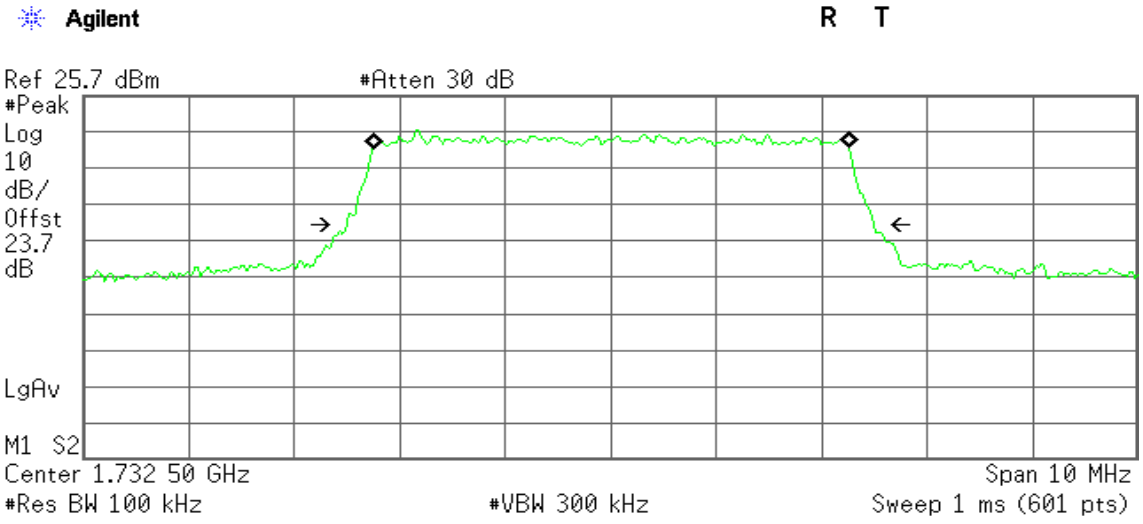
CHANNEL BANDWIDTH: 5MHz / QPSK

CH Low



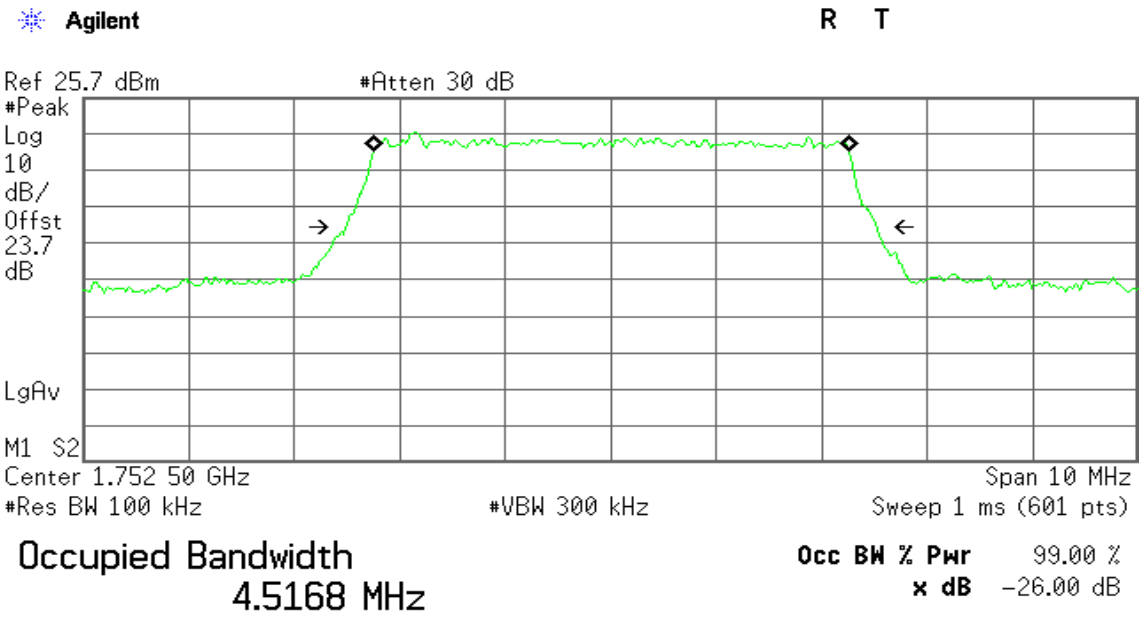
Transmit Freq Error	9.322 kHz
x dB Bandwidth	5.091 MHz

CH Mid



Transmit Freq Error	3.332 kHz
x dB Bandwidth	5.009 MHz

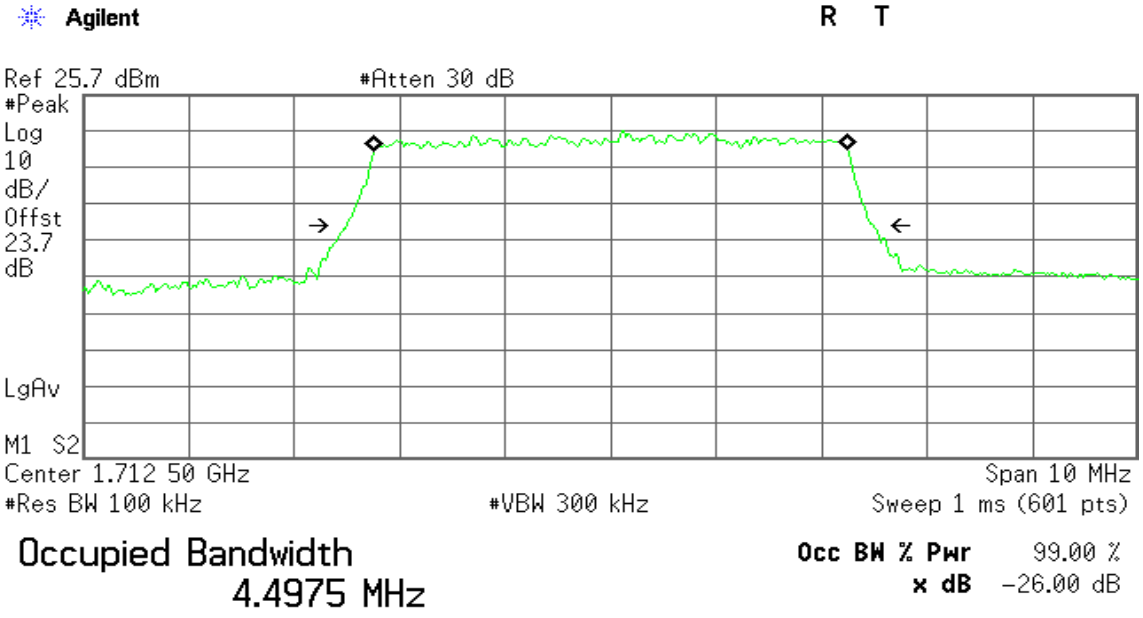
CH High



Transmit Freq Error 3.879 kHz
x dB Bandwidth 5.043 MHz

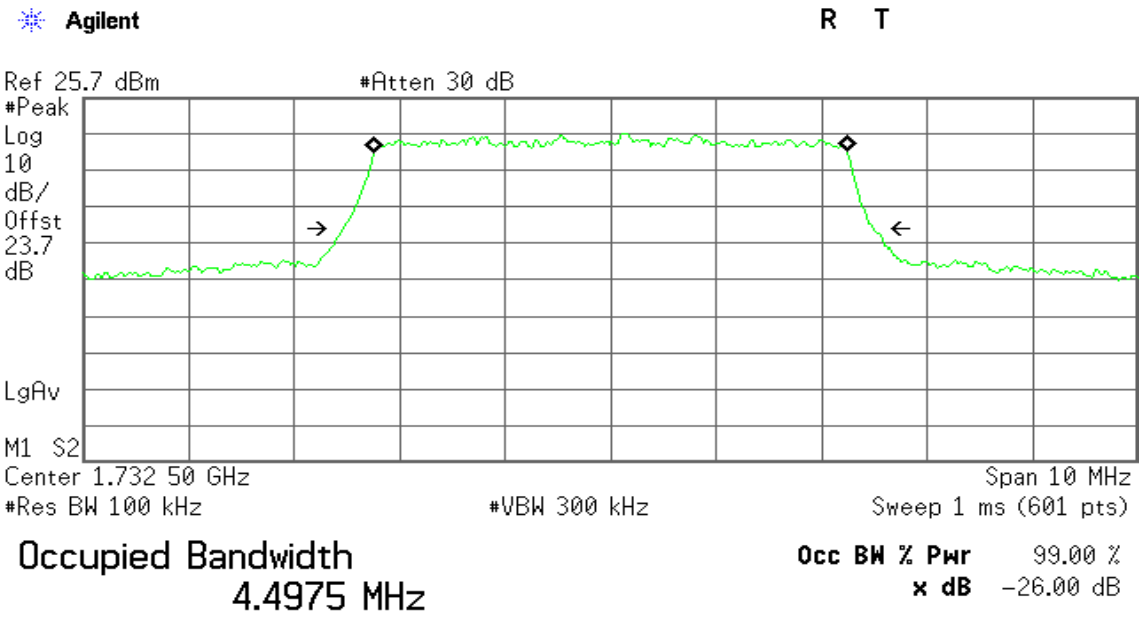
CHANNEL BANDWIDTH: 5MHz / 16QAM

CH Low



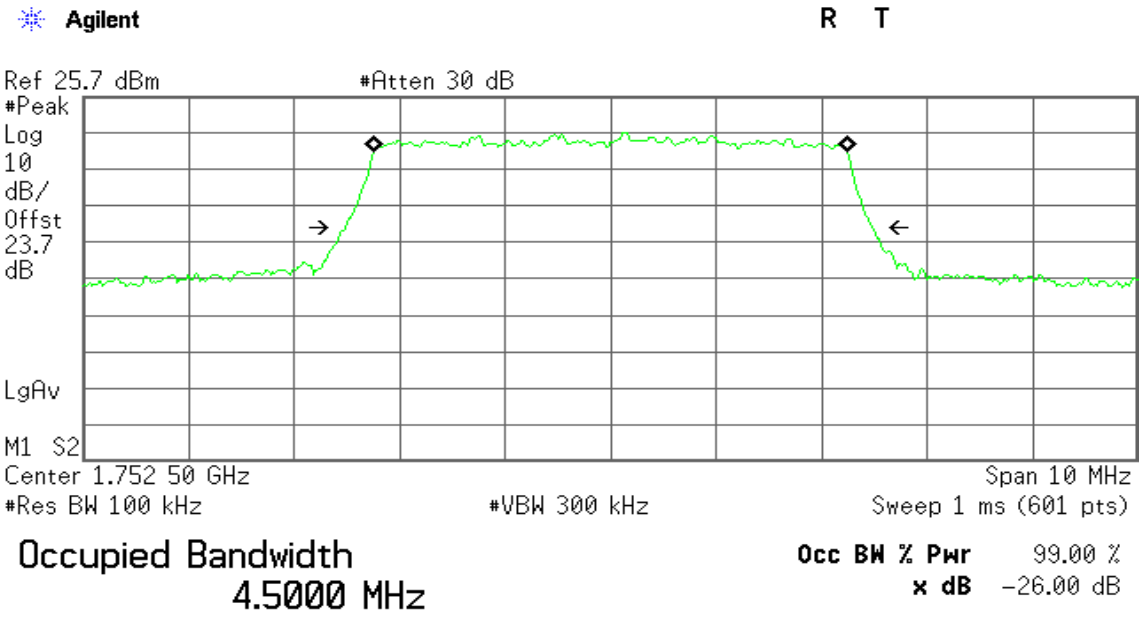
Transmit Freq Error 3.880 kHz
x dB Bandwidth 5.006 MHz

CH Mid



Transmit Freq Error 546.974 Hz
x dB Bandwidth 5.036 MHz

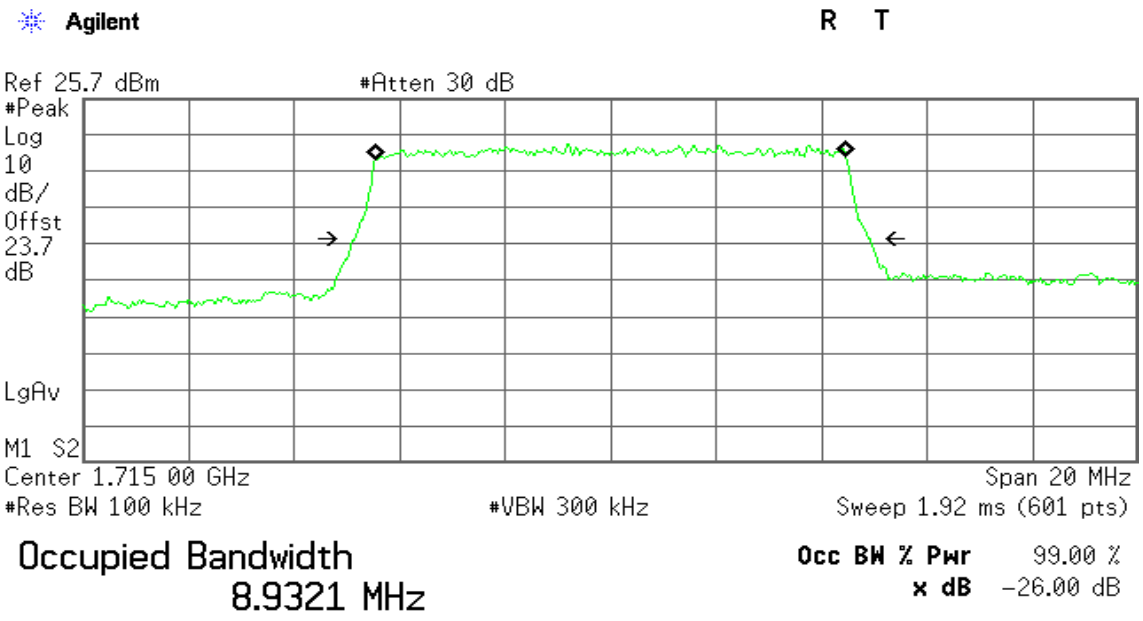
CH High



Transmit Freq Error -2.532 kHz
x dB Bandwidth 5.001 MHz

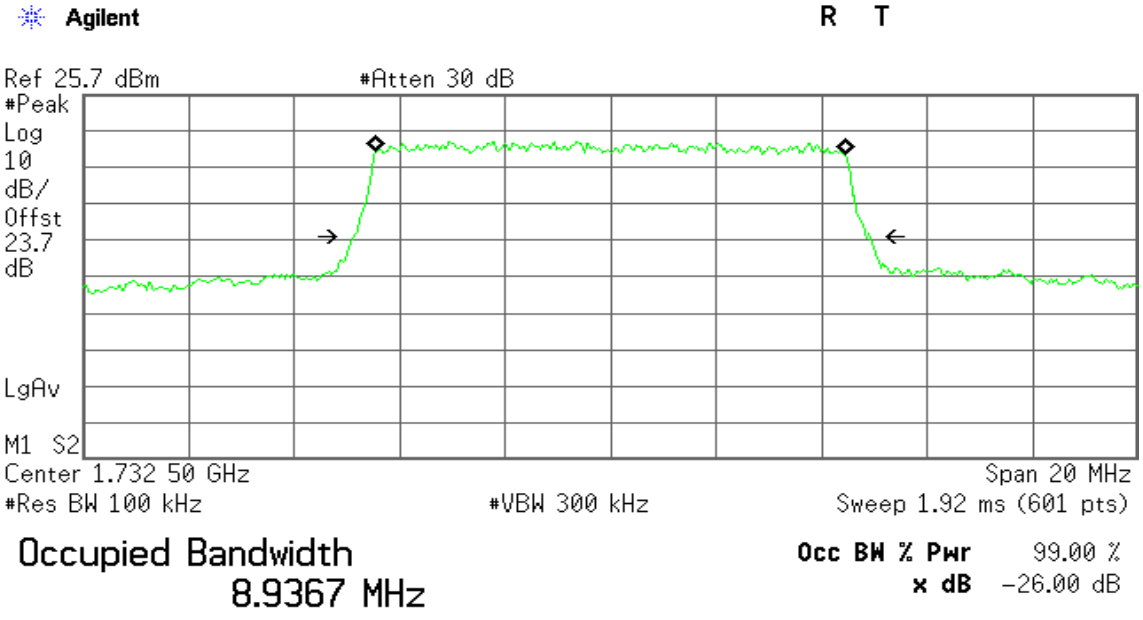
CHANNEL BANDWIDTH: 10MHz / QPSK

CH Low



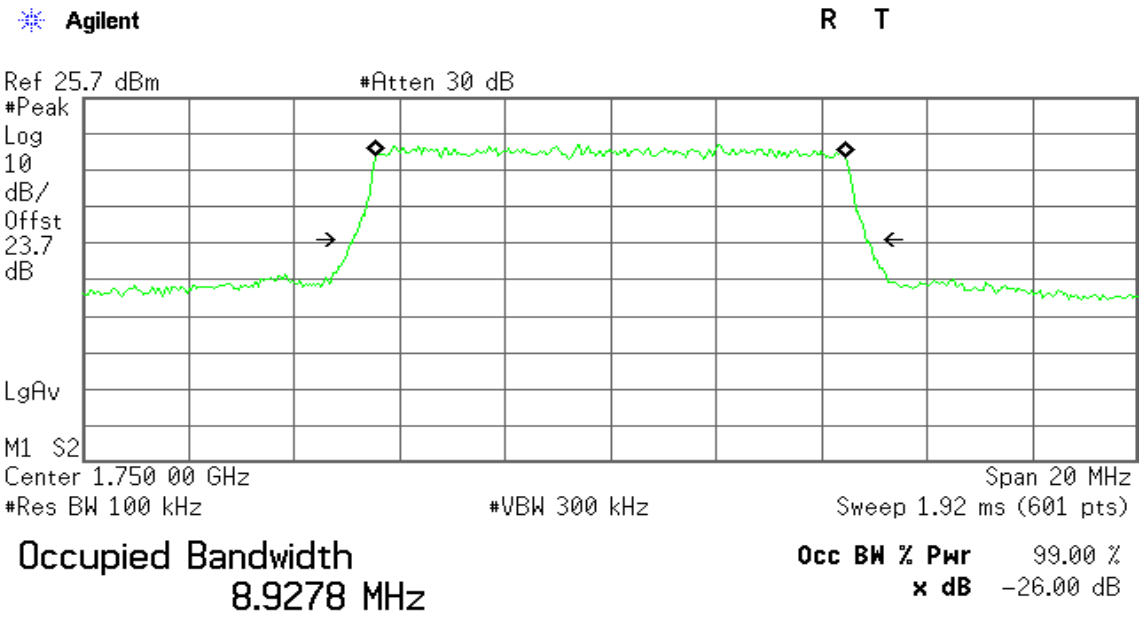
Transmit Freq Error 8.689 kHz
x dB Bandwidth 9.764 MHz

CH Mid



Transmit Freq Error -1.960 kHz
x dB Bandwidth 9.797 MHz

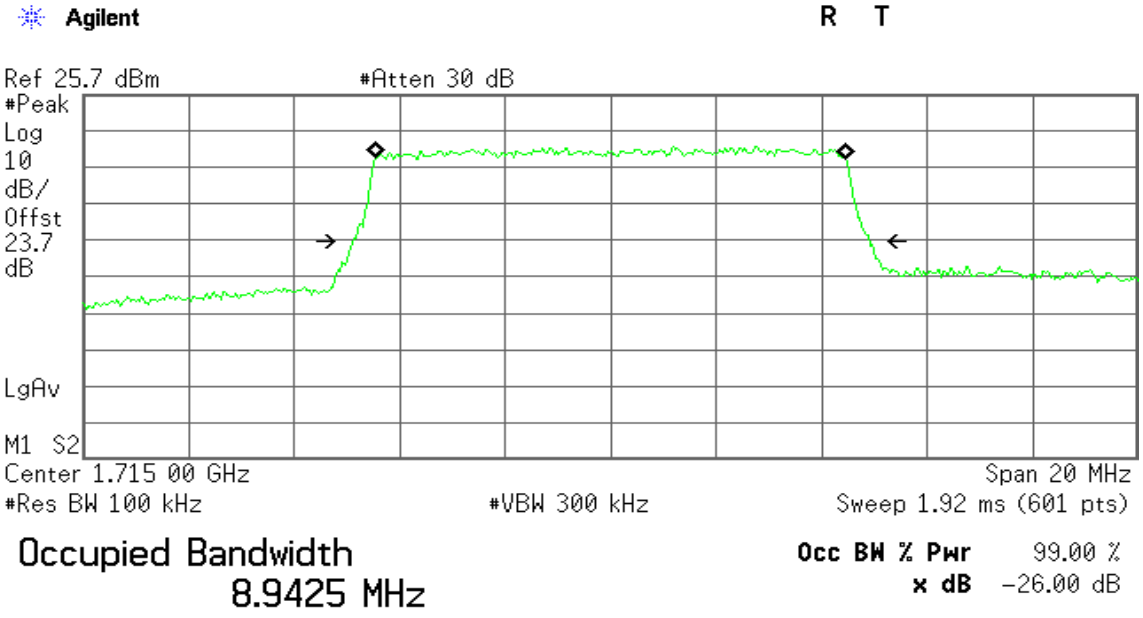
CH High



Transmit Freq Error 7.225 kHz
x dB Bandwidth 9.743 MHz

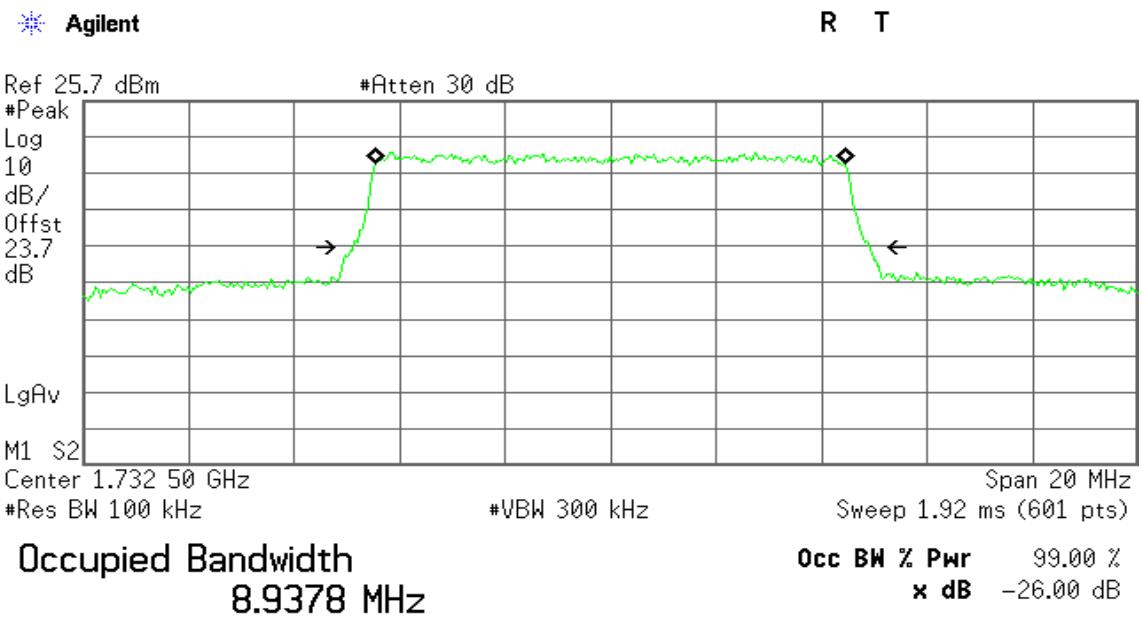
CHANNEL BANDWIDTH: 10MHz / 16QAM

CH Low



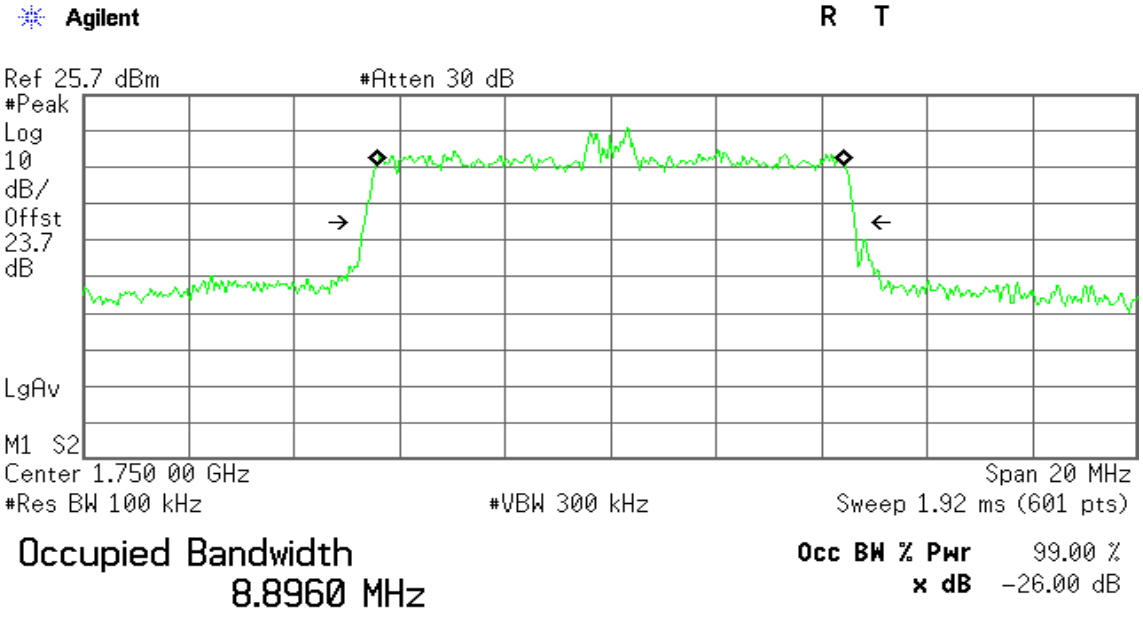
Transmit Freq Error 1.699 kHz
x dB Bandwidth 9.816 MHz

CH Mid



Transmit Freq Error -1.661 kHz
x dB Bandwidth 9.811 MHz

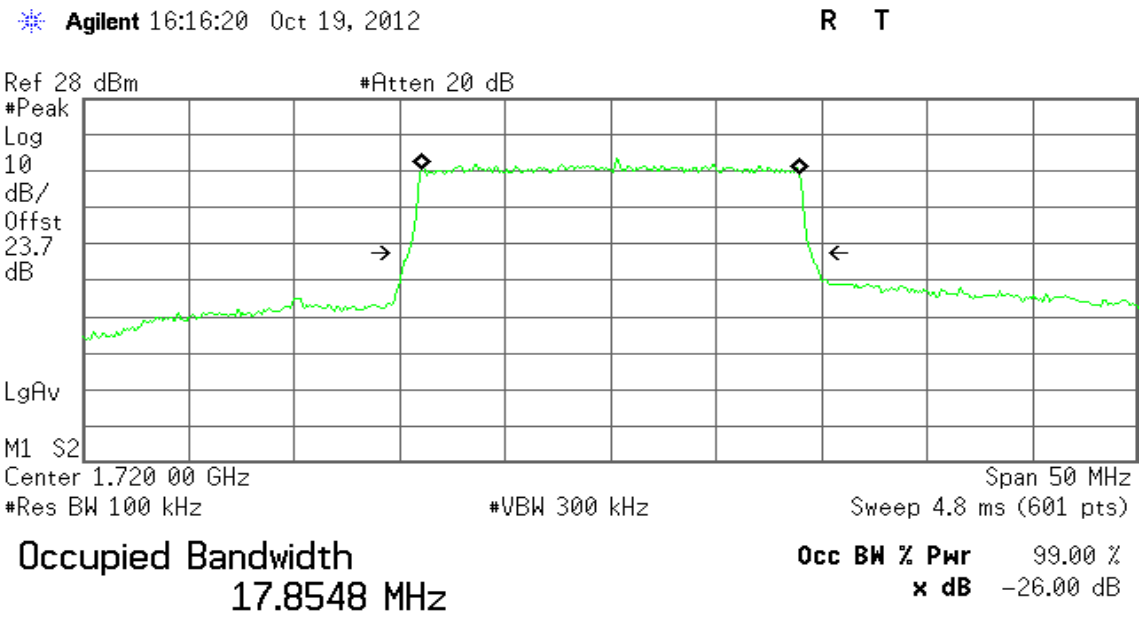
CH High



Transmit Freq Error 606.522 Hz
x dB Bandwidth 9.309 MHz

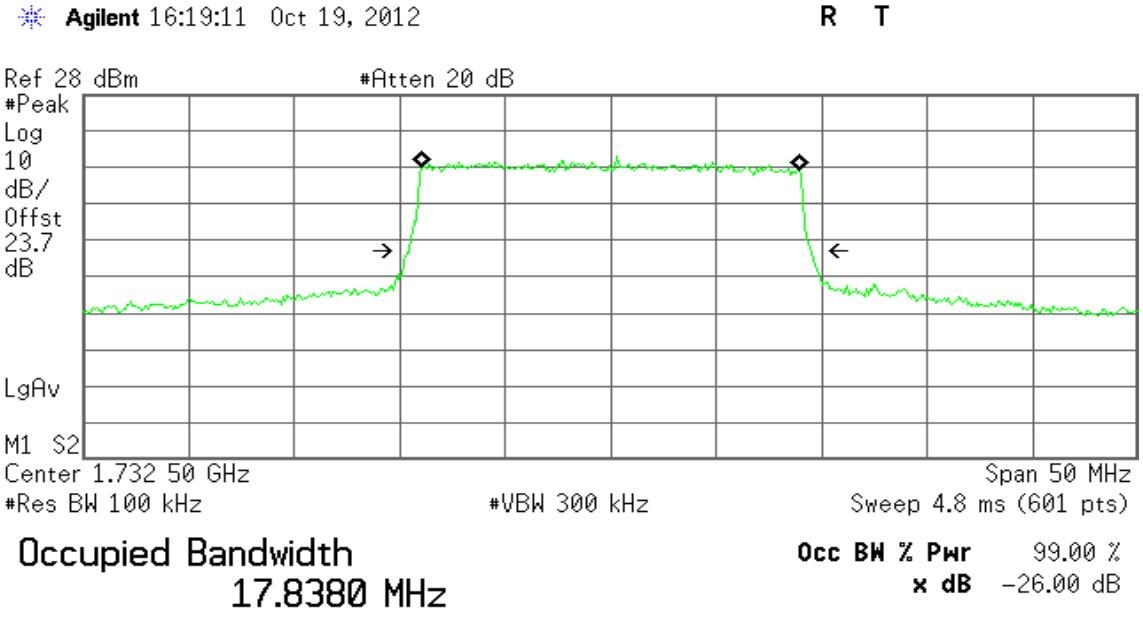
CHANNEL BANDWIDTH: 20MHz / QPSK

CH Low



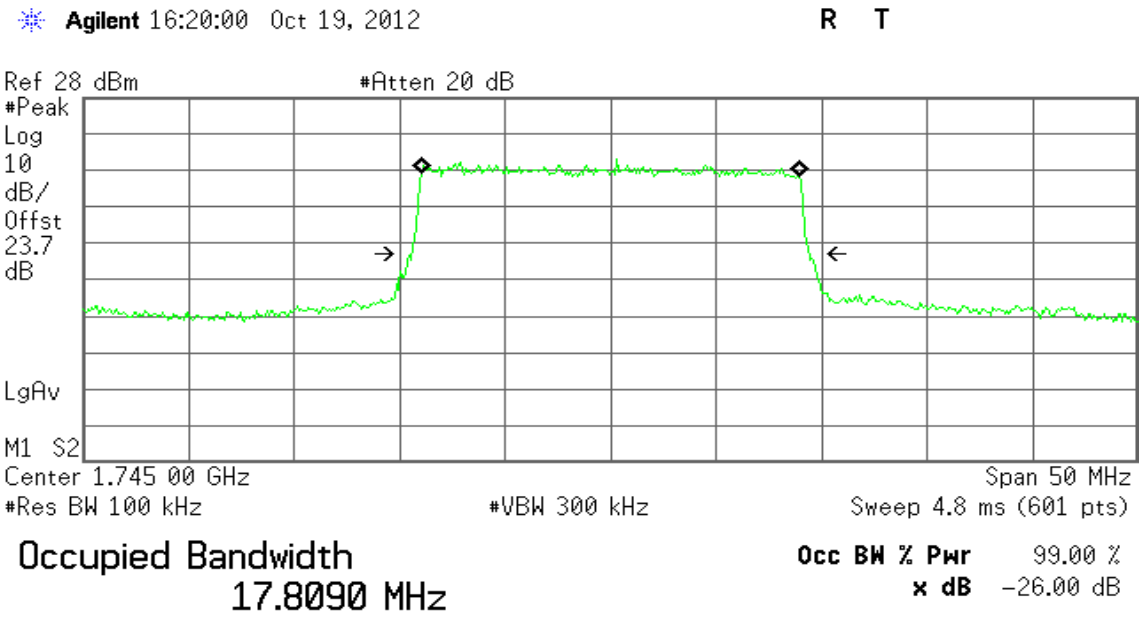
Transmit Freq Error	-19.741 kHz
x dB Bandwidth	19.036 MHz

CH Mid



Transmit Freq Error	-8.782 kHz
x dB Bandwidth	18.983 MHz

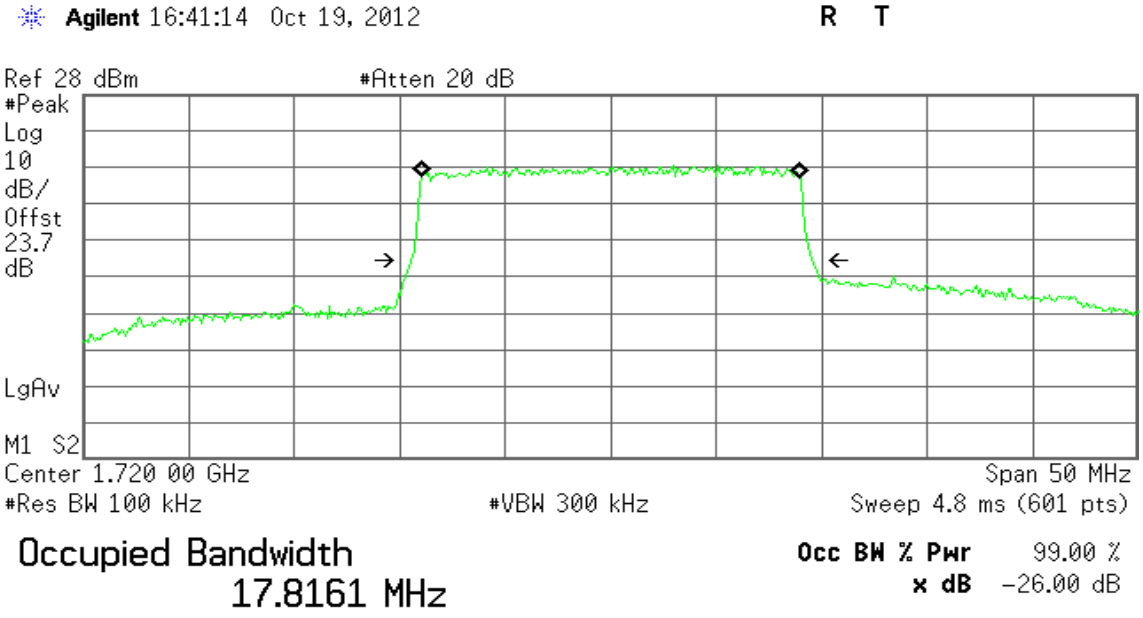
CH High



Transmit Freq Error -10.547 kHz
x dB Bandwidth 18.774 MHz

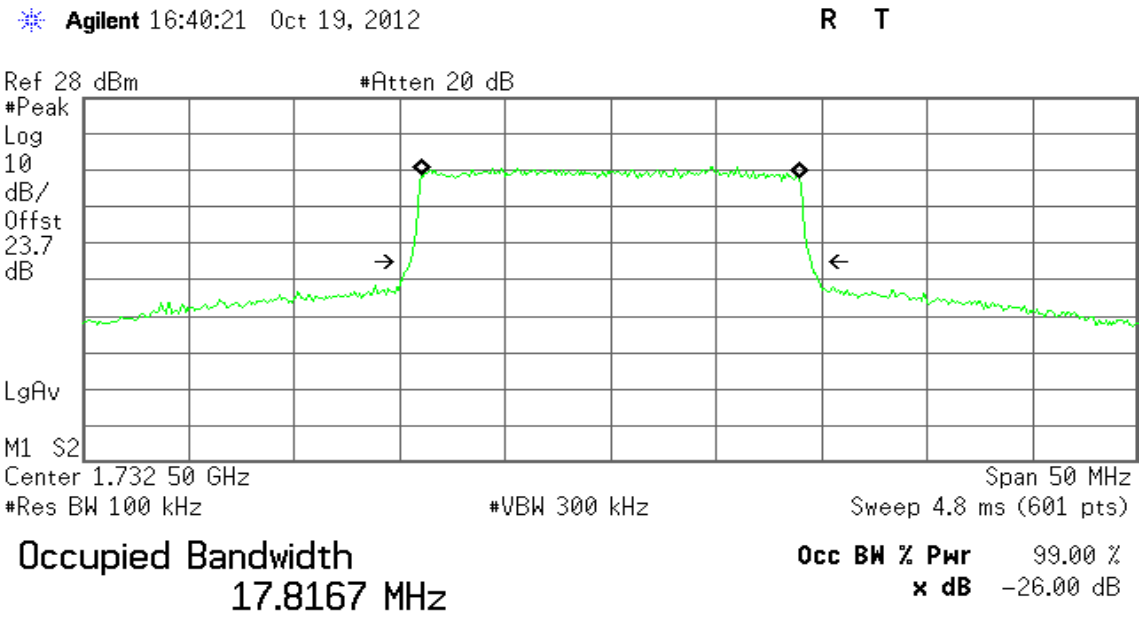
CHANNEL BANDWIDTH: 20MHz / 16QAM

CH Low



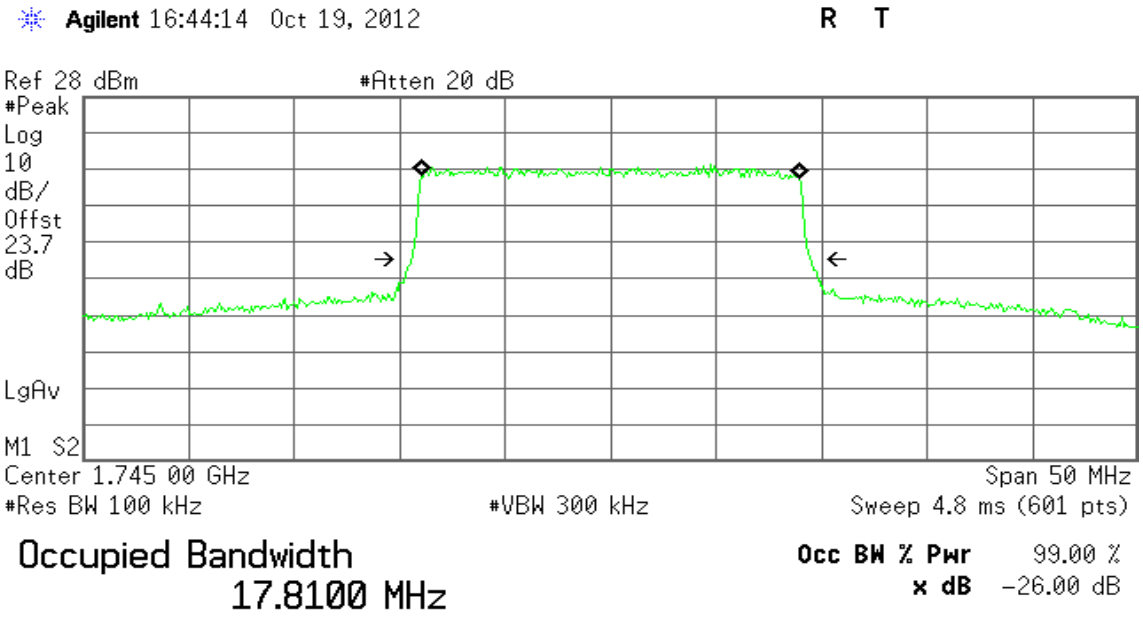
Transmit Freq Error 20.759 kHz
x dB Bandwidth 18.963 MHz

CH Mid



Transmit Freq Error −14.900 kHz
x dB Bandwidth 18.923 MHz

CH High



Transmit Freq Error −9.805 kHz
x dB Bandwidth 18.806 MHz

7.4 PEAK TO AVERAGE RATIO

LIMIT

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

TEST PROCEDURES

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth.
2. Set the number of counts to a value that stabilizes the measured CCDF curve.
3. Record the maximum PAPR level associated with a probability of 0.1%.

TEST RESULTS

LTE Band 17

CHANNEL BANDWIDTH: 5MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	706.5	7.40
Mid	710.0	7.38
High	713.5	7.12

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	706.5	8.12
Mid	710.0	8.32
High	713.5	8.19

CHANNEL BANDWIDTH: 10MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	709.0	7.25
Mid	710.0	7.01
High	711.0	6.95

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	709.0	8.17
Mid	710.0	8.78
High	711.0	8.27

LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1712.5	7.02
Mid	1732.5	6.98
High	1752.5	6.66

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1712.5	7.73
Mid	1732.5	7.52
High	1752.5	7.60

CHANNEL BANDWIDTH: 10MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	6.76
Mid	1732.5	6.76
High	1750.0	6.60

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	7.79
Mid	1732.5	8.30
High	1750.0	8.61

CHANNEL BANDWIDTH: 20MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	7.17
Mid	1732.5	7.12
High	1750.0	7.27

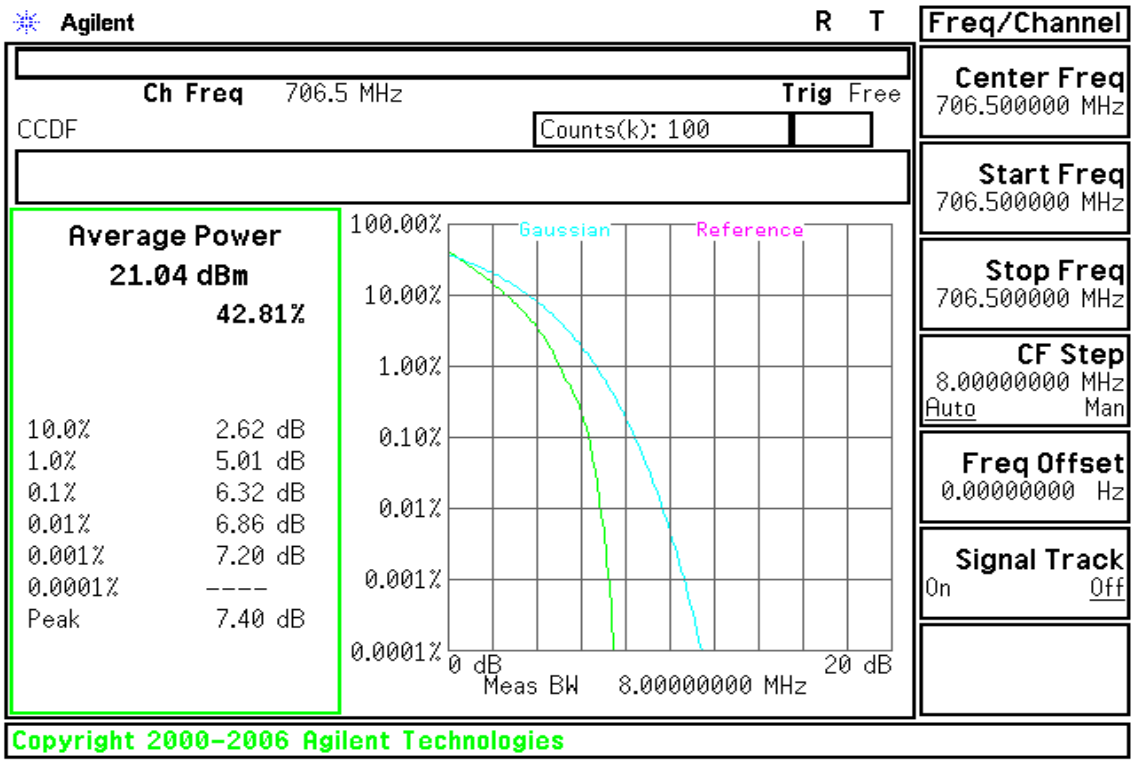
CHANNEL BANDWIDTH: 20MHz / 16QAM / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	8.73
Mid	1732.5	8.76
High	1750.0	8.66

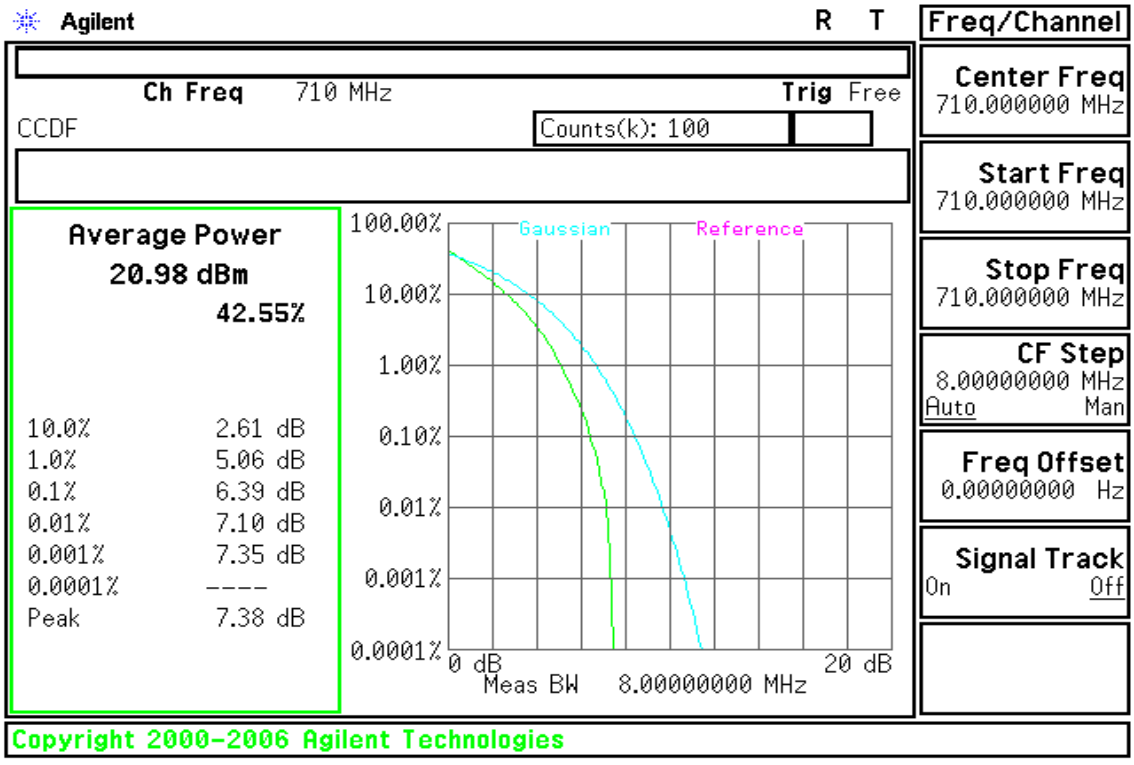
LTE Band 17

CHANNEL BANDWIDTH: 5MHz / QPSK

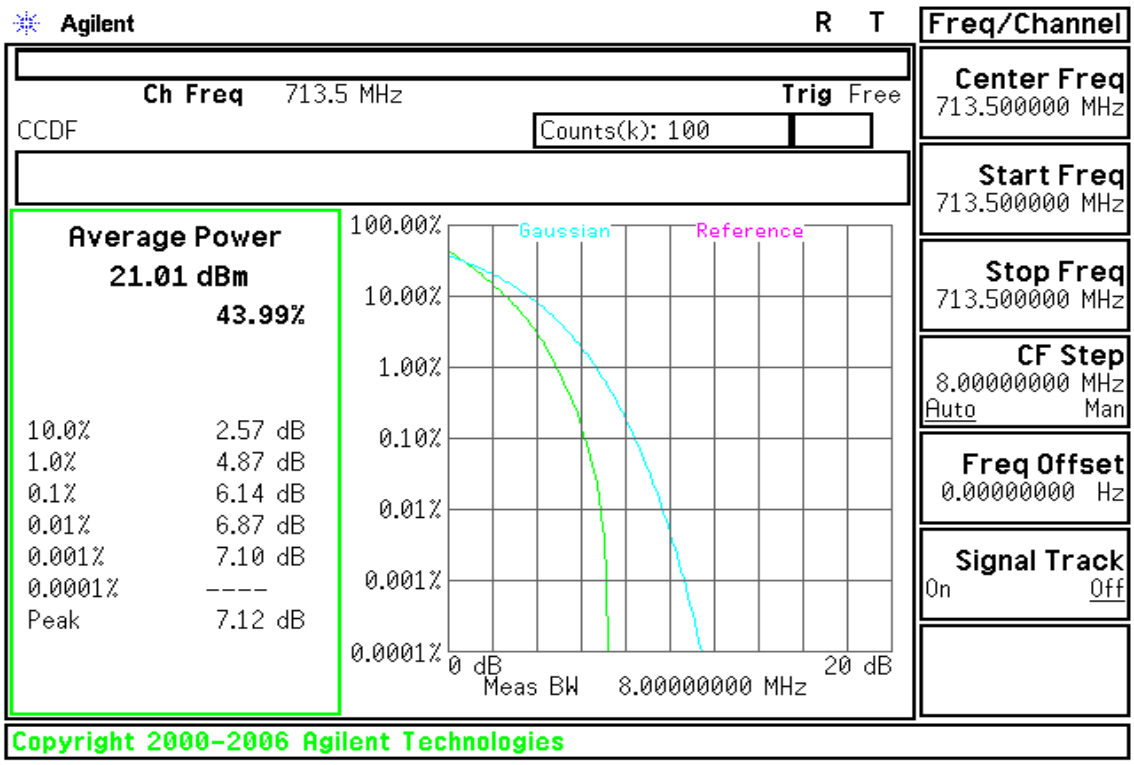
CH Low



CH Mid

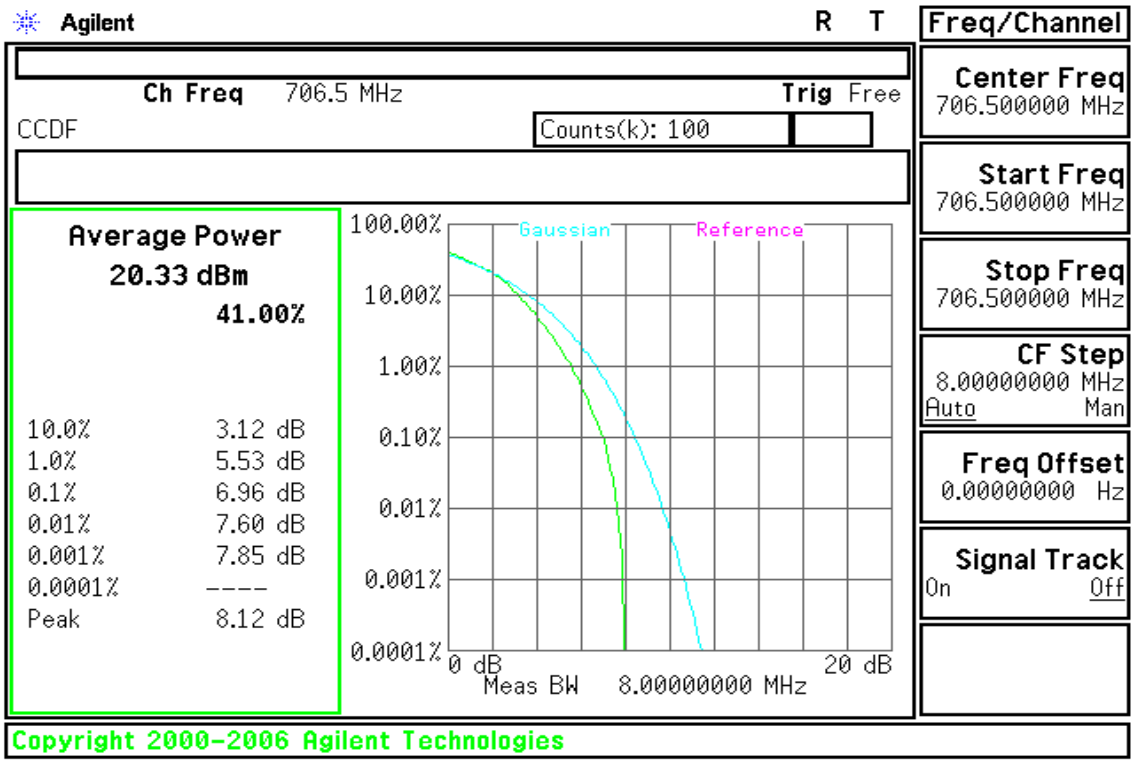


CH High

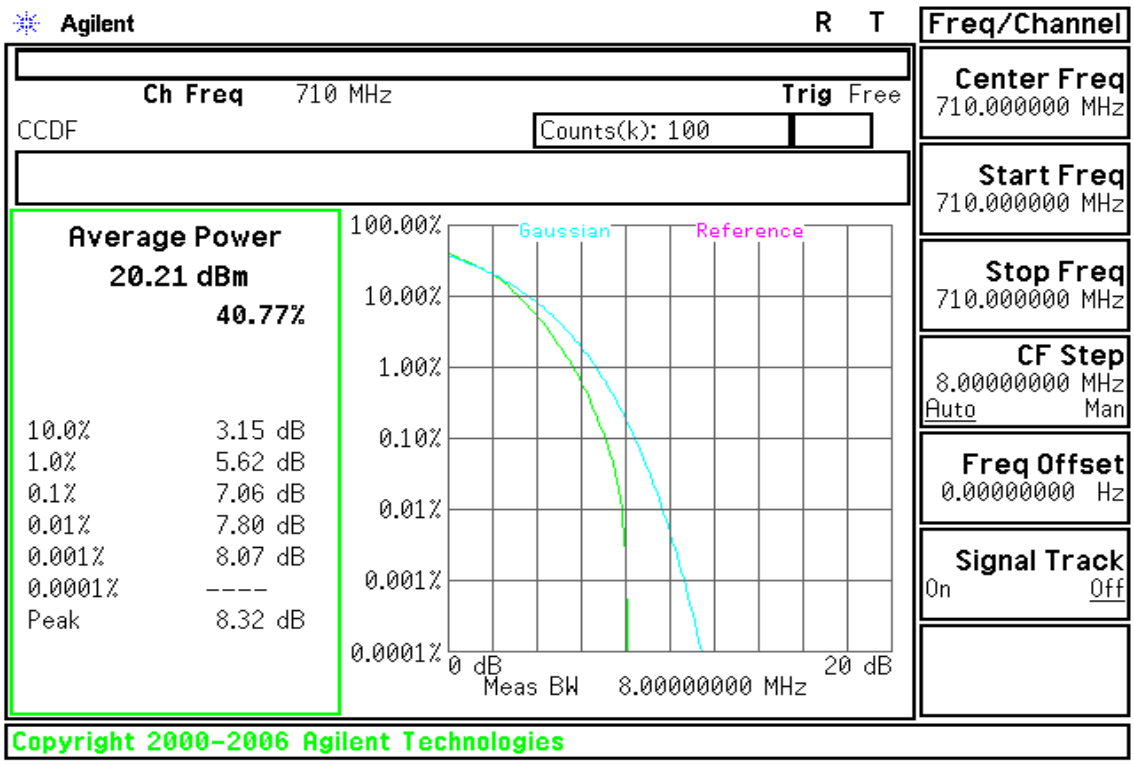


CHANNEL BANDWIDTH: 5MHz / 16QAM

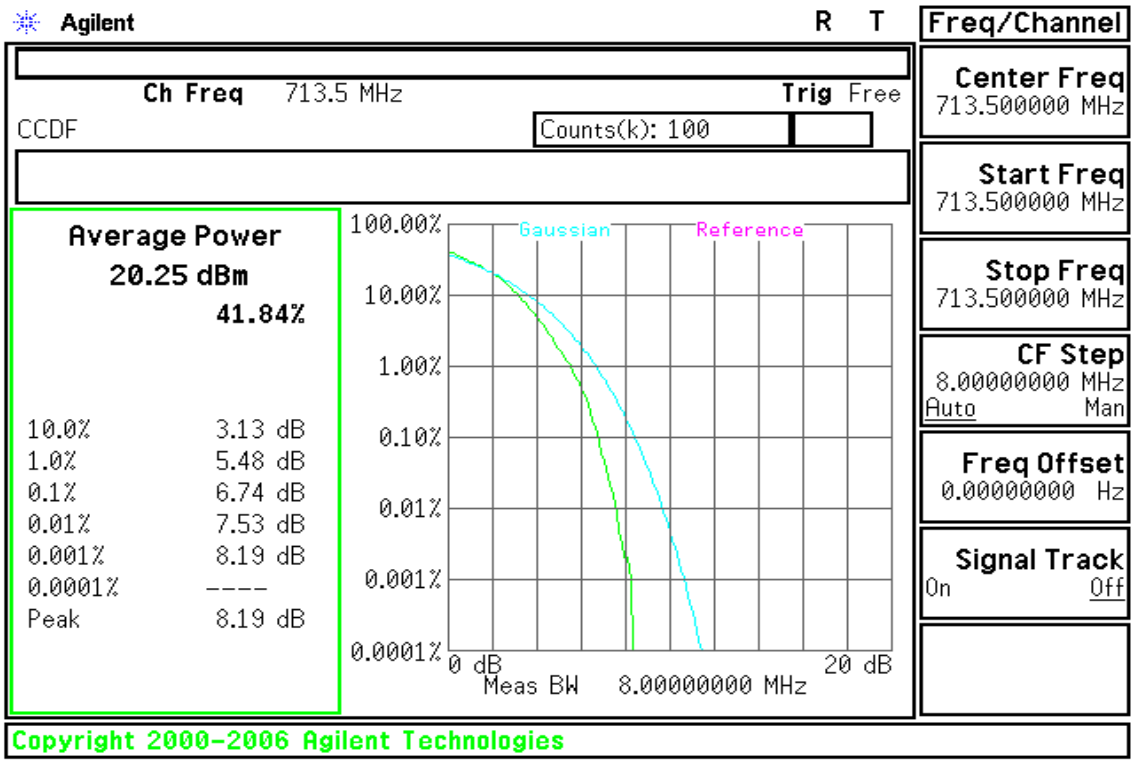
CH Low



CH Mid

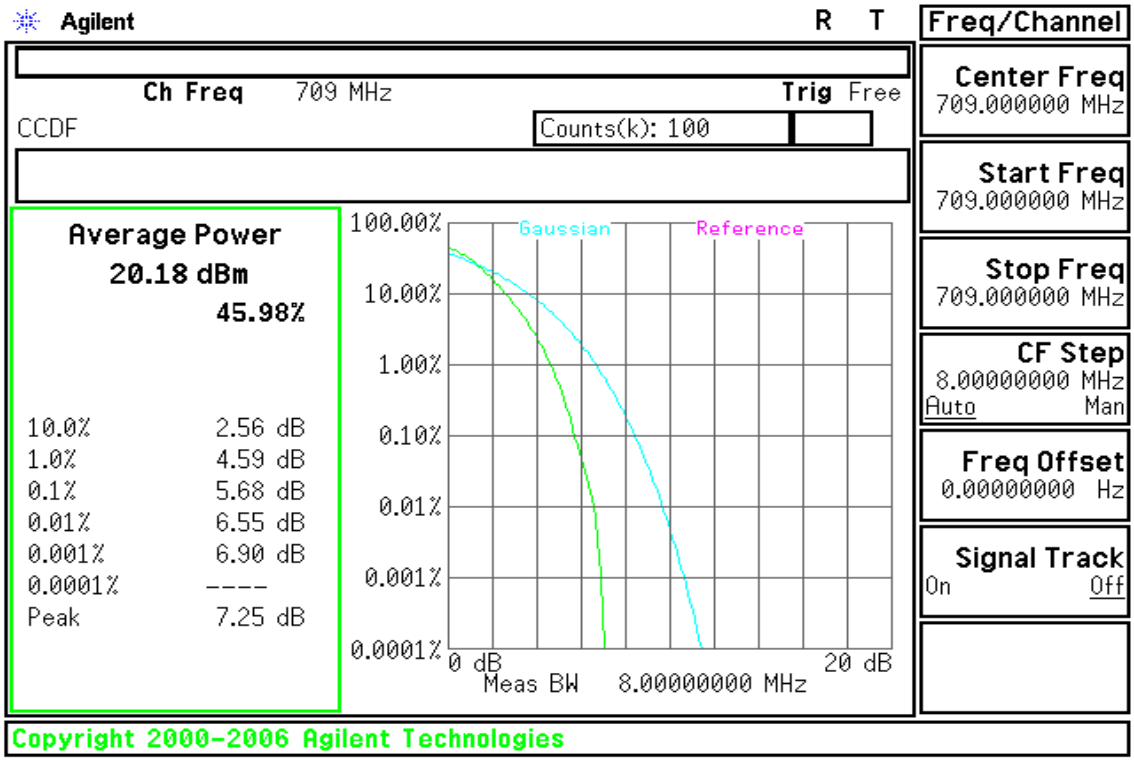


CH High

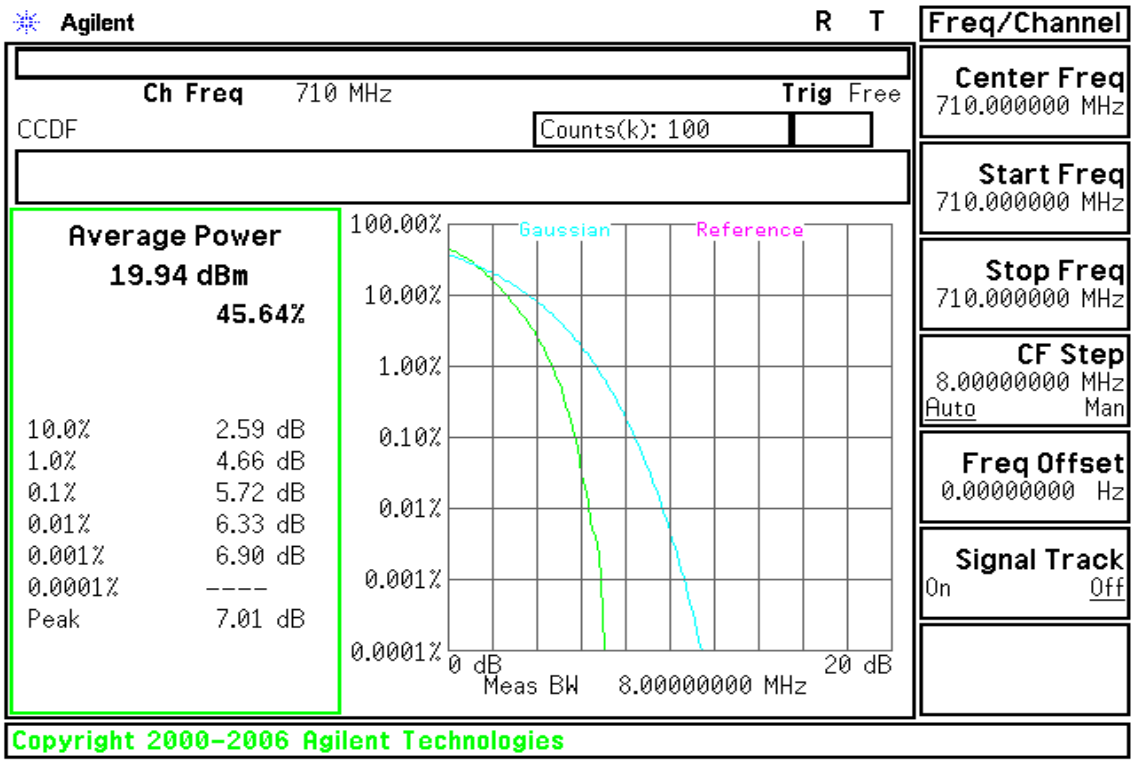


CHANNEL BANDWIDTH: 10MHz / QPSK

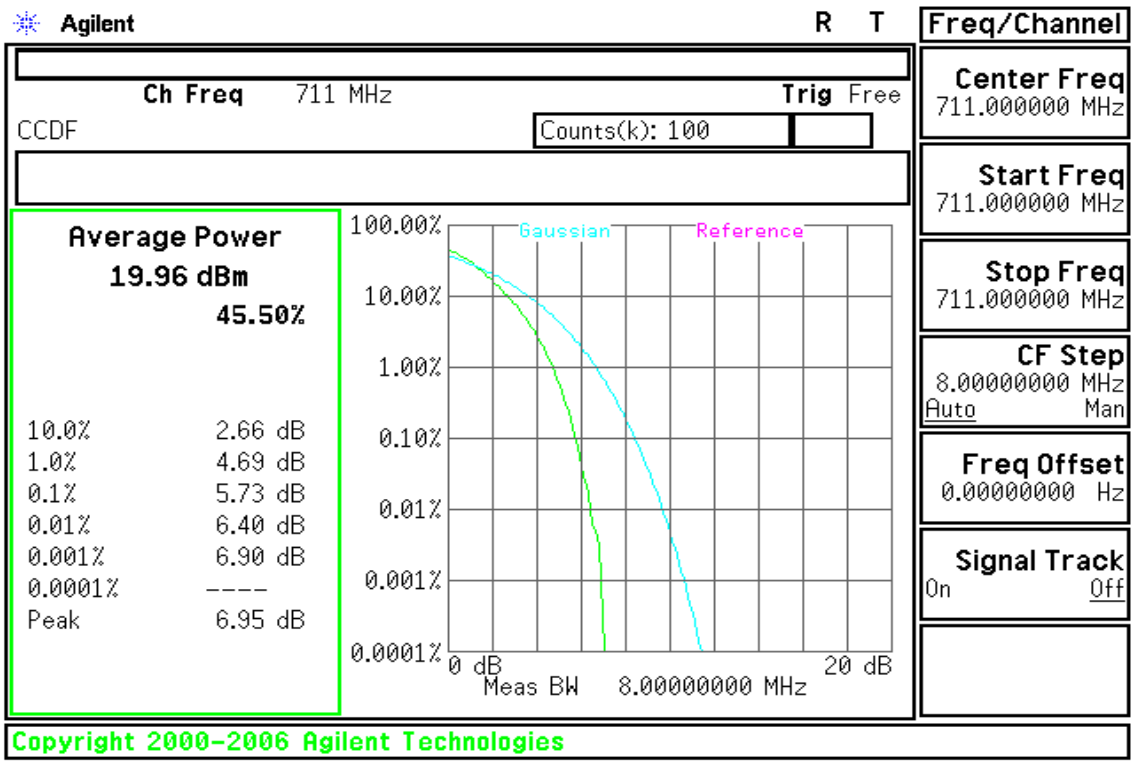
CH Low



CH Mid

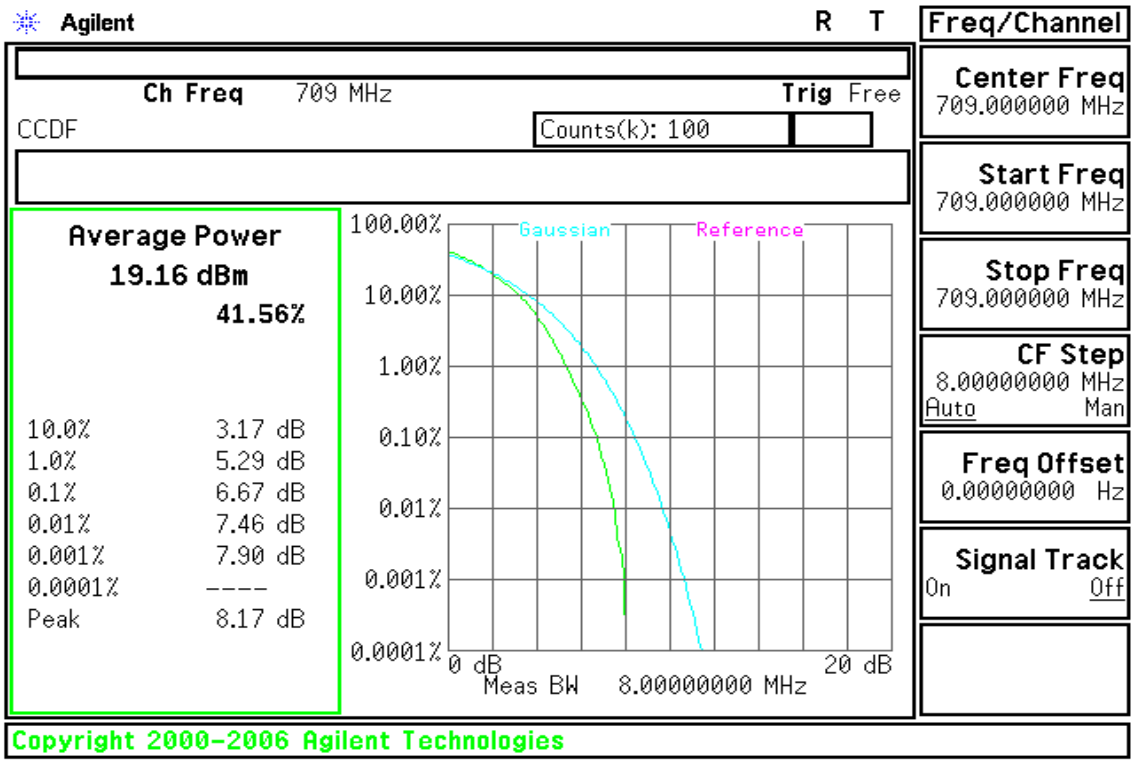


CH High

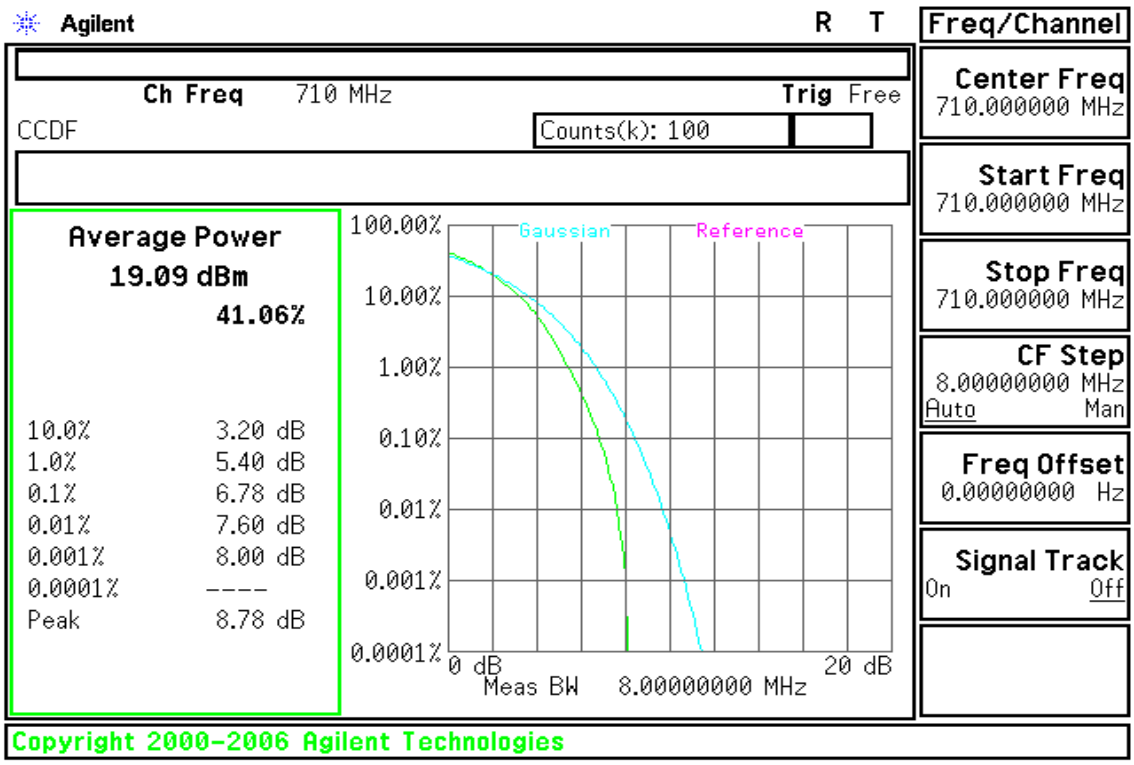


CHANNEL BANDWIDTH: 10MHz / 16QAM

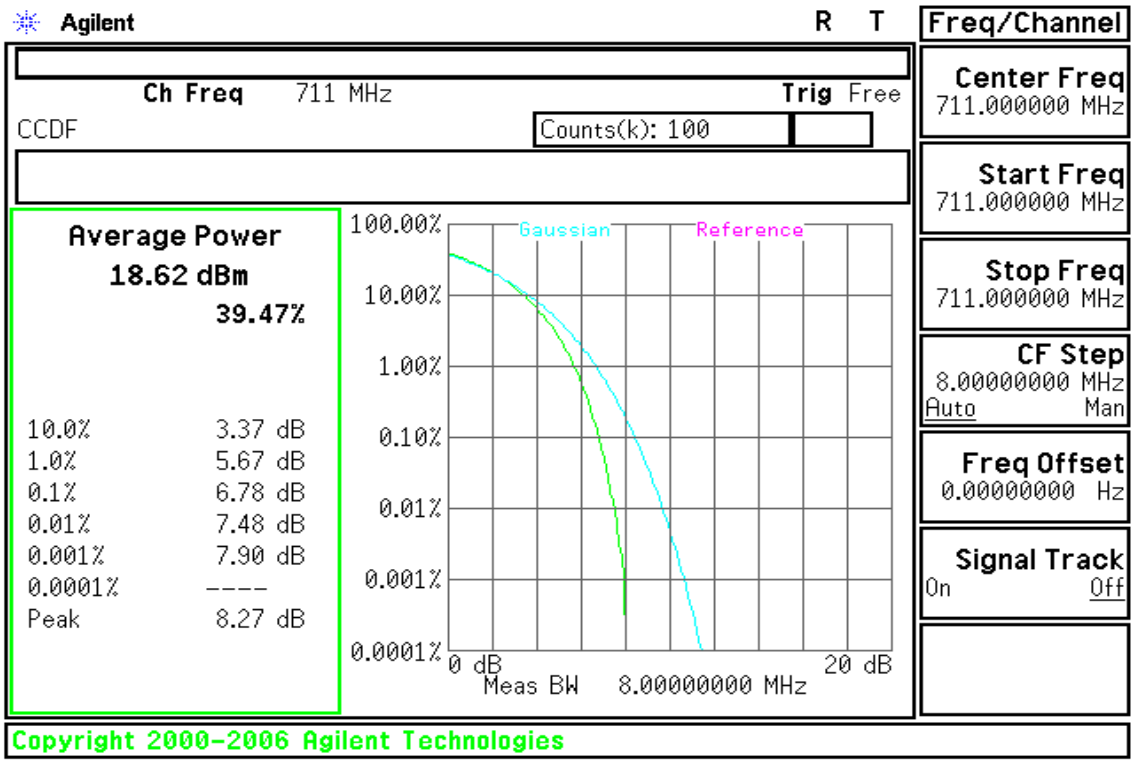
CH Low



CH Mid



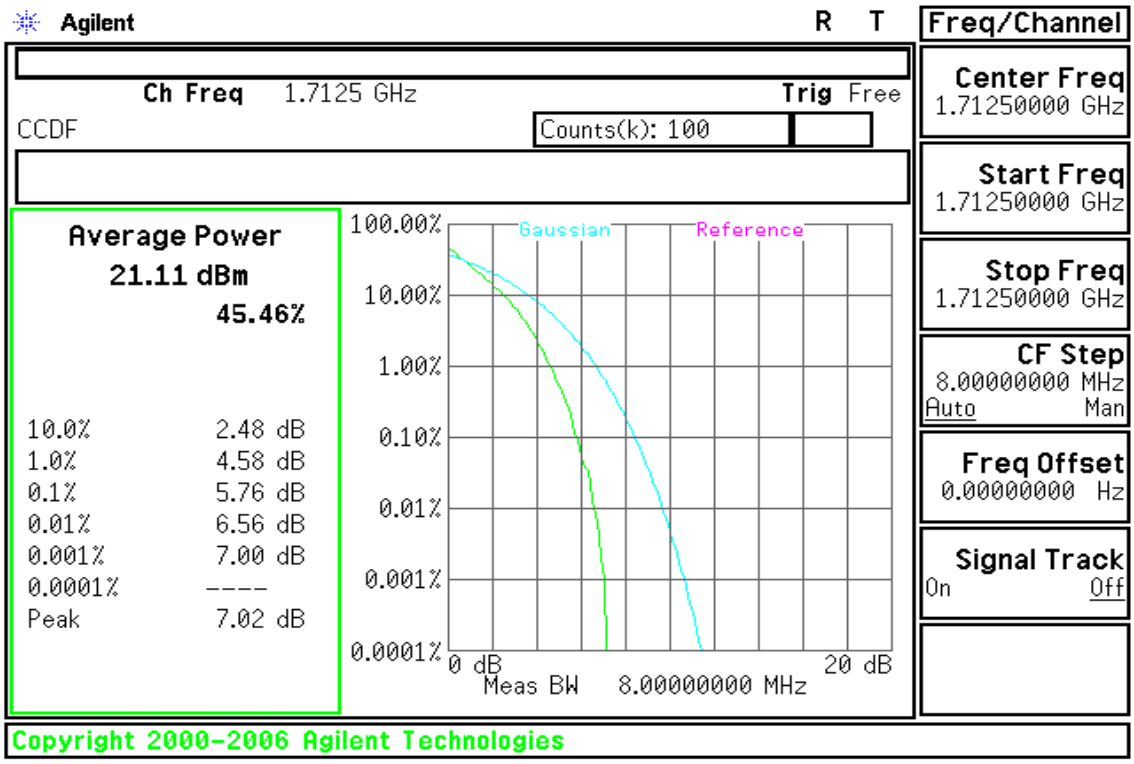
CH High



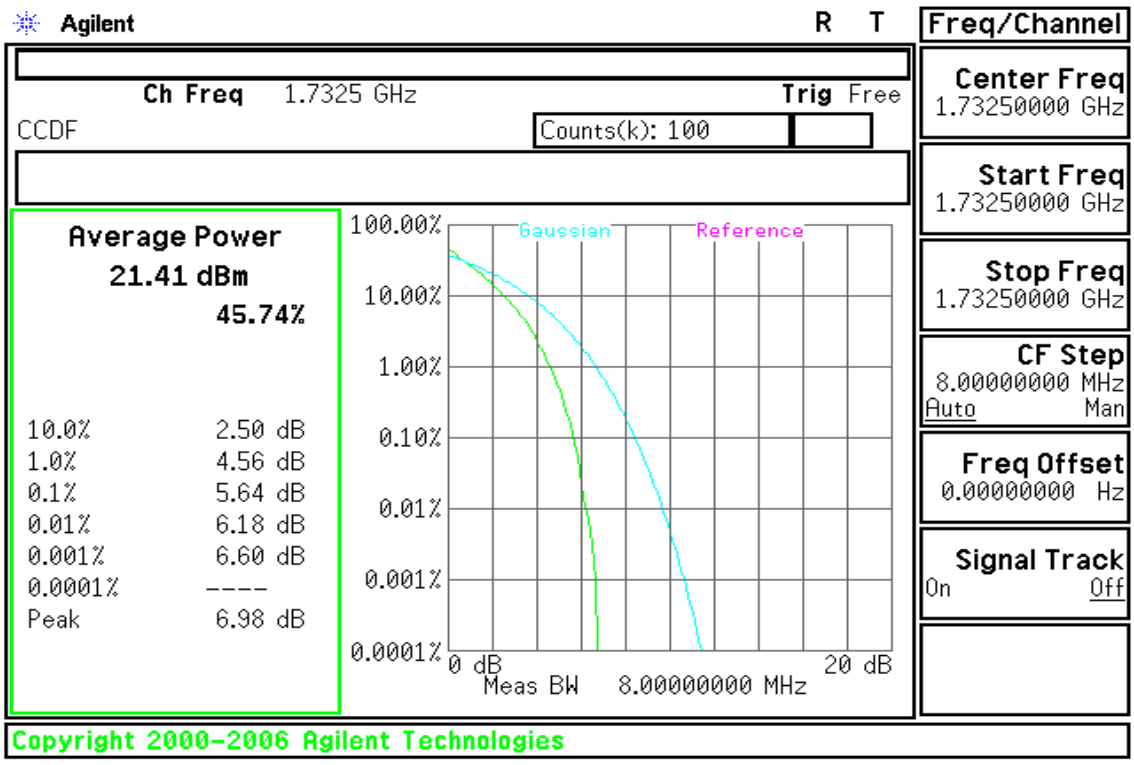
LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK

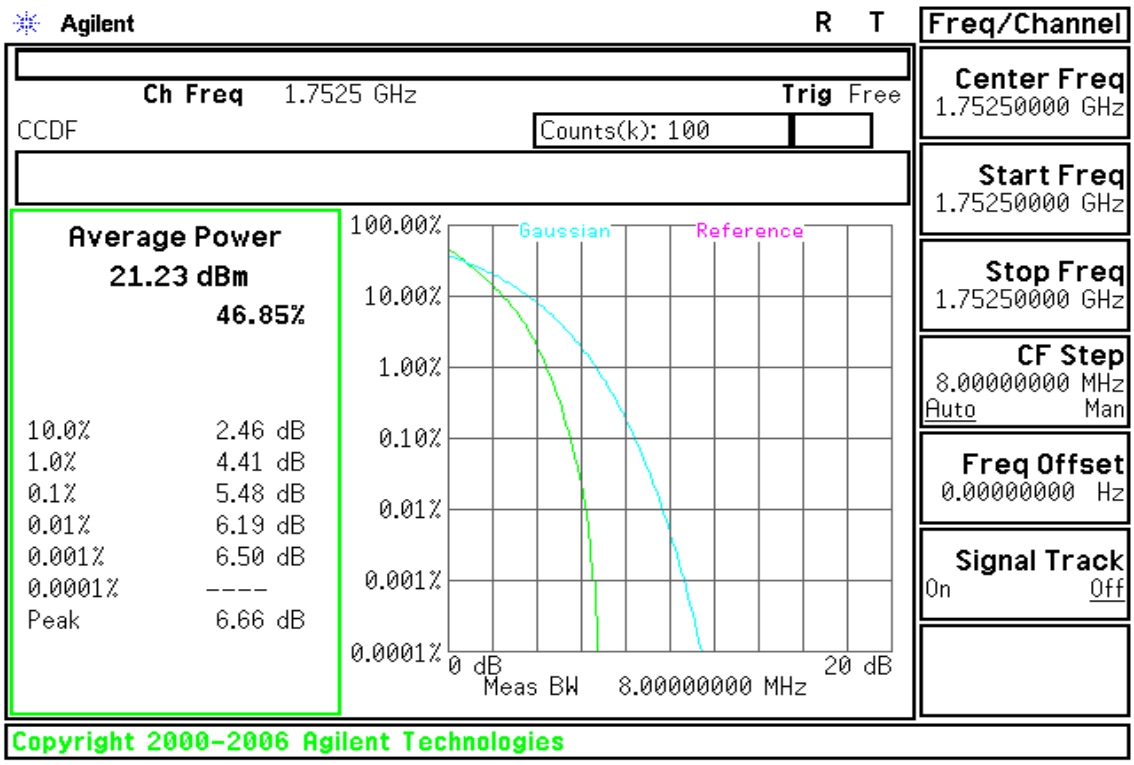
CH Low



CH Mid

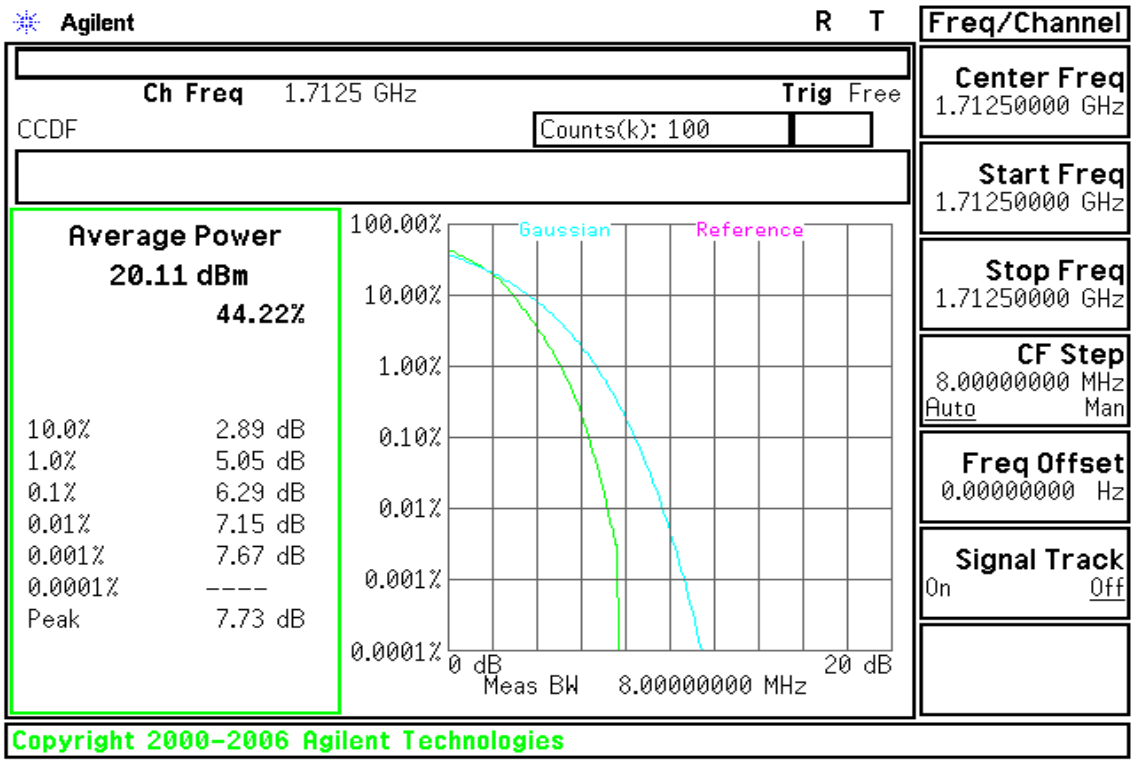


CH High

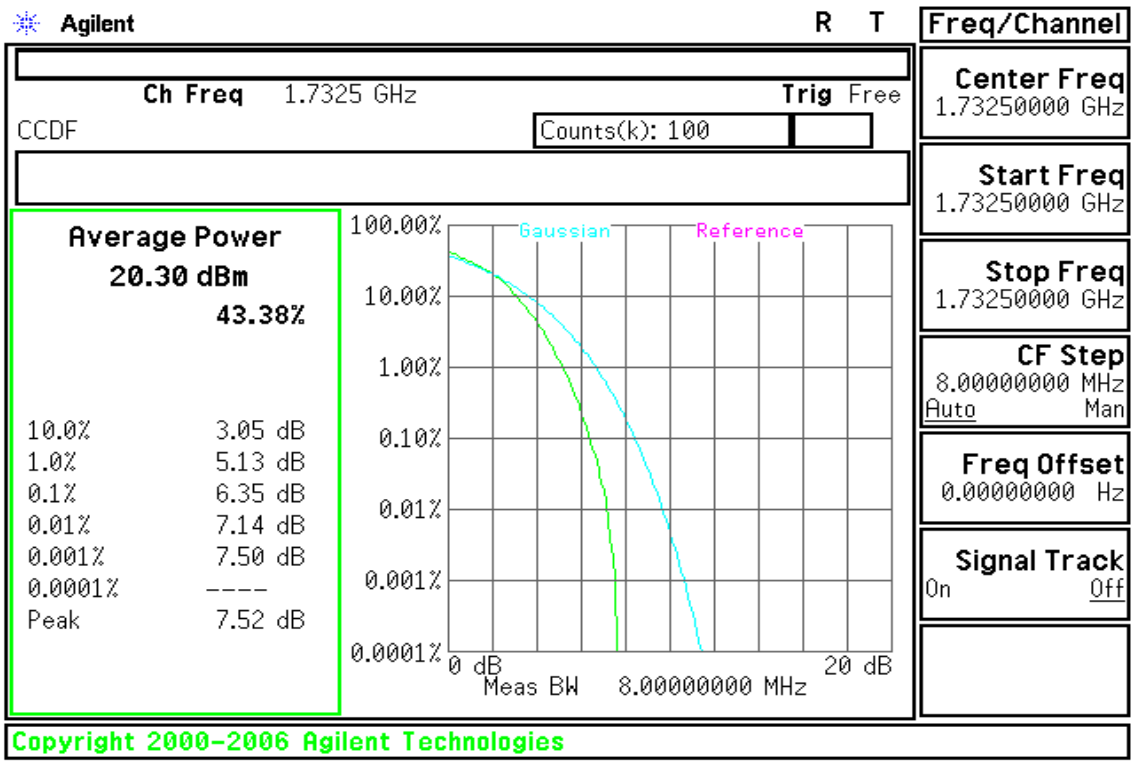


CHANNEL BANDWIDTH: 5MHz / 16QAM

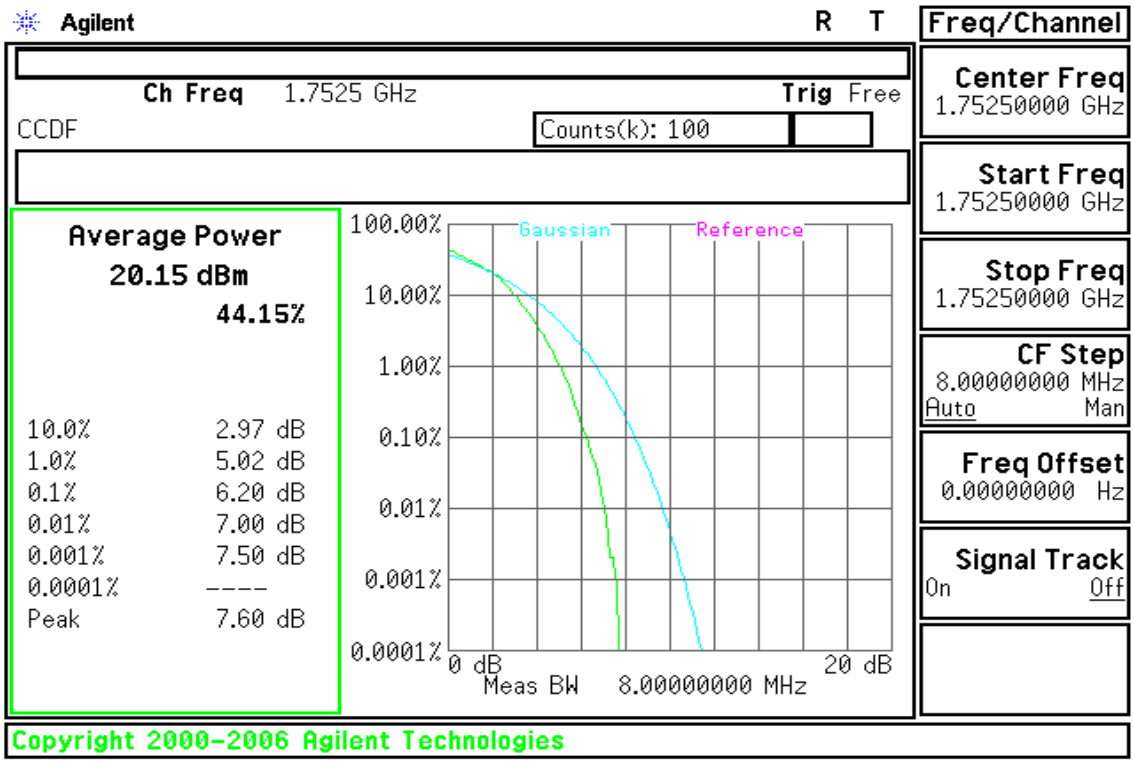
CH Low



CH Mid

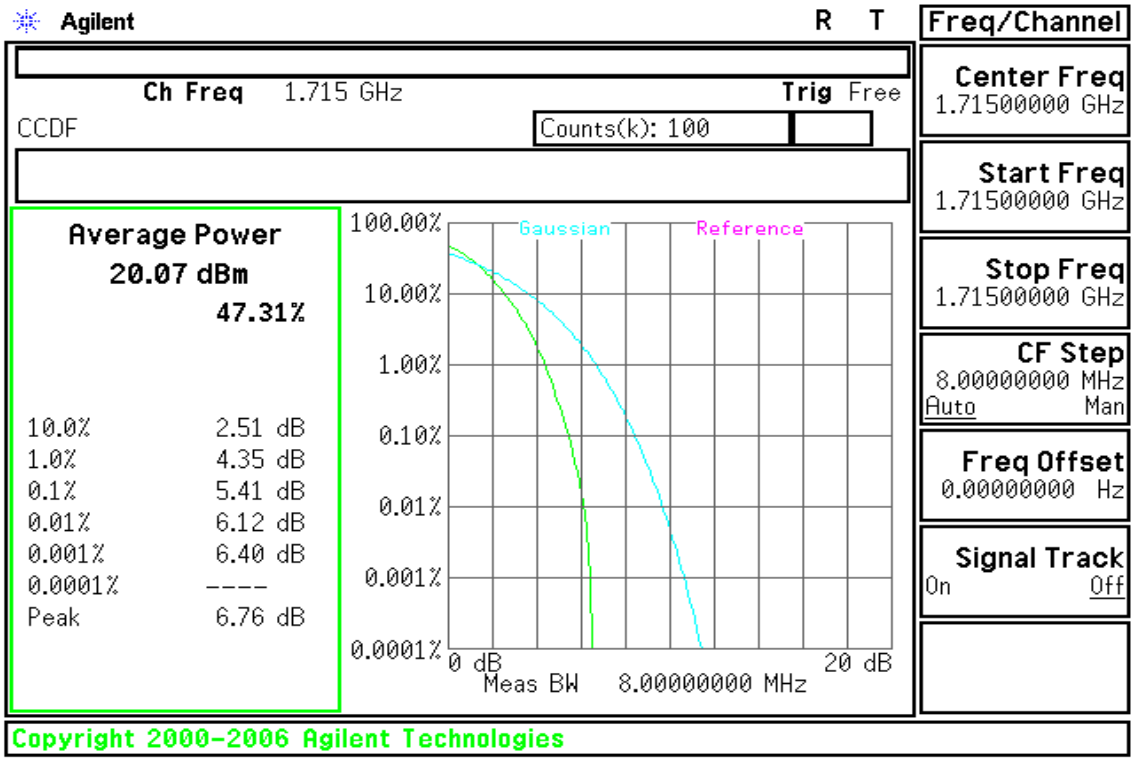


CH High

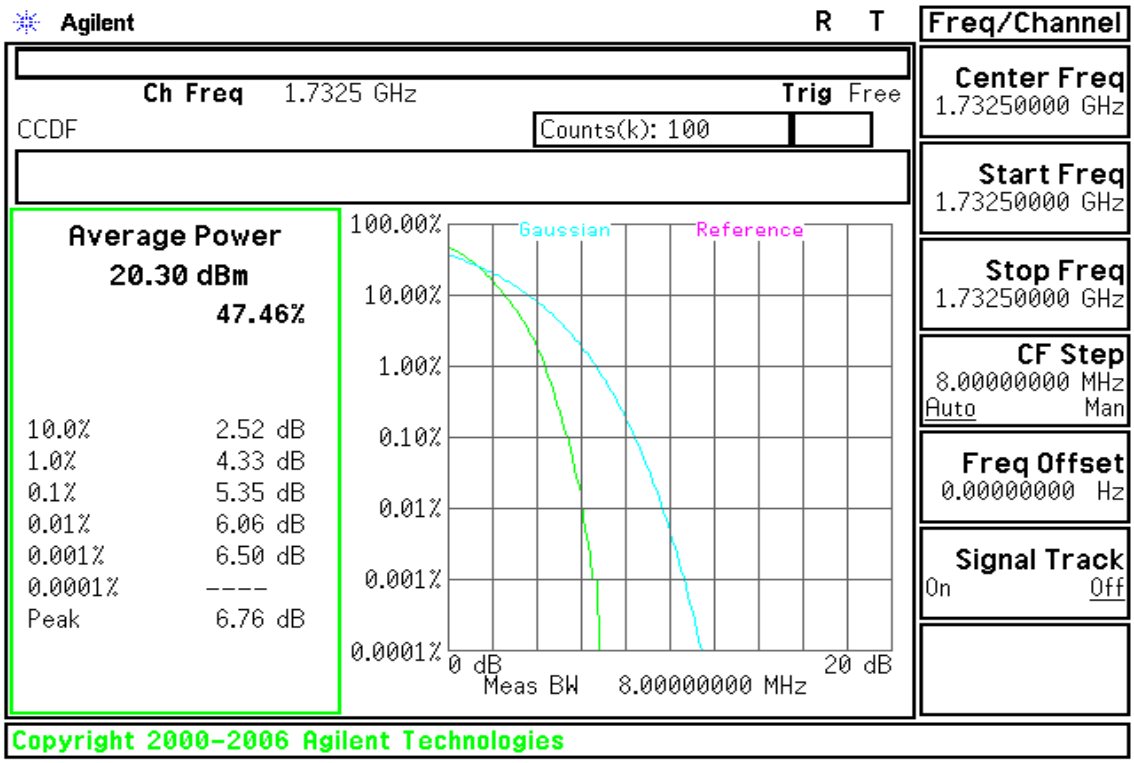


CHANNEL BANDWIDTH: 10MHz / QPSK

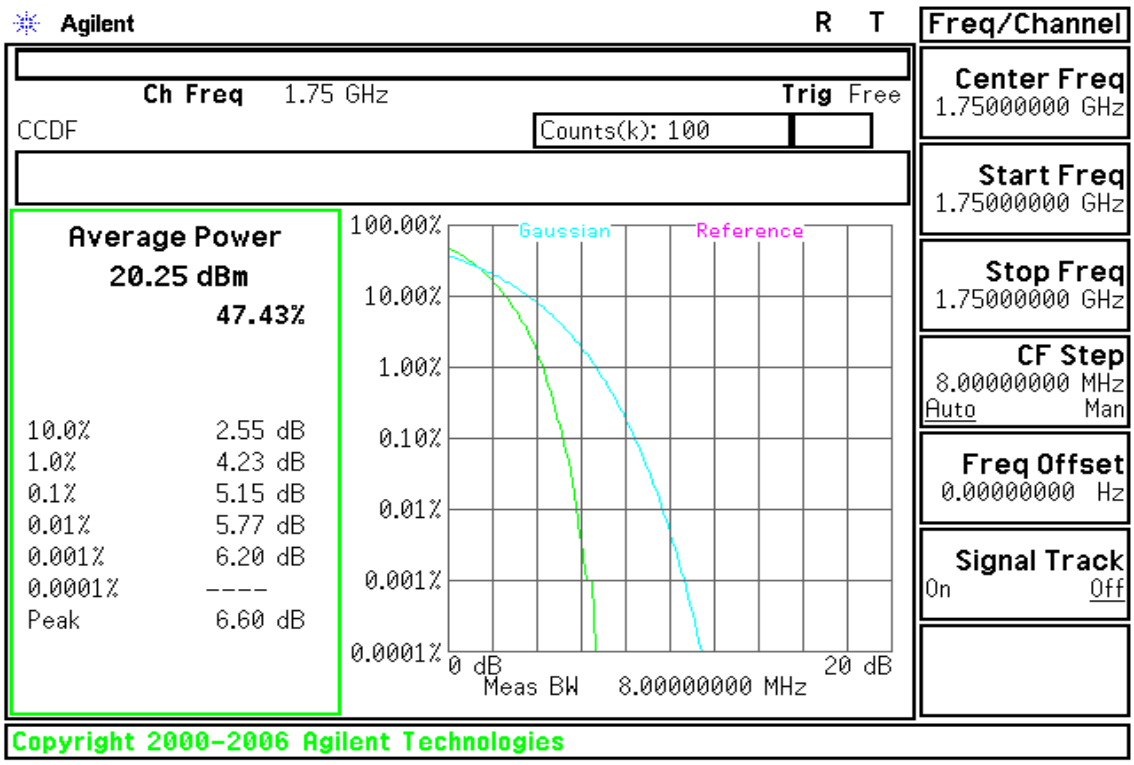
CH Low



CH Mid

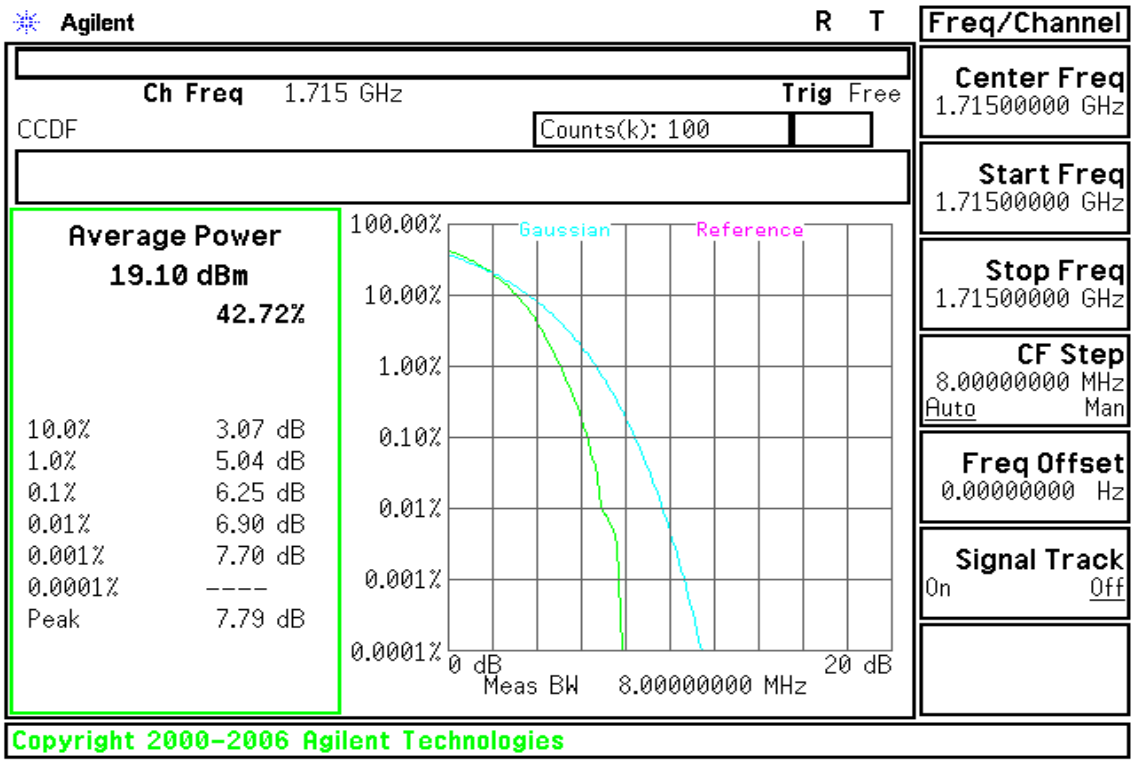


CH High

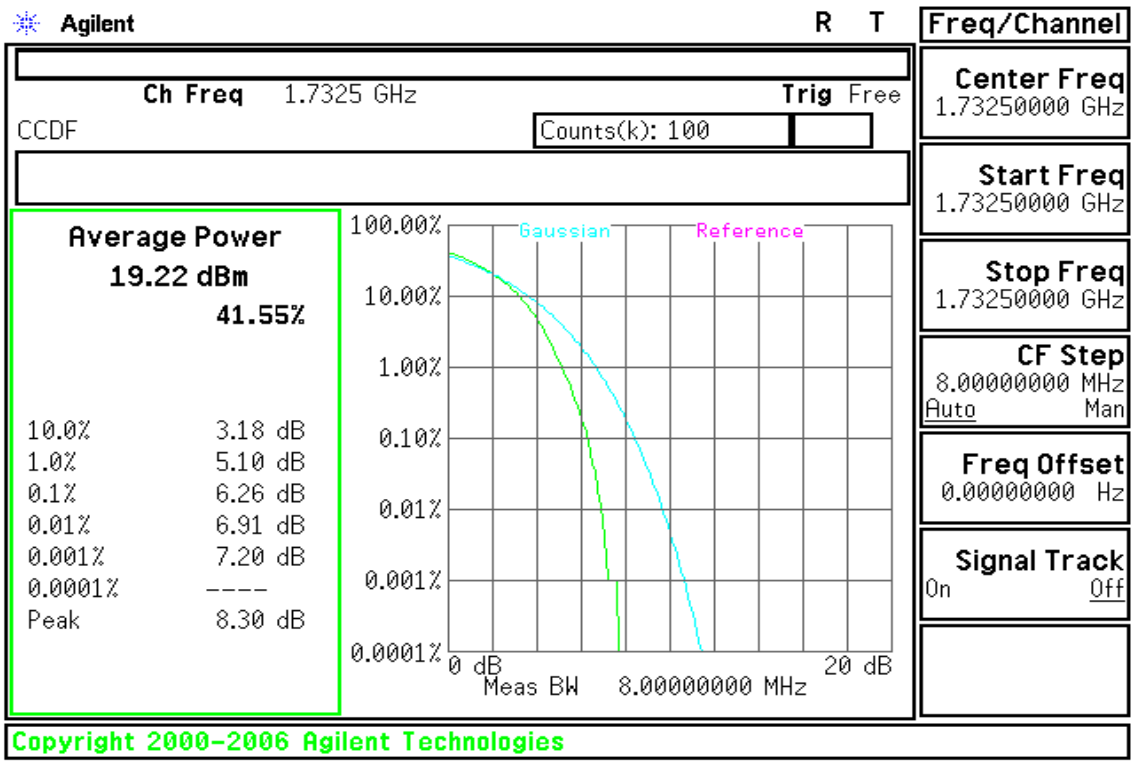


CHANNEL BANDWIDTH: 10MHz / 16QAM

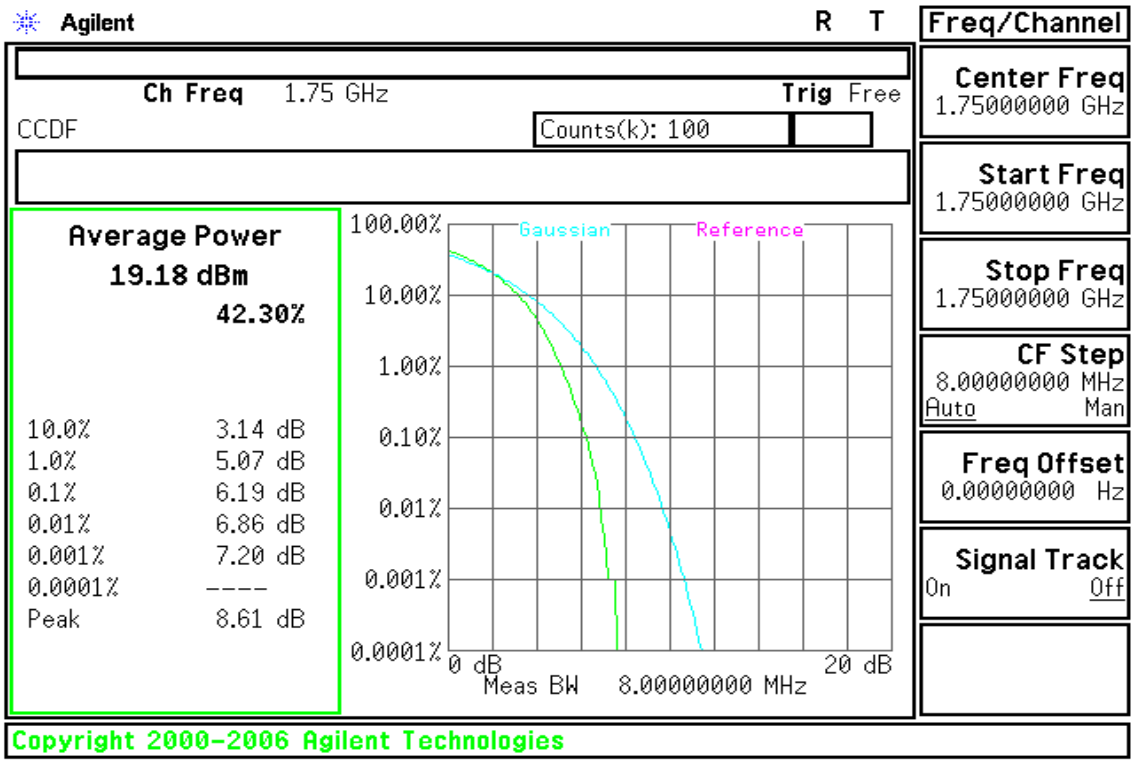
CH Low



CH Mid

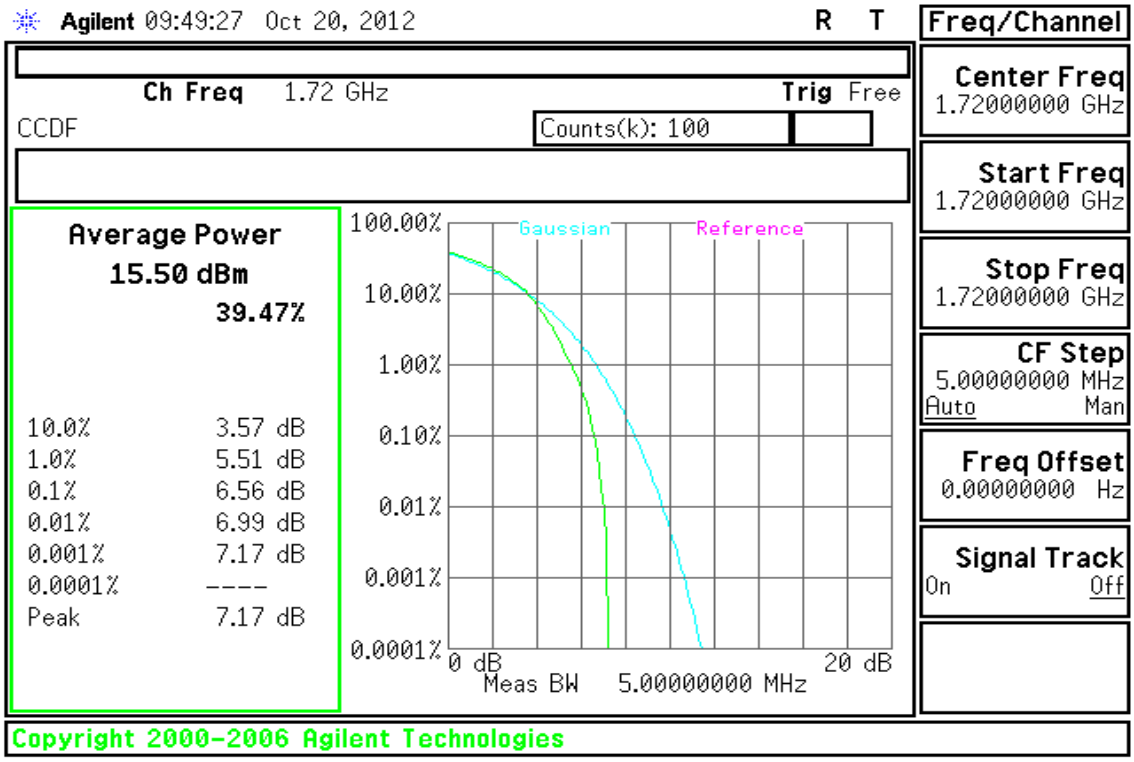


CH High

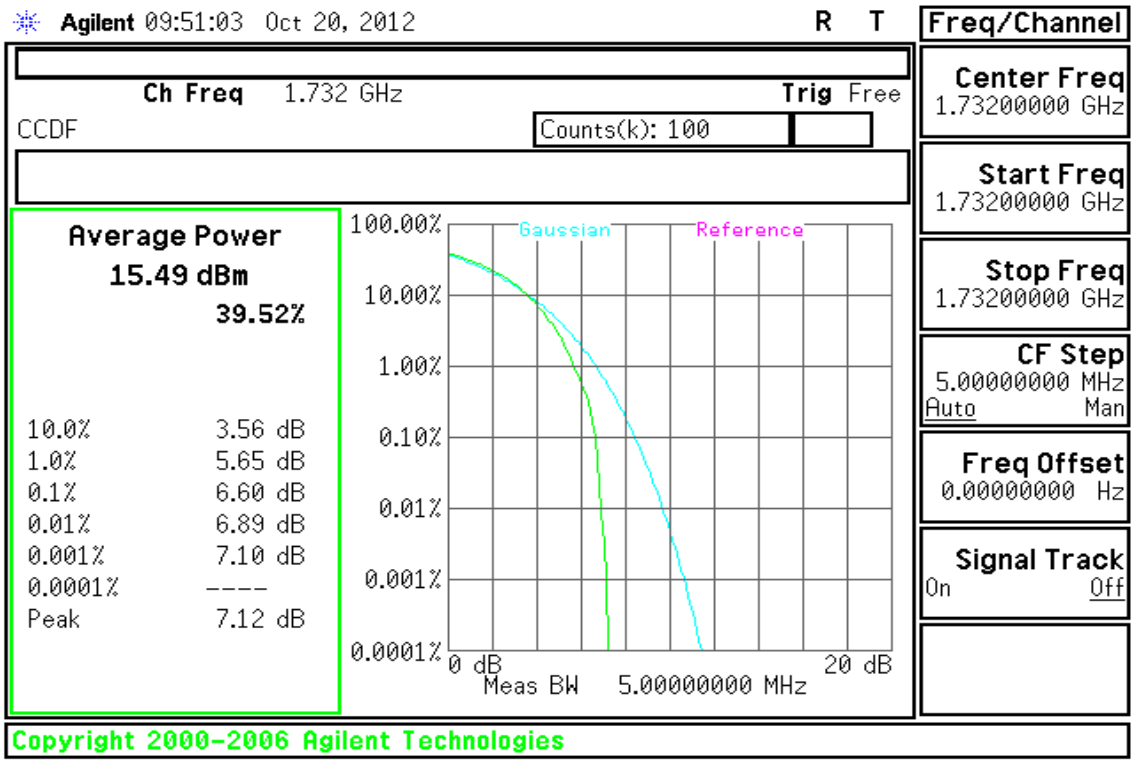


CHANNEL BANDWIDTH: 20MHz / QPSK

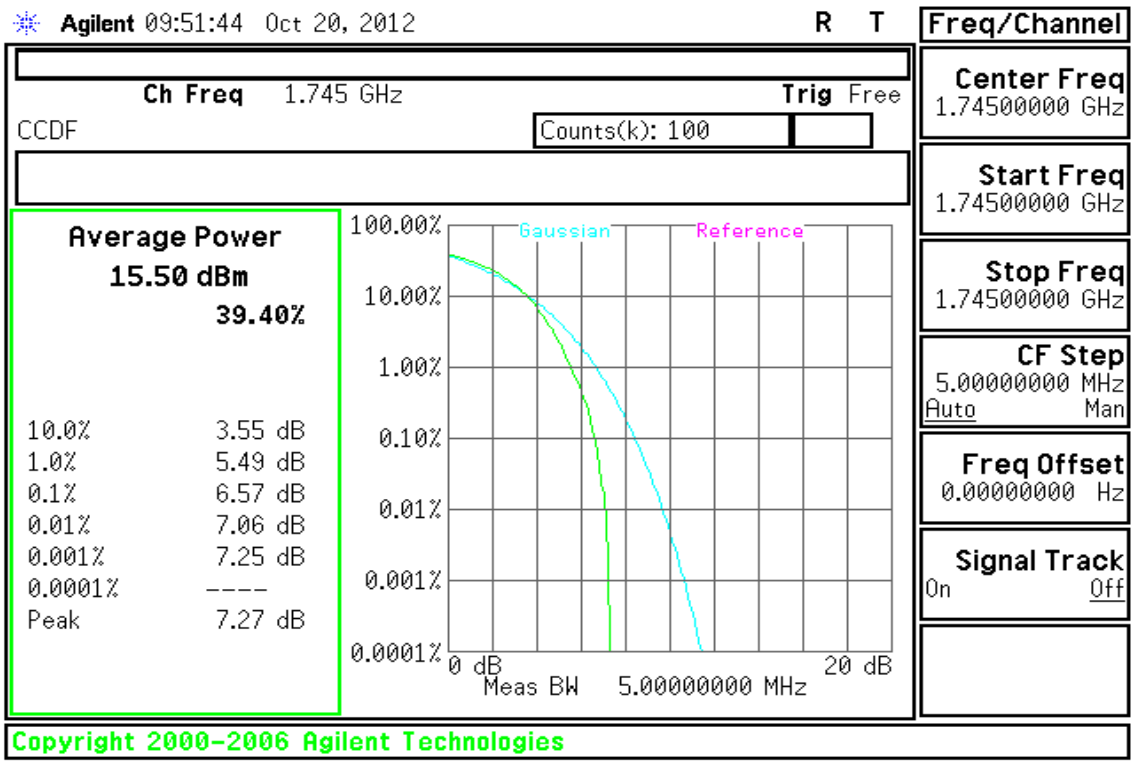
CH Low



CH Mid

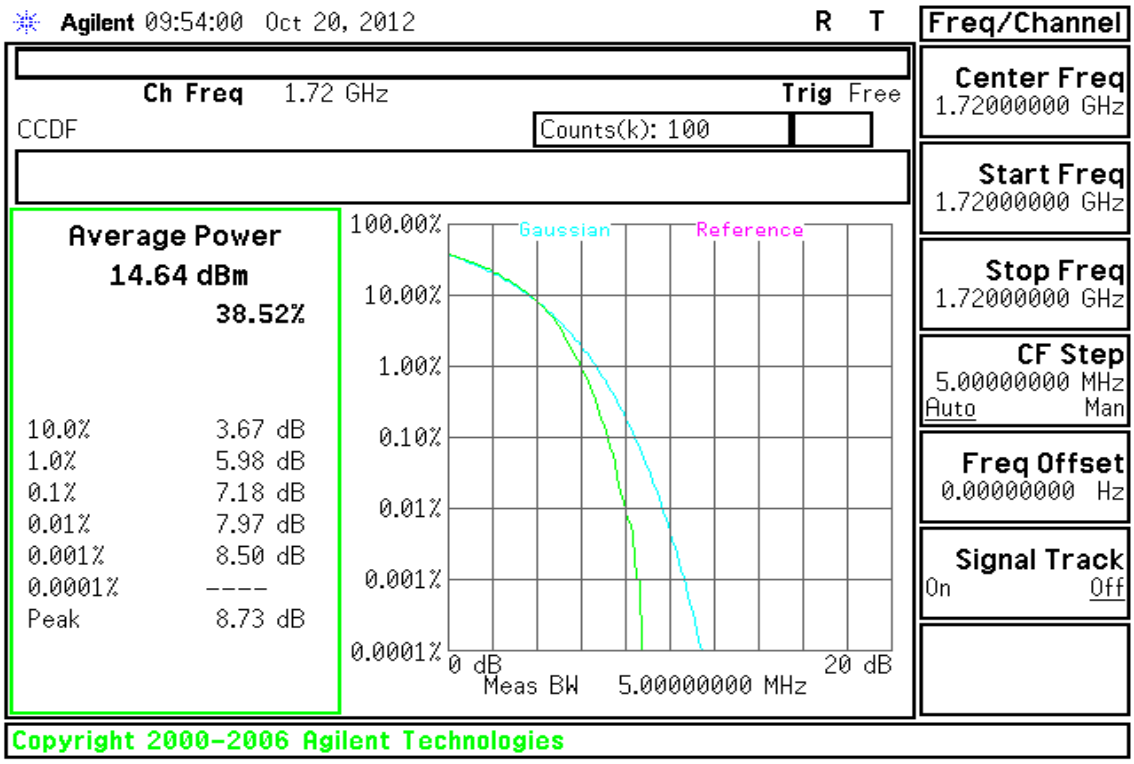


CH High

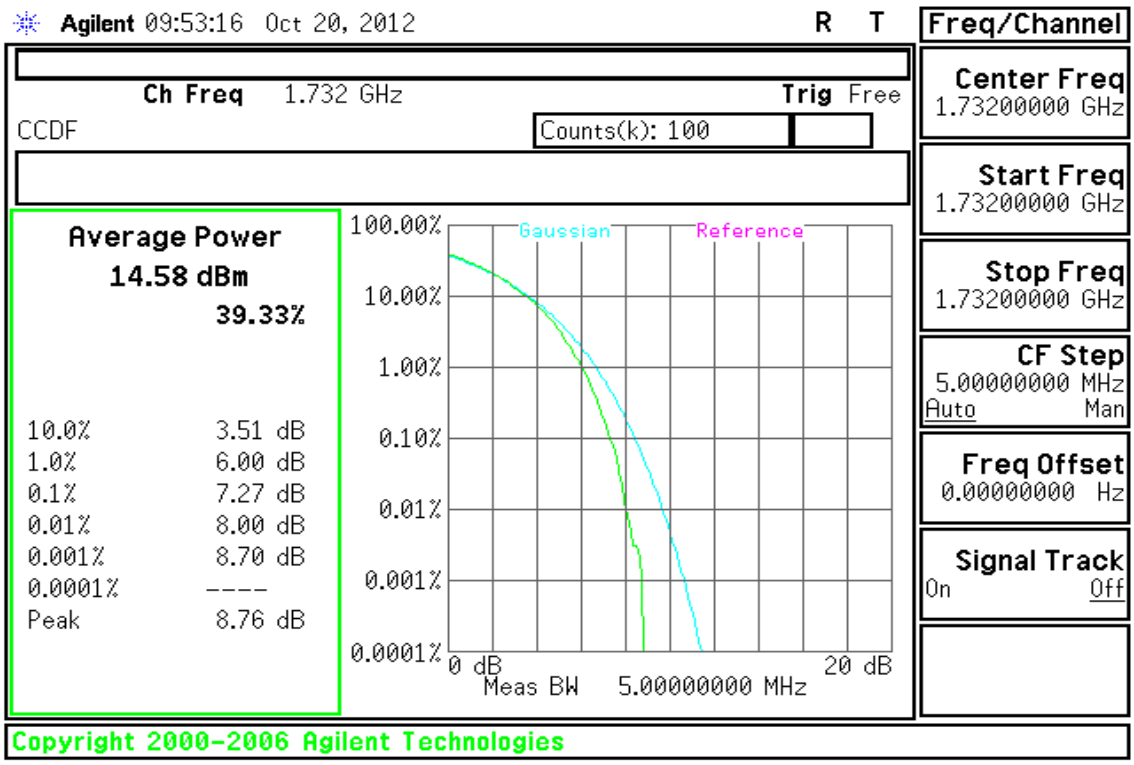


CHANNEL BANDWIDTH: 20MHz / 16QAM

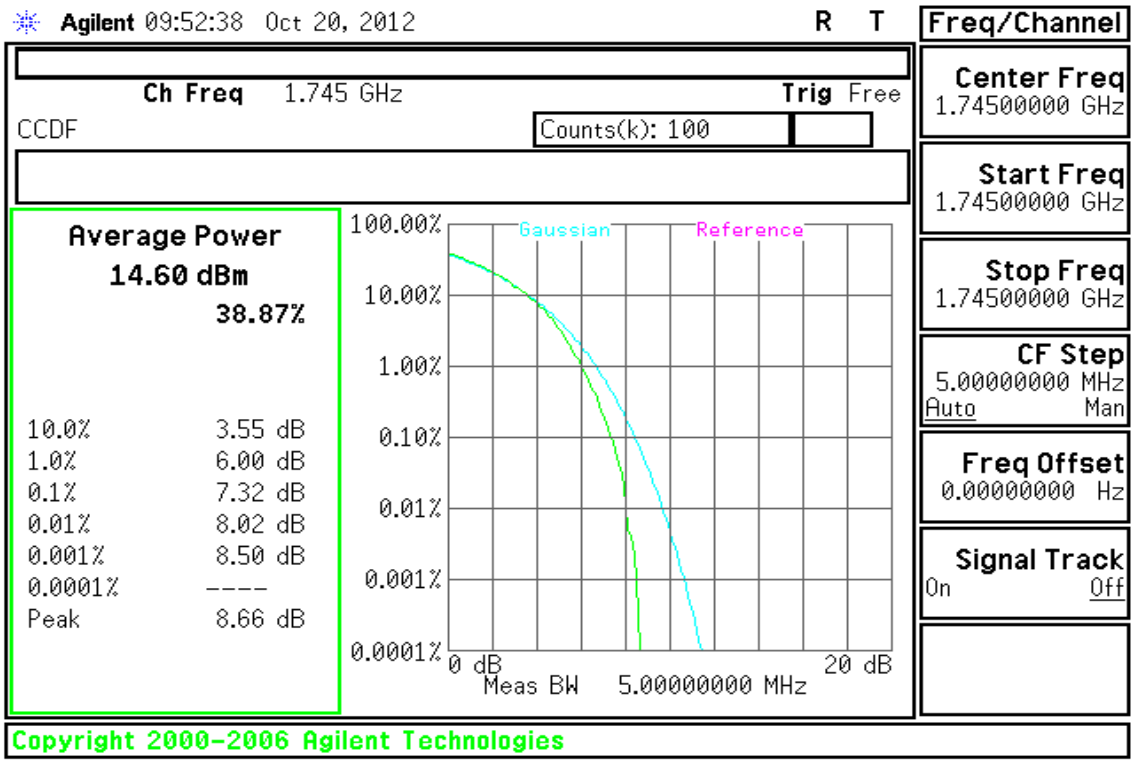
CH Low



CH Mid



CH High



7.5 BAND EDGE MEASUREMENT

LIMIT

For operations in the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed. For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any

emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission equal to –13dBm.In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

TEST PROCEDURES

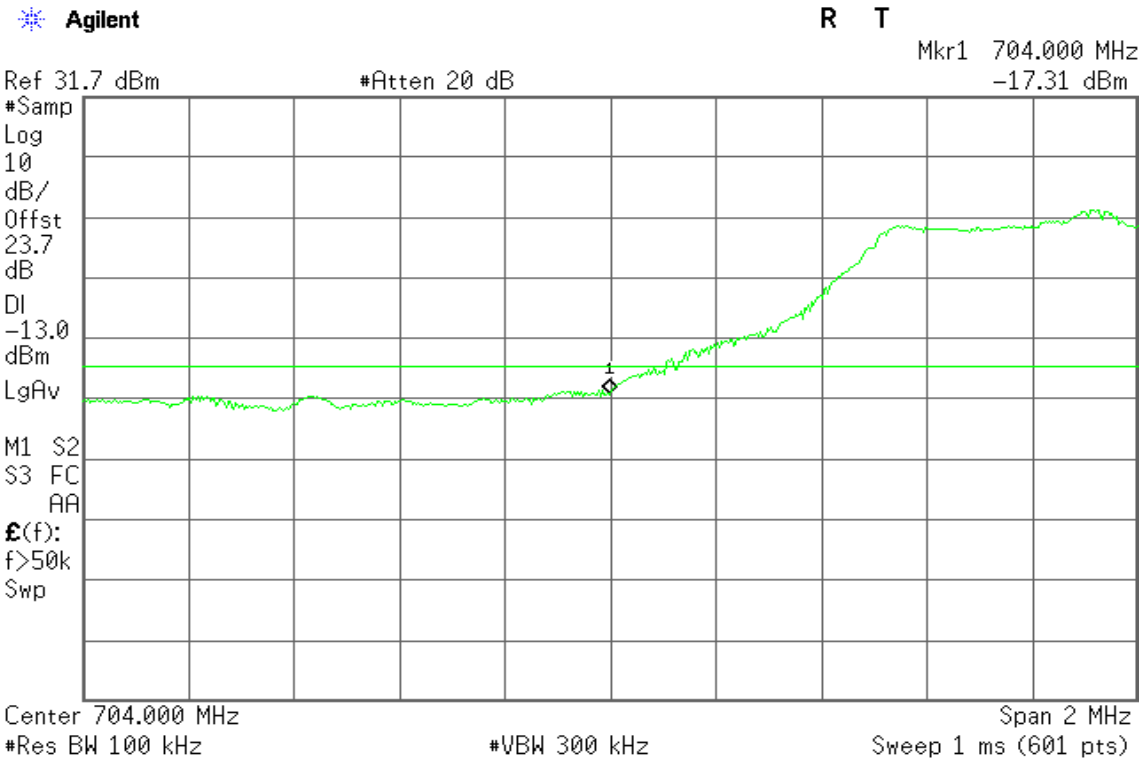
1. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with Spectrum Analyzer. All measurements were done at 2 channels (low and high operational frequency range.).
2. The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer. This splitter loss and cable loss are the worst loss 7.2 dB in the transmitted path track.
3. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 50kHz and VB of the spectrum is 200kHz.
4. Record the max trace plot into the test report.

TEST RESULTS:

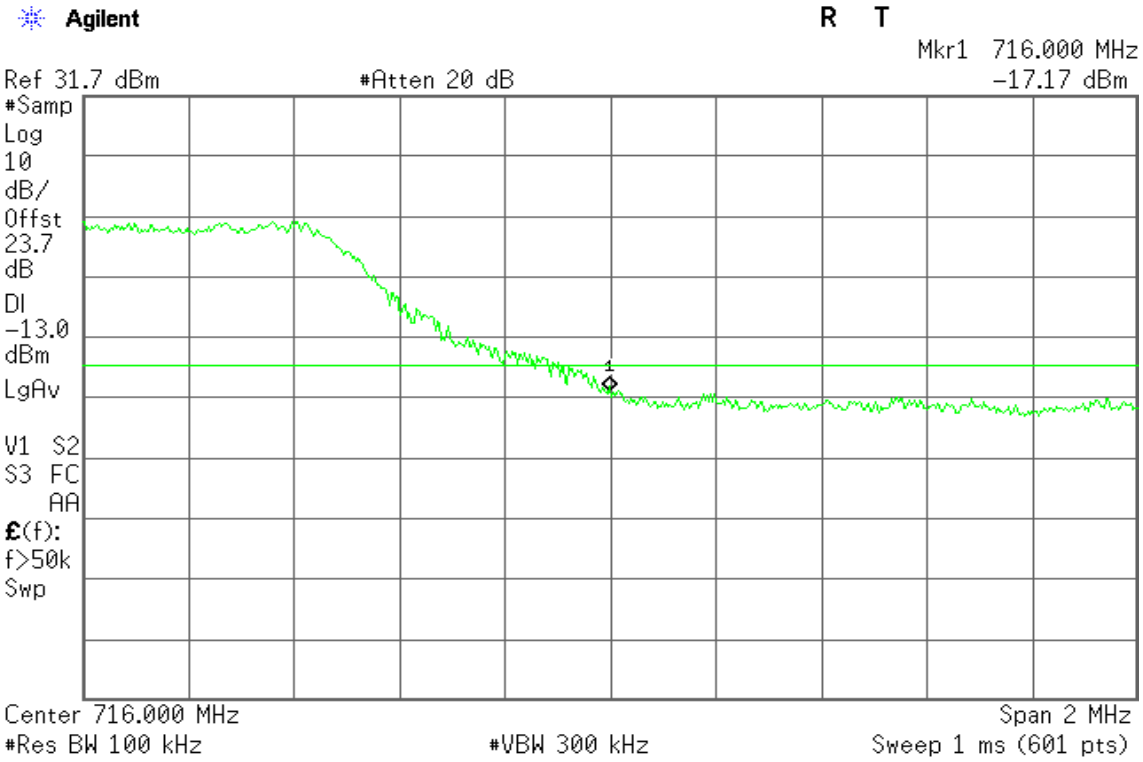
LTE Band 17

CHANNEL BANDWIDTH: 10MHz / QPSK / FULL RB ALLOCATED

LOWER BAND EDGE



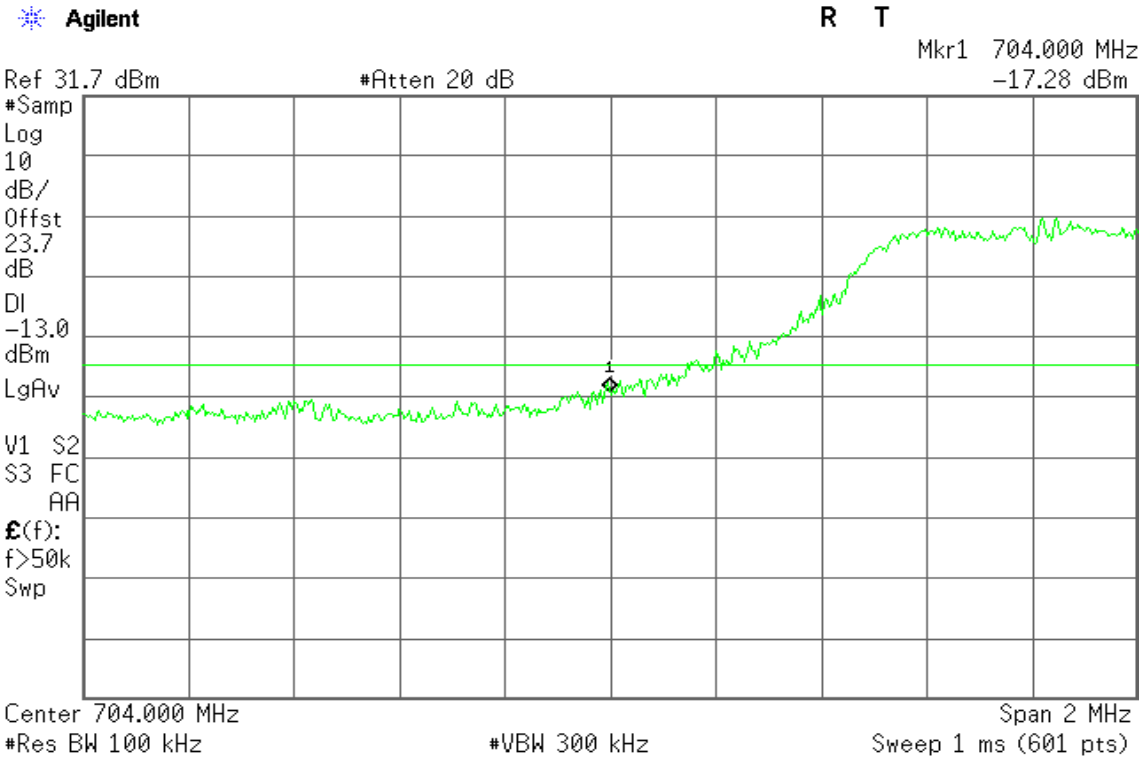
HIGHER BAND EDGE



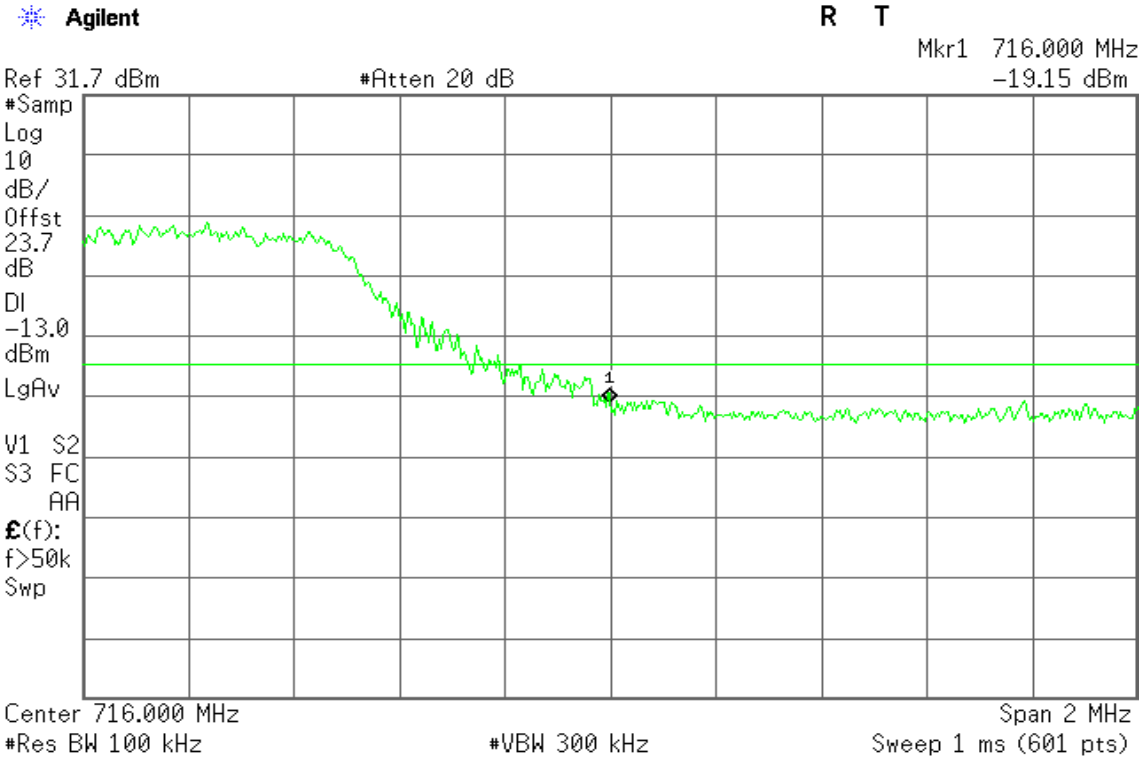
LTE Band 17

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

LOWER BAND EDGE



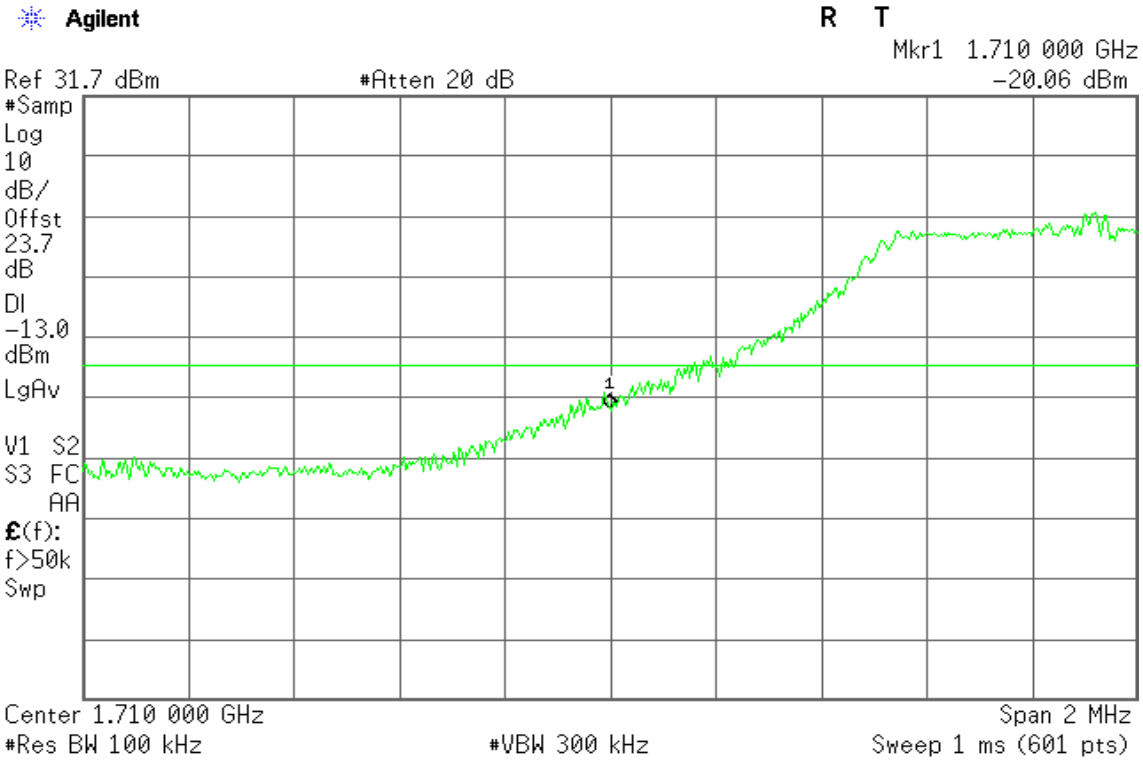
HIGHER BAND EDGE



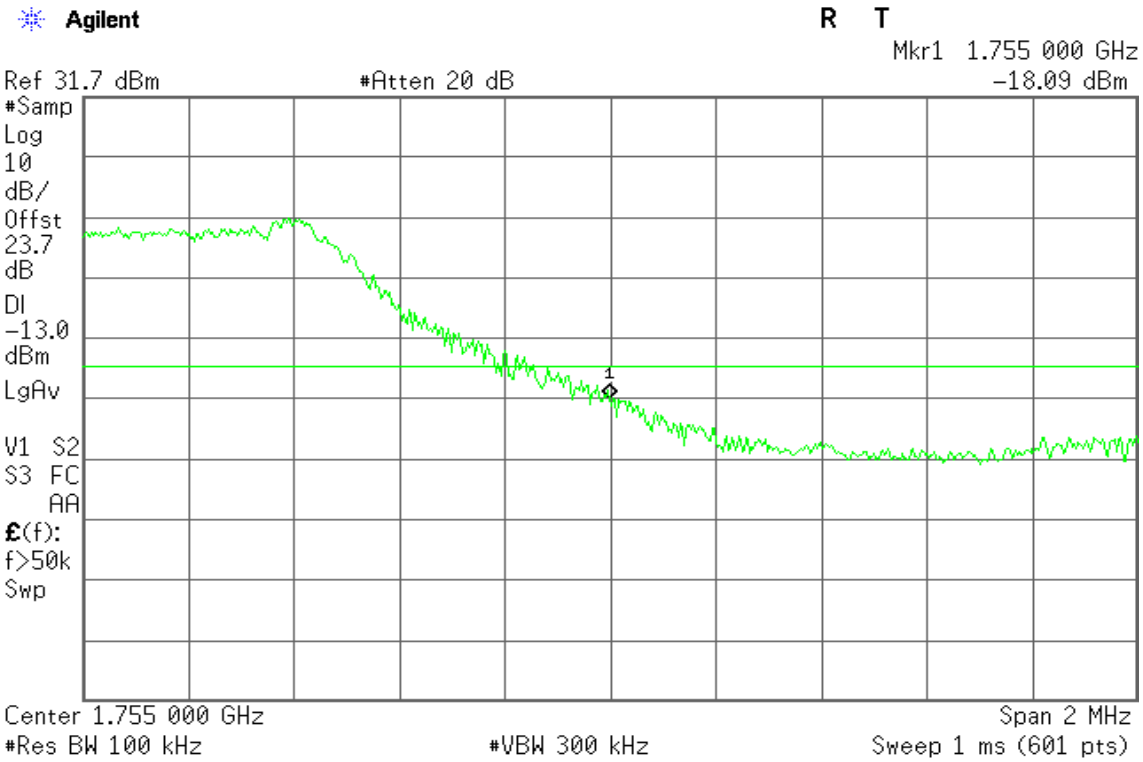
LTE Band 4

CHANNEL BANDWIDTH: 10MHz / QPSK / FULL RB ALLOCATION

LOWER BAND EDGE

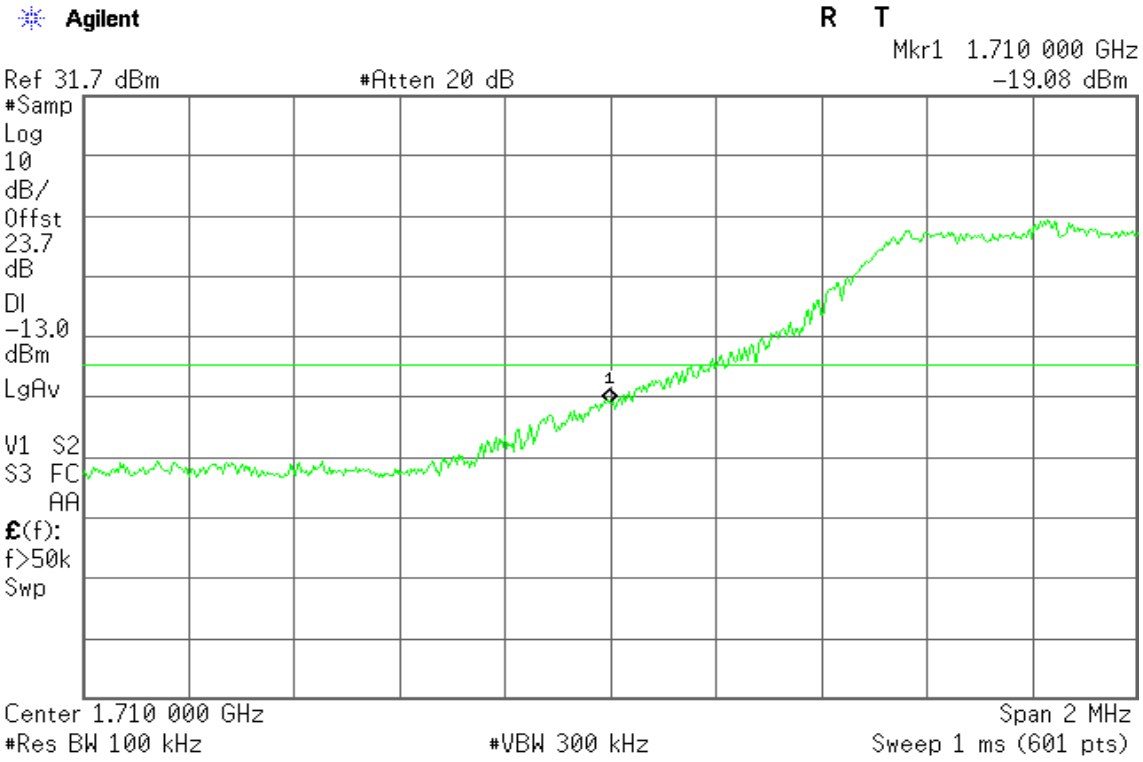


HIGHER BAND EDGE

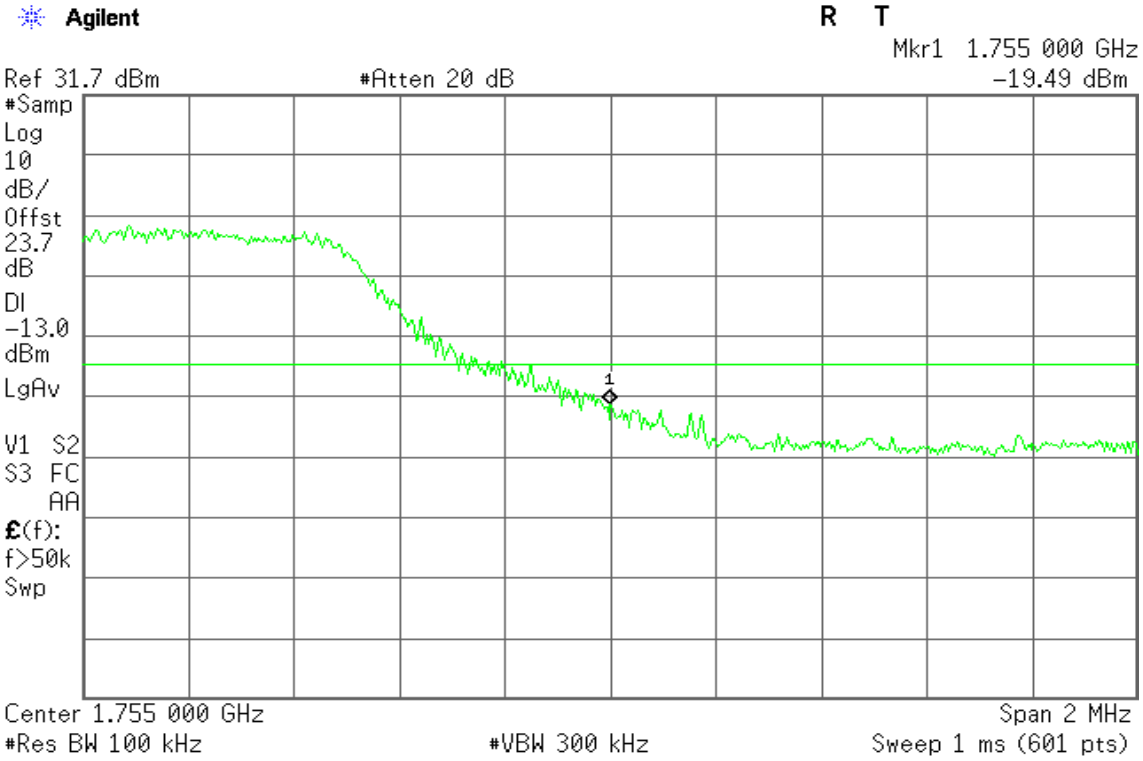


CHANNEL BANDWIDTH: 10MHz / 16QAM / FULL RB ALLOCATION

LOWER BAND EDGE



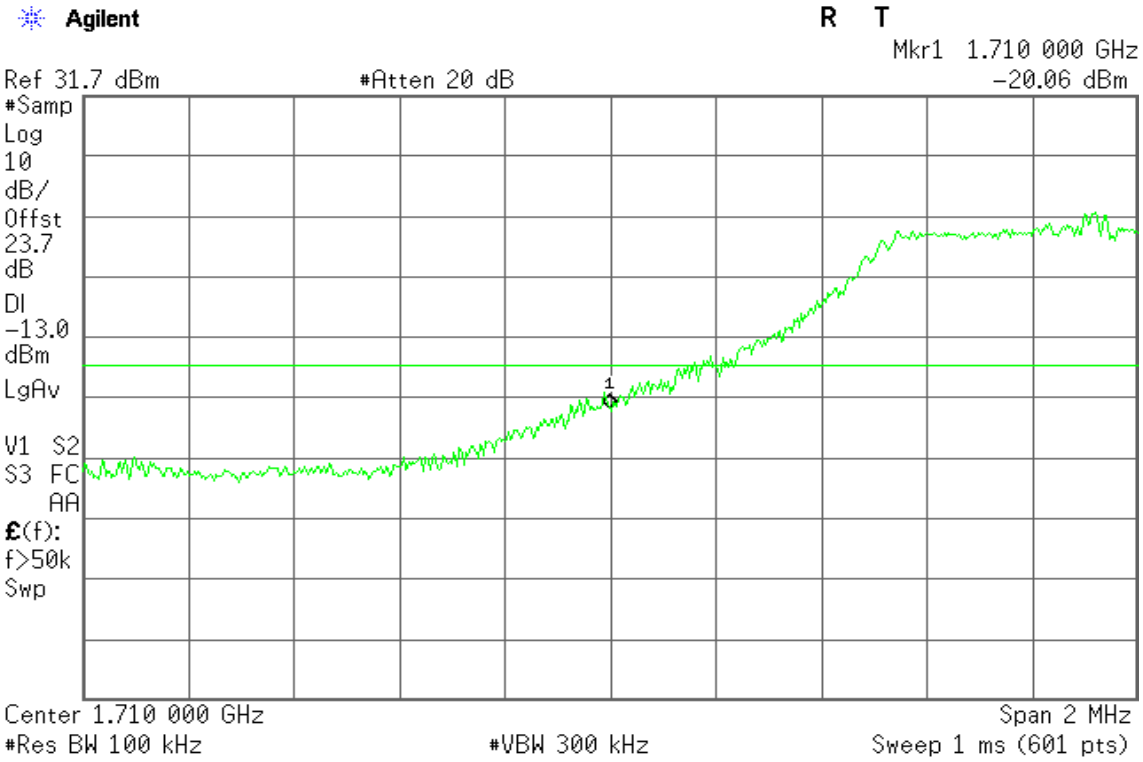
HIGHER BAND EDGE



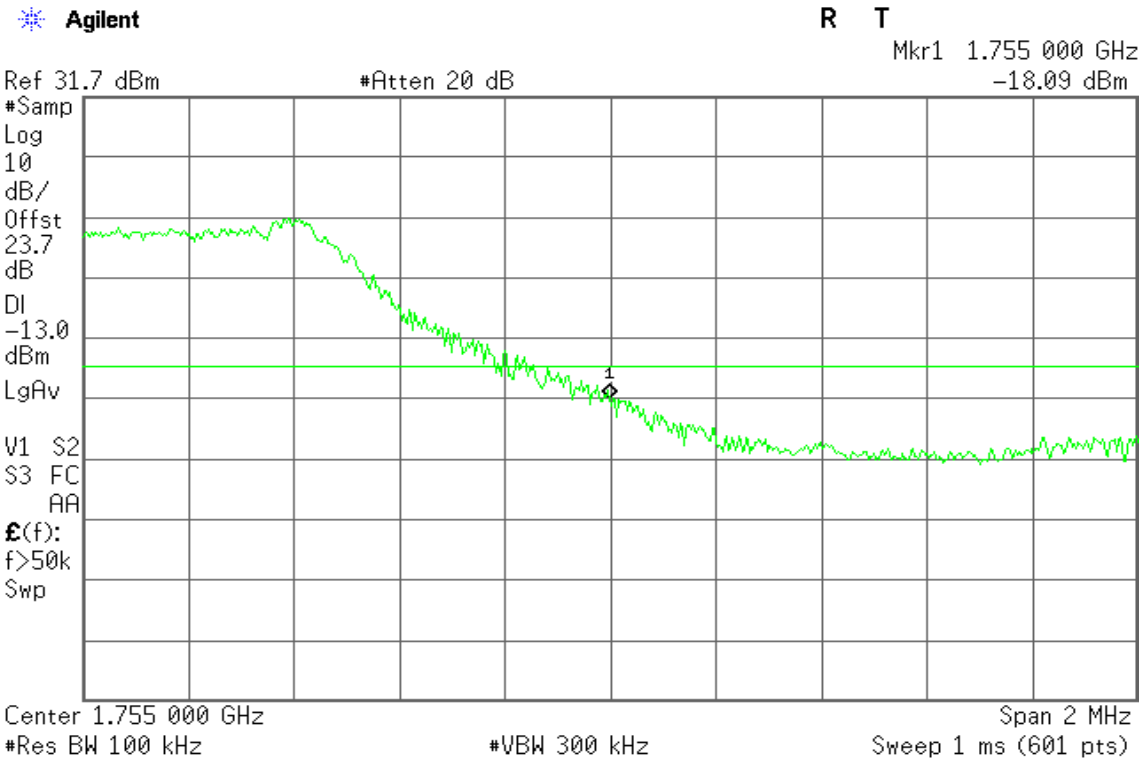
LTE Band 4

CHANNEL BANDWIDTH: 20MHz / QPSK / FULL RB ALLOCATION

LOWER BAND EDGE

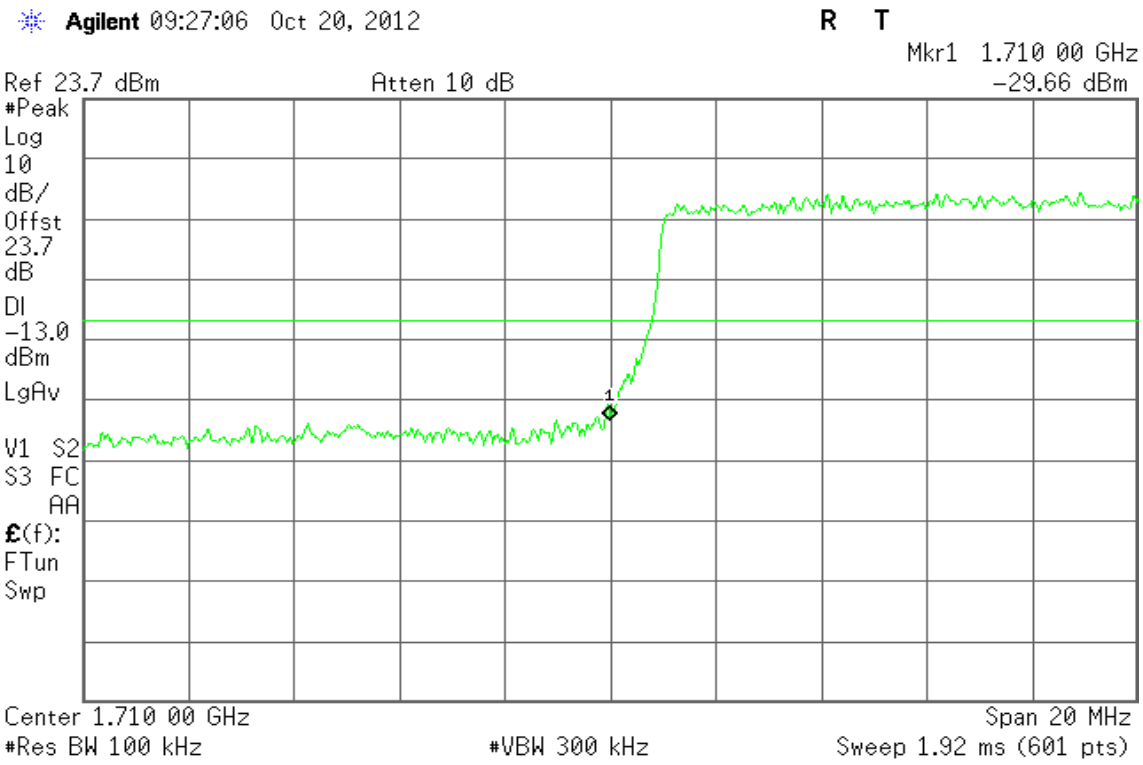


HIGHER BAND EDGE

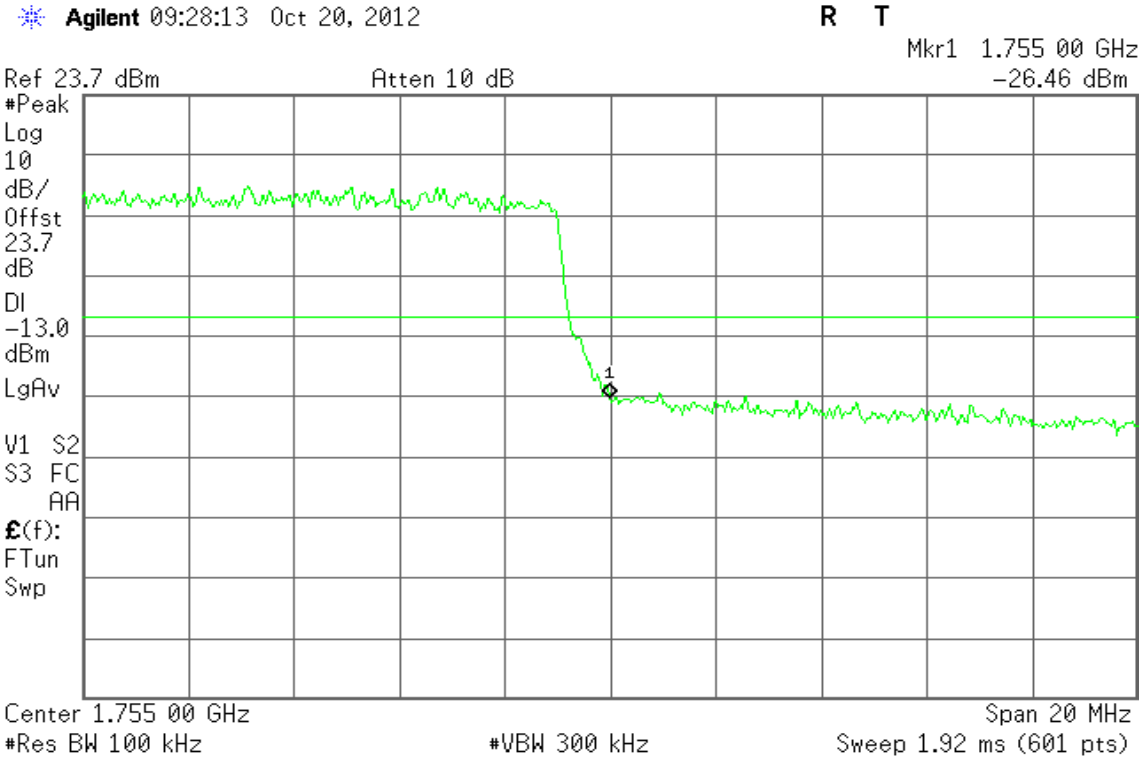


CHANNEL BANDWIDTH: 20MHz / 16QAM / FULL RB ALLOCATION

LOWER BAND EDGE



HIGHER BAND EDGE



7.6 CONDUCTED SPURIOUS EMISSIONS

LIMITS

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission equal to –13dBm

TEST PROCEDURES

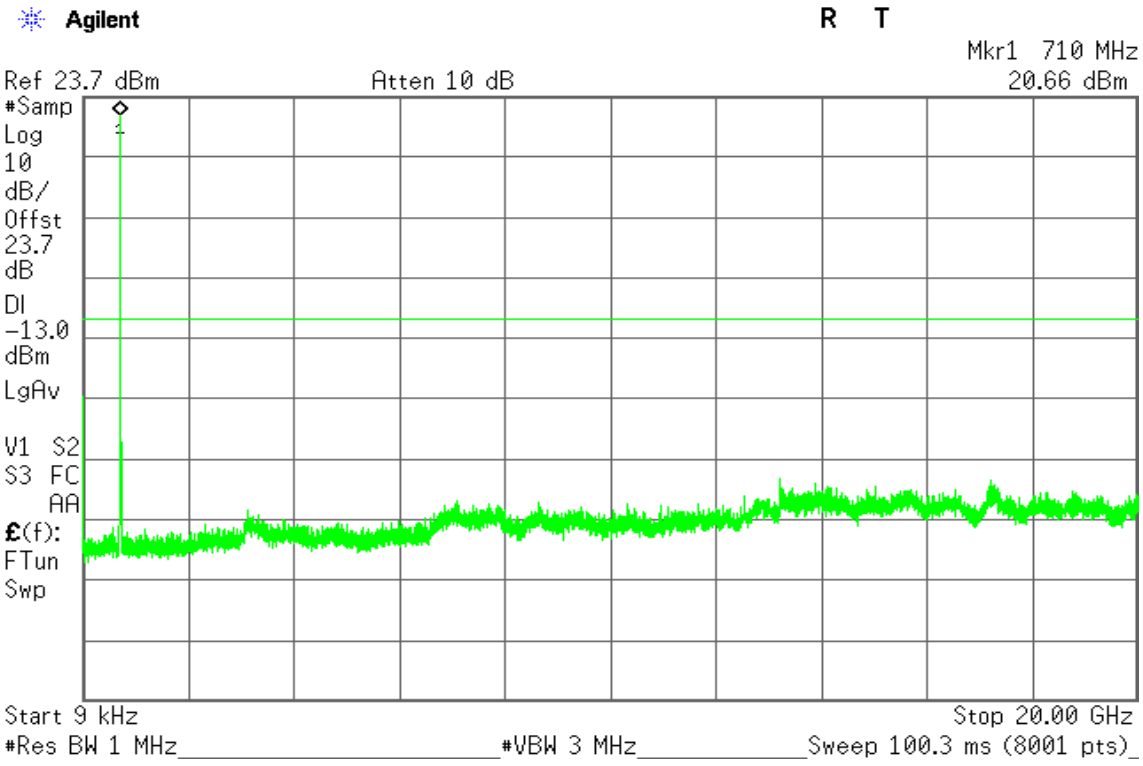
1. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high operational frequency range.).
2. The conducted spurious emission used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
3. When the spectrum scanned from 30MHz to 3GHz, it shall be connected to the band reject filter attenuated the carried frequency. The spectrum set RB=1MHz, VB=3MHz.
4. When the spectrum scanned from 3GHz to 20GHz, it shall be connected to the high pass filter attenuated the carried frequency. The spectrum set RB=1MHz, VB=3MHz.

TEST RESULTS

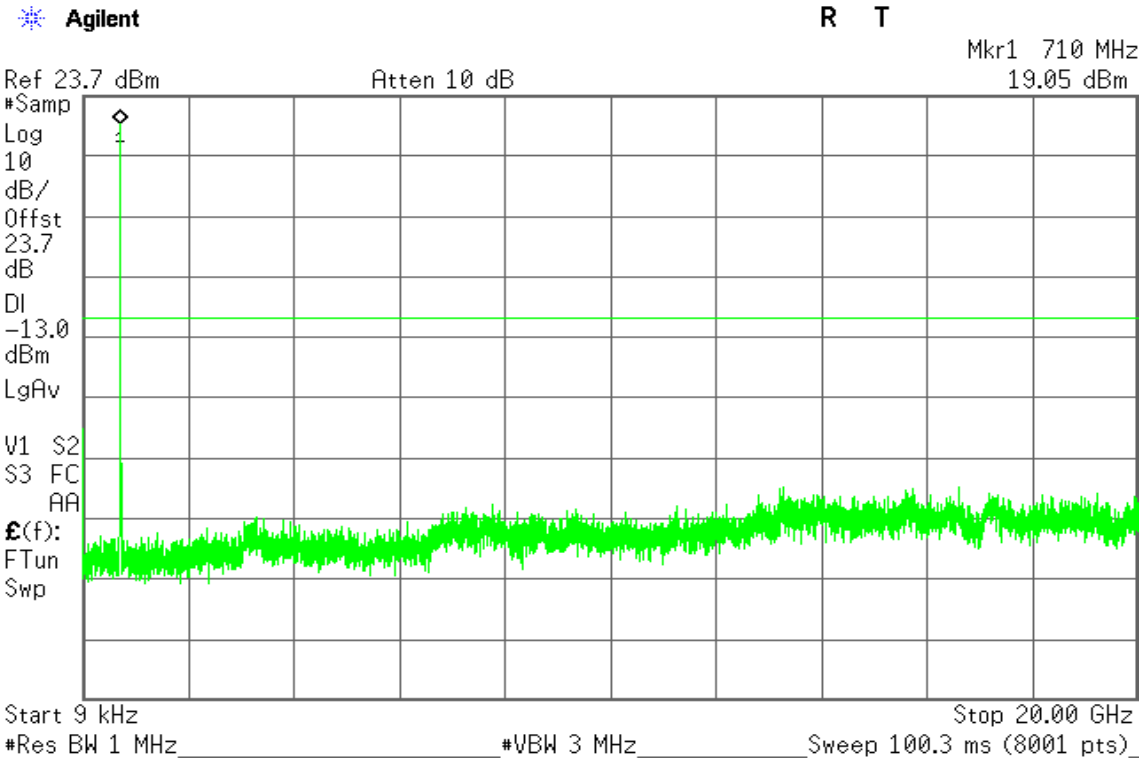
LTE Band 17

CHANNEL BANDWIDTH: 5MHz / QPSK

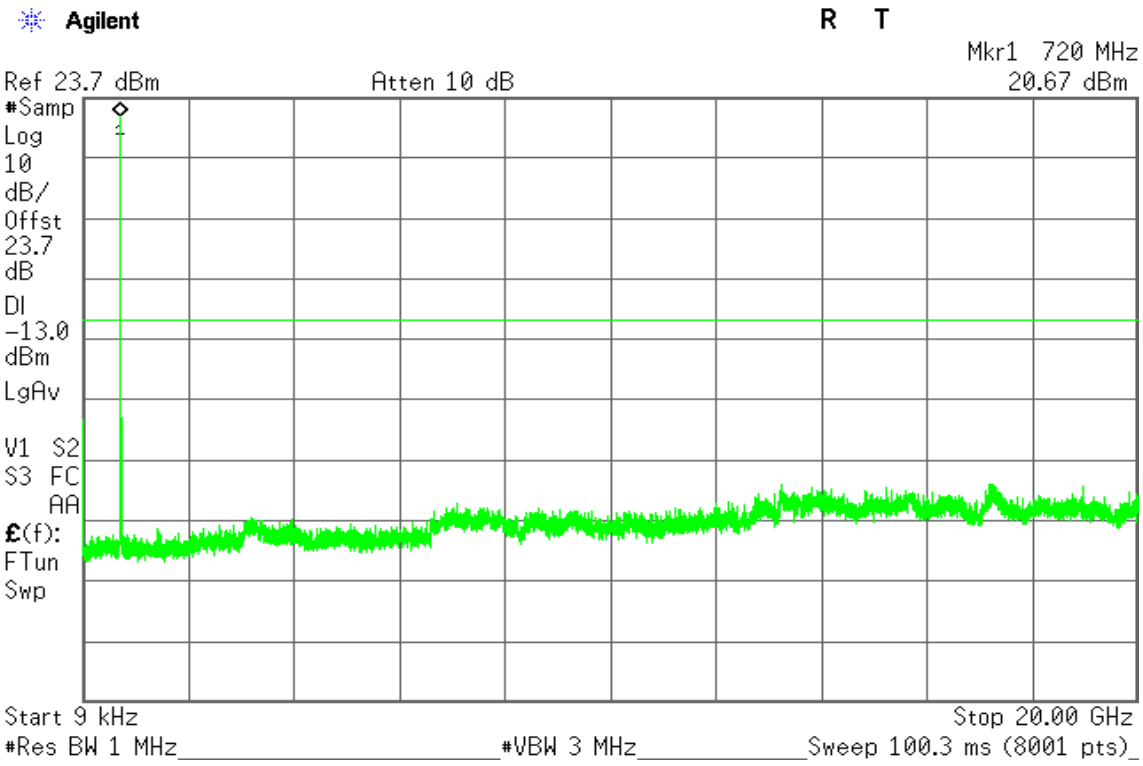
CH Low



CH Mid

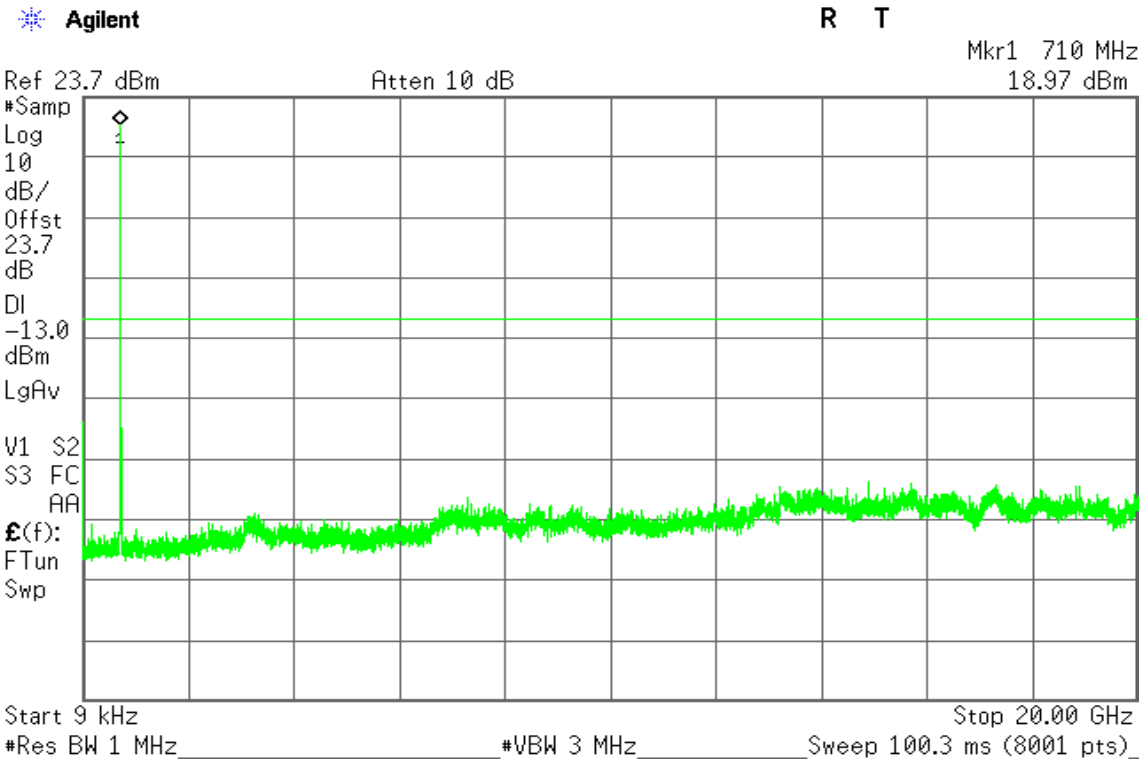


CH High

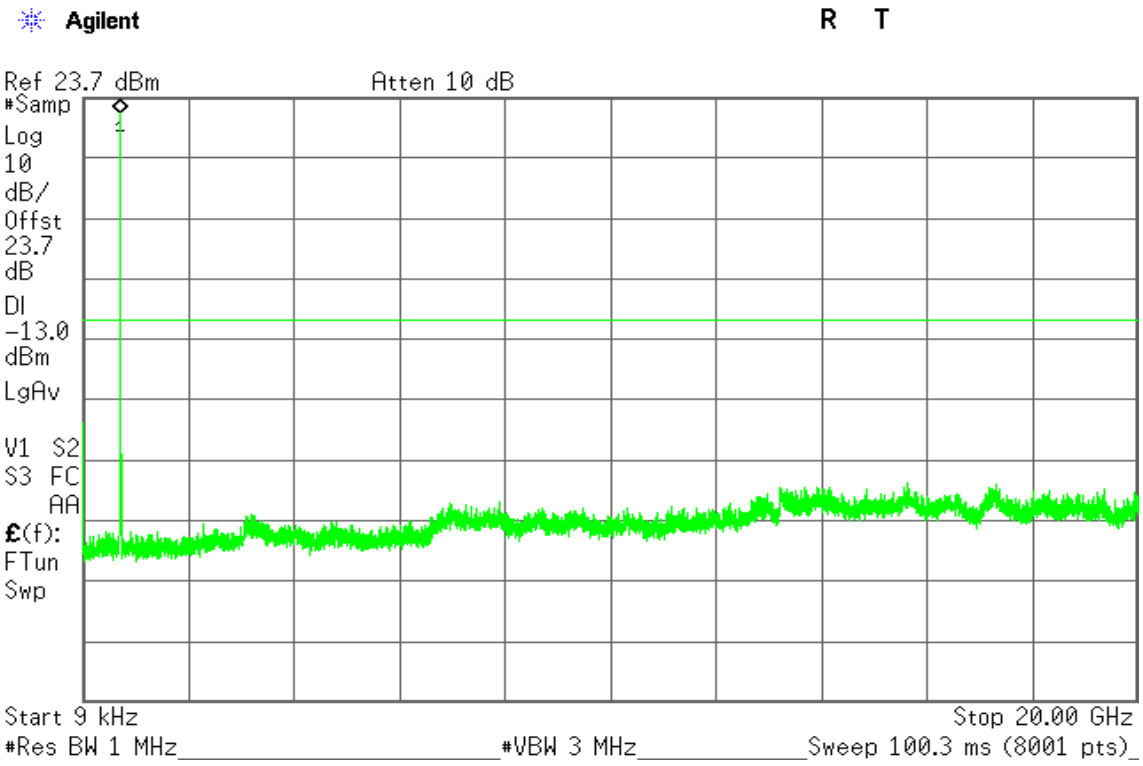


CHANNEL BANDWIDTH: 5MHz / 16QAM

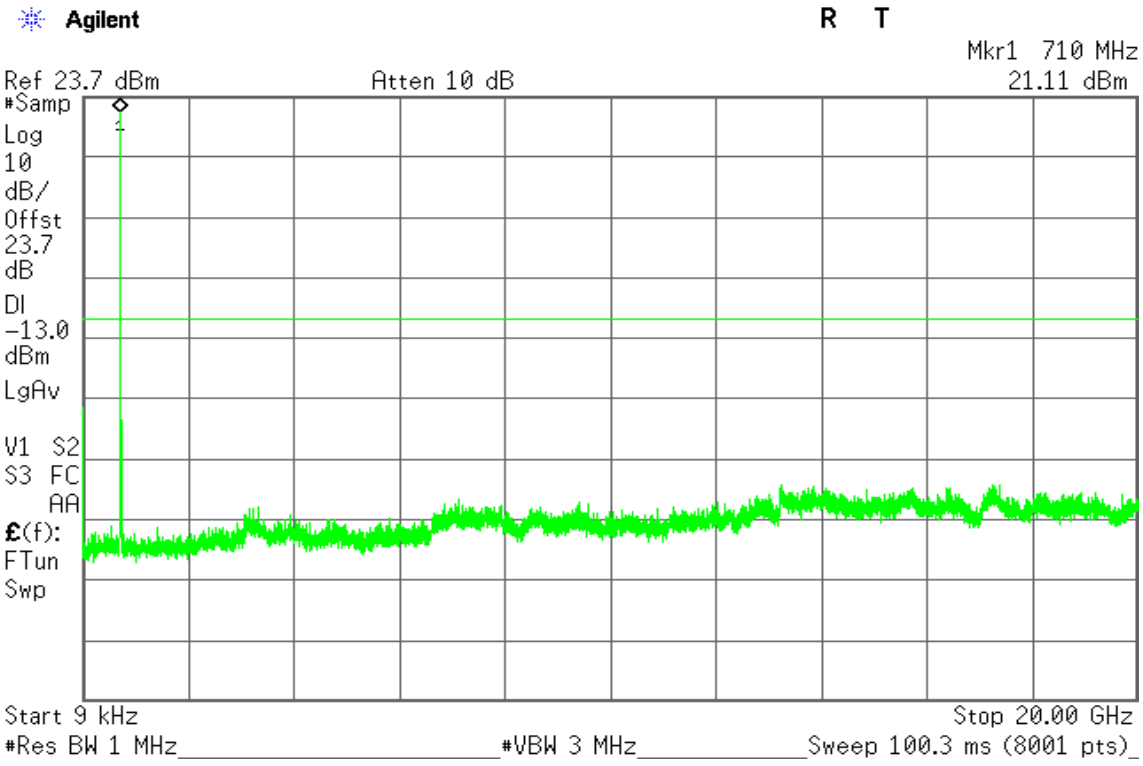
CH Low



CH Mid

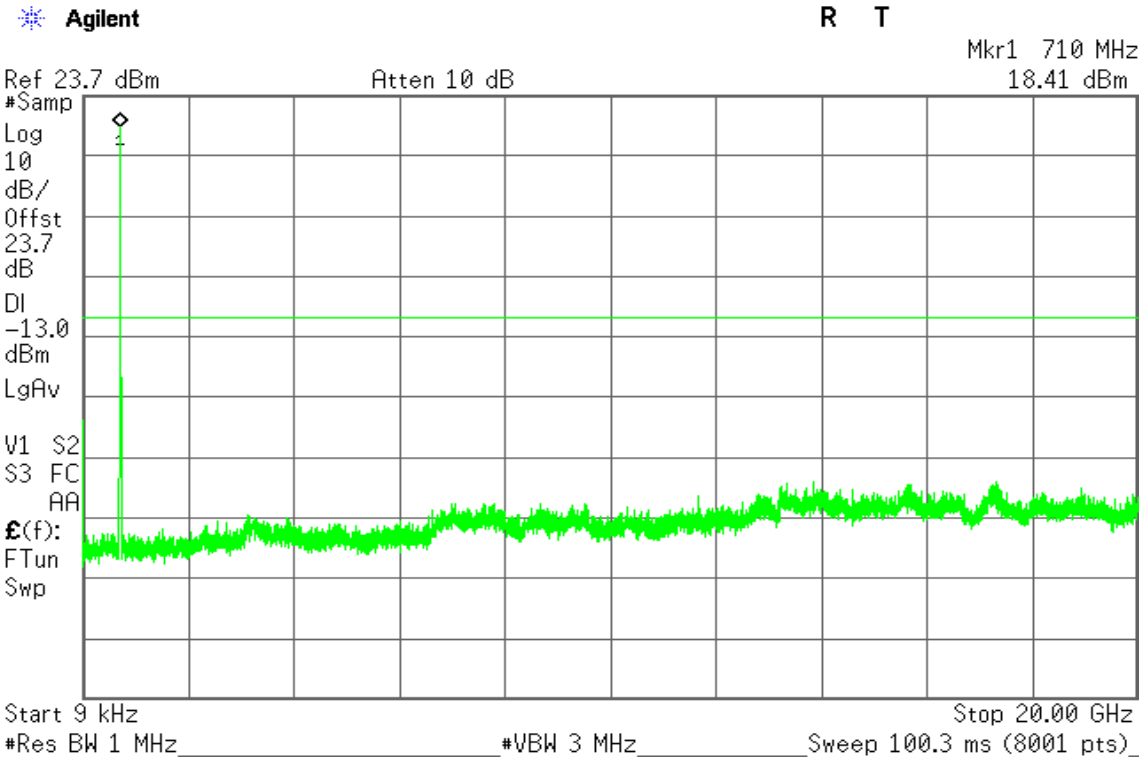


CH High

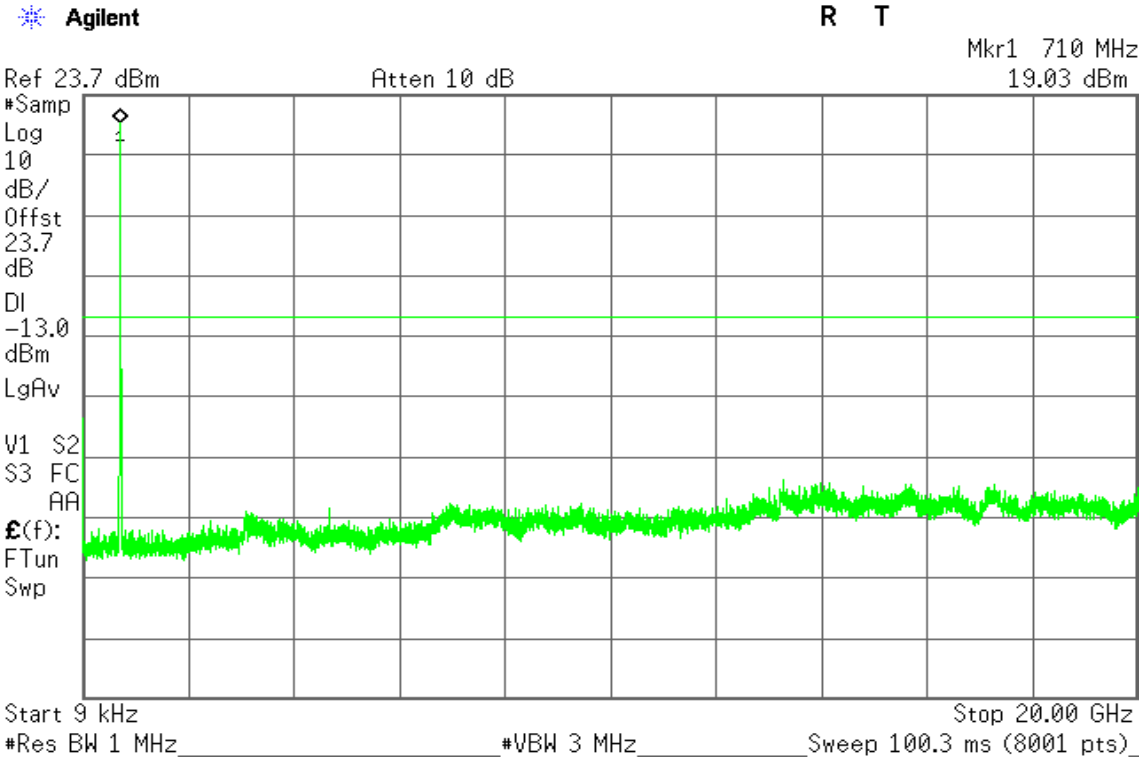


CHANNEL BANDWIDTH: 10MHz / QPSK

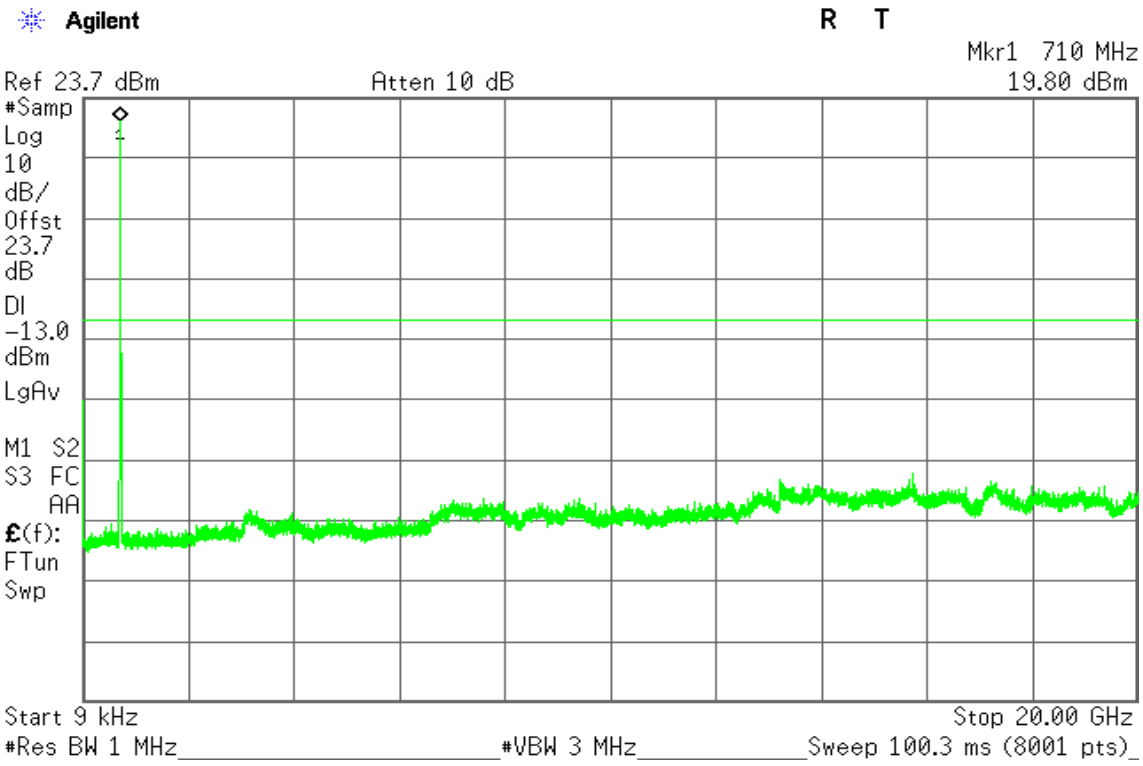
CH Low



CH Mid

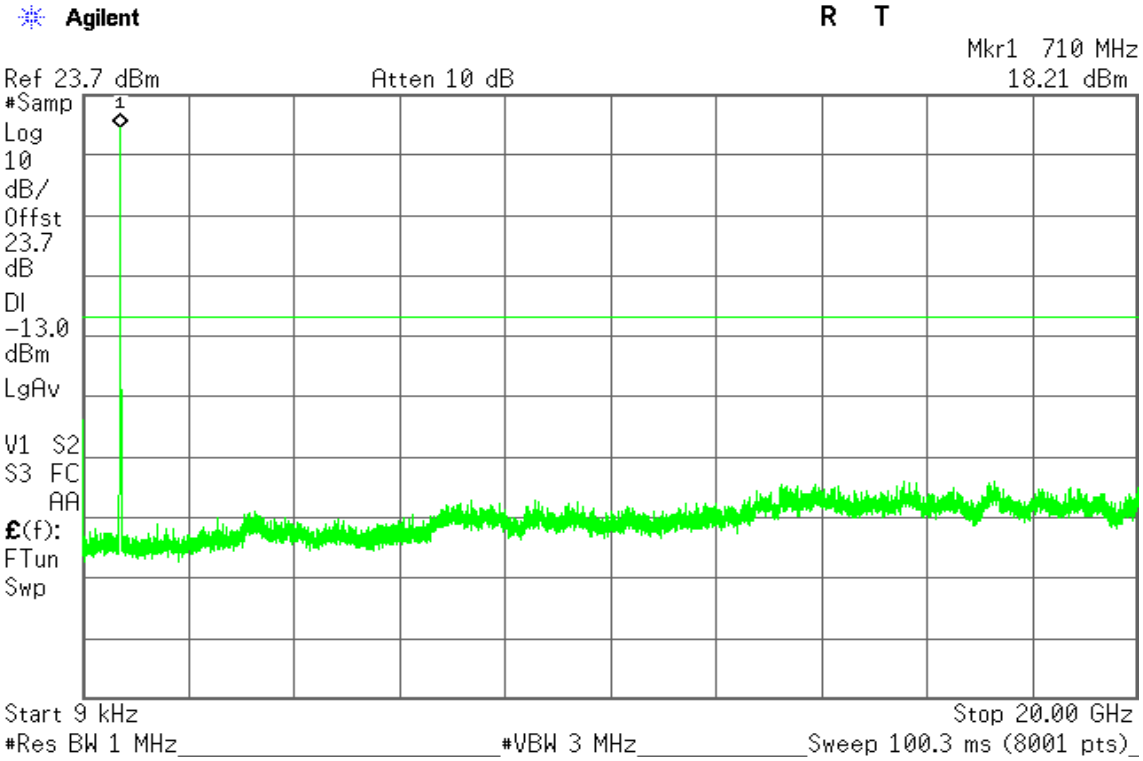


CH High

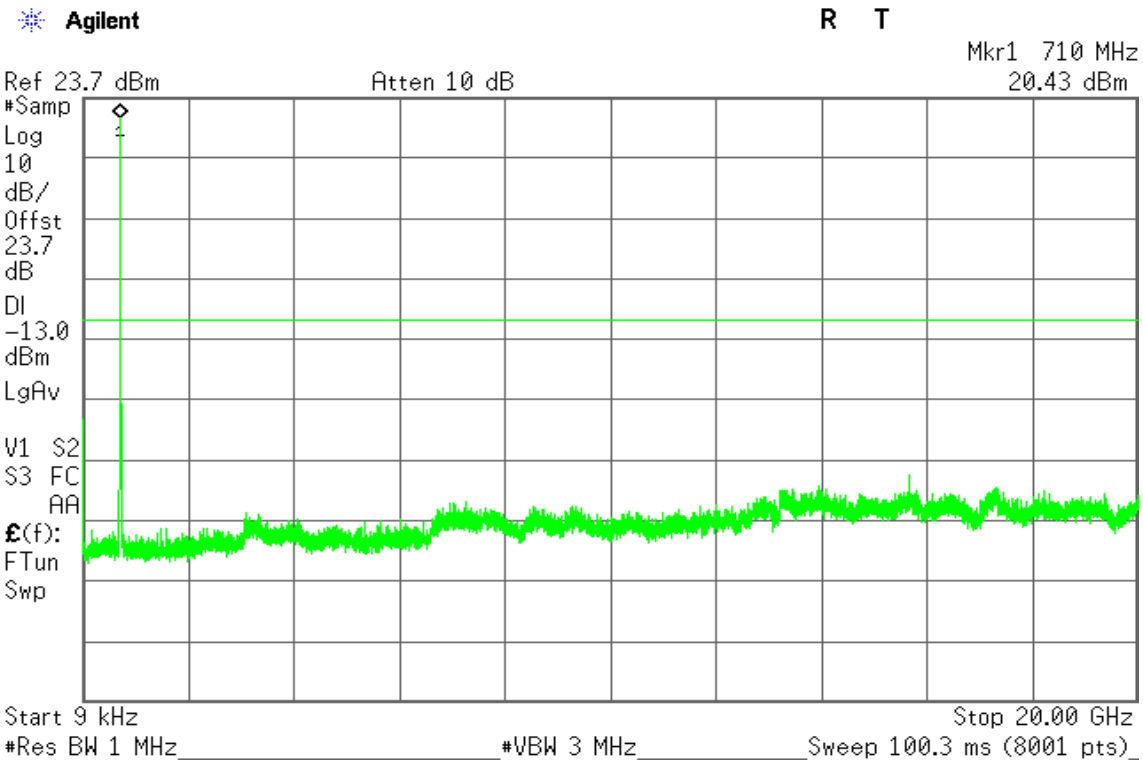


CHANNEL BANDWIDTH: 10MHz / 16QAM

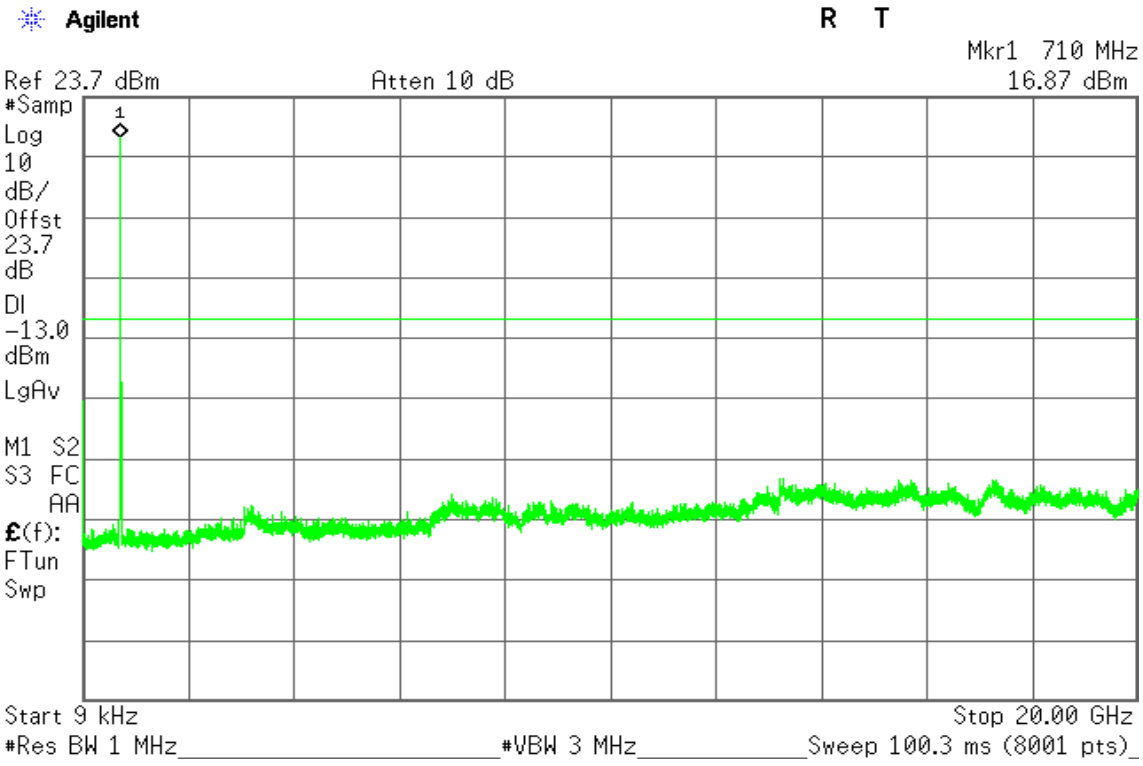
CH Low



CH Mid



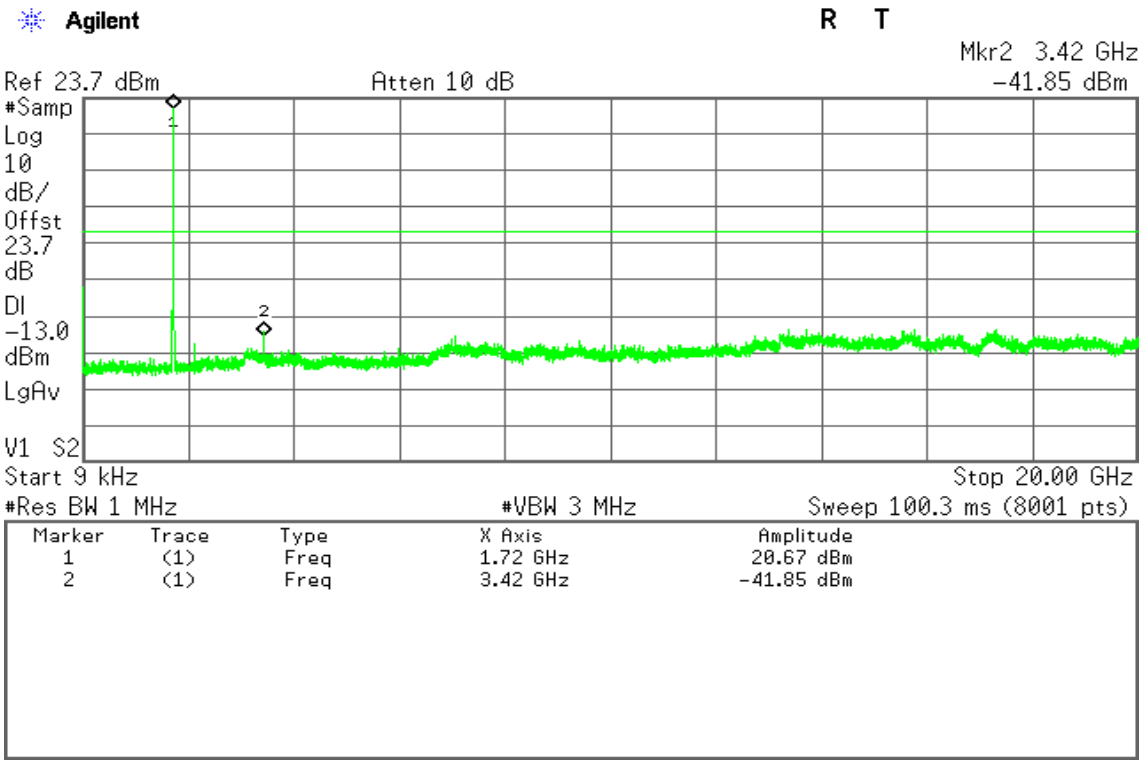
CH High



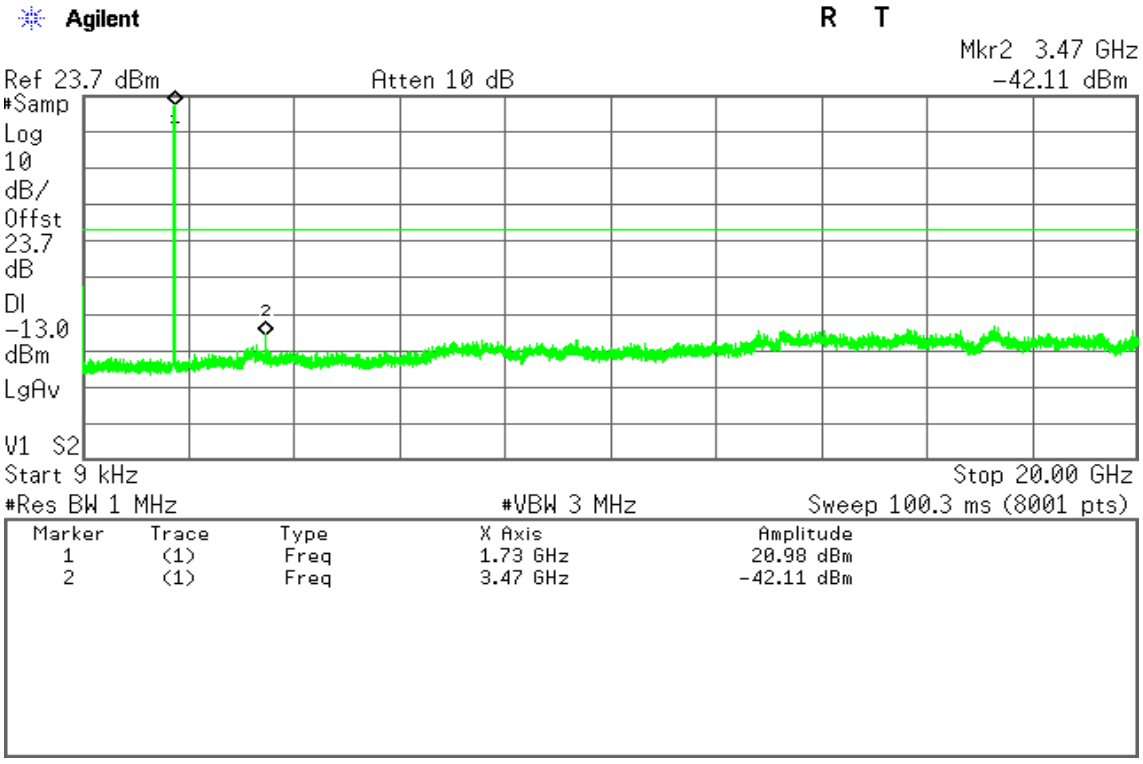
LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK

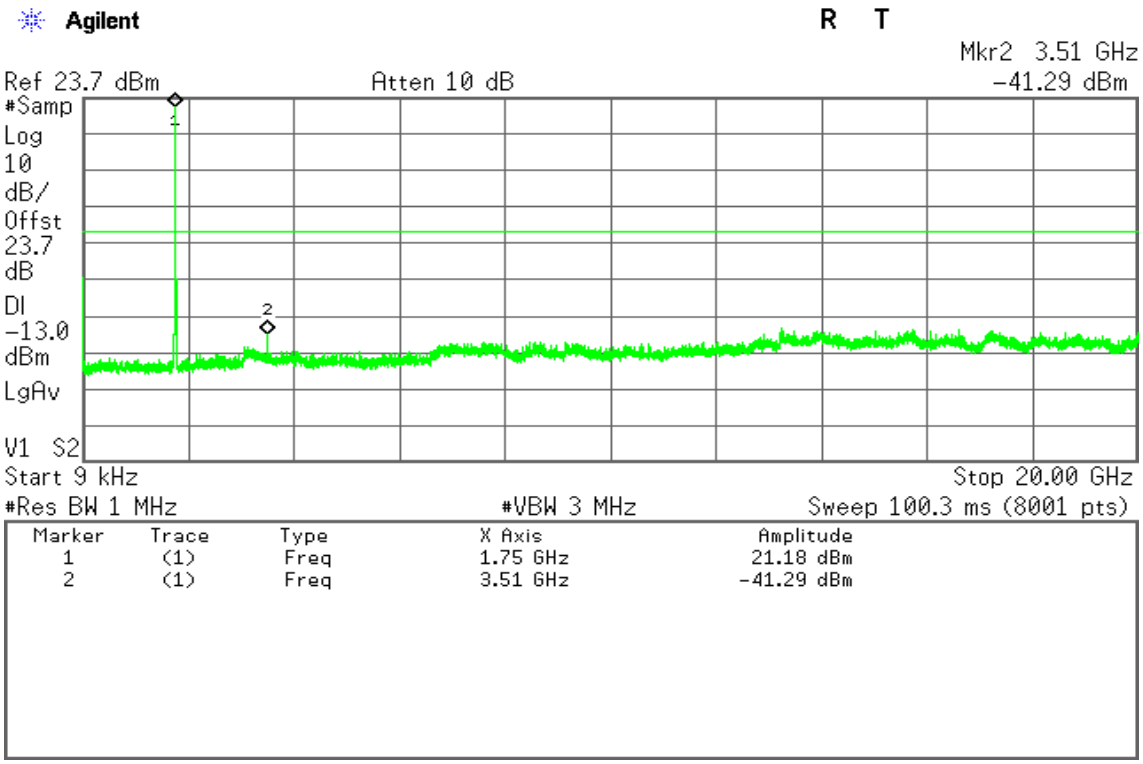
CH Low



CH Mid

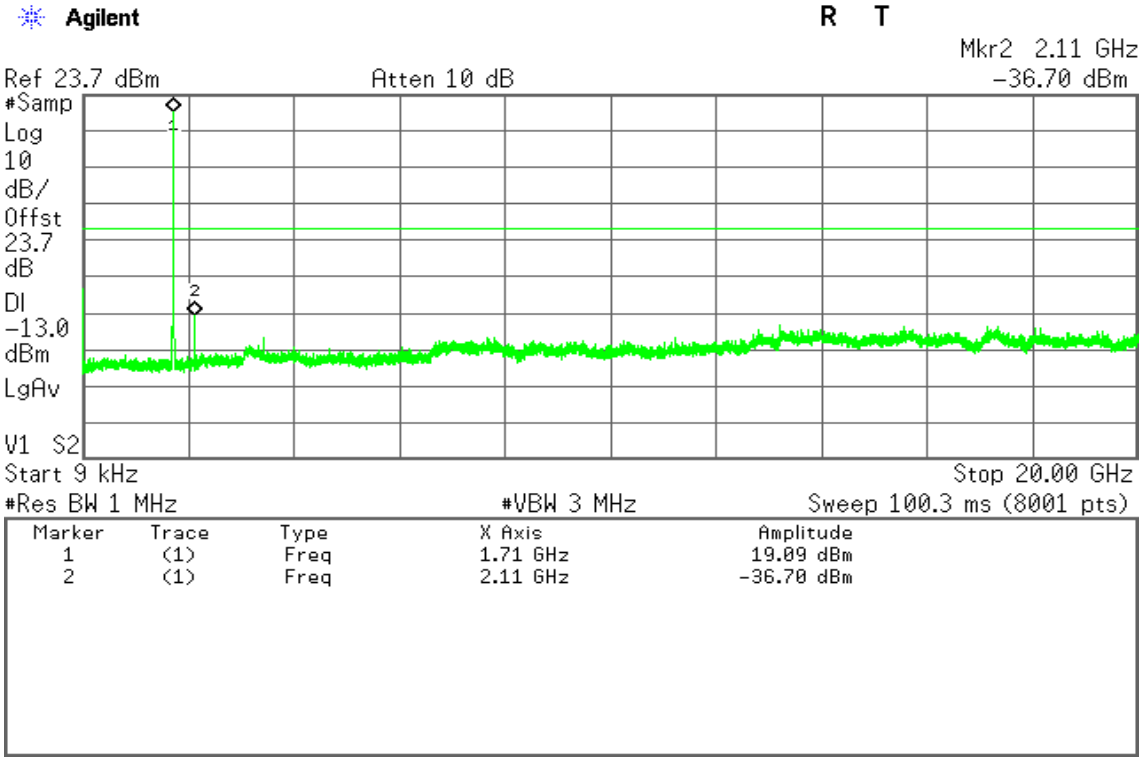


CH High

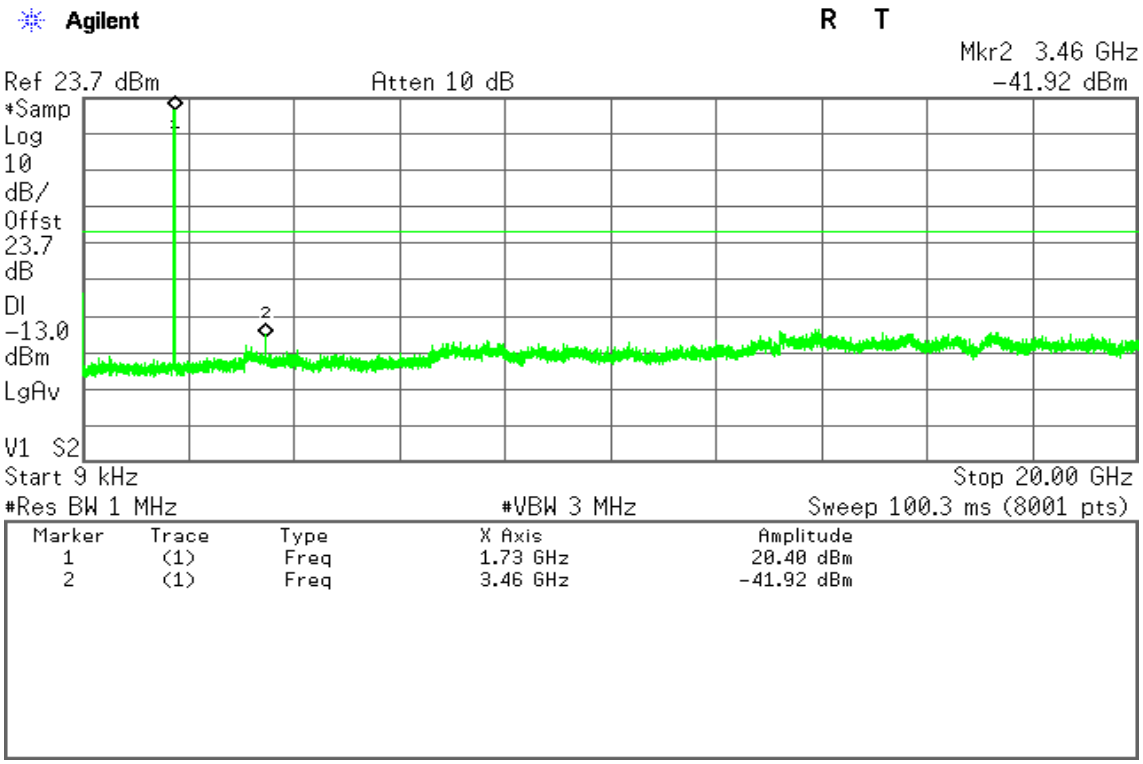


CHANNEL BANDWIDTH: 5MHz / 16QAM

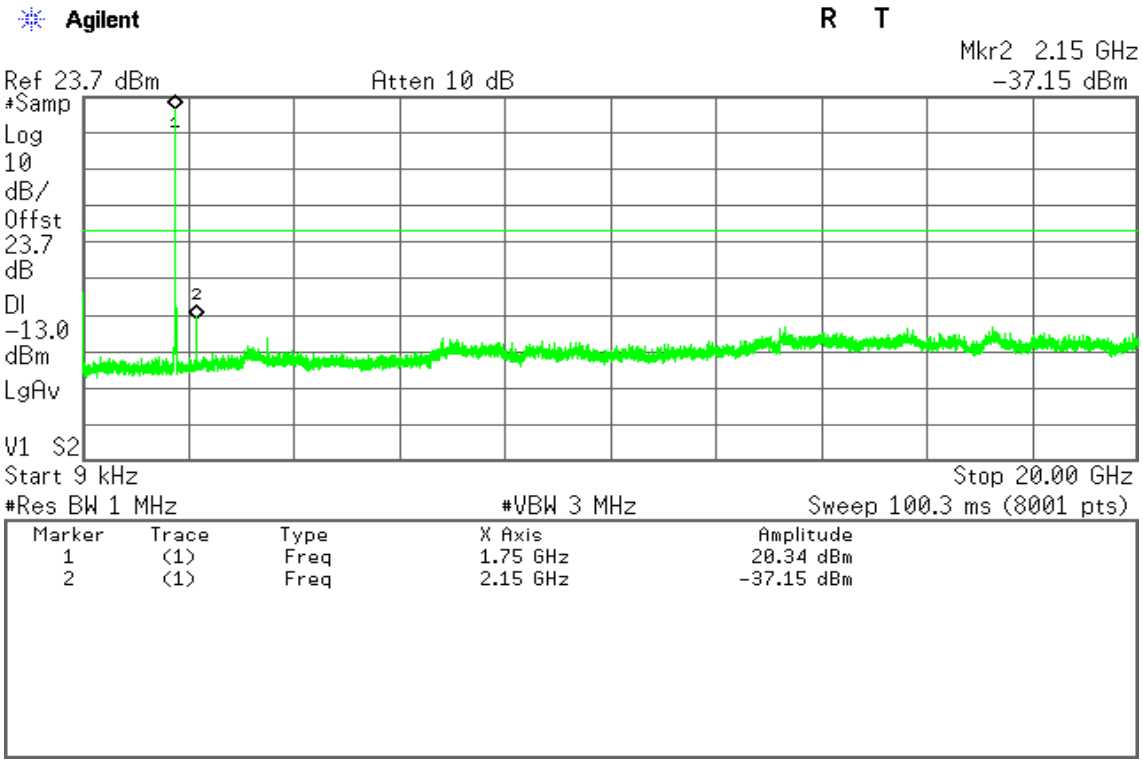
CH Low



CH Mid

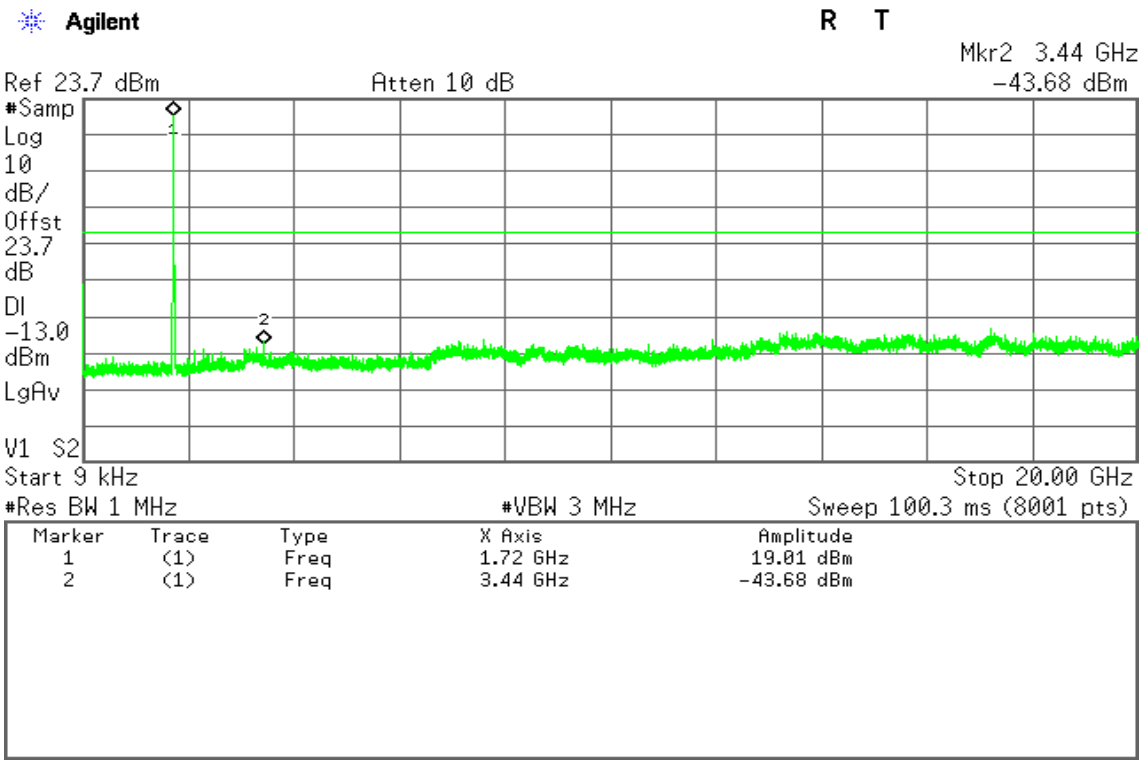


CH High

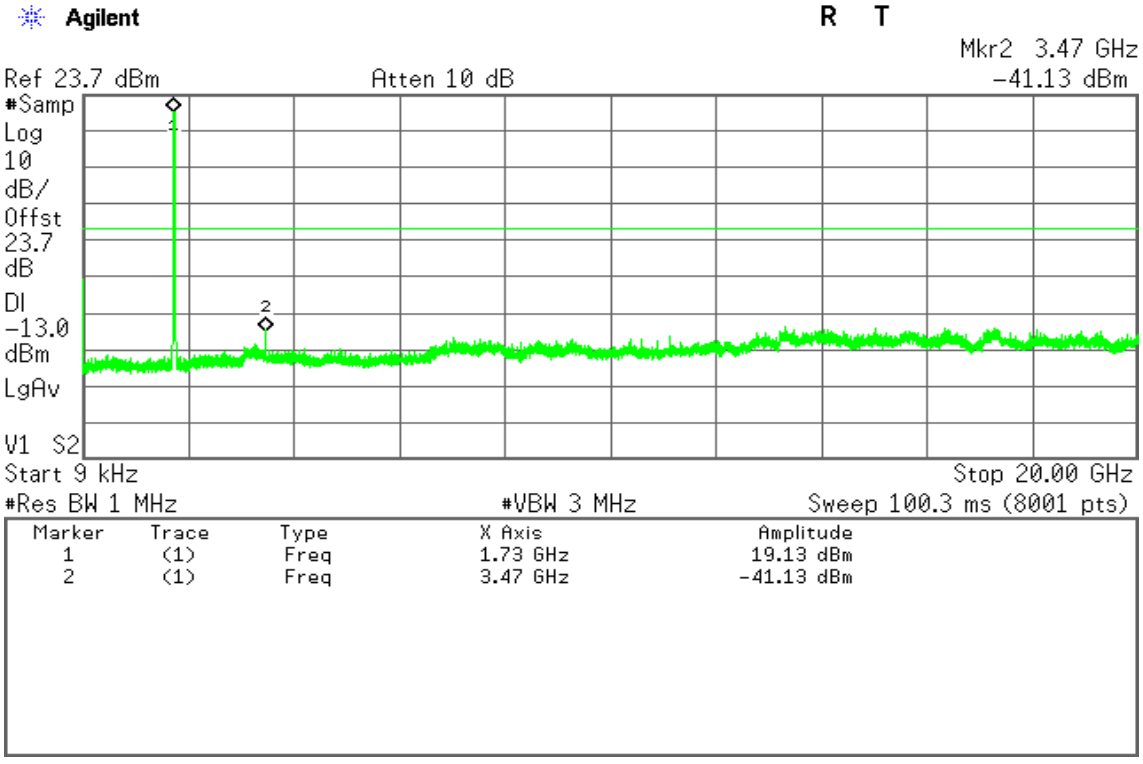


CHANNEL BANDWIDTH: 10MHz / QPSK

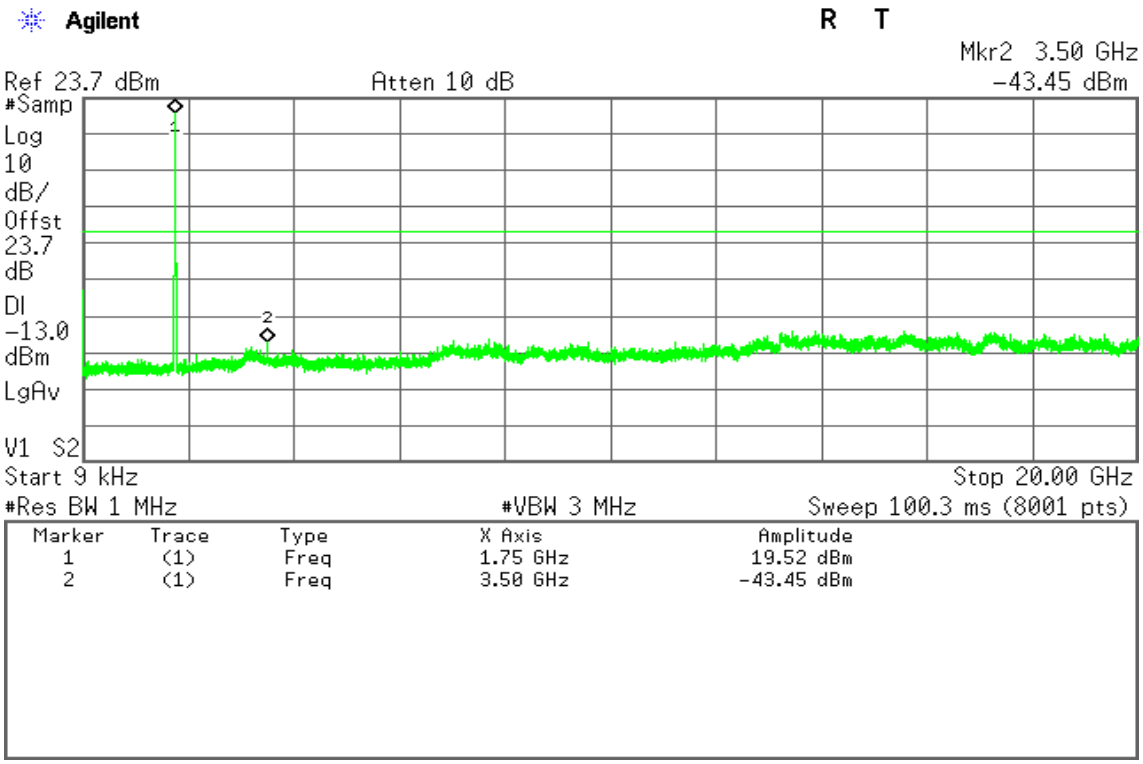
CH Low



CH Mid

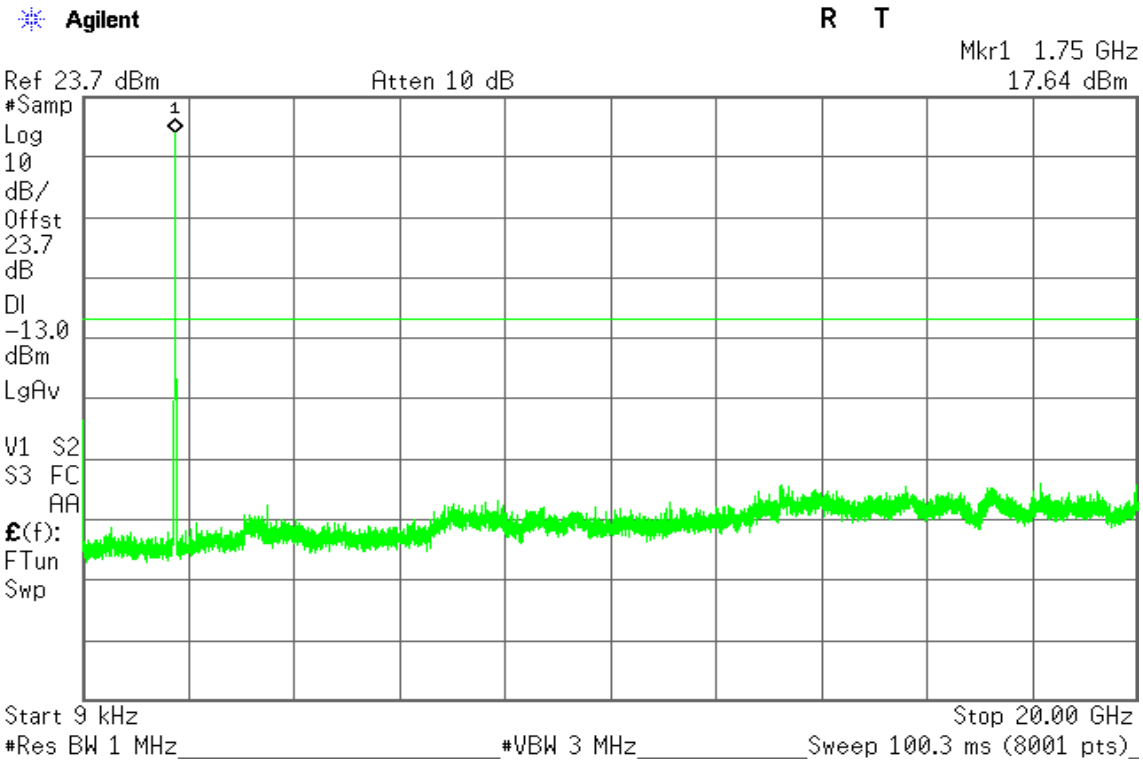


CH High

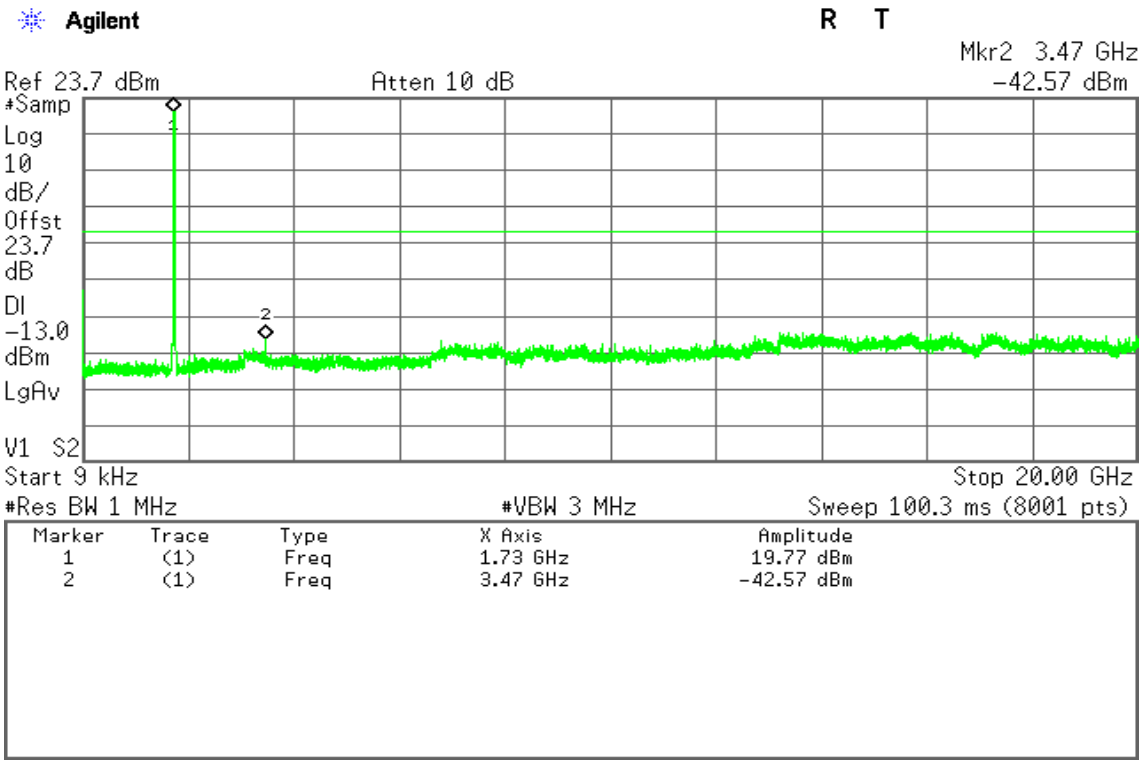


CHANNEL BANDWIDTH: 10MHz / 16QAM

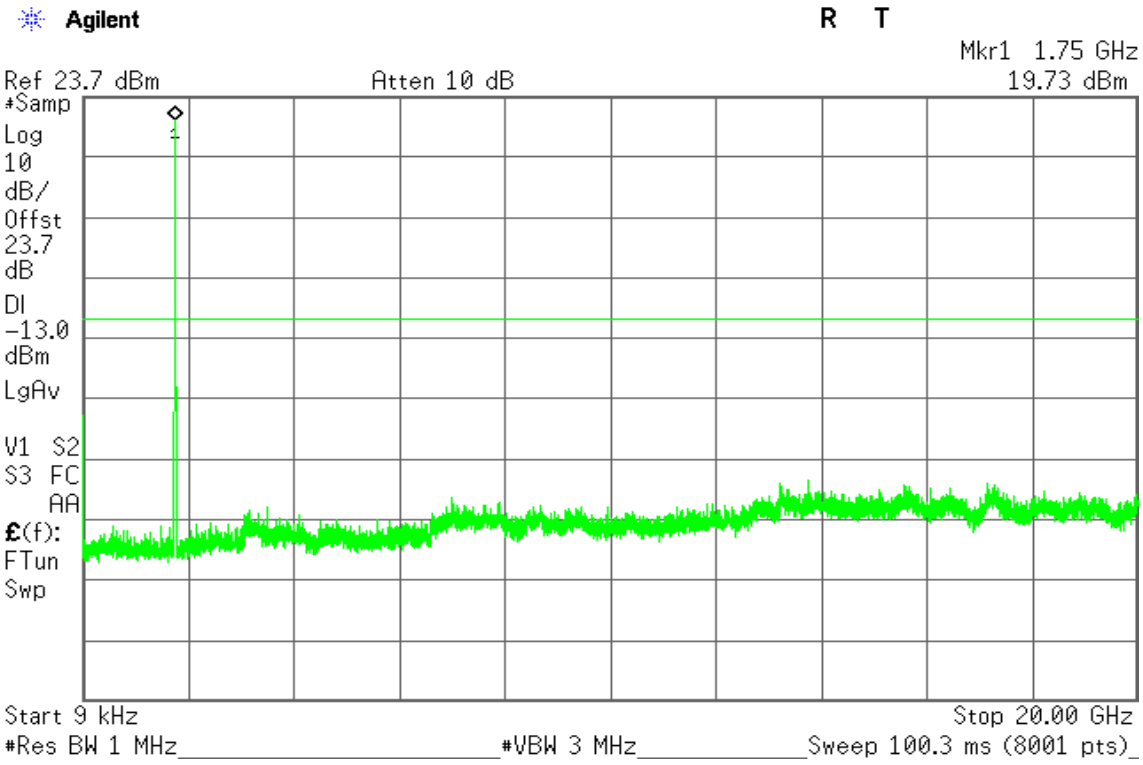
CH Low



CH Mid

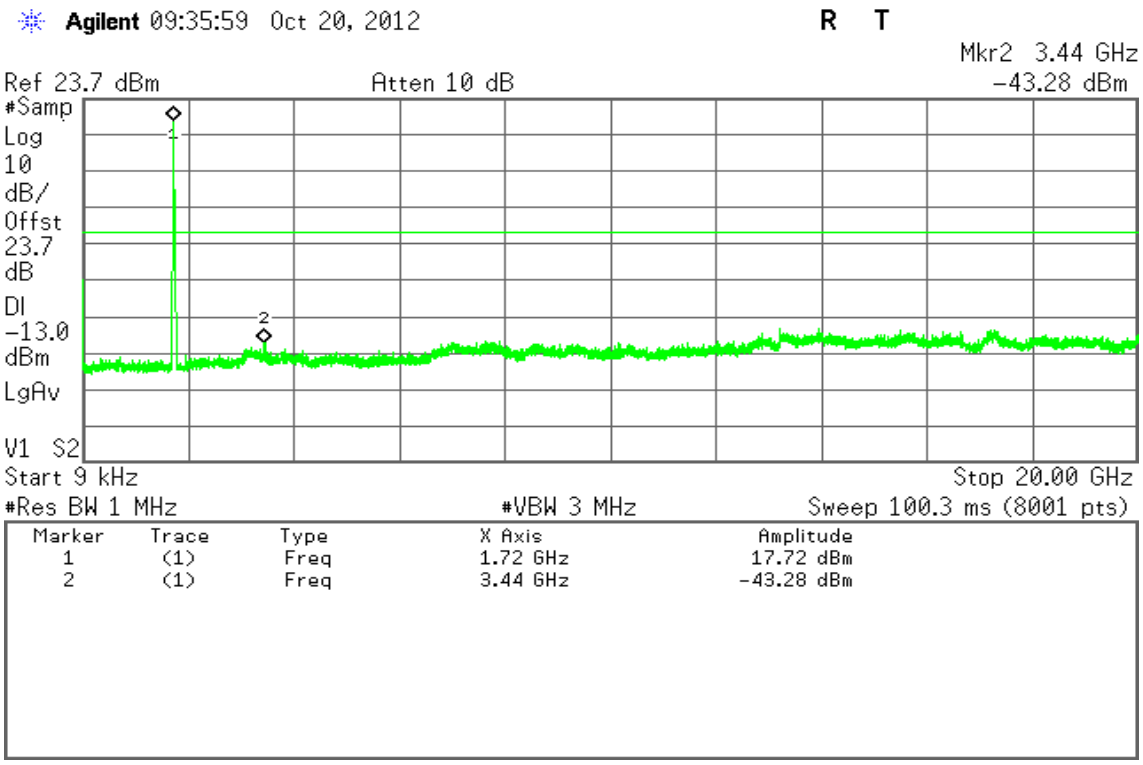


CH High

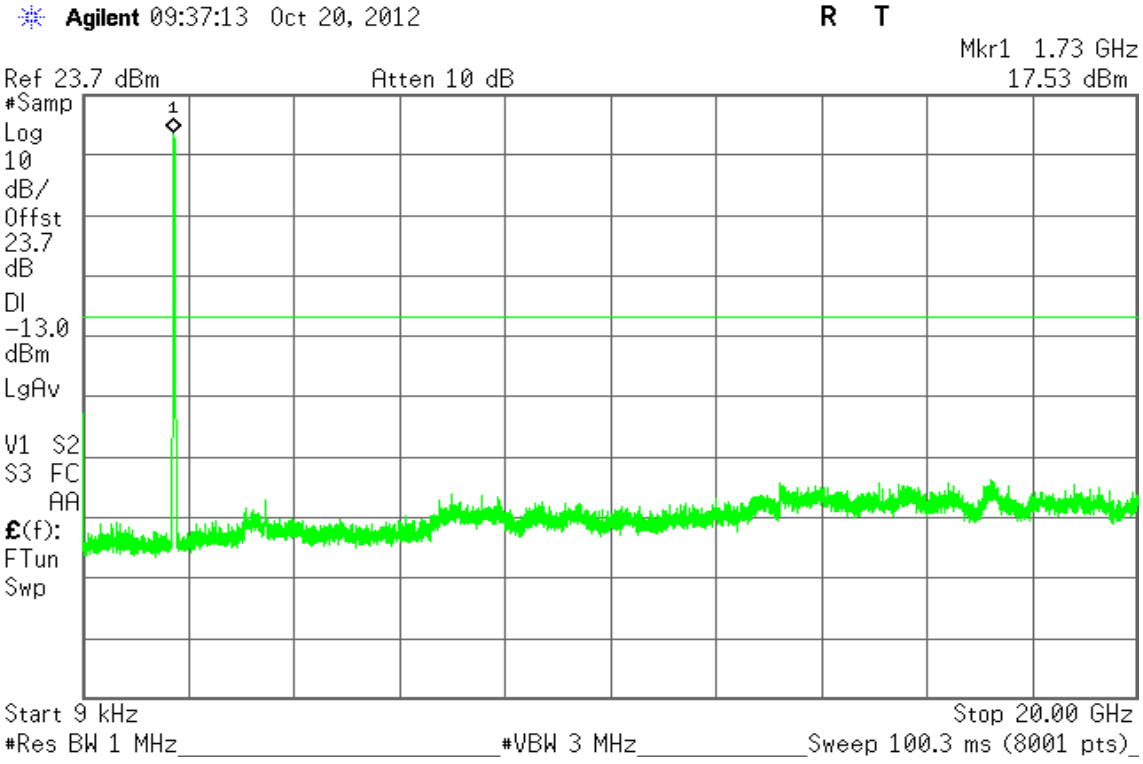


CHANNEL BANDWIDTH: 20MHz / QPSK

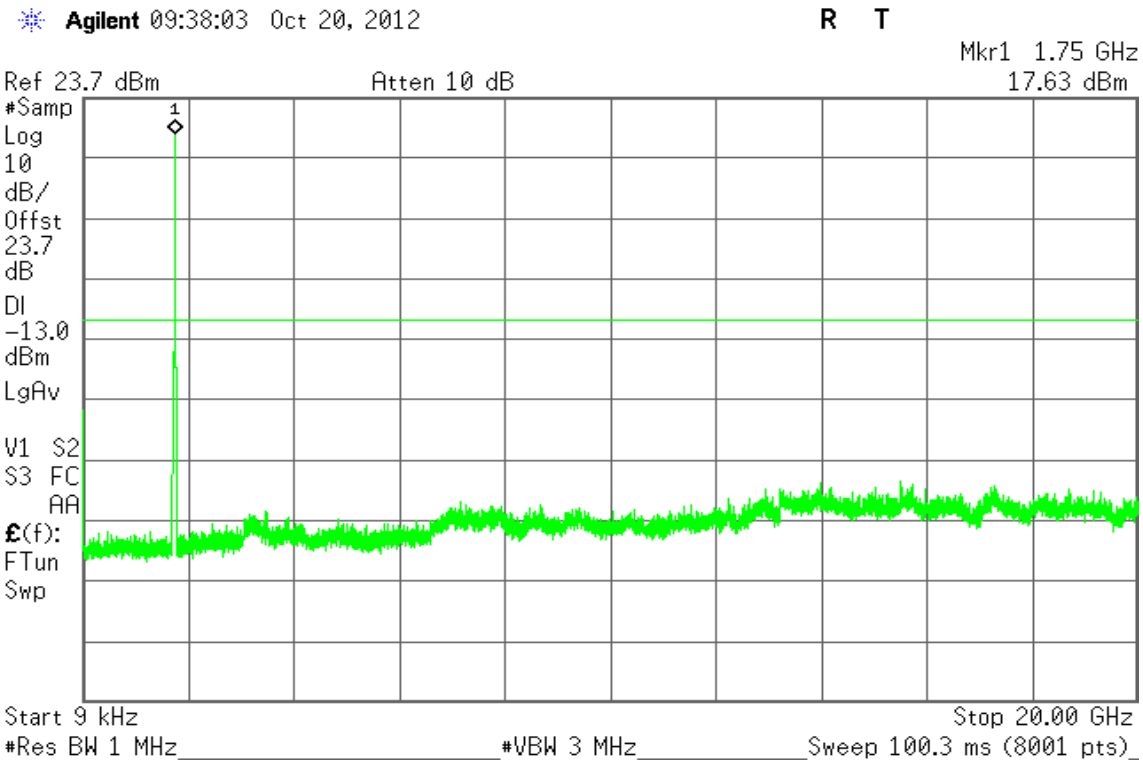
CH Low



CH Mid

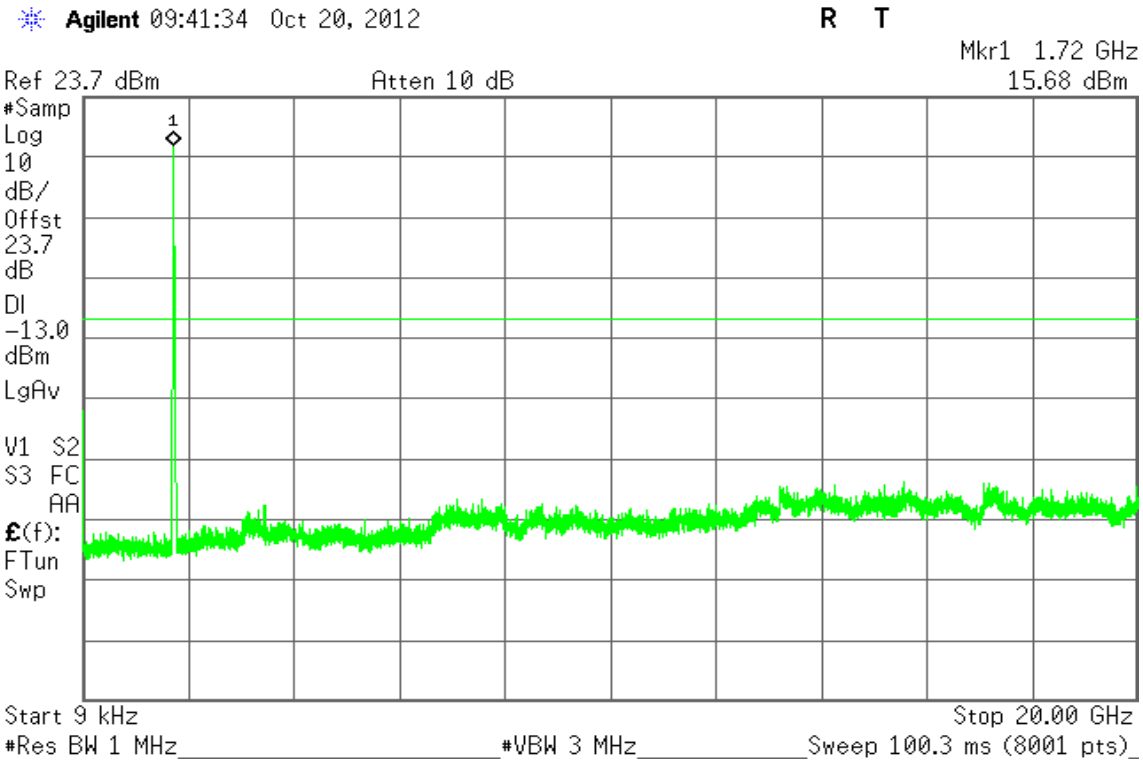


CH High

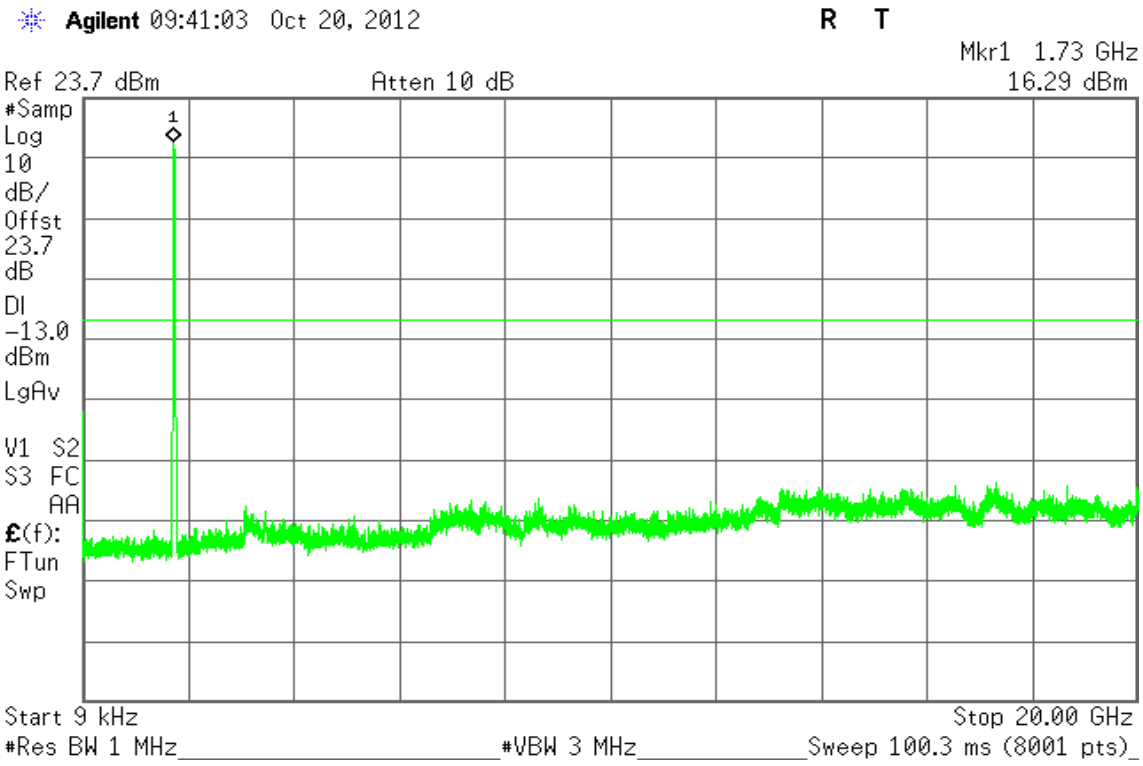


CHANNEL BANDWIDTH: 20MHz / 16QAM

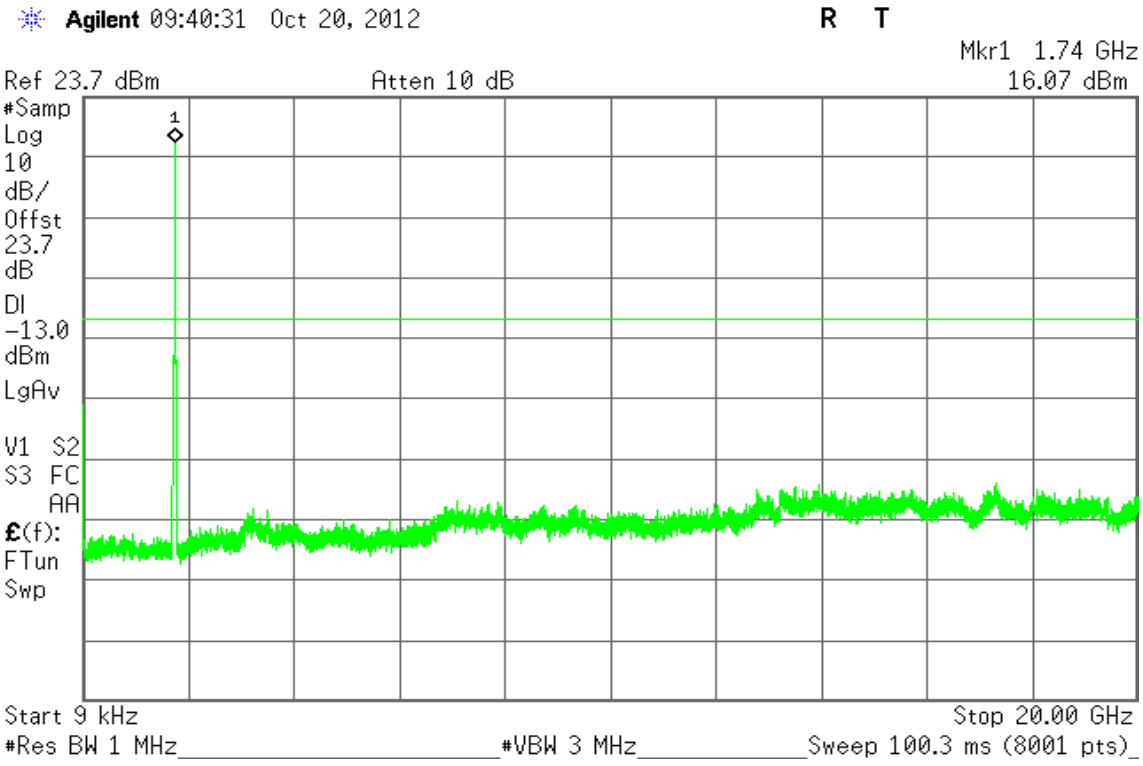
CH Low



CH Mid



CH High



7.7 RADIATED EMISSION MEASUREMENT

LIMITS

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission equal to –13dBm

So the limit of emission is the same absolute specified line.

Limits	EQUIVALENT FIELD STRENGTH AT 3m (dBuV/m) (NOTE)
-13	82.22

NOTE: The following formula is used to convert the equipment radiated power to field strength.

E = [1000000√ (30P)] / 3 uV/m, where P is Watts

TEST PROCEDURES

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the receiving antenna, which was mounted on antenna tower and its position at 0.8 m above the ground.
3. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading and recorded the value.
4. Repeat step 1 ~ 3 for horizontal polarization.

NOTE: *The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.*

TEST RESULTS

Below 1GHz

LTE Band 17 / CHANNEL BANDWIDTH: 5MHz

Operation Mode:	Tx / Low channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
59.1000	-50.94	0.87	-2.23	-54.04	-13.00	-41.04	V
107.6000	-63.98	1.19	-1.39	-66.56	-13.00	-53.56	V
136.7000	-65.81	1.38	-0.61	-67.80	-13.00	-54.80	V
226.4250	-72.96	1.78	5.37	-69.37	-13.00	-56.37	V
330.7000	-80.72	2.16	5.71	-77.17	-13.00	-64.17	V
738.1000	-45.65	3.2	6.17	-42.68	-13.00	-29.68	V
59.1000	-49.98	0.87	-2.23	-53.08	-13.00	-40.08	H
80.9250	-52.69	1.05	-0.01	-53.75	-13.00	-40.75	H
136.7000	-57.05	1.38	-0.61	-59.04	-13.00	-46.04	H
226.4250	-63.8	1.78	5.37	-60.21	-13.00	-47.21	H
420.4250	-74.33	2.46	5.8	-70.99	-13.00	-57.99	H
735.6750	-55.57	3.19	6.24	-52.52	-13.00	-39.52	H

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / Middle channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
59.1000	-50.9	0.87	-2.23	-54.00	-13.00	-41.00	V
107.6000	-62.81	1.19	-1.39	-65.39	-13.00	-52.39	V
136.7000	-66.67	1.38	-0.61	-68.66	-13.00	-55.66	V
226.4250	-73.75	1.78	5.37	-70.16	-13.00	-57.16	V
330.7000	-79.44	2.16	5.71	-75.89	-13.00	-62.89	V
740.5250	-45.61	3.21	6.1	-42.72	-13.00	-29.72	V
49.4000	-49.77	0.8	-5.08	-55.65	-13.00	-42.65	H
80.9250	-54.31	1.05	-0.01	-55.37	-13.00	-42.37	H
136.7000	-57.92	1.38	-0.61	-59.91	-13.00	-46.91	H
226.4250	-64.99	1.78	5.37	-61.40	-13.00	-48.40	H
330.7000	-74.93	2.16	5.71	-71.38	-13.00	-58.38	H
742.9500	-57.67	3.21	6.1	-54.78	-13.00	-41.78	H

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / High channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
59.1000	-50.86	0.87	-2.23	-53.96	-13.00	-40.96	V
95.4750	-64.41	1.13	0.34	-65.20	-13.00	-52.20	V
141.5500	-67.83	1.4	-0.1	-69.33	-13.00	-56.33	V
226.4250	-73.56	1.78	5.37	-69.97	-13.00	-56.97	V
330.7000	-79.83	2.16	5.71	-76.28	-13.00	-63.28	V
745.3750	-45.47	3.21	6.1	-42.58	-13.00	-29.58	V
49.4000	-47.24	0.8	-5.08	-53.12	-13.00	-40.12	H
80.9250	-53.97	1.05	-0.01	-55.03	-13.00	-42.03	H
136.7000	-58.53	1.38	-0.61	-60.52	-13.00	-47.52	H
226.4250	-65.53	1.78	5.37	-61.94	-13.00	-48.94	H
335.5500	-76.57	2.17	5.75	-72.99	-13.00	-59.99	H
745.3750	-56.32	3.21	6.1	-53.43	-13.00	-40.43	H

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

LTE Band 17 / CHANNEL BANDWIDTH: 10MHz

Operation Mode:	Tx / Low channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
59.1000	-50.55	0.87	-2.23	-53.65	-13.00	-40.65	V
107.6000	-62.87	1.19	-1.39	-65.45	-13.00	-52.45	V
136.7000	-67.17	1.38	-0.61	-69.16	-13.00	-56.16	V
226.4250	-74.34	1.78	5.37	-70.75	-13.00	-57.75	V
333.1250	-78.84	2.16	5.73	-75.27	-13.00	-62.27	V
735.6750	-45.59	3.19	6.24	-42.54	-13.00	-29.54	V
54.2500	-51.69	0.83	-3.65	-56.17	-13.00	-43.17	H
80.9250	-54.41	1.05	-0.01	-55.47	-13.00	-42.47	H
148.8250	-60.86	1.42	0.58	-61.70	-13.00	-48.70	H
226.4250	-66.05	1.78	5.37	-62.46	-13.00	-49.46	H
333.1250	-75.22	2.16	5.73	-71.65	-13.00	-58.65	H
735.6750	-57.93	3.19	6.24	-54.88	-13.00	-41.88	H

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / Middle channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
59.1000	-52.63	0.87	-2.23	-55.73	-13.00	-42.73	V
107.6000	-61.65	1.19	-1.39	-64.23	-13.00	-51.23	V
226.4250	-74.54	1.78	5.37	-70.95	-13.00	-57.95	V
330.7000	-80.98	2.16	5.71	-77.43	-13.00	-64.43	V
410.7250	-82	2.45	5.9	-78.55	-13.00	-65.55	V
745.3750	-45.05	3.21	6.1	-42.16	-13.00	-29.16	V
80.9250	-55.72	1.05	-0.01	-56.78	-13.00	-43.78	H
226.4250	-66.12	1.78	5.37	-62.53	-13.00	-49.53	H
742.9500	-57.95	3.21	6.1	-55.06	-13.00	-42.06	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / High channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
59.1000	-52.9	0.87	-2.23	-56.00	-13.00	-43.00	V
107.6000	-60.95	1.19	-1.39	-63.53	-13.00	-50.53	V
226.4250	-74.73	1.78	5.37	-71.14	-13.00	-58.14	V
333.1250	-81.03	2.16	5.73	-77.46	-13.00	-64.46	V
393.7500	-81.69	2.34	5.99	-78.04	-13.00	-65.04	V
745.3750	-44.81	3.21	6.1	-41.92	-13.00	-28.92	V
54.2500	-51.85	0.83	-3.66	-56.34	-13.00	-43.34	H
80.9250	-55.12	1.05	-0.01	-56.18	-13.00	-43.18	H
148.8250	-61.23	1.42	0.58	-62.07	-13.00	-49.07	H
226.4250	-66.29	1.78	5.37	-62.70	-13.00	-49.70	H
333.1250	-75.88	2.16	5.73	-72.31	-13.00	-59.31	H
747.8000	-57.71	3.2	6.1	-54.81	-13.00	-41.81	H

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

LTE Band 4 / CHANNEL BANDWIDTH: 5MHz

Operation Mode:	Tx / Low channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
59.1000	-52.47	0.87	-2.23	-55.57	-13.00	-42.57	V
80.9250	-60.46	1.05	-0.01	-61.52	-13.00	-48.52	V
107.6000	-62.12	1.19	-1.39	-64.70	-13.00	-51.70	V
136.7000	-64.57	1.38	-0.61	-66.56	-13.00	-53.56	V
226.4250	-73.85	1.78	5.37	-70.26	-13.00	-57.26	V
333.1250	-79.59	2.16	5.73	-76.02	-13.00	-63.02	V
54.2500	-50.45	0.83	-3.66	-54.94	-13.00	-41.94	H
85.7750	-52.92	1.08	0.56	-53.44	-13.00	-40.44	H
136.7000	-54.71	1.38	-0.61	-56.70	-13.00	-43.70	H
226.4250	-68.01	1.78	5.37	-64.42	-13.00	-51.42	H
391.3250	-76.81	2.32	6	-73.13	-13.00	-60.13	H
454.3750	-76.59	2.59	5.79	-73.39	-13.00	-60.39	H

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / Middle channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
59.1000	-52.8	0.87	-2.23	-55.90	-13.00	-42.90	V
107.6000	-62.72	1.19	-1.39	-65.30	-13.00	-52.30	V
136.7000	-64.19	1.38	-0.61	-66.18	-13.00	-53.18	V
226.4250	-74.09	1.78	5.37	-70.50	-13.00	-57.50	V
330.7000	-79.45	2.16	5.71	-75.90	-13.00	-62.90	V
418.0000	-80.31	2.46	5.83	-76.94	-13.00	-63.94	V
54.2500	-50.44	0.83	-3.66	-54.93	-13.00	-41.93	H
80.9250	-54.2	1.05	-0.01	-55.26	-13.00	-42.26	H
136.7000	-56.82	1.38	-0.61	-58.81	-13.00	-45.81	H
226.4250	-68.24	1.78	5.37	-64.65	-13.00	-51.65	H
403.4500	-75.78	2.41	5.96	-72.23	-13.00	-59.23	H
454.3750	-76.25	2.59	5.79	-73.05	-13.00	-60.05	H

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / High channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
59.1000	-52.32	0.87	-2.23	-55.42	-13.00	-42.42	V
107.6000	-61.52	1.19	-1.39	-64.10	-13.00	-51.10	V
136.7000	-64.04	1.38	-0.61	-66.03	-13.00	-53.03	V
226.4250	-73.34	1.78	5.37	-69.75	-13.00	-56.75	V
333.1250	-78.97	2.16	5.73	-75.40	-13.00	-62.40	V
396.1750	-81.1	2.36	5.99	-77.47	-13.00	-64.47	V
54.2500	-50.33	0.83	-3.66	-54.82	-13.00	-41.82	H
80.9250	-54.71	1.05	-0.01	-55.77	-13.00	-42.77	H
136.7000	-56.41	1.38	-0.61	-58.40	-13.00	-45.40	H
226.4250	-68.05	1.78	5.37	-64.46	-13.00	-51.46	H
371.9250	-76.85	2.3	5.85	-73.30	-13.00	-60.30	H
454.3750	-77.14	2.59	5.79	-73.94	-13.00	-60.94	H

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

LTE Band 4 / CHANNEL BANDWIDTH: 10MHz

Operation Mode:	Tx / Low channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
59.1000	-52.49	0.87	-2.23	-55.59	-13.00	-42.59	V
80.9250	-59.93	1.05	-0.01	-60.99	-13.00	-47.99	V
136.7000	-65.73	1.38	-0.61	-67.72	-13.00	-54.72	V
226.4250	-75.08	1.78	5.37	-71.49	-13.00	-58.49	V
333.1250	-80.52	2.16	5.73	-76.95	-13.00	-63.95	V
420.4250	-80.75	2.46	5.8	-77.41	-13.00	-64.41	V
80.9250	-55.18	1.05	-0.01	-56.24	-13.00	-43.24	H
136.7000	-57.54	1.38	-0.61	-59.53	-13.00	-46.53	H
226.4250	-69.35	1.78	5.37	-65.76	-13.00	-52.76	H
364.6500	-77.23	2.28	5.75	-73.76	-13.00	-60.76	H
420.4250	-76.01	2.46	5.8	-72.67	-13.00	-59.67	H
454.3750	-74.93	2.59	5.79	-71.73	-13.00	-58.73	H

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / Middle channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
56.6750	-50.41	0.85	-2.94	-54.20	-13.00	-41.20	V
85.7750	-60.36	1.08	0.56	-60.88	-13.00	-47.88	V
105.1750	-63.85	1.18	-1.07	-66.10	-13.00	-53.10	V
124.5750	-63.85	1.31	-1.78	-66.94	-13.00	-53.94	V
226.4250	-74.54	1.78	5.37	-70.95	-13.00	-57.95	V
803.5750	-76.14	3.33	6.46	-73.01	-13.00	-60.01	V
80.9250	-53.45	1.05	-0.01	-54.51	-13.00	-41.51	H
136.7000	-56.14	1.38	-0.61	-58.13	-13.00	-45.13	H
226.4250	-68.57	1.78	5.37	-64.98	-13.00	-51.98	H
330.7000	-76.53	2.16	5.71	-72.98	-13.00	-59.98	H
454.3750	-74.13	2.59	5.79	-70.93	-13.00	-57.93	H
803.5750	-71.9	3.33	6.46	-68.77	-13.00	-55.77	H

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / High channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
59.1000	-51.32	0.87	-2.23	-54.42	-13.00	-41.42	V
80.9250	-59.26	1.05	-0.01	-60.32	-13.00	-47.32	V
136.7000	-64.73	1.38	-0.61	-66.72	-13.00	-53.72	V
214.3000	-74.96	1.72	5.38	-71.30	-13.00	-58.30	V
362.2250	-79.7	2.28	5.73	-76.25	-13.00	-63.25	V
420.4250	-78.79	2.46	5.8	-75.45	-13.00	-62.45	V
54.2500	-51.57	0.83	-3.66	-56.06	-13.00	-43.06	H
80.9250	-53.16	1.05	-0.01	-54.22	-13.00	-41.22	H
136.7000	-56.76	1.38	-0.61	-58.75	-13.00	-45.75	H
226.4250	-67.84	1.78	5.37	-64.25	-13.00	-51.25	H
420.4250	-73.94	2.46	5.8	-70.60	-13.00	-57.60	H
454.3750	-73.75	2.59	5.79	-70.55	-13.00	-57.55	H

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

LTE Band 4 / CHANNEL BANDWIDTH: 20MHz

Operation Mode:	Tx / Low channel	**Test Date:**	October 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	60% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
73.6500	-55.87	0.99	-1.28	-58.14	-13.00	-45.14	V
136.7000	-65.9	1.38	-0.61	-67.89	-13.00	-54.89	V
301.6000	-73.24	2.1	5.63	-69.71	-13.00	-56.71	V
367.0750	-75.3	2.29	5.77	-71.82	-13.00	-58.82	V
507.7250	-73.74	2.69	5.98	-70.45	-13.00	-57.45	V
667.7750	-78.5	3.07	6.3	-75.27	-13.00	-62.27	V
204.6000	-62.68	1.65	4.2	-60.13	-13.00	-47.13	H
301.6000	-70.12	2.1	5.63	-66.59	-13.00	-53.59	H
367.0750	-72.9	2.29	5.77	-69.42	-13.00	-56.42	H
507.7250	-71.5	2.69	5.98	-68.21	-13.00	-55.21	H
801.1500	-72.72	3.33	6.55	-69.50	-13.00	-56.50	H
910.2750	-69.54	3.57	6.6	-66.51	-13.00	-53.51	H

Remark:

3. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / Middle channel	**Test Date:**	October 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	60% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
80.9250	-59.37	1.05	-0.01	-60.43	-13.00	-47.43	V
136.7000	-66.42	1.38	-0.61	-68.41	-13.00	-55.41	V
301.6000	-73.98	2.1	5.63	-70.45	-13.00	-57.45	V
367.0750	-76.6	2.29	5.77	-73.12	-13.00	-60.12	V
507.7250	-74.61	2.69	5.98	-71.32	-13.00	-58.32	V
667.7750	-78.16	3.07	6.3	-74.93	-13.00	-61.93	V
158.5250	-62.17	1.48	1.33	-62.32	-13.00	-49.32	H
204.6000	-64.6	1.65	4.2	-62.05	-13.00	-49.05	H
301.6000	-70.42	2.1	5.63	-66.89	-13.00	-53.89	H
371.9250	-72.43	2.3	5.85	-68.88	-13.00	-55.88	H
507.7250	-71.53	2.69	5.98	-68.24	-13.00	-55.24	H
801.1500	-72.37	3.33	6.55	-69.15	-13.00	-56.15	H

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / High channel	**Test Date:**	October 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	60% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
73.6500	-56.3	0.99	-1.28	-58.57	-13.00	-45.57	V
180.3500	-72.15	1.61	3.62	-70.14	-13.00	-57.14	V
301.6000	-73.71	2.1	5.63	-70.18	-13.00	-57.18	V
367.0750	-75.57	2.29	5.77	-72.09	-13.00	-59.09	V
415.5750	-75.68	2.45	5.85	-72.28	-13.00	-59.28	V
507.7250	-74.53	2.69	5.98	-71.24	-13.00	-58.24	V
73.6500	-59.05	0.99	-1.28	-61.32	-13.00	-48.32	H
136.7000	-60.51	1.38	-0.61	-62.50	-13.00	-49.50	H
204.6000	-63.83	1.65	4.2	-61.28	-13.00	-48.28	H
301.6000	-70.14	2.1	5.63	-66.61	-13.00	-53.61	H
367.0750	-72.77	2.29	5.77	-69.29	-13.00	-56.29	H
524.7000	-71.39	2.73	6.05	-68.07	-13.00	-55.07	H

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Above 1GHz

LTE Band 17 / CHANNEL BANDWIDTH: 5MHz

Operation Mode:	Tx / Low channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1420.000	-45.22	4.68	5.72	-44.18	-13.00	-31.18	V
2120.000	-39.12	5.81	5.57	-39.36	-13.00	-26.36	V
2820.000	-47.25	6.88	6.93	-47.20	-13.00	-34.20	V
4937.500	-48.18	9.32	10.5	-47.00	-13.00	-34.00	V
N/A							
1420.000	-44.05	4.68	5.72	-43.01	-13.00	-30.01	H
2120.000	-35.24	5.81	5.57	-35.48	-13.00	-22.48	H
2820.000	-49.42	6.88	6.93	-49.37	-13.00	-36.37	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / Middle channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1420.000	-52.32	4.68	5.72	-51.28	-13.00	-38.28	V
2137.500	-51.87	5.84	5.59	-52.12	-13.00	-39.12	V
2837.500	-52.9	6.94	6.98	-52.86	-13.00	-39.86	V
N/A							
1420.000	-51.91	4.68	5.72	-50.87	-13.00	-37.87	H
2137.500	-48.75	5.84	5.59	-49.00	-13.00	-36.00	H
2837.500	-53.52	6.94	6.98	-53.48	-13.00	-40.48	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / High channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1507.500	-52.72	4.87	6.29	-51.30	-13.00	-38.30	V
2155.000	-54.31	5.87	5.62	-54.56	-13.00	-41.56	V
3012.500	-54.85	7.03	7.44	-54.44	-13.00	-41.44	V
N/A							
1437.500	-52.15	4.72	5.85	-51.02	-13.00	-38.02	H
2155.000	-51.3	5.87	5.62	-51.55	-13.00	-38.55	H
2855.000	-54.49	7	7.02	-54.47	-13.00	-41.47	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

LTE Band 17 / CHANNEL BANDWIDTH: 10MHz

Operation Mode:	Tx / Low channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1420.000	-47.87	4.68	5.72	-46.83	-13.00	-33.83	V
2120.000	-48.68	5.81	5.57	-48.92	-13.00	-35.92	V
2820.000	-46.68	6.88	6.93	-46.63	-13.00	-33.63	V
4955.000	-46.52	9.34	10.53	-45.33	-13.00	-32.33	V
N/A							
1420.000	-47.72	4.68	5.72	-46.68	-13.00	-33.68	H
2820.000	-45.75	6.88	6.93	-45.70	-13.00	-32.70	H
4955.000	-48.95	9.34	10.53	-47.76	-13.00	-34.76	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / Middle channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1420.000	-48.74	4.68	5.72	-47.70	-13.00	-34.70	V
2837.500	-49.61	6.94	6.98	-49.57	-13.00	-36.57	V
4955.000	-50.24	9.34	10.53	-49.05	-13.00	-36.05	V
N/A							
1420.000	-51.74	4.68	5.72	-50.70	-13.00	-37.70	H
2837.500	-50.87	6.94	6.98	-50.83	-13.00	-37.83	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / High channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1752.500	-35.48	5.2	5.85	-34.83	-13.00	-21.83	V
2837.500	-49.52	6.94	6.98	-49.48	-13.00	-36.48	V
3555.000	-50.06	8	8.96	-49.10	-13.00	-36.10	V
4972.500	-47.62	9.37	10.56	-46.43	-13.00	-33.43	V
N/A							
1752.500	-37.66	5.2	5.85	-37.01	-13.00	-24.01	H
2155.000	-43.17	5.87	5.62	-43.42	-13.00	-30.42	H
2837.500	-48.18	6.94	6.98	-48.14	-13.00	-35.14	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

LTE Band 4 / CHANNEL BANDWIDTH: 5MHz

Operation Mode:	Tx / Low channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
2120.000	-32.71	5.81	5.57	-32.95	-13.00	-19.95	V
3432.500	-37.18	7.67	8.7	-36.15	-13.00	-23.15	V
5147.500	-37.62	9.5	10.66	-36.46	-13.00	-23.46	V
N/A							
2120.000	-43.31	5.81	5.57	-43.55	-13.00	-30.55	H
3432.500	-40.91	7.67	8.7	-39.88	-13.00	-26.88	H
5147.500	-40.1	9.5	10.66	-38.94	-13.00	-25.94	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / Middle channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
2137.500	-29.17	5.84	5.59	-29.42	-13.00	-16.42	V
3467.500	-35.72	7.77	8.8	-34.69	-13.00	-21.69	V
5200.000	-38.13	9.56	10.68	-37.01	-13.00	-24.01	V
N/A							
2137.500	-40.47	5.84	5.59	-40.72	-13.00	-27.72	H
3467.500	-37.22	7.77	8.8	-36.19	-13.00	-23.19	H
5200.000	-40.98	9.56	10.68	-39.86	-13.00	-26.86	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / High channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
2155.000	-21.95	5.87	5.62	-22.20	-13.00	-9.20	V
3502.500	-31.59	7.88	8.9	-30.57	-13.00	-17.57	V
5252.500	-41.42	9.61	10.7	-40.33	-13.00	-27.33	V
N/A							
2155.000	-37.5	5.87	5.62	-37.75	-13.00	-24.75	H
3502.500	-37.03	7.88	8.9	-36.01	-13.00	-23.01	H
5252.500	-44.08	9.61	10.7	-42.99	-13.00	-29.99	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

LTE Band 4 / CHANNEL BANDWIDTH: 10MHz

Operation Mode:	Tx / Low channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1717.500	-52.26	5.14	5.91	-51.49	-13.00	-38.49	V
2120.000	-33.03	5.81	5.57	-33.27	-13.00	-20.27	V
3432.500	-45.3	7.67	8.7	-44.27	-13.00	-31.27	V
N/A							
1717.500	-50.46	5.14	5.91	-49.69	-13.00	-36.69	H
2120.000	-42.23	5.81	5.57	-42.47	-13.00	-29.47	H
3432.500	-46.51	7.67	8.7	-45.48	-13.00	-32.48	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / Middle channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
2137.500	-30.07	5.84	5.59	-30.32	-13.00	-17.32	V
3467.500	-38.75	7.77	8.8	-37.72	-13.00	-24.72	V
5200.000	-44.5	9.56	10.68	-43.38	-13.00	-30.38	V
N/A							
2137.500	-41.67	5.84	5.59	-41.92	-13.00	-28.92	H
3467.500	-44.25	7.77	8.8	-43.22	-13.00	-30.22	H
5200.000	-46.52	9.56	10.68	-45.40	-13.00	-32.40	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / High channel	**Test Date:**	September 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
2155.000	-25.33	5.87	5.62	-25.58	-13.00	-12.58	V
3520.000	-34.42	7.92	8.92	-33.42	-13.00	-20.42	V
5252.500	-43.39	9.61	10.7	-42.30	-13.00	-29.30	V
N/A							
2155.000	-38.5	5.87	5.62	-38.75	-13.00	-25.75	H
3502.500	-38.87	7.88	8.9	-37.85	-13.00	-24.85	H
5252.500	-38.11	9.61	10.7	-37.02	-13.00	-24.02	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

LTE Band 4 / CHANNEL BANDWIDTH: 20MHz

Operation Mode:	Tx / Low channel	**Test Date:**	October 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	60% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1682.500	-46.64	5.09	5.97	-45.76	-13.00	-32.76	V
3450.000	-36.24	7.72	8.75	-35.21	-13.00	-22.21	V
5147.500	-43.94	9.5	10.66	-42.78	-13.00	-29.78	V
N/A							
2120.000	-44.65	5.81	5.57	-44.89	-13.00	-31.89	H
3432.500	-40.52	7.67	8.7	-39.49	-13.00	-26.49	H
5147.500	-49.27	9.5	10.66	-48.11	-13.00	-35.11	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / Middle channel	**Test Date:**	October 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	60% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1507.500	-51.51	4.87	6.29	-50.09	-13.00	-37.09	V
2137.500	-51.1	5.84	5.59	-51.35	-13.00	-38.35	V
3467.500	-39.66	7.77	8.8	-38.63	-13.00	-25.63	V
N/A							
1262.500	-49.86	4.42	4.59	-49.69	-13.00	-36.69	H
2137.500	-45.58	5.84	5.59	-45.83	-13.00	-32.83	H
3467.500	-42.28	7.77	8.8	-41.25	-13.00	-28.25	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

Operation Mode:	Tx / High channel	**Test Date:**	October 20, 2012
Temperature:	25°C	**Tested by:**	David Shu
Humidity:	60% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1787.500	-49.78	5.27	5.78	-49.27	-13.00	-36.27	V
2155.000	-49.83	5.87	5.62	-50.08	-13.00	-37.08	V
3485.000	-43.85	7.83	8.86	-42.82	-13.00	-29.82	V
N/A							
1787.500	-48.65	5.27	5.78	-48.14	-13.00	-35.14	H
2155.000	-46.94	5.87	5.62	-47.19	-13.00	-34.19	H
3502.500	-46.36	7.88	8.9	-45.34	-13.00	-32.34	H
N/A							

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*