FCC TEST REPORT and IC TEST REPORT

For

4G/LTE Outdoor Router

Model: BiPAC 6200ZUL-R6, BEC 6800RUL-R6

Trade Name: Billion , BEC

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.
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Testing Laboratory
1309

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Revision History

Rev.		Issue Date		Revisions	Effect Page	Revised By
00		June 11, 2014		Initial Issue	ALL	Angel Cheng

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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 Outdoor Router

Trade Name: Billion , BEC

Model: BiPAC 6200ZUL-R6, BEC 6800RUL-R6

Date of Test: May 1 ~ 4, 2014

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

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

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

Deviation from Applicable Standard
None

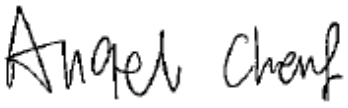
The above equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily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

Approved by

Miller Lee
Section Manager
Compliance Certification Services Inc.

Reviewed by

Angel Cheng
Section Manager
Compliance Certification Services Inc.



2. EUT DESCRIPTION

Product	4G/LTE Outdoor Router	
Model Number	BiPAC 6200ZUL-R6, BEC 6800RUL-R6	
Model Discrepancy	All the specification and layout are identical except they come with different model numbers for marketing purposes.	
Trade	Billion , BEC	
Received Date	May 19, 2014	
Power Source	Powered form PoE. Model: PSE803 I/P: AC 100~240V, 50/60Hz O/P: DC 48V, 15.4W	
Modulation Technology	LTE Band 17	QPSK, 16QAM
	LTE Band 4	QPSK, 16QAM
Frequency Range	LTE Band 17 Channel Bandwidth: 5MHz	706.5MHz ~ 713.5MHz
	LTE Band 17 Channel Bandwidth: 10MHz	709MHz ~ 711MHz
	LTE Band 4 Channel Bandwidth: 5MHz	1712.5MHz ~1752.5MHz
	LTE Band 4 Channel Bandwidth: 10MHz	1715.0MHz ~1750.0MHz
	LTE Band 4 Channel Bandwidth: 20MHz	1710MHz ~1755MHz
Maximum ERP Power	LTE Band 17 Channel Bandwidth: 5MHz	QPSK: 29.95dBm 16QAM: 29.69dBm
	LTE Band 17 Channel Bandwidth: 10MHz	QPSK : 28.53dBm 16QAM: 28.51dBm
Maximum EIRP Power	LTE Band 4 Channel Bandwidth: 5MHz	QPSK: 30.96dBm 16QAM: 31.75dBm
	LTE Band 4 Channel Bandwidth: 10MHz	QPSK: 29.85dBm 16QAM: 30.53dBm
	LTE Band 4 Channel Bandwidth: 20MHz	QPSK: 29.16 dBm 16QAM: 29.03dBm
Category	LTE: 3	
Antenna Specification	LTE Band 4: Patch Antenna / Gain: 7dBi LTE Band 17: Patch Antenna / Gain: 7dBi	

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

3. TEST METHODOLOGY

3.1 DESCRIPTION OF TEST TYPE

The EUT (model: BiPAC 6200ZUL-R6) had been tested under operating condition.

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

LTE Band 17: 704MHz ~ 716MHz

Three channels had been tested for each channel bandwidth.

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

LTE Band 4: 1710MHz ~ 1755MHz

Three channels had been tested for each channel bandwidth.

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

4. INSTRUMENT CALIBRATION

4.1 MEASURING INSTRUMENT CALIBRATION

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

4.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

Remark: *Each piece of equipment is scheduled for calibration once a year.*

Conducted Emissions Test Site				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY43360131	03/20/2014
Power Meter	Anritsu	ML2495A	1012009	06/03/2015
Power Sensor	Anritsu	MA2411A	0917072	06/03/2015

3M Semi Anechoic Chamber				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	US42510268	11/05/2014
EMI Test Receiver	R&S	ESCI	100064	02/16/2015
Pre-Amplifier	Mini-Circults	ZFL-1000LN	SF350700823	01/11/2015
Bilog Antenna	Sunol Sciences	JB3	A030105	02/16/2015
Bilog Antenna	Sunol Sciences	JB3	A030205	10/01/2014
Horn Antenna	EMCO	3117	00055165	02/16/2015
Horn Antenna	EMCO	3117	00055167	01/27/2015
Horn Antenna	EMCO	3116	26370	01/06/2015
Loop Antenna	EMCO	6502	8905/2356	06/11/2015
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
Site NSA	CCS	N/A	N/A	12/21/2014
Test S/W	EZ-EMC (CCS-3A1RE)			

4.3 MEASUREMENT UNCERTAINTY

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

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

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

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

☐ No.199, Chunghsen Road, Hsintien City, Taipei Hsien, Taiwan, R.O.C.
Tel: 886-2-2217-0894 / Fax: 886-2-2217-1029

☒ No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)
Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045

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

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

5.2 EQUIPMENT

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

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

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

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

5.3 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3M Semi Anechoic Chamber (FCC MRA: TW1039) to perform FCC Part 15 measurements	FCC MRA: TW1039
Taiwan	TAF	LP0002, RTTE01, FCC Method-47 CFR Part 15 Subpart C, D, E, RSS-210, RSS-310 IDA TS SRD, AS/NZS 4268, AS/NZS 4771, TS 12.1 & 12,2, ETSI EN 300 440-1, ETSI EN 300 440-2, ETSI EN 300 328, ETSI EN 300 220-1, ETSI EN 300 220-2, ETSI EN 301 893, ETSI EN 301 489-1/3/7/17 FCC OET Bulletin 65 + Supplement C, EN 50360, EN 50361, EN 50371, RSS 102, EN 50383, EN 50385, EN 50392, IEC 62209, CNS 14958-1, CNS 14959 FCC Method –47 CFR Part 15 Subpart B IEC / EN 61000-3-2, IEC / EN 61000-3-3, IEC / EN 61000-4-2/3/4/5/6/8/11	TAF Testing Laboratory 1309
Canada	Industry Canada	3M Semi Anechoic Chamber (IC 2324G-1 / IC 2324G-2) to perform	Canada IC 2324G-1 IC 2324G-2

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

6. SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

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

6.2 SUPPORT EQUIPMENT

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

Remark:

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

7. TEST PROCEDURE AND RESULT

7.1 OUTPUT POWER MEASUREMENT

LIMITS

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

band are limited to 1 watt EIRP.

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

to 3 watts ERP

TEST PROCEDURES

EIRP / ERP MEASUREMENT:

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

CONDUCTED POWER MEASUREMENT:

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

TEST RESULTS

LTE Band 17

Channel Bandwidth: 5MHz

Frequency (MHz)		CH	Peak Power (dBm)
QPSK 1 RB ALLOCATED AT THE LOWER EDGE	706.50	23755	23.70
	710.00	23790	23.52
	713.50	23825	23.79
QPSK 1 RB ALLOCATED AT THE UPPER EDGE	706.50	23755	23.53
	710.00	23790	23.51
	713.50	23825	23.52

Frequency (MHz)		CH	Peak Power (dBm)
QPSK 50% RB ALLOCATION CENTERED	706.50	23755	23.34
	710.00	23790	23.96
	713.50	23825	23.81
QPSK 100% RB ALLOCATION CENTERED	706.50	23755	23.34
	710.00	23790	23.38
	713.50	23825	23.48

Frequency (MHz)		CH	Peak Power (dBm)
16QAM 1 RB ALLOCATED AT THE LOWER EDGE	706.50	23755	23.65
	710.00	23790	23.47
	713.50	23825	23.61
16QAM 1 RB ALLOCATED AT THE UPPER EDGE	706.50	23755	23.49
	710.00	23790	23.41
	713.50	23825	23.47

Frequency (MHz)		CH	Peak Power (dBm)
16QAM 50% RB ALLOCATION CENTERED	706.50	23755	23.31
	710.00	23790	23.74
	713.50	23825	23.77
16QAM 100% RB ALLOCATION CENTERED	706.50	23755	23.21
	710.00	23790	23.35
	713.50	23825	23.33

Remarks:

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

LTE Band 17

Channel Bandwidth: 10MHz

Frequency (MHz)		CH	Peak Power (dBm)
QPSK 1 RB ALLOCATED AT THE LOWER EDGE	709.00	23780	23.60
	710.00	23790	23.53
	711.00	23800	23.53
QPSK 1 RB ALLOCATED AT THE UPPER EDGE	709.00	23780	23.78
	710.00	23790	23.47
	711.00	23800	23.30

Frequency (MHz)		CH	Peak Power (dBm)
QPSK 50% RB ALLOCATION CENTERED	709.00	23780	23.38
	710.00	23790	23.80
	711.00	23800	23.75
QPSK 100% RB ALLOCATION CENTERED	709.00	23780	22.30
	710.00	23790	23.34
	711.00	23800	22.32

Frequency (MHz)		CH	Peak Power (dBm)
16QAM 1 RB ALLOCATED AT THE LOWER EDGE	709.00	23780	23.45
	710.00	23790	23.41
	711.00	23800	23.36
16QAM 1 RB ALLOCATED AT THE UPPER EDGE	709.00	23780	23.64
	710.00	23790	23.39
	711.00	23800	23.24

Frequency (MHz)		CH	Peak Power (dBm)
16QAM 50% RB ALLOCATION CENTERED	709.00	23780	23.36
	710.00	23790	23.52
	711.00	23800	23.61
16QAM 100% RB ALLOCATION CENTERED	709.00	23780	22.45
	710.00	23790	23.11
	711.00	23800	22.41

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

Frequency (MHz)		CH	Peak Power (dBm)
QPSK 1 RB ALLOCATED AT THE LOWER EDGE	1712.50	19975	23.49
	1732.50	20175	23.55
	1752.50	20375	23.28
QPSK 1 RB ALLOCATED AT THE UPPER EDGE	1712.50	19975	23.73
	1732.50	20175	23.79
	1752.50	20375	23.95

Frequency (MHz)		CH	Peak Power (dBm)
QPSK 50% RB ALLOCATION CENTERED	1712.50	19975	22.61
	1732.50	20175	22.60
	1752.50	20375	23.28
QPSK 100% RB ALLOCATION CENTERED	1712.50	19975	22.45
	1732.50	20175	22.10
	1752.50	20375	22.05

Frequency (MHz)		CH	Peak Power (dBm)
16QAM 1 RB ALLOCATED AT THE LOWER EDGE	1712.50	19975	23.41
	1732.50	20175	23.49
	1752.50	20375	23.17
16QAM 1 RB ALLOCATED AT THE UPPER EDGE	1712.50	19975	23.57
	1732.50	20175	23.61
	1752.50	20375	23.87

Frequency (MHz)		CH	Peak Power (dBm)
16QAM 50% RB ALLOCATION CENTERED	1712.50	19975	22.57
	1732.50	20175	22.49
	1752.50	20375	23.12
16QAM 100% RB ALLOCATION CENTERED	1712.50	19975	22.39
	1732.50	20175	22.08
	1752.50	20375	22.01

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

Frequency (MHz)		CH	Peak Power (dBm)
QPSK 1 RB ALLOCATED AT THE LOWER EDGE	1715.00	20000	23.43
	1732.50	20175	22.35
	1750.00	20350	22.34
QPSK 1 RB ALLOCATED AT THE UPPER EDGE	1715.00	20000	23.43
	1732.50	20175	23.50
	1750.00	20350	23.47

Frequency (MHz)		CH	Peak Power (dBm)
QPSK 50% RB ALLOCATION CENTERED	1715.00	20000	23.01
	1732.50	20175	23.44
	1750.00	20350	22.66
QPSK 100% RB ALLOCATION CENTERED	1715.00	20000	22.33
	1732.50	20175	21.99
	1750.00	20350	22.30

Frequency (MHz)		CH	Peak Power (dBm)
16QAM 1 RB ALLOCATED AT THE LOWER EDGE	1715.00	20000	23.34
	1732.50	20175	22.27
	1750.00	20350	22.21
16QAM 1 RB ALLOCATED AT THE UPPER EDGE	1715.00	20000	23.24
	1732.50	20175	23.12
	1750.00	20350	23.39

Frequency (MHz)		CH	Peak Power (dBm)
16QAM 50% RB ALLOCATION CENTERED	1715.00	20000	22.98
	1732.50	20175	23.41
	1750.00	20350	22.74
16QAM 100% RB ALLOCATION CENTERED	1715.00	20000	22.29
	1732.50	20175	22.02
	1750.00	20350	22.19

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

Frequency (MHz)		CH	Peak Power (dBm)
QPSK 1 RB ALLOCATED AT THE LOWER EDGE	1720.00	20050	23.48
	1732.50	20175	23.12
	1745.00	20300	23.45
QPSK 1 RB ALLOCATED AT THE UPPER EDGE	1720.00	20050	23.39
	1732.50	20175	23.23
	1745.00	20300	23.32

Frequency (MHz)		CH	Peak Power (dBm)
QPSK 50% RB ALLOCATION CENTERED	1720.00	20050	21.92
	1732.50	20175	22.00
	1745.00	20300	22.28
QPSK 100% RB ALLOCATION CENTERED	1720.00	20050	21.97
	1732.50	20175	21.96
	1745.00	20300	21.90

Frequency (MHz)		CH	Peak Power (dBm)
16QAM 1 RB ALLOCATED AT THE LOWER EDGE	1720.00	20050	23.35
	1732.50	20175	23.07
	1745.00	20300	23.33
16QAM 1 RB ALLOCATED AT THE UPPER EDGE	1720.00	20050	23.24
	1732.50	20175	23.37
	1745.00	20300	23.28

Frequency (MHz)		CH	Peak Power (dBm)
16QAM 50% RB ALLOCATION CENTERED	1720.00	20050	22.01
	1732.50	20175	21.97
	1745.00	20300	22.14
16QAM 100% RB ALLOCATION CENTERED	1720.00	20050	21.88
	1732.50	20175	21.94
	1745.00	20300	21.87

Remarks:

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

ERP POWER

LTE Band 17

Channel Bandwidth: 5MHz / QPSK

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
23755	706.5	V	26.37	3.13	6.32	29.56	38.45	-8.89
	706.5	H	-2.97	3.13	6.32	0.22	38.45	-38.23
23790	710.0	V	26.6	3.14	6.3	29.76	38.45	-8.69
	710.0	H	-2.74	3.14	6.3	0.42	38.45	-38.03
23825	713.5	V	26.74	3.15	6.36	***29.95**	38.45	-8.50
	713.5	H	3.77	3.15	6.35	6.97	38.45	-31.48

Channel Bandwidth: 5MHz / 16QAM

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
23755	706.5	V	26.15	3.13	6.32	29.34	38.45	-9.11
	706.5	H	7.11	3.13	6.32	10.30	38.45	-28.15
23790	710.0	V	26.37	3.14	6.31	29.54	38.45	-8.91
	710.0	H	4.9	3.14	6.3	8.06	38.45	-30.39
23825	713.5	V	26.49	3.15	6.35	***29.69**	38.45	-8.76
	713.5	H	4.49	3.15	6.36	7.70	38.45	-30.75

Remark:

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

Channel Bandwidth: 10MHz / QPSK

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
23780	709.0	V	24.6	3.13	6.33	27.80	38.45	-10.65
	709.0	H	7.06	3.13	6.34	10.27	38.45	-28.18
23790	710.0	V	24.9	3.13	6.32	28.09	38.45	-10.36
	710.0	H	7.36	3.13	6.33	10.56	38.45	-27.89
23800	711.0	V	25.35	3.14	6.32	***28.53**	38.45	-9.92
	711.0	H	2.8	3.14	6.31	5.97	38.45	-32.48

Channel Bandwidth: 10MHz / 16QAM

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
23780	709.0	V	24.78	3.13	6.33	27.98	38.45	-10.47
	709.0	H	8.03	3.13	6.33	11.23	38.45	-27.22
23790	710.0	V	25.02	3.13	6.32	28.21	38.45	-10.24
	710.0	H	6.51	3.13	6.32	9.70	38.45	-28.75
23800	711.0	V	25.34	3.14	6.31	***28.51**	38.45	-9.94
	711.0	H	8.27	3.13	6.32	11.46	38.45	-26.99

Remark:

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

EIRP POWER

LTE Band 4

Channel Bandwidth: 5MHz / QPSK

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
19975	1712.5	V	30.01	5.14	5.91	30.78	33.00	-2.22
	1712.5	H	10.29	5.13	5.92	11.08	33.00	-21.92
20175	1732.5	V	30.37	5.17	5.88	31.08	33.00	-1.92
	1732.5	H	10.64	5.17	5.88	11.35	33.00	-21.65
20375	1752.5	V	30.25	5.17	5.88	***30.96**	33.00	-2.04
	1752.5	H	10.35	5.17	5.88	11.06	33.00	-21.94

Channel Bandwidth: 5MHz / 16QAM

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
19975	1712.5	V	30.6	5.14	5.91	31.37	33.00	-1.63
	1712.5	H	10.62	5.13	5.92	11.41	33.00	-21.59
20175	1732.5	V	30.43	5.17	5.88	31.14	33.00	-1.86
	1732.5	H	10.9	5.17	5.88	11.61	33.00	-21.39
20375	1752.5	V	31.12	5.21	5.84	***31.75**	33.00	-1.25
	1752.5	H	12.92	5.21	5.84	13.55	33.00	-19.45

Channel Bandwidth: 10MHz / QPSK

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
20000	1715.0	V	28.74	5.14	5.91	29.51	33.00	-3.49
	1715.0	H	9.09	5.14	5.91	9.86	33.00	-23.14
20175	1732.5	V	29.02	5.16	5.89	29.75	33.00	-3.25
	1732.5	H	9.36	5.16	5.89	10.09	33.00	-22.91
20350	1750.0	V	29.22	5.21	5.84	***29.85**	33.00	-3.15
	1750.0	H	10.66	5.21	5.84	11.29	33.00	-21.71

Channel Bandwidth: 10MHz / 16QAM

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
20000	1715.0	V	29.13	5.14	5.91	29.90	33.00	-3.10
	1715.0	H	9.22	5.14	5.91	9.99	33.00	-23.01
20175	1732.5	V	29.58	5.16	5.89	30.31	33.00	-2.69
	1732.5	H	10.1	5.16	5.89	10.83	33.00	-22.17
20350	1750.0	V	29.9	5.21	5.84	***30.53**	33.00	-2.47
	1750.0	H	11.23	5.2	5.85	11.88	33.00	-21.12

Channel Bandwidth: 20MHz / QPSK

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
20050	1720.00	V	27.66	5.15	5.9	28.41	33.00	-4.59
	1720.00	H	8.33	5.15	5.9	9.08	33.00	-23.92
20175	1732.50	V	28.18	5.15	5.9	28.93	33.00	-4.07
	1732.50	H	8.98	5.16	5.89	9.71	33.00	-23.29
20300	1745.00	V	28.51	5.2	5.85	***29.16**	33.00	-3.84
	1745.00	H	9.81	5.2	5.85	10.46	33.00	-22.54

Channel Bandwidth: 20MHz / 16QAM

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
20050	1720.00	V	28.13	5.15	5.9	28.88	33.00	-4.12
	1720.00	H	8.09	5.14	5.91	8.86	33.00	-24.14
20175	1732.50	V	28.22	5.16	5.89	28.95	33.00	-4.05
	1732.50	H	8.44	5.16	5.89	9.17	33.00	-23.83
20300	1745.00	V	28.38	5.2	5.85	***29.03**	33.00	-3.97
	1745.00	H	9.6	5.2	5.85	10.25	33.00	-22.75

Remark:

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

7.2 FREQUENCY STABILITY MEASUREMENT

LIMIT

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

TEST PROCEDURE

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

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

TEST RESULTS

FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT:

LTE Band 17

Reference Frequency: LTE Band 17 710 MHz @ 20℃						
Limit: ± 2.5 ppm = 1775Hz						
Power Supply Vdc	Environment Temperature (℃)	5M Frequency (Hz)	Delta (Hz)	10M Frequency (Hz)	Delta (Hz)	Limit (Hz)
48	50	709999990	-18	709999995	-7	1775
48	40	709999995	-13	709999994	-8	
48	30	709999992	-16	709999997	-5	
48	20	710000008	0	710000002	0	
48	10	709999996	-12	709999995	-7	
48	0	709999995	-13	709999994	-8	
48	-10	709999992	-16	709999991	-11	
48	-20	709999991	-17	709999992	-10	
48	-30	709999994	-14	709999995	-7	

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)	20M Frequency (Hz)	Delta (Hz)	Limit (Hz)
48	50	173249995	-11	173249999	-9	173249993	-15	4331
48	40	173249994	-12	173249998	-10	173249995	-13	
48	30	173249992	-14	173249915	-93	173249998	-10	
48	20	173250006	0	173250008	0	173250008	0	
48	10	173249999	-7	173249995	-13	173249997	-11	
48	0	173249998	-8	173249992	-16	173249998	-10	
48	-10	173249995	-11	173249992	-16	173249995	-13	
48	-20	173249992	-14	173249994	-14	173249992	-16	
48	-30	173249991	-15	173249992	-16	173249996	-12	

FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT:

LTE Band 17

Reference Frequency: LTE Band 17 710 MHz @ 20℃						
Limit: ± 2.5 ppm = 1775Hz						
Power Supply Vdc	Environment Temperature (℃)	5M Frequency (Hz)	Delta (Hz)	10M Frequency (Hz)	Delta (Hz)	Limit (Hz)
52.8	20	710000005	-3	710000005	3	1775
48		710000008	0	710000002	0	
40.8		710000007	-1	710000004	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)	20M Frequency (Hz)	Delta (Hz)	Limit (Hz)
52.8	20	173250005	-1	173250004	-4	173250005	-3	4331
48		173250006	0	173250008	0	173250008	0	
40.8		173250002	-4	173250005	-3	173250007	-1	

7.3 OCCUPIED BANDWIDTH MEASUREMENT

LIMITS

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

TEST PROCEDURES

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

TEST RESULTS

LTE Band 17

CHANNEL BANDWIDTH: 5MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	706.5	4.5132
Mid	710.0	4.5243
High	713.5	4.5276

CHANNEL BANDWIDTH: 5MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	706.5	4.5144
Mid	710.0	4.5204
High	713.5	4.5204

CHANNEL BANDWIDTH: 10MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	709.0	8.9080
Mid	710.0	8.9187
High	711.0	8.9461

CHANNEL BANDWIDTH: 10MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	709.0	8.9108
Mid	710.0	8.9057
High	711.0	8.9443

LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1712.5	4.5210
Mid	1732.5	4.5037
High	1752.5	4.5213

CHANNEL BANDWIDTH: 5MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1712.5	4.5086
Mid	1732.5	4.5226
High	1752.5	4.5239

CHANNEL BANDWIDTH: 10MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1715.0	8.9337
Mid	1732.5	8.9539
High	1750.0	8.9522

CHANNEL BANDWIDTH: 10MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1715.0	8.9527
Mid	1732.5	8.9368
High	1750.0	8.9565

CHANNEL BANDWIDTH: 20MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1715.0	17.7975
Mid	1732.5	17.8363
High	1750.0	17.8828

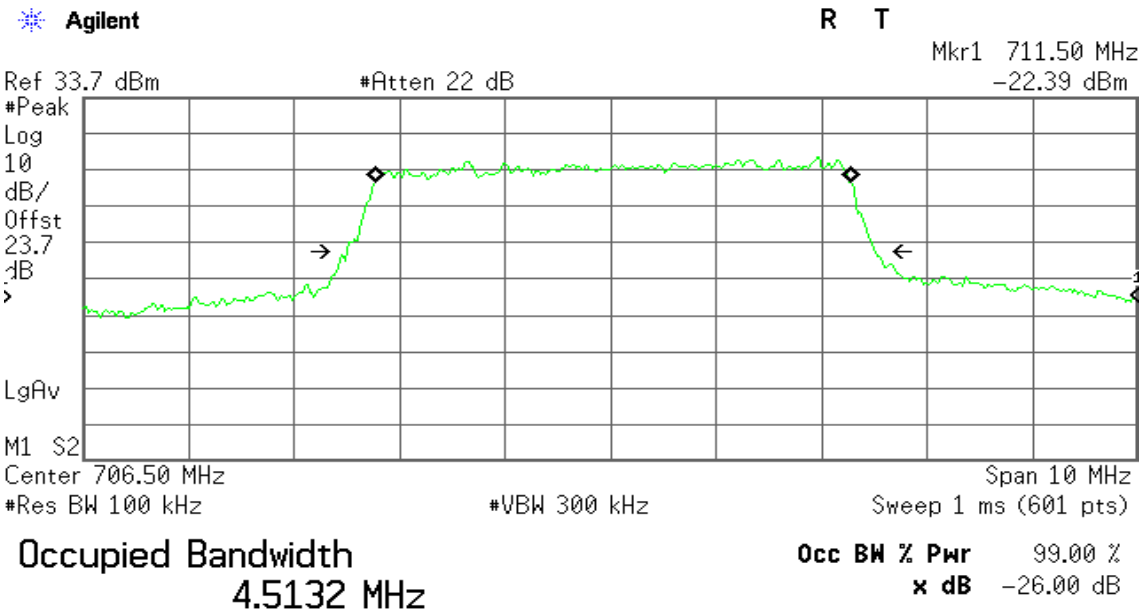
CHANNEL BANDWIDTH: 20MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1715.0	17.7979
Mid	1732.5	17.8383
High	1750.0	17.8593

LTE Band 17

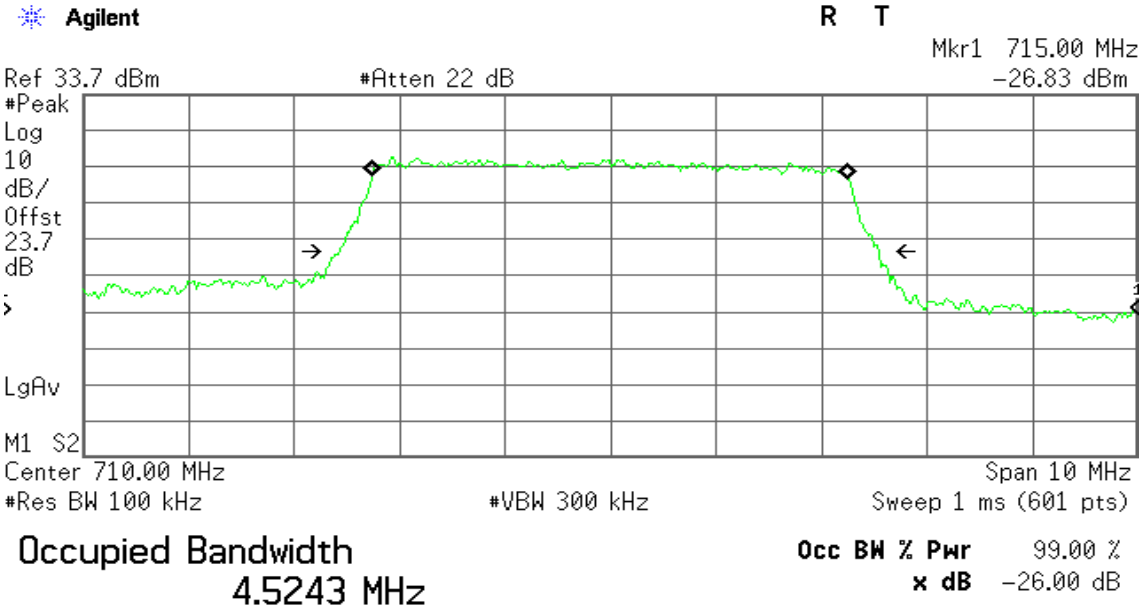
CHANNEL BANDWIDTH: 5MHz / QPSK

CH Low



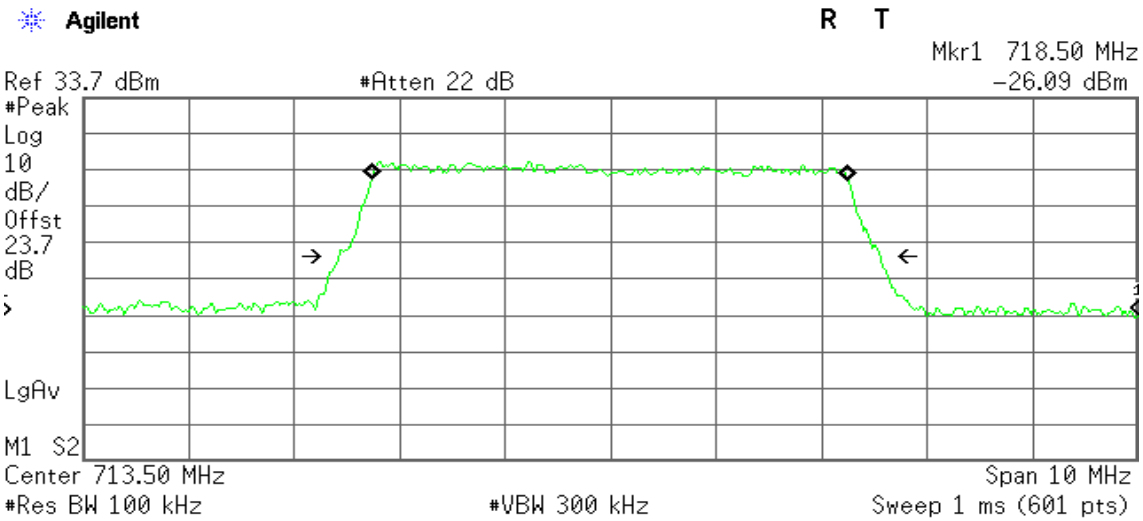
Transmit Freq Error	20.650 kHz
x dB Bandwidth	5.022 MHz

CH Mid



Transmit Freq Error	-6.388 kHz
x dB Bandwidth	5.127 MHz

CH High



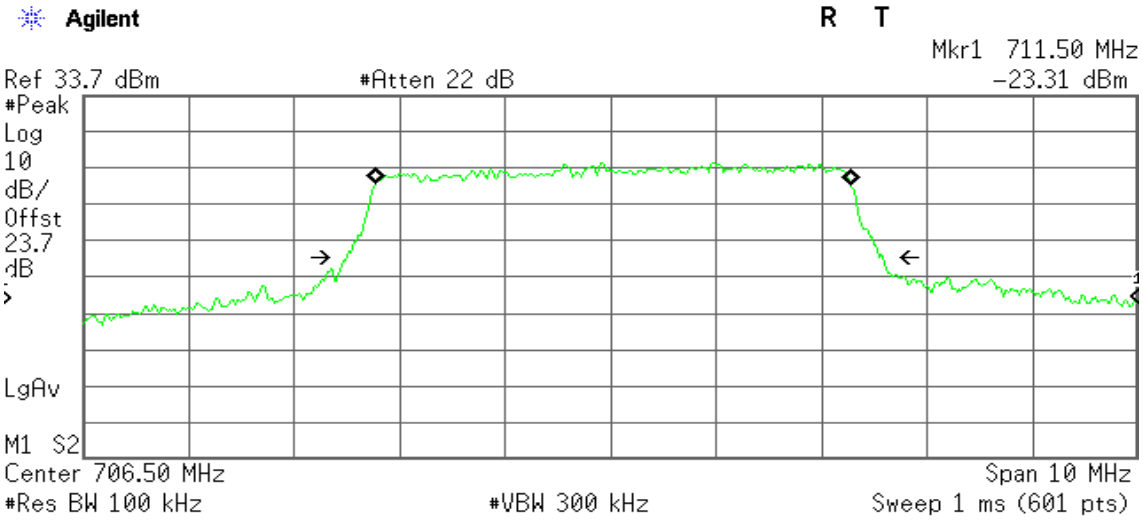
Occupied Bandwidth
4.5276 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -6.749 kHz
x dB Bandwidth 5.136 MHz

CHANNEL BANDWIDTH: 5MHz / 16QAM

CH Low

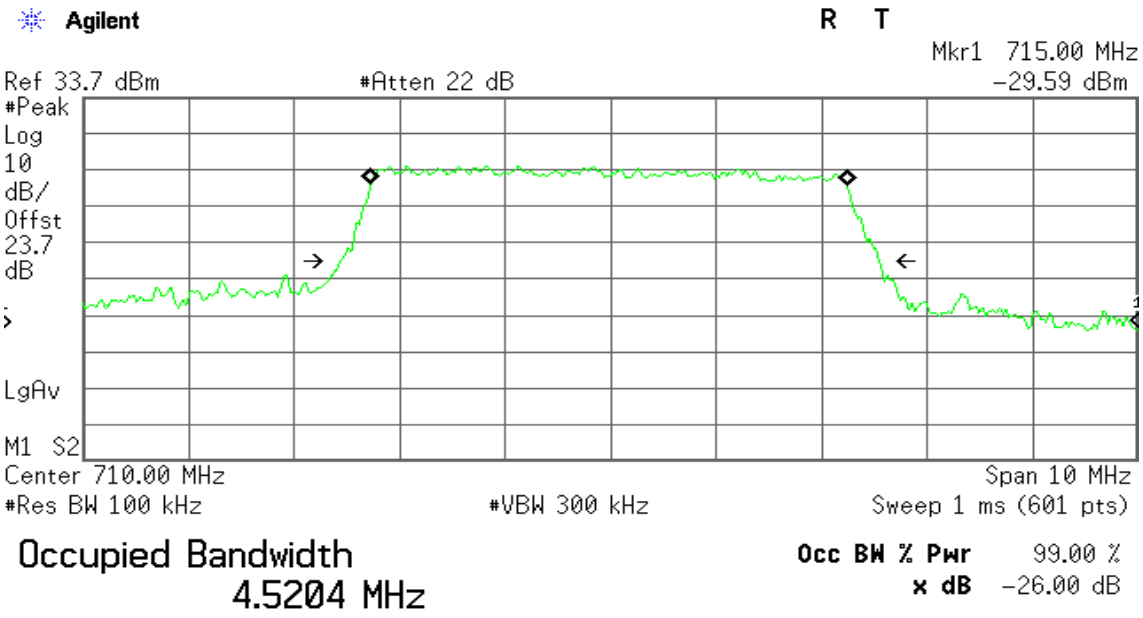


Occupied Bandwidth
4.5144 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 23.359 kHz
x dB Bandwidth 5.093 MHz

CH Mid

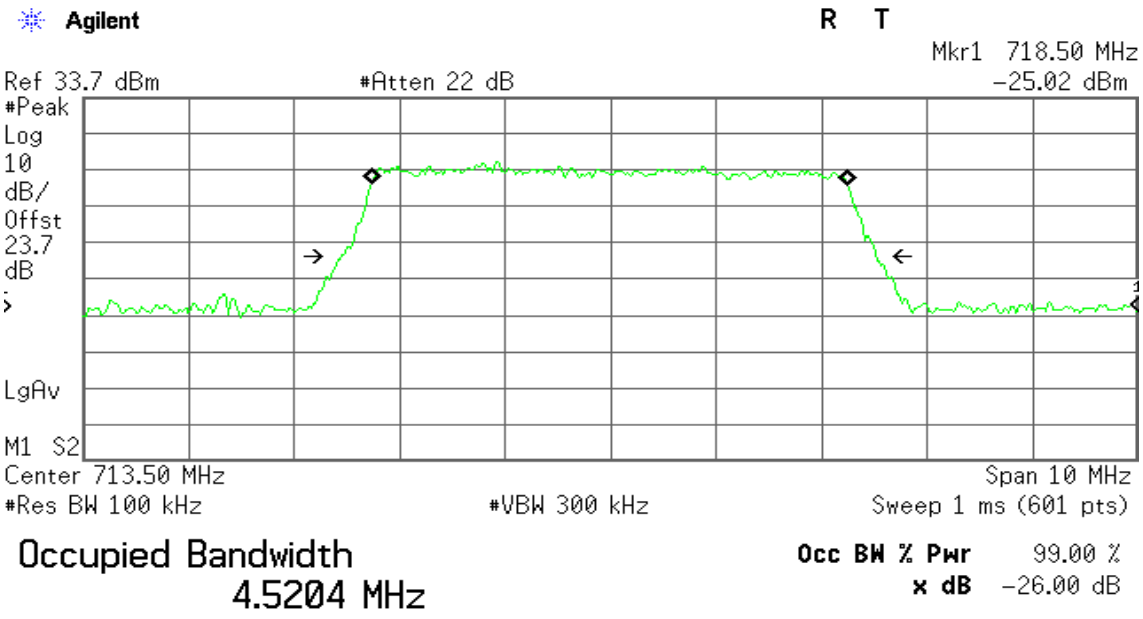


Occupied Bandwidth
4.5204 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -14.948 kHz
x dB Bandwidth 5.108 MHz

CH High



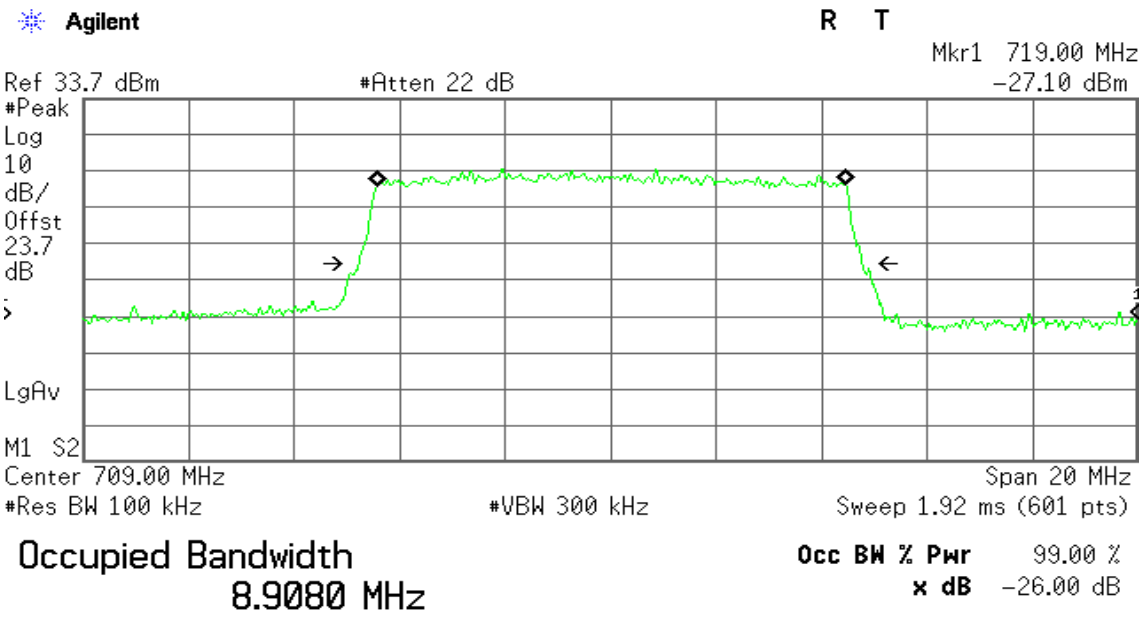
Occupied Bandwidth
4.5204 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -8.715 kHz
x dB Bandwidth 5.083 MHz

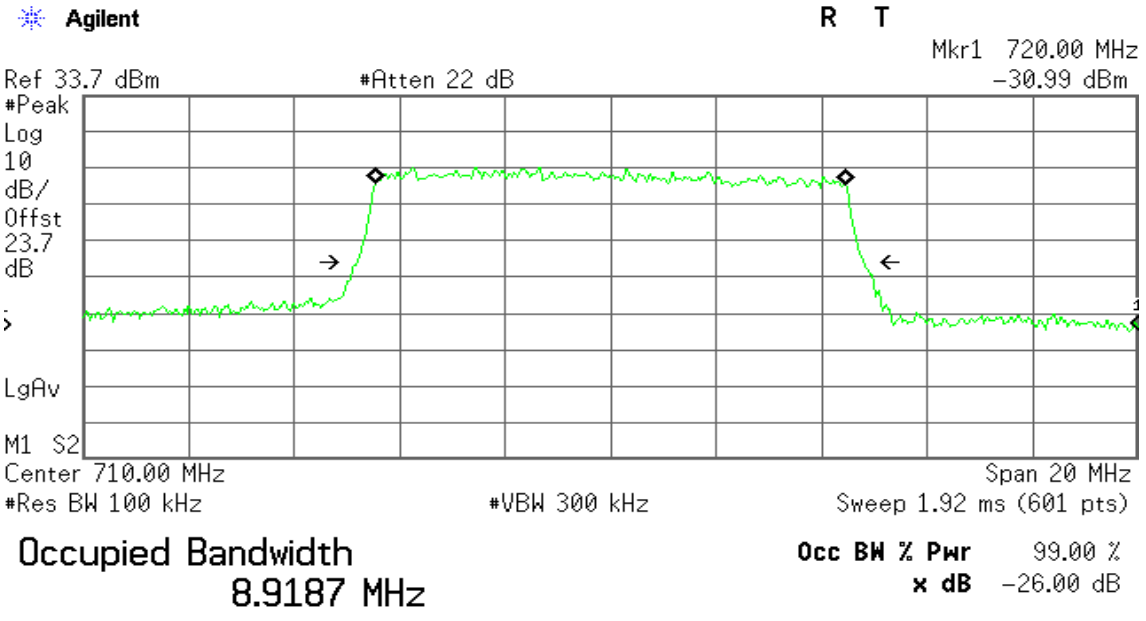
CHANNEL BANDWIDTH: 10MHz / QPSK

CH Low



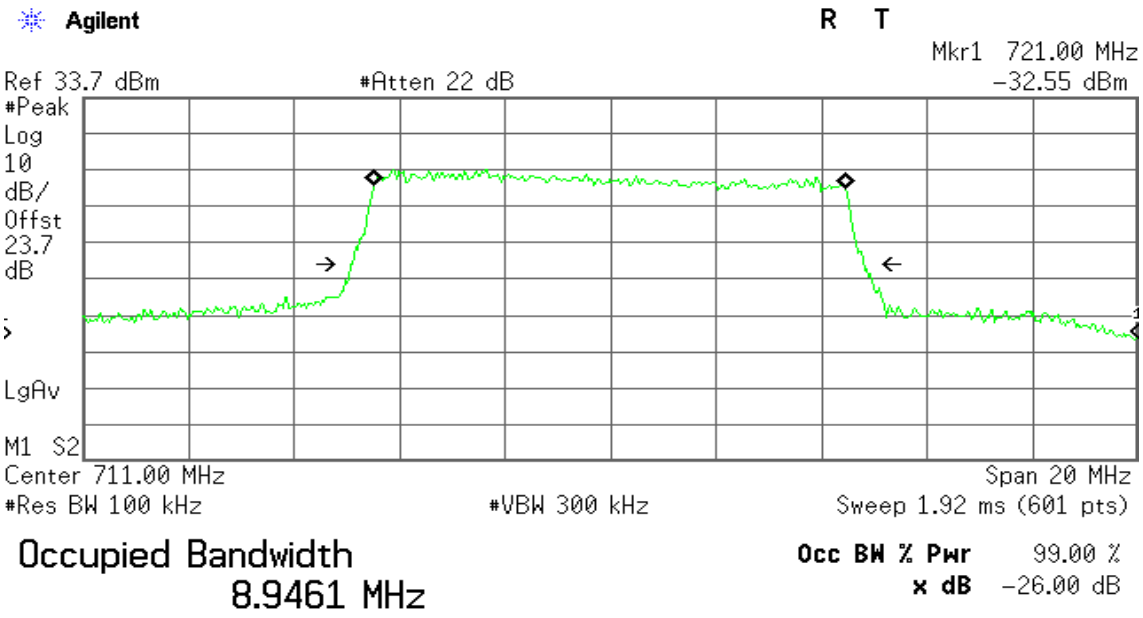
Transmit Freq Error 7.236 kHz
x dB Bandwidth 9.561 MHz

CH Mid



Transmit Freq Error -5.773 kHz
x dB Bandwidth 9.623 MHz

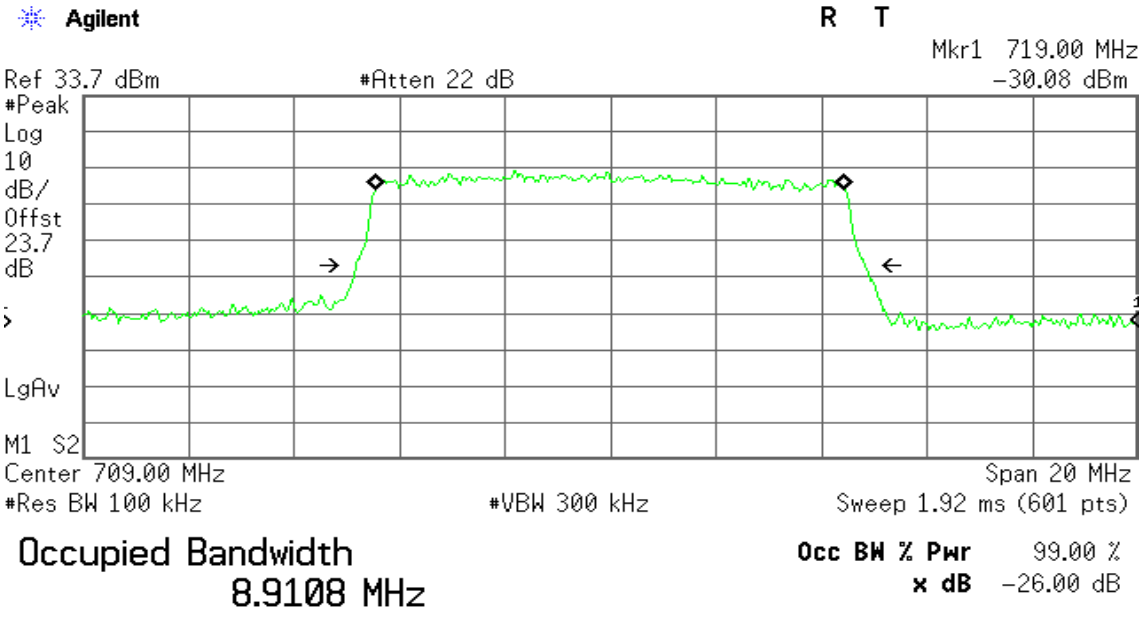
CH High



Transmit Freq Error	-22.125 kHz
x dB Bandwidth	9.718 MHz

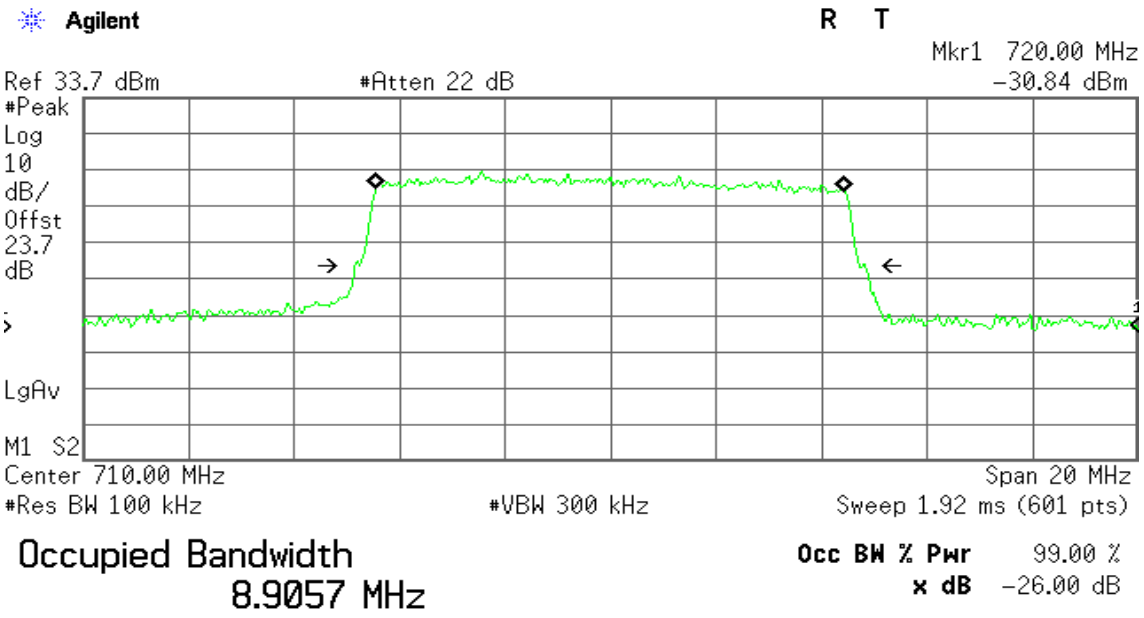
CHANNEL BANDWIDTH: 10MHz / 16QAM

CH Low



Transmit Freq Error	-9.072 kHz
x dB Bandwidth	9.674 MHz

CH Mid

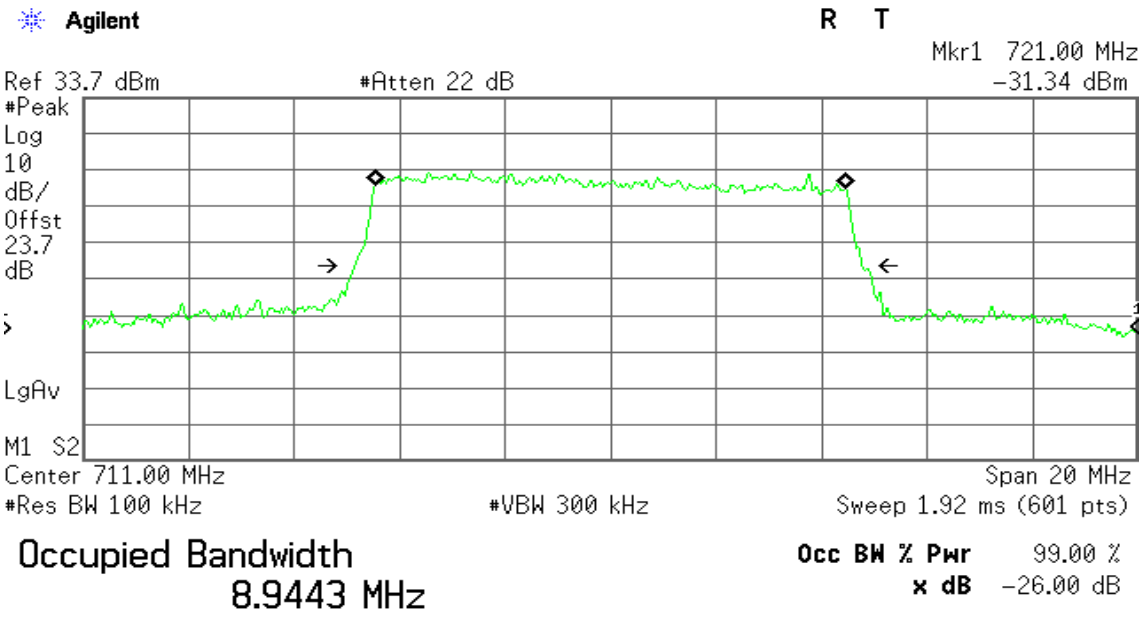


Occupied Bandwidth
8.9057 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -2.995 kHz
x dB Bandwidth 9.707 MHz

CH High



Occupied Bandwidth
8.9443 MHz

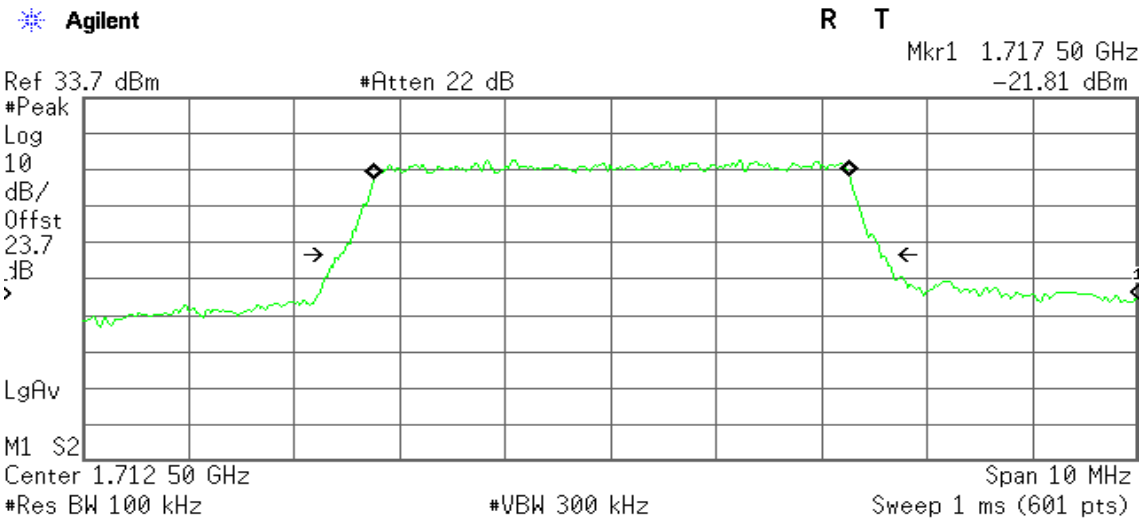
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -6.770 kHz
x dB Bandwidth 9.638 MHz

LTE Band 4

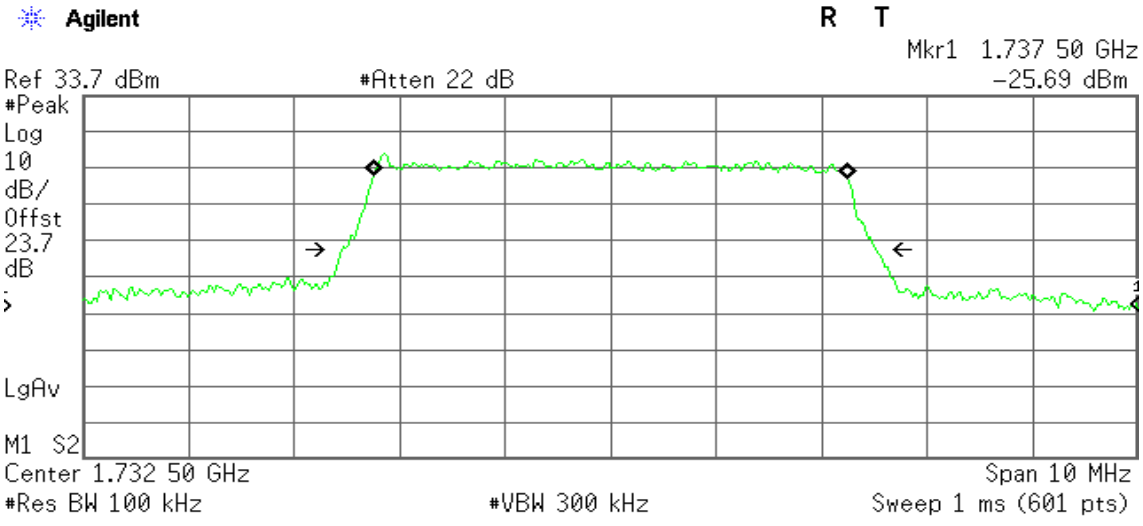
CHANNEL BANDWIDTH: 5MHz / QPSK

CH Low



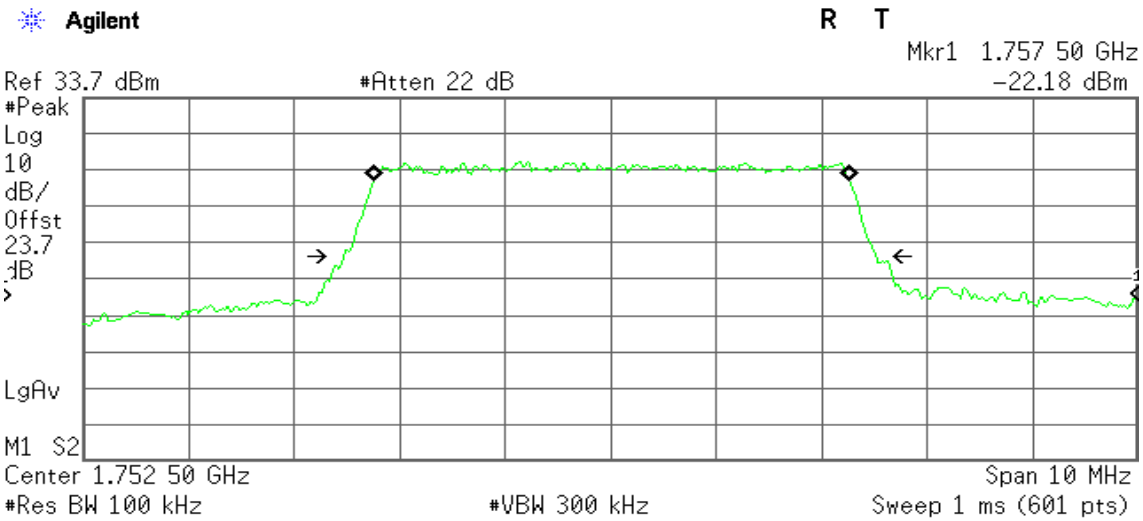
Transmit Freq Error 12.583 kHz
x dB Bandwidth 5.121 MHz

CH Mid



Transmit Freq Error -2.854 kHz
x dB Bandwidth 5.069 MHz

CH High



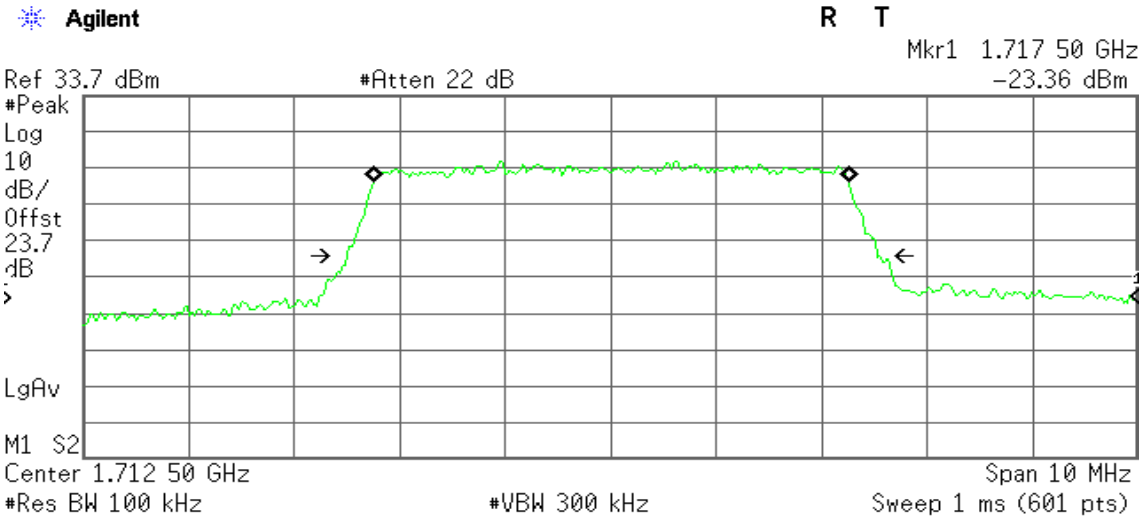
Occupied Bandwidth
4.5213 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 10.288 kHz
x dB Bandwidth 5.057 MHz

CHANNEL BANDWIDTH: 5MHz / 16QAM

CH Low

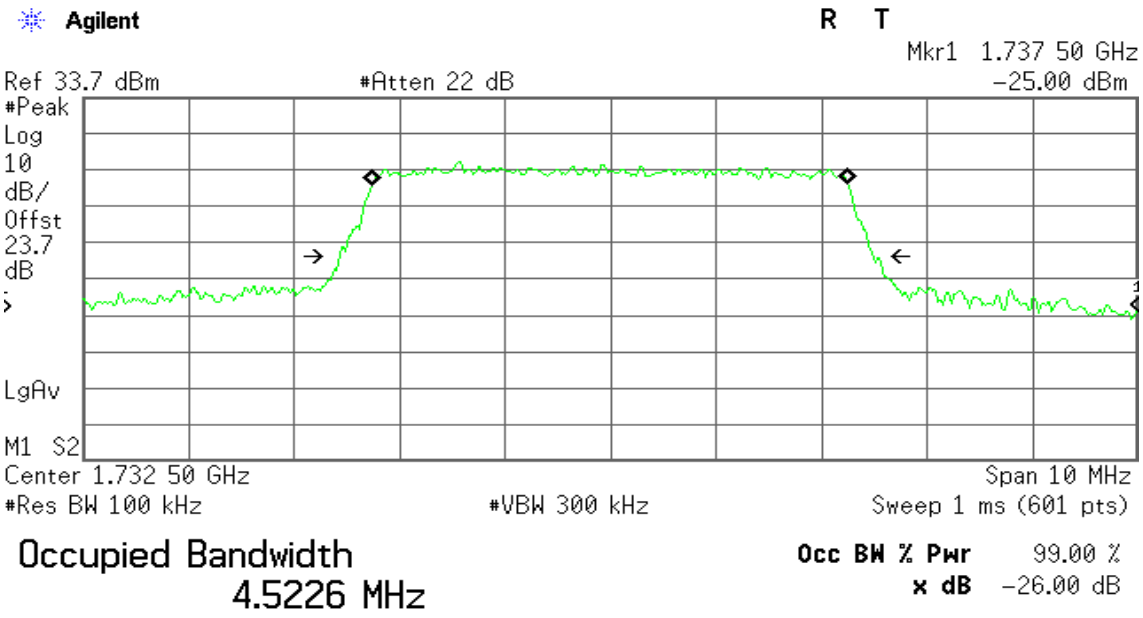


Occupied Bandwidth
4.5086 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 6.268 kHz
x dB Bandwidth 5.036 MHz

CH Mid

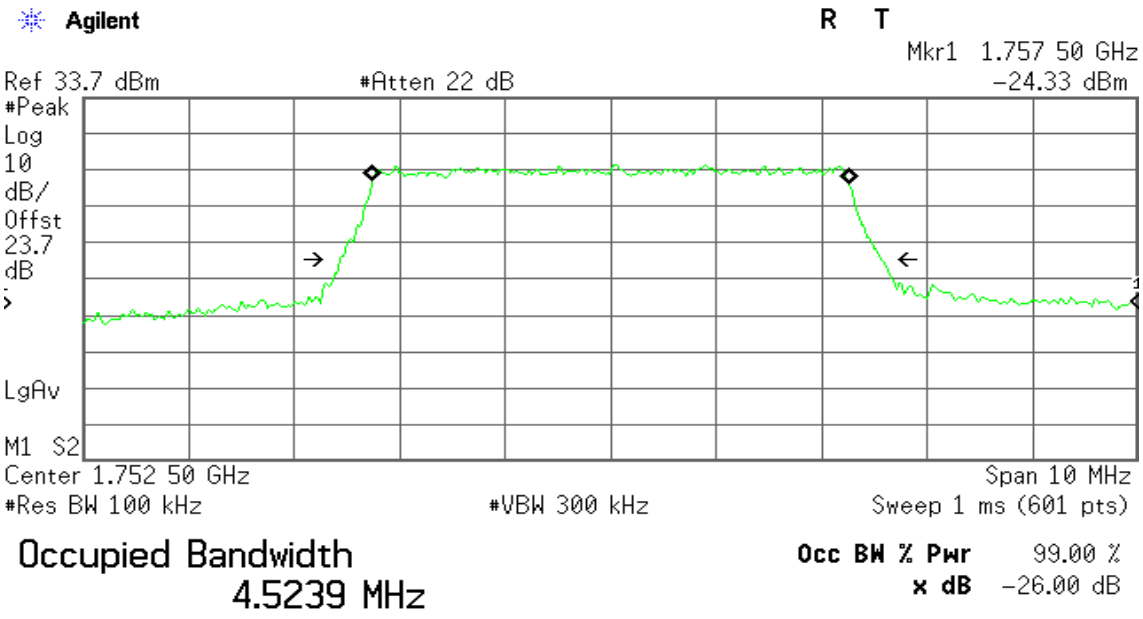


Occupied Bandwidth
4.5226 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -7.993 kHz
x dB Bandwidth 5.070 MHz

CH High



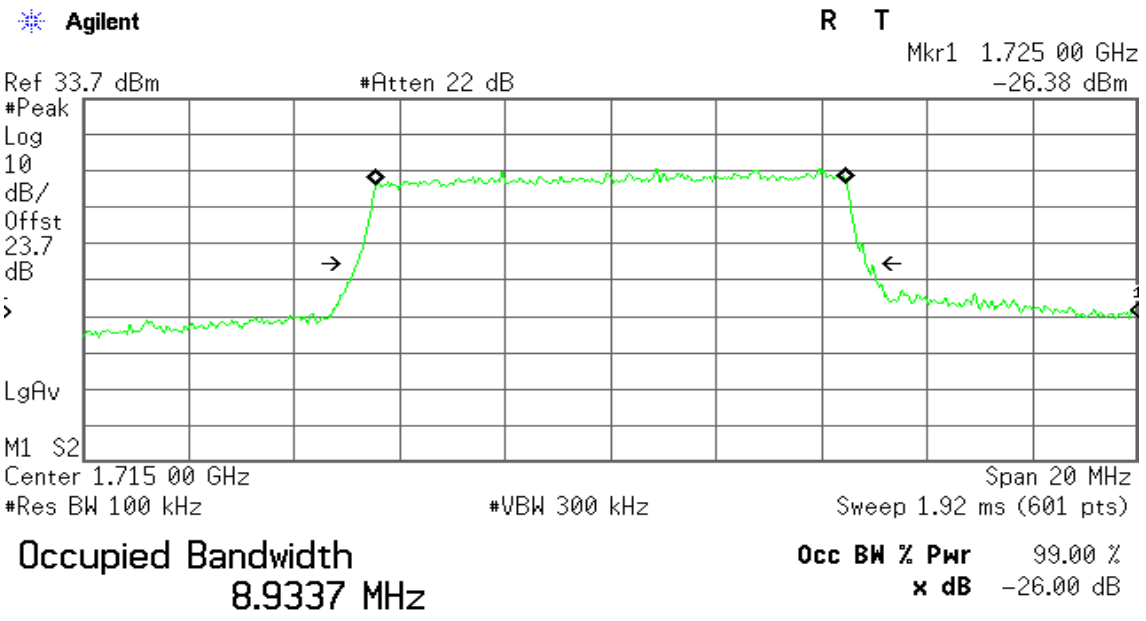
Occupied Bandwidth
4.5239 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 3.069 kHz
x dB Bandwidth 5.141 MHz

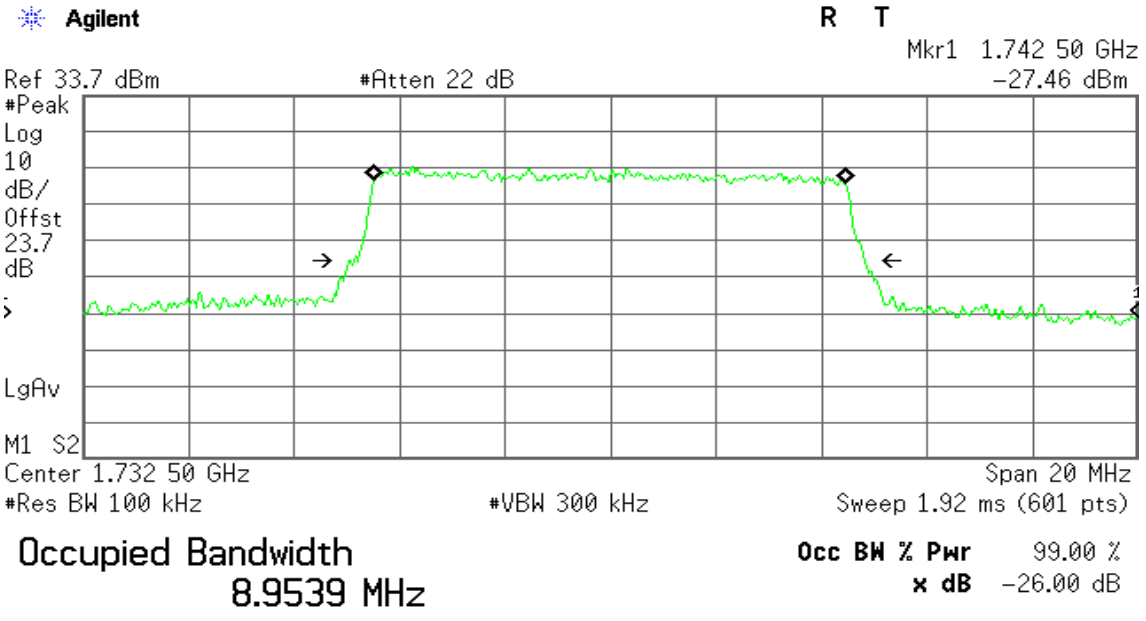
CHANNEL BANDWIDTH: 10MHz / QPSK

CH Low



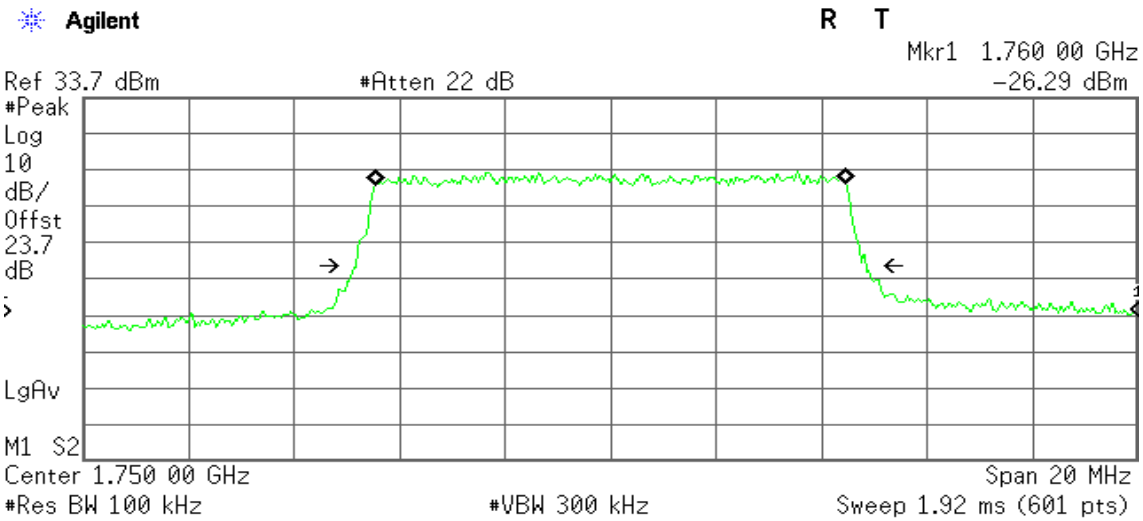
Transmit Freq Error	16.208 kHz
x dB Bandwidth	9.657 MHz

CH Mid



Transmit Freq Error	-15.801 kHz
x dB Bandwidth	9.793 MHz

CH High



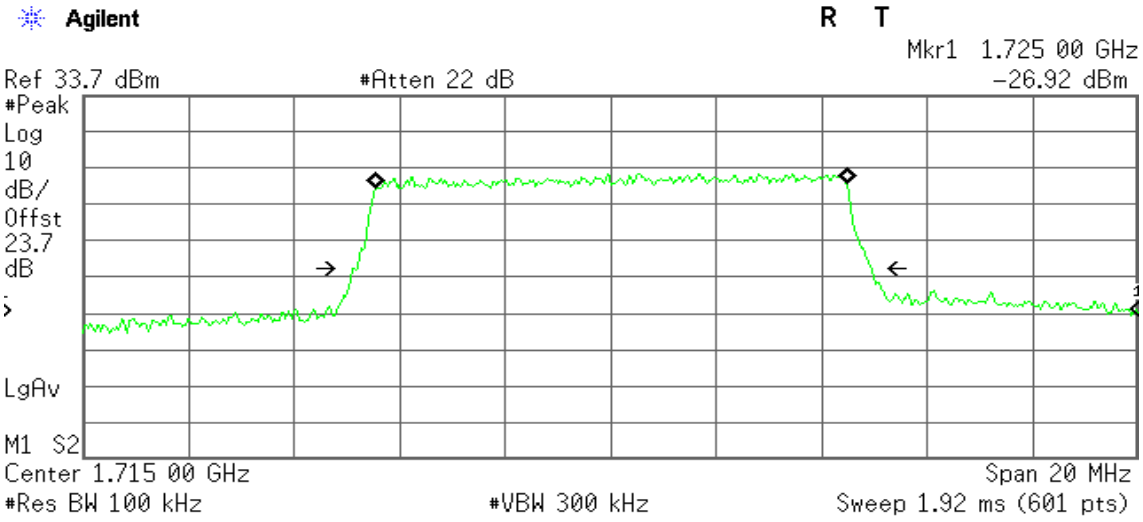
Occupied Bandwidth
8.9522 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -1.482 kHz
x dB Bandwidth 9.691 MHz

CHANNEL BANDWIDTH: 10MHz / 16QAM

CH Low

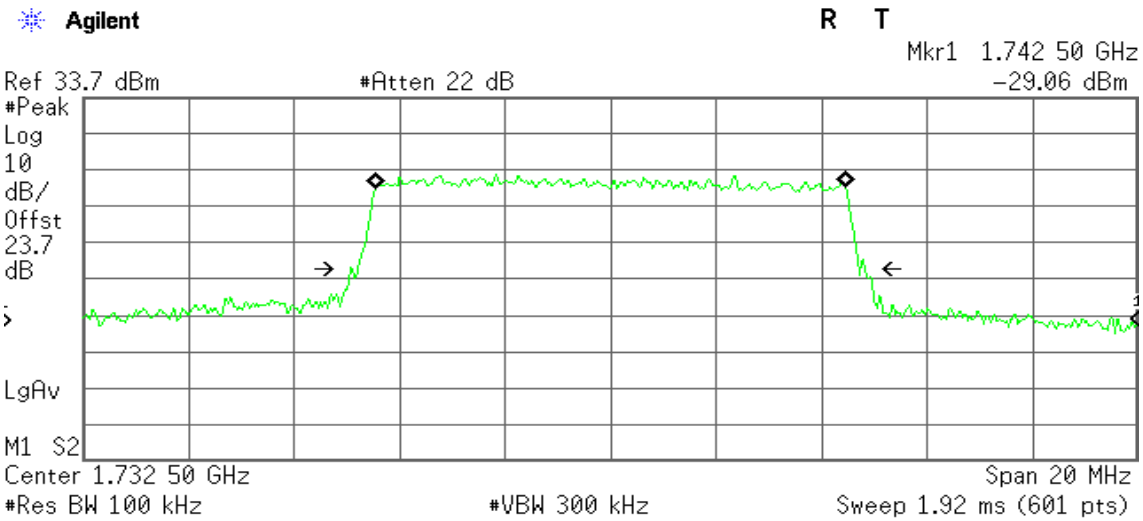


Occupied Bandwidth
8.9527 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 13.995 kHz
x dB Bandwidth 9.847 MHz

CH Mid

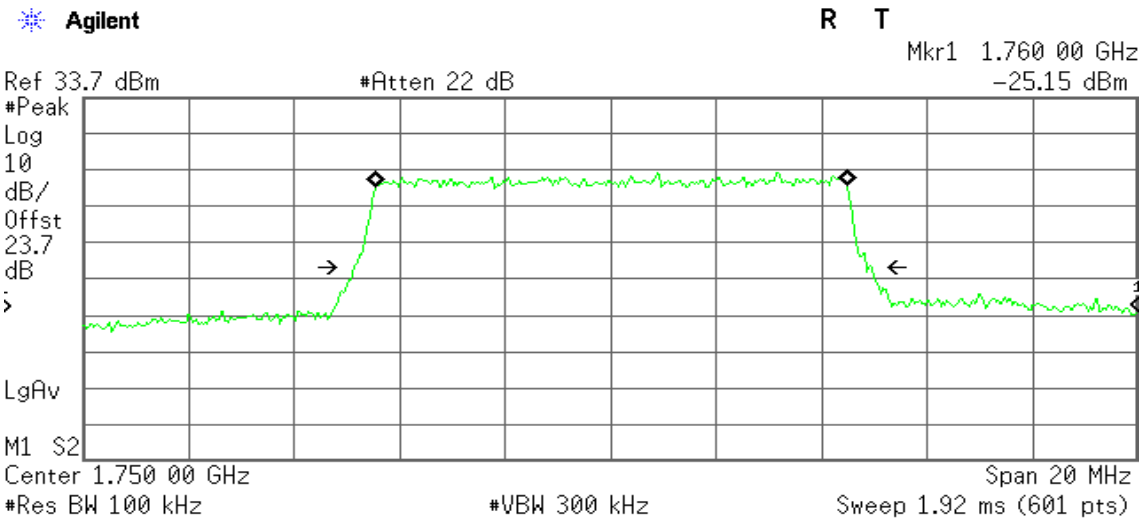


Occupied Bandwidth
8.9368 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -3.125 kHz
x dB Bandwidth 9.773 MHz

CH High



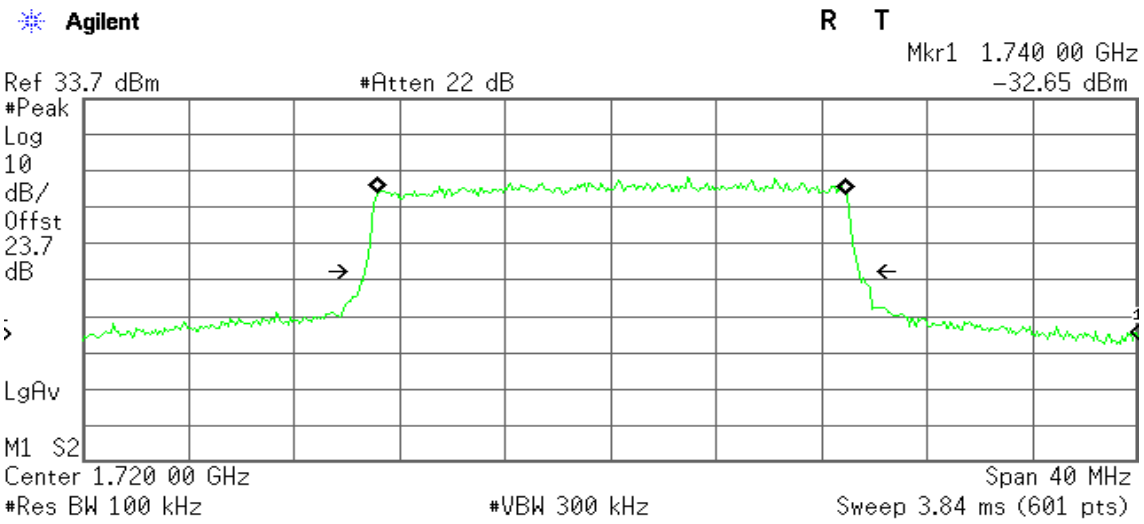
Occupied Bandwidth
8.9565 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 12.837 kHz
x dB Bandwidth 9.825 MHz

CHANNEL BANDWIDTH: 20MHz / QPSK

CH Low

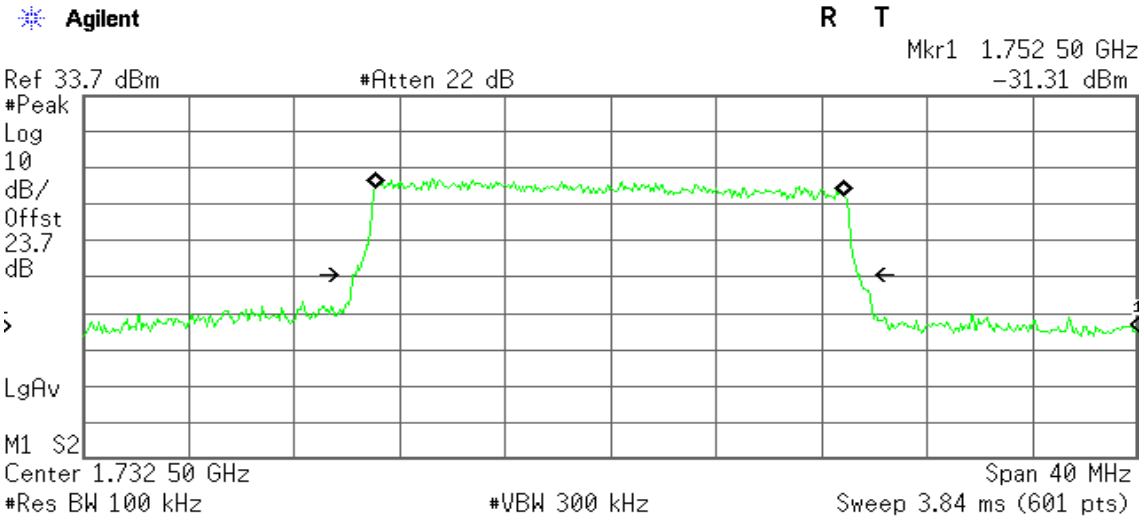


Occupied Bandwidth
17.7975 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 30.133 kHz
x dB Bandwidth 18.792 MHz

CH Mid

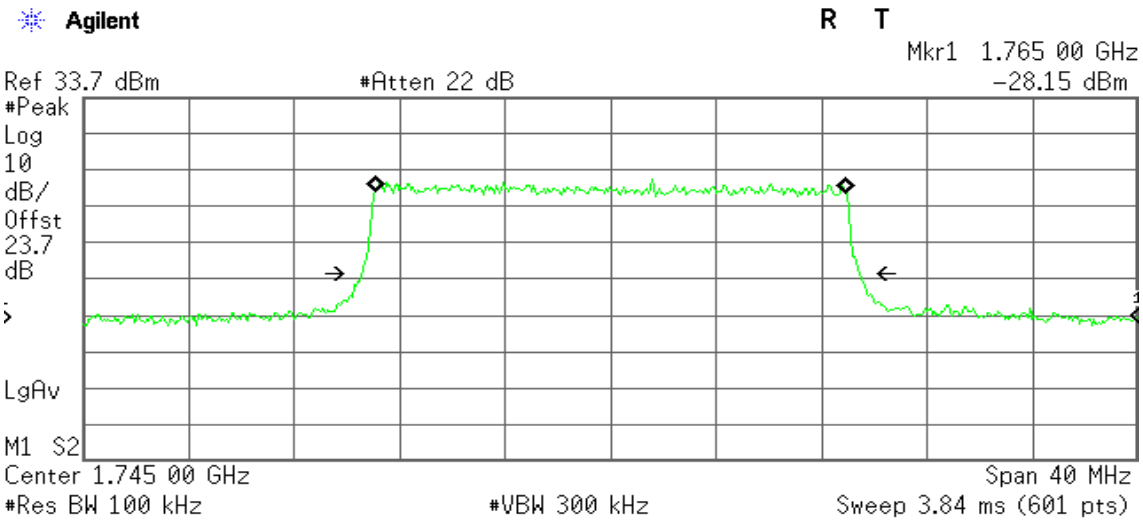


Occupied Bandwidth
17.8363 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -34.427 kHz
x dB Bandwidth 19.048 MHz

CH High



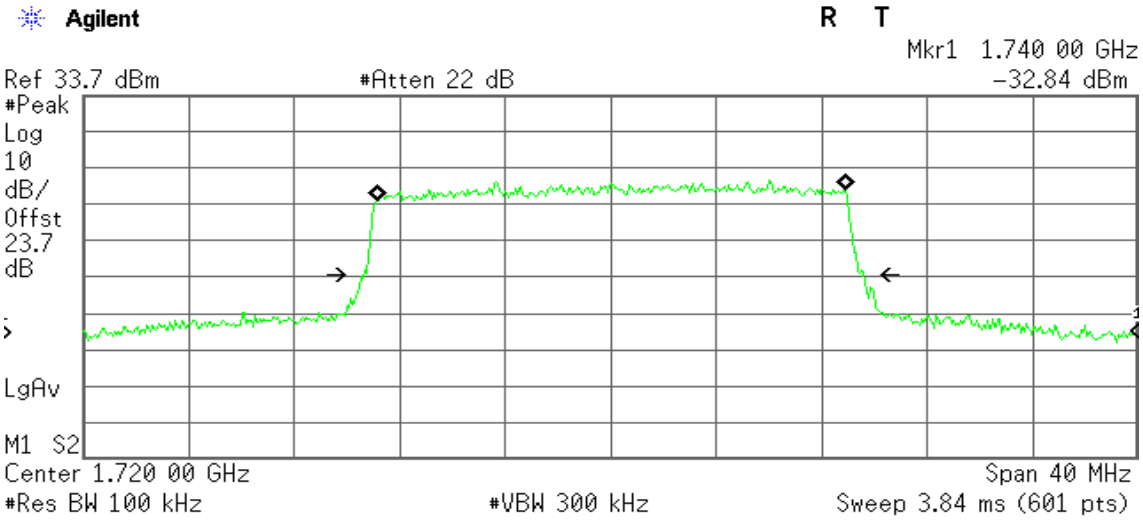
Occupied Bandwidth
17.8828 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -4.442 kHz
x dB Bandwidth 18.896 MHz

CHANNEL BANDWIDTH: 20MHz / 16QAM

CH Low

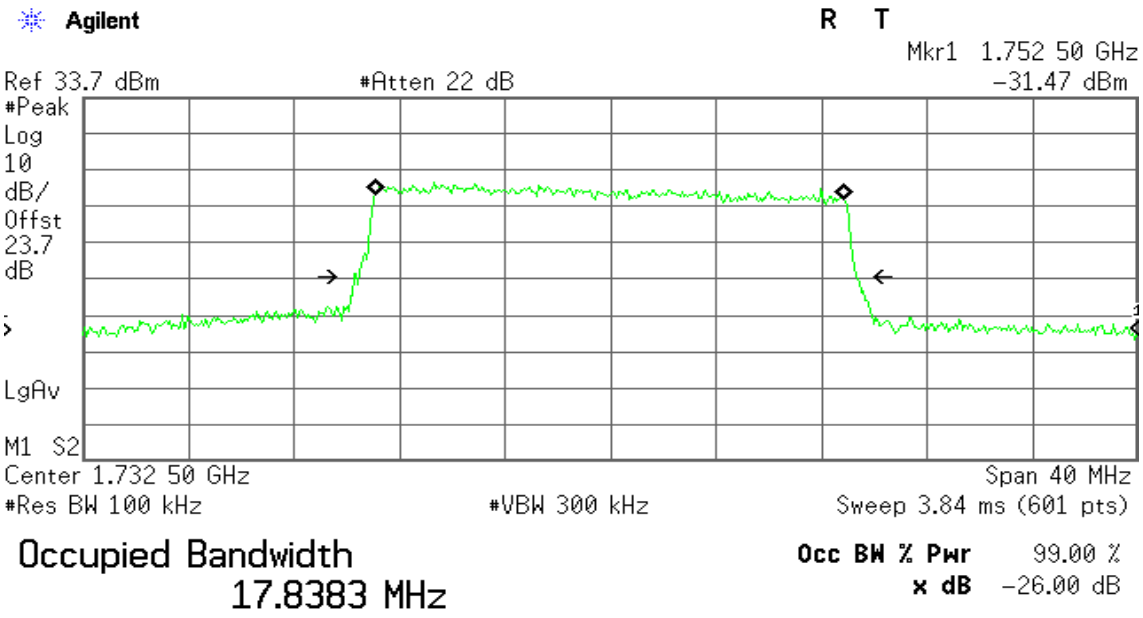


Occupied Bandwidth
17.7979 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 34.157 kHz
x dB Bandwidth 19.003 MHz

CH Mid

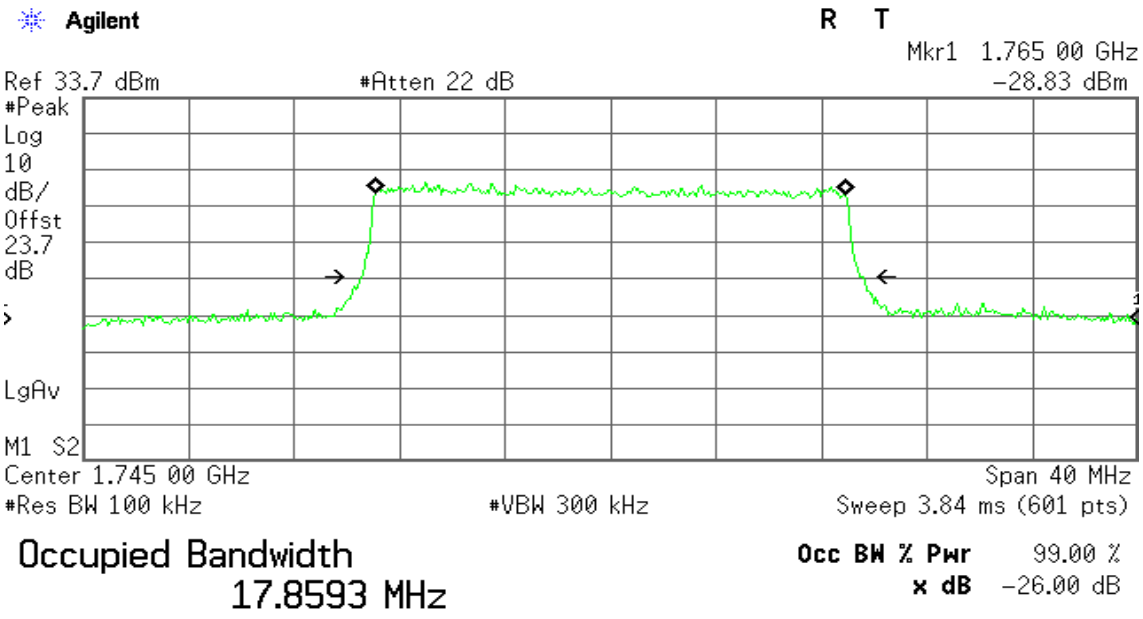


Occupied Bandwidth
17.8383 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -37.786 kHz
x dB Bandwidth 19.113 MHz

CH High



Occupied Bandwidth
17.8593 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -3.578 kHz
x dB Bandwidth 18.907 MHz

7.4 PEAK TO AVERAGE RATIO

LIMIT

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

TEST PROCEDURES

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

TEST RESULTS

LTE Band 17

CHANNEL BANDWIDTH: 5MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	706.5	5.51
Mid	710.0	5.84
High	713.5	6.19

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	706.5	6.41
Mid	710.0	6.89
High	713.5	7.25

CHANNEL BANDWIDTH: 10MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	709.0	4.84
Mid	710.0	5.14
High	711.0	4.87

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	709.0	6.79
Mid	710.0	7.15
High	711.0	7.04

LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1712.5	6.25
Mid	1732.5	5.55
High	1752.5	6.71

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1712.5	7.23
Mid	1732.5	6.69
High	1752.5	7.75

CHANNEL BANDWIDTH: 10MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	7.07
Mid	1732.5	5.89
High	1750.0	5.25

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	7.24
Mid	1732.5	6.82
High	1750.0	6.97

CHANNEL BANDWIDTH: 20MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	7.19
Mid	1732.5	7.35
High	1750.0	7.32

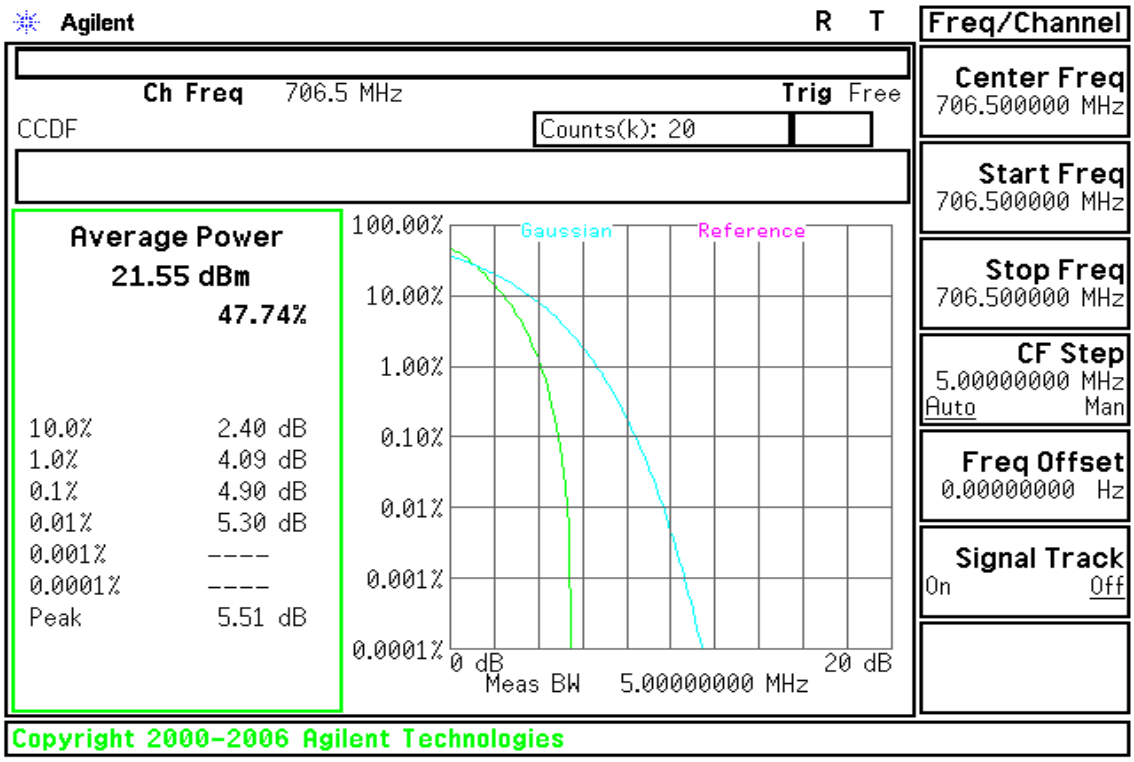
CHANNEL BANDWIDTH: 20MHz / 16QAM / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	8.82
Mid	1732.5	8.74
High	1750.0	8.83

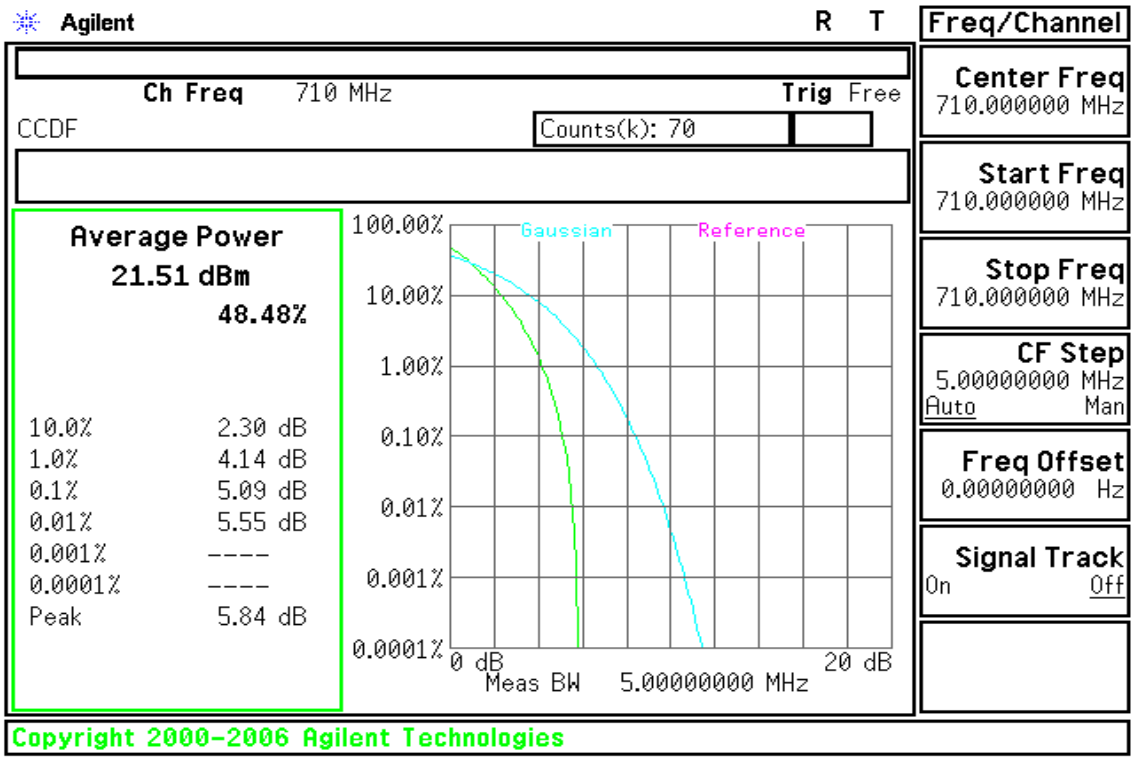
LTE Band 17

CHANNEL BANDWIDTH: 5MHz / QPSK

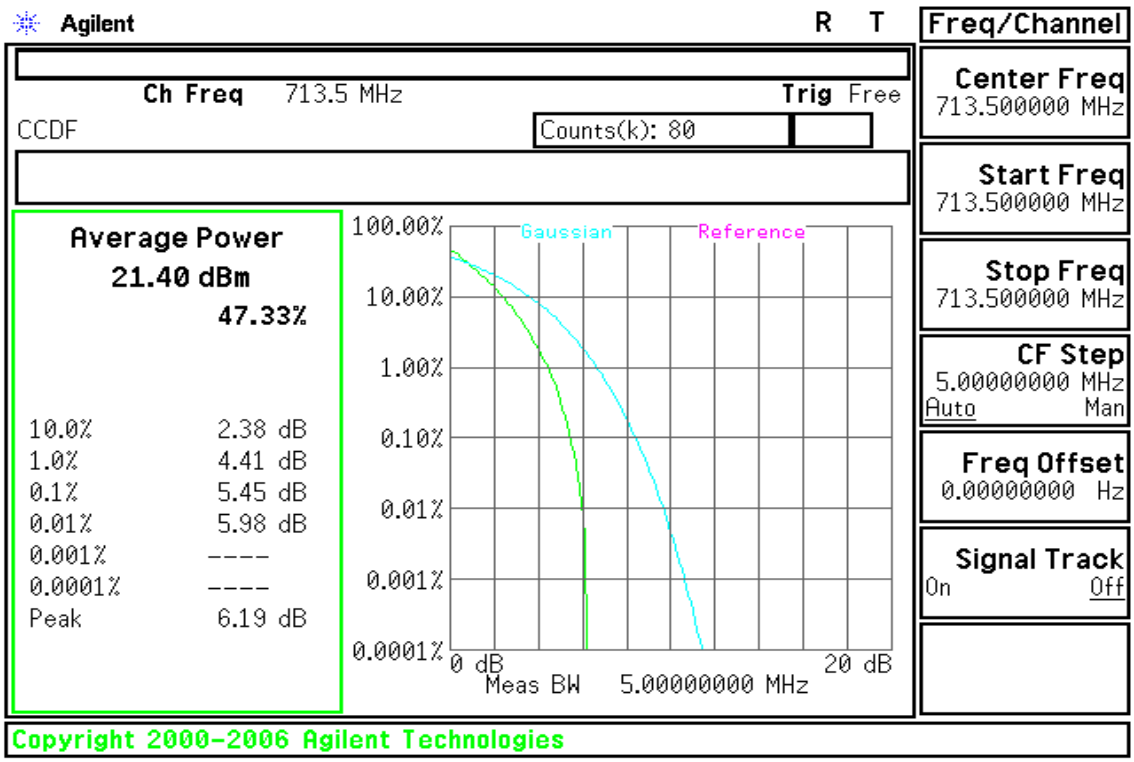
CH Low



CH Mid

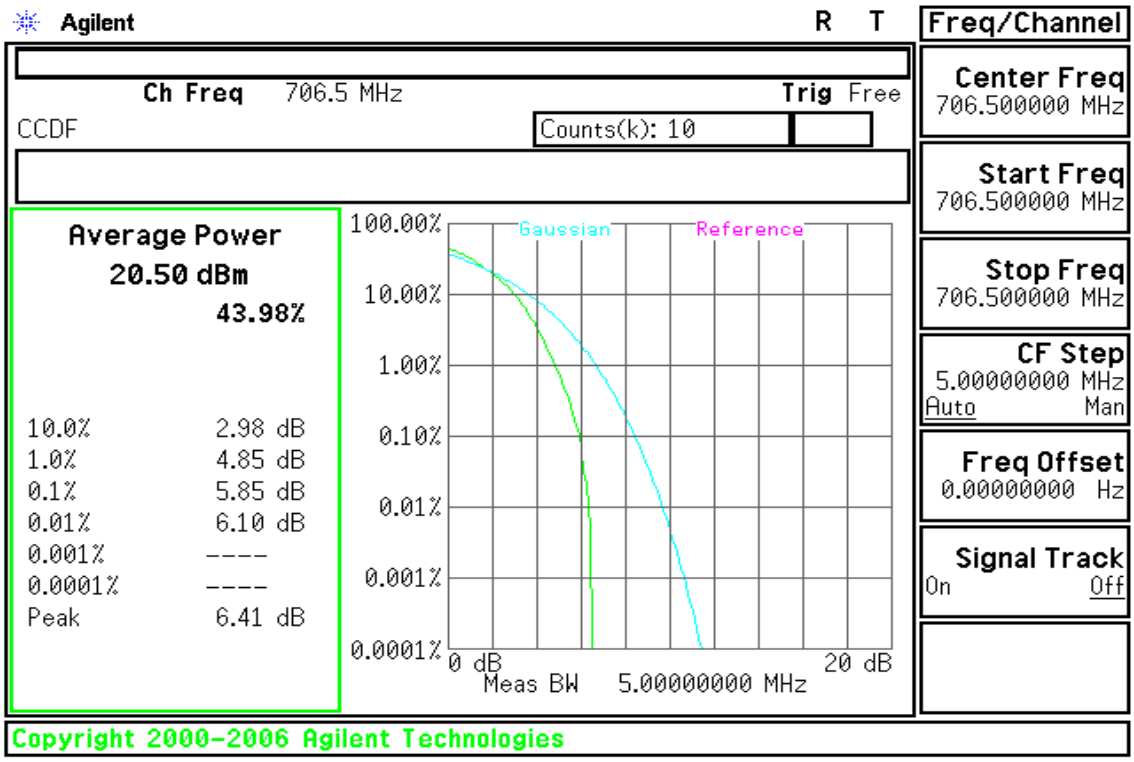


CH High

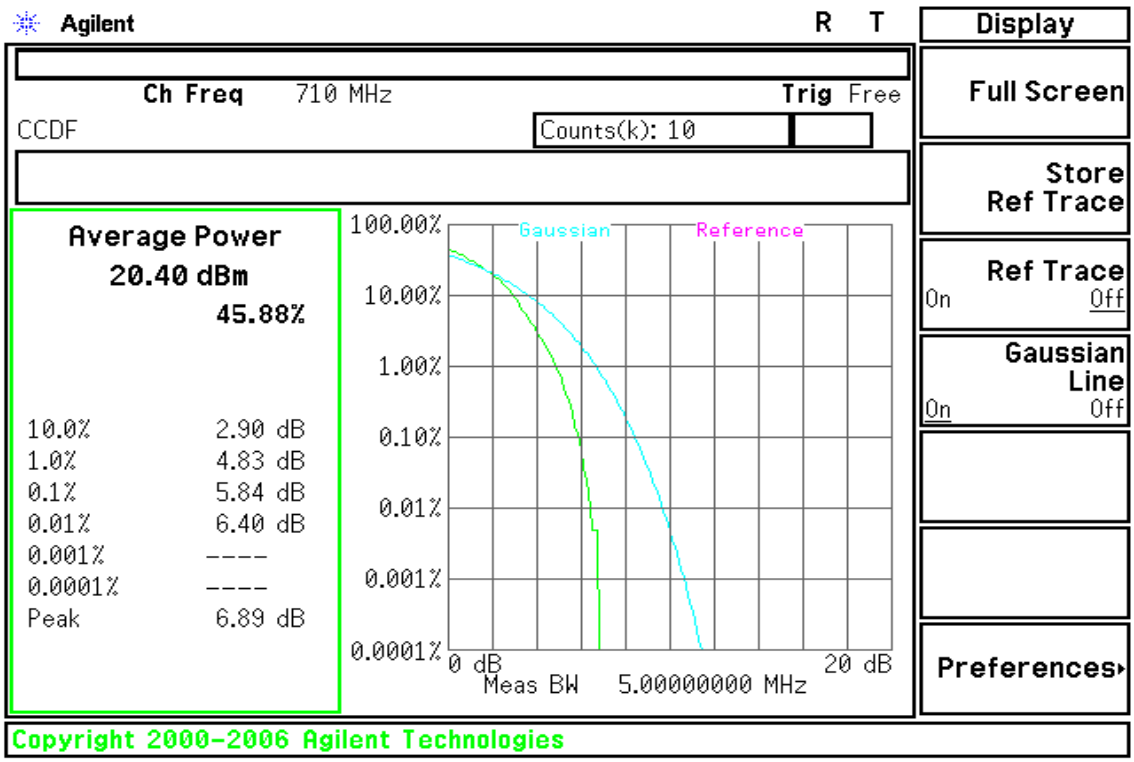


CHANNEL BANDWIDTH: 5MHz / 16QAM

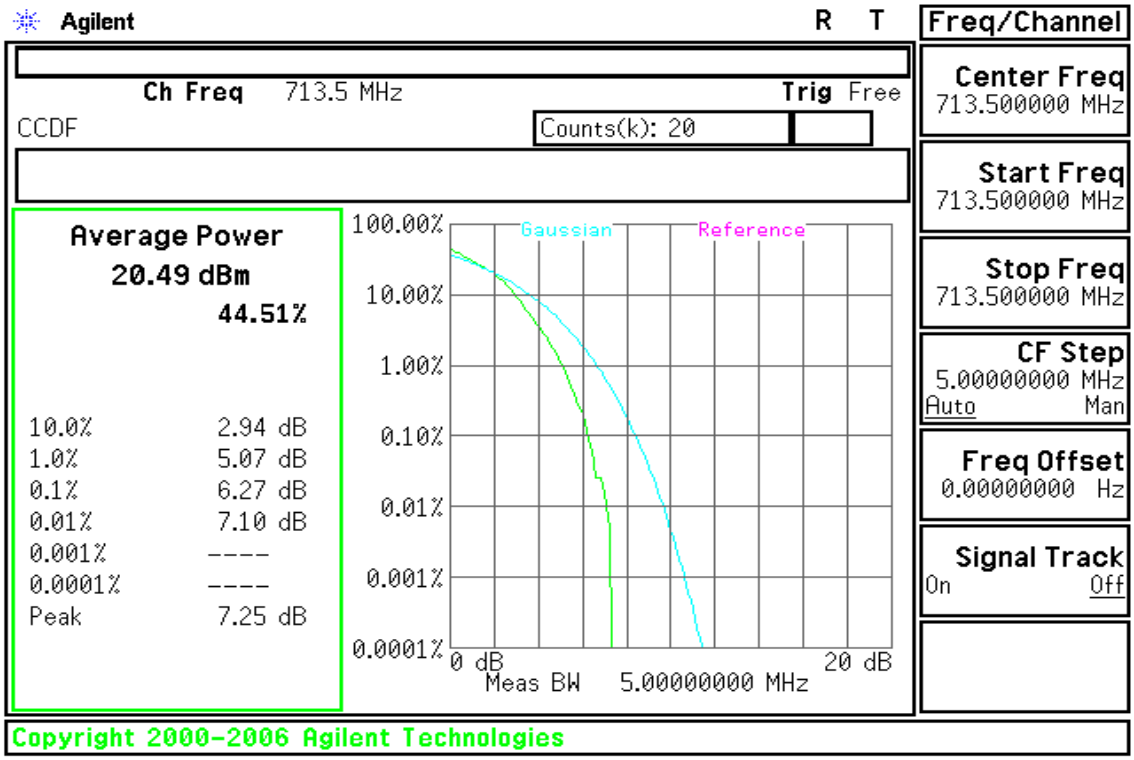
CH Low



CH Mid

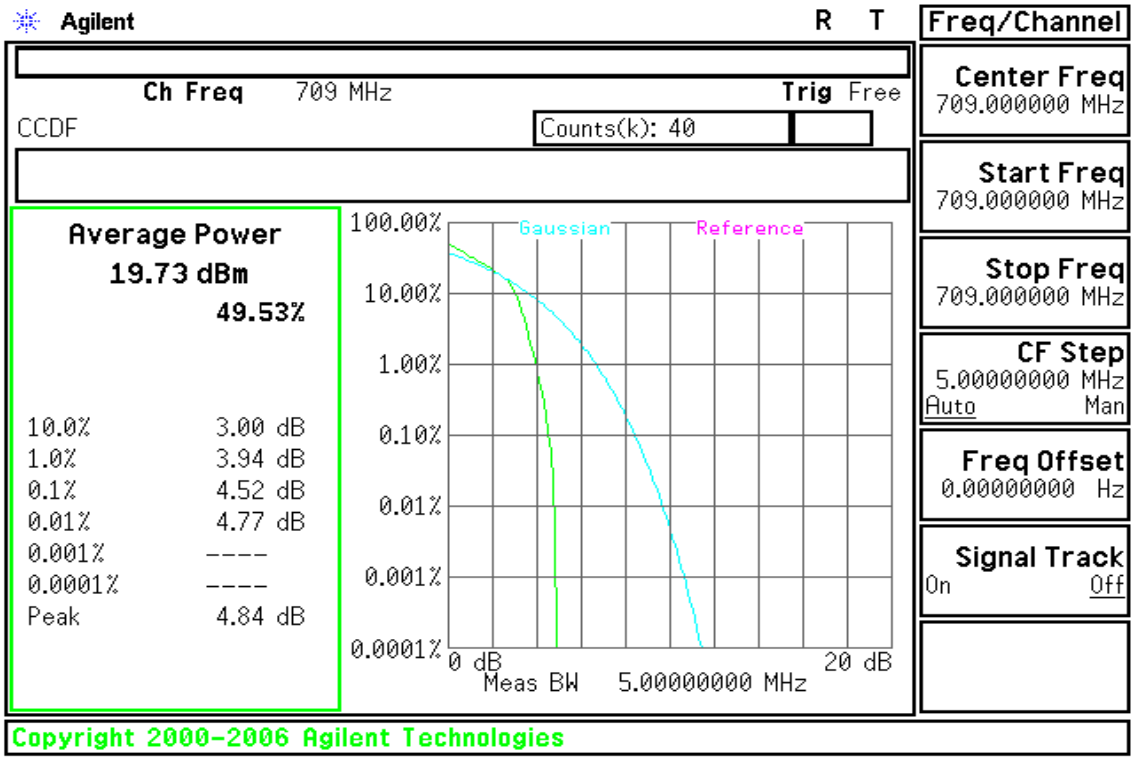


CH High

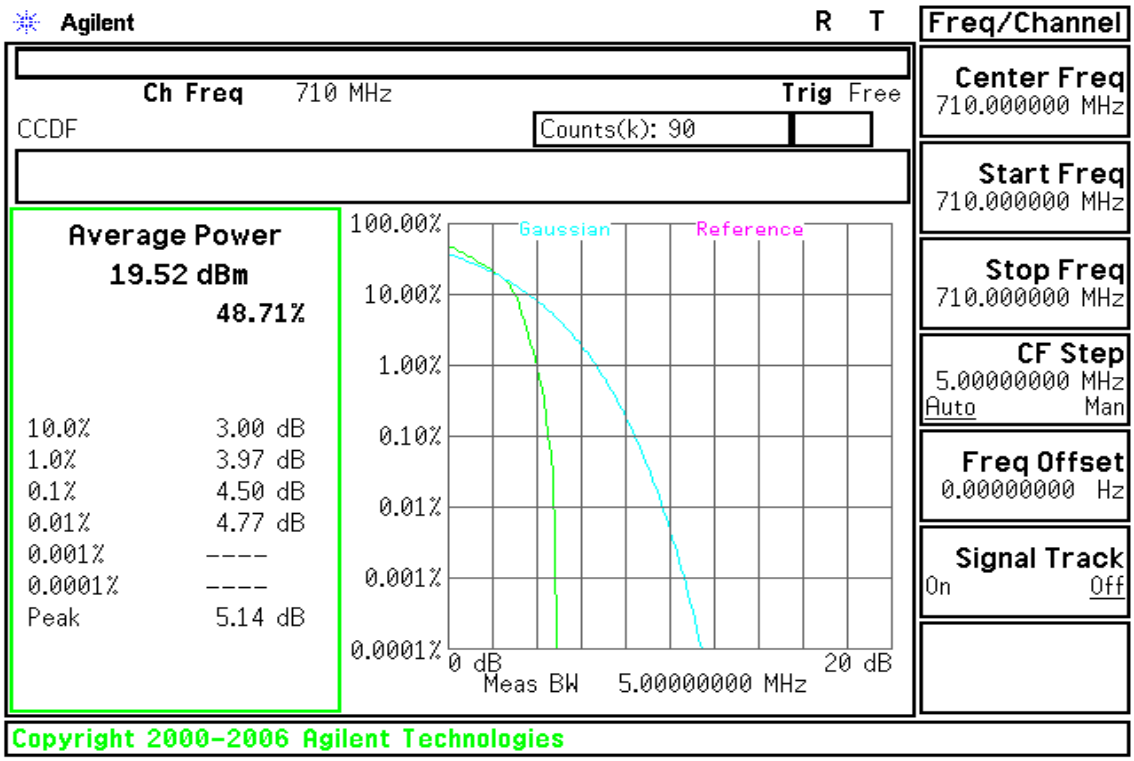


CHANNEL BANDWIDTH: 10MHz / QPSK

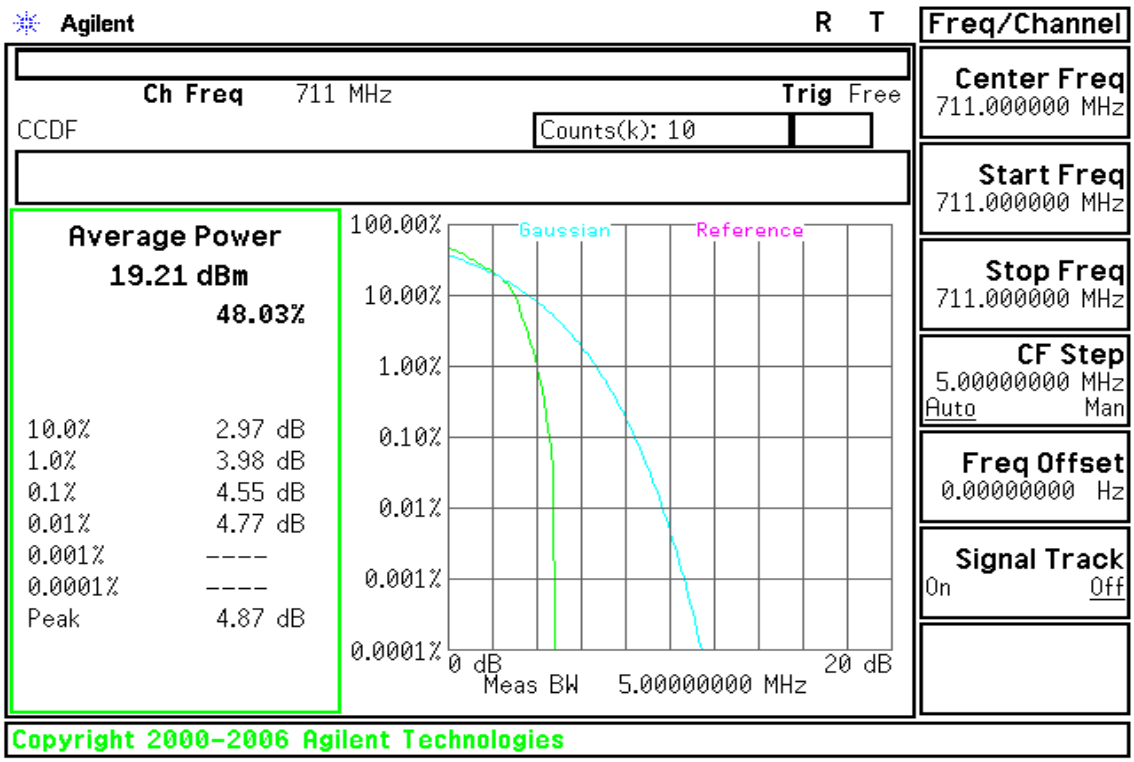
CH Low



CH Mid

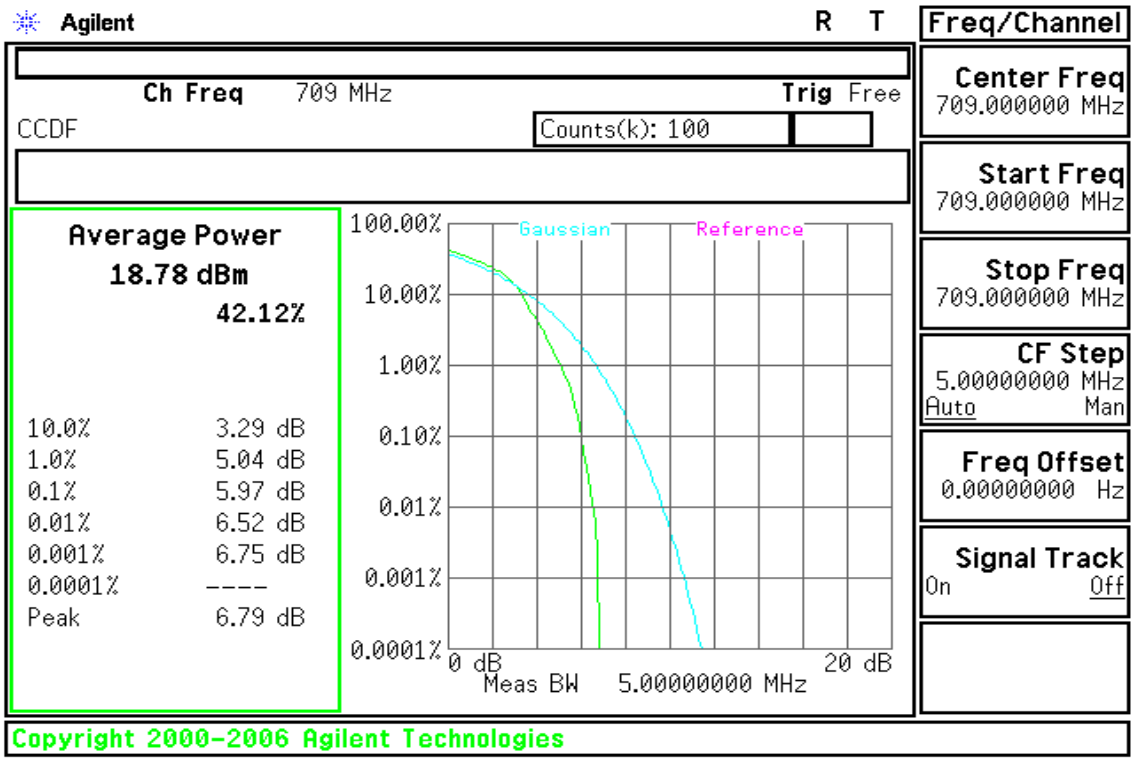


CH High

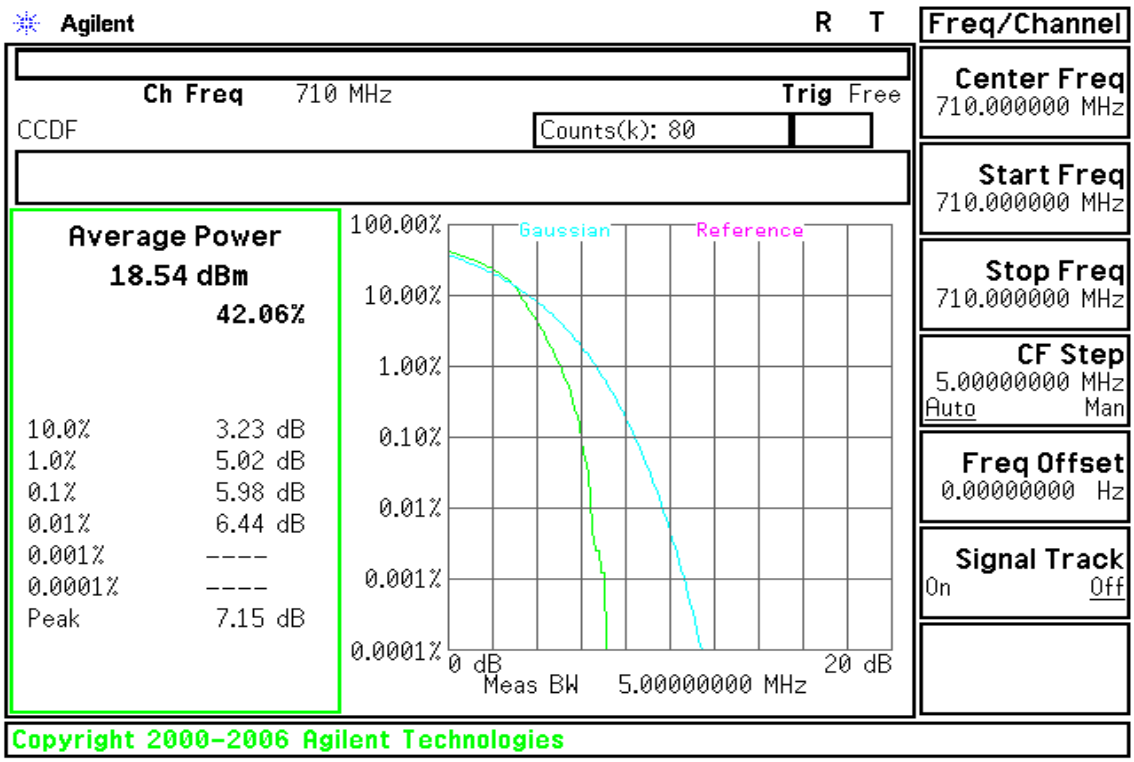


CHANNEL BANDWIDTH: 10MHz / 16QAM

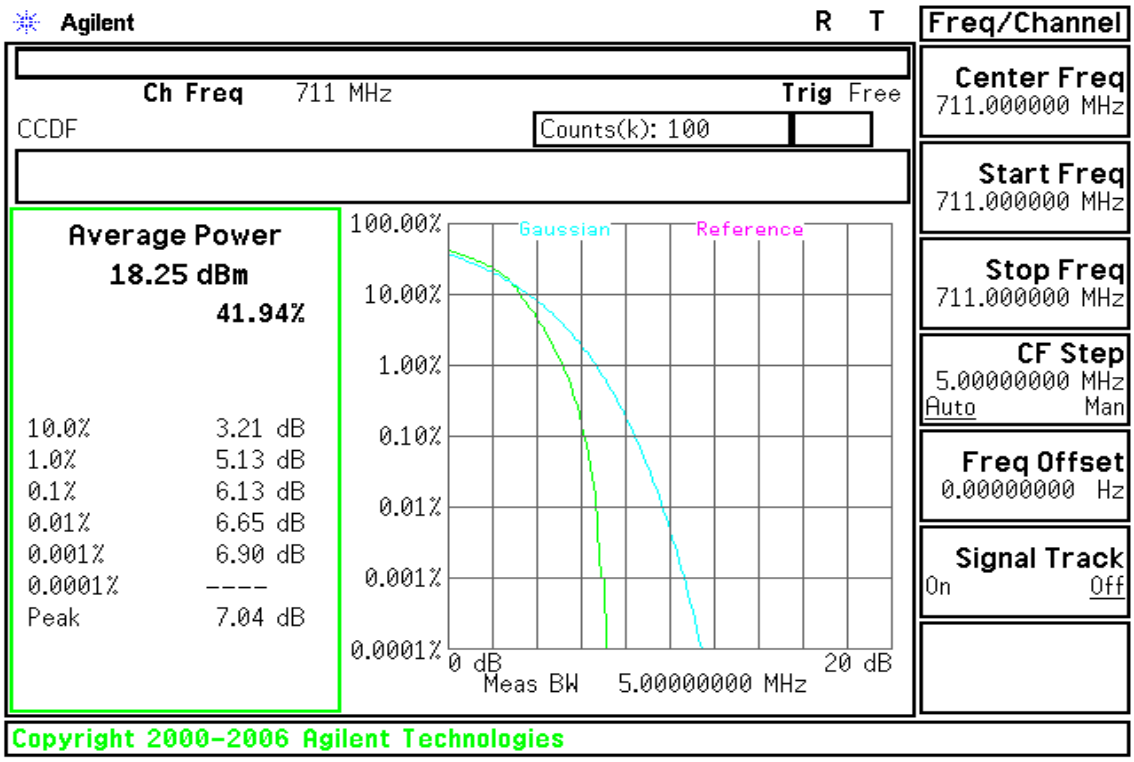
CH Low



CH Mid



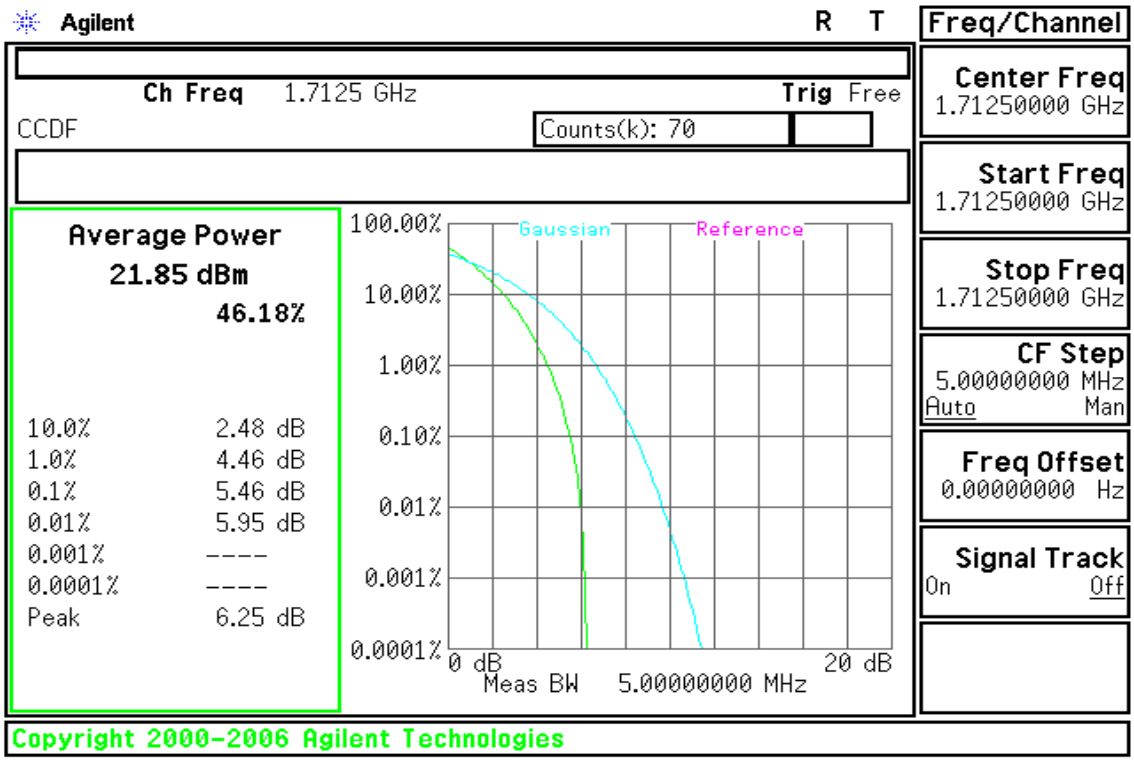
CH High



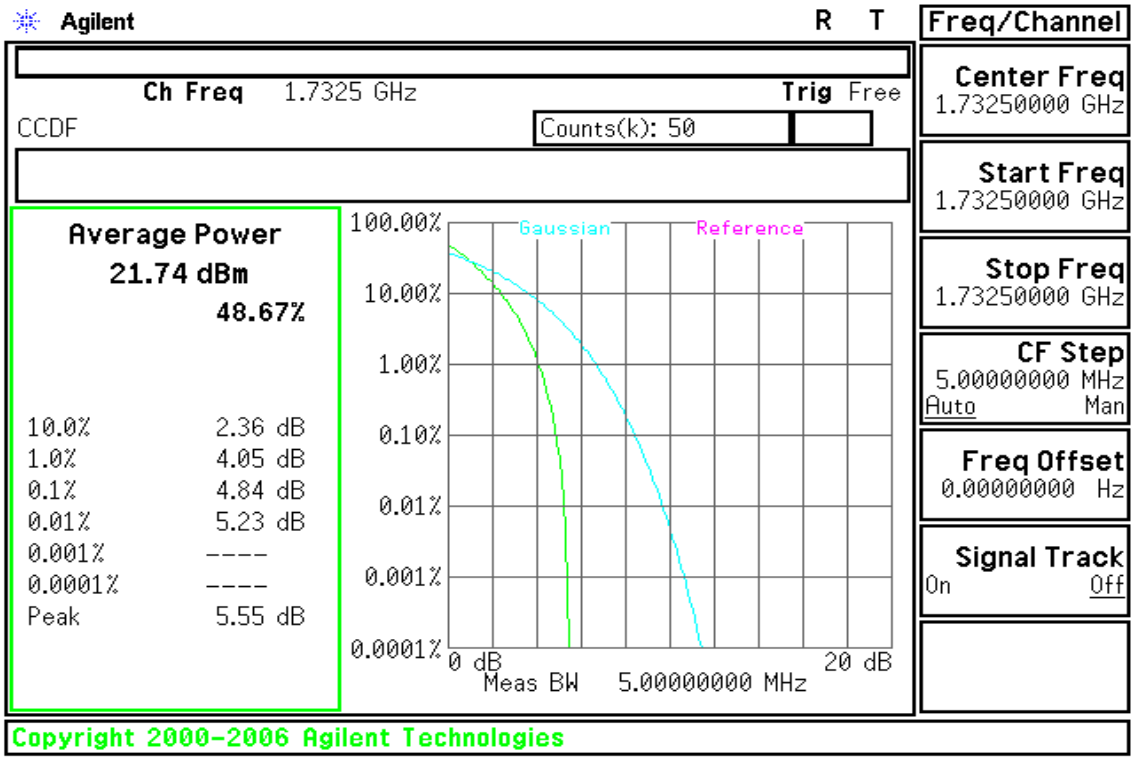
LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK

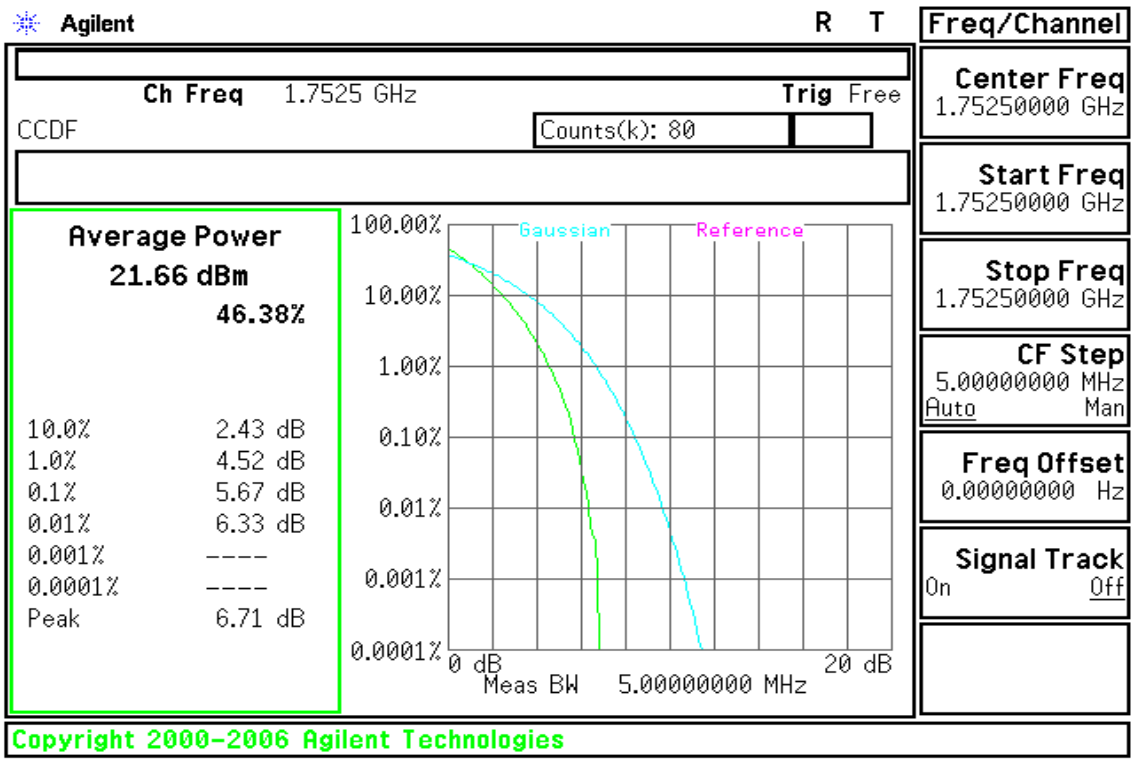
CH Low



CH Mid

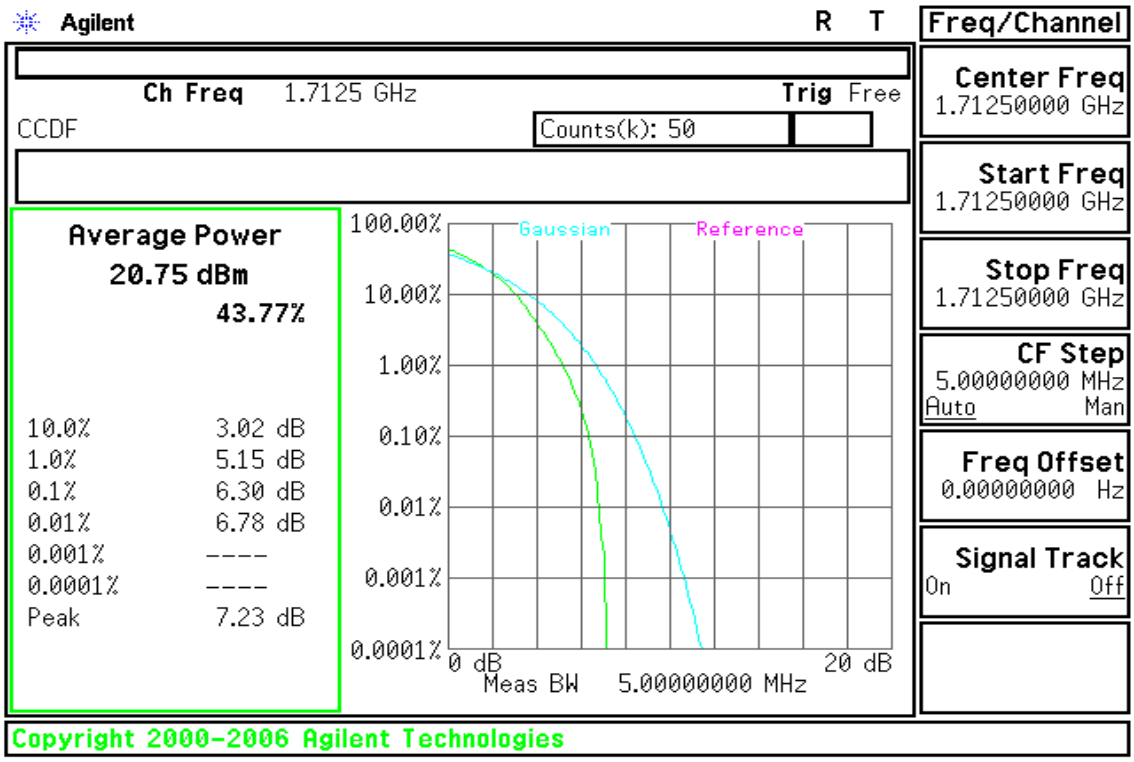


CH High

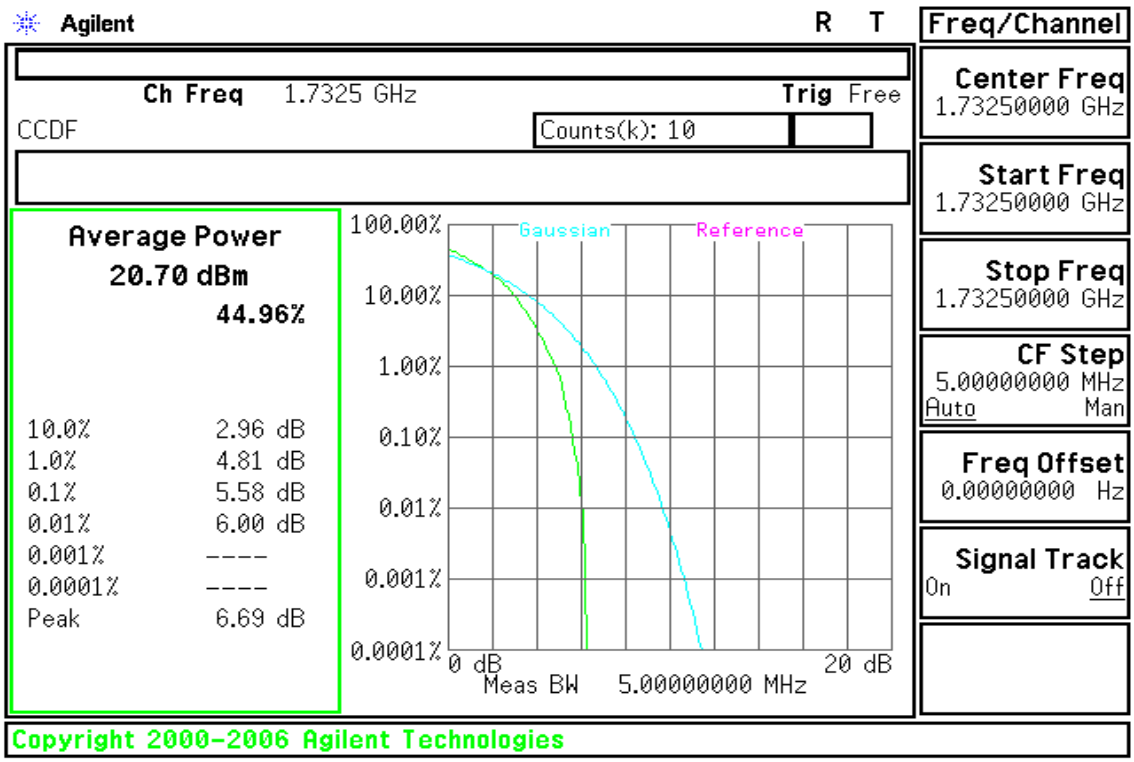


CHANNEL BANDWIDTH: 5MHz / 16QAM

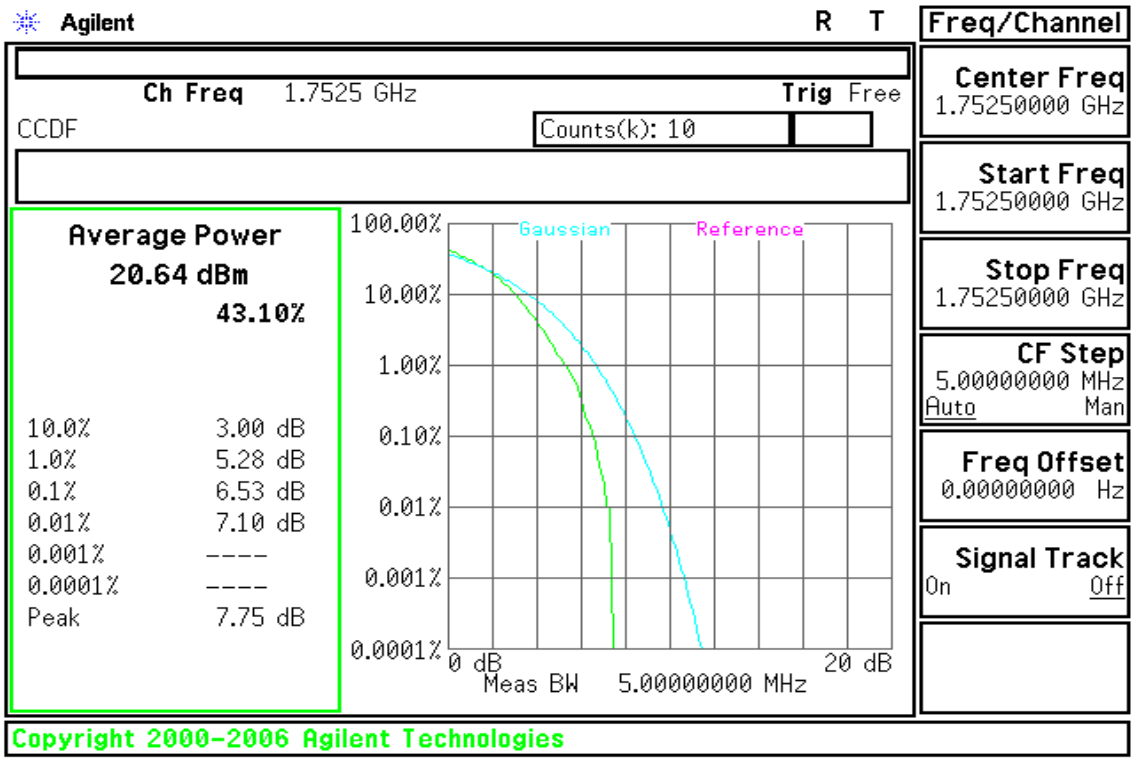
CH Low



CH Mid

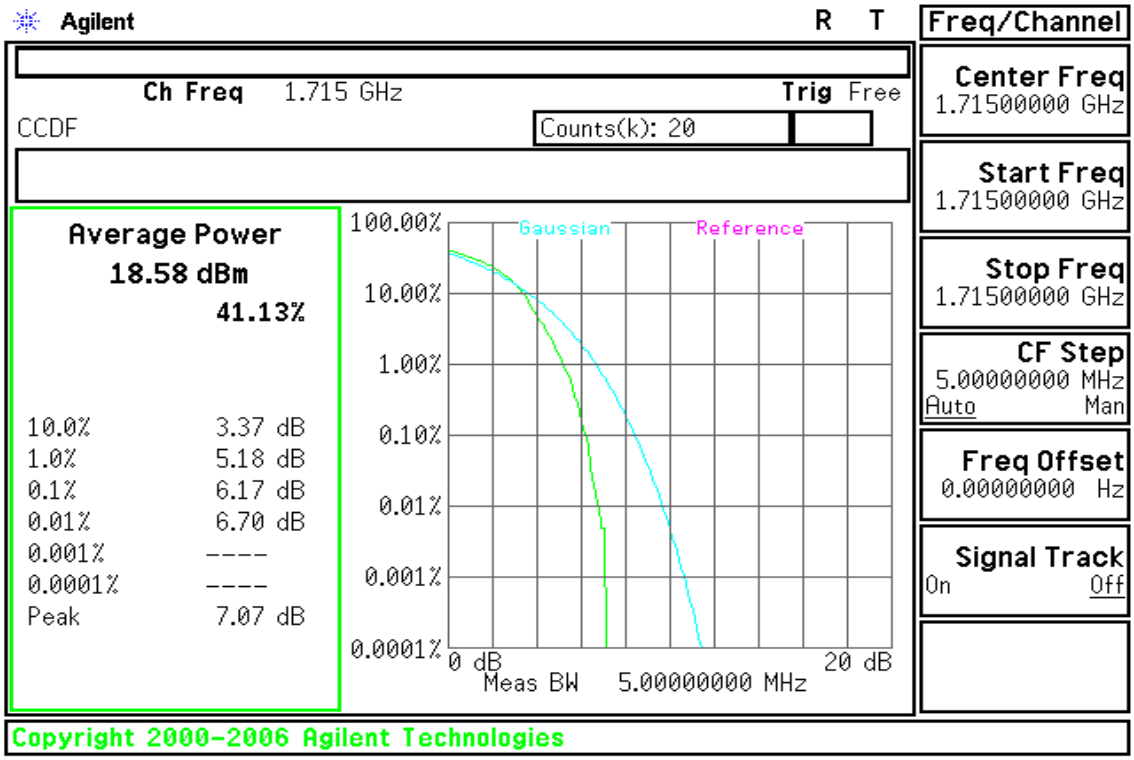


CH High

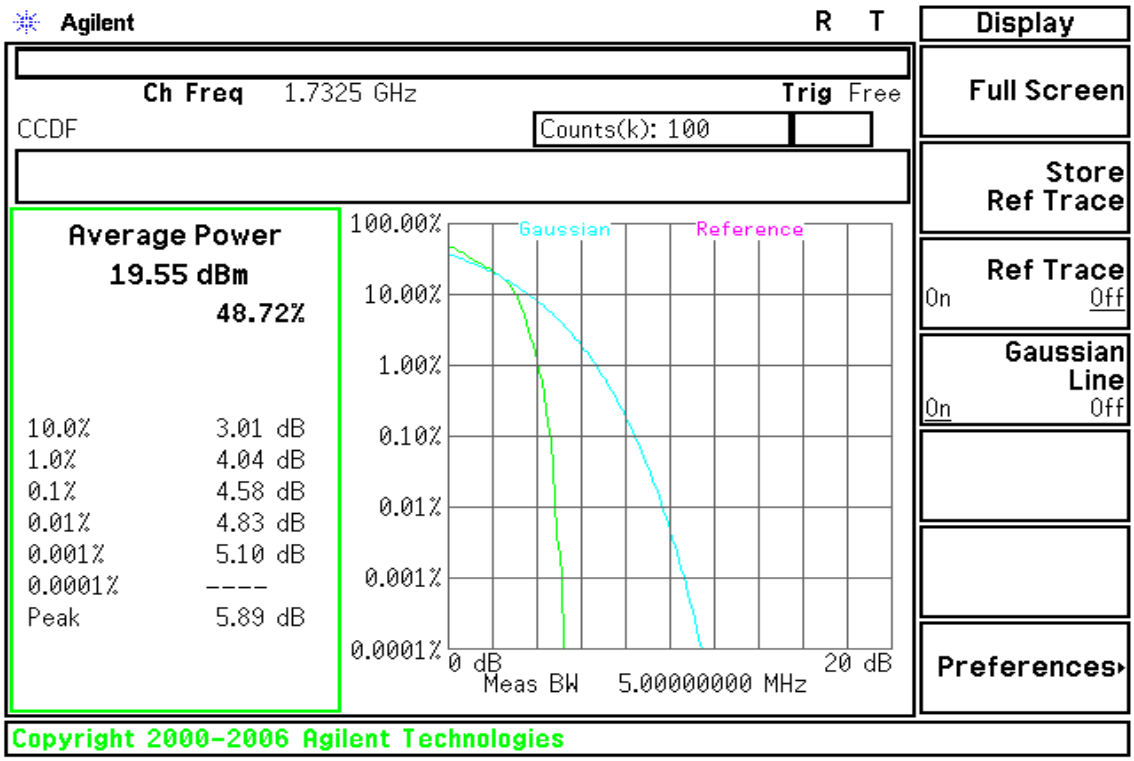


CHANNEL BANDWIDTH: 10MHz / QPSK

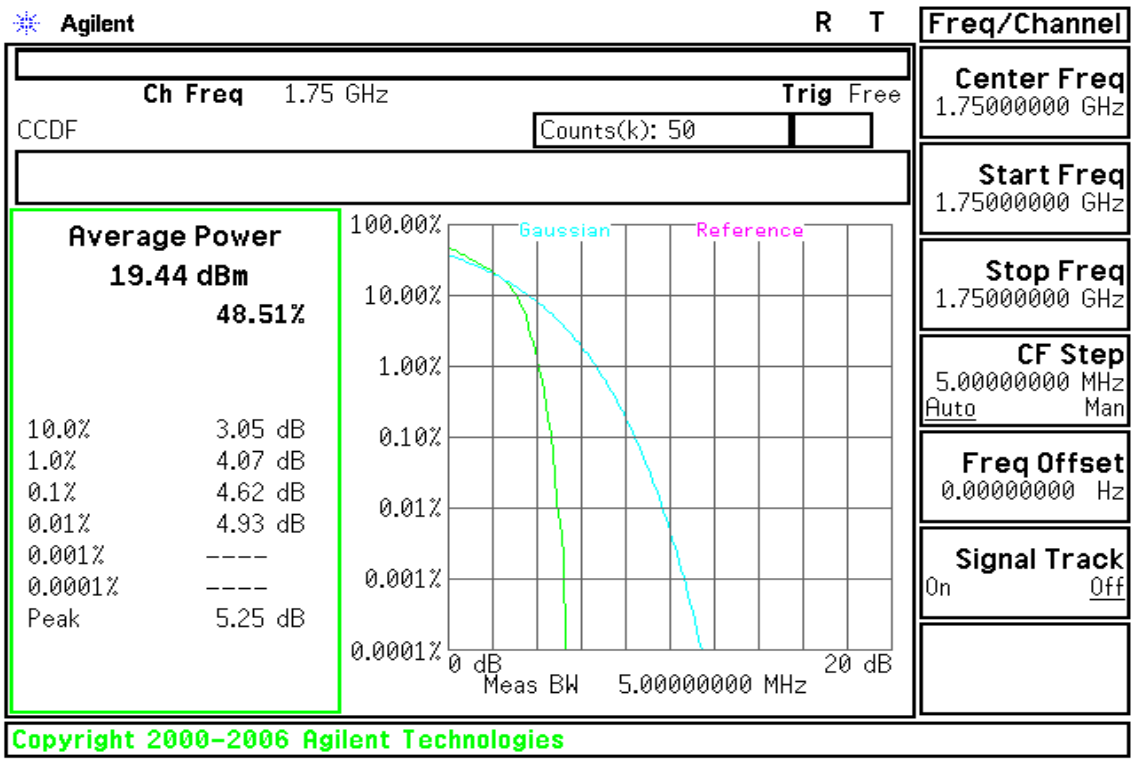
CH Low



CH Mid

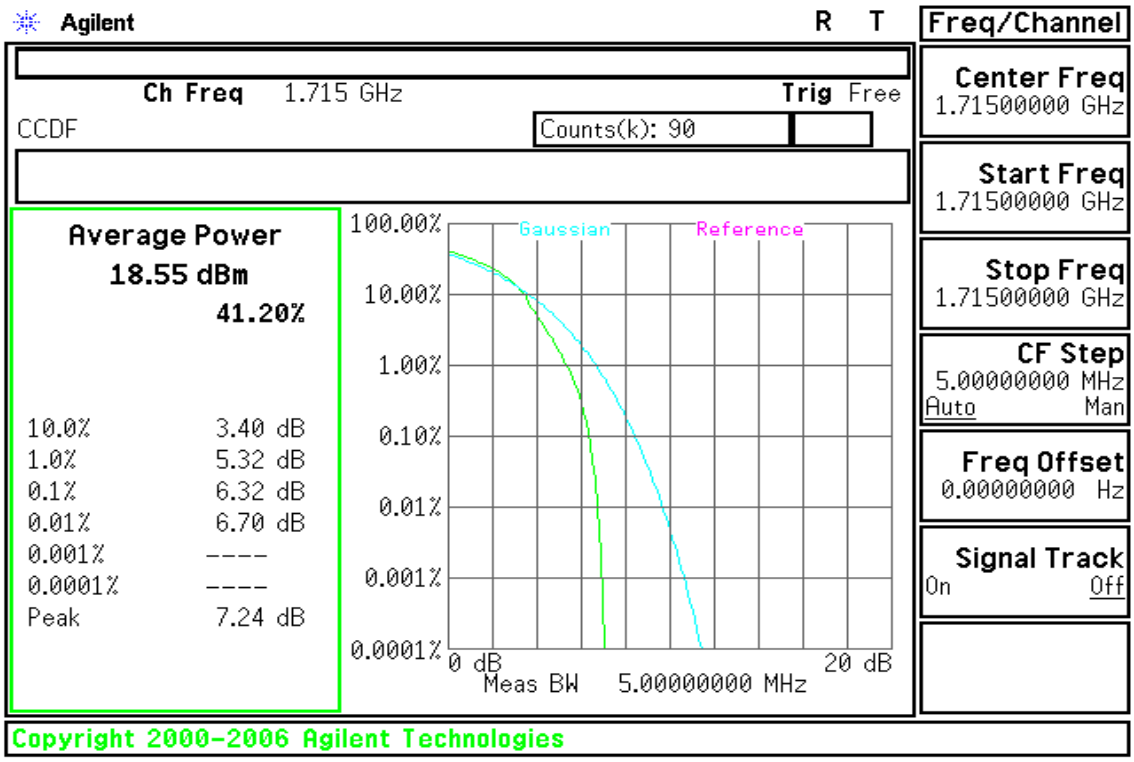


CH High

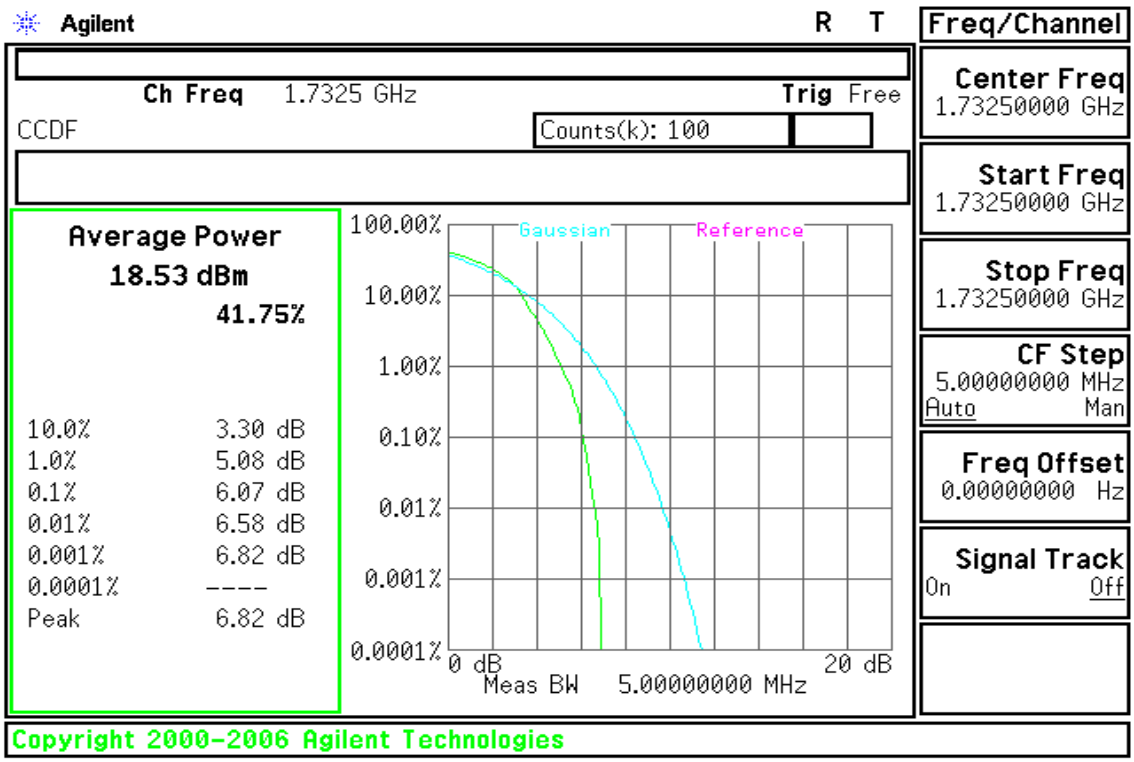


CHANNEL BANDWIDTH: 10MHz / 16QAM

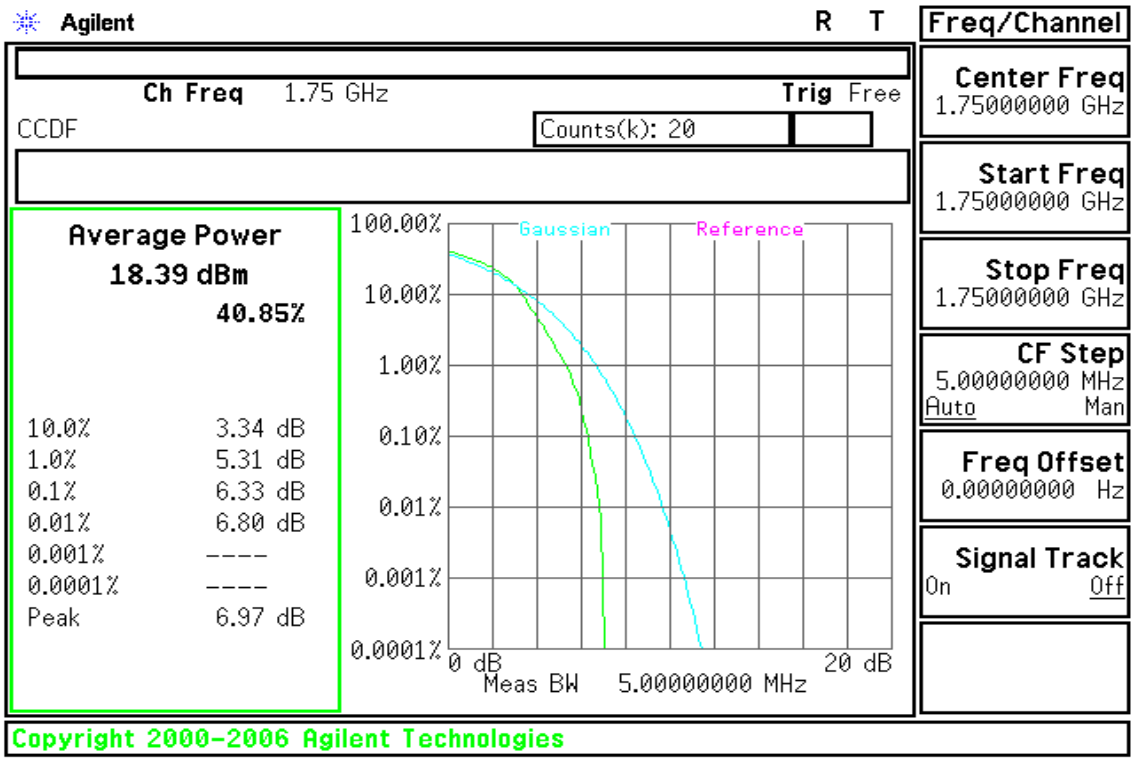
CH Low



CH Mid

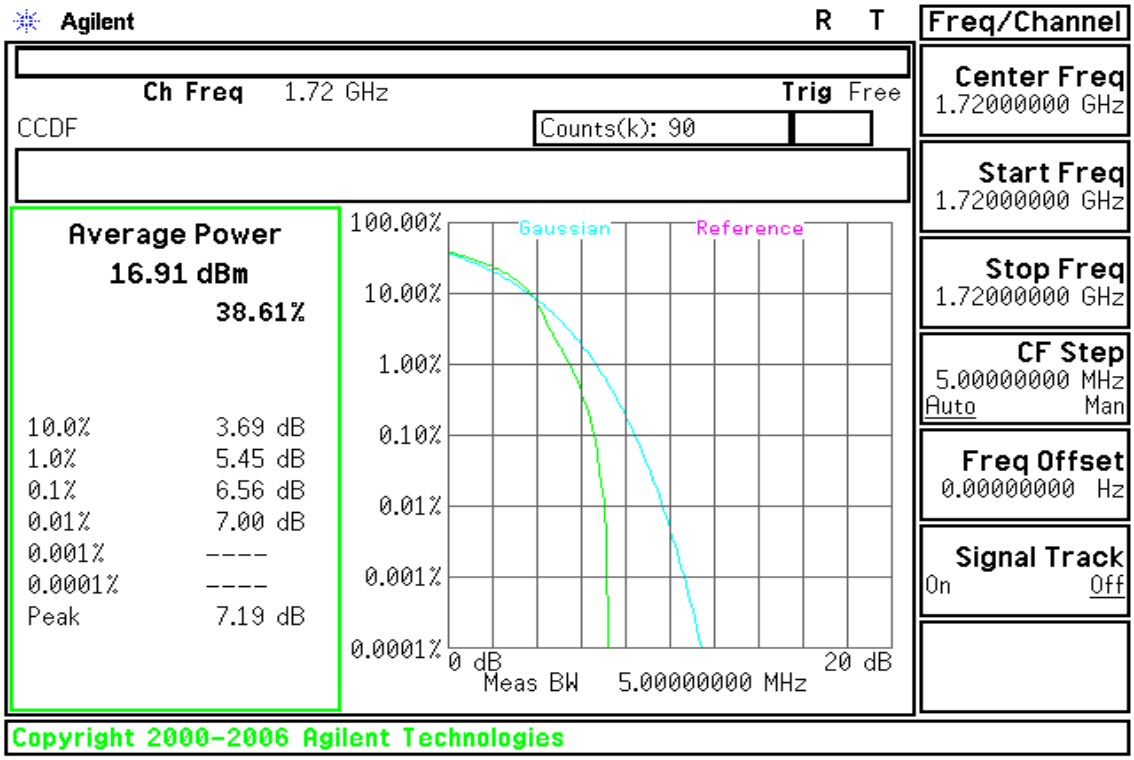


CH High

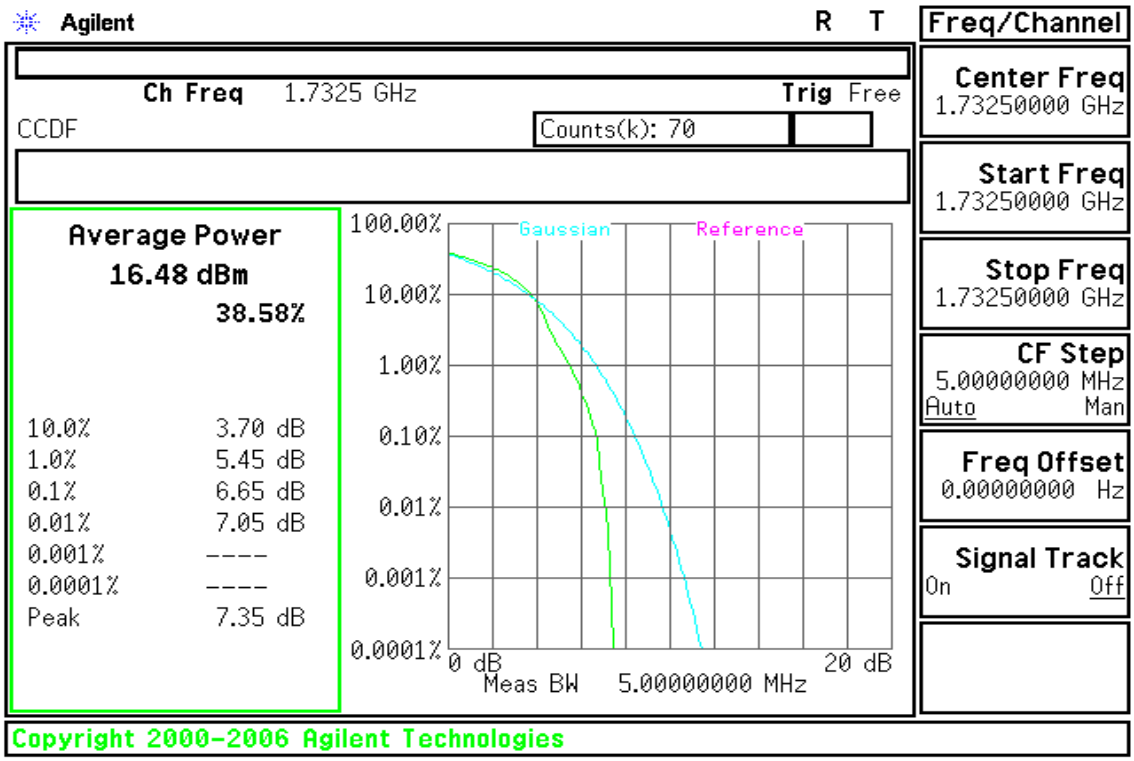


CHANNEL BANDWIDTH: 20MHz / QPSK

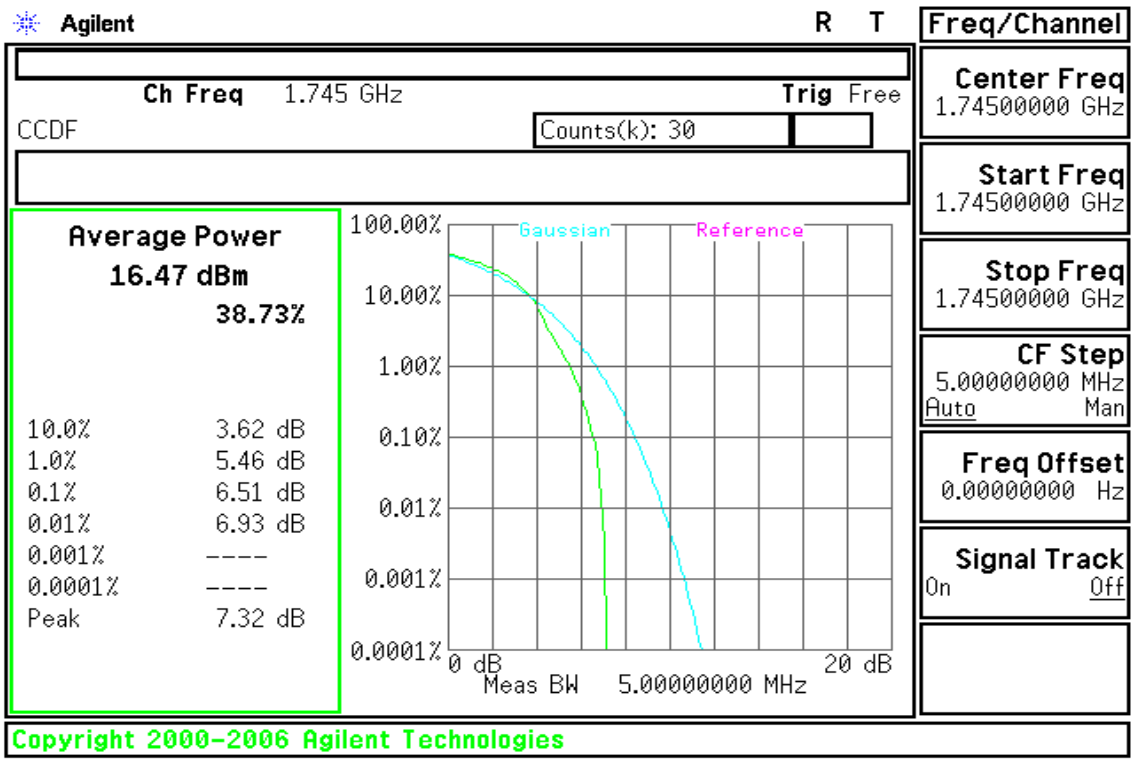
CH Low



CH Mid

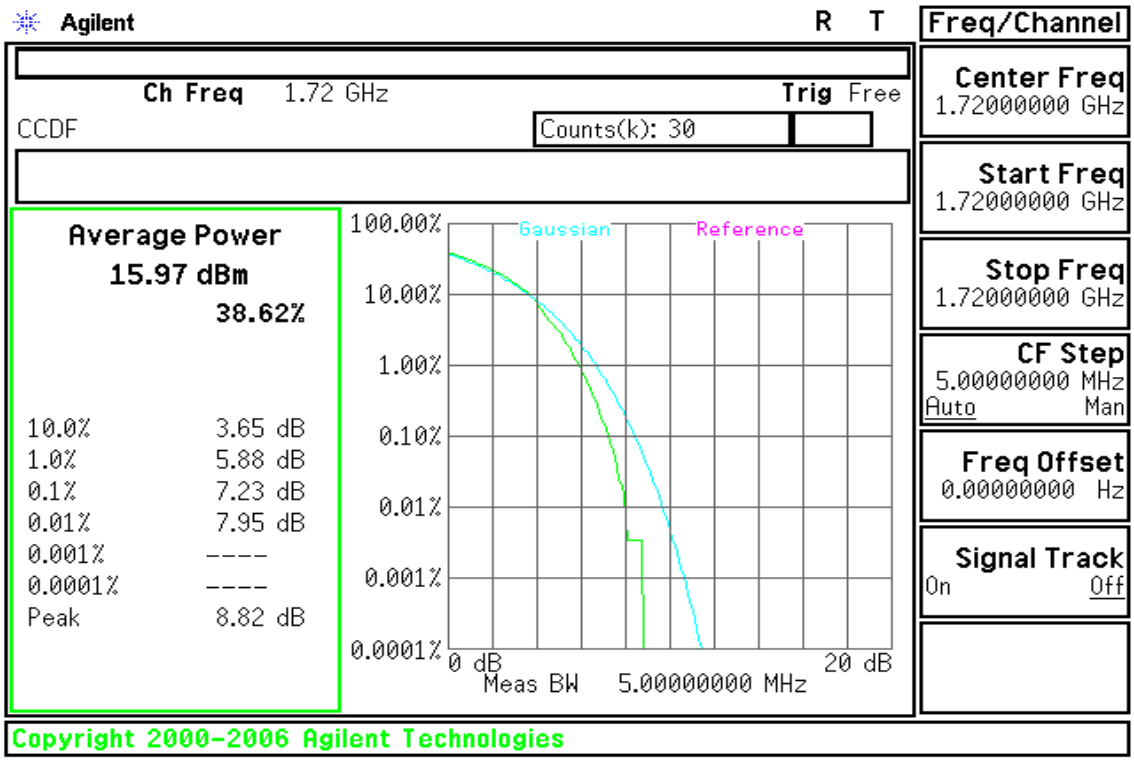


CH High

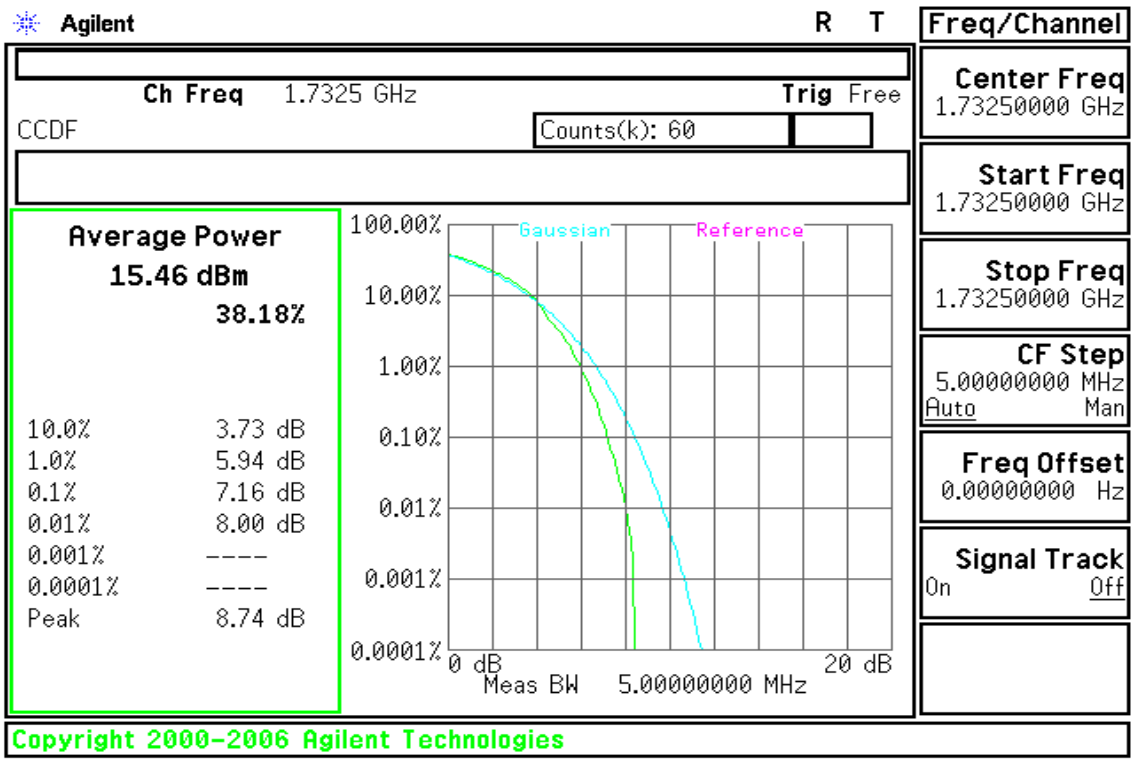


CHANNEL BANDWIDTH: 20MHz / 16QAM

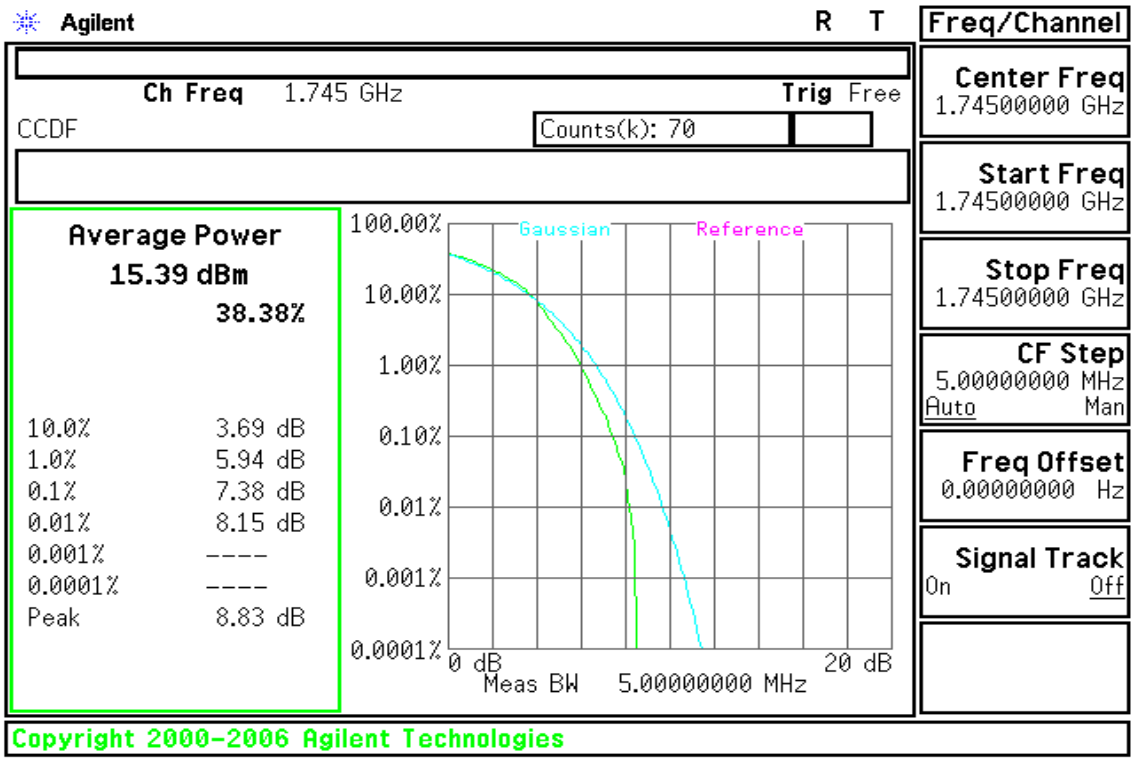
CH Low



CH Mid



CH High



7.5 BAND EDGE MEASUREMENT

LIMIT

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

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

TEST PROCEDURES

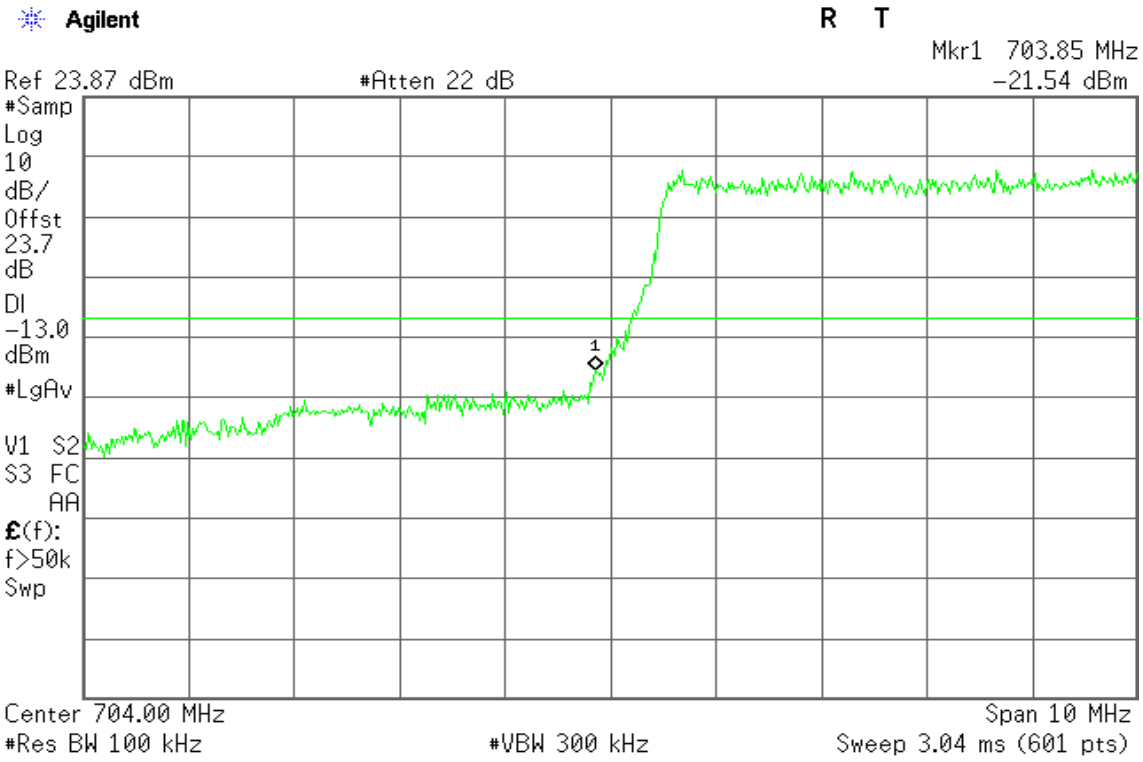
1. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with Spectrum Analyzer. All measurements were done at 2 channels (low and high operational frequency range.).
2. The band edge measurement used the power splitter via EUT RF power connector between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

TEST RESULTS:

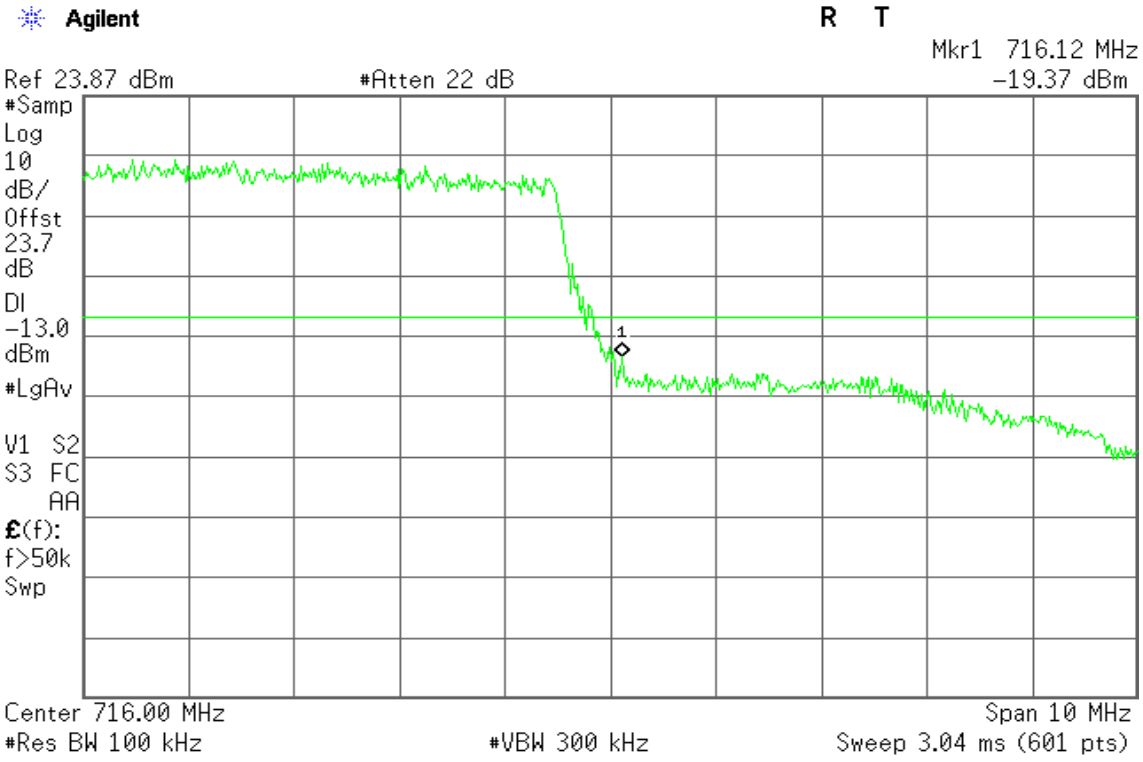
LTE Band 17

CHANNEL BANDWIDTH: 10MHz / QPSK / FULL RB ALLOCATED

LOWER BAND EDGE



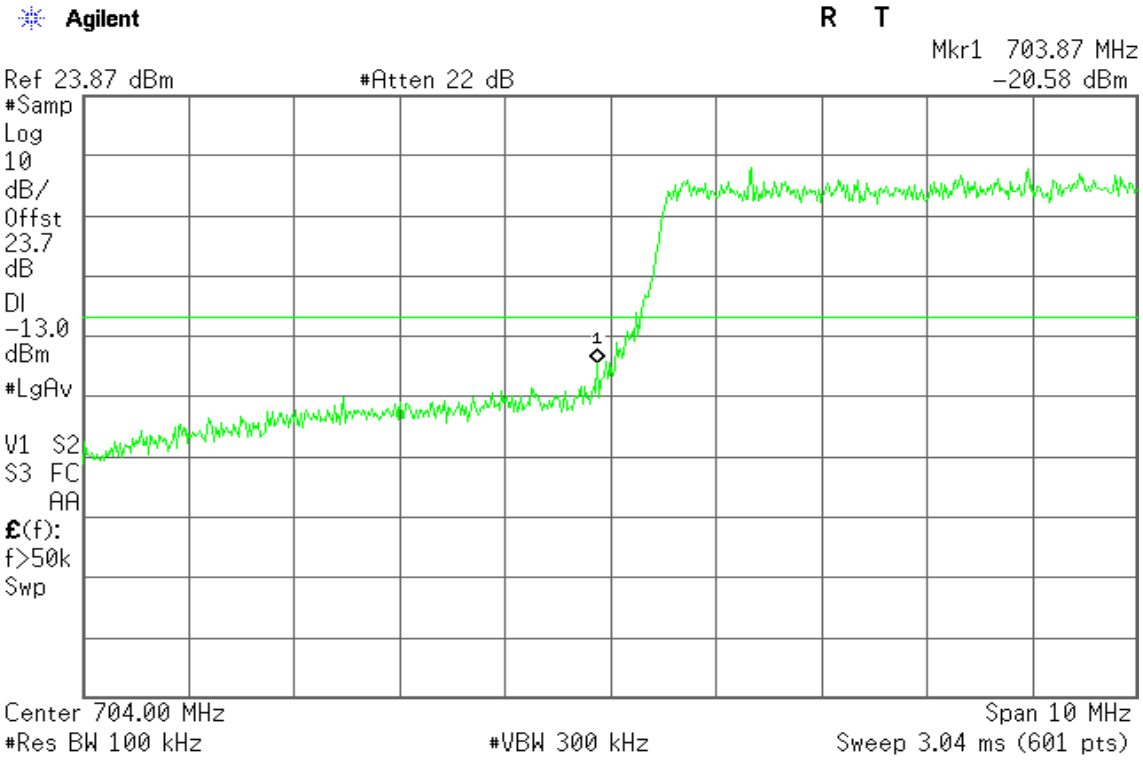
HIGHER BAND EDGE



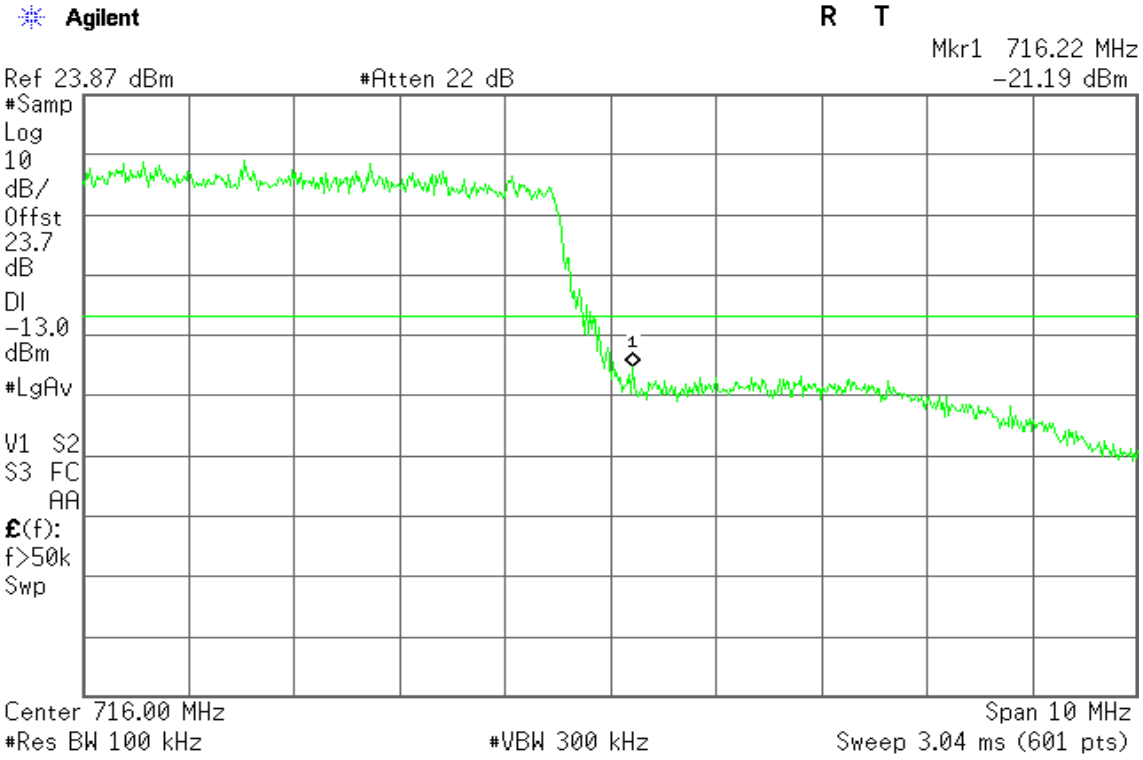
LTE Band 17

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

LOWER BAND EDGE



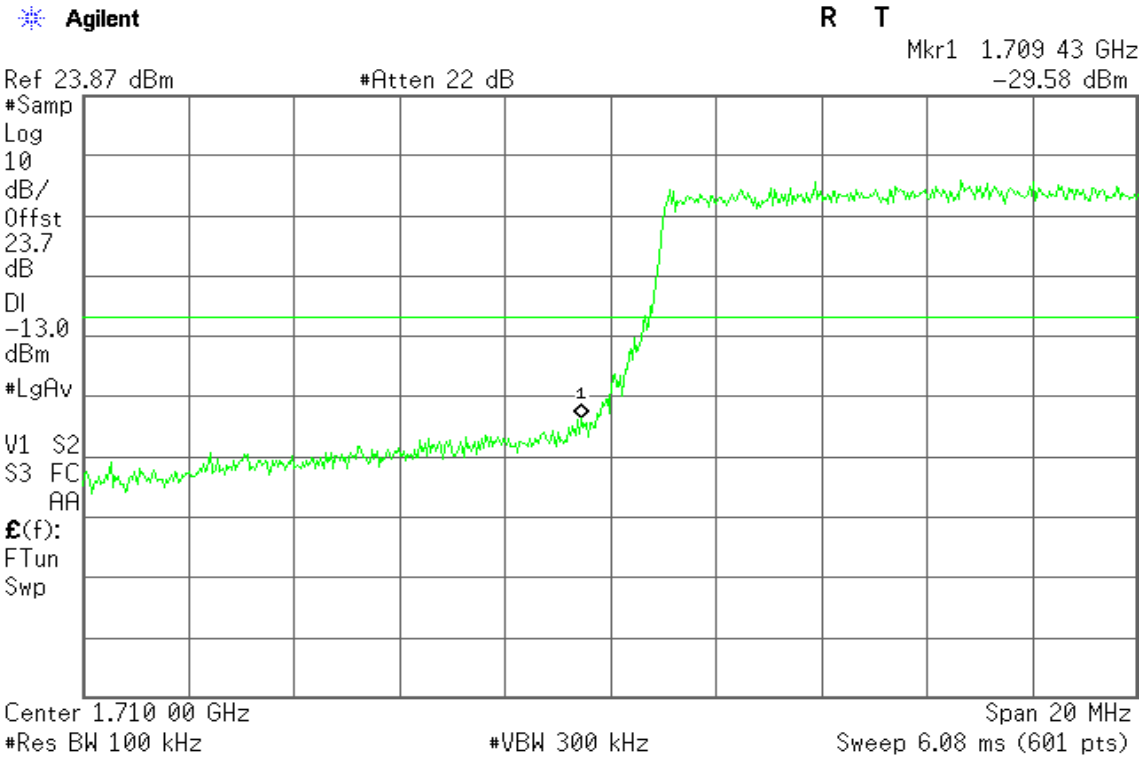
HIGHER BAND EDGE



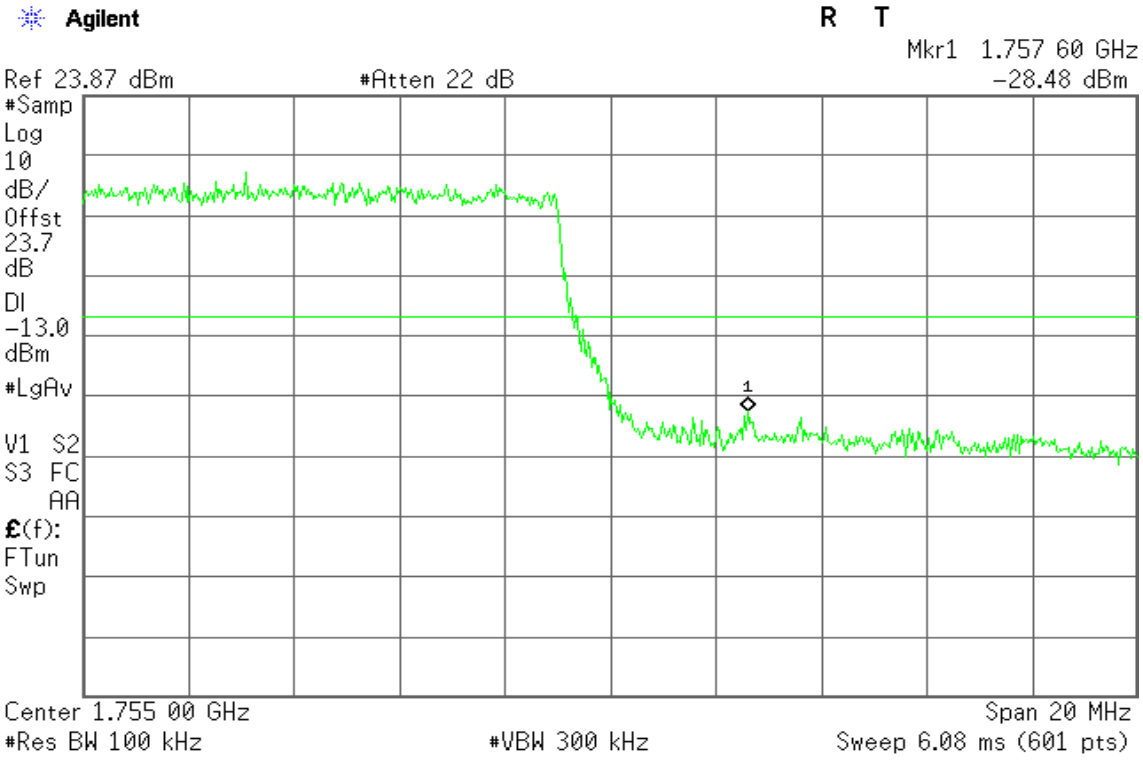
LTE Band 4

CHANNEL BANDWIDTH: 20MHz / QPSK / FULL RB ALLOCATION

LOWER BAND EDGE

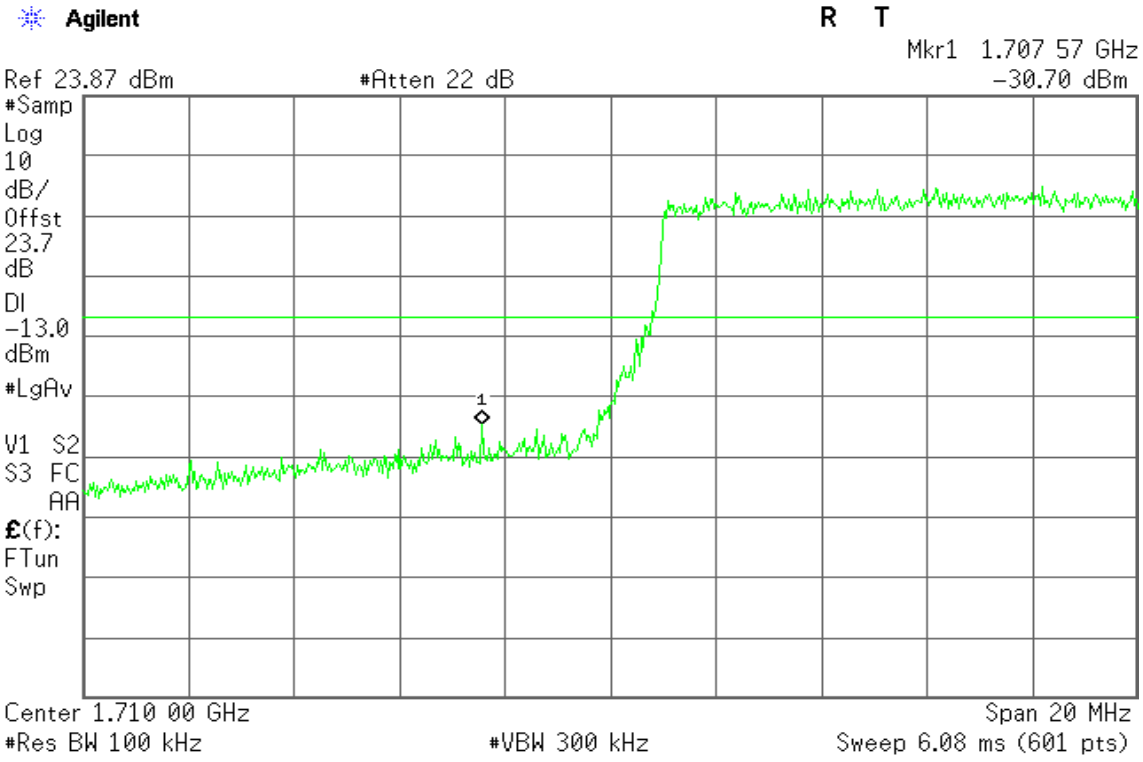


HIGHER BAND EDGE

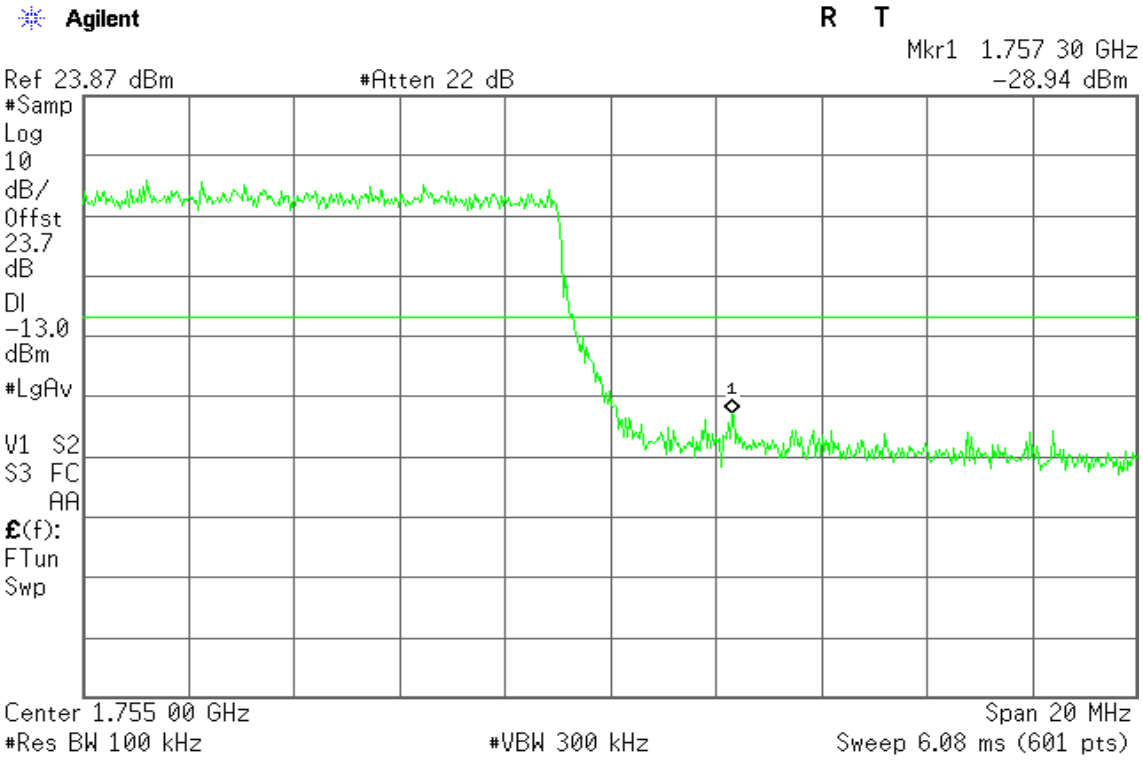


CHANNEL BANDWIDTH: 20MHz / 16QAM / FULL RB ALLOCATION

LOWER BAND EDGE



HIGHER BAND EDGE



7.6 CONDUCTED SPURIOUS EMISSIONS

LIMITS

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

TEST PROCEDURES

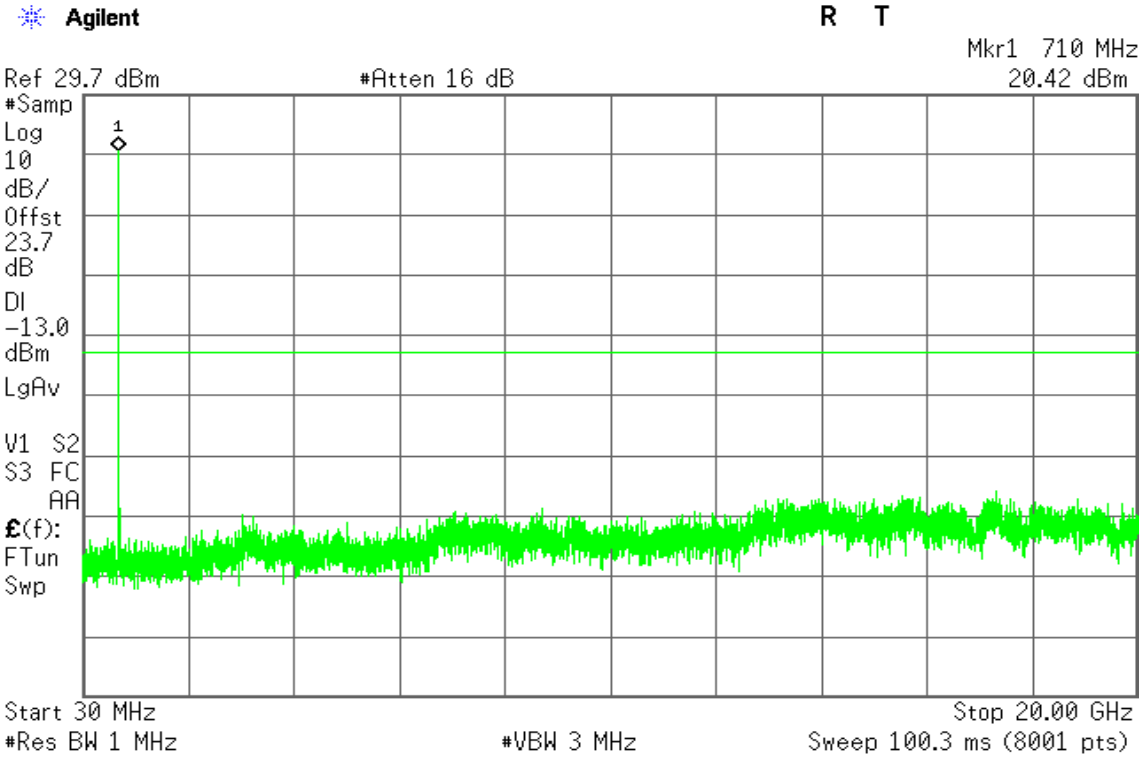
1. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high operational frequency range.).
2. The conducted spurious emission used the power splitter via EUT RF power connector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

TEST RESULTS

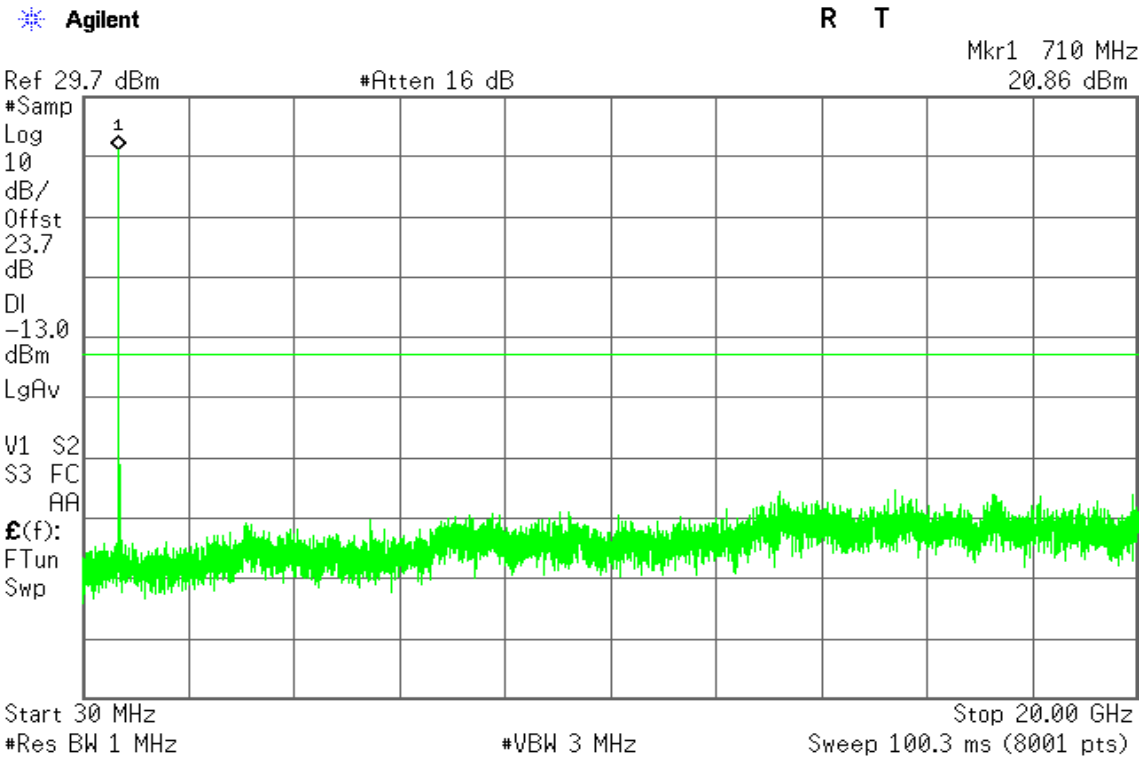
LTE Band 17

CHANNEL BANDWIDTH: 5MHz / QPSK

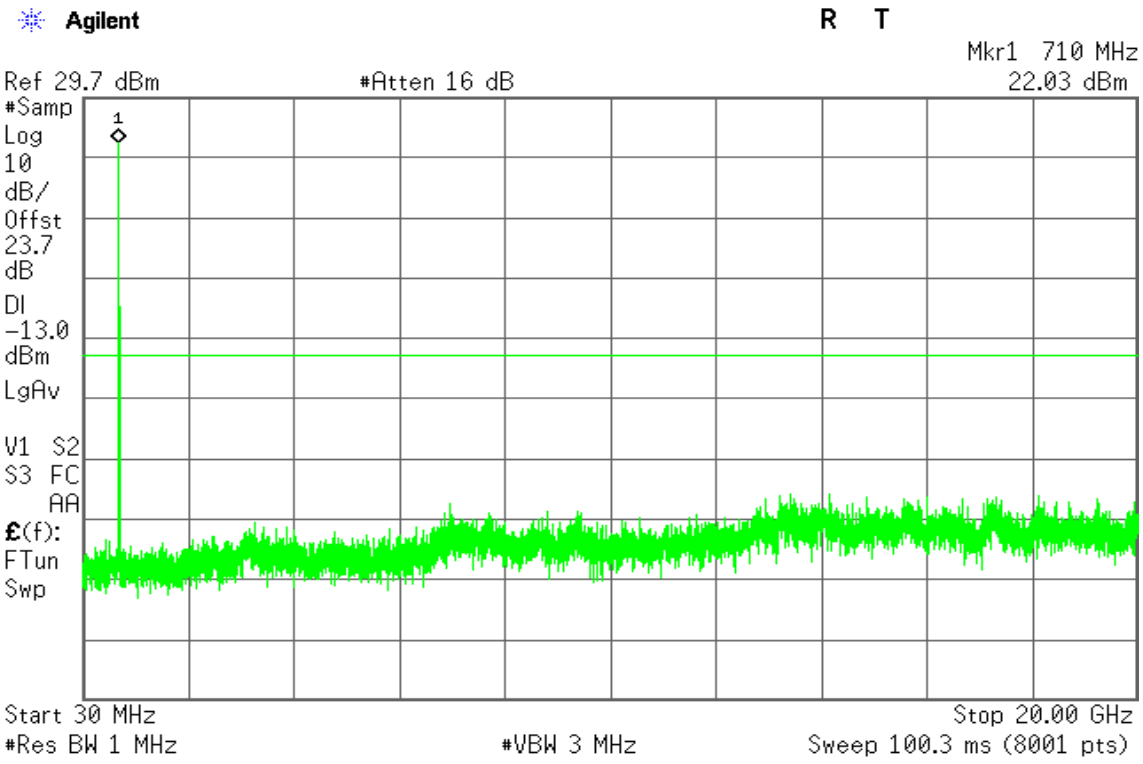
CH Low



CH Mid

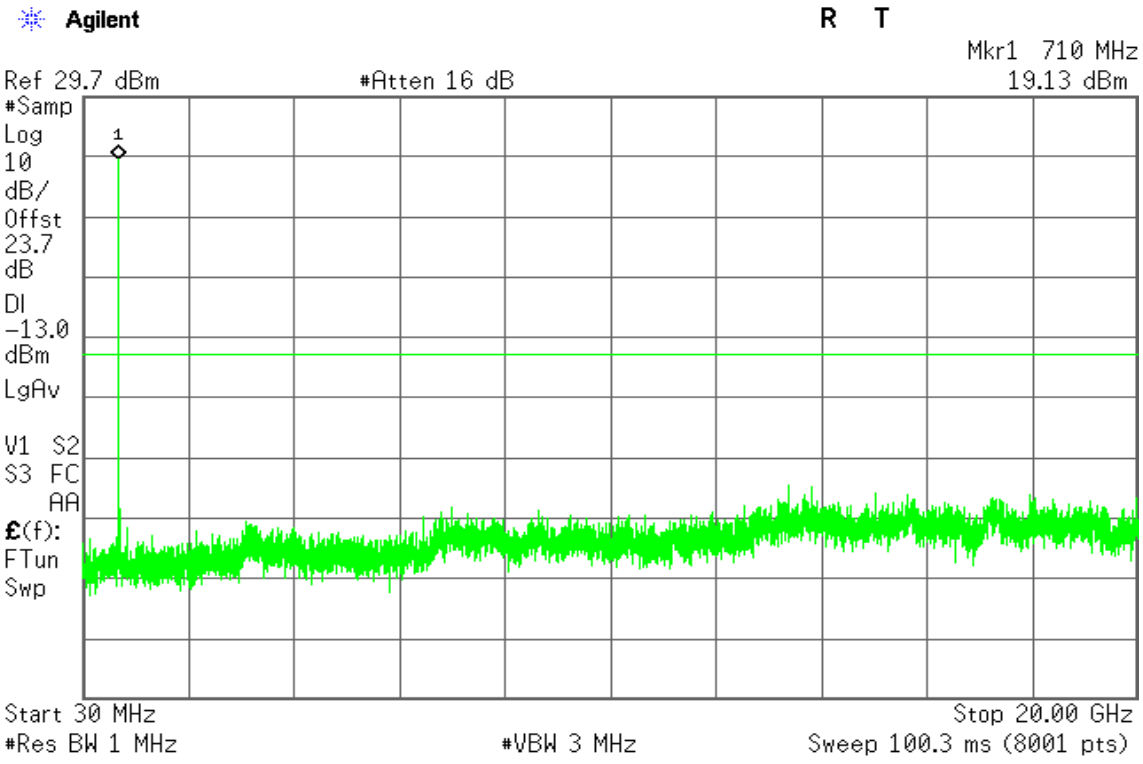


CH High

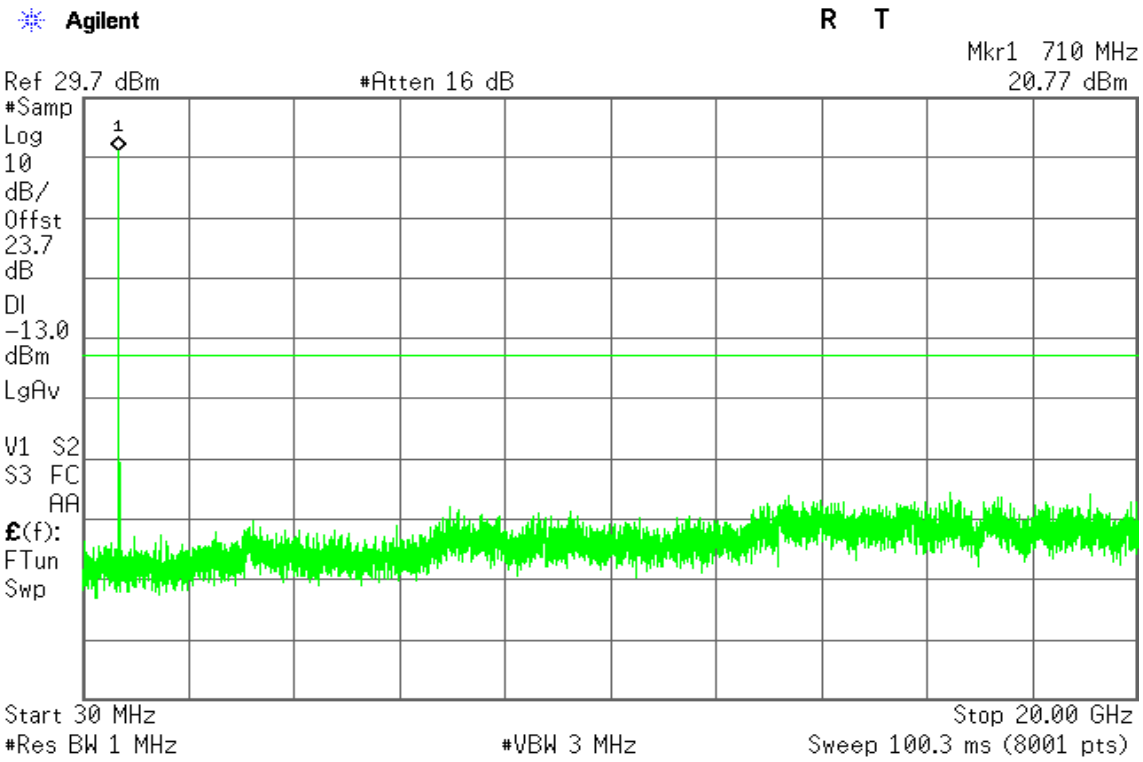


CHANNEL BANDWIDTH: 5MHz / 16QAM

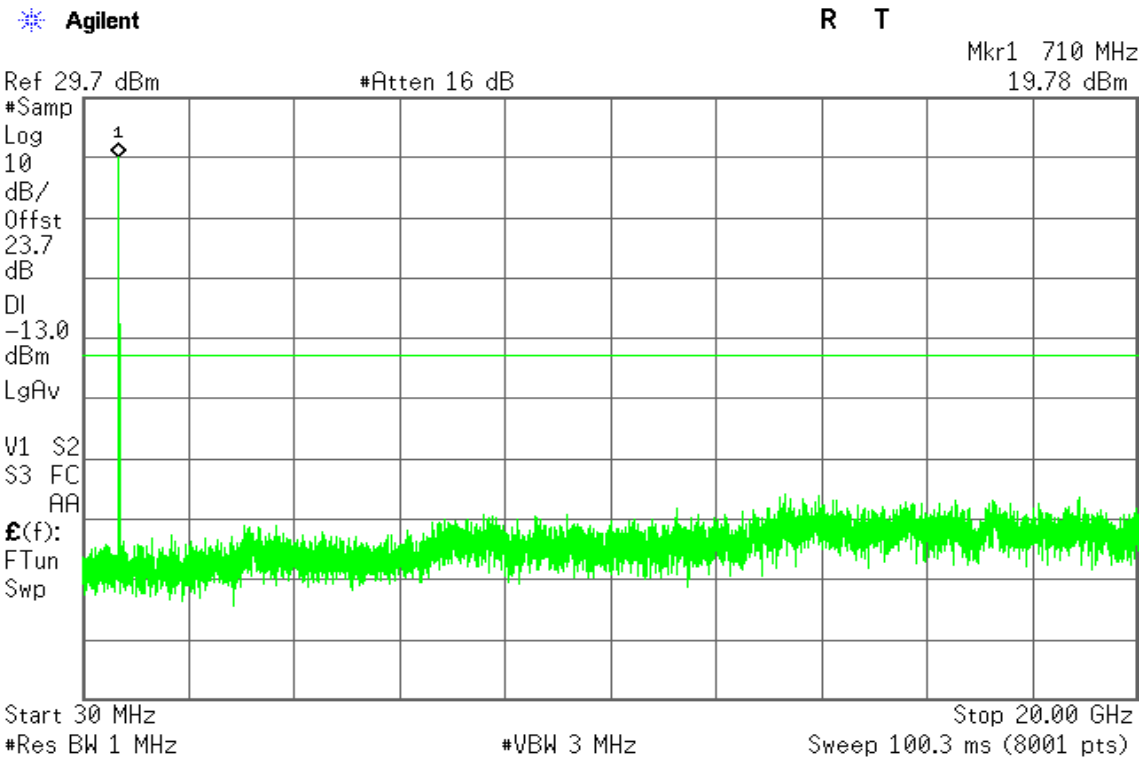
CH Low



CH Mid

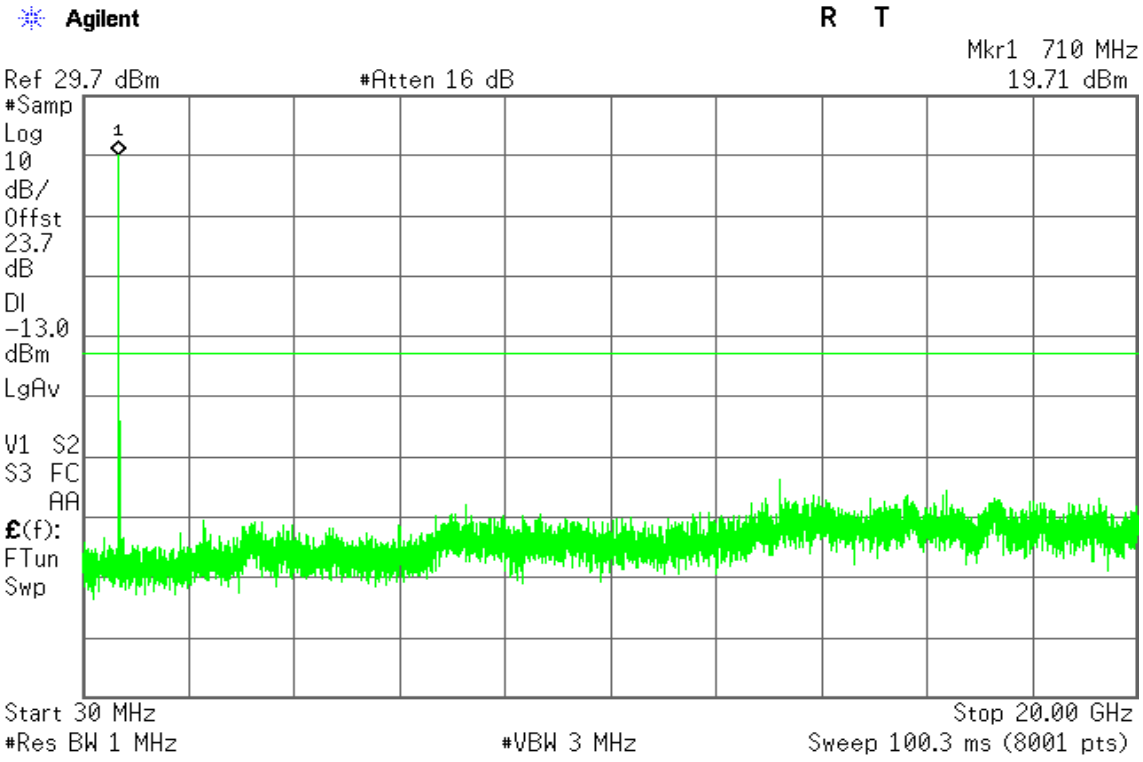


CH High

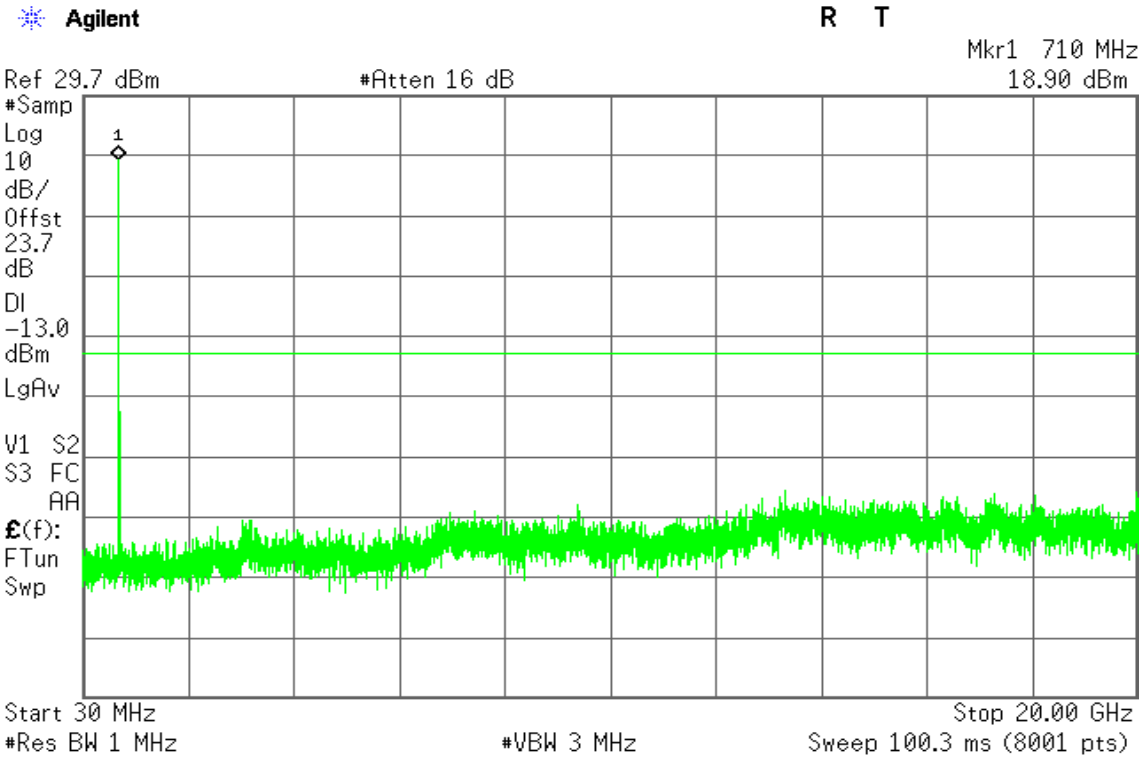


CHANNEL BANDWIDTH: 10MHz / QPSK

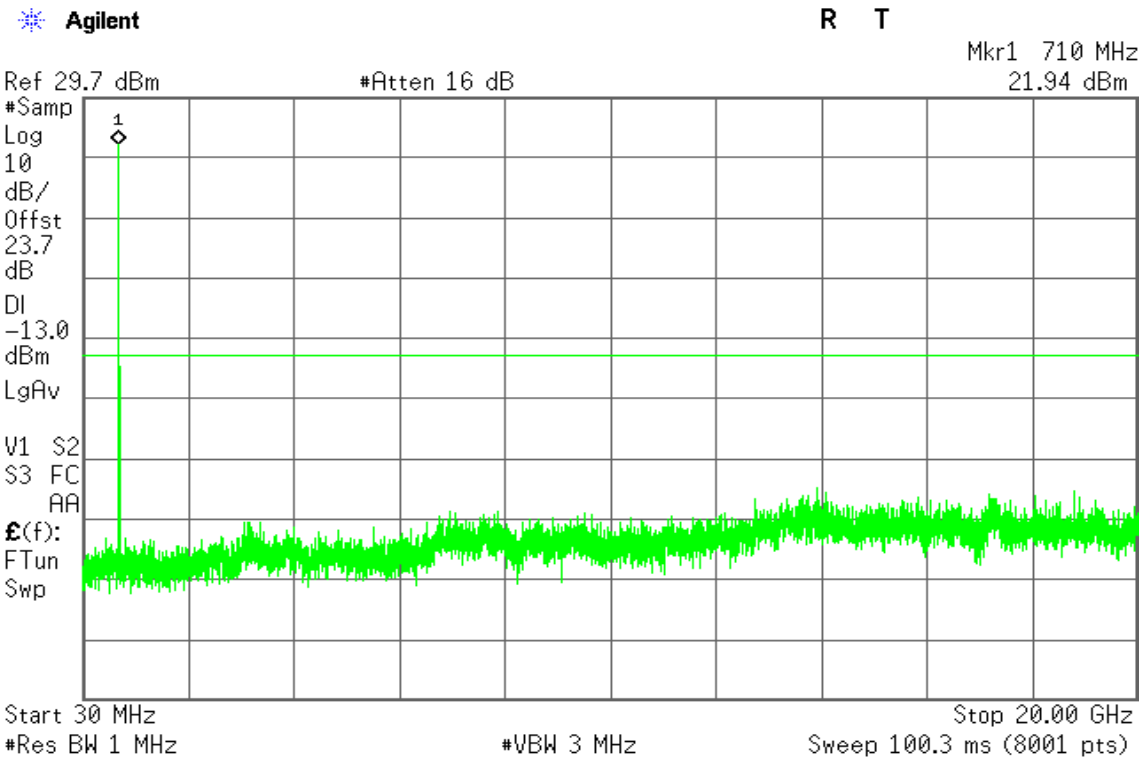
CH Low



CH Mid

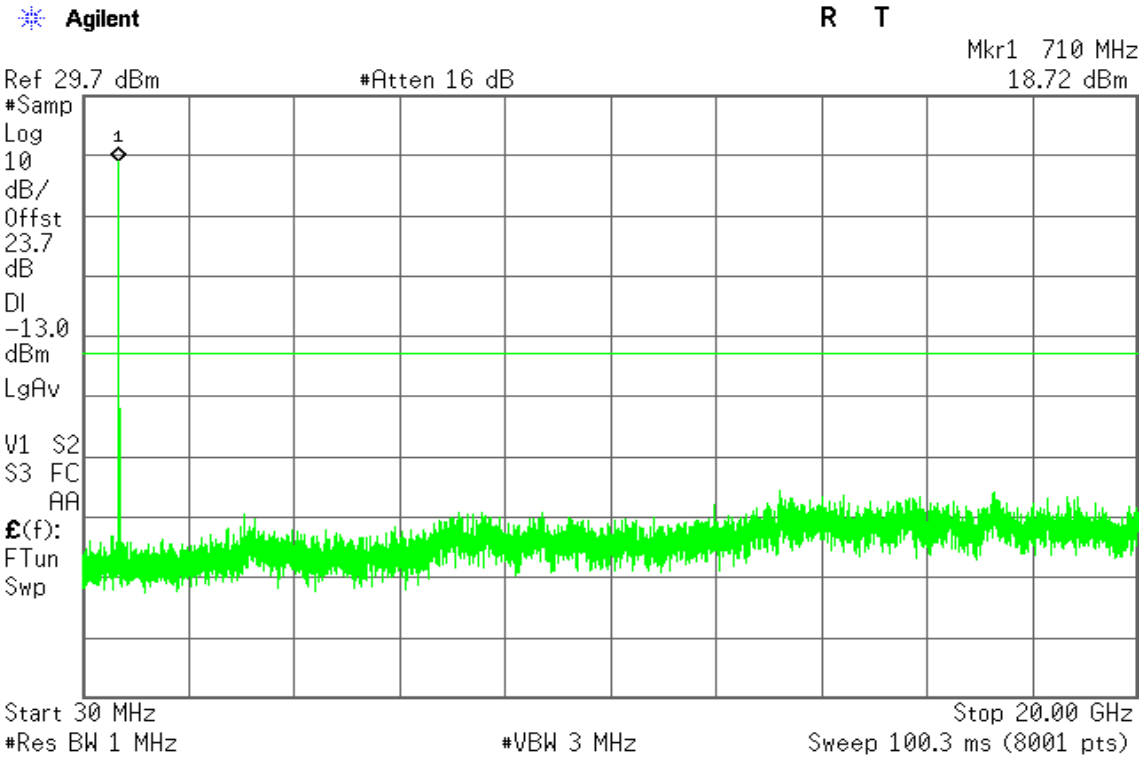


CH High

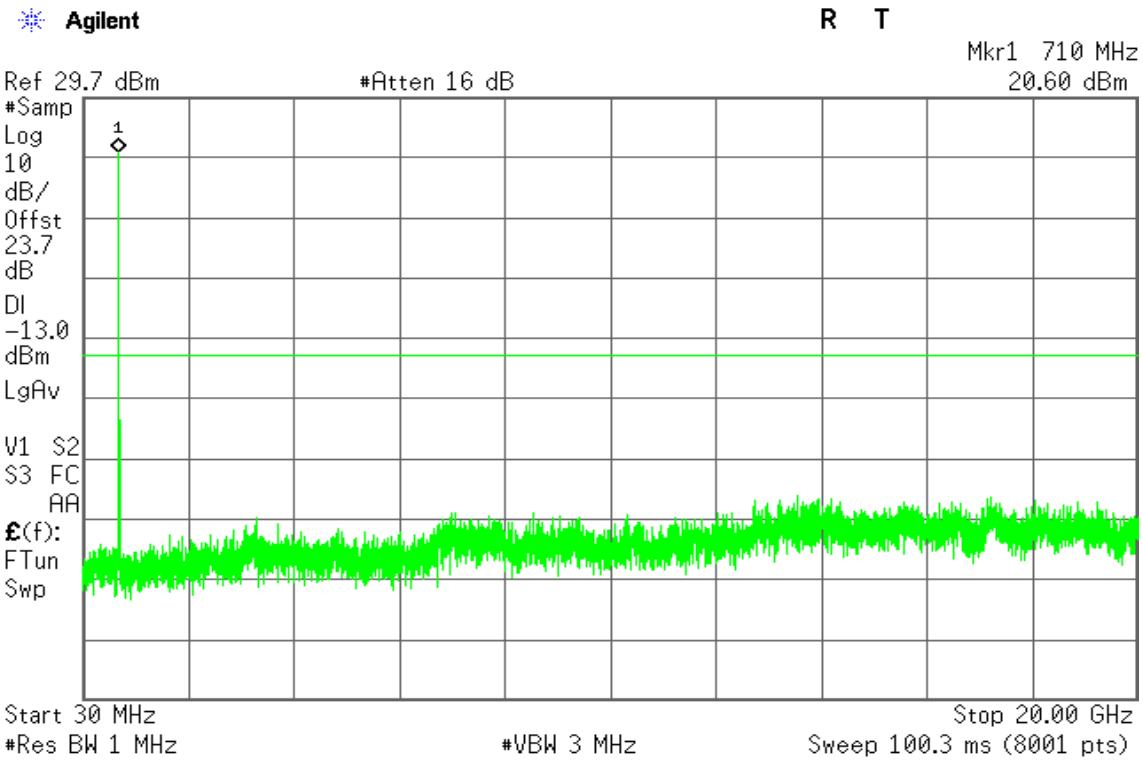


CHANNEL BANDWIDTH: 10MHz / 16QAM

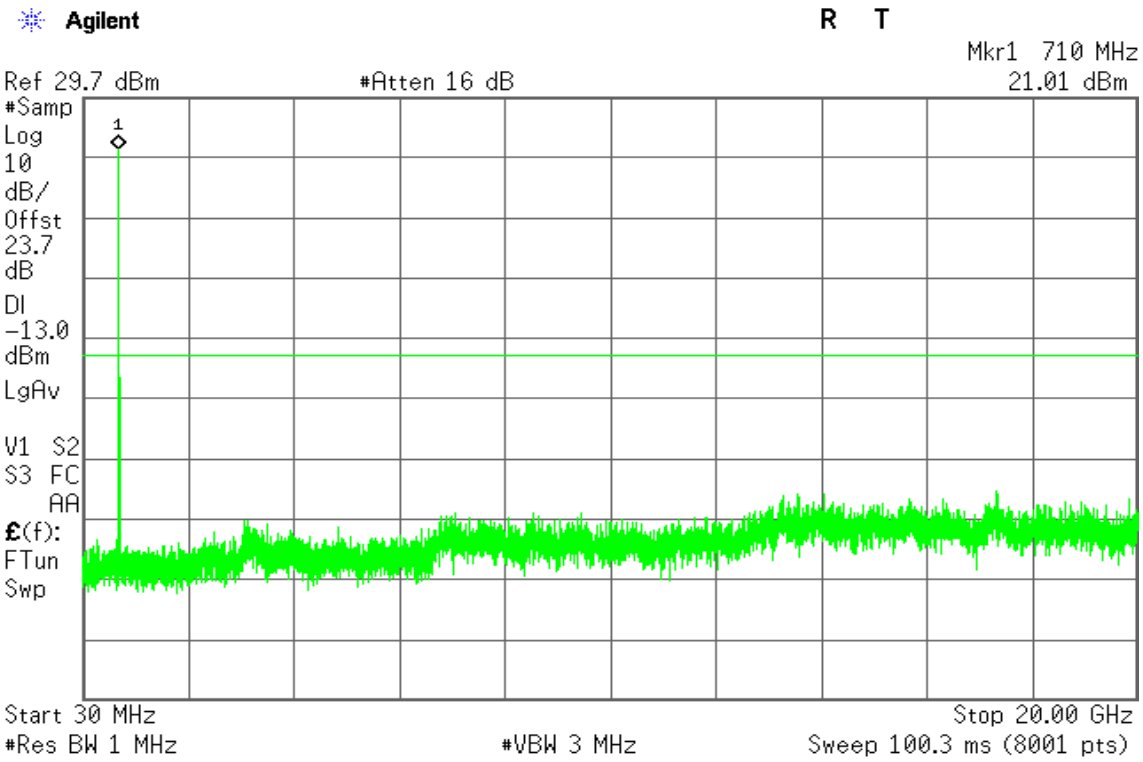
CH Low



CH Mid



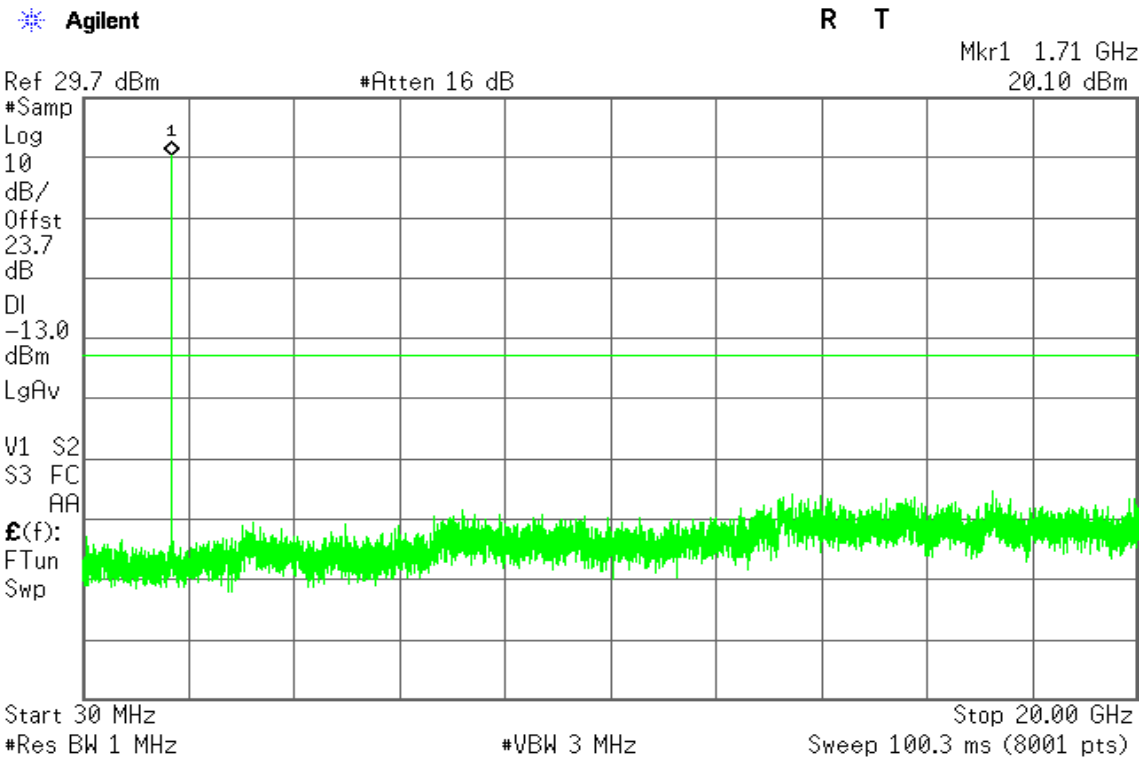
CH High



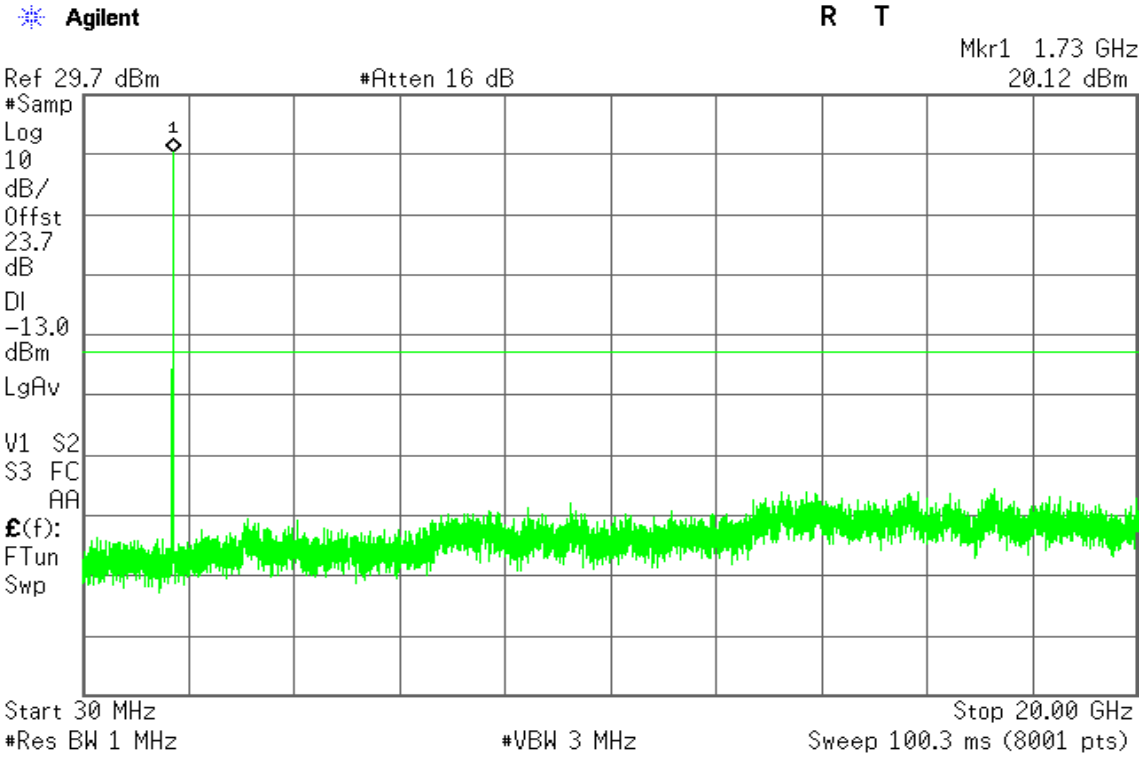
LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK

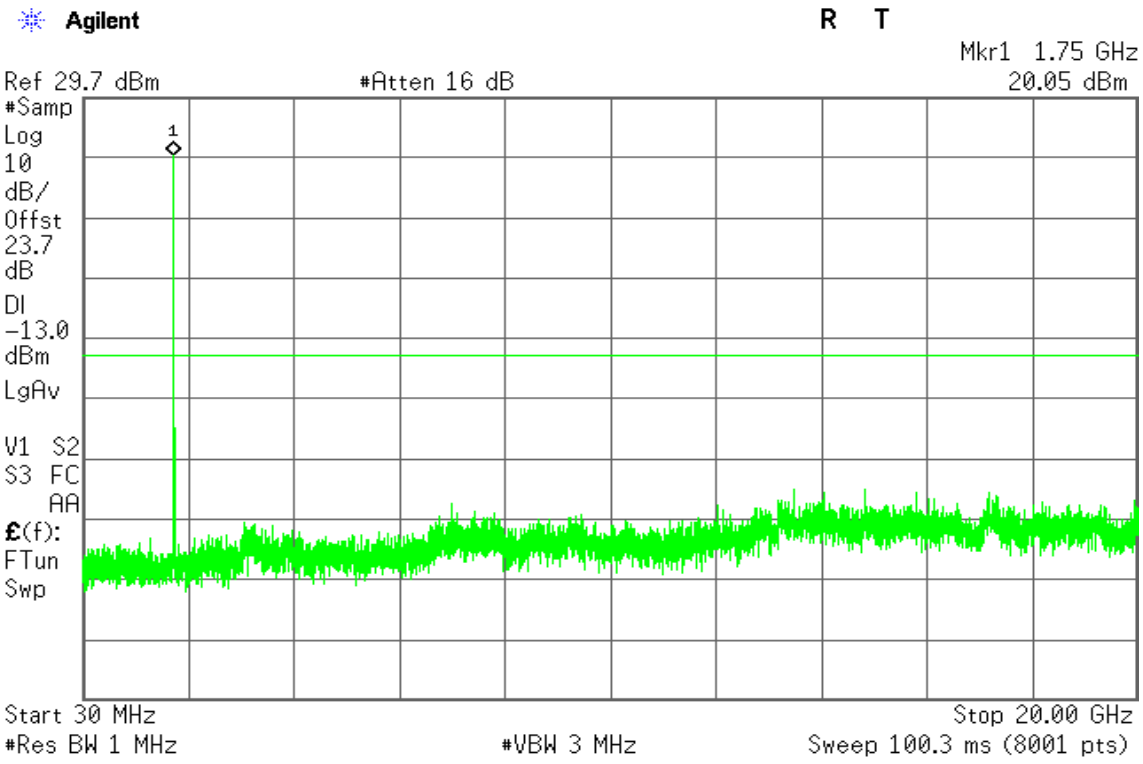
CH Low



CH Mid

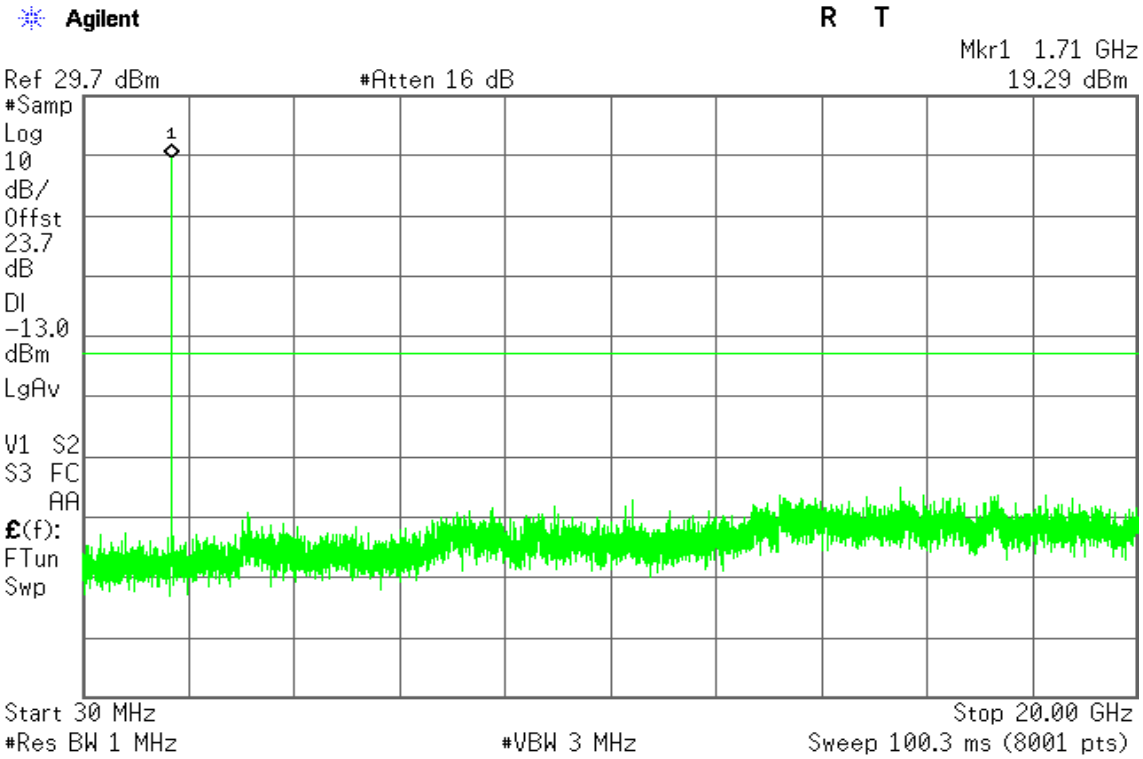


CH High

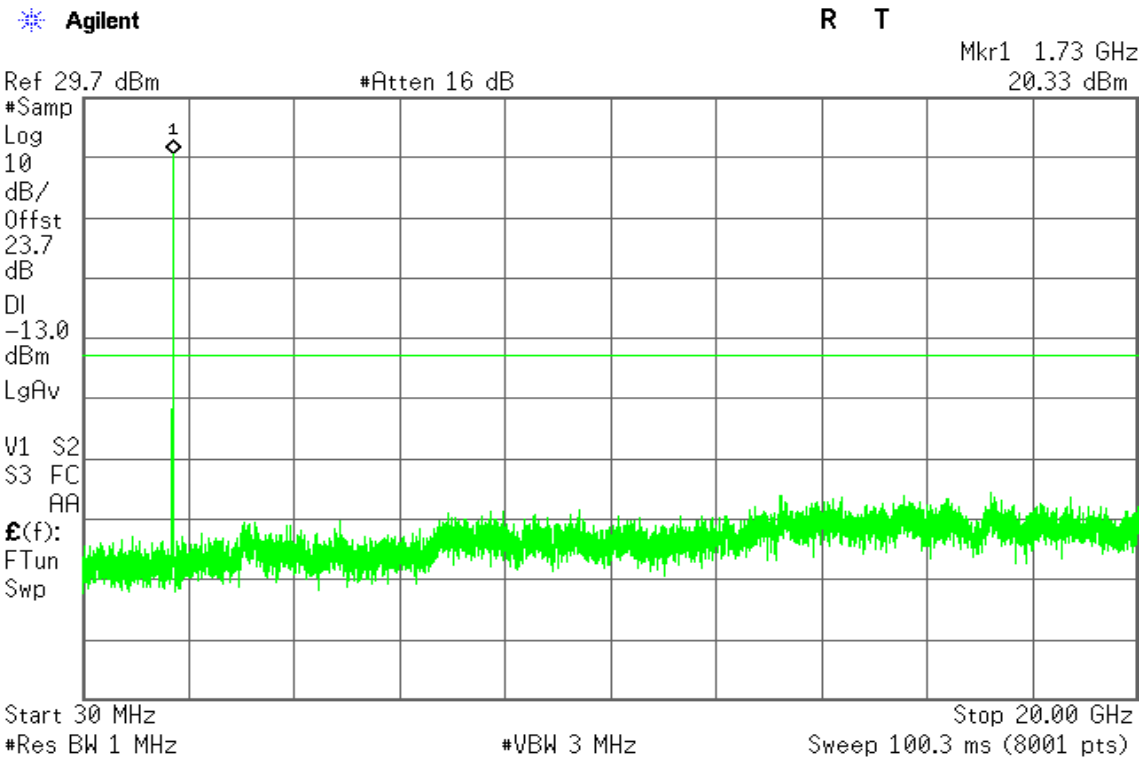


CHANNEL BANDWIDTH: 5MHz / 16QAM

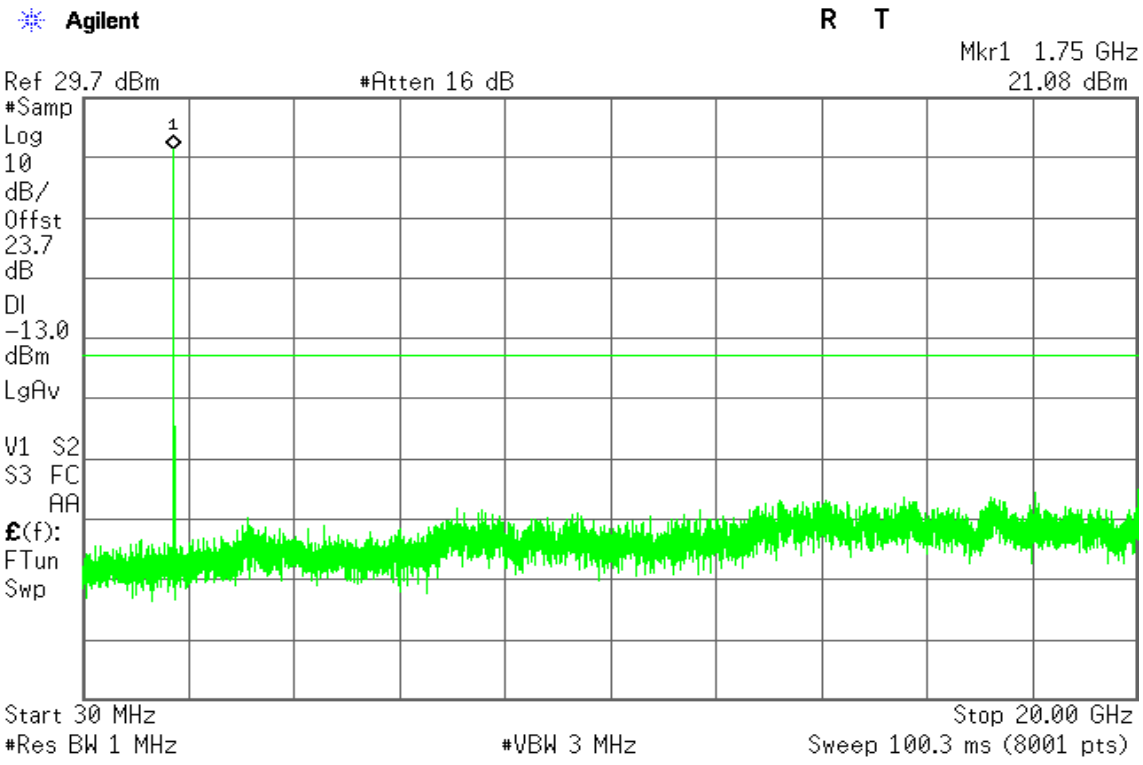
CH Low



CH Mid

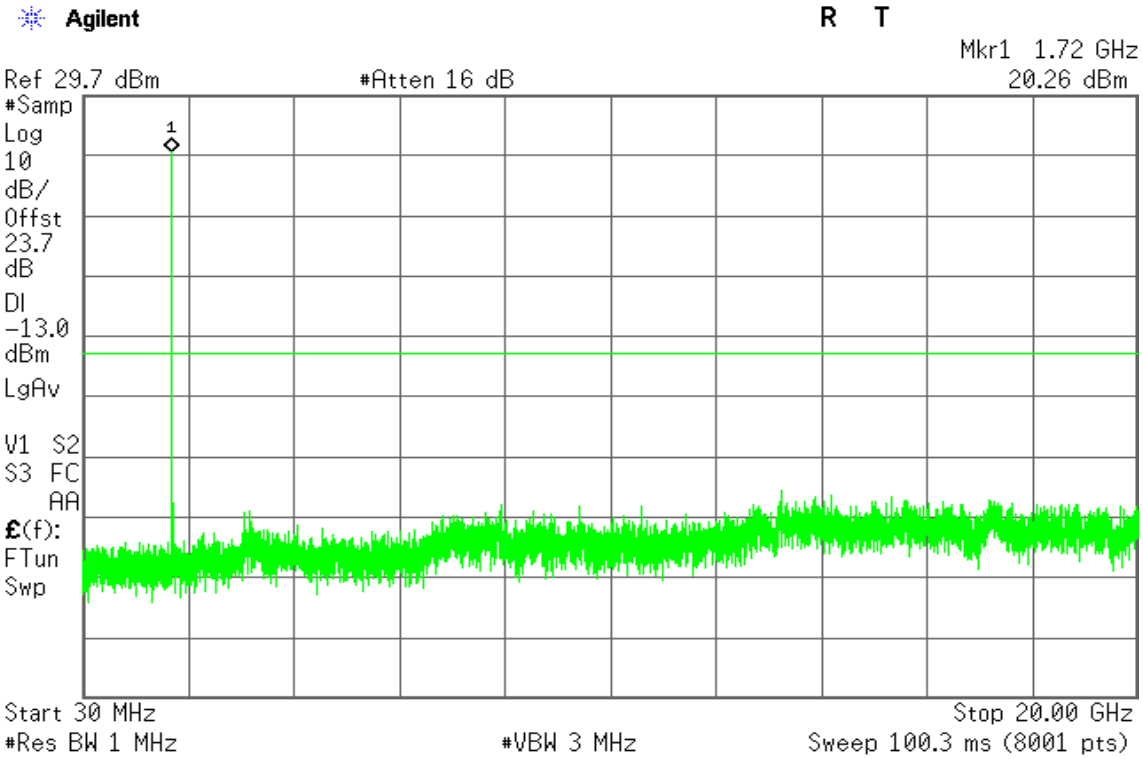


CH High

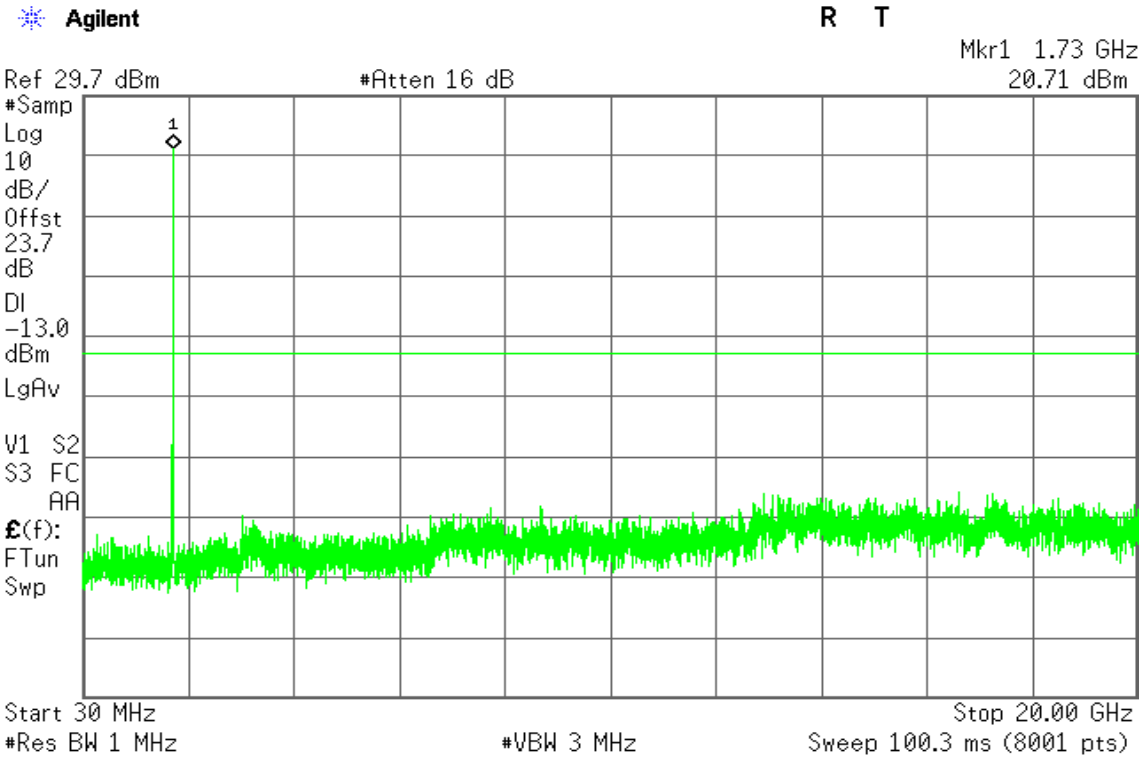


CHANNEL BANDWIDTH: 10MHz / QPSK

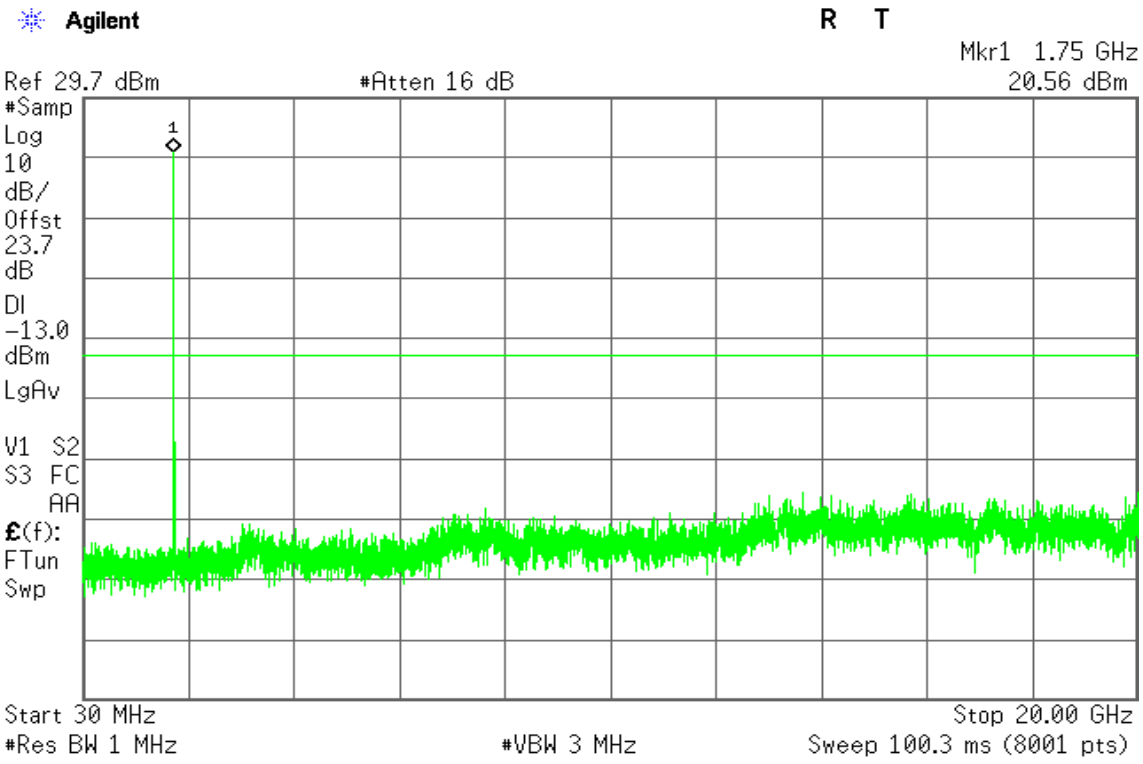
CH Low



CH Mid

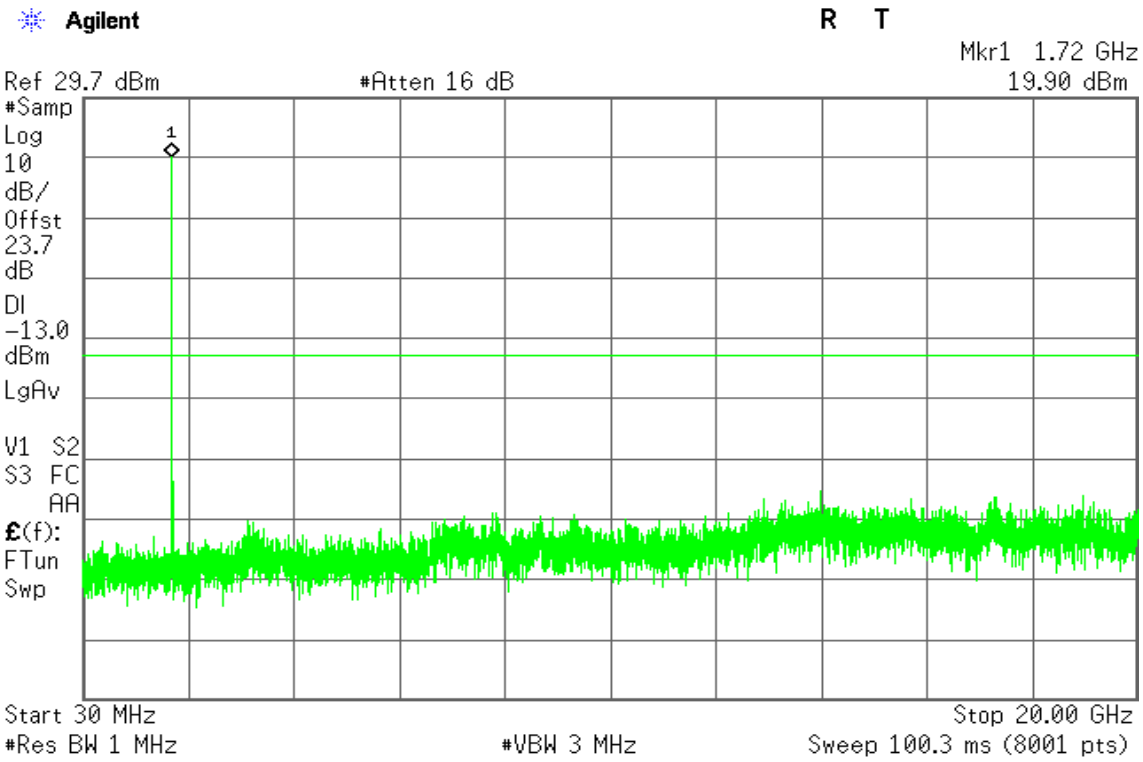


CH High

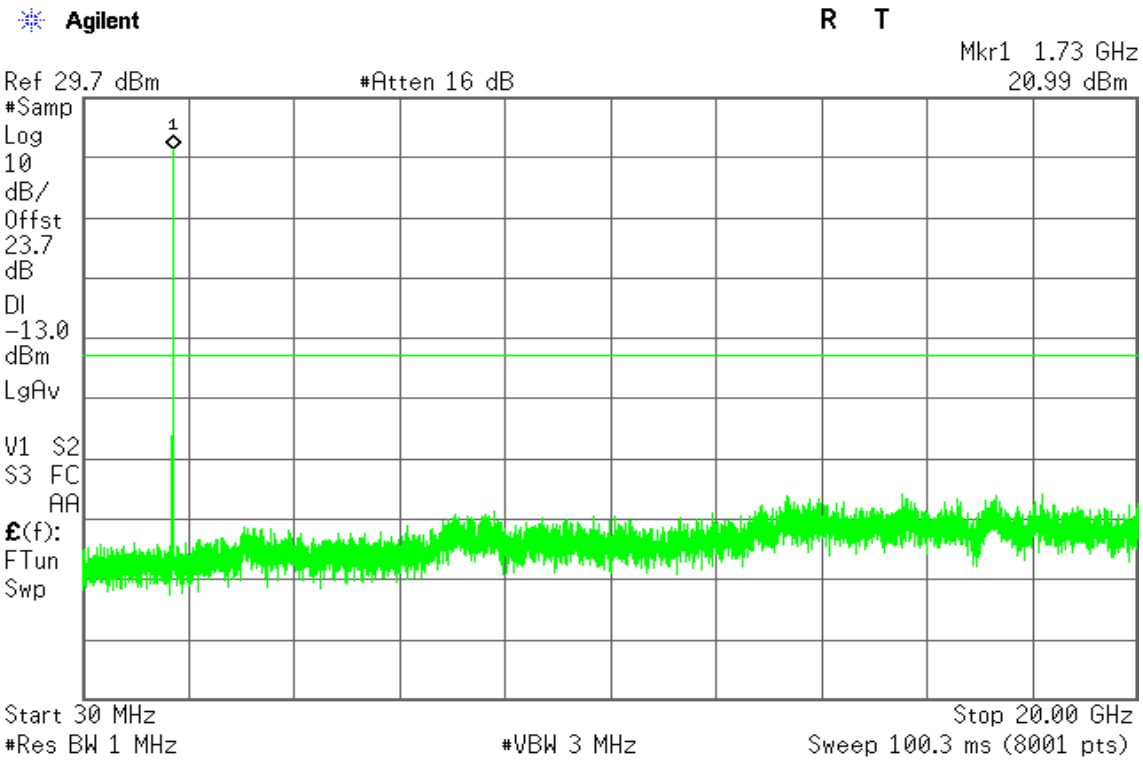


CHANNEL BANDWIDTH: 10MHz / 16QAM

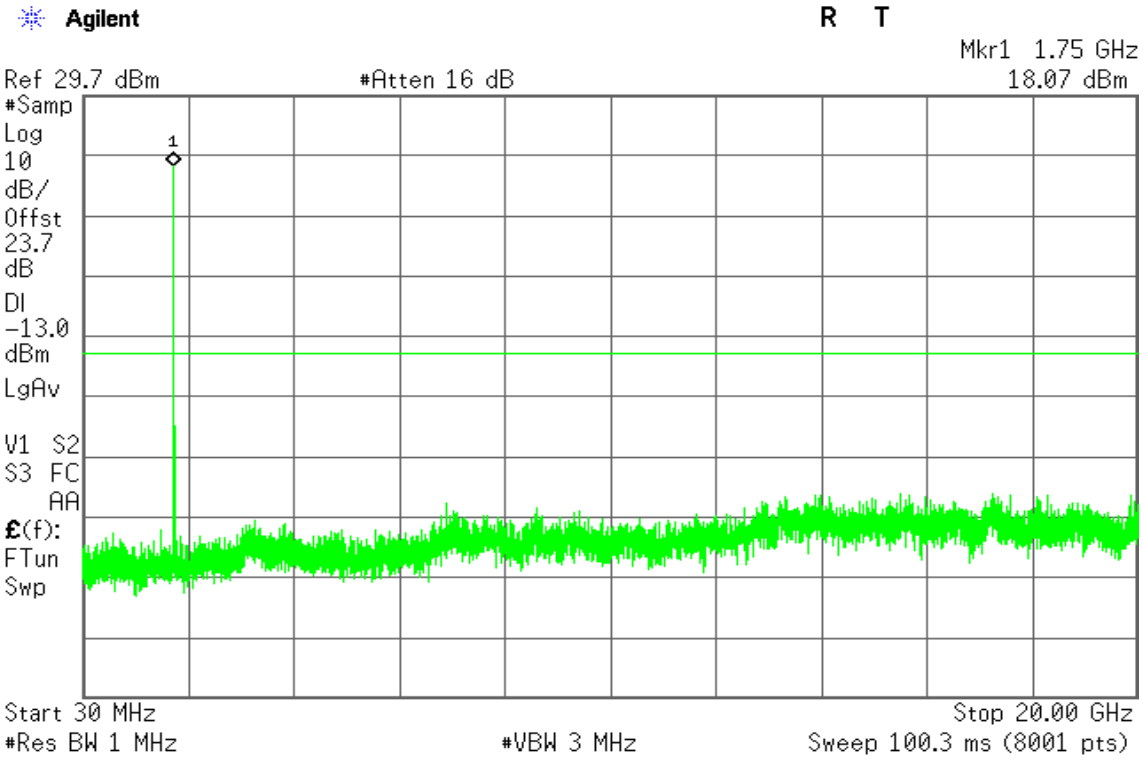
CH Low



CH Mid

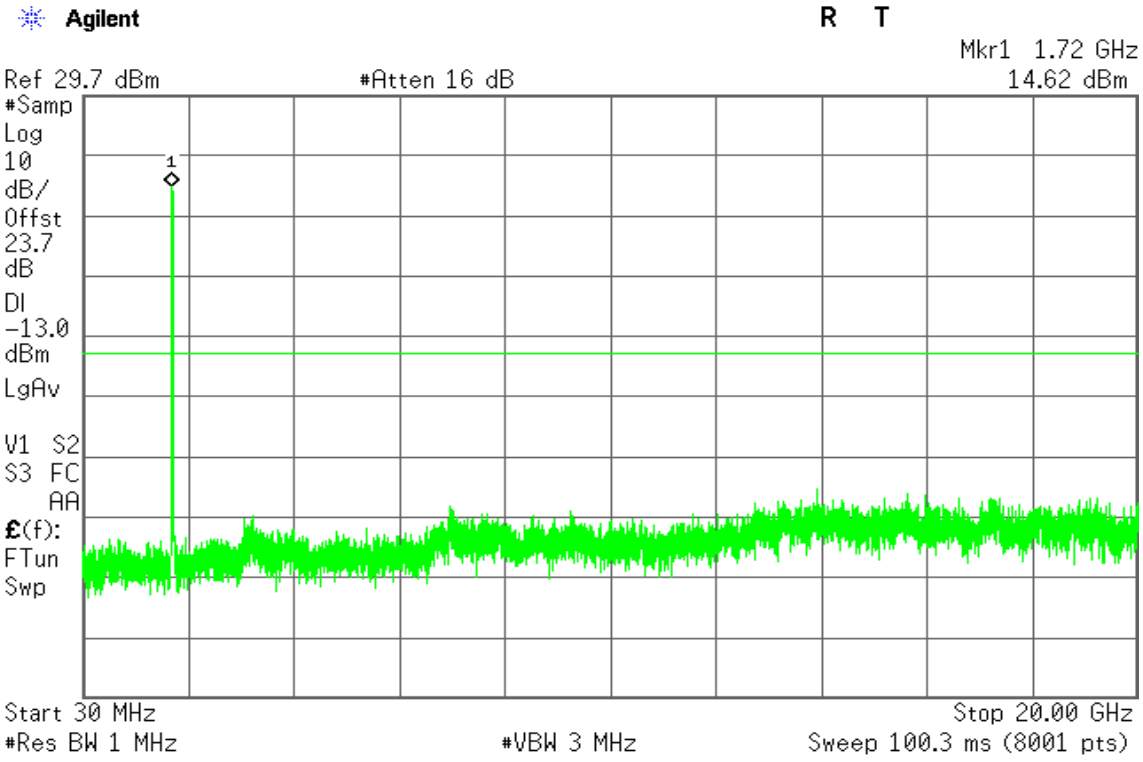


CH High

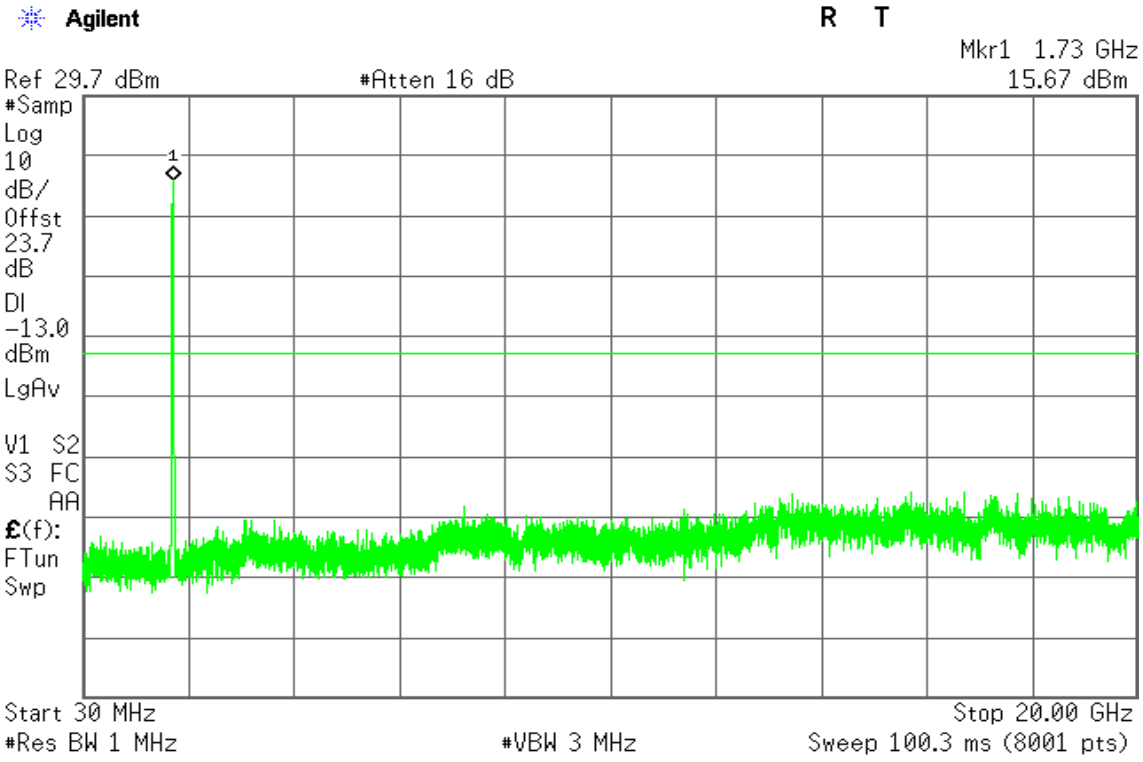


CHANNEL BANDWIDTH: 20MHz / QPSK

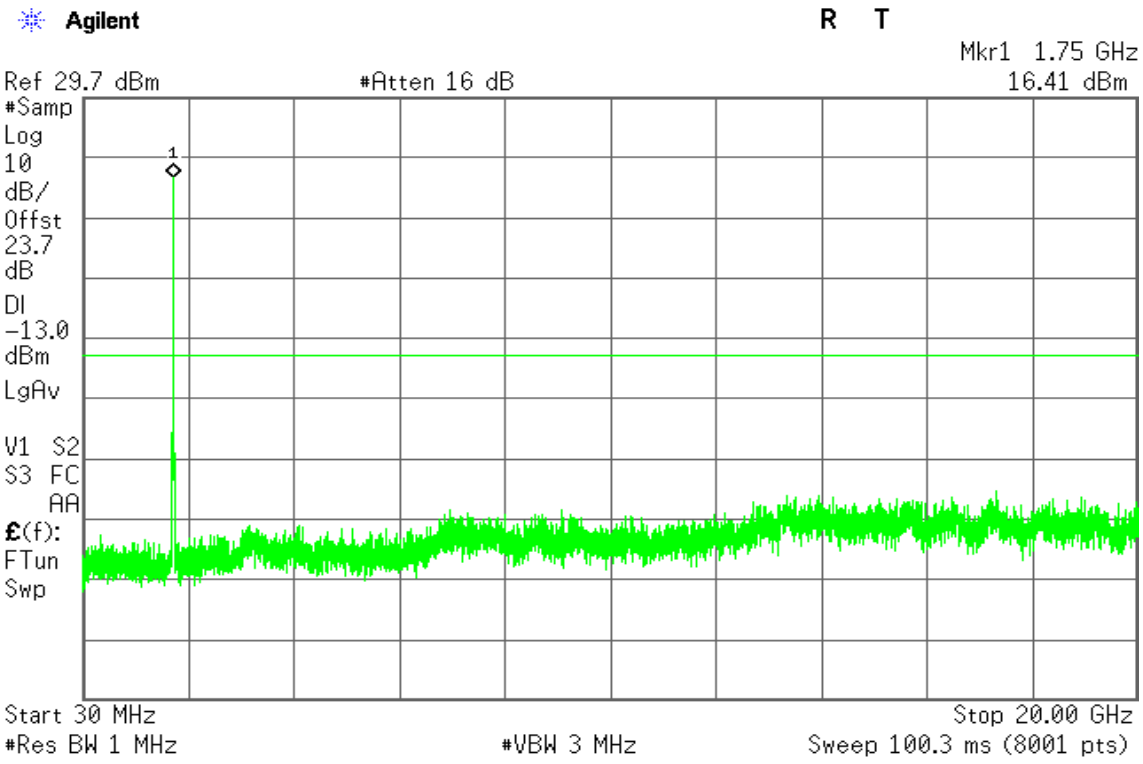
CH Low



CH Mid

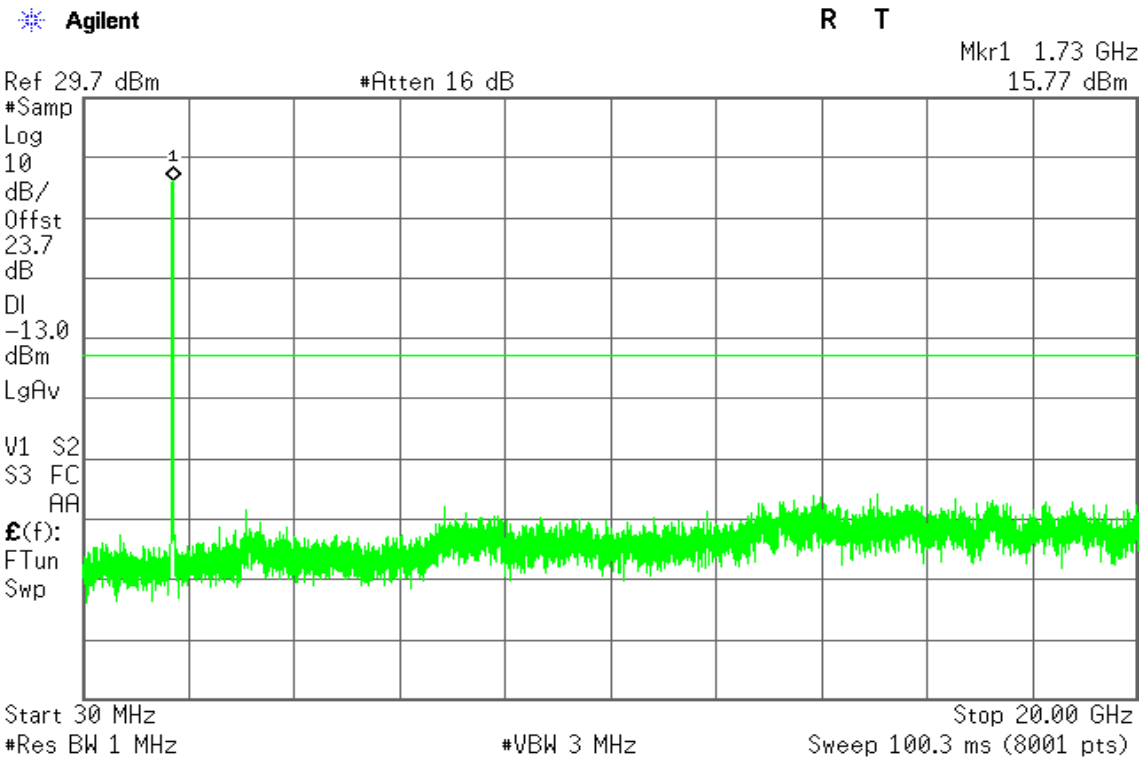


CH High

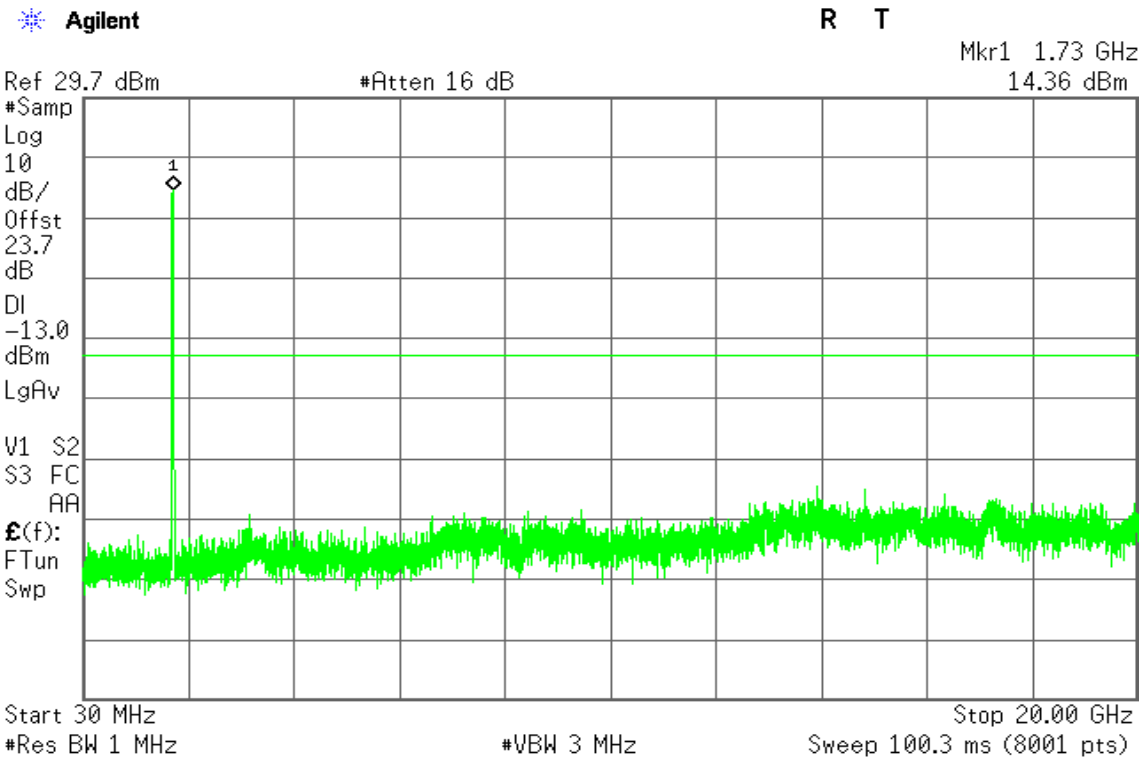


CHANNEL BANDWIDTH: 20MHz / 16QAM

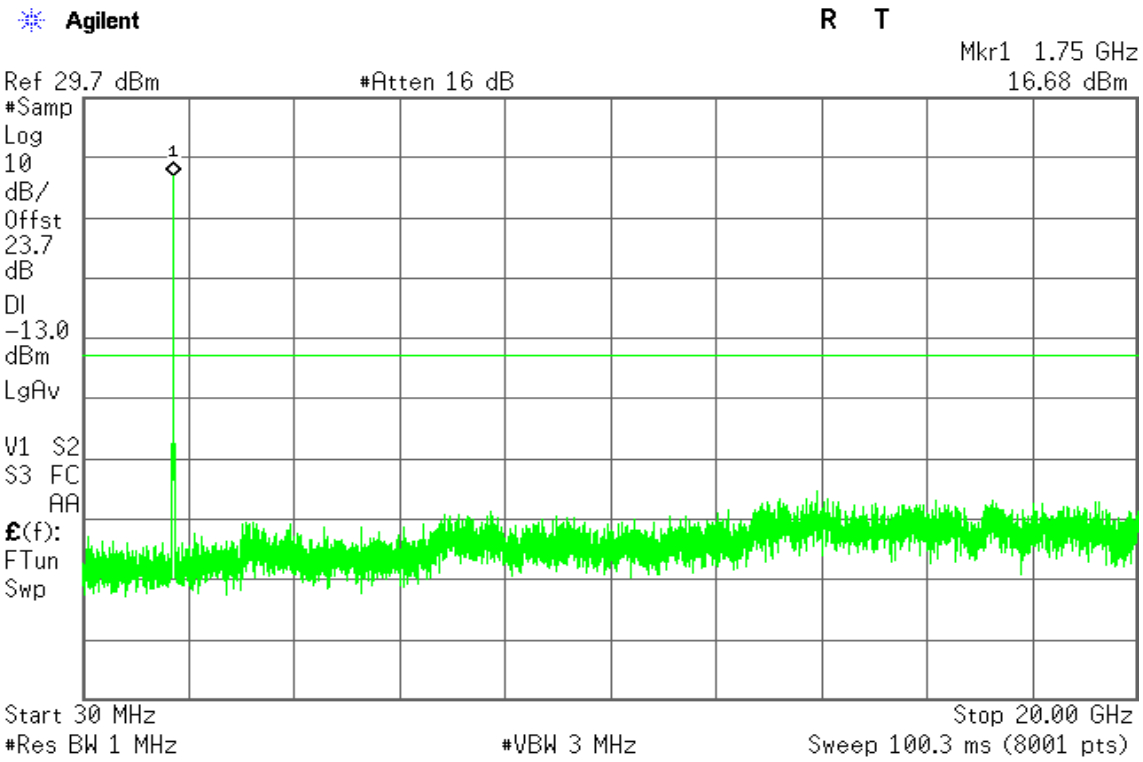
CH Low



CH Mid



CH High



7.7 RADIATED EMISSION MEASUREMENT

LIMITS

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

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

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

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

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

TEST PROCEDURES

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

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

TEST RESULTS

Below 1GHz

LTE Band 17 / CHANNEL BANDWIDTH: 5MHz / QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
94.0200	-52.6	1.12	0.58	-53.14	-13.00	-40.14	V
159.9800	-61.77	1.48	1.43	-61.82	-13.00	-48.82	V
265.7100	-64.81	1.95	5.32	-61.44	-13.00	-48.44	V
299.6600	-63.7	2.09	5.59	-60.20	-13.00	-47.20	V
416.0600	-68.2	2.46	5.85	-64.81	-13.00	-51.81	V
624.6100	-71.41	2.96	6.15	-68.22	-13.00	-55.22	V
99.8400	-51.61	1.15	-0.37	-53.13	-13.00	-40.13	H
200.7200	-61.55	1.63	3.19	-59.99	-13.00	-46.99	H
299.6600	-60.88	2.09	5.59	-57.38	-13.00	-44.38	H
398.6000	-69.05	2.38	5.98	-65.45	-13.00	-52.45	H
512.0900	-71.24	2.69	6.02	-67.91	-13.00	-54.91	H
640.1300	-63.13	3.01	6.13	-60.01	-13.00	-47.01	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
98.8700	-53.12	1.14	-0.21	-54.47	-13.00	-41.47	V
265.7100	-65.02	1.95	5.32	-61.65	-13.00	-48.65	V
299.6600	-63.65	2.09	5.59	-60.15	-13.00	-47.15	V
415.0900	-68.08	2.45	5.86	-64.67	-13.00	-51.67	V
459.7100	-76	2.6	5.88	-72.72	-13.00	-59.72	V
624.6100	-71.21	2.96	6.15	-68.02	-13.00	-55.02	V
94.0200	-50.69	1.12	0.58	-51.23	-13.00	-38.23	H
199.7500	-58.44	1.63	2.94	-57.13	-13.00	-44.13	H
299.6600	-59.33	2.09	5.59	-55.83	-13.00	-42.83	H
332.6400	-58.88	2.16	5.73	-55.31	-13.00	-42.31	H
416.0600	-70.77	2.46	5.85	-67.38	-13.00	-54.38	H
640.1300	-62.51	3.01	6.13	-59.39	-13.00	-46.39	H

Remark:

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

Operation Mode:	Tx / High channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
98.8700	-49.67	1.14	-0.21	-51.02	-13.00	-38.02	V
160.9500	-59.84	1.49	1.5	-59.83	-13.00	-46.83	V
299.6600	-61.14	2.09	5.59	-57.64	-13.00	-44.64	V
416.0600	-65.53	2.46	5.85	-62.14	-13.00	-49.14	V
500.4500	-73.42	2.7	5.9	-70.22	-13.00	-57.22	V
624.6100	-69.15	2.96	6.15	-65.96	-13.00	-52.96	V
94.0200	-50.59	1.12	0.58	-51.13	-13.00	-38.13	H
159.9800	-57.68	1.48	1.43	-57.73	-13.00	-44.73	H
266.6800	-59.8	1.96	5.27	-56.49	-13.00	-43.49	H
332.6400	-58.3	2.16	5.73	-54.73	-13.00	-41.73	H
512.0900	-69.43	2.69	6.02	-66.10	-13.00	-53.10	H
640.1300	-61.56	3.01	6.13	-58.44	-13.00	-45.44	H

Remark:

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

LTE Band 17 / CHANNEL BANDWIDTH: 10MHz

Operation Mode:	Tx / Low channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
94.0200	-54.08	1.12	0.58	-54.62	-13.00	-41.62	V
266.6800	-64.35	1.96	5.27	-61.04	-13.00	-48.04	V
299.6600	-64.15	2.09	5.59	-60.65	-13.00	-47.65	V
415.0900	-69.82	2.45	5.86	-66.41	-13.00	-53.41	V
500.4500	-76.35	2.7	5.9	-73.15	-13.00	-60.15	V
624.6100	-72.22	2.96	6.15	-69.03	-13.00	-56.03	V
94.0200	-53.82	1.12	0.58	-54.36	-13.00	-41.36	H
158.0400	-57.92	1.47	1.29	-58.10	-13.00	-45.10	H
298.6900	-61.33	2.09	5.57	-57.85	-13.00	-44.85	H
331.6700	-61.52	2.16	5.72	-57.96	-13.00	-44.96	H
500.4500	-74.9	2.7	5.9	-71.70	-13.00	-58.70	H
640.1300	-65.02	3.01	6.13	-61.90	-13.00	-48.90	H

Remark:

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

Operation Mode:	Tx / Middle channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
94.9900	-53.83	1.13	0.42	-54.54	-13.00	-41.54	V
266.6800	-65.32	1.96	5.27	-62.01	-13.00	-49.01	V
299.6600	-63.2	2.09	5.59	-59.70	-13.00	-46.70	V
416.0600	-70.31	2.46	5.85	-66.92	-13.00	-53.92	V
500.4500	-76.75	2.7	5.9	-73.55	-13.00	-60.55	V
624.6100	-72.09	2.96	6.15	-68.90	-13.00	-55.90	V
94.0200	-52.95	1.12	0.58	-53.49	-13.00	-40.49	H
185.2000	-63.95	1.61	3.81	-61.75	-13.00	-48.75	H
299.6600	-60.98	2.09	5.59	-57.48	-13.00	-44.48	H
366.5900	-64.6	2.29	5.77	-61.12	-13.00	-48.12	H
500.4500	-73.47	2.7	5.9	-70.27	-13.00	-57.27	H
640.1300	-65.05	3.01	6.13	-61.93	-13.00	-48.93	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
94.0200	-52.98	1.12	0.58	-53.52	-13.00	-40.52	V
265.7100	-64.56	1.95	5.32	-61.19	-13.00	-48.19	V
299.6600	-63.05	2.09	5.59	-59.55	-13.00	-46.55	V
416.0600	-69.12	2.46	5.85	-65.73	-13.00	-52.73	V
500.4500	-75.03	2.7	5.9	-71.83	-13.00	-58.83	V
624.6100	-71.07	2.96	6.15	-67.88	-13.00	-54.88	V
99.8400	-52.02	1.15	-0.37	-53.54	-13.00	-40.54	H
185.2000	-63.01	1.61	3.81	-60.81	-13.00	-47.81	H
265.7100	-62.28	1.95	5.32	-58.91	-13.00	-45.91	H
332.6400	-61.62	2.16	5.73	-58.05	-13.00	-45.05	H
512.0900	-71.57	2.69	6.02	-68.24	-13.00	-55.24	H
640.1300	-64.73	3.01	6.13	-61.61	-13.00	-48.61	H

Remark:

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

LTE Band 17 / CHANNEL BANDWIDTH: 5MHz / 16QAM

Operation Mode:	Tx / Low channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
98.8700	-51.81	1.14	-0.21	-53.16	-13.00	-40.16	V
265.7100	-64.4	1.95	5.32	-61.03	-13.00	-48.03	V
332.6400	-66.98	2.16	5.73	-63.41	-13.00	-50.41	V
459.7100	-78.05	2.6	5.88	-74.77	-13.00	-61.77	V
535.3700	-80.76	2.77	6.16	-77.37	-13.00	-64.37	V
640.1300	-70.28	3.01	6.13	-67.16	-13.00	-54.16	V
99.8400	-51.51	1.15	-0.37	-53.03	-13.00	-40.03	H
199.7500	-60.82	1.63	2.94	-59.51	-13.00	-46.51	H
299.6600	-60.43	2.09	5.59	-56.93	-13.00	-43.93	H
415.0900	-65.3	2.45	5.86	-61.89	-13.00	-48.89	H
512.0900	-72.79	2.69	6.02	-69.46	-13.00	-56.46	H
640.1300	-63.05	3.01	6.13	-59.93	-13.00	-46.93	H

Remark:

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

Operation Mode:	Tx / Middle channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
98.8700	-52.95	1.14	-0.21	-54.30	-13.00	-41.30	V
266.6800	-64.95	1.96	5.27	-61.64	-13.00	-48.64	V
331.6700	-67.2	2.16	5.72	-63.64	-13.00	-50.64	V
415.0900	-72.11	2.45	5.86	-68.70	-13.00	-55.70	V
497.5400	-73.16	2.69	5.87	-69.98	-13.00	-56.98	V
640.1300	-71.29	3.01	6.13	-68.17	-13.00	-55.17	V
99.8400	-51.99	1.15	-0.37	-53.51	-13.00	-40.51	H
160.9500	-60.38	1.49	1.5	-60.37	-13.00	-47.37	H
266.6800	-63.17	1.96	5.27	-59.86	-13.00	-46.86	H
332.6400	-61.3	2.16	5.73	-57.73	-13.00	-44.73	H
416.0600	-67.55	2.46	5.85	-64.16	-13.00	-51.16	H
640.1300	-61.81	3.01	6.13	-58.69	-13.00	-45.69	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
97.9000	-53.89	1.14	-0.05	-55.08	-13.00	-42.08	V
266.6800	-65.17	1.96	5.27	-61.86	-13.00	-48.86	V
299.6600	-64.24	2.09	5.59	-60.74	-13.00	-47.74	V
416.0600	-73.93	2.46	5.85	-70.54	-13.00	-57.54	V
512.0900	-80.56	2.69	6.02	-77.23	-13.00	-64.23	V
640.1300	-71.45	3.01	6.13	-68.33	-13.00	-55.33	V
94.0200	-52.94	1.12	0.58	-53.48	-13.00	-40.48	H
266.6800	-62.83	1.96	5.27	-59.52	-13.00	-46.52	H
331.6700	-61.64	2.16	5.72	-58.08	-13.00	-45.08	H
416.0600	-67.25	2.46	5.85	-63.86	-13.00	-50.86	H
512.0900	-73.55	2.69	6.02	-70.22	-13.00	-57.22	H
640.1300	-63.42	3.01	6.13	-60.30	-13.00	-47.30	H

Remark:

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

LTE Band 17 / CHANNEL BANDWIDTH: 10MHz / 16QAM

Operation Mode:	Tx / Low channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
94.0200	-52.46	1.12	0.58	-53.00	-13.00	-40.00	V
266.6800	-65.23	1.96	5.27	-61.92	-13.00	-48.92	V
299.6600	-63.98	2.09	5.59	-60.48	-13.00	-47.48	V
415.0900	-70.19	2.45	5.86	-66.78	-13.00	-53.78	V
512.0900	-76.97	2.69	6.02	-73.64	-13.00	-60.64	V
624.6100	-71.35	2.96	6.15	-68.16	-13.00	-55.16	V
94.0200	-52.59	1.12	0.58	-53.13	-13.00	-40.13	H
266.6800	-63.29	1.96	5.27	-59.98	-13.00	-46.98	H
299.6600	-61.24	2.09	5.59	-57.74	-13.00	-44.74	H
365.6200	-64.84	2.29	5.76	-61.37	-13.00	-48.37	H
512.0900	-69.97	2.69	6.02	-66.64	-13.00	-53.64	H
640.1300	-65.62	3.01	6.13	-62.50	-13.00	-49.50	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
94.0200	-54.54	1.12	0.58	-55.08	-13.00	-42.08	V
265.7100	-64.85	1.95	5.32	-61.48	-13.00	-48.48	V
298.6900	-64.31	2.09	5.57	-60.83	-13.00	-47.83	V
415.0900	-69.93	2.45	5.86	-66.52	-13.00	-53.52	V
536.3400	-79.03	2.77	6.19	-75.61	-13.00	-62.61	V
624.6100	-72.57	2.96	6.15	-69.38	-13.00	-56.38	V
94.0200	-53.95	1.12	0.58	-54.49	-13.00	-41.49	H
232.7300	-66.12	1.8	5.39	-62.53	-13.00	-49.53	H
299.6600	-60.89	2.09	5.59	-57.39	-13.00	-44.39	H
365.6200	-64.51	2.29	5.76	-61.04	-13.00	-48.04	H
500.4500	-75.21	2.7	5.9	-72.01	-13.00	-59.01	H
640.1300	-65.48	3.01	6.13	-62.36	-13.00	-49.36	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.*

Operation Mode:	Tx / High channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
94.0200	-54.16	1.12	0.58	-54.70	-13.00	-41.70	V
184.2300	-67.55	1.61	3.77	-65.39	-13.00	-52.39	V
299.6600	-63.88	2.09	5.59	-60.38	-13.00	-47.38	V
415.0900	-71.61	2.45	5.86	-68.20	-13.00	-55.20	V
536.3400	-77.12	2.77	6.19	-73.70	-13.00	-60.70	V
640.1300	-71.32	3.01	6.13	-68.20	-13.00	-55.20	V
94.0200	-52.43	1.12	0.58	-52.97	-13.00	-39.97	H
160.9500	-61.15	1.49	1.5	-61.14	-13.00	-48.14	H
299.6600	-61.05	2.09	5.59	-57.55	-13.00	-44.55	H
365.6200	-64.87	2.29	5.76	-61.40	-13.00	-48.40	H
512.0900	-73.88	2.69	6.02	-70.55	-13.00	-57.55	H
624.6100	-69.01	2.96	6.15	-65.82	-13.00	-52.82	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.*

LTE Band 4 / CHANNEL BANDWIDTH: 5MHz / QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
132.8200	-54.04	1.36	-1.07	-56.47	-13.00	-43.47	V
214.3000	-68.32	1.72	5.38	-64.66	-13.00	-51.66	V
299.6600	-65.92	2.09	5.59	-62.42	-13.00	-49.42	V
356.8900	-68.13	2.26	5.73	-64.66	-13.00	-51.66	V
512.0900	-64.91	2.69	6.02	-61.58	-13.00	-48.58	V
624.6100	-71.28	2.96	6.15	-68.09	-13.00	-55.09	V
98.8700	-52.66	1.14	-0.21	-54.01	-13.00	-41.01	H
232.7300	-63.33	1.8	5.39	-59.74	-13.00	-46.74	H
299.6600	-63.56	2.09	5.59	-60.06	-13.00	-47.06	H
348.1600	-67.02	2.22	5.8	-63.44	-13.00	-50.44	H
640.1300	-67.16	3.01	6.13	-64.04	-13.00	-51.04	H
896.2100	-64.31	3.51	6.65	-61.17	-13.00	-48.17	H

Remark:

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

Operation Mode:	Tx / Middle channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
132.8200	-54.1	1.36	-1.07	-56.53	-13.00	-43.53	V
299.6600	-65.74	2.09	5.59	-62.24	-13.00	-49.24	V
416.0600	-69.38	2.46	5.85	-65.99	-13.00	-52.99	V
512.0900	-65.6	2.69	6.02	-62.27	-13.00	-49.27	V
624.6100	-71.46	2.96	6.15	-68.27	-13.00	-55.27	V
896.2100	-68.38	3.51	6.65	-65.24	-13.00	-52.24	V
98.8700	-47.01	1.14	-0.21	-48.36	-13.00	-35.36	H
232.7300	-60.51	1.8	5.39	-56.92	-13.00	-43.92	H
299.6600	-60.28	2.09	5.59	-56.78	-13.00	-43.78	H
512.0900	-69.23	2.69	6.02	-65.90	-13.00	-52.90	H
640.1300	-71.68	3.01	6.13	-68.56	-13.00	-55.56	H
896.2100	-63.31	3.51	6.65	-60.17	-13.00	-47.17	H

Remark:

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

Operation Mode:	Tx / High channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
132.8200	-53.94	1.36	-1.07	-56.37	-13.00	-43.37	V
299.6600	-65.74	2.09	5.59	-62.24	-13.00	-49.24	V
384.0500	-67.33	2.31	5.99	-63.65	-13.00	-50.65	V
512.0900	-64.08	2.69	6.02	-60.75	-13.00	-47.75	V
666.3200	-72.91	3.07	6.3	-69.68	-13.00	-56.68	V
896.2100	-69.61	3.51	6.65	-66.47	-13.00	-53.47	V
97.9000	-53.74	1.14	-0.05	-54.93	-13.00	-41.93	H
232.7300	-63.01	1.8	5.39	-59.42	-13.00	-46.42	H
299.6600	-63.24	2.09	5.59	-59.74	-13.00	-46.74	H
512.0900	-69.91	2.69	6.02	-66.58	-13.00	-53.58	H
640.1300	-66.51	3.01	6.13	-63.39	-13.00	-50.39	H
896.2100	-64.41	3.51	6.65	-61.27	-13.00	-48.27	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
94.0200	-55.6	1.12	0.58	-56.14	-13.00	-43.14	V
162.8900	-60.92	1.51	1.72	-60.71	-13.00	-47.71	V
299.6600	-66.84	2.09	5.59	-63.34	-13.00	-50.34	V
415.0900	-68.21	2.45	5.86	-64.80	-13.00	-51.80	V
512.0900	-67.13	2.69	6.02	-63.80	-13.00	-50.80	V
896.2100	-66.81	3.51	6.65	-63.67	-13.00	-50.67	V
99.8400	-53.42	1.15	-0.37	-54.94	-13.00	-41.94	H
162.8900	-56.49	1.51	1.72	-56.28	-13.00	-43.28	H
266.6800	-62.53	1.96	5.27	-59.22	-13.00	-46.22	H
366.5900	-63.18	2.29	5.77	-59.70	-13.00	-46.70	H
624.6100	-65.85	2.96	6.15	-62.66	-13.00	-49.66	H
896.2100	-65.59	3.51	6.65	-62.45	-13.00	-49.45	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
98.8700	-53.97	1.14	-0.21	-55.32	-13.00	-42.32	V
163.8600	-61.66	1.51	1.83	-61.34	-13.00	-48.34	V
265.7100	-65.78	1.95	5.32	-62.41	-13.00	-49.41	V
360.7700	-66.42	2.27	5.71	-62.98	-13.00	-49.98	V
512.0900	-68.3	2.69	6.02	-64.97	-13.00	-51.97	V
896.2100	-66.57	3.51	6.65	-63.43	-13.00	-50.43	V
99.8400	-53.95	1.15	-0.37	-55.47	-13.00	-42.47	H
160.9500	-56.24	1.49	1.5	-56.23	-13.00	-43.23	H
266.6800	-61.63	1.96	5.27	-58.32	-13.00	-45.32	H
364.6500	-64.77	2.28	5.75	-61.30	-13.00	-48.30	H
624.6100	-66.89	2.96	6.15	-63.70	-13.00	-50.70	H
896.2100	-65.51	3.51	6.65	-62.37	-13.00	-49.37	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 / High channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
94.0200	-54.57	1.12	0.58	-55.11	-13.00	-42.11	V
160.9500	-61.58	1.49	1.5	-61.57	-13.00	-48.57	V
266.6800	-65.42	1.96	5.27	-62.11	-13.00	-49.11	V
349.1300	-66.86	2.22	5.8	-63.28	-13.00	-50.28	V
512.0900	-67.89	2.69	6.02	-64.56	-13.00	-51.56	V
896.2100	-66.05	3.51	6.65	-62.91	-13.00	-49.91	V
94.0200	-54.62	1.12	0.58	-55.16	-13.00	-42.16	H
163.8600	-56.51	1.51	1.83	-56.19	-13.00	-43.19	H
299.6600	-62.33	2.09	5.59	-58.83	-13.00	-45.83	H
332.6400	-61.67	2.16	5.73	-58.10	-13.00	-45.10	H
640.1300	-67.53	3.01	6.13	-64.41	-13.00	-51.41	H
896.2100	-64.96	3.51	6.65	-61.82	-13.00	-48.82	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.*

LTE Band 4 / CHANNEL BANDWIDTH: 20MHz/ QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	May 4, 2014
Temperature:	25℃	**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)
132.8200	-53.84	1.36	-1.07	-56.27	-13.00	-43.27	V
213.3300	-68.4	1.71	5.4	-64.71	-13.00	-51.71	V
299.6600	-65.68	2.09	5.59	-62.18	-13.00	-49.18	V
512.0900	-64.9	2.69	6.02	-61.57	-13.00	-48.57	V
624.6100	-71.16	2.96	6.15	-67.97	-13.00	-54.97	V
896.2100	-69.14	3.51	6.65	-66.00	-13.00	-53.00	V
98.8700	-52.32	1.14	-0.21	-53.67	-13.00	-40.67	H
232.7300	-63.26	1.8	5.39	-59.67	-13.00	-46.67	H
351.0700	-64.61	2.23	5.79	-61.05	-13.00	-48.05	H
512.0900	-69.27	2.69	6.02	-65.94	-13.00	-52.94	H
640.1300	-66.63	3.01	6.13	-63.51	-13.00	-50.51	H
896.2100	-64.83	3.51	6.65	-61.69	-13.00	-48.69	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:**	May 4, 2014
Temperature:	25℃	**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)
132.8200	-54.4	1.36	-1.07	-56.83	-13.00	-43.83	V
206.5400	-67.72	1.67	4.7	-64.69	-13.00	-51.69	V
299.6600	-65.48	2.09	5.59	-61.98	-13.00	-48.98	V
512.0900	-64.92	2.69	6.02	-61.59	-13.00	-48.59	V
624.6100	-70.54	2.96	6.15	-67.35	-13.00	-54.35	V
896.2100	-69	3.51	6.65	-65.86	-13.00	-52.86	V
98.8700	-51.73	1.14	-0.21	-53.08	-13.00	-40.08	H
232.7300	-63.23	1.8	5.39	-59.64	-13.00	-46.64	H
299.6600	-64.19	2.09	5.59	-60.69	-13.00	-47.69	H
512.0900	-69.56	2.69	6.02	-66.23	-13.00	-53.23	H
640.1300	-66.66	3.01	6.13	-63.54	-13.00	-50.54	H
896.2100	-64.63	3.51	6.65	-61.49	-13.00	-48.49	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:**	May 4, 2014
Temperature:	25℃	**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)
98.8700	-57.5	1.14	-0.21	-58.85	-13.00	-45.85	V
250.1900	-68.86	1.84	5.68	-65.02	-13.00	-52.02	V
349.1300	-65.76	2.22	5.8	-62.18	-13.00	-49.18	V
512.0900	-64.81	2.69	6.02	-61.48	-13.00	-48.48	V
624.6100	-71.99	2.96	6.15	-68.80	-13.00	-55.80	V
896.2100	-69.39	3.51	6.65	-66.25	-13.00	-53.25	V
60.0700	-51.54	0.88	-2.19	-54.61	-13.00	-41.61	H
232.7300	-63.55	1.8	5.39	-59.96	-13.00	-46.96	H
299.6600	-63.93	2.09	5.59	-60.43	-13.00	-47.43	H
504.3300	-70.18	2.7	5.94	-66.94	-13.00	-53.94	H
640.1300	-67.02	3.01	6.13	-63.90	-13.00	-50.90	H
896.2100	-64.87	3.51	6.65	-61.73	-13.00	-48.73	H

Remark:

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

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

Operation Mode:	Tx / Low channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
132.8200	-54.4	1.36	-1.07	-56.83	-13.00	-43.83	V
211.3900	-67.8	1.7	5.42	-64.08	-13.00	-51.08	V
299.6600	-65.03	2.09	5.59	-61.53	-13.00	-48.53	V
512.0900	-63.66	2.69	6.02	-60.33	-13.00	-47.33	V
640.1300	-72.82	3.01	6.13	-69.70	-13.00	-56.70	V
896.2100	-69.09	3.51	6.65	-65.95	-13.00	-52.95	V
98.8700	-51.86	1.14	-0.21	-53.21	-13.00	-40.21	H
151.2500	-60.53	1.43	0.8	-61.16	-13.00	-48.16	H
232.7300	-63.15	1.8	5.39	-59.56	-13.00	-46.56	H
298.6900	-63.74	2.09	5.57	-60.26	-13.00	-47.26	H
504.3300	-69.81	2.7	5.94	-66.57	-13.00	-53.57	H
640.1300	-65.88	3.01	6.13	-62.76	-13.00	-49.76	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
132.8200	-54.42	1.36	-1.07	-56.85	-13.00	-43.85	V
299.6600	-66.02	2.09	5.59	-62.52	-13.00	-49.52	V
384.0500	-68.64	2.31	5.99	-64.96	-13.00	-51.96	V
512.0900	-64.45	2.69	6.02	-61.12	-13.00	-48.12	V
666.3200	-72.73	3.07	6.3	-69.50	-13.00	-56.50	V
896.2100	-69.56	3.51	6.65	-66.42	-13.00	-53.42	V
98.8700	-53.05	1.14	-0.21	-54.40	-13.00	-41.40	H
232.7300	-63.51	1.8	5.39	-59.92	-13.00	-46.92	H
299.6600	-64.21	2.09	5.59	-60.71	-13.00	-47.71	H
353.9800	-68.35	2.25	5.76	-64.84	-13.00	-51.84	H
640.1300	-66.67	3.01	6.13	-63.55	-13.00	-50.55	H
896.2100	-64.39	3.51	6.65	-61.25	-13.00	-48.25	H

Remark:

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

Operation Mode:	Tx / High channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
132.8200	-54.49	1.36	-1.07	-56.92	-13.00	-43.92	V
299.6600	-65.37	2.09	5.59	-61.87	-13.00	-48.87	V
349.1300	-66.72	2.22	5.8	-63.14	-13.00	-50.14	V
512.0900	-63	2.69	6.02	-59.67	-13.00	-46.67	V
640.1300	-72.99	3.01	6.13	-69.87	-13.00	-56.87	V
896.2100	-68.71	3.51	6.65	-65.57	-13.00	-52.57	V
98.8700	-51.86	1.14	-0.21	-53.21	-13.00	-40.21	H
232.7300	-63.17	1.8	5.39	-59.58	-13.00	-46.58	H
299.6600	-63.52	2.09	5.59	-60.02	-13.00	-47.02	H
504.3300	-70.23	2.7	5.94	-66.99	-13.00	-53.99	H
640.1300	-66.46	3.01	6.13	-63.34	-13.00	-50.34	H
896.2100	-65.21	3.51	6.65	-62.07	-13.00	-49.07	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: 10MHz / 16QAM

Operation Mode:	Tx / Low channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
77.5300	-57.02	1.02	-0.6	-58.64	-13.00	-45.64	V
213.3300	-68.74	1.71	5.4	-65.05	-13.00	-52.05	V
299.6600	-65.62	2.09	5.59	-62.12	-13.00	-49.12	V
512.0900	-63.88	2.69	6.02	-60.55	-13.00	-47.55	V
576.1100	-68.21	2.88	6.05	-65.04	-13.00	-52.04	V
896.2100	-69.1	3.51	6.65	-65.96	-13.00	-52.96	V
98.8700	-52.24	1.14	-0.21	-53.59	-13.00	-40.59	H
232.7300	-63.62	1.8	5.39	-60.03	-13.00	-47.03	H
299.6600	-63.78	2.09	5.59	-60.28	-13.00	-47.28	H
353.9800	-67.49	2.25	5.76	-63.98	-13.00	-50.98	H
640.1300	-66.98	3.01	6.13	-63.86	-13.00	-50.86	H
896.2100	-64.71	3.51	6.65	-61.57	-13.00	-48.57	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
132.8200	-54.48	1.36	-1.07	-56.91	-13.00	-43.91	V
298.6900	-65.49	2.09	5.57	-62.01	-13.00	-49.01	V
356.8900	-65.73	2.26	5.73	-62.26	-13.00	-49.26	V
512.0900	-65.34	2.69	6.02	-62.01	-13.00	-49.01	V
624.6100	-71.75	2.96	6.15	-68.56	-13.00	-55.56	V
896.2100	-69.17	3.51	6.65	-66.03	-13.00	-53.03	V
98.8700	-52.56	1.14	-0.21	-53.91	-13.00	-40.91	H
232.7300	-63.05	1.8	5.39	-59.46	-13.00	-46.46	H
339.4300	-67.19	2.17	5.79	-63.57	-13.00	-50.57	H
504.3300	-70.5	2.7	5.94	-67.26	-13.00	-54.26	H
640.1300	-66.88	3.01	6.13	-63.76	-13.00	-50.76	H
896.2100	-64.31	3.51	6.65	-61.17	-13.00	-48.17	H

Remark:

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

Operation Mode:	Tx / High channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
132.8200	-53.86	1.36	-1.07	-56.29	-13.00	-43.29	V
215.2700	-67.75	1.73	5.37	-64.11	-13.00	-51.11	V
299.6600	-65.49	2.09	5.59	-61.99	-13.00	-48.99	V
356.8900	-67.17	2.26	5.73	-63.70	-13.00	-50.70	V
512.0900	-65.09	2.69	6.02	-61.76	-13.00	-48.76	V
896.2100	-69.05	3.51	6.65	-65.91	-13.00	-52.91	V
98.8700	-52.78	1.14	-0.21	-54.13	-13.00	-41.13	H
232.7300	-62.67	1.8	5.39	-59.08	-13.00	-46.08	H
299.6600	-63.87	2.09	5.59	-60.37	-13.00	-47.37	H
504.3300	-70.78	2.7	5.94	-67.54	-13.00	-54.54	H
640.1300	-65.36	3.01	6.13	-62.24	-13.00	-49.24	H
896.2100	-64.45	3.51	6.65	-61.31	-13.00	-48.31	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:**	May 4, 2014
Temperature:	25℃	**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)
132.8200	-54.25	1.36	-1.07	-56.68	-13.00	-43.68	V
298.6900	-65.55	2.09	5.57	-62.07	-13.00	-49.07	V
350.1000	-67.99	2.23	5.8	-64.42	-13.00	-51.42	V
512.0900	-63.83	2.69	6.02	-60.50	-13.00	-47.50	V
624.6100	-71.63	2.96	6.15	-68.44	-13.00	-55.44	V
896.2100	-69.24	3.51	6.65	-66.10	-13.00	-53.10	V
98.8700	-52.95	1.14	-0.21	-54.30	-13.00	-41.30	H
232.7300	-63.38	1.8	5.39	-59.79	-13.00	-46.79	H
299.6600	-63.64	2.09	5.59	-60.14	-13.00	-47.14	H
504.3300	-70.4	2.7	5.94	-67.16	-13.00	-54.16	H
640.1300	-67.01	3.01	6.13	-63.89	-13.00	-50.89	H
896.2100	-64.23	3.51	6.65	-61.09	-13.00	-48.09	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:**	May 4, 2014
Temperature:	25℃	**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)
132.8200	-53.96	1.36	-1.07	-56.39	-13.00	-43.39	V
211.3900	-67.77	1.7	5.42	-64.05	-13.00	-51.05	V
331.6700	-66.22	2.16	5.72	-62.66	-13.00	-49.66	V
512.0900	-64.9	2.69	6.02	-61.57	-13.00	-48.57	V
624.6100	-71.32	2.96	6.15	-68.13	-13.00	-55.13	V
896.2100	-68.81	3.51	6.65	-65.67	-13.00	-52.67	V
98.8700	-52.14	1.14	-0.21	-53.49	-13.00	-40.49	H
232.7300	-63.71	1.8	5.39	-60.12	-13.00	-47.12	H
299.6600	-64.11	2.09	5.59	-60.61	-13.00	-47.61	H
504.3300	-70.52	2.7	5.94	-67.28	-13.00	-54.28	H
640.1300	-67.02	3.01	6.13	-63.90	-13.00	-50.90	H
896.2100	-65.08	3.51	6.65	-61.94	-13.00	-48.94	H

Remark:

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

Operation Mode:	Tx / High channel	**Test Date:**	May 4, 2014
Temperature:	25℃	**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)
132.8200	-54.3	1.36	-1.07	-56.73	-13.00	-43.73	V
299.6600	-66.02	2.09	5.59	-62.52	-13.00	-49.52	V
416.0600	-69.36	2.46	5.85	-65.97	-13.00	-52.97	V
512.0900	-62.91	2.69	6.02	-59.58	-13.00	-46.58	V
666.3200	-72.94	3.07	6.3	-69.71	-13.00	-56.71	V
896.2100	-69.27	3.51	6.65	-66.13	-13.00	-53.13	V
98.8700	-52.12	1.14	-0.21	-53.47	-13.00	-40.47	H
232.7300	-63.11	1.8	5.39	-59.52	-13.00	-46.52	H
299.6600	-63.73	2.09	5.59	-60.23	-13.00	-47.23	H
504.3300	-70.69	2.7	5.94	-67.45	-13.00	-54.45	H
640.1300	-67.17	3.01	6.13	-64.05	-13.00	-51.05	H
896.2100	-63.9	3.51	6.65	-60.76	-13.00	-47.76	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.*

Above 1GHz

LTE Band 17 / CHANNEL BANDWIDTH: 5MHz / QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1406.000	-54.21	4.65	5.62	-53.24	-13.00	-40.24	V
2491.000	-55.03	6.33	6.09	-55.27	-13.00	-42.27	V
N/A							
1406.000	-46.78	4.65	5.62	-45.81	-13.00	-32.81	H
3625.000	-55	8.13	9.03	-54.10	-13.00	-41.10	H
N/A							

Remark:

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

Operation Mode:	Tx / Middle channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1406.000	-55.06	4.65	5.62	-54.09	-13.00	-41.09	V
3604.000	-55.76	8.11	9	-54.87	-13.00	-41.87	V
N/A							
1406.000	-47.4	4.65	5.62	-46.43	-13.00	-33.43	H
3044.000	-55.92	7.08	7.53	-55.47	-13.00	-42.47	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.*

Operation Mode:	Tx / High channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1406.000	-55.34	4.65	5.62	-54.37	-13.00	-41.37	V
1959.000	-53.99	5.61	5.47	-54.13	-13.00	-41.13	V
N/A							
1406.000	-47.6	4.65	5.62	-46.63	-13.00	-33.63	H
4976.000	-52.94	9.37	10.56	-51.75	-13.00	-38.75	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 17 / CHANNEL BANDWIDTH: 10MHz / QPSK

Operation Mode:	Tx / Low channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1420.000	-43.35	4.68	5.72	-42.31	-13.00	-29.31	V
2134.000	-38.91	5.84	5.59	-39.16	-13.00	-26.16	V
N/A							
1406.000	-45.44	4.65	5.62	-44.47	-13.00	-31.47	H
3856.000	-52.76	8.33	9.26	-51.83	-13.00	-38.83	H
N/A							

Remark:

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

Operation Mode:	Tx / Middle channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1420.000	-43.9	4.68	5.72	-42.86	-13.00	-29.86	V
2134.000	-37.67	5.84	5.59	-37.92	-13.00	-24.92	V
N/A							
1406.000	-43.91	4.65	5.62	-42.94	-13.00	-29.94	H
3380.000	-54.63	7.55	8.54	-53.64	-13.00	-40.64	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1420.000	-45.52	4.68	5.72	-44.48	-13.00	-31.48	V
2134.000	-39.55	5.84	5.59	-39.80	-13.00	-26.80	V
N/A							
1406.000	-45.52	4.65	5.62	-44.55	-13.00	-31.55	H
3170.000	-55.7	7.23	7.91	-55.02	-13.00	-42.02	H
N/A							

Remark:

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

LTE Band 17 / CHANNEL BANDWIDTH: 5MHz / 16QAM

Operation Mode:	Tx / Low channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1406.000	-53.16	4.65	5.62	-52.19	-13.00	-39.19	V
1952.000	-51.16	5.59	5.49	-51.26	-13.00	-38.26	V
N/A							
1406.000	-45.2	4.65	5.62	-44.23	-13.00	-31.23	H
3093.000	-55.01	7.16	7.68	-54.49	-13.00	-41.49	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1952.000	-50.71	5.59	5.49	-50.81	-13.00	-37.81	V
4108.000	-53.68	8.46	9.49	-52.65	-13.00	-39.65	V
N/A							
1406.000	-45.85	4.65	5.62	-44.88	-13.00	-31.88	H
3793.000	-54.05	8.26	9.19	-53.12	-13.00	-40.12	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1406.000	-55.32	4.65	5.62	-54.35	-13.00	-41.35	V
1959.000	-55.04	5.61	5.47	-55.18	-13.00	-42.18	V
N/A							
1406.000	-46.91	4.65	5.62	-45.94	-13.00	-32.94	H
3884.000	-53.97	8.37	9.28	-53.06	-13.00	-40.06	H
N/A							

Remark:

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

LTE Band 17 / CHANNEL BANDWIDTH: 10MHz/ 16QAM

Operation Mode:	Tx / Low channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1406.000	-55.15	4.65	5.62	-54.18	-13.00	-41.18	V
1959.000	-50.9	5.61	5.47	-51.04	-13.00	-38.04	V
N/A							
1406.000	-47.15	4.65	5.62	-46.18	-13.00	-33.18	H
3870.000	-54.36	8.35	9.27	-53.44	-13.00	-40.44	H
N/A							

Remark:

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

Operation Mode:	Tx / Middle channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1406.000	-55.14	4.65	5.62	-54.17	-13.00	-41.17	V
2400.000	-52.91	6.18	5.96	-53.13	-13.00	-40.13	V
N/A							
1406.000	-47.79	4.65	5.62	-46.82	-13.00	-33.82	H
4276.000	-54.39	8.57	9.62	-53.34	-13.00	-40.34	H
N/A							

Remark:

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

Operation Mode:	Tx / High channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1406.000	-54.7	4.65	5.62	-53.73	-13.00	-40.73	V
2393.000	-53.34	6.17	5.95	-53.56	-13.00	-40.56	V
N/A							
1406.000	-47.64	4.65	5.62	-46.67	-13.00	-33.67	H
3310.000	-56.78	7.47	8.33	-55.92	-13.00	-42.92	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1406.000	-53.41	4.65	5.62	-52.44	-13.00	-39.44	V
3422.000	-49.71	7.64	8.67	-48.68	-13.00	-35.68	V
N/A							
1406.000	-51.73	4.65	5.62	-50.76	-13.00	-37.76	H
4549.000	-52.77	9.02	9.88	-51.91	-13.00	-38.91	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1406.000	-52.95	4.65	5.62	-51.98	-13.00	-38.98	V
3464.000	-53.13	7.76	8.79	-52.10	-13.00	-39.10	V
N/A							
1406.000	-51.61	4.65	5.62	-50.64	-13.00	-37.64	H
3464.000	-41.24	7.76	8.79	-40.21	-13.00	-27.21	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1406.000	-53.44	4.65	5.62	-52.47	-13.00	-39.47	V
3506.000	-48.8	7.88	8.91	-47.77	-13.00	-34.77	V
N/A							
1406.000	-51.92	4.65	5.62	-50.95	-13.00	-37.95	H
3506.000	-35.08	7.88	8.91	-34.05	-13.00	-21.05	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1406.000	-53.97	4.65	5.62	-53.00	-13.00	-40.00	V
3310.000	-53.45	7.47	8.33	-52.59	-13.00	-39.59	V
N/A							
1406.000	-51.77	4.65	5.62	-50.80	-13.00	-37.80	H
3429.000	-39.04	7.66	8.69	-38.01	-13.00	-25.01	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1406.000	-53.25	4.65	5.62	-52.28	-13.00	-39.28	V
3464.000	-53.65	7.76	8.79	-52.62	-13.00	-39.62	V
N/A							
1406.000	-51.79	4.65	5.62	-50.82	-13.00	-37.82	H
3464.000	-40.75	7.76	8.79	-39.72	-13.00	-26.72	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1406.000	-52.01	4.65	5.62	-51.04	-13.00	-38.04	V
3506.000	-35.41	7.88	8.91	-34.38	-13.00	-21.38	V
N/A							
1406.000	-51.79	4.65	5.62	-50.82	-13.00	-37.82	H
3499.000	-33.59	7.87	8.9	-32.56	-13.00	-19.56	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:**	May 4, 2014
Temperature:	25℃	**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)
1406.000	-52.43	4.65	5.62	-51.46	-13.00	-38.46	V
3310.000	-54.16	7.47	8.33	-53.30	-13.00	-40.30	V
N/A							
1406.000	-50.94	4.65	5.62	-49.97	-13.00	-36.97	H
3443.000	-44.56	7.7	8.73	-43.53	-13.00	-30.53	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:**	May 4, 2014
Temperature:	25℃	**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)
1406.000	-51.46	4.65	5.62	-50.49	-13.00	-37.49	V
3464.000	-54.05	7.76	8.79	-53.02	-13.00	-40.02	V
N/A							
1406.000	-48.28	4.65	5.62	-47.31	-13.00	-34.31	H
3464.000	-39.97	7.76	8.79	-38.94	-13.00	-25.94	H
N/A							

Remark:

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

Operation Mode:	Tx / High channel	**Test Date:**	May 4, 2014
Temperature:	25℃	**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)
1406.000	-52.95	4.65	5.62	-51.98	-13.00	-38.98	V
3499.000	-51.91	7.87	8.9	-50.88	-13.00	-37.88	V
N/A							
1406.000	-51.19	4.65	5.62	-50.22	-13.00	-37.22	H
3492.000	-38.73	7.85	8.88	-37.70	-13.00	-24.70	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3429.000	-51.37	7.66	8.69	-50.34	-13.00	-37.34	V
4976.000	-55.18	9.37	10.56	-53.99	-13.00	-40.99	V
N/A							
3422.000	-40.37	7.64	8.67	-39.34	-13.00	-26.34	H
4808.000	-54.25	9.32	10.29	-53.28	-13.00	-40.28	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
2134.000	-46.13	5.84	5.59	-46.38	-13.00	-33.38	V
3471.000	-53.48	7.78	8.81	-52.45	-13.00	-39.45	V
N/A							
1406.000	-51.6	4.65	5.62	-50.63	-13.00	-37.63	H
3464.000	-41.47	7.76	8.79	-40.44	-13.00	-27.44	H
N/A							

Remark:

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

Operation Mode:	Tx / High channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1406.000	-53.57	4.65	5.62	-52.60	-13.00	-39.60	V
3506.000	-50.26	7.88	8.91	-49.23	-13.00	-36.23	V
N/A							
1406.000	-51.59	4.65	5.62	-50.62	-13.00	-37.62	H
3506.000	-35.02	7.88	8.91	-33.99	-13.00	-20.99	H
N/A							

Remark:

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

LTE Band 4 / CHANNEL BANDWIDTH: 10MHz / 16QAM

Operation Mode:	Tx / Low channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3429.000	-54.4	7.66	8.69	-53.37	-13.00	-40.37	V
4388.000	-55.49	8.64	9.71	-54.42	-13.00	-41.42	V
N/A							
3429.000	-42.35	7.66	8.69	-41.32	-13.00	-28.32	H
4829.000	-54.58	9.3	10.33	-53.55	-13.00	-40.55	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:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1406.000	-53.81	4.65	5.62	-52.84	-13.00	-39.84	V
3471.000	-55.44	7.78	8.81	-54.41	-13.00	-41.41	V
N/A							
1406.000	-52.37	4.65	5.62	-51.40	-13.00	-38.40	H
3471.000	-44.79	7.78	8.81	-43.76	-13.00	-30.76	H
N/A							

Remark:

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

Operation Mode:	Tx / High channel	**Test Date:**	May 1, 2014
Temperature:	25℃	**Tested by:**	Dennis. Li
Humidity:	45% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1406.000	-53.81	4.65	5.62	-52.84	-13.00	-39.84	V
3499.000	-51.79	7.87	8.9	-50.76	-13.00	-37.76	V
N/A							
1406.000	-51.74	4.65	5.62	-50.77	-13.00	-37.77	H
3506.000	-38.2	7.88	8.91	-37.17	-13.00	-24.17	H
N/A							

Remark:

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

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

Operation Mode:	Tx / Low channel	**Test Date:**	May 4, 2014
Temperature:	25℃	**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)
1406.000	-54.46	4.65	5.62	-53.49	-13.00	-40.49	V
3436.000	-53.81	7.68	8.71	-52.78	-13.00	-39.78	V
N/A							
3436.000	-50.08	7.68	8.71	-49.05	-13.00	-36.05	H
5053.000	-53.91	9.43	10.62	-52.72	-13.00	-39.72	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 / Middle channel	**Test Date:**	May 4, 2014
Temperature:	25℃	**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)
1406.000	-54.17	4.65	5.62	-53.20	-13.00	-40.20	V
4983.000	-55.19	9.38	10.57	-54.00	-13.00	-41.00	V
N/A							
1406.000	-51.75	4.65	5.62	-50.78	-13.00	-37.78	H
3478.000	-44.76	7.8	8.83	-43.73	-13.00	-30.73	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:**	May 4, 2014
Temperature:	25℃	**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)
1406.000	-54.44	4.65	5.62	-53.47	-13.00	-40.47	V
3499.000	-46.23	7.87	8.9	-45.20	-13.00	-32.20	V
N/A							
1406.000	-53.91	4.65	5.62	-52.94	-13.00	-39.94	H
3492.000	-43.96	7.85	8.88	-42.93	-13.00	-29.93	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.*