FCC TEST REPORT and IC TEST REPORT

For

4G/LTE VoIP Wireless-N VPN Broadband Router

Model: BiPAC 6300VNOZ
(Other series models, Please see the page 7.)

Trade Name: Billion

Issued to

Billion Electric Co., Ltd.
8F., No.192, Sec. 2, Zhongxing Rd., Xindian Dist., New Taipei City 231, 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: February 3, 2015

Testing Laboratory
1309

Revision History

Rev.		Issue Date		Revisions	Effect Page	Revised By
00		February 3, 2015		Initial Issue	ALL	Doris Chu

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1. TEST RESULT CERTIFICATION

Applicant:	Billion Electric Co., Ltd. 8F., No.192, Sec. 2, Zhongxing Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)
Equipment Under Test:	4G/LTE VoIP Wireless-N VPN Broadband Router
Trade Name:	Billion
Model:	BiPAC 6300VNOZ
	(Other series models, Please see the page 7.)
Date of Test:	January 13 ~ 30, 2015

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.

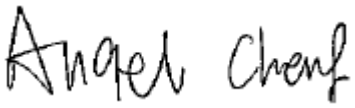
Deviation from Applicable Standard
None

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	4G/LTE VoIP Wireless-N VPN Broadband Router	
Model Number	BiPAC 6300VNOZ (Other series models, Please see the page 7.)	
Trade	Billion	
Received Date	October 23, 2014	
Power Source	Vdc from Power Adapter EGB / PAW024A15US I/P: AC 100-240, 0.7A, 50/60Hz O/P: DC 15V, 1.6A	
Modulation Technology	LTE Band 13	QPSK, 16QAM
	LTE Band 4	QPSK, 16QAM
Frequency Range	LTE Band 13 Channel Bandwidth: 5MHz	706.5MHz ~ 713.5MHz
	LTE Band 13 Channel Bandwidth: 10MHz	777MHz ~ 787MHz
	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: 19.21dBm 16QAM: 19.22dBm
	LTE Band 13 Channel Bandwidth: 10MHz	QPSK : 17.04dBm 16QAM: 17.70dBm
Maximum EIRP Power	LTE Band 4 Channel Bandwidth: 5MHz	QPSK: 16.76dBm 16QAM: 17.36dBm
	LTE Band 4 Channel Bandwidth: 10MHz	QPSK: 15.19dBm 16QAM: 16.30dBm
	LTE Band 4 Channel Bandwidth: 20MHz	QPSK: 13.92 dBm 16QAM: 13.82dBm
Category	LTE: 3	
Antenna Specification	1. AN0727-13B03SM LTE Band 4: Dipole Antenna / Gain: 1.7dBi LTE Band 13: Dipole Antenna / Gain: 1.7dBi 2. AN8921F-9219SM LTE Band 4: Dipole Antenna / Gain: 1.5dBi LTE Band 13: Dipole Antenna / Gain: 2.5dBi	

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

Model Discrepancy

Product: 4G/LTE VoIP Wireless-N VPN Broadband Router

Model: BiPAC 6300VNOZ

Data Applies To : BiPAC 4500VNOZ,
BiPAC 6300VNPZ, BiPAC 4500VNPZ, BEC 6300VNL , RidgeWave 6300VNL
BiPAC 6300NZ, BiPAC 4500NZ,
BiPAC 6300NZL, BiPAC 4500NZL, BEC 6300NEL , RidgeWave 6300NEL

For FCC (BiPAC 6300VNOZ)

The difference of the model :												
Model /Difference Item	BiPAC 6300VNOZ	BiPAC 4500VNOZ	BiPAC 6300VNPZ	BiPAC 4500VNPZ	BEC 6300VNL	RidgeWave 6300VNL	BiPAC 6300NZ	BiPAC 4500NZ	BiPAC 6300NZL	BiPAC 4500NZL	BEC 6300NEL	RidgeWave 6300NEL
LAN	3	3	3	3	3	3	4	4	4	4	4	4
EWAN	1	1	1	1	1	1	1	1	1	1	1	1
UPS	1	1	1	1	1	1	0	0	0	0	0	0
USB	1	1	1	1	1	1	1	1	1	1	1	1
FXS	2	2	2	2	2	2	0	0	0	0	0	0
SIM	1	1	1	1	1	1	1	1	1	1	1	1
Note	For the marketing purpose											
Power Adapter	15V / 1.6A					15V / 1.6A						

3. TEST METHODOLOGY

3.1 DESCRIPTION OF TEST TYPE

The EUT (model: BiPAC 6300VNOZ) had been tested under operating condition.

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

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

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 stand-up position (Z axis) and the worst case was recorded.

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	US42510252	11/23/2015
Thermostatic/Hrgrosatic Chamber	TAICHY	MHG-150LF	930619	10/07/2015
AC Power Source	EXTECH	6205	1140845	N.C.R
DC Power Supply	ABM	8301HD	D011531	N.C.R
Power Meter	Anritsu	ML2495A	1012009	06/03/2015
Power Sensor	Anritsu	MA2411A	0917072	06/03/2015
Spectrum Analyzer	ROHDE&SCHWARZ	FSV40	101073	07/09/2015

Wugu 966 Chamber A				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	US42510268	09/18/2015
EMI Test Receiver	R&S	ESCI	100064	05/30/2015
Bilog Antenna	Sunol Sciences	JB3	A030105	08/19/2015
Horn Antenna	EMCO	3117	00055165	02/04/2015
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
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
	N/A						

Remark:

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

7. TEST PROCEDURE AND RESULT

7.1 OUTPUT POWER MEASUREMENT

LIMITS

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

band are limited to 1 watt EIRP.

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

to 3 watts ERP

TEST PROCEDURES

EIRP / ERP MEASUREMENT:

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

CONDUCTED POWER MEASUREMENT:

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

TEST RESULTS

LTE Band 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	23.19	0.20845
782.00	23230	23.32	0.21478
784.50	23255	23.53	0.22542

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
779.50	23205	23.45	0.22131
782.00	23230	23.41	0.21928
784.50	23255	23.17	0.20749

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
779.50	23205	22.22	0.16672
782.00	23230	22.52	0.17865
784.50	23255	22.31	0.17022

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
779.50	23205	22.18	0.16520
782.00	23230	22.21	0.16634
784.50	23255	22.20	0.16596

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	22.22	0.16672
782.00	23230	22.08	0.16144
784.50	23255	22.20	0.16596

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
779.50	23205	22.13	0.16331
782.00	23230	22.52	0.17865
784.50	23255	22.68	0.18535

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
779.50	23205	21.11	0.12912
782.00	23230	21.23	0.13274
784.50	23255	21.32	0.13552

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
779.50	23205	21.06	0.12764
782.00	23230	21.27	0.13397
784.50	23255	21.33	0.13583

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	23.11	0.20464

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
782.00	23230	23.32	0.21478

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
782.00	23230	22.19	0.16558

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
782.00	23230	22.26	0.16827

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	22.06	0.16069

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
782.00	23230	22.71	0.18664

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
782.00	23230	21.02	0.12647

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
782.00	23230	21.09	0.12853

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	23.25	0.21135
1732.5	20175	23.32	0.21478
1752.5	20375	23.21	0.20941

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	23.42	0.21979
1732.5	20175	23.21	0.20941
1752.5	20375	23.25	0.21135

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	22.24	0.16749
1732.5	20175	22.19	0.16558
1752.5	20375	22.35	0.17179

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	22.17	0.16482
1732.5	20175	22.31	0.17022
1752.5	20375	22.08	0.16144

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	22.63	0.18323
1732.5	20175	22.08	0.16144
1752.5	20375	22.33	0.17100

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	22.44	0.17539
1732.5	20175	22.43	0.17498
1752.5	20375	22.31	0.17022

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	21.27	0.13397
1732.5	20175	21.57	0.14355
1752.5	20375	21.48	0.14060

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1712.5	19975	21.06	0.12764
1732.5	20175	21.38	0.13740
1752.5	20375	21.02	0.12647

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	23.15	0.20654
1732.5	20175	23.32	0.21478
1750.0	20350	23.22	0.20989

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	23.34	0.21577
1732.5	20175	23.50	0.22387
1750.0	20350	23.54	0.22594

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	22.11	0.16255
1732.5	20175	22.28	0.16904
1750.0	20350	22.25	0.16788

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	22.13	0.16331
1732.5	20175	22.05	0.16032
1750.0	20350	21.87	0.15382

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	22.44	0.17539
1732.5	20175	22.49	0.17742
1750.0	20350	22.31	0.17022

Conducted Output Power (16QAM RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	21.99	0.15812
1732.5	20175	22.36	0.17219
1750.0	20350	22.44	0.17539

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	21.18	0.13122
1732.5	20175	21.23	0.13274
1750.0	20350	21.11	0.12912

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1715.0	20000	21.14	0.13002
1732.5	20175	21.15	0.13032
1750.0	20350	21.02	0.12647

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	23.29	0.21330
1732.50	20175	23.23	0.21038
1745.00	20300	23.42	0.21979

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	23.18	0.20797
1732.50	20175	23.19	0.20845
1745.00	20300	23.24	0.21086

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	22.16	0.16444
1732.50	20175	22.06	0.16069
1745.00	20300	21.94	0.15631

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	22.07	0.16106
1732.50	20175	22.04	0.15996
1745.00	20300	21.98	0.15776

Remarks:

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

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	22.51	0.17824
1732.50	20175	22.48	0.17701
1745.00	20300	22.53	0.17906

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	22.44	0.17539
1732.50	20175	22.50	0.17783
1745.00	20300	22.49	0.17742

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	21.03	0.12677
1732.50	20175	21.09	0.12853
1745.00	20300	21.05	0.12735

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	**Channel**	**Output Power**	
		(dBm)	**(W)**
1720.00	20050	21.09	0.12853
1732.50	20175	21.03	0.12677
1745.00	20300	21.07	0.12794

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	780.9500	V	16.39	3.31	6.13	**19.21**	38.45	-19.24
	780.9500	H	8.79	3.31	6.13	11.61	38.45	-26.84
23230	780.2000	V	16.09	3.3	6.12	18.91	38.45	-19.54
	780.5000	H	7.83	3.3	6.12	10.65	38.45	-27.80
23255	782.7500	V	16.08	3.31	6.14	18.91	38.45	-19.54
	782.9000	H	7.49	3.31	6.14	10.32	38.45	-28.13

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)
23305	780.8000	V	16.4	3.3	6.12	**19.22**	38.45	-19.23
	780.0500	H	7.5	3.3	6.12	10.32	38.45	-28.13
23230	780.6500	V	16.09	3.3	6.12	18.91	38.45	-19.54
	780.3500	H	6	3.3	6.12	8.82	38.45	-29.63
23255	783.3500	V	16.1	3.31	6.15	18.94	38.45	-19.51
	783.3500	H	6.66	3.31	6.15	9.50	38.45	-28.95

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	781.8500	V	14.22	3.31	6.13	**17.04**	38.45	-21.41
	781.8500	H	4.3	3.31	6.13	7.12	38.45	-31.33

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	782.1500	V	14.87	3.31	6.14	**17.70**	38.45	-20.75
	779.1500	H	5.11	3.3	6.12	7.93	38.45	-30.52

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	1713.800	V	15.97	5.13	5.92	**16.76**	33.00	-16.24
	1713.800	H	13.34	5.13	5.92	14.13	33.00	-18.87
20175	1731.100	V	15.74	5.17	5.88	16.45	33.00	-16.55
	1731.400	H	13.47	5.17	5.88	14.18	33.00	-18.82
20375	1754.200	V	15.04	5.21	5.84	15.67	33.00	-17.33
	1754.300	H	12.32	5.21	5.84	12.95	33.00	-20.05

Channel Bandwidth: 5MHz / 16QAM

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
19975	1713.500	V	16.57	5.13	5.92	**17.36**	33.00	-15.64
	1714.300	H	14.75	5.14	5.91	15.52	33.00	-17.48
20175	1731.100	V	16.04	5.17	5.88	16.75	33.00	-16.25
	1730.700	H	14	5.17	5.88	14.71	33.00	-18.29
20375	1753.500	V	15.83	5.21	5.84	16.46	33.00	-16.54
	1754.000	H	13.32	5.21	5.84	13.95	33.00	-19.05

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	1718.800	V	14.42	5.14	5.91	**15.19**	33.00	-17.81
	1717.500	H	12.04	5.14	5.91	12.81	33.00	-20.19
20175	1729.300	V	14.17	5.16	5.89	14.90	33.00	-18.10
	1729.200	H	11.94	5.16	5.89	12.67	33.00	-20.33
20350	1751.300	V	14.25	5.2	5.85	14.90	33.00	-18.10
	1750.300	H	11.44	5.2	5.85	12.09	33.00	-20.91

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	1717.600	V	15.53	5.14	5.91	**16.30**	33.00	-16.70
	1718.000	H	12.9	5.14	5.91	13.67	33.00	-19.33
20175	1728.800	V	15.24	5.16	5.89	15.97	33.00	-17.03
	1729.300	H	13.42	5.16	5.89	14.15	33.00	-18.85
20350	1753.100	V	14.11	5.21	5.84	14.74	33.00	-18.26
	1752.200	H	12.7	5.2	5.85	13.35	33.00	-19.65

Channel Bandwidth: 20MHz / QPSK

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
20050	1720.300	V	13.17	5.15	5.9	**13.92**	33.00	-19.08
	1719.900	H	11.1	5.15	5.9	11.85	33.00	-21.15
20175	1724.700	V	13.08	5.15	5.9	13.83	33.00	-19.17
	1726.100	H	11.11	5.16	5.89	11.84	33.00	-21.16
20300	1752.200	V	12.68	5.2	5.85	13.33	33.00	-19.67
	1752.100	H	10.63	5.2	5.85	11.28	33.00	-21.72

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	1717.500	V	13.05	5.14	5.91	**13.82**	33.00	-19.18
	1719.200	H	10.94	5.14	5.91	11.71	33.00	-21.29
20175	1725.100	V	13.04	5.16	5.89	13.77	33.00	-19.23
	1726.100	H	10.76	5.16	5.89	11.49	33.00	-21.51
20300	1750.700	V	12.56	5.2	5.85	13.21	33.00	-19.79
	1750.800	H	10.06	5.2	5.85	10.71	33.00	-22.29

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)
110	50	781999993	-12	781999995	-10	1775
110	40	781999995	-10	781999999	-6	
110	30	781999998	-7	781999998	-7	
110	20	782000005	0	782000005	0	
110	10	781999994	-11	781999994	-11	
110	0	781999991	-14	781999991	-14	
110	-10	781999992	-13	781999993	-12	
110	-20	781999995	-10	781999996	-9	
110	-30	781999997	-8	781999995	-10	

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)
110	50	173249992	-25	173249998	-10	4331
110	40	173249995	-22	173249995	-13	
110	30	173249994	-23	173249992	-16	
110	20	173250017	0	173250008	0	
110	10	173249996	-21	173249992	-16	
110	0	173249992	-25	173249994	-14	
110	-10	173249995	-22	173249992	-16	
110	-20	173249997	-20	173249992	-16	
110	-30	173249996	-21	173249999	-9	

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)
93.5	20	782000004	-1	782000009	4	1775
110		782000005	0	782000005	0	
126.5		782000009	4	782000007	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)
93.5	20	173250015	-2	173250007	-1	4331
110		173250017	0	173250008	0	
126.5		173250010	-7	173250005	-3	

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	4.4842
Mid	782.0	4.4870
High	784.5	4.5018

CHANNEL BANDWIDTH: 5MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	779.5	4.5067
Mid	782.0	4.4980
High	784.5	4.4971

CHANNEL BANDWIDTH: 10MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Mid	782	8.9075

CHANNEL BANDWIDTH: 10MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Mid	782	8.8781

LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1712.5	4.5032
Mid	1732.5	4.4968
High	1752.5	4.4980

CHANNEL BANDWIDTH: 5MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1712.5	4.5101
Mid	1732.5	4.5047
High	1752.5	4.5013

CHANNEL BANDWIDTH: 10MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1715.0	8.9505
Mid	1732.5	8.9337
High	1750.0	8.9501

CHANNEL BANDWIDTH: 10MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1715.0	8.9106
Mid	1732.5	8.9266
High	1750.0	8.9330

CHANNEL BANDWIDTH: 20MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1715.0	17.7723
Mid	1732.5	17.8344
High	1750.0	17.8158

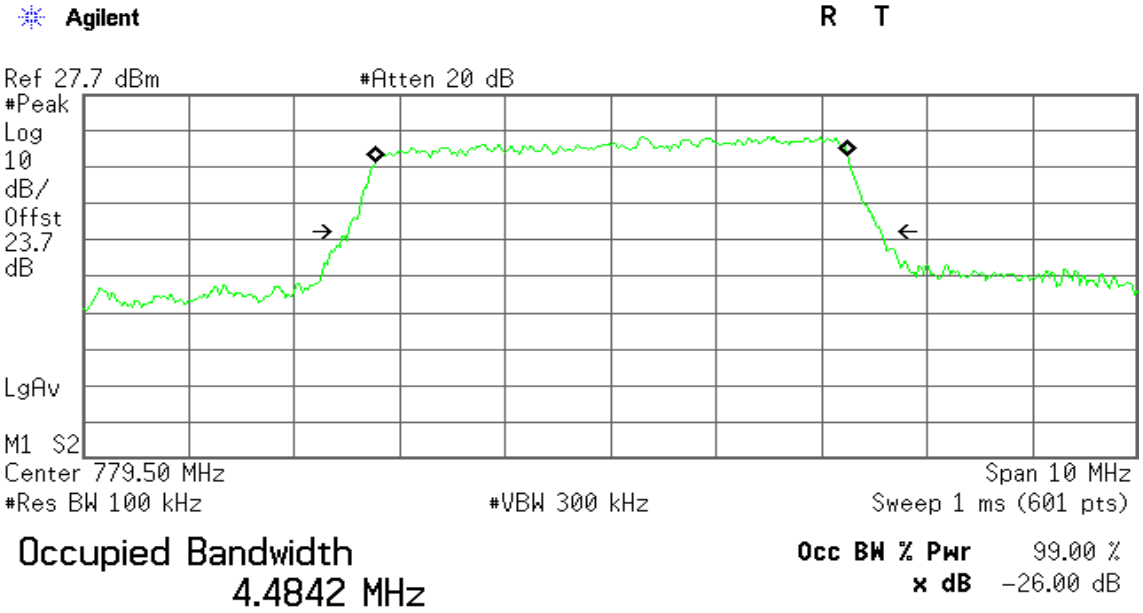
CHANNEL BANDWIDTH: 20MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1715.0	17.8054
Mid	1732.5	17.8384
High	1750.0	17.8769

LTE Band 13

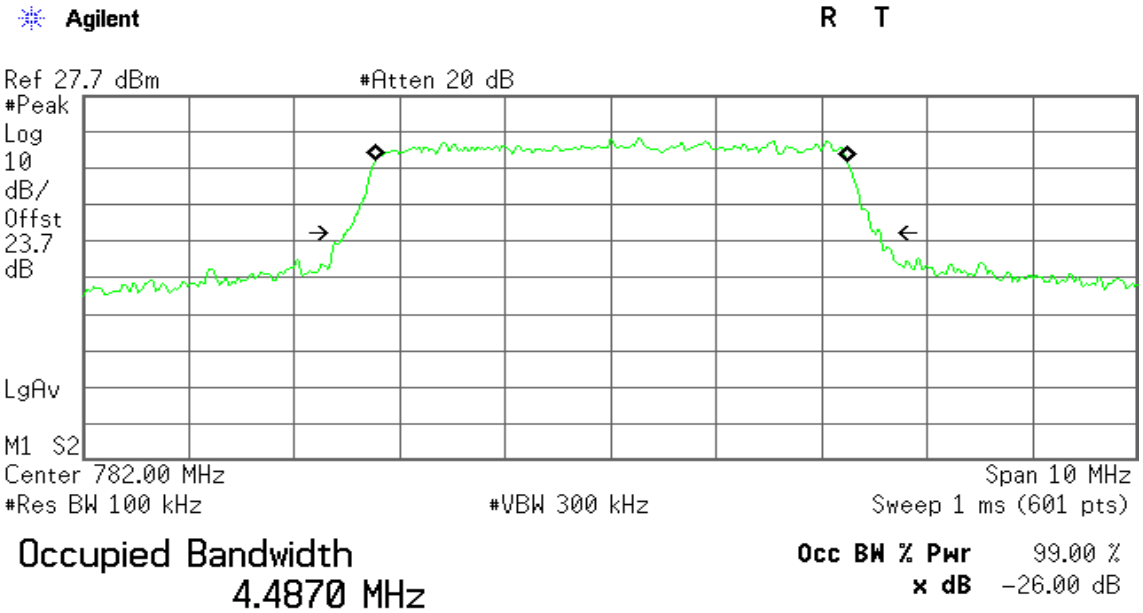
CHANNEL BANDWIDTH: 5MHz / QPSK

CH Low



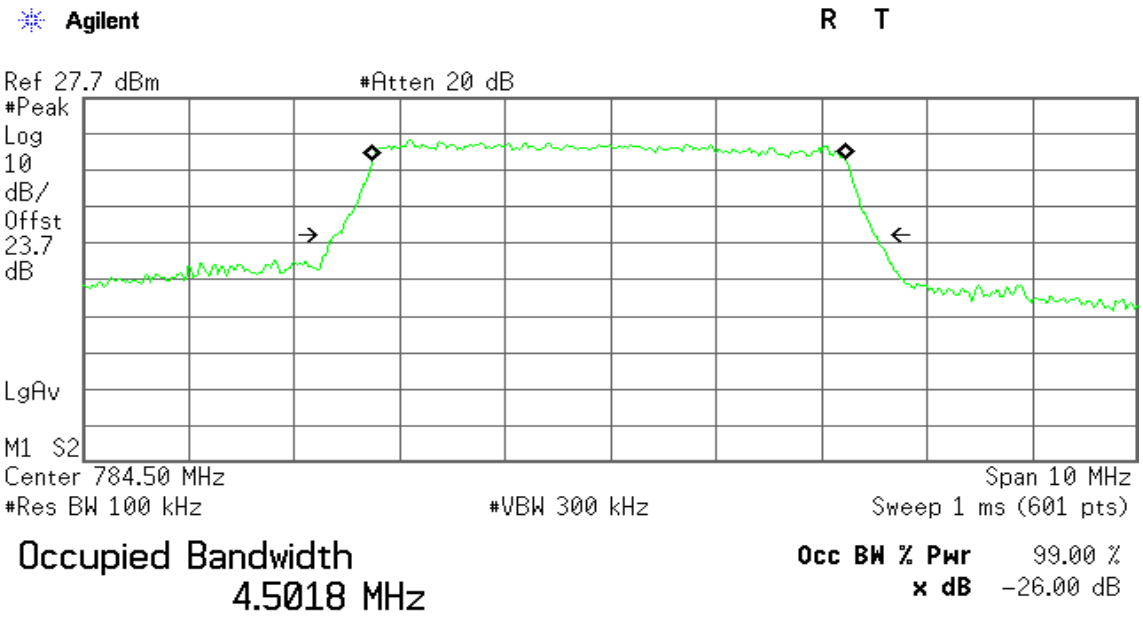
Transmit Freq Error	13.491 kHz
x dB Bandwidth	5.053 MHz

CH Mid



Transmit Freq Error	6.438 kHz
x dB Bandwidth	5.070 MHz

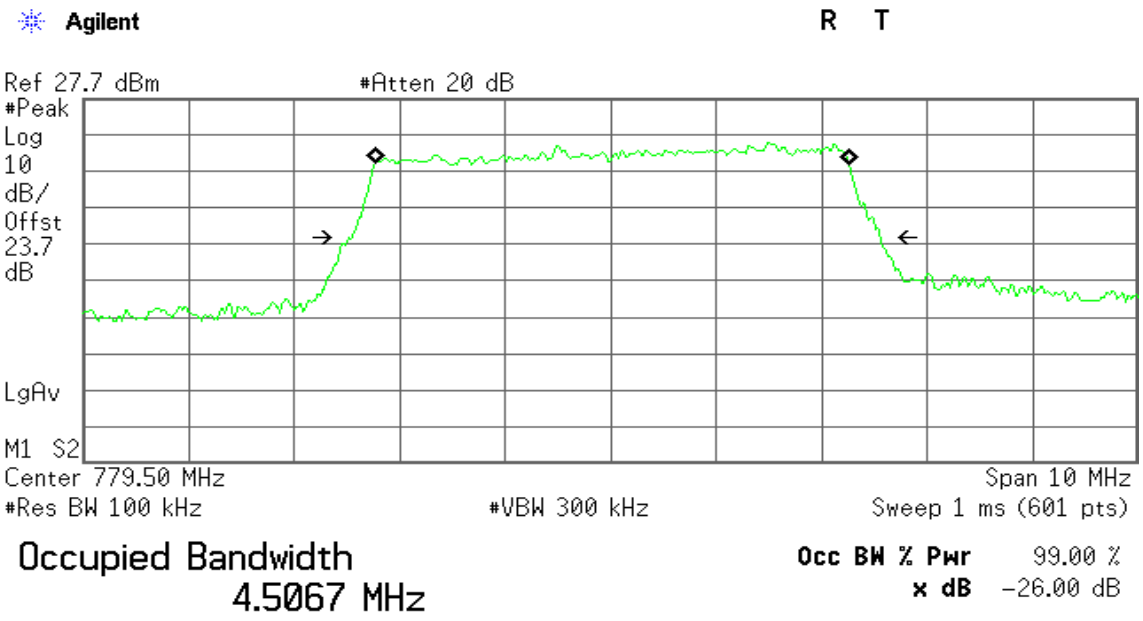
CH High



Transmit Freq Error -12.584 kHz
x dB Bandwidth 5.123 MHz

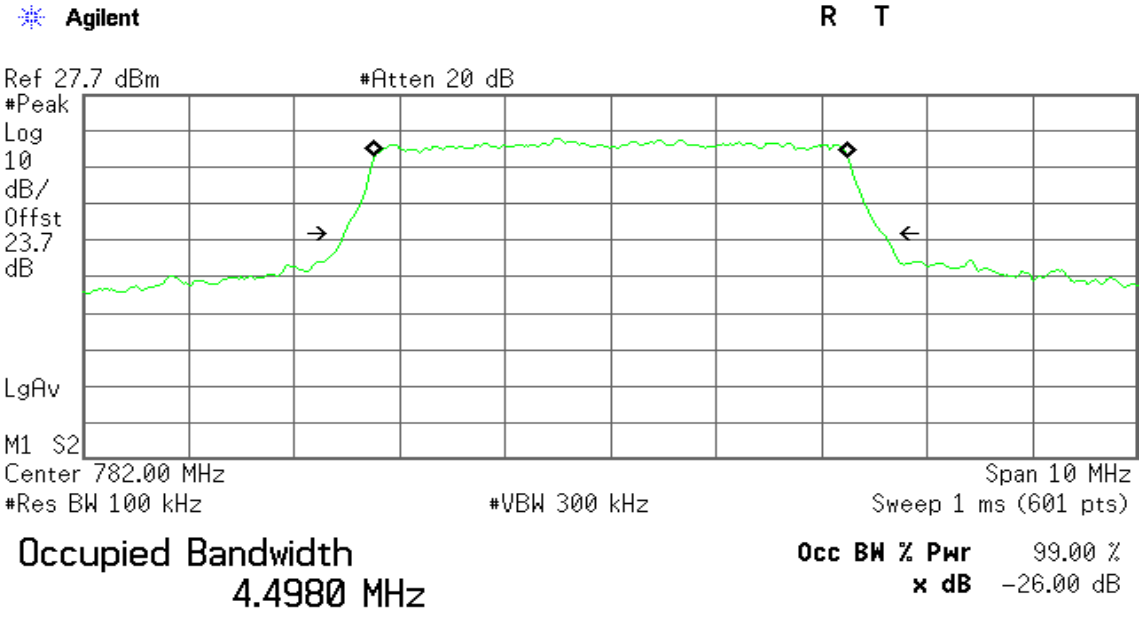
CHANNEL BANDWIDTH: 5MHz / 16QAM

CH Low



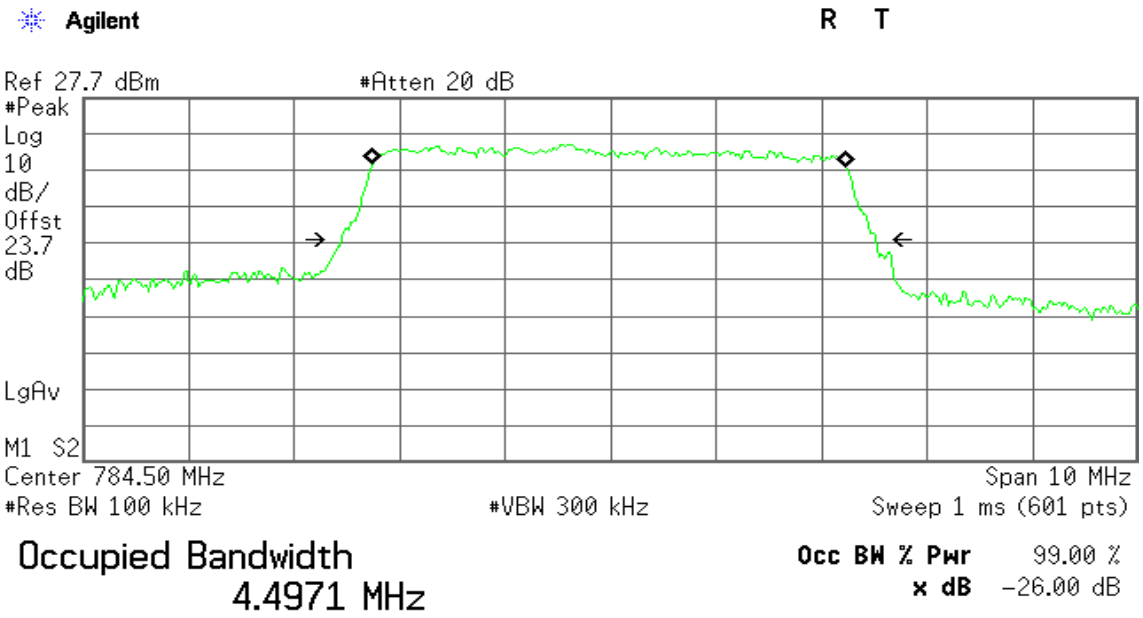
Transmit Freq Error	12.776 kHz
x dB Bandwidth	5.046 MHz

CH Mid



Transmit Freq Error	7.295 kHz
x dB Bandwidth	5.109 MHz

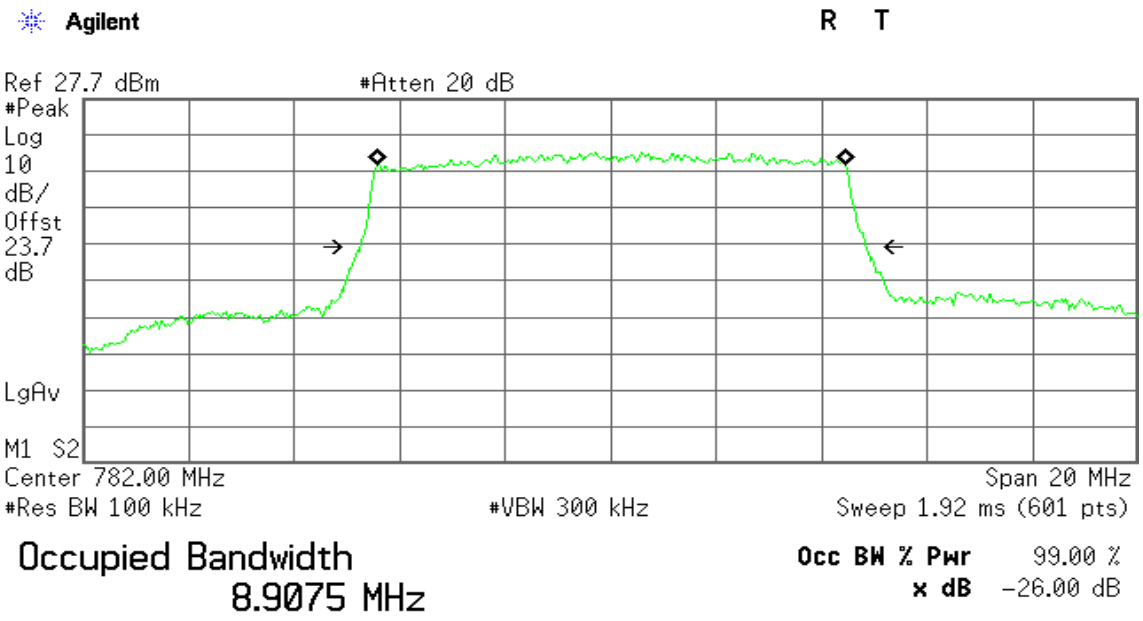
CH High



Transmit Freq Error -14.949 kHz
x dB Bandwidth 5.077 MHz

CHANNEL BANDWIDTH: 10MHz / QPSK

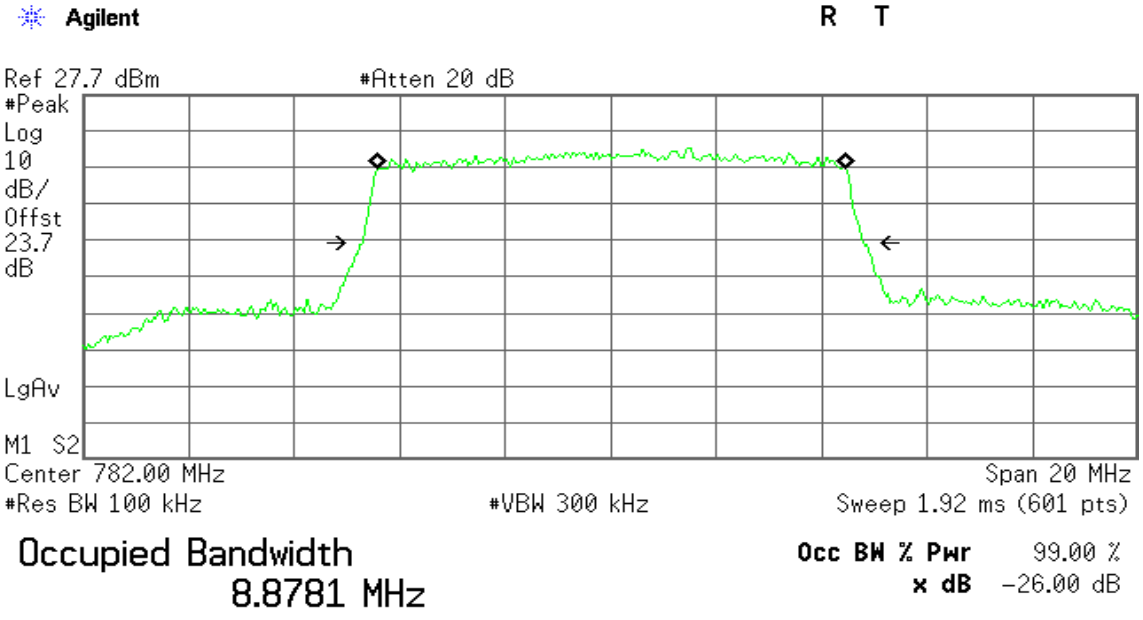
CH Mid



Transmit Freq Error 10.171 kHz
x dB Bandwidth 9.606 MHz

CHANNEL BANDWIDTH: 10MHz / 16QAM

CH Mid

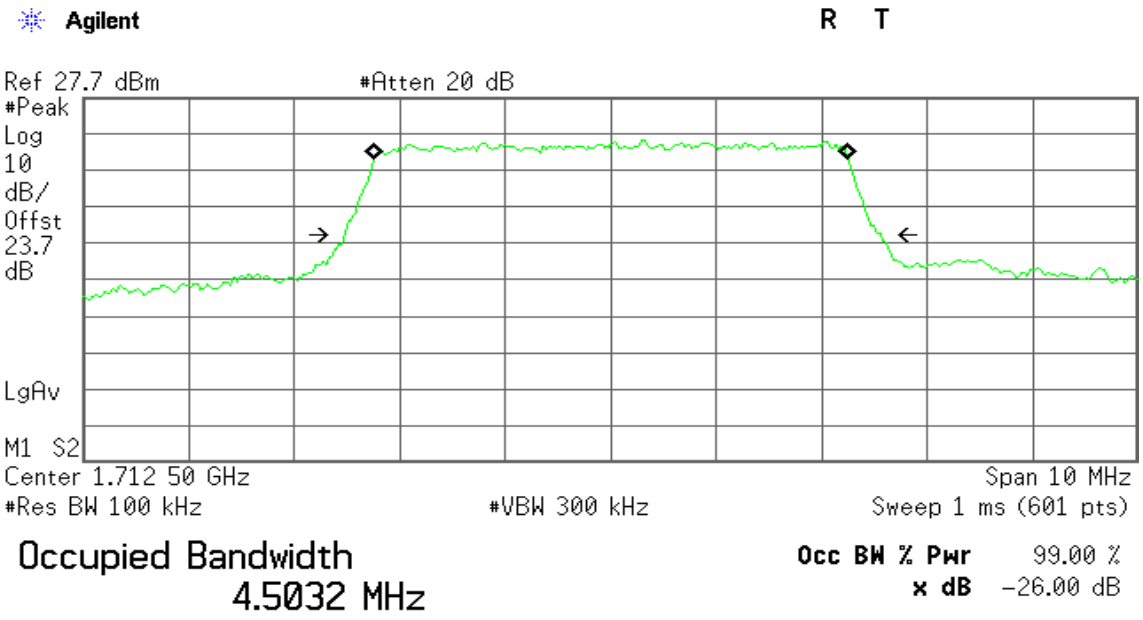


Transmit Freq Error 19.407 kHz
x dB Bandwidth 9.499 MHz

LTE Band 4

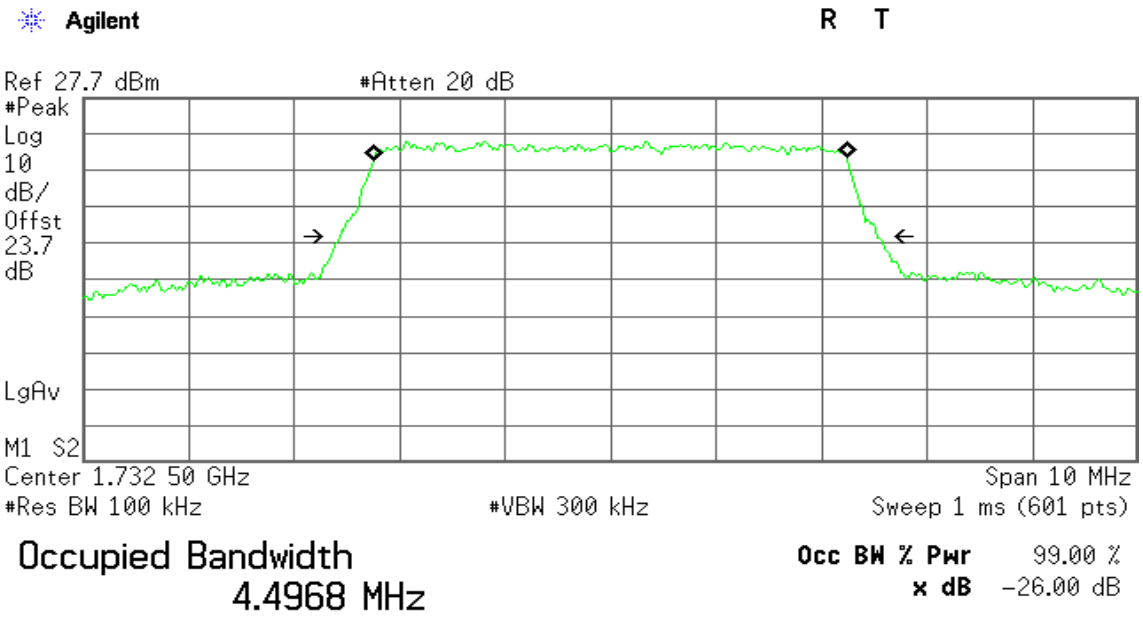
CHANNEL BANDWIDTH: 5MHz / QPSK

CH Low



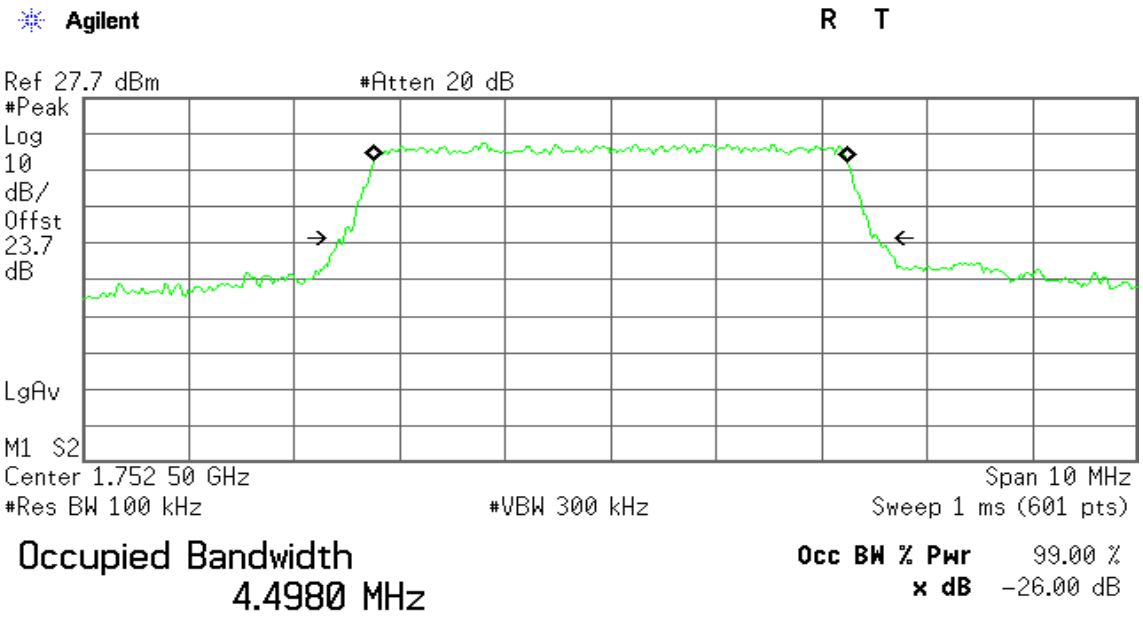
Transmit Freq Error 5.710 kHz
x dB Bandwidth 5.092 MHz

CH Mid



Transmit Freq Error -5.846 kHz
x dB Bandwidth 5.095 MHz

CH High



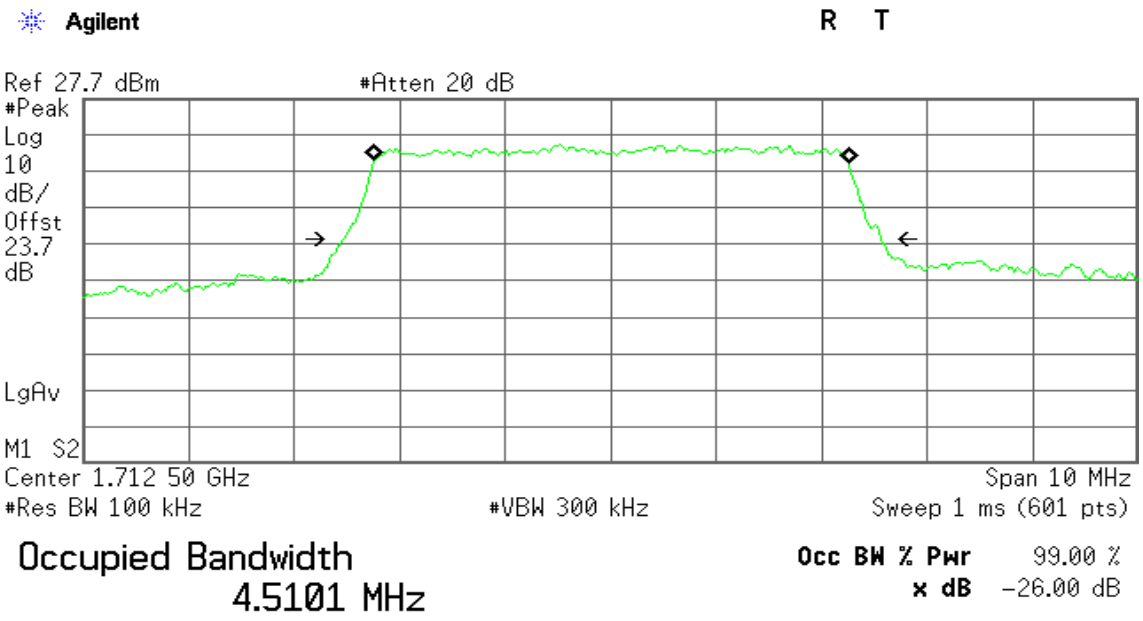
Occupied Bandwidth
4.4980 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -342.002 Hz
x dB Bandwidth 5.068 MHz

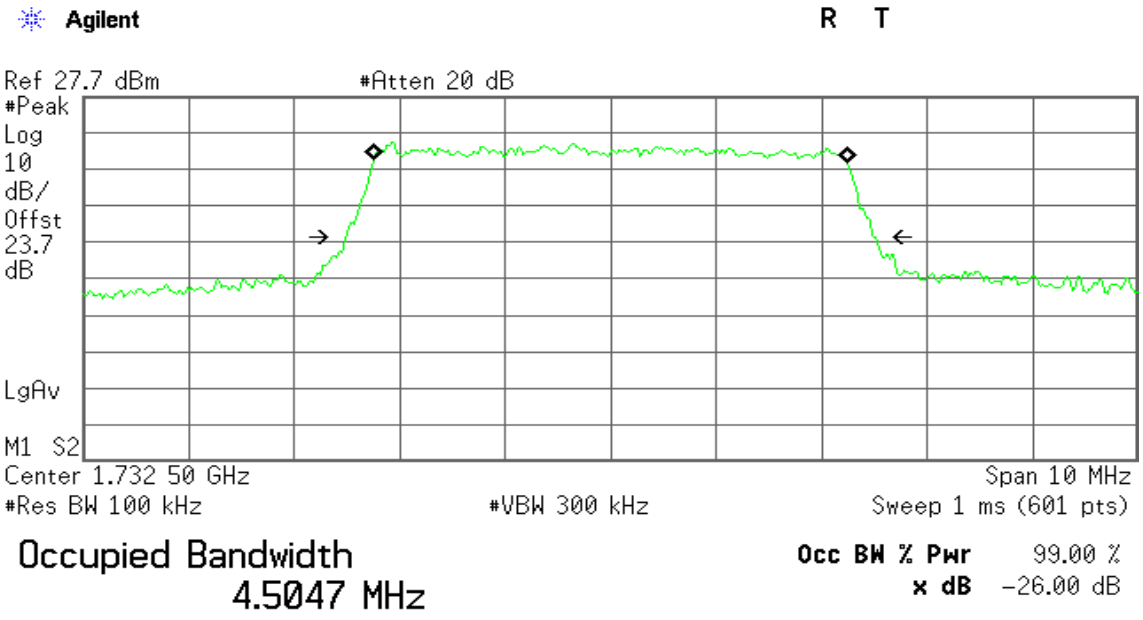
CHANNEL BANDWIDTH: 5MHz / 16QAM

CH Low



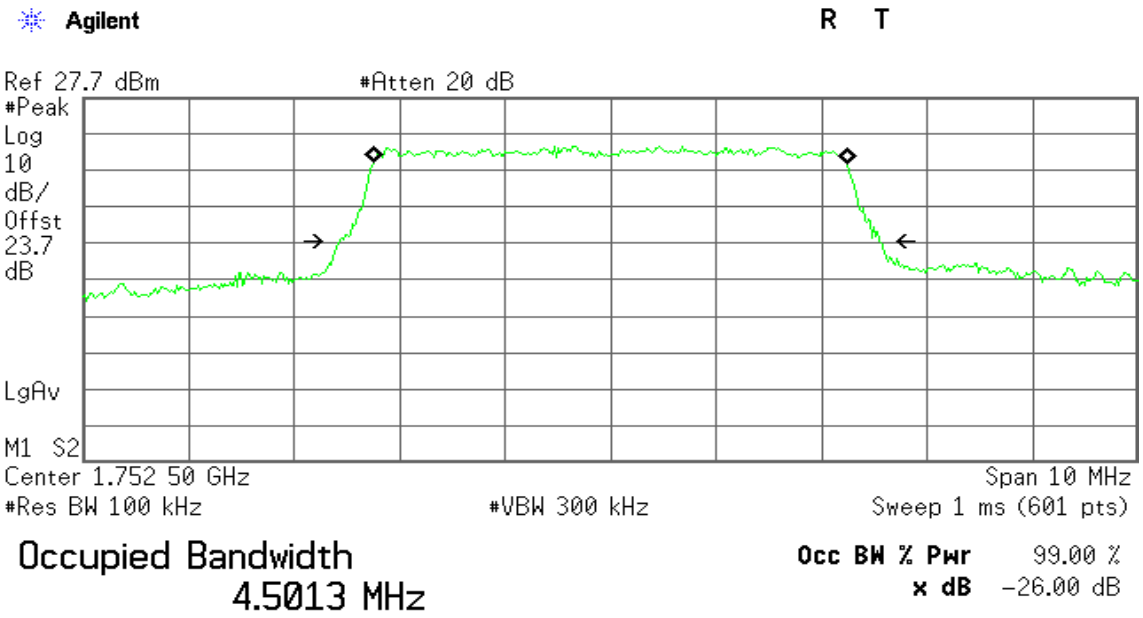
Transmit Freq Error	5.412 kHz
x dB Bandwidth	5.111 MHz

CH Mid



Transmit Freq Error	1.376 kHz
x dB Bandwidth	5.034 MHz

CH High



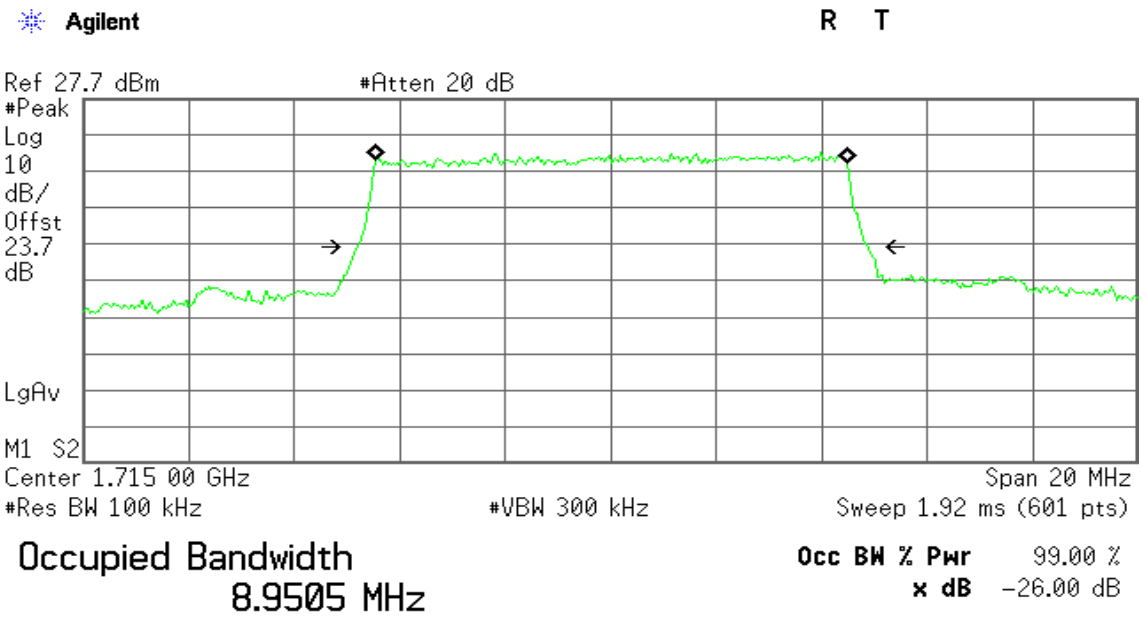
Occupied Bandwidth
4.5013 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -3.523 kHz
x dB Bandwidth 5.128 MHz

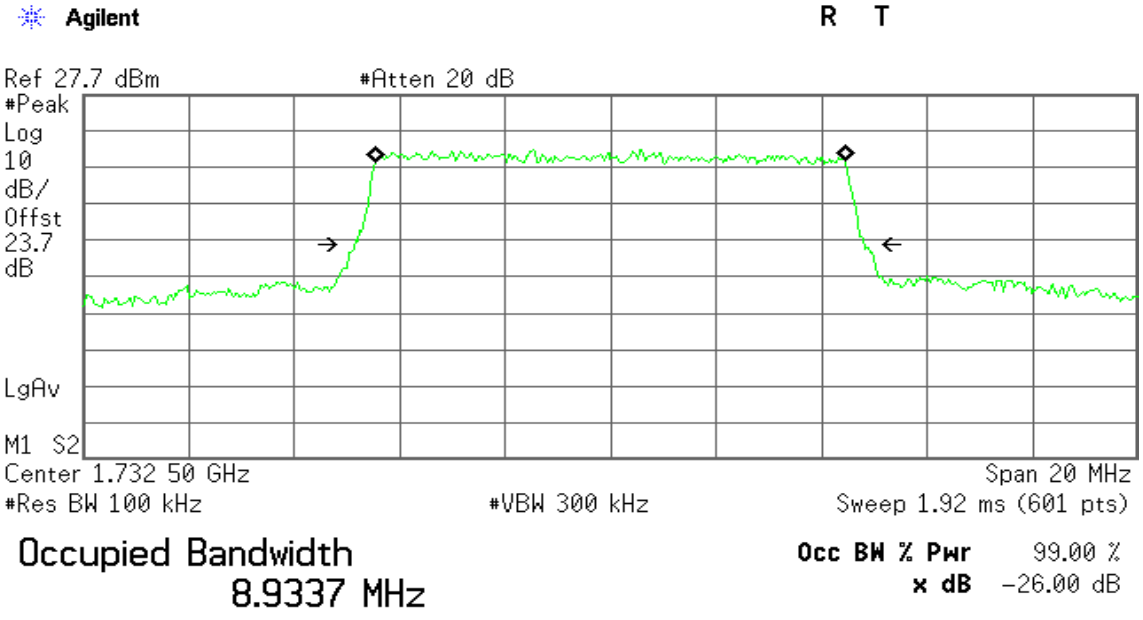
CHANNEL BANDWIDTH: 10MHz / QPSK

CH Low



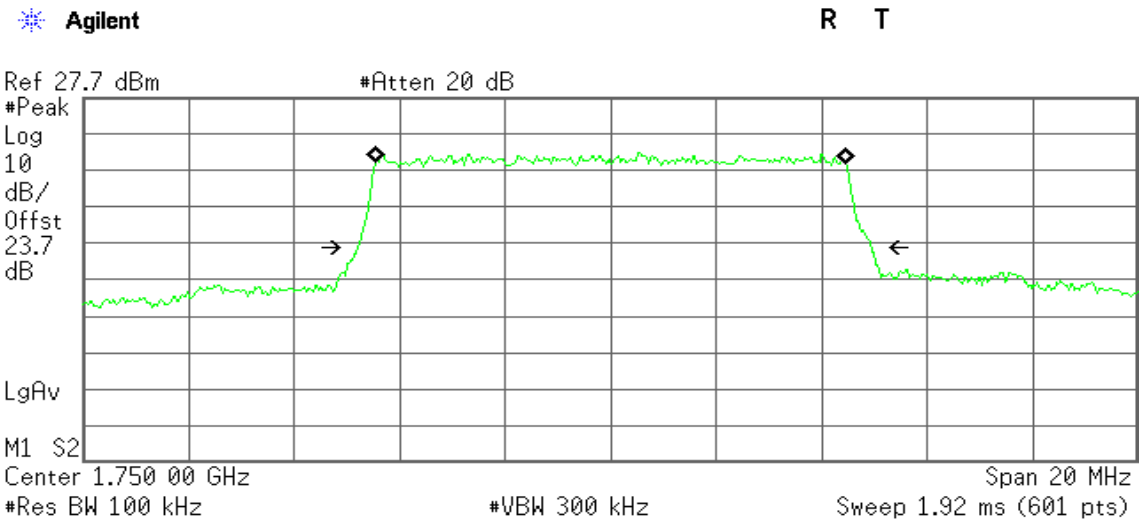
Transmit Freq Error 10.138 kHz
x dB Bandwidth 9.701 MHz

CH Mid



Transmit Freq Error -1.831 kHz
x dB Bandwidth 9.674 MHz

CH High



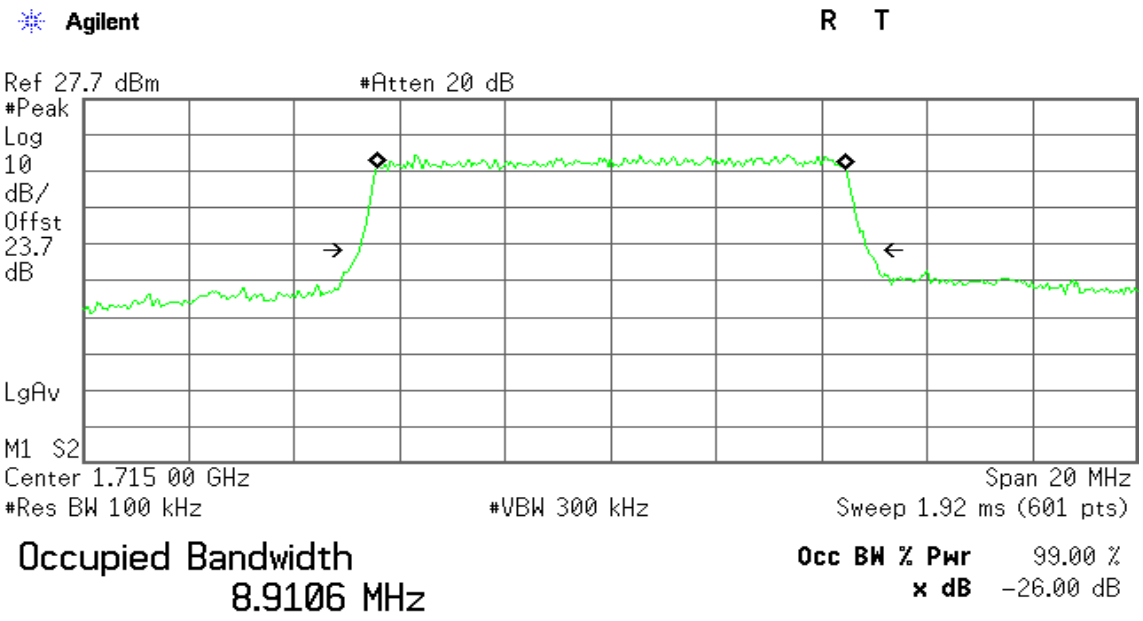
Occupied Bandwidth
8.9501 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 5.268 kHz
x dB Bandwidth 9.765 MHz

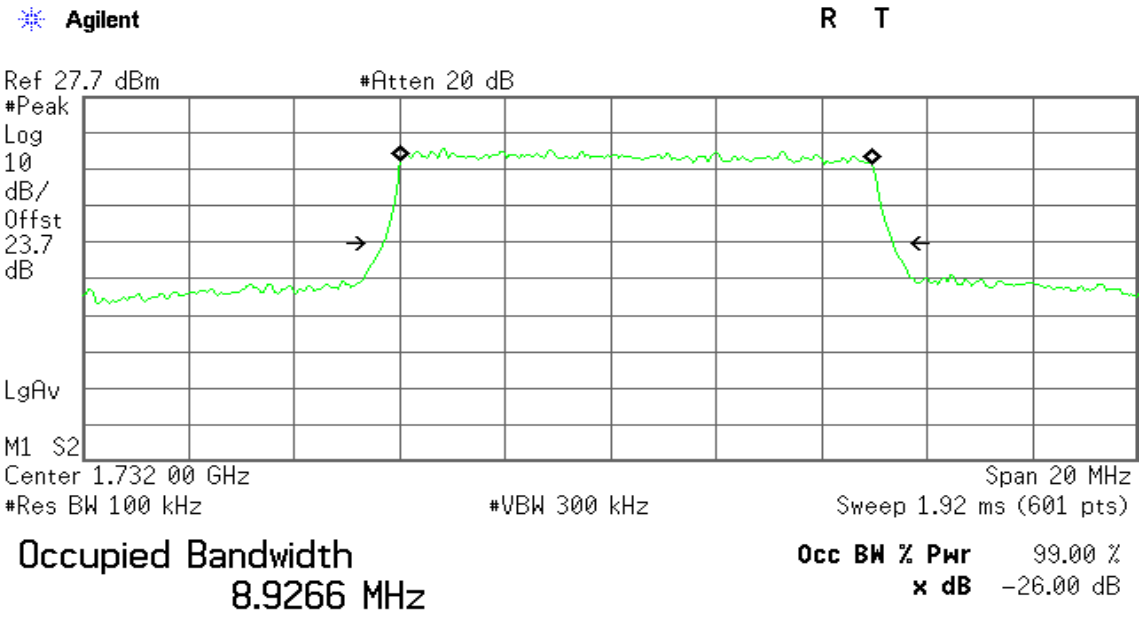
CHANNEL BANDWIDTH: 10MHz / 16QAM

CH Low



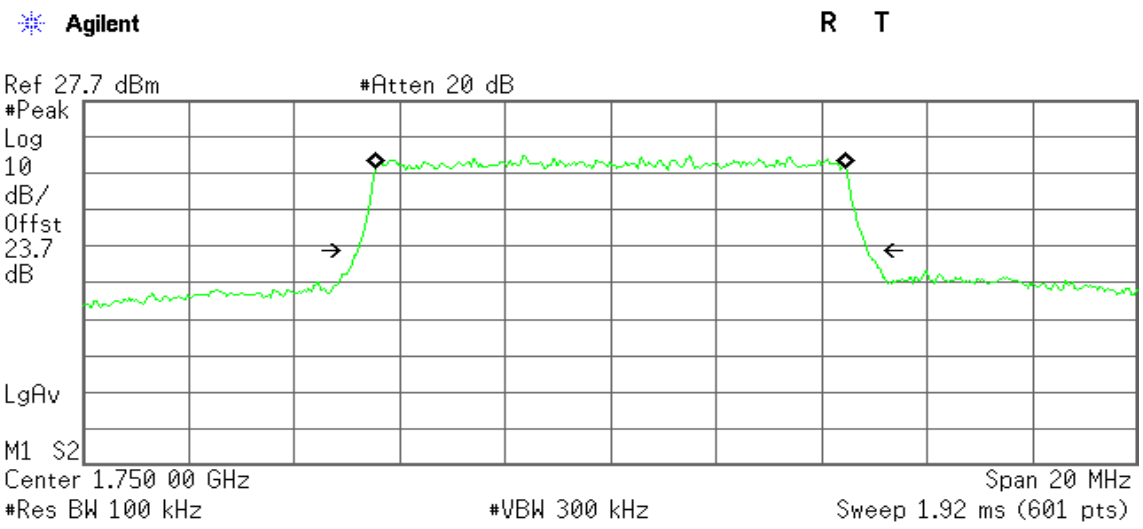
Transmit Freq Error	13.613 kHz
x dB Bandwidth	9.649 MHz

CH Mid



Transmit Freq Error	499.592 kHz
x dB Bandwidth	9.692 MHz

CH High



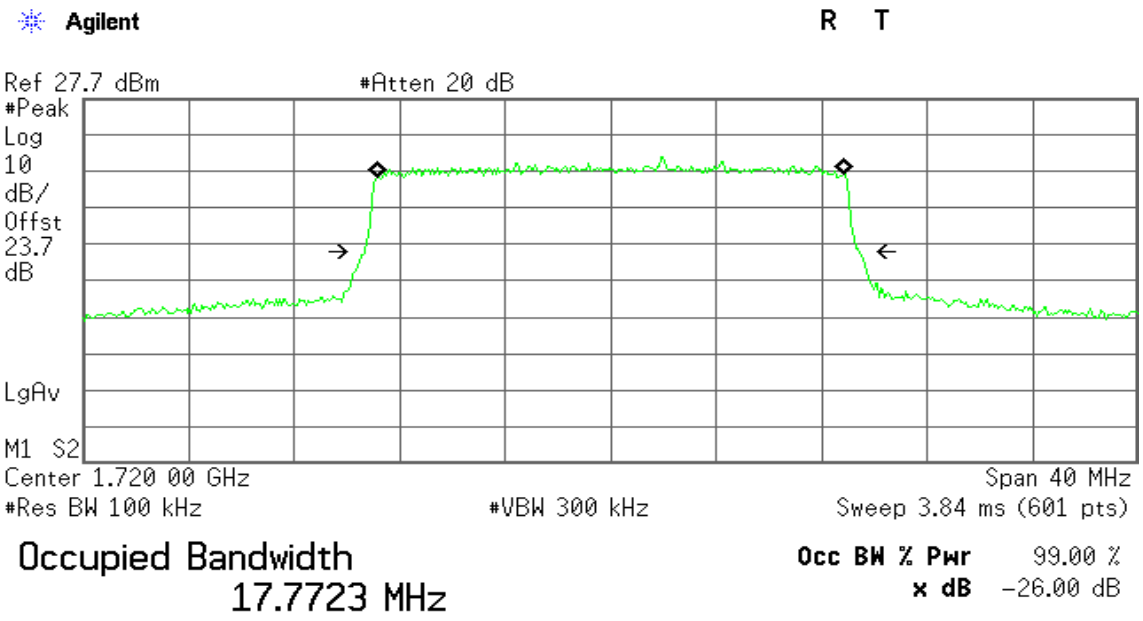
Occupied Bandwidth
8.9330 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 8.077 kHz
x dB Bandwidth 9.683 MHz

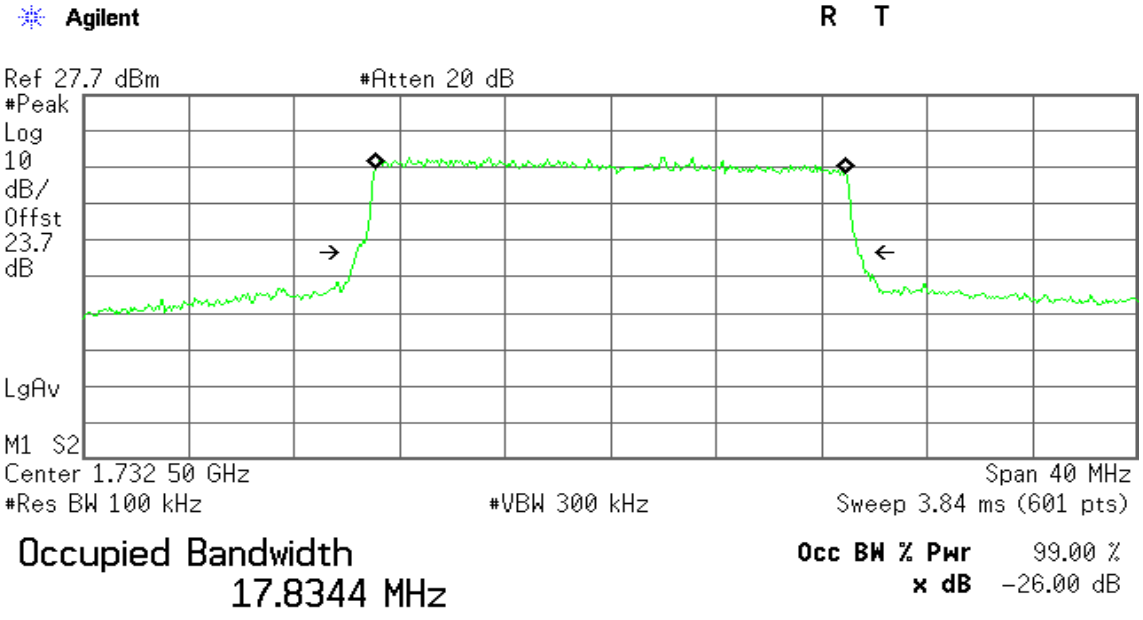
CHANNEL BANDWIDTH: 20MHz / QPSK

CH Low



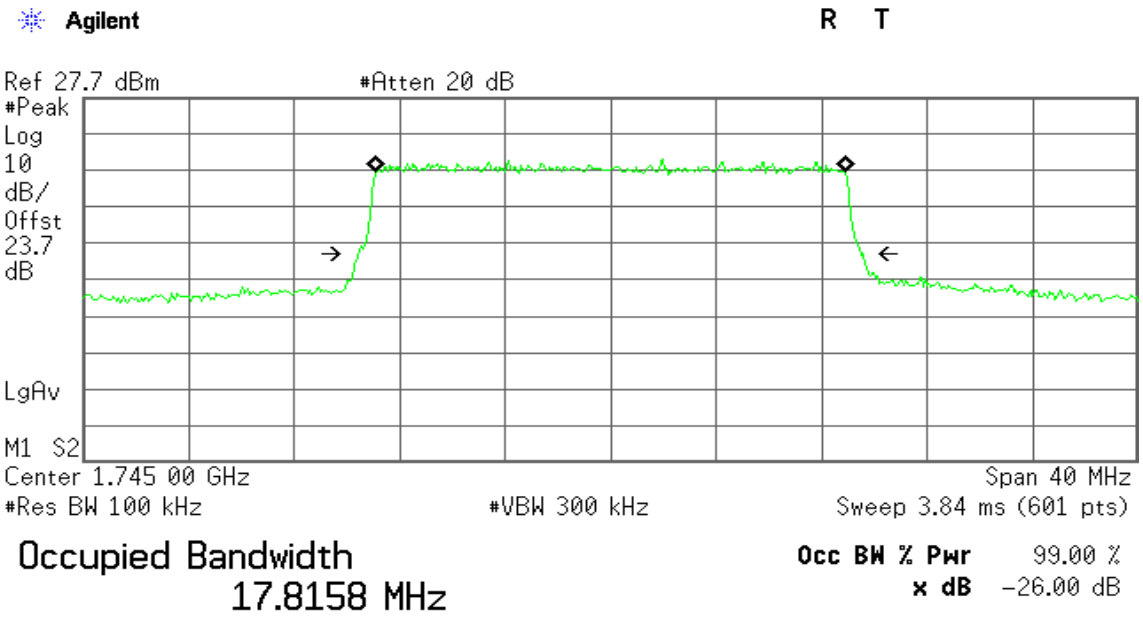
Transmit Freq Error	8.349 kHz
x dB Bandwidth	18.786 MHz

CH Mid



Transmit Freq Error	-12.732 kHz
x dB Bandwidth	19.032 MHz

CH High



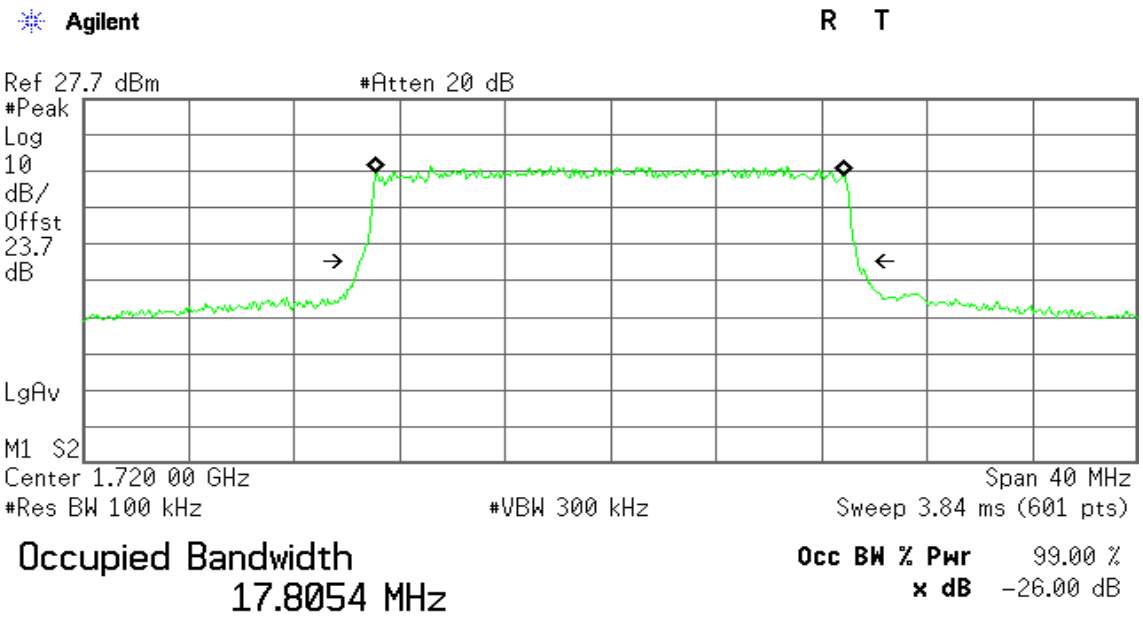
Occupied Bandwidth
17.8158 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 7.693 kHz
x dB Bandwidth 19.092 MHz

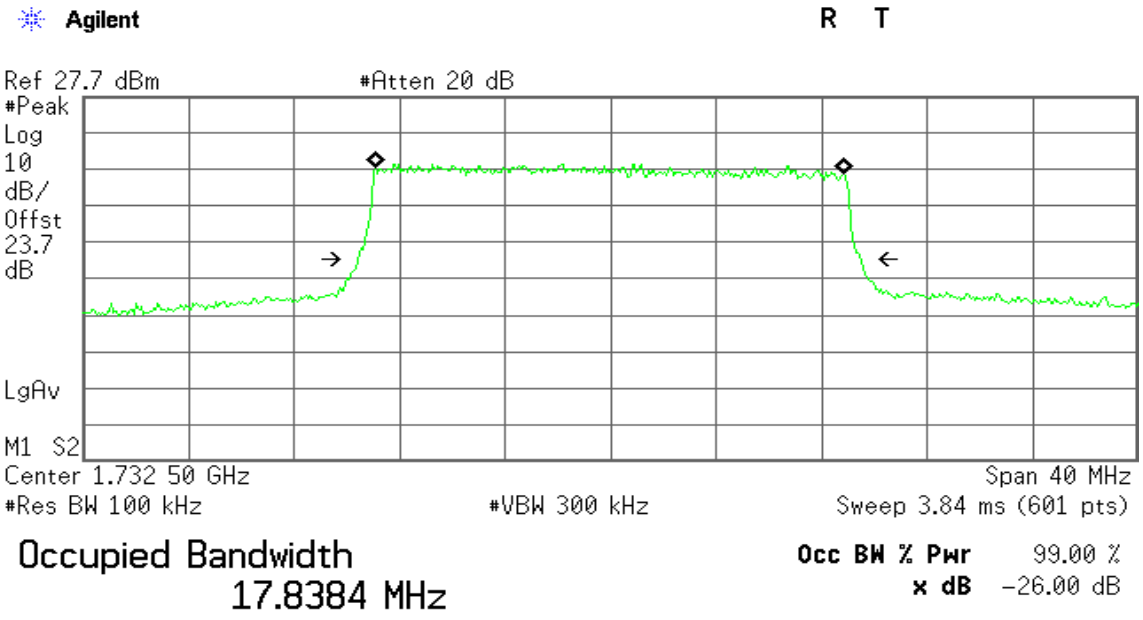
CHANNEL BANDWIDTH: 20MHz / 16QAM

CH Low



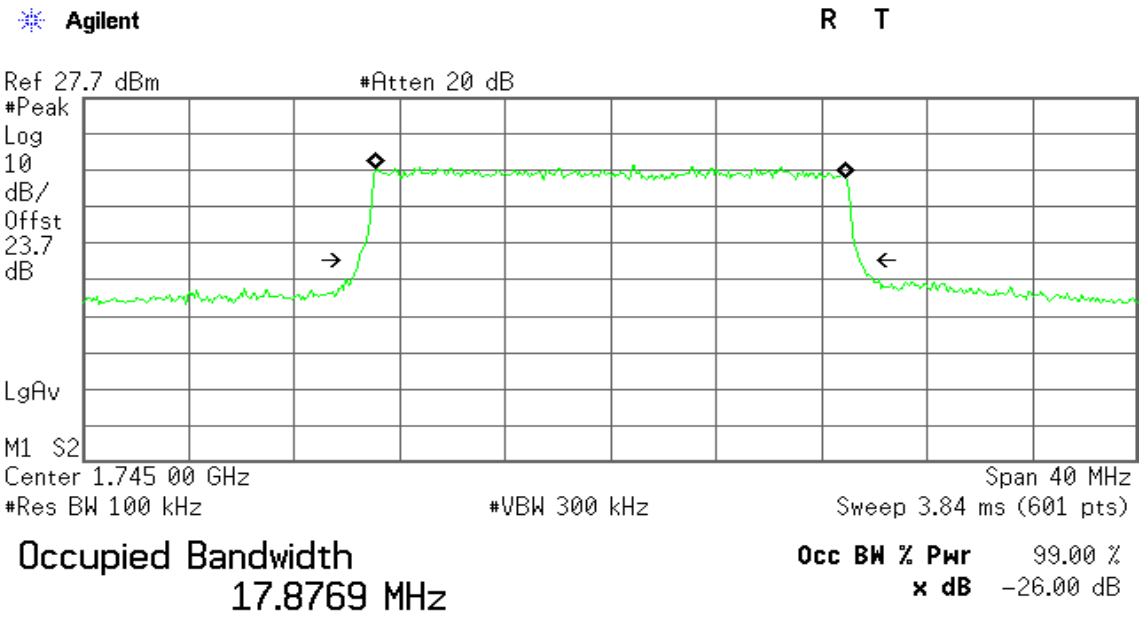
Transmit Freq Error	-2.724 kHz
x dB Bandwidth	18.918 MHz

CH Mid



Transmit Freq Error	-27.007 kHz
x dB Bandwidth	19.109 MHz

CH High



Occupied Bandwidth
17.8769 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -5.653 kHz
x dB Bandwidth 19.015 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	6.01
Mid	782.0	5.62
High	784.5	5.87

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	779.5	7.24
Mid	782.0	6.36
High	784.5	6.73

CHANNEL BANDWIDTH: 10MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Mid	782.0	4.91

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Mid	782.0	6.77

LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1712.5	6.59
Mid	1732.5	6.25
High	1752.5	6.65

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1712.5	7.77
Mid	1732.5	7.41
High	1752.5	7.63

CHANNEL BANDWIDTH: 10MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	5.06
Mid	1732.5	6.15
High	1750.0	5.25

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	7.09
Mid	1732.5	7.24
High	1750.0	7.09

CHANNEL BANDWIDTH: 20MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	7.34
Mid	1732.5	7.37
High	1750.0	7.38

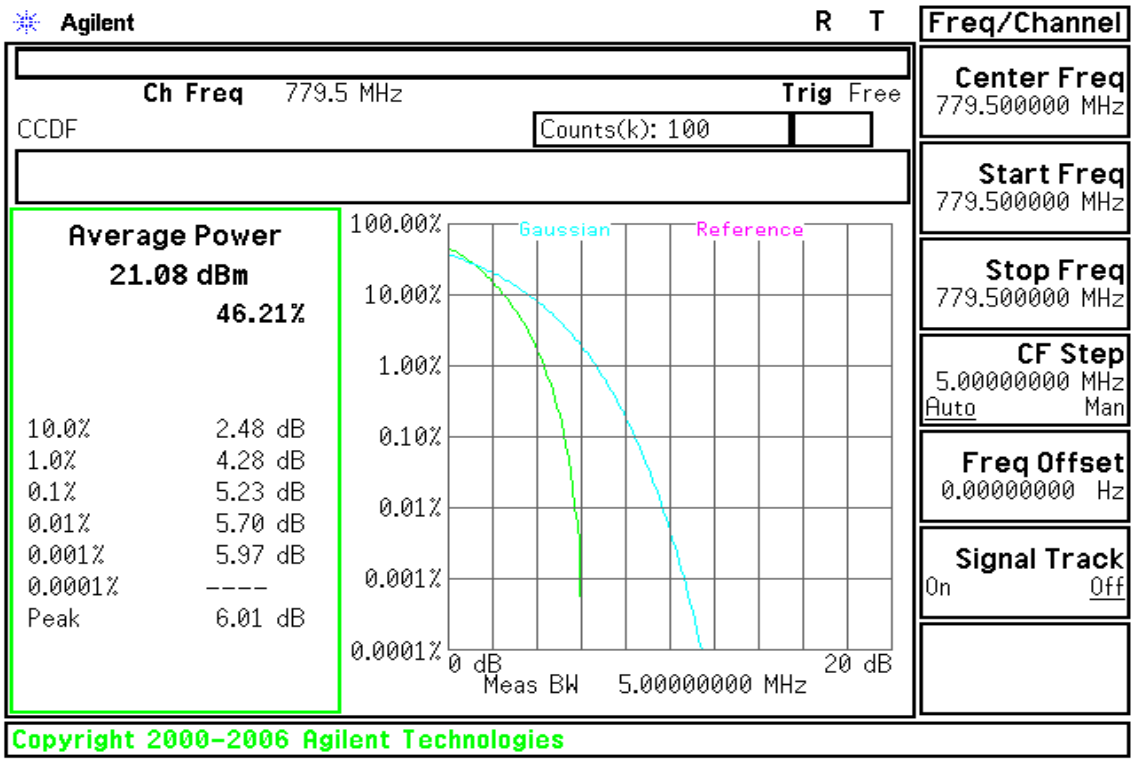
CHANNEL BANDWIDTH: 20MHz / 16QAM / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	9.02
Mid	1732.5	8.47
High	1750.0	9.12

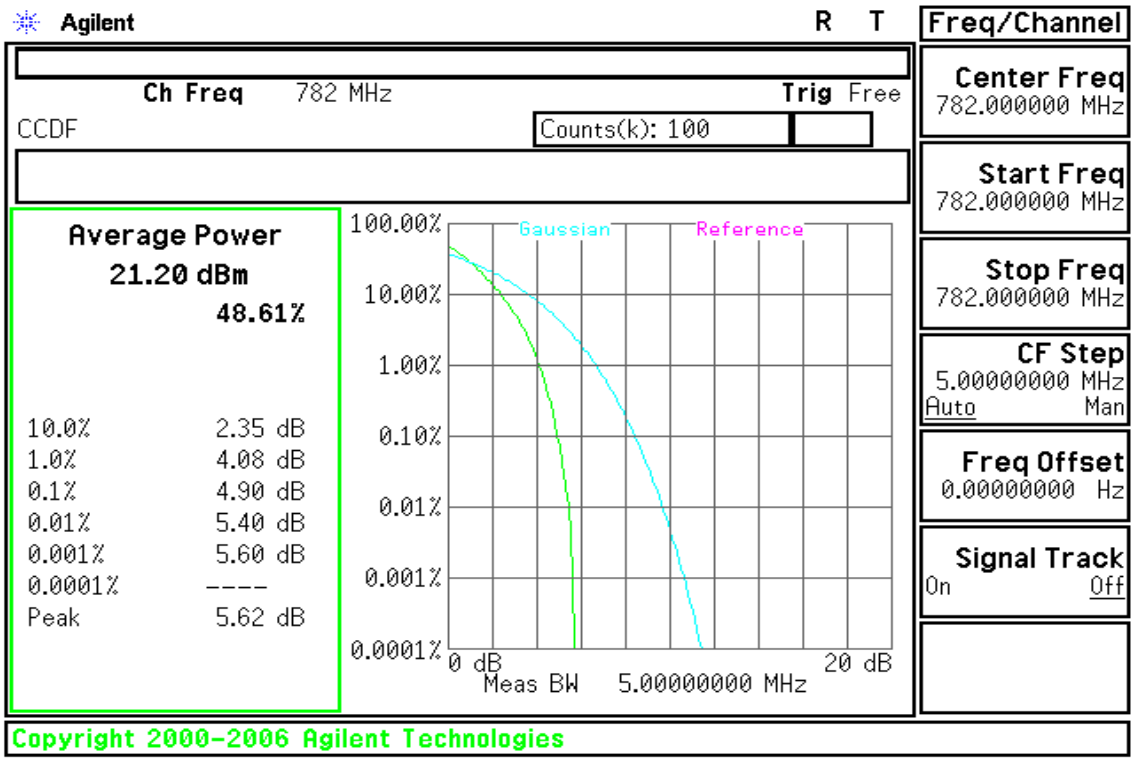
LTE Band 13

CHANNEL BANDWIDTH: 5MHz / QPSK

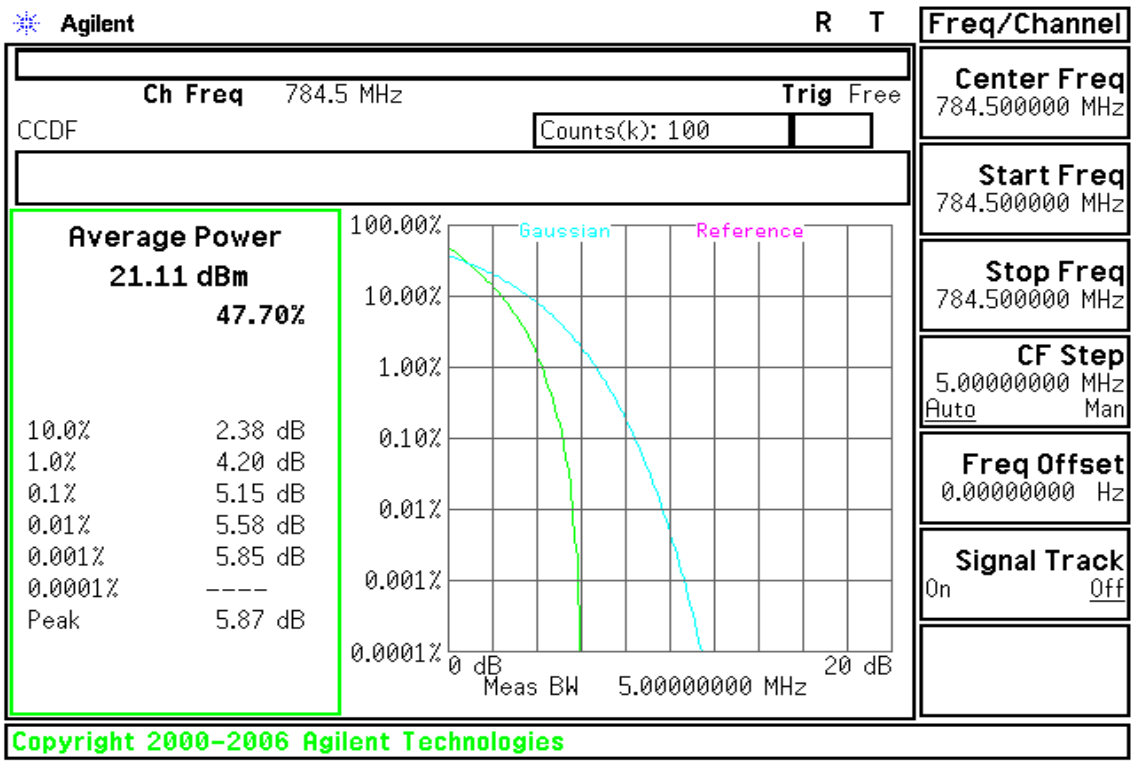
CH Low



CH Mid

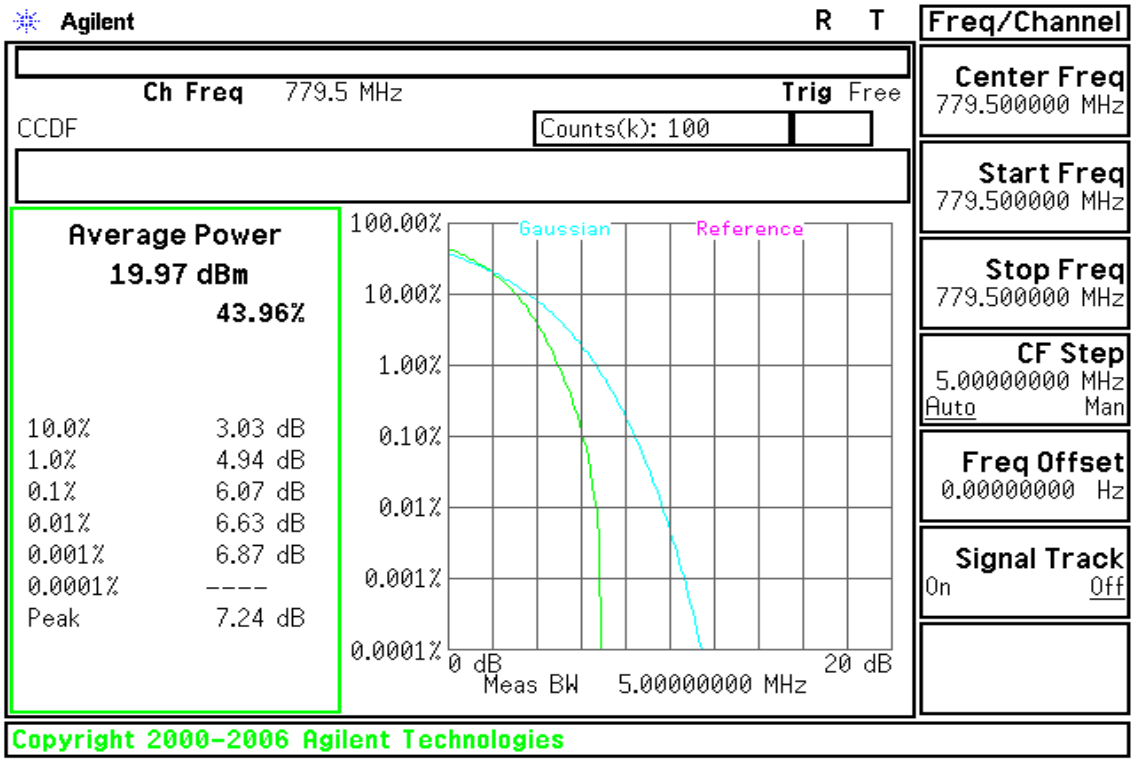


CH High

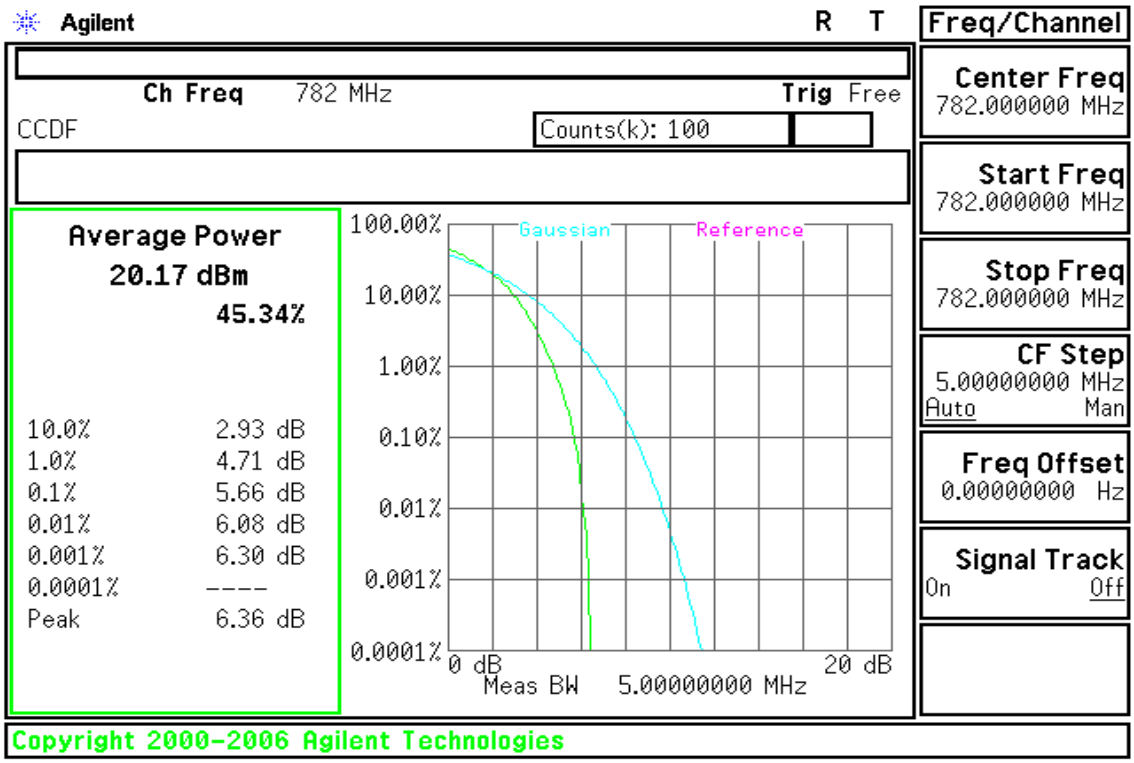

Agilent
R T
Freq/Channel
Ch Freq 784.5 MHz
Trig Free
CCDF
Counts(k): 100
Center Freq
784.500000 MHz
Start Freq
784.500000 MHz
Stop Freq
784.500000 MHz
CF Step
5.00000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Average Power
21.11 dBm
47.70%
10.0% 2.38 dB
1.0% 4.20 dB
0.1% 5.15 dB
0.01% 5.58 dB
0.001% 5.85 dB
0.0001% ----
Peak 5.87 dB
100.00%
10.00%
1.00%
0.10%
0.01%
0.001%
0.0001%
Gaussian
Reference
0 dB
20 dB
Meas BW 5.00000000 MHz
Copyright 2000-2006 Agilent Technologies

CHANNEL BANDWIDTH: 5MHz / 16QAM

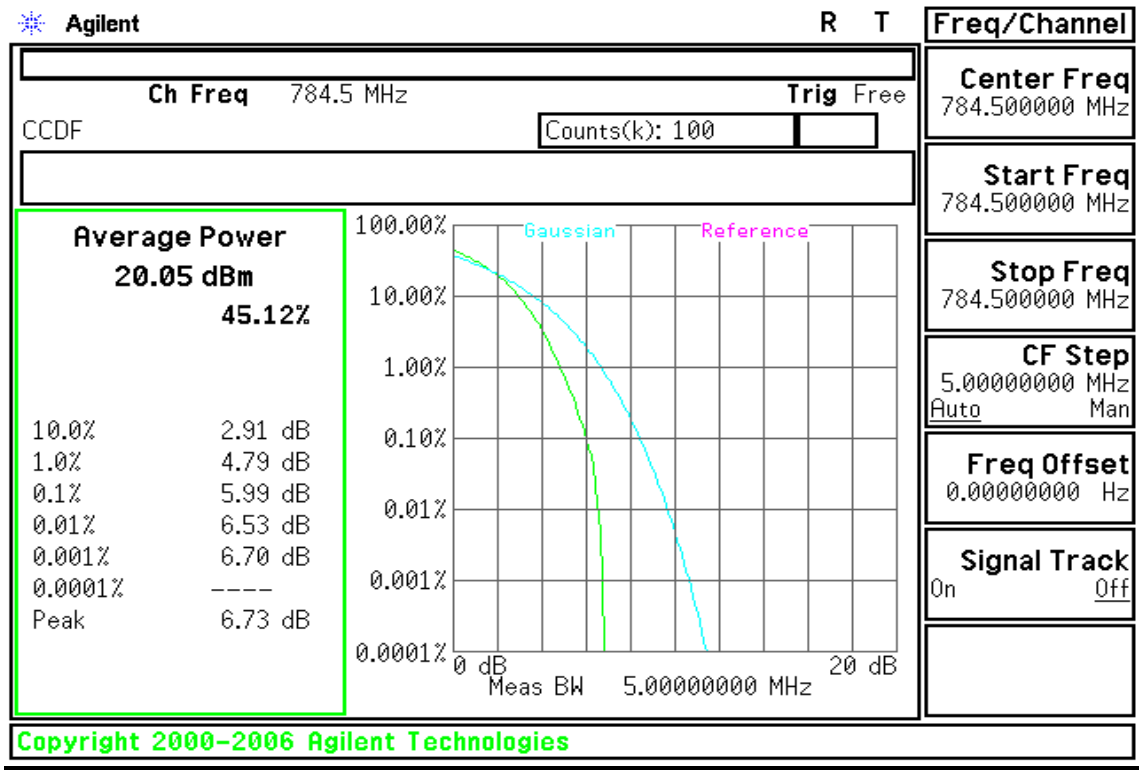
CH Low



CH Mid

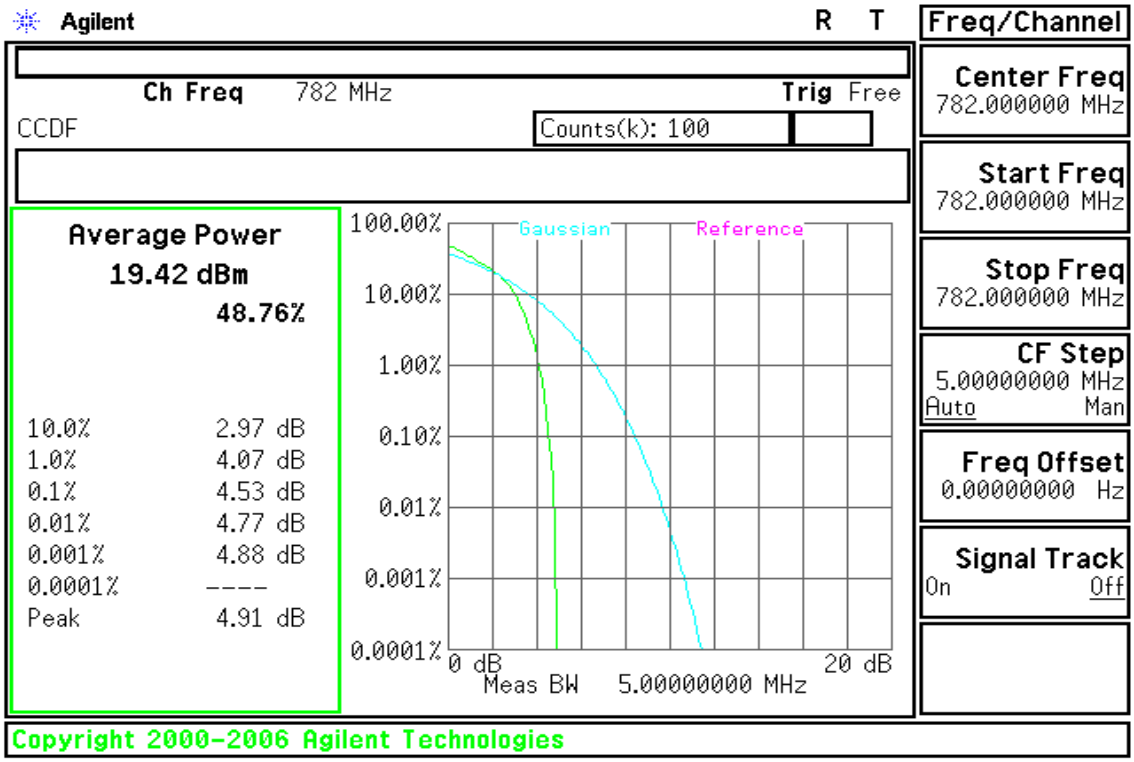


CH High


Agilent
R T
Freq/Channel
Ch Freq 784.5 MHz
Trig Free
CCDF
Counts(k): 100
Center Freq
784.500000 MHz
Start Freq
784.500000 MHz
Stop Freq
784.500000 MHz
CF Step
5.00000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Average Power
20.05 dBm
45.12%
10.0% 2.91 dB
1.0% 4.79 dB
0.1% 5.99 dB
0.01% 6.53 dB
0.001% 6.70 dB
0.0001% ----
Peak 6.73 dB
100.00%
10.00%
1.00%
0.10%
0.01%
0.001%
0.0001%
Gaussian
Reference
0 dB
20 dB
Meas BW 5.00000000 MHz
Copyright 2000-2006 Agilent Technologies

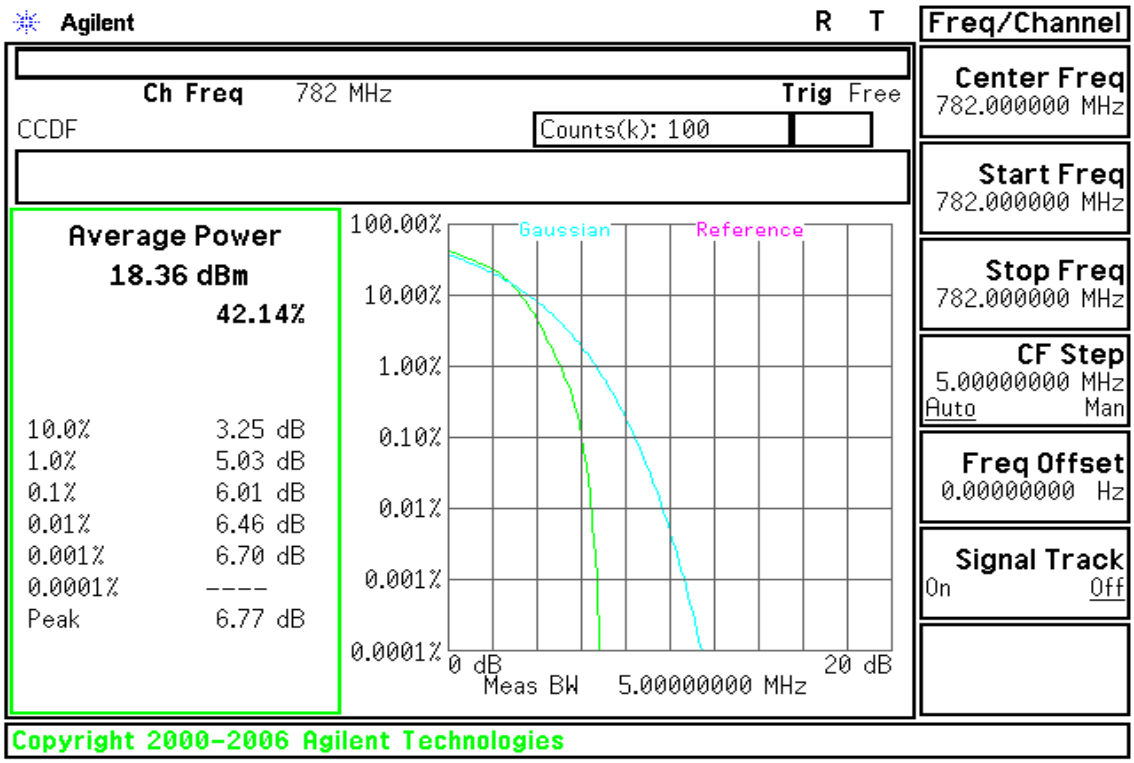
CHANNEL BANDWIDTH: 10MHz / QPSK

CH Mid



CHANNEL BANDWIDTH: 10MHz / 16QAM

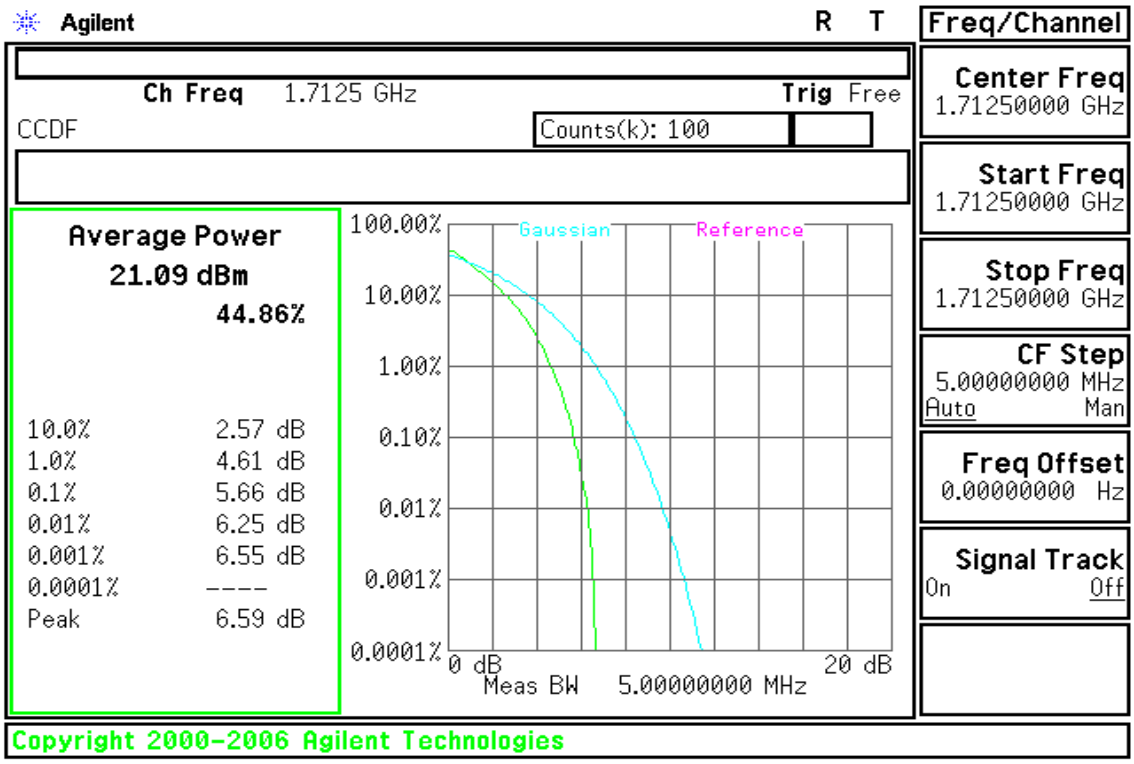
CH Mid



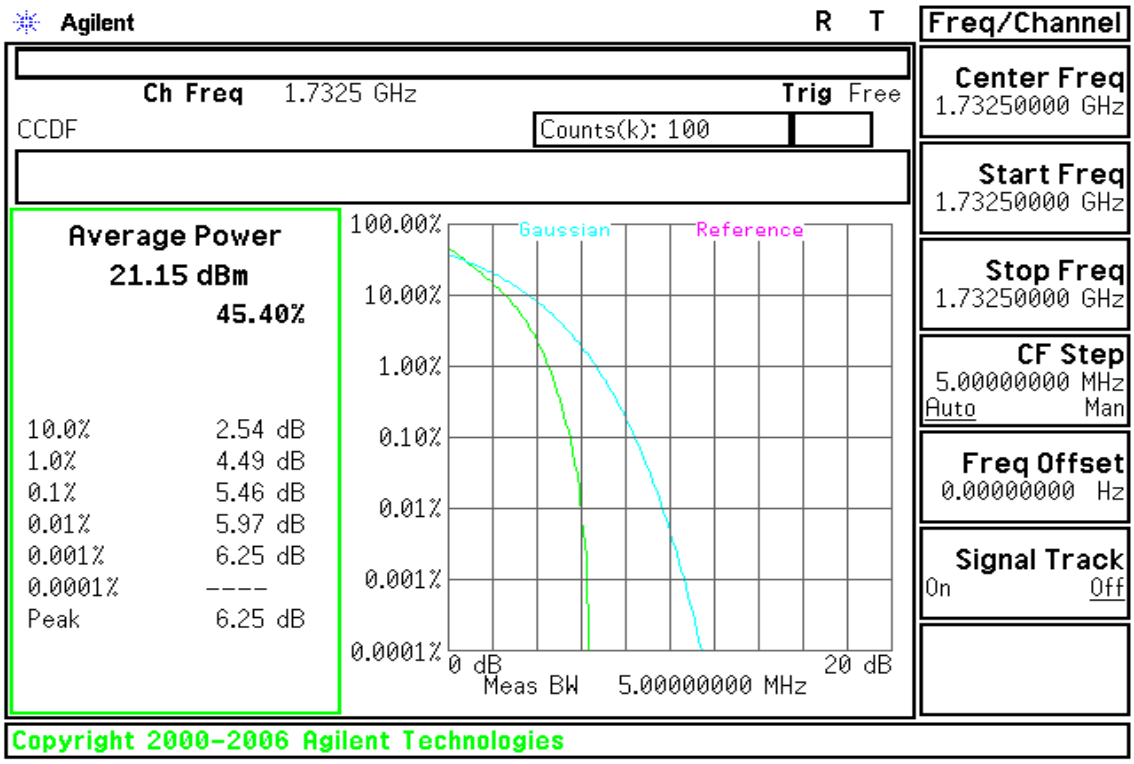
LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK

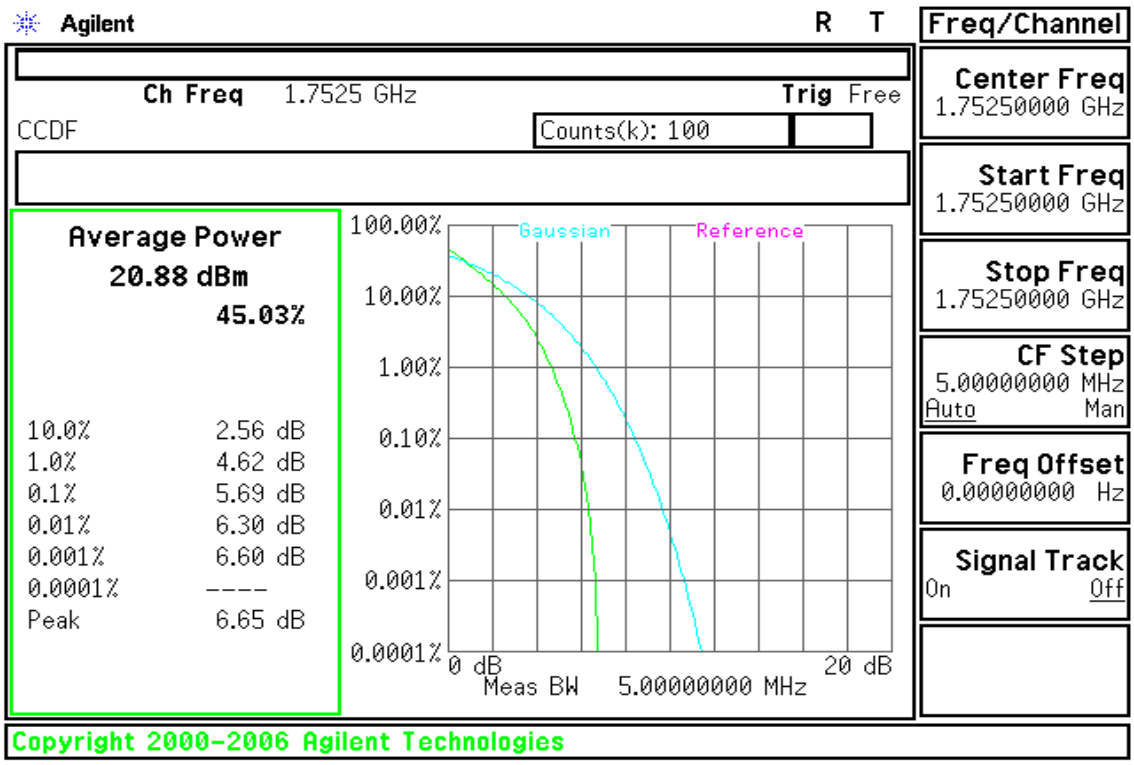
CH Low



CH Mid

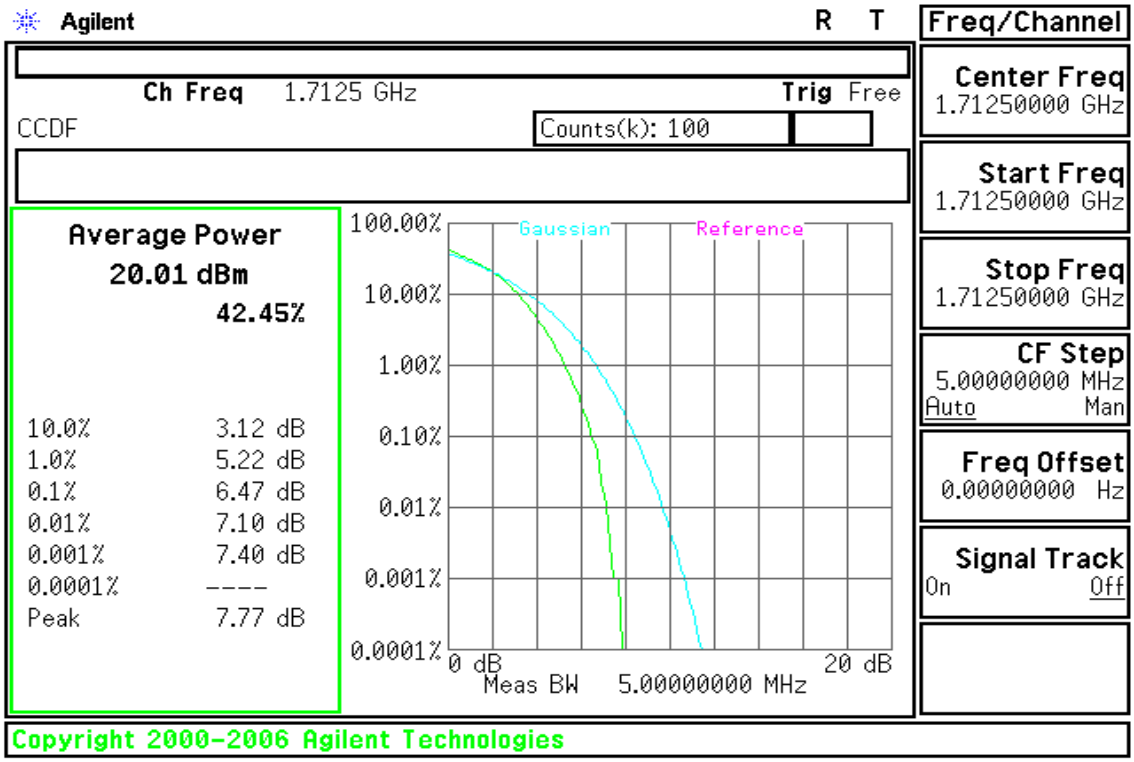


CH High

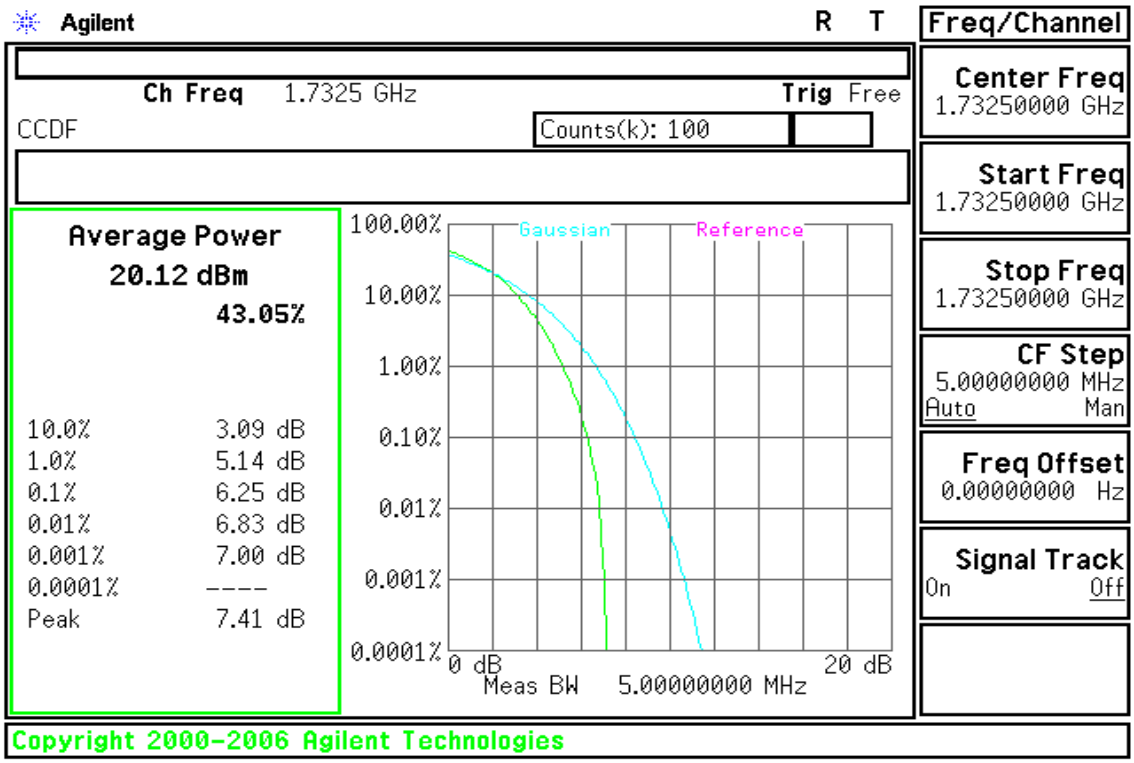

Agilent
R T
Freq/Channel
Ch Freq 1.7525 GHz
Trig Free
CCDF
Counts(k): 100
Center Freq
1.75250000 GHz
Start Freq
1.75250000 GHz
Stop Freq
1.75250000 GHz
CF Step
5.00000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Average Power
20.88 dBm
45.03%
10.0% 2.56 dB
1.0% 4.62 dB
0.1% 5.69 dB
0.01% 6.30 dB
0.001% 6.60 dB
0.0001% ----
Peak 6.65 dB
100.00%
10.00%
1.00%
0.10%
0.01%
0.001%
0.0001%
Gaussian
Reference
0 dB
20 dB
Meas BW 5.00000000 MHz
Copyright 2000-2006 Agilent Technologies

CHANNEL BANDWIDTH: 5MHz / 16QAM

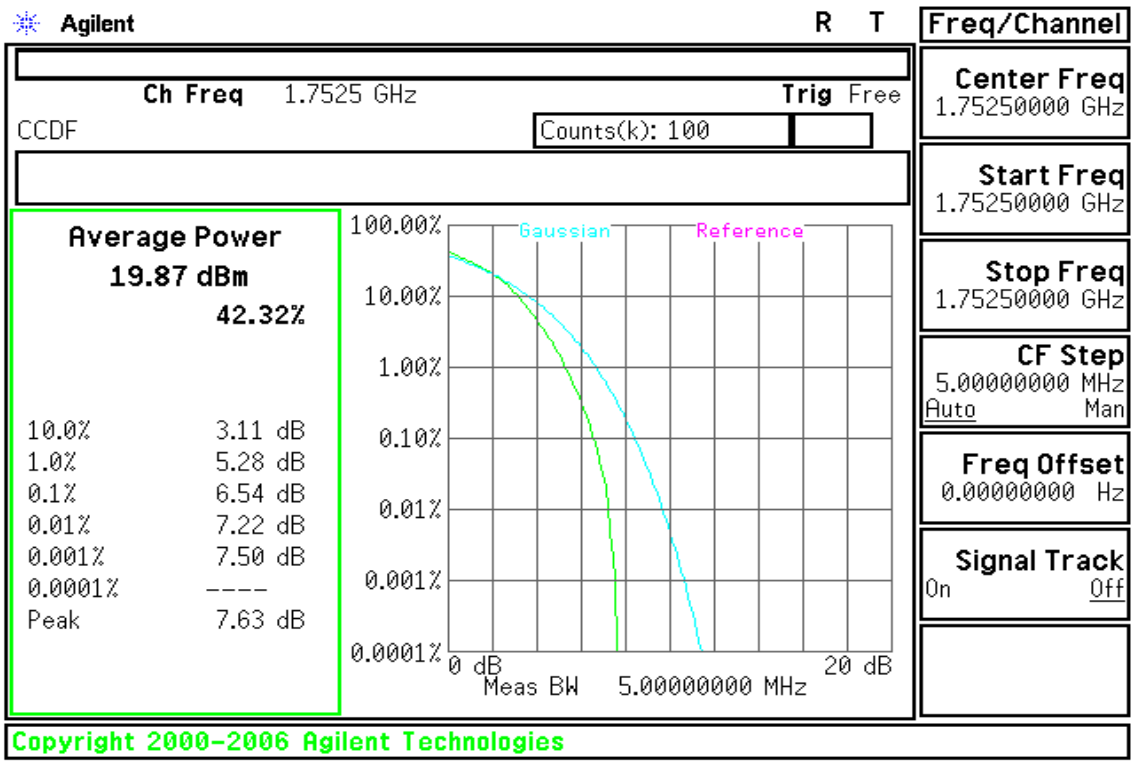
CH Low



CH Mid

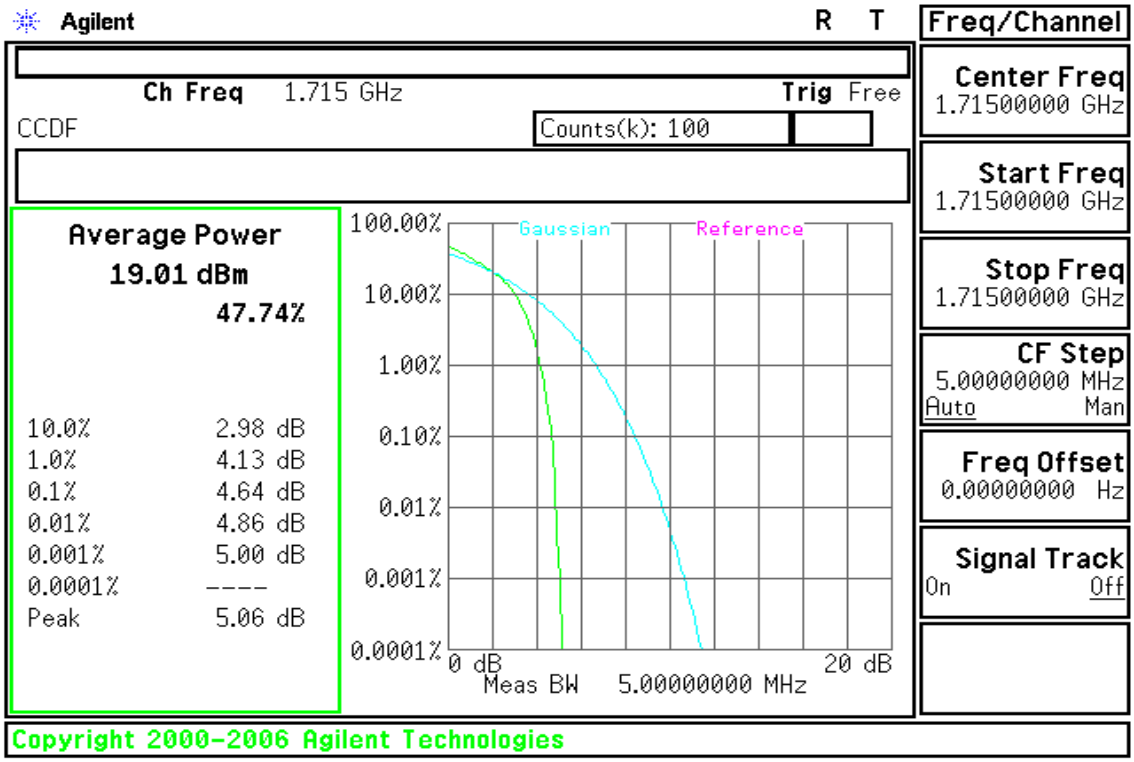


CH High

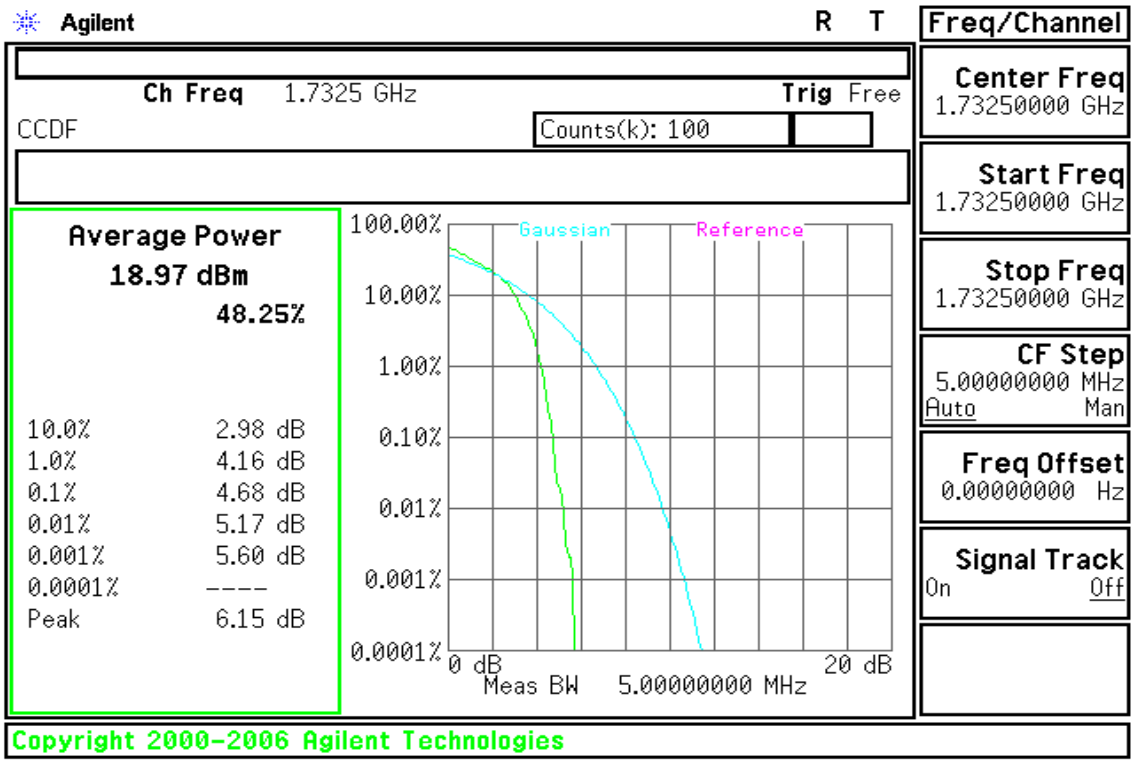

Agilent
R T
Freq/Channel
Ch Freq 1.7525 GHz
Trig Free
CCDF
Counts(k): 100
Center Freq
1.75250000 GHz
Start Freq
1.75250000 GHz
Stop Freq
1.75250000 GHz
CF Step
5.00000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Average Power
19.87 dBm
42.32%
10.0% 3.11 dB
1.0% 5.28 dB
0.1% 6.54 dB
0.01% 7.22 dB
0.001% 7.50 dB
0.0001% ----
Peak 7.63 dB
100.00%
10.00%
1.00%
0.10%
0.01%
0.001%
0.0001%
Gaussian
Reference
0 dB
20 dB
Meas BW 5.00000000 MHz
Copyright 2000-2006 Agilent Technologies

CHANNEL BANDWIDTH: 10MHz / QPSK

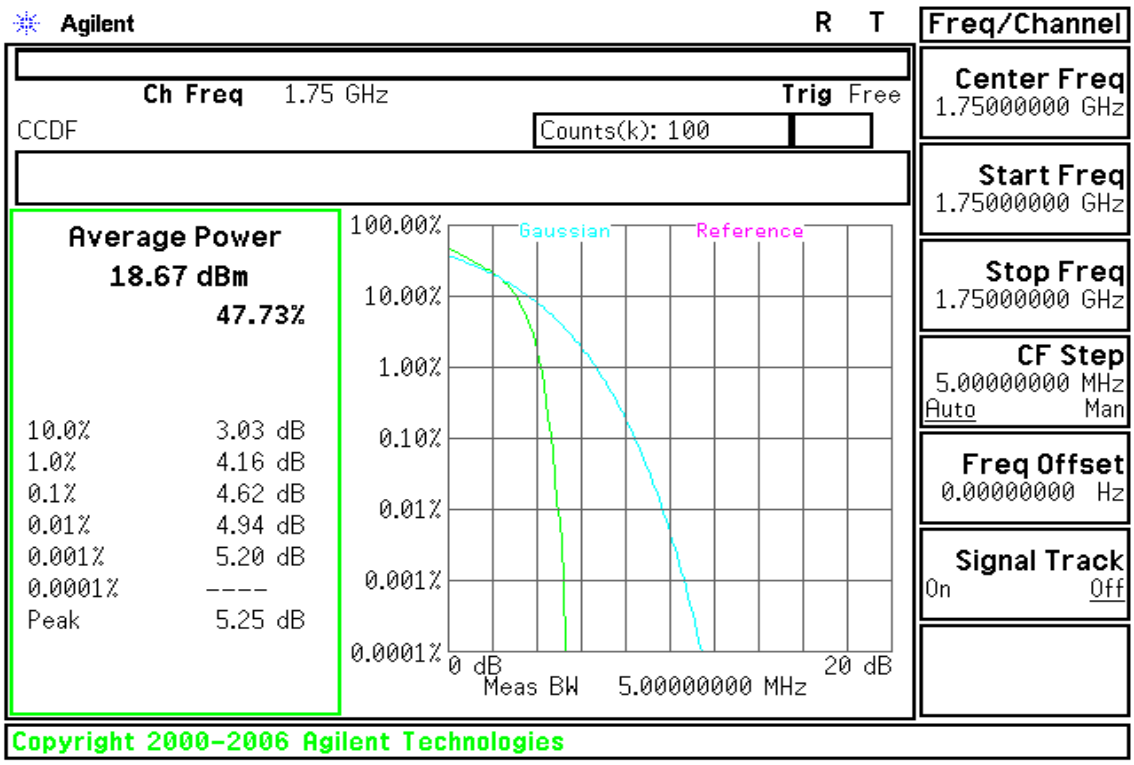
CH Low



CH Mid

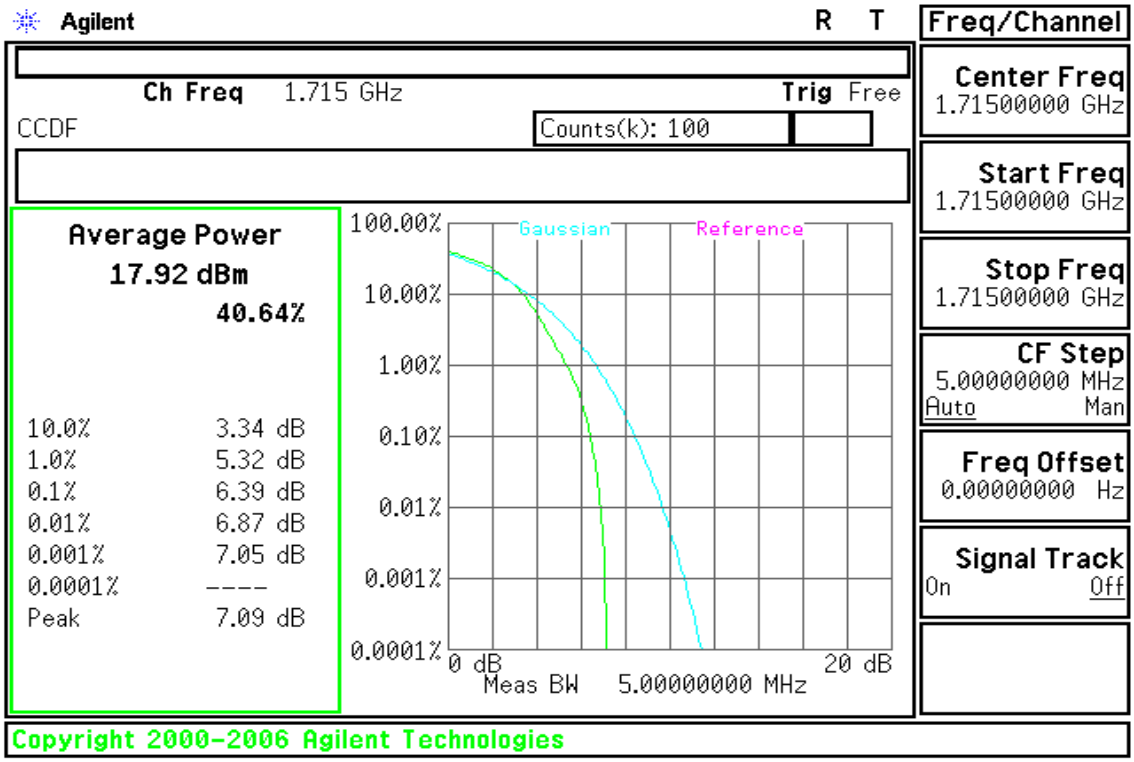


CH High

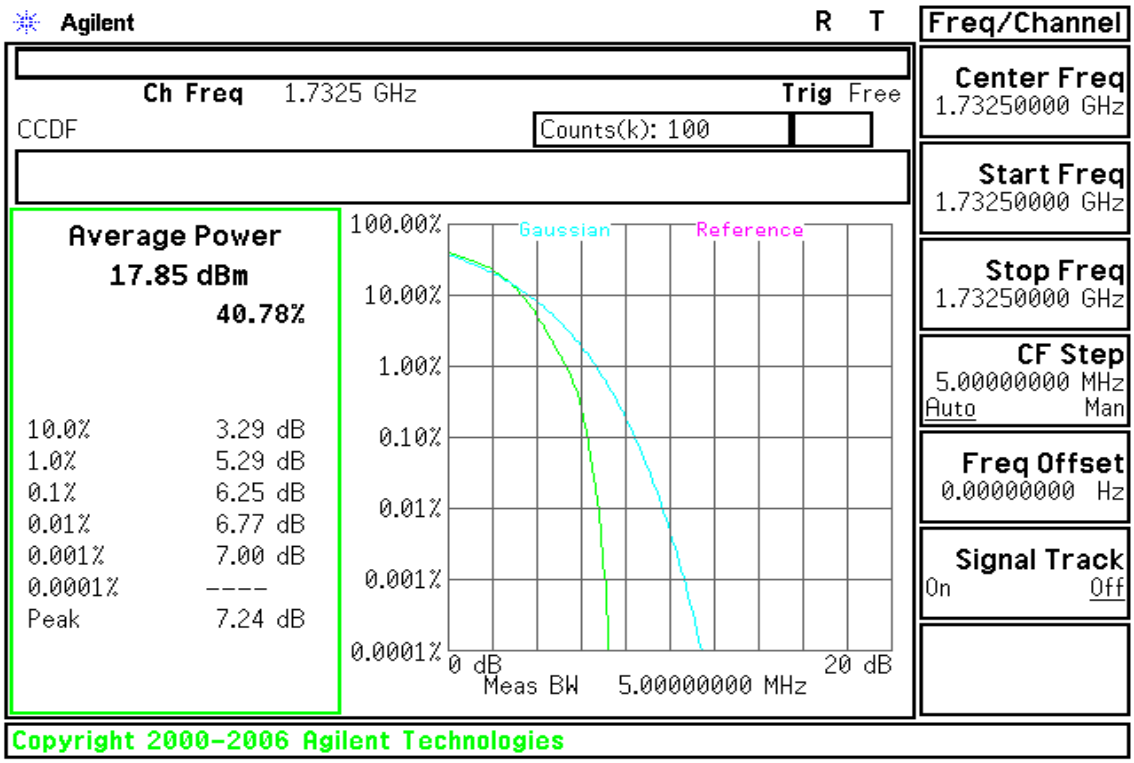

Agilent
R T
Freq/Channel
Ch Freq 1.75 GHz
Trig Free
CCDF
Counts(k): 100
Center Freq
1.75000000 GHz
Start Freq
1.75000000 GHz
Stop Freq
1.75000000 GHz
CF Step
5.00000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Average Power
18.67 dBm
47.73%
10.0% 3.03 dB
1.0% 4.16 dB
0.1% 4.62 dB
0.01% 4.94 dB
0.001% 5.20 dB
0.0001% ----
Peak 5.25 dB
100.00%
10.00%
1.00%
0.10%
0.01%
0.001%
0.0001%
Gaussian
Reference
0 dB
20 dB
Meas BW 5.00000000 MHz
Copyright 2000-2006 Agilent Technologies

CHANNEL BANDWIDTH: 10MHz / 16QAM

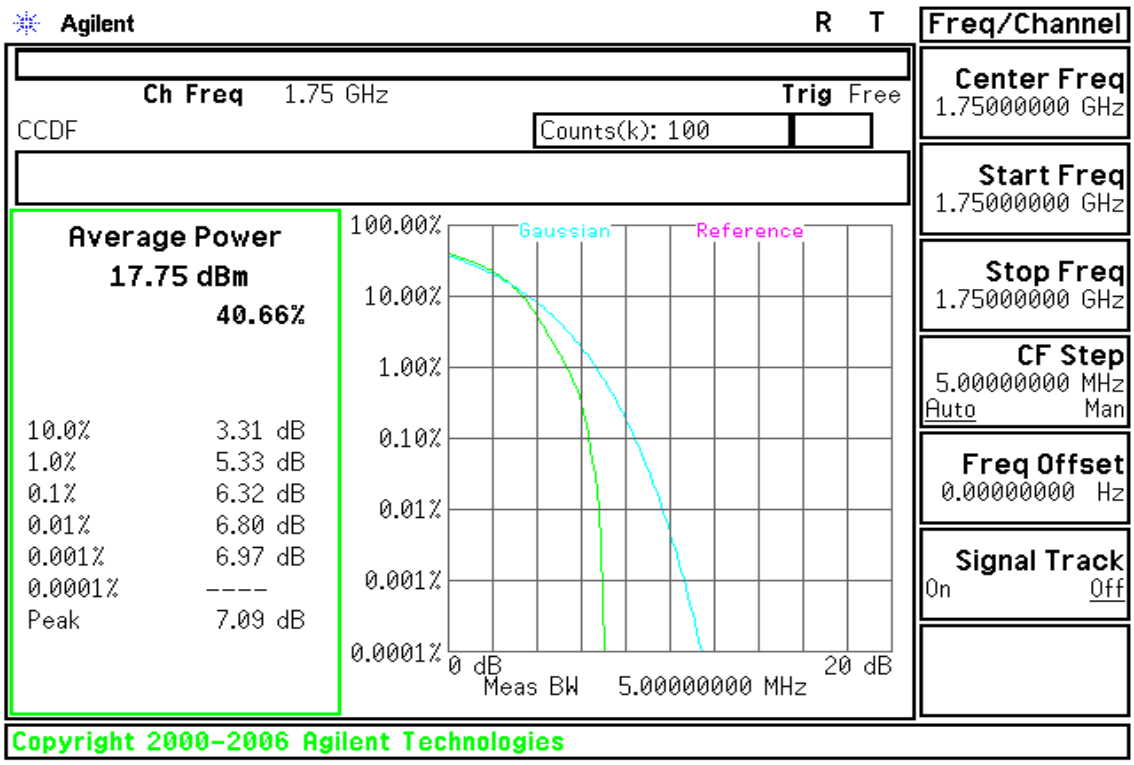
CH Low



CH Mid

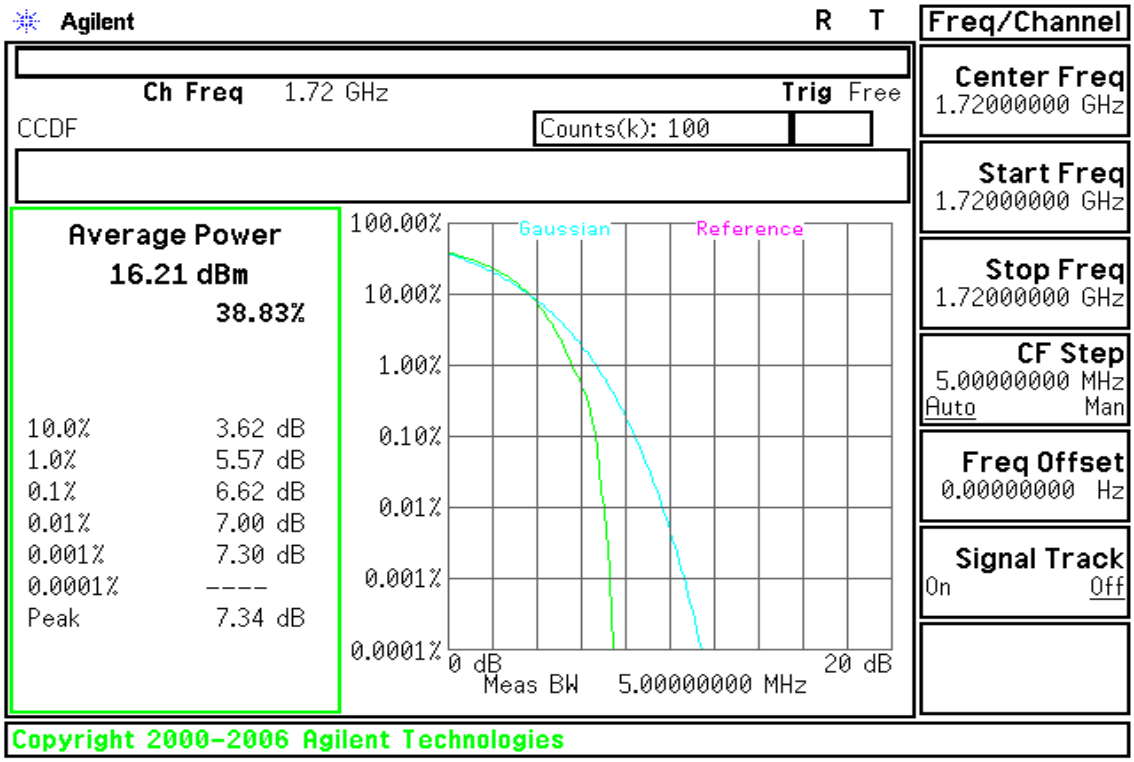


CH High

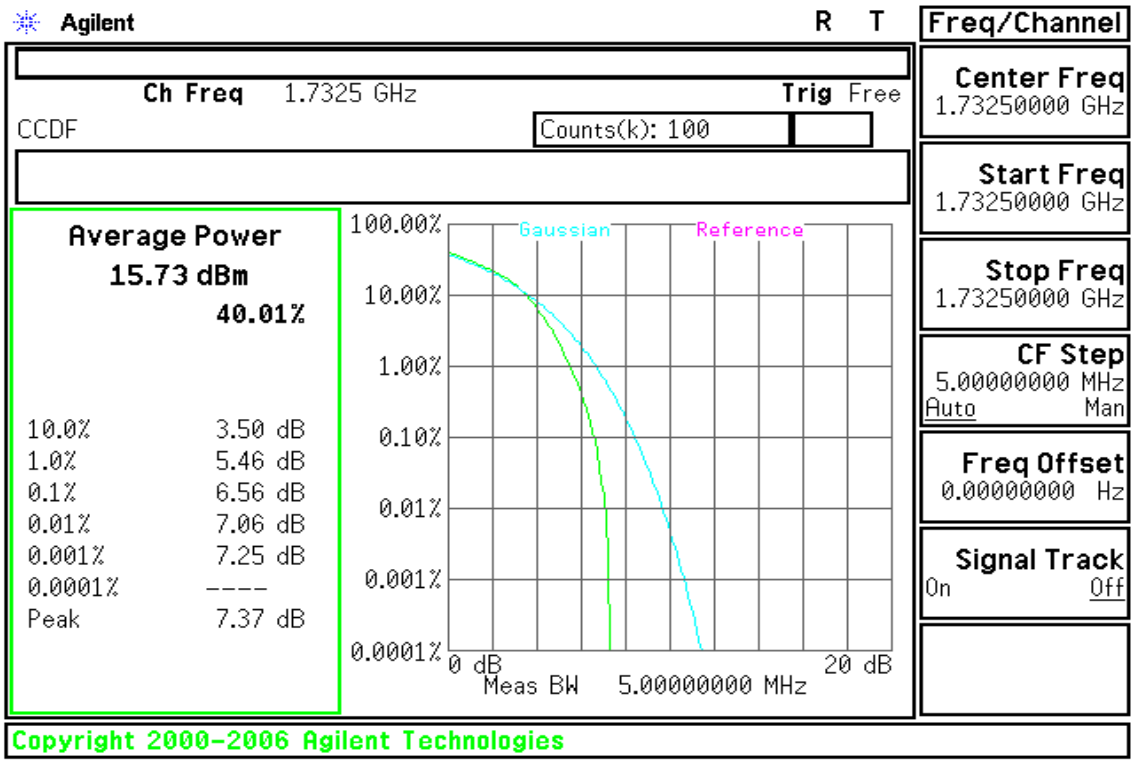

Agilent
R T
Freq/Channel
Ch Freq 1.75 GHz
Trig Free
CCDF
Counts(k): 100
Center Freq
1.75000000 GHz
Start Freq
1.75000000 GHz
Stop Freq
1.75000000 GHz
CF Step
5.00000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Average Power
17.75 dBm
40.66%
10.0% 3.31 dB
1.0% 5.33 dB
0.1% 6.32 dB
0.01% 6.80 dB
0.001% 6.97 dB
0.0001% ----
Peak 7.09 dB
100.00%
10.00%
1.00%
0.10%
0.01%
0.001%
0.0001%
Gaussian
Reference
0 dB
20 dB
Meas BW 5.00000000 MHz
Copyright 2000-2006 Agilent Technologies

CHANNEL BANDWIDTH: 20MHz / QPSK

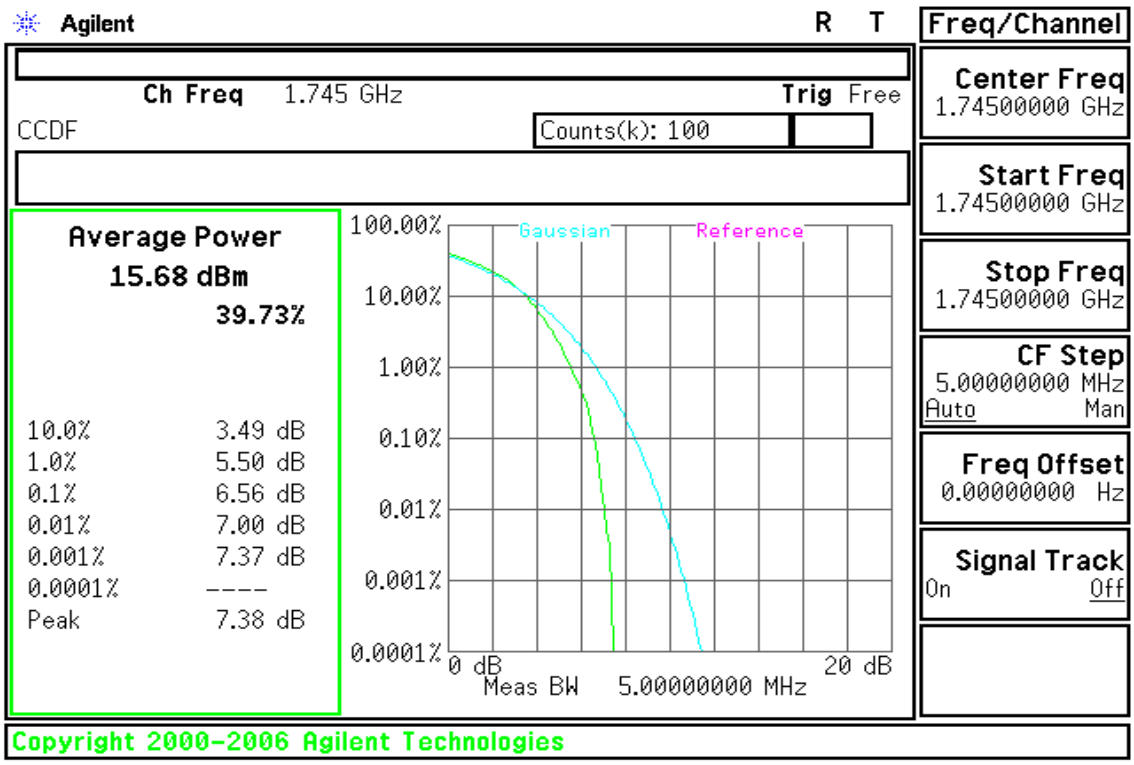
CH Low



CH Mid

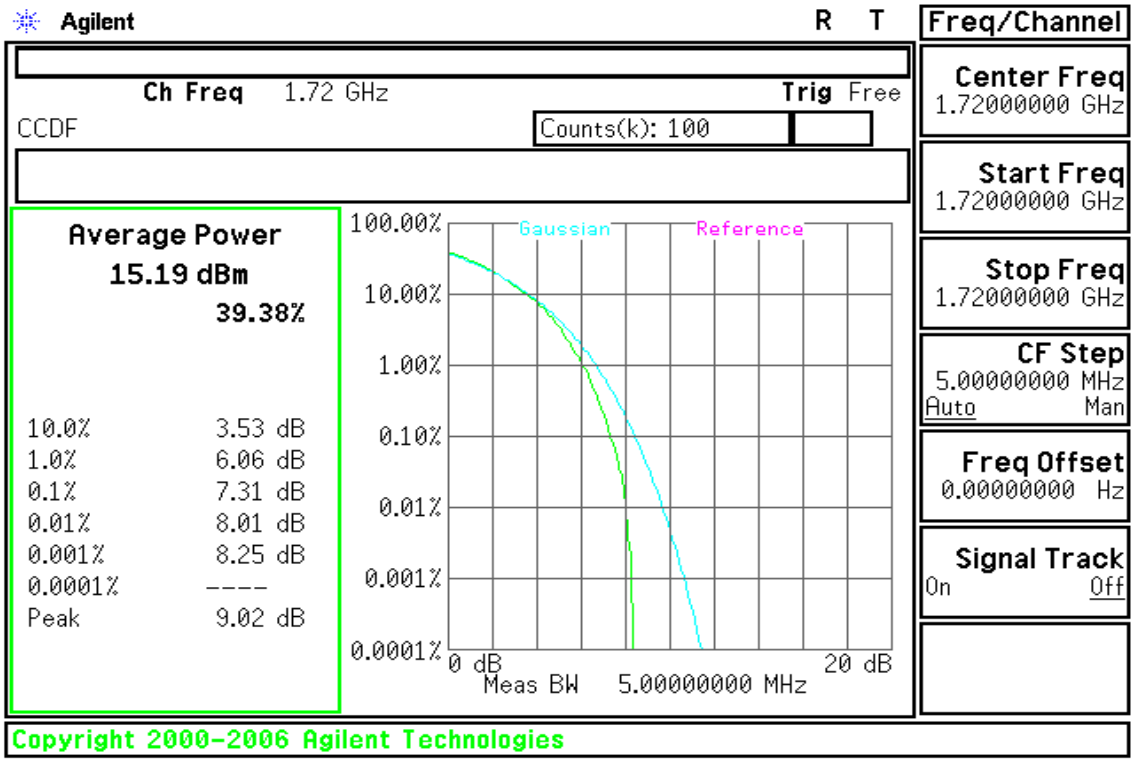


CH High

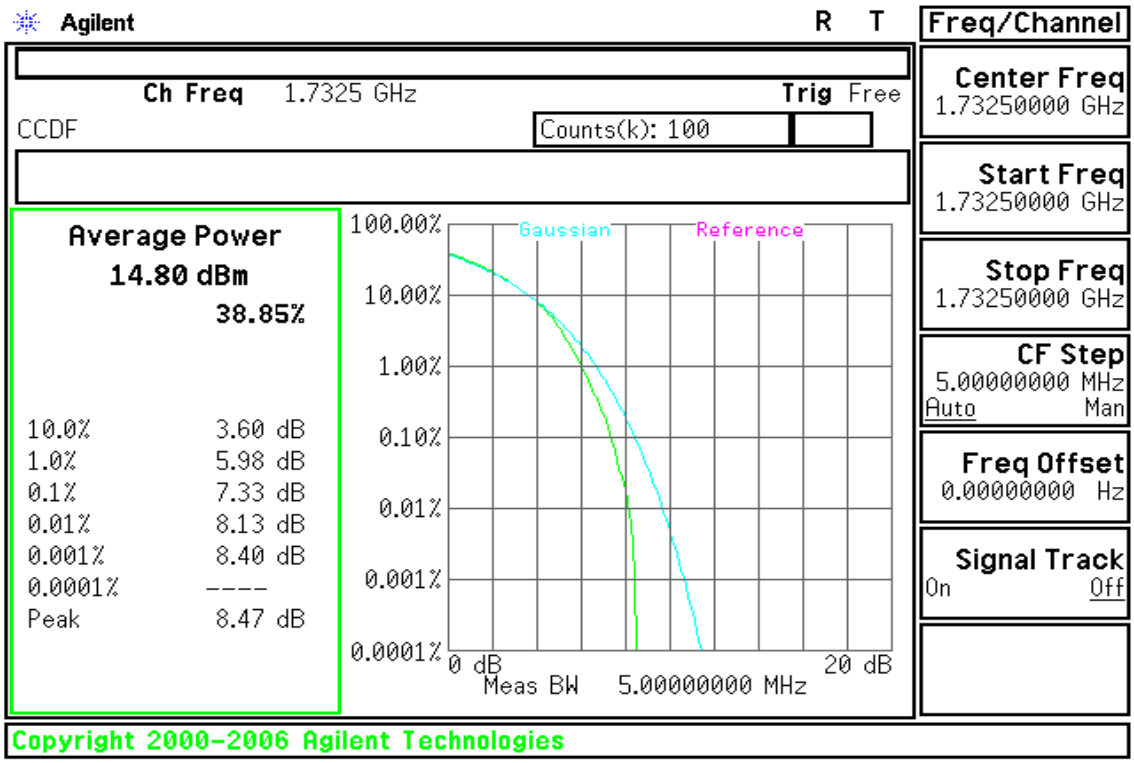

Agilent
R T
Freq/Channel
Ch Freq 1.745 GHz
Trig Free
CCDF
Counts(k): 100
Center Freq
1.74500000 GHz
Start Freq
1.74500000 GHz
Stop Freq
1.74500000 GHz
CF Step
5.00000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Average Power
15.68 dBm
39.73%
10.0% 3.49 dB
1.0% 5.50 dB
0.1% 6.56 dB
0.01% 7.00 dB
0.001% 7.37 dB
0.0001% ----
Peak 7.38 dB
100.00%
10.00%
1.00%
0.10%
0.01%
0.001%
0.0001%
Gaussian
Reference
0 dB
20 dB
Meas BW 5.00000000 MHz
Copyright 2000-2006 Agilent Technologies

CHANNEL BANDWIDTH: 20MHz / 16QAM

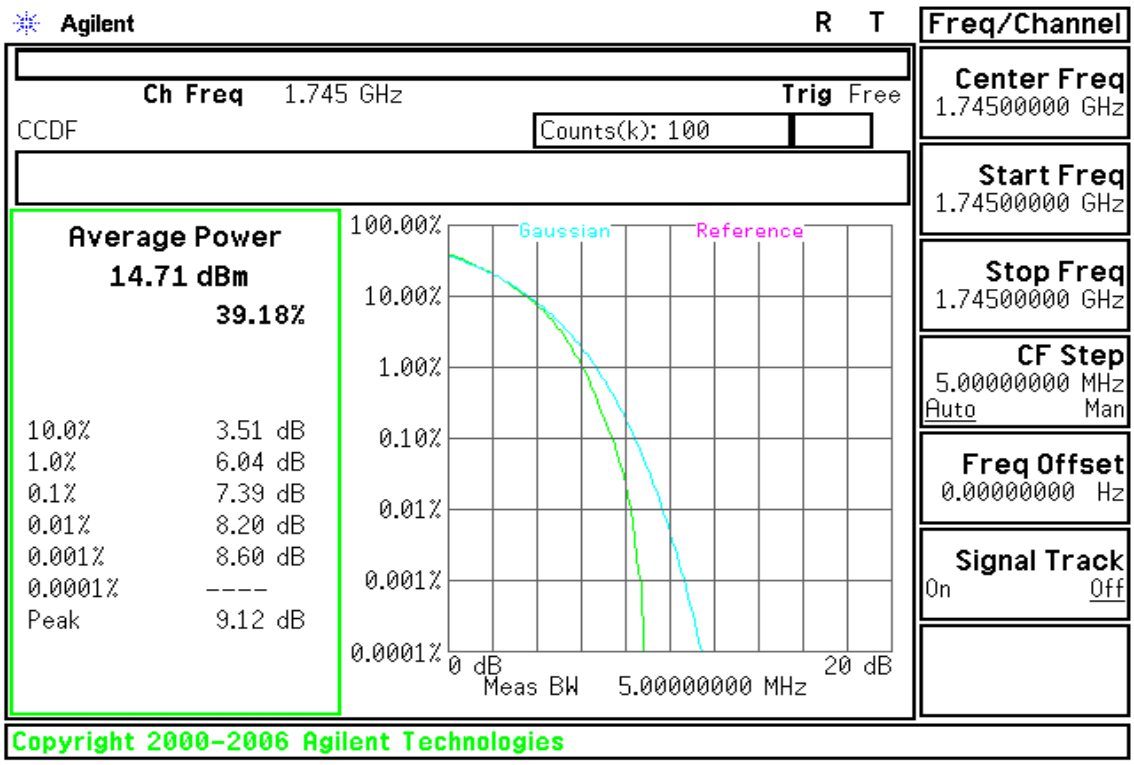
CH Low



CH Mid



CH High


Agilent
R T
Freq/Channel
Ch Freq 1.745 GHz
Trig Free
CCDF
Counts(k): 100
Center Freq
1.74500000 GHz
Start Freq
1.74500000 GHz
Stop Freq
1.74500000 GHz
CF Step
5.00000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Average Power
14.71 dBm
39.18%
10.0% 3.51 dB
1.0% 6.04 dB
0.1% 7.39 dB
0.01% 8.20 dB
0.001% 8.60 dB
0.0001% ----
Peak 9.12 dB
100.00%
10.00%
1.00%
0.10%
0.01%
0.001%
0.0001%
Gaussian
Reference
0 dB
20 dB
Meas BW 5.00000000 MHz
Copyright 2000-2006 Agilent Technologies

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

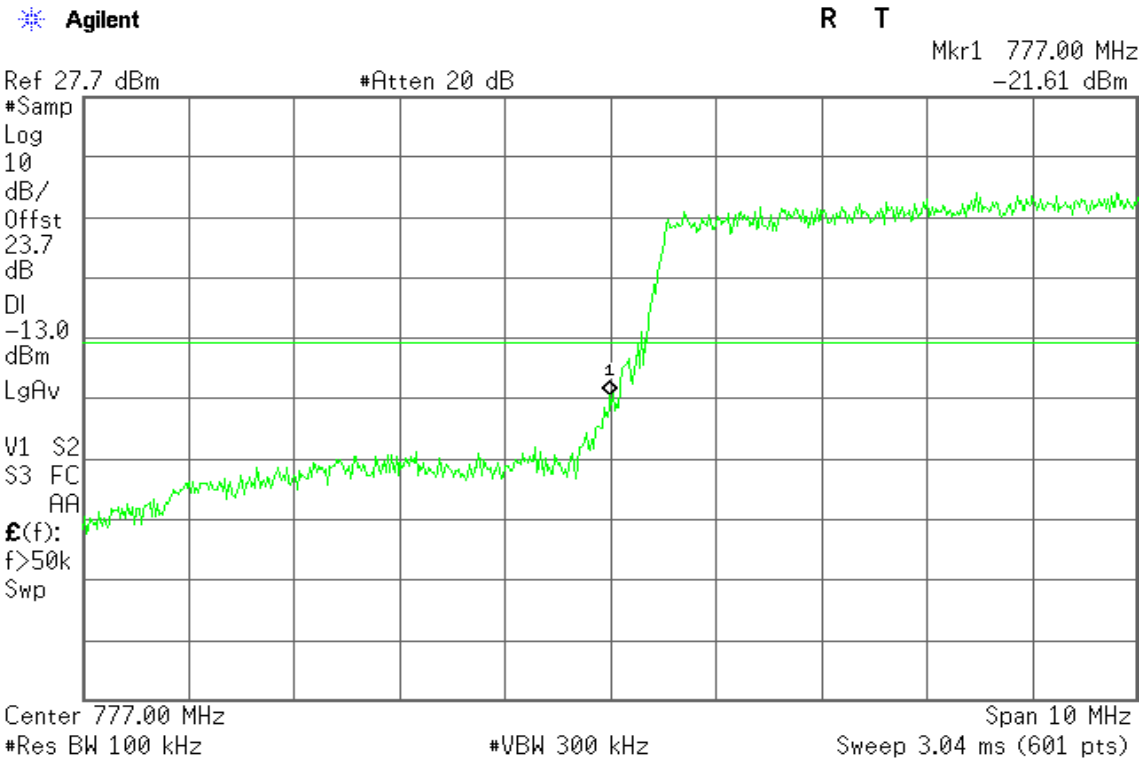
1. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with Spectrum Analyzer. All measurements were done at 2 channels (low and high operational frequency range.).
2. The band edge measurement used the power splitter via EUT RF power connector between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

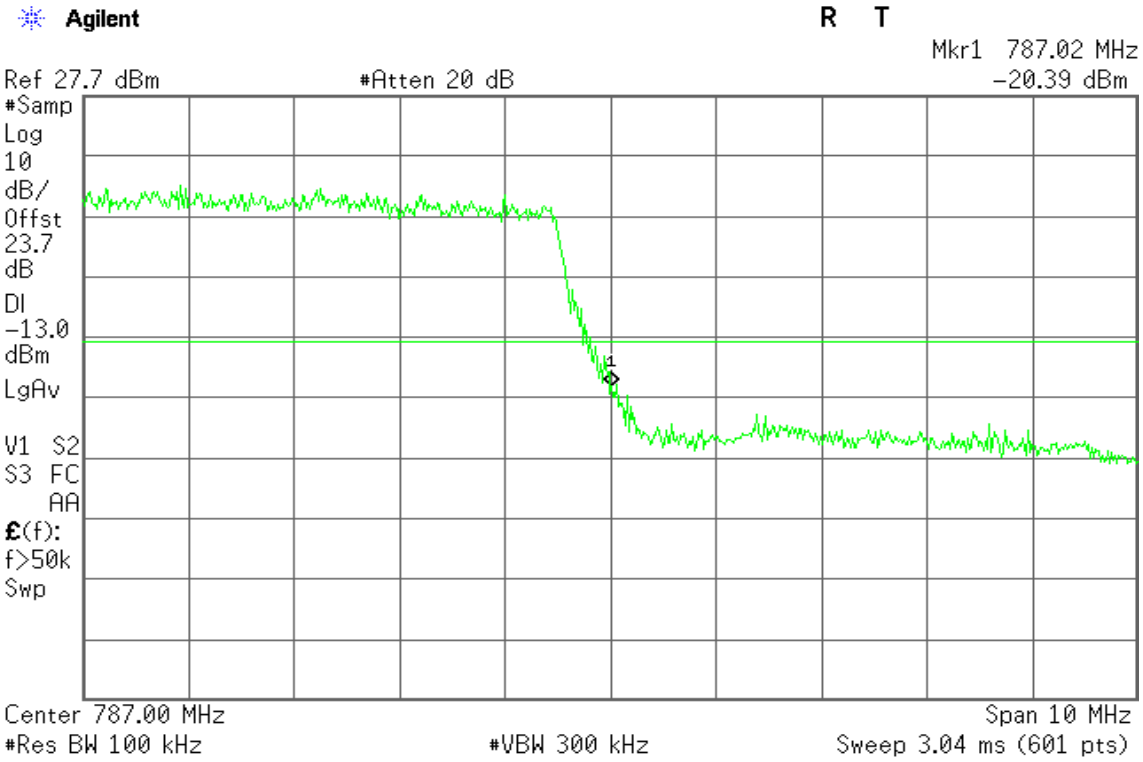
LTE Band 13

CHANNEL BANDWIDTH: 10MHz / QPSK / FULL RB ALLOCATED

LOWER BAND EDGE



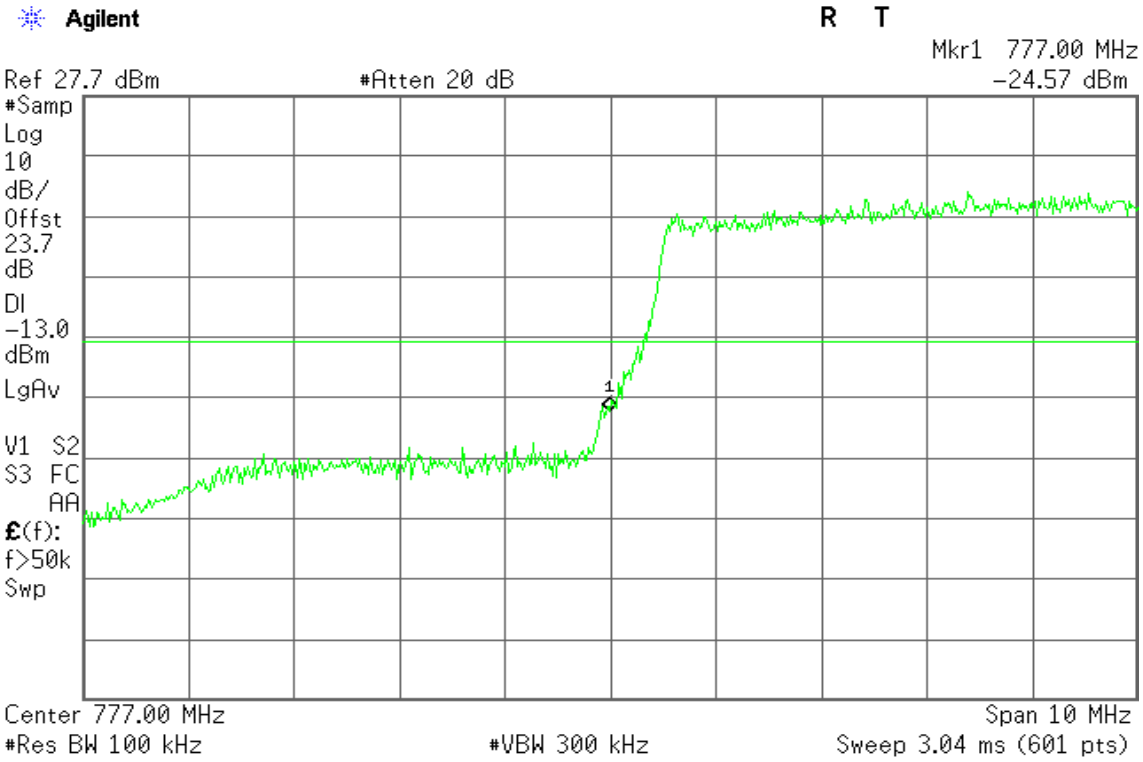
HIGHER BAND EDGE



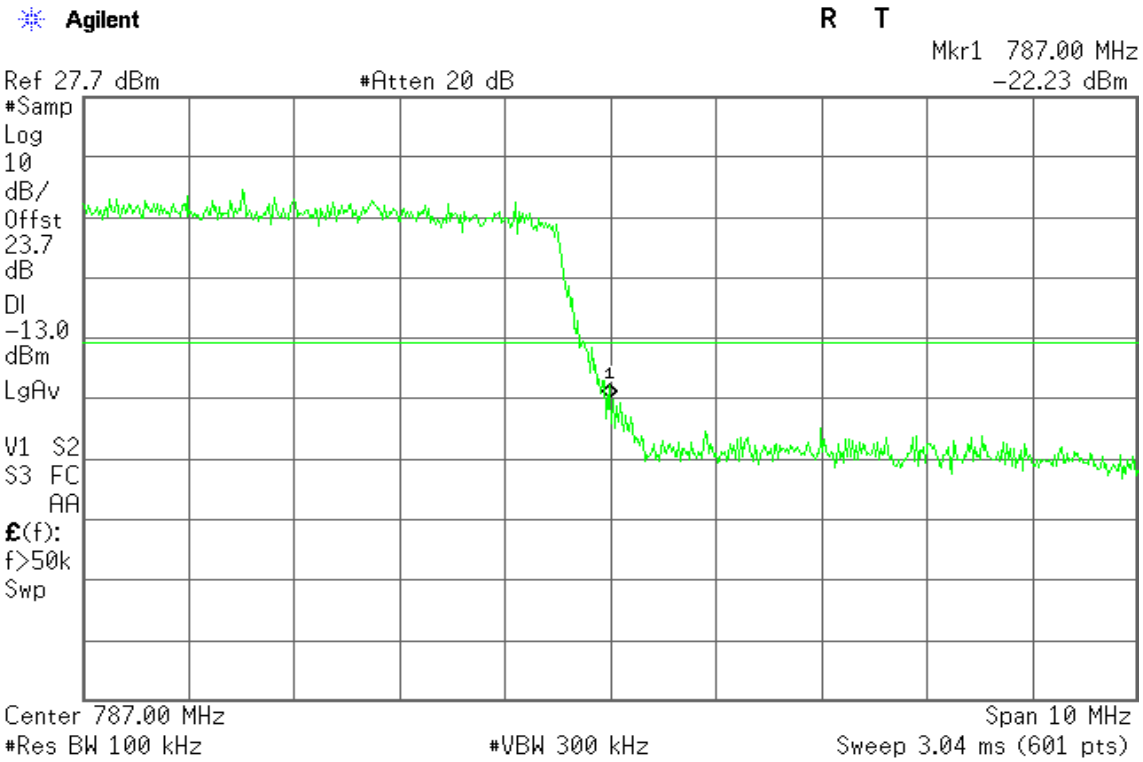
LTE Band 13

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

LOWER BAND EDGE



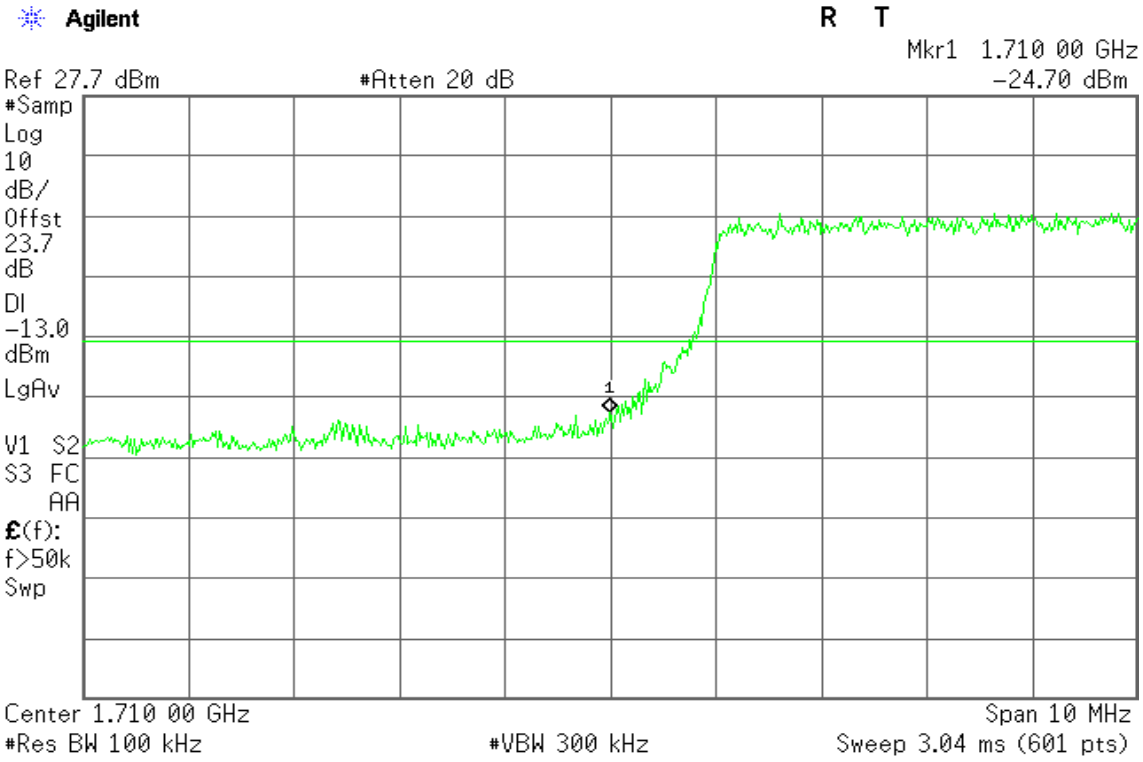
HIGHER BAND EDGE



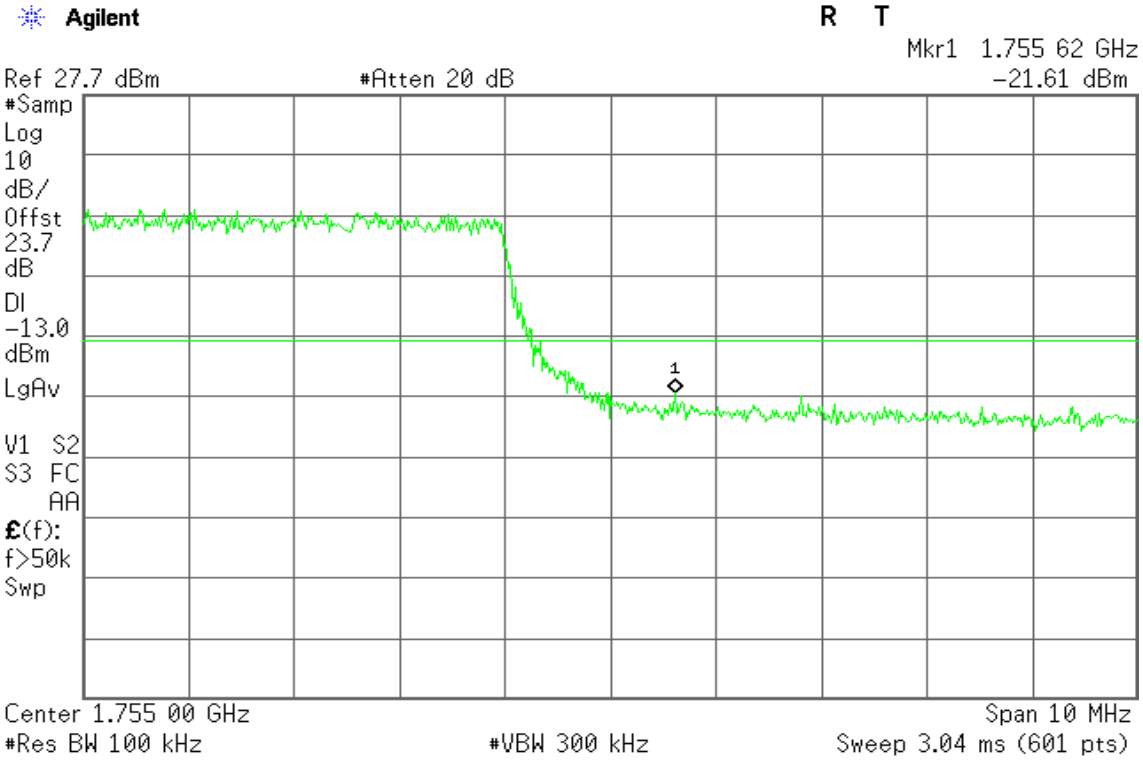
LTE Band 4

CHANNEL BANDWIDTH: 20MHz / QPSK / FULL RB ALLOCATION

LOWER BAND EDGE

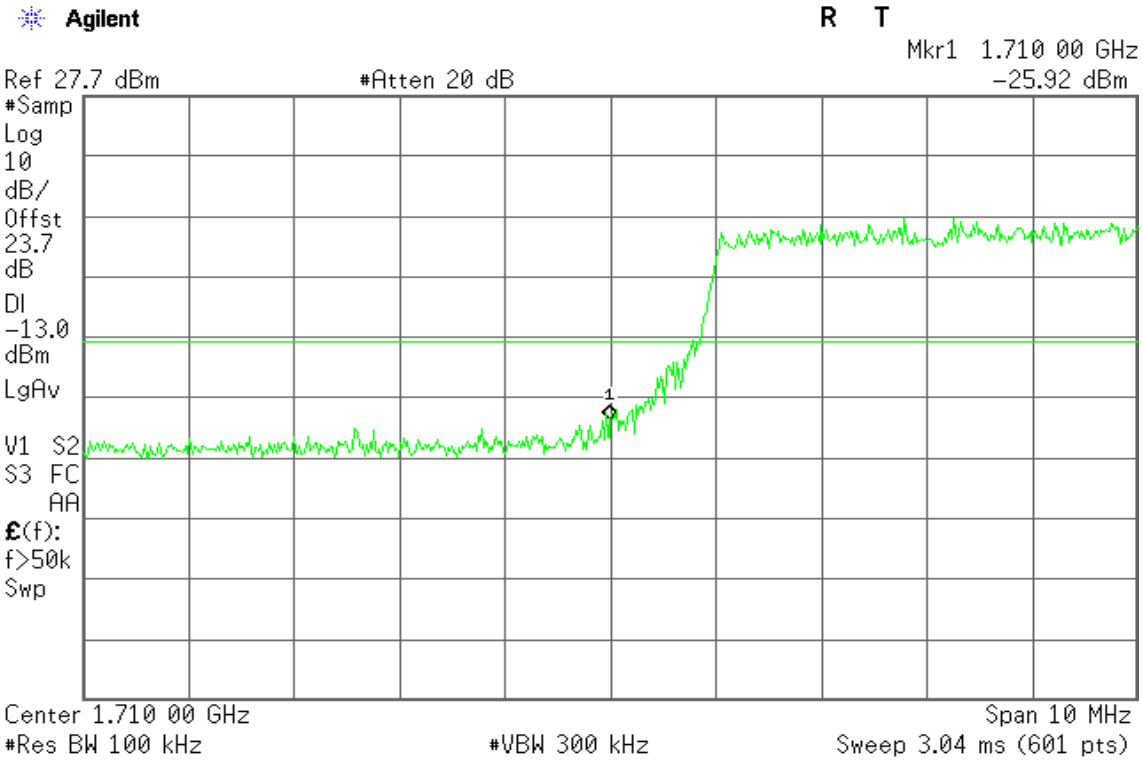


HIGHER BAND EDGE

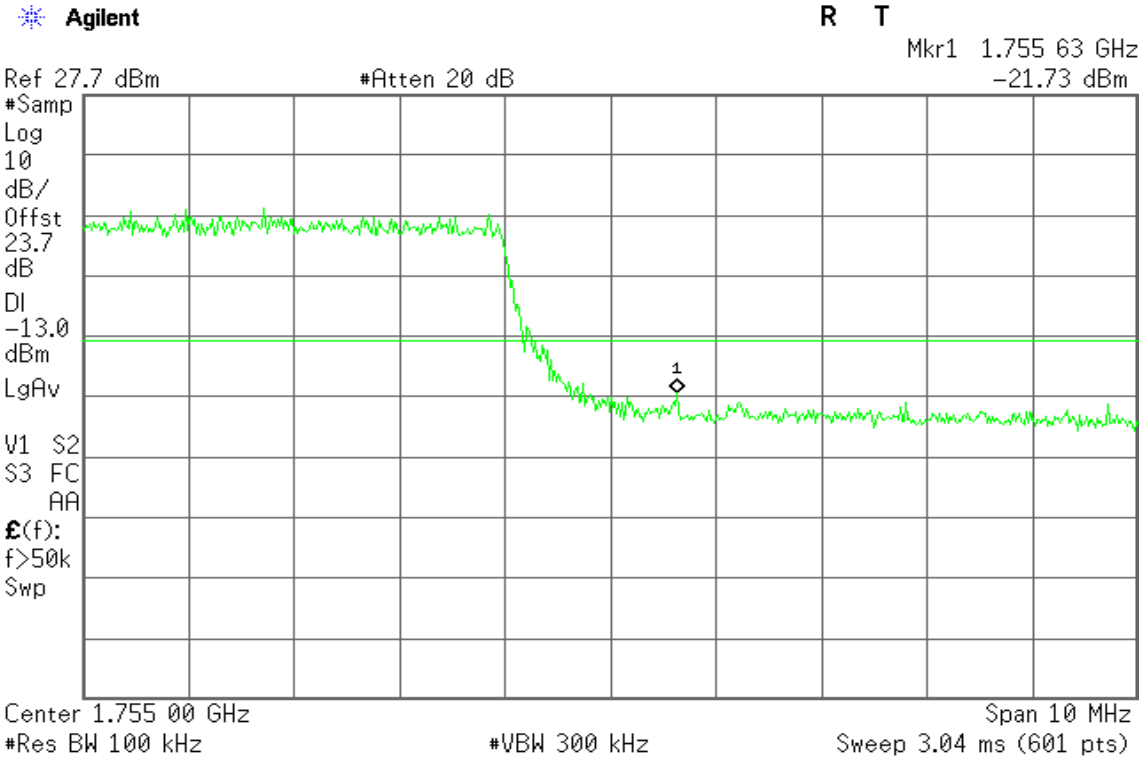


CHANNEL BANDWIDTH: 20MHz / 16QAM / FULL RB ALLOCATION

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

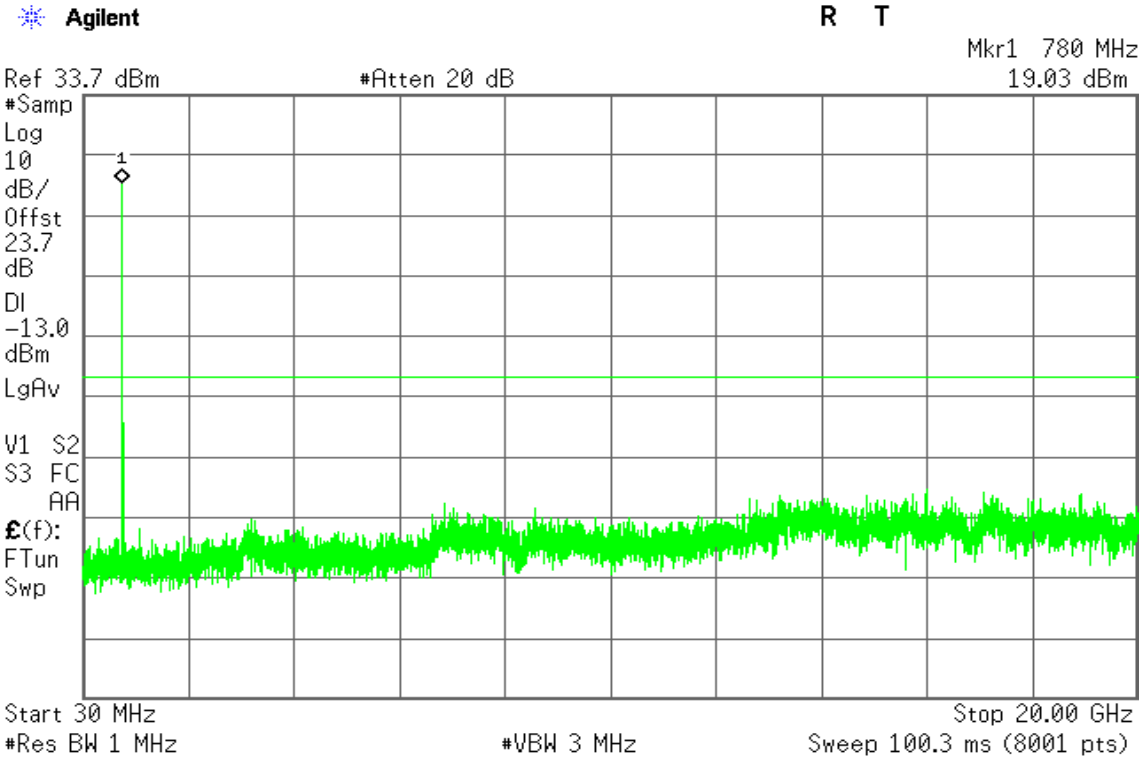
1. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high operational frequency range.).
2. The conducted spurious emission used the power splitter via EUT RF power connector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

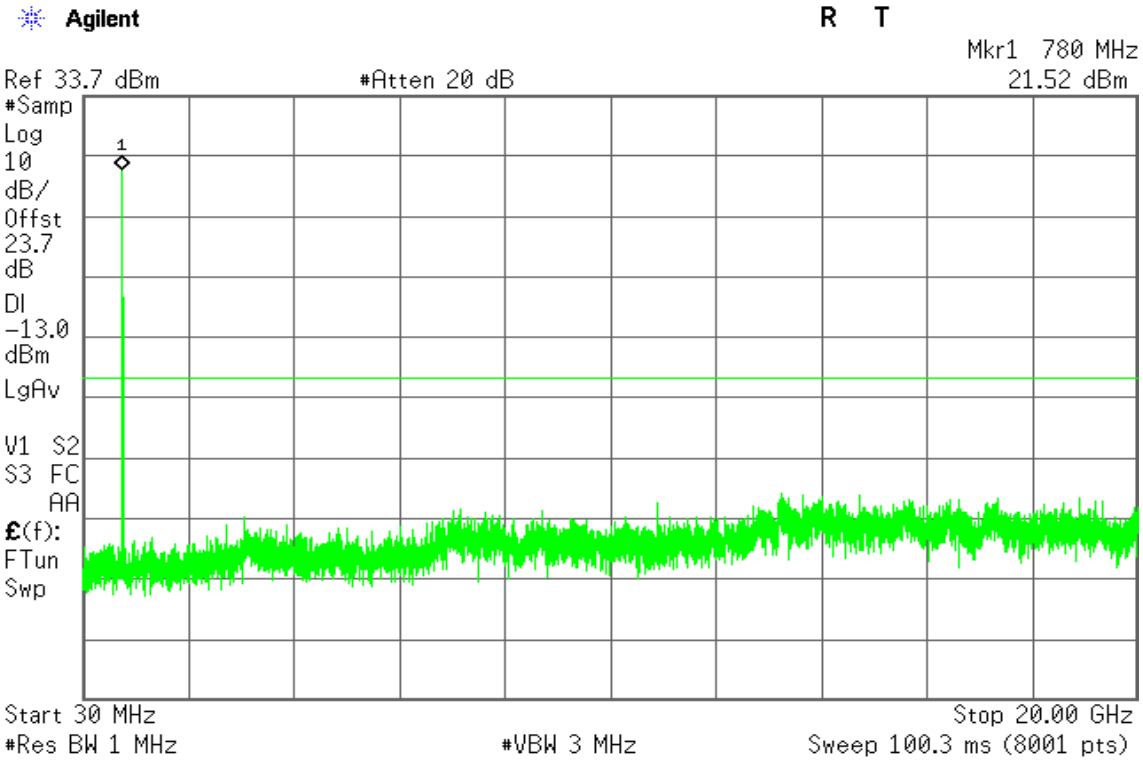
LTE Band 13

CHANNEL BANDWIDTH: 5MHz / QPSK

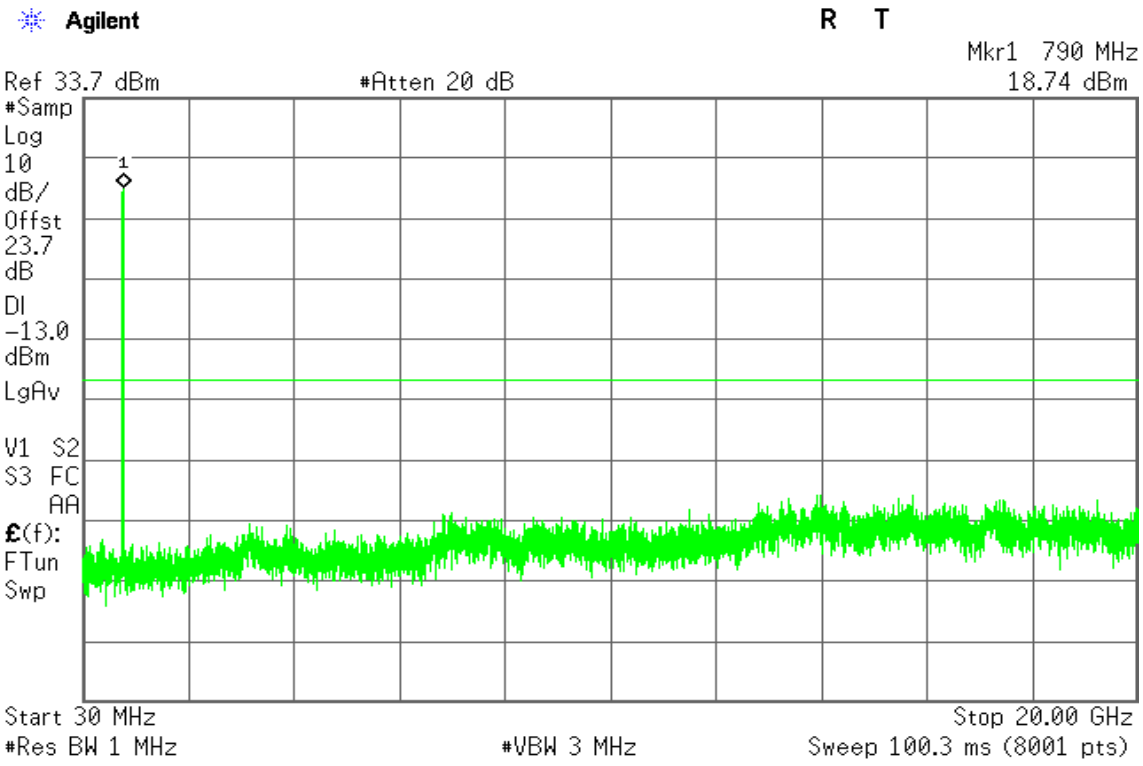
CH Low



CH Mid

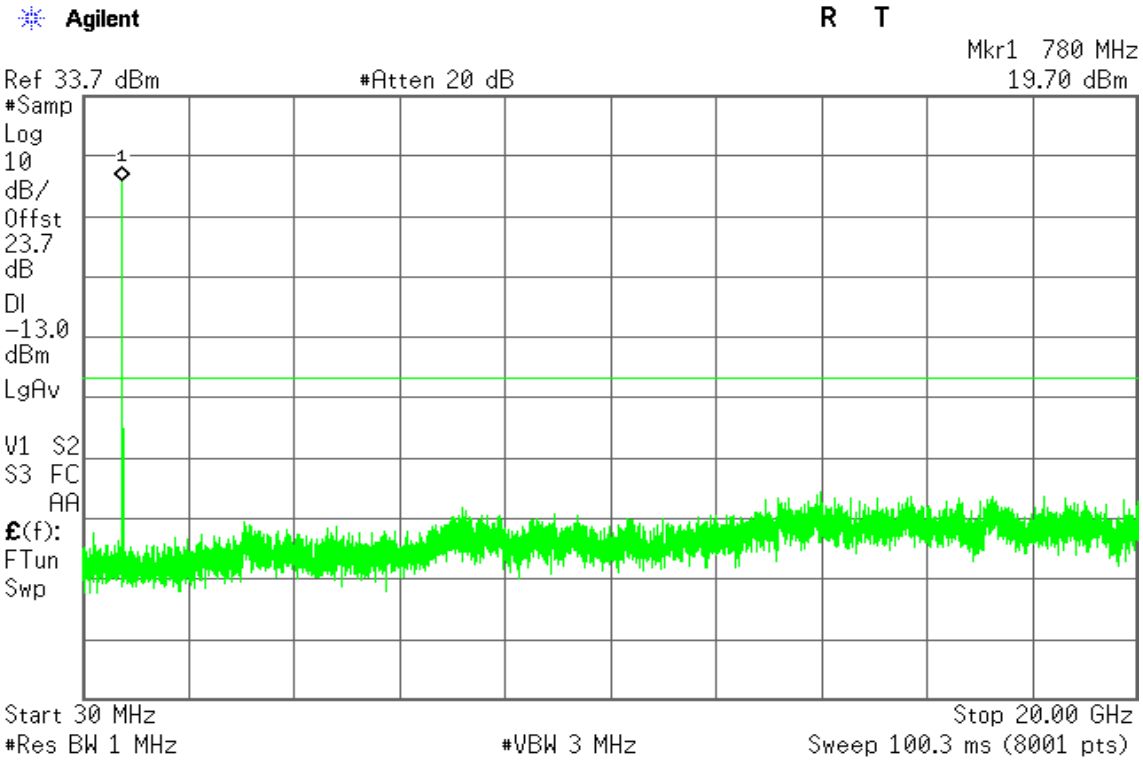


CH High

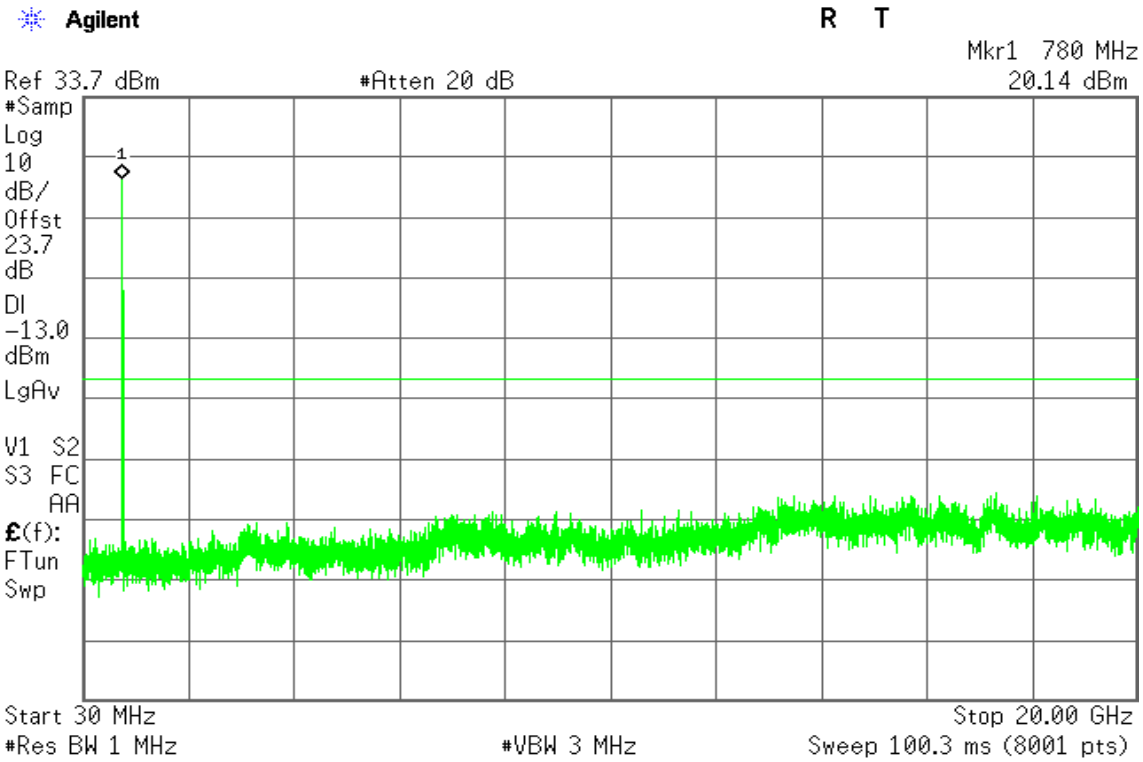

Agilent
R T
Mkr1 790 MHz
18.74 dBm
Ref 33.7 dBm
#Atten 20 dB
#Samp
Log
10
dB/
Offst
23.7
dB
Dl
-13.0
dBm
LgAv
V1 S2
S3 FC
AA
£(f):
FTun
Swp
Start 30 MHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 20.00 GHz
Sweep 100.3 ms (8001 pts)

CHANNEL BANDWIDTH: 5MHz / 16QAM

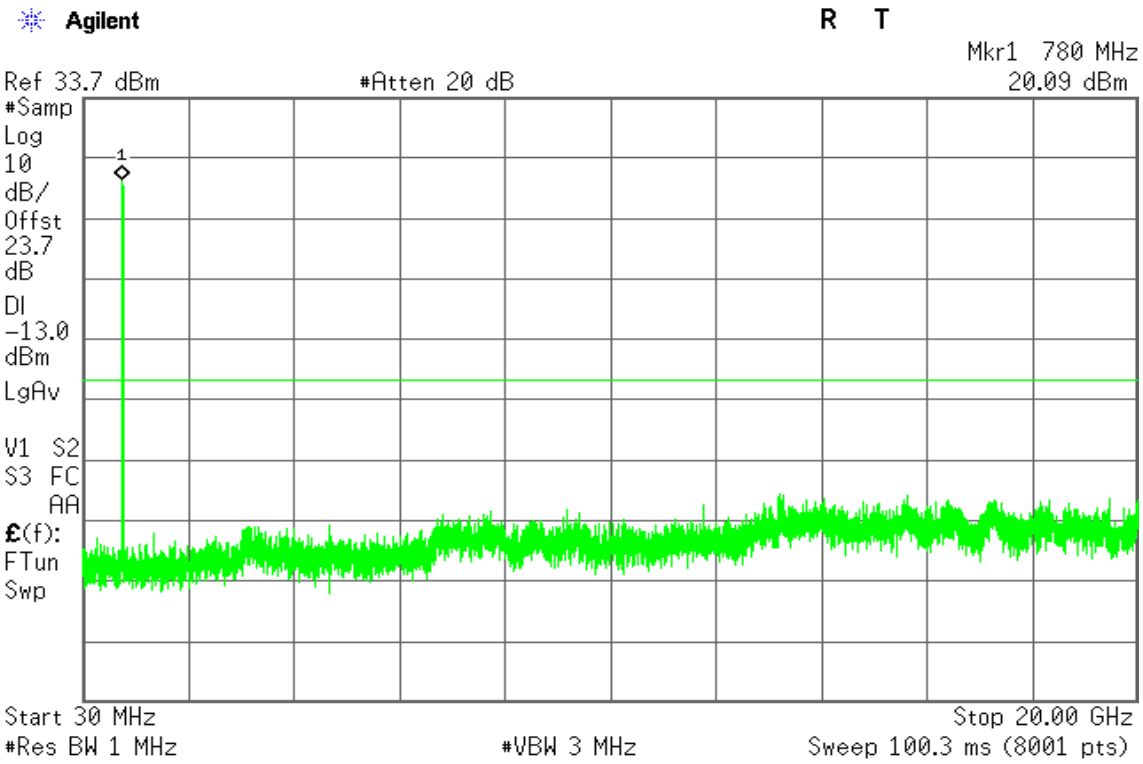
CH Low



CH Mid

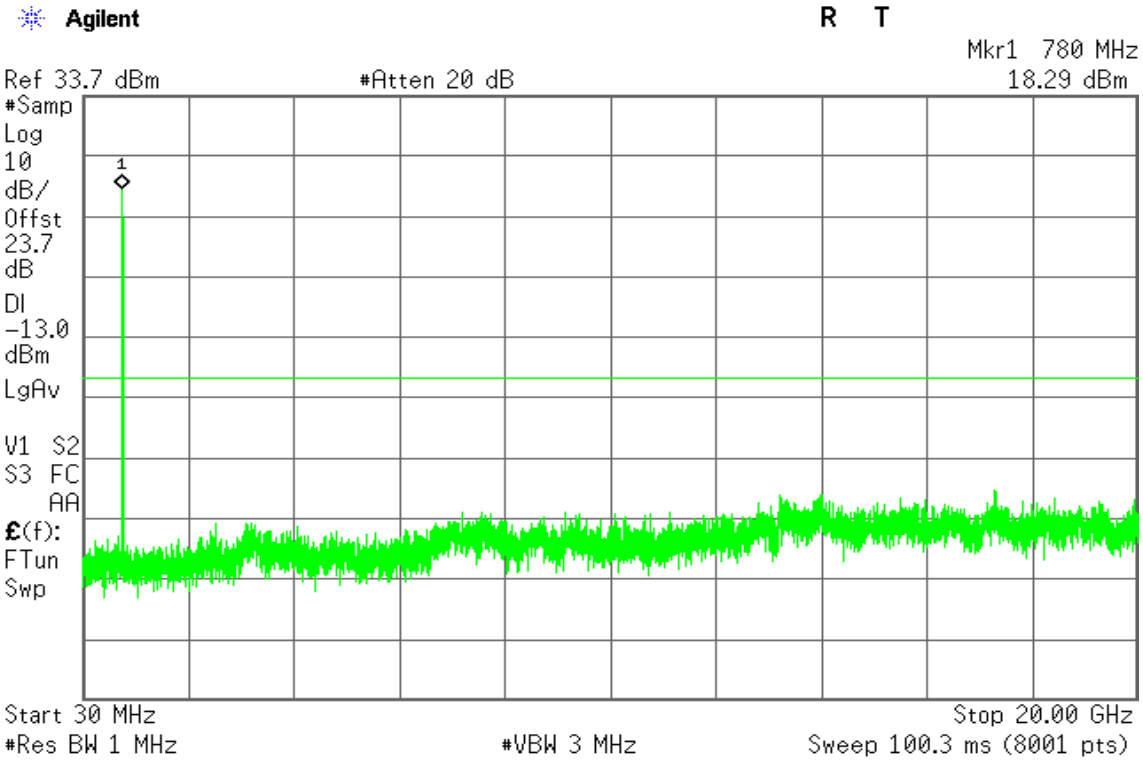


CH High


Agilent
R T
Mkr1 780 MHz
20.09 dBm
Ref 33.7 dBm
#Atten 20 dB
#Samp
Log
10
dB/
Offst
23.7
dB
Dl
-13.0
dBm
LgAv
V1 S2
S3 FC
AA
£(f):
FTun
Swp
Start 30 MHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 20.00 GHz
Sweep 100.3 ms (8001 pts)

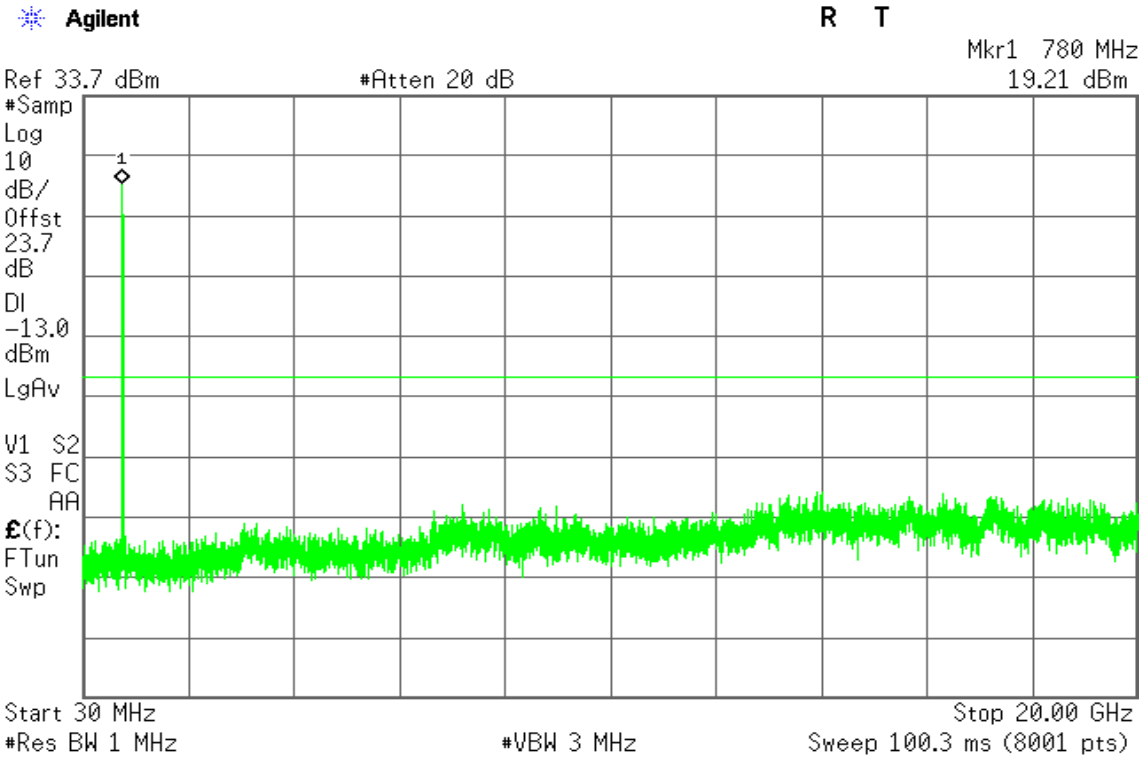
CHANNEL BANDWIDTH: 10MHz / QPSK

CH Mid



CHANNEL BANDWIDTH: 10MHz / 16QAM

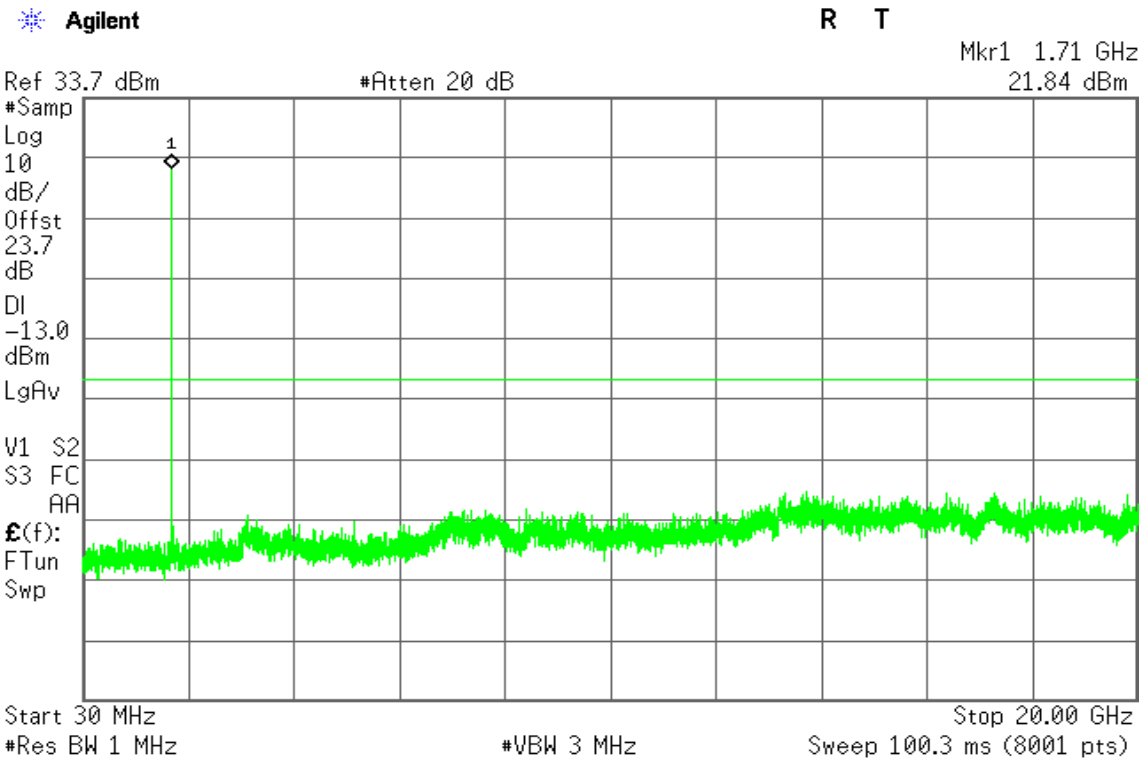
CH Mid



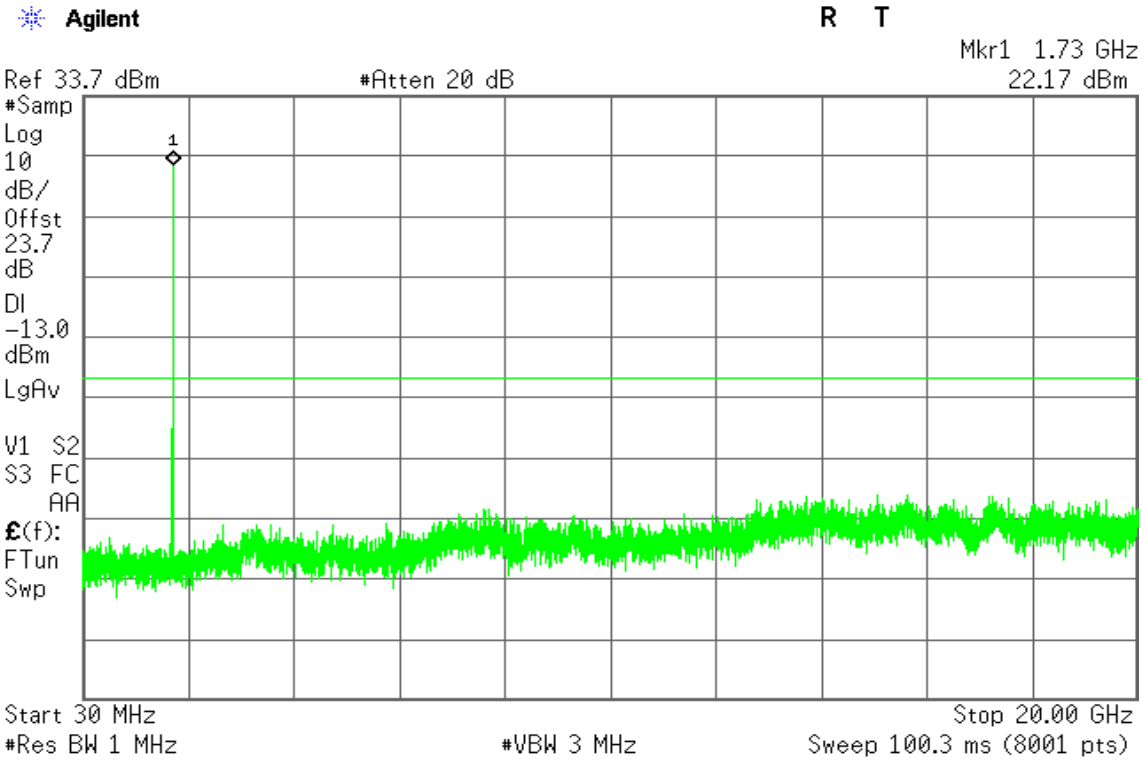
LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK

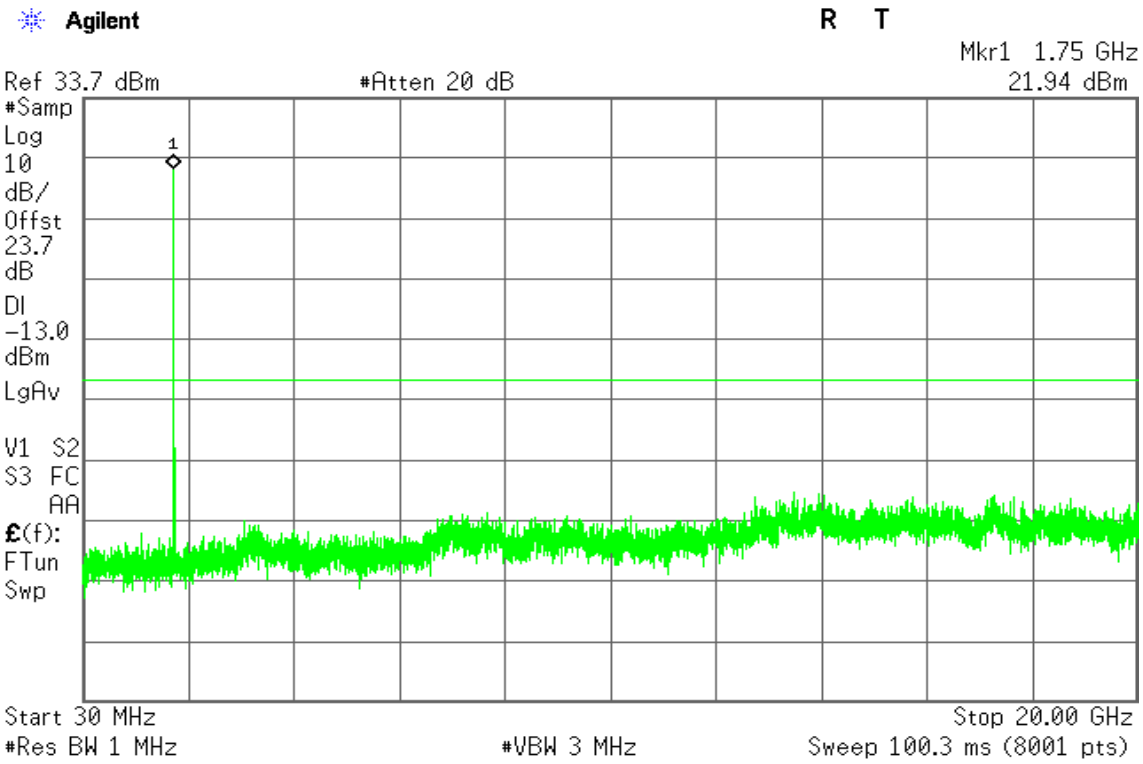
CH Low



CH Mid

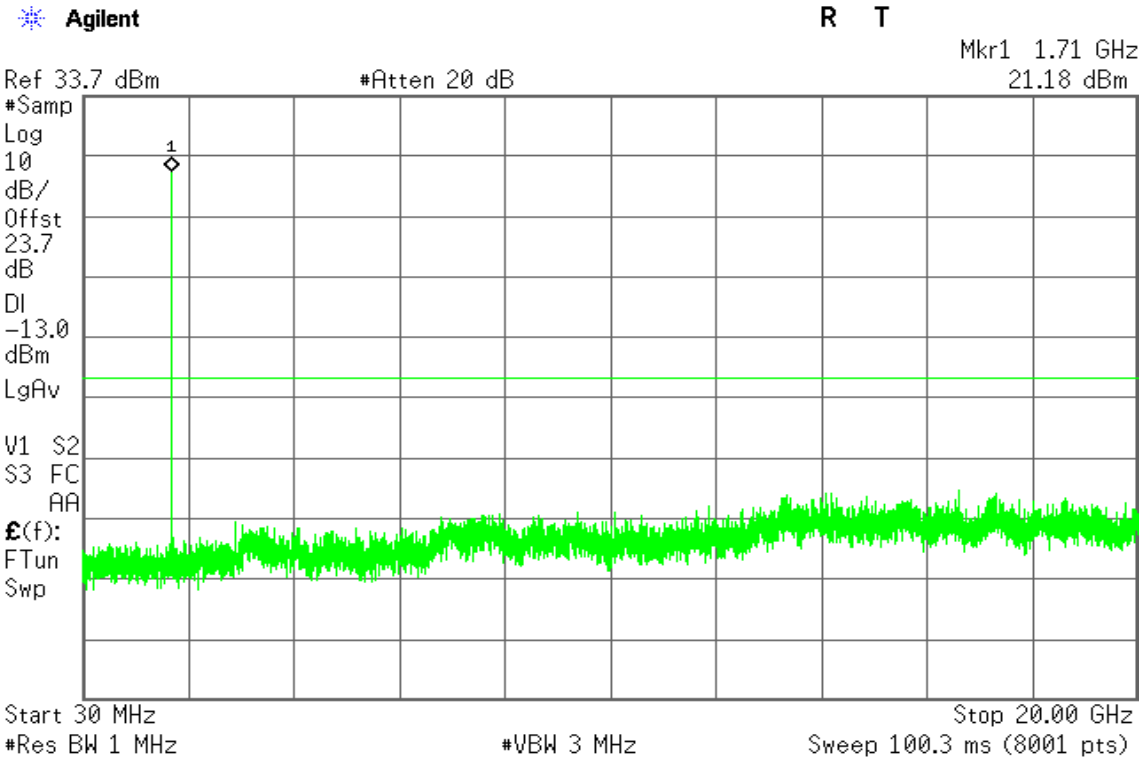


CH High

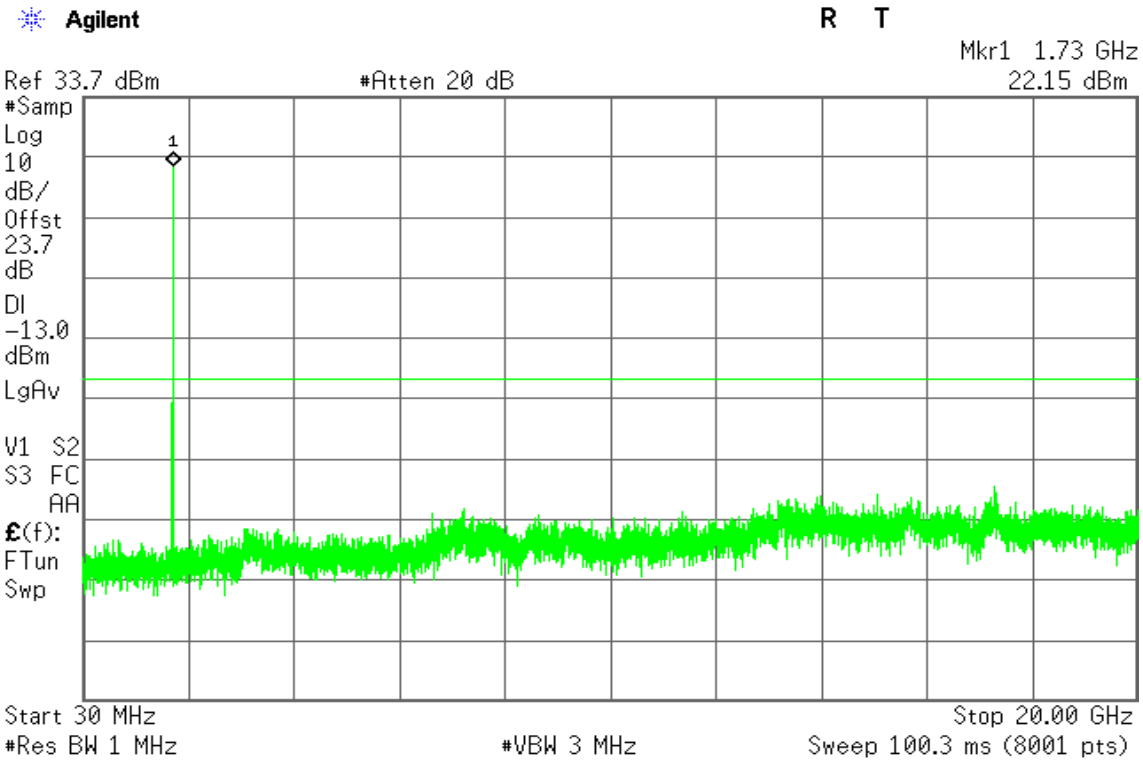

Agilent
R T
Mkr1 1.75 GHz
21.94 dBm
Ref 33.7 dBm
#Atten 20 dB
#Samp
Log
10
dB/
Offst
23.7
dB
Dl
-13.0
dBm
LgAv
V1 S2
S3 FC
AA
£(f):
FTun
Swp
Start 30 MHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 20.00 GHz
Sweep 100.3 ms (8001 pts)

CHANNEL BANDWIDTH: 5MHz / 16QAM

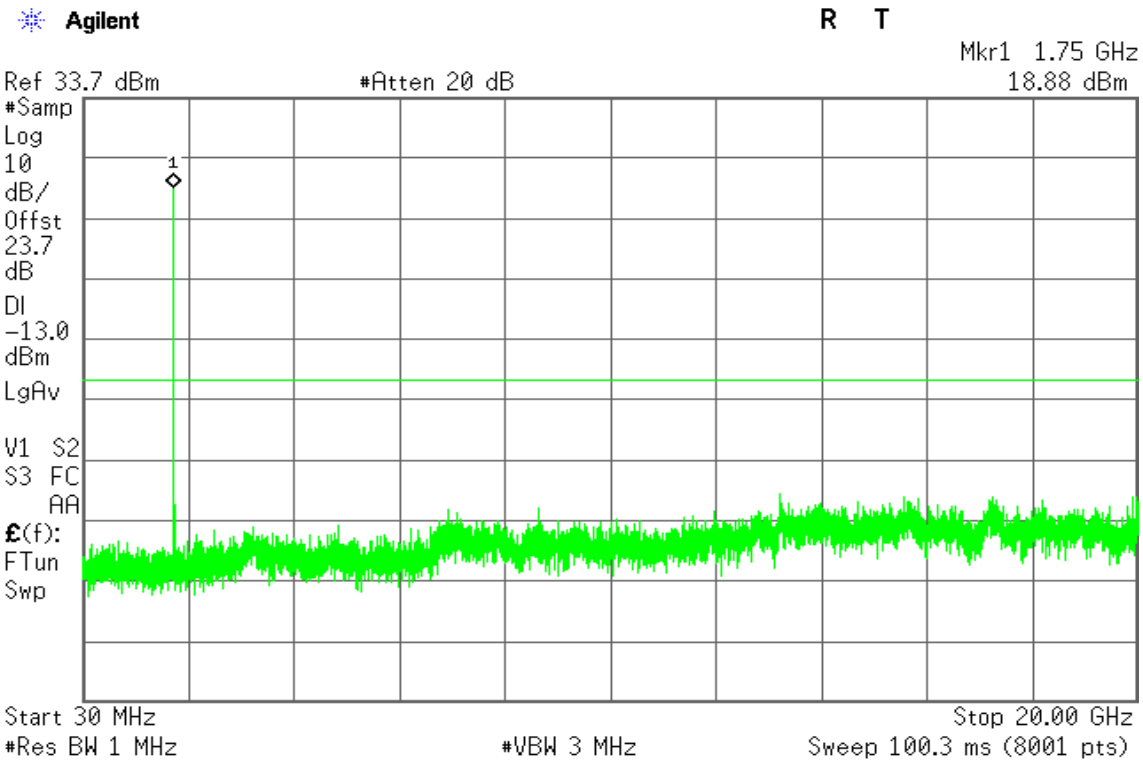
CH Low



CH Mid

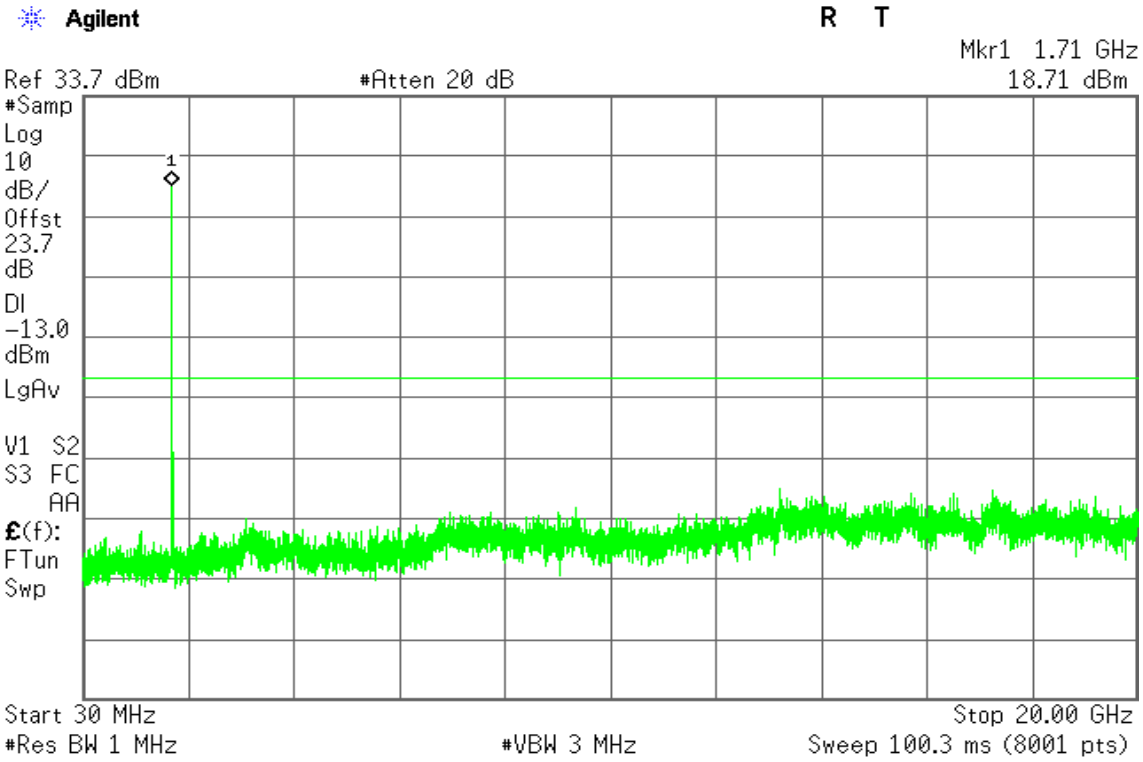


CH High

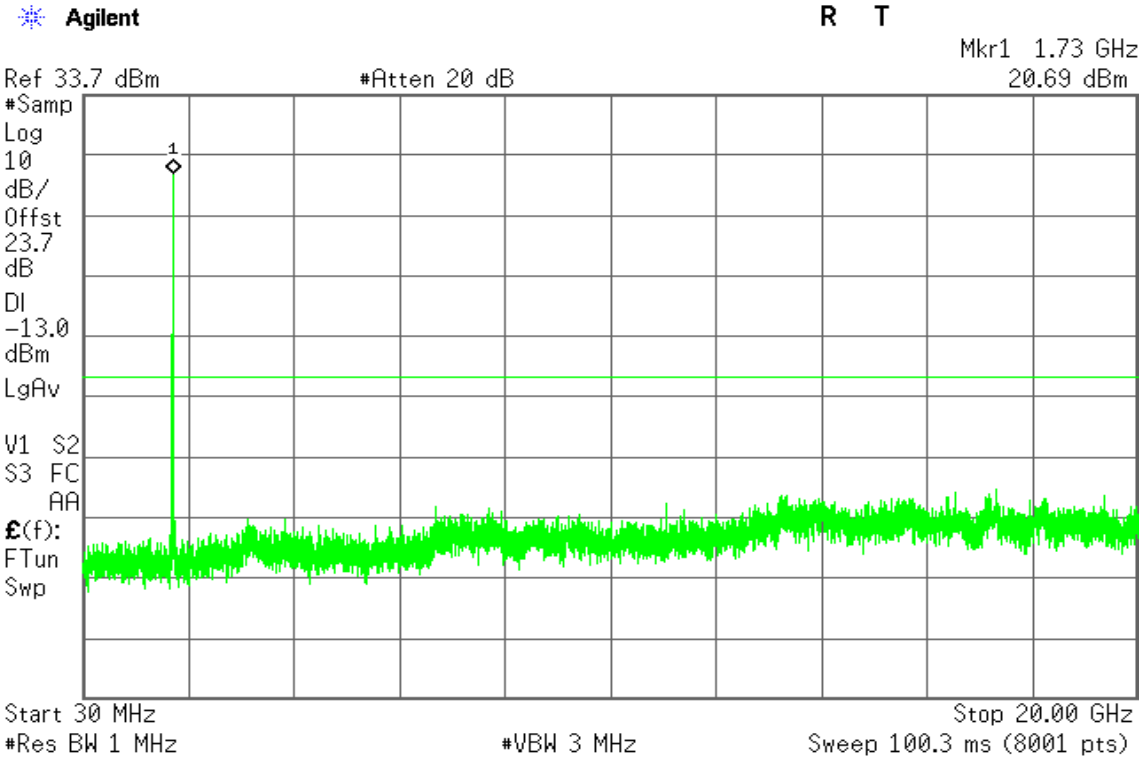

Agilent
R T
Mkr1 1.75 GHz
18.88 dBm
Ref 33.7 dBm
#Atten 20 dB
#Samp
Log
10
dB/
Offst
23.7
dB
Dl
-13.0
dBm
LgAv
V1 S2
S3 FC
AA
£(f):
FTun
Swp
Start 30 MHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 20.00 GHz
Sweep 100.3 ms (8001 pts)

CHANNEL BANDWIDTH: 10MHz / QPSK

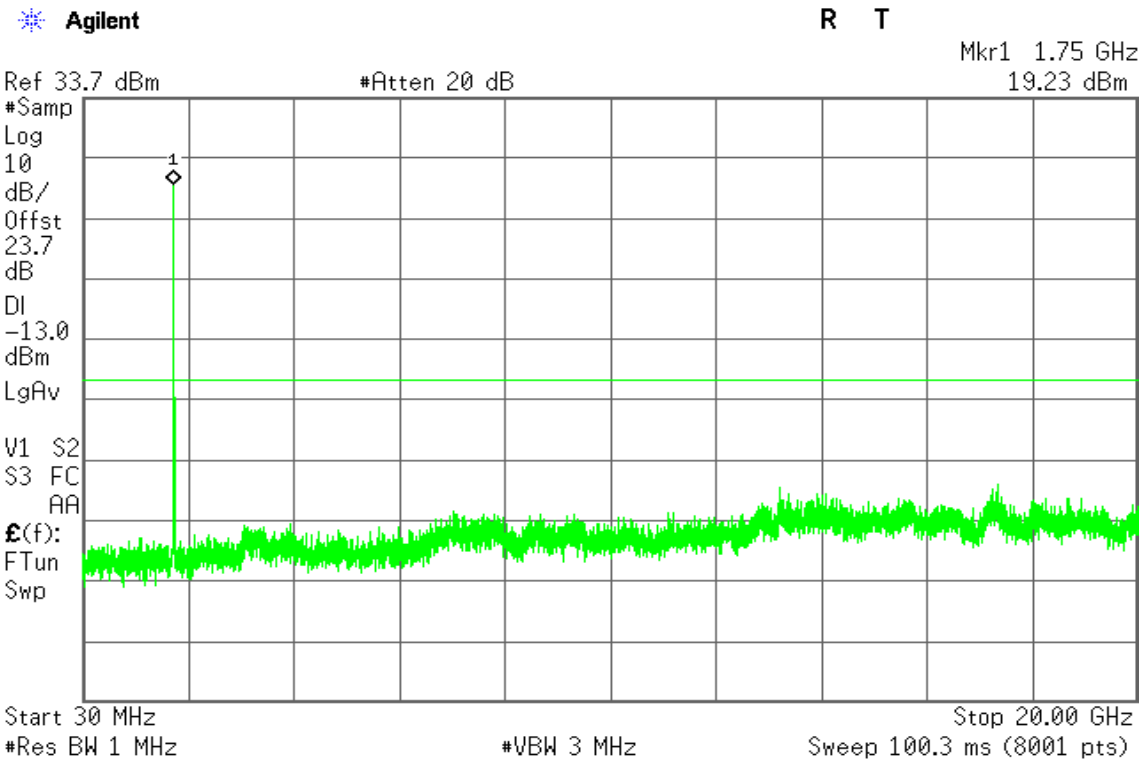
CH Low



CH Mid

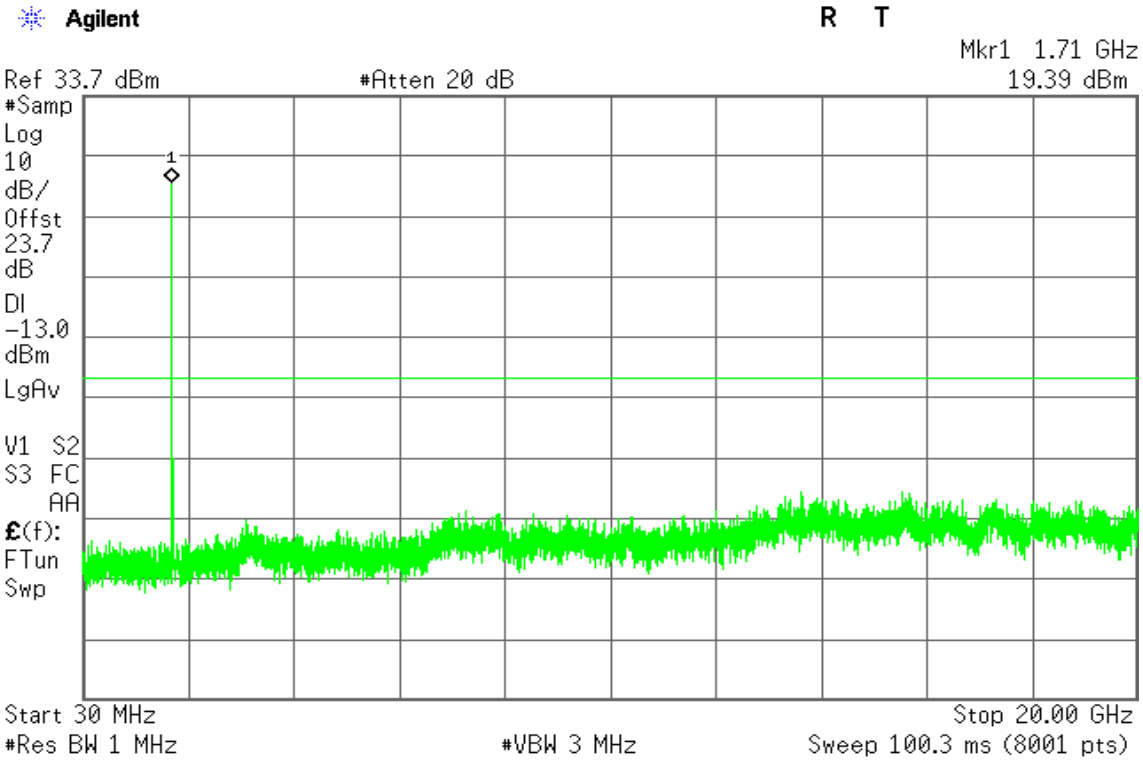


CH High

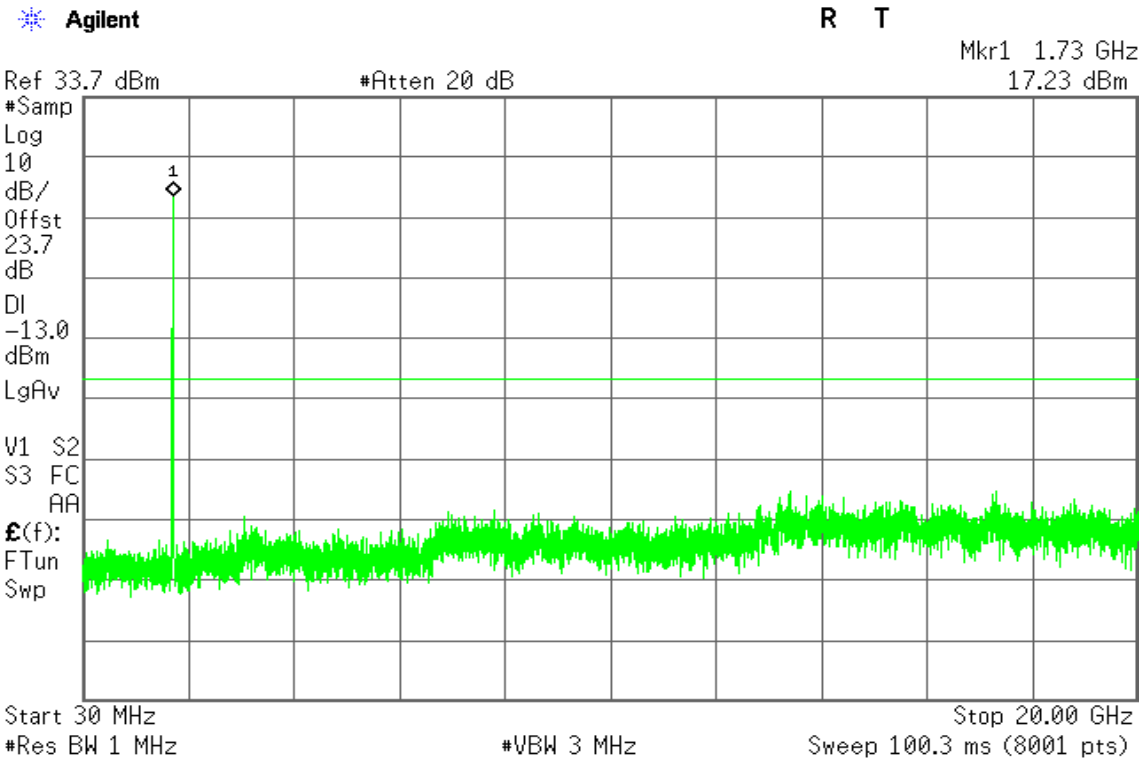

Agilent
R T
Mkr1 1.75 GHz
19.23 dBm
Ref 33.7 dBm
#Atten 20 dB
#Samp
Log
10
dB/
Offst
23.7
dB
Dl
-13.0
dBm
LgAv
V1 S2
S3 FC
AA
£(f):
FTun
Swp
Start 30 MHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 20.00 GHz
Sweep 100.3 ms (8001 pts)

CHANNEL BANDWIDTH: 10MHz / 16QAM

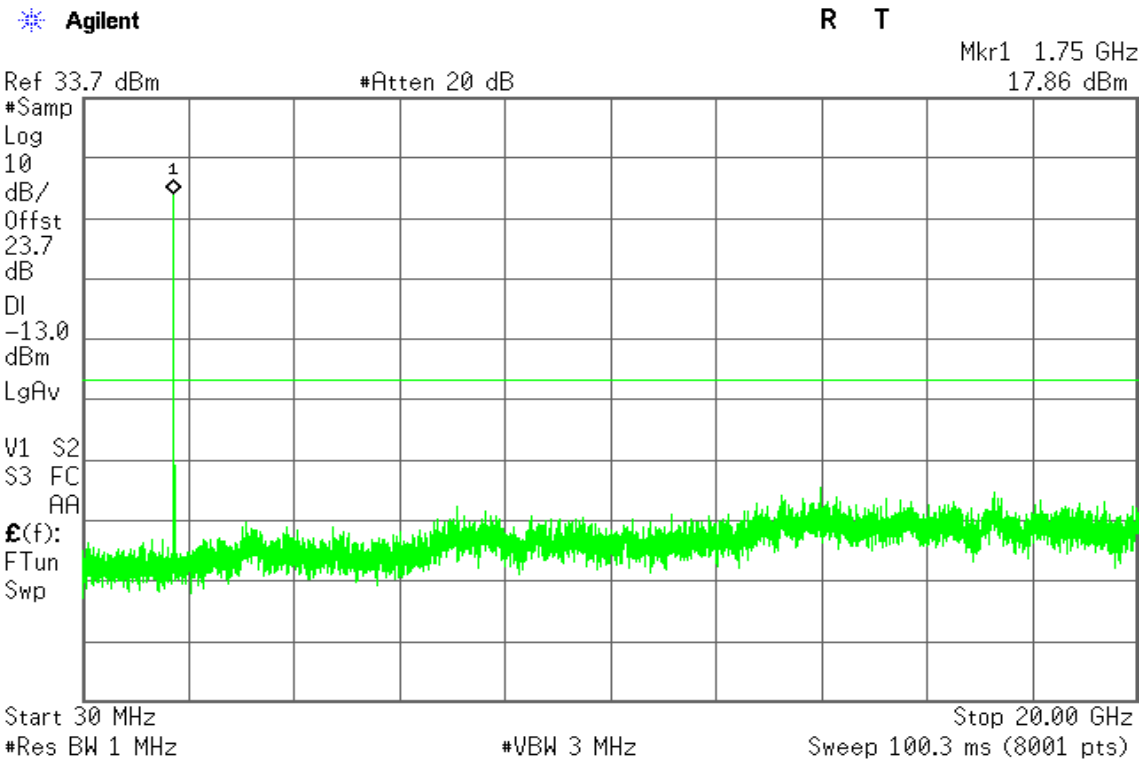
CH Low



CH Mid

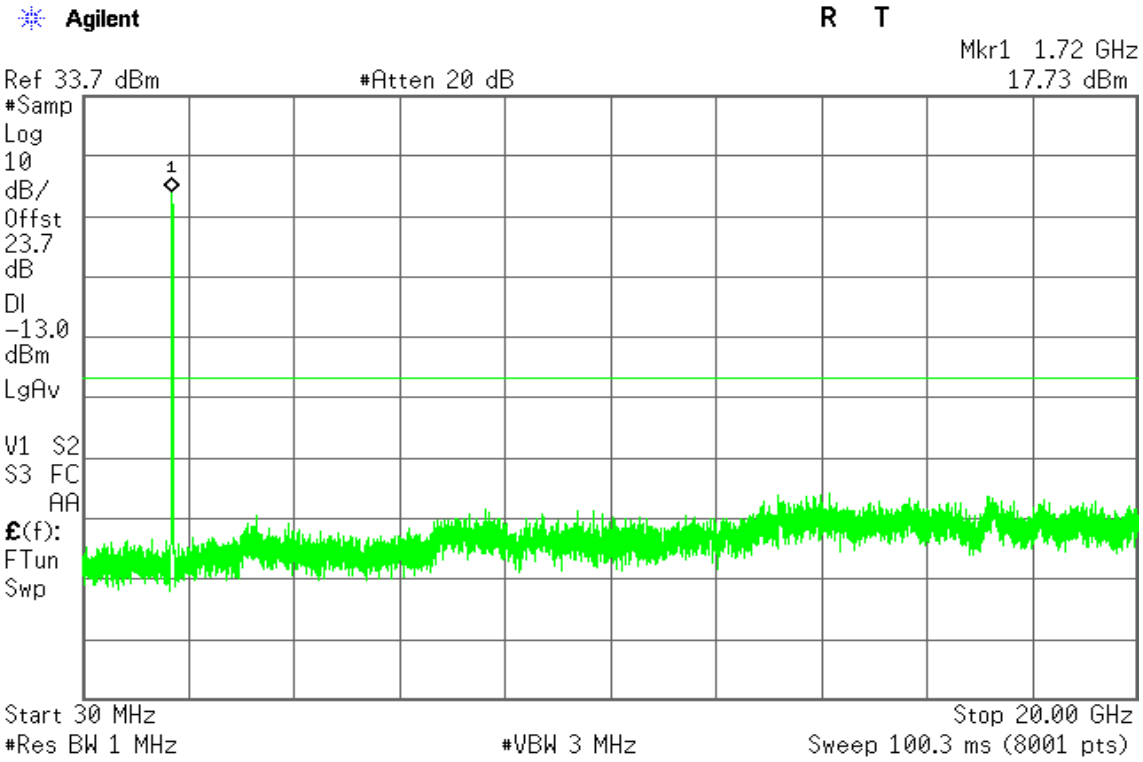


CH High

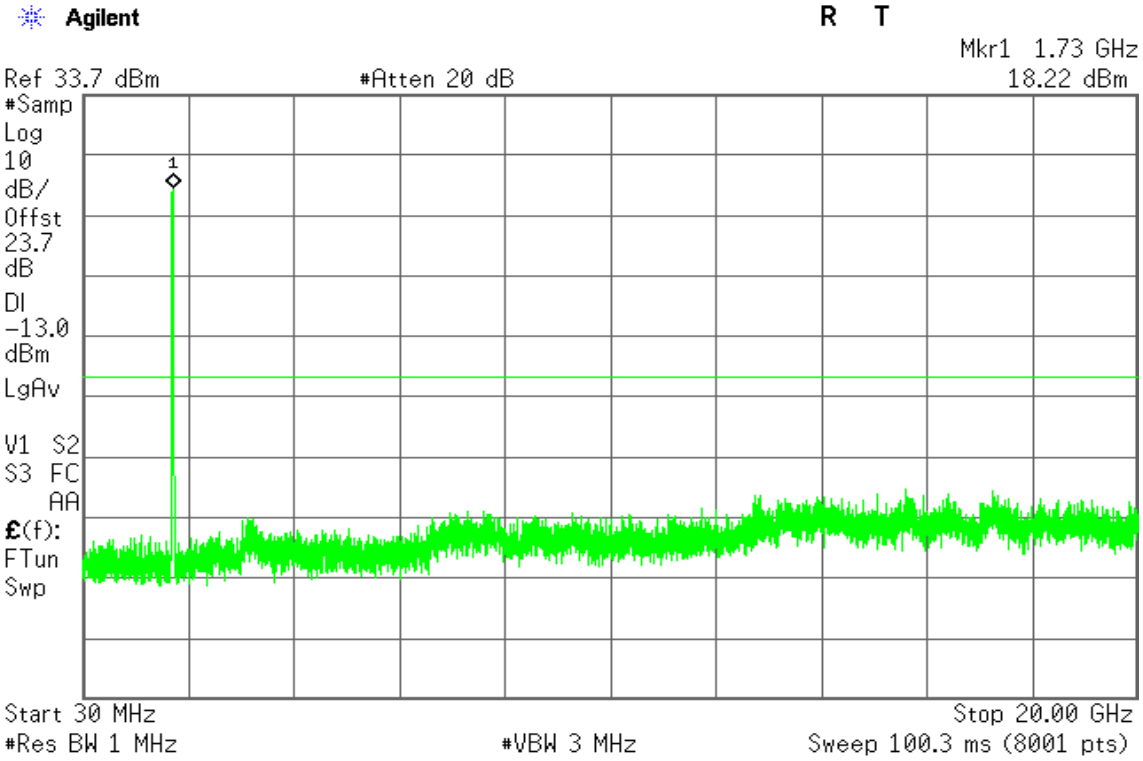

Agilent
R T
Mkr1 1.75 GHz
17.86 dBm
Ref 33.7 dBm
#Atten 20 dB
#Samp
Log
10
dB/
Offst
23.7
dB
Dl
-13.0
dBm
LgAv
V1 S2
S3 FC
AA
£(f):
FTun
Swp
Start 30 MHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 20.00 GHz
Sweep 100.3 ms (8001 pts)

CHANNEL BANDWIDTH: 20MHz / QPSK

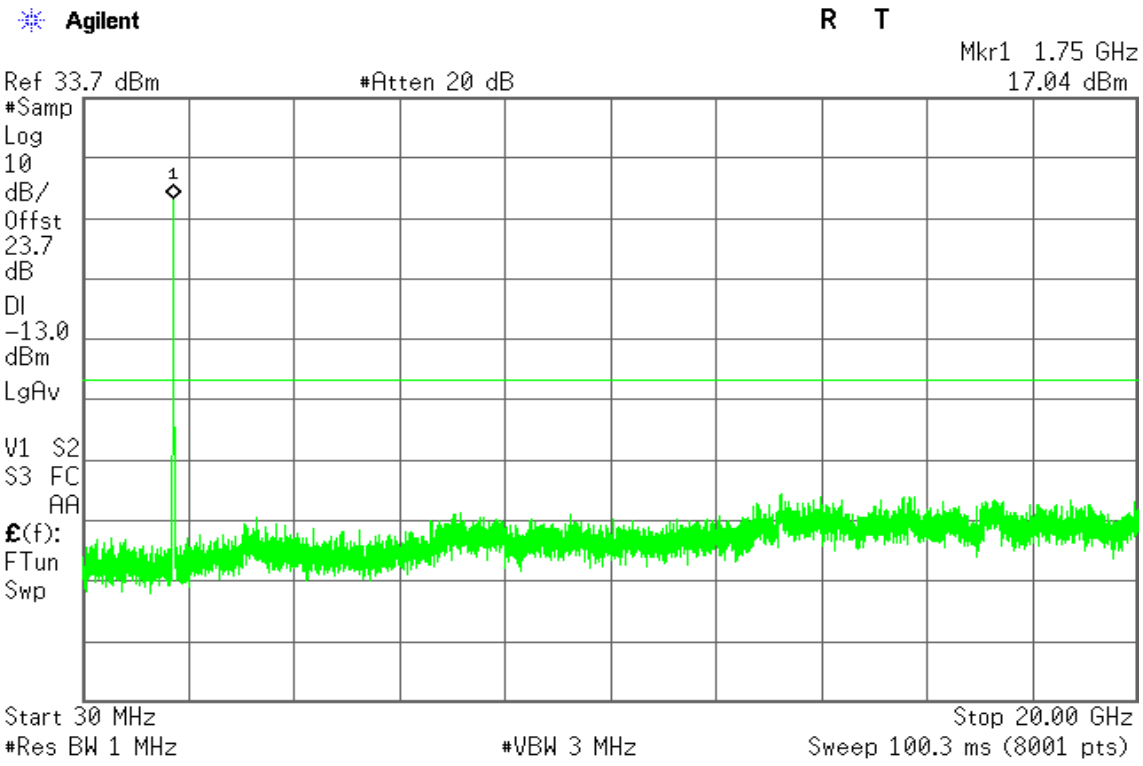
CH Low



CH Mid

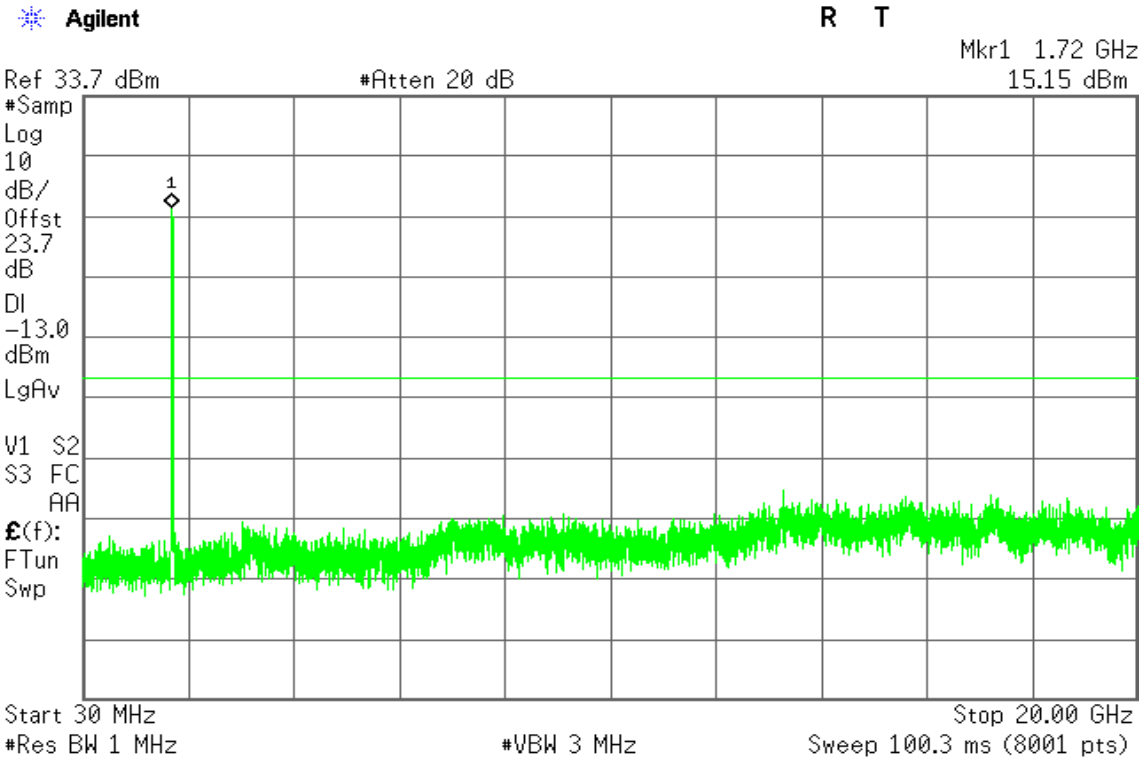


CH High

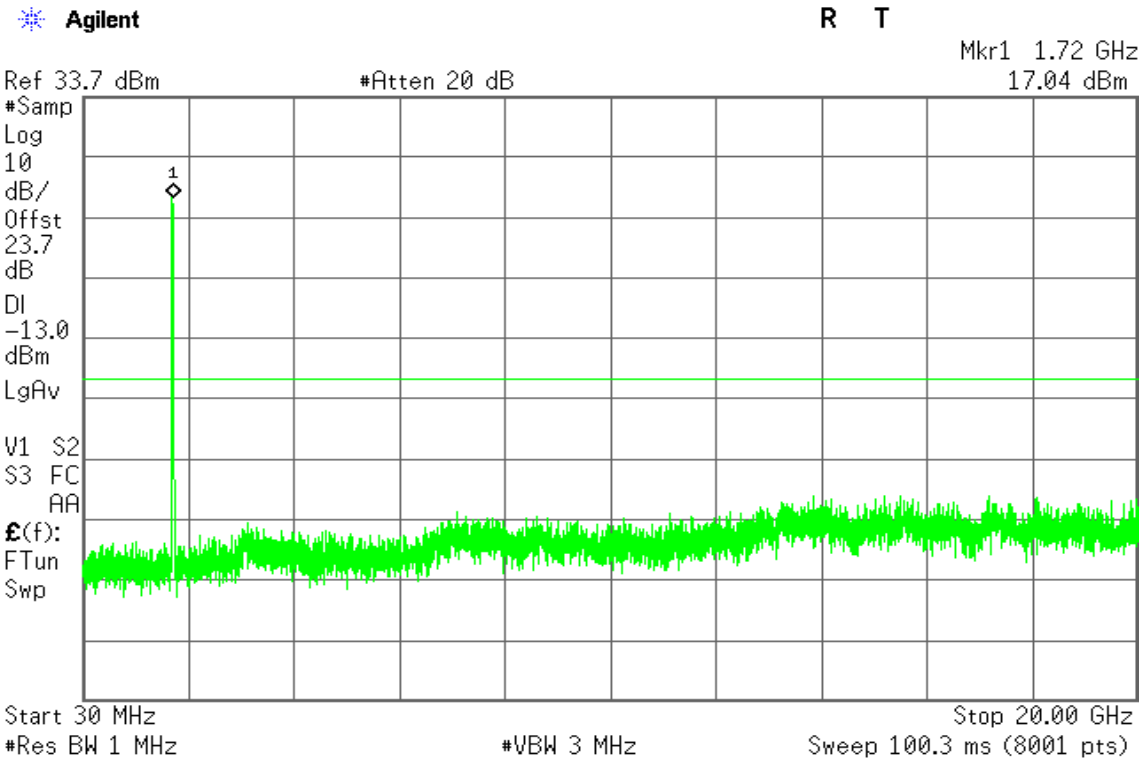

Agilent
R T
Mkr1 1.75 GHz
17.04 dBm
Ref 33.7 dBm
#Atten 20 dB
#Samp
Log
10
dB/
Offst
23.7
dB
Dl
-13.0
dBm
LgAv
V1 S2
S3 FC
AA
£(f):
FTun
Swp
Start 30 MHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 20.00 GHz
Sweep 100.3 ms (8001 pts)

CHANNEL BANDWIDTH: 20MHz / 16QAM

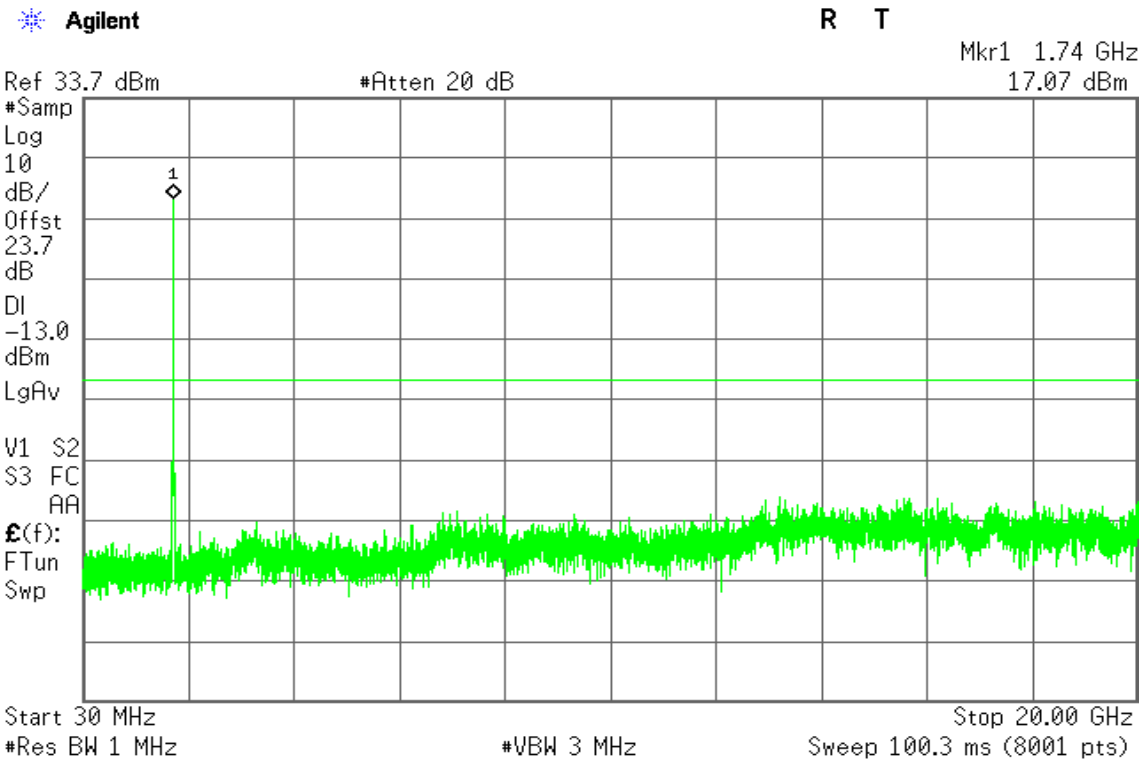
CH Low



CH Mid



CH High


Agilent
R T
Mkr1 1.74 GHz
17.07 dBm
Ref 33.7 dBm
#Atten 20 dB
#Samp
Log
10
dB/
Offst
23.7
dB
Dl
-13.0
dBm
LgAv
V1 S2
S3 FC
AA
£(f):
FTun
Swp
Start 30 MHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 20.00 GHz
Sweep 100.3 ms (8001 pts)

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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
55.2200	-66.92	0.84	-3.37	-71.13	-13.00	-58.13	V
202.6600	-64.32	1.65	3.69	-62.28	-13.00	-49.28	V
250.1900	-65.89	1.84	5.68	-62.05	-13.00	-49.05	V
375.3200	-69.9	2.31	5.91	-66.30	-13.00	-53.30	V
466.5000	-79.19	2.61	5.82	-75.98	-13.00	-62.98	V
586.7800	-70.96	2.89	6.13	-67.72	-13.00	-54.72	V
136.7000	-63.12	1.38	-0.61	-65.11	-13.00	-52.11	H
200.7200	-63.06	1.63	3.19	-61.50	-13.00	-48.50	H
250.1900	-60.15	1.84	5.68	-56.31	-13.00	-43.31	H
375.3200	-65.74	2.31	5.91	-62.14	-13.00	-49.14	H
515.9700	-70.67	2.7	6.06	-67.31	-13.00	-54.31	H
593.5700	-57.91	2.89	6.27	-54.53	-13.00	-41.53	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
53.2800	-64.71	0.83	-3.94	-69.48	-13.00	-56.48	V
202.6600	-62.71	1.65	3.69	-60.67	-13.00	-47.67	V
250.1900	-64.47	1.84	5.68	-60.63	-13.00	-47.63	V
375.3200	-68.62	2.31	5.91	-65.02	-13.00	-52.02	V
593.5700	-68.05	2.89	6.27	-64.67	-13.00	-51.67	V
641.1000	-72.47	3.01	6.12	-69.36	-13.00	-56.36	V
140.5800	-63.98	1.39	-0.19	-65.56	-13.00	-52.56	H
202.6600	-63.23	1.65	3.69	-61.19	-13.00	-48.19	H
250.1900	-60.21	1.84	5.68	-56.37	-13.00	-43.37	H
375.3200	-65.23	2.31	5.91	-61.63	-13.00	-48.63	H
516.9400	-71.28	2.7	6.07	-67.91	-13.00	-54.91	H
588.7200	-58.75	2.89	6.17	-55.47	-13.00	-42.47	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
55.2200	-66.23	0.84	-3.37	-70.44	-13.00	-57.44	V
201.6900	-64.36	1.64	3.44	-62.56	-13.00	-49.56	V
250.1900	-65.68	1.84	5.68	-61.84	-13.00	-48.84	V
375.3200	-70.12	2.31	5.91	-66.52	-13.00	-53.52	V
582.9000	-70.57	2.89	6.06	-67.40	-13.00	-54.40	V
641.1000	-74.91	3.01	6.12	-71.80	-13.00	-58.80	V
133.7900	-63.91	1.36	-0.95	-66.22	-13.00	-53.22	H
202.6600	-63.55	1.65	3.69	-61.51	-13.00	-48.51	H
250.1900	-60.61	1.84	5.68	-56.77	-13.00	-43.77	H
375.3200	-66.32	2.31	5.91	-62.72	-13.00	-49.72	H
509.1800	-71.38	2.69	5.99	-68.08	-13.00	-55.08	H
589.6900	-58.19	2.89	6.19	-54.89	-13.00	-41.89	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
53.2800	-62.79	0.83	-3.94	-67.56	-13.00	-54.56	V
202.6600	-61.54	1.65	3.69	-59.50	-13.00	-46.50	V
250.1900	-62.54	1.84	5.68	-58.70	-13.00	-45.70	V
375.3200	-67.03	2.31	5.91	-63.43	-13.00	-50.43	V
582.9000	-67.09	2.89	6.06	-63.92	-13.00	-50.92	V
624.6100	-72.72	2.96	6.15	-69.53	-13.00	-56.53	V
133.7900	-63.01	1.36	-0.95	-65.32	-13.00	-52.32	H
250.1900	-60.35	1.84	5.68	-56.51	-13.00	-43.51	H
375.3200	-66.1	2.31	5.91	-62.50	-13.00	-49.50	H
466.5000	-73.29	2.61	5.82	-70.08	-13.00	-57.08	H
514.0300	-69.32	2.69	6.04	-65.97	-13.00	-52.97	H
583.8700	-56.9	2.89	6.08	-53.71	-13.00	-40.71	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 background noise floor.*

LTE Band 13 / CHANNEL BANDWIDTH: 5MHz / 16QAM

Operation Mode:	Tx / Low channel	**Test Date:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
53.2800	-65.88	0.83	-3.94	-70.65	-13.00	-57.65	V
204.6000	-64.48	1.65	4.2	-61.93	-13.00	-48.93	V
250.1900	-66.07	1.84	5.68	-62.23	-13.00	-49.23	V
375.3200	-70.22	2.31	5.91	-66.62	-13.00	-53.62	V
583.8700	-69.57	2.89	6.08	-66.38	-13.00	-53.38	V
641.1000	-74.46	3.01	6.12	-71.35	-13.00	-58.35	V
130.8800	-62	1.35	-1.3	-64.65	-13.00	-51.65	H
202.6600	-63.52	1.65	3.69	-61.48	-13.00	-48.48	H
250.1900	-60.35	1.84	5.68	-56.51	-13.00	-43.51	H
375.3200	-66.26	2.31	5.91	-62.66	-13.00	-49.66	H
513.0600	-69.15	2.69	6.03	-65.81	-13.00	-52.81	H
587.7500	-57.44	2.89	6.15	-54.18	-13.00	-41.18	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
53.2800	-64.1	0.83	-3.94	-68.87	-13.00	-55.87	V
250.1900	-63.9	1.84	5.68	-60.06	-13.00	-47.06	V
375.3200	-68.31	2.31	5.91	-64.71	-13.00	-51.71	V
466.5000	-74.56	2.61	5.82	-71.35	-13.00	-58.35	V
582.9000	-66.71	2.89	6.06	-63.54	-13.00	-50.54	V
641.1000	-71.16	3.01	6.12	-68.05	-13.00	-55.05	V
136.7000	-61.74	1.38	-0.61	-63.73	-13.00	-50.73	H
202.6600	-62.49	1.65	3.69	-60.45	-13.00	-47.45	H
250.1900	-59.75	1.84	5.68	-55.91	-13.00	-42.91	H
375.3200	-64.92	2.31	5.91	-61.32	-13.00	-48.32	H
515.0000	-71.55	2.7	6.05	-68.20	-13.00	-55.20	H
593.5700	-56.2	2.89	6.27	-52.82	-13.00	-39.82	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
53.2800	-65.4	0.83	-3.94	-70.17	-13.00	-57.17	V
202.6600	-64.32	1.65	3.69	-62.28	-13.00	-49.28	V
250.1900	-65.9	1.84	5.68	-62.06	-13.00	-49.06	V
375.3200	-70.34	2.31	5.91	-66.74	-13.00	-53.74	V
587.7500	-70.56	2.89	6.15	-67.30	-13.00	-54.30	V
641.1000	-73.33	3.01	6.12	-70.22	-13.00	-57.22	V
137.6700	-62.8	1.38	-0.49	-64.67	-13.00	-51.67	H
250.1900	-60.7	1.84	5.68	-56.86	-13.00	-43.86	H
375.3200	-65.96	2.31	5.91	-62.36	-13.00	-49.36	H
508.2100	-73.17	2.69	5.98	-69.88	-13.00	-56.88	H
593.5700	-57.66	2.89	6.27	-54.28	-13.00	-41.28	H
642.0700	-73.69	3.01	6.14	-70.56	-13.00	-57.56	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
53.2800	-65.6	0.83	-3.94	-70.37	-13.00	-57.37	V
203.6300	-64.91	1.65	3.94	-62.62	-13.00	-49.62	V
250.1900	-65.82	1.84	5.68	-61.98	-13.00	-48.98	V
375.3200	-69.91	2.31	5.91	-66.31	-13.00	-53.31	V
587.7500	-71.16	2.89	6.15	-67.90	-13.00	-54.90	V
641.1000	-72.04	3.01	6.12	-68.93	-13.00	-55.93	V
138.6400	-62.51	1.39	-0.38	-64.28	-13.00	-51.28	H
202.6600	-62.64	1.65	3.69	-60.60	-13.00	-47.60	H
250.1900	-59.86	1.84	5.68	-56.02	-13.00	-43.02	H
375.3200	-66.05	2.31	5.91	-62.45	-13.00	-49.45	H
515.0000	-71	2.7	6.05	-67.65	-13.00	-54.65	H
585.8100	-56.94	2.89	6.11	-53.72	-13.00	-40.72	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: 5MHz / QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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	-64.07	1.63	3.19	-62.51	-13.00	-49.51	V
250.1900	-66.1	1.84	5.68	-62.26	-13.00	-49.26	V
375.3200	-70.33	2.31	5.91	-66.73	-13.00	-53.73	V
466.5000	-74.66	2.61	5.82	-71.45	-13.00	-58.45	V
587.7500	-67.74	2.89	6.15	-64.48	-13.00	-51.48	V
700.2700	-72.37	3.11	6.39	-69.09	-13.00	-56.09	V
136.7000	-62.84	1.38	-0.61	-64.83	-13.00	-51.83	H
250.1900	-60.32	1.84	5.68	-56.48	-13.00	-43.48	H
375.3200	-66.3	2.31	5.91	-62.70	-13.00	-49.70	H
508.2100	-72.92	2.69	5.98	-69.63	-13.00	-56.63	H
594.5400	-58.06	2.89	6.29	-54.66	-13.00	-41.66	H
749.7400	-69.27	3.2	6.1	-66.37	-13.00	-53.37	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
201.6900	-63.89	1.64	3.44	-62.09	-13.00	-49.09	V
250.1900	-65.94	1.84	5.68	-62.10	-13.00	-49.10	V
375.3200	-70.38	2.31	5.91	-66.78	-13.00	-53.78	V
586.7800	-69.25	2.89	6.13	-66.01	-13.00	-53.01	V
700.2700	-74.84	3.11	6.39	-71.56	-13.00	-58.56	V
816.6700	-71.17	3.37	6.2	-68.34	-13.00	-55.34	V
133.7900	-61.64	1.36	-0.95	-63.95	-13.00	-50.95	H
250.1900	-60.68	1.84	5.68	-56.84	-13.00	-43.84	H
375.3200	-66.25	2.31	5.91	-62.65	-13.00	-49.65	H
520.8200	-69.47	2.71	6.09	-66.09	-13.00	-53.09	H
587.7500	-55.3	2.89	6.15	-52.04	-13.00	-39.04	H
700.2700	-67.23	3.11	6.39	-63.95	-13.00	-50.95	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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	-63.99	1.63	3.19	-62.43	-13.00	-49.43	V
250.1900	-65.69	1.84	5.68	-61.85	-13.00	-48.85	V
375.3200	-69.67	2.31	5.91	-66.07	-13.00	-53.07	V
589.6900	-67.42	2.89	6.19	-64.12	-13.00	-51.12	V
700.2700	-72.05	3.11	6.39	-68.77	-13.00	-55.77	V
816.6700	-72.01	3.37	6.2	-69.18	-13.00	-56.18	V
135.7300	-62.15	1.37	-0.72	-64.24	-13.00	-51.24	H
250.1900	-60.38	1.84	5.68	-56.54	-13.00	-43.54	H
375.3200	-65.99	2.31	5.91	-62.39	-13.00	-49.39	H
515.9700	-66.46	2.7	6.06	-63.10	-13.00	-50.10	H
588.7200	-57.29	2.89	6.17	-54.01	-13.00	-41.01	H
700.2700	-69.81	3.11	6.39	-66.53	-13.00	-53.53	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
203.6300	-64.42	1.65	3.94	-62.13	-13.00	-49.13	V
250.1900	-66.31	1.84	5.68	-62.47	-13.00	-49.47	V
375.3200	-69.51	2.31	5.91	-65.91	-13.00	-52.91	V
582.9000	-69.3	2.89	6.06	-66.13	-13.00	-53.13	V
700.2700	-72.3	3.11	6.39	-69.02	-13.00	-56.02	V
758.4700	-73.81	3.22	6.27	-70.76	-13.00	-57.76	V
136.7000	-61.87	1.38	-0.61	-63.86	-13.00	-50.86	H
250.1900	-60.43	1.84	5.68	-56.59	-13.00	-43.59	H
375.3200	-66.09	2.31	5.91	-62.49	-13.00	-49.49	H
515.9700	-66.78	2.7	6.06	-63.42	-13.00	-50.42	H
582.9000	-58.37	2.89	6.06	-55.20	-13.00	-42.20	H
642.0700	-67.58	3.01	6.14	-64.45	-13.00	-51.45	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
53.2800	-62.07	0.83	-3.94	-66.84	-13.00	-53.84	V
250.1900	-62.81	1.84	5.68	-58.97	-13.00	-45.97	V
375.3200	-66.86	2.31	5.91	-63.26	-13.00	-50.26	V
571.2600	-72.94	2.87	6.1	-69.71	-13.00	-56.71	V
700.2700	-70.9	3.11	6.39	-67.62	-13.00	-54.62	V
816.6700	-70.08	3.37	6.2	-67.25	-13.00	-54.25	V
135.7300	-59.06	1.37	-0.72	-61.15	-13.00	-48.15	H
250.1900	-57.38	1.84	5.68	-53.54	-13.00	-40.54	H
375.3200	-63.46	2.31	5.91	-59.86	-13.00	-46.86	H
513.0600	-66.37	2.69	6.03	-63.03	-13.00	-50.03	H
582.9000	-54.24	2.89	6.06	-51.07	-13.00	-38.07	H
700.2700	-65.32	3.11	6.39	-62.04	-13.00	-49.04	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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	-63.7	1.65	3.69	-61.66	-13.00	-48.66	V
250.1900	-66.2	1.84	5.68	-62.36	-13.00	-49.36	V
375.3200	-70.34	2.31	5.91	-66.74	-13.00	-53.74	V
587.7500	-69.83	2.89	6.15	-66.57	-13.00	-53.57	V
700.2700	-73.05	3.11	6.39	-69.77	-13.00	-56.77	V
816.6700	-74.21	3.37	6.2	-71.38	-13.00	-58.38	V
131.8500	-62.13	1.35	-1.18	-64.66	-13.00	-51.66	H
250.1900	-60.69	1.84	5.68	-56.85	-13.00	-43.85	H
375.3200	-65.8	2.31	5.91	-62.20	-13.00	-49.20	H
515.0000	-71.19	2.7	6.05	-67.84	-13.00	-54.84	H
588.7200	-58.92	2.89	6.17	-55.64	-13.00	-42.64	H
749.7400	-69.97	3.2	6.1	-67.07	-13.00	-54.07	H

Remark:

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

LTE Band 4 / CHANNEL BANDWIDTH: 20MHz / QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
54.2500	-65.93	0.83	-3.66	-70.42	-13.00	-57.42	V
200.7200	-64.45	1.63	3.19	-62.89	-13.00	-49.89	V
250.1900	-65.83	1.84	5.68	-61.99	-13.00	-48.99	V
375.3200	-69.75	2.31	5.91	-66.15	-13.00	-53.15	V
587.7500	-69.66	2.89	6.15	-66.40	-13.00	-53.40	V
700.2700	-72.15	3.11	6.39	-68.87	-13.00	-55.87	V
136.7000	-62.9	1.38	-0.61	-64.89	-13.00	-51.89	H
250.1900	-60.34	1.84	5.68	-56.50	-13.00	-43.50	H
375.3200	-65.93	2.31	5.91	-62.33	-13.00	-49.33	H
515.9700	-69.13	2.7	6.06	-65.77	-13.00	-52.77	H
587.7500	-55.99	2.89	6.15	-52.73	-13.00	-39.73	H
749.7400	-68.82	3.2	6.1	-65.92	-13.00	-52.92	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
201.6900	-64.27	1.64	3.44	-62.47	-13.00	-49.47	V
250.1900	-65.77	1.84	5.68	-61.93	-13.00	-48.93	V
375.3200	-70	2.31	5.91	-66.40	-13.00	-53.40	V
588.7200	-69.99	2.89	6.17	-66.71	-13.00	-53.71	V
700.2700	-72.54	3.11	6.39	-69.26	-13.00	-56.26	V
816.6700	-72.35	3.37	6.2	-69.52	-13.00	-56.52	V
203.6300	-63.13	1.65	3.94	-60.84	-13.00	-47.84	H
250.1900	-60.31	1.84	5.68	-56.47	-13.00	-43.47	H
375.3200	-65.96	2.31	5.91	-62.36	-13.00	-49.36	H
512.0900	-68.71	2.69	6.02	-65.38	-13.00	-52.38	H
589.6900	-59.73	2.89	6.19	-56.43	-13.00	-43.43	H
700.2700	-68.34	3.11	6.39	-65.06	-13.00	-52.06	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
53.2800	-65.56	0.83	-3.94	-70.33	-13.00	-57.33	V
200.7200	-64.13	1.63	3.19	-62.57	-13.00	-49.57	V
375.3200	-69.82	2.31	5.91	-66.22	-13.00	-53.22	V
585.8100	-65.21	2.89	6.11	-61.99	-13.00	-48.99	V
700.2700	-72.71	3.11	6.39	-69.43	-13.00	-56.43	V
874.8700	-73.74	3.45	6.6	-70.59	-13.00	-57.59	V
137.6700	-62.59	1.38	-0.49	-64.46	-13.00	-51.46	H
250.1900	-60.44	1.84	5.68	-56.60	-13.00	-43.60	H
375.3200	-65.84	2.31	5.91	-62.24	-13.00	-49.24	H
515.0000	-68.99	2.7	6.05	-65.64	-13.00	-52.64	H
589.6900	-57.15	2.89	6.19	-53.85	-13.00	-40.85	H
700.2700	-70.31	3.11	6.39	-67.03	-13.00	-54.03	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.*

LTE Band 4 / CHANNEL BANDWIDTH: 5MHz / 16QAM

Operation Mode:	Tx / Low channel	**Test Date:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
201.6900	-64.19	1.64	3.44	-62.39	-13.00	-49.39	V
250.1900	-66.08	1.84	5.68	-62.24	-13.00	-49.24	V
375.3200	-70.24	2.31	5.91	-66.64	-13.00	-53.64	V
589.6900	-69.79	2.89	6.19	-66.49	-13.00	-53.49	V
700.2700	-72.5	3.11	6.39	-69.22	-13.00	-56.22	V
816.6700	-68.6	3.37	6.2	-65.77	-13.00	-52.77	V
197.8100	-65.56	1.63	3.15	-64.04	-13.00	-51.04	H
250.1900	-60.54	1.84	5.68	-56.70	-13.00	-43.70	H
375.3200	-65.97	2.31	5.91	-62.37	-13.00	-49.37	H
593.5700	-57.3	2.89	6.27	-53.92	-13.00	-40.92	H
700.2700	-63.66	3.11	6.39	-60.38	-13.00	-47.38	H
874.8700	-68.29	3.45	6.6	-65.14	-13.00	-52.14	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
201.6900	-63.7	1.64	3.44	-61.90	-13.00	-48.90	V
250.1900	-65.57	1.84	5.68	-61.73	-13.00	-48.73	V
375.3200	-69.71	2.31	5.91	-66.11	-13.00	-53.11	V
589.6900	-66.39	2.89	6.19	-63.09	-13.00	-50.09	V
700.2700	-73.09	3.11	6.39	-69.81	-13.00	-56.81	V
816.6700	-72.42	3.37	6.2	-69.59	-13.00	-56.59	V
141.5500	-63.83	1.4	-0.1	-65.33	-13.00	-52.33	H
250.1900	-60.49	1.84	5.68	-56.65	-13.00	-43.65	H
375.3200	-66.4	2.31	5.91	-62.80	-13.00	-49.80	H
511.1200	-69.69	2.69	6.01	-66.37	-13.00	-53.37	H
593.5700	-56	2.89	6.27	-52.62	-13.00	-39.62	H
700.2700	-69.04	3.11	6.39	-65.76	-13.00	-52.76	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
203.6300	-64.01	1.65	3.94	-61.72	-13.00	-48.72	V
250.1900	-66.18	1.84	5.68	-62.34	-13.00	-49.34	V
375.3200	-70.22	2.31	5.91	-66.62	-13.00	-53.62	V
512.0900	-77.07	2.69	6.02	-73.74	-13.00	-60.74	V
583.8700	-68.28	2.89	6.08	-65.09	-13.00	-52.09	V
700.2700	-72.26	3.11	6.39	-68.98	-13.00	-55.98	V
201.6900	-62.08	1.64	3.44	-60.28	-13.00	-47.28	H
250.1900	-60.36	1.84	5.68	-56.52	-13.00	-43.52	H
375.3200	-65.91	2.31	5.91	-62.31	-13.00	-49.31	H
589.6900	-57.1	2.89	6.19	-53.80	-13.00	-40.80	H
749.7400	-70.38	3.2	6.1	-67.48	-13.00	-54.48	H
874.8700	-68.75	3.45	6.6	-65.60	-13.00	-52.60	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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	-64.13	1.65	3.69	-62.09	-13.00	-49.09	V
250.1900	-66.3	1.84	5.68	-62.46	-13.00	-49.46	V
375.3200	-70.26	2.31	5.91	-66.66	-13.00	-53.66	V
587.7500	-69.23	2.89	6.15	-65.97	-13.00	-52.97	V
700.2700	-74.55	3.11	6.39	-71.27	-13.00	-58.27	V
816.6700	-71.5	3.37	6.2	-68.67	-13.00	-55.67	V
135.7300	-62.09	1.37	-0.72	-64.18	-13.00	-51.18	H
250.1900	-60.52	1.84	5.68	-56.68	-13.00	-43.68	H
375.3200	-65.58	2.31	5.91	-61.98	-13.00	-48.98	H
512.0900	-72.34	2.69	6.02	-69.01	-13.00	-56.01	H
582.9000	-56.21	2.89	6.06	-53.04	-13.00	-40.04	H
749.7400	-70.62	3.2	6.1	-67.72	-13.00	-54.72	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.*

Operation Mode:	Tx / Middle channel	**Test Date:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
56.1900	-65.77	0.85	-3.09	-69.71	-13.00	-56.71	V
250.1900	-64.36	1.84	5.68	-60.52	-13.00	-47.52	V
375.3200	-69.11	2.31	5.91	-65.51	-13.00	-52.51	V
582.9000	-69.1	2.89	6.06	-65.93	-13.00	-52.93	V
700.2700	-72.88	3.11	6.39	-69.60	-13.00	-56.60	V
816.6700	-71.38	3.37	6.2	-68.55	-13.00	-55.55	V
134.7600	-61.09	1.37	-0.84	-63.30	-13.00	-50.30	H
202.6600	-60.23	1.65	3.69	-58.19	-13.00	-45.19	H
250.1900	-58.77	1.84	5.68	-54.93	-13.00	-41.93	H
375.3200	-64.32	2.31	5.91	-60.72	-13.00	-47.72	H
515.9700	-69.07	2.7	6.06	-65.71	-13.00	-52.71	H
589.6900	-55.45	2.89	6.19	-52.15	-13.00	-39.15	H

Remark:

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

Operation Mode:	Tx / High channel	**Test Date:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
204.6000	-64.7	1.65	4.2	-62.15	-13.00	-49.15	V
250.1900	-66.23	1.84	5.68	-62.39	-13.00	-49.39	V
375.3200	-70.55	2.31	5.91	-66.95	-13.00	-53.95	V
585.8100	-69.46	2.89	6.11	-66.24	-13.00	-53.24	V
749.7400	-76.47	3.2	6.1	-73.57	-13.00	-60.57	V
874.8700	-74.19	3.45	6.6	-71.04	-13.00	-58.04	V
156.1000	-64.65	1.46	1.15	-64.96	-13.00	-51.96	H
250.1900	-60.45	1.84	5.68	-56.61	-13.00	-43.61	H
375.3200	-65.76	2.31	5.91	-62.16	-13.00	-49.16	H
514.0300	-69.35	2.69	6.04	-66.00	-13.00	-53.00	H
596.4800	-57.24	2.9	6.33	-53.81	-13.00	-40.81	H
749.7400	-69.68	3.2	6.1	-66.78	-13.00	-53.78	H

Remark:

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

LTE Band 4 / CHANNEL BANDWIDTH: 20MHz / 16QAM

Operation Mode:	Tx / Low channel	**Test Date:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
55.2200	-65.85	0.84	-3.37	-70.06	-13.00	-57.06	V
200.7200	-63.4	1.63	3.19	-61.84	-13.00	-48.84	V
250.1900	-66.14	1.84	5.68	-62.30	-13.00	-49.30	V
375.3200	-70.59	2.31	5.91	-66.99	-13.00	-53.99	V
582.9000	-71.64	2.89	6.06	-68.47	-13.00	-55.47	V
700.2700	-73.9	3.11	6.39	-70.62	-13.00	-57.62	V
132.8200	-62.38	1.36	-1.07	-64.81	-13.00	-51.81	H
250.1900	-60.38	1.84	5.68	-56.54	-13.00	-43.54	H
375.3200	-66.24	2.31	5.91	-62.64	-13.00	-49.64	H
510.1500	-71.48	2.69	6	-68.17	-13.00	-55.17	H
589.6900	-54.09	2.89	6.19	-50.79	-13.00	-37.79	H
749.7400	-69.66	3.2	6.1	-66.76	-13.00	-53.76	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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	-64.07	1.65	3.69	-62.03	-13.00	-49.03	V
250.1900	-65.82	1.84	5.68	-61.98	-13.00	-48.98	V
375.3200	-69.57	2.31	5.91	-65.97	-13.00	-52.97	V
582.9000	-67.41	2.89	6.06	-64.24	-13.00	-51.24	V
641.1000	-70.53	3.01	6.12	-67.42	-13.00	-54.42	V
816.6700	-72.83	3.37	6.2	-70.00	-13.00	-57.00	V
140.5800	-63.43	1.39	-0.19	-65.01	-13.00	-52.01	H
250.1900	-60.32	1.84	5.68	-56.48	-13.00	-43.48	H
375.3200	-65.83	2.31	5.91	-62.23	-13.00	-49.23	H
515.0000	-69.07	2.7	6.05	-65.72	-13.00	-52.72	H
594.5400	-56.22	2.89	6.29	-52.82	-13.00	-39.82	H
749.7400	-69.96	3.2	6.1	-67.06	-13.00	-54.06	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:**	January 13, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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	-64.46	1.65	3.69	-62.42	-13.00	-49.42	V
250.1900	-66.04	1.84	5.68	-62.20	-13.00	-49.20	V
375.3200	-70.06	2.31	5.91	-66.46	-13.00	-53.46	V
582.9000	-68.12	2.89	6.06	-64.95	-13.00	-51.95	V
700.2700	-73.2	3.11	6.39	-69.92	-13.00	-56.92	V
874.8700	-73.33	3.45	6.6	-70.18	-13.00	-57.18	V
136.7000	-62.72	1.38	-0.61	-64.71	-13.00	-51.71	H
250.1900	-60.74	1.84	5.68	-56.90	-13.00	-43.90	H
375.3200	-66.11	2.31	5.91	-62.51	-13.00	-49.51	H
511.1200	-71.05	2.69	6.01	-67.73	-13.00	-54.73	H
594.5400	-60.15	2.89	6.29	-56.75	-13.00	-43.75	H
749.7400	-70.26	3.2	6.1	-67.36	-13.00	-54.36	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:**	January 14, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
1560.000	-59.22	4.93	6.19	-57.96	-13.00	-44.96	V
4290.000	-53.62	8.59	9.63	-52.58	-13.00	-39.58	V
N/A							
1280.000	-56.12	4.47	4.72	-55.87	-13.00	-42.87	H
4339.000	-53.19	8.62	9.67	-52.14	-13.00	-39.14	H
N/A							

Remark:

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

Operation Mode:	Tx / Middle channel	**Test Date:**	January 14, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
3128.000	-55.47	7.2	7.78	-54.89	-13.00	-41.89	V
6131.000	-50.92	10.81	11	-50.73	-13.00	-37.73	V
N/A							
2918.000	-56.15	7.12	7.19	-56.08	-13.00	-43.08	H
5123.000	-52.89	9.48	10.65	-51.72	-13.00	-38.72	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:**	January 14, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
1567.000	-57.23	4.94	6.18	-55.99	-13.00	-42.99	V
3919.000	-53.16	8.38	9.32	-52.22	-13.00	-39.22	V
N/A							
1574.000	-56.82	4.95	6.17	-55.60	-13.00	-42.60	H
4437.000	-50.98	8.74	9.75	-49.97	-13.00	-36.97	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:**	January 14, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
3555.000	-55.17	8	8.96	-54.21	-13.00	-41.21	V
7349.000	-45.62	12.06	12.46	-45.22	-13.00	-32.22	V
N/A							
2911.000	-54.55	7.13	7.17	-54.51	-13.00	-41.51	H
4997.000	-52.55	9.41	10.6	-51.36	-13.00	-38.36	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:**	January 14, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
3009.000	-56.55	7.02	7.43	-56.14	-13.00	-43.14	V
4934.000	-53.41	9.31	10.49	-52.23	-13.00	-39.23	V
N/A							
1273.000	-54.25	4.45	4.67	-54.03	-13.00	-41.03	H
4024.000	-53.03	8.38	9.42	-51.99	-13.00	-38.99	H
N/A							

Remark:

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

Operation Mode:	Tx / Middle channel	**Test Date:**	January 14, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
3114.000	-56.4	7.18	7.74	-55.84	-13.00	-42.84	V
6082.000	-52.04	10.66	10.97	-51.73	-13.00	-38.73	V
N/A							
2344.000	-56.09	6.12	5.88	-56.33	-13.00	-43.33	H
5431.000	-52.65	9.86	10.77	-51.74	-13.00	-38.74	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:**	January 14, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
1567.000	-58.2	4.94	6.18	-56.96	-13.00	-43.96	V
3856.000	-53.84	8.33	9.26	-52.91	-13.00	-39.91	V
N/A							
1567.000	-55.83	4.94	6.18	-54.59	-13.00	-41.59	H
4472.000	-52.15	8.83	9.78	-51.20	-13.00	-38.20	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:**	January 14, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
3275.000	-56.39	7.41	8.23	-55.57	-13.00	-42.57	V
6684.000	-49.01	11.29	11.52	-48.78	-13.00	-35.78	V
N/A							
2834.000	-55.52	6.93	6.97	-55.48	-13.00	-42.48	H
6698.000	-48.57	11.3	11.54	-48.33	-13.00	-35.33	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:**	January 30, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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	-45.73	7.64	8.67	-44.70	-13.00	-31.70	V
6348.000	-49.82	10.98	11.18	-49.62	-13.00	-36.62	V
N/A							
3422.000	-49.17	7.64	8.67	-48.14	-13.00	-35.14	H
6978.000	-46.04	11.54	11.87	-45.71	-13.00	-32.71	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:**	January 30, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
3464.000	-44.85	7.76	8.79	-43.82	-13.00	-30.82	V
6348.000	-49.28	10.98	11.18	-49.08	-13.00	-36.08	V
N/A							
3464.000	-48.03	7.76	8.79	-47.00	-13.00	-34.00	H
5116.000	-50.7	9.47	10.65	-49.52	-13.00	-36.52	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:**	January 30, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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	-45.96	7.88	8.91	-44.93	-13.00	-31.93	V
5256.000	-48.59	9.61	10.7	-47.50	-13.00	-34.50	V
N/A							
3506.000	-50.56	7.88	8.91	-49.53	-13.00	-36.53	H
6635.000	-48.24	11.25	11.46	-48.03	-13.00	-35.03	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:**	January 14, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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	-49.82	7.66	8.69	-48.79	-13.00	-35.79	V
6229.000	-50.46	11.08	11.08	-50.46	-13.00	-37.46	V
N/A							
3429.000	-53.74	7.66	8.69	-52.71	-13.00	-39.71	H
6201.000	-49.26	11.22	11.06	-49.42	-13.00	-36.42	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.*

Operation Mode:	Tx / Middle channel	**Test Date:**	January 14, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
3471.000	-51.41	7.78	8.81	-50.38	-13.00	-37.38	V
6810.000	-48.95	11.32	11.67	-48.60	-13.00	-35.60	V
N/A							
3464.000	-54.14	7.76	8.79	-53.11	-13.00	-40.11	H
5634.000	-51.73	10.18	10.83	-51.08	-13.00	-38.08	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.*

Operation Mode:	Tx / High channel	**Test Date:**	January 14, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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	-48.01	7.88	8.91	-46.98	-13.00	-33.98	V
5249.000	-52.89	9.6	10.7	-51.79	-13.00	-38.79	V
N/A							
3499.000	-51.58	7.87	8.9	-50.55	-13.00	-37.55	H
5774.000	-50.97	10.35	10.85	-50.47	-13.00	-37.47	H
N/A							

Remark:

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

LTE Band 4 / CHANNEL BANDWIDTH: 20MHz / QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	January 30, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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	-51.45	7.66	8.69	-50.42	-13.00	-37.42	V
6194.000	-50.19	11.18	11.06	-50.31	-13.00	-37.31	V
N/A							
3429.000	-54.3	7.66	8.69	-53.27	-13.00	-40.27	H
5025.000	-52.41	9.42	10.61	-51.22	-13.00	-38.22	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:**	January 30, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
3471.000	-51.62	7.78	8.81	-50.59	-13.00	-37.59	V
6943.000	-46.92	11.53	11.83	-46.62	-13.00	-33.62	V
N/A							
3891.000	-53.1	8.38	9.29	-52.19	-13.00	-39.19	H
6691.000	-48.18	11.29	11.53	-47.94	-13.00	-34.94	H
N/A							

Remark:

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

Operation Mode:	Tx / High channel	**Test Date:**	January 30, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
3492.000	-48.88	7.85	8.88	-47.85	-13.00	-34.85	V
5249.000	-51.29	9.6	10.7	-50.19	-13.00	-37.19	V
N/A							
4073.000	-53.09	8.43	9.46	-52.06	-13.00	-39.06	H
7153.000	-46.15	11.85	12.14	-45.86	-13.00	-32.86	H
N/A							

Remark:

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

LTE Band 4 / CHANNEL BANDWIDTH: 5MHz / 16QAM

Operation Mode:	Tx / Low channel	**Test Date:**	January 30, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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	-47.59	7.64	8.67	-46.56	-13.00	-33.56	V
6586.000	-50.05	11.2	11.4	-49.85	-13.00	-36.85	V
N/A							
3422.000	-50.05	7.64	8.67	-49.02	-13.00	-36.02	H
5858.000	-51.24	10.41	10.87	-50.78	-13.00	-37.78	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:**	January 30, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
3464.000	-48.11	7.76	8.79	-47.08	-13.00	-34.08	V
5200.000	-52.32	9.56	10.68	-51.20	-13.00	-38.20	V
N/A							
3464.000	-52.81	7.76	8.79	-51.78	-13.00	-38.78	H
6327.000	-49.82	10.88	11.16	-49.54	-13.00	-36.54	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:**	January 30, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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	-44.84	7.88	8.91	-43.81	-13.00	-30.81	V
5256.000	-49.28	9.61	10.7	-48.19	-13.00	-35.19	V
N/A							
3506.000	-50.68	7.88	8.91	-49.65	-13.00	-36.65	H
6110.000	-50.06	10.68	10.99	-49.75	-13.00	-36.75	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 / 16QAM

Operation Mode:	Tx / Low channel	**Test Date:**	January 14, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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	-49.32	7.66	8.69	-48.29	-13.00	-35.29	V
5144.000	-53.12	9.5	10.66	-51.96	-13.00	-38.96	V
N/A							
3429.000	-53.34	7.66	8.69	-52.31	-13.00	-39.31	H
5802.000	-51.64	10.42	10.86	-51.20	-13.00	-38.20	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:**	January 14, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
3464.000	-51.2	7.76	8.79	-50.17	-13.00	-37.17	V
5669.000	-52.37	10.17	10.83	-51.71	-13.00	-38.71	V
N/A							
3464.000	-54.09	7.76	8.79	-53.06	-13.00	-40.06	H
5977.000	-50.79	10.73	10.9	-50.62	-13.00	-37.62	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:**	January 14, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
3499.000	-48.07	7.87	8.9	-47.04	-13.00	-34.04	V
5739.000	-53.16	10.26	10.85	-52.57	-13.00	-39.57	V
N/A							
3499.000	-52.36	7.87	8.9	-51.33	-13.00	-38.33	H
5522.000	-52.66	9.99	10.8	-51.85	-13.00	-38.85	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 / 16QAM

Operation Mode:	Tx / Low channel	**Test Date:**	January 30, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
3856.000	-53.63	8.33	9.26	-52.70	-13.00	-39.70	V
6047.000	-51.25	10.73	10.94	-51.04	-13.00	-38.04	V
N/A							
3898.000	-53.65	8.39	9.3	-52.74	-13.00	-39.74	H
6187.000	-49.37	11.14	11.05	-49.46	-13.00	-36.46	H
N/A							

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:**	January 30, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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)
3478.000	-51.98	7.8	8.83	-50.95	-13.00	-37.95	V
6005.000	-51.48	10.82	10.9	-51.40	-13.00	-38.40	V
N/A							
3905.000	-52.69	8.39	9.31	-51.77	-13.00	-38.77	H
6677.000	-48.28	11.28	11.51	-48.05	-13.00	-35.05	H
N/A							

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 / High channel	**Test Date:**	January 30, 2015
Temperature:	26℃	**Tested by:**	Dennis Li
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	-53.41	7.66	8.69	-52.38	-13.00	-39.38	V
5872.000	-51.77	10.41	10.87	-51.31	-13.00	-38.31	V
N/A							
3849.000	-53.23	8.32	9.25	-52.30	-13.00	-39.30	H
6187.000	-49.7	11.14	11.05	-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.*