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

SIMPLE TEST REPORT

For

HE910-GL

Trade Name: Telit

Model: HE910-GL

Issued to

TELIT COMMUNICATIONS SPA
Via Stazione di Prosecco 5/B - (TS) Italy

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: March 27, 2015

Testing Laboratory
1309

Revision History

Rev.		Issue Date		Revisions	Effect Page	Revised By
00		March 27, 2015		Initial Issue	ALL	Becca Chen

TABLE OF CONTENTS

1. TEST RESULT CERTIFICATION

Applicant:	TELIT COMMUNICATIONS SPA Via Stazione di Prosecco 5/B - (TS) Italy
Manufacturer:	TELIT COMMUNICATIONS SPA Via Stazione di Prosecco 5/B - (TS) Italy
Equipment Under Test:	HE910-GL
Trade Name:	Telit
Model Number:	HE910-GL
Date of Test:	March 25, 2015

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
FCC 47 CFR PART 27 SUBPART L & IC RSS-139 Issue 2: February 2009	No non-compliance noted

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA/EIA-603-C and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rule FCC PART 27 Subpart L, IC RSS-139 Issue 2.

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

Approved by:

Miller Lee
Section Manager
Compliance Certification Services Inc.

Reviewed by:

Angel Cheng
Section Manager
Compliance Certification Services Inc.

2. EUT DESCRIPTION

Product	HE910-GL
Trade Name	Telit
Model Number	HE910-GL
Model Discrepancy	N/A
Received Date	March 16, 2015
Power Supply	DC 3.8V powered from Host device.
Frequency Range	WCDMA / HSDPA / HSUPA Band IV: 1710-1755 MHz
Transmit Power (ERP & EIRP Power)	WCDMA Band IV: 20.67 dBm HSDPA Band IV: 20.71 dBm HSUPA Band IV: 20.05 dBm
Cellular Phone Protocol	WCDMA: Quadrature Phase Shift Keying (QPSK) with Root-raised cosine pulse shaping filters (roll off = 0.22)
Antenna Gain	2.14dBi
Antenna Type	1/4 1 Mobile Antenna

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&IC ID:* ***RI7HE910GL*** *&* ***5131A-HE910GL*** *filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.*

3. TEST METHODOLOGY

Both conducted and radiated testing were performed according to the procedures document on chapter 13 of ANSI C63.4: 2009, TIA/EIA-603-C: 2004 and FCC CFR 47, Part 27 Subpart L.

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

3.1 EUT CONFIGURATION

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

3.2 EUT EXERCISE

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4: 2009.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4: 2009.

3.4 DESCRIPTION OF TEST MODES

The EUT (model: HE910-GL) 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 (CH1427) and Channel High (CH1513) were chosen for full testing.

WCDMA / HSDPA Band IV:
Channel Low (CH1312), Channel Mid (CH1427) and Channel High (CH1513) were chosen for full testing.

WCDMA / HSUPA Band IV:
Channel Low (CH1312), Channel Mid (CH1427) and Channel High (CH1513) were chosen for full testing.

4. INSTRUMENT CALIBRATION

6.1 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.

6.2 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.*

Wugu 966 Chamber A				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	US42510268	09/18/2015
EMI Test Receiver	R&S	ESCI	100064	05/30/2015
Bilog Antenna	Sunol Sciences	JB3	A030105	08/19/2015
Horn Antenna	EMCO	3117	00055165	01/26/2016
Horn Antenna	EMCO	3116	26370	12/25/2015
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
Pre-Amplifier	MITEQ	1652-3000	1490939	08/09/2016
Pre-Amplifier	EMC	EMC 01265	4035	08/09/2016
Pre-Amplifier	MITEQ	AMF-6F-260400-40-8P	985646	12/25/2015
Coaxial Cable	Huber+Suhner	102	29212/2	12/25/2015
Coaxial Cable	Huber+Suhner	102	29406/2	12/25/2015
Test S/W	EZ-EMC (CCS-3A1RE)			

6.3 MEASUREMENT UNCERTAINTY

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

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

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

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

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

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

☐ No.81-1, Lane 210, Bade 2nd Rd., Luchu Hsiang, Taoyuan Hsien 338, Taiwan
Tel: 886-3-324-0332 / Fax: 886-3-324-5235

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4: 2009 and CISPR Publication 22.

5.2 EQUIPMENT

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

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

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

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

5.3 LABORATORY ACCREDITATIONS AND LISTING

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

5.4 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

6.4 SETUP CONFIGURATION OF EUT

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

6.5 SUPPORT EQUIPMENT

No	Equipment	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
1	Notebook PC	IBM	7663 (T61)	L3E9812	FCC DoC	LAN Cable: Unshielded, 10m Line Cable: Unshielded, 1.0m	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m with a core
2	Power Supply	Agilent	E3640A	N/A	FCC DoC	N/A	Unshielded, 1.8m

Remark:

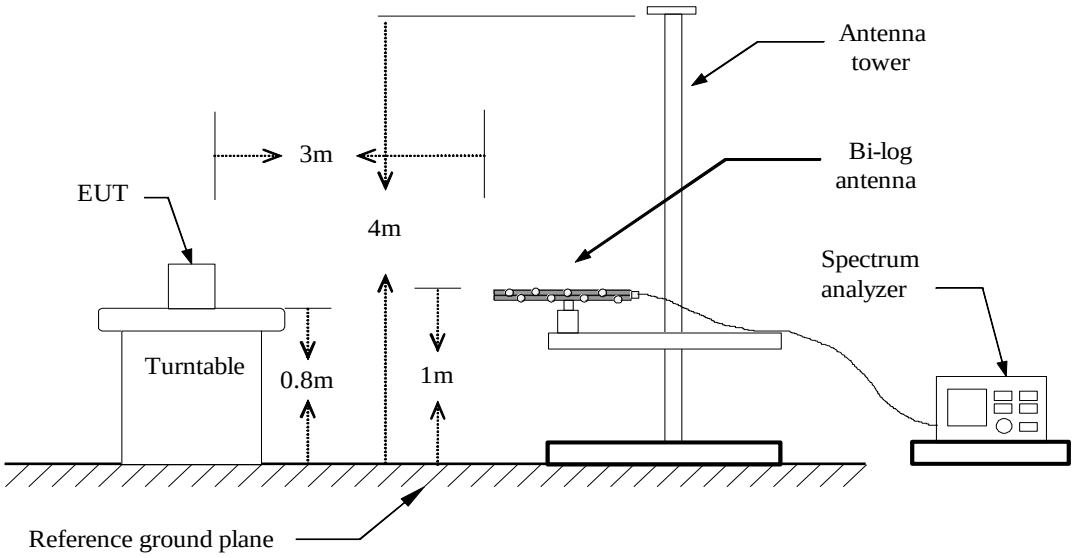
1. *All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.*
2. *Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.*

7. FCC PART 27 REQUIREMENTS & INDUSTRY CANADA RSS-139

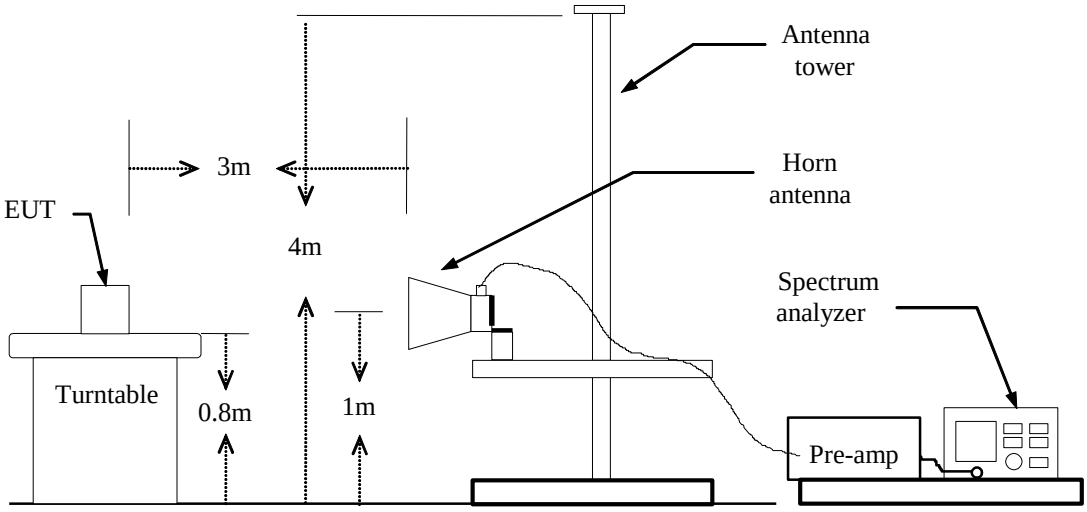
7.1 ERP & EIRP MEASUREMENT

Test Configuration

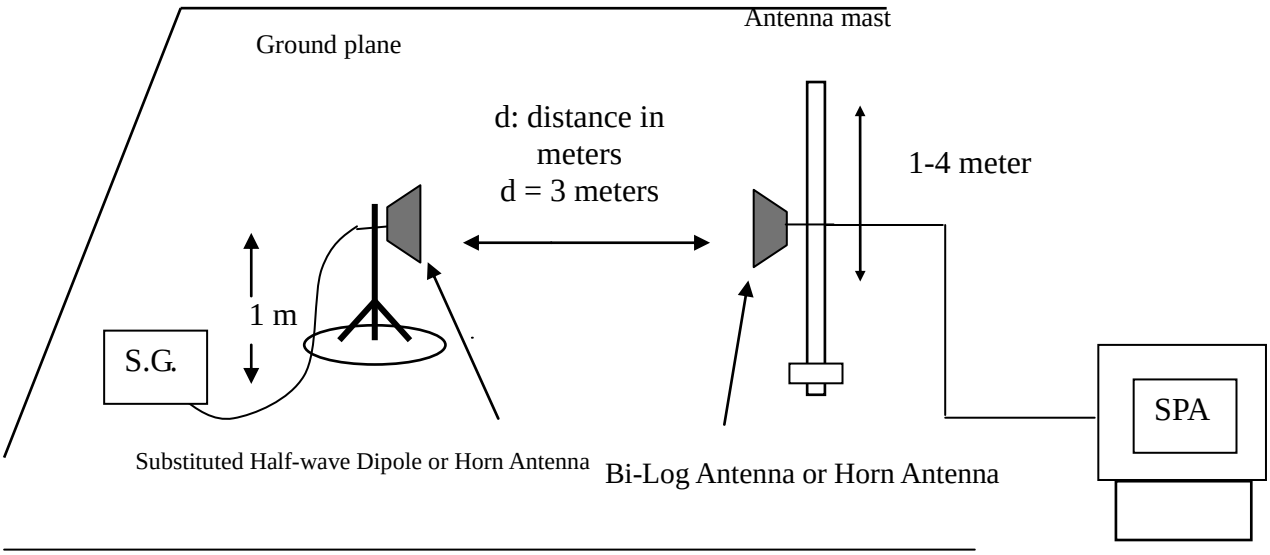
Below 1 GHz



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

TEST RESULTS

No non-compliance noted.

WCDMA BAND IV Test Data

Channel	Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Pol.
1312	1713.500	18.65	5.13	5.92	19.44	33.00	-13.56	V
	1711.400	14.52	5.13	5.92	15.31	33.00	-17.69	H
1427	1736.000	19.69	5.17	5.88	20.40	33.00	-12.60	V
	1736.200	13.68	5.18	5.87	14.37	33.00	-18.63	H
1513	1753.400	20.04	5.21	5.84	***20.67**	33.00	-12.33	V
	1753.700	13.51	5.21	5.84	14.14	33.00	-18.86	H

HSDPA BAND IV Test Data

Channel	Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Pol.
1312	1713.200	17.66	5.13	5.92	18.45	33.00	-14.55	V
	1711.600	13.49	5.13	5.92	14.28	33.00	-18.72	H
1427	1735.700	20	5.17	5.88	***20.71**	33.00	-12.29	V
	1736.300	16.38	5.18	5.87	17.07	33.00	-15.93	H
1513	1753.500	19.18	5.21	5.84	19.81	33.00	-13.19	V
	1753.400	16.35	5.21	5.84	16.98	33.00	-16.02	H

HSUPA BAND IV Test Data

Channel	Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Pol.
1312	1713.600	17.76	5.13	5.92	18.55	33.00	-14.45	V
	1711.300	13.5	5.13	5.92	14.29	33.00	-18.71	H
1427	1736.200	18.27	5.18	5.87	18.96	33.00	-14.04	V
	1736.500	12.48	5.18	5.87	13.17	33.00	-19.83	H
1513	1753.600	19.42	5.21	5.84	***20.05**	33.00	-12.95	V
	1753.700	16.37	5.21	5.84	17.00	33.00	-16.00	H

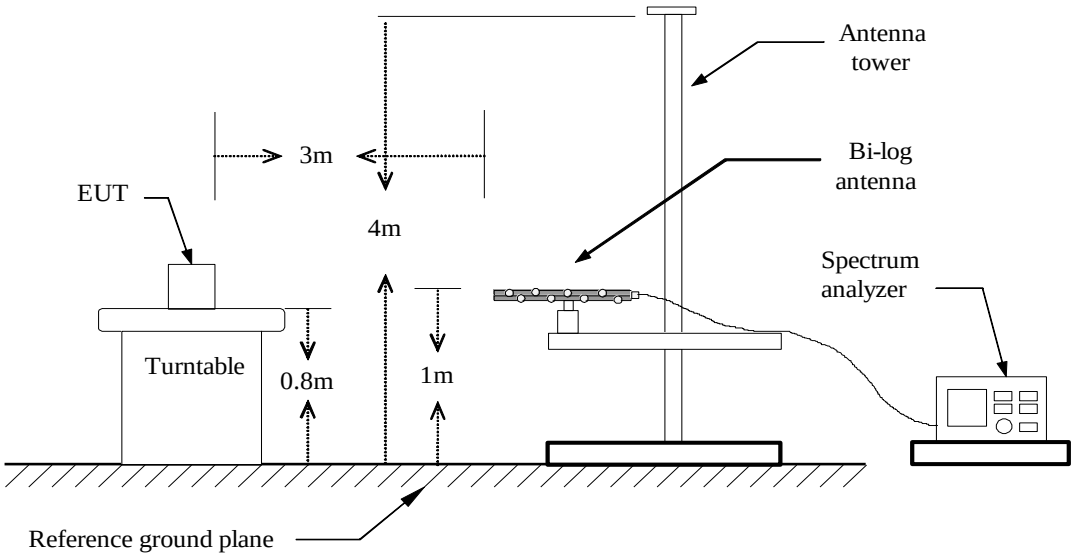
7.2FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

LIMIT

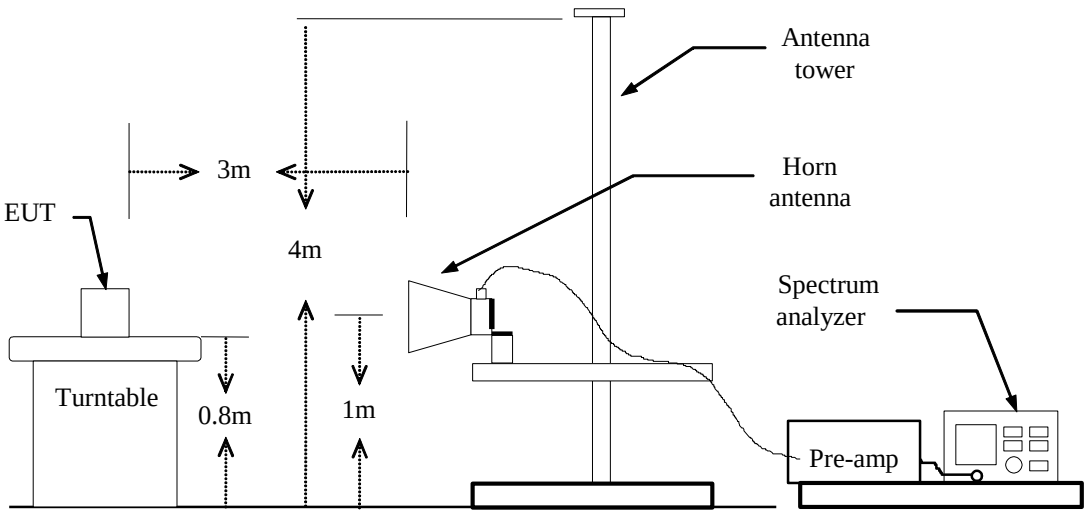
§27.53 (g) and RSS-139 § 6.5 For operations in the 1710–1755MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10 (P) dB.

Test Configuration

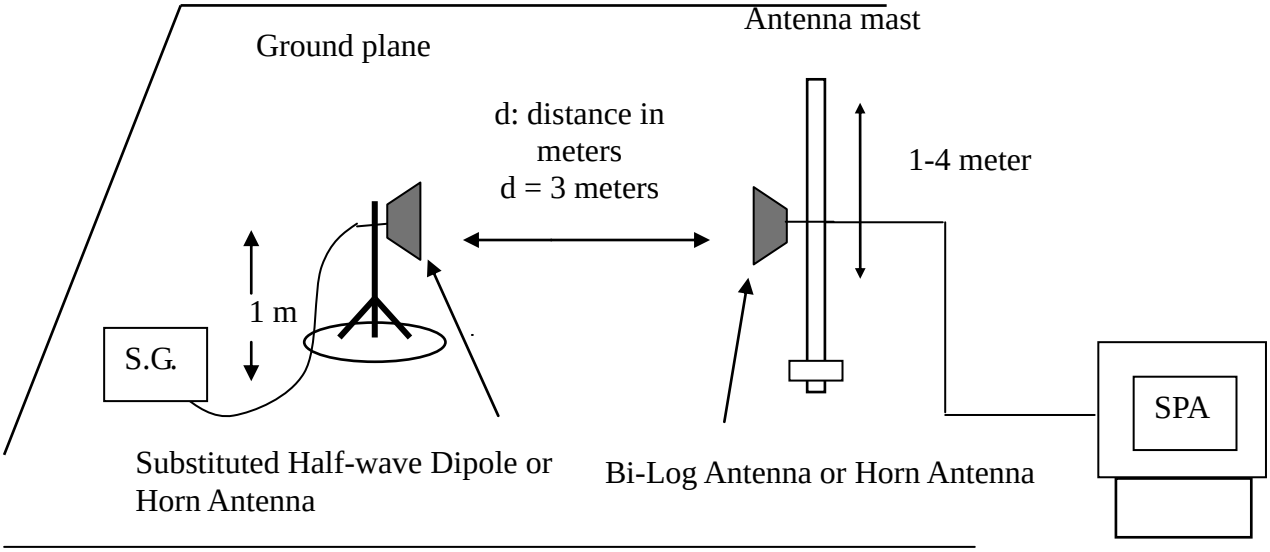
Below 1 GHz



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 (dBd) – Cable (dB)

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

TEST RESULTS

Refer to the attached tabular data sheets.

Operation Mode: WCDMA Band IV / TX / CH 1312 **Test Date:** March 25, 2015

Temperature: 24°C **Tested by:** Dennis Li

Humidity: 56 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
66.8600	-52.3	0.93	-1.89	-55.12	-13.00	-42.12	V
101.7800	-67.88	1.16	-0.64	-69.68	-13.00	-56.68	V
153.1900	-72.33	1.44	0.94	-72.83	-13.00	-59.83	V
299.6600	-70.59	2.09	5.59	-67.09	-13.00	-54.09	V
415.0900	-76.47	2.45	5.86	-73.06	-13.00	-60.06	V
576.1100	-79.46	2.88	6.05	-76.29	-13.00	-63.29	V
65.8900	-53.19	0.93	-1.93	-56.05	-13.00	-43.05	H
216.2400	-73.56	1.74	5.36	-69.94	-13.00	-56.94	H
299.6600	-71.29	2.09	5.59	-67.79	-13.00	-54.79	H
364.6500	-74.06	2.28	5.75	-70.59	-13.00	-57.59	H
624.6100	-69.79	2.96	6.15	-66.60	-13.00	-53.60	H
749.7400	-66.97	3.2	6.1	-64.07	-13.00	-51.07	H

Remark:

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

Operation Mode: WCDMA Band IV / TX / CH 1427 **Test Date:** March 25, 2015

Temperature: 24°C **Tested by:** Dennis Li

Humidity: 56 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
66.8600	-49.83	0.93	-1.89	-52.65	-13.00	-39.65	V
126.0300	-68.49	1.32	-1.69	-71.50	-13.00	-58.50	V
299.6600	-71.65	2.09	5.59	-68.15	-13.00	-55.15	V
416.0600	-74.64	2.46	5.85	-71.25	-13.00	-58.25	V
540.2200	-77.85	2.78	6.26	-74.37	-13.00	-61.37	V
664.3800	-73.92	3.06	6.3	-70.68	-13.00	-57.68	V
64.9200	-53.05	0.92	-1.98	-55.95	-13.00	-42.95	H
138.6400	-64.48	1.39	-0.38	-66.25	-13.00	-53.25	H
298.6900	-68.34	2.09	5.57	-64.86	-13.00	-51.86	H
415.0900	-71.97	2.45	5.86	-68.56	-13.00	-55.56	H
624.6100	-67.93	2.96	6.15	-64.74	-13.00	-51.74	H
749.7400	-67.31	3.2	6.1	-64.41	-13.00	-51.41	H

Remark:

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

Operation Mode: WCDMA Band IV / TX / CH 1513 **Test Date:** March 25, 2015

Temperature: 24°C **Tested by:** Dennis Li

Humidity: 56 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
64.9200	-50.24	0.92	-1.98	-53.14	-13.00	-40.14	V
250.1900	-72.86	1.84	5.68	-69.02	-13.00	-56.02	V
299.6600	-70.93	2.09	5.59	-67.43	-13.00	-54.43	V
416.0600	-76.83	2.46	5.85	-73.44	-13.00	-60.44	V
666.3200	-73.33	3.07	6.3	-70.10	-13.00	-57.10	V
866.1400	-77.33	3.44	6.47	-74.30	-13.00	-61.30	V
64.9200	-54.57	0.92	-1.98	-57.47	-13.00	-44.47	H
120.2100	-61.02	1.27	-2.06	-64.35	-13.00	-51.35	H
299.6600	-70.2	2.09	5.59	-66.70	-13.00	-53.70	H
365.6200	-72.38	2.29	5.76	-68.91	-13.00	-55.91	H
527.6100	-74.72	2.74	6.02	-71.44	-13.00	-58.44	H
624.6100	-70.22	2.96	6.15	-67.03	-13.00	-54.03	H

Remark:

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

Operation Mode:	WCDMA / HSDPA Band IV / TX / CH 1312	**Test Date:**	March 25, 2015
Temperature:	24℃	**Tested by:**	Dennis Li
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
67.8300	-49.67	0.94	-1.85	-52.46	-13.00	-39.46	V
153.1900	-72.85	1.44	0.94	-73.35	-13.00	-60.35	V
332.6400	-75.32	2.16	5.73	-71.75	-13.00	-58.75	V
500.4500	-78.4	2.7	5.9	-75.20	-13.00	-62.20	V
666.3200	-73.04	3.07	6.3	-69.81	-13.00	-56.81	V
773.0200	-78.64	3.28	6.29	-75.63	-13.00	-62.63	V
66.8600	-56.37	0.93	-1.89	-59.19	-13.00	-46.19	H
127.0000	-66.72	1.32	-1.63	-69.67	-13.00	-56.67	H
299.6600	-71.64	2.09	5.59	-68.14	-13.00	-55.14	H
458.7400	-72.74	2.6	5.87	-69.47	-13.00	-56.47	H
527.6100	-73.3	2.74	6.02	-70.02	-13.00	-57.02	H
624.6100	-69.73	2.96	6.15	-66.54	-13.00	-53.54	H

Remark:

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

Operation Mode:	WCDMA / HSDPA Band IV / TX / CH 1427	**Test Date:**	March 25, 2015
Temperature:	24℃	**Tested by:**	Dennis Li
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
64.9200	-49.63	0.92	-1.98	-52.53	-13.00	-39.53	V
243.4000	-76.59	1.82	5.43	-72.98	-13.00	-59.98	V
299.6600	-71.74	2.09	5.59	-68.24	-13.00	-55.24	V
459.7100	-75.67	2.6	5.88	-72.39	-13.00	-59.39	V
666.3200	-73.78	3.07	6.3	-70.55	-13.00	-57.55	V
816.6700	-79.25	3.37	6.2	-76.42	-13.00	-63.42	V
67.8300	-52.99	0.94	-1.85	-55.78	-13.00	-42.78	H
250.1900	-69.43	1.84	5.68	-65.59	-13.00	-52.59	H
365.6200	-73.02	2.29	5.76	-69.55	-13.00	-56.55	H
500.4500	-74.71	2.7	5.9	-71.51	-13.00	-58.51	H
624.6100	-70.25	2.96	6.15	-67.06	-13.00	-54.06	H
749.7400	-66.47	3.2	6.1	-63.57	-13.00	-50.57	H

Remark:

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

Operation Mode:	WCDMA / HSDPA Band IV / TX / CH 1513	**Test Date:**	March 25, 2015
Temperature:	24℃	**Tested by:**	Dennis Li
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
65.8900	-49.95	0.93	-1.93	-52.81	-13.00	-39.81	V
229.8200	-73.89	1.8	5.39	-70.30	-13.00	-57.30	V
299.6600	-70.98	2.09	5.59	-67.48	-13.00	-54.48	V
459.7100	-74.9	2.6	5.88	-71.62	-13.00	-58.62	V
516.9400	-78.17	2.7	6.07	-74.80	-13.00	-61.80	V
663.4100	-73.78	3.06	6.3	-70.54	-13.00	-57.54	V
65.8900	-51.48	0.93	-1.93	-54.34	-13.00	-41.34	H
250.1900	-70.09	1.84	5.68	-66.25	-13.00	-53.25	H
298.6900	-68.93	2.09	5.57	-65.45	-13.00	-52.45	H
415.0900	-74.11	2.45	5.86	-70.70	-13.00	-57.70	H
624.6100	-69.78	2.96	6.15	-66.59	-13.00	-53.59	H
666.3200	-73.35	3.07	6.3	-70.12	-13.00	-57.12	H

Remark:

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

Operation Mode:	WCDMA / HSUPA Band IV / TX / CH 1312	**Test Date:**	March 25, 2015
Temperature:	24℃	**Tested by:**	Dennis Li
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
64.9200	-51.41	0.92	-1.98	-54.31	-13.00	-41.31	V
222.0600	-77.54	1.77	5.34	-73.97	-13.00	-60.97	V
298.6900	-71.78	2.09	5.57	-68.30	-13.00	-55.30	V
416.0600	-76.29	2.46	5.85	-72.90	-13.00	-59.90	V
500.4500	-80.41	2.7	5.9	-77.21	-13.00	-64.21	V
666.3200	-73.24	3.07	6.3	-70.01	-13.00	-57.01	V
67.8300	-52.5	0.94	-1.85	-55.29	-13.00	-42.29	H
120.2100	-63.22	1.27	-2.06	-66.55	-13.00	-53.55	H
299.6600	-69.49	2.09	5.59	-65.99	-13.00	-52.99	H
365.6200	-72.88	2.29	5.76	-69.41	-13.00	-56.41	H
624.6100	-70.26	2.96	6.15	-67.07	-13.00	-54.07	H
749.7400	-67.83	3.2	6.1	-64.93	-13.00	-51.93	H

Remark:

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

Operation Mode:	WCDMA / HSUPA Band IV / TX / CH 1427	**Test Date:**	March 25, 2015
Temperature:	24℃	**Tested by:**	Dennis Li
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
66.8600	-48.79	0.93	-1.89	-51.61	-13.00	-38.61	V
186.1700	-70.14	1.62	3.85	-67.91	-13.00	-54.91	V
298.6900	-69.72	2.09	5.57	-66.24	-13.00	-53.24	V
416.0600	-72.47	2.46	5.85	-69.08	-13.00	-56.08	V
576.1100	-77.45	2.88	6.05	-74.28	-13.00	-61.28	V
663.4100	-70.99	3.06	6.3	-67.75	-13.00	-54.75	V
68.8000	-53.15	0.95	-1.81	-55.91	-13.00	-42.91	H
132.8200	-66.39	1.36	-1.07	-68.82	-13.00	-55.82	H
250.1900	-69.93	1.84	5.68	-66.09	-13.00	-53.09	H
354.9500	-70.59	2.25	5.75	-67.09	-13.00	-54.09	H
624.6100	-69.22	2.96	6.15	-66.03	-13.00	-53.03	H
749.7400	-67.33	3.2	6.1	-64.43	-13.00	-51.43	H

Remark:

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

Operation Mode:	WCDMA / HSUPA Band IV / TX / CH 1513	**Test Date:**	March 25, 2015
Temperature:	24℃	**Tested by:**	Dennis Li
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
64.9200	-51.02	0.92	-1.98	-53.92	-13.00	-40.92	V
229.8200	-75.69	1.8	5.39	-72.10	-13.00	-59.10	V
298.6900	-72.39	2.09	5.57	-68.91	-13.00	-55.91	V
416.0600	-75.08	2.46	5.85	-71.69	-13.00	-58.69	V
597.4500	-79.41	2.9	6.35	-75.96	-13.00	-62.96	V
666.3200	-74.64	3.07	6.3	-71.41	-13.00	-58.41	V
65.8900	-51.76	0.93	-1.93	-54.62	-13.00	-41.62	H
216.2400	-75.36	1.74	5.36	-71.74	-13.00	-58.74	H
299.6600	-69.66	2.09	5.59	-66.16	-13.00	-53.16	H
432.5500	-75.22	2.5	5.82	-71.90	-13.00	-58.90	H
527.6100	-73.59	2.74	6.02	-70.31	-13.00	-57.31	H
624.6100	-70.25	2.96	6.15	-67.06	-13.00	-54.06	H

Remark:

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

Above 1GHz

Operation Mode:	WCDMA Band IV / TX / CH 1312	**Test Date:**	March 25, 2015
Temperature:	24℃	**Tested by:**	Dennis Li
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1714.000	-53.5	5.14	5.91	-52.73	-13.00	-39.73	V
3429.000	-48.18	7.66	8.69	-47.15	-13.00	-34.15	V
N/A							
3422.000	-51.45	7.64	8.67	-50.42	-13.00	-37.42	H
5809.000	-50.72	10.42	10.86	-50.28	-13.00	-37.28	H
N/A							

Remark:

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

Operation Mode:	WCDMA Band IV / TX / CH 1427	**Test Date:**	March 25, 2015
Temperature:	24℃	**Tested by:**	Dennis Li
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3471.000	-48.16	7.78	8.81	-47.13	-13.00	-34.13	V
4941.000	-51.32	9.32	10.51	-50.13	-13.00	-37.13	V
N/A							
3471.000	-51.36	7.78	8.81	-50.33	-13.00	-37.33	H
5158.000	-50.98	9.51	10.66	-49.83	-13.00	-36.83	H
N/A							

Remark:

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

Operation Mode: WCDMA Band IV / TX / CH 1513 **Test Date:** March 25, 2015

Temperature: 24℃ **Tested by:** Dennis Li

Humidity: 56 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3506.000	-46.67	7.88	8.91	-45.64	-13.00	-32.64	V
5081.000	-52.34	9.44	10.63	-51.15	-13.00	-38.15	V
N/A							
3506.000	-49.9	7.88	8.91	-48.87	-13.00	-35.87	H
5830.000	-50.43	10.41	10.87	-49.97	-13.00	-36.97	H
N/A							

Remark:

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

Operation Mode:	WCDMA / HSDPA Band IV / TX / CH 1312	**Test Date:**	March 25, 2015
Temperature:	24℃	**Tested by:**	Dennis Li
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1714.000	-53.41	5.14	5.91	-52.64	-13.00	-39.64	V
3429.000	-47.14	7.66	8.69	-46.11	-13.00	-33.11	V
N/A							
3429.000	-51.95	7.66	8.69	-50.92	-13.00	-37.92	H
5445.000	-51.68	9.87	10.78	-50.77	-13.00	-37.77	H
N/A							

Remark:

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

Operation Mode:	WCDMA / HSDPA Band IV / TX / CH 1427	**Test Date:**	March 25, 2015
Temperature:	24℃	**Tested by:**	Dennis Li
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3471.000	-49.08	7.78	8.81	-48.05	-13.00	-35.05	V
4451.000	-51.68	8.78	9.76	-50.70	-13.00	-37.70	V
N/A							
3471.000	-51.69	7.78	8.81	-50.66	-13.00	-37.66	H
5417.000	-49.94	9.84	10.77	-49.01	-13.00	-36.01	H
N/A							

Remark:

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

Operation Mode:	WCDMA / HSDPA Band IV / TX / CH 1513	**Test Date:**	March 25, 2015
Temperature:	24℃	**Tested by:**	Dennis Li
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3506.000	-47.74	7.88	8.91	-46.71	-13.00	-33.71	V
5494.000	-52.03	9.93	10.8	-51.16	-13.00	-38.16	V
N/A							
3506.000	-50.06	7.88	8.91	-49.03	-13.00	-36.03	H
5690.000	-50.56	10.16	10.84	-49.88	-13.00	-36.88	H
N/A							

Remark:

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

Operation Mode:	WCDMA / HSUPA Band IV / TX / CH 1312	**Test Date:**	March 25, 2015
Temperature:	24℃	**Tested by:**	Dennis Li
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1714.000	-54.09	5.14	5.91	-53.32	-13.00	-40.32	V
3429.000	-47.24	7.66	8.69	-46.21	-13.00	-33.21	V
N/A							
3422.000	-52.84	7.64	8.67	-51.81	-13.00	-38.81	H
4738.000	-51.74	9.2	10.18	-50.76	-13.00	-37.76	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.*

Operation Mode:	WCDMA / HSUPA Band IV / TX / CH 1427	**Test Date:**	March 25, 2015
Temperature:	24℃	**Tested by:**	Dennis Li
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3471.000	-49.16	7.78	8.81	-48.13	-13.00	-35.13	V
4899.000	-51.52	9.26	10.44	-50.34	-13.00	-37.34	V
N/A							
3471.000	-50.69	7.78	8.81	-49.66	-13.00	-36.66	H
4780.000	-50.43	9.28	10.25	-49.46	-13.00	-36.46	H
N/A							

Remark:

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

Operation Mode:	WCDMA / HSUPA Band IV / TX / CH 1513	**Test Date:**	March 25, 2015
Temperature:	24℃	**Tested by:**	Dennis Li
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	S.G. (dBm)	Cable loss (dB)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3506.000	-46.79	7.88	8.91	-45.76	-13.00	-32.76	V
5676.000	-51.73	10.17	10.84	-51.06	-13.00	-38.06	V
N/A							
3506.000	-50.25	7.88	8.91	-49.22	-13.00	-36.22	H
5060.000	-51.45	9.43	10.62	-50.26	-13.00	-37.26	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.*