



FCC ID: QYLWP7603BC03
Report No.: T190115W01-RP2

ISED: 10301A-WP7603BC03

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Rev.: 00

**FCC 47 CFR PART 27 SUBPART L
&
INDUSTRY CANADA RSS-139**

TEST REPORT

For

Body Worn Camera

FCC Model No.: BC-03

ISED Model No.: ATT-WP7603

Trade Name: Getac

Issued to

**Getac Technology Corp.
5F, Building A, No.209, Sec.1, Nangang Rd., Nangang Dist., Taipei City
11568, Taiwan.**

Issued by

**Compliance Certification Services Inc.
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)
Issued Date: June 12, 2019**

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	June 12, 2019	Initial Issue	ALL	May Lin

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1 TEST RESULT CERTIFICATION

Applicant: Getac Technology Corp.
5F, Building A, No.209, Sec.1, Nangang Rd., Nangang
Dist., Taipei City 11568, Taiwan.

Manufacturer: Getac Technology Corp.
4F., NO.1, R&D ROAD 2, SCIENCE PARK, HSINCHU,
TAIWAN, R.O.C.

Equipment Under Test: Body Worn Camera

Trade Name: Getac

FCC Model No.: BC-03

ISED Model No.: ATT-WP7603

Date of Test: February 26 ~March 13, 2019

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR PART 27 SUBPART L & RSS-139 Issue 3 July 2015	No non-compliance noted

Statements of Conformity
Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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 ANSI C63.26:2015 and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of IC RSS-139 Issue 3.

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 radiated emission limits of FCC Rule FCC PART 27 Subpart L.

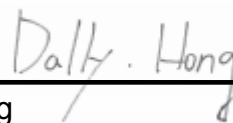
The test results of this report relate only to the tested sample identified in this report.

Approved by:

Tested by:



Kevin Tsai
Deputy Manager
Compliance Certification Services Inc.



Dally Hong
Engineer
Compliance Certification Services Inc.

2 EUT DESCRIPTION

Product	Body Worn Camera
FCC Model No.	BC-03
ISED Model No.	ATT-WP7603
Model Discrepancy	N/A
Trade Name	Getac
Received Date	January 15, 2019
Power Supply	1. Powered from battery: DC 5V 2. Powered from docking
Frequency Range	WCDMA / HSDPA / HSUPA Band IV: 1712.4-1752.6 MHz
Transmit Power (ERP & EIRP Power)	WCDMA 12.2k RMC Band IV: 13.63 dBm
Antenna Gain	Coupling Antenna WCDMA band IV: 0.86 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

3 TEST METHODOLOGY

Both conducted and radiated testing were performed according to the procedures document on ANSI C63.10: 2013, TIA/EIA-603-C: 2004 and FCC CFR 47, Part 27 Subpart L.

Both conducted and radiated testing were performed according to the procedures document on ANSI C63.26: 2015 and RSS-139.

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 had been tested under operating condition.

EUT staying in continuous transmitting mode was programmed.

After verification, all tests carried out are with the worst-case test modes as shown below except radiated spurious emission below 1GHz and power line conducted emissions below 30MHz, which worst case was in normal link mode and receiving radiated spurious emission above 1GHz, which worst case was in CH Mid mode only.

WCDMA Band IV:

Channel Low (CH1312), Channel Mid (CH1413) and Channel High (CH1513) were chosen for full testing.

HSDPA Band IV:

Channel Low (CH1312), Channel Mid (CH1413) and Channel High (CH1513) were chosen for full testing.

HSUPA Band IV:

Channel Low (CH1312), Channel Mid (CH1413) and Channel High (CH1513) were chosen for full testing.

3.2.1 The worst mode of measurement

Radiated Emission Measurement	
Test Condition	Band edge, Emission for Unwanted and Fundamental
Power supply Mode	Mode 1: EUT Power by Docking (Big). Mode 2: EUT Power by Docking (Small). Mode 3: EUT Power by Battery.
Worst Mode	<input checked="" type="checkbox"/> Mode 1 <input type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4
Position	<input type="checkbox"/> Placed in fixed position. <input checked="" type="checkbox"/> Placed in fixed position at X-Plane (E2-Plane) <input type="checkbox"/> Placed in fixed position at Y-Plane (E1-Plane) <input type="checkbox"/> Placed in fixed position at Z-Plane (H-Plane)

Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT Power by Docking (Big). Mode 2: EUT Power by Docking (Small). Mode 3: EUT Power by Battery.
Worst Mode	<input checked="" type="checkbox"/> Mode 1 <input type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4

Remark:

1. The worst mode was record in this test report.
2. The EUT pre-scanned in three axis, X, Y, Z and two polarity, Horizontal and Vertical for radiated measurement. The worst case (X-Plane) were recorded in this report.

4 TEST SUMMERY

FCC Standard Sec.	IC Standard Sec.	Chapter	Test Item	Result
2.1046	RSS-GEN Sec. 6.12	8.1	Average Power	Pass
27.50(d)(4)	RSS-139	8.2	ERP & EIRP	Pass
2.1049	RSS-Gen Sec. 6.6	8.3	Occupied Bandwidth (99%) and 26 dB Bandwidth	Pass
27.53 (h)	RSS-139	8.4	Conducted Bandedge	Pass
27.53 (h)	RSS-139	8.5	Conducted Spurious Emissions	Pass
27.50(a)	RSS-139	8.6	Peak To Average Power Ratio	Pass
27.53 (h)	RSS-139	8.7	Field Strength Of Spurious Radiation	Pass
27.54	RSS-139	8.8	Frequency Stability V.S. Temperature	Pass
27.54	RSS-139	8.9	Requency Stability V.S. Voltage	Pass

5 INSTRUMENT CALIBRATION

5.1 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.

5.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

Conducted Emissions Test Site					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Coaxial Cable	Woken	WC12	CC001	06/29/2018	06/28/2019
Coaxial Cable	Woken	WC12	CC002	06/29/2018	06/28/2019
Coaxial Cable	Woken	WC12	CC003	06/29/2018	06/28/2019
Power Divider	Solvang Technology	STI08-0015	008	07/27/2018	07/26/2019
Wideband Radio Communication Tester	R&S	CMW 500	116875	04/20/2018	04/19/2019
Signal Analyzer	R&S	FSV 40	101073	09/27/2018	09/26/2019
Wireless Communication Test Set	Agilent	8960/E5515C	MY48363204	07/23/2018	07/22/2019
Software	N/A				

Wugu 966 Chamber A					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Bilog Antenna	Sunol Sciences	JB1	A052609	03/14/2018	03/13/2019
Cable	HUBER SUHNER	SUCOFLEX 104PEA	23452	06/29/2018	06/28/2019
Cable	HUBER SUHNER	SUCOFLEX 104PEA	33960	06/29/2018	06/28/2019
Digital Radio Communication Tester	R&S	CMU200	116604	07/19/2018	07/18/2019
Digital Thermo-Hygro Meter	WISEWIND	1110	D06	01/30/2019	01/29/2020
Horn Antenna	SCHWARZBECK	BBHA 9120D	779	03/14/2018	03/13/2019
Pre-Amplifier	Anritsu	MH648A	M89145	06/29/2018	06/28/2019
Pre-Amplifier	EMEC	EM01G26G	060570	06/29/2018	06/28/2019
Signal Analyzer	Agilent	N9010A	MY52220817	03/22/2018	03/21/2019
Wideband Radio Communication Tester	R&S	CMW 500	116875	04/20/2018	04/19/2019
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)				

Remark: Each piece of equipment is scheduled for calibration once a year.

5.3 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
Powerline Conducted Emission	+/-1.2575
3M Semi Anechoic Chamber / 30M~200M	+/- 4.12
3M Semi Anechoic Chamber / 200M~1000M	+/- 4.68
3M Semi Anechoic Chamber / 1G~8G	+/- 5.18
3M Semi Anechoic Chamber / 8G~18G	+/- 5.47
3M Semi Anechoic Chamber / 18G~26G	+/- 3.81
3M Semi Anechoic Chamber / 26G~40G	+/- 3.87

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

6 FACILITIES AND ACCREDITATIONS

6.1 FACILITIES

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

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

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

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

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

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10: 2013 and CISPR Publication 22.

6.2 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."

6.3 LABORATORY ACCREDITATIONS AND LISTING

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

7 SETUP OF EQUIPMENT UNDER TEST

7.1 SETUP CONFIGURATION OF EUT

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

7.2 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.*

8 FCC PART 27 REQUIREMENTS & INDUSTRY CANADA RSS-139

8.1 AVERAGE POWER

LIMIT

For reporting purposes only.

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.

TEST RESULTS

No non-compliance noted.

TEST DATA

Test Data

WCDMA 12.2K RMC

Band	Date Rate or Sub-test	UL/DL Channel No.	Frequency(MHz)	Average power(dBm)	Output Power (W)
WCDMA Band IV	RMC 12.2Kbps	1312/1537	1712.4	22.81	13.8
		1413/1638	1732.6	22.83	13.8
		1513/1738	1752.6	22.67	13.6

HSDPA

Band IV

Band	Mode	UL/DL Channel No.	Frequency(MHz)	Average power(dBm)	Output Power (W)
HSDPA IV	1	1312/1537	1712.4	21.69	12.7
		1413/1638	1732.6	21.68	12.6
		1513/1738	1752.6	21.46	12.4
	2	1312/1537	1712.4	21.71	12.7
		1413/1638	1732.6	21.72	12.7
		1513/1738	1752.6	21.39	12.4
	3	1312/1537	1712.4	21.22	12.2
		1413/1638	1732.6	21.22	12.2
		1513/1738	1752.6	20.83	11.8
	4	1312/1537	1712.4	21.23	12.2
		1413/1638	1732.6	21.19	12.2
		1513/1738	1752.6	20.84	11.8

HSUPA

Band IV

Band	Mode	UL/DL Channel No.	Frequency(MHz)	Average power(dBm)	Output Power (W)
HSUPA IV	1	1312/1537	1712.4	21.38	12.3
		1413/1638	1732.6	21.52	12.5
		1513/1738	1752.6	21.48	12.4
	2	1312/1537	1712.4	20.91	11.9
		1413/1638	1732.6	21.09	12.1
		1513/1738	1752.6	20.97	11.9
	3	1312/1537	1712.4	21.45	12.4
		1413/1638	1732.6	21.65	12.6
		1513/1738	1752.6	21.39	12.4
	4	1312/1537	1712.4	21.43	12.4
		1413/1638	1732.6	21.52	12.5
		1513/1738	1752.6	21.44	12.4
	5	1312/1537	1712.4	21.38	12.3
		1413/1638	1732.6	21.67	12.6
		1513/1738	1752.6	21.39	12.4

8.2 ERP & EIRP MEASUREMENT

LIMIT

FCC Part 27.50(d)(4)

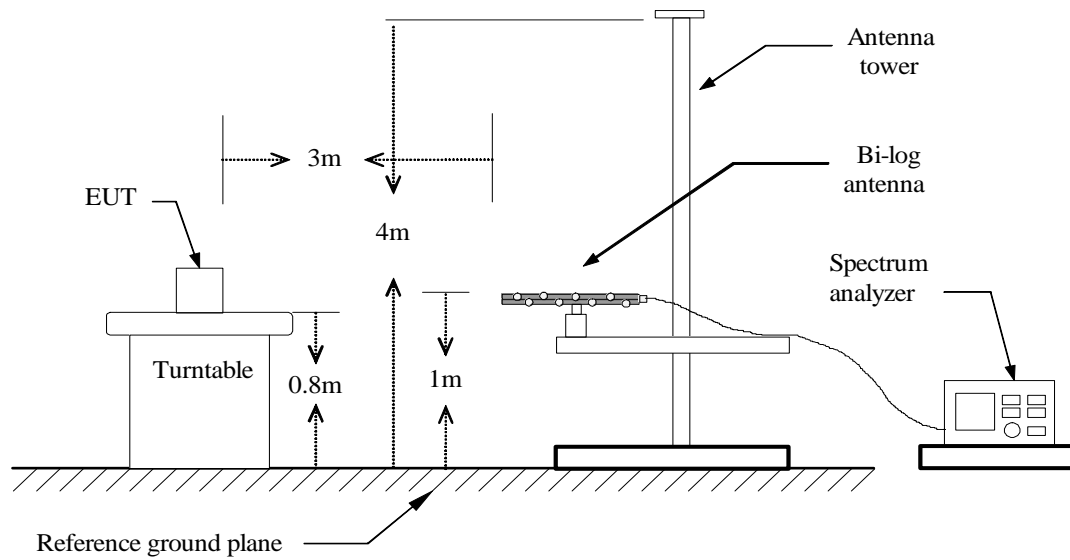
Fixed, mobile, and portable (handheld) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

RSS-139 section 6.5

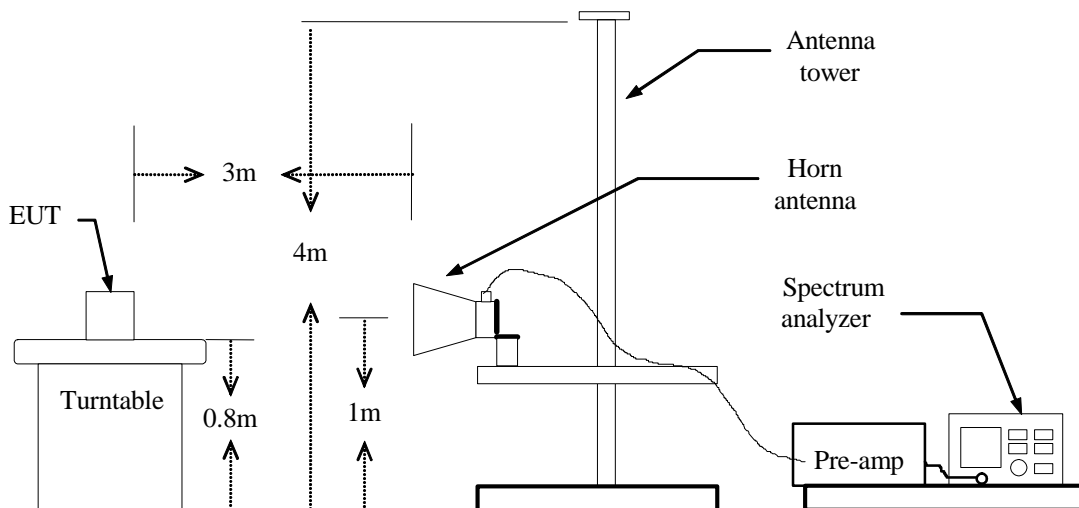
The equivalent isotropically radiated power (e.i.r.p.) for mobile and portable transmitters shall not exceed one watt. The e.i.r.p. for fixed and base stations in the band 1710-1780 MHz shall not exceed 1 watt..

Test Configuration

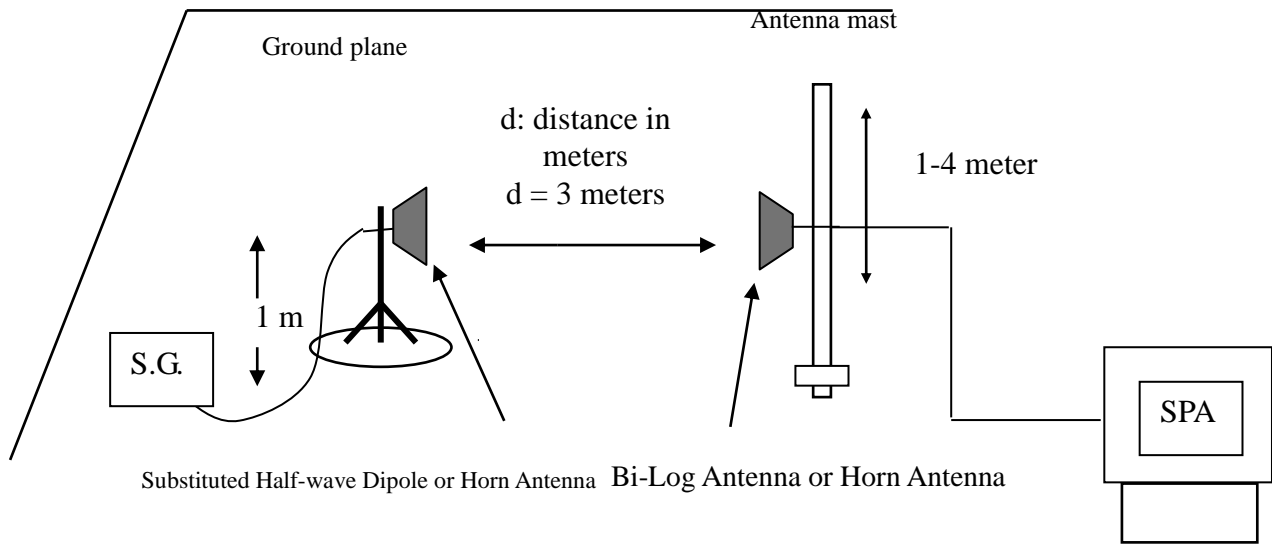
Below 1 GHz



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 1% to 5% of the OBW and not to exceed 1 MHz. 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.

EIRP in frequency band 1712-1752MHz were measured using a substitution method. The EUT was replaced by half-wave dipole (1712-1752MHz) connected to a signal generator. The spectrum analyzer reading was recorded and EIRP was calculated as follows:

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

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

TEST RESULTS

No non-compliance noted.

TEST DATA

WCDMA 12.2K RMC

Test Mode	Channel	Vertical		Horizontal	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
WCDMA 12.2K RMC (Band IV)	Lowest	9.14	0.00820	22.46	0.17620
	Middle	13.00	0.01995	25.32	0.34041
	Highest	13.63	0.02307	25.27	0.33651

8.3 OCCUPIED BANDWIDTH (99%) & 26 dB BANDWIDTH MEASUREMENT

LIMIT

For Reporting purpose only.

TEST PROCEDURE

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 $\geq 3 \times$ RBW
4. Detector = Peak
5. *Trace mode = max. hold*

TEST RESULTS

No non-compliance noted

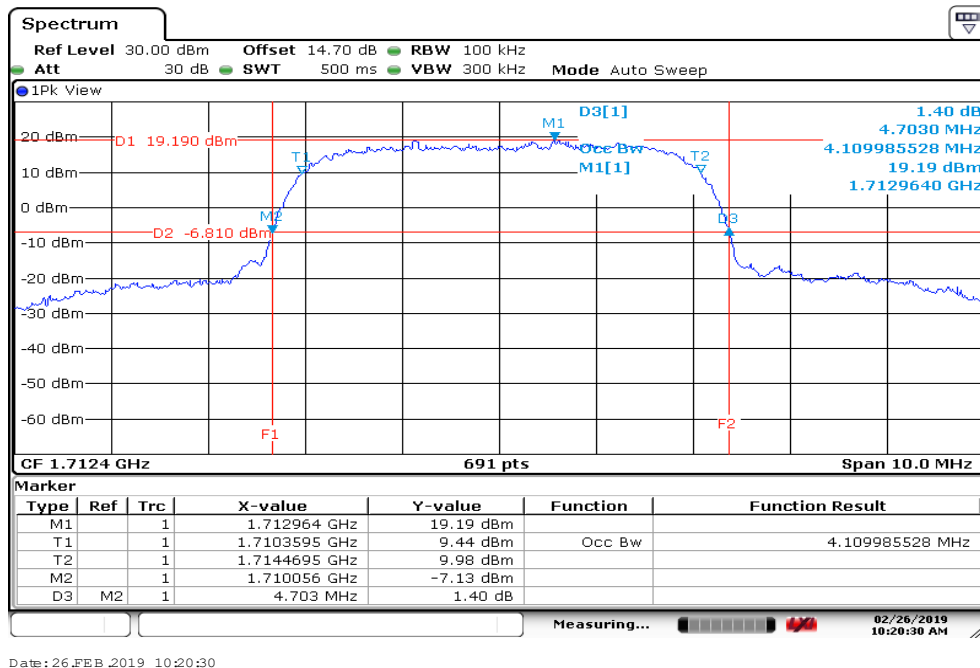
Test Data

Test Mode	CH	Frequency (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
WCDMA 12.2k RMC (Band IV)	Lowest	1710	4.1099	4.703
	Middle	1730.2	4.1389	4.073
	Highest	1750.2	4.1244	4.703

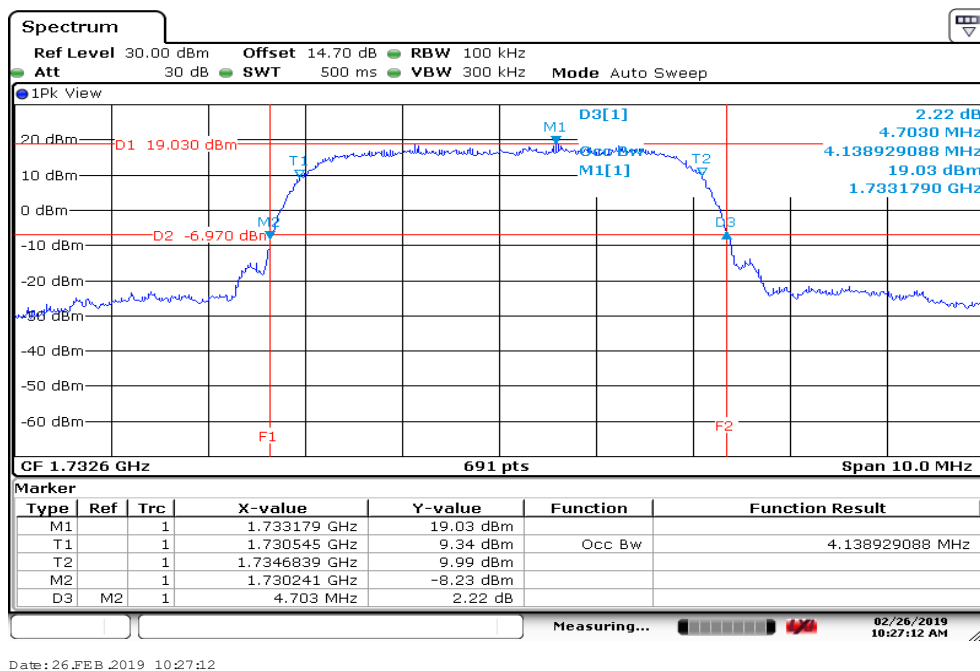
Test Plot

WCDMA 12.2k RMC (Band IV)

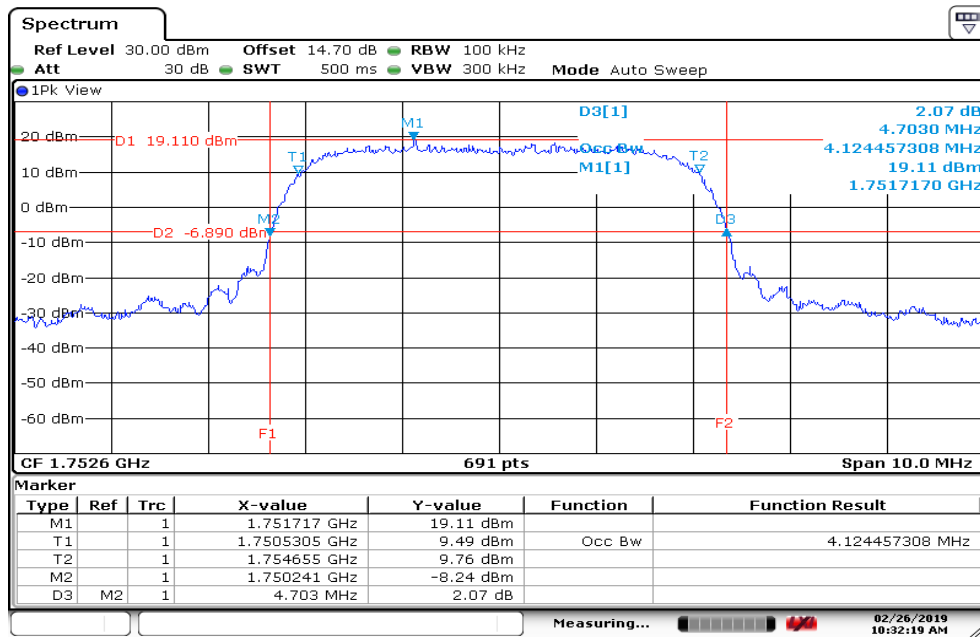
Low CH



Mid CH



High CH



Date: 26.FEB.2019 10:32:19

8.4 CONDUCTED BAND EDGE MEASUREMENT

Limit

FCC §27.53 (h)

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB.

RSS-139 section 6.6

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

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.

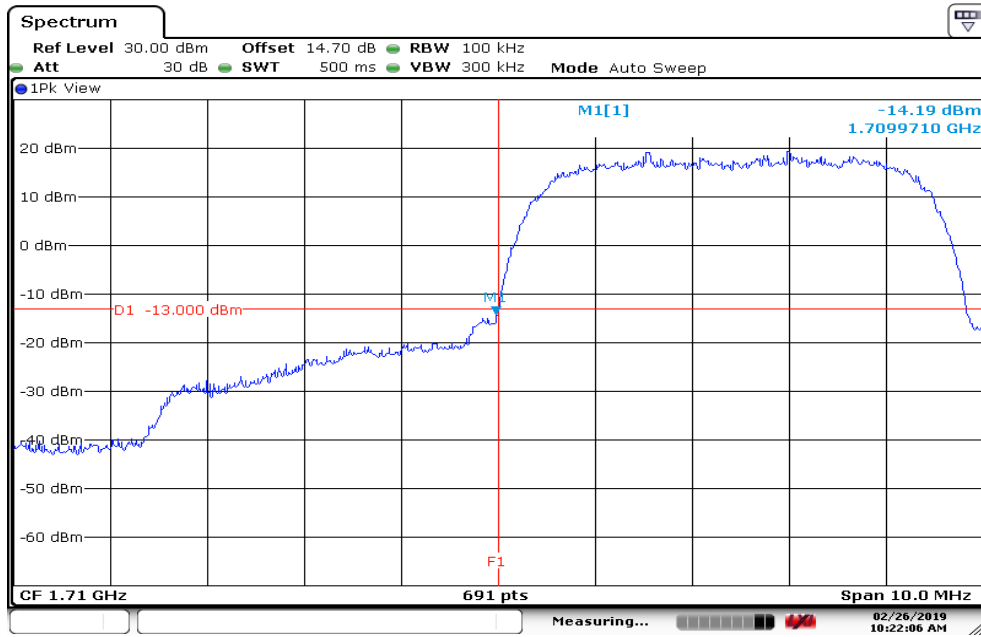
TEST RESULTS

No non-compliance noted.

Test Plot

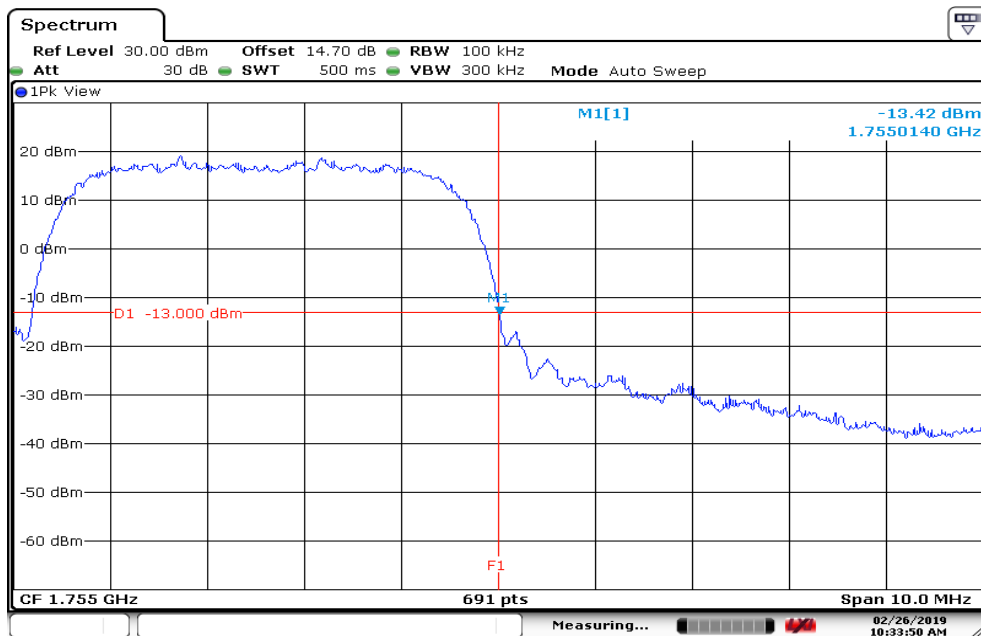
WCDMA 12.2K RMC (BAND IV)

CH Low



Date: 26.FEB.2019 10:22:07

CH High



Date: 26.FEB.2019 10:33:50

8.5 CONDUCTED SPURIOUS EMISSIONS

LIMIT

FCC §27.53 (h)

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB.

RSS-139 section 6.6

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

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. 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.

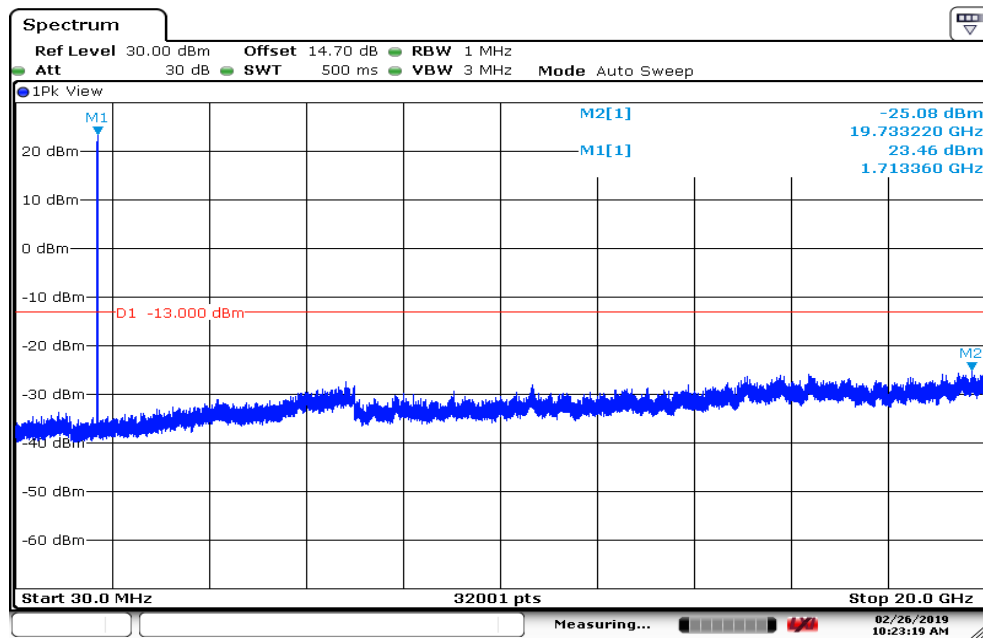
TEST RESULTS

No non-compliance noted.

Test Data

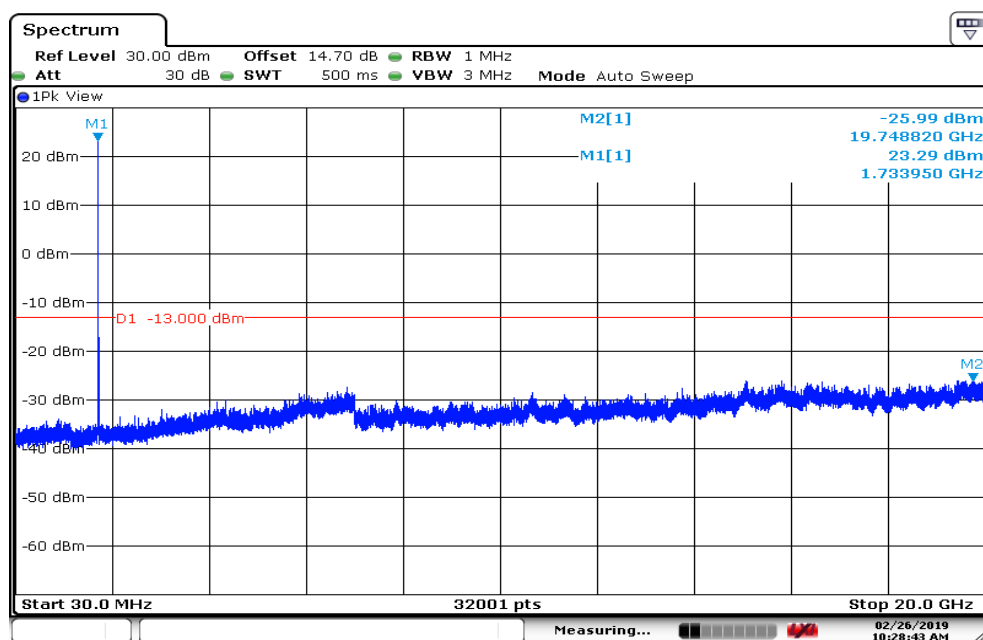
WCDMA 12.2K RMC (BAND IV)

CH Low



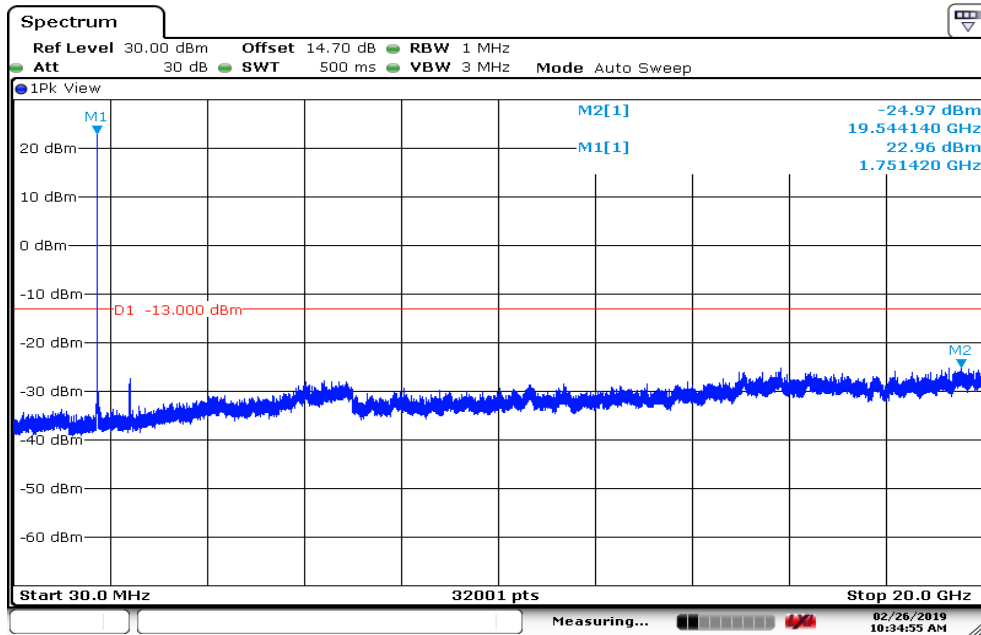
Date: 26.FEB.2019 10:23:20

CH Mid



Date: 26.FEB.2019 10:28:44

CH High



Date: 26.FEB.2019 10:34:55

8.6 PEAK TO AVERAGE POWER RATIO

Limit

FCC §27.50(a)

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

RSS-139 section 6.5

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

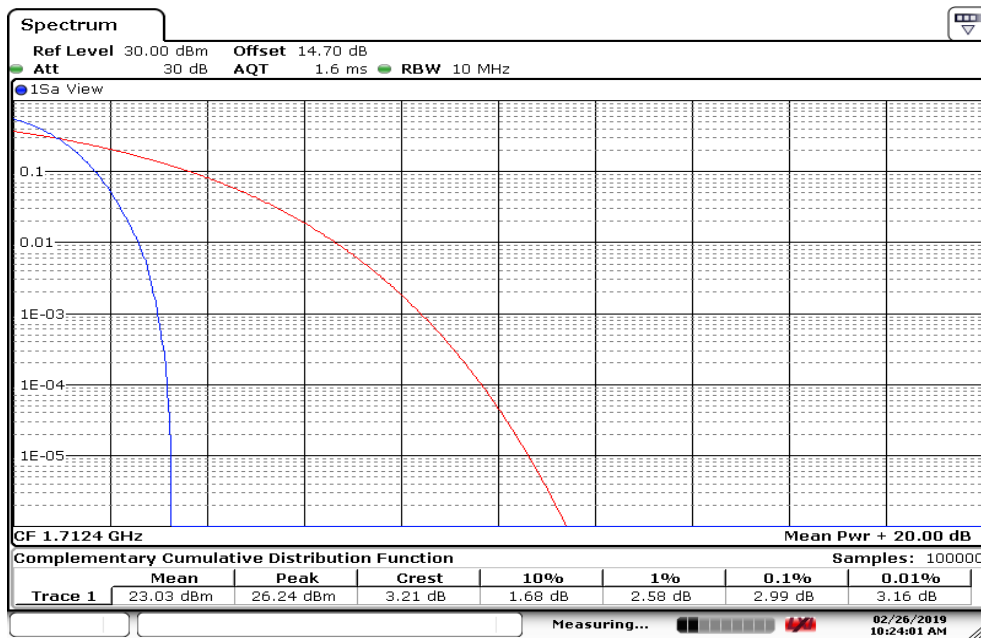
Test Procedures

1. According to KDB 971168D01, photograph 5.7.1
2. The EUT was connect to spectrum analyzer and call box.
3. Set the CCDF function in spectrum analyzer.
4. The highest RF output power were measured and recorded the maximum PAPR level associated with a probability of 0.1%.
5. Record the Peak to Average Power Ratio.

Test Data

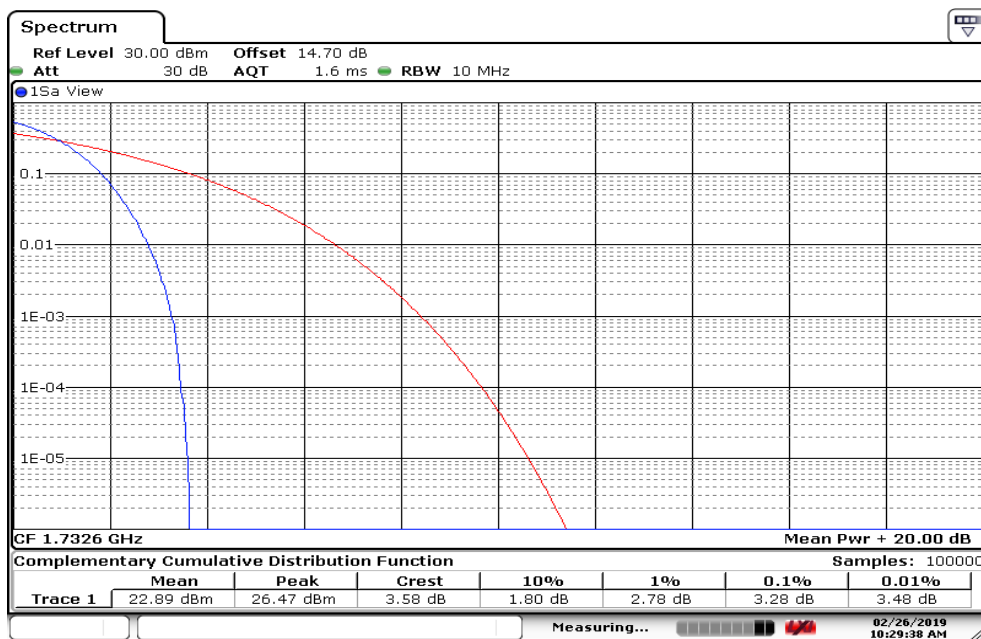
WCDMA 12.2K RMC (BAND IV)

CH Low



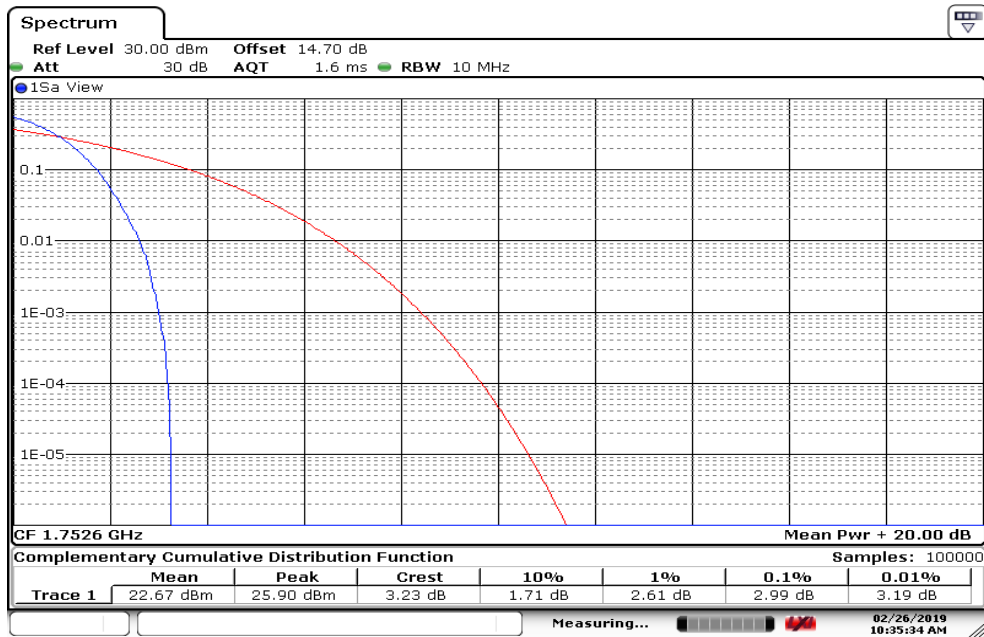
Date: 26.FEB.2019 10:24:01

CH Mid



Date: 26.FEB.2019 10:29:38

CH High



Date: 26.FEB.2019 10:35:35

8.7 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

LIMIT

FCC §27.53 (h)

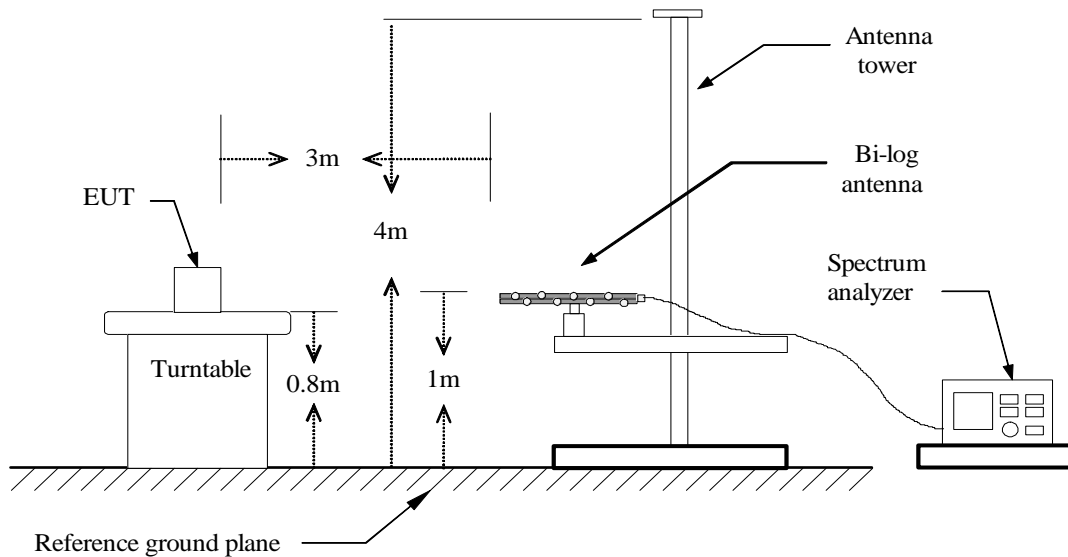
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB.

RSS-139 section 6.6

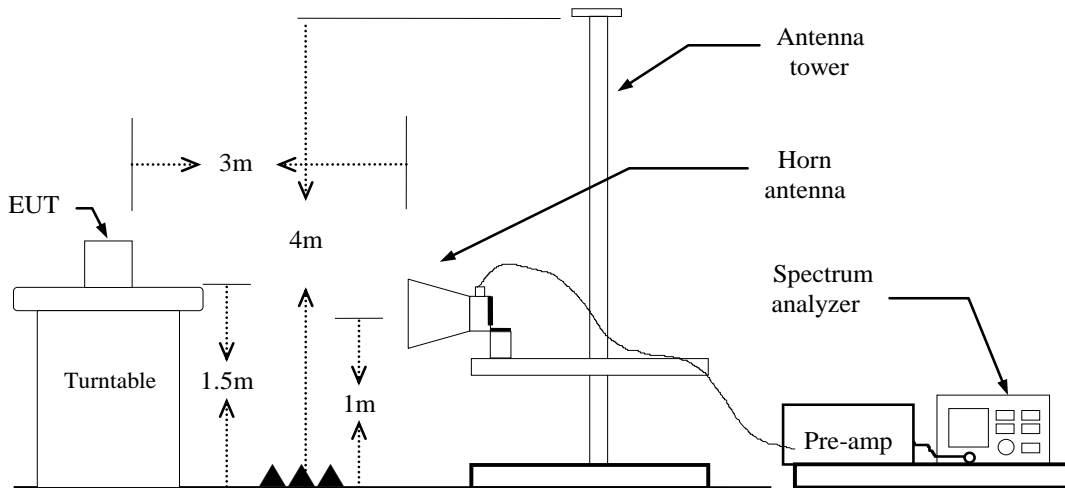
The mean power of emission must be attenuated below the mean power of the non-modulated carrier (P) on any frequency twice or more than twice the fundamental frequency by at least $43 + 10 \log P$ dB.

Test Configuration

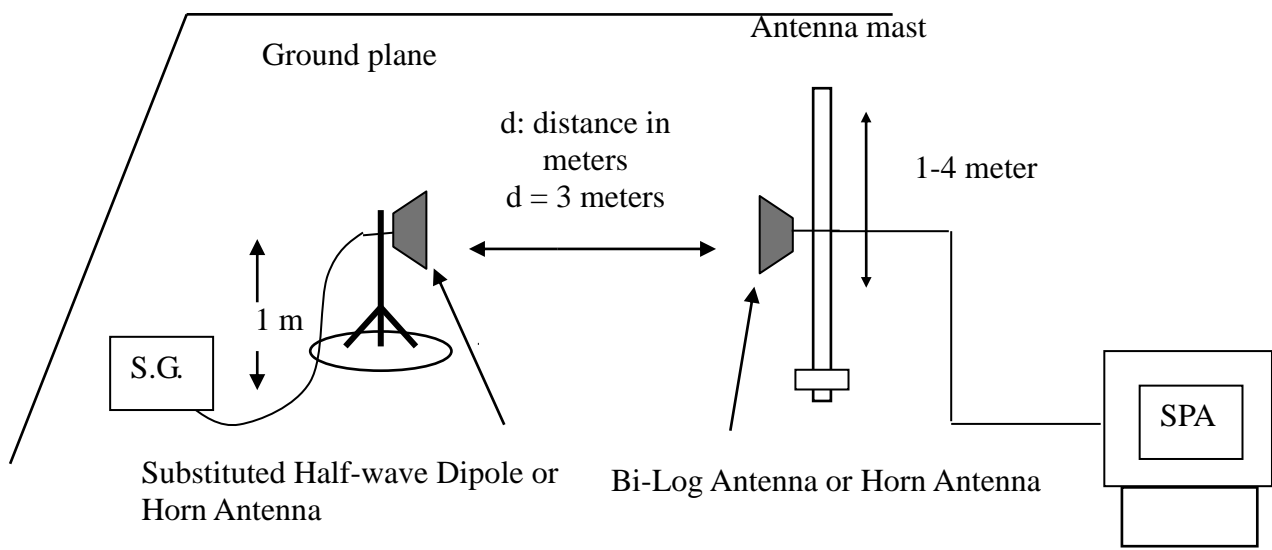
Below 1 GHz



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.
According to RSS-139 section 6.6
2. The EUT was placed on a turntable
 - (1) Below 1G : 0.8m
 - (2) Above 1G : 1.5m
 - (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)

Limit Line: -13dBm

TEST RESULTS

Refer to the attached tabular data sheets.

Operation Mode: WCDMA 12.2k RMC Band IV / TX / CH 1413

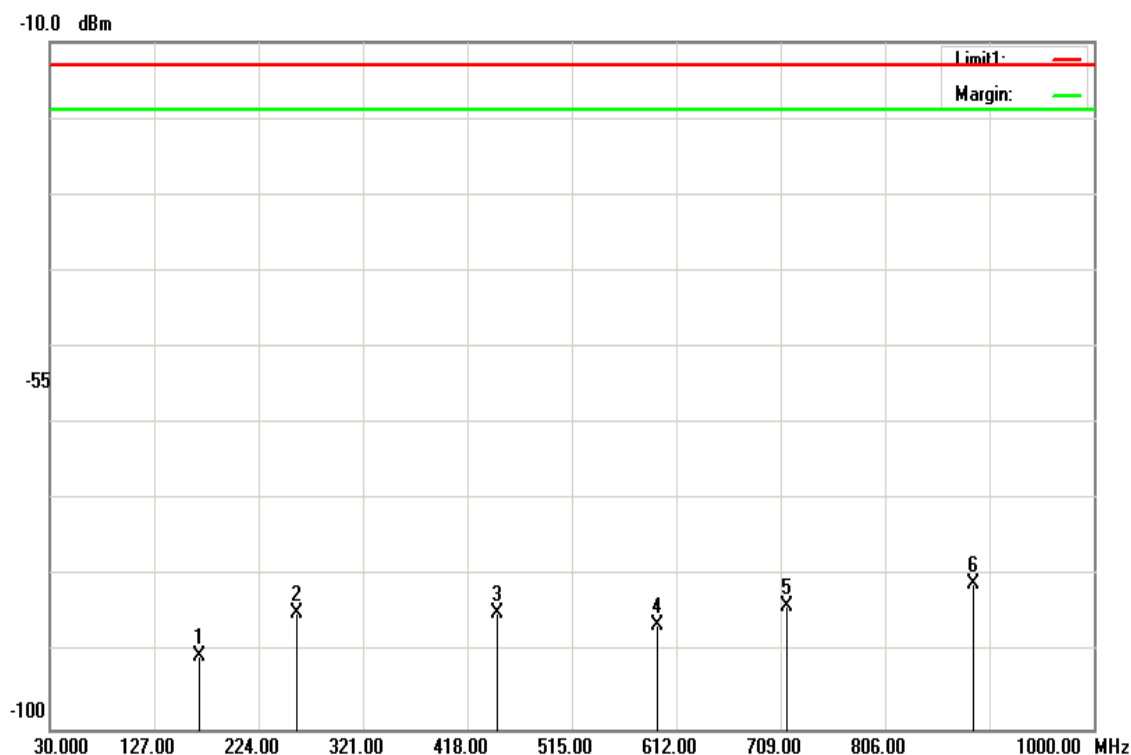
Test Date: March 13, 2019

Temperature: 22°C

Tested by: Dally Hong

Humidity: 46 % RH

Polarity: Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
169.1950	-87.1	1.29	-90.54	-13.00	-77.54	V
259.8900	-80.98	1.61	-84.74	-13.00	-71.74	V
445.1600	-80.48	2.12	-84.75	-13.00	-71.75	V
594.5400	-81.76	2.46	-86.37	-13.00	-73.37	V
714.8200	-79.07	2.71	-83.93	-13.00	-70.93	V
888.9350	-75.86	3.04	-81.05	-13.00	-68.05	V

Remark:

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

Operation Mode: WCDMA 12.2k RMC Band IV / TX / CH 1413

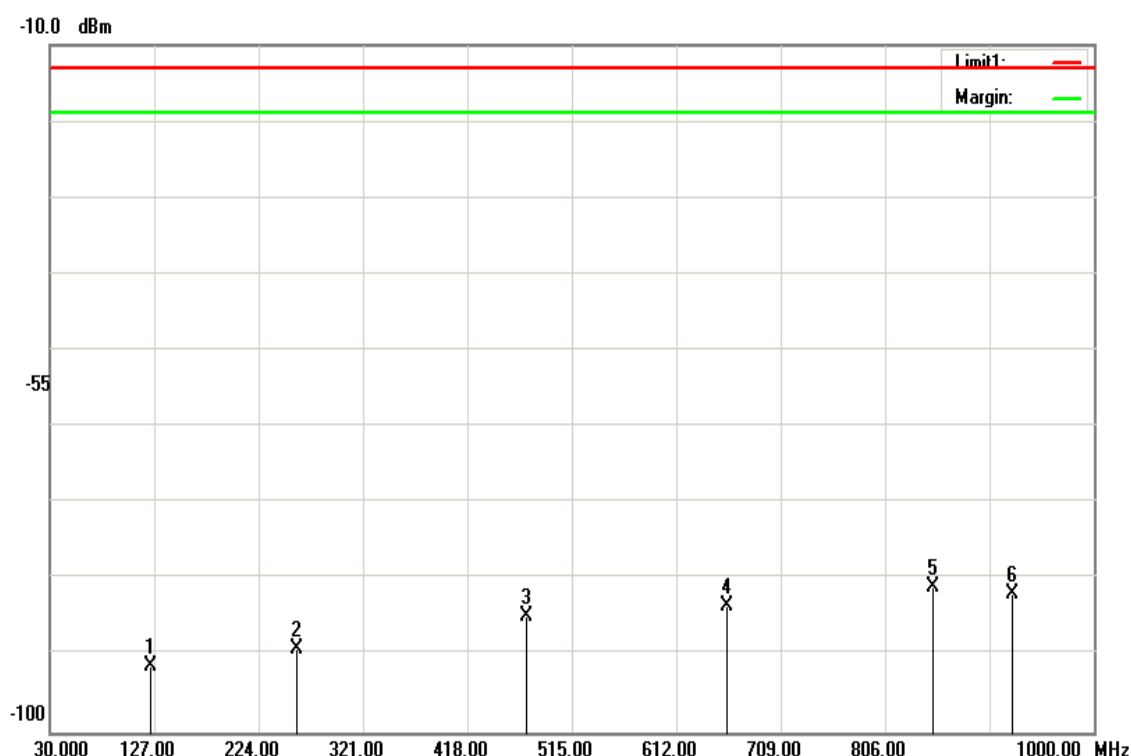
Test Date: March 13, 2019

Temperature: 22°C

Tested by: Dally Hong

Humidity: 46 % RH

Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
124.5750	-88.05	1.11	-91.31	-13.00	-78.31	H
259.4050	-85.26	1.61	-89.02	-13.00	-76.02	H
473.7750	-80.54	2.19	-84.88	-13.00	-71.88	H
659.5300	-78.71	2.59	-83.45	-13.00	-70.45	H
851.1050	-75.91	2.97	-81.03	-13.00	-68.03	H
924.8250	-76.62	3.1	-81.87	-13.00	-68.87	H

Remark:

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

Above 1GHz

Operation Mode: WCDMA 12.2k RMC Band IV / TX / CH 1312

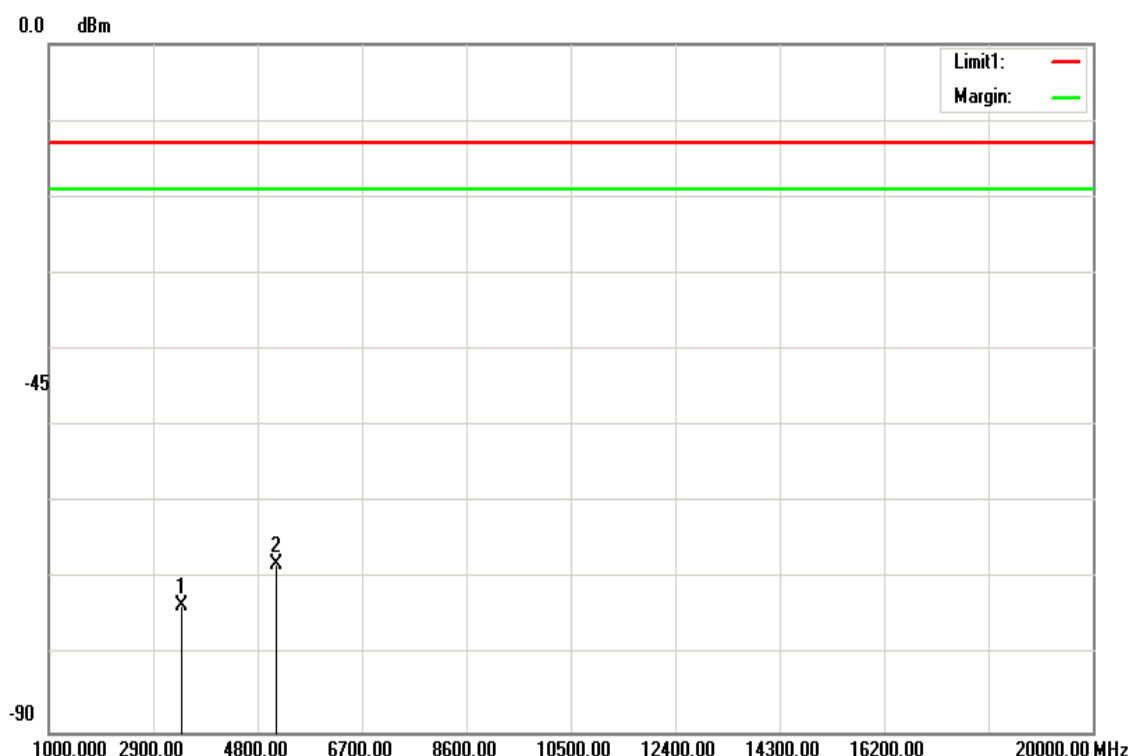
Test Date: March 13, 2019

Temperature: 22°C

Tested by: Dally Hong

Humidity: 46 % RH

Polarity: Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3424.800	-67.17	6.35	-73.52	-13.00	-60.52	V
5133.500	-60.24	7.92	-68.16	-13.00	-55.16	V
N/A						

Remark:

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

Operation Mode: WCDMA 12.2k RMC Band IV / TX / CH 1312

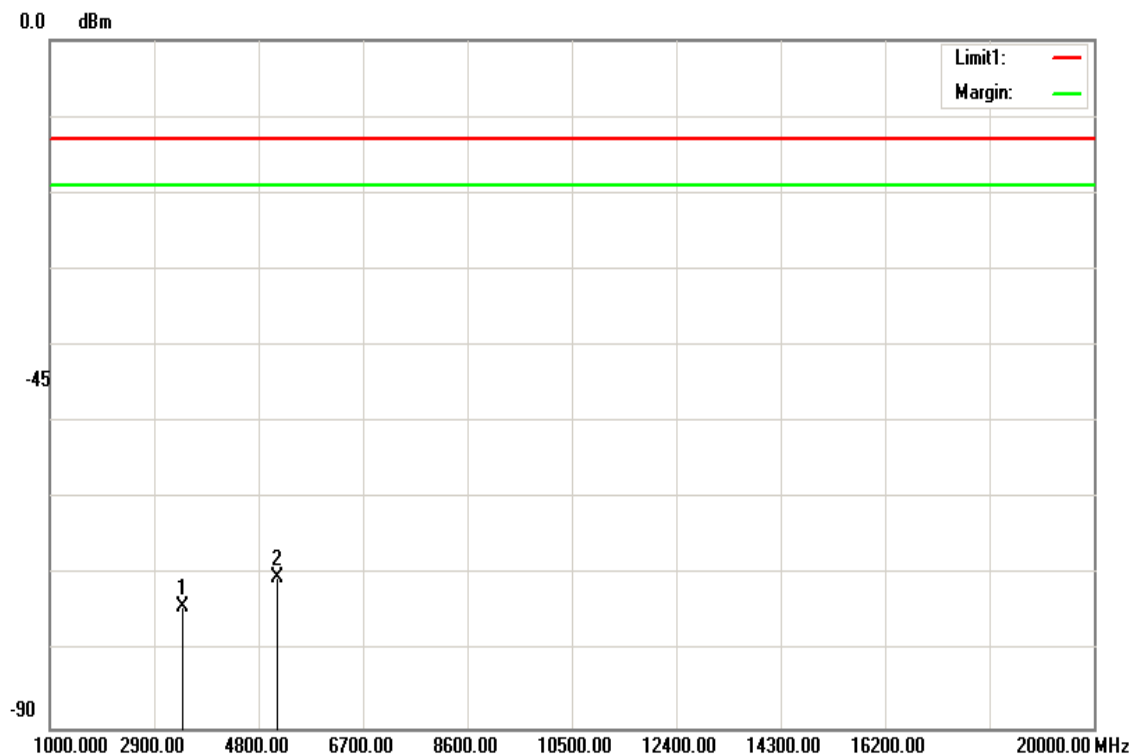
Test Date: March 13, 2019

Temperature: 22°C

Tested by: Dally Hong

Humidity: 46 % RH

Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3424.800	-67.83	6.35	-74.18	-13.00	-61.18	H
5137.200	-62.42	7.93	-70.35	-13.00	-57.35	H
N/A						

Remark:

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

Operation Mode: WCDMA 12.2k RMC Band IV / TX / CH 1413

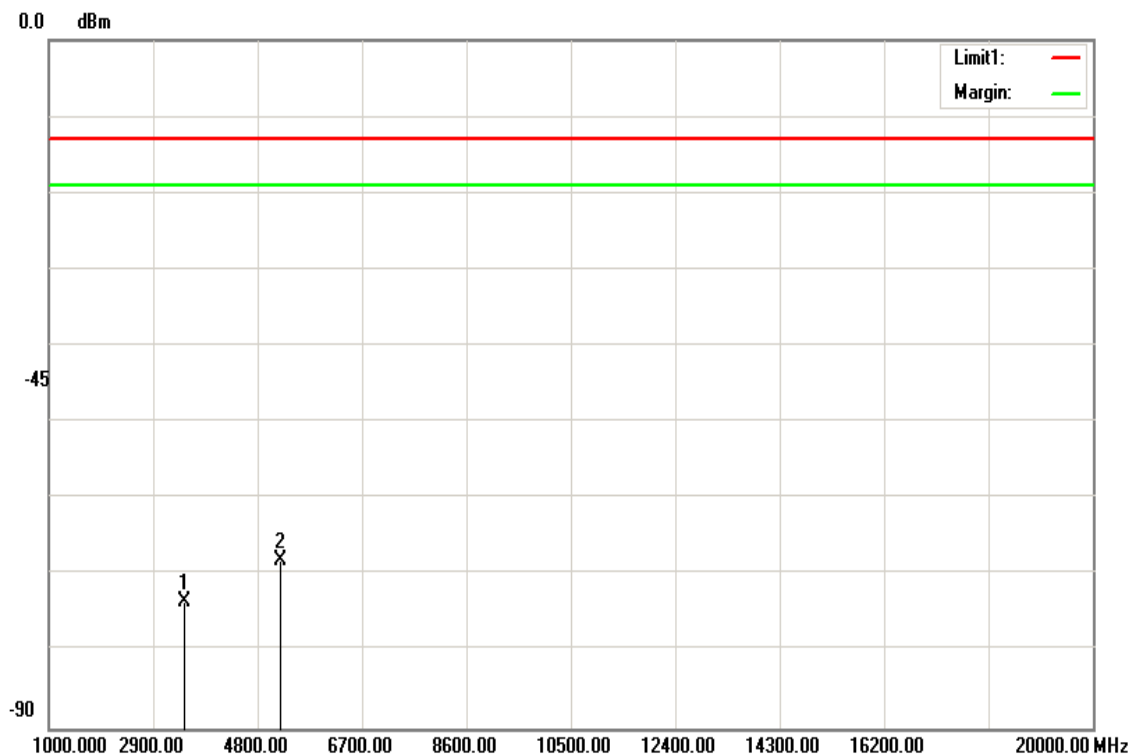
Test Date: March 13, 2019

Temperature: 22°C

Tested by: Dally Hong

Humidity: 46 % RH

Polarity: Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3465.200	-66.99	6.39	-73.38	-13.00	-60.38	V
5210.500	-60.07	7.99	-68.06	-13.00	-55.06	V
N/A						

Remark:

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

Operation Mode: WCDMA 12.2k RMC Band IV / TX / CH 1413

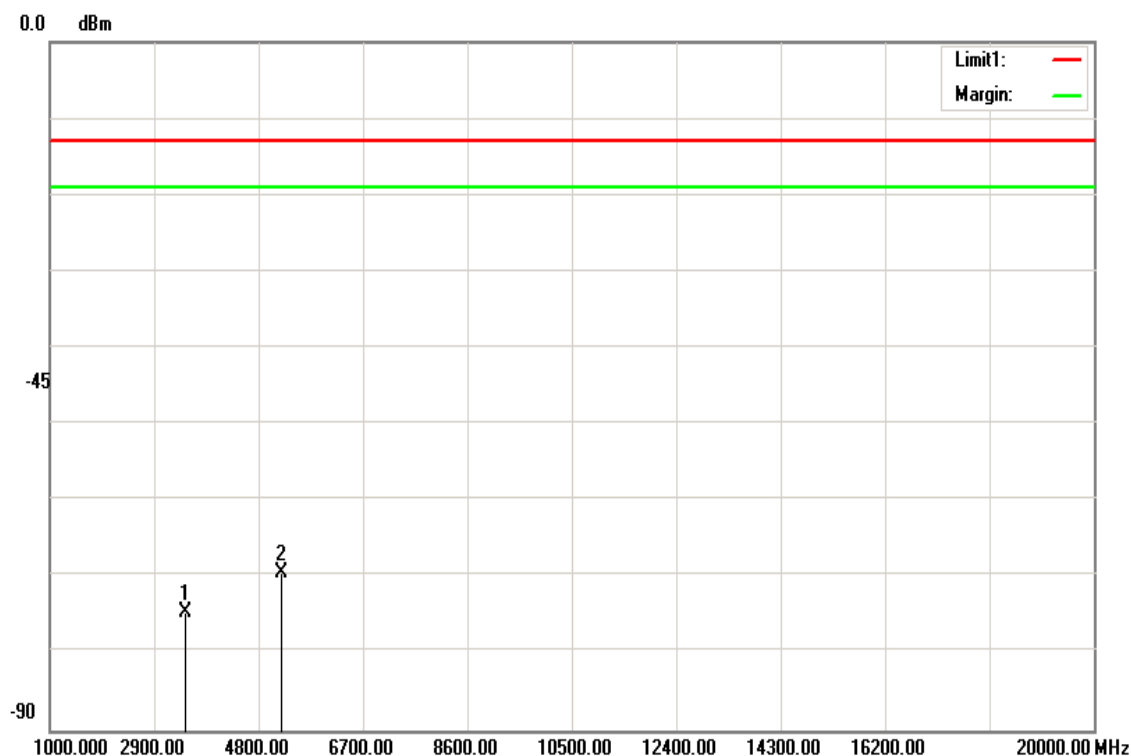
Test Date: March 13, 2019

Temperature: 22°C

Tested by: Dally Hong

Humidity: 46 % RH

Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3465.200	-68.21	6.39	-74.60	-13.00	-61.60	H
5210.500	-61.34	7.99	-69.33	-13.00	-56.33	H
N/A						

Remark:

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

Operation Mode: WCDMA 12.2k RMC Band IV / TX / CH 1513

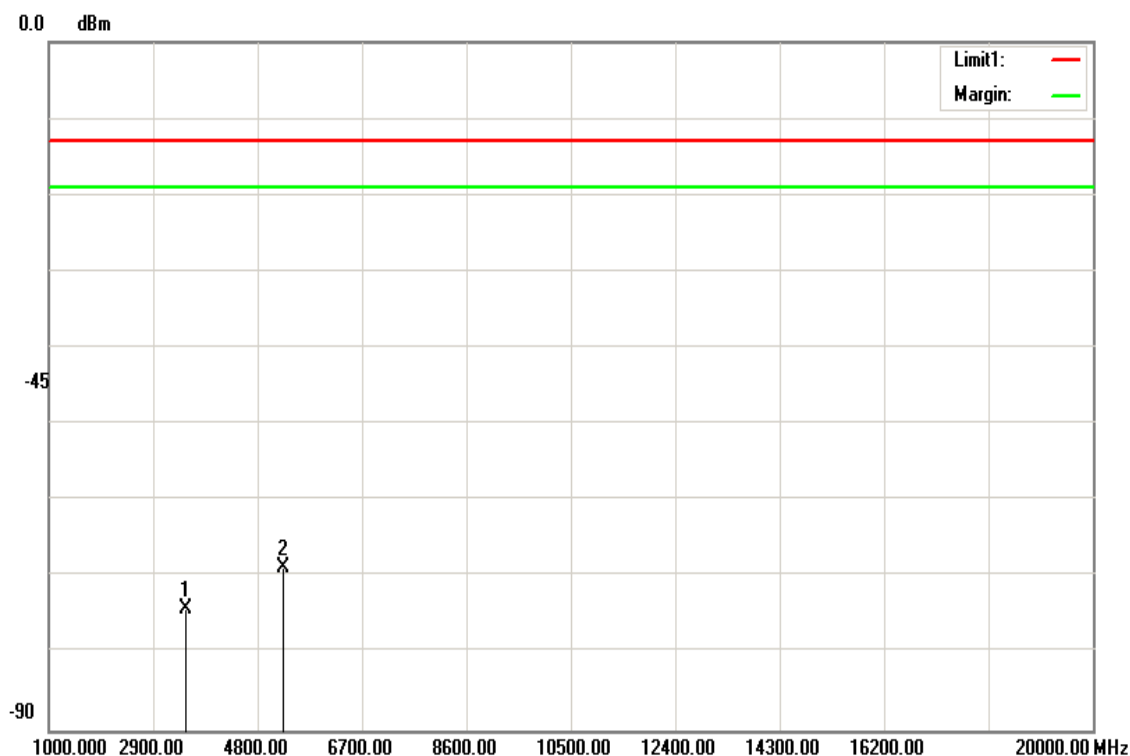
Test Date: March 13, 2019

Temperature: 22°C

Tested by: Dally Hong

Humidity: 46 % RH

Polarity: Ver.



Frequency (MHz)	S.G. (dBm)	Ant. Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3505.200	-67.75	6.44	-74.19	-13.00	-61.19	V
5263.000	-60.65	8.04	-68.69	-13.00	-55.69	V
N/A						

Remark:

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

Operation Mode: WCDMA 12.2k RMC Band IV / TX / CH 1513

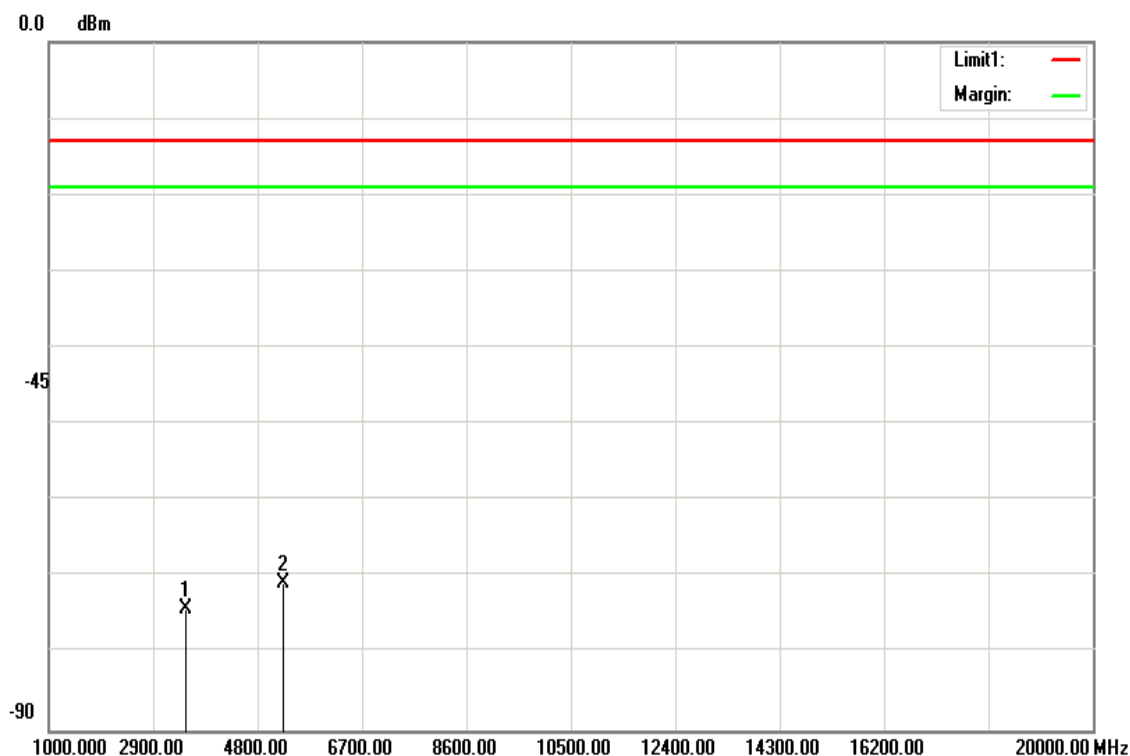
Test Date: March 13, 2019

Temperature: 22°C

Tested by: Dally Hong

Humidity: 46 % RH

Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3505.200	-67.59	6.44	-74.03	-13.00	-61.03	H
5257.800	-62.73	8.03	-70.76	-13.00	-57.76	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.

8.8 FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

LIMIT

According to the FCC part 27.54 & RSS-139 section 6.4

shall be tested the frequency stability. The rule is defined that” The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

Test Procedure

Use Anritsu 8820 with frequency Error measurement capability.

Temp = -30 to +50°C

Voltage= 85% to 115% of the nominal value for AC powered equipment.

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 IV Low Channel 1712.4 MHz				
Limit: 2.5 ppm = 4281 Hz				
Power Supply (Vac)	Environment Temperature (°C)	BW: 20M Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
120	50	2.00	0.0012	+/- 2.5
120	40	-1.00	-0.0006	
120	30	-1.00	-0.0006	
120	20	-2.00	-0.0012	
120	10	1.00	0.0006	
120	0	0.00	0.0000	
120	-10	-1.00	-0.0006	
120	-20	2.00	0.0012	

Reference Frequency: WCDMA 12.2k RMC Band IV Mid Channel 1732.6 MHz				
Limit: 2.5 ppm = 4331.5 Hz				
Power Supply (Vac)	Environment Temperature (°C)	BW: 20M Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
120	50	-1.00	-0.0006	+/- 2.5
120	40	-2.00	-0.0012	
120	30	0.00	0.0000	
120	20	1.00	0.0006	
120	10	1.00	0.0006	
120	0	-2.00	-0.0012	
120	-10	-2.00	-0.0012	
120	-20	-4.00	-0.0023	

Reference Frequency: WCDMA 12.2k RMC Band IV High Channel 1752.6 MHz				
Limit: 2.5 ppm = 4381.5 Hz				
Power Supply (Vac)	Environment Temperature (°C)	BW: 20M Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
120	50	-3.00	-0.0017	+/- 2.5
120	40	1.00	0.0006	
120	30	-2.00	-0.0011	
120	20	0.00	0.0000	
120	10	2.00	0.0011	
120	0	-3.00	-0.0017	
120	-10	-2.00	-0.0011	
120	-20	-3.00	-0.0017	

8.9 FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

LIMIT

According to the FCC part 27.54 & RSS-139 section 6.4

shall be tested the frequency stability. The rule is defined that "The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation."

Test Procedure

Use Anritsu 8820 with frequency Error measurement capability.

Temp = -30 to +50°C

Voltage= 85% to 115% of the nominal value for AC powered equipment.

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 IV Low Channel 1712.4 MHz				
Limit: 2.5 ppm = 4281Hz				
Power Supply (Vac)	Environment Temperature (°C)	BW: 20M Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
102	20	-1.00	-0.0006	+/- 2.5
120		-2.00	-0.0012	
138		-2.00	-0.0012	

Reference Frequency: WCDMA 12.2k RMC Band IV Mid Channel 1732.6 MHz				
Limit: 2.5 ppm = 4331.5Hz				
Power Supply (Vac)	Environment Temperature (°C)	BW: 20M Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
102	20	-1.00	-0.0006	+/- 2.5
120		1.00	0.0006	
138		1.00	0.0006	

Reference Frequency: WCDMA 12.2k RMC Band IV High Channel 1752.6 MHz				
Limit: 2.5 ppm = 4381.5Hz				
Power Supply (Vac)	Environment Temperature (°C)	BW: 20M Frequency Error(Hz)	Frequency Error (ppm)	Limit (ppm)
102	20	-1.00	-0.0006	+/- 2.5
120		0.00	0.0000	
138		-1.00	-0.0006	

--End Of Report--