



FCC 47 CFR PART 22 SUBPART H AND PART 24 SUBPART E

TEST REPORT

For

4G/LTE VoIP Wireless-N VPN Broadband Router

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

Trade Name: Billion

Issued to

Billion Electric Co., Ltd.
8F., No.192, Sec. 2, Zhongxing Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)

Issued by

Compliance Certification Services Inc.
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)
<http://www.ccsrf.com>
service@ccsrf.com
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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
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1. TEST RESULT CERTIFICATION

Applicant: Billion Electric Co., Ltd.
8F., No.192, Sec. 2, Zhongxing Rd., Xindian Dist., New Taipei City
231, Taiwan (R.O.C.)

Equipment Under Test: 4G/LTE VoIP Wireless-N VPN Broadband Router

Trade Name: Billion

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

Date of Test: December 23, 2014 ~ January 12, 2015

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR Part 22 Subpart H & Part 24 Subpart E	No non-compliance noted

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA/EIA-603-C: 2004 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rule FCC PART 22 Subpart H and PART 24 Subpart E.

The test results of this report relate only to the tested sample identified in this report.

Approved by:

Reviewed by:

Miller Lee
Section Manager
Compliance Certification Services Inc.

Angel Cheng
Section Manager
Compliance Certification Services Inc.



2. EUT DESCRIPTION

Product	4G/LTE VoIP Wireless-N VPN Broadband Router
Trade Name	Billion
Model Number	BiPAC 6300VNOZ (Other series models, Please see the page 7.)
Received Date	October 23, 2014
Power Supply	Vdc from Power Adapter EGB / PAW024A15US I/P: AC 100-240, 0.7A, 50/60Hz O/P: DC 15V, 1.6A
Frequency Range	GPRS / EDGE: 850: 824.2 ~ 848.8 MHz GPRS / EDGE: 1900: 1850.2 ~ 1909.8 MHz WCDMA / HSDPA / HSUPA Band II: 1852.4 ~ 1907.6 MHz WCDMA / HSDPA / HSUPA Band V: 826.4 ~ 846.6MHz
Transmit Power (ERP & EIRP Power)	GPRS 850: 26.23 dBm GPRS 1900: 21.80 dBm EDGE 850: 26.71 dBm EDGE 1900: 20.72 dBm WCDMA Band II: 21.28 dBm HSDPA Band II: 21.62 dBm HSUPA Band II: 22.07 dBm WCDMA Band V: 19.48 dBm HSDPA Band V: 21.43 dBm HSUPA Band V: 21.29 dBm
Cellular Phone Protocol	GPRS: GMSK EDGE: 8PSK WCDMA: Quadrature Phase Shift Keying (QPSK) with Root-raised cosine pulse shaping filters (roll off = 0.22)
Type of Emission	GPRS 850: 245KGXW--- GPRS 1900: 243KGXW--- EDGE 850: 243KG7W--- EDGE 1900: 248KG7W--- WCDMA Band II: 4M17F9W--- WCDMA Band V: 4M14F9W--- WCDMA HSDPA Band II: 4M17F9W--- WCDMA HSDPA Band V: 4M16F9W--- WCDMA HSUPA Band II: 4M17F9W--- WCDMA HSUPA Band V: 4M15F9W---



Antenna Gain	1. AN0727-13B03SM GPRS / EDGE 850: 1.7 dBi GPRS / EDGE 1900: 1.7 dBi WCDMA band II: 1.7 dBi WCDMA band V: 1.7 dBi 2. AN8921F-9219SM GPRS / EDGE 850: 2.5 dBi GPRS / EDGE 1900: 1.5 dBi WCDMA band II: 1.5 dBi WCDMA band V: 2.5 dBi
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Remark:

1. *The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.*
2. *This submittal(s) (test report) is intended for FCC ID: QI3BIL-4500VNOZ filing to comply with Part 22 and Part 24 of the FCC 47 CFR Rules.*



Model Discrepancy

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

Model: BiPAC 6300VNOZ

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

For FCC (BiPAC 6300VNOZ)

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



3. TEST METHODOLOGY

Both conducted and radiated testing were performed according to the procedures document on chapter 13 of ANSI C63.4: 2009, TIA/EIA-603-C: 2004 and FCC CFR 47, Part 2, PART 22 SUBPART H AND PART 24 SUBPART E

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

3.2 EUT EXERCISE

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4: 2009. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4: 2009.



3.4 DESCRIPTION OF TEST MODES

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

EUT staying in continuous transmitting mode was programmed.

GPRS / EDGE 850:

Channel Low (CH128), Channel Mid (CH190) and Channel High (CH251) were chosen for full testing.

GPRS / EDGE 1900:

Channel Low (CH512), Channel Mid (CH661) and Channel High (CH810) were chosen for full testing.

WCDMA Band II:

Channel Low (CH9262), Channel Mid (CH9400) and Channel High (CH9538) were chosen for full testing.

WCDMA Band V:

Channel Low (CH4132), Channel Mid (CH4182) and Channel High (CH4233) were chosen for full testing.

WCDMA / HSDPA Band II:

Channel Low (CH9262), Channel Mid (CH9400) and Channel High (CH9538) were chosen for full testing.

WCDMA / HSDPA Band V:

Channel Low (CH4132), Channel Mid (CH4182) and Channel High (CH4233) were chosen for full testing.

WCDMA / HSUPA Band II:

Channel Low (CH9262), Channel Mid (CH9400) and Channel High (CH9538) were chosen for full testing.

WCDMA / HSDPA Band V:

Channel Low (CH4132), Channel Mid (CH4182) and Channel High (CH4233) were chosen for full testing.

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz and power line conducted emissions below 30MHz, which worst case was in normal link mode only.

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



4. INSTRUMENT CALIBRATION

4.1 MEASURING INSTRUMENT CALIBRATION

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

4.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

Remark: Each piece of equipment is scheduled for calibration once a year and Loop Antenna is scheduled for calibration once three years.

Conducted Emissions Test Site				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US42510252	11/23/2015
Thermostatic/Hrgrosatic Chamber	TAICHY	MHG-150LF	930619	10/07/2015
AC Power Source	EXTECH	6205	1140845	N.C.R
DC Power Supply	ABM	8301HD	D011531	N.C.R
Power Meter	Anritsu	ML2495A	1012009	06/03/2015
Power Sensor	Anritsu	MA2411A	0917072	06/03/2015
Spectrum Analyzer	ROHDE&SCHWARZ	FSV40	101073	07/09/2015

Wugu 966 Chamber A				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US42510268	09/18/2015
EMI Test Receiver	R&S	ESCI	100064	05/30/2015
Bilog Antenna	Sunol Sciences	JB3	A030105	08/19/2015
Horn Antenna	EMCO	3117	00055165	02/04/2015
Turn Table	CCS	CC-T-1F	N/A	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R
Test S/W	EZ-EMC (CCS-3A1RE)			



4.3 MEASUREMENT UNCERTAINTY

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

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



5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

No.199, Chungshen 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., Lujhu Township, Taoyuan County 33841, TAIWAN, R.O.C.

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	FCC ID	Series No.	Data Cable	Power Cord
	N/A						

Remark:

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



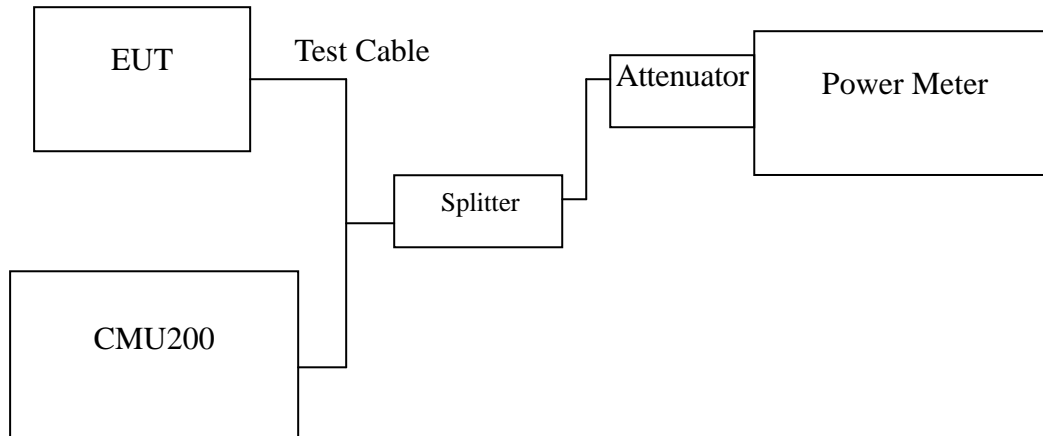
7. FCC PART 22 & 24 REQUIREMENTS

7.1 PEAK POWER

LIMIT

According to FCC §2.1046.

Test Configuration



Remark: Measurement setup for testing on Antenna connector

TEST PROCEDURE

The transmitter output was connected to a calibrated attenuator, the other end of which was connected to a power meter. Transmitter output was read off the power meter in dBm. The power output at the transmitter antenna port was determined by adding the value of the attenuator to the power meter reading.

TEST RESULTS

No non-compliance noted.



Test Data

Test Mode	CH	Frequency (MHz)	Peak Power (dBm)	Output Power (W)
GPRS 850	128	824.20	32.90	1.94984
	190	836.60	33.00	1.99526
	251	848.80	32.90	1.94984
EDGE 850	128	824.20	29.10	0.81283
	190	836.60	29.30	0.85114
	251	848.80	29.40	0.87096

Test Mode	CH	Frequency (MHz)	Peak Power (dBm)	Output Power (W)
GPRS 1900	512	1850.20	28.80	0.75858
	661	1880.00	29.10	0.81283
	810	1909.80	29.10	0.81283
EDGE 1900	512	1850.20	27.80	0.60256
	661	1880.00	27.80	0.60256
	810	1909.80	27.80	0.60256

Remark: The value of factor includes both the loss of cable and external attenuator



Test Mode	CH	Frequency (MHz)	Peak Power (dBm)	Output Power (W)
WCDMA (BAND II)	9262	1852.40	25.90	0.38905
	9400	1880.00	25.91	0.38994
	9538	1907.60	25.92	0.39084
WCDMA (BAND V)	4132	826.40	26.05	0.40272
	4182	836.40	26.08	0.40551
	4233	846.60	26.20	0.41687

Test Mode	CH	Frequency (MHz)	Peak Power (dBm)	Output Power (W)
WCDMA / HSDPA (BAND II)	9262	1852.40	26.35	0.43152
	9400	1880.00	26.14	0.41115
	9538	1907.60	26.23	0.41976
WCDMA / HSDPA (BAND V)	4132	826.40	26.25	0.42170
	4182	836.40	26.43	0.43954
	4233	846.60	26.86	0.48529

Test Mode	CH	Frequency (MHz)	Peak Power (dBm)	Output Power (W)
WCDMA / HSUPA (BAND II)	9262	1852.40	26.39	0.43551
	9400	1880.00	25.38	0.34514
	9538	1907.60	25.55	0.35892
WCDMA / HSUPA (BAND V)	4132	826.40	25.93	0.39174
	4182	836.40	25.83	0.38282
	4233	846.60	26.14	0.41115

Remark: The value of factor includes both the loss of cable and external attenuator

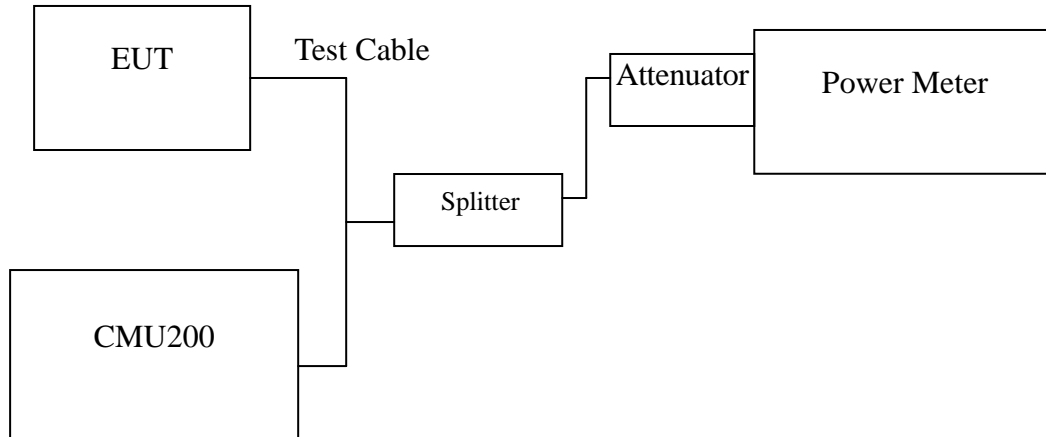


7.2 AVERAGE POWER

LIMIT

For reporting purposes only.

Test Configuration



Remark: Measurement setup for testing on Antenna connector

TEST PROCEDURE

The transmitter output was connected to a calibrated attenuator, the other end of which was connected to a power meter. Transmitter output was read off the power meter in dBm. The power output at the transmitter antenna port was determined by adding the value of the attenuator to the power meter reading.

TEST RESULTS

No non-compliance noted.



Test Data

Test Mode	CH	Frequency (MHz)	AVG Power (dBm)	Output Power W
GPRS 850	128	824.20	32.80	1.90546
	190	836.60	32.90	1.94984
	251	848.80	32.80	1.90546
EDGE 850	128	824.20	25.90	0.38905
	190	836.60	26.10	0.40738
	251	848.80	26.10	0.40738

Test Mode	CH	Frequency (MHz)	AVG Power (dBm)	Output Power W
GPRS 1900	512	1850.20	28.60	0.72444
	661	1880.00	28.90	0.77625
	810	1909.80	28.90	0.77625
EDGE 1900	512	1850.20	24.70	0.29512
	661	1880.00	24.60	0.28840
	810	1909.80	24.60	0.28840

Remark: The value of factor includes both the loss of cable and external attenuator



Test Mode	CH	Frequency (MHz)	AVG Power (dBm)	Output Power W
WCDMA (BAND II)	9262	1852.40	22.28	0.16904
	9400	1880.00	22.21	0.16634
	9538	1907.60	22.48	0.17701
WCDMA (BAND V)	4132	826.40	22.46	0.17620
	4182	836.40	22.54	0.17947
	4233	846.60	22.49	0.17742

Test Mode	CH	Frequency (MHz)	AVG Power (dBm)	Output Power W
WCDMA / HSDPA (BAND II)	9262	1852.40	21.81	0.15171
	9400	1880.00	21.56	0.14322
	9538	1907.60	21.91	0.15524
WCDMA / HSDPA (BAND V)	4132	826.40	21.99	0.15812
	4182	836.40	22.02	0.15922
	4233	846.60	22.36	0.17219

Test Mode	CH	Frequency (MHz)	AVG Power (dBm)	Output Power W
WCDMA / HSUPA (BAND II)	9262	1852.40	21.52	0.14191
	9400	1880.00	21.11	0.12912
	9538	1907.60	21.29	0.13459
WCDMA / HSUPA (BAND V)	4132	826.40	21.41	0.13836
	4182	836.40	21.48	0.14060
	4233	846.60	21.56	0.14322

Remark: The value of factor includes both the loss of cable and external attenuator



7.3 ERP & EIRP MEASUREMENT

LIMIT

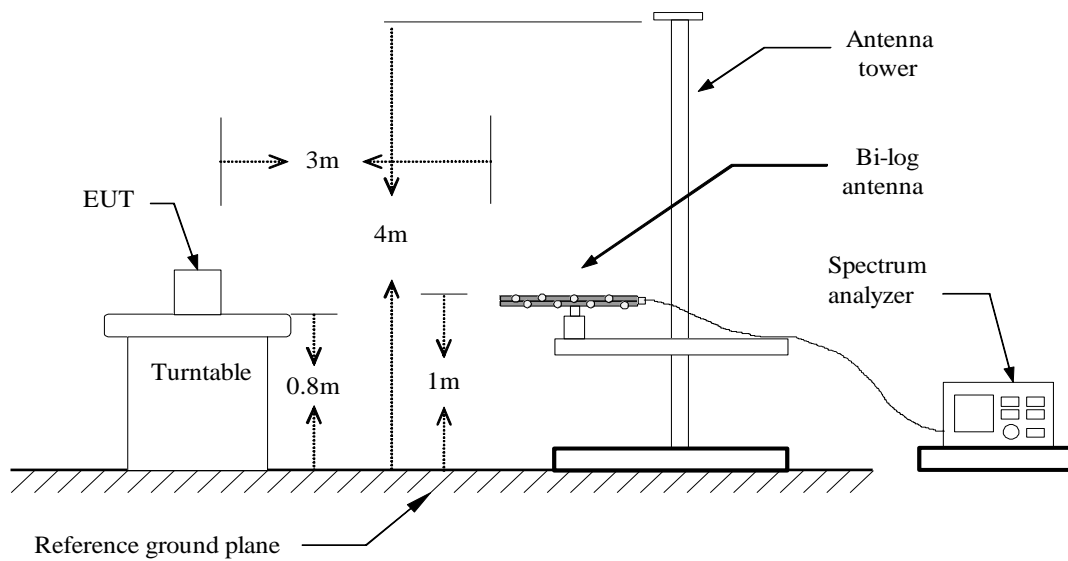
According to FCC §2.1046

FCC 22.913(a): The Effective Radiated Power (ERP) of mobile transmitters must not exceed 7 Watts.

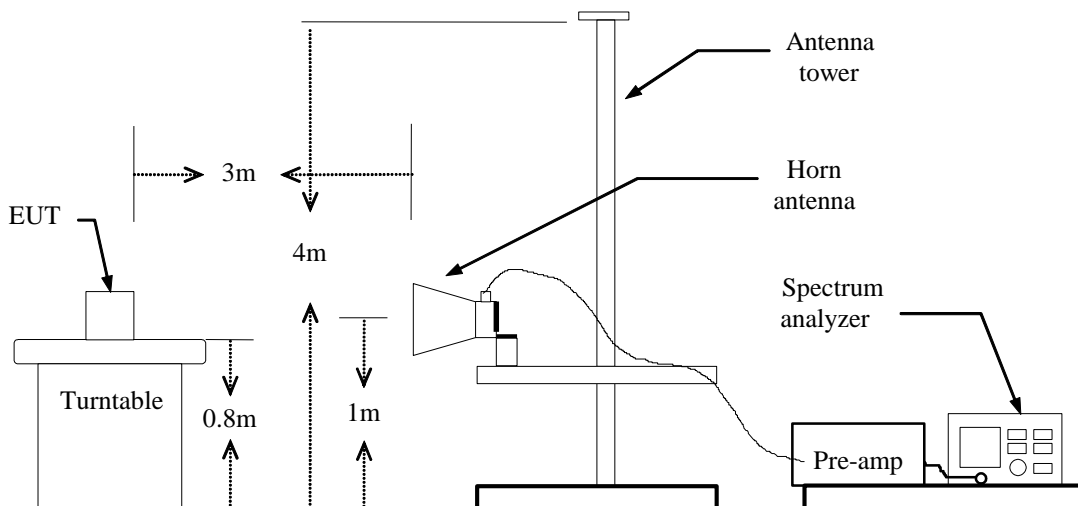
FCC 24.232(b): The equivalent Isotropic Radiated Power (EIRP) must not exceed 2 Watts.

Test Configuration

Below 1 GHz

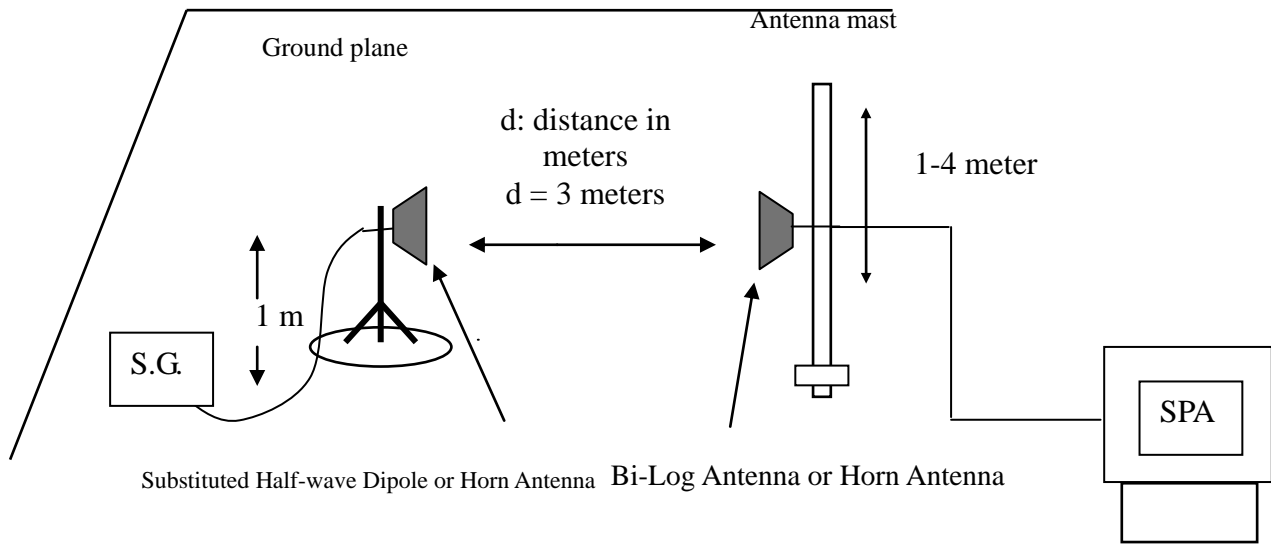


Above 1 GHz





For Substituted Method Test Set-UP



TEST PROCEDURE

The EUT was placed on a non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.

During the measurement of the EUT, the resolution bandwidth was set to 5MHz and the average bandwidth was set to 50MHz. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna. The reading was recorded and the field strength (E in dBuV/m) was calculated.

ERP in frequency band 824-849MHz, and EIRP in frequency band 1851.25 –1910MHz were measured using a substitution method. The EUT was replaced by half-wave dipole (824-849MHz) or horn antenna (1851.25-1910MHz) connected to a signal generator. The spectrum analyzer reading was recorded and ERP/EIRP was calculated as follows:

$$\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)} - 2.15$$

$$\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)}$$

TEST RESULTS

No non-compliance noted.

**GPRS 850 TEST DATA**

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
128	824.2900	V	22.09	3.39	6.24	24.94	38.45	-13.51
	823.9400	H	10.58	3.39	6.23	13.42	38.45	-25.03
190	836.5400	V	21.14	3.4	6.36	24.10	38.45	-14.35
	836.5400	H	10.82	3.4	6.36	13.78	38.45	-24.67
251	848.8600	V	23.23	3.4	6.4	26.23	38.45	-12.22
	848.6500	H	10.24	3.4	6.4	13.24	38.45	-25.21

GPRS 1900 TEST DATA

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
512	1850.280	V	21.5	5.37	5.67	21.80	33.00	-11.20
	1850.040	H	19.38	5.37	5.67	19.68	33.00	-13.32
661	1879.920	V	20.66	5.42	5.62	20.86	33.00	-12.14
	1879.920	H	18.11	5.42	5.62	18.31	33.00	-14.69
810	1910.040	V	20.07	5.48	5.56	20.15	33.00	-12.85
	1909.800	H	18.61	5.48	5.56	18.69	33.00	-14.31

EDGE 850 Test Data

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
128	824.2200	V	21.08	3.39	6.24	23.93	38.45	-14.52
	824.1500	H	9.61	3.39	6.24	12.46	38.45	-25.99
190	836.4700	V	22.7	3.4	6.36	25.66	38.45	-12.79
	836.5400	H	9.35	3.4	6.36	12.31	38.45	-26.14
251	848.7900	V	23.71	3.4	6.4	26.71	38.45	-11.74
	848.6500	H	9.65	3.4	6.4	12.65	38.45	-25.80

EDGE 1900 Test Data

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
512	1850.280	V	20.42	5.37	5.67	20.72	33.00	-12.28
	1850.160	H	18.19	5.37	5.67	18.49	33.00	-14.51
661	1879.920	V	20.23	5.42	5.62	20.43	33.00	-12.57
	1879.920	H	17.15	5.42	5.62	17.35	33.00	-15.65
810	1909.680	V	20.04	5.48	5.56	20.12	33.00	-12.88
	1909.680	H	18.47	5.48	5.56	18.55	33.00	-14.45

**WCDMA Test Data (BAND II)**

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
9262	1853.040	V	20.99	5.37	5.66	21.28	33.00	-11.72
	1853.880	H	18.23	5.38	5.66	18.51	33.00	-14.49
9400	1879.560	V	20.3	5.42	5.62	20.50	33.00	-12.50
	1879.440	H	17.6	5.42	5.62	17.80	33.00	-15.20
9538	1906.920	V	20.47	5.47	5.57	20.57	33.00	-12.43
	1907.040	H	16.98	5.47	5.57	17.08	33.00	-15.92

WCDMA Test Data (BAND V)

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
4132	825.6900	V	14.79	3.39	6.25	17.65	38.45	-20.80
	825.5500	H	5.97	3.39	6.25	8.83	38.45	-29.62
4182	835.7700	V	15.52	3.4	6.36	18.48	38.45	-19.97
	835.7700	H	5.12	3.4	6.36	8.08	38.45	-30.37
4233	847.1800	V	16.48	3.4	6.4	19.48	38.45	-18.97
	847.2500	H	4.25	3.4	6.4	7.25	38.45	-31.20

WCDMA / HSDPA BAND II Test Data

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
9262	1851.480	V	21.32	5.37	5.67	21.62	33.00	-11.38
	1851.360	H	18.71	5.37	5.67	19.01	33.00	-13.99
9400	1879.080	V	21.25	5.42	5.62	21.45	33.00	-11.55
	1878.840	H	18.65	5.42	5.62	18.85	33.00	-14.15
9538	1908.600	V	20.78	5.47	5.56	20.87	33.00	-12.13
	1907.160	H	17.63	5.47	5.57	17.73	33.00	-15.27

WCDMA / HSDPA BAND V Test Data

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
4132	826.5300	V	15.78	3.39	6.26	18.65	38.45	-19.80
	825.1300	H	6.91	3.39	6.25	9.77	38.45	-28.68
4182	835.4900	V	16.79	3.4	6.35	19.74	38.45	-18.71
	835.5600	H	6.05	3.4	6.35	9.00	38.45	-29.45
4233	847.6000	V	18.43	3.4	6.4	21.43	38.45	-17.02
	846.8300	H	7.15	3.4	6.4	10.15	38.45	-28.30



WCDMA / HSUPA BAND II Test Data

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
9262	1851.480	V	21.77	5.37	5.67	22.07	33.00	-10.93
	1853.400	H	19.26	5.38	5.66	19.54	33.00	-13.46
9400	1879.080	V	20.89	5.42	5.62	21.09	33.00	-11.91
	1881.120	H	18.51	5.42	5.61	18.70	33.00	-14.30
9538	1908.840	V	20.03	5.47	5.56	20.12	33.00	-12.88
	1908.480	H	16.96	5.47	5.56	17.05	33.00	-15.95

WCDMA / HSUPA BAND V Test Data

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
4132	825.4800	V	15.91	3.39	6.25	18.77	38.45	-19.68
	825.2000	H	6.86	3.39	6.25	9.72	38.45	-28.73
4182	835.7000	V	16.72	3.4	6.36	19.68	38.45	-18.77
	835.3500	H	6.08	3.4	6.35	9.03	38.45	-29.42
4233	847.7400	V	18.29	3.4	6.4	21.29	38.45	-17.16
	847.7400	H	7	3.4	6.4	10.00	38.45	-28.45

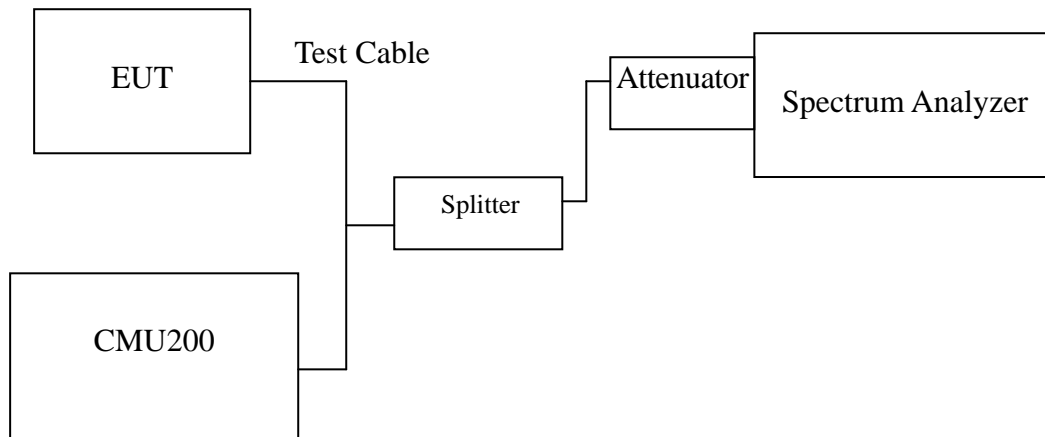


7.4 OCCUPIED BANDWIDTH MEASUREMENT

LIMIT

According to §FCC 2.1049.

Test Configuration



Remark: Measurement setup for testing on Antenna connector

TEST PROCEDURE

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW was set to about 1% of emission BW, VBW is set to 3 times the RBW, -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

TEST RESULTS

No non-compliance noted



Test Data

Test Mode	CH	Frequency (MHz)	99% Bandwidth (kHz)
GPRS 850	128	824.20	245.7047
	190	836.60	244.8031
	251	848.80	242.5346
EDGE 850	128	824.20	243.3925
	190	836.60	241.1031
	251	848.80	233.8155

Test Mode	CH	Frequency (MHz)	99% Bandwidth (kHz)
GPRS 1900	512	1850.20	240.9492
	661	1880.00	243.5072
	810	1909.80	239.5899
EDGE 1900	512	1850.20	248.6853
	661	1880.00	238.7329
	810	1909.80	239.0959



Test Mode	CH	Frequency (MHz)	99% Bandwidth (MHz)
WCDMA (Band II)	9262	1852.40	4.1560
	9400	1880.00	4.1553
	9538	1907.60	4.1764
WCDMA (Band V)	4132	826.40	4.1244
	4182	836.40	4.1481
	4233	846.60	4.1396
WCDMA / HSDPA (BAND II)	9262	1852.40	4.1580
	9400	1880.00	4.1637
	9538	1907.60	4.1703
WCDMA / HSDPA (BAND V)	4132	826.40	4.1663
	4182	836.40	4.1491
	4233	846.60	4.1647
WCDMA / HSUPA (BAND II)	9262	1852.40	4.1555
	9400	1880.00	4.1656
	9538	1907.60	4.1759
WCDMA / HSUPA (BAND V)	4132	826.40	4.1572
	4182	836.40	4.1491
	4233	846.60	4.1462

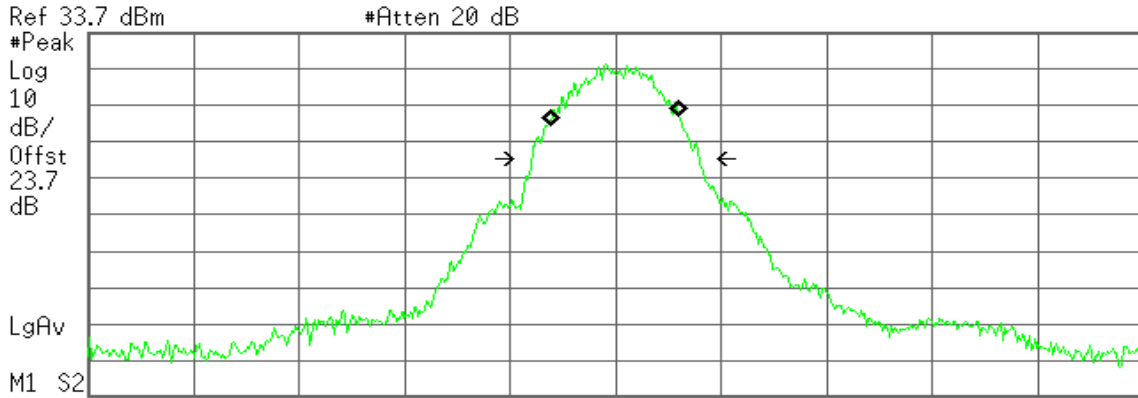


Test Plot

GPRS 850 (CH Low)

Agilent

R T



Occupied Bandwidth
245.7047 kHz

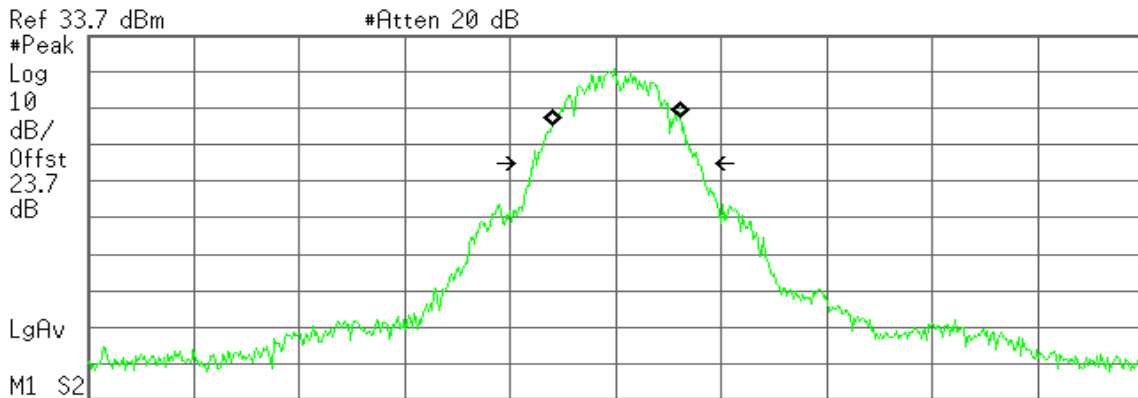
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -1.383 kHz
x dB Bandwidth 318.277 kHz

GPRS 850 (CH Mid)

Agilent

R T



Occupied Bandwidth
244.8031 kHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

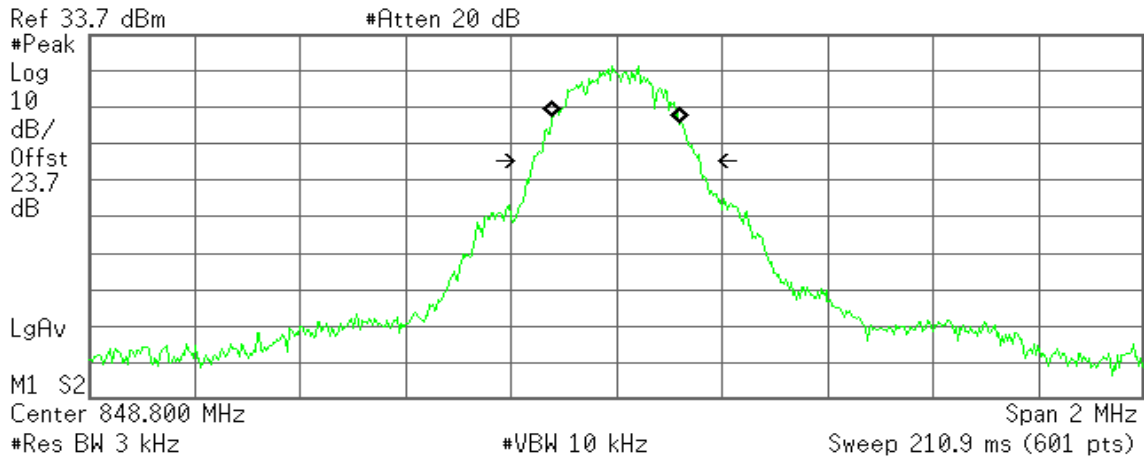
Transmit Freq Error 1.755 kHz
x dB Bandwidth 312.581 kHz



GPRS 850(CH High)

Agilent

R T



Occupied Bandwidth
242.5346 kHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

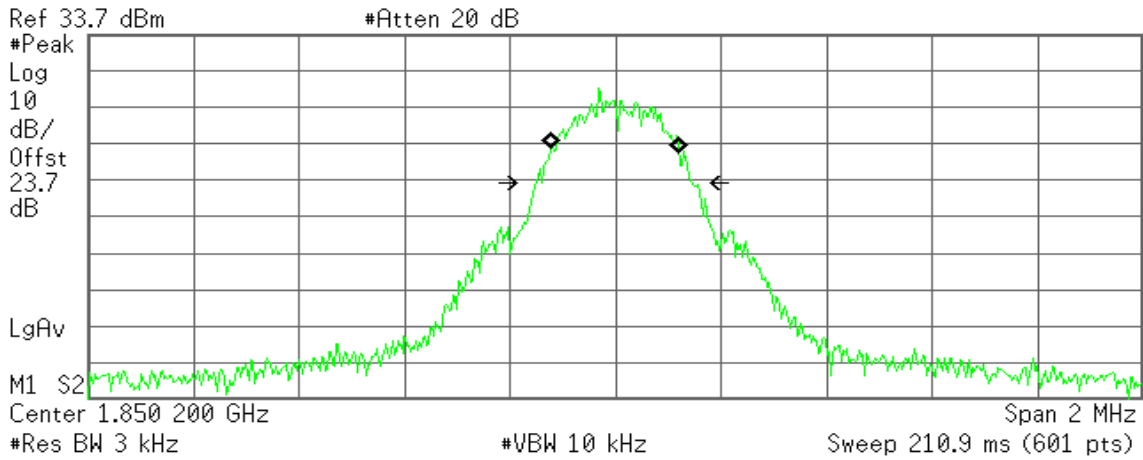
Transmit Freq Error -531.677 Hz
x dB Bandwidth 317.066 kHz



GPRS 1900 (CH Low)

Agilent

R T



Occupied Bandwidth
243.3925 kHz

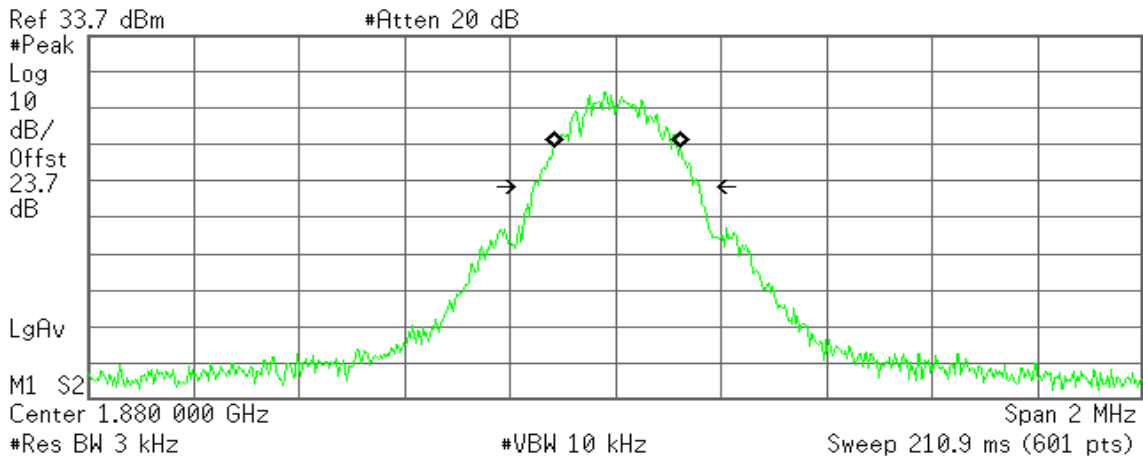
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -655.554 Hz
x dB Bandwidth 297.102 kHz

GPRS 1900 (CH Mid)

Agilent

R T



Occupied Bandwidth
241.1031 kHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

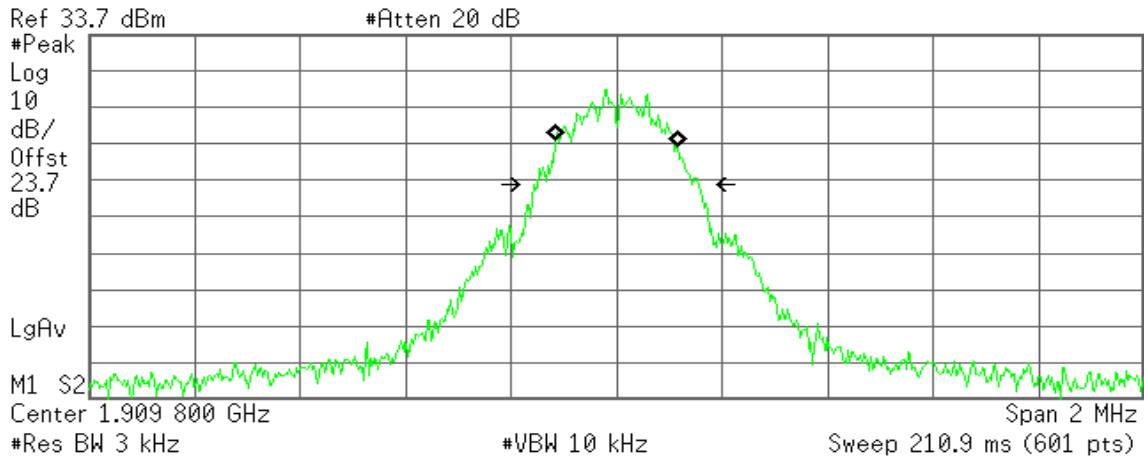
Transmit Freq Error 2.264 kHz
x dB Bandwidth 316.001 kHz



GPRS 1900 (CH High)

Agilent

R T



Occupied Bandwidth
233.8155 kHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

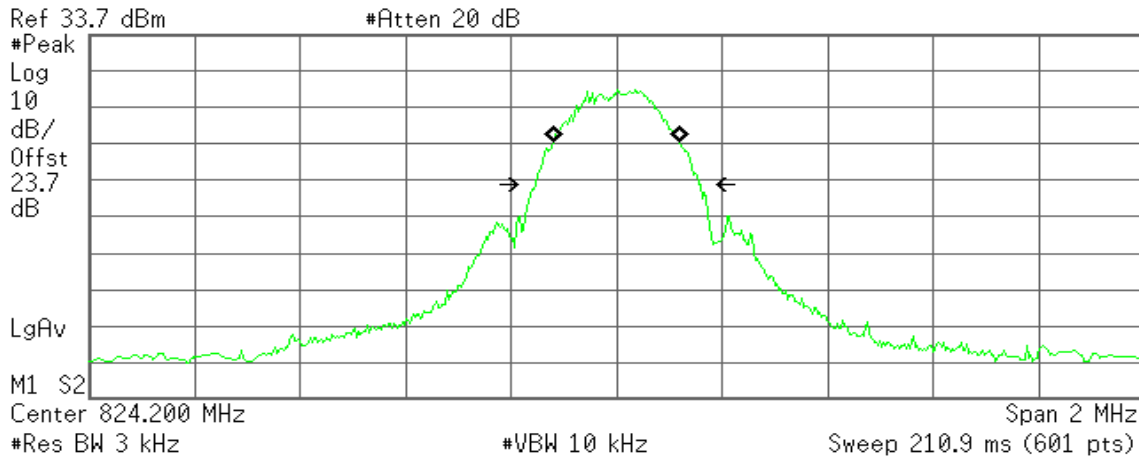
Transmit Freq Error 128.803 Hz
x dB Bandwidth 305.540 kHz



EDGE 850 (CH Low)

Agilent

R T



Occupied Bandwidth
240.9492 kHz

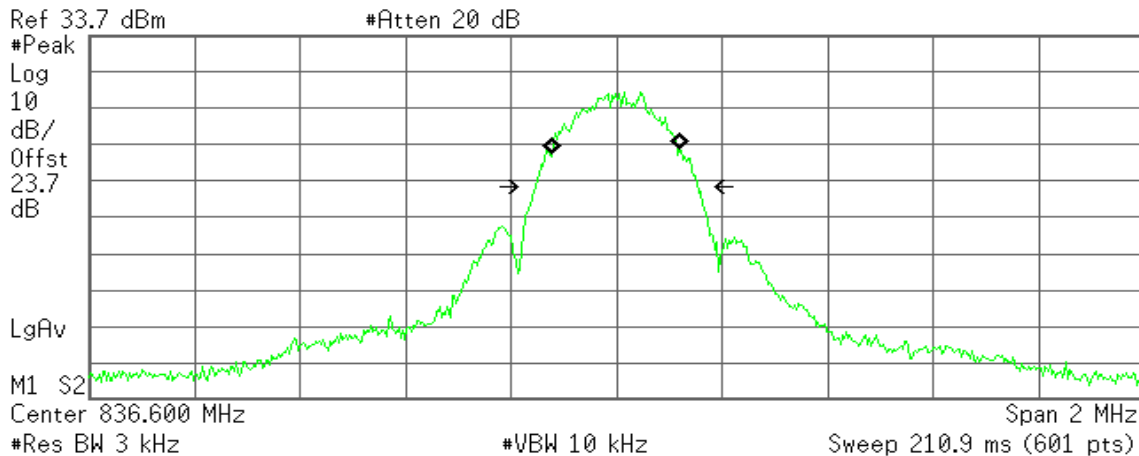
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -22.916 Hz
x dB Bandwidth 310.926 kHz

EDGE 850 (CH Mid)

Agilent

R T



Occupied Bandwidth
243.5072 kHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

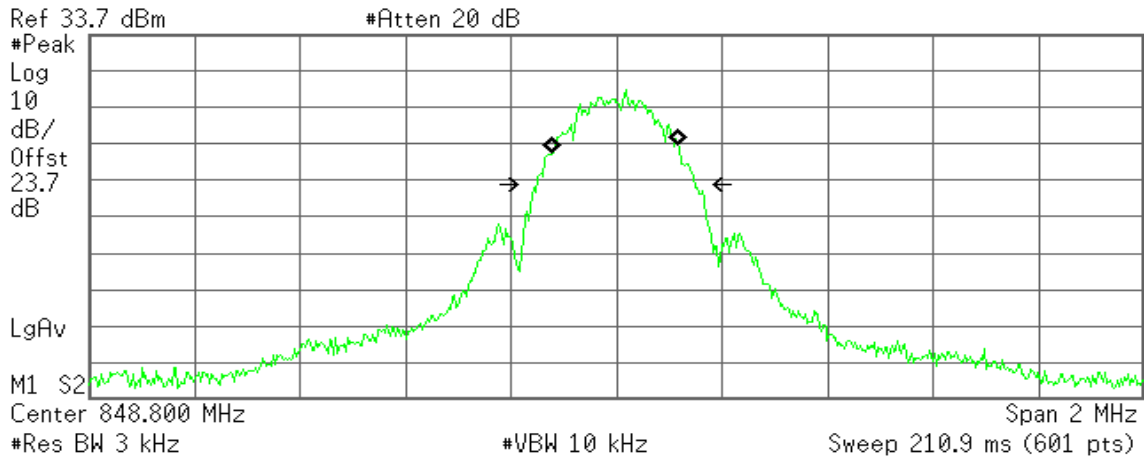
Transmit Freq Error -1.052 kHz
x dB Bandwidth 307.693 kHz



EDGE 850 (CH High)

Agilent

R T



Occupied Bandwidth
239.5899 kHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

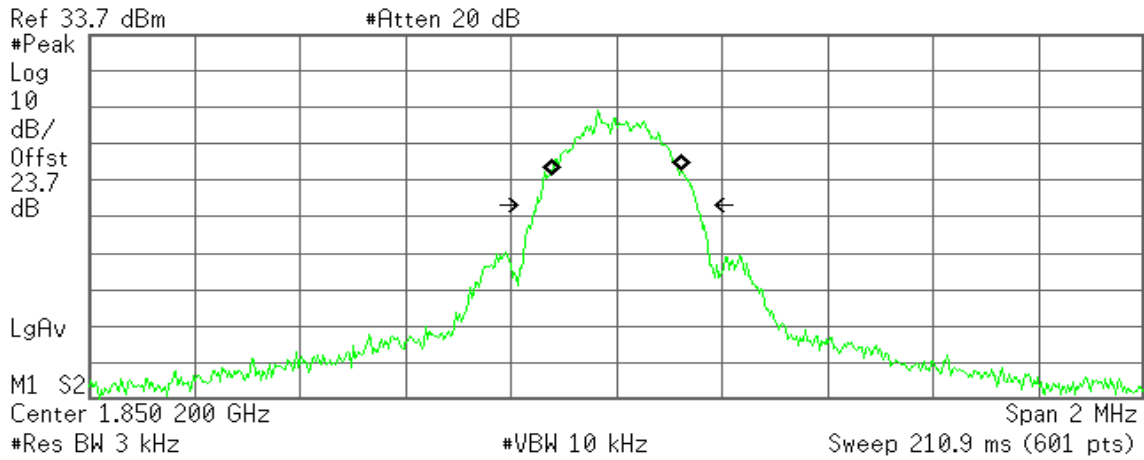
Transmit Freq Error -2.050 kHz
x dB Bandwidth 301.227 kHz



EDGE 1900 (CH Low)

Agilent

R T



Occupied Bandwidth
248.6853 kHz

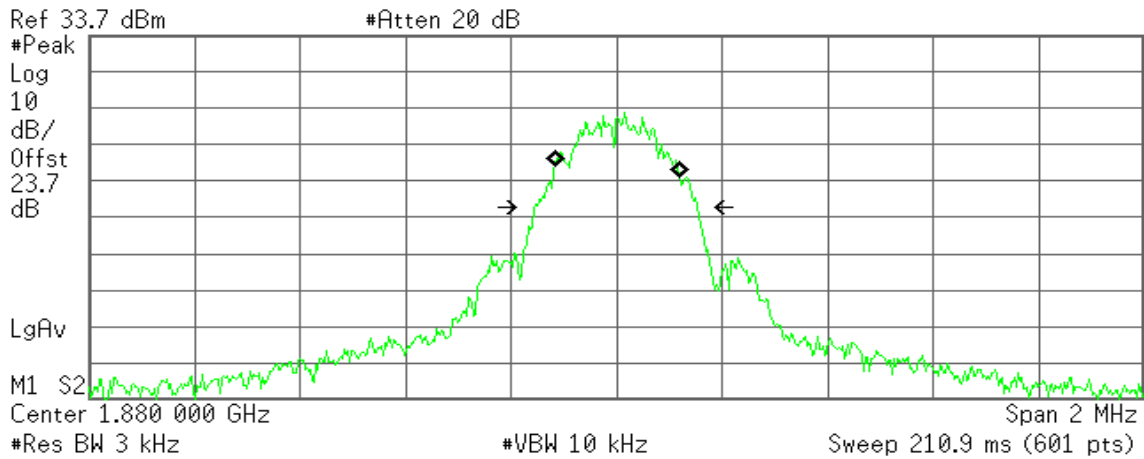
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -177.017 Hz
x dB Bandwidth 304.565 kHz

EDGE 1900 (CH Mid)

Agilent

R T



Occupied Bandwidth
238.7329 kHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

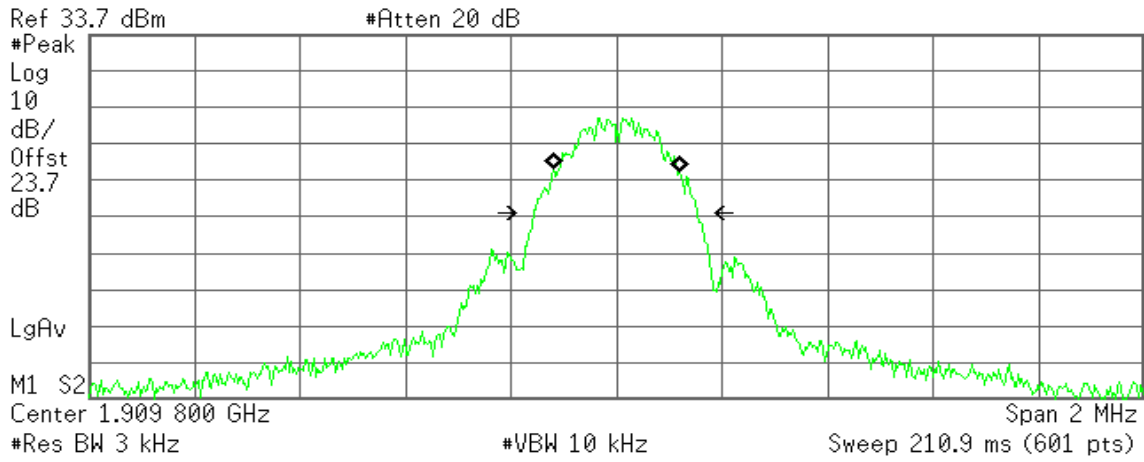
Transmit Freq Error 1.525 kHz
x dB Bandwidth 310.184 kHz



EDGE 1900 (CH High)

Agilent

R T



Occupied Bandwidth
239.0959 kHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

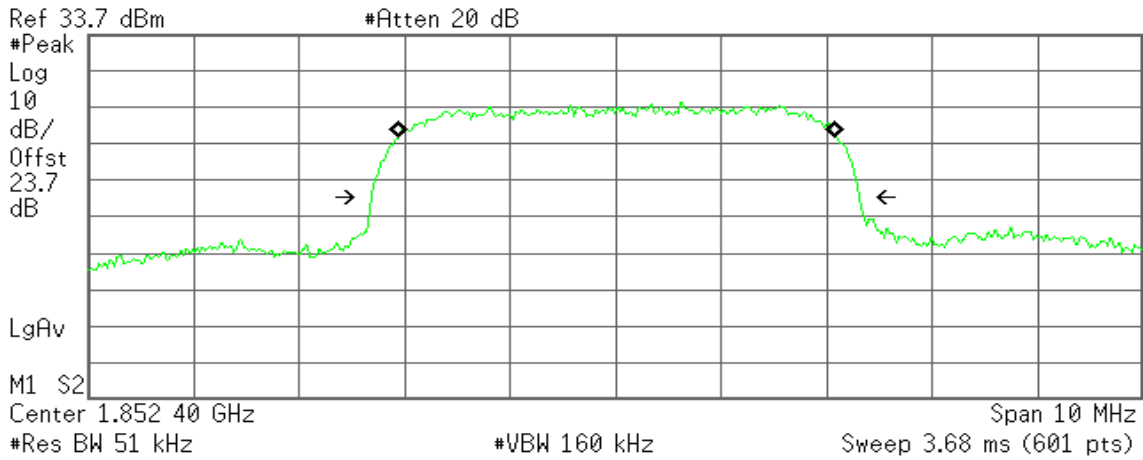
Transmit Freq Error 480.712 Hz
x dB Bandwidth 310.343 kHz



WCDMA Band II (CH Low)

Agilent

R T



Occupied Bandwidth
4.1560 MHz

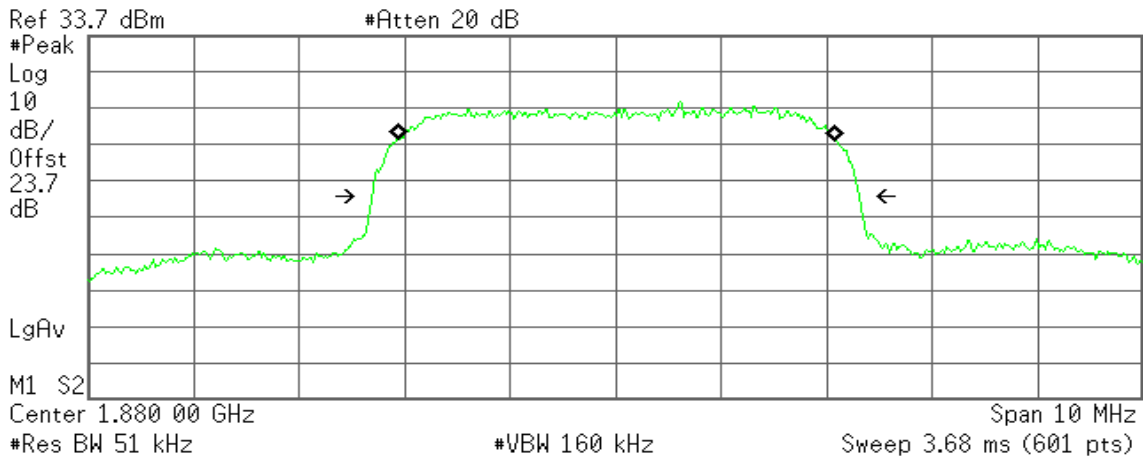
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 13.038 kHz
x dB Bandwidth 4.634 MHz

WCDMA Band II (CH Mid)

Agilent

R T



Occupied Bandwidth
4.1553 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

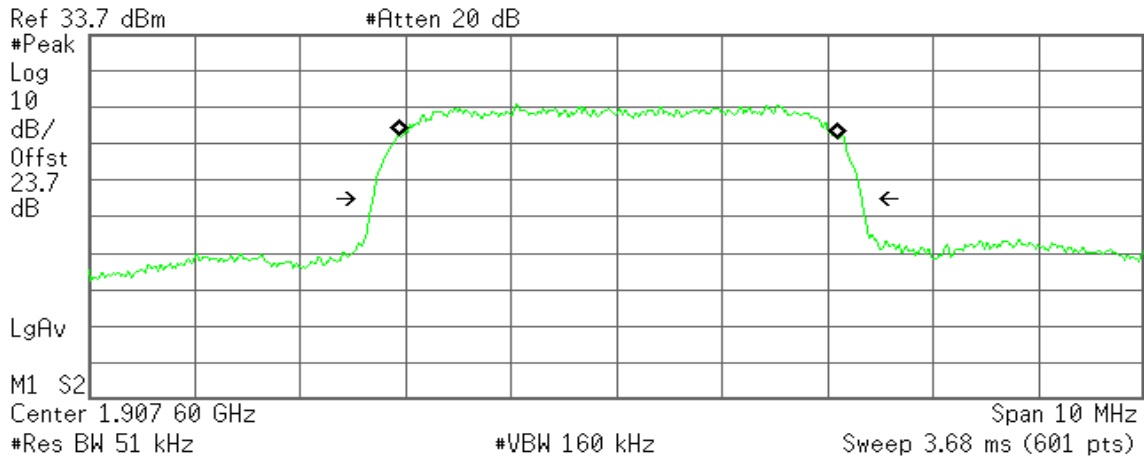
Transmit Freq Error 5.154 kHz
x dB Bandwidth 4.631 MHz



WCDMA Band II (CH High)

Agilent

R T



Occupied Bandwidth
4.1764 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

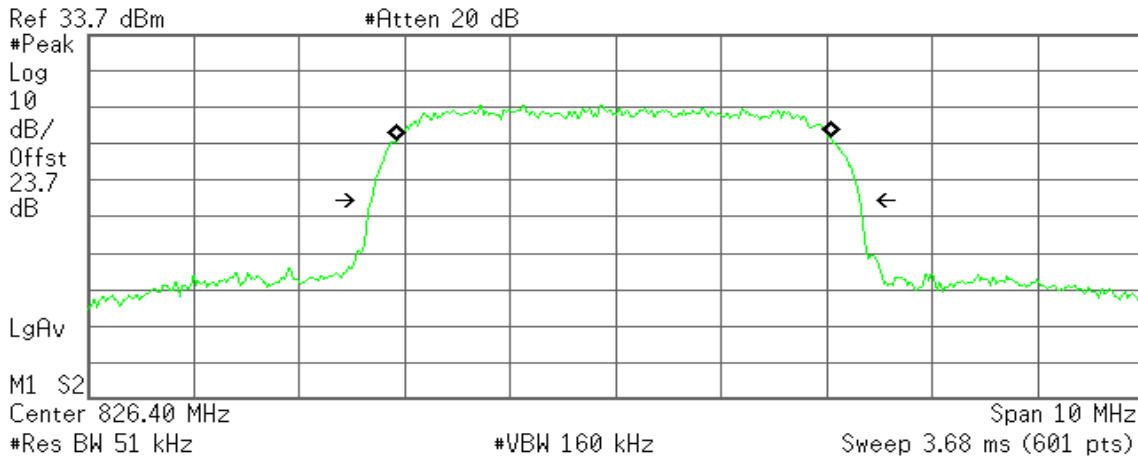
Transmit Freq Error 15.281 kHz
x dB Bandwidth 4.643 MHz



WCDMA Band V (CH Low)

Agilent

R T



Occupied Bandwidth
4.1244 MHz

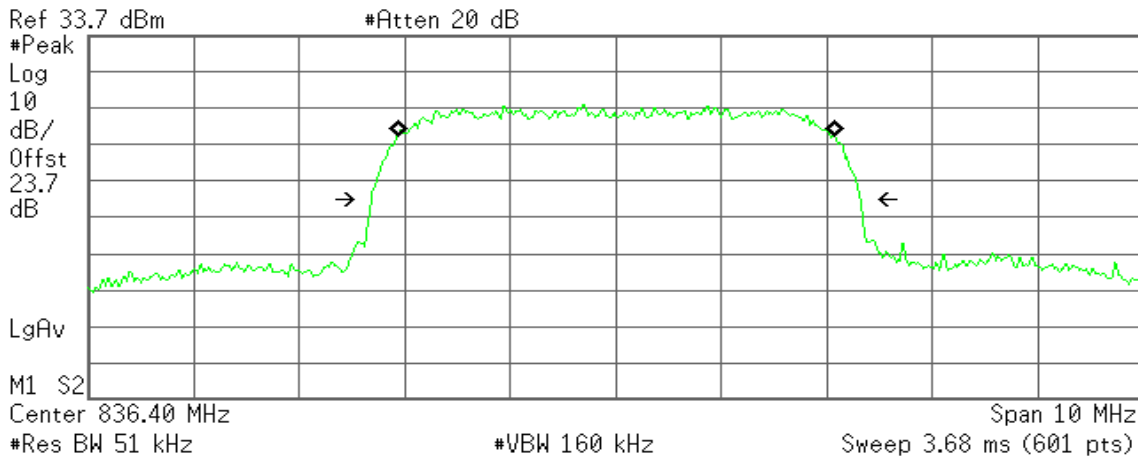
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -15.063 kHz
x dB Bandwidth 4.642 MHz

WCDMA Band V (CH Mid)

Agilent

R T



Occupied Bandwidth
4.1481 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

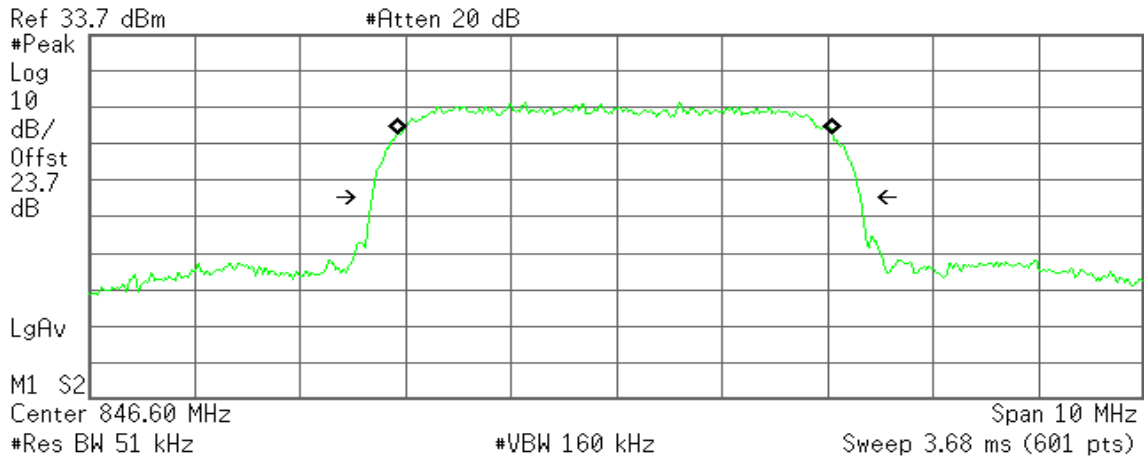
Transmit Freq Error 6.581 kHz
x dB Bandwidth 4.651 MHz



WCDMA Band V (CH High)

Agilent

R T



Occupied Bandwidth
4.1396 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

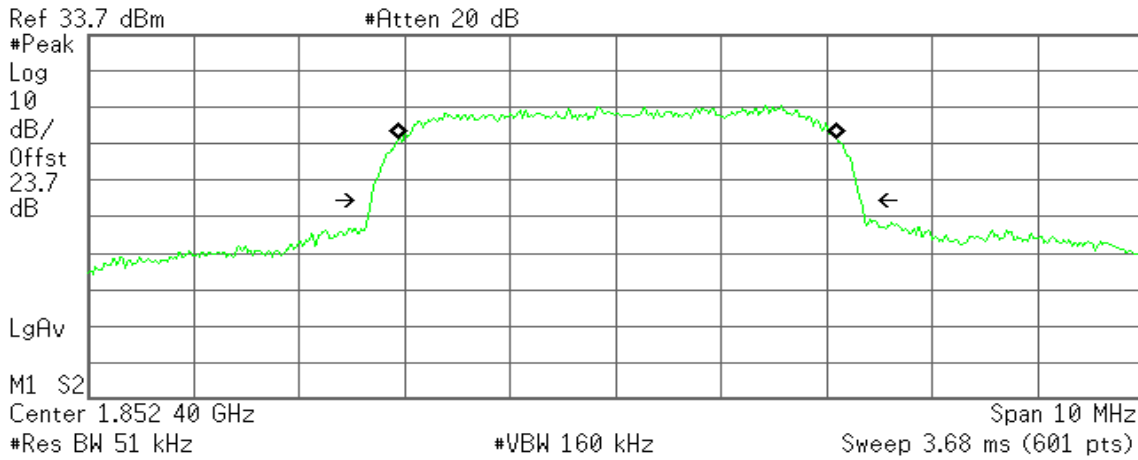
Transmit Freq Error -14.944 kHz
x dB Bandwidth 4.641 MHz



WCDMA / HSDPA Band II (CH Low)

Agilent

R T



Occupied Bandwidth
4.1580 MHz

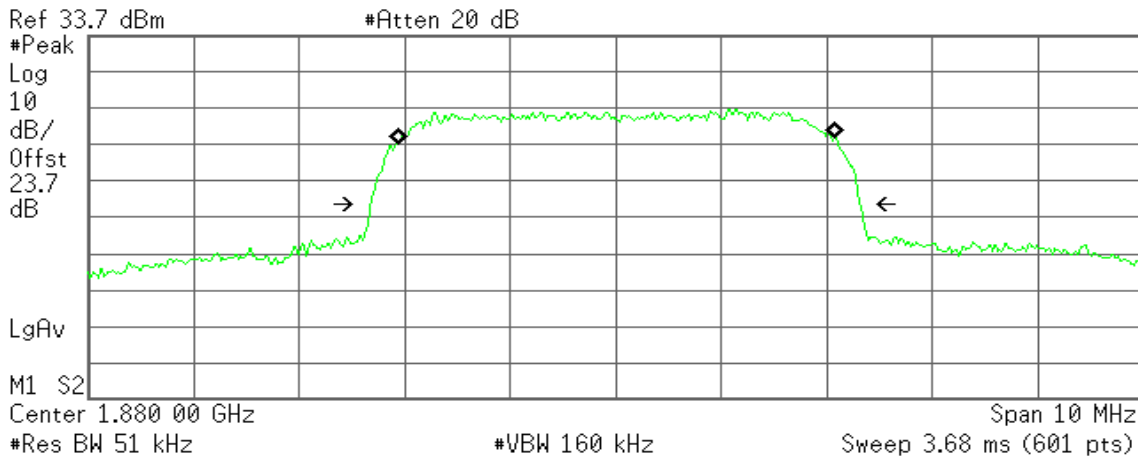
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 20.297 kHz
x dB Bandwidth 4.655 MHz

WCDMA / HSDPA Band II (CH Mid)

Agilent

R T



Occupied Bandwidth
4.1637 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

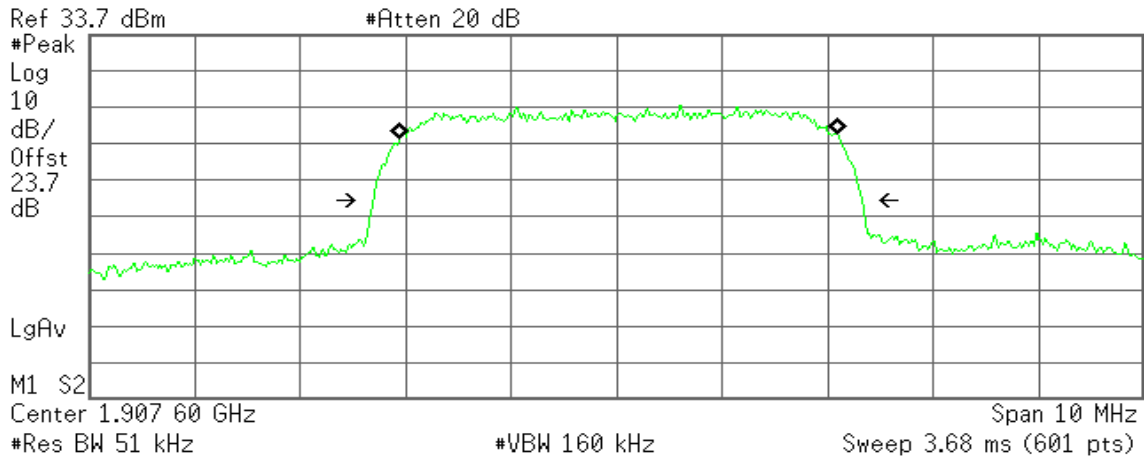
Transmit Freq Error 7.025 kHz
x dB Bandwidth 4.652 MHz



WCDMA / HSDPA Band II (CH High)

Agilent

R T



Occupied Bandwidth
4.1703 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

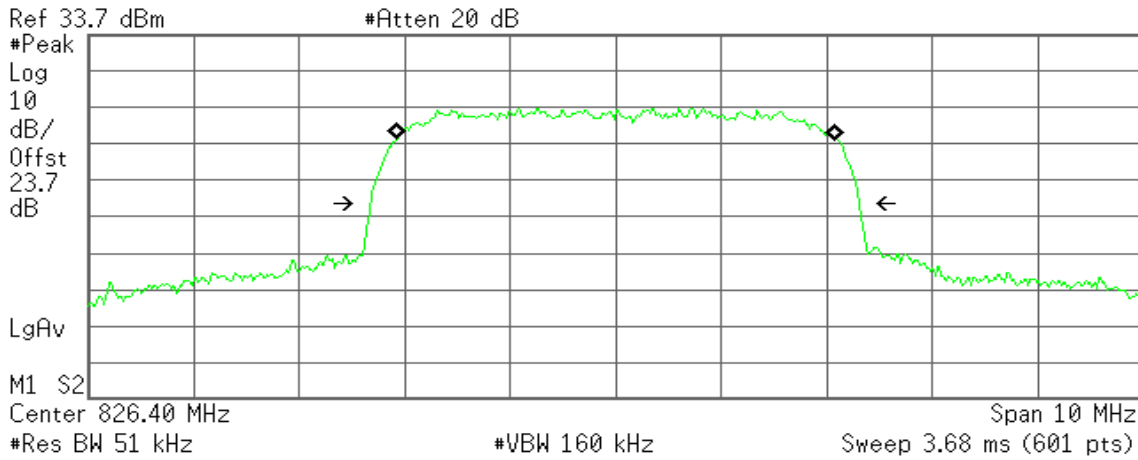
Transmit Freq Error 17.092 kHz
x dB Bandwidth 4.645 MHz



WCDMA / HSDPA Band V (CH Low)

Agilent

R T



Occupied Bandwidth
4.1663 MHz

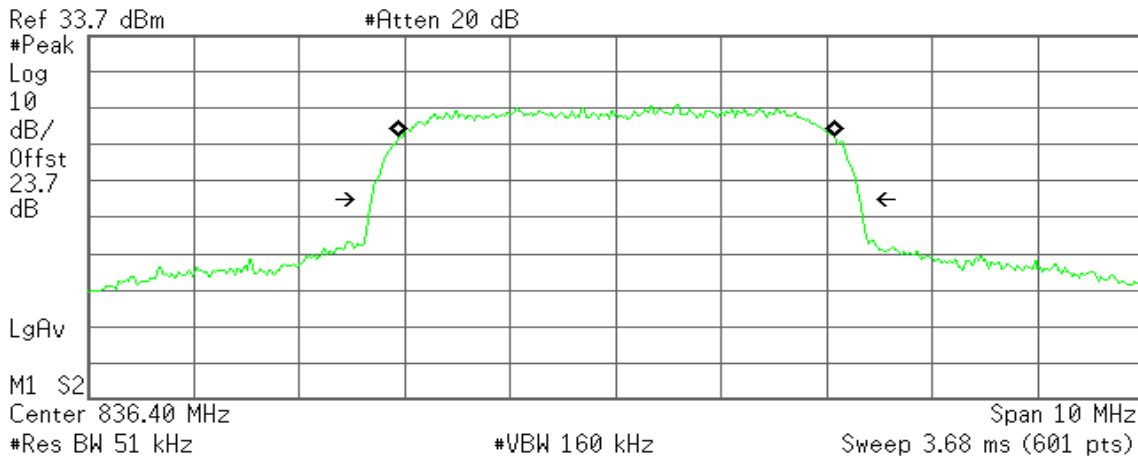
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 4.880 kHz
x dB Bandwidth 4.644 MHz

WCDMA / HSDPA Band V (CH Mid)

Agilent

R T



Occupied Bandwidth
4.1491 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

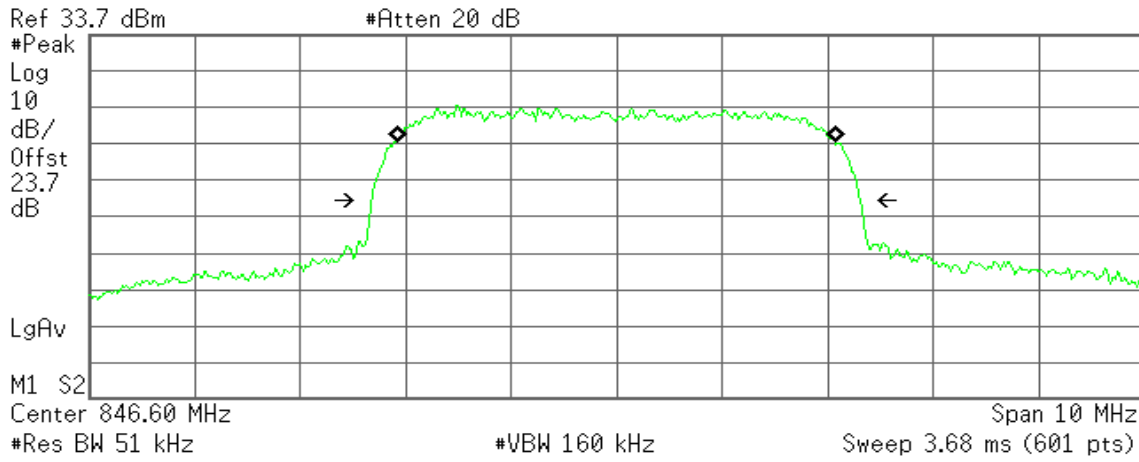
Transmit Freq Error 11.317 kHz
x dB Bandwidth 4.635 MHz



WCDMA / HSDPA Band V (CH High)

Agilent

R T



Occupied Bandwidth
4.1647 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

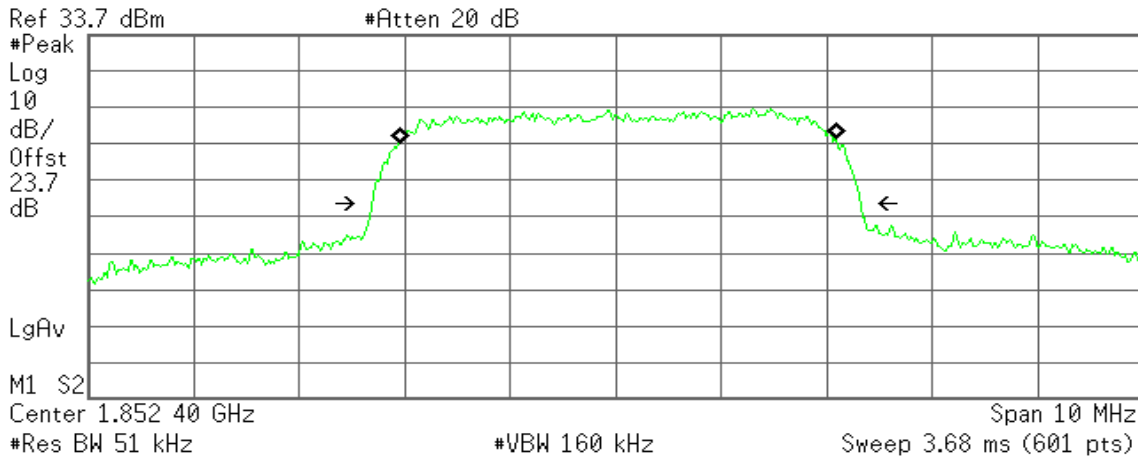
Transmit Freq Error -6.621 kHz
x dB Bandwidth 4.640 MHz



WCDMA / HSUPA Band II (CH Low)

Agilent

R T



Occupied Bandwidth
4.1555 MHz

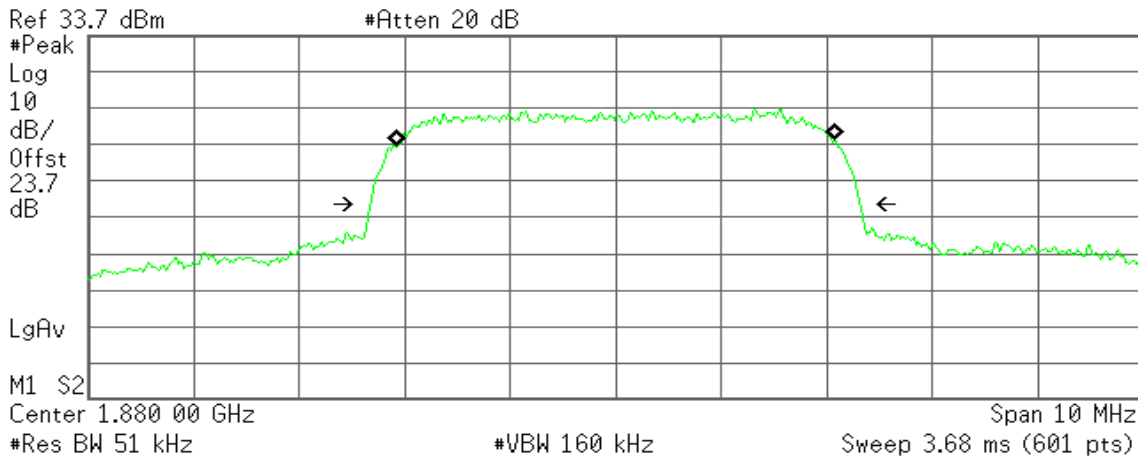
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 21.910 kHz
x dB Bandwidth 4.641 MHz

WCDMA / HSUPA Band II (CH Mid)

Agilent

R T



Occupied Bandwidth
4.1656 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

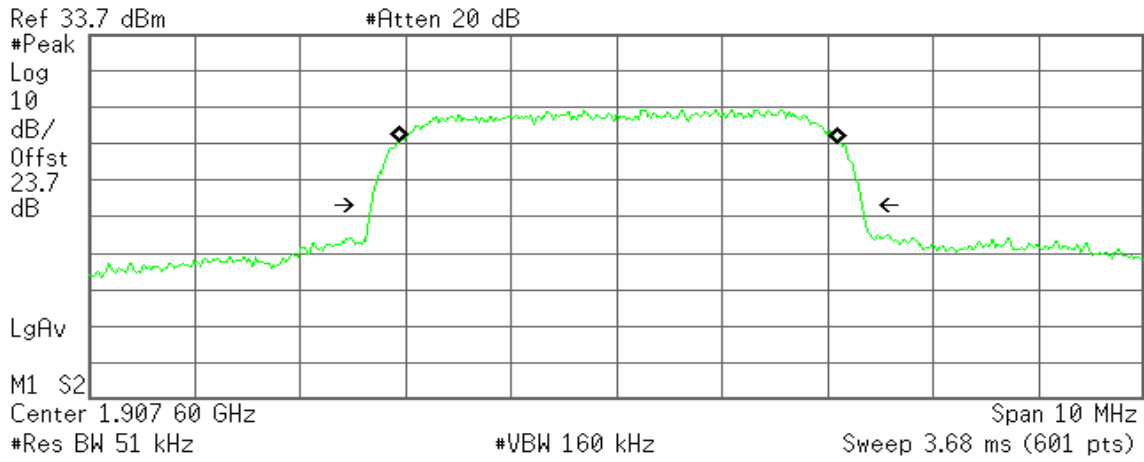
Transmit Freq Error 1.932 kHz
x dB Bandwidth 4.650 MHz



WCDMA / HSUPA Band II (CH High)

Agilent

R T



Occupied Bandwidth
4.1759 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

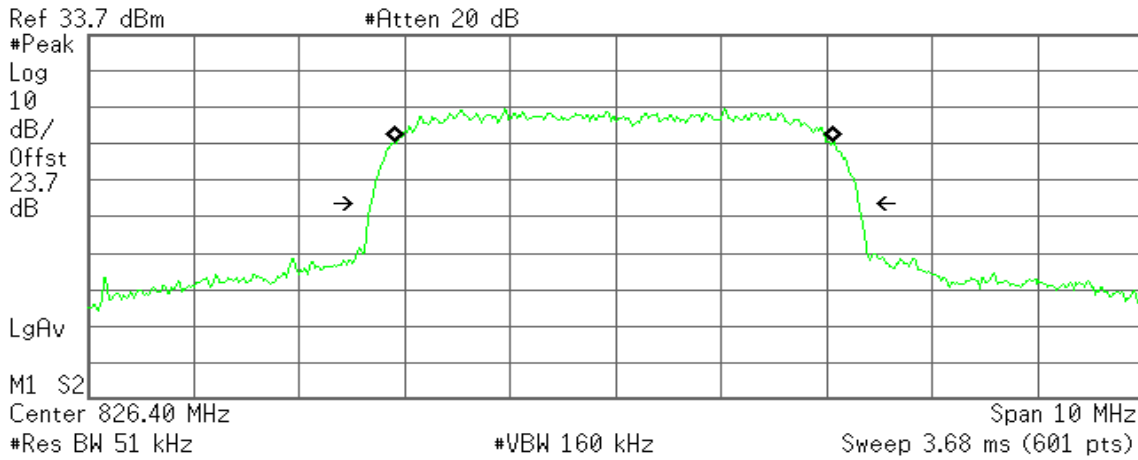
Transmit Freq Error 13.912 kHz
x dB Bandwidth 4.661 MHz



WCDMA / HSUPA Band V (CH Low).

Agilent

R T



Occupied Bandwidth
4.1572 MHz

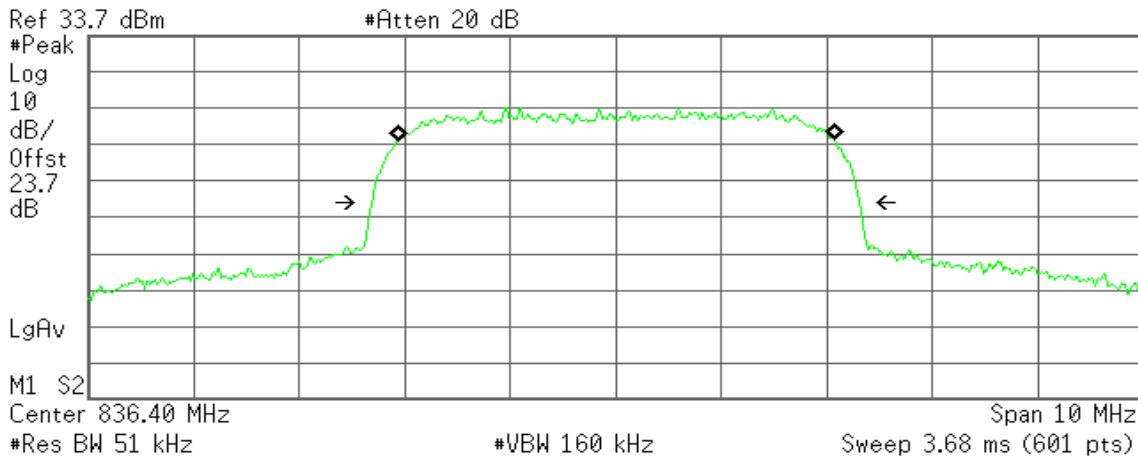
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -17.189 kHz
x dB Bandwidth 4.638 MHz

WCDMA / HSUPA Band V (CH Mid)

Agilent

R T



Occupied Bandwidth
4.1491 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

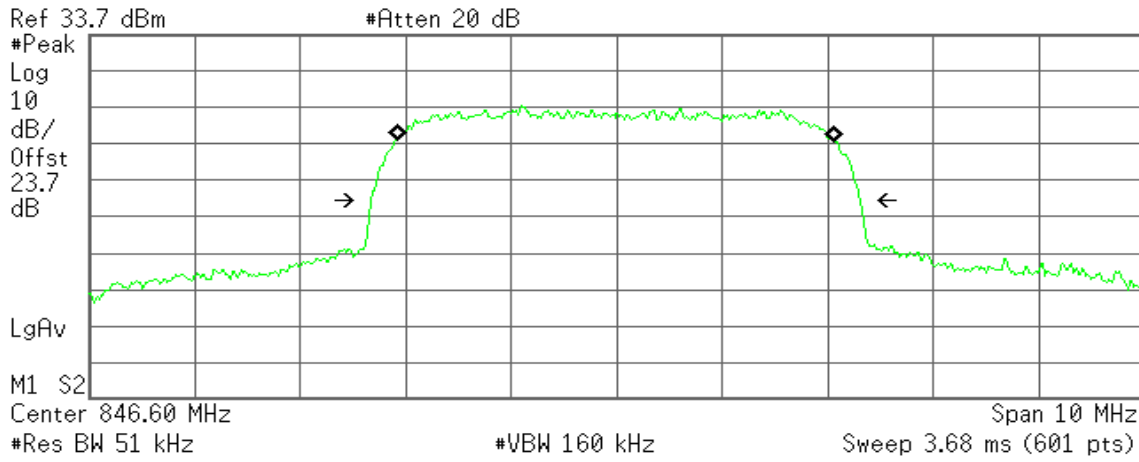
Transmit Freq Error 1.749 kHz
x dB Bandwidth 4.634 MHz



WCDMA / HSUPA Band V (CH Mid)

Agilent

R T



Occupied Bandwidth
4.1462 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -8.306 kHz
x dB Bandwidth 4.645 MHz



7.5 OUT OF BAND EMISSION AT ANTENNA TERMINALS

LIMIT

According to FCC §2.1051, FCC §22.917, FCC §24.238(a).

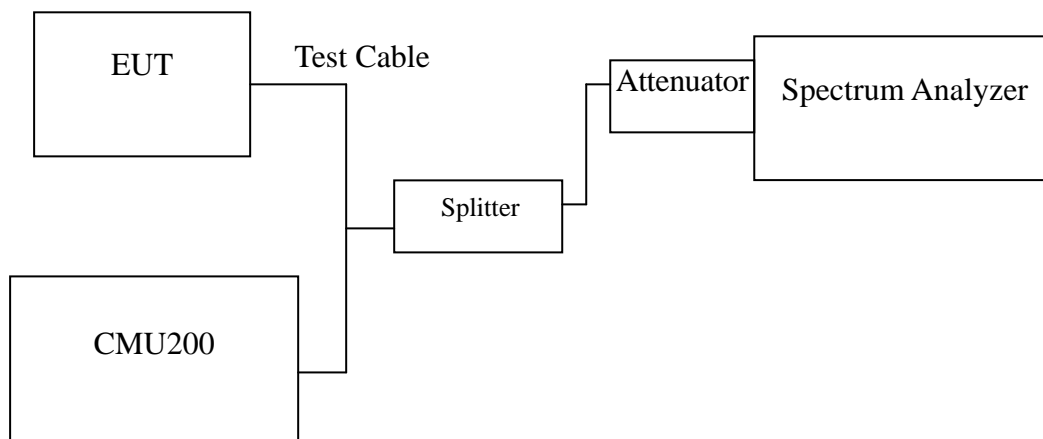
Out of Band Emissions: The mean power of emission must be attenuated below the mean power of the non-modulated carrier (P) on any frequency twice or more than twice the fundamental frequency by at least $43 + 10 \log P$ dB.

Mobile Emissions in Base Frequency Range: The mean power of any emissions appearing in the base station frequency range from cellular mobile transmitters operated must be attenuated to a level not exceed -80 dBm at the transmit antenna connector.

Band Edge Requirements: In the 1MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1% of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the Out of band Emission

Test Configuration

Out of band emission at antenna terminals:



TEST PROCEDURE

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.

For the out of band: Set the RBW, VBW = 1MHz, Start=30MHz, Stop= 10 th harmonic. Limit = -13dBm

Band Edge Requirements (824 MHz and 849 MHz /1850MHz and 1910MHz): In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions. Limit, -13dBm.

TEST RESULTS

No non-compliance noted.



Test Data

Mode	CH	Location	Description
GPRS 850	128	Figure 8-1	Conducted spurious emissions, 30MHz - 20GHz
	190	Figure 8-2	Conducted spurious emissions, 30MHz - 20GHz
	251	Figure 8-3	Conducted spurious emissions, 30MHz - 20GHz

Mode	CH	Location	Description
GPRS 1900	512	Figure 9-1	Conducted spurious emissions, 30MHz - 20GHz
	661	Figure 9-2	Conducted spurious emissions, 30MHz - 20GHz
	810	Figure 9-3	Conducted spurious emissions, 30MHz - 20GHz

Mode	CH	Location	Description
GPRS 850	128	Figure 10-1	Band Edge emissions
	251	Figure 10-2	Band Edge emissions

Mode	CH	Location	Description
GPRS 1900	512	Figure 11-1	Band Edge emissions
	810	Figure 11-2	Band Edge emissions

Mode	CH	Location	Description
EDGE 850	128	Figure 12-1	Conducted spurious emissions, 30MHz - 20GHz
	190	Figure 12-2	Conducted spurious emissions, 30MHz - 20GHz
	251	Figure 12-3	Conducted spurious emissions, 30MHz - 20GHz
EDGE 1900	512	Figure 13-1	Conducted spurious emissions, 30MHz - 20GHz
	661	Figure 13-2	Conducted spurious emissions, 30MHz - 20GHz
	810	Figure 13-3	Conducted spurious emissions, 30MHz - 20GHz

Mode	CH	Location	Description
EDGE 850	128	Figure 14-1	Band Edge emissions
	251	Figure 14-2	Band Edge emissions
EDGE 1900	512	Figure 15-1	Band Edge emissions
	810	Figure 15-2	Band Edge emissions



Mode	CH	Location	Description
WCDMA (Band II)	9262	Figure 16-1	Conducted spurious emissions, 30MHz - 20GHz
	9400	Figure 16-2	Conducted spurious emissions, 30MHz - 20GHz
	9538	Figure 16-3	Conducted spurious emissions, 30MHz - 20GHz
WCDMA (Band V)	4132	Figure 17-1	Conducted spurious emissions, 30MHz - 20GHz
	4182	Figure 17-2	Conducted spurious emissions, 30MHz - 20GHz
	4233	Figure 17-3	Conducted spurious emissions, 30MHz - 20GHz

Mode	CH	Location	Description
WCDMA (Band II)	9262	Figure 18-1	Band Edge emissions
	9538	Figure 18-2	Band Edge emissions
WCDMA (Band V)	4132	Figure 19-1	Band Edge emissions
	4233	Figure 19-2	Band Edge emissions

Mode	CH	Location	Description
HSDPA WCDMA (Band II)	9262	Figure 20-1	Conducted spurious emissions, 30MHz - 20GHz
	9400	Figure 20-2	Conducted spurious emissions, 30MHz - 20GHz
	9538	Figure 20-3	Conducted spurious emissions, 30MHz - 20GHz
HSDPA WCDMA (Band V)	4132	Figure 21-1	Conducted spurious emissions, 30MHz - 20GHz
	4182	Figure 21-2	Conducted spurious emissions, 30MHz - 20GHz
	4233	Figure 21-3	Conducted spurious emissions, 30MHz - 20GHz

Mode	CH	Location	Description
HSDPA WCDMA (Band II)	9262	Figure 22-1	Band Edge emissions
	9538	Figure 22-2	Band Edge emissions
HSDPA WCDMA (Band V)	4132	Figure 23-1	Band Edge emissions
	4233	Figure 23-2	Band Edge emissions



Mode	CH	Location	Description
HSUPA WCDMA (Band II)	9262	Figure 24-1	Conducted spurious emissions, 30MHz - 20GHz
	9400	Figure 24-2	Conducted spurious emissions, 30MHz - 20GHz
	9538	Figure 24-3	Conducted spurious emissions, 30MHz - 20GHz
HSUPA WCDMA (Band V)	4132	Figure 25-1	Conducted spurious emissions, 30MHz - 20GHz
	4182	Figure 25-2	Conducted spurious emissions, 30MHz - 20GHz
	4233	Figure 25-3	Conducted spurious emissions, 30MHz - 20GHz

Mode	CH	Location	Description
HSUPA WCDMA (Band II)	9262	Figure 26-1	Band Edge emissions
	9538	Figure 26-2	Band Edge emissions
HSUPA WCDMA (Band V)	4132	Figure 27-1	Band Edge emissions
	4233	Figure 27-2	Band Edge emissions



Test Plot

GPRS 850

Figure 8-1: Out of Band emission at antenna terminals – GPRS CH Low

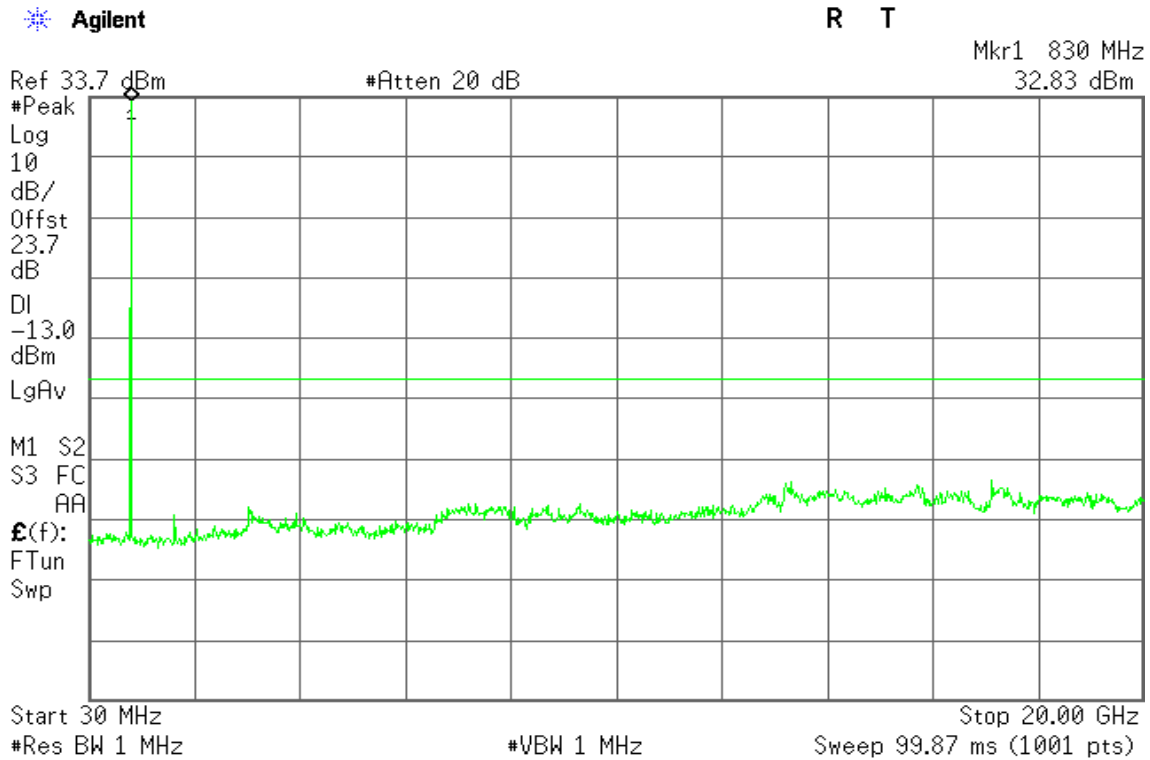


Figure 8-2: Out of Band emission at antenna terminals – GPRS CH Mid

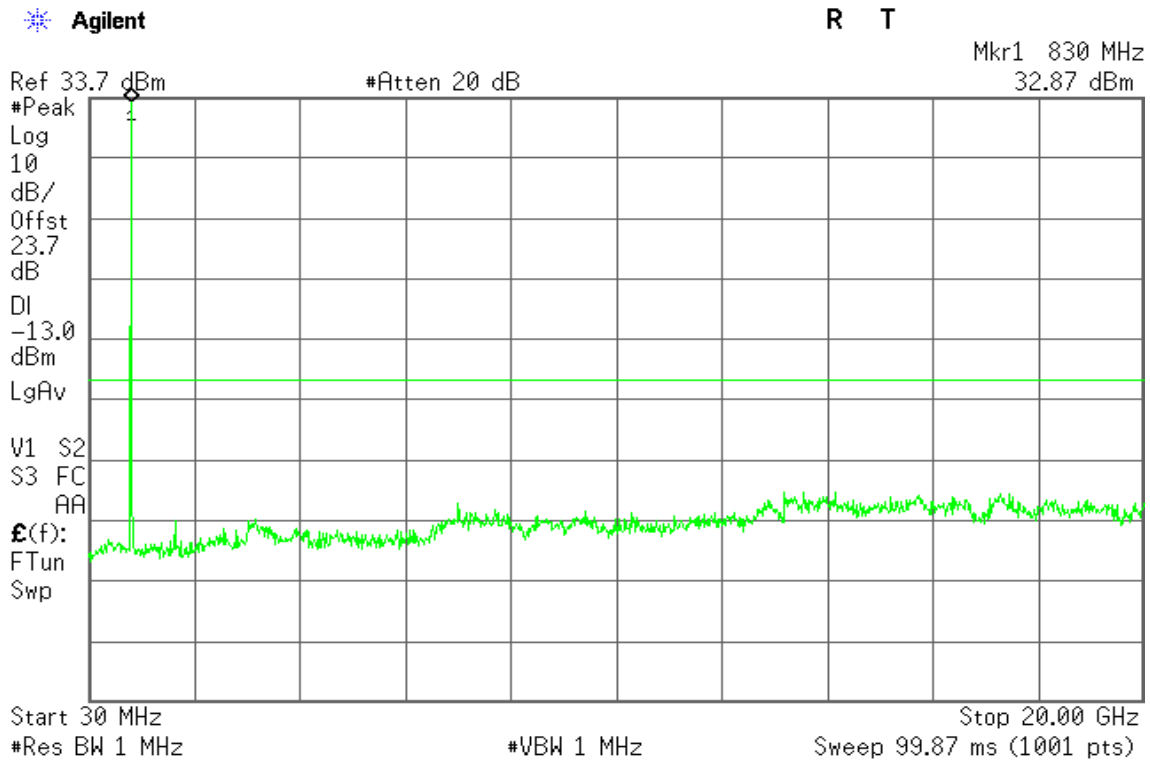
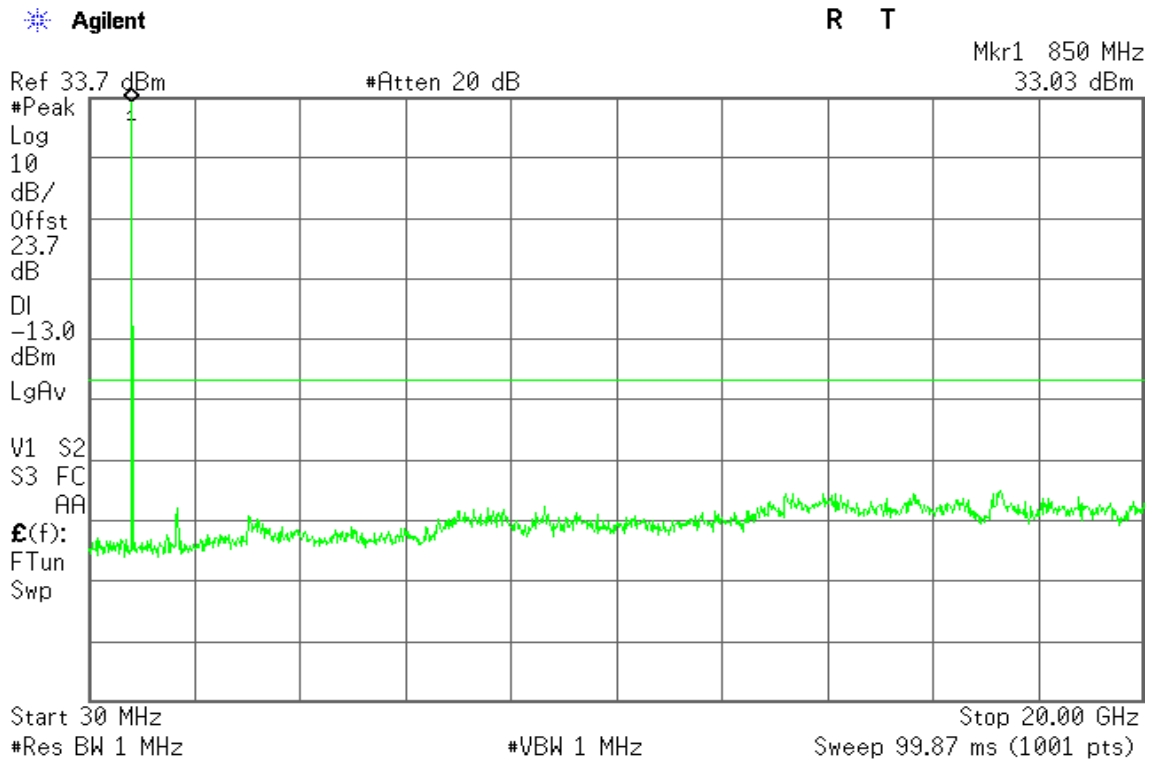




Figure 8-3: Out of Band emission at antenna terminals – GPRS CH High





GPRS 1900

Figure 9-1: Out of Band emission at antenna terminals – GPRS CH Low

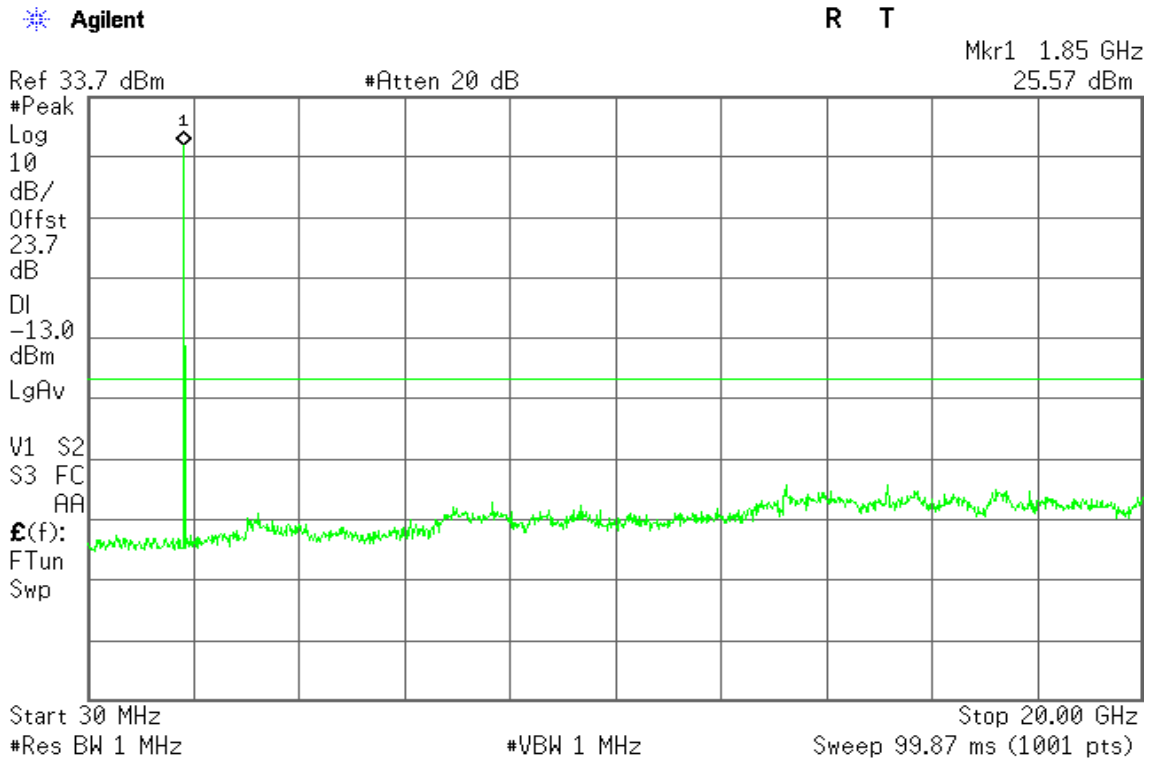


Figure 9-2: Out of Band emission at antenna terminals – GPRS CH Mid

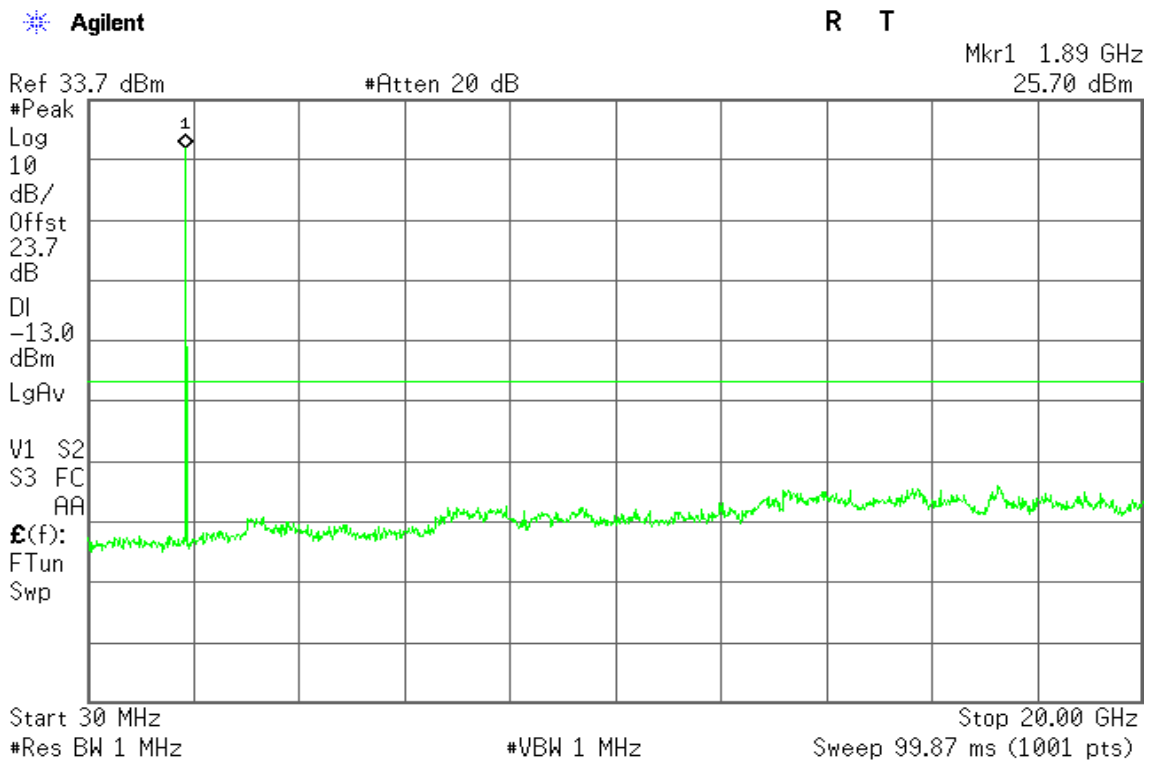
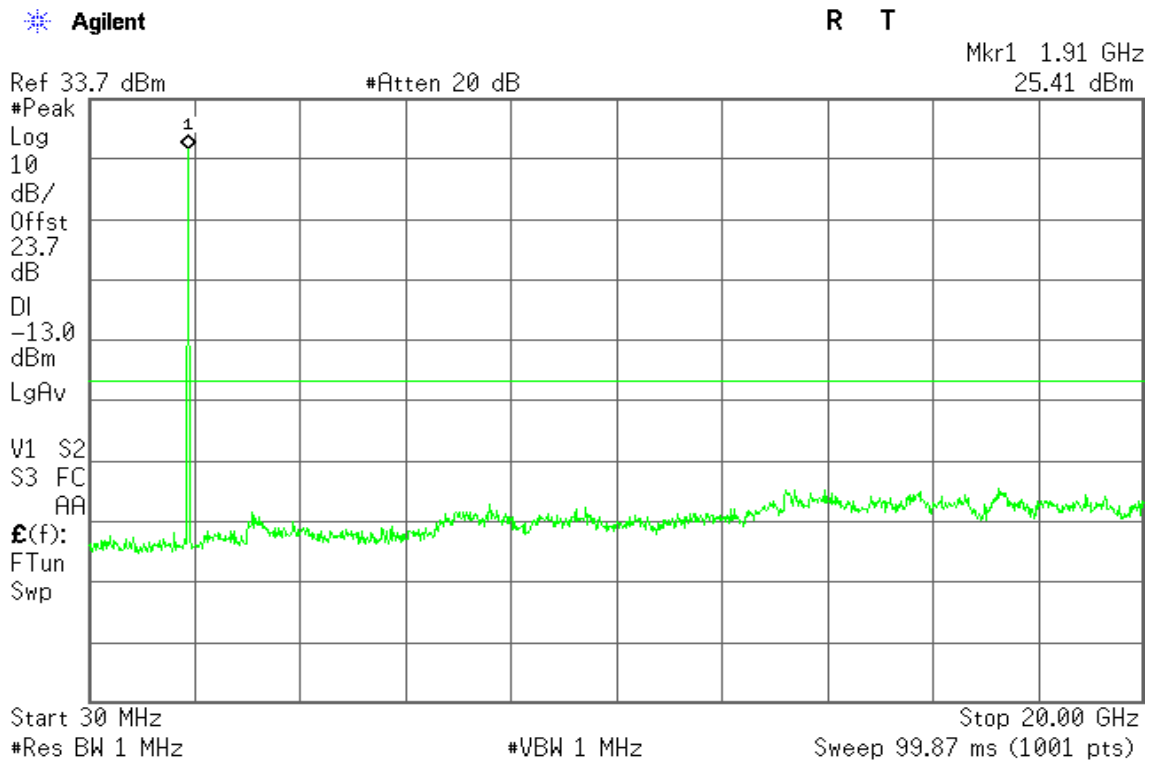




Figure 9-3: Out of Band emission at antenna terminals – GPRS CH High





GPRS 850

Figure 10-1: Band Edge emissions – GPRS CH Low

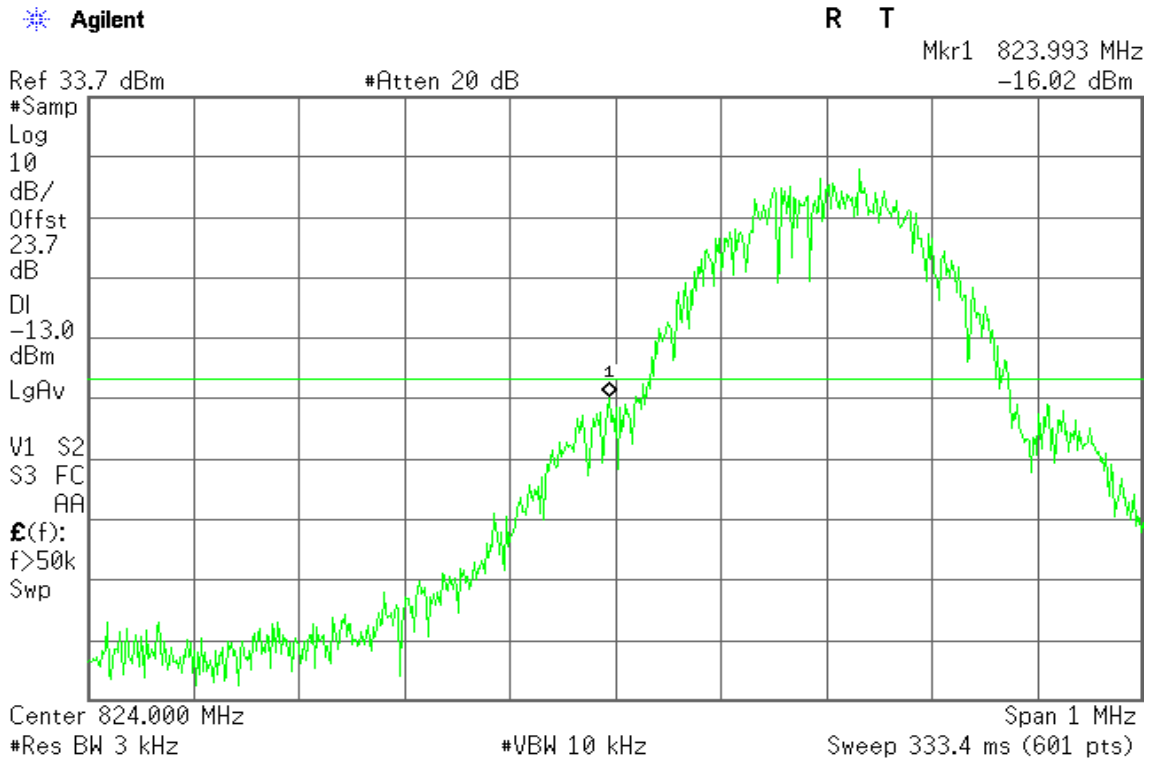
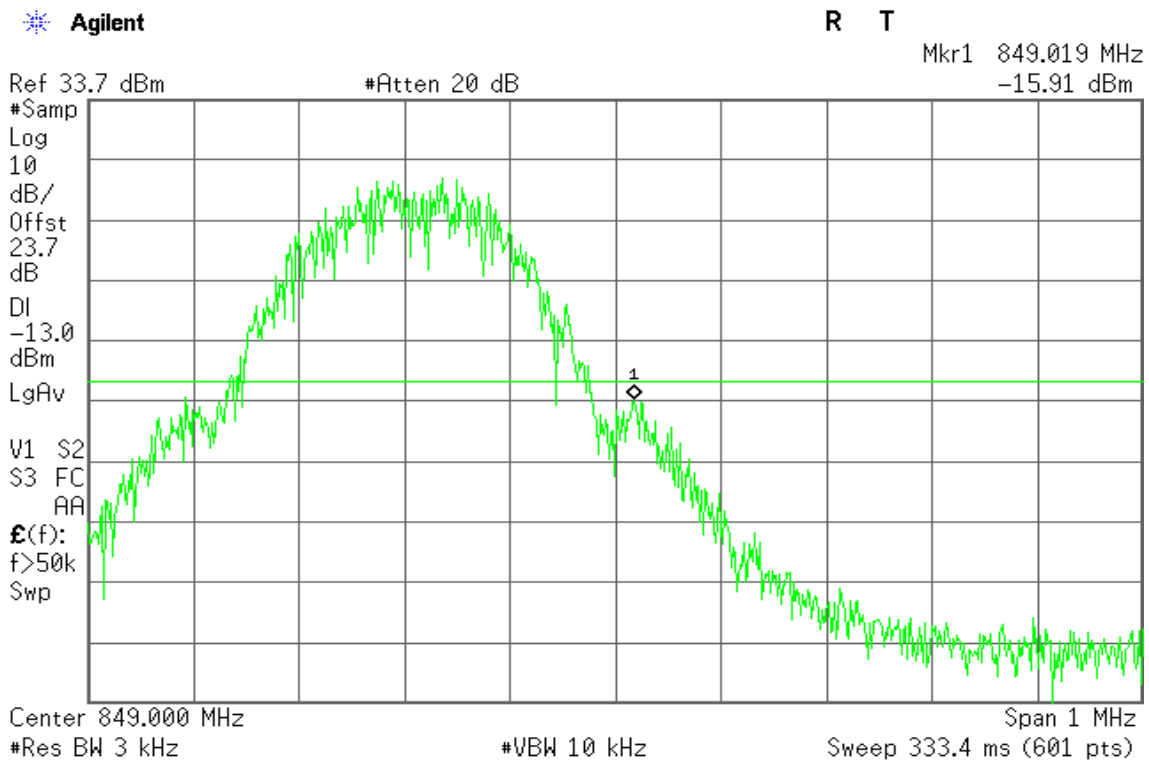


Figure 10-2: Band Edge emissions –GPRS CH High





GPRS 1900

Figure 11-1: Band Edge emissions – GPRS CH Low

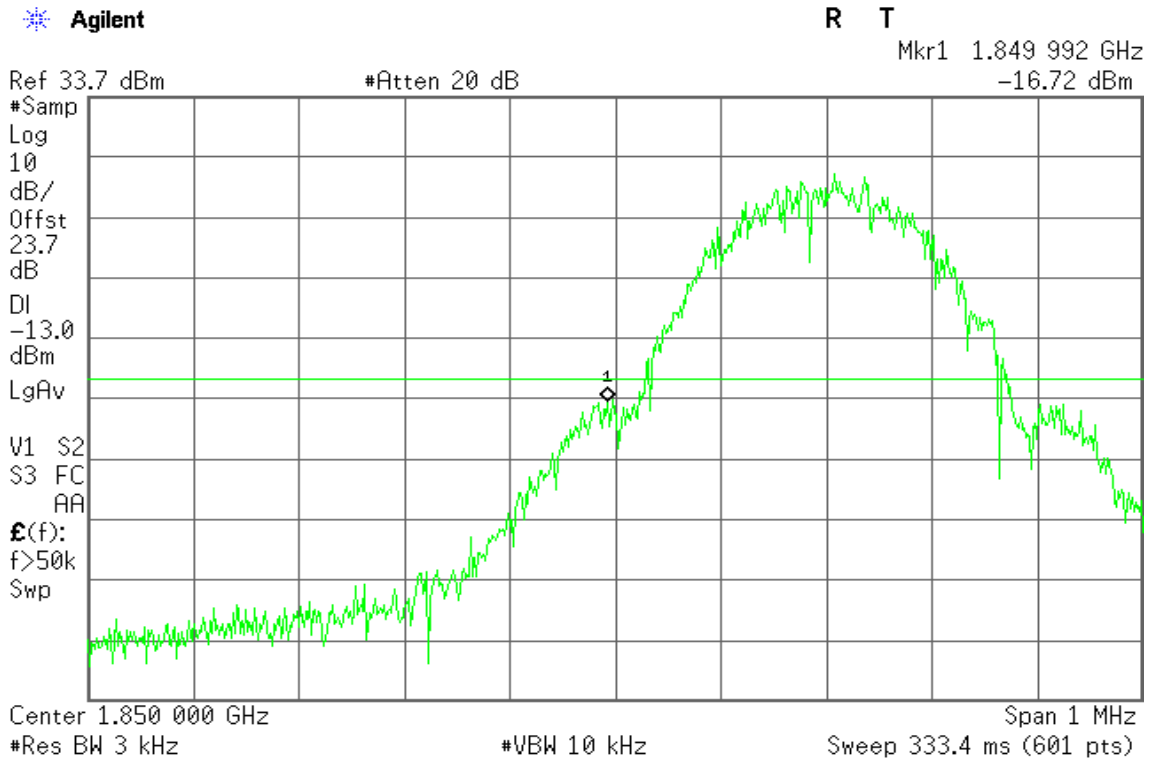
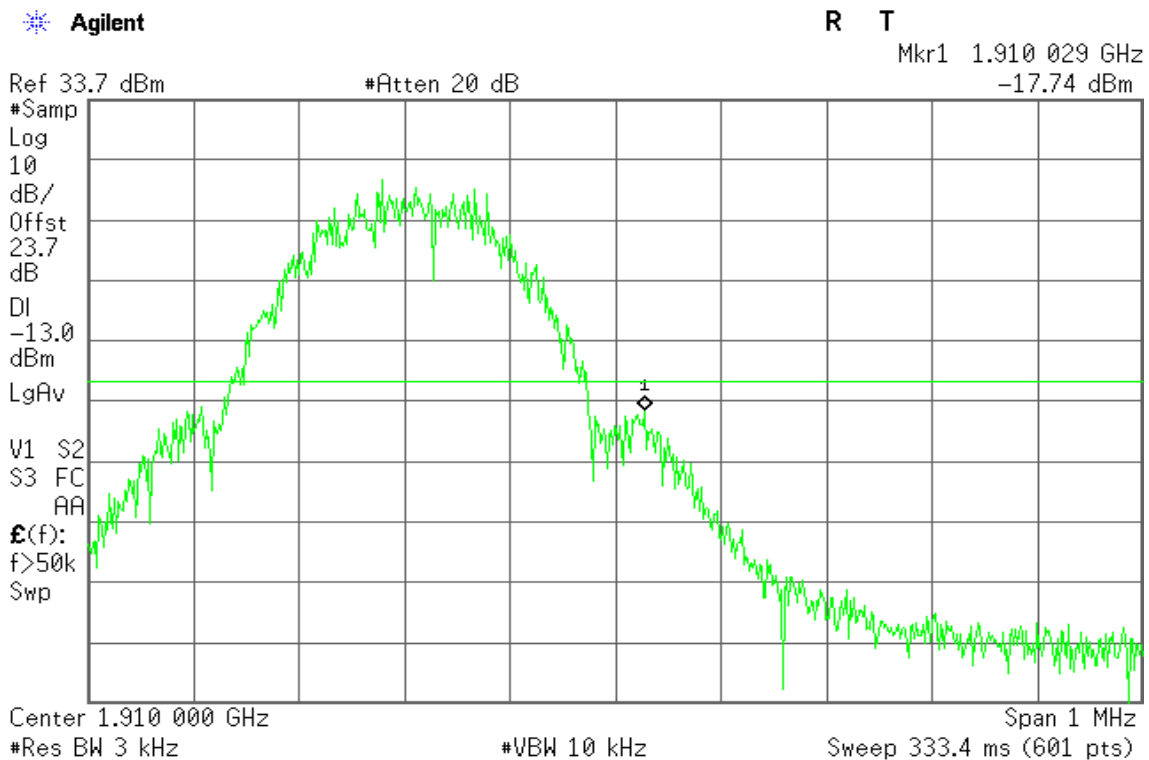


Figure 11-2: Band Edge emissions – GPRS CH High





EDGE 850

Figure 12-1: Out of Band emission at antenna terminals –EDGE CH Low

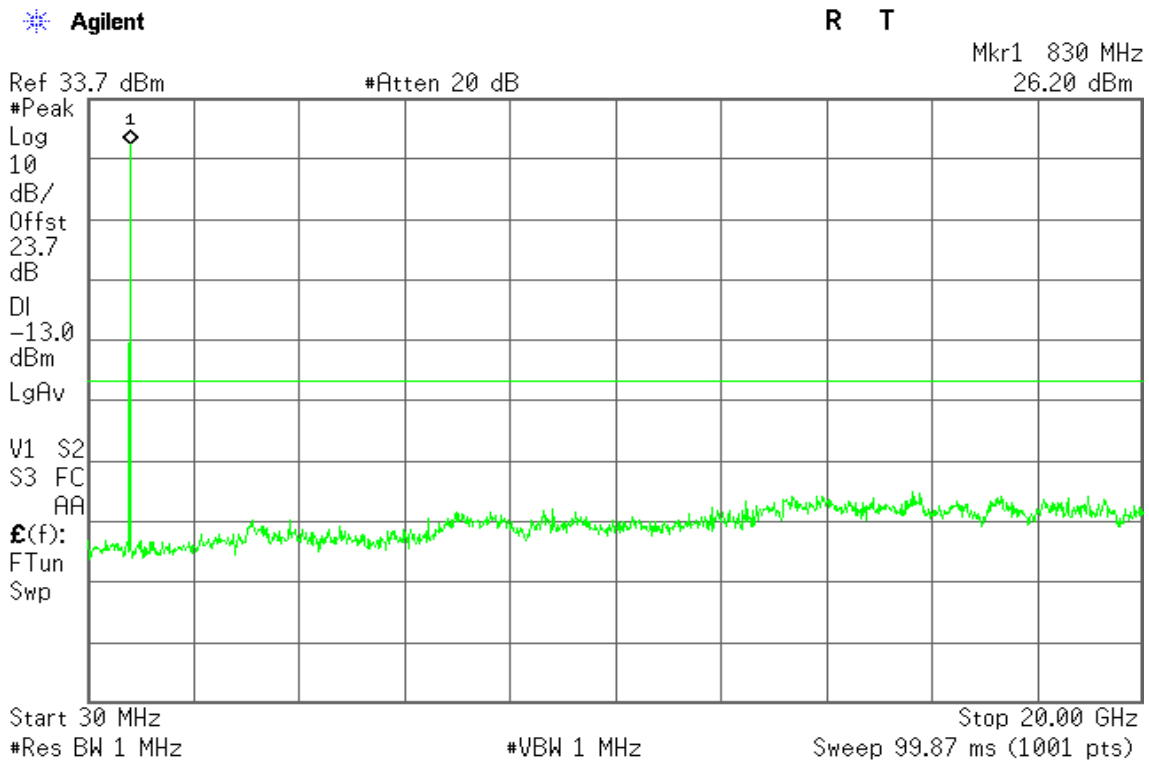


Figure 12-2: Out of Band emission at antenna terminals –EDGE CH Mid

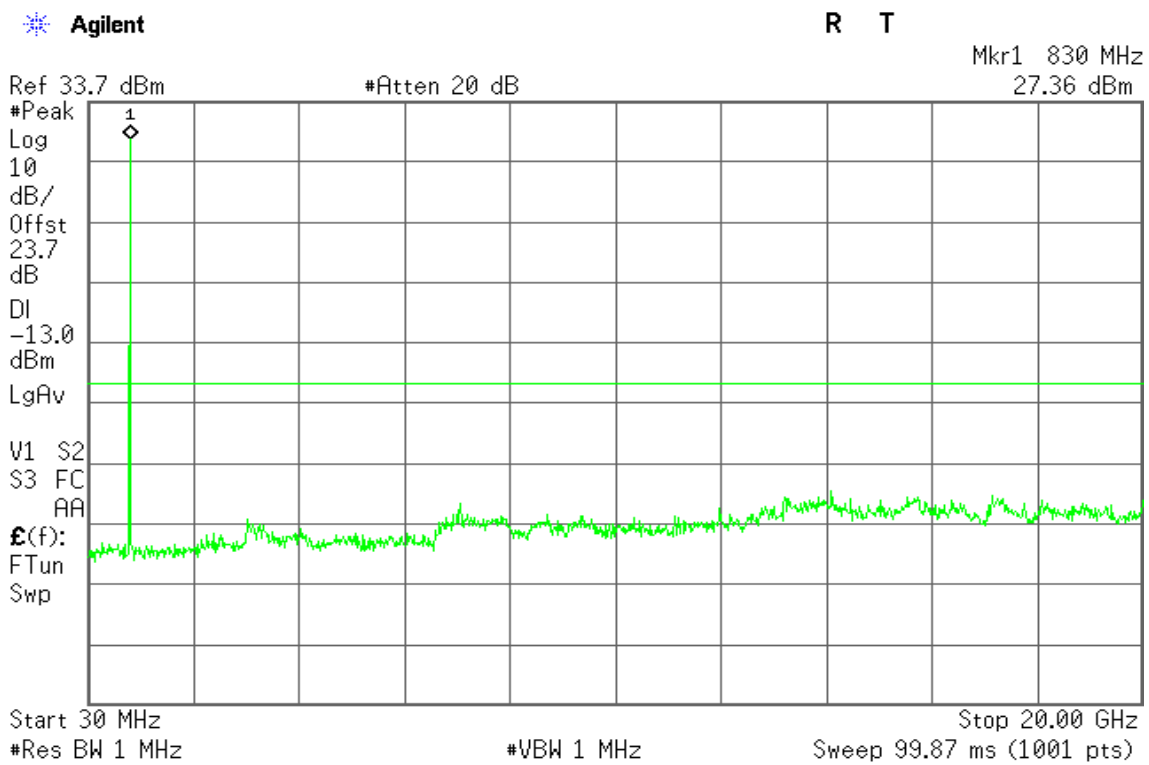
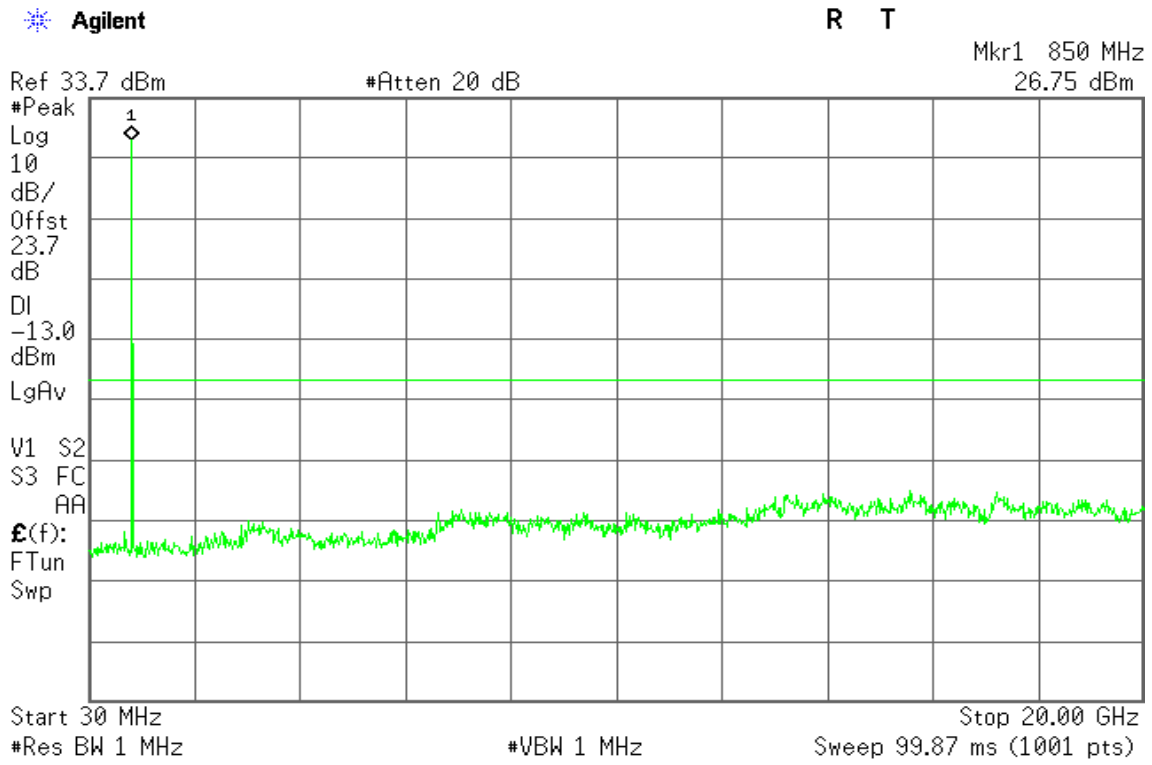




Figure 12-3: Out of Band emission at antenna terminals –EDGE CH High





EDGE 1900

Figure 13-1: Out of Band emission at antenna terminals –EDGE CH Low

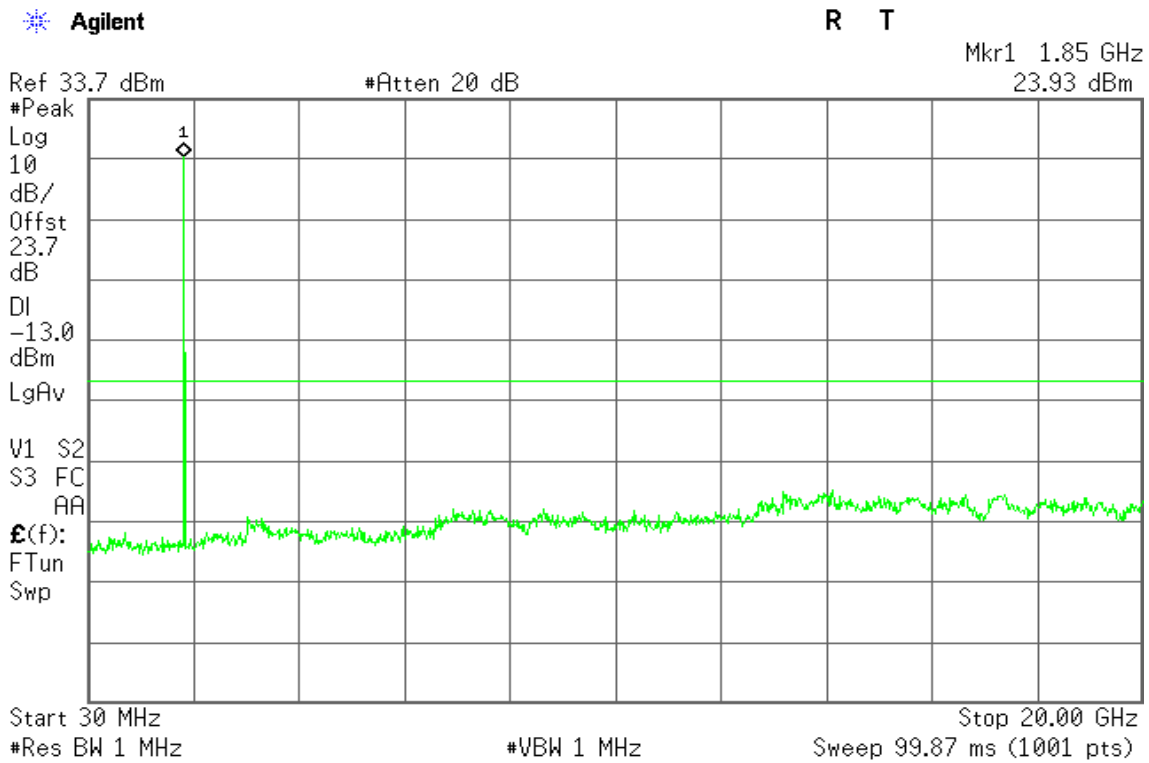


Figure 13-2: Out of Band emission at antenna terminals –EDGE CH Mid

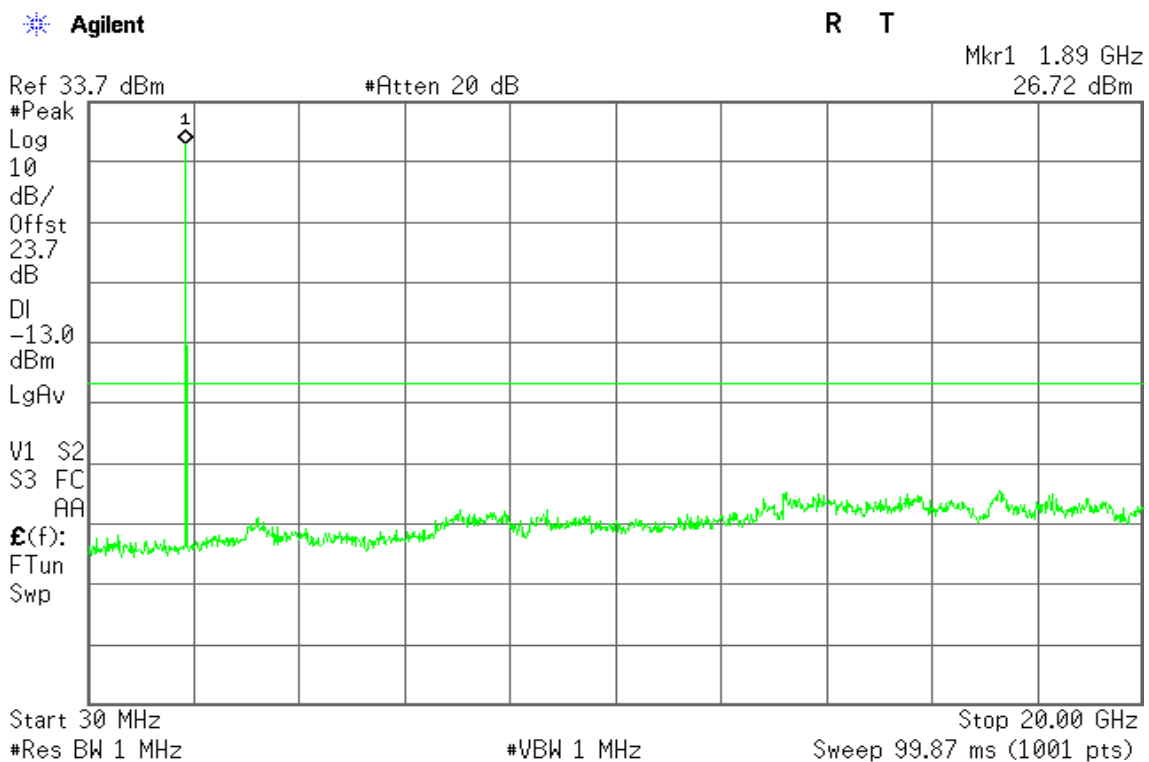
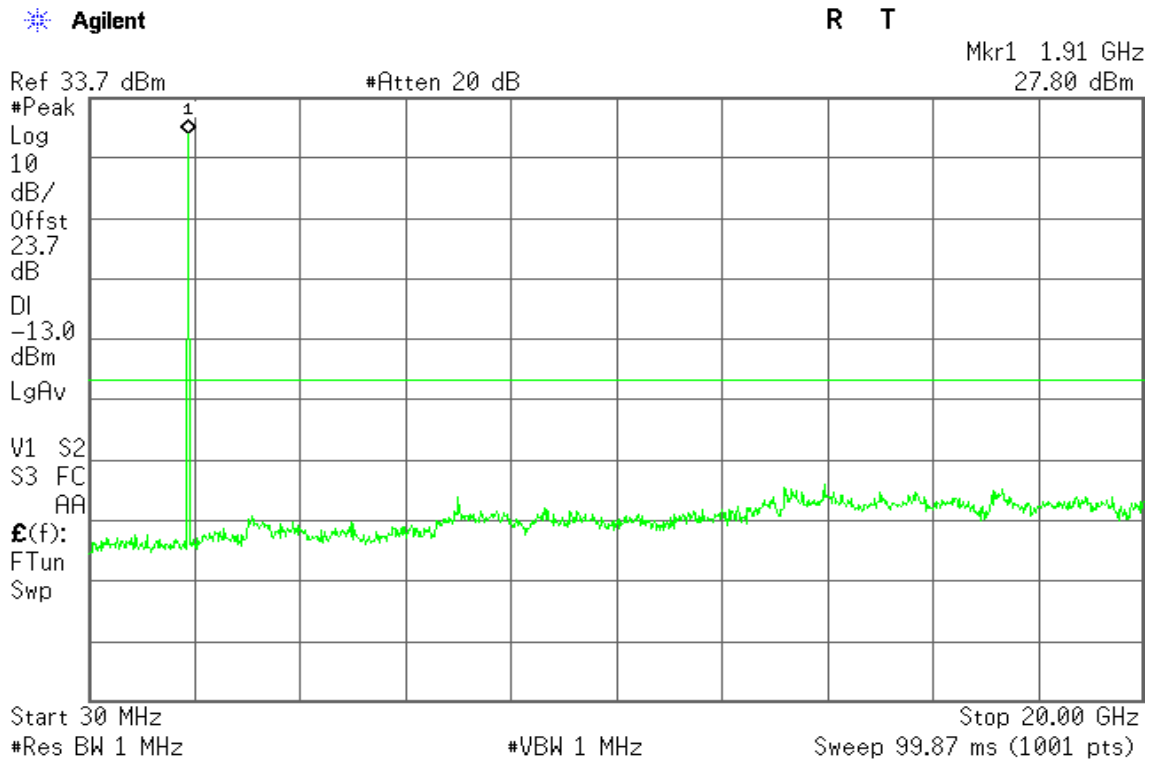




Figure 13-3: Out of Band emission at antenna terminals –EDGE CH High





EDGE 850

Figure 14-1: Band Edge emissions – EDGE CH Low

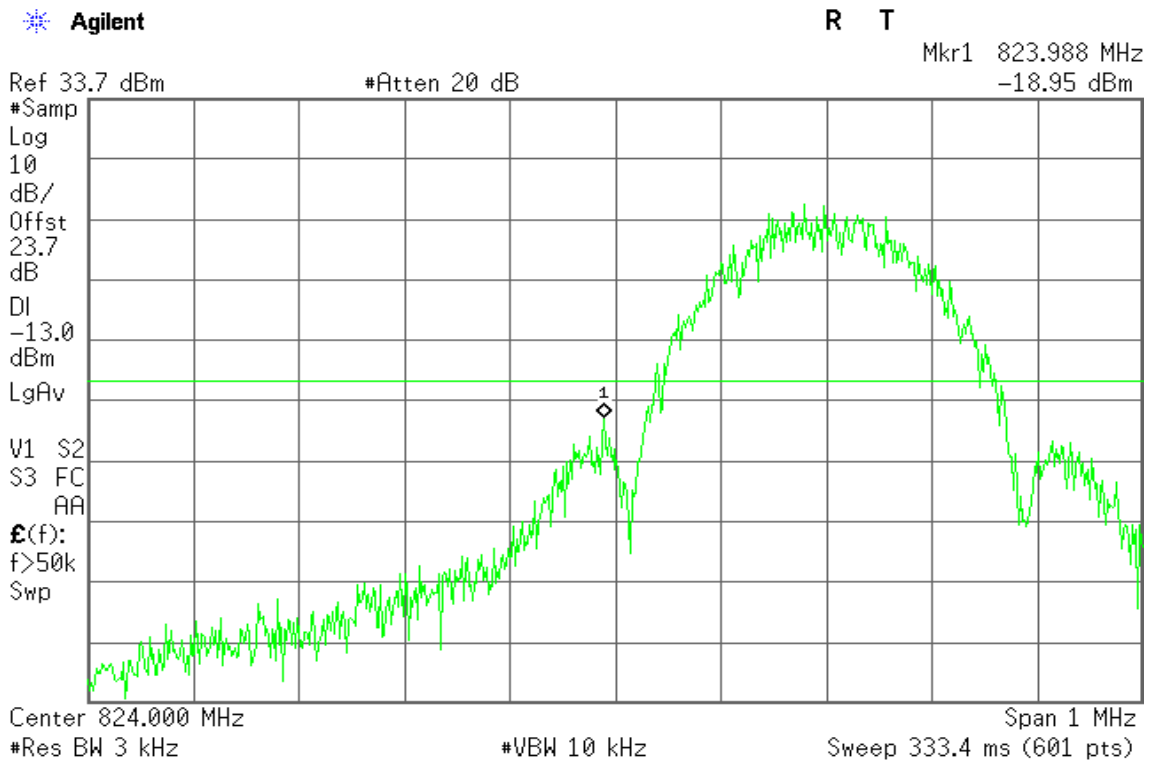
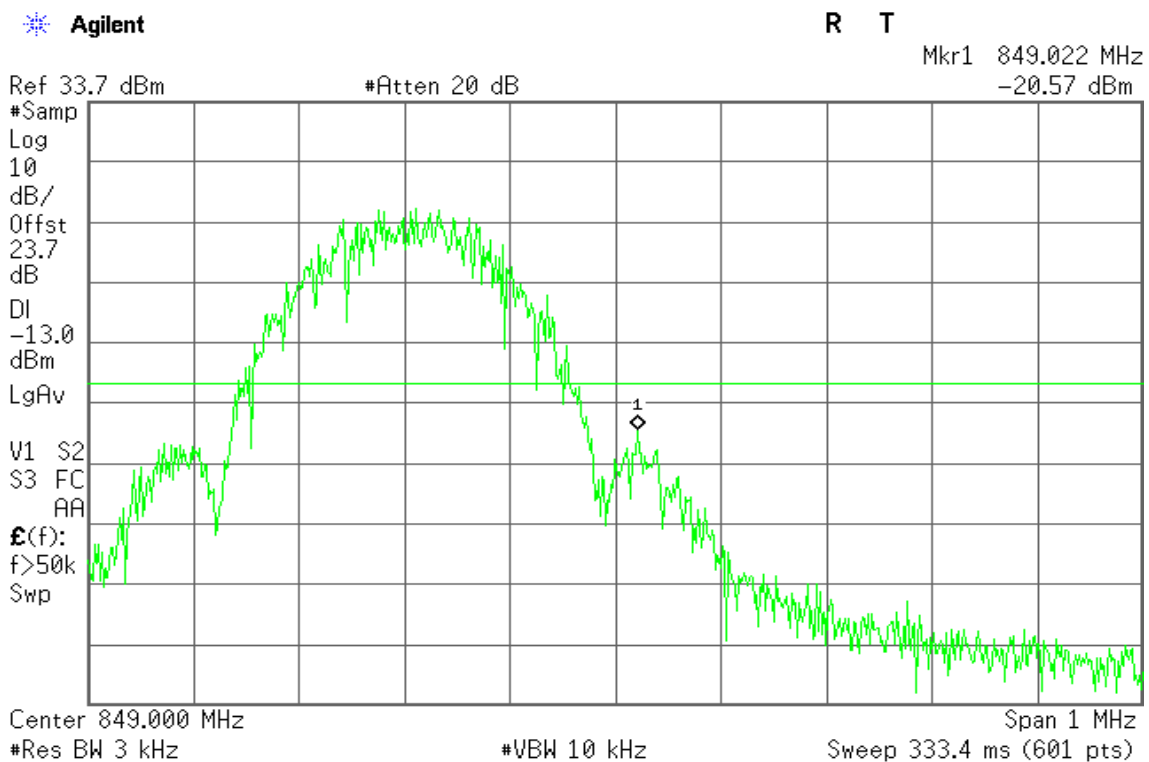


Figure 14-2: Band Edge emissions – EDGE CH High





EDGE 1900

Figure 15-1: Band Edge emissions – EDGE CH Low

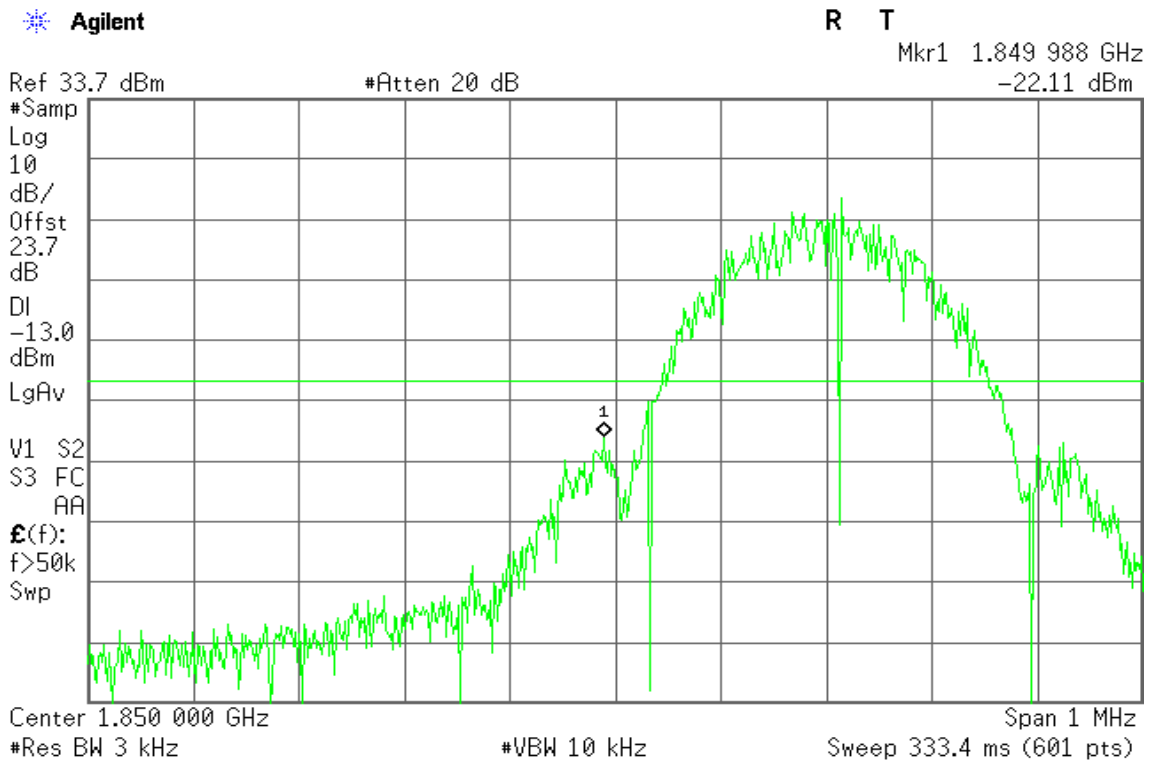
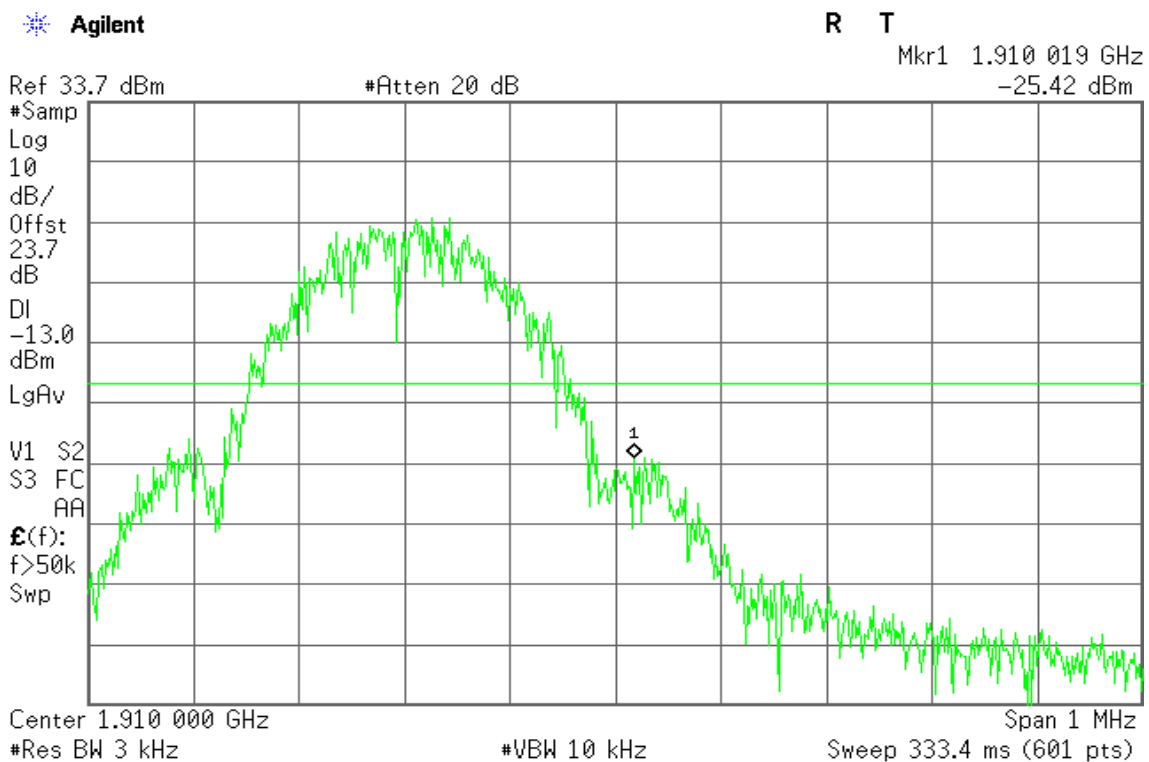


Figure 15-2: Band Edge emissions – EDGE CH High





WCDMA Band II

Figure 16-1: Out of Band emission at antenna terminals – WCDMA CH Low

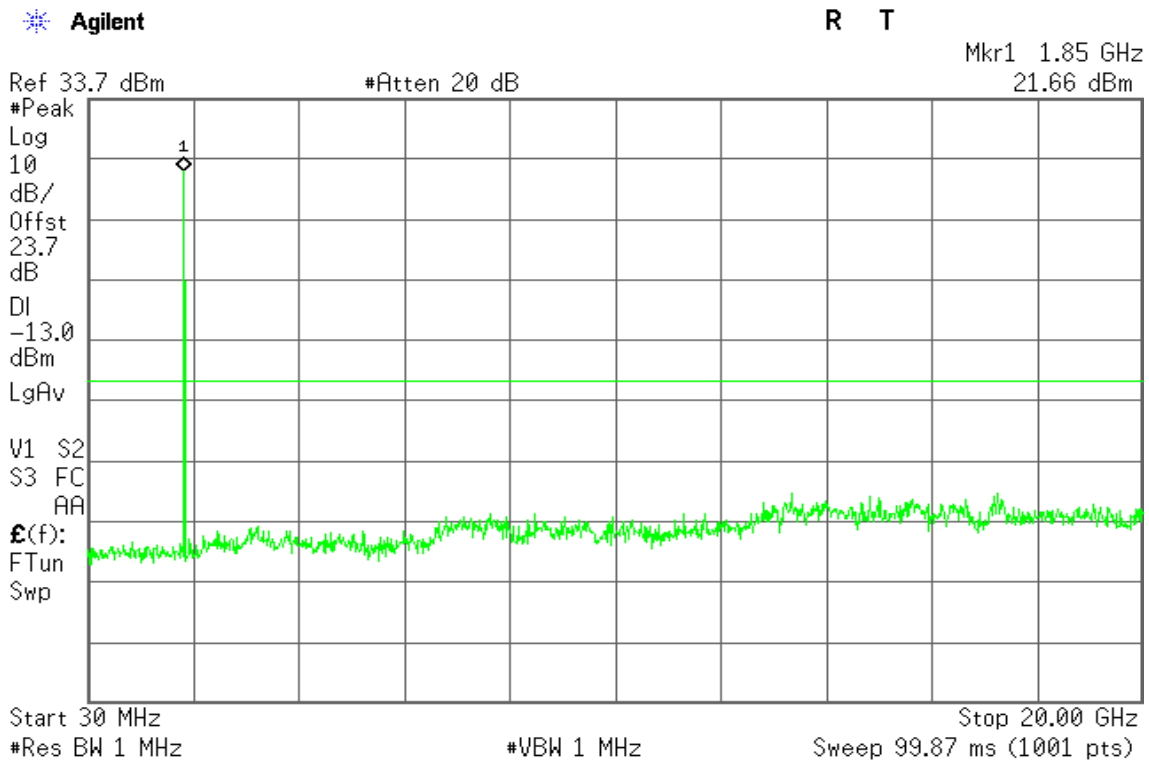


Figure 16-2: Out of Band emission at antenna terminals – WCDMA CH Mid

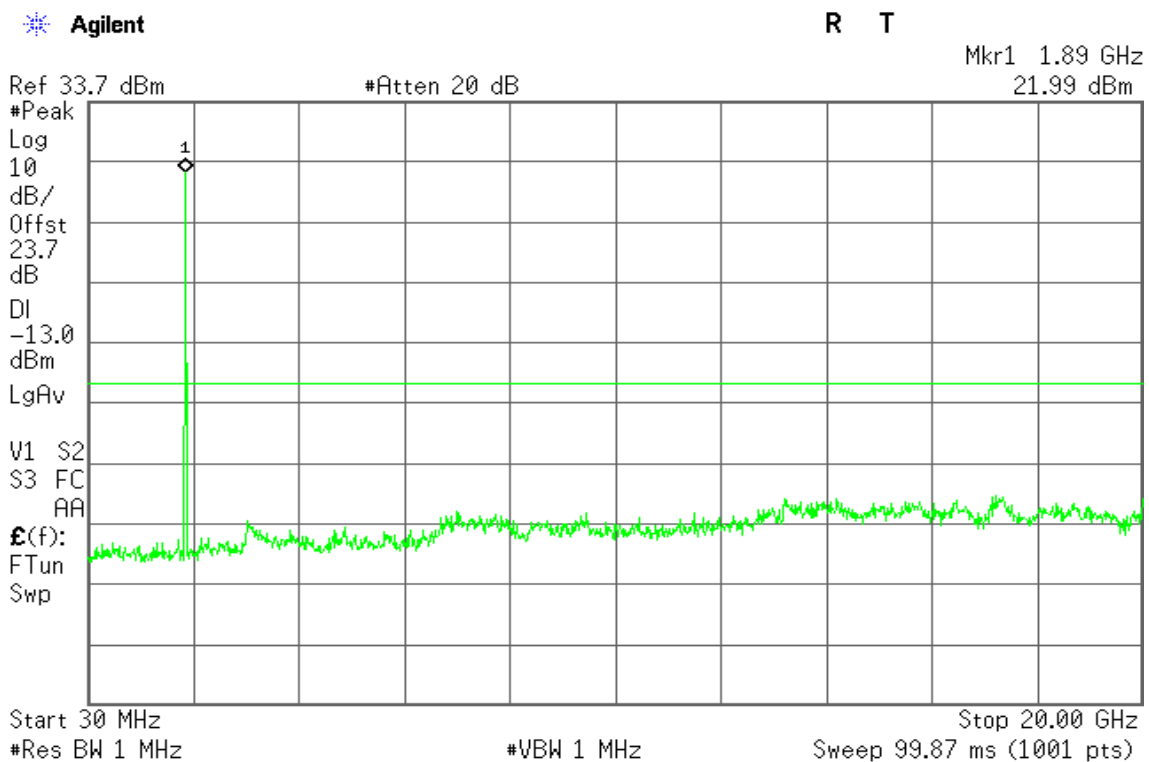
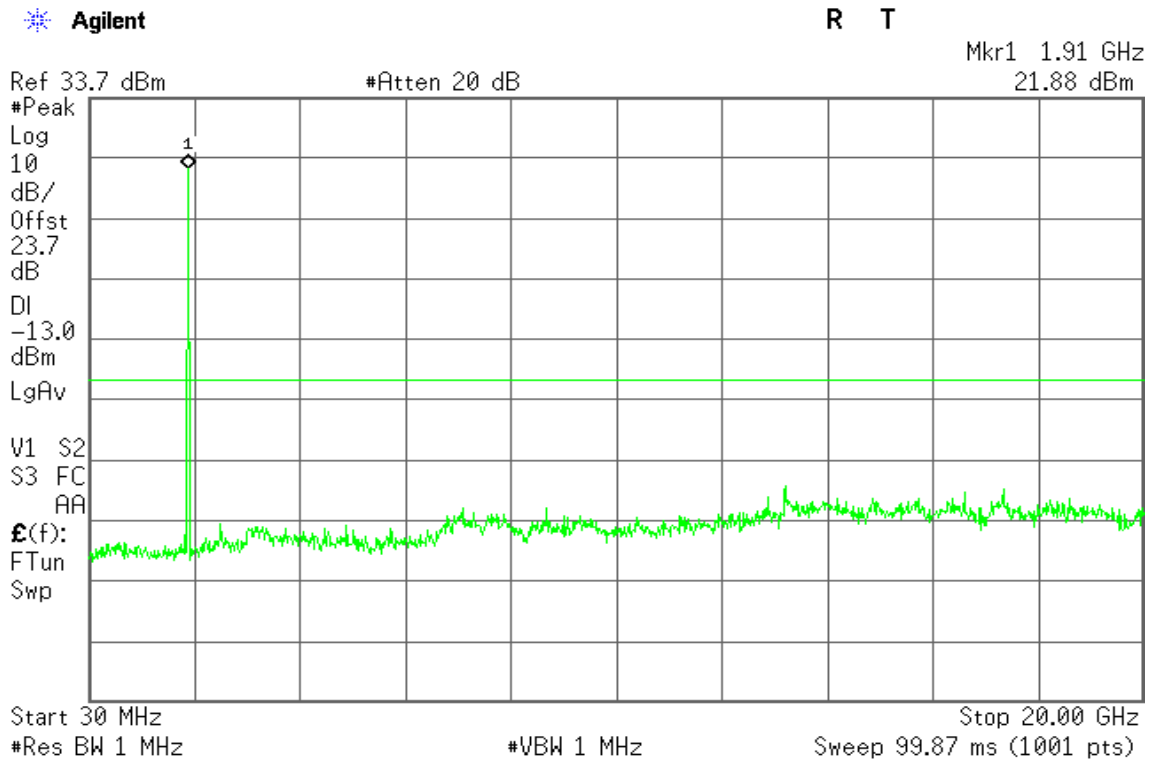




Figure 16-3: Out of Band emission at antenna terminals – WCDMA CH High





WCDMA Band V

Figure 17-1: Out of Band emission at antenna terminals – WCDMA CH Low

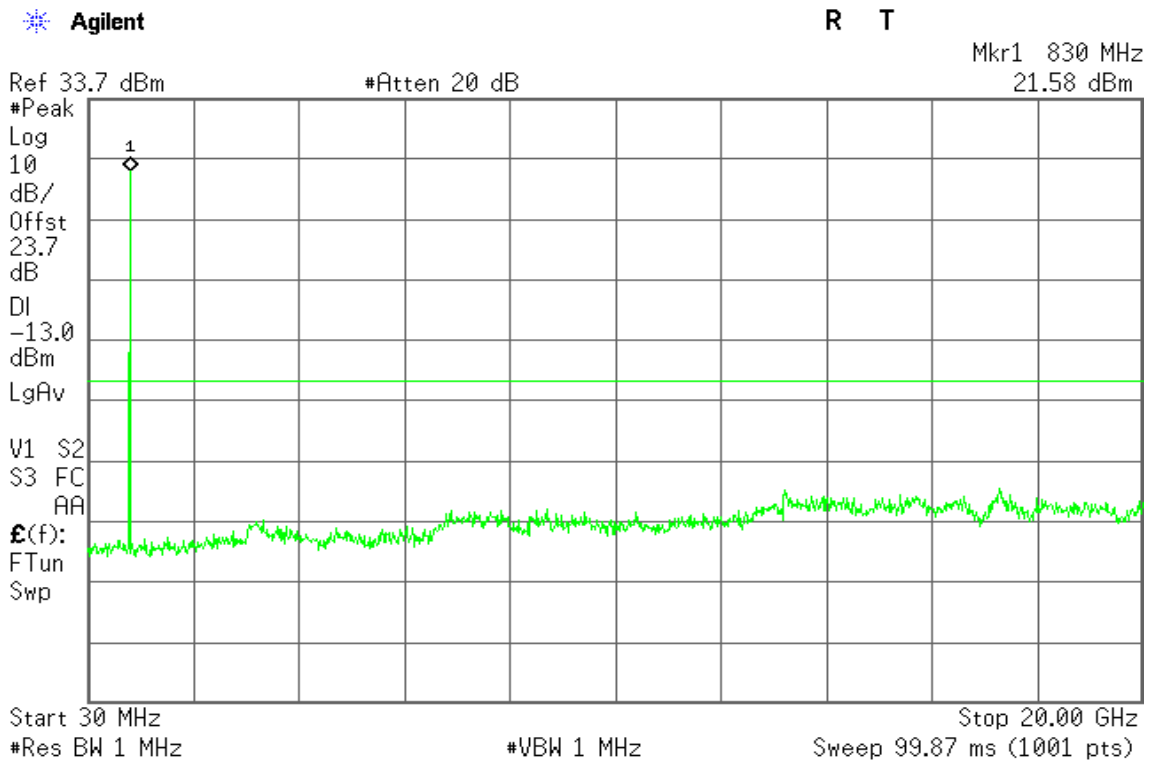


Figure 17-2: Out of Band emission at antenna terminals – WCDMA CH Mid

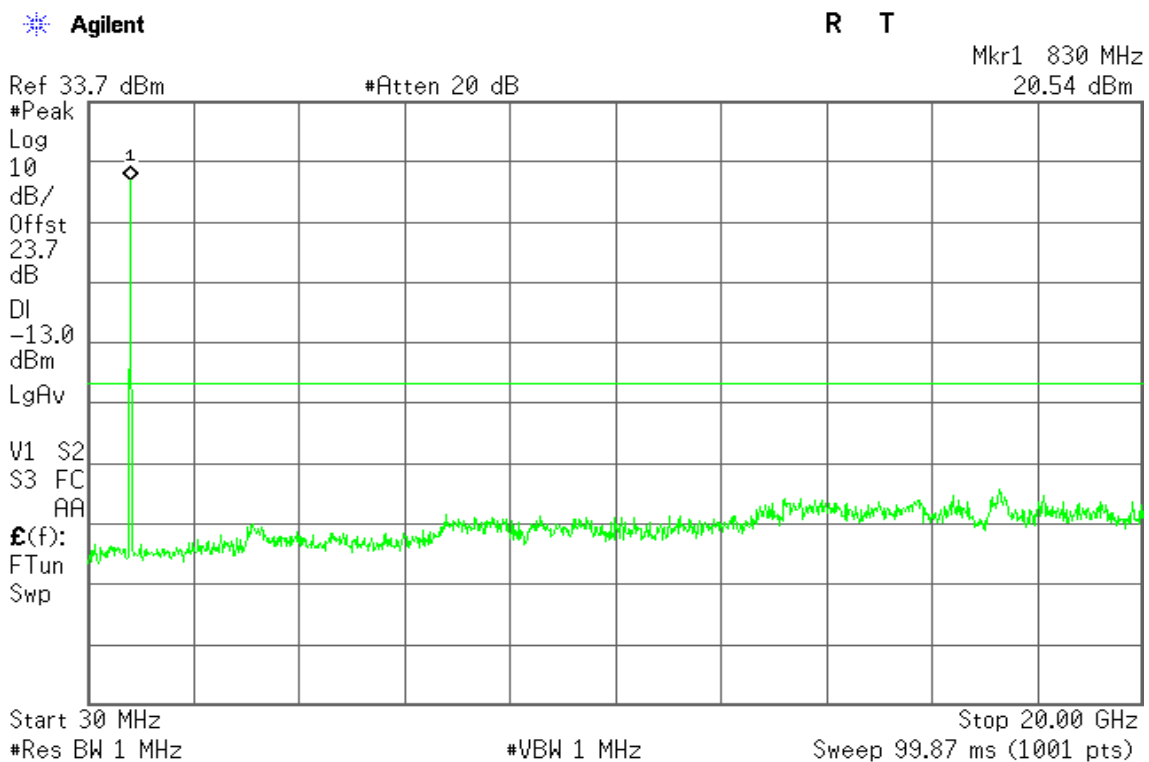
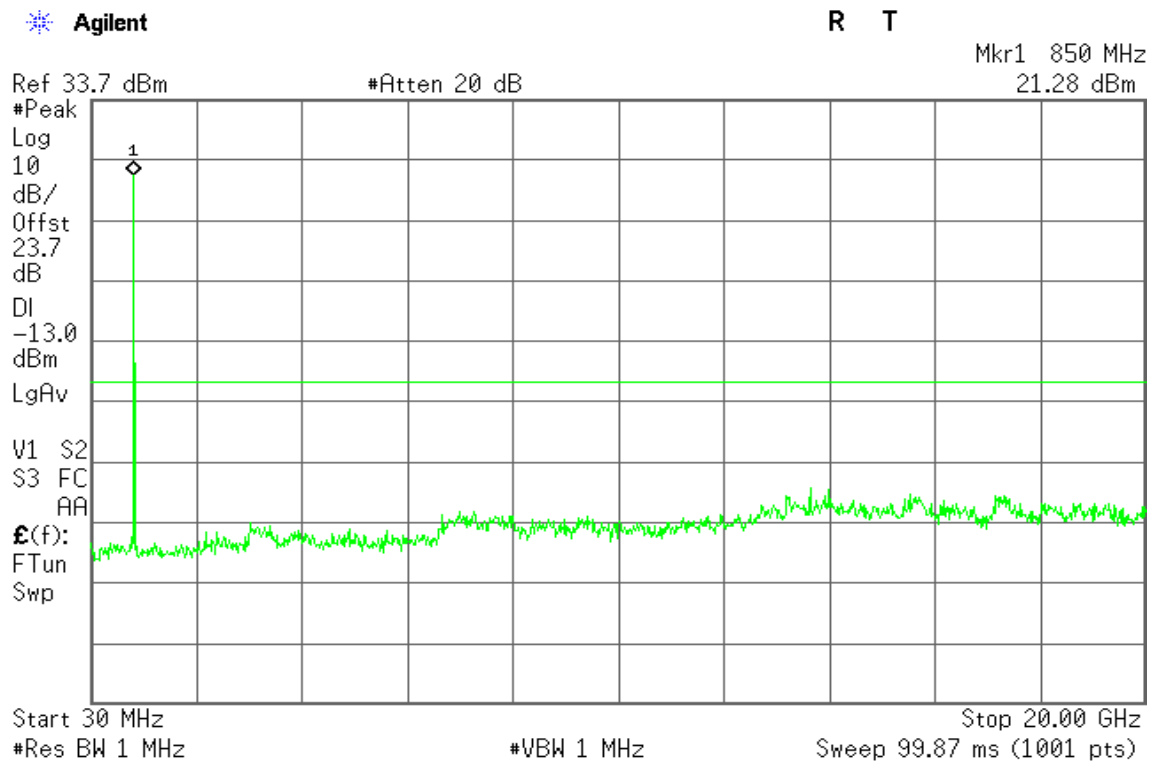




Figure 17-3: Out of Band emission at antenna terminals – WCDMA CH High





WCDMA Band II

Figure 18-1: Band Edge emissions – WCDMA CH Low

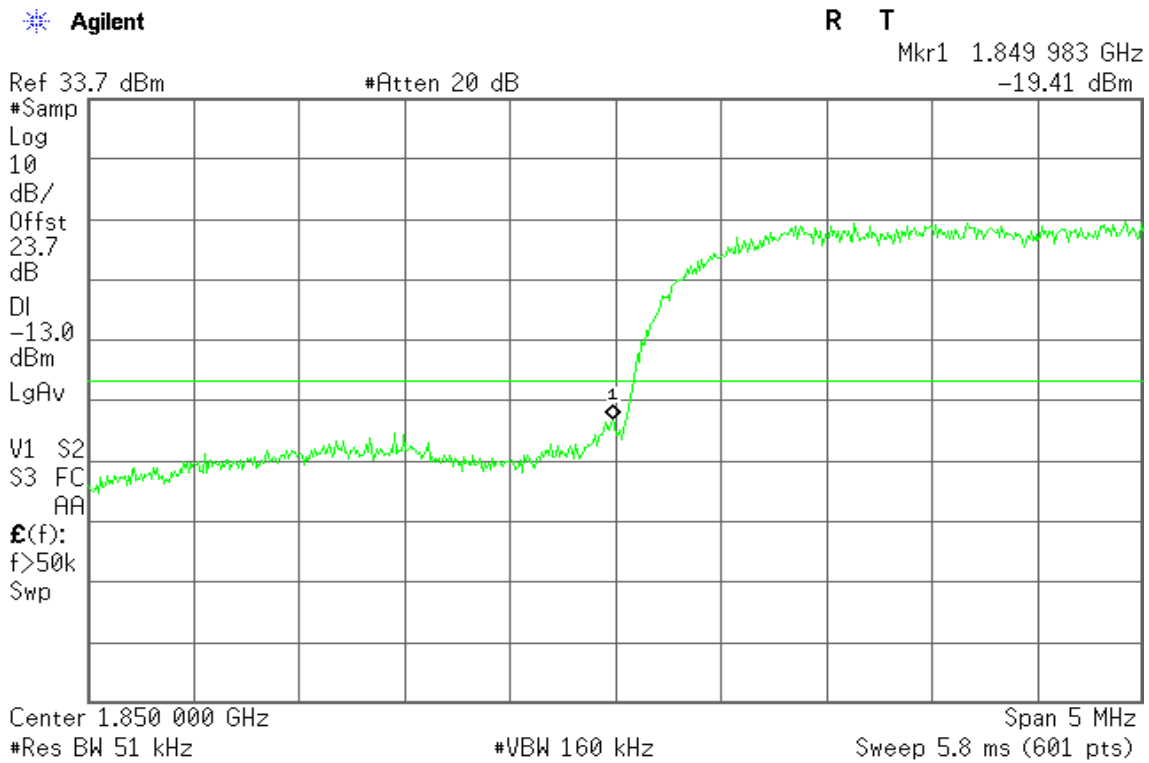
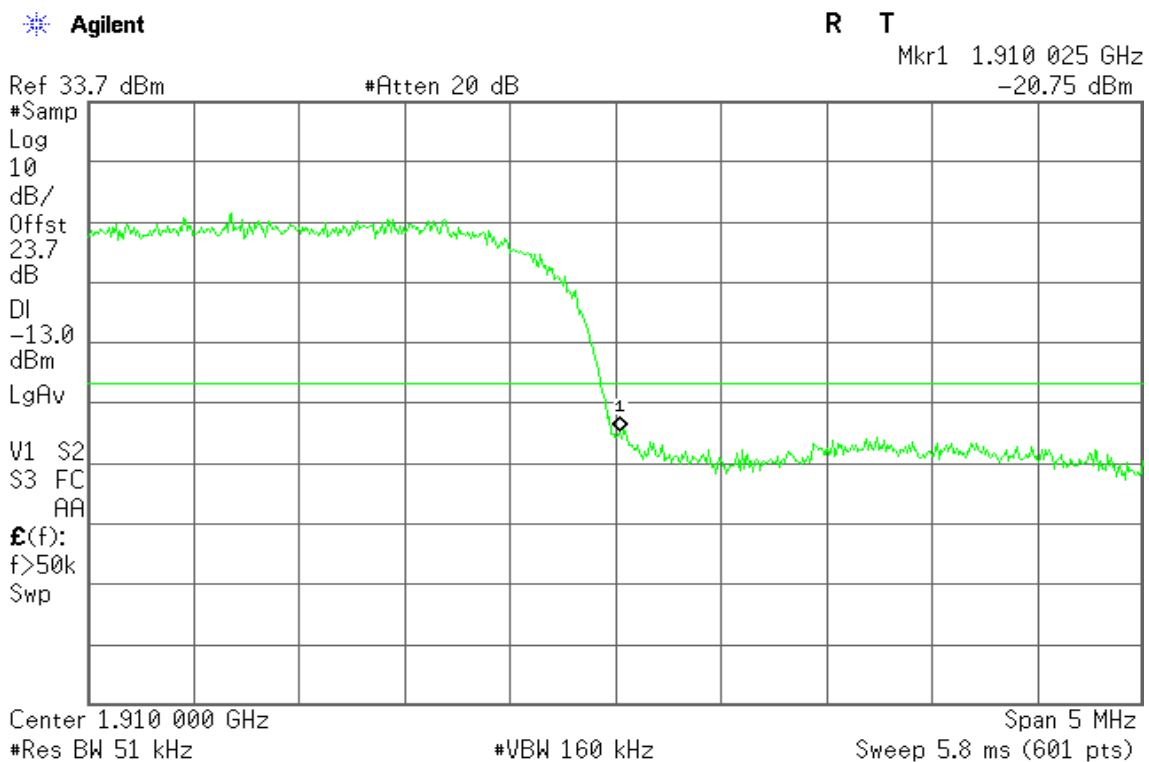


Figure 18-2: Band Edge emissions –WCDMA CH High





WCDMA Band V

Figure 19-1: Band Edge emissions –WCDMA CH Low

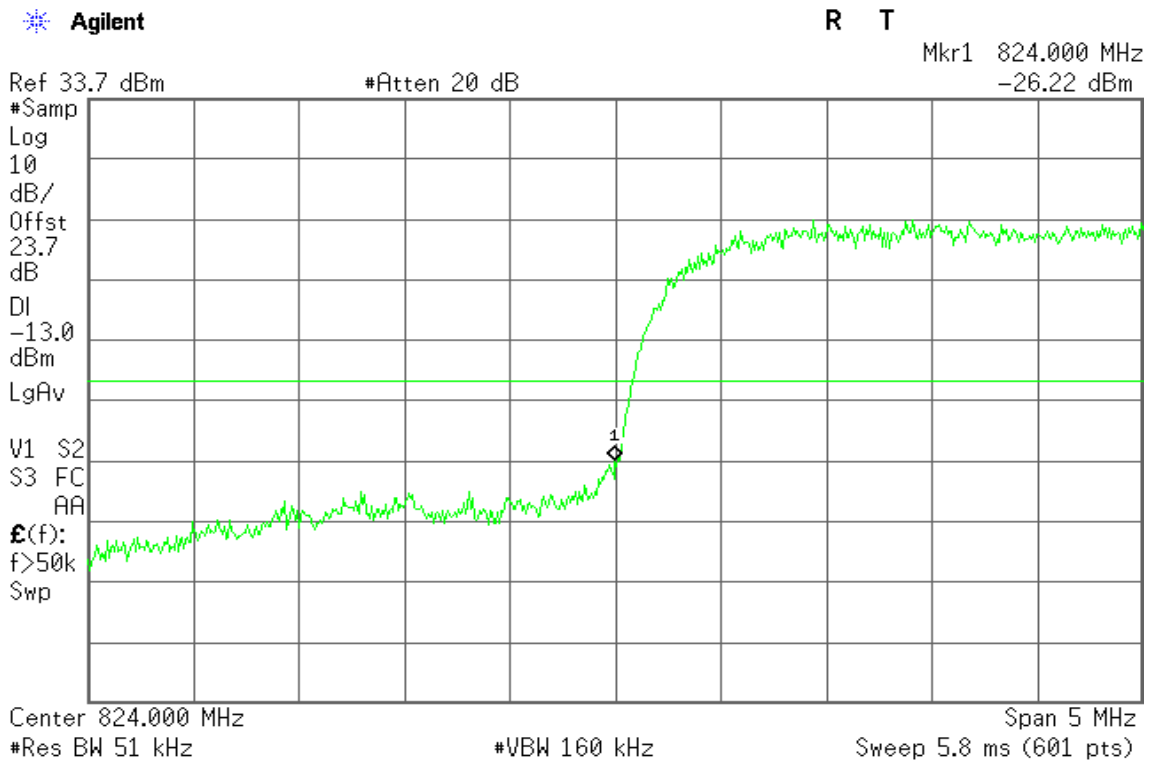
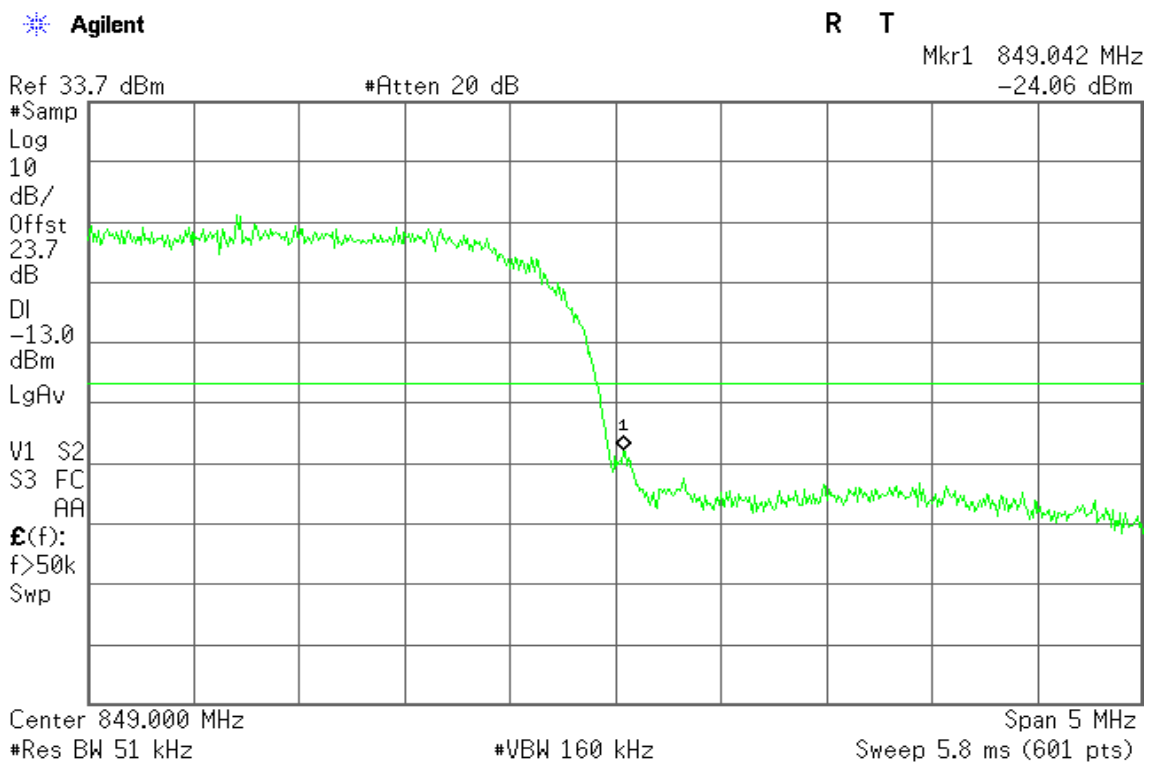


Figure 19-2: Band Edge emissions –WCDMA CH High





WCDMA / HSDPA Band II

Figure 20-1: Out of Band emission at antenna terminals – HSDPA CH Low

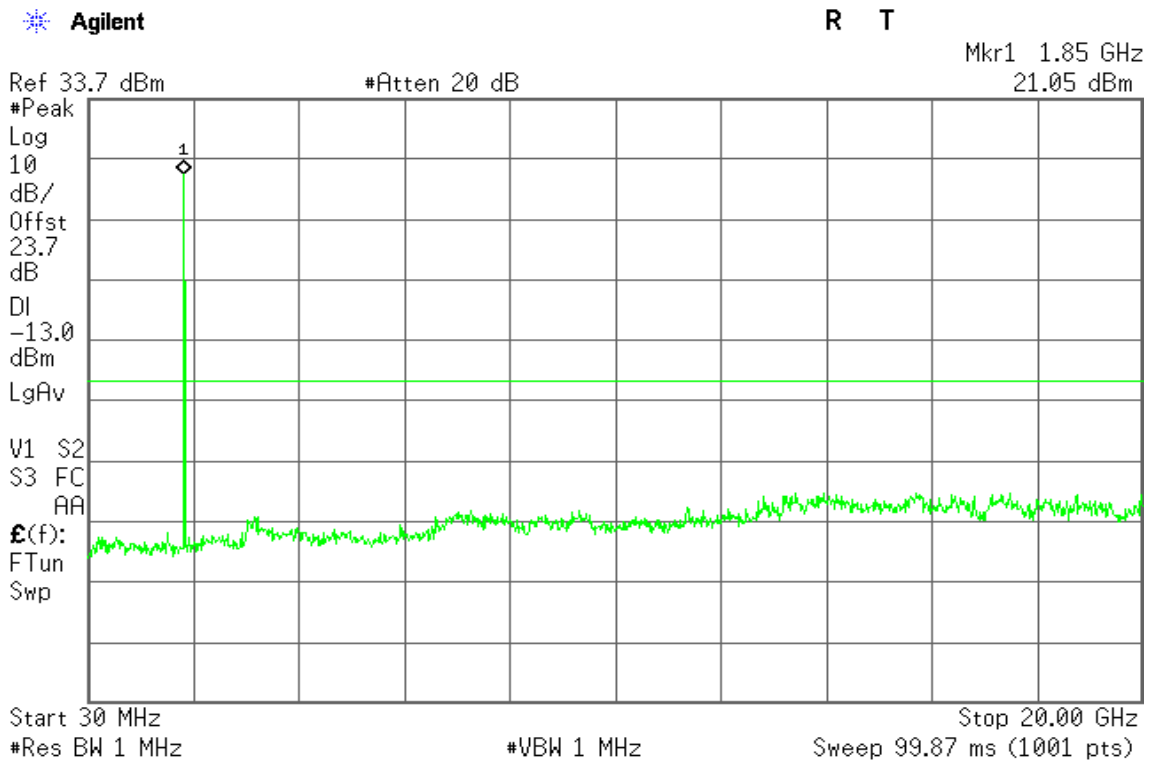


Figure 20-2: Out of Band emission at antenna terminals – HSDPA CH Mid

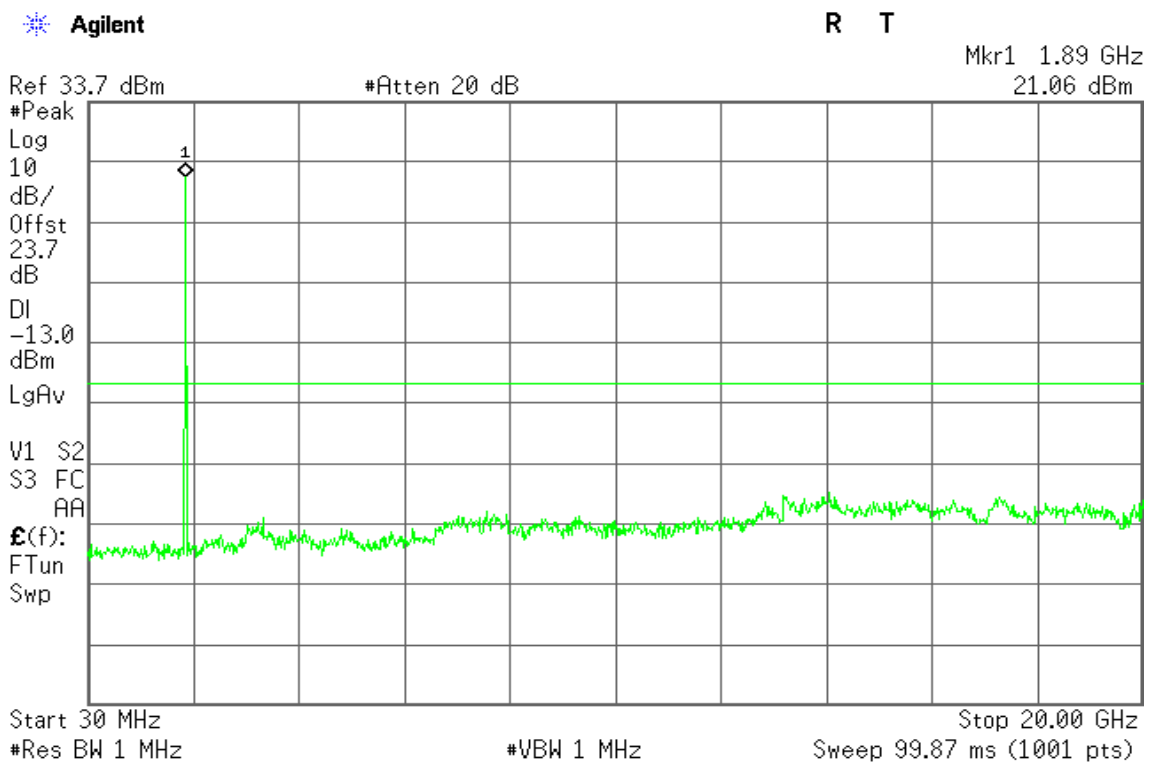
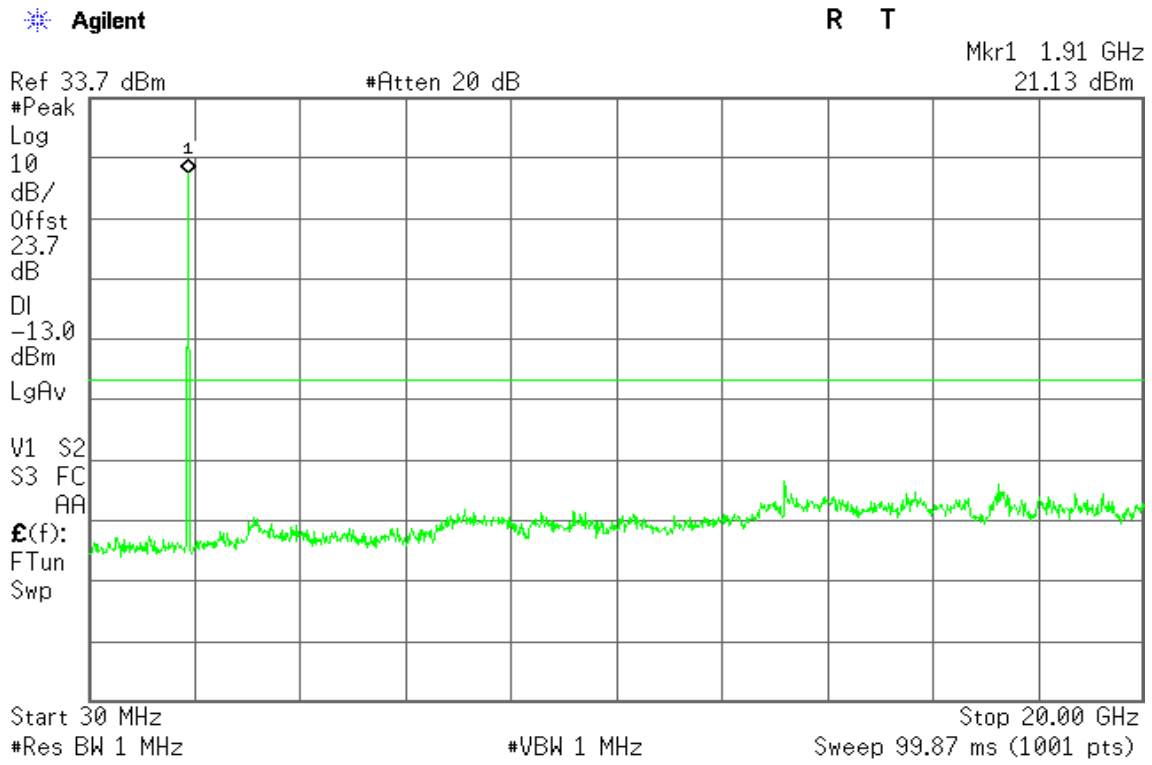




Figure 20-3: Out of Band emission at antenna terminals – HSDPA CH High





WCDMA / HSDPA Band V

Figure 21-1: Out of Band emission at antenna terminals – HSDPA CH Low

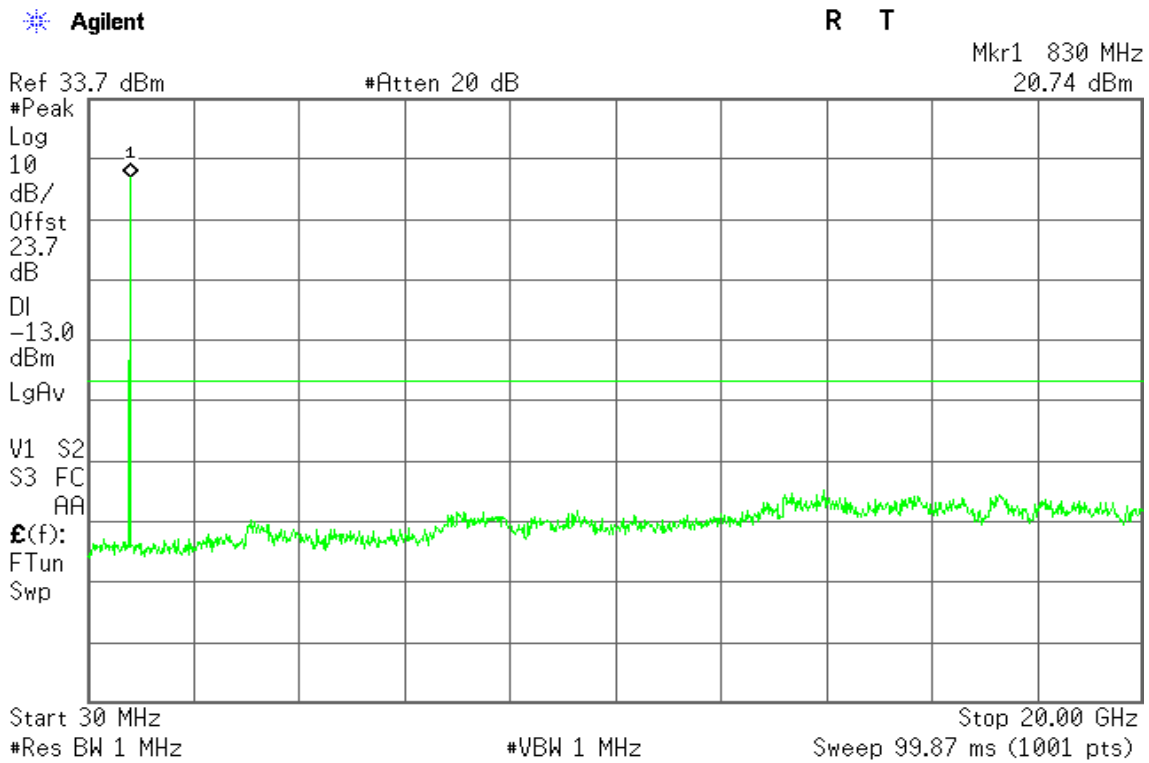


Figure 21-2: Out of Band emission at antenna terminals – HSDPA CH Mid

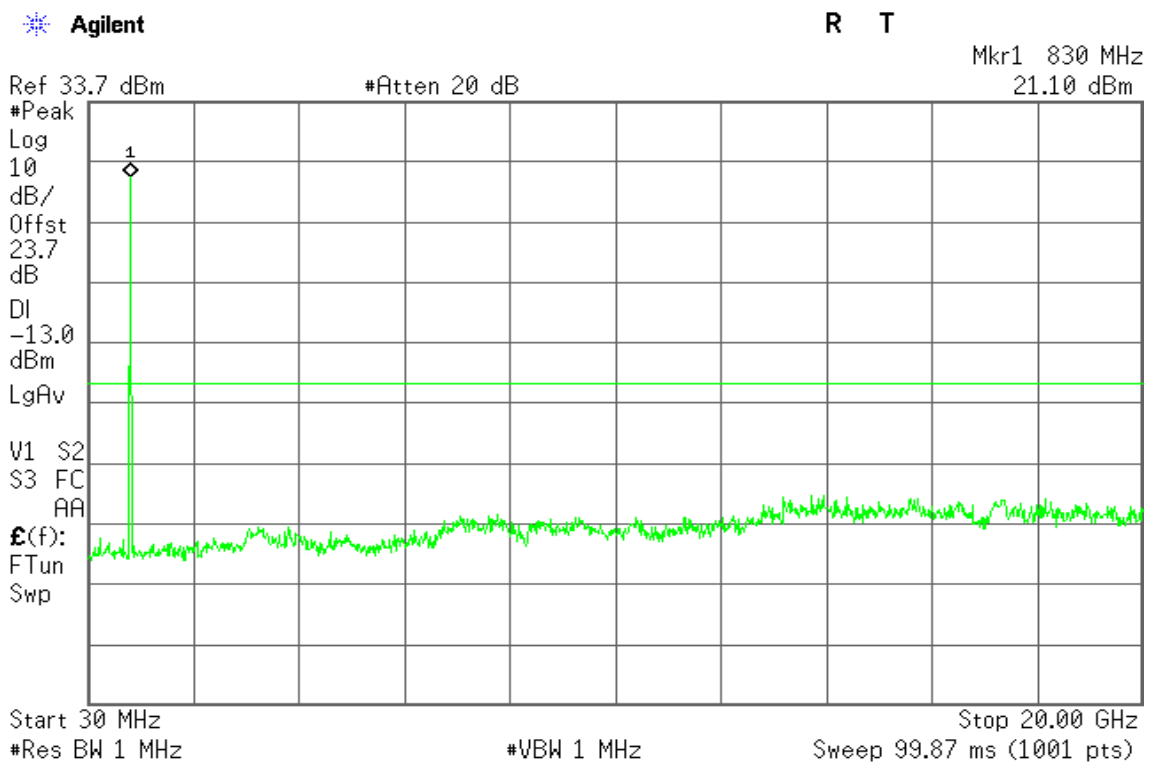
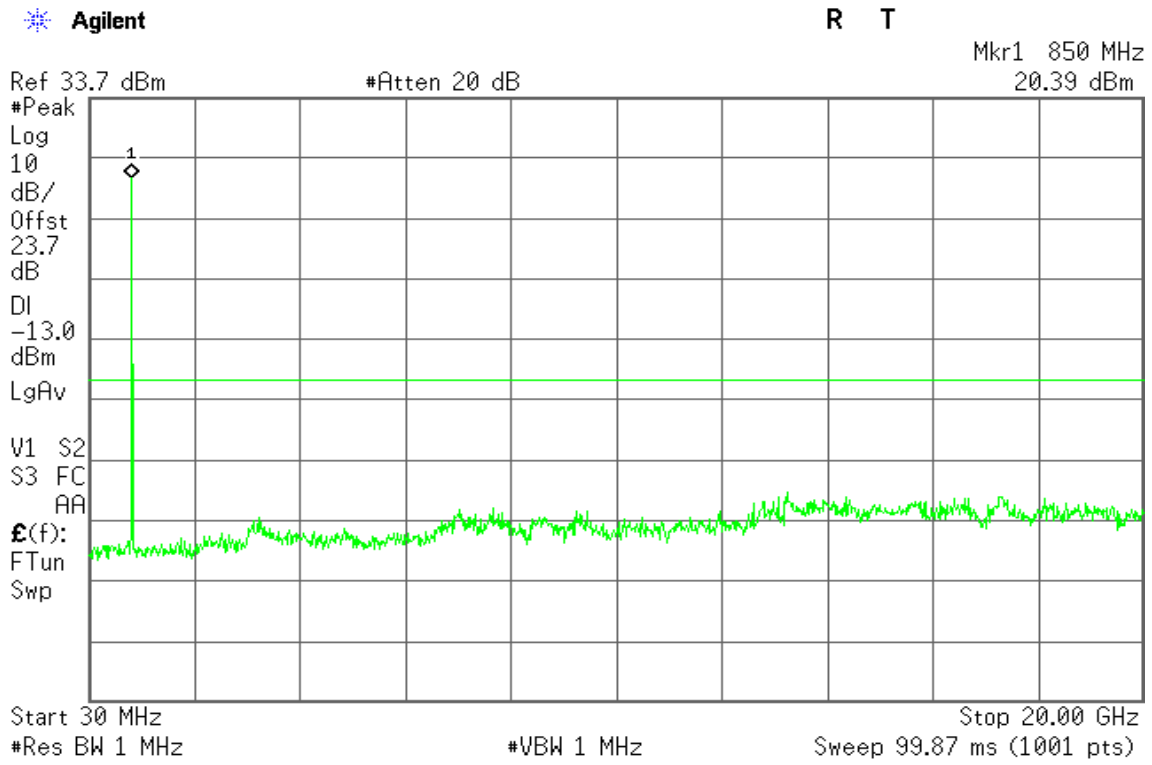




Figure 21-3: Out of Band emission at antenna terminals – HSDPA CH High





WCDMA / HSDPA Band II

Figure 22-1: Band Edge emissions – HSDPA CH Low

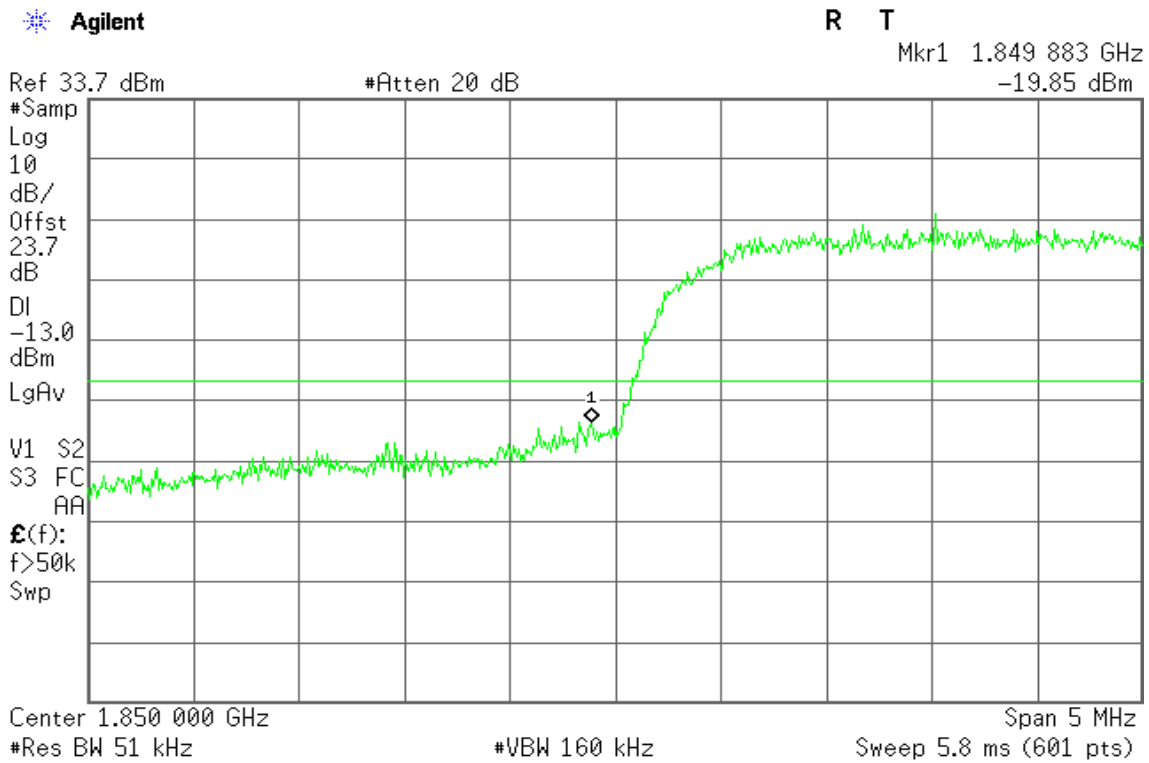
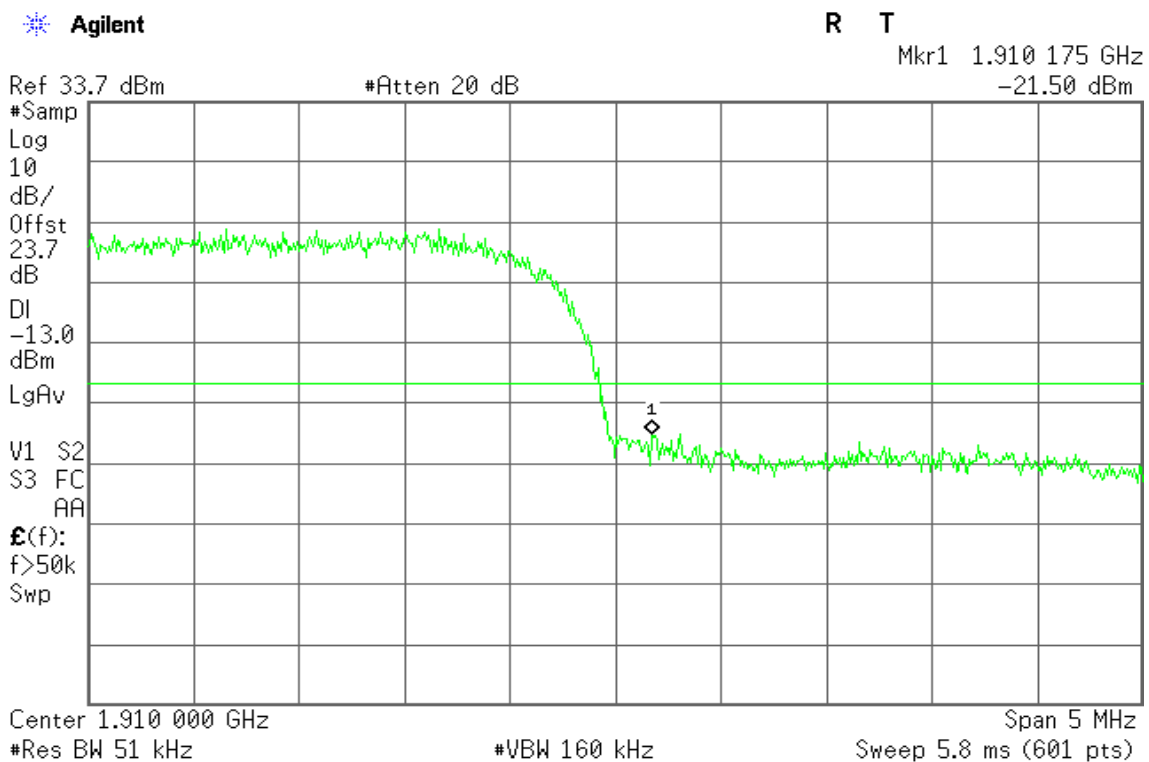


Figure 22-2: Band Edge emissions – HSDPA CH High





WCDMA / HSDPA Band V

Figure 23-1: Band Edge emissions – HSDPA CH Low

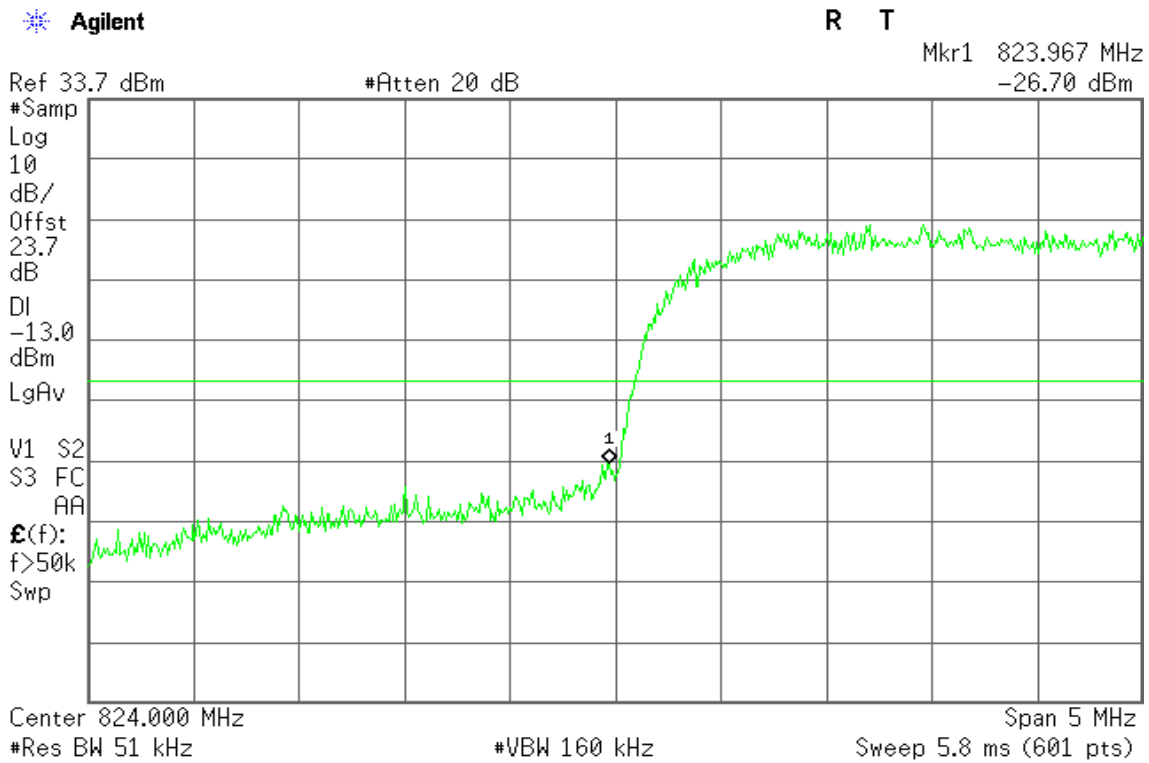
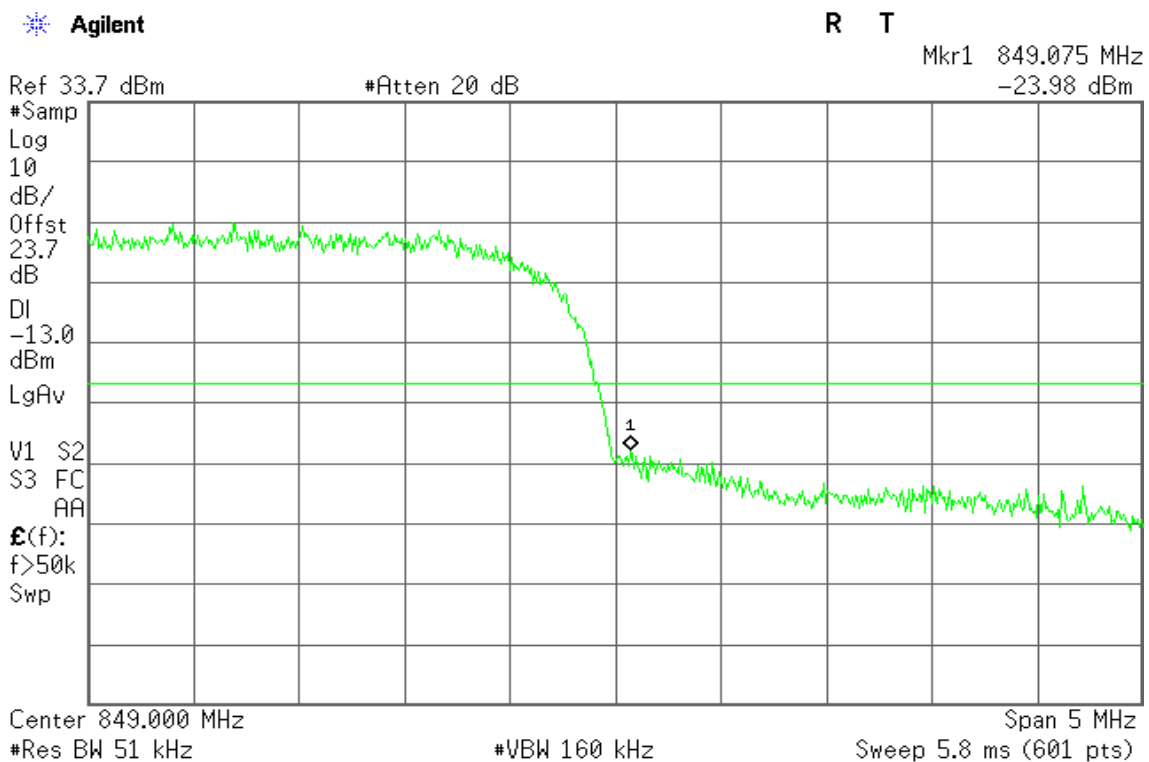


Figure 23-2: Band Edge emissions – HSDPA CH High





WCDMA / HSUPA Band II

Figure 24-1: Out of Band emission at antenna terminals – HSUPA CH Low

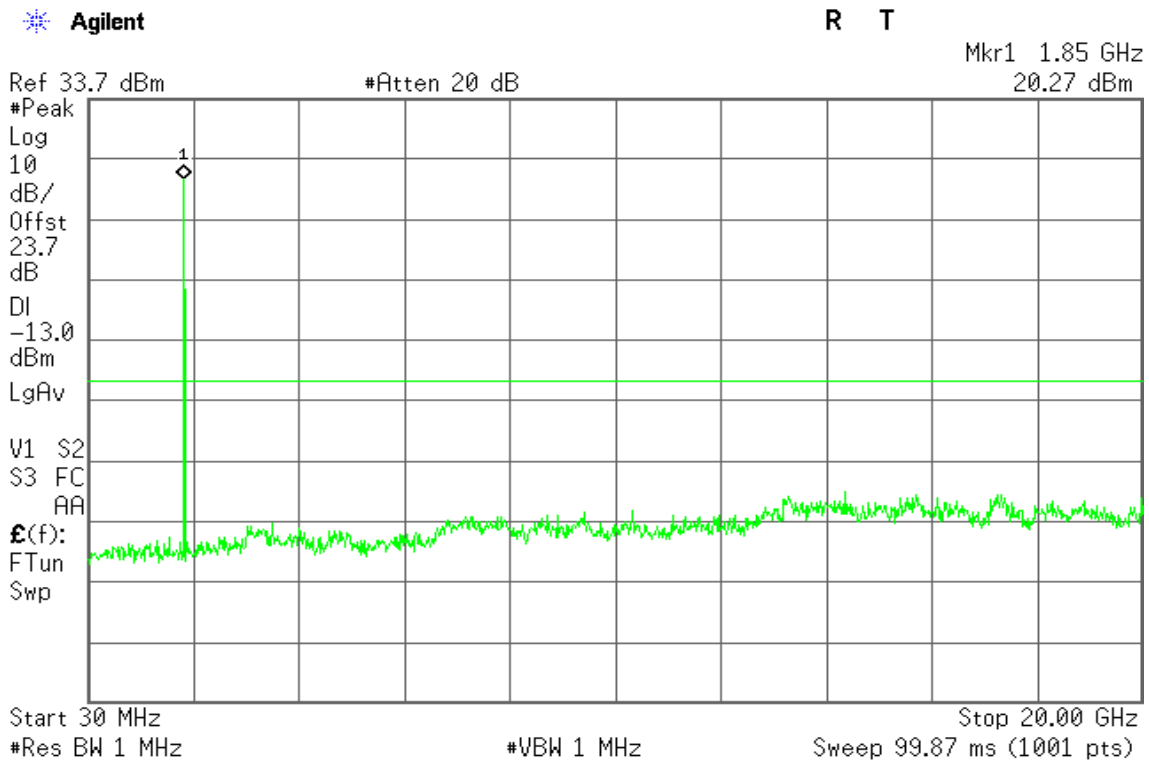


Figure 24-2: Out of Band emission at antenna terminals – HSUPA CH Mid

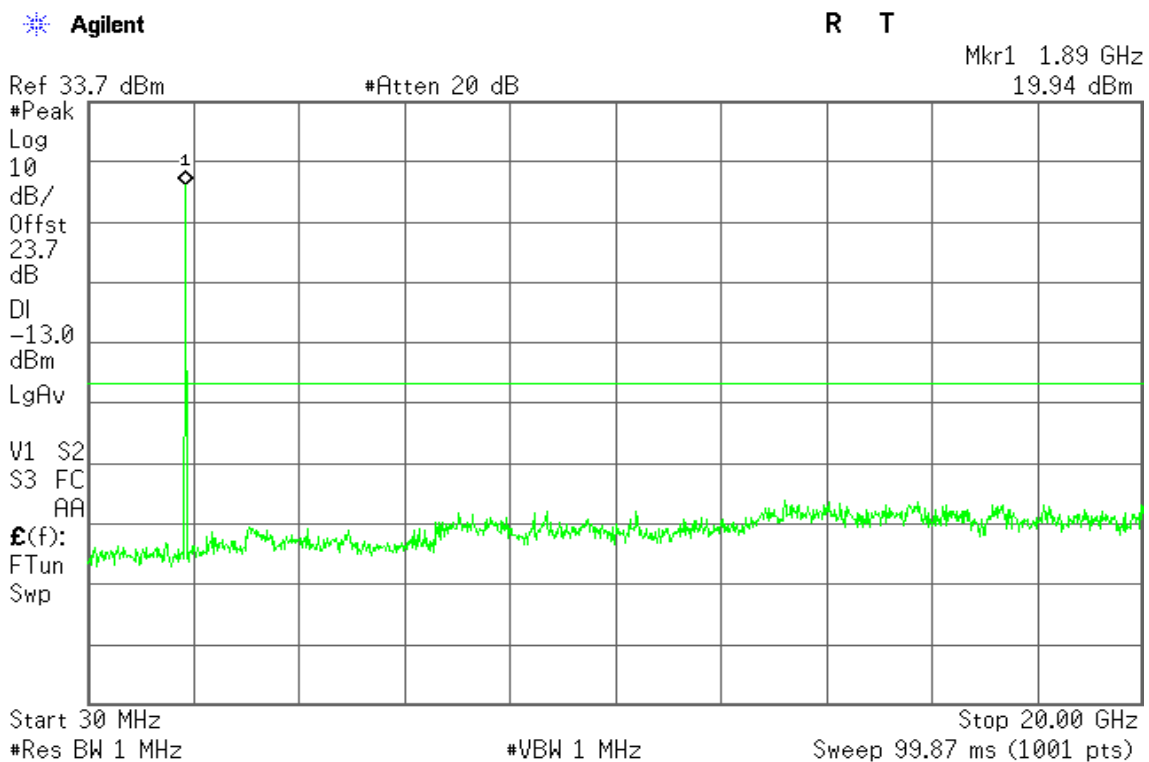
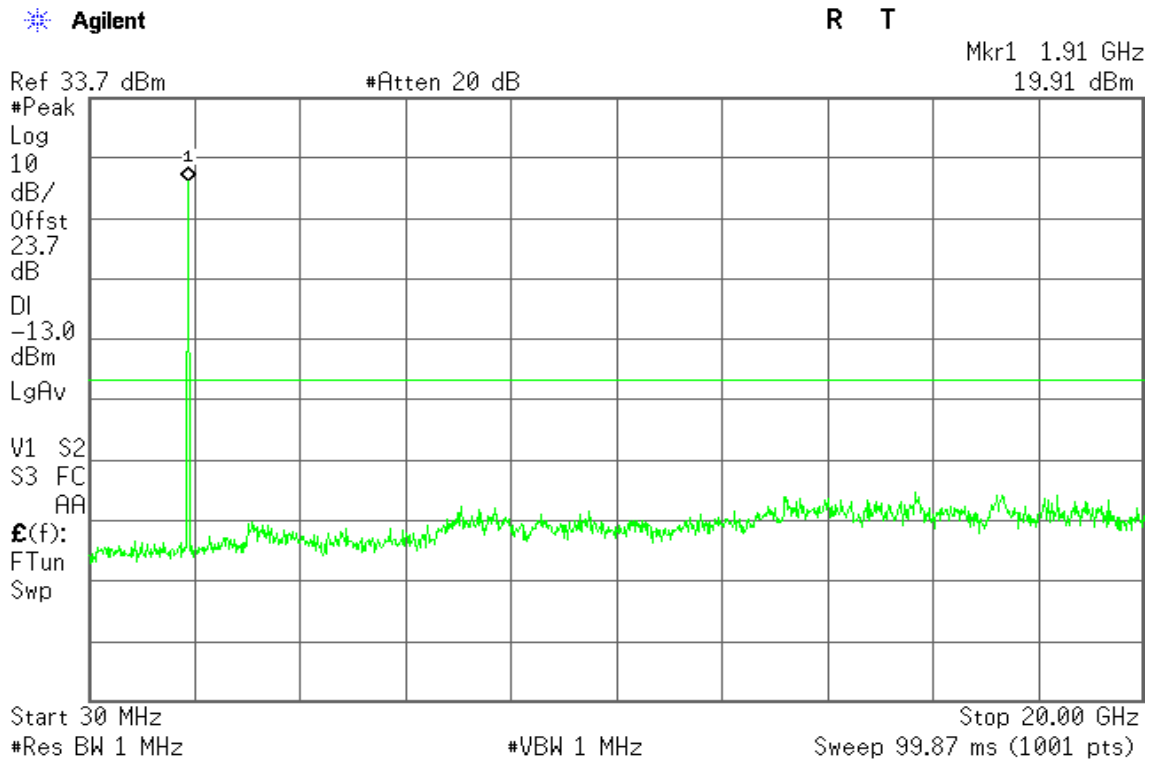




Figure 24-3: Out of Band emission at antenna terminals – HSUPA CH High





HSUPA / WCDMA Band V

Figure 25-1: Out of Band emission at antenna terminals – HSUPA CH Low

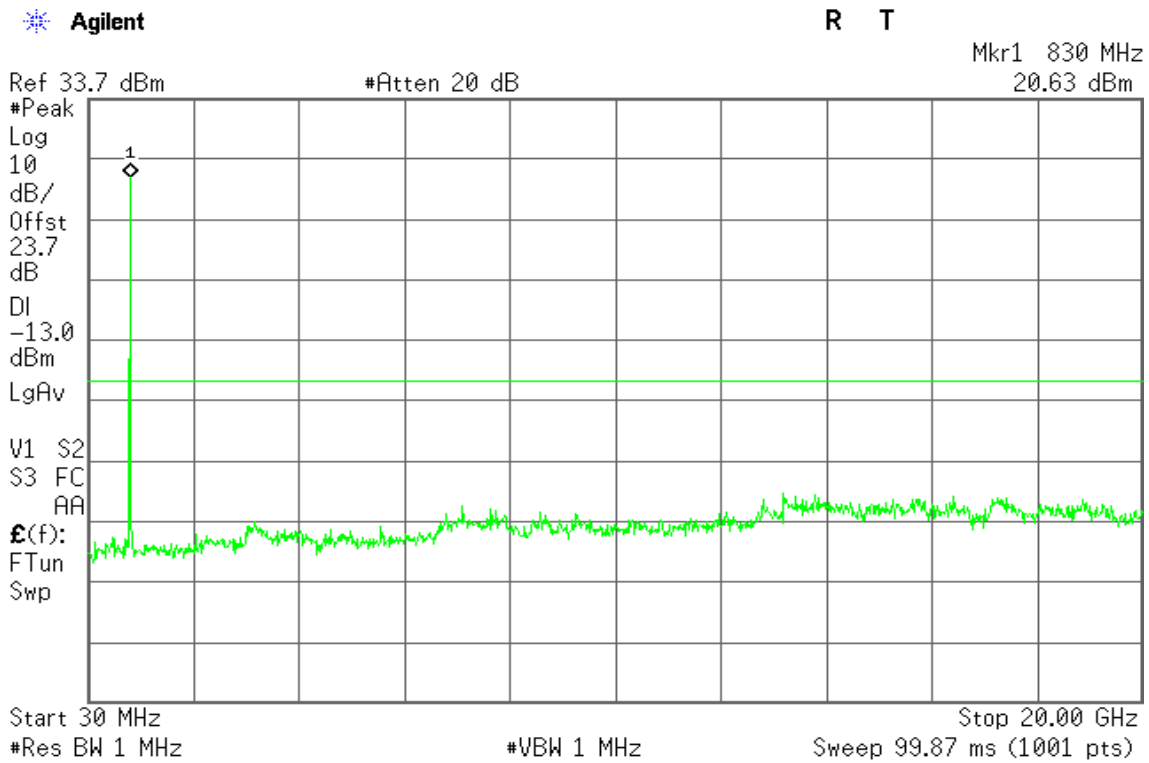


Figure 25-2: Out of Band emission at antenna terminals – HSUPA CH Mid

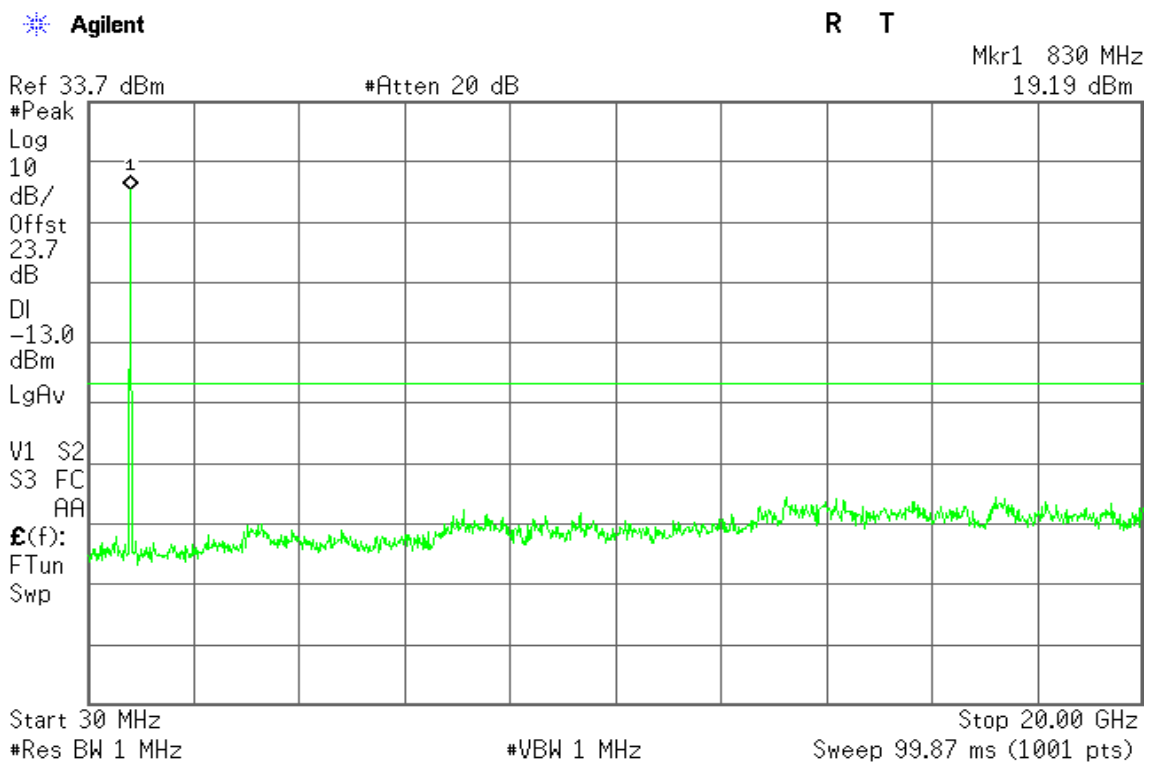
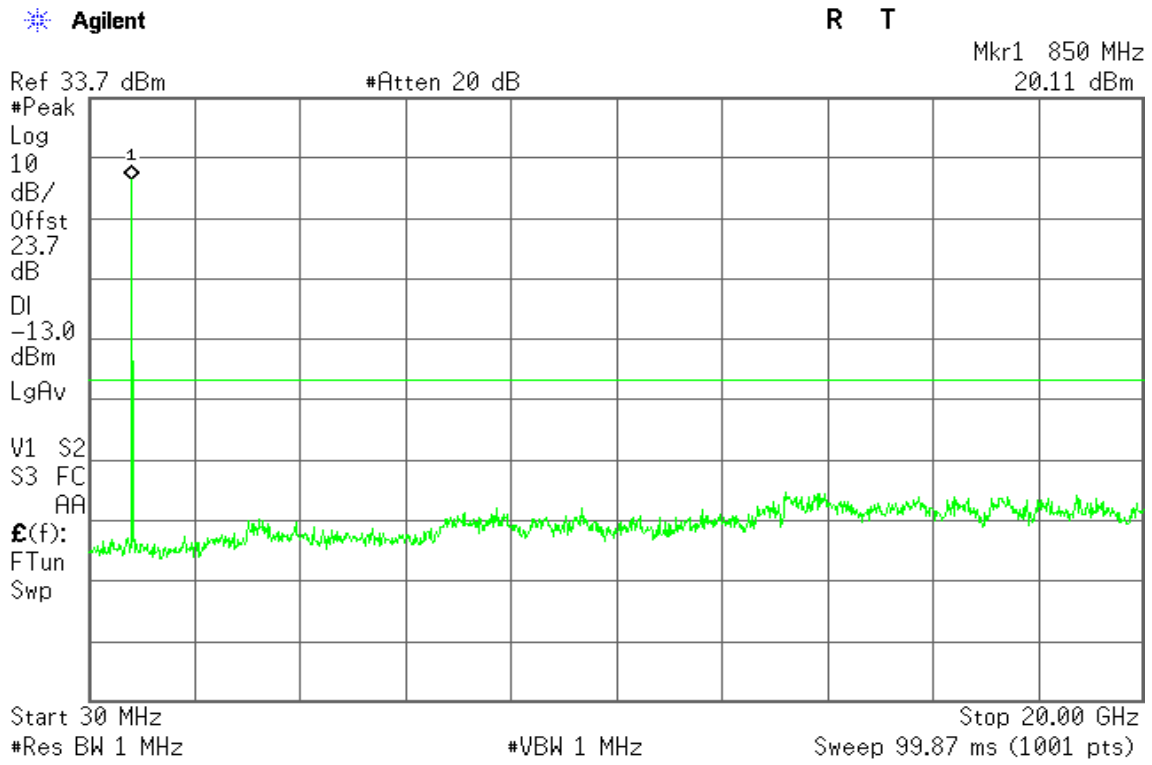




Figure 25-3: Out of Band emission at antenna terminals – HSUPA CH High





WCDMA / HSUPA Band II

Figure 26-1: Band Edge emissions – HSUPA CH Low

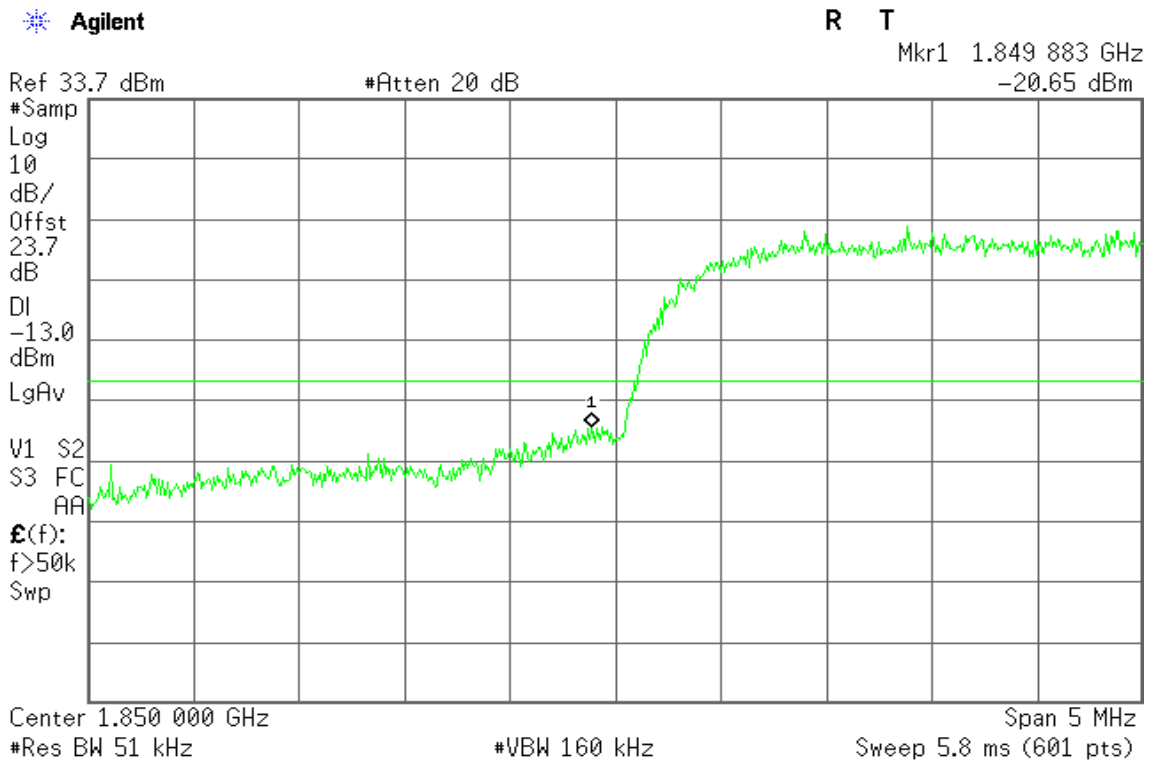
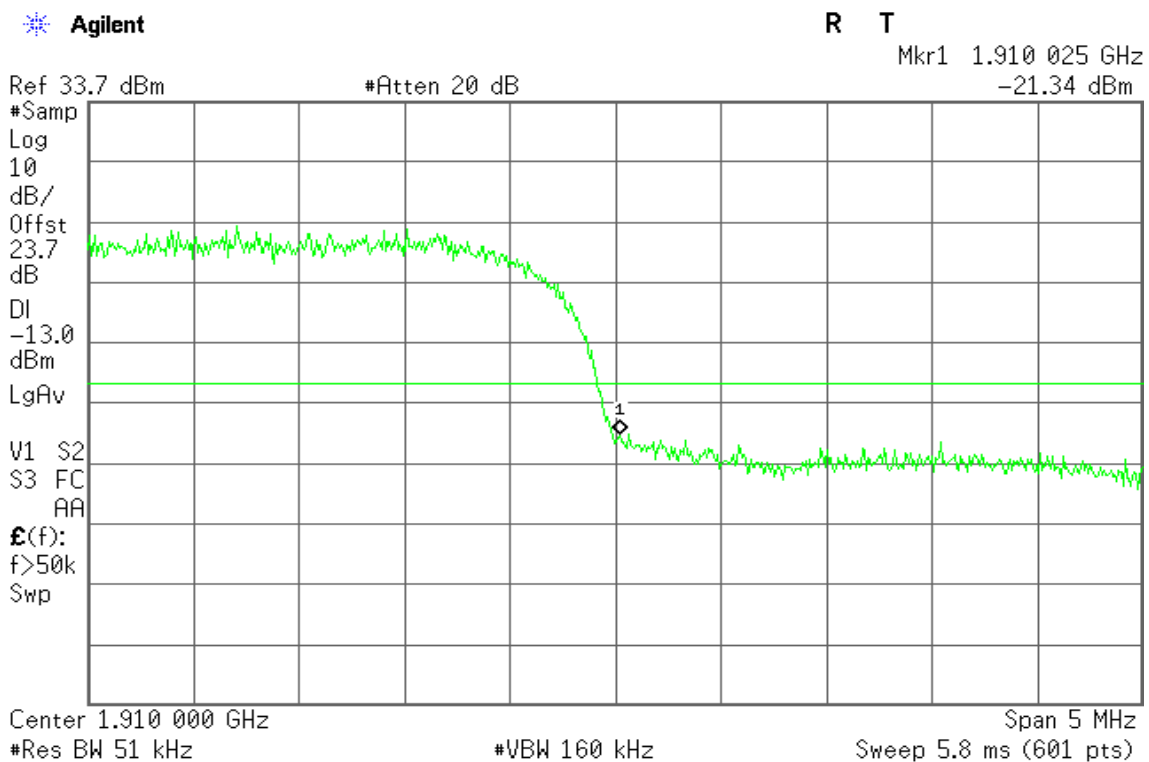


Figure 26-2: Band Edge emissions – HSUPA CH High





WCDMA / HSUPA Band V

Figure 27-1: Band Edge emissions – HSUPA CH Low

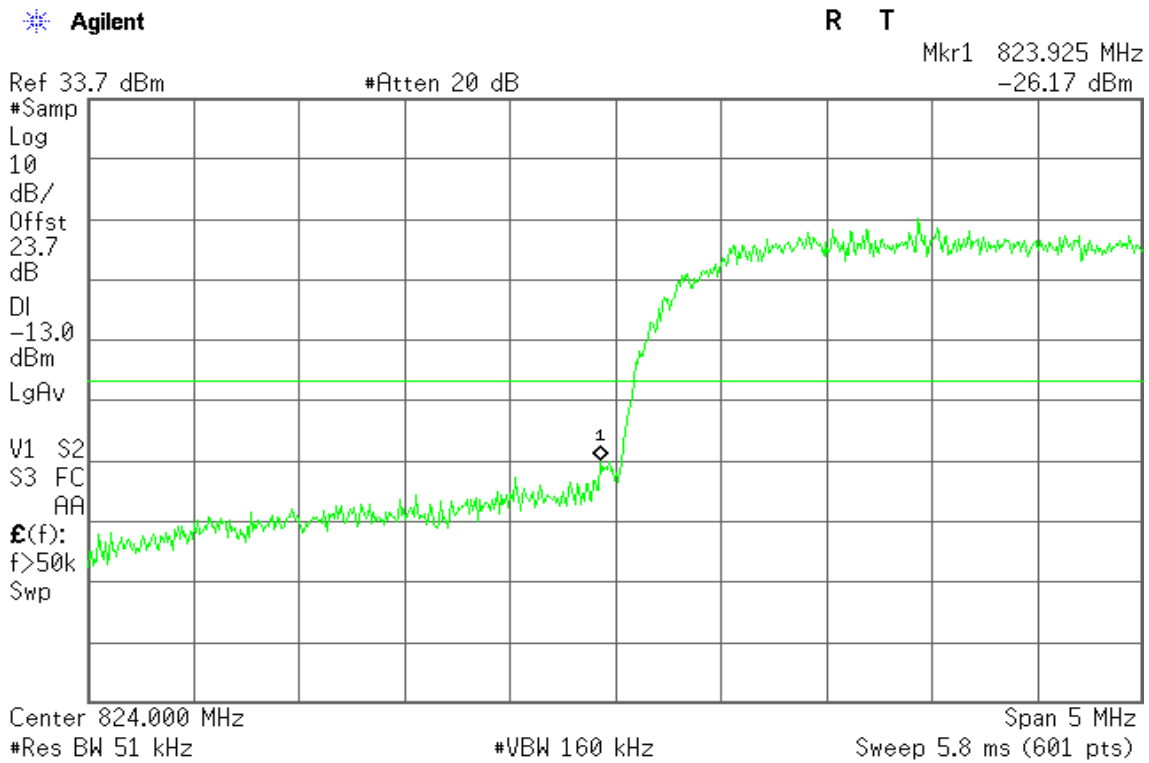
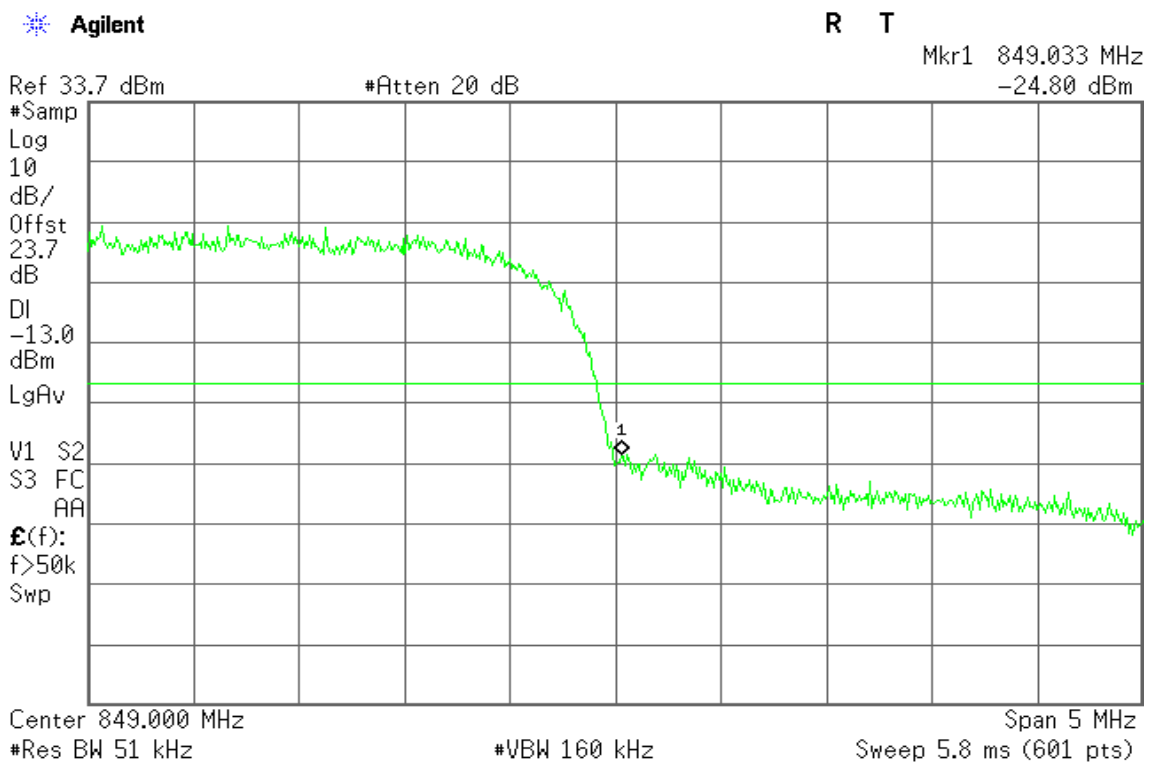


Figure 27-2: Band Edge emissions – HSUPA CH High





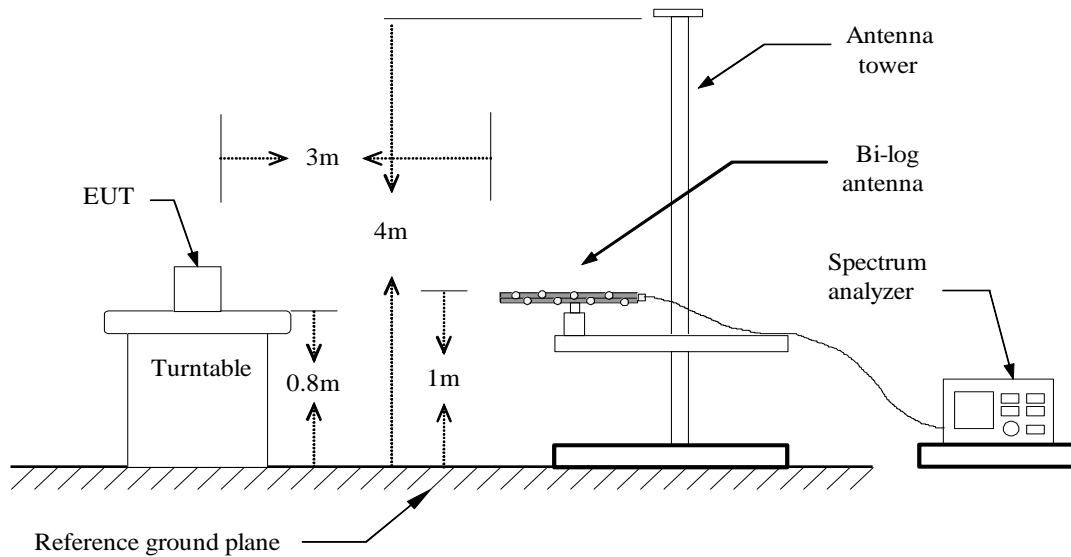
7.6 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

LIMIT

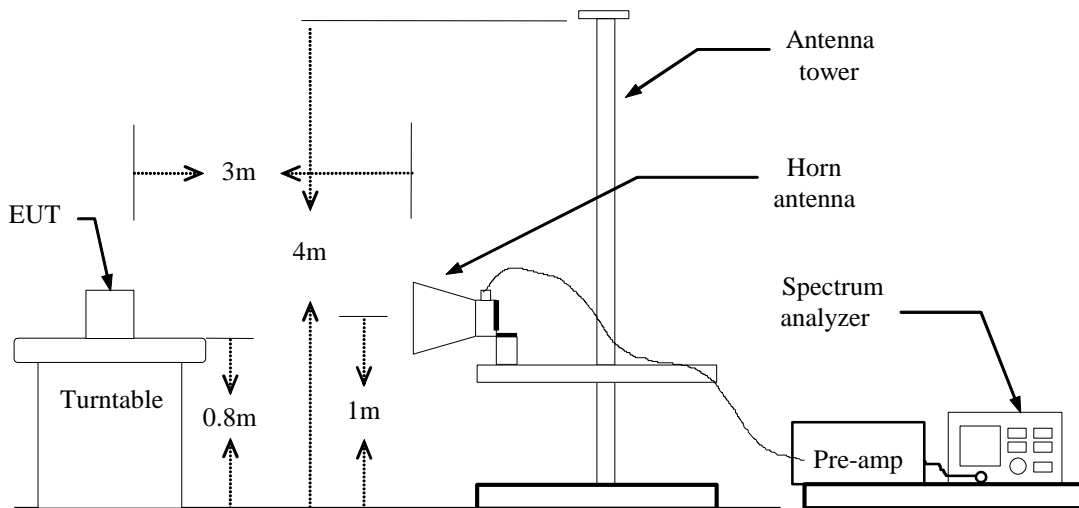
According to FCC §2.1053

Test Configuration

Below 1 GHz

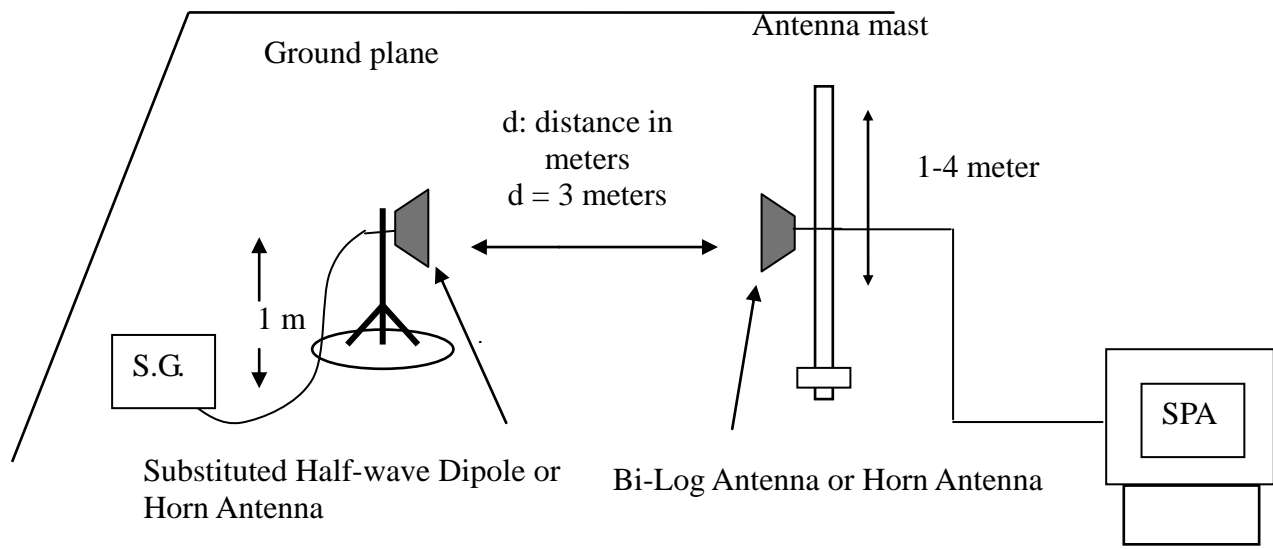


Above 1 GHz





Substituted Method Test Set-up



TEST PROCEDURE

The EUT was placed on a non-conductive, the measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission were identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

$$\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable (dB)}$$

$$\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)}$$

TEST RESULTS

Refer to the attached tabular data sheets.



Radiated Spurious Emission Measurement Result / Below 1GHz

Operation Mode: GPRS 850 / TX / CH 128

Test Date: December 23, 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)
144.4600	-70.58	1.41	0.17	-71.82	-13.00	-58.82	V
202.6600	-69.06	1.65	3.69	-67.02	-13.00	-54.02	V
250.1900	-65.94	1.84	5.68	-62.10	-13.00	-49.10	V
375.3200	-72.23	2.31	5.91	-68.63	-13.00	-55.63	V
524.7000	-75.17	2.73	6.05	-71.85	-13.00	-58.85	V
644.0100	-60.01	3.02	6.17	-56.86	-13.00	-43.86	V
148.3400	-62.65	1.42	0.53	-63.54	-13.00	-50.54	H
250.1900	-63.11	1.84	5.68	-59.27	-13.00	-46.27	H
375.3200	-66.82	2.31	5.91	-63.22	-13.00	-50.22	H
525.6700	-69.66	2.73	6.04	-66.35	-13.00	-53.35	H
582.9000	-59.78	2.89	6.06	-56.61	-13.00	-43.61	H
641.1000	-46.73	3.01	6.12	-43.62	-13.00	-30.62	H

Remark:

1. *The emission behaviour belongs to narrowband spurious emission.*
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: GPRS 850 / TX / CH 190

Test Date: December 23, 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)
142.5200	-69.84	1.4	-0.01	-71.25	-13.00	-58.25	V
250.1900	-66.07	1.84	5.68	-62.23	-13.00	-49.23	V
375.3200	-72.73	2.31	5.91	-69.13	-13.00	-56.13	V
524.7000	-72.15	2.73	6.05	-68.83	-13.00	-55.83	V
582.9000	-70.25	2.89	6.06	-67.08	-13.00	-54.08	V
641.1000	-55.28	3.01	6.12	-52.17	-13.00	-39.17	V
147.3700	-61.62	1.42	0.44	-62.60	-13.00	-49.60	H
250.1900	-60.81	1.84	5.68	-56.97	-13.00	-43.97	H
375.3200	-65.03	2.31	5.91	-61.43	-13.00	-48.43	H
525.6700	-63.92	2.73	6.04	-60.61	-13.00	-47.61	H
621.7000	-57.62	2.95	6.13	-54.44	-13.00	-41.44	H
642.0700	-47.31	3.01	6.14	-44.18	-13.00	-31.18	H

Remark:

1. *The emission behaviour belongs to narrowband spurious emission.*
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: GPRS 850 / TX / CH 251

Test Date: December 23, 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)
144.4600	-70.92	1.41	0.17	-72.16	-13.00	-59.16	V
250.1900	-66.19	1.84	5.68	-62.35	-13.00	-49.35	V
375.3200	-71.98	2.31	5.91	-68.38	-13.00	-55.38	V
524.7000	-76.9	2.73	6.05	-73.58	-13.00	-60.58	V
583.8700	-67.32	2.89	6.08	-64.13	-13.00	-51.13	V
642.0700	-61.56	3.01	6.14	-58.43	-13.00	-45.43	V
142.5200	-62.02	1.4	-0.01	-63.43	-13.00	-50.43	H
239.5200	-61.64	1.81	5.35	-58.10	-13.00	-45.10	H
375.3200	-66.66	2.31	5.91	-63.06	-13.00	-50.06	H
524.7000	-62.92	2.73	6.05	-59.60	-13.00	-46.60	H
582.9000	-62.52	2.89	6.06	-59.35	-13.00	-46.35	H
641.1000	-45.44	3.01	6.12	-42.33	-13.00	-29.33	H

Remark:

1. *The emission behaviour belongs to narrowband spurious emission.*
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: GPRS 1900 / TX / CH 512

Test Date: December 23, 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)
144.4600	-67.92	1.41	0.17	-69.16	-13.00	-56.16	V
250.1900	-64.95	1.84	5.68	-61.11	-13.00	-48.11	V
375.3200	-72.19	2.31	5.91	-68.59	-13.00	-55.59	V
587.7500	-69.48	2.89	6.15	-66.22	-13.00	-53.22	V
641.1000	-55.65	3.01	6.12	-52.54	-13.00	-39.54	V
816.6700	-70.98	3.37	6.2	-68.15	-13.00	-55.15	V
58.1300	-66.02	0.86	-2.51	-69.39	-13.00	-56.39	H
250.1900	-62.27	1.84	5.68	-58.43	-13.00	-45.43	H
375.3200	-64.34	2.31	5.91	-60.74	-13.00	-47.74	H
641.1000	-42.18	3.01	6.12	-39.07	-13.00	-26.07	H
700.2700	-54	3.11	6.39	-50.72	-13.00	-37.72	H
816.6700	-62.02	3.37	6.2	-59.19	-13.00	-46.19	H

Remark:

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



Operation Mode: GPRS 1900 / TX / CH 661

Test Date: December 23, 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)
204.6000	-68.7	1.65	4.2	-66.15	-13.00	-53.15	V
250.1900	-65.18	1.84	5.68	-61.34	-13.00	-48.34	V
375.3200	-72.39	2.31	5.91	-68.79	-13.00	-55.79	V
466.5000	-74.75	2.61	5.82	-71.54	-13.00	-58.54	V
641.1000	-58.73	3.01	6.12	-55.62	-13.00	-42.62	V
816.6700	-67.72	3.37	6.2	-64.89	-13.00	-51.89	V
135.7300	-57.07	1.37	-0.72	-59.16	-13.00	-46.16	H
250.1900	-60.34	1.84	5.68	-56.50	-13.00	-43.50	H
375.3200	-63.28	2.31	5.91	-59.68	-13.00	-46.68	H
524.7000	-63.02	2.73	6.05	-59.70	-13.00	-46.70	H
642.0700	-45.1	3.01	6.14	-41.97	-13.00	-28.97	H
816.6700	-62.49	3.37	6.2	-59.66	-13.00	-46.66	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: GPRS 1900 / TX / CH 810

Test Date: December 23, 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)
58.1300	-66.79	0.86	-2.51	-70.16	-13.00	-57.16	V
250.1900	-64.54	1.84	5.68	-60.70	-13.00	-47.70	V
375.3200	-71.85	2.31	5.91	-68.25	-13.00	-55.25	V
524.7000	-72.66	2.73	6.05	-69.34	-13.00	-56.34	V
641.1000	-54.72	3.01	6.12	-51.61	-13.00	-38.61	V
816.6700	-68.45	3.37	6.2	-65.62	-13.00	-52.62	V
141.5500	-58.05	1.4	-0.1	-59.55	-13.00	-46.55	H
250.1900	-59.23	1.84	5.68	-55.39	-13.00	-42.39	H
375.3200	-62.15	2.31	5.91	-58.55	-13.00	-45.55	H
582.9000	-57.03	2.89	6.06	-53.86	-13.00	-40.86	H
641.1000	-40.63	3.01	6.12	-37.52	-13.00	-24.52	H
816.6700	-59.31	3.37	6.2	-56.48	-13.00	-43.48	H

Remark:

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



Operation Mode: EDGE 850 / TX / CH 128

Test Date: December 23, 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)
141.5500	-70.1	1.4	-0.1	-71.60	-13.00	-58.60	V
250.1900	-66.01	1.84	5.68	-62.17	-13.00	-49.17	V
375.3200	-72.33	2.31	5.91	-68.73	-13.00	-55.73	V
466.5000	-77.81	2.61	5.82	-74.60	-13.00	-61.60	V
524.7000	-77.37	2.73	6.05	-74.05	-13.00	-61.05	V
641.1000	-61.64	3.01	6.12	-58.53	-13.00	-45.53	V
140.5800	-61.97	1.39	-0.19	-63.55	-13.00	-50.55	H
240.4900	-61.81	1.81	5.34	-58.28	-13.00	-45.28	H
375.3200	-66.48	2.31	5.91	-62.88	-13.00	-49.88	H
524.7000	-63.99	2.73	6.05	-60.67	-13.00	-47.67	H
583.8700	-61.76	2.89	6.08	-58.57	-13.00	-45.57	H
642.0700	-47.12	3.01	6.14	-43.99	-13.00	-30.99	H

Remark:

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



Operation Mode: EDGE 850 / TX / CH 190

Test Date: December 23, 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)
141.5500	-69.95	1.4	-0.1	-71.45	-13.00	-58.45	V
250.1900	-66.01	1.84	5.68	-62.17	-13.00	-49.17	V
375.3200	-72.56	2.31	5.91	-68.96	-13.00	-55.96	V
524.7000	-77.1	2.73	6.05	-73.78	-13.00	-60.78	V
583.8700	-70.72	2.89	6.08	-67.53	-13.00	-54.53	V
641.1000	-59.48	3.01	6.12	-56.37	-13.00	-43.37	V
141.5500	-61.82	1.4	-0.1	-63.32	-13.00	-50.32	H
241.4600	-61.77	1.81	5.36	-58.22	-13.00	-45.22	H
375.3200	-65.91	2.31	5.91	-62.31	-13.00	-49.31	H
524.7000	-61.86	2.73	6.05	-58.54	-13.00	-45.54	H
583.8700	-56.9	2.89	6.08	-53.71	-13.00	-40.71	H
641.1000	-43.63	3.01	6.12	-40.52	-13.00	-27.52	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: EDGE 850 / TX / CH 251

Test Date: December 23, 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)
140.5800	-69.9	1.39	-0.19	-71.48	-13.00	-58.48	V
250.1900	-66.07	1.84	5.68	-62.23	-13.00	-49.23	V
375.3200	-72.42	2.31	5.91	-68.82	-13.00	-55.82	V
524.7000	-71.47	2.73	6.05	-68.15	-13.00	-55.15	V
583.8700	-71.27	2.89	6.08	-68.08	-13.00	-55.08	V
641.1000	-55.33	3.01	6.12	-52.22	-13.00	-39.22	V
143.4900	-61.66	1.4	0.08	-62.98	-13.00	-49.98	H
238.5500	-62.74	1.81	5.35	-59.20	-13.00	-46.20	H
375.3200	-65.89	2.31	5.91	-62.29	-13.00	-49.29	H
524.7000	-67.16	2.73	6.05	-63.84	-13.00	-50.84	H
582.9000	-63.73	2.89	6.06	-60.56	-13.00	-47.56	H
644.0100	-51.13	3.02	6.17	-47.98	-13.00	-34.98	H

Remark:

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



Operation Mode: EDGE 1900 / TX / CH 512

Test Date: December 23, 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)
139.6100	-69.57	1.39	-0.28	-71.24	-13.00	-58.24	V
250.1900	-65.19	1.84	5.68	-61.35	-13.00	-48.35	V
375.3200	-72.72	2.31	5.91	-69.12	-13.00	-56.12	V
582.9000	-70.54	2.89	6.06	-67.37	-13.00	-54.37	V
642.0700	-60.21	3.01	6.14	-57.08	-13.00	-44.08	V
758.4700	-73.08	3.22	6.27	-70.03	-13.00	-57.03	V
140.5800	-61.62	1.39	-0.19	-63.20	-13.00	-50.20	H
250.1900	-63.76	1.84	5.68	-59.92	-13.00	-46.92	H
375.3200	-66.46	2.31	5.91	-62.86	-13.00	-49.86	H
583.8700	-59.64	2.89	6.08	-56.45	-13.00	-43.45	H
641.1000	-45.26	3.01	6.12	-42.15	-13.00	-29.15	H
816.6700	-60.85	3.37	6.2	-58.02	-13.00	-45.02	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: EDGE 1900 / TX / CH 661

Test Date: December 23, 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)
202.6600	-68.38	1.65	3.69	-66.34	-13.00	-53.34	V
250.1900	-65.51	1.84	5.68	-61.67	-13.00	-48.67	V
375.3200	-72.86	2.31	5.91	-69.26	-13.00	-56.26	V
524.7000	-69.51	2.73	6.05	-66.19	-13.00	-53.19	V
643.0400	-61.97	3.01	6.16	-58.82	-13.00	-45.82	V
874.8700	-74.29	3.45	6.6	-71.14	-13.00	-58.14	V
139.6100	-61.31	1.39	-0.28	-62.98	-13.00	-49.98	H
250.1900	-63.62	1.84	5.68	-59.78	-13.00	-46.78	H
375.3200	-66.24	2.31	5.91	-62.64	-13.00	-49.64	H
524.7000	-66.07	2.73	6.05	-62.75	-13.00	-49.75	H
641.1000	-44.35	3.01	6.12	-41.24	-13.00	-28.24	H
816.6700	-61.14	3.37	6.2	-58.31	-13.00	-45.31	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: EDGE 1900 / TX / CH 810

Test Date: December 23, 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)
137.6700	-69.79	1.38	-0.49	-71.66	-13.00	-58.66	V
202.6600	-68.41	1.65	3.69	-66.37	-13.00	-53.37	V
250.1900	-65.27	1.84	5.68	-61.43	-13.00	-48.43	V
408.3000	-76.69	2.44	5.92	-73.21	-13.00	-60.21	V
641.1000	-60.3	3.01	6.12	-57.19	-13.00	-44.19	V
758.4700	-69.96	3.22	6.27	-66.91	-13.00	-53.91	V
143.4900	-62.02	1.4	0.08	-63.34	-13.00	-50.34	H
250.1900	-63.94	1.84	5.68	-60.10	-13.00	-47.10	H
375.3200	-66.59	2.31	5.91	-62.99	-13.00	-49.99	H
524.7000	-66.28	2.73	6.05	-62.96	-13.00	-49.96	H
640.1300	-49.21	3.01	6.13	-46.09	-13.00	-33.09	H
815.7000	-63.61	3.37	6.2	-60.78	-13.00	-47.78	H

Remark:

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



Operation Mode: WCDMA Band II / TX / CH 9262

Test Date: January 12, 2015

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)
55.2200	-67.85	0.84	-3.37	-72.06	-13.00	-59.06	V
202.6600	-67.25	1.65	3.69	-65.21	-13.00	-52.21	V
375.3200	-71.48	2.31	5.91	-67.88	-13.00	-54.88	V
466.5000	-80.67	2.61	5.82	-77.46	-13.00	-64.46	V
582.9000	-73.82	2.89	6.06	-70.65	-13.00	-57.65	V
643.0400	-72.03	3.01	6.16	-68.88	-13.00	-55.88	V
140.5800	-62.56	1.39	-0.19	-64.14	-13.00	-51.14	H
240.4900	-63.32	1.81	5.34	-59.79	-13.00	-46.79	H
375.3200	-64.14	2.31	5.91	-60.54	-13.00	-47.54	H
582.9000	-63.32	2.89	6.06	-60.15	-13.00	-47.15	H
624.6100	-67.69	2.96	6.15	-64.50	-13.00	-51.50	H
729.3700	-76.68	3.18	6.4	-73.46	-13.00	-60.46	H

Remark:

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



Operation Mode: WCDMA Band II / TX / CH 9400

Test Date: January 12, 2015

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)
55.2200	-68.6	0.84	-3.37	-72.81	-13.00	-59.81	V
192.9600	-73.81	1.62	3.68	-71.75	-13.00	-58.75	V
250.1900	-69.2	1.84	5.68	-65.36	-13.00	-52.36	V
375.3200	-71.53	2.31	5.91	-67.93	-13.00	-54.93	V
583.8700	-69.82	2.89	6.08	-66.63	-13.00	-53.63	V
641.1000	-72.11	3.01	6.12	-69.00	-13.00	-56.00	V
113.4200	-69.62	1.23	-1.84	-72.69	-13.00	-59.69	H
144.4600	-62.85	1.41	0.17	-64.09	-13.00	-51.09	H
250.1900	-61.36	1.84	5.68	-57.52	-13.00	-44.52	H
375.3200	-63.8	2.31	5.91	-60.20	-13.00	-47.20	H
583.8700	-64.64	2.89	6.08	-61.45	-13.00	-48.45	H
641.1000	-72.11	3.01	6.12	-69.00	-13.00	-56.00	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: WCDMA Band II / TX / CH 9538

Test Date: January 12, 2015

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)
55.2200	-67.72	0.84	-3.37	-71.93	-13.00	-58.93	V
201.6900	-67.17	1.64	3.44	-65.37	-13.00	-52.37	V
250.1900	-68.88	1.84	5.68	-65.04	-13.00	-52.04	V
375.3200	-71.78	2.31	5.91	-68.18	-13.00	-55.18	V
583.8700	-69.28	2.89	6.08	-66.09	-13.00	-53.09	V
624.6100	-72.87	2.96	6.15	-69.68	-13.00	-56.68	V
145.4300	-62.45	1.41	0.26	-63.60	-13.00	-50.60	H
240.4900	-63.69	1.81	5.34	-60.16	-13.00	-47.16	H
375.3200	-64.03	2.31	5.91	-60.43	-13.00	-47.43	H
582.9000	-62.99	2.89	6.06	-59.82	-13.00	-46.82	H
624.6100	-67.96	2.96	6.15	-64.77	-13.00	-51.77	H
767.2000	-75.96	3.26	6.37	-72.85	-13.00	-59.85	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: WCDMA Band V / TX / CH 4132

Test Date: January 12, 2015

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)
53.2800	-66.31	0.83	-3.94	-71.08	-13.00	-58.08	V
202.6600	-67.76	1.65	3.69	-65.72	-13.00	-52.72	V
250.1900	-69.21	1.84	5.68	-65.37	-13.00	-52.37	V
375.3200	-71.97	2.31	5.91	-68.37	-13.00	-55.37	V
525.6700	-77.86	2.73	6.04	-74.55	-13.00	-61.55	V
583.8700	-73.34	2.89	6.08	-70.15	-13.00	-57.15	V
147.3700	-63.2	1.42	0.44	-64.18	-13.00	-51.18	H
250.1900	-61.36	1.84	5.68	-57.52	-13.00	-44.52	H
375.3200	-64.3	2.31	5.91	-60.70	-13.00	-47.70	H
475.2300	-78.06	2.63	5.65	-75.04	-13.00	-62.04	H
582.9000	-64.82	2.89	6.06	-61.65	-13.00	-48.65	H
624.6100	-68.07	2.96	6.15	-64.88	-13.00	-51.88	H

Remark:

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



Operation Mode: WCDMA Band V / TX / CH 4182

Test Date: January 12, 2015

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)
57.1600	-67.74	0.86	-2.8	-71.40	-13.00	-58.40	V
202.6600	-67.24	1.65	3.69	-65.20	-13.00	-52.20	V
250.1900	-69.1	1.84	5.68	-65.26	-13.00	-52.26	V
375.3200	-71.71	2.31	5.91	-68.11	-13.00	-55.11	V
582.9000	-72.16	2.89	6.06	-68.99	-13.00	-55.99	V
624.6100	-73.66	2.96	6.15	-70.47	-13.00	-57.47	V
143.4900	-62.17	1.4	0.08	-63.49	-13.00	-50.49	H
250.1900	-61.71	1.84	5.68	-57.87	-13.00	-44.87	H
375.3200	-63.13	2.31	5.91	-59.53	-13.00	-46.53	H
575.1400	-71.94	2.88	6.06	-68.76	-13.00	-55.76	H
583.8700	-65.35	2.89	6.08	-62.16	-13.00	-49.16	H
624.6100	-68	2.96	6.15	-64.81	-13.00	-51.81	H

Remark:

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



Operation Mode: WCDMA Band V / TX / CH 4233

Test Date: January 12, 2015

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)
140.5800	-71.04	1.39	-0.19	-72.62	-13.00	-59.62	V
204.6000	-67.68	1.65	4.2	-65.13	-13.00	-52.13	V
250.1900	-69.23	1.84	5.68	-65.39	-13.00	-52.39	V
375.3200	-71.85	2.31	5.91	-68.25	-13.00	-55.25	V
582.9000	-68.96	2.89	6.06	-65.79	-13.00	-52.79	V
624.6100	-74.07	2.96	6.15	-70.88	-13.00	-57.88	V
149.3100	-62.61	1.42	0.62	-63.41	-13.00	-50.41	H
250.1900	-61.57	1.84	5.68	-57.73	-13.00	-44.73	H
375.3200	-63.99	2.31	5.91	-60.39	-13.00	-47.39	H
586.7800	-65.11	2.89	6.13	-61.87	-13.00	-48.87	H
624.6100	-67.73	2.96	6.15	-64.54	-13.00	-51.54	H
771.0800	-76.08	3.27	6.35	-73.00	-13.00	-60.00	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: WCDMA / HSDPA Band II /
TX / CH 9262

Test Date: January 12, 2015

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)
56.1900	-67.82	0.85	-3.09	-71.76	-13.00	-58.76	V
201.6900	-67.44	1.64	3.44	-65.64	-13.00	-52.64	V
250.1900	-69.05	1.84	5.68	-65.21	-13.00	-52.21	V
375.3200	-71.4	2.31	5.91	-67.80	-13.00	-54.80	V
582.9000	-68.92	2.89	6.06	-65.75	-13.00	-52.75	V
624.6100	-73.39	2.96	6.15	-70.20	-13.00	-57.20	V
146.4000	-63.45	1.41	0.35	-64.51	-13.00	-51.51	H
250.1900	-61.54	1.84	5.68	-57.70	-13.00	-44.70	H
375.3200	-64.02	2.31	5.91	-60.42	-13.00	-47.42	H
582.9000	-65.45	2.89	6.06	-62.28	-13.00	-49.28	H
624.6100	-67.91	2.96	6.15	-64.72	-13.00	-51.72	H
780.7800	-75.1	3.3	6.12	-72.28	-13.00	-59.28	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: WCDMA / HSDPA Band II /
TX / CH 9400

Test Date: January 12, 2015

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)
55.2200	-68.25	0.84	-3.37	-72.46	-13.00	-59.46	V
143.4900	-72.13	1.4	0.08	-73.45	-13.00	-60.45	V
202.6600	-67.3	1.65	3.69	-65.26	-13.00	-52.26	V
250.1900	-69.42	1.84	5.68	-65.58	-13.00	-52.58	V
375.3200	-72.01	2.31	5.91	-68.41	-13.00	-55.41	V
582.9000	-71.46	2.89	6.06	-68.29	-13.00	-55.29	V
135.7300	-63.24	1.37	-0.72	-65.33	-13.00	-52.33	H
250.1900	-61.89	1.84	5.68	-58.05	-13.00	-45.05	H
375.3200	-64.21	2.31	5.91	-60.61	-13.00	-47.61	H
500.4500	-76.31	2.7	5.9	-73.11	-13.00	-60.11	H
582.9000	-63.23	2.89	6.06	-60.06	-13.00	-47.06	H
624.6100	-68.03	2.96	6.15	-64.84	-13.00	-51.84	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.



Operation Mode: WCDMA / HSDPA Band II /
TX / CH 9538

Test Date: January 12, 2015

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)
55.2200	-66.97	0.84	-3.37	-71.18	-13.00	-58.18	V
202.6600	-67.5	1.65	3.69	-65.46	-13.00	-52.46	V
262.8000	-75.19	1.93	5.46	-71.66	-13.00	-58.66	V
375.3200	-71.63	2.31	5.91	-68.03	-13.00	-55.03	V
525.6700	-78.42	2.73	6.04	-75.11	-13.00	-62.11	V
583.8700	-69.87	2.89	6.08	-66.68	-13.00	-53.68	V
144.4600	-63	1.41	0.17	-64.24	-13.00	-51.24	H
250.1900	-61.5	1.84	5.68	-57.66	-13.00	-44.66	H
375.3200	-64.41	2.31	5.91	-60.81	-13.00	-47.81	H
589.6900	-67.08	2.89	6.19	-63.78	-13.00	-50.78	H
624.6100	-67.97	2.96	6.15	-64.78	-13.00	-51.78	H
641.1000	-75.03	3.01	6.12	-71.92	-13.00	-58.92	H

Remark:

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



Operation Mode: WCDMA / HSDPA Band V /
TX / CH 4132

Test Date: January 12, 2015

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)
144.4600	-69.76	1.41	0.17	-71.00	-13.00	-58.00	V
202.6600	-67.24	1.65	3.69	-65.20	-13.00	-52.20	V
250.1900	-69	1.84	5.68	-65.16	-13.00	-52.16	V
375.3200	-71.39	2.31	5.91	-67.79	-13.00	-54.79	V
582.9000	-70.52	2.89	6.06	-67.35	-13.00	-54.35	V
641.1000	-72.72	3.01	6.12	-69.61	-13.00	-56.61	V
139.6100	-61.69	1.39	-0.28	-63.36	-13.00	-50.36	H
250.1900	-61.59	1.84	5.68	-57.75	-13.00	-44.75	H
375.3200	-64.05	2.31	5.91	-60.45	-13.00	-47.45	H
424.7900	-78.54	2.47	5.8	-75.21	-13.00	-62.21	H
582.9000	-66.16	2.89	6.06	-62.99	-13.00	-49.99	H
624.6100	-68.06	2.96	6.15	-64.87	-13.00	-51.87	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: WCDMA / HSDPA Band V /
TX / CH 4182

Test Date: January 12, 2015

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)
57.1600	-67.22	0.86	-2.8	-70.88	-13.00	-57.88	V
203.6300	-67.28	1.65	3.94	-64.99	-13.00	-51.99	V
250.1900	-68.93	1.84	5.68	-65.09	-13.00	-52.09	V
375.3200	-71.2	2.31	5.91	-67.60	-13.00	-54.60	V
523.7300	-75.29	2.72	6.06	-71.95	-13.00	-58.95	V
582.9000	-70.93	2.89	6.06	-67.76	-13.00	-54.76	V
142.5200	-61.79	1.4	-0.01	-63.20	-13.00	-50.20	H
203.6300	-62.28	1.65	3.94	-59.99	-13.00	-46.99	H
250.1900	-61.26	1.84	5.68	-57.42	-13.00	-44.42	H
375.3200	-62.6	2.31	5.91	-59.00	-13.00	-46.00	H
466.5000	-76.66	2.61	5.82	-73.45	-13.00	-60.45	H
582.9000	-63.22	2.89	6.06	-60.05	-13.00	-47.05	H

Remark:

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



Operation Mode: WCDMA / HSDPA Band V /
TX / CH 4233

Test Date: January 12, 2015

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)
53.2800	-66.01	0.83	-3.94	-70.78	-13.00	-57.78	V
202.6600	-67.31	1.65	3.69	-65.27	-13.00	-52.27	V
250.1900	-69.29	1.84	5.68	-65.45	-13.00	-52.45	V
375.3200	-71.87	2.31	5.91	-68.27	-13.00	-55.27	V
415.0900	-79.94	2.45	5.86	-76.53	-13.00	-63.53	V
582.9000	-73.45	2.89	6.06	-70.28	-13.00	-57.28	V
148.3400	-62.57	1.42	0.53	-63.46	-13.00	-50.46	H
250.1900	-61.57	1.84	5.68	-57.73	-13.00	-44.73	H
375.3200	-63.76	2.31	5.91	-60.16	-13.00	-47.16	H
399.5700	-77.68	2.39	5.98	-74.09	-13.00	-61.09	H
515.9700	-76.21	2.7	6.06	-72.85	-13.00	-59.85	H
583.8700	-65.4	2.89	6.08	-62.21	-13.00	-49.21	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.



Operation Mode: WCDMA / HSUPA Band II /
TX / CH 9262

Test Date: January 12, 2015

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)
125.0600	-73.02	1.31	-1.75	-76.08	-13.00	-63.08	V
250.1900	-68.51	1.84	5.68	-64.67	-13.00	-51.67	V
375.3200	-71.53	2.31	5.91	-67.93	-13.00	-54.93	V
525.6700	-75.45	2.73	6.04	-72.14	-13.00	-59.14	V
582.9000	-71.69	2.89	6.06	-68.52	-13.00	-55.52	V
624.6100	-72.96	2.96	6.15	-69.77	-13.00	-56.77	V
146.4000	-63.7	1.41	0.35	-64.76	-13.00	-51.76	H
202.6600	-63.19	1.65	3.69	-61.15	-13.00	-48.15	H
250.1900	-61.95	1.84	5.68	-58.11	-13.00	-45.11	H
375.3200	-64.04	2.31	5.91	-60.44	-13.00	-47.44	H
585.8100	-64.2	2.89	6.11	-60.98	-13.00	-47.98	H
624.6100	-68.35	2.96	6.15	-65.16	-13.00	-52.16	H

Remark:

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



Operation Mode: WCDMA / HSUPA Band II / TX / CH 9400

Test Date: January 12, 2015

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)
53.2800	-67.03	0.83	-3.94	-71.80	-13.00	-58.80	V
203.6300	-67.84	1.65	3.94	-65.55	-13.00	-52.55	V
250.1900	-69.37	1.84	5.68	-65.53	-13.00	-52.53	V
375.3200	-71.76	2.31	5.91	-68.16	-13.00	-55.16	V
583.8700	-76.33	2.89	6.08	-73.14	-13.00	-60.14	V
624.6100	-72.85	2.96	6.15	-69.66	-13.00	-56.66	V
53.2800	-67.96	0.83	-3.94	-72.73	-13.00	-59.73	H
200.7200	-62.65	1.63	3.19	-61.09	-13.00	-48.09	H
250.1900	-61.67	1.84	5.68	-57.83	-13.00	-44.83	H
375.3200	-63.81	2.31	5.91	-60.21	-13.00	-47.21	H
587.7500	-65.66	2.89	6.15	-62.40	-13.00	-49.40	H
624.6100	-67.58	2.96	6.15	-64.39	-13.00	-51.39	H

Remark:

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



Operation Mode: WCDMA / HSUPA Band II /
TX / CH 9538

Test Date: January 12, 2015

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)
54.2500	-67.76	0.83	-3.66	-72.25	-13.00	-59.25	V
142.5200	-72.06	1.4	-0.01	-73.47	-13.00	-60.47	V
250.1900	-69.43	1.84	5.68	-65.59	-13.00	-52.59	V
375.3200	-71.22	2.31	5.91	-67.62	-13.00	-54.62	V
583.8700	-74.78	2.89	6.08	-71.59	-13.00	-58.59	V
624.6100	-73.32	2.96	6.15	-70.13	-13.00	-57.13	V
146.4000	-63.11	1.41	0.35	-64.17	-13.00	-51.17	H
200.7200	-62.09	1.63	3.19	-60.53	-13.00	-47.53	H
250.1900	-61.68	1.84	5.68	-57.84	-13.00	-44.84	H
375.3200	-63.42	2.31	5.91	-59.82	-13.00	-46.82	H
583.8700	-65.87	2.89	6.08	-62.68	-13.00	-49.68	H
624.6100	-68.01	2.96	6.15	-64.82	-13.00	-51.82	H

Remark:

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



Operation Mode: WCDMA / HSUPA Band V /
TX / CH 4132

Test Date: January 12, 2015

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)
141.5500	-71.23	1.4	-0.1	-72.73	-13.00	-59.73	V
233.7000	-73.67	1.8	5.39	-70.08	-13.00	-57.08	V
375.3200	-74.38	2.31	5.91	-70.78	-13.00	-57.78	V
524.7000	-79.42	2.73	6.05	-76.10	-13.00	-63.10	V
582.9000	-68.93	2.89	6.06	-65.76	-13.00	-52.76	V
624.6100	-74.25	2.96	6.15	-71.06	-13.00	-58.06	V
146.4000	-62.21	1.41	0.35	-63.27	-13.00	-50.27	H
250.1900	-61.64	1.84	5.68	-57.80	-13.00	-44.80	H
375.3200	-64.26	2.31	5.91	-60.66	-13.00	-47.66	H
446.1300	-78.68	2.57	5.78	-75.47	-13.00	-62.47	H
583.8700	-62.57	2.89	6.08	-59.38	-13.00	-46.38	H
624.6100	-68.39	2.96	6.15	-65.20	-13.00	-52.20	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: WCDMA / HSUPA Band V /
TX / CH 4182

Test Date: January 12, 2015

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)
53.2800	-65.66	0.83	-3.94	-70.43	-13.00	-57.43	V
146.4000	-71.53	1.41	0.35	-72.59	-13.00	-59.59	V
250.1900	-68.75	1.84	5.68	-64.91	-13.00	-51.91	V
375.3200	-71.75	2.31	5.91	-68.15	-13.00	-55.15	V
582.9000	-71.64	2.89	6.06	-68.47	-13.00	-55.47	V
624.6100	-73.61	2.96	6.15	-70.42	-13.00	-57.42	V
135.7300	-62.71	1.37	-0.72	-64.80	-13.00	-51.80	H
240.4900	-62.59	1.81	5.34	-59.06	-13.00	-46.06	H
250.1900	-61.25	1.84	5.68	-57.41	-13.00	-44.41	H
375.3200	-62.99	2.31	5.91	-59.39	-13.00	-46.39	H
475.2300	-77.03	2.63	5.65	-74.01	-13.00	-61.01	H
586.7800	-65.99	2.89	6.13	-62.75	-13.00	-49.75	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: WCDMA / HSUPA Band V /
TX / CH 4233

Test Date: January 12, 2015

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)
199.7500	-66.24	1.63	2.94	-64.93	-13.00	-51.93	V
260.8600	-75.23	1.91	5.56	-71.58	-13.00	-58.58	V
375.3200	-71.49	2.31	5.91	-67.89	-13.00	-54.89	V
524.7000	-79.36	2.73	6.05	-76.04	-13.00	-63.04	V
582.9000	-73.12	2.89	6.06	-69.95	-13.00	-56.95	V
641.1000	-74.58	3.01	6.12	-71.47	-13.00	-58.47	V
144.4600	-61.76	1.41	0.17	-63.00	-13.00	-50.00	H
250.1900	-61.71	1.84	5.68	-57.87	-13.00	-44.87	H
375.3200	-64.09	2.31	5.91	-60.49	-13.00	-47.49	H
586.7800	-65.43	2.89	6.13	-62.19	-13.00	-49.19	H
624.6100	-67.92	2.96	6.15	-64.73	-13.00	-51.73	H
642.0700	-71.59	3.01	6.14	-68.46	-13.00	-55.46	H

Remark:

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



Above 1GHz

Operation Mode: GPRS 850 / TX / CH 128

Test Date: December 23, 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)
1651.000	-52.07	5.05	6.03	-51.09	-13.00	-38.09	V
2470.000	-48.37	6.3	6.06	-48.61	-13.00	-35.61	V
N/A							
1651.000	-52.54	5.05	6.03	-51.56	-13.00	-38.56	H
4227.000	-53.19	8.52	9.58	-52.13	-13.00	-39.13	H
N/A							

Remark:

- 1. The emission behaviour belongs to narrowband spurious emission.*
- 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: GPRS 850 / TX / CH 190

Test Date: December 23, 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)
1672.000	-54.4	5.07	5.99	-53.48	-13.00	-40.48	V
2512.000	-47.08	6.37	6.13	-47.32	-13.00	-34.32	V
N/A							
1672.000	-50.59	5.07	5.99	-49.67	-13.00	-36.67	H
4353.000	-53	8.62	9.68	-51.94	-13.00	-38.94	H
N/A							

Remark:

1. The emission behaviour belongs to narrowband spurious emission.
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: GPRS 850 / TX / CH 251

Test Date: December 23, 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)
1700.000	-55.73	5.11	5.94	-54.90	-13.00	-41.90	V
2547.000	-46.65	6.42	6.22	-46.85	-13.00	-33.85	V
N/A							
1700.000	-52.87	5.11	5.94	-52.04	-13.00	-39.04	H
2547.000	-54.88	6.42	6.22	-55.08	-13.00	-42.08	H
N/A							

Remark:

- 1. The emission behaviour belongs to narrowband spurious emission.*
- 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: GPRS 1900 / TX / CH 512

Test Date: December 23, 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)
3702.000	-42.69	8.2	9.1	-41.79	-13.00	-28.79	V
5550.000	-44.83	10.06	10.81	-44.08	-13.00	-31.08	V
N/A							
3702.000	-45.69	8.2	9.1	-44.79	-13.00	-31.79	H
5550.000	-43.91	10.06	10.81	-43.16	-13.00	-30.16	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: GPRS 1900 / TX / CH 661

Test Date: December 23, 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)
3758.000	-40.1	8.23	9.16	-39.17	-13.00	-26.17	V
5641.000	-46.55	10.18	10.83	-45.90	-13.00	-32.90	V
N/A							
3758.000	-44.49	8.23	9.16	-43.56	-13.00	-30.56	H
5641.000	-45.63	10.18	10.83	-44.98	-13.00	-31.98	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: GPRS 1900 / TX / CH 810

Test Date: December 23, 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)
3821.000	-38.57	8.29	9.22	-37.64	-13.00	-24.64	V
5732.000	-49.73	10.24	10.85	-49.12	-13.00	-36.12	V
N/A							
3821.000	-44.48	8.29	9.22	-43.55	-13.00	-30.55	H
5732.000	-48.6	10.24	10.85	-47.99	-13.00	-34.99	H
N/A							

Remark:

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



Operation Mode: EDGE 850 / TX / CH 128

Test Date: December 23, 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)
1651.000	-52.82	5.05	6.03	-51.84	-13.00	-38.84	V
2470.000	-48.69	6.3	6.06	-48.93	-13.00	-35.93	V
N/A							
1651.000	-55.66	5.05	6.03	-54.68	-13.00	-41.68	H
2470.000	-55.19	6.3	6.06	-55.43	-13.00	-42.43	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: EDGE 850 / TX / CH 190

Test Date: December 23, 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)
1700.000	-55.94	5.11	5.94	-55.11	-13.00	-42.11	V
2547.000	-46.77	6.42	6.22	-46.97	-13.00	-33.97	V
N/A							
1672.000	-51.59	5.07	5.99	-50.67	-13.00	-37.67	H
5767.000	-51.2	10.33	10.85	-50.68	-13.00	-37.68	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: EDGE 850 / TX / CH 251

Test Date: December 23, 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)
1700.000	-55.24	5.11	5.94	-54.41	-13.00	-41.41	V
2547.000	-46.88	6.42	6.22	-47.08	-13.00	-34.08	V
N/A							
1700.000	-52.25	5.11	5.94	-51.42	-13.00	-38.42	H
2547.000	-55.06	6.42	6.22	-55.26	-13.00	-42.26	H
N/A							

Remark:

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



Operation Mode: EDGE 1900 / TX / CH 512

Test Date: December 23, 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)
3702.000	-43.12	8.2	9.1	-42.22	-13.00	-29.22	V
5550.000	-45.34	10.06	10.81	-44.59	-13.00	-31.59	V
N/A							
3702.000	-46.43	8.2	9.1	-45.53	-13.00	-32.53	H
5550.000	-44.18	10.06	10.81	-43.43	-13.00	-30.43	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: EDGE 1900 / TX / CH 661

Test Date: December 23, 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)
3758.000	-40.3	8.23	9.16	-39.37	-13.00	-26.37	V
5641.000	-46.82	10.18	10.83	-46.17	-13.00	-33.17	V
N/A							
3758.000	-44.88	8.23	9.16	-43.95	-13.00	-30.95	H
5641.000	-45.3	10.18	10.83	-44.65	-13.00	-31.65	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: EDGE 1900 / TX / CH 810

Test Date: December 23, 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)
3821.000	-38.85	8.29	9.22	-37.92	-13.00	-24.92	V
5732.000	-48.25	10.24	10.85	-47.64	-13.00	-34.64	V
N/A							
3821.000	-43.67	8.29	9.22	-42.74	-13.00	-29.74	H
5732.000	-49.03	10.24	10.85	-48.42	-13.00	-35.42	H
N/A							

Remark:

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



Operation Mode: WCDMA Band II / TX / CH 9262

Test Date: January 12, 2015

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)
3709.000	-41.68	8.21	9.11	-40.78	-13.00	-27.78	V
5564.000	-43.96	10.1	10.81	-43.25	-13.00	-30.25	V
N/A							
3702.000	-46.77	8.2	9.1	-45.87	-13.00	-32.87	H
5557.000	-48.12	10.08	10.81	-47.39	-13.00	-34.39	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: WCDMA Band II / TX / CH 9400

Test Date: January 12, 2015

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)
3758.000	-41.11	8.23	9.16	-40.18	-13.00	-27.18	V
5634.000	-42.33	10.18	10.83	-41.68	-13.00	-28.68	V
N/A							
3765.000	-45.02	8.24	9.16	-44.10	-13.00	-31.10	H
5634.000	-44.32	10.18	10.83	-43.67	-13.00	-30.67	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: WCDMA Band II / TX / CH 9538

Test Date: January 12, 2015

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)
3814.000	-39.81	8.28	9.21	-38.88	-13.00	-25.88	V
5725.000	-39.34	10.22	10.84	-38.72	-13.00	-25.72	V
N/A							
3814.000	-43.26	8.28	9.21	-42.33	-13.00	-29.33	H
5725.000	-42.59	10.22	10.84	-41.97	-13.00	-28.97	H
N/A							

Remark:

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



Operation Mode: WCDMA Band V / TX / CH 4132

Test Date: January 12, 2015

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)
1658.000	-46.66	5.06	6.02	-45.70	-13.00	-32.70	V
3310.000	-50.5	7.47	8.33	-49.64	-13.00	-36.64	V
N/A							
1651.000	-48.23	5.05	6.03	-47.25	-13.00	-34.25	H
3310.000	-52.52	7.47	8.33	-51.66	-13.00	-38.66	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: WCDMA Band V / TX / CH 4182

Test Date: January 12, 2015

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)
1672.000	-44.58	5.07	5.99	-43.66	-13.00	-30.66	V
3345.000	-48.46	7.51	8.44	-47.53	-13.00	-34.53	V
N/A							
1672.000	-45.93	5.07	5.99	-45.01	-13.00	-32.01	H
3338.000	-49.43	7.5	8.41	-48.52	-13.00	-35.52	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: WCDMA Band V / TX / CH 4233

Test Date: January 12, 2015

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)
1693.000	-45.53	5.1	5.95	-44.68	-13.00	-31.68	V
3380.000	-49.51	7.55	8.54	-48.52	-13.00	-35.52	V
N/A							
1693.000	-47.76	5.1	5.95	-46.91	-13.00	-33.91	H
2533.000	-51.94	6.4	6.19	-52.15	-13.00	-39.15	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: WCDMA / HSDPA Band II / TX / CH 9262

Test Date: January 12, 2015

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)
3709.000	-40.04	8.21	9.11	-39.14	-13.00	-26.14	V
5557.000	-44.83	10.08	10.81	-44.10	-13.00	-31.10	V
N/A							
3709.000	-45.6	8.21	9.11	-44.70	-13.00	-31.70	H
5557.000	-45.26	10.08	10.81	-44.53	-13.00	-31.53	H
N/A							

Remark:

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



Operation Mode: WCDMA / HSDPA Band II /
TX / CH 9400

Test Date: January 12, 2015

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)
3758.000	-40.46	8.23	9.16	-39.53	-13.00	-26.53	V
5641.000	-42.75	10.18	10.83	-42.10	-13.00	-29.10	V
N/A							
3765.000	-45.65	8.24	9.16	-44.73	-13.00	-31.73	H
5641.000	-44.6	10.18	10.83	-43.95	-13.00	-30.95	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: WCDMA / HSDPA Band II /
TX / CH 9538

Test Date: January 12, 2015

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)
3814.000	-39.61	8.28	9.21	-38.68	-13.00	-25.68	V
5725.000	-39.79	10.22	10.84	-39.17	-13.00	-26.17	V
N/A							
3814.000	-44.37	8.28	9.21	-43.44	-13.00	-30.44	H
5718.000	-43.61	10.21	10.84	-42.98	-13.00	-29.98	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: WCDMA / HSDPA Band V /
TX / CH 4132

Test Date: January 12, 2015

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)
1658.000	-47.83	5.06	6.02	-46.87	-13.00	-33.87	V
3310.000	-52.71	7.47	8.33	-51.85	-13.00	-38.85	V
N/A							
1658.000	-50.37	5.06	6.02	-49.41	-13.00	-36.41	H
3310.000	-53.31	7.47	8.33	-52.45	-13.00	-39.45	H
N/A							

Remark:

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



Operation Mode: WCDMA / HSDPA Band V /
TX / CH 4182

Test Date: January 12, 2015

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)
1672.000	-49.08	5.07	5.99	-48.16	-13.00	-35.16	V
3345.000	-52.24	7.51	8.44	-51.31	-13.00	-38.31	V
N/A							
1672.000	-51.26	5.07	5.99	-50.34	-13.00	-37.34	H
3338.000	-53.41	7.5	8.41	-52.50	-13.00	-39.50	H
N/A							

Remark:

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



Operation Mode: WCDMA / HSDPA Band V /
TX / CH 4233

Test Date: January 12, 2015

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)
1693.000	-47.42	5.1	5.95	-46.57	-13.00	-33.57	V
3380.000	-50.79	7.55	8.54	-49.80	-13.00	-36.80	V
N/A							
1693.000	-49.99	5.1	5.95	-49.14	-13.00	-36.14	H
4227.000	-50.03	8.52	9.58	-48.97	-13.00	-35.97	H
N/A							

Remark:

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



Operation Mode: WCDMA / HSUPA Band II / TX / CH 9262

Test Date: January 12, 2015

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)
3709.000	-42.26	8.21	9.11	-41.36	-13.00	-28.36	V
5557.000	-44.65	10.08	10.81	-43.92	-13.00	-30.92	V
N/A							
3709.000	-44.59	8.21	9.11	-43.69	-13.00	-30.69	H
5557.000	-46.27	10.08	10.81	-45.54	-13.00	-32.54	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: WCDMA / HSUPA Band II / TX / CH 9400

Test Date: January 12, 2015

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)
3765.000	-41.07	8.24	9.16	-40.15	-13.00	-27.15	V
5641.000	-43.6	10.18	10.83	-42.95	-13.00	-29.95	V
N/A							
3765.000	-45.99	8.24	9.16	-45.07	-13.00	-32.07	H
5641.000	-44.64	10.18	10.83	-43.99	-13.00	-30.99	H
N/A							

Remark:

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



Operation Mode: WCDMA / HSUPA Band II / TX / CH 9538

Test Date: January 12, 2015

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)
3814.000	-39.71	8.28	9.21	-38.78	-13.00	-25.78	V
5725.000	-39.79	10.22	10.84	-39.17	-13.00	-26.17	V
N/A							
3814.000	-44.3	8.28	9.21	-43.37	-13.00	-30.37	H
5718.000	-42.58	10.21	10.84	-41.95	-13.00	-28.95	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: WCDMA / HSUPA Band V /
TX / CH 4132

Test Date: January 12, 2015

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)
1658.000	-46.83	5.06	6.02	-45.87	-13.00	-32.87	V
3310.000	-53.5	7.47	8.33	-52.64	-13.00	-39.64	V
N/A							
1658.000	-49.82	5.06	6.02	-48.86	-13.00	-35.86	H
4136.000	-51.89	8.47	9.51	-50.85	-13.00	-37.85	H
N/A							

Remark:

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



Operation Mode: WCDMA / HSUPA Band V /
TX / CH 4182

Test Date: January 12, 2015

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)
1672.000	-48.59	5.07	5.99	-47.67	-13.00	-34.67	V
3345.000	-52.57	7.51	8.44	-51.64	-13.00	-38.64	V
N/A							
1672.000	-50.79	5.07	5.99	-49.87	-13.00	-36.87	H
3597.000	-53.62	8.1	9	-52.72	-13.00	-39.72	H
N/A							

Remark:

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



Operation Mode: WCDMA / HSUPA Band V /
TX / CH 4233

Test Date: January 12, 2015

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)
1693.000	-47.79	5.1	5.95	-46.94	-13.00	-33.94	V
4227.000	-49.15	8.52	9.58	-48.09	-13.00	-35.09	V
N/A							
1693.000	-49.66	5.1	5.95	-48.81	-13.00	-35.81	H
4241.000	-50.7	8.54	9.59	-49.65	-13.00	-36.65	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.



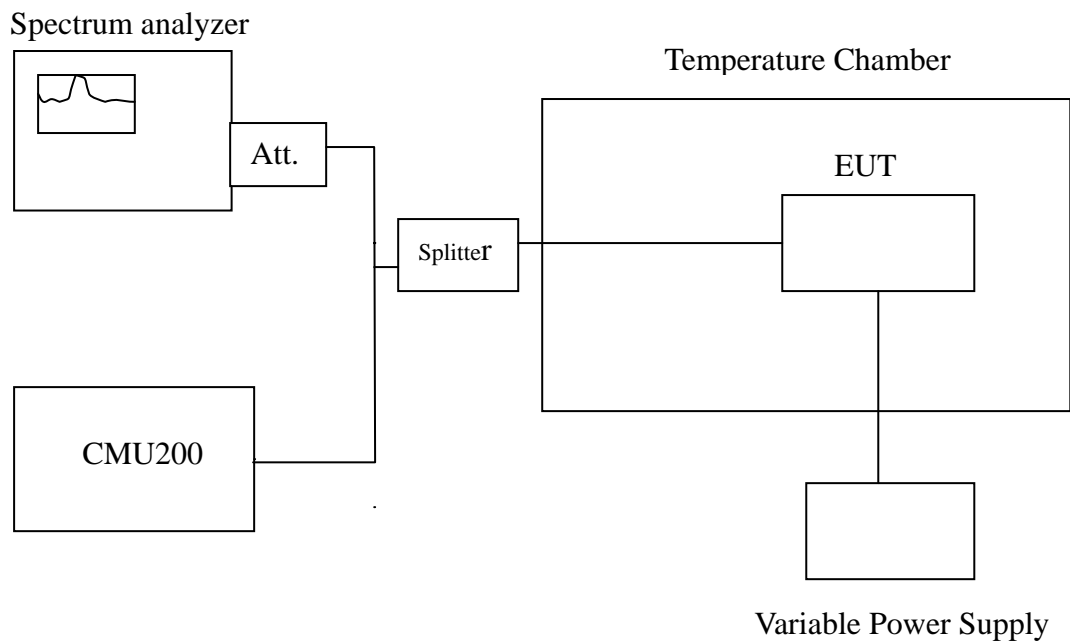
7.7 FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

LIMIT

According to FCC §2.1055, FCC §22.355, .FCC §24.235.

Frequency Tolerance: 2.5 ppm

Test Configuration



Remark: Measurement setup for testing on Antenna connector



TEST PROCEDURE

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

TEST RESULTS

No non-compliance noted.

Reference Frequency: GPRS Mid Channel 836.6 MHz @ 20°C				
Limit: +/- 2.5 ppm = 2091 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.7	50	836600006	16	2091
	40	836600007	17	
	30	836599996	6	
	20	836599990	0	
	10	836600006	16	
	0	836599997	7	
	-10	836599992	2	
	-20	836599991	1	
	-30	836600020	30	

Reference Frequency: GPRS Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.7	50	1879999994	-4	4700
	40	1880000020	22	
	30	1879999982	-16	
	20	1879999998	0	
	10	1880000000	2	
	0	1880000016	18	
	-10	1879999998	0	
	-20	1880000020	22	
	-30	1879999984	-14	



Reference Frequency: EDGE Mid Channel 836.6 MHz @ 20°C				
Limit: +/- 2.5 ppm = 2091 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.7	50	836599995	-11	2091
	40	836600011	5	
	30	836599986	-20	
	20	836600006	0	
	10	836599994	-12	
	0	836599995	-11	
	-10	836599984	-22	
	-20	836600012	6	
	-30	836599998	-8	

Reference Frequency: EDGE Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.7	50	1879999995	-11	4700
	40	1880000000	-6	
	30	1880000011	5	
	20	1880000006	0	
	10	1880000012	6	
	0	1880000001	-5	
	-10	1880000015	9	
	-20	1880000025	19	
	-30	1880000002	-4	



Reference Frequency: WCDMA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.7	50	1879999976	-16	4700
	40	1879999991	-1	
	30	1880000017	25	
	20	1879999992	0	
	10	1880000017	25	
	0	1880000007	15	
	-10	1880000017	25	
	-20	1879999987	-5	
	-30	1880000020	28	

Reference Frequency: WCDMA Band V Mid Channel 836.4 MHz @ 20°C				
Limit: ± 2.5 ppm = 2091 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.7	50	836399990	-2	2091
	40	836400020	28	
	30	836400004	12	
	20	836399992	0	
	10	836399988	-4	
	0	836400011	19	
	-10	836399987	-5	
	-20	836400000	8	
	-30	836399977	-15	



Reference Frequency: WCDMA / HSDPA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.7	50	1879999997	2	4700
	40	1879999982	-13	
	30	1880000013	18	
	20	1879999995	0	
	10	1880000020	25	
	0	1880000021	26	
	-10	1879999983	-12	
	-20	1879999996	1	
	-30	1879999987	-8	

Reference Frequency: WCDMA / HSDPA Band V Mid Channel 836.4 MHz @ 20°C				
Limit: ± 2.5 ppm = 2091 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.7	50	836400025	26	2091
	40	836399987	-12	
	30	836400003	4	
	20	836399999	0	
	10	836399987	-12	
	0	836399983	-16	
	-10	836399983	-16	
	-20	836400022	23	
	-30	836399976	-23	



Reference Frequency: WCDMA / HSUPA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.7	50	1880000006	13	4700
	40	1880000009	16	
	30	1879999991	-2	
	20	1879999993	0	
	10	1880000014	21	
	0	1879999989	-4	
	-10	1880000004	11	
	-20	1879999997	4	
	-30	1880000018	25	

Reference Frequency: WCDMA / HSUPA Band V Mid Channel 836.4 MHz @ 20°C				
Limit: ± 2.5 ppm = 2091 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.7	50	836399993	0	2091
	40	836400018	25	
	30	836399984	-9	
	20	836399993	0	
	10	836399994	1	
	0	836399997	4	
	-10	836400001	8	
	-20	836400007	14	
	-30	836400013	20	



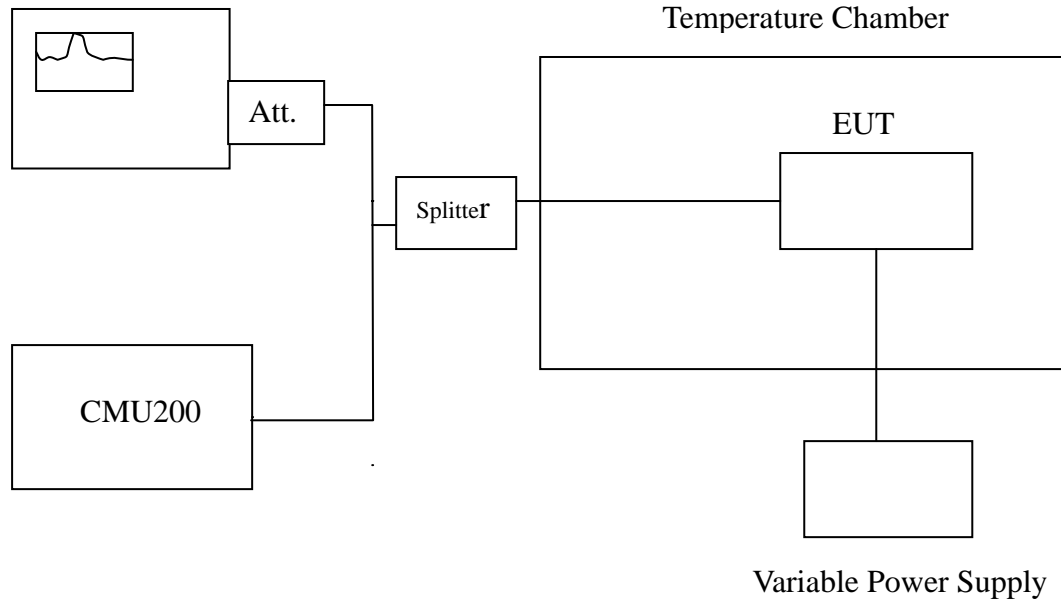
7.8 FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

LIMIT

According to FCC §2.1055, FCC §22.355, .FCC §24.235,

Test Configuration

Spectrum analyzer



Remark: Measurement setup for testing on Antenna connector.



TEST PROCEDURE

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ($\pm 15\%$) and endpoint, record the maximum frequency change.

TEST RESULTS

No non-compliance noted.

Reference Frequency: GPRS Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2091Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.255	20	836600015	11	2091
3.7		836600004	0	
3.145		836600005	1	

Reference Frequency: GPRS Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.255	20	1880000007	5	4700
3.7		1880000002	0	
3.145		1880000018	16	



Reference Frequency: EDGE Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2091Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.255	20	836600002	5	2091
3.7		836599997	0	
3.145		836600000	3	

Reference Frequency: EDGE Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.255	20	1879999998	-4	4700
3.7		1880000002	0	
3.145		1880000012	10	



Reference Frequency: WCDMA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.255	20	1879999990	0	4700
3.7		1879999990	0	
3.145		1880000018	28	

Reference Frequency: WCDMA Band V Mid Channel 836.4 MHz @ 20°C				
Limit: ± 2.5 ppm = 2091Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.255	20	836399986	-9	2091
3.7		836399995	0	
3.145		836400010	15	



Reference Frequency: WCDMA HSDPA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.255	20	1880000018	22	4700
3.7		1879999996	0	
3.145		1879999980	-16	

Reference Frequency: WCDMA HSDPA Band V Mid Channel 836.4 MHz @ 20°C				
Limit: ± 2.5 ppm = 2091Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.255	20	836399988	-20	2091
3.7		836400008	0	
3.145		836400019	11	



Reference Frequency: WCDMA HSUPA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.255	20	1879999987	-10	4700
3.7		1879999997	0	
3.145		1879999994	-3	

Reference Frequency: WCDMA HSUPA Band V Mid Channel 836.4 MHz @ 20°C				
Limit: ± 2.5 ppm = 2091Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.255	20	836400007	10	2091
3.7		836399997	0	
3.145		836399988	-9	