FCC TEST REPORT and IC TEST REPORT

For

LTE miniCard

Model: LM177

Trade Name: Quanta

Issued to

Quanta Computer Inc.
No. 188, Wen Hwa 2nd RD., Kuei Shan Hsiang,
Taoyuan Hsien, Taiwan, R.O.C.

Issued by

Compliance Certification Services Inc.
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)
http://www.ccsrf.com
service@ccsrf.com
Issued Date: April 25, 2014

Testing Laboratory
1309

Revision History

Rev.		Issue Date		Revisions	Effect Page	Revised By
00		April 25, 2014		Initial Issue	ALL	Kelly Cheng

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1. TEST RESULT CERTIFICATION

Applicant: Quanta Computer Inc.
No. 188, Wen Hwa 2nd RD., Kuei Shan Hsiang, Taoyuan Hsien, Taiwan, R.O.C.

Equipment Under Test: LTE miniCard

Trade Name: Quanta

Model: LM177

Date of Test: April 18 ~ April 22, 2014

FCC PART 27, SUBPART C, L, FCC PART 2	
OPERATING BAND: 777 ~ 787 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.

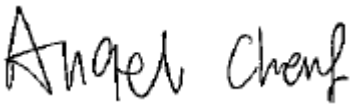
Deviation from Applicable Standard
None

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



Angel Cheng
Section Manager
Compliance Certification Services Inc.

2. EUT DESCRIPTION

Product	LTE miniCard	
Model Number	LM177	
Model Discrepancy	N/A	
Trade	Quanta	
Received Date	April 3, 2014	
Power Source	Powered by host device	
Modulation Technology	LTE Band 13	QPSK, 16QAM
	LTE Band 4	QPSK, 16QAM
Frequency Range	LTE Band 13 Channel Bandwidth: 5MHz	779.5MHz ~ 784.5MHz
	LTE Band 13 Channel Bandwidth: 10MHz	782MHz
	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 13 Channel Bandwidth: 5MHz	QPSK: 16.91dBm 16QAM: 21.43dBm
	LTE Band 13 Channel Bandwidth: 10MHz	QPSK : 18.21dBm 16QAM: 19.06dBm
Maximum EIRP Power	LTE Band 4 Channel Bandwidth: 5MHz	QPSK: 29.33dBm 16QAM: 29.70dBm
	LTE Band 4 Channel Bandwidth: 10MHz	QPSK: 27.22dBm 16QAM: 28.49dBm
	LTE Band 4 Channel Bandwidth: 20MHz	QPSK: 24.28 dBm 16QAM: 27.35dBm
Category	LTE: 3	
Antenna Specification	LTE Band 4: 3-cable Multiband Antenna / Gain: 5.86 dBi LTE Band 13: 3-cable Multiband Antenna / Gain: 3.82dBi	

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: LM177) had been tested under operating condition.

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

The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis).

The worst emission was found:

in lie-down (X axis) for BAND 13

and lie-down (Y axis) for BAND IV

LTE Band 13: 777 MHz ~ 787 MHz

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	03/19/2015
Power Meter	Anritsu	ML2495A	1012009	06/04/2014
Power Sensor	Anritsu	MA2411A	0917072	06/04/2014

3M Semi Anechoic Chamber				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	US42510268	11/05/2014
EMI Test Receiver	R&S	ESCI	100064	02/16/2015
Pre-Amplifier	Mini-Circults	ZFL-1000LN	SF350700823	01/11/2015
Bilog Antenna	Sunol Sciences	JB3	A030105	02/16/2015
Bilog Antenna	Sunol Sciences	JB3	A030205	10/01/2014
Horn Antenna	EMCO	3117	00055165	02/16/2015
Horn Antenna	EMCO	3117	00055167	01/27/2015
Horn Antenna	EMCO	3116	26370	01/06/2015
Loop Antenna	EMCO	6502	8905/2356	06/12/2014
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	12/21/2014
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 Dist., New Taipei City 24891, Taiwan. (R.O.C.)
Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045

☐ No.81-1, Lane 210, Bade 2nd Rd., 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.	Notebook PC	IBM	7663 (T61)	L3E9812	N/A	N/A	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m with a core

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 13

Channel Bandwidth: 5MHz

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
779.50	23205	23.72	0.23550
782.00	23230	23.63	0.23067
784.50	23255	23.61	0.22961

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
779.50	23205	23.32	0.21478
782.00	23230	22.73	0.18750
784.50	23255	23.66	0.23227

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
779.50	23205	23.47	0.22233
782.00	23230	23.03	0.20091
784.50	23255	22.87	0.19364

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
779.50	23205	23.17	0.20749
782.00	23230	22.96	0.19770
784.50	23255	23.17	0.20749

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)**
779.50	23205	23.62	0.23014
782.00	23230	23.05	0.20184
784.50	23255	23.14	0.20606

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
779.50	23205	23.49	0.22336
782.00	23230	23.82	0.24099
784.50	23255	23.85	0.24266

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
779.50	23205	23.72	0.23550
782.00	23230	22.78	0.18967
784.50	23255	22.78	0.18967

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
779.50	23205	23.33	0.21528
782.00	23230	23.27	0.21232
784.50	23255	22.83	0.19187

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 13

Channel Bandwidth: 10MHz

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
782.00	23230	23.07	0.20277

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
782.00	23230	23.23	0.21038

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
782.00	23230	23.45	0.22131

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
782.00	23230	23.46	0.22182

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: 10MHz

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
782.00	23230	23.26	0.21184

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
782.00	23230	23.40	0.21878

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
782.00	23230	23.40	0.21878

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
782.00	23230	23.86	0.24322

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	23.07	0.20277
1732.5	20175	23.19	0.20845
1752.5	20375	23.08	0.20324

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	23.14	0.20606
1732.5	20175	23.53	0.22542
1752.5	20375	22.98	0.19861

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	22.78	0.18967
1732.5	20175	23.05	0.20184
1752.5	20375	22.74	0.18793

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	22.75	0.18836
1732.5	20175	23.17	0.20749
1752.5	20375	22.73	0.18750

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	23.83	0.24155
1732.5	20175	23.66	0.23227
1752.5	20375	23.41	0.21928

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	23.93	0.24717
1732.5	20175	23.70	0.23442
1752.5	20375	23.15	0.20654

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	23.61	0.22961
1732.5	20175	23.15	0.20654
1752.5	20375	23.85	0.24266

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	23.12	0.20512
1732.5	20175	23.42	0.21979
1752.5	20375	23.25	0.21135

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	23.11	0.20464
1732.5	20175	23.38	0.21777
1750.0	20350	23.05	0.20184

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	23.07	0.20277
1732.5	20175	23.28	0.21281
1750.0	20350	23.34	0.21577

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	22.95	0.19724
1732.5	20175	23.30	0.21380
1750.0	20350	22.99	0.19907

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	22.74	0.18793
1732.5	20175	22.99	0.19907
1750.0	20350	22.71	0.18664

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: 10MHz

Conducted Output Power (16QAM RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	23.29	0.21330
1732.5	20175	23.75	0.23714
1750.0	20350	23.85	0.24266

Conducted Output Power (16QAM RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	23.27	0.21232
1732.5	20175	23.94	0.24774
1750.0	20350	23.88	0.24434

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	22.99	0.19907
1732.5	20175	23.19	0.20845
1750.0	20350	23.59	0.22856

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	23.09	0.20370
1732.5	20175	23.05	0.20184
1750.0	20350	23.03	0.20091

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	22.98	0.19861
1732.50	20175	23.17	0.20749
1745.00	20300	23.01	0.19999

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	23.21	0.20941
1732.50	20175	23.42	0.21979
1745.00	20300	22.97	0.19815

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	22.76	0.18880
1732.50	20175	22.91	0.19543
1745.00	20300	22.97	0.19815

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	22.87	0.19364
1732.50	20175	22.93	0.19634
1745.00	20300	22.94	0.19679

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	23.21	0.20941
1732.50	20175	23.64	0.23121
1745.00	20300	21.73	0.14894

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	23.52	0.22491
1732.50	20175	23.31	0.21429
1745.00	20300	22.12	0.16293

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	23.03	0.20091
1732.50	20175	23.06	0.20230
1745.00	20300	22.98	0.19861

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	23.10	0.20417
1732.50	20175	23.30	0.21380
1745.00	20300	22.61	0.18239

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 13

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)
23205	778.5500	V	10.21	3.3	6.13	13.04	38.45	-25.41
	777.5000	H	14.44	3.29	6.16	17.31	38.45	-21.14
23230	780.8000	V	14.09	3.3	6.12	***16.91**	38.45	-21.54
	783.5000	H	14.53	3.31	6.15	17.37	38.45	-21.08

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)
23205	777.9500	V	11.92	3.3	6.15	14.77	38.45	-23.68
	778.5500	H	15.47	3.3	6.13	18.30	38.45	-20.15
23230	783.3500	V	13.85	3.31	6.15	16.69	38.45	-21.76
	783.2000	H	16.7	3.31	6.15	19.54	38.45	-18.91
23255	786.0500	V	15.32	3.32	6.17	18.17	38.45	-20.28
	785.6000	H	18.58	3.32	6.17	***21.43**	38.45	-17.02

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)
23230	785.3000	V	11.6	3.32	6.17	14.45	38.45	-24.00
	784.8500	H	15.37	3.32	6.16	***18.21**	38.45	-20.24

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)
23230	785.3000	V	12.58	3.32	6.16	15.42	38.45	-23.03
	784.8500	H	16.22	3.32	6.16	***19.06**	38.45	-19.39

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	1710.3	V	28.54	5.13	5.92	***29.33**	33.00	-3.67
	1710.8	H	21.04	5.13	5.92	21.83	33.00	-11.17
20175	1730.5	V	28.17	5.16	5.89	28.90	33.00	-4.10
	1730.1	H	21.16	5.16	5.89	21.89	33.00	-11.11
20375	1750.3	V	28.65	5.2	5.85	29.30	33.00	-3.70
	1750.6	H	21.81	5.2	5.85	22.46	33.00	-10.54

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)
20000	1716.8	V	21.42	5.14	5.91	22.19	33.00	-10.81
	1716.4	H	26.43	5.14	5.91	27.20	33.00	-5.80
20175	1733.8	V	20.04	5.17	5.88	20.75	33.00	-12.25
	1733.5	H	25.56	5.17	5.88	26.27	33.00	-6.73
20375	1750.2	V	29.05	5.2	5.85	***29.70**	33.00	-3.30
	1750.2	H	22.04	5.2	5.85	22.69	33.00	-10.31

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	1718.4	V	25.86	5.14	5.91	26.63	33.00	-6.37
	1718.3	H	17.15	5.14	5.91	17.92	33.00	-15.08
20175	1729.3	V	26.49	5.16	5.89	***27.22**	33.00	-5.78
	1729.3	H	14.93	5.16	5.89	15.66	33.00	-17.34
20350	1752.6	V	26.65	5.2	5.85	27.30	33.00	-5.70
	1752.6	H	14.95	5.2	5.85	15.60	33.00	-17.40

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	1714.6	V	27.43	5.14	5.91	28.20	33.00	-4.80
	1717.3	H	20.55	5.14	5.91	21.32	33.00	-11.68
20175	1734.7	V	27.42	5.17	5.88	28.13	33.00	-4.87
	1732.5	H	20.45	5.17	5.88	21.16	33.00	-11.84
20350	1745.1	V	27.82	5.19	5.86	***28.49**	33.00	-4.51
	1747.3	H	20.44	5.2	5.85	21.09	33.00	-11.91

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	1721.7	V	22.12	5.15	5.9	22.87	33.00	-10.13
	1721.9	H	16.89	5.15	5.9	17.64	33.00	-15.36
20175	1727.8	V	22.11	5.16	5.89	22.84	33.00	-10.16
	1726.3	H	16.28	5.16	5.89	17.01	33.00	-15.99
20300	1749.8	V	23.63	5.2	5.85	***24.28**	33.00	-8.72
	1748.7	H	16.31	5.2	5.85	16.96	33.00	-16.04

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	1719.4	V	26.58	5.14	5.91	***27.35**	33.00	-5.65
	1719.9	H	19.39	5.15	5.9	20.14	33.00	-12.86
20175	1730.7	V	25.78	5.17	5.88	26.49	33.00	-6.51
	1727.1	H	18.56	5.16	5.89	19.29	33.00	-13.71
20300	1745.8	V	26.38	5.19	5.86	27.05	33.00	-5.95
	1746.5	H	17.75	5.19	5.86	18.42	33.00	-14.58

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 13

Reference Frequency: LTE Band 13 782 MHz @ 20℃						
Limit: ± 2.5 ppm = 1775Hz						
Power Supply Vdc	Environment Temperature (℃)	5M Frequency (Hz)	Delta (Hz)	10M Frequency (Hz)	Delta (Hz)	Limit (Hz)
30	50	781999995	7	782000008	7	1775
30	40	782000001	13	781999997	-4	
30	30	782000004	16	782000002	1	
30	20	781999988	0	782000001	0	
30	10	781999992	4	781999983	-18	
30	0	781999993	5	781999988	-13	
30	-10	782000011	23	781999991	-10	
30	-20	781999980	-8	781999999	-2	
30	-30	781999989	1	782000003	2	

LTE Band 4

Reference Frequency: LTE Band 4 1732.5 MHz @ 20℃						
Limit: ± 2.5 ppm = 4331Hz						
Power Supply Vdc	Environment Temperature (℃)	5M Frequency (Hz)	Delta (Hz)	10M Frequency (Hz)	Delta (Hz)	Limit (Hz)
30	50	173249995	6	173249997	-5	4331
30	40	173249989	0	173250001	-1	
30	30	173249999	10	173249990	-12	
30	20	173249989	0	173250002	0	
30	10	173249988	-1	173249997	-5	
30	0	173249989	0	173249994	-8	
30	-10	173249992	3	173250003	1	
30	-20	173249996	7	173249989	-13	
30	-30	173249987	-2	173249996	-6	

FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT:

LTE Band 13

Reference Frequency: LTE Band 13 710 MHz @ 20℃						
Limit: ± 2.5 ppm = 1775Hz						
Power Supply Vdc	Environment Temperature (℃)	5M Frequency (Hz)	Delta (Hz)	10M Frequency (Hz)	Delta (Hz)	Limit (Hz)
32	20	781999985	-3	781999993	-8	1775
30		781999988	0	782000001	0	
25.5		781999997	9	781999995	-6	

LTE Band 4

Reference Frequency: LTE Band 4 1732.5 MHz @ 20℃						
Limit: ± 2.5 ppm = 4331Hz						
Power Supply Vdc	Environment Temperature (℃)	5M Frequency (Hz)	Delta (Hz)	10M Frequency (Hz)	Delta (Hz)	Limit (Hz)
32	20	173249986	-3	173250005	3	4331
30		173249989	0	173250002	0	
25.5		173249995	6	173249994	-8	

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 13

CHANNEL BANDWIDTH: 5MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	779.5	4.5290
Mid	782.0	4.5091
High	784.5	4.5265

CHANNEL BANDWIDTH: 5MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	779.5	4.5264
Mid	782.0	4.5315
High	784.5	4.5353

CHANNEL BANDWIDTH: 10MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Mid	782	8.9241

CHANNEL BANDWIDTH: 10MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Mid	782	8.9212

LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1712.5	4.5357
Mid	1732.5	4.5379
High	1752.5	4.5223

CHANNEL BANDWIDTH: 5MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1712.5	4.5362
Mid	1732.5	4.5493
High	1752.5	4.5392

CHANNEL BANDWIDTH: 10MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1715.0	8.9486
Mid	1732.5	8.9350
High	1750.0	8.9569

CHANNEL BANDWIDTH: 10MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1715.0	8.9594
Mid	1732.5	8.9710
High	1750.0	8.9483

CHANNEL BANDWIDTH: 20MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1720.0	17.8119
Mid	1732.5	17.8385
High	1745.0	17.8512

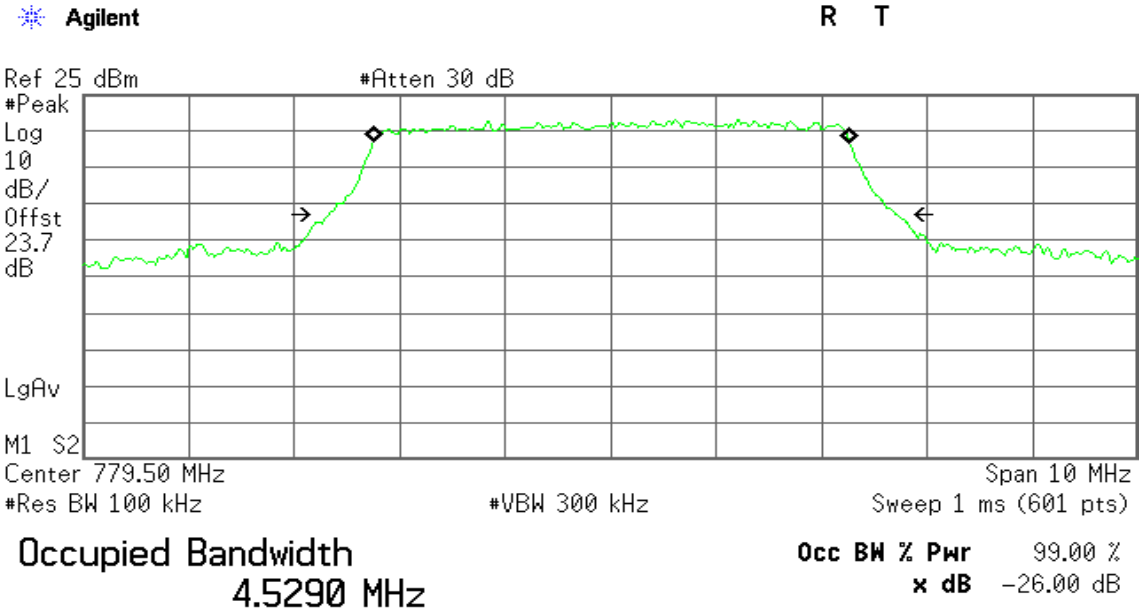
CHANNEL BANDWIDTH: 20MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1720.0	17.8113
Mid	1732.5	17.8537
High	1745.0	17.8619

LTE Band 13

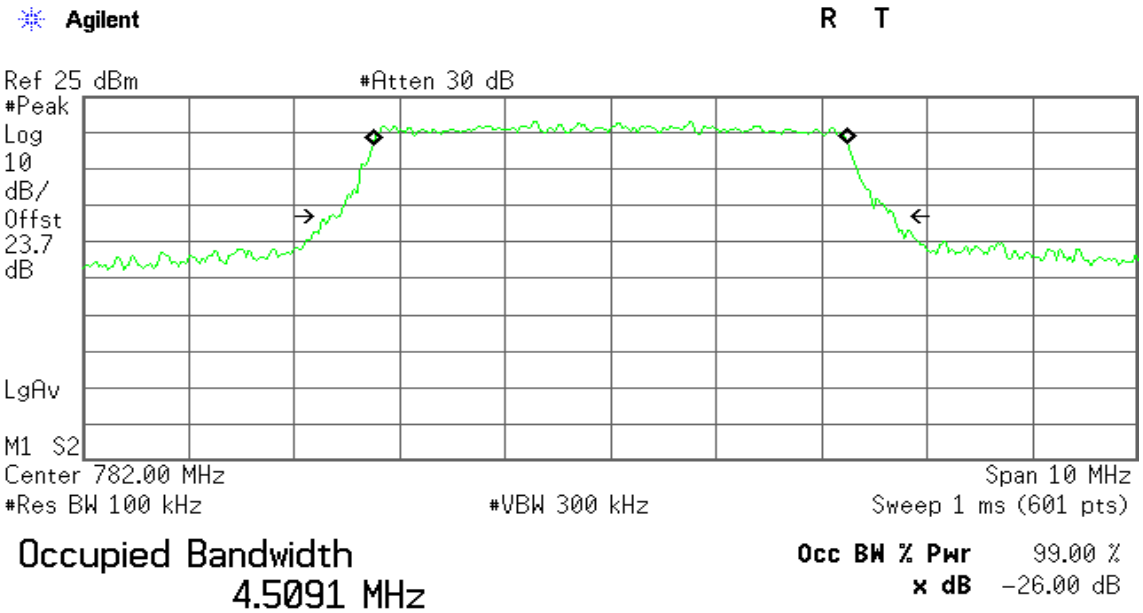
CHANNEL BANDWIDTH: 5MHz / QPSK

CH Low



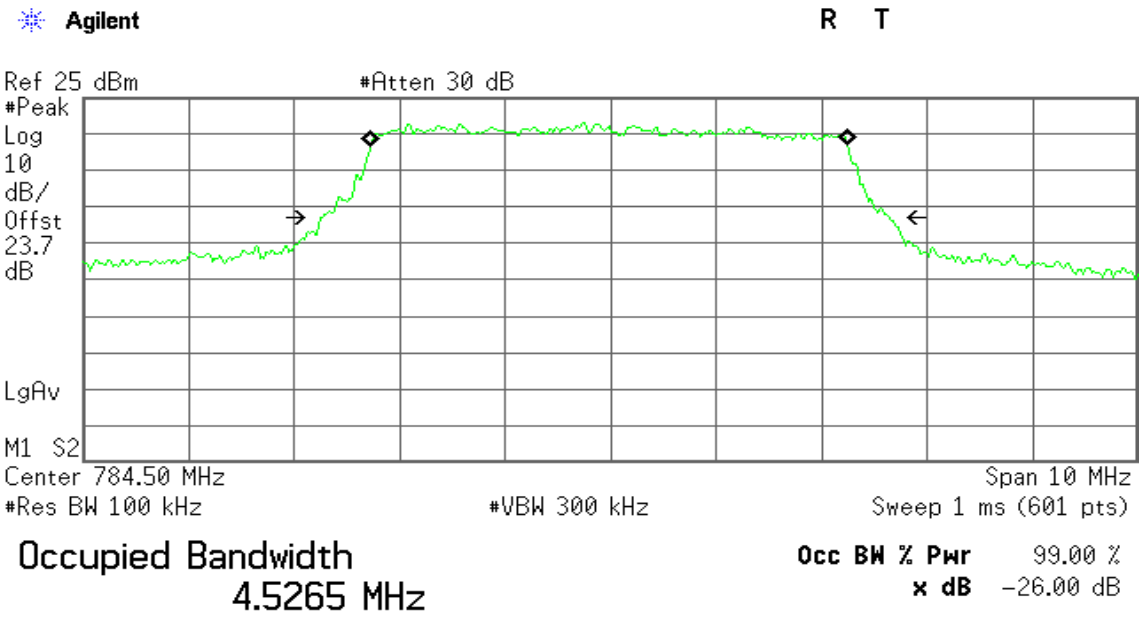
Transmit Freq Error	9.408 kHz
x dB Bandwidth	5.401 MHz

CH Mid



Transmit Freq Error	-1.043 kHz
x dB Bandwidth	5.337 MHz

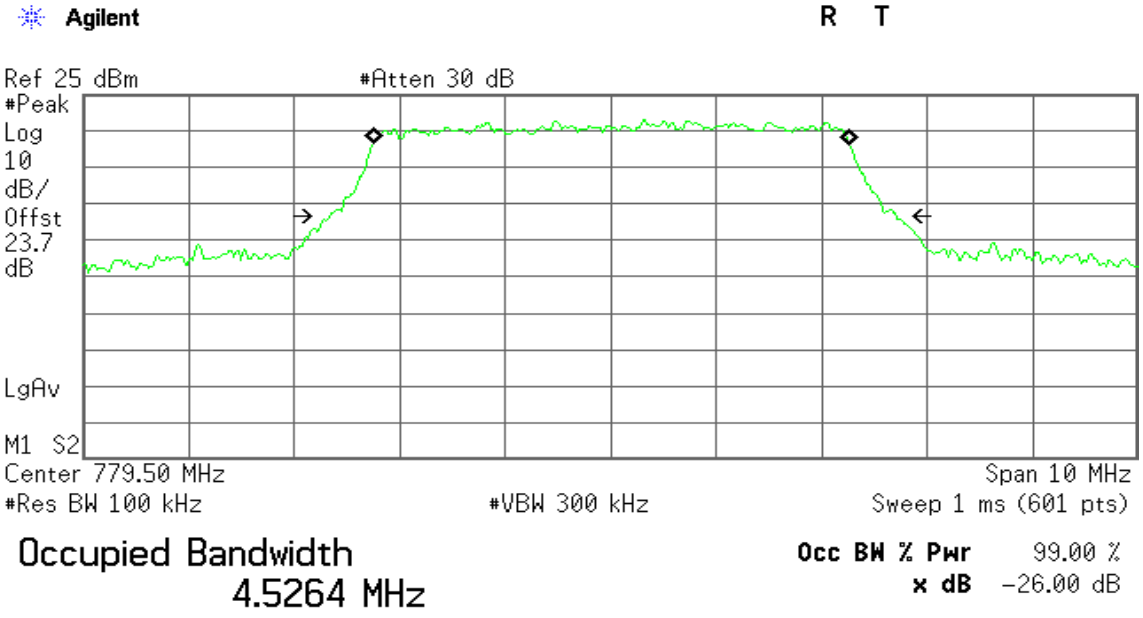
CH High



Transmit Freq Error -12.435 kHz
x dB Bandwidth 5.382 MHz

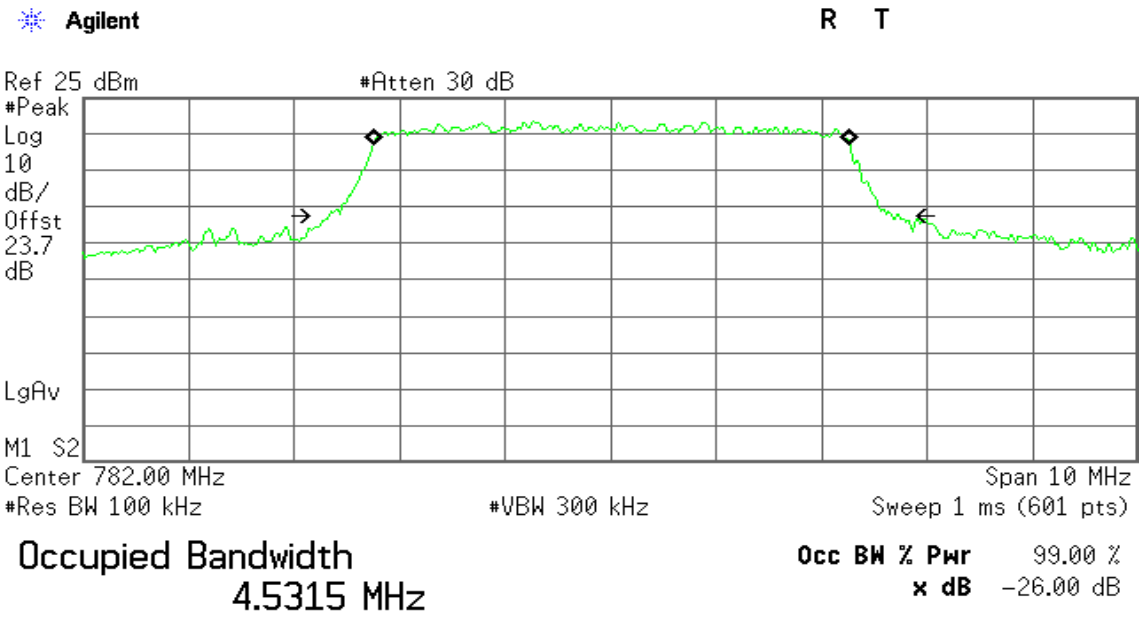
CHANNEL BANDWIDTH: 5MHz / 16QAM

CH Low



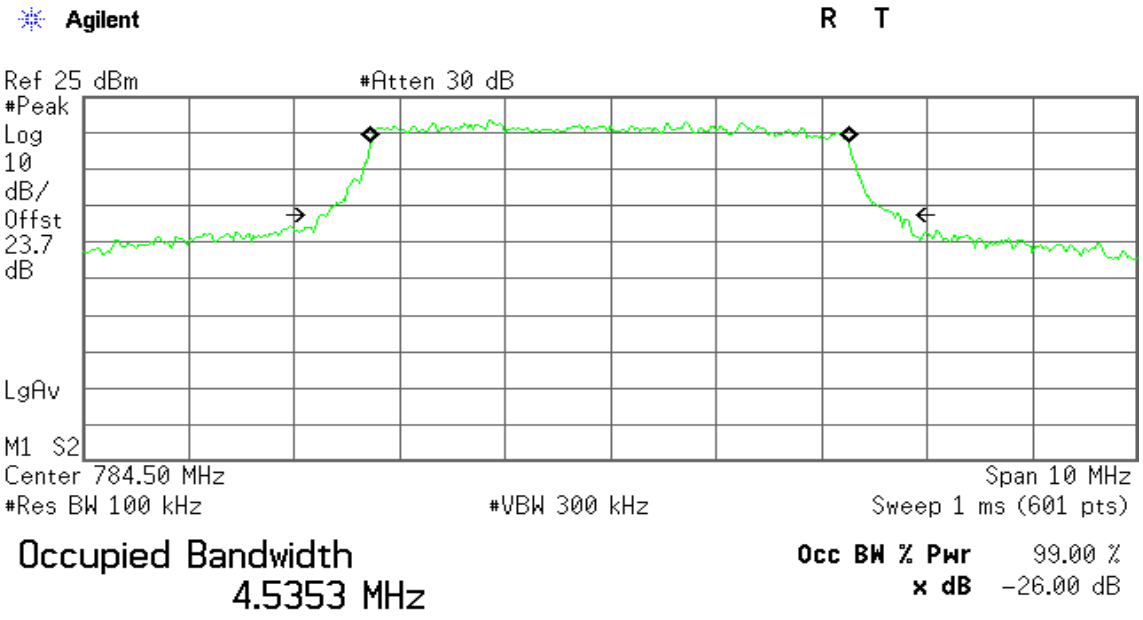
Transmit Freq Error 8.268 kHz
x dB Bandwidth 5.366 MHz

CH Mid



Transmit Freq Error	9.001 kHz
x dB Bandwidth	5.418 MHz

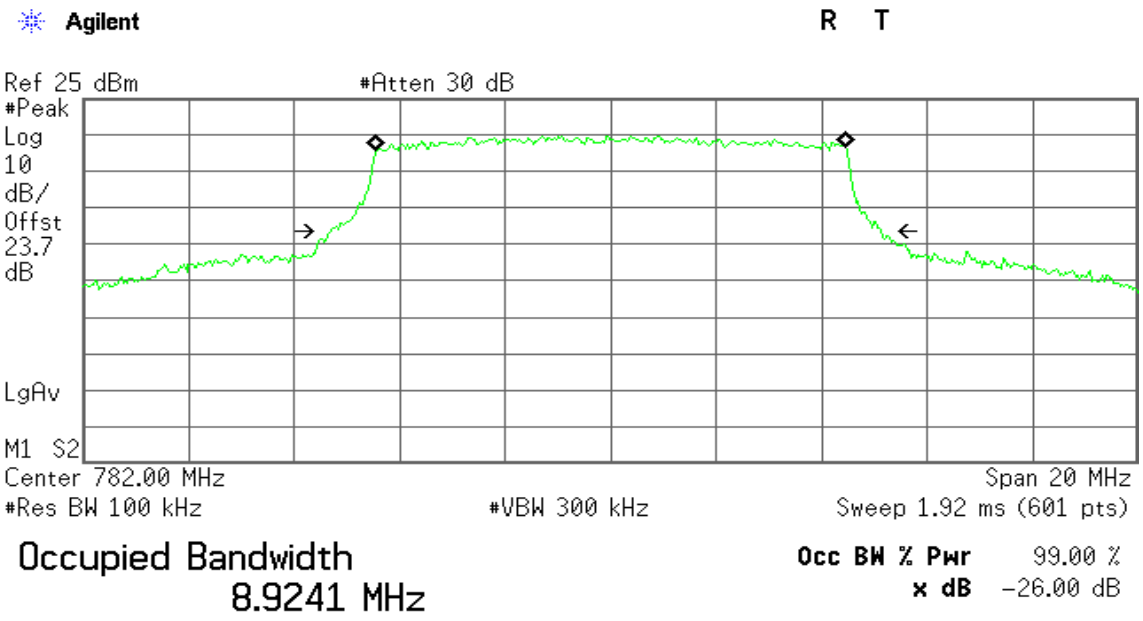
CH High



Transmit Freq Error	-9.178 kHz
x dB Bandwidth	5.474 MHz

CHANNEL BANDWIDTH: 10MHz / QPSK

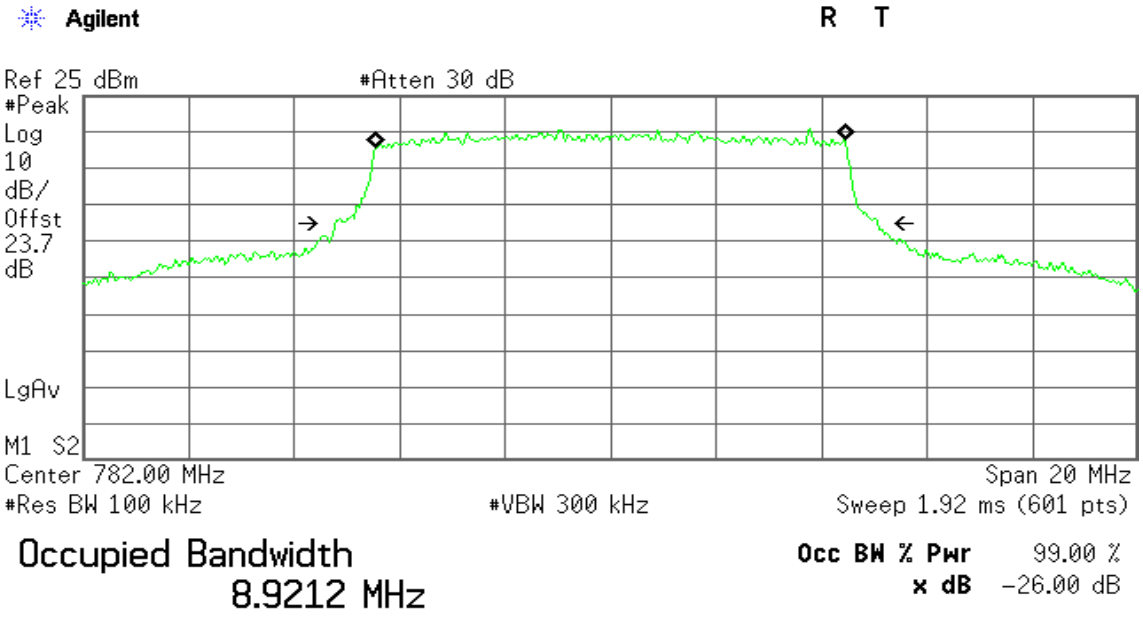
CH Mid



Transmit Freq Error 8.130 kHz
x dB Bandwidth 10.439 MHz

CHANNEL BANDWIDTH: 10MHz / 16QAM

CH Mid

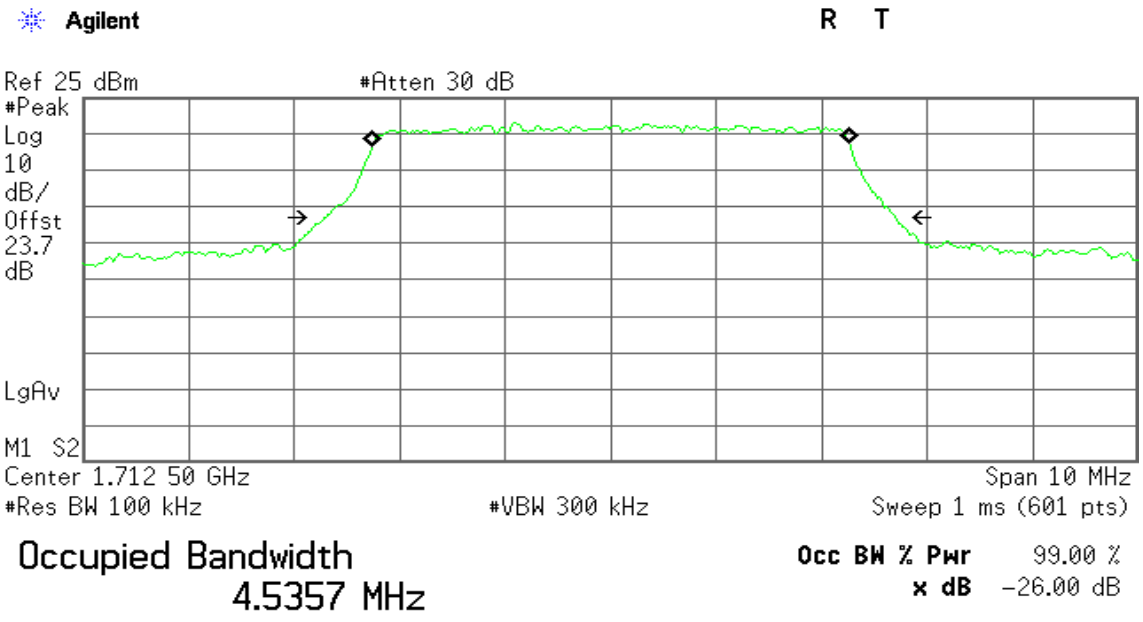


Transmit Freq Error 2.108 kHz
x dB Bandwidth 10.307 MHz

LTE Band 4

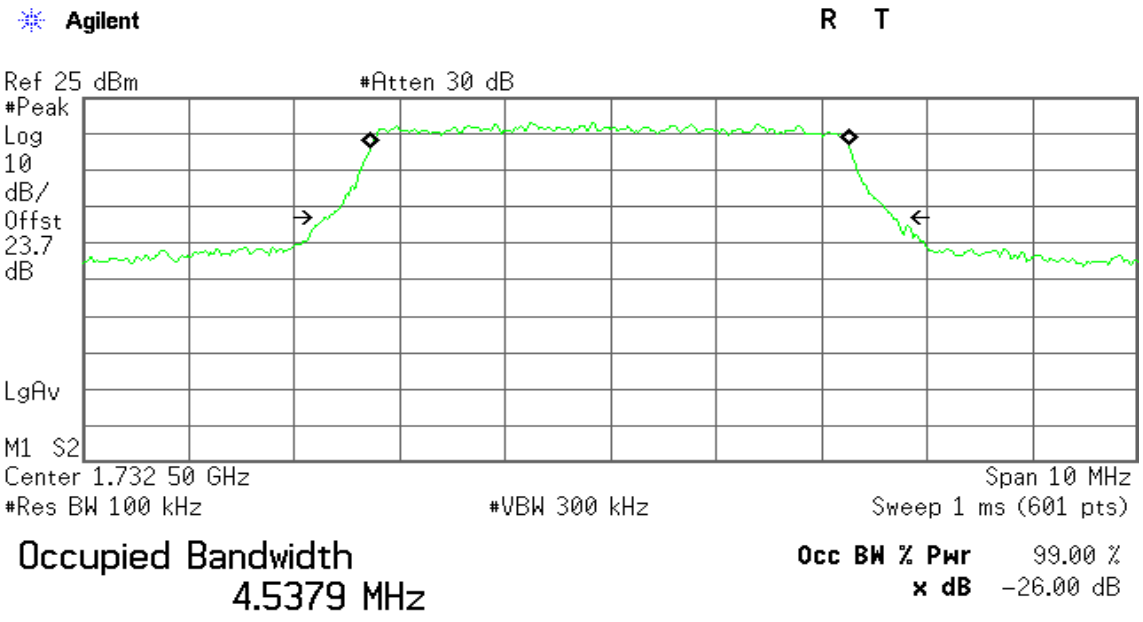
CHANNEL BANDWIDTH: 5MHz / QPSK

CH Low



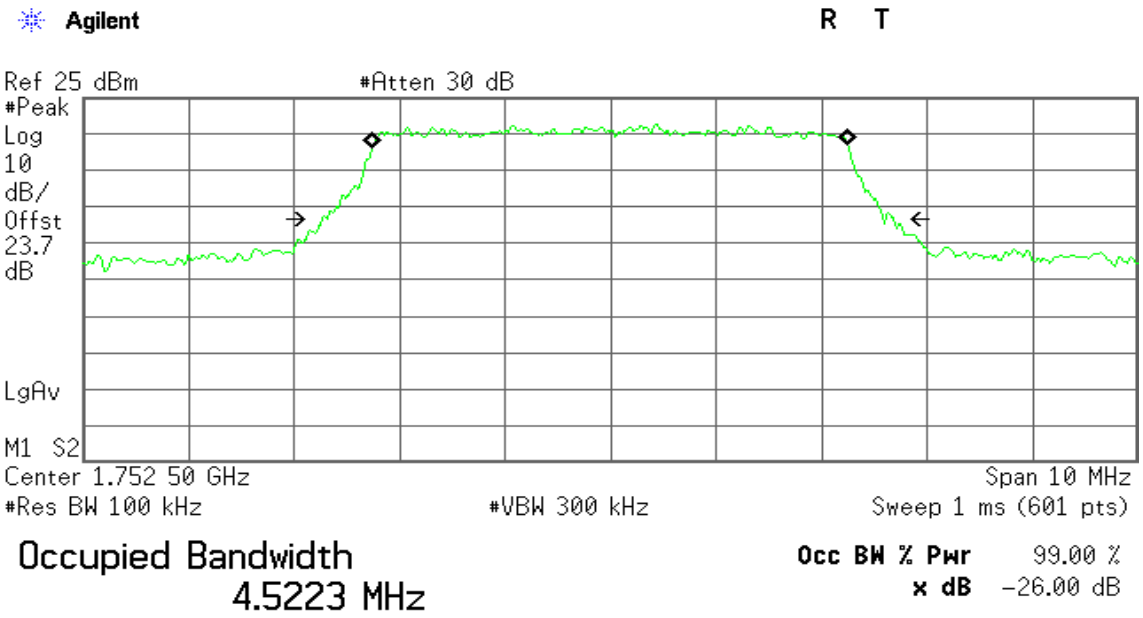
Transmit Freq Error	4.913 kHz
x dB Bandwidth	5.421 MHz

CH Mid



Transmit Freq Error	-9.866 kHz
x dB Bandwidth	5.348 MHz

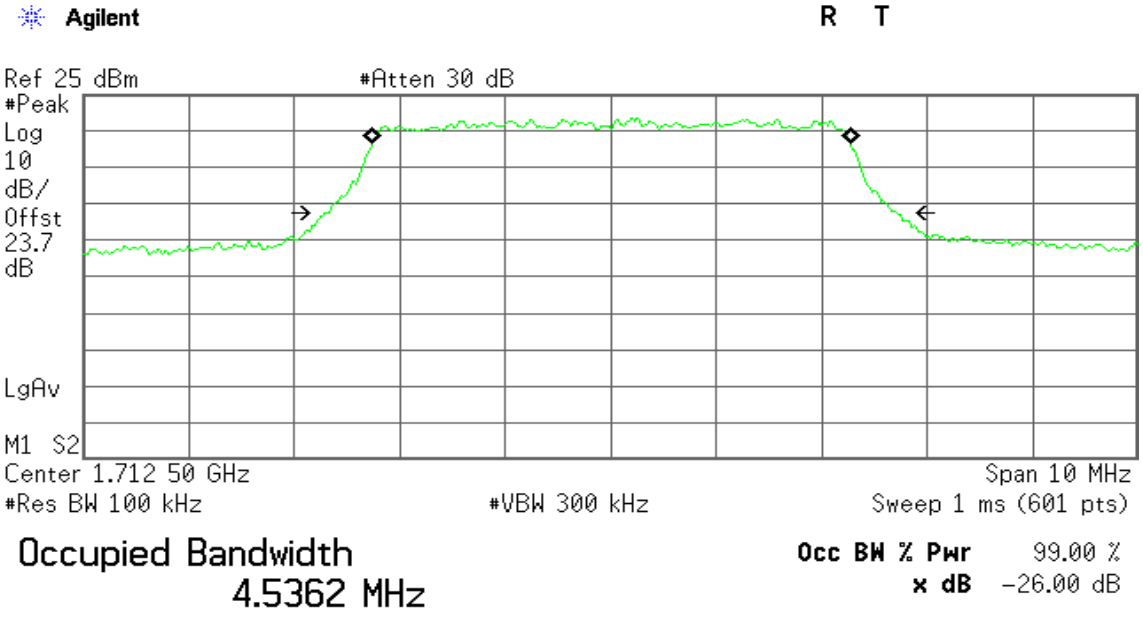
CH High



Transmit Freq Error -4.907 kHz
x dB Bandwidth 5.423 MHz

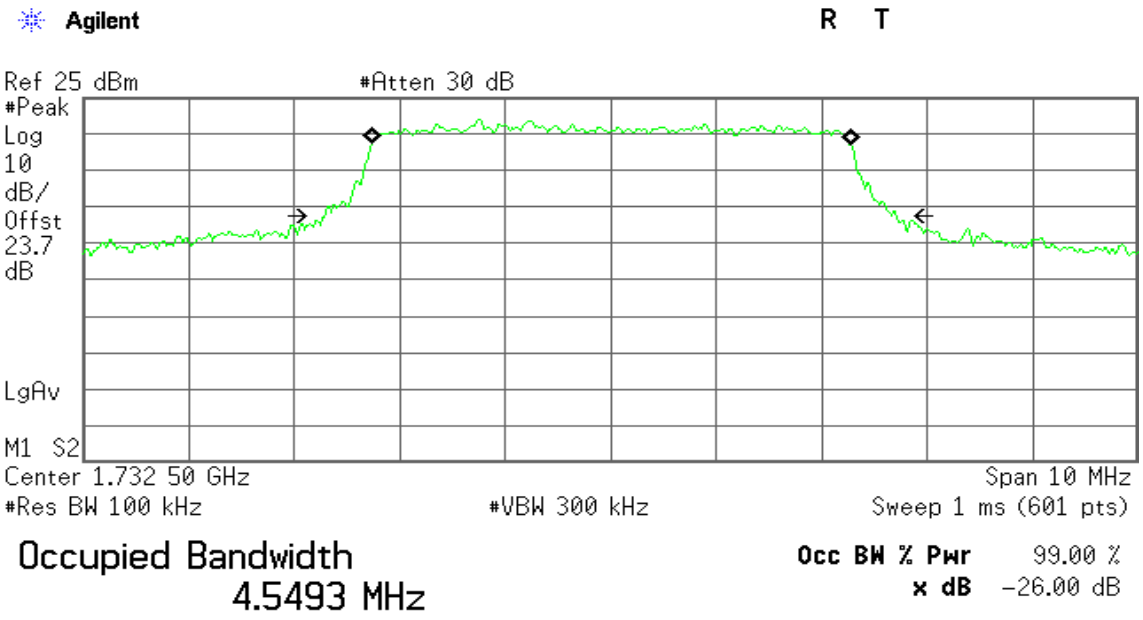
CHANNEL BANDWIDTH: 5MHz / 16QAM

CH Low



Transmit Freq Error 7.643 kHz
x dB Bandwidth 5.402 MHz

CH Mid

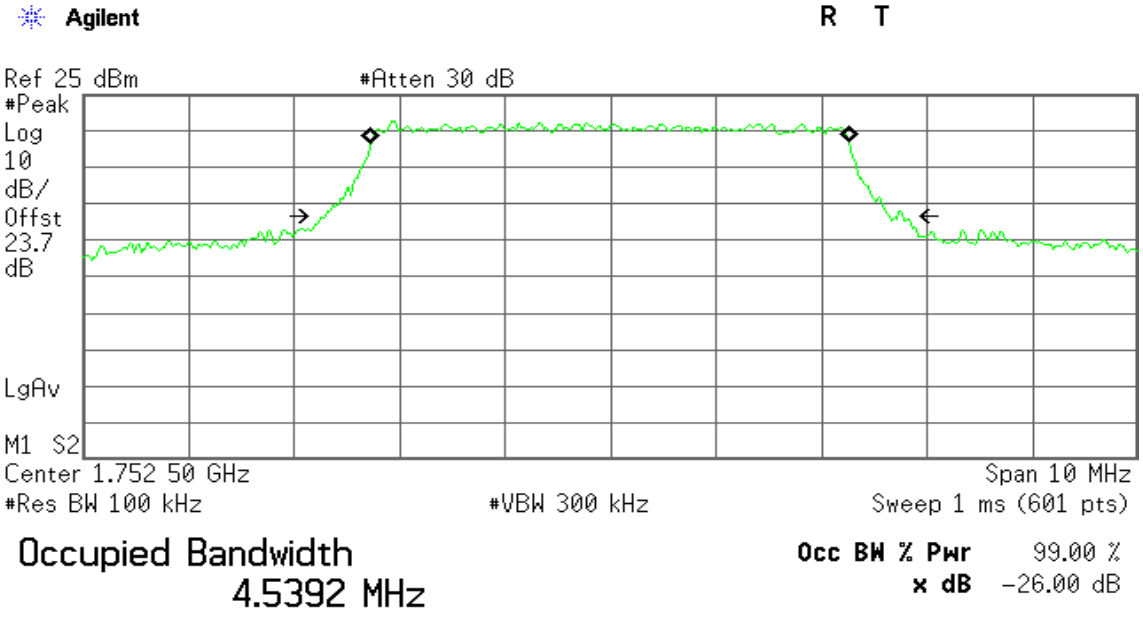


Occupied Bandwidth
4.5493 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 6.321 kHz
x dB Bandwidth 5.421 MHz

CH High



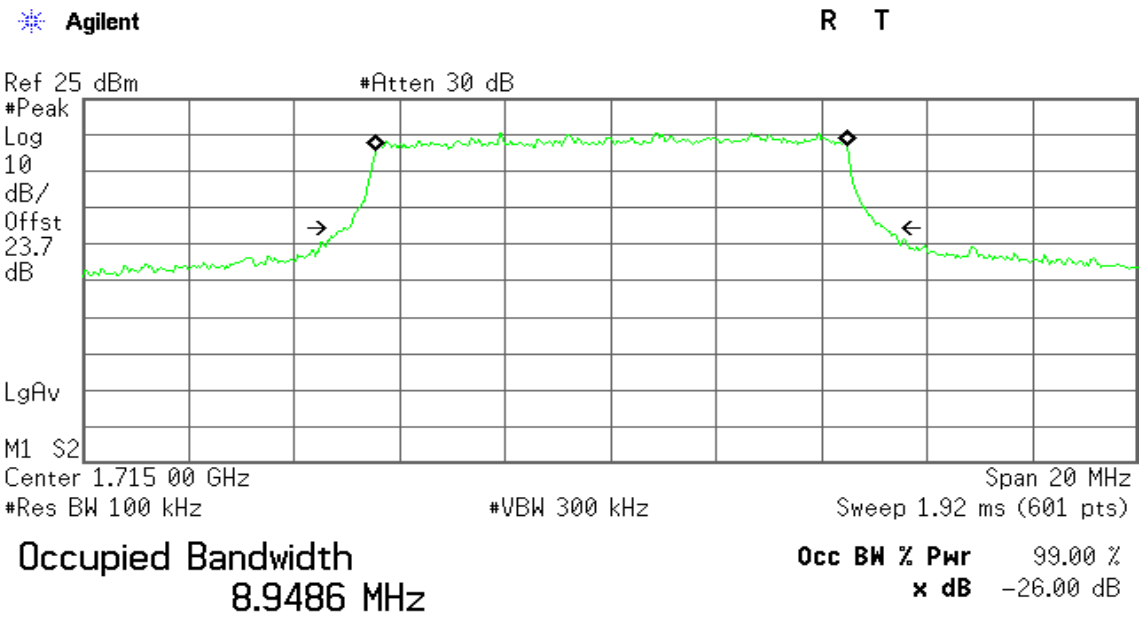
Occupied Bandwidth
4.5392 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -7.118 kHz
x dB Bandwidth 5.474 MHz

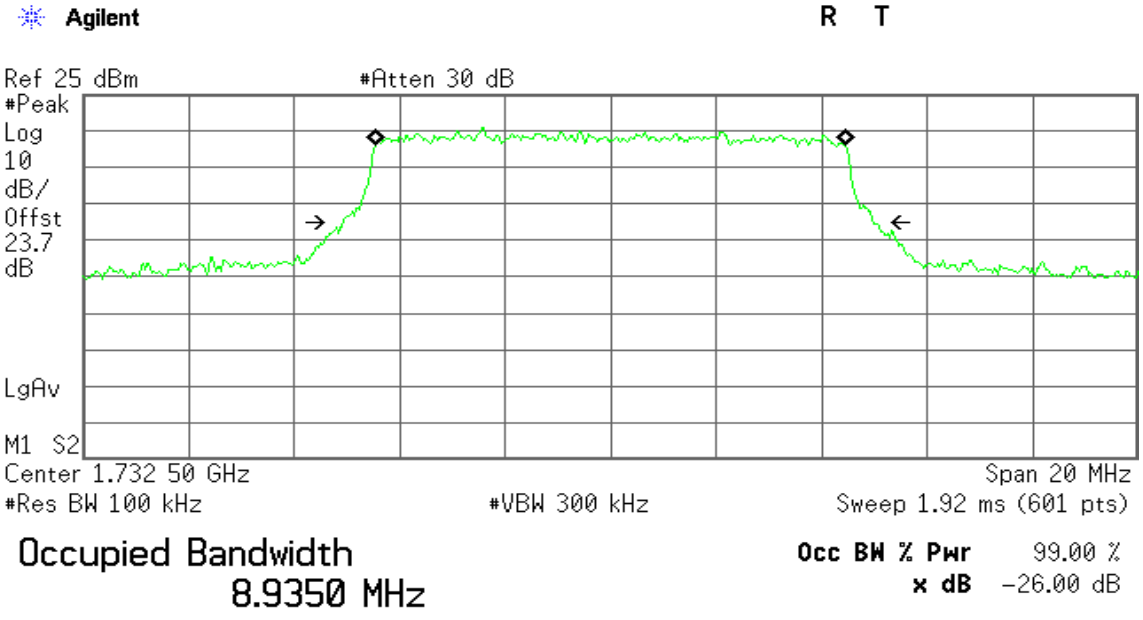
CHANNEL BANDWIDTH: 10MHz / QPSK

CH Low



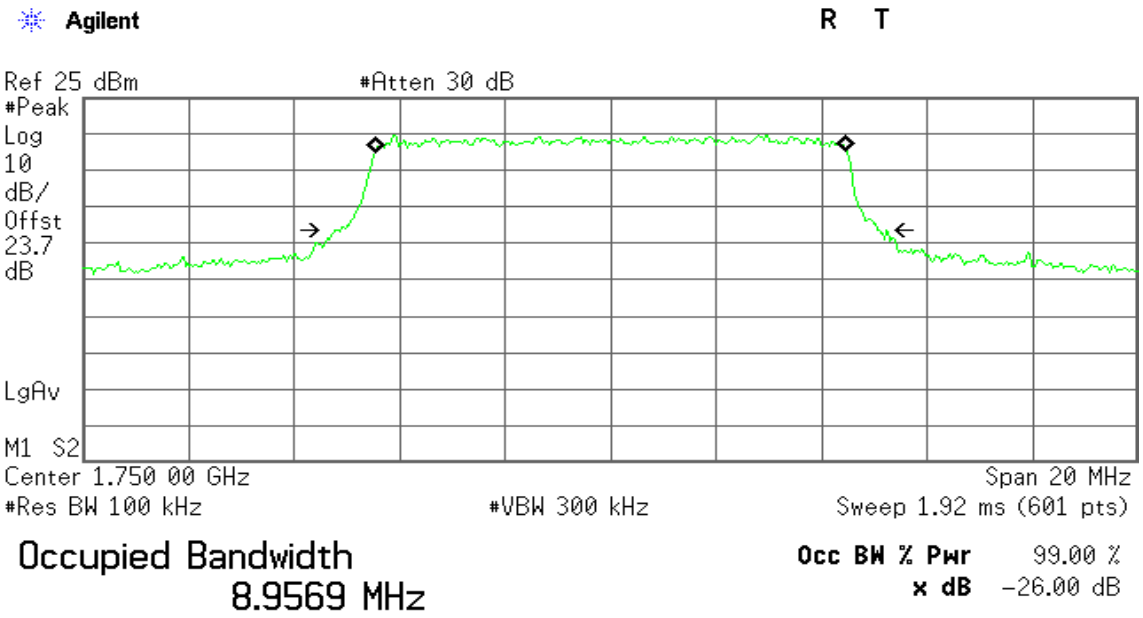
Transmit Freq Error	18.316 kHz
x dB Bandwidth	10.282 MHz

CH Mid



Transmit Freq Error	-1.705 kHz
x dB Bandwidth	10.069 MHz

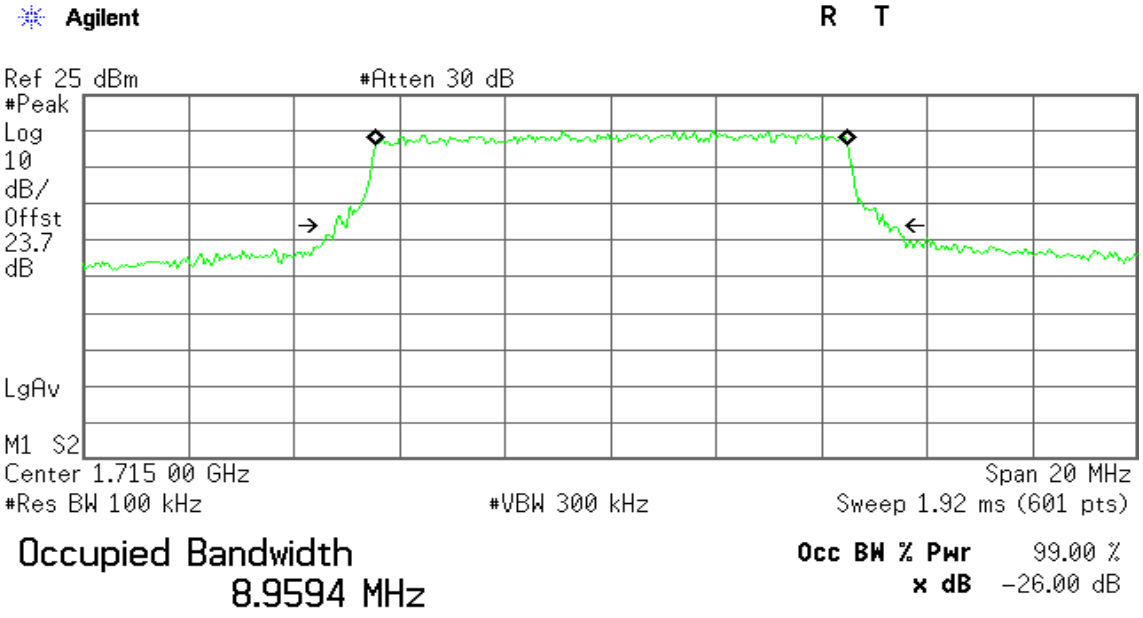
CH High



Transmit Freq Error 1.954 kHz
x dB Bandwidth 10.266 MHz

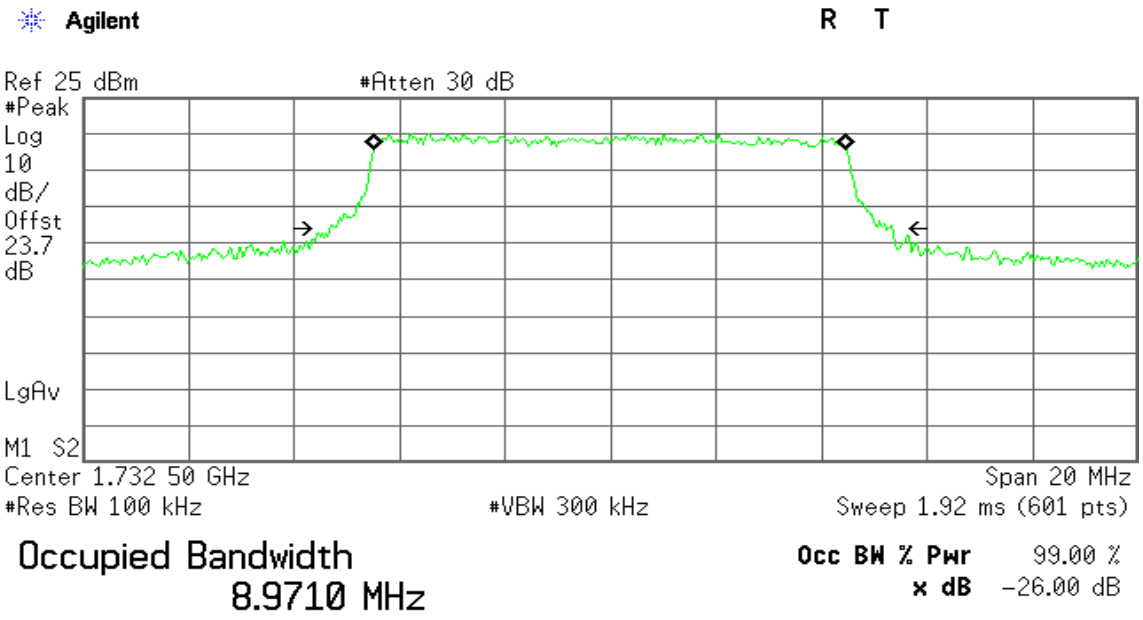
CHANNEL BANDWIDTH: 10MHz / 16QAM

CH Low



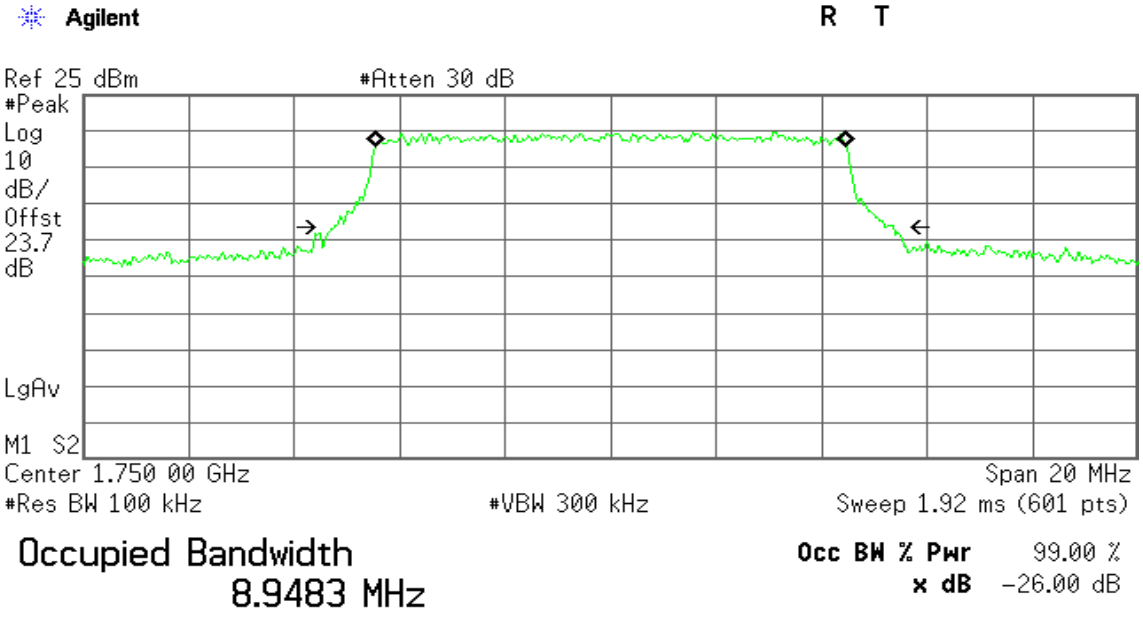
Transmit Freq Error 18.879 kHz
x dB Bandwidth 10.480 MHz

CH Mid



Transmit Freq Error -5.293 kHz
x dB Bandwidth 10.666 MHz

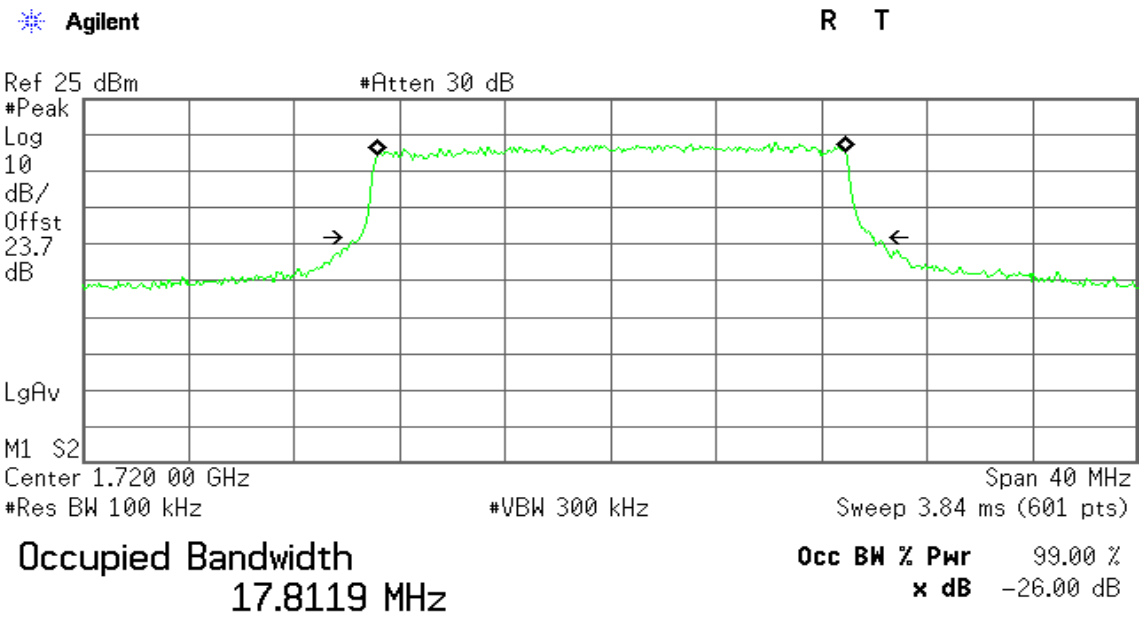
CH High



Transmit Freq Error 2.728 kHz
x dB Bandwidth 10.627 MHz

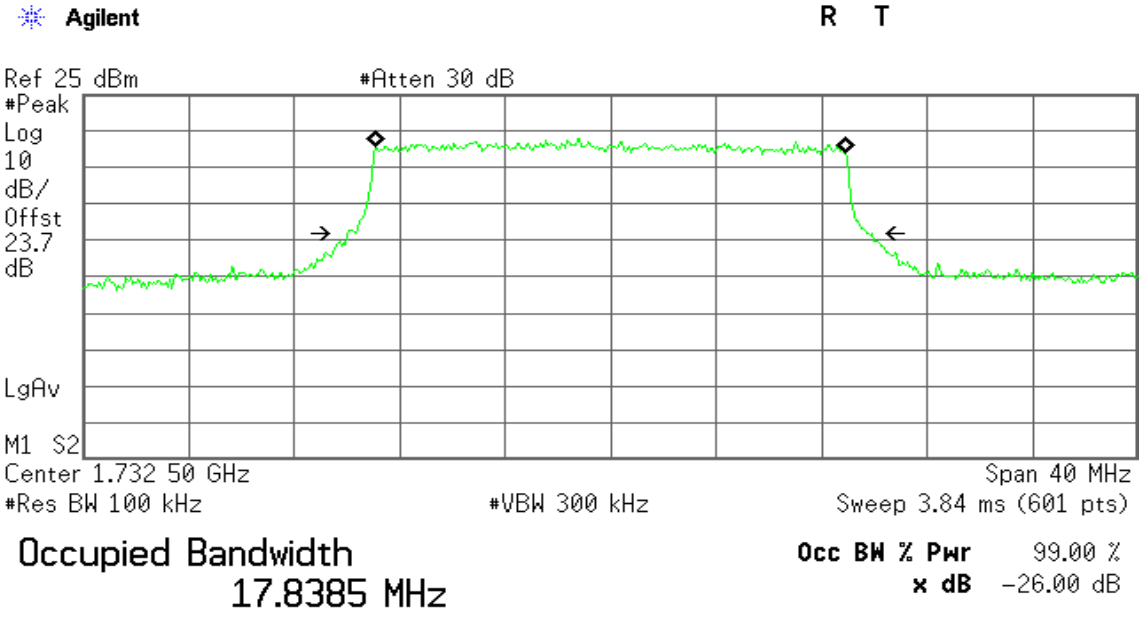
CHANNEL BANDWIDTH: 20MHz / QPSK

CH Low



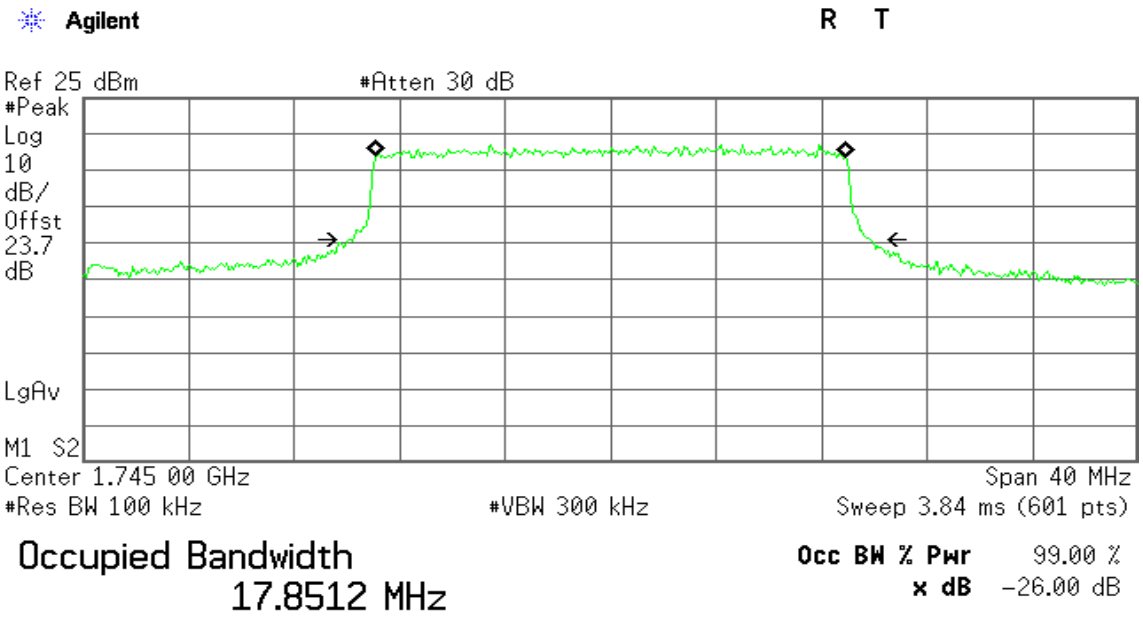
Transmit Freq Error	28.440 kHz
x dB Bandwidth	19.451 MHz

CH Mid



Transmit Freq Error	-17.197 kHz
x dB Bandwidth	19.810 MHz

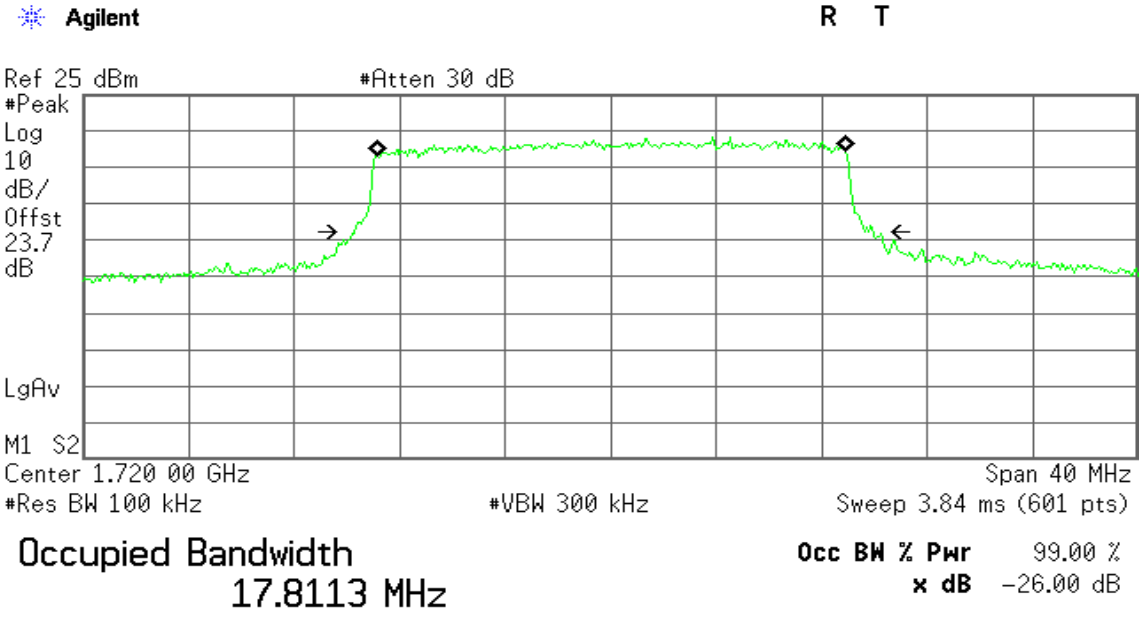
CH High



Transmit Freq Error 10.059 kHz
x dB Bandwidth 19.635 MHz

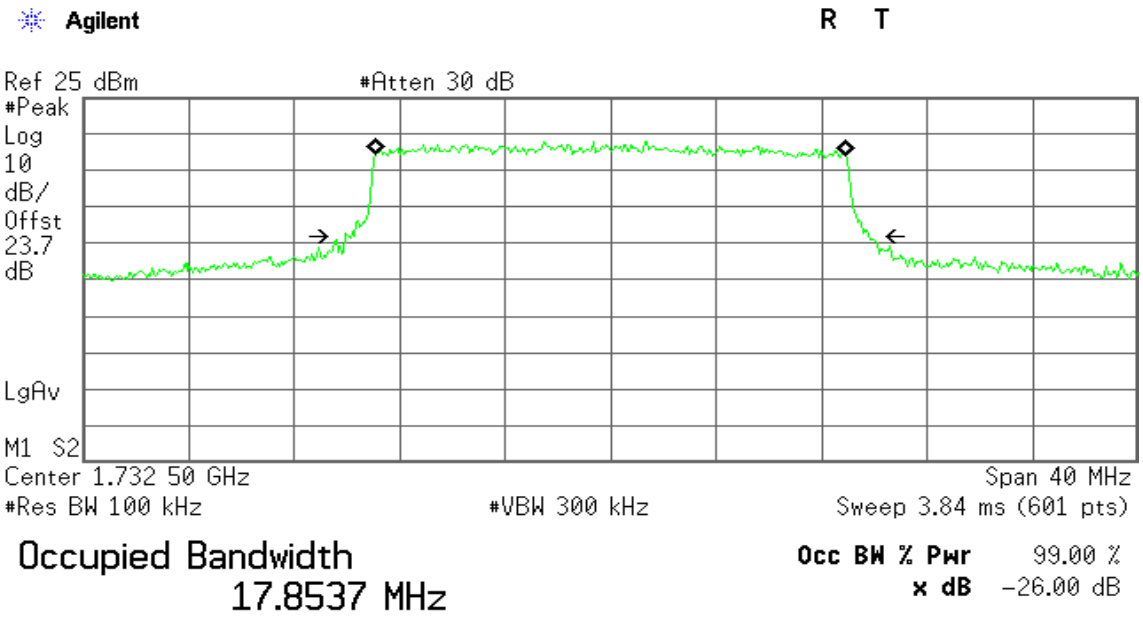
CHANNEL BANDWIDTH: 20MHz / 16QAM

CH Low



Transmit Freq Error 29.188 kHz
x dB Bandwidth 19.689 MHz

CH Mid

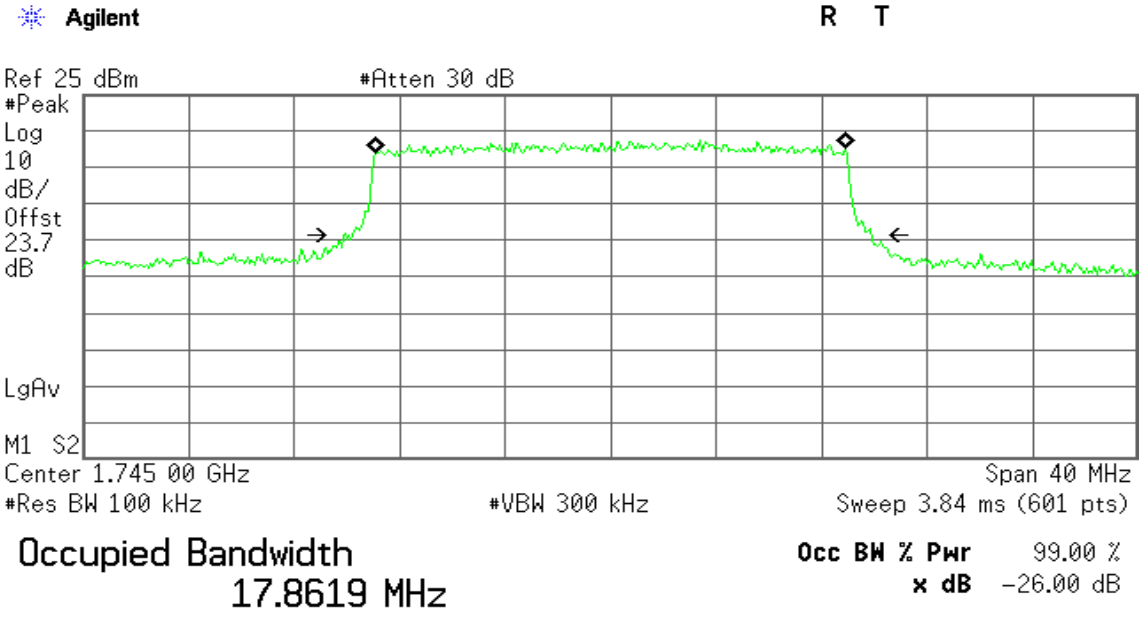


Occupied Bandwidth
17.8537 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 5.458 kHz
x dB Bandwidth 19.881 MHz

CH High



Occupied Bandwidth
17.8619 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 4.867 kHz
x dB Bandwidth 20.043 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 13

CHANNEL BANDWIDTH: 5MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	779.5	5.41
Mid	782.0	5.41
High	784.5	5.47

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	779.5	6.14
Mid	782.0	6.03
High	784.5	5.46

CHANNEL BANDWIDTH: 10MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Mid	782.0	5.39

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Mid	782.0	6.59

LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1712.5	6.34
Mid	1732.5	5.48
High	1752.5	6.06

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1712.5	6.31
Mid	1732.5	5.73
High	1752.5	6.12

CHANNEL BANDWIDTH: 10MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	5.06
Mid	1732.5	5.04
High	1750.0	5.51

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	6.97
Mid	1732.5	6.76
High	1750.0	7.19

CHANNEL BANDWIDTH: 20MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	7.41
Mid	1732.5	7.03
High	1750.0	7.37

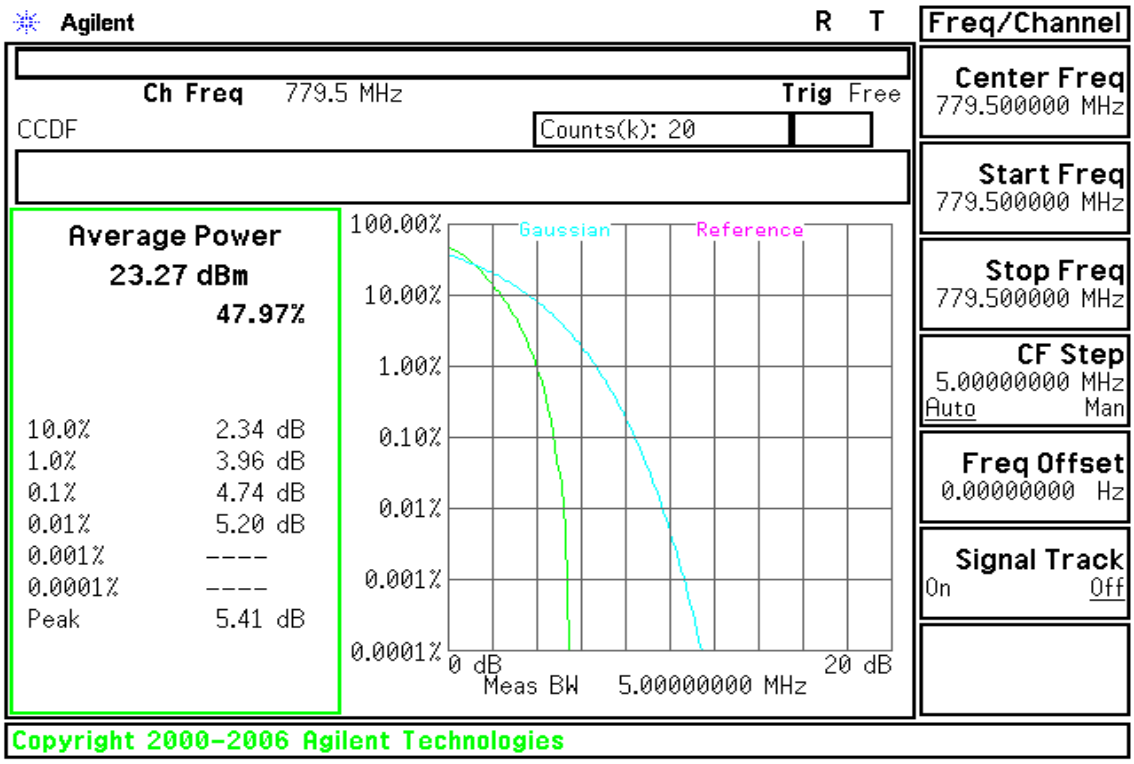
CHANNEL BANDWIDTH: 20MHz / 16QAM / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	8.80
Mid	1732.5	8.81
High	1750.0	9.00

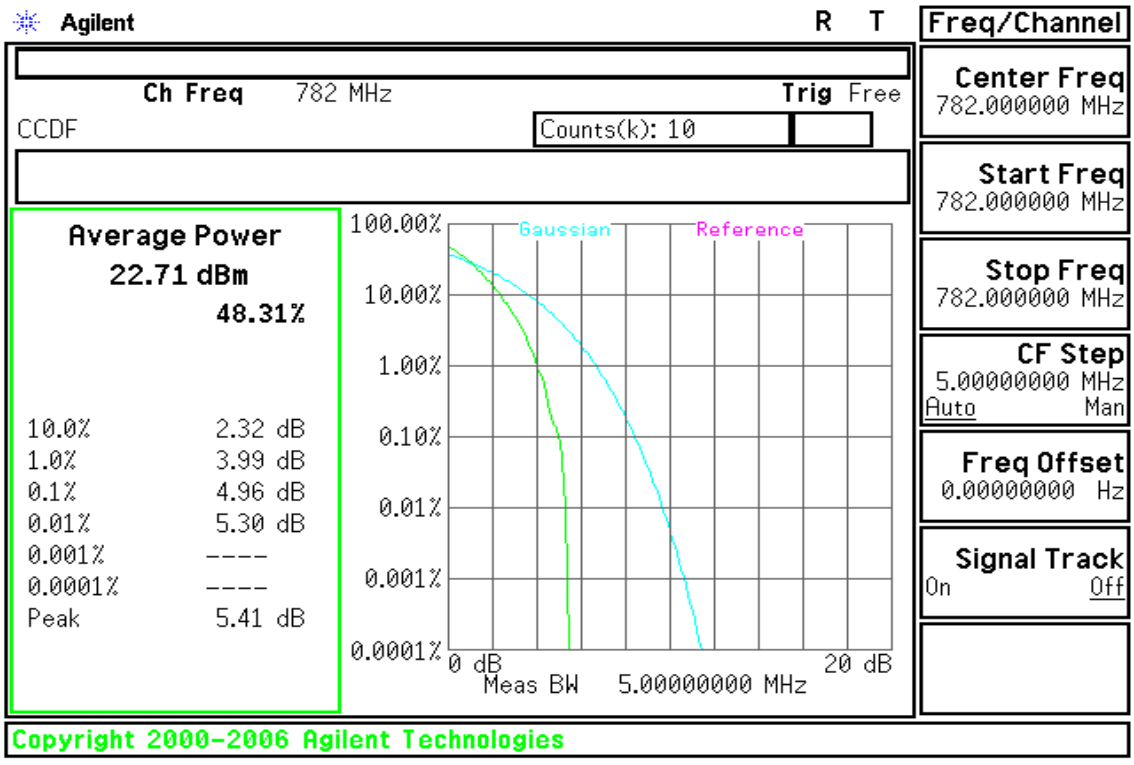
LTE Band 13

CHANNEL BANDWIDTH: 5MHz / QPSK

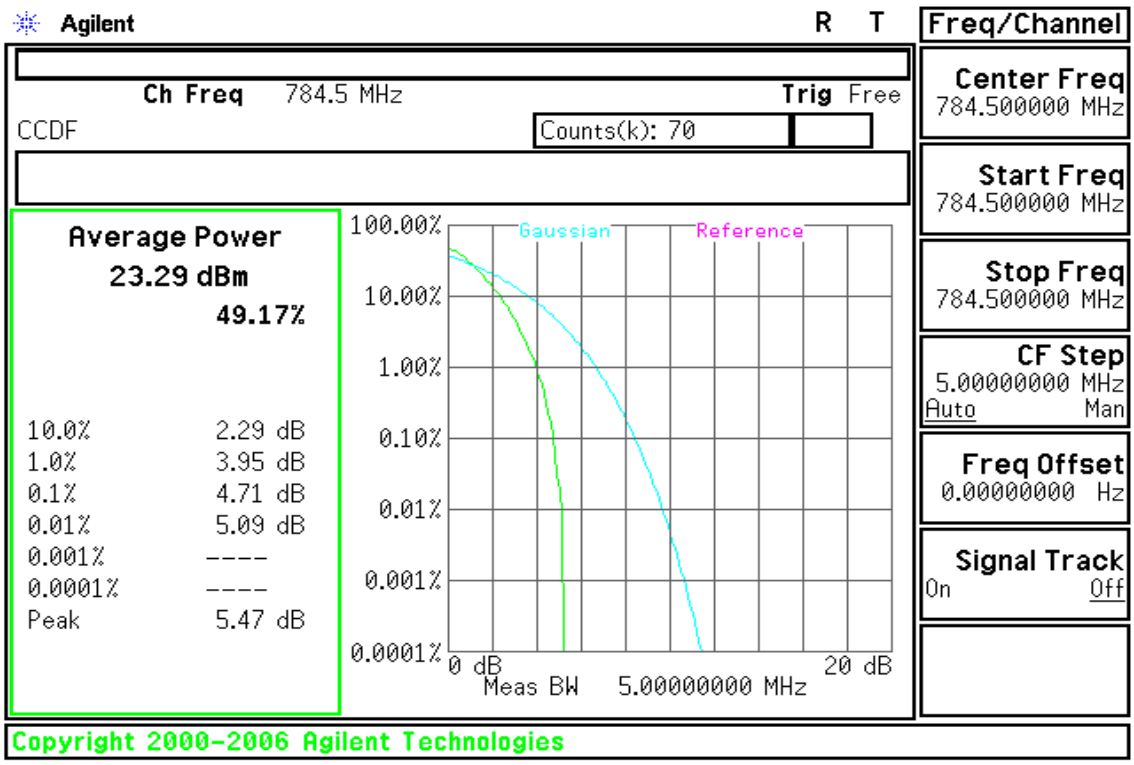
CH Low



CH Mid

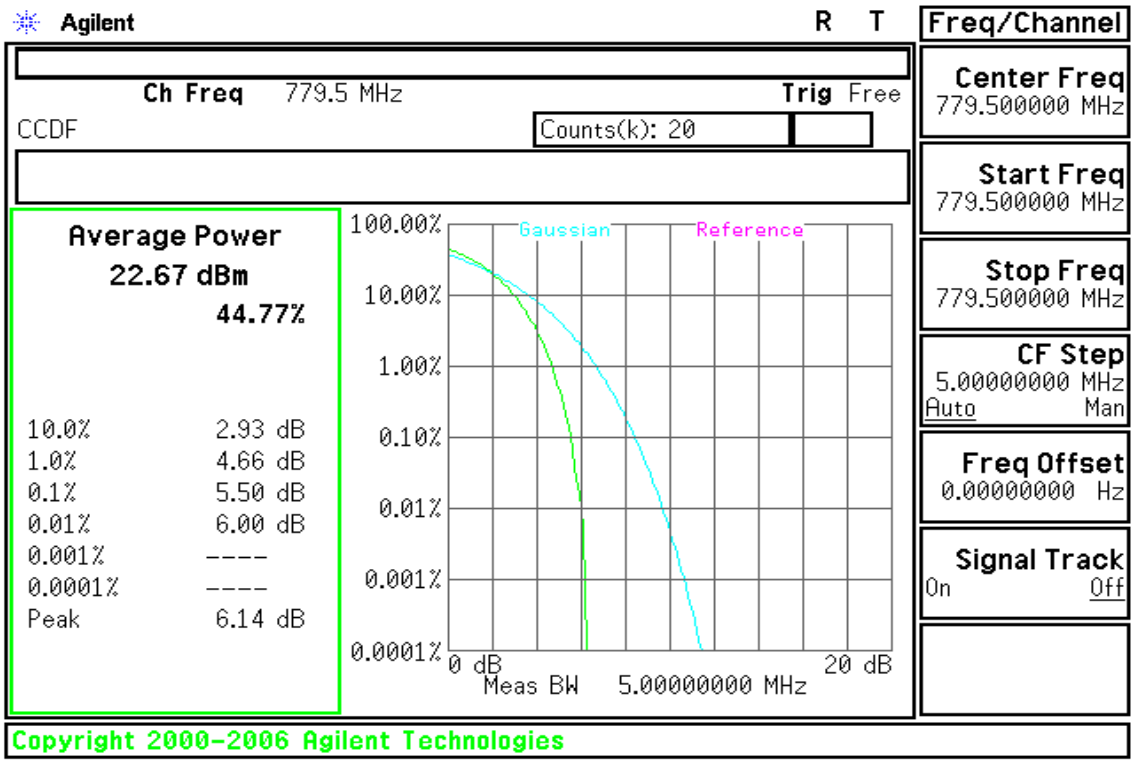


CH High

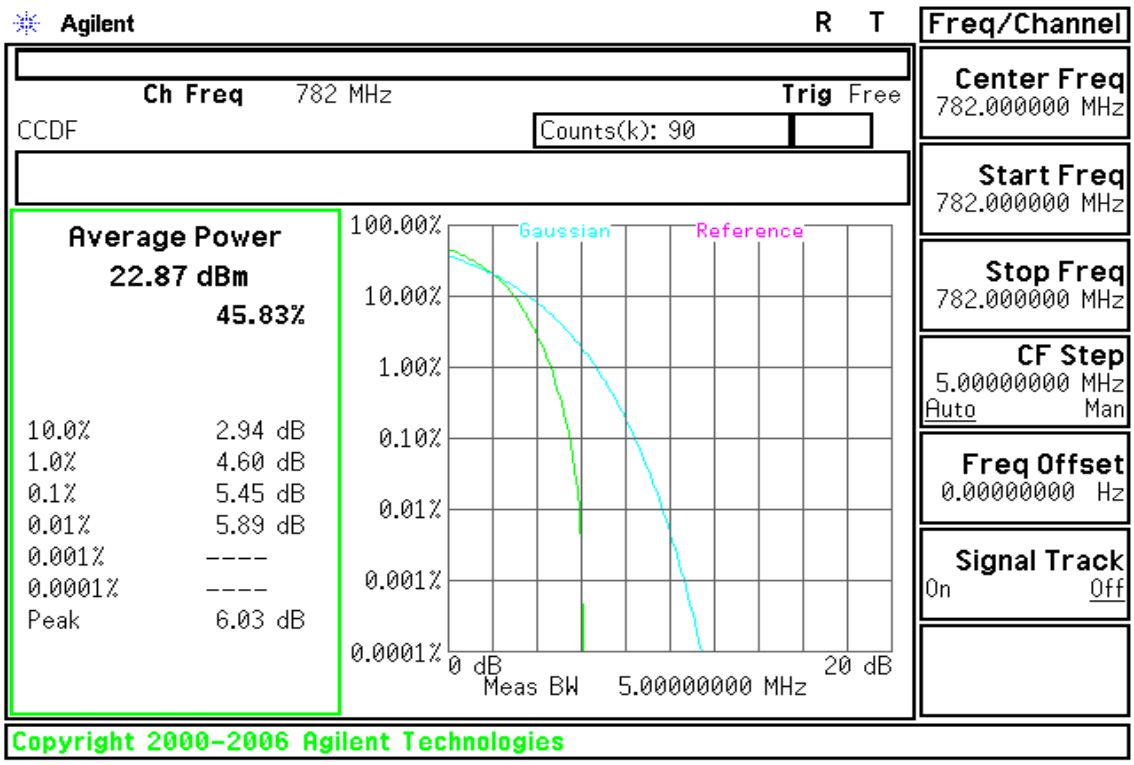


CHANNEL BANDWIDTH: 5MHz / 16QAM

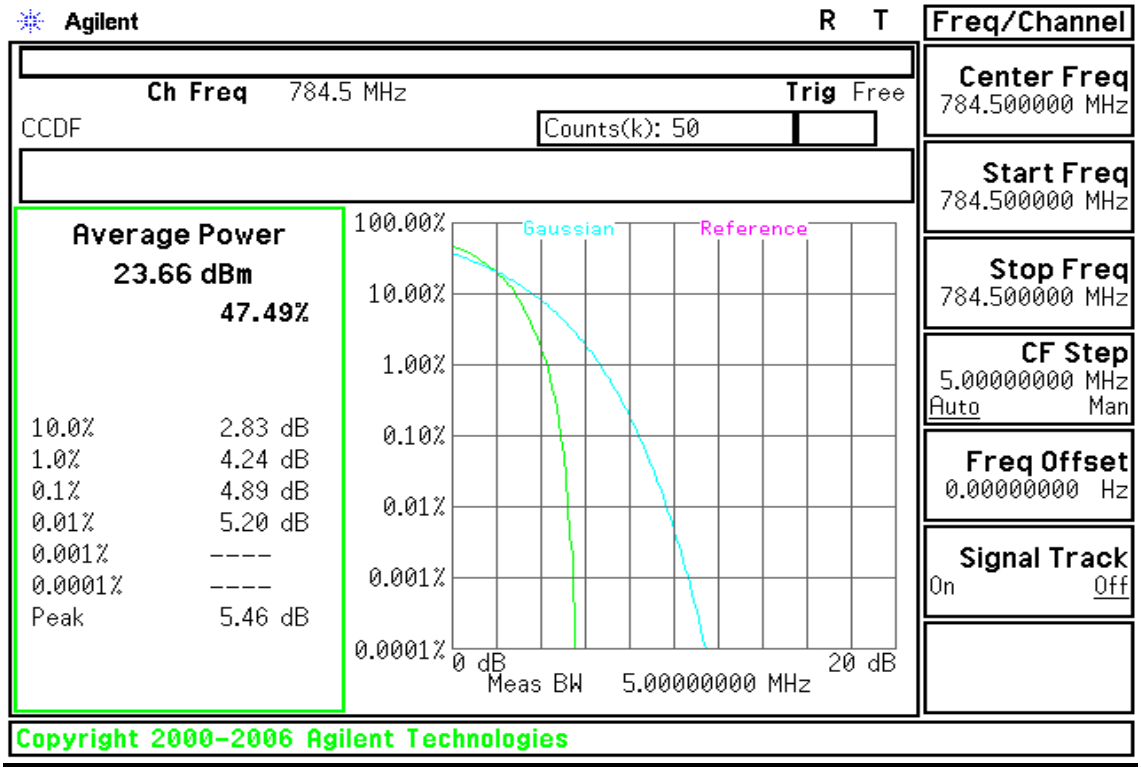
CH Low



CH Mid

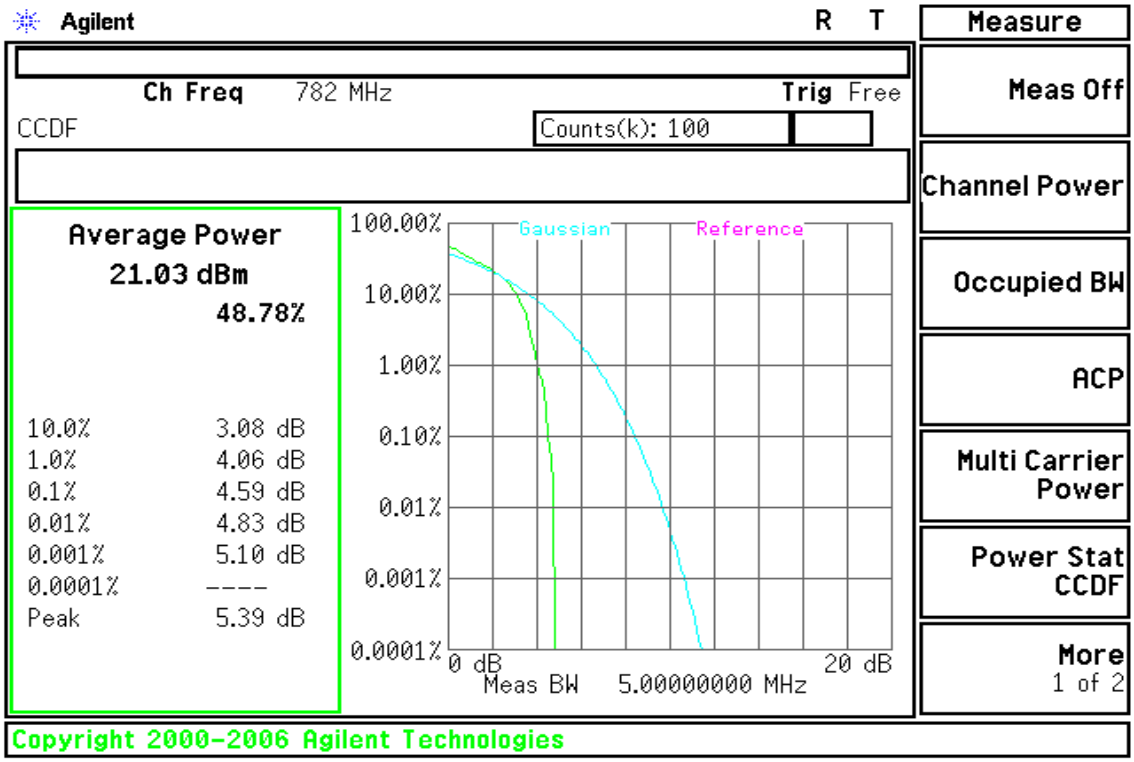


CH High



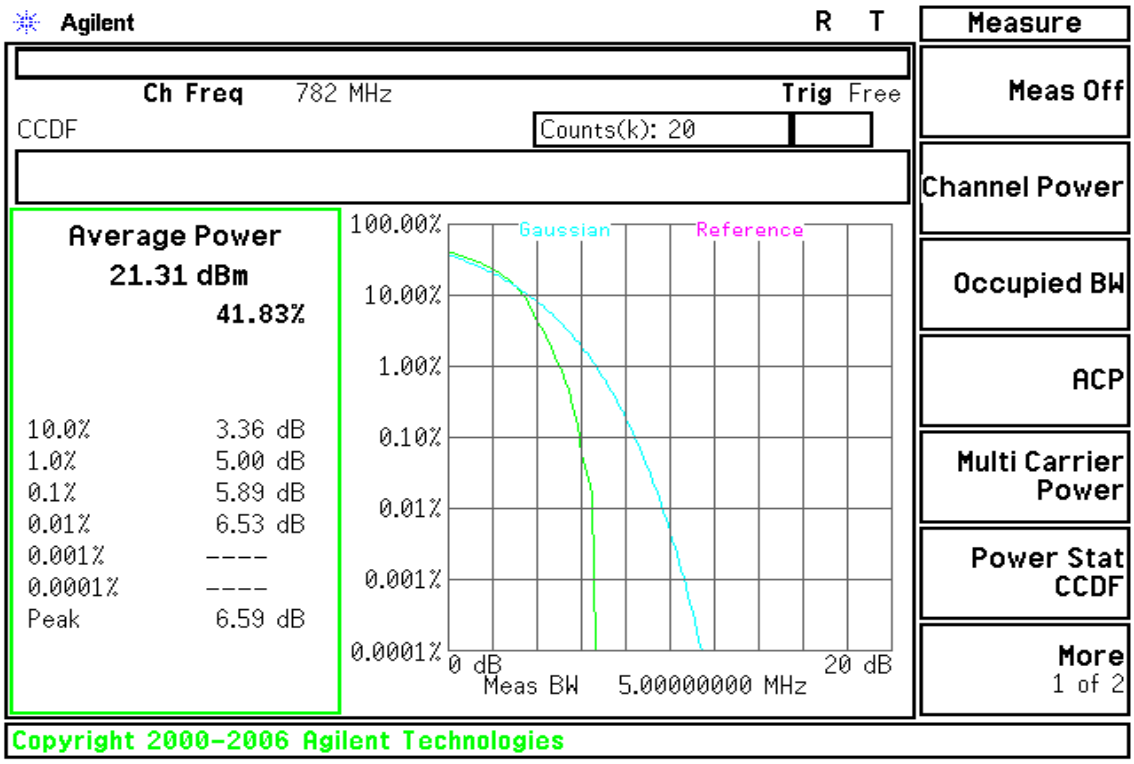
CHANNEL BANDWIDTH: 10MHz / QPSK

CH Mid



CHANNEL BANDWIDTH: 10MHz / 16QAM

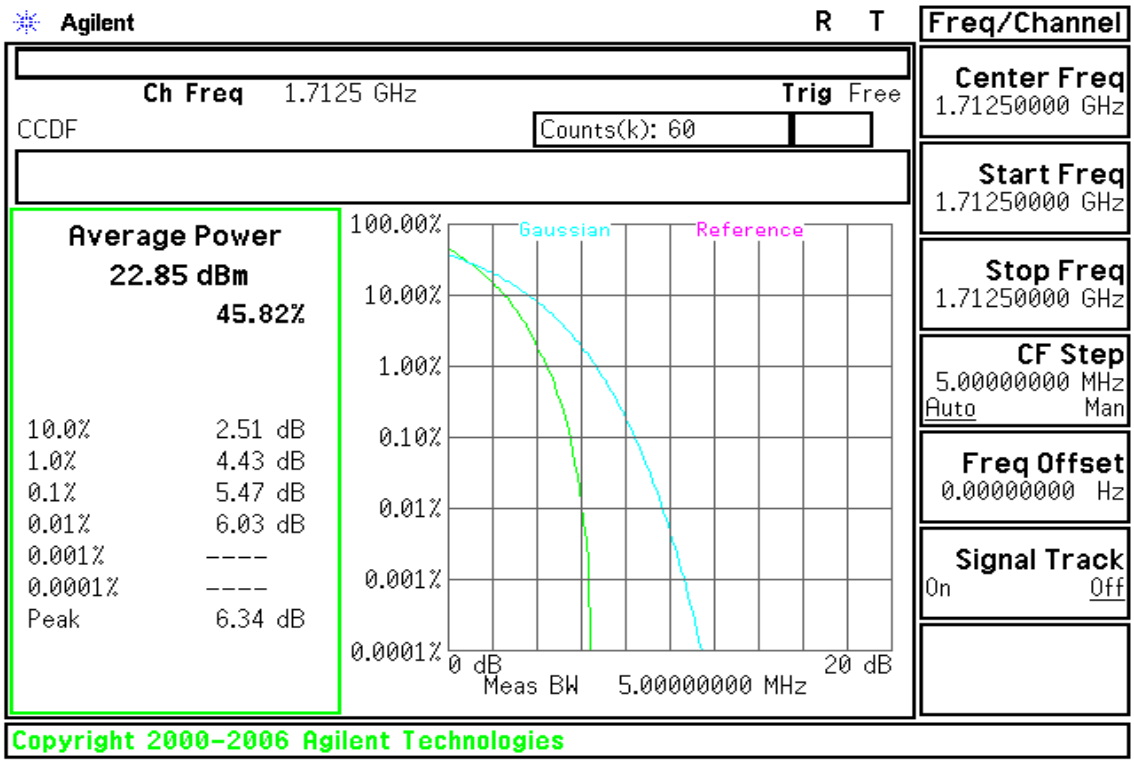
CH Mid



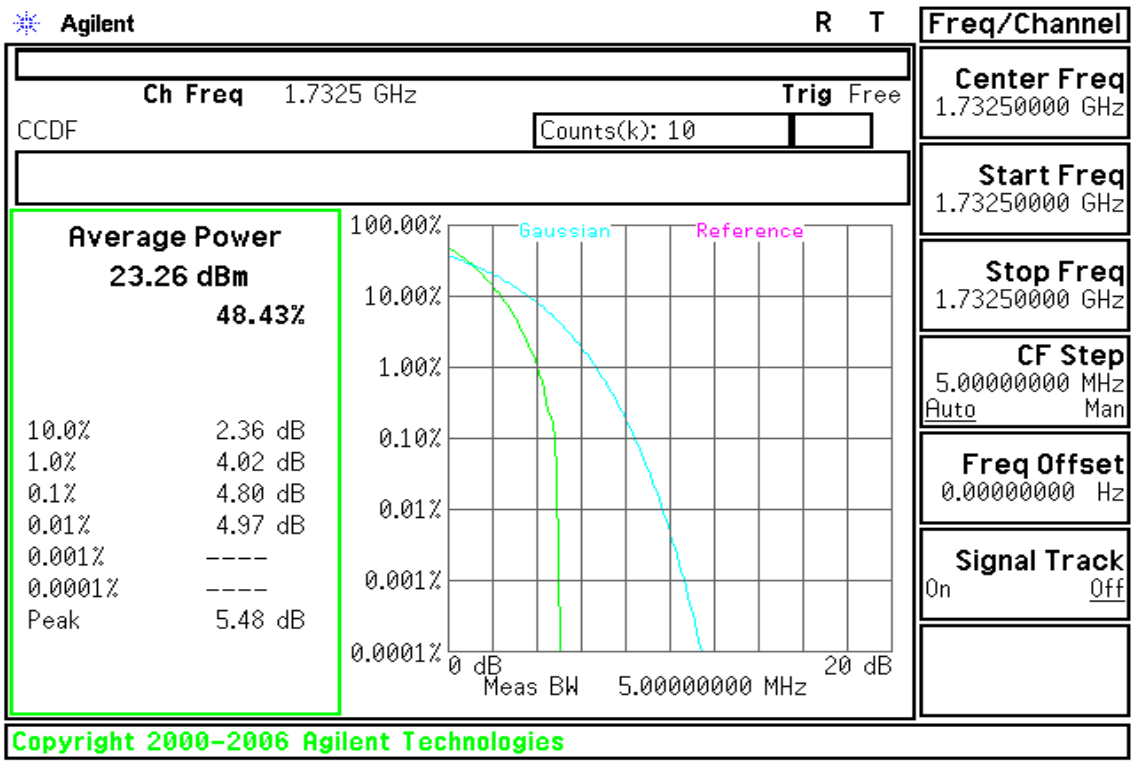
LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK

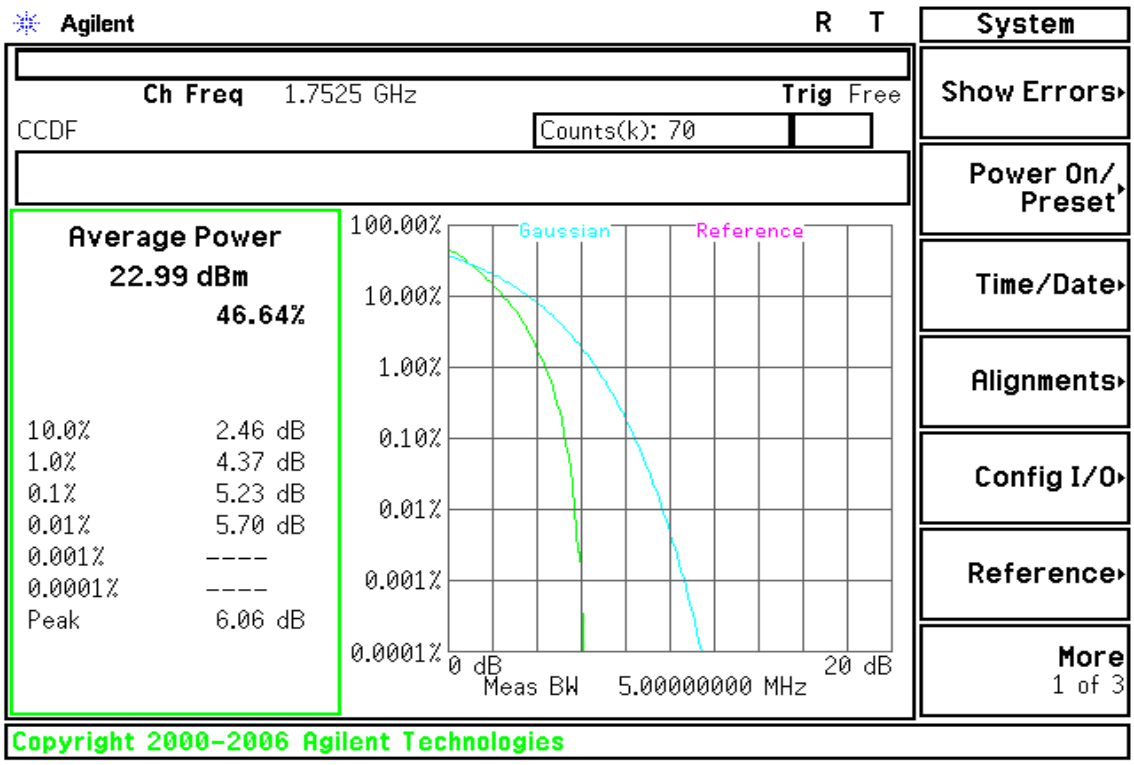
CH Low



CH Mid

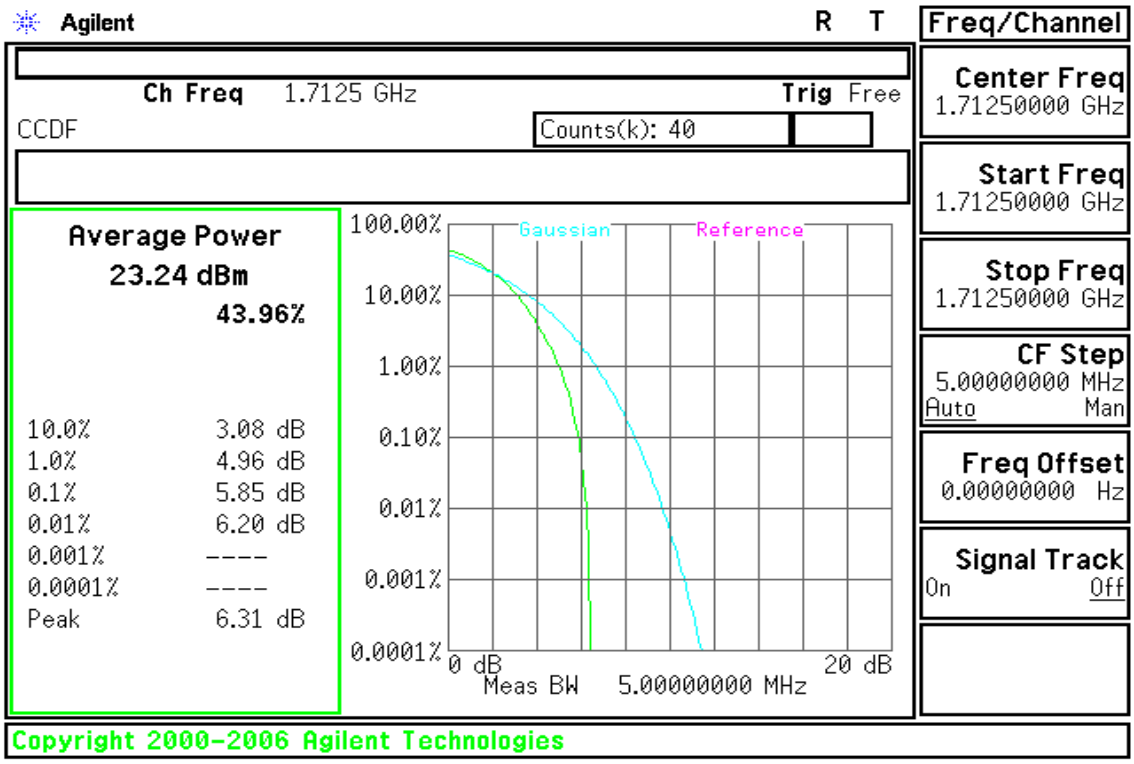


CH High

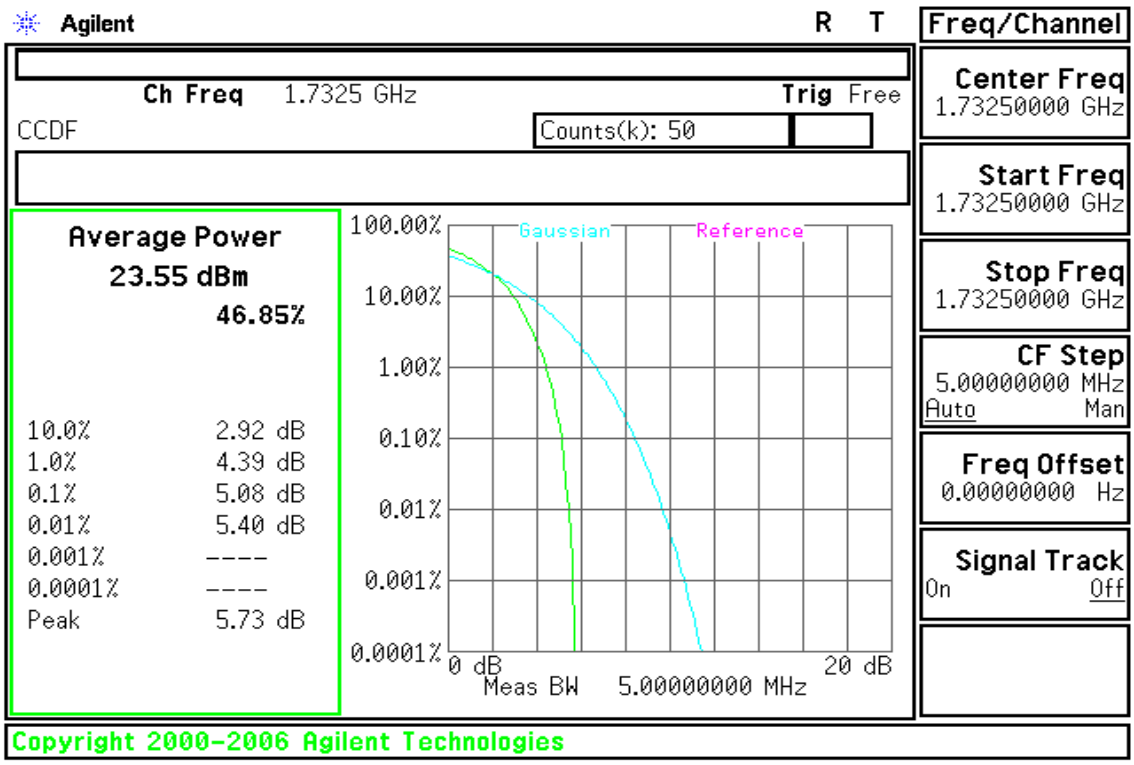


CHANNEL BANDWIDTH: 5MHz / 16QAM

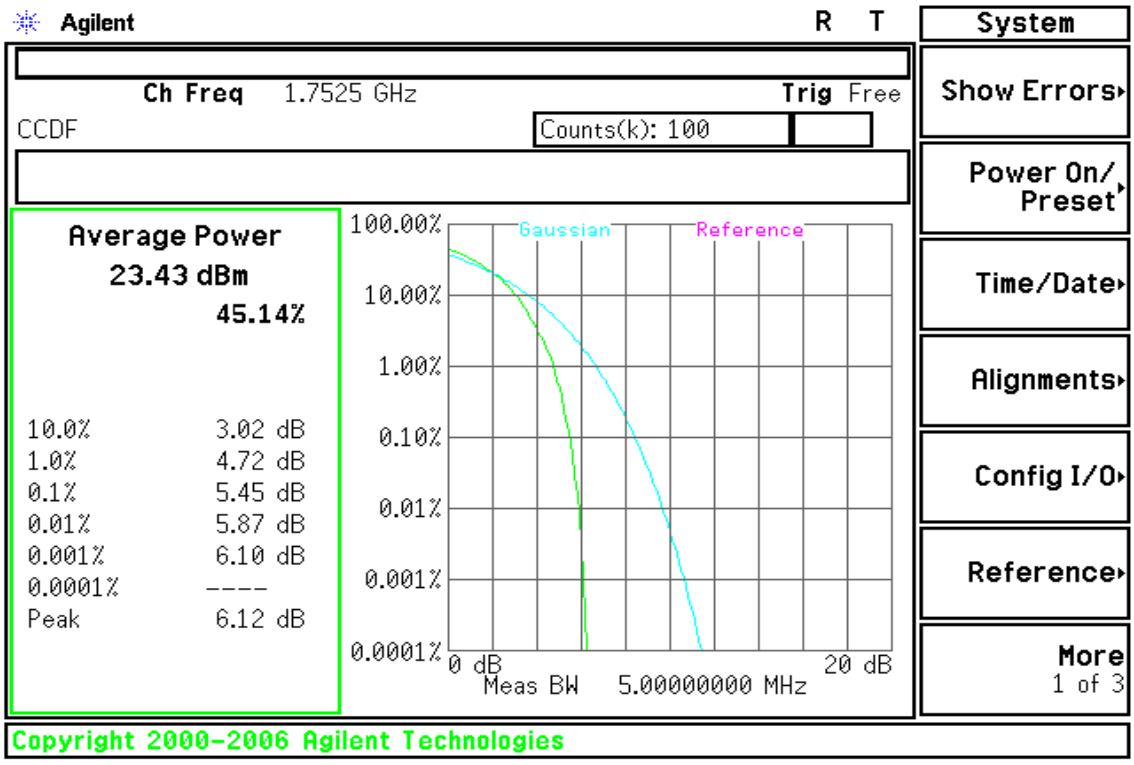
CH Low



CH Mid

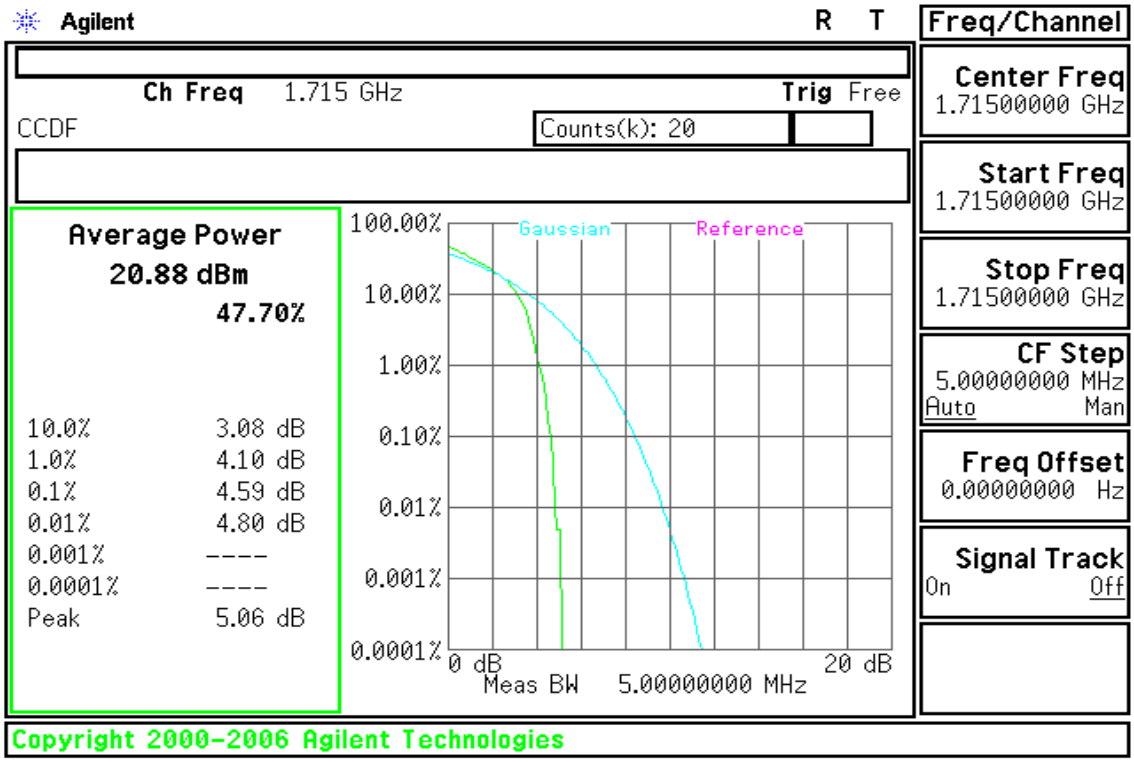


CH High

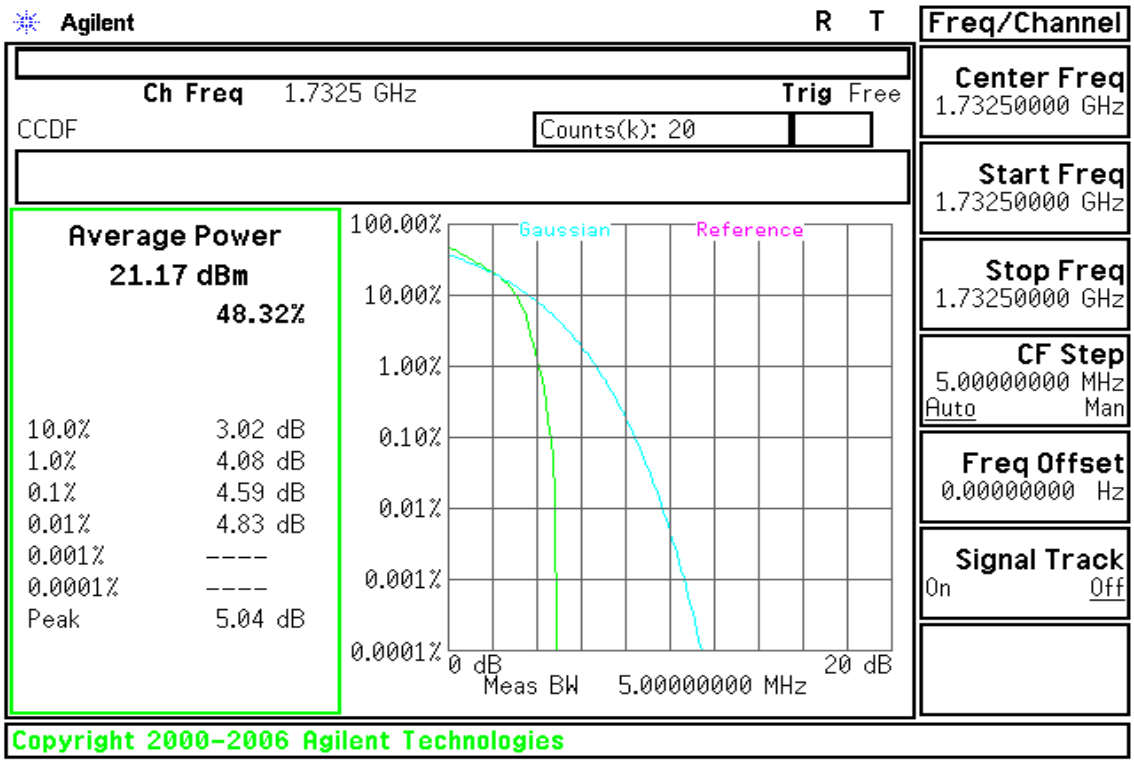


CHANNEL BANDWIDTH: 10MHz / QPSK

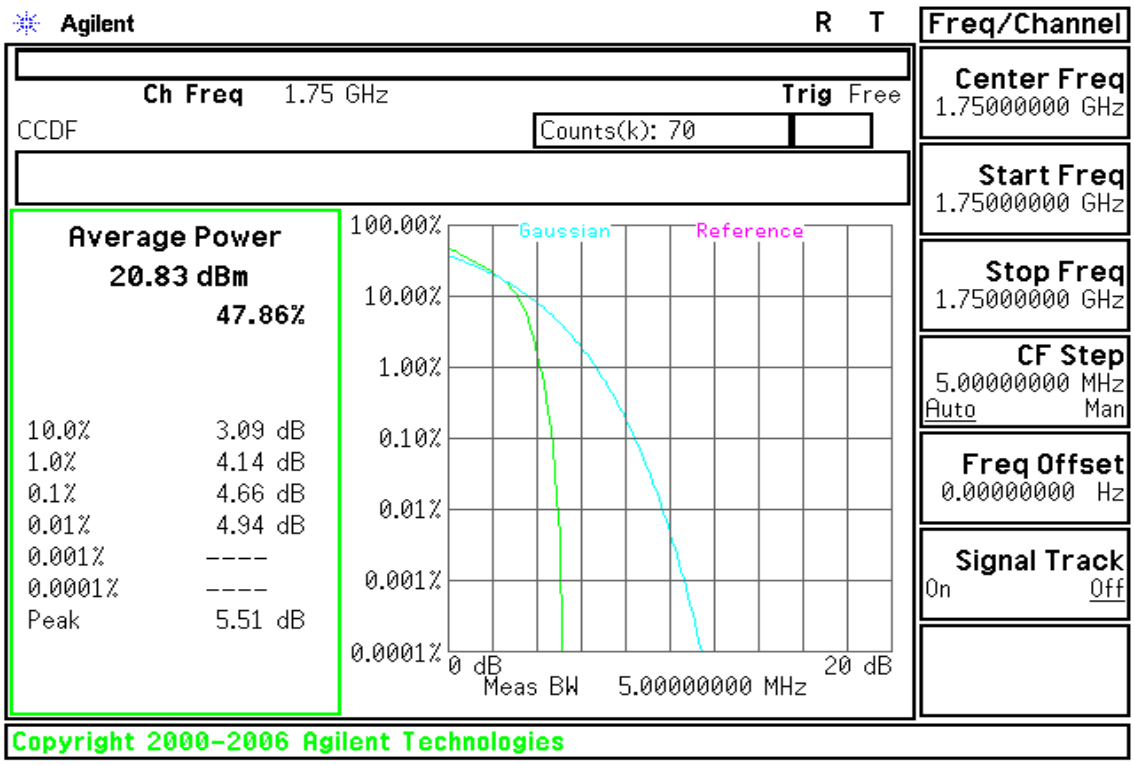
CH Low



CH Mid

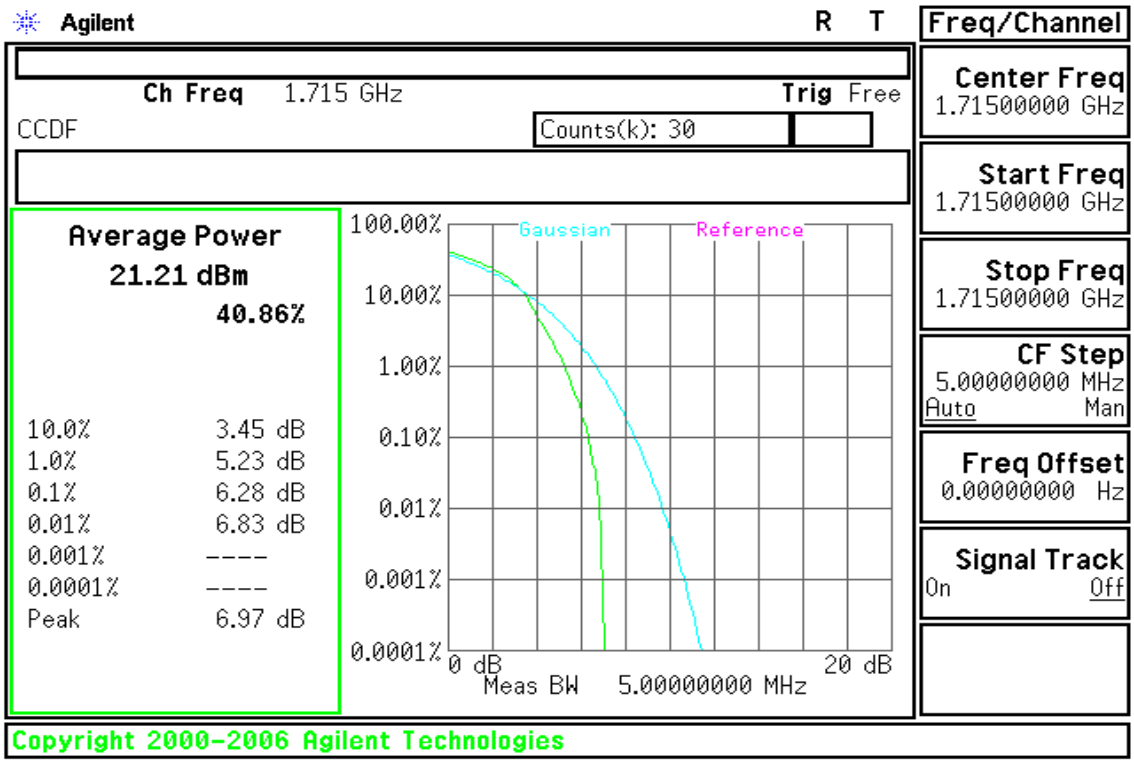


CH High

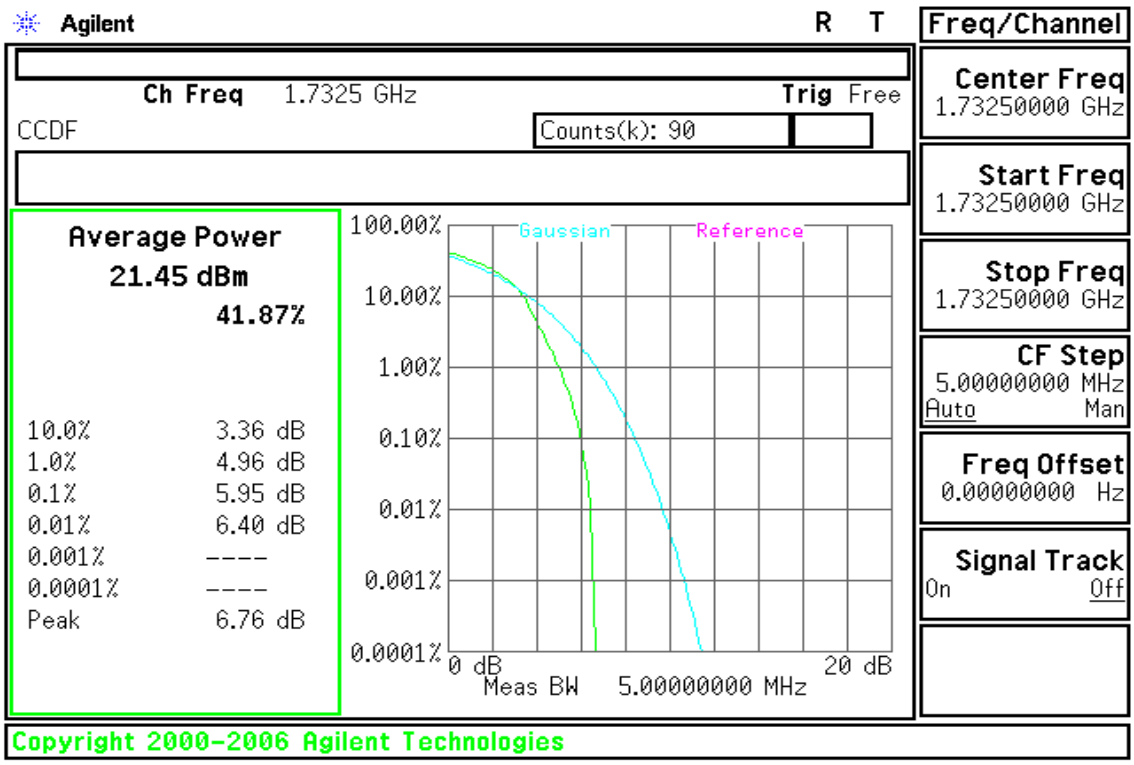


CHANNEL BANDWIDTH: 10MHz / 16QAM

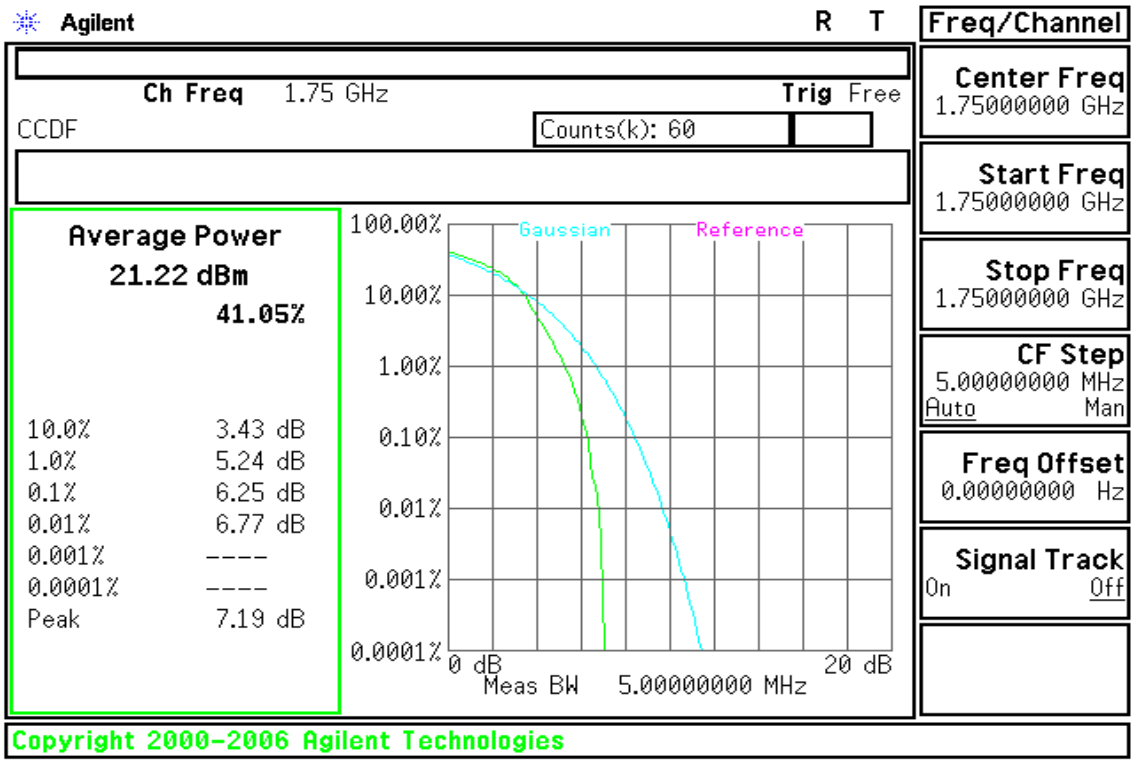
CH Low



CH Mid

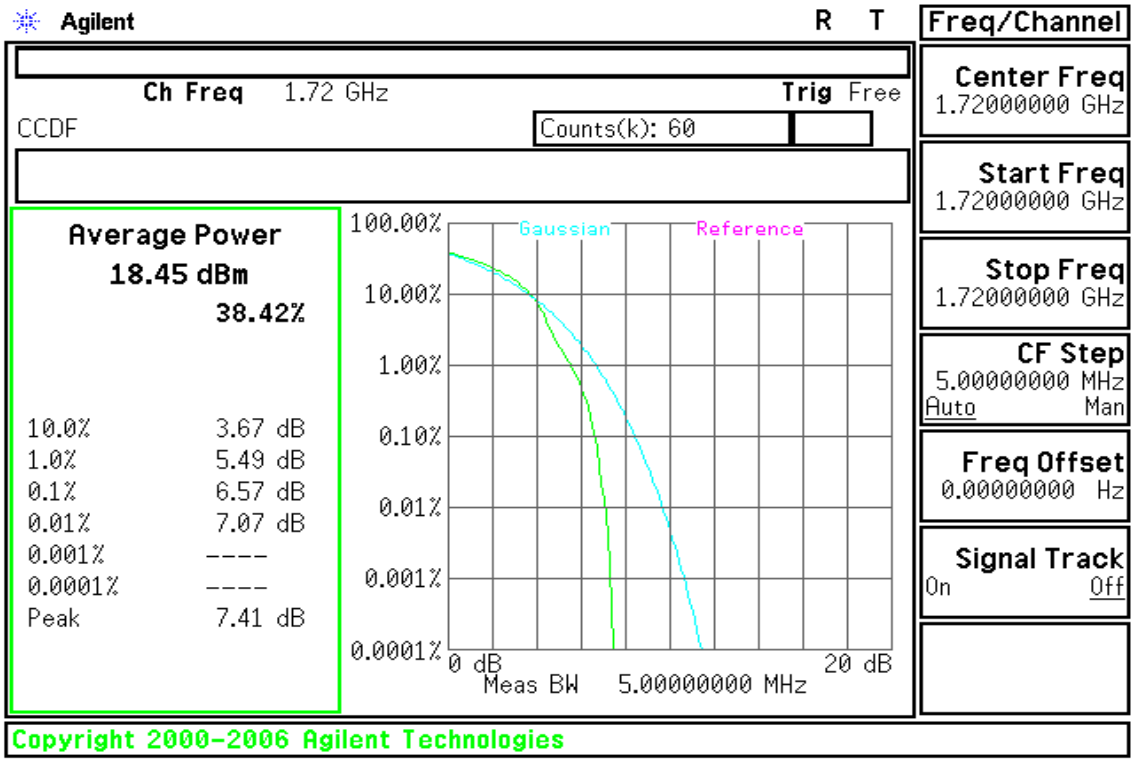


CH High

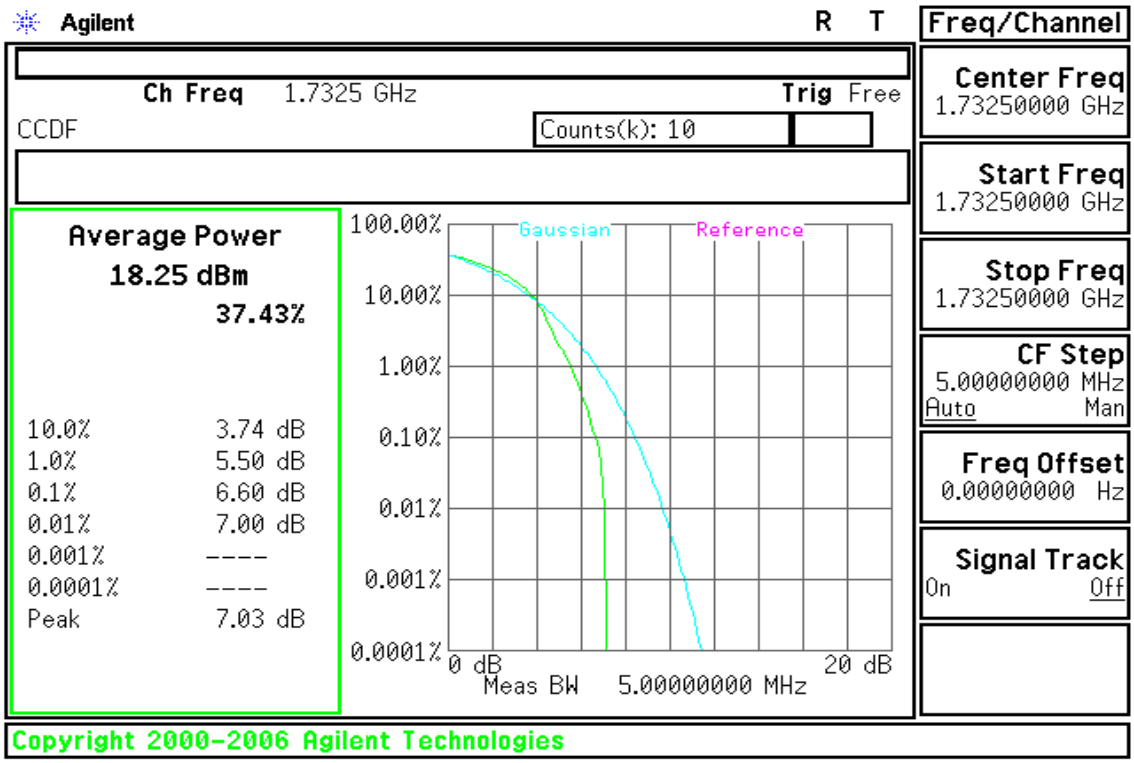


CHANNEL BANDWIDTH: 20MHz / QPSK

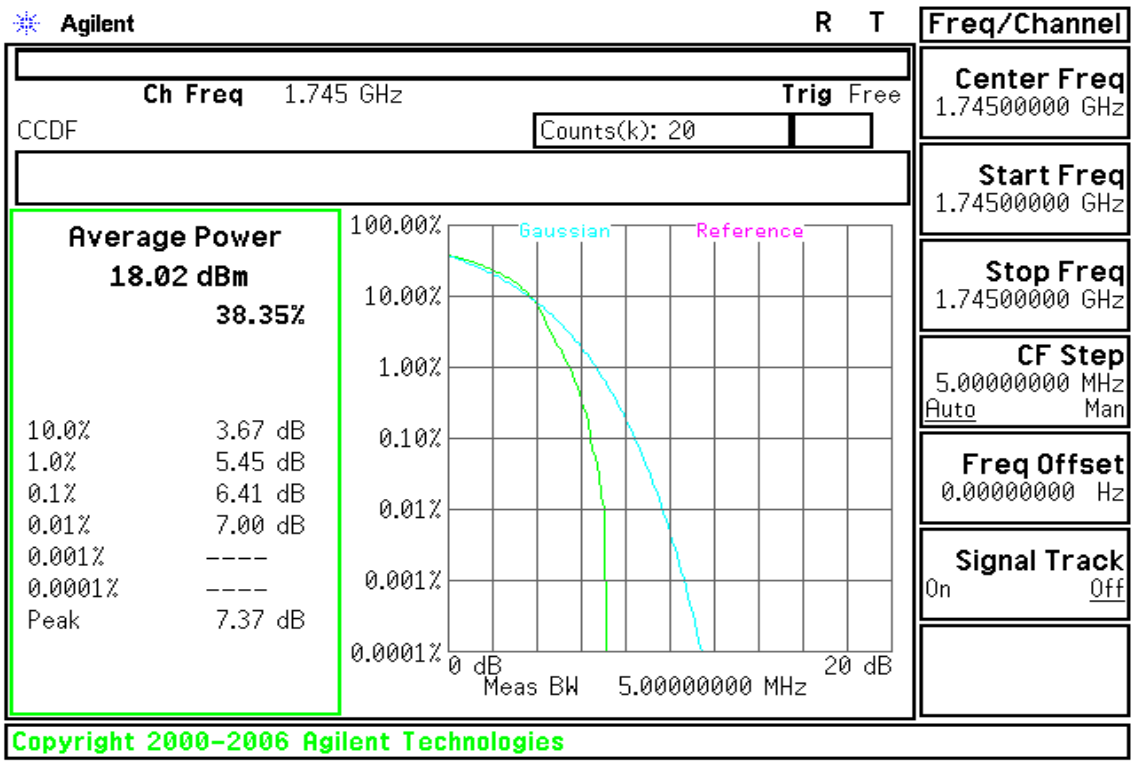
CH Low



CH Mid

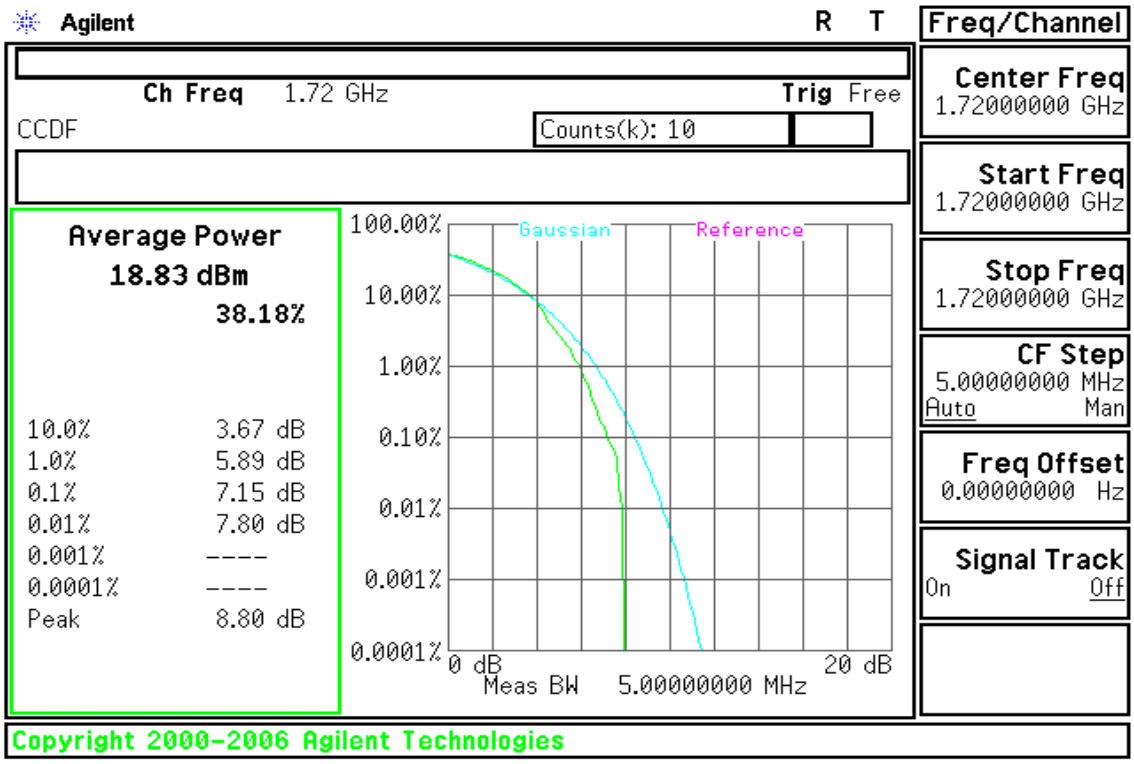


CH High

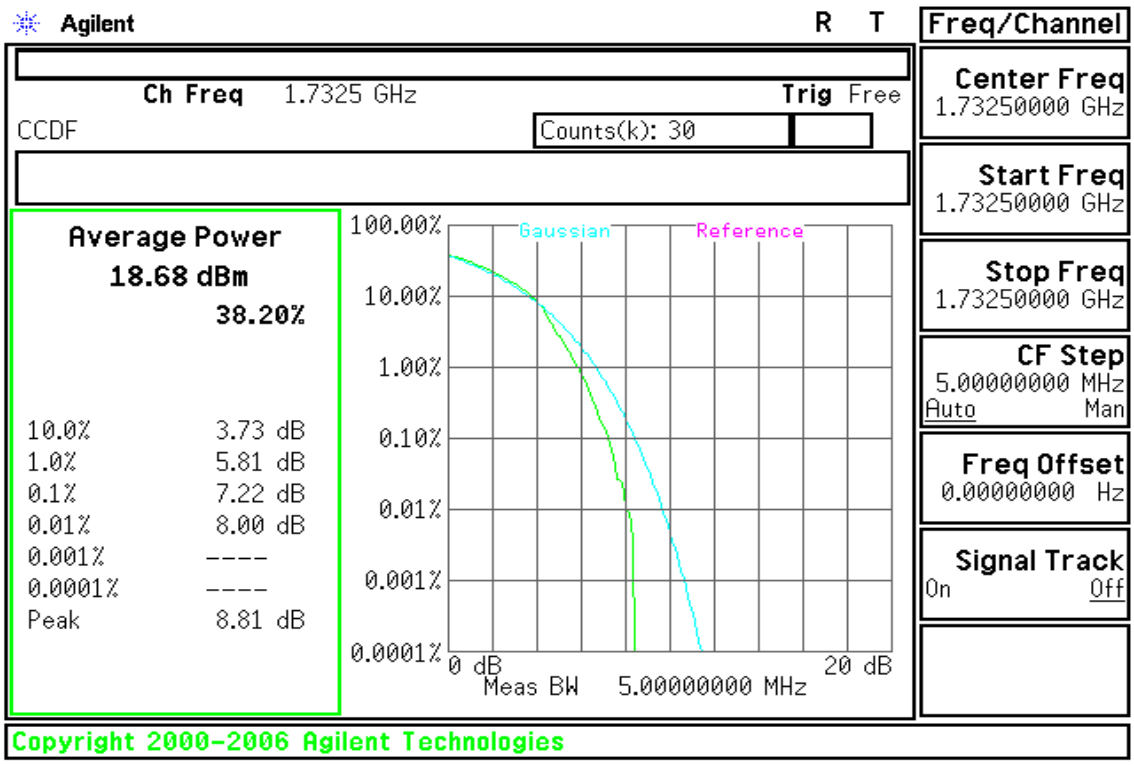


CHANNEL BANDWIDTH: 20MHz / 16QAM

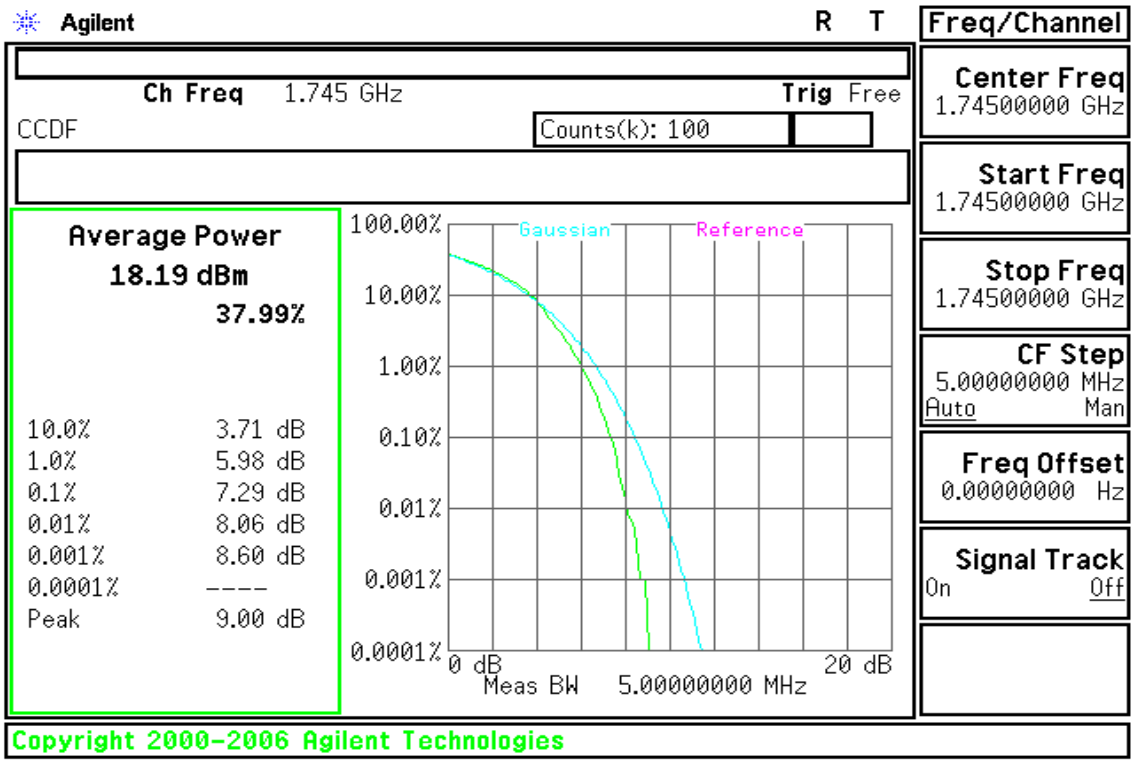
CH Low



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

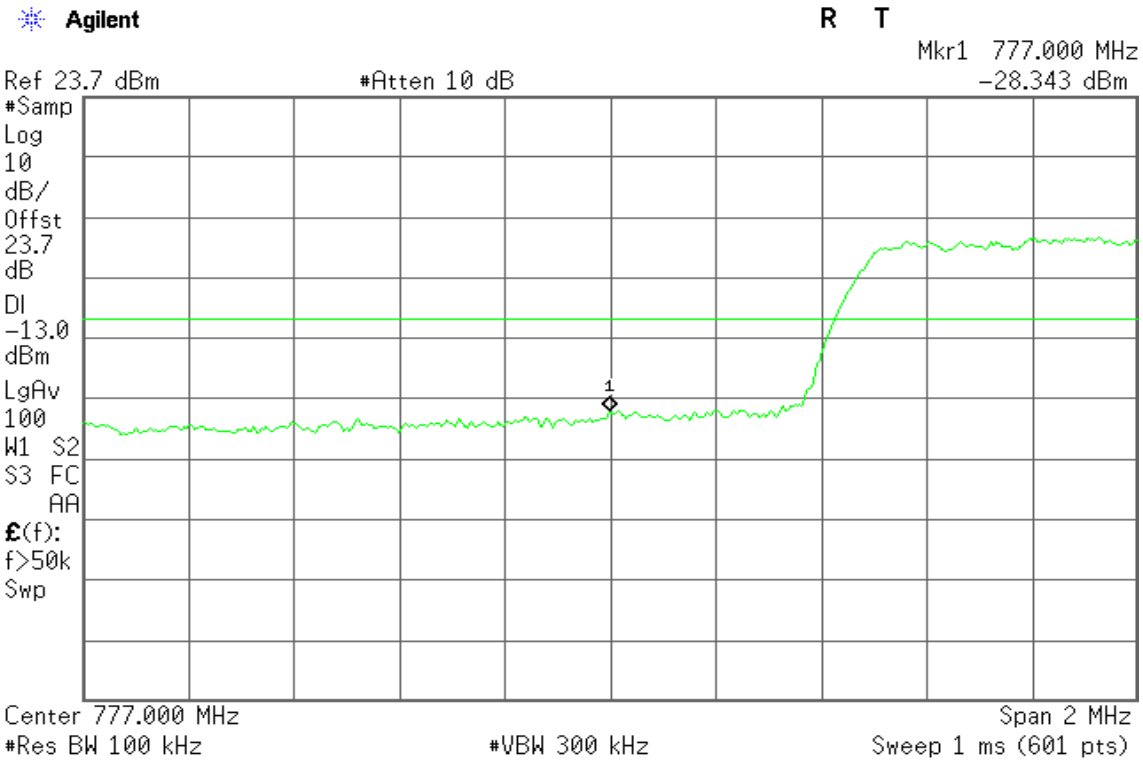
1. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with Spectrum Analyzer. All measurements were done at 2 channels (low and high operational frequency range.).
2. The band edge measurement used the power splitter via EUT RF power connector between 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:

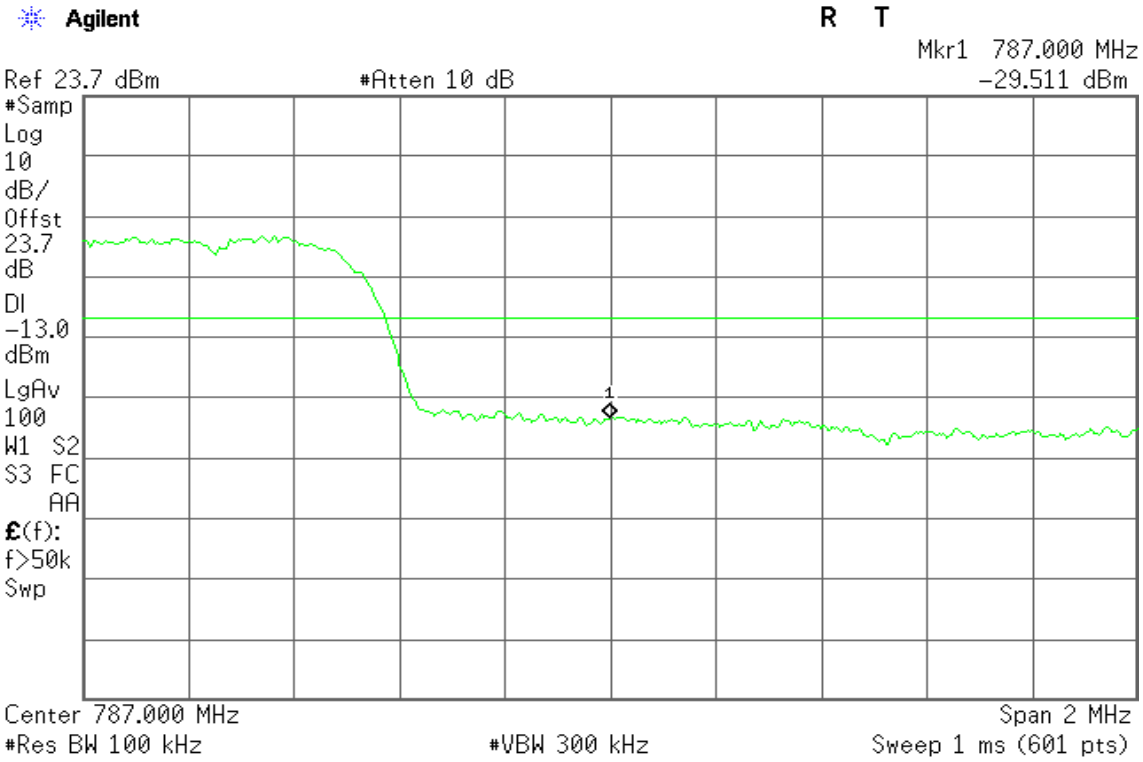
LTE Band 13

CHANNEL BANDWIDTH: 10MHz / QPSK / FULL RB ALLOCATED

LOWER BAND EDGE



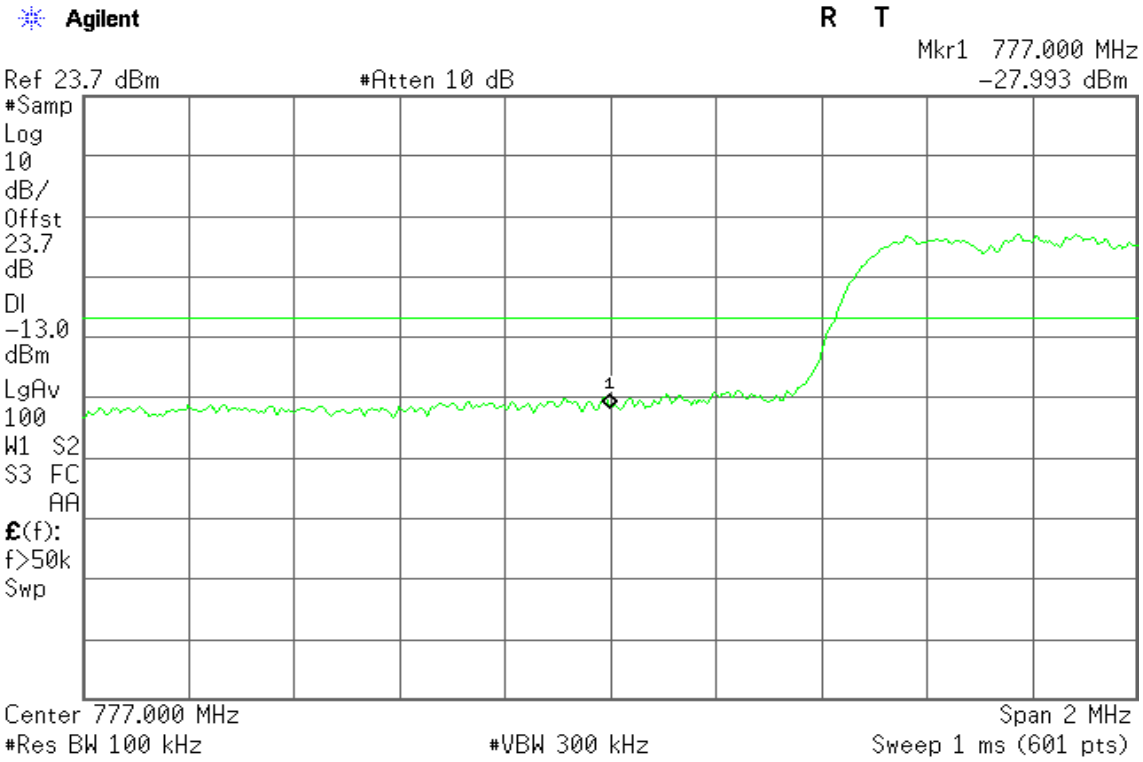
HIGHER BAND EDGE



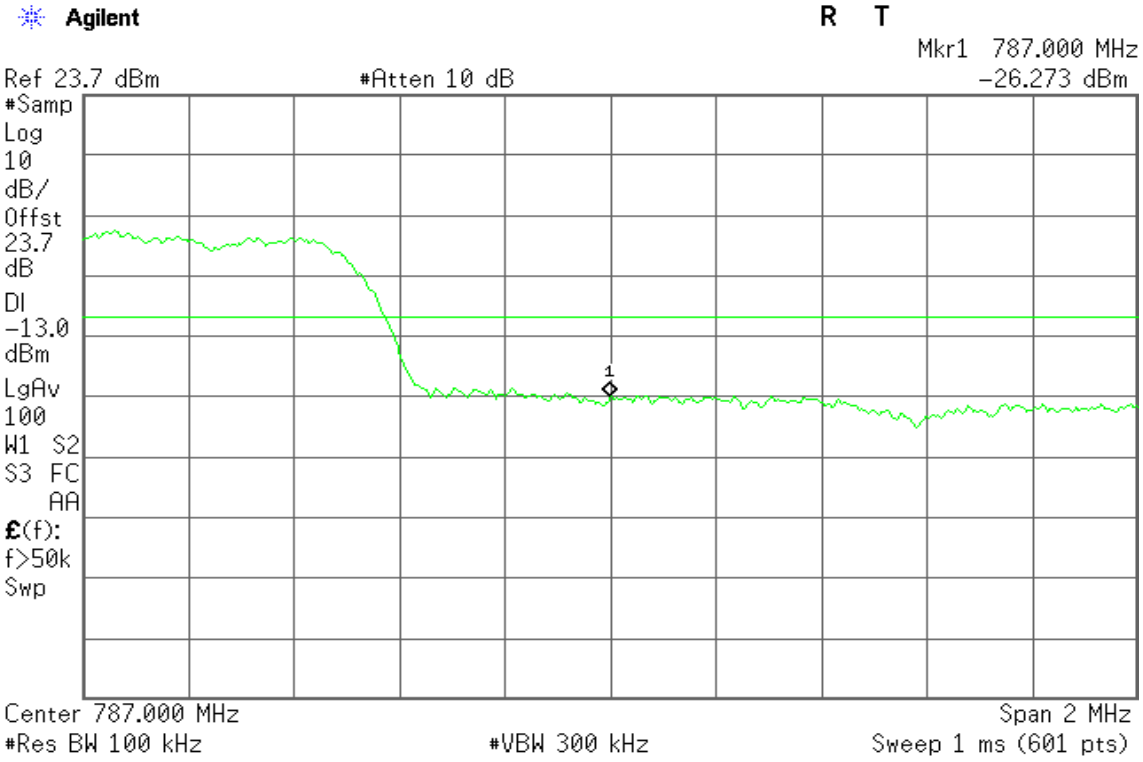
LTE Band 13

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

LOWER BAND EDGE



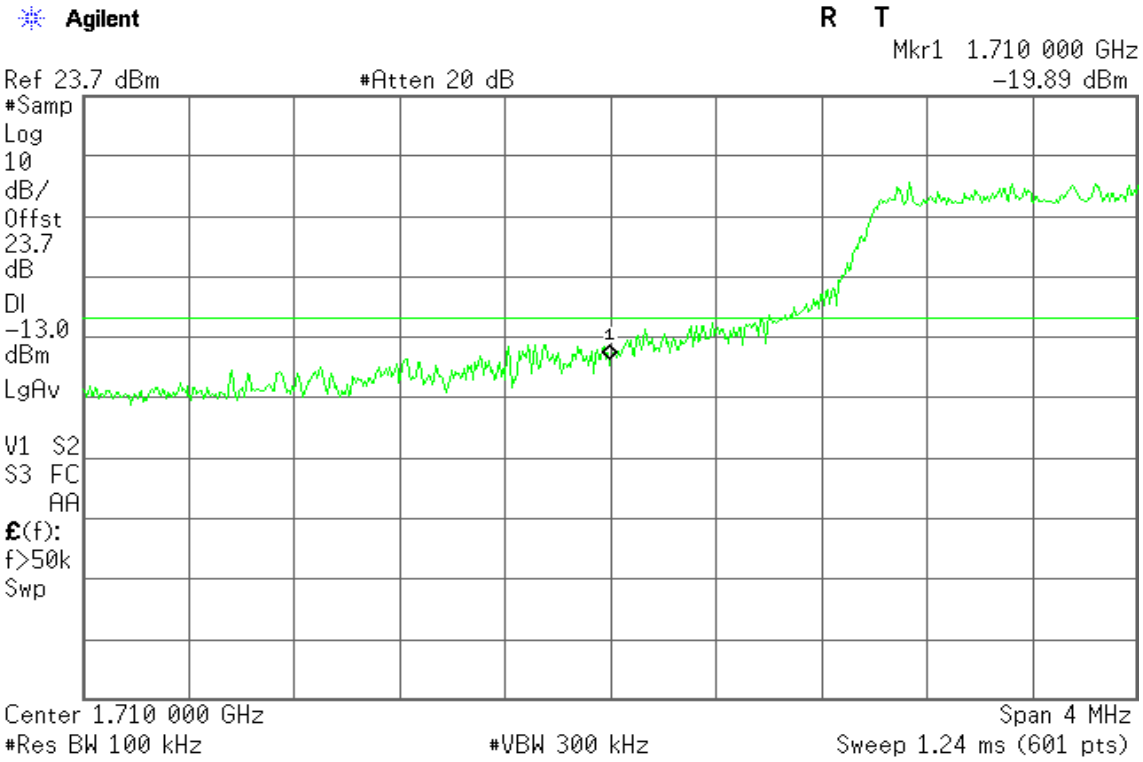
HIGHER BAND EDGE



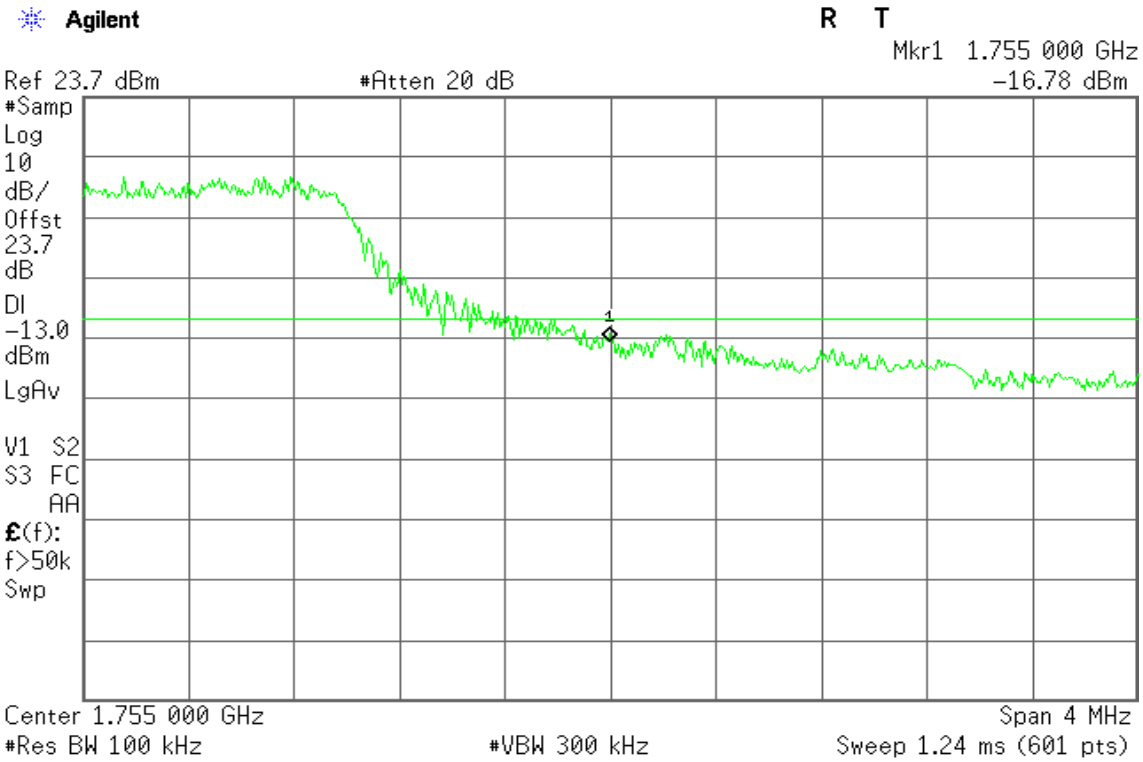
LTE Band 4

CHANNEL BANDWIDTH: 20MHz / QPSK / FULL RB ALLOCATION

LOWER BAND EDGE

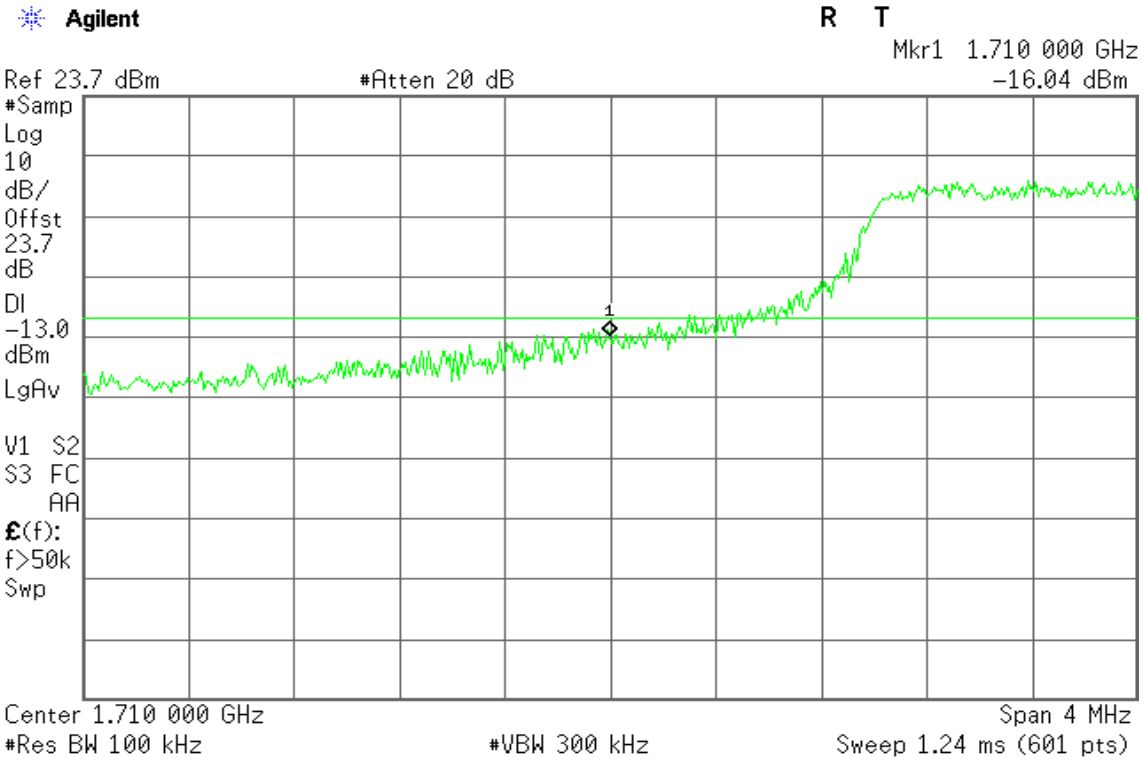


HIGHER BAND EDGE

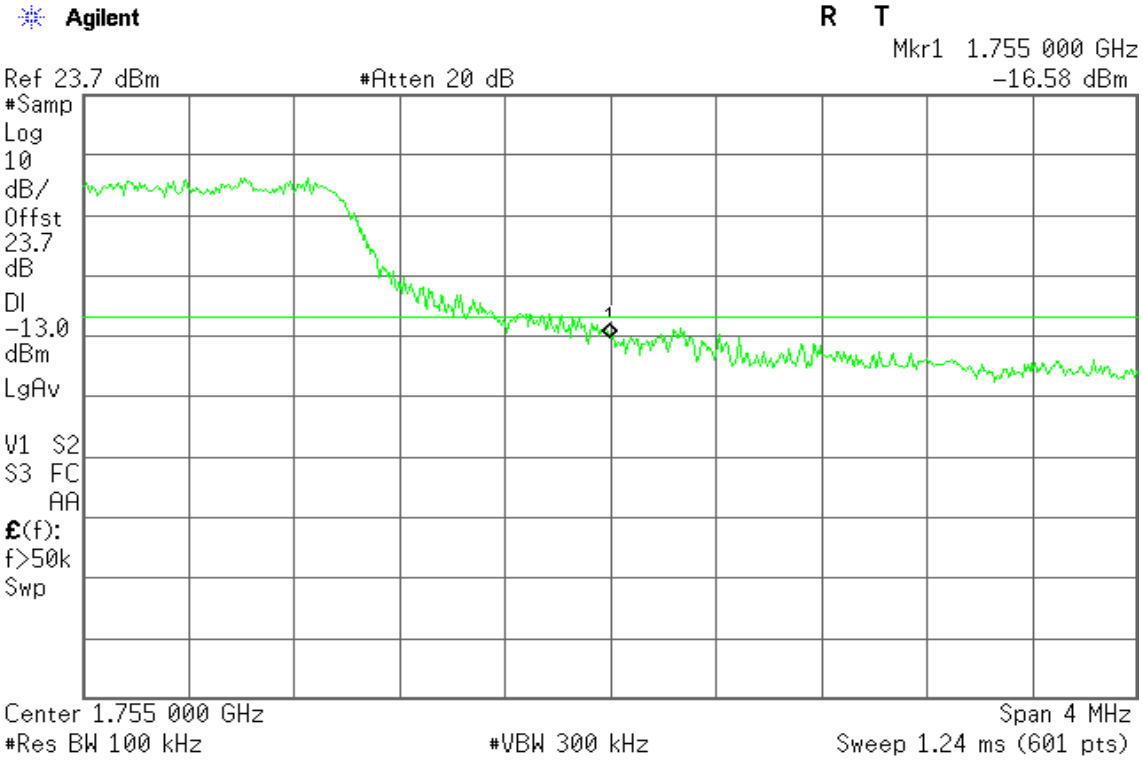


CHANNEL BANDWIDTH: 20MHz / 16QAM / FULL RB ALLOCATION

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

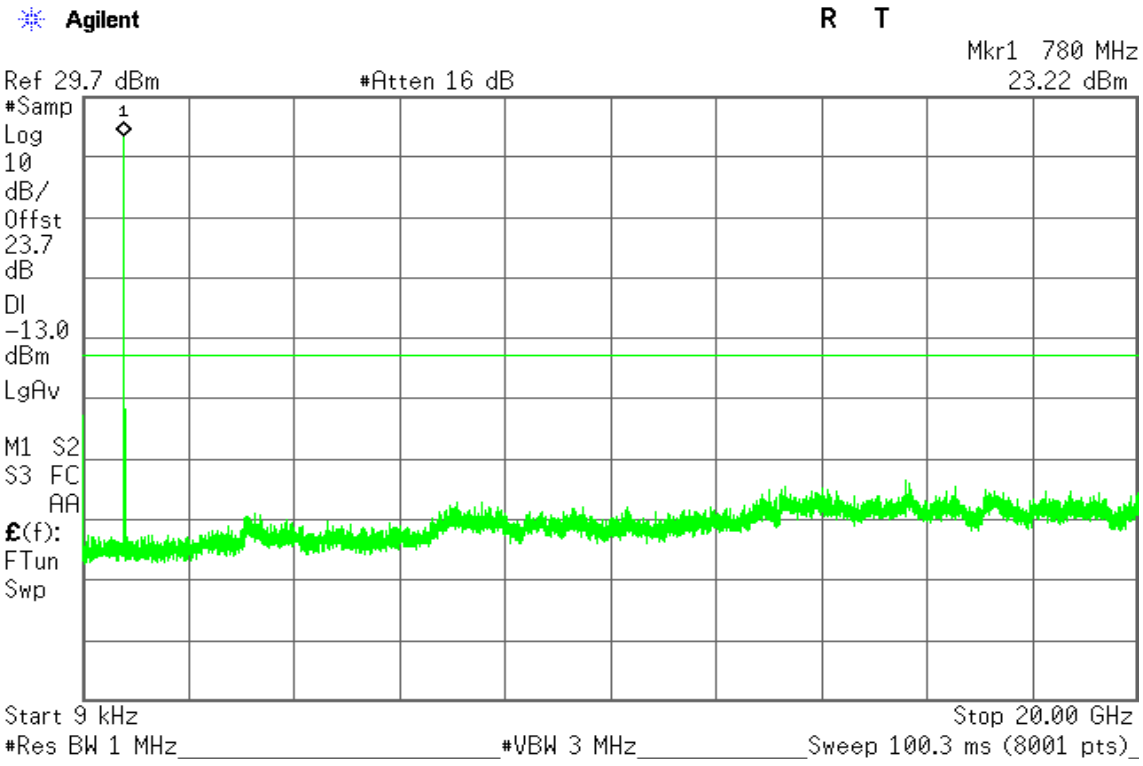
1. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high operational frequency range.).
2. The conducted spurious emission used the power splitter via EUT RF power connector 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

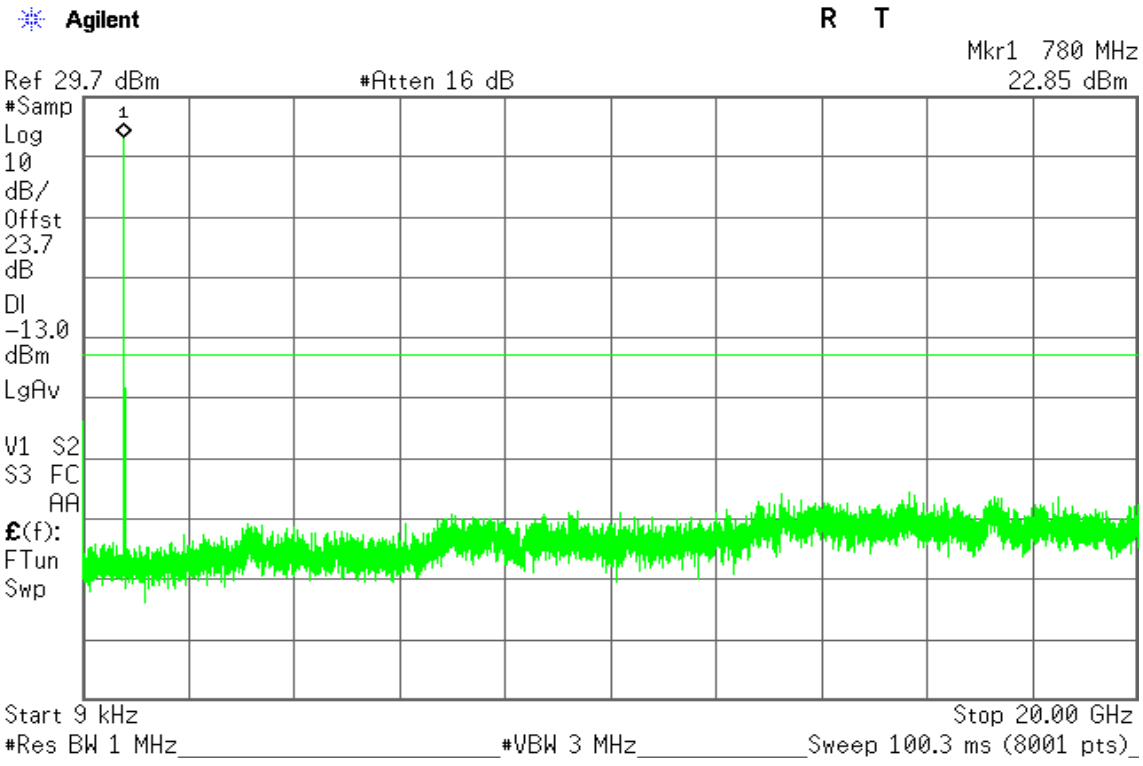
LTE Band 13

CHANNEL BANDWIDTH: 5MHz / QPSK

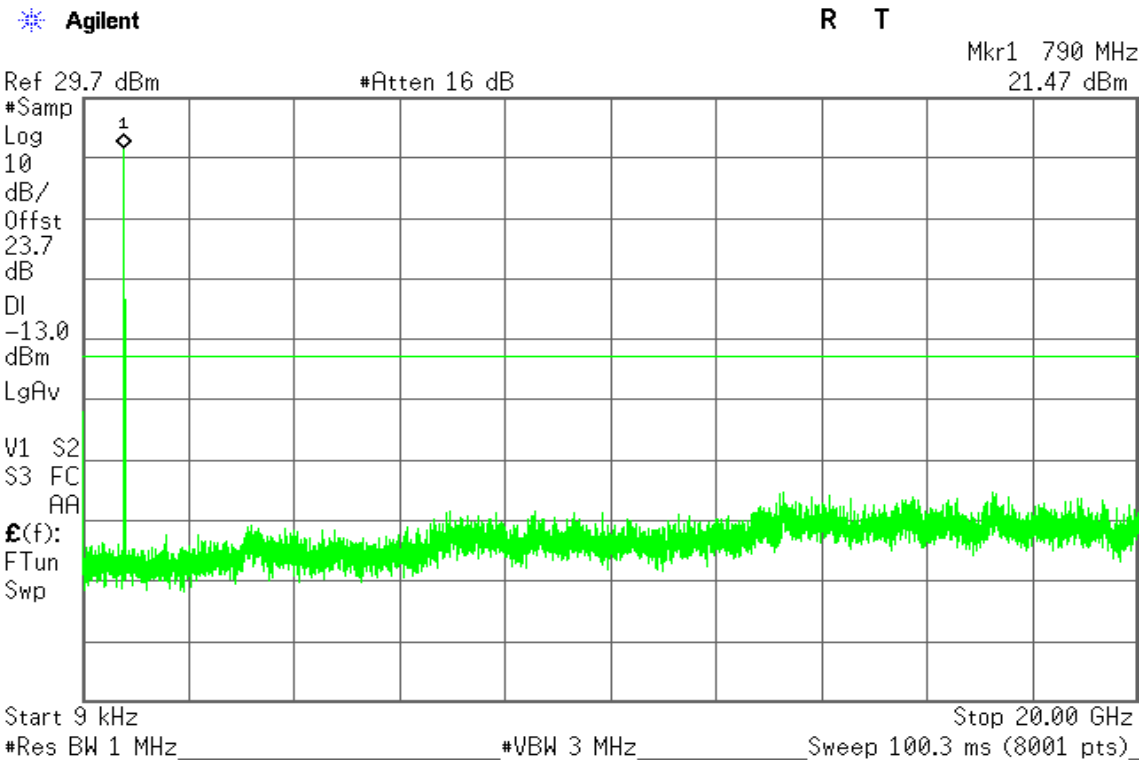
CH Low



CH Mid

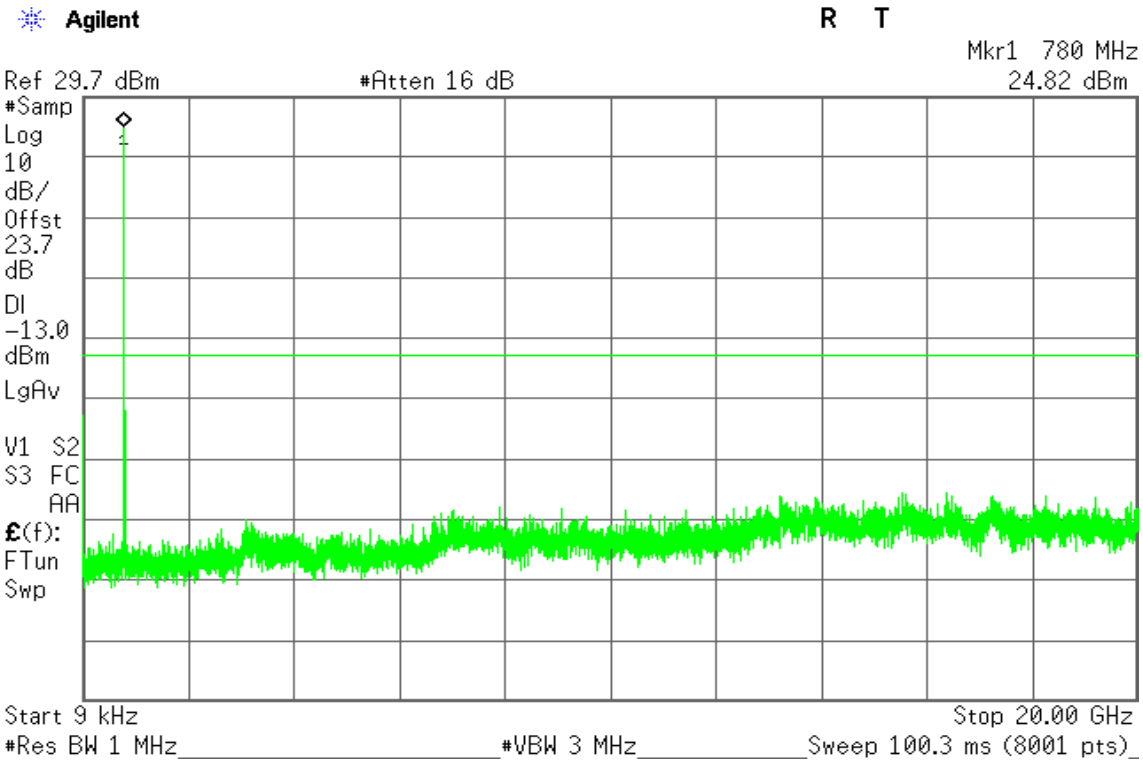


CH High

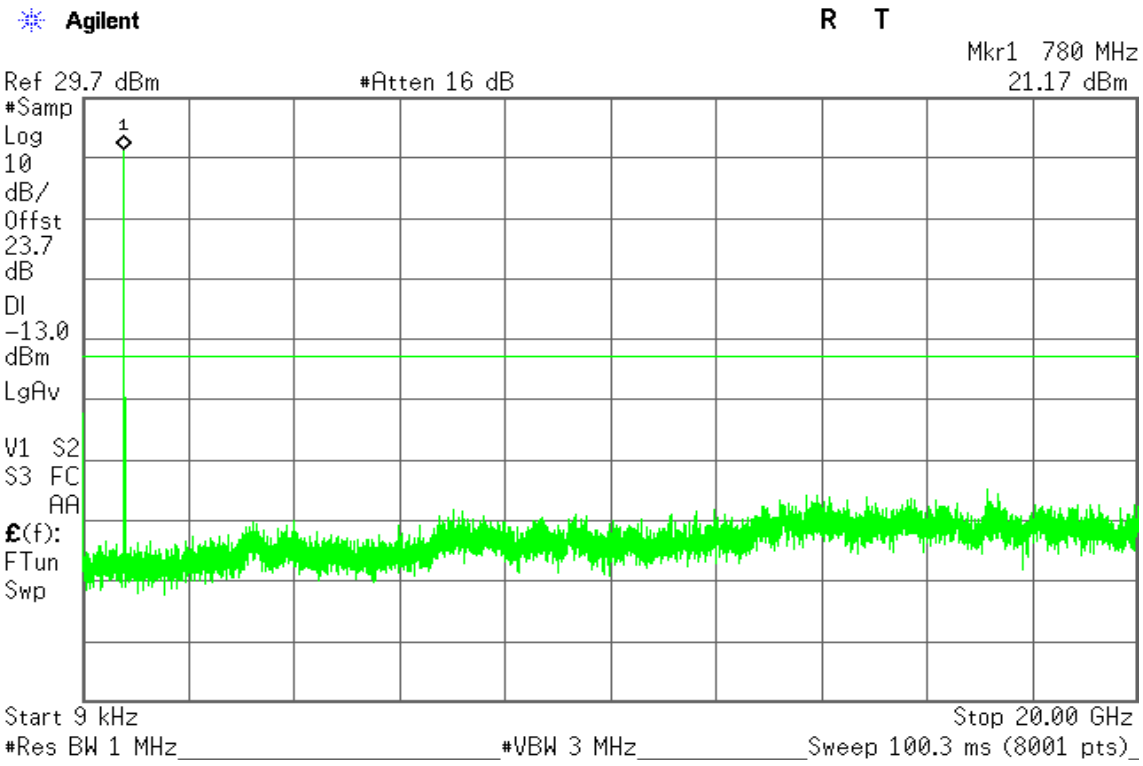


CHANNEL BANDWIDTH: 5MHz / 16QAM

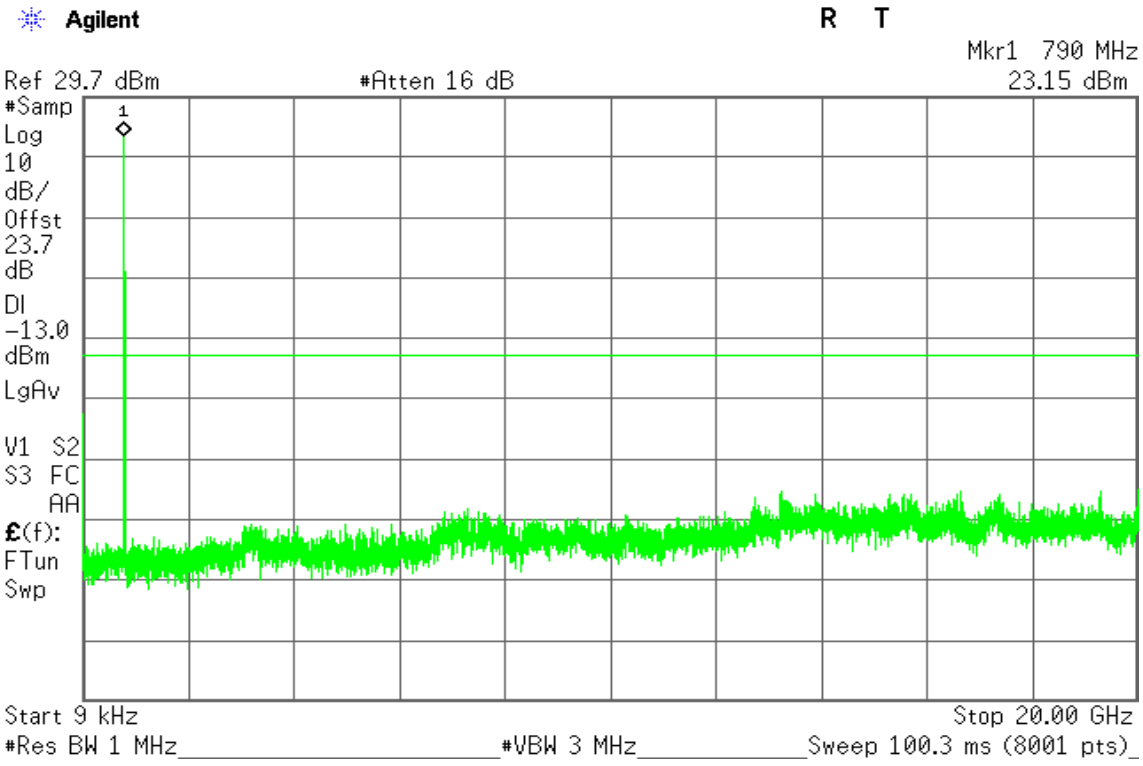
CH Low



CH Mid

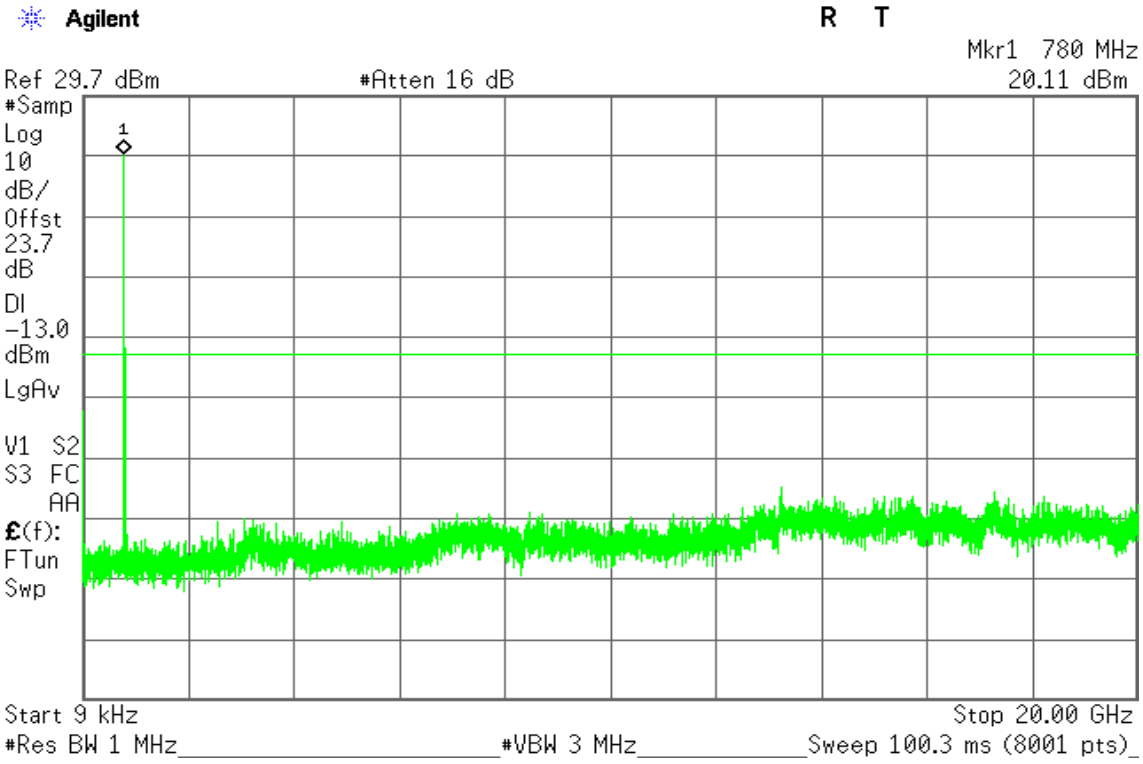


CH High



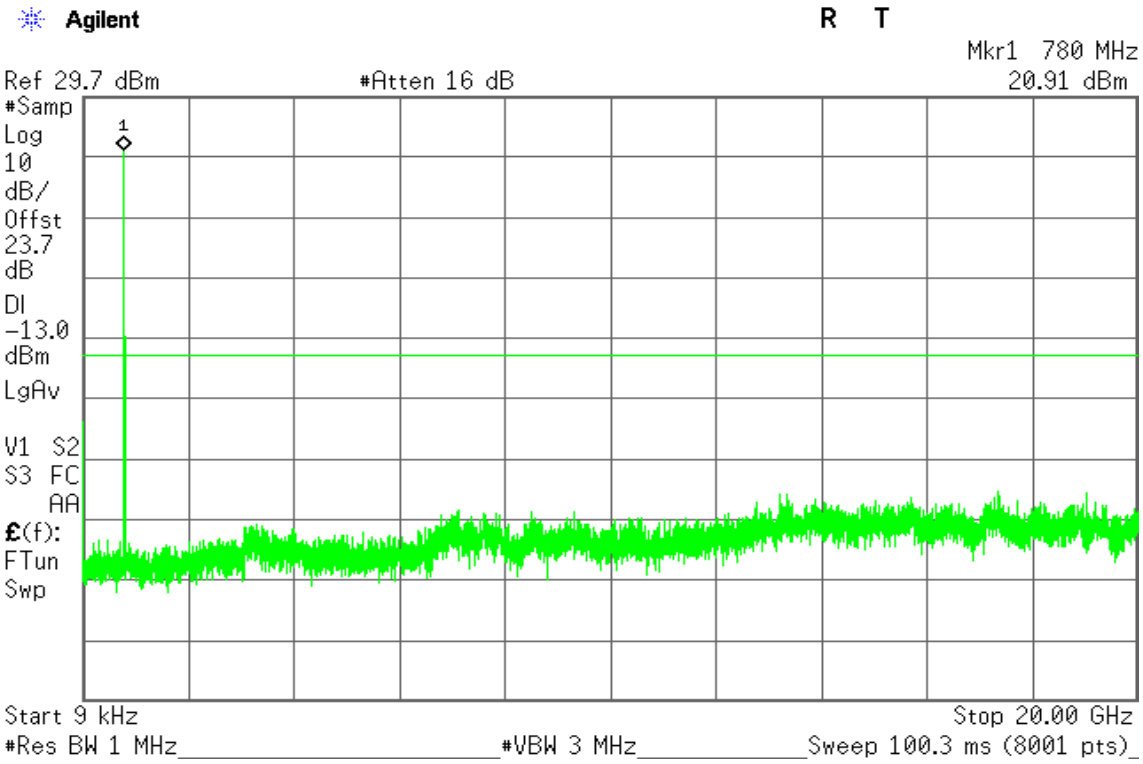
CHANNEL BANDWIDTH: 10MHz / QPSK

CH Mid



CHANNEL BANDWIDTH: 10MHz / 16QAM

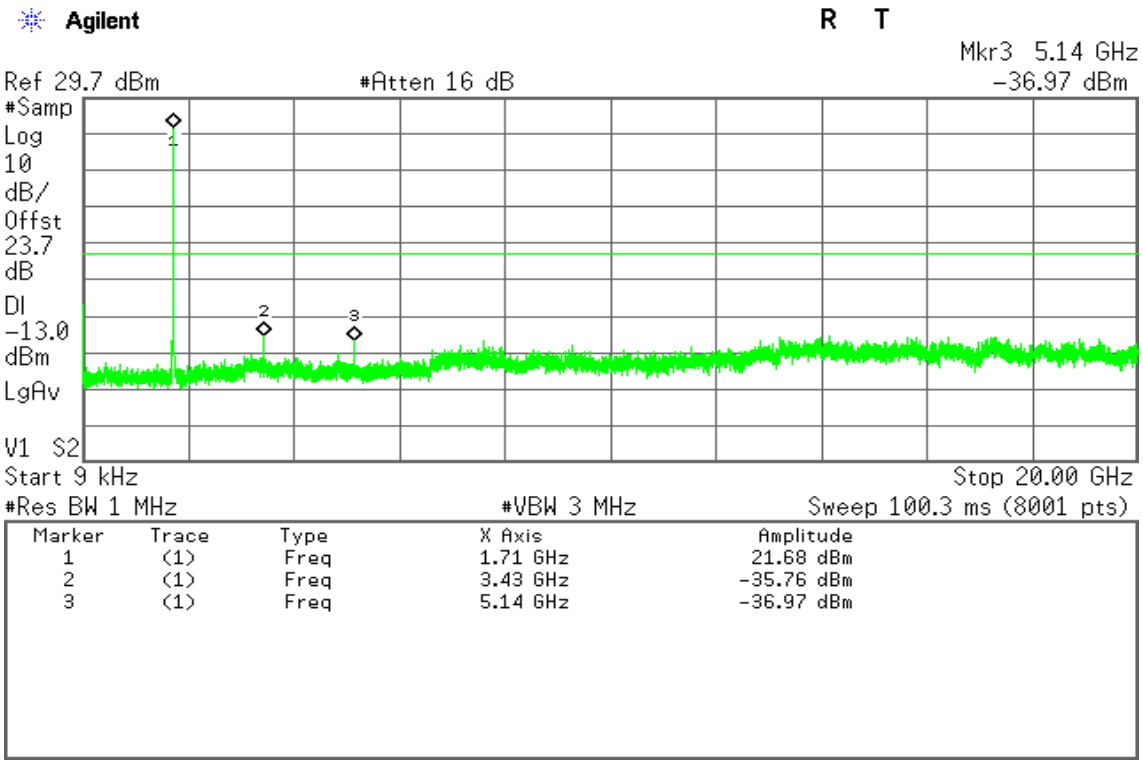
CH Mid



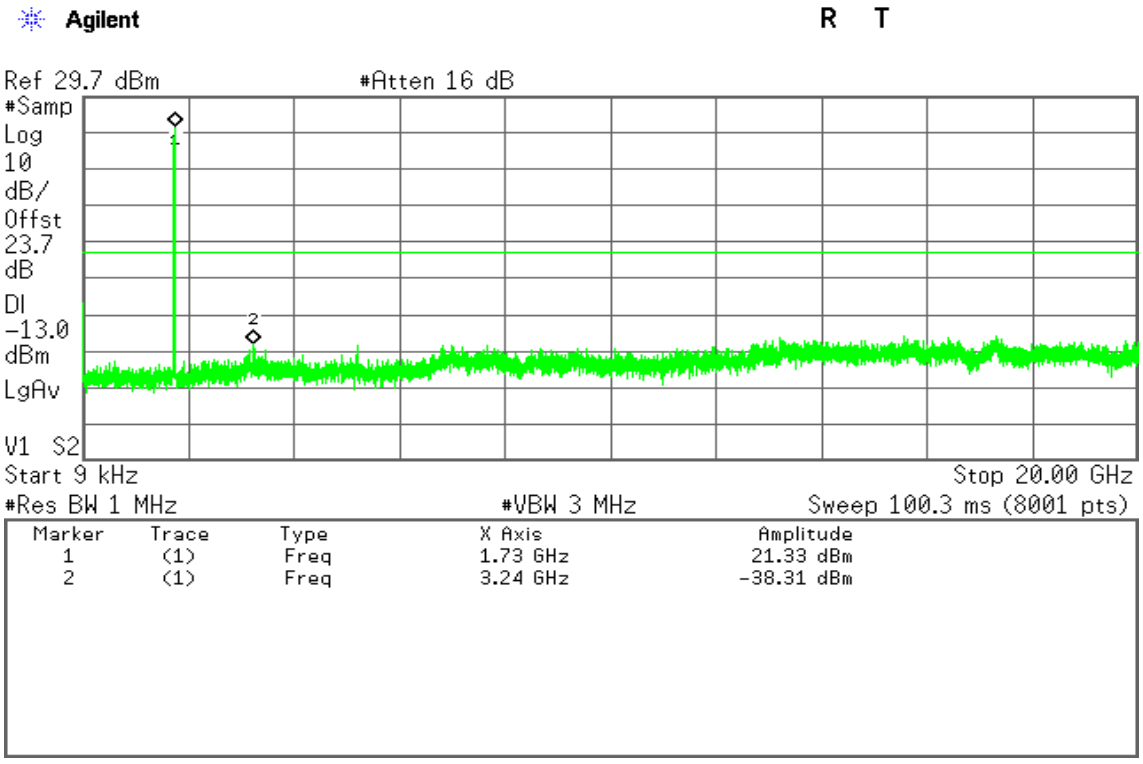
LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK

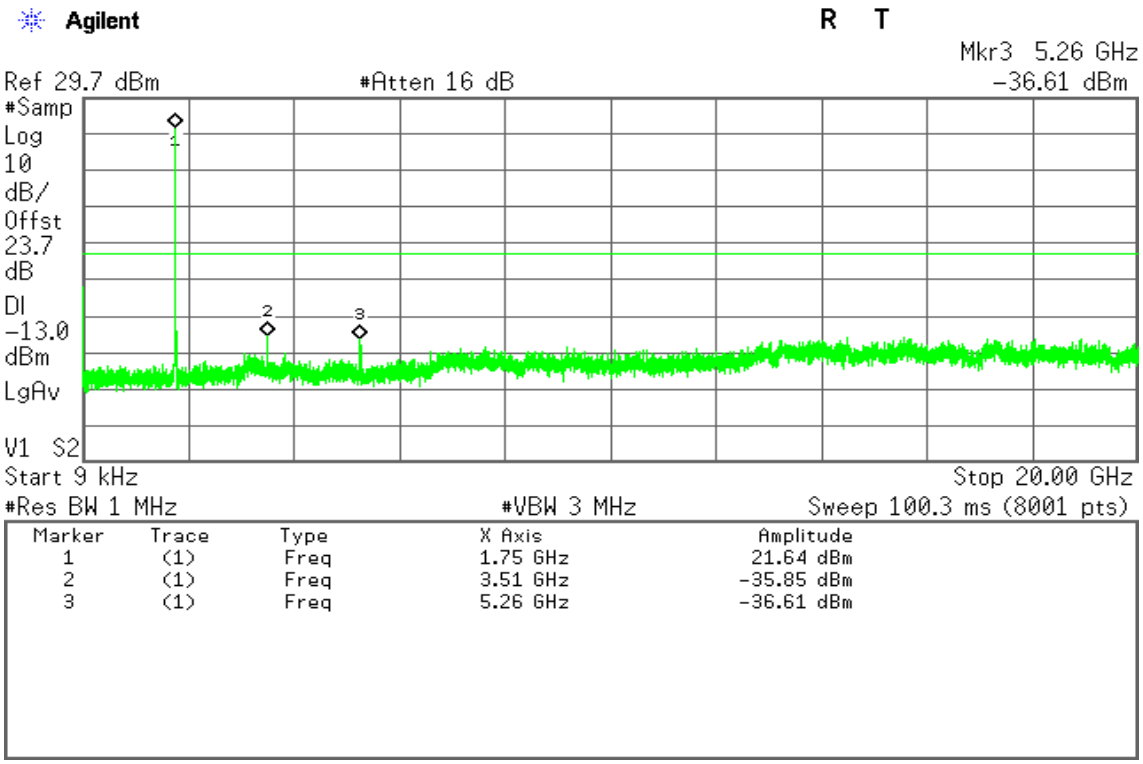
CH Low



CH Mid

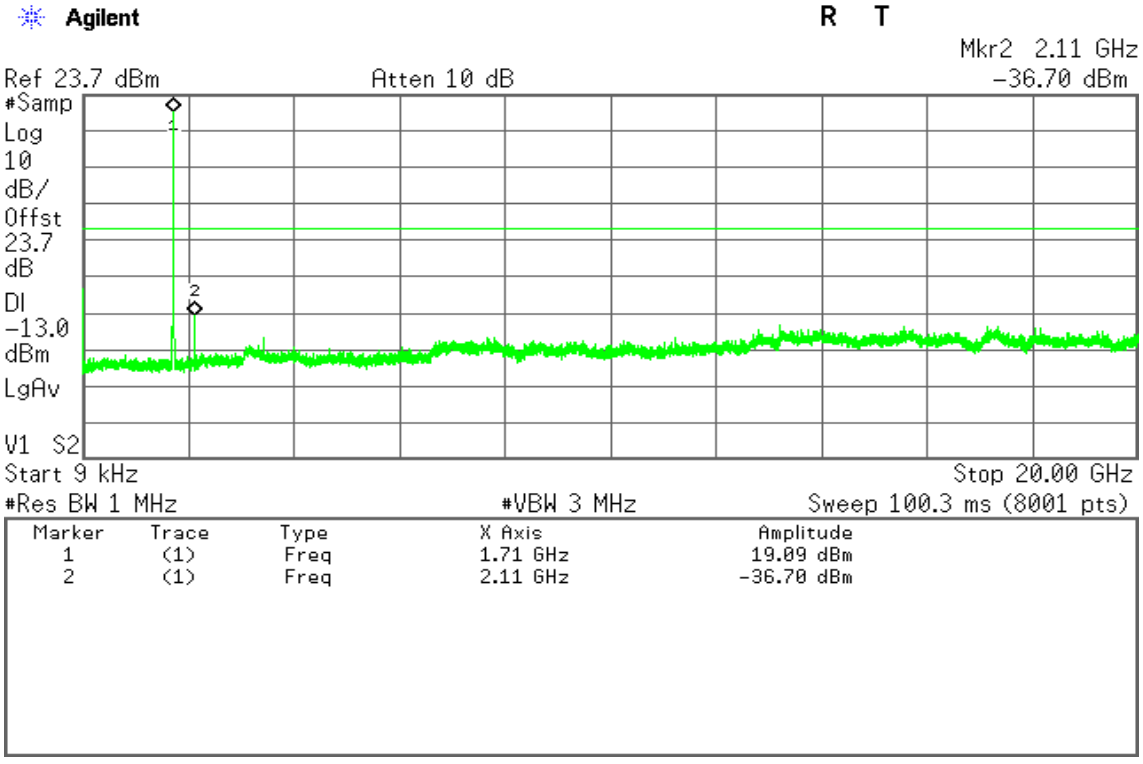


CH High

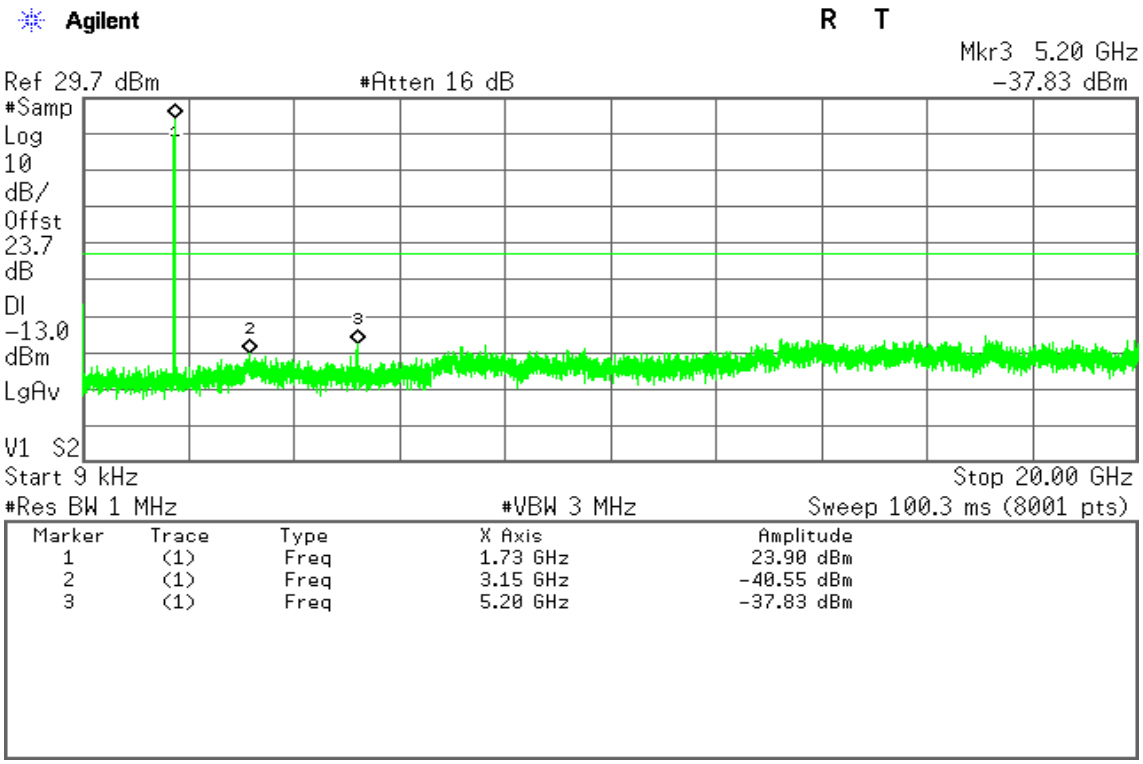


CHANNEL BANDWIDTH: 5MHz / 16QAM

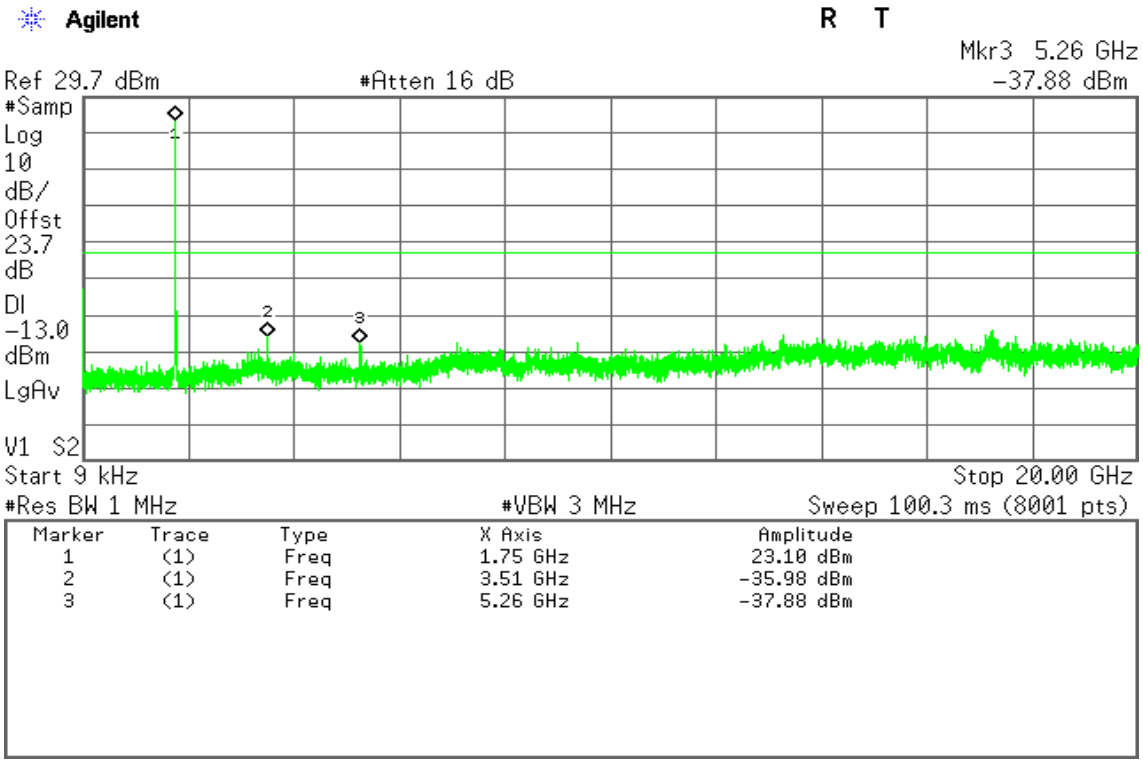
CH Low



CH Mid

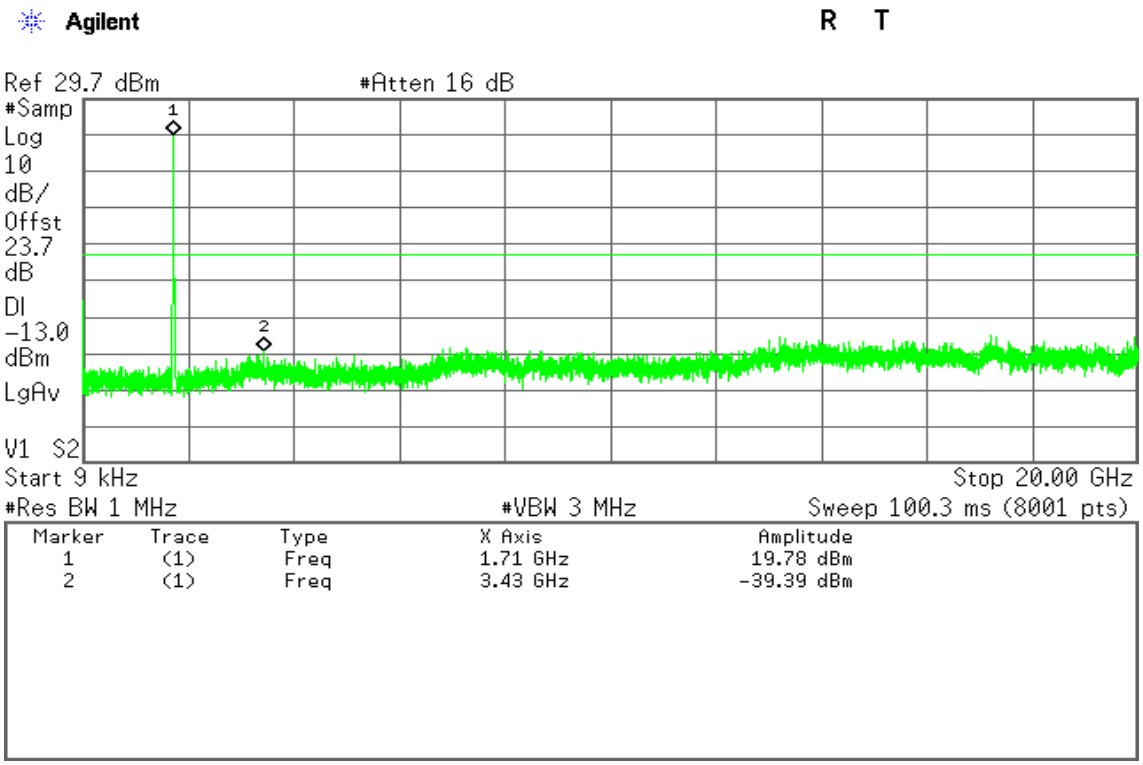


CH High

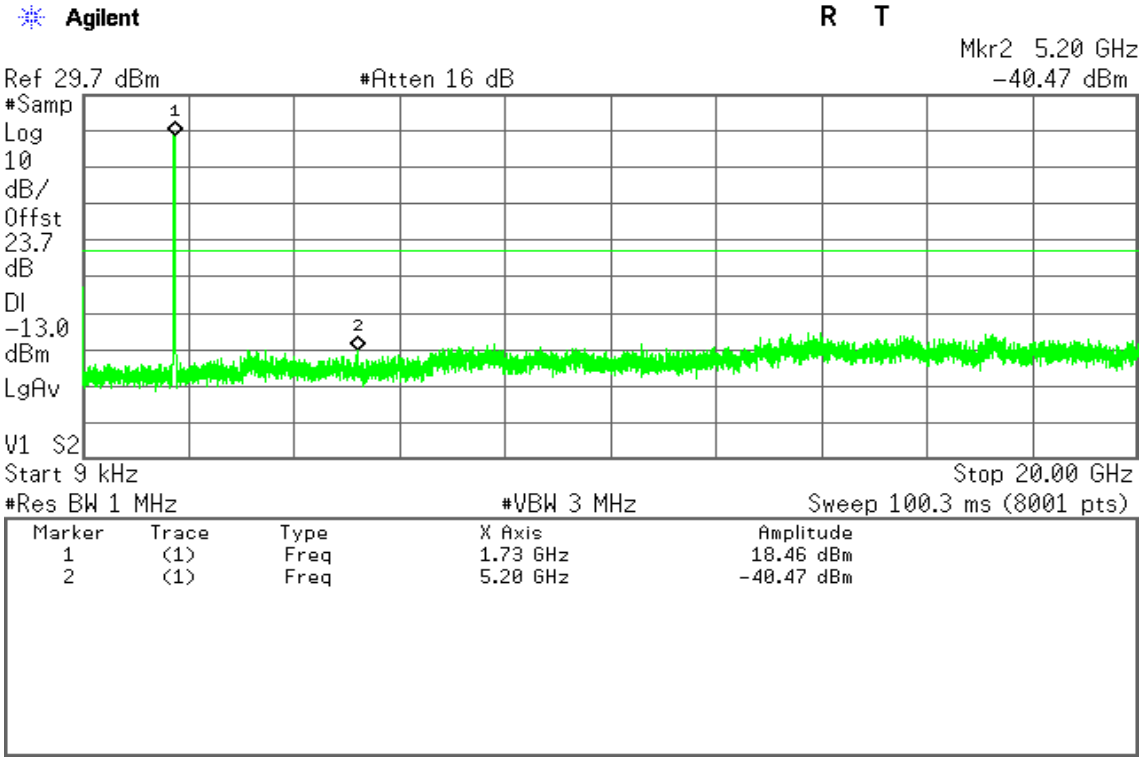


CHANNEL BANDWIDTH: 10MHz / QPSK

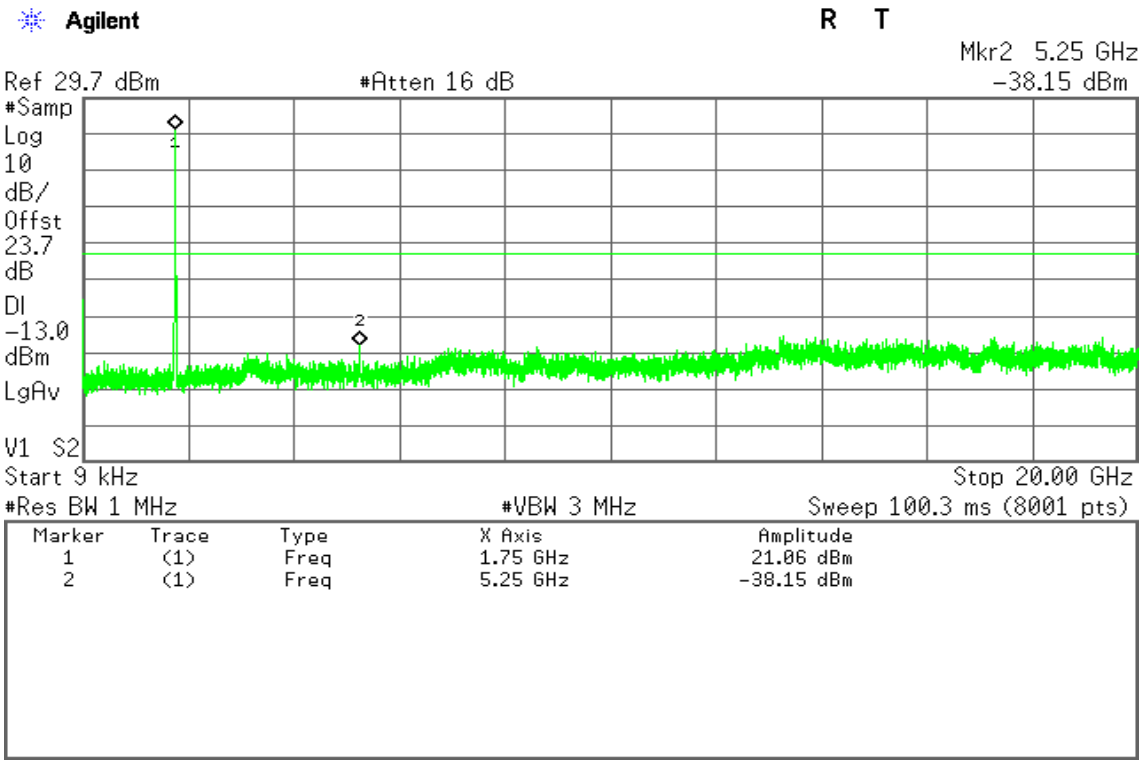
CH Low



CH Mid

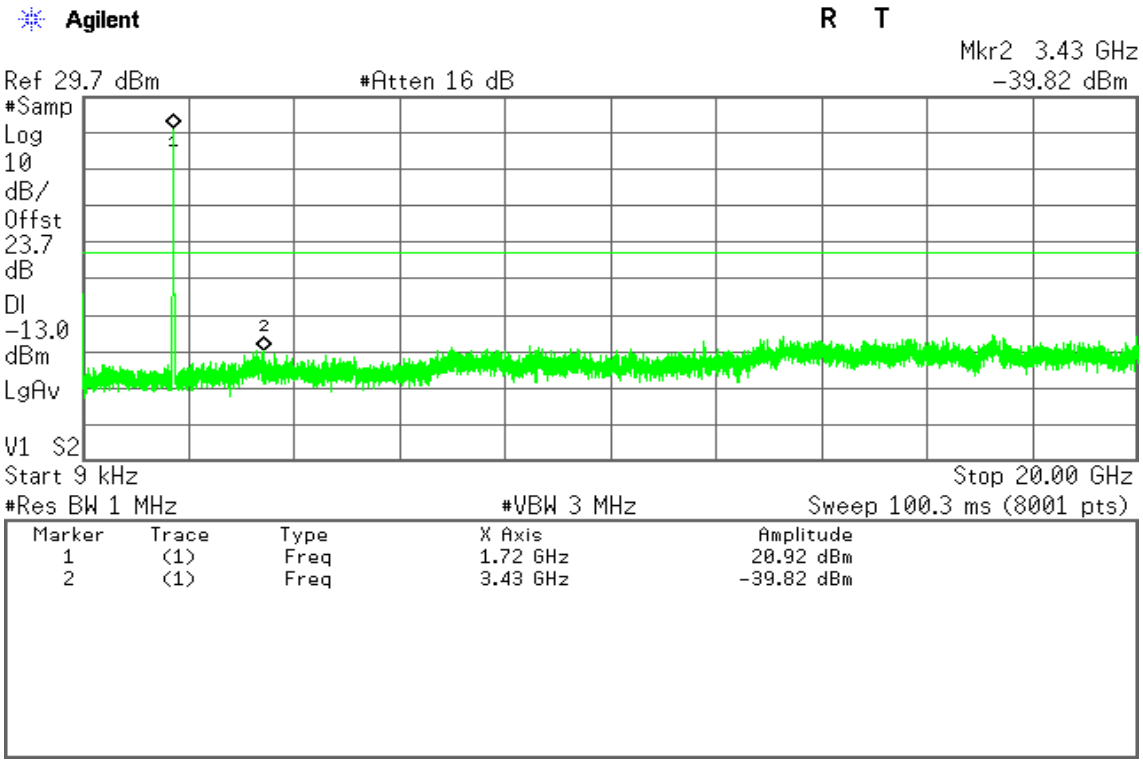


CH High

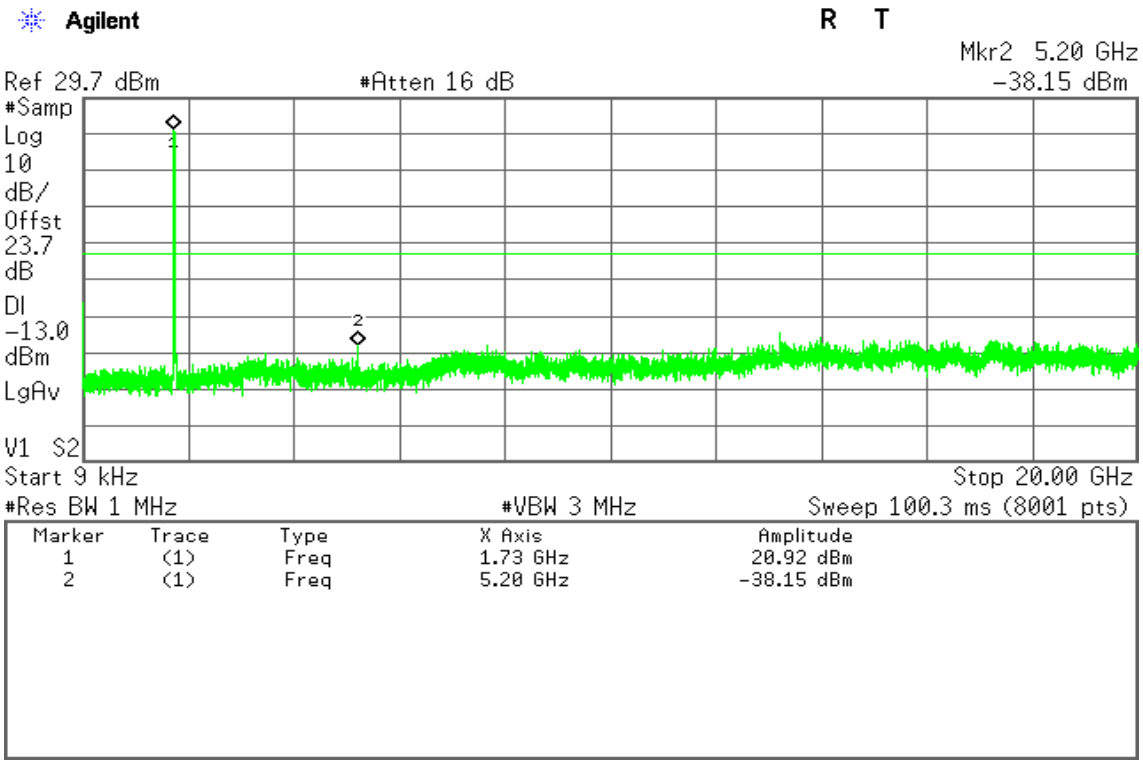


CHANNEL BANDWIDTH: 10MHz / 16QAM

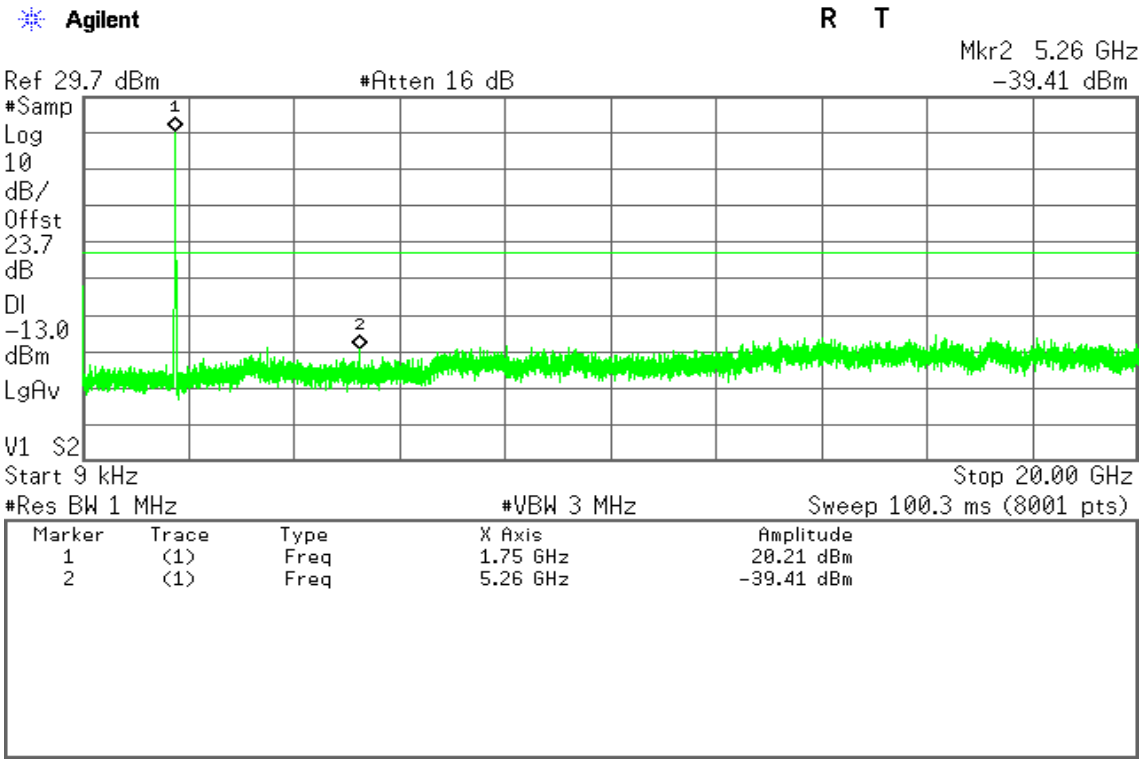
CH Low



CH Mid

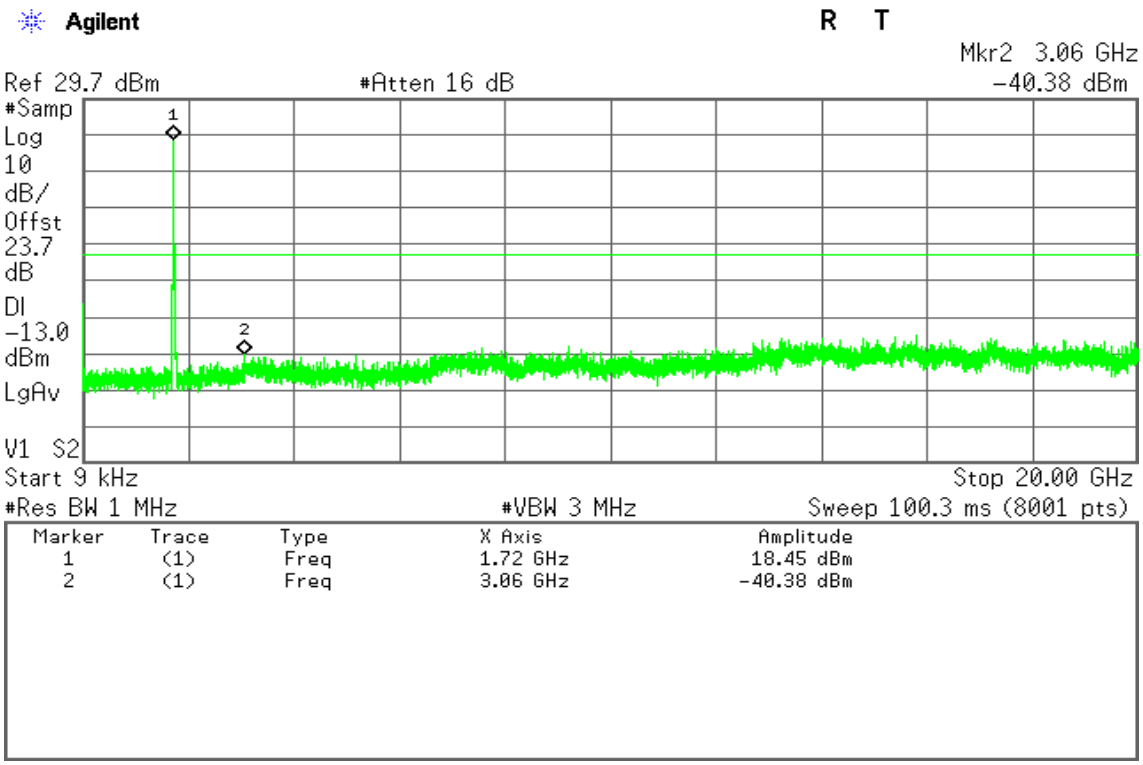


CH High

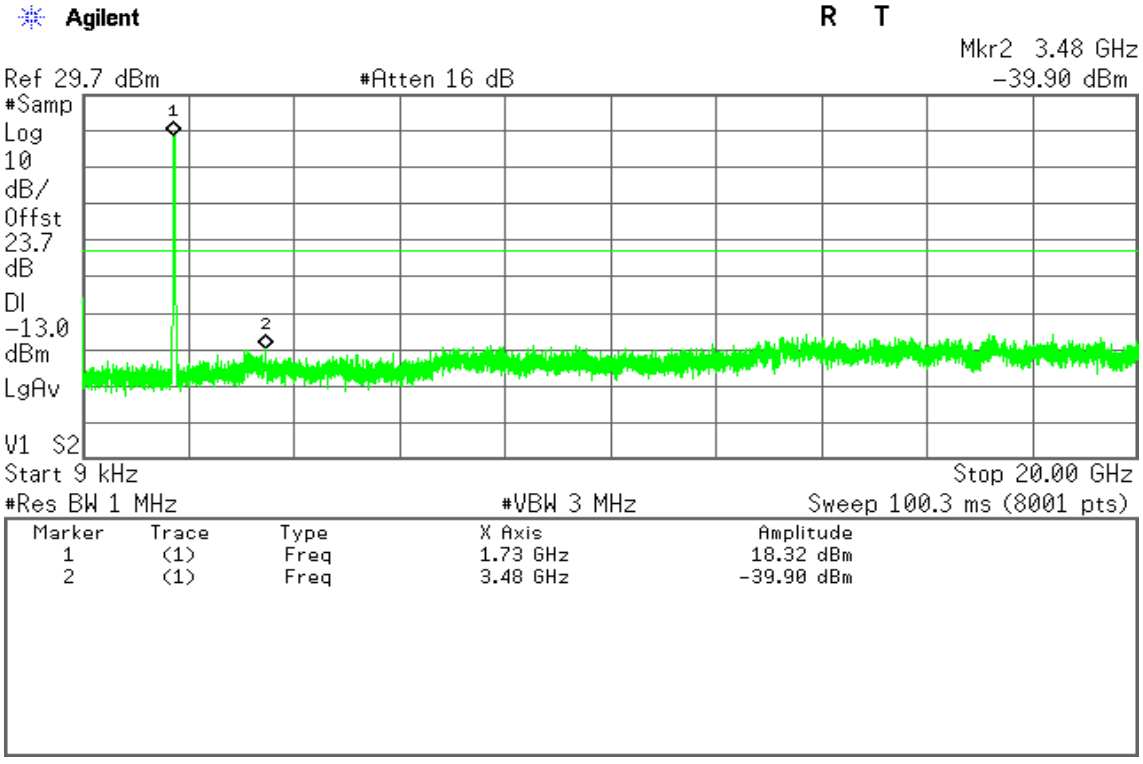


CHANNEL BANDWIDTH: 20MHz / QPSK

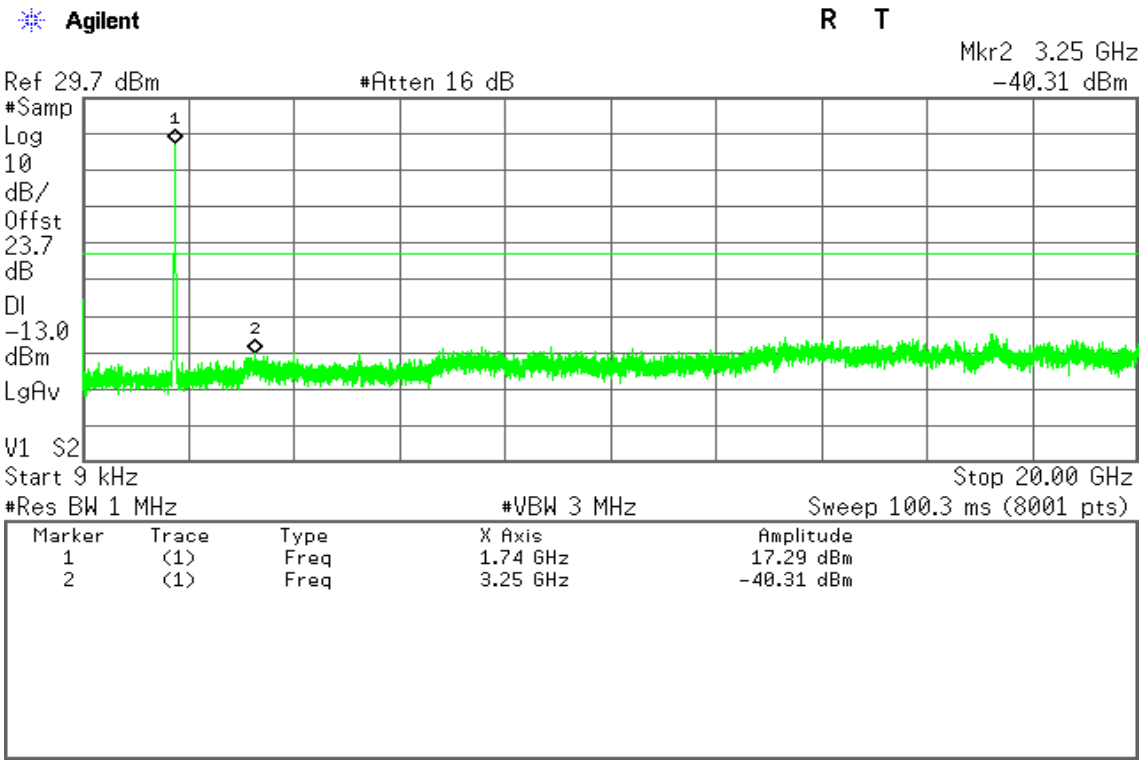
CH Low



CH Mid

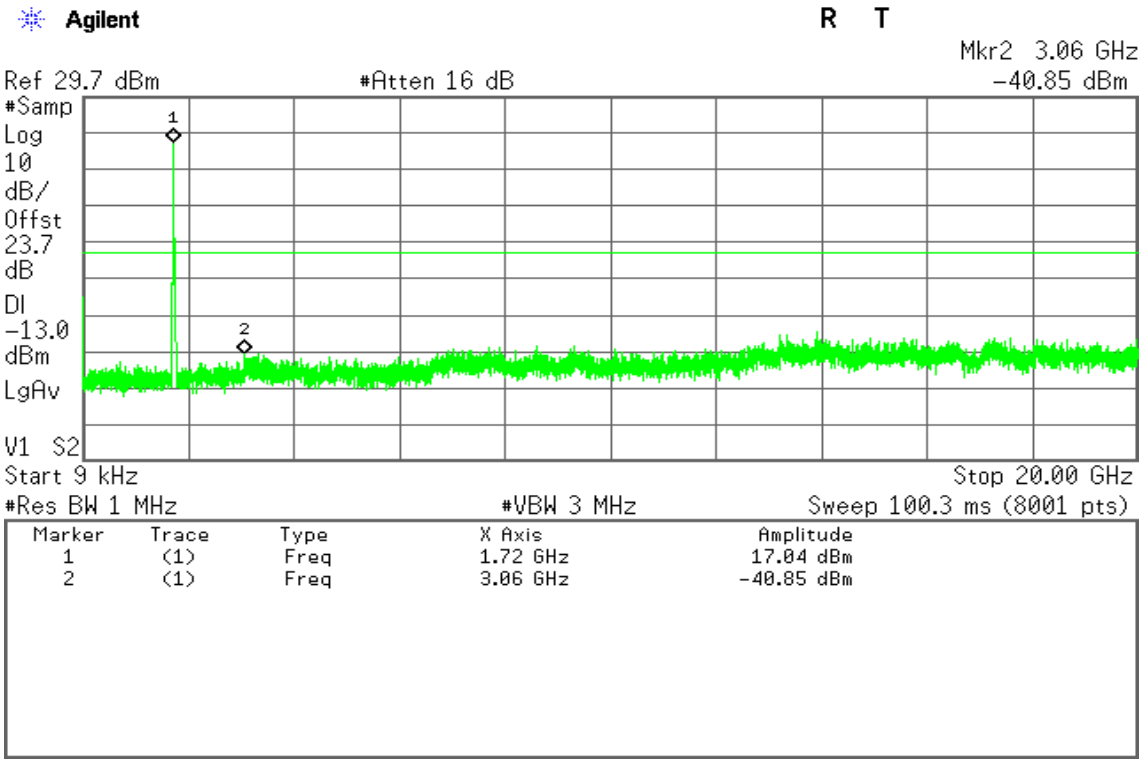


CH High

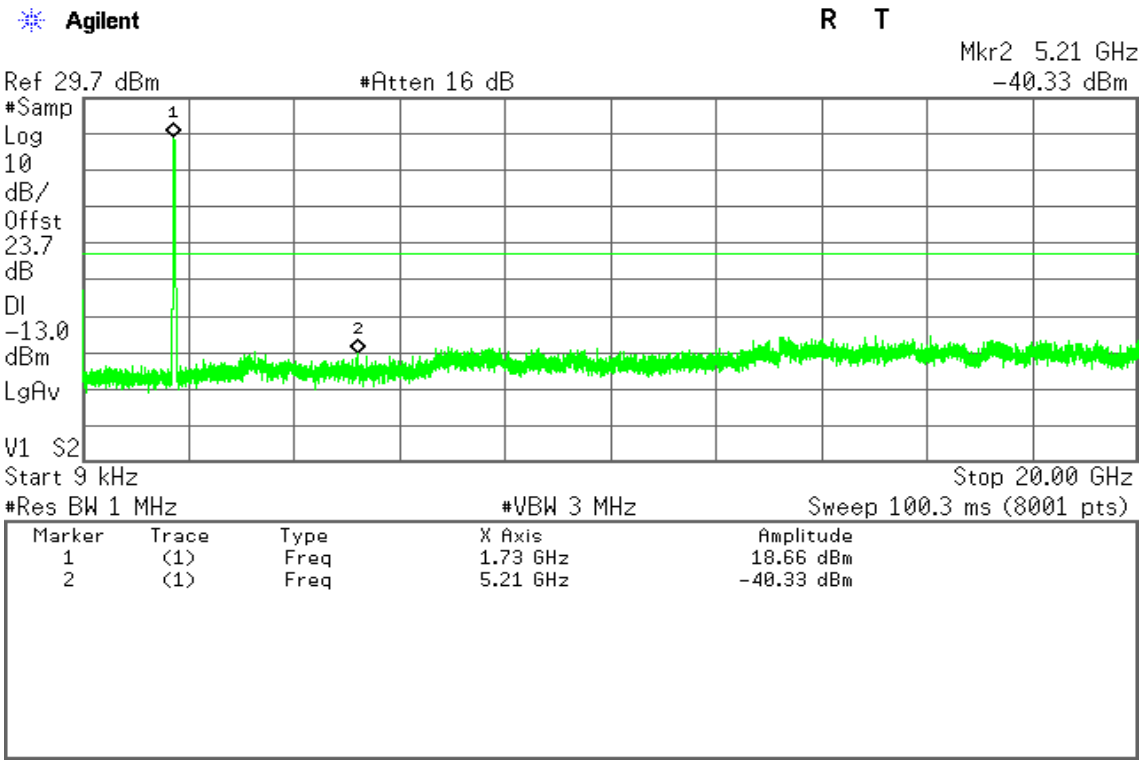


CHANNEL BANDWIDTH: 20MHz / 16QAM

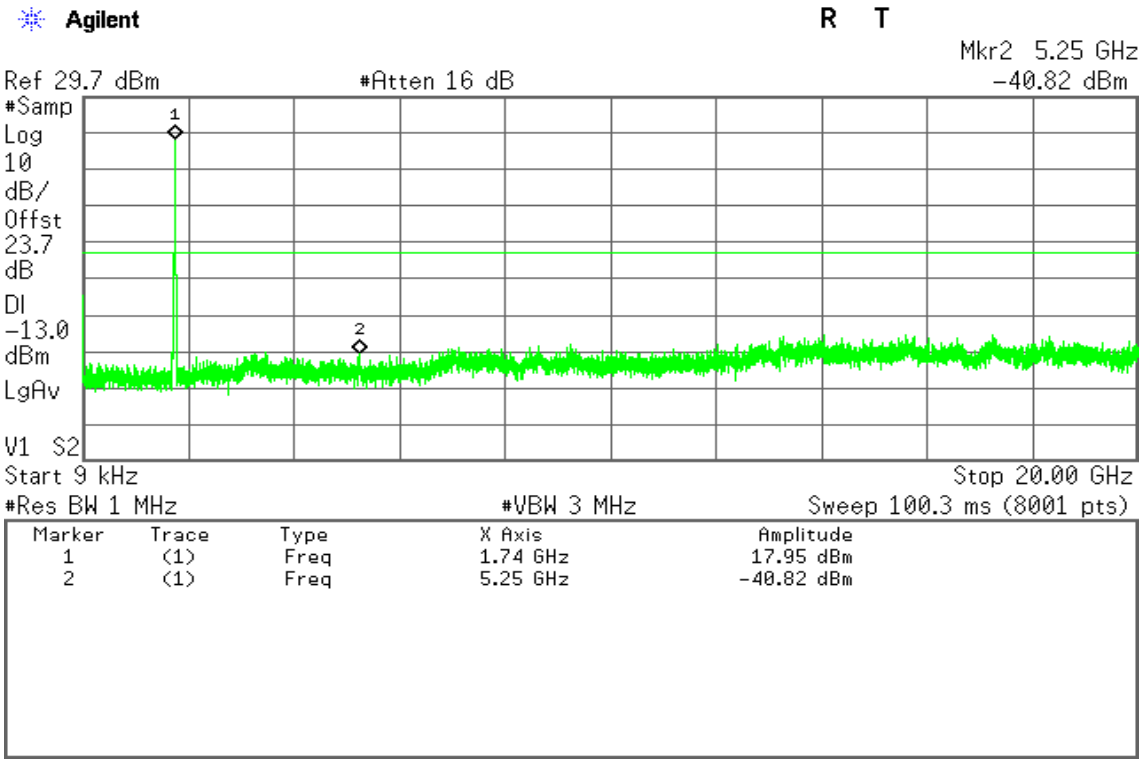
CH Low



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 13 / CHANNEL BANDWIDTH: 5MHz / QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	April 18, 2014
Temperature:	26℃	**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)
47.4600	-68.96	0.78	-6.58	-76.32	-13.00	-63.32	V
202.6600	-77.13	1.65	3.69	-75.09	-13.00	-62.09	V
254.0700	-77.42	1.86	5.66	-73.62	-13.00	-60.62	V
300.6300	-75.15	2.1	5.61	-71.64	-13.00	-58.64	V
399.5700	-75.77	2.39	5.98	-72.18	-13.00	-59.18	V
506.2700	-81.34	2.69	5.96	-78.07	-13.00	-65.07	V
75.5900	-70.39	1.01	-0.94	-72.34	-13.00	-59.34	H
152.2200	-70.34	1.44	0.87	-70.91	-13.00	-57.91	H
256.9800	-70.09	1.89	5.62	-66.36	-13.00	-53.36	H
300.6300	-70.14	2.1	5.61	-66.63	-13.00	-53.63	H
404.4200	-69.28	2.42	5.95	-65.75	-13.00	-52.75	H
600.3600	-78.17	2.9	6.4	-74.67	-13.00	-61.67	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:**	April 18, 2014
Temperature:	26℃	**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)
47.4600	-67.55	0.78	-6.58	-74.91	-13.00	-61.91	V
167.7400	-79.28	1.55	2.26	-78.57	-13.00	-65.57	V
202.6600	-77.01	1.65	3.69	-74.97	-13.00	-61.97	V
248.2500	-78.38	1.83	5.61	-74.60	-13.00	-61.60	V
303.5400	-76.07	2.11	5.67	-72.51	-13.00	-59.51	V
398.6000	-75.62	2.38	5.98	-72.02	-13.00	-59.02	V
75.5900	-70.06	1.01	-0.94	-72.01	-13.00	-59.01	H
163.8600	-71.66	1.51	1.83	-71.34	-13.00	-58.34	H
254.0700	-69.54	1.86	5.66	-65.74	-13.00	-52.74	H
300.6300	-69.98	2.1	5.61	-66.47	-13.00	-53.47	H
405.3900	-70.37	2.42	5.94	-66.85	-13.00	-53.85	H
559.6200	-78.94	2.84	6.03	-75.75	-13.00	-62.75	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:**	April 18, 2014
Temperature:	26℃	**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)
47.4600	-63.61	0.78	-6.58	-70.97	-13.00	-57.97	V
202.6600	-75.2	1.65	3.69	-73.16	-13.00	-60.16	V
259.8900	-76.73	1.91	5.59	-73.05	-13.00	-60.05	V
300.6300	-72.85	2.1	5.61	-69.34	-13.00	-56.34	V
400.5400	-72.54	2.4	5.98	-68.96	-13.00	-55.96	V
506.2700	-78.16	2.69	5.96	-74.89	-13.00	-61.89	V
51.3400	-64.27	0.81	-4.51	-69.59	-13.00	-56.59	H
161.9200	-66.01	1.5	1.61	-65.90	-13.00	-52.90	H
244.3700	-68.03	1.82	5.47	-64.38	-13.00	-51.38	H
303.5400	-65.84	2.11	5.67	-62.28	-13.00	-49.28	H
400.5400	-67.26	2.4	5.98	-63.68	-13.00	-50.68	H
473.2900	-71.27	2.62	5.7	-68.19	-13.00	-55.19	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 13 / CHANNEL BANDWIDTH: 10MHz / QPSK

Operation Mode:	Tx / Middle channel	**Test Date:**	April 18, 2014
Temperature:	26℃	**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)
75.5900	-73.84	1.01	-0.94	-75.79	-13.00	-62.79	V
200.7200	-74.31	1.63	3.19	-72.75	-13.00	-59.75	V
243.4000	-77.82	1.82	5.43	-74.21	-13.00	-61.21	V
303.5400	-75.39	2.11	5.67	-71.83	-13.00	-58.83	V
400.5400	-74.8	2.4	5.98	-71.22	-13.00	-58.22	V
506.2700	-79.17	2.69	5.96	-75.90	-13.00	-62.90	V
51.3400	-64.96	0.81	-4.51	-70.28	-13.00	-57.28	H
75.5900	-68.45	1.01	-0.94	-70.40	-13.00	-57.40	H
200.7200	-71.15	1.63	3.19	-69.59	-13.00	-56.59	H
252.1300	-71.41	1.85	5.68	-67.58	-13.00	-54.58	
300.6300	-69.06	2.1	5.61	-65.55	-13.00	-52.55	
402.4800	-69.28	2.41	5.97	-65.72	-13.00	-52.72	

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 13 / CHANNEL BANDWIDTH: 5MHz / 16QAM

Operation Mode:	Tx / Low channel	**Test Date:**	April 22, 2014
Temperature:	26℃	**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)
44.5500	-68.6	0.76	-8.84	-78.20	-13.00	-65.20	V
150.2800	-79.63	1.43	0.71	-80.35	-13.00	-67.35	V
200.7200	-76.98	1.63	3.19	-75.42	-13.00	-62.42	V
256.9800	-76.29	1.89	5.62	-72.56	-13.00	-59.56	V
300.6300	-73.14	2.1	5.61	-69.63	-13.00	-56.63	V
400.5400	-79.81	2.4	5.98	-76.23	-13.00	-63.23	V
47.4600	-66.68	0.78	-6.58	-74.04	-13.00	-61.04	H
164.8300	-68.87	1.52	1.94	-68.45	-13.00	-55.45	H
254.0700	-67.7	1.86	5.66	-63.90	-13.00	-50.90	H
303.5400	-68.92	2.11	5.67	-65.36	-13.00	-52.36	H
416.0600	-73.13	2.46	5.85	-69.74	-13.00	-56.74	H
698.3300	-78.28	3.11	6.41	-74.98	-13.00	-61.98	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:**	April 22, 2014
Temperature:	26℃	**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)
44.5500	-64.53	0.76	-8.84	-74.13	-13.00	-61.13	V
174.5300	-76.21	1.59	3	-74.80	-13.00	-61.80	V
202.6600	-74.21	1.65	3.69	-72.17	-13.00	-59.17	V
256.0100	-75.61	1.88	5.63	-71.86	-13.00	-58.86	V
300.6300	-73.11	2.1	5.61	-69.60	-13.00	-56.60	V
405.3900	-78.05	2.42	5.94	-74.53	-13.00	-61.53	V
47.4600	-65.82	0.78	-6.58	-73.18	-13.00	-60.18	H
163.8600	-69.51	1.51	1.83	-69.19	-13.00	-56.19	H
202.6600	-69.1	1.65	3.69	-67.06	-13.00	-54.06	H
249.2200	-67.74	1.84	5.65	-63.93	-13.00	-50.93	H
300.6300	-68.72	2.1	5.61	-65.21	-13.00	-52.21	H
402.4800	-72.86	2.41	5.97	-69.30	-13.00	-56.30	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:**	April 18, 2014
Temperature:	26℃	**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)
44.5500	-68.98	0.76	-8.84	-78.58	-13.00	-65.58	V
200.7200	-76.92	1.63	3.19	-75.36	-13.00	-62.36	V
255.0400	-74.95	1.87	5.65	-71.17	-13.00	-58.17	V
300.6300	-74.42	2.1	5.61	-70.91	-13.00	-57.91	V
433.5200	-80.87	2.5	5.83	-77.54	-13.00	-64.54	V
620.7300	-82.81	2.94	6.12	-79.63	-13.00	-66.63	V
47.4600	-66.94	0.78	-6.58	-74.30	-13.00	-61.30	H
164.8300	-68.37	1.52	1.94	-67.95	-13.00	-54.95	H
253.1000	-68.36	1.86	5.67	-64.55	-13.00	-51.55	H
300.6300	-69.21	2.1	5.61	-65.70	-13.00	-52.70	H
403.4500	-72.77	2.41	5.96	-69.22	-13.00	-56.22	H
533.4300	-78.31	2.76	6.11	-74.96	-13.00	-61.96	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 13 / CHANNEL BANDWIDTH: 10MHz / 16QAM

Operation Mode:	Tx / Middle channel	**Test Date:**	April 18, 2014
Temperature:	26℃	**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)
47.4600	-66.86	0.78	-6.58	-74.22	-13.00	-61.22	V
202.6600	-74.72	1.65	3.69	-72.68	-13.00	-59.68	V
250.1900	-76.49	1.84	5.68	-72.65	-13.00	-59.65	V
300.6300	-74.7	2.1	5.61	-71.19	-13.00	-58.19	V
391.8100	-75.04	2.32	6	-71.36	-13.00	-58.36	V
608.1200	-81.85	2.93	6.32	-78.46	-13.00	-65.46	V
52.3100	-63.33	0.82	-4.22	-68.37	-13.00	-55.37	H
202.6600	-69.81	1.65	3.69	-67.77	-13.00	-54.77	H
257.9500	-66.92	1.89	5.61	-63.20	-13.00	-50.20	H
300.6300	-68.31	2.1	5.61	-64.80	-13.00	-51.80	H
393.7500	-67.41	2.34	5.99	-63.76	-13.00	-50.76	H
608.1200	-74.85	2.93	6.32	-71.46	-13.00	-58.46	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 / QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	April 22, 2014
Temperature:	26℃	**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)
239.5200	-76.35	1.81	5.35	-72.81	-13.00	-59.81	V
301.6000	-76.9	2.1	5.63	-73.37	-13.00	-60.37	V
401.5100	-81.18	2.4	5.98	-77.60	-13.00	-64.60	V
493.6600	-80.66	2.68	5.83	-77.51	-13.00	-64.51	V
563.5000	-82.69	2.85	6.02	-79.52	-13.00	-66.52	V
619.7600	-83.72	2.94	6.11	-80.55	-13.00	-67.55	V
159.9800	-71.51	1.48	1.43	-71.56	-13.00	-58.56	H
202.6600	-71.85	1.65	3.69	-69.81	-13.00	-56.81	H
251.1600	-69.12	1.84	5.69	-65.27	-13.00	-52.27	H
301.6000	-70.79	2.1	5.63	-67.26	-13.00	-54.26	H
398.6000	-75.01	2.38	5.98	-71.41	-13.00	-58.41	H
489.7800	-75.27	2.67	5.77	-72.17	-13.00	-59.17	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:**	April 22, 2014
Temperature:	26℃	**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)
160.9500	-82.78	1.49	1.5	-82.77	-13.00	-69.77	V
202.6600	-78.43	1.65	3.69	-76.39	-13.00	-63.39	V
270.5600	-76.46	1.98	5.11	-73.33	-13.00	-60.33	V
301.6000	-78.33	2.1	5.63	-74.80	-13.00	-61.80	V
401.5100	-82.49	2.4	5.98	-78.91	-13.00	-65.91	V
570.2900	-82.48	2.87	6.1	-79.25	-13.00	-66.25	V
164.8300	-69.15	1.52	1.94	-68.73	-13.00	-55.73	H
254.0700	-68.21	1.86	5.66	-64.41	-13.00	-51.41	H
300.6300	-70.31	2.1	5.61	-66.80	-13.00	-53.80	H
400.5400	-76.42	2.4	5.98	-72.84	-13.00	-59.84	H
462.6200	-75.86	2.61	5.85	-72.62	-13.00	-59.62	H
640.1300	-78.54	3.01	6.13	-75.42	-13.00	-62.42	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 ackground noise floor.*

Operation Mode:	Tx / High channel	**Test Date:**	April 22, 2014
Temperature:	26℃	**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)
202.6600	-78.25	1.65	3.69	-76.21	-13.00	-63.21	V
301.6000	-77.05	2.1	5.63	-73.52	-13.00	-60.52	V
401.5100	-80.77	2.4	5.98	-77.19	-13.00	-64.19	V
502.3900	-82.76	2.7	5.92	-79.54	-13.00	-66.54	V
668.2600	-80.18	3.07	6.3	-76.95	-13.00	-63.95	V
794.3600	-82.22	3.33	6.35	-79.20	-13.00	-66.20	V
164.8300	-69.76	1.52	1.94	-69.34	-13.00	-56.34	H
254.0700	-67.64	1.86	5.66	-63.84	-13.00	-50.84	H
300.6300	-70.29	2.1	5.61	-66.78	-13.00	-53.78	H
391.8100	-77.07	2.32	6	-73.39	-13.00	-60.39	H
474.2600	-76.03	2.63	5.68	-72.98	-13.00	-59.98	H
667.2900	-77.58	3.07	6.3	-74.35	-13.00	-61.35	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 / QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	April 22, 2014
Temperature:	26℃	**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)
164.8300	-80.74	1.52	1.94	-80.32	-13.00	-67.32	V
200.7200	-77.53	1.63	3.19	-75.97	-13.00	-62.97	V
249.2200	-78.45	1.84	5.65	-74.64	-13.00	-61.64	V
301.6000	-77.26	2.1	5.63	-73.73	-13.00	-60.73	V
406.3600	-80.1	2.43	5.94	-76.59	-13.00	-63.59	V
562.5300	-82.7	2.85	6.01	-79.54	-13.00	-66.54	V
164.8300	-71.75	1.52	1.94	-71.33	-13.00	-58.33	H
202.6600	-72.12	1.65	3.69	-70.08	-13.00	-57.08	H
255.0400	-69.1	1.87	5.65	-65.32	-13.00	-52.32	H
304.5100	-71.16	2.11	5.69	-67.58	-13.00	-54.58	H
463.5900	-75.61	2.61	5.84	-72.38	-13.00	-59.38	H
503.3600	-77.48	2.7	5.93	-74.25	-13.00	-61.25	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:**	April 22, 2014
Temperature:	26℃	**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)
200.7200	-77.48	1.63	3.19	-75.92	-13.00	-62.92	V
257.9500	-78.74	1.89	5.61	-75.02	-13.00	-62.02	V
304.5100	-77.1	2.11	5.69	-73.52	-13.00	-60.52	V
401.5100	-81.71	2.4	5.98	-78.13	-13.00	-65.13	V
538.2800	-83.05	2.78	6.24	-79.59	-13.00	-66.59	V
640.1300	-83.08	3.01	6.13	-79.96	-13.00	-66.96	V
159.9800	-72.59	1.48	1.43	-72.64	-13.00	-59.64	H
200.7200	-71.47	1.63	3.19	-69.91	-13.00	-56.91	H
250.1900	-67.61	1.84	5.68	-63.77	-13.00	-50.77	H
300.6300	-70.68	2.1	5.61	-67.17	-13.00	-54.17	H
401.5100	-75.94	2.4	5.98	-72.36	-13.00	-59.36	H
471.3500	-75.28	2.62	5.74	-72.16	-13.00	-59.16	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:**	April 22, 2014
Temperature:	26℃	**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)
202.6600	-78.62	1.65	3.69	-76.58	-13.00	-63.58	V
257.9500	-79.88	1.89	5.61	-76.16	-13.00	-63.16	V
304.5100	-77.56	2.11	5.69	-73.98	-13.00	-60.98	V
392.7800	-82.16	2.33	5.99	-78.50	-13.00	-65.50	V
485.9000	-81.91	2.65	5.66	-78.90	-13.00	-65.90	V
666.3200	-83.02	3.07	6.3	-79.79	-13.00	-66.79	V
159.9800	-71.23	1.48	1.43	-71.28	-13.00	-58.28	H
200.7200	-70.54	1.63	3.19	-68.98	-13.00	-55.98	H
246.3100	-68.6	1.83	5.54	-64.89	-13.00	-51.89	H
300.6300	-70.17	2.1	5.61	-66.66	-13.00	-53.66	H
401.5100	-75.91	2.4	5.98	-72.33	-13.00	-59.33	H
597.4500	-80.35	2.9	6.35	-76.90	-13.00	-63.90	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 / QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	April 22, 2014
Temperature:	26℃	**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)
200.7200	-77.94	1.63	3.19	-76.38	-13.00	-63.38	V
257.9500	-79.22	1.89	5.61	-75.50	-13.00	-62.50	V
301.6000	-75.96	2.1	5.63	-72.43	-13.00	-59.43	V
401.5100	-80.5	2.4	5.98	-76.92	-13.00	-63.92	V
507.2400	-81.53	2.69	5.97	-78.25	-13.00	-65.25	V
563.5000	-82.73	2.85	6.02	-79.56	-13.00	-66.56	V
159.9800	-71.56	1.48	1.43	-71.61	-13.00	-58.61	H
202.6600	-71.76	1.65	3.69	-69.72	-13.00	-56.72	H
243.4000	-69.54	1.82	5.43	-65.93	-13.00	-52.93	H
301.6000	-69.12	2.1	5.63	-65.59	-13.00	-52.59	H
413.1500	-75.98	2.45	5.88	-72.55	-13.00	-59.55	H
464.5600	-74.17	2.61	5.84	-70.94	-13.00	-57.94	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:**	April 22, 2014
Temperature:	26℃	**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)
202.6600	-77.28	1.65	3.69	-75.24	-13.00	-62.24	V
246.3100	-78.98	1.83	5.54	-75.27	-13.00	-62.27	V
301.6000	-76.86	2.1	5.63	-73.33	-13.00	-60.33	V
406.3600	-81.3	2.43	5.94	-77.79	-13.00	-64.79	V
507.2400	-83.15	2.69	5.97	-79.87	-13.00	-66.87	V
724.5200	-83.52	3.17	6.46	-80.23	-13.00	-67.23	V
159.0100	-72.31	1.48	1.36	-72.43	-13.00	-59.43	H
251.1600	-69.53	1.84	5.69	-65.68	-13.00	-52.68	H
301.6000	-68.8	2.1	5.63	-65.27	-13.00	-52.27	H
400.5400	-76.6	2.4	5.98	-73.02	-13.00	-60.02	H
491.7200	-74.44	2.67	5.81	-71.30	-13.00	-58.30	H
585.8100	-78.95	2.89	6.11	-75.73	-13.00	-62.73	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 / High channel	**Test Date:**	April 22, 2014
Temperature:	26℃	**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)
161.9200	-81.92	1.5	1.61	-81.81	-13.00	-68.81	V
249.2200	-77.52	1.84	5.65	-73.71	-13.00	-60.71	V
300.6300	-77.11	2.1	5.61	-73.60	-13.00	-60.60	V
401.5100	-80.83	2.4	5.98	-77.25	-13.00	-64.25	V
479.1100	-82.75	2.64	5.56	-79.83	-13.00	-66.83	V
713.8500	-83.28	3.15	6.38	-80.05	-13.00	-67.05	V
164.8300	-69.16	1.52	1.94	-68.74	-13.00	-55.74	H
260.8600	-69.39	1.91	5.56	-65.74	-13.00	-52.74	H
300.6300	-68.36	2.1	5.61	-64.85	-13.00	-51.85	H
401.5100	-75.73	2.4	5.98	-72.15	-13.00	-59.15	H
485.9000	-74.9	2.65	5.66	-71.89	-13.00	-58.89	H
627.5200	-79.55	2.97	6.17	-76.35	-13.00	-63.35	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 / 16QAM

Operation Mode:	Tx / Low channel	**Test Date:**	April 22, 2014
Temperature:	26℃	**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)
43.5800	-69.54	0.75	-9.59	-79.88	-13.00	-66.88	V
202.6600	-77.88	1.65	3.69	-75.84	-13.00	-62.84	V
240.4900	-77.98	1.81	5.34	-74.45	-13.00	-61.45	V
304.5100	-78.29	2.11	5.69	-74.71	-13.00	-61.71	V
511.1200	-82.72	2.69	6.01	-79.40	-13.00	-66.40	V
635.2800	-83.2	2.99	6.17	-80.02	-13.00	-67.02	V
47.4600	-67.54	0.78	-6.58	-74.90	-13.00	-61.90	H
200.7200	-72.59	1.63	3.19	-71.03	-13.00	-58.03	H
257.9500	-67.88	1.89	5.61	-64.16	-13.00	-51.16	H
300.6300	-70.81	2.1	5.61	-67.30	-13.00	-54.30	H
400.5400	-75.08	2.4	5.98	-71.50	-13.00	-58.50	H
508.2100	-77.32	2.69	5.98	-74.03	-13.00	-61.03	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:**	April 22, 2014
Temperature:	26℃	**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)
44.5500	-70.63	0.76	-8.84	-80.23	-13.00	-67.23	V
202.6600	-78.25	1.65	3.69	-76.21	-13.00	-63.21	V
300.6300	-77.36	2.1	5.61	-73.85	-13.00	-60.85	V
401.5100	-82.97	2.4	5.98	-79.39	-13.00	-66.39	V
507.2400	-81	2.69	5.97	-77.72	-13.00	-64.72	V
639.1600	-82.03	3	6.14	-78.89	-13.00	-65.89	V
47.4600	-67.22	0.78	-6.58	-74.58	-13.00	-61.58	H
164.8300	-69.67	1.52	1.94	-69.25	-13.00	-56.25	H
259.8900	-65.98	1.91	5.59	-62.30	-13.00	-49.30	H
300.6300	-68.84	2.1	5.61	-65.33	-13.00	-52.33	H
400.5400	-74.24	2.4	5.98	-70.66	-13.00	-57.66	H
500.4500	-77.91	2.7	5.9	-74.71	-13.00	-61.71	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 ackground noise floor.*

Operation Mode:	Tx / High channel	**Test Date:**	April 18, 2014
Temperature:	26℃	**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)
44.5500	-70.75	0.76	-8.84	-80.35	-13.00	-67.35	V
202.6600	-77.78	1.65	3.69	-75.74	-13.00	-62.74	V
257.9500	-78.43	1.89	5.61	-74.71	-13.00	-61.71	V
300.6300	-77.34	2.1	5.61	-73.83	-13.00	-60.83	V
405.3900	-80.81	2.42	5.94	-77.29	-13.00	-64.29	V
667.2900	-79.64	3.07	6.3	-76.41	-13.00	-63.41	V
47.4600	-67.33	0.78	-6.58	-74.69	-13.00	-61.69	H
161.9200	-71.74	1.5	1.61	-71.63	-13.00	-58.63	H
243.4000	-67.29	1.82	5.43	-63.68	-13.00	-50.68	H
300.6300	-69.59	2.1	5.61	-66.08	-13.00	-53.08	H
456.8000	-76.06	2.6	5.84	-72.82	-13.00	-59.82	H
668.2600	-76.95	3.07	6.3	-73.72	-13.00	-60.72	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 / 16QAM

Operation Mode:	Tx / Low channel	**Test Date:**	April 22, 2014
Temperature:	26℃	**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)
158.0400	-82.04	1.47	1.29	-82.22	-13.00	-69.22	V
200.7200	-77.57	1.63	3.19	-76.01	-13.00	-63.01	V
253.1000	-79.11	1.86	5.67	-75.30	-13.00	-62.30	V
300.6300	-76.09	2.1	5.61	-72.58	-13.00	-59.58	V
401.5100	-80.83	2.4	5.98	-77.25	-13.00	-64.25	V
537.3100	-83.65	2.77	6.22	-80.20	-13.00	-67.20	V
48.4300	-67.29	0.79	-5.83	-73.91	-13.00	-60.91	H
167.7400	-72.59	1.55	2.26	-71.88	-13.00	-58.88	H
200.7200	-71.85	1.63	3.19	-70.29	-13.00	-57.29	H
254.0700	-69.03	1.86	5.66	-65.23	-13.00	-52.23	H
300.6300	-68.74	2.1	5.61	-65.23	-13.00	-52.23	H
463.5900	-74.22	2.61	5.84	-70.99	-13.00	-57.99	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:**	April 22, 2014
Temperature:	26℃	**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)
202.6600	-77.04	1.65	3.69	-75.00	-13.00	-62.00	V
254.0700	-78.39	1.86	5.66	-74.59	-13.00	-61.59	V
300.6300	-77.37	2.1	5.61	-73.86	-13.00	-60.86	V
401.5100	-81.34	2.4	5.98	-77.76	-13.00	-64.76	V
541.1900	-83.38	2.78	6.25	-79.91	-13.00	-66.91	V
639.1600	-82.92	3	6.14	-79.78	-13.00	-66.78	V
162.8900	-72.27	1.51	1.72	-72.06	-13.00	-59.06	H
202.6600	-71.02	1.65	3.69	-68.98	-13.00	-55.98	H
255.0400	-69.33	1.87	5.65	-65.55	-13.00	-52.55	H
300.6300	-68.9	2.1	5.61	-65.39	-13.00	-52.39	H
491.7200	-74.06	2.67	5.81	-70.92	-13.00	-57.92	H
640.1300	-78.6	3.01	6.13	-75.48	-13.00	-62.48	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:**	April 22, 2014
Temperature:	26℃	**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)
202.6600	-76.83	1.65	3.69	-74.79	-13.00	-61.79	V
243.4000	-77.76	1.82	5.43	-74.15	-13.00	-61.15	V
300.6300	-77.3	2.1	5.61	-73.79	-13.00	-60.79	V
405.3900	-81.16	2.42	5.94	-77.64	-13.00	-64.64	V
663.4100	-81.48	3.06	6.3	-78.24	-13.00	-65.24	V
824.4300	-82.18	3.39	6.24	-79.33	-13.00	-66.33	V
47.4600	-67.26	0.78	-6.58	-74.62	-13.00	-61.62	H
164.8300	-69.22	1.52	1.94	-68.80	-13.00	-55.80	H
202.6600	-70.79	1.65	3.69	-68.75	-13.00	-55.75	H
256.0100	-68.77	1.88	5.63	-65.02	-13.00	-52.02	H
300.6300	-69.36	2.1	5.61	-65.85	-13.00	-52.85	H
475.2300	-74.88	2.63	5.65	-71.86	-13.00	-58.86	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 / 16QAM

Operation Mode:	Tx / Low channel	**Test Date:**	April 22, 2014
Temperature:	26℃	**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)
202.6600	-78.98	1.65	3.69	-76.94	-13.00	-63.94	V
255.0400	-78.56	1.87	5.65	-74.78	-13.00	-61.78	V
300.6300	-75.24	2.1	5.61	-71.73	-13.00	-58.73	V
405.3900	-80.96	2.42	5.94	-77.44	-13.00	-64.44	V
560.5900	-82.78	2.85	6.01	-79.62	-13.00	-66.62	V
635.2800	-83.59	2.99	6.17	-80.41	-13.00	-67.41	V
164.8300	-70.63	1.52	1.94	-70.21	-13.00	-57.21	H
254.0700	-68.11	1.86	5.66	-64.31	-13.00	-51.31	H
300.6300	-69.65	2.1	5.61	-66.14	-13.00	-53.14	H
400.5400	-75.55	2.4	5.98	-71.97	-13.00	-58.97	H
497.5400	-75.77	2.69	5.87	-72.59	-13.00	-59.59	H
611.0300	-79.97	2.94	6.27	-76.64	-13.00	-63.64	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:**	April 22, 2014
Temperature:	26℃	**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)
200.7200	-77.84	1.63	3.19	-76.28	-13.00	-63.28	V
256.0100	-78.23	1.88	5.63	-74.48	-13.00	-61.48	V
300.6300	-74.35	2.1	5.61	-70.84	-13.00	-57.84	V
405.3900	-81.69	2.42	5.94	-78.17	-13.00	-65.17	V
538.2800	-83.32	2.78	6.24	-79.86	-13.00	-66.86	V
695.4200	-84.6	3.12	6.44	-81.28	-13.00	-68.28	V
39.7000	-46.42	0.72	-12.6	-59.74	-13.00	-46.74	H
159.0100	-72.39	1.48	1.36	-72.51	-13.00	-59.51	H
250.1900	-69.71	1.84	5.68	-65.87	-13.00	-52.87	H
300.6300	-68.42	2.1	5.61	-64.91	-13.00	-51.91	H
472.3200	-74.9	2.62	5.72	-71.80	-13.00	-58.80	H
697.3600	-79.74	3.11	6.42	-76.43	-13.00	-63.43	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.*

Operation Mode:	Tx / High channel	**Test Date:**	April 22, 2014
Temperature:	26℃	**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)
216.2400	-80.68	1.74	5.36	-77.06	-13.00	-64.06	V
256.9800	-79.61	1.89	5.62	-75.88	-13.00	-62.88	V
304.5100	-75.7	2.11	5.69	-72.12	-13.00	-59.12	V
401.5100	-82.12	2.4	5.98	-78.54	-13.00	-65.54	V
501.4200	-81.83	2.7	5.91	-78.62	-13.00	-65.62	V
688.6300	-83.51	3.13	6.5	-80.14	-13.00	-67.14	V
164.8300	-69.47	1.52	1.94	-69.05	-13.00	-56.05	H
253.1000	-69.23	1.86	5.67	-65.42	-13.00	-52.42	H
300.6300	-69.47	2.1	5.61	-65.96	-13.00	-52.96	H
466.5000	-75.15	2.61	5.82	-71.94	-13.00	-58.94	H
630.4300	-79.11	2.98	6.19	-75.90	-13.00	-62.90	H
772.0500	-77.78	3.28	6.32	-74.74	-13.00	-61.74	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 13 / CHANNEL BANDWIDTH: 5MHz / QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	April 18, 2014
Temperature:	26℃	**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)
2386.000	-43.05	6.16	5.94	-43.27	-13.00	-30.27	V
4780.000	-47.84	9.28	10.25	-46.87	-13.00	-33.87	V
N/A							
1602.000	-51.99	4.98	6.12	-50.85	-13.00	-37.85	H
1952.000	-50.61	5.59	5.49	-50.71	-13.00	-37.71	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:**	April 18, 2014
Temperature:	26℃	**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)
1602.000	-54.84	4.98	6.12	-53.70	-13.00	-40.70	V
2393.000	-42.17	6.17	5.95	-42.39	-13.00	-29.39	V
N/A							
1595.000	-56.55	4.97	6.13	-55.39	-13.00	-42.39	H
1952.000	-54	5.59	5.49	-54.10	-13.00	-41.10	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:**	April 18, 2014
Temperature:	26℃	**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)
2526.000	-43.2	6.39	6.17	-43.42	-13.00	-30.42	V
3191.000	-47.36	7.25	7.97	-46.64	-13.00	-33.64	V
N/A							
1595.000	-57.26	4.97	6.13	-56.10	-13.00	-43.10	H
2134.000	-54.92	5.84	5.59	-55.17	-13.00	-42.17	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 13 / CHANNEL BANDWIDTH: 10MHz / QPSK

Operation Mode:	Tx / Middle channel	**Test Date:**	April 18, 2014
Temperature:	26℃	**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)
1595.000	-51.97	4.97	6.13	-50.81	-13.00	-37.81	V
2393.000	-44.13	6.17	5.95	-44.35	-13.00	-31.35	V
N/A							
1595.000	-56.53	4.97	6.13	-55.37	-13.00	-42.37	H
1945.000	-50.19	5.57	5.5	-50.26	-13.00	-37.26	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 13 / CHANNEL BANDWIDTH: 5MHz / 16QAM

Operation Mode:	Tx / Low channel	**Test Date:**	April 18, 2014
Temperature:	26℃	**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)
2498.000	-45.25	6.35	6.1	-45.50	-13.00	-32.50	V
3191.000	-48.37	7.25	7.97	-47.65	-13.00	-34.65	V
N/A							
1595.000	-56.12	4.97	6.13	-54.96	-13.00	-41.96	H
2393.000	-49.37	6.17	5.95	-49.59	-13.00	-36.59	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:**	April 18, 2014
Temperature:	26℃	**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)
2393.000	-43.69	6.17	5.95	-43.91	-13.00	-30.91	V
3191.000	-47.5	7.25	7.97	-46.78	-13.00	-33.78	V
N/A							
1595.000	-53.4	4.97	6.13	-52.24	-13.00	-39.24	H
2393.000	-51.6	6.17	5.95	-51.82	-13.00	-38.82	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:**	April 18, 2014
Temperature:	26℃	**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)
1595.000	-52.45	4.97	6.13	-51.29	-13.00	-38.29	V
2393.000	-42.57	6.17	5.95	-42.79	-13.00	-29.79	V
N/A							
1595.000	-52.37	4.97	6.13	-51.21	-13.00	-38.21	H
2393.000	-50.8	6.17	5.95	-51.02	-13.00	-38.02	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 13 / CHANNEL BANDWIDTH: 10MHz / 16QAM

Operation Mode:	Tx / Middle channel	**Test Date:**	April 18, 2014
Temperature:	26℃	**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)
2400.000	-43.85	6.18	5.96	-44.07	-13.00	-31.07	V
3184.000	-48.5	7.25	7.95	-47.80	-13.00	-34.80	V
N/A							
1595.000	-52.94	4.97	6.13	-51.78	-13.00	-38.78	H
2400.000	-51.58	6.18	5.96	-51.80	-13.00	-38.80	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 / QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	April 18, 2014
Temperature:	26℃	**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)
3422.000	-43.36	7.64	8.67	-42.33	-13.00	-29.33	V
5144.000	-47.82	9.5	10.66	-46.66	-13.00	-33.66	V
N/A							
3429.000	-44.07	7.66	8.69	-43.04	-13.00	-30.04	H
5137.000	-48.66	9.49	10.65	-47.50	-13.00	-34.50	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:**	April 18, 2014
Temperature:	26℃	**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)
2505.000	-47.51	6.36	6.11	-47.76	-13.00	-34.76	V
3191.000	-46.99	7.25	7.97	-46.27	-13.00	-33.27	V
5200.000	-47.01	9.56	10.68	-45.89	-13.00	-32.89	V
N/A							
3464.000	-51.35	7.76	8.79	-50.32	-13.00	-37.32	H
5200.000	-47.75	9.56	10.68	-46.63	-13.00	-33.63	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:**	April 18, 2014
Temperature:	26℃	**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)
2540.000	-47.83	6.41	6.2	-48.04	-13.00	-35.04	V
3506.000	-44.1	7.88	8.91	-43.07	-13.00	-30.07	V
5256.000	-43.33	9.61	10.7	-42.24	-13.00	-29.24	V
N/A							
3506.000	-45.48	7.88	8.91	-44.45	-13.00	-31.45	H
5256.000	-45.51	9.61	10.7	-44.42	-13.00	-31.42	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 / QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	April 18, 2014
Temperature:	26℃	**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)
3429.000	-45.87	7.66	8.69	-44.84	-13.00	-31.84	V
5144.000	-48.91	9.5	10.66	-47.75	-13.00	-34.75	V
N/A							
3429.000	-47.24	7.66	8.69	-46.21	-13.00	-33.21	H
5151.000	-50.6	9.51	10.66	-49.45	-13.00	-36.45	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:**	April 18, 2014
Temperature:	26℃	**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)
3184.000	-48.98	7.25	7.95	-48.28	-13.00	-35.28	V
5207.000	-47.97	9.57	10.68	-46.86	-13.00	-33.86	V
N/A							
3464.000	-51.04	7.76	8.79	-50.01	-13.00	-37.01	H
5200.000	-49.56	9.56	10.68	-48.44	-13.00	-35.44	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:**	April 18, 2014
Temperature:	26℃	**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)
3506.000	-46.65	7.88	8.91	-45.62	-13.00	-32.62	V
5256.000	-43.35	9.61	10.7	-42.26	-13.00	-29.26	V
N/A							
3499.000	-47.63	7.87	8.9	-46.60	-13.00	-33.60	H
5249.000	-46.71	9.6	10.7	-45.61	-13.00	-32.61	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 / QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	April 18, 2014
Temperature:	26℃	**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)
3443.000	-48.27	7.7	8.73	-47.24	-13.00	-34.24	V
5151.000	-50.23	9.51	10.66	-49.08	-13.00	-36.08	V
N/A							
3422.000	-49.86	7.64	8.67	-48.83	-13.00	-35.83	H
5165.000	-51.53	9.52	10.67	-50.38	-13.00	-37.38	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:**	April 18, 2014
Temperature:	26℃	**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)
2540.000	-49.56	6.41	6.2	-49.77	-13.00	-36.77	V
5200.000	-49.73	9.56	10.68	-48.61	-13.00	-35.61	V
N/A							
3464.000	-51.55	7.76	8.79	-50.52	-13.00	-37.52	H
5214.000	-50.91	9.57	10.69	-49.79	-13.00	-36.79	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:**	April 18, 2014
Temperature:	26℃	**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)
3506.000	-51.06	7.88	8.91	-50.03	-13.00	-37.03	V
5242.000	-48.77	9.6	10.7	-47.67	-13.00	-34.67	V
N/A							
3499.000	-50.89	7.87	8.9	-49.86	-13.00	-36.86	H
5235.000	-48.18	9.59	10.69	-47.08	-13.00	-34.08	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 / 16QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	April 18, 2014
Temperature:	26℃	**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)
2589.000	-48.67	6.47	6.33	-48.81	-13.00	-35.81	V
3422.000	-41.02	7.64	8.67	-39.99	-13.00	-26.99	V
5137.000	-46.28	9.49	10.65	-45.12	-13.00	-32.12	V
N/A							
3422.000	-43.62	7.64	8.67	-42.59	-13.00	-29.59	H
5137.000	-46.06	9.49	10.65	-44.90	-13.00	-31.90	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:**	April 18, 2014
Temperature:	26℃	**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)
2484.000	-47.02	6.32	6.08	-47.26	-13.00	-34.26	V
3471.000	-46.4	7.78	8.81	-45.37	-13.00	-32.37	V
5200.000	-43.09	9.56	10.68	-41.97	-13.00	-28.97	V
N/A							
3471.000	-46.97	7.78	8.81	-45.94	-13.00	-32.94	H
5200.000	-46.08	9.56	10.68	-44.96	-13.00	-31.96	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:**	April 18, 2014
Temperature:	26℃	**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)
2554.000	-47.51	6.43	6.24	-47.70	-13.00	-34.70	V
3506.000	-41.8	7.88	8.91	-40.77	-13.00	-27.77	V
5256.000	-41.25	9.61	10.7	-40.16	-13.00	-27.16	V
N/A							
3506.000	-45.73	7.88	8.91	-44.70	-13.00	-31.70	H
5256.000	-44.51	9.61	10.7	-43.42	-13.00	-30.42	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 / 16QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	April 18, 2014
Temperature:	26℃	**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)
2540.000	-46.68	6.41	6.2	-46.89	-13.00	-33.89	V
3429.000	-44.59	7.66	8.69	-43.56	-13.00	-30.56	V
5144.000	-47.77	9.5	10.66	-46.61	-13.00	-33.61	V
N/A							
3429.000	-46.58	7.66	8.69	-45.55	-13.00	-32.55	H
5144.000	-48.95	9.5	10.66	-47.79	-13.00	-34.79	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:**	April 18, 2014
Temperature:	26℃	**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)
2603.000	-48.39	6.5	6.37	-48.52	-13.00	-35.52	V
3464.000	-49.92	7.76	8.79	-48.89	-13.00	-35.89	V
5200.000	-47.73	9.56	10.68	-46.61	-13.00	-33.61	V
N/A							
3464.000	-52.2	7.76	8.79	-51.17	-13.00	-38.17	H
5200.000	-48.88	9.56	10.68	-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 / High channel	**Test Date:**	April 18, 2014
Temperature:	26℃	**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)
2540.000	-48.49	6.41	6.2	-48.70	-13.00	-35.70	V
3492.000	-47.1	7.85	8.88	-46.07	-13.00	-33.07	V
5242.000	-43.96	9.6	10.7	-42.86	-13.00	-29.86	V
N/A							
3492.000	-48.36	7.85	8.88	-47.33	-13.00	-34.33	H
5235.000	-43.54	9.59	10.69	-42.44	-13.00	-29.44	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 / 16QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	April 18, 2014
Temperature:	26℃	**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)
3443.000	-47.18	7.7	8.73	-46.15	-13.00	-33.15	V
5165.000	-49.91	9.52	10.67	-48.76	-13.00	-35.76	V
N/A							
3436.000	-49.28	7.68	8.71	-48.25	-13.00	-35.25	H
5158.000	-51.04	9.51	10.66	-49.89	-13.00	-36.89	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:**	April 18, 2014
Temperature:	26℃	**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)
3198.000	-45.81	7.26	7.99	-45.08	-13.00	-32.08	V
5200.000	-49.53	9.56	10.68	-48.41	-13.00	-35.41	V
N/A							
3471.000	-52.31	7.78	8.81	-51.28	-13.00	-38.28	H
5207.000	-50.95	9.57	10.68	-49.84	-13.00	-36.84	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:**	April 18, 2014
Temperature:	26℃	**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)
2547.000	-48.31	6.42	6.22	-48.51	-13.00	-35.51	V
3499.000	-50.53	7.87	8.9	-49.50	-13.00	-36.50	V
5242.000	-47.24	9.6	10.7	-46.14	-13.00	-33.14	V
N/A							
3492.000	-49.58	7.85	8.88	-48.55	-13.00	-35.55	H
5242.000	-48.57	9.6	10.7	-47.47	-13.00	-34.47	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.*