

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

TEST REPORT

For

Computer

Model:

TREK-572, TREK-572XXXXXXXXXXXXXXXXXX
(where "X" may be any alphanumeric character , "-" or blank)

Trade Name: ADVANTECH

Issued to

Advantech Co. Ltd.
No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District, Taipei 114,
Taiwan, R.O.C.

Issued by

Compliance Certification Services Inc.
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)
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Issued Date: October 21, 2015



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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	October 21, 2015	Initial Issue	ALL	Doris Chu

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1. TEST RESULT CERTIFICATION

Applicant: Advantech Co. Ltd.
No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District,
Taipei 114, Taiwan, R.O.C.

Equipment Under Test: Computer

Trade Name: ADVANTECH

Model Number: TREK-572, TREK-572XXXXXXXXXXXXXXXXXX
(where "X" may be any alphanumeric character , "-" or blank)

Date of Test: October 13 ~14, 2015

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

We hereby certify that:

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

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

Approved by:



Miller Lee
Manager
Compliance Certification Services Inc.

Reviewed by:



Angel Cheng
Section Manager
Compliance Certification Services Inc.

2. EUT DESCRIPTION

Product	Computer
Trade Name	ADVANTECH
Model Number	TREK-572, TREK-572XXXXXXXXXXXXXXXXXX (where "X" may be any alphanumeric character , "-" or blank)
Model Discrepancy	All the above models are identical except for the designation of model numbers. The suffix of (where "X" may be any alphanumeric character , "-" or blank) on model number is just for marketing purpose only.
Received Date	August 6, 2015
Power Supply	Power form DC power supply (9V-32V)
Frequency Range	GPRS / EDGE: 850: 824.2 ~ 848.8 MHz GPRS / EDGE: 1900: 1850.2 ~ 1909.8 MHz WCDMA / HSDPA / HSUPA Band II: 1852.4 ~ 1907.6 MHz WCDMA / HSDPA / HSUPA Band V: 826.4 ~ 846.6MHz
Transmit Power (ERP & EIRP Power)	GPRS 850: 33.81 dBm GPRS 1900: 24.14 dBm EDGE 850: 32.98 dBm EDGE 1900: 24.08 dBm WCDMA Band II: 18.96 dBm HSDPA Band II: 18.32 dBm HSUPA Band II: 18.54 dBm WCDMA Band V: 24.24 dBm HSDPA Band V: 23.67 dBm HSUPA Band V: 23.70 dBm
Cellular Phone Protocol	GPRS: GMSK EDGE: 8PSK WCDMA: Quadrature Phase Shift Keying (QPSK) with Root-raised cosine pulse shaping filters (roll off = 0.22)
Type of Emission	GPRS 850: 246KGXW--- GPRS 1900: 243KGXW--- EDGE 850: 248KG7W--- EDGE 1900: 243KG7W--- WCDMA Band II: 4M15F9W--- WCDMA Band V: 4M13F9W--- WCDMA HSDPA Band II: 4M15F9W--- WCDMA HSDPA Band V: 4M15F9W--- WCDMA HSUPA Band II: 4M15F9W--- WCDMA HSUPA Band V: 4M13F9W---

Antenna Gain	GPRS / EDGE 850: 2.22 dBi GPRS / EDGE 1900: 1.42 dBi WCDMA band II: 1.42 dBi WCDMA band V: 2.22 dBi
Antenna Type	PIFA Antenna

Remark:

1. The EUT send are pre-pilot unit from factory

3. TEST METHODOLOGY

Both conducted and radiated testing were performed according to the procedures document in ANSI C63.10: 2013, 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

According to the requirements in ANSI C63.10: 2013. 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 1.5 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 ANSI C63.10: 2013.

3.4 DESCRIPTION OF TEST MODES

The EUT (model: TREK-572) 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.

We find the worst cases are HSUPA & HSDPA than HSPA+. So HSUPA& HSDPA are tested

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 (X 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.

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4407B	MY44212686	03/17/2016
Pre-Amplifier	MITEQ	AFS44-00102650-42-10P-44	1042473	04/13/2016
'Bilog Antenna	Sunol Sciences	JB1	A0526009	08/05/2016
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
Spectrum Analyzer	ROHDE&SCHWARZ	FSV40	101073	07/19/2016
Horn Antenna	EMCO	3117	00055165	01/26/2016
Wideband Radio Communication Tester	ROHDE&SCHWARZ	CMU 200	100535	09/17/2016

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 C63.10: 2013 and CISPR Publication 22.

5.2 EQUIPMENT

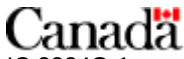
Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

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: TW1309) to perform FCC Part 15 measurements	 FCC MRA: TW1309
Taiwan	TAF	LP0002, RTTE01, FCC Method-47 CFR Part 15 Subpart C, D, E, RSS-210, RSS-310 IDA TS SRD, AS/NZS 4268, AS/NZS 4771, TS 12.1 & 12.2, ETSI EN 300 440-1, ETSI EN 300 440-2, ETSI EN 300 328, ETSI EN 300 220-1, ETSI EN 300 220-2, ETSI EN 301 893, ETSI EN 301 489-1/3/7/17 FCC OET Bulletin 65 + Supplement C, EN 50360, EN 50361, EN 50371, RSS 102, EN 50383, EN 50385, EN 50392, IEC 62209, CNS 14958-1, CNS 14959 FCC Method -47 CFR Part 15 Subpart B IEC / EN 61000-3-2, IEC / EN 61000-3-3, IEC / EN 61000-4-2/3/4/5/6/8/11	
Canada	Industry Canada	3M Semi Anechoic Chamber (IC 2324G-1 / IC 2324G-2) to perform	 IC 2324G-1 IC 2324G-2

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

6. SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

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

6.2 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
1	Power Supply (Remote)	Agilent	E3640A	N/A	FCC DoC	N/A	Unshielded, 1.8m
2	7" LCD Display	ADVANTECH	TREK-303	N/A	FCC DoC	Display Cable: shielded, 2.0m with two cores	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.

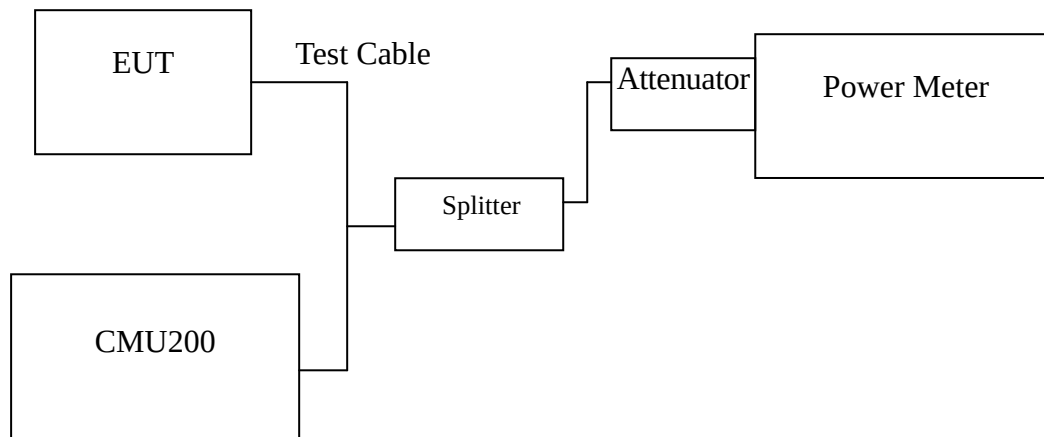
7. FCC PART 22 & 24 REQUIREMENTS

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	32.70	1.86209
	190	836.60	32.90	1.94984
	251	848.80	32.80	1.90546
EDGE 850	128	824.20	28.63	0.72946
	190	836.60	29.10	0.81283
	251	848.80	29.20	0.83176

Test Mode	CH	Frequency (MHz)	Peak Power (dBm)	Output Power (W)
GPRS 1900	512	1850.20	29.70	0.93325
	661	1880.00	30.30	1.07152
	810	1909.80	29.60	0.91201
EDGE 1900	512	1850.20	29.00	0.79433
	661	1880.00	29.80	0.95499
	810	1909.80	29.00	0.79433

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	26.94	0.49431
	9400	1880.00	25.72	0.37325
	9538	1907.60	25.68	0.36983
WCDMA (BAND V)	4132	826.40	26.72	0.46989
	4182	836.40	26.13	0.41020
	4233	846.60	26.26	0.42267

Test Mode	CH	Frequency (MHz)	Peak Power (dBm)	Output Power (W)
WCDMA / HSDPA (BAND II)	9262	1852.40	26.38	0.43451
	9400	1880.00	26.09	0.40644
	9538	1907.60	25.96	0.39446
WCDMA / HSDPA (BAND V)	4132	826.40	27.13	0.51642
	4182	836.40	27.15	0.51880
	4233	846.60	27.01	0.50234

Test Mode	CH	Frequency (MHz)	Peak Power (dBm)	Output Power (W)
WCDMA / HSUPA (BAND II)	9262	1852.40	26.73	0.47098
	9400	1880.00	26.35	0.43152
	9538	1907.60	25.99	0.39719
WCDMA / HSUPA (BAND V)	4132	826.40	26.76	0.47424
	4182	836.40	26.12	0.40926
	4233	846.60	26.70	0.46774

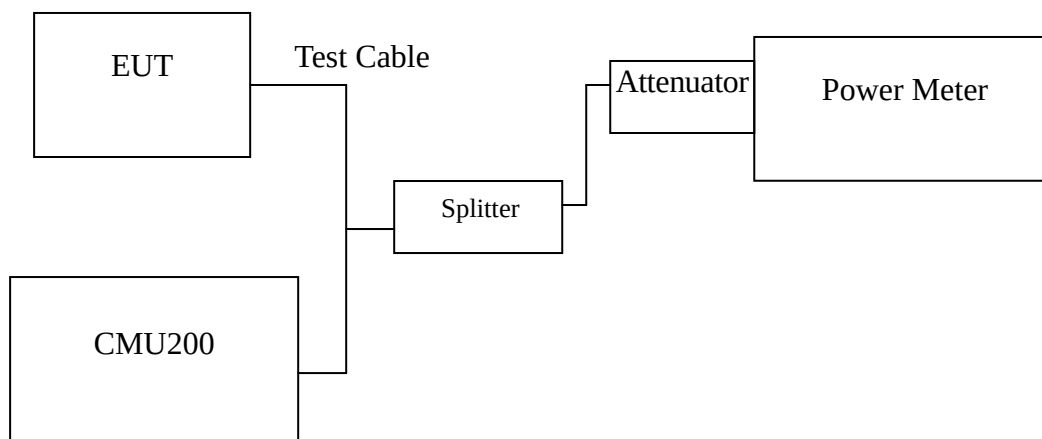
Remark: The value of factor includes both the loss of cable and external attenuator

7.2 AVERAGE POWER

LIMIT

For reporting purposes only.

Test Configuration



Remark: Measurement setup for testing on Antenna connector

TEST PROCEDURE

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

TEST RESULTS

No non-compliance noted.

Test Data

Test Mode	CH	Frequency (MHz)	AVG Power (dBm)	Output Power (W)
GPRS 850	128	824.20	32.50	1.77828
	190	836.60	32.70	1.86209
	251	848.80	32.60	1.81970
EDGE 850	128	824.20	25.30	0.33884
	190	836.60	25.90	0.38905
	251	848.80	26.00	0.39811

Test Mode	CH	Frequency (MHz)	AVG Power (dBm)	Output Power (W)
GPRS 1900	512	1850.20	29.60	0.91201
	661	1880.00	30.10	1.02329
	810	1909.80	29.40	0.87096
EDGE 1900	512	1850.20	25.80	0.38019
	661	1880.00	26.60	0.45709
	810	1909.80	25.80	0.38019

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	22.51	0.17824
	9400	1880.00	22.16	0.16444
	9538	1907.60	22.24	0.16749
WCDMA (BAND V)	4132	826.40	22.93	0.19634
	4182	836.40	22.96	0.19770
	4233	846.60	22.71	0.18664

Test Mode	CH	Frequency (MHz)	AVG Power (dBm)	Output Power (W)
WCDMA / HSDPA (BAND II)	9262	1852.40	21.63	0.14555
	9400	1880.00	21.34	0.13614
	9538	1907.60	21.47	0.14028
WCDMA / HSDPA (BAND V)	4132	826.40	22.42	0.17458
	4182	836.40	22.43	0.17498
	4233	846.60	22.45	0.17579

Test Mode	CH	Frequency (MHz)	Peak Power (dBm)	Output Power (W)
WCDMA / HSUPA (BAND II)	9262	1852.40	22.55	0.17989
	9400	1880.00	22.22	0.16672
	9538	1907.60	22.30	0.16982
WCDMA / HSUPA (BAND V)	4132	826.40	22.66	0.18450
	4182	836.40	22.80	0.19055
	4233	846.60	22.38	0.17298

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

7.3 ERP & EIRP MEASUREMENT

LIMIT

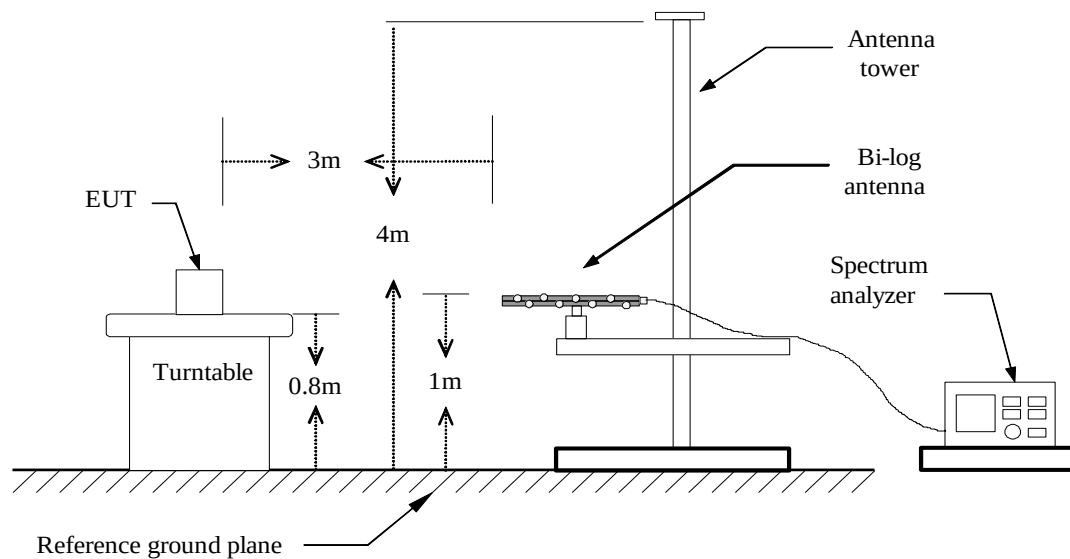
According to FCC §2.1046

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

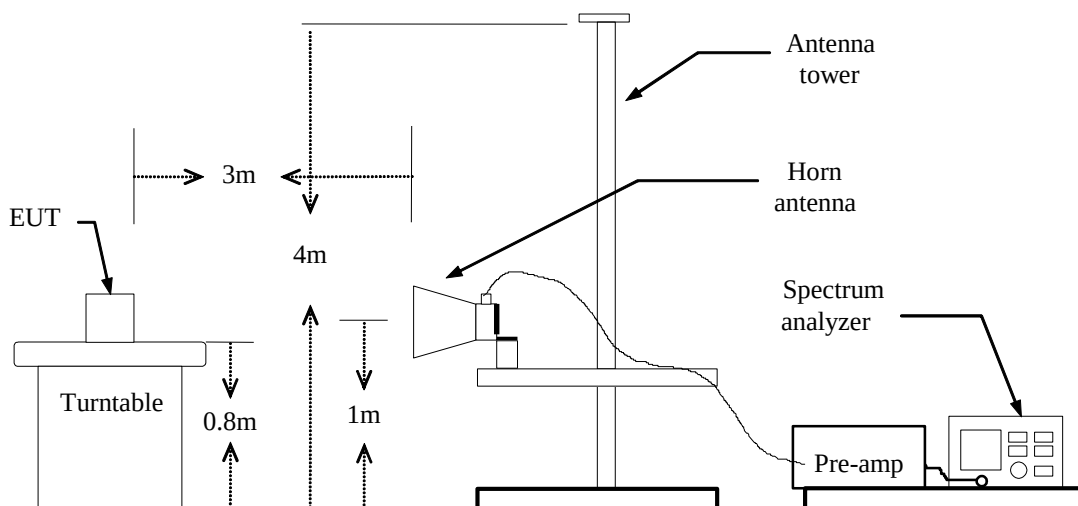
FCC 24.232(b): The equivalent Isotropic Radiated Power (EIRP) must not exceed 2 Watts.

Test Configuration

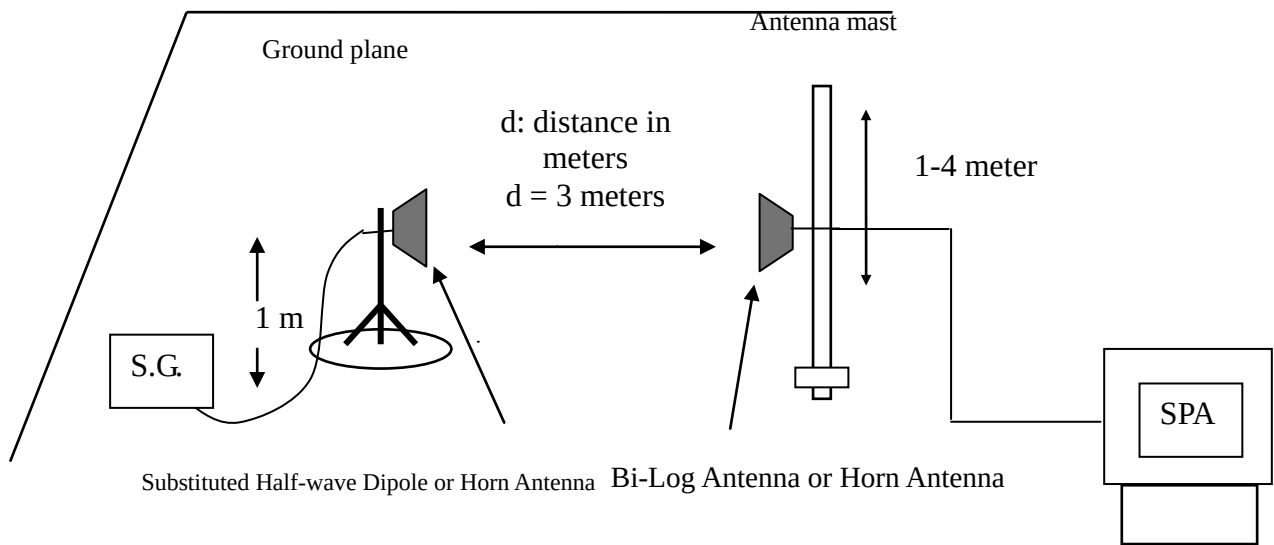
Below 1 GHz



Above 1 GHz



For Substituted Method Test Set-UP



TEST PROCEDURE

The EUT was placed on an 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.

TEST DATA

GPRS 850

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
128	824.1800	V	18.16	3.39	6.24	21.01	38.45	-17.44
	824.6600	H	29.17	3.39	6.24	32.02	38.45	-6.43
190	836.4200	V	20.52	3.4	6.36	23.48	38.45	-14.97
	836.7200	H	29.27	3.4	6.37	32.24	38.45	-6.21
251	848.7800	V	20.21	3.4	6.4	23.21	38.45	-15.24
	849.0800	H	30.81	3.4	6.4	*33.81	38.45	-4.64

GPRS 1900

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	14.08	5.37	5.67	14.38	33.00	-18.62
	1850.160	H	23.84	5.37	5.67	*24.14	33.00	-8.86
661	1880.160	V	15.03	5.42	5.62	15.23	33.00	-17.77
	1879.920	H	23.82	5.42	5.62	24.02	33.00	-8.98
810	1909.800	V	13.18	5.48	5.56	13.26	33.00	-19.74
	1909.800	H	23.53	5.48	5.56	23.61	33.00	-9.39

EGPRS 850

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
128	824.0600	V	17.16	3.39	6.24	20.01	38.45	-18.44
	824.1200	H	28.48	3.39	6.24	31.33	38.45	-7.12
190	836.6000	V	16.94	3.4	6.37	19.91	38.45	-18.54
	849.0200	H	29.94	3.4	6.4	32.94	38.45	-5.51
251	848.8400	V	19.29	3.4	6.4	22.29	38.45	-16.16
	849.0200	H	29.98	3.4	6.4	*32.98	38.45	-5.47

EGPRS 1900

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	14.06	5.37	5.67	14.36	33.00	-18.64
	1850.160	H	23.78	5.37	5.67	*24.08	33.00	-8.92
661	1880.040	V	15.07	5.42	5.62	15.27	33.00	-17.73
	1879.920	H	23.87	5.42	5.62	24.07	33.00	-8.93
810	1909.800	V	13.23	5.48	5.56	13.31	33.00	-19.69
	1909.800	H	23.55	5.48	5.56	23.63	33.00	-9.37

WCDMA BAND II

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	7.02	5.37	5.66	7.31	33.00	-25.69
	1852.800	H	18.46	5.37	5.66	18.75	33.00	-14.25
9400	1880.400	V	9.69	5.42	5.62	9.89	33.00	-23.11
	1880.520	H	18.76	5.42	5.62	*18.96	33.00	-14.04
9538	1906.800	V	10.07	5.47	5.57	10.17	33.00	-22.83
	1906.680	H	15.76	5.47	5.57	15.86	33.00	-17.14

WCDMA BAND V

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
4132	826.7600	V	11.28	3.39	6.26	14.15	38.45	-24.30
	826.7600	H	21.36	3.39	6.26	24.23	38.45	-14.22
4182	836.6600	V	13.38	3.4	6.37	16.35	38.45	-22.10
	836.7800	H	21.06	3.4	6.37	24.03	38.45	-14.42
4233	846.5000	V	14.68	3.4	6.4	17.68	38.45	-20.77
	847.1000	H	21.24	3.4	6.4	*24.24	38.45	-14.21

HSDPA BAND II

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	5.86	5.37	5.66	6.15	33.00	-26.85
	1853.040	H	17.14	5.37	5.66	17.43	33.00	-15.57
9400	1880.400	V	9.02	5.42	5.62	9.22	33.00	-23.78
	1880.160	H	18.12	5.42	5.62	*18.32	33.00	-14.68
9538	1906.440	V	9.56	5.47	5.57	9.66	33.00	-23.34
	1906.560	H	17.86	5.47	5.57	17.96	33.00	-15.04

HSDPA BAND V

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
4132	826.5200	V	10.61	3.39	6.26	13.48	38.45	-24.97
	826.7000	H	20.8	3.39	6.26	*23.67	38.45	-14.78
4182	837.0200	V	12.84	3.4	6.37	15.81	38.45	-22.64
	836.7200	H	20.47	3.4	6.37	23.44	38.45	-15.01
4233	846.9200	V	13.91	3.4	6.4	16.91	38.45	-21.54
	847.1000	H	20.48	3.4	6.4	23.48	38.45	-14.97

HSUPA BAND II

Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
9262	1853.160	V	6.1	5.38	5.66	6.38	33.00	-26.62
	1852.800	H	17.33	5.37	5.66	17.62	33.00	-15.38
9400	1880.400	V	9.2	5.42	5.62	9.40	33.00	-23.60
	1880.160	H	18.34	5.42	5.62	*18.54	33.00	-14.46
9538	1906.440	V	9.54	5.47	5.57	9.64	33.00	-23.36
	1906.680	H	17.86	5.47	5.57	17.96	33.00	-15.04

HSUPA BAND V

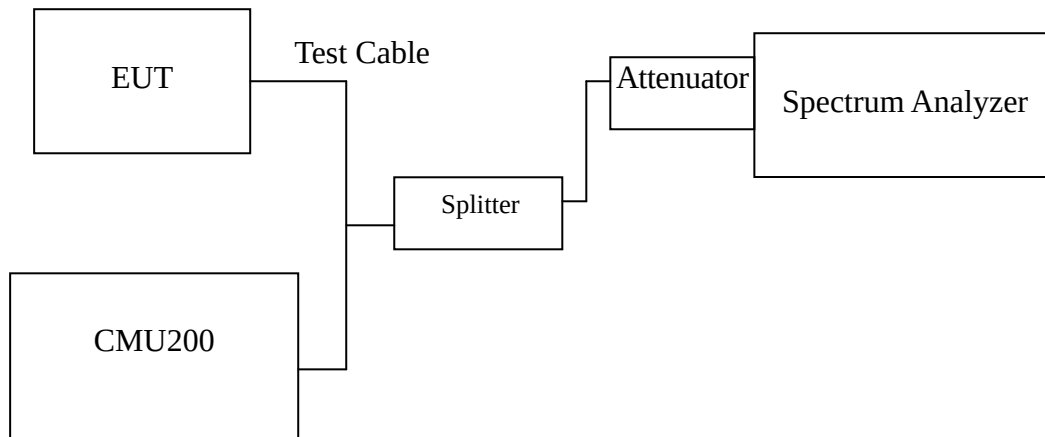
Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
4132	825.9000	V	15.1	3.39	6.26	17.97	38.45	-20.48
	826.8200	H	20.83	3.39	6.26	*23.70	38.45	-14.75
4182	836.7800	V	12.85	3.4	6.37	15.82	38.45	-22.63
	837.5600	H	20.49	3.41	6.38	23.46	38.45	-14.99
4233	846.8000	V	13.91	3.4	6.4	16.91	38.45	-21.54
	847.1000	H	20.5	3.4	6.4	23.50	38.45	-14.95

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

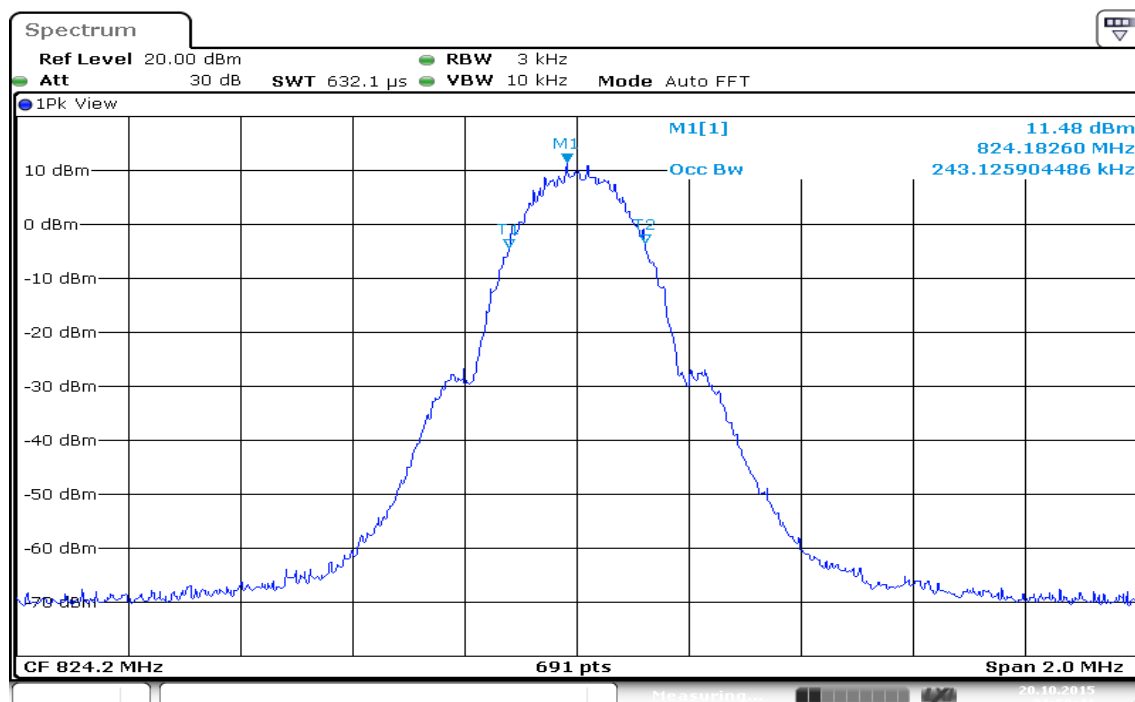
Test Mode	CH	Frequency (MHz)	99% Bandwidth (kHz)
GPRS 850	128	824.20	243.1259
	190	836.60	*246.0202
	251	848.80	246.0202
EDGE 850	128	824.20	240.2315
	190	836.60	243.1259
	251	848.80	*248.9146

Test Mode	CH	Frequency (MHz)	99% Bandwidth (kHz)
GPRS 1900	512	1850.20	*243.1259
	661	1880.00	243.1259
	810	1909.80	243.1259
EDGE 1900	512	1850.20	240.2315
	661	1880.00	240.2315
	810	1909.80	*243.1259

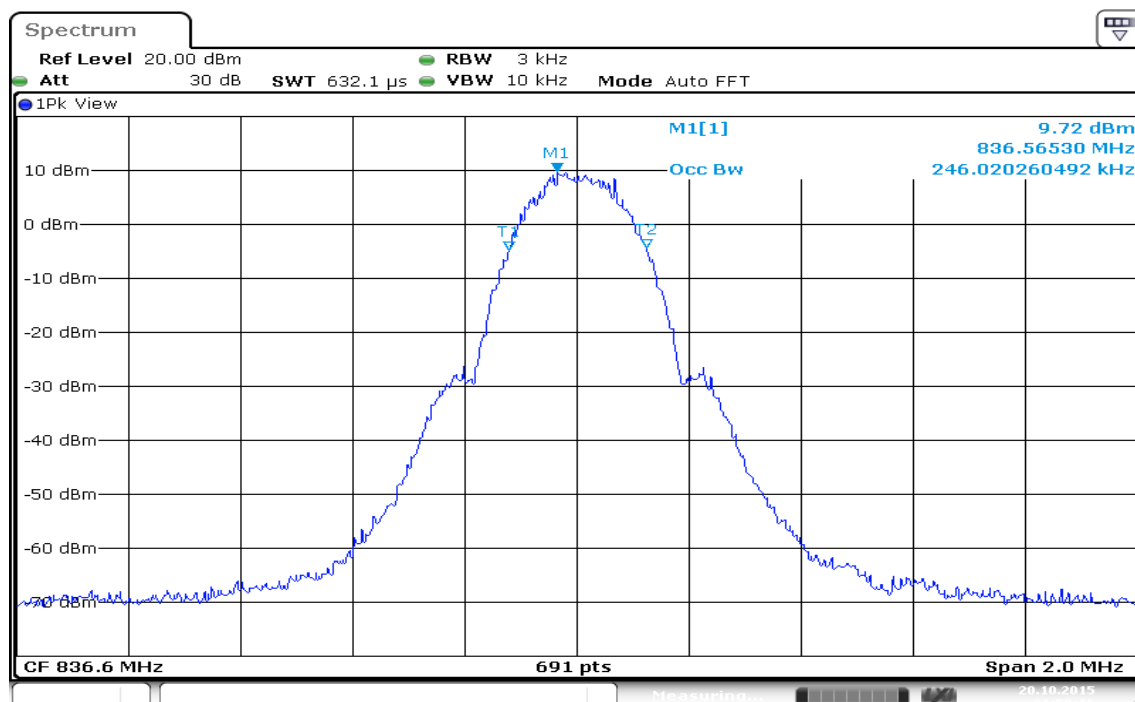
Test Mode	CH	Frequency (MHz)	99% Bandwidth (MHz)
WCDMA (Band II)	9262	1852.40	*4.1534
	9400	1880.00	4.1534
	9538	1907.60	4.1389
WCDMA (Band V)	4132	826.40	4.1244
	4182	836.40	*4.1389
	4233	846.60	4.1389
WCDMA / HSDPA (BAND II)	9262	1852.40	*4.1534
	9400	1880.00	4.1389
	9538	1907.60	4.1244
WCDMA / HSDPA (BAND V)	4132	826.40	*4.1534
	4182	836.40	4.1534
	4233	846.60	4.1389
WCDMA / HSUPA (BAND II)	9262	1852.40	*4.1534
	9400	1880.00	4.1534
	9538	1907.60	4.1244
WCDMA / HSUPA (BAND V)	4132	826.40	4.1244
	4182	836.40	*4.1389
	4233	846.60	4.1389

Test Plot

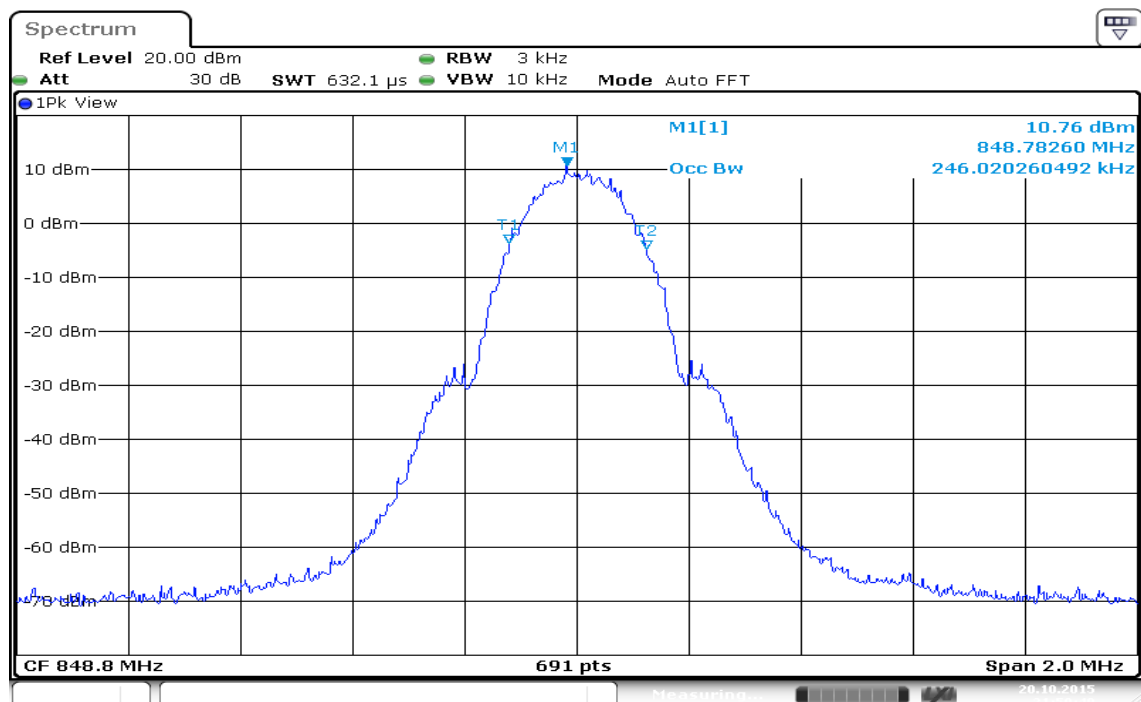
GPRS 850 (CH Low)



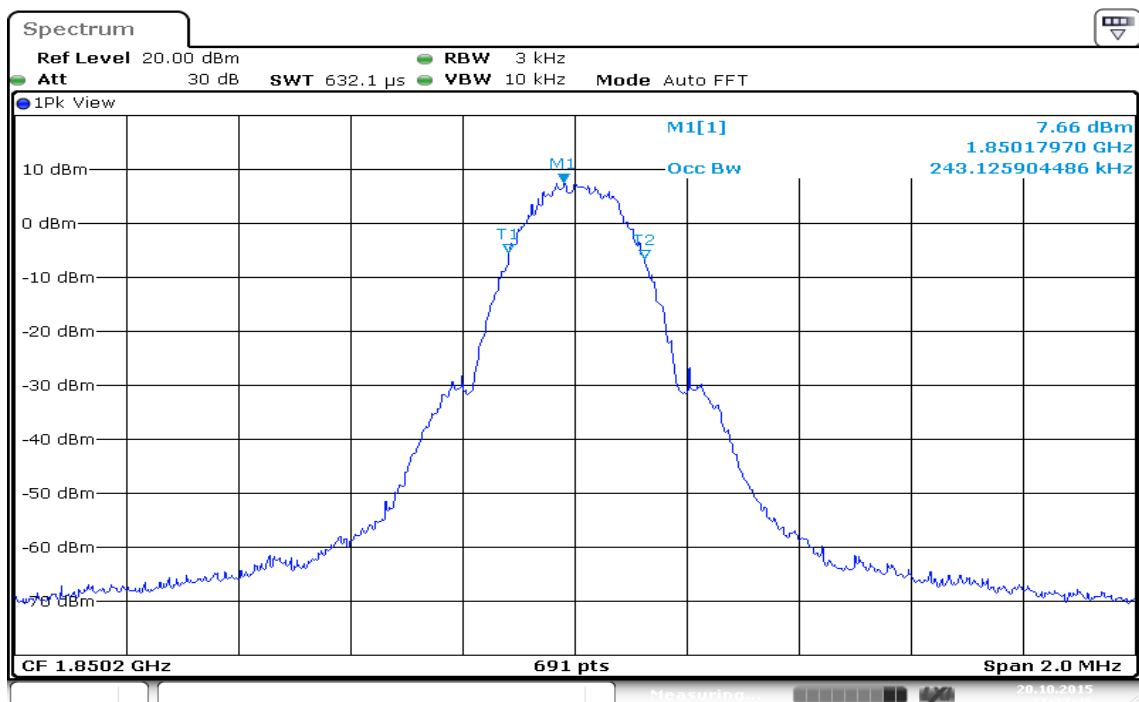
GPRS 850 (CH Mid)



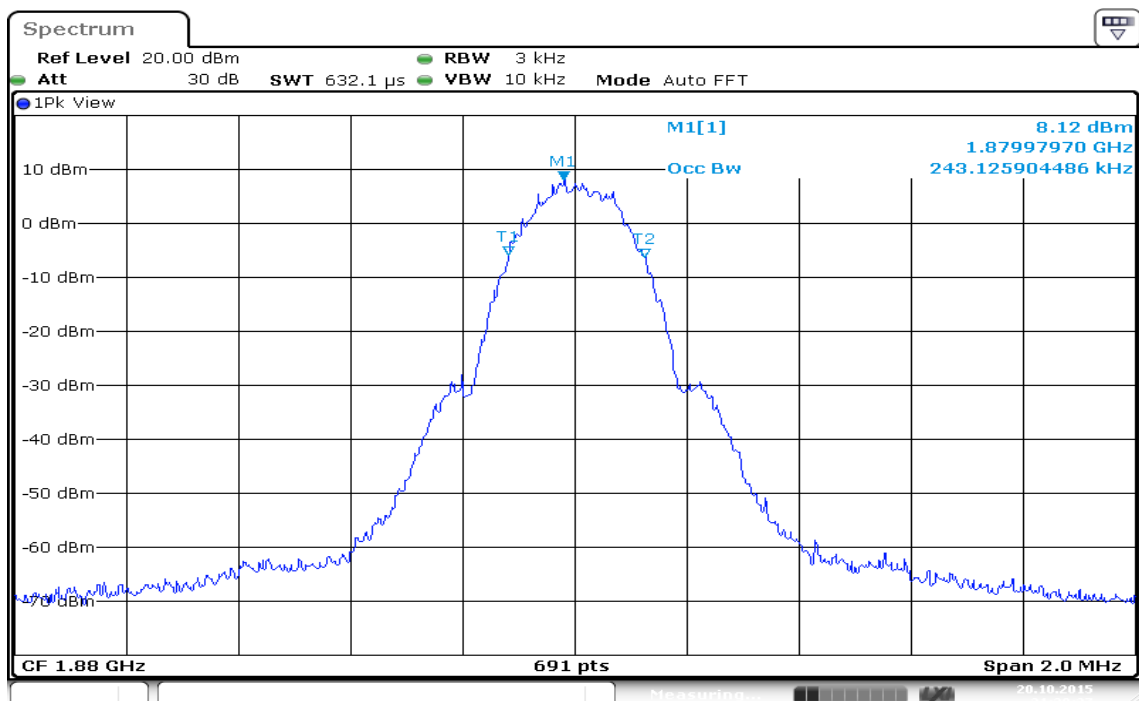
GPRS 850(CH High)



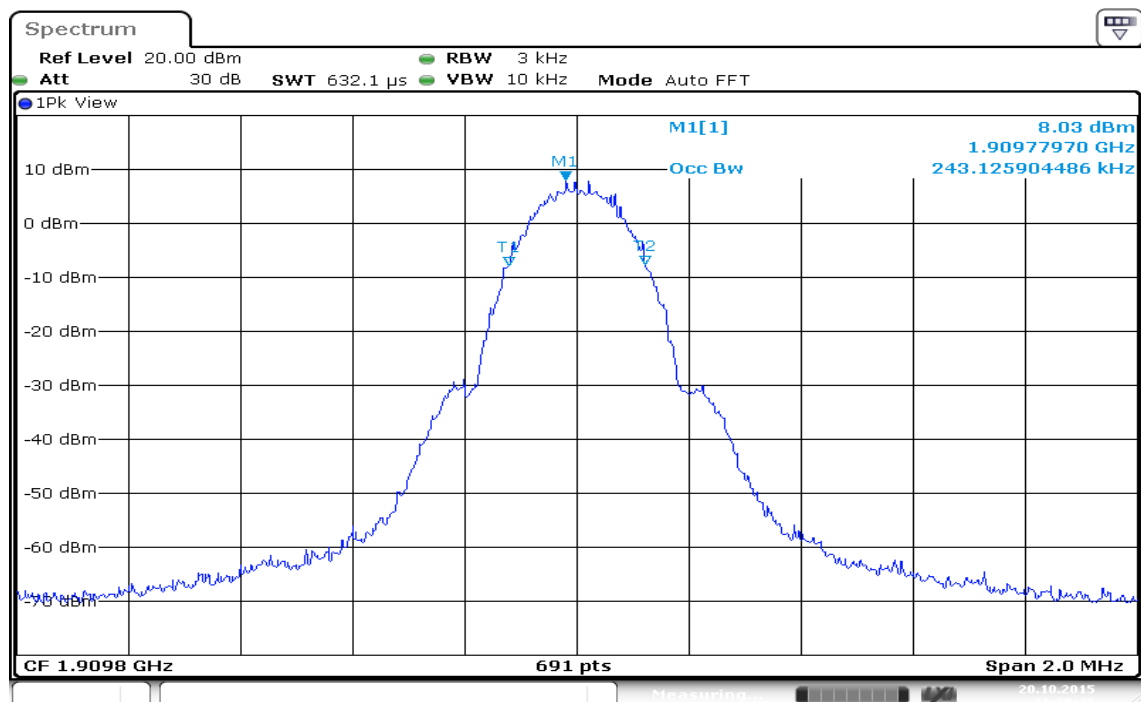
GPRS 1900 (CH Low)



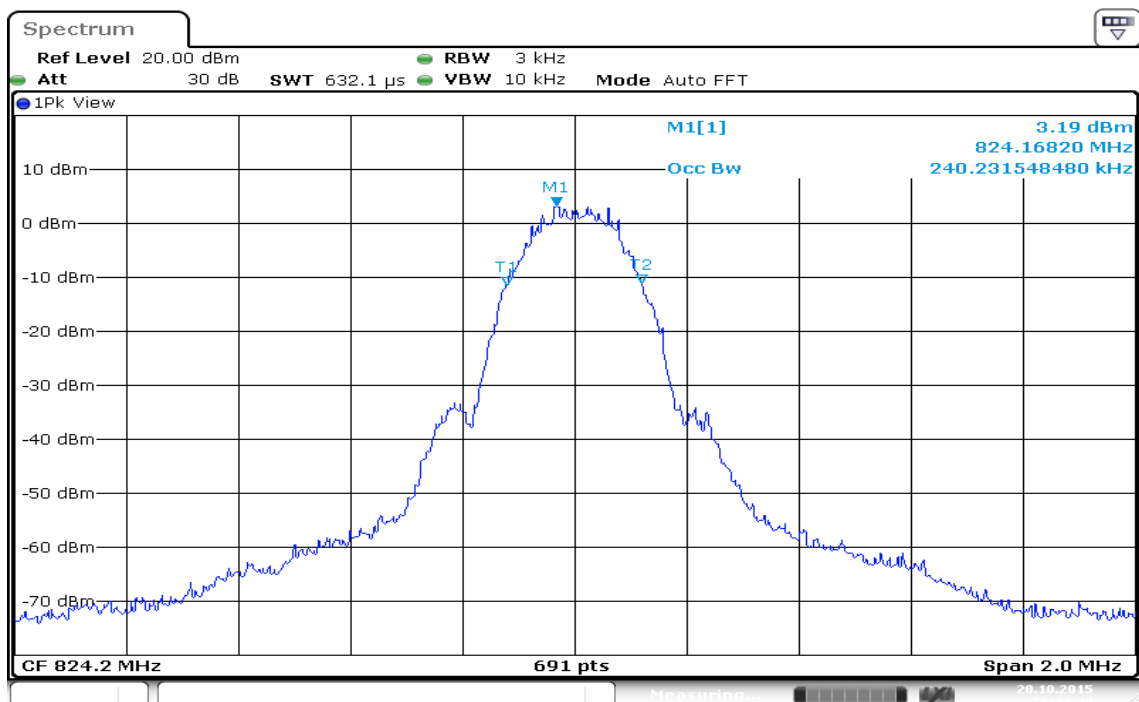
GPRS 1900 (CH Mid)



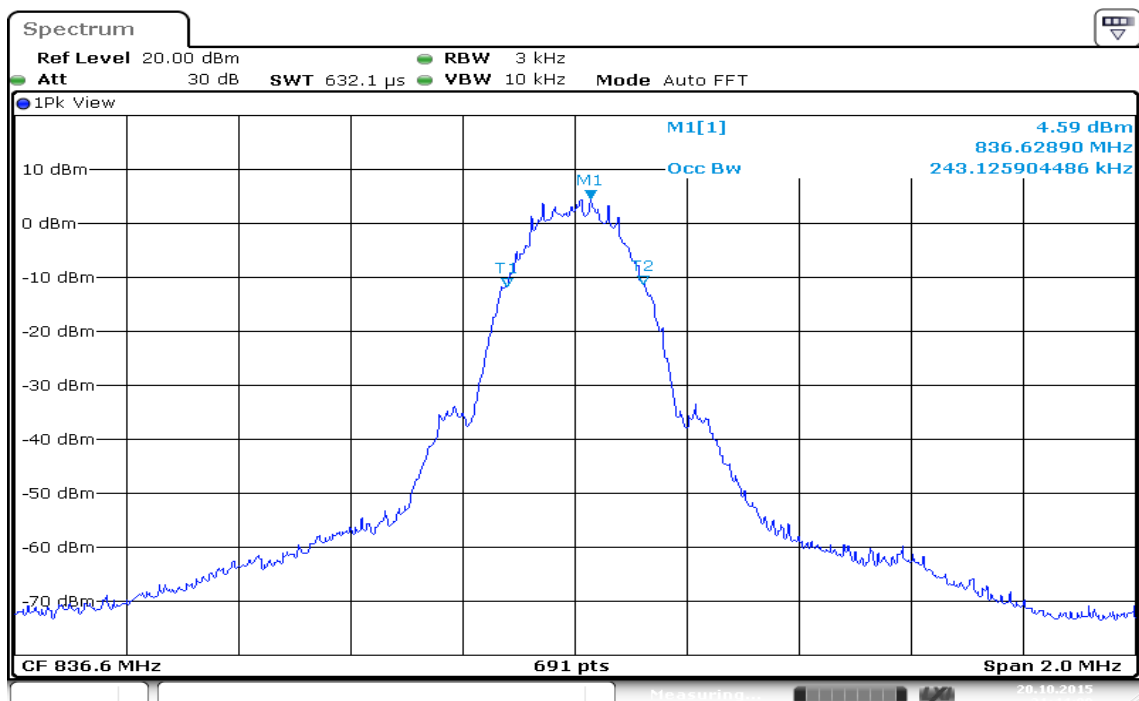
GPRS 1900 (CH High)



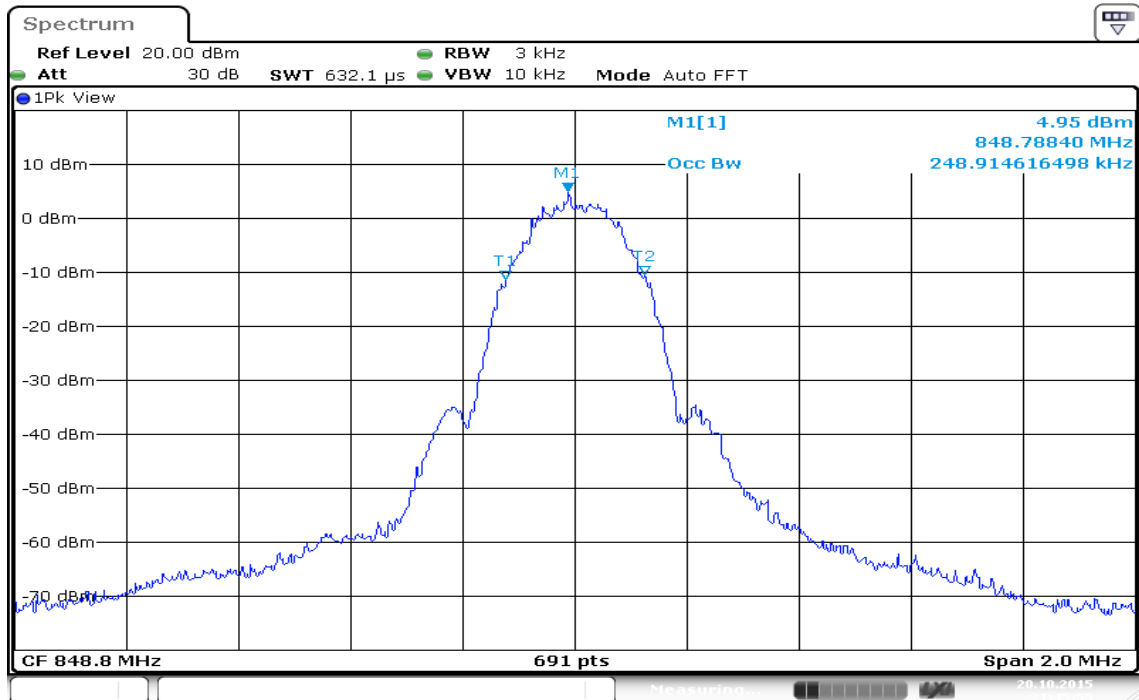
EDGE 850 (CH Low)



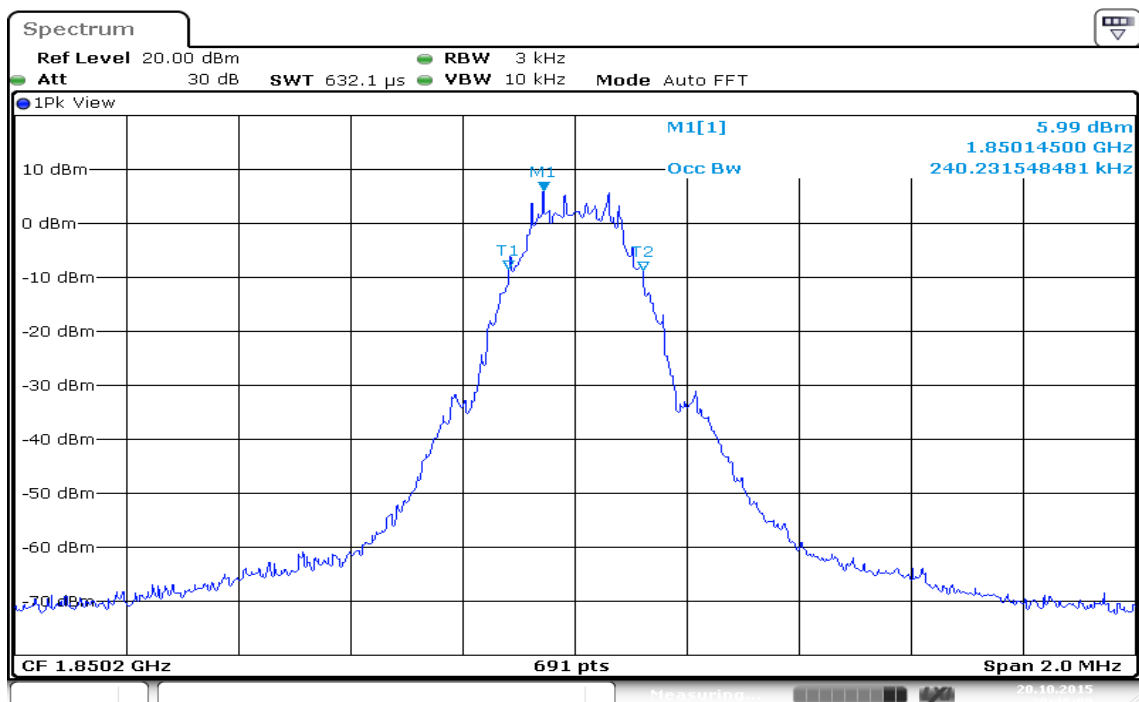
EDGE 850 (CH Mid)



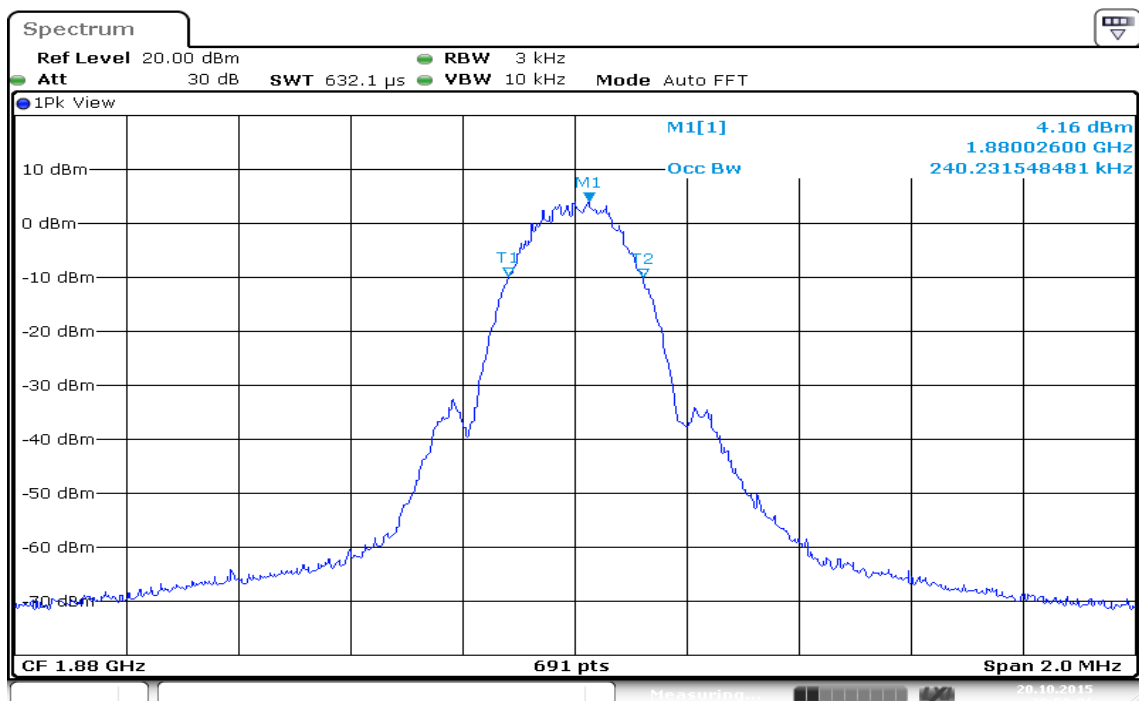
EDGE 850 (CH High)



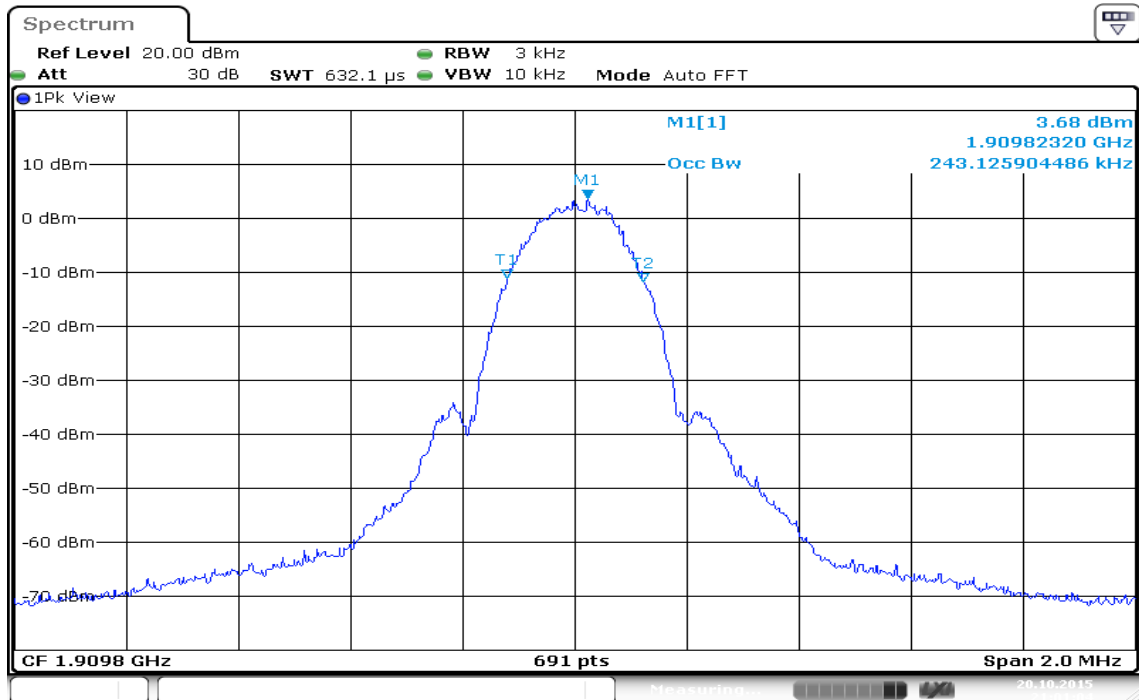
EDGE 1900 (CH Low)



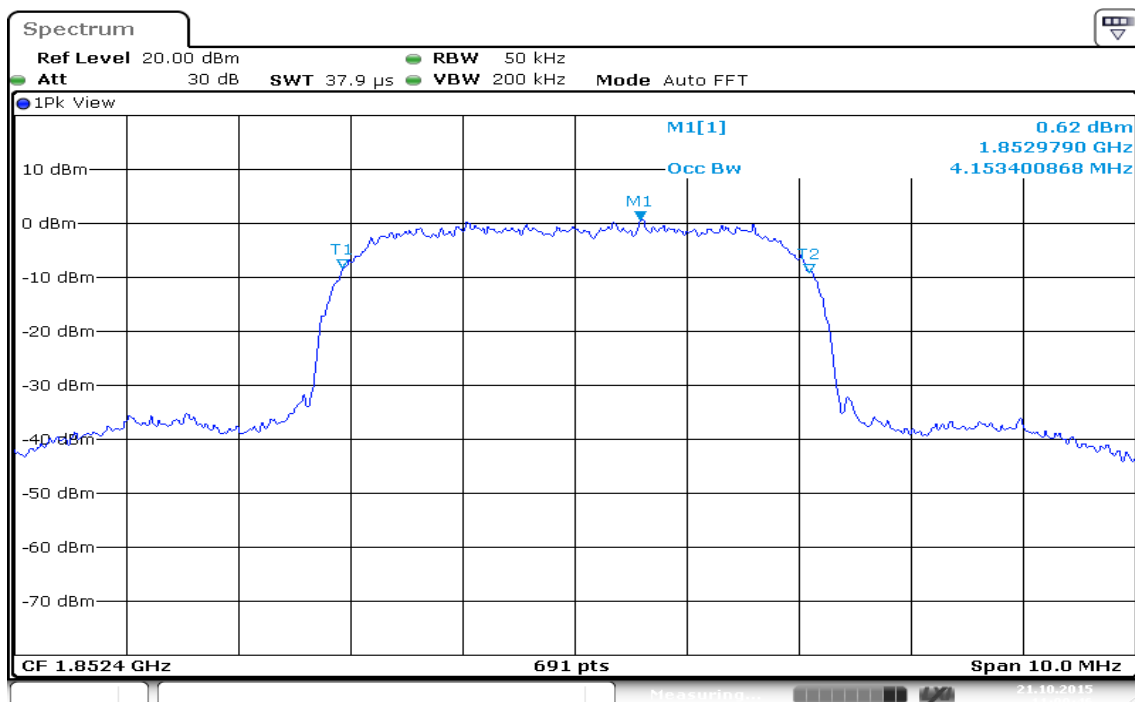
EDGE 1900 (CH Mid)



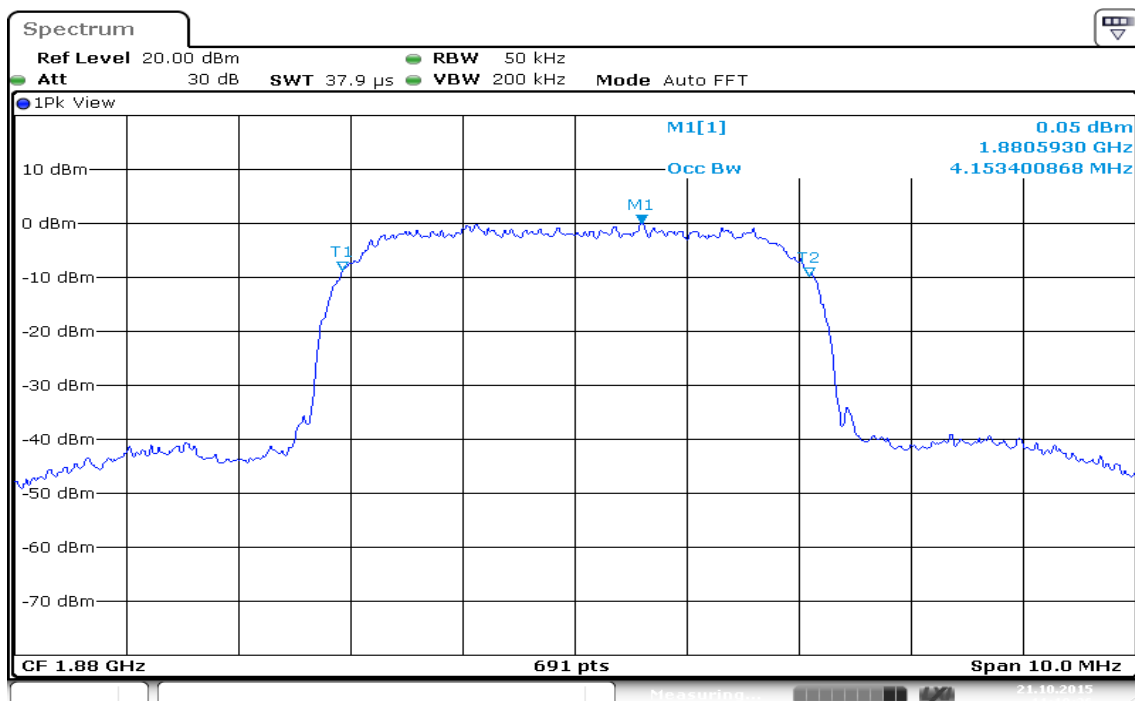
EDGE 1900 (CH High)



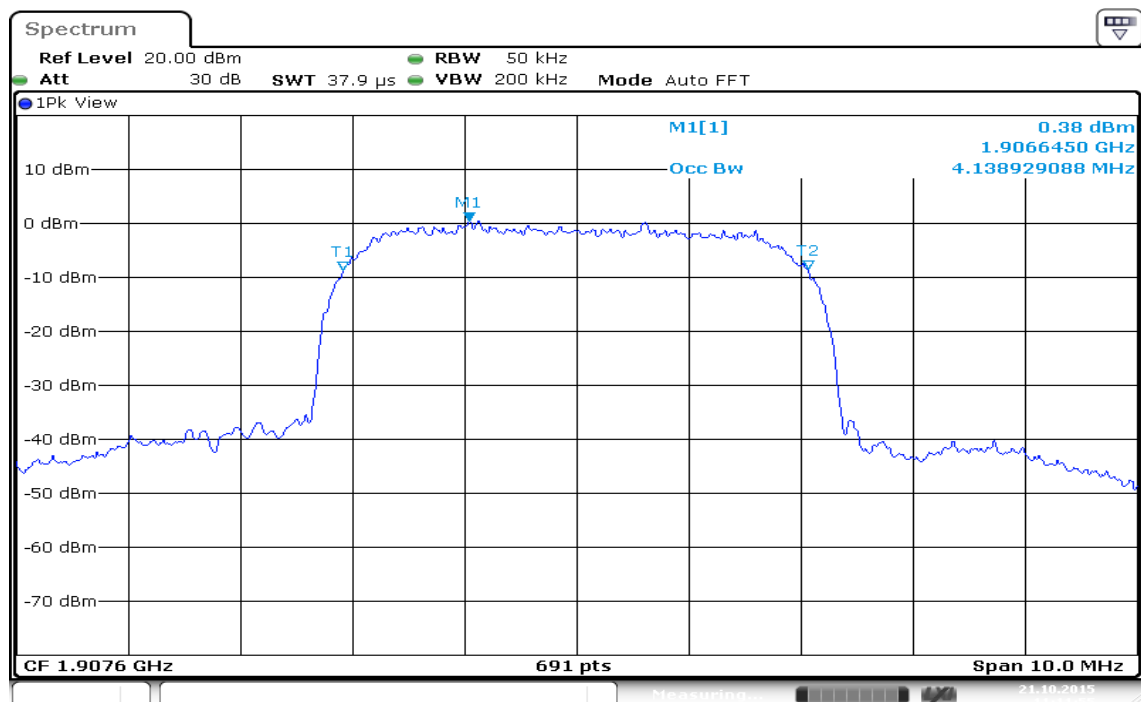
WCDMA Band II (CH Low)



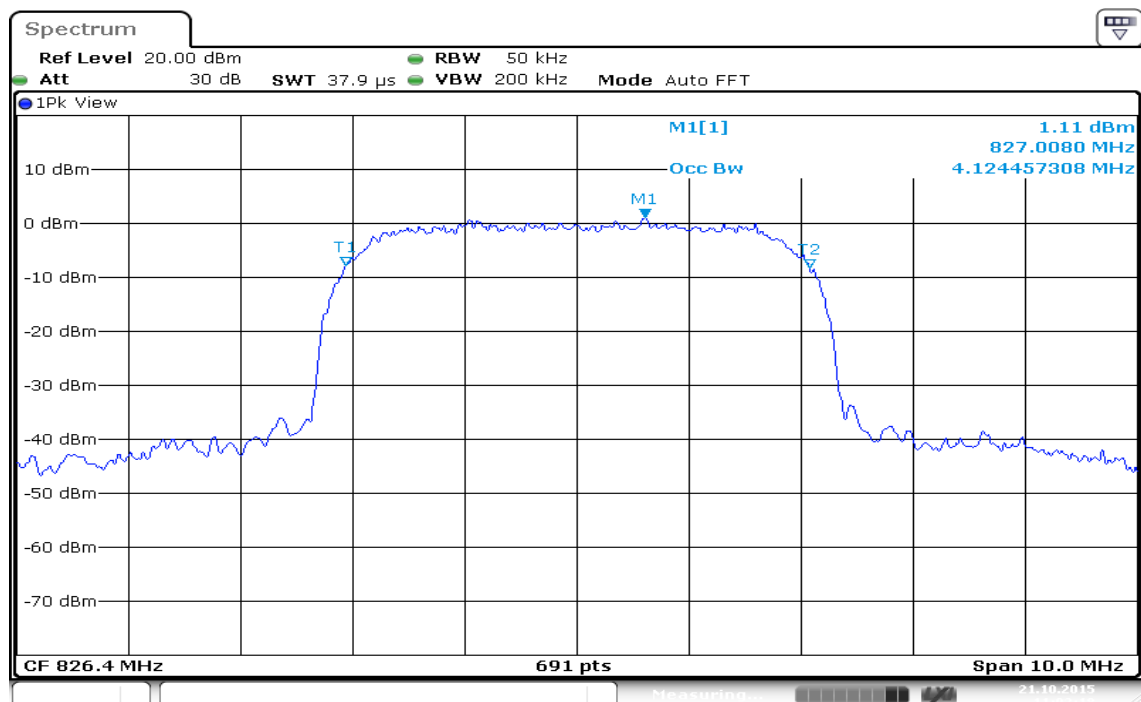
WCDMA Band II (CH Mid)



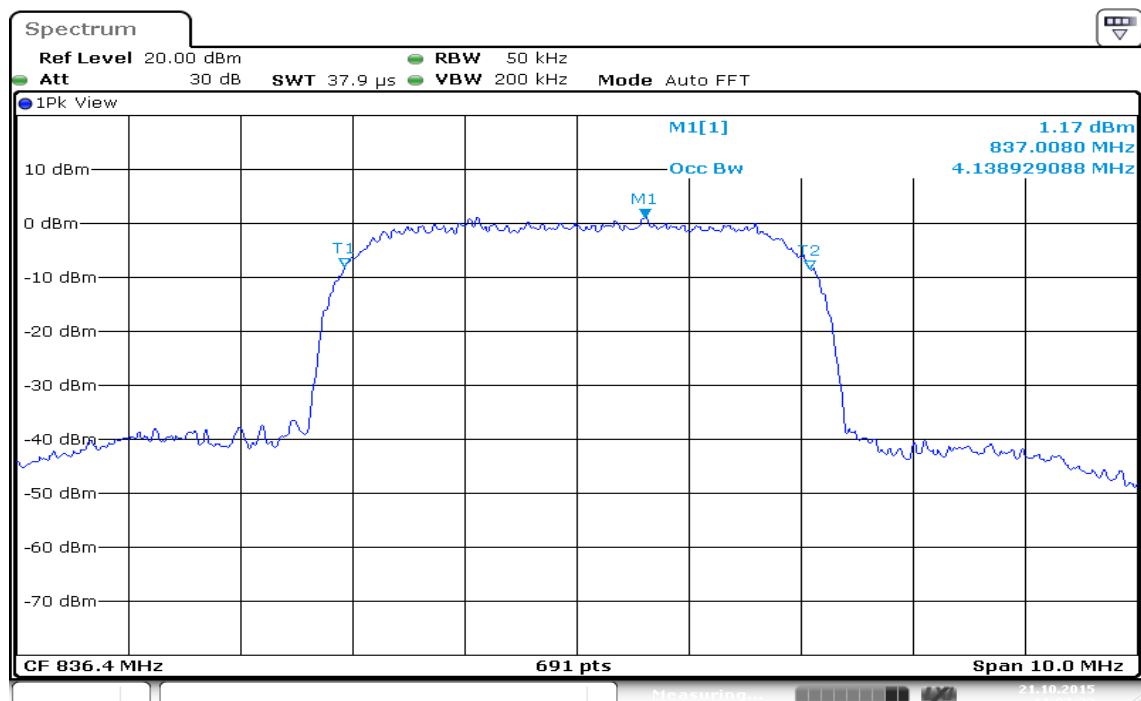
WCDMA Band II (CH High)



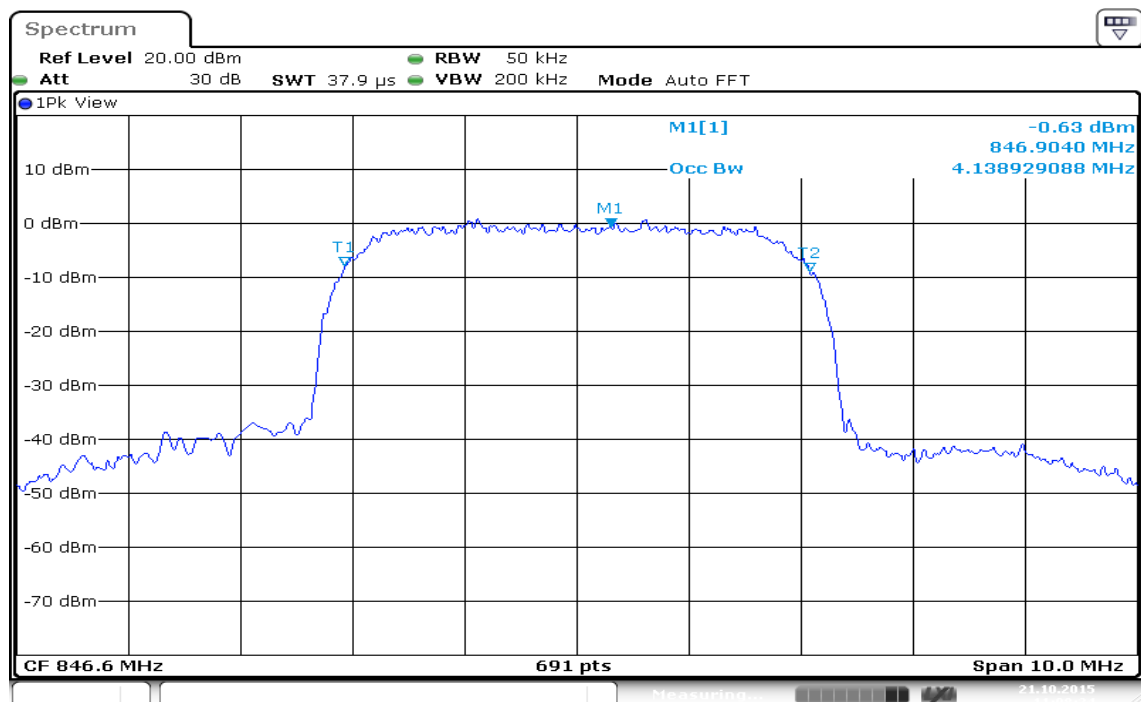
WCDMA Band V (CH Low)



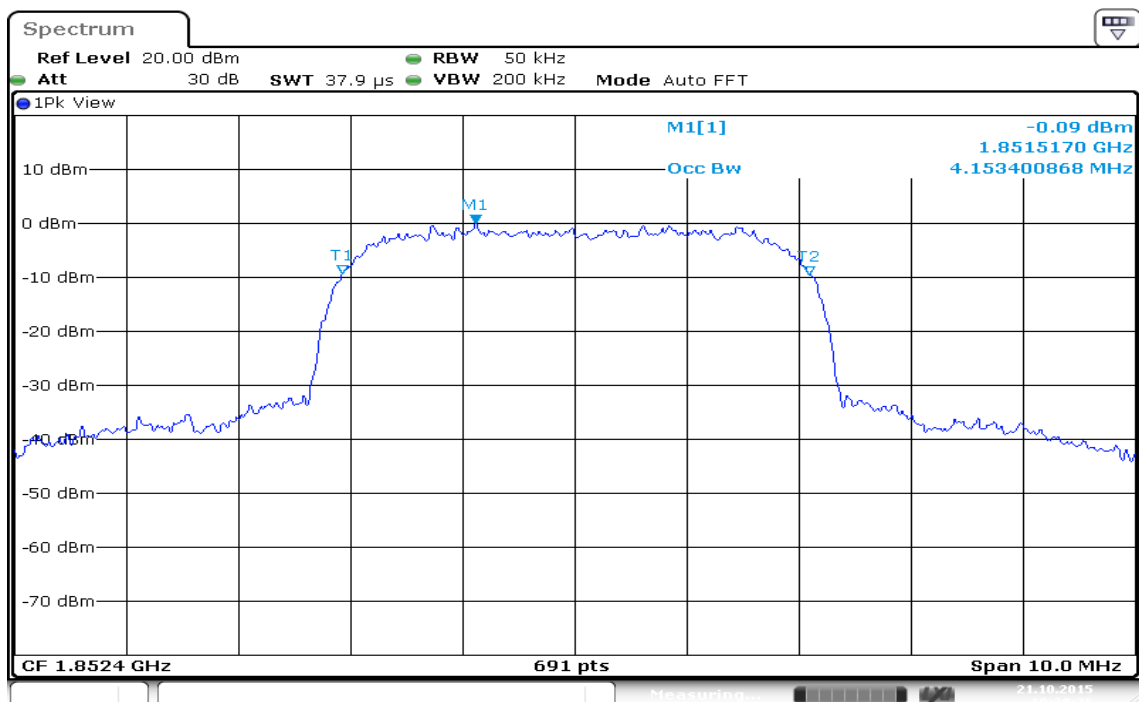
WCDMA Band V (CH Mid)



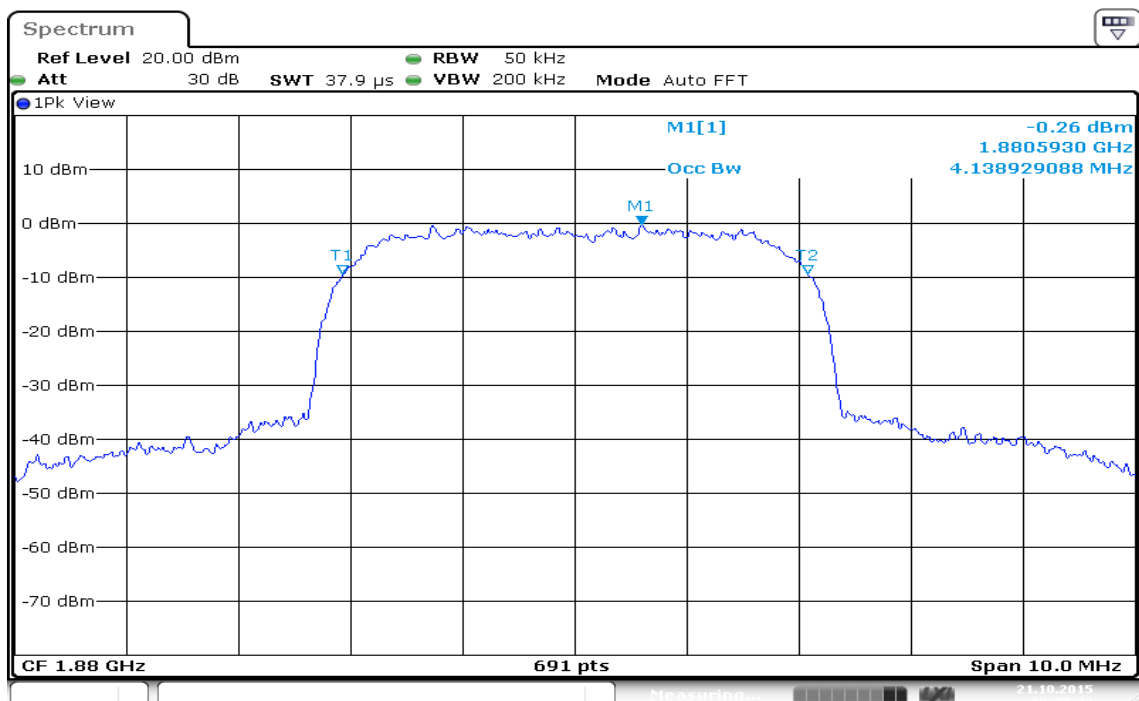
WCDMA Band V (CH High)



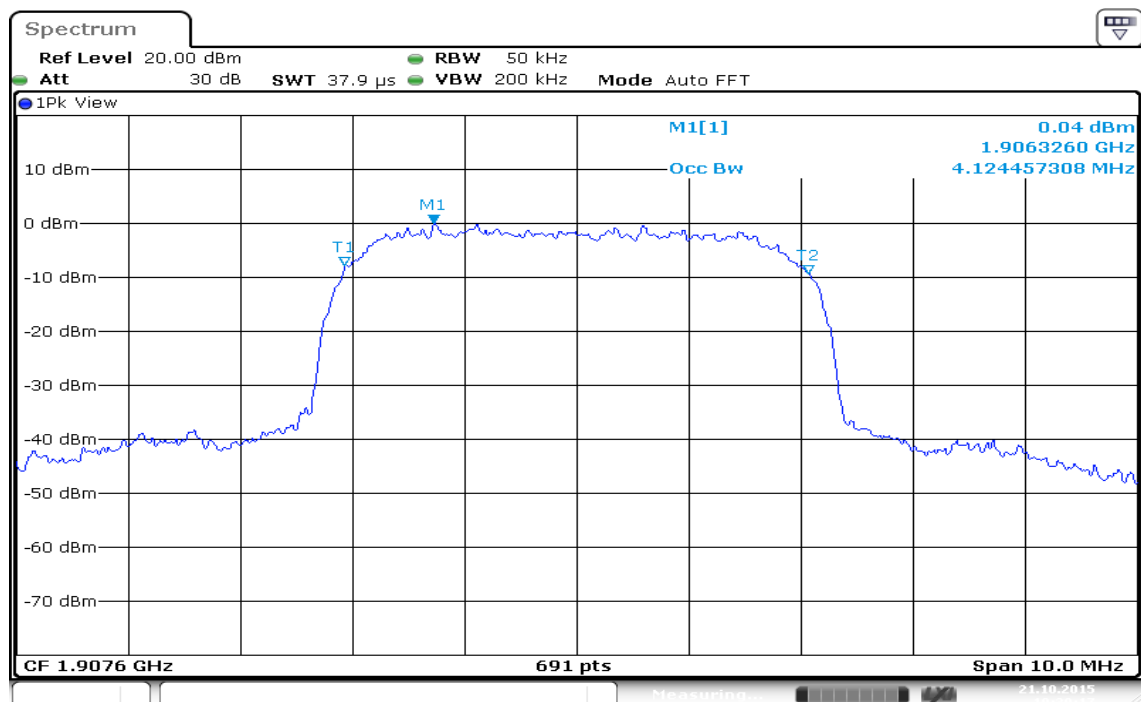
WCDMA / HSDPA Band II (CH Low)



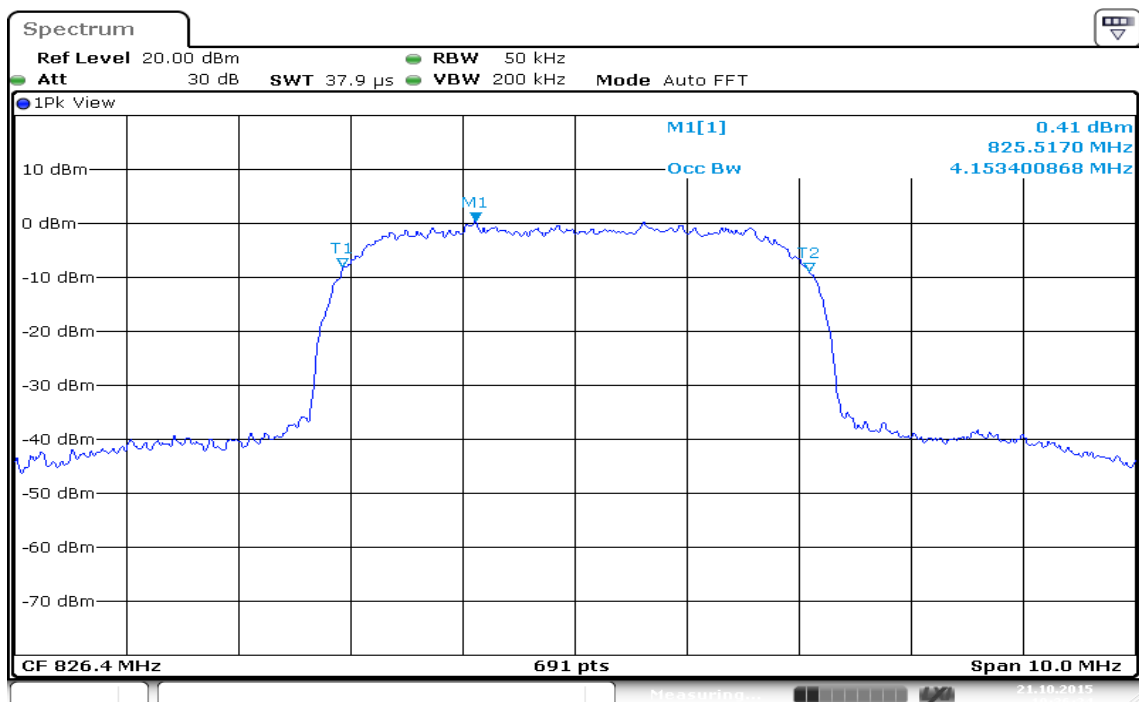
WCDMA / HSDPA Band II (CH Mid)



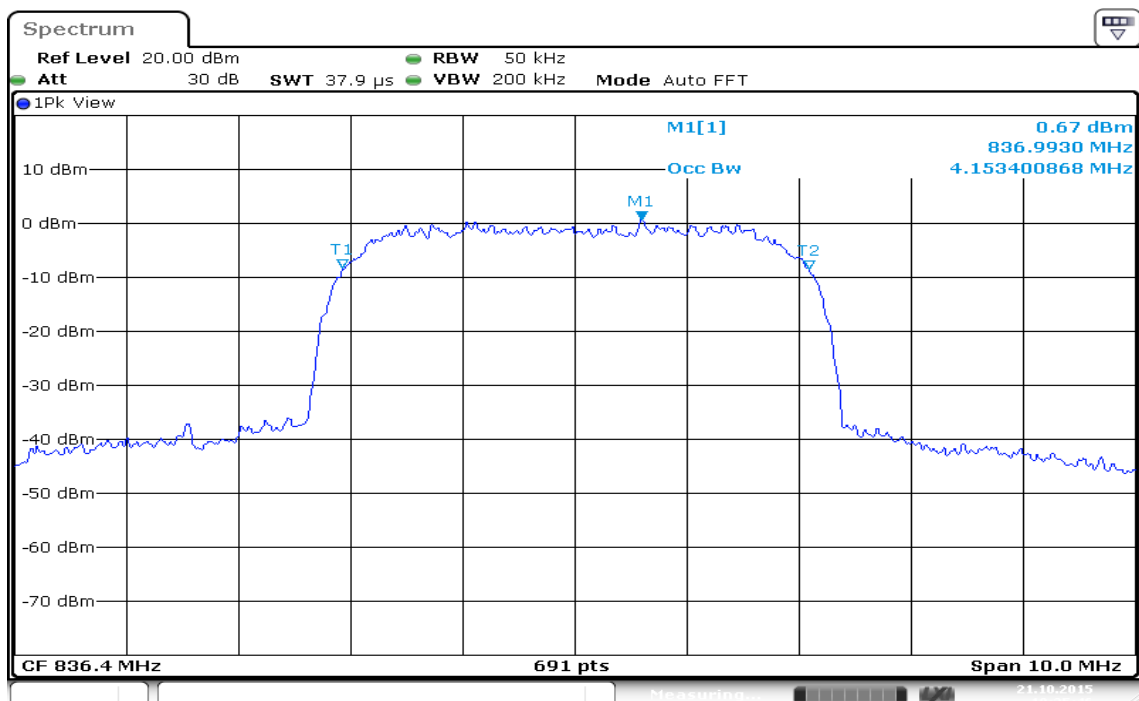
WCDMA / HSDPA Band II (CH High)



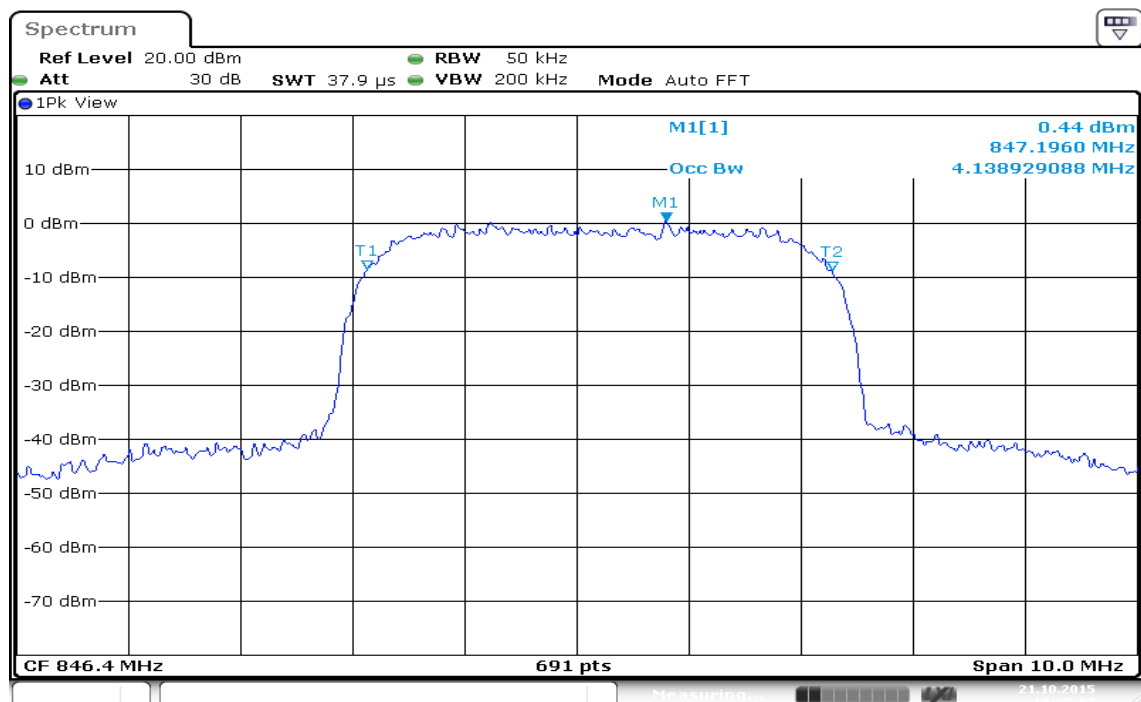
WCDMA / HSDPA Band V (CH Low)



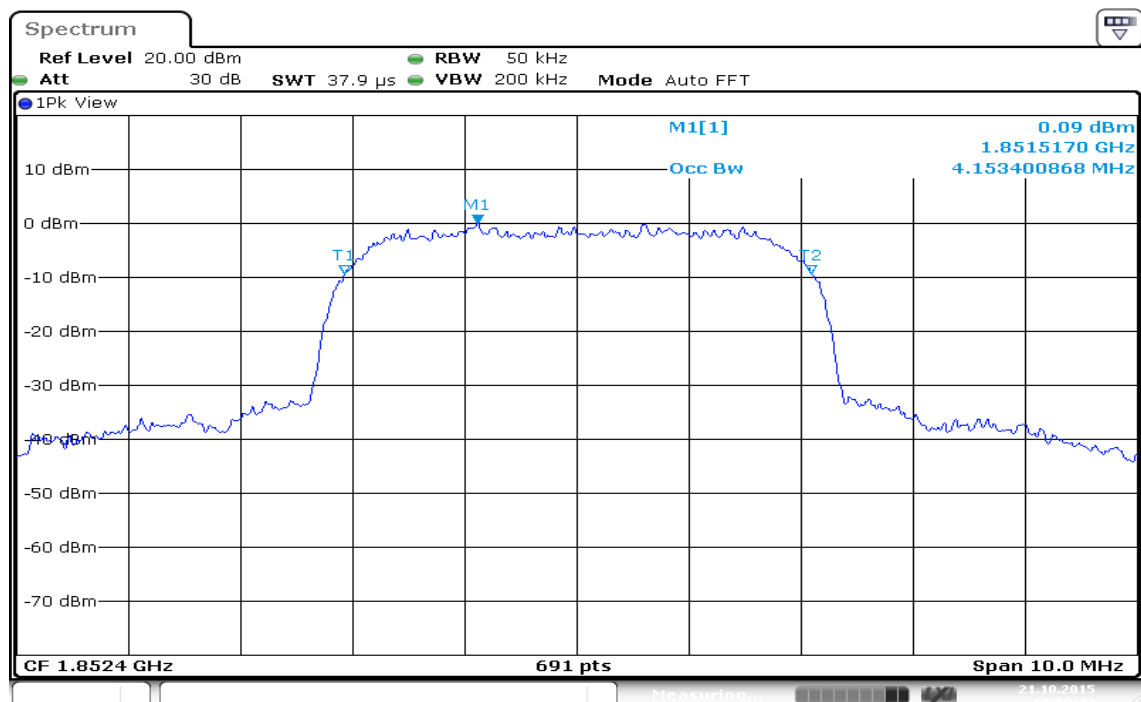
WCDMA / HSDPA Band V (CH Mid)



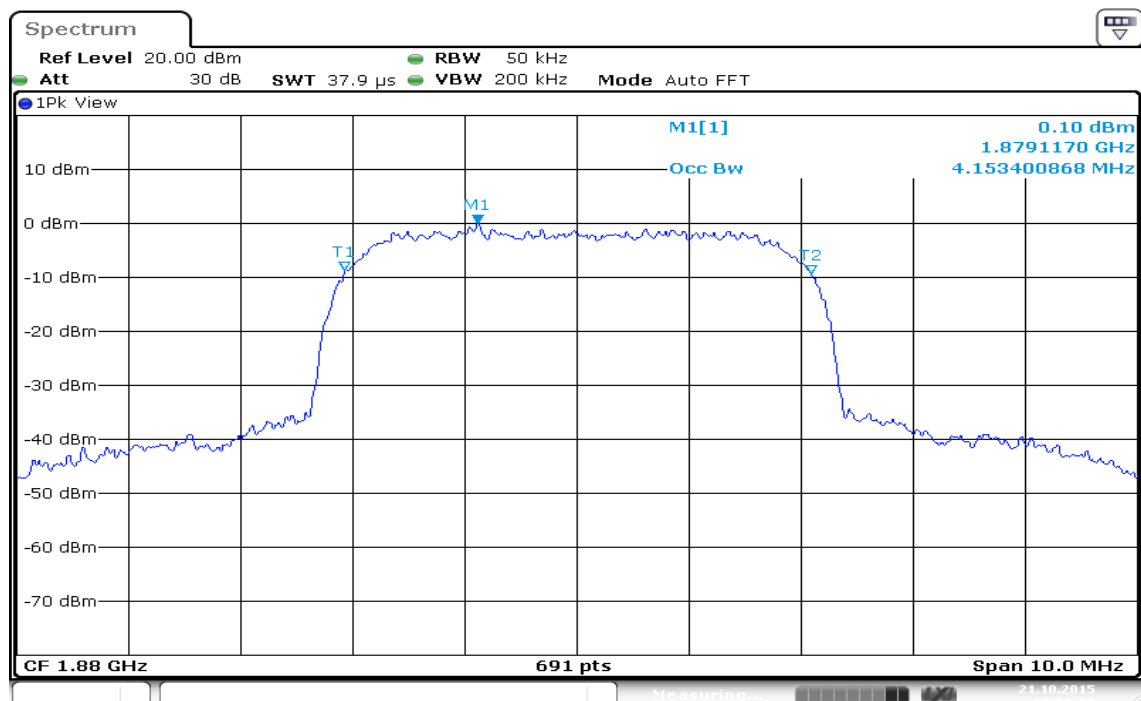
WCDMA / HSDPA Band V (CH High)



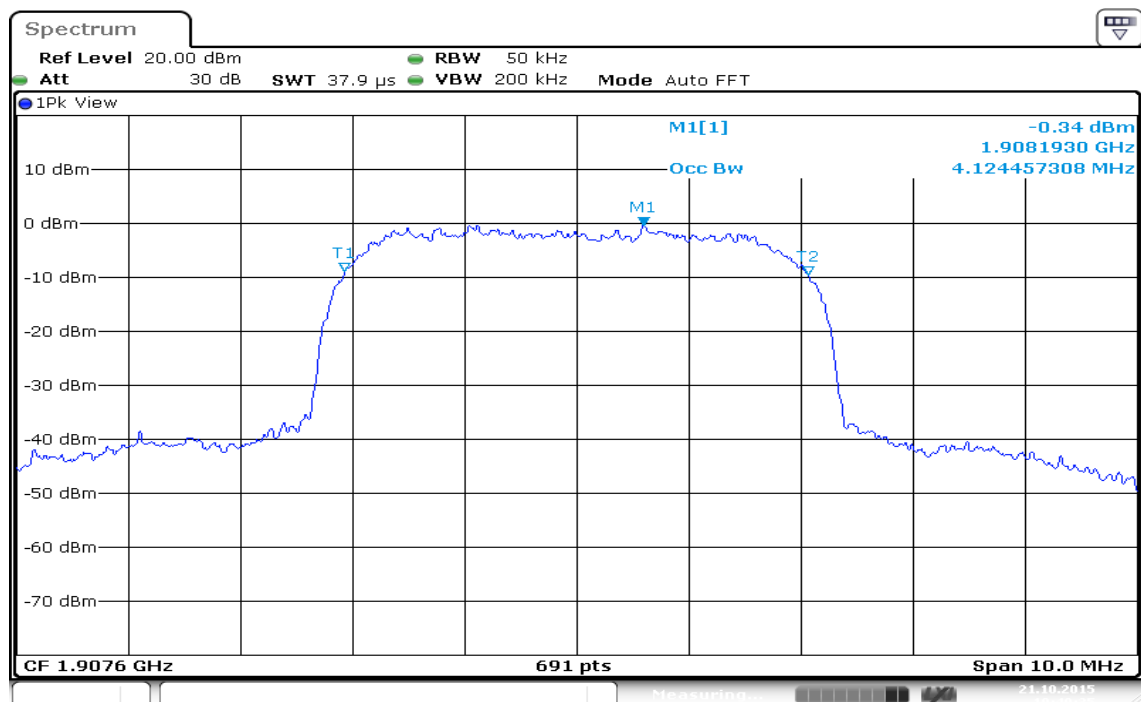
WCDMA / HSUPA Band II (CH Low)



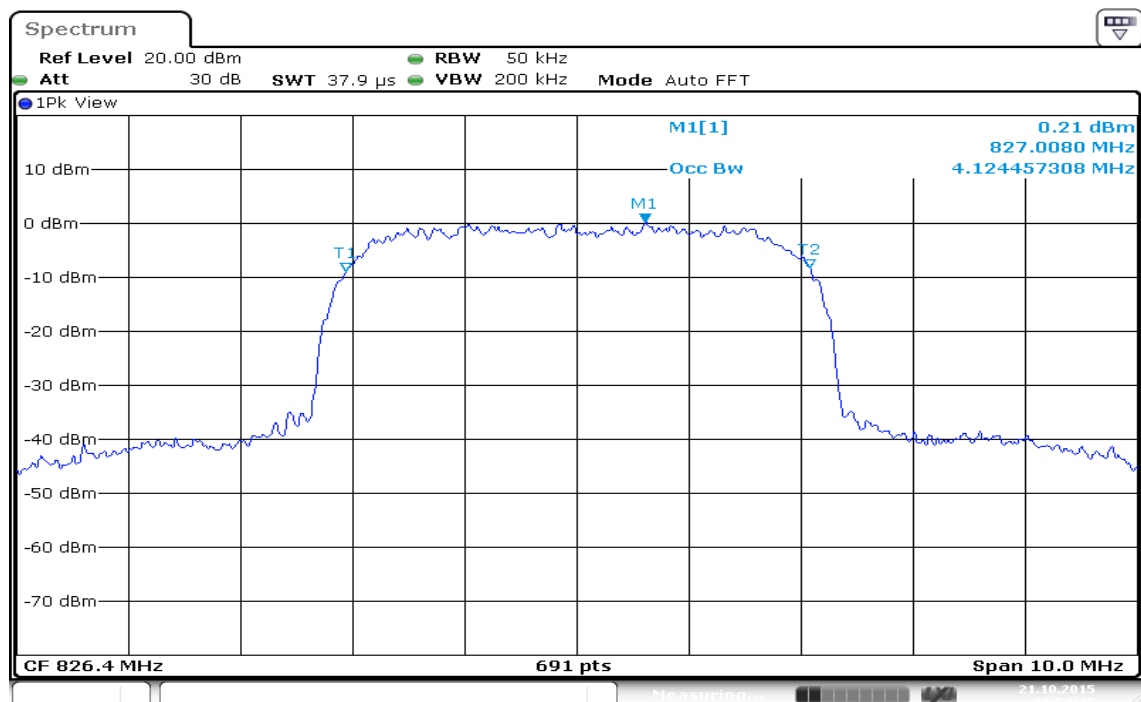
WCDMA / HSUPA Band II (CH Mid)



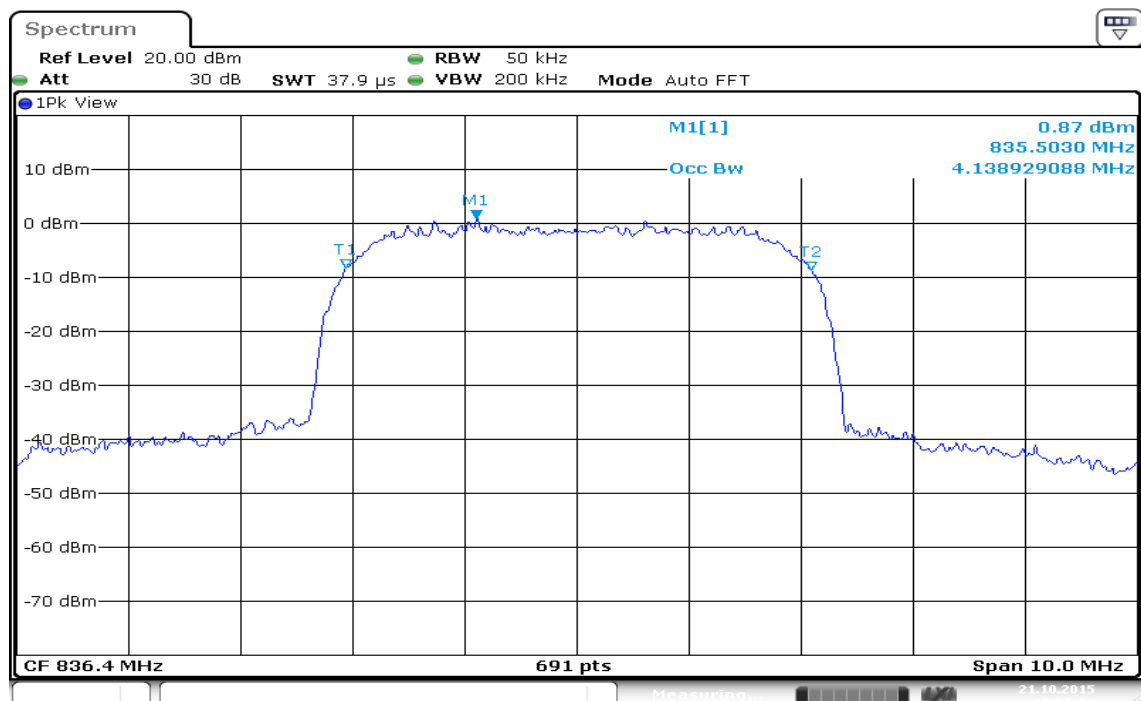
WCDMA / HSUPA Band II (CH High)



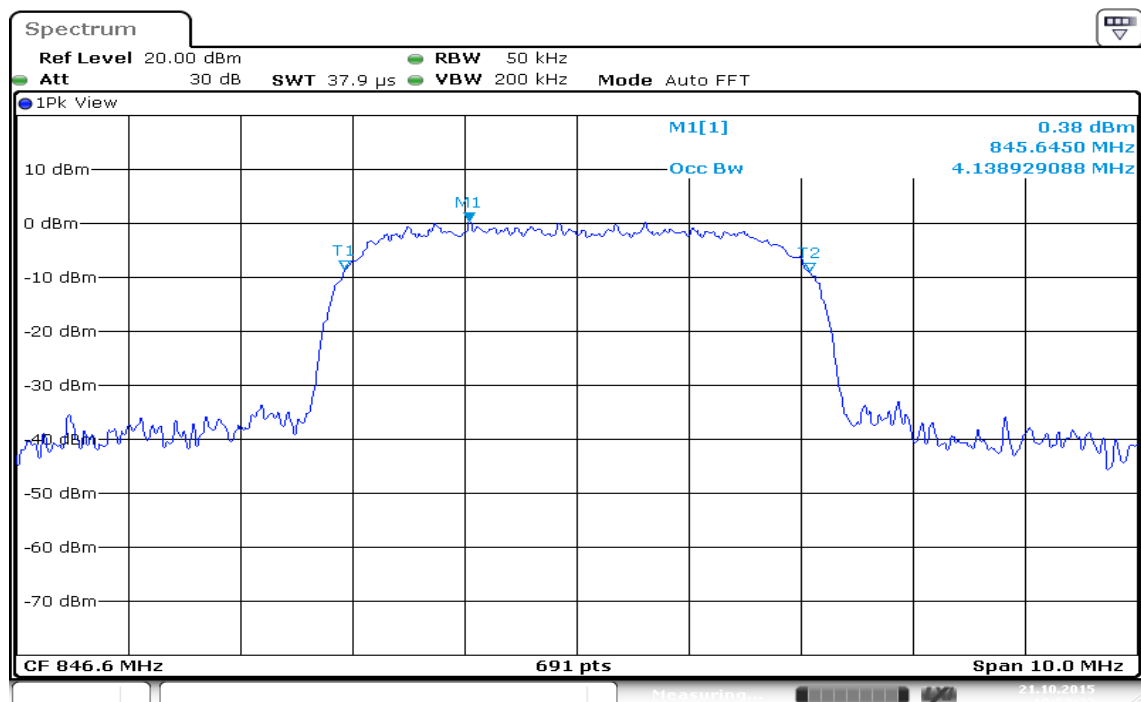
WCDMA / HSUPA Band V (CH Low).



WCDMA / HSUPA Band V (CH Mid)



WCDMA / HSUPA Band V (CH Mid)



7.5 OUT OF BAND EMISSION AT ANTENNA TERMINALS

LIMIT

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

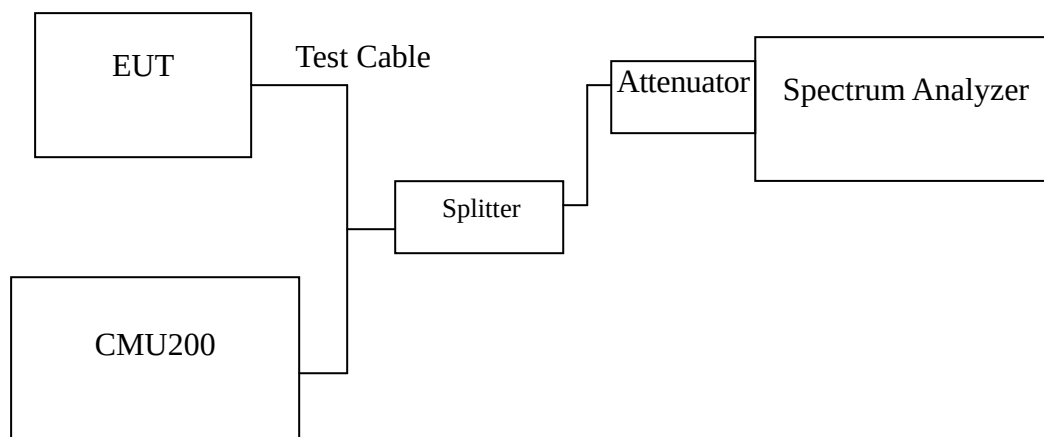
Out of Band Emissions: The mean power of emission must be attenuated below the mean power of the non-modulated carrier (P) on any frequency twice or more than twice the fundamental frequency by at least $43 + 10 \log P$ dB.

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

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

Test Configuration

Out of band emission at antenna terminals:



TEST PROCEDURE

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

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

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

TEST RESULTS

No non-compliance noted.

Test Data

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

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

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

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

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

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

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

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

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

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

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

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

Test Plot

GPRS 850

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

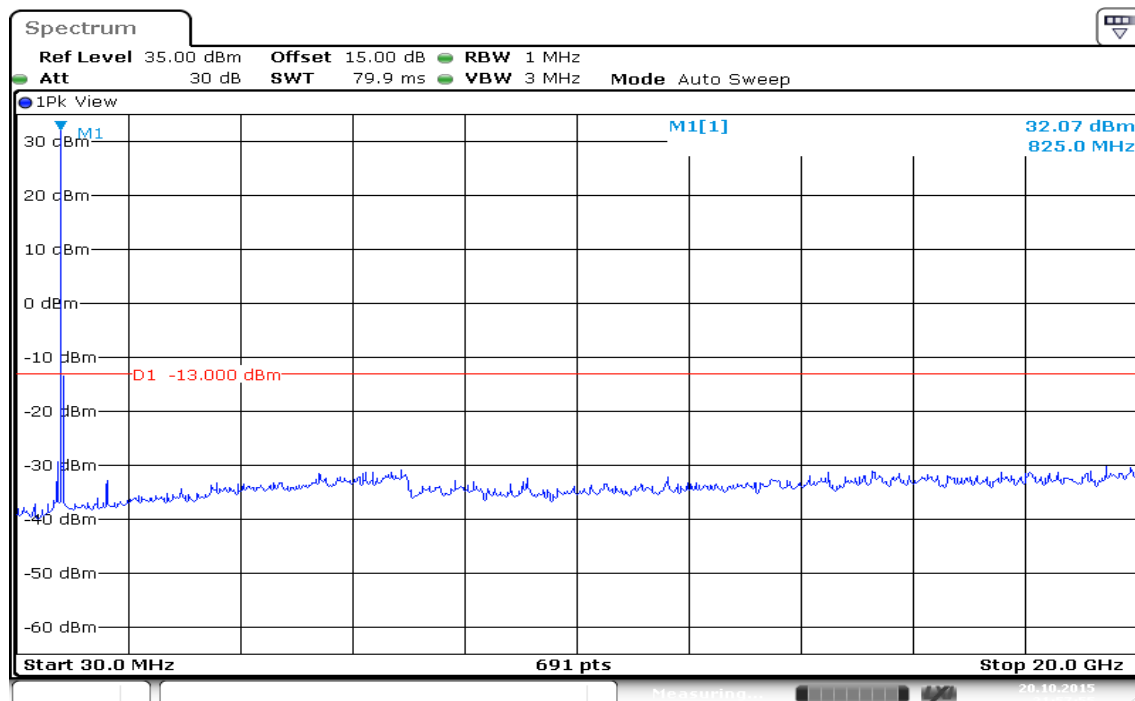


Figure 8-2: Out of Band emission at antenna terminals – GPRS CH Mid

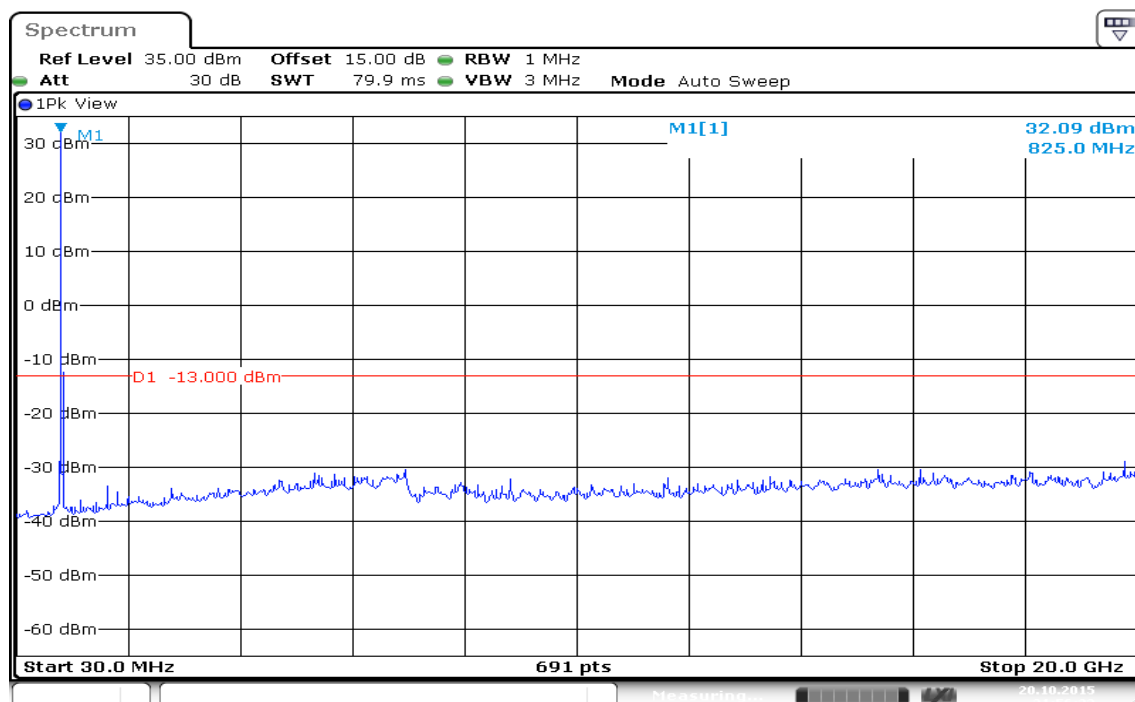
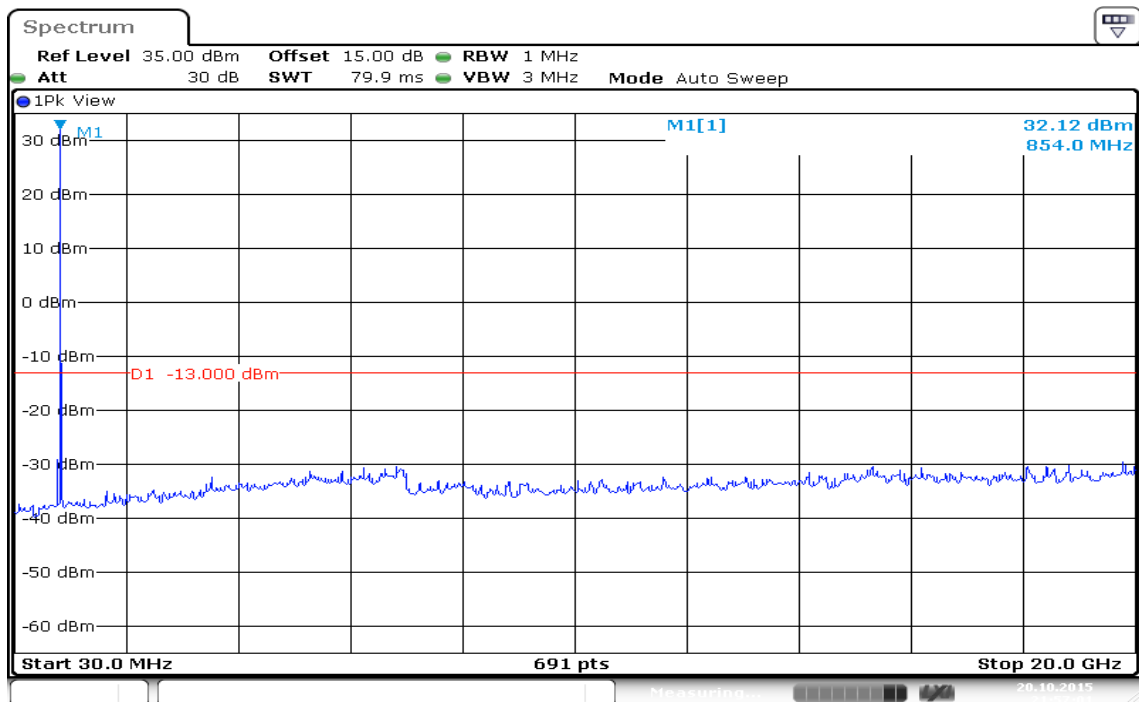


Figure 8-3: Out of Band emission at antenna terminals – GPRS CH High



GPRS 1900

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

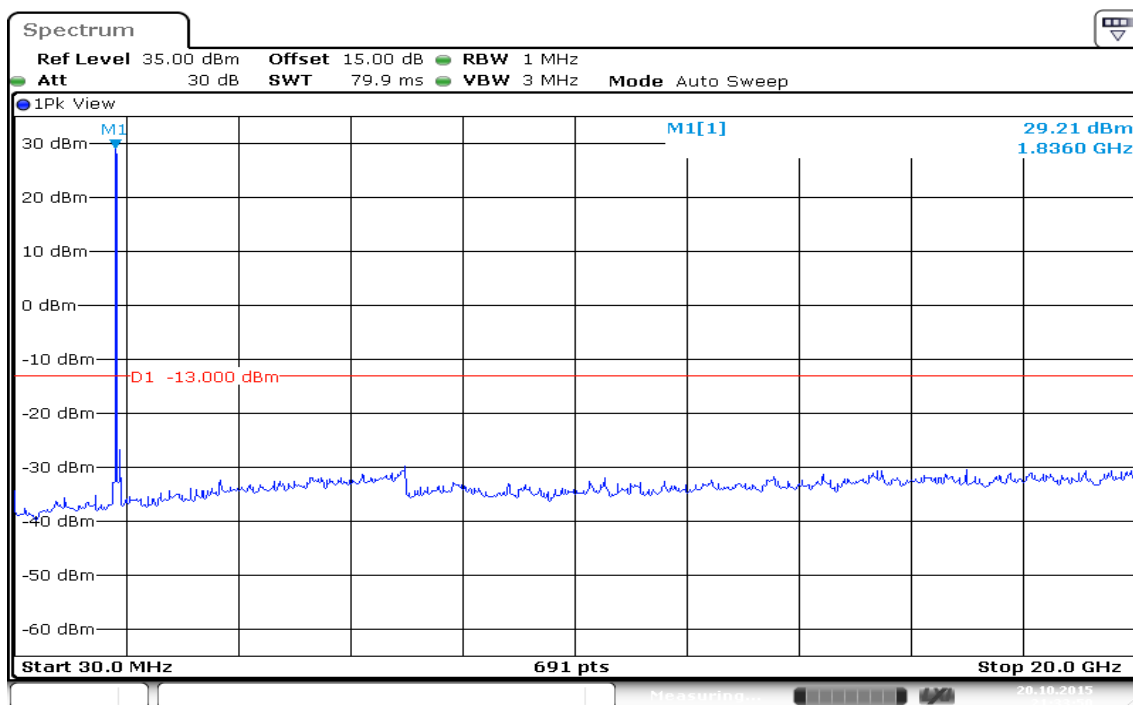


Figure 9-2: Out of Band emission at antenna terminals – GPRS CH Mid

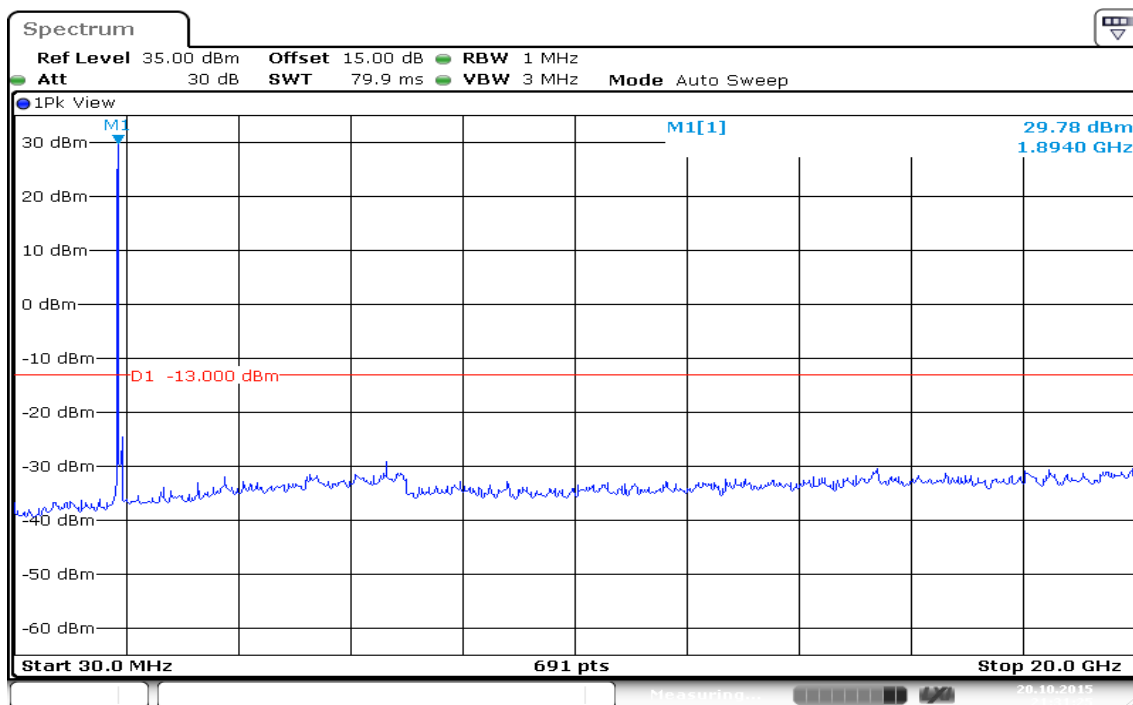
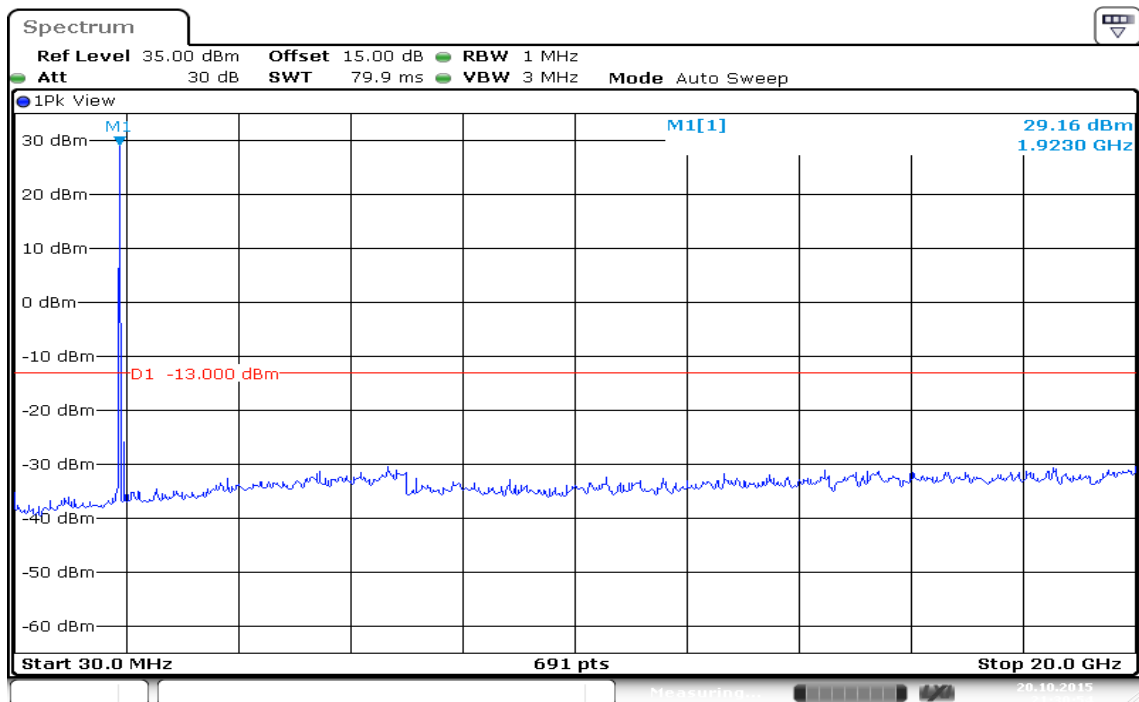


Figure 9-3: Out of Band emission at antenna terminals – GPRS CH High



GPRS 850

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

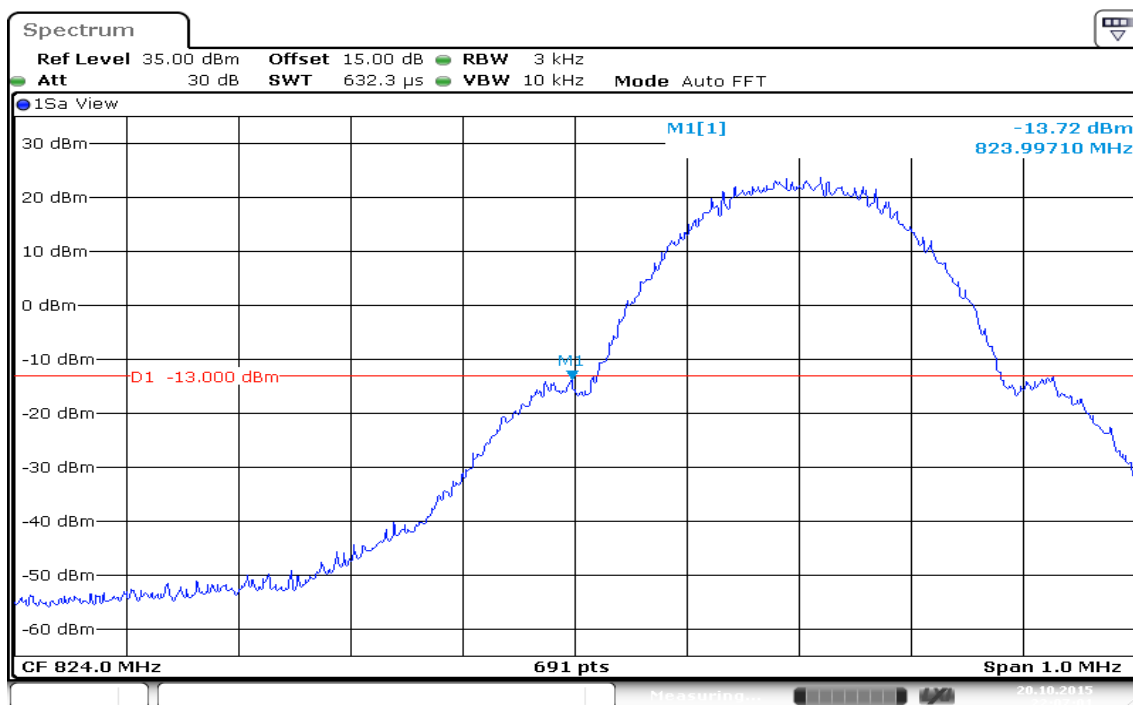
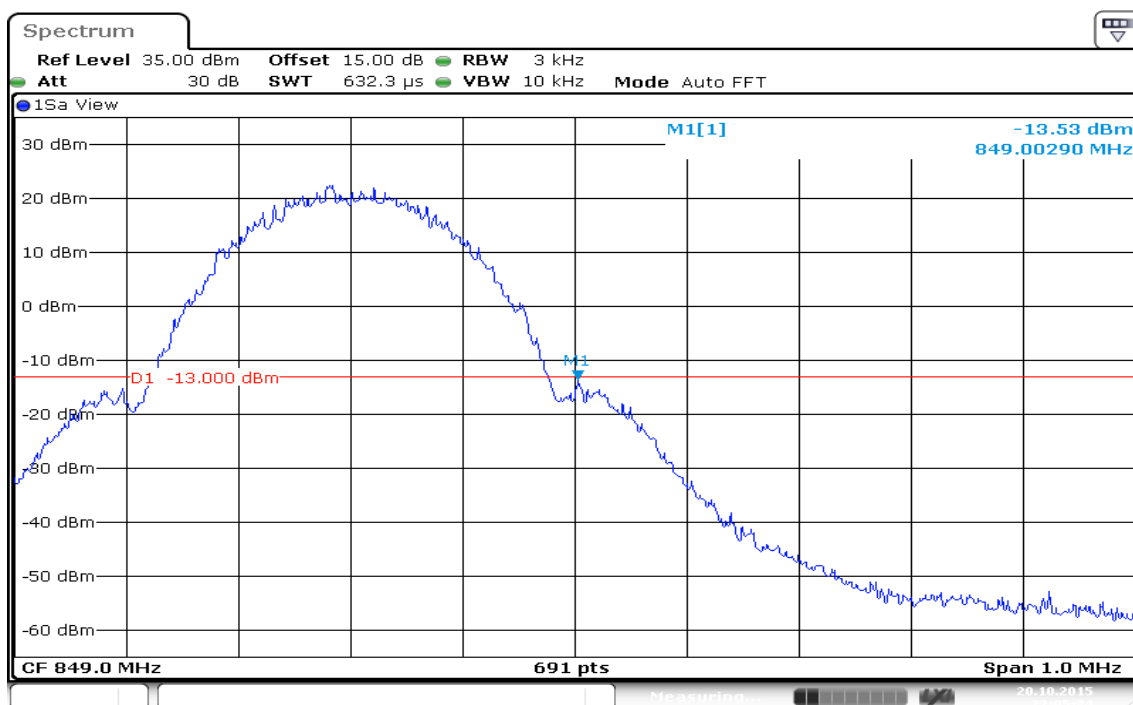


Figure 10-2: Band Edge emissions –GPRS CH High



GPRS 1900

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

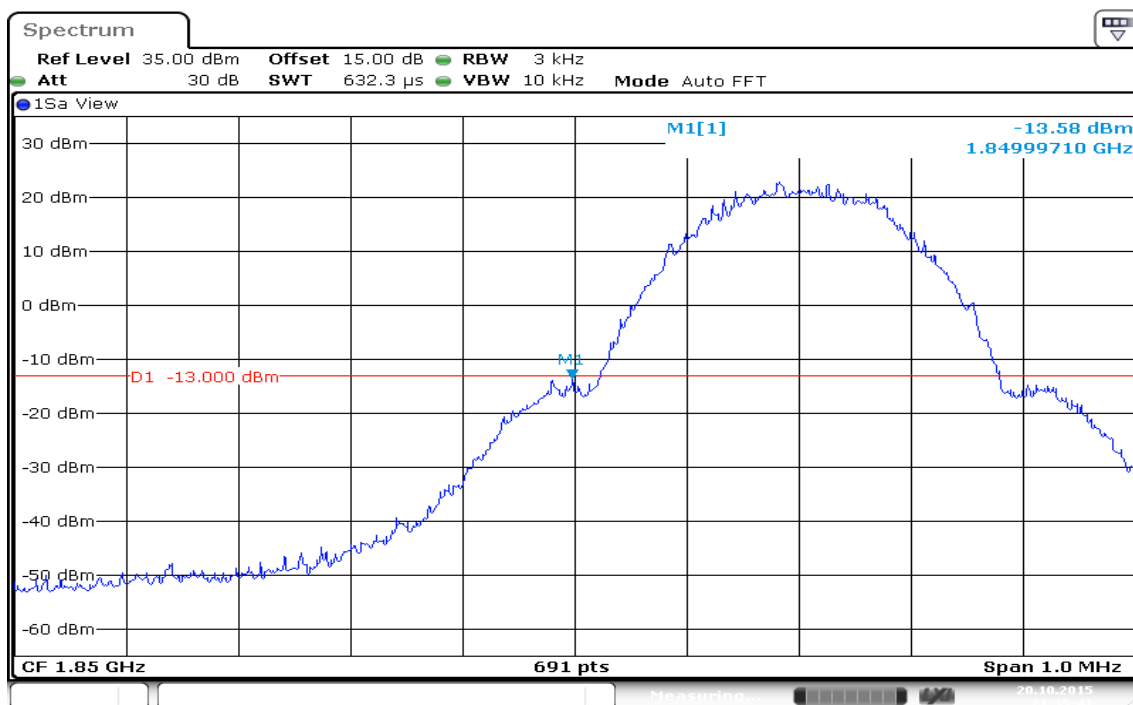
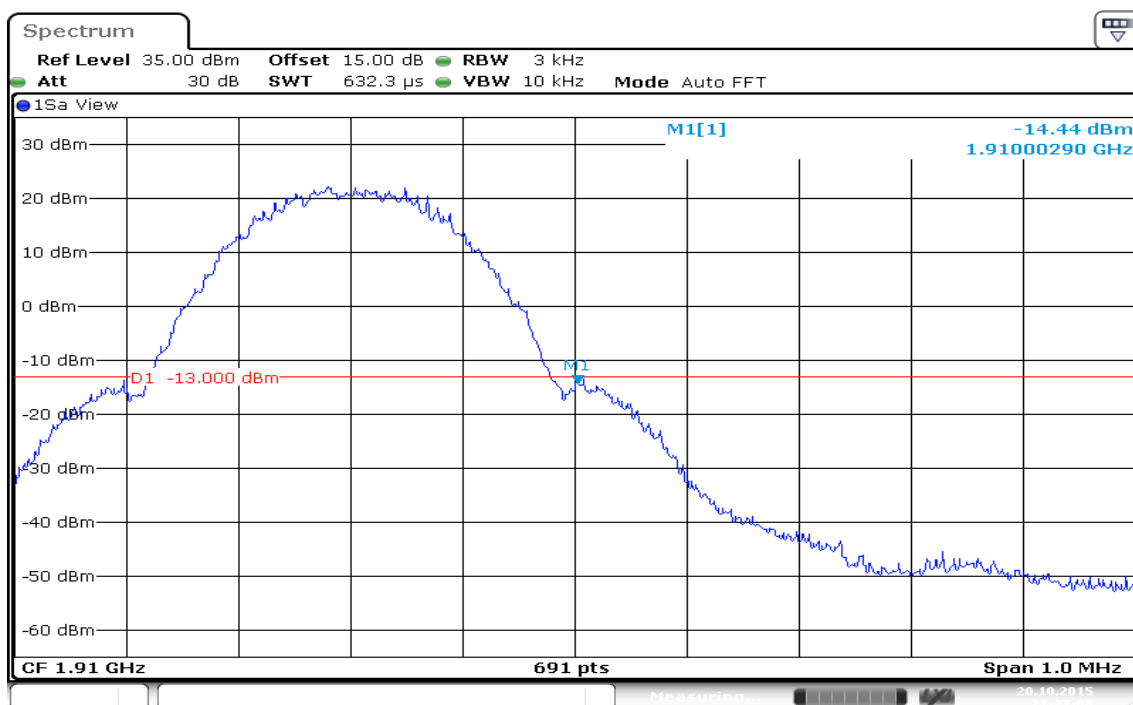


Figure 11-2: Band Edge emissions – GPRS CH High



EDGE 850

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

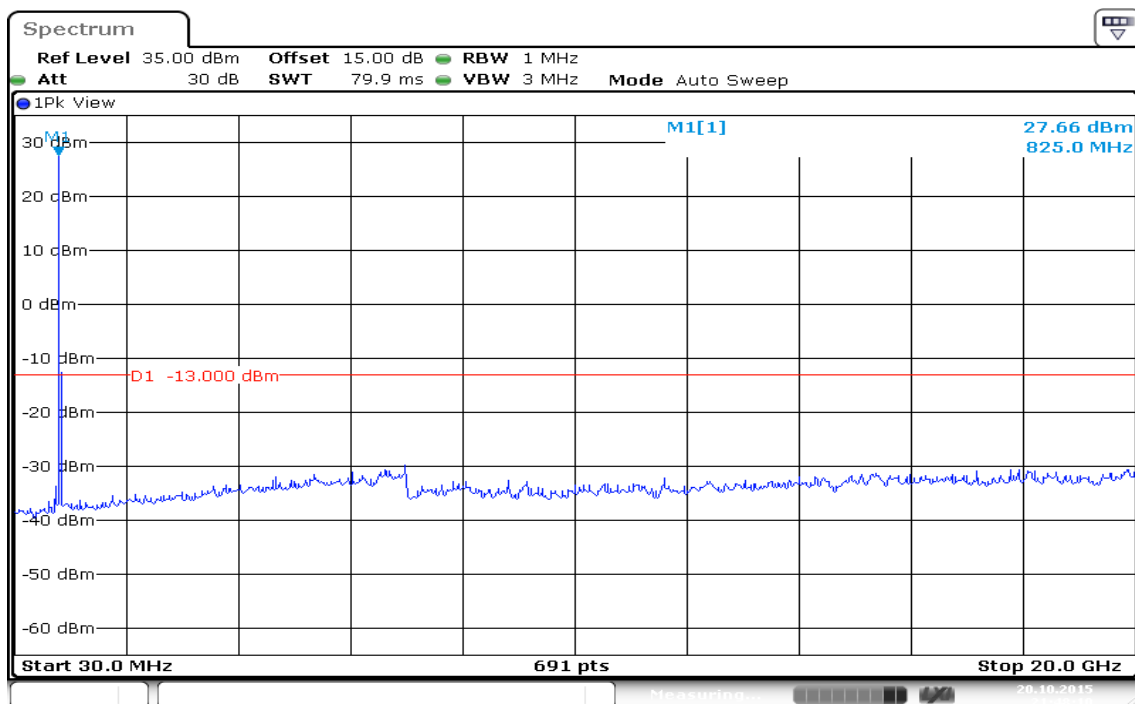


Figure 12-2: Out of Band emission at antenna terminals –EDGE CH Mid

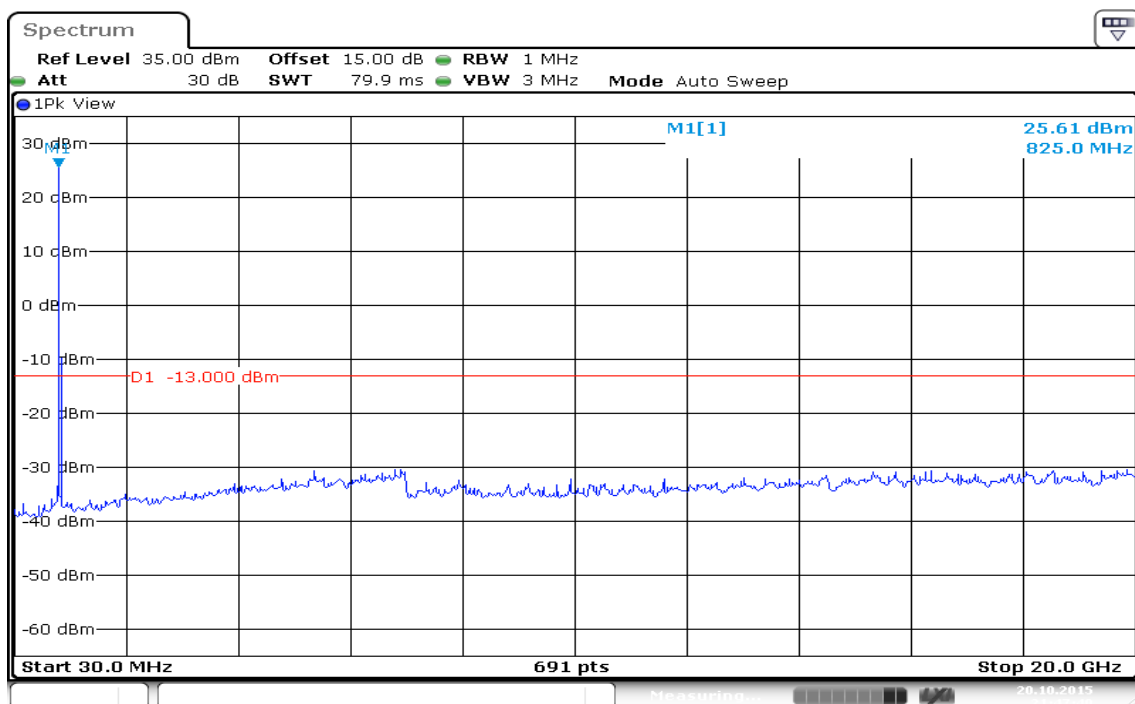
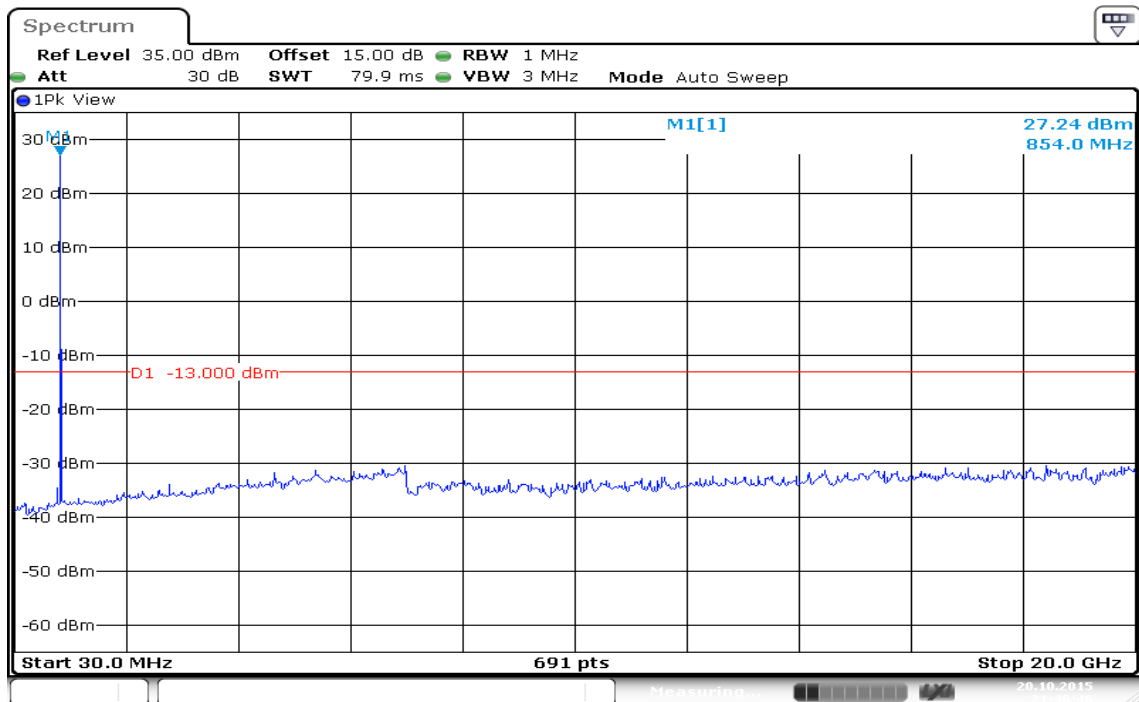


Figure 12-3: Out of Band emission at antenna terminals –EDGE CH High



EDGE 1900

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

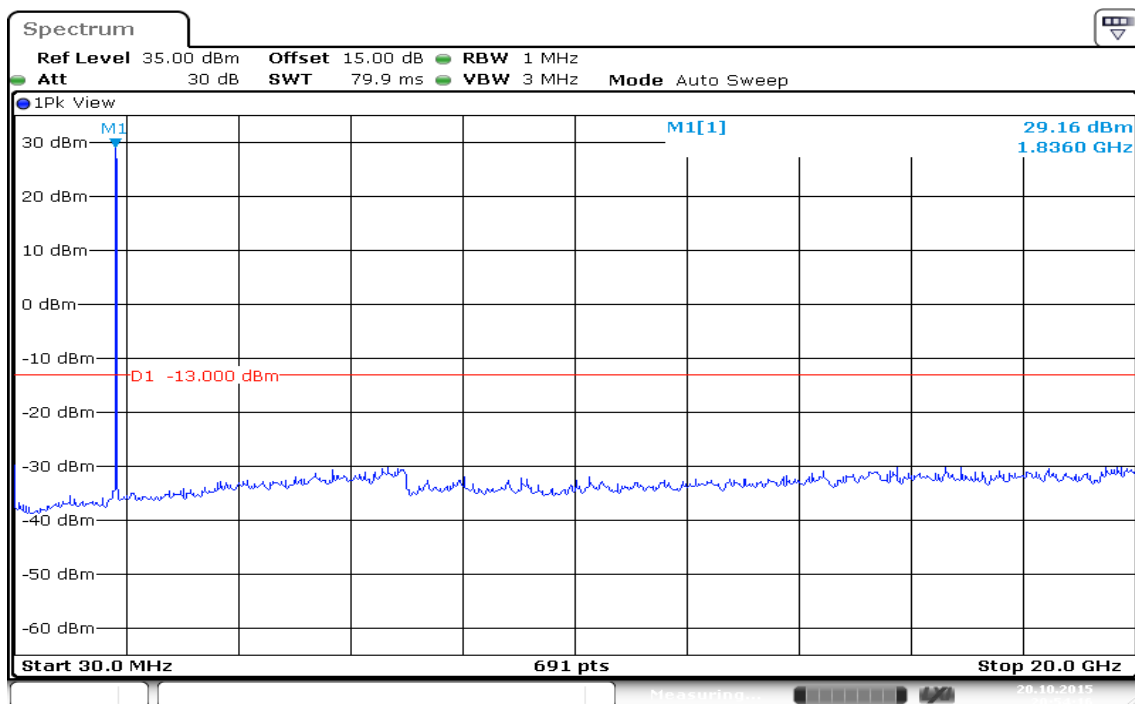


Figure 13-2: Out of Band emission at antenna terminals –EDGE CH Mid

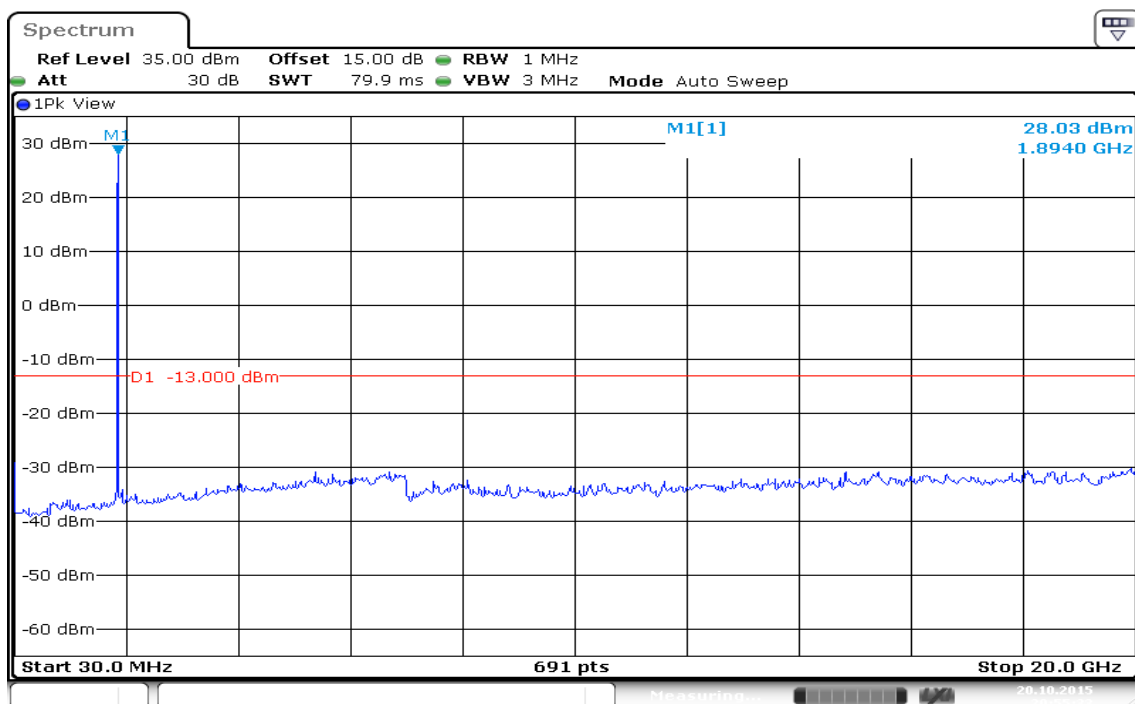
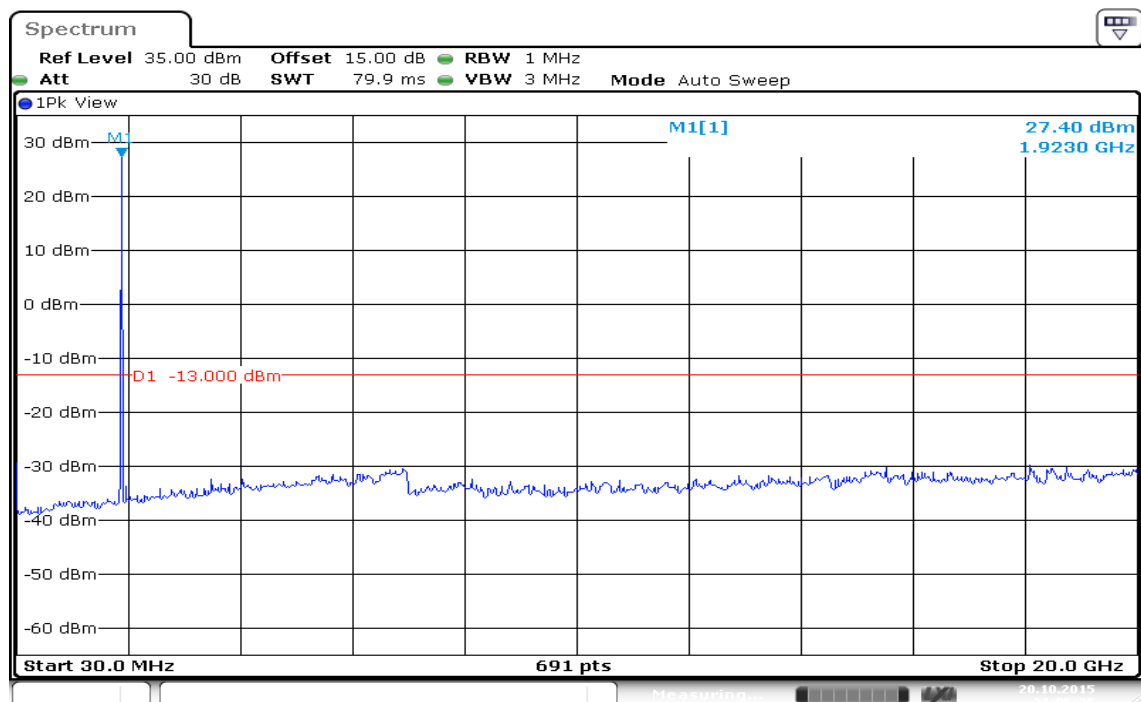


Figure 13-3: Out of Band emission at antenna terminals –EDGE CH High



EDGE 850

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

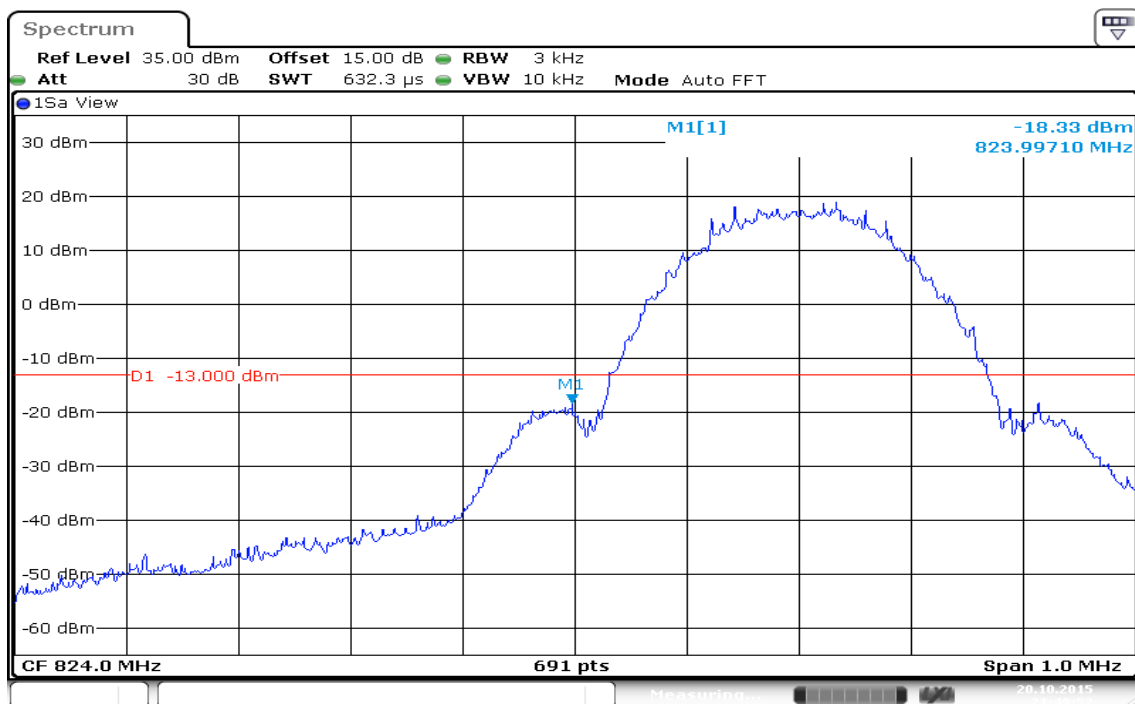
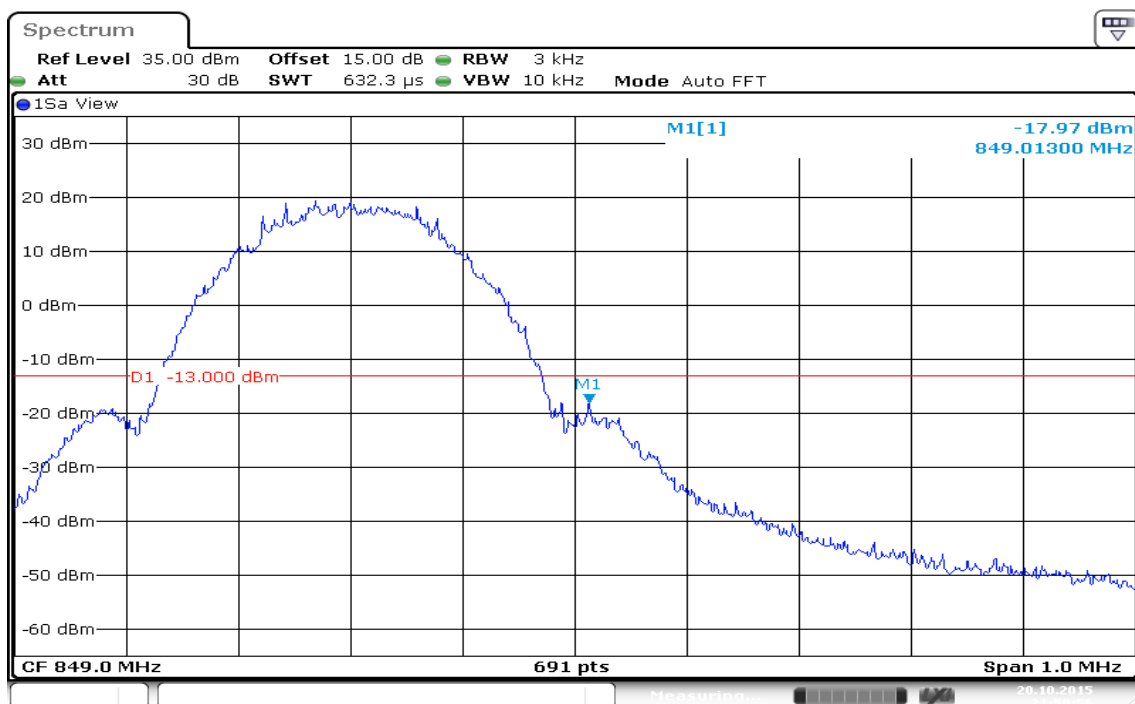


Figure 14-2: Band Edge emissions – EDGE CH High



EDGE 1900

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

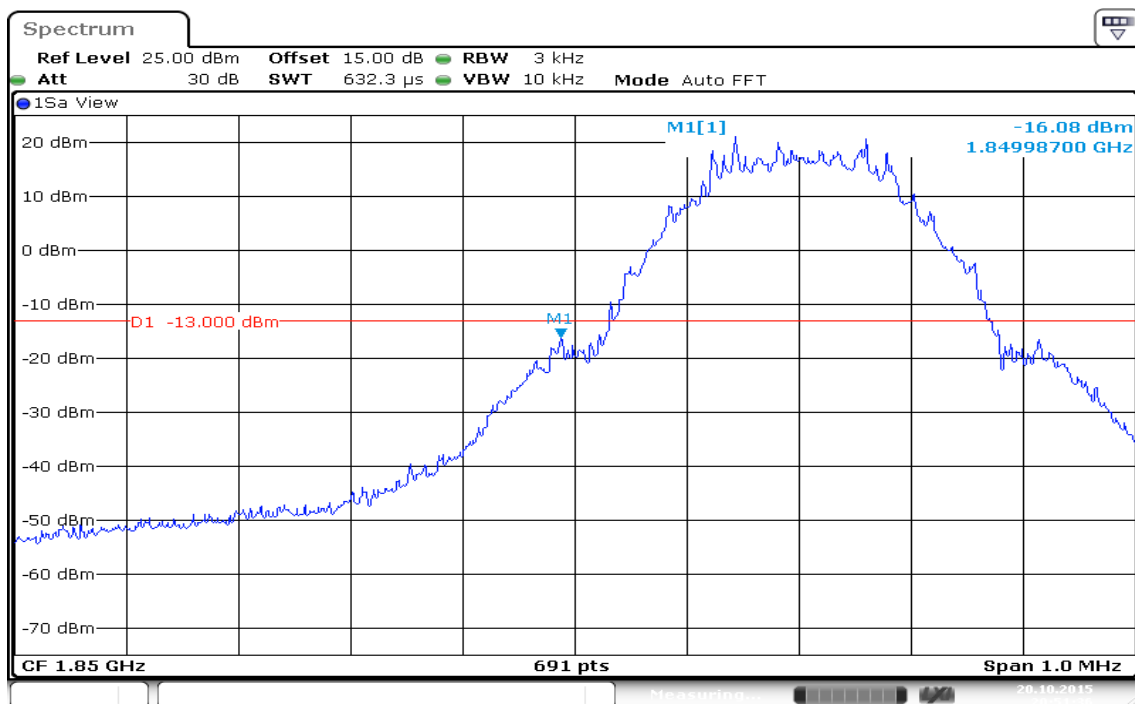
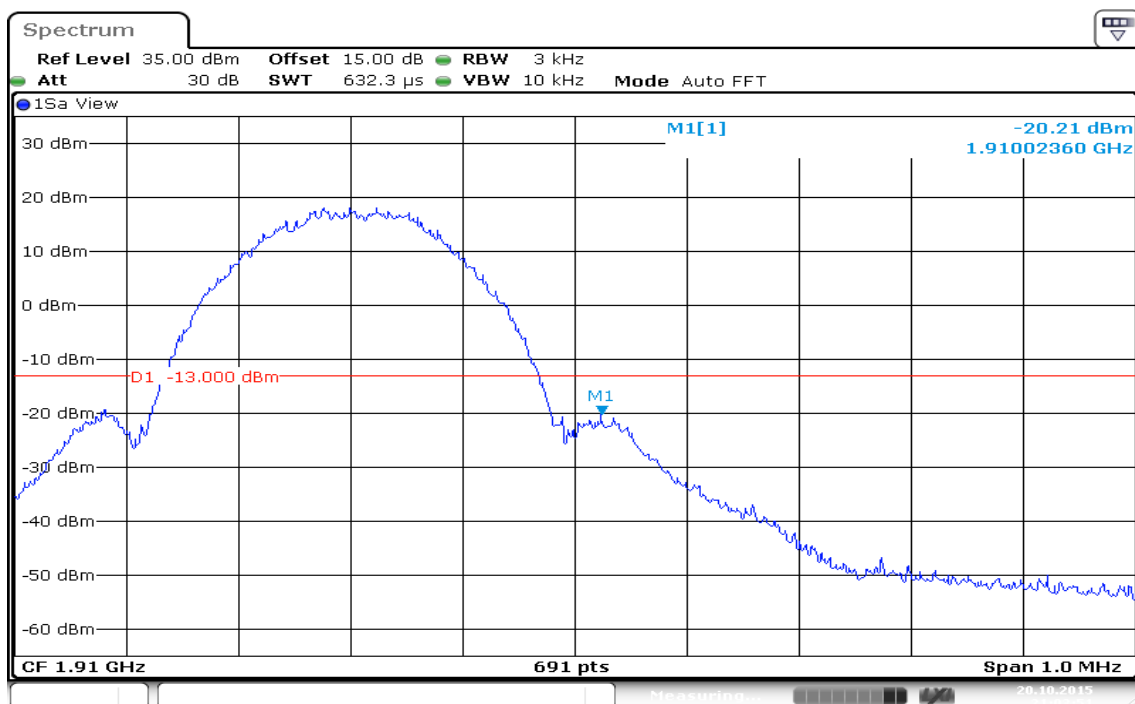


Figure 15-2: Band Edge emissions – EDGE CH High



WCDMA Band II

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

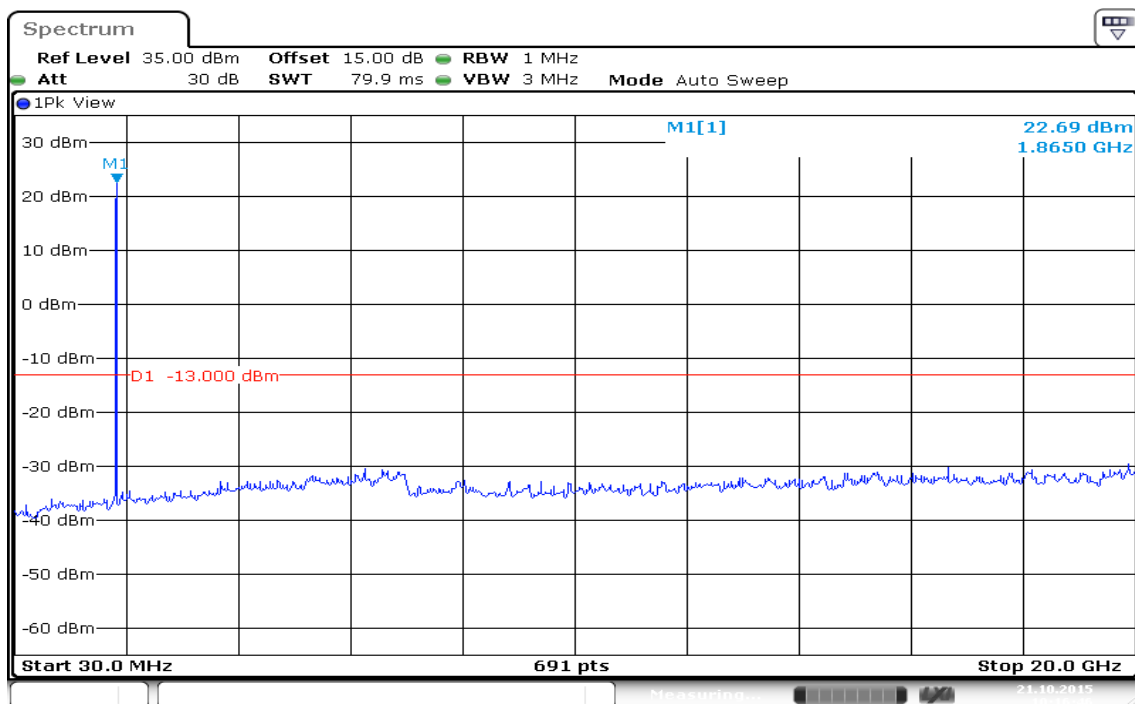


Figure 16-2: Out of Band emission at antenna terminals – WCDMA CH Mid

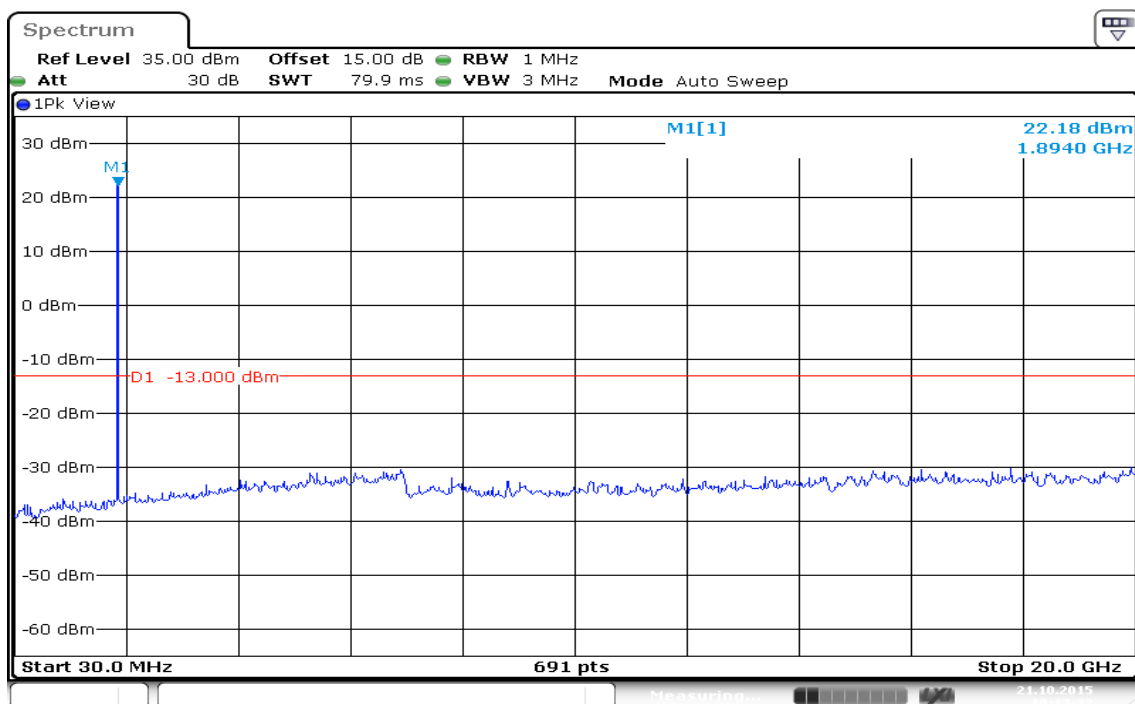
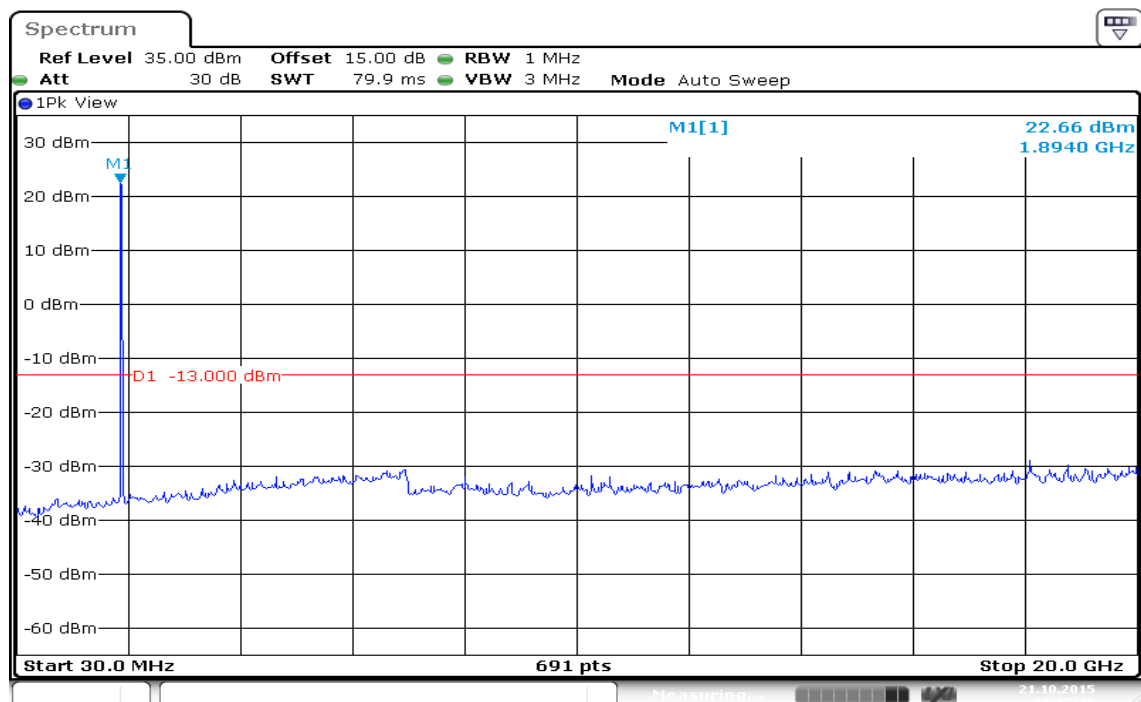


Figure 16-3: Out of Band emission at antenna terminals – WCDMA CH High



WCDMA Band V

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

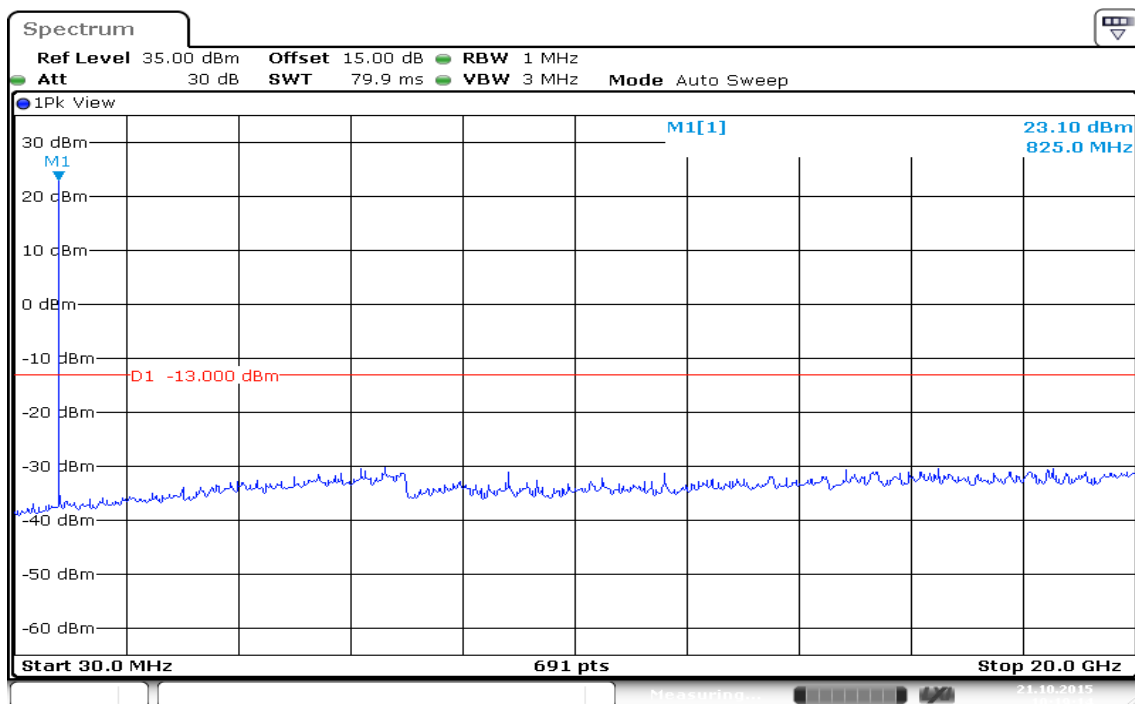


Figure 17-2: Out of Band emission at antenna terminals – WCDMA CH Mid

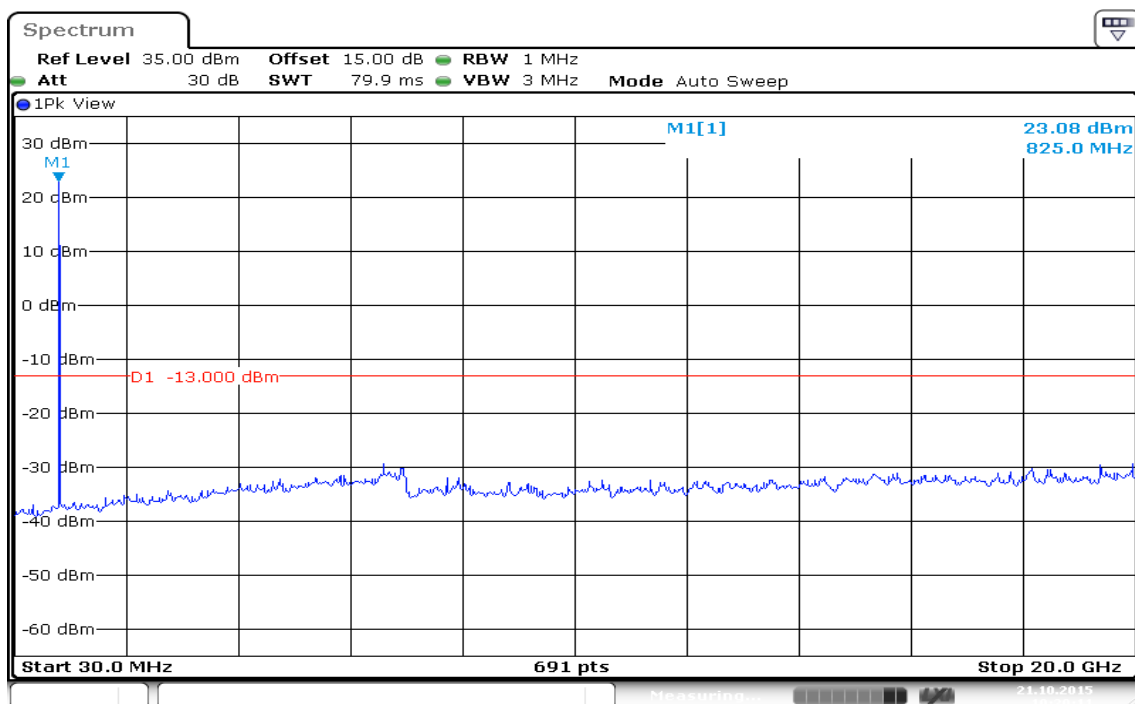
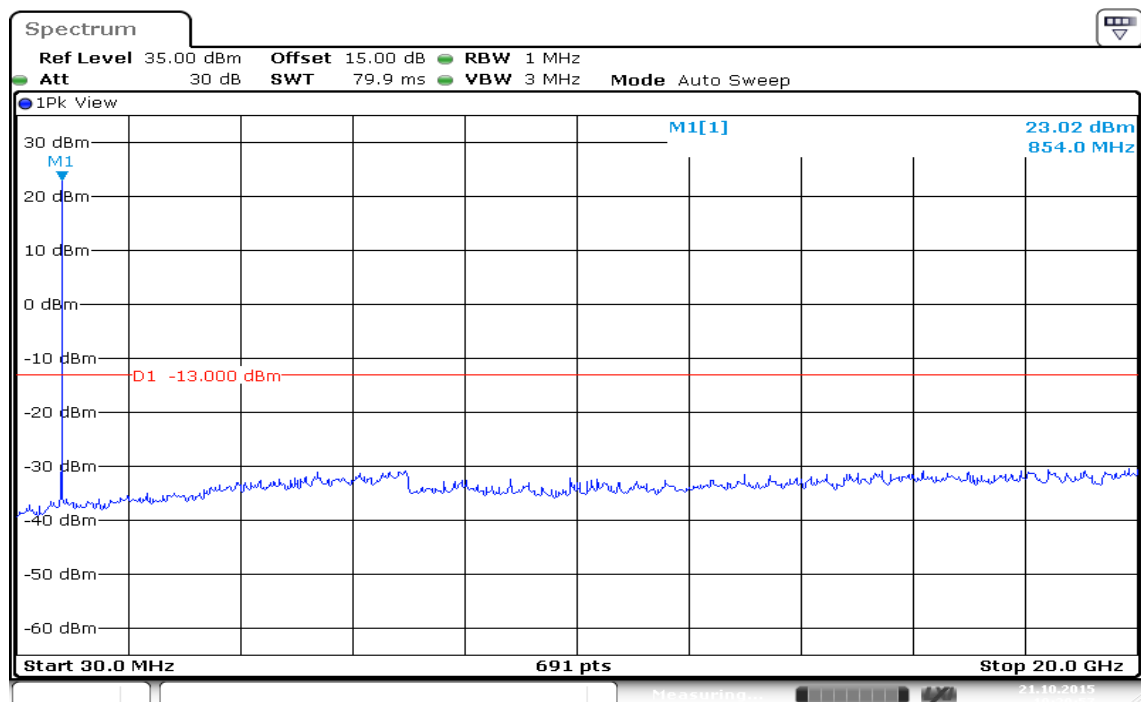


Figure 17-3: Out of Band emission at antenna terminals – WCDMA CH High



WCDMA Band II

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

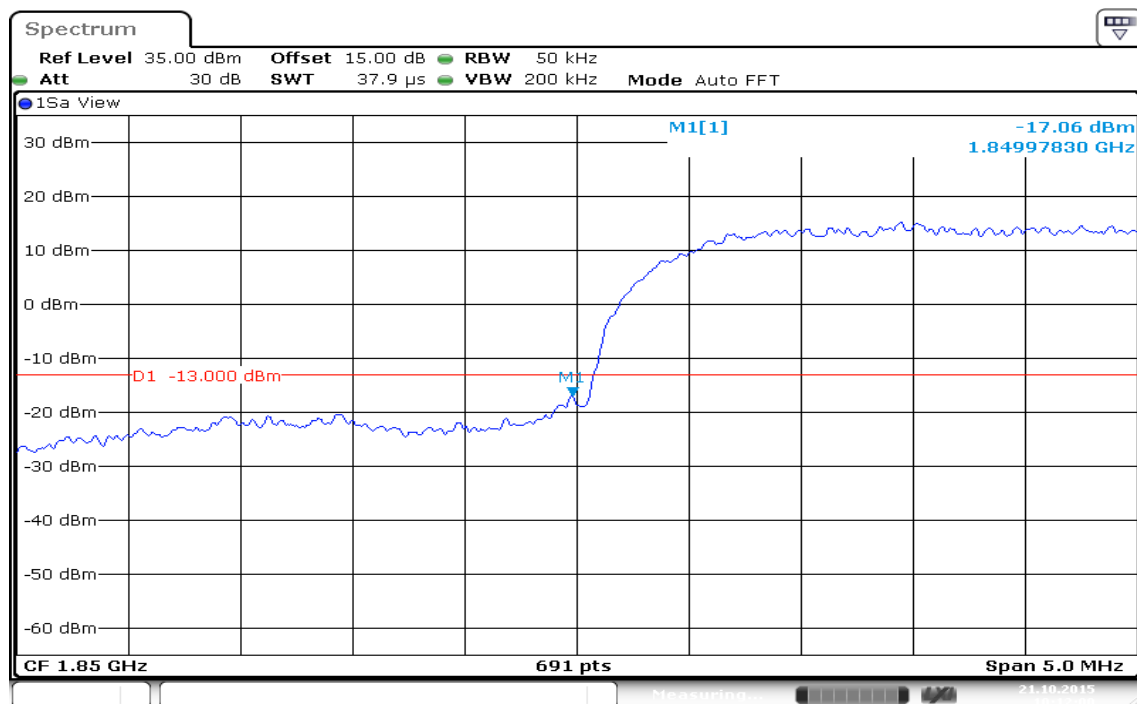
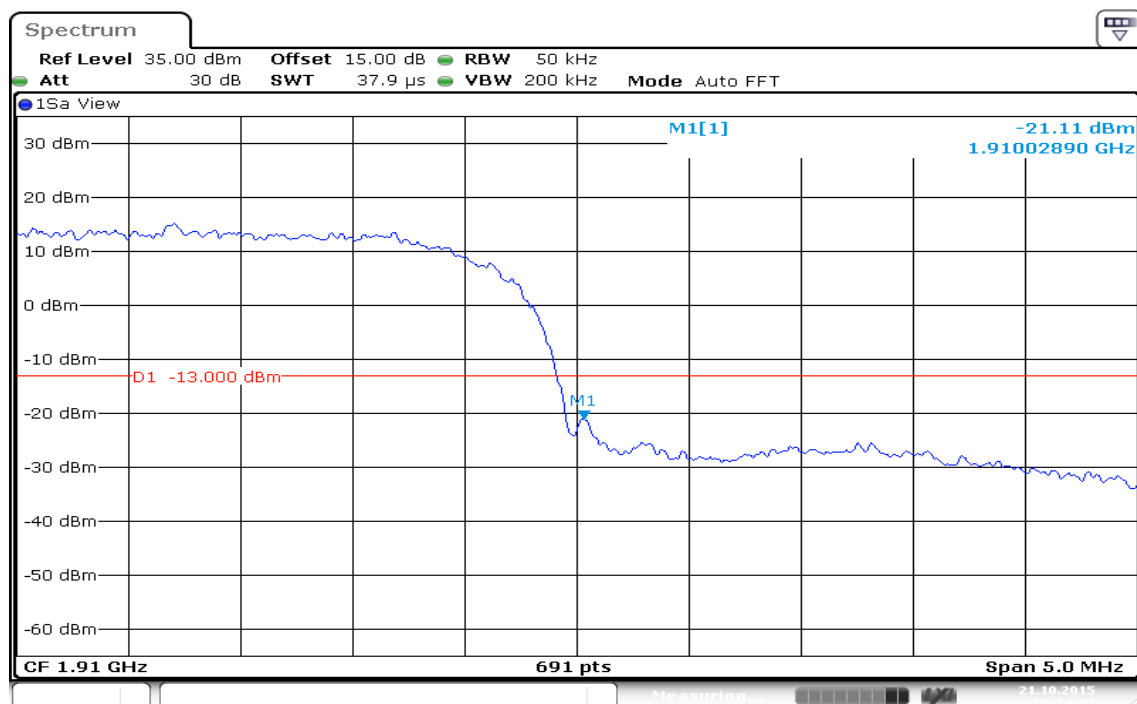


Figure 18-2: Band Edge emissions –WCDMA CH High



WCDMA Band V

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

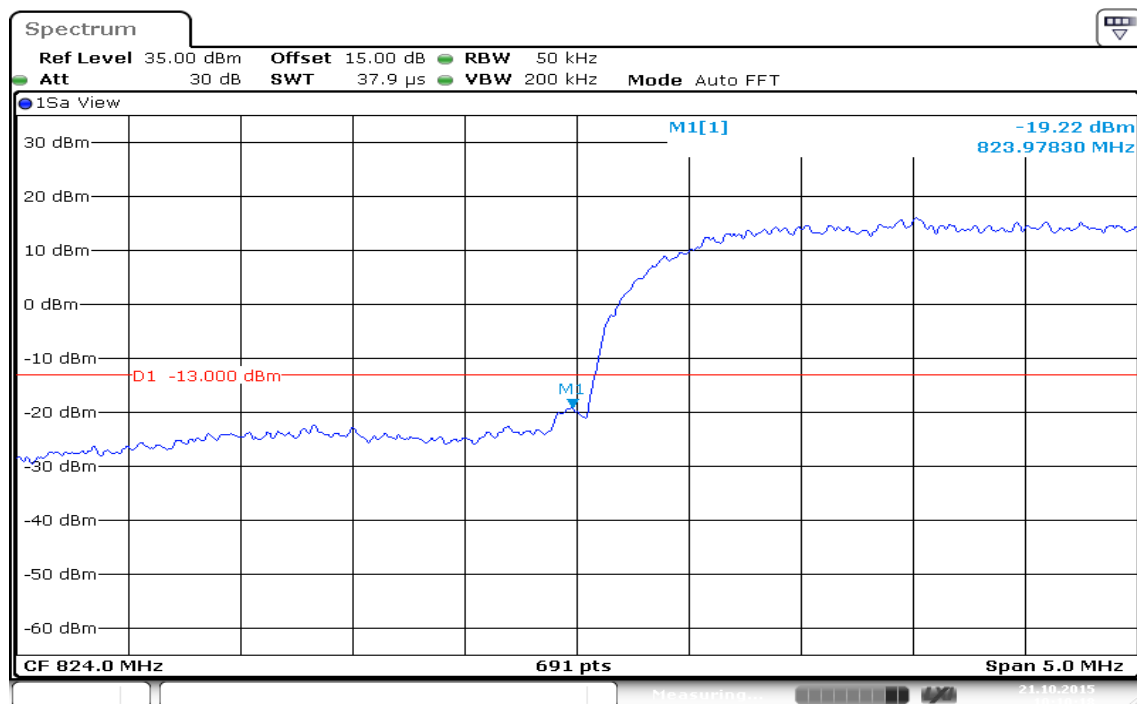
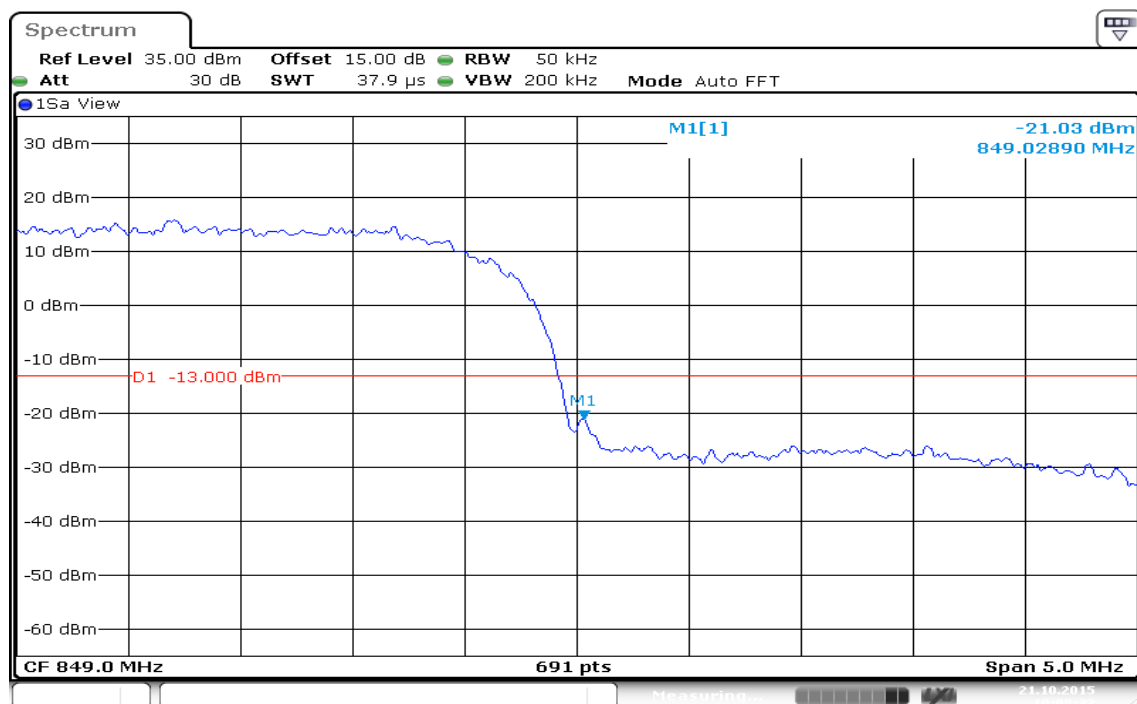


Figure 19-2: Band Edge emissions –WCDMA CH High



WCDMA / HSDPA Band II

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

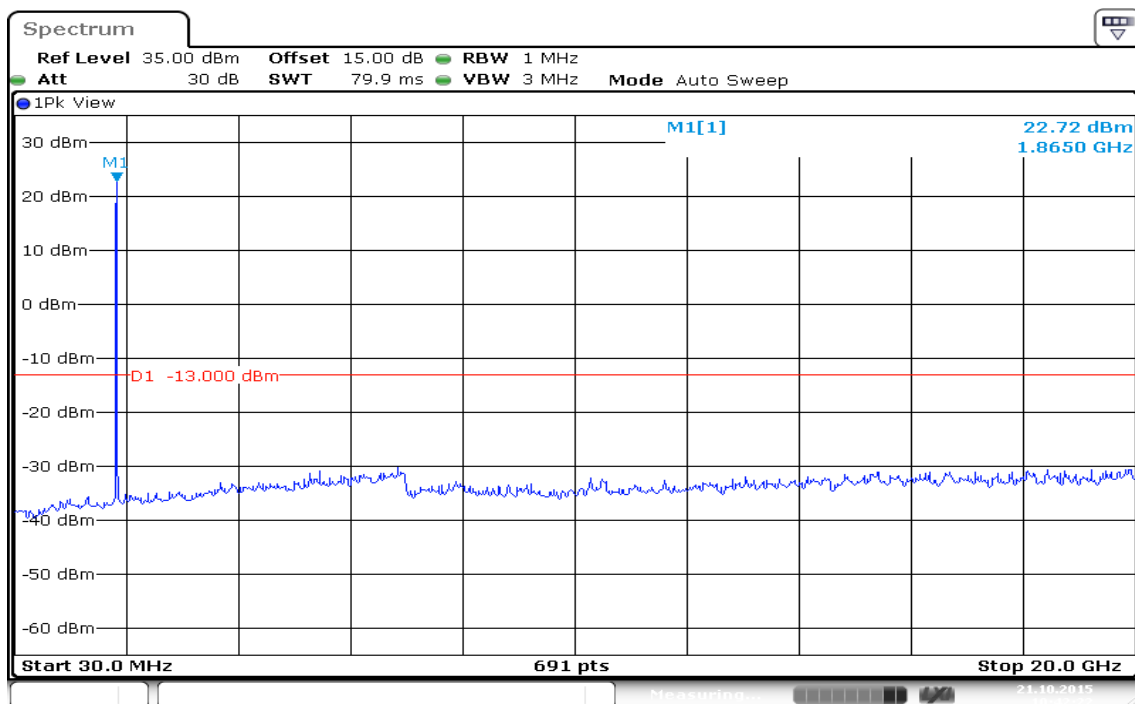


Figure 20-2: Out of Band emission at antenna terminals – HSDPA CH Mid

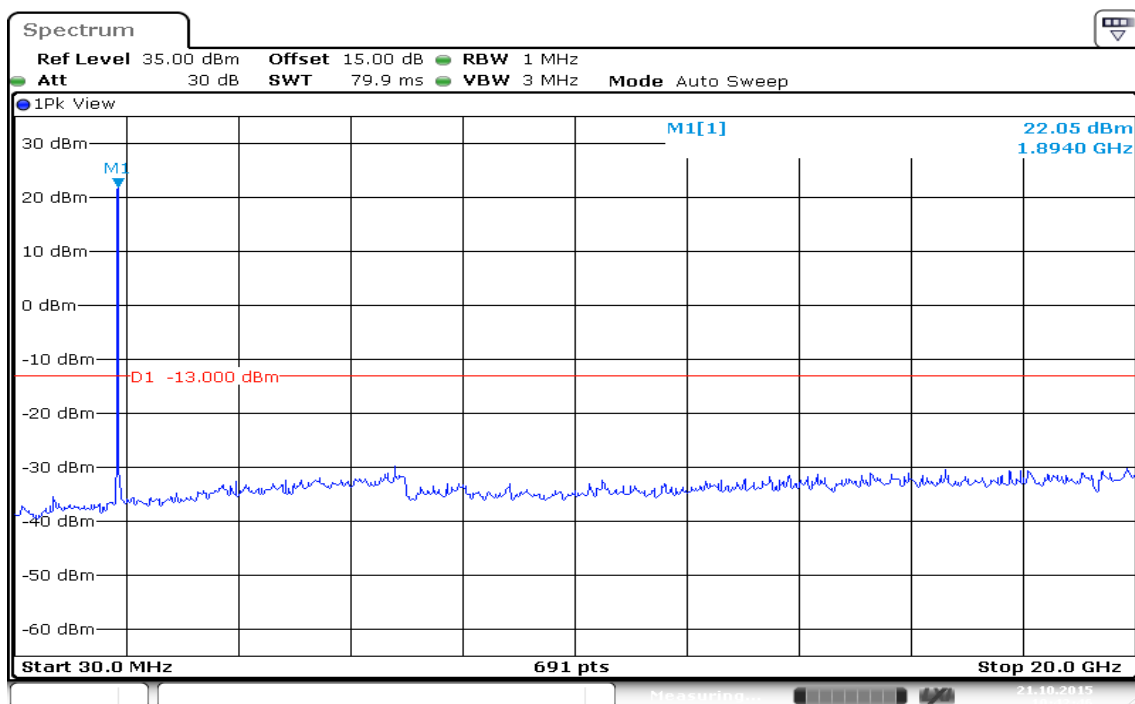
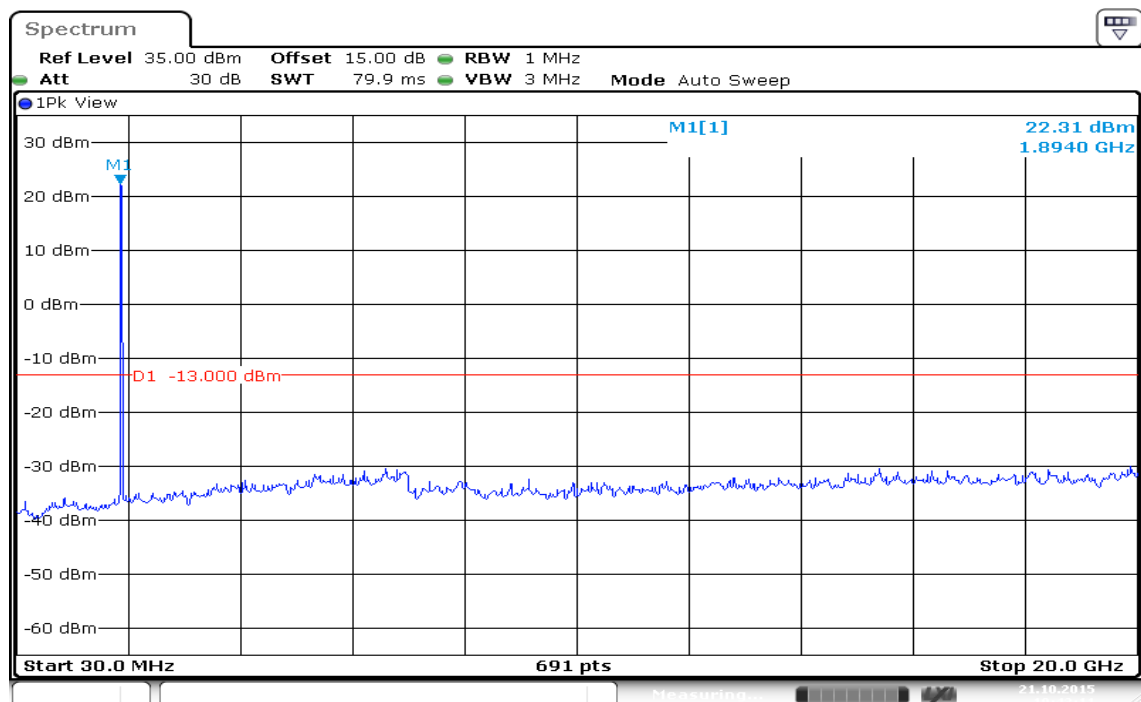


Figure 20-3: Out of Band emission at antenna terminals – HSDPA CH High



WCDMA / HSDPA Band V

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

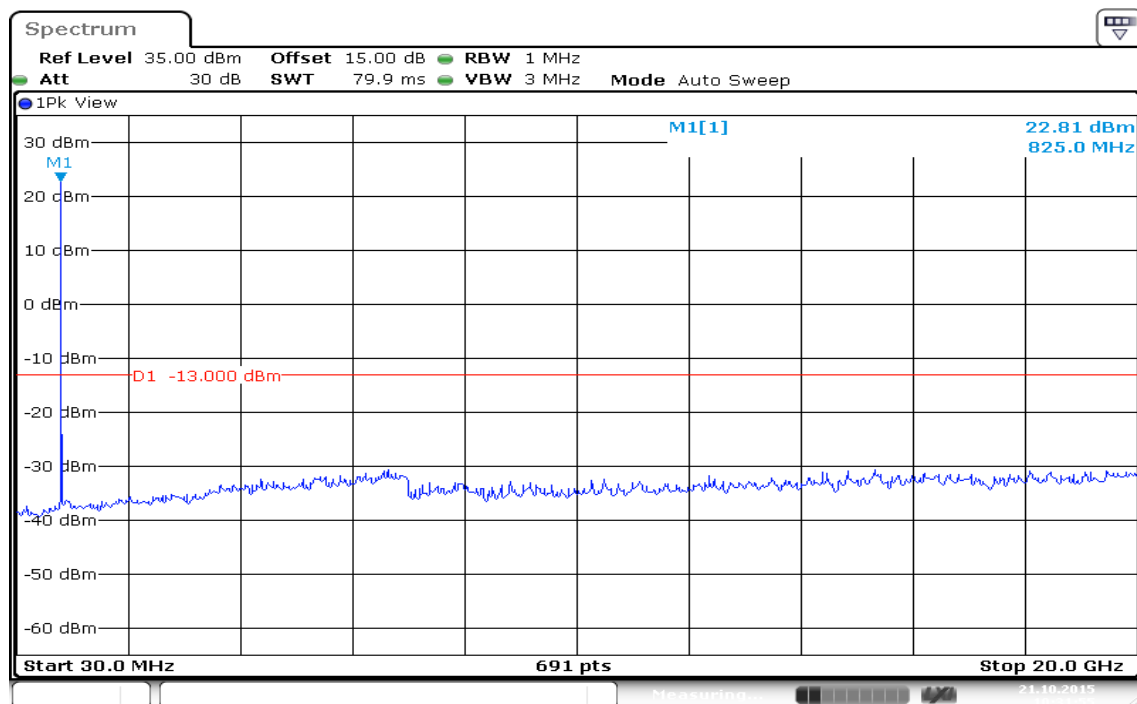


Figure 21-2: Out of Band emission at antenna terminals – HSDPA CH Mid

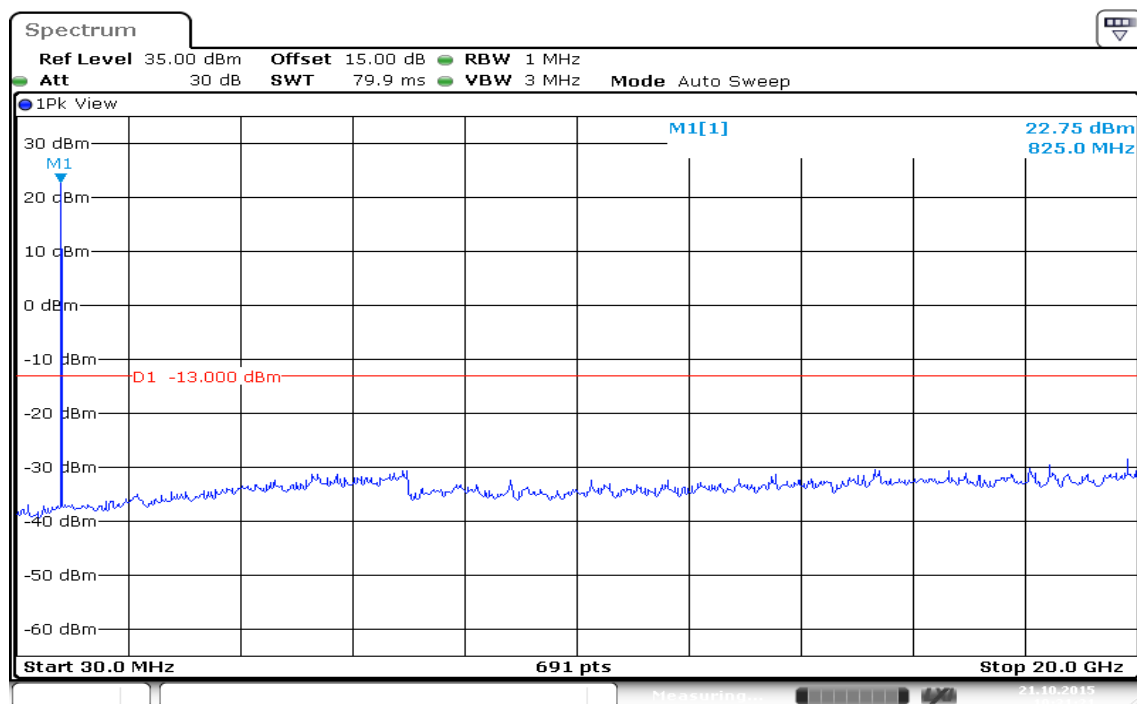
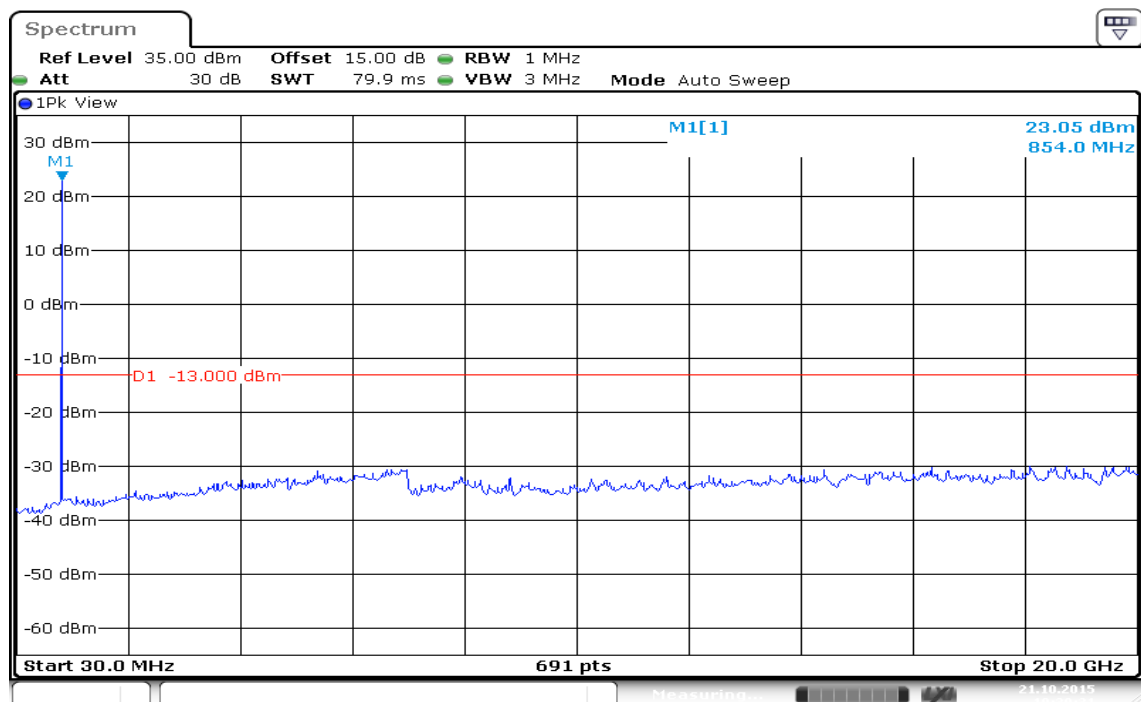


Figure 21-3: Out of Band emission at antenna terminals – HSDPA CH High



WCDMA / HSDPA Band II

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

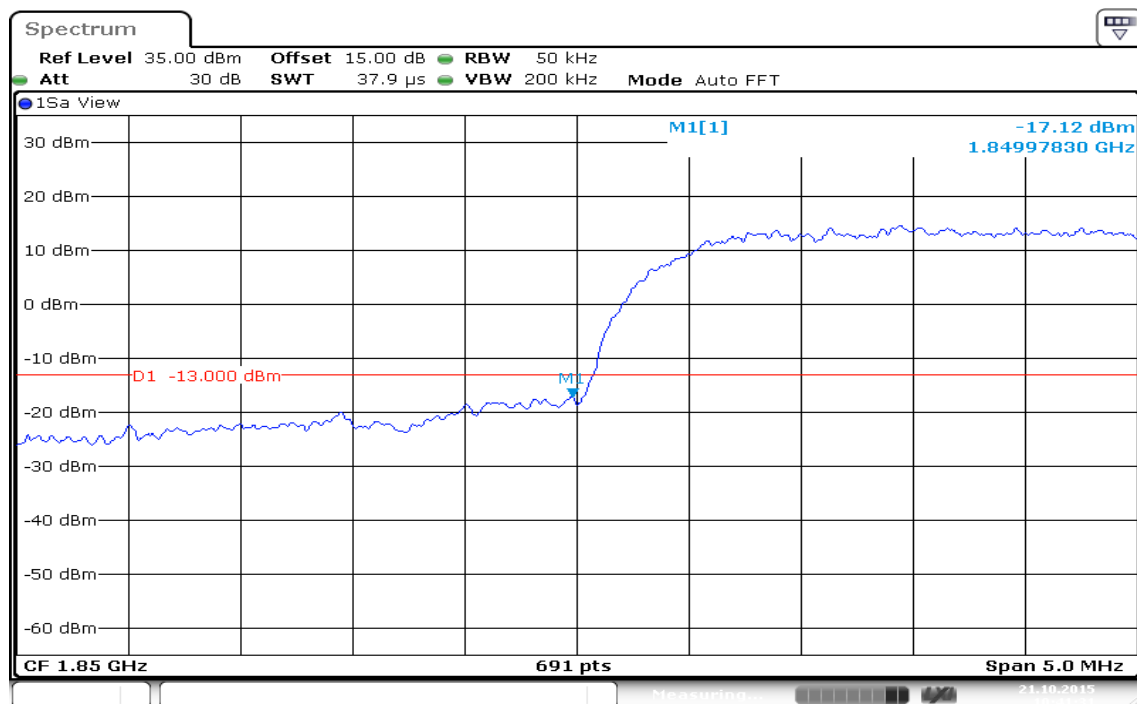
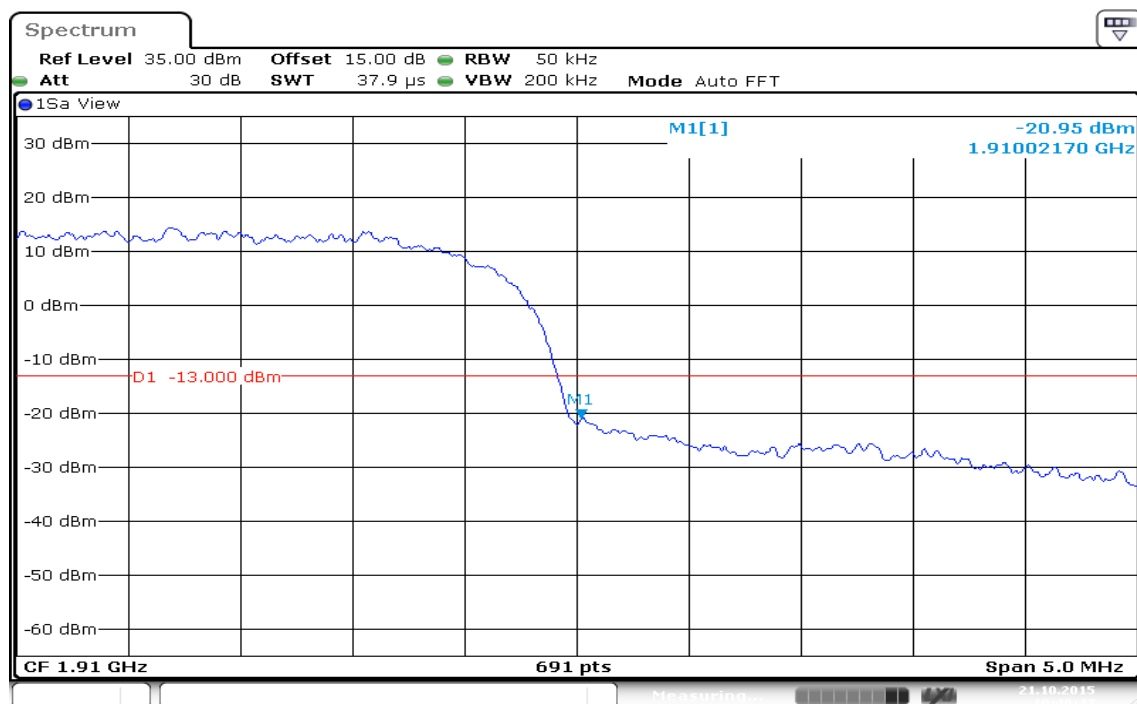


Figure 22-2: Band Edge emissions – HSDPA CH High



WCDMA / HSDPA Band V

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

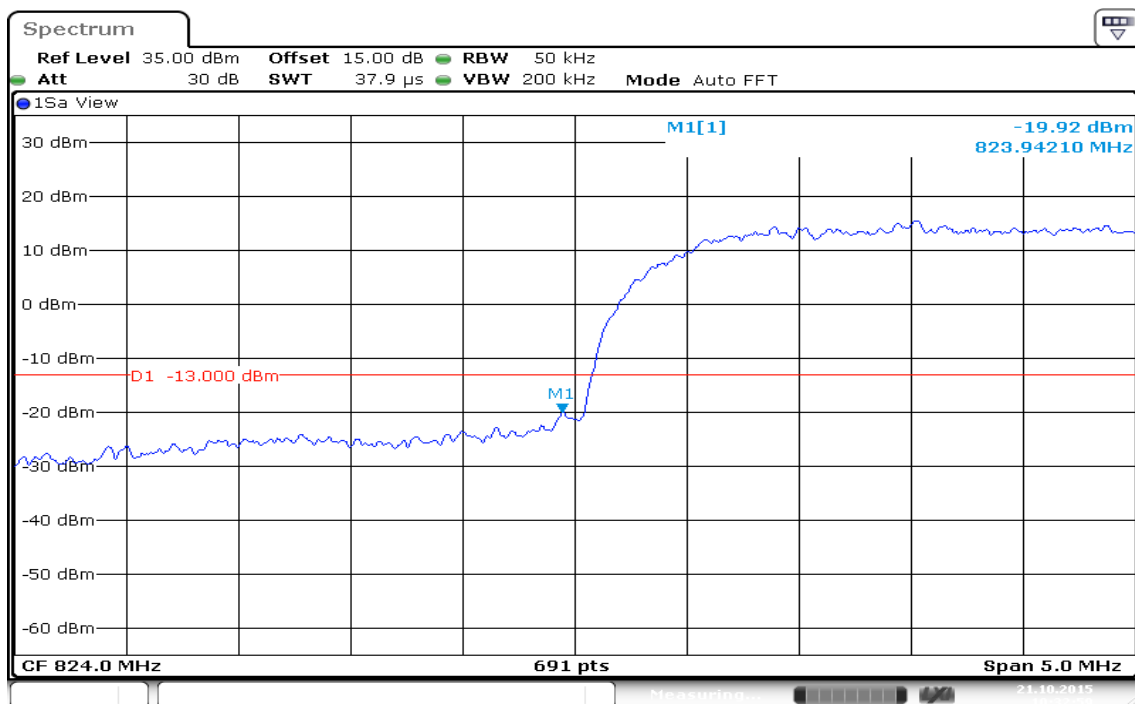
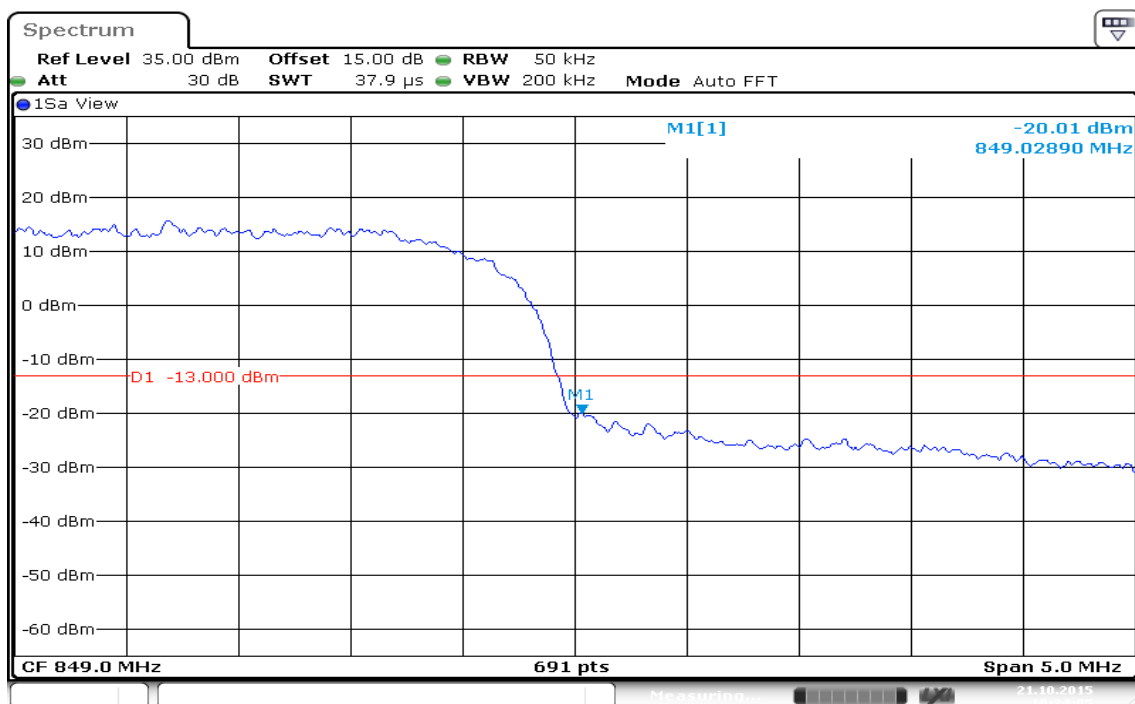


Figure 23-2: Band Edge emissions – HSDPA CH High



WCDMA / HSUPA Band II

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

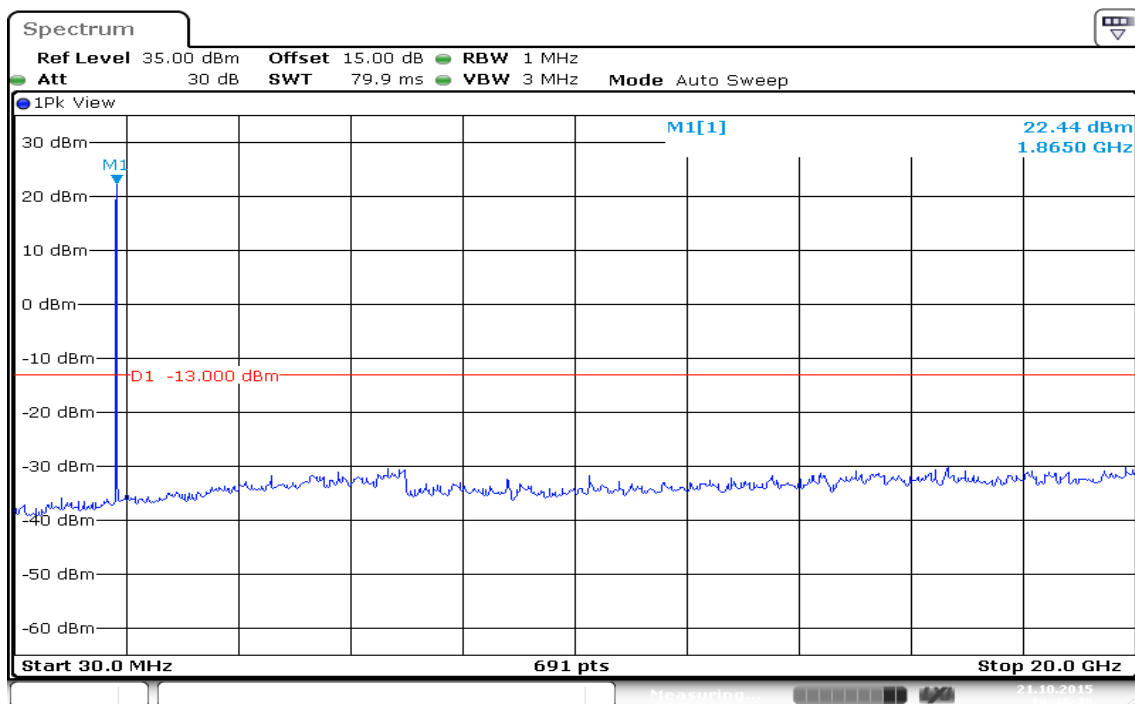


Figure 24-2: Out of Band emission at antenna terminals – HSUPA CH Mid

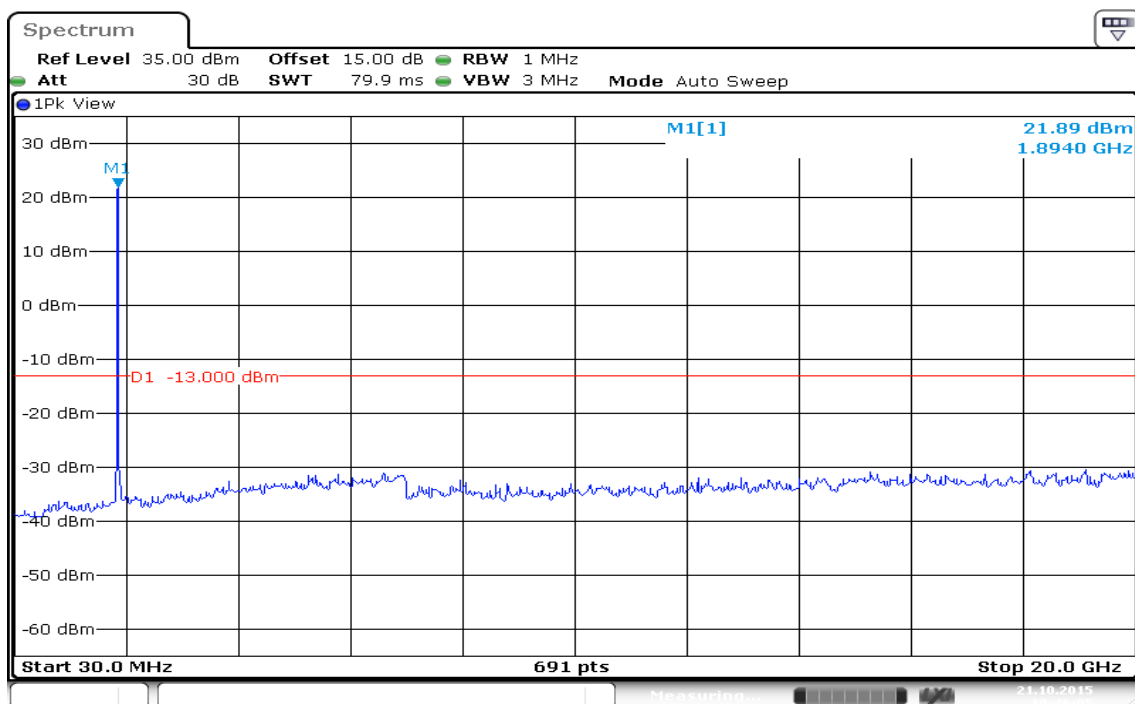
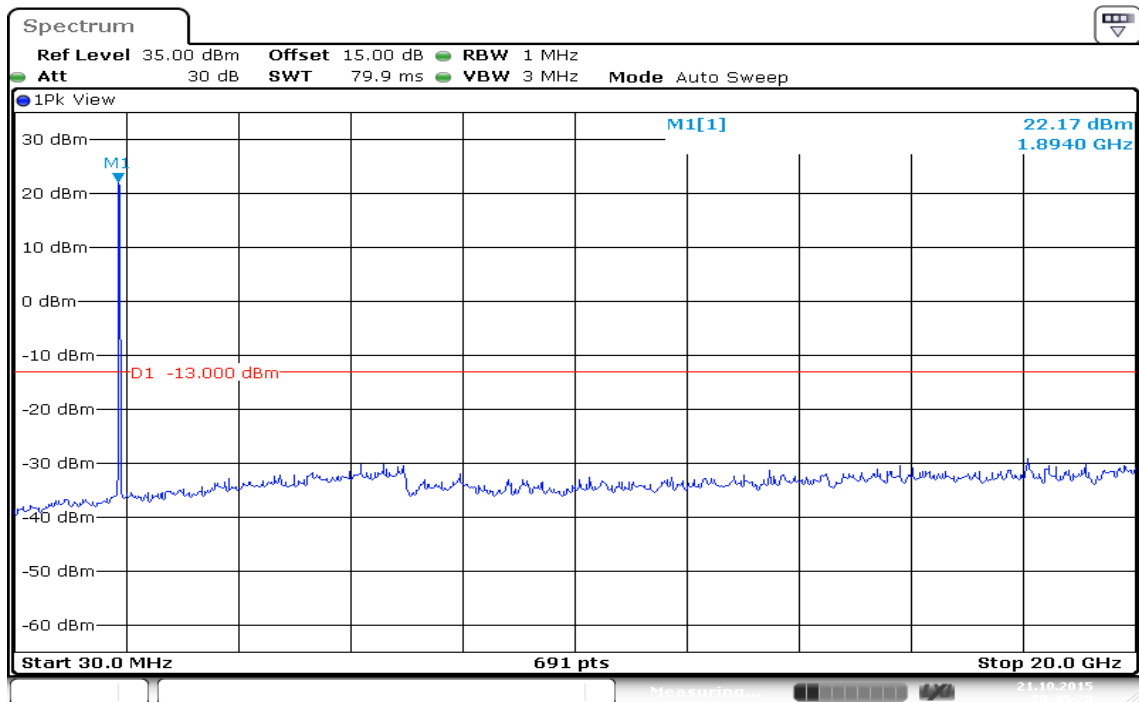


Figure 24-3: Out of Band emission at antenna terminals – HSUPA CH High



HSUPA / WCDMA Band V

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

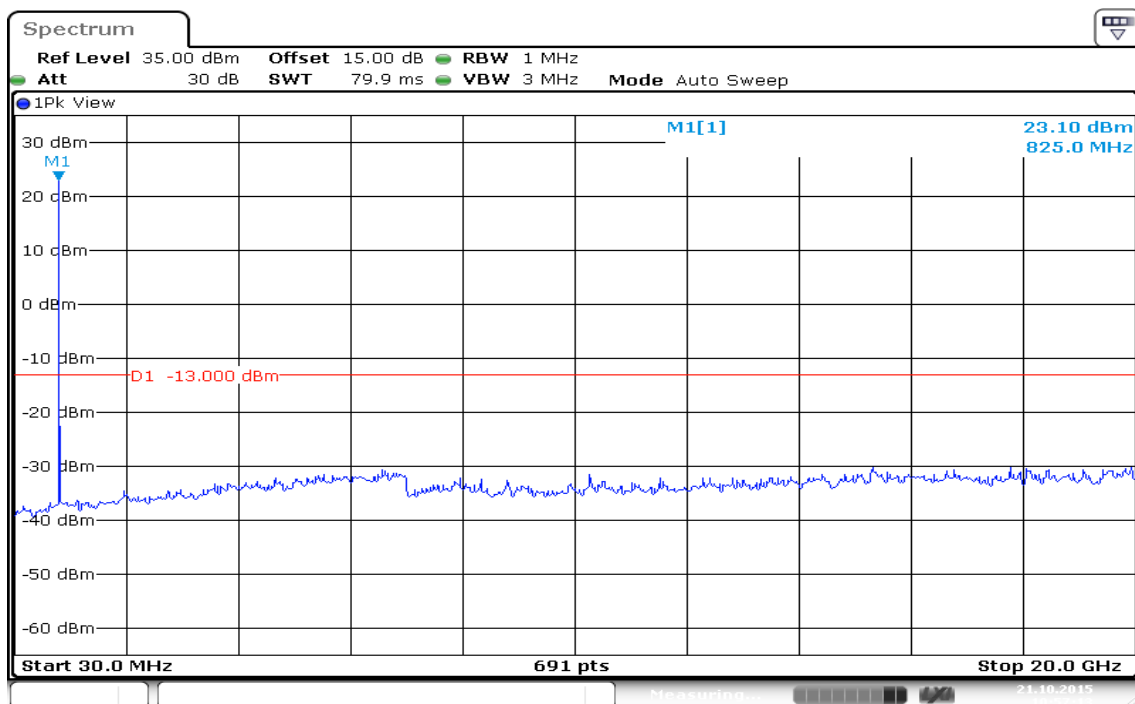


Figure 25-2: Out of Band emission at antenna terminals – HSUPA CH Mid

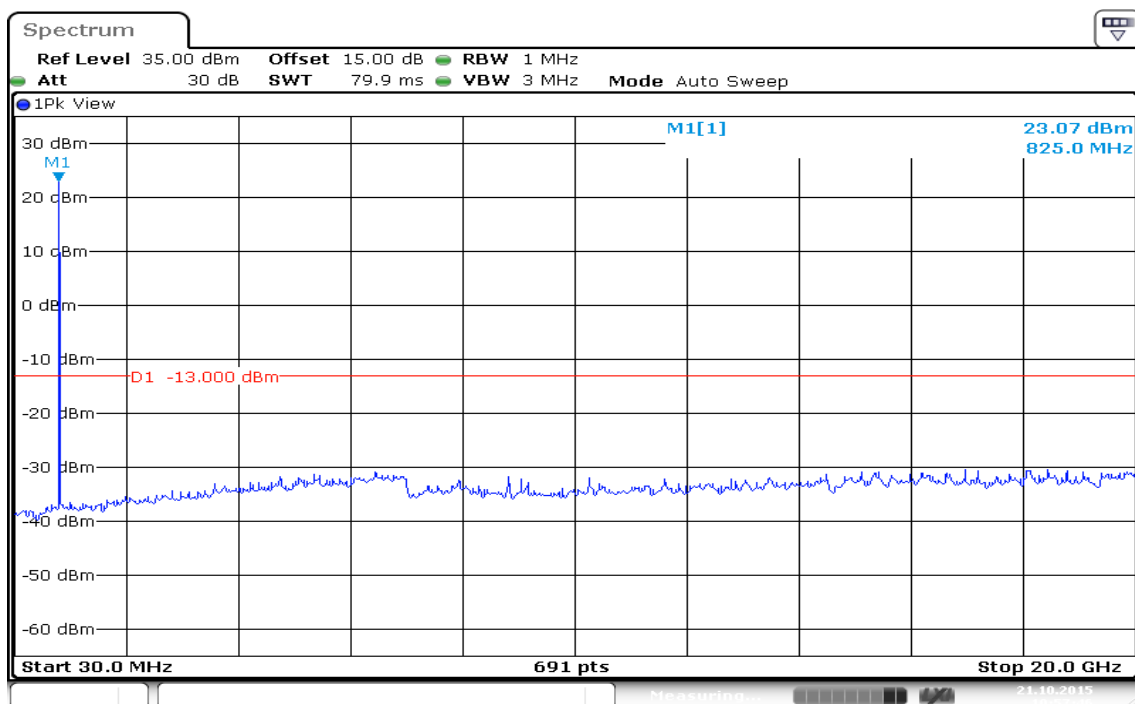
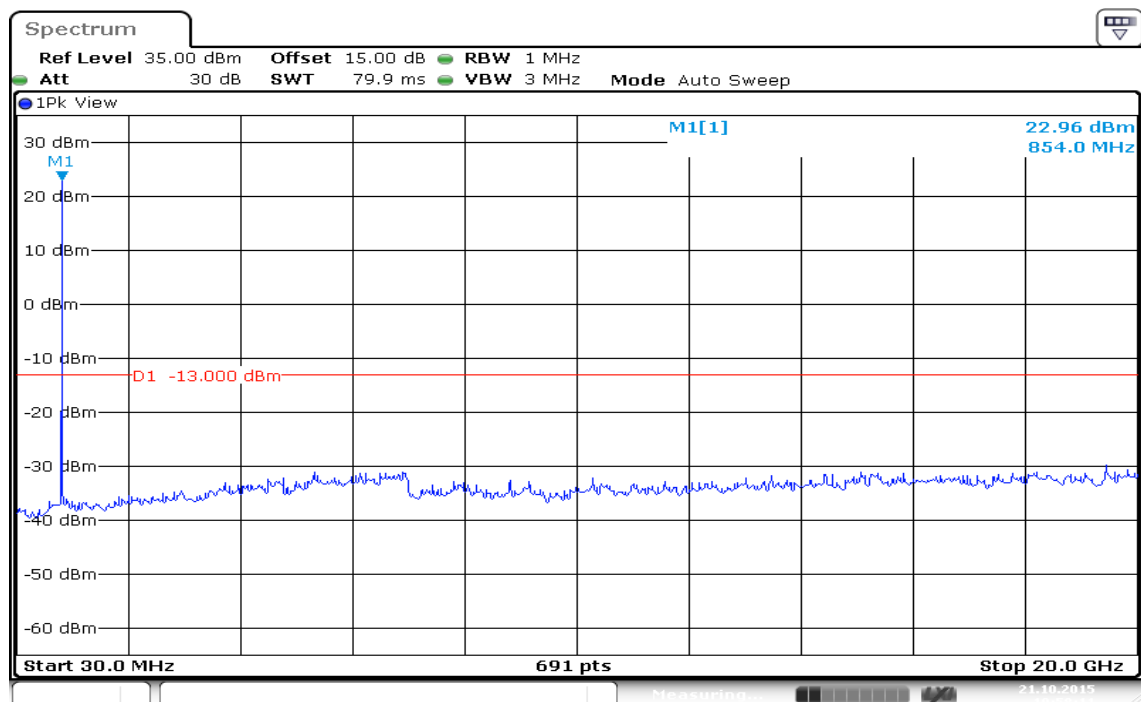


Figure 25-3: Out of Band emission at antenna terminals – HSUPA CH High



WCDMA / HSUPA Band II

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

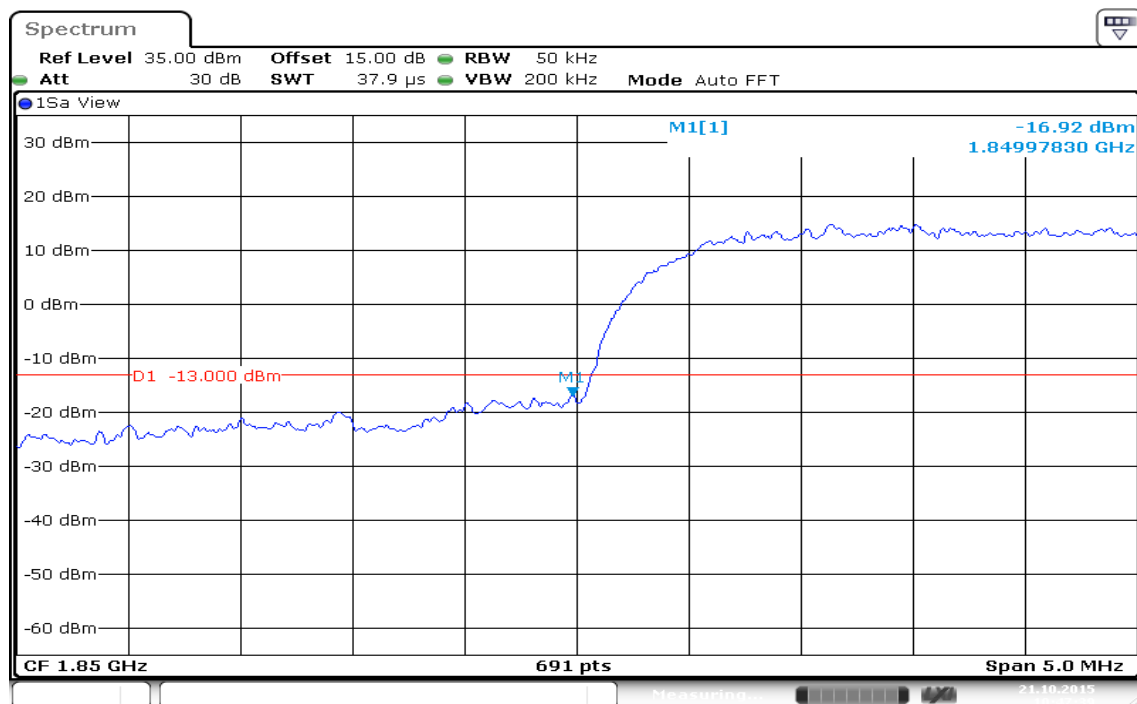
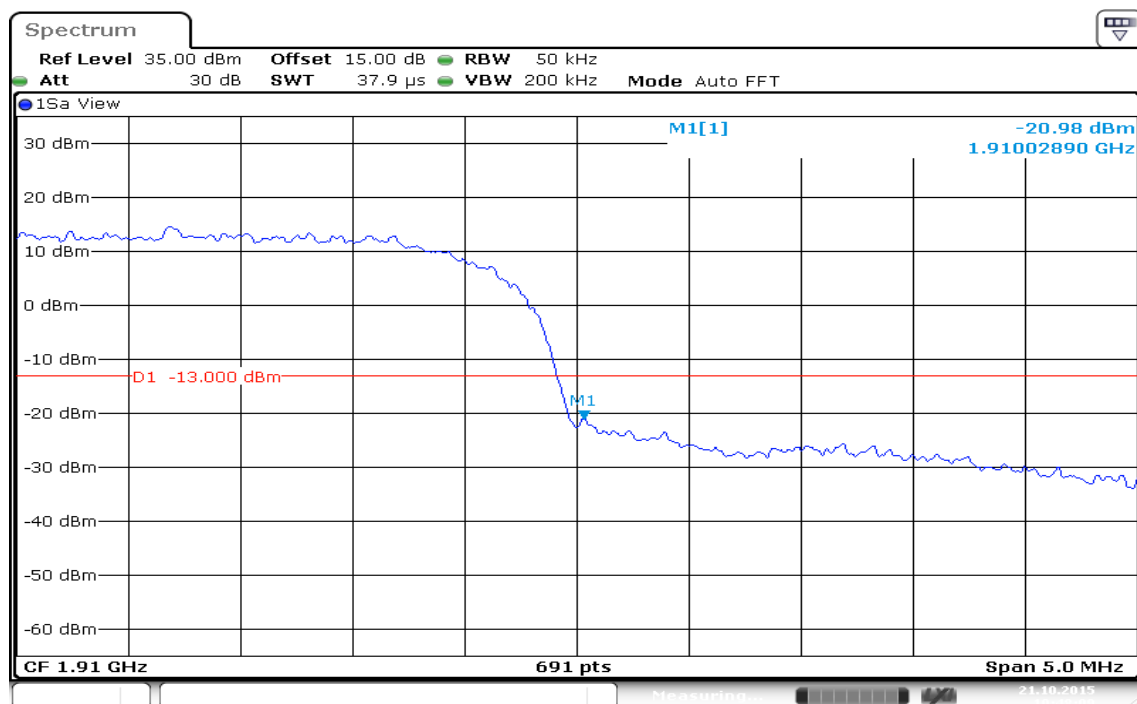


Figure 26-2: Band Edge emissions – HSUPA CH High



WCDMA / HSUPA Band V

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

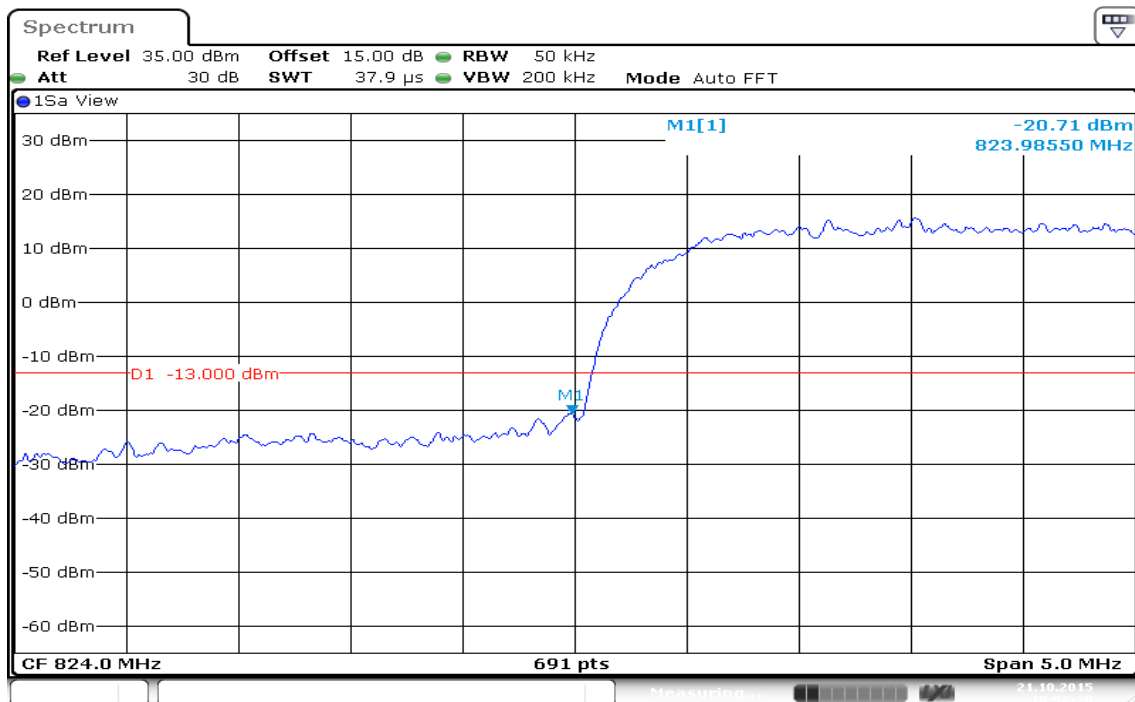
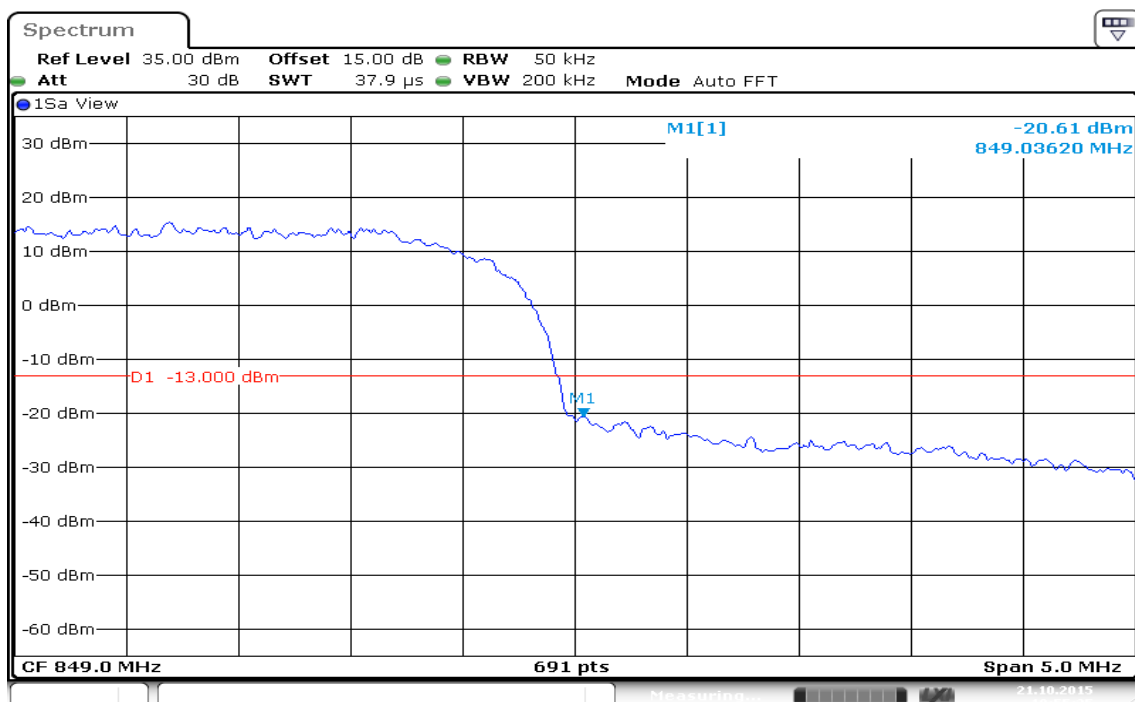


Figure 27-2: Band Edge emissions – HSUPA CH High



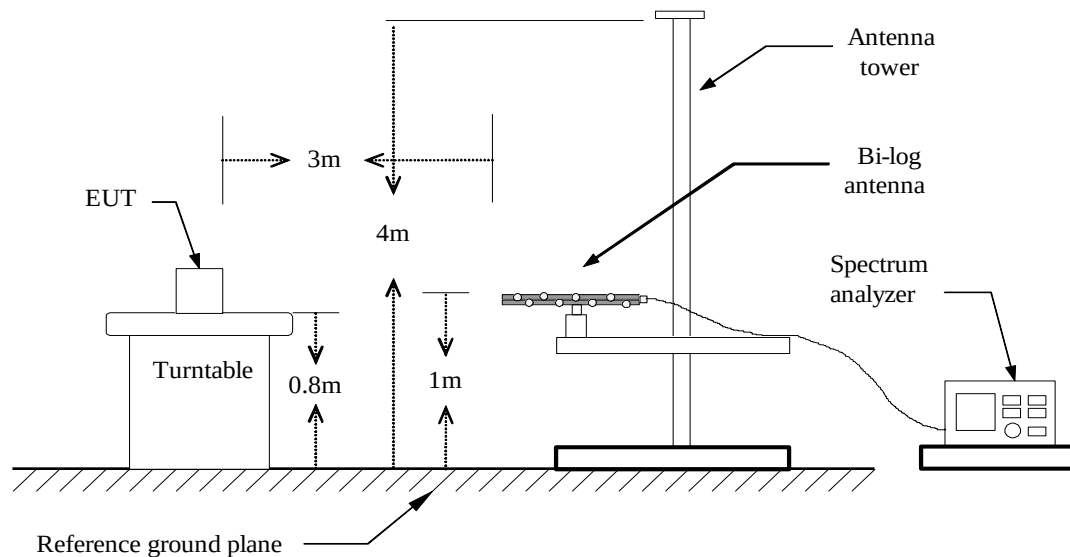
7.6 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

LIMIT

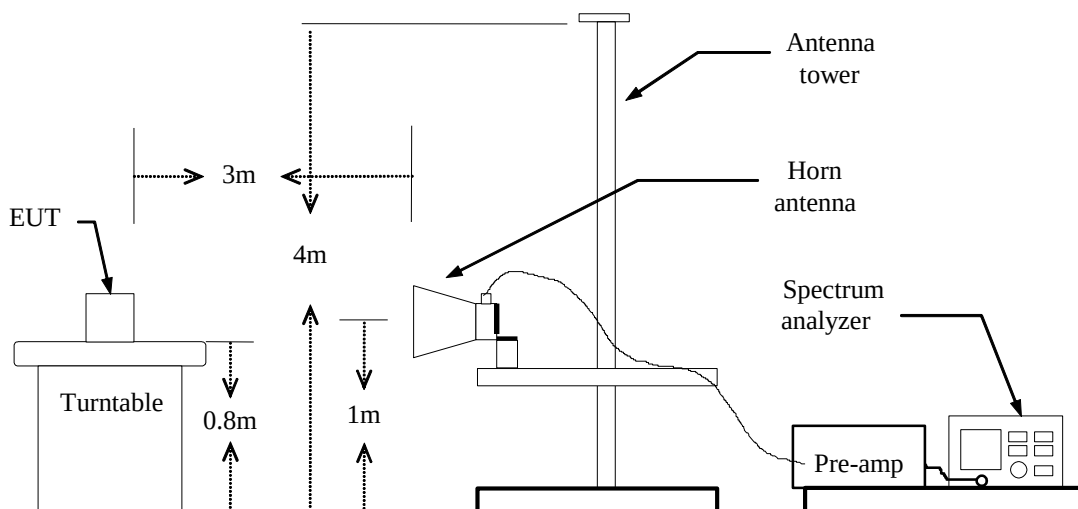
According to FCC §2.1053

Test Configuration

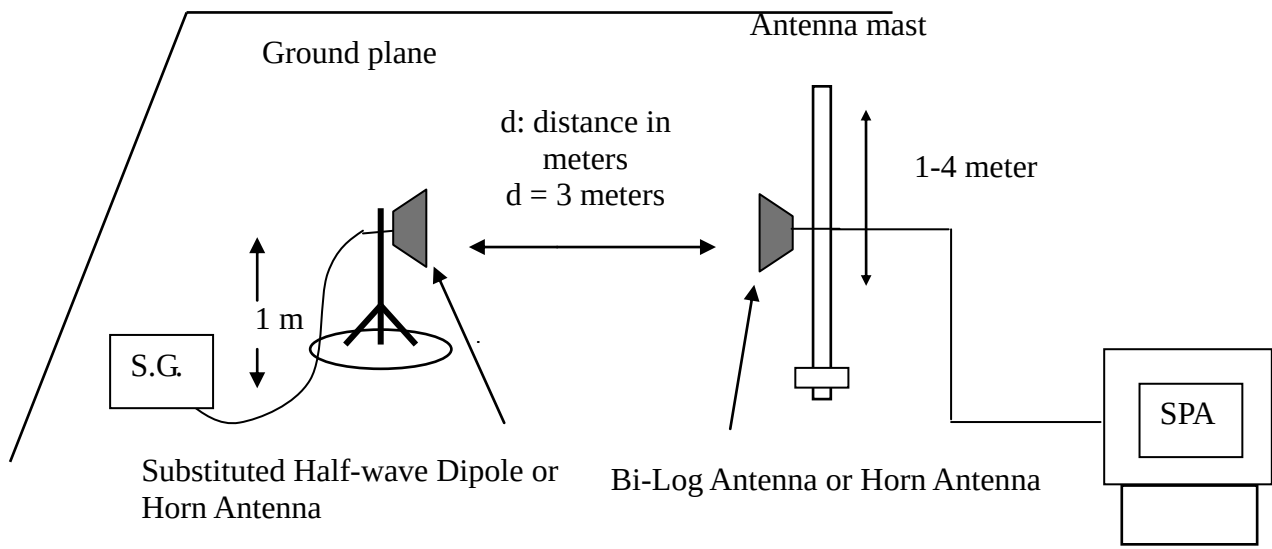
Below 1 GHz



Above 1 GHz



Substituted Method Test Set-up



TEST PROCEDURE

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

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

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

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

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

TEST RESULTS

Refer to the attached tabular data sheets.

Radiated Spurious Emission Measurement Result / Below 1GHz**Operation Mode:** GPRS 850 / TX / CH 128**Test Date:** October 13, 2015**Temperature:** 21°C**Tested by:** Jason Lu**Humidity:** 56 % 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	-59.47	1.13	0.26	-60.34	-13.00	-47.34	V
243.4000	-78.8	1.82	5.43	-75.19	-13.00	-62.19	V
342.3400	-75.35	2.18	5.8	-71.73	-13.00	-58.73	V
529.5500	-79.31	2.75	6	-76.06	-13.00	-63.06	V
624.6100	-78.22	2.96	6.15	-75.03	-13.00	-62.03	V
746.8300	-80.46	3.2	6.1	-77.56	-13.00	-64.56	V
95.9600	-61.12	1.13	0.26	-61.99	-13.00	-48.99	H
306.4500	-73.77	2.12	5.73	-70.16	-13.00	-57.16	H
342.3400	-70.95	2.18	5.8	-67.33	-13.00	-54.33	H
511.1200	-76.03	2.69	6.01	-72.71	-13.00	-59.71	H
600.3600	-72.76	2.9	6.4	-69.26	-13.00	-56.26	H
667.2900	-77.56	3.07	6.3	-74.33	-13.00	-61.33	H

Remark:

1. The emission behaviour belongs to narrowband spurious emission.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.

Operation Mode: GPRS 850 / TX / CH 190**Test Date:** October 13, 2015**Temperature:** 21°C**Tested by:** Jason Lu**Humidity:** 56 % 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	-61.79	1.13	0.26	-62.66	-13.00	-49.66	V
258.9200	-83.69	1.9	5.6	-79.99	-13.00	-66.99	V
342.3400	-74.93	2.18	5.8	-71.31	-13.00	-58.31	V
448.0700	-79.43	2.58	5.74	-76.27	-13.00	-63.27	V
578.0500	-79.15	2.88	6.03	-76.00	-13.00	-63.00	V
622.6700	-75.89	2.95	6.14	-72.70	-13.00	-59.70	V
87.2300	-60.02	1.09	0.73	-60.38	-13.00	-47.38	H
195.8700	-71.8	1.63	3.36	-70.07	-13.00	-57.07	H
258.9200	-75.25	1.9	5.6	-71.55	-13.00	-58.55	H
289.9600	-63	2.02	5.41	-59.61	-13.00	-46.61	H
354.9500	-71.78	2.25	5.75	-68.28	-13.00	-55.28	H
511.1200	-74.95	2.69	6.01	-71.63	-13.00	-58.63	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:** October 13, 2015**Temperature:** 21°C**Tested by:** Jason Lu**Humidity:** 56 % 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	-62.69	1.13	0.26	-63.56	-13.00	-50.56	V
141.5500	-66.41	1.4	-0.1	-67.91	-13.00	-54.91	V
319.0600	-76.55	2.17	5.71	-73.01	-13.00	-60.01	V
426.7300	-78.6	2.48	5.8	-75.28	-13.00	-62.28	V
579.0200	-77.94	2.89	6.02	-74.81	-13.00	-61.81	V
638.1900	-80.76	3	6.14	-77.62	-13.00	-64.62	V
113.4200	-58.45	1.23	-1.84	-61.52	-13.00	-48.52	H
258.9200	-75.73	1.9	5.6	-72.03	-13.00	-59.03	H
345.2500	-70.29	2.2	5.8	-66.69	-13.00	-53.69	H
459.7100	-74.44	2.6	5.88	-71.16	-13.00	-58.16	H
600.3600	-73.65	2.9	6.4	-70.15	-13.00	-57.15	H
738.1000	-76.24	3.2	6.17	-73.27	-13.00	-60.27	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: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-63.97	1.13	0.26	-64.84	-13.00	-51.84	V
270.5600	-83.54	1.98	5.11	-80.41	-13.00	-67.41	V
354.9500	-82.13	2.25	5.75	-78.63	-13.00	-65.63	V
576.1100	-82.19	2.88	6.05	-79.02	-13.00	-66.02	V
643.0400	-82.78	3.01	6.16	-79.63	-13.00	-66.63	V
835.1000	-80.21	3.4	6.35	-77.26	-13.00	-64.26	V
128.9400	-56.52	1.34	-1.5	-59.36	-13.00	-46.36	H
176.4700	-65.51	1.59	3.21	-63.89	-13.00	-50.89	H
342.3400	-71.29	2.18	5.8	-67.67	-13.00	-54.67	H
600.3600	-71.72	2.9	6.4	-68.22	-13.00	-55.22	H
729.3700	-75.23	3.18	6.4	-72.01	-13.00	-59.01	H
830.2500	-75.55	3.39	6.3	-72.64	-13.00	-59.64	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: GPRS 1900 / TX / CH 661

Test Date: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-63.97	1.13	0.26	-64.84	-13.00	-51.84	V
150.2800	-71.59	1.43	0.71	-72.31	-13.00	-59.31	V
270.5600	-83.54	1.98	5.11	-80.41	-13.00	-67.41	V
426.7300	-81.56	2.48	5.8	-78.24	-13.00	-65.24	V
508.2100	-81.71	2.69	5.98	-78.42	-13.00	-65.42	V
727.4300	-82.28	3.18	6.42	-79.04	-13.00	-66.04	V
95.9600	-70.52	1.13	0.26	-71.39	-13.00	-58.39	H
147.3700	-67.35	1.42	0.44	-68.33	-13.00	-55.33	H
270.5600	-76.8	1.98	5.11	-73.67	-13.00	-60.67	H
448.0700	-75.75	2.58	5.74	-72.59	-13.00	-59.59	H
643.0400	-76.64	3.01	6.16	-73.49	-13.00	-60.49	H
769.1400	-76.25	3.27	6.39	-73.13	-13.00	-60.13	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: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-63.69	1.13	0.26	-64.56	-13.00	-51.56	V
186.1700	-83.75	1.62	3.85	-81.52	-13.00	-68.52	V
270.5600	-81.78	1.98	5.11	-78.65	-13.00	-65.65	V
426.7300	-80.34	2.48	5.8	-77.02	-13.00	-64.02	V
577.0800	-81.97	2.88	6.04	-78.81	-13.00	-65.81	V
772.0500	-80.13	3.28	6.32	-77.09	-13.00	-64.09	V
147.3700	-67.11	1.42	0.44	-68.09	-13.00	-55.09	H
246.3100	-76.32	1.83	5.54	-72.61	-13.00	-59.61	H
448.0700	-75.55	2.58	5.74	-72.39	-13.00	-59.39	H
612.9700	-76.87	2.94	6.23	-73.58	-13.00	-60.58	H
773.9900	-75.3	3.28	6.26	-72.32	-13.00	-59.32	H
993.2100	-74.05	3.72	6.2	-71.57	-13.00	-58.57	H

Remark:

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

Operation Mode: EDGE 850 / TX / CH 128

Test Date: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-59.52	1.13	0.26	-60.39	-13.00	-47.39	V
141.5500	-65.07	1.4	-0.1	-66.57	-13.00	-53.57	V
191.9900	-78.08	1.62	3.79	-75.91	-13.00	-62.91	V
342.3400	-73.55	2.18	5.8	-69.93	-13.00	-56.93	V
439.3400	-78.25	2.53	5.9	-74.88	-13.00	-61.88	V
702.2100	-81.23	3.12	6.37	-77.98	-13.00	-64.98	V
95.9600	-60.35	1.13	0.26	-61.22	-13.00	-48.22	H
167.7400	-65.71	1.55	2.26	-65.00	-13.00	-52.00	H
246.3100	-74.83	1.83	5.54	-71.12	-13.00	-58.12	H
342.3400	-70.66	2.18	5.8	-67.04	-13.00	-54.04	H
552.8300	-72.4	2.82	6.14	-69.08	-13.00	-56.08	H
622.6700	-74.03	2.95	6.14	-70.84	-13.00	-57.84	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: EDGE 850 / TX / CH 190**Test Date:** October 13, 2015**Temperature:** 21°C**Tested by:** Jason Lu**Humidity:** 56 % 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	-59.99	1.13	0.26	-60.86	-13.00	-47.86	V
198.7800	-78.73	1.63	3.05	-77.31	-13.00	-64.31	V
330.7000	-78.28	2.16	5.71	-74.73	-13.00	-61.73	V
342.3400	-75.25	2.18	5.8	-71.63	-13.00	-58.63	V
426.7300	-78.84	2.48	5.8	-75.52	-13.00	-62.52	V
529.5500	-79.56	2.75	6	-76.31	-13.00	-63.31	V
154.1600	-60.71	1.45	1.01	-61.15	-13.00	-48.15	H
319.0600	-71.98	2.17	5.71	-68.44	-13.00	-55.44	H
345.2500	-71.31	2.2	5.8	-67.71	-13.00	-54.71	H
505.3000	-75.06	2.69	5.95	-71.80	-13.00	-58.80	H
627.5200	-69.47	2.97	6.17	-66.27	-13.00	-53.27	H
793.3900	-75.74	3.33	6.33	-72.74	-13.00	-59.74	H

Remark:

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

Operation Mode: EDGE 850 / TX / CH 251

Test Date: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
95.9600	-58.69	1.13	0.26	-59.56	-13.00	-46.56	V
150.2800	-67.66	1.43	0.71	-68.38	-13.00	-55.38	V
342.3400	-75.24	2.18	5.8	-71.62	-13.00	-58.62	V
342.3400	-75.24	2.18	5.8	-71.62	-13.00	-58.62	V
439.3400	-77.81	2.53	5.9	-74.44	-13.00	-61.44	V
600.3600	-77.58	2.9	6.4	-74.08	-13.00	-61.08	V
95.9600	-59.29	1.13	0.26	-60.16	-13.00	-47.16	H
170.6500	-69.46	1.57	2.59	-68.44	-13.00	-55.44	H
309.3600	-73.6	2.13	5.78	-69.95	-13.00	-56.95	H
346.2200	-71.03	2.21	5.8	-67.44	-13.00	-54.44	H
415.0900	-73.55	2.45	5.86	-70.14	-13.00	-57.14	H
623.6400	-68.5	2.95	6.14	-65.31	-13.00	-52.31	H

Remark:

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

Operation Mode: EDGE 1900 / TX / CH 512

Test Date: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-62.16	1.13	0.26	-63.03	-13.00	-50.03	V
205.5700	-78.87	1.66	4.45	-76.08	-13.00	-63.08	V
342.3400	-74.9	2.18	5.8	-71.28	-13.00	-58.28	V
541.1900	-76.8	2.78	6.25	-73.33	-13.00	-60.33	V
600.3600	-78.23	2.9	6.4	-74.73	-13.00	-61.73	V
771.0800	-78.77	3.27	6.35	-75.69	-13.00	-62.69	V
95.9600	-59.69	1.13	0.26	-60.56	-13.00	-47.56	H
161.9200	-68.3	1.5	1.61	-68.19	-13.00	-55.19	H
270.5600	-75.45	1.98	5.11	-72.32	-13.00	-59.32	H
448.0700	-74.74	2.58	5.74	-71.58	-13.00	-58.58	H
609.0900	-77.46	2.94	6.31	-74.09	-13.00	-61.09	H
784.6600	-74.79	3.32	6.16	-71.95	-13.00	-58.95	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: EDGE 1900 / TX / CH 661

Test Date: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-63.87	1.13	0.26	-64.74	-13.00	-51.74	V
246.3100	-82.27	1.83	5.54	-78.56	-13.00	-65.56	V
354.9500	-78.89	2.25	5.75	-75.39	-13.00	-62.39	V
448.0700	-78.82	2.58	5.74	-75.66	-13.00	-62.66	V
637.2200	-81.16	3	6.15	-78.01	-13.00	-65.01	V
772.0500	-79.38	3.28	6.32	-76.34	-13.00	-63.34	V
95.9600	-57.74	1.13	0.26	-58.61	-13.00	-45.61	H
270.5600	-75.79	1.98	5.11	-72.66	-13.00	-59.66	H
459.7100	-75.72	2.6	5.88	-72.44	-13.00	-59.44	H
644.9800	-77.12	3.02	6.19	-73.95	-13.00	-60.95	H
798.2400	-75.34	3.33	6.47	-72.20	-13.00	-59.20	H
889.4200	-75.71	3.5	6.7	-72.51	-13.00	-59.51	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: EDGE 1900 / TX / CH 810

Test Date: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-62.18	1.13	0.26	-63.05	-13.00	-50.05	V
270.5600	-81.57	1.98	5.11	-78.44	-13.00	-65.44	V
448.0700	-77.89	2.58	5.74	-74.73	-13.00	-61.73	V
620.7300	-80.25	2.94	6.12	-77.07	-13.00	-64.07	V
748.7700	-79.79	3.2	6.1	-76.89	-13.00	-63.89	V
885.5400	-79.38	3.48	6.7	-76.16	-13.00	-63.16	V
150.2800	-64.28	1.43	0.71	-65.00	-13.00	-52.00	H
270.5600	-77.62	1.98	5.11	-74.49	-13.00	-61.49	H
459.7100	-76.06	2.6	5.88	-72.78	-13.00	-59.78	H
643.0400	-77.27	3.01	6.16	-74.12	-13.00	-61.12	H
771.0800	-75.4	3.27	6.35	-72.32	-13.00	-59.32	H
925.3100	-75.79	3.59	6.5	-72.88	-13.00	-59.88	H

Remark:

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

Operation Mode: WCDMA Band II / TX / CH 9262**Test Date:** October 14, 2015**Temperature:** 21°C**Tested by:** Jason Lu**Humidity:** 56 % 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)
84.3200	-70.13	1.07	0.39	-70.81	-13.00	-57.81	V
270.5600	-78.83	1.98	5.11	-75.70	-13.00	-62.70	V
379.2000	-81.3	2.31	5.98	-77.63	-13.00	-64.63	V
448.0700	-78.82	2.58	5.74	-75.66	-13.00	-62.66	V
600.3600	-80.09	2.9	6.4	-76.59	-13.00	-63.59	V
718.7000	-80.2	3.16	6.46	-76.90	-13.00	-63.90	V
84.3200	-59.41	1.07	0.39	-60.09	-13.00	-47.09	H
120.2100	-69.52	1.27	-2.06	-72.85	-13.00	-59.85	H
273.4700	-79.4	1.99	5.17	-76.22	-13.00	-63.22	H
402.4800	-76.52	2.41	5.97	-72.96	-13.00	-59.96	H
628.4900	-75.51	2.97	6.18	-72.30	-13.00	-59.30	H
706.0900	-77.33	3.13	6.33	-74.13	-13.00	-61.13	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:** October 14, 2015**Temperature:** 21°C**Tested by:** Jason Lu**Humidity:** 56 % 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)
84.3200	-70.18	1.07	0.39	-70.86	-13.00	-57.86	V
165.8000	-77.93	1.53	2.05	-77.41	-13.00	-64.41	V
309.3600	-79.55	2.13	5.78	-75.90	-13.00	-62.90	V
382.1100	-80.91	2.31	5.99	-77.23	-13.00	-64.23	V
459.7100	-80.29	2.6	5.88	-77.01	-13.00	-64.01	V
649.8300	-80.67	3.03	6.28	-77.42	-13.00	-64.42	V
84.3200	-59.09	1.07	0.39	-59.77	-13.00	-46.77	H
257.9500	-79.46	1.89	5.61	-75.74	-13.00	-62.74	H
390.8400	-74.96	2.32	6	-71.28	-13.00	-58.28	H
577.0800	-74.89	2.88	6.04	-71.73	-13.00	-58.73	H
674.0800	-76.31	3.08	6.38	-73.01	-13.00	-60.01	H
806.0000	-74.42	3.33	6.38	-71.37	-13.00	-58.37	H

Remark:

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

Operation Mode: WCDMA Band II / TX / CH 9538**Test Date:** October 14, 2015**Temperature:** 21°C**Tested by:** Jason Lu**Humidity:** 56 % 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)
84.3200	-70.63	1.07	0.39	-71.31	-13.00	-58.31	V
161.9200	-73.8	1.5	1.61	-73.69	-13.00	-60.69	V
270.5600	-79.04	1.98	5.11	-75.91	-13.00	-62.91	V
448.0700	-78.81	2.58	5.74	-75.65	-13.00	-62.65	V
600.3600	-80.7	2.9	6.4	-77.20	-13.00	-64.20	V
711.9100	-80.46	3.15	6.35	-77.26	-13.00	-64.26	V
84.3200	-58.48	1.07	0.39	-59.16	-13.00	-46.16	H
138.6400	-69.94	1.39	-0.38	-71.71	-13.00	-58.71	H
256.0100	-79.07	1.88	5.63	-75.32	-13.00	-62.32	H
459.7100	-75.48	2.6	5.88	-72.20	-13.00	-59.20	H
516.9400	-76.92	2.7	6.07	-73.55	-13.00	-60.55	H
629.4600	-73.2	2.97	6.19	-69.98	-13.00	-56.98	H

Remark:

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

Operation Mode: WCDMA Band V / TX / CH 4132**Test Date:** October 14, 2015**Temperature:** 21°C**Tested by:** Jason Lu**Humidity:** 56 % 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)
84.3200	-66.33	1.07	0.39	-67.01	-13.00	-54.01	V
150.2800	-68.16	1.43	0.71	-68.88	-13.00	-55.88	V
249.2200	-70.32	1.84	5.65	-66.51	-13.00	-53.51	V
390.8400	-76.2	2.32	6	-72.52	-13.00	-59.52	V
529.5500	-75.41	2.75	6	-72.16	-13.00	-59.16	V
656.6200	-79.67	3.05	6.3	-76.42	-13.00	-63.42	V
84.3200	-59.12	1.07	0.39	-59.80	-13.00	-46.80	H
194.9000	-64.97	1.63	3.47	-63.13	-13.00	-50.13	H
271.5300	-72.03	1.98	5.13	-68.88	-13.00	-55.88	H
346.2200	-70.2	2.21	5.8	-66.61	-13.00	-53.61	H
459.7100	-74.45	2.6	5.88	-71.17	-13.00	-58.17	H
631.4000	-73.55	2.98	6.2	-70.33	-13.00	-57.33	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: WCDMA Band V / TX / CH 4182**Test Date:** October 14, 2015**Temperature:** 21°C**Tested by:** Jason Lu**Humidity:** 56 % 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)
115.3600	-62.67	1.24	-1.91	-65.82	-13.00	-52.82	V
270.5600	-78	1.98	5.11	-74.87	-13.00	-61.87	V
342.3400	-74.82	2.18	5.8	-71.20	-13.00	-58.20	V
456.8000	-76.9	2.6	5.84	-73.66	-13.00	-60.66	V
529.5500	-75.82	2.75	6	-72.57	-13.00	-59.57	V
735.1900	-79.38	3.19	6.25	-76.32	-13.00	-63.32	V
100.8100	-54.9	1.15	-0.51	-56.56	-13.00	-43.56	H
161.9200	-67.62	1.5	1.61	-67.51	-13.00	-54.51	H
369.5000	-70.02	2.3	5.8	-66.52	-13.00	-53.52	H
390.8400	-72.44	2.32	6	-68.76	-13.00	-55.76	H
632.3700	-71.17	2.98	6.19	-67.96	-13.00	-54.96	H
794.3600	-73.26	3.33	6.35	-70.24	-13.00	-57.24	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:** October 14, 2015**Temperature:** 21°C**Tested by:** Jason Lu**Humidity:** 56 % 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	-60.39	0.86	-2.8	-64.05	-13.00	-51.05	V
228.8500	-80.18	1.79	5.38	-76.59	-13.00	-63.59	V
309.3600	-76.05	2.13	5.78	-72.40	-13.00	-59.40	V
390.8400	-77.37	2.32	6	-73.69	-13.00	-60.69	V
448.0700	-77.38	2.58	5.74	-74.22	-13.00	-61.22	V
577.0800	-75.06	2.88	6.04	-71.90	-13.00	-58.90	V
84.3200	-59.52	1.07	0.39	-60.20	-13.00	-47.20	H
194.9000	-68.62	1.63	3.47	-66.78	-13.00	-53.78	H
369.5000	-71.18	2.3	5.8	-67.68	-13.00	-54.68	H
459.7100	-74.67	2.6	5.88	-71.39	-13.00	-58.39	H
600.3600	-73.03	2.9	6.4	-69.53	-13.00	-56.53	H
631.4000	-71.71	2.98	6.2	-68.49	-13.00	-55.49	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 / HSDPA Band II /
TX / CH 9262

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
84.3200	-71	1.07	0.39	-71.68	-13.00	-58.68	V
161.9200	-74.47	1.5	1.61	-74.36	-13.00	-61.36	V
270.5600	-79.91	1.98	5.11	-76.78	-13.00	-63.78	V
448.0700	-79.09	2.58	5.74	-75.93	-13.00	-62.93	V
612.0000	-80.84	2.94	6.25	-77.53	-13.00	-64.53	V
643.0400	-81.68	3.01	6.16	-78.53	-13.00	-65.53	V
84.3200	-59.41	1.07	0.39	-60.09	-13.00	-47.09	H
194.9000	-74.79	1.63	3.47	-72.95	-13.00	-59.95	H
273.4700	-79.4	1.99	5.17	-76.22	-13.00	-63.22	H
354.9500	-75.24	2.25	5.75	-71.74	-13.00	-58.74	H
448.0700	-76.58	2.58	5.74	-73.42	-13.00	-60.42	H
565.4400	-76.01	2.86	6.04	-72.83	-13.00	-59.83	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 II /
TX / CH 9400

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
84.3200	-69.85	1.07	0.39	-70.53	-13.00	-57.53	V
198.7800	-81.22	1.63	3.05	-79.80	-13.00	-66.80	V
345.2500	-76.94	2.2	5.8	-73.34	-13.00	-60.34	V
506.2700	-81.91	2.69	5.96	-78.64	-13.00	-65.64	V
577.0800	-80.13	2.88	6.04	-76.97	-13.00	-63.97	V
707.0600	-80.86	3.13	6.32	-77.67	-13.00	-64.67	V
84.3200	-59.3	1.07	0.39	-59.98	-13.00	-46.98	H
195.8700	-76.39	1.63	3.36	-74.66	-13.00	-61.66	H
265.7100	-79.08	1.95	5.32	-75.71	-13.00	-62.71	H
402.4800	-74.92	2.41	5.97	-71.36	-13.00	-58.36	H
435.4600	-75.38	2.51	5.86	-72.03	-13.00	-59.03	H
516.9400	-76.36	2.7	6.07	-72.99	-13.00	-59.99	H

Remark:

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

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

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
84.3200	-69.64	1.07	0.39	-70.32	-13.00	-57.32	V
270.5600	-78.64	1.98	5.11	-75.51	-13.00	-62.51	V
448.0700	-79	2.58	5.74	-75.84	-13.00	-62.84	V
600.3600	-81	2.9	6.4	-77.50	-13.00	-64.50	V
721.6100	-81.19	3.17	6.49	-77.87	-13.00	-64.87	V
868.0800	-78.46	3.44	6.49	-75.41	-13.00	-62.41	V
84.3200	-59.37	1.07	0.39	-60.05	-13.00	-47.05	H
198.7800	-76.18	1.63	3.05	-74.76	-13.00	-61.76	H
330.7000	-77.38	2.16	5.71	-73.83	-13.00	-60.83	H
448.0700	-75.47	2.58	5.74	-72.31	-13.00	-59.31	H
529.5500	-75.41	2.75	6	-72.16	-13.00	-59.16	H
600.3600	-74.43	2.9	6.4	-70.93	-13.00	-57.93	H

Remark:

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

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

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
84.3200	-71.45	1.07	0.39	-72.13	-13.00	-59.13	V
174.5300	-80.01	1.59	3	-78.60	-13.00	-65.60	V
270.5600	-79.63	1.98	5.11	-76.50	-13.00	-63.50	V
390.8400	-81.16	2.32	6	-77.48	-13.00	-64.48	V
459.7100	-80.71	2.6	5.88	-77.43	-13.00	-64.43	V
600.3600	-81.41	2.9	6.4	-77.91	-13.00	-64.91	V
84.3200	-59.93	1.07	0.39	-60.61	-13.00	-47.61	H
186.1700	-76.04	1.62	3.85	-73.81	-13.00	-60.81	H
270.5600	-76.26	1.98	5.11	-73.13	-13.00	-60.13	H
402.4800	-76.26	2.41	5.97	-72.70	-13.00	-59.70	H
468.4400	-77.99	2.62	5.8	-74.81	-13.00	-61.81	H
656.6200	-77.03	3.05	6.3	-73.78	-13.00	-60.78	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 V /
TX / CH 4182

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
66.8600	-64.66	0.93	-1.89	-67.48	-13.00	-54.48	V
270.5600	-77.89	1.98	5.11	-74.76	-13.00	-61.76	V
345.2500	-75.86	2.2	5.8	-72.26	-13.00	-59.26	V
448.0700	-76.74	2.58	5.74	-73.58	-13.00	-60.58	V
576.1100	-78.21	2.88	6.05	-75.04	-13.00	-62.04	V
631.4000	-79.9	2.98	6.2	-76.68	-13.00	-63.68	V
84.3200	-59.66	1.07	0.39	-60.34	-13.00	-47.34	H
195.8700	-76.77	1.63	3.36	-75.04	-13.00	-62.04	H
345.2500	-75.68	2.2	5.8	-72.08	-13.00	-59.08	H
459.7100	-76.11	2.6	5.88	-72.83	-13.00	-59.83	H
566.4100	-76.04	2.86	6.06	-72.84	-13.00	-59.84	H
633.3400	-74.37	2.99	6.18	-71.18	-13.00	-58.18	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: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
84.3200	-70.31	1.07	0.39	-70.99	-13.00	-57.99	V
180.3500	-79.65	1.61	3.62	-77.64	-13.00	-64.64	V
270.5600	-78.53	1.98	5.11	-75.40	-13.00	-62.40	V
345.2500	-76.91	2.2	5.8	-73.31	-13.00	-60.31	V
448.0700	-78.15	2.58	5.74	-74.99	-13.00	-61.99	V
552.8300	-81.43	2.82	6.14	-78.11	-13.00	-65.11	V
84.3200	-59.38	1.07	0.39	-60.06	-13.00	-47.06	H
138.6400	-71.1	1.39	-0.38	-72.87	-13.00	-59.87	H
267.6500	-79.18	1.96	5.22	-75.92	-13.00	-62.92	H
402.4800	-74.73	2.41	5.97	-71.17	-13.00	-58.17	H
600.3600	-74.84	2.9	6.4	-71.34	-13.00	-58.34	H
924.3400	-74.2	3.59	6.51	-71.28	-13.00	-58.28	H

Remark:

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

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

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
84.3200	-69.89	1.07	0.39	-70.57	-13.00	-57.57	V
180.3500	-79.62	1.61	3.62	-77.61	-13.00	-64.61	V
270.5600	-78.68	1.98	5.11	-75.55	-13.00	-62.55	V
448.0700	-77.79	2.58	5.74	-74.63	-13.00	-61.63	V
552.8300	-81.6	2.82	6.14	-78.28	-13.00	-65.28	V
653.7100	-80.44	3.04	6.3	-77.18	-13.00	-64.18	V
84.3200	-59.21	1.07	0.39	-59.89	-13.00	-46.89	H
150.2800	-73.63	1.43	0.71	-74.35	-13.00	-61.35	H
240.4900	-79.72	1.81	5.34	-76.19	-13.00	-63.19	H
345.2500	-75.31	2.2	5.8	-71.71	-13.00	-58.71	H
448.0700	-75.54	2.58	5.74	-72.38	-13.00	-59.38	H
695.4200	-77.15	3.12	6.44	-73.83	-13.00	-60.83	H

Remark:

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

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

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
84.3200	-70.23	1.07	0.39	-70.91	-13.00	-57.91	V
161.9200	-74.23	1.5	1.61	-74.12	-13.00	-61.12	V
270.5600	-78.3	1.98	5.11	-75.17	-13.00	-62.17	V
448.0700	-78.35	2.58	5.74	-75.19	-13.00	-62.19	V
539.2500	-82.64	2.78	6.27	-79.15	-13.00	-66.15	V
711.9100	-81.25	3.15	6.35	-78.05	-13.00	-65.05	V
84.3200	-59.22	1.07	0.39	-59.90	-13.00	-46.90	H
138.6400	-70.45	1.39	-0.38	-72.22	-13.00	-59.22	H
263.7700	-79.71	1.93	5.41	-76.23	-13.00	-63.23	H
402.4800	-75.55	2.41	5.97	-71.99	-13.00	-58.99	H
529.5500	-77.29	2.75	6	-74.04	-13.00	-61.04	H
629.4600	-75.78	2.97	6.19	-72.56	-13.00	-59.56	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: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
84.3200	-69.39	1.07	0.39	-70.07	-13.00	-57.07	V
150.2800	-72.96	1.43	0.71	-73.68	-13.00	-60.68	V
309.3600	-79.28	2.13	5.78	-75.63	-13.00	-62.63	V
390.8400	-82.17	2.32	6	-78.49	-13.00	-65.49	V
516.9400	-81.35	2.7	6.07	-77.98	-13.00	-64.98	V
645.9500	-80.53	3.02	6.21	-77.34	-13.00	-64.34	V
84.3200	-58.73	1.07	0.39	-59.41	-13.00	-46.41	H
195.8700	-76.65	1.63	3.36	-74.92	-13.00	-61.92	H
345.2500	-74.14	2.2	5.8	-70.54	-13.00	-57.54	H
459.7100	-75.43	2.6	5.88	-72.15	-13.00	-59.15	H
576.1100	-73.97	2.88	6.05	-70.80	-13.00	-57.80	H
632.3700	-72.52	2.98	6.19	-69.31	-13.00	-56.31	H

Remark:

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

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

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
84.3200	-69.93	1.07	0.39	-70.61	-13.00	-57.61	V
270.5600	-79.29	1.98	5.11	-76.16	-13.00	-63.16	V
346.2200	-75.83	2.21	5.8	-72.24	-13.00	-59.24	V
435.4600	-81.63	2.51	5.86	-78.28	-13.00	-65.28	V
600.3600	-80.34	2.9	6.4	-76.84	-13.00	-63.84	V
706.0900	-79.52	3.13	6.33	-76.32	-13.00	-63.32	V
84.3200	-59.47	1.07	0.39	-60.15	-13.00	-47.15	H
138.6400	-71.18	1.39	-0.38	-72.95	-13.00	-59.95	H
259.8900	-77.87	1.91	5.59	-74.19	-13.00	-61.19	H
345.2500	-74.35	2.2	5.8	-70.75	-13.00	-57.75	H
448.0700	-75.04	2.58	5.74	-71.88	-13.00	-58.88	H
639.1600	-74.95	3	6.14	-71.81	-13.00	-58.81	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 / HSUPA Band V /
TX / CH 4182

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
84.3200	-69.63	1.07	0.39	-70.31	-13.00	-57.31	V
161.9200	-73.82	1.5	1.61	-73.71	-13.00	-60.71	V
270.5600	-78.72	1.98	5.11	-75.59	-13.00	-62.59	V
319.0600	-79.28	2.17	5.71	-75.74	-13.00	-62.74	V
448.0700	-77.16	2.58	5.74	-74.00	-13.00	-61.00	V
505.3000	-81.28	2.69	5.95	-78.02	-13.00	-65.02	V
84.3200	-59.45	1.07	0.39	-60.13	-13.00	-47.13	H
138.6400	-70.72	1.39	-0.38	-72.49	-13.00	-59.49	H
252.1300	-79.21	1.85	5.68	-75.38	-13.00	-62.38	H
345.2500	-75.42	2.2	5.8	-71.82	-13.00	-58.82	H
448.0700	-74.94	2.58	5.74	-71.78	-13.00	-58.78	H
600.3600	-75.68	2.9	6.4	-72.18	-13.00	-59.18	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 / HSUPA Band V /
TX / CH 4233

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
84.3200	-70.39	1.07	0.39	-71.07	-13.00	-58.07	V
150.2800	-72.13	1.43	0.71	-72.85	-13.00	-59.85	V
270.5600	-78.24	1.98	5.11	-75.11	-13.00	-62.11	V
345.2500	-78.63	2.2	5.8	-75.03	-13.00	-62.03	V
448.0700	-78.68	2.58	5.74	-75.52	-13.00	-62.52	V
505.3000	-81.66	2.69	5.95	-78.40	-13.00	-65.40	V
60.0700	-63.29	0.88	-2.19	-66.36	-13.00	-53.36	H
84.3200	-58.88	1.07	0.39	-59.56	-13.00	-46.56	H
107.6000	-67.82	1.19	-1.39	-70.40	-13.00	-57.40	H
195.8700	-76.77	1.63	3.36	-75.04	-13.00	-62.04	H
345.2500	-75.65	2.2	5.8	-72.05	-13.00	-59.05	H
448.0700	-74.55	2.58	5.74	-71.39	-13.00	-58.39	H

Remark:

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

Above 1GHz**Operation Mode:** GPRS 850 / TX / CH 128**Test Date:** October 13, 2015**Temperature:** 21°C**Tested by:** Jason Lu**Humidity:** 56 % 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)
1567.000	-51.2	4.94	6.18	-49.96	-13.00	-36.96	V
2470.000	-51.48	6.3	6.06	-51.72	-13.00	-38.72	V
N/A							
1651.000	-41.88	5.05	6.03	-40.90	-13.00	-27.90	H
2470.000	-51.03	6.3	6.06	-51.27	-13.00	-38.27	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: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
1567.000	-52.07	4.94	6.18	-50.83	-13.00	-37.83	V
5060.000	-51.78	9.43	10.62	-50.59	-13.00	-37.59	V
N/A							
1672.000	-45.01	5.07	5.99	-44.09	-13.00	-31.09	H
2512.000	-49.59	6.37	6.13	-49.83	-13.00	-36.83	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: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-38.8	5.11	5.94	-37.97	-13.00	-24.97	V
2547.000	-43.29	6.42	6.22	-43.49	-13.00	-30.49	V
N/A							
1700.000	-32.51	5.11	5.94	-31.68	-13.00	-18.68	H
2547.000	-37.46	6.42	6.22	-37.66	-13.00	-24.66	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: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-36.79	8.2	9.1	-35.89	-13.00	-22.89	V
6887.000	-45.98	11.5	11.76	-45.72	-13.00	-32.72	V
N/A							
3702.000	-26.19	8.2	9.1	-25.29	-13.00	-12.29	H
7412.000	-43.03	12.11	12.56	-42.58	-13.00	-29.58	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: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-37.11	8.23	9.16	-36.18	-13.00	-23.18	V
6733.000	-47.71	11.3	11.58	-47.43	-13.00	-34.43	V
N/A							
3758.000	-28.62	8.23	9.16	-27.69	-13.00	-14.69	H
6775.000	-46.17	11.3	11.63	-45.84	-13.00	-32.84	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: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3821.000	-38.96	8.29	9.22	-38.03	-13.00	-25.03	V
7440.000	-44.23	12.16	12.6	-43.79	-13.00	-30.79	V
N/A							
3821.000	-32.39	8.29	9.22	-31.46	-13.00	-18.46	H
5732.000	-45.67	10.24	10.85	-45.06	-13.00	-32.06	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 850 / TX / CH 128

Test Date: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
1756.000	-49.93	5.21	5.84	-49.30	-13.00	-36.30	V
2470.000	-52.06	6.3	6.06	-52.30	-13.00	-39.30	V
N/A							
1651.000	-41.72	5.05	6.03	-40.74	-13.00	-27.74	H
2470.000	-49.89	6.3	6.06	-50.13	-13.00	-37.13	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 850 / TX / CH 190

Test Date: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
1735.000	-51.15	5.17	5.88	-50.44	-13.00	-37.44	V
4122.000	-52.49	8.47	9.5	-51.46	-13.00	-38.46	V
N/A							
1672.000	-45.03	5.07	5.99	-44.11	-13.00	-31.11	H
2512.000	-48.24	6.37	6.13	-48.48	-13.00	-35.48	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: EDGE 850 / TX / CH 251

Test Date: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-38.72	5.11	5.94	-37.89	-13.00	-24.89	V
2547.000	-44.17	6.42	6.22	-44.37	-13.00	-31.37	V
N/A							
1700.000	-32.06	5.11	5.94	-31.23	-13.00	-18.23	H
2547.000	-38.08	6.42	6.22	-38.28	-13.00	-25.28	H
N/A							

Remark:

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

Operation Mode: EDGE 1900 / TX / CH 512

Test Date: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-37.21	8.2	9.1	-36.31	-13.00	-23.31	V
6187.000	-49.89	11.14	11.05	-49.98	-13.00	-36.98	V
N/A							
3702.000	-23.13	8.2	9.1	-22.23	-13.00	-9.23	H
6495.000	-48.52	11.05	11.3	-48.27	-13.00	-35.27	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: EDGE 1900 / TX / CH 661

Test Date: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-38.64	8.23	9.16	-37.71	-13.00	-24.71	V
7223.000	-45.54	11.89	12.26	-45.17	-13.00	-32.17	V
N/A							
3758.000	-39.35	8.23	9.16	-38.42	-13.00	-25.42	H
7181.000	-45.37	11.85	12.19	-45.03	-13.00	-32.03	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: October 13, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-42.12	8.29	9.22	-41.19	-13.00	-28.19	V
7517.000	-44.65	12.24	12.72	-44.17	-13.00	-31.17	V
N/A							
3821.000	-29.85	8.29	9.22	-28.92	-13.00	-15.92	H
6824.000	-46.34	11.36	11.69	-46.01	-13.00	-33.01	H
N/A							

Remark:

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

Operation Mode: WCDMA Band II / TX / CH 9262**Test Date:** October 14, 2015**Temperature:** 21°C**Tested by:** Jason Lu**Humidity:** 56 % 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	-48.31	8.2	9.1	-47.41	-13.00	-34.41	V
5515.000	-51.91	9.98	10.8	-51.09	-13.00	-38.09	V
N/A							
3702.000	-37.56	8.2	9.1	-36.66	-13.00	-23.66	H
6887.000	-45.67	11.5	11.76	-45.41	-13.00	-32.41	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 Band II / TX / CH 9400**Test Date:** October 14, 2015**Temperature:** 21°C**Tested by:** Jason Lu**Humidity:** 56 % 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	-50.15	8.24	9.16	-49.23	-13.00	-36.23	V
6306.000	-49.21	10.78	11.14	-48.85	-13.00	-35.85	V
N/A							
3758.000	-43.75	8.23	9.16	-42.82	-13.00	-29.82	H
6019.000	-48.48	10.79	10.92	-48.35	-13.00	-35.35	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 Band II / TX / CH 9538**Test Date:** October 14, 2015**Temperature:** 21°C**Tested by:** Jason Lu**Humidity:** 56 % 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	-50.67	8.28	9.21	-49.74	-13.00	-36.74	V
6544.000	-48.42	11.12	11.35	-48.19	-13.00	-35.19	V
N/A							
4255.000	-51.42	8.55	9.6	-50.37	-13.00	-37.37	H
6845.000	-46.36	11.4	11.71	-46.05	-13.00	-33.05	H
N/A							

Remark:

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

Operation Mode: WCDMA Band V / TX / CH 4132**Test Date:** October 14, 2015**Temperature:** 21°C**Tested by:** Jason Lu**Humidity:** 56 % 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)
1966.000	-45.36	5.63	5.46	-45.53	-13.00	-32.53	V
5501.000	-51.21	9.94	10.8	-50.35	-13.00	-37.35	V
N/A							
4136.000	-47.6	8.47	9.51	-46.56	-13.00	-33.56	H
5711.000	-50.22	10.19	10.84	-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: WCDMA Band V / TX / CH 4182**Test Date:** October 14, 2015**Temperature:** 21°C**Tested by:** Jason Lu**Humidity:** 56 % 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	-54.2	5.05	6.03	-53.22	-13.00	-40.22	V
1966.000	-53.53	5.63	5.46	-53.70	-13.00	-40.70	V
N/A							
3555.000	-52.69	8	8.96	-51.73	-13.00	-38.73	H
6124.000	-48.32	10.76	11	-48.08	-13.00	-35.08	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:** October 14, 2015**Temperature:** 21°C**Tested by:** Jason Lu**Humidity:** 56 % 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)
1287.000	-51.93	4.49	4.77	-51.65	-13.00	-38.65	V
1966.000	-53.46	5.63	5.46	-53.63	-13.00	-40.63	V
N/A							
1966.000	-51.81	5.63	5.46	-51.98	-13.00	-38.98	H
5144.000	-50.28	9.5	10.66	-49.12	-13.00	-36.12	H
N/A							

Remark:

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

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

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-48.81	8.2	9.1	-47.91	-13.00	-34.91	V
6180.000	-49.36	11.1	11.04	-49.42	-13.00	-36.42	V
N/A							
3702.000	-45.56	8.2	9.1	-44.66	-13.00	-31.66	H
6481.000	-47.69	11.07	11.28	-47.48	-13.00	-34.48	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 / HSDPA Band II /
TX / CH 9400

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
1287.000	-54	4.49	4.77	-53.72	-13.00	-40.72	V
3765.000	-50.65	8.24	9.16	-49.73	-13.00	-36.73	V
N/A							
3758.000	-44.25	8.23	9.16	-43.32	-13.00	-30.32	H
6019.000	-48.98	10.79	10.92	-48.85	-13.00	-35.85	H
N/A							

Remark:

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

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

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-50.35	8.28	9.21	-49.42	-13.00	-36.42	V
6117.000	-49.44	10.72	10.99	-49.17	-13.00	-36.17	V
N/A							
2869.000	-54	7.04	7.06	-53.98	-13.00	-40.98	H
4689.000	-52.09	9.13	10.1	-51.12	-13.00	-38.12	H
N/A							

Remark:

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

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

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
1735.000	-54	5.17	5.88	-53.29	-13.00	-40.29	V
1966.000	-46.36	5.63	5.46	-46.53	-13.00	-33.53	V
N/A							
4136.000	-49.1	8.47	9.51	-48.06	-13.00	-35.06	H
7027.000	-45.62	11.62	11.94	-45.30	-13.00	-32.30	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: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
1308.000	-54.46	4.53	4.92	-54.07	-13.00	-41.07	V
5053.000	-50.43	9.43	10.62	-49.24	-13.00	-36.24	V
N/A							
1735.000	-51.75	5.17	5.88	-51.04	-13.00	-38.04	H
6418.000	-47.84	11.19	11.23	-47.80	-13.00	-34.80	H
N/A							

Remark:

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

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

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
1287.000	-52.93	4.49	4.77	-52.65	-13.00	-39.65	V
2309.000	-54.2	6.08	5.83	-54.45	-13.00	-41.45	V
N/A							
1280.000	-52.42	4.47	4.72	-52.17	-13.00	-39.17	H
1966.000	-51.81	5.63	5.46	-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 / HSUPA Band II /
TX / CH 9262

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-49.81	8.2	9.1	-48.91	-13.00	-35.91	V
4633.000	-50.49	9.13	10.01	-49.61	-13.00	-36.61	V
N/A							
3702.000	-38.56	8.2	9.1	-37.66	-13.00	-24.66	H
5718.000	-50.41	10.21	10.84	-49.78	-13.00	-36.78	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.

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

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-51.15	8.24	9.16	-50.23	-13.00	-37.23	V
6992.000	-46.98	11.54	11.89	-46.63	-13.00	-33.63	V
N/A							
3758.000	-44.75	8.23	9.16	-43.82	-13.00	-30.82	H
7440.000	-43.18	12.16	12.6	-42.74	-13.00	-29.74	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: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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	-49.35	8.28	9.21	-48.42	-13.00	-35.42	V
6117.000	-49.44	10.72	10.99	-49.17	-13.00	-36.17	V
N/A							
1301.000	-54.47	4.52	4.87	-54.12	-13.00	-41.12	H
4955.000	-51.13	9.34	10.53	-49.94	-13.00	-36.94	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 / HSUPA Band V /
TX / CH 4132

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
1301.000	-55.91	4.52	4.87	-55.56	-13.00	-42.56	V
1966.000	-46.36	5.63	5.46	-46.53	-13.00	-33.53	V
N/A							
4136.000	-48.6	8.47	9.51	-47.56	-13.00	-34.56	H
6397.000	-48.25	11.21	11.22	-48.24	-13.00	-35.24	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 / HSUPA Band V /
TX / CH 4182

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
1966.000	-53.99	5.63	5.46	-54.16	-13.00	-41.16	V
4836.000	-51.77	9.3	10.34	-50.73	-13.00	-37.73	V
N/A							
							V
4178.000	-50.93	8.48	9.54	-49.87	-13.00	-36.87	H
7342.000	-42.95	12.06	12.45	-42.56	-13.00	-29.56	H
N/A							

Remark:

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

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

Test Date: October 14, 2015

Temperature: 21°C

Tested by: Jason Lu

Humidity: 56 % 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)
1287.000	-51.93	4.49	4.77	-51.65	-13.00	-38.65	V
2309.000	-54.2	6.08	5.83	-54.45	-13.00	-41.45	V
N/A							
1294.000	-52.34	4.5	4.82	-52.02	-13.00	-39.02	H
1966.000	-51.4	5.63	5.46	-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.

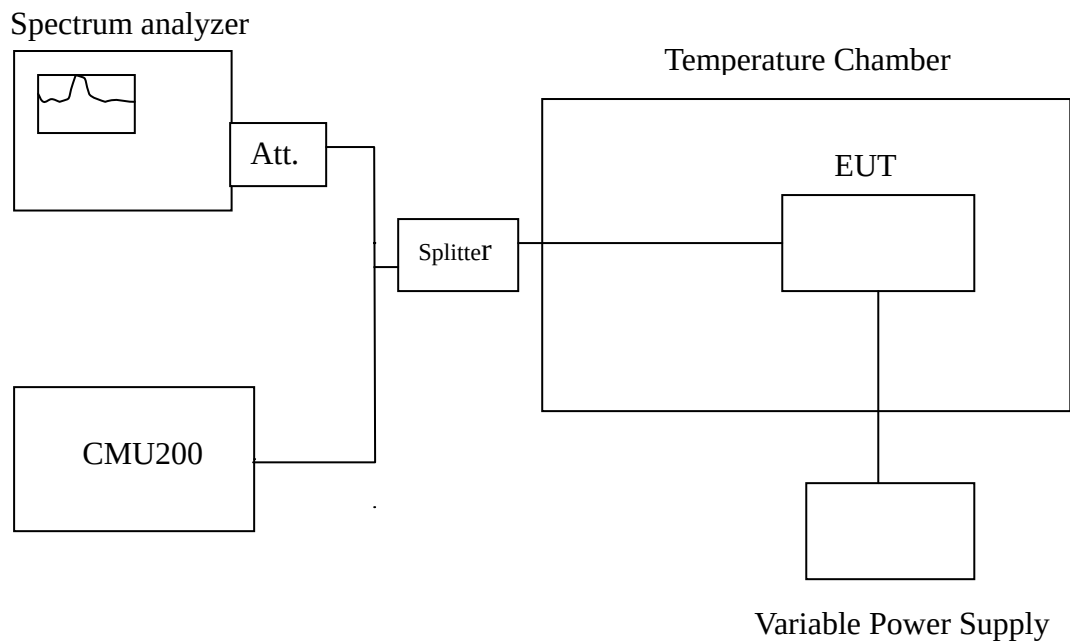
7.7 FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

LIMIT

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

Frequency Tolerance: 2.5 ppm

Test Configuration



Remark: Measurement setup for testing on Antenna connector

TEST PROCEDURE

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

TEST RESULTS

No non-compliance noted.

Reference Frequency: GPRS Mid Channel 836.6 MHz @ 20°C				
Limit: +/- 2.5 ppm = 2091 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
24	50	836599983	-7	2091
	40	836600017	27	
	30	836600017	27	
	20	836599990	0	
	10	836600006	16	
	0	836600023	33	
	-10	836600004	14	
	-20	836600003	13	
	-30	836599978	-12	

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)
24	50	1880000011	16	4700
	40	1880000020	25	
	30	1879999983	-12	
	20	1879999995	0	
	10	1880000011	16	
	0	1880000023	28	
	-10	1880000015	20	
	-20	1879999981	-14	
	-30	1880000012	17	

Reference Frequency: EDGE Mid Channel 836.6 MHz @ 20°C				
Limit: +/- 2.5 ppm = 2091 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
24	50	836599997	-7	2091
	40	836600008	4	
	30	836599994	-10	
	20	836600004	0	
	10	836600017	13	
	0	836600022	18	
	-10	836599978	-26	
	-20	836600017	13	
	50	836599997	-7	

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)
24	50	1879999999	6	4700
	40	1879999976	-17	
	30	1880000015	22	
	20	1879999993	0	
	10	1879999987	-6	
	0	1880000008	15	
	-10	1880000020	27	
	-20	1880000000	7	
	-30	1879999987	-6	

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)
24	50	1879999989	-21	4700
	40	1880000012	2	
	30	1880000006	-4	
	20	1880000010	0	
	10	1880000015	5	
	0	1880000019	9	
	-10	1879999982	-28	
	-20	1879999987	-23	
	-30	1879999989	-21	

Reference Frequency: WCDMA Band V Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2091 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
24	50	836399987	-19	2091
	40	836400015	9	
	30	836400008	2	
	20	836400006	0	
	10	836400000	-6	
	0	836400014	8	
	-10	836400022	16	
	-20	836400018	12	
	-30	836400018	12	

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)
24	50	1880000024	23	4700
	40	1880000002	1	
	30	1879999990	-11	
	20	1880000001	0	
	10	1880000003	2	
	0	1880000001	0	
	-10	1879999980	-21	
	-20	1879999992	-9	
	-30	1880000019	18	

Reference Frequency: WCDMA / HSDPA Band V Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2091 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
24	50	836400016	18	2091
	40	836400016	18	
	30	836399992	-6	
	20	836399998	0	
	10	836400017	19	
	0	836399999	1	
	-10	836400008	10	
	-20	836400012	14	
	-30	836399993	-5	

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)
24	50	1880000022	26	4700
	40	1880000005	9	
	30	1880000011	15	
	20	1879999996	0	
	10	1879999990	-6	
	0	1879999994	-2	
	-10	1879999997	1	
	-20	1880000025	29	
	-30	1879999998	2	

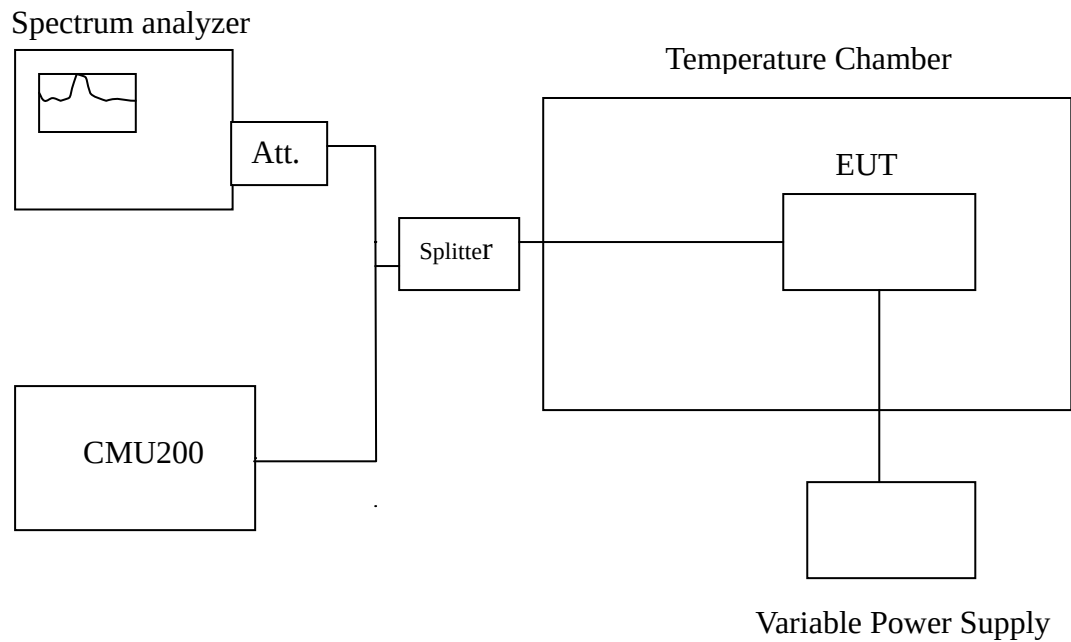
Reference Frequency: WCDMA / HSUPA Band V Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2091 Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
24	50	836400005	9	2091
	40	836399996	0	
	30	836400019	23	
	20	836399996	0	
	10	836400014	18	
	0	836399989	-7	
	-10	836400021	25	
	-20	836400016	20	
	-30	836400023	27	

7.8 FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

LIMIT

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

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.

DC

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

TEST RESULTS

No non-compliance noted.

Reference Frequency: GPRS Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2091Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
27.6	20	836600020	24	2091
24		836599996	0	
20.4		836600019	23	

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)
27.6	20	1879999988	-15	4700
24		1880000003	0	
20.4		1880000004	1	

Reference Frequency: EDGE Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2091Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
27.6	20	836599996	-4	2091
24		836600000	0	
20.4		836599994	-6	

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)
27.6	20	1879999989	-3	4700
24		1879999992	0	
20.4		1880000018	26	

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)
27.6	20	1879999997	-8	4700
24		1880000005	0	
20.4		1880000020	15	

Reference Frequency: WCDMA Band V Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2091Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
27.6	20	836399994	-6	2091
24		836400000	0	
20.4		836399987	-13	

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)
27.6	20	1880000002	9	4700
24		1879999993	0	
20.4		1880000010	17	

Reference Frequency: WCDMA HSDPA Band V Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2091Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
27.6	20	836400011	5	2091
24		836400006	0	
20.4		836399984	-22	

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)
27.6	20	1879999987	-16	4700
24		1880000003	0	
20.4		1879999995	-8	

Reference Frequency: WCDMA HSUPA Band V Mid Channel 836.6 MHz @ 20°C				
Limit: ± 2.5 ppm = 2091Hz				
Power Supply Vac	Environment Temperature (°C)	Frequency (Hz)	Delta (Hz)	Limit (Hz)
27.6	20	836400000	-3	2091
24		836400003	0	
20.4		836400000	-3	