

## FCC Test Report

### (Spot Check: Part 22, Part 27 – NSA Mode: n66A + LTE Band 5 / 12)

**Report No.:** RF200514C16B-5

**FCC ID:** T8GSAN9001

**Original FCC ID:** T8GSAN9000

**Test Model:** SA-N9001 CUS D1

**Received Date:** May 14, 2020

**Test Date:** Nov. 29 ~ Dec. 24, 2020

**Issued Date:** Dec. 30, 2020

**Applicant:** Harman Connected Car Division

**Address:** Parking 3, 85748 Garching Germany

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
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33383, Taiwan

**FCC Registration /** 788550 / TW0003

**Designation Number:**



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### Release Control Record

Issue No.	Description	Date Issued
RF200514C16B-5	Original release	Dec. 30, 2020

## 1 Certificate of Conformity

**Product:** Module

**Brand:** Harman

**Test Model:** SA-N9001 CUS D1

**Sample Status:** Standard Sample

**Applicant:** Harman Connected Car Division

**Test Date:** Nov. 29 ~ Dec. 24, 2020

**Standards:** FCC Part 22, Subpart H  
FCC Part 27, Subpart H, L

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

**Prepared by :** Celine Chou , **Date:** Dec. 30, 2020  
Celine Chou / Senior Specialist

**Approved by :** Bruce Chen , **Date:** Dec. 30, 2020  
Bruce Chen / Senior Project Engineer

## 2 Summary of Test Results

For LTE Band 5

Applied Standard: FCC Part 22 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 22.913 (a)	Effective radiated power	Pass	Meet the requirement of limit.
2.1053 22.917	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -28.60dB at 35.12MHz.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

For n66, LTE Band 12

Applied Standard: FCC Part 27 & Part 2				
FCC Clause		Test Item	Result	Remarks
LTE B12	n66			
2.1046 27.50 (c)	2.1046 27.50 (d)(4)	Equivalent Isotropically Radiated Power / Equivalent Radiated Power	Pass	Meet the requirement of limit.
2.1053 27.53(g)	2.1053 27.53(h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -26.50dB at 35.12MHz.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

### 2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) ( $\pm$ )
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.59 dB
	200MHz ~ 1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

## 2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver KEYSIGHT	N9038A	MY55420137	Apr. 16, 2020	Apr. 15, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Jun. 12, 2020	Jun. 11, 2021
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Nov. 06, 2020	Nov. 05, 2021
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Nov. 22, 2020	Nov. 21, 2021
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 22, 2020	Nov. 21, 2021
Loop Antenna TESEQ	HLA 6121	45745	Jul. 06, 2020	Jul. 05, 2021
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Jun. 08, 2020	Jun. 07, 2021
Preamplifier Agilent (Above 1GHz)	8449B	3008A02367	Feb. 18, 2020	Feb. 17, 2021
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM8 000	CABLE-CH9-02 (248780+171006)	Jan. 18, 2020	Jan. 17, 2021
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Jan. 18, 2020	Jan. 17, 2021
RF signal cable Woken	8D-FB	Cable-CH9-01	Jun. 08, 2020	Jun. 07, 2021
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Pre-amplifier (18GHz-40GHz) EMC	EMC184045B	980175	Sep. 04, 2020	Sep. 03, 2021
UXM 5G Wireless Test Platform Keysight	E7515B	MY58300759	Apr. 18, 2020	Apr. 17, 2021
Standard Temperature And Humidity Chamber TERCHY	MHU-225AU	920842	May 27, 2020	May 31, 2021
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
True RMS Clamp Meter Fluke	325	31130711WS	Jun. 06, 2020	Jun. 05, 2021
DC power supply	U8002A	MY56330015	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.  
2. The test was performed in HwaYa Chamber 9.

### 3 General Information

#### 3.1 General Description of EUT

Product	Module
Brand	Harman
Test Model	SA-N9001 CUS D1
Sample Status	Standard Sample
Power Supply rating	4.2Vdc

#### n66

Modulation Type	$\pi/2$ BPSK, QPSK, 16QAM, 64QAM, 256QAM					
Waveform Type	CP-OFDM, DFT-s-OFDM					
Operating Frequency	n66 (Channel Bandwidth: 5MHz)	1712.5 ~ 1777.5MHz				
	n66 (Channel Bandwidth: 10MHz)	1715.0 ~ 1775.0MHz				
	n66 (Channel Bandwidth: 15MHz)	1717.5 ~ 1772.5MHz				
	n66 (Channel Bandwidth: 20MHz)	1720.0 ~ 1770.0MHz				
	n66 (Channel Bandwidth: 40MHz)	1730.0 ~ 1760.0MHz				
Max. EIRP Power		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
	n66 (Channel Bandwidth: 5MHz)	411.150mW (26.14dBm)	340.408mW (25.32dBm)	269.153mW (24.30dBm)	232.274mW (23.66dBm)	151.705mW (21.81dBm)
	n66 (Channel Bandwidth: 10MHz)	409.261mW (26.12dBm)	333.426mW (25.23dBm)	269.774mW (24.31dBm)	234.963mW (23.71dBm)	152.757mW (21.84dBm)
	n66 (Channel Bandwidth: 15MHz)	408.319mW (26.11dBm)	331.131mW (25.20dBm)	261.216mW (24.17dBm)	238.232mW (23.77dBm)	152.405mW (21.83dBm)
	n66 (Channel Bandwidth: 20MHz)	405.509mW (26.08dBm)	327.341mW (25.15dBm)	268.534mW (24.29dBm)	242.103mW (23.84dBm)	149.279mW (21.74dBm)
	n66 (Channel Bandwidth: 40MHz)	398.107mW (26.00dBm)	330.370mW (25.19dBm)	271.019mW (24.33dBm)	238.781mW (23.78dBm)	146.893mW (21.67dBm)
Emission Designator		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
	n66 (Channel Bandwidth: 5MHz)	4M47G7D	4M47G7D	4M47D7W	4M45D7W	4M46D7W
	n66 (Channel Bandwidth: 10MHz)	8M93G7D	8M93G7D	8M93D7W	8M92D7W	8M92D7W
	n66 (Channel Bandwidth: 15MHz)	13M4G7D	13M4G7D	13M4D7W	13M4D7W	13M4D7W
	n66 (Channel Bandwidth: 20MHz)	17M9G7D	17M9G7D	17M9D7W	17M8D7W	17M9D7W
	n66 (Channel Bandwidth: 40MHz)	38M6G7D	38M6G7D	38M6D7W	38M6D7W	38M6D7W

### LTE Band

Modulation Type	QPSK, 16QAM, 64QAM, 256QAM				
Operating Frequency	LTE Band 5 (Channel Bandwidth: 1.4MHz)	824.7 ~ 848.3MHz			
	LTE Band 5 (Channel Bandwidth: 3MHz)	825.5 ~ 847.5MHz			
	LTE Band 5 (Channel Bandwidth: 5MHz)	826.5 ~ 846.5MHz			
	LTE Band 5 (Channel Bandwidth: 10MHz)	829.0 ~ 844.0MHz			
	LTE Band 12 (Channel Bandwidth: 1.4MHz)	699.7 ~ 715.3MHz			
	LTE Band 12 (Channel Bandwidth: 3MHz)	700.5 ~ 714.5MHz			
	LTE Band 12 (Channel Bandwidth: 5MHz)	701.5 ~ 713.5MHz			
	LTE Band 12 (Channel Bandwidth: 10MHz)	704.0 ~ 711.0MHz			
Max. ERP Power		QPSK	16QAM	64QAM	256QAM
	LTE Band 5 (Channel Bandwidth: 1.4MHz)	160.325mW (22.05dBm)	128.825mW (21.10dBm)	103.276mW (20.14dBm)	63.826mW (18.05dBm)
	LTE Band 5 (Channel Bandwidth: 3MHz)	163.305mW (22.13dBm)	127.644mW (21.06dBm)	101.391mW (20.06dBm)	64.714mW (18.11dBm)
	LTE Band 5 (Channel Bandwidth: 5MHz)	162.555mW (22.11dBm)	129.420mW (21.12dBm)	101.158mW (20.05dBm)	65.313mW (18.15dBm)
	LTE Band 5 (Channel Bandwidth: 10MHz)	159.956mW (22.04dBm)	130.017mW (21.14dBm)	103.039mW (20.13dBm)	64.714mW (18.11dBm)
	LTE Band 12 (Channel Bandwidth: 1.4MHz)	104.232mW (20.18dBm)	84.140mW (19.25dBm)	65.917mW (18.19dBm)	42.462mW (16.28dBm)
	LTE Band 12 (Channel Bandwidth: 3MHz)	103.992mW (20.17dBm)	83.946mW (19.24dBm)	66.222mW (18.21dBm)	42.073mW (16.24dBm)
	LTE Band 12 (Channel Bandwidth: 5MHz)	111.173mW (20.46dBm)	88.308mW (19.46dBm)	70.146mW (18.46dBm)	44.259mW (16.46dBm)
	LTE Band 12 (Channel Bandwidth: 10MHz)	110.917mW (20.45dBm)	87.700mW (19.43dBm)	70.146mW (18.46dBm)	43.451mW (16.38dBm)
	Emission Designator		QPSK	16QAM	64QAM
LTE Band 5 (Channel Bandwidth: 1.4MHz)		1M09G7D	1M09G7D	1M09D7W	1M09D7W
LTE Band 5 (Channel Bandwidth: 3MHz)		2M69G7D	2M68G7D	2M68D7W	2M68D7W
LTE Band 5 (Channel Bandwidth: 5MHz)		4M50G7D	4M50G7D	4M50D7W	4M50D7W
LTE Band 5 (Channel Bandwidth: 10MHz)		8M98G7D	8M98G7D	8M98D7W	8M98D7W
LTE Band 12 (Channel Bandwidth: 1.4MHz)		1M09G7D	1M09G7D	1M09D7W	1M08D7W
LTE Band 12 (Channel Bandwidth: 3MHz)		2M69G7D	2M69G7D	2M68D7W	2M69D7W
LTE Band 12 (Channel Bandwidth: 5MHz)		4M50G7D	4M50G7D	4M50D7W	4M50D7W
LTE Band 12 (Channel Bandwidth: 10MHz)		8M98G7D	8M98G7D	8M98D7W	8M98D7W
Antenna Type	Refer to note				
Antenna Connector	Refer to note				
Accessory Device	NA				
Cable Supplied	NA				



**Note:**

1. This report is a supplementary report to the original BV CPS report no.: RF200514C16A-5. Exhibit prepared for FCC Spot Check Verification report, the format, test items and amount of spot-check test data are decided by applicant's engineering judgment, for more details please refer to declaration letter exhibit. Radiated emission and output power verification worst test refer to original report.
2. The antenna information is listed as below.

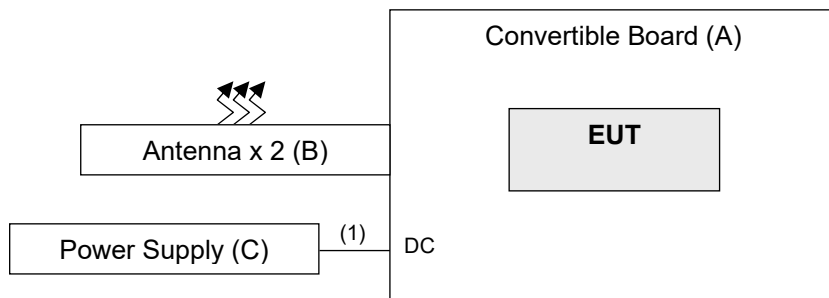
Operating frequency band	Antenna	Gain (dBi)	Connector Type
Band 2	5G/4G Terminal Mount Monopole Antenna	2.92	SMA
Band 5		1.01	
Band 7		2.20	
Band 12		-1.17	
Band 25		2.97	
Band 38		2.18	
Band 41		2.20	
Band 66		3.44	
Band 71		1.72	
Band 77		2.61	

\* The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3. The EUT supports the following ENDC configuration.

	FCC 5G FR1			ENDC
	Band	SCS	Bandwidth (MHz)	
5G NR	n5	15kHz	5/10/15/20	Band 2/66
	n41	30kHz	10/15/20/40/50/60/80/90/100	Band 26
	n66	15kHz	5/10/15/20/40	Band 5/12
	n71	15kHz	5/10/15/20	Band 2/66

### 3.2 Configuration of System under Test



#### 3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Convertible Board	NA	NA	NA	NA	Provided by client
B.	Antenna x 2	TAOGLAS	TG.55.8113	NA	NA	Provided by client
C.	DC Power supply	TECPEL	GPS-3030DD	GEO855739	NA	-

Note: All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC cable	1	1	N	0	-

### 3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case was found when positioned on X-plane. Following channel(s) was (were) selected for the final test as listed below.

n66

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	342500 to 355500	342500 (1712.5MHz), 349000 (1745.0MHz), 355500 (1777.5MHz)	5MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		343000 to 355000	343000 (1715.0MHz), 349000 (1745.0MHz), 355000 (1775.0MHz)	10MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 26 RB Offset 1 RB / 51 RB Offset 26 RB / 0 RB Offset 26 RB / 13 RB Offset 26 RB / 26 RB Offset 52 RB / 0 RB Offset
		343500 to 354500	343500 (1717.5MHz), 349000 (1745.0MHz), 354500 (1772.5MHz)	15MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 39 RB Offset 1 RB / 78 RB Offset 39 RB / 0 RB Offset 39 RB / 19 RB Offset 39 RB / 40 RB Offset 79 RB / 0 RB Offset
		344000 to 354000	344000 (1720.0MHz), 349000 (1745.0MHz), 354000 (1770.0MHz)	20MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 53 RB Offset 1 RB / 105 RB Offset 53 RB / 0 RB Offset 53 RB / 27 RB Offset 53 RB / 53 RB Offset 106 RB / 0 RB Offset
		346000 to 352000	346000 (1730.0MHz), 349000 (1745.0MHz), 352000 (1760.0MHz)	40MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 108 RB Offset 1 RB / 215 RB Offset 108 RB / 0 RB Offset 108 RB / 53 RB Offset 108 RB / 107 RB Offset 216 RB / 0 RB Offset
-	Radiated Emission Below 1GHz	343500 to 354500	349000 (1745.0MHz)	15MHz	$\pi/2$ BPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	343500 to 354500	349000 (1745.0MHz)	15MHz	$\pi/2$ BPSK	1 RB / 0 RB Offset

LTE Band 5

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	ERP	20407 to 20643	20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 2 RB Offset 1 RB / 5 RB Offset 3 RB / 0 RB Offset 3 RB / 1 RB Offset 3 RB / 3 RB Offset 6 RB / 0 RB Offset
		20415 to 20635	20415 (825.5MHz), 20525 (836.5MHz), 20635 (847.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 7 RB Offset 1 RB / 14 RB Offset 8 RB / 0 RB Offset 8 RB / 3 RB Offset 8 RB / 7 RB Offset 15 RB / 0 RB Offset
		20425 to 20625	20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		20450 to 20600	20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 12 RB Offset 25 RB / 25 RB Offset 50 RB / 0 RB Offset
-	Radiated Emission Below 1GHz	20450 to 20600	20525 (836.5MHz)	10MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	20450 to 20600	20525 (836.5MHz)	10MHz	QPSK	1 RB / 0 RB Offset

LTE Band 12

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	ERP	23017 to 23173	23017 (699.7MHz), 23095 (707.5MHz), 23173 (715.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 2 RB Offset 1 RB / 5 RB Offset 3 RB / 0 RB Offset 3 RB / 1 RB Offset 3 RB / 3 RB Offset 6 RB / 0 RB Offset
		23025 to 23165	23025 (700.5MHz), 23095 (707.5MHz), 23165 (714.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 7 RB Offset 1 RB / 14 RB Offset 8 RB / 0 RB Offset 8 RB / 3 RB Offset 8 RB / 7 RB Offset 15 RB / 0 RB Offset
		23035 to 23155	23035 (701.5MHz), 23095 (707.5MHz), 23155 (713.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		23060 to 23130	23060 (704.0MHz), 23095 (707.5 MHz), 23130 (711.0 MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 12 RB Offset 25 RB / 25 RB Offset 50 RB / 0 RB Offset
-	Radiated Emission Below 1GHz	23060 to 23130	23095 (707.5MHz)	10MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	23060 to 23130	23095 (707.5MHz)	10MHz	QPSK	1 RB / 0 RB Offset

Test Condition:

Test Item	Environmental Conditions	Input Power (System)	Tested By
ERP / EIRP	25deg. C, 70%RH	4.2Vdc	James Yang
Radiated Emission	22deg. C, 66%RH	120Vac, 60Hz	Jones Chang

### **3.4 EUT Operating Conditions**

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

### **3.5 General Description of Applied Standards and References**

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards and References:

#### **Test Standard:**

**FCC 47 CFR Part 2**

**FCC 47 CFR Part 22**

**FCC 47 CFR Part 27**

**ANSI/TIA/EIA-603-D-2010**

**ANSI/TIA/EIA-603-E 2016**

ANSI 63.26-2015

All test items have been performed and recorded as per the above standards.

#### **References Test Guidance:**

**KDB 971168 D01 Power Meas License Digital Systems v03r01**

**KDB 971168 D02 Misc Rev Approv License Devices v02r01**

All test items have been performed as a reference to the above KDB test guidance.

## 4 Test Types and Results

### 4.1 Output Power Measurement

#### 4.1.1 Limits of Output Power Measurement

For n66:

Mobile / Portable station are limited to 1 watts e.i.r.p.

For LTE Band 5:

Mobile / Portable station are limited to 7 watts e.r.p.

For LTE Band 12:

Control and mobile stations in the 698-746 MHz, 746-757 MHz, 787-788 MHz and 805-806 MHz band are limited to 30 watts ERP.

Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink, 746-757 MHz, 787-788 MHz and 805-806 MHz band are limited to 3 watts ERP.

#### 4.1.2 Test Procedures

##### Conducted Power Measurement:

1. Connect the DUT transmitter output to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.
2. Set span to at least 1.5 times the OBW.
3. Set RBW = 1-5% of the OBW, not to exceed 1 MHz.
4. Set VBW  $\geq 3 \times$  RBW.
5. Set number of points in sweep  $\geq 2 \times$  span / RBW.
6. Sweep time = auto-couple.
7. Detector = RMS (power averaging).
8. If the EUT can be configured to transmit continuously (i.e., burst duty cycle  $\geq 98\%$ ), then set the trigger to free run.
9. If the EUT cannot be configured to transmit continuously (i.e., burst duty cycle  $< 98\%$ ), then use a sweep trigger with the level set to enable triggering only on full power bursts and configure the EUT to transmit at full power for the entire duration of each sweep. Ensure that the sweep time is less than or equal to the transmission burst duration.
10. Trace average at least 100 traces in power averaging (i.e., RMS) mode.
11. Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with the band limits set equal to the OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

##### Maximum EIRP / ERP

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation as follows:

$$\text{EIRP} = P_{\text{Meas}} + G_T$$

$$\text{ERP} = P_{\text{Meas}} + G_T - 2.15$$

where

ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively

(expressed in the same units as  $P_{\text{Meas}}$ , e.g., dBm or dBW)

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

$G_T$  gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

### 4.1.3 Test Setup

Conducted Power Measurement:



For the actual test configuration, please refer to the attached file (Test Setup Photo).



#### 4.1.4 Test Results

##### Conducted Output Power (dBm)

NR Band 66 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		346000	349000	352000
		Frequency (MHz)		1730	1745	1760
40M	pi/2 BPSK	1	0	21.73	21.64	22.17
		1	108	22.39	22.38	22.56
		1	215	22.00	21.99	22.33
		108	0	21.70	21.90	22.15
		108	53	21.92	22.02	22.35
		108	107	22.43	22.42	22.43
		216	0	21.99	21.81	22.24
	QPSK	1	0	20.82	20.85	21.25
		1	108	21.55	21.51	21.75
		1	215	21.16	21.22	21.59
		108	0	20.93	20.96	21.37
		108	53	21.23	21.16	21.53
		108	107	21.56	21.69	21.66
		216	0	21.17	21.20	21.38
	16QAM	1	0	19.92	19.80	20.37
		1	108	20.57	20.57	20.89
		1	215	20.28	20.15	20.51
		108	0	20.02	19.99	20.37
		108	53	20.12	20.30	20.59
		108	107	20.59	20.56	20.63
		216	0	20.07	20.01	20.44
	64QAM	1	0	19.41	19.34	19.79
		1	108	20.08	20.08	20.34
		1	215	19.78	19.61	19.90
		108	0	19.59	19.51	19.83
		108	53	19.76	19.72	20.07
		108	107	20.12	20.17	20.10
		216	0	19.56	19.70	19.81
	256QAM	1	0	17.37	17.42	17.73
		1	108	18.01	18.03	18.23
1		215	17.60	17.78	17.97	
108		0	17.50	17.58	17.83	
108		53	17.71	17.63	18.09	
108		107	18.03	18.05	18.15	
216		0	17.56	17.50	17.85	

NR Band 66 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		344000	349000	354000
		Frequency (MHz)		1720	1745	1770
20M	pi/2 BPSK	1	0	21.63	21.72	22.15
		1	53	22.37	22.33	22.64
		1	105	21.90	22.07	22.26
		53	0	21.72	21.76	22.20
		53	27	22.01	22.06	22.38
		53	53	22.46	22.50	22.35
		106	0	21.90	21.85	22.17
	QPSK	1	0	20.95	20.85	21.28
		1	53	21.50	21.56	21.71
		1	105	21.24	21.12	21.52
		53	0	20.97	20.95	21.20
		53	27	21.11	21.18	21.42
		53	53	21.53	21.68	21.54
		106	0	21.10	21.01	21.34
	16QAM	1	0	19.96	19.90	20.27
		1	53	20.51	20.60	20.85
		1	105	20.24	20.17	20.50
		53	0	20.05	19.95	20.27
		53	27	20.17	20.23	20.55
		53	53	20.68	20.55	20.63
		106	0	20.20	20.07	20.46
	64QAM	1	0	19.34	19.38	19.75
		1	53	20.09	20.06	20.40
		1	105	19.61	19.75	20.01
		53	0	19.50	19.42	19.88
		53	27	19.60	19.76	19.97
		53	53	20.18	20.03	20.06
		106	0	19.50	19.50	19.83
	256QAM	1	0	17.36	17.30	17.73
		1	53	18.00	18.02	18.30
		1	105	17.67	17.78	17.90
		53	0	17.46	17.43	17.76
		53	27	17.67	17.80	17.92
		53	53	18.05	18.03	18.16
		106	0	17.67	17.51	17.97

NR Band 66 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		343500	349000	354500
		Frequency (MHz)		1717.5	1745	1772.5
15M	pi/2 BPSK	1	0	21.77	21.60	22.03
		1	39	22.31	22.39	22.67
		1	78	21.99	22.02	22.34
		39	0	21.79	21.80	22.15
		39	19	21.91	21.97	22.28
		39	40	22.48	22.36	22.33
		79	0	21.96	21.96	22.25
	QPSK	1	0	20.93	20.98	21.31
		1	39	21.58	21.58	21.76
		1	78	21.29	21.11	21.42
		39	0	21.10	21.06	21.34
		39	19	21.10	21.26	21.49
		39	40	21.58	21.70	21.56
		79	0	21.02	21.02	21.37
	16QAM	1	0	19.88	19.95	20.37
		1	39	20.60	20.56	20.73
		1	78	20.15	20.18	20.57
		39	0	19.95	20.04	20.27
		39	19	20.12	20.13	20.52
		39	40	20.53	20.54	20.62
		79	0	20.11	20.19	20.36
	64QAM	1	0	19.34	19.47	19.89
		1	39	20.10	20.06	20.33
		1	78	19.76	19.71	19.96
		39	0	19.54	19.40	19.86
		39	19	19.73	19.67	20.09
		39	40	20.00	20.04	20.17
		79	0	19.54	19.60	19.87
	256QAM	1	0	17.47	17.35	17.89
		1	39	18.07	18.02	18.39
		1	78	17.71	17.75	17.93
		39	0	17.60	17.50	17.77
		39	19	17.61	17.63	18.07
		39	40	18.08	18.13	18.05
		79	0	17.70	17.67	17.96

NR Band 66 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		343000	349000	355000
		Frequency (MHz)		1715	1745	1775
10M	pi/2 BPSK	1	0	21.67	21.75	22.10
		1	26	22.30	22.39	22.68
		1	51	22.03	22.03	22.34
		26	0	21.88	21.86	22.02
		26	13	21.93	21.99	22.38
		26	26	22.40	22.43	22.43
		52	0	21.90	21.90	22.10
	QPSK	1	0	20.93	20.89	21.21
		1	26	21.57	21.51	21.79
		1	51	21.11	21.25	21.45
		26	0	21.08	20.91	21.37
		26	13	21.27	21.19	21.54
		26	26	21.61	21.56	21.62
		52	0	21.01	21.04	21.41
	16QAM	1	0	19.84	19.90	20.25
		1	26	20.59	20.60	20.87
		1	51	20.30	20.26	20.57
		26	0	19.90	19.90	20.33
		26	13	20.21	20.27	20.55
		26	26	20.56	20.62	20.69
		52	0	20.14	20.02	20.31
	64QAM	1	0	19.34	19.46	19.80
		1	26	20.01	20.07	20.27
		1	51	19.76	19.71	20.07
		26	0	19.41	19.60	19.82
		26	13	19.76	19.66	20.00
		26	26	20.02	20.07	20.14
		52	0	19.55	19.59	19.93
	256QAM	1	0	17.37	17.47	17.75
		1	26	18.07	18.03	18.40
		1	51	17.80	17.61	17.92
		26	0	17.41	17.52	17.73
		26	13	17.74	17.71	17.91
		26	26	18.07	18.17	18.19
		52	0	17.58	17.65	17.88

NR Band 66 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		342500	349000	355500
		Frequency (MHz)		1712.5	1745	1777.5
5M	pi/2 BPSK	1	0	21.80	21.69	22.08
		1	12	22.34	22.30	22.70
		1	24	21.92	22.09	22.26
		12	0	21.87	21.73	22.09
		12	6	22.01	22.03	22.22
		12	13	22.34	22.32	22.34
		25	0	21.95	21.86	22.16
	QPSK	1	0	20.95	20.86	21.32
		1	12	21.52	21.52	21.88
		1	24	21.23	21.17	21.59
		12	0	21.05	21.01	21.30
		12	6	21.30	21.16	21.56
		12	13	21.62	21.52	21.50
		25	0	21.10	21.05	21.47
	16QAM	1	0	19.92	19.89	20.31
		1	12	20.56	20.59	20.86
		1	24	20.27	20.10	20.53
		12	0	20.03	19.98	20.23
		12	6	20.16	20.26	20.54
		12	13	20.59	20.55	20.56
		25	0	20.08	20.19	20.43
	64QAM	1	0	19.31	19.34	19.79
		1	12	20.00	20.00	20.22
		1	24	19.60	19.74	19.91
		12	0	19.42	19.57	19.80
		12	6	19.67	19.63	19.93
		12	13	20.02	20.19	20.02
		25	0	19.50	19.54	19.93
	256QAM	1	0	17.49	17.34	17.78
		1	12	18.01	18.08	18.37
		1	24	17.65	17.77	17.92
		12	0	17.59	17.55	17.90
		12	6	17.72	17.70	18.01
		12	13	18.19	18.19	18.19
		25	0	17.60	17.64	17.85

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20450	20525	20600
		Frequency (MHz)		829	836.5	844
10M	QPSK	1	0	22.73	23.01	23.14
		1	24	22.62	22.99	23.10
		1	49	22.82	22.90	23.18
		25	0	21.76	22.15	22.16
		25	12	21.72	22.18	22.23
		25	25	21.79	22.11	22.18
		50	0	21.71	22.09	22.05
	16QAM	1	0	21.74	21.92	22.28
		1	24	21.65	21.82	22.13
		1	49	21.75	21.95	22.21
		25	0	20.71	21.15	21.13
		25	12	20.85	21.11	21.25
		25	25	20.80	21.06	21.27
		50	0	20.78	21.14	21.11
	64QAM	1	0	20.73	20.90	21.27
		1	24	20.69	20.92	21.12
		1	49	20.75	20.98	21.19
		25	0	19.69	20.20	20.13
		25	12	19.84	20.14	20.17
		25	25	19.80	20.17	20.17
		50	0	19.62	20.05	20.02
	256QAM	1	0	18.77	19.05	19.12
		1	24	18.70	18.85	19.04
		1	49	18.89	18.96	19.25
		25	0	17.64	18.13	18.12
		25	12	17.90	18.01	18.20
		25	25	17.68	18.01	18.24
		50	0	17.77	18.19	18.19

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20425	20525	20625
		Frequency (MHz)		826.5	836.5	846.5
5M	QPSK	1	0	22.67	22.96	23.25
		1	12	22.71	22.93	23.16
		1	24	22.84	22.91	23.12
		12	0	21.66	22.20	22.15
		12	6	21.77	22.07	22.23
		12	13	21.62	22.05	22.14
		25	0	21.70	22.04	22.01
	16QAM	1	0	21.66	21.99	22.22
		1	12	21.63	21.85	22.11
		1	24	21.89	21.93	22.26
		12	0	20.64	21.06	21.00
		12	6	20.76	21.06	21.16
		12	13	20.67	21.00	21.15
		25	0	20.60	21.04	21.11
	64QAM	1	0	20.69	20.96	21.12
		1	12	20.74	20.96	21.05
		1	24	20.83	20.96	21.19
		12	0	19.69	20.20	20.07
		12	6	19.75	20.06	20.22
		12	13	19.61	20.02	20.20
		25	0	19.76	20.09	20.08
	256QAM	1	0	18.65	19.10	19.14
		1	12	18.68	18.82	19.13
		1	24	18.83	18.81	19.29
		12	0	17.75	18.14	18.15
		12	6	17.86	18.03	18.30
		12	13	17.68	18.05	18.24
		25	0	17.78	18.02	18.11

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20415	20525	20635
		Frequency (MHz)		825.5	836.5	847.5
3M	QPSK	1	0	22.75	23.05	23.26
		1	7	22.79	22.80	23.08
		1	14	22.75	22.93	23.27
		8	0	21.80	22.09	22.07
		8	3	21.71	22.02	22.29
		8	7	21.72	22.02	22.15
		15	0	21.75	22.00	22.04
	16QAM	1	0	21.69	21.97	22.10
		1	7	21.60	21.88	22.00
		1	14	21.86	21.86	22.20
		8	0	20.69	21.04	21.18
		8	3	20.75	21.19	21.16
		8	7	20.69	21.08	21.14
		15	0	20.75	21.19	21.16
	64QAM	1	0	20.77	20.99	21.10
		1	7	20.70	20.86	21.20
		1	14	20.90	20.87	21.12
		8	0	19.73	20.13	20.08
		8	3	19.88	20.15	20.21
		8	7	19.76	20.02	20.25
		15	0	19.61	20.06	20.06
	256QAM	1	0	18.68	19.08	19.25
		1	7	18.70	18.86	19.18
		1	14	18.74	18.92	19.21
		8	0	17.60	18.02	18.01
		8	3	17.85	18.07	18.27
		8	7	17.62	18.09	18.11
		15	0	17.77	18.08	18.11



LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20407	20525	20643
		Frequency (MHz)		824.7	836.5	848.3
1.4M	QPSK	1	0	22.70	23.10	23.18
		1	2	22.78	22.94	23.01
		1	5	22.79	22.99	23.19
		3	0	21.63	22.07	22.11
		3	1	21.86	22.13	22.19
		3	3	21.61	22.05	22.18
		6	0	21.70	22.05	22.10
	16QAM	1	0	21.77	21.96	22.24
		1	2	21.70	21.98	22.18
		1	5	21.82	22.00	22.23
		3	0	20.66	21.09	21.20
		3	1	20.86	21.05	21.15
		3	3	20.80	21.05	21.20
		6	0	20.60	21.15	21.20
	64QAM	1	0	20.75	20.99	21.28
		1	2	20.77	20.93	21.08
		1	5	20.84	20.90	21.15
		3	0	19.61	20.05	20.08
		3	1	19.82	20.03	20.21
		3	3	19.70	20.17	20.26
		6	0	19.65	20.10	20.13
	256QAM	1	0	18.62	19.03	19.15
		1	2	18.63	18.80	19.19
		1	5	18.89	18.82	19.19
		3	0	17.69	18.05	18.16
		3	1	17.85	18.10	18.16
		3	3	17.73	18.08	18.10
		6	0	17.61	18.20	18.12

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23060	23095	23130
		Frequency (MHz)		704	707.5	711
10M	QPSK	1	0	23.35	23.37	23.65
		1	24	23.35	23.60	23.77
		1	49	23.50	23.52	23.63
		25	0	22.22	22.48	22.74
		25	12	22.37	22.44	22.63
		25	25	22.23	22.59	22.46
		50	0	22.49	22.50	22.66
	16QAM	1	0	22.22	22.47	22.65
		1	24	22.36	22.56	22.61
		1	49	22.31	22.60	22.75
		25	0	21.40	21.59	21.68
		25	12	21.42	21.49	21.64
		25	25	21.29	21.55	21.57
		50	0	21.32	21.59	21.61
	64QAM	1	0	21.28	21.47	21.76
		1	24	21.20	21.65	21.77
		1	49	21.30	21.54	21.78
		25	0	20.30	20.40	20.66
		25	12	20.50	20.33	20.61
		25	25	20.25	20.43	20.47
		50	0	20.31	20.55	20.56
	256QAM	1	0	19.22	19.47	19.70
		1	24	19.35	19.69	19.68
		1	49	19.31	19.56	19.63
		25	0	18.33	18.48	18.65
		25	12	18.44	18.50	18.78
		25	25	18.29	18.45	18.57
		50	0	18.32	18.57	18.58

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23035	23095	23155
		Frequency (MHz)		701.5	707.5	713.5
5M	QPSK	1	0	23.39	23.33	23.68
		1	12	23.21	23.51	23.61
		1	24	23.43	23.57	23.78
		12	0	22.31	22.43	22.64
		12	6	22.39	22.44	22.67
		12	13	22.38	22.59	22.56
		25	0	22.47	22.57	22.51
	16QAM	1	0	22.23	22.47	22.78
		1	12	22.38	22.63	22.71
		1	24	22.46	22.45	22.70
		12	0	21.30	21.47	21.77
		12	6	21.43	21.50	21.74
		12	13	21.20	21.42	21.44
		25	0	21.30	21.56	21.67
	64QAM	1	0	21.32	21.33	21.78
		1	12	21.24	21.54	21.75
		1	24	21.47	21.48	21.69
		12	0	20.37	20.42	20.80
		12	6	20.30	20.32	20.80
		12	13	20.22	20.40	20.42
		25	0	20.48	20.64	20.69
	256QAM	1	0	19.36	19.40	19.70
		1	12	19.22	19.51	19.76
		1	24	19.45	19.46	19.78
		12	0	18.33	18.60	18.61
		12	6	18.34	18.33	18.65
		12	13	18.21	18.57	18.56
		25	0	18.31	18.60	18.55

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23025	23095	23165
		Frequency (MHz)		700.5	707.5	714.5
3M	QPSK	1	0	23.35	23.46	23.49
		1	7	23.35	23.46	23.45
		1	14	23.48	23.37	23.48
		8	0	22.35	22.54	22.69
		8	3	22.48	22.43	22.60
		8	7	22.30	22.57	22.43
		15	0	22.48	22.65	22.50
	16QAM	1	0	22.37	22.43	22.56
		1	7	22.21	22.44	22.54
		1	14	22.33	22.49	22.50
		8	0	21.30	21.50	21.77
		8	3	21.46	21.50	21.75
		8	7	21.23	21.59	21.51
		15	0	21.36	21.70	21.69
	64QAM	1	0	21.37	21.36	21.51
		1	7	21.23	21.46	21.53
		1	14	21.36	21.44	21.47
		8	0	20.38	20.51	20.74
		8	3	20.46	20.44	20.60
		8	7	20.30	20.41	20.46
		15	0	20.46	20.55	20.69
	256QAM	1	0	19.25	19.39	19.56
		1	7	19.26	19.51	19.52
		1	14	19.48	19.44	19.55
		8	0	18.32	18.43	18.66
		8	3	18.37	18.31	18.68
		8	7	18.36	18.50	18.54
		15	0	18.35	18.67	18.53

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23017	23095	23173
		Frequency (MHz)		699.7	707.5	715.3
1.4M	QPSK	1	0	23.29	23.39	23.48
		1	2	23.30	23.42	23.50
		1	5	23.37	23.40	23.44
		3	0	22.40	22.44	22.75
		3	1	22.46	22.37	22.65
		3	3	22.20	22.55	22.56
		6	0	22.46	22.62	22.65
	16QAM	1	0	22.21	22.46	22.48
		1	2	22.21	22.52	22.57
		1	5	22.39	22.57	22.54
		3	0	21.27	21.46	21.63
		3	1	21.41	21.44	21.63
		3	3	21.23	21.58	21.57
		6	0	21.32	21.67	21.58
	64QAM	1	0	21.40	21.44	21.51
		1	2	21.32	21.49	21.50
		1	5	21.39	21.40	21.48
		3	0	20.34	20.46	20.78
		3	1	20.48	20.34	20.73
		3	3	20.21	20.52	20.50
		6	0	20.35	20.57	20.70
	256QAM	1	0	19.37	19.37	19.60
		1	2	19.27	19.44	19.50
		1	5	19.42	19.56	19.55
		3	0	18.32	18.45	18.64
		3	1	18.43	18.38	18.62
		3	3	18.40	18.43	18.60
		6	0	18.41	18.56	18.51

**EIRP Power (dBm)**

NR Band 66 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		346000	349000	352000
		Frequency (MHz)		1730	1745	1760
40M	pi/2 BPSK	1	0	25.17	25.08	25.61
		1	108	25.83	25.82	26.00
		1	215	25.44	25.43	25.77
		108	0	25.14	25.34	25.59
		108	53	25.36	25.46	25.79
		108	107	25.87	25.86	25.87
		216	0	25.43	25.25	25.68
	QPSK	1	0	24.26	24.29	24.69
		1	108	24.99	24.95	25.19
		1	215	24.60	24.66	25.03
		108	0	24.37	24.40	24.81
		108	53	24.67	24.60	24.97
		108	107	25.00	25.13	25.10
		216	0	24.61	24.64	24.82
	16QAM	1	0	23.36	23.24	23.81
		1	108	24.01	24.01	24.33
		1	215	23.72	23.59	23.95
		108	0	23.46	23.43	23.81
		108	53	23.56	23.74	24.03
		108	107	24.03	24.00	24.07
		216	0	23.51	23.45	23.88
	64QAM	1	0	22.85	22.78	23.23
		1	108	23.52	23.52	23.78
		1	215	23.22	23.05	23.34
		108	0	23.03	22.95	23.27
		108	53	23.20	23.16	23.51
		108	107	23.56	23.61	23.54
		216	0	23.00	23.14	23.25
	256QAM	1	0	20.81	20.86	21.17
		1	108	21.45	21.47	21.67
1		215	21.04	21.22	21.41	
108		0	20.94	21.02	21.27	
108		53	21.15	21.07	21.53	
108		107	21.47	21.49	21.59	
216		0	21.00	20.94	21.29	

\*EIRP = Conducted + antenna gain

NR Band 66 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		344000	349000	354000
		Frequency (MHz)		1720	1745	1770
20M	pi/2 BPSK	1	0	25.07	25.16	25.59
		1	53	25.81	25.77	26.08
		1	105	25.34	25.51	25.70
		53	0	25.16	25.20	25.64
		53	27	25.45	25.50	25.82
		53	53	25.90	25.94	25.79
		106	0	25.34	25.29	25.61
	QPSK	1	0	24.39	24.29	24.72
		1	53	24.94	25.00	25.15
		1	105	24.68	24.56	24.96
		53	0	24.41	24.39	24.64
		53	27	24.55	24.62	24.86
		53	53	24.97	25.12	24.98
		106	0	24.54	24.45	24.78
	16QAM	1	0	23.40	23.34	23.71
		1	53	23.95	24.04	24.29
		1	105	23.68	23.61	23.94
		53	0	23.49	23.39	23.71
		53	27	23.61	23.67	23.99
		53	53	24.12	23.99	24.07
		106	0	23.64	23.51	23.90
	64QAM	1	0	22.78	22.82	23.19
		1	53	23.53	23.50	23.84
		1	105	23.05	23.19	23.45
		53	0	22.94	22.86	23.32
		53	27	23.04	23.20	23.41
		53	53	23.62	23.47	23.50
		106	0	22.94	22.94	23.27
	256QAM	1	0	20.80	20.74	21.17
		1	53	21.44	21.46	21.74
1		105	21.11	21.22	21.34	
53		0	20.90	20.87	21.20	
53		27	21.11	21.24	21.36	
53		53	21.49	21.47	21.60	
106		0	21.11	20.95	21.41	

\*EIRP = Conducted + antenna gain

NR Band 66 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		343500	349000	354500
		Frequency (MHz)		1717.5	1745	1772.5
15M	pi/2 BPSK	1	0	25.21	25.04	25.47
		1	39	25.75	25.83	26.11
		1	78	25.43	25.46	25.78
		39	0	25.23	25.24	25.59
		39	19	25.35	25.41	25.72
		39	40	25.92	25.80	25.77
		79	0	25.40	25.40	25.69
	QPSK	1	0	24.37	24.42	24.75
		1	39	25.02	25.02	25.20
		1	78	24.73	24.55	24.86
		39	0	24.54	24.50	24.78
		39	19	24.54	24.70	24.93
		39	40	25.02	25.14	25.00
		79	0	24.46	24.46	24.81
	16QAM	1	0	23.32	23.39	23.81
		1	39	24.04	24.00	24.17
		1	78	23.59	23.62	24.01
		39	0	23.39	23.48	23.71
		39	19	23.56	23.57	23.96
		39	40	23.97	23.98	24.06
		79	0	23.55	23.63	23.80
	64QAM	1	0	22.78	22.91	23.33
		1	39	23.54	23.50	23.77
		1	78	23.20	23.15	23.40
		39	0	22.98	22.84	23.30
		39	19	23.17	23.11	23.53
		39	40	23.44	23.48	23.61
		79	0	22.98	23.04	23.31
	256QAM	1	0	20.91	20.79	21.33
		1	39	21.51	21.46	21.83
		1	78	21.15	21.19	21.37
		39	0	21.04	20.94	21.21
		39	19	21.05	21.07	21.51
		39	40	21.52	21.57	21.49
		79	0	21.14	21.11	21.40

\*EIRP = Conducted + antenna gain



NR Band 66 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		343000	349000	355000
		Frequency (MHz)		1715	1745	1775
10M	pi/2 BPSK	1	0	25.11	25.19	25.54
		1	26	25.74	25.83	26.12
		1	51	25.47	25.47	25.78
		26	0	25.32	25.30	25.46
		26	13	25.37	25.43	25.82
		26	26	25.84	25.87	25.87
		52	0	25.34	25.34	25.54
	QPSK	1	0	24.37	24.33	24.65
		1	26	25.01	24.95	25.23
		1	51	24.55	24.69	24.89
		26	0	24.52	24.35	24.81
		26	13	24.71	24.63	24.98
		26	26	25.05	25.00	25.06
		52	0	24.45	24.48	24.85
	16QAM	1	0	23.28	23.34	23.69
		1	26	24.03	24.04	24.31
		1	51	23.74	23.70	24.01
		26	0	23.34	23.34	23.77
		26	13	23.65	23.71	23.99
		26	26	24.00	24.06	24.13
		52	0	23.58	23.46	23.75
	64QAM	1	0	22.78	22.90	23.24
		1	26	23.45	23.51	23.71
		1	51	23.20	23.15	23.51
		26	0	22.85	23.04	23.26
		26	13	23.20	23.10	23.44
		26	26	23.46	23.51	23.58
		52	0	22.99	23.03	23.37
	256QAM	1	0	20.81	20.91	21.19
		1	26	21.51	21.47	21.84
		1	51	21.24	21.05	21.36
		26	0	20.85	20.96	21.17
		26	13	21.18	21.15	21.35
		26	26	21.51	21.61	21.63
		52	0	21.02	21.09	21.32

\*EIRP = Conducted + antenna gain

NR Band 66 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		342500	349000	355500
		Frequency (MHz)		1712.5	1745	1777.5
5M	pi/2 BPSK	1	0	25.24	25.13	25.52
		1	12	25.78	25.74	26.14
		1	24	25.36	25.53	25.70
		12	0	25.31	25.17	25.53
		12	6	25.45	25.47	25.66
		12	13	25.78	25.76	25.78
		25	0	25.39	25.30	25.60
	QPSK	1	0	24.39	24.30	24.76
		1	12	24.96	24.96	25.32
		1	24	24.67	24.61	25.03
		12	0	24.49	24.45	24.74
		12	6	24.74	24.60	25.00
		12	13	25.06	24.96	24.94
		25	0	24.54	24.49	24.91
	16QAM	1	0	23.36	23.33	23.75
		1	12	24.00	24.03	24.30
		1	24	23.71	23.54	23.97
		12	0	23.47	23.42	23.67
		12	6	23.60	23.70	23.98
		12	13	24.03	23.99	24.00
		25	0	23.52	23.63	23.87
	64QAM	1	0	22.75	22.78	23.23
		1	12	23.44	23.44	23.66
		1	24	23.04	23.18	23.35
		12	0	22.86	23.01	23.24
		12	6	23.11	23.07	23.37
		12	13	23.46	23.63	23.46
		25	0	22.94	22.98	23.37
	256QAM	1	0	20.93	20.78	21.22
		1	12	21.45	21.52	21.81
		1	24	21.09	21.21	21.36
		12	0	21.03	20.99	21.34
		12	6	21.16	21.14	21.45
		12	13	21.63	21.63	21.63
		25	0	21.04	21.08	21.29

\*EIRP = Conducted + antenna gain

**ERP Power (dBm)**

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20450	20525	20600
		Frequency (MHz)		829	836.5	844
10M	QPSK	1	0	21.59	21.87	22.00
		1	24	21.48	21.85	21.96
		1	49	21.68	21.76	22.04
		25	0	20.62	21.01	21.02
		25	12	20.58	21.04	21.09
		25	25	20.65	20.97	21.04
		50	0	20.57	20.95	20.91
	16QAM	1	0	20.60	20.78	21.14
		1	24	20.51	20.68	20.99
		1	49	20.61	20.81	21.07
		25	0	19.57	20.01	19.99
		25	12	19.71	19.97	20.11
		25	25	19.66	19.92	20.13
		50	0	19.64	20.00	19.97
	64QAM	1	0	19.59	19.76	20.13
		1	24	19.55	19.78	19.98
		1	49	19.61	19.84	20.05
		25	0	18.55	19.06	18.99
		25	12	18.70	19.00	19.03
		25	25	18.66	19.03	19.03
		50	0	18.48	18.91	18.88
	256QAM	1	0	17.63	17.91	17.98
		1	24	17.56	17.71	17.90
		1	49	17.75	17.82	18.11
		25	0	16.50	16.99	16.98
		25	12	16.76	16.87	17.06
		25	25	16.54	16.87	17.10
		50	0	16.63	17.05	17.05

\*ERP = Conducted + antenna gain - 2.15

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20425	20525	20625
		Frequency (MHz)		826.5	836.5	846.5
5M	QPSK	1	0	21.53	21.82	22.11
		1	12	21.57	21.79	22.02
		1	24	21.70	21.77	21.98
		12	0	20.52	21.06	21.01
		12	6	20.63	20.93	21.09
		12	13	20.48	20.91	21.00
		25	0	20.56	20.90	20.87
	16QAM	1	0	20.52	20.85	21.08
		1	12	20.49	20.71	20.97
		1	24	20.75	20.79	21.12
		12	0	19.50	19.92	19.86
		12	6	19.62	19.92	20.02
		12	13	19.53	19.86	20.01
		25	0	19.46	19.90	19.97
	64QAM	1	0	19.55	19.82	19.98
		1	12	19.60	19.82	19.91
		1	24	19.69	19.82	20.05
		12	0	18.55	19.06	18.93
		12	6	18.61	18.92	19.08
		12	13	18.47	18.88	19.06
		25	0	18.62	18.95	18.94
	256QAM	1	0	17.51	17.96	18.00
		1	12	17.54	17.68	17.99
		1	24	17.69	17.67	18.15
		12	0	16.61	17.00	17.01
		12	6	16.72	16.89	17.16
		12	13	16.54	16.91	17.10
		25	0	16.64	16.88	16.97

\*ERP = Conducted + antenna gain - 2.15

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20415	20525	20635
		Frequency (MHz)		825.5	836.5	847.5
3M	QPSK	1	0	21.61	21.91	22.12
		1	7	21.65	21.66	21.94
		1	14	21.61	21.79	22.13
		8	0	20.66	20.95	20.93
		8	3	20.57	20.88	21.15
		8	7	20.58	20.88	21.01
		15	0	20.61	20.86	20.90
	16QAM	1	0	20.55	20.83	20.96
		1	7	20.46	20.74	20.86
		1	14	20.72	20.72	21.06
		8	0	19.55	19.90	20.04
		8	3	19.61	20.05	20.02
		8	7	19.55	19.94	20.00
		15	0	19.61	20.05	20.02
	64QAM	1	0	19.63	19.85	19.96
		1	7	19.56	19.72	20.06
		1	14	19.76	19.73	19.98
		8	0	18.59	18.99	18.94
		8	3	18.74	19.01	19.07
		8	7	18.62	18.88	19.11
		15	0	18.47	18.92	18.92
	256QAM	1	0	17.54	17.94	18.11
		1	7	17.56	17.72	18.04
		1	14	17.60	17.78	18.07
		8	0	16.46	16.88	16.87
		8	3	16.71	16.93	17.13
		8	7	16.48	16.95	16.97
		15	0	16.63	16.94	16.97

\*ERP = Conducted + antenna gain - 2.15

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20407	20525	20643
		Frequency (MHz)		824.7	836.5	848.3
1.4M	QPSK	1	0	21.56	21.96	22.04
		1	2	21.64	21.80	21.87
		1	5	21.65	21.85	22.05
		3	0	20.49	20.93	20.97
		3	1	20.72	20.99	21.05
		3	3	20.47	20.91	21.04
		6	0	20.56	20.91	20.96
	16QAM	1	0	20.63	20.82	21.10
		1	2	20.56	20.84	21.04
		1	5	20.68	20.86	21.09
		3	0	19.52	19.95	20.06
		3	1	19.72	19.91	20.01
		3	3	19.66	19.91	20.06
		6	0	19.46	20.01	20.06
	64QAM	1	0	19.61	19.85	20.14
		1	2	19.63	19.79	19.94
		1	5	19.70	19.76	20.01
		3	0	18.47	18.91	18.94
		3	1	18.68	18.89	19.07
		3	3	18.56	19.03	19.12
		6	0	18.51	18.96	18.99
	256QAM	1	0	17.48	17.89	18.01
		1	2	17.49	17.66	18.05
		1	5	17.75	17.68	18.05
		3	0	16.55	16.91	17.02
		3	1	16.71	16.96	17.02
		3	3	16.59	16.94	16.96
		6	0	16.47	17.06	16.98

\*ERP = Conducted + antenna gain - 2.15

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23060	23095	23130
		Frequency (MHz)		704	707.5	711
10M	QPSK	1	0	20.03	20.05	20.33
		1	24	20.03	20.28	20.45
		1	49	20.18	20.20	20.31
		25	0	18.90	19.16	19.42
		25	12	19.05	19.12	19.31
		25	25	18.91	19.27	19.14
		50	0	19.17	19.18	19.34
	16QAM	1	0	18.90	19.15	19.33
		1	24	19.04	19.24	19.29
		1	49	18.99	19.28	19.43
		25	0	18.08	18.27	18.36
		25	12	18.10	18.17	18.32
		25	25	17.97	18.23	18.25
		50	0	18.00	18.27	18.29
	64QAM	1	0	17.96	18.15	18.44
		1	24	17.88	18.33	18.45
		1	49	17.98	18.22	18.46
		25	0	16.98	17.08	17.34
		25	12	17.18	17.01	17.29
		25	25	16.93	17.11	17.15
		50	0	16.99	17.23	17.24
	256QAM	1	0	15.90	16.15	16.38
		1	24	16.03	16.37	16.36
		1	49	15.99	16.24	16.31
		25	0	15.01	15.16	15.33
		25	12	15.12	15.18	15.46
		25	25	14.97	15.13	15.25
		50	0	15.00	15.25	15.26

\*ERP = Conducted + antenna gain - 2.15

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23035	23095	23155
		Frequency (MHz)		701.5	707.5	713.5
5M	QPSK	1	0	20.07	20.01	20.36
		1	12	19.89	20.19	20.29
		1	24	20.11	20.25	20.46
		12	0	18.99	19.11	19.32
		12	6	19.07	19.12	19.35
		12	13	19.06	19.27	19.24
		25	0	19.15	19.25	19.19
	16QAM	1	0	18.91	19.15	19.46
		1	12	19.06	19.31	19.39
		1	24	19.14	19.13	19.38
		12	0	17.98	18.15	18.45
		12	6	18.11	18.18	18.42
		12	13	17.88	18.10	18.12
		25	0	17.98	18.24	18.35
	64QAM	1	0	18.00	18.01	18.46
		1	12	17.92	18.22	18.43
		1	24	18.15	18.16	18.37
		12	0	17.05	17.10	17.48
		12	6	16.98	17.00	17.48
		12	13	16.90	17.08	17.10
		25	0	17.16	17.32	17.37
	256QAM	1	0	16.04	16.08	16.38
		1	12	15.90	16.19	16.44
		1	24	16.13	16.14	16.46
		12	0	15.01	15.28	15.29
		12	6	15.02	15.01	15.33
		12	13	14.89	15.25	15.24
		25	0	14.99	15.28	15.23

\*ERP = Conducted + antenna gain - 2.15



LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23025	23095	23165
		Frequency (MHz)		700.5	707.5	714.5
3M	QPSK	1	0	20.03	20.14	20.17
		1	7	20.03	20.14	20.13
		1	14	20.16	20.05	20.16
		8	0	19.03	19.22	19.37
		8	3	19.16	19.11	19.28
		8	7	18.98	19.25	19.11
		15	0	19.16	19.33	19.18
	16QAM	1	0	19.05	19.11	19.24
		1	7	18.89	19.12	19.22
		1	14	19.01	19.17	19.18
		8	0	17.98	18.18	18.45
		8	3	18.14	18.18	18.43
		8	7	17.91	18.27	18.19
		15	0	18.04	18.38	18.37
	64QAM	1	0	18.05	18.04	18.19
		1	7	17.91	18.14	18.21
		1	14	18.04	18.12	18.15
		8	0	17.06	17.19	17.42
		8	3	17.14	17.12	17.28
		8	7	16.98	17.09	17.14
		15	0	17.14	17.23	17.37
	256QAM	1	0	15.93	16.07	16.24
		1	7	15.94	16.19	16.20
		1	14	16.16	16.12	16.23
		8	0	15.00	15.11	15.34
		8	3	15.05	14.99	15.36
		8	7	15.04	15.18	15.22
		15	0	15.03	15.35	15.21

\*ERP = Conducted + antenna gain - 2.15

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23017	23095	23173
		Frequency (MHz)		699.7	707.5	715.3
1.4M	QPSK	1	0	19.97	20.07	20.16
		1	2	19.98	20.10	20.18
		1	5	20.05	20.08	20.12
		3	0	19.08	19.12	19.43
		3	1	19.14	19.05	19.33
		3	3	18.88	19.23	19.24
		6	0	19.14	19.30	19.33
	16QAM	1	0	18.89	19.14	19.16
		1	2	18.89	19.20	19.25
		1	5	19.07	19.25	19.22
		3	0	17.95	18.14	18.31
		3	1	18.09	18.12	18.31
		3	3	17.91	18.26	18.25
		6	0	18.00	18.35	18.26
	64QAM	1	0	18.08	18.12	18.19
		1	2	18.00	18.17	18.18
		1	5	18.07	18.08	18.16
		3	0	17.02	17.14	17.46
		3	1	17.16	17.02	17.41
		3	3	16.89	17.20	17.18
		6	0	17.03	17.25	17.38
	256QAM	1	0	16.05	16.05	16.28
		1	2	15.95	16.12	16.18
		1	5	16.10	16.24	16.23
		3	0	15.00	15.13	15.32
		3	1	15.11	15.06	15.30
		3	3	15.08	15.11	15.28
		6	0	15.09	15.24	15.19

\*ERP = Conducted + antenna gain - 2.15

## 4.2 Radiated Emission Measurement

### 4.2.1 Limits of Radiated Emission Measurement

For n66:

According to FCC 27.53(h) for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 MHz, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log (P)$  dB.

For LTE Band 5:

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. The emission limit equal to  $-13\text{dBm}$ .

For LTE Band 12:

According to FCC 27.53(g) for operations in the 600 MHz band and the 698-746 MHz band, 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. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater.

### 4.2.2 Test Procedure

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b.  $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$ . Correction Factor (includes EIRP and ERP unit conversion factor) = Antenna gain of substitution horn. – Tx cable loss. Measurement method refers to ANSI C63.26 section 5.5.3.2.
- c. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,  $\text{E.R.P power} = \text{E.I.R.P power} - 2.15\text{dBi}$ .

Note:

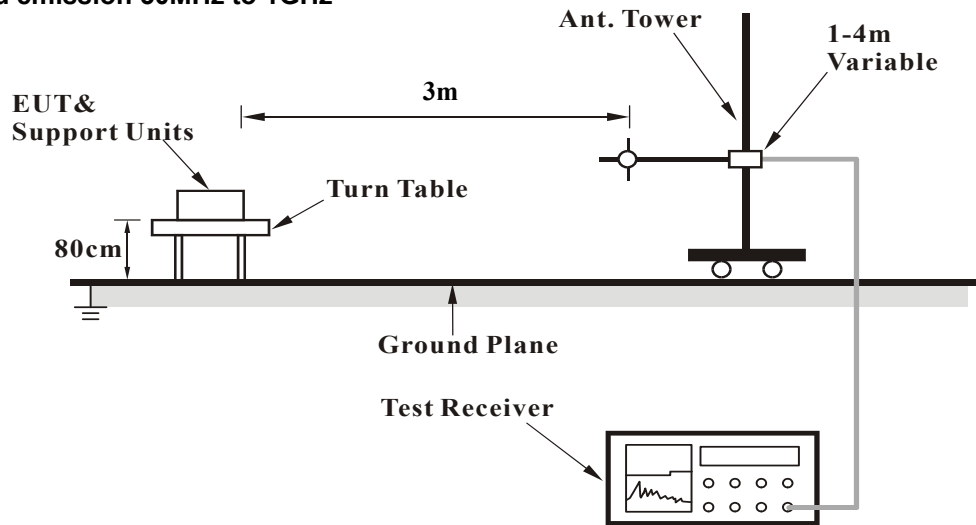
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.
2. The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz: The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

### 4.2.3 Deviation from Test Standard

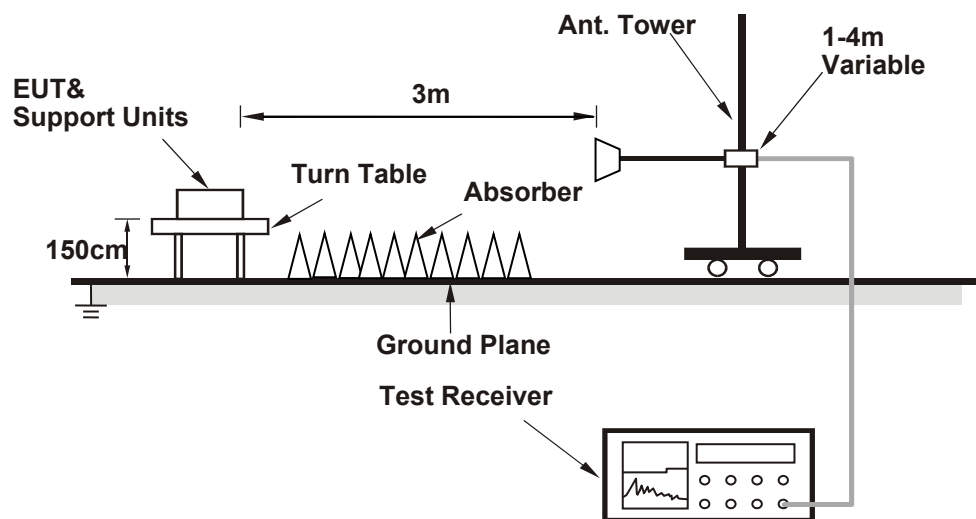
No deviation.

#### 4.2.4 Test Setup

For radiated emission 30MHz to 1GHz



For radiated emission above 1GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

#### 4.2.5 Test Results

Below 1GHz

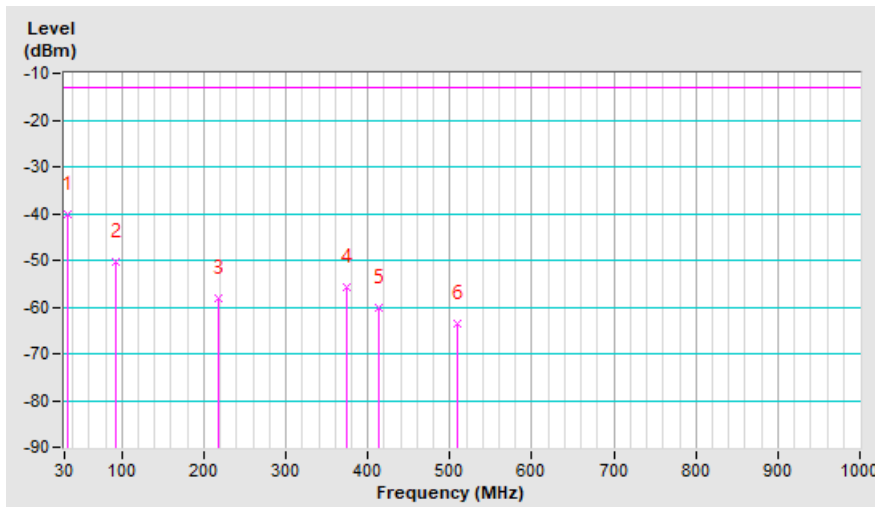
n66, Channel Bandwidth: 15MHz

Mode	TX channel 349000 (1745.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	34.52	-43.10	-23.40	-16.70	-40.10	-13.00	-27.10
2	92.56	-41.60	-49.50	-0.70	-50.20	-13.00	-37.20
3	217.58	-49.80	-56.10	-2.10	-58.20	-13.00	-45.20
4	374.98	-54.00	-59.60	3.70	-55.90	-13.00	-42.90
5	412.69	-60.10	-63.50	3.30	-60.20	-13.00	-47.20
6	510.10	-63.70	-67.50	3.80	-63.70	-13.00	-50.70

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB).

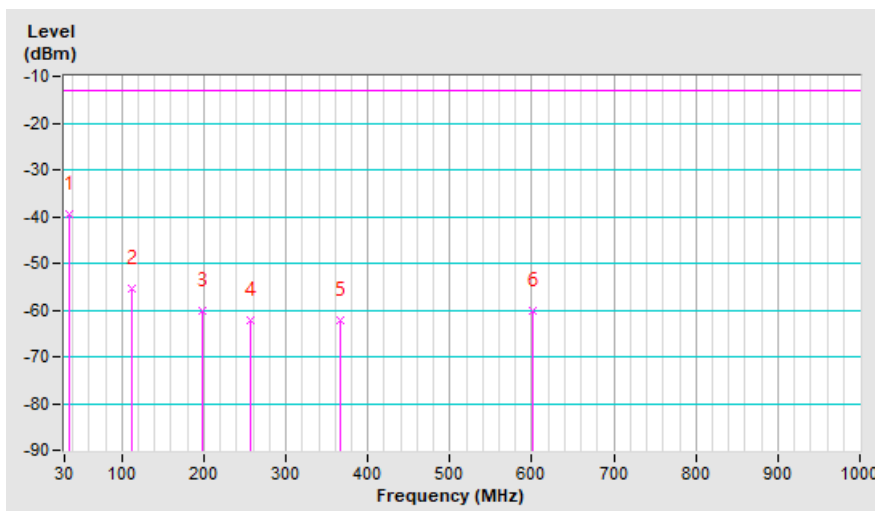


Mode	TX channel 349000 (1745.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	35.12	-29.40	-23.20	-16.30	-39.50	-13.00	-26.50
2	112.30	-48.10	-53.00	-2.50	-55.50	-13.00	-42.50
3	198.65	-59.40	-57.90	-2.40	-60.30	-13.00	-47.30
4	257.31	-62.80	-60.70	-1.60	-62.30	-13.00	-49.30
5	366.96	-61.80	-66.00	3.80	-62.20	-13.00	-49.20
6	600.21	-63.80	-63.90	3.80	-60.10	-13.00	-47.10

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB).



LTE Band 5, Channel Bandwidth: 10MHz

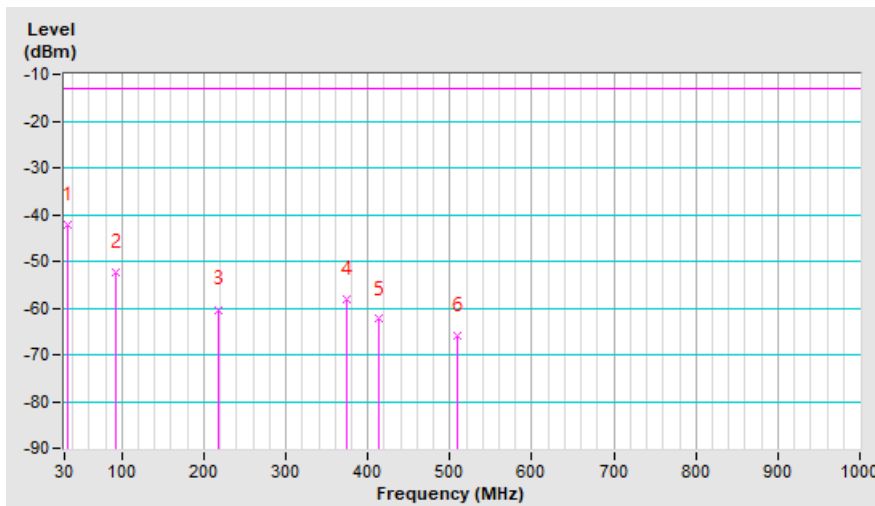
Mode	TX channel 20525 (836.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	34.52	-43.10	-25.50	-16.70	-42.20	-13.00	-29.20
2	92.56	-41.60	-51.70	-0.70	-52.40	-13.00	-39.40
3	217.58	-49.80	-58.20	-2.10	-60.30	-13.00	-47.30
4	374.98	-54.00	-61.70	3.70	-58.00	-13.00	-45.00
5	412.69	-60.10	-65.70	3.30	-62.40	-13.00	-49.40
6	510.10	-63.80	-69.70	3.80	-65.90	-13.00	-52.90

Remarks:

- ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
- Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB) + 2.15dB.

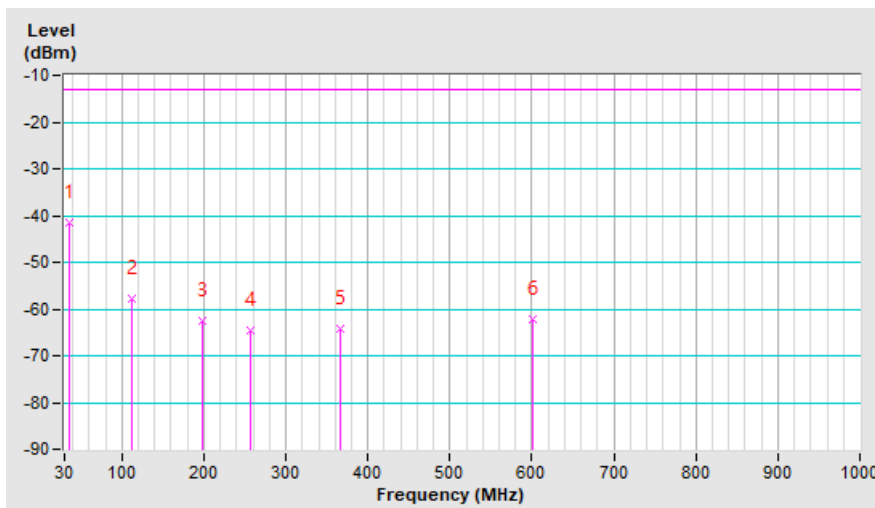


Mode	TX channel 20525 (836.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	35.12	-29.40	-25.30	-16.30	-41.60	-13.00	-28.60
2	112.30	-48.20	-55.20	-2.50	-57.70	-13.00	-44.70
3	198.65	-59.40	-60.00	-2.40	-62.40	-13.00	-49.40
4	257.31	-62.90	-62.90	-1.60	-64.50	-13.00	-51.50
5	366.96	-61.80	-68.10	3.80	-64.30	-13.00	-51.30
6	600.21	-63.80	-66.00	3.80	-62.20	-13.00	-49.20

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB) + 2.15dB.





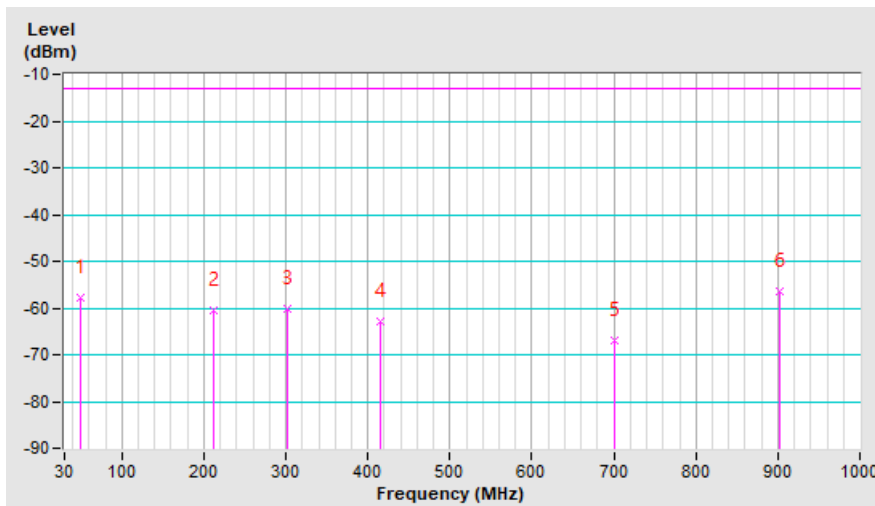
LTE Band 12, Channel Bandwidth: 10MHz

Mode	TX channel 23095 (707.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	48.74	-55.40	-49.20	-8.50	-57.70	-13.00	-44.70
2	212.10	-49.80	-58.30	-2.10	-60.40	-13.00	-47.40
3	301.52	-53.40	-63.50	3.50	-60.00	-13.00	-47.00
4	415.22	-60.90	-66.40	3.40	-63.00	-13.00	-50.00
5	701.28	-67.60	-70.30	3.40	-66.90	-13.00	-53.90
6	901.35	-61.80	-59.80	3.50	-56.30	-13.00	-43.30

Remarks:

- ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
- Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB) + 2.15dB.

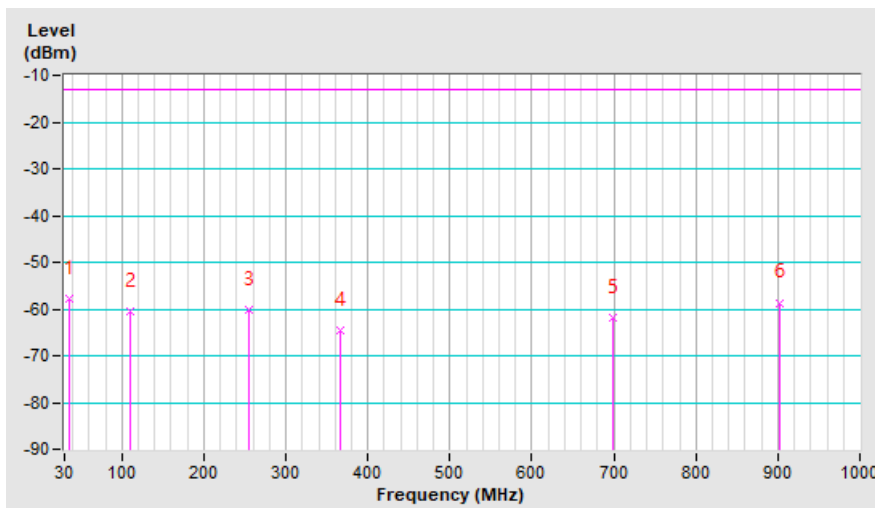


Mode	TX channel 23095 (707.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	35.35	-45.70	-41.60	-16.10	-57.70	-13.00	-44.70
2	110.69	-50.20	-57.80	-2.60	-60.40	-13.00	-47.40
3	254.98	-58.20	-58.70	-1.40	-60.10	-13.00	-47.10
4	365.56	-62.00	-68.30	3.80	-64.50	-13.00	-51.50
5	699.23	-65.50	-65.20	3.40	-61.80	-13.00	-48.80
6	902.69	-64.80	-62.20	3.60	-58.60	-13.00	-45.60

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB) + 2.15dB.



Above 1GHz  
n66, Channel Bandwidth: 15MHz

Mode	TX channel 349000 (1745.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3490.00	-63.60	-55.40	1.50	-53.90	-13.00	-40.90
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3490.00	-61.60	-54.00	1.50	-52.50	-13.00	-39.50

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB).

LTE Band 5, Channel Bandwidth: 10MHz

Mode	TX channel 20525 (836.5MHz)	Frequency Range	1GHz ~ 10GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1673.00	-57.00	-49.40	0.80	-48.60	-13.00	-35.60
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1673.00	-53.00	-45.70	0.80	-44.90	-13.00	-31.90

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB) + 2.15dB.

LTE Band 12, Channel Bandwidth: 10MHz

Mode	TX channel 23095 (707.5MHz)	Frequency Range	1GHz ~ 10GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1415.00	-63.00	-56.50	0.90	-55.60	-13.00	-42.60

Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1415.00	-65.00	-59.60	0.90	-58.70	-13.00	-45.70

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB) + 2.15dB.

## 5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

## Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited and approved according to ISO/IEC 17025.

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The address and road map of all our labs can be found in our web site also.

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