



FCC TEST REPORT and IC TEST REPORT

For

LE910-NVG

Model: LE910-NVG, LE910-SVG

Trade Name: Telit

Issued to

Telit Communications S.P.A.
Via Stazione di Prosecco 5/B
34010 Sgonico, Trieste - Italy

Issued by

Compliance Certification Services Inc.
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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	May 5, 2014	Initial Issue	ALL	Angel Cheng



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1. TEST RESULT CERTIFICATION

Applicant: Telit Communications S.P.A.
Via Stazione di Prosecco 5/B
34010 Sgonico, Trieste - ItalyN

Manufacturer: Telit Communications S.P.A.
Via Stazione di Prosecco 5/B
34010 Sgonico, Trieste - ItalyN

Equipment Under Test: LE910-NVG

Trade Name: Telit

Model: LE910-NVG, LE910-SVG

Date of Test: May 1, 2014



FCC PART 27, SUBPART C, L, FCC PART 2	
OPERATING BAND: 777 ~ 787 MHZ	
STANDARD	TEST TYPE AND LIMIT
2.1046 27.50(B)(10) & RSS-130 Issue 1 October 2013 4.4	Maximum Peak Output Power Limit: max. 3 watts e.r.p peak power
2.1055 27.54 & RSS-130 Issue 1 October 2013 4.3	Frequency Stability
2.1049 27.53(g) & RSS-130 Issue 1 October 2013 4.3	Occupied Bandwidth
27.50(d)(5)	Peak to average ratio
27.53(g)	Band Edge Measurements
2.1051 27.53(g) & RSS-130 Issue 1 October 2013 4.6	Conducted Spurious Emissions
2.1053 27.53(g) & RSS-130 Issue 1 October 2013 4.6	Radiated Spurious Emissions

OPERATING BAND: 1710~1755 MHZ	
Standard	TEST TYPE AND LIMIT
2.1046 27.50(d)(4) & RSS-139 Issue 2 February 2009 6.4	Maximum Peak Output Power Limit: max. 1 watts e.i.r.p peak power max. 5 watts for Band 17
2.1055 27.54 & RSS-139 Issue 2 February 2009 6.3	Frequency Stability
2.1049 27.53(h) & RSS-139 Issue 2 February 2009 2.3	Occupied Bandwidth
27.50(d)(5) & RSS-139 Issue 2 February 2009 6.4	Peak to average ratio
27.53(h)	Band Edge Measurements
2.1051 27.53(h) & RSS-139 Issue 2 February 2009 6.5	Conducted Spurious Emissions
2.1053 27.53(h) & RSS-139 Issue 2 February 2009 6.5 6.6	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

Reviewed by

Miller Lee
Section Manager
Compliance Certification Services Inc.

Angel Cheng
Section Manager
Compliance Certification Services Inc.



2. EUT DESCRIPTION

Product	LE910-NVG	
Model Number	LE910-NVG, LE910-SVG	
Model Discrepancy	Model Number	Difference
	LE910-NVG	SVG is the same as NVG but with 3G technology disabled by SW. Their HW is identical
	LE910-SVG	
Trade	Telit	
Received Date	April 15, 2014	
Power Supply	DC 3.7V powered from Host device.	
Modulation Technology	LTE Band 13	QPSK, 16QAM
	LTE Band 4	QPSK, 16QAM
Frequency Range	LTE Band 13 Channel Bandwidth: 5MHz	779.5MHz ~ 784.5MHz
	LTE Band 13 Channel Bandwidth: 10MHz	782MHz
	LTE Band 4 Channel Bandwidth: 5MHz	1712.5MHz ~1752.5MHz
	LTE Band 4 Channel Bandwidth: 10MHz	1715.0MHz ~1750.0MHz
	LTE Band 4 Channel Bandwidth: 20MHz	1720MHz ~1745MHz
Maximum ERP Power	LTE Band 13 Channel Bandwidth: 5MHz	QPSK: 21.47dBm 16QAM: 21.79dBm
	LTE Band 13 Channel Bandwidth: 10MHz	QPSK : 19.61dBm 16QAM: 19.81dBm
Maximum EIRP Power	LTE Band 4 Channel Bandwidth: 5MHz	QPSK: 17.75dBm 16QAM: 17.57dBm
	LTE Band 4 Channel Bandwidth: 10MHz	QPSK: 16.31dBm 16QAM: 17.19dBm
	LTE Band 4 Channel Bandwidth: 20MHz	QPSK: 16.17dBm 16QAM: 15.86dBm
Category	LTE: 3	
Antenna Specification	1/4l Antenna / Gain: 2.14dBi	



3. TEST METHODOLOGY

3.1 DESCRIPTION OF TEST TYPE

The EUT (model: LE910-NVG) had been tested under operating condition.

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

LTE Band 13: 777 MHz ~ 787 MHz

Three channels had been tested for each channel bandwidth.

Channel Bandwidth	5MHz		10MHz	
	Channel	Frequency(MHz)	Channel	Frequency(MHz)
Low channel (L)	23205	779.05	N/A	N/A
Middle channel (M)	23230	782.00	23230	782.00
High channel (H)	23255	784.50	N/A	N/A

LTE Band 4: 1710MHz ~ 1755MHz

Three channels had been tested for each channel bandwidth.

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



4. INSTRUMENT CALIBRATION

4.1 MEASURING INSTRUMENT CALIBRATION

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

4.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

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

Conducted Emissions Test Site				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY43360131	03/19/2015
Power Meter	Anritsu	ML2495A	1012009	06/04/2014
Power Sensor	Anritsu	MA2411A	0917072	06/04/2014

3M Semi Anechoic Chamber				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US42510268	11/05/2014
EMI Test Receiver	R&S	ESCI	100064	02/16/2015
Pre-Amplifier	Mini-Circuits	ZFL-1000LN	SF350700823	01/11/2015
Bilog Antenna	Sunol Sciences	JB3	A030105	02/16/2015
Bilog Antenna	Sunol Sciences	JB3	A030205	10/01/2014
Horn Antenna	EMCO	3117	00055165	02/16/2015
Horn Antenna	EMCO	3117	00055167	01/27/2015
Horn Antenna	EMCO	3116	26370	01/06/2015
Loop Antenna	EMCO	6502	8905/2356	06/12/2014
Turn Table	CCS	CC-T-1F	N/A	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R
Site NSA	CCS	N/A	N/A	12/21/2014
Test S/W	EZ-EMC (CCS-3A1RE)			



4.3 MEASUREMENT UNCERTAINTY

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

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



5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

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

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

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

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

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

5.2 EQUIPMENT

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




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

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

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



5.3 TABLE OF ACCREDITATIONS AND LISTINGS

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

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



6. SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

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

6.2 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
1.	Radio Communication Analyzer (Remote)	Anritsu	MT8820C	6200938900	N/A	N/A	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

Operating in the Frequency Bands 698-756 MHz shall not exceed 5 watts for portable equipment or for indoor fixed subscriber equipment

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. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$
4. $E.R.P = E.I.R.P - 2.15 \text{ dB}$

CONDUCTED POWER MEASUREMENT:

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



TEST RESULTS

LTE Band 13

Channel Bandwidth: 5MHz

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
779.50	23205	22.04	0.15996
782.00	23230	22.12	0.16293
784.50	23255	22.48	0.17701

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
779.50	23205	22.91	0.19543
782.00	23230	22.82	0.19143
784.50	23255	22.54	0.17947

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
779.50	23205	22.08	0.16144
782.00	23230	22.56	0.18030
784.50	23255	22.57	0.18072

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
779.50	23205	22.12	0.16293
782.00	23230	22.20	0.16596
784.50	23255	22.26	0.16827

Remarks:

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



Channel Bandwidth: 5MHz

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
779.50	23205	22.57	0.18072
782.00	23230	22.09	0.16181
784.50	23255	22.69	0.18578

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
779.50	23205	22.78	0.18967
782.00	23230	23.17	0.20749
784.50	23255	22.49	0.17742

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
779.50	23205	22.09	0.16181
782.00	23230	22.12	0.16293
784.50	23255	22.06	0.16069

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
779.50	23205	22.07	0.16106
782.00	23230	22.12	0.16293
784.50	23255	22.25	0.16788

Remarks:

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



LTE Band 13

Channel Bandwidth: 10MHz

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
782.00	23230	22.84	0.19231

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
782.00	23230	22.32	0.17061

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
782.00	23230	22.12	0.16293

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
782.00	23230	22.08	0.16144

Remarks:

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



Conducted Output Power (16QAM 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
782.00	23230	22.51	0.17824

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
782.00	23230	22.12	0.16293

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
782.00	23230	22.24	0.16749

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
782.00	23230	22.18	0.16520

Remarks:

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



LTE Band 4

Channel Bandwidth: 5MHz

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1712.5	19975	22.53	0.17906
1732.5	20175	23.59	0.22856
1752.5	20375	22.73	0.18750

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1712.5	19975	22.24	0.16749
1732.5	20175	22.80	0.19055
1752.5	20375	23.02	0.20045

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1712.5	19975	22.11	0.16255
1732.5	20175	22.94	0.19679
1752.5	20375	22.91	0.19543

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1712.5	19975	22.12	0.16293
1732.5	20175	22.96	0.19770
1752.5	20375	22.22	0.16672

Remarks:

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



Channel Bandwidth: 5MHz

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1712.5	19975	23.04	0.20137
1732.5	20175	23.41	0.21928
1752.5	20375	22.89	0.19454

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1712.5	19975	23.28	0.21281
1732.5	20175	23.04	0.20137
1752.5	20375	23.05	0.20184

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1712.5	19975	22.24	0.16749
1732.5	20175	22.48	0.17701
1752.5	20375	22.53	0.17906

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1712.5	19975	22.22	0.16672
1732.5	20175	22.31	0.17022
1752.5	20375	22.28	0.16904

Remarks:

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



LTE Band 4

Channel Bandwidth: 10MHz

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1715.0	20000	23.06	0.20230
1732.5	20175	23.41	0.21928
1750.0	20350	23.49	0.22336

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1715.0	20000	22.80	0.19055
1732.5	20175	22.67	0.18493
1750.0	20350	22.54	0.17947

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1715.0	20000	22.32	0.17061
1732.5	20175	22.48	0.17701
1750.0	20350	22.51	0.17824

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1715.0	20000	22.79	0.19011
1732.5	20175	22.88	0.19409
1750.0	20350	22.69	0.18578

Remarks:

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



Conducted Output Power (16QAM RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1715.0	20000	22.63	0.18323
1732.5	20175	22.84	0.19231
1750.0	20350	22.51	0.17824

Conducted Output Power (16QAM RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1715.0	20000	22.46	0.17620
1732.5	20175	22.56	0.18030
1750.0	20350	22.38	0.17298

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1715.0	20000	22.68	0.18535
1732.5	20175	22.36	0.17219
1750.0	20350	22.24	0.16749

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1715.0	20000	22.15	0.16406
1732.5	20175	22.21	0.16634
1750.0	20350	22.23	0.16711

Remarks:

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



LTE Band 4

Channel Bandwidth: 20MHz

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1720.00	20050	23.04	0.20137
1732.50	20175	23.41	0.21928
1745.00	20300	22.89	0.19454

Conducted Output Power (QPSK 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1720.00	20050	23.28	0.21281
1732.50	20175	23.04	0.20137
1745.00	20300	23.05	0.20184

Conducted Output Power (QPSK 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1720.00	20050	22.24	0.16749
1732.50	20175	22.48	0.17701
1745.00	20300	22.53	0.17906

Conducted Output Power (QPSK 100% RB ALLOCATION)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1720.00	20050	22.22	0.16672
1732.50	20175	22.31	0.17022
1745.00	20300	22.28	0.16904

Remarks:

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



Conducted Output Power (16QAM 1 RB ALLOCATED AT THE LOWER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1720.00	20050	22.18	0.16520
1732.50	20175	23.13	0.20559
1745.00	20300	23.05	0.20184

Conducted Output Power (16QAM 1 RB ALLOCATED AT THE UPPER EDGE)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1720.00	20050	22.58	0.18113
1732.50	20175	22.76	0.18880
1745.00	20300	22.67	0.18493

Conducted Output Power (16QAM 50% RB ALLOCATION CENTERED)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1720.00	20050	22.15	0.16406
1732.50	20175	22.24	0.16749
1745.00	20300	22.18	0.16520

Conducted Output Power (16QAM 100% RB ALLOCATION)			
Frequency (MHz)	Channel	Output Power	
		(dBm)	(W)
1720.00	20050	22.34	0.17140
1732.50	20175	22.21	0.16634
1745.00	20300	22.19	0.16558

Remarks:

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



ERP POWER

LTE Band 13

Channel Bandwidth: 5MHz / QPSK

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
23205	778.4000	V	14.44	3.3	6.14	17.28	38.45	-21.17
	780.8000	H	17.58	3.3	6.12	20.40	38.45	-18.05
23230	780.2000	V	16.24	3.3	6.12	19.06	38.45	-19.39
	780.9500	H	18.65	3.31	6.13	*21.47	38.45	-16.98
23255	785.7500	V	14.21	3.32	6.17	17.06	38.45	-21.39
	785.9000	H	18.4	3.32	6.17	21.25	38.45	-17.20

Channel Bandwidth: 5MHz / 16QAM

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
23205	779.3000	V	15.22	3.3	6.11	18.03	38.45	-20.42
	780.5000	H	17.87	3.3	6.12	20.69	38.45	-17.76
23230	780.2000	V	15.84	3.3	6.12	18.66	38.45	-19.79
	780.6500	H	18.97	3.3	6.12	*21.79	38.45	-16.66
23255	786.2000	V	14.38	3.32	6.17	17.23	38.45	-21.22
	785.6000	H	18.48	3.32	6.17	21.33	38.45	-17.12

Channel Bandwidth: 10MHz / QPSK

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
23230	779.3000	V	13.97	3.3	6.11	16.78	38.45	-21.67
	779.1500	H	16.79	3.3	6.12	*19.61	38.45	-18.84

Channel Bandwidth: 10MHz / 16QAM

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
23230	779.3000	V	14.44	3.3	6.12	17.26	38.45	-21.19
	779.1500	H	17	3.3	6.11	*19.81	38.45	-18.64

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	13.81	5.13	5.92	14.60	33.00	-18.40
	1712.5	H	16.96	5.13	5.92	*17.75	33.00	-15.25
20175	1732.5	V	12.85	5.17	5.88	13.56	33.00	-19.44
	1732.5	H	15.37	5.17	5.88	16.08	33.00	-16.92
20375	1752.5	V	14.11	5.21	5.84	14.74	33.00	-18.26
	1752.5	H	13.87	5.2	5.85	14.52	33.00	-18.48

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)
19975	1712.5	V	14.75	5.14	5.91	15.52	33.00	-17.48
	1712.5	H	16.78	5.13	5.92	*17.57	33.00	-15.43
20175	1732.5	V	12.87	5.17	5.88	13.58	33.00	-19.42
	1732.5	H	15.33	5.17	5.88	16.04	33.00	-16.96
20375	1752.5	V	14.47	5.21	5.84	15.10	33.00	-17.90
	1752.5	H	14.03	5.2	5.85	14.68	33.00	-18.32



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	13.12	5.13	5.92	13.91	33.00	-19.09
	1715.0	H	15.54	5.14	5.91	*16.31	33.00	-16.69
20175	1732.5	V	12.4	5.16	5.89	13.13	33.00	-19.87
	1732.5	H	14.99	5.16	5.89	15.72	33.00	-17.28
20350	1750.0	V	12.91	5.19	5.86	13.58	33.00	-19.42
	1750.0	H	12.86	5.19	5.86	13.53	33.00	-19.47

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	13.94	5.13	5.92	14.73	33.00	-18.27
	1715.0	H	16.42	5.14	5.91	*17.19	33.00	-15.81
20175	1732.5	V	12.44	5.16	5.89	13.17	33.00	-19.83
	1732.5	H	15.05	5.16	5.89	15.78	33.00	-17.22
20350	1750.0	V	13.27	5.19	5.86	13.94	33.00	-19.06
	1750.0	H	13.41	5.2	5.85	14.06	33.00	-18.94



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	12.11	5.13	5.92	12.90	33.00	-20.10
	1720.00	H	15.18	5.15	5.9	15.93	33.00	-17.07
20175	1732.50	V	12.95	5.16	5.89	13.68	33.00	-19.32
	1732.50	H	15.44	5.16	5.89	*16.17	33.00	-16.83
20300	1745.00	V	12.66	5.2	5.85	13.31	33.00	-19.69
	1745.00	H	12.94	5.19	5.86	13.61	33.00	-19.39

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	12.43	5.15	5.9	13.18	33.00	-19.82
	1720.00	H	15.11	5.15	5.9	*15.86	33.00	-17.14
20175	1732.50	V	12.29	5.16	5.89	13.02	33.00	-19.98
	1732.50	H	14.93	5.16	5.89	15.66	33.00	-17.34
20300	1745.00	V	12.73	5.2	5.85	13.38	33.00	-19.62
	1745.00	H	12.37	5.19	5.86	13.04	33.00	-19.96

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) $-30^{\circ}\text{C} \sim 50^{\circ}\text{C}$. According to the RSS-139 Issue 2 February 2009, The frequency stability shall be sufficient to ensure that the emission bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.

According to the RSS-130 Issue 1 October 2013,, The frequency offset shall be measured according to the procedure described in RSS-Gen and recorded.

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 $\pm 0.5^{\circ}\text{C}$ during the measurement testing.
5. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

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



TEST RESULTS

FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT:

LTE Band 13

Reference Frequency: LTE Band 13 782 MHz @ 20°C						
Limit: ± 2.5 ppm = 1955Hz						
Power Supply Vdc	Environment Temperature (°C)	5M Frequency (Hz)	Delta (Hz)	10M Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.8	50	781999993	-12	781999995	-10	1955
3.8	40	781999995	-10	781999999	-6	
3.8	30	781999998	-7	781999998	-7	
3.8	20	782000005	0	782000005	0	
3.8	10	781999994	-11	781999994	-11	
3.8	0	781999991	-14	781999991	-14	
3.8	-10	781999992	-13	781999993	-12	
3.8	-20	781999995	-10	781999996	-9	
3.8	-30	781999997	-8	781999995	-10	

LTE Band 4

Reference Frequency: LTE Band 4 1732.5 MHz @ 20°C								
Limit: ± 2.5 ppm = 4331Hz								
Power Supply Vdc	Environment Temperature (°C)	5M Frequency (Hz)	Delta (Hz)	10M Frequency (Hz)	Delta (Hz)	20M Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.8	50	173249992	-25	173249998	-10	173249985	-27	4331
3.8	40	173249995	-22	173249995	-13	173249997	-15	
3.8	30	173249994	-23	173249992	-16	173249996	-16	
3.8	20	173250017	0	173250008	0	173250012	0	
3.8	10	173249996	-21	173249992	-16	173249998	-14	
3.8	0	173249992	-25	173249994	-14	173249993	-19	
3.8	-10	173249995	-22	173249992	-16	173249994	-18	
3.8	-20	173249997	-20	173249992	-16	173249995	-17	
3.8	-30	173249996	-21	173249999	-9	173250010	-2	



FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT:

LTE Band 13

Reference Frequency: LTE Band 13 782 MHz @ 20°C						
Limit: ± 2.5 ppm = 1775Hz						
Power Supply Vdc	Environment Temperature (°C)	5M Frequency (Hz)	Delta (Hz)	10M Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.37	20	782000004	-1	782000009	4	1955
3.8		782000005	0	782000005	0	
3.23		782000009	4	782000007	2	

LTE Band 4

Reference Frequency: LTE Band 4 1732.5 MHz @ 20°C								
Limit: ± 2.5 ppm = 4331Hz								
Power Supply Vdc	Environment Temperature (°C)	5M Frequency (Hz)	Delta (Hz)	10M Frequency (Hz)	Delta (Hz)	20M Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.37	20	173250015	-2	173250007	-1	173250005	-7	4331
3.8		173250017	0	173250008	0	173250012	0	
3.23		173250010	-7	173250005	-3	173250017	5	



7.3 OCCUPIED BANDWIDTH MEASUREMENT

LIMITS

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

TEST PROCEDURES

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



TEST RESULTS

LTE Band 13

CHANNEL BANDWIDTH: 5MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	779.5	4.5014
Mid	782.0	5.5204
High	784.5	4.5484

CHANNEL BANDWIDTH: 5MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	779.5	4.5006
Mid	782.0	4.5194
High	784.5	4.5299

CHANNEL BANDWIDTH: 10MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Mid	782.0	8.9524

CHANNEL BANDWIDTH: 10MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Mid	782.0	8.9488



LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1712.5	4.5127
Mid	1732.5	4.5169
High	1752.5	4.5076

CHANNEL BANDWIDTH: 5MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1712.5	4.5280
Mid	1732.5	4.5291
High	1752.5	4.5085

CHANNEL BANDWIDTH: 10MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1715.0	8.9331
Mid	1732.5	8.9479
High	1750.0	8.9519

CHANNEL BANDWIDTH: 10MHz / 16QAM

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	1715.0	8.9421
Mid	1732.5	8.9410
High	1750.0	8.9384



CHANNEL BANDWIDTH: 20MHz / QPSK

Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	20050	17.8067
Mid	20170	17.8758
High	20300	17.8380

CHANNEL BANDWIDTH: 20MHz / 16QAM

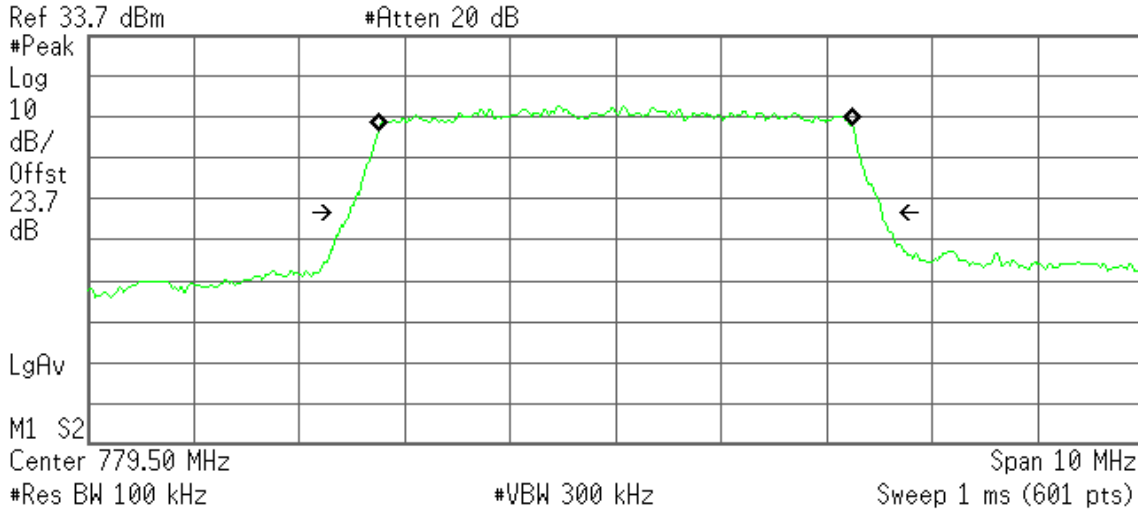
Channel	FREQUENCY (MHz)	Occupied bandwidth (MHz)
Low	20050	17.8283
Mid	20170	17.8689
High	20300	17.8364



LTE Band 13
CHANNEL BANDWIDTH: 5MHz / QPSK
CH Low

Agilent

R T



Occupied Bandwidth
4.5014 MHz

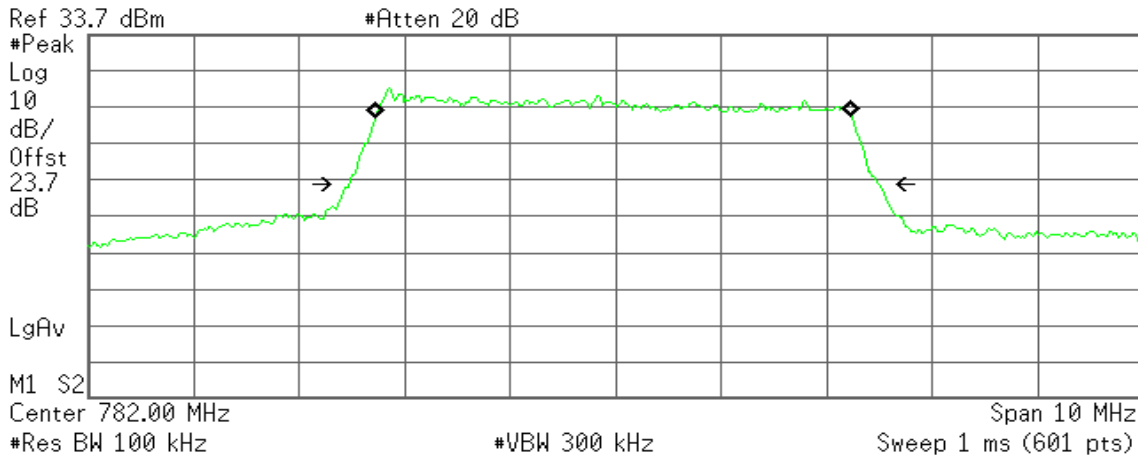
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 2.386 kHz
x dB Bandwidth 5.054 MHz

CH Mid

Agilent

R T



Occupied Bandwidth
4.5204 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

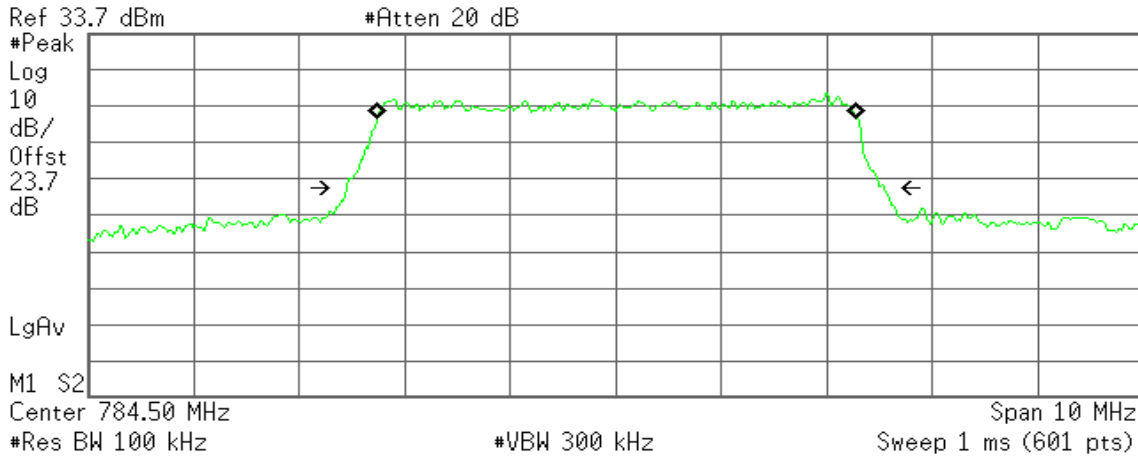
Transmit Freq Error -19.085 kHz
x dB Bandwidth 5.028 MHz



CH High

Agilent

R T



Occupied Bandwidth
4.5484 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

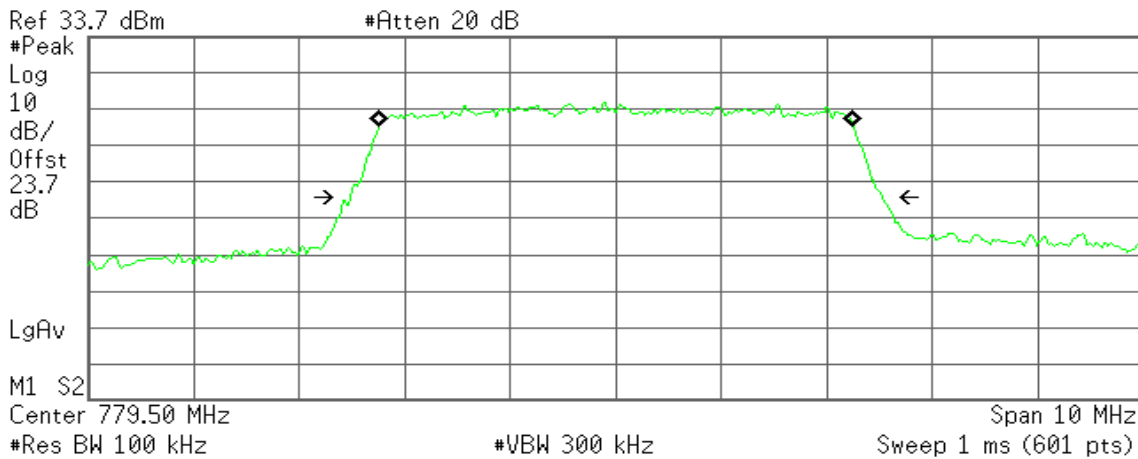
Transmit Freq Error 9.438 kHz
x dB Bandwidth 5.106 MHz

CHANNEL BANDWIDTH: 5MHz / 16QAM

CH Low

Agilent

R T



Occupied Bandwidth
4.5006 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

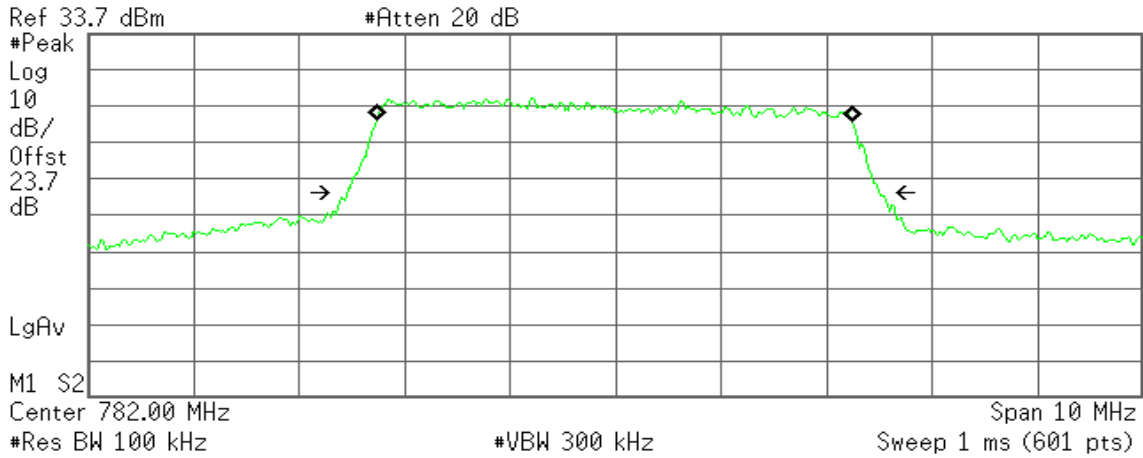
Transmit Freq Error 6.808 kHz
x dB Bandwidth 5.052 MHz



CH Mid

Agilent

R T



Occupied Bandwidth
 4.5194 MHz

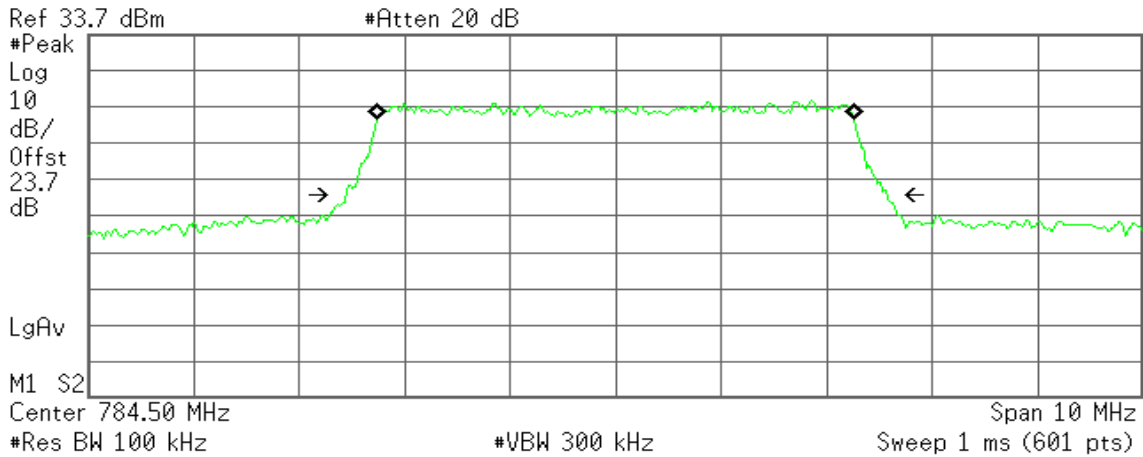
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -12.418 kHz
x dB Bandwidth 5.047 MHz

CH High

Agilent

R T



Occupied Bandwidth
 4.5299 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 172.071 Hz
x dB Bandwidth 5.138 MHz

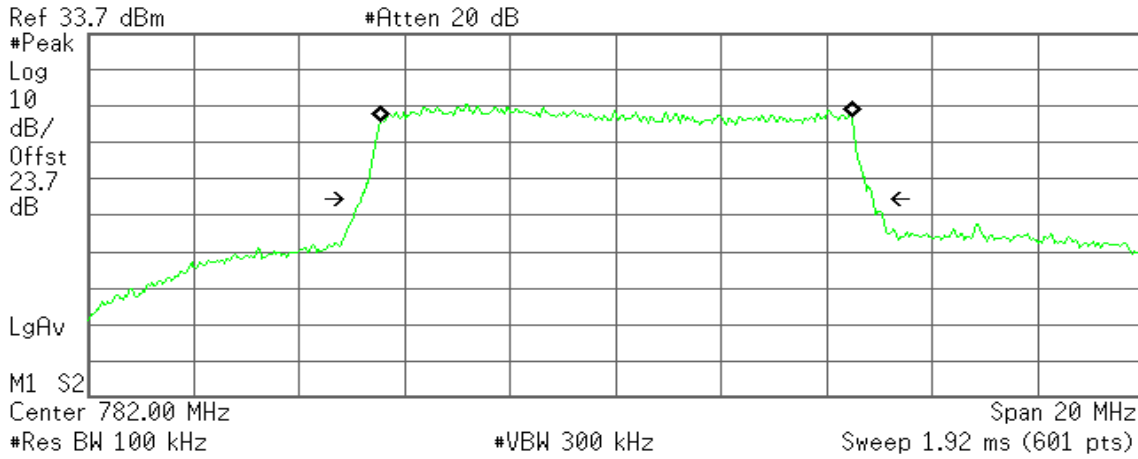


CHANNEL BANDWIDTH: 10MHz / QPSK

CH Mid

Agilent

R T



Occupied Bandwidth
 8.9524 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

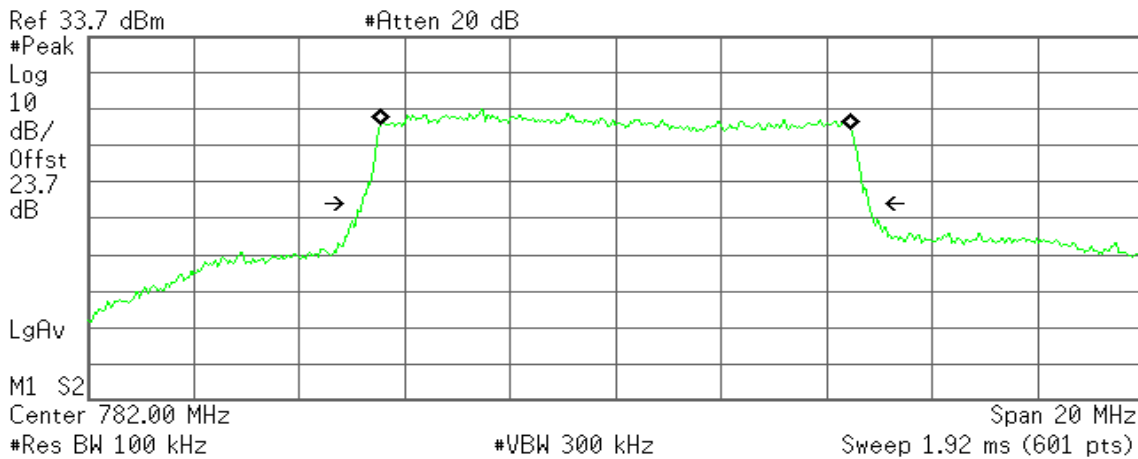
Transmit Freq Error 8.154 kHz
x dB Bandwidth 9.714 MHz

CHANNEL BANDWIDTH: 10MHz / 16QAM

CH Mid

Agilent

R T



Occupied Bandwidth
 8.9488 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 888.597 Hz
x dB Bandwidth 9.628 MHz



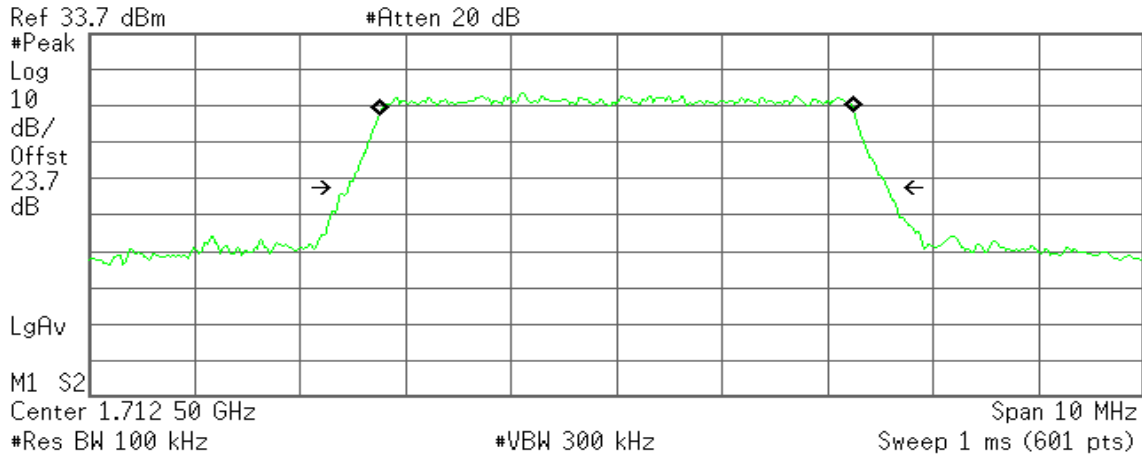
LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK

CH Low

Agilent

R T



Occupied Bandwidth
4.5127 MHz

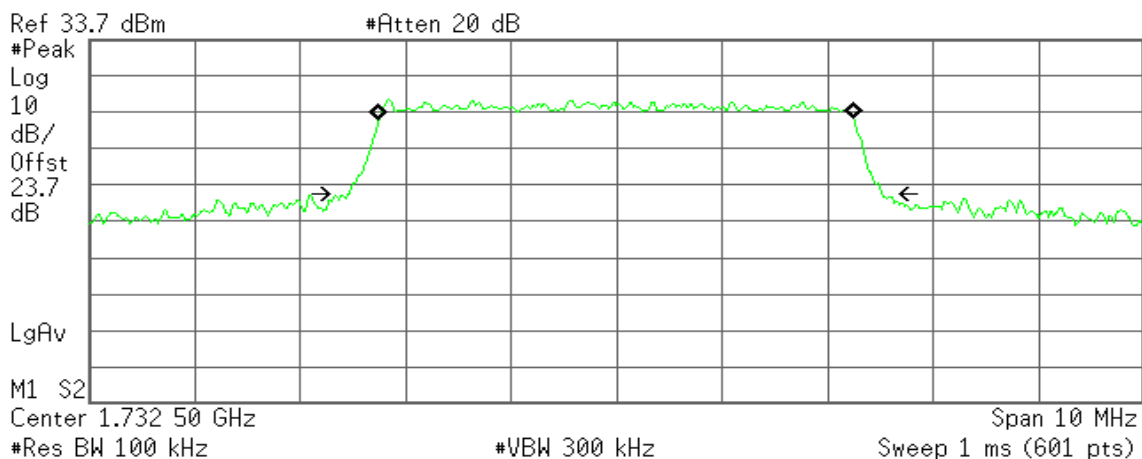
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -395.747 Hz
x dB Bandwidth 5.119 MHz

CH Mid

Agilent

R T



Occupied Bandwidth
4.5169 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

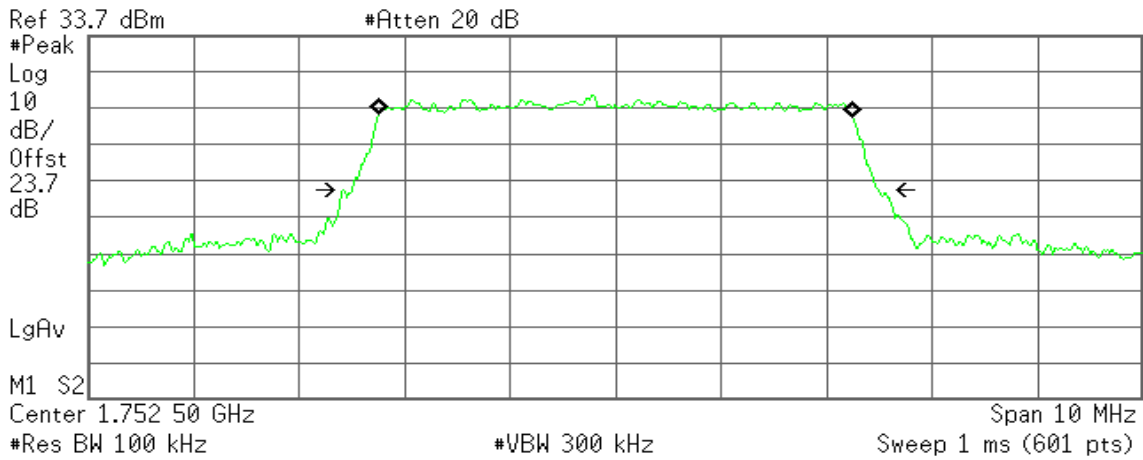
Transmit Freq Error -228.940 Hz
x dB Bandwidth 5.074 MHz



CH High

Agilent

R T



Occupied Bandwidth
 4.5076 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

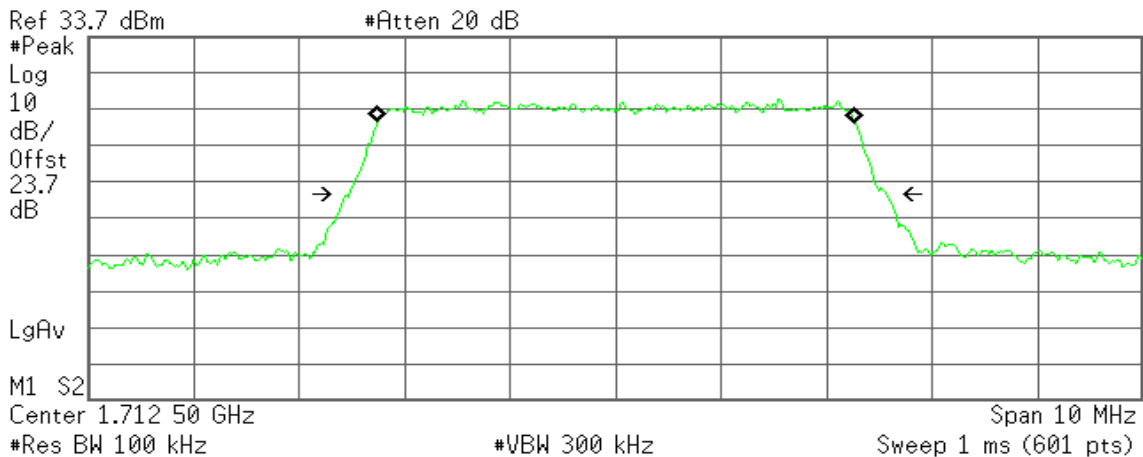
Transmit Freq Error 1.020 kHz
x dB Bandwidth 4.990 MHz

CHANNEL BANDWIDTH: 5MHz / 16QAM

CH Low

Agilent

R T



Occupied Bandwidth
 4.5280 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

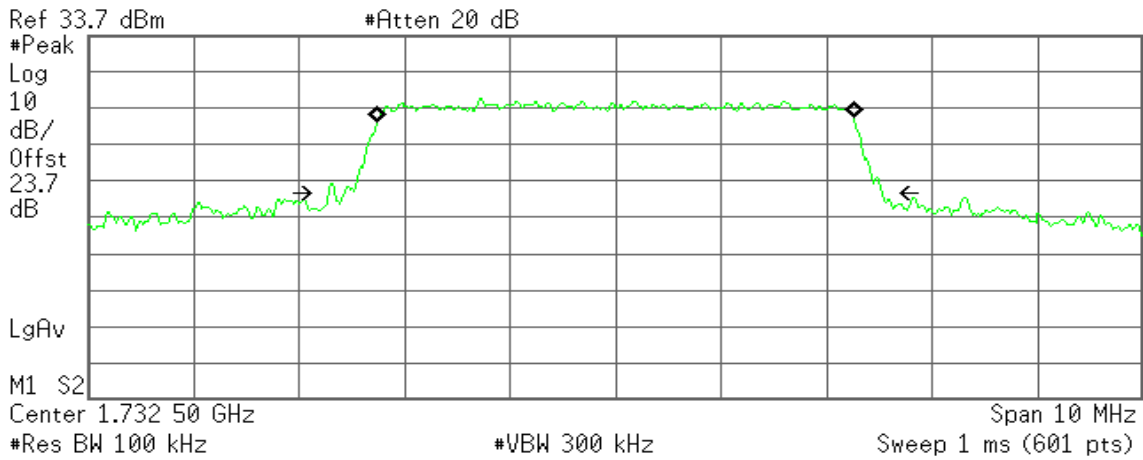
Transmit Freq Error 5.454 kHz
x dB Bandwidth 5.094 MHz



CH Mid

Agilent

R T



Occupied Bandwidth
 4.5291 MHz

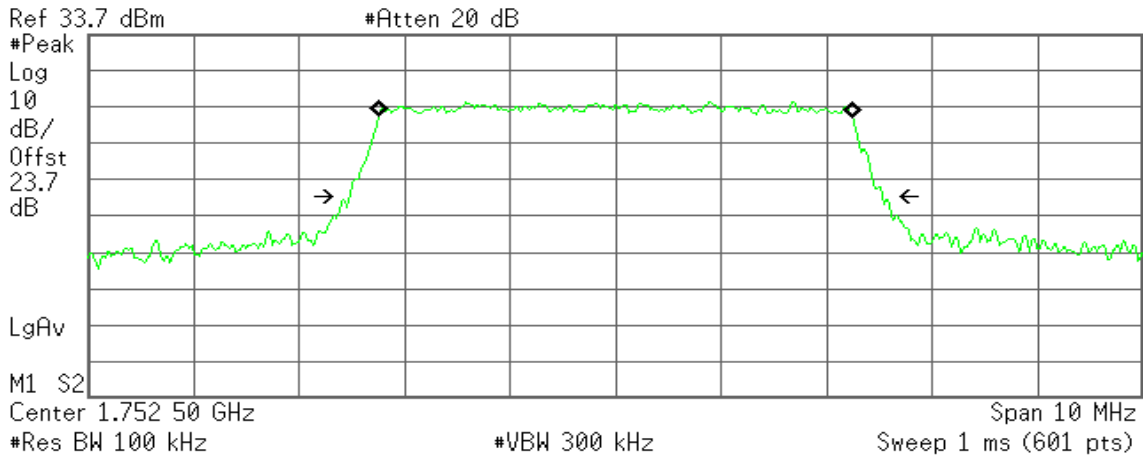
Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -321.706 Hz
 x dB Bandwidth 5.256 MHz

CH High

Agilent

R T



Occupied Bandwidth
 4.5085 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error 865.707 Hz
 x dB Bandwidth 5.053 MHz

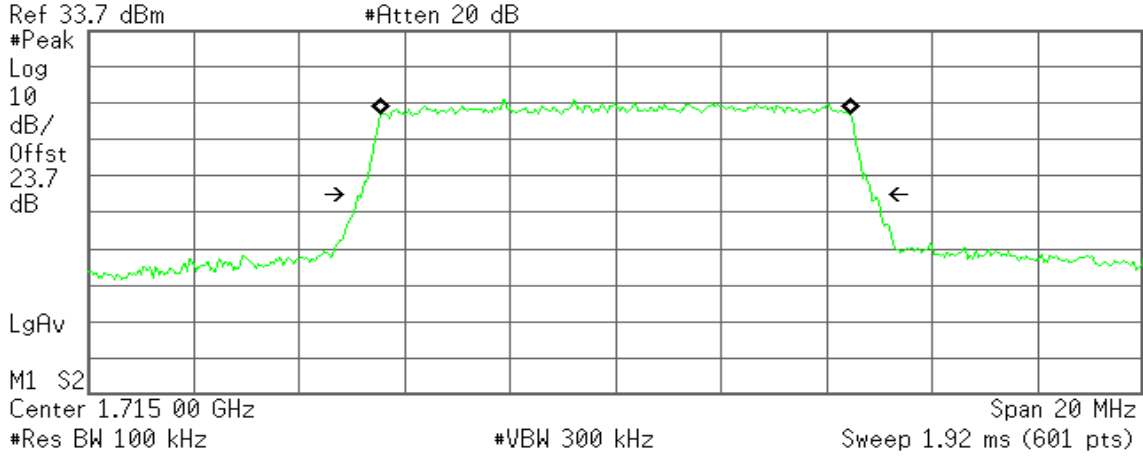


CHANNEL BANDWIDTH: 10MHz / QPSK

CH Low

Agilent

R T



Occupied Bandwidth
8.9331 MHz

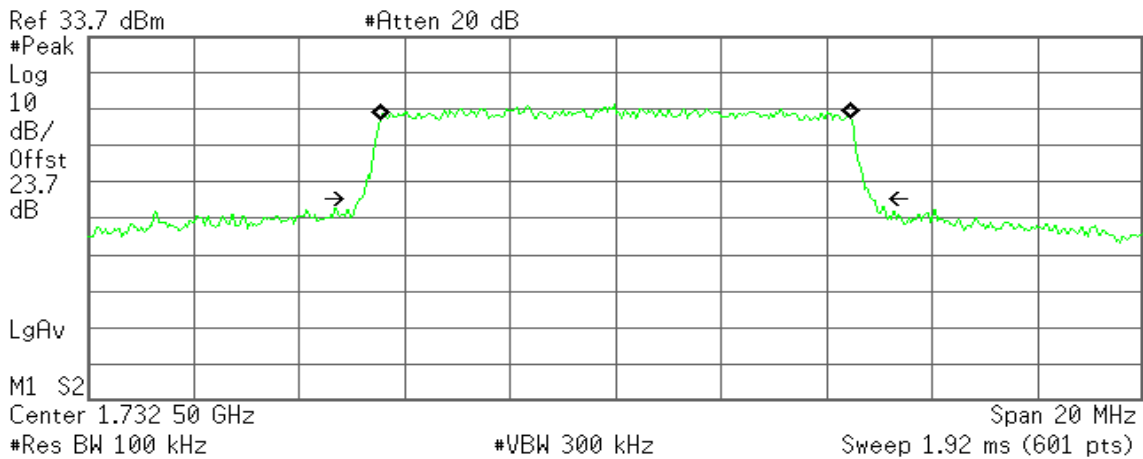
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 2.277 kHz
x dB Bandwidth 9.682 MHz

CH Mid

Agilent

R T



Occupied Bandwidth
8.9479 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

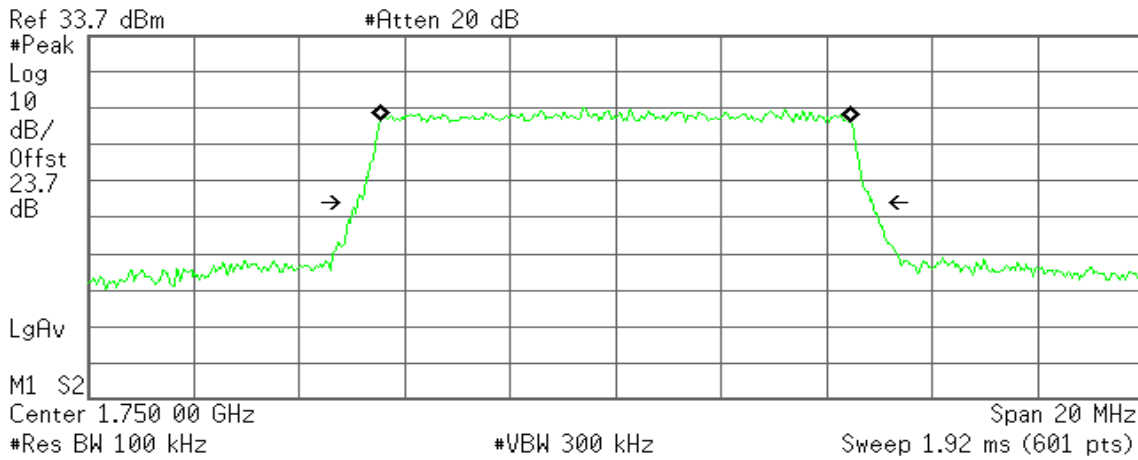
Transmit Freq Error 2.327 kHz
x dB Bandwidth 9.687 MHz



CH High

Agilent

R T



Occupied Bandwidth
 8.9519 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

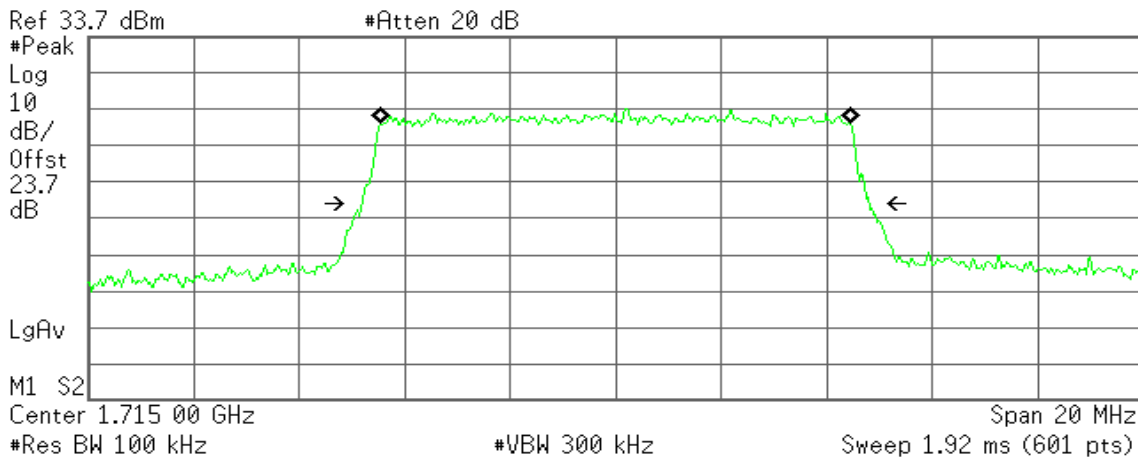
Transmit Freq Error 1.717 kHz
x dB Bandwidth 9.790 MHz

CHANNEL BANDWIDTH: 10MHz / 16QAM

CH Low

Agilent

R T



Occupied Bandwidth
 8.9421 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

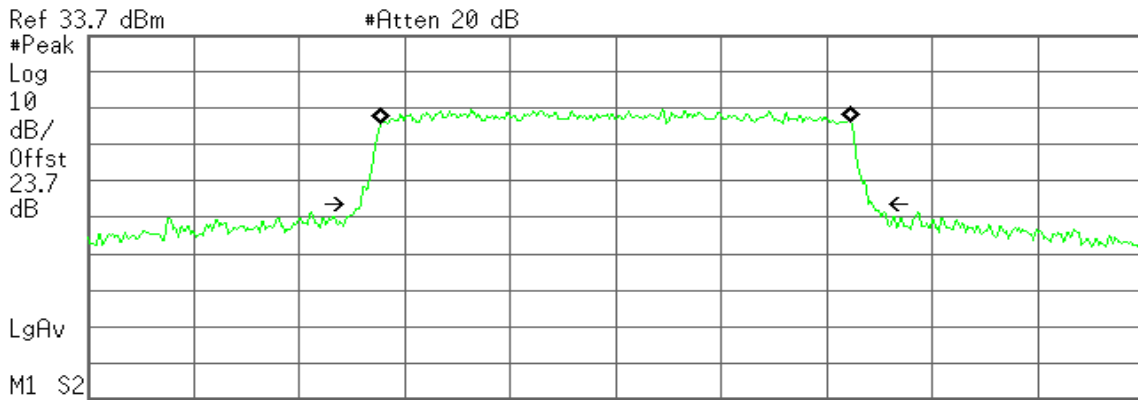
Transmit Freq Error -4.638 kHz
x dB Bandwidth 9.644 MHz



CH Mid

Agilent

R T



Center 1.732 50 GHz Span 20 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 1.92 ms (601 pts)

Occupied Bandwidth
8.9410 MHz

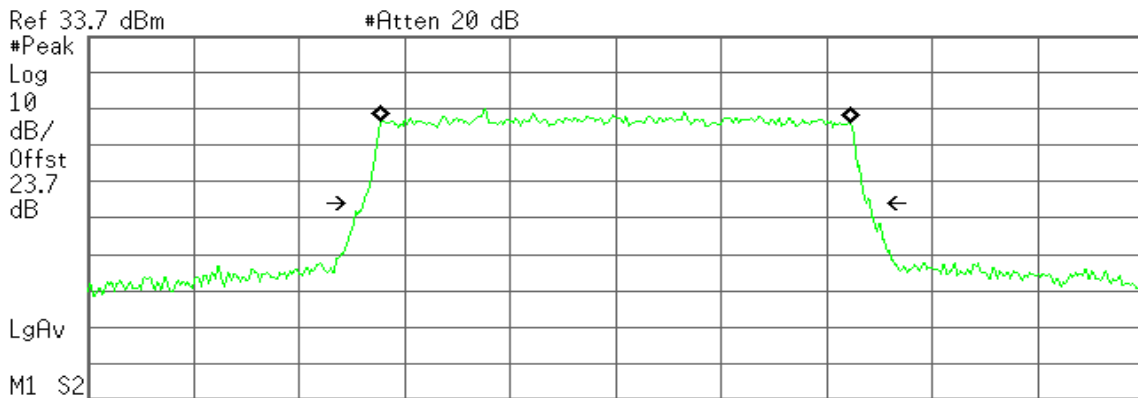
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 2.342 kHz
x dB Bandwidth 9.705 MHz

CH High

Agilent

R T



Center 1.750 00 GHz Span 20 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 1.92 ms (601 pts)

Occupied Bandwidth
8.9384 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 4.413 kHz
x dB Bandwidth 9.635 MHz

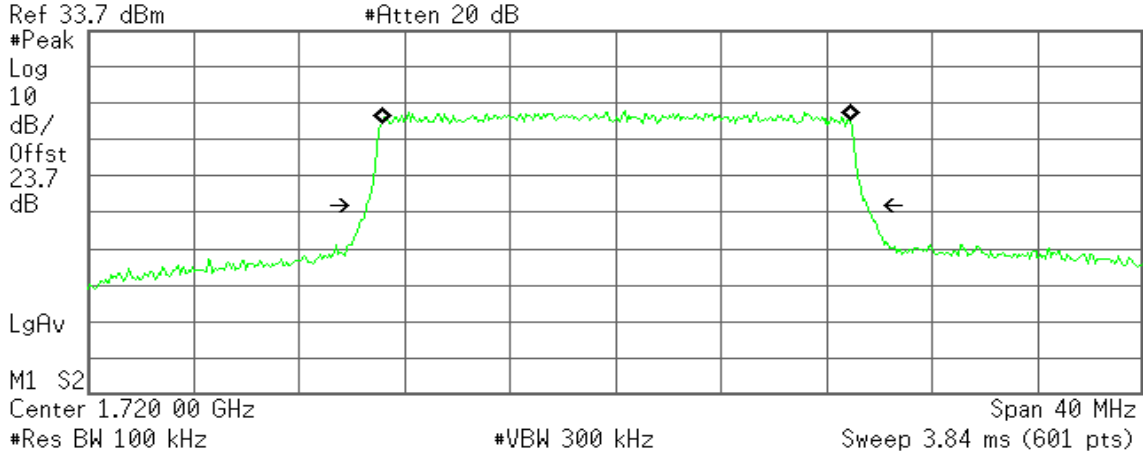


CHANNEL BANDWIDTH: 20MHz / QPSK

CH Low

Agilent

R T



Occupied Bandwidth
17.8067 MHz

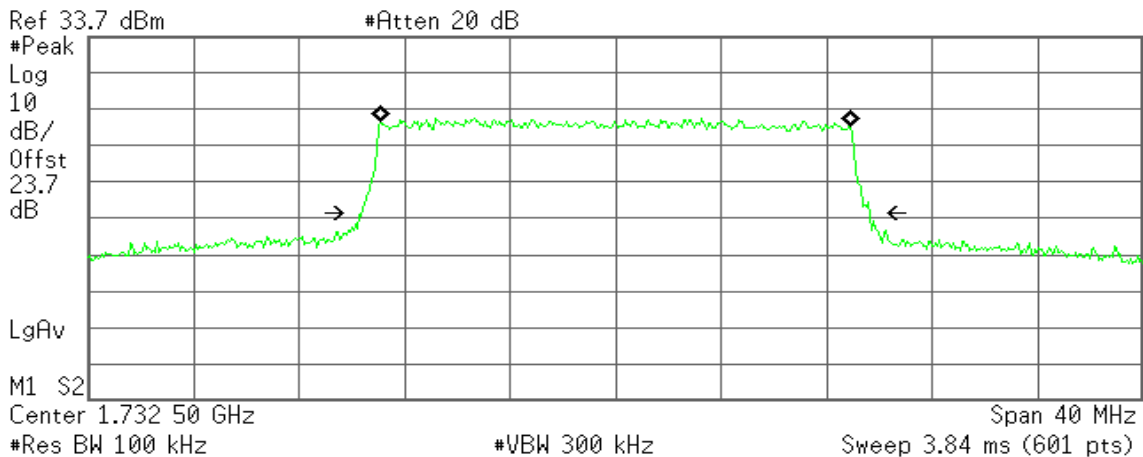
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 10.689 kHz
x dB Bandwidth 19.040 MHz

CH Mid

Agilent

R T



Occupied Bandwidth
17.8758 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

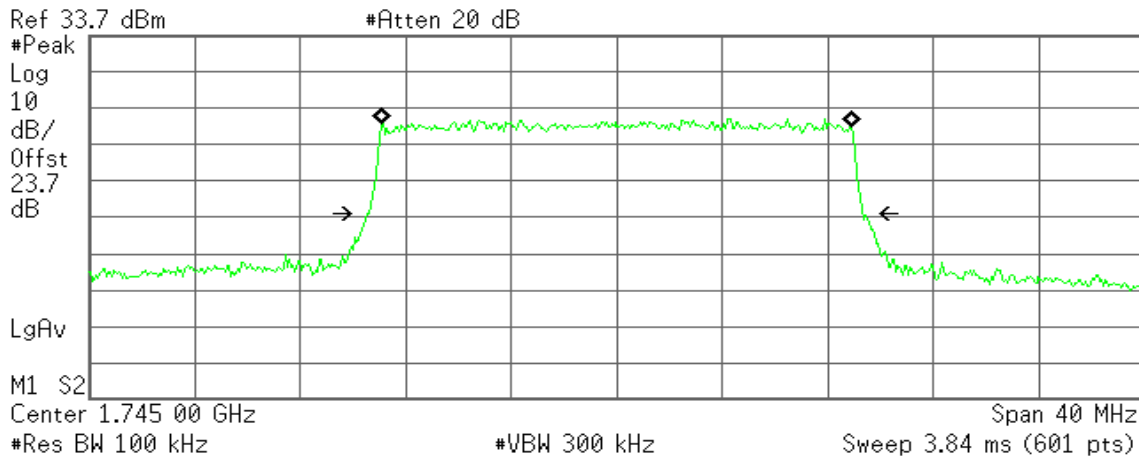
Transmit Freq Error -18.589 kHz
x dB Bandwidth 19.296 MHz



CH High

Agilent

R T



Occupied Bandwidth
17.8380 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

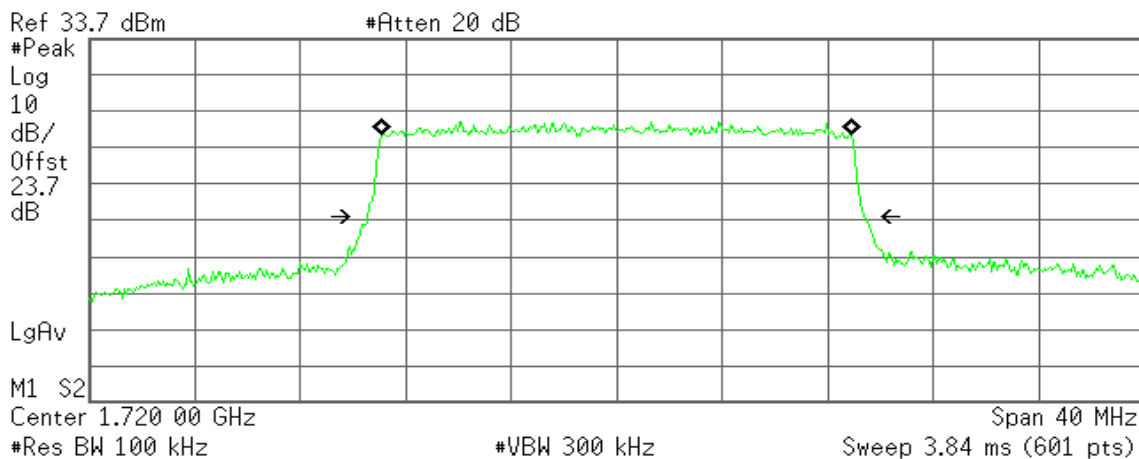
Transmit Freq Error -861.803 Hz
x dB Bandwidth 18.779 MHz

CHANNEL BANDWIDTH: 20MHz / 16QAM

CH Low

Agilent

R T



Occupied Bandwidth
17.8283 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

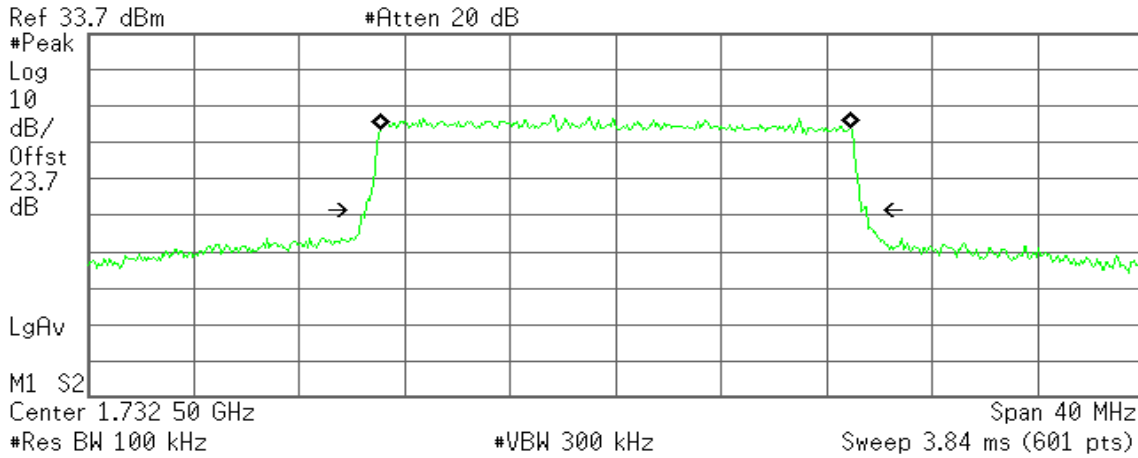
Transmit Freq Error -9.650 kHz
x dB Bandwidth 18.843 MHz



CH Mid

Agilent

R T



Occupied Bandwidth
 17.8689 MHz

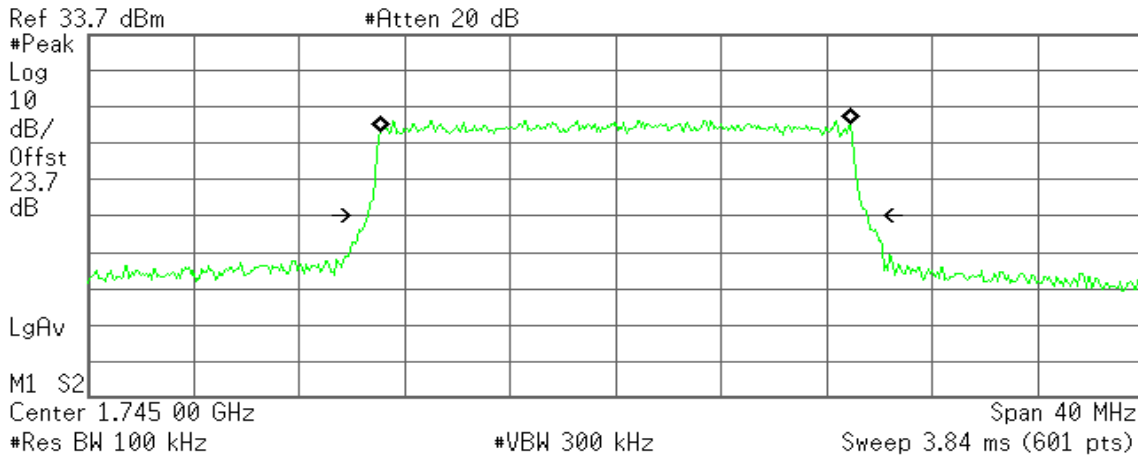
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 6.074 kHz
x dB Bandwidth 19.049 MHz

CH High

Agilent

R T



Occupied Bandwidth
 17.8364 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 5.037 kHz
x dB Bandwidth 18.955 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 \geq signal's occupied bandwidth.
2. Set the number of counts to a value that stabilizes the measured CCDF curve.
3. Record the maximum PAPR level associated with a probability of 0.1%.



TEST RESULTS

LTE Band 13

CHANNEL BANDWIDTH: 5MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	779.05	6.75
Mid	782.00	7.03
High	784.50	6.87

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	779.05	7.83
Mid	782.00	7.87
High	784.50	7.90

CHANNEL BANDWIDTH: 10MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Mid	782.00	4.96

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Mid	782.00	7.14



LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1712.5	6.52
Mid	1732.5	5.17
High	1752.5	5.78

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1712.5	7.88
Mid	1732.5	6.16
High	1752.5	6.58

CHANNEL BANDWIDTH: 10MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	4.95
Mid	1732.5	5.23
High	1750.0	5.51

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

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	5.12
Mid	1732.5	5.34
High	1750.0	4.95



CHANNEL BANDWIDTH: 20MHz / QPSK / 100%RB

Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	7.24
Mid	1732.5	7.42
High	1750.0	7.29

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

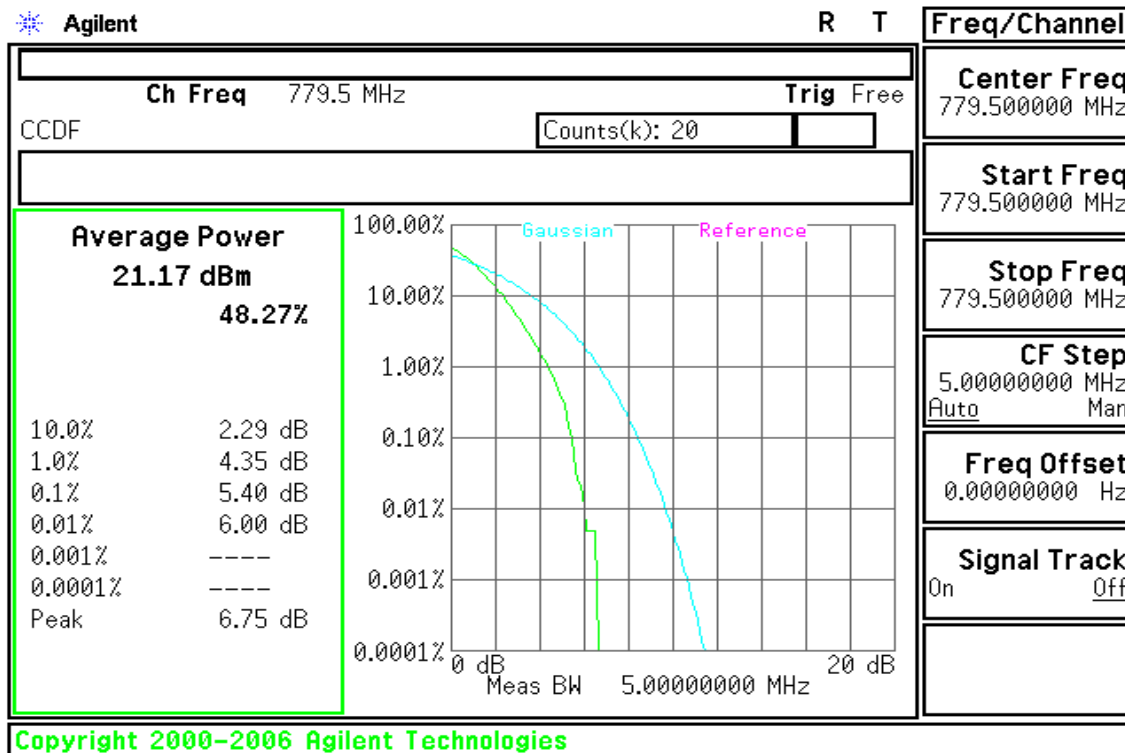
Channel	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
Low	1715.0	9.04
Mid	1732.5	8.92
High	1750.0	9.09



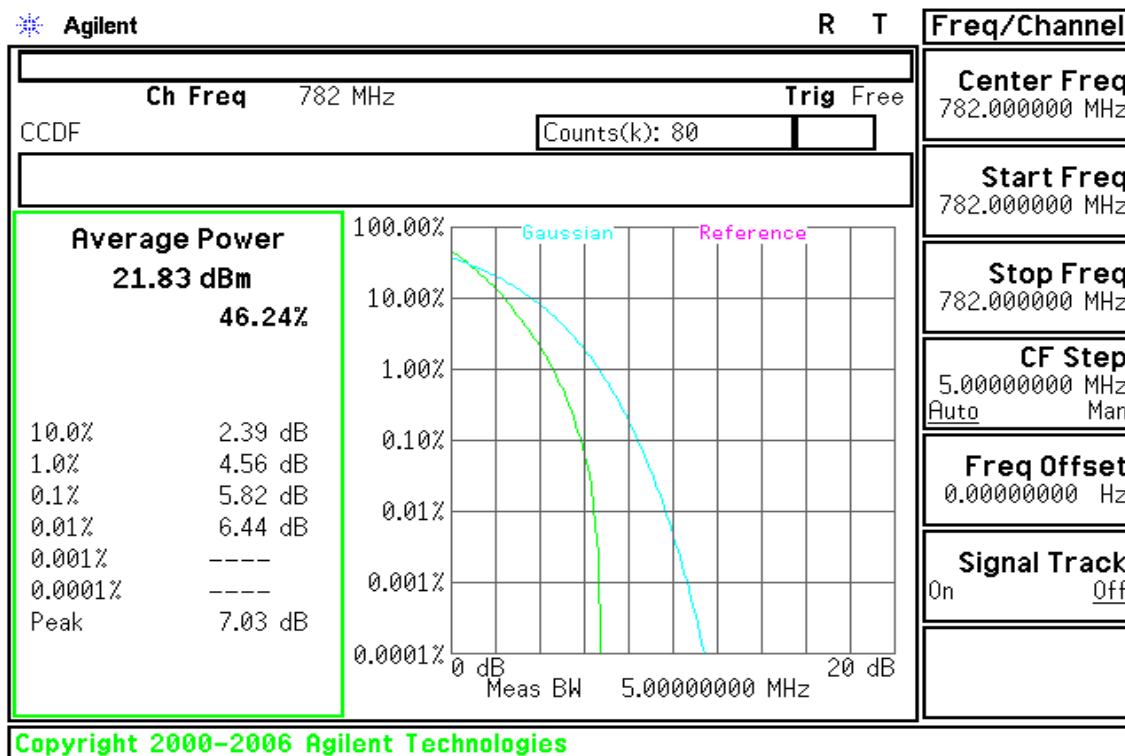
LTE Band 13

CHANNEL BANDWIDTH: 5MHz / QPSK

CH Low

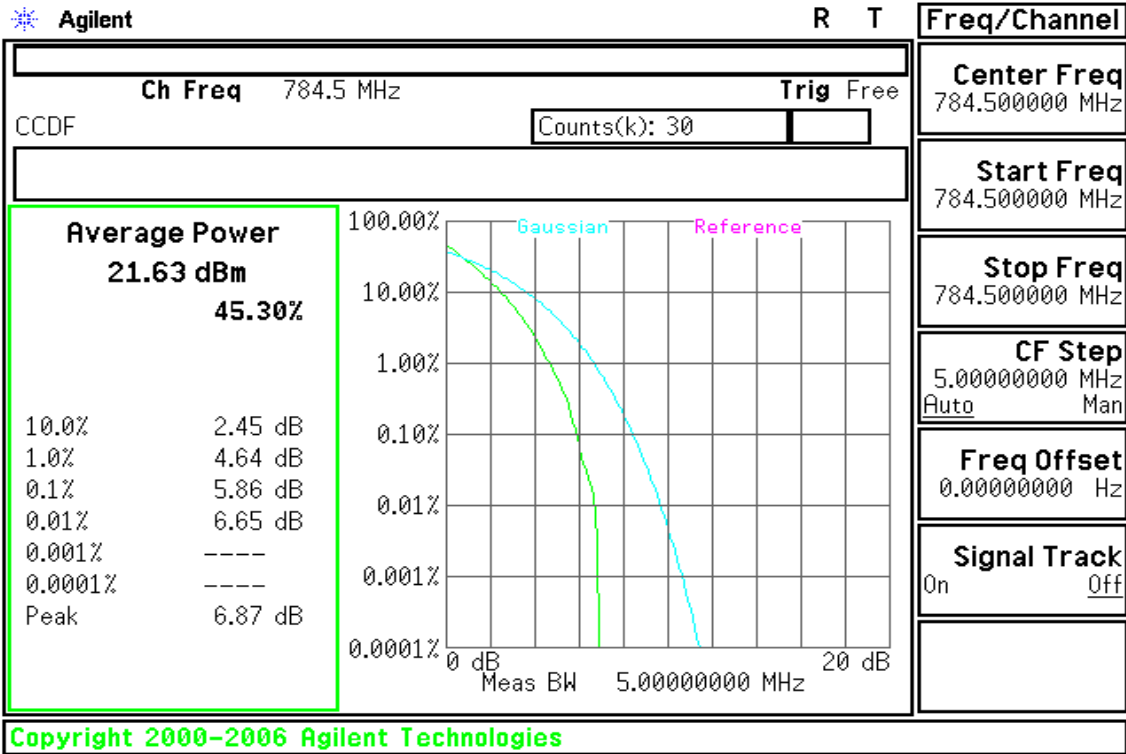


CH Mid



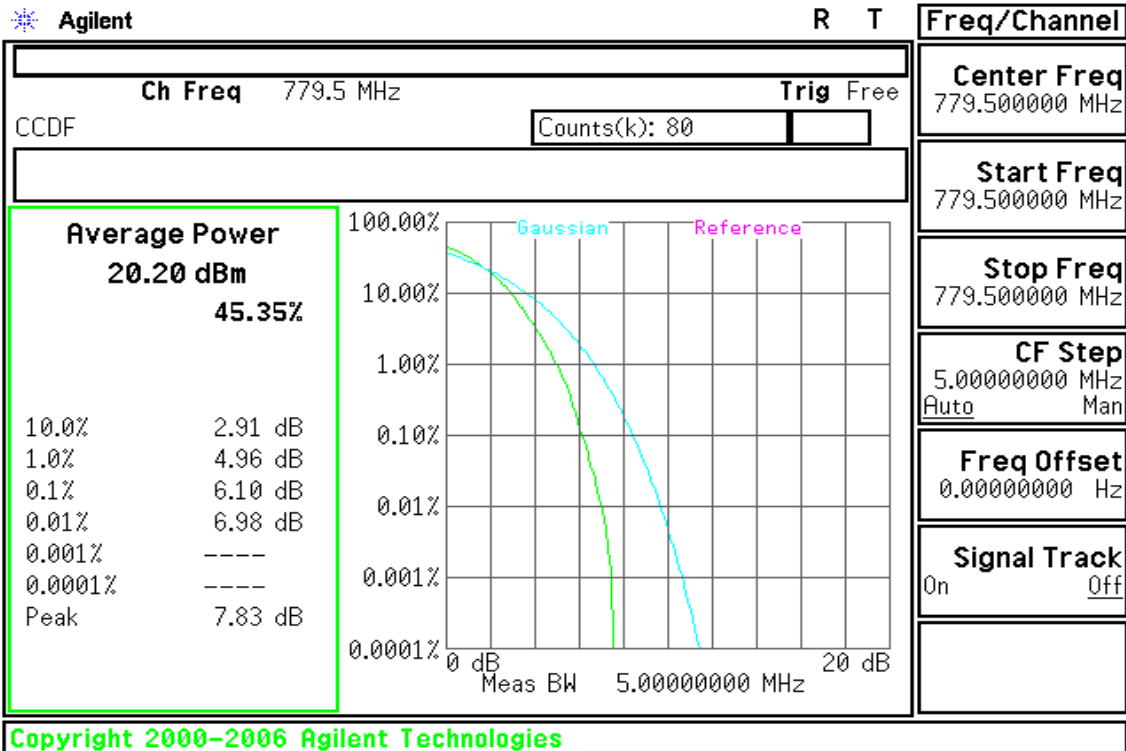


CH High



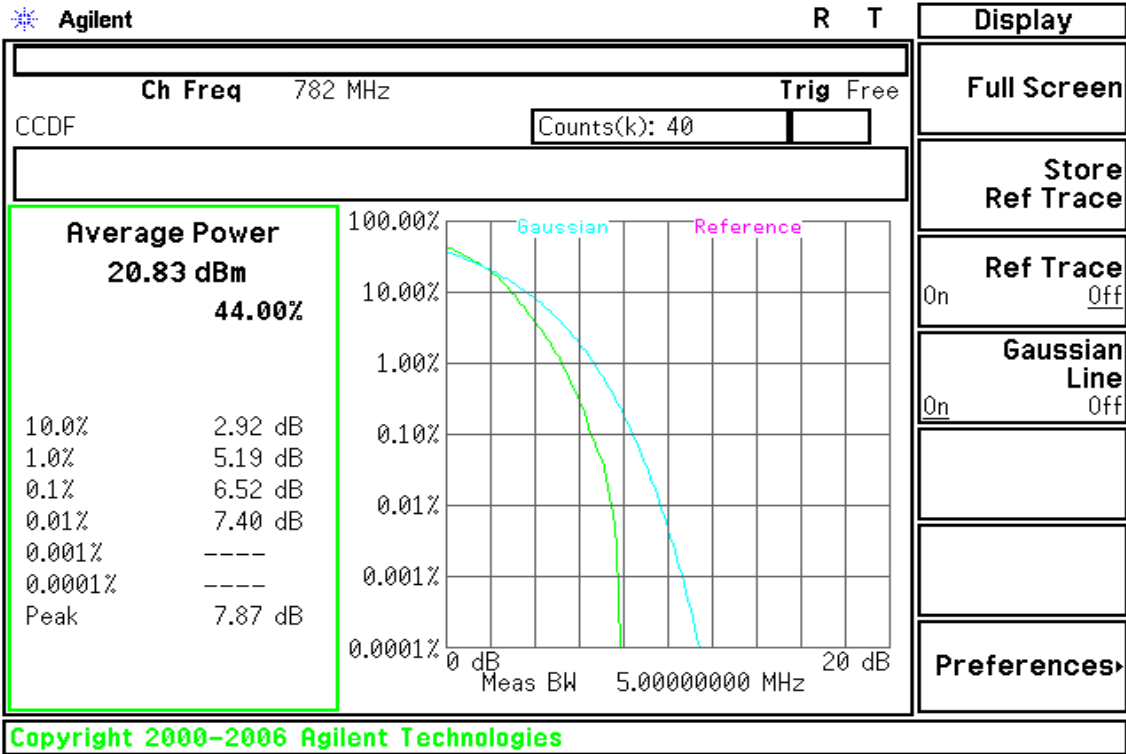
CHANNEL BANDWIDTH: 5MHz / 16QAM

CH Low

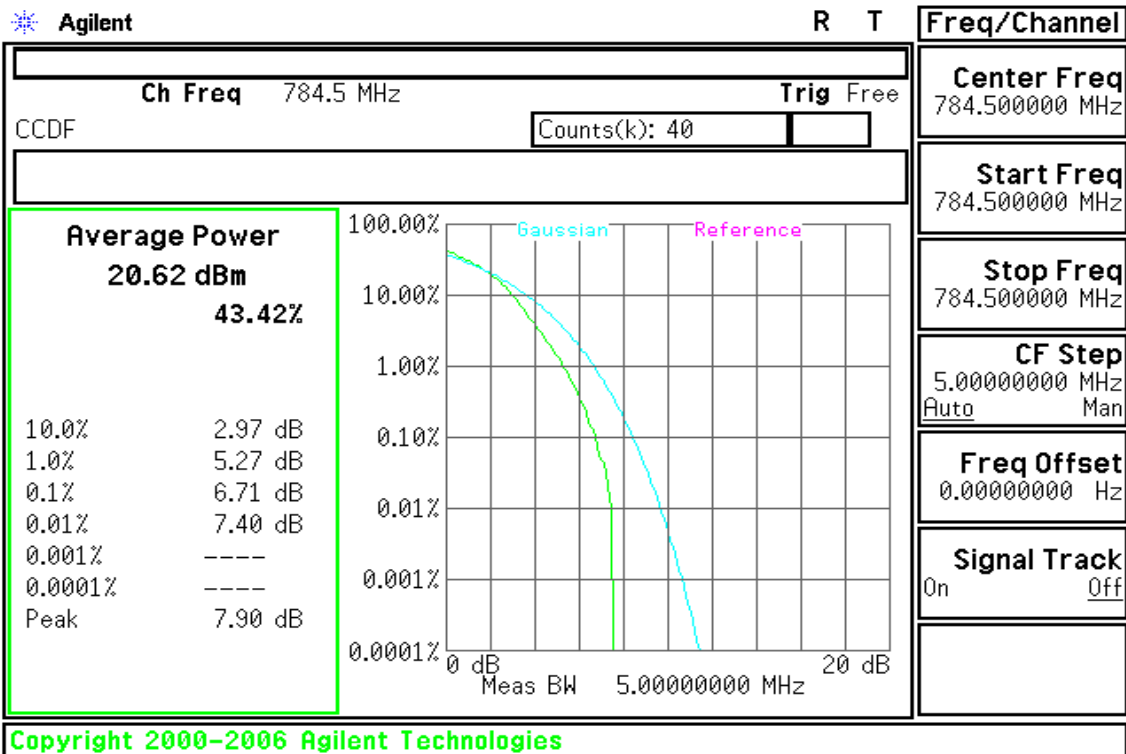




CH Mid



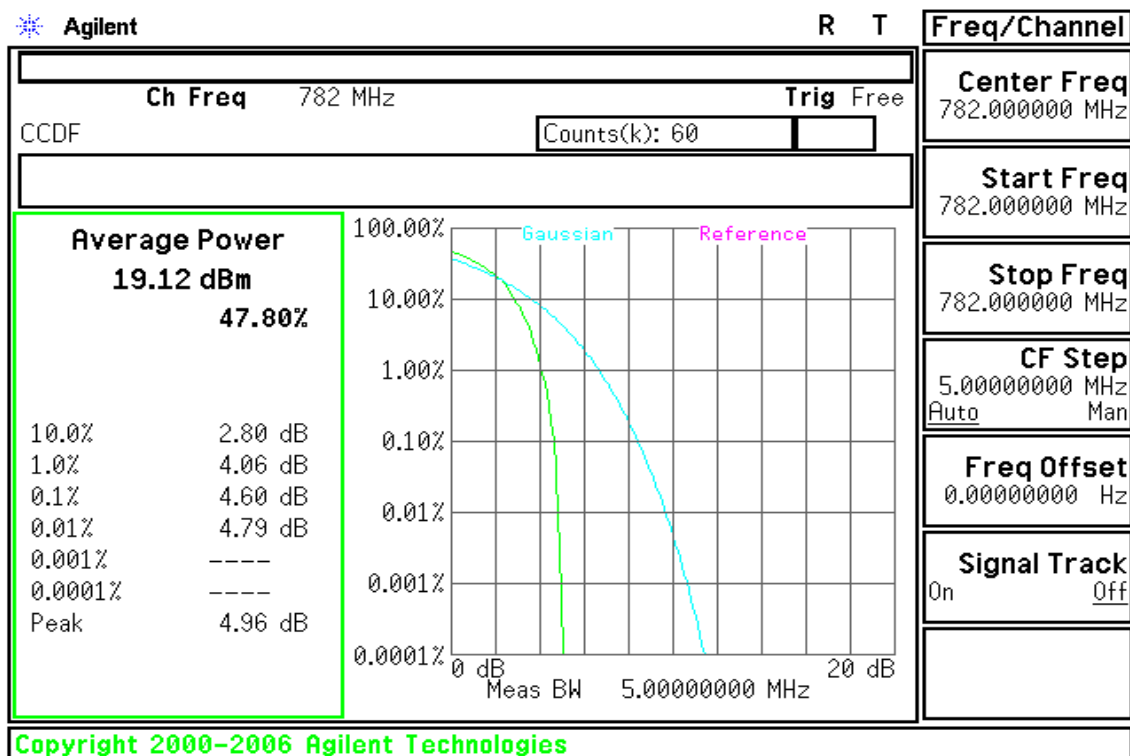
CH High





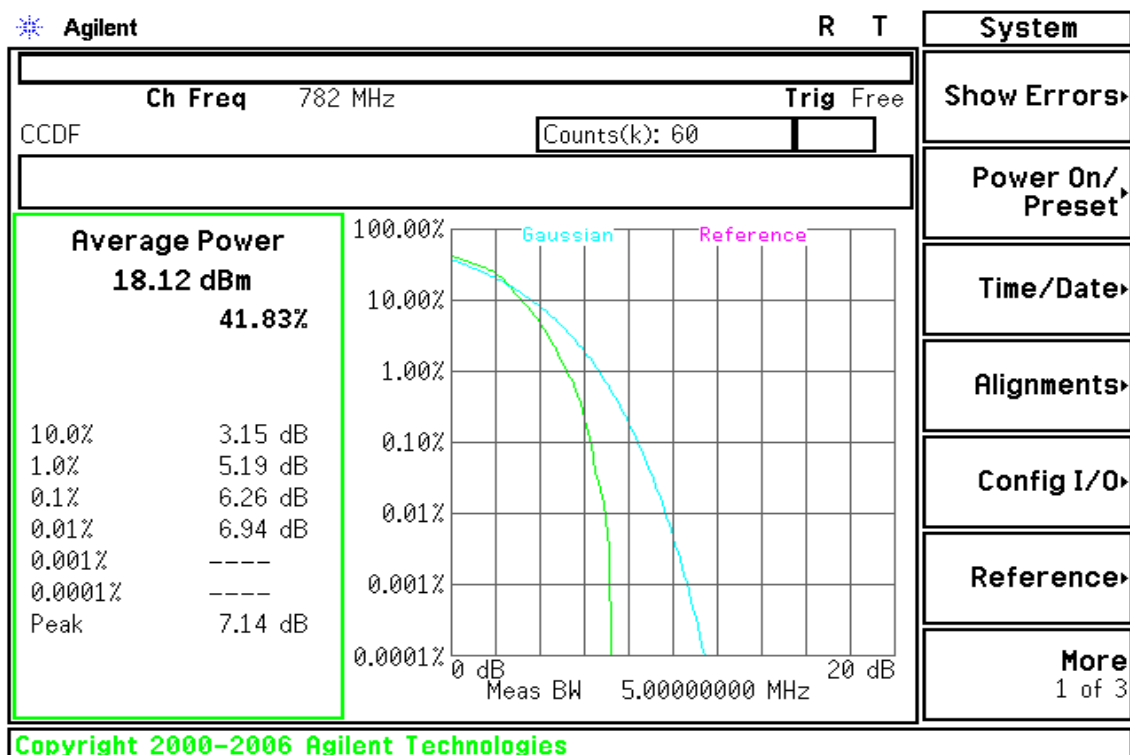
CHANNEL BANDWIDTH: 10MHz / QPSK

CH Mid



CHANNEL BANDWIDTH: 10MHz / 16QAM

CH Mid

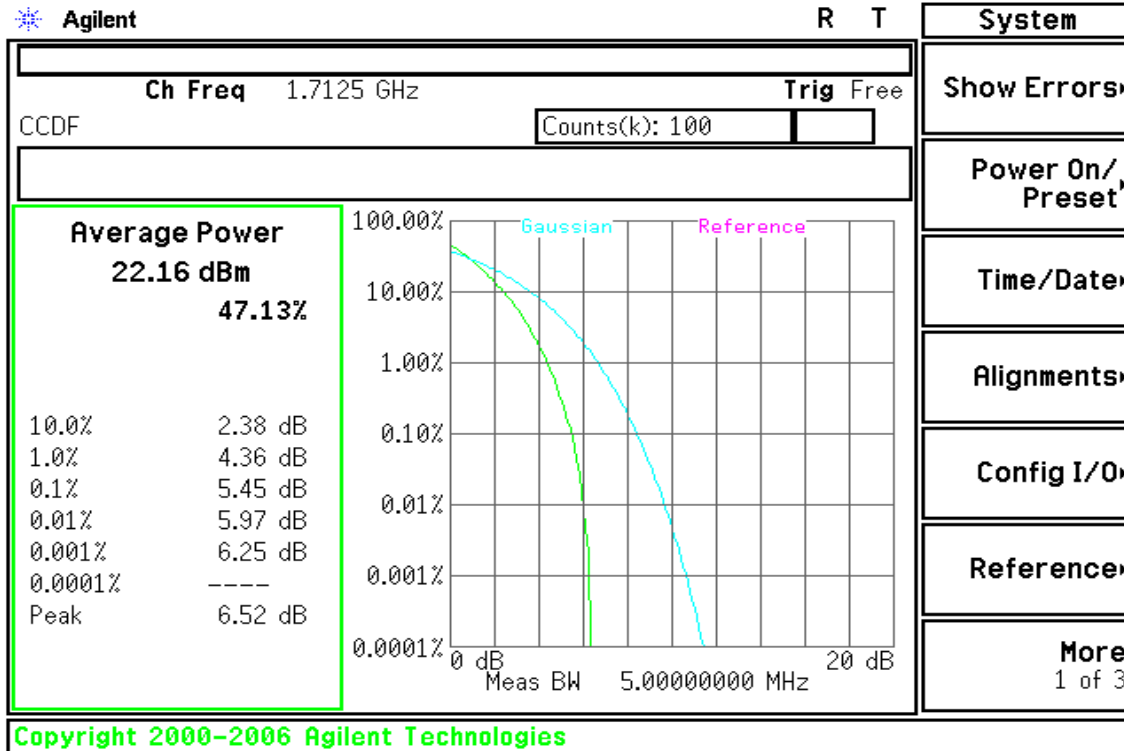




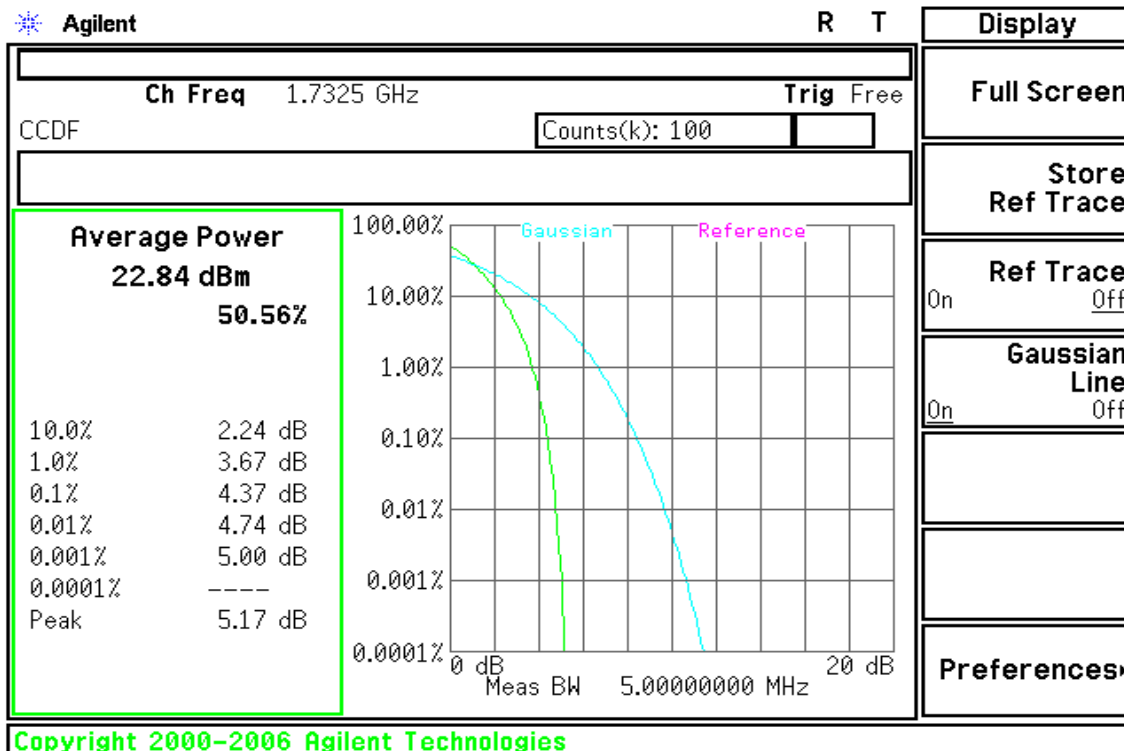
LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK

CH Low

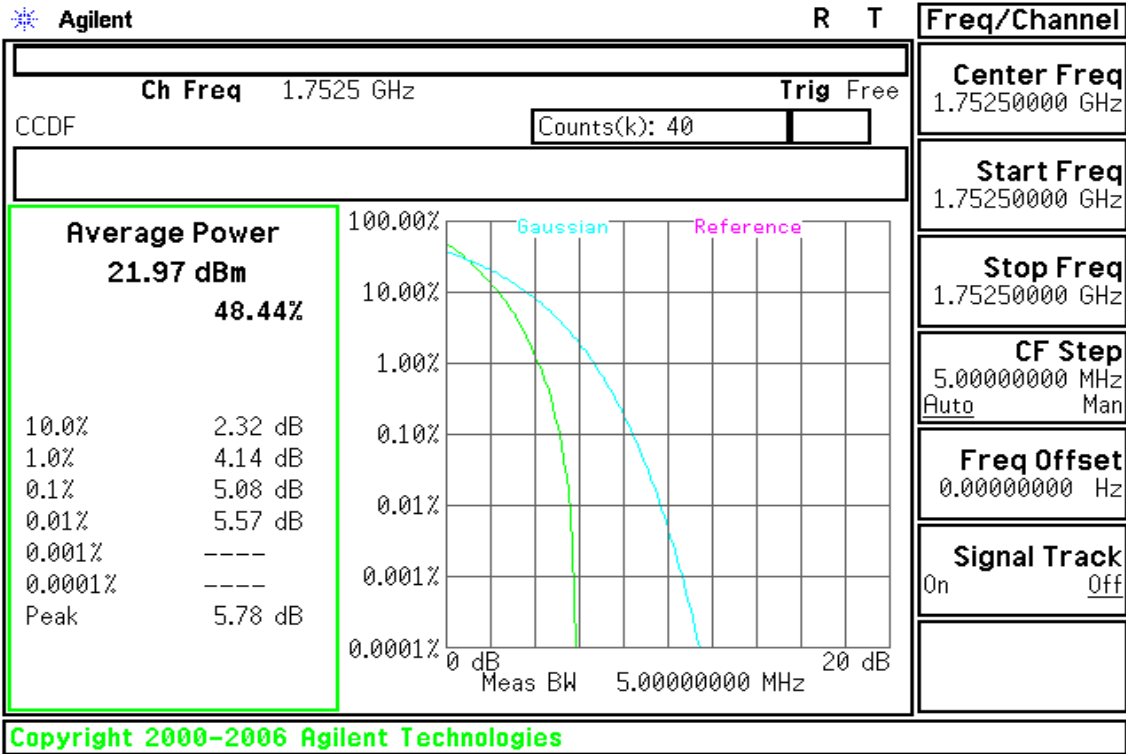


CH Mid



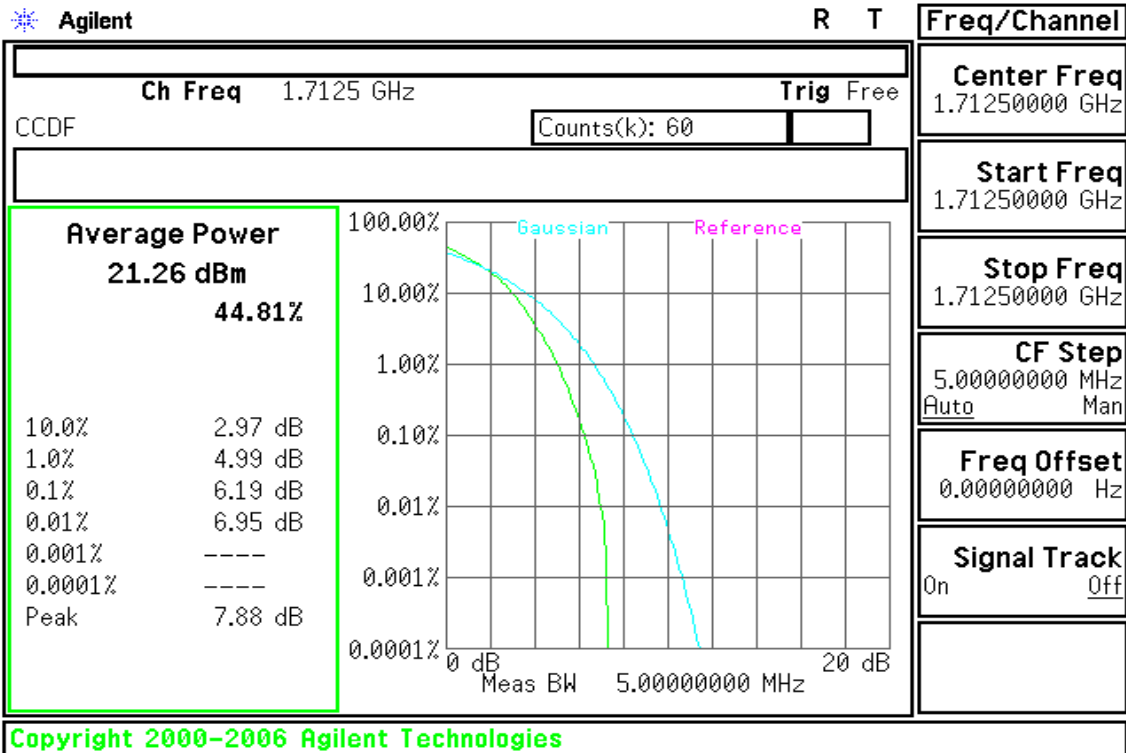


CH High



CHANNEL BANDWIDTH: 5MHz / 16QAM

CH Low





CH Mid

Agilent R T

Ch Freq 1.7325 GHz Trig Free

CCDF Counts(k): 100

Average Power 21.70 dBm 46.90%	
10.0% 2.83 dB	
1.0% 4.45 dB	
0.1% 5.27 dB	
0.01% 5.75 dB	
0.001% 6.00 dB	
0.0001% 6.16 dB	
Peak	

Meas BW 5.00000000 MHz

Freq/Channel
Center Freq 1.73250000 GHz
Start Freq 1.73250000 GHz
Stop Freq 1.73250000 GHz
CF Step 5.00000000 MHz Auto Man
Freq Offset 0.00000000 Hz
Signal Track On Off

Copyright 2000-2006 Agilent Technologies

CH High

Agilent R T

Ch Freq 1.7525 GHz Trig Free

CCDF Counts(k): 30

Average Power 20.99 dBm 45.63%	
10.0% 2.88 dB	
1.0% 4.78 dB	
0.1% 5.80 dB	
0.01% 6.30 dB	
0.001% ----	
0.0001% ----	
Peak	
6.58 dB	

Meas BW 5.00000000 MHz

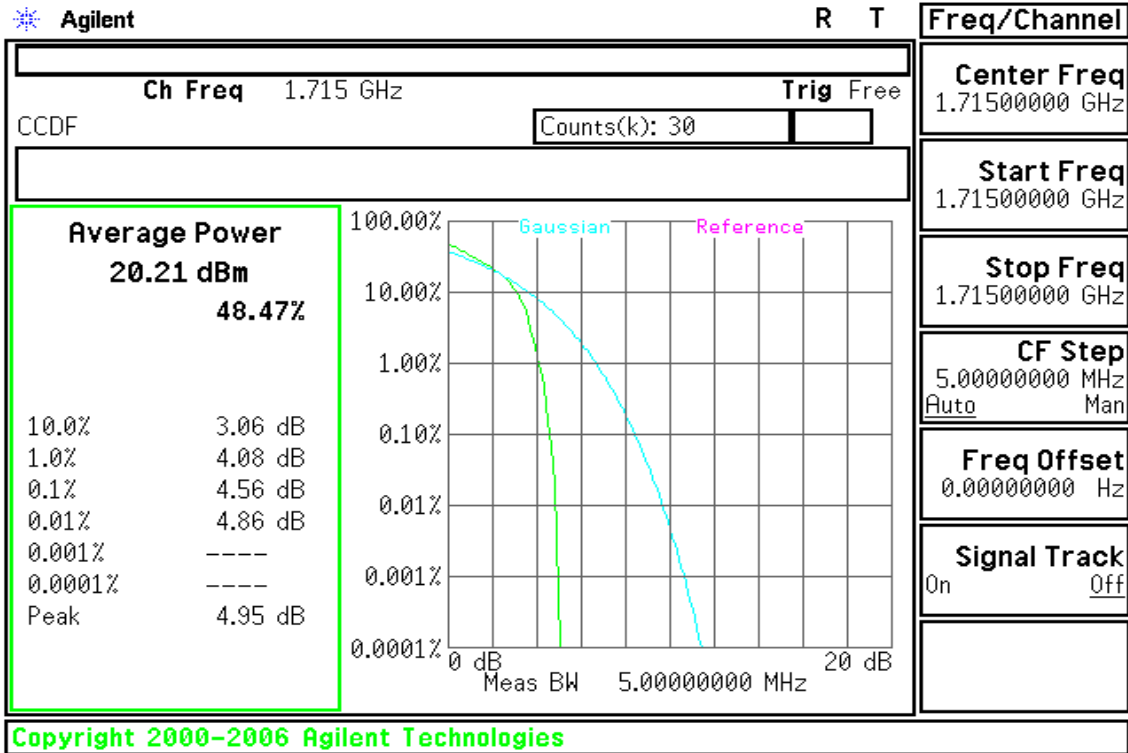
Display
Full Screen
Store Ref Trace
Ref Trace On Off
Gaussian Line On Off
Preferences

Copyright 2000-2006 Agilent Technologies

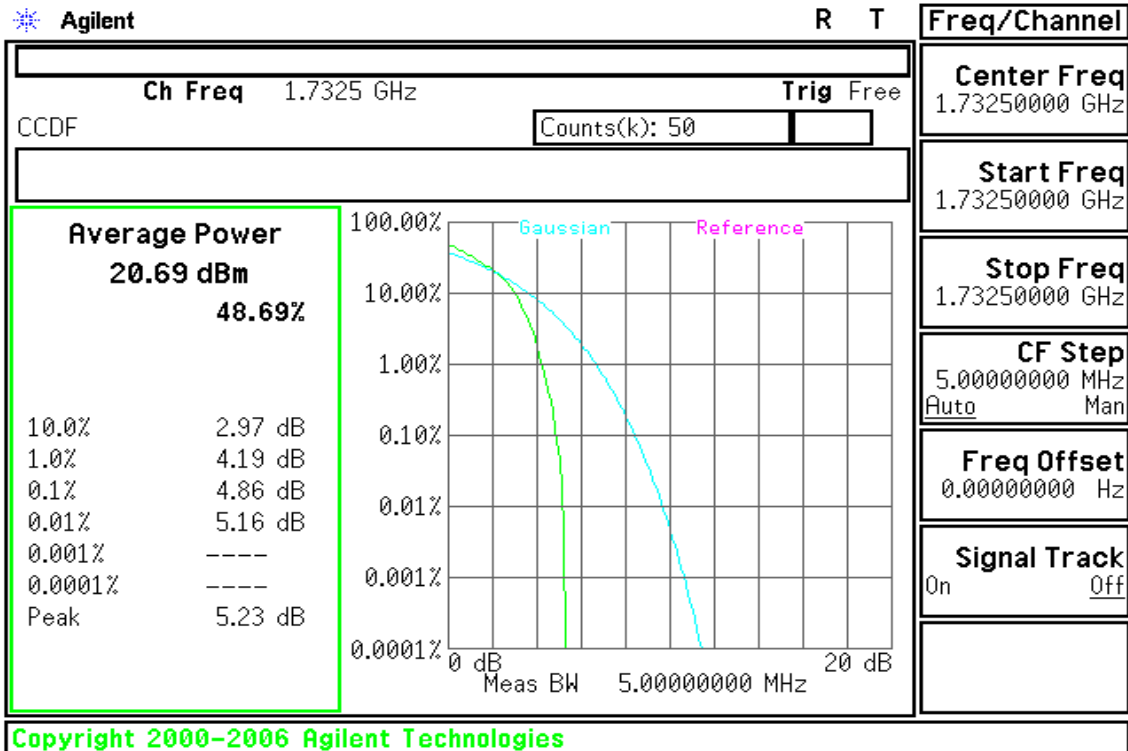


CHANNEL BANDWIDTH: 10MHz / QPSK

CH Low

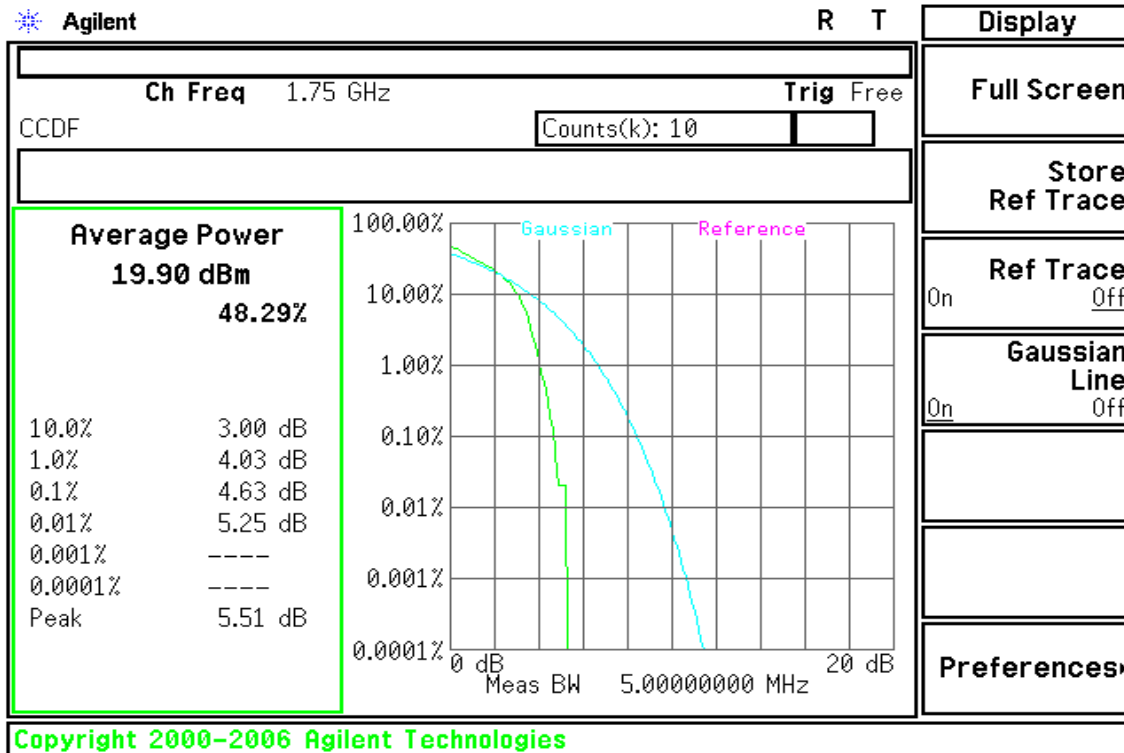


CH Mid



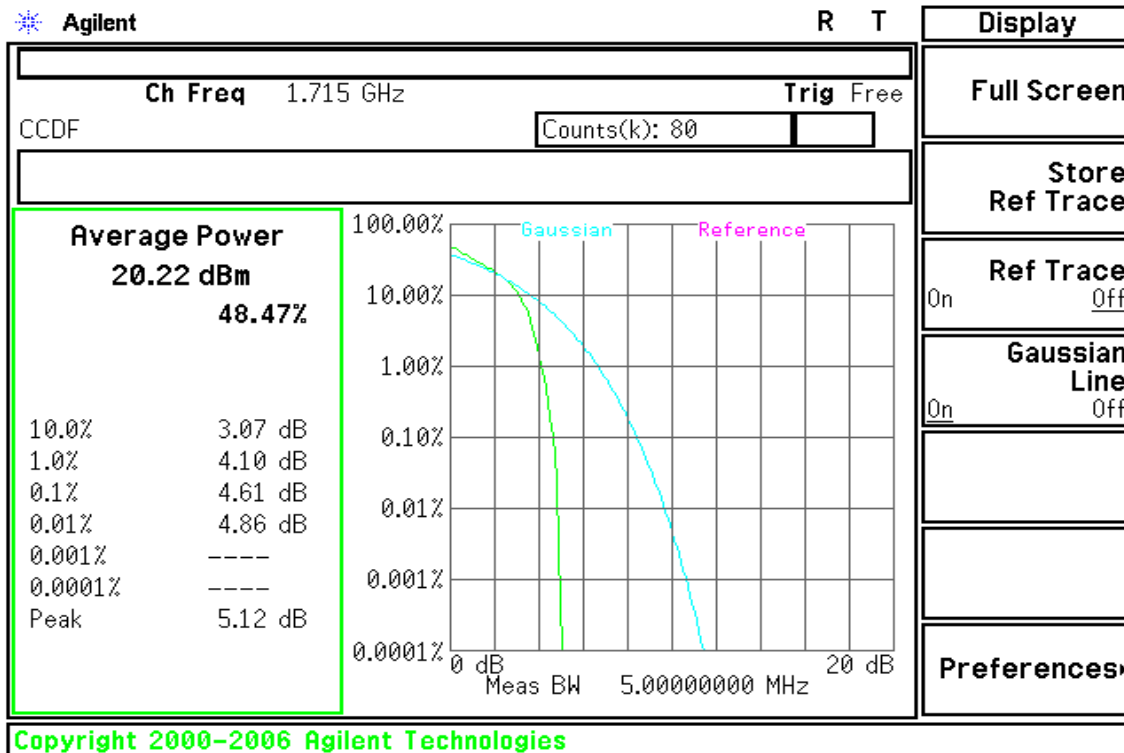


CH High



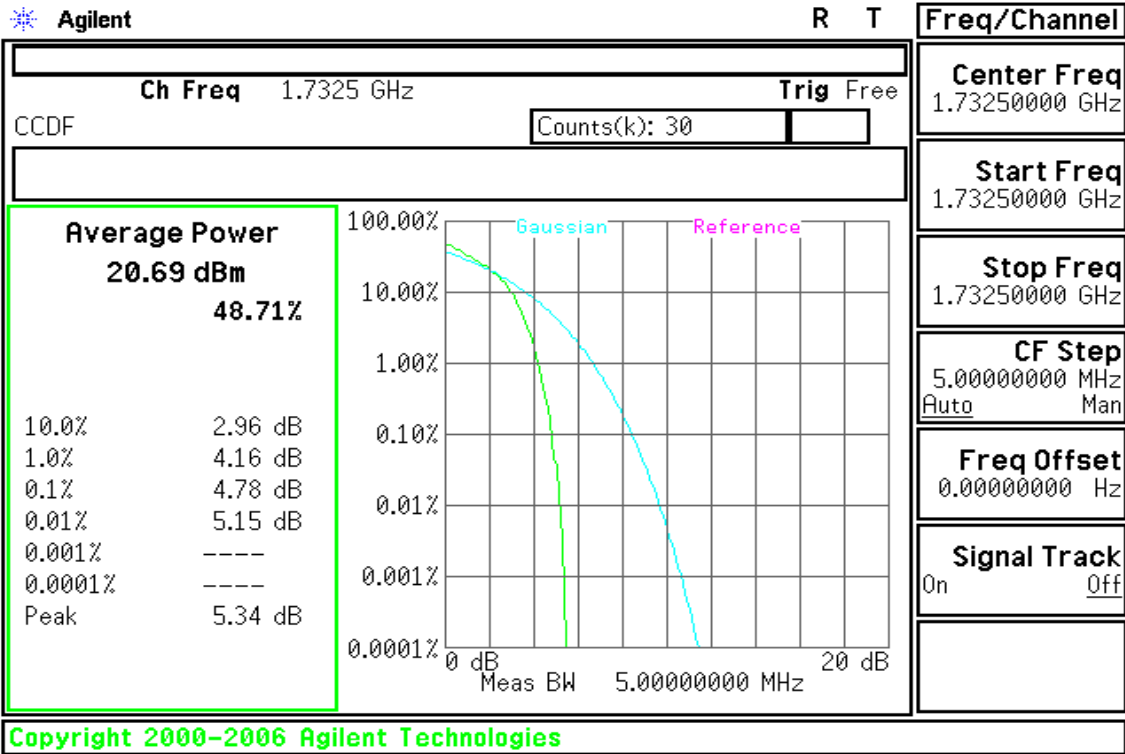
CHANNEL BANDWIDTH: 10MHz / 16QAM

CH Low

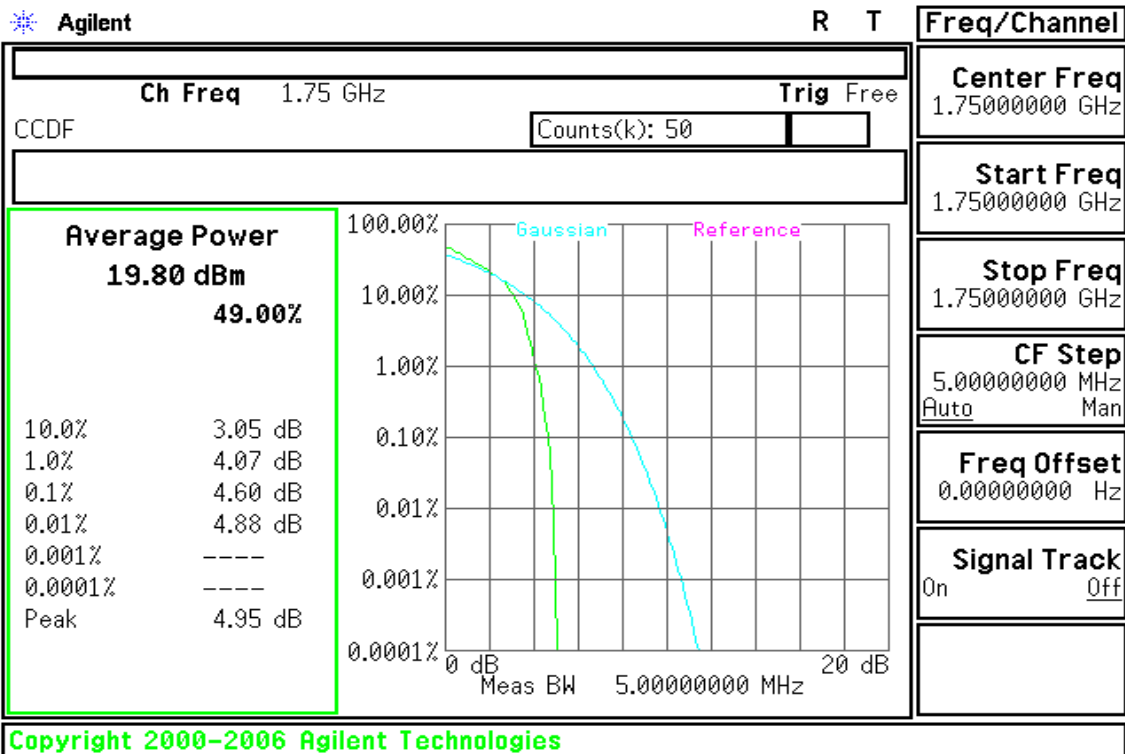




CH Mid



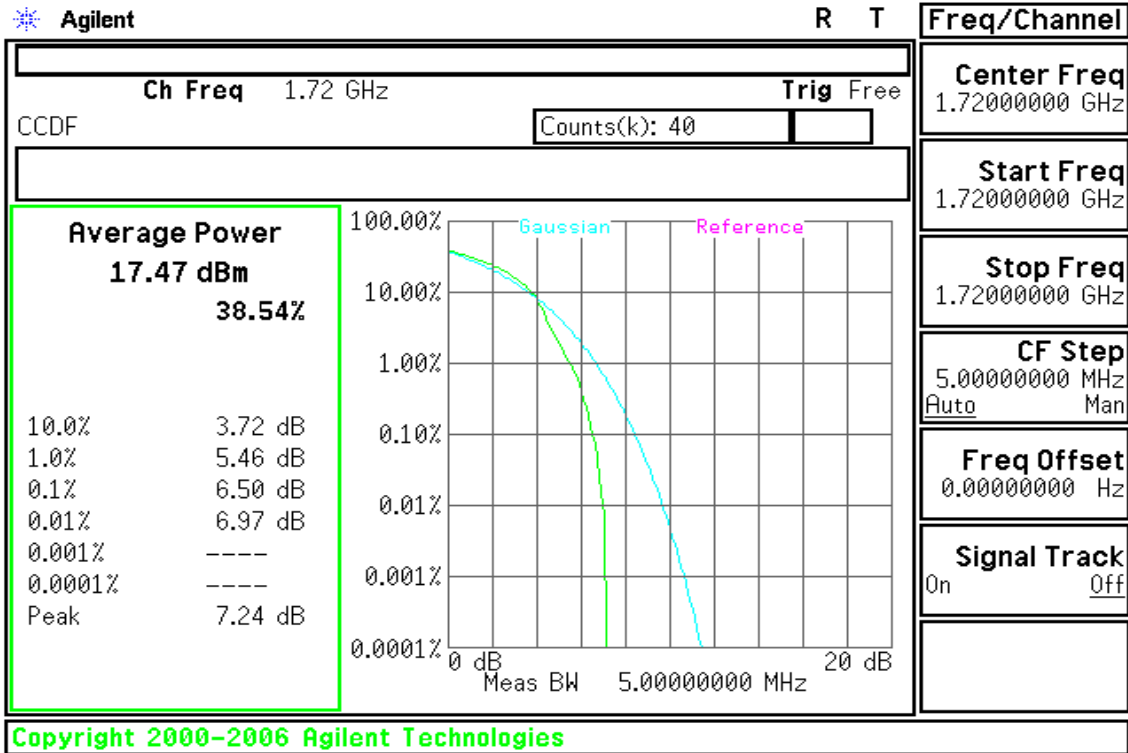
CH High



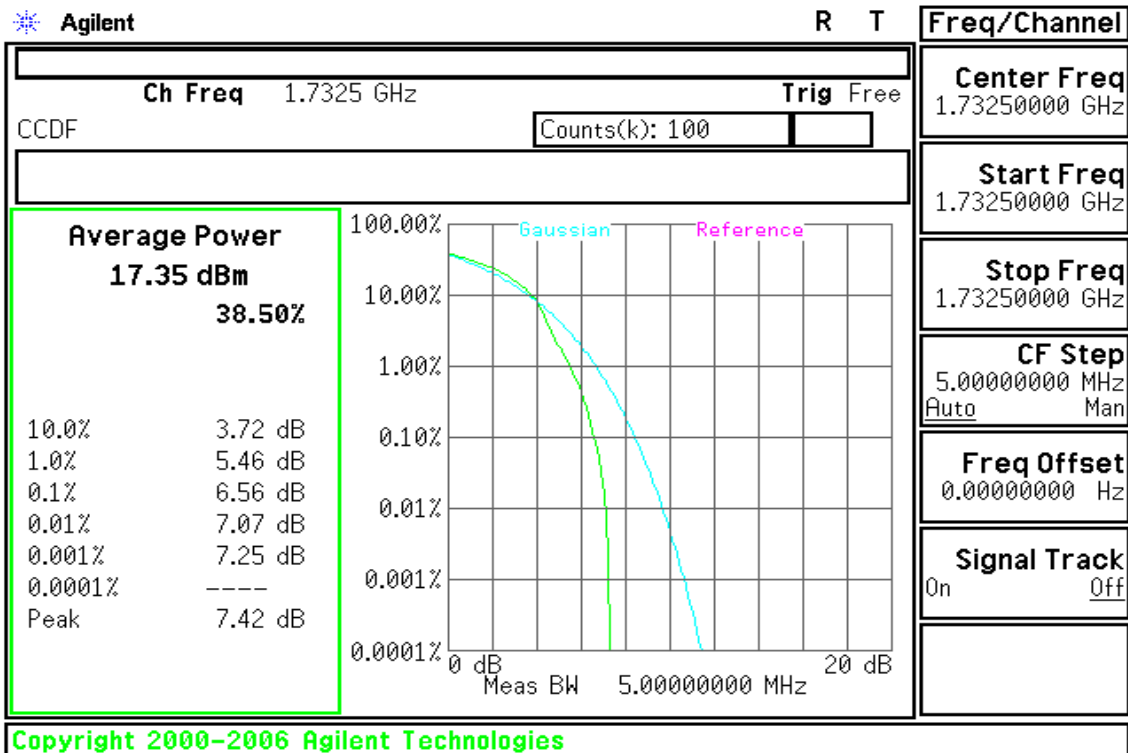


CHANNEL BANDWIDTH: 20MHz / QPSK

CH Low

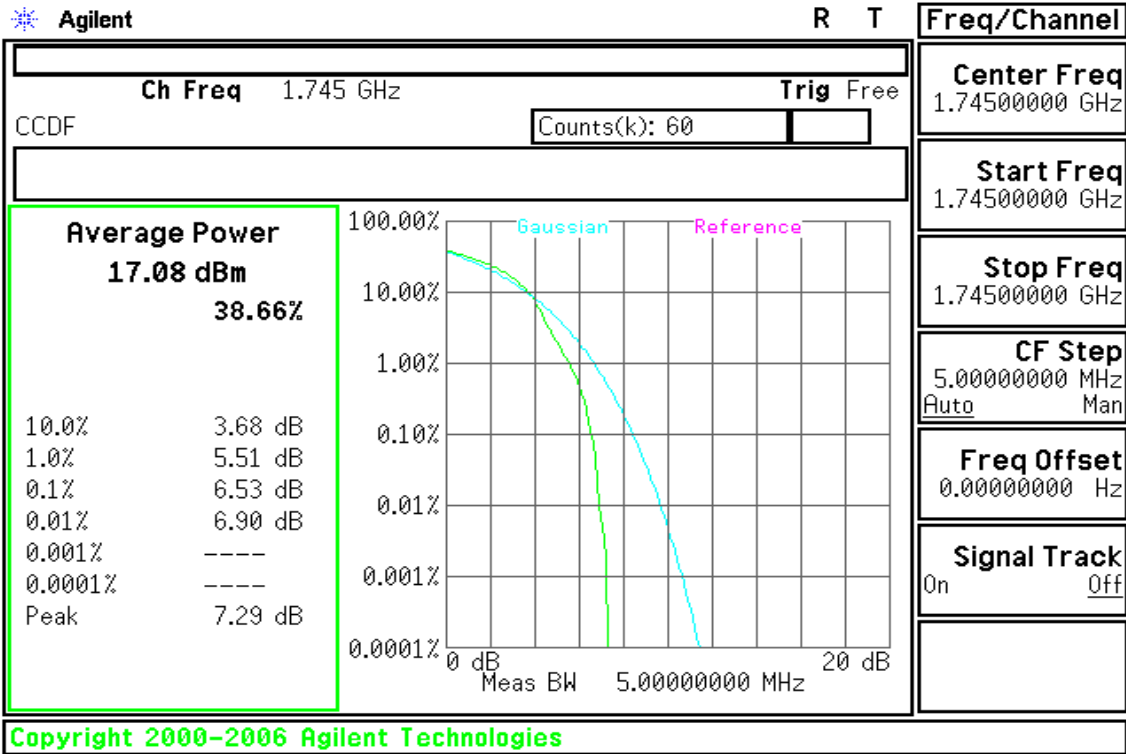


CH Mid



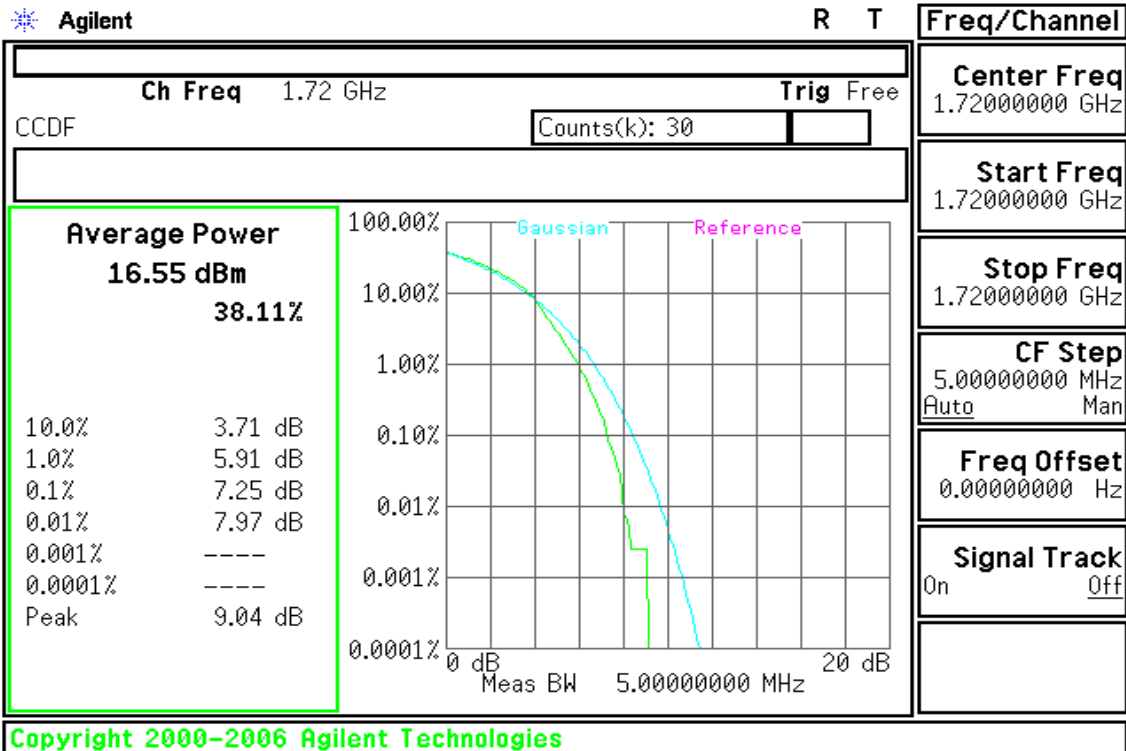


CH High



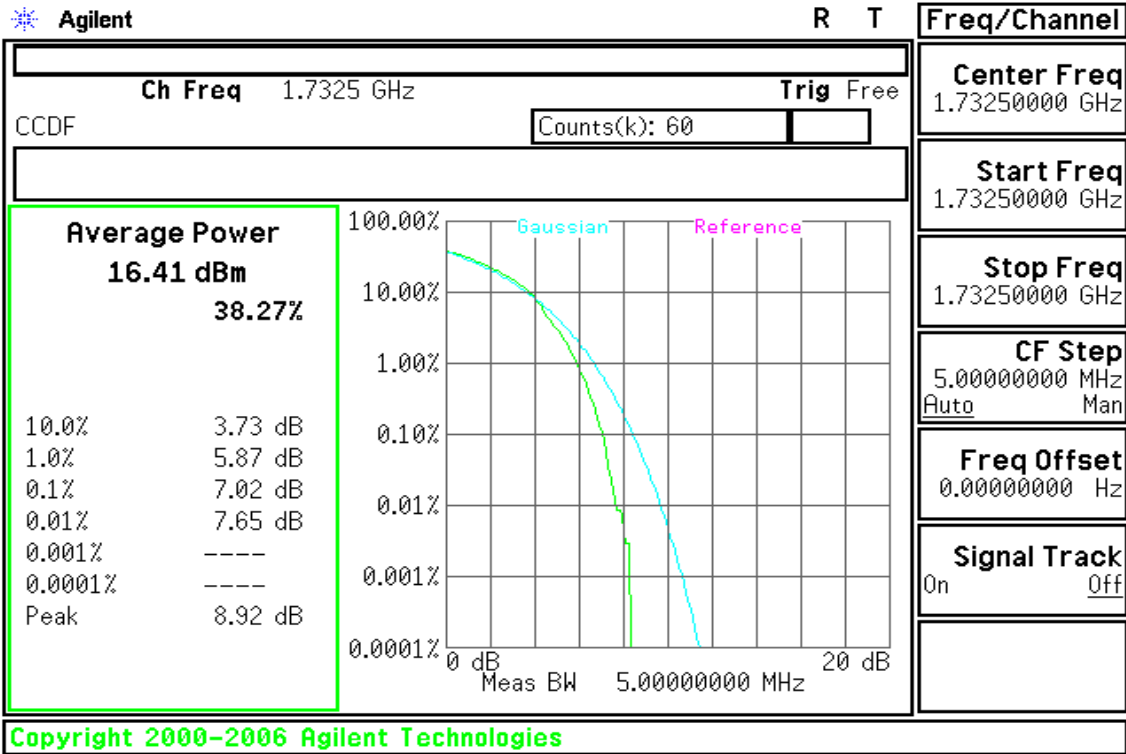
CHANNEL BANDWIDTH: 20MHz / 16QAM

CH Low

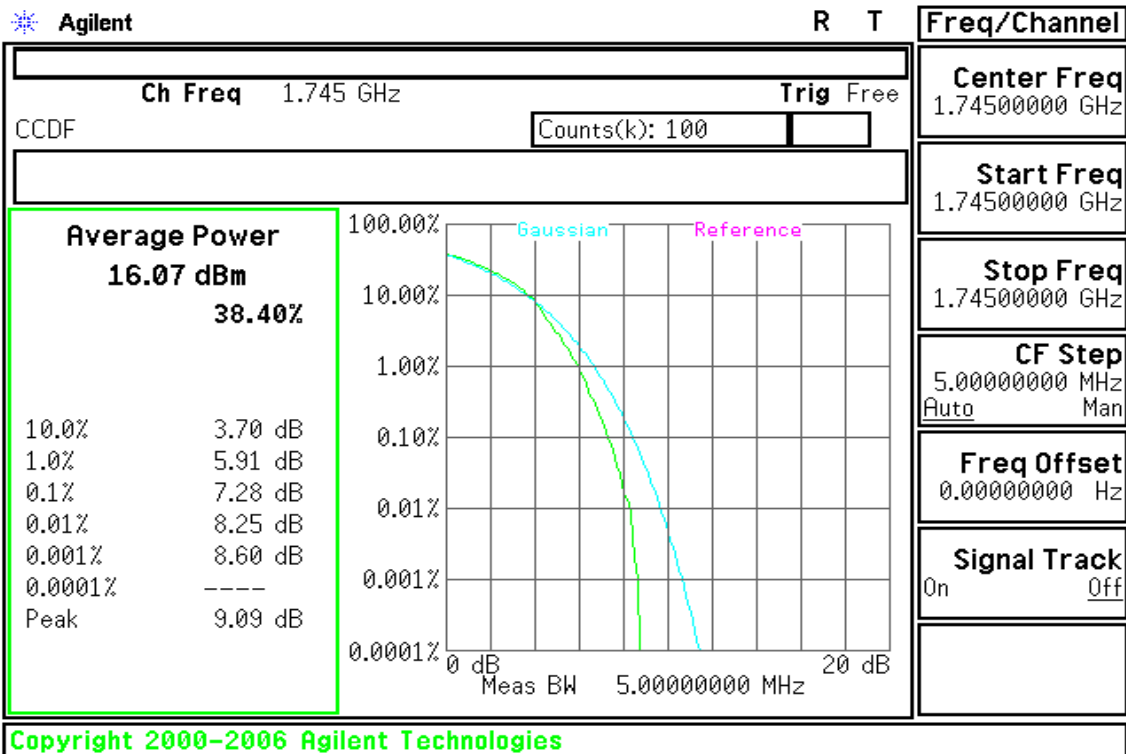




CH Mid



CH High





7.5BAND 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 $43 + 10 \log_{10}(P)$ dB. The limit of emission equal to -13dBm . In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

TEST PROCEDURES

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

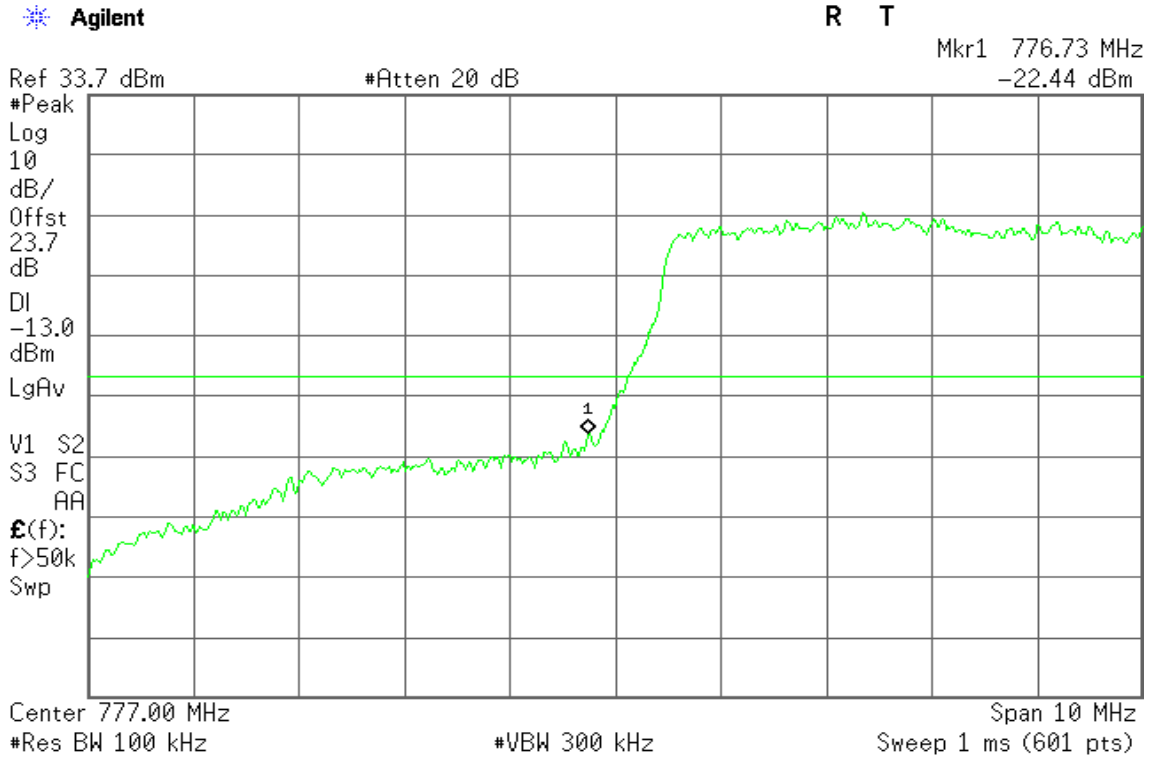


TEST RESULTS:

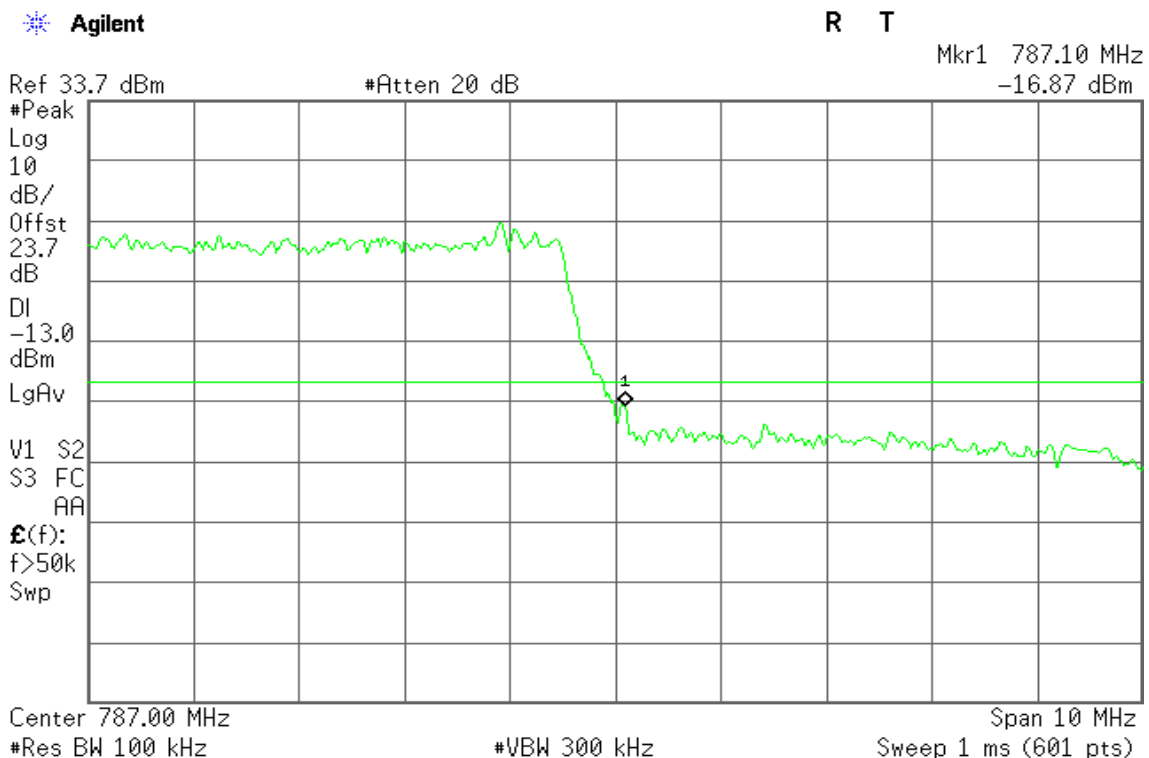
LTE Band 13

CHANNEL BANDWIDTH: 10MHz / QPSK / FULL RB ALLOCATED

LOWER BAND EDGE



HIGHER BAND EDGE

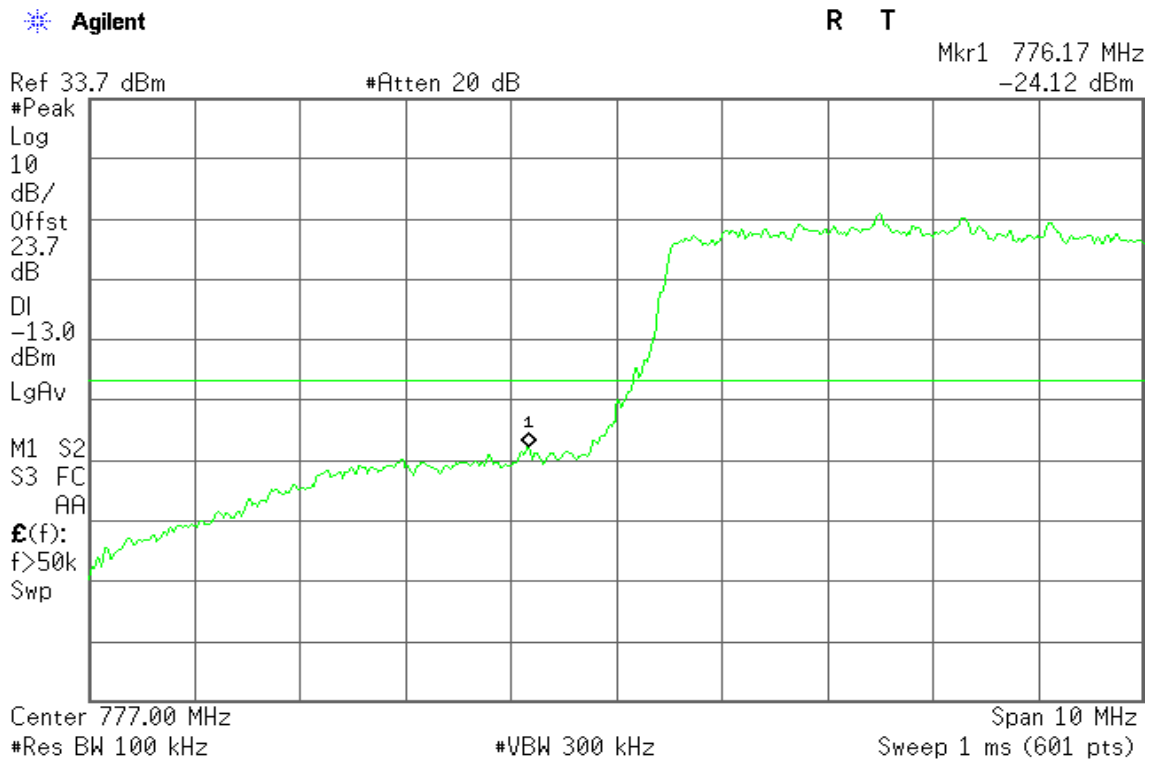




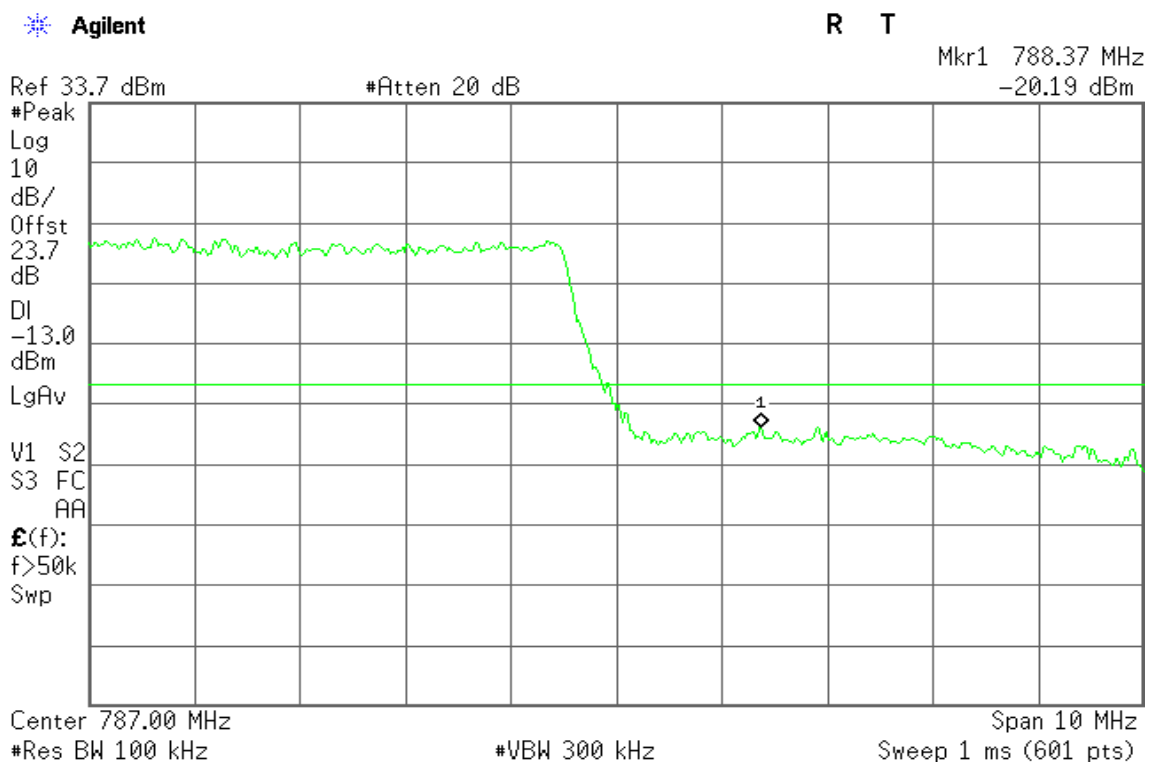
LTE Band 13

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

LOWER BAND EDGE



HIGHER BAND EDGE

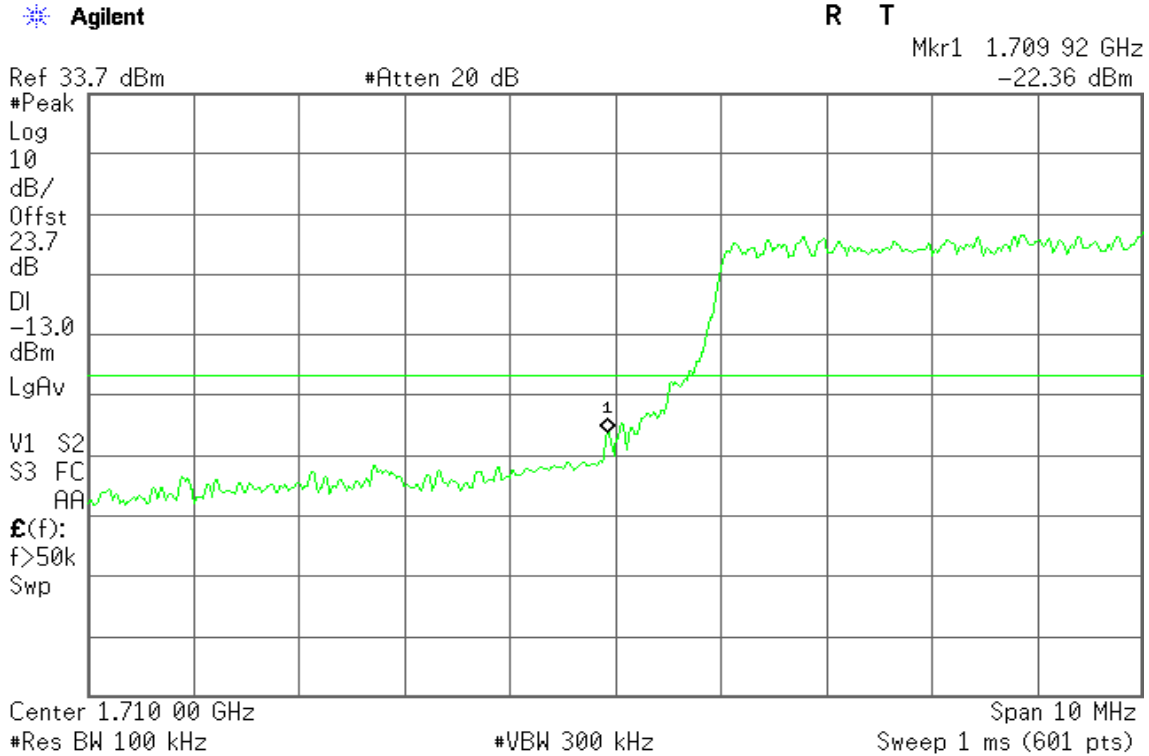




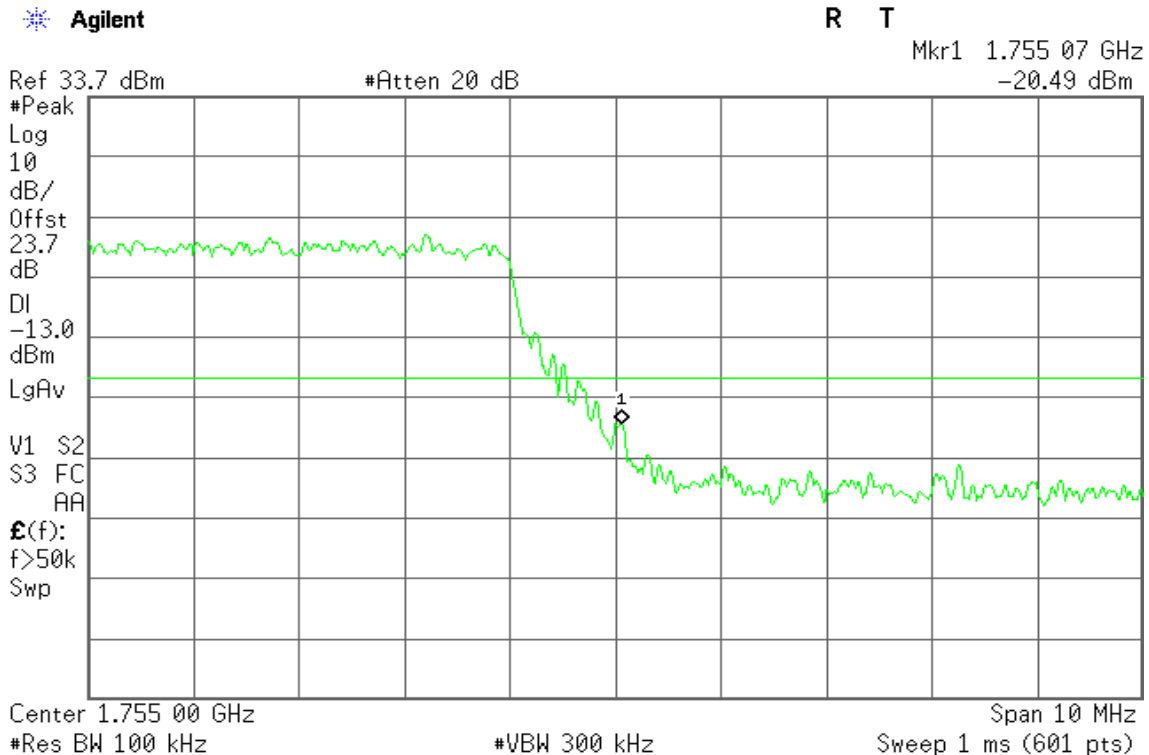
LTE Band 4

CHANNEL BANDWIDTH: 20MHz / QPSK / FULL RB ALLOCATION

LOWER BAND EDGE



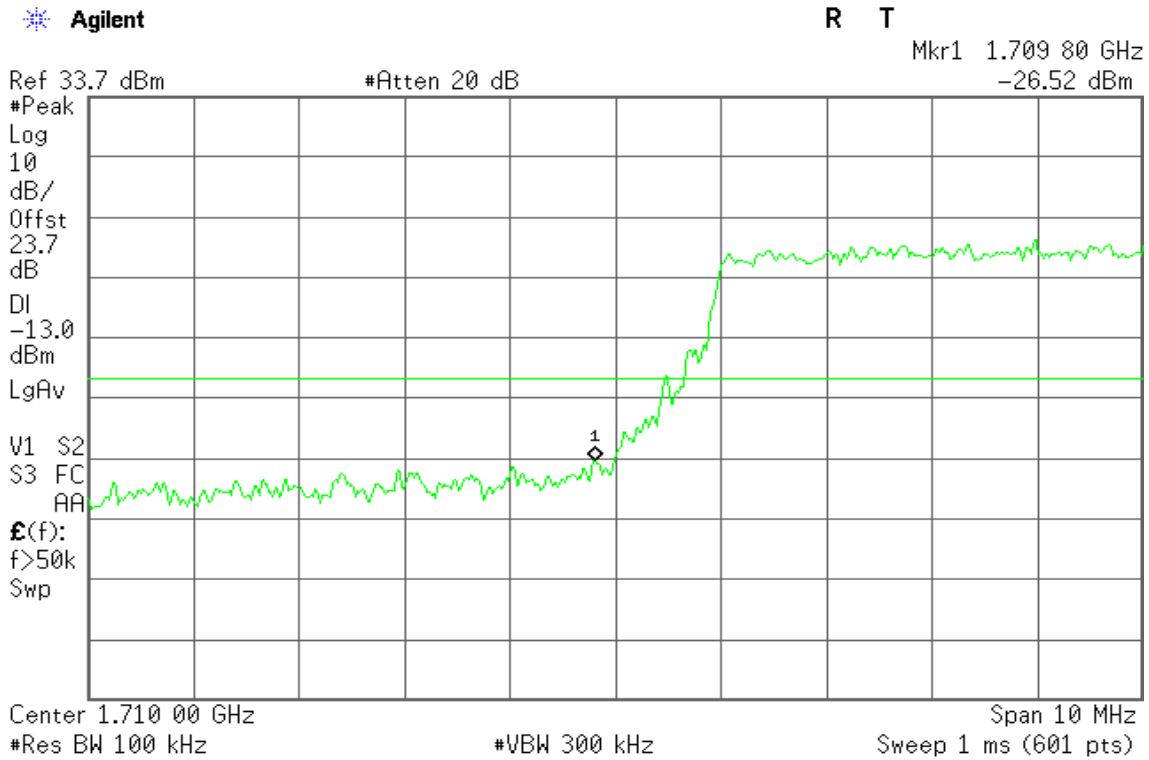
HIGHER BAND EDGE



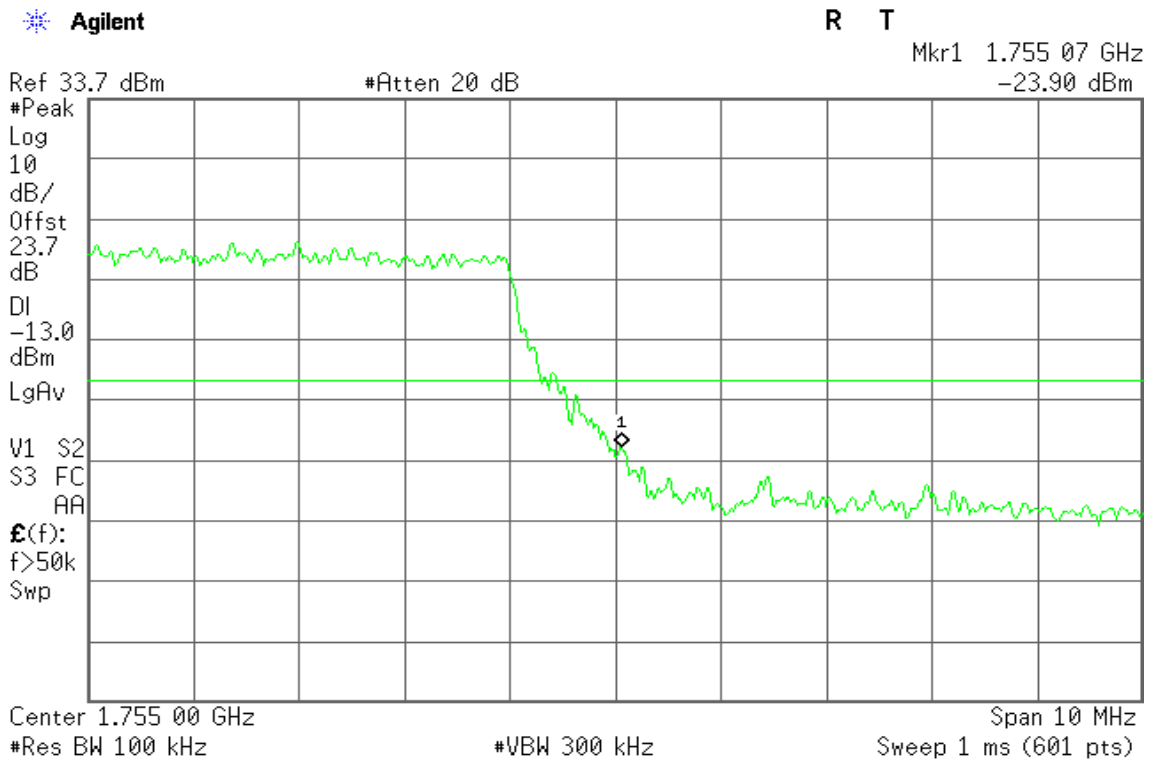


CHANNEL BANDWIDTH: 20MHz / 16QAM / FULL RB ALLOCATION

LOWER BAND EDGE



HIGHER BAND EDGE





7.6 CONDUCTED SPURIOUS EMISSIONS

LIMITS

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ 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 20GHz, it shall be connected to the band reject filter attenuated the carried frequency. The spectrum set RB=1MHz, VB=3MHz.

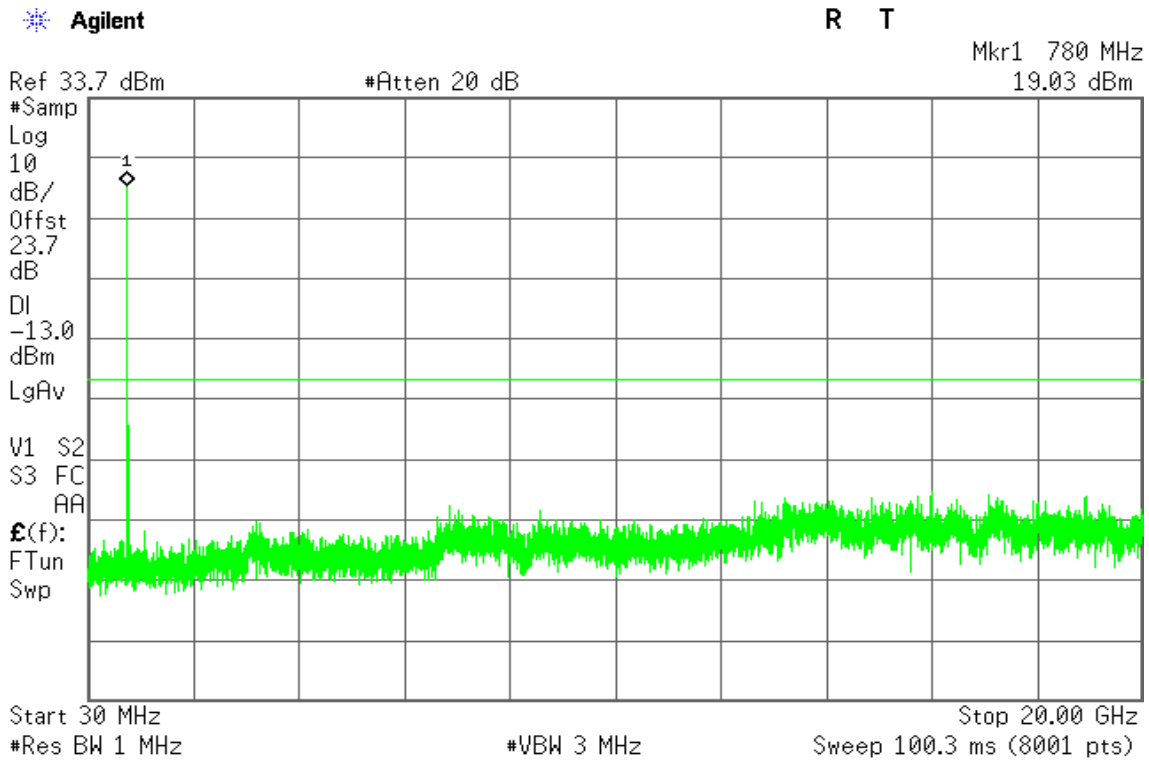


TEST RESULTS

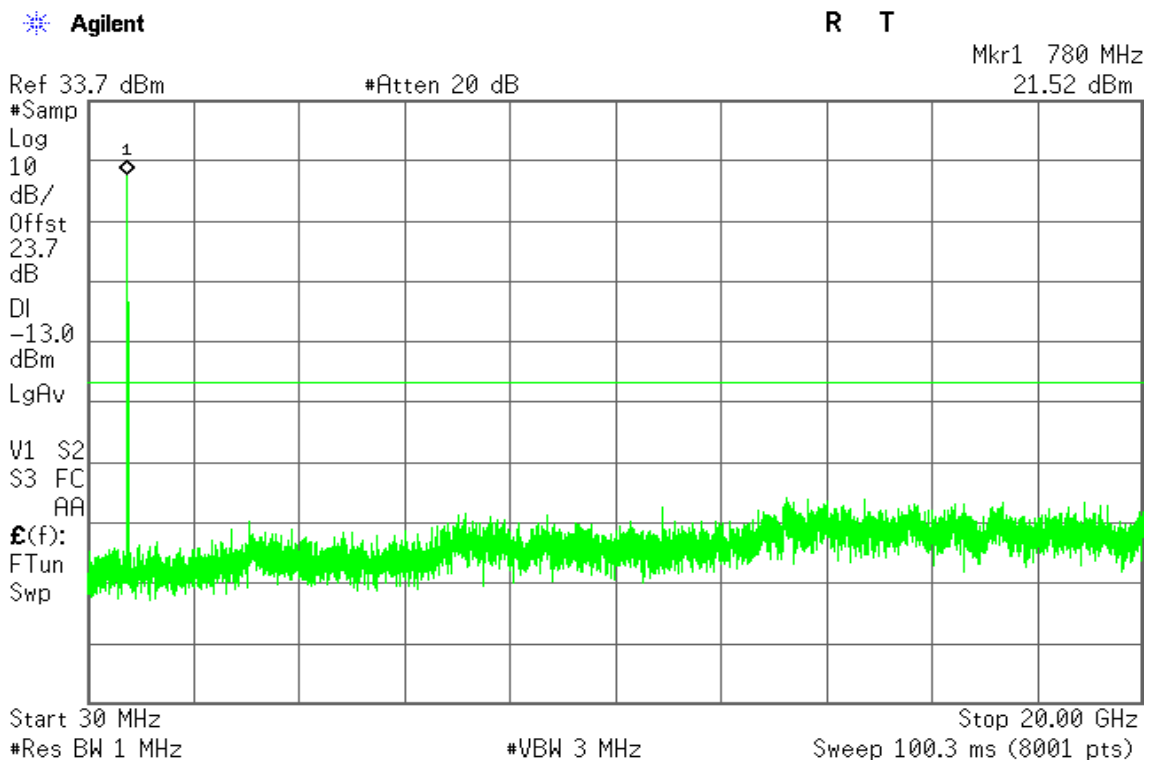
LTE Band 13

CHANNEL BANDWIDTH: 5MHz / QPSK

CH Low



CH Mid



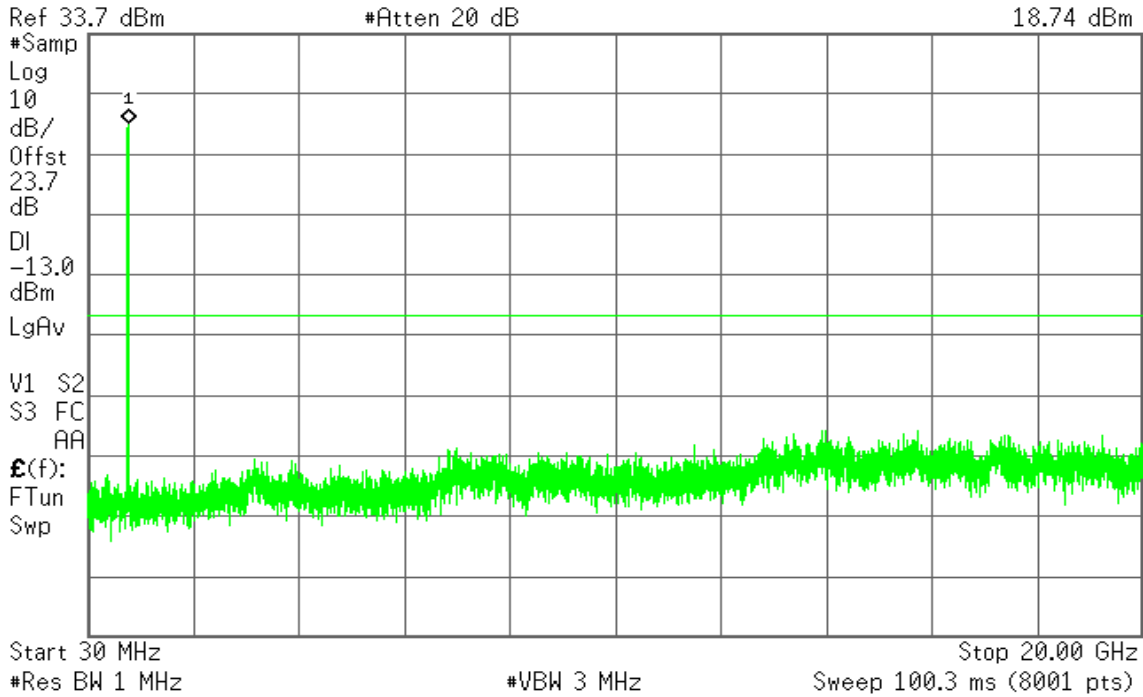


CH High

Agilent

R T

Mkr1 790 MHz
 18.74 dBm



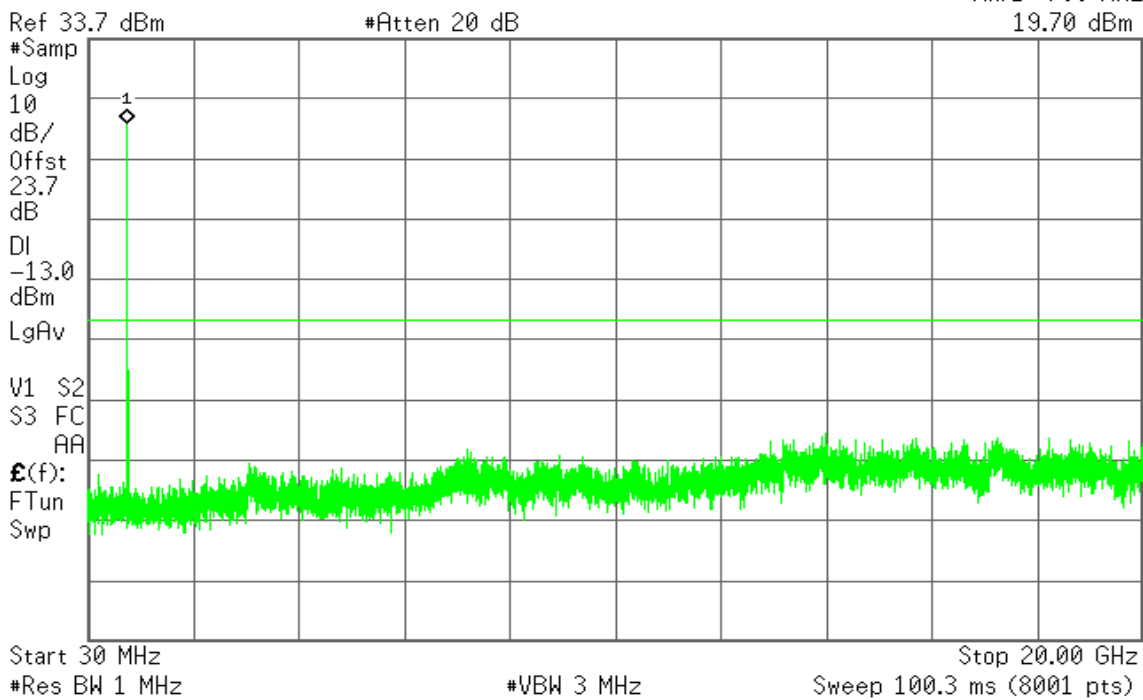
CHANNEL BANDWIDTH: 5MHz / 16QAM

CH Low

Agilent

R T

Mkr1 780 MHz
 19.70 dBm



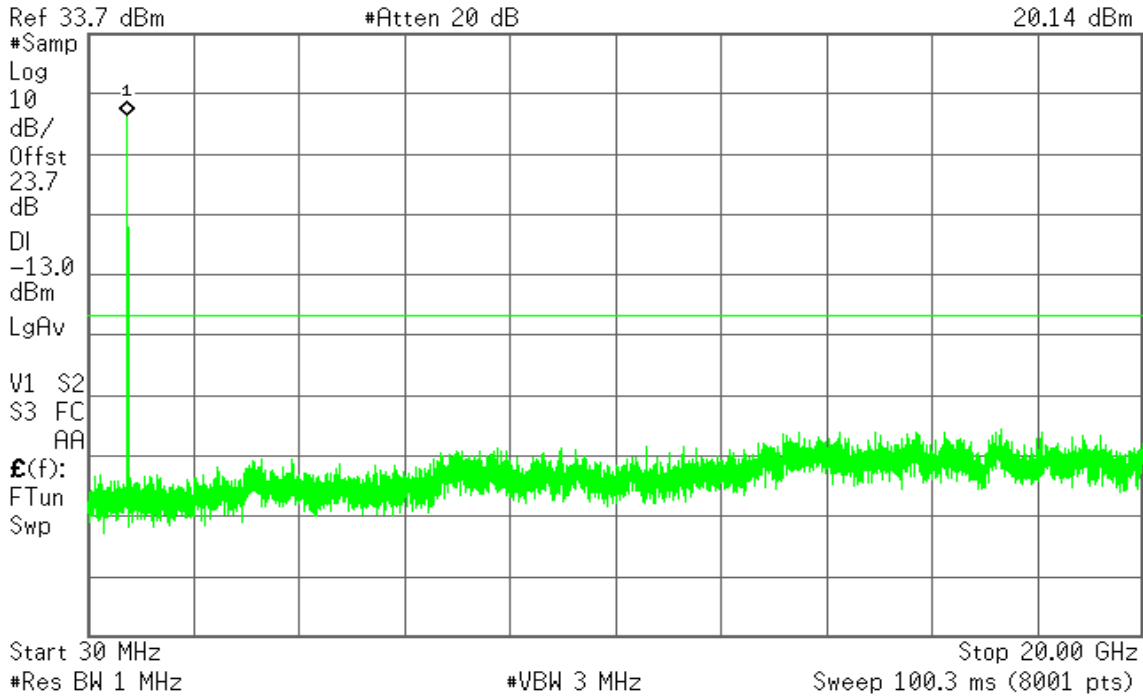


CH Mid

Agilent

R T

Mkr1 780 MHz
20.14 dBm

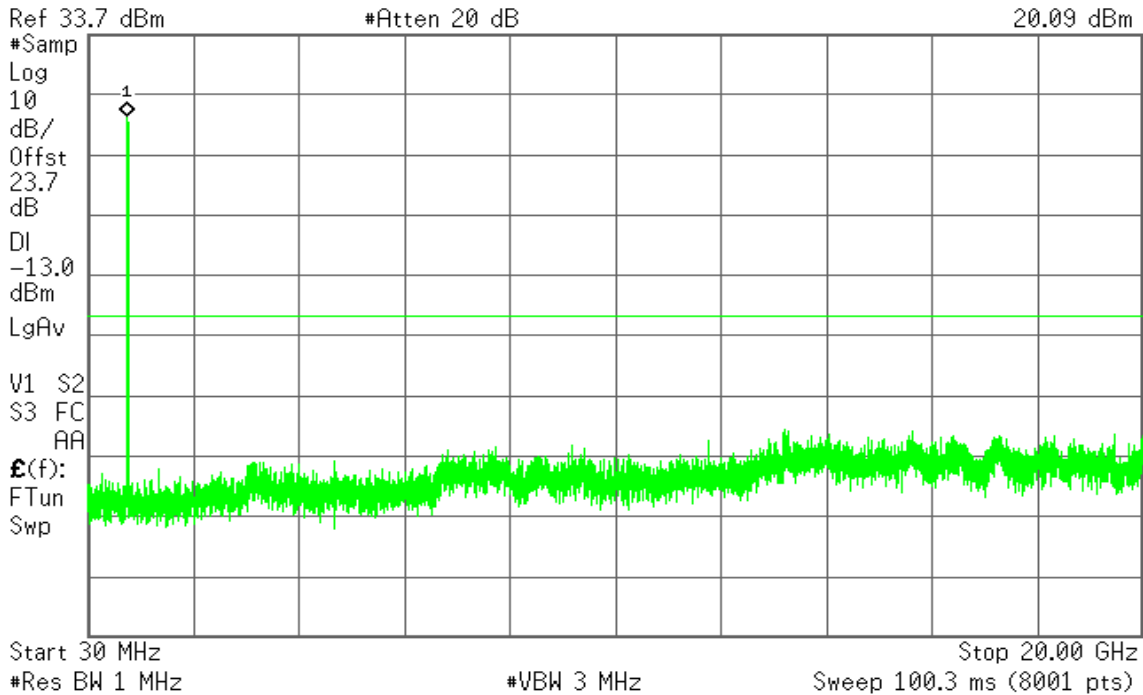


CH High

Agilent

R T

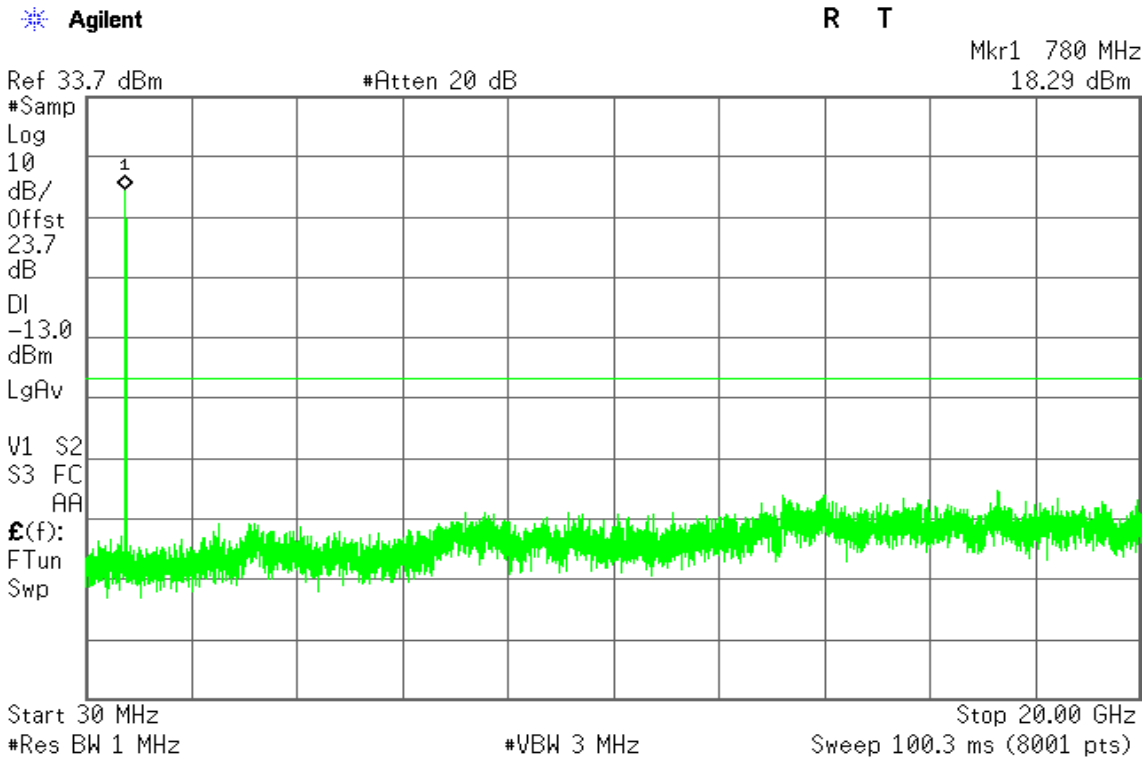
Mkr1 780 MHz
20.09 dBm





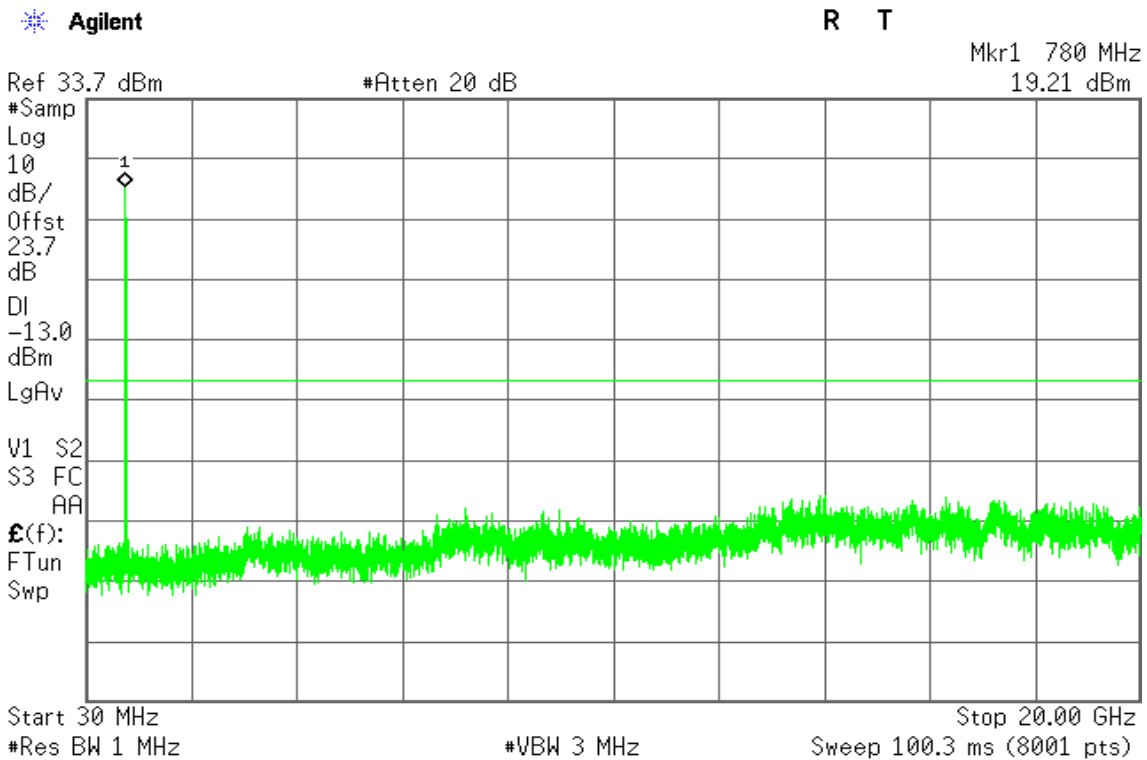
CHANNEL BANDWIDTH: 10MHz / QPSK

CH Mid



CHANNEL BANDWIDTH: 10MHz / 16QAM

CH Mid

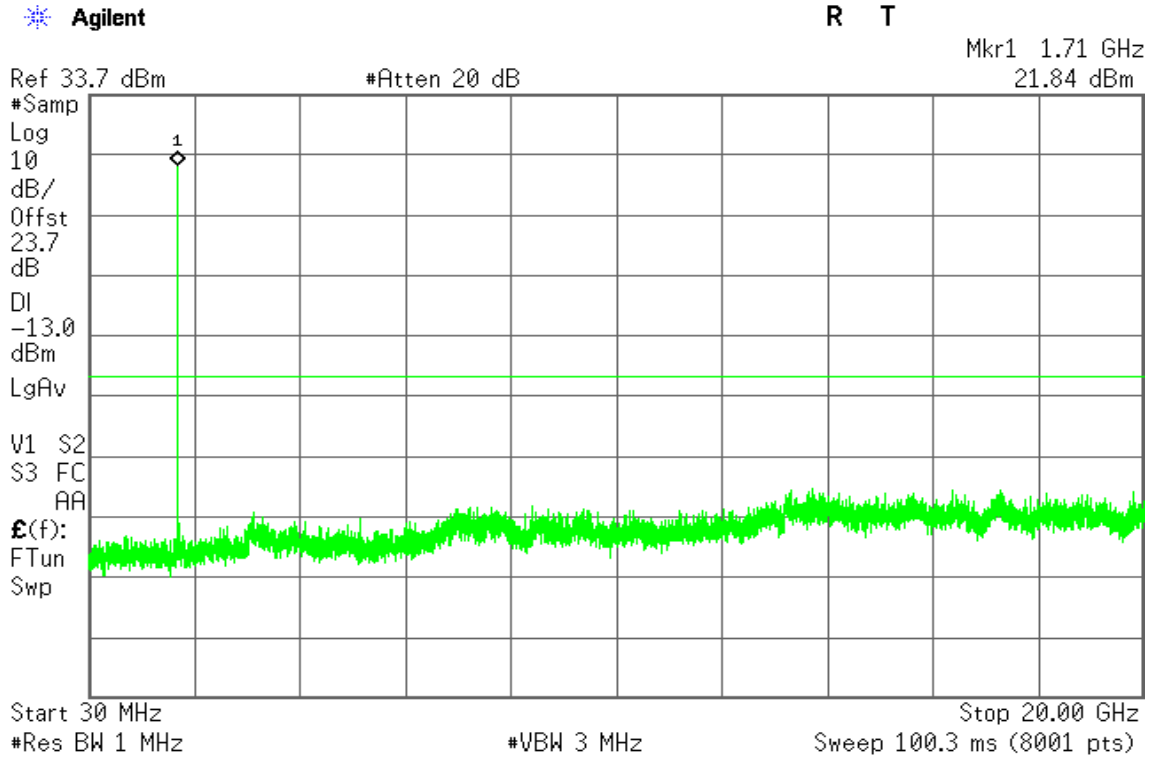




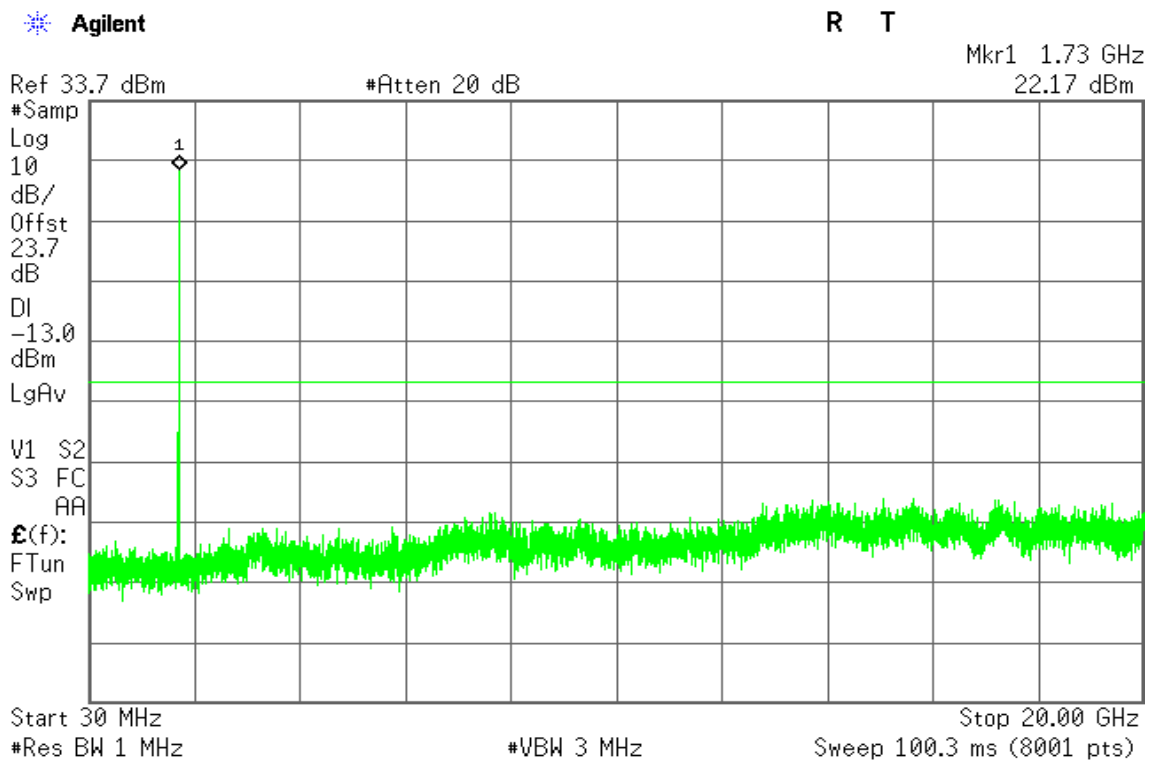
LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK

CH Low



CH Mid

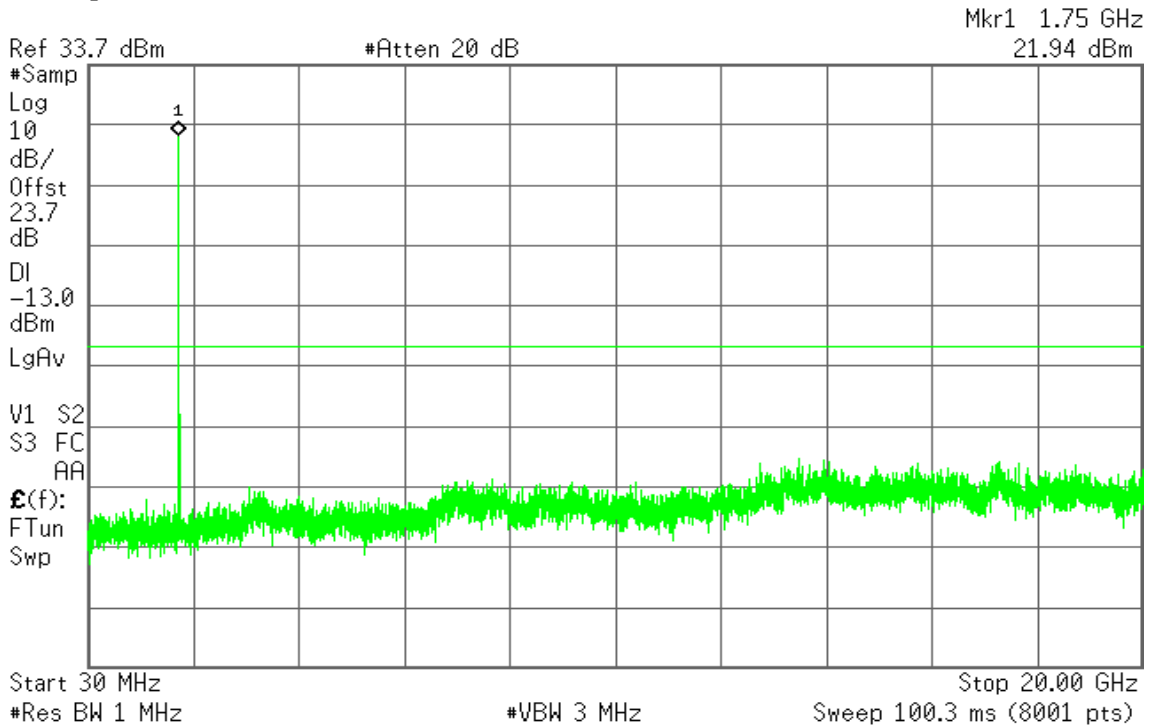




CH High

Agilent

R T

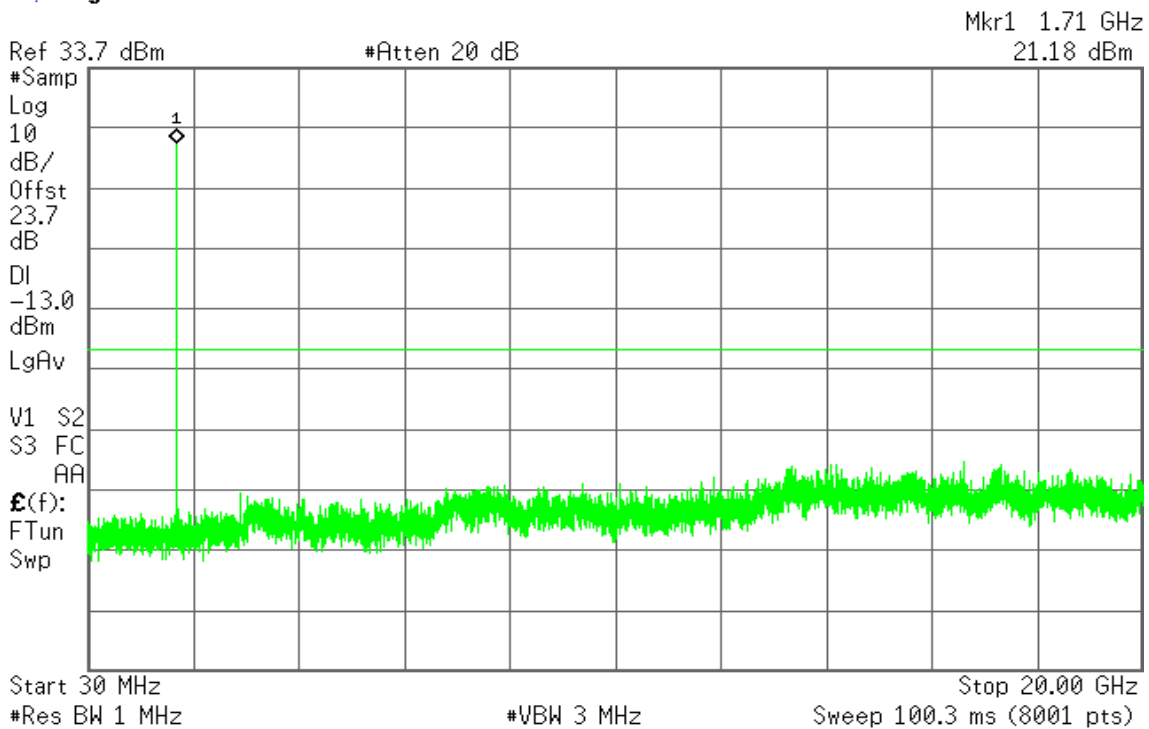


CHANNEL BANDWIDTH: 5MHz / 16QAM

CH Low

Agilent

R T



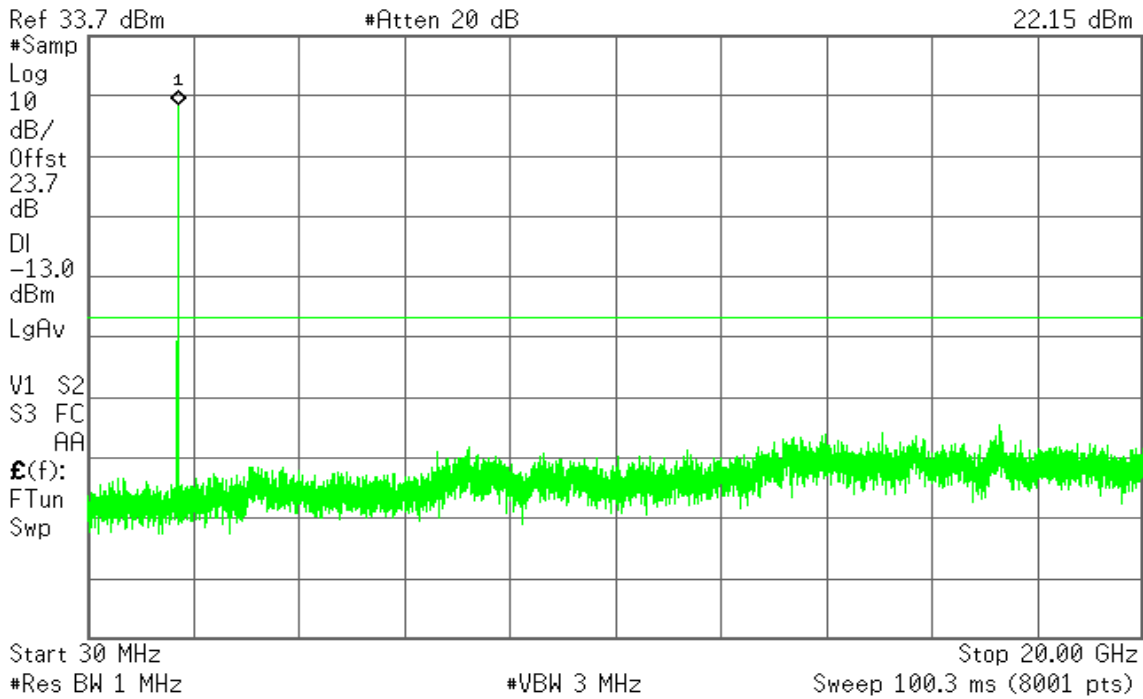


CH Mid

Agilent

R T

Mkr1 1.73 GHz
22.15 dBm

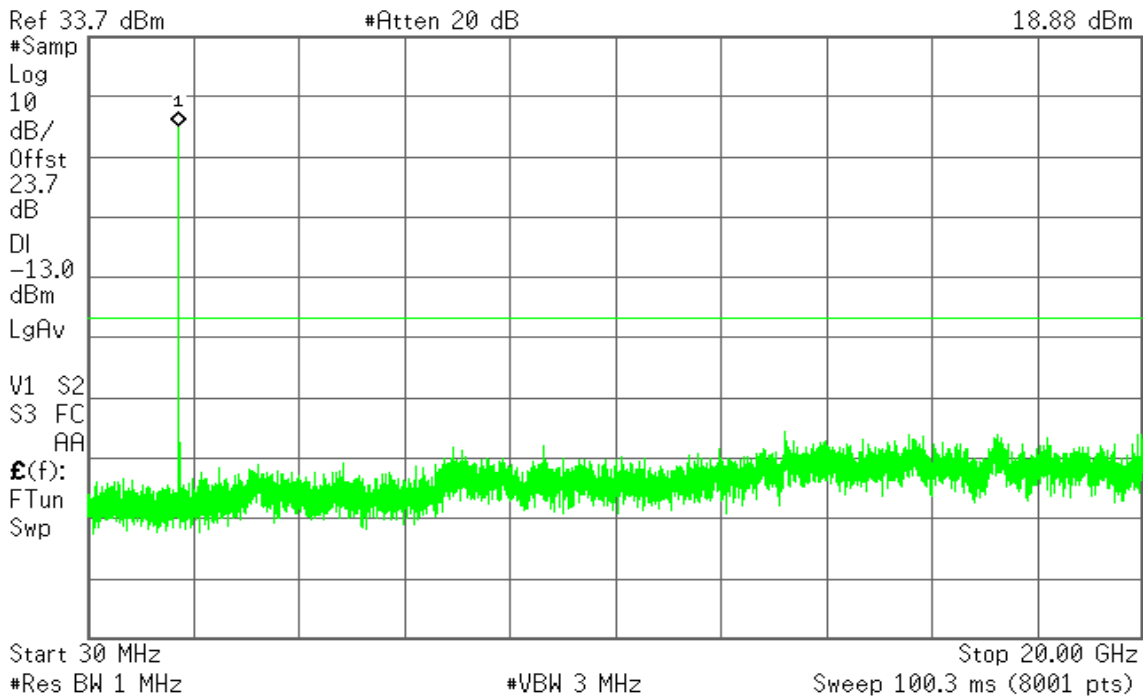


CH High

Agilent

R T

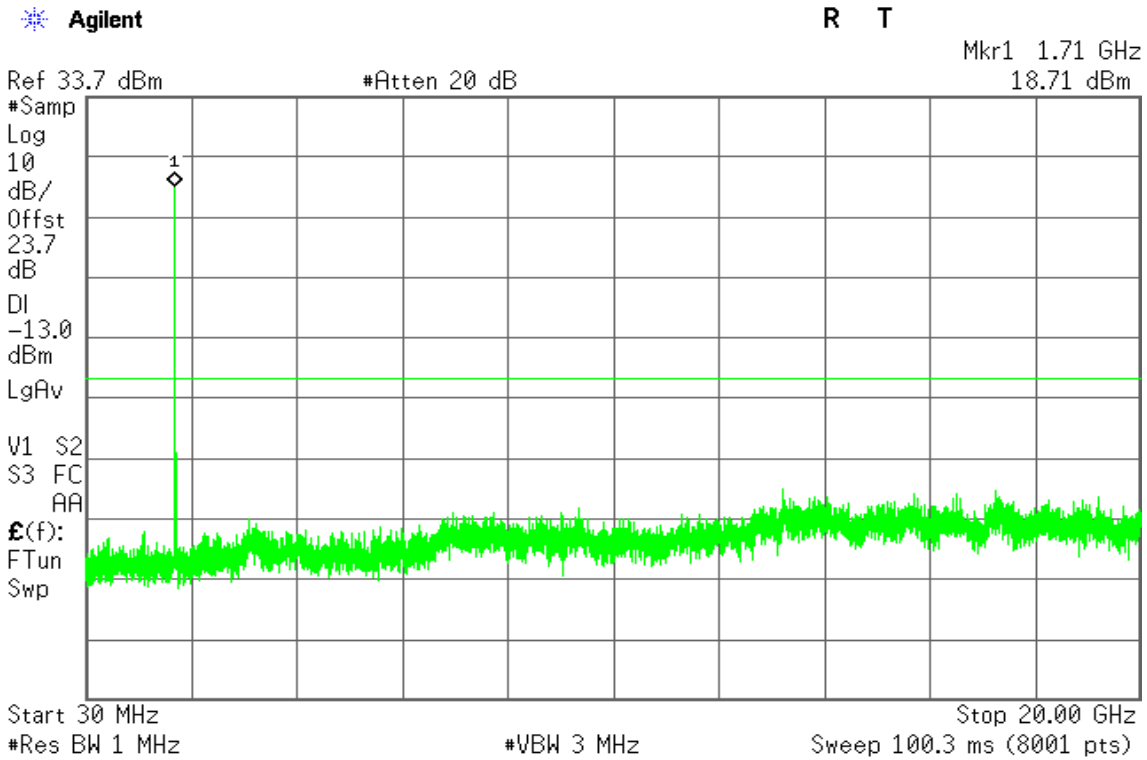
Mkr1 1.75 GHz
18.88 dBm



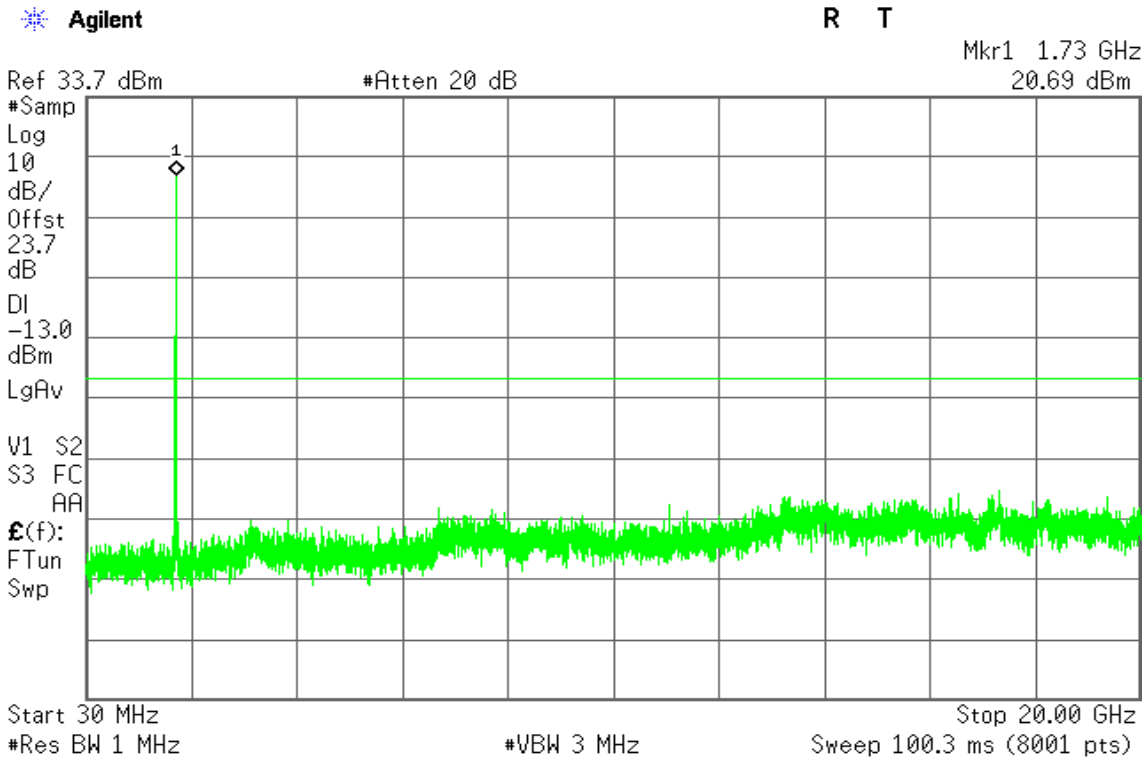


CHANNEL BANDWIDTH: 10MHz / QPSK

CH Low



CH Mid

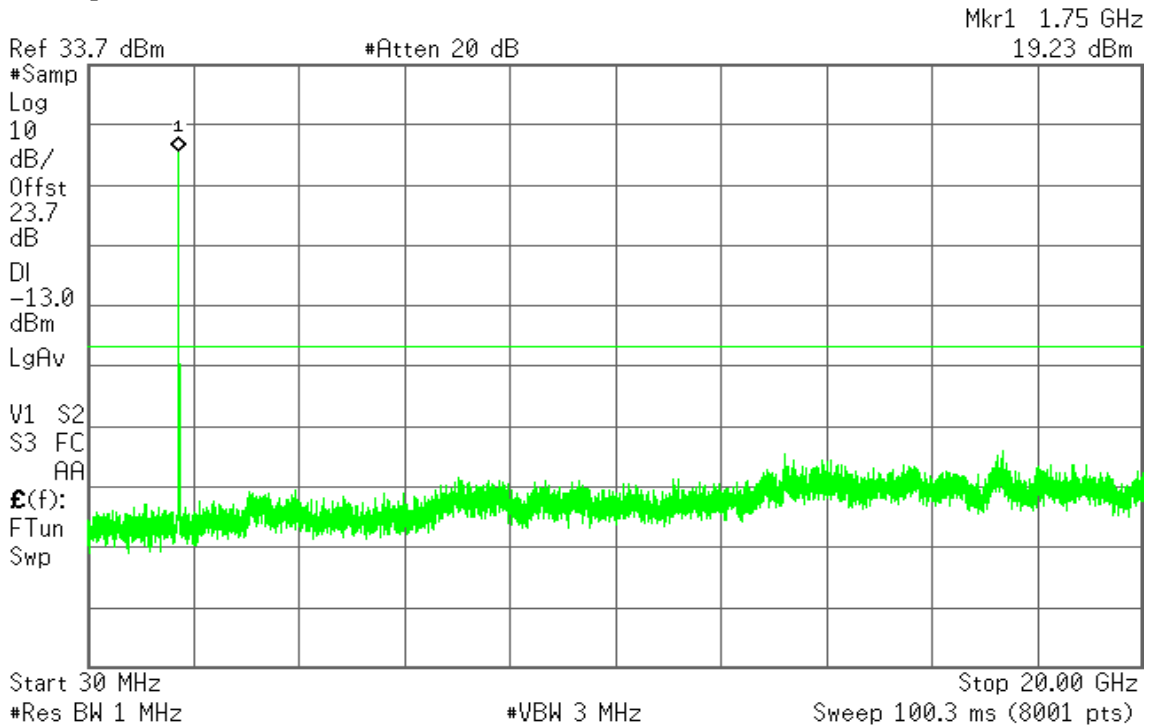




CH High

Agilent

R T

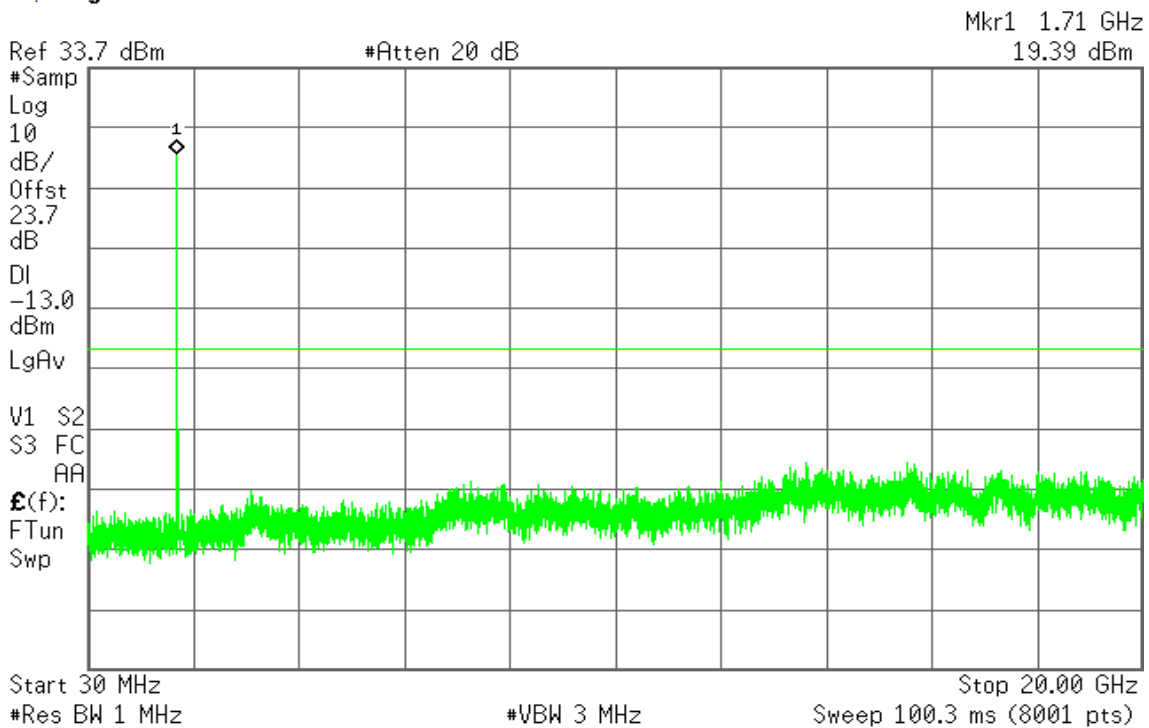


CHANNEL BANDWIDTH: 10MHz / 16QAM

CH Low

Agilent

R T



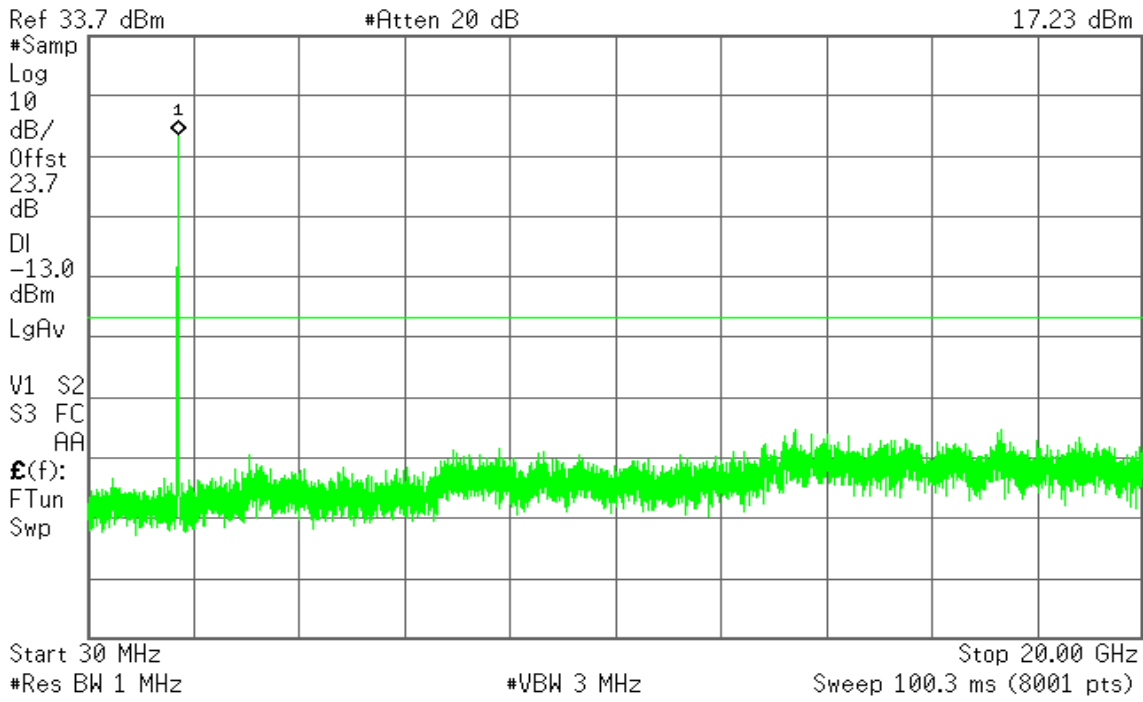


CH Mid

Agilent

R T

Mkr1 1.73 GHz
17.23 dBm

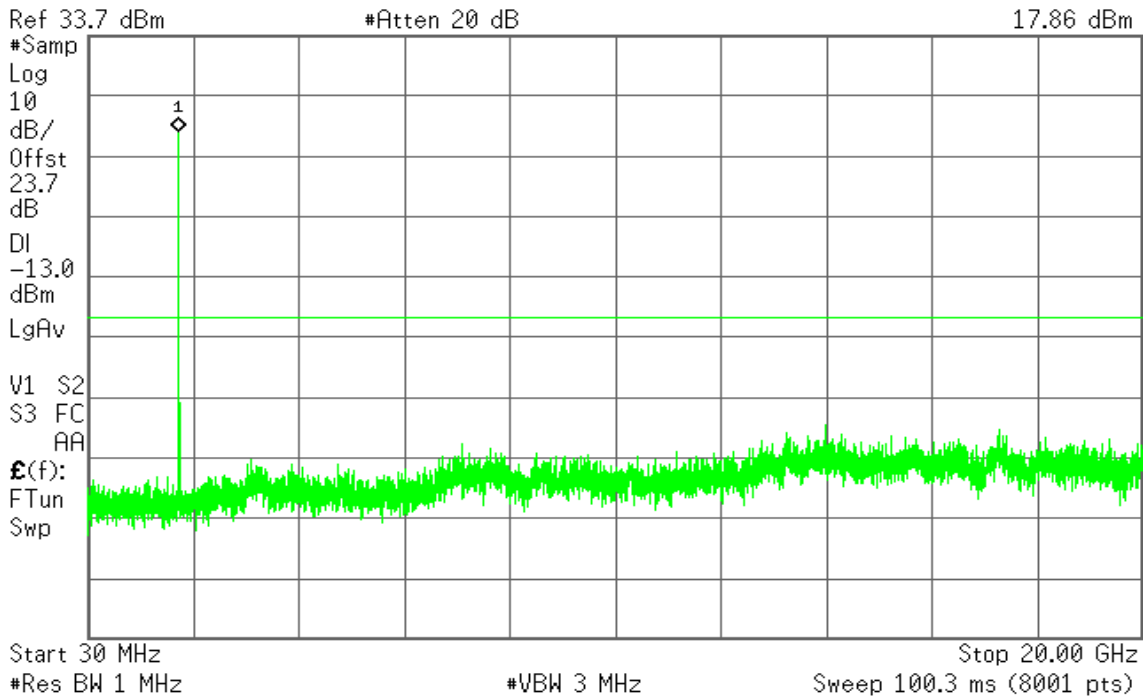


CH High

Agilent

R T

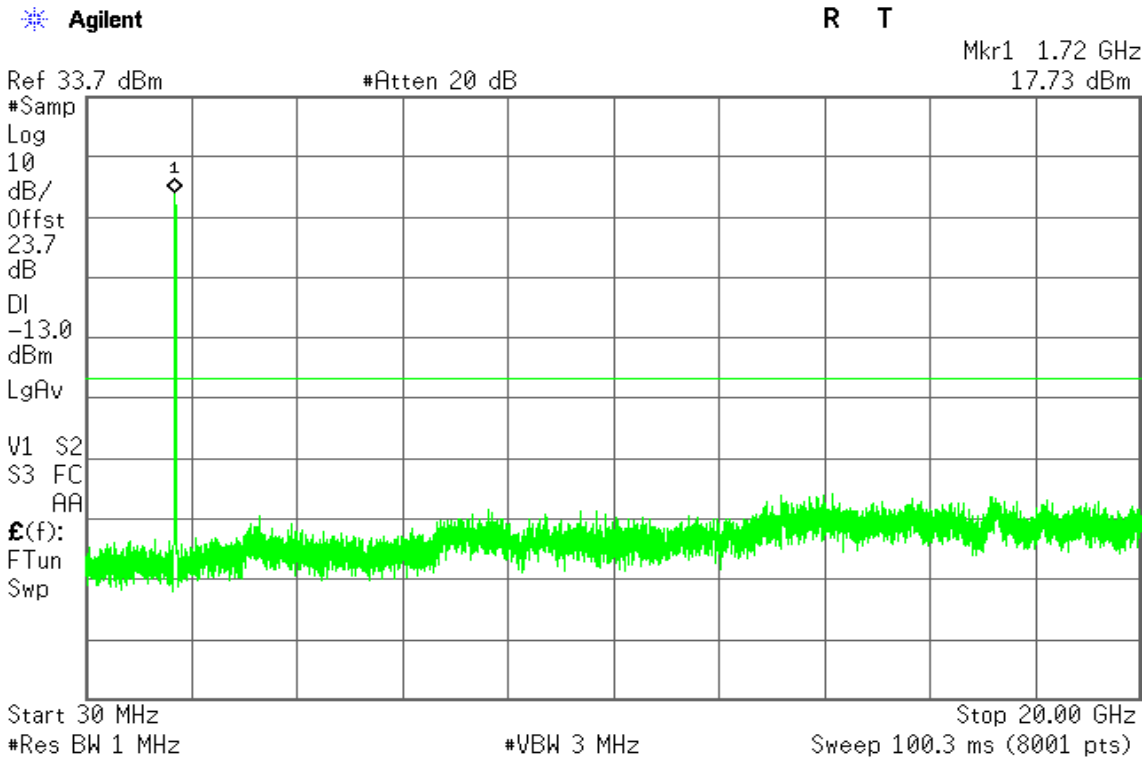
Mkr1 1.75 GHz
17.86 dBm



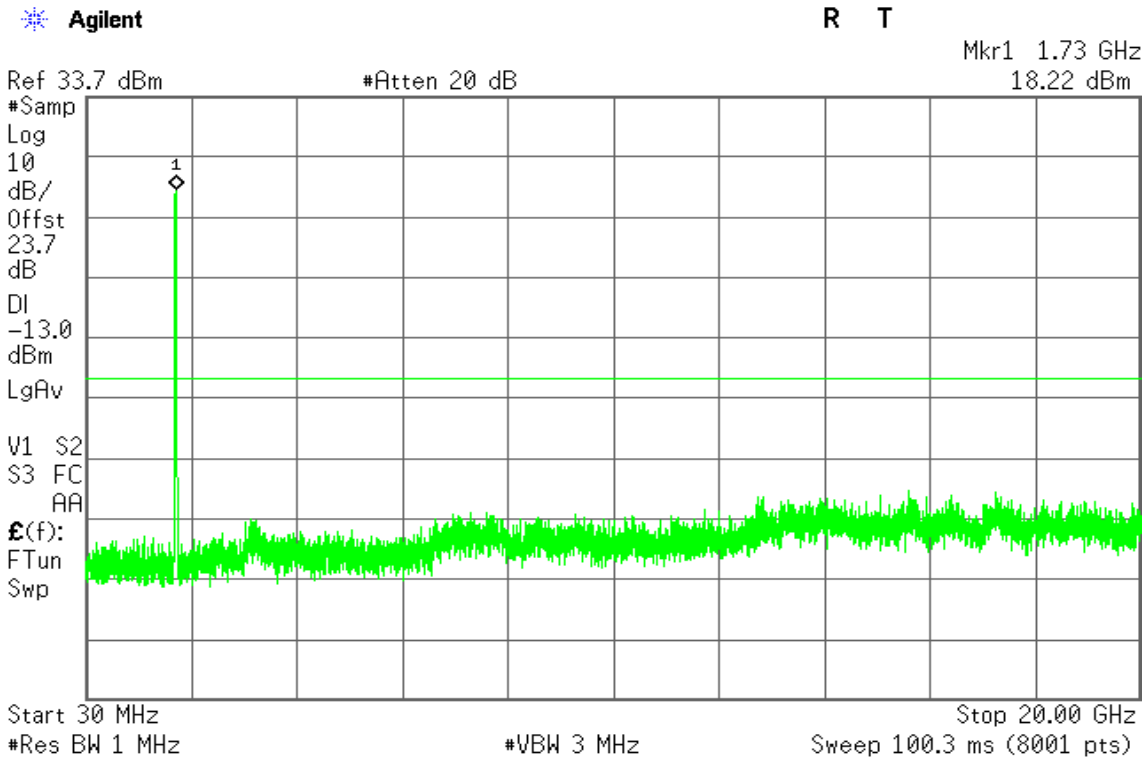


CHANNEL BANDWIDTH: 20MHz / QPSK

CH Low



CH Mid

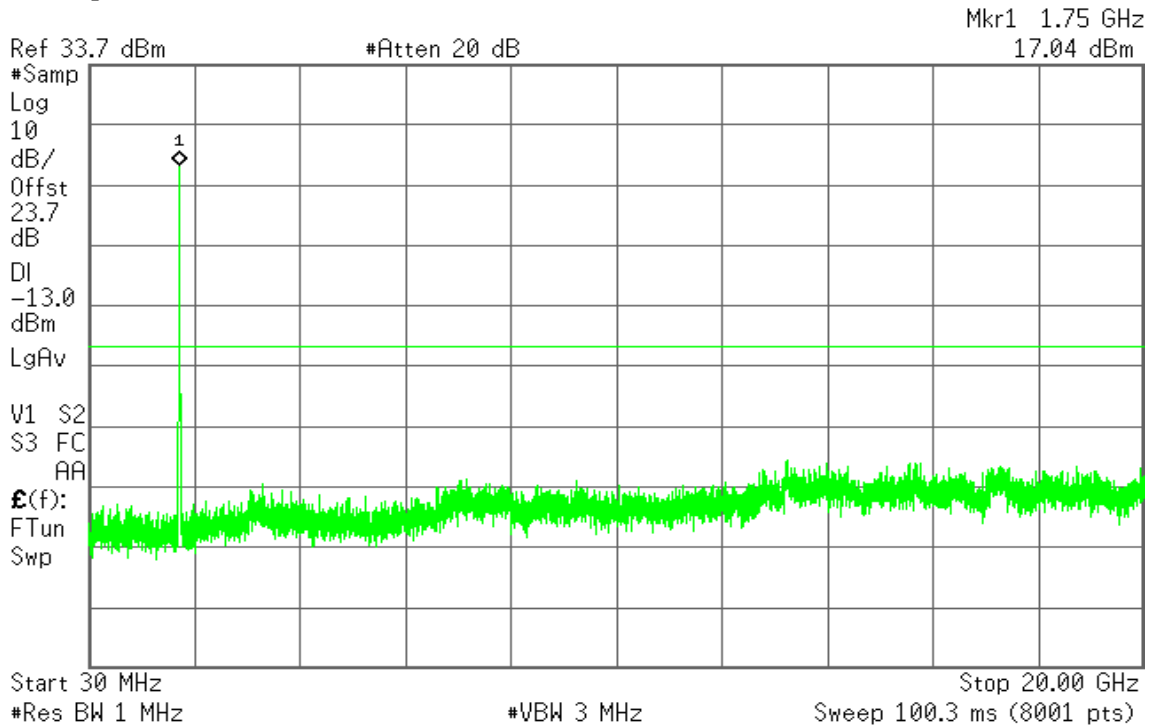




CH High

Agilent

R T

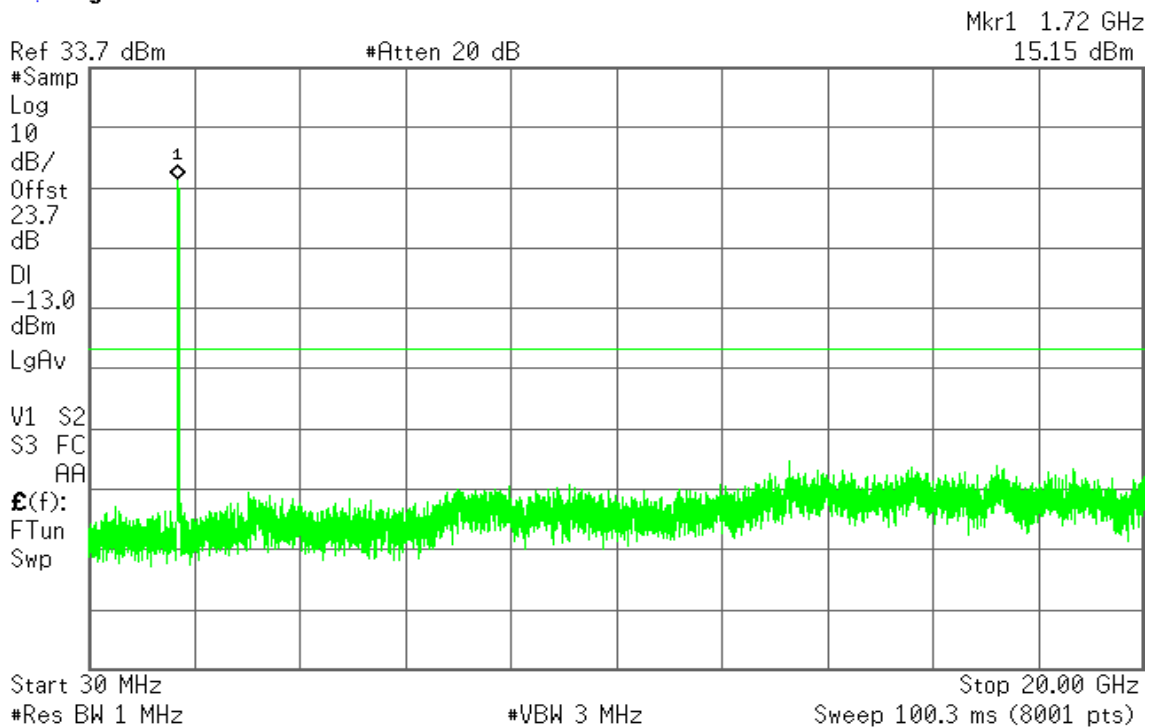


CHANNEL BANDWIDTH: 20MHz / 16QAM

CH Low

Agilent

R T



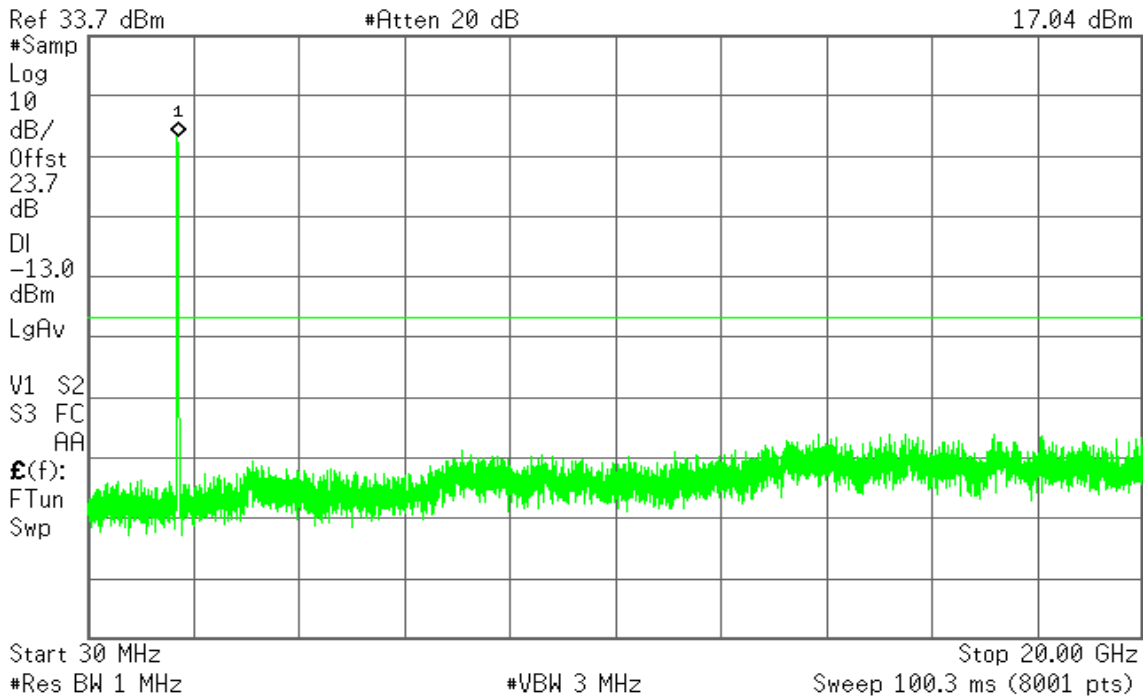


CH Mid

Agilent

R T

Mkr1 1.72 GHz
17.04 dBm

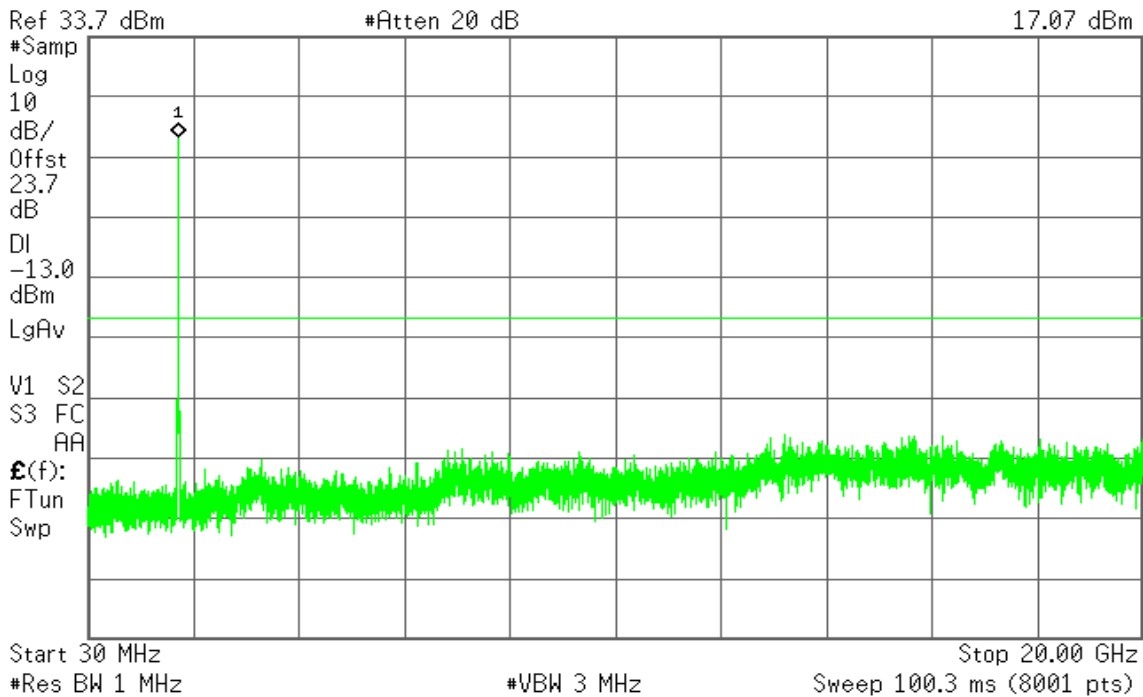


CH High

Agilent

R T

Mkr1 1.74 GHz
17.07 dBm





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 $43 + 10 \log_{10}(P)$ dB. The limit of emission equal to -13 dBm

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.

$$E = [1000000\sqrt{(30P)}] / 3 \text{ uV/m, where P is Watts}$$

TEST PROCEDURES

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

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



TEST RESULTS

Below 1GHz

LTE Band 13 / CHANNEL BANDWIDTH: 5MHz / QPSK

Operation Mode: Tx / Low channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
60.0700	-61.38	0.88	-2.19	-64.45	-13.00	-51.45	V
95.9600	-57.6	1.13	0.26	-58.47	-13.00	-45.47	V
150.2800	-65.41	1.43	0.71	-66.13	-13.00	-53.13	V
369.5000	-78.02	2.3	5.8	-74.52	-13.00	-61.52	V
516.9400	-80.72	2.7	6.07	-77.35	-13.00	-64.35	V
651.7700	-82.39	3.03	6.3	-79.12	-13.00	-66.12	V
84.3200	-58.77	1.07	0.39	-59.45	-13.00	-46.45	H
138.6400	-65.6	1.39	-0.38	-67.37	-13.00	-54.37	H
285.1100	-80.11	2.01	5.35	-76.77	-13.00	-63.77	H
369.5000	-73.3	2.3	5.8	-69.80	-13.00	-56.80	H
505.3000	-77.49	2.69	5.95	-74.23	-13.00	-61.23	H
622.6700	-77.8	2.95	6.14	-74.61	-13.00	-61.61	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.*



Operation Mode: Tx / Middle channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
60.0700	-59.81	0.88	-2.19	-62.88	-13.00	-49.88	V
95.9600	-56.87	1.13	0.26	-57.74	-13.00	-44.74	V
150.2800	-65.21	1.43	0.71	-65.93	-13.00	-52.93	V
288.9900	-82.06	2.02	5.39	-78.69	-13.00	-65.69	V
369.5000	-78.36	2.3	5.8	-74.86	-13.00	-61.86	V
505.3000	-80.11	2.69	5.95	-76.85	-13.00	-63.85	V
84.3200	-58.99	1.07	0.39	-59.67	-13.00	-46.67	H
171.6200	-73.67	1.57	2.69	-72.55	-13.00	-59.55	H
291.9000	-80.51	2.04	5.44	-77.11	-13.00	-64.11	H
369.5000	-72.57	2.3	5.8	-69.07	-13.00	-56.07	H
516.9400	-76.33	2.7	6.07	-72.96	-13.00	-59.96	H
601.3300	-77.54	2.91	6.39	-74.06	-13.00	-61.06	H

Remark:

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



Operation Mode: Tx / High channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
60.0700	-58.49	0.88	-2.19	-61.56	-13.00	-48.56	V
95.9600	-55.86	1.13	0.26	-56.73	-13.00	-43.73	V
150.2800	-63.12	1.43	0.71	-63.84	-13.00	-50.84	V
357.8600	-75.36	2.26	5.72	-71.90	-13.00	-58.90	V
505.3000	-78.48	2.69	5.95	-75.22	-13.00	-62.22	V
643.0400	-81.29	3.01	6.16	-78.14	-13.00	-65.14	V
84.3200	-57.77	1.07	0.39	-58.45	-13.00	-45.45	H
138.6400	-64.45	1.39	-0.38	-66.22	-13.00	-53.22	H
224.9700	-78.4	1.78	5.36	-74.82	-13.00	-61.82	H
357.8600	-72.41	2.26	5.72	-68.95	-13.00	-55.95	H
516.9400	-75.09	2.7	6.07	-71.72	-13.00	-58.72	H
619.7600	-77.77	2.94	6.11	-74.60	-13.00	-61.60	H

Remark:

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



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

Operation Mode: Tx / Low channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
95.9600	-57.44	1.13	0.26	-58.31	-13.00	-45.31	V
150.2800	-65.53	1.43	0.71	-66.25	-13.00	-53.25	V
279.2900	-83.25	2	5.29	-79.96	-13.00	-66.96	V
345.2500	-78.95	2.2	5.8	-75.35	-13.00	-62.35	V
448.0700	-79.5	2.58	5.74	-76.34	-13.00	-63.34	V
601.3300	-83.07	2.91	6.39	-79.59	-13.00	-66.59	V
84.3200	-59.31	1.07	0.39	-59.99	-13.00	-46.99	H
153.1900	-68.08	1.44	0.94	-68.58	-13.00	-55.58	H
312.2700	-79.3	2.14	5.76	-75.68	-13.00	-62.68	H
369.5000	-71.77	2.3	5.8	-68.27	-13.00	-55.27	H
505.3000	-77.09	2.69	5.95	-73.83	-13.00	-60.83	H
632.3700	-78.95	2.98	6.19	-75.74	-13.00	-62.74	H

Remark:

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



Operation Mode: Tx / Middle channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
95.9600	-57.51	1.13	0.26	-58.38	-13.00	-45.38	V
150.2800	-65.67	1.43	0.71	-66.39	-13.00	-53.39	V
286.0800	-82.74	2.01	5.36	-79.39	-13.00	-66.39	V
372.4100	-80.35	2.3	5.85	-76.80	-13.00	-63.80	V
505.3000	-81.13	2.69	5.95	-77.87	-13.00	-64.87	V
625.5800	-83	2.96	6.16	-79.80	-13.00	-66.80	V
84.3200	-59.73	1.07	0.39	-60.41	-13.00	-47.41	H
153.1900	-67.8	1.44	0.94	-68.30	-13.00	-55.30	H
276.3800	-80.19	1.99	5.23	-76.95	-13.00	-63.95	H
354.9500	-73.94	2.25	5.75	-70.44	-13.00	-57.44	H
448.0700	-77.2	2.58	5.74	-74.04	-13.00	-61.04	H
601.3300	-77.85	2.91	6.39	-74.37	-13.00	-61.37	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: 26°C **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)
95.9600	-58.38	1.13	0.26	-59.25	-13.00	-46.25	V
150.2800	-65.31	1.43	0.71	-66.03	-13.00	-53.03	V
369.5000	-77.41	2.3	5.8	-73.91	-13.00	-60.91	V
448.0700	-80.14	2.58	5.74	-76.98	-13.00	-63.98	V
529.5500	-83.28	2.75	6	-80.03	-13.00	-67.03	V
612.9700	-81.99	2.94	6.23	-78.70	-13.00	-65.70	V
84.3200	-60.11	1.07	0.39	-60.79	-13.00	-47.79	H
138.6400	-65.64	1.39	-0.38	-67.41	-13.00	-54.41	H
213.3300	-80.19	1.71	5.4	-76.50	-13.00	-63.50	H
357.8600	-73.15	2.26	5.72	-69.69	-13.00	-56.69	H
469.4100	-78.23	2.62	5.79	-75.06	-13.00	-62.06	H
612.9700	-77.94	2.94	6.23	-74.65	-13.00	-61.65	H

Remark:

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



LTE Band 13 / CHANNEL BANDWIDTH: 10MHz / QPSK

Operation Mode: Tx / Middle channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
95.9600	-58.02	1.13	0.26	-58.89	-13.00	-45.89	V
150.2800	-65.81	1.43	0.71	-66.53	-13.00	-53.53	V
286.0800	-82.24	2.01	5.36	-78.89	-13.00	-65.89	V
357.8600	-77.94	2.26	5.72	-74.48	-13.00	-61.48	V
448.0700	-80.15	2.58	5.74	-76.99	-13.00	-63.99	V
612.9700	-82.27	2.94	6.23	-78.98	-13.00	-65.98	V
84.3200	-59.79	1.07	0.39	-60.47	-13.00	-47.47	H
138.6400	-65.72	1.39	-0.38	-67.49	-13.00	-54.49	H
222.0600	-79.67	1.77	5.34	-76.10	-13.00	-63.10	H
369.5000	-73.31	2.3	5.8	-69.81	-13.00	-56.81	H
516.9400	-77.25	2.7	6.07	-73.88	-13.00	-60.88	H
631.4000	-79.11	2.98	6.2	-75.89	-13.00	-62.89	H

Remark:

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



LTE Band 13 / CHANNEL BANDWIDTH: 10MHz / 16QAM

Operation Mode: Tx / Middle channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
60.0700	-59.73	0.88	-2.19	-62.80	-13.00	-49.80	V
95.9600	-58.25	1.13	0.26	-59.12	-13.00	-46.12	V
150.2800	-65.53	1.43	0.71	-66.25	-13.00	-53.25	V
345.2500	-78.16	2.2	5.8	-74.56	-13.00	-61.56	V
448.0700	-78.86	2.58	5.74	-75.70	-13.00	-62.70	V
601.3300	-82.94	2.91	6.39	-79.46	-13.00	-66.46	V
84.3200	-59.99	1.07	0.39	-60.67	-13.00	-47.67	H
120.2100	-62.83	1.27	-2.06	-66.16	-13.00	-53.16	H
193.9300	-77.15	1.62	3.58	-75.19	-13.00	-62.19	H
369.5000	-73.45	2.3	5.8	-69.95	-13.00	-56.95	H
516.9400	-76.68	2.7	6.07	-73.31	-13.00	-60.31	H
632.3700	-78.91	2.98	6.19	-75.70	-13.00	-62.70	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: 26°C **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)
95.9600	-58.37	1.13	0.26	-59.24	-13.00	-46.24	V
150.2800	-64.75	1.43	0.71	-65.47	-13.00	-52.47	V
345.2500	-79.01	2.2	5.8	-75.41	-13.00	-62.41	V
448.0700	-80.88	2.58	5.74	-77.72	-13.00	-64.72	V
733.2500	-78.61	3.19	6.31	-75.49	-13.00	-62.49	V
799.2100	-80.44	3.33	6.49	-77.28	-13.00	-64.28	V
84.3200	-59.9	1.07	0.39	-60.58	-13.00	-47.58	H
138.6400	-67.3	1.39	-0.38	-69.07	-13.00	-56.07	H
357.8600	-73.42	2.26	5.72	-69.96	-13.00	-56.96	H
516.9400	-77.52	2.7	6.07	-74.15	-13.00	-61.15	H
733.2500	-75.02	3.19	6.31	-71.90	-13.00	-58.90	H
867.1100	-77.34	3.44	6.48	-74.30	-13.00	-61.30	H

Remark:

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



Operation Mode: Tx / Middle channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
95.9600	-58.1	1.13	0.26	-58.97	-13.00	-45.97	V
150.2800	-65.5	1.43	0.71	-66.22	-13.00	-53.22	V
369.5000	-78.22	2.3	5.8	-74.72	-13.00	-61.72	V
505.3000	-81.76	2.69	5.95	-78.50	-13.00	-65.50	V
645.9500	-82.09	3.02	6.21	-78.90	-13.00	-65.90	V
769.1400	-77.25	3.27	6.39	-74.13	-13.00	-61.13	V
84.3200	-60.36	1.07	0.39	-61.04	-13.00	-48.04	H
357.8600	-72.42	2.26	5.72	-68.96	-13.00	-55.96	H
516.9400	-78.14	2.7	6.07	-74.77	-13.00	-61.77	H
661.4700	-77.78	3.06	6.3	-74.54	-13.00	-61.54	H
769.1400	-76.41	3.27	6.39	-73.29	-13.00	-60.29	H
860.3200	-76.56	3.43	6.41	-73.58	-13.00	-60.58	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: 26°C **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)
95.9600	-57.85	1.13	0.26	-58.72	-13.00	-45.72	V
150.2800	-65.03	1.43	0.71	-65.75	-13.00	-52.75	V
369.5000	-78.55	2.3	5.8	-75.05	-13.00	-62.05	V
448.0700	-80.62	2.58	5.74	-77.46	-13.00	-64.46	V
601.3300	-82.81	2.91	6.39	-79.33	-13.00	-66.33	V
769.1400	-76.62	3.27	6.39	-73.50	-13.00	-60.50	V
95.9600	-60.17	1.13	0.26	-61.04	-13.00	-48.04	H
161.9200	-69.74	1.5	1.61	-69.63	-13.00	-56.63	H
379.2000	-75.01	2.31	5.98	-71.34	-13.00	-58.34	H
516.9400	-77.06	2.7	6.07	-73.69	-13.00	-60.69	H
769.1400	-75.9	3.27	6.39	-72.78	-13.00	-59.78	H
902.0300	-76.51	3.53	6.6	-73.44	-13.00	-60.44	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 4 / CHANNEL BANDWIDTH: 5MHz / 16QAM

Operation Mode: Tx / Low channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
95.9600	-58.22	1.13	0.26	-59.09	-13.00	-46.09	V
150.2800	-65.14	1.43	0.71	-65.86	-13.00	-52.86	V
357.8600	-78.95	2.26	5.72	-75.49	-13.00	-62.49	V
505.3000	-81.45	2.69	5.95	-78.19	-13.00	-65.19	V
661.4700	-81.77	3.06	6.3	-78.53	-13.00	-65.53	V
769.1400	-76.42	3.27	6.39	-73.30	-13.00	-60.30	V
84.3200	-60.37	1.07	0.39	-61.05	-13.00	-48.05	H
161.9200	-69.19	1.5	1.61	-69.08	-13.00	-56.08	H
357.8600	-73.57	2.26	5.72	-70.11	-13.00	-57.11	H
448.0700	-77.65	2.58	5.74	-74.49	-13.00	-61.49	H
588.7200	-78.39	2.89	6.17	-75.11	-13.00	-62.11	H
841.8900	-76.69	3.41	6.4	-73.70	-13.00	-60.70	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: 26°C **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)
95.9600	-57.52	1.13	0.26	-58.39	-13.00	-45.39	V
150.2800	-65	1.43	0.71	-65.72	-13.00	-52.72	V
288.9900	-81.83	2.02	5.39	-78.46	-13.00	-65.46	V
369.5000	-77.74	2.3	5.8	-74.24	-13.00	-61.24	V
448.0700	-79.55	2.58	5.74	-76.39	-13.00	-63.39	V
769.1400	-76.57	3.27	6.39	-73.45	-13.00	-60.45	V
84.3200	-59.44	1.07	0.39	-60.12	-13.00	-47.12	H
161.9200	-67.87	1.5	1.61	-67.76	-13.00	-54.76	H
270.5600	-80.88	1.98	5.11	-77.75	-13.00	-64.75	H
357.8600	-71.75	2.26	5.72	-68.29	-13.00	-55.29	H
516.9400	-77.72	2.7	6.07	-74.35	-13.00	-61.35	H
733.2500	-74.88	3.19	6.31	-71.76	-13.00	-58.76	H

Remark:

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



Operation Mode: Tx / High channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
95.9600	-57.66	1.13	0.26	-58.53	-13.00	-45.53	V
150.2800	-65.09	1.43	0.71	-65.81	-13.00	-52.81	V
369.5000	-77.41	2.3	5.8	-73.91	-13.00	-60.91	V
450.9800	-80.49	2.59	5.74	-77.34	-13.00	-64.34	V
577.0800	-83.77	2.88	6.04	-80.61	-13.00	-67.61	V
769.1400	-76.85	3.27	6.39	-73.73	-13.00	-60.73	V
84.3200	-60	1.07	0.39	-60.68	-13.00	-47.68	H
150.2800	-67.23	1.43	0.71	-67.95	-13.00	-54.95	H
357.8600	-71.92	2.26	5.72	-68.46	-13.00	-55.46	H
516.9400	-77.35	2.7	6.07	-73.98	-13.00	-60.98	H
733.2500	-74.47	3.19	6.31	-71.35	-13.00	-58.35	H
840.9200	-77.42	3.41	6.4	-74.43	-13.00	-61.43	H

Remark:

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



LTE Band 4 / CHANNEL BANDWIDTH: 10MHz / QPSK

Operation Mode: Tx / Low channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
95.9600	-58.44	1.13	0.26	-59.31	-13.00	-46.31	V
150.2800	-65.54	1.43	0.71	-66.26	-13.00	-53.26	V
369.5000	-78.6	2.3	5.8	-75.10	-13.00	-62.10	V
505.3000	-81.47	2.69	5.95	-78.21	-13.00	-65.21	V
769.1400	-77.4	3.27	6.39	-74.28	-13.00	-61.28	V
942.7700	-80	3.61	6.37	-77.24	-13.00	-64.24	V
95.9600	-58.21	1.13	0.26	-59.08	-13.00	-46.08	H
174.5300	-73.76	1.59	3	-72.35	-13.00	-59.35	H
357.8600	-73.05	2.26	5.72	-69.59	-13.00	-56.59	H
516.9400	-78.82	2.7	6.07	-75.45	-13.00	-62.45	H
721.6100	-77.93	3.17	6.49	-74.61	-13.00	-61.61	H
811.8200	-76.68	3.35	6.2	-73.83	-13.00	-60.83	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: 26°C **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)
95.9600	-56.5	1.13	0.26	-57.37	-13.00	-44.37	V
150.2800	-64.8	1.43	0.71	-65.52	-13.00	-52.52	V
319.0600	-82.81	2.17	5.71	-79.27	-13.00	-66.27	V
369.5000	-79.52	2.3	5.8	-76.02	-13.00	-63.02	V
505.3000	-81.77	2.69	5.95	-78.51	-13.00	-65.51	V
769.1400	-77.87	3.27	6.39	-74.75	-13.00	-61.75	V
95.9600	-57.09	1.13	0.26	-57.96	-13.00	-44.96	H
161.9200	-70.62	1.5	1.61	-70.51	-13.00	-57.51	H
357.8600	-73.74	2.26	5.72	-70.28	-13.00	-57.28	H
516.9400	-78.15	2.7	6.07	-74.78	-13.00	-61.78	H
673.1100	-78.31	3.08	6.36	-75.03	-13.00	-62.03	H
793.3900	-75.75	3.33	6.33	-72.75	-13.00	-59.75	H

Remark:

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



Operation Mode: Tx / High channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
95.9600	-56.57	1.13	0.26	-57.44	-13.00	-44.44	V
161.9200	-67.79	1.5	1.61	-67.68	-13.00	-54.68	V
346.2200	-77.95	2.21	5.8	-74.36	-13.00	-61.36	V
505.3000	-80.69	2.69	5.95	-77.43	-13.00	-64.43	V
635.2800	-82.7	2.99	6.17	-79.52	-13.00	-66.52	V
757.5000	-77.7	3.22	6.25	-74.67	-13.00	-61.67	V
84.3200	-60.41	1.07	0.39	-61.09	-13.00	-48.09	H
150.2800	-67.63	1.43	0.71	-68.35	-13.00	-55.35	H
357.8600	-73.94	2.26	5.72	-70.48	-13.00	-57.48	H
516.9400	-78.49	2.7	6.07	-75.12	-13.00	-62.12	H
733.2500	-75.83	3.19	6.31	-72.71	-13.00	-59.71	H
902.0300	-75.91	3.53	6.6	-72.84	-13.00	-59.84	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: 26°C **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)
95.9600	-58.02	1.13	0.26	-58.89	-13.00	-45.89	V
150.2800	-65.02	1.43	0.71	-65.74	-13.00	-52.74	V
345.2500	-78.21	2.2	5.8	-74.61	-13.00	-61.61	V
505.3000	-82.4	2.69	5.95	-79.14	-13.00	-66.14	V
781.7500	-77.2	3.31	6.13	-74.38	-13.00	-61.38	V
946.6500	-79.37	3.62	6.33	-76.66	-13.00	-63.66	V
84.3200	-59.97	1.07	0.39	-60.65	-13.00	-47.65	H
161.9200	-69.23	1.5	1.61	-69.12	-13.00	-56.12	H
357.8600	-72.45	2.26	5.72	-68.99	-13.00	-55.99	H
516.9400	-77.2	2.7	6.07	-73.83	-13.00	-60.83	H
745.8600	-75.32	3.2	6.1	-72.42	-13.00	-59.42	H
875.8400	-76.47	3.46	6.61	-73.32	-13.00	-60.32	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: 26°C **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)
95.9600	-57.04	1.13	0.26	-57.91	-13.00	-44.91	V
150.2800	-65.25	1.43	0.71	-65.97	-13.00	-52.97	V
369.5000	-78.49	2.3	5.8	-74.99	-13.00	-61.99	V
450.9800	-80.2	2.59	5.74	-77.05	-13.00	-64.05	V
612.9700	-83.26	2.94	6.23	-79.97	-13.00	-66.97	V
769.1400	-76.99	3.27	6.39	-73.87	-13.00	-60.87	V
95.9600	-59.79	1.13	0.26	-60.66	-13.00	-47.66	H
357.8600	-71.75	2.26	5.72	-68.29	-13.00	-55.29	H
516.9400	-77.61	2.7	6.07	-74.24	-13.00	-61.24	H
673.1100	-78.35	3.08	6.36	-75.07	-13.00	-62.07	H
793.3900	-76.09	3.33	6.33	-73.09	-13.00	-60.09	H
902.0300	-76.4	3.53	6.6	-73.33	-13.00	-60.33	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: 26°C **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)
95.9600	-58.39	1.13	0.26	-59.26	-13.00	-46.26	V
150.2800	-65.1	1.43	0.71	-65.82	-13.00	-52.82	V
346.2200	-78.43	2.21	5.8	-74.84	-13.00	-61.84	V
448.0700	-79.82	2.58	5.74	-76.66	-13.00	-63.66	V
601.3300	-83.25	2.91	6.39	-79.77	-13.00	-66.77	V
769.1400	-77.23	3.27	6.39	-74.11	-13.00	-61.11	V
95.9600	-58.99	1.13	0.26	-59.86	-13.00	-46.86	H
161.9200	-69.32	1.5	1.61	-69.21	-13.00	-56.21	H
357.8600	-72.29	2.26	5.72	-68.83	-13.00	-55.83	H
529.5500	-79.02	2.75	6	-75.77	-13.00	-62.77	H
733.2500	-75.55	3.19	6.31	-72.43	-13.00	-59.43	H
838.0100	-76.74	3.41	6.38	-73.77	-13.00	-60.77	H

Remark:

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



LTE Band 4 / CHANNEL BANDWIDTH: 20MHz / QPSK

Operation Mode: Tx / Low channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
95.9600	-57.7	1.13	0.26	-58.57	-13.00	-45.57	V
150.2800	-64.6	1.43	0.71	-65.32	-13.00	-52.32	V
285.1100	-81.93	2.01	5.35	-78.59	-13.00	-65.59	V
369.5000	-79.44	2.3	5.8	-75.94	-13.00	-62.94	V
505.3000	-82.11	2.69	5.95	-78.85	-13.00	-65.85	V
770.1100	-76.82	3.27	6.38	-73.71	-13.00	-60.71	V
95.9600	-58.47	1.13	0.26	-59.34	-13.00	-46.34	H
161.9200	-70.3	1.5	1.61	-70.19	-13.00	-57.19	H
357.8600	-73.39	2.26	5.72	-69.93	-13.00	-56.93	H
469.4100	-78.56	2.62	5.79	-75.39	-13.00	-62.39	H
601.3300	-76.73	2.91	6.39	-73.25	-13.00	-60.25	H
793.3900	-75.77	3.33	6.33	-72.77	-13.00	-59.77	H

Remark:

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



Operation Mode: Tx / Middle channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
95.9600	-57.22	1.13	0.26	-58.09	-13.00	-45.09	V
150.2800	-64.92	1.43	0.71	-65.64	-13.00	-52.64	V
345.2500	-79.09	2.2	5.8	-75.49	-13.00	-62.49	V
448.0700	-80.59	2.58	5.74	-77.43	-13.00	-64.43	V
612.9700	-82.39	2.94	6.23	-79.10	-13.00	-66.10	V
769.1400	-77.46	3.27	6.39	-74.34	-13.00	-61.34	V
95.9600	-58.14	1.13	0.26	-59.01	-13.00	-46.01	H
161.9200	-69.92	1.5	1.61	-69.81	-13.00	-56.81	H
382.1100	-74.2	2.31	5.99	-70.52	-13.00	-57.52	H
585.8100	-78.95	2.89	6.11	-75.73	-13.00	-62.73	H
770.1100	-76.31	3.27	6.38	-73.20	-13.00	-60.20	H
878.7500	-77.22	3.46	6.66	-74.02	-13.00	-61.02	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: 26°C **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)
95.9600	-57.89	1.13	0.26	-58.76	-13.00	-45.76	V
150.2800	-64.18	1.43	0.71	-64.90	-13.00	-51.90	V
345.2500	-78.99	2.2	5.8	-75.39	-13.00	-62.39	V
448.0700	-79.84	2.58	5.74	-76.68	-13.00	-63.68	V
612.9700	-82.31	2.94	6.23	-79.02	-13.00	-66.02	V
781.7500	-76.72	3.31	6.13	-73.90	-13.00	-60.90	V
95.9600	-58.31	1.13	0.26	-59.18	-13.00	-46.18	H
267.6500	-66.21	1.96	5.22	-62.95	-13.00	-49.95	H
357.8600	-73.35	2.26	5.72	-69.89	-13.00	-56.89	H
516.9400	-76.69	2.7	6.07	-73.32	-13.00	-60.32	H
649.8300	-78.36	3.03	6.28	-75.11	-13.00	-62.11	H
745.8600	-76.11	3.2	6.1	-73.21	-13.00	-60.21	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 1, 2014
Temperature: 26°C **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)
95.9600	-57.19	1.13	0.26	-58.06	-13.00	-45.06	V
150.2800	-64.72	1.43	0.71	-65.44	-13.00	-52.44	V
275.4100	-83.15	1.99	5.21	-79.93	-13.00	-66.93	V
369.5000	-77.6	2.3	5.8	-74.10	-13.00	-61.10	V
505.3000	-81.83	2.69	5.95	-78.57	-13.00	-65.57	V
769.1400	-76.63	3.27	6.39	-73.51	-13.00	-60.51	V
95.9600	-58.58	1.13	0.26	-59.45	-13.00	-46.45	H
161.9200	-70.22	1.5	1.61	-70.11	-13.00	-57.11	H
357.8600	-73.1	2.26	5.72	-69.64	-13.00	-56.64	H
516.9400	-78.05	2.7	6.07	-74.68	-13.00	-61.68	H
673.1100	-78.88	3.08	6.36	-75.60	-13.00	-62.60	H
836.0700	-76.48	3.4	6.36	-73.52	-13.00	-60.52	H

Remark:

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



Operation Mode: Tx / Middle channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
95.9600	-58.26	1.13	0.26	-59.13	-13.00	-46.13	V
150.2800	-65.02	1.43	0.71	-65.74	-13.00	-52.74	V
288.9900	-82.93	2.02	5.39	-79.56	-13.00	-66.56	V
382.1100	-78.62	2.31	5.99	-74.94	-13.00	-61.94	V
505.3000	-81.69	2.69	5.95	-78.43	-13.00	-65.43	V
769.1400	-77.37	3.27	6.39	-74.25	-13.00	-61.25	V
95.9600	-59.01	1.13	0.26	-59.88	-13.00	-46.88	H
138.6400	-65.18	1.39	-0.38	-66.95	-13.00	-53.95	H
357.8600	-72.84	2.26	5.72	-69.38	-13.00	-56.38	H
516.9400	-77.29	2.7	6.07	-73.92	-13.00	-60.92	H
733.2500	-76.03	3.19	6.31	-72.91	-13.00	-59.91	H
836.0700	-77.27	3.4	6.36	-74.31	-13.00	-61.31	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.*



Operation Mode: Tx / High channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
95.9600	-57.13	1.13	0.26	-58.00	-13.00	-45.00	V
150.2800	-65.03	1.43	0.71	-65.75	-13.00	-52.75	V
345.2500	-77.85	2.2	5.8	-74.25	-13.00	-61.25	V
448.0700	-79.28	2.58	5.74	-76.12	-13.00	-63.12	V
769.1400	-77.01	3.27	6.39	-73.89	-13.00	-60.89	V
936.9500	-79.71	3.6	6.4	-76.91	-13.00	-63.91	V
95.9600	-58.86	1.13	0.26	-59.73	-13.00	-46.73	H
161.9200	-69.87	1.5	1.61	-69.76	-13.00	-56.76	H
357.8600	-72.79	2.26	5.72	-69.33	-13.00	-56.33	H
516.9400	-77.62	2.7	6.07	-74.25	-13.00	-61.25	H
601.3300	-78.56	2.91	6.39	-75.08	-13.00	-62.08	H
793.3900	-75.84	3.33	6.33	-72.84	-13.00	-59.84	H

Remark:

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



Above 1GHz

LTE Band 13 / CHANNEL BANDWIDTH: 5MHz / QPSK

Operation Mode: Tx / Low channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
1945.000	-53.06	5.57	5.5	-53.13	-13.00	-40.13	V
3114.000	-56.48	7.18	7.74	-55.92	-13.00	-42.92	V
N/A							
1945.000	-55.72	5.57	5.5	-55.79	-13.00	-42.79	H
3247.000	-56.48	7.35	8.14	-55.69	-13.00	-42.69	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: 26°C **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)
1945.000	-50.76	5.57	5.5	-50.83	-13.00	-37.83	V
3695.000	-55.83	8.2	9.09	-54.94	-13.00	-41.94	V
N/A							
1945.000	-54.27	5.57	5.5	-54.34	-13.00	-41.34	H
3870.000	-55.04	8.35	9.27	-54.12	-13.00	-41.12	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: 26°C **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)
1945.000	-52.59	5.57	5.5	-52.66	-13.00	-39.66	V
3856.000	-55.22	8.33	9.26	-54.29	-13.00	-41.29	V
N/A							
1945.000	-56.44	5.57	5.5	-56.51	-13.00	-43.51	H
4381.000	-53.84	8.63	9.7	-52.77	-13.00	-39.77	H
N/A							

Remark:

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



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

Operation Mode: Tx / Low channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
1959.000	-47.59	5.61	5.47	-47.73	-13.00	-34.73	V
4486.000	-54.03	8.87	9.79	-53.11	-13.00	-40.11	V
N/A							
1952.000	-49.53	5.59	5.49	-49.63	-13.00	-36.63	H
3121.000	-55.84	7.19	7.76	-55.27	-13.00	-42.27	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: 26°C **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)
1945.000	-58.21	5.57	5.5	-58.28	-13.00	-45.28	V
3877.000	-55.43	8.36	9.28	-54.51	-13.00	-41.51	V
N/A							
1952.000	-54.17	5.59	5.49	-54.27	-13.00	-41.27	H
3751.000	-55.12	8.23	9.15	-54.20	-13.00	-41.20	H
N/A							

Remark:

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



Operation Mode: Tx / High channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
1945.000	-52.82	5.57	5.5	-52.89	-13.00	-39.89	V
4192.000	-55.04	8.49	9.55	-53.98	-13.00	-40.98	V
N/A							
1959.000	-46.76	5.61	5.47	-46.90	-13.00	-33.90	H
3576.000	-56	8.05	8.98	-55.07	-13.00	-42.07	H
N/A							

Remark:

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



LTE Band 13 / CHANNEL BANDWIDTH: 10MHz / QPSK

Operation Mode: Tx / Middle channel **Test Date:** July 22, 2013
Temperature: 26°C **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)
1952.000	-49.35	5.59	5.49	-49.45	-13.00	-36.45	V
3730.000	-56.1	8.22	9.13	-55.19	-13.00	-42.19	V
N/A							
1945.000	-55.79	5.57	5.5	-55.86	-13.00	-42.86	H
3541.000	-55.32	7.97	8.94	-54.35	-13.00	-41.35	H
N/A							

Remark:

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



LTE Band 13 / CHANNEL BANDWIDTH: 10MHz / 16QAM

Operation Mode: Tx / Middle channel **Test Date:** July 22, 2013
Temperature: 26°C **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)
1945.000	-50.88	5.57	5.5	-50.95	-13.00	-37.95	V
3555.000	-56.73	8	8.96	-55.77	-13.00	-42.77	V
N/A							
1945.000	-53.18	5.57	5.5	-53.25	-13.00	-40.25	H
4423.000	-53.85	8.7	9.74	-52.81	-13.00	-39.81	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: 26°C **Tested by:** Dennis Li
Humidity: 60% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3422.000	-46.85	7.64	8.67	-45.82	-13.00	-32.82	V
6852.000	-44.88	11.42	11.72	-44.58	-13.00	-31.58	V
N/A							
1714.000	-57.81	5.14	5.91	-57.04	-13.00	-44.04	H
3422.000	-51.57	7.64	8.67	-50.54	-13.00	-37.54	H
N/A							

Remark:

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



Operation Mode: Tx / Middle channel **Test Date:** May 1, 2014
Temperature: 26°C **Tested by:** Dennis Li
Humidity: 60% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3464.000	-50.75	7.76	8.79	-49.72	-13.00	-36.72	V
5200.000	-49.65	9.56	10.68	-48.53	-13.00	-35.53	V
6929.000	-42.25	11.53	11.81	-41.97	-13.00	-28.97	V
N/A							
2701.000	-57.06	6.73	6.62	-57.17	-13.00	-44.17	H
3898.000	-54.07	8.39	9.3	-53.16	-13.00	-40.16	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: 26°C **Tested by:** Dennis Li
Humidity: 60% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3506.000	-48.82	7.88	8.91	-47.79	-13.00	-34.79	V
7013.000	-45.44	11.58	11.92	-45.10	-13.00	-32.10	V
N/A							
3506.000	-53.46	7.88	8.91	-52.43	-13.00	-39.43	H
4892.000	-54.48	9.26	10.43	-53.31	-13.00	-40.31	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: 26°C **Tested by:** Dennis Li
Humidity: 60% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3422.000	-45.87	7.64	8.67	-44.84	-13.00	-31.84	V
6852.000	-45.54	11.42	11.72	-45.24	-13.00	-32.24	V
N/A							
3422.000	-51.07	7.64	8.67	-50.04	-13.00	-37.04	H
5333.000	-53.58	9.71	10.73	-52.56	-13.00	-39.56	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.



Operation Mode: Tx / Middle channel **Test Date:** May 1, 2014
Temperature: 26°C **Tested by:** Dennis Li
Humidity: 60% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3464.000	-51.51	7.76	8.79	-50.48	-13.00	-37.48	V
5200.000	-50.73	9.56	10.68	-49.61	-13.00	-36.61	V
6929.000	-40.67	11.53	11.81	-40.39	-13.00	-27.39	V
N/A							
2708.000	-56.69	6.74	6.64	-56.79	-13.00	-43.79	H
3828.000	-53.94	8.3	9.23	-53.01	-13.00	-40.01	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 / High channel **Test Date:** May 1, 2014
Temperature: 26°C **Tested by:** Dennis Li
Humidity: 60% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3499.000	-47.71	7.87	8.9	-46.68	-13.00	-33.68	V
7006.000	-42.76	11.56	11.91	-42.41	-13.00	-29.41	V
N/A							
3506.000	-52.37	7.88	8.91	-51.34	-13.00	-38.34	H
4416.000	-53.96	8.68	9.73	-52.91	-13.00	-39.91	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.*



LTE Band 4 / CHANNEL BANDWIDTH: 10MHz / QPSK

Operation Mode: Tx / Low channel **Test Date:** May 1, 2014
Temperature: 26°C **Tested by:** Dennis Li
Humidity: 60% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3429.000	-49.12	7.66	8.69	-48.09	-13.00	-35.09	V
6852.000	-44.51	11.42	11.72	-44.21	-13.00	-31.21	V
N/A							
3422.000	-52.97	7.64	8.67	-51.94	-13.00	-38.94	H
4773.000	-53.46	9.27	10.24	-52.49	-13.00	-39.49	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: 26°C **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)
3457.000	-52.03	7.74	8.77	-51.00	-13.00	-38.00	V
5200.000	-53.05	9.56	10.68	-51.93	-13.00	-38.93	V
N/A							
2715.000	-57.19	6.74	6.66	-57.27	-13.00	-44.27	H
4080.000	-54.46	8.44	9.46	-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 / High channel **Test Date:** May 1, 2014
Temperature: 26°C **Tested by:** Dennis Li
Humidity: 60% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3499.000	-49.63	7.87	8.9	-48.60	-13.00	-35.60	V
6999.000	-44.99	11.54	11.9	-44.63	-13.00	-31.63	V
N/A							
3499.000	-54.02	7.87	8.9	-52.99	-13.00	-39.99	H
4808.000	-53.52	9.32	10.29	-52.55	-13.00	-39.55	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.*



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

Operation Mode: Tx / Low channel **Test Date:** May 1, 2014
Temperature: 26°C **Tested by:** Dennis Li
Humidity: 60% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3429.000	-50.03	7.66	8.69	-49.00	-13.00	-36.00	V
6852.000	-46.54	11.42	11.72	-46.24	-13.00	-33.24	V
N/A							
3429.000	-54.55	7.66	8.69	-53.52	-13.00	-40.52	H
4402.000	-53.59	8.65	9.72	-52.52	-13.00	-39.52	H
N/A							

Remark:

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



Operation Mode: Tx / Middle channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
3457.000	-53.15	7.74	8.77	-52.12	-13.00	-39.12	V
6929.000	-45.97	11.53	11.81	-45.69	-13.00	-32.69	V
N/A							
3814.000	-54.47	8.28	9.21	-53.54	-13.00	-40.54	H
4801.000	-54.18	9.32	10.28	-53.22	-13.00	-40.22	H
N/A							

Remark:

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



Operation Mode: Tx / High channel **Test Date:** May 1, 2014
Temperature: 26°C **Tested by:** Dennis Li
Humidity: 60% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3429.000	-50.03	7.66	8.69	-49.00	-13.00	-36.00	V
6852.000	-46.54	11.42	11.72	-46.24	-13.00	-33.24	V
N/A							
3492.000	-54.26	7.85	8.88	-53.23	-13.00	-40.23	H
4857.000	-53.73	9.29	10.37	-52.65	-13.00	-39.65	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 1, 2014
Temperature: 26°C **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)
3443.000	-50.14	7.7	8.73	-49.11	-13.00	-36.11	V
6880.000	-45.66	11.48	11.76	-45.38	-13.00	-32.38	V
N/A							
3443.000	-53.53	7.7	8.73	-52.50	-13.00	-39.50	H
5417.000	-55.33	9.84	10.77	-54.40	-13.00	-41.40	H
N/A							

Remark:

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



Operation Mode: Tx / Middle channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
3450.000	-52.05	7.72	8.75	-51.02	-13.00	-38.02	V
5193.000	-54.39	9.55	10.68	-53.26	-13.00	-40.26	V
N/A							
3695.000	-54.73	8.2	9.09	-53.84	-13.00	-40.84	H
5963.000	-54.34	10.67	10.89	-54.12	-13.00	-41.12	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: 26°C **Tested by:** Dennis Li
Humidity: 60% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3492.000	-50.55	7.85	8.88	-49.52	-13.00	-36.52	V
6957.000	-48.77	11.54	11.85	-48.46	-13.00	-35.46	V
N/A							
4024.000	-54.18	8.38	9.42	-53.14	-13.00	-40.14	H
5249.000	-53.9	9.6	10.7	-52.80	-13.00	-39.80	H
N/A							

Remark:

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



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

Operation Mode: Tx / Low channel **Test Date:** May 1, 2014
Temperature: 26°C **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)
3443.000	-51.57	7.7	8.73	-50.54	-13.00	-37.54	V
5025.000	-54.87	9.42	10.61	-53.68	-13.00	-40.68	V
N/A							
3443.000	-54	7.7	8.73	-52.97	-13.00	-39.97	H
4381.000	-53.72	8.63	9.7	-52.65	-13.00	-39.65	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: 26°C **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)
3457.000	-53.49	7.74	8.77	-52.46	-13.00	-39.46	V
4542.000	-53.06	9	9.87	-52.19	-13.00	-39.19	V
N/A							
3737.000	-55.55	8.22	9.14	-54.63	-13.00	-41.63	H
4437.000	-54.08	8.74	9.75	-53.07	-13.00	-40.07	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: 26°C **Tested by:** Dennis Li
Humidity: 60% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3492.000	-51.28	7.85	8.88	-50.25	-13.00	-37.25	V
4948.000	-54.39	9.33	10.52	-53.20	-13.00	-40.20	V
N/A							
3499.000	-54.77	7.87	8.9	-53.74	-13.00	-40.74	H
5060.000	-54.1	9.43	10.62	-52.91	-13.00	-39.91	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.*