



FCC ID: 2ARCQ-EM7565
Report No.: T180821D09-RP5

Page 1 / 28
Rev. 01

FCC TEST REPORT

For

Nodegrid

Model No.: SR

Trade Name: ZPE

Issued to

**ZPE Systems, Inc.
46757 Fremont Blvd., Fremont, CA 94538, USA**

Issued by

**Compliance Certification Services Inc.
Wugu Laboratory
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)
Issued Date: November 29, 2018**

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.
除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部分複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	November 29, 2018	Initial Issue	ALL	Allison Chen
01	December 21, 2018	1. Revised description of test modes in section 4.1. 2. Revised test condition in section 4.2. 3. Revised EIPR Power in section 2. 4. Revised test data in section 8.	P.5, P.7-8, P.15-28	Allison Chen

TABLE OF CONTENTS

1	TEST RESULT CERTIFICATION	4
2	EUT DESCRIPTION	5
3	TEST SUMMARY	6
4	TEST METHODOLOGY	7
4.1.	DESCRIPTION OF TEST TYPE	7
4.2.	THE WORST MODE OF MEASUREMENT	8
5	INSTRUMENT CALIBRATION	9
5.1.	MEASURING INSTRUMENT CALIBRATION	9
5.2.	MEASUREMENT EQUIPMENT USED	9
5.3.	MEASUREMENT UNCERTAINTY	10
6	FACILITIES AND ACCREDITATIONS	11
6.1.	FACILITIES	11
6.2.	EQUIPMENT	11
7	SETUP OF EQUIPMENT UNDER TEST	12
7.1.	SETUP CONFIGURATION OF EUT	12
7.2.	SUPPORT EQUIPMENT	12
8	TEST PROCEDURE AND RESULT	13
8.1.	RADIATED EMISSIONS	13
8.2.	TRANSMITTER RADIATED EMISSIONS ABOVE 1GHZ	19
8.3.	EIRP MEASUREMENT	25
APPENDIX A PHOTOGRAPHS OF TEST SETUP		A-1
APPENDIX 1 - PHOTOGRAPHS OF EUT		

Report No.: T180821D09-RP5

1 TEST RESULT CERTIFICATION

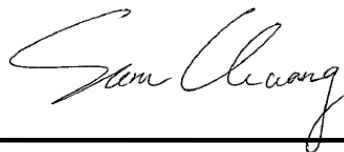
Applicant:	ZPE Systems, Inc. 46757 Fremont Blvd., Fremont, CA 94538, USA
Manufacturer:	ZPE Systems, Inc. 46757 Fremont Blvd., Fremont, CA 94538, USA
Equipment Under Test:	Nodegrid
Trade Name:	ZPE
Model:	SR
Tested:	September 28 ~ October 2, 2018; December 20, 2018

Deviation from Applicable Standard
None

The above equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved by

Tested by




Sam Chuang
Manager
Compliance Certification Services Inc.

Jerry Chuang
Engineer
Compliance Certification Services Inc.

2 EUT DESCRIPTION

Product	Nodegrid		
Model No.	SR		
Model Discrepancy	N/A		
Trade Name	ZPE		
Received Date	August 21, 2018		
Power Supply	Power from AC adapter or internal Power Supply		
Modulation Technology	LTE Band 26	QPSK, 16QAM	
Frequency Range	LTE Band 26 Channel Bandwidth: 1.4MHz	814.7MHz ~ 823.3MHz	
	LTE Band 26 Channel Bandwidth: 3MHz	815.5MHz ~ 822.5MHz	
	LTE Band 26 Channel Bandwidth: 5MHz	816.5MHz ~ 821.5MHz	
	LTE Band 26 Channel Bandwidth: 10MHz	819MHz	
	LTE Band 26 Channel Bandwidth: 15MHz	821.5MHz	
Maximum EIRP Power	LTE Band 26 Channel Bandwidth: 1.4MHz	QPSK	28.18 dBm
	LTE Band 26 Channel Bandwidth: 1.4MHz	16QAM	28.96 dBm
	LTE Band 26 Channel Bandwidth: 3MHz	QPSK	27.46 dBm
	LTE Band 26 Channel Bandwidth: 3MHz	16QAM	27.63 dBm
	LTE Band 26 Channel Bandwidth: 5MHz	QPSK	27.83 dBm
LTE Band 26 Channel Bandwidth: 5MHz	16QAM	28.49 dBm	
LTE Band 26 Channel Bandwidth: 10MHz	QPSK	27.88 dBm	
LTE Band 26 Channel Bandwidth: 10MHz	16QAM	28.09 dBm	
LTE Band 26 Channel Bandwidth: 15MHz	QPSK	27.71 dBm	
LTE Band 26 Channel Bandwidth: 15MHz	16QAM	28.14 dBm	
Antenna Specification	External Antenna LTE Band 26: 2.6 dBi		

3 TEST SUMMARY

FCC Standard Section	Report Section	Test Item	Result
-	2	Antenna Requirement	Pass
2.1046	-	Conducted Output power	N/A
2.1049, 90.209	-	Occupied bandwidth and 26dB Bandwidth	N/A
2.1051, 90.691	-	Emission masks In-band emissions	N/A
2.1051, 90.691	-	Emission masks Out of band emissions	N/A
2.1053, 90.691	8.1 8.2	Spurious Radiation Measurement	Pass
2.1053, 90.691	8.3	EIRP Measurement	Pass
2.1055, 90.213	-	Frequency Stability v.s. temperature measurement	N/A

Report No.: T180821D09-RP5

4 TEST METHODOLOGY

4.1. DESCRIPTION OF TEST TYPE

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

Software used to control the EUT for staying in continuous transmitting mode was programmed.

LTE Band 26: 814 MHz ~ 849 MHz

Three channels had been tested for each channel bandwidth.

Channel Bandwidth	1.4MHz		3MHz		5MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low channel (L)	26697	814.7	26705	815.5	26715	816.5
Middle channel (M)	26740	819	26740	819	26740	819
High channel (H)	26783	823.3	26775	822.5	26765	821.5
Channel Bandwidth	10MHz		15MHz			
	Channel	Frequency (MHz)	Channel	Frequency (MHz)		
Low channel (L)	-	-	26765	821.5		
Middle channel (M)	26740	819	-	-		
High channel (H)	-	-	-	-		

For test mode:

The conducted power be measured in 1, 50% and 100% RB allocation, offset to upper edge, centered and lower edge of the channel bandwidth of each required channel.

	QPSK	Worst Mode	16QAM	Worst Mode
Band26	1M	1 RB ALLOCATED AT THE LOWER EDGE	1M	1 RB ALLOCATED AT THE LOWER EDGE
	3M	1 RB ALLOCATED AT THE LOWER EDGE	3M	1 RB ALLOCATED AT THE LOWER EDGE
	5M	1 RB ALLOCATED AT THE LOWER EDGE	5M	1 RB ALLOCATED AT THE LOWER EDGE
	10M	1 RB ALLOCATED AT THE LOWER EDGE	10M	1 RB ALLOCATED AT THE LOWER EDGE
	15M	1 RB ALLOCATED AT THE LOWER EDGE	15M	1 RB ALLOCATED AT THE LOWER EDGE

4.2. THE WORST MODE OF MEASUREMENT

Test Condition	Emission for Unwanted and Fundamental
Power supply Mode	Mode 1: EUT Power by adapter.
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)

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.

Report No.: T180821D09-RP5

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

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

Wugu Fully Chamber					
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	02/08/2018	02/07/2019
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)				

5.3. MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
Powerline Conducted Emission	N/A
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 $k=2$.

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 C63.4 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.

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."

7 SETUP OF EQUIPMENT UNDER TEST

7.1. SETUP CONFIGURATION OF EUT

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

7.2. SUPPORT EQUIPMENT

No.	Device Type	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 TEST PROCEDURE AND RESULT

8.1. RADIATED EMISSIONS

FCC, Part 15 Subpart C §15.205/ §15.209

LIMIT

1. According to §15.209(a), except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

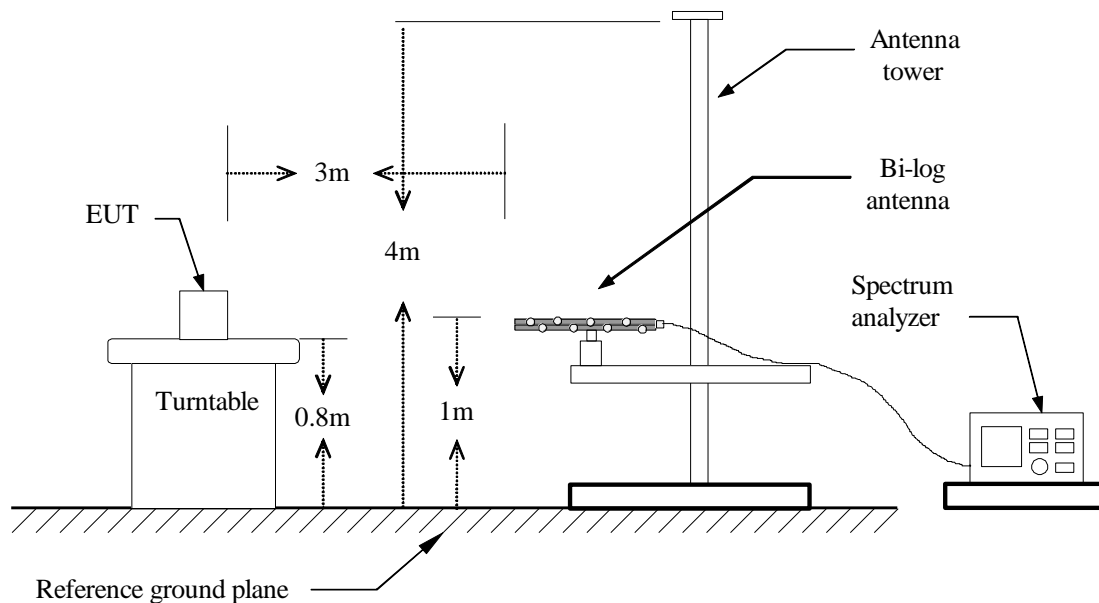
Remark: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

2. In the emission table above, the tighter limit applies at the band edges.

Frequency (MHz)	Field Strength ($\mu\text{V/m}$ at 3-meter)	Field Strength (dB $\mu\text{V/m}$ at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Configuration

Below 1 GHz



TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:
Below 1GHz:
RBW=100kHz / VBW=300kHz / Sweep=AUTO
7. Repeat above procedures until the measurements for all frequencies are complete.

Report No.: T180821D09-RP5

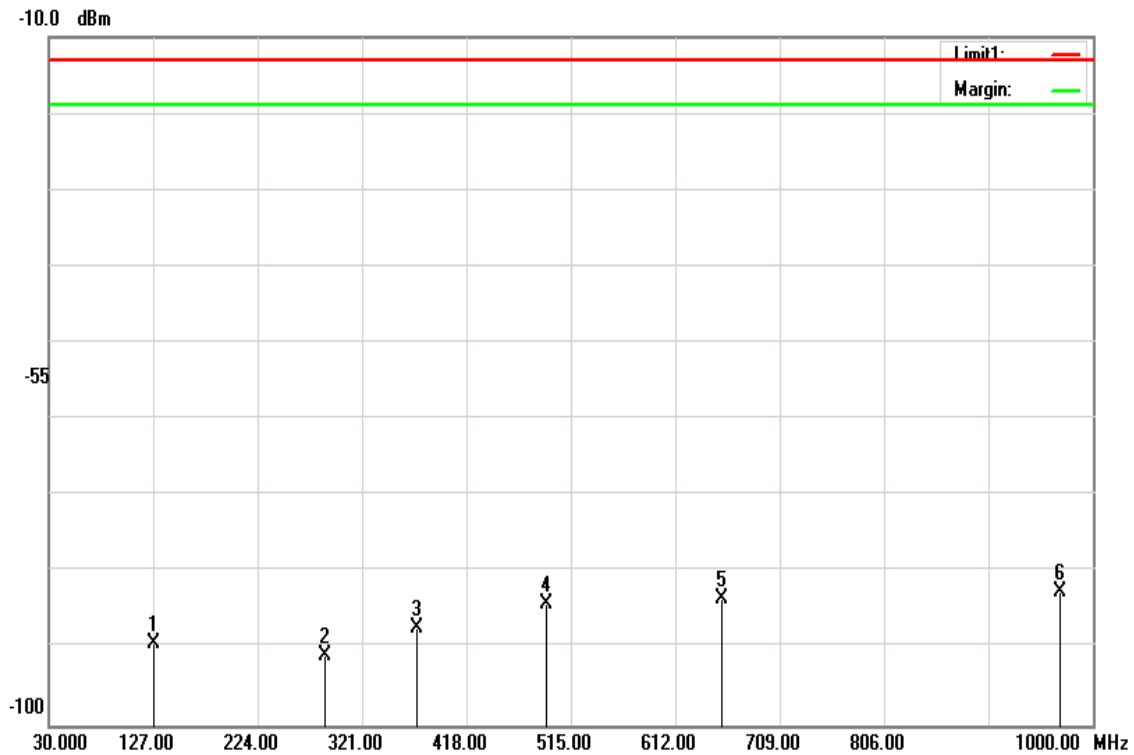
TEST RESULTS

Test Results

Below 1GHz

LTE Band 26 / BW: 15MHz / QPSK / RB =1, RB Offset = 0

Operation Mode: Tx / Mid CH Test Date: December 20, 2018
 Temperature: 23°C Tested by: Jerry Chuang
 Humidity: 46 %RH Polarity: Ver.

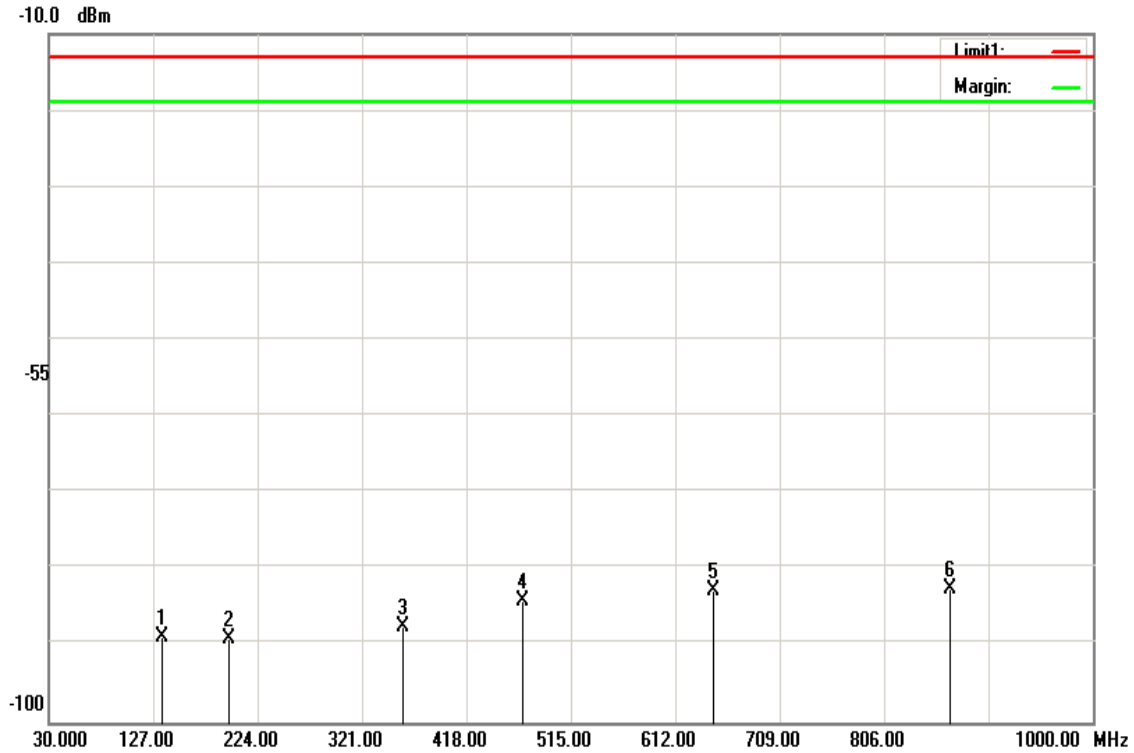


Frequency (MHz)	S.G. (dBm)	Cable Loss(dB)	Ant.Gain (dBd)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
127.0000	-86.01	1.12	-2.15	-89.28	-13.00	-75.76	H
287.0500	-87.01	1.68	-2.15	-90.84	-13.00	-76.07	H
372.8950	-83.28	1.93	-2.15	-87.36	-13.00	-74.62	H
492.2050	-79.74	2.23	-2.15	-84.12	-13.00	-71.24	H
655.1650	-78.72	2.58	-2.15	-83.45	-13.00	-69.88	H
970.4150	-77.34	3.18	-2.15	-82.67	-13.00	-69.45	H

Report No.: T180821D09-RP5

Operation Mode: Tx / Mid CH
Temperature: 23°C
Humidity: 46 %RH

Test Date: December 20, 2018
Tested by: Jerry Chuang
Polarity: Hor.

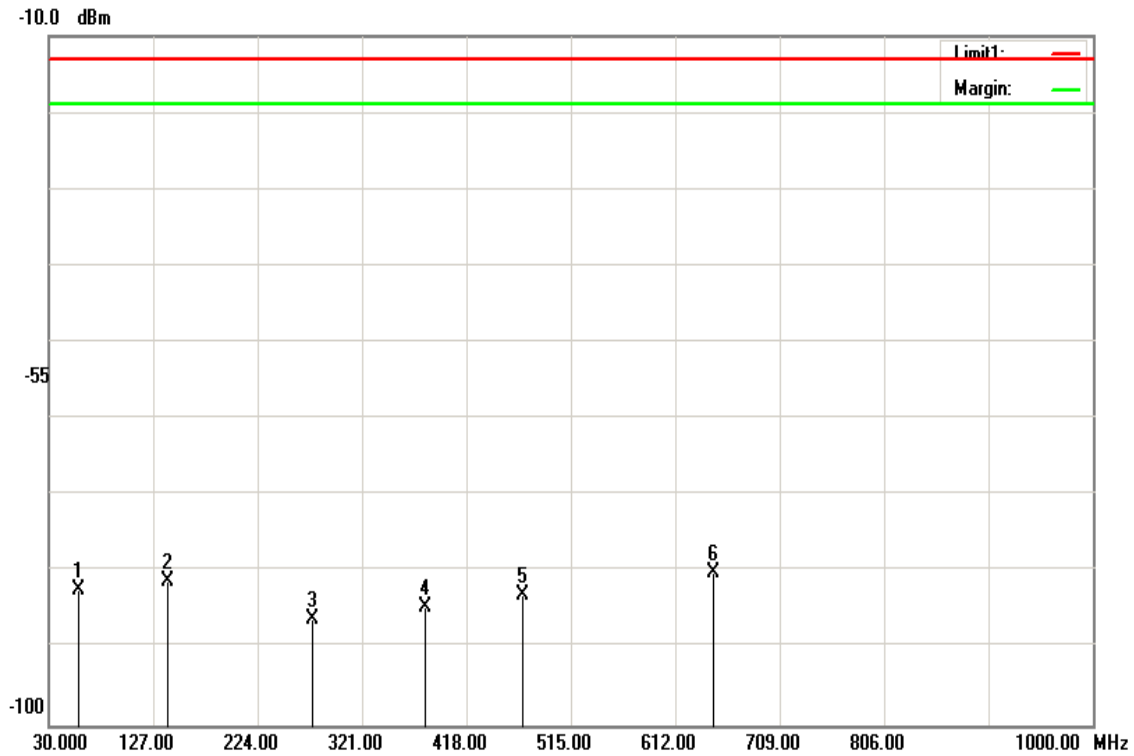


Frequency (MHz)	S.G. (dBm)	Cable Loss(dB)	Ant.Gain (dBd)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
135.7300	-85.46	1.15	-2.15	-88.76	-13.00	-75.76	H
196.8400	-85.53	1.39	-2.15	-89.07	-13.00	-76.07	H
358.8300	-83.58	1.89	-2.15	-87.62	-13.00	-74.62	H
470.3800	-79.91	2.18	-2.15	-84.24	-13.00	-71.24	H
648.3750	-78.16	2.57	-2.15	-82.88	-13.00	-69.88	H
867.1100	-77.3	3	-2.15	-82.45	-13.00	-69.45	H

Report No.: T180821D09-RP5

LTE Band 26 / BW: 15MHz / 16QAM / RB =1, RB Offset = 0

Operation Mode: Tx / Mid CH **Test Date:** December 20, 2018
Temperature: 23°C **Tested by:** Jerry Chuang
Humidity: 46 %RH **Polarity:** Ver.

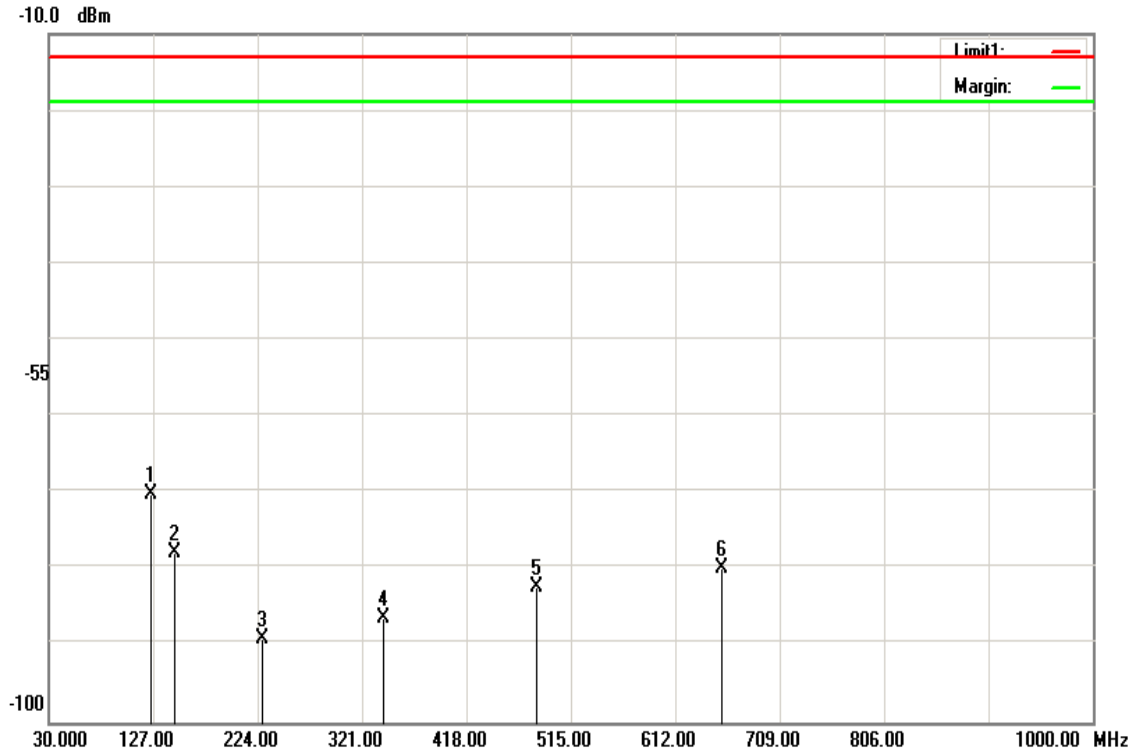


Frequency (MHz)	S.G. (dBm)	Cable Loss(dB)	Ant.Gain (dBd)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
79.9550	-83.97	0.88	-2.15	-87.00	-13.00	-74.00	V
128.9400	-81.86	1.13	-2.15	-85.14	-13.00	-72.14	V
202.6600	-87.74	1.41	-2.15	-91.30	-13.00	-78.30	V
329.2450	-85.44	1.81	-2.15	-89.40	-13.00	-76.40	V
521.3050	-81.86	2.3	-2.15	-86.31	-13.00	-73.31	V
660.0150	-78.69	2.59	-2.15	-83.43	-13.00	-70.43	V

Report No.: T180821D09-RP5

Operation Mode: Tx / Mid CH
Temperature: 23°C
Humidity: 46 %RH

Test Date: December 20, 2018
Tested by: Jerry Chuang
Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Cable Loss(dB)	Ant.Gain (dBd)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
79.4700	-83.89	0.88	-2.15	-86.92	-13.00	-73.92	H
113.4200	-84.94	1.06	-2.15	-88.15	-13.00	-75.15	H
166.2850	-86.4	1.28	-2.15	-89.83	-13.00	-76.83	H
290.9300	-85	1.7	-2.15	-88.85	-13.00	-75.85	H
496.5700	-82.19	2.24	-2.15	-86.58	-13.00	-73.58	H
660.5000	-77.59	2.59	-2.15	-82.33	-13.00	-69.33	H

8.2. TRANSMITTER RADIATED EMISSIONS ABOVE 1GHZ

FCC 47 CFR Part 90, Subpart S; §90.691, 2.1053

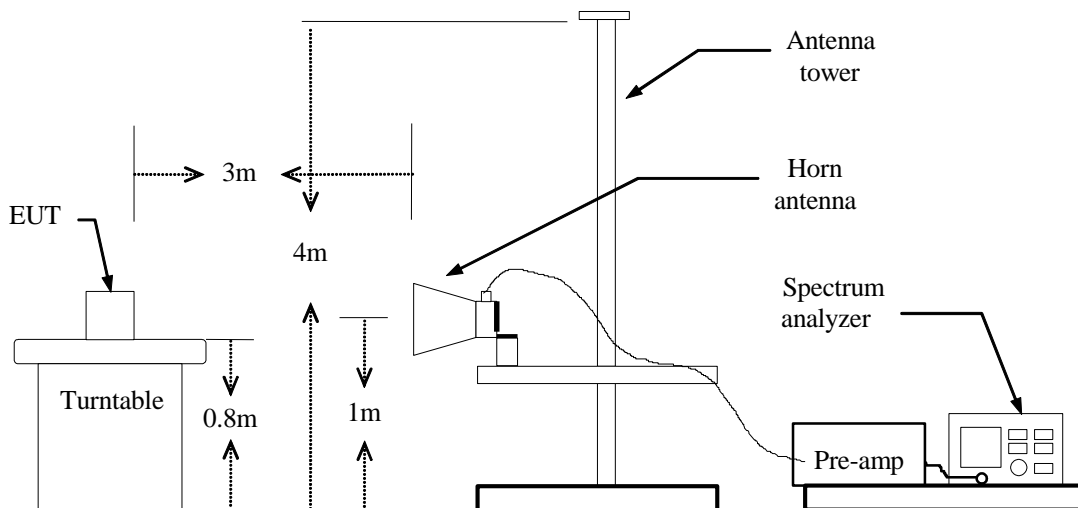
The power of any emission FCC part 90.691 on any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth at least $43 + 10\text{Log}(P)$ dB. The spectrum is scanned from 30MHz up to a frequency including it's 10th harmonic.

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43+10\log(P)$ dB. The spectrum is scanned from 30MHz up to a frequency including its 10th harmonic.

Limit

For operation in the 814-824 band the power of any emission outside the frequency band of operation shall be attenuated below the transmitter power (P) within the licensed band of operation, measured in Watts, by at least $43 + 10*\text{Log}(P) = -13\text{dBm}$.

Test Configuration Above 1 GHz



TEST PROCEDURE

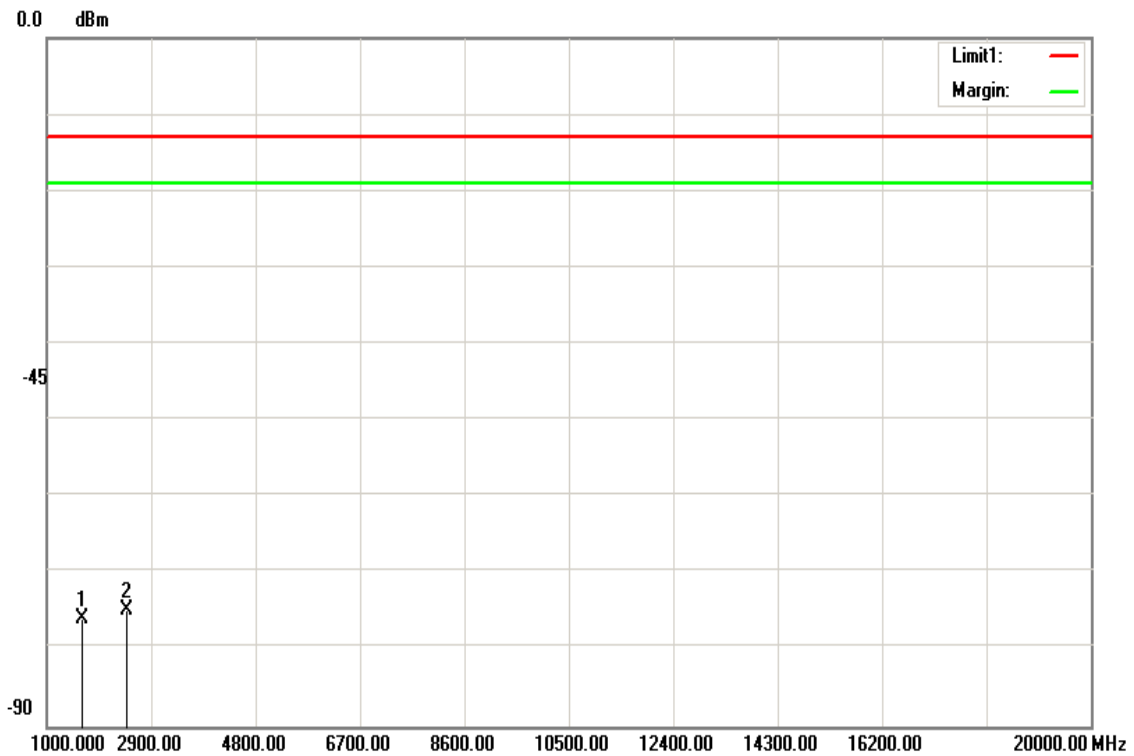
1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:
RBW=VBW=1MHz / Sweep=AUTO
7. Repeat above procedures until the measurements for all frequencies are complete.

Report No.: T180821D09-RP5

Above 1GHz

LTE Band 26 / BW: 15MHz / QPSK RB =1, RB Offset = 0

Operation Mode:	Tx / High CH	Test Date:	December 20, 2018
Temperature:	23°C	Tested by:	Jerry Chuang
Humidity:	46 %RH	Polarity:	Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1643.000	-71.82	4.19	-76.01	-13.00	-63.01	V
2464.500	-69.48	5.28	-74.76	-13.00	-61.76	V
N/A						

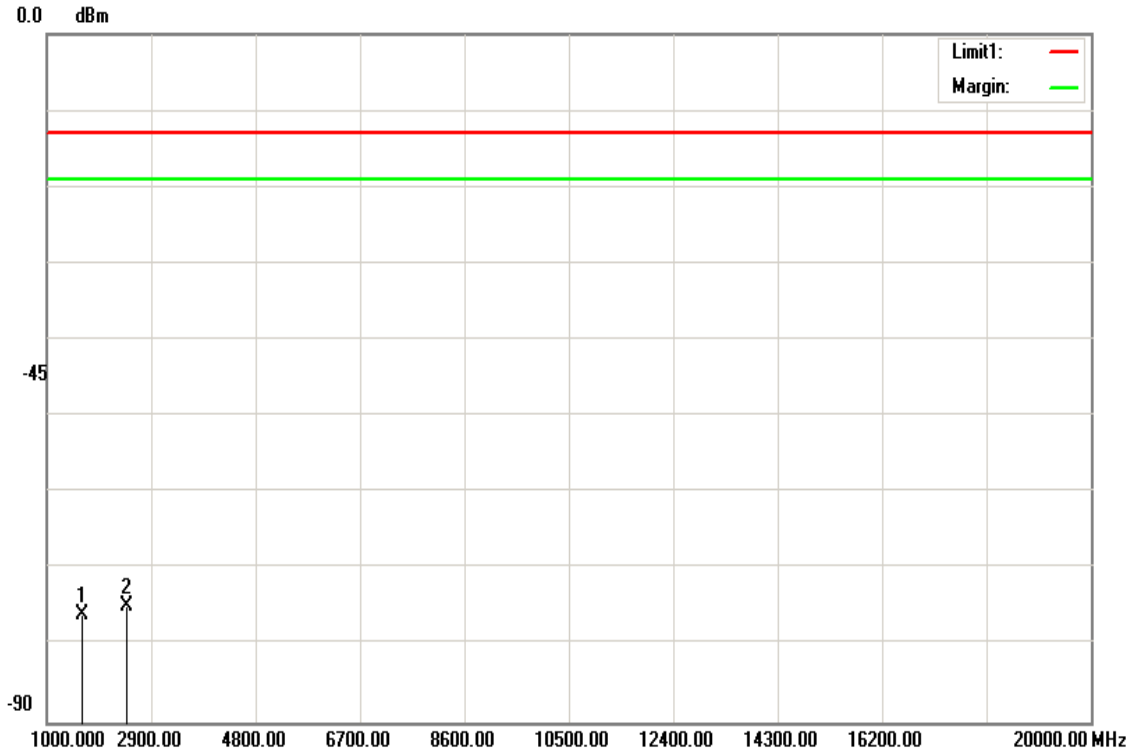
Remark:

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

Report No.: T180821D09-RP5

Operation Mode: Tx / High CH
Temperature: 23°C
Humidity: 46 %RH

Test Date: December 20, 2018
Tested by: Jerry Chuang
Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1735.000	-65.45	4.32	-69.77	-13.00	-56.77	H
3257.500	-62.29	6.18	-68.47	-13.00	-31.47	H
N/A						

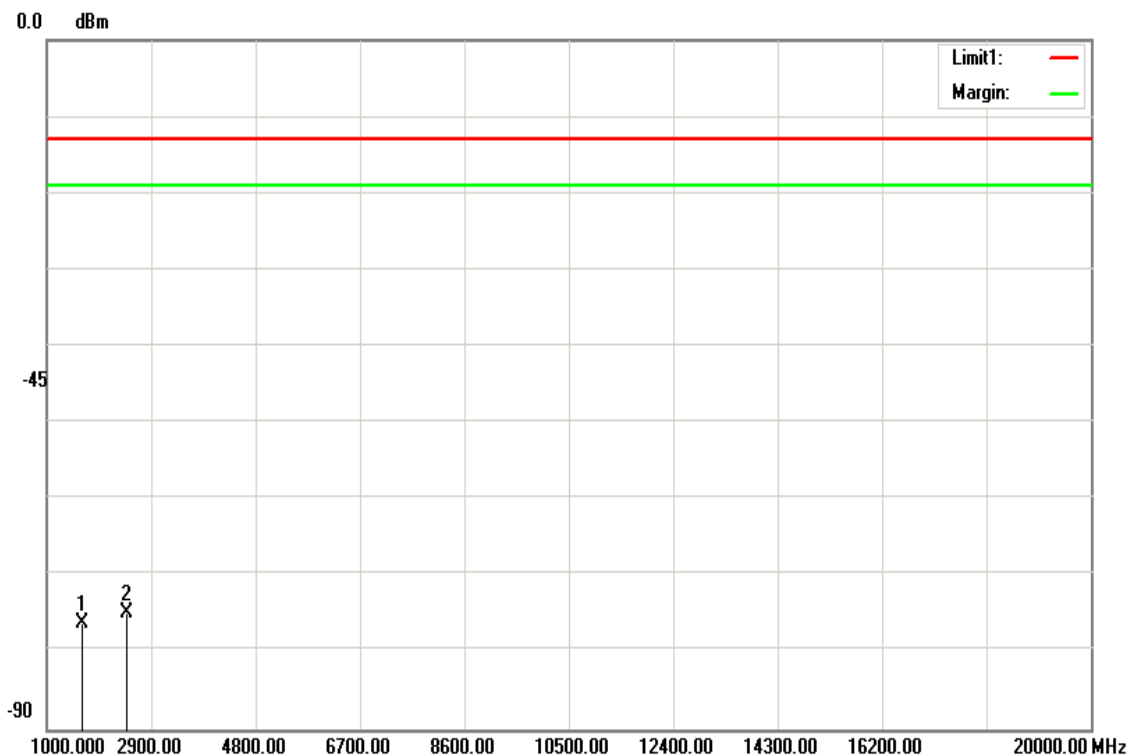
Remark:

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

Report No.: T180821D09-RP5

LTE Band 26 / BW: 15MHz / 16QAM / RB =1, RB Offset = 0

Operation Mode: Tx / High CH **Test Date:** December 20, 2018
Temperature: 23°C **Tested by:** Jerry Chuang
Humidity: 46 %RH **Polarity:** Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1643.000	-71.87	4.19	-76.06	-13.00	-63.06	V
2464.500	-69.58	5.28	-74.86	-13.00	-61.86	V
N/A						

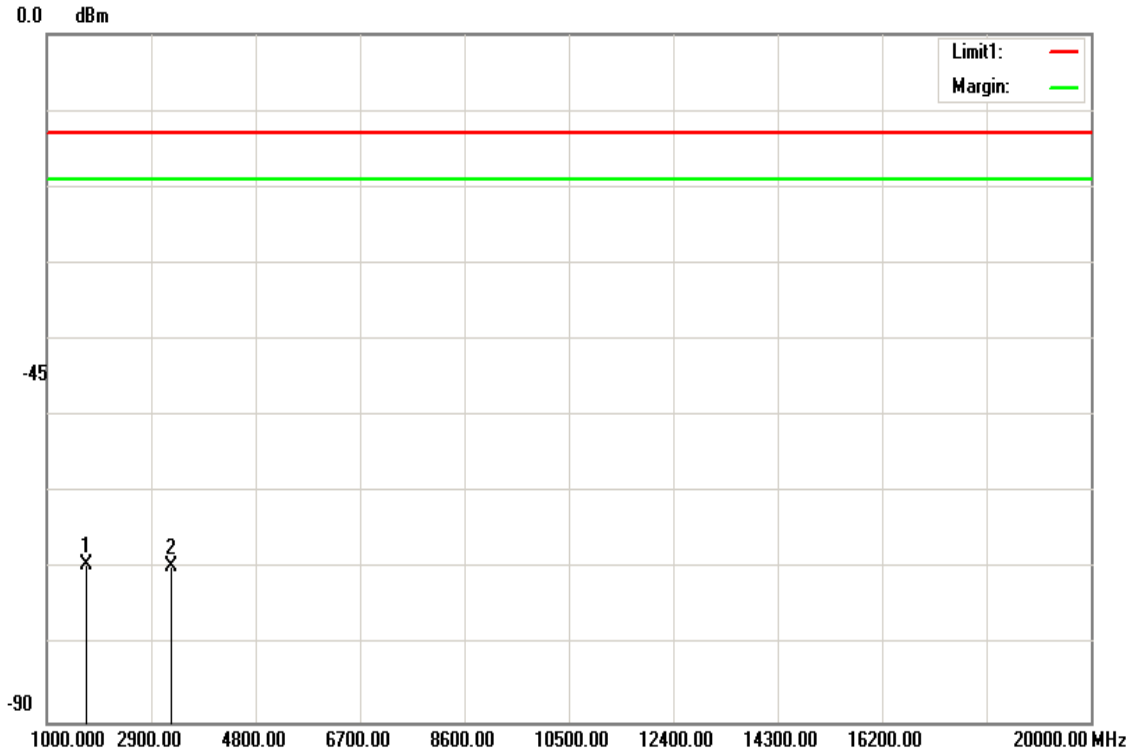
Remark:

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

Report No.: T180821D09-RP5

Operation Mode: Tx / High CH
Temperature: 23°C
Humidity: 46 %RH

Test Date: December 20, 2018
Tested by: Jerry Chuang
Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1731.500	-65.16	4.31	-69.47	-13.00	-56.47	H
3261.000	-63.45	6.18	-69.63	-13.00	-56.63	H
N/A						

Remark:

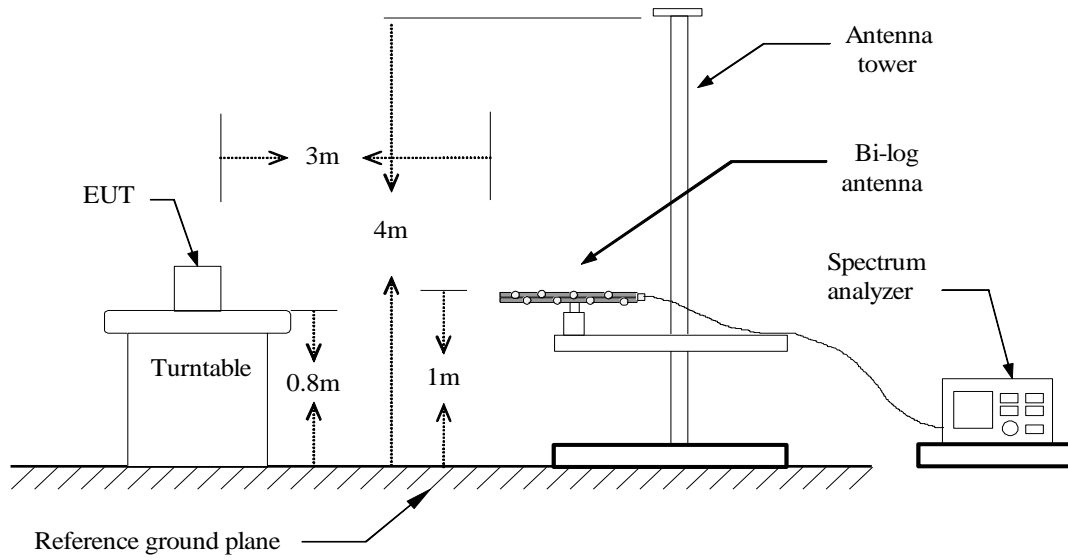
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Report No.: T180821D09-RP5

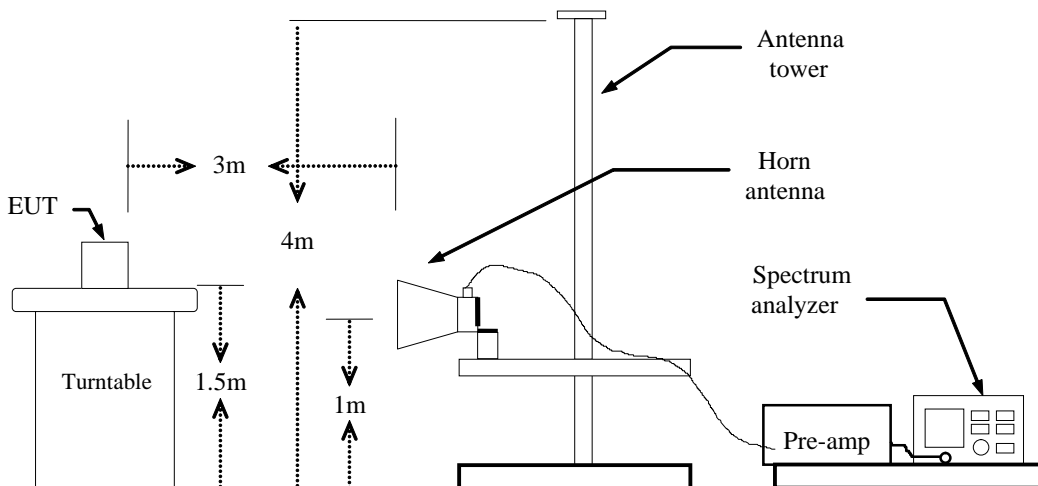
8.3. EIRP MEASUREMENT

TEST CONFIGURATION

Below 1 GHz

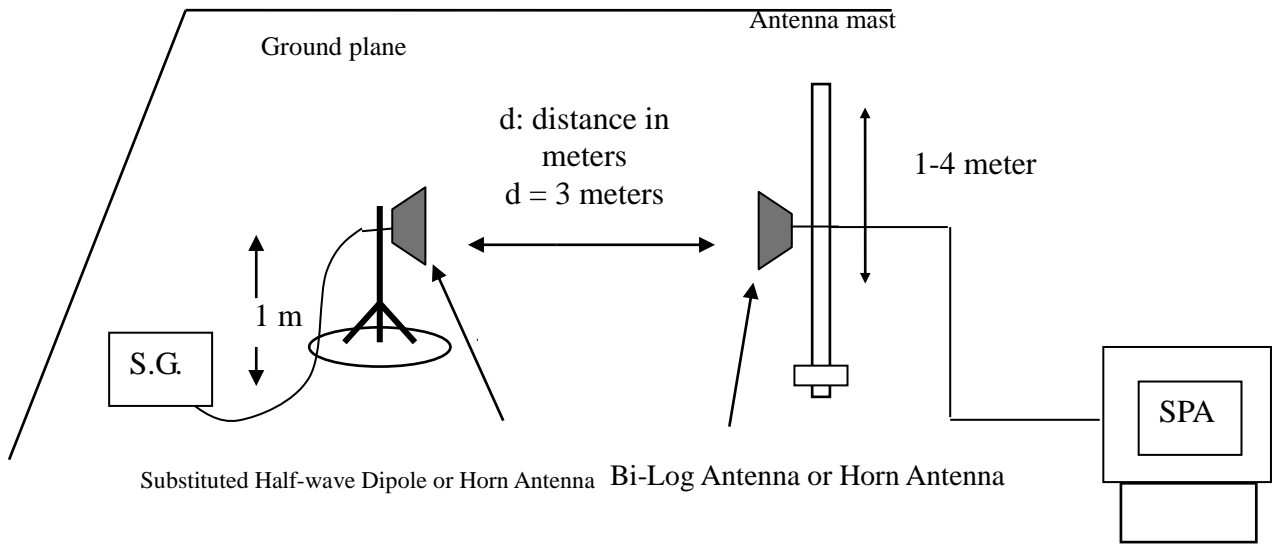


Above 1 GHz



Report No.: T180821D09-RP5

For Substituted Method Test Set-UP



TEST PROCEDURE

1. The EUT was placed on a non-conductive rotating platform (0.8m for below 1G and above 1G) in a semi-chamber. The radiated emission at the fundamental frequency was measured at 3m and SA with RMS detector per section 5, KDB 971168 D01 Power Meas License Digital Systems.
2. During the measurement, the call box parameters were set to get the maximum output power of the EUT. The maximum emission was recorded from spectrum analyzer power level (LVL) from 360 degrees rotation of turntable and the test antenna raised and lowered over a range from 1m to 4m in both horizontally and vertically polarized orientations.
3. EIRP was measured method according to TIA/EIA-603-E. The EUT was replaced by the substitution antenna at same location, and then record the maximum Analyzer reading through raised and lowered the test antenna.

$$ERP = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)} - 2.15$$

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

TEST RESULTS

No non-compliance noted.

Report No.: T180821D09-RP5

EIRP POWER

LTE Band 26

BW: 1.4MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
26	1.4	Lowest	QPSK	1	0	12.59	0.0182	28.13	0.6501
		Middle		1	0	12.13	0.0163	28.18	0.6577
		Highest		1	0	13.30	0.0214	27.87	0.6124
		Lowest	16 QAM	1	0	13.40	0.0219	28.31	0.6776
		Middle		1	0	12.54	0.0179	28.64	0.7311
		Highest		1	0	13.05	0.0202	28.96	0.7870

BW: 3MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
26	3	Lowest	QPSK	1	0	9.34	0.0086	27.35	0.5433
		Middle		1	0	9.39	0.0087	27.46	0.5572
		Highest		1	0	9.91	0.0098	27.17	0.5212
		Lowest	16 QAM	1	0	9.17	0.0083	27.48	0.5598
		Middle		1	0	9.36	0.0086	27.63	0.5794
		Highest		1	0	10.33	0.0108	27.23	0.5284

BW: 5MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
26	5	Lowest	QPSK	1	0	9.17	0.0083	27.83	0.6067
		Middle		1	0	9.89	0.0097	27.27	0.5333
		Highest		1	0	9.65	0.0092	27.32	0.5395
		Lowest	16 QAM	1	0	9.61	0.0091	28.49	0.7063
		Middle		1	0	9.01	0.0080	28.11	0.6471
		Highest		1	0	9.01	0.0080	27.67	0.5848

BW: 10MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
26	10	Middle	QPSK	1	0	9.71	0.0094	27.88	0.6138
		Middle	16 QAM	1	0	9.71	0.0094	28.09	0.6442

BW: 15MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
26	15	Middle	QPSK	1	0	9.44	0.0088	27.71	0.5902
		Middle	16 QAM	1	0	9.52	0.0090	28.14	0.6516

- End of Test Report -