



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

TEST REPORT

For

CISCO EDUCATION ENABLED DEVELOPMENT 3700

Model: CEED 3700

Trade Name: CISCO SYSTEMS

Issued to

**CISCO SYSTEMS
BANGALORE, INDIA**

Issued by

Compliance Certification Services Inc.

**No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)**

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Issued Date: June 04, 2014



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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	June 04, 2014	Initial Issue	ALL	Kelly Cheng



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1. TEST RESULT CERTIFICATION

Applicant: CISCO SYSTEMS
BANGALORE, INDIA

Equipment Under Test: CISCO EDUCATION ENABLED DEVELOPMENT 3700

Trade Name: CISCO SYSTEMS

Model Number: CEED 3700

Date of Test: May 21 ~ 27, 2014

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	CISCO EDUCATION ENABLED DEVELOPMENT 3700
Trade Name	CISCO SYSTEMS
Model Number	CEED 3700
Model Discrepancy	N/A
Received Date	May 19, 2014
Power Supply	Power from host device.
Frequency Range	GSM / GPRS / EDGE: 850: 824.2 ~ 848.8 MHz GSM / 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: 32.26 dBm GPRS 1900: 29.24 dBm EDGE 850: 32.33 dBm EDGE 1900: 29.25 dBm WCDMA Band II: 26.34 dBm HSDPA Band II: 26.13 dBm HSUPA Band II: 26.96 dBm WCDMA Band V: 26.61 dBm HSDPA Band V: 26.21 dBm HSUPA Band V: 26.12 dBm
Modulation Technique	GMSK
Type of Emission	GPRS 850: 245KGXW GPRS 1900: 246KGXW EDGE 850: 248KG7W EDGE 1900: 246KG7W WCDMA Band II: 4M14F9W WCDMA Band V: 4M14F9W WCDMA HSDPA Band II: 4M17F9W WCDMA HSDPA Band V: 4M17F9W WCDMA HSUPA Band II: 4M16F9W WCDMA HSUPA Band V: 4M14F9W
Antenna Gain	GSM / GPRS / EDGE 850: 2.7dBi GSM / GPRS / EDGE 1900: 1.7 dBi WCDMA band II: 1.7 dBi WCDMA band V: 2.7 dBi
Antenna Type	Linear Polarization Antenna

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: **LDKCEED3700** filing to comply with Part 22 and Part 24 of the FCC 47 CFR Rules.



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: CEED 3700) 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 lie-down 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	MY43360131	03/16/2015
Power Meter	Anritsu	ML2495A	1012009	06/03/2015
Power Sensor	Anritsu	MA2411A	0917072	06/03/2015
Temp. / Humidity Chamber	Terchy	MHG-150LF	930619	10/17/2014

Wugu 966 Chamber A				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US42510268	11/13/2014
EMI Test Receiver	R&S	ESCI	100064	02/27/2015
Pre-Amplifier	Mini-Circuits	ZFL-1000LN	SF350700823	01/11/2015
Pre-Amplifier	MITEQ	AFS44-00102650-42-10P-44	1415367	11/18/2014
Bilog Antenna	Sunol Sciences	JB3	A030105	10/01/2014
Bilog Antenna	Sunol Sciences	JB3	A030205	10/01/2014
Horn Antenna	EMCO	3117	00055165	02/12/2015
Horn Antenna	EMCO	3117	00055167	01/27/2015
Horn Antenna	EMCO	3116	00026370	10/10/2014
Loop Antenna	EMCO	6502	8905/2356	06/08/2015
Turn Table	CCS	CC-T-1F	N/A	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R
Site NSA	CCS	N/A	N/A	12/21/2014
Test S/W	EZ-EMC (CCS-3A1RE)			



4.3 MEASUREMENT UNCERTAINTY

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

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



5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

☐ No.199, Chunghsen Road, Hsintien City, Taipei Hsien, Taiwan, R.O.C.

Tel: 886-2-2217-0894 / Fax: 886-2-2217-1029

☒ No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)

Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045

☐ No.81-1, Lane 210, Bade 2nd Rd., 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

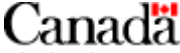
Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

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.



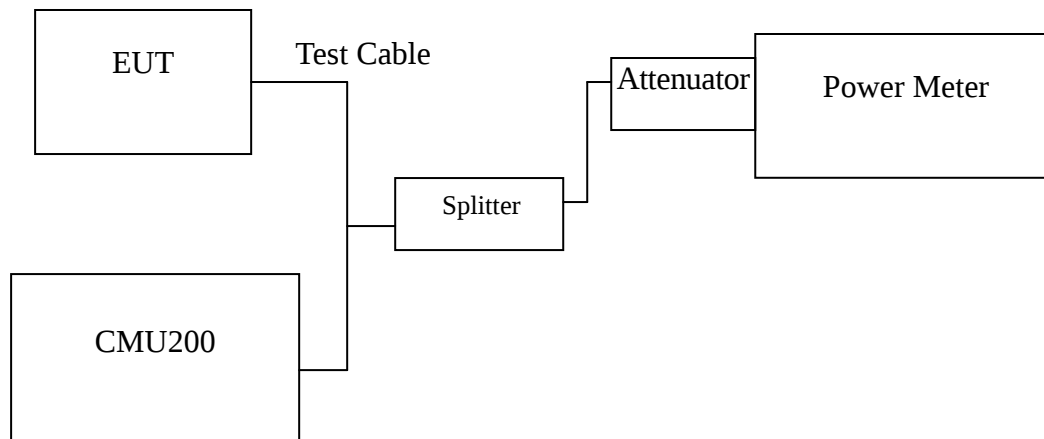
7. FCC PART 22 & 24 REQUIREMENTS

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	32.23	1.67109
	190	836.60	32.21	1.66341
	251	848.80	*32.26	1.68267
EDGE 850	128	824.20	*32.33	1.71002
	190	836.60	32.17	1.64816
	251	848.80	32.22	1.66725

Test Mode	CH	Frequency (MHz)	Peak Power (dBm)	Output Power W
GPRS 1900	512	1850.20	*29.24	0.83946
	661	1880.00	29.21	0.83368
	810	1909.80	29.20	0.83176
EDGE 1900	512	1850.20	29.23	0.83753
	661	1880.00	*29.25	0.84140
	810	1909.80	29.18	0.82794

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	26.17	0.41400
	9400	1880.00	*26.34	0.43053
	9538	1907.60	25.91	0.38994
WCDMA (BAND V)	4132	826.40	*26.61	0.45814
	4182	836.40	26.41	0.43752
	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	25.76	0.37670
	9400	1880.00	*26.13	0.41020
	9538	1907.60	25.95	0.39355
WCDMA / HSDPA (BAND V)	4132	826.40	*26.21	0.41783
	4182	836.40	25.75	0.37584
	4233	846.60	26.02	0.39994

Test Mode	CH	Frequency (MHz)	Peak Power (dBm)	Output Power W
WCDMA / HSUPA (BAND II)	9262	1852.40	26.17	0.41400
	9400	1880.00	*26.96	0.49659
	9538	1907.60	26.03	0.40087
WCDMA / HSUPA (BAND V)	4132	826.40	26.08	0.40551
	4182	836.40	*26.12	0.40926
	4233	846.60	25.86	0.38548

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

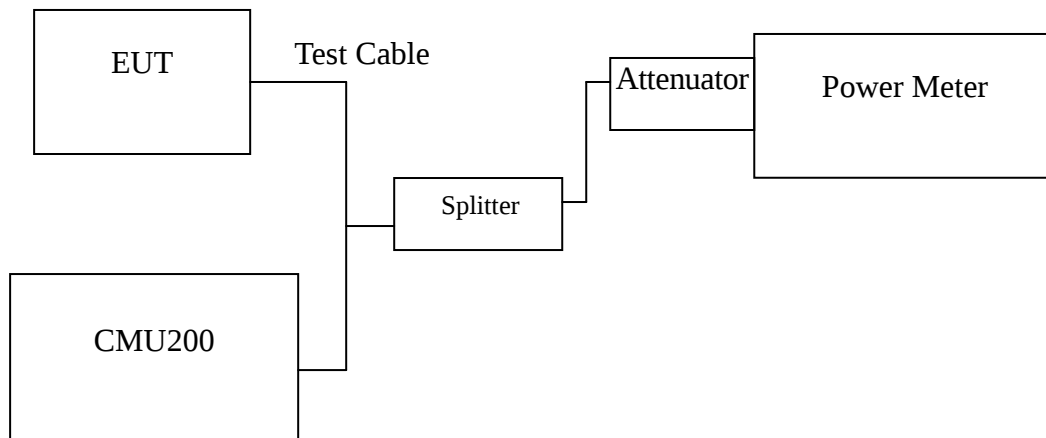


7.2 AVERAGE POWER

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	26.21	0.41777
	190	836.60	26.19	0.41585
	251	848.80	26.24	0.42067
EDGE 850	128	824.20	26.31	0.42750
	190	836.60	26.15	0.41204
	251	848.80	26.20	0.41681

Test Mode	CH	Frequency (MHz)	AVG Power (dBm)	Output Power W
GPRS 1900	512	1850.20	23.22	0.20986
	661	1880.00	23.19	0.20842
	810	1909.80	23.18	0.20794
EDGE 1900	512	1850.20	23.21	0.20938
	661	1880.00	23.23	0.21035
	810	1909.80	23.16	0.20699

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	22.60	0.18197
	9400	1880.00	22.57	0.18072
	9538	1907.60	22.54	0.17947
WCDMA (BAND V)	4132	826.40	22.71	0.18664
	4182	836.40	22.77	0.18923
	4233	846.60	22.48	0.17701

Test Mode	CH	Frequency (MHz)	AVG Power (dBm)	Output Power W
WCDMA / HSDPA (BAND II)	9262	1852.40	22.26	0.16827
	9400	1880.00	21.97	0.15740
	9538	1907.60	22.21	0.16634
WCDMA / HSDPA (BAND V)	4132	826.40	22.56	0.18030
	4182	836.40	22.49	0.17742
	4233	846.60	22.38	0.17298

Test Mode	CH	Frequency (MHz)	AVG Power (dBm)	Output Power W
WCDMA / HSUPA (BAND II)	9262	1852.40	22.29	0.16943
	9400	1880.00	22.27	0.16866
	9538	1907.60	22.36	0.17219
WCDMA / HSUPA (BAND V)	4132	826.40	22.17	0.16482
	4182	836.40	22.21	0.16634
	4233	846.60	22.19	0.16558

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



7.3 ERP & EIRP MEASUREMENT

LIMIT

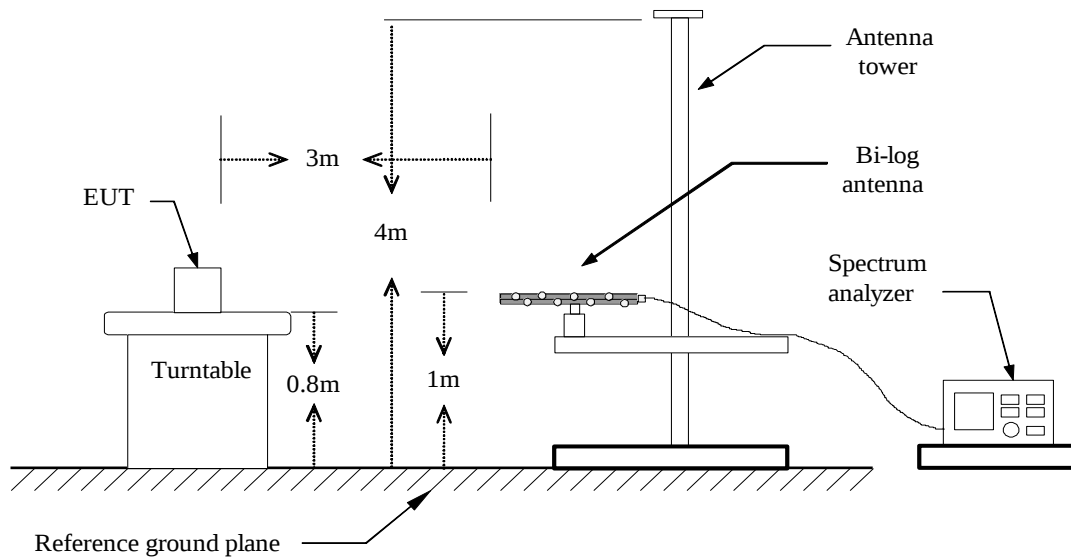
According to FCC §2.1046

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

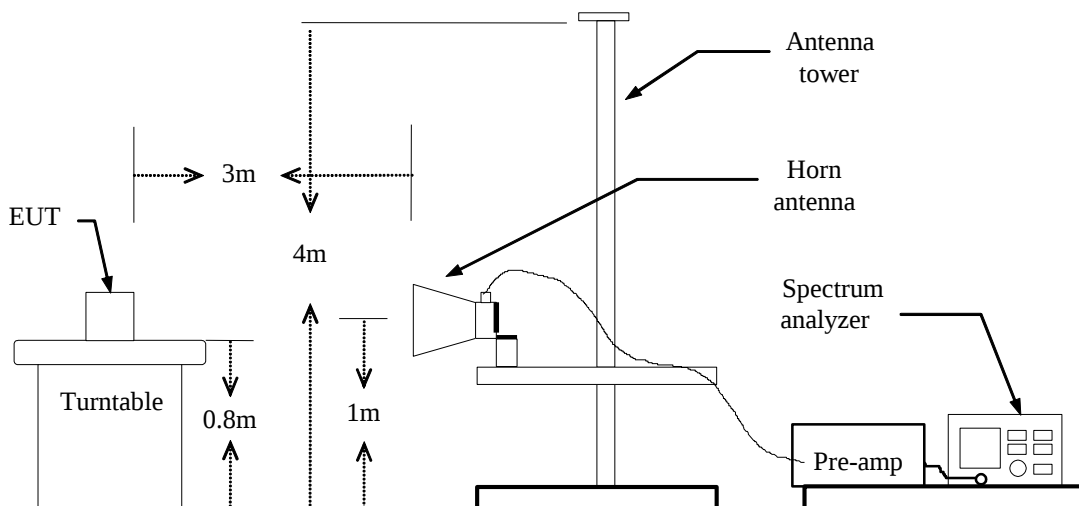
FCC 24.232(b): The equivalent Isotropic Radiated Power (EIRP) must not exceed 2 Watts.

Test Configuration

Below 1 GHz

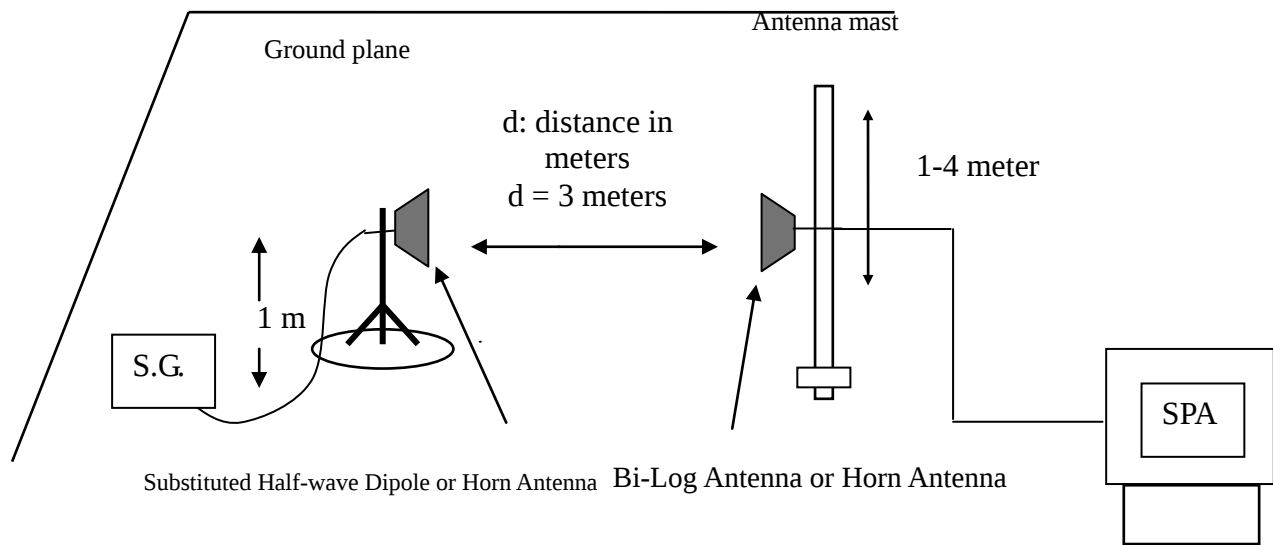


Above 1 GHz





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	823.9400	V	22.02	3.39	6.23	*24.86	38.45	-13.59
	824.4300	H	19.51	3.39	6.24	22.36	38.45	-16.09
190	836.6100	V	21.62	3.4	6.37	24.59	38.45	-13.86
	836.7500	H	16.41	3.4	6.37	19.38	38.45	-19.07
251	848.7900	V	21.61	3.4	6.4	24.61	38.45	-13.84
	848.7900	H	18.89	3.4	6.4	21.89	38.45	-16.56

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	31.32	5.37	5.67	*31.62	33.00	-1.38
	1850.040	H	24.53	5.37	5.67	24.83	33.00	-8.17
661	1879.920	V	28.13	5.42	5.62	28.33	33.00	-4.67
	1879.920	H	22.74	5.42	5.62	22.94	33.00	-10.06
810	1909.800	V	26.84	5.48	5.56	26.92	33.00	-6.08
	1909.800	H	21.48	5.48	5.56	21.56	33.00	-11.44

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	21.95	3.39	6.24	24.80	38.45	-13.65
	824.4300	H	19.36	3.39	6.24	22.21	38.45	-16.24
190	836.4700	V	22.06	3.4	6.36	*25.02	38.45	-13.43
	836.5400	H	19.16	3.4	6.36	22.12	38.45	-16.33
251	848.7200	V	21.65	3.4	6.4	24.65	38.45	-13.80
	848.6500	H	18.82	3.4	6.4	21.82	38.45	-16.63

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	1850.160	V	29.51	5.37	5.67	*29.81	33.00	-3.19
	1850.160	H	23.14	5.37	5.67	23.44	33.00	-9.56
661	1880.040	V	28.17	5.42	5.62	28.37	33.00	-4.63
	1880.040	H	22.75	5.42	5.62	22.95	33.00	-10.05
810	1909.800	V	26.92	5.48	5.56	27.00	33.00	-6.00
	1909.800	H	21.3	5.48	5.56	21.38	33.00	-11.62

**WCDMA 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	1852.800	V	23.56	5.37	5.66	23.85	33.00	-9.15
	1853.400	H	16.52	5.38	5.66	16.80	33.00	-16.20
9400	1879.560	V	24.89	5.42	5.62	25.09	33.00	-7.91
	1880.400	H	19.19	5.42	5.62	19.39	33.00	-13.61
9538	1906.680	V	25.11	5.47	5.57	*25.21	33.00	-7.79
	1906.680	H	19.11	5.47	5.57	19.21	33.00	-13.79

WCDMA 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	826.9500	V	14.89	3.39	6.27	17.77	38.45	-20.68
	826.8100	H	11.95	3.39	6.26	14.82	38.45	-23.63
4182	837.4500	V	16.14	3.4	6.37	*19.11	38.45	-19.34
	837.3100	H	12.82	3.4	6.37	15.79	38.45	-22.66
4233	846.9700	V	15.09	3.4	6.4	18.09	38.45	-20.36
	847.1800	H	11.82	3.4	6.4	14.82	38.45	-23.63

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	1852.920	V	22.69	5.37	5.66	22.98	33.00	-10.02
	1852.560	H	16.34	5.37	5.67	16.64	33.00	-16.36
9400	1880.520	V	24.61	5.42	5.62	24.81	33.00	-8.19
	1881.240	H	17.86	5.42	5.61	18.05	33.00	-14.95
9538	1906.440	V	25.25	5.47	5.57	*25.35	33.00	-7.65
	1906.560	H	18.47	5.47	5.57	18.57	33.00	-14.43

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	827.3000	V	15.71	3.39	6.27	18.59	38.45	-19.86
	827.7900	H	12.1	3.39	6.27	14.98	38.45	-23.47
4182	836.2600	V	16.93	3.4	6.36	*19.89	38.45	-18.56
	837.1000	H	13.84	3.4	6.37	16.81	38.45	-21.64
4233	847.6700	V	16.06	3.4	6.4	19.06	38.45	-19.39
	847.7400	H	12.79	3.4	6.4	15.79	38.45	-22.66

**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	1852.680	V	25.02	5.37	5.67	25.32	33.00	-7.68
	1851.840	H	19.13	5.37	5.67	19.43	33.00	-13.57
9400	1880.160	V	25.69	5.42	5.62	25.89	33.00	-7.11
	1879.680	H	19.91	5.42	5.62	20.11	33.00	-12.89
9538	1906.800	V	26.53	5.47	5.57	*26.63	33.00	-6.37
	1907.040	H	19.44	5.47	5.57	19.54	33.00	-13.46

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	826.8800	V	15.64	3.39	6.27	*18.52	38.45	-19.93
	827.3000	H	12.43	3.39	6.27	15.31	38.45	-23.14
4182	836.6800	V	14.77	3.4	6.37	17.74	38.45	-20.71
	836.5400	H	11.71	3.4	6.36	14.67	38.45	-23.78
4233	846.6900	V	15.01	3.4	6.4	18.01	38.45	-20.44
	847.1800	H	12.21	3.4	6.4	15.21	38.45	-23.24

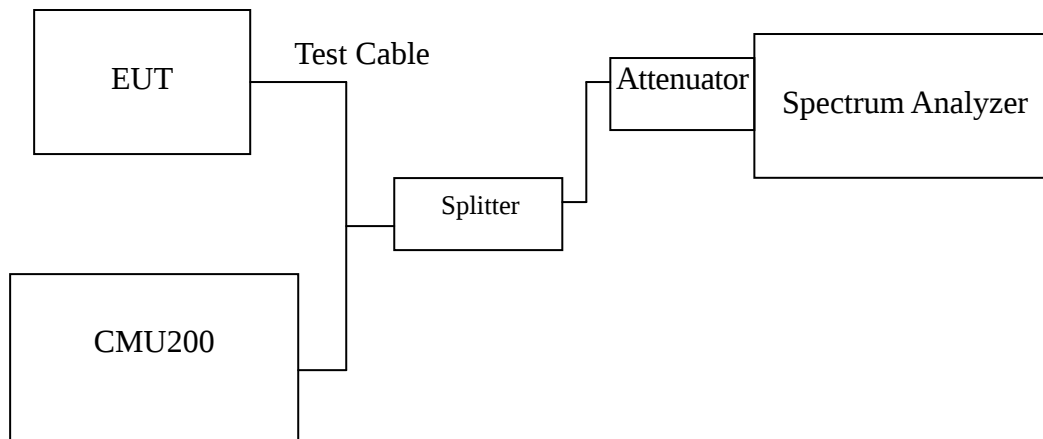


7.4 OCCUPIED BANDWIDTH MEASUREMENT

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	240.7016
	190	836.60	*245.6050
	251	848.80	243.1066
EDGE 850	128	824.20	243.2826
	190	836.60	242.8230
	251	848.80	*248.0802

Test Mode	CH	Frequency (MHz)	99% Bandwidth (kHz)
GPRS 1900	512	1850.20	245.1093
	661	1880.00	245.2715
	810	1909.80	*246.0278
EDGE 1900	512	1850.20	*246.1149
	661	1880.00	245.3931
	810	1909.80	243.6313



Test Mode	CH	Frequency (MHz)	99% Bandwidth (MHz)
WCDMA (Band II)	9262	1852.40	*4.1466
	9400	1880.00	4.1276
	9538	1907.60	4.1219
WCDMA (Band V)	4132	826.40	4.1244
	4182	836.40	*4.1499
	4233	846.60	4.1284
WCDMA / HSDPA (BAND II)	9262	1852.40	4.1594
	9400	1880.00	*4.1705
	9538	1907.60	4.1695
WCDMA / HSDPA (BAND V)	4132	826.40	4.1607
	4182	836.40	4.1616
	4233	846.60	*4.1756
WCDMA / HSUPA (BAND II)	9262	1852.40	*4.1644
	9400	1880.00	4.1403
	9538	1907.60	4.1366
WCDMA / HSUPA (BAND V)	4132	826.40	4.1363
	4182	836.40	4.1311
	4233	846.60	*4.1485

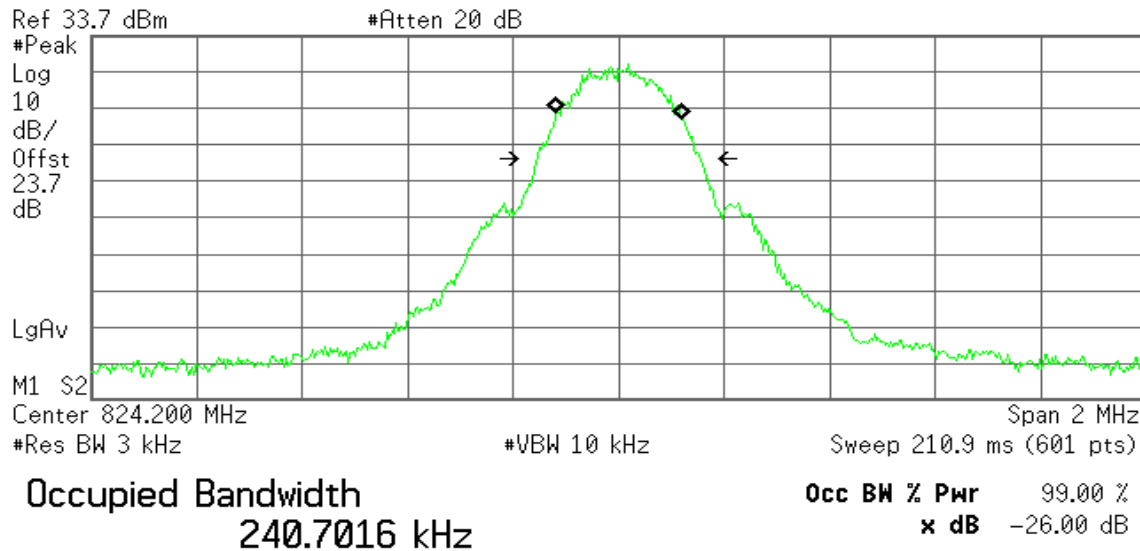


Test Plot

GPRS 850 (CH Low)

Agilent

R T

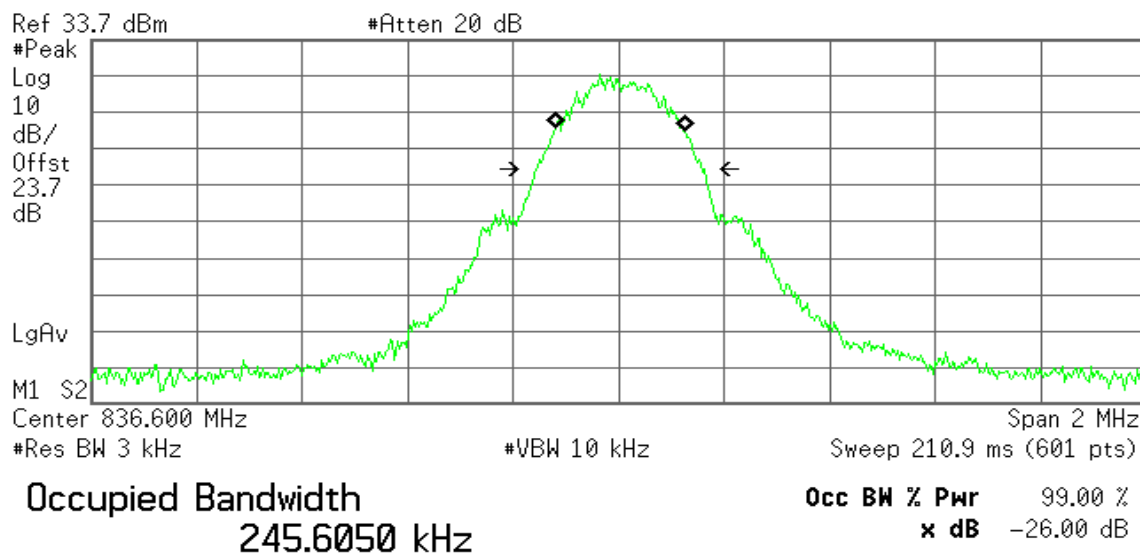


Transmit Freq Error 827.676 Hz
x dB Bandwidth 311.497 kHz

GPRS 850 (CH Mid)

Agilent

R T



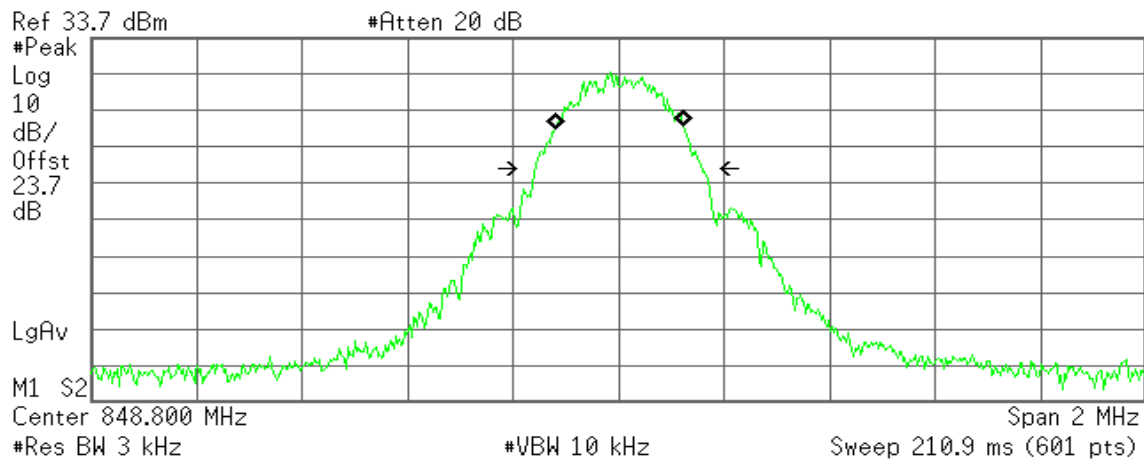
Transmit Freq Error 2.209 kHz
x dB Bandwidth 314.634 kHz



GPRS 850(CH High)

Agilent

R T



Occupied Bandwidth
243.1066 kHz

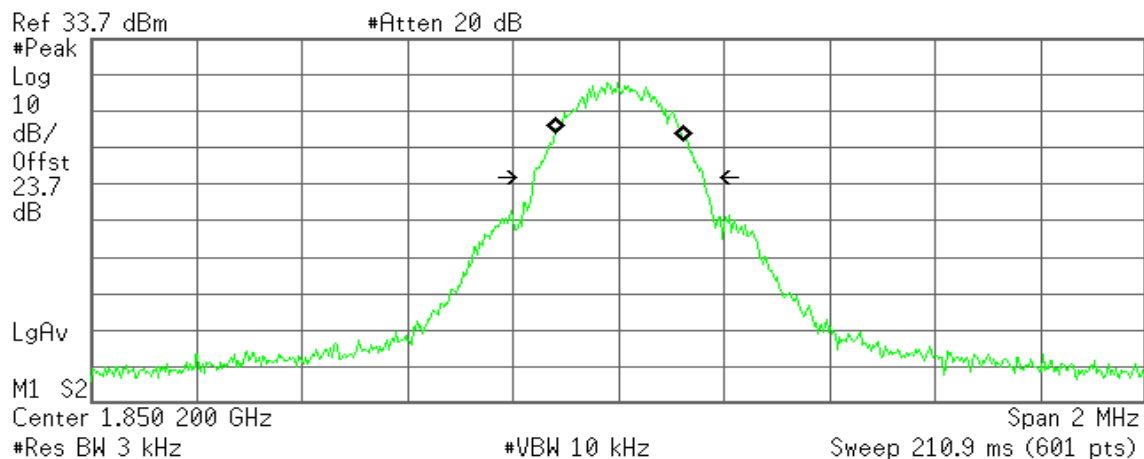
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 847.340 Hz
x dB Bandwidth 316.919 kHz

GPRS 1900 (CH Low)

Agilent

R T



Occupied Bandwidth
245.1093 kHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

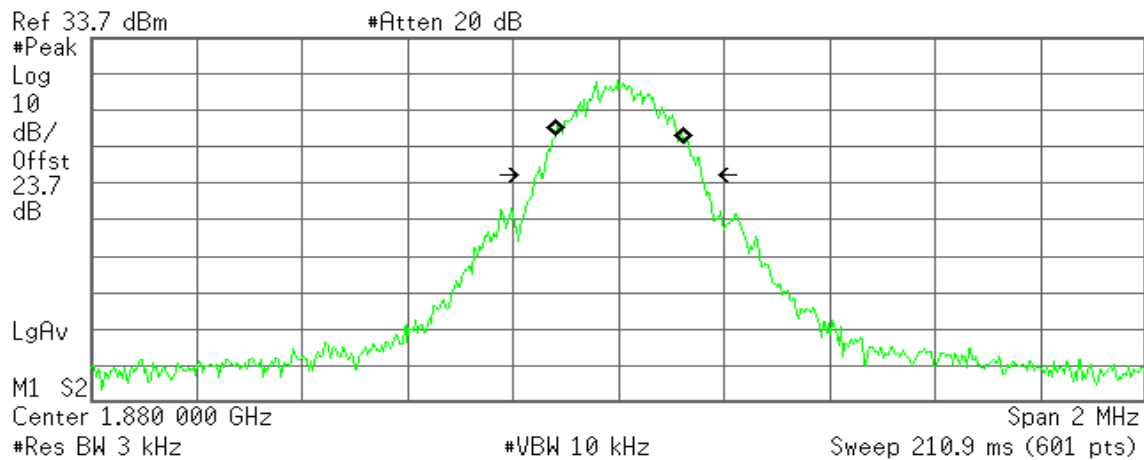
Transmit Freq Error 1.167 kHz
x dB Bandwidth 322.465 kHz



GPRS 1900 (CH Mid)

Agilent

R T

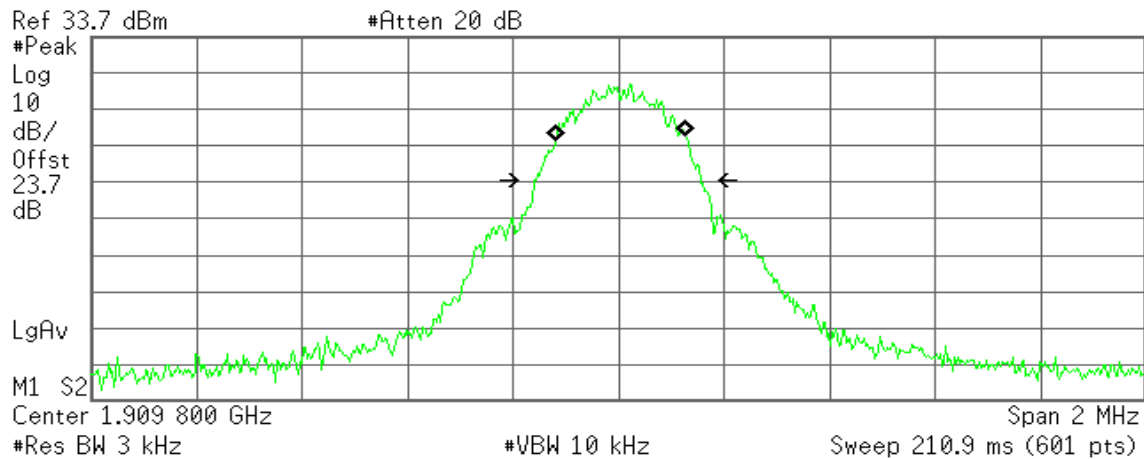


Transmit Freq Error 2.107 kHz
x dB Bandwidth 314.175 kHz

GPRS 1900 (CH High)

Agilent

R T



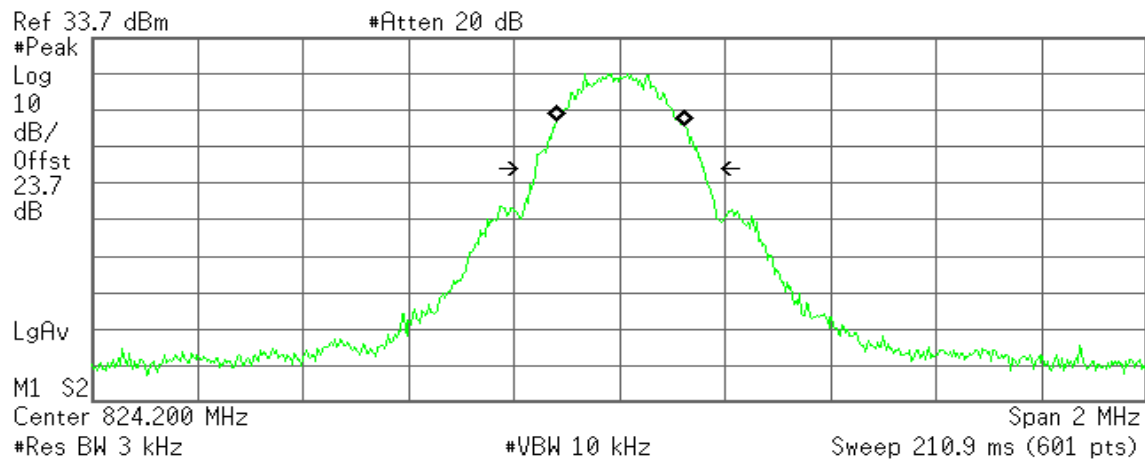
Transmit Freq Error 3.781 kHz
x dB Bandwidth 312.420 kHz



EDGE 850 (CH Low)

Agilent

R T



Occupied Bandwidth
243.2826 kHz

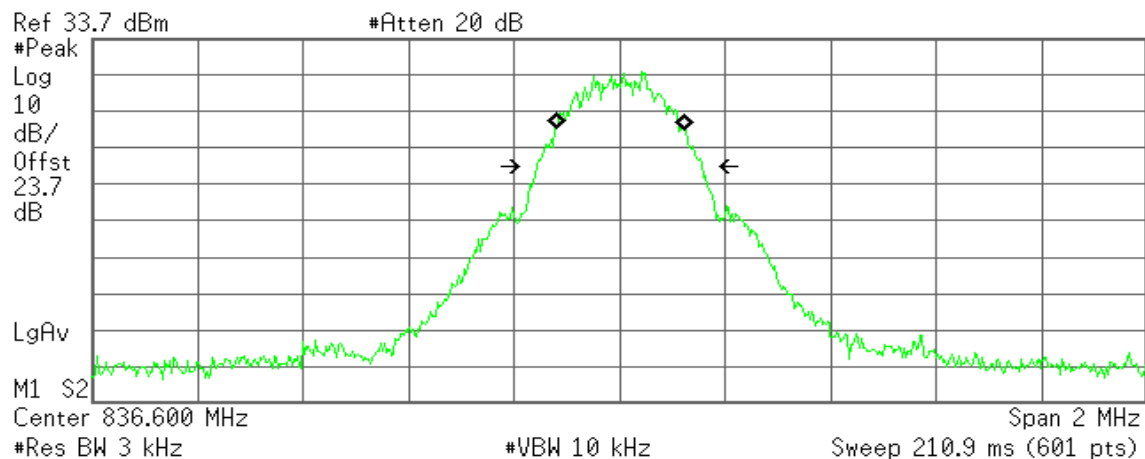
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 529.470 Hz
x dB Bandwidth 319.406 kHz

EDGE 850 (CH Mid)

Agilent

R T



Occupied Bandwidth
242.8230 kHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

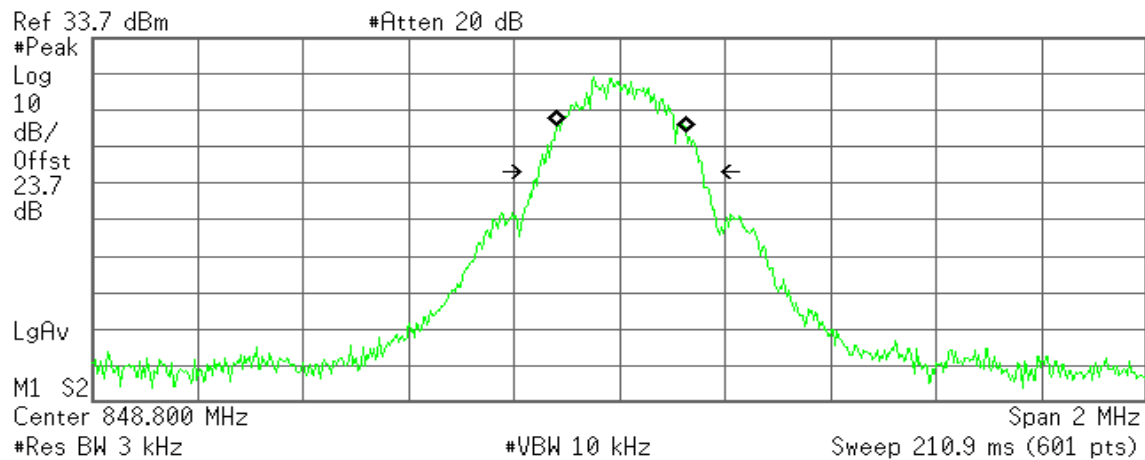
Transmit Freq Error 367.478 Hz
x dB Bandwidth 314.398 kHz



EDGE 850 (CH High)

Agilent

R T



Occupied Bandwidth
248.0802 kHz

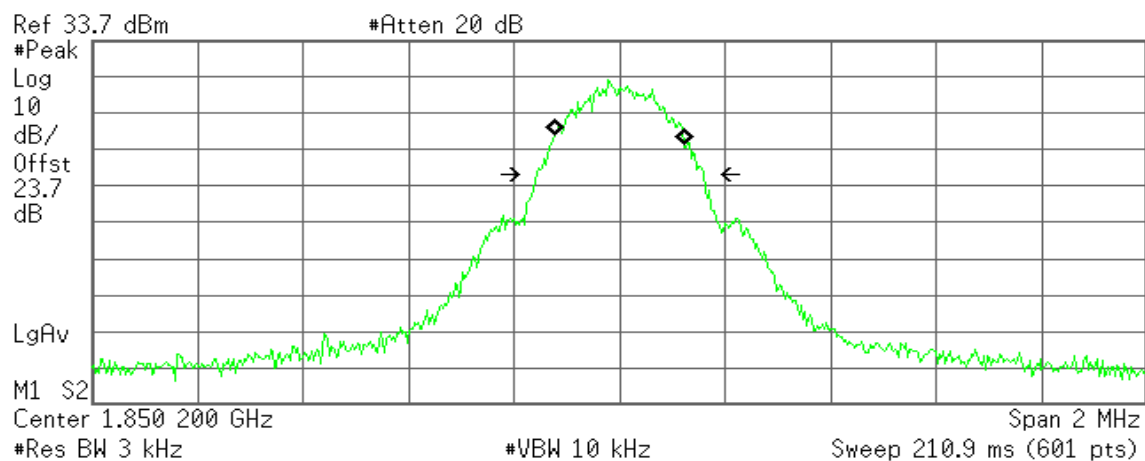
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 3.328 kHz
x dB Bandwidth 312.509 kHz

EDGE 1900 (CH Low)

Agilent

R T



Occupied Bandwidth
246.1149 kHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

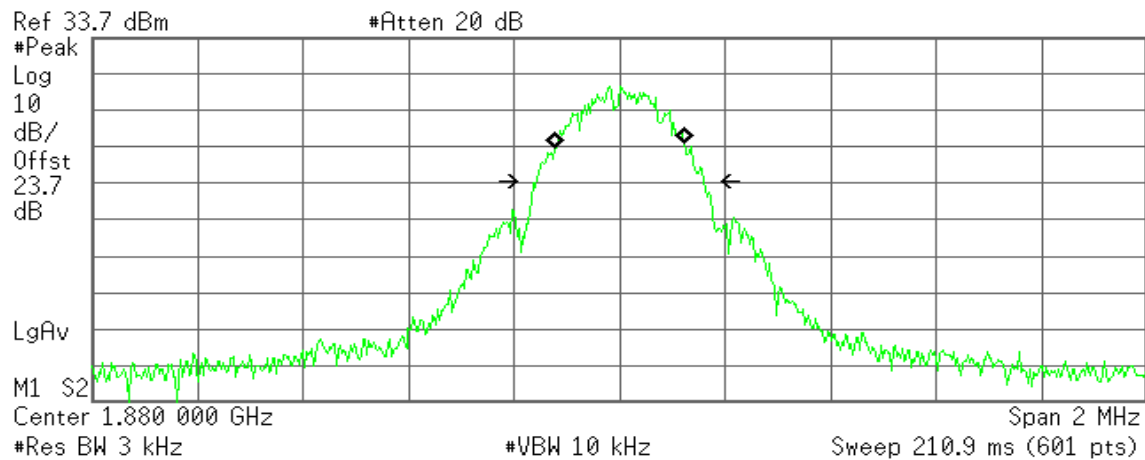
Transmit Freq Error -154.382 Hz
x dB Bandwidth 318.580 kHz



EDGE 1900 (CH Mid)

Agilent

R T



Occupied Bandwidth
245.3931 kHz

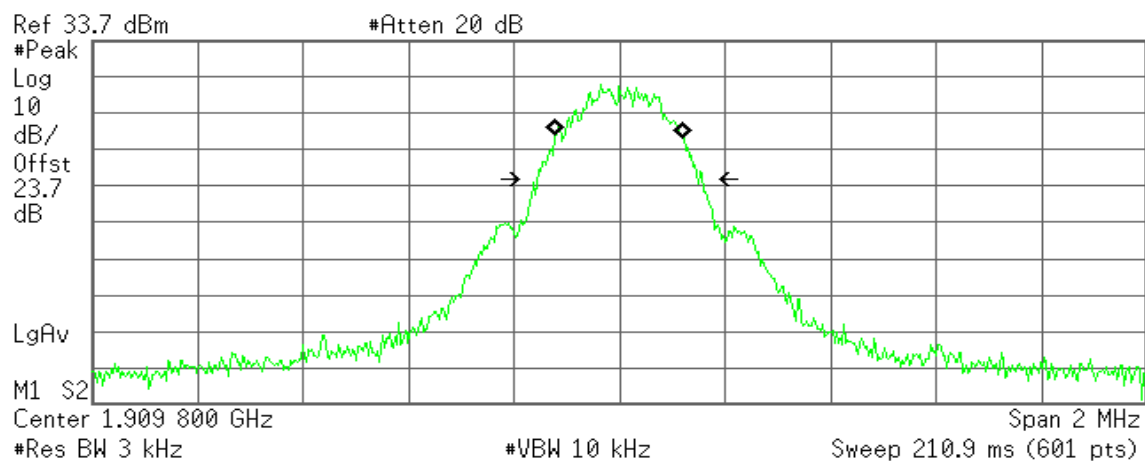
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 880.987 Hz
x dB Bandwidth 318.452 kHz

EDGE 1900 (CH High)

Agilent

R T



Occupied Bandwidth
243.6313 kHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

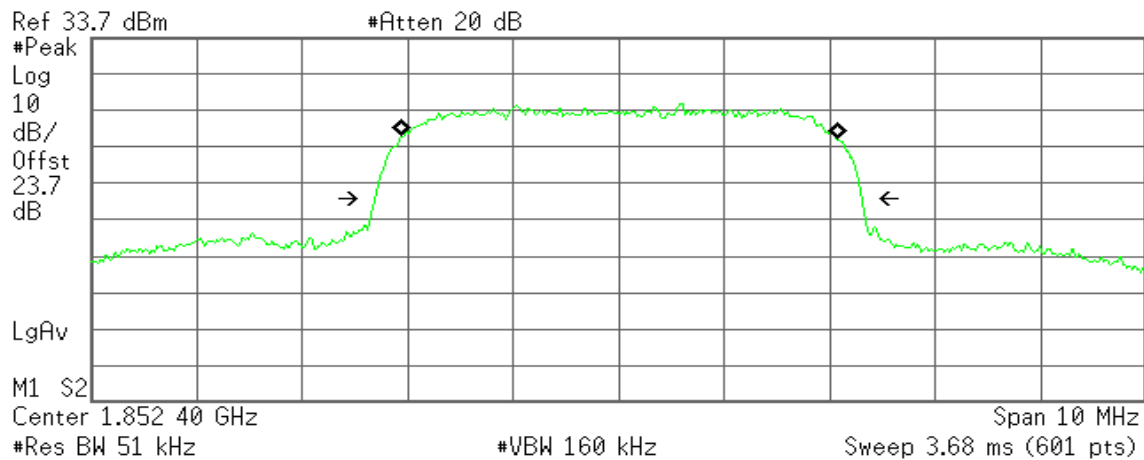
Transmit Freq Error -611.836 Hz
x dB Bandwidth 314.061 kHz



WCDMA Band II (CH Low)

Agilent

R T



Occupied Bandwidth
4.1466 MHz

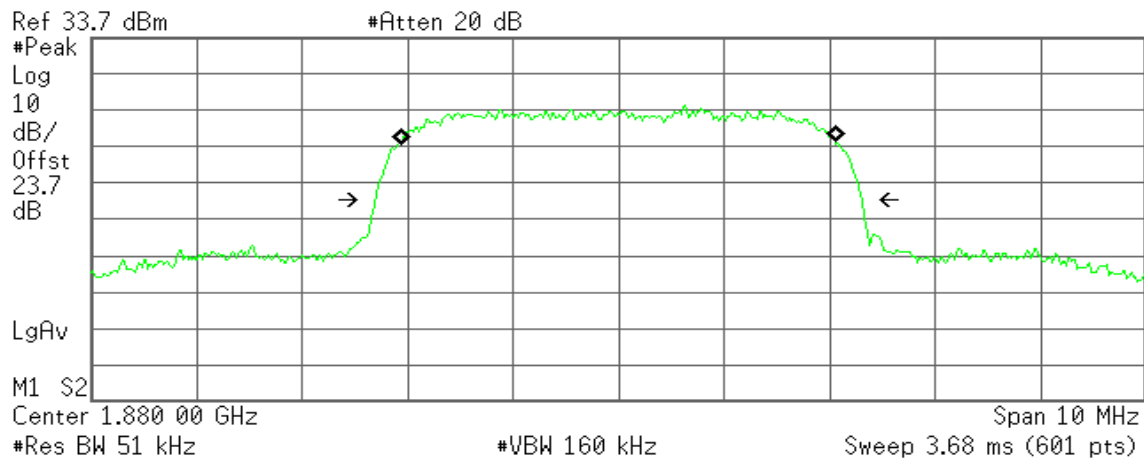
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 6.158 kHz
x dB Bandwidth 4.628 MHz

WCDMA Band II (CH Mid)

Agilent

R T



Occupied Bandwidth
4.1276 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

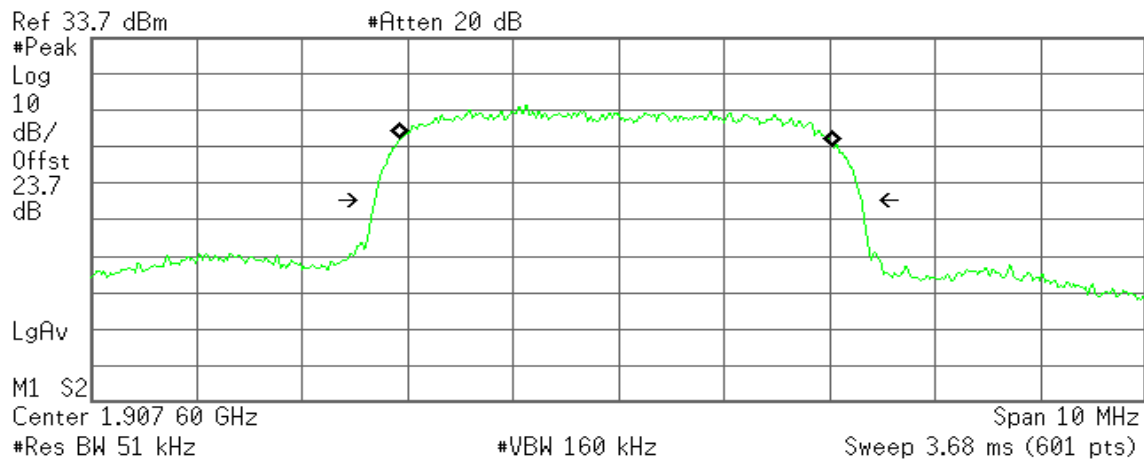
Transmit Freq Error -3.620 kHz
x dB Bandwidth 4.625 MHz



WCDMA Band II (CH High)

Agilent

R T



Occupied Bandwidth
4.1219 MHz

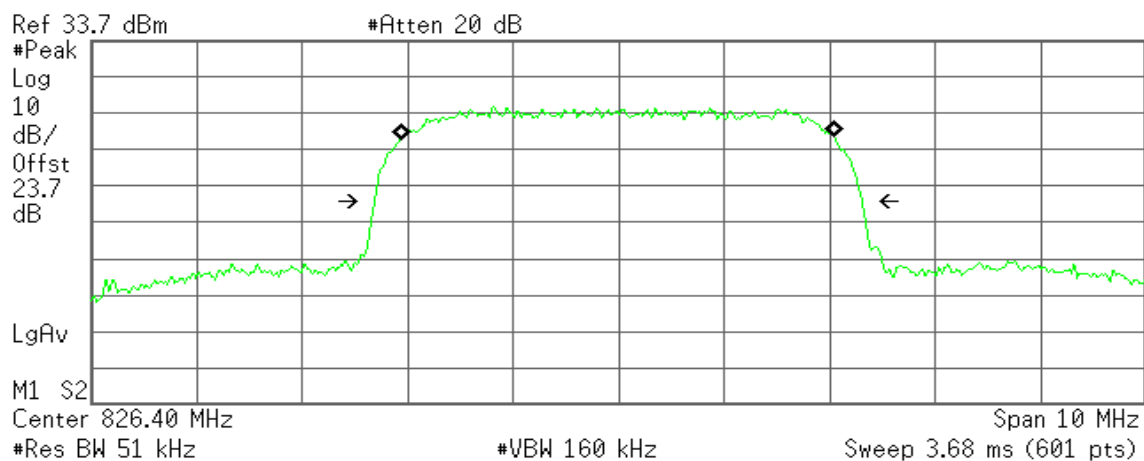
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -21.871 kHz
x dB Bandwidth 4.625 MHz

WCDMA Band V (CH Low)

Agilent

R T



Occupied Bandwidth
4.1244 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

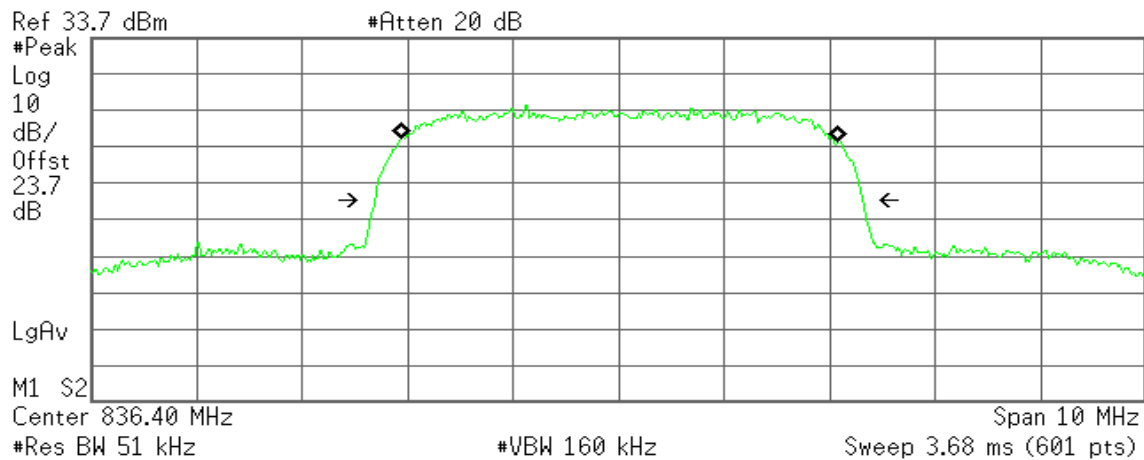
Transmit Freq Error -11.342 kHz
x dB Bandwidth 4.636 MHz



WCDMA Band V (CH Mid)

Agilent

R T



Occupied Bandwidth
4.1499 MHz

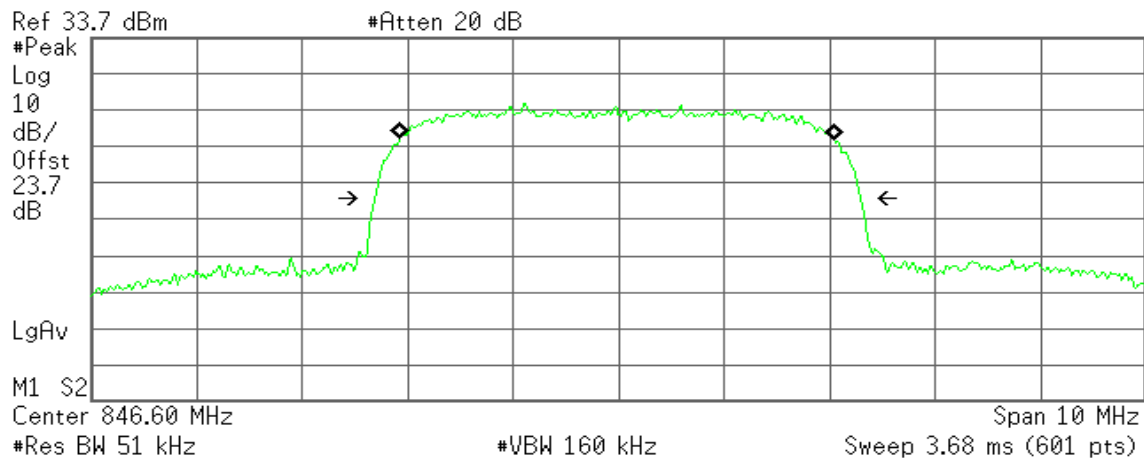
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 4.606 kHz
x dB Bandwidth 4.636 MHz

WCDMA Band V (CH High)

Agilent

R T



Occupied Bandwidth
4.1284 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

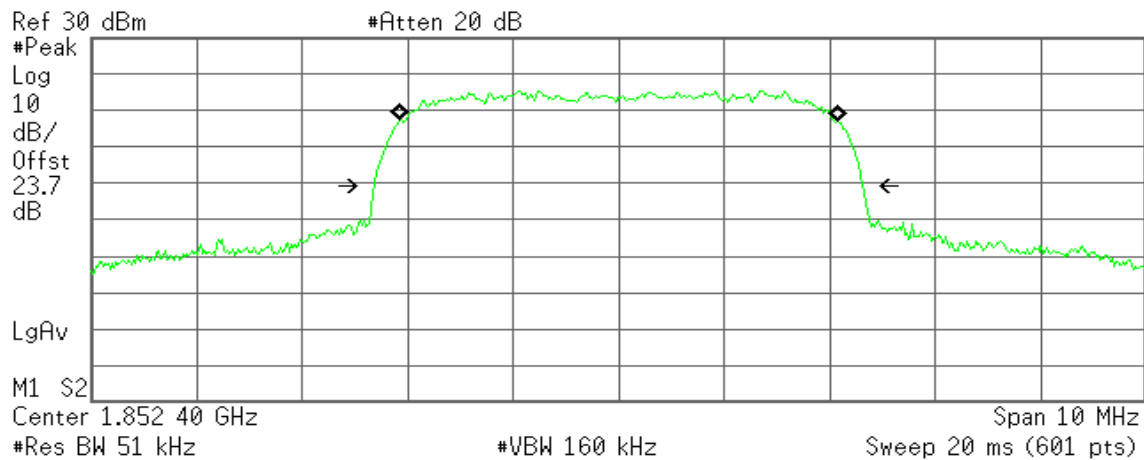
Transmit Freq Error -13.975 kHz
x dB Bandwidth 4.612 MHz



WCDMA / HSDPA Band II (CH Low)

Agilent

R T

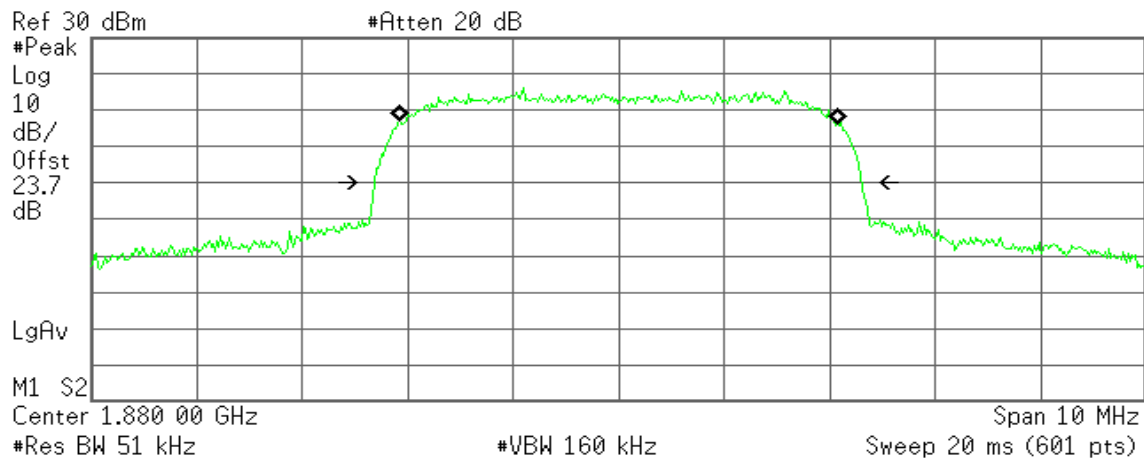


Transmit Freq Error 3.808 kHz
x dB Bandwidth 4.636 MHz

WCDMA / HSDPA Band II (CH Mid)

Agilent

R T



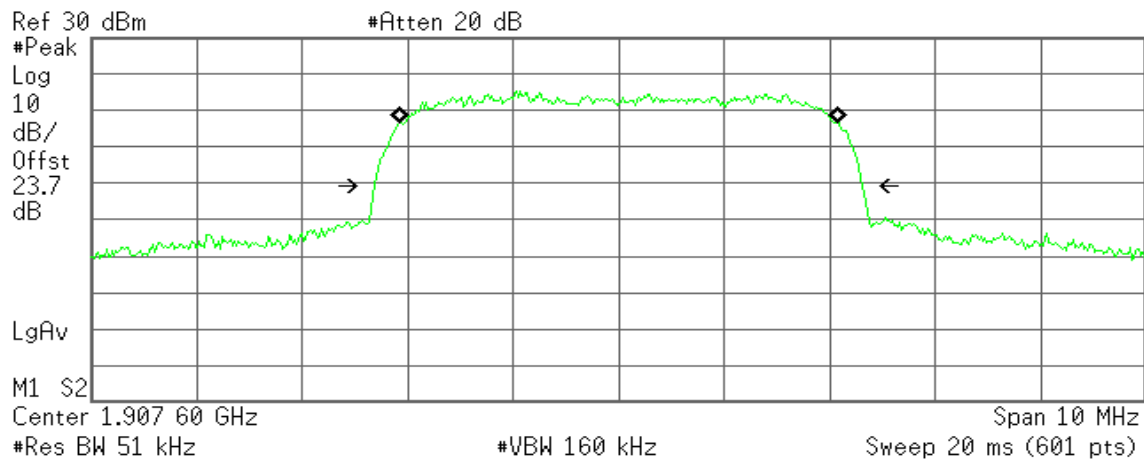
Transmit Freq Error 3.458 kHz
x dB Bandwidth 4.626 MHz



WCDMA / HSDPA Band II (CH High)

Agilent

R T



Occupied Bandwidth
4.1695 MHz

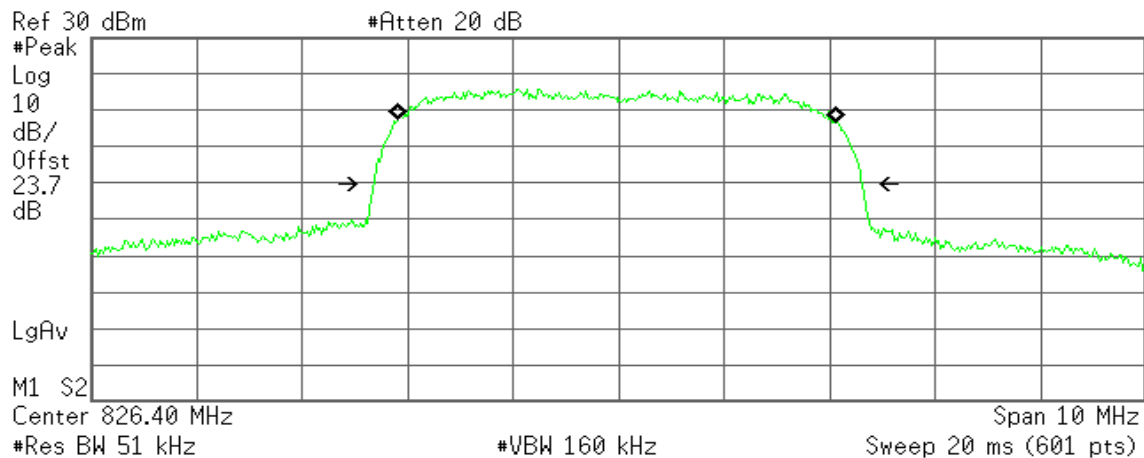
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 5.181 kHz
x dB Bandwidth 4.632 MHz

WCDMA / HSDPA Band V (CH Low)

Agilent

R T



Occupied Bandwidth
4.1607 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

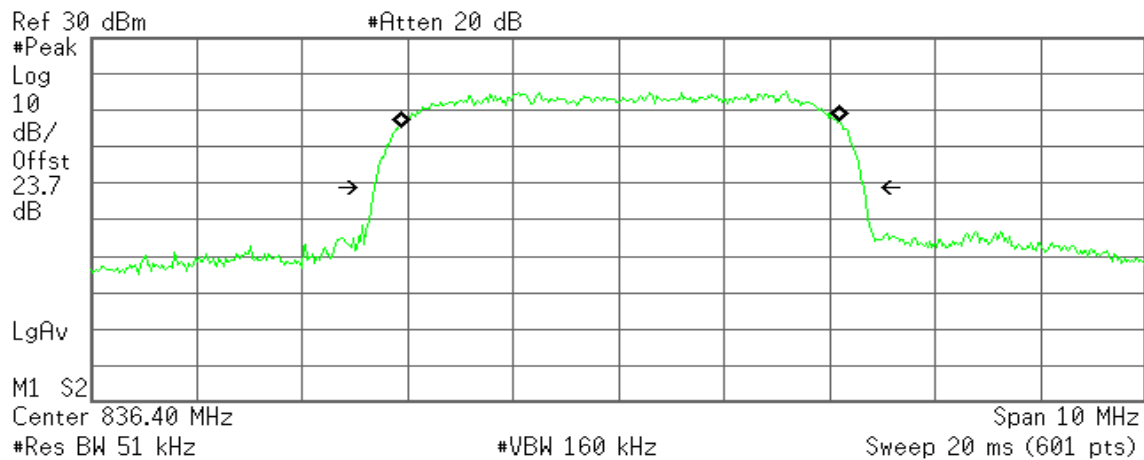
Transmit Freq Error -15.786 kHz
x dB Bandwidth 4.638 MHz



WCDMA / HSDPA Band V (CH Mid)

Agilent

R T



Occupied Bandwidth
4.1616 MHz

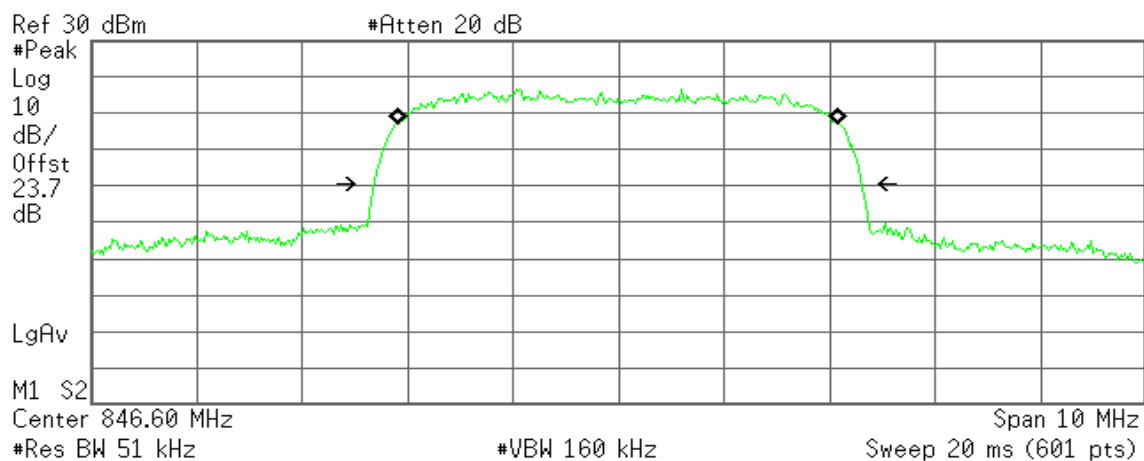
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 17.474 kHz
x dB Bandwidth 4.650 MHz

WCDMA / HSDPA Band V (CH High)

Agilent

R T



Occupied Bandwidth
4.1756 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

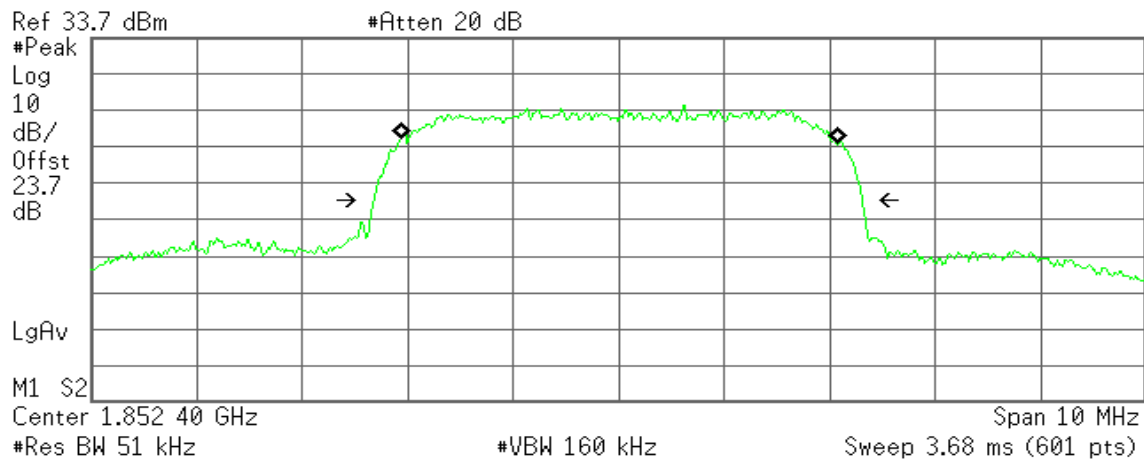
Transmit Freq Error -4.122 kHz
x dB Bandwidth 4.632 MHz



WCDMA / HSUPA Band II (CH Low)

Agilent

R T



Occupied Bandwidth
4.1644 MHz

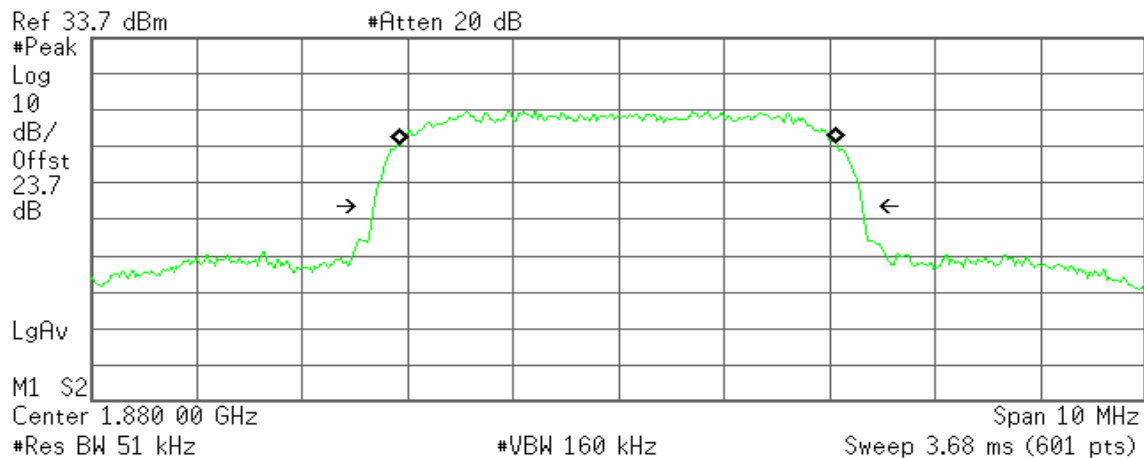
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 9.206 kHz
x dB Bandwidth 4.641 MHz

WCDMA / HSUPA Band II (CH Mid)

Agilent

R T



Occupied Bandwidth
4.1403 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

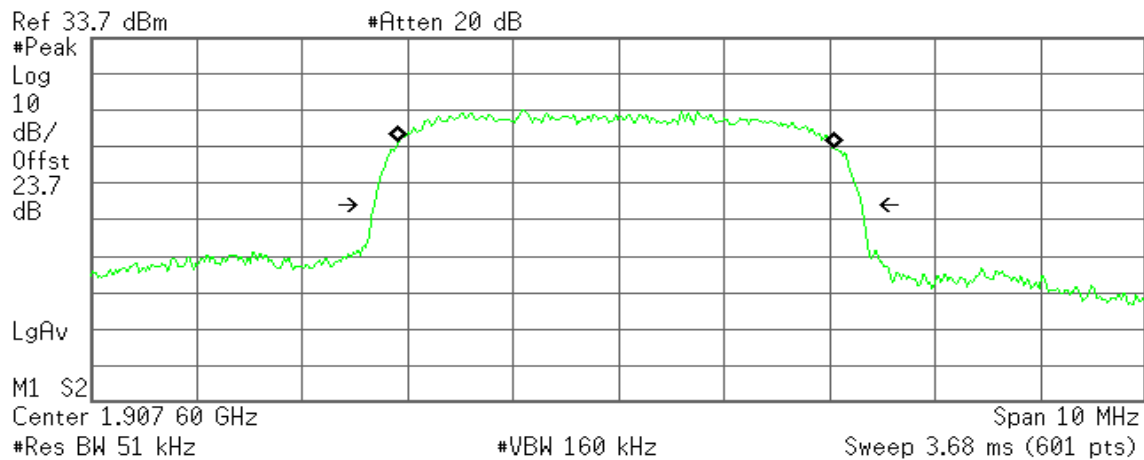
Transmit Freq Error -8.775 kHz
x dB Bandwidth 4.642 MHz



WCDMA / HSUPA Band II (CH High)

Agilent

R T



Occupied Bandwidth
4.1366 MHz

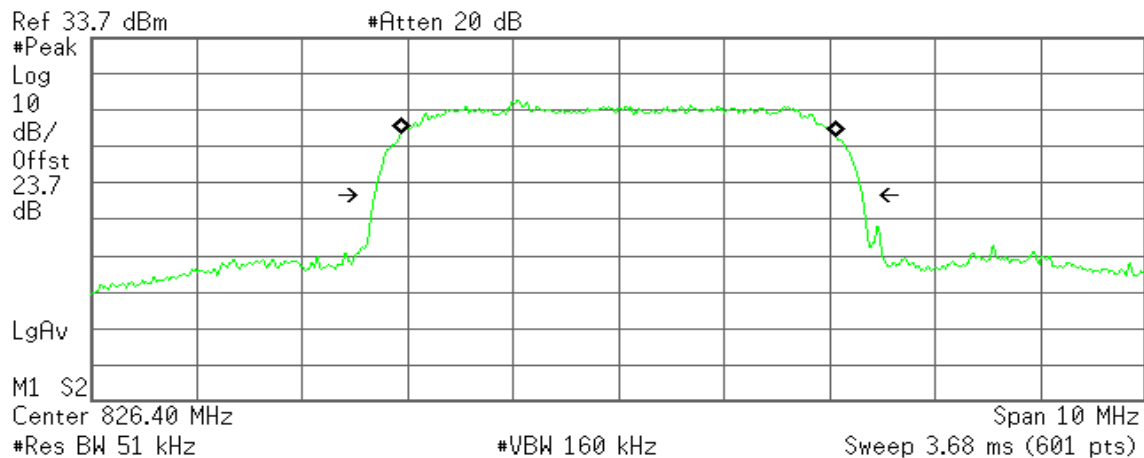
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -23.492 kHz
x dB Bandwidth 4.627 MHz

WCDMA / HSUPA Band V (CH Low).

Agilent

R T



Occupied Bandwidth
4.1363 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

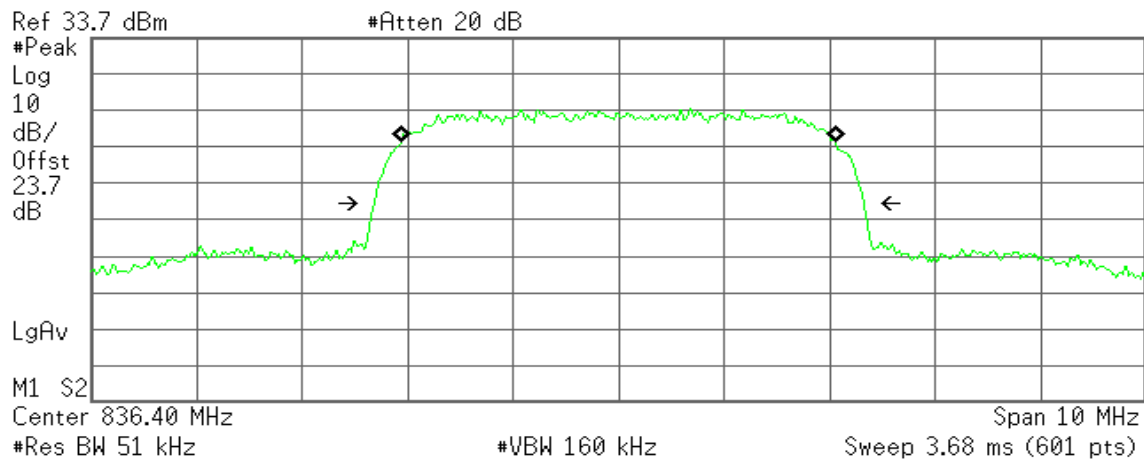
Transmit Freq Error -3.083 kHz
x dB Bandwidth 4.631 MHz



WCDMA / HSUPA Band V (CH Mid)

Agilent

R T



Occupied Bandwidth
4.1311 MHz

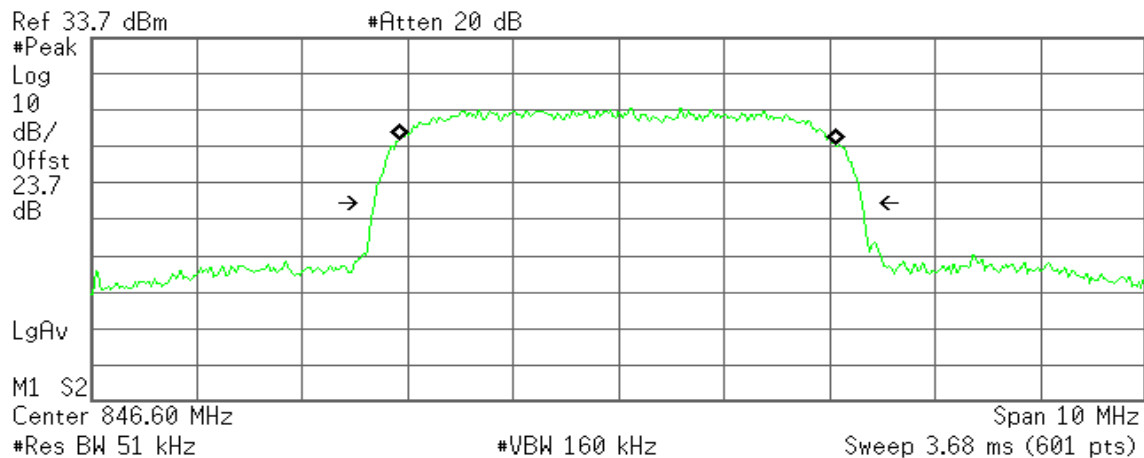
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -1.340 kHz
x dB Bandwidth 4.649 MHz

WCDMA / HSUPA Band V (CH Mid)

Agilent

R T



Occupied Bandwidth
4.1485 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -13.520 kHz
x dB Bandwidth 4.630 MHz



7.5 OUT OF BAND EMISSION AT ANTENNA TERMINALS

LIMIT

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

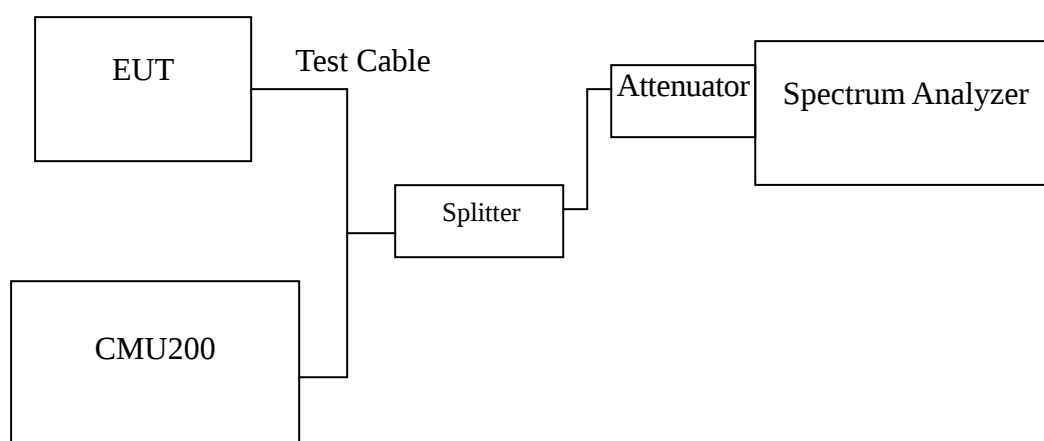
Out of Band Emissions: The mean power of emission must be attenuated below the mean power of the non-modulated carrier (P) on any frequency twice or more than twice the fundamental frequency by at least $43 + 10 \log P$ dB.

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 10-1	Conducted spurious emissions, 30MHz - 20GHz
	661	Figure 10-2	Conducted spurious emissions, 30MHz - 20GHz
	810	Figure 10-3	Conducted spurious emissions, 30MHz - 20GHz

Mode	CH	Location	Description
GPRS 850	128	Figure 12-1	Band Edge emissions
	251	Figure 12-2	Band Edge emissions

Mode	CH	Location	Description
GPRS 1900	512	Figure 14-1	Band Edge emissions
	810	Figure 14-2	Band Edge emissions

Mode	CH	Location	Description
EDGE 850	128	Figure 15-1	Conducted spurious emissions, 30MHz - 20GHz
	190	Figure 15-2	Conducted spurious emissions, 30MHz - 20GHz
	251	Figure 15-3	Conducted spurious emissions, 30MHz - 20GHz
EDGE 1900	512	Figure 16-1	Conducted spurious emissions, 30MHz - 20GHz
	661	Figure 16-2	Conducted spurious emissions, 30MHz - 20GHz
	810	Figure 16-3	Conducted spurious emissions, 30MHz - 20GHz

Mode	CH	Location	Description
EDGE 850	128	Figure 17-1	Band Edge emissions
	251	Figure 17-2	Band Edge emissions
EDGE 1900	512	Figure 18-1	Band Edge emissions
	810	Figure 18-2	Band Edge emissions



Mode	CH	Location	Description
WCDMA (Band II)	9262	Figure 19-1	Conducted spurious emissions, 30MHz - 20GHz
	9400	Figure 19-2	Conducted spurious emissions, 30MHz - 20GHz
	9538	Figure 19-3	Conducted spurious emissions, 30MHz - 20GHz
WCDMA (Band V)	4132	Figure 20-1	Conducted spurious emissions, 30MHz - 20GHz
	4182	Figure 20-2	Conducted spurious emissions, 30MHz - 20GHz
	4233	Figure 20-3	Conducted spurious emissions, 30MHz - 20GHz

Mode	CH	Location	Description
WCDMA (Band II)	9262	Figure 21-1	Band Edge emissions
	9538	Figure 21-2	Band Edge emissions
WCDMA (Band V)	4132	Figure 22-1	Band Edge emissions
	4233	Figure 22-2	Band Edge emissions

Mode	CH	Location	Description
HSDPA WCDMA (Band II)	9262	Figure 23-1	Conducted spurious emissions, 30MHz - 20GHz
	9400	Figure 23-2	Conducted spurious emissions, 30MHz - 20GHz
	9538	Figure 23-3	Conducted spurious emissions, 30MHz - 20GHz
HSDPA WCDMA (Band V)	4132	Figure 24-1	Conducted spurious emissions, 30MHz - 20GHz
	4182	Figure 24-2	Conducted spurious emissions, 30MHz - 20GHz
	4233	Figure 24-3	Conducted spurious emissions, 30MHz - 20GHz

Mode	CH	Location	Description
HSDPA WCDMA (Band II)	9262	Figure 25-1	Band Edge emissions
	9538	Figure 25-2	Band Edge emissions
HSDPA WCDMA (Band V)	4132	Figure 26-1	Band Edge emissions
	4233	Figure 26-2	Band Edge emissions



Mode	CH	Location	Description
HSUPA WCDMA (Band II)	9262	Figure 27-1	Conducted spurious emissions, 30MHz - 20GHz
	9400	Figure 27-2	Conducted spurious emissions, 30MHz - 20GHz
	9538	Figure 27-3	Conducted spurious emissions, 30MHz - 20GHz
HSUPA WCDMA (Band V)	4132	Figure 28-1	Conducted spurious emissions, 30MHz - 20GHz
	4182	Figure 28-2	Conducted spurious emissions, 30MHz - 20GHz
	4233	Figure 28-3	Conducted spurious emissions, 30MHz - 20GHz

Mode	CH	Location	Description
HSUPA WCDMA (Band II)	9262	Figure 29-1	Band Edge emissions
	9538	Figure 29-2	Band Edge emissions
HSUPA WCDMA (Band V)	4132	Figure 30-1	Band Edge emissions
	4233	Figure 30-2	Band Edge emissions



Test Plot

GPRS 850

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

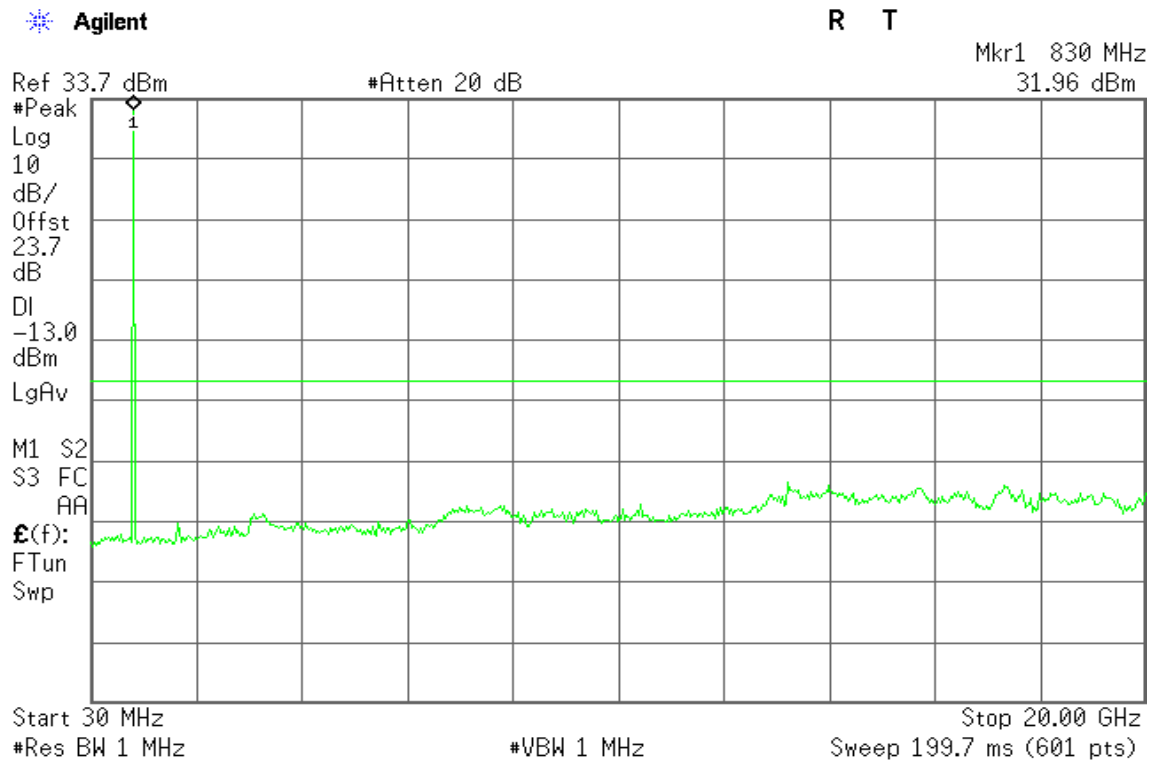


Figure 8-2: Out of Band emission at antenna terminals – GPRS CH Mid

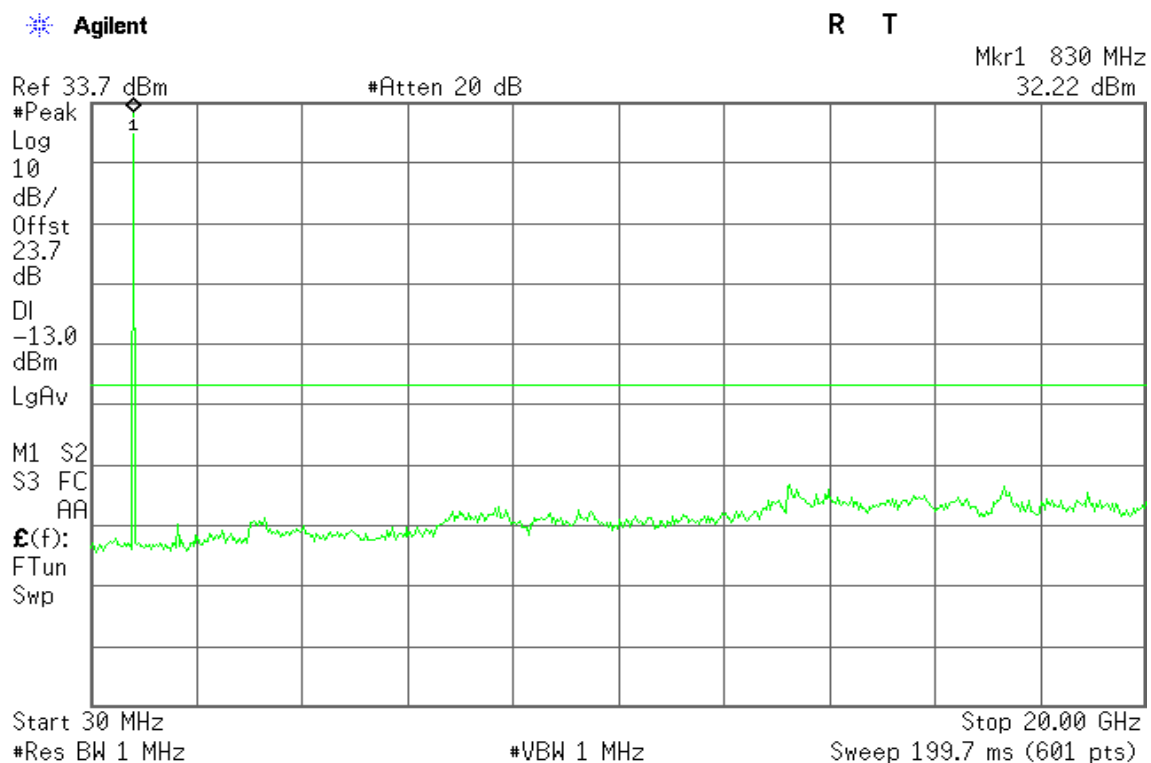
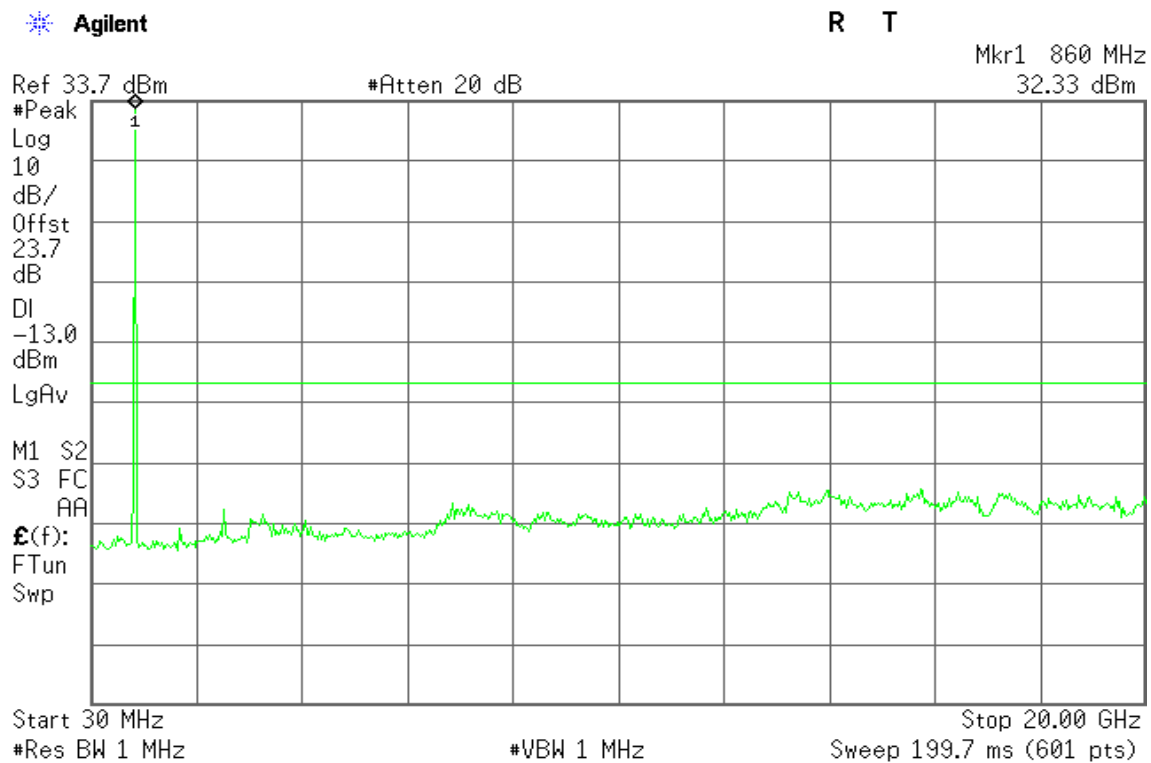




Figure 8-3: Out of Band emission at antenna terminals – GPRS CH High



GPRS 1900

Figure 10-1: Out of Band emission at antenna terminals – GSM CH Low

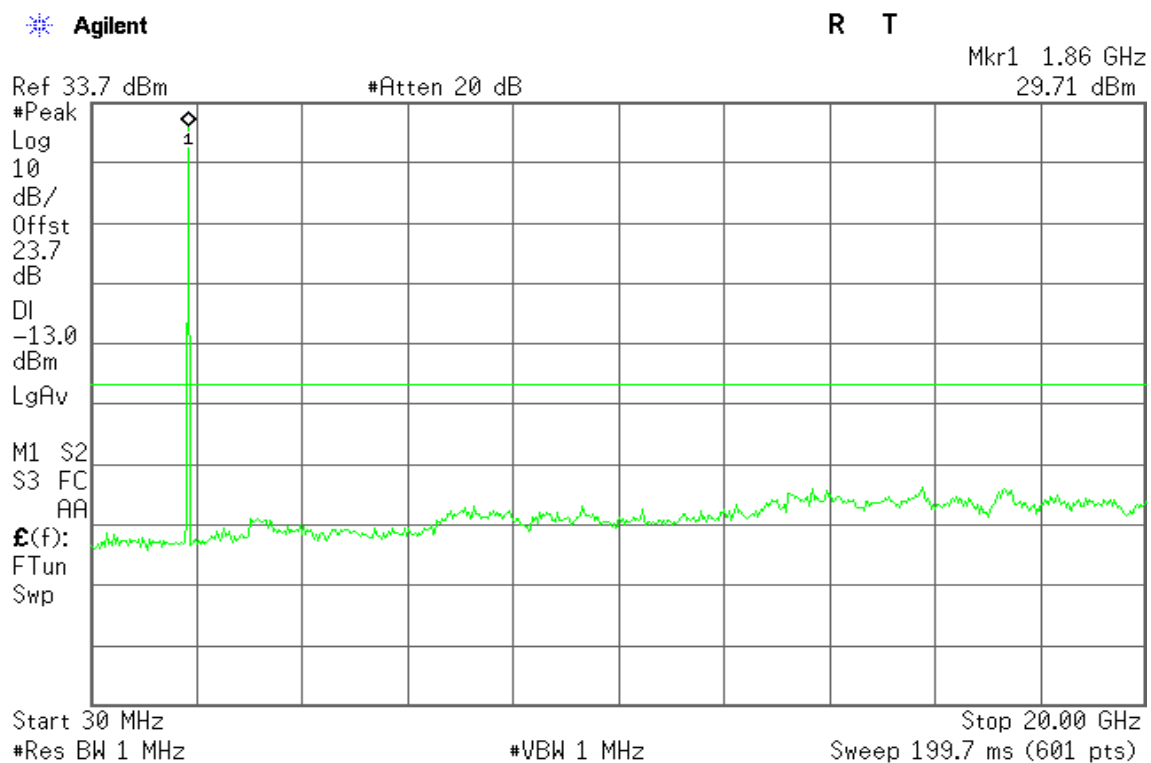




Figure 10-2: Out of Band emission at antenna terminals – GSM CH Mid

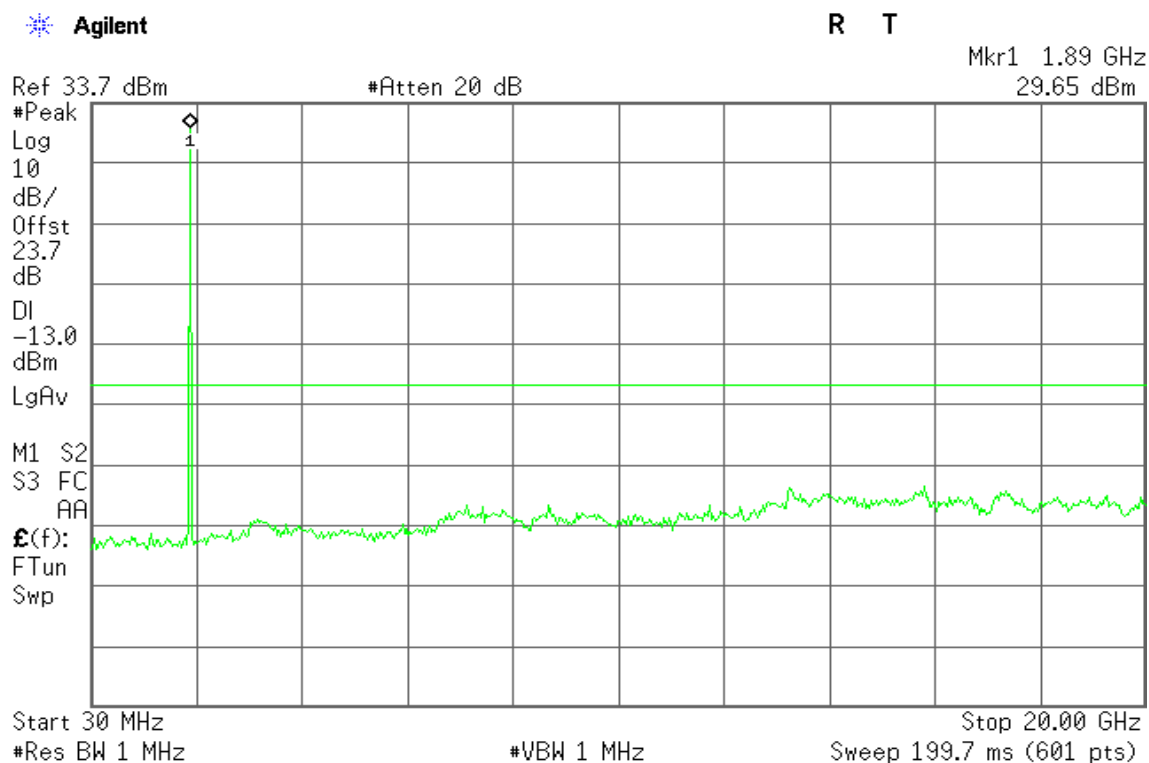
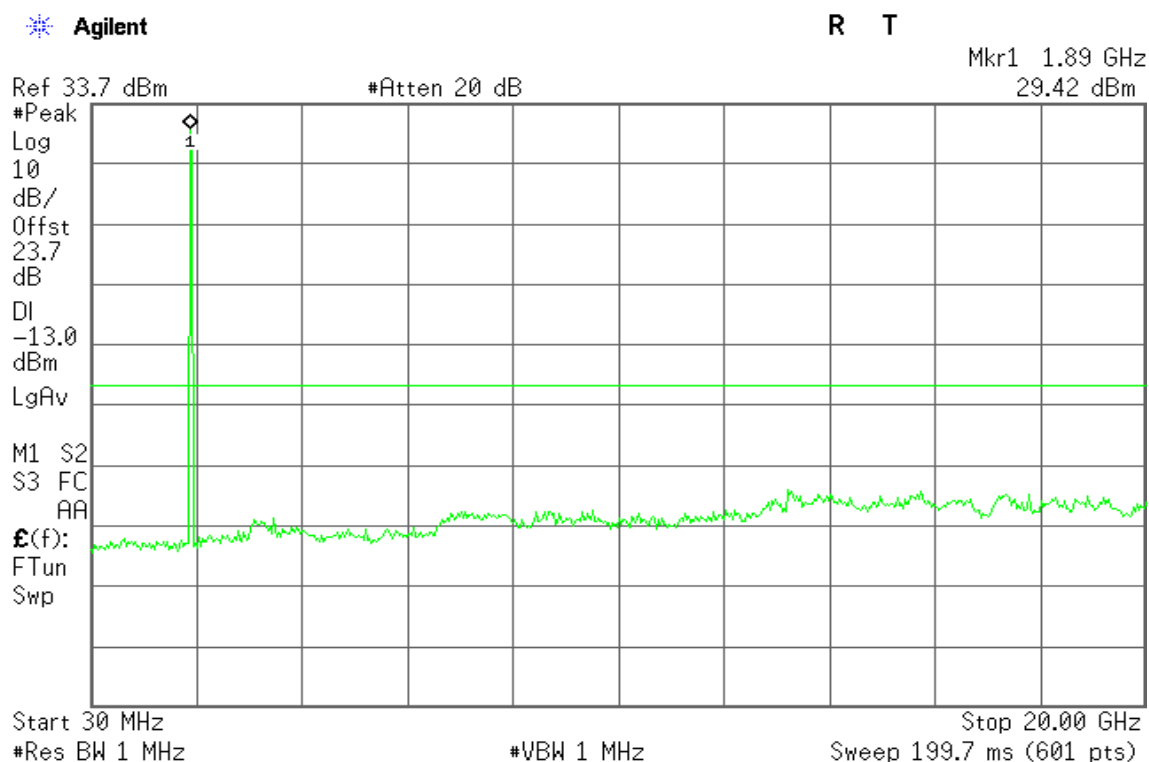


Figure 10-3: Out of Band emission at antenna terminals – GSM CH High





GPRS 850

Figure 12-1: Band Edge emissions – GPRS CH Low

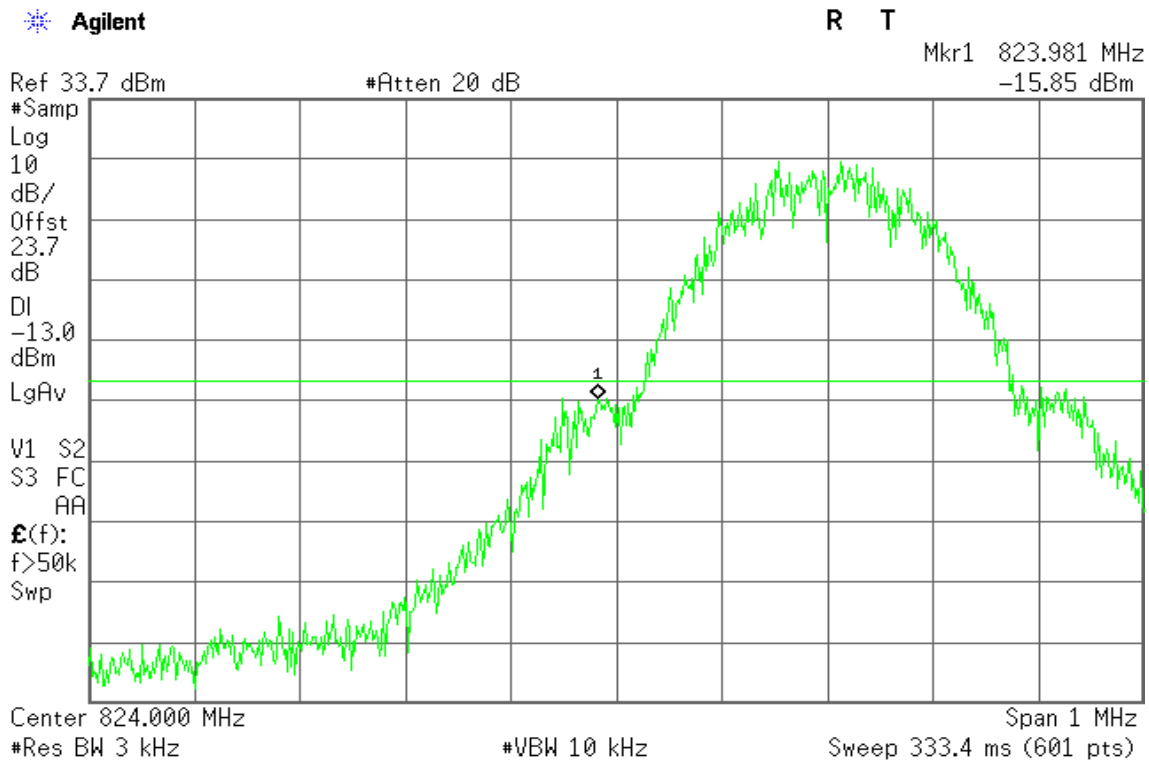
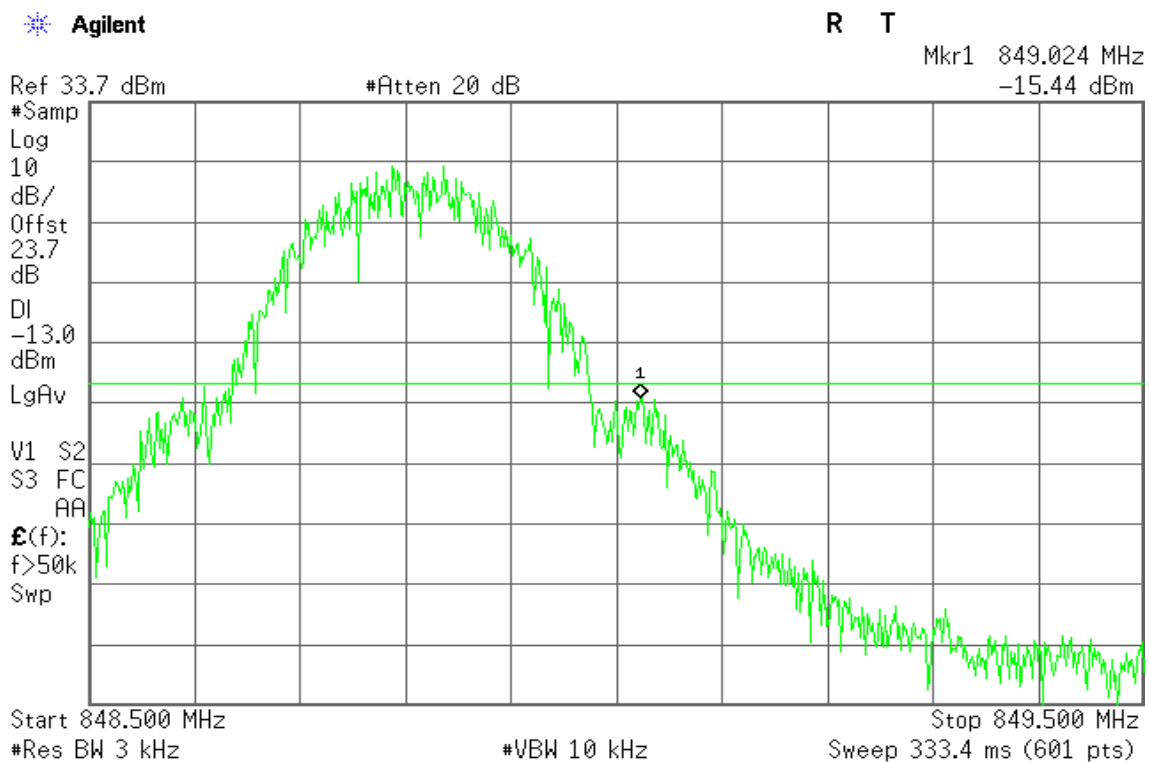


Figure 12-2: Band Edge emissions –GPRS CH High





GPRS 1900

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

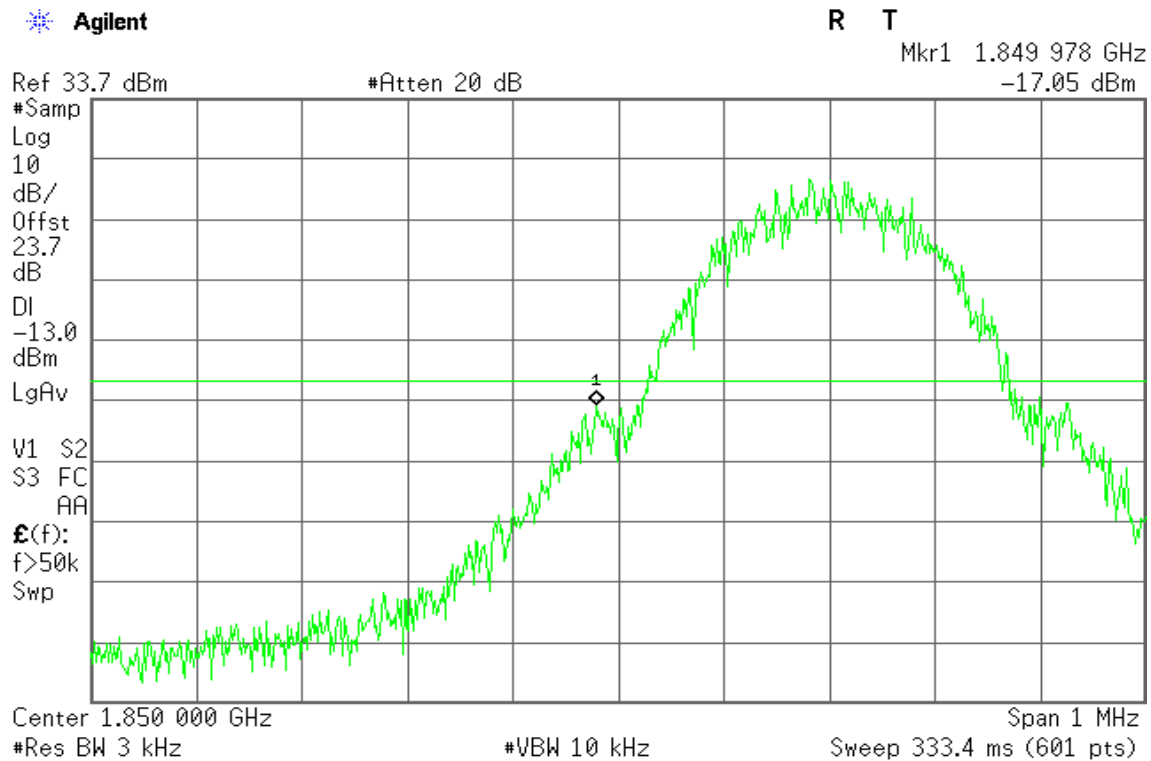
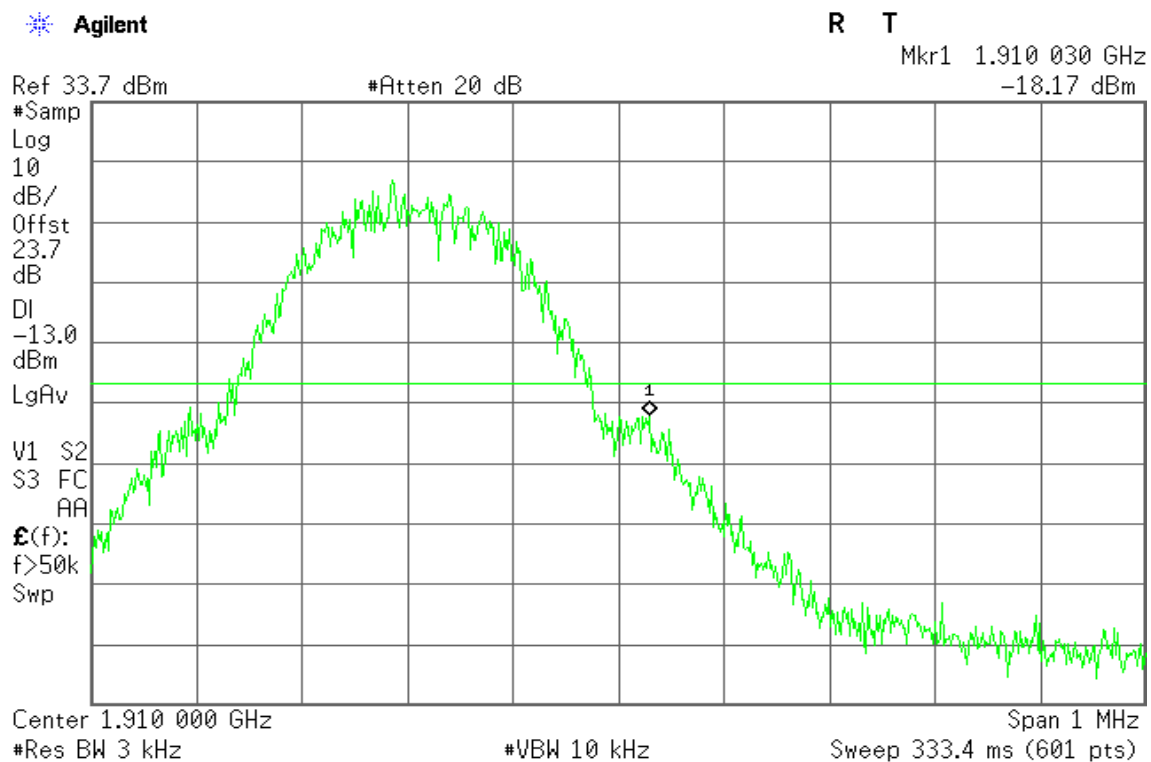


Figure 14-2: Band Edge emissions – GPRS CH High





EDGE 850

Figure 15-1: Out of Band emission at antenna terminals –EDGE CH Low

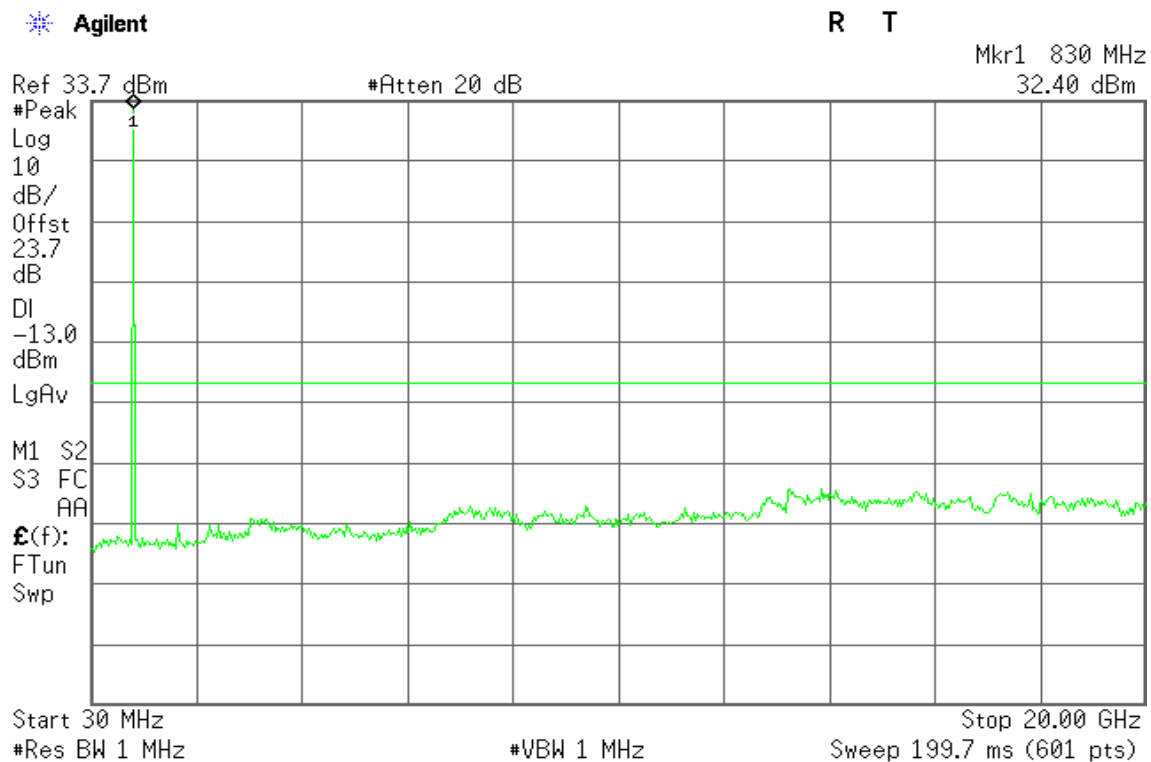


Figure 15-2: Out of Band emission at antenna terminals –EDGE CH Mid

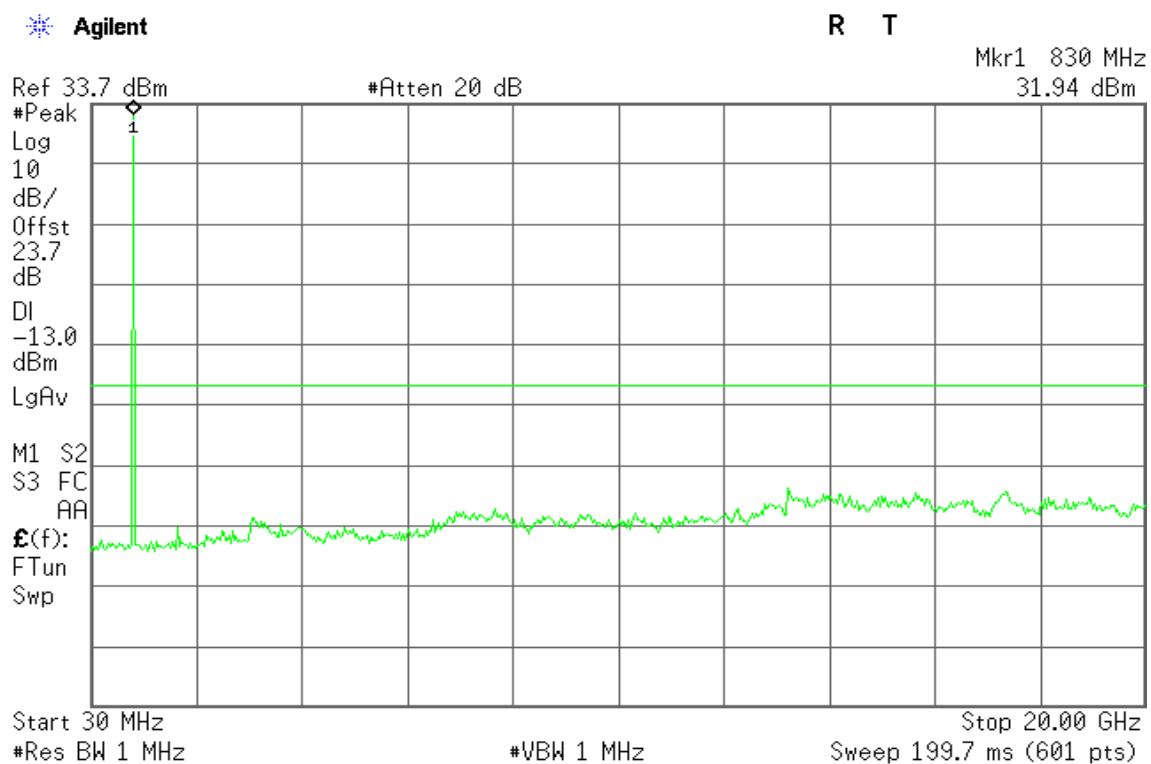
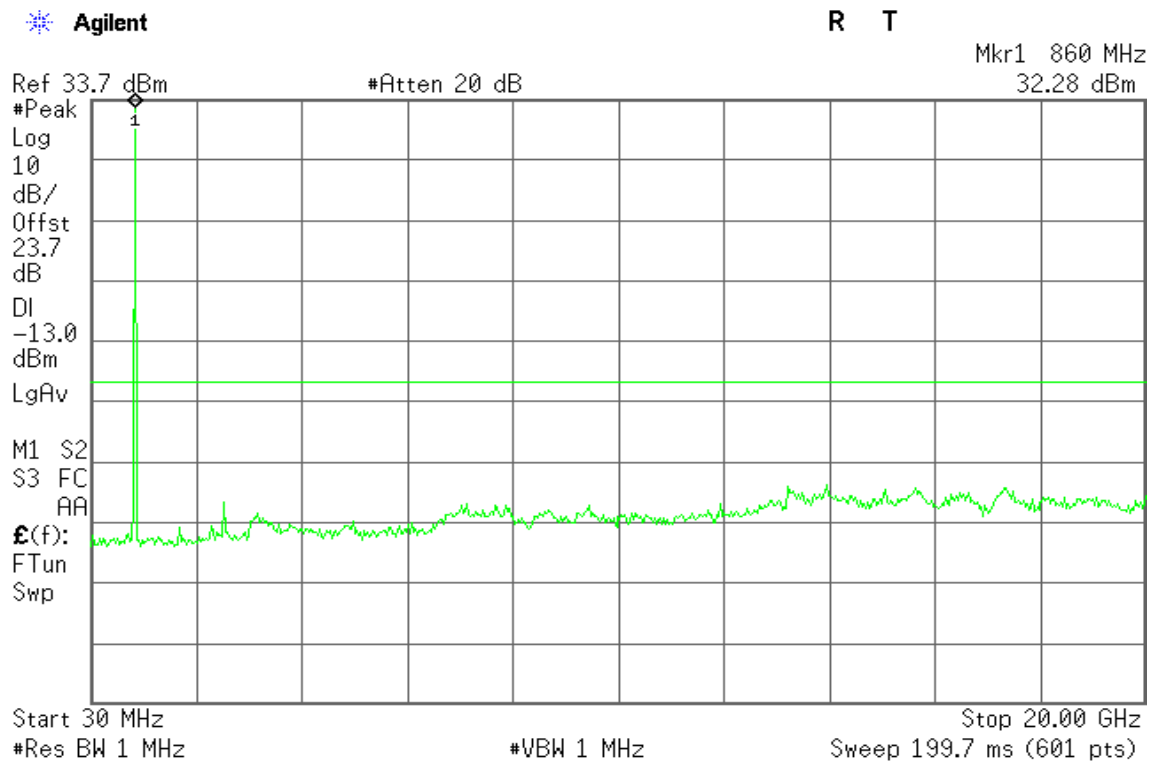




Figure 15-3: Out of Band emission at antenna terminals –EDGE CH High



EDGE 1900

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

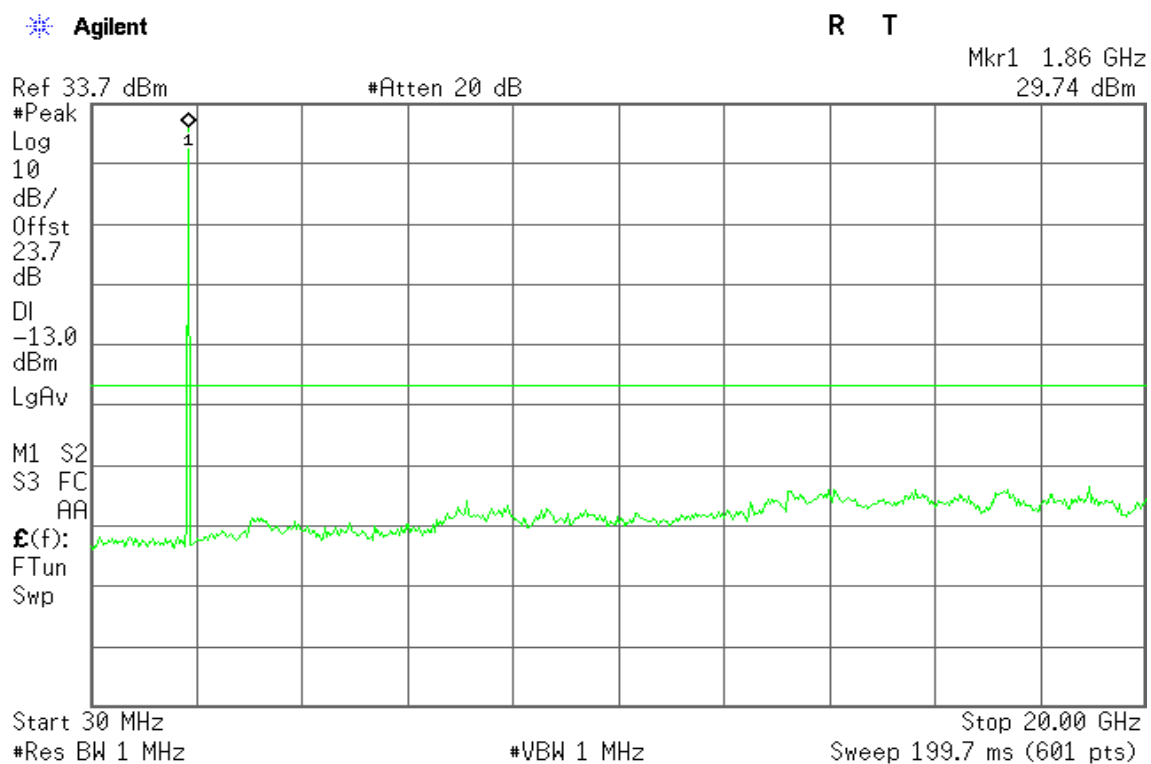




Figure 16-2: Out of Band emission at antenna terminals –EDGE CH Mid

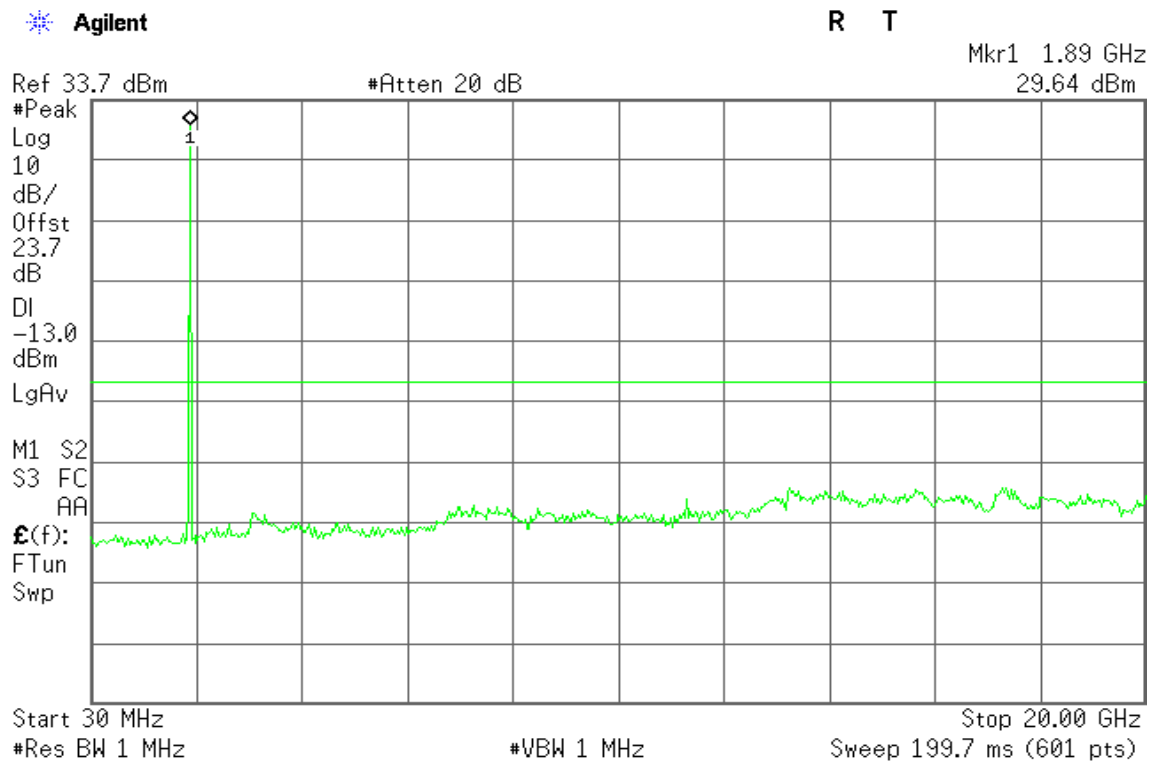
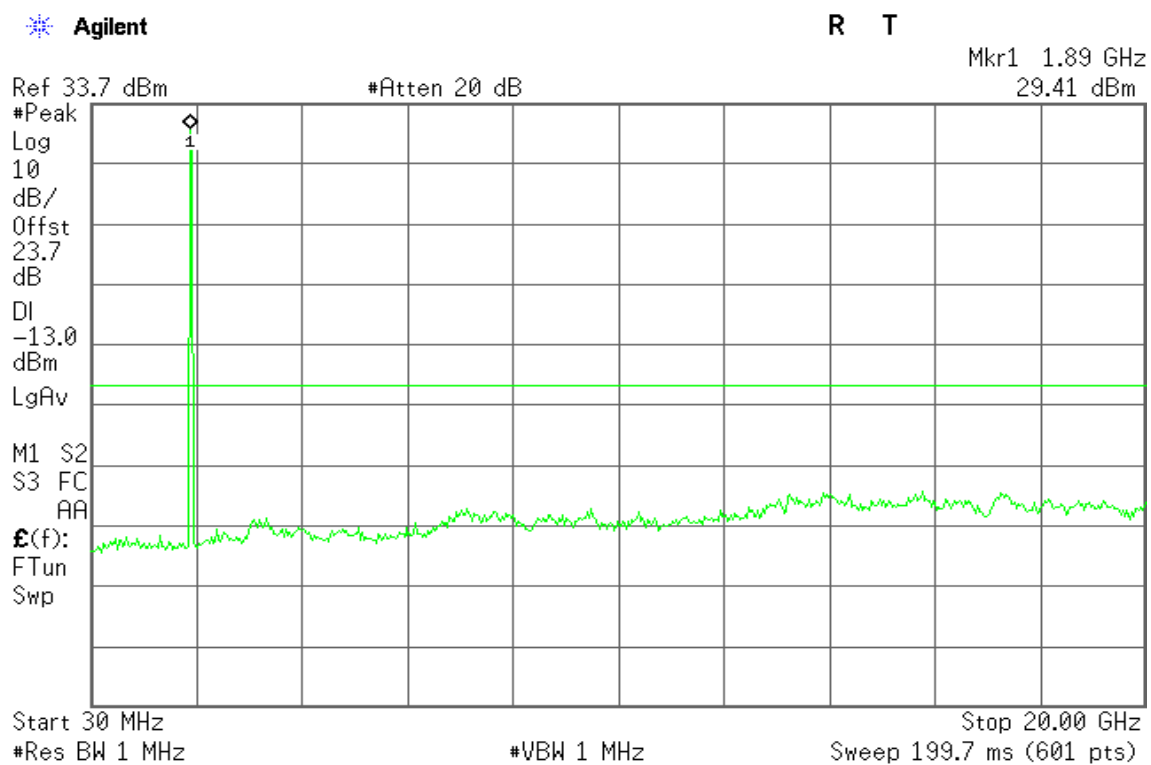


Figure 16-3: Out of Band emission at antenna terminals –EDGE CH High





EDGE 850

Figure 17-1: Band Edge emissions – EDGE CH Low

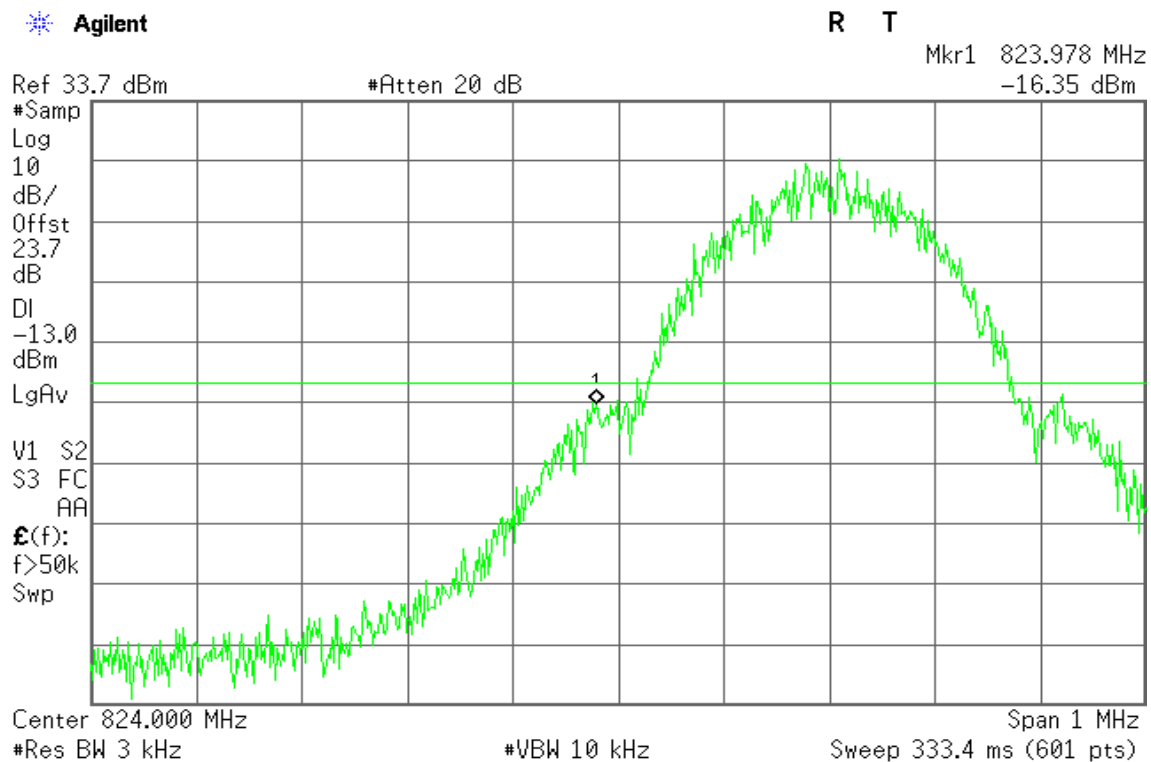
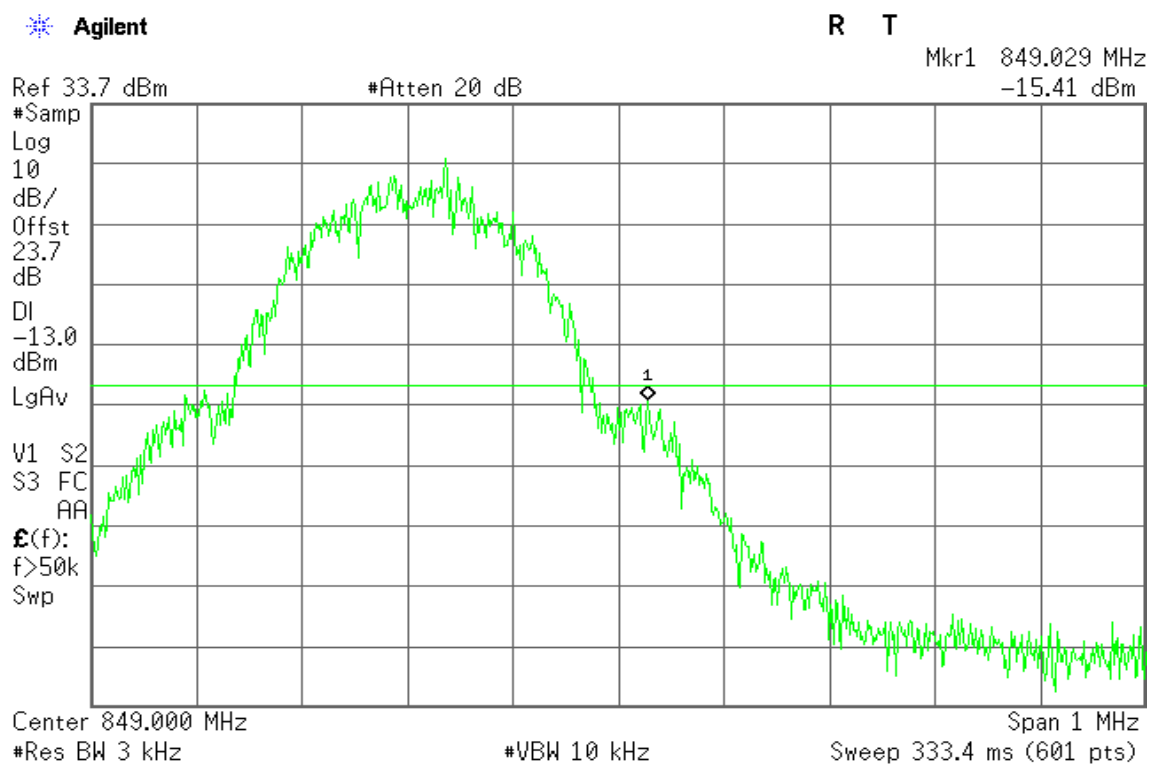


Figure 17-2: Band Edge emissions – EDGE CH High





EDGE 1900

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

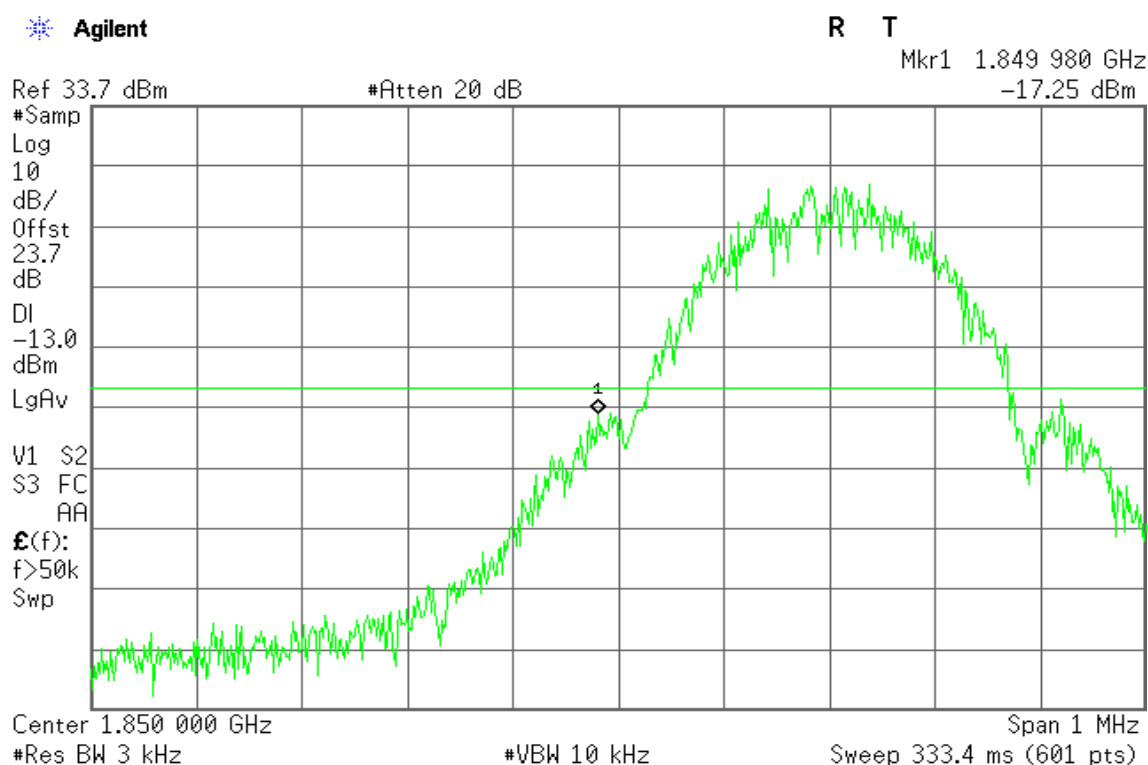
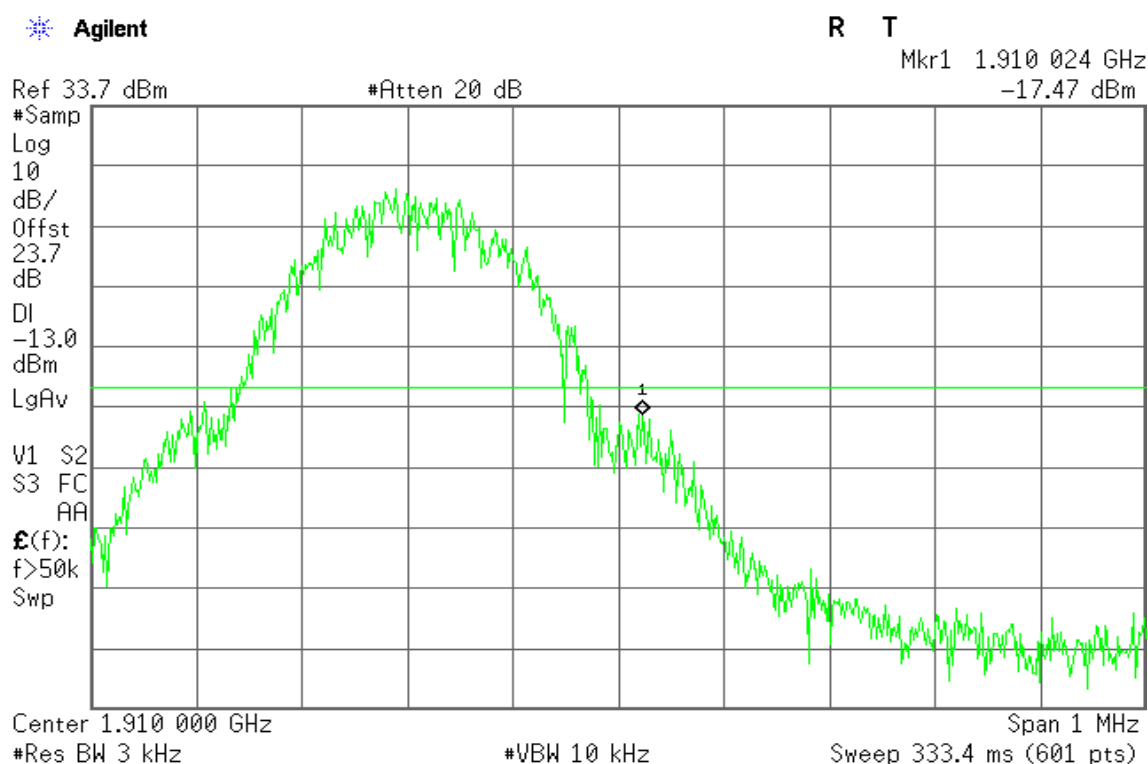


Figure 18-2: Band Edge emissions – EDGE CH High





WCDMA Band II

Figure 19-1: Out of Band emission at antenna terminals – WCDMA CH Low

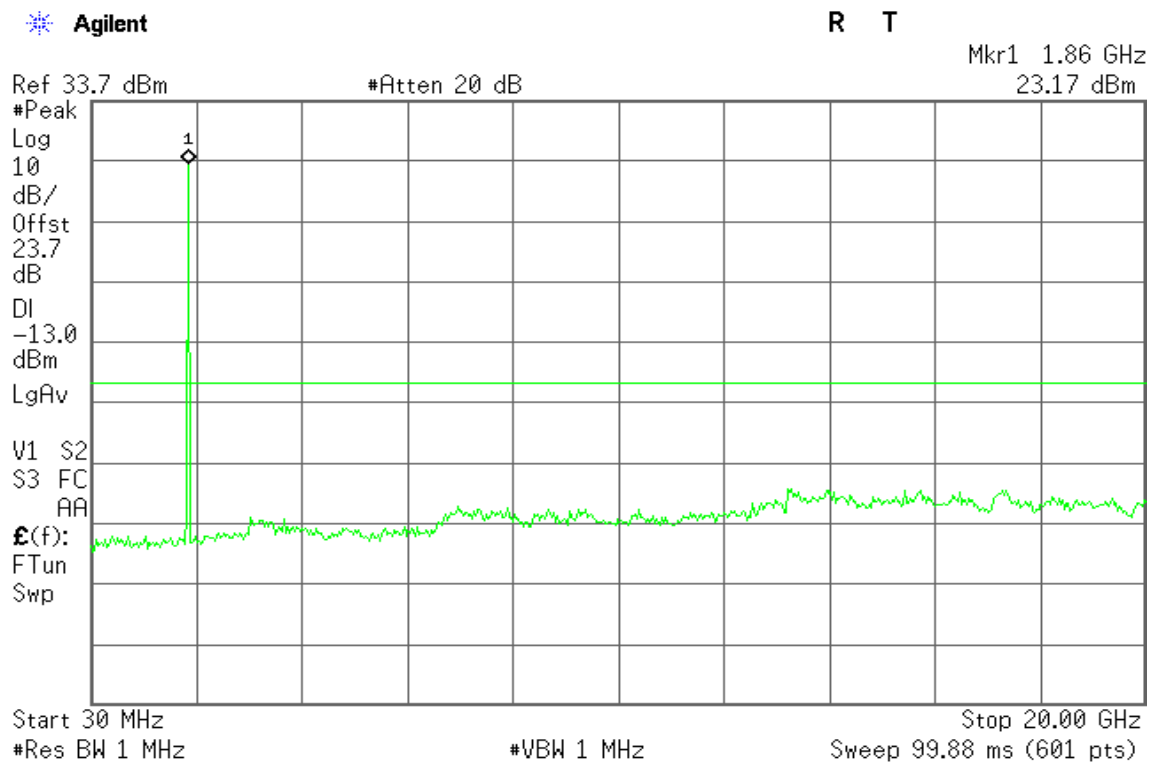


Figure 19-2: Out of Band emission at antenna terminals – WCDMA CH Mid

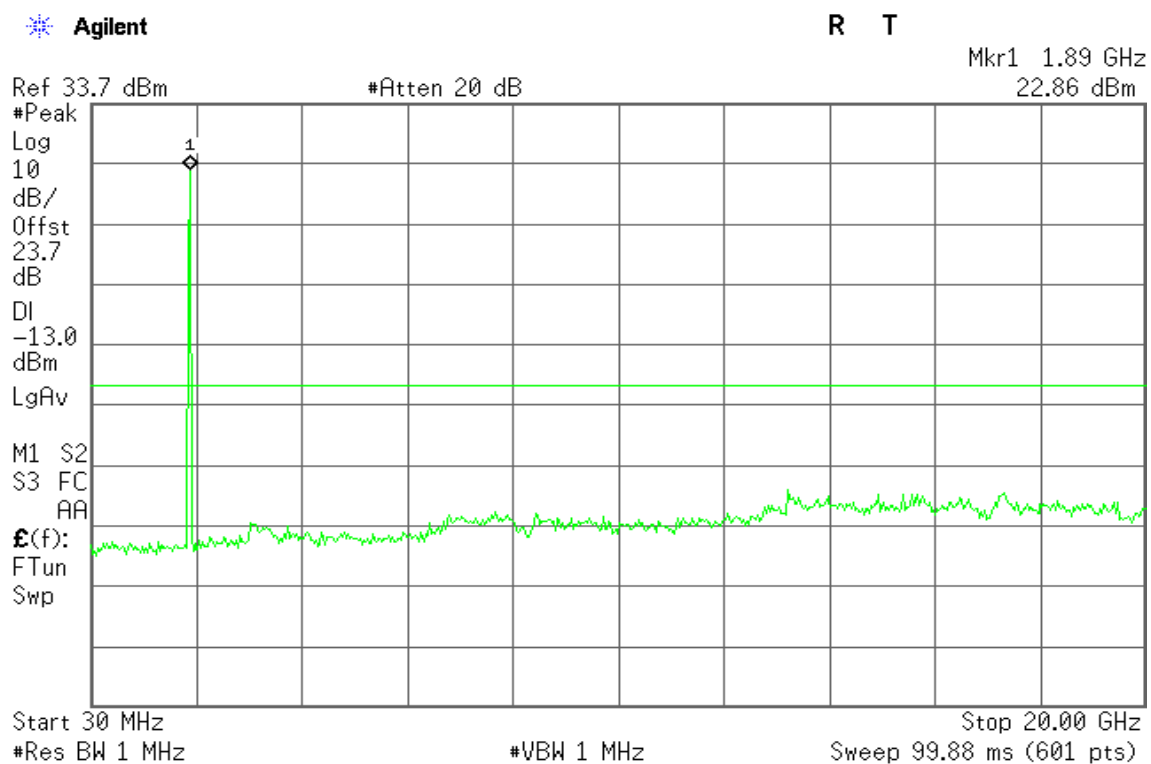
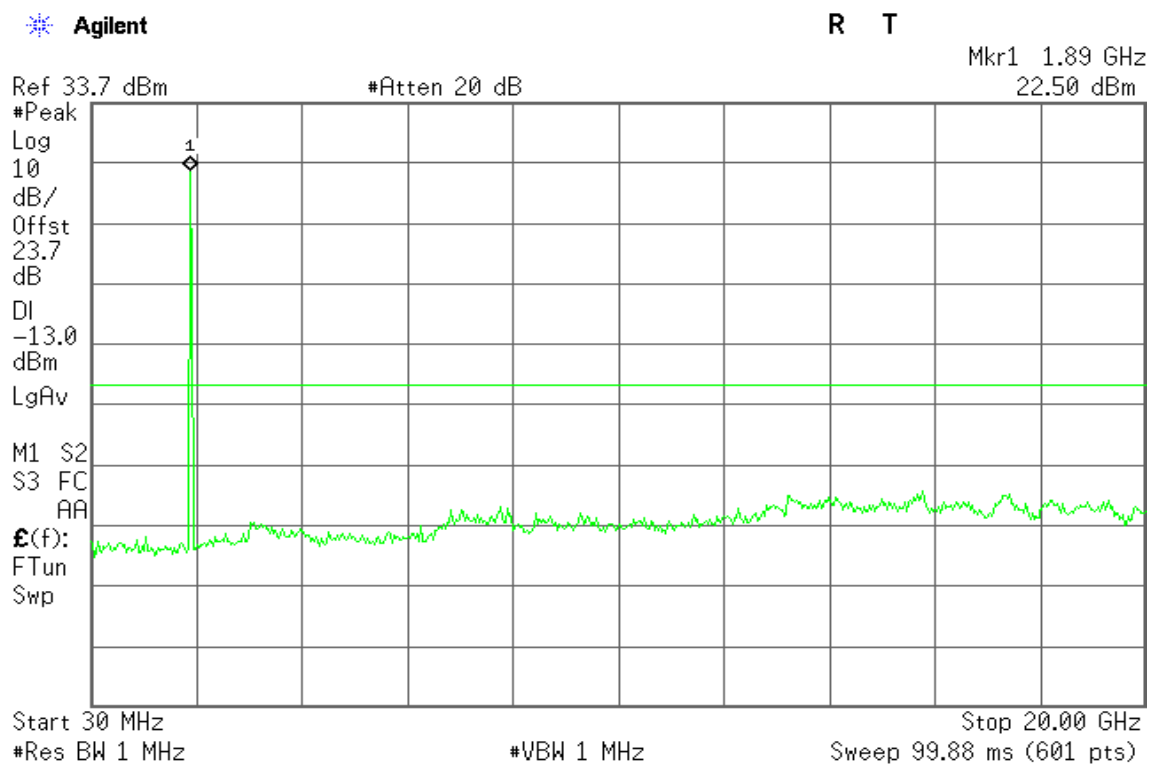




Figure 19-3: Out of Band emission at antenna terminals – WCDMA CH High



WCDMA Band V

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

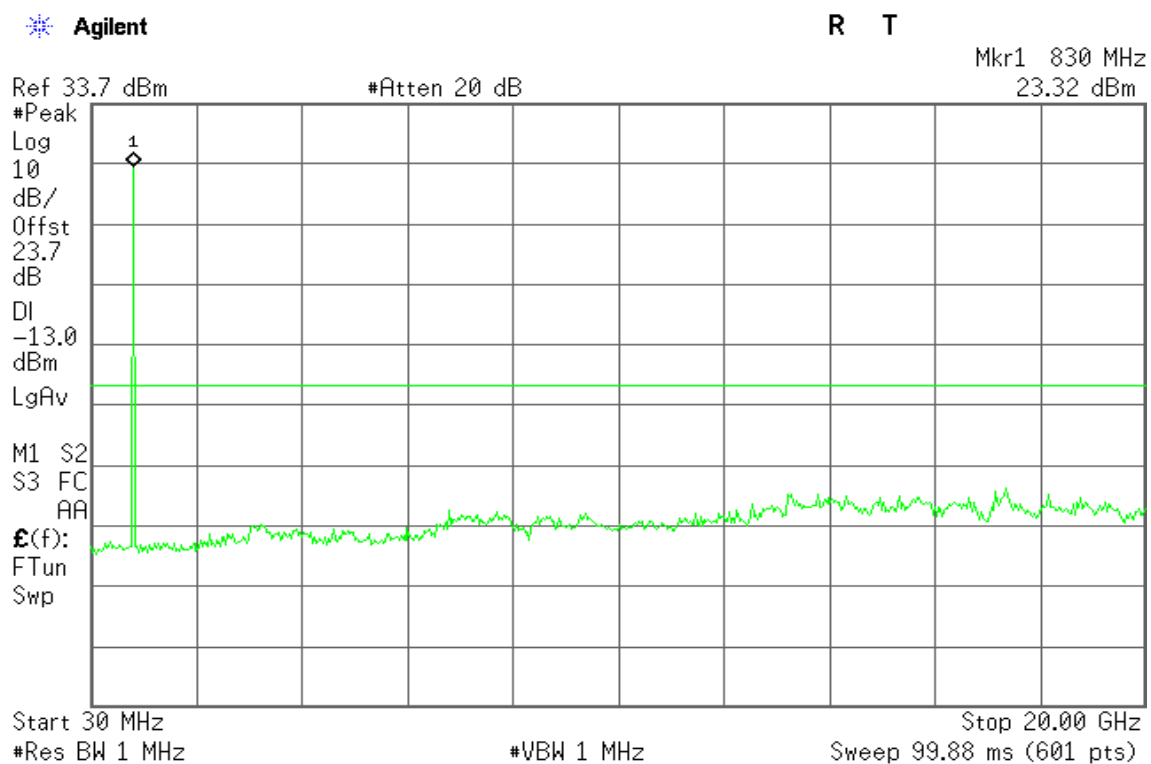




Figure 20-2: Out of Band emission at antenna terminals – WCDMA CH Mid

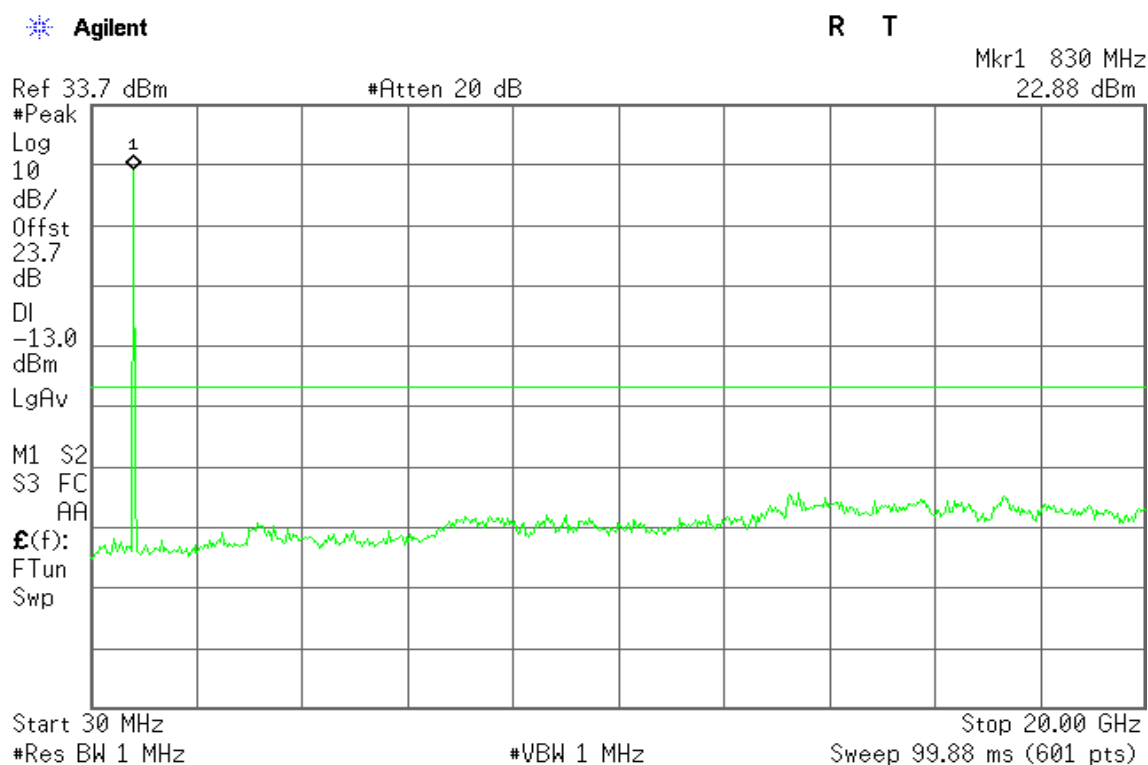
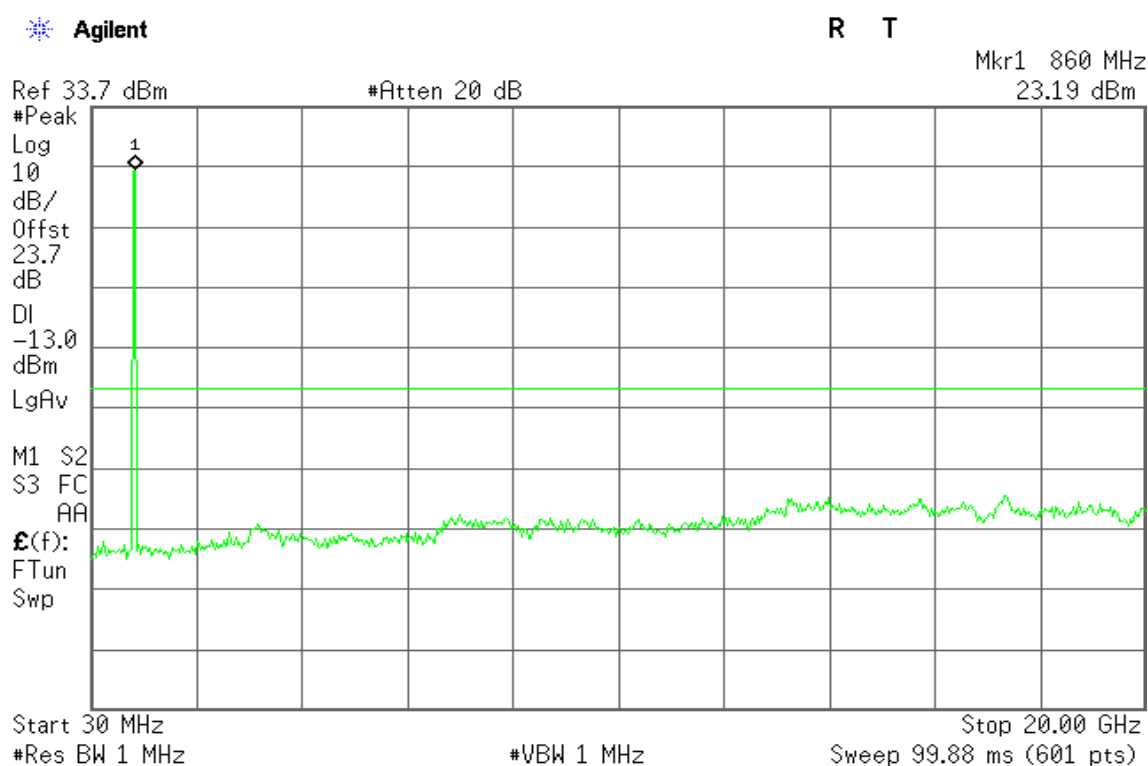


Figure 20-3: Out of Band emission at antenna terminals – WCDMA CH High





WCDMA Band II

Figure 21-1: Band Edge emissions – WCDMA CH Low

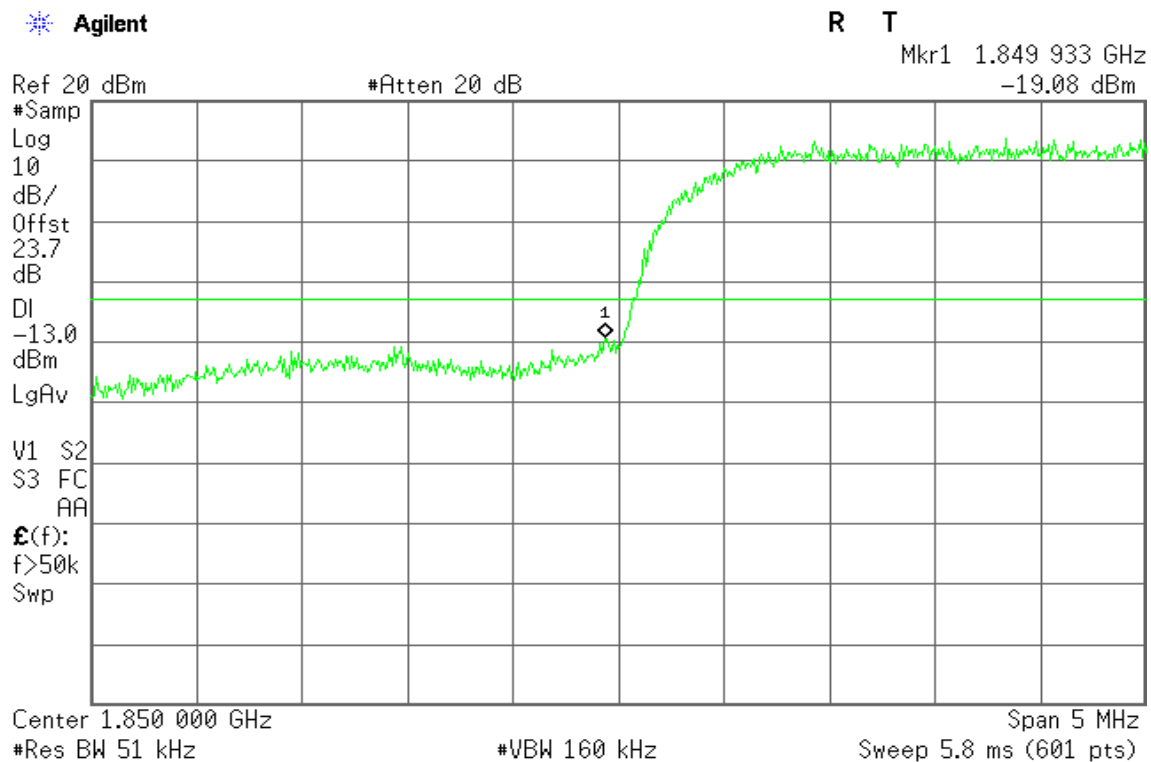
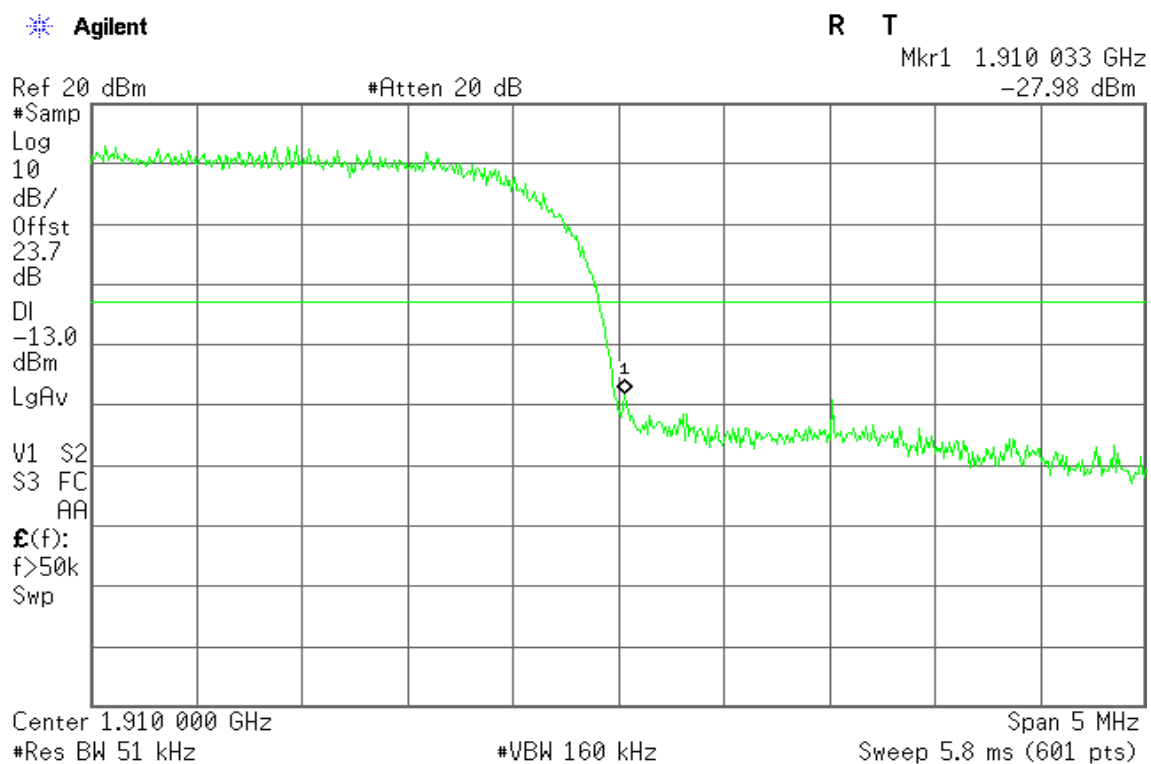


Figure 21-2: Band Edge emissions –WCDMA CH High





WCDMA Band V

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

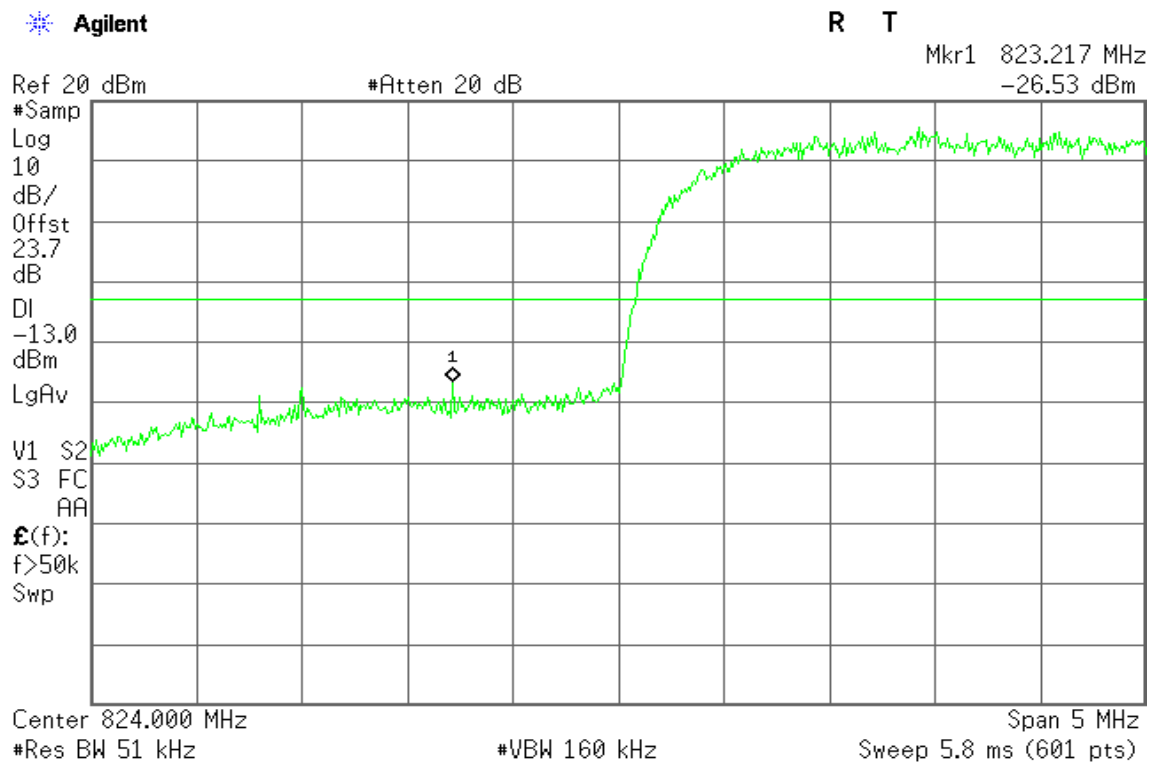
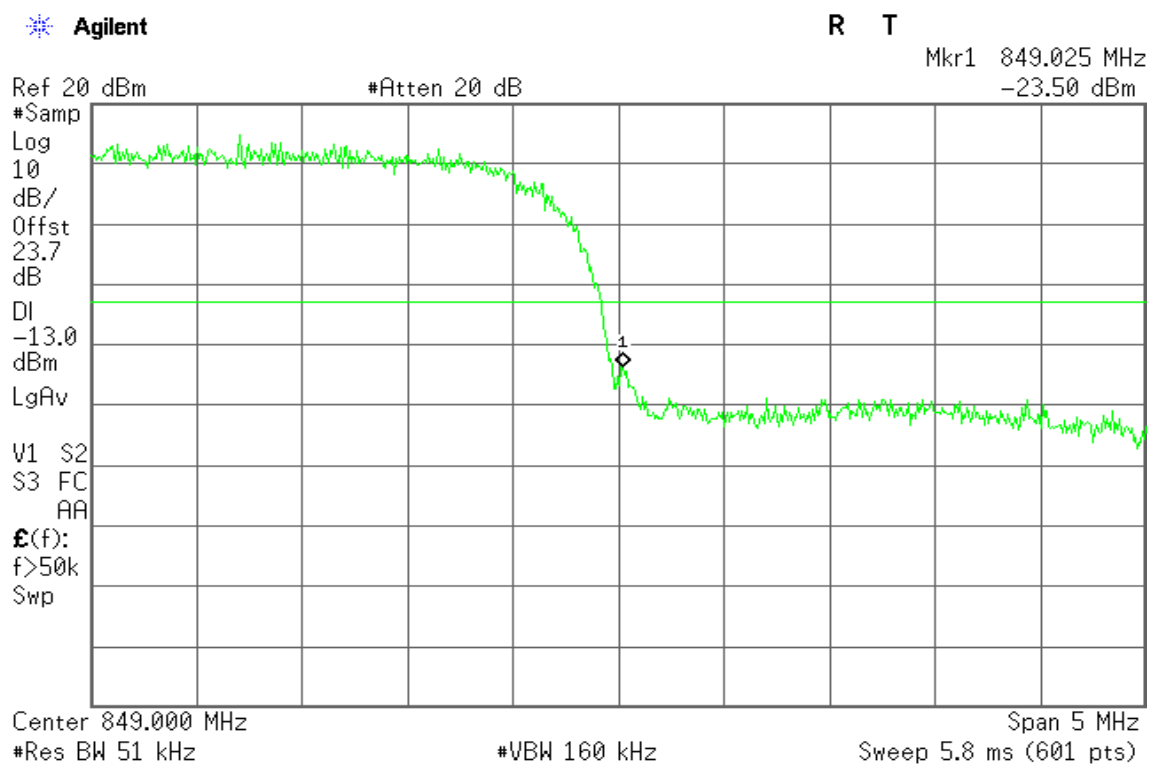


Figure 22-2: Band Edge emissions –WCDMA CH High





WCDMA / HSDPA Band II

Figure 23-1: Out of Band emission at antenna terminals – HSDPA CH Low

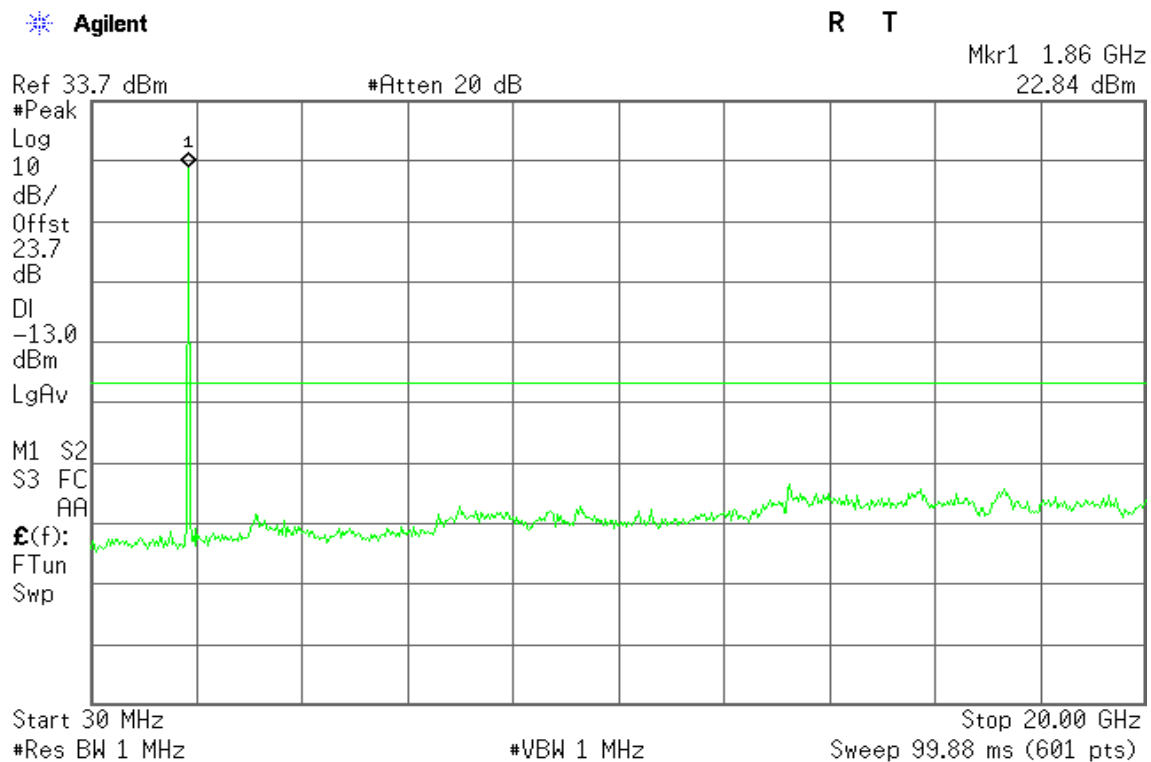


Figure 23-2: Out of Band emission at antenna terminals – HSDPA CH Mid

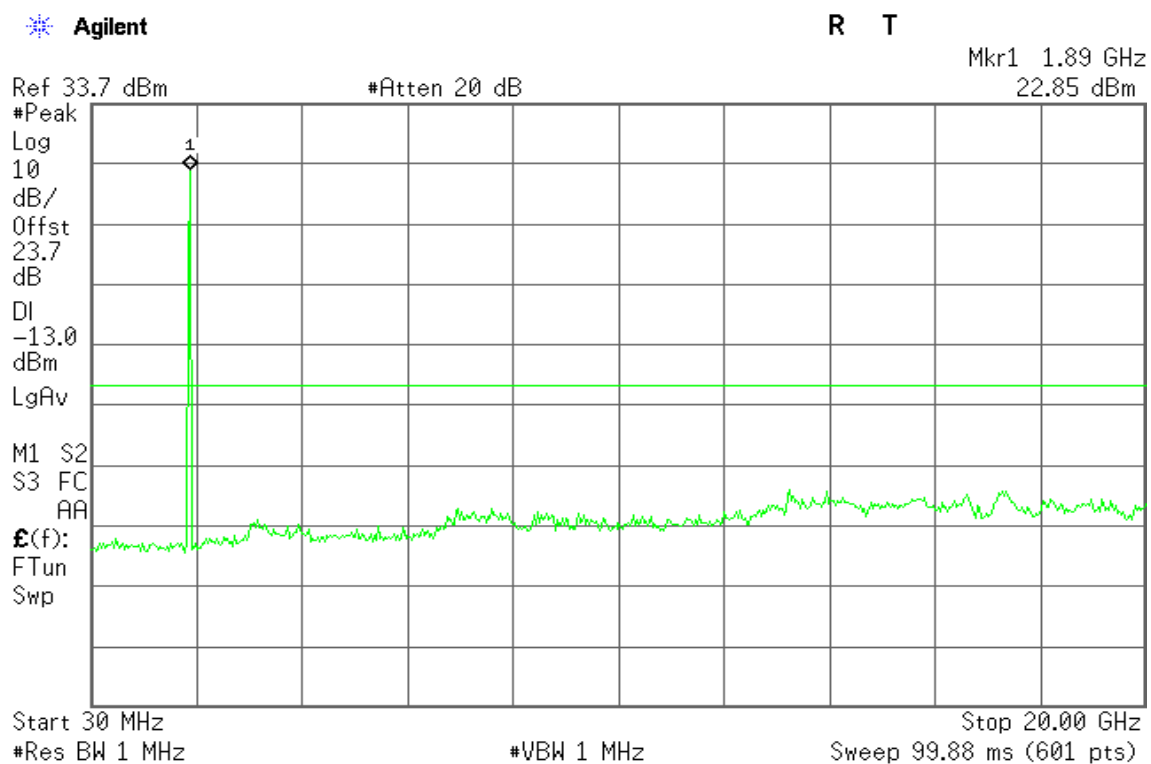
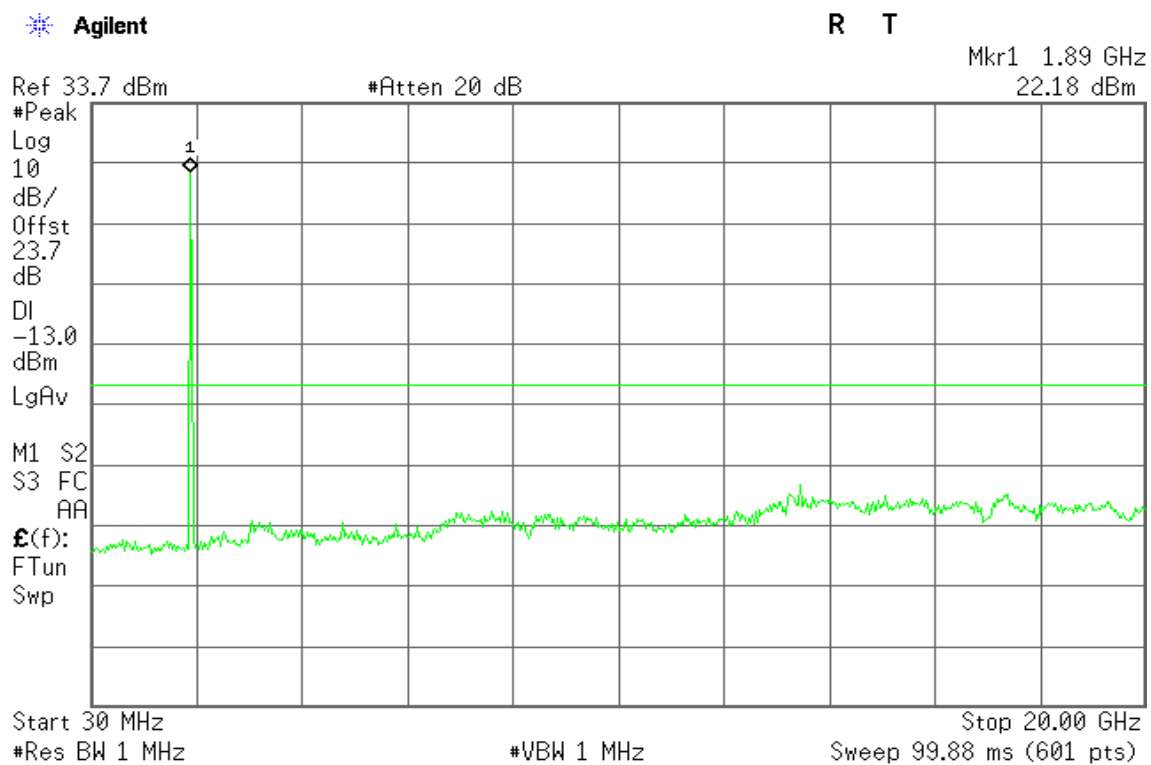




Figure 23-3: Out of Band emission at antenna terminals – HSDPA CH High



WCDMA / HSDPA Band V

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

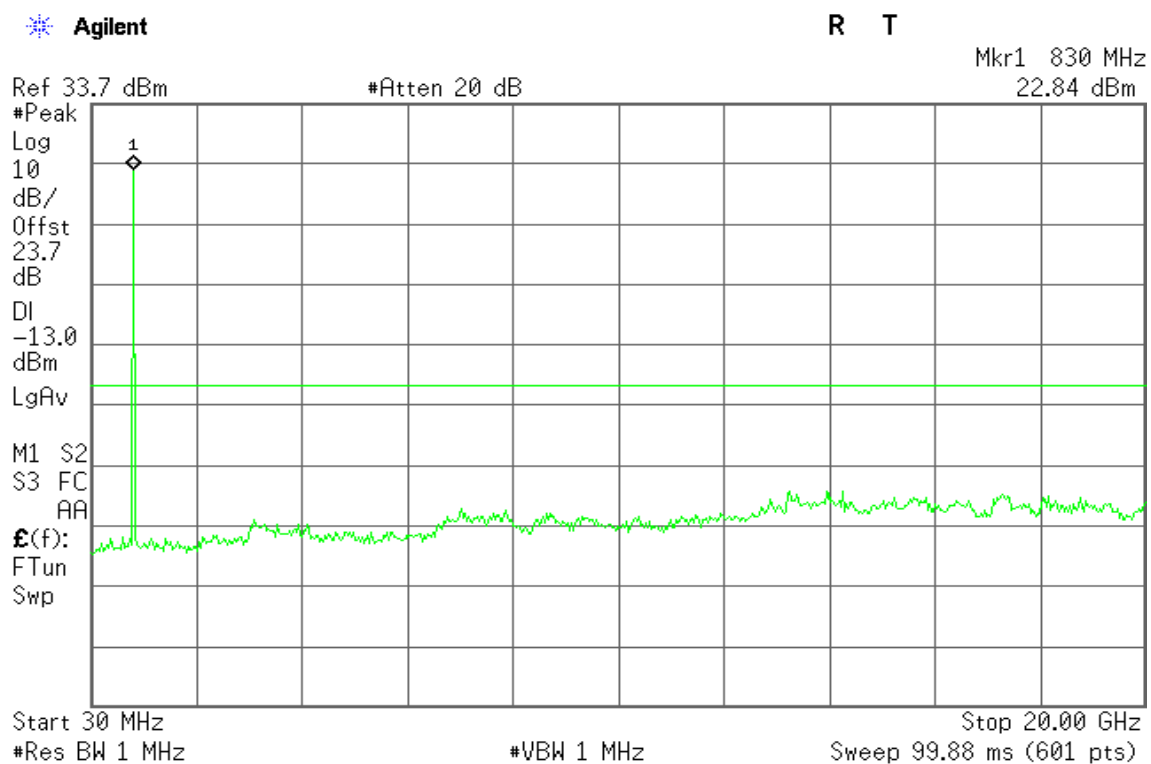




Figure 24-2: Out of Band emission at antenna terminals – HSDPA CH Mid

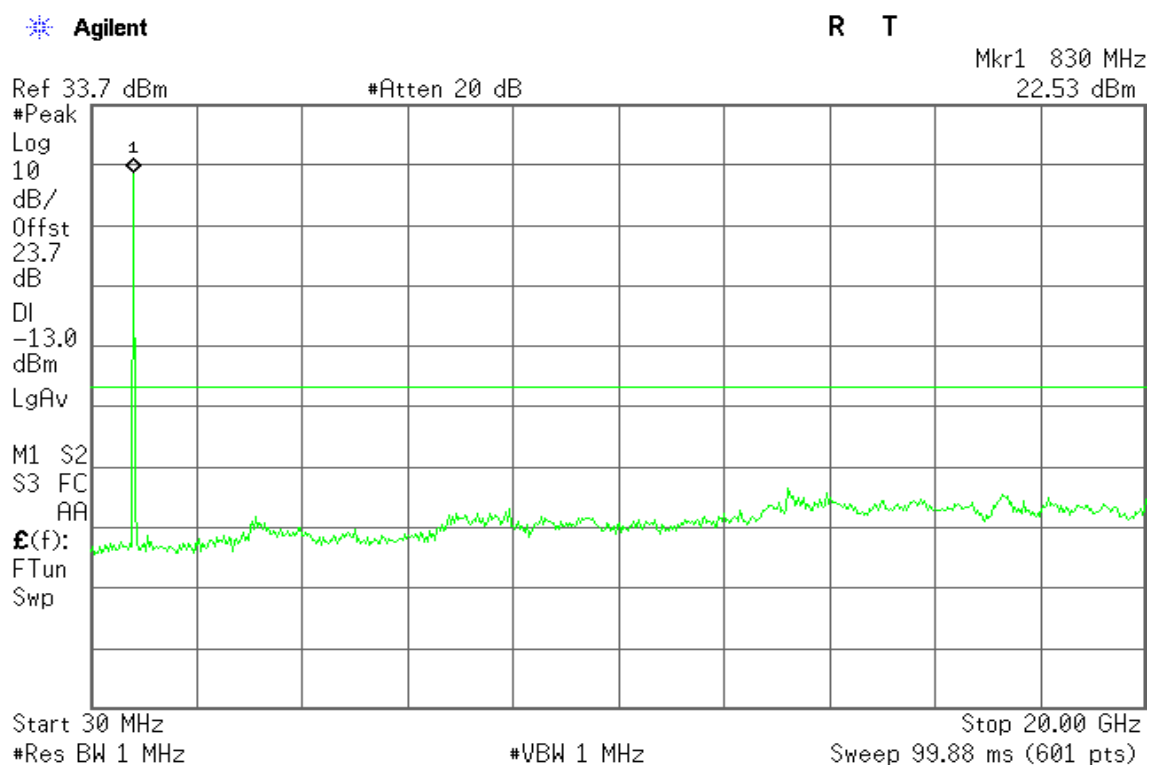
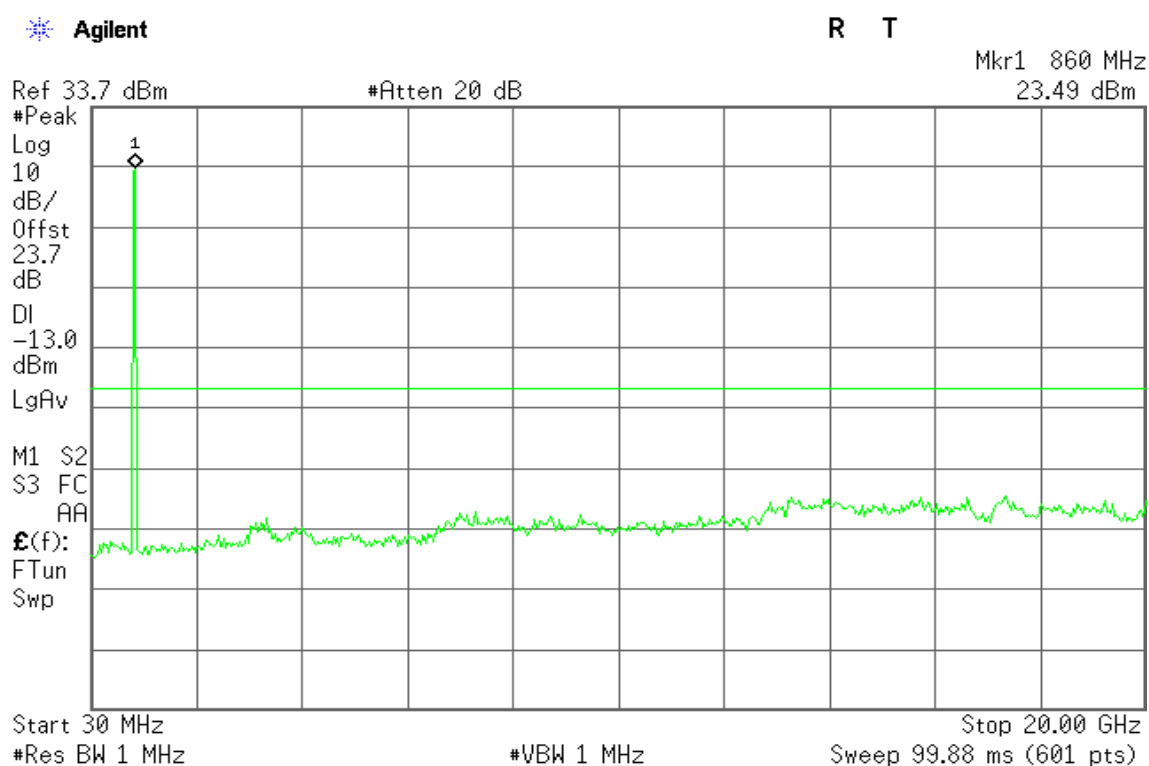


Figure 24-3: Out of Band emission at antenna terminals – HSDPA CH High





WCDMA / HSDPA Band II

Figure 25-1: Band Edge emissions – HSDPA CH Low

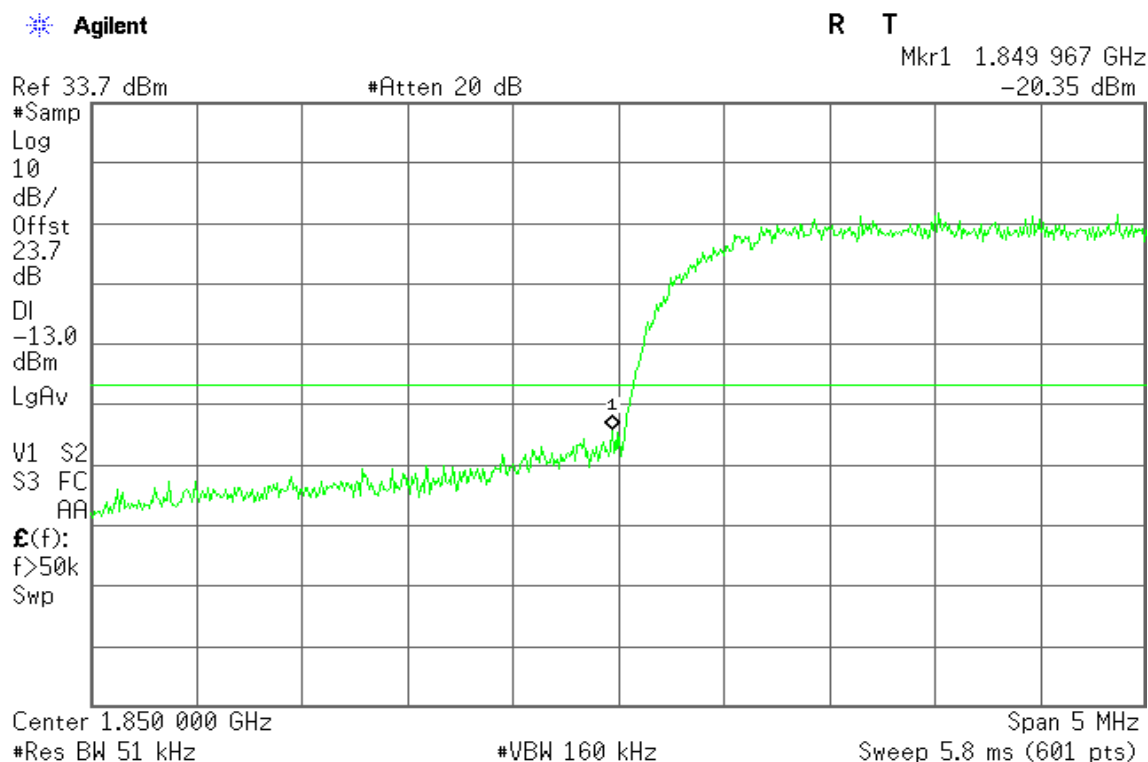
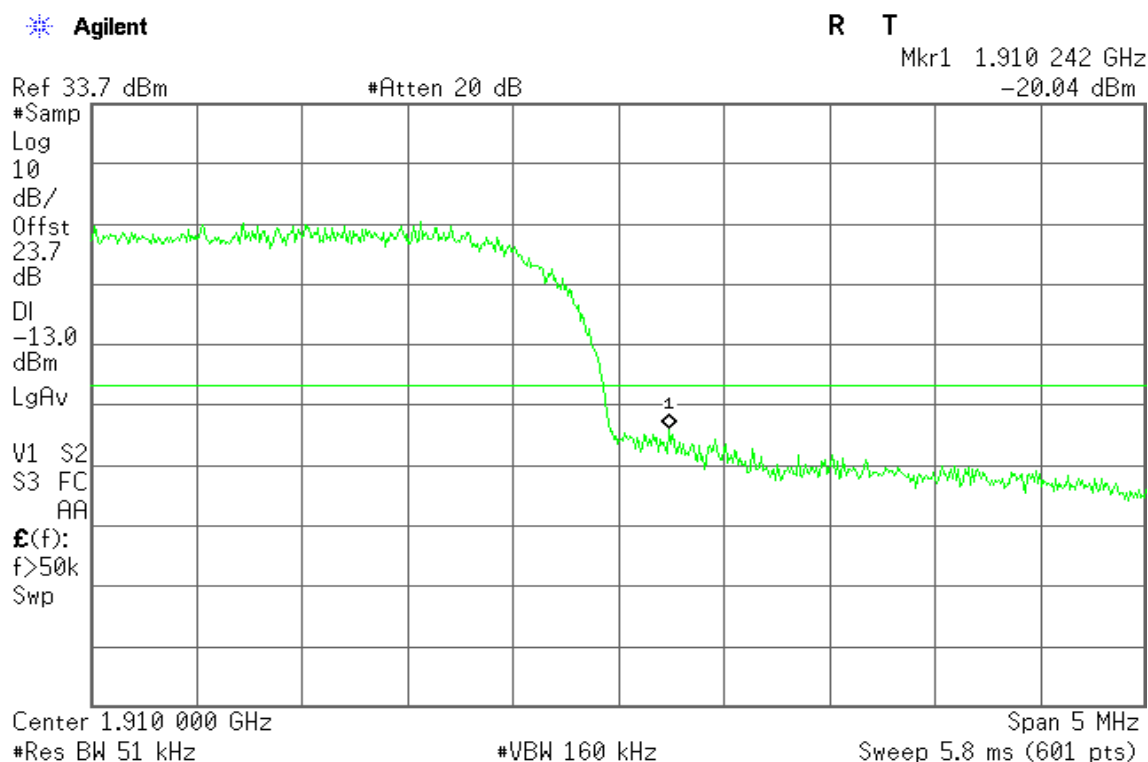


Figure 25-2: Band Edge emissions – HSDPA CH High





WCDMA / HSDPA Band V

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

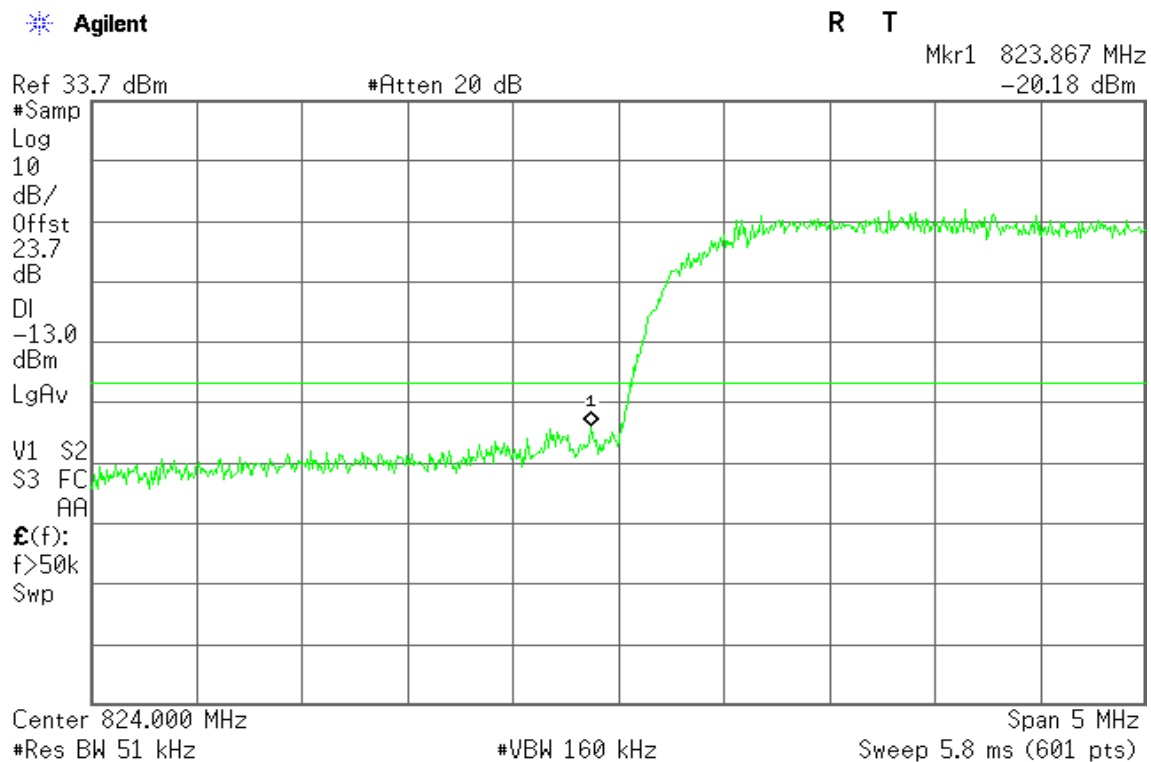
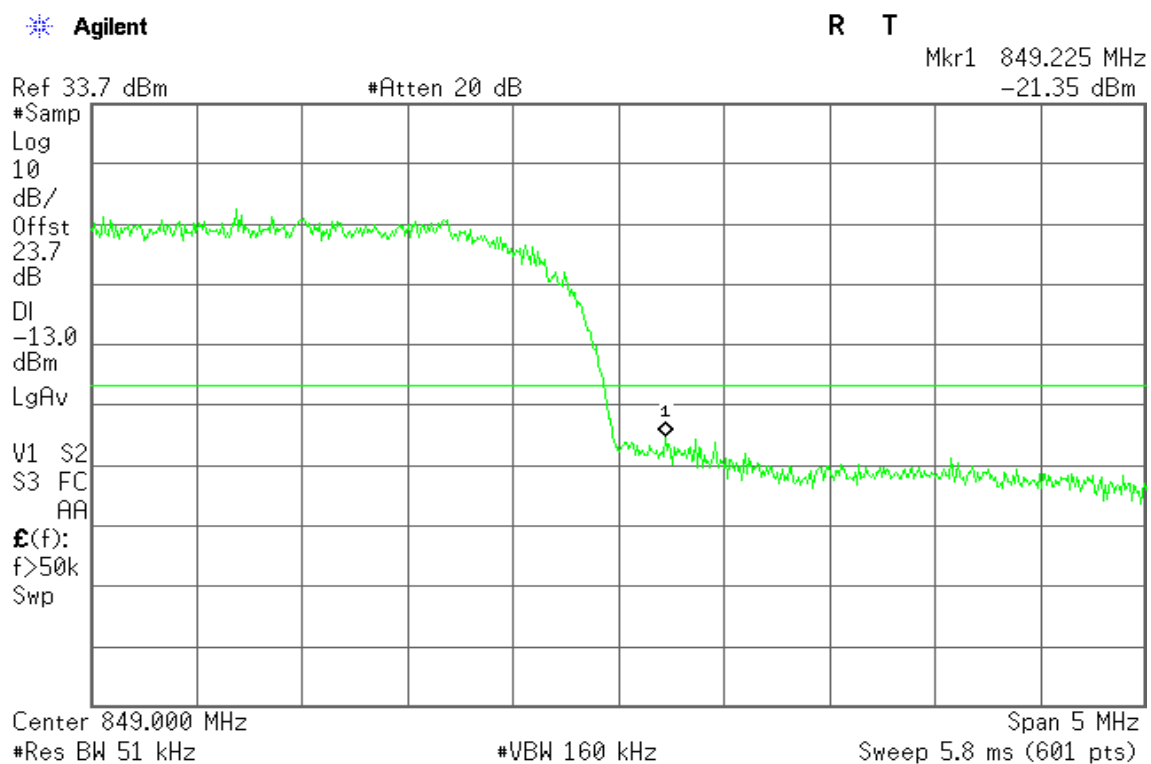


Figure 26-2: Band Edge emissions – HSDPA CH High





WCDMA / HSUPA Band II

Figure 27-1: Out of Band emission at antenna terminals – HSUPA CH Low

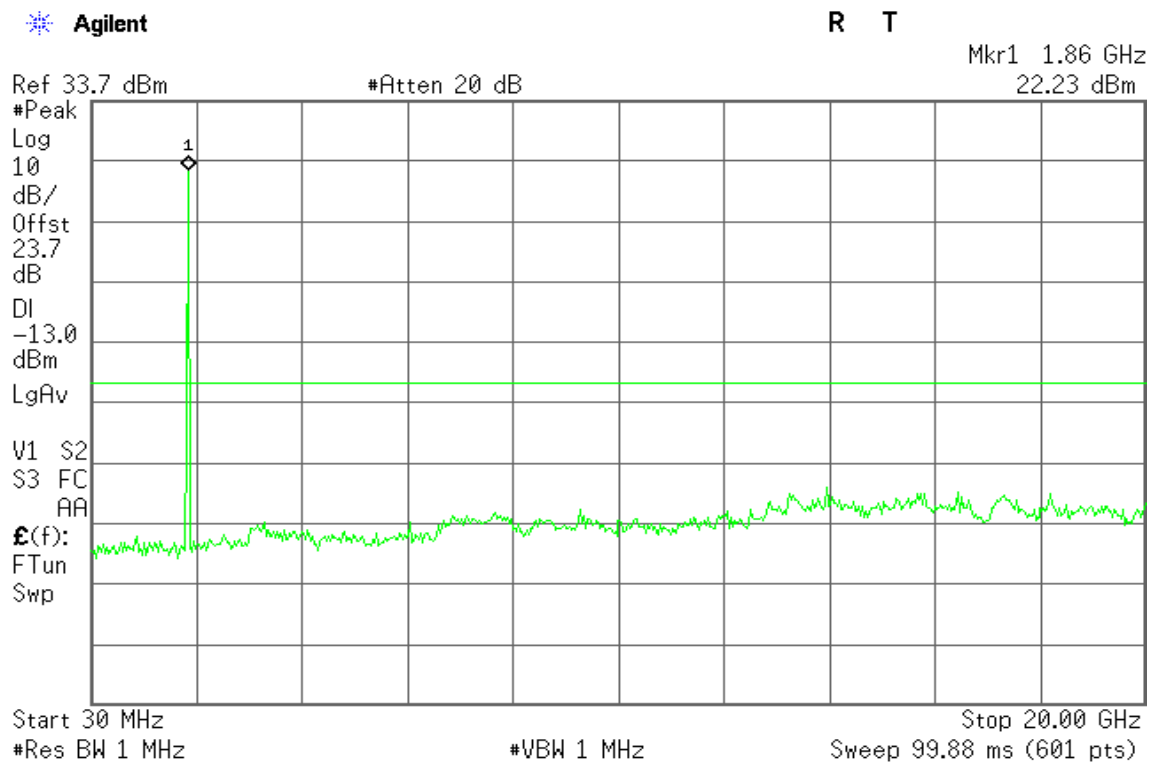


Figure 27-2: Out of Band emission at antenna terminals – HSUPA CH Mid

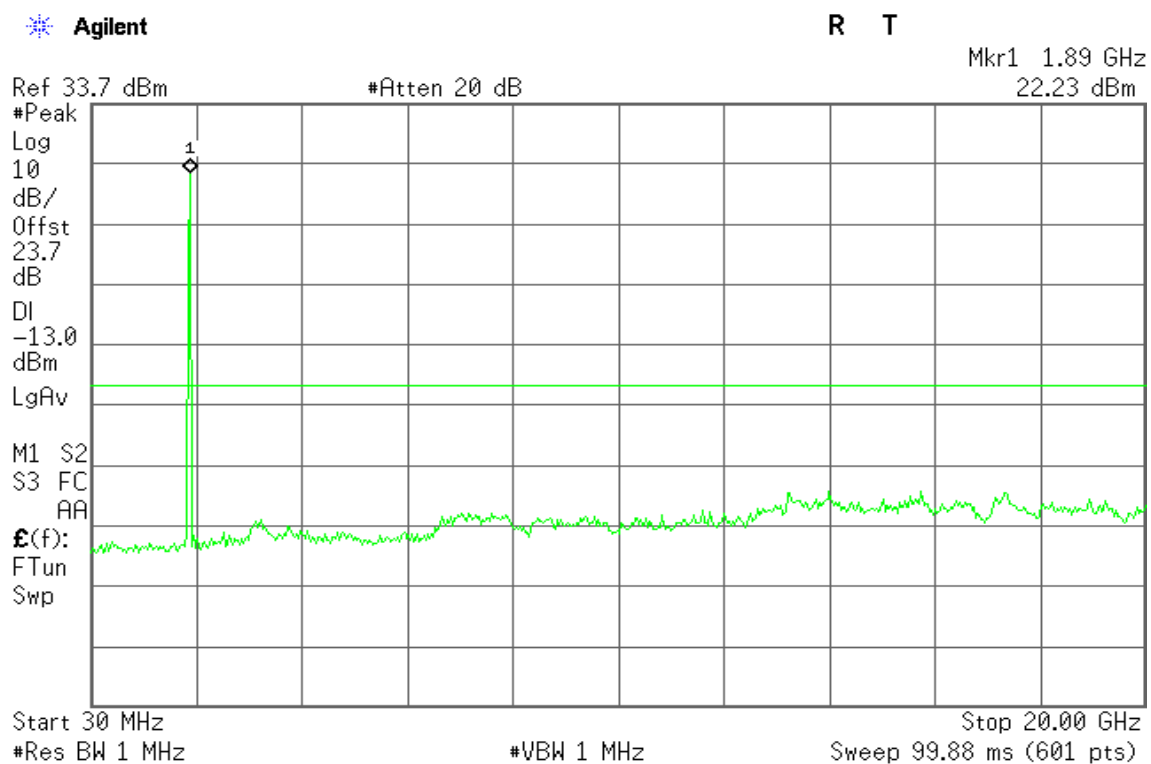
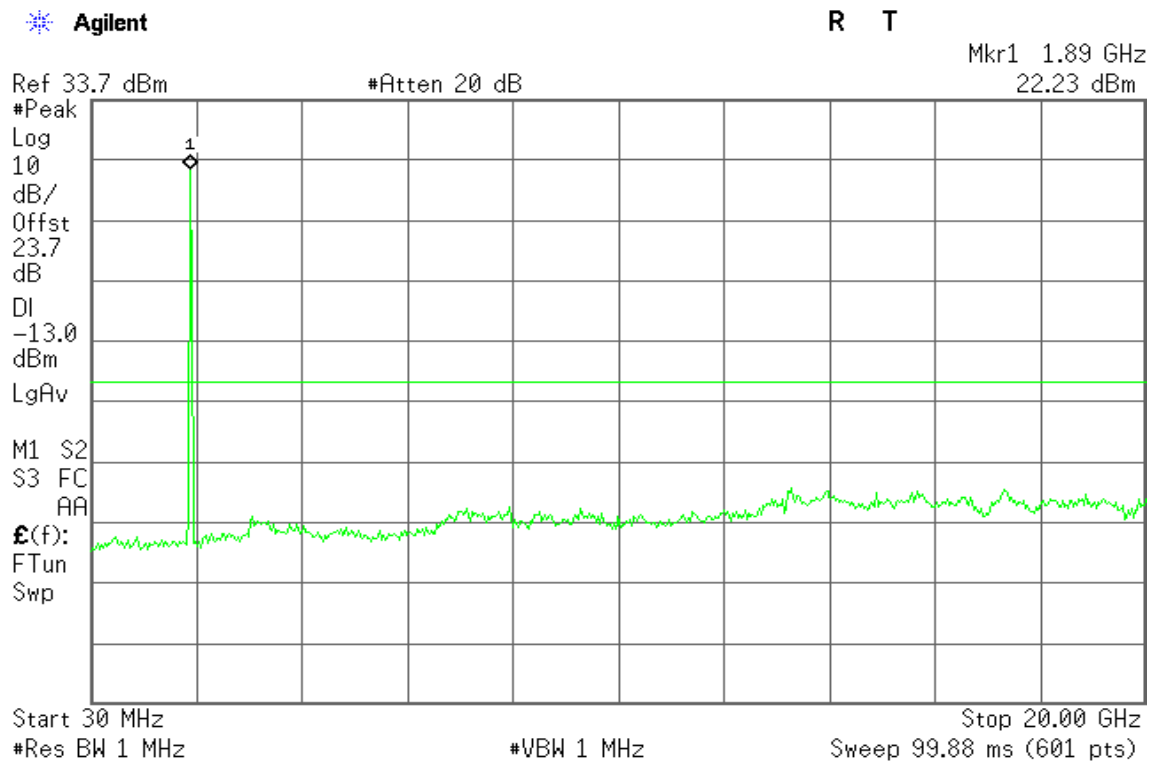




Figure 27-3: Out of Band emission at antenna terminals – HSUPA CH High



HSUPA / WCDMA Band V

Figure 28-1: Out of Band emission at antenna terminals – HSUPA CH Low

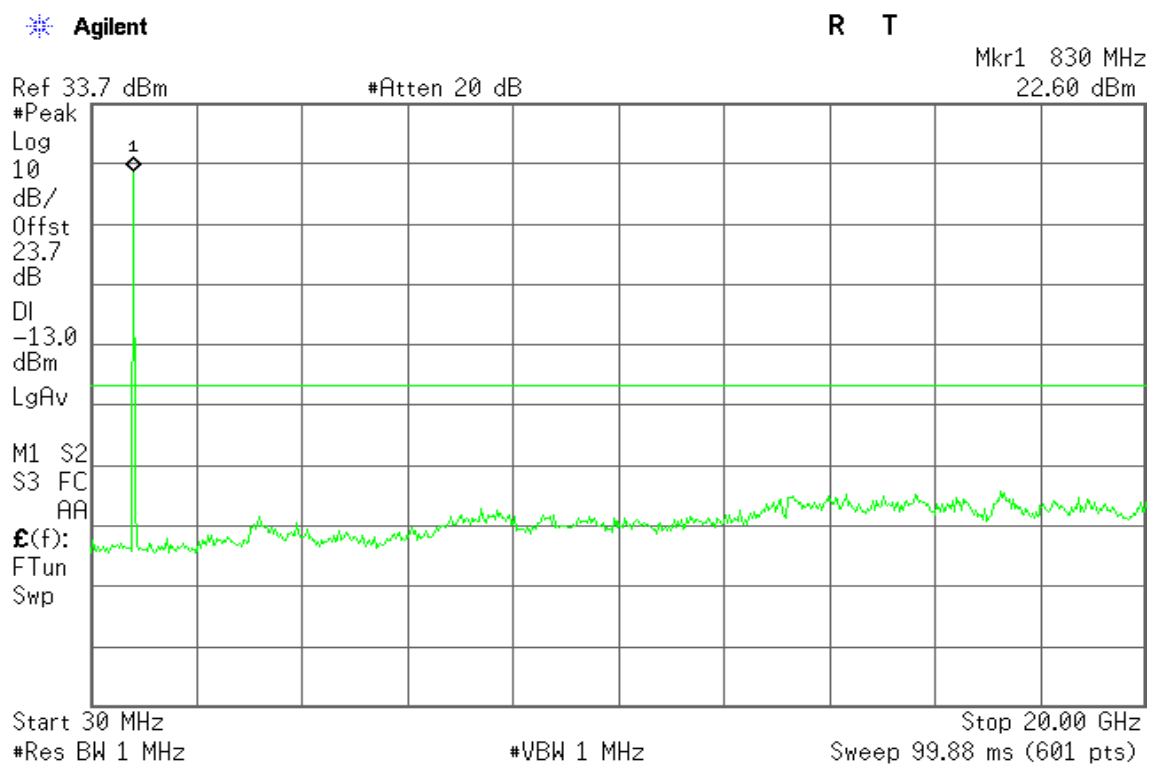




Figure 28-2: Out of Band emission at antenna terminals – HSUPA CH Mid

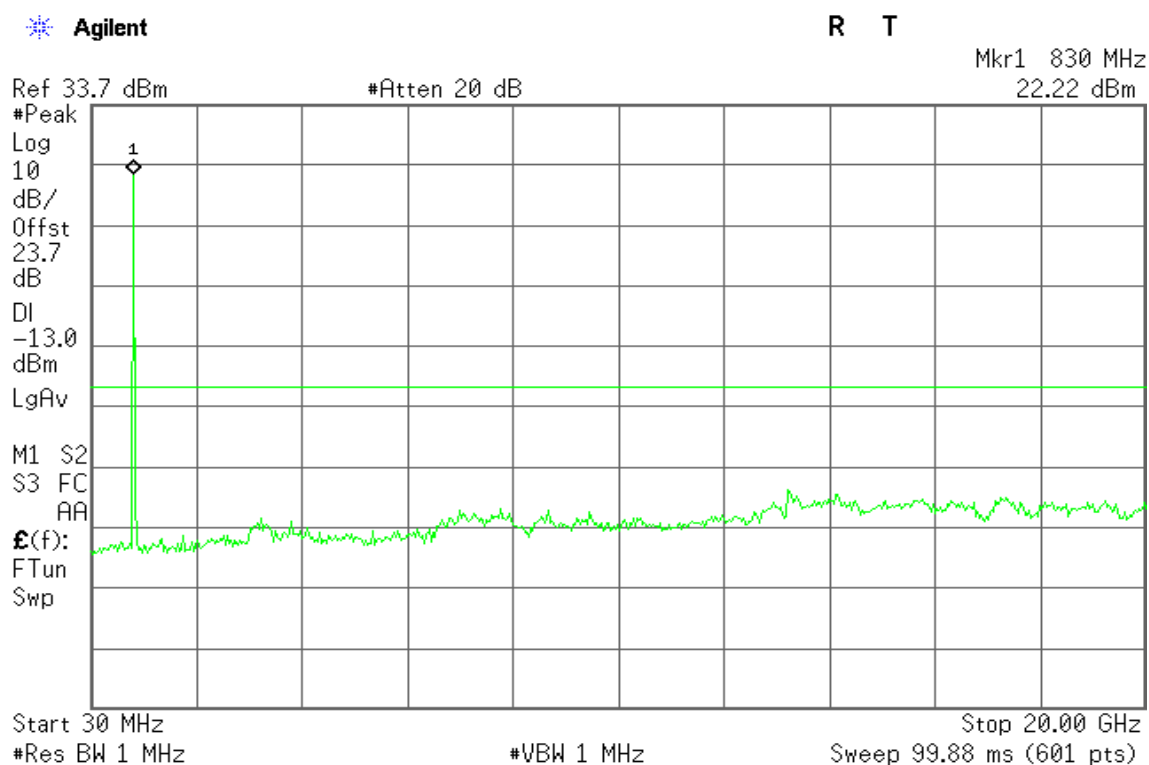
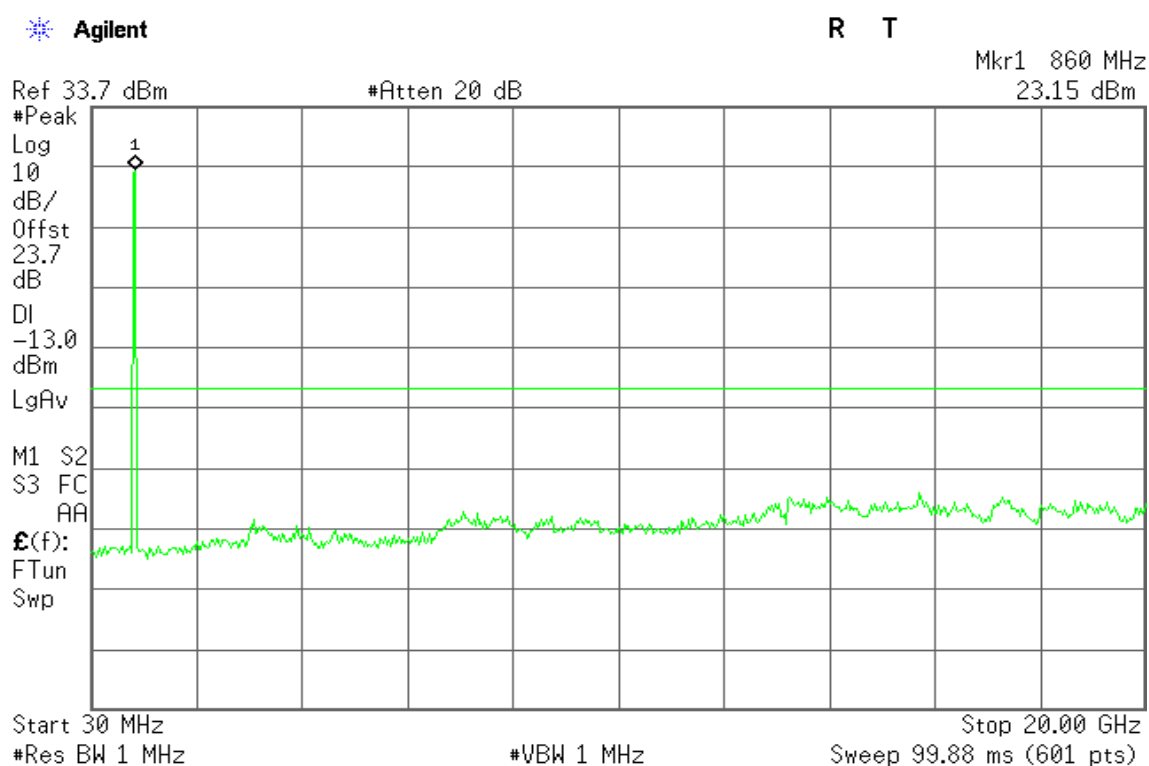


Figure 28-3: Out of Band emission at antenna terminals – HSUPA CH High





WCDMA / HSUPA Band II

Figure 29-1: Band Edge emissions – HSUPA CH Low

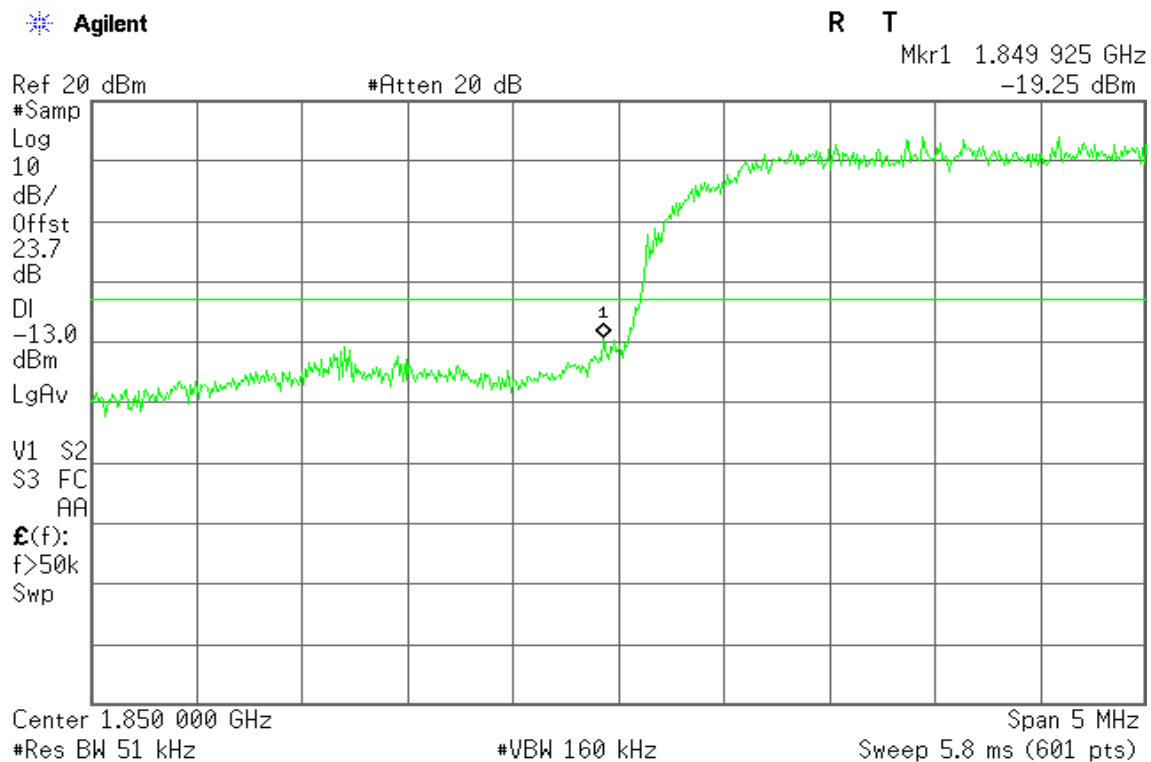
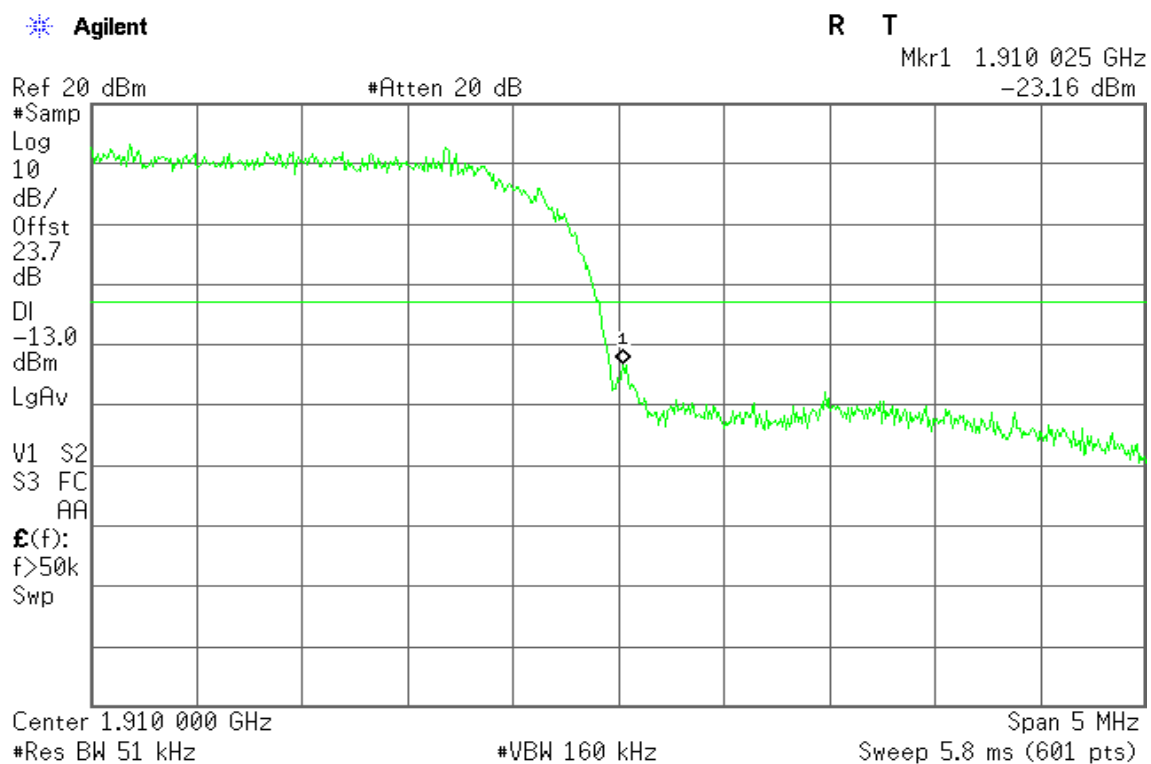


Figure 29-2: Band Edge emissions – HSUPA CH High





WCDMA / HSUPA Band V

Figure 30-1: Band Edge emissions – HSUPA CH Low

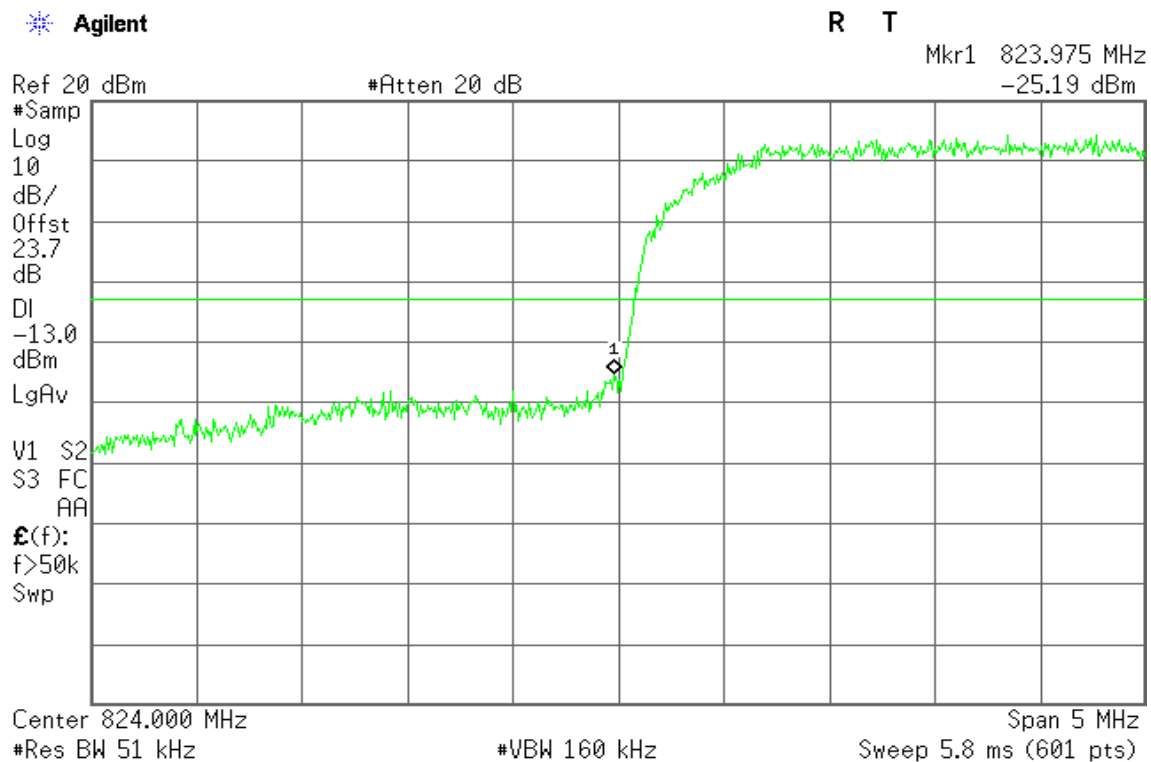
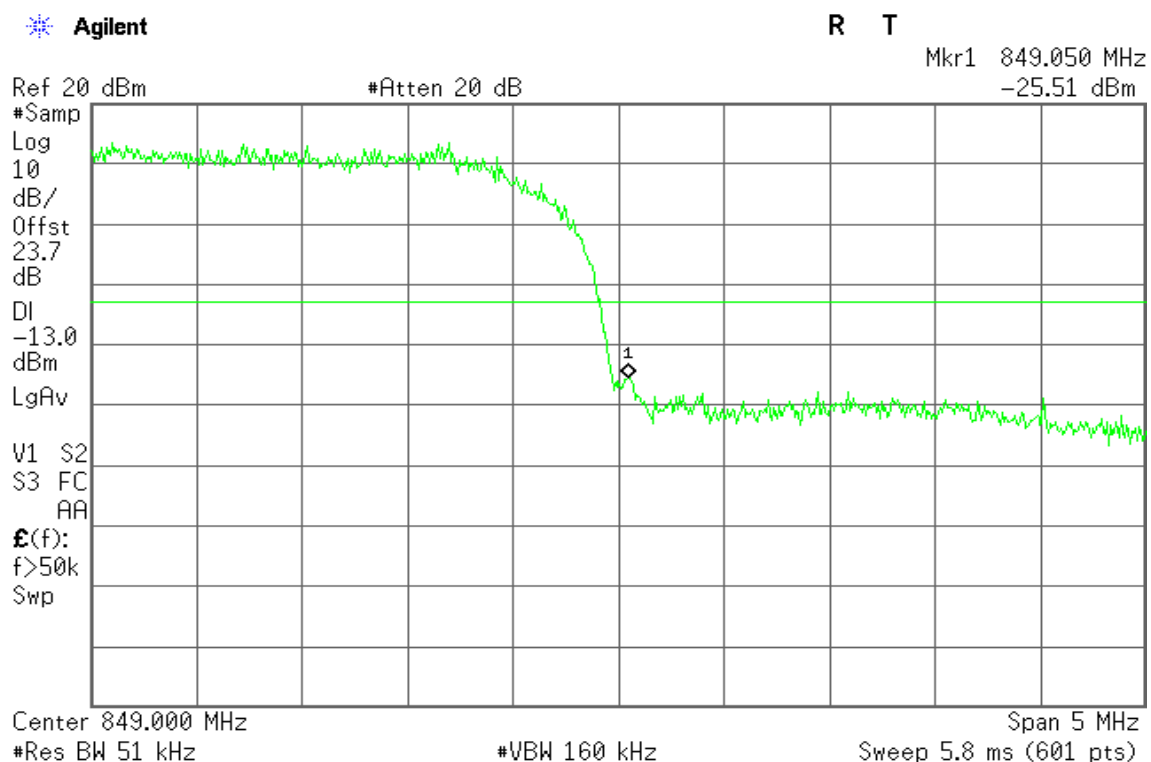


Figure 30-2: Band Edge emissions – HSUPA CH High





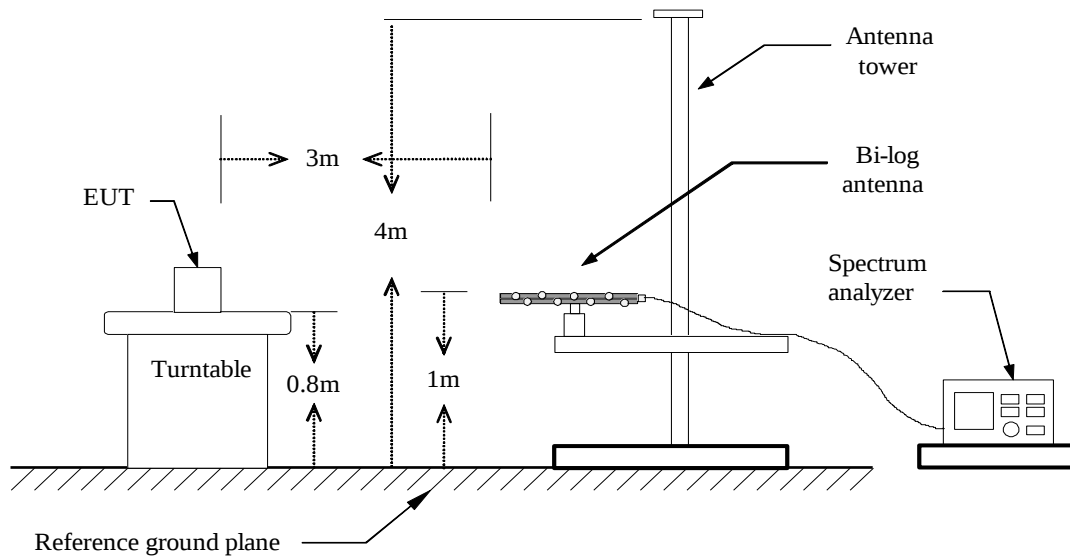
7.6 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

LIMIT

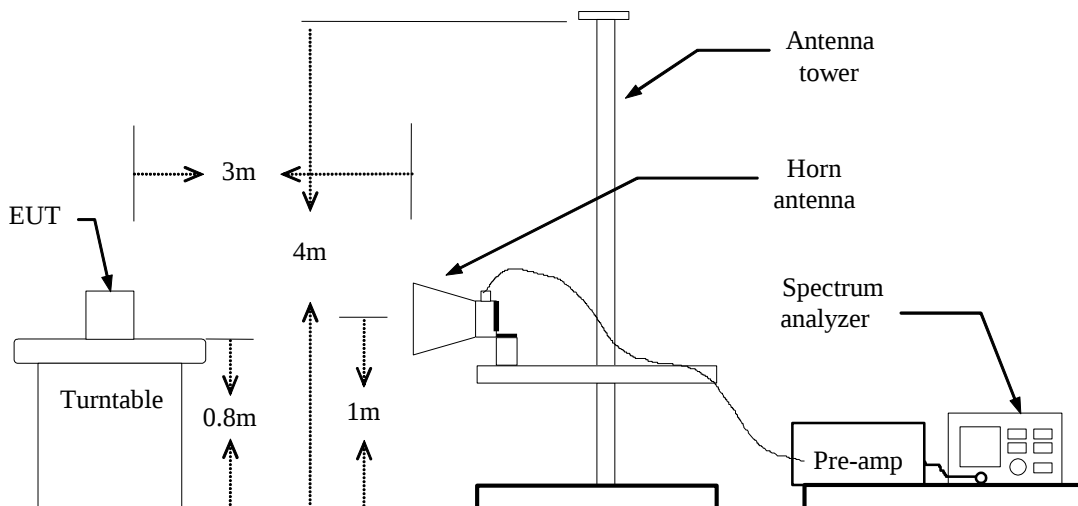
According to FCC §2.1053

Test Configuration

Below 1 GHz

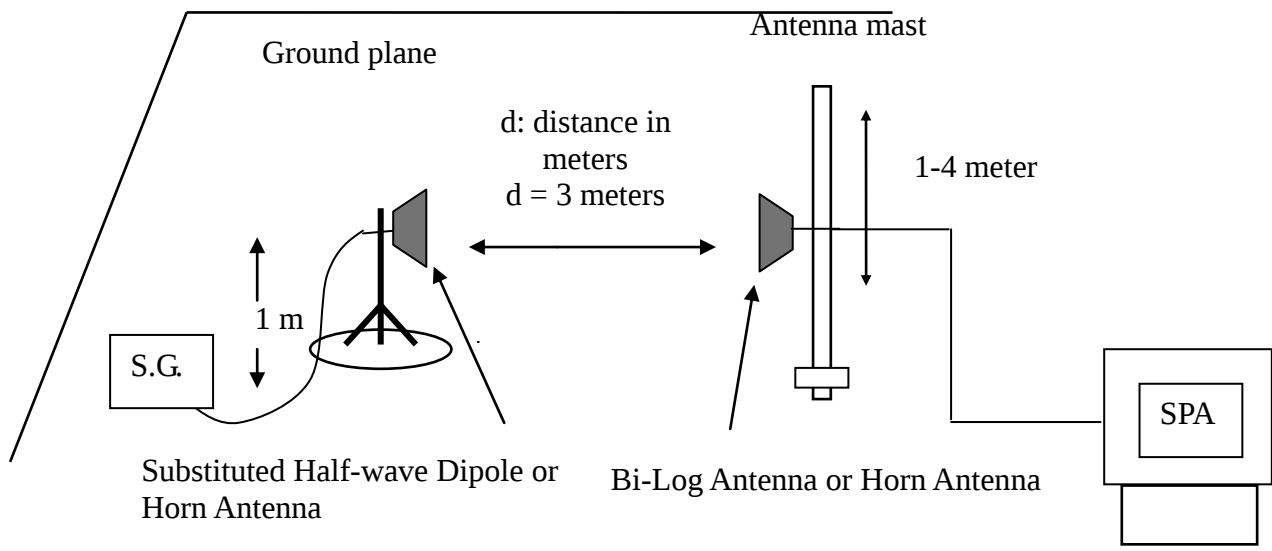


Above 1 GHz





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:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
51.3400	-57.6	0.81	-4.51	-62.92	-13.00	-49.92	V
166.7700	-63.64	1.54	2.15	-63.03	-13.00	-50.03	V
233.7000	-62.49	1.8	5.39	-58.90	-13.00	-45.90	V
359.8000	-67.12	2.27	5.7	-63.69	-13.00	-50.69	V
500.4500	-75.59	2.7	5.9	-72.39	-13.00	-59.39	V
624.6100	-74.32	2.96	6.15	-71.13	-13.00	-58.13	V
99.8400	-63.61	1.15	-0.37	-65.13	-13.00	-52.13	H
166.7700	-56.6	1.54	2.15	-55.99	-13.00	-42.99	H
233.7000	-63.17	1.8	5.39	-59.58	-13.00	-46.58	H
359.8000	-58.84	2.27	5.7	-55.41	-13.00	-42.41	H
500.4500	-68.38	2.7	5.9	-65.18	-13.00	-52.18	H
624.6100	-69.3	2.96	6.15	-66.11	-13.00	-53.11	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:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
91.1100	-64.85	1.11	1.05	-64.91	-13.00	-51.91	V
166.7700	-63.87	1.54	2.15	-63.26	-13.00	-50.26	V
233.7000	-62.74	1.8	5.39	-59.15	-13.00	-46.15	V
359.8000	-67.51	2.27	5.7	-64.08	-13.00	-51.08	V
500.4500	-75.25	2.7	5.9	-72.05	-13.00	-59.05	V
600.3600	-76.61	2.9	6.4	-73.11	-13.00	-60.11	V
99.8400	-61.8	1.15	-0.37	-63.32	-13.00	-50.32	H
166.7700	-54.34	1.54	2.15	-53.73	-13.00	-40.73	H
239.5200	-64.42	1.81	5.35	-60.88	-13.00	-47.88	H
359.8000	-56.16	2.27	5.7	-52.73	-13.00	-39.73	H
500.4500	-65.97	2.7	5.9	-62.77	-13.00	-49.77	H
624.6100	-67	2.96	6.15	-63.81	-13.00	-50.81	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:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
51.3400	-58.71	0.81	-4.51	-64.03	-13.00	-51.03	V
166.7700	-65.09	1.54	2.15	-64.48	-13.00	-51.48	V
233.7000	-63.42	1.8	5.39	-59.83	-13.00	-46.83	V
359.8000	-68.63	2.27	5.7	-65.20	-13.00	-52.20	V
500.4500	-75.25	2.7	5.9	-72.05	-13.00	-59.05	V
624.6100	-76.06	2.96	6.15	-72.87	-13.00	-59.87	V
99.8400	-64.4	1.15	-0.37	-65.92	-13.00	-52.92	H
166.7700	-56.76	1.54	2.15	-56.15	-13.00	-43.15	H
233.7000	-64.25	1.8	5.39	-60.66	-13.00	-47.66	H
359.8000	-59.16	2.27	5.7	-55.73	-13.00	-42.73	H
500.4500	-69.22	2.7	5.9	-66.02	-13.00	-53.02	H
624.6100	-69.88	2.96	6.15	-66.69	-13.00	-53.69	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:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
91.1100	-65.18	1.11	1.05	-65.24	-13.00	-52.24	V
166.7700	-64.88	1.54	2.15	-64.27	-13.00	-51.27	V
233.7000	-63.7	1.8	5.39	-60.11	-13.00	-47.11	V
359.8000	-67.71	2.27	5.7	-64.28	-13.00	-51.28	V
500.4500	-74.8	2.7	5.9	-71.60	-13.00	-58.60	V
624.6100	-75.69	2.96	6.15	-72.50	-13.00	-59.50	V
166.7700	-57.18	1.54	2.15	-56.57	-13.00	-43.57	H
233.7000	-63.44	1.8	5.39	-59.85	-13.00	-46.85	H
359.8000	-59.32	2.27	5.7	-55.89	-13.00	-42.89	H
500.4500	-68.47	2.7	5.9	-65.27	-13.00	-52.27	H
624.6100	-70.08	2.96	6.15	-66.89	-13.00	-53.89	H
800.1800	-69.25	3.33	6.52	-66.06	-13.00	-53.06	H

Remark:

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

**Operation Mode:** GPRS 1900 / TX / CH 661**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
90.1400	-67.4	1.11	1.07	-67.44	-13.00	-54.44	V
166.7700	-65.62	1.54	2.15	-65.01	-13.00	-52.01	V
233.7000	-64.56	1.8	5.39	-60.97	-13.00	-47.97	V
359.8000	-68.43	2.27	5.7	-65.00	-13.00	-52.00	V
500.4500	-78.02	2.7	5.9	-74.82	-13.00	-61.82	V
624.6100	-76.02	2.96	6.15	-72.83	-13.00	-59.83	V
99.8400	-64.96	1.15	-0.37	-66.48	-13.00	-53.48	H
166.7700	-57.4	1.54	2.15	-56.79	-13.00	-43.79	H
233.7000	-63.96	1.8	5.39	-60.37	-13.00	-47.37	H
359.8000	-59.74	2.27	5.7	-56.31	-13.00	-43.31	H
500.4500	-67.63	2.7	5.9	-64.43	-13.00	-51.43	H
624.6100	-69.64	2.96	6.15	-66.45	-13.00	-53.45	H

Remark:

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

**Operation Mode:** GPRS 1900 / TX / CH 810**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
90.1400	-67.87	1.11	1.07	-67.91	-13.00	-54.91	V
166.7700	-65.51	1.54	2.15	-64.90	-13.00	-51.90	V
233.7000	-64.11	1.8	5.39	-60.52	-13.00	-47.52	V
359.8000	-68.51	2.27	5.7	-65.08	-13.00	-52.08	V
624.6100	-76.29	2.96	6.15	-73.10	-13.00	-60.10	V
800.1800	-77.09	3.33	6.52	-73.90	-13.00	-60.90	V
99.8400	-64.94	1.15	-0.37	-66.46	-13.00	-53.46	H
166.7700	-57.83	1.54	2.15	-57.22	-13.00	-44.22	H
233.7000	-64.29	1.8	5.39	-60.70	-13.00	-47.70	H
359.8000	-59.8	2.27	5.7	-56.37	-13.00	-43.37	H
500.4500	-66.57	2.7	5.9	-63.37	-13.00	-50.37	H
624.6100	-69.52	2.96	6.15	-66.33	-13.00	-53.33	H

Remark:

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

**Operation Mode:** EDGE 850 / TX / CH 128**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
90.1400	-65.33	1.11	1.07	-65.37	-13.00	-52.37	V
166.7700	-64.17	1.54	2.15	-63.56	-13.00	-50.56	V
233.7000	-63.29	1.8	5.39	-59.70	-13.00	-46.70	V
359.8000	-67.86	2.27	5.7	-64.43	-13.00	-51.43	V
480.0800	-76.5	2.64	5.54	-73.60	-13.00	-60.60	V
624.6100	-76.4	2.96	6.15	-73.21	-13.00	-60.21	V
99.8400	-64.37	1.15	-0.37	-65.89	-13.00	-52.89	H
166.7700	-56.59	1.54	2.15	-55.98	-13.00	-42.98	H
279.2900	-70.96	2	5.29	-67.67	-13.00	-54.67	H
359.8000	-58.92	2.27	5.7	-55.49	-13.00	-42.49	H
500.4500	-66.57	2.7	5.9	-63.37	-13.00	-50.37	H
624.6100	-69.83	2.96	6.15	-66.64	-13.00	-53.64	H

Remark:

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

**Operation Mode:** EDGE 850 / TX / CH 190**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
91.1100	-66.36	1.11	1.05	-66.42	-13.00	-53.42	V
233.7000	-63.07	1.8	5.39	-59.48	-13.00	-46.48	V
359.8000	-67.99	2.27	5.7	-64.56	-13.00	-51.56	V
500.4500	-77.33	2.7	5.9	-74.13	-13.00	-61.13	V
624.6100	-76.58	2.96	6.15	-73.39	-13.00	-60.39	V
720.6400	-81.59	3.17	6.49	-78.27	-13.00	-65.27	V
99.8400	-63.24	1.15	-0.37	-64.76	-13.00	-51.76	H
166.7700	-55.13	1.54	2.15	-54.52	-13.00	-41.52	H
233.7000	-62.28	1.8	5.39	-58.69	-13.00	-45.69	H
359.8000	-57.46	2.27	5.7	-54.03	-13.00	-41.03	H
500.4500	-66.76	2.7	5.9	-63.56	-13.00	-50.56	H
600.3600	-70.14	2.9	6.4	-66.64	-13.00	-53.64	H

Remark:

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

**Operation Mode:** EDGE 850 / TX / CH 251**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
90.1400	-67.06	1.11	1.07	-67.10	-13.00	-54.10	V
166.7700	-65.28	1.54	2.15	-64.67	-13.00	-51.67	V
233.7000	-64.22	1.8	5.39	-60.63	-13.00	-47.63	V
359.8000	-68.68	2.27	5.7	-65.25	-13.00	-52.25	V
500.4500	-77.09	2.7	5.9	-73.89	-13.00	-60.89	V
624.6100	-77.67	2.96	6.15	-74.48	-13.00	-61.48	V
99.8400	-65.08	1.15	-0.37	-66.60	-13.00	-53.60	H
166.7700	-57.07	1.54	2.15	-56.46	-13.00	-43.46	H
233.7000	-64.45	1.8	5.39	-60.86	-13.00	-47.86	H
359.8000	-59.38	2.27	5.7	-55.95	-13.00	-42.95	H
500.4500	-69.56	2.7	5.9	-66.36	-13.00	-53.36	H
624.6100	-70.11	2.96	6.15	-66.92	-13.00	-53.92	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:** EDGE 1900 / TX / CH 512**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
92.0800	-65.86	1.12	0.89	-66.09	-13.00	-53.09	V
233.7000	-64.22	1.8	5.39	-60.63	-13.00	-47.63	V
359.8000	-68.3	2.27	5.7	-64.87	-13.00	-51.87	V
500.4500	-76.74	2.7	5.9	-73.54	-13.00	-60.54	V
624.6100	-76.88	2.96	6.15	-73.69	-13.00	-60.69	V
800.1800	-76.47	3.33	6.52	-73.28	-13.00	-60.28	V
99.8400	-64.78	1.15	-0.37	-66.30	-13.00	-53.30	H
166.7700	-57.68	1.54	2.15	-57.07	-13.00	-44.07	H
233.7000	-63.36	1.8	5.39	-59.77	-13.00	-46.77	H
359.8000	-59.63	2.27	5.7	-56.20	-13.00	-43.20	H
500.4500	-69.25	2.7	5.9	-66.05	-13.00	-53.05	H
624.6100	-69.28	2.96	6.15	-66.09	-13.00	-53.09	H

Remark:

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

**Operation Mode:** EDGE 1900 / TX / CH 661**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
91.1100	-66.86	1.11	1.05	-66.92	-13.00	-53.92	V
166.7700	-65.57	1.54	2.15	-64.96	-13.00	-51.96	V
233.7000	-63.58	1.8	5.39	-59.99	-13.00	-46.99	V
359.8000	-68.49	2.27	5.7	-65.06	-13.00	-52.06	V
500.4500	-76.06	2.7	5.9	-72.86	-13.00	-59.86	V
800.1800	-76.71	3.33	6.52	-73.52	-13.00	-60.52	V
166.7700	-57.6	1.54	2.15	-56.99	-13.00	-43.99	H
233.7000	-63.9	1.8	5.39	-60.31	-13.00	-47.31	H
359.8000	-59.37	2.27	5.7	-55.94	-13.00	-42.94	H
500.4500	-69.95	2.7	5.9	-66.75	-13.00	-53.75	H
624.6100	-69.92	2.96	6.15	-66.73	-13.00	-53.73	H
800.1800	-70.3	3.33	6.52	-67.11	-13.00	-54.11	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:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
90.1400	-67.33	1.11	1.07	-67.37	-13.00	-54.37	V
166.7700	-65.22	1.54	2.15	-64.61	-13.00	-51.61	V
233.7000	-64.37	1.8	5.39	-60.78	-13.00	-47.78	V
359.8000	-68.51	2.27	5.7	-65.08	-13.00	-52.08	V
500.4500	-76.61	2.7	5.9	-73.41	-13.00	-60.41	V
624.6100	-75.67	2.96	6.15	-72.48	-13.00	-59.48	V
99.8400	-64.76	1.15	-0.37	-66.28	-13.00	-53.28	H
166.7700	-57.7	1.54	2.15	-57.09	-13.00	-44.09	H
233.7000	-64.43	1.8	5.39	-60.84	-13.00	-47.84	H
359.8000	-59.98	2.27	5.7	-56.55	-13.00	-43.55	H
500.4500	-69.62	2.7	5.9	-66.42	-13.00	-53.42	H
624.6100	-69	2.96	6.15	-65.81	-13.00	-52.81	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 II / TX / CH 9262**Test Date:** May 21, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
122.1500	-72.93	1.29	-1.93	-76.15	-13.00	-63.15	V
233.7000	-82.32	1.8	5.39	-78.73	-13.00	-65.73	V
359.8000	-71.09	2.27	5.7	-67.66	-13.00	-54.66	V
500.4500	-79.08	2.7	5.9	-75.88	-13.00	-62.88	V
600.3600	-77.73	2.9	6.4	-74.23	-13.00	-61.23	V
800.1800	-77.98	3.33	6.52	-74.79	-13.00	-61.79	V
50.3700	-56.66	0.81	-4.8	-62.27	-13.00	-49.27	H
99.8400	-64.52	1.15	-0.37	-66.04	-13.00	-53.04	H
233.7000	-69.04	1.8	5.39	-65.45	-13.00	-52.45	H
359.8000	-57.99	2.27	5.7	-54.56	-13.00	-41.56	H
624.6100	-73.79	2.96	6.15	-70.60	-13.00	-57.60	H
800.1800	-71.14	3.33	6.52	-67.95	-13.00	-54.95	H

Remark:

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

**Operation Mode:** WCDMA Band II / TX / CH 9400**Test Date:** May 21, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
124.0900	-71.87	1.3	-1.81	-74.98	-13.00	-61.98	V
300.6300	-79.32	2.1	5.61	-75.81	-13.00	-62.81	V
359.8000	-69.9	2.27	5.7	-66.47	-13.00	-53.47	V
500.4500	-82.89	2.7	5.9	-79.69	-13.00	-66.69	V
600.3600	-77.06	2.9	6.4	-73.56	-13.00	-60.56	V
800.1800	-78.35	3.33	6.52	-75.16	-13.00	-62.16	V
50.3700	-56.16	0.81	-4.8	-61.77	-13.00	-48.77	H
122.1500	-62.8	1.29	-1.93	-66.02	-13.00	-53.02	H
233.7000	-68.72	1.8	5.39	-65.13	-13.00	-52.13	H
359.8000	-57.15	2.27	5.7	-53.72	-13.00	-40.72	H
624.6100	-72.79	2.96	6.15	-69.60	-13.00	-56.60	H
800.1800	-70.4	3.33	6.52	-67.21	-13.00	-54.21	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 Band II / TX / CH 9538**Test Date:** May 21, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
122.1500	-72.61	1.29	-1.93	-75.83	-13.00	-62.83	V
233.7000	-81.1	1.8	5.39	-77.51	-13.00	-64.51	V
359.8000	-71.03	2.27	5.7	-67.60	-13.00	-54.60	V
500.4500	-82.31	2.7	5.9	-79.11	-13.00	-66.11	V
600.3600	-78.02	2.9	6.4	-74.52	-13.00	-61.52	V
800.1800	-78.99	3.33	6.52	-75.80	-13.00	-62.80	V
51.3400	-56.66	0.81	-4.51	-61.98	-13.00	-48.98	H
122.1500	-62.57	1.29	-1.93	-65.79	-13.00	-52.79	H
233.7000	-69.14	1.8	5.39	-65.55	-13.00	-52.55	H
359.8000	-57.55	2.27	5.7	-54.12	-13.00	-41.12	H
624.6100	-72.58	2.96	6.15	-69.39	-13.00	-56.39	H
800.1800	-69.8	3.33	6.52	-66.61	-13.00	-53.61	H

Remark:

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

**Operation Mode:** WCDMA Band V / TX / CH 4132**Test Date:** May 21, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
50.3700	-69.87	0.81	-4.8	-75.48	-13.00	-62.48	V
123.1200	-71.46	1.29	-1.87	-74.62	-13.00	-61.62	V
233.7000	-81.89	1.8	5.39	-78.30	-13.00	-65.30	V
359.8000	-70.91	2.27	5.7	-67.48	-13.00	-54.48	V
600.3600	-78.86	2.9	6.4	-75.36	-13.00	-62.36	V
624.6100	-79.66	2.96	6.15	-76.47	-13.00	-63.47	V
50.3700	-57.09	0.81	-4.8	-62.70	-13.00	-49.70	H
122.1500	-62.8	1.29	-1.93	-66.02	-13.00	-53.02	H
233.7000	-69.77	1.8	5.39	-66.18	-13.00	-53.18	H
359.8000	-57.87	2.27	5.7	-54.44	-13.00	-41.44	H
500.4500	-73.49	2.7	5.9	-70.29	-13.00	-57.29	H
600.3600	-74.37	2.9	6.4	-70.87	-13.00	-57.87	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 Band V / TX / CH 4182**Test Date:** May 21, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
122.1500	-71.33	1.29	-1.93	-74.55	-13.00	-61.55	V
233.7000	-82.06	1.8	5.39	-78.47	-13.00	-65.47	V
359.8000	-71.05	2.27	5.7	-67.62	-13.00	-54.62	V
500.4500	-80.07	2.7	5.9	-76.87	-13.00	-63.87	V
600.3600	-78.99	2.9	6.4	-75.49	-13.00	-62.49	V
727.4300	-84.12	3.18	6.42	-80.88	-13.00	-67.88	V
50.3700	-57.29	0.81	-4.8	-62.90	-13.00	-49.90	H
122.1500	-63.3	1.29	-1.93	-66.52	-13.00	-53.52	H
233.7000	-69.74	1.8	5.39	-66.15	-13.00	-53.15	H
359.8000	-58.01	2.27	5.7	-54.58	-13.00	-41.58	H
500.4500	-76.62	2.7	5.9	-73.42	-13.00	-60.42	H
624.6100	-73.3	2.96	6.15	-70.11	-13.00	-57.11	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:** May 21, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
46.4900	-67.04	0.78	-7.34	-75.16	-13.00	-62.16	V
124.0900	-72.74	1.3	-1.81	-75.85	-13.00	-62.85	V
233.7000	-82.36	1.8	5.39	-78.77	-13.00	-65.77	V
359.8000	-71.05	2.27	5.7	-67.62	-13.00	-54.62	V
500.4500	-83.61	2.7	5.9	-80.41	-13.00	-67.41	V
600.3600	-78.72	2.9	6.4	-75.22	-13.00	-62.22	V
50.3700	-56.5	0.81	-4.8	-62.11	-13.00	-49.11	H
122.1500	-63.57	1.29	-1.93	-66.79	-13.00	-53.79	H
233.7000	-69.9	1.8	5.39	-66.31	-13.00	-53.31	H
359.8000	-57.96	2.27	5.7	-54.53	-13.00	-41.53	H
500.4500	-74.63	2.7	5.9	-71.43	-13.00	-58.43	H
624.6100	-73.16	2.96	6.15	-69.97	-13.00	-56.97	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:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
51.3400	-44.62	0.81	-4.51	-49.94	-13.00	-36.94	V
92.0800	-69.19	1.12	0.89	-69.42	-13.00	-56.42	V
166.7700	-66	1.54	2.15	-65.39	-13.00	-52.39	V
199.7500	-68.67	1.63	2.94	-67.36	-13.00	-54.36	V
359.8000	-68.29	2.27	5.7	-64.86	-13.00	-51.86	V
600.3600	-78.07	2.9	6.4	-74.57	-13.00	-61.57	V
166.7700	-57.2	1.54	2.15	-56.59	-13.00	-43.59	H
204.6000	-68.02	1.65	4.2	-65.47	-13.00	-52.47	H
359.8000	-59.17	2.27	5.7	-55.74	-13.00	-42.74	H
500.4500	-70.15	2.7	5.9	-66.95	-13.00	-53.95	H
624.6100	-71.24	2.96	6.15	-68.05	-13.00	-55.05	H
800.1800	-67.91	3.33	6.52	-64.72	-13.00	-51.72	H

Remark:

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

**Operation Mode:** WCDMA / HSDPA Band II /
TX / CH 9400**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
50.3700	-41.79	0.81	-4.8	-47.40	-13.00	-34.40	V
166.7700	-66.17	1.54	2.15	-65.56	-13.00	-52.56	V
233.7000	-70.46	1.8	5.39	-66.87	-13.00	-53.87	V
359.8000	-67.72	2.27	5.7	-64.29	-13.00	-51.29	V
480.0800	-78.5	2.64	5.54	-75.60	-13.00	-62.60	V
624.6100	-76.58	2.96	6.15	-73.39	-13.00	-60.39	V
87.2300	-69.57	1.09	0.73	-69.93	-13.00	-56.93	H
166.7700	-56.96	1.54	2.15	-56.35	-13.00	-43.35	H
206.5400	-67.17	1.67	4.7	-64.14	-13.00	-51.14	H
359.8000	-59.06	2.27	5.7	-55.63	-13.00	-42.63	H
500.4500	-69.26	2.7	5.9	-66.06	-13.00	-53.06	H
624.6100	-70.97	2.96	6.15	-67.78	-13.00	-54.78	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 / HSDPA Band II /
TX / CH 9538**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
50.3700	-44.16	0.81	-4.8	-49.77	-13.00	-36.77	V
92.0800	-70.37	1.12	0.89	-70.60	-13.00	-57.60	V
166.7700	-66.4	1.54	2.15	-65.79	-13.00	-52.79	V
233.7000	-70.73	1.8	5.39	-67.14	-13.00	-54.14	V
359.8000	-68.02	2.27	5.7	-64.59	-13.00	-51.59	V
600.3600	-78.14	2.9	6.4	-74.64	-13.00	-61.64	V
166.7700	-56.41	1.54	2.15	-55.80	-13.00	-42.80	H
206.5400	-67.26	1.67	4.7	-64.23	-13.00	-51.23	H
359.8000	-59.57	2.27	5.7	-56.14	-13.00	-43.14	H
500.4500	-69.96	2.7	5.9	-66.76	-13.00	-53.76	H
624.6100	-71.45	2.96	6.15	-68.26	-13.00	-55.26	H
800.1800	-68.02	3.33	6.52	-64.83	-13.00	-51.83	H

Remark:

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

**Operation Mode:** WCDMA / HSDPA Band V /
TX / CH 4132**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
50.3700	-52.73	0.81	-4.8	-58.34	-13.00	-45.34	V
166.7700	-65.99	1.54	2.15	-65.38	-13.00	-52.38	V
233.7000	-71.17	1.8	5.39	-67.58	-13.00	-54.58	V
359.8000	-67.85	2.27	5.7	-64.42	-13.00	-51.42	V
480.0800	-78.15	2.64	5.54	-75.25	-13.00	-62.25	V
600.3600	-77.57	2.9	6.4	-74.07	-13.00	-61.07	V
99.8400	-68.53	1.15	-0.37	-70.05	-13.00	-57.05	H
166.7700	-57.47	1.54	2.15	-56.86	-13.00	-43.86	H
205.5700	-67.9	1.66	4.45	-65.11	-13.00	-52.11	H
359.8000	-59.25	2.27	5.7	-55.82	-13.00	-42.82	H
500.4500	-71.33	2.7	5.9	-68.13	-13.00	-55.13	H
624.6100	-71.79	2.96	6.15	-68.60	-13.00	-55.60	H

Remark:

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

**Operation Mode:** WCDMA / HSDPA Band V /
TX / CH 4182**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
50.3700	-52.4	0.81	-4.8	-58.01	-13.00	-45.01	V
92.0800	-67.96	1.12	0.89	-68.19	-13.00	-55.19	V
166.7700	-66.04	1.54	2.15	-65.43	-13.00	-52.43	V
233.7000	-70.79	1.8	5.39	-67.20	-13.00	-54.20	V
359.8000	-67.77	2.27	5.7	-64.34	-13.00	-51.34	V
500.4500	-78.94	2.7	5.9	-75.74	-13.00	-62.74	V
99.8400	-68.38	1.15	-0.37	-69.90	-13.00	-56.90	H
166.7700	-56.85	1.54	2.15	-56.24	-13.00	-43.24	H
205.5700	-67.04	1.66	4.45	-64.25	-13.00	-51.25	H
359.8000	-59.08	2.27	5.7	-55.65	-13.00	-42.65	H
499.4800	-69.99	2.7	5.89	-66.80	-13.00	-53.80	H
624.6100	-71.62	2.96	6.15	-68.43	-13.00	-55.43	H

Remark:

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

**Operation Mode:** WCDMA / HSDPA Band V /
TX / CH 4233**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
51.3400	-53.99	0.81	-4.51	-59.31	-13.00	-46.31	V
166.7700	-65.44	1.54	2.15	-64.83	-13.00	-51.83	V
233.7000	-70.35	1.8	5.39	-66.76	-13.00	-53.76	V
359.8000	-67.5	2.27	5.7	-64.07	-13.00	-51.07	V
500.4500	-78.25	2.7	5.9	-75.05	-13.00	-62.05	V
624.6100	-77.95	2.96	6.15	-74.76	-13.00	-61.76	V
166.7700	-56.53	1.54	2.15	-55.92	-13.00	-42.92	H
194.9000	-66.14	1.63	3.47	-64.30	-13.00	-51.30	H
279.2900	-73.04	2	5.29	-69.75	-13.00	-56.75	H
359.8000	-58.68	2.27	5.7	-55.25	-13.00	-42.25	H
500.4500	-69.86	2.7	5.9	-66.66	-13.00	-53.66	H
624.6100	-71.96	2.96	6.15	-68.77	-13.00	-55.77	H

Remark:

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



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

Test Date: May 22, 2014

Temperature: 26°C

Tested by: David Shu

Humidity: 60 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
52.3100	-57.46	0.82	-4.22	-62.50	-13.00	-49.50	V
166.7700	-69.65	1.54	2.15	-69.04	-13.00	-56.04	V
233.7000	-73.23	1.8	5.39	-69.64	-13.00	-56.64	V
359.8000	-69.11	2.27	5.7	-65.68	-13.00	-52.68	V
450.9800	-76.38	2.59	5.74	-73.23	-13.00	-60.23	V
624.6100	-76.5	2.96	6.15	-73.31	-13.00	-60.31	V
99.8400	-61.57	1.15	-0.37	-63.09	-13.00	-50.09	H
233.7000	-62.47	1.8	5.39	-58.88	-13.00	-45.88	H
359.8000	-57.15	2.27	5.7	-53.72	-13.00	-40.72	H
450.9800	-68.56	2.59	5.74	-65.41	-13.00	-52.41	H
624.6100	-70.18	2.96	6.15	-66.99	-13.00	-53.99	H
800.1800	-68.95	3.33	6.52	-65.76	-13.00	-52.76	H

Remark:

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

**Operation Mode:** WCDMA / HSUPA Band II /
TX / CH 9400**Test Date:** May 22, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
51.3400	-56.41	0.81	-4.51	-61.73	-13.00	-48.73	V
166.7700	-70.14	1.54	2.15	-69.53	-13.00	-56.53	V
233.7000	-73.44	1.8	5.39	-69.85	-13.00	-56.85	V
359.8000	-70.07	2.27	5.7	-66.64	-13.00	-53.64	V
450.9800	-73.77	2.59	5.74	-70.62	-13.00	-57.62	V
624.6100	-77.2	2.96	6.15	-74.01	-13.00	-61.01	V
99.8400	-60	1.15	-0.37	-61.52	-13.00	-48.52	H
233.7000	-61.47	1.8	5.39	-57.88	-13.00	-44.88	H
359.8000	-55.35	2.27	5.7	-51.92	-13.00	-38.92	H
450.9800	-67.26	2.59	5.74	-64.11	-13.00	-51.11	H
624.6100	-66.37	2.96	6.15	-63.18	-13.00	-50.18	H
800.1800	-67.27	3.33	6.52	-64.08	-13.00	-51.08	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:** May 22, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
51.3400	-58.5	0.81	-4.51	-63.82	-13.00	-50.82	V
166.7700	-70.47	1.54	2.15	-69.86	-13.00	-56.86	V
233.7000	-75.04	1.8	5.39	-71.45	-13.00	-58.45	V
359.8000	-70.91	2.27	5.7	-67.48	-13.00	-54.48	V
450.9800	-77.5	2.59	5.74	-74.35	-13.00	-61.35	V
624.6100	-77.75	2.96	6.15	-74.56	-13.00	-61.56	V
99.8400	-60.42	1.15	-0.37	-61.94	-13.00	-48.94	H
233.7000	-62.16	1.8	5.39	-58.57	-13.00	-45.57	H
359.8000	-54.81	2.27	5.7	-51.38	-13.00	-38.38	H
450.9800	-67.9	2.59	5.74	-64.75	-13.00	-51.75	H
624.6100	-68.35	2.96	6.15	-65.16	-13.00	-52.16	H
800.1800	-68.68	3.33	6.52	-65.49	-13.00	-52.49	H

Remark:

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

**Operation Mode:** WCDMA / HSUPA Band V /
TX / CH 4132**Test Date:** May 22, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
51.3400	-53.84	0.81	-4.51	-59.16	-13.00	-46.16	V
166.7700	-67.93	1.54	2.15	-67.32	-13.00	-54.32	V
233.7000	-71.53	1.8	5.39	-67.94	-13.00	-54.94	V
359.8000	-68.53	2.27	5.7	-65.10	-13.00	-52.10	V
450.9800	-73.61	2.59	5.74	-70.46	-13.00	-57.46	V
624.6100	-75.81	2.96	6.15	-72.62	-13.00	-59.62	V
51.3400	-59.61	0.81	-4.51	-64.93	-13.00	-51.93	H
99.8400	-60.35	1.15	-0.37	-61.87	-13.00	-48.87	H
233.7000	-62.34	1.8	5.39	-58.75	-13.00	-45.75	H
359.8000	-55.45	2.27	5.7	-52.02	-13.00	-39.02	H
450.9800	-66.04	2.59	5.74	-62.89	-13.00	-49.89	H
624.6100	-68.05	2.96	6.15	-64.86	-13.00	-51.86	H

Remark:

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

**Operation Mode:** WCDMA / HSUPA Band V /
TX / CH 4182**Test Date:** May 22, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
51.3400	-56.03	0.81	-4.51	-61.35	-13.00	-48.35	V
166.7700	-69.12	1.54	2.15	-68.51	-13.00	-55.51	V
233.7000	-72.62	1.8	5.39	-69.03	-13.00	-56.03	V
359.8000	-70.77	2.27	5.7	-67.34	-13.00	-54.34	V
450.9800	-75.05	2.59	5.74	-71.90	-13.00	-58.90	V
624.6100	-76.37	2.96	6.15	-73.18	-13.00	-60.18	V
99.8400	-57.16	1.15	-0.37	-58.68	-13.00	-45.68	H
233.7000	-60.13	1.8	5.39	-56.54	-13.00	-43.54	H
359.8000	-52.65	2.27	5.7	-49.22	-13.00	-36.22	H
450.9800	-63.83	2.59	5.74	-60.68	-13.00	-47.68	H
500.4500	-67.95	2.7	5.9	-64.75	-13.00	-51.75	H
624.6100	-63.79	2.96	6.15	-60.60	-13.00	-47.60	H

Remark:

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

**Operation Mode:** WCDMA / HSUPA Band V /
TX / CH 4233**Test Date:** May 22, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
51.3400	-57.3	0.81	-4.51	-62.62	-13.00	-49.62	V
99.8400	-70.63	1.15	-0.37	-72.15	-13.00	-59.15	V
233.7000	-73.31	1.8	5.39	-69.72	-13.00	-56.72	V
359.8000	-71.53	2.27	5.7	-68.10	-13.00	-55.10	V
450.9800	-72.08	2.59	5.74	-68.93	-13.00	-55.93	V
624.6100	-76.79	2.96	6.15	-73.60	-13.00	-60.60	V
99.8400	-59.87	1.15	-0.37	-61.39	-13.00	-48.39	H
194.9000	-69.34	1.63	3.47	-67.50	-13.00	-54.50	H
233.7000	-61.84	1.8	5.39	-58.25	-13.00	-45.25	H
359.8000	-54.07	2.27	5.7	-50.64	-13.00	-37.64	H
450.9800	-66.23	2.59	5.74	-63.08	-13.00	-50.08	H
624.6100	-68.1	2.96	6.15	-64.91	-13.00	-51.91	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:** May 27, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1651.000	-39.72	5.05	6.03	-38.74	-13.00	-25.74	V
2470.000	-41.5	6.3	6.06	-41.74	-13.00	-28.74	V
N/A							
1651.000	-42.36	5.05	6.03	-41.38	-13.00	-28.38	H
2470.000	-43.84	6.3	6.06	-44.08	-13.00	-31.08	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 850 / TX / CH 190**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1672.000	-38.97	5.07	5.99	-38.05	-13.00	-25.05	V
2512.000	-43.55	6.37	6.13	-43.79	-13.00	-30.79	V
N/A							
1672.000	-42.7	5.07	5.99	-41.78	-13.00	-28.78	H
2512.000	-46.17	6.37	6.13	-46.41	-13.00	-33.41	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:** May 27, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1700.000	-40.63	5.11	5.94	-39.80	-13.00	-26.80	V
2547.000	-42.7	6.42	6.22	-42.90	-13.00	-29.90	V
N/A							
1700.000	-43.17	5.11	5.94	-42.34	-13.00	-29.34	H
2547.000	-44.1	6.42	6.22	-44.30	-13.00	-31.30	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:** May 27, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3702.000	-45.69	8.2	9.1	-44.79	-13.00	-31.79	V
5550.000	-40.54	10.06	10.81	-39.79	-13.00	-26.79	V
N/A							
3702.000	-47.9	8.2	9.1	-47.00	-13.00	-34.00	H
5550.000	-50.32	10.06	10.81	-49.57	-13.00	-36.57	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:** May 27, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3758.000	-50.87	8.23	9.16	-49.94	-13.00	-36.94	V
5641.000	-48.37	10.18	10.83	-47.72	-13.00	-34.72	V
N/A							
3758.000	-53.1	8.23	9.16	-52.17	-13.00	-39.17	H
5123.000	-54.04	9.48	10.65	-52.87	-13.00	-39.87	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:** May 27, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3821.000	-50.28	8.29	9.22	-49.35	-13.00	-36.35	V
5732.000	-47.55	10.24	10.85	-46.94	-13.00	-33.94	V
N/A							
3842.000	-53.56	8.31	9.24	-52.63	-13.00	-39.63	H
4857.000	-53.33	9.29	10.37	-52.25	-13.00	-39.25	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:** May 27, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1651.000	-40.24	5.05	6.03	-39.26	-13.00	-26.26	V
2470.000	-41.9	6.3	6.06	-42.14	-13.00	-29.14	V
N/A							
1651.000	-41.88	5.05	6.03	-40.90	-13.00	-27.90	H
2470.000	-43.69	6.3	6.06	-43.93	-13.00	-30.93	H
N/A							

Remark:

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

**Operation Mode:** EDGE 850 / TX / CH 190**Test Date:** May 27, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1672.000	-39.05	5.07	5.99	-38.13	-13.00	-25.13	V
2512.000	-43.21	6.37	6.13	-43.45	-13.00	-30.45	V
N/A							
1672.000	-42.3	5.07	5.99	-41.38	-13.00	-28.38	H
2512.000	-45.55	6.37	6.13	-45.79	-13.00	-32.79	H
N/A							

Remark:

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

**Operation Mode:** EDGE 850 / TX / CH 251**Test Date:** May 27, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1700.000	-39.43	5.11	5.94	-38.60	-13.00	-25.60	V
2547.000	-42.84	6.42	6.22	-43.04	-13.00	-30.04	V
N/A							
1700.000	-43.62	5.11	5.94	-42.79	-13.00	-29.79	H
2547.000	-44.52	6.42	6.22	-44.72	-13.00	-31.72	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:** EDGE 1900 / TX / CH 512**Test Date:** May 27, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3702.000	-44.16	8.2	9.1	-43.26	-13.00	-30.26	V
5550.000	-39.92	10.06	10.81	-39.17	-13.00	-26.17	V
N/A							
3702.000	-46.82	8.2	9.1	-45.92	-13.00	-32.92	H
5550.000	-51.81	10.06	10.81	-51.06	-13.00	-38.06	H
N/A							

Remark:

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

**Operation Mode:** EDGE 1900 / TX / CH 661**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3758.000	-48.42	8.23	9.16	-47.49	-13.00	-34.49	V
5641.000	-48.59	10.18	10.83	-47.94	-13.00	-34.94	V
N/A							
3758.000	-52.59	8.23	9.16	-51.66	-13.00	-38.66	H
4983.000	-54.32	9.38	10.57	-53.13	-13.00	-40.13	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:** May 27, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3821.000	-51.2	8.29	9.22	-50.27	-13.00	-37.27	V
5732.000	-48.58	10.24	10.85	-47.97	-13.00	-34.97	V
N/A							
3604.000	-55.82	8.11	9	-54.93	-13.00	-41.93	H
4269.000	-54.29	8.57	9.62	-53.24	-13.00	-40.24	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:** May 21, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3702.000	-50.25	8.2	9.1	-49.35	-13.00	-36.35	V
4472.000	-55.47	8.83	9.78	-54.52	-13.00	-41.52	V
N/A							
3709.000	-54.47	8.21	9.11	-53.57	-13.00	-40.57	H
4465.000	-55.04	8.82	9.77	-54.09	-13.00	-41.09	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:** May 21, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3905.000	-46.85	8.39	9.31	-45.93	-13.00	-32.93	V
4647.000	-55.06	9.13	10.04	-54.15	-13.00	-41.15	V
N/A							
3058.000	-57	7.1	7.57	-56.53	-13.00	-43.53	H
3898.000	-53.93	8.39	9.3	-53.02	-13.00	-40.02	H
N/A							

Remark:

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

**Operation Mode:** WCDMA Band II / TX / CH 9538**Test Date:** May 21, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3821.000	-53.55	8.29	9.22	-52.62	-13.00	-39.62	V
4381.000	-55.51	8.63	9.7	-54.44	-13.00	-41.44	V
N/A							
3821.000	-54.87	8.29	9.22	-53.94	-13.00	-40.94	H
4906.000	-55.66	9.27	10.45	-54.48	-13.00	-41.48	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:** May 21, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
4129.000	-41.13	8.47	9.5	-40.10	-13.00	-27.10	V
4962.000	-54.86	9.35	10.54	-53.67	-13.00	-40.67	V
N/A							
4129.000	-51.1	8.47	9.5	-50.07	-13.00	-37.07	H
6586.000	-53.47	11.2	11.4	-53.27	-13.00	-40.27	H
N/A							

Remark:

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

**Operation Mode:** WCDMA Band V / TX / CH 4182**Test Date:** May 21, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
2512.000	-53.12	6.37	6.13	-53.36	-13.00	-40.36	V
4178.000	-50.07	8.48	9.54	-49.01	-13.00	-36.01	V
N/A							
2512.000	-56.64	6.37	6.13	-56.88	-13.00	-43.88	H
4647.000	-55.38	9.13	10.04	-54.47	-13.00	-41.47	H
N/A							

Remark:

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

**Operation Mode:** WCDMA Band V / TX / CH 4233**Test Date:** May 21, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
2540.000	-54.51	6.41	6.2	-54.72	-13.00	-41.72	V
4227.000	-51.31	8.52	9.58	-50.25	-13.00	-37.25	V
N/A							
2540.000	-55.66	6.41	6.2	-55.87	-13.00	-42.87	H
3387.000	-55.94	7.56	8.56	-54.94	-13.00	-41.94	H
N/A							

Remark:

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

**Operation Mode:** WCDMA / HSDPA Band II /
TX / CH 9262**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3702.000	-52.46	8.2	9.1	-51.56	-13.00	-38.56	V
4850.000	-54.1	9.29	10.36	-53.03	-13.00	-40.03	V
N/A							
3702.000	-48.9	8.2	9.1	-48.00	-13.00	-35.00	H
4997.000	-53.69	9.41	10.6	-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 II /
TX / CH 9400**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
2974.000	-56.76	7.05	7.33	-56.48	-13.00	-43.48	V
4353.000	-54.07	8.62	9.68	-53.01	-13.00	-40.01	V
N/A							
3590.000	-55.51	8.09	8.99	-54.61	-13.00	-41.61	H
5004.000	-53.76	9.41	10.6	-52.57	-13.00	-39.57	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:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3814.000	-53.22	8.28	9.21	-52.29	-13.00	-39.29	V
4332.000	-54.19	8.61	9.67	-53.13	-13.00	-40.13	V
N/A							
3814.000	-51.56	8.28	9.21	-50.63	-13.00	-37.63	H
4626.000	-53.2	9.13	10	-52.33	-13.00	-39.33	H
N/A							

Remark:

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

**Operation Mode:** WCDMA / HSDPA Band V /
TX / CH 4132**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
4129.000	-39.4	8.47	9.5	-38.37	-13.00	-25.37	V
4955.000	-52.99	9.34	10.53	-51.80	-13.00	-38.80	V
N/A							
4129.000	-48.75	8.47	9.5	-47.72	-13.00	-34.72	H
5109.000	-54.08	9.46	10.64	-52.90	-13.00	-39.90	H
N/A							

Remark:

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

**Operation Mode:** WCDMA / HSDPA Band V /
TX / CH 4182**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1952.000	-52.06	5.59	5.49	-52.16	-13.00	-39.16	V
4178.000	-46.77	8.48	9.54	-45.71	-13.00	-32.71	V
N/A							
3142.000	-54.93	7.21	7.83	-54.31	-13.00	-41.31	H
5186.000	-53.66	9.54	10.67	-52.53	-13.00	-39.53	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 V /
TX / CH 4233**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3380.000	-52.51	7.55	8.54	-51.52	-13.00	-38.52	V
4227.000	-50.75	8.52	9.58	-49.69	-13.00	-36.69	V
N/A							
3380.000	-55.28	7.55	8.54	-54.29	-13.00	-41.29	H
4514.000	-53.36	8.94	9.82	-52.48	-13.00	-39.48	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:** May 22, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3709.000	-50.04	8.21	9.11	-49.14	-13.00	-36.14	V
5004.000	-54.33	9.41	10.6	-53.14	-13.00	-40.14	V
N/A							
3702.000	-53.19	8.2	9.1	-52.29	-13.00	-39.29	H
4605.000	-53.15	9.13	9.97	-52.31	-13.00	-39.31	H
N/A							

Remark:

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

**Operation Mode:** WCDMA / HSUPA Band II /
TX / CH 9400**Test Date:** May 22, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3639.000	-55.52	8.15	9.04	-54.63	-13.00	-41.63	V
4430.000	-54.14	8.72	9.74	-53.12	-13.00	-40.12	V
N/A							
3219.000	-55.86	7.3	8.06	-55.10	-13.00	-42.10	H
5067.000	-53.25	9.44	10.63	-52.06	-13.00	-39.06	H
N/A							

Remark:

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

**Operation Mode:** WCDMA / HSUPA Band II /
TX / CH 9538**Test Date:** May 22, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3814.000	-51.99	8.28	9.21	-51.06	-13.00	-38.06	V
4815.000	-54.49	9.31	10.3	-53.50	-13.00	-40.50	V
N/A							
3611.000	-55.48	8.12	9.01	-54.59	-13.00	-41.59	H
5067.000	-53.67	9.44	10.63	-52.48	-13.00	-39.48	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:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
4129.000	-42.69	8.47	9.5	-41.66	-13.00	-28.66	V
4962.000	-54.2	9.35	10.54	-53.01	-13.00	-40.01	V
N/A							
4129.000	-50.96	8.47	9.5	-49.93	-13.00	-36.93	H
4682.000	-52.98	9.13	10.09	-52.02	-13.00	-39.02	H
N/A							

Remark:

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

**Operation Mode:** WCDMA / HSUPA Band V /
TX / CH 4182**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1952.000	-52.55	5.59	5.49	-52.65	-13.00	-39.65	V
4178.000	-49.05	8.48	9.54	-47.99	-13.00	-34.99	V
N/A							
3919.000	-53.06	8.38	9.32	-52.12	-13.00	-39.12	H
4941.000	-52.54	9.32	10.51	-51.35	-13.00	-38.35	H
N/A							

Remark:

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

**Operation Mode:** WCDMA / HSUPA Band V /
TX / CH 4233**Test Date:** May 23, 2014**Temperature:** 26°C**Tested by:** David Shu**Humidity:** 60 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3387.000	-52.76	7.56	8.56	-51.76	-13.00	-38.76	V
4227.000	-50.29	8.52	9.58	-49.23	-13.00	-36.23	V
N/A							
1952.000	-52.58	5.59	5.49	-52.68	-13.00	-39.68	H
3387.000	-54.85	7.56	8.56	-53.85	-13.00	-40.85	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.



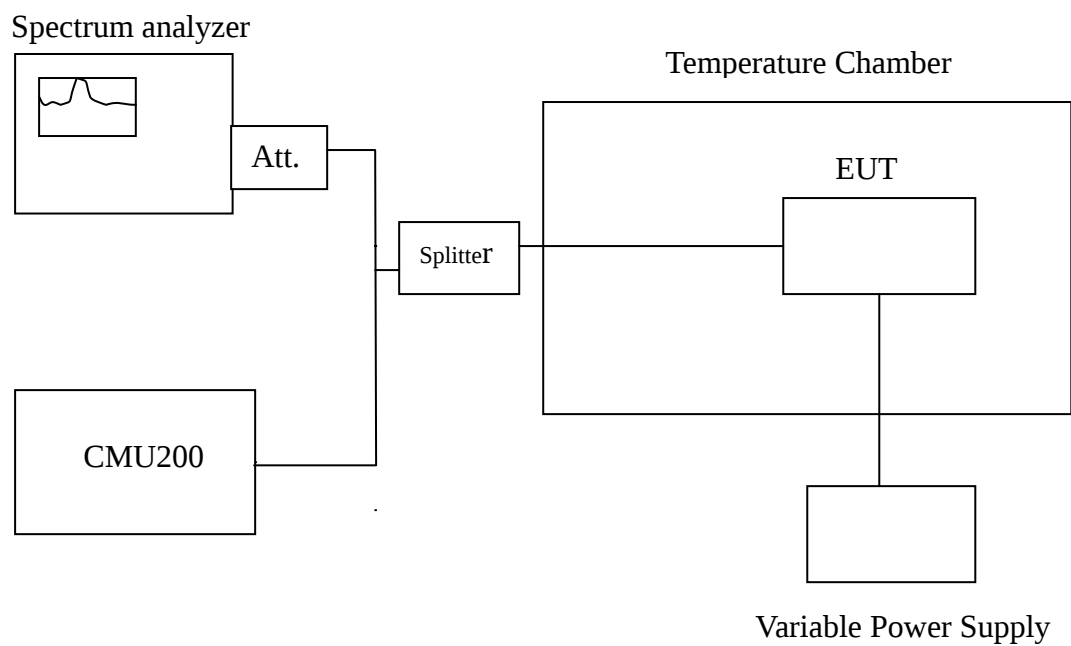
7.7 FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

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 = 2090 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
110	50	836599993	-12	2091
	40	836599992	-13	
	30	836599995	-10	
	20	836600005	0	
	10	836599992	-13	
	0	836599994	-11	
	-10	836599995	-10	
	-20	836599998	-7	
	-30	836599994	-11	

Reference Frequency: GPRS Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
110	50	1879999994	-12	4700
	40	1879999998	-8	
	30	1879999995	-11	
	20	1880000006	0	
	10	1879999996	-10	
	0	1879999999	-7	
	-10	1879999998	-8	
	-20	1879999995	-11	
	-30	1879999994	-12	



Reference Frequency: EDGE Mid Channel 836.6 MHz @ 20°C				
Limit: +/- 2.5 ppm = 2090 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
110	50	836599992	-16	2090
	40	836599994	-14	
	30	836599998	-10	
	20	836600008	0	
	10	836599996	-12	
	0	836599992	-16	
	-10	836599994	-14	
	-20	836599998	-10	
	-30	836599996	-12	

Reference Frequency: EDGE Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
110	50	1880000001	-1	4700
	40	1879999988	-14	
	30	1879999992	-10	
	20	1880000002	0	
	10	1879999996	-6	
	0	1879999998	-4	
	-10	1879999995	-7	
	-20	1879999994	-8	
	-30	1879999992	-10	



Reference Frequency: WCDMA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
110	50	1879999994	-6	4700
	40	1879999997	-3	
	30	1879999998	-2	
	20	1880000000	0	
	10	1879999991	-9	
	0	1879999992	-8	
	-10	1879999995	-5	
	-20	1879999996	-4	
	-30	1879999999	-1	

Reference Frequency: WCDMA Band V Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2090 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
110	50	836599998	-10	2090
	40	836599995	-13	
	30	836599996	-12	
	20	836600008	0	
	10	836599994	-14	
	0	836599991	-17	
	-10	836599992	-16	
	-20	836599995	-13	
	-30	836599998	-10	



Reference Frequency: WCDMA / HSDPA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
110	50	1879999995	-10	4700
	40	1879999996	-9	
	30	1879999993	-12	
	20	1880000005	0	
	10	1879999996	-9	
	0	1879999999	-6	
	-10	1879999998	-7	
	-20	1879999995	-10	
	-30	1879999992	-13	

Reference Frequency: WCDMA / HSDPA Band V Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2090 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
110	50	836599989	-16	2090
	40	836599995	-10	
	30	836599994	-11	
	20	836600005	0	
	10	836599992	-13	
	0	836599995	-10	
	-10	836599994	-11	
	-20	836599997	-8	
	-30	836599991	-14	



Reference Frequency: WCDMA / HSUPA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
110	50	1879999993	-15	4700
	40	1879999996	-12	
	30	1879999995	-13	
	20	1880000008	0	
	10	1879999991	-17	
	0	1879999994	-14	
	-10	1879999995	-13	
	-20	1879999992	-16	
	-30	1879999993	-15	

Reference Frequency: WCDMA / HSUPA Band V Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2090 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
110	50	836599992	-13	2091
	40	836599995	-10	
	30	836599994	-11	
	20	836600005	0	
	10	836599996	-9	
	0	836599999	-6	
	-10	836599998	-7	
	-20	836599995	-10	
	-30	836599992	-13	



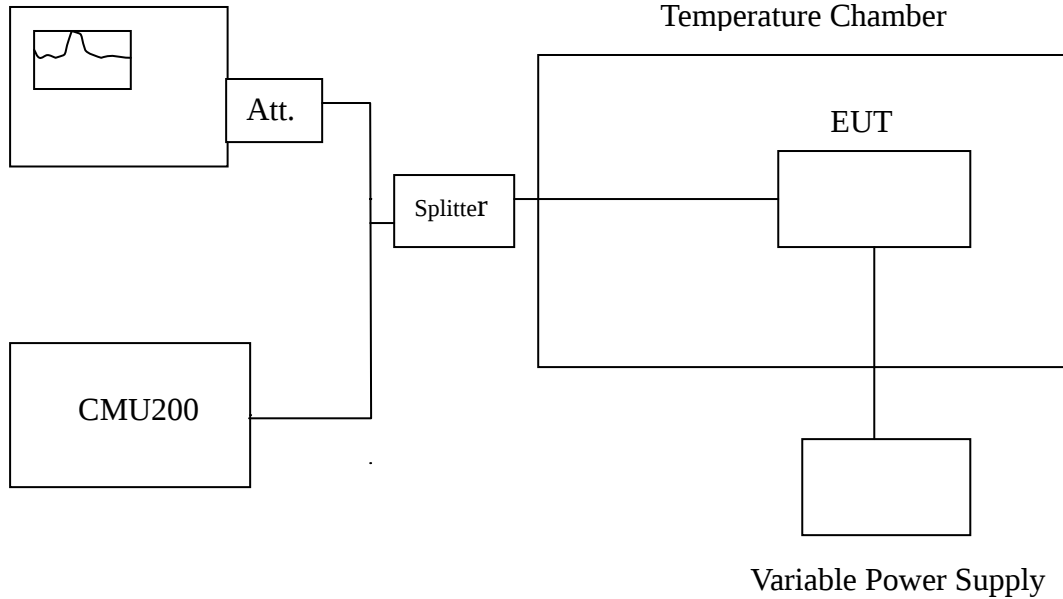
7.8 FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

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.

AC

Reduce the input voltage to specify extreme voltage variation ($\pm 10\%$) 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 = 2090Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
121	20	836600007	2	2091
110		836600005	0	
99		836600004	-1	

Reference Frequency: GPRS Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
121	20	1880000008	2	4700
110		1880000006	0	
99		1880000005	-1	



Reference Frequency: EDGE Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2090Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
121	20	836600005	-3	2091
110		836600008	0	
99		836600009	1	

Reference Frequency: EDGE Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
121	20	1880000005	3	4700
110		1880000002	0	
99		1880000001	-1	

Reference Frequency: WCDMA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
121	20	1880000001	1	4700
110		1880000000	0	
99		1880000002	2	

Reference Frequency: WCDMA Band V Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2090Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
121	20	836600006	-2	2091
110		836600008	0	
99		836600007	-1	



Reference Frequency: WCDMA HSDPA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
121	20	1880000006	1	4700
110		1880000005	0	
99		1880000008	3	

Reference Frequency: WCDMA HSDPA Band V Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2090Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
121	20	836600007	2	2091
110		836600005	0	
99		836600002	-3	

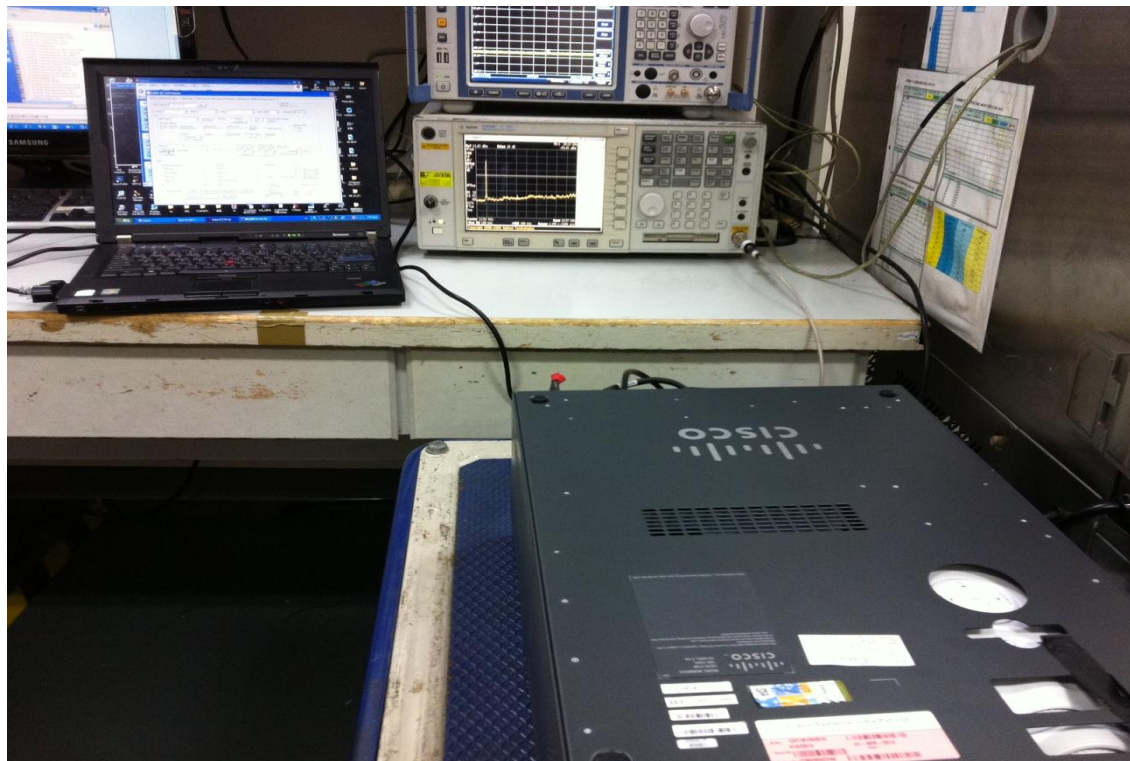
Reference Frequency: WCDMA HSUPA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
121	20	1880000007	-1	4700
110		1880000008	0	
99		1880000005	-3	

Reference Frequency: WCDMA HSUPA Band V Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2090Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
121	20	836600008	3	2091
110		836600005	0	
99		836600006	1	



APPENDIX I PHOTOGRAPHS OF TEST SETUP

Conducted Emission Set Up Photo



Radiated Emission Set up Photos

