FCC 47 CFR PART 24 SUBPART E

TEST REPORT

For

Tablet PC

Model: Smart Tab II^{7}

Trade Name: Vodafone

Issued to

Lenovo (Shanghai) Electronics Technology Co., Ltd.
No. 68 Building, 199 Fenju Road, Wai Gao Qiao FTZ , Shanghai , China

Issued by

Compliance Certification Services Inc.
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Testing Laboratory
1309

Revision History

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APPENDIX 1 - PHOTOGRAPHS OF EUT

1. TEST RESULT CERTIFICATION

Applicant:	Lenovo (Shanghai) Electronics Technology Co., Ltd. No. 68 Building, 199 Fenju Road, Wai Gao Qiao FTZ , Shanghai , China
Equipment Under Test:	Tablet PC
Trade Name:	Vodafone
Model Number:	Smart Tab II[7]
Date of Test:	June 29 ~ August 24, 2012

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
FCC 47 CFR 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: 2003 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 24 Subpart E.

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

Approved by:

Jason Lin

Jason Lin
Section Manager
Compliance Certification Services Inc.

Reviewed by:

Gina Lo

Gina Lo
Section Manager
Compliance Certification Services Inc.

2. EUT DESCRIPTION

Product	Tablet PC
Trade Name	Vodafone
Model Number	Smart Tab II[7]
Model Discrepancy	N/A
Received Date	June 18, 2012
Power Ratting	VDC from Power adapter 1) HuntKey / Model: HKA00905015-3C I/P: 100~240Vac 50/60Hz, 0.25A O/P: 5.0Vdc 1.5A 2) HuntKey / Model: HKA00905015-4C I/P:100~240Vac 50/60Hz, 0.25A O/P:5.0Vdc 1.5A 3). HuntKey / Model: HKA00905015-LC I/P: 100~240Vac 50/60Hz, 0.25A O/P: 5.0Vdc 1.5A 4) HuntKey / Model: HKA00905015-9C I/P: 100~240Vac 50/60Hz, 0.25A O/P: 5.0Vdc 1.5A
Frequency Range	TX: 1850.2 ~ 1909.8 MHz RX: 1930 ~ 1989.8 MHz
Transmit Power (EIRP Power)	29.60 dBm
Modulation Technique	GMSK
Cellular Phone Protocol	GSM (PCS), GPRS
Type of Emission	246KGXW--
Antenna Type	PIFA Antenna
Antenna Specification	0.9 dBi

Remark:

1. *The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.*
2. *This submittal(s) (test report) is intended for FCC ID: **057A2107VDF3G** filing to comply with Part 24 of the FCC 47 CFR Rules.*

3. TEST METHODOLOGY

Both conducted and radiated testing were performed according to the procedures document on chapter 13 of ANSI C63.4, TIA/EIA-603-C: 2003 and FCC CFR 47, 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057.

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.

The EUT was operated by establishing air-link with base station emulator to fix the TX frequency that was for the purpose of the measurements.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4 and TIA/EIA-603-C: 2003.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4 and TIA/EIA-603-C: 2003.

Based upon the RF conducted output power measurement as documented in the original filing, testing was only completed for GPRS/Class 8 modes as this mode had the highest peak power by comparing to GPRS/EDGE mode of operation.

3.4 DESCRIPTION OF TEST MODES

The EUT (model: Smart Tab II[7]) had been tested under operating condition.

EUT staying in continuous transmitting mode was programmed.

GPRS 1900: Channel Low (CH512), Channel Mid (CH661) and Channel High (CH810) were chosen for full testing.

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, Y axis) and the worst case was recorded.

4. INSTRUMENT CALIBRATION

4.1 MEASURING INSTRUMENT CALIBRATION

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

4.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

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

Conducted Emissions Test Site				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	MY43360131	03/01/2013
Power Meter	Agilent	E4416A	GB41291611	06/25/2013
Power Sensor	Agilent	E9327A	US40441097	06/25/2013

Wugu 966 Chamber A				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	US42510252	11/02/2012
EMI Test Receiver	R&S	ESCI	100064	02/16/2013
Pre-Amplifier	Mini-Circults	ZFL-1000LN	SF350700823	01/12/2013
Pre-Amplifier	MITEQ	AFS44-00102650-42-10P-44	1415367	11/19/2012
Bilog Antenna	Sunol Sciences	JB3	A030105	10/03/2012
Bilog Antenna	Sunol Sciences	JB3	A030205	10/03/2012
Horn Antenna	EMCO	3117	00055165	01/11/2013
Horn Antenna	EMCO	3117	00055167	12/05/2012
Horn Antenna	EMCO	3116	00026370	10/12/2012
Loop Antenna	EMCO	6502	8905/2356	06/10/2013
Turn Table	CCS	CC-T-1F	N/A	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R
Site NSA	CCS	N/A	N/A	12/25/2012
Test S/W	EZ-EMC (CCS-3A1RE)			

Conducted Emission room # A				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI Test Receiver	R&S	ESHS10	843743/015	04/30/2013
LISN	SCHWARZBECK	NSLK 8127	8127-541	12/17/2013
LISN	SCHAFFNER	NNB 41	03/10013	N.C.R.
Test S/W	CCS-3A1-CE			

4.3 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
Powerline Conducted Emission	+/- 1.6202
3M Semi Anechoic Chamber / 30M~200M	+/- 4.0606
3M Semi Anechoic Chamber / 200M~1000M	+/- 3.9979
3M Semi Anechoic Chamber / 1G~8G	+/- 2.5790
3M Semi Anechoic Chamber / 8G~18G	+/- 2.5928
3M Semi Anechoic Chamber / 18G~26G	+/- 2.7212
3M Semi Anechoic Chamber / 26G~40G	+/- 2.9520

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

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

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

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

☒ No.11, Wu-Gong 6th Rd., Wugu Industrial Park, New Taipei City 248, Taiwan (R.O.C.)
Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045

☐ No.81-1, Lane 210, Bade 2nd Rd., Lujhu Township, Taoyuan County 33841, TAIWAN, R.O.C.
Tel: 886-3-324-0332 / Fax: 886-3-324-5235

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

5.2 EQUIPMENT

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

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

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

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

5.3 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3M Semi Anechoic Chamber (FCC MRA: TW1039) to perform FCC Part 15 measurements	FCC MRA: TW1039
Taiwan	TAF	LP0002, RTTE01, FCC Method-47 CFR Part 15 Subpart C, D, E, RSS-210, RSS-310 IDA TS SRD, AS/NZS 4268, AS/NZS 4771, TS 12.1 & 12,2, ETSI EN 300 440-1, ETSI EN 300 440-2, ETSI EN 300 328, ETSI EN 300 220-1, ETSI EN 300 220-2, ETSI EN 301 893, ETSI EN 301 489-1/3/7/17 FCC OET Bulletin 65 + Supplement C, EN 50360, EN 50361, EN 50371, RSS 102, EN 50383, EN 50385, EN 50392, IEC 62209, CNS 14958-1, CNS 14959 FCC Method –47 CFR Part 15 Subpart B IEC / EN 61000-3-2, IEC / EN 61000-3-3, IEC / EN 61000-4-2/3/4/5/6/8/11	TAF Testing Laboratory 1309
Canada	Industry Canada	3M Semi Anechoic Chamber (IC 2324G-1 / IC 2324G-2) to perform	Canada IC 2324G-1 IC 2324G-2

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

6. SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

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

6.2 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
1	Multimedia Headset	Labtec	Axis-301	N/A	FCC DoC	Unshielded, 1.8m x 2	N/A
2	SIM Card	N/A	N/A	N/A	N/A	N/A	N/A
3	SD Card	Transcend.	N/A	N/A	N/A	N/A	N/A
4	Wireless Pre-N Router (MIMO) (Remote)	BELKIN	F5D8230-4	N/A	SA3-AGN0901A P0100	N/A	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m with a core
5	Universal Radio Communication Tester (Remote)	R&S	CMU200	101245	N/A	N/A	Unshielded, 1.8m
6	BT Headset (Remote)	N/A	N/A	N/A	N/A	N/A	N/A

Remark:

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

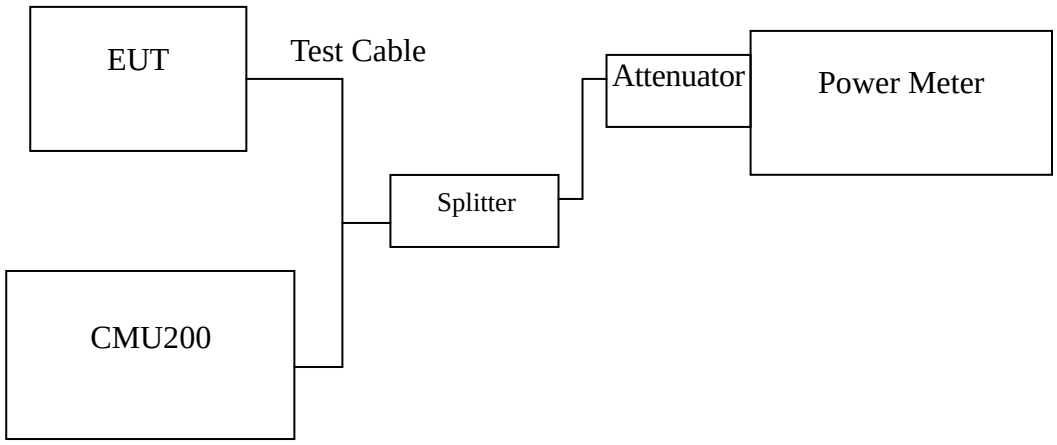
7. FCC PART 24 REQUIREMENTS

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 1900 (Class 8)	512	1850.20	28.91	0.77803
	661	1880.00	28.86	0.76913
	810	1910.00	28.79	0.75683
EDGE 1900 (Class 8)	512	1850.20	28.9	0.77624
	661	1880.00	28.84	0.76559
	810	1910.00	28.79	0.75683

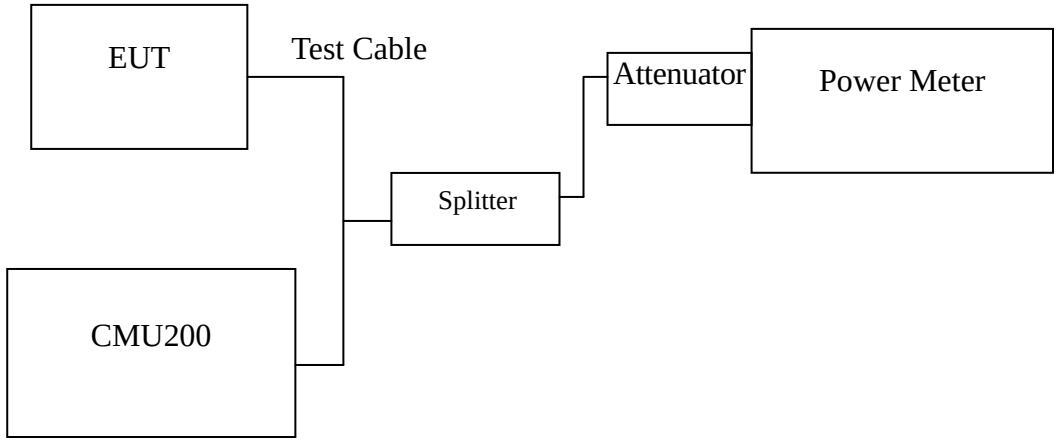
Remark: *The value of factor includes both the loss of cable and external attenuator*

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)	Average Power (dBm)	Output Power (W)
GPRS 1900 (Class 8)	512	1850.20	19.88	0.09727
	661	1880.00	19.83	0.09616
	810	1910.00	19.76	0.09462
EDGE 1900 (Class 8)	512	1850.20	19.87	0.09705
	661	1880.00	19.81	0.09571
	810	1910.00	19.76	0.09462

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

7.3 ERP & EIRP MEASUREMENT

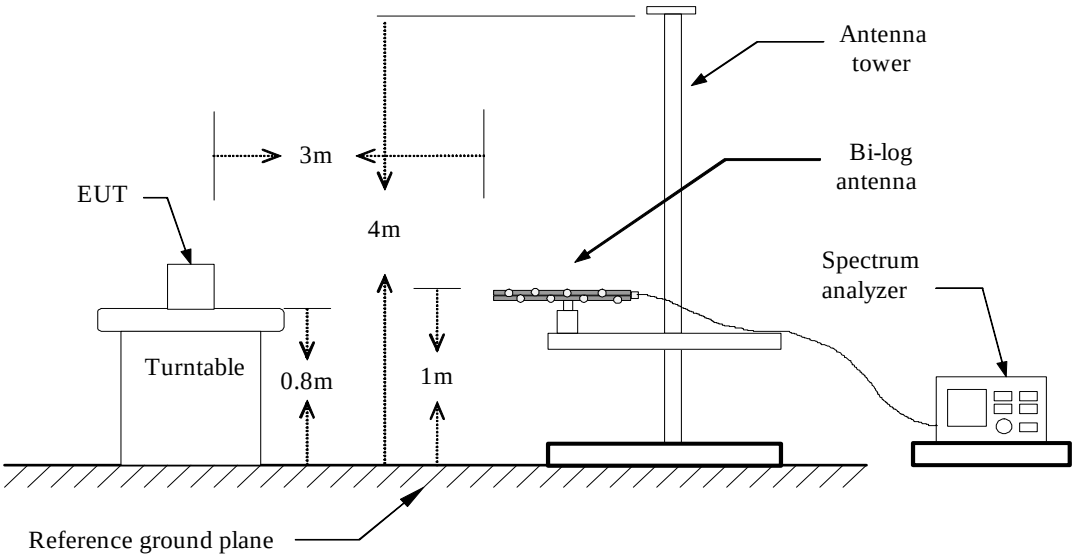
LIMIT

According to FCC §2.1046

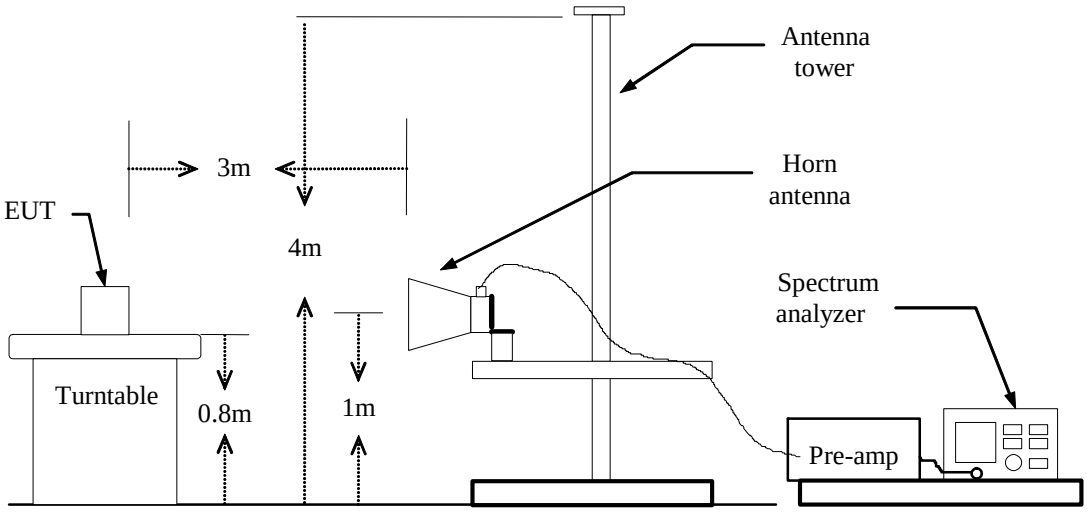
FCC 24.232(b): The equivalent Isotropic Radiated Power (EIRP) must not exceed 2 Watts.

Test Configuration

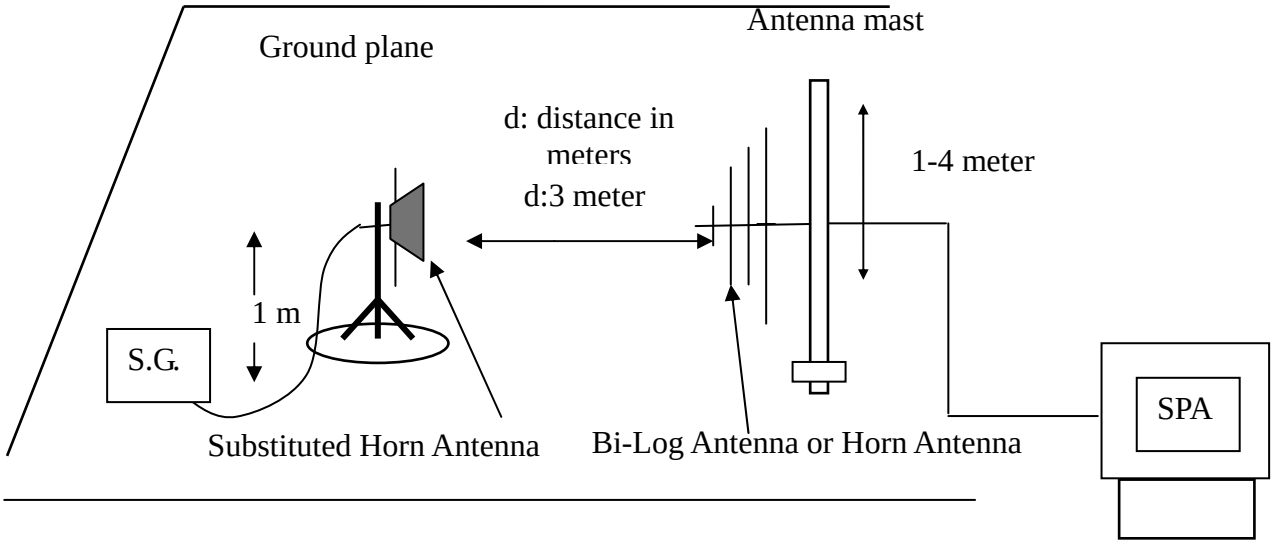
Below 1 GHz



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 3MHz and the average bandwidth was set to 3MHz. 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:

ERP = S.G. output (dBm) + Antenna Gain (dBi) – Cable (dB)-2.15
EIRP = S.G. output (dBm) + Antenna Gain (dBi) – Cable (dB)

TEST RESULTS

No non-compliance noted.

GPRS 1900 Test Data (Class 8)

EUT Pol.	Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
X	512	1850.20	V	14.94	5.37	5.67	15.24	33.00	-17.76
		1850.20	H	27.37	5.37	5.67	27.67	33.00	-5.33
	661	1880.00	V	16.13	5.42	5.62	16.33	33.00	-16.67
		1880.00	H	28.68	5.42	5.62	28.88	33.00	-4.12
	810	1909.80	V	16.36	5.48	5.56	16.44	33.00	-16.56
		1909.80	H	29.52	5.48	5.56	***29.60**	33.00	-3.40
Y	512	1850.20	V	25.3	5.37	5.67	25.60	33.00	-7.40
		1850.20	H	26.67	5.37	5.67	26.97	33.00	-6.03
	661	1880.00	V	25.5	5.42	5.62	25.70	33.00	-7.30
		1880.00	H	27.63	5.42	5.62	27.83	33.00	-5.17
	810	1909.80	V	25.67	5.48	5.56	25.75	33.00	-7.25
		1909.80	H	28.46	5.48	5.56	28.54	33.00	-4.46
Z	512	1850.20	V	27.2	5.37	5.67	27.50	33.00	-5.50
		1850.20	H	20.35	5.37	5.67	20.65	33.00	-12.35
	661	1880.00	V	28.22	5.42	5.62	28.42	33.00	-4.58
		1880.00	H	21.19	5.42	5.62	21.39	33.00	-11.61
	810	1909.80	V	28.12	5.48	5.56	28.20	33.00	-4.80
		1909.80	H	20.5	5.48	5.56	20.58	33.00	-12.42

EGPRS 1900 Test Data (Class 8)

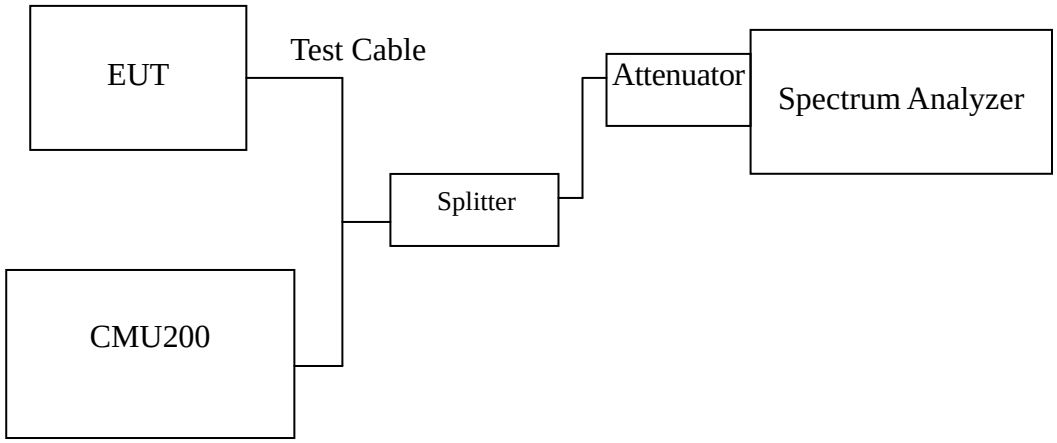
EUT Pol.	Channel	Frequency (MHz)	Antenna Pol.	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)
X	512	1850.20	V	11.49	5.37	5.67	11.79	33.00	-21.21
		1850.20	H	24	5.37	5.67	24.30	33.00	-8.70
	661	1880.00	V	12.75	5.42	5.62	12.95	33.00	-20.05
		1880.00	H	25.45	5.42	5.62	25.65	33.00	-7.35
	810	1909.80	V	13.01	5.48	5.56	13.09	33.00	-19.91
		1909.80	H	26.28	5.48	5.56	26.36	33.00	-6.64
Y	512	1850.20	V	22.03	5.37	5.67	22.33	33.00	-10.67
		1850.20	H	23.43	5.37	5.67	23.73	33.00	-9.27
	661	1880.00	V	22.26	5.42	5.62	22.46	33.00	-10.54
		1880.00	H	24.36	5.42	5.62	24.56	33.00	-8.44
	810	1909.80	V	22.25	5.48	5.56	22.33	33.00	-10.67
		1909.80	H	25.05	5.48	5.56	25.13	33.00	-7.87
Z	512	1850.20	V	27.18	5.37	5.67	27.48	33.00	-5.52
		1850.20	H	17.05	5.37	5.67	17.35	33.00	-15.65
	661	1880.00	V	24.95	5.42	5.62	25.15	33.00	-7.85
		1880.00	H	17.97	5.42	5.62	18.17	33.00	-14.83
	810	1909.80	V	24.97	5.48	5.56	25.05	33.00	-7.95
		1909.80	H	17.32	5.48	5.56	17.40	33.00	-15.60

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

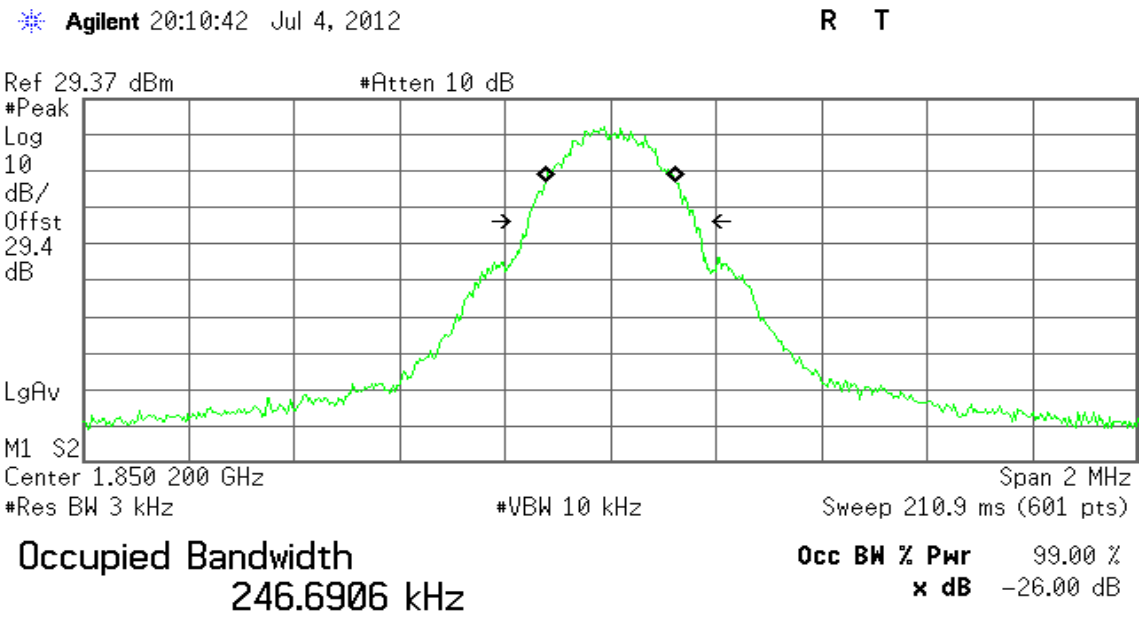
No non-compliance noted

Test Data

Test Mode	CH	Frequency (MHz)	Bandwidth (kHz)
GPRS 1900 (Class 8)	512	1850.20	246.6906
	661	1880.00	244.6886
	810	1909.80	239.4095
EGPRS 1900 (Class 8)	512	1850.20	245.0324
	661	1880.00	244.6726
	810	1909.80	245.4575

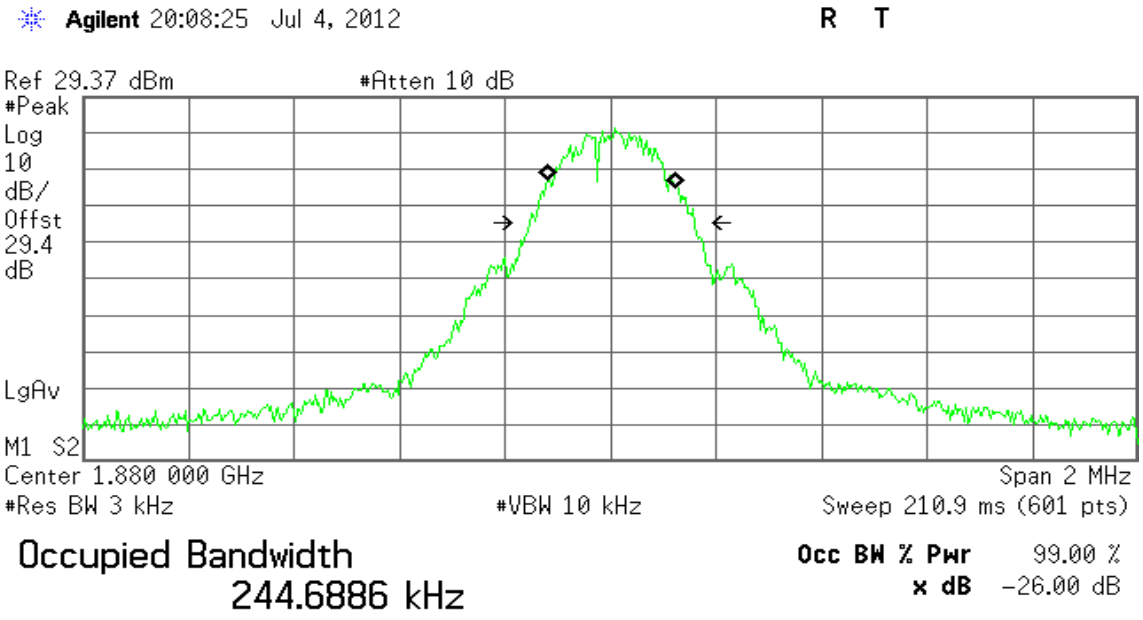
Test Plot

GPRS 1900 (CH Low)



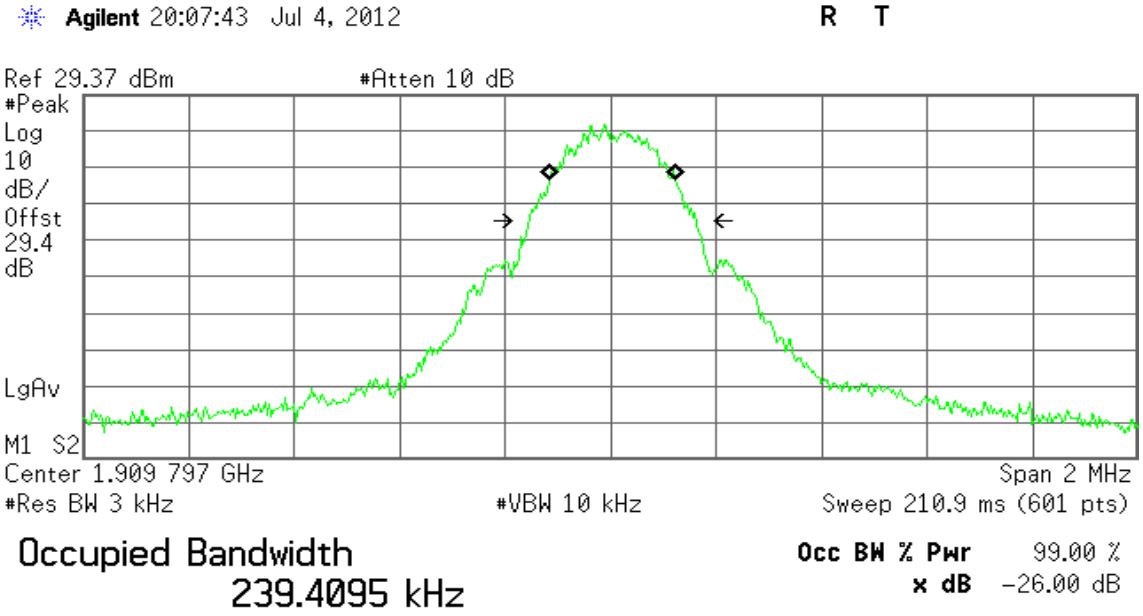
Transmit Freq Error	611.018 Hz
x dB Bandwidth	316.706 kHz

GPRS 1900 (CH Mid)



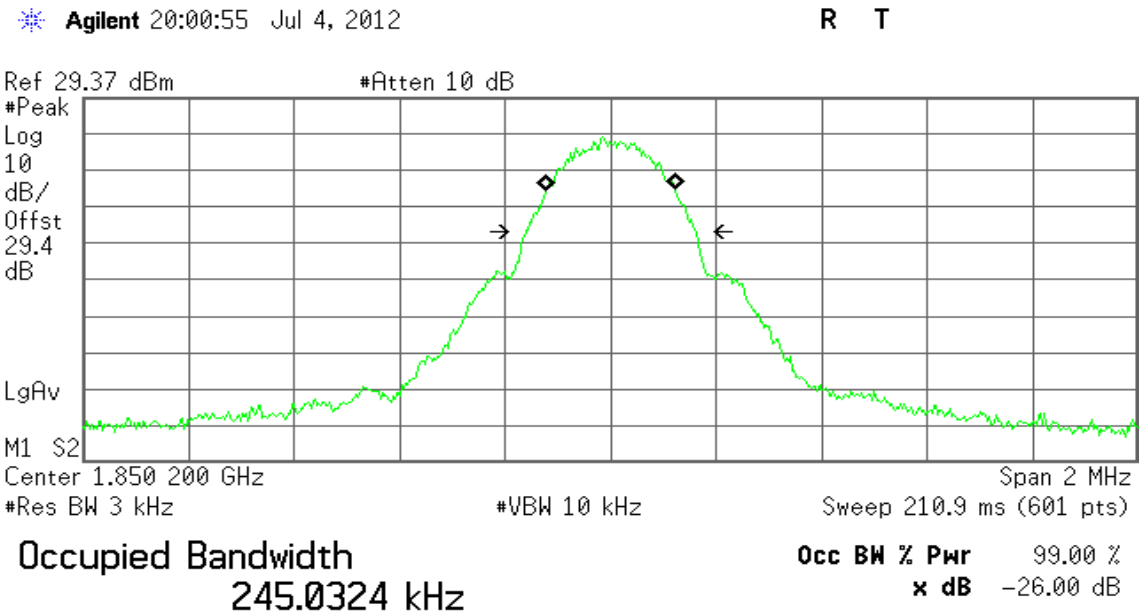
Transmit Freq Error	1.956 kHz
x dB Bandwidth	313.060 kHz

GPRS 1900 (CH High)



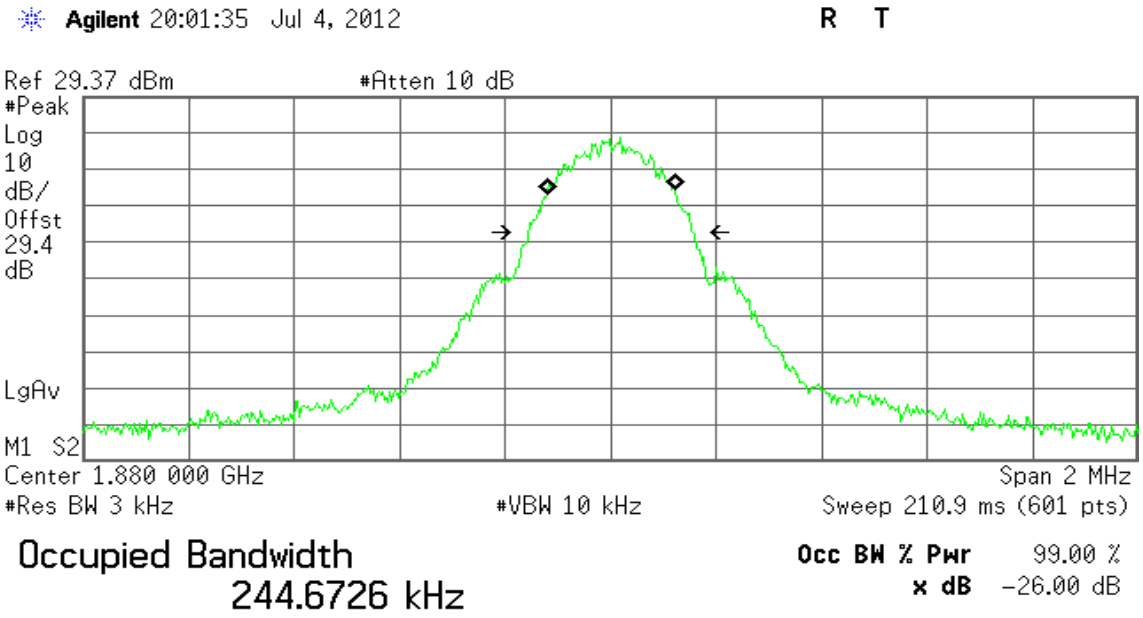
Transmit Freq Error	3.601 kHz
x dB Bandwidth	317.070 kHz

EGPRS 1900 (CH Low)



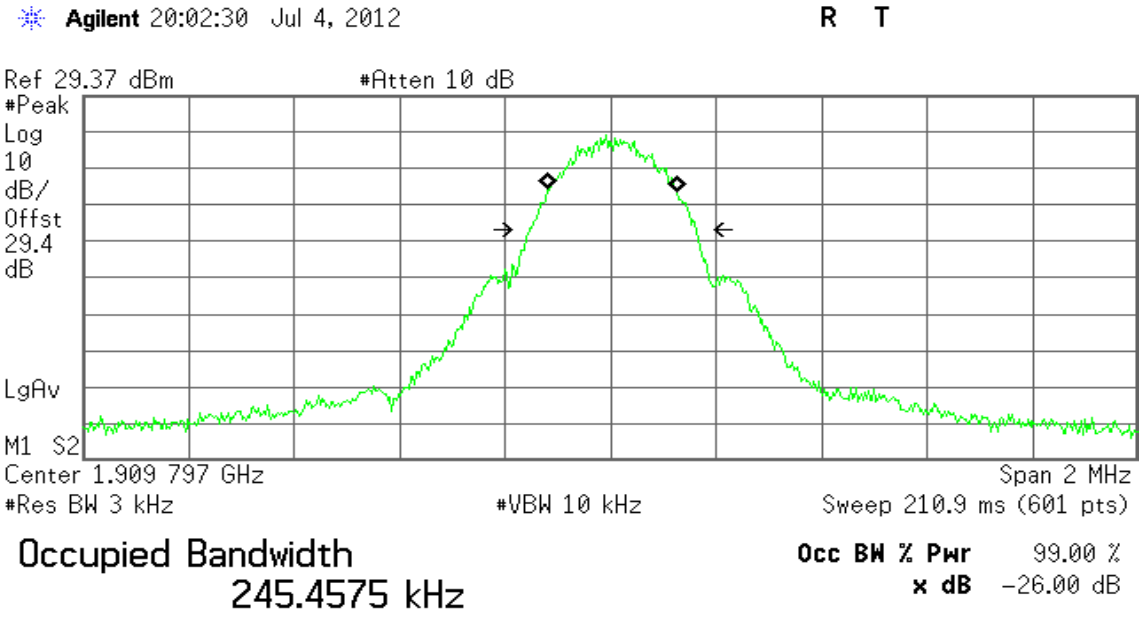
Transmit Freq Error	796.467 Hz
x dB Bandwidth	323.886 kHz

EGPRS 1900 (CH Mid)



Transmit Freq Error	918.386 Hz
x dB Bandwidth	311.457 kHz

EGPRS 1900 (CH High)



Transmit Freq Error	3.896 kHz
x dB Bandwidth	317.101 kHz

7.5 OUT OF BAND EMISSION AT ANTENNA TERMINALS

LIMIT

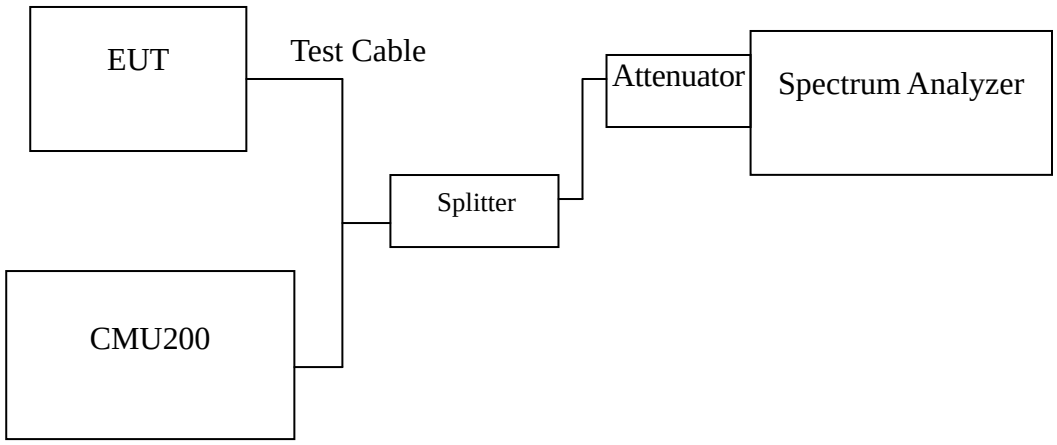
According to FCC §2.1051, FCC §2.2917(f), FCC §24.238(a).

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 lease 43 + 10 log P dB.

Band Edge Requirements: In the 1MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at lease 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 (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

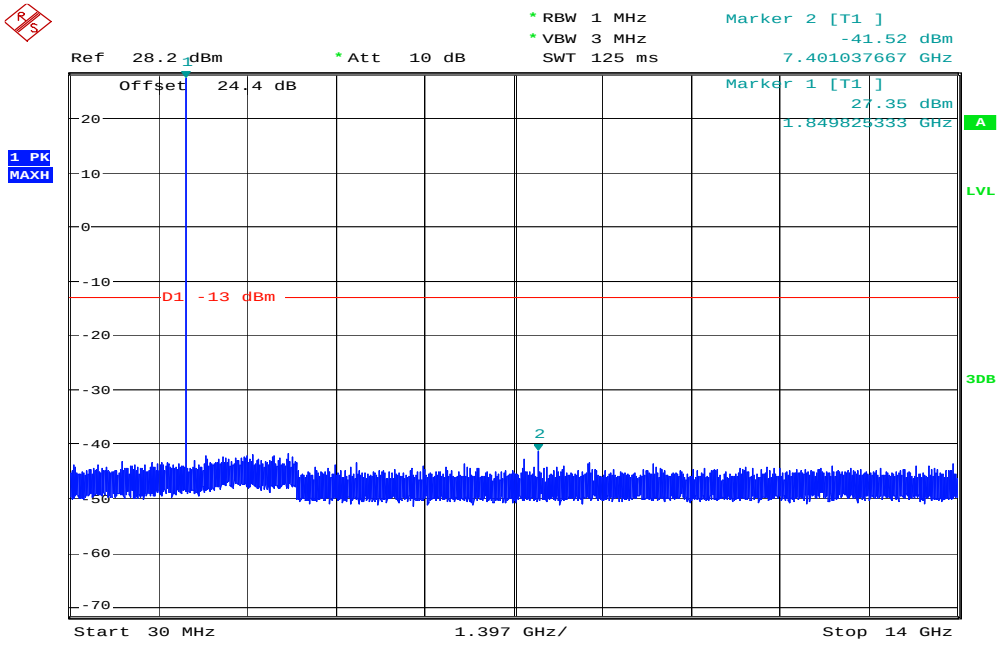
Test Mode	CH	Location	Description
GPRS 1900 (Class 8)	512	Figure 7-1	Conducted spurious emissions, 30MHz - 20GHz
	661	Figure 7-2	Conducted spurious emissions, 30MHz - 20GHz
	810	Figure 7-3	Conducted spurious emissions, 30MHz - 20GHz
EGPRS 1900 (Class 8)	512	Figure 7-4	Conducted spurious emissions, 30MHz - 20GHz
	661	Figure 7-5	Conducted spurious emissions, 30MHz - 20GHz
	810	Figure 7-6	Conducted spurious emissions, 30MHz - 20GHz

Test Mode	CH	Location	Description
GPRS 1900 (Class 8)	512	Figure 8-1	Band Edge emissions
	810	Figure 8-2	Band Edge emissions
EGPRS 1900 (Class 8)	512	Figure 8-3	Band Edge emissions
	810	Figure 8-4	Band Edge emissions

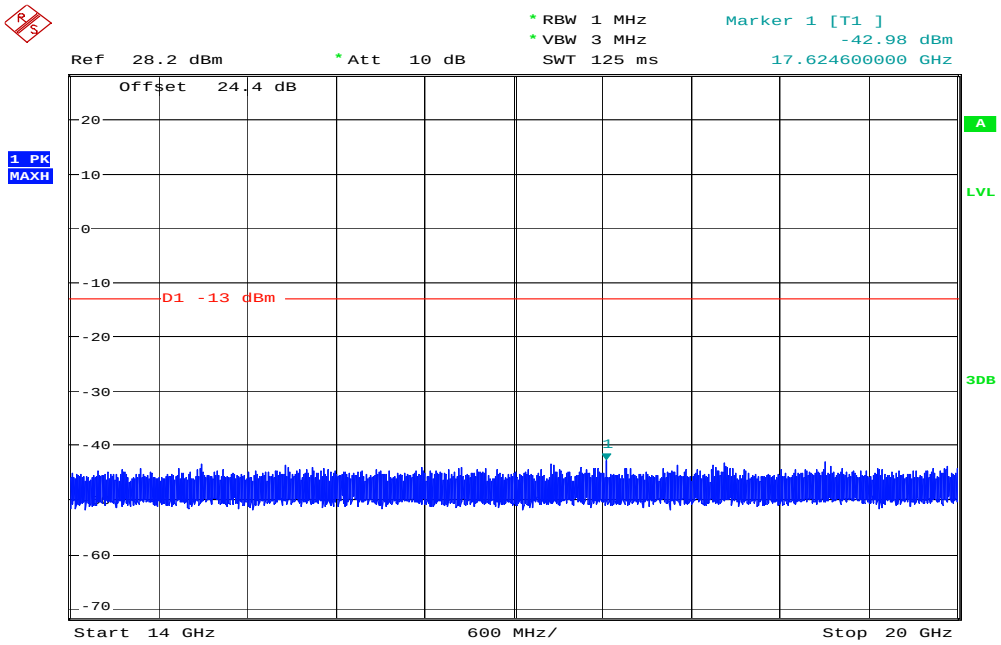
Test Plot

GPRS 1900

Figure 7-1: Out of Band emission at antenna terminals–GPRS CH Low

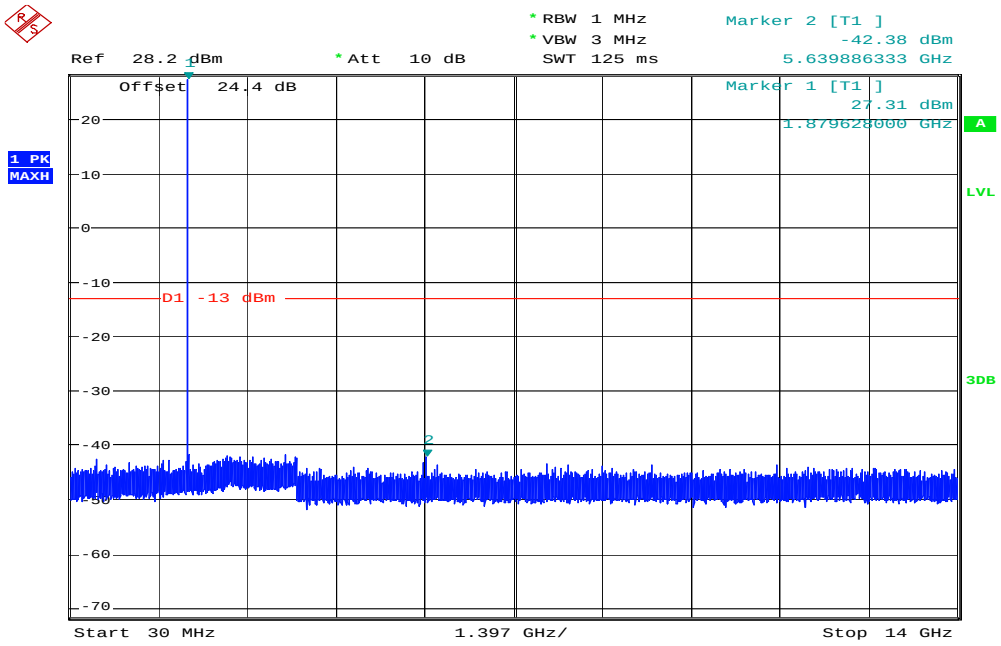


Date: 24.AUG.2012 18:06:44

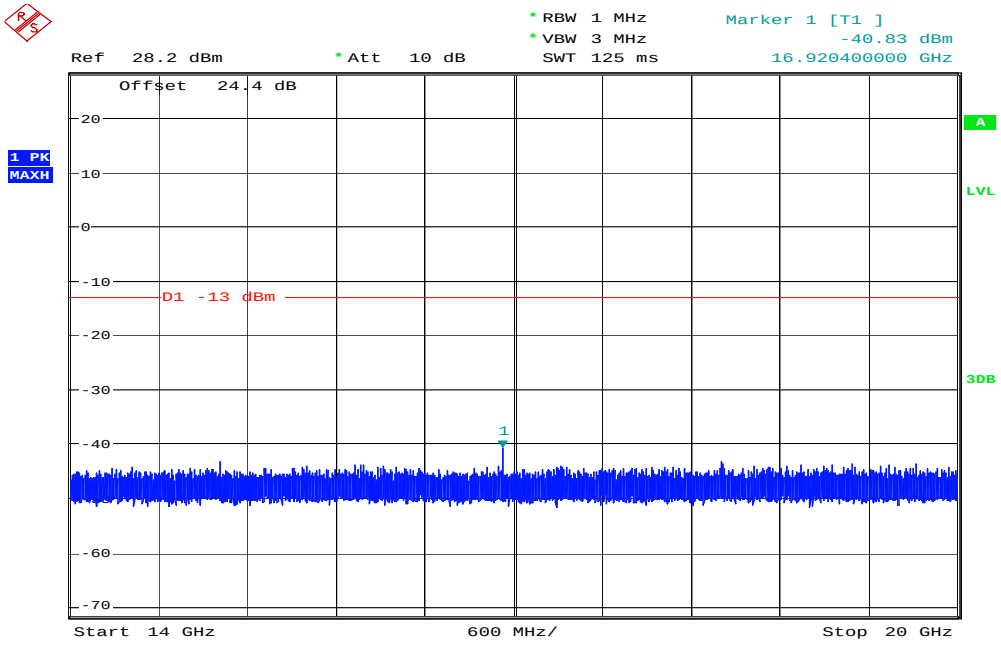


Date: 24.AUG.2012 18:01:26

Figure 7-2: Out of Band emission at antenna terminals –GPRS CH Mid

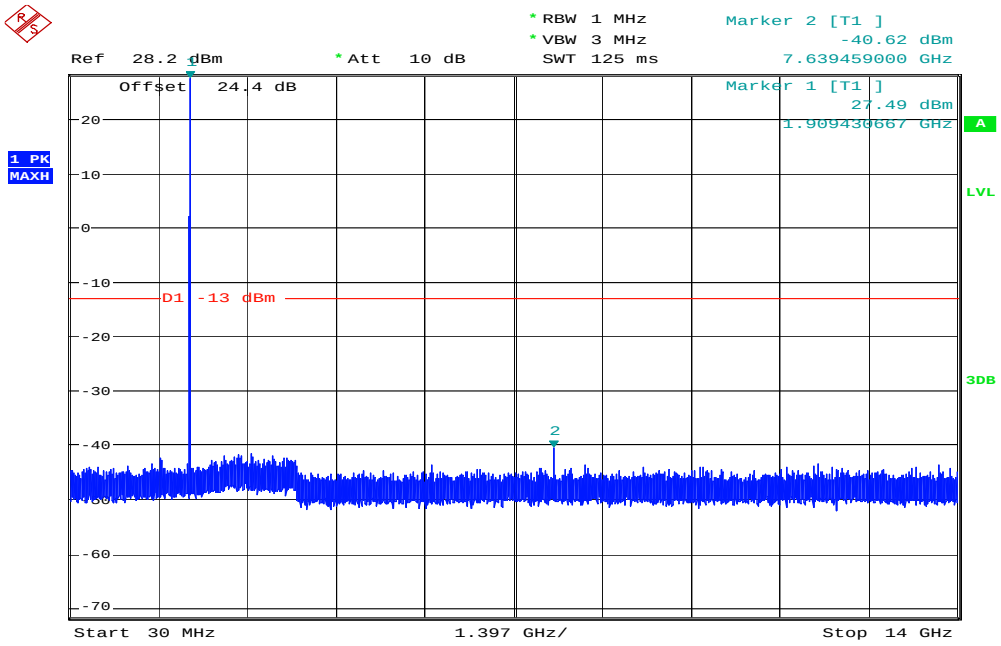


Date: 24.AUG.2012 18:08:13

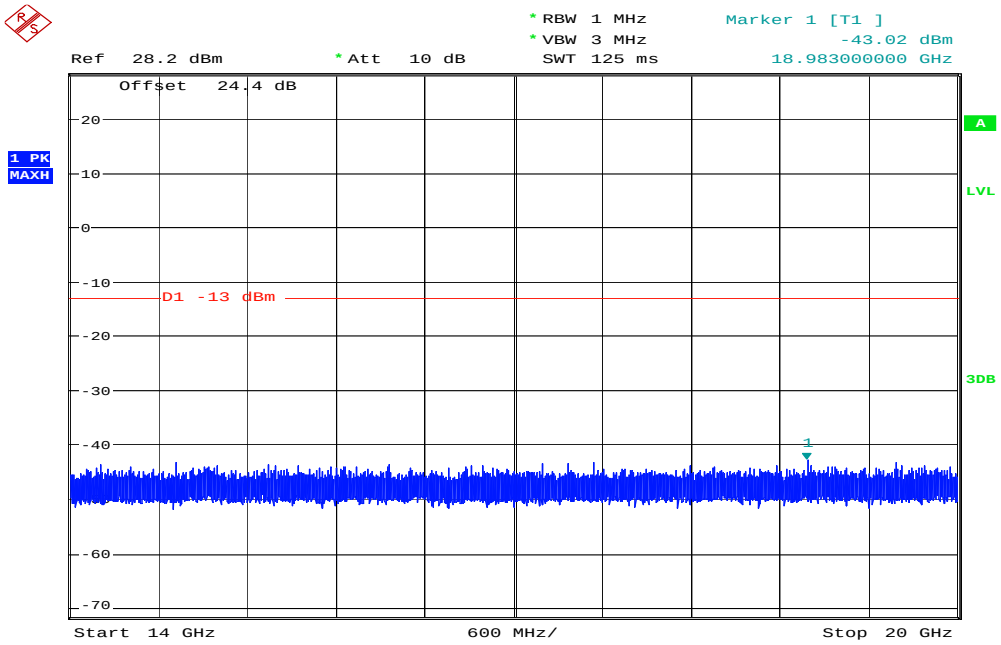


Date: 24.AUG.2012 18:02:25

Figure 7-3: Out of Band emission at antenna terminals –GPRS CH High



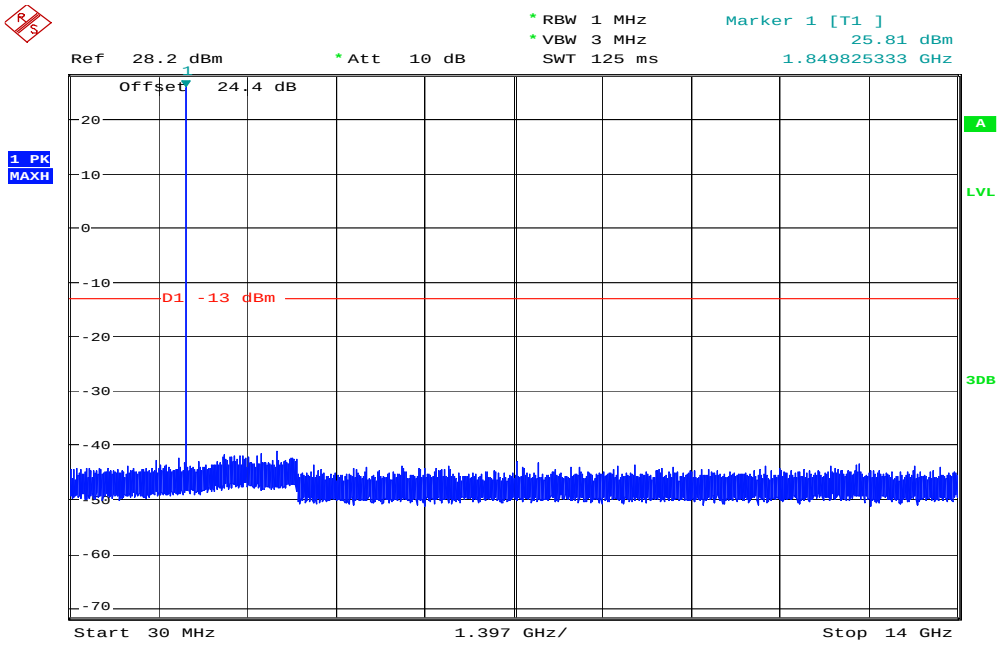
Date: 24.AUG.2012 18:09:07



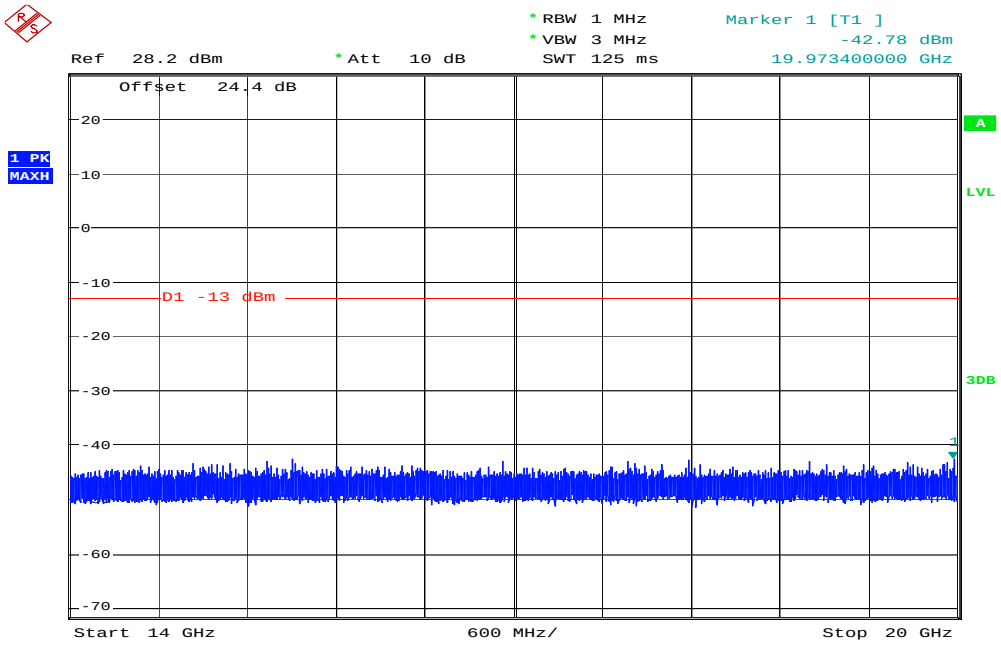
Date: 24.AUG.2012 18:03:12

EGPRS 1900

Figure 7-4: Out of Band emission at antenna terminals–EGPRS CH Low

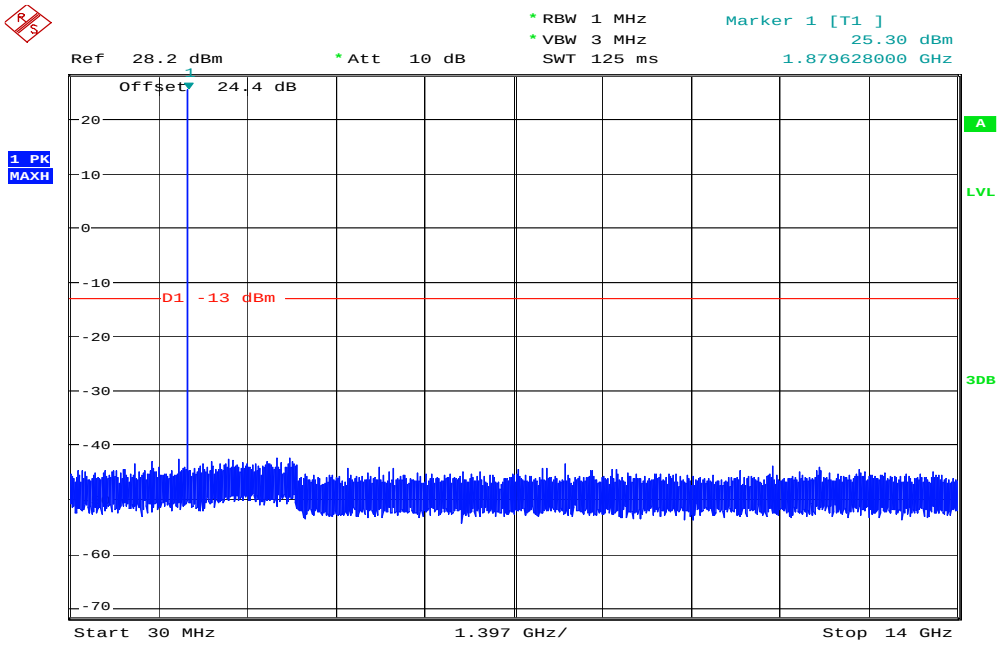


Date: 24.AUG.2012 17:56:01

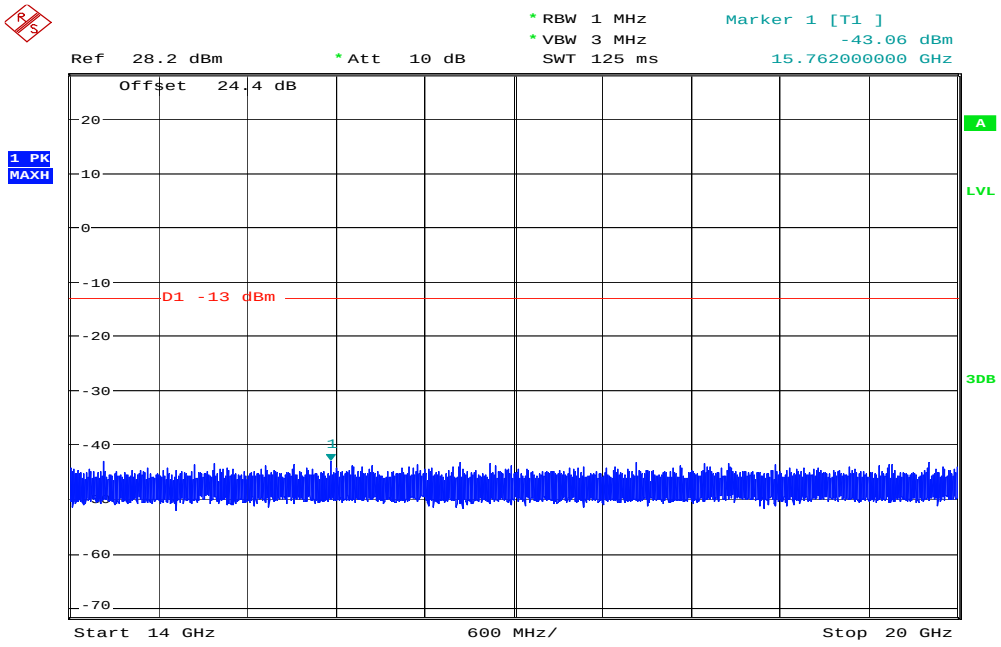


Date: 24.AUG.2012 18:00:14

Figure 7-5: Out of Band emission at antenna terminals–EGPRS CH Mid

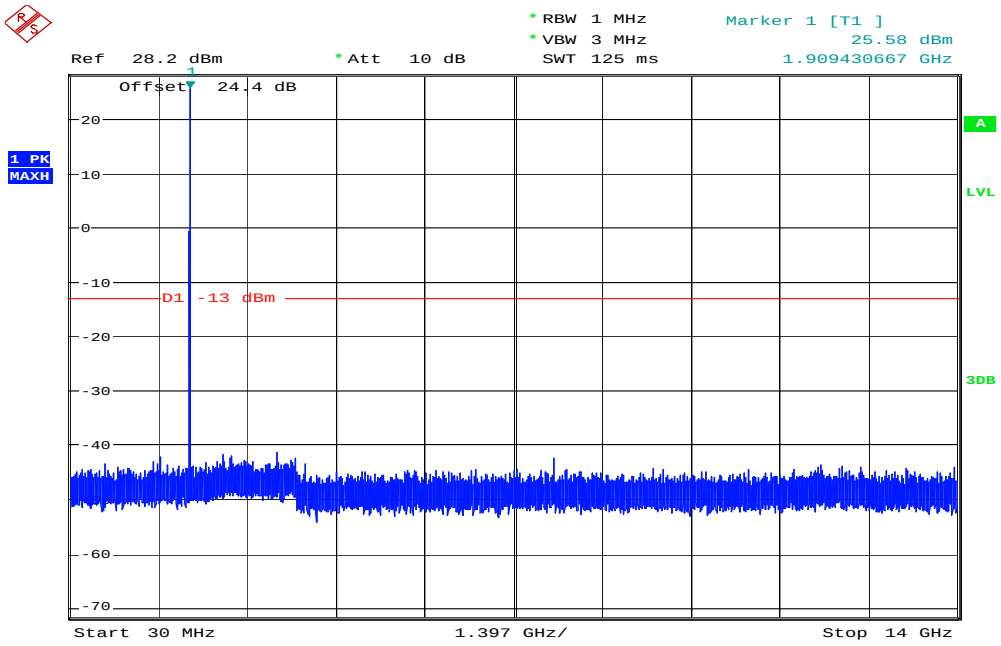


Date: 24.AUG.2012 17:56:43

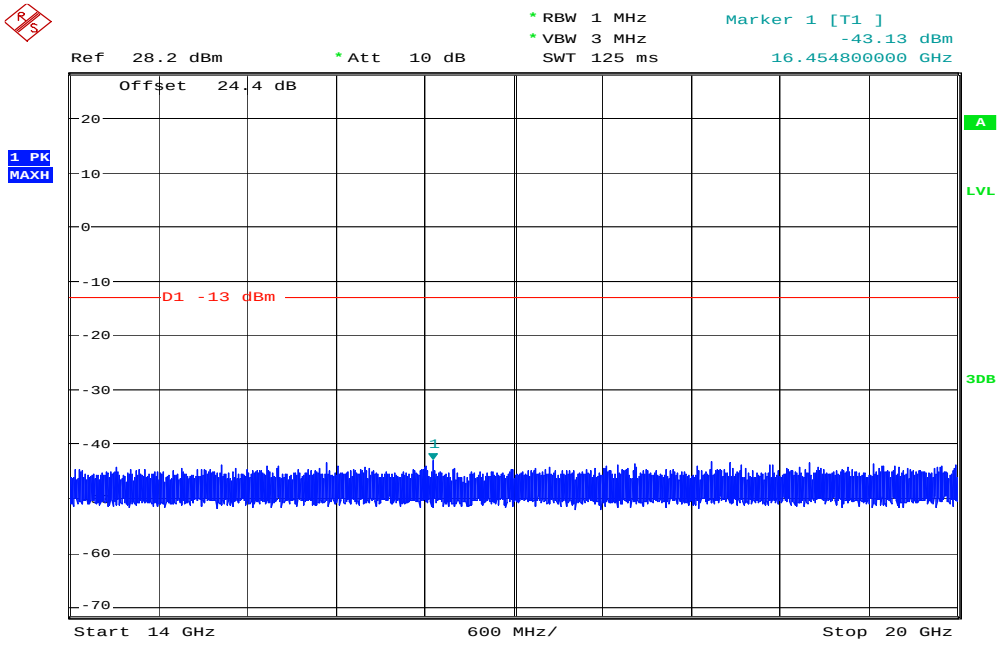


Date: 24.AUG.2012 17:59:18

Figure 7-6: Out of Band emission at antenna terminals –EGPRS CH High



Date: 24.AUG.2012 17:57:16



Date: 24.AUG.2012 17:58:01

GPRS 1900

Figure 8-1: Band Edge emissions–GPRS CH Low

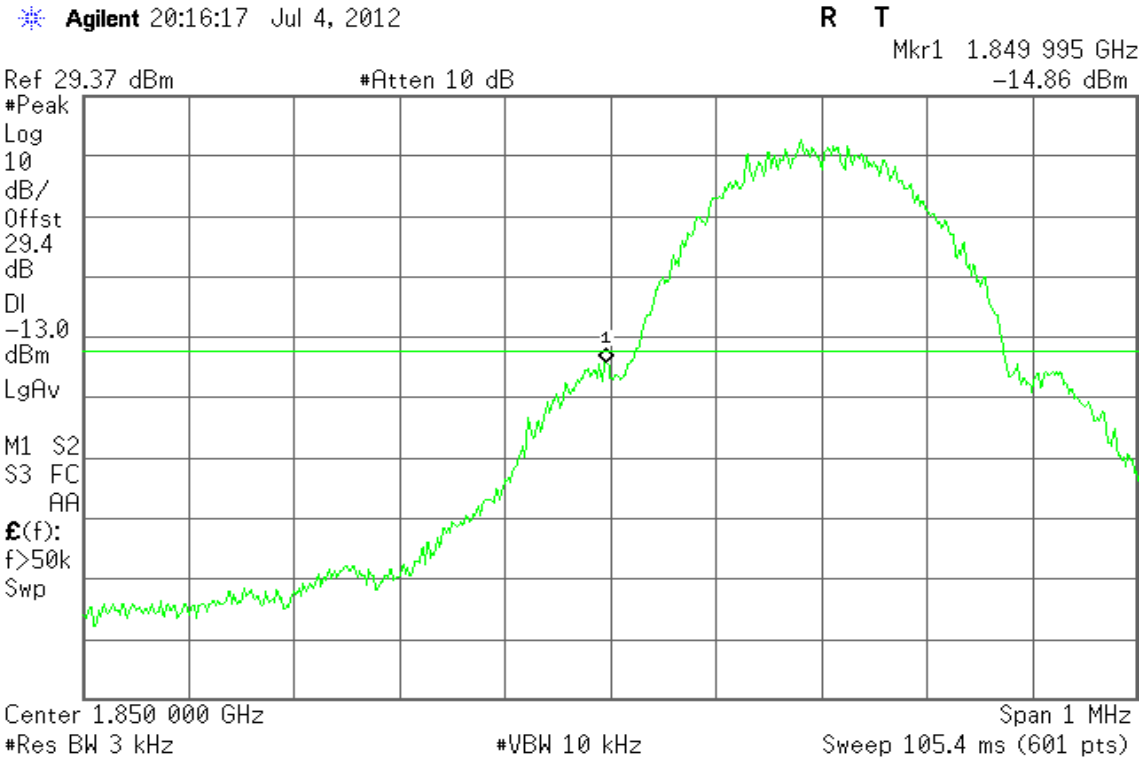
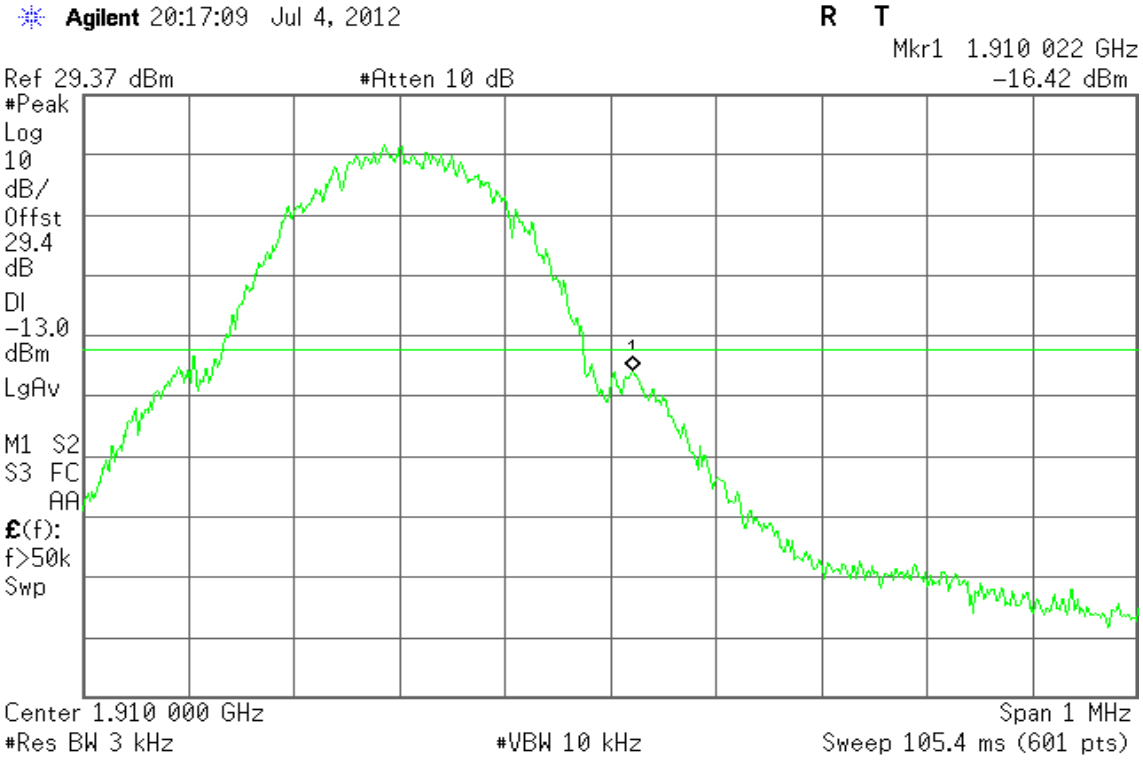


Figure 8-2: Band Edge emissions–GPRS CH High



EGPRS 1900

Figure 8-3: Band Edge emissions– EGPRS CH Low

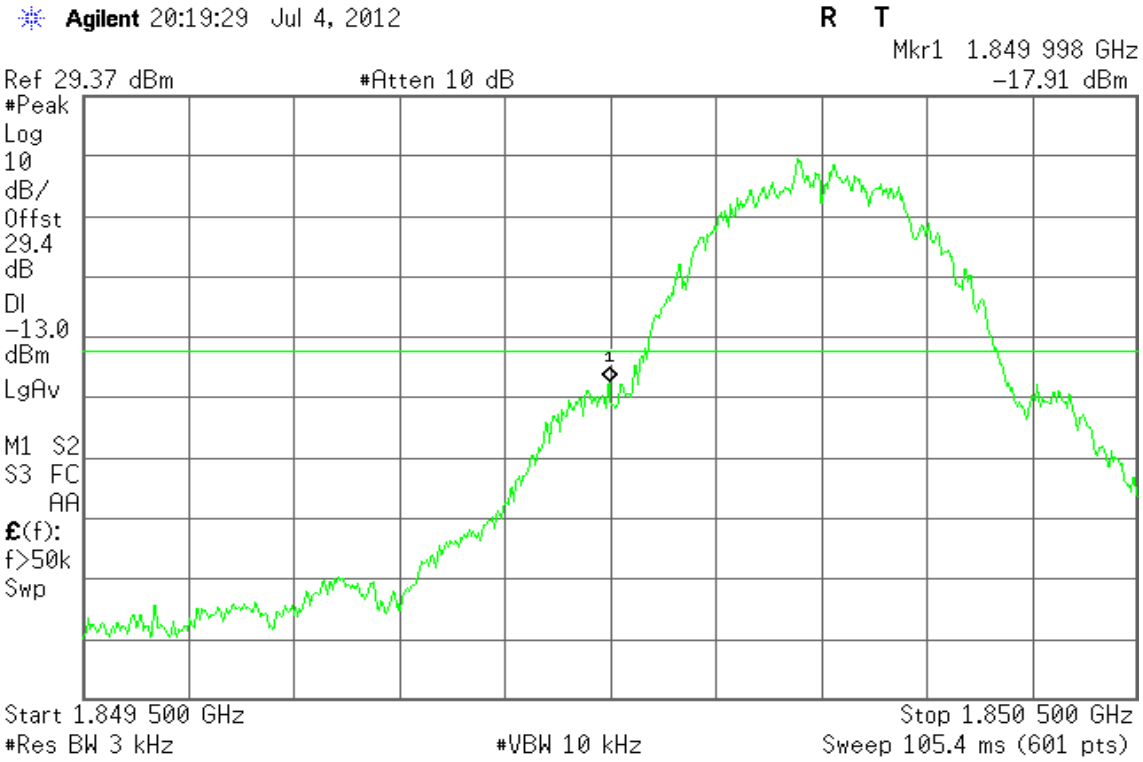
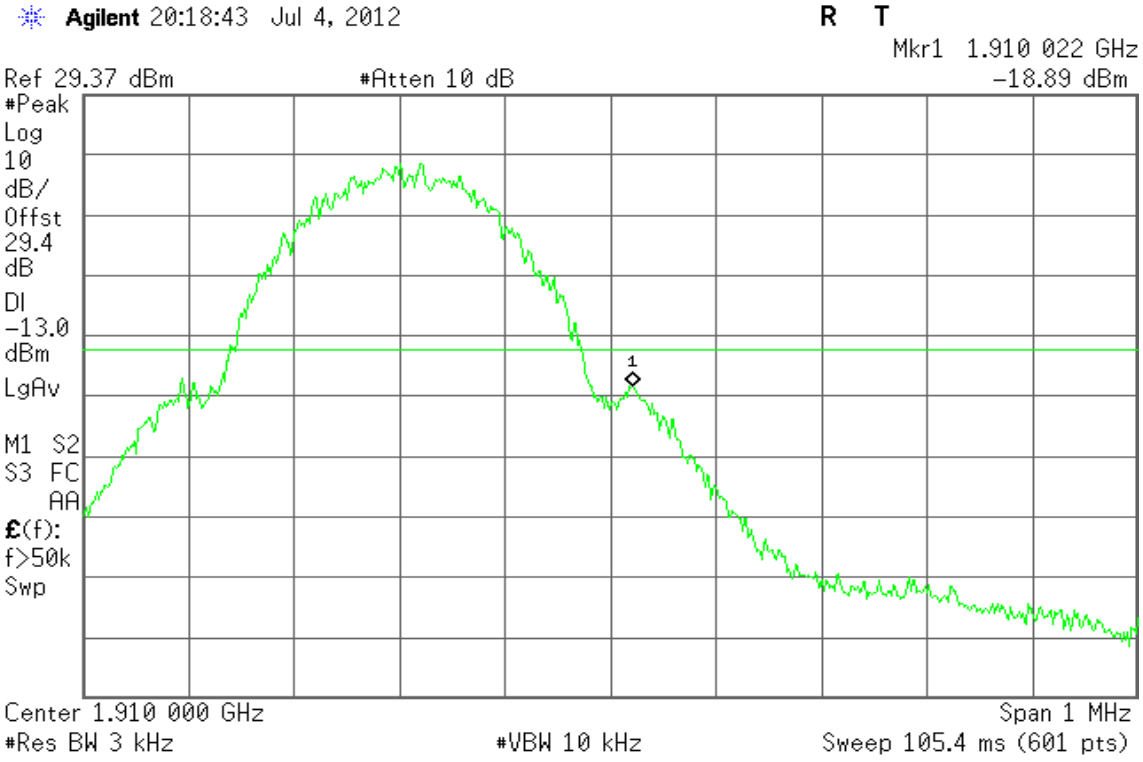


Figure 8-4: Band Edge emissions–EGPRS CH High



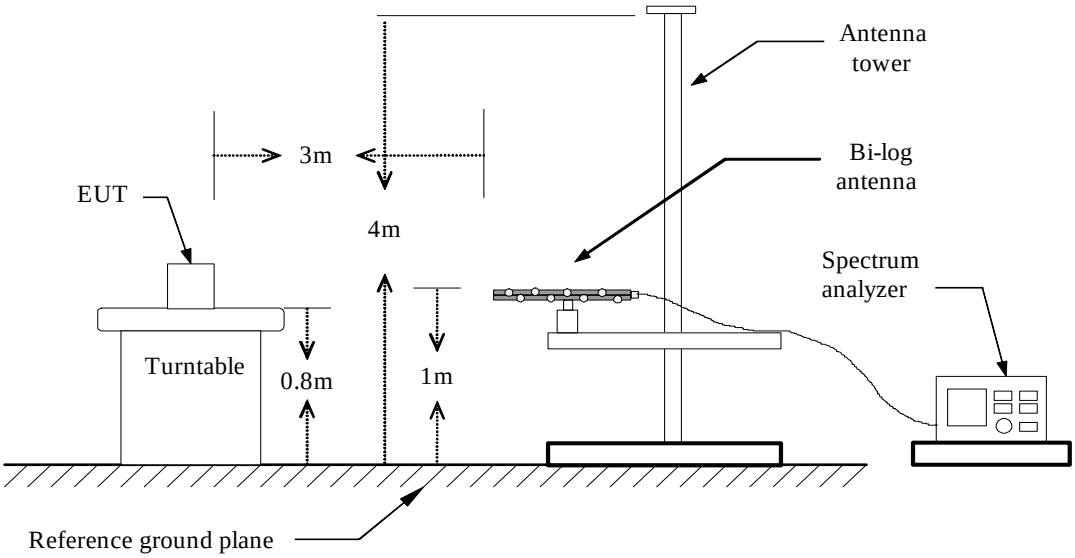
7.6 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

LIMIT

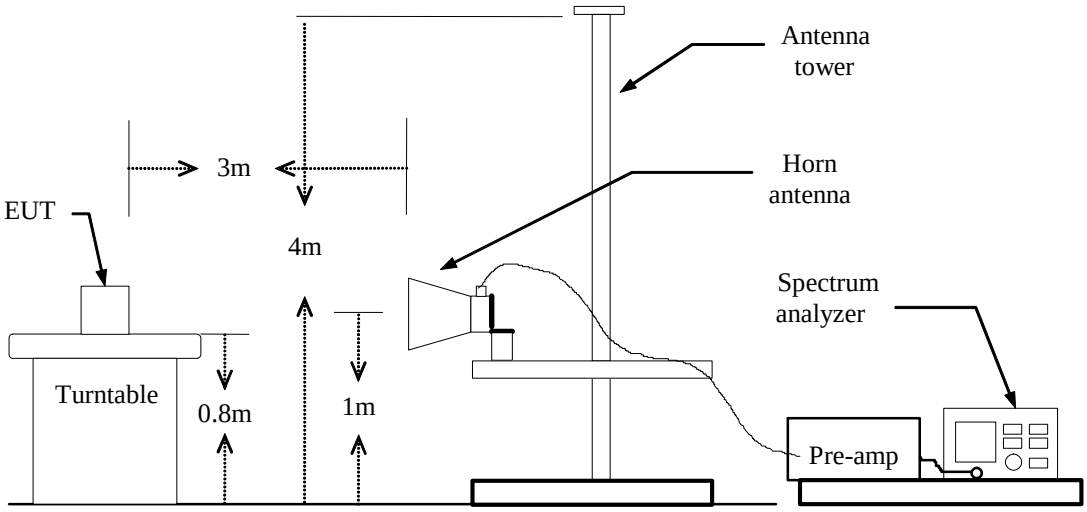
According to FCC §2.1053

Test Configuration

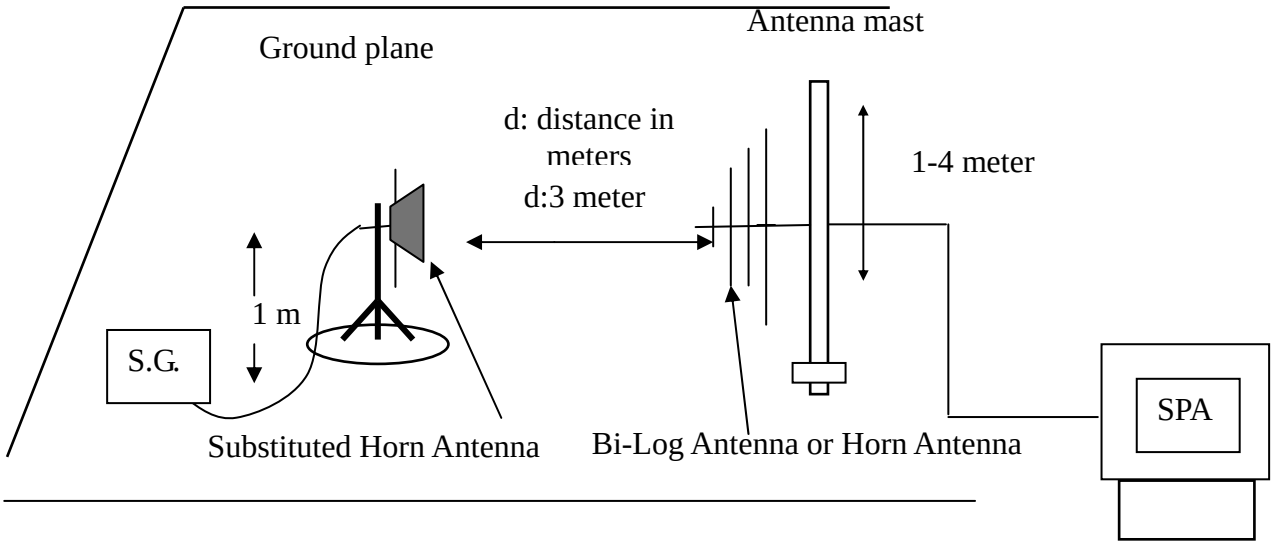
Below 1 GHz



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.

ERP = S.G. output (dBm) + Antenna Gain (dBi) – Cable (dB) -2.15

EIRP = S.G. output (dBm) + Antenna Gain (dBi) – Cable (dB)

TEST RESULTS

Refer to the attached tabular data sheets.

Radiated Spurious Emission Measurement Result
Below 1GHz

Operation Mode: GPRS 1900 / TX / CH 512 **Test Date:** July 3, 2012
Temperature: 25°C **Tested by:** David Lee
Humidity: 45% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss(dB)	Ant.Gain (dBi)	Result (dBm)	Limit (dBm)	Margin dB	Antenna Polarization (V/H)
46.9750	-67.22	0.78	-6.96	-74.96	-13.00	-61.96	V
76.0750	-67.79	1.01	-0.85	-69.65	-13.00	-56.65	V
105.1750	-70.62	1.18	-1.07	-72.87	-13.00	-59.87	V
141.5500	-71.94	1.4	-0.1	-73.44	-13.00	-60.44	V
204.6000	-79.15	1.65	4.2	-76.60	-13.00	-63.60	V
415.5750	-75.85	2.45	5.85	-72.45	-13.00	-59.45	V
39.7000	-60.32	0.72	-12.6	-73.64	-13.00	-60.64	H
76.0750	-70.69	1.01	-0.85	-72.55	-13.00	-59.55	H
105.1750	-65.01	1.18	-1.07	-67.26	-13.00	-54.26	H
146.4000	-67.45	1.41	0.35	-68.51	-13.00	-55.51	H
248.2500	-71.79	1.83	5.61	-68.01	-13.00	-55.01	H
415.5750	-63.94	2.45	5.85	-60.54	-13.00	-47.54	H

Operation Mode: GPRS 1900 / TX / CH 661 **Test Date:** July 3, 2012
Temperature: 25°C **Tested by:** David Lee
Humidity: 45% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss(dB)	Ant.Gain (dBi)	Result (dBm)	Limit (dBm)	Margin dB	Antenna Polarization (V/H)
46.9750	-67.38	0.78	-6.96	-75.12	-13.00	-62.12	V
76.0750	-68.4	1.01	-0.85	-70.26	-13.00	-57.26	V
105.1750	-69.81	1.18	-1.07	-72.06	-13.00	-59.06	V
146.4000	-72.24	1.41	0.35	-73.30	-13.00	-60.30	V
427.7000	-76.5	2.48	5.8	-73.18	-13.00	-60.18	V
781.7500	-78.35	3.31	6.13	-75.53	-13.00	-62.53	V
39.7000	-59.22	0.72	-12.6	-72.54	-13.00	-59.54	H
76.0750	-71.22	1.01	-0.85	-73.08	-13.00	-60.08	H
105.1750	-63.64	1.18	-1.07	-65.89	-13.00	-52.89	H
146.4000	-68.08	1.41	0.35	-69.14	-13.00	-56.14	H
345.2500	-69.98	2.2	5.8	-66.38	-13.00	-53.38	H
425.2750	-63.89	2.47	5.8	-60.56	-13.00	-47.56	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: GPRS 1900 / TX / CH 810 **Test Date:** July 3, 2012

Temperature: 25°C **Tested by:** David Lee

Humidity: 45% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss(dB)	Ant.Gain (dBi)	Result (dBm)	Limit (dBm)	Margin dB	Antenna Polarization (V/H)
46.9750	-67.05	0.78	-6.96	-74.79	-13.00	-61.79	V
76.0750	-68.77	1.01	-0.85	-70.63	-13.00	-57.63	V
105.1750	-70.99	1.18	-1.07	-73.24	-13.00	-60.24	V
143.9750	-74.56	1.41	0.13	-75.84	-13.00	-62.84	V
427.7000	-76.57	2.48	5.8	-73.25	-13.00	-60.25	V
495.6000	-81.52	2.69	5.85	-78.36	-13.00	-65.36	V
105.1750	-63.1	1.18	-1.07	-65.35	-13.00	-52.35	H
143.9750	-68.61	1.41	0.13	-69.89	-13.00	-56.89	H
177.9250	-73.14	1.6	3.36	-71.38	-13.00	-58.38	H
255.5250	-75.16	1.87	5.64	-71.39	-13.00	-58.39	H
345.2500	-69.66	2.2	5.8	-66.06	-13.00	-53.06	H
432.5500	-65.07	2.5	5.82	-61.75	-13.00	-48.75	H

Operation Mode: EGPRS 1900 / TX / CH 512 **Test Date:** July 3, 2012

Temperature: 25°C **Tested by:** David Lee

Humidity: 45% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss(dB)	Ant.Gain (dBi)	Result (dBm)	Limit (dBm)	Margin dB	Antenna Polarization (V/H)
51.8250	-69.08	0.82	-4.37	-74.27	-13.00	-61.27	V
76.0750	-67.92	1.01	-0.85	-69.78	-13.00	-56.78	V
105.1750	-69.58	1.18	-1.07	-71.83	-13.00	-58.83	V
146.4000	-73.6	1.41	0.35	-74.66	-13.00	-61.66	V
422.8500	-76.5	2.47	5.8	-73.17	-13.00	-60.17	V
495.6000	-81.18	2.69	5.85	-78.02	-13.00	-65.02	V
39.7000	-58.37	0.72	-12.6	-71.69	-13.00	-58.69	H
105.1750	-62.56	1.18	-1.07	-64.81	-13.00	-51.81	H
146.4000	-66.99	1.41	0.35	-68.05	-13.00	-55.05	H
226.4250	-72.15	1.78	5.37	-68.56	-13.00	-55.56	H
350.1000	-68.98	2.23	5.8	-65.41	-13.00	-52.41	H
422.8500	-62.86	2.47	5.8	-59.53	-13.00	-46.53	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: EGPRS 1900 / TX / CH 661 **Test Date:** July 3, 2012

Temperature: 25°C **Tested by:** David Lee

Humidity: 45% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss(dB)	Ant.Gain (dBi)	Result (dBm)	Limit (dBm)	Margin dB	Antenna Polarization (V/H)
51.8250	-69.84	0.82	-4.37	-75.03	-13.00	-62.03	V
76.0750	-69.2	1.01	-0.85	-71.06	-13.00	-58.06	V
105.1750	-71.89	1.18	-1.07	-74.14	-13.00	-61.14	V
141.5500	-74.68	1.4	-0.1	-76.18	-13.00	-63.18	V
425.2750	-76.43	2.47	5.8	-73.10	-13.00	-60.10	V
493.1750	-79.88	2.68	5.83	-76.73	-13.00	-63.73	V
39.7000	-59.51	0.72	-12.6	-72.83	-13.00	-59.83	H
76.0750	-70.79	1.01	-0.85	-72.65	-13.00	-59.65	H
105.1750	-63.63	1.18	-1.07	-65.88	-13.00	-52.88	H
143.9750	-68.91	1.41	0.13	-70.19	-13.00	-57.19	H
347.6750	-70.3	2.21	5.8	-66.71	-13.00	-53.71	H
418.0000	-63.61	2.46	5.83	-60.24	-13.00	-47.24	H

Operation Mode: GPRS 1900 / TX / CH 810 **Test Date:** July 3, 2012

Temperature: 25°C **Tested by:** David Lee

Humidity: 45% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss(dB)	Ant.Gain (dBi)	Result (dBm)	Limit (dBm)	Margin dB	Antenna Polarization (V/H)
46.9750	-67.36	0.78	-6.96	-75.10	-13.00	-62.10	V
76.0750	-68.36	1.01	-0.85	-70.22	-13.00	-57.22	V
105.1750	-70.02	1.18	-1.07	-72.27	-13.00	-59.27	V
151.2500	-76.21	1.43	0.8	-76.84	-13.00	-63.84	V
354.9500	-83.56	2.25	5.75	-80.06	-13.00	-67.06	V
425.2750	-75.6	2.47	5.8	-72.27	-13.00	-59.27	V
105.1750	-64.45	1.18	-1.07	-66.70	-13.00	-53.70	H
122.1500	-65.46	1.29	-1.93	-68.68	-13.00	-55.68	H
180.3500	-74.32	1.61	3.62	-72.31	-13.00	-59.31	H
224.0000	-75.07	1.78	5.35	-71.50	-13.00	-58.50	H
345.2500	-70.98	2.2	5.8	-67.38	-13.00	-54.38	H
415.5750	-65.02	2.45	5.85	-61.62	-13.00	-48.62	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 1900 / TX / CH 512 **Test Date:** July 3, 2012

Temperature: 25°C **Tested by:** David Lee

Humidity: 45% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss(dB)	Ant.Gain (dBi)	Result (dBm)	Limit (dBm)	Margin dB	Antenna Polarization (V/H)
3712.500	-49.92	8.21	9.11	-49.02	-13.00	-36.02	V
5550.000	-43.56	10.06	10.81	-42.81	-13.00	-29.81	V
7405.000	-42.98	12.1	12.55	-42.53	-13.00	-29.53	V
N/A							
3712.500	-49.81	8.21	9.11	-48.91	-13.00	-35.91	H
5550.000	-41.05	10.06	10.81	-40.30	-13.00	-27.30	H
N/A							

Operation Mode: GPRS 1900 / TX / CH 661 **Test Date:** July 3, 2012

Temperature: 25°C **Tested by:** David Lee

Humidity: 45% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss(dB)	Ant.Gain (dBi)	Result (dBm)	Limit (dBm)	Margin dB	Antenna Polarization (V/H)
3765.000	-42.65	8.24	9.16	-41.73	-13.00	-28.73	V
5637.500	-42.79	10.18	10.83	-42.14	-13.00	-29.14	V
7527.500	-41.58	12.23	12.73	-41.08	-13.00	-28.08	V
N/A							
3765.000	-41.1	8.24	9.16	-40.18	-13.00	-27.18	H
5637.500	-41.91	10.18	10.83	-41.26	-13.00	-28.26	H
N/A							

Remark:

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

Operation Mode: GPRS 1900 / TX / CH 810 **Test Date:** July 3, 2012
Temperature: 25°C **Tested by:** David Lee
Humidity: 45% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss(dB)	Ant.Gain (dBi)	Result (dBm)	Limit (dBm)	Margin dB	Antenna Polarization (V/H)
3817.500	-43.89	8.28	9.22	-42.95	-13.00	-29.95	V
5742.500	-48.04	10.27	10.85	-47.46	-13.00	-34.46	V
7650.000	-42.24	12.29	12.85	-41.68	-13.00	-28.68	V
N/A							
3817.500	-45.13	8.28	9.22	-44.19	-13.00	-31.19	H
5742.500	-48.69	10.27	10.85	-48.11	-13.00	-35.11	H
N/A							

Operation Mode: EGPRS 1900 / TX / CH 512 **Test Date:** July 3, 2012
Temperature: 25°C **Tested by:** David Lee
Humidity: 45% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss(dB)	Ant.Gain (dBi)	Result (dBm)	Limit (dBm)	Margin dB	Antenna Polarization (V/H)
3712.500	-52.94	8.21	9.11	-52.04	-13.00	-39.04	V
5550.000	-49.62	10.06	10.81	-48.87	-13.00	-35.87	V
7405.000	-44.48	12.1	12.55	-44.03	-13.00	-31.03	V
N/A							
4850.000	-52.21	9.29	10.36	-51.14	-13.00	-38.14	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: EGPRS 1900 / TX / CH 661 **Test Date:** July 3, 2012

Temperature: 25°C **Tested by:** David Lee

Humidity: 45% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss(dB)	Ant.Gain (dBi)	Result (dBm)	Limit (dBm)	Margin dB	Antenna Polarization (V/H)
3765.000	-47.04	8.24	9.16	-46.12	-13.00	-33.12	V
5637.500	-47.6	10.18	10.83	-46.95	-13.00	-33.95	V
7527.500	-43.95	12.23	12.73	-43.45	-13.00	-30.45	V
N/A							
3765.000	-49.76	8.24	9.16	-48.84	-13.00	-35.84	H
5637.500	-48.21	10.18	10.83	-47.56	-13.00	-34.56	H
N/A							

Operation Mode: EGPRS 1900 / TX / CH 810 **Test Date:** July 3, 2012

Temperature: 25°C **Tested by:** David Lee

Humidity: 45% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss(dB)	Ant.Gain (dBi)	Result (dBm)	Limit (dBm)	Margin dB	Antenna Polarization (V/H)
3817.500	-47.92	8.28	9.22	-46.98	-13.00	-33.98	V
5742.500	-52.59	10.27	10.85	-52.01	-13.00	-39.01	V
7650.000	-44.15	12.29	12.85	-43.59	-13.00	-30.59	V
N/A							
3817.500	-49.28	8.28	9.22	-48.34	-13.00	-35.34	H
N/A							

Remark:

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

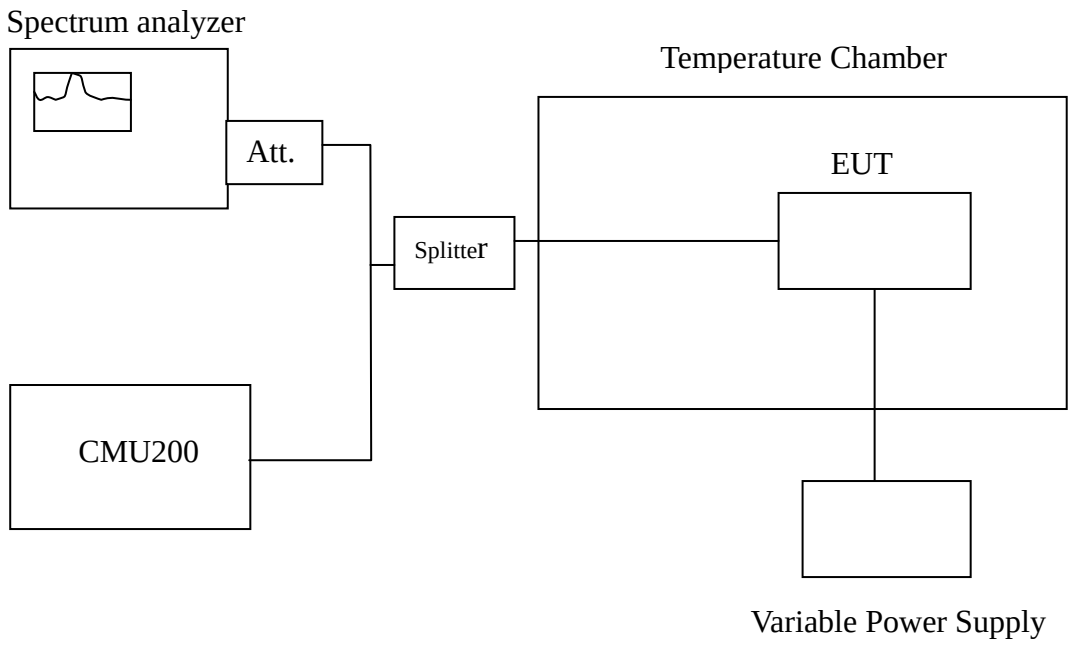
7.7 FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

LIMIT

According to FCC §2.1055, FCC §24.235.

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 Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	**Environment Temperature (°C)**	**Frequency (Hz)**	**Delta (Hz)**	**Limit (Hz)**
3.7	50	1880000001	1	4700
	40	1880000016	16	
	30	1880000013	13	
	20	1880000000	0	
	10	1880000018	18	
	0	1880000019	19	
	-10	1880000011	11	
	-20	1880000024	24	
	-30	1880000007	7	

Reference Frequency: EPRS Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	**Environment Temperature (°C)**	**Frequency (Hz)**	**Delta (Hz)**	**Limit (Hz)**
3.7	50	1880000001	1	4700
	40	1880000016	16	
	30	1880000013	13	
	20	1880000000	0	
	10	1880000018	18	
	0	1880000019	19	
	-10	1880000011	11	
	-20	1880000024	24	
	-30	1880000007	7	

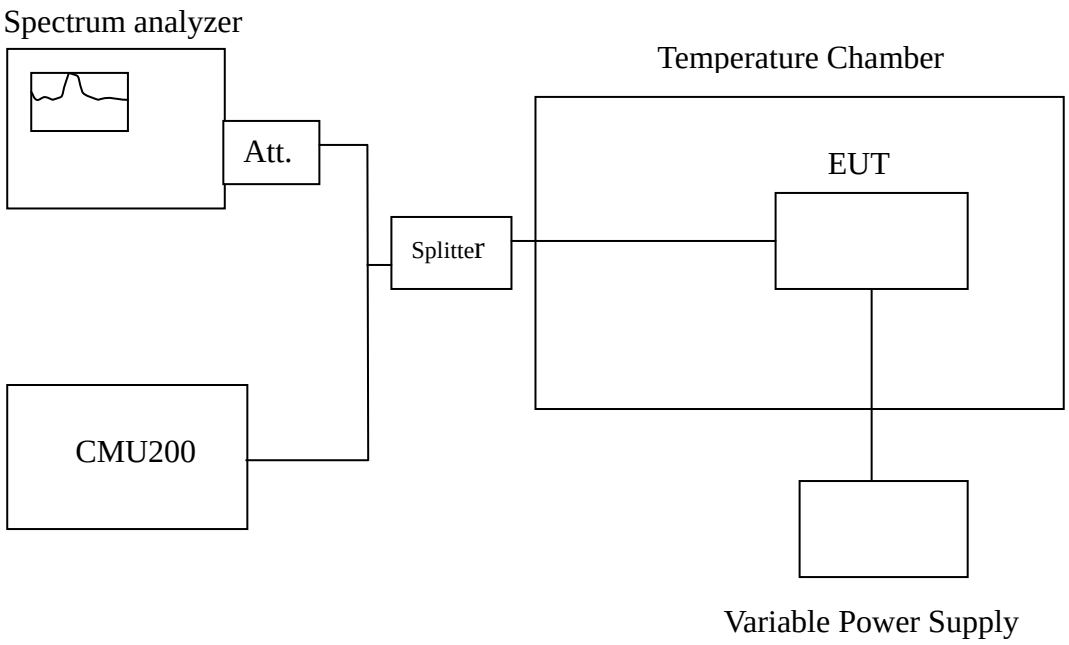
7.8 FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

LIMIT

According to FCC §2.1055, FCC §24.235,

Frequency Tolerance: 2.5 ppm.

Test Configuration



Remark: *Measurement setup for testing on Antenna connector.*

TEST PROCEDURE

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.
Reduce the input voltage to specify extreme voltage variation (± 15%) and endpoint, record the maximum frequency change.

TEST RESULTS

No non-compliance noted.

Reference Frequency: GPRS Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	**Environment Temperature (°C)**	**Frequency (Hz)**	**Delta (Hz)**	**Limit (Hz)**
4.255	20	1879999980	-20	4700
3.7		1880000000	0	
3.145		1879999977	-23	
2.8END		1879999562	-438	

Reference Frequency: EPRS Channel 1880 MHz @ 20°C				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply Vdc	**Environment Temperature (°C)**	**Frequency (Hz)**	**Delta (Hz)**	**Limit (Hz)**
4.255	20	1879999980	-20	4700
3.7		1880000000	0	
3.145		1879999977	-23	
2.8END		1879999562	-438	

7.9 POWERLINE CONDUCTED EMISSIONS

LIMIT

According to §15.207(a), except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

***** *Decreases with the logarithm of the frequency.*

Test Configuration

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

TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

TEST RESULTS

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

Operation Mode:	Normal Link	**Test Date:**	June 29, 2012
Temperature:	26°C	**Tested by:**	David Shu
Humidity:	60 RH		

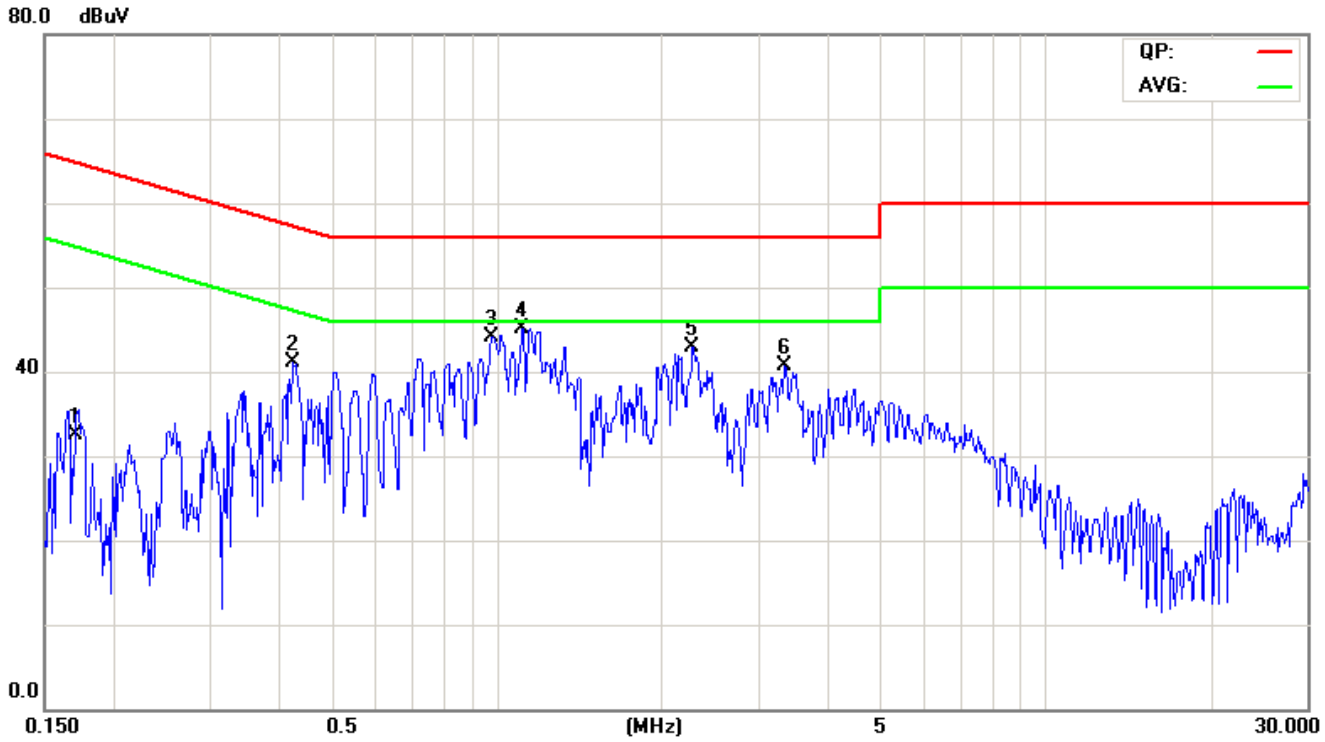
Freq. (MHz)	QP Reading (dBuV)	AV Reading (dBuV)	Corr. factor (dB)	QP Result (dBuV)	AV Result (dBuV)	QP Limit (dBuV)	AV Limit (dBuV)	QP Margin (dB)	AV Margin (dB)	Note
0.1684	33.28	23.88	0.07	33.35	23.95	65.04	55.04	-31.69	-31.09	L1
0.4246	40.01	32.52	0.07	40.08	32.59	57.36	47.36	-17.28	-14.77	L1
0.9765	42.84	32.28	0.08	42.92	32.36	56.00	46.00	-13.08	-13.64	L1
1.1078	42.88	31.96	0.08	42.96	32.04	56.00	46.00	-13.04	-13.96	L1
2.2696	36.75	24.91	0.09	36.84	25.00	56.00	46.00	-19.16	-21.00	L1
3.3081	35.17	23.43	0.11	35.28	23.54	56.00	46.00	-20.72	-22.46	L1
0.1636	33.77	26.07	0.07	33.84	26.14	65.28	55.28	-31.44	-29.14	L2
0.4192	45.89	37.51	0.07	45.96	37.58	57.46	47.46	-11.50	-9.88	L2
0.9242	47.58	34.05	0.08	47.66	34.13	56.00	46.00	-8.34	-11.87	L2
1.1234	48.87	37.78	0.08	48.95	37.86	56.00	46.00	-7.05	-8.14	L2
2.1269	43.75	31.48	0.08	43.83	31.56	56.00	46.00	-12.17	-14.44	L2
3.3116	40.89	29.33	0.11	41.00	29.44	56.00	46.00	-15.00	-16.56	L2

Remark:

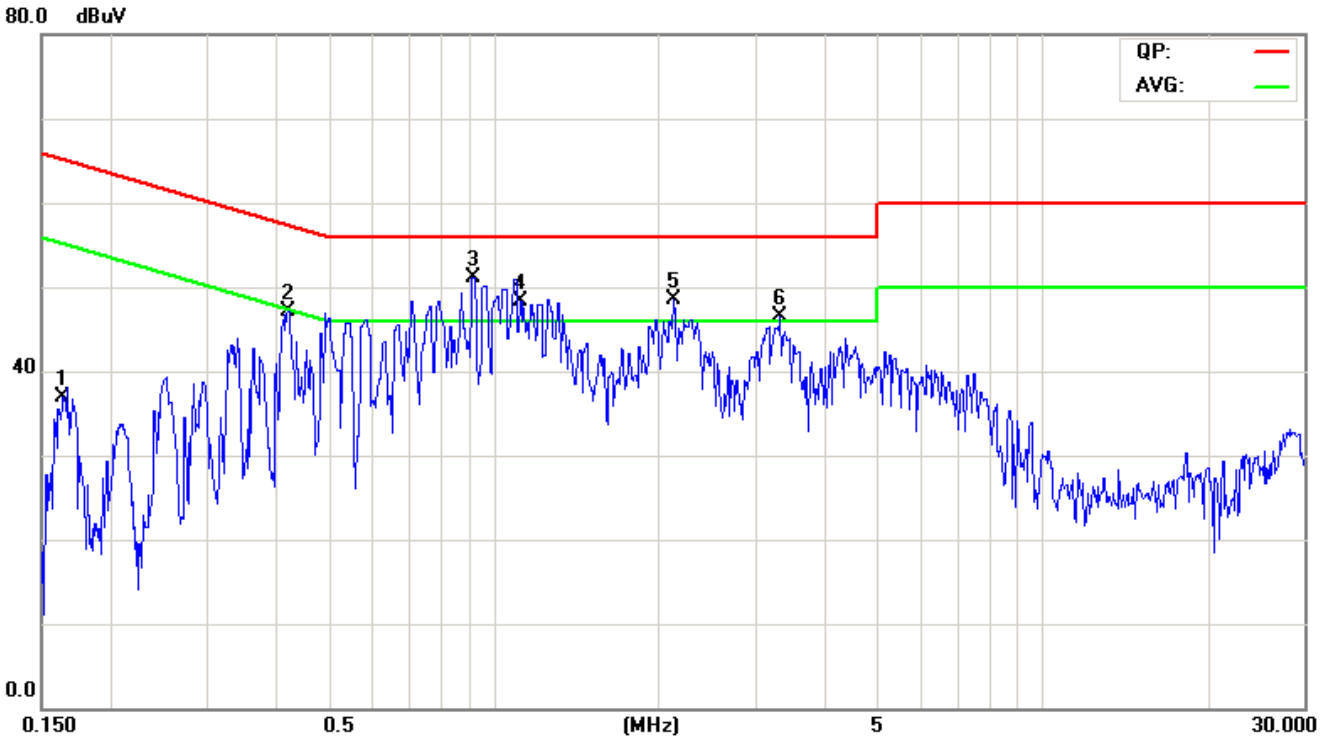
1. *Measuring frequencies from 0.15 MHz to 30MHz.*
2. *The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Quasi-peak detector and average detector.*
3. *The IF bandwidth of SPA between 0.15MHz to 30MHz was 10kHz; the IF bandwidth of Test Receiver between 0.15MHz to 30MHz was 9kHz;*
4. *L1 = Line One (Live Line) / L2 = Line Two (Neutral Line)*

Test Plots

Conducted emissions (Line 1)



Conducted emissions (Line 2)



APPENDIX I
RADIO FREQUENCY EXPOSURE

LIMIT

EUT Specification

EUT	Tablet PC
Frequency band (Operating)	☐ WLAN: 2.412GHz ~ 2.462GHz ☐ WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz ☐ WLAN: 5.745GHz ~ 5.825GHz ☒ Others: 1850.2 ~ 1909.8 MHz
Device category	☒ Portable (<20cm separation) ☐ Mobile (>20cm separation) ☐ Others
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm^2) ☒ General Population/Uncontrolled exposure (S=1mW/cm^2)
Antenna diversity	☒ Single antenna ☐ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Max. output power	29.60 dBm (912.01mW)
Antenna gain (Max)	0.9 dBi (Numeric gain: 1.23)
Evaluation applied	☐ MPE Evaluation ☒ SAR Evaluation*
Remark: *1. The maximum output power is 29.60 dBm (912.01mW) at 1909.80MHz (with 1.23 numeric antenna gain.)*	

TEST RESULTS

No non-compliance noted.

MPE EVALUATION

Not applicable.