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

TEST REPORT

For

Computer

FCC Model: AIM8Q, AIM8Qxxxxxxxxxxxxxxx, AIM-x5BTxxxxxxxxxxx(where "x" may be any alphanumeric character, "-" or blank for marketing purpose and no impact safety related critical components and constructions)

IC Model: AIM8Q, AIM-25BT, AIM-35BT, AIM-55BT, AIM-65BT, AIM-75BT

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.)
http://www.ccsrf.com
service@ccsrf.com
Issued Date: June 8, 2017

Testing Laboratory
1309

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	June 8, 2017	Initial Issue	ALL	Angel Cheng
01	July 10, 2017	1. Revise date of test 2. Added section 7.5 3. Modify setup photos	P.4, P.75 P.62,63	Angel Cheng

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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.

Manufacturer: 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

FCC Model: AIM8Q, AIM8Qxxxxxxxxxxxxxxxx, AIM-x5BTxxxxxxxxxxx(where "x" may be any alphanumeric character, "-" or blank for marketing purpose and no impact safety related critical components and constructions)

IC Model: AIM8Q, AIM-25BT, AIM-35BT, AIM-55BT, AIM-65BT, AIM-75BT

Date of Test: April 18 ~ May 22, 2017

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
FCC 47 CFR Part 22 Subpart H & Part 24 Subpart E & IC RSS-132 Issue 3: January, 2013 and IC RSS-133 Issue 6: January, 2013	No non-compliance noted

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA/EIA-603-D: 2010 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:

Sam Chuang
Manager
Compliance Certification Services Inc.

Tested by:

Timmy Wang
Engineer
Compliance Certification Services Inc.

2. EUT DESCRIPTION

Product	Computer
FCC Model No.	AIM8Q, AIM8Qxxxxxxxxxxxxxxx, AIM-x5BTxxxxxxxxxxx(where "x" may be any alphanumeric character, "-" or blank for marketing purpose and no impact safety related critical components and constructions)
IC Model No.	AIM8Q, AIM-25BT, AIM-35BT, AIM-55BT, AIM-65BT, AIM-75BT
Model Discrepancy	All models are electrically identical, different model names are for marketing purpose
Trade Name	ADVANTECH
Received Date	April 6, 2017
Power Supply	1. VDC from Power Adapter Chicony / A16-018N1A I/P: 100-240Vac, 1A, 50-60Hz O/P: 5.15Vdc, 3A, 9.1Vdc, 2A, 18W 2. Battery ADVANTECH / AIM-BAT-8 Rating: 3.8V, 4900mAh, 18.62Wh
Frequency Range	WCDMA / HSDPA / HSUPA Band II: 1852.4 ~ 1907.6 MHz WCDMA / HSDPA / HSUPA Band V: 826.4 ~ 846.6MHz
Antenna Gain	PIFA Antenna WCDMA band II: -1.98 dBi WCDMA band V: -1.91 dBi

Remark:

1. *The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.*
2. *For test mode WCDMA, HSUPA and HSDPA were pretest. The worst case was WCDMA in this test report*

Emission Designator					
System	**Band**	**Frequency Range(MHz)**	**Emission Designator (99% OBW)**	**Maximum ERP (W)**	**Maximum EIRP (W)**
WCDMA 12.2K RMC	**II**	**1852.4MHz ~1907.6MHz**	**4M16F9W**	**N/A**	**0.453**
	V	**826.4MHz ~ 846.6MHz**	**4M15F9W**	**0.419**	**N/A**

3. TEST METHODOLOGY

Both conducted and radiated testing were performed according to TIA/EIA-603-D: 2010 and FCC CFR 47, Part 2, Part 22 Subpart H and Part 24 Subpart E

The tests documented in this report were performed in accordance with IC RSS-132, SPSR503, RSS-133, SPSR510 and ANSI C63.26: 2015 and TIA/EIA-603-C.

3.1 EUT CONFIGURATION

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

3.2 DESCRIPTION OF TEST MODES

The EUT (model: AIM8Q) had been tested under operating condition.

The EUT be set in maximum power transmission via call box during testing.

3.2.1 The worst mode of measurement

For WCDMA Band II

Radiated Emission Measurement	
Test Condition	**Band edge, Emission for Unwanted and Fundamental**
Voltage/Hz	**120V/60Hz**
Test Mode	**Mode 1:EUT power by AC adapter via power cable.** **Mode 2:EUT power by Battery.**
Worst Mode	☒ **Mode 1** ☐ **Mode 2** ☐ **Mode 3** ☐ **Mode 4**
Position	☐ **P**laced in fixed position. ☒ **P**laced in fixed position at X-Plane (E2-Plane) ☐ **P**laced in fixed position at Y-Plane (E1-Plane) ☐ **P**laced in fixed position at Z-Plane (H-Plane)

Radiated Emission Measurement Below 1G	
Test Condition	**Radiated Emission Below 1G**
Voltage/Hz	**120V/60Hz**
Test Mode	**Mode 1:EUT power by AC adapter via power cable.** **Mode 2:EUT power by Battery.**
Worst Mode	☒ **Mode 1** ☐ **Mode 2** ☐ **Mode 3** ☐ **Mode 4**

Remark:
1. The worst mode was record in this test report.
2. The EUT pre-scanned in three axis ,X,Y, Z for radiated measurement. The worst cases (X-Plane) were recorded in this report.
3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.

For WCDMA Band V

Radiated Emission Measurement	
Test Condition	**Band edge, Emission for Unwanted and Fundamental**
Voltage/Hz	**120V/60Hz**
Test Mode	**Mode 1:EUT power by AC adapter via power cable.** **Mode 2:EUT power by Battery.**
Worst Mode	☒ **Mode 1** ☐ **Mode 2** ☐ **Mode 3** ☐ **Mode 4**
Position	☐ **P**laced in fixed position. ☐ **P**laced in fixed position at X-Plane (E2-Plane) ☒ **P**laced in fixed position at Y-Plane (E1-Plane) ☐ **P**laced in fixed position at Z-Plane (H-Plane)

Radiated Emission Measurement Below 1G	
Test Condition	**Radiated Emission Below 1G**
Voltage/Hz	**120V/60Hz**
Test Mode	**Mode 1:EUT power by AC adapter via power cable.** **Mode 2:EUT power by Battery.**
Worst Mode	☒ **Mode 1** ☐ **Mode 2** ☐ **Mode 3** ☐ **Mode 4**

Remark:
1. The worst mode was record in this test report.
2. The EUT pre-scanned in three axis ,X,Y, Z for radiated measurement. The worst cases (Y-Plane) were recorded in this report.
3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.

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.*

Conducted Emissions Test Site					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Power Meter	Anritsu	ML2495A	1012009	07/04/2016	07/03/2017
Power Sensor	Anritsu	MA2411B	917072	07/04/2016	07/03/2017
Base Station	R&S	CMU 200	101245	07/29/2016	07/28/2017
Base Station	Anritsu	MT-8820C	6200938900	07/26/2016	07/25/2017
Spectrum Analyzer	R&S	FSV 40	101073	10/05/2016	10/04/2017

Wugu 966 Chamber A					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Bilog Antenna	Sunol Sciences	JB3	A030105	07/03/2016	07/02/2017
Horn Antenna	EMCO	3117	00055165	02/20/2017	02/19/2018
Pre-Amplifier	EMCI	EMC 012635	980151	06/23/2016	06/22/2017
Pre-Amplifier	EMEC	EM330	060609	06/08/2016	06/07/2017
Spectrum Analyzer	Agilent	E4446A	US42510252	12/05/2016	12/04/2017
Loop Ant	COM-POWER	AL-130	121051	03/02/2017	03/1/2018
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R
Software	EZ-EMC (CCS-3A1RE)				

4.3 MEASUREMENT UNCERTAINTY

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

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

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

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

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

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

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

5.2 EQUIPMENT

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

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

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

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

5.3 TABLE OF ACCREDITATIONS AND LISTINGS

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

6.2 SUPPORT EQUIPMENT

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

Remark:

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

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

7.1 AVERAGE POWER

Test Procedures

CONDUCTED POWER MEASUREMENT:

1. The transmitter output power was connected to the call box.
2. Set EUT at maximum output power via call box.
3. Set Call box at lowest, middle and highest channels for each band and modulation.

No non-compliance noted.

Test Data

WCDMA 12.2K RMC

Band	Mode	UL/DL Channel No.	Frequency(MHz)	Average power(dBm)	Output Power (W)
WCDMA Band II	Rel 99	9262/9662	1852.4	22.8	0.19055
		9400/9800	1880.0	23.0	0.19953
		9538/9983	1907.6	22.9	0.19498
WCDMA Band V	Rel 99	4132/4157	826.4	23.0	0.19953
		4182/4407	836.4	23.0	0.19953
		4233/4458	846.6	22.9	0.19498

HSDPA

Band II

Band	Mode	UL/DL Channel No.	Frequency(MHz)	Average power(dBm)	Output Power (W)
HSDPA II	1	9262/9662	1852.4	21.8	0.15136
		9400/9800	1880.0	22.1	0.16218
		9538/9983	1907.6	22.0	0.15849
	2	9262/9662	1852.4	21.3	0.13490
		9400/9800	1880.0	21.6	0.14454
		9538/9983	1907.6	21.5	0.14125
	3	9262/9662	1852.4	20.8	0.12023
		9400/9800	1880.0	21.1	0.12882
		9538/9983	1907.6	21.0	0.12589
	4	9262/9662	1852.4	20.8	0.12023
		9400/9800	1880.0	21.1	0.12882
		9538/9983	1907.6	21.0	0.12589

Band V

Band	Mode	UL/DL Channel No.	Frequency(MHz)	Average power(dBm)	Output Power (W)
HSDPA V	1	4132/4157	826.4	22.0	0.15849
		4182/4407	836.4	22.1	0.16218
		4233/4458	846.6	22.0	0.15849
	2	4132/4157	826.4	21.5	0.14125
		4182/4407	836.4	21.6	0.14454
		4233/4458	846.6	21.5	0.14125
	3	4132/4157	826.4	21.0	0.12589
		4182/4407	836.4	21.1	0.12882
		4233/4458	846.6	21.0	0.12589
	4	4132/4157	826.4	21.0	0.12589
		4182/4407	836.4	21.1	0.12882
		4233/4458	846.6	21.0	0.12589

HSUPA

Band II

Band	Mode	UL/DL Channel No.	Frequency(MHz)	Average power(dBm)	Output Power (W)
HSUPA II	1	9262/9662	1852.4	21.8	0.15136
		9400/9800	1880.0	22.1	0.16218
		9538/9983	1907.6	22.0	0.15849
	2	9262/9662	1852.4	19.8	0.09550
		9400/9800	1880.0	20.1	0.10233
		9538/9983	1907.6	20.0	0.10000
	3	9262/9662	1852.4	20.8	0.12023
		9400/9800	1880.0	21.1	0.12882
		9538/9983	1907.6	21.0	0.12589
	4	9262/9662	1852.4	19.8	0.09550
		9400/9800	1880.0	20.1	0.10233
		9538/9983	1907.6	20.0	0.10000
	5	9262/9662	1852.4	21.8	0.15136
		9400/9800	1880.0	22.1	0.16218
		9538/9983	1907.6	22.0	0.15849

Band V

Band	Mode	UL/DL Channel No.	Frequency(MHz)	Average power(dBm)	Output Power (W)
HSUPA V	1	4132/4157	826.4	22.0	0.15849
		4182/4407	836.4	22.1	0.16218
		4233/4458	846.6	22.0	0.15849
	2	4132/4157	826.4	20.0	0.10000
		4182/4407	836.4	20.1	0.10233
		4233/4458	846.6	20.0	0.10000
	3	4132/4157	826.4	21.0	0.12589
		4182/4407	836.4	21.1	0.12882
		4233/4458	846.6	21.0	0.12589
	4	4132/4157	826.4	20.0	0.10000
		4182/4407	836.4	20.1	0.10233
		4233/4458	846.6	20.0	0.10000
	5	4132/4157	826.4	22.0	0.15849
		4182/4407	836.4	22.1	0.16218
		4233/4458	846.6	22.0	0.15849

7.2 ERP & EIRP MEASUREMENT

LIMIT

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

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

RSS-132, section 5.4

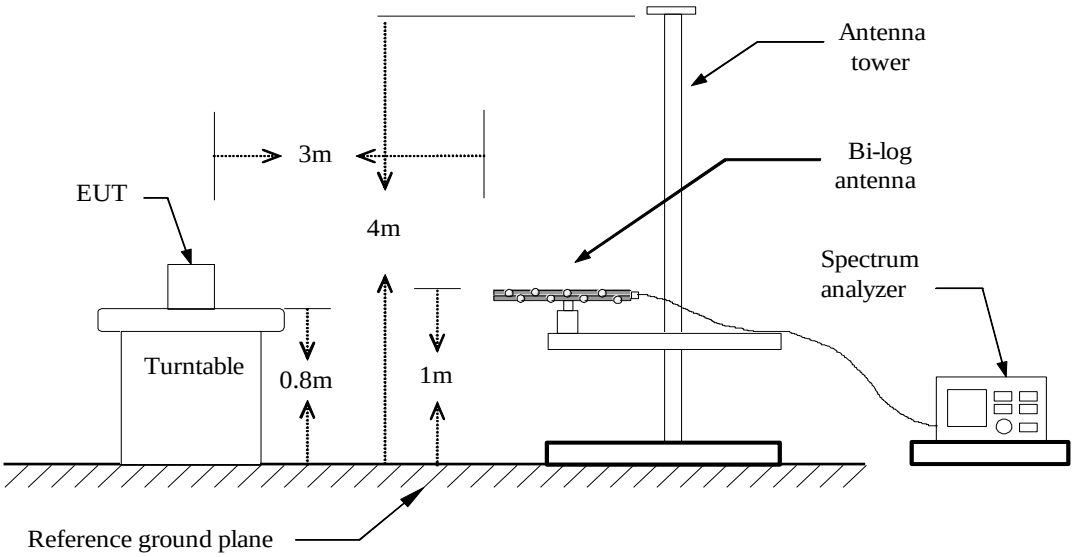
The transmitter output power shall be measured in terms of average power. The equivalent isotropically radiated power (e.i.r.p.) for mobile equipment shall not exceed 11.5 watts. Refer to SRSP-503 for base station e.i.r.p. limits.

RSS-133, section 6.4

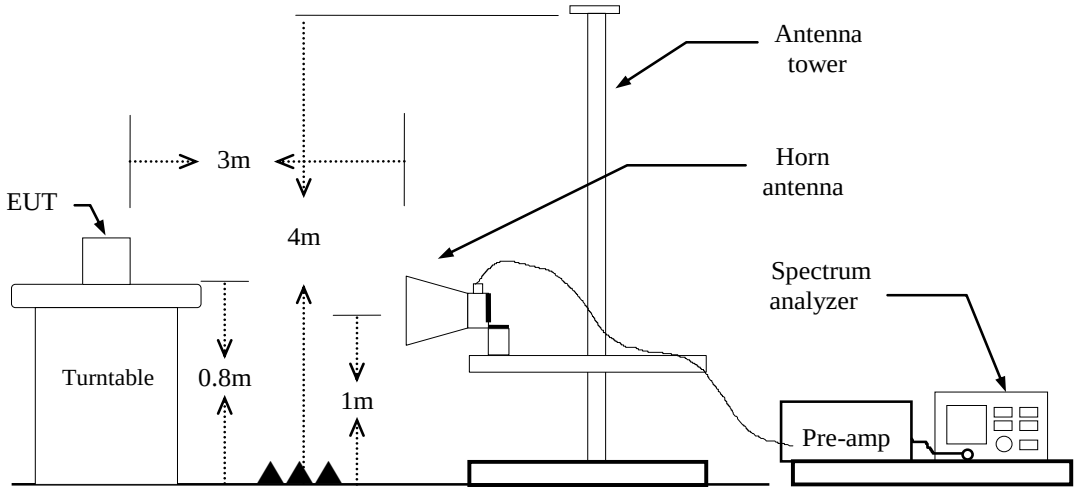
The equivalent isotropically radiated power (e.i.r.p.) for transmitters shall not exceed the limits given in SRSP-510. Moreover, base station transmitters operating in the band 1930-1995 MHz shall not have output power exceeding 100 watts.

Test Configuration

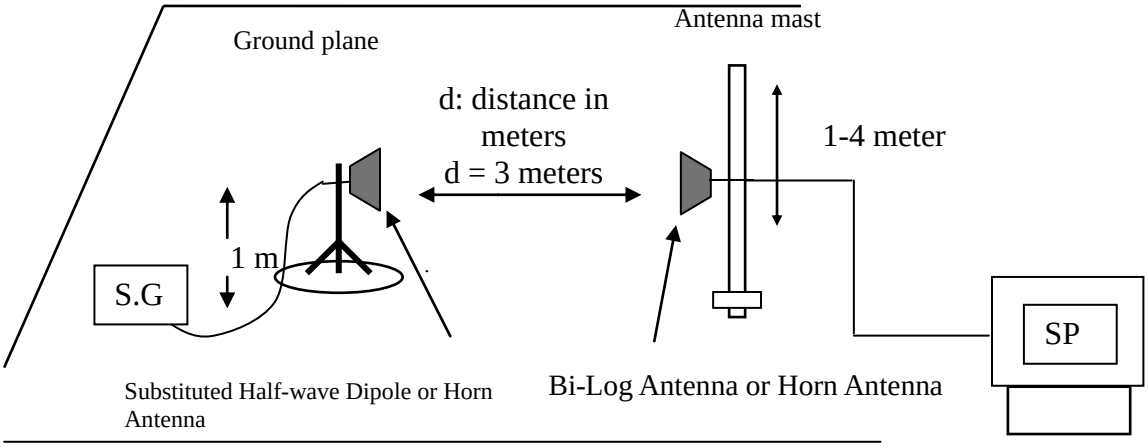
Below 1 GHz



Above 1 GHz


Antenna
tower
3m
Horn
antenna
EUT
4m
Spectrum
analyzer
Turntable
0.8m
1m
Pre-amp

For Substituted Method Test Set-UP



TEST PROCEDURE

1. The EUT was placed on a non-conductive rotating platform (0.8m for below 1G and above 1G) in a semi-chamber. The radiated emission at the fundamental frequency was measured at 3m and SA with RMS detector per section 5, KDB 971168 D01.

2. During the measurement, the call box parameters were set to get the maximum output power of the EUT. The maximum emission was recorded from spectrum analyzer power level (LVL) from 360 degrees rotation of turntable and the test antenna raised and lowered over a range from 1m to 4m in both horizontally and vertically polarized orientations.

3. EIRP was measured method according to TIA/EIA-603-D:2010. The EUT was replaced by the substitution antenna at same location, and then record the maximum Analyzer reading through raised and lowered the test antenna.

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.

WCDMA 12.2K RMC

Test Mode	Channel	Vertical		Horizontal	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
WCDMA 12.2K RMC (Band II)	Lowest	17.40	0.054	26.57	0.453
	Middle	14.65	0.029	25.62	0.364
	Highest	16.93	0.049	25.22	0.332

Test Mode	Channel	Vertical		Horizontal	
		ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
WCDMA 12.2K RMC (Band V)	Lowest	24.50	0.281	25.34	0.341
	Middle	24.09	0.256	26.23	0.419
	Highest	25.04	0.319	26.09	0.406

7.3 OCCUPIED BANDWIDTH MEASUREMENT

Limits

For Reporting purpose only.

TEST PROCEDURES

KDB 971168 v02r02 - Section 4.2

1. The occupied bandwidth was measured with the spectrum analyzer at the lowest, middle and highest channels in each band and different modulation. The 99% and -26dB bandwidth was measured and recorded.
2. RBW = 1-5% of the expected OBW
3. VBW ≥ 3 x RBW
4. Detector = Peak
5. Trace mode = max. hold

TEST RESULTS

No non-compliance noted

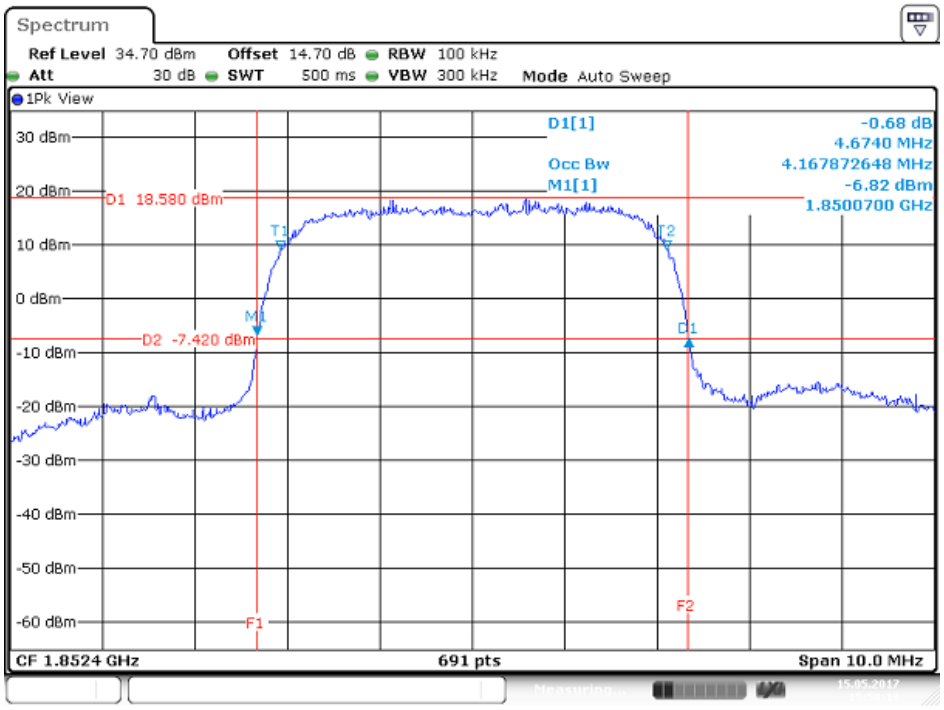
Test Data

Test Mode	CH	Frequency (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
WCDMA 12.2k RMC (Band II)	Lowest	1852.4	4.1678	4.6740
	Middle	1880.0	4.1678	4.6740
	Highest	1907.6	4.1534	4.6740
WCDMA 12.2k RMC (Band V)	Lowest	826.4	4.1534	4.6740
	Middle	836.4	4.1534	4.6740
	Highest	846.6	4.1534	4.6600

Test Plot

WCDMA 12.2k RMC (Band II)

Low CH



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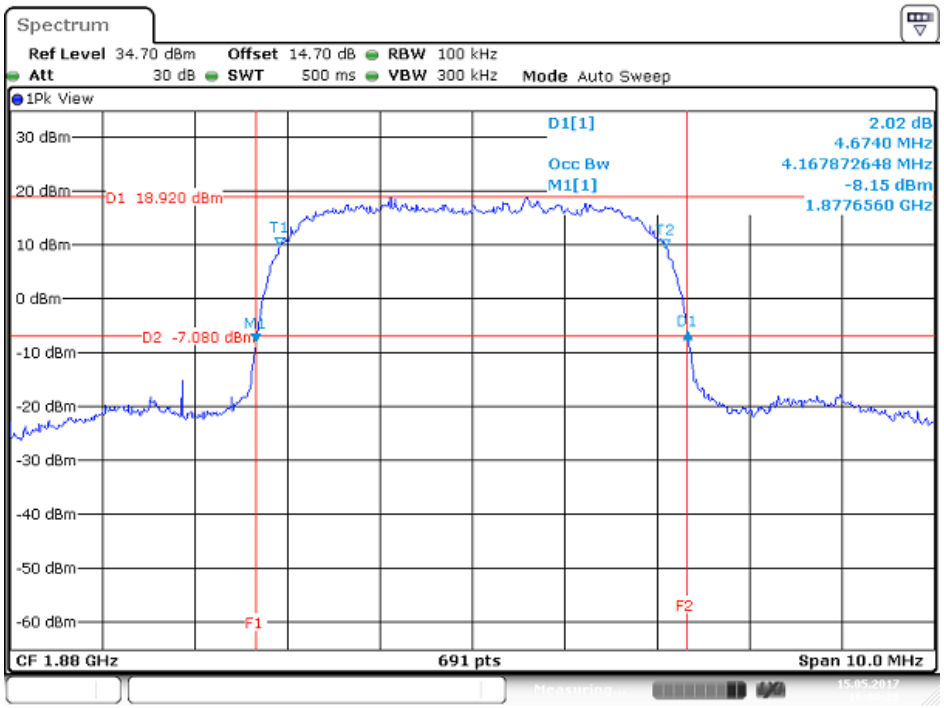
Mid CH



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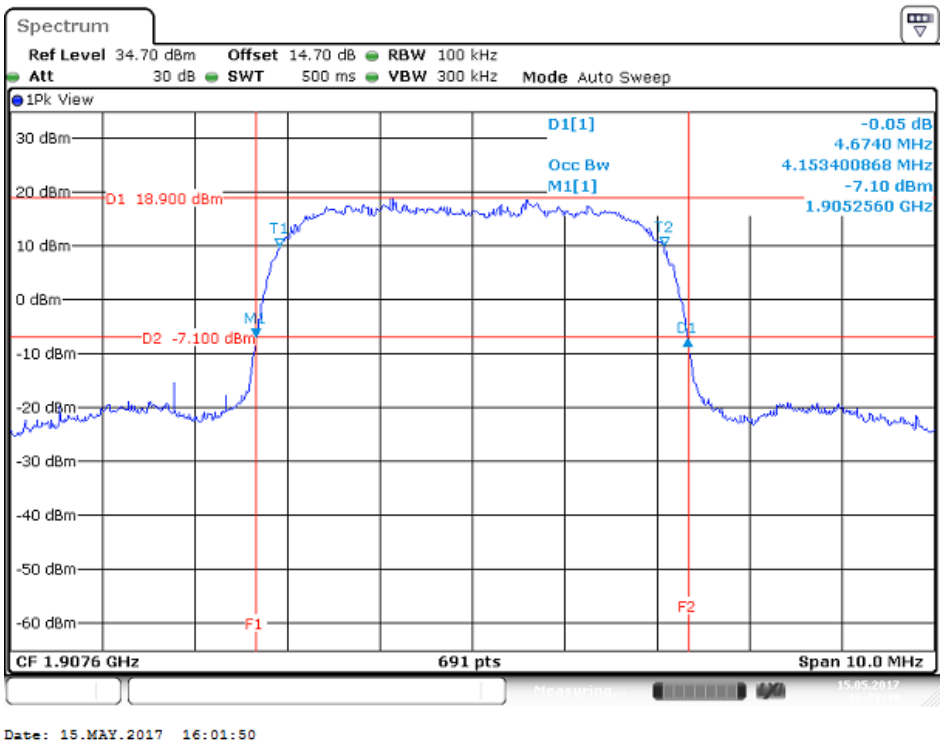
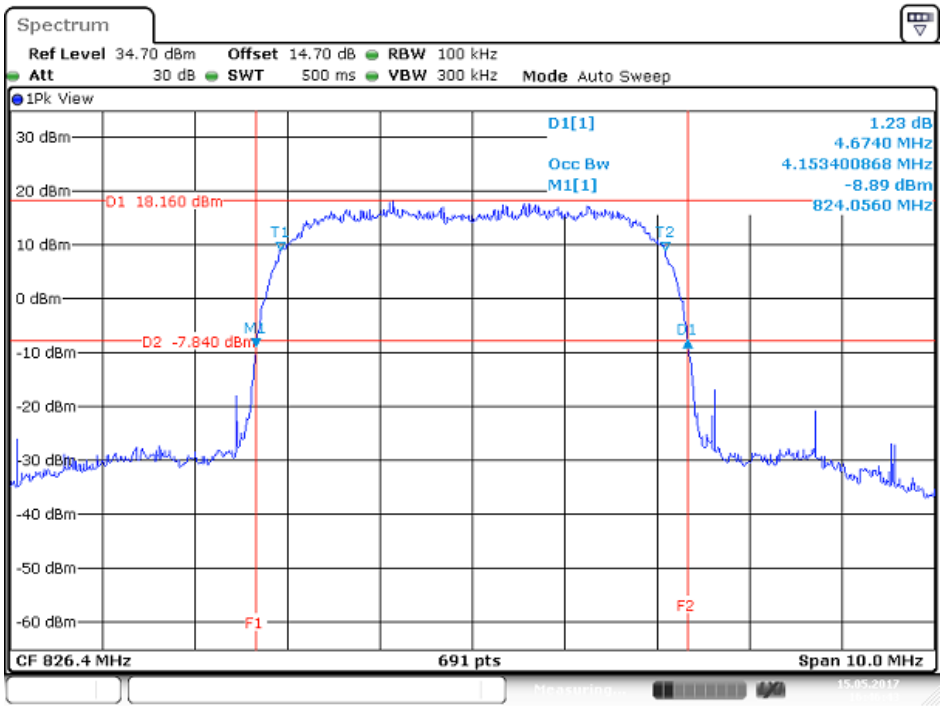
High CH


Spectrum
Ref Level 34.70 dBm Offset 14.70 dB RBW 100 kHz
Att 30 dB SWT 500 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D1[1] -0.05 dB
4.6740 MHz
Occ Bw 4.153400868 MHz
M1[1] -7.10 dBm
1.9052560 GHz
D1 18.900 dBm
D2 -7.100 dBm
30 dBm
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
T1
T2
M1
D1
F1
F2
CF 1.9076 GHz
691 pts
Span 10.0 MHz
Date: 15.MAY.2017 16:01:50

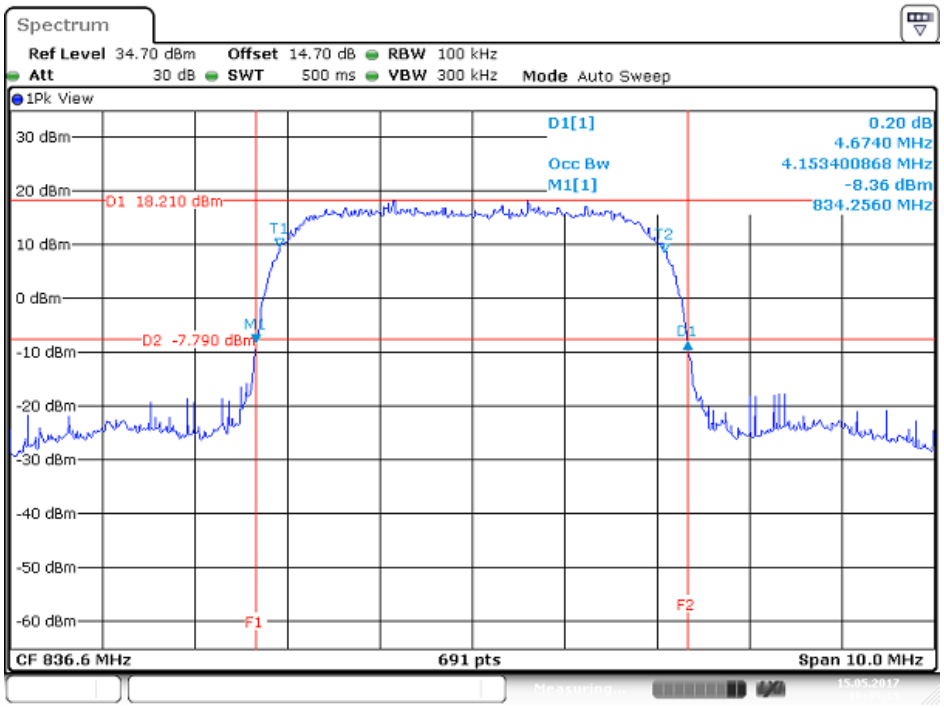
WCDMA 12.2k RMC (Band V)

Low CH



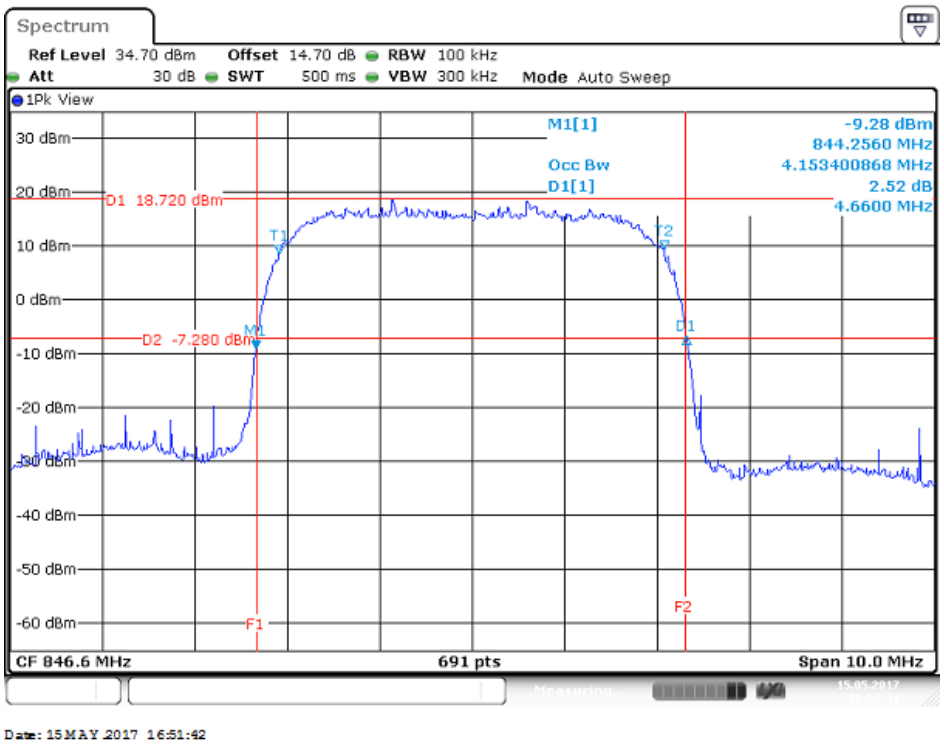
Date: 15.MAY.2017 16:46:43

Mid CH



Date: 15.MAY.2017 16:49:15

High CH


Spectrum
Ref Level 34.70 dBm Offset 14.70 dB RBW 100 kHz
Att 30 dB SWT 500 ms VBW 300 kHz Mode Auto Sweep
1Pk View
M1[1] -9.28 dBm
844.2560 MHz
Occ Bw 4.153400868 MHz
D1[1] 2.52 dB
4.6600 MHz
D1 18.720 dBm
D2 -7.280 dBm
30 dBm
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
T1
T2
M1
D1
F1
F2
CF 846.6 MHz
691 pts
Span 10.0 MHz
Date: 15.MAY.2017 16:51:42

7.4 CONDUCTED BANDEDG MEASUREMENT

Limit

FCC §22.917(a), Band 5

For operations in the 824-849 MHz band, out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

FCC §24.238(a), Band 2

For operations in the 1850-1910 and 1930-1950 MHz band, out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

RSS-132 section 5.5 and RSS-133 section 6.5

In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts).

TEST PROCEDURE

According to KDB 971168 D01, section 6.0

1. The EUT was connected to spectrum analyzer and call box.
2. The RF output of EUT was connected to the spectrum analyzer.
3. Start and stop frequency were set such that the band edge would be placed in the center of the plot
4. Span was set large enough so as to capture all out of band emissions near the band edge
5. Set the spectrum analyzer, RBW=100kHz, VBW=300kHz.
6. Record the Band edge emission.

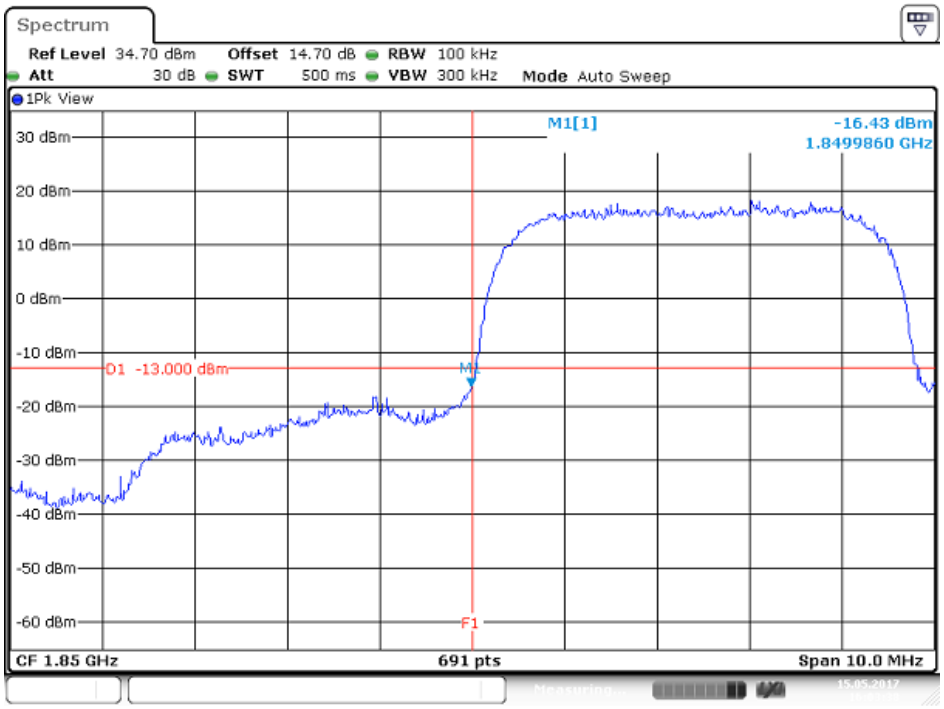
TEST RESULTS

No non-compliance noted.

Test Data

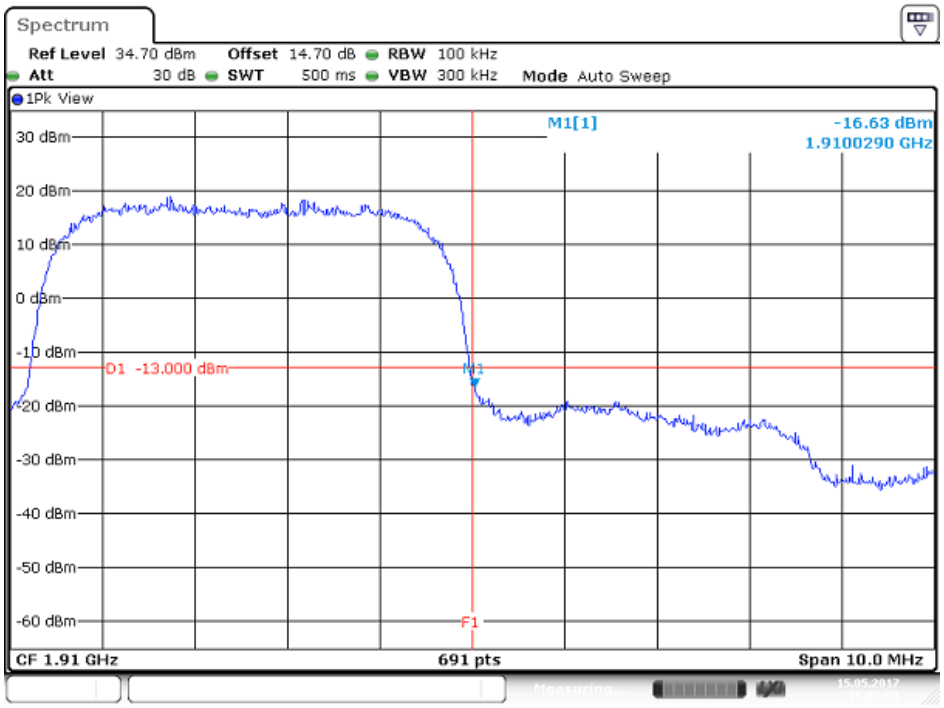
WCDMA 12.2k RMC (Band II)

Low CH



Date: 15.MAY.2017 16:03:39

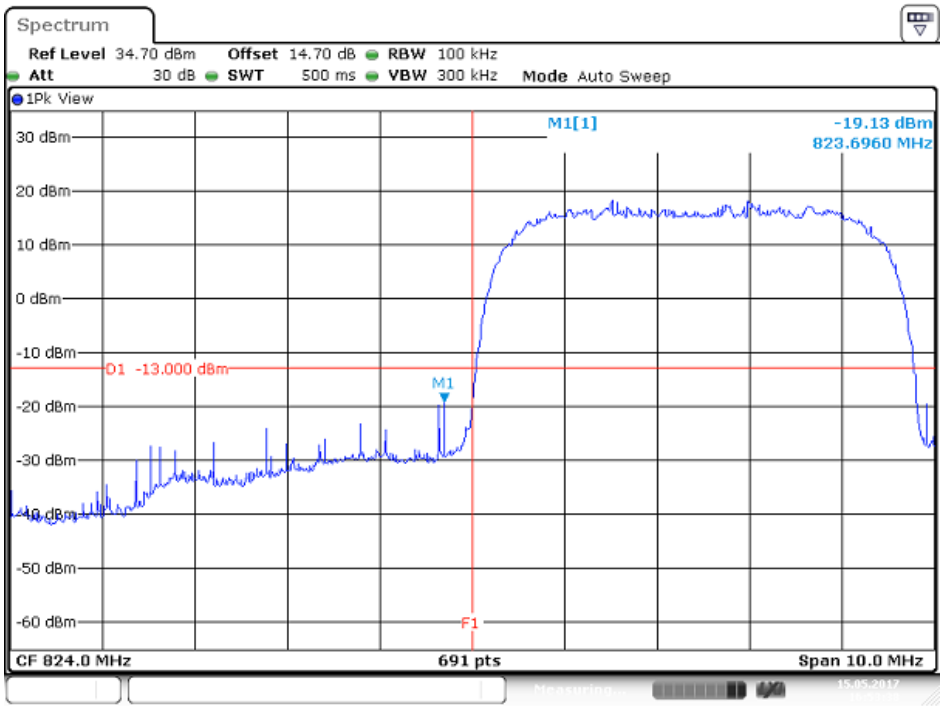
High CH



Date: 15.MAY.2017 16:02:52

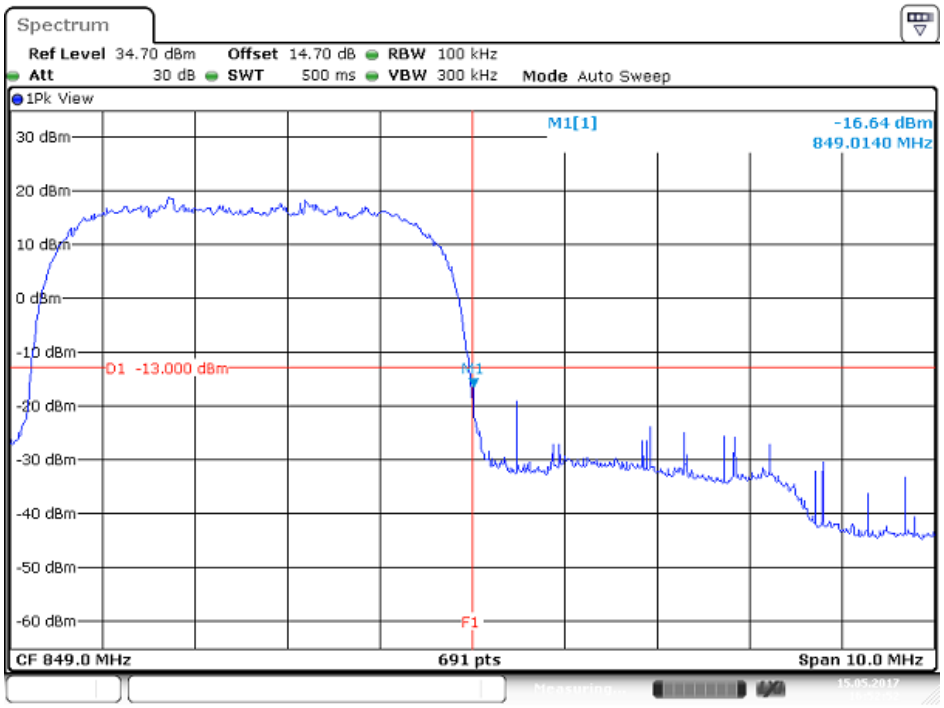
WCDMA 12.2k RMC (Band V)

Low CH



Date: 15.MAY.2017 16:53:38

High CH



Date: 15.MAY.2017 16:52:53

7.5 PEAK TO AVERAGE RATIO

Limit

FCC §22.913(d), Band 5

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

FCC §24.232(d), Band 2

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

RSS-132 section 5.4 and RSS-133 section 6.4

The peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

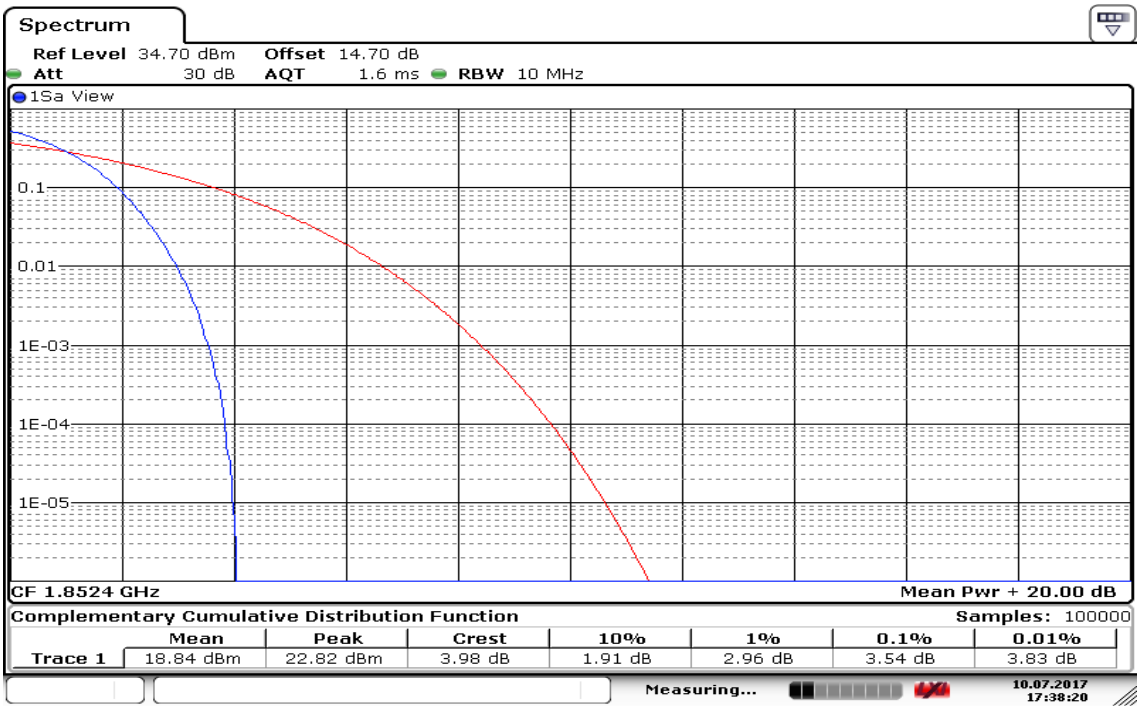
Test Procedures

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

Test Data

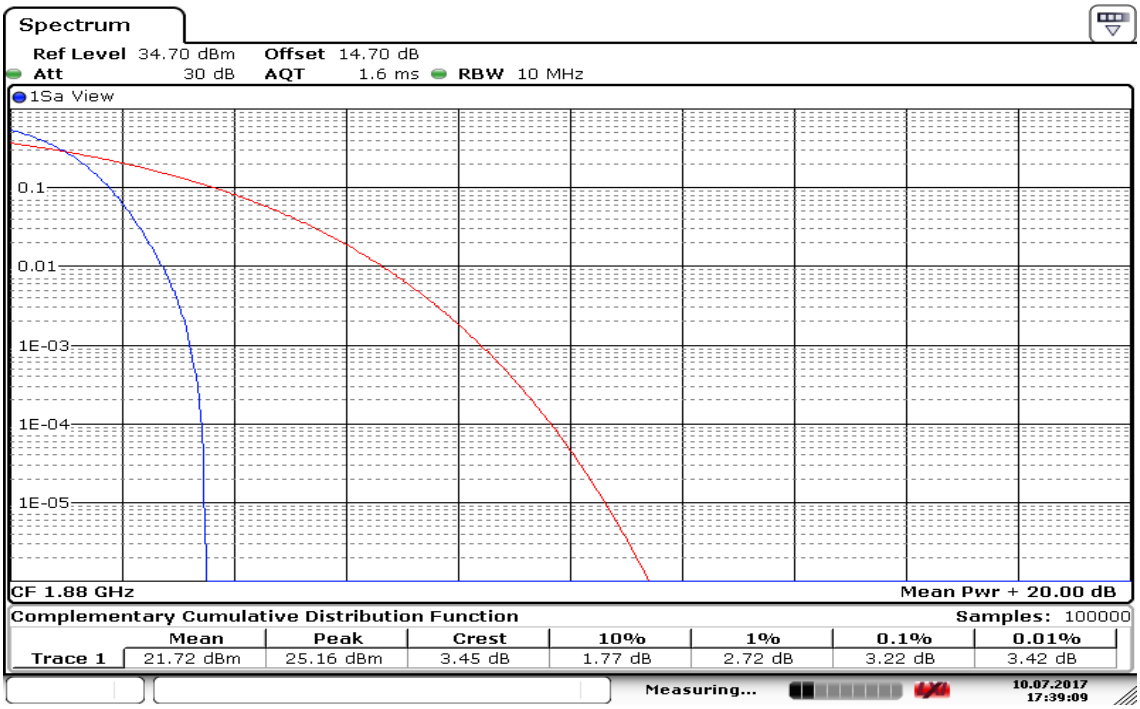
WCDMA 12.2k RMC (Band II)

Low CH



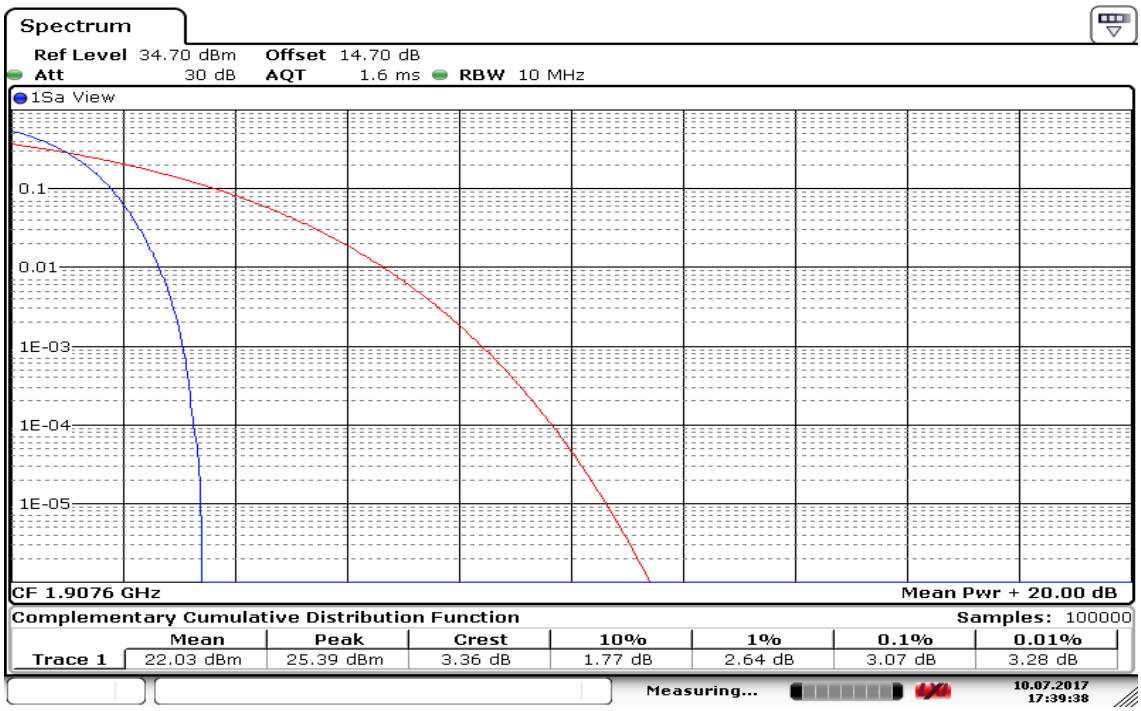
Date: 10.JUL.2017 17:38:20

Mid CH



Date: 10.JUL.2017 17:39:09

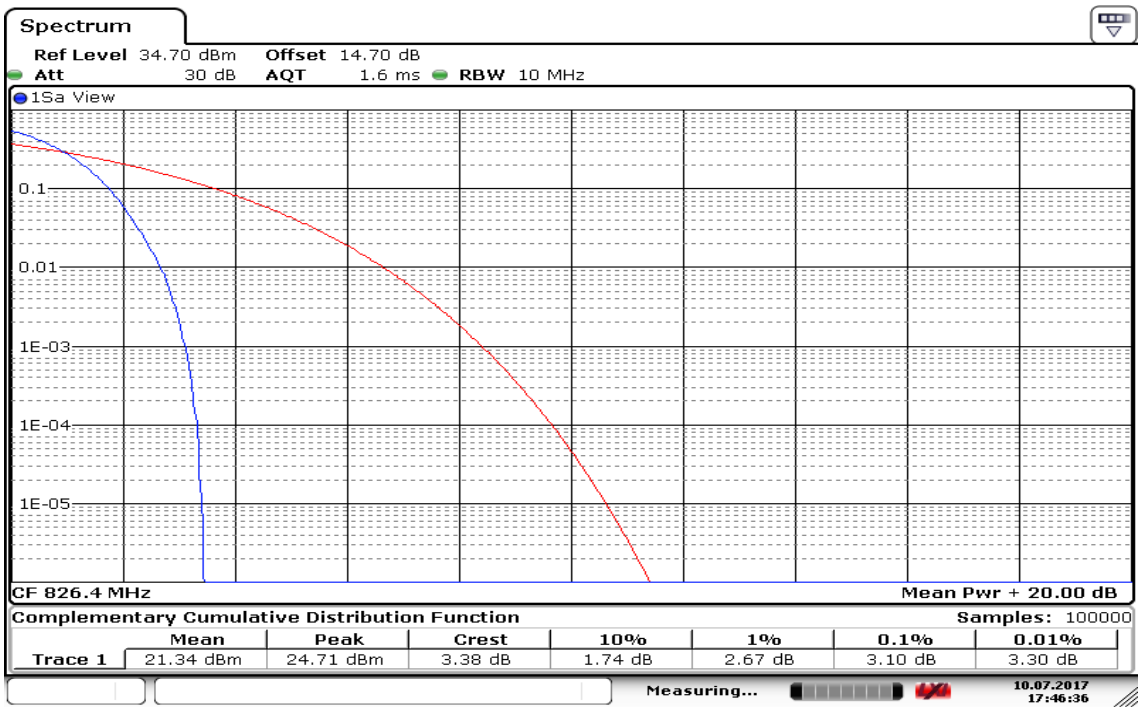
High CH



Date: 10.JUL.2017 17:39:37

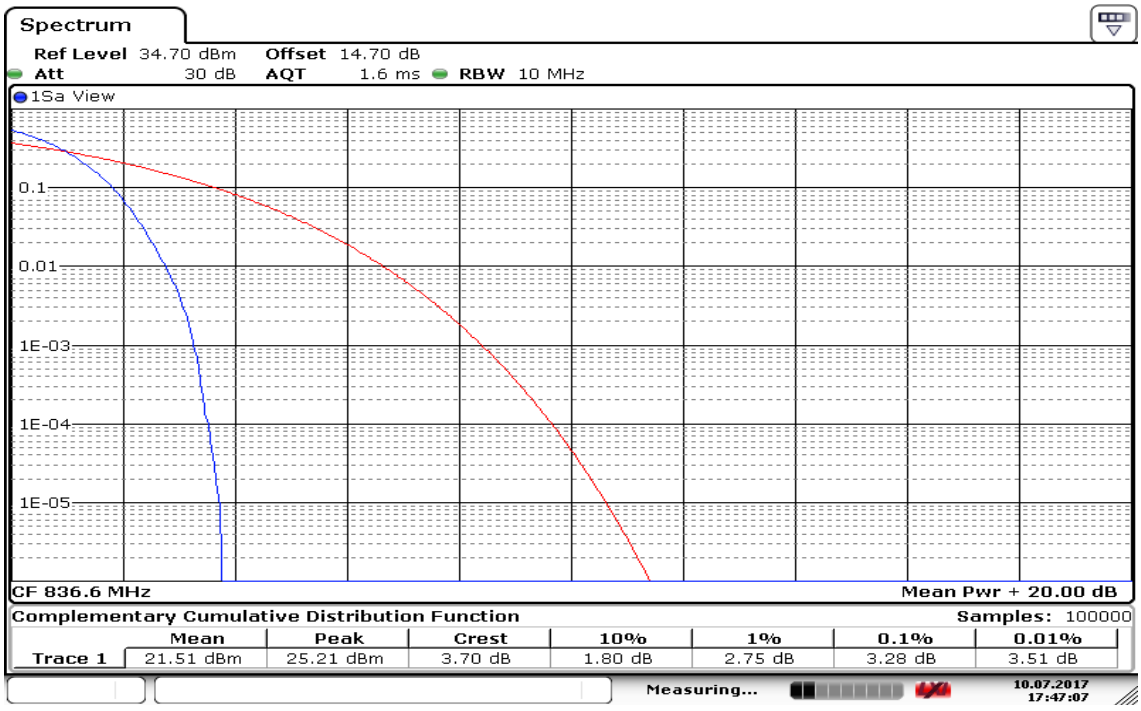
WCDMA 12.2k RMC (Band V)

Low CH



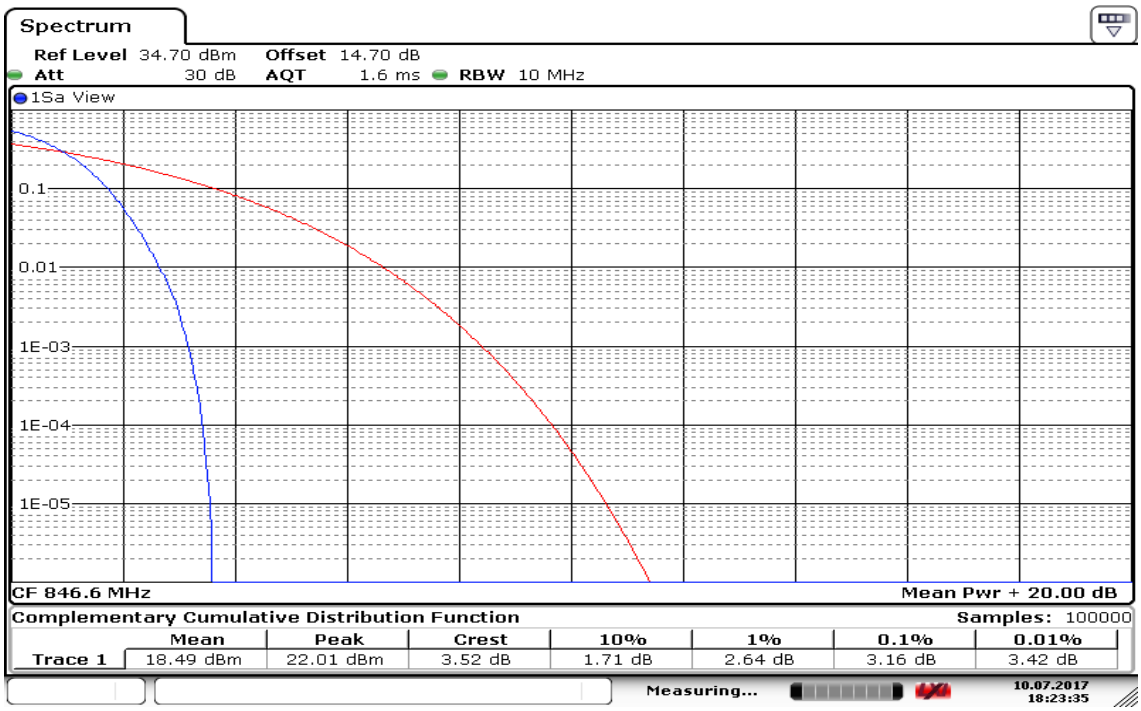
Date: 10.JUL.2017 17:46:36

Mid CH



Date: 10.JUL.2017 17:47:07

High CH



Date: 10.JUL.2017 18:23:35

7.6 CONDUCTED SPURIOUS EMISSIONS

Limit

FCC §22.917(a), Band 5

For operations in the 824-849 MHz band, out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

FCC §24.238(a), Band 2

For operations in the 1850-1910 and 1930-1950 MHz band, out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

RSS-132 section 5.5 and RSS-133 section 6.5

In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts).

Test Procedures

According to KDB 971168 D01, section 6.0

1. The EUT was connected to spectrum analyzer and call box.
2. The RF output of EUT was connected to the spectrum analyzer.
3. Set the spectrum analyzer, RBW=1MHz, VBW=3MHz.
4. Record the maximum spurious emission.
5. The fundamental frequency should be excluded against the limit in operating band.

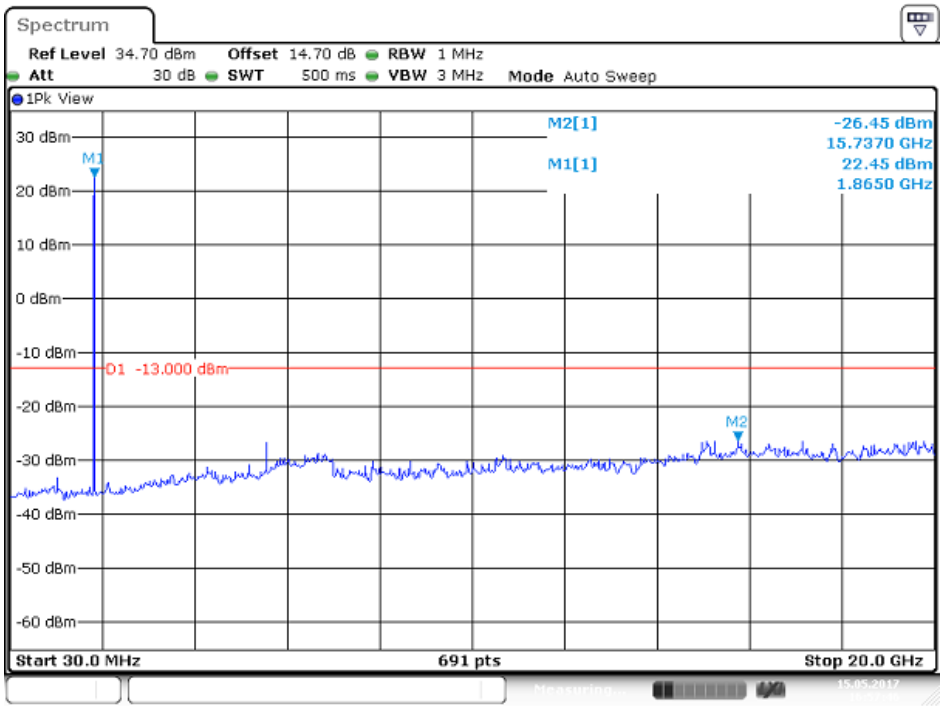
TEST RESULTS

No non-compliance noted

Test Data

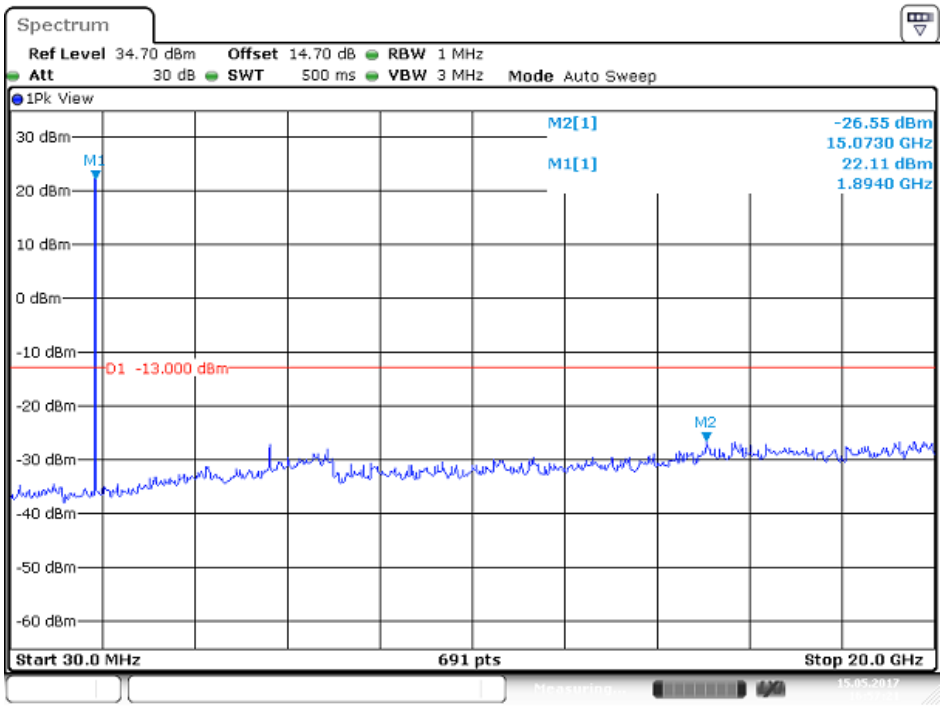
WCDMA 12.2k RMC (Band II)

Low CH



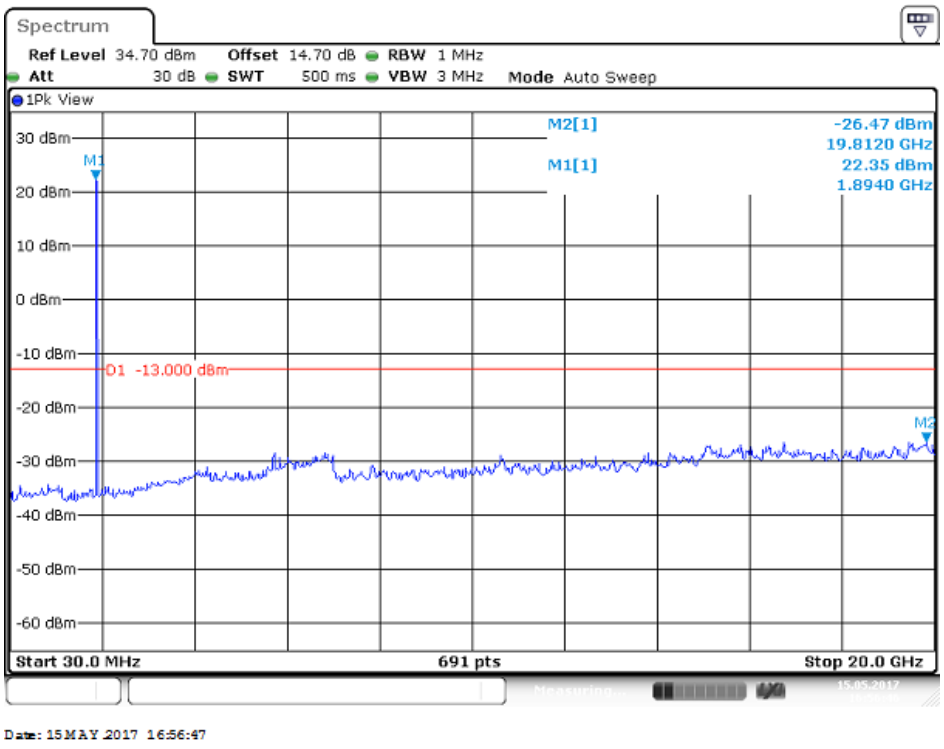
Date: 15.MAY.2017 16:57:47

Mid CH



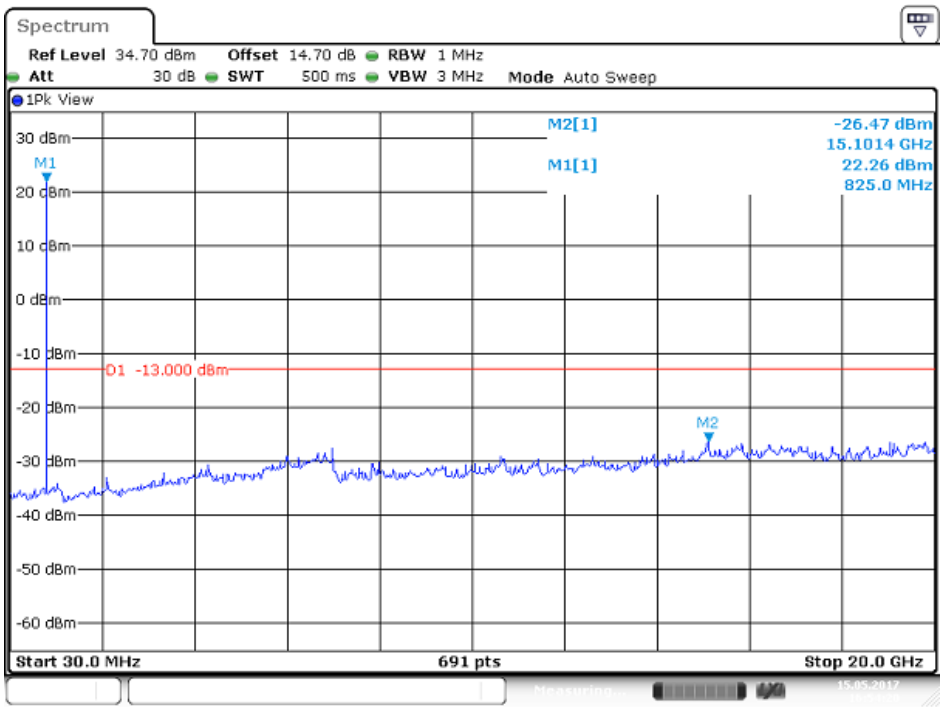
Date: 15.MAY.2017 16:57:21

High CH


Spectrum
Ref Level 34.70 dBm Offset 14.70 dB RBW 1 MHz
Att 30 dB SWT 500 ms VBW 3 MHz Mode Auto Sweep
1Pk View
M2[1] -26.47 dBm
19.8120 GHz
M1[1] 22.35 dBm
1.8940 GHz
30 dBm
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
M1
D1 -13.000 dBm
M2
Start 30.0 MHz
691 pts
Stop 20.0 GHz
Date: 15.MAY.2017 16:56:47

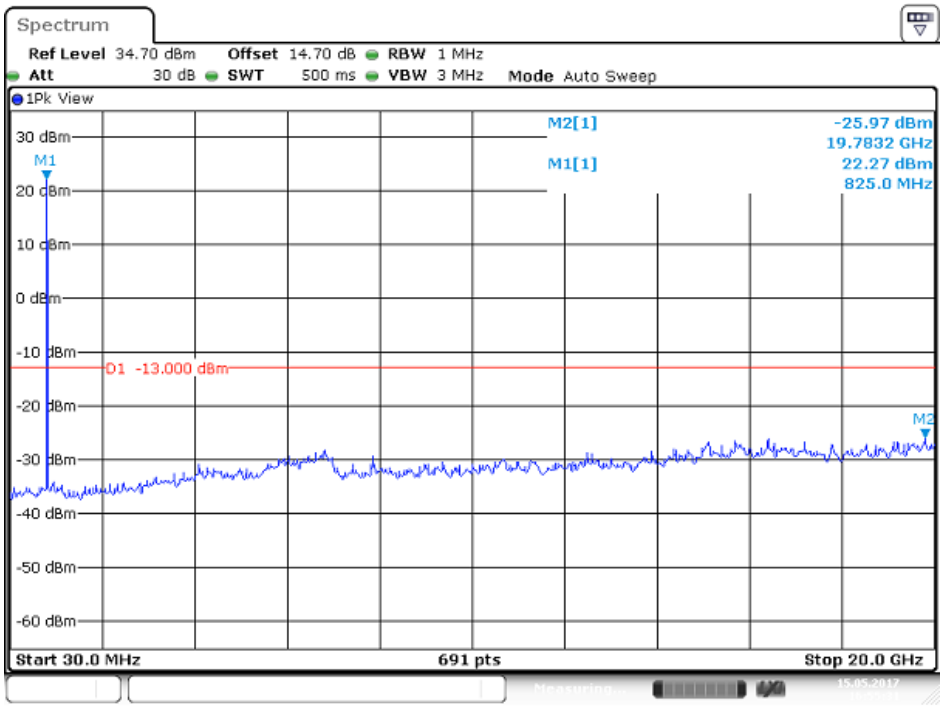
WCDMA 12.2k RMC (Band V)

Low CH



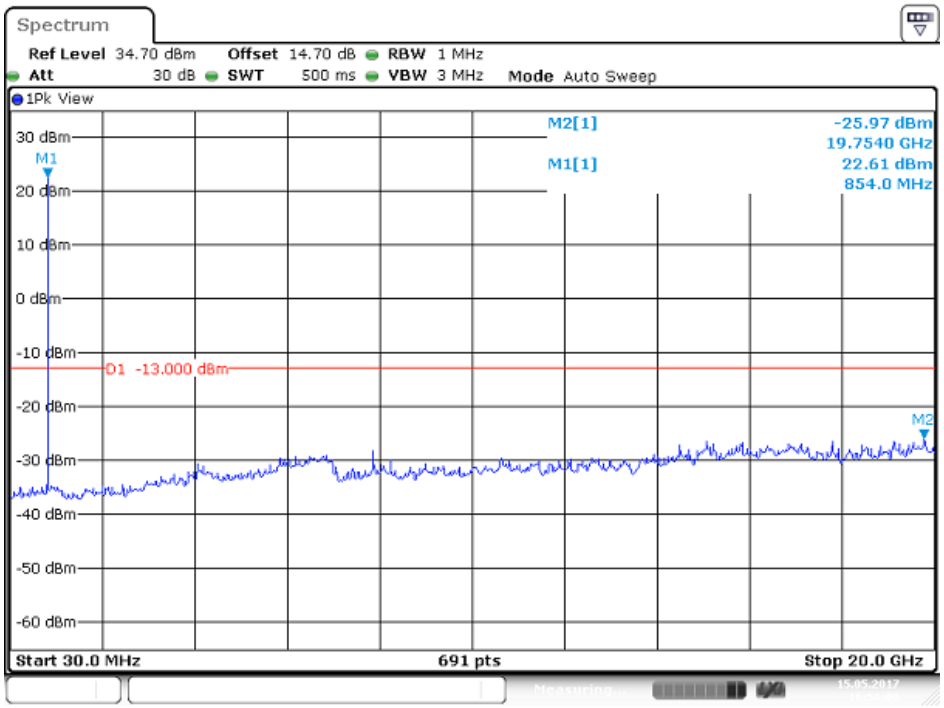
Date: 15.MAY.2017 16:54:21

Mid CH



Date: 15.MAY.2017 16:55:32

High CH


Spectrum
Ref Level 34.70 dBm Offset 14.70 dB RBW 1 MHz
Att 30 dB SWT 500 ms VBW 3 MHz Mode Auto Sweep
1Pk View
M2[1] -25.97 dBm
19.7540 GHz
M1[1] 22.61 dBm
854.0 MHz
30 dBm
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
M1
D1 -13.000 dBm
M2
Start 30.0 MHz
691 pts
Stop 20.0 GHz
Date: 15.MAY.2017 16:56:00

7.7 SPURIOUS RADIATION MEASUREMENT

Limit

FCC §22.917(a), Band 5

For operations in the 824-849 MHz band, out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

FCC §24.238(a), Band 2

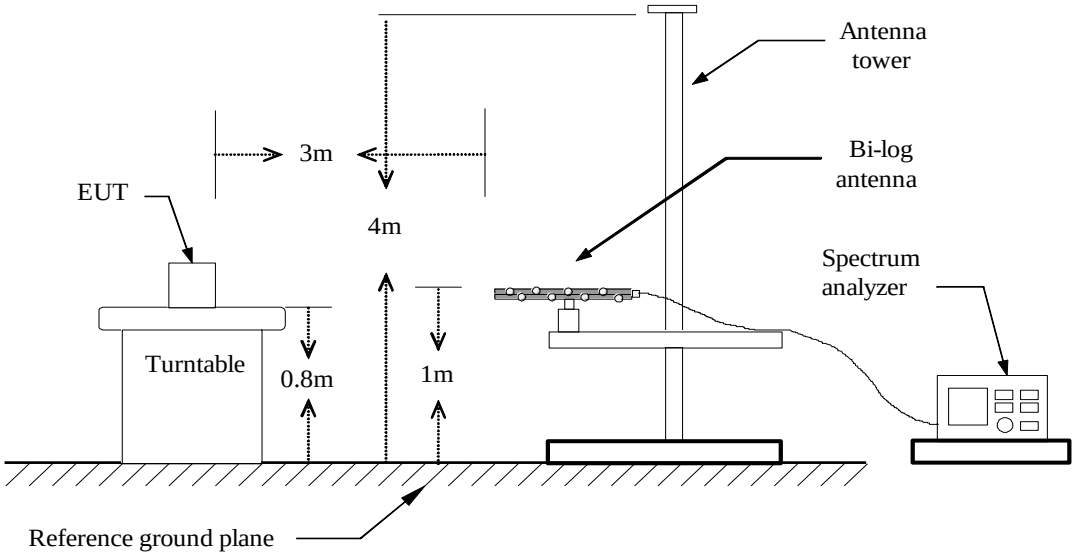
For operations in the 1850-1910 and 1930-1950 MHz band, out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

RSS-132 section 5.5 and RSS-133 section 6.5

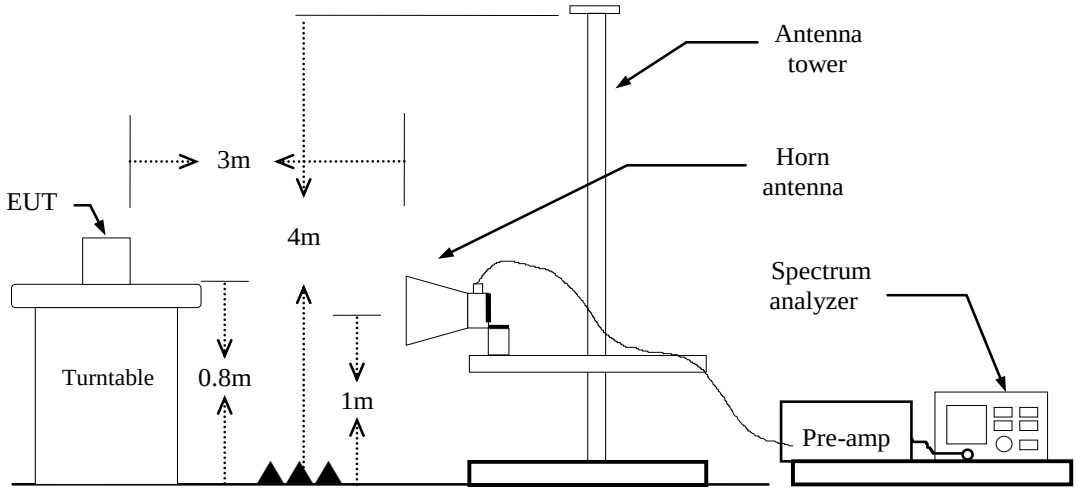
In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts).

Test Configuration

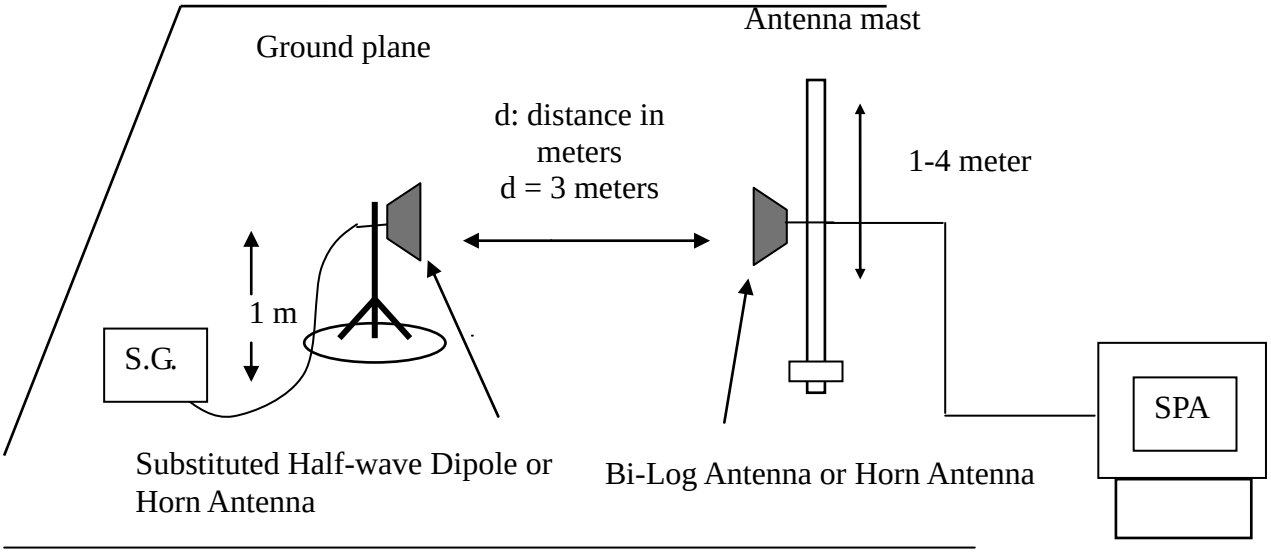
Below 1 GHz



Above 1 GHz



Substituted Method Test Set-up



TEST PROCEDURE

1. According to KDB 971168 D01. section 5.8 and TIA-603-D:2010 section 2.2.12.
2. The EUT was placed on a turntable
   (1) Below 1G : 0.8m
   (2) Above 1G : 0.8m
   (3) EUT set 3m from the receiving antenna
   (4) The table was rotated 360 degrees of the highest spurious emission to determine the position.
3. Set the spectrum analyzer , RBW=1MHz, VBW=3MHz.
4. A horn antenna was driven by a signal generator.
5. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission

ERP = S.G. output (dBm) + Antenna Gain (dBd) – Cable (dB)

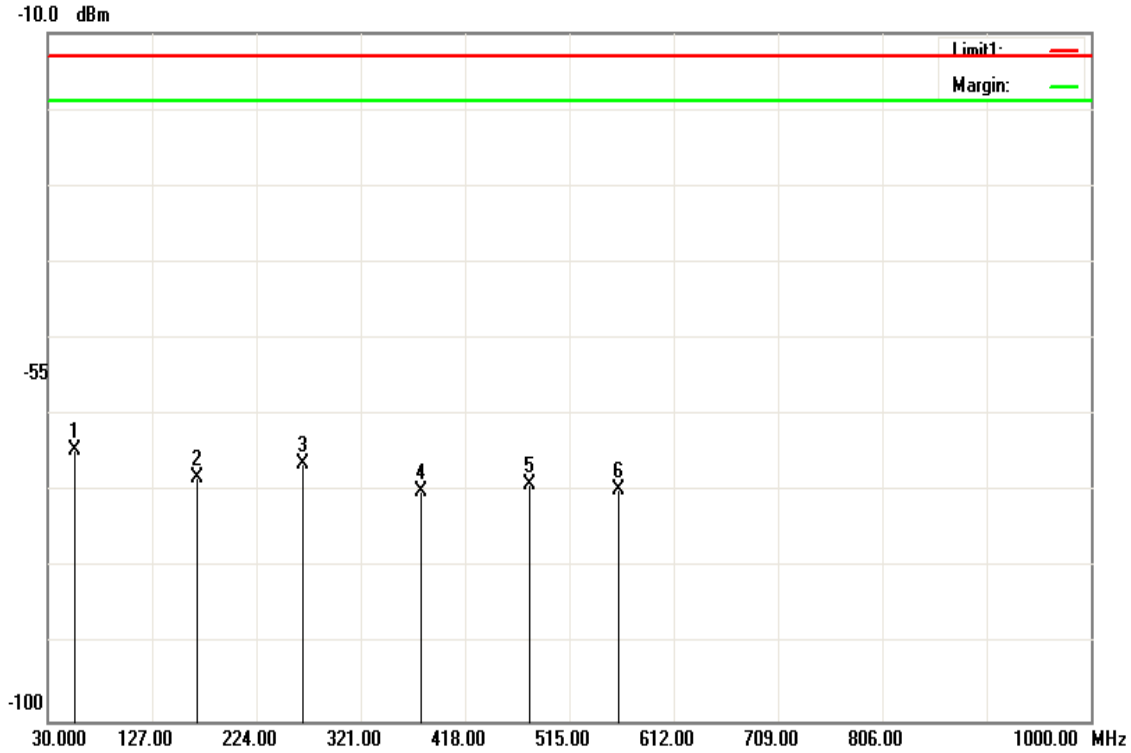
EIRP = S.G. output (dBm) + Antenna Gain (dBi) – Cable (dB)

TEST RESULTS

Refer to the attached tabular data sheets.

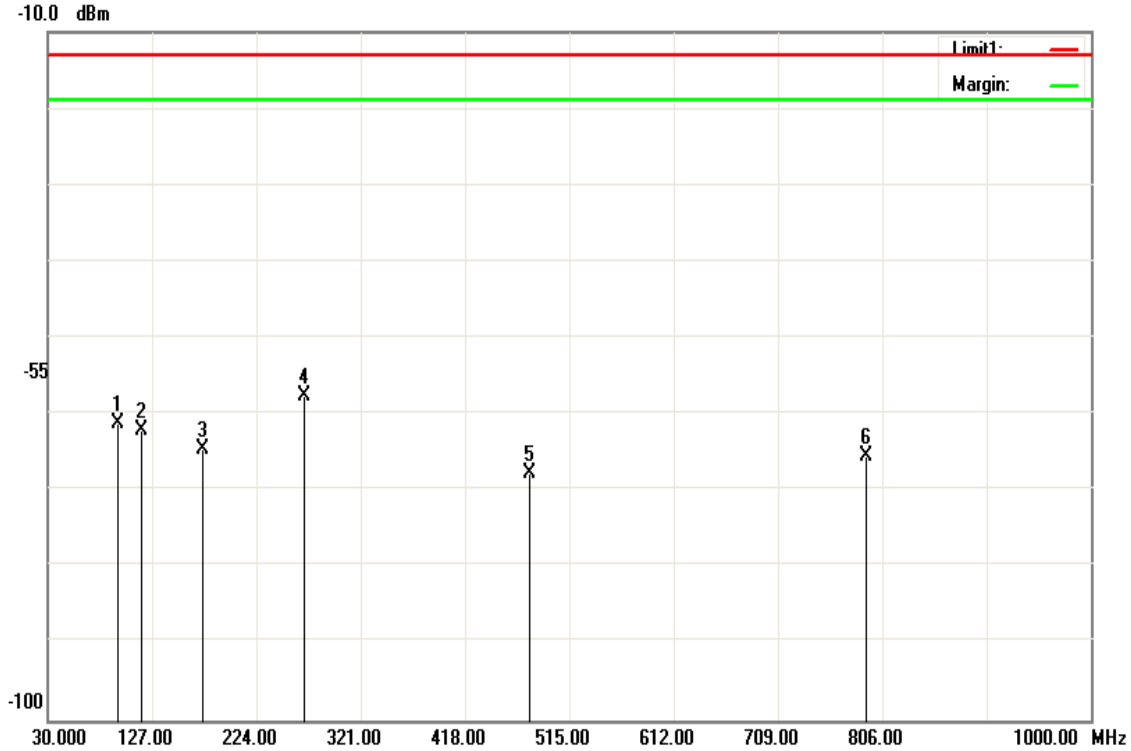
Radiated Spurious Emission Measurement Result / Below 1GHz

Operation Mode:	WCDMA 12.2k RMC Band II / TX /Mid CH	**Test Date:**	April 18, 2017
Temperature:	21.8°C	**Tested by:**	Timmy Wang
Humidity:	60 % RH	**Polarity:**	Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
55.2200	-62.78	-1.78	-64.56	-13.00	-51.56	V
168.7100	-69.62	1.45	-68.17	-13.00	-55.17	V
267.6500	-73.54	7.22	-66.32	-13.00	-53.32	V
377.2600	-77.16	7.21	-69.95	-13.00	-56.95	V
478.1400	-75.88	6.91	-68.97	-13.00	-55.97	V
560.5900	-74.9	5.06	-69.84	-13.00	-56.84	V

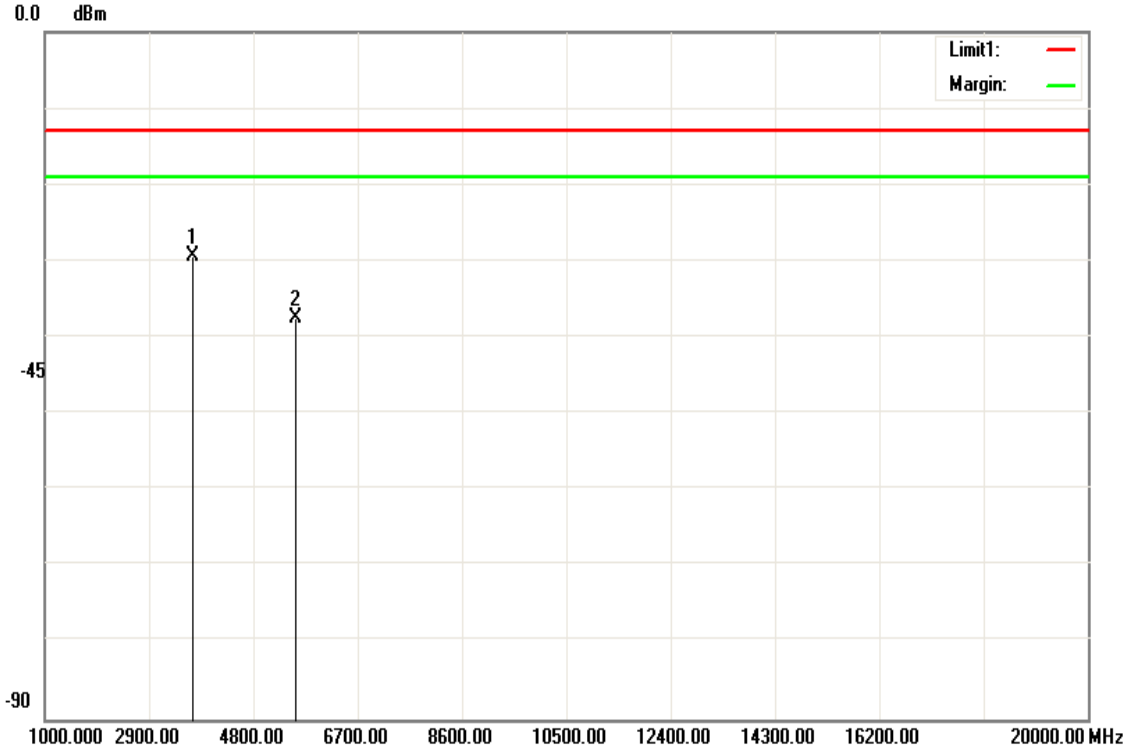
Operation Mode:	WCDMA 12.2k RMC Band II / TX /Mid CH	**Test Date:**	April 18, 2017
Temperature:	21.8°C	**Tested by:**	Timmy Wang
Humidity:	60 % RH	**Polarity:**	Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
94.9900	-61.28	0.2	-61.08	-13.00	-48.08	H
117.3000	-62.88	0.79	-62.09	-13.00	-49.09	H
174.5300	-67.46	2.81	-64.65	-13.00	-51.65	H
268.6200	-64.8	7.21	-57.59	-13.00	-44.59	H
478.1400	-74.61	6.91	-67.70	-13.00	-54.70	H
790.4800	-66.92	1.36	-65.56	-13.00	-52.56	H

Above 1GHz

Operation Mode:	WCDMA 12.2k RMC Band II / TX / Low CH	**Test Date:**	May 22, 2017
Temperature:	23°C	**Tested by:**	Timmy Wang
Humidity:	51 % RH	**Polarity:**	Ver.

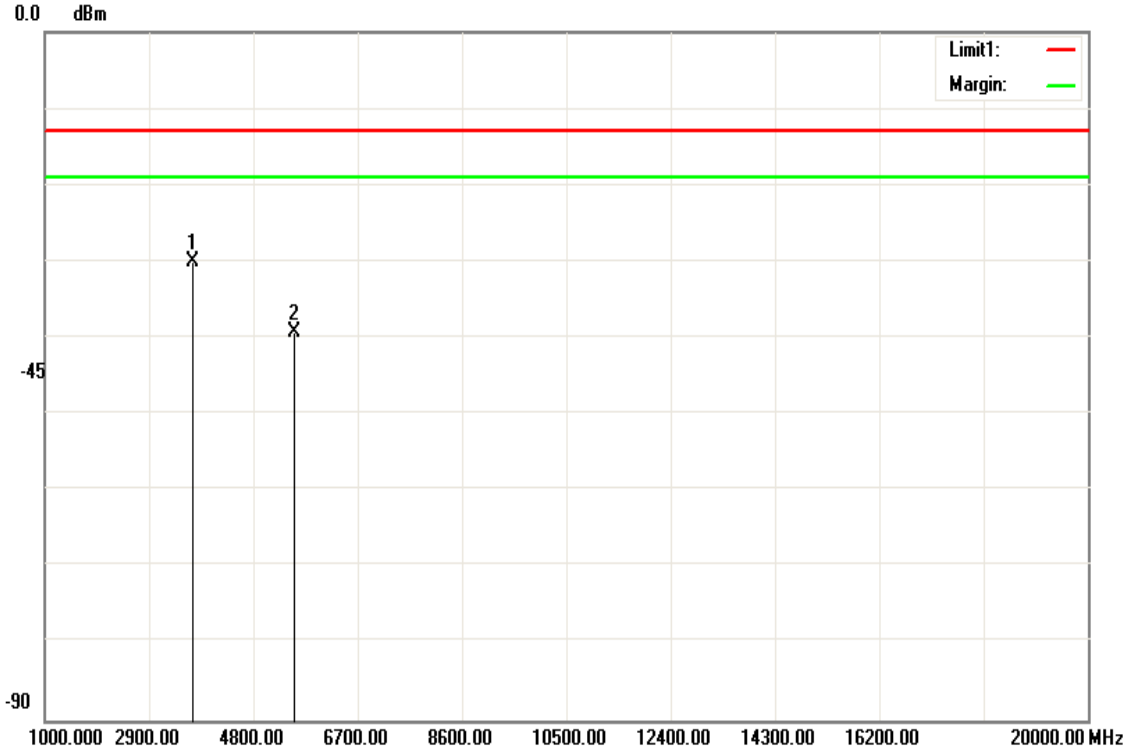


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3709.000	-41.93	12.54	-29.39	-13.00	-16.39	V
5564.000	-50.4	12.87	-37.53	-13.00	-24.53	V
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Operation Mode:	WCDMA 12.2k RMC Band II / TX / Low CH	**Test Date:**	May 22, 2017
Temperature:	23°C	**Tested by:**	Timmy Wang
Humidity:	51 % RH	**Polarity:**	Hor.

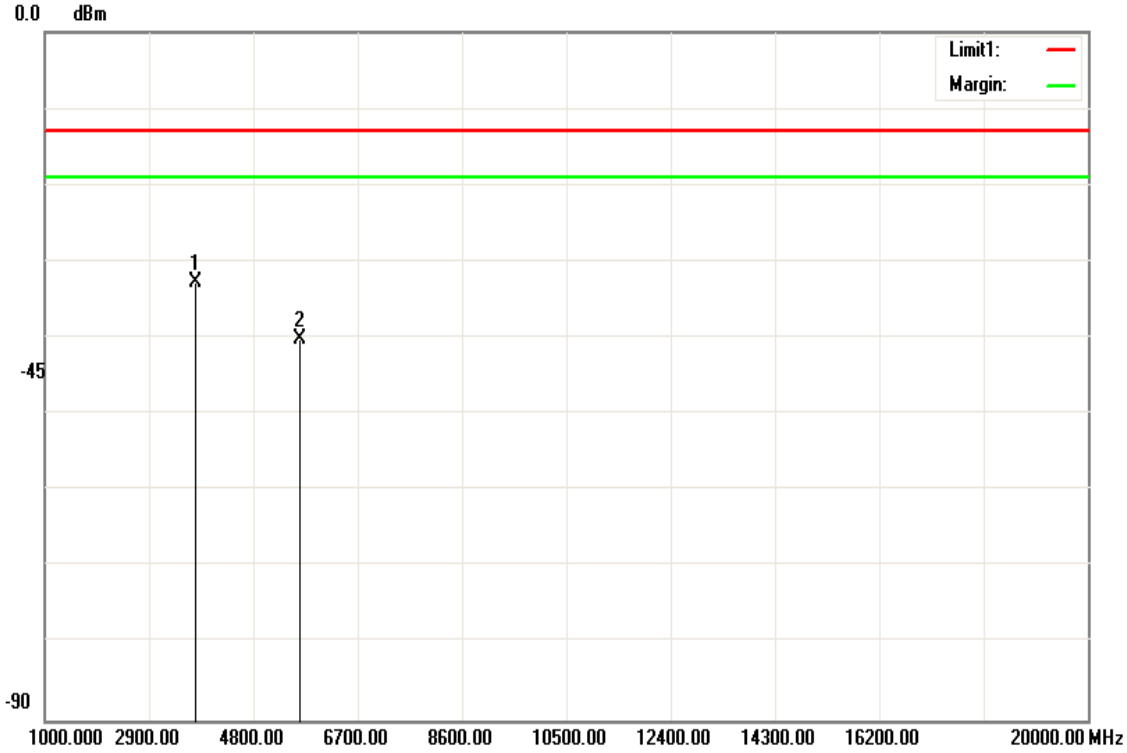


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3709.000	-42.48	12.54	-29.94	-13.00	-16.94	H
5557.000	-52.05	12.88	-39.17	-13.00	-26.17	H
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Operation Mode:	WCDMA 12.2k RMC Band II / TX / Mid CH	**Test Date:**	May 22, 2017
Temperature:	23°C	**Tested by:**	Timmy Wang
Humidity:	51 % RH	**Polarity:**	Ver.

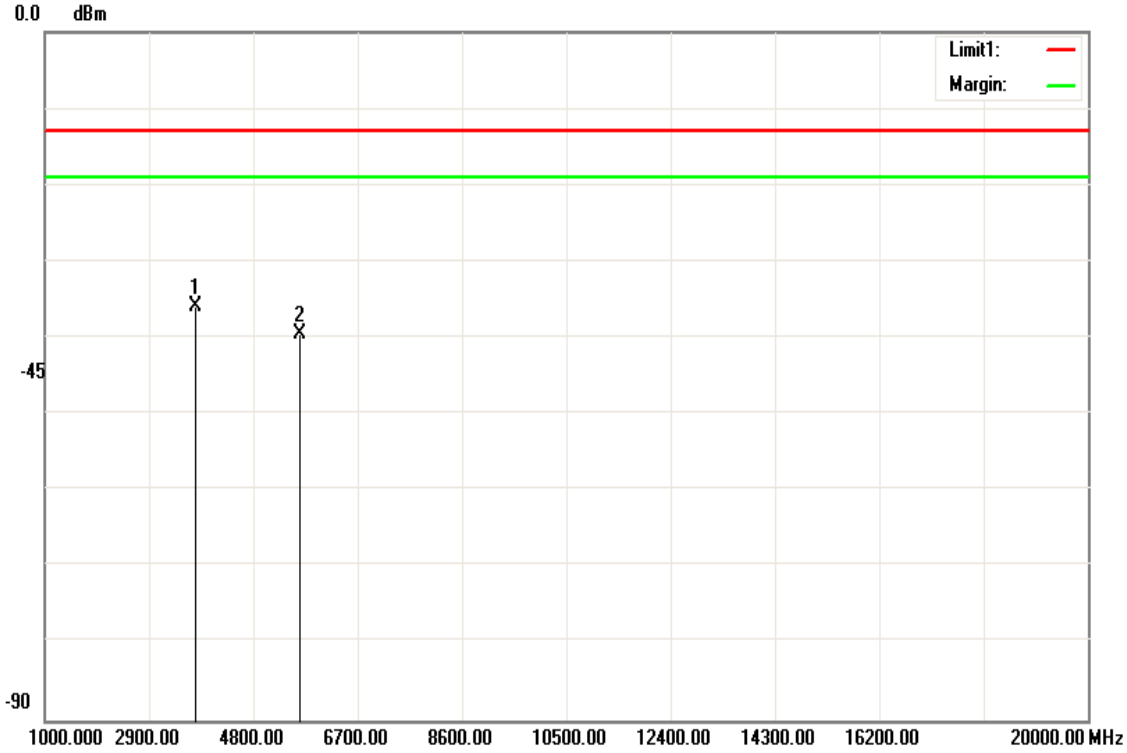


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3758.000	-45.21	12.55	-32.66	-13.00	-19.66	V
5641.000	-52.98	12.84	-40.14	-13.00	-27.14	V
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Operation Mode:	WCDMA 12.2k RMC Band II / TX / Mid CH	**Test Date:**	May 22, 2017
Temperature:	23°C	**Tested by:**	Timmy Wang
Humidity:	51 % RH	**Polarity:**	Hor.

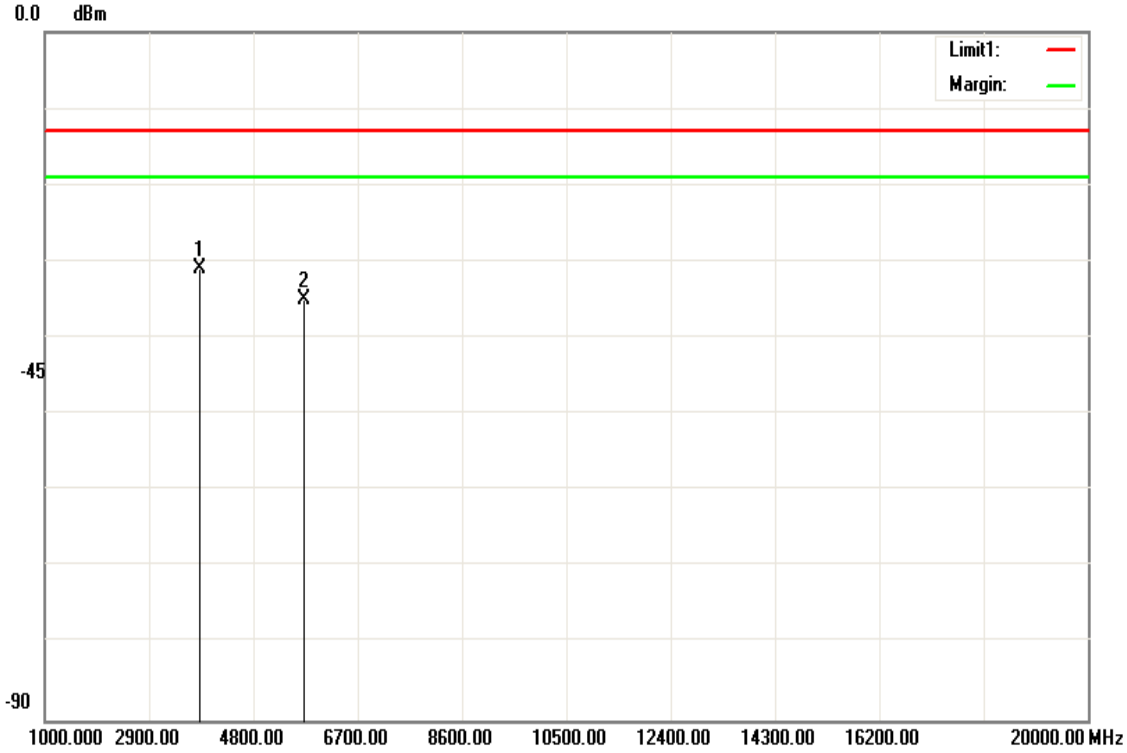


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3758.000	-48.46	12.55	-35.91	-13.00	-22.91	H
5641.000	-52.28	12.84	-39.44	-13.00	-26.44	H
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Operation Mode:	WCDMA 12.2k RMC Band II / TX / High CH	**Test Date:**	May 22, 2017
Temperature:	23°C	**Tested by:**	Timmy Wang
Humidity:	51 % RH	**Polarity:**	Ver.

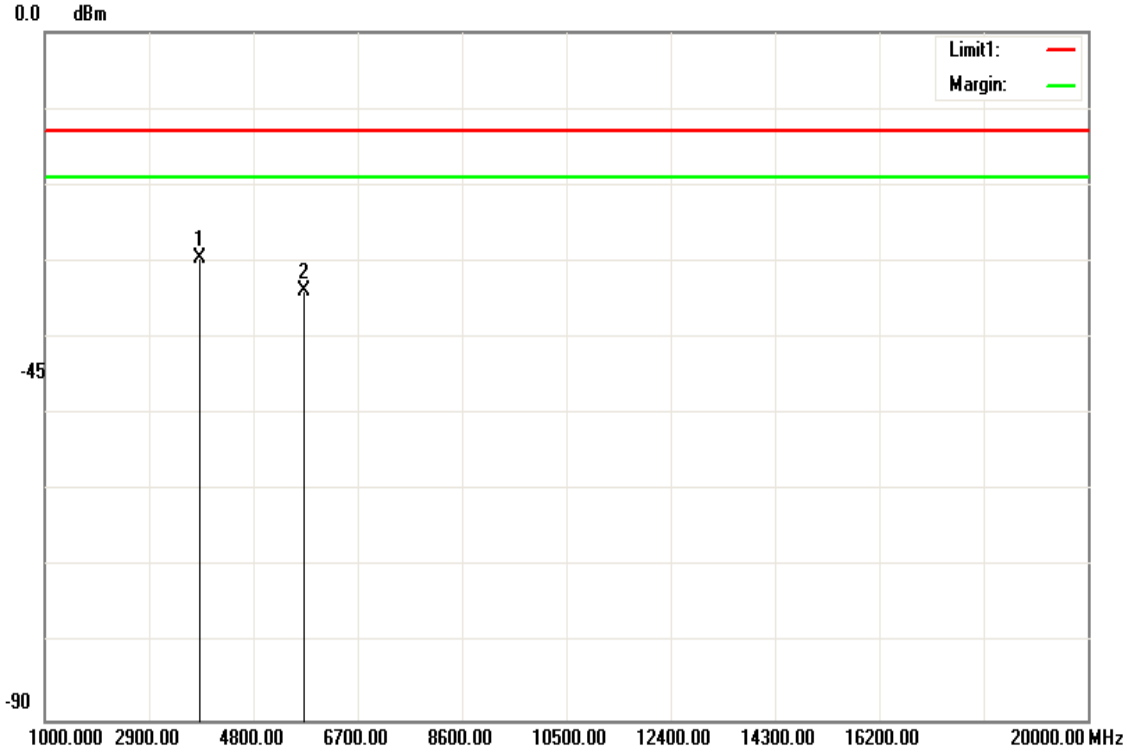


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3821.000	-43.6	12.56	-31.04	-13.00	-18.04	V
5725.000	-47.83	12.81	-35.02	-13.00	-22.02	V
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Operation Mode:	WCDMA 12.2k RMC Band II / TX / High CH	**Test Date:**	May 22, 2017
Temperature:	23°C	**Tested by:**	Timmy Wang
Humidity:	51 % RH	**Polarity:**	Hor.



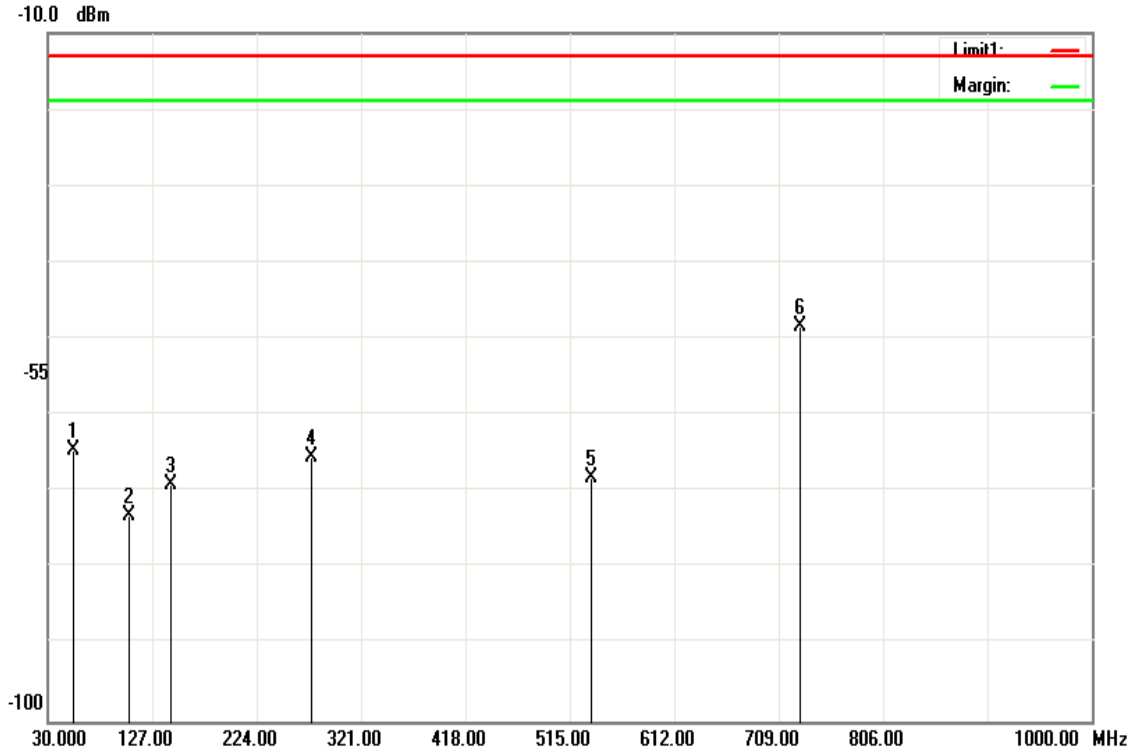
Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3814.000	-42.21	12.56	-29.65	-13.00	-16.65	H
5725.000	-46.76	12.81	-33.95	-13.00	-20.95	H
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

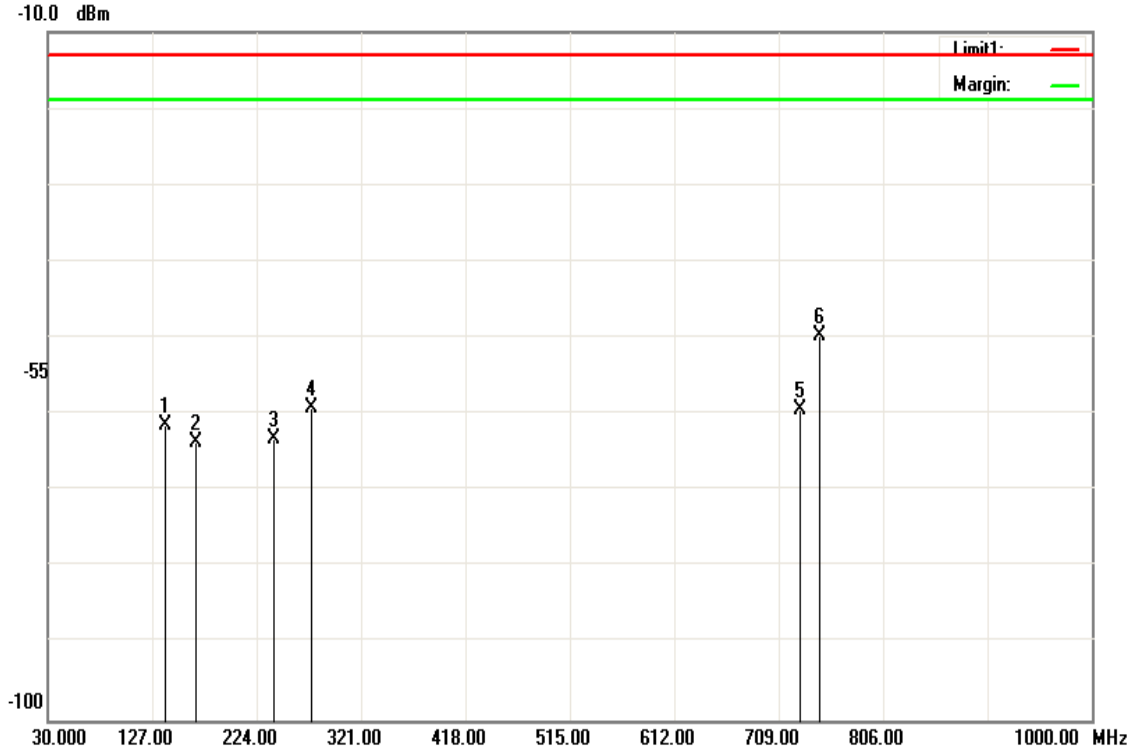
Radiated Spurious Emission Measurement Result / Below 1GHz

Operation Mode:	WCDMA 12.2k RMC Band V / TX /Mid CH	**Test Date:**	April 18, 2017
Temperature:	22.8°C	**Tested by:**	Timmy Wang
Humidity:	60 % RH	**Polarity:**	Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
54.2500	-62.72	-1.88	-64.60	-13.00	-51.60	V
105.6600	-73.35	0.33	-73.02	-13.00	-60.02	V
144.4600	-69.78	0.8	-68.98	-13.00	-55.98	V
274.4400	-72.57	7.16	-65.41	-13.00	-52.41	V
535.3700	-74.96	6.84	-68.12	-13.00	-55.12	V
729.3700	-50.1	1.83	-48.27	-13.00	-35.27	V

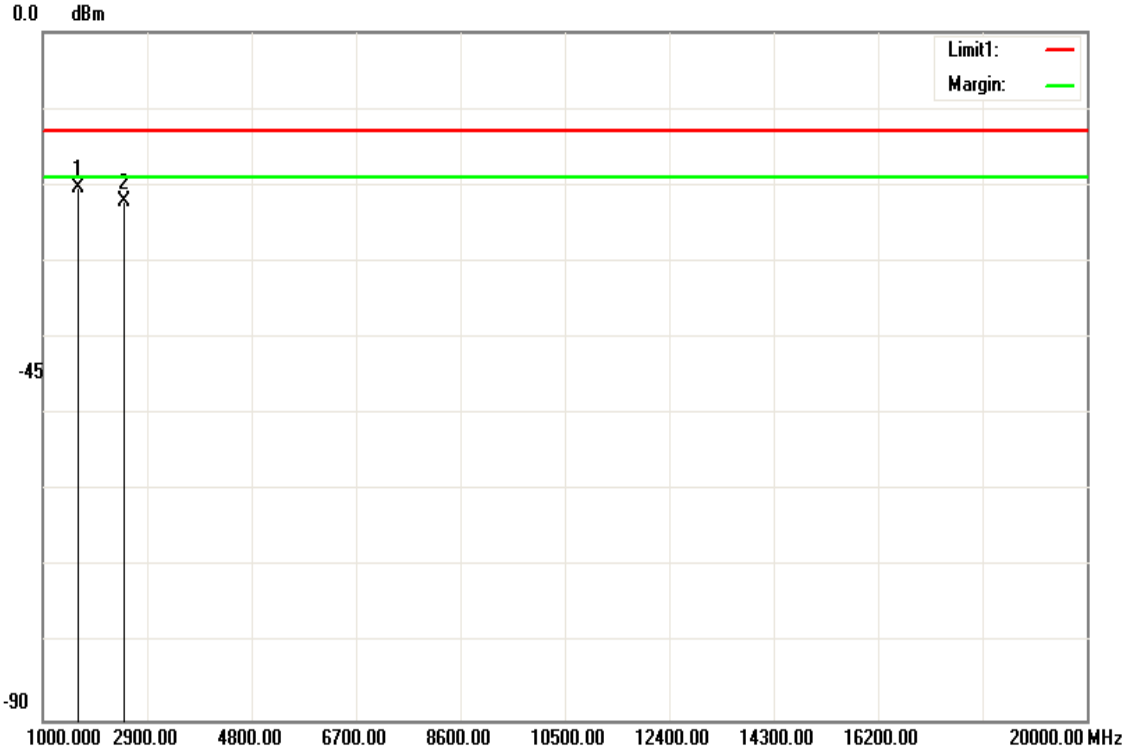
Operation Mode:	WCDMA 12.2k RMC Band V / TX /Mid CH	**Test Date:**	April 18, 2017
Temperature:	22.8°C	**Tested by:**	Timmy Wang
Humidity:	60 % RH	**Polarity:**	Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
139.6100	-62.52	1.19	-61.33	-13.00	-48.33	H
167.7400	-64.91	1.22	-63.69	-13.00	-50.69	H
239.5200	-69.89	6.71	-63.18	-13.00	-50.18	H
274.4400	-66.23	7.16	-59.07	-13.00	-46.07	H
729.3700	-61.28	1.83	-59.45	-13.00	-46.45	H
746.8300	-51.45	1.69	-49.76	-13.00	-36.76	H

Above 1GHz

Operation Mode:	WCDMA 12.2k RMC Band V / TX / Low CH	**Test Date:**	May 22, 2017
Temperature:	23°C	**Tested by:**	Timmy Wang
Humidity:	51 % RH	**Polarity:**	Ver.

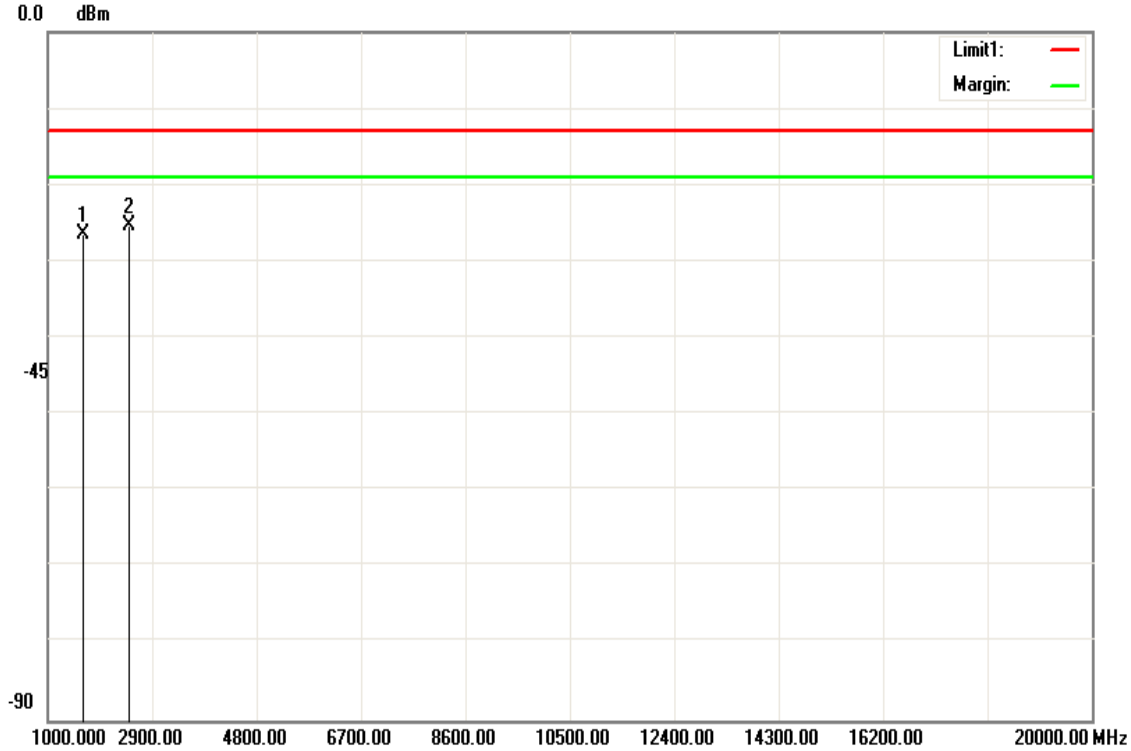


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1658.000	-21.89	1.52	-20.37	-13.00	-7.37	V
2484.000	-24.05	1.84	-22.21	-13.00	-9.21	V
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Operation Mode:	WCDMA 12.2k RMC Band V / TX / Low CH	**Test Date:**	May 22, 2017
Temperature:	23°C	**Tested by:**	Timmy Wang
Humidity:	51 % RH	**Polarity:**	Hor.

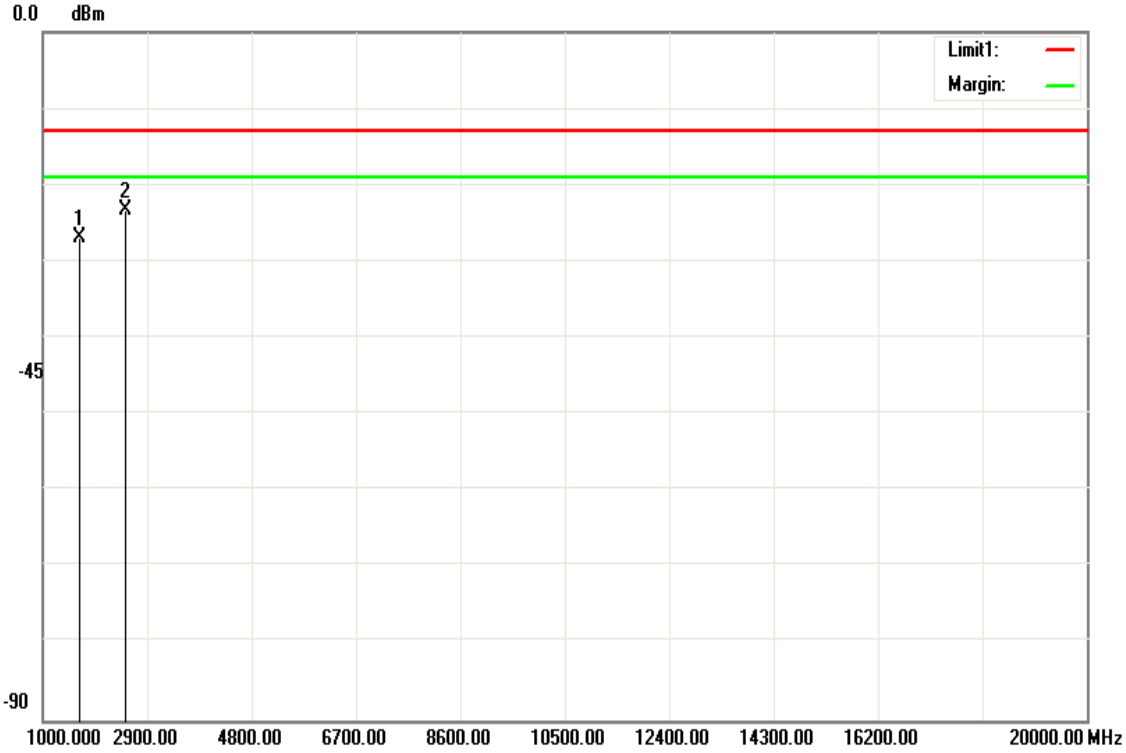


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1658.000	-28.05	1.52	-26.53	-13.00	-13.53	H
2477.000	-27.23	1.83	-25.40	-13.00	-12.40	H
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Operation Mode:	WCDMA 12.2k RMC Band V / TX / Mid CH	**Test Date:**	May 22, 2017
Temperature:	23°C	**Tested by:**	Timmy Wang
Humidity:	51 % RH	**Polarity:**	Ver.

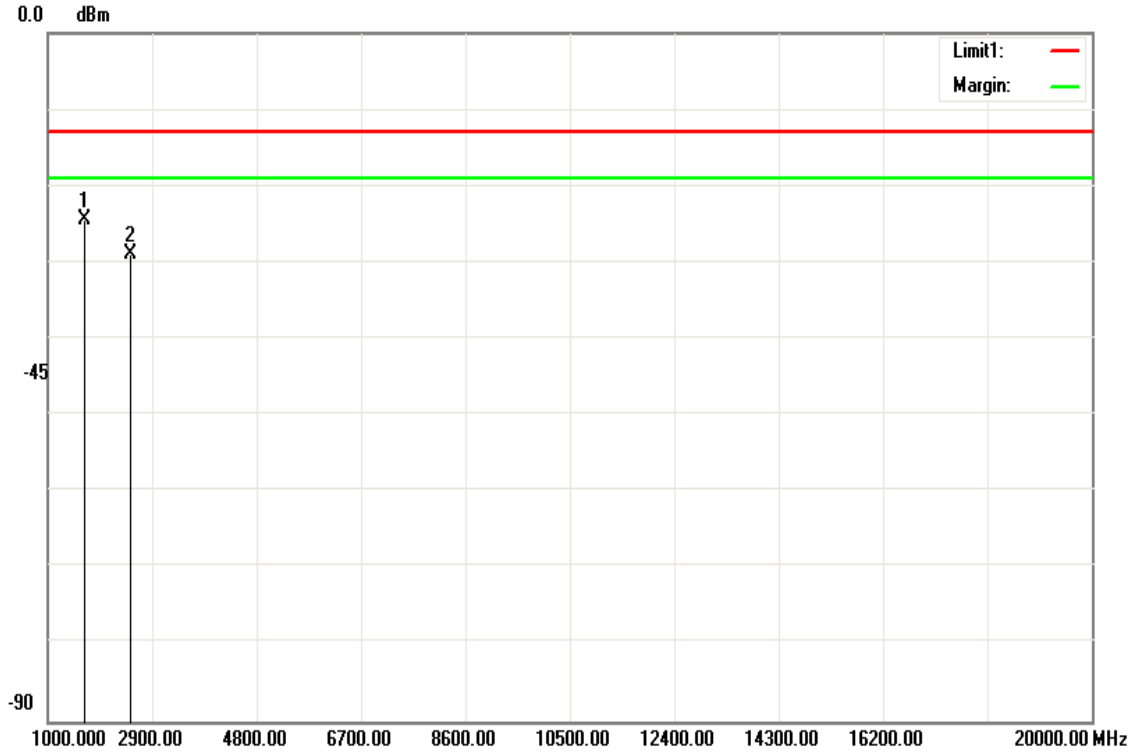


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1672.000	-28.39	1.52	-26.87	-13.00	-13.87	V
2505.000	-25.18	1.94	-23.24	-13.00	-10.24	V
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Operation Mode:	WCDMA 12.2k RMC Band V / TX / Mid CH 4182	**Test Date:**	May 22, 2017
Temperature:	23°C	**Tested by:**	Timmy Wang
Humidity:	51 % RH	**Polarity:**	Hor.

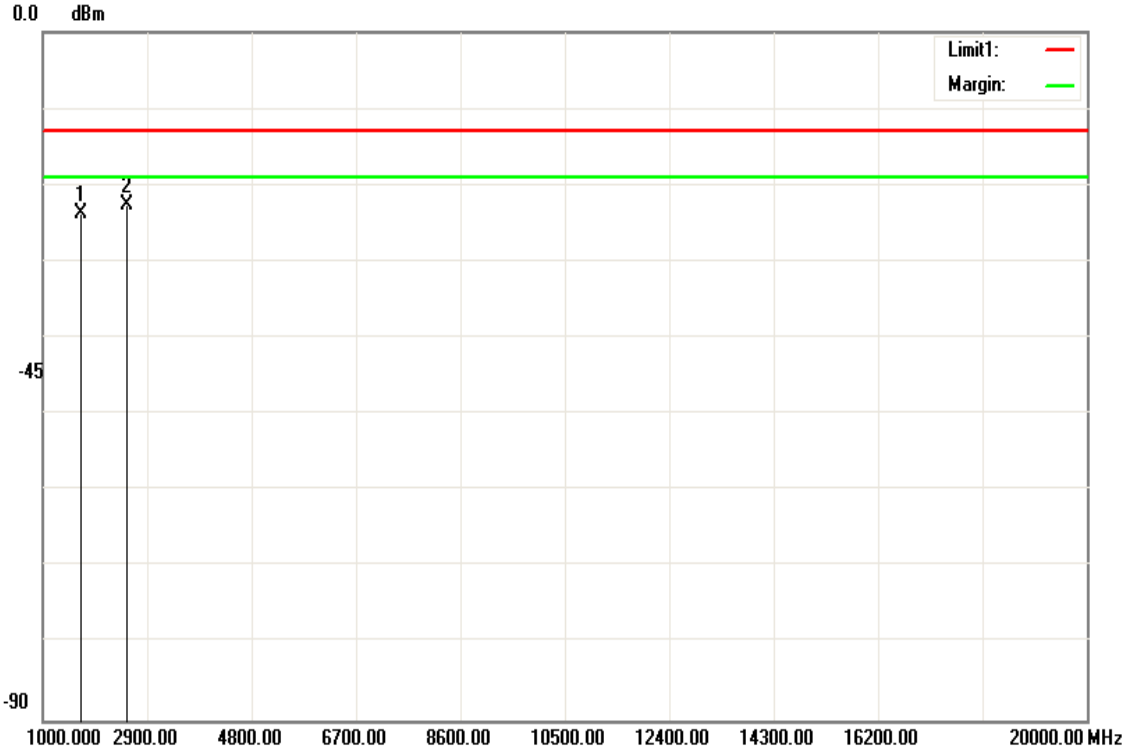


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1672.000	-25.9	1.52	-24.38	-13.00	-11.38	H
2512.000	-30.89	2.07	-28.82	-13.00	-15.82	H
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Operation Mode:	WCDMA 12.2k RMC Band V / TX /High CH	**Test Date:**	May 22, 2017
Temperature:	23°C	**Tested by:**	Timmy Wang
Humidity:	51 % RH	**Polarity:**	Ver.

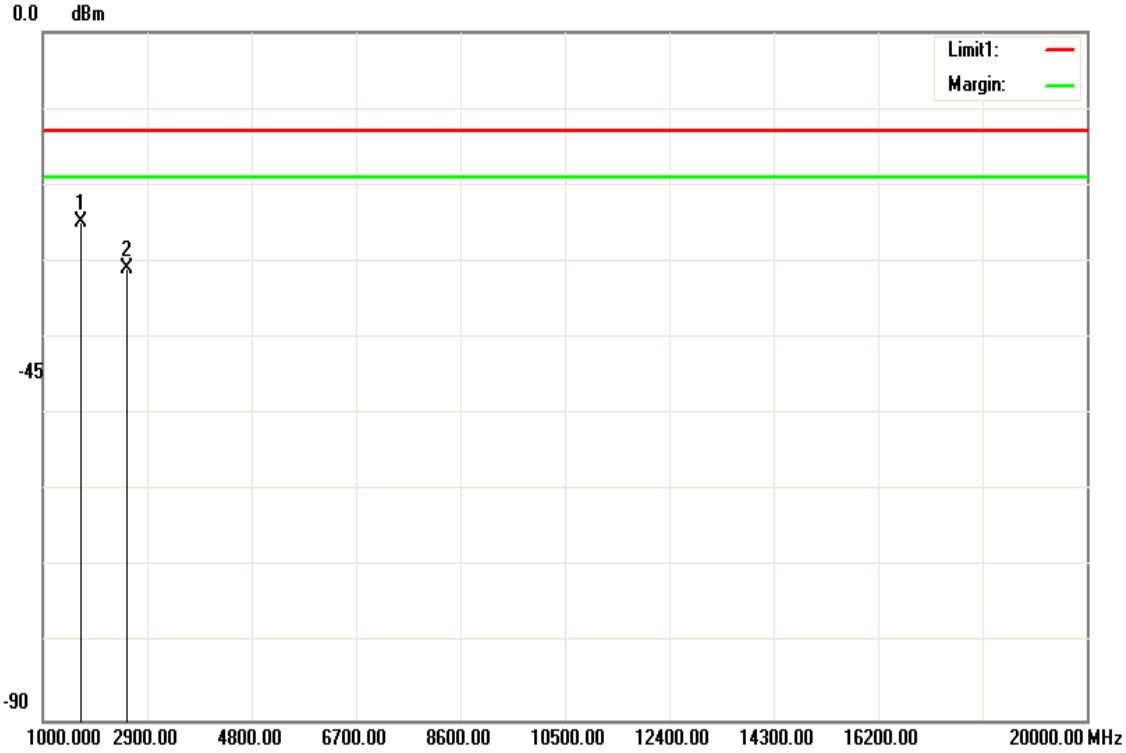


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1693.000	-25.14	1.51	-23.63	-13.00	-10.63	V
2533.000	-25.12	2.47	-22.65	-13.00	-9.65	V
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Operation Mode:	WCDMA 12.2k RMC Band V / TX /High CH	**Test Date:**	May 22, 2017
Temperature:	23°C	**Tested by:**	Timmy Wang
Humidity:	51 % RH	**Polarity:**	Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1693.000	-26.39	1.51	-24.88	-13.00	-11.88	H
2540.000	-33.45	2.6	-30.85	-13.00	-17.85	H
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

7.8 FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

LIMIT

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

According to RSS-132 (5.3) & RSS-133 (6.3).

Test Procedure

Use Anritsu 8820 with frequency Error measurement capability.
Temp = -30 to +50℃ ,Voltage= 85% to 115% of the nominal value for AC powered equipment. Frequency Tolerance: +/-2.5 ppm

NOTE: *The frequency error was recorded frequency error from the communication simulator.*

TEST RESULTS

No non-compliance noted.

Reference Frequency: WCDMA 12.2k RMC Band II Low Channel 1852.4 MHz				
Limit: ± 2.5 ppm = 4631 Hz				
Power Supply (Vac)	Environment Temperature (°C)	Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
120	50	-4.00	-0.002159	+/- 2.5
120	40	-2.00	-0.001080	
120	30	-4.00	-0.002159	
120	20	-5.00	-0.002699	
120	10	-2.00	-0.001080	
120	0	-3.00	-0.001620	
120	-10	-6.00	-0.003239	
120	-20	-4.00	-0.002159	

Reference Frequency: WCDMA 12.2k RMC Band II Mid Channel 1880 MHz				
Limit: ± 2.5 ppm = 4700 Hz				
Power Supply (Vac)	Environment Temperature (°C)	Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
120	50	-4.00	-0.002128	+/- 2.5
120	40	-3.00	-0.001596	
120	30	-6.00	-0.003191	
120	20	-7.00	-0.003723	
120	10	-6.00	-0.003191	
120	0	-5.00	-0.002660	
120	-10	-7.00	-0.003723	
120	-20	-5.00	-0.002660	

Reference Frequency: WCDMA 12.2k RMC Band II High Channel 1907.6 MHz				
Limit: ± 2.5 ppm = 4769 Hz				
Power Supply (Vac)	Environment Temperature (°C)	Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
120	50	-13.00	-0.006815	+/- 2.5
120	40	-10.00	-0.005242	
120	30	-11.00	-0.005766	
120	20	-10.00	-0.005242	
120	10	-12.00	-0.006291	
120	0	-10.00	-0.005242	
120	-10	-11.00	-0.005766	
120	-20	-10.00	-0.005242	

Reference Frequency: WCDMA 12.2k RMC Band V Low Channel 826.4 MHz				
Limit: ± 2.5 ppm = 2066 Hz				
Power Supply (Vac)	Environment Temperature (°C)	Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
120	50	0.00	0.000000	+/- 2.5
120	40	1.00	0.001210	
120	30	2.00	0.002420	
120	20	2.00	0.002420	
120	10	0.00	0.000000	
120	0	2.00	0.002420	
120	-10	3.00	0.003630	
120	-20	1.00	0.001210	

Reference Frequency: WCDMA 12.2k RMC Band V Mid Channel 836.6 MHz				
Limit: ± 2.5 ppm = 2091.5 Hz				
Power Supply (Vac)	Environment Temperature (°C)	Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
120	50	2.00	0.002391	+/- 2.5
120	40	3.00	0.003586	
120	30	0.00	0.000000	
120	20	1.00	0.001195	
120	10	1.00	0.001195	
120	0	1.00	0.001195	
120	-10	2.00	0.002391	
120	-20	0.00	0.000000	

Reference Frequency: WCDMA 12.2k RMC Band V High Channel 846.6 MHz				
Limit: ± 2.5 ppm = 2116.5 Hz				
Power Supply (Vac)	Environment Temperature (°C)	Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
120	50	0.00	0.000000	+/- 2.5
120	40	-2.00	-0.002362	
120	30	-1.00	-0.001181	
120	20	0.00	0.000000	
120	10	-1.00	-0.001181	
120	0	-1.00	-0.001181	
120	-10	0.00	0.000000	
120	-20	-2.00	-0.002362	

FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT:

Reference Frequency: WCDMA 12.2k RMC Band II Low Channel 1852.4 MHz				
Limit: ± 2.5 ppm = 4631Hz				
Power Supply (Vac)	Environment Temperature (°C)	Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
102	20	-4.00	-0.002159	+/- 2.5
120		-5.00	-0.002699	
138		-5.00	-0.002699	

Reference Frequency: WCDMA 12.2k RMC Band II Mid Channel 1880 MHz				
Limit: ± 2.5 ppm = 4700Hz				
Power Supply (Vac)	Environment Temperature (°C)	Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
102	20	-6.00	-0.003191	+/- 2.5
120		-7.00	-0.003723	
138		-7.00	-0.003723	

Reference Frequency: WCDMA 12.2k RMC Band II High Channel 1907.6 MHz				
Limit: ± 2.5 ppm = 4769Hz				
Power Supply (Vac)	Environment Temperature (°C)	Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
102	20	-12.00	-0.006291	+/- 2.5
120		-10.00	-0.005242	
138		-10.00	-0.005242	

Reference Frequency: WCDMA 12.2k RMC Band V Mid Channel 826.4 MHz				
Limit: ± 2.5 ppm = 2066Hz				
Power Supply (Vac)	Environment Temperature (°C)	Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
102	20	1.00	0.001210	+/- 2.5
120		2.00	0.002420	
138		1.00	0.001210	

Reference Frequency: WCDMA 12.2k RMC Band V Mid Channel 836.6 MHz				
Limit: ± 2.5 ppm = 2091.5Hz				
Power Supply (Vac)	Environment Temperature (°C)	Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
102	20	0.00	0.000000	+/- 2.5
120		1.00	0.001195	
138		1.00	0.001195	

Reference Frequency: WCDMA 12.2k RMC Band V Mid Channel 846.6 MHz				
Limit: ± 2.5 ppm = 2116.5Hz				
Power Supply (Vac)	Environment Temperature (°C)	Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
102	20	0.00	0.000000	+/- 2.5
120		0.00	0.000000	
138		-1.00	-0.001181	