

# TEST REPORT

of

FCC Part 2 Subpart J, Part 22 Subpart C/H,  
Part 24 Subpart E, Part 27 Subpart C and Part 90 Subpart S

FCC ID: BEJ-LW9880G

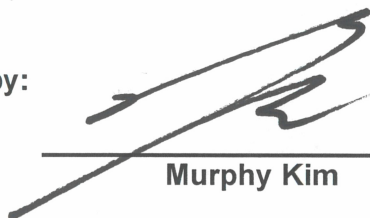
Equipment Under Test : Cellular Modem  
Model Name : LW-9880G  
Variant Model Name(s) : -  
Applicant : LG Electronics USA, Inc.  
Manufacturer : LG Electronics Inc.  
Date of Receipt : 2023.11.01  
Date of Test(s) : 2023.11.04 ~ 2023.12.07  
Date of Issue : 2023.12.07

In the configuration tested, the EUT complied with the standards specified above. This test report does not assure KOLAS accreditation.

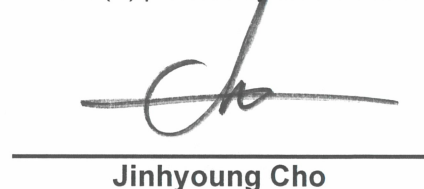
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- 2) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.
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We are responsible for all the information of this test report except for the data(※) provided by the customer.

**Tested by:**

  
\_\_\_\_\_  
Murphy Kim

**Technical  
Manager:**

  
\_\_\_\_\_  
Jinhyoung Cho

**SGS Korea Co., Ltd. Gunpo Laboratory**

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## 1. General Information

### 1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)  
 - 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807  
 - 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807  
 - Designation number: KR0150

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### 1.2. Details of Applicant

Applicant : LG Electronics USA, Inc.  
 Address : 111 Sylvan Avenue, North Building, Englewood Cliffs, New Jersey, United States, 07632  
 Contact Person : Kim, David  
 Phone No. : +1 201 266 2215

### 1.3. Details of Manufacturer

Company : LG Electronics Inc.  
 Address : 170, Seongsanpaechong-ro, Seongan-gu, Changwon-si, Gyeongsangnam-do, Korea, 51533

### 1.4. Description of EUT

<b>Kind of Product</b>	Cellular Modem
<b>Model Name</b>	LW-9880G
<b>Serial Number</b>	001
<b>Power Supply</b>	DC 5 V
<b>Rated Power</b>	LTE Band 2, 4, 5, 12, 13, 26, 66: 22.5 dB m
<b>Frequency Range</b>	LTE Band 2: 1 850 MHz ~ 1 910 MHz LTE Band 4: 1 710 MHz ~ 1 755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 26(Part 90): 814 MHz ~ 824 MHz LTE Band 26(Part 22): 824 MHz ~ 849 MHz LTE Band 66: 1 710 MHz ~ 1 780 MHz
<b>Modulation Technique</b>	QPSK, 16QAM
<b>LTE Category</b>	Cat 1
<b>Antenna Type</b>	Carrier press Type
<b>Antenna Gain*</b>	699 MHz ~ 716 MHz: 3.08 dB i 777 MHz ~ 787 MHz: 1.08 dB i 814 MHz ~ 824 MHz: 1.11 dB i 824 MHz ~ 849 MHz: 1.11 dB i 1 710 MHz ~ 1 780 MHz: 1.57 dB i 1 850 MHz ~ 1 910 MHz: 1.97 dB i
<b>H/W Version</b>	Rev.1.0
<b>S/W Version</b>	V.1.0

### 1.5. Test Equipment List

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Interval	Cal. Due
Signal Generator	R&S	SMA100B	106887	Oct. 06, 2023	Annual	Oct. 06, 2024
Spectrum Analyzer	R&S	FSV30	103210	Dec. 07, 2022	Annual	Dec. 07, 2023
Spectrum Analyzer	Agilent	N9020A	MY53421758	Sep. 01, 2023	Annual	Sep. 01, 2024
Mobile Test Unit	R&S	CMW 500	144034	Feb. 17, 2023	Annual	Feb. 17, 2024
Communication Analyzer	Anritsu	MT8821C	6262192291	Oct. 11, 2023	Annual	Oct. 11, 2024
Temperature Chamber	ESPEC CORP.	SH-662	93000533	Jun. 01, 2023	Annual	Jun. 01, 2024
Low Pass Filter	Mini-Circuits	NLP-1200+	V 8979400903-2	Feb. 09, 2023	Annual	Feb. 09, 2024
High Pass Filter	Wainwright Instrument GmbH	WHKX10-900-1000-18000-40SS	7	Mar. 02, 2023	Annual	Mar. 02, 2024
High Pass Filter	Wainwright Instrument GmbH	WHKX2.2/12.75G-10SS	8	Mar. 02, 2023	Annual	Mar. 02, 2024
High Pass Filter	Wainwright Instrument GmbH	WHK3.0/18G-6SS	4	Jun. 01, 2023	Annual	Jun. 01, 2024
High Pass Filter	Wainwright Instrument GmbH	WHNX7.5/26.5G-6SS	11	Oct. 17, 2023	Annual	Oct. 17, 2024
BRIDGE COUPLER	MARKI MICROWAVE INC	CBR16-0012	1542	May 16, 2023	Annual	May 16, 2024
Directional Coupler	KRYTAR	152613	122660	Jul. 13, 2023	Annual	Jul. 13, 2024
DC Power Supply	Agilent	U8002A	MY49030063	Jan. 20, 2023	Annual	Jan. 20, 2024
Preamplifier	H.P.	8447F	2944A03909	Aug. 04, 2023	Annual	Aug. 04, 2024
Preamplifier	R&S	SCU 18	10117	Jun. 15, 2023	Annual	Jun. 15, 2024
Preamplifier	TESTEK	TK-PA1840H	130016	Jan. 11, 2023	Annual	Jan. 11, 2024
Test Receiver	R&S	ESU 26	100109	Jan. 18, 2023	Annual	Jan. 18, 2024
Loop Antenna	Schwarzbeck Mess-Elektronik	FMZB 1519	1519-039	Aug. 21, 2023	Biennial	Aug. 21, 2025
Bilog Antenna	Schwarzbeck Mess-Elektronik	VULB9163	01126	Feb. 09, 2023	Annual	Feb. 09, 2024
Horn Antenna	R&S	HF906	100326	Feb. 28, 2023	Annual	Feb. 28, 2024
Horn Antenna	Schwarzbeck Mess-Elektronik	BBHA 9170	BBHA9170223	Oct. 10, 2023	Annual	Oct. 10, 2024
Antenna Master	Innco systems GmbH	MA4640-XP-ET	MA4640/536/383 30516/L	N.C.R.	N/A	N.C.R.
Turn Table	Innco systems GmbH	DS 1200S	N/A	N.C.R.	N/A	N.C.R.
Controller	Innco systems GmbH	CONTROLLER CO3000-4P	CO3000/963/383 30516/L	N.C.R.	N/A	N.C.R.
Anechoic Chamber	SY Corporation	L x W x H (9.6 m x 6.4 m x 6.6 m)	N/A	N.C.R.	N/A	N.C.R.
Coaxial Cable	RFONE	MWX221-NMSNMS (4 m)	J1023142	Oct. 04, 2023	Semi-Annual	Apr. 04, 2024
Coaxial Cable	Qualwave Inc.	QA500-18-NN-10 (10 m)	22200114	Oct. 04, 2023	Semi-Annual	Apr. 04, 2024
Coaxial Cable	RADIALL	TESTPRO 3	182287	Oct. 14, 2023	Semi-Annual	Apr. 14, 2024
Coaxial Cable	RADIALL	TESTPRO 3	182288	Oct. 14, 2023	Semi-Annual	Apr. 14, 2024
Coaxial Cable	RADIALL	TESTPRO 3	182291	Oct. 14, 2023	Semi-Annual	Apr. 14, 2024

**Note;**

- For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.

### 1.6. Summary of Test Results

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 2, 22, 24, 27 and 90		
Section(s)	Test Item(s)	Result
§2.1046 §22.913(a)(5) §24.232(c) §27.50(b)(9) §27.50(c)(9) §27.50(d)(4) §90.635(b)	E.R.P. / E.I.R.P.	Complied
§22.917(a) §24.238(a) §27.53(c)(2) §27.53(f) §27.53(g) §27.53(h)(1) §90.691(a)	Radiated Spurious Emissions	Complied
§2.1046	Conducted Output Power	Complied
§2.1049	Occupied Bandwidth	Complied
§22.913(d) §24.232(d) §27.50(d)(5)	Peak-Average Ratio	Complied
§22.917(a) §24.238(a) §27.53(c)(2) §27.53(g) §27.53(h)(1) §90.691(a)	Spurious Emission at Antenna Terminal	Complied
§22.917(a) §24.238(a) §27.53(c)(2) §27.53(c)(4) §27.53(g) §27.53(h)(1) §90.691(a)	Band Edge and Emission Mask	Complied
§2.1055 §22.355 §24.235 §27.54 §90.213(a)	Frequency Stability	Complied

## 1.7. Sample Calculation for Offset

Where relevant, the following sample calculation is provided:

### 1.7.1. Conducted Test

Offset value (dB) = Directional Coupler (dB) + Cable loss (dB)

### 1.7.2. Radiation test

- E.I.R.P. (dB m) = Measured level (dB $\mu$ V) + Antenna factor (dB/m) + Cable loss (dB) + 20 Log D - 104.8;  
where D is the measurement distance in meters.
- E.R.P. (dB m) = E.I.R.P. (dB m) - 2.15 (dB)

## 1.8. Device Capabilities

This device contains the following capabilities;

LTE Band 5 (824 MHz ~ 849 MHz) is covered by LTE Band 26 (824 MHz ~ 849 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth. Therefore test data provided in this report covers LTE Band 5 as well as Band 26.

## 1.9. Worst Case Configuration and Mode

The worst-case is based on the conducted output power measurement investigation results. All testing was performed using QPSK and 16QAM modulations. However, the spurious radiated emission and spurious at antenna terminal were only performed on bandwidth and RB offset (with RB size 1) with the highest conducted power in QPSK.

The peak to average ratio were tested only 16QAM modulation as worst case.

The radiation test of the EUT was investigated in three orthogonal orientations X, Y, and Z, and the worst case data is reported.

### 1.10. Measurement Configuration

Test Items	Band	Test Channel			Bandwidth (MHz)						Modulation		RB #		
		Low	Mid	High	1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full
Conducted Output Power	2	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	12	V	V	V	V	V	V	V			V	V	V	V	V
	13	V	V	V			V	V			V	V	V	V	V
	*26/5 Part22	V	V	V	V	V	V	V	V		V	V	V	V	V
	26 Part90	V	V	V	V	V	V	V	V		V	V	V	V	V
	66/4	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Occupied Bandwidth	2	V	V	V	V	V	V	V	V	V	V	V	-	-	V
	12	V	V	V	V	V	V	V			V	V	-	-	V
	13	V	V	V			V	V			V	V	-	-	V
	*26/5 Part22	V	V	V	V	V	V	V	V		V	V	-	-	V
	26 Part90	V	V	V	V	V	V	V	V		V	V	-	-	V
	66/4	V	V	V	V	V	V	V	V	V	V	V	-	-	V
Peak-to-Average Ratio	2	V	V	V	V	V	V	V	V	V	-	V	-	-	V
	12	V	V	V	V	V	V	V			-	V	-	-	V
	13	V	V	V			V	V			-	V	-	-	V
	*26/5 Part22	V	V	V	V	V	V	V	V		-	V	-	-	V
	26 Part90	V	V	V	V	V	V	V	V		-	V	-	-	V
	66/4	V	V	V	V	V	V	V	V	V	-	V	-	-	V
Frequency Stability	2	V	V	V	-	-	V	-	-	-	V	-	-	-	V
	12	V	V	V	-	-	V	-			V	-	-	-	V
	13	V	V	V			V	-			V	-	-	-	V
	*26/5 Part22	V	V	V	-	-	V	-	-		V	-	-	-	V
	26 Part90	V	V	V	-	-	V	-	-		V	-	-	-	V
	66/4	V	V	V	-	-	V	-	-	-	V	-	-	-	V
Band edge	2	V	V	V	V	V	V	V	V	V	V	V	V	-	V
	12	V	V	V	V	V	V	V			V	V	V	-	V
	13	V	V	V			V	V			V	V	V	-	V
	*26/5 Part22	V	V	V	V	V	V	V	V		V	V	V	-	V
	26 Part90	V	V	V	V	V	V	V	V		V	V	V	-	V
	66/4	V	V	V	V	V	V	V	V	V	V	V	V	-	V
Spurious Emission at Antenna Terminal and Radiated Spurious Emissions	2	V	V	V	Worst case										
	12	V	V	V	Worst case										
	13	V	V	V	Worst case										
	*26/5 Part22	V	V	V	Worst case										
	26 Part90	V	V	V	Worst case										
	66/4	V	V	V	Worst case										

\* B5 is not supported 15M bandwidth.

### 1.11. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty	
Conducted Output Power	0.33 dB	
Occupied Bandwidth	0.04 MHz	
Conducted Spurious Emissions	0.85 dB	
Peak to Average Ratio	0.66 dB	
Frequency Stability	0.11 kHz	
Radiated Emission, 9 kHz to 30 MHz	H	3.60 dB
	V	3.60 dB
Radiated Emission, below 1 GHz	H	4.60 dB
	V	4.90 dB
Radiated Emission, above 1 GHz	H	3.90 dB
	V	3.80 dB

All measurement uncertainty values are shown with a coverage factor of  $k=2$  to indicate a 95 % level of confidence.

### 1.12. Test Report Revision

Revision	Report Number	Date of Issue	Description
0	F690501-RF-RTL004667	2023.12.07	Initial



### 1.13. Emission Designator and Max Power

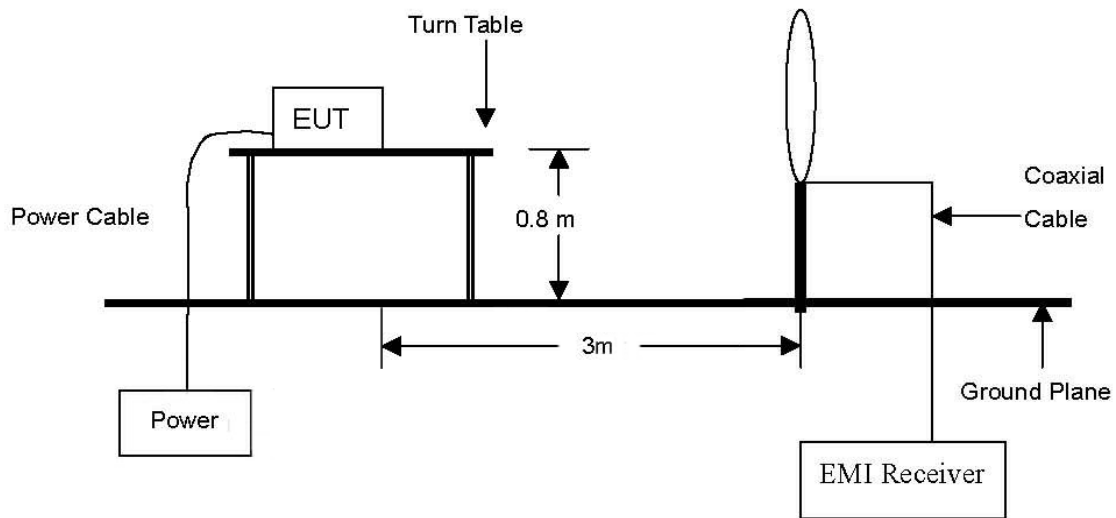
Band	Band width (MHz)	Modulation	Low Freq. (MHz)	Upper Freq. (MHz)	Conducted Average (dB m)	Ant. Gain (dB i)	E.R.P. / E.I.R.P. Average (dB m)	E.R.P. / E.I.R.P. Average (W)	Emission Designator
2	1.4	QPSK	1 850.7	1 909.3	23.50	1.97	25.47	0.352	1M10G7D
		16QAM			22.59		24.56	0.286	1M09D7D
	3	QPSK	1 851.5	1 908.5	23.52		25.49	0.354	2M68G7D
		16QAM			22.53		24.50	0.282	2M68D7D
	5	QPSK	1 852.5	1 907.5	23.51		25.48	0.353	4M51G7D
		16QAM			22.44		24.41	0.276	4M48D7D
	10	QPSK	1 855	1 905	23.52		25.49	0.354	8M95G7D
		16QAM			22.30		24.27	0.267	4M89D7D
	15	QPSK	1 857.5	1 902.5	23.54		25.51	0.356	13M4G7D
		16QAM			22.67		24.64	0.291	5M08D7D
	20	QPSK	1 860	1 900	23.42		25.39	0.346	17M8G7D
		16QAM			22.22		24.19	0.262	5M15D7D
12	1.4	QPSK	699.7	715.3	23.93	3.08	24.86	0.306	1M09G7D
		16QAM			22.67		23.60	0.229	1M09D7D
	3	QPSK	700.5	714.5	23.70		24.63	0.290	2M68G7D
		16QAM			23.05		23.98	0.250	2M67D7D
	5	QPSK	701.5	713.5	23.87		24.80	0.302	4M51G7D
		16QAM			22.99		23.92	0.247	4M49D7D
	10	QPSK	704	711	23.72		24.65	0.292	8M95G7D
		16QAM			22.81		23.74	0.237	4M89D7D
13	5	QPSK	779.5	784.5	23.69	1.08	22.62	0.183	4M48G7D
		16QAM			22.78		21.71	0.148	4M50D7D
	10	QPSK	782	782	23.85		22.78	0.190	8M91G7D
		16QAM			22.70		21.63	0.146	4M86D7D
26/5 Part 22	1.4	QPSK	824.7	848.3	23.82	1.11	22.78	0.190	1M10G7D
		16QAM			22.36		21.32	0.136	1M09D7D
	3	QPSK	825.5	847.5	23.59		22.55	0.180	2M67G7D
		16QAM			22.42		21.38	0.137	2M68D7D
	5	QPSK	826.5	846.5	23.62		22.58	0.181	4M51G7D
		16QAM			22.25		21.21	0.132	4M50D7D
	10	QPSK	829	844	23.69		22.65	0.184	8M93G7D
		16QAM			22.31		21.27	0.134	4M89D7D
26 Part 22	15	QPSK	831.5	841.5	23.52	22.48	0.177	13M5G7D	
		16QAM			22.27	21.23	0.133	5M04D7D	
26 Part 90	1.4	QPSK	814.7	823.3	23.95	1.11	22.91	0.195	1M09G7D
		16QAM			22.68		21.64	0.146	1M09D7D
	3	QPSK	815.5	822.5	23.71		22.67	0.185	2M68G7D
		16QAM			22.44		21.40	0.138	2M69D7D
	5	QPSK	816.5	821.5	23.67		22.63	0.183	4M49G7D
		16QAM			22.46		21.42	0.139	4M50D7D
	10	QPSK	819		23.64		22.60	0.182	8M89G7D
		16QAM	819		22.28		21.24	0.133	4M86D7D
	15	QPSK	821.5		23.55		22.51	0.178	13M4G7D
		16QAM	821.5		22.52		21.48	0.141	5M08D7D

Band	Band width (MHz)	Modulation	Low Freq. (MHz)	Upper Freq. (MHz)	Conducted Average (dB m)	Ant. Gain (dB i)	E.R.P. / E.I.R.P. Average (dB m)	E.R.P. / E.I.R.P. Average (W)	Emission Designator
66/4	1.4	QPSK	1 710.7	1 779.3	23.36	1.57	24.93	0.311	1M10G7D
		16QAM			22.15		23.72	0.236	1M11D7D
	3	QPSK	1 711.5	1 778.5	23.68		25.25	0.335	2M67G7D
		16QAM			22.21		23.78	0.239	2M68D7D
	5	QPSK	1 712.5	1 777.5	23.47		25.04	0.319	4M49G7D
		16QAM			22.15		23.72	0.236	4M52D7D
	10	QPSK	1 715	1 775.0	23.61		25.18	0.330	8M95G7D
		16QAM			22.31		23.88	0.244	4M89D7D
	15	QPSK	1 717.5	1 772.5	23.66		25.23	0.333	13M4G7D
		16QAM			22.29		23.86	0.243	5M04D7D
	20	QPSK	1 720	1 770	23.45		25.02	0.318	17M9G7D
		16QAM			22.48		24.05	0.254	5M08D7D

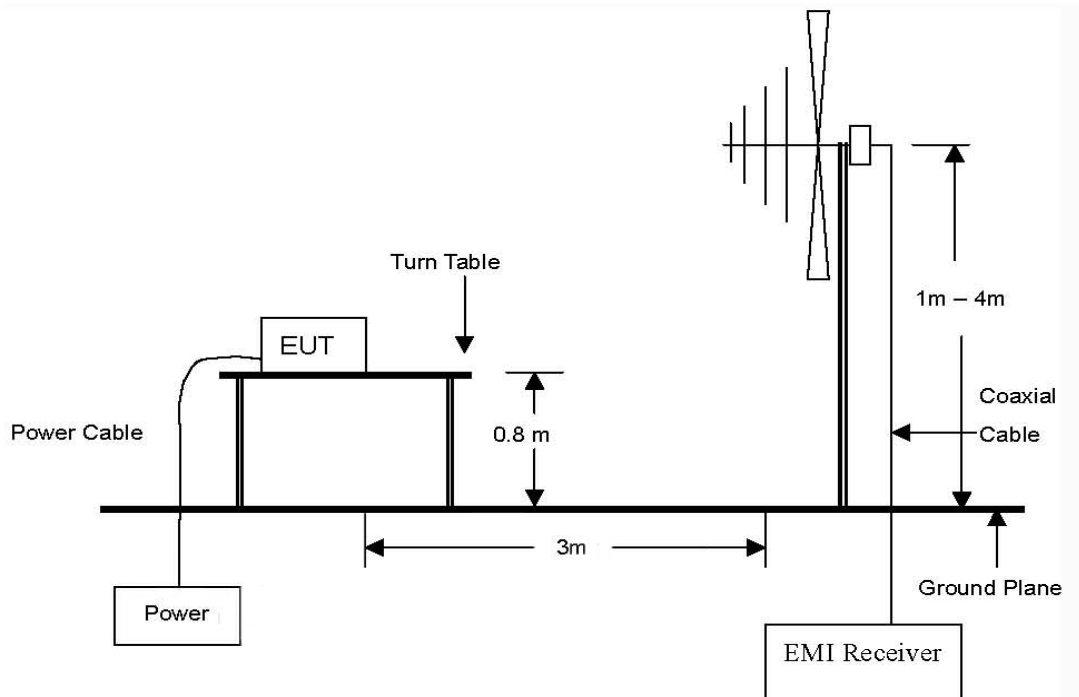
## 2. E.R.P. / E.I.R.P. & Radiated Spurious Emissions

### 2.1. Test setup

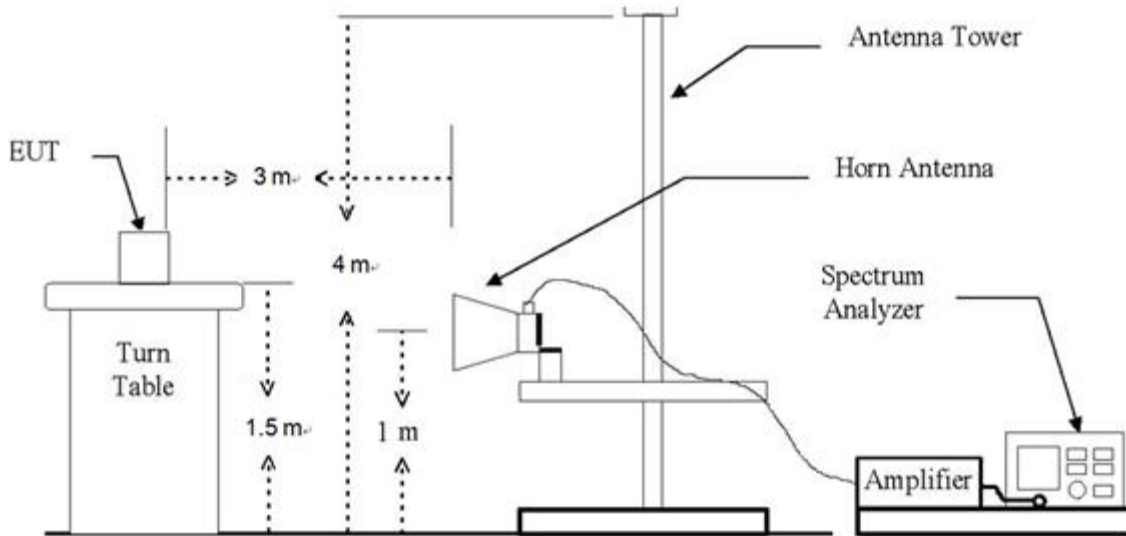
The diagram below shows the test setup that is utilized to make the measurements for emission from 9 kHz to 30 MHz.



The diagram below shows the test setup that is utilized to make the measurements for emission from 30 MHz to 1 GHz Emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 1 GHz to 20 GHz Emissions.



## 2.2. Limit

### 2.2.1. Limit of E.R.P. / E.I.R.P.

- §22.913(a)(5), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.
- §24.232(c), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.
- §27.50(b)(9), control stations and mobile stations transmitting in the 746–757 MHz, 776–788 MHz, and 805–806 MHz bands and fixed stations transmitting in the 787–788 MHz and 805–806 MHz bands are limited to 30 watts ERP.
- §27.50(c)(9), control and mobile stations in the 698–746 MHz band are limited to 30 watts ERP.
- §27.50(d)(4), fixed, mobile, and portable (hand-held) stations operating in the 1 710-1 755 MHz band and mobile and portable stations operating in the 1 695-1 710 MHz and 1 755-1 780 MHz bands are limited to 1 watt EIRP.
- §90.635(b), the maximum output power of the transmitter for mobile stations is 100 watts (20 dBW).

### 2.2.2. Limit of Radiated Spurious Emissions

- §22.917(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10\log(P)$  dB.
- §24.238(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.
- §27.53(c)(2), on any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log (P)$  dB;
- §27.53(f), for operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1 559-1 610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.
- §27.53(g), the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log (P)$  dB.
- §27.53(h)(1), for operations in the 1 695-1 710 MHz, 1 710-1 755 MHz, 1 755-1 780 MHz, 1 915-1 920 MHz, 1 995-2 000 MHz, 2 000-2 020 MHz, 2 110-2 155 MHz, 2 155-2 180 MHz, and 2 180-2 200 bands, 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.
- §90.691(a), out-of-band emission requirement shall apply only to the "outer" channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:
  - (1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least  $116 \text{Log}_{10} (f / 6.1)$  decibels or  $50 + 10 \text{Log}_{10} (P)$  decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.
  - (2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \text{Log}_{10} (P)$  decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

## 2.3. Test Procedure

### 2.3.1. E.R.P. or E.I.R.P. from conducted RF output power

According to subclause 5.2.5.5 of ANSI C63.26-2015 E.R.P. and E.I.R.P. are defined as the product of the power supplied to the antenna and its gain.

The relevant equation for determining the E.R.P. or E.I.R.P. from the conducted RF output power measured using the guidance provided above is:

$$\text{E.R.P. or E.I.R.P.} = P_{\text{Meas}} + G_{\text{T}}$$

where:

E.R.P. or E.I.R.P. = effective radiated power or equivalent isotropically radiated power, respectively  
(expressed in the same units as  $P_{\text{Meas}}$ , typically dBW or dBm);

$P_{\text{Meas}}$  = measured transmitter output power or PSD, in dBm or dBW;

$G_{\text{T}}$  = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

### 2.3.2. Radiated Output Power & Radiated Spurious Emissions

The test based on ANSI/TIA 603E: 2016 and ANSI C63.26-2015 and KDB 971168 D01 Power Meas License Digital Systems v03r01.

1. On a test site, the EUT shall be placed at 0.8 m or 1.5 m height on a turn table, and in the position close to normal use as declared by the applicant.
2. The test antenna shall be oriented initially for vertical polarization located 3 m from EUT to correspond to the fundamental frequency of the transmitter.
3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used for the measurement.
4. Radiated spurious emissions measurement method was set as follows:  
RBW = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1 GHz, VBW  $\geq$  3 x RBW,  
Detector = RMS, trace mode = max hold, per the guidelines of KDB 971168 D01 Power Meas License Digital Systems v03r01.
5. The transmitter shall be switched on, the measuring receiver shall be tuned to the frequency of the transmitter under test.
6. The test antenna shall be raised and lowered through the specified range of height until the maximum signal level is detected by the measuring receiver.
7. The transmitter shall be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
8. The test antenna shall be raised and lowered again through the specified range of height until the maximum signal level is detected by the measuring receiver.
9. The maximum signal level detected by the measuring receiver shall be noted.
10. In necessary, the input attenuator setting on the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
11. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
12. The measurement shall be repeated with the test antenna orientated for horizontal polarization.

## 2.4. Test results

Ambient temperature : (23 ± 1) °C  
 Relative humidity : 47 % R.H.

### 2.4.1. E.R.P. / E.I.R.P. from conducted RF output power measurements

Band	Frequency (MHz)	Maximum Conducted Power (dB m)	Maximum Conducted Power (W)	Antenna Gain (dB i)	Maximum E.I.R.P. (dB m)	Maximum E.I.R.P. (W)	Maximum E.R.P. (dB m)	Maximum E.R.P. (W)	Limit
2	1 850 ~ 1 910	23.54	0.226	1.97	25.51	0.356			2 W E.I.R.P.
12	699 ~ 716	23.93	0.247	3.08	27.01	0.502	24.86	0.306	30 W E.R.P.
13	777 ~ 787	23.85	0.243	1.08	24.93	0.311	22.78	0.190	30 W E.R.P.
26/5 Part 22	824 ~ 849	23.82	0.241	1.11	24.93	0.311	22.78	0.190	7 W E.R.P.
26 Part 90	814 ~ 824	23.95	0.248	1.11	25.06	0.321	22.91	0.195	100 W
66/4	1 710 ~ 1 780	23.68	0.233	1.57	25.25	0.335			1 W E.I.R.P.

**Remark;**

1. E.I.R.P. (dB m) = Maximum Conducted Power (dB m) + Antenna Gain (dB i)
2. E.R.P. (dB m) = E.I.R.P. (dB m) – 2.15 (dB); where E.R.P. and E.I.R.P. are expressed in consistent units.



### 2.4.2. Radiated Spurious Emissions

#### LTE band 2 (15 MHz – QPSK)

Frequency (MHz)	Measured Level (dB $\mu$ V)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB $\mu$ V/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (1 857.5 MHz)									
Below 1 000.00	Not detected	-	-	-	-	-	-	-	-
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-
Middle Channel (1 880.0 MHz)									
Below 1 000.00	Not detected	-	-	-	-	-	-	-	-
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-
High Channel (1 902.5 MHz)									
Below 1 000.00	Not detected	-	-	-	-	-	-	-	-
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-

**LTE band 12 (1.4 MHz – QPSK)**

Frequency (MHz)	Measured Level (dB $\mu$ V)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB $\mu$ V/m)	CF (dB)	E.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (699.7 MHz)									
1 398.57	76.46	H	25.29	-40.16	61.59	-97.41	-35.82	-13	22.82
1 398.42	71.32	V	25.29	-40.16	56.45	-97.41	-40.96	-13	27.96
2 097.75	71.86	H	27.80	-37.09	62.57	-97.41	<b>-34.84</b>	-13	21.84
2 097.66	68.54	V	27.80	-37.09	59.25	-97.41	-38.16	-13	25.16
2 796.81	59.20	H	29.09	-37.54	50.75	-97.41	-46.66	-13	33.66
2 797.02	59.46	V	29.09	-37.54	51.01	-97.41	-46.40	-13	33.40
3 496.23	55.54	H	31.29	-36.59	50.24	-97.41	-47.17	-13	34.17
3 496.25	56.80	V	31.29	-36.59	51.50	-97.41	-45.91	-13	32.91
4 195.48	47.97	H	32.19	-35.87	44.29	-97.41	-53.12	-13	40.12
4 195.48	47.78	V	32.19	-35.87	44.10	-97.41	-53.31	-13	40.31
4 894.70	47.52	H	33.17	-34.15	46.54	-97.41	-50.87	-13	37.87
4 894.78	48.15	V	33.17	-34.15	47.17	-97.41	-50.24	-13	37.24
5 593.91	40.80	H	34.20	-33.62	41.38	-97.41	-56.03	-13	43.03
5 594.21	38.32	V	34.20	-33.64	38.88	-97.41	-58.53	-13	45.53
Above 5 600.00	Not detected	-	-	-	-	-	-	-	-

**LTE band 12 (1.4 MHz – QPSK)**

Frequency (MHz)	Measured Level (dB $\mu$ V)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB $\mu$ V/m)	CF (dB)	E.R.P. (dB m)	Limit (dB m)	Margin (dB)
Middle Channel (707.5 MHz)									
1 414.09	73.92	H	25.24	-40.12	59.04	-97.41	-38.37	-13	25.37
1 414.21	74.41	V	25.24	-40.12	59.53	-97.41	-37.88	-13	24.88
2 121.09	70.24	H	27.72	-37.45	60.51	-97.41	-36.90	-13	23.90
2 121.17	68.10	V	27.72	-37.45	58.37	-97.41	-39.04	-13	26.04
2 828.14	60.63	H	29.21	-37.32	52.52	-97.41	-44.89	-13	31.89
2 828.18	60.67	V	29.21	-37.32	52.56	-97.41	-44.85	-13	31.85
3 535.22	54.24	H	31.30	-36.67	48.87	-97.41	-48.54	-13	35.54
3 535.29	56.63	V	31.30	-36.67	51.26	-97.41	-46.15	-13	33.15
4 242.31	45.18	H	32.20	-34.60	42.78	-97.41	-54.63	-13	41.63
4 242.50	43.23	V	32.20	-34.62	40.81	-97.41	-56.60	-13	43.60
4 949.42	49.74	H	33.20	-33.89	49.05	-97.41	-48.36	-13	35.36
4 949.33	49.11	V	33.20	-33.89	48.42	-97.41	-48.99	-13	35.99
5 656.14	43.16	H	34.10	-34.97	42.29	-97.41	-55.12	-13	42.12
5 656.44	40.81	V	34.10	-34.96	39.95	-97.41	-57.46	-13	44.46
Above 5 700.00	Not detected	-	-	-	-	-	-	-	-

**LTE band 12 (1.4 MHz – QPSK)**

Frequency (MHz)	Measured Level (dB $\mu$ V)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB $\mu$ V/m)	CF (dB)	E.R.P. (dB m)	Limit (dB m)	Margin (dB)
High Channel (715.3 MHz)									
1 429.77	74.07	H	25.18	-40.05	59.20	-97.41	-38.21	-13	25.21
1 429.67	75.72	V	25.18	-40.05	60.85	-97.41	-36.56	-13	23.56
2 144.58	69.75	H	27.62	-38.15	59.22	-97.41	-38.19	-13	25.19
2 144.50	67.05	V	27.62	-38.14	56.53	-97.41	-40.88	-13	27.88
2 859.42	57.51	H	29.30	-37.17	49.64	-97.41	-47.77	-13	34.77
2 859.41	60.98	V	29.30	-37.17	53.11	-97.41	-44.30	-13	31.30
3 574.25	52.59	H	31.35	-35.82	48.12	-97.41	-49.29	-13	36.29
3 574.23	57.19	V	31.35	-35.82	52.72	-97.41	-44.69	-13	31.69
4 288.90	39.07	H	32.20	-35.52	35.75	-97.41	-61.66	-13	48.66
4 288.74	39.68	V	32.20	-35.52	36.36	-97.41	-61.05	-13	48.05
5 003.97	47.73	H	33.22	-34.44	46.51	-97.41	-50.90	-13	37.90
5 003.95	48.85	V	33.22	-34.44	47.63	-97.41	-49.78	-13	36.78
5 718.87	42.91	H	34.18	-34.25	42.84	-97.41	-54.57	-13	41.57
5 718.89	40.45	V	34.18	-34.25	40.38	-97.41	-57.03	-13	44.03
Above 5 800.00	Not detected	-	-	-	-	-	-	-	-

**LTE band 13 (10 MHz – QPSK)**

Frequency (MHz)	Measured Level (dB $\mu$ V)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB $\mu$ V/m)	CF (dB)	E.R.P. (dB m)	Limit (dB m)	Margin (dB)
Middle Channel (782.0 MHz)									
1 555.22	55.58	H	25.31	-39.00	41.89	-97.41	-55.52	-13	42.52
1 555.20	54.04	V	25.31	-39.00	40.35	-97.41	-57.06	-13	44.06
2 332.80	53.21	H	28.13	-37.54	43.80	-97.41	<b>-53.61</b>	-13	40.61
2 332.74	51.55	V	28.13	-37.54	42.14	-97.41	-55.27	-13	42.27
Above 2 400.00	Not detected	-	-	-	-	-	-	-	-

**LTE band 26/5 Part 22 (1.4 MHz – QPSK)**

Frequency (MHz)	Measured Level (dB $\mu$ V)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB $\mu$ V/m)	CF (dB)	E.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (824.7 MHz)									
1 648.47	53.63	H	25.69	-39.65	39.67	-97.41	-57.74	-13	44.74
1 648.54	62.44	V	25.69	-39.65	48.48	-97.41	<b>-48.93</b>	-13	35.93
2 472.78	50.51	H	28.25	-36.62	42.14	-97.41	-55.27	-13	42.27
2 472.87	53.02	V	28.25	-36.62	44.65	-97.41	-52.76	-13	39.76
Above 2 500.00	Not detected	-	-	-	-	-	-	-	-
Middle Channel (836.5 MHz)									
1 672.09	51.84	H	26.05	-39.30	38.59	-97.41	-58.82	-13	45.82
1 672.09	53.47	V	26.05	-39.30	40.22	-97.41	-57.19	-13	44.19
2 508.07	48.04	H	28.33	-37.93	38.44	-97.41	-58.97	-13	45.97
2 508.16	48.12	V	28.33	-37.93	38.52	-97.41	-58.89	-13	45.89
Above 2 600.00	Not detected	-	-	-	-	-	-	-	-
High Channel (848.3 MHz)									
1 695.74	56.26	H	26.43	-39.35	43.34	-97.41	-54.07	-13	41.07
1 695.76	60.65	V	26.43	-39.35	47.73	-97.41	-49.68	-13	36.68
2 543.56	45.61	H	28.47	-37.43	36.65	-97.41	-60.76	-13	47.76
2 543.50	50.30	V	28.47	-37.44	41.33	-97.41	-56.08	-13	43.08
Above 2 600.00	Not detected	-	-	-	-	-	-	-	-

**LTE band 26\_Part 90 (1.4 MHz – QPSK)**

Frequency (MHz)	Measured Level (dB $\mu$ V)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB $\mu$ V/m)	CF (dB)	E.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (814.7 MHz)									
1 628.52	53.02	H	25.57	-39.53	39.06	-97.41	-58.35	-13	45.35
1 628.54	49.26	V	25.57	-39.53	35.30	-97.41	-62.11	-13	49.11
2 442.73	50.31	H	28.21	-37.75	40.77	-97.41	-56.64	-13	43.64
2 442.67	47.10	V	28.21	-37.75	37.56	-97.41	-59.85	-13	46.85
Above 2 500.00	Not detected	-	-	-	-	-	-	-	-
Middle Channel (819.0 MHz)									
1 637.07	53.28	H	25.62	-39.58	39.32	-97.41	-58.09	-13	45.09
1 637.03	47.01	V	25.62	-39.58	33.05	-97.41	-64.36	-13	51.36
2 455.64	48.65	H	28.21	-37.43	39.43	-97.41	-57.98	-13	44.98
2 455.55	51.53	V	28.21	-37.43	42.31	-97.41	<b>-55.10</b>	-13	42.10
Above 2 500.00	Not detected	-	-	-	-	-	-	-	-
High Channel (823.3 MHz)									
1 641.67	53.30	H	25.65	-39.61	39.34	-97.41	-58.07	-13	45.07
1 641.56	48.19	V	25.65	-39.61	34.23	-97.41	-63.18	-13	50.18
2 468.64	48.02	H	28.24	-36.82	39.44	-97.41	-57.97	-13	44.97
2 468.53	44.51	V	28.24	-36.82	35.93	-97.41	-61.48	-13	48.48
Above 2 500.00	Not detected	-	-	-	-	-	-	-	-

**LTE band 66/4 (3 MHz – QPSK)**

Frequency (MHz)	Measured Level (dB $\mu$ V)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB $\mu$ V/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (1 711.5 MHz)									
3 420.57	43.15	H	31.08	-35.44	38.79	-95.26	-56.47	-13	43.47
3 420.42	41.93	V	31.08	-35.45	37.56	-95.26	-57.70	-13	44.70
6 840.83	34.96	H	35.58	-33.13	37.41	-95.26	-57.85	-13	44.85
6 840.91	37.26	V	35.58	-33.13	39.71	-95.26	-55.55	-13	42.55
Above 6 900.00	Not detected	-	-	-	-	-	-	-	-
Middle Channel (1 745.0 MHz)									
3 487.71	44.82	H	31.28	-36.56	39.54	-95.26	-55.72	-13	42.72
3 487.55	43.93	V	31.28	-36.56	38.65	-95.26	-56.61	-13	43.61
6 974.99	36.12	H	35.55	-32.16	39.51	-95.26	-55.75	-13	42.75
6 974.90	40.66	V	35.55	-32.16	44.05	-95.26	<b>-51.21</b>	-13	38.21
Above 7 000.00	Not detected	-	-	-	-	-	-	-	-
High Channel (1 778.5 MHz)									
3 554.49	43.83	H	31.31	-36.54	38.60	-95.26	-56.66	-13	43.66
3 554.49	42.90	V	31.31	-36.54	37.67	-95.26	-57.59	-13	44.59
7 109.02	36.28	H	35.65	-32.20	39.73	-95.26	-55.53	-13	42.53
7 109.17	39.09	V	35.66	-32.21	42.54	-95.26	-52.72	-13	39.72
Above 7 200.00	Not detected	-	-	-	-	-	-	-	-

**Remark;**

1. AF = Antenna Factor, CL = Cable Loss, CF = Conversion Factor.
2. E (dB $\mu$ V/m) = Measured Level (dB $\mu$ V) + Antenna Factor (dB/m) + AMP (dB) + Cable Loss (dB).
3. E.I.R.P. (dB m) = E (dB $\mu$ V/m) + CF (dB).
4. E.R.P. (dB m) = E (dB $\mu$ V/m) + CF (dB) – 2.15 (dB); where E.R.P. and E.I.R.P. are expressed in consistent units.
5. CF (dB) = 20 log D - 104.8; where D is the measurement distance in meters, According to ANSI C63.26-2015 5.2.7 and KDB 971168 D01 v03r01 5.8.4
6. The frequency spectrum is examined from 9 kHz to the 10<sup>th</sup> harmonic of the fundamental frequency of the transmitter. No other spurious and harmonic emissions were reported greater than listed emissions above table.



### 3. Conducted Output Power

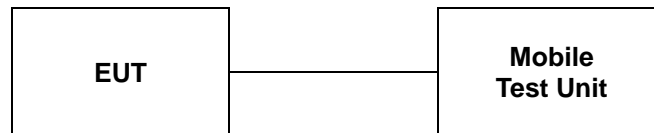
#### 3.1. Limit

CFR 47, Section FCC §2.1046.

#### 3.2. Test Procedure

Output power shall be measured at the RF output terminals for all configurations.

1. The RF output of the transmitter was connected to the input of the mobile test unit in order to establish communication with the EUT.
2. The EUT was set up for the max. output power with pseudo random data modulation by using mobile test unit parameters.
3. This EUT was tested under all configurations and the highest power was investigated and reported.



### 3.3. Test Result

Ambient temperature : (23 ± 1) °C  
 Relative humidity : 47 % R.H.

LTE Band 2											
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power							
				18607 (1 850.7 MHz)		18900 (1 880.0 MHz)		19193 (1 909.3 MHz)			
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)		
1.4	QPSK	1	0	<b>23.50</b>	<b>0.224</b>	22.97	0.198	23.40	0.219		
		1	3	23.30	0.214	23.10	0.204	23.48	0.223		
		1	5	23.15	0.207	23.04	0.201	23.17	0.207		
		3	0	23.48	0.223	23.03	0.201	23.30	0.214		
		3	2	23.32	0.215	23.16	0.207	23.44	0.221		
		3	3	23.35	0.216	23.14	0.206	23.42	0.220		
	16QAM	1	0	22.48	0.177	22.03	0.160	22.08	0.161		
		1	3	21.95	0.157	22.03	0.160	21.93	0.156		
		1	5	22.17	0.165	22.11	0.163	22.10	0.162		
		3	0	22.29	0.169	22.08	0.161	21.94	0.156		
		3	2	<b>22.59</b>	<b>0.182</b>	22.04	0.160	22.12	0.163		
		3	3	22.50	0.178	22.00	0.158	22.07	0.161		
		6	0	21.51	0.142	21.29	0.135	21.64	0.146		
		3	QPSK	1	0	<b>23.52</b>	<b>0.225</b>	23.09	0.204	23.26	0.212
1	7			23.43	0.220	23.19	0.208	23.31	0.214		
1	14			23.52	0.225	23.19	0.208	23.31	0.214		
8	0			22.44	0.175	22.06	0.161	22.23	0.167		
8	4			22.33	0.171	22.08	0.161	22.11	0.163		
8	7			22.36	0.172	22.09	0.162	22.11	0.163		
15	0			22.28	0.169	22.02	0.159	22.22	0.167		
16QAM	1		0	22.05	0.160	22.21	0.166	22.33	0.171		
	1		7	22.27	0.169	<b>22.53</b>	<b>0.179</b>	22.03	0.160		
	1		14	22.18	0.165	22.49	0.177	22.09	0.162		
	8		0	21.73	0.149	21.13	0.130	21.13	0.130		
	8		4	21.60	0.145	21.13	0.130	21.22	0.132		
	8		7	21.55	0.143	21.15	0.130	21.10	0.129		
	15		0	21.26	0.134	21.06	0.128	21.11	0.129		
	5		QPSK	1	0	23.45	0.221	23.11	0.205	23.27	0.212
				1	12	<b>23.51</b>	<b>0.224</b>	23.20	0.209	23.24	0.211
				1	24	23.51	0.224	23.22	0.210	23.30	0.214
				12	0	22.43	0.175	22.29	0.169	22.16	0.164
12		6		22.35	0.172	22.42	0.175	22.14	0.164		
12		13		22.39	0.173	22.34	0.171	22.12	0.163		
25		0		22.03	0.160	22.09	0.162	22.18	0.165		
16QAM		1	0	22.02	0.159	22.14	0.164	<b>22.44</b>	<b>0.175</b>		
		1	12	22.11	0.163	22.12	0.163	21.94	0.156		
		1	24	22.13	0.163	22.14	0.164	21.85	0.153		
		12	0	21.45	0.140	21.06	0.128	21.13	0.130		
		12	6	21.25	0.133	21.12	0.129	21.11	0.129		
	12	13	21.30	0.135	21.20	0.132	21.03	0.127			
	25	0	21.47	0.140	21.14	0.130	21.11	0.129			

LTE Band 2									
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				18650 (1 855.0 MHz)		18900 (1 880.0 MHz)		19150 (1 905.0 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
10	QPSK	1	0	23.49	0.223	23.44	0.221	23.49	0.223
		1	25	<b>23.52</b>	<b>0.225</b>	23.39	0.218	23.38	0.218
		1	49	23.38	0.218	23.22	0.210	23.51	0.224
		25	0	22.55	0.180	22.29	0.169	22.25	0.168
		25	12	22.38	0.173	22.33	0.171	22.13	0.163
		25	25	22.46	0.176	22.53	0.179	22.36	0.172
		50	0	22.48	0.177	22.05	0.160	22.14	0.164
	16QAM	1	0	22.25	0.168	21.99	0.158	21.93	0.156
		1	25	22.23	0.167	22.05	0.160	22.07	0.161
		1	49	22.23	0.167	21.98	0.158	<b>22.30</b>	<b>0.170</b>
27		0	21.09	0.129	20.78	0.120	21.03	0.127	
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				18675 (1 857.5 MHz)		18900 (1 880.0 MHz)		19125 (1 902.5 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
15	QPSK	1	0	23.52	0.225	23.19	0.208	23.30	0.214
		1	36	<b>23.54</b>	<b>0.226</b>	23.28	0.213	23.42	0.220
		1	74	23.52	0.225	23.26	0.212	23.31	0.214
		36	0	22.58	0.181	22.37	0.173	22.07	0.161
		36	18	22.34	0.171	22.26	0.168	22.14	0.164
		36	37	22.35	0.172	22.28	0.169	22.09	0.162
		75	0	22.31	0.170	22.35	0.172	22.16	0.164
	16QAM	1	0	22.49	0.177	22.05	0.160	22.04	0.160
		1	36	22.17	0.165	22.07	0.161	22.09	0.162
		1	74	<b>22.67</b>	<b>0.185</b>	21.91	0.155	22.12	0.163
27		0	20.91	0.123	21.01	0.126	21.13	0.130	
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				18700 (1 860.0 MHz)		18900 (1 880.0 MHz)		19100 (1 900.0 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
20	QPSK	1	0	<b>23.42</b>	<b>0.220</b>	23.31	0.214	23.12	0.205
		1	50	23.41	0.219	23.21	0.209	23.27	0.212
		1	99	23.41	0.219	23.37	0.217	23.34	0.216
		50	0	22.58	0.181	22.41	0.174	22.03	0.160
		50	25	22.34	0.171	22.46	0.176	22.15	0.164
		50	13	22.30	0.170	22.43	0.175	22.29	0.169
		100	0	22.37	0.173	22.39	0.173	22.31	0.170
	16QAM	1	0	22.21	0.166	21.88	0.154	22.05	0.160
		1	50	22.14	0.164	21.89	0.155	22.15	0.164
		1	99	<b>22.22</b>	<b>0.167</b>	22.01	0.159	21.99	0.158
27		0	20.59	0.115	20.94	0.124	20.86	0.122	

LTE Band 12									
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				23017 (699.7 MHz)		23095 (707.5 MHz)		23173 (715.3 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
1.4	QPSK	1	0	23.55	0.226	<b>23.93</b>	<b>0.247</b>	23.72	0.236
		1	3	23.65	0.232	23.66	0.232	23.59	0.229
		1	5	23.68	0.233	23.90	0.245	23.59	0.229
		3	0	23.66	0.232	23.90	0.245	23.72	0.236
		3	2	23.65	0.232	23.64	0.231	23.61	0.230
		3	3	23.64	0.231	23.62	0.230	23.71	0.235
		6	0	22.59	0.182	22.58	0.181	22.52	0.179
	16QAM	1	0	22.19	0.166	22.54	0.179	22.49	0.177
		1	3	22.64	0.184	22.59	0.182	22.40	0.174
		1	5	22.53	0.179	22.58	0.181	22.44	0.175
		3	0	<b>22.67</b>	<b>0.185</b>	22.63	0.183	22.42	0.175
		3	2	22.63	0.183	22.32	0.171	22.52	0.179
		3	3	22.59	0.182	22.37	0.173	22.53	0.179
		6	0	21.47	0.140	21.55	0.143	21.50	0.141
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				23025 (700.5 MHz)		23095 (707.5 MHz)		23165 (714.5 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
3	QPSK	1	0	23.42	0.220	23.55	0.226	23.38	0.218
		1	7	23.61	0.230	23.29	0.213	23.35	0.216
		1	14	<b>23.70</b>	<b>0.234</b>	23.38	0.218	23.12	0.205
		8	0	22.58	0.181	22.46	0.176	22.72	0.187
		8	4	22.41	0.174	22.55	0.180	22.73	0.187
		8	7	22.49	0.177	22.54	0.179	22.67	0.185
		15	0	22.55	0.180	22.45	0.176	22.62	0.183
	16QAM	1	0	22.50	0.178	22.76	0.189	22.93	0.196
		1	7	22.44	0.175	22.65	0.184	<b>23.05</b>	<b>0.202</b>
		1	14	22.44	0.175	22.63	0.183	22.87	0.194
		8	0	21.78	0.151	21.54	0.143	21.51	0.142
		8	4	21.75	0.150	21.55	0.143	21.49	0.141
		8	7	21.77	0.150	21.54	0.143	21.54	0.143
		15	0	21.65	0.146	21.39	0.138	21.34	0.136

LTE Band 12									
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				23035 (701.5 MHz)		23095 (707.5 MHz)		23155 (713.5 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
5	QPSK	1	0	23.35	0.216	<b>23.87</b>	<b>0.244</b>	23.11	0.205
		1	12	23.56	0.227	23.18	0.208	23.21	0.209
		1	24	23.37	0.217	23.18	0.208	23.09	0.204
		12	0	22.53	0.179	22.61	0.182	22.48	0.177
		12	6	22.52	0.179	22.61	0.182	22.49	0.177
		12	13	22.41	0.174	22.51	0.178	22.51	0.178
		25	0	22.42	0.175	22.46	0.176	22.43	0.175
	16QAM	1	0	22.19	0.166	<b>22.99</b>	<b>0.199</b>	22.23	0.167
		1	12	22.56	0.180	22.93	0.196	22.25	0.168
		1	24	22.21	0.166	22.69	0.186	22.14	0.164
		12	0	21.49	0.141	21.31	0.135	21.51	0.142
		12	6	21.51	0.142	21.41	0.138	21.69	0.148
		12	13	21.41	0.138	21.27	0.134	21.49	0.141
		25	0	21.58	0.144	21.38	0.137	21.55	0.143
LTE Band 12									
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				23060 (704.0 MHz)		23095 (707.5 MHz)		23130 (711.0 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
10	QPSK	1	0	23.62	0.230	<b>23.72</b>	<b>0.236</b>	23.35	0.216
		1	25	23.57	0.228	23.61	0.230	23.45	0.221
		1	49	23.57	0.228	23.52	0.225	23.54	0.226
		25	0	22.55	0.180	22.63	0.183	22.56	0.180
		25	12	22.54	0.179	22.49	0.177	22.54	0.179
		25	25	22.53	0.179	22.31	0.170	22.39	0.173
		50	0	22.49	0.177	22.52	0.179	22.58	0.181
	16QAM	1	0	<b>22.81</b>	<b>0.191</b>	22.68	0.185	22.32	0.171
		1	25	22.74	0.188	22.51	0.178	22.27	0.169
		1	49	22.81	0.191	22.62	0.183	22.19	0.166
		27	0	21.34	0.136	21.43	0.139	21.60	0.145

LTE Band 13									
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				23205 (779.5 MHz)		23230 (782.0 MHz)		23255 (784.5 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
5	QPSK	1	0	23.44	0.221	23.51	0.224	23.05	0.202
		1	12	<b>23.69</b>	<b>0.234</b>	23.56	0.227	23.13	0.206
		1	24	23.47	0.222	23.56	0.227	23.06	0.202
		12	0	22.56	0.180	22.64	0.184	22.52	0.179
		12	6	22.70	0.186	22.64	0.184	22.65	0.184
		12	13	22.57	0.181	22.63	0.183	22.57	0.181
		25	0	22.58	0.181	22.64	0.184	22.50	0.178
	16QAM	1	0	22.35	0.172	22.40	0.174	22.70	0.186
		1	12	22.50	0.178	22.49	0.177	<b>22.78</b>	<b>0.190</b>
		1	24	22.42	0.175	22.52	0.179	22.72	0.187
		12	0	21.46	0.140	21.46	0.140	21.53	0.142
		12	6	21.48	0.141	21.48	0.141	21.69	0.148
		12	13	21.57	0.144	21.47	0.140	21.77	0.150
		25	0	21.36	0.137	21.49	0.141	21.66	0.147
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				-		23230 (782.0 MHz)		-	
				-	-	(dB m)	(W)	-	-
10	QPSK	1	0	-	-	<b>23.85</b>	<b>0.243</b>	-	-
		1	25	-	-	23.79	0.239	-	-
		1	49	-	-	23.67	0.233	-	-
		25	0	-	-	22.63	0.183	-	-
		25	12	-	-	22.52	0.179	-	-
		25	25	-	-	22.48	0.177	-	-
		50	0	-	-	22.61	0.182	-	-
	16QAM	1	0	-	-	22.39	0.173	-	-
		1	25	-	-	<b>22.70</b>	<b>0.186</b>	-	-
		1	49	-	-	22.41	0.174	-	-
		27	0	-	-	21.44	0.139	-	-

LTE Band 26/5_part 22									
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				26797 (824.7 MHz)		26915 (836.5 MHz)		27033 (848.3 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
1.4	QPSK	1	0	23.36	0.217	23.43	0.220	23.45	0.221
		1	2	23.41	0.219	23.32	0.215	23.44	0.221
		1	5	23.44	0.221	23.42	0.220	<b>23.82</b>	<b>0.241</b>
		3	0	23.35	0.216	23.32	0.215	23.42	0.220
		3	2	23.38	0.218	23.47	0.222	23.41	0.219
		3	3	23.46	0.222	23.46	0.222	23.41	0.219
		6	0	22.31	0.170	22.41	0.174	22.42	0.175
	16QAM	1	0	22.17	0.165	22.03	0.160	22.18	0.165
		1	3	22.15	0.164	22.07	0.161	22.27	0.169
		1	5	22.33	0.171	22.15	0.164	22.08	0.161
		3	0	22.31	0.170	22.21	0.166	22.22	0.167
		3	2	22.31	0.170	22.22	0.167	22.27	0.169
		3	3	<b>22.36</b>	<b>0.172</b>	22.13	0.163	22.23	0.167
		6	0	21.14	0.130	21.63	0.146	21.59	0.144
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				26805 (825.5 MHz)		26915 (836.5 MHz)		27025 (847.5 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
3	QPSK	1	0	23.38	0.218	23.49	0.223	23.51	0.224
		1	7	23.36	0.217	23.53	0.225	23.36	0.217
		1	14	23.41	0.219	<b>23.59</b>	<b>0.229</b>	23.43	0.220
		8	0	22.50	0.178	22.44	0.175	22.33	0.171
		8	4	22.52	0.179	22.49	0.177	22.33	0.171
		8	7	22.50	0.178	22.26	0.168	22.33	0.171
		15	0	22.26	0.168	22.36	0.172	22.32	0.171
	16QAM	1	0	22.38	0.173	22.17	0.165	22.17	0.165
		1	7	<b>22.42</b>	<b>0.175</b>	22.22	0.167	22.19	0.166
		1	14	22.27	0.169	22.24	0.167	22.06	0.161
		8	0	21.74	0.149	21.38	0.137	21.31	0.135
		8	4	21.79	0.151	21.73	0.149	21.30	0.135
		8	7	21.71	0.148	21.49	0.141	21.39	0.138
		15	0	21.20	0.132	21.35	0.136	21.33	0.136
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				26815 (826.5 MHz)		26915 (836.5 MHz)		27015 (846.5 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
5	QPSK	1	0	23.41	0.219	23.46	0.222	23.28	0.213
		1	12	23.36	0.217	23.45	0.221	<b>23.62</b>	<b>0.230</b>
		1	24	23.33	0.215	23.42	0.220	23.30	0.214
		12	0	22.50	0.178	22.48	0.177	22.37	0.173
		12	6	22.60	0.182	22.45	0.176	22.41	0.174
		12	13	22.57	0.181	22.57	0.181	22.36	0.172
		25	0	22.48	0.177	22.36	0.172	22.35	0.172
	16QAM	1	0	22.19	0.166	22.07	0.161	22.05	0.160
		1	12	22.10	0.162	22.13	0.163	22.15	0.164
		1	24	<b>22.25</b>	<b>0.168</b>	22.09	0.162	21.99	0.158
		12	0	21.47	0.140	21.36	0.137	21.42	0.139
		12	6	21.70	0.148	21.53	0.142	21.36	0.137
		12	13	21.45	0.140	21.35	0.136	21.36	0.137
		25	0	21.57	0.144	21.37	0.137	21.40	0.138

LTE Band 26/5_part 22									
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				26840 (829.0 MHz)		26915 (836.5 MHz)		26990 (844.0 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
10	QPSK	1	0	23.43	0.220	23.36	0.217	23.39	0.218
		1	25	23.51	0.224	23.62	0.230	23.48	0.223
		1	49	23.46	0.222	23.51	0.224	<b>23.69</b>	<b>0.234</b>
		25	0	22.48	0.177	22.52	0.179	22.42	0.175
		25	12	22.62	0.183	22.43	0.175	22.43	0.175
		25	25	22.61	0.182	22.58	0.181	22.61	0.182
	16QAM	50	0	22.55	0.180	22.48	0.177	22.36	0.172
		1	0	22.25	0.168	22.12	0.163	22.25	0.168
		1	25	22.11	0.163	22.18	0.165	22.13	0.163
		1	49	22.24	0.167	<b>22.31</b>	<b>0.170</b>	22.22	0.167
		27	0	21.59	0.144	21.62	0.145	21.56	0.143
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				26865 (831.5 MHz)		-		26965 (841.5 MHz)	
				(dB m)	(W)	-	-	(dB m)	(W)
15	QPSK	1	0	23.45	0.221	-	-	23.40	0.219
		1	36	23.50	0.224	-	-	<b>23.52</b>	<b>0.225</b>
		1	74	23.48	0.223	-	-	23.51	0.224
		36	0	22.49	0.177	-	-	22.48	0.177
		36	18	22.63	0.183	-	-	22.53	0.179
		36	37	22.60	0.182	-	-	22.50	0.178
	16QAM	75	0	22.48	0.177	-	-	22.39	0.173
		1	0	22.26	0.168	-	-	22.24	0.167
		1	36	22.24	0.167	-	-	22.11	0.163
		1	74	<b>22.27</b>	<b>0.169</b>	-	-	22.23	0.167
		27	0	21.50	0.141	-	-	21.58	0.144



LTE Band 26_part 90									
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				26697 (814.7 MHz)		26740 (819.0 MHz)		26783 (823.3 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
1.4	QPSK	1	0	23.37	0.217	23.50	0.224	23.25	0.211
		1	2	23.59	0.229	23.61	0.230	23.42	0.220
		1	5	23.60	0.229	<b>23.95</b>	<b>0.248</b>	23.34	0.216
		3	0	23.50	0.224	23.58	0.228	23.43	0.220
		3	2	23.61	0.230	23.76	0.238	23.32	0.215
		3	3	23.57	0.228	23.57	0.228	23.32	0.215
		6	0	22.47	0.177	22.62	0.183	22.50	0.178
	16QAM	1	0	22.31	0.170	22.07	0.161	22.28	0.169
		1	2	22.14	0.164	22.08	0.161	22.34	0.171
		1	5	22.27	0.169	22.18	0.165	22.40	0.174
		3	0	22.57	0.181	22.14	0.164	22.35	0.172
		3	2	22.44	0.175	22.24	0.167	22.25	0.168
		3	3	<b>22.68</b>	<b>0.185</b>	22.30	0.170	22.22	0.167
		6	0	21.61	0.145	21.63	0.146	21.81	0.152
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				26705 (815.5 MHz)		26740 (819.0 MHz)		26775 (822.5 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
3	QPSK	1	0	23.41	0.219	23.57	0.228	23.40	0.219
		1	7	23.58	0.228	<b>23.71</b>	<b>0.235</b>	23.45	0.221
		1	14	23.52	0.225	23.47	0.222	23.47	0.222
		8	0	22.59	0.182	22.52	0.179	22.45	0.176
		8	4	22.50	0.178	22.56	0.180	22.47	0.177
		8	7	22.69	0.186	22.52	0.179	22.47	0.177
		15	0	22.48	0.177	22.53	0.179	22.48	0.177
	16QAM	1	0	22.27	0.169	<b>22.44</b>	<b>0.175</b>	22.29	0.169
		1	7	22.25	0.168	22.34	0.171	22.29	0.169
		1	14	22.19	0.166	22.38	0.173	22.27	0.169
		8	0	21.57	0.144	21.65	0.146	21.43	0.139
		8	4	21.50	0.141	21.42	0.139	21.36	0.137
		8	7	21.72	0.149	21.37	0.137	21.44	0.139
		15	0	21.43	0.139	21.52	0.142	21.36	0.137
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				26715 (816.5 MHz)		26740 (819.0 MHz)		26765 (821.5 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
5	QPSK	1	0	23.32	0.215	23.54	0.226	23.43	0.220
		1	12	23.53	0.225	<b>23.67</b>	<b>0.233</b>	23.63	0.231
		1	24	23.57	0.228	23.58	0.228	23.28	0.213
		12	0	22.59	0.182	22.55	0.180	22.44	0.175
		12	6	22.59	0.182	22.54	0.179	22.54	0.179
		12	13	22.65	0.184	22.57	0.181	22.32	0.171
		25	0	22.58	0.181	22.48	0.177	22.44	0.175
	16QAM	1	0	22.25	0.168	22.10	0.162	22.07	0.161
		1	12	22.24	0.167	<b>22.46</b>	<b>0.176</b>	22.16	0.164
		1	24	22.28	0.169	22.20	0.166	22.28	0.169
		12	0	21.53	0.142	21.40	0.138	21.43	0.139
		12	6	21.60	0.145	21.63	0.146	21.54	0.143
		12	13	21.58	0.144	21.36	0.137	21.44	0.139
		25	0	21.63	0.146	21.45	0.140	21.63	0.146

LTE Band 26_part 90									
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				-		26740 (819.0 MHz)		-	
				-	-	(dB m)	(W)	-	-
10	QPSK	1	0	-	-	23.56	0.227	-	-
		1	25	-	-	23.52	0.225	-	-
		1	49	-	-	<b>23.64</b>	<b>0.231</b>	-	-
		25	0	-	-	22.68	0.185	-	-
		25	12	-	-	22.63	0.183	-	-
		25	25	-	-	22.57	0.181	-	-
		50	0	-	-	22.42	0.175	-	-
	16QAM	1	0	-	-	22.26	0.168	-	-
		1	25	-	-	22.14	0.164	-	-
		1	49	-	-	<b>22.28</b>	<b>0.169</b>	-	-
27		0	-	-	21.53	0.142	-	-	
LTE Band 26_part 90									
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				-		26765 (821.5 MHz)		-	
				-	-	(dB m)	(W)	-	-
15	QPSK	1	0	-	-	23.44	0.221	-	-
		1	36	-	-	<b>23.55</b>	<b>0.226</b>	-	-
		1	74	-	-	23.48	0.223	-	-
		36	0	-	-	22.63	0.183	-	-
		36	18	-	-	22.61	0.182	-	-
		36	37	-	-	22.51	0.178	-	-
		75	0	-	-	22.65	0.184	-	-
	16QAM	1	0	-	-	<b>22.52</b>	<b>0.179</b>	-	-
		1	36	-	-	22.29	0.169	-	-
		1	74	-	-	22.31	0.170	-	-
27		0	-	-	21.62	0.145	-	-	

LTE Band 66/4									
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				131979 (1 710.7 MHz)		132322 (1 745.0 MHz)		132665 (1 779.3 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
1.4	QPSK	1	0	23.10	0.204	23.15	0.207	22.90	0.195
		1	3	23.21	0.209	23.14	0.206	22.87	0.194
		1	5	23.14	0.206	23.22	0.210	22.94	0.197
		3	0	22.99	0.199	23.21	0.209	23.01	0.200
		3	2	23.09	0.204	<b>23.36</b>	<b>0.217</b>	22.82	0.191
		3	3	23.04	0.201	23.36	0.217	22.99	0.199
		6	0	22.05	0.160	22.22	0.167	21.78	0.151
	16QAM	1	0	21.84	0.153	22.07	0.161	21.65	0.146
		1	3	21.94	0.156	22.00	0.158	21.72	0.149
		1	5	21.93	0.156	22.08	0.161	21.80	0.151
		3	0	21.85	0.153	22.08	0.161	21.65	0.146
		3	2	22.14	0.164	22.08	0.161	21.54	0.143
		3	3	21.88	0.154	<b>22.15</b>	<b>0.164</b>	21.84	0.153
		6	0	20.81	0.121	21.14	0.130	20.73	0.118
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				131987 (1 711.5 MHz)		132322 (1 745.0 MHz)		132657 (1 778.5 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
3	QPSK	1	0	23.24	0.211	<b>23.68</b>	<b>0.233</b>	23.08	0.203
		1	7	23.18	0.208	23.48	0.223	23.01	0.200
		1	14	23.17	0.207	23.35	0.216	23.07	0.203
		8	0	22.13	0.163	22.34	0.171	21.88	0.154
		8	4	22.09	0.162	22.28	0.169	21.89	0.155
		8	7	22.08	0.161	22.35	0.172	21.89	0.155
		15	0	22.04	0.160	22.27	0.169	21.89	0.155
	16QAM	1	0	21.92	0.156	<b>22.21</b>	<b>0.166</b>	21.75	0.150
		1	7	21.98	0.158	21.95	0.157	21.68	0.147
		1	14	21.84	0.153	22.21	0.166	21.58	0.144
		8	0	21.45	0.140	21.32	0.136	20.82	0.121
		8	4	21.00	0.126	21.24	0.133	20.75	0.119
		8	7	21.36	0.137	21.36	0.137	20.86	0.122
		15	0	20.81	0.121	21.34	0.136	20.86	0.122
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				131997 (1 712.5 MHz)		132322 (1 745.0 MHz)		132647 (1 777.5 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
5	QPSK	1	0	23.10	0.204	23.39	0.218	23.03	0.201
		1	12	23.15	0.207	23.35	0.216	23.26	0.212
		1	24	23.21	0.209	<b>23.47</b>	<b>0.222</b>	22.97	0.198
		12	0	22.13	0.163	22.40	0.174	21.94	0.156
		12	6	22.11	0.163	22.21	0.166	21.89	0.155
		12	13	22.06	0.161	22.27	0.169	21.82	0.152
		25	0	22.07	0.161	22.26	0.168	21.92	0.156
	16QAM	1	0	21.78	0.151	21.98	0.158	21.77	0.150
		1	12	21.89	0.155	<b>22.15</b>	<b>0.164</b>	21.60	0.145
		1	24	21.90	0.155	22.05	0.160	21.65	0.146
		12	0	22.03	0.160	21.24	0.133	20.88	0.122
		12	6	22.02	0.159	21.21	0.132	20.91	0.123
		12	13	22.03	0.160	21.09	0.129	20.84	0.121
		25	0	21.17	0.131	21.23	0.133	20.87	0.122

LTE Band 66/4									
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				132022 (1 715.0 MHz)		132322 (1 745.0 MHz)		132622 (1 775.0 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
10	QPSK	1	0	23.19	0.208	23.47	0.222	23.10	0.204
		1	25	23.28	0.213	23.50	0.224	23.13	0.206
		1	49	23.05	0.202	<b>23.61</b>	<b>0.230</b>	23.14	0.206
		25	0	22.16	0.164	22.39	0.173	22.03	0.160
		25	12	22.10	0.162	22.30	0.170	21.87	0.154
		25	25	22.09	0.162	22.31	0.170	21.81	0.152
	16QAM	50	0	22.03	0.160	22.31	0.170	21.84	0.153
		1	0	21.88	0.154	<b>22.31</b>	<b>0.170</b>	21.93	0.156
		1	25	22.03	0.160	22.05	0.160	21.94	0.156
		1	49	21.98	0.158	22.31	0.170	21.86	0.153
		27	0	21.06	0.128	21.32	0.136	20.86	0.122
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				132047 (1 717.5 MHz)		132322 (1 745.0 MHz)		132597 (1 772.5 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
15	QPSK	1	0	23.21	0.209	23.53	0.225	23.21	0.209
		1	36	23.22	0.210	23.58	0.228	<b>23.66</b>	<b>0.232</b>
		1	74	23.23	0.210	23.57	0.228	23.28	0.213
		36	0	22.22	0.167	22.28	0.169	21.89	0.155
		36	18	22.03	0.160	22.16	0.164	21.57	0.144
		36	37	22.21	0.166	22.11	0.163	21.60	0.145
	16QAM	75	0	21.99	0.158	22.19	0.166	21.98	0.158
		1	0	22.22	0.167	<b>22.29</b>	<b>0.169</b>	21.94	0.156
		1	36	21.93	0.156	22.27	0.169	21.85	0.153
		1	74	21.91	0.155	22.16	0.164	21.85	0.153
		27	0	20.93	0.124	21.26	0.134	21.09	0.129
Bandwidth (MHz)	Modulation	RB Size	RB Offset	Conducted Output Power					
				132072 (1 720.0 MHz)		132322 (1 745.0 MHz)		132572 (1 770.0 MHz)	
				(dB m)	(W)	(dB m)	(W)	(dB m)	(W)
20	QPSK	1	0	23.16	0.207	23.42	0.220	23.14	0.206
		1	50	23.17	0.207	23.44	0.221	23.11	0.205
		1	99	23.19	0.208	<b>23.45</b>	<b>0.221</b>	23.27	0.212
		50	0	21.84	0.153	22.13	0.163	21.84	0.153
		50	25	22.15	0.164	22.02	0.159	21.83	0.152
		50	13	21.94	0.156	22.05	0.160	21.74	0.149
	16QAM	100	0	22.05	0.160	22.06	0.161	21.88	0.154
		1	0	22.23	0.167	<b>22.48</b>	<b>0.177</b>	21.78	0.151
		1	50	21.73	0.149	22.17	0.165	21.62	0.145
		1	99	21.80	0.151	22.15	0.164	21.79	0.151
		27	0	20.90	0.123	21.02	0.126	20.90	0.123

**Note;**

UL Max. 5 Mbps for LTE Cat 1, so the maximum number of RB supported by 16QAM is 27RB.

## 4. Occupied Bandwidth

### 4.1. Limit

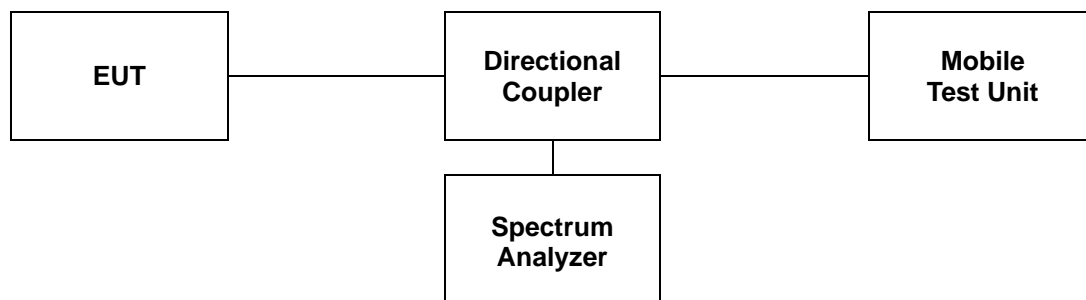
CFR 47, Section FCC §2.1049.

### 4.2. Test Procedure

The test follows section 5.4.4 of ANSI C63.26-2015.

- a. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation. Products including the emission skirts (typically a span of  $1.5 \times \text{OBW}$  is sufficient).
- b. The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1 % to 5 % of the anticipated OBW, and the VBW shall be set  $\geq 3 \times \text{RBW}$ .
- c. Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
- d. Set the detection mode to peak, and the trace mode to max-hold.
- e. If the instrument does not have a 99 % OBW function, recover the trace data points and sum directly in linear power terms. Place the recovered amplitude data points, beginning at the lowest frequency, in a running sum until 0.5 % of the total is reached. Record that frequency as the lower OBW frequency. Repeat the process until 99.5 % of the total is reached and record that frequency as the upper OBW frequency. The 99 % power OBW can be determined by computing the difference these two frequencies.
- f. The OBW shall be reported and plot(s) of the measuring instrument display shall be provided with the test report. The frequency and amplitude axis and scale shall be clearly labeled. Tabular data can be reported in addition to the plot(s).

For the 99 % emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99 % emission bandwidth).



### 4.3 Test Results

Ambient temperature : (23 ± 1) °C  
 Relative humidity : 47 % R.H.

Band	Bandwidth (MHz)	Frequency (MHz)	Occupied Bandwidth (MHz)	
			QPSK	16QAM
2	1.4	1 880	1.097	1.094
	3		2.679	2.679
	5		4.505	4.476
	10		8.951	4.891 (27 RB)
	15		13.367	5.080 (27 RB)
	20		17.822	5.152 (27 RB)
12	1.4	707.5	1.091	1.088
	3		2.679	2.673
	5		4.505	4.486
	10		8.951	4.891 (27 RB)
13	5	782.0	4.476	4.496
	10		8.911	4.863 (27 RB)
26/5 Part 22	1.4	836.5	1.097	1.091
	3		2.673	2.679
	5		4.505	4.496
	10		8.931	4.891 (27 RB)
26 Part 22	15	831.5	13.487	5.036 (27 RB)
26 Part 90	1.4	819	1.091	1.091
	3		2.679	2.685
	5		4.486	4.496
	10		8.891	4.863 (27 RB)
	15	821.5	13.427	5.080 (27 RB)
66/4	1.4	1 745.0	1.097	1.106
	3		2.673	2.679
	5		4.486	4.515
	10		8.951	4.891 (27 RB)
	15		13.427	5.035 (27 RB)
	20		17.862	5.075 (27 RB)

**Note;**

UL Max. 5 Mbps for LTE Cat 1, so the maximum number of RB supported by 16QAM is 27RB.