



**FCC 47 CFR PART 22 SUBPART H AND PART 24 SUBPART E
&
INDUSTRY CANADA RSS-132 & RSS-133**

TEST REPORT

For

LE910-NVG

Trade Name: Telit

Model: LE910-NVG, LE910-SVG

Issued to

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

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: May 7, 2014



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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	May 7, 2014	Initial Issue	ALL	Angel Cheng



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1. TEST RESULT CERTIFICATION

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

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

Equipment Under Test: LE910-NVG

Trade Name: Telit

Model Number: LE910-NVG, LE910-SVG

Date of Test: April 29, 2014

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR PART 22 SUBPART H AND PART 24 SUBPART E & IC RSS-132 Issue 3: January, 2013 and IC RSS-133 Issue 6: January, 2013	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 and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rule FCC PART 22 Subpart H, PART 24 Subpart E, IC RSS-132 Issue 3 and IC RSS-133 Issue 6.

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

Approved by:

Miller Lee
Section Manager
Compliance Certification Services Inc.

Reviewed by:

Angel Cheng
Section Manager
Compliance Certification Services Inc.



2. EUT DESCRIPTION

Product	LE910-NVG	
Trade Name	Telit	
Model Number	LE910-NVG, LE910-SVG	
Model Discrepancy	Model Number	Difference
	LE910-NVG	SVG is the same as NVG but with 3G technology disabled by SW. Their HW is identical
	LE910-SVG	
Received Date	April 15, 2014	
Power Supply	DC 3.7V powered from Host device.	
Frequency Range	WCDMA / HSDPA / HSUPA Band II: 1852.4 ~ 1907.6 MHz WCDMA / HSDPA / HSUPA Band V: 826.4 ~ 846.6MHz	
Modulation Technique	QPSK	
Antenna Specification	1/4l Antenna / Gain: 2.14dBi	

Mode	ERP Power (dBm)	Type of Emission
WCDMA Band V	18.13	4M16G7W
WCDMA HSDPA Band V	20.07	4M18G7W
WCDMA HSUPA Band V	18.98	4M18G7W

Mode	ERP Power (dBm)	Type of Emission
WCDMA Band II	21.83	4M17G7W
WCDMA HSDPA Band II	21.55	4M18G7W
WCDMA HSUPA Band II	20.97	4M17G7W



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 and Part 22 Subpart H & Part 24 Subpart E.

The tests documented in this report were performed in accordance with IC RSS-132, SPSR503, RSS-133, SPSR510 and ANSI C63.4 and TIA/EIA-603-C.

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: LE910-NVG) had been tested under operating condition.

EUT staying in continuous transmitting mode was programmed.

After verification, all tests carried out are with the worst-case test modes as shown below except radiated spurious emission below 1GHz which worst case was in normal link mode.

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.



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	03/19/2015
Power Meter	Anritsu	ML2495A	1012009	06/04/2014
Power Sensor	Anritsu	MA2411A	0917072	06/04/2014

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



4.3 MEASUREMENT UNCERTAINTY

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

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



5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

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

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

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

☐ No.81-1, Lane 210, Bade 2nd Rd., 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: 2009 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.

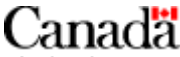
Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

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

5.3 LABORATORY ACCREDITATIONS AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by American Association for Laboratory Accreditation Program for the specific scope accreditation under Lab Code: 0824-01 to perform Electromagnetic Interference tests according to FCC Part 15 and CISPR 22 requirements. In addition, the test facilities are listed with Industry Canada, Certification and Engineering Bureau, IC 2324G-1 for 3M Semi Anechoic Chamber A, 2324G-2 for 3M Semi Anechoic Chamber B.

**5.4TABLE 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 II for the actual connections between EUT and support equipment.

6.2 SUPPORT EQUIPMENT

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

Remark:

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



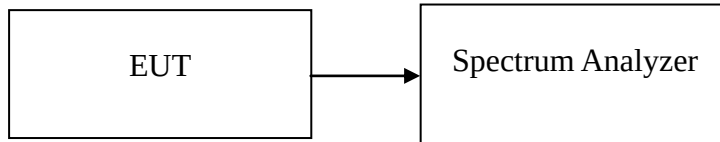
7. FCC PART 22 & 24 REQUIREMENTS & INDUSTRY CANADA RSS-132 & RSS-133

7.199% BANDWIDTH

LIMIT

None; for reporting purposes only.

Test Configuration



TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled.

TEST RESULTS

No non-compliance noted.

**Test Data**

Test Mode	CH	Frequency (MHz)	99% Bandwidth (MHz)
WCDMA (Band II)	9262	1852.40	4.1556
	9400	1880.00	4.1734
	9538	1907.60	4.1637
WCDMA (Band V)	4132	826.40	4.1666
	4182	836.40	4.1524
	4233	846.60	4.1669
WCDMA / HSDPA (BAND II)	9262	1852.40	4.1508
	9400	1880.00	4.1852
	9538	1907.60	4.1518
WCDMA / HSDPA (BAND V)	4132	826.40	4.1672
	4182	836.40	4.1580
	4233	846.60	4.1800
WCDMA / HSUPA (BAND II)	9262	1852.40	4.1571
	9400	1880.00	4.1456
	9538	1907.60	4.1786
WCDMA / HSUPA (BAND V)	4132	826.40	4.1810
	4182	836.40	4.1418
	4233	846.60	4.1378

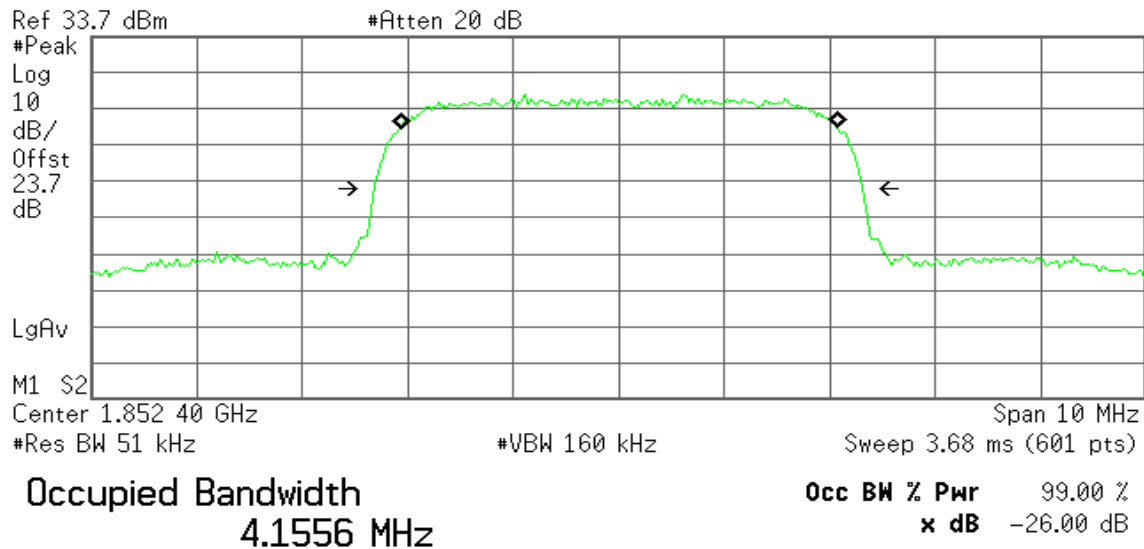


Test Plot

WCDMA Band II (CH Low)

Agilent

R T

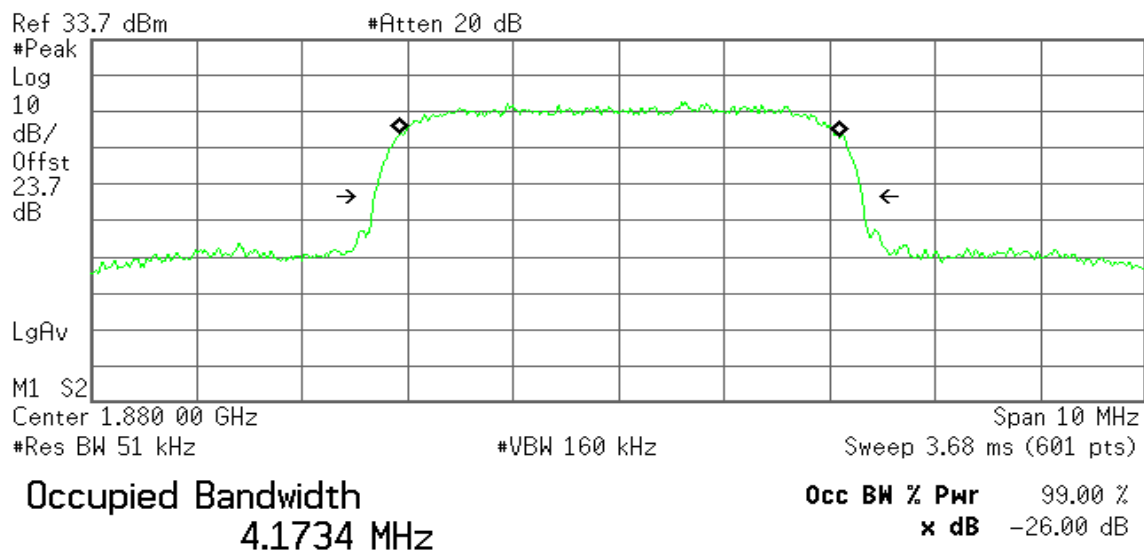


Transmit Freq Error 3.764 kHz
x dB Bandwidth 4.643 MHz

WCDMA Band II (CH Mid)

Agilent

R T



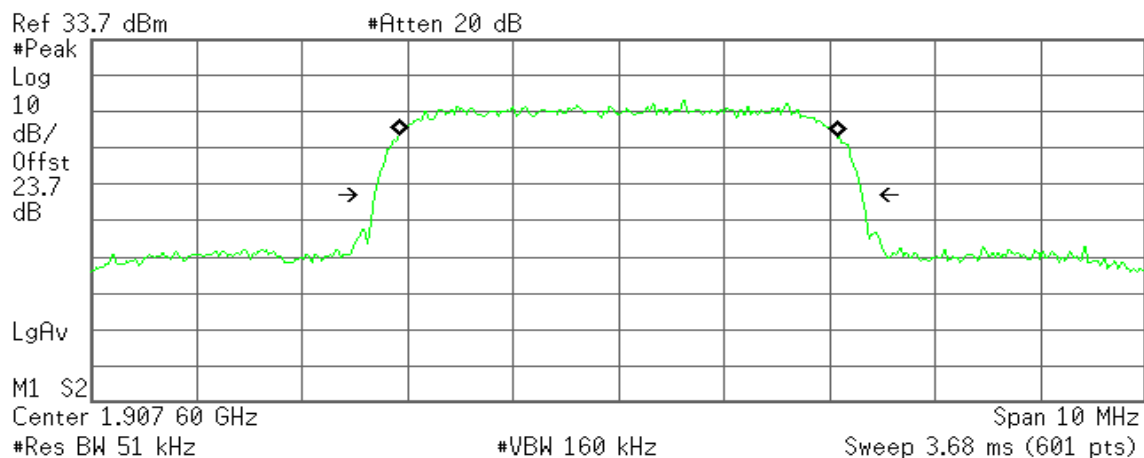
Transmit Freq Error 6.863 kHz
x dB Bandwidth 4.639 MHz



WCDMA Band II (CH High)

Agilent

R T



Occupied Bandwidth
4.1637 MHz

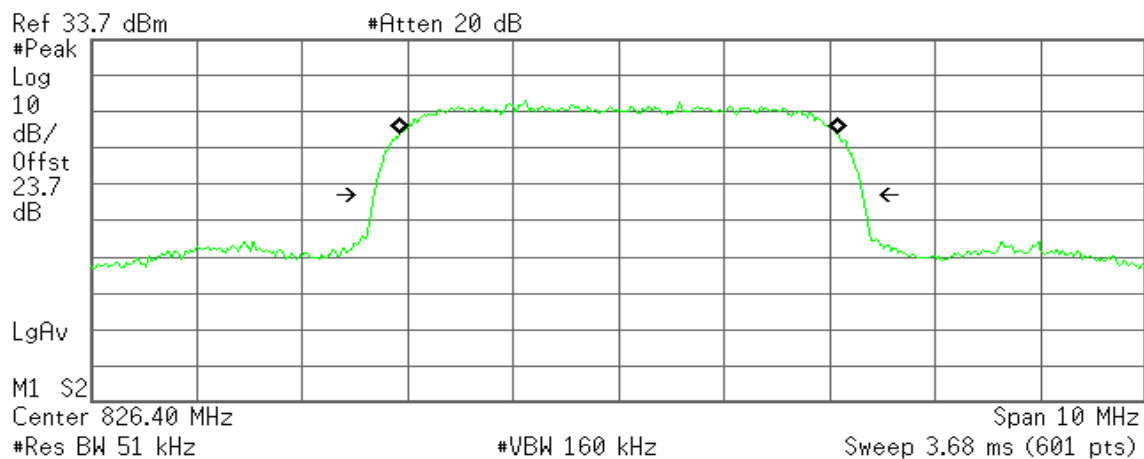
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -2.795 kHz
x dB Bandwidth 4.629 MHz

WCDMA Band V (CH Low)

Agilent

R T



Occupied Bandwidth
4.1666 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

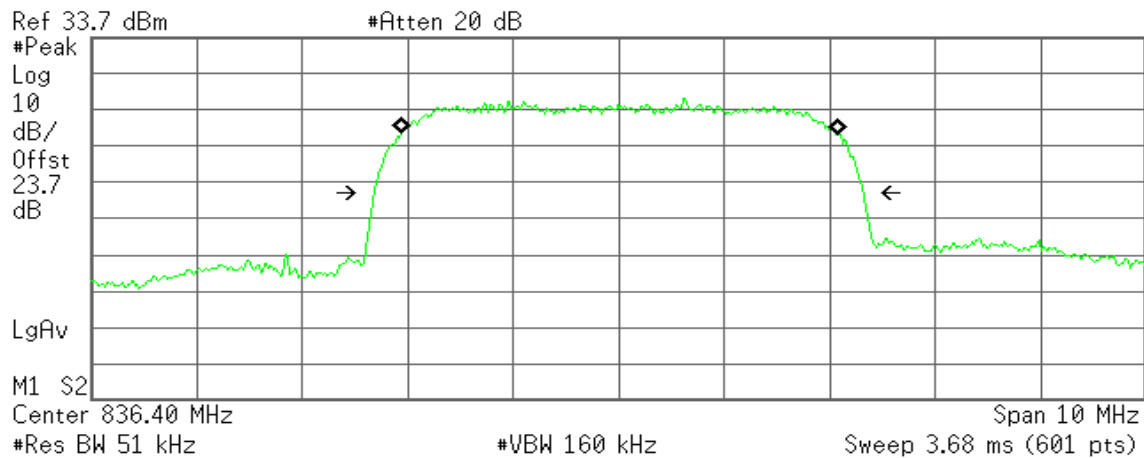
Transmit Freq Error -3.739 kHz
x dB Bandwidth 4.649 MHz



WCDMA Band V (CH Mid)

Agilent

R T



Occupied Bandwidth
4.1524 MHz

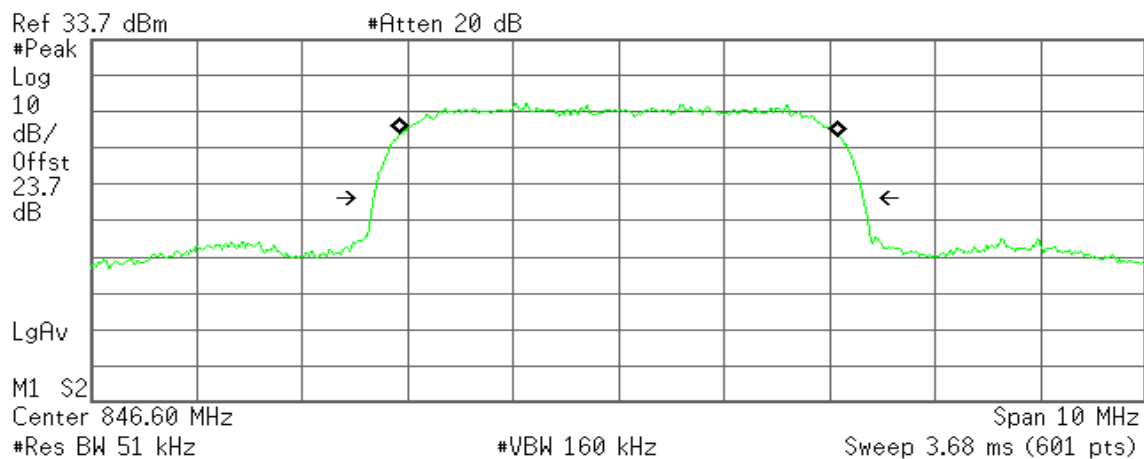
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 7.654 kHz
x dB Bandwidth 4.652 MHz

WCDMA Band V (CH High)

Agilent

R T



Occupied Bandwidth
4.1669 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

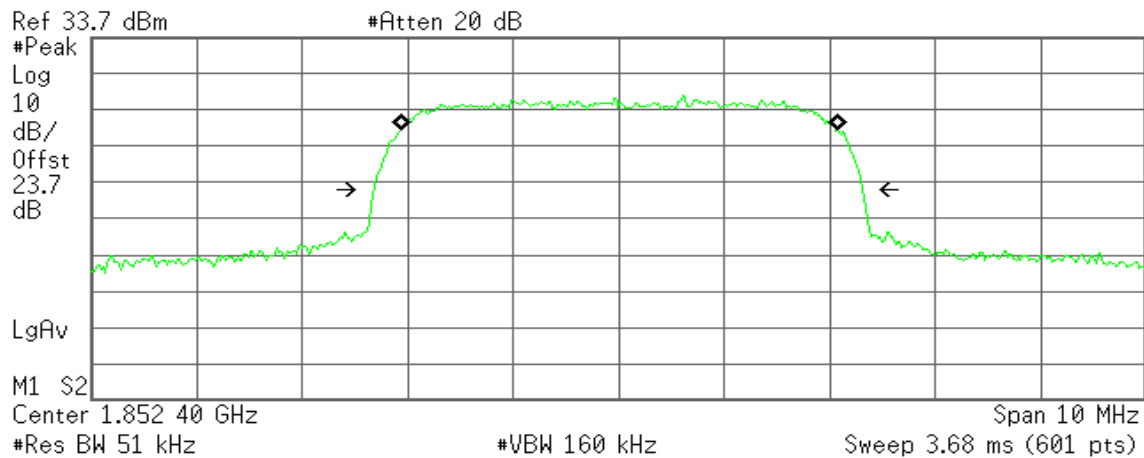
Transmit Freq Error -64.036 Hz
x dB Bandwidth 4.651 MHz



WCDMA / HSDPA Band II (CH Low)

Agilent

R T



Occupied Bandwidth
4.1508 MHz

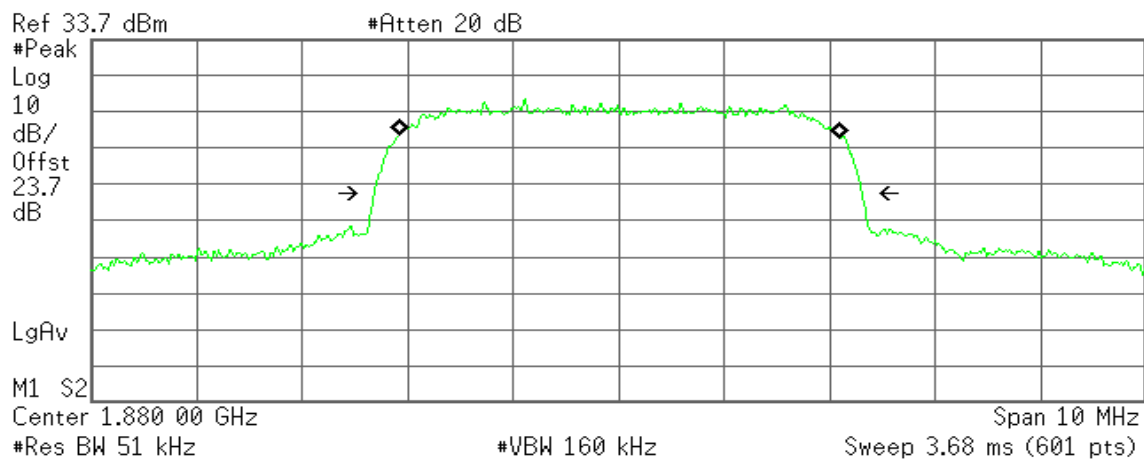
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 7.475 kHz
x dB Bandwidth 4.646 MHz

WCDMA / HSDPA Band II (CH Mid)

Agilent

R T



Occupied Bandwidth
4.1852 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

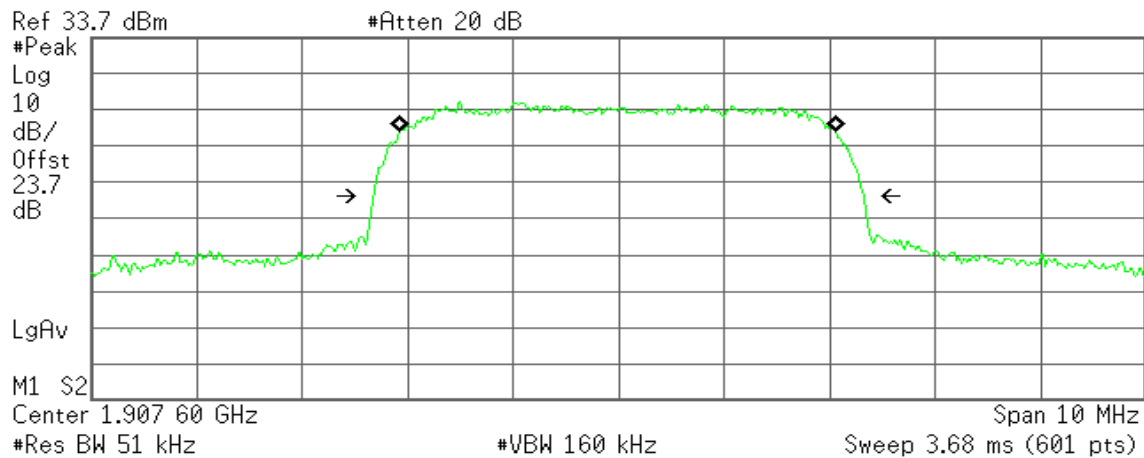
Transmit Freq Error 5.468 kHz
x dB Bandwidth 4.638 MHz



WCDMA / HSDPA Band II (CH High)

Agilent

R T



Occupied Bandwidth
4.1518 MHz

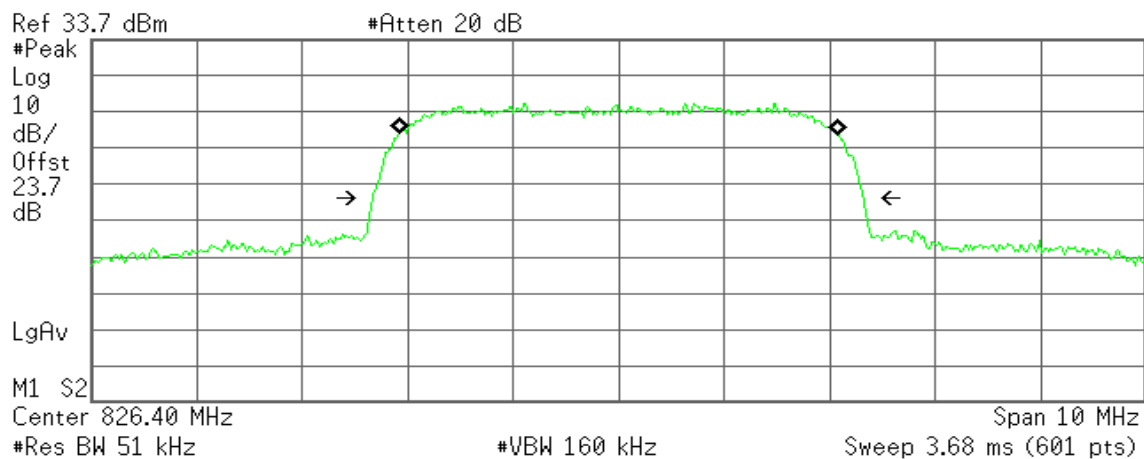
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -7.617 kHz
x dB Bandwidth 4.662 MHz

WCDMA / HSDPA Band V (CH Low)

Agilent

R T



Occupied Bandwidth
4.1672 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

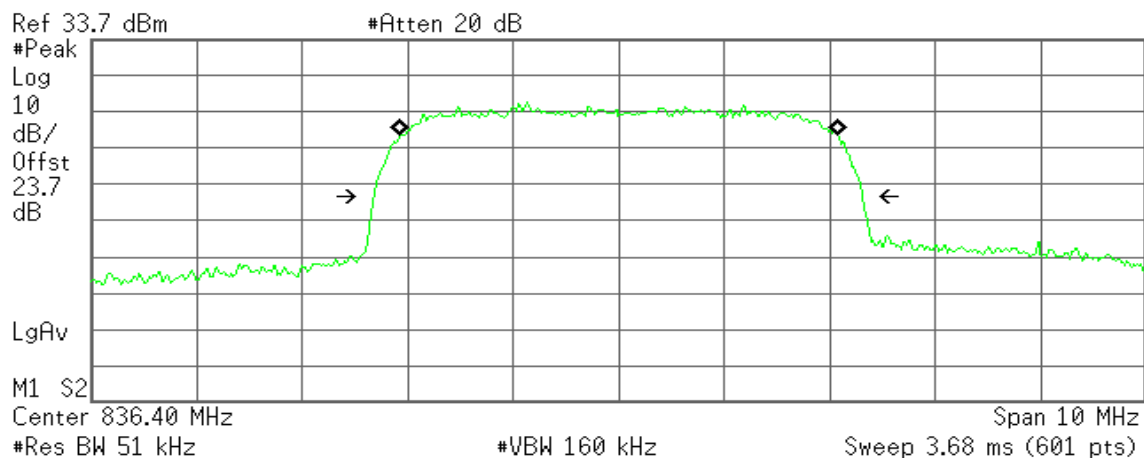
Transmit Freq Error -2.314 kHz
x dB Bandwidth 4.668 MHz



WCDMA / HSDPA Band V (CH Mid)

Agilent

R T



Occupied Bandwidth
4.1580 MHz

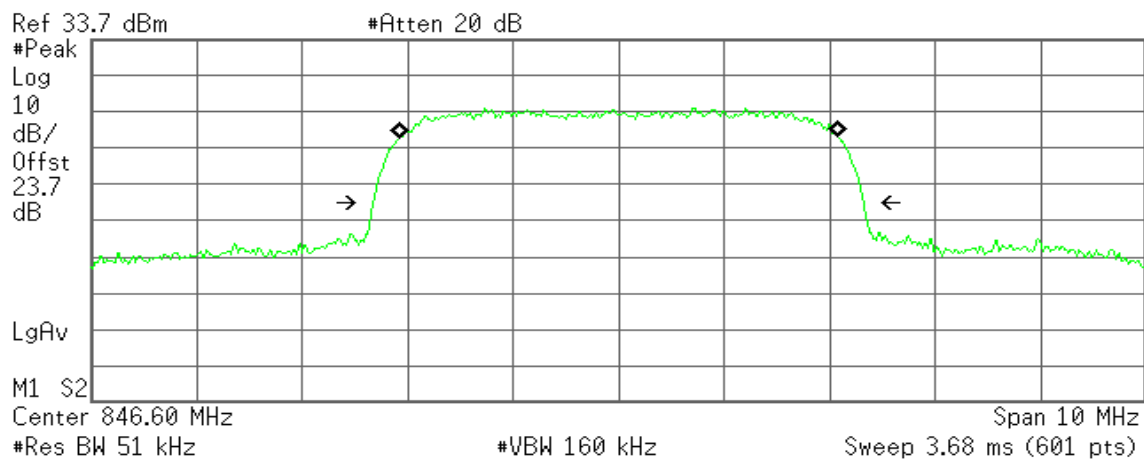
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -1.117 kHz
x dB Bandwidth 4.644 MHz

WCDMA / HSDPA Band V (CH High)

Agilent

R T



Occupied Bandwidth
4.1800 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

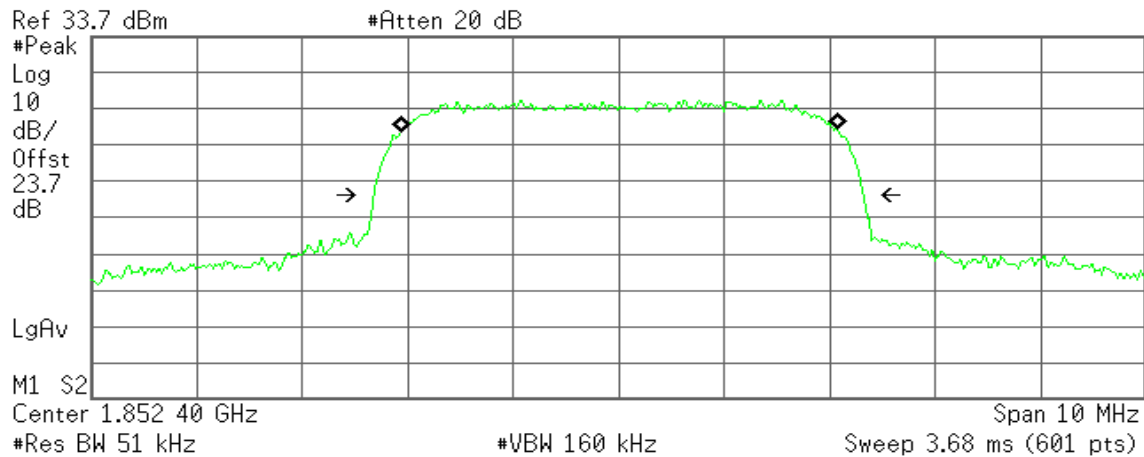
Transmit Freq Error 1.327 kHz
x dB Bandwidth 4.664 MHz



WCDMA / HSUPA Band II (CH Low)

Agilent

R T



Occupied Bandwidth
4.1571 MHz

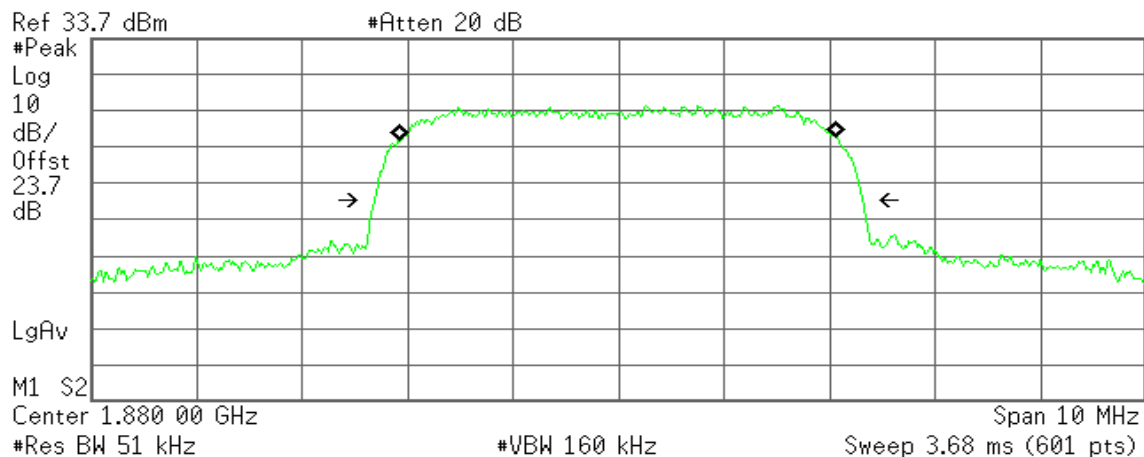
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 4.827 kHz
x dB Bandwidth 4.652 MHz

WCDMA / HSUPA Band II (CH Mid)

Agilent

R T



Occupied Bandwidth
4.1456 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

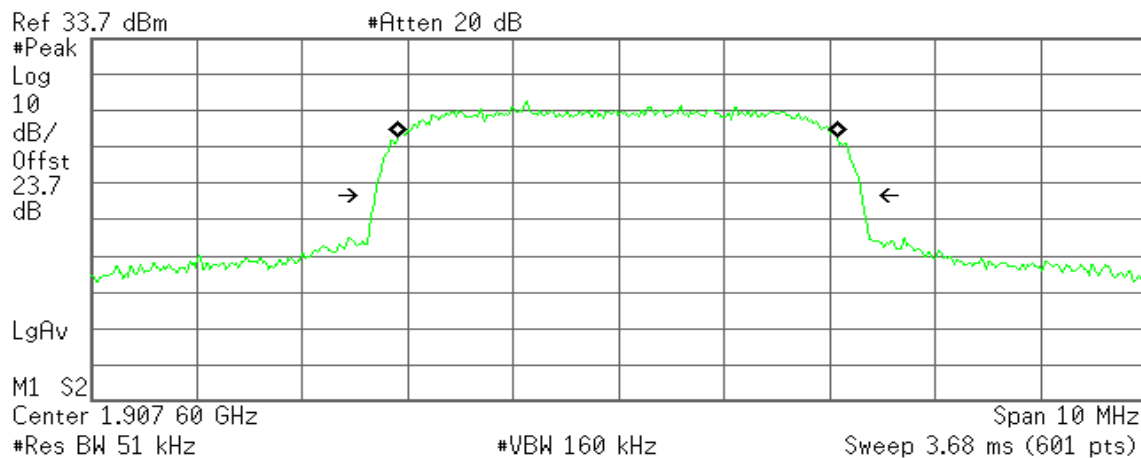
Transmit Freq Error -6.138 kHz
x dB Bandwidth 4.638 MHz



WCDMA / HSUPA Band II (CH High)

Agilent

R T

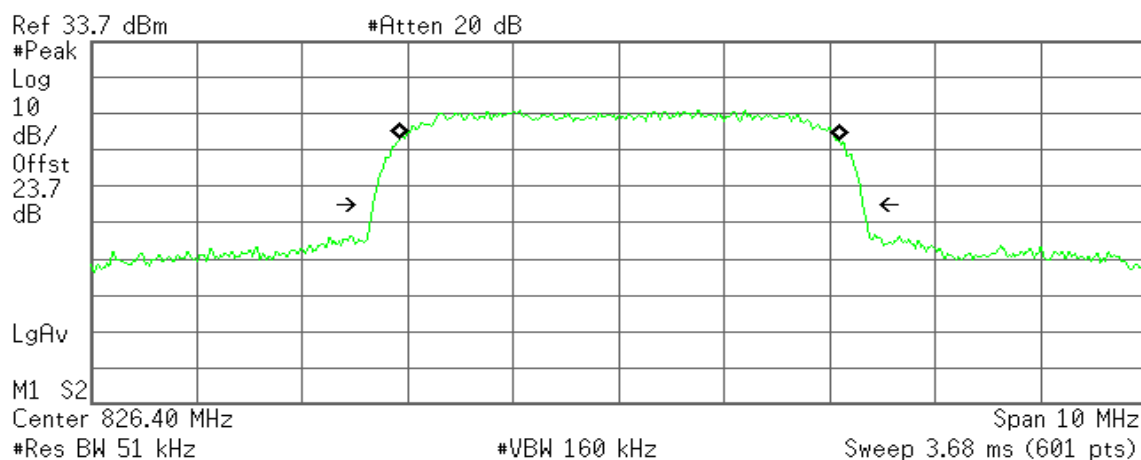


Transmit Freq Error -9.070 kHz
x dB Bandwidth 4.623 MHz

WCDMA / HSUPA Band V (CH Low)

Agilent

R T



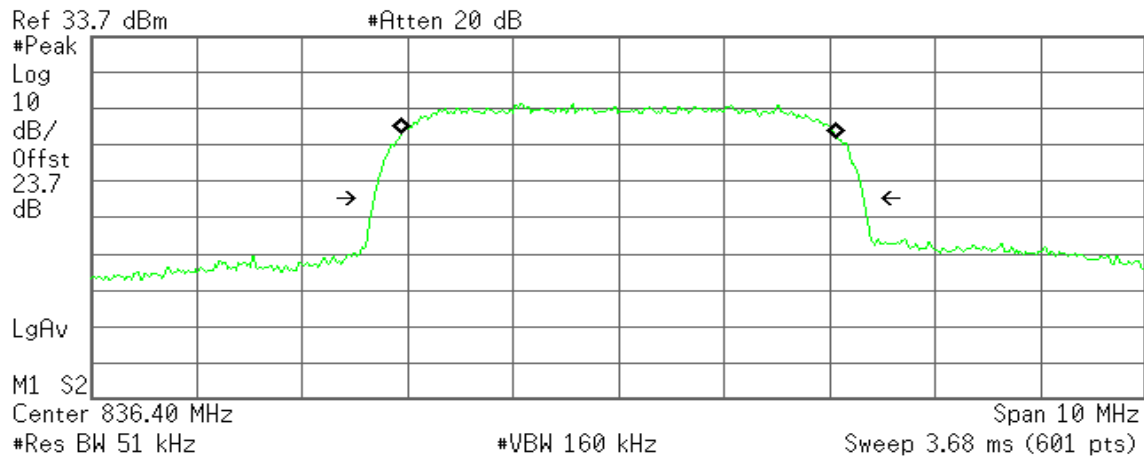
Transmit Freq Error 3.209 kHz
x dB Bandwidth 4.653 MHz



WCDMA / HSUPA Band V (CH Mid)

Agilent

R T

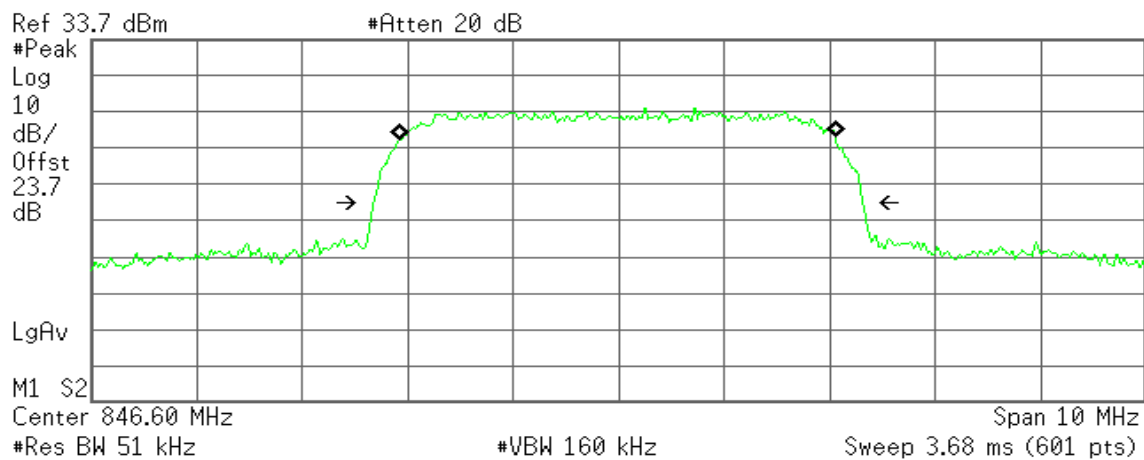


Transmit Freq Error 1.700 kHz
x dB Bandwidth 4.655 MHz

WCDMA / HSUPA Band V (CH High)

Agilent

R T



Transmit Freq Error -9.575 kHz
x dB Bandwidth 4.646 MHz

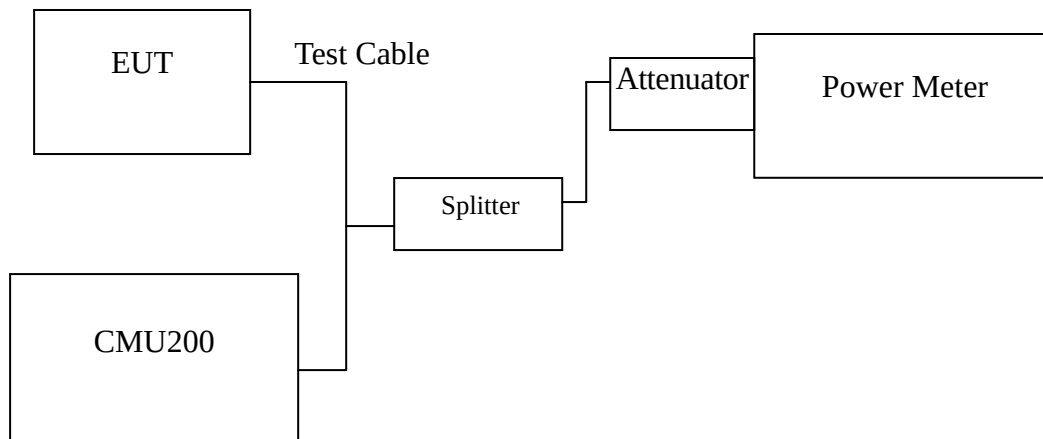


7.2 PEAK POWER

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)
WCDMA (BAND II)	9262	1852.40	26.41	0.43752
	9400	1880.00	26.20	0.41687
	9538	1907.60	26.29	0.42560
WCDMA (BAND V)	4132	826.40	25.96	0.39446
	4182	836.40	25.62	0.36475
	4233	846.60	26.01	0.39902

Test Mode	CH	Frequency (MHz)	Peak Power (dBm)	Output Power (W)
WCDMA / HSDPA (BAND II)	9262	1852.40	27.38	0.54702
	9400	1880.00	27.21	0.52602
	9538	1907.60	27.24	0.52966
WCDMA / HSDPA (BAND V)	4132	826.40	26.84	0.48306
	4182	836.40	26.27	0.42364
	4233	846.60	26.82	0.48084

Test Mode	CH	Frequency (MHz)	Peak Power (dBm)	Output Power (W)
WCDMA / HSUPA (BAND II)	9262	1852.40	26.85	0.48417
	9400	1880.00	26.24	0.42073
	9538	1907.60	26.46	0.44259
WCDMA / HSUPA (BAND V)	4132	826.40	26.19	0.41591
	4182	836.40	26.24	0.42073
	4233	846.60	26.53	0.44978

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

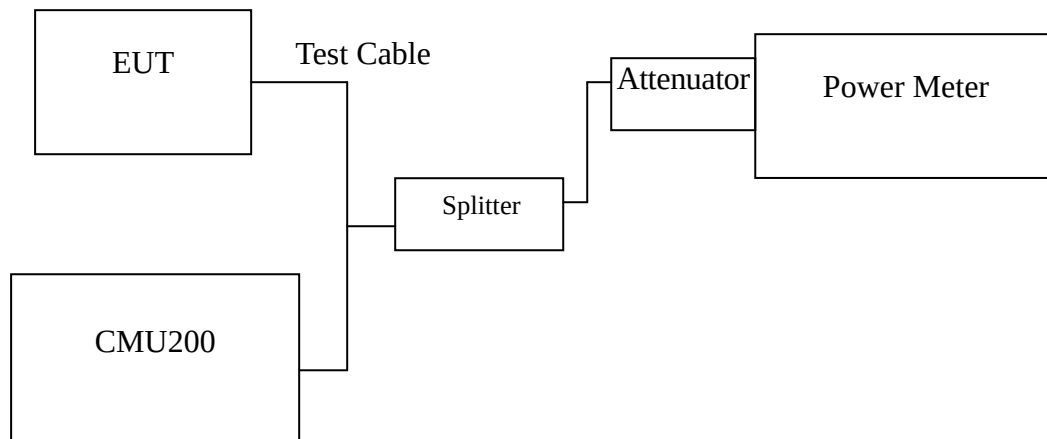


7.3 AVERAGE POWER

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)	Average Power (dBm)	Output Power (W)
WCDMA (BAND II)	9262	1852.40	22.78	0.18967
	9400	1880.00	22.30	0.16982
	9538	1907.60	22.53	0.17906
WCDMA (BAND V)	4132	826.40	22.29	0.16943
	4182	836.40	22.35	0.17179
	4233	846.60	22.33	0.17100

Test Mode	CH	Frequency (MHz)	Average Power (dBm)	Output Power (W)
WCDMA / HSDPA (BAND II)	9262	1852.40	22.98	0.19861
	9400	1880.00	22.39	0.17338
	9538	1907.60	22.80	0.19055
WCDMA / HSDPA (BAND V)	4132	826.40	22.35	0.17179
	4182	836.40	22.13	0.16331
	4233	846.60	22.15	0.16406

Test Mode	CH	Frequency (MHz)	Peak Power (dBm)	Output Power (W)
WCDMA / HSUPA (BAND II)	9262	1852.40	22.84	0.19231
	9400	1880.00	2.20	0.00166
	9538	1907.60	22.49	0.17742
WCDMA / HSUPA (BAND V)	4132	826.40	22.17	0.16482
	4182	836.40	22.51	0.17824
	4233	846.60	22.38	0.17298

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



7.4 ERP & EIRP MEASUREMENT

LIMIT

According to FCC §2.1046

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

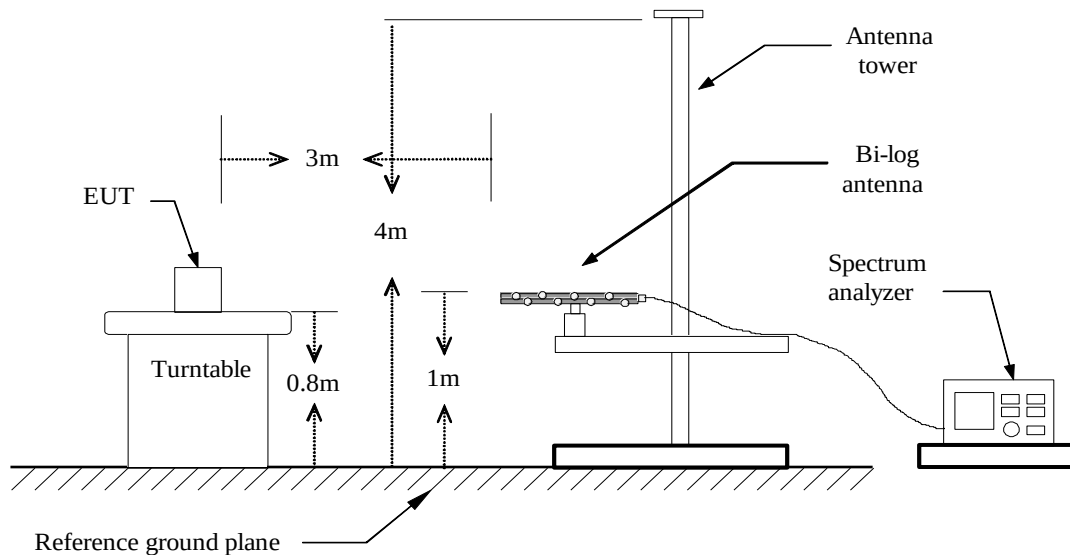
RSS-132 § 4.4 The maximum (ERP) shall be 6.3 Watts for mobile stations.

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

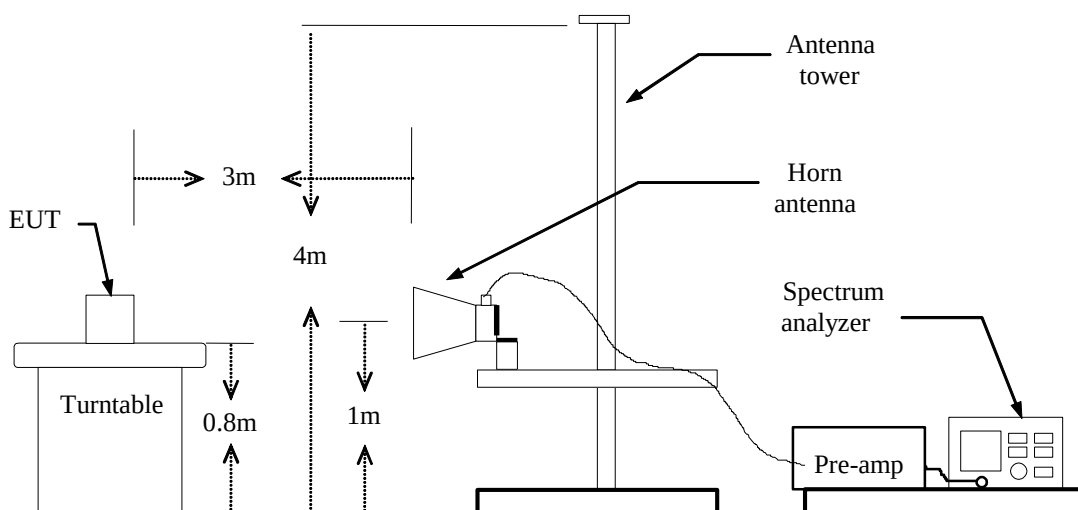
RSS133 § 6.4: Mobile stations and hand-held portables are limited to 2 watts maximum (EIRP).

Test Configuration

Below 1 GHz

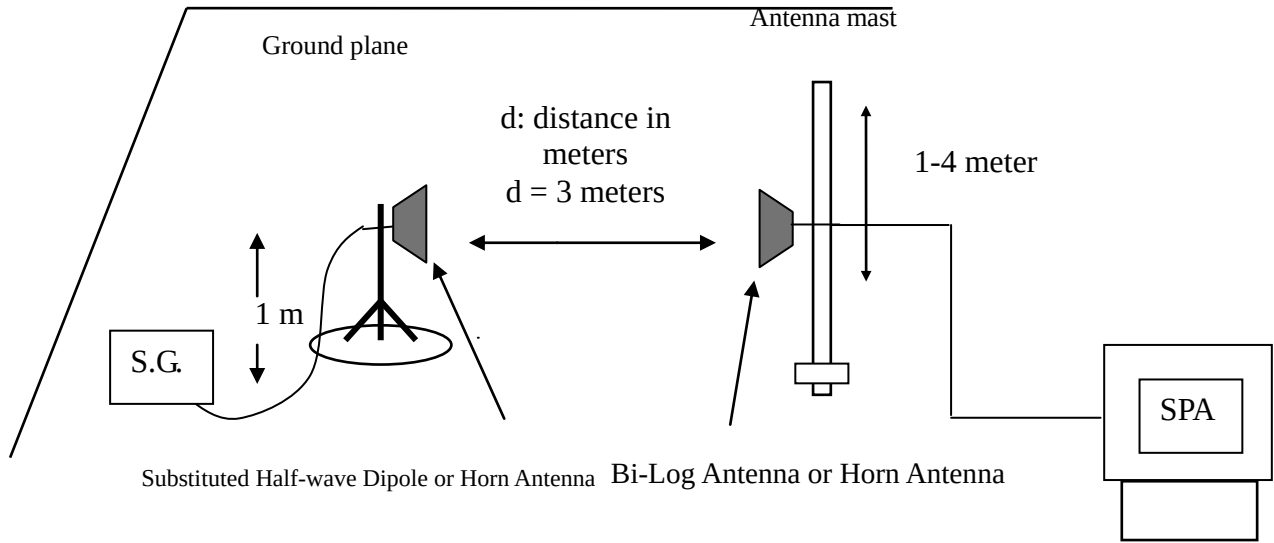


Above 1 GHz





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.

**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	1852.40	V	21.34	5.38	5.66	21.62	33.00	-11.38
	1852.40	H	16.4	5.37	5.67	16.70	33.00	-16.30
9400	1880.00	V	21.64	5.42	5.61	*21.83	33.00	-11.17
	1880.00	H	15.58	5.42	5.61	15.77	33.00	-17.23
9538	1907.60	V	21.25	5.47	5.57	21.35	33.00	-11.65
	1907.60	H	15.59	5.47	5.57	15.69	33.00	-17.31

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	826.40	V	14.91	3.39	6.28	17.80	38.45	-20.65
	826.40	H	15.13	3.39	6.27	18.01	38.45	-20.44
4182	836.40	V	15.16	3.4	6.37	*18.13	38.45	-20.32
	836.40	H	14.96	3.4	6.37	17.93	38.45	-20.52
4233	846.60	V	14.59	3.4	6.4	17.59	38.45	-20.86
	846.60	H	13.4	3.4	6.4	16.40	38.45	-22.05

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	1852.40	V	21.27	5.38	5.66	*21.55	33.00	-11.45
	1852.40	H	16.42	5.38	5.66	16.70	33.00	-16.30
9400	1880.00	V	21.21	5.42	5.61	21.40	33.00	-11.60
	1880.00	H	17.33	5.42	5.61	17.52	33.00	-15.48
9538	1907.60	V	16.59	5.47	5.57	16.69	33.00	-16.31
	1907.60	H	16.44	5.47	5.57	16.54	33.00	-16.46

HSDPA BAND V Test Data

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
4132	826.40	V	14.47	3.39	6.27	17.35	38.45	-21.10
	826.40	H	17.02	3.39	6.27	19.90	38.45	-18.55
4182	836.40	V	14.71	3.41	6.38	17.68	38.45	-20.77
	836.40	H	17.1	3.4	6.37	*20.07	38.45	-18.38
4233	846.60	V	14.39	3.4	6.4	17.39	38.45	-21.06
	846.60	H	15.45	3.4	6.4	18.45	38.45	-20.00

**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	1852.40	V	20.3	5.38	5.66	20.58	33.00	-12.42
	1852.40	H	16.12	5.37	5.67	16.42	33.00	-16.58
9400	1880.00	V	20.6	5.42	5.61	20.79	33.00	-12.21
	1880.00	H	15.42	5.42	5.61	15.61	33.00	-17.39
9538	1907.60	V	20.87	5.47	5.57	*20.97	33.00	-12.03
	1907.60	H	15.68	5.47	5.57	15.78	33.00	-17.22

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	826.40	V	13.88	3.39	6.27	16.76	38.45	-21.69
	826.40	H	15.1	3.39	6.27	17.98	38.45	-20.47
4182	836.40	V	14.13	3.4	6.36	17.09	38.45	-21.36
	836.40	H	16.02	3.4	6.36	*18.98	38.45	-19.47
4233	846.60	V	13.87	3.4	6.4	16.87	38.45	-21.58
	846.60	H	15.33	3.4	6.4	18.33	38.45	-20.12



7.5 OUT OF BAND EMISSION AT ANTENNA TERMINALS

LIMIT

According to FCC §2.1051, FCC §22.917, FCC §24.238(a), RSS-132 (4.5.2), RSS-133 (6.6).

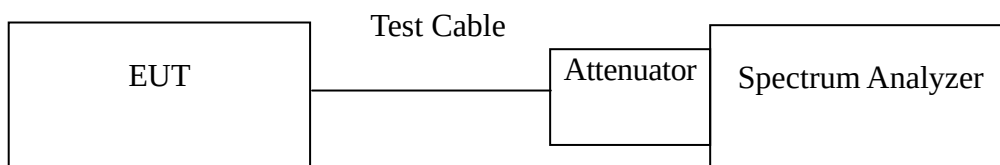
Out of Band Emissions: The mean power of emission must be attenuated below the mean power of the non-modulated carrier (P) on any frequency twice or more than twice the fundamental frequency by at least $43 + 10 \log P$ dB.

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
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

WCDMA Band II

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

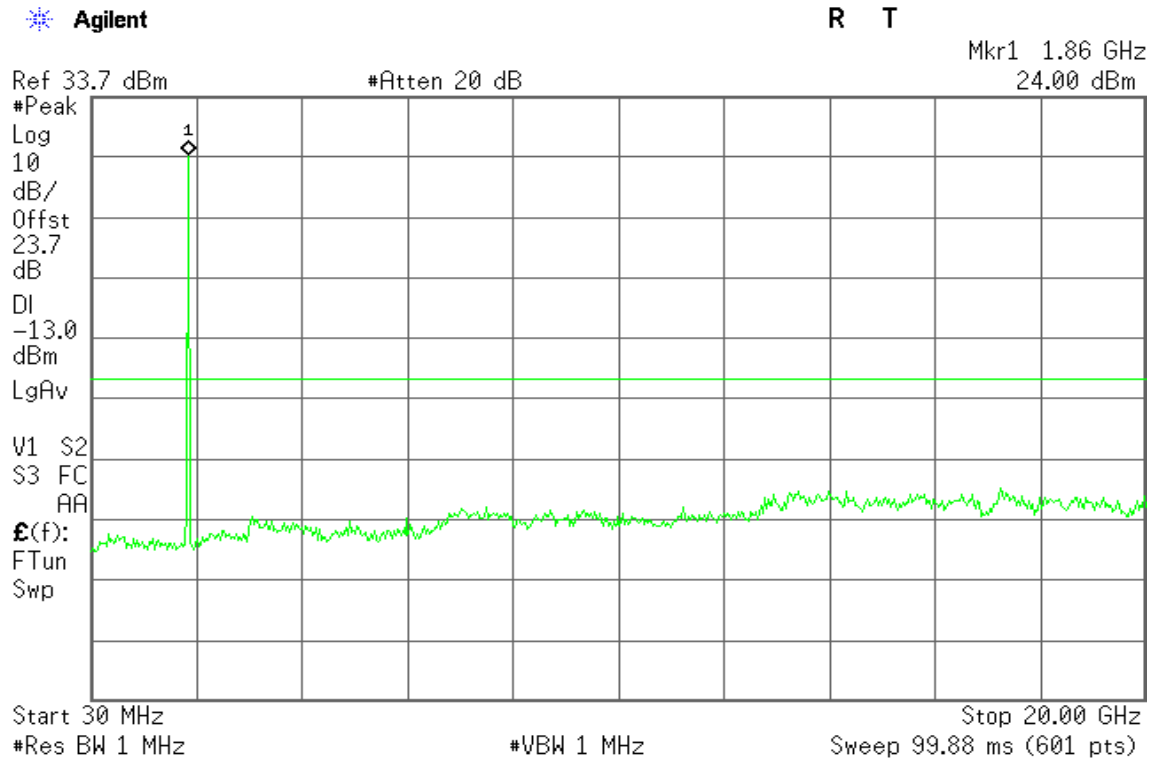


Figure 19-2: Out of Band emission at antenna terminals – WCDMA CH Mid

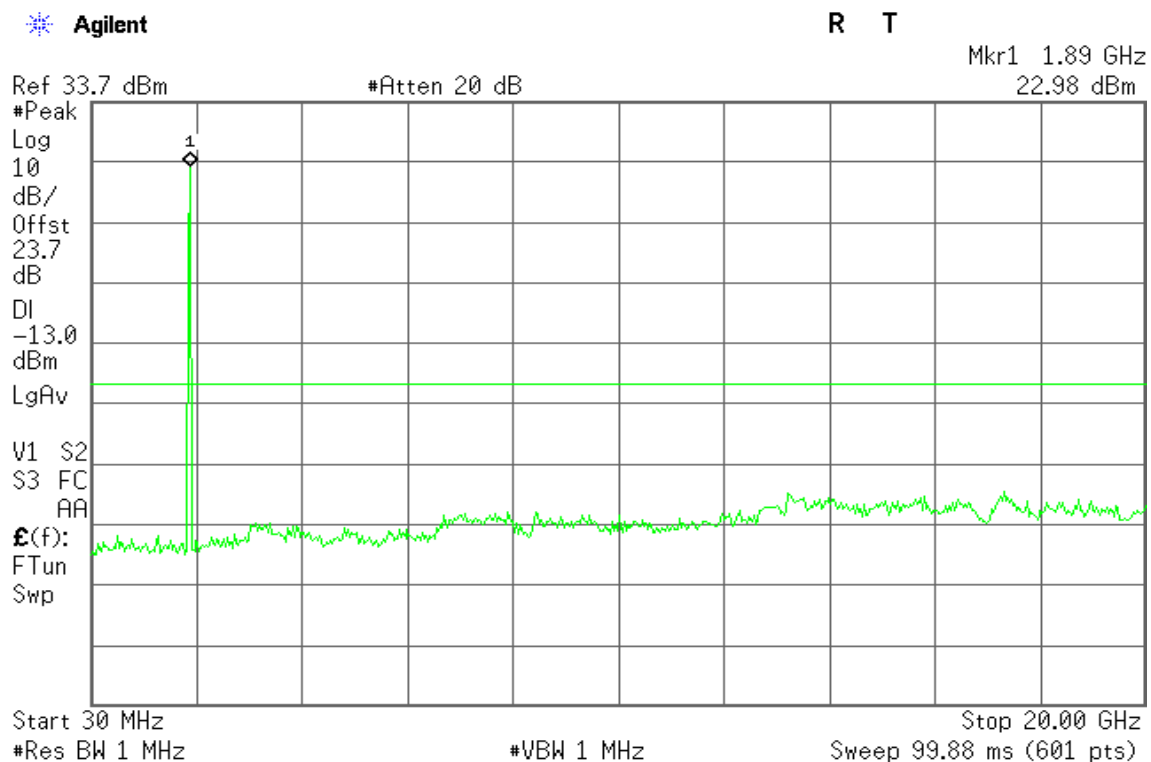
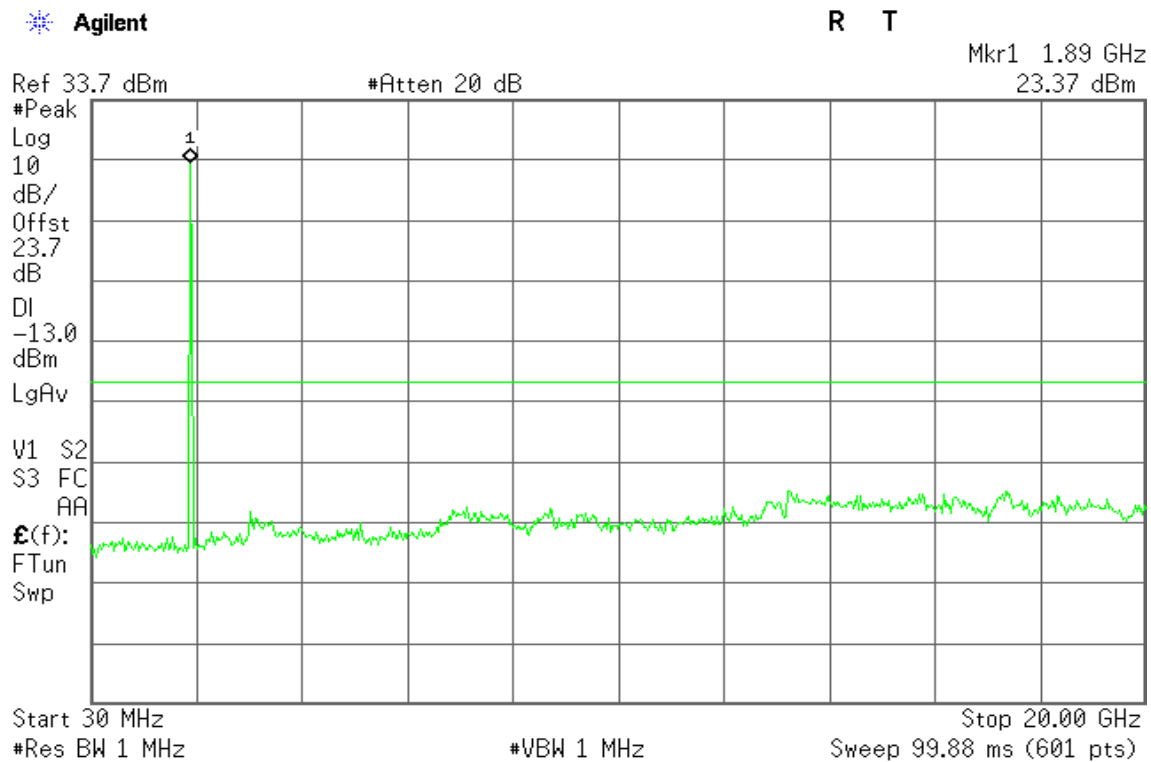




Figure 19-3: Out of Band emission at antenna terminals – WCDMA CH High



WCDMA Band V

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

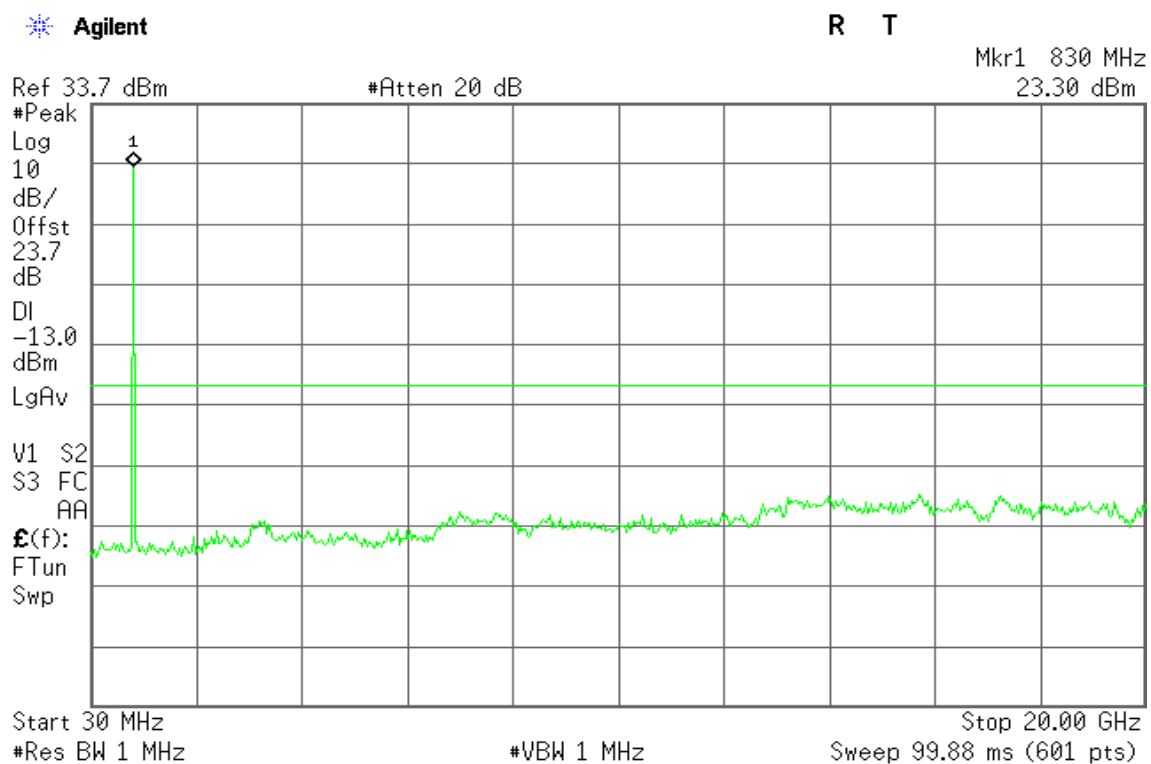




Figure 20-2: Out of Band emission at antenna terminals – WCDMA CH Mid

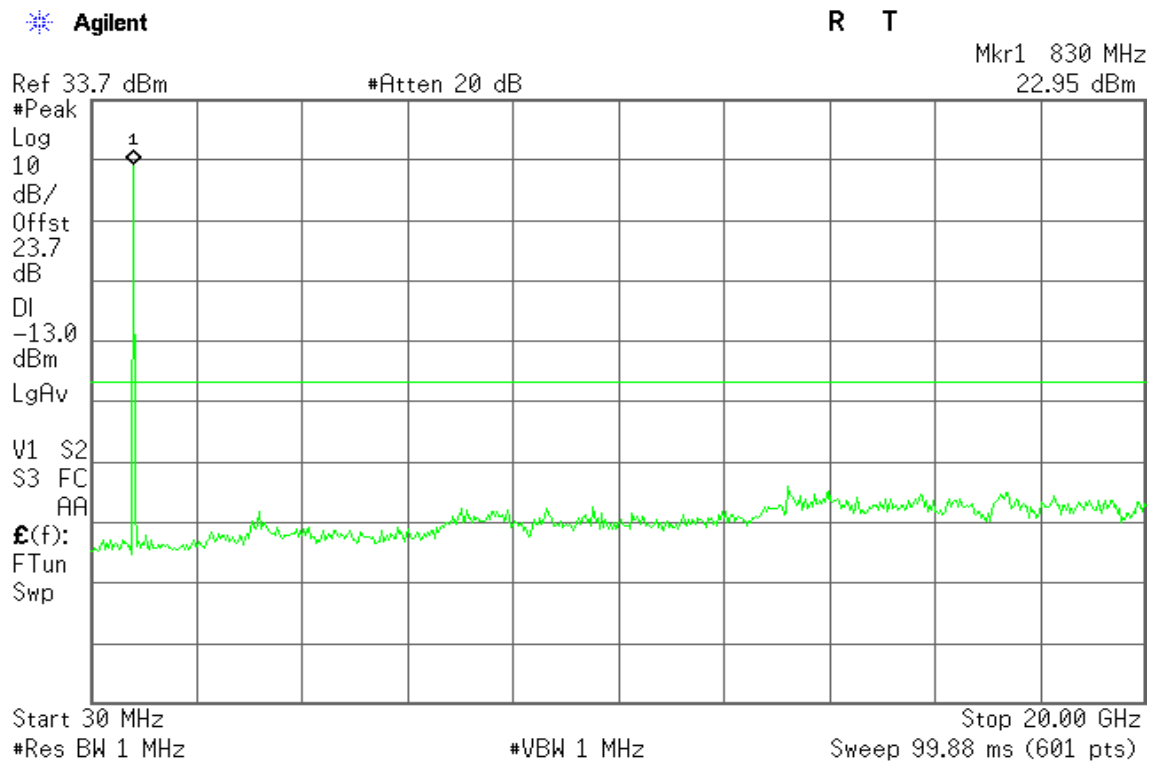
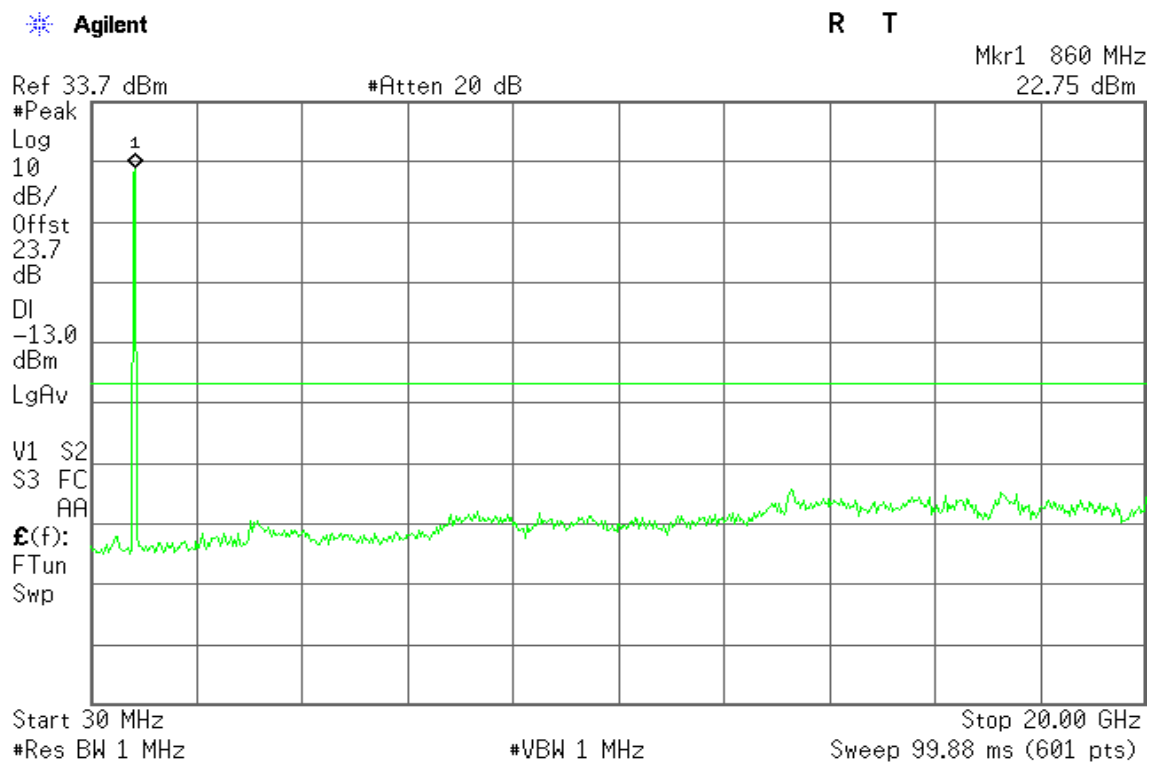


Figure 20-3: Out of Band emission at antenna terminals – WCDMA CH High





WCDMA Band II

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

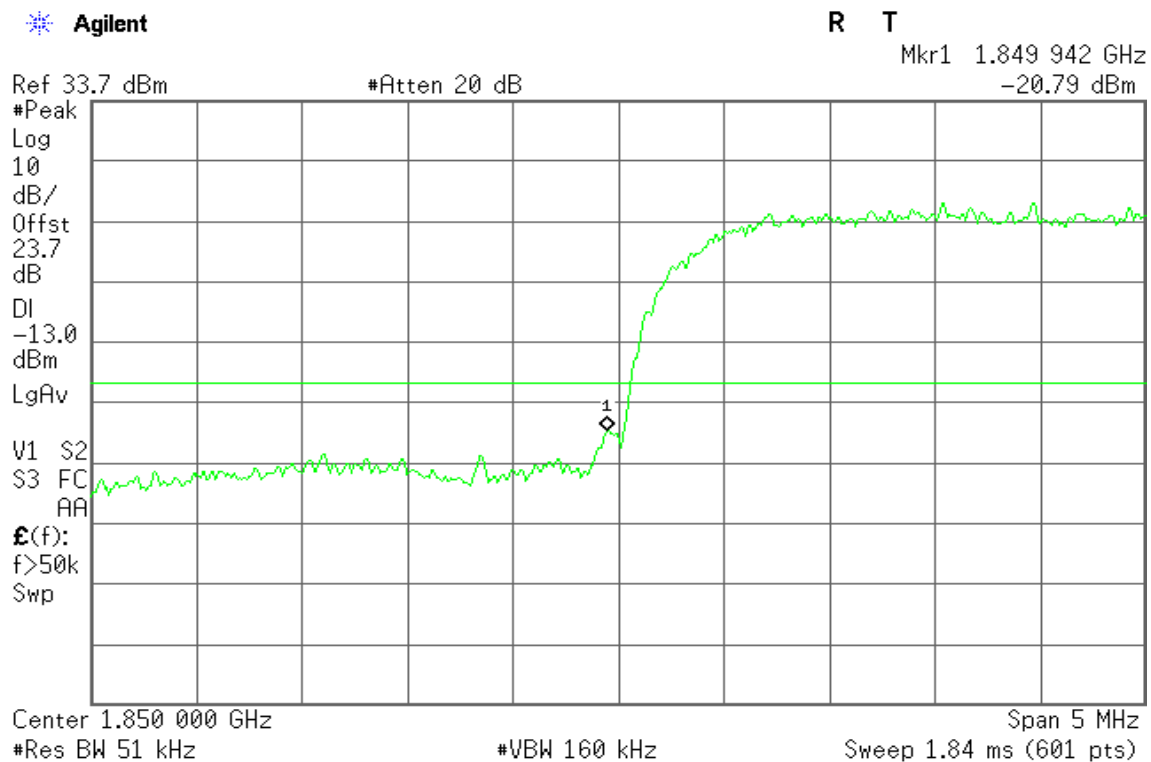
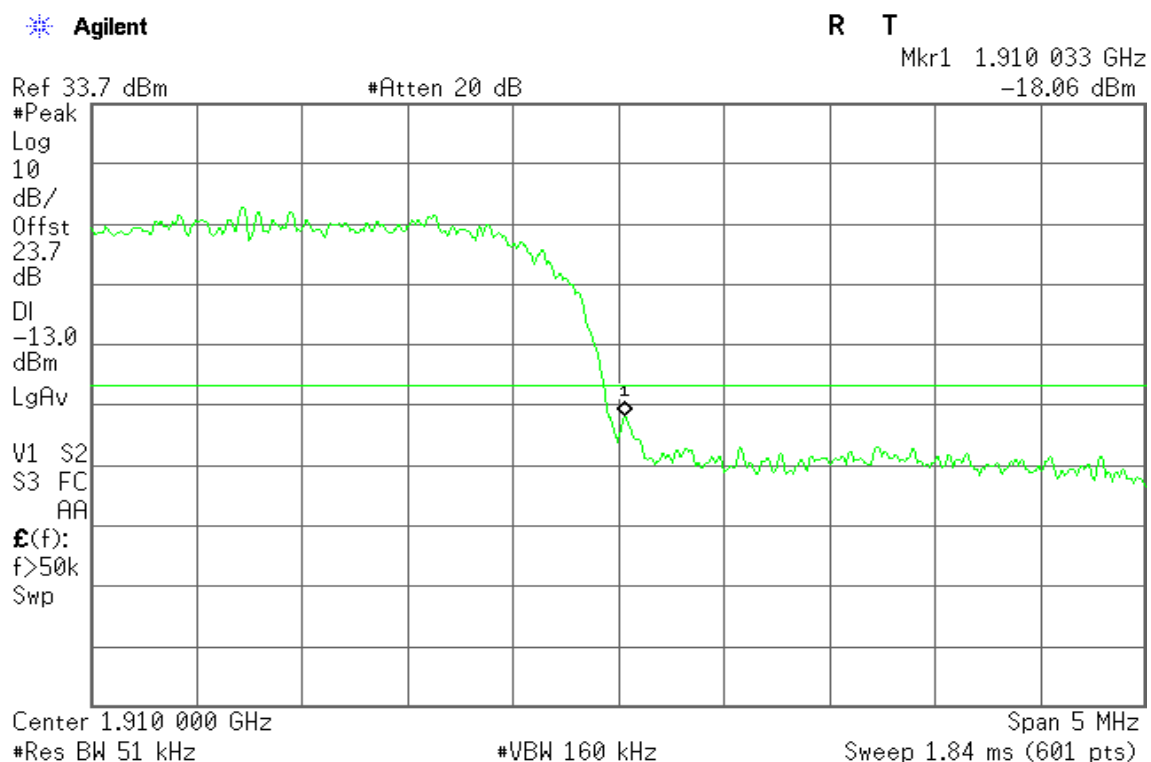


Figure 21-2: Band Edge emissions –WCDMA CH High





WCDMA Band V

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

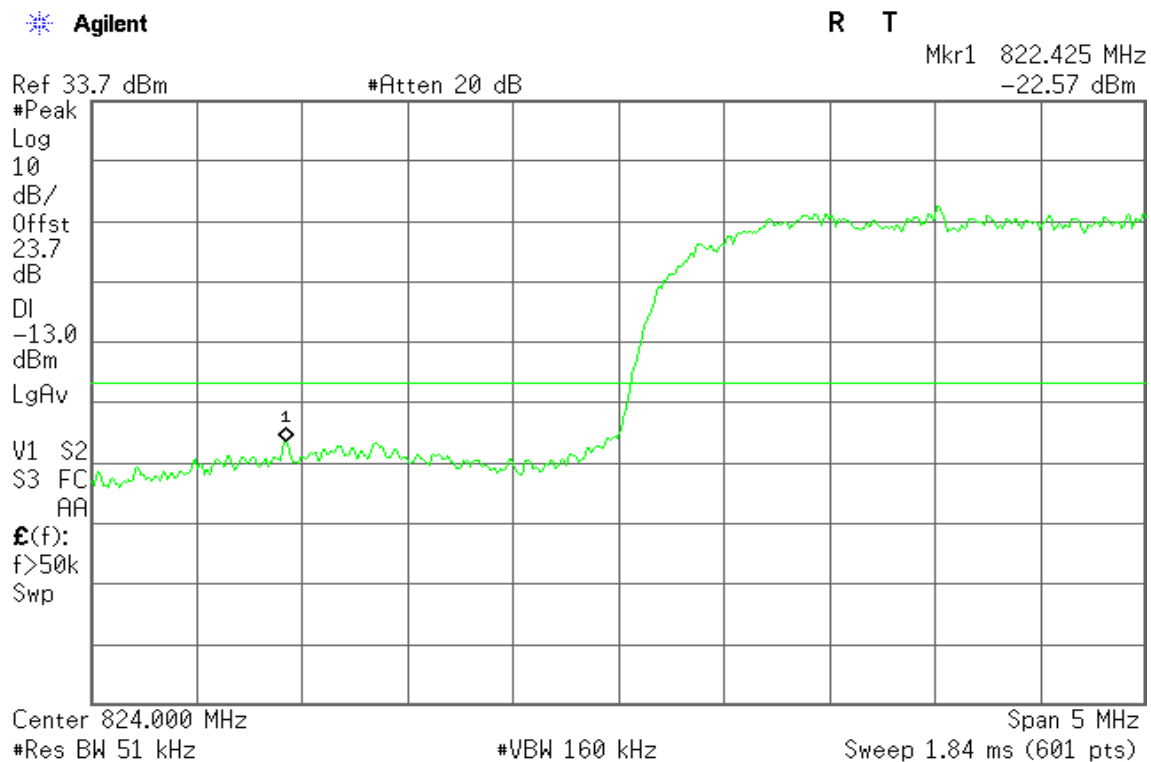
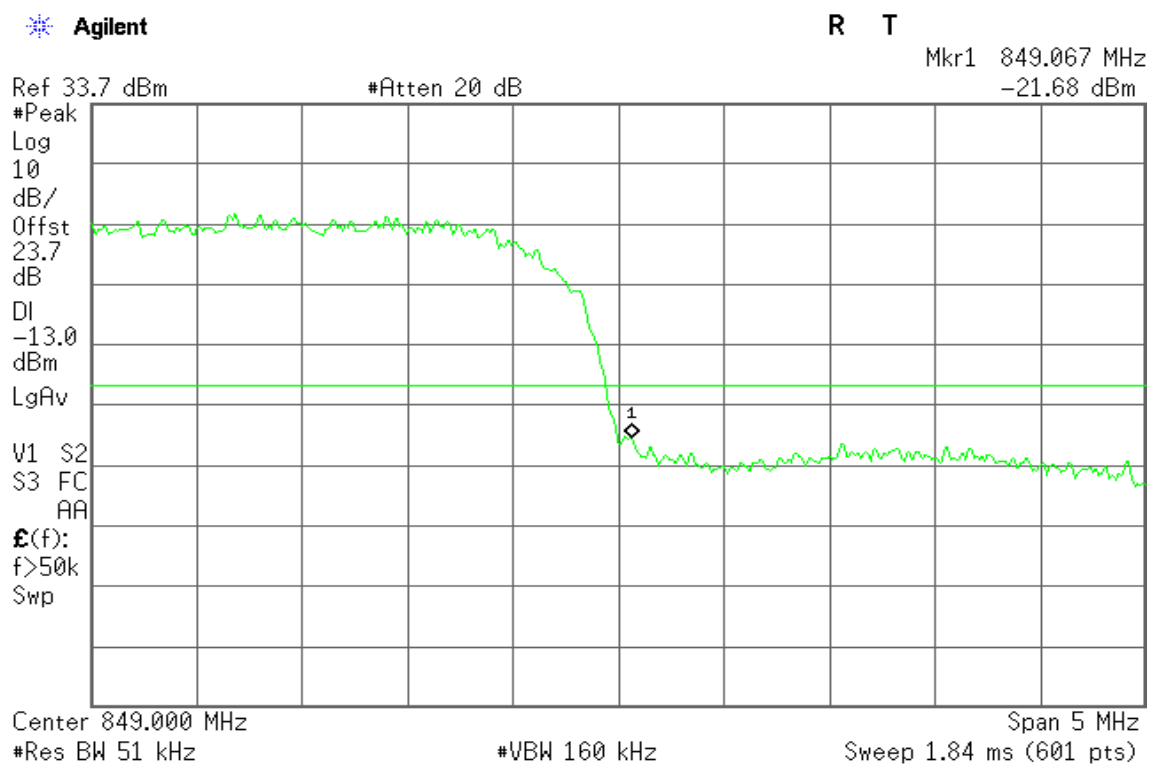


Figure 22-2: Band Edge emissions –WCDMA CH High





WCDMA / HSDPA Band II

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

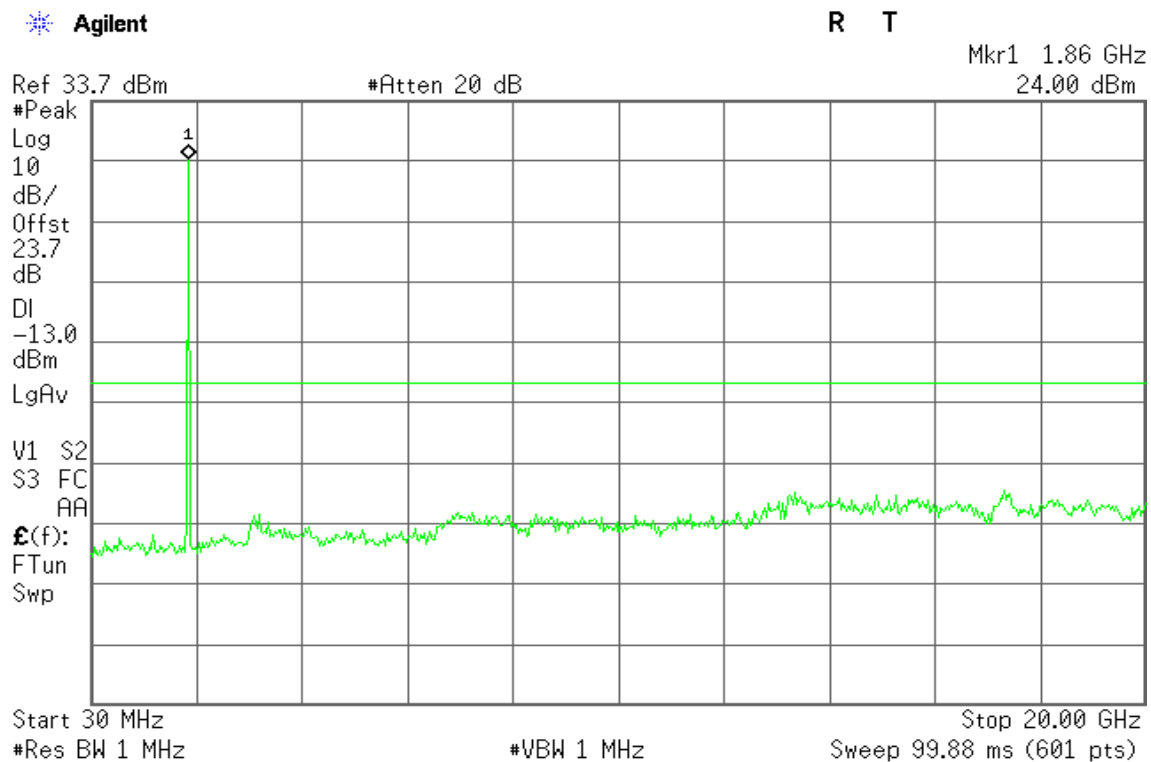


Figure 23-2: Out of Band emission at antenna terminals – HSDPA CH Mid

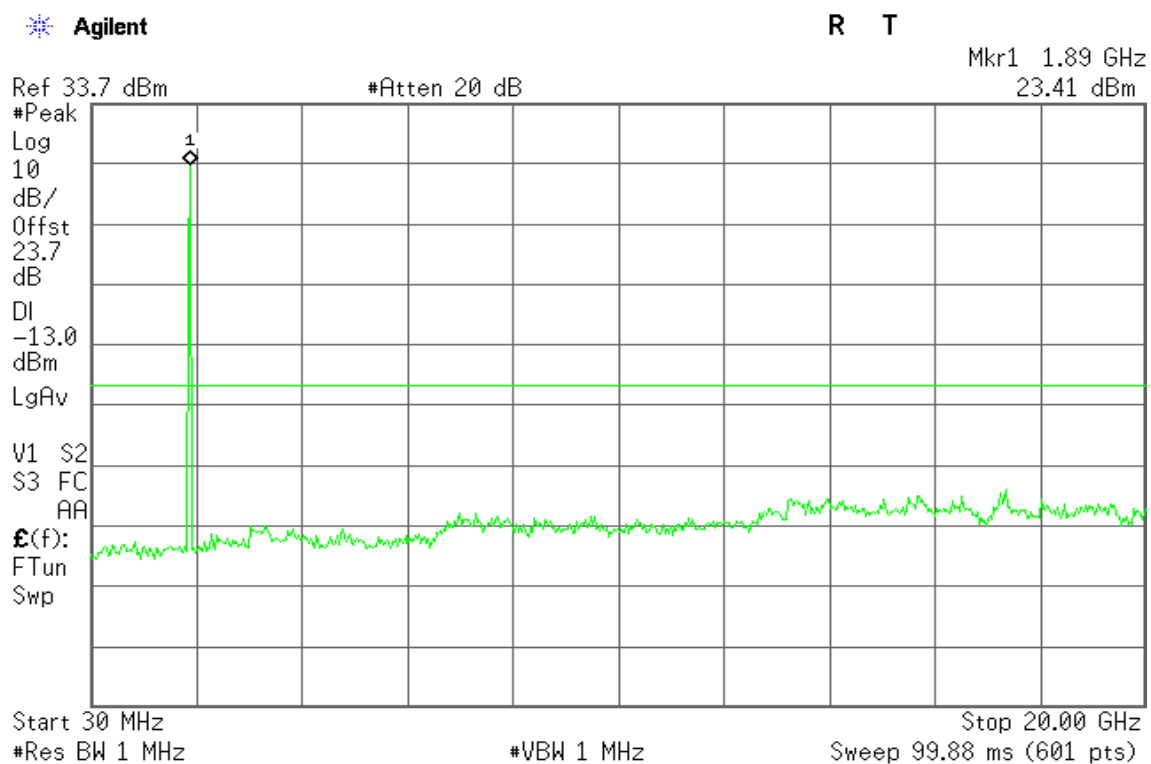
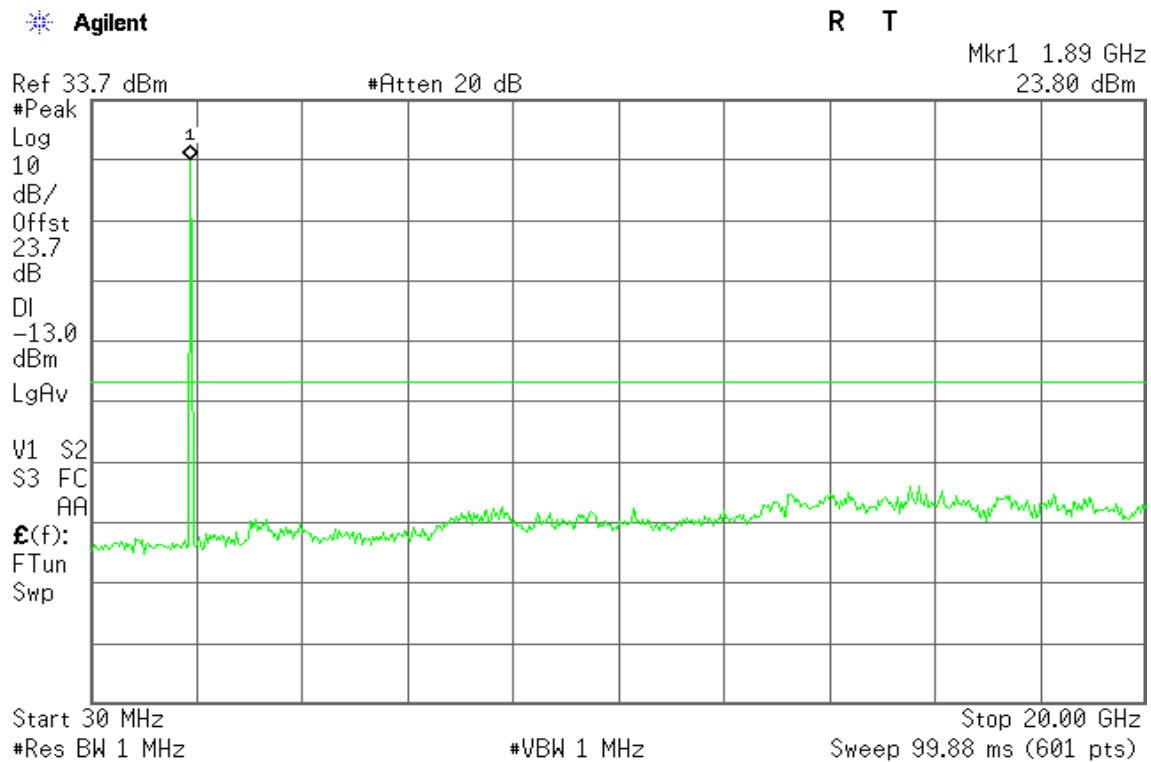




Figure 23-3: Out of Band emission at antenna terminals – HSDPA CH High



WCDMA / HSDPA Band V

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

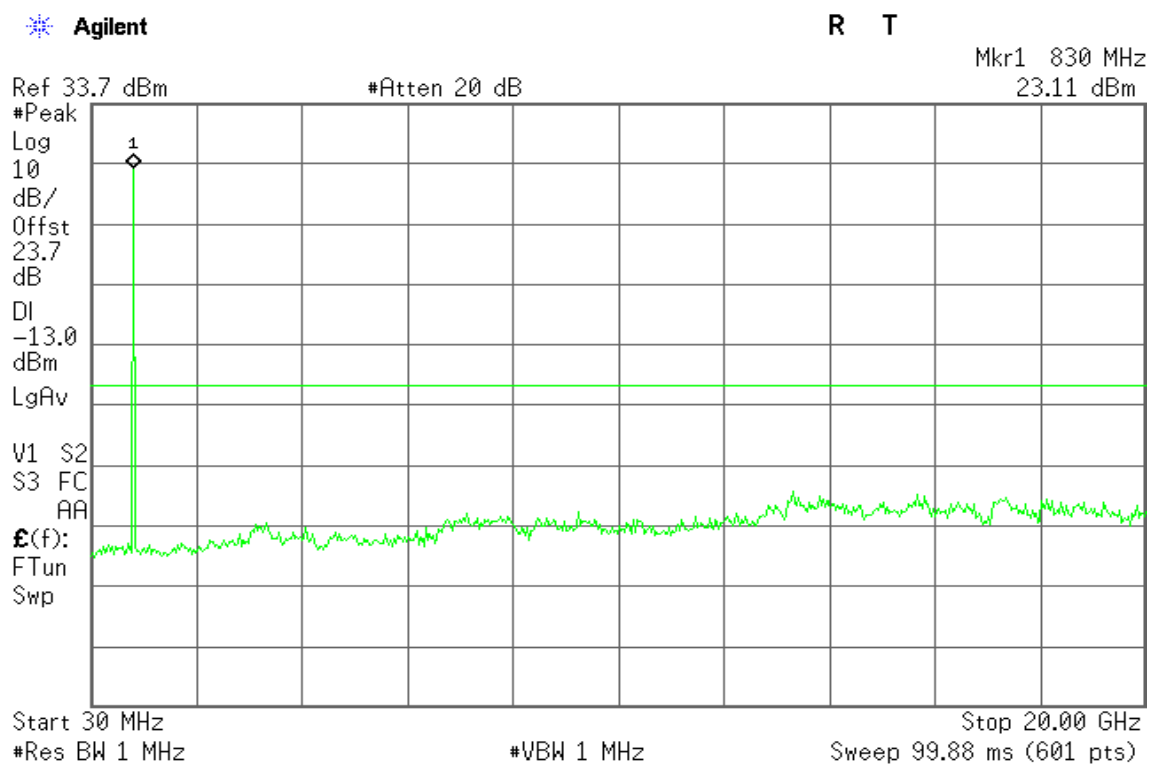




Figure 24-2: Out of Band emission at antenna terminals – HSDPA CH Mid

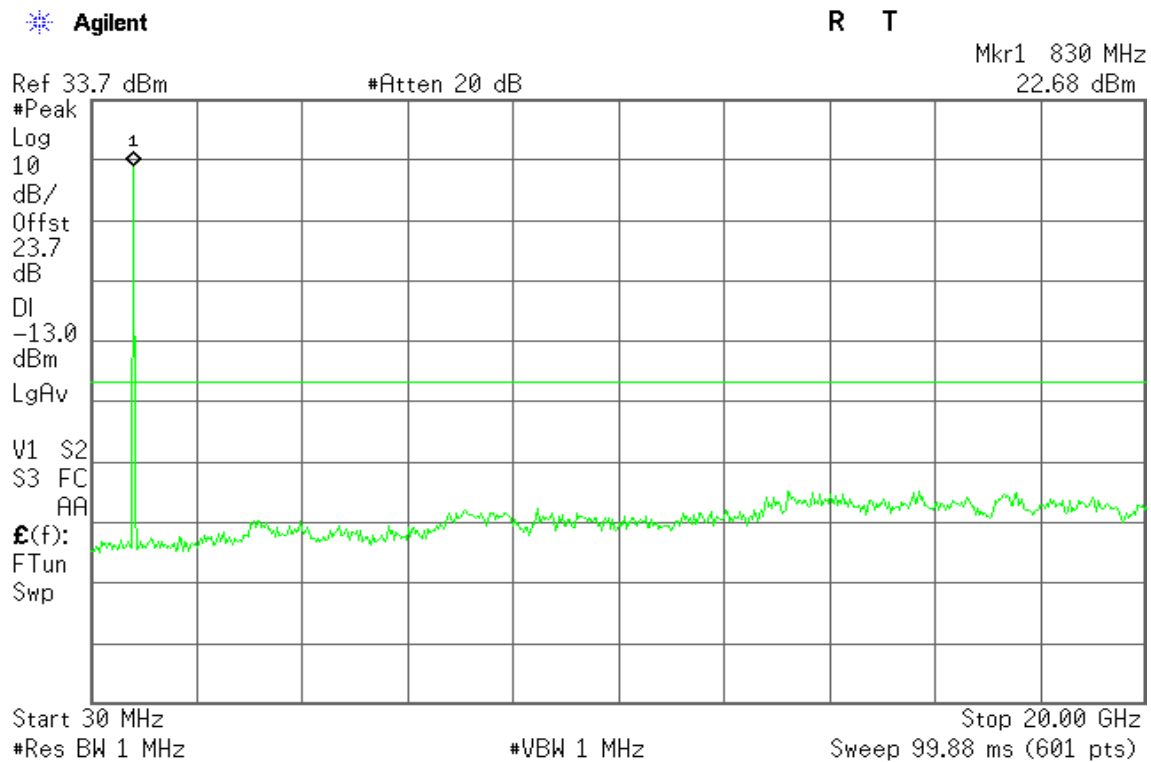
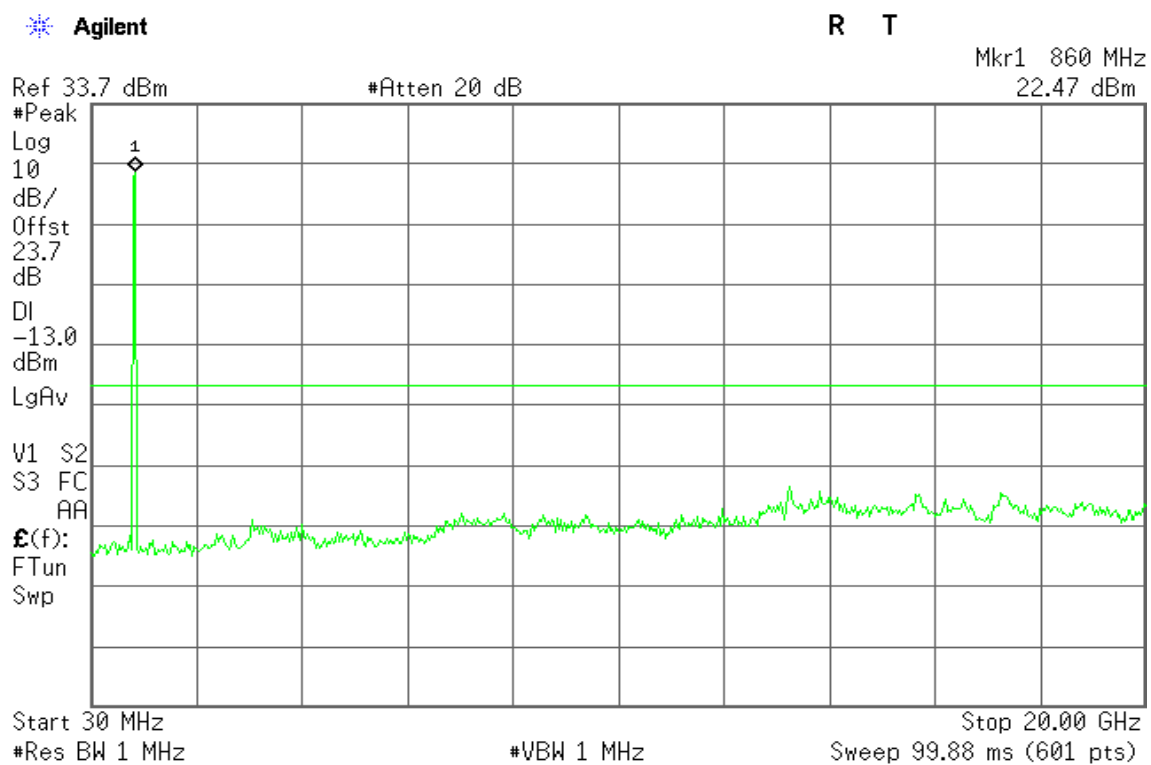


Figure 24-3: Out of Band emission at antenna terminals – HSDPA CH High





WCDMA / HSDPA Band II

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

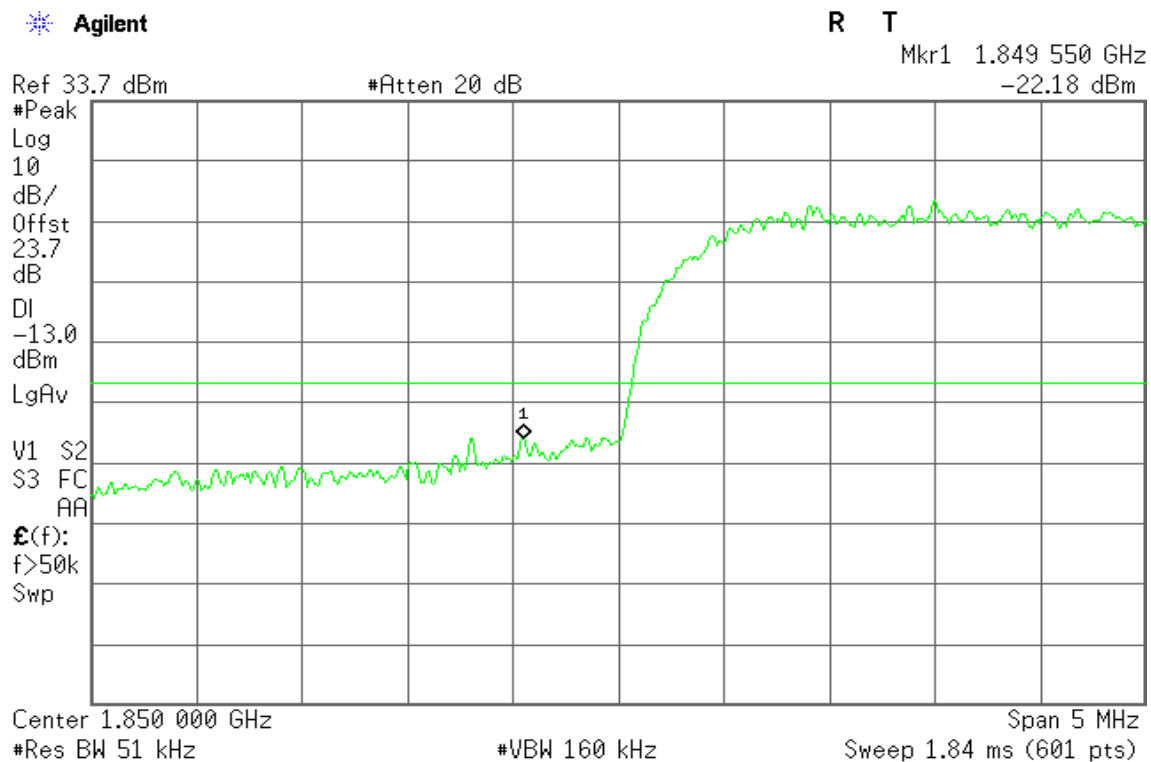
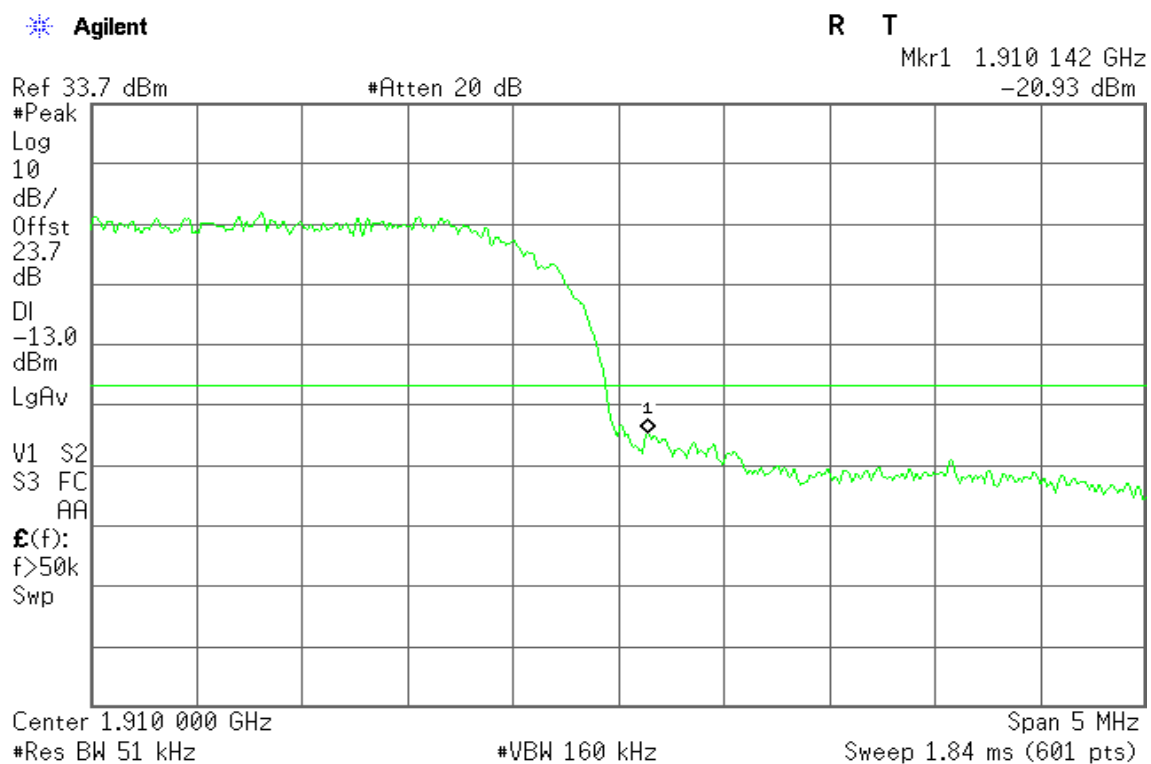


Figure 25-2: Band Edge emissions – HSDPA CH High





WCDMA / HSDPA Band V

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

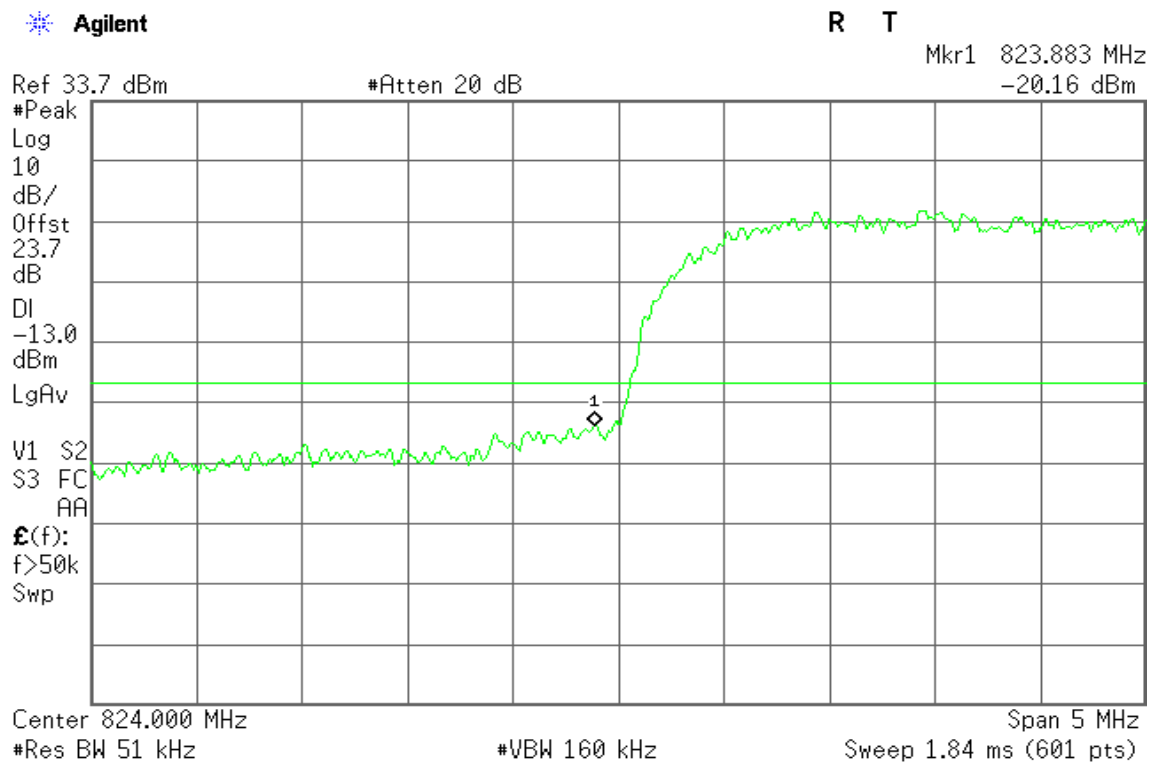
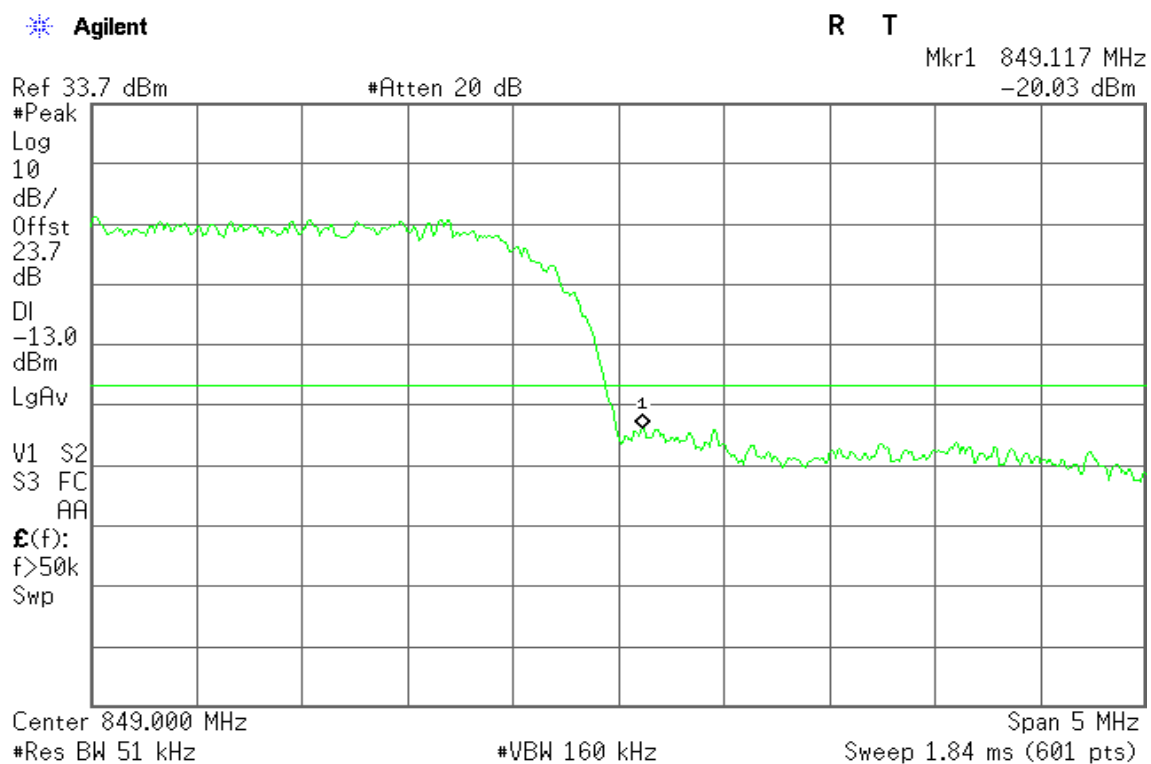


Figure 26-2: Band Edge emissions – HSDPA CH High





WCDMA / HSUPA Band II

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

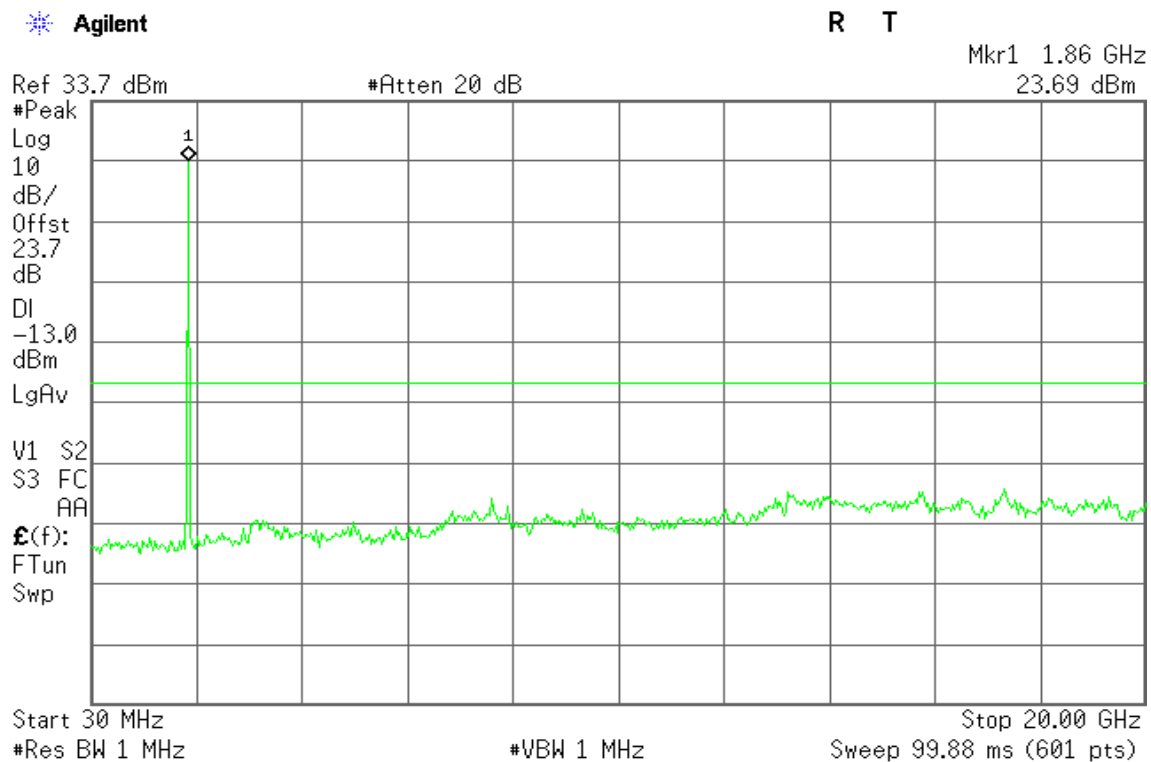


Figure 27-2: Out of Band emission at antenna terminals – HSUPA CH Mid

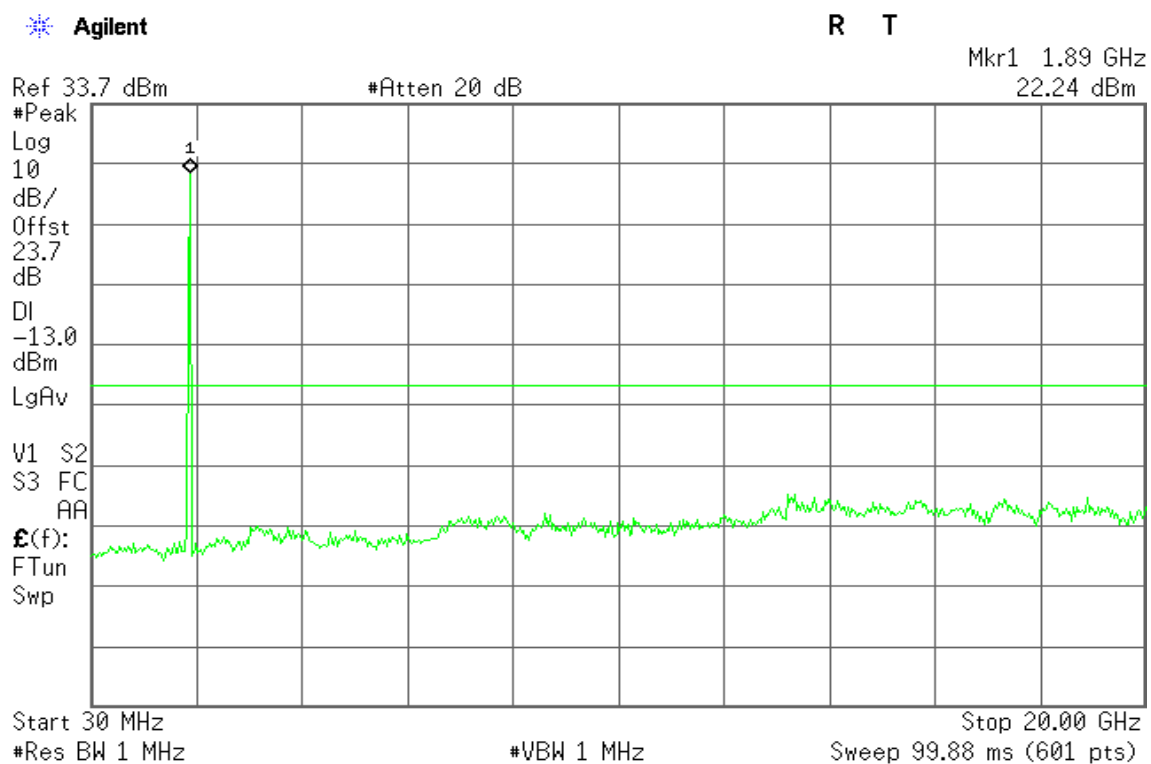
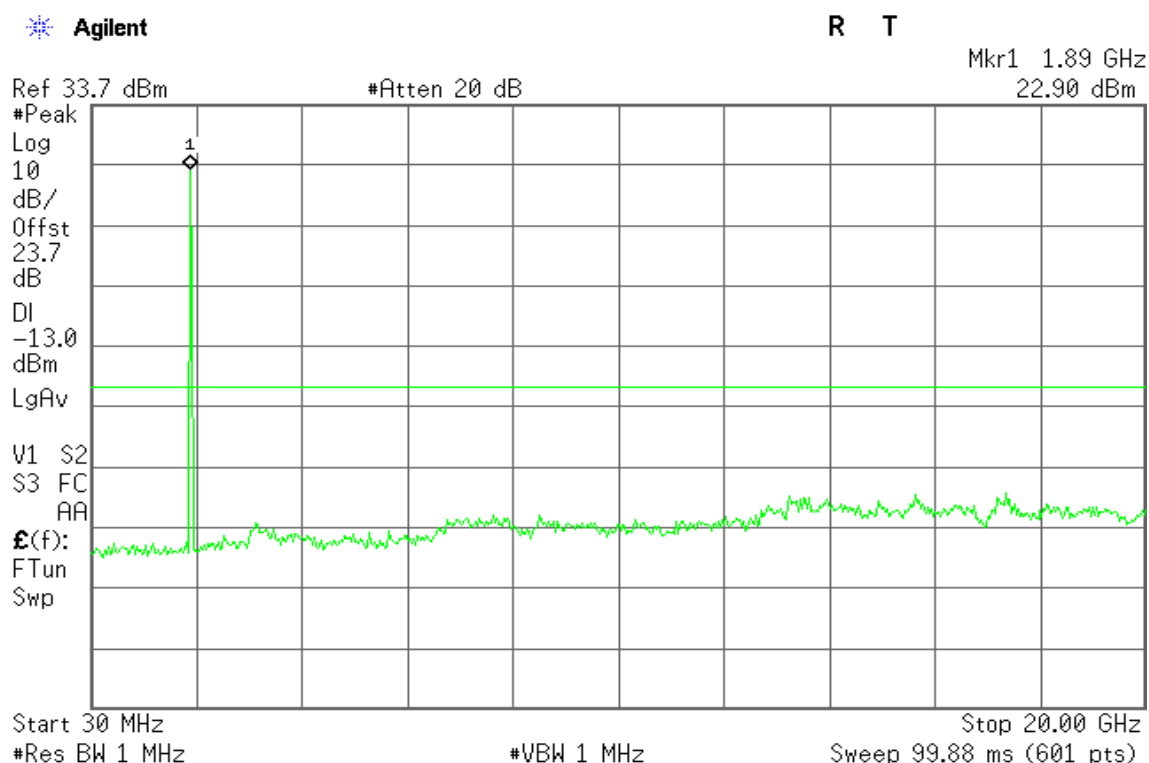




Figure 27-3: Out of Band emission at antenna terminals – HSUPA CH High



HSUPA / WCDMA Band V

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

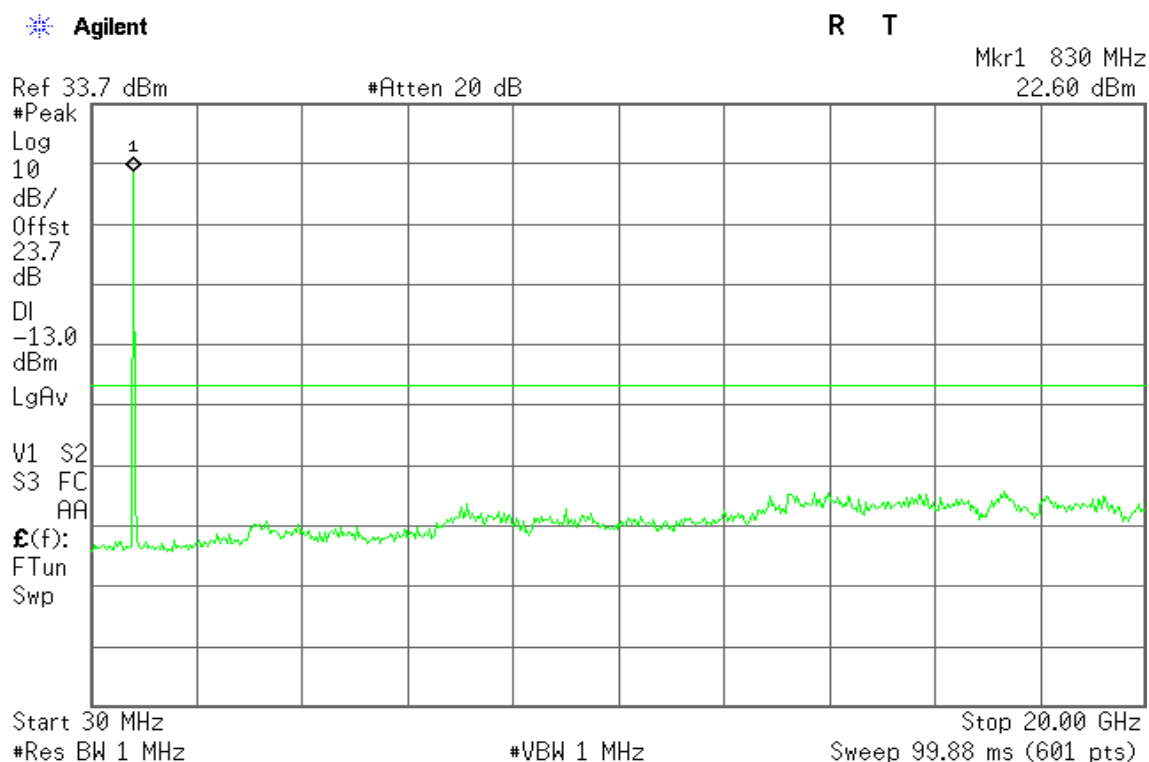




Figure 28-2: Out of Band emission at antenna terminals – HSUPA CH Mid

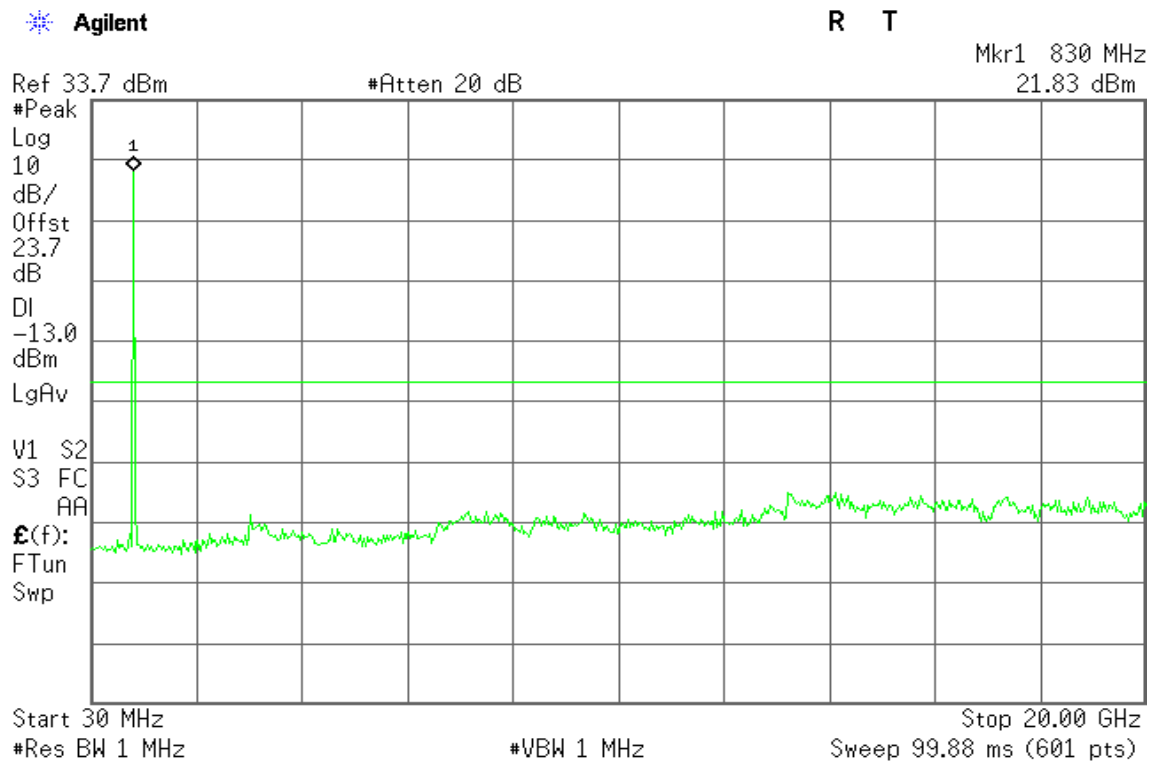
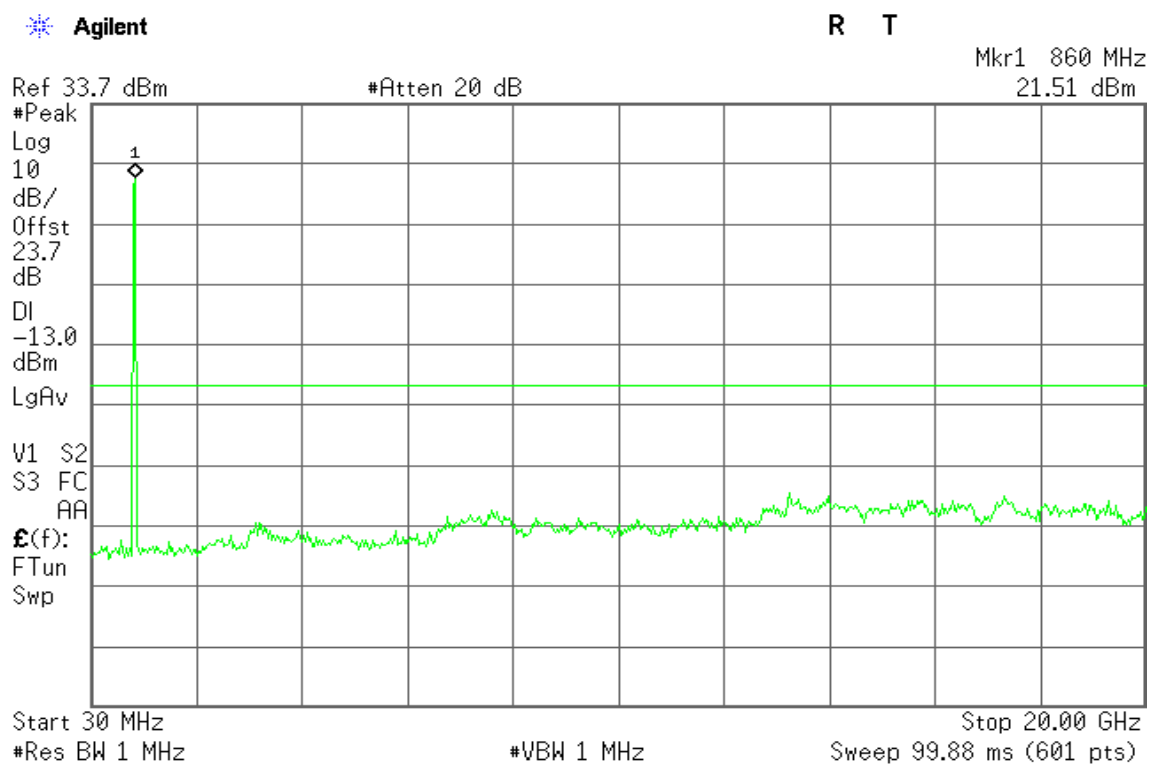


Figure 28-3: Out of Band emission at antenna terminals – HSUPA CH High





WCDMA / HSUPA Band II

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

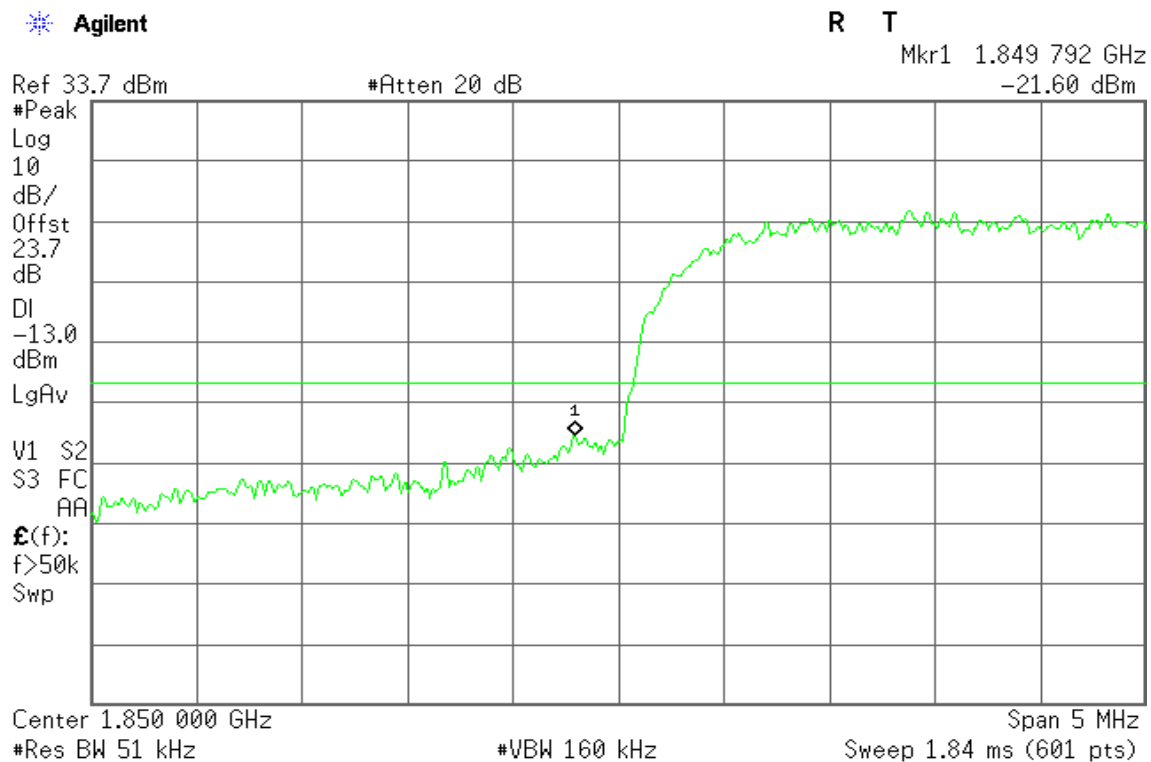
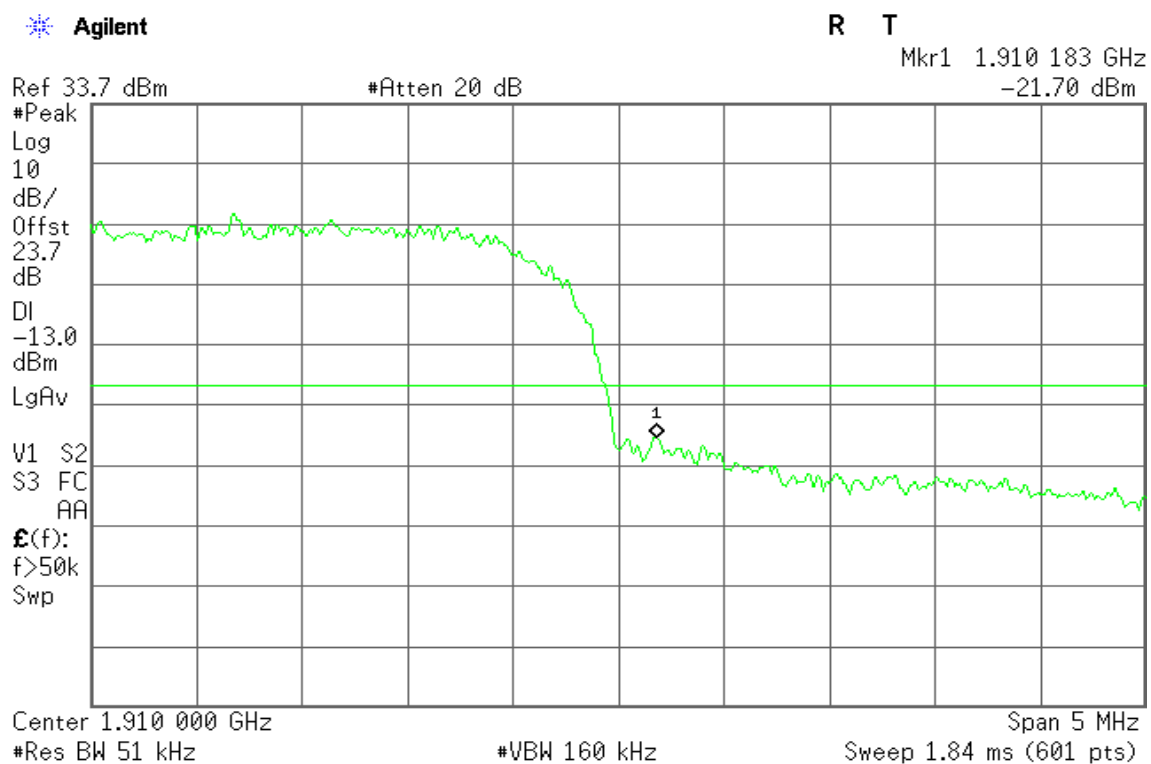


Figure 29-2: Band Edge emissions – HSUPA CH High





WCDMA / HSUPA Band V

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

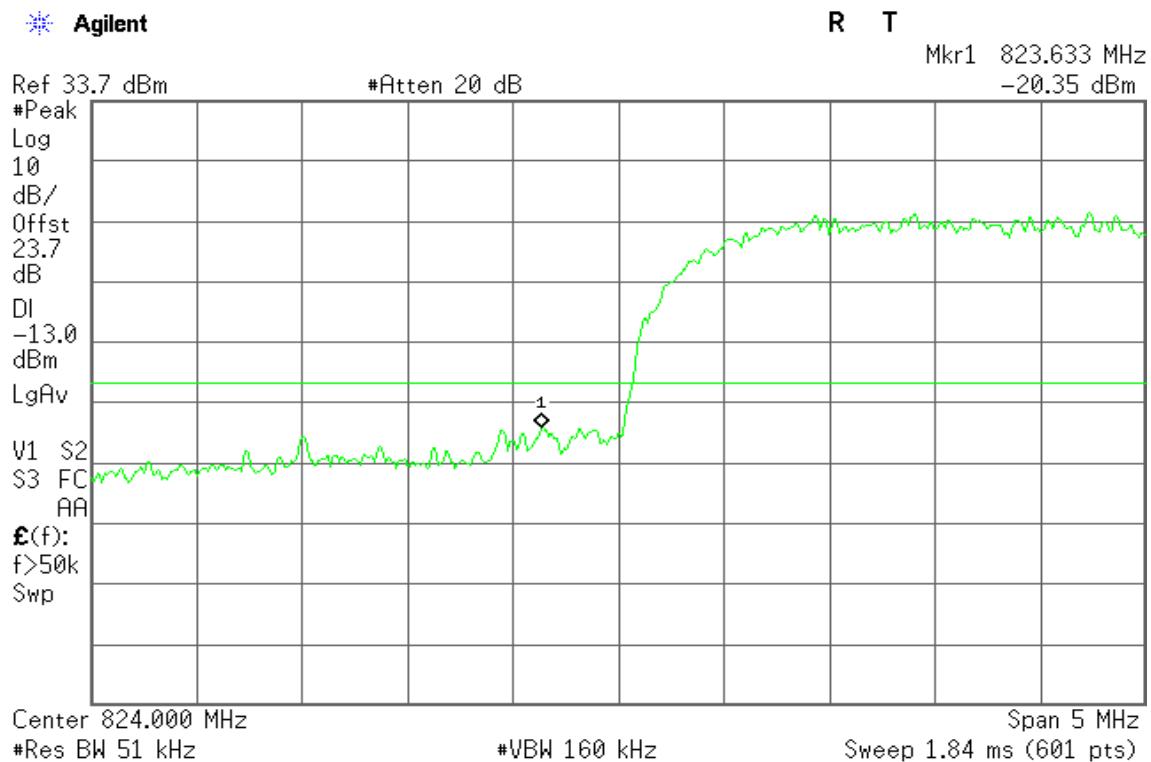
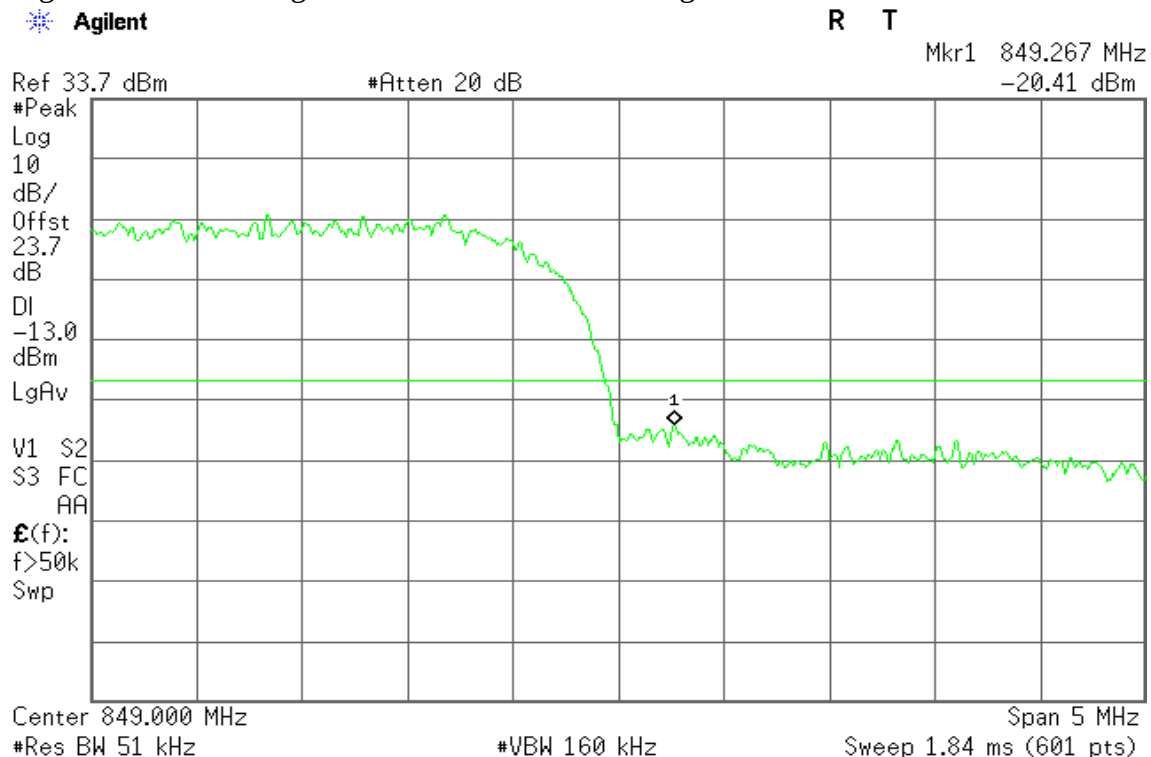


Figure 30-2: Band Edge emissions – HSUPA CH High





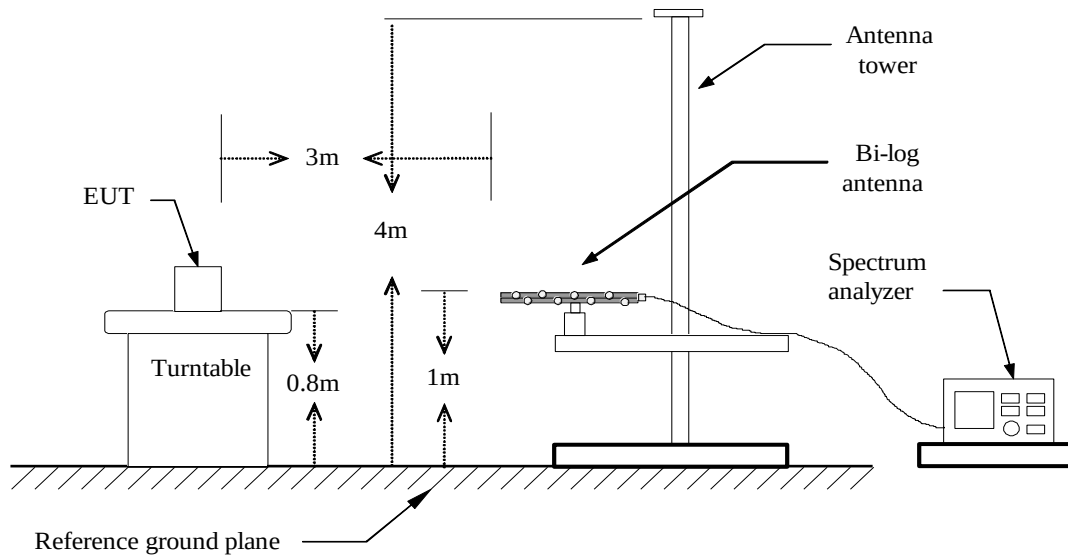
7.6 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

LIMIT

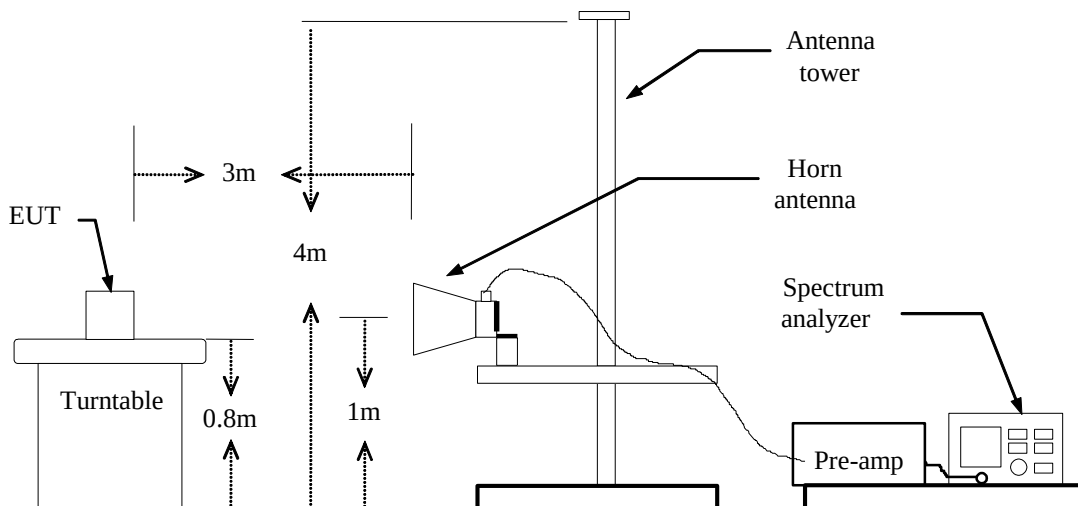
According to FCC §2.1053, RSS-132 (4.6) & RSS-133 (6.5).

Test Configuration

Below 1 GHz

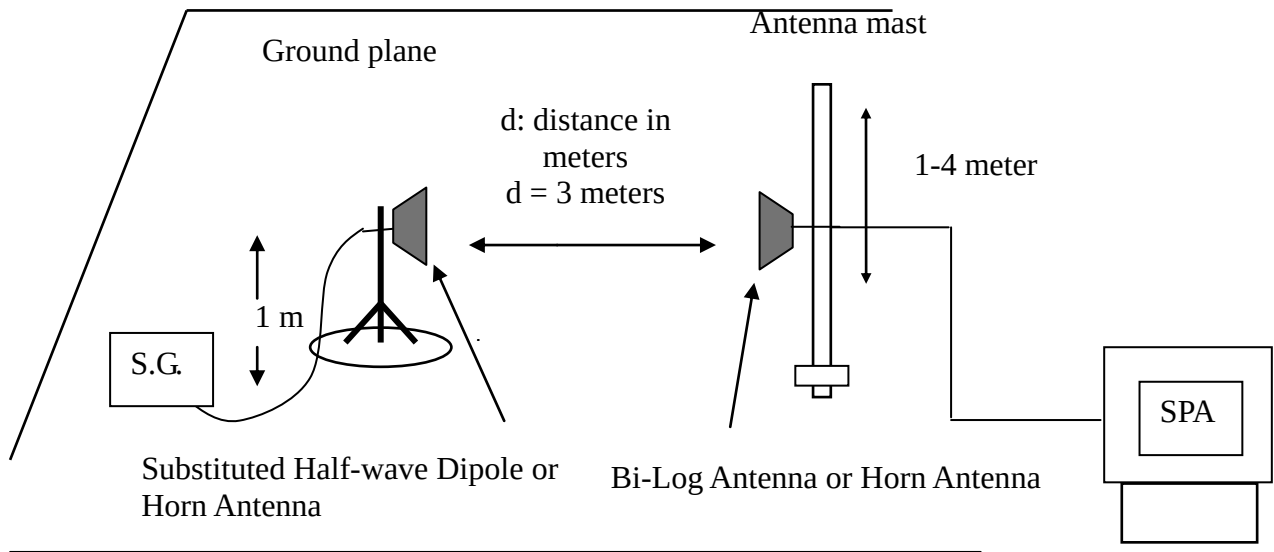


Above 1 GHz





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:** WCDMA Band II / TX / CH 9262**Test Date:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
60.0700	-64.72	0.88	-2.19	-67.79	-13.00	-54.79	V
95.9600	-59.63	1.13	0.26	-60.50	-13.00	-47.50	V
144.4600	-67.41	1.41	0.17	-68.65	-13.00	-55.65	V
345.2500	-78.96	2.2	5.8	-75.36	-13.00	-62.36	V
448.0700	-81.23	2.58	5.74	-78.07	-13.00	-65.07	V
612.9700	-81.54	2.94	6.23	-78.25	-13.00	-65.25	V
95.9600	-61.7	1.13	0.26	-62.57	-13.00	-49.57	H
150.2800	-65.77	1.43	0.71	-66.49	-13.00	-53.49	H
379.2000	-76.26	2.31	5.98	-72.59	-13.00	-59.59	H
516.9400	-78.02	2.7	6.07	-74.65	-13.00	-61.65	H
673.1100	-77.67	3.08	6.36	-74.39	-13.00	-61.39	H
793.3900	-76.27	3.33	6.33	-73.27	-13.00	-60.27	H

Remark:

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

**Operation Mode:** WCDMA Band II / TX / CH 9400**Test Date:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
95.9600	-59.84	1.13	0.26	-60.71	-13.00	-47.71	V
135.7300	-65.91	1.37	-0.72	-68.00	-13.00	-55.00	V
346.2200	-79.58	2.21	5.8	-75.99	-13.00	-62.99	V
448.0700	-81.01	2.58	5.74	-77.85	-13.00	-64.85	V
625.5800	-81.82	2.96	6.16	-78.62	-13.00	-65.62	V
770.1100	-78.42	3.27	6.38	-75.31	-13.00	-62.31	V
84.3200	-61.88	1.07	0.39	-62.56	-13.00	-49.56	H
150.2800	-65.55	1.43	0.71	-66.27	-13.00	-53.27	H
390.8400	-76.99	2.32	6	-73.31	-13.00	-60.31	H
450.9800	-79.03	2.59	5.74	-75.88	-13.00	-62.88	H
601.3300	-76.89	2.91	6.39	-73.41	-13.00	-60.41	H
769.1400	-75.71	3.27	6.39	-72.59	-13.00	-59.59	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:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
60.0700	-64.11	0.88	-2.19	-67.18	-13.00	-54.18	V
101.7800	-58.32	1.16	-0.64	-60.12	-13.00	-47.12	V
161.9200	-68.76	1.5	1.61	-68.65	-13.00	-55.65	V
345.2500	-79.52	2.2	5.8	-75.92	-13.00	-62.92	V
450.9800	-80.71	2.59	5.74	-77.56	-13.00	-64.56	V
770.1100	-78.05	3.27	6.38	-74.94	-13.00	-61.94	V
95.9600	-61.03	1.13	0.26	-61.90	-13.00	-48.90	H
150.2800	-65.42	1.43	0.71	-66.14	-13.00	-53.14	H
390.8400	-76.95	2.32	6	-73.27	-13.00	-60.27	H
516.9400	-78.93	2.7	6.07	-75.56	-13.00	-62.56	H
691.5400	-77.87	3.13	6.48	-74.52	-13.00	-61.52	H
745.8600	-75.55	3.2	6.1	-72.65	-13.00	-59.65	H

Remark:

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

**Operation Mode:** WCDMA Band V / TX / CH 4132**Test Date:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
60.0700	-65.71	0.88	-2.19	-68.78	-13.00	-55.78	V
101.7800	-58.72	1.16	-0.64	-60.52	-13.00	-47.52	V
138.6400	-66.62	1.39	-0.38	-68.39	-13.00	-55.39	V
345.2500	-78.02	2.2	5.8	-74.42	-13.00	-61.42	V
448.0700	-81.14	2.58	5.74	-77.98	-13.00	-64.98	V
601.3300	-82.21	2.91	6.39	-78.73	-13.00	-65.73	V
95.9600	-60.93	1.13	0.26	-61.80	-13.00	-48.80	H
150.2800	-65.32	1.43	0.71	-66.04	-13.00	-53.04	H
263.7700	-80.65	1.93	5.41	-77.17	-13.00	-64.17	H
379.2000	-76.4	2.31	5.98	-72.73	-13.00	-59.73	H
516.9400	-78.06	2.7	6.07	-74.69	-13.00	-61.69	H
612.9700	-75.9	2.94	6.23	-72.61	-13.00	-59.61	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 4182**Test Date:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
60.0700	-65.71	0.88	-2.19	-68.78	-13.00	-55.78	V
101.7800	-58.74	1.16	-0.64	-60.54	-13.00	-47.54	V
135.7300	-65.69	1.37	-0.72	-67.78	-13.00	-54.78	V
345.2500	-79.41	2.2	5.8	-75.81	-13.00	-62.81	V
516.9400	-81.96	2.7	6.07	-78.59	-13.00	-65.59	V
625.5800	-82.01	2.96	6.16	-78.81	-13.00	-65.81	V
90.1400	-63.19	1.11	1.07	-63.23	-13.00	-50.23	H
150.2800	-65.49	1.43	0.71	-66.21	-13.00	-53.21	H
354.9500	-78.24	2.25	5.75	-74.74	-13.00	-61.74	H
402.4800	-78.58	2.41	5.97	-75.02	-13.00	-62.02	H
612.9700	-77.27	2.94	6.23	-73.98	-13.00	-60.98	H
732.2800	-78.51	3.18	6.34	-75.35	-13.00	-62.35	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:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
60.0700	-66.09	0.88	-2.19	-69.16	-13.00	-56.16	V
101.7800	-58.76	1.16	-0.64	-60.56	-13.00	-47.56	V
161.9200	-70.07	1.5	1.61	-69.96	-13.00	-56.96	V
346.2200	-78.85	2.21	5.8	-75.26	-13.00	-62.26	V
448.0700	-81.54	2.58	5.74	-78.38	-13.00	-65.38	V
579.9900	-83.31	2.89	6.01	-80.19	-13.00	-67.19	V
84.3200	-61.64	1.07	0.39	-62.32	-13.00	-49.32	H
150.2800	-65.7	1.43	0.71	-66.42	-13.00	-53.42	H
256.0100	-80.65	1.88	5.63	-76.90	-13.00	-63.90	H
379.2000	-78.85	2.31	5.98	-75.18	-13.00	-62.18	H
529.5500	-77.45	2.75	6	-74.20	-13.00	-61.20	H
689.6000	-79.28	3.13	6.5	-75.91	-13.00	-62.91	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.

**Operation Mode:** WCDMA / HSDPA Band II /
TX / CH 9262**Temperature:** 24°C**Humidity:** 50 % RH**Test Date:** April 29, 2014**Tested by:** Dennis Li**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
57.1600	-63.37	0.86	-2.8	-67.03	-13.00	-54.03	V
95.9600	-57.82	1.13	0.26	-58.69	-13.00	-45.69	V
138.6400	-63.09	1.39	-0.38	-64.86	-13.00	-51.86	V
346.2200	-79.04	2.21	5.8	-75.45	-13.00	-62.45	V
516.9400	-81.66	2.7	6.07	-78.29	-13.00	-65.29	V
769.1400	-77.81	3.27	6.39	-74.69	-13.00	-61.69	V
123.1200	-61.49	1.29	-1.87	-64.65	-13.00	-51.65	H
251.1600	-55.58	1.84	5.69	-51.73	-13.00	-38.73	H
383.0800	-66.27	2.31	5.99	-62.59	-13.00	-49.59	H
446.1300	-69.58	2.57	5.78	-66.37	-13.00	-53.37	H
549.9200	-69.76	2.81	6.18	-66.39	-13.00	-53.39	H
563.5000	-73.68	2.85	6.02	-70.51	-13.00	-57.51	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**Temperature:** 24°C**Humidity:** 50 % RH**Test Date:** April 29, 2014**Tested by:** Dennis Li**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
57.1600	-62.73	0.86	-2.8	-66.39	-13.00	-53.39	V
95.9600	-56.74	1.13	0.26	-57.61	-13.00	-44.61	V
138.6400	-62.91	1.39	-0.38	-64.68	-13.00	-51.68	V
345.2500	-77.17	2.2	5.8	-73.57	-13.00	-60.57	V
505.3000	-81.01	2.69	5.95	-77.75	-13.00	-64.75	V
769.1400	-76.58	3.27	6.39	-73.46	-13.00	-60.46	V
84.3200	-56.54	1.07	0.39	-57.22	-13.00	-44.22	H
174.5300	-73.88	1.59	3	-72.47	-13.00	-59.47	H
354.9500	-77.92	2.25	5.75	-74.42	-13.00	-61.42	H
445.1600	-77.36	2.56	5.8	-74.12	-13.00	-61.12	H
601.3300	-78.32	2.91	6.39	-74.84	-13.00	-61.84	H
733.2500	-76.92	3.19	6.31	-73.80	-13.00	-60.80	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**Temperature:** 24°C**Humidity:** 50 % RH**Test Date:** April 29, 2014**Tested by:** Dennis Li**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
57.1600	-62.88	0.86	-2.8	-66.54	-13.00	-53.54	V
95.9600	-57.46	1.13	0.26	-58.33	-13.00	-45.33	V
138.6400	-62.55	1.39	-0.38	-64.32	-13.00	-51.32	V
345.2500	-77.7	2.2	5.8	-74.10	-13.00	-61.10	V
516.9400	-81	2.7	6.07	-77.63	-13.00	-64.63	V
770.1100	-76.76	3.27	6.38	-73.65	-13.00	-60.65	V
84.3200	-55.91	1.07	0.39	-56.59	-13.00	-43.59	H
144.4600	-69.78	1.41	0.17	-71.02	-13.00	-58.02	H
270.5600	-80.32	1.98	5.11	-77.19	-13.00	-64.19	H
379.2000	-75.73	2.31	5.98	-72.06	-13.00	-59.06	H
516.9400	-77.24	2.7	6.07	-73.87	-13.00	-60.87	H
661.4700	-78.04	3.06	6.3	-74.80	-13.00	-61.80	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:** April 29, 2014**Temperature:** 24°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
57.1600	-62.15	0.86	-2.8	-65.81	-13.00	-52.81	V
95.9600	-56.87	1.13	0.26	-57.74	-13.00	-44.74	V
153.1900	-71.06	1.44	0.94	-71.56	-13.00	-58.56	V
369.5000	-77.07	2.3	5.8	-73.57	-13.00	-60.57	V
529.5500	-81.67	2.75	6	-78.42	-13.00	-65.42	V
689.6000	-82.9	3.13	6.5	-79.53	-13.00	-66.53	V
84.3200	-56.71	1.07	0.39	-57.39	-13.00	-44.39	H
144.4600	-70.66	1.41	0.17	-71.90	-13.00	-58.90	H
270.5600	-80.54	1.98	5.11	-77.41	-13.00	-64.41	H
379.2000	-73.89	2.31	5.98	-70.22	-13.00	-57.22	H
516.9400	-77.34	2.7	6.07	-73.97	-13.00	-60.97	H
641.1000	-78.65	3.01	6.12	-75.54	-13.00	-62.54	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:** April 29, 2014**Temperature:** 24°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
57.1600	-61.9	0.86	-2.8	-65.56	-13.00	-52.56	V
95.9600	-57.27	1.13	0.26	-58.14	-13.00	-45.14	V
138.6400	-63.45	1.39	-0.38	-65.22	-13.00	-52.22	V
346.2200	-77.45	2.21	5.8	-73.86	-13.00	-60.86	V
469.4100	-80.71	2.62	5.79	-77.54	-13.00	-64.54	V
655.6500	-82.63	3.04	6.3	-79.37	-13.00	-66.37	V
84.3200	-57.47	1.07	0.39	-58.15	-13.00	-45.15	H
174.5300	-73.43	1.59	3	-72.02	-13.00	-59.02	H
270.5600	-79.52	1.98	5.11	-76.39	-13.00	-63.39	H
379.2000	-75.52	2.31	5.98	-71.85	-13.00	-58.85	H
505.3000	-78.36	2.69	5.95	-75.10	-13.00	-62.10	H
612.9700	-78.47	2.94	6.23	-75.18	-13.00	-62.18	H

Remark:

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

**Operation Mode:** WCDMA / HSDPA Band V / TX / CH 4233**Test Date:** April 29, 2014**Temperature:** 24°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
57.1600	-62.74	0.86	-2.8	-66.40	-13.00	-53.40	V
95.9600	-56.68	1.13	0.26	-57.55	-13.00	-44.55	V
138.6400	-62.96	1.39	-0.38	-64.73	-13.00	-51.73	V
180.3500	-78.24	1.61	3.62	-76.23	-13.00	-63.23	V
345.2500	-79.37	2.2	5.8	-75.77	-13.00	-62.77	V
585.8100	-82.65	2.89	6.11	-79.43	-13.00	-66.43	V
84.3200	-57.87	1.07	0.39	-58.55	-13.00	-45.55	H
138.6400	-66.01	1.39	-0.38	-67.78	-13.00	-54.78	H
174.5300	-74	1.59	3	-72.59	-13.00	-59.59	H
319.0600	-78.59	2.17	5.71	-75.05	-13.00	-62.05	H
379.2000	-75.2	2.31	5.98	-71.53	-13.00	-58.53	H
529.5500	-76.6	2.75	6	-73.35	-13.00	-60.35	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**Temperature:** 25°C**Humidity:** 50 % RH**Test Date:** April 29, 2014**Tested by:** Ryan Chen**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
60.0700	-60.49	0.88	-2.19	-63.56	-13.00	-50.56	V
95.9600	-54.23	1.13	0.26	-55.10	-13.00	-42.10	V
174.5300	-72.17	1.59	3	-70.76	-13.00	-57.76	V
345.2500	-74.73	2.2	5.8	-71.13	-13.00	-58.13	V
505.3000	-79.7	2.69	5.95	-76.44	-13.00	-63.44	V
770.1100	-74.51	3.27	6.38	-71.40	-13.00	-58.40	V
95.9600	-53.73	1.13	0.26	-54.60	-13.00	-41.60	H
161.9200	-68.31	1.5	1.61	-68.20	-13.00	-55.20	H
342.3400	-73.36	2.18	5.8	-69.74	-13.00	-56.74	H
379.2000	-71.28	2.31	5.98	-67.61	-13.00	-54.61	H
516.9400	-74.38	2.7	6.07	-71.01	-13.00	-58.01	H
697.3600	-75.13	3.11	6.42	-71.82	-13.00	-58.82	H

Remark:

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

**Operation Mode:** WCDMA / HSUPA Band II /
TX / CH 9400**Temperature:** 25°C**Humidity:** 50 % RH**Test Date:** April 29, 2014**Tested by:** Ryan Chen**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
60.0700	-59.9	0.88	-2.19	-62.97	-13.00	-49.97	V
95.9600	-56.12	1.13	0.26	-56.99	-13.00	-43.99	V
138.6400	-60.95	1.39	-0.38	-62.72	-13.00	-49.72	V
345.2500	-75.36	2.2	5.8	-71.76	-13.00	-58.76	V
469.4100	-78.75	2.62	5.79	-75.58	-13.00	-62.58	V
770.1100	-75.28	3.27	6.38	-72.17	-13.00	-59.17	V
95.9600	-55.99	1.13	0.26	-56.86	-13.00	-43.86	H
138.6400	-65.41	1.39	-0.38	-67.18	-13.00	-54.18	H
180.3500	-75.52	1.61	3.62	-73.51	-13.00	-60.51	H
379.2000	-73.84	2.31	5.98	-70.17	-13.00	-57.17	H
612.9700	-77.28	2.94	6.23	-73.99	-13.00	-60.99	H
793.3900	-74.84	3.33	6.33	-71.84	-13.00	-58.84	H

Remark:

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

**Operation Mode:** WCDMA / HSUPA Band II /
TX / CH 9538**Temperature:** 25°C**Humidity:** 50 % RH**Test Date:** April 29, 2014**Tested by:** Ryan Chen**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
60.0700	-59.86	0.88	-2.19	-62.93	-13.00	-49.93	V
101.7800	-58.51	1.16	-0.64	-60.31	-13.00	-47.31	V
150.2800	-65.1	1.43	0.71	-65.82	-13.00	-52.82	V
346.2200	-77.66	2.21	5.8	-74.07	-13.00	-61.07	V
516.9400	-80.63	2.7	6.07	-77.26	-13.00	-64.26	V
770.1100	-75.65	3.27	6.38	-72.54	-13.00	-59.54	V
95.9600	-55.85	1.13	0.26	-56.72	-13.00	-43.72	H
174.5300	-72.3	1.59	3	-70.89	-13.00	-57.89	H
354.9500	-75.28	2.25	5.75	-71.78	-13.00	-58.78	H
459.7100	-76.43	2.6	5.88	-73.15	-13.00	-60.15	H
697.3600	-77.45	3.11	6.42	-74.14	-13.00	-61.14	H
817.6400	-76.29	3.38	6.2	-73.47	-13.00	-60.47	H

Remark:

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

**Operation Mode:** WCDMA / HSUPA Band V /
TX / CH 4132**Temperature:** 25°C**Humidity:** 50 % RH**Test Date:** April 29, 2014**Tested by:** Ryan Chen**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
60.0700	-62.74	0.88	-2.19	-65.81	-13.00	-52.81	V
95.9600	-57.46	1.13	0.26	-58.33	-13.00	-45.33	V
138.6400	-62.18	1.39	-0.38	-63.95	-13.00	-50.95	V
345.2500	-76.69	2.2	5.8	-73.09	-13.00	-60.09	V
456.8000	-79.74	2.6	5.84	-76.50	-13.00	-63.50	V
655.6500	-83.23	3.04	6.3	-79.97	-13.00	-66.97	V
95.9600	-56.95	1.13	0.26	-57.82	-13.00	-44.82	H
177.4400	-72.54	1.6	3.31	-70.83	-13.00	-57.83	H
270.5600	-80.28	1.98	5.11	-77.15	-13.00	-64.15	H
379.2000	-74.22	2.31	5.98	-70.55	-13.00	-57.55	H
589.6900	-78.93	2.89	6.19	-75.63	-13.00	-62.63	H
737.1300	-78.29	3.2	6.2	-75.29	-13.00	-62.29	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**Temperature:** 25°C**Humidity:** 50 % RH**Test Date:** April 29, 2014**Tested by:** Ryan Chen**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
60.0700	-62.04	0.88	-2.19	-65.11	-13.00	-52.11	V
95.9600	-57.32	1.13	0.26	-58.19	-13.00	-45.19	V
144.4600	-63.82	1.41	0.17	-65.06	-13.00	-52.06	V
345.2500	-76.69	2.2	5.8	-73.09	-13.00	-60.09	V
516.9400	-78.83	2.7	6.07	-75.46	-13.00	-62.46	V
691.5400	-83.29	3.13	6.48	-79.94	-13.00	-66.94	V
95.9600	-56.33	1.13	0.26	-57.20	-13.00	-44.20	H
150.2800	-68.51	1.43	0.71	-69.23	-13.00	-56.23	H
270.5600	-78.41	1.98	5.11	-75.28	-13.00	-62.28	H
379.2000	-74.39	2.31	5.98	-70.72	-13.00	-57.72	H
585.8100	-78.08	2.89	6.11	-74.86	-13.00	-61.86	H
679.9000	-78.58	3.09	6.5	-75.17	-13.00	-62.17	H

Remark:

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

**Operation Mode:** WCDMA / HSUPA Band V /
TX / CH 4233**Temperature:** 25°C**Humidity:** 50 % RH**Test Date:** April 29, 2014**Tested by:** Ryan Chen**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
60.0700	-60.51	0.88	-2.19	-63.58	-13.00	-50.58	V
95.9600	-56.92	1.13	0.26	-57.79	-13.00	-44.79	V
144.4600	-64.32	1.41	0.17	-65.56	-13.00	-52.56	V
345.2500	-76.86	2.2	5.8	-73.26	-13.00	-60.26	V
516.9400	-79.86	2.7	6.07	-76.49	-13.00	-63.49	V
649.8300	-83.04	3.03	6.28	-79.79	-13.00	-66.79	V
95.9600	-56.81	1.13	0.26	-57.68	-13.00	-44.68	H
177.4400	-73.95	1.6	3.31	-72.24	-13.00	-59.24	H
319.0600	-78.91	2.17	5.71	-75.37	-13.00	-62.37	H
379.2000	-74.26	2.31	5.98	-70.59	-13.00	-57.59	H
571.2600	-79.5	2.87	6.1	-76.27	-13.00	-63.27	H
730.3400	-77.19	3.18	6.39	-73.98	-13.00	-60.98	H

Remark:

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

**Above 1GHz****Operation Mode:** WCDMA Band II / TX / CH 9262**Test Date:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** 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	-36.03	8.2	9.1	-35.13	-13.00	-22.13	V
5557.000	-47.73	10.08	10.81	-47.00	-13.00	-34.00	V
7412.000	-34.83	12.11	12.56	-34.38	-13.00	-21.38	V
N/A							
3709.000	-41.92	8.21	9.11	-41.02	-13.00	-28.02	H
5557.000	-51.21	10.08	10.81	-50.48	-13.00	-37.48	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 II / TX / CH 9400**Test Date:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** 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	-36.87	8.23	9.16	-35.94	-13.00	-22.94	V
5641.000	-51.32	10.18	10.83	-50.67	-13.00	-37.67	V
7524.000	-39.38	12.23	12.72	-38.89	-13.00	-25.89	V
3758.000	-41.81	8.23	9.16	-40.88	-13.00	-27.88	H
5641.000	-52.24	10.18	10.83	-51.59	-13.00	-38.59	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:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** 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	-36.52	8.28	9.21	-35.59	-13.00	-22.59	V
5725.000	-47.24	10.22	10.84	-46.62	-13.00	-33.62	V
7629.000	-36.36	12.22	12.83	-35.75	-13.00	-22.75	V
N/A							
3821.000	-41.26	8.29	9.22	-40.33	-13.00	-27.33	H
5725.000	-50.16	10.22	10.84	-49.54	-13.00	-36.54	H
N/A							

Remark:

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

**Operation Mode:** WCDMA Band V / TX / CH 4132**Test Date:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
2589.000	-57.16	6.47	6.33	-57.30	-13.00	-44.30	V
3996.000	-54.49	8.35	9.4	-53.44	-13.00	-40.44	V
N/A							
2988.000	-56.37	7.03	7.37	-56.03	-13.00	-43.03	H
4696.000	-52.52	9.13	10.11	-51.54	-13.00	-38.54	H
N/A							

Remark:

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

**Operation Mode:** WCDMA Band V / TX / CH 4182**Test Date:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3352.000	-56.58	7.52	8.46	-55.64	-13.00	-42.64	V
4360.000	-54.29	8.62	9.69	-53.22	-13.00	-40.22	V
N/A							
3611.000	-54.55	8.12	9.01	-53.66	-13.00	-40.66	H
4780.000	-53.44	9.28	10.25	-52.47	-13.00	-39.47	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:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
2939.000	-56.18	7.1	7.24	-56.04	-13.00	-43.04	V
3786.000	-54.2	8.25	9.19	-53.26	-13.00	-40.26	V
N/A							
3597.000	-54.15	8.1	9	-53.25	-13.00	-40.25	H
4486.000	-52.55	8.87	9.79	-51.63	-13.00	-38.63	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:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** 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	-36.93	8.2	9.1	-36.03	-13.00	-23.03	V
5557.000	-49.17	10.08	10.81	-48.44	-13.00	-35.44	V
7412.000	-36.42	12.11	12.56	-35.97	-13.00	-22.97	V
N/A							
3709.000	-42.89	8.21	9.11	-41.99	-13.00	-28.99	H
5557.000	-52.71	10.08	10.81	-51.98	-13.00	-38.98	H
N/A							

Remark:

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

**Operation Mode:** WCDMA / HSDPA Band II / TX / CH 9400**Test Date:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3765.000	-38.91	8.24	9.16	-37.99	-13.00	-24.99	V
5641.000	-50.32	10.18	10.83	-49.67	-13.00	-36.67	V
7517.000	-39.5	12.24	12.72	-39.02	-13.00	-26.02	V
N/A							
3758.000	-43.02	8.23	9.16	-42.09	-13.00	-29.09	H
5641.000	-52.64	10.18	10.83	-51.99	-13.00	-38.99	H
N/A							

Remark:

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

**Operation Mode:** WCDMA / HSDPA Band II / TX / CH 9538**Test Date:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** 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	-37.43	8.28	9.21	-36.50	-13.00	-23.50	V
5725.000	-47.26	10.22	10.84	-46.64	-13.00	-33.64	V
7629.000	-34.57	12.22	12.83	-33.96	-13.00	-20.96	V
N/A							
3814.000	-41.41	8.28	9.21	-40.48	-13.00	-27.48	H
5718.000	-49.89	10.21	10.84	-49.26	-13.00	-36.26	H
N/A							

Remark:

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

**Operation Mode:** WCDMA / HSDPA Band V / TX / CH 4132**Test Date:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** 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	-47	5.59	5.49	-47.10	-13.00	-34.10	V
2610.000	-54.03	6.51	6.39	-54.15	-13.00	-41.15	V
N/A							
2827.000	-55.82	6.9	6.95	-55.77	-13.00	-42.77	H
3926.000	-53.36	8.38	9.33	-52.41	-13.00	-39.41	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:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1945.000	-50.7	5.57	5.5	-50.77	-13.00	-37.77	V
2645.000	-52.08	6.6	6.48	-52.20	-13.00	-39.20	V
N/A							
2834.000	-56.59	6.93	6.97	-56.55	-13.00	-43.55	H
3744.000	-54.11	8.23	9.14	-53.20	-13.00	-40.20	H
N/A							

Remark:

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

**Operation Mode:** WCDMA / HSDPA Band V / TX / CH 4233**Test Date:** April 29, 2014**Temperature:** 25°C**Tested by:** Dennis Li**Humidity:** 50 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
2673.000	-54.65	6.67	6.55	-54.77	-13.00	-41.77	V
4766.000	-53.62	9.26	10.23	-52.65	-13.00	-39.65	V
N/A							
2988.000	-55.49	7.03	7.37	-55.15	-13.00	-42.15	H
4038.000	-52.61	8.39	9.43	-51.57	-13.00	-38.57	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 / HSUPA Band II /
TX / CH 9262**Temperature:** 25°C**Humidity:** 50 % RH**Test Date:** April 29, 2014**Tested by:** Ryan Chen**Polarity:** 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	-37.56	8.21	9.11	-36.66	-13.00	-23.66	V
5557.000	-50.36	10.08	10.81	-49.63	-13.00	-36.63	V
7412.000	-37.85	12.11	12.56	-37.40	-13.00	-24.40	V
N/A							
3702.000	-41.65	8.2	9.1	-40.75	-13.00	-27.75	H
5557.000	-52.7	10.08	10.81	-51.97	-13.00	-38.97	H
N/A							

Remark:

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

**Operation Mode:** WCDMA / HSUPA Band II /
TX / CH 9400**Temperature:** 25°C**Humidity:** 50 % RH**Test Date:** April 29, 2014**Tested by:** Ryan Chen**Polarity:** 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	-38.37	8.23	9.16	-37.44	-13.00	-24.44	V
5641.000	-50.85	10.18	10.83	-50.20	-13.00	-37.20	V
7517.000	-38.55	12.24	12.72	-38.07	-13.00	-25.07	V
N/A							
3765.000	-44.28	8.24	9.16	-43.36	-13.00	-30.36	H
4934.000	-53.86	9.31	10.49	-52.68	-13.00	-39.68	H
N/A							

Remark:

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

**Operation Mode:** WCDMA / HSUPA Band II /
TX / CH 9538**Temperature:** 25°C**Humidity:** 50 % RH**Test Date:** April 29, 2014**Tested by:** Ryan Chen**Polarity:** 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	-37.17	8.28	9.21	-36.24	-13.00	-23.24	V
5725.000	-46.06	10.22	10.84	-45.44	-13.00	-32.44	V
7636.000	-35.85	12.24	12.84	-35.25	-13.00	-22.25	V
N/A							
3814.000	-41.77	8.28	9.21	-40.84	-13.00	-27.84	H
5718.000	-51.29	10.21	10.84	-50.66	-13.00	-37.66	H
N/A							

Remark:

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

**Operation Mode:** WCDMA / HSUPA Band V /
TX / CH 4132**Temperature:** 25°C**Humidity:** 50 % RH**Test Date:** April 29, 2014**Tested by:** Ryan Chen**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1945.000	-53.45	5.57	5.5	-53.52	-13.00	-40.52	V
2617.000	-49.47	6.53	6.4	-49.60	-13.00	-36.60	V
N/A							
1952.000	-52.67	5.59	5.49	-52.77	-13.00	-39.77	H
4241.000	-53.64	8.54	9.59	-52.59	-13.00	-39.59	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**Temperature:** 25°C**Humidity:** 50 % RH**Test Date:** April 29, 2014**Tested by:** Ryan Chen**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1763.000	-57.41	5.22	5.83	-56.80	-13.00	-43.80	V
2645.000	-50.96	6.6	6.48	-51.08	-13.00	-38.08	V
N/A							
1959.000	-54.11	5.61	5.47	-54.25	-13.00	-41.25	H
3751.000	-55.29	8.23	9.15	-54.37	-13.00	-41.37	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**Temperature:** 25°C**Humidity:** 50 % RH**Test Date:** April 29, 2014**Tested by:** Ryan Chen**Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1784.000	-56.73	5.26	5.79	-56.20	-13.00	-43.20	V
2673.000	-49.29	6.67	6.55	-49.41	-13.00	-36.41	V
N/A							
1784.000	-57.07	5.26	5.79	-56.54	-13.00	-43.54	H
3051.000	-56.24	7.09	7.55	-55.78	-13.00	-42.78	H
N/A							

Remark:

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



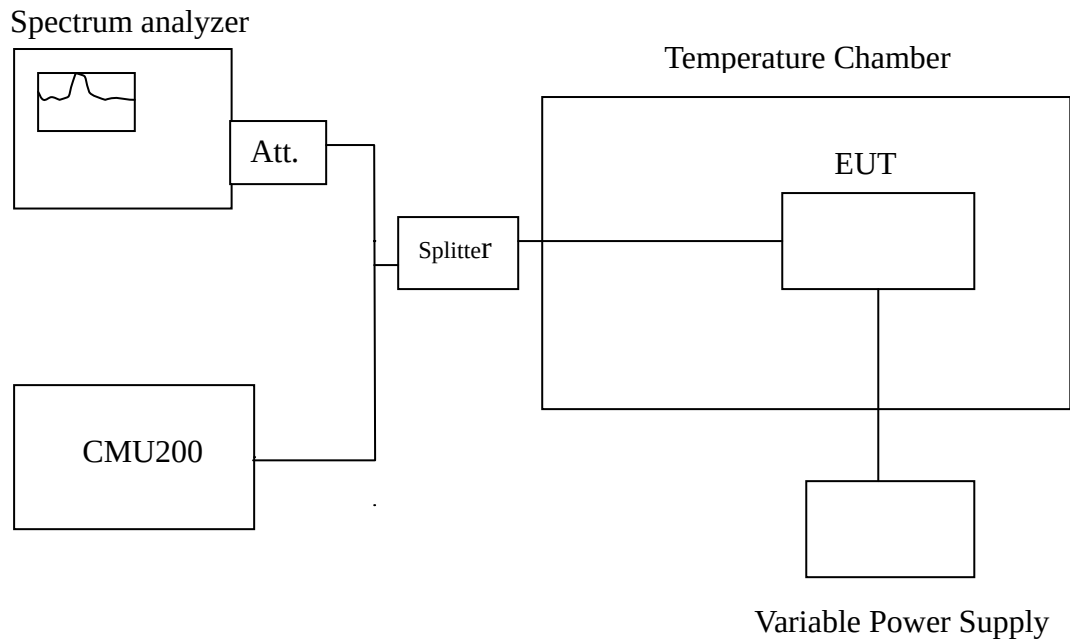
7.7 FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

LIMIT

According to FCC §2.1055, FCC §24.235, RSS-132 (4.3) & RSS-133 (6.3).

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: WCDMA Band V Mid Channel 836.4 MHz @ 20°C				
Limit: +/- 2.5 ppm = 2090 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.8	50	836399995	-7	2090
	40	836399997	-5	
	30	836399992	-10	
	20	836400002	0	
	10	836399996	-6	
	0	836399999	-3	
	-10	836399995	-7	
	-20	836399992	-10	
	-30	836399995	-7	

Reference Frequency: WCDMA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.8	50	1879999994	-12	4700
	40	1879999992	-14	
	30	1879999993	-13	
	20	1880000006	0	
	10	1879999998	-8	
	0	1879999999	-7	
	-10	1879999996	-10	
	-20	1879999995	-11	
	-30	1879999991	-15	



Reference Frequency: WCDMA / HSDPA Band V Mid Channel 836.4 MHz @ 20°C				
Limit: +/- 2.5 ppm = 2090 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.8	50	836399995	-10	2090
	40	836399996	-9	
	30	836399993	-12	
	20	836400005	0	
	10	836399992	-13	
	0	836399996	-9	
	-10	836399998	-7	
	-20	836399994	-11	
	-30	836399996	-9	

Reference Frequency: WCDMA / HSDPA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.8	50	1879999996	-9	4700
	40	1879999993	-12	
	30	1879999991	-14	
	20	1880000005	0	
	10	1879999995	-10	
	0	1879999997	-8	
	-10	1879999998	-7	
	-20	1879999995	-10	
	-30	1879999992	-13	



Reference Frequency: WCDMA / HSUPA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.8	50	1879999995	-9	4700
	40	1879999994	-10	
	30	1879999993	-11	
	20	1880000004	0	
	10	1879999993	-11	
	0	1879999997	-7	
	-10	1879999989	-15	
	-20	1879999995	-9	
	-30	1879999993	-11	

Reference Frequency: WCDMA / HSUPA Band V Mid Channel 836.4 MHz @ 20°C				
Limit: ± 2.5 ppm = 2090 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
3.8	50	836399989	-18	2090
	40	836399995	-12	
	30	836399993	-14	
	20	836400007	0	
	10	836399995	-12	
	0	836399991	-16	
	-10	836399985	-22	
	-20	836399996	-11	
	-30	836399998	-9	



7.8 FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

LIMIT

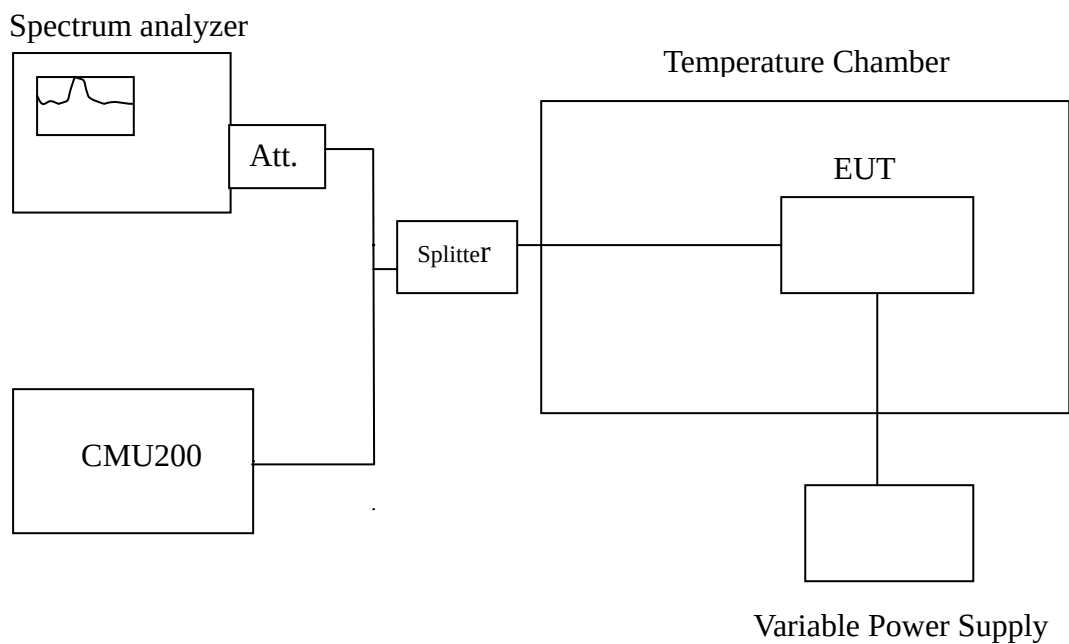
According to FCC §2.1055, FCC §24.235,

Frequency Tolerance: 2.5 ppm.

According to RSS-132 (4.3) & RSS-133 (6.3).

The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations and ± 1.0 ppm for base stations.

Test Configuration



Remark: Measurement setup for testing on Antenna connector.



TEST PROCEDURE

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

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

TEST RESULTS

No non-compliance noted.

Reference Frequency: WCDMA Band V Mid Channel 836.4 MHz @ 20°C				
Limit: ± 2.5 ppm = 2090Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.37	20	836400003	1	2090
3.8		836400002	0	
3.23		836400005	3	

Reference Frequency: WCDMA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.37	20	1880000005	-1	4700
3.8		1880000006	0	
3.23		1880000008	2	



Reference Frequency: WCDMA / HSDPA Band V Mid Channel 836.4 MHz @ 20°C				
Limit: ± 2.5 ppm = 2090Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.37	20	836400008	3	2090
3.8		836400005	0	
3.23		836400003	-2	

Reference Frequency: WCDMA / HSDPA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.37	20	1880000007	2	4700
3.8		1880000005	0	
3.23		1880000003	-2	



Reference Frequency: WCDMA HSUPA Band II Mid Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.37	20	1880000003	-1	4700
3.8		1880000004	0	
3.23		1880000002	-2	

Reference Frequency: WCDMA HSUPA Band V Mid Channel 836.4 MHz @ 20°C				
Limit: ± 2.5 ppm = 2090Hz				
Power Supply Vdc	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
4.37	20	836400001	-6	2090
3.8		836400007	0	
3.23		836400005	-2	