

TEST REPORT

Application No.: KSEM2009001145CR
FCC ID: 2AD6I-SG-6000-E1100
Applicant: Hillstone Networks Corp.
Address of Applicant: 5201 Great America Pkwy, suite 420, Santa Clara, CA 95054
Manufacturer: Hillstone Networks Co., Ltd.
Address of Manufacturer: NO.181,Jingrun Road, High-Tech Zone, Suzhou
Factory: Sanmina-SCI Systems (Kunshan) Co., Ltd.
Address of Factory: 312 Qing Yang South Road Kun shan, Jiangsu Province
Equipment Under Test (EUT):
EUT Name: Firewall Appliance
Model No.: SG-6000-E1100WG4,SG-6000-E1100W,SG-6000-E1100G4,SG-6000-E1100WG4-IN,SG-6000-E1100W-IN,SG-6000-E1100G4-IN
 □ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.

Trade mark:



Standard(s) : 47 CFR Part 2
 47 CFR Part 22
 47 CFR Part 24
 47 CFR Part 27

Date of Receipt: 2020-09-03
Date of Test: 2020-09-15 to 2020-10-04
Date of Issue: 2020-10-14

Test Result:	Pass
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* In the configuration tested, the EUT complied with the standards specified above.

Eric Lin
EMC Lab Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.



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Revision Record			
Version	Description	Date	Remark
00	Original	2020-10-14	/

Authorized for issue by:			
		<i>Damon Zhou</i>	
		Damon Zhou / Project Engineer	
		<i>Eric Lin</i>	
		Eric Lin / Reviewer	

2 Test Summary

Test Item	FCC Rule No.	Requirements	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046, §22.913, §24.232 §27.50(a) §27.50(h)(2)	ERP≤7W(LTE Band 5) EIRP≤ 2W(LTE Band 38, 41) EIRP≤250mW/5MHz or 50mW/MHz (LTE Band 40)	PASS
Peak-Average Ratio	§24.232	≤13dB	PASS
Modulation Characteristics	§2.1047	Digital modulation	PASS
Bandwidth	§2.1049(h)	OBW:No limit EBW: No limit	PASS
Band Edge Compliance	§2.1051, §22.917, §24.238 §27.53(a)(4) §27.53(m)(4)(6)	≤ -13dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block(LTE Band5,38,40,41)	PASS
Spurious emissions at antenna terminals	§2.1051, §22.917, §24.238 §27.53(a)(4) §27.53(m)(4)(6)	≤ -13dBm(LTE Band5) ≤ -25dBm(LTE Band38,41) ≤ -40dBm(LTE Band40)	PASS
Field strength of spurious radiation	§2.1051, §22.917, §24.238 §27.53(a)(4) §27.53(m)(4)(6)	≤ -13dBm(LTE Band5) ≤ -25dBm(LTE Band38,41) ≤ -40dBm(LTE Band40)	PASS
Frequency stability	§2.1055, §22.355, §24.235 §27.54	≤ ±2.5ppm.	PASS

Declaration of EUT Family Grouping:

Note: There are series models mentioned in this report, and they are the similar in electrical and electronic characters. Only the model SG-6000-E1100WG4 was tested since their differences were the model number and appearance.

3 Contents

	Page
1 COVER PAGE	1
2 TEST SUMMARY	3
3 CONTENTS	4
4 GENERAL INFORMATION	6
4.1 Details of E.U.T.	6
4.2 Test Frequency	7
4.3 Test Environment	8
4.4 Description of Support Units	8
4.5 Measurement Uncertainty	8
4.6 Test Location	9
4.7 Test Facility	9
4.8 Deviation from Standards	9
4.9 Abnormalities from Standard Conditions	9
5 EQUIPMENT LIST	10
6 RADIO SPECTRUM MATTER TEST RESULTS	11
6.1 Effective (Isotropic) Radiated Power Output Data	11
6.1.1 E.U.T. Operation	11
6.1.2 Test Setup Diagram	11
6.1.3 Measurement Data	11
6.2 Peak-Average Ratio	12
6.2.1 E.U.T. Operation	12
6.2.2 Test Setup Diagram	12
6.2.3 Measurement Data	12
6.3 Bandwidth	13
6.3.1 E.U.T. Operation	13
6.3.2 Test Setup Diagram	13
6.3.3 Measurement Data	13
6.4 Band Edge Compliance	14
6.4.1 E.U.T. Operation	14
6.4.2 Test Setup Diagram	14
6.4.3 Measurement Data	14
6.5 Spurious emissions at antenna terminals	15
6.5.1 E.U.T. Operation	15
6.5.2 Test Setup Diagram	15
6.5.3 Measurement Data	15
6.6 Field strength of spurious radiation	16
6.6.1 E.U.T. Operation	16
6.6.2 Test Setup Diagram	16
6.6.3 Measurement Procedure and Data	17
6.7 Frequency stability	23
6.7.1 E.U.T. Operation	23
6.7.2 Test Setup Diagram	23
6.7.3 Measurement Data	23
6.8 Modulation Characteristics	24
6.8.1 E.U.T. Operation	24
6.8.2 Test Setup Diagram	24
6.8.3 Measurement Data	24



7 TEST SETUP PHOTOGRAPHS25

8 EUT CONSTRUCTIONAL DETAILS25

4 General Information

4.1 Details of E.U.T.

Power supply:	DC 12V by adapter Adapter Model:ADP-36LH B INPUT:100-240V,1.2A,50-60Hz. OUTPUT:12V,3A
Test voltage:	AC 120V, 60Hz
Sample Type:	Portable production
LTE Operation Frequency Band:	LTE FDD Band 5 LTE TDD Band 38,40a,40b,41b,41c
Modulation Type:	QPSK, 16QAM
Antenna Type:	Dipole
Antenna Gain:	Band 5: 2.8dBi Band 38: 1.25dBi Band 40a: 1.45dBi Band 40b: 1.45dBi Band 41b: 2.21dBi Band 41c: 2.21 dBi
Extreme temp. Tolerance:	-20°C to +70°C
Extreme vol. Limits:	102VAC to 138VAC (nominal: 120V AC)
IMEI:	860461043120057

4.2 Test Frequency

Test mode:	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE FDD Band 5	1.4	824.7	836.5	848.3
	3	825.5	836.5	847.5
	5	826.5	836.5	846.5
	10	829.0	836.5	844.0
Test mode:	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE TDD Band 38	5	2572.5	2595.0	2617.5
	10	2575.0	2595.0	2615.0
	15	2577.5	2595.0	2612.5
	20	2580.0	2595.0	2610.0
Test mode:	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE TDD Band 40 (2305MHz-2315MHz)	5	2307.5	2310	2312.5
	10	/	2310	/
Test mode:	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE TDD Band 40 (2350MHz-2360MHz)	5	2352.5	2355	2357.5
	10	/	2355	/
Test mode:	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE TDD Band 41b	5	2557.5	2605.0	2652.5
	10	2560	2605.0	2650.0
	15	2562.5	2605.0	2647.5
	20	2565.0	2605.0	2645.0
Test mode:	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE TDD Band 41c	5	2547.5	2600.0	2652.5
	10	2550.0	2600.0	2650.0
	15	2552.5	2600.0	2647.5
	20	2555.0	2600.0	2645.0

4.3 Test Environment

Environment Parameter	Selected Values During Tests	
Relative Humidity	48%	
Atmospheric Pressure:	1015Pa	
Temperature:	TN	25 °C
Voltage:	VL	102 V
	VN	120 V
	VH	138 V

NOTE: VL= lower extreme test voltage
 VN= nominal voltage
 VH= upper extreme test voltage
 TN= normal temperature

4.4 Description of Support Units

The EUT has been tested independent unit.

4.5 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	8.4 x 10 ⁻⁸
2	Timeout	2s
3	Duty cycle	0.37%
4	Occupied Bandwidth	3%
5	RF conducted power	0.6dB
6	RF power density	2.84dB
7	Conducted Spurious emissions	0.75dB
8	RF Radiated power	4.6dB (Below 1GHz)
		4.1dB (Above 1GHz)
9	Radiated Spurious emission test	4.2dB (Below 30MHz)
		4.4dB (30MHz-1GHz)
		4.8dB (1GHz-18GHz)
		5.2dB (Above 18GHz)
10	Temperature test	1°C
11	Humidity test	3%
12	Supply voltages	1.5%
13	Time	3%

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

4.6 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

4.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L4354)**

CNAS has accredited Compliance Certification Services (Kunshan) Inc. to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 2541.01)**

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

- **FCC (Designation Number: CN1172)**

Compliance Certification Services Inc. has been recognized as an accredited testing laboratory.

Designation Number: CN1172.

- **ISED (CAB Identifier: CN0072)**

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development (ISED) Canada as an accredited testing laboratory.

CAB Identifier: CN0072.

- **VCCI (Member No.: 1938)**

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-1600, C-1707, T-1499, G-10216 respectively.

4.8 Deviation from Standards

None

4.9 Abnormalities from Standard Conditions

None

5 Equipment List

Item	Equipment	Manufacturer	Model	Serial Number	Cal Date	Cal. Due Date
Conducted Emission at Mains Terminals (150kHz-30MHz)						
1	EMI Test Receive	R&S	ESCI	100781	02/24/2020	02/23/2021
2	LISN	R&S	ENV216	101604	10/24/2019	10/23/2020
3	LISN	Schwarzbeck	NNLK 8129	8129-143	10/24/2019	10/23/2020
4	Pulse Limiter	R&S	ESH3-Z2	100609	02/24/2020	02/23/2021
5	CE test Cable	Thermax	/	14	02/24/2020	02/23/2021
RF Conducted Test						
1	Spectrum Analyzer	Agilent	E4446A	MY44020154	04/22/2020	04/21/2021
2	Spectrum Analyzer	Keysight	N9020A	MY55370209	12/19/2019	12/18/2020
3	Signal Generator	Agilent	E8257C	MY43321570	10/24/2019	10/23/2020
4	Vector Signal Generator	R&S	SMU 200A	102744	02/24/2020	02/23/2021
5	Universal Radio Communication Tester	R&S	CMU200	109525	12/19/2019	12/18/2020
6	Universal Radio Communication Tester	R&S	CMW500	159275	12/19/2019	12/18/2020
7	Power Meter	Anritsu	ML2495A	1445010	04/21/2020	04/20/2021
8	Switcher	CCSRF	FY562	KS301219	12/20/2019	12/19/2020
9	AC Power Source	EXTECH	6605	1570106	N.C.R	N.C.R
10	DC Power Supply	Agilent	E3632A	MY50340053	N.C.R	N.C.R
11	6dB Attenuator	Mini-Circuits	NAT-6-2W	15542-1	N.C.R	N.C.R
12	Power Divider	AISI	IOWOPE2068	PE2068	N.C.R	N.C.R
13	Filter	MICRO-TRONICS	BRM50701	5	N.C.R	N.C.R
14	Conducted test cable	/	RF01-RF04	/	04/21/2020	04/22/2021
15	Temp. / Humidity Chamber	TERCHY	MHK-120AK	X30109	04/21/2020	04/20/2021
RF Radiated Test						
1	Spectrum Analyzer	R&S	FSV40	101493	01/08/2020	01/07/2021
2	Signal Generator	Agilent	E8257C	MY43321570	10/24/2019	10/23/2020
3	Loop Antenna	Schwarzbeck	HXYZ9170	9170-108	02/24/2020	02/23/2021
4	Bilog Antenna	TESEQ	CBL 6112D	35403	06/22/2019	06/21/2021
5	Bilog Antenna	SCHWARZBECK	VULB9160	9160-3342	04/29/2019	04/28/2021
6	Horn-antenna(1-18GHz)	Schwarzbeck	BBHA9120D	267	11/04/2018	11/03/2020
7	Horn-antenna(1-18GHz)	ETS-LINDGREN	3117	00143290	02/25/2019	02/24/2021
8	Horn Antenna(18-40GHz)	Schwarzbeck	BBHA9170	BBHA9170171	02/27/2018	02/26/2021
9	Pre-Amplifier(30MHz~18GHz)	CCSRF	AMP1277	1	12/19/2019	12/18/2020
10	Pre-Amplifier(0.1~26.5GHz)	EMCI	EMC012645	980060	04/21/2020	04/20/2021
11	Low Pass Filter	MICRO-TRONICS	VLFX-950	RV142900829	N.C.R	N.C.R
12	High Pass Filter	Mini-Circuits	VHF-1200	15542	N.C.R	N.C.R
13	Filter (5450MHz~5770 MHz)	MICRO-TRONICS	BRC50704-01	2	N.C.R	N.C.R
14	Filter (5690 MHz~5930 MHz)	MICRO-TRONICS	BRC50705-01	4	N.C.R	N.C.R
15	Filter (5150 MHz~5350 MHz)	MICRO-TRONICS	BRC50703-01	2	N.C.R	N.C.R
16	Filter (885 MHz~915 MHz)	MICRO-TRONICS	BRM14698	1	N.C.R	N.C.R
17	Filter (815 MHz~860 MHz)	MICRO-TRONICS	BRM14697	1	N.C.R	N.C.R
18	Filter (1745 MHz~1910 MHz)	MICRO-TRONICS	BRM14700	1	N.C.R	N.C.R
19	Filter (1922 MHz~1977 MHz)	MICRO-TRONICS	BRM50715	1	N.C.R	N.C.R
20	Filter (2550 MHz)	MICRO-TRONICS	HPM13362	5	N.C.R	N.C.R
21	Filter (1532 MHz~1845 MHz)	MICRO-TRONICS	BRM50713	1	N.C.R	N.C.R
22	Filter (2.4GHz)	MICRO-TRONICS	BRM50701	5	N.C.R	N.C.R
23	RE test cable	/	RE01-RE04	/	04/21/2020	04/22/2021

6 Radio Spectrum Matter Test Results

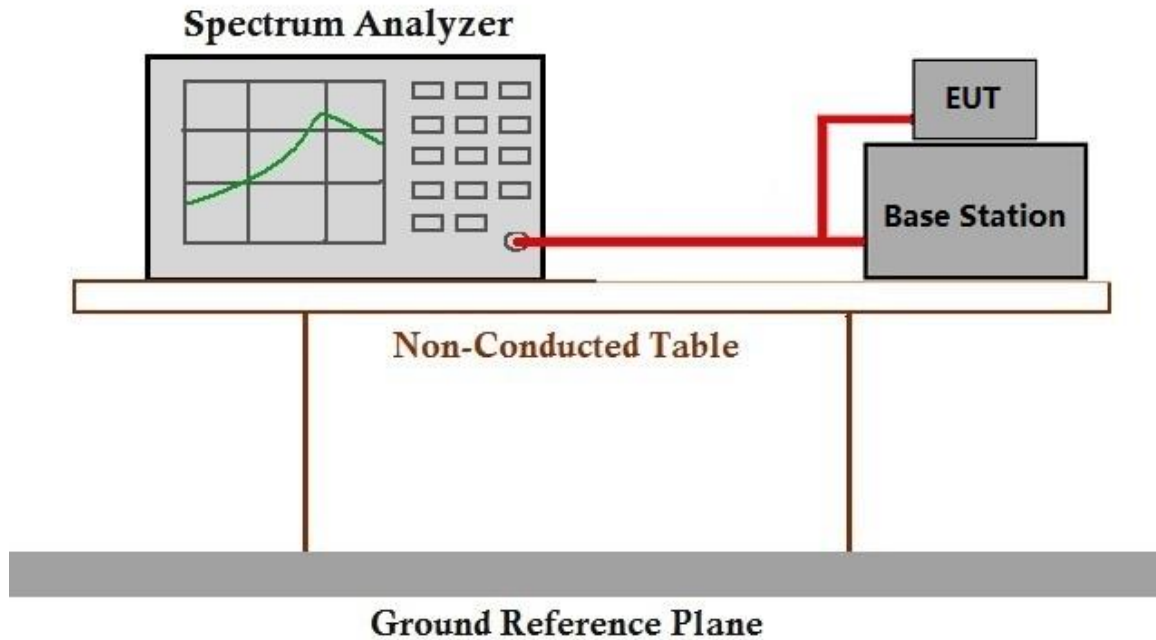
6.1 Effective (Isotropic) Radiated Power Output Data

Test Requirement: §2.1046, §22.913, §24.232, §27.50(a)(3), §27.50(h)(2)
 Test Method: ANSI C63.26, KDB 971168 D01 v03
 Limit: ERP≤7W(LTE Band 5)
 EIRP≤ 2W(LTE Band 38,41)
 EIRP≤250mW/5MHz or 50mW/MHz (LTE Band 40)

6.1.1 E.U.T. Operation

Operating Environment:
 Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
 Test mode: a: Tx mode, Keep the EUT in transmitting mode.

6.1.2 Test Setup Diagram



6.1.3 Measurement Data

Please refer to Appendix A for Effective (Isotropic) Radiated Power Output Data-LTE

Remark: The EIRP of LTE band 40 is tested every 5MHz channel power

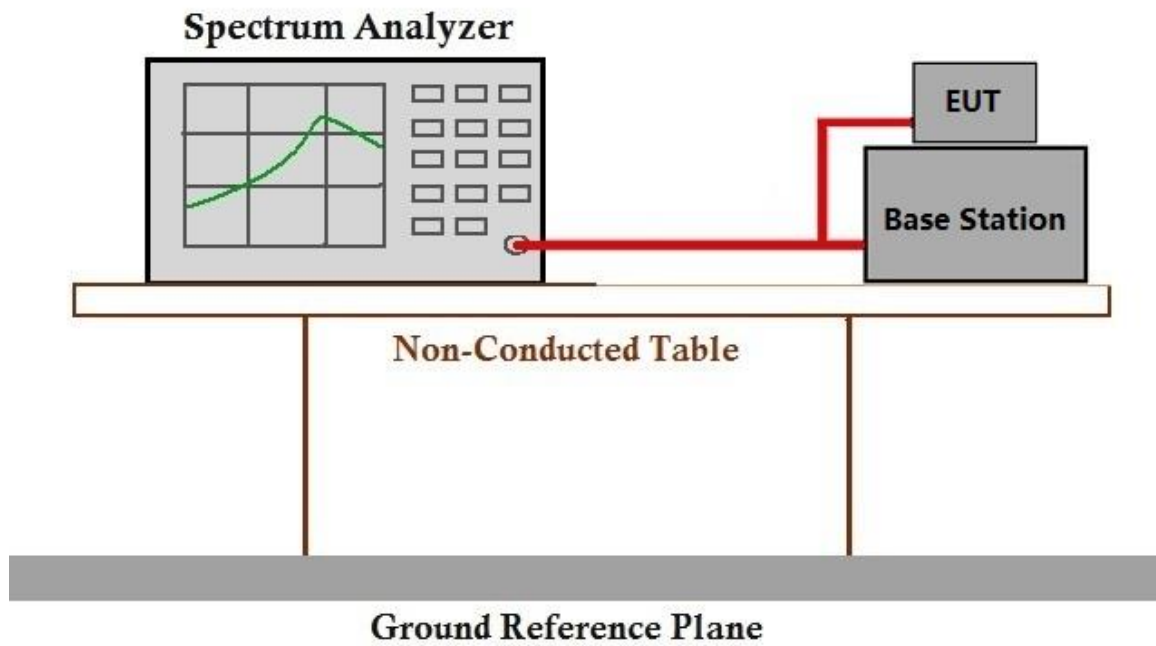
6.2 Peak-Average Ratio

Test Requirement: §24.232
 Test Method: ANSI C63.26, KDB 971168 D01 v03
 Limit: ≤13dB

6.2.1 E.U.T. Operation

Operating Environment:
 Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
 Test mode: a: Tx mode, Keep the EUT in transmitting mode.

6.2.2 Test Setup Diagram



6.2.3 Measurement Data

Please refer to Appendix B- Peak-Average Ratio-LTE

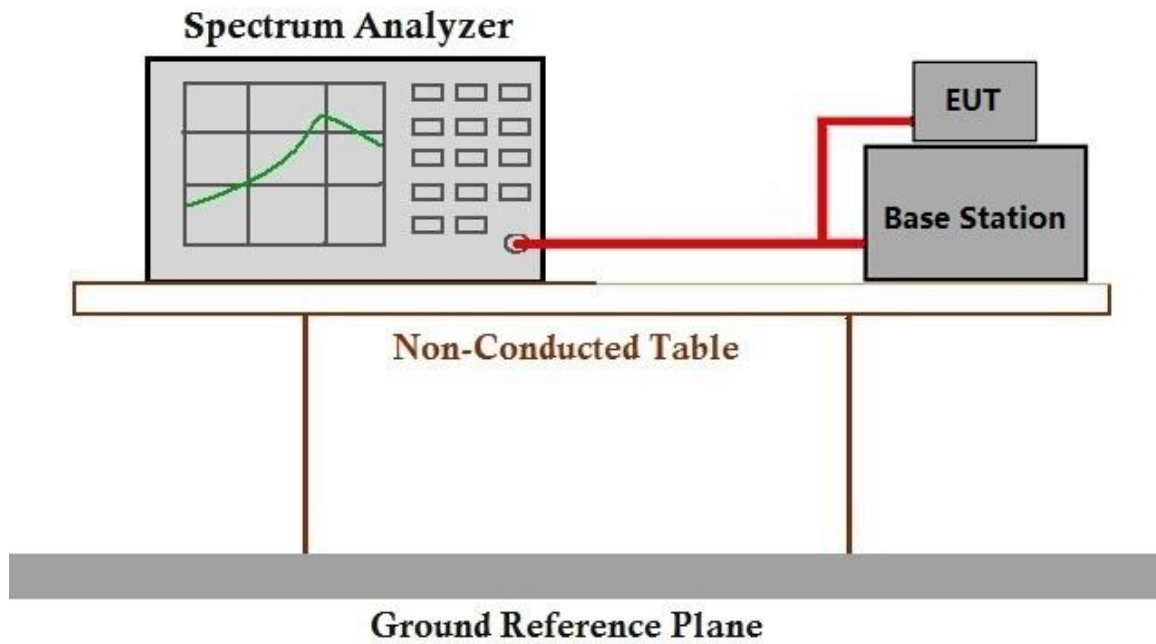
6.3 Bandwidth

Test Requirement: §2.1049(h)
 Test Method: ANSI C63.26, KDB 971168 D01 v03
 Limit: OBW: No limit
 EBW: No limit

6.3.1 E.U.T. Operation

Operating Environment:
 Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
 Test mode: a: Tx mode, Keep the EUT in transmitting mode.

6.3.2 Test Setup Diagram



6.3.3 Measurement Data

Please refer to Appendix C- Bandwidth-LTE

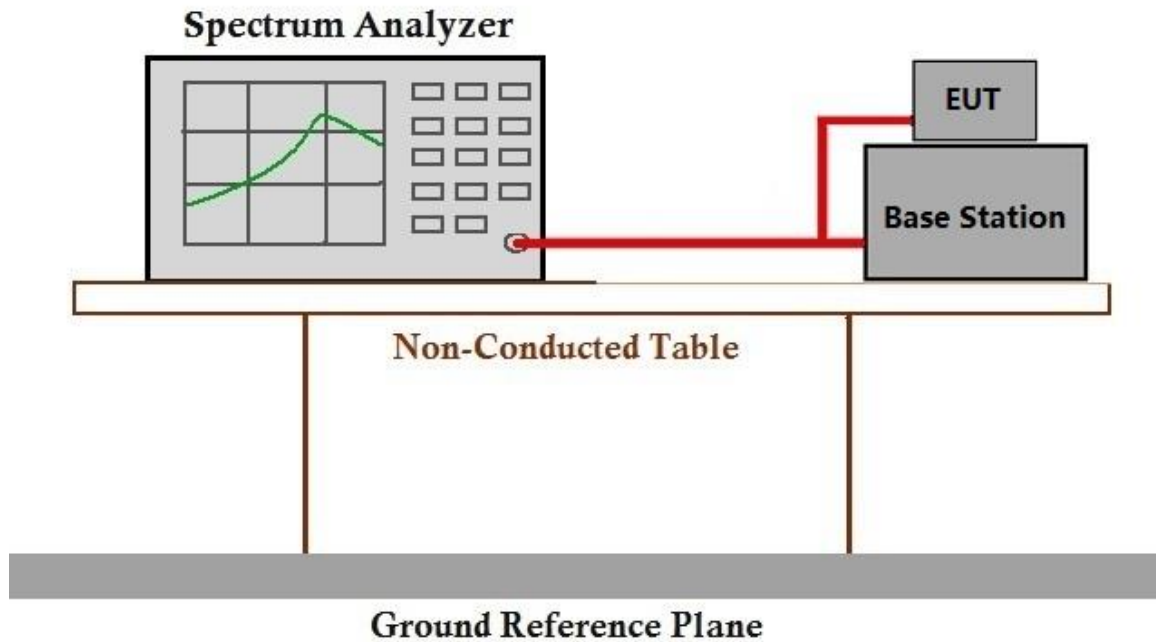
6.4 Band Edge Compliance

Test Requirement: §2.1051, §22.917, §24.238, §27.53(a)(4), §27.54(m)(4)(6)
 Test Method: ANSI C63.26, KDB 971168 D01 v03
 Limit: ≤ -13dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block(LTE Band5,38,40,41)

6.4.1 E.U.T. Operation

Operating Environment:
 Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
 Test mode: a: Tx mode, Keep the EUT in transmitting mode.

6.4.2 Test Setup Diagram



6.4.3 Measurement Data

Please refer to Appendix D- Band Edge & Spurious emissions at antenna terminals-LTE

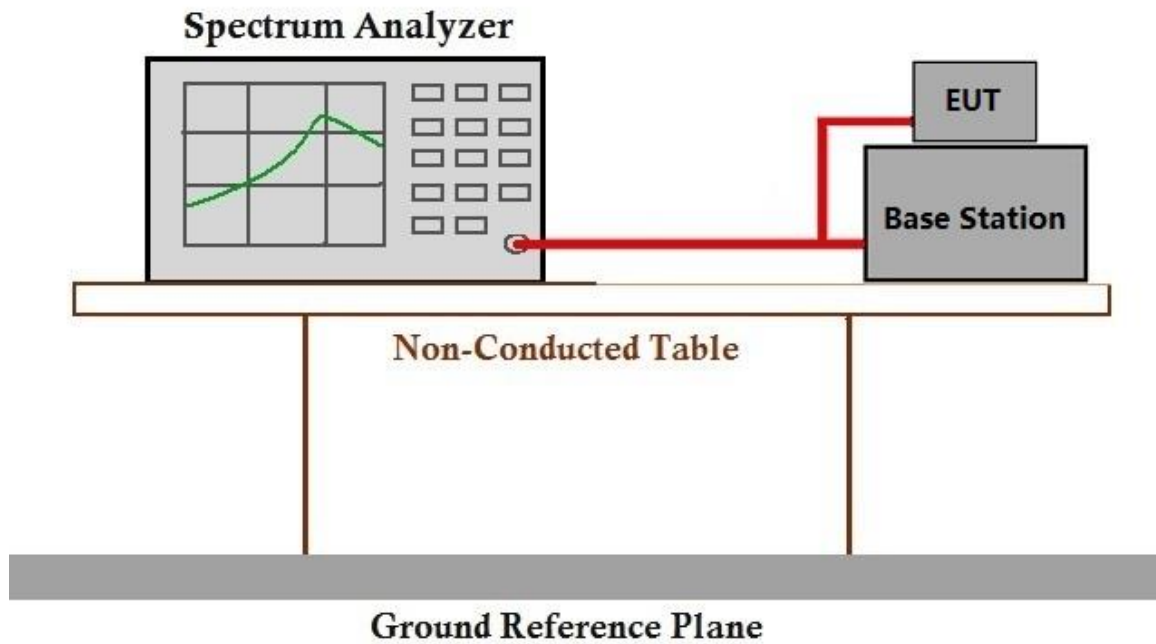
6.5 Spurious emissions at antenna terminals

Test Requirement: §2.1051, §22.917, §24.238, §27.53(a)(4), §27.53(m)(4)(6)
 Test Method: ANSI C63.26, KDB 971168 D01 v03
 Limit: ≤ -13dBm(LTE Band5)
 ≤ -25dBm(LTE Band38,41)
 ≤ -40dBm(LTE Band40)

6.5.1 E.U.T. Operation

Operating Environment:
 Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
 Test mode: a: Tx mode, Keep the EUT in transmitting mode.

6.5.2 Test Setup Diagram



6.5.3 Measurement Data

Please refer to Appendix D- Band Edge & Spurious emissions at antenna terminals-LTE

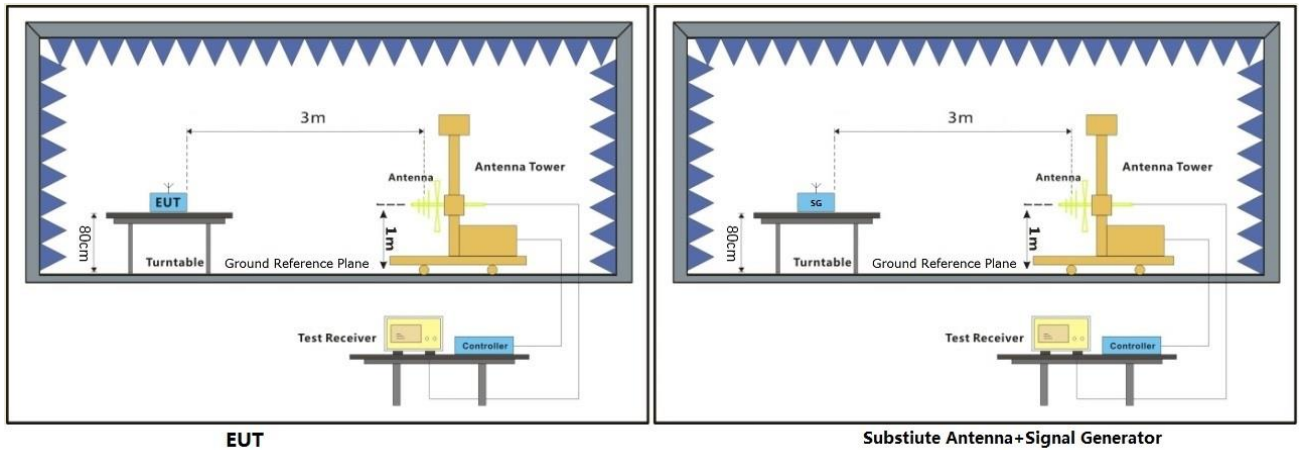
6.6 Field strength of spurious radiation

Test Requirement: §2.1051, §22.917, §24.238, §27.53(a)(4), §27.53(m)(4)(6)
 Test Method: ANSI C63.26, KDB 971168 D01 v03
 Limit: $\leq -13\text{dBm}$ (LTE Band5)
 $\leq -25\text{dBm}$ (LTE Band38,41)
 $\leq -40\text{dBm}$ (LTE Band40)

6.6.1 E.U.T. Operation

Operating Environment:
 Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
 Test mode: a: Tx mode, Keep the EUT in transmitting mode.

6.6.2 Test Setup Diagram



6.6.3 Measurement Procedure and Data

Test Procedure:

- (1) On a test site, the EUT shall be placed on a turntable and in the position closest to the normal use as declared by the user.
- (2) The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- (3) The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
- (4) The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
- (5) The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
- (6) The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- (7) The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
- (8) The maximum signal level detected by the measuring receiver shall be noted.
- (9) The measurement shall be repeated with the test antenna set to horizontal polarization.
- (10) Replace the antenna with a proper Antenna (substitution antenna).
- (11) The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
- (12) The substitution antenna shall be connected to a calibrated signal generator.
- (13) If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- (14) The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
- (15) The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
- (16) The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
- (17) The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

LTE BAND 5-Low channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
1658.000	-52.98	-13	-39.98	Horizontal
2487.000	-59.02	-13	-46.02	Horizontal
3316.000	-53.56	-13	-40.56	Horizontal
1658.000	-53.25	-13	-40.25	Vertical
2487.000	-57.92	-13	-44.92	Vertical
3316.000	-55.05	-13	-42.05	Vertical

LTE BAND 5-Middle channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
1673.000	-54.35	-13	-41.35	Horizontal
2509.500	-58.10	-13	-45.10	Horizontal
3346.000	-56.66	-13	-43.66	Horizontal
1673.000	-57.59	-13	-44.59	Vertical
2509.500	-58.48	-13	-45.48	Vertical
3346.000	-58.49	-13	-45.49	Vertical

LTE BAND 5-High channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
1688.000	-54.89	-13	-41.89	Horizontal
2532.000	-62.68	-13	-49.68	Horizontal
3376.000	-55.38	-13	-42.38	Horizontal
1688.000	-53.22	-13	-40.22	Vertical
2532.000	-62.50	-13	-49.50	Vertical
3376.000	-56.10	-13	-43.10	Vertical

LTE BAND 38-Low channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
5160.000	-58.14	-25	-33.14	Horizontal
7740.000	-60.72	-25	-35.72	Horizontal
10320.000	-56.65	-25	-31.65	Horizontal
5160.000	-51.74	-25	-26.74	Vertical
7740.000	-60.04	-25	-35.04	Vertical
10320.000	-54.87	-25	-29.87	Vertical

LTE BAND 38-Middle channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
5190.000	-58.33	-25	-33.33	Horizontal
7785.000	-59.31	-25	-34.31	Horizontal
10380.000	-56.64	-25	-31.64	Horizontal
5190.000	-58.93	-25	-33.93	Vertical
7785.000	-57.53	-25	-32.53	Vertical
10380.000	-59.66	-25	-34.66	Vertical

LTE BAND 38-High channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
5520.000	-61.29	-25	-36.29	Horizontal
7830.000	-59.18	-25	-34.18	Horizontal
10440.000	-56.29	-25	-31.29	Horizontal
5520.000	-61.33	-25	-36.33	Vertical
7830.000	-60.59	-25	-35.59	Vertical
10440.000	-54.58	-25	-29.58	Vertical

LTE BAND 40a-Low channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
4615.000	-59.54	-40	-19.54	Horizontal
6922.500	-58.37	-40	-18.37	Horizontal
9230.000	-55.31	-40	-15.31	Horizontal
4615.000	-55.49	-40	-15.49	Vertical
6922.500	-59.06	-40	-19.06	Vertical
9230.000	-56.28	-40	-16.28	Vertical

LTE BAND 40a-Middle channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
4620.000	-53.30	-40	-13.30	Horizontal
6930.000	-61.12	-40	-21.12	Horizontal
9240.000	-55.88	-40	-15.88	Horizontal
4620.000	-59.59	-40	-19.59	Vertical
6930.000	-58.83	-40	-18.83	Vertical
9240.000	-55.27	-40	-15.27	Vertical

LTE BAND 40a-High channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
4625.000	-53.02	-40	-13.02	Horizontal
6937.500	-63.54	-40	-13.54	Horizontal
9250.000	-57.04	-40	-17.04	Horizontal
4625.000	-51.55	-40	-11.55	Vertical
6937.500	-61.18	-40	-11.18	Vertical
9250.000	-56.99	-40	-16.99	Vertical

LTE BAND 40b-Low channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
4615.000	-60.01	-40	-20.01	Horizontal
6922.500	-60.21	-40	-20.21	Horizontal
9230.000	-56.08	-40	-16.08	Horizontal
4615.000	-53.06	-40	-13.06	Vertical
6922.500	-62.27	-40	-22.27	Vertical
9230.000	-58.20	-40	-18.20	Vertical

LTE BAND 40b-Middle channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
4705.000	-61.05	-40	-21.05	Horizontal
7057.500	-59.58	-40	-19.58	Horizontal
9410.000	-54.98	-40	-14.98	Horizontal
4705.000	-60.61	-40	-20.61	Vertical
7057.500	-63.21	-40	-23.21	Vertical
9410.000	-53.48	-40	-13.48	Vertical

LTE BAND 40b-High channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
4715.000	-51.54	-40	-11.54	Horizontal
7072.500	-60.70	-40	-20.70	Horizontal
9430.000	-57.55	-40	-17.55	Horizontal
4715.000	-58.89	-40	-18.89	Vertical
7072.500	-62.01	-40	-22.01	Vertical
9430.000	-55.34	-40	-15.34	Vertical

LTE BAND 41a-Low channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
5130.000	-56.38	-25	-31.38	Horizontal
7695.000	-60.15	-25	-35.15	Horizontal
10260.000	-59.77	-25	-34.77	Horizontal
5130.000	-53.44	-25	-28.44	Vertical
7695.000	-59.84	-25	-34.84	Vertical
10260.000	-56.26	-25	-31.26	Vertical

LTE BAND 41a-Middle channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
5210.000	-54.89	-25	-29.89	Horizontal
7815.000	-63.4	-25	-38.4	Horizontal
10420.000	-54.83	-25	-29.83	Horizontal
5210.000	-61.15	-25	-36.15	Vertical
7815.000	-59.26	-25	-34.26	Vertical
10420.000	-52.96	-25	-27.96	Vertical

LTE BAND 41a-High channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
5290.000	-60.92	-25	-35.92	Horizontal
7935.000	-60.01	-25	-35.01	Horizontal
10580.000	-52.61	-25	-27.61	Horizontal
5290.000	-61.37	-25	-36.37	Vertical
7935.000	-61.46	-25	-36.46	Vertical
10580.000	-56.19	-25	-31.19	Vertical

LTE BAND 41b-Low channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
5110.000	-52.97	-25	-27.97	Horizontal
7665.000	-62.52	-25	-37.52	Horizontal
10220.000	-52.78	-25	-27.78	Horizontal
5110.000	-54.74	-25	-29.74	Vertical
7665.000	-59.52	-25	-34.52	Vertical
10220.000	-54.22	-25	-29.22	Vertical

LTE BAND 41b-Middle channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
5200.000	-52.25	-25	-27.25	Horizontal
7800.000	-61.56	-25	-36.56	Horizontal
10400.000	-58.09	-25	-33.09	Horizontal
5200.000	-54.41	-25	-29.41	Vertical
7800.000	-58.9	-25	-33.9	Vertical
10400.000	-55.56	-25	-30.56	Vertical

LTE BAND 41b-High channel				
Frequency (MHz)	Level (dBm)	Limit (dBm)	Over Limit (dB)	Polarization
5290.000	-57.77	-25	-32.77	Horizontal
7935.000	-61.12	-25	-36.12	Horizontal
10580.000	-56.29	-25	-31.29	Horizontal
5290.000	-60.61	-25	-35.61	Vertical
7935.000	-59.94	-25	-34.94	Vertical
10580.000	-56.75	-25	-31.75	Vertical

Remark:

We have tested all modulation and all Bandwidth , but only the worst case data presented in this report.

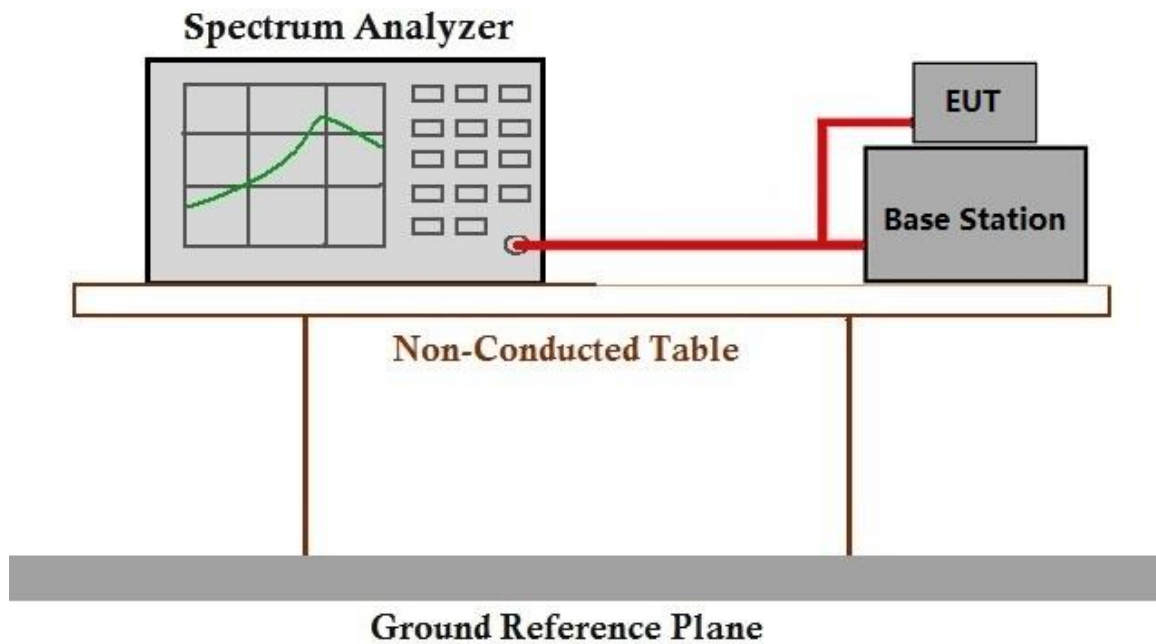
6.7 Frequency stability

Test Requirement: §2.1055, §22.355, §24.235, §27.54
 Test Method: ANSI C63.26, KDB 971168 D01 v03
 Limit: $\leq \pm 2.5\text{ppm}$.

6.7.1 E.U.T. Operation

Operating Environment:
 Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
 Test mode: a: Tx mode, Keep the EUT in transmitting mode.

6.7.2 Test Setup Diagram



6.7.3 Measurement Data

Please refer to Appendix E- Frequency stability-LTE

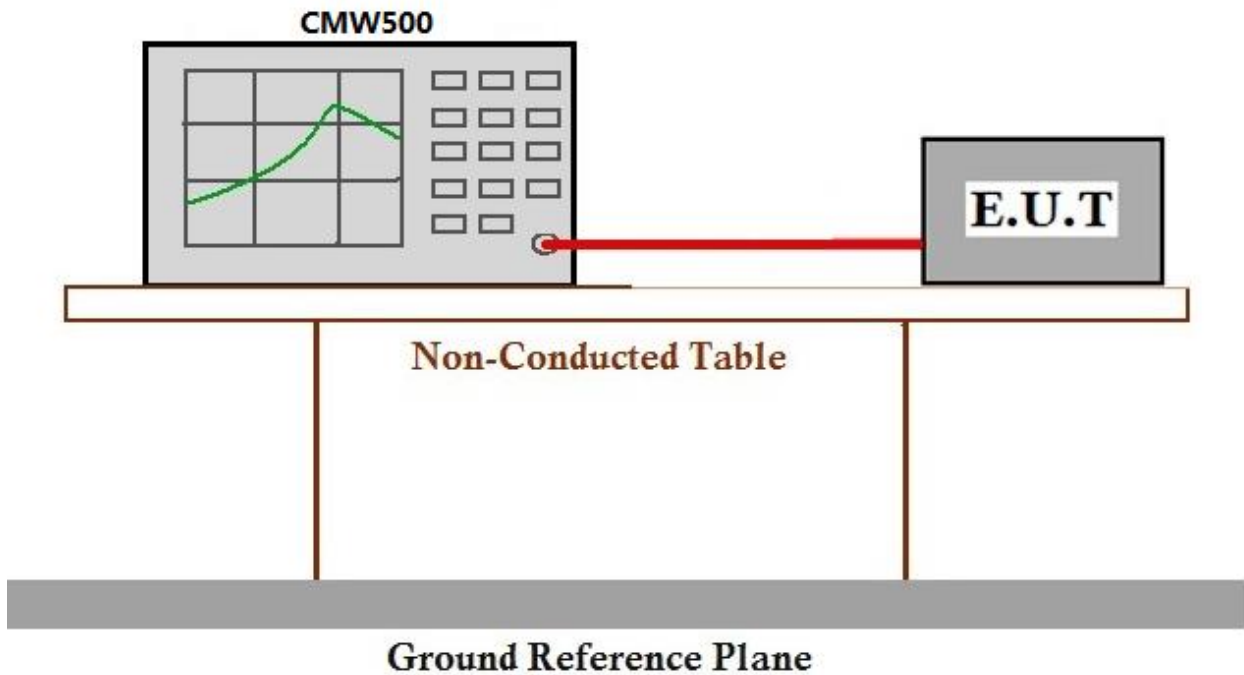
6.8 Modulation Characteristics

Test Requirement: §2.1047
Test Method: ANSI C63.26
Limit: Digital modulation

6.8.1 E.U.T. Operation

Operating Environment:
Temperature: 22.7 °C Humidity: 68.2 % RH Atmospheric Pressure: 1030 mbar
Test mode: a: Tx mode, Keep the EUT in transmitting mode.

6.8.2 Test Setup Diagram



6.8.3 Measurement Data

Please refer to Appendix F- Modulation Characteristics-LTE

7 Test Setup Photographs

Refer to the < Test Setup photos-FCC>.

8 EUT Constructional Details

Refer to the < External Photos > & < Internal Photos >.

- End of the Report -