FCC Test Report
(Part 24)

Report No.: RF180919C04-1

FCC ID: 2AJOTTA1124

Test Model: TA1124

Received Date: Sep. 19, 2018

Test Date: Oct. 01 ~ Oct. 26, 2018

Issued Date: Nov. 06, 2018

Applicant: HMD Global Oy

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

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Release Control Record

Issue No.	Description	Date Issued
RF180919C04-1	Original release.	Nov. 06, 2018

1 Certificate of Conformity

Product: Smart Phone

Brand: NOKIA

Test Model: TA1124

Sample Status: Engineering sample

Applicant: HMD Global Oy

Test Date: Oct. 01 ~ Oct. 26, 2018

Standards: FCC Part 24, Subpart E

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 : _____ , **Date:** Nov. 06, 2018

Suntee / Specialist

Approved by : _____ , **Date:** Nov. 06, 2018

Bruce Chen / Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 24 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 24.232	Effective radiated power	Pass	Meet the requirement of limit.
2.1046 24.232(d)	Peak To Average Ratio	Pass	Meet the requirement of limit.
2.1047	Modulation characteristics	Pass	Meet the requirement
2.1055 24.235	Frequency Stability	Pass	Meet the requirement of limit.
2.1049 24.238(b)	Occupied Bandwidth	Pass	Meet the requirement of limit.
24.238(b)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 24.238	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 24.238	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -17.9dB at 61.04MHz.

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) (±)
Radiated Emissions up to 1 GHz	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. 11, 2018	Apr. 10, 2019
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	May 29, 2018	May 28, 2019
BILOG Antenna SCHWARZBECK	VULB9168	9168-148	Dec. 11, 2017	Dec. 10, 2018
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Dec. 12, 2017	Dec. 11, 2018
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 01, 2017	Nov. 30, 2018
Loop Antenna EMCI	EM-6879	269	Sep. 07, 2018	Sep. 06, 2019
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Aug. 08, 2018	Aug. 07, 2019
Preamplifier Agilent (Above 1GHz)	8449B	3008A01638	Feb. 22, 2018	Feb. 21, 2019
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 15, 2018	Jan. 14, 2019
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Aug. 08, 2018	Aug. 07, 2019
RF signal cable Woken	8D-FB	Cable-CH9-01	Jul. 31, 2018	Jul. 30, 2019
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
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
Temperature And Humidity Chamber TERCHY	HRM-120RF	931022	Nov. 20, 2017	Nov. 19, 2018
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
Radio Communication Analyzer	MT8821C	6261786083	Dec. 21, 2017	Dec. 20, 2018

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. The FCC Designation Number is TW0003. The number will be varied with the Lab location and scope as attached.
4. The IC Site Registration No. is IC 7450F-9.

3 General Information

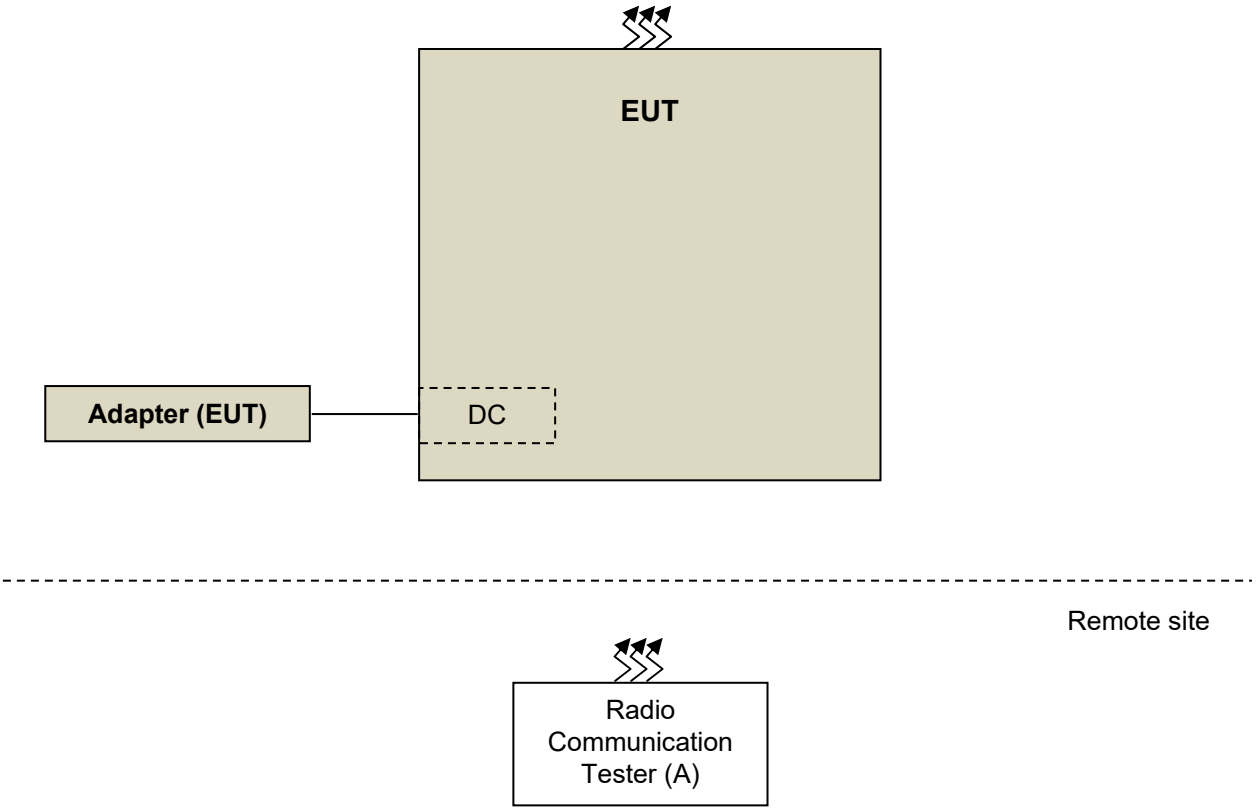
3.1 General Description of EUT

Product	SmartPhone			
Brand	NOKIA			
Test Model	TA1124			
Sample Status	Engineering sample			
Power Supply Rating	5 Vdc / 9 Vdc (Adapter) 3.85 Vdc (Battery)			
Modulation Type	PCS, GPRS: GMSK EDGE: 8PSK WCDMA: BPSK, QPSK HSDPA: BPSK HSUPA: QPSK LTE: QPSK, 16QAM, 64QAM			
Operating Frequency	PCS/GPRS/ EDGE	1850.2MHz ~ 1909.8MHz		
	WCDMA Band 2	1852.4MHz ~ 1907.6MHz		
	LTE Band 2 (Channel Bandwidth 1.4MHz)	1850.7MHz ~ 1909.3MHz		
	LTE Band 2 (Channel Bandwidth 3MHz)	1851.5MHz ~ 1908.5MHz		
	LTE Band 2 (Channel Bandwidth 5MHz)	1852.5MHz ~ 1907.5MHz		
	LTE Band 2 (Channel Bandwidth 10MHz)	1855.0MHz ~ 1905.0MHz		
	LTE Band 2 (Channel Bandwidth 15MHz)	1857.5MHz ~ 1902.5MHz		
	LTE Band 2 (Channel Bandwidth 20MHz)	1860.0MHz ~ 1900.0MHz		
Max. EIRP Power (Main source)	PCS/GPRS	1288.250mW (31.1dBm)		
	EDGE	501.187mW (27.0dBm)		
	WCDMA Band 2	776.247mW (28.9dBm)		
		QPSK	16QAM	64QAM
	LTE Band 2 (Channel Bandwidth 1.4MHz)	630.957mW (28.0dBm)	501.187mW (27.0dBm)	436.516 mW (26.4dBm)
	LTE Band 2 (Channel Bandwidth 3MHz)	724.436mW (28.6dBm)	575.440mW (27.6dBm)	489.779mW (26.9dBm)
	LTE Band 2 (Channel Bandwidth 5MHz)	741.310mW (28.7dBm)	575.440mW (27.6dBm)	478.630mW (26.8dBm)
	LTE Band 2 (Channel Bandwidth 10MHz)	776.247mW (28.9dBm)	616.595mW (27.9dBm)	524.807mW (27.2dBm)
	LTE Band 2 (Channel Bandwidth 15MHz)	741.310mW (28.7dBm)	602.560mW (27.8dBm)	501.187mW (27.0dBm)
	LTE Band 2 (Channel Bandwidth 20MHz)	758.578mW (28.8dBm)	588.844mW (27.7dBm)	501.187mW (27.0dBm)
Max. EIRP Power (2nd source)	PCS/GPRS	1000.000mW (30.0dBm)		

Emission Designator	PCS/GPRS	247KGXW		
	EDGE	244KGXW		
	WCDMA Band 2	4M15F9W		
		QPSK	16QAM	64QAM
	LTE Band 2 (Channel Bandwidth 1.4MHz)	1M09G7D	1M09D7W	1M09D7W
	LTE Band 2 (Channel Bandwidth 3MHz)	2M70G7D	2M70D7W	2M70D7W
	LTE Band 2 (Channel Bandwidth 5MHz)	4M49G7D	4M49D7W	4M51D7W
	LTE Band 2 (Channel Bandwidth 10MHz)	8M96G7D	8M97D7W	8M96D7W
	LTE Band 2 (Channel Bandwidth 15MHz)	13M4G7D	13M4D7W	13M4D7W
	LTE Band 2 (Channel Bandwidth 20MHz)	17M9G7D	17M9D7W	17M9D7W
Antenna Type	Monopole antenna with -2.5dBi			
Antenna Connector	NA			
Accessory Device	Refer to Note as below			
Data Cable Supplied	Refer to Note as below			

Note: The EUT's accessories list refers to Ext. Pho.

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.	Radio Communication Tester	Anritsu	MT8820C	6201010284	NA	-

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

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 as the table below. Following channel(s) was (were) selected for the final test as listed below:

Band	ERP	Radiated Emission
PCS	X-plane	X-plane
WCDMA Band 2	X-plane	X-plane
LTE Band 2	X-plane	X-plane

Test results are presented in the report as below.

Test Mode	Test Condition
A	Main Source: EUT + Battery 1 + Photo Camera 1 + Video Camera 1 + eMMC 1 + RAM 1
B	2nd Source: EUT + Battery 2 + Photo Camera 2 + Video Camera 2 + eMMC 2 + RAM 2

PCS Mode

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
A	EIRP	512 to 810	512(1850.2MHz), 661(1880.0MHz), 810(1909.8MHz)	PCS, EDGE
B		512 to 810	661(1880.0MHz)	PCS
A	Modulation characteristics	512 to 810	661(1880.0MHz)	PCS, EDGE
A	Frequency Stability	512 to 810	661(1880.0MHz)	PCS
A	Occupied Bandwidth	512 to 810	512(1850.2MHz), 661(1880.0MHz), 810(1909.8MHz)	PCS, EDGE
A	Band Edge	512 to 810	512(1850.2MHz), 810(1909.8MHz)	PCS, EDGE
A	Peak To Average Ratio	512 to 810	512(1850.2MHz), 661(1880.0MHz), 810(1909.8MHz)	PCS, EDGE
A	Conducted Emission	512 to 810	512(1850.2MHz), 661(1880.0MHz), 810(1909.8MHz)	PCS, EDGE
A	Radiated Emission Below 1GHz	512 to 810	661(1880.0MHz)	PCS, EDGE
B		512 to 810	661(1880.0MHz)	PCS
A	Radiated Emission Above 1GHz	512 to 810	512(1850.2MHz), 661(1880.0MHz), 810(1909.8MHz)	PCS, EDGE
B		512 to 810	661(1880.0MHz)	PCS

WCDMA Band 2 Mode

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
A	EIRP	9262 to 9538	9262(1852.4MHz), 9400(1880.0MHz), 9538(1907.6MHz)	WCDMA
A	Modulation characteristics	9262 to 9538	9400(1880.0MHz)	WCDMA
A	Frequency Stability	9262 to 9538	9400(1880.0MHz)	WCDMA
A	Occupied Bandwidth	9262 to 9538	9262(1852.4MHz), 9400(1880.0MHz), 9538(1907.6MHz)	WCDMA
A	Band Edge	9262 to 9538	9262(1852.4MHz), 9538(1907.6MHz)	WCDMA
A	Peak To Average Ratio	9262 to 9538	9262(1852.4MHz), 9400(1880.0MHz), 9538(1907.6MHz)	WCDMA
A	Conducted Emission	9262 to 9538	9262(1852.4MHz), 9400(1880.0MHz), 9538(1907.6MHz)	WCDMA
A	Radiated Emission Below 1GHz	9262 to 9538	9262(1852.4MHz)	WCDMA
A	Radiated Emission Above 1GHz	9262 to 9538	9262(1852.4MHz), 9400(1880.0MHz), 9538(1907.6MHz)	WCDMA

LTE Band 2

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
A	EIRP	18607 to 19193	18607(1850.70MHz), 18900(1880.00MHz), 19193(1909.30MHz)	1.4MHz	QPSK / 16QAM / 64QAM	1 RB / 5 RB Offset
		18615 to 19185	18615(1851.50MHz), 18900(1880.00MHz), 19185(1908.50MHz)	3MHz	QPSK / 16QAM / 64QAM	1 RB / 14 RB Offset
		18625 to 19175	18625(1852.50MHz), 18900(1880.00MHz), 19175(1907.50MHz)	5MHz	QPSK / 16QAM / 64QAM	1 RB / 24 RB Offset
		18650 to 19150	18650(1855.00MHz), 18900(1880.00MHz), 19150(1905.00MHz)	10MHz	QPSK / 16QAM / 64QAM	1 RB / 49 RB Offset
		18675 to 19125	18675(1857.50MHz), 18900(1880.00MHz), 19125(1902.50MHz)	15MHz	QPSK / 16QAM / 64QAM	1 RB / 74 RB Offset
		18700 to 19100	18700(1860.00MHz), 18900(1880.00MHz), 19100(1900.00MHz)	20MHz	QPSK / 16QAM / 64QAM	1 RB / 99 RB Offset
A	Modulation characteristics	18700 to 19100	18900(1880.00MHz)	10MHz	QPSK / 16QAM / 64QAM	1 RB / 99 RB Offset
A	Frequency Stability	18607 to 19193	18607(1850.70MHz), 19193(1909.30MHz)	1.4MHz	QPSK	1 RB / 5 RB Offset
		18615 to 19185	18615(1851.50MHz), 19185(1908.50MHz)	3MHz	QPSK	1 RB / 14 RB Offset
		18625 to 19175	18625(1852.50MHz), 19175(1907.50MHz)	5MHz	QPSK	1 RB / 24 RB Offset
		18650 to 19150	18650(1855.00MHz), 19150(1905.00MHz)	10MHz	QPSK	1 RB / 49 RB Offset
		18675 to 19125	18675(1857.50MHz), 19125(1902.50MHz)	15MHz	QPSK	1 RB / 74 RB Offset
		18700 to 19100	18700(1860.00MHz), 19100(1900.00MHz)	20MHz	QPSK	1 RB / 99 RB Offset
A	Occupied Bandwidth	18607 to 19193	18607(1850.70MHz), 18900(1880.00MHz), 19193(1909.30MHz)	1.4MHz	QPSK / 16QAM / 64QAM	1 RB / 5 RB Offset
		18615 to 19185	18615(1851.50MHz), 18900(1880.00MHz), 19185(1908.50MHz)	3MHz	QPSK / 16QAM / 64QAM	1 RB / 14 RB Offset
		18625 to 19175	18625(1852.50MHz), 18900(1880.00MHz), 19175(1907.50MHz)	5MHz	QPSK / 16QAM / 64QAM	1 RB / 24 RB Offset
		18650 to 19150	18650(1855.00MHz), 18900(1880.00MHz), 19150(1905.00MHz)	10MHz	QPSK / 16QAM / 64QAM	1 RB / 49 RB Offset
		18675 to 19125	18675(1857.50MHz), 18900(1880.00MHz), 19125(1902.50MHz)	15MHz	QPSK / 16QAM / 64QAM	1 RB / 74 RB Offset
		18700 to 19100	18700(1860.00MHz), 18900(1880.00MHz), 19100(1900.00MHz)	20MHz	QPSK / 16QAM / 64QAM	1 RB / 99 RB Offset

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
A	Band Edge	18607 to 19193	18607(1850.70MHz), 19193(1909.30MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset 1 RB / 5 RB Offset 6 RB / 0 RB Offset
		18615 to 19185	18615(1851.50MHz), 19185(1908.50MHz)	3MHz	QPSK	1 RB / 0 RB Offset 1 RB / 14 RB Offset 15 RB / 0 RB Offset
		18625 to 19175	18625(1852.50MHz), 19175(1907.50MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		18650 to 19150	18650(1855.00MHz), 19150(1905.00MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
		18675 to 19125	18675(1857.50MHz), 19125(1902.50MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 74 RB Offset 75 RB / 0 RB Offset
		18700 to 19100	18700(1860.00MHz), 19100(1900.00MHz)	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 99 RB Offset 100 RB / 0 RB Offset
A	Peak to Average Ratio	18607 to 19193	18607(1850.70MHz), 18900(1880.00MHz), 19193(1909.30MHz)	1.4MHz	QPSK / 16QAM / 64QAM	1 RB / 5 RB Offset
		18615 to 19185	18615(1851.50MHz), 18900(1880.00MHz), 19185(1908.50MHz)	3MHz	QPSK / 16QAM / 64QAM	1 RB / 14 RB Offset
		18625 to 19175	18625(1852.50MHz), 18900(1880.00MHz), 19175(1907.50MHz)	5MHz	QPSK / 16QAM / 64QAM	1 RB / 24 RB Offset
		18650 to 19150	18650(1855.00MHz), 18900(1880.00MHz), 19150(1905.00MHz)	10MHz	QPSK / 16QAM / 64QAM	1 RB / 49 RB Offset
		18675 to 19125	18675(1857.50MHz), 18900(1880.00MHz), 19125(1902.50MHz)	15MHz	QPSK / 16QAM / 64QAM	1 RB / 74 RB Offset
		18700 to 19100	18700(1860.00MHz), 18900(1880.00MHz), 19100(1900.00MHz)	20MHz	QPSK / 16QAM / 64QAM	1 RB / 99 RB Offset
A	Conducted Emission	18607 to 19193	18607(1850.70MHz), 18900(1880.00MHz), 19193(1909.30MHz)	1.4MHz	QPSK	1 RB / 5 RB Offset
		18615 to 19185	18615(1851.50MHz), 18900(1880.00MHz), 19185(1908.50MHz)	3MHz	QPSK	1 RB / 14 RB Offset
		18625 to 19175	18625(1852.50MHz), 18900(1880.00MHz), 19175(1907.50MHz)	5MHz	QPSK	1 RB / 24 RB Offset
		18650 to 19150	18650(1855.00MHz), 18900(1880.00MHz), 19150(1905.00MHz)	10MHz	QPSK	1 RB / 49 RB Offset
		18675 to 19125	18675(1857.50MHz), 18900(1880.00MHz), 19125(1902.50MHz)	15MHz	QPSK	1 RB / 74 RB Offset
		18700 to 19100	18700(1860.00MHz), 18900(1880.00MHz), 19100(1900.00MHz)	20MHz	QPSK	1 RB / 99 RB Offset

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
A	Radiated Emission Below 1GHz	18607 to 19193	18607(1850.70MHz)	1.4MHz	QPSK	1 RB / 5 RB Offset
		18615 to 19185	18615(1851.50MHz)	3MHz	QPSK	1 RB / 14 RB Offset
		18625 to 19175	18625(1852.50MHz)	5MHz	QPSK	1 RB / 24 RB Offset
		18650 to 19150	18650(1855.00MHz)	10MHz	QPSK	1 RB / 49 RB Offset
		18675 to 19125	18675(1857.50MHz)	15MHz	QPSK	1 RB / 74 RB Offset
		18700 to 19100	18700(1860.00MHz)	20MHz	QPSK	1 RB / 99 RB Offset
A	Radiated Emission Above 1GHz	18607 to 19193	18607(1850.70MHz), 18900(1880.00MHz), 19193(1909.30MHz)	1.4MHz	QPSK	1 RB / 5 RB Offset
		18615 to 19185	18615(1851.50MHz), 18900(1880.00MHz), 19185(1908.50MHz)	3MHz	QPSK	1 RB / 14 RB Offset
		18625 to 19175	18625(1852.50MHz), 18900(1880.00MHz), 19175(1907.50MHz)	5MHz	QPSK	1 RB / 24 RB Offset
		18650 to 19150	18650(1855.00MHz), 18900(1880.00MHz), 19150(1905.00MHz)	10MHz	QPSK	1 RB / 49 RB Offset
		18675 to 19125	18675(1857.50MHz), 18900(1880.00MHz), 19125(1902.50MHz)	15MHz	QPSK	1 RB / 74 RB Offset
		18700 to 19100	18700(1860.00MHz), 18900(1880.00MHz), 19100(1900.00MHz)	20MHz	QPSK	1 RB / 99 RB Offset

Note:

1. For radiated emission below 1GHz, low, mid and high channels were pre-tested in chamber with 1.4MHz mode. Low channel on mode A was found to be the worst case and therefore had been chosen for all final tests.
2. The conducted output power for QPSK, 16QAM and 64QAM, measured value of QPSK is higher than 16QAM and 64QAM mode. Therefore, only occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM and 64QAM modes, the other test items were performed under QPSK mode only.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
EIRP	25deg. C, 66%RH	120Vac, 60Hz	Han Wu Greg Lin
Modulation characteristics	24deg. C, 64%RH	120Vac, 60Hz	Wayne Huang
Frequency Stability	24deg. C, 64%RH	120Vac, 60Hz	Wayne Huang
Occupied Bandwidth	24deg. C, 64%RH	120Vac, 60Hz	Wayne Huang
Band Edge	24deg. C, 64%RH	120Vac, 60Hz	Wayne Huang
Peak To Average Ratio	24deg. C, 64%RH	120Vac, 60Hz	Wayne Huang
Conducted Emission	24deg. C, 64%RH	120Vac, 60Hz	Wayne Huang
Radiated Emission	25deg. C, 66%RH	120Vac, 60Hz	Han Wu Greg Lin

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

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

FCC 47 CFR Part 2

FCC 47 CFR Part 24

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

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

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

Mobile / Portable station are limited to 2 watts e.r.p.

4.1.2 Test Procedures

EIRP / ERP Measurement:

a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 1MHz for PCS, 5MHz for WCDMA mode and 10MHz for LTE mode.

b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m(below or equal 1GHz) and/or 1.5m(above 1GHz) 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.

c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step b. Record the power level of S.G

d. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15dB.

Where:

$ERP/EIRP = P_{Meas} + G_T - L_C$

P_{Meas} : Measure transmitter output power.
G_T : Gain of the transmitting antenna.
L_C : signal attenuation in the connecting cable between the transmitter and antenna.

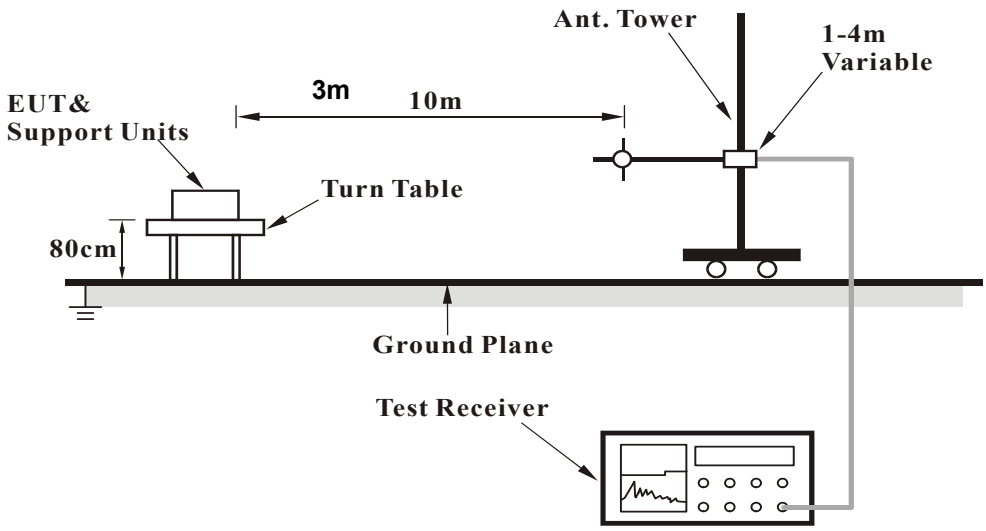
Conducted Power Measurement:

The EUT was set up for the maximum power with PCS, WCDMA, LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

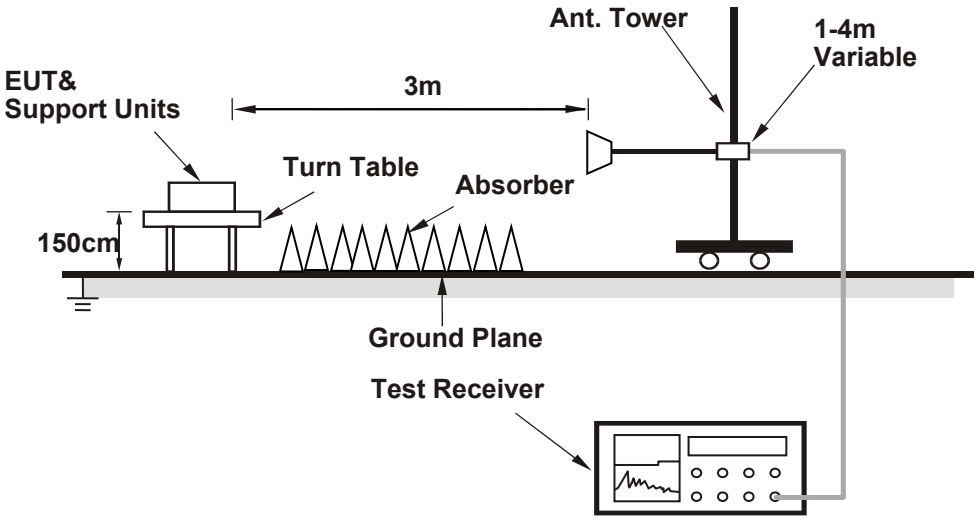
4.1.3 Test Setup

EIRP / ERP Measurement:

For Radiated Emission below or equal 1GHz



For Radiated Emission above 1GHz



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

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)

Band	PCS1900		
Channel	512	661	810
Frequency (MHz)	1850.2	1880	1909.8
PCS	30.14	29.76	29.44
GPRS 1Tx Slot	30.15	29.79	29.46
GPRS 2Tx Slot	27.28	27.20	26.85
EDGE 1Tx Slot (MCS9)	25.67	25.26	25.18
EDGE 2Tx Slot (MCS9)	23.12	22.75	22.62

Band	WCDMA Band II		
TX Channel	9262	9400	9538
Rx Channel	9662	9800	9938
Frequency (MHz)	1852.4	1880	1907.6
RMC 12.2K	24.83	24.94	24.98
HSDPA Subtest-1	23.87	24.06	24.14
HSDPA Subtest-2	23.98	24.08	24.14
HSDPA Subtest-3	23.47	23.60	23.66
HSDPA Subtest-4	23.45	23.60	23.66
DC-HSDPA Subtest-1	23.53	24.04	24.09
DC-HSDPA Subtest-2	23.97	24.05	24.11
DC-HSDPA Subtest-3	23.46	23.61	23.62
DC-HSDPA Subtest-4	23.47	23.58	23.60
HSUPA Subtest-1	23.98	24.16	24.12
HSUPA Subtest-2	22.63	22.76	22.80
HSUPA Subtest-3	22.63	22.75	22.81
HSUPA Subtest-4	22.90	22.91	22.95
HSUPA Subtest-5	24.00	24.10	24.20

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18700	18900	19100
		Frequency (MHz)		1860	1880	1900
20M	QPSK	1	0	23.57	24.09	24.18
		1	50	23.82	24.34	**24.43**
		1	99	23.54	24.06	24.15
		50	0	22.48	23.00	23.09
		50	25	22.51	23.03	23.12
		50	50	22.45	22.97	23.06
		100	0	22.40	22.92	23.01
	16QAM	1	0	22.47	23.02	23.08
		1	50	22.82	23.31	23.43
		1	99	22.47	23.01	23.14
		50	0	21.41	21.94	21.99
		50	25	21.45	22.00	22.03
		50	50	21.40	21.89	22.01
		100	0	21.39	21.85	21.98
	64QAM	1	0	21.53	22.00	22.10
		1	50	21.77	22.28	22.36
		1	99	21.50	22.01	22.13
		50	0	20.44	21.00	21.09
		50	25	20.41	20.93	21.02
		50	50	20.44	20.91	21.04
		100	0	20.38	20.83	21.00

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18675	18900	19125
		Frequency (MHz)		1857.5	1880	1902.5
15M	QPSK	1	0	23.47	24.00	24.16
		1	37	23.72	24.34	24.36
		1	74	23.46	23.99	24.11
		36	0	22.42	22.91	23.00
		36	19	22.47	23.02	23.06
		36	39	22.35	22.88	22.96
		75	0	22.30	22.91	22.99
	16QAM	1	0	22.50	22.97	23.03
		1	37	22.77	23.19	23.39
		1	74	22.48	22.96	23.11
		36	0	21.37	21.86	21.96
		36	19	21.33	21.87	22.06
		36	39	21.38	21.79	21.91
		75	0	21.27	21.84	21.93
	64QAM	1	0	21.40	21.99	22.14
		1	37	21.66	22.23	22.30
		1	74	21.50	21.97	22.06
		36	0	20.38	20.90	20.94
		36	19	20.34	20.94	20.96
		36	39	20.33	20.84	20.98
		75	0	20.25	20.76	20.86

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18650	18900	19150
		Frequency (MHz)		1855	1880	1905
10M	QPSK	1	0	23.41	24.00	24.04
		1	24	23.66	24.14	24.35
		1	49	23.39	23.86	24.12
		25	0	22.35	22.81	22.91
		25	12	22.27	22.82	22.93
		25	25	22.35	22.79	22.96
		50	0	22.25	22.76	22.98
	16QAM	1	0	22.26	22.85	23.07
		1	24	22.72	23.15	23.32
		1	49	22.33	22.93	22.88
		25	0	21.25	21.93	21.96
		25	12	21.26	21.81	21.83
		25	25	21.24	21.89	21.84
		50	0	21.16	21.84	21.95
	64QAM	1	0	21.39	21.94	21.97
		1	24	21.63	22.08	22.28
		1	49	21.37	21.82	22.05
		25	0	20.26	20.80	20.89
		25	12	20.36	20.88	20.85
		25	25	20.27	20.86	20.84
		50	0	20.16	20.79	20.88

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18625	18900	19175
		Frequency (MHz)		1852.5	1880	1907.5
5M	QPSK	1	0	23.40	23.86	23.89
		1	12	23.72	24.24	24.32
		1	24	23.48	23.93	24.04
		12	0	22.31	22.84	22.81
		12	6	22.42	22.91	22.78
		12	13	22.24	22.97	22.83
		25	0	22.32	22.78	22.87
	16QAM	1	0	22.36	22.96	22.98
		1	12	22.58	23.19	23.21
		1	24	22.34	22.88	23.09
		12	0	21.35	21.82	21.96
		12	6	21.44	21.82	21.94
		12	13	21.33	21.77	21.84
		25	0	21.25	21.70	21.87
	64QAM	1	0	21.42	21.96	22.00
		1	12	21.76	22.11	22.22
		1	24	21.44	21.90	22.08
		12	0	20.29	20.75	20.84
		12	6	20.34	20.91	20.98
		12	13	20.40	20.73	20.90
		25	0	20.24	20.84	20.79

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18615	18900	19185
		Frequency (MHz)		1851.5	1880	1908.5
3M	QPSK	1	0	23.34	23.99	24.12
		1	7	23.65	24.19	24.32
		1	14	23.30	24.01	24.03
		8	0	22.31	22.90	22.97
		8	3	22.43	22.95	23.05
		8	7	22.35	22.75	22.87
		15	0	22.34	22.85	22.99
	16QAM	1	0	22.26	22.82	23.05
		1	7	22.65	23.14	23.24
		1	14	22.48	22.77	23.06
		8	0	21.20	21.87	21.91
		8	3	21.27	21.85	22.01
		8	7	21.32	21.83	21.80
		15	0	21.27	21.72	21.87
	64QAM	1	0	21.37	21.96	21.91
		1	7	21.52	22.17	22.26
		1	14	21.48	21.96	22.01
		8	0	20.34	20.88	20.87
		8	3	20.31	20.90	20.93
		8	7	20.15	20.75	20.97
		15	0	20.16	20.68	20.76

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18607	18900	19193
		Frequency (MHz)		1850.7	1880	1909.3
1.4M	QPSK	1	0	23.49	23.95	24.10
		1	2	23.64	24.18	24.34
		1	5	23.41	24.02	24.14
		3	0	23.32	23.86	23.95
		3	1	23.35	23.84	24.06
		3	3	23.32	23.88	23.99
		6	0	22.20	22.80	22.92
	16QAM	1	0	22.41	22.84	23.03
		1	2	22.64	23.12	23.35
		1	5	22.45	22.92	23.04
		3	0	22.32	22.74	22.95
		3	1	22.33	22.81	22.99
		3	3	22.25	22.88	22.90
		6	0	21.26	21.72	21.76
	64QAM	1	0	21.30	21.96	22.01
		1	2	21.56	22.16	22.24
		1	5	21.40	21.89	22.02
		3	0	21.35	21.86	21.85
		3	1	21.42	21.80	21.82
		3	3	21.17	21.83	21.79
		6	0	20.28	20.79	20.78

EIRP Power (dBm)

Test Mode A

PCS Mode

MODE		TX channel 512					
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	1850.20	-9.2	31.0	0.1	**31.1**	33.0	-1.9
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	1850.20	-16.1	24.3	0.1	24.4	33.0	-8.6

MODE		TX channel 661					
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	1880.00	-10.0	30.5	0.0	30.5	33.0	-2.5
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	1880.00	-16.8	23.8	0.0	23.8	33.0	-9.2

MODE		TX channel 810					
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	1909.80	-9.4	31.2	-0.1	**31.1**	33.0	-1.9
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	1909.80	-14.2	26.6	-0.1	26.5	33.0	-6.5

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

EDGE Mode

MODE		TX channel 512					
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	1850.20	-13.7	26.5	0.1	26.6	33.0	-6.4
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	1850.20	-20.2	20.2	0.1	20.3	33.0	-12.7

MODE		TX channel 661					
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	1880.00	-14.0	26.5	0.0	26.5	33.0	-6.5
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	1880.00	-20.3	20.3	0.0	20.3	33.0	-12.7

MODE		TX channel 810					
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	1909.80	-13.5	27.1	-0.1	**27.0**	33.0	-6.0
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	1909.80	-19.8	21.0	-0.1	20.9	33.0	-12.1

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

WCDMA Band 2 Mode

MODE		TX channel 9262					
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	1852.40	-12.8	27.4	0.1	27.5	33.0	-5.5
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	1852.40	-20.8	19.6	0.1	19.7	33.0	-13.3

MODE		TX channel 9400					
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	1880.00	-12.3	28.2	0.0	28.2	33.0	-4.8
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	1880.00	-20.9	19.7	0.0	19.7	33.0	-13.3

MODE		TX channel 9538					
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	1907.60	-11.7	29.0	-0.1	**28.9**	33.0	-4.1
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	1907.60	-20.6	20.2	-0.1	20.1	33.0	-12.9

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

Modulation Type: QPSK

LTE Band 2, Channel Bandwidth: 1.4MHz

MODE		TX channel 18607					
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	1850.70	-14.2	26.0	0.1	26.1	33.0	-6.9
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	1850.70	-23.6	16.8	0.1	16.9	33.0	-16.1

MODE		TX channel 18900					
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	1880.00	-12.5	28.0	0.0	**28.0**	33.0	-5.0
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	1880.00	-22.5	18.1	0.0	18.1	33.0	-14.9

MODE		TX channel 19193					
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	1909.30	-13.4	27.3	-0.1	27.2	33.0	-5.8
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	1909.30	-23.1	17.7	-0.1	17.6	33.0	-15.4

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

LTE Band 2, Channel Bandwidth: 3MHz

MODE		TX channel 18615					
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	1851.50	-14.4	25.8	0.1	25.9	33.0	-7.1
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	1851.50	-24.2	16.2	0.1	16.3	33.0	-16.7

MODE		TX channel 18900					
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	1880.00	-11.9	28.6	0.0	**28.6**	33.0	-4.4
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	1880.00	-21.5	19.1	0.0	19.1	33.0	-13.9

MODE		TX channel 19185					
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	1908.50	-12.3	28.4	-0.1	28.3	33.0	-4.7
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	1908.50	-22.0	18.8	-0.1	18.7	33.0	-14.3

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

LTE Band 2, Channel Bandwidth: 5MHz

MODE		TX channel 18625					
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	1852.50	-13.7	26.5	0.1	26.6	33.0	-6.4
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	1852.50	-23.5	16.9	0.1	17.0	33.0	-16.0

MODE		TX channel 18900					
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	1880.00	-11.8	28.7	0.0	**28.7**	33.0	-4.3
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	1880.00	-21.3	19.3	0.0	19.3	33.0	-13.7

MODE		TX channel 19175					
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	1907.50	-12.3	28.4	-0.1	28.3	33.0	-4.7
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	1907.50	-22.1	18.7	-0.1	18.6	33.0	-14.4

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

LTE Band 2, Channel Bandwidth: 10MHz

MODE		TX channel 18650					
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	1855.00	-13.9	26.4	0.0	26.4	33.0	-6.6
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	1855.00	-23.6	16.9	0.0	16.9	33.0	-16.1

MODE		TX channel 18900					
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	1880.00	-11.6	28.9	0.0	**28.9**	33.0	-4.1
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	1880.00	-21.2	19.4	0.0	19.4	33.0	-13.6

MODE		TX channel 19150					
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	1905.00	-12.0	28.7	-0.1	28.6	33.0	-4.4
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	1905.00	-21.7	19.1	-0.1	19.0	33.0	-14.0

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

LTE Band 2, Channel Bandwidth: 15MHz

MODE		TX channel 18675					
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	1857.50	-13.7	26.6	0.0	26.6	33.0	-6.4
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	1857.50	-23.3	17.2	0.0	17.2	33.0	-15.8

MODE		TX channel 18900					
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	1880.00	-11.8	28.7	0.0	**28.7**	33.0	-4.3
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	1880.00	-21.5	19.1	0.0	19.1	33.0	-13.9

MODE		TX channel 19125					
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	1902.50	-12.2	28.5	-0.1	28.4	33.0	-4.6
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	1902.50	-21.9	18.9	-0.1	18.8	33.0	-14.2

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

LTE Band 2, Channel Bandwidth: 20MHz

MODE		TX channel 18700					
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	1860.00	-13.9	26.4	0.0	26.4	33.0	-6.6
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	1860.00	-23.4	17.1	0.0	17.1	33.0	-15.9

MODE		TX channel 18900					
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	1880.00	-12.0	28.5	0.0	28.5	33.0	-4.5
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	1880.00	-21.7	18.9	0.0	18.9	33.0	-14.1

MODE		TX channel 19100					
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	1900.00	-11.8	28.9	-0.1	**28.8**	33.0	-4.2
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	1900.00	-21.3	19.5	-0.1	19.4	33.0	-13.6

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

Modulation Type: 16QAM

LTE Band 2, Channel Bandwidth: 1.4MHz

MODE		TX channel 18607					
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	1850.70	-15.1	25.1	0.1	25.2	33.0	-7.8
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	1850.70	-24.5	15.9	0.1	16.0	33.0	-17.0

MODE		TX channel 18900					
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	1880.00	-13.5	27.0	0.0	27.0	33.0	-6.0
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	1880.00	-23.6	17.0	0.0	17.0	33.0	-16.0

MODE		TX channel 19193					
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	1909.30	-14.2	26.5	-0.1	26.4	33.0	-6.6
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	1909.30	-23.9	16.9	-0.1	16.8	33.0	-16.2

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

LTE Band 2, Channel Bandwidth: 3MHz

MODE		TX channel 18615					
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	1851.50	-15.3	24.9	0.1	25.0	33.0	-8.0
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	1851.50	-25.1	15.3	0.1	15.4	33.0	-17.6

MODE		TX channel 18900					
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	1880.00	-12.9	27.6	0.0	**27.6**	33.0	-5.4
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	1880.00	-22.4	18.2	0.0	18.2	33.0	-14.8

MODE		TX channel 19185					
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	1908.50	-13.3	27.4	-0.1	27.3	33.0	-5.7
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	1908.50	-23.0	17.8	-0.1	17.7	33.0	-15.3

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

LTE Band 2, Channel Bandwidth: 5MHz

MODE		TX channel 18625					
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	1852.50	-14.8	25.4	0.1	25.5	33.0	-7.5
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	1852.50	-24.6	15.8	0.1	15.9	33.0	-17.1

MODE		TX channel 18900					
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	1880.00	-12.9	27.6	0.0	**27.6**	33.0	-5.4
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	1880.00	-22.3	18.3	0.0	18.3	33.0	-14.7

MODE		TX channel 19175					
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	1907.50	-13.3	27.4	-0.1	27.3	33.0	-5.7
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	1907.50	-23.1	17.7	-0.1	17.6	33.0	-15.4

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

LTE Band 2, Channel Bandwidth: 10MHz

MODE		TX channel 18650					
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	1855.00	-14.8	25.5	0.0	25.5	33.0	-7.5
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	1855.00	-24.5	16.0	0.0	16.0	33.0	-17.0

MODE		TX channel 18900					
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	1880.00	-12.6	27.9	0.0	**27.9**	33.0	-5.1
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	1880.00	-22.2	18.4	0.0	18.4	33.0	-14.6

MODE		TX channel 19150					
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	1905.00	-13.1	27.6	-0.1	27.5	33.0	-5.5
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	1905.00	-22.7	18.1	-0.1	18.0	33.0	-15.0

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

LTE Band 2, Channel Bandwidth: 15MHz

MODE		TX channel 18675					
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	1857.50	-14.6	25.7	0.0	25.7	33.0	-7.3
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	1857.50	-24.4	16.1	0.0	16.1	33.0	-16.9

MODE		TX channel 18900					
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	1880.00	-12.7	27.8	0.0	**27.8**	33.0	-5.2
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	1880.00	-22.5	18.1	0.0	18.1	33.0	-14.9

MODE		TX channel 19125					
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	1902.50	-13.2	27.5	-0.1	27.4	33.0	-5.6
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	1902.50	-22.9	17.9	-0.1	17.8	33.0	-15.2

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

LTE Band 2, Channel Bandwidth: 20MHz

MODE		TX channel 18700					
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	1860.00	-14.8	25.5	0.0	25.5	33.0	-7.5
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	1860.00	-24.4	16.1	0.0	16.1	33.0	-16.9

MODE		TX channel 18900					
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	1880.00	-12.8	27.7	0.0	**27.7**	33.0	-5.3
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	1880.00	-22.7	17.9	0.0	17.9	33.0	-15.1

MODE		TX channel 19100					
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	1900.00	-12.9	27.8	-0.1	**27.7**	33.0	-5.3
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	1900.00	-22.4	18.4	-0.1	18.3	33.0	-14.7

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

Modulation Type: 64QAM

LTE Band 2, Channel Bandwidth: 1.4MHz

MODE		TX channel 18607					
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	1850.70	-15.6	24.6	0.1	24.7	33.0	-8.3
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	1850.70	-25.0	15.4	0.1	15.5	33.0	-17.5

MODE		TX channel 18900					
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	1880.00	-14.1	26.4	0.0	**26.4**	33.0	-6.6
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	1880.00	-24.2	16.4	0.0	16.4	33.0	-16.6

MODE		TX channel 19193					
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	1909.30	-14.8	25.9	-0.1	25.8	33.0	-7.2
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	1909.30	-24.6	16.2	-0.1	16.1	33.0	-16.9

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

LTE Band 2, Channel Bandwidth: 3MHz

MODE		TX channel 18615					
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	1851.50	-15.8	24.4	0.1	24.5	33.0	-8.5
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	1851.50	-25.7	14.7	0.1	14.8	33.0	-18.2

MODE		TX channel 18900					
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	1880.00	-13.6	26.9	0.0	**26.9**	33.0	-6.1
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	1880.00	-23.1	17.5	0.0	17.5	33.0	-15.5

MODE		TX channel 19185					
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	1908.50	-14.0	26.7	-0.1	26.6	33.0	-6.4
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	1908.50	-23.7	17.1	-0.1	17.0	33.0	-16.0

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

LTE Band 2, Channel Bandwidth: 5MHz

MODE		TX channel 18625					
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	1852.50	-15.4	24.8	0.1	24.9	33.0	-8.1
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	1852.50	-25.3	15.1	0.1	15.2	33.0	-17.8

MODE		TX channel 18900					
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	1880.00	-13.7	26.8	0.0	**26.8**	33.0	-6.2
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	1880.00	-23.1	17.5	0.0	17.5	33.0	-15.5

MODE		TX channel 19175					
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	1907.50	-13.8	26.9	-0.1	**26.8**	33.0	-6.2
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	1907.50	-23.6	17.2	-0.1	17.1	33.0	-15.9

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

LTE Band 2, Channel Bandwidth: 10MHz

MODE		TX channel 18650					
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	1855.00	-15.4	24.9	0.0	24.9	33.0	-8.1
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	1855.00	-25.2	15.3	0.0	15.3	33.0	-17.7

MODE		TX channel 18900					
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	1880.00	-13.3	27.2	0.0	**27.2**	33.0	-5.8
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	1880.00	-22.8	17.8	0.0	17.8	33.0	-15.2

MODE		TX channel 19150					
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	1905.00	-13.6	27.1	-0.1	27.0	33.0	-6.0
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	1905.00	-23.4	17.4	-0.1	17.3	33.0	-15.7

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

LTE Band 2, Channel Bandwidth: 15MHz

MODE		TX channel 18675					
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	1857.50	-15.2	25.1	0.0	25.1	33.0	-7.9
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	1857.50	-25.1	15.4	0.0	15.4	33.0	-17.6

MODE		TX channel 18900					
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	1880.00	-13.5	27.0	0.0	**27.0**	33.0	-6.0
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	1880.00	-23.2	17.4	0.0	17.4	33.0	-15.6

MODE		TX channel 19125					
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	1902.50	-14.1	26.6	-0.1	26.5	33.0	-6.5
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	1902.50	-23.8	17.0	-0.1	16.9	33.0	-16.1

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

LTE Band 2, Channel Bandwidth: 20MHz

MODE		TX channel 18700					
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	1860.00	-15.4	24.9	0.0	24.9	33.0	-8.1
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	1860.00	-25.0	15.5	0.0	15.5	33.0	-17.5

MODE		TX channel 18900					
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	1880.00	-13.5	27.0	0.0	**27.0**	33.0	-6.0
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	1880.00	-23.4	17.2	0.0	17.2	33.0	-15.8

MODE		TX channel 19100					
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	1900.00	-13.6	27.1	-0.1	**27.0**	33.0	-6.0
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	1900.00	-23.2	17.6	-0.1	17.5	33.0	-15.5

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

Test Mode B

PCS Mode

MODE		TX channel 661					
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	1880.00	-10.5	30.0	0.0	**30.0**	33.0	-3.0
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	1880.00	-17.0	23.6	0.0	23.6	33.0	-9.4

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

4.2 Modulation Characteristics Measurement

4.2.1 Limits of Modulation Characteristics

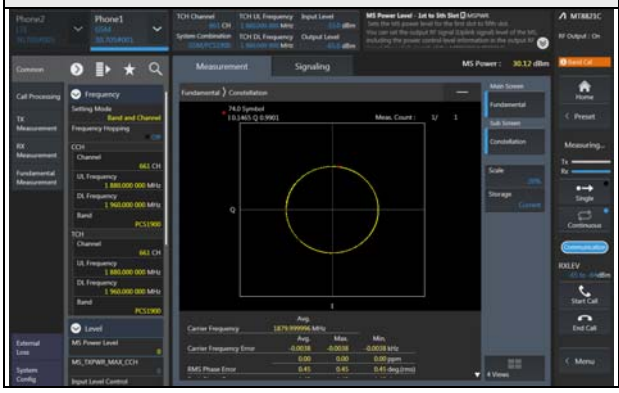
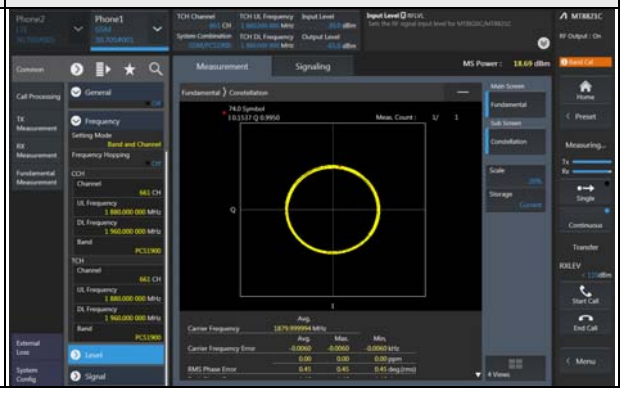
N/A

4.2.2 Test Procedure

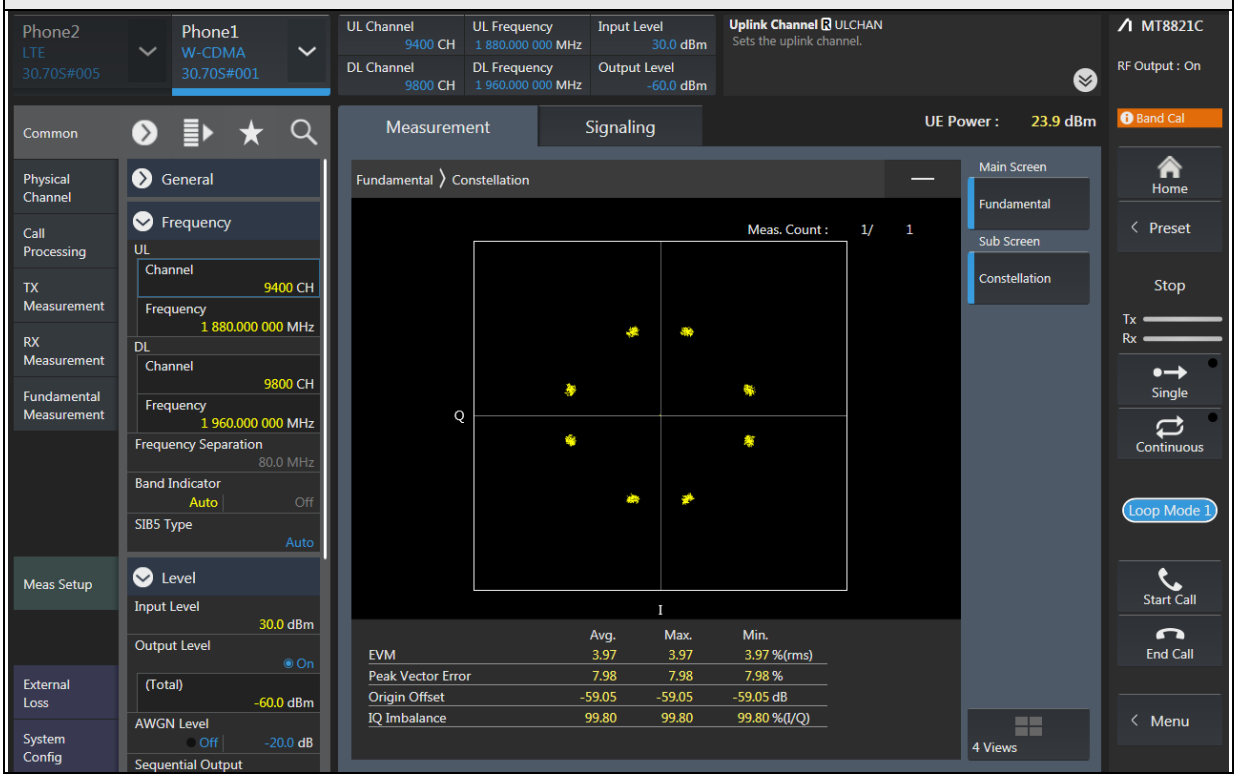
Connect the EUT to Communication Simulator via the antenna connector, The frequency band is set as EUT supported Modulation and Channels, the EUT output is matched with 50 ohm load, the waveform quality and constellation of the EUT was tested.

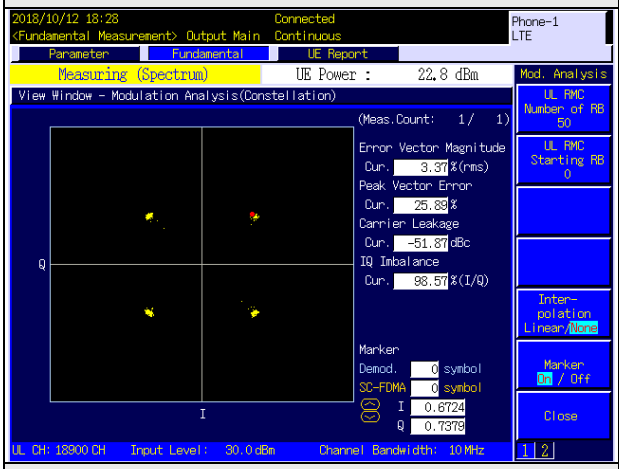
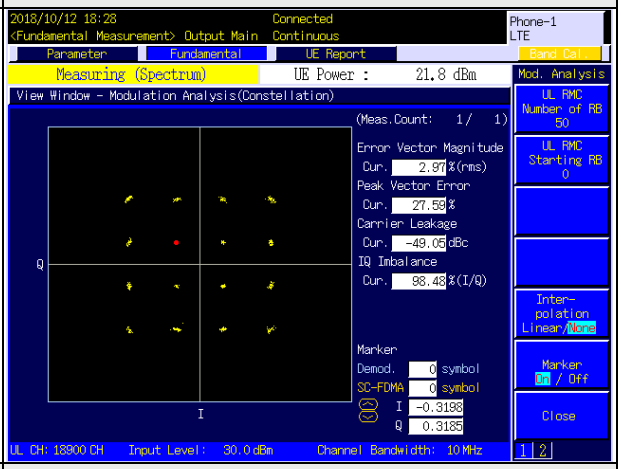
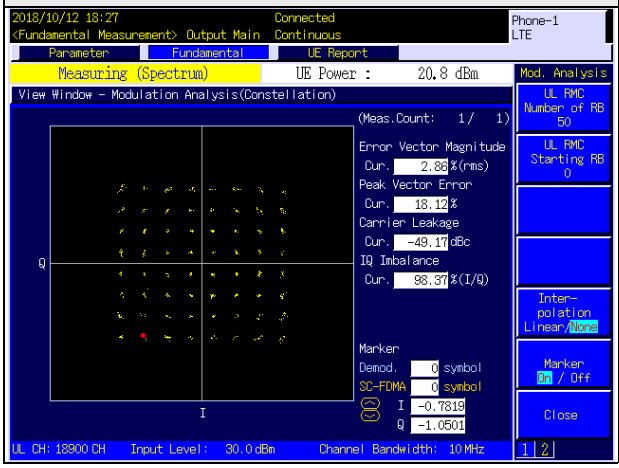
4.2.3 Test Setup

4.2.4 Test Results

Spectrum Plot of Measurement Value	
Channel: 661 / Frequency (MHz): 1880.0MHz	
PCS	EDGE
	

Spectrum Plot of Measurement Value
Channel: 9400 / Frequency (MHz): 1880.0MHz
WCDMA Band 2



LTE Band 2	
Spectrum Plot of Measurement Value	
Channel: 18900 / Frequency (MHz): 1880.0MHz	
Channel Bandwidth: 10MHz / QPSK	Channel Bandwidth: 10MHz / 16QAM
	
Channel Bandwidth: 10MHz / 64QAM	
	

4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

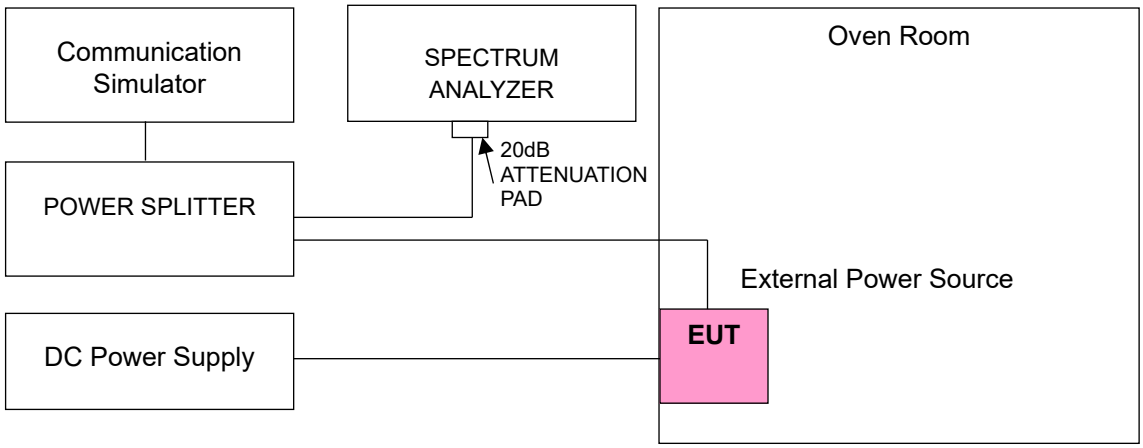
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

4.3.2 Test Procedure

a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5 ℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

4.3.3 Test Setup



4.3.4 Test Results

Frequency Error vs. Voltage

Voltage (Volts)	PCS			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	1850.200002	0.001	1909.800004	0.002
3.27	1850.200004	0.002	1909.800001	0.001
4.42	1850.200004	0.002	1909.800003	0.002

Note: The applicant defined the normal working voltage is from 3.27Vdc to 4.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	PCS			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1850.200004	0.002	1909.800003	0.002
-20	1850.200002	0.001	1909.800004	0.002
-10	1850.200003	0.002	1909.800004	0.002
0	1850.200002	0.001	1909.800002	0.001
10	1850.200001	0.001	1909.800001	0.001
20	1850.199997	-0.001	1909.799998	-0.001
30	1850.199996	-0.002	1909.799997	-0.002
40	1850.199997	-0.002	1909.799998	-0.001
50	1850.199996	-0.002	1909.799998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	EDGE			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	1850.200002	0.001	1909.800003	0.001
3.27	1850.200003	0.001	1909.800003	0.002
4.42	1850.200002	0.001	1909.800004	0.002

Note: The applicant defined the normal working voltage is from 3.27Vdc to 4.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	EDGE			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1850.200001	0.001	1909.800003	0.002
-20	1850.200002	0.001	1909.800002	0.001
-10	1850.200003	0.002	1909.800004	0.002
0	1850.200003	0.002	1909.800002	0.001
10	1850.200003	0.002	1909.800003	0.001
20	1850.199998	-0.001	1909.799998	-0.001
30	1850.199996	-0.002	1909.799998	-0.001
40	1850.199999	-0.001	1909.799996	-0.002
50	1850.199997	-0.001	1909.799999	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	WCDMA Band 2			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	1852.400002	0.001	1907.600004	0.002
3.27	1852.400003	0.001	1907.600002	0.001
4.42	1852.400003	0.002	1907.600004	0.002

Note: The applicant defined the normal working voltage is from 3.27Vdc to 4.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	WCDMA Band 2			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1852.400004	0.002	1907.600003	0.002
-20	1852.400002	0.001	1907.600002	0.001
-10	1852.400002	0.001	1907.600003	0.002
0	1852.400003	0.002	1907.600003	0.002
10	1852.400002	0.001	1907.600002	0.001
20	1852.399998	-0.001	1907.599998	-0.001
30	1852.399996	-0.002	1907.599997	-0.002
40	1852.399999	-0.001	1907.599998	-0.001
50	1852.399998	-0.001	1907.599996	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 2			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	1850.700002	0.001	1909.300000	0.001
3.27	1850.700003	0.001	1909.300002	0.001
4.42	1850.700004	0.002	1909.300003	0.001

Note: The applicant defined the normal working voltage is from 3.27Vdc to 4.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 2			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1850.700003	0.001	1909.300004	0.002
-20	1850.700002	0.001	1909.300004	0.002
-10	1850.700003	0.002	1909.300003	0.001
0	1850.700004	0.002	1909.300003	0.002
10	1850.700003	0.002	1909.300003	0.001
20	1850.699998	-0.001	1909.299997	-0.002
30	1850.699998	-0.001	1909.299997	-0.001
40	1850.699996	-0.002	1909.299998	-0.001
50	1850.699998	-0.001	1909.299997	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 2			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	1851.500002	0.001	1907.500001	0.001
3.27	1851.500003	0.002	1907.500004	0.002
4.42	1851.500002	0.001	1907.500001	0.001

Note: The applicant defined the normal working voltage is from 3.27Vdc to 4.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 2			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1851.500003	0.002	1907.500004	0.002
-20	1851.500003	0.002	1907.500001	0.001
-10	1851.500003	0.002	1907.500001	0.001
0	1851.500004	0.002	1907.500003	0.002
10	1851.500003	0.002	1907.500001	0.001
20	1851.499996	-0.002	1907.499996	-0.002
30	1851.499997	-0.002	1907.499999	-0.001
40	1851.499997	-0.002	1907.499997	-0.002
50	1851.499997	-0.002	1907.499998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 2			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	1852.500002	0.001	1907.500002	0.001
3.27	1852.500002	0.001	1907.500002	0.001
4.42	1852.500004	0.002	1907.500002	0.001

Note: The applicant defined the normal working voltage is from 3.27Vdc to 4.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 2			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1852.500003	0.002	1907.500001	0.001
-20	1852.500003	0.002	1907.500003	0.001
-10	1852.500001	0.001	1907.500004	0.002
0	1852.500002	0.001	1907.500004	0.002
10	1852.500002	0.001	1907.500002	0.001
20	1852.499998	-0.001	1907.499996	-0.002
30	1852.499996	-0.002	1907.499997	-0.002
40	1852.499997	-0.002	1907.499996	-0.002
50	1852.499997	-0.002	1907.499997	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 2			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	1855.000002	0.001	1905.000003	0.002
3.27	1855.000003	0.002	1905.000004	0.002
4.42	1855.000004	0.002	1905.000003	0.002

Note: The applicant defined the normal working voltage is from 3.27Vdc to 4.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 2			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1855.000002	0.001	1905.000004	0.002
-20	1855.000002	0.001	1905.000003	0.002
-10	1855.000001	0.001	1905.000002	0.001
0	1855.000004	0.002	1905.000003	0.002
10	1855.000004	0.002	1905.000003	0.001
20	1854.999996	-0.002	1904.999997	-0.001
30	1854.999999	-0.001	1904.999996	-0.002
40	1854.999998	-0.001	1904.999997	-0.002
50	1854.999997	-0.002	1904.999996	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 2			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	1857.500004	0.002	1902.500004	0.002
3.27	1857.500001	0.001	1902.500001	0.001
4.42	1857.500002	0.001	1902.500001	0.001

Note: The applicant defined the normal working voltage is from 3.27Vdc to 4.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 2			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1857.500002	0.001	1902.500001	0.001
-20	1857.500002	0.001	1902.500002	0.001
-10	1857.500004	0.002	1902.500003	0.001
0	1857.500004	0.002	1902.500004	0.002
10	1857.500001	0.001	1902.500002	0.001
20	1857.499997	-0.002	1902.499997	-0.002
30	1857.499996	-0.002	1902.499999	-0.001
40	1857.499998	-0.001	1902.499999	-0.001
50	1857.499999	-0.001	1902.499998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 2			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	1860.000002	0.001	1900.000003	0.002
3.27	1860.000003	0.002	1900.000003	0.002
4.42	1860.000001	0.001	1900.000004	0.002

Note: The applicant defined the normal working voltage is from 3.27Vdc to 4.42Vdc.

Frequency Error vs. Temperature

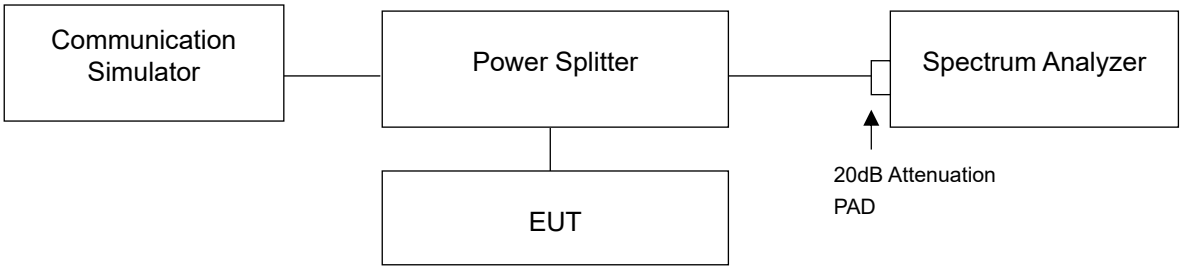
Temp. (℃)	LTE Band 2			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1860.000003	0.001	1900.000003	0.002
-20	1860.000002	0.001	1900.000003	0.002
-10	1860.000004	0.002	1900.000003	0.002
0	1860.000003	0.002	1900.000001	0.001
10	1860.000001	0.001	1900.000002	0.001
20	1859.999998	-0.001	1899.999999	-0.001
30	1859.999998	-0.001	1899.999997	-0.002
40	1859.999999	-0.001	1899.999997	-0.002
50	1859.999996	-0.002	1899.999999	-0.001

4.4 Occupied Bandwidth Measurement

4.4.1 Test Procedure

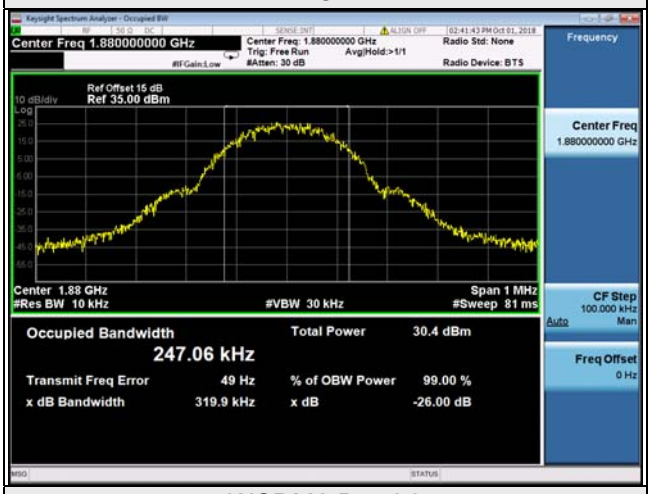
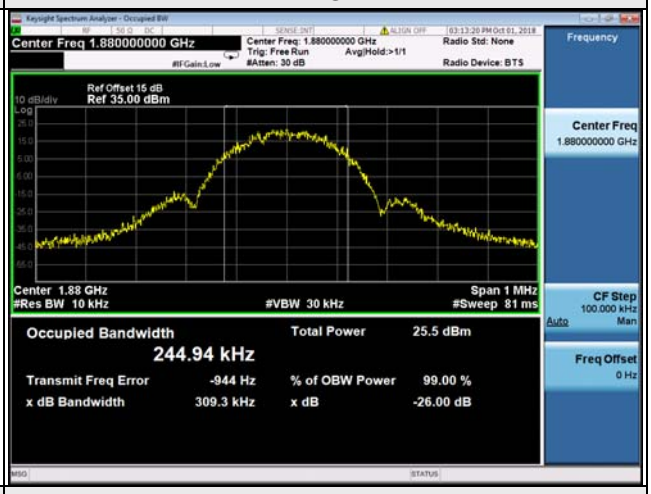
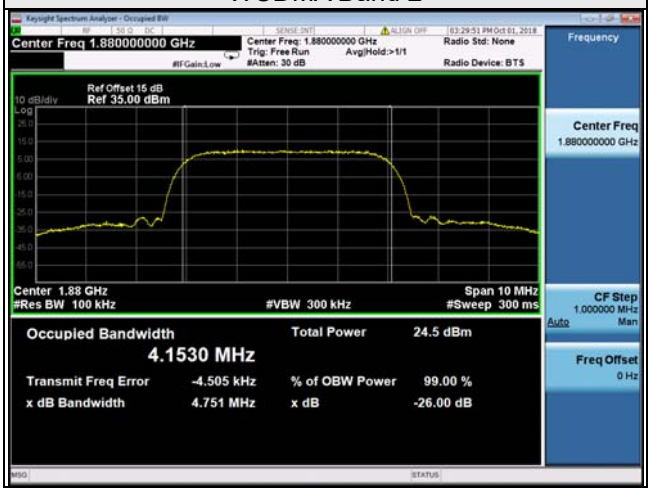
The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

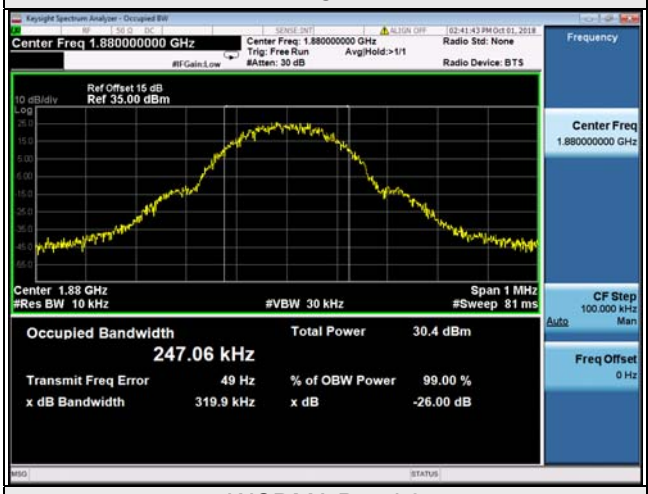
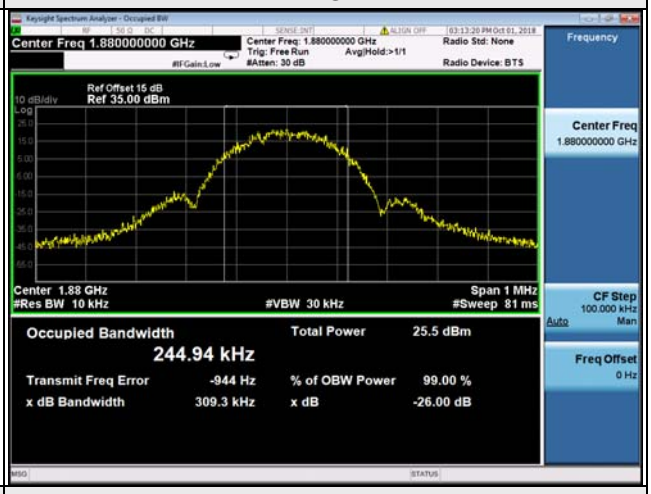
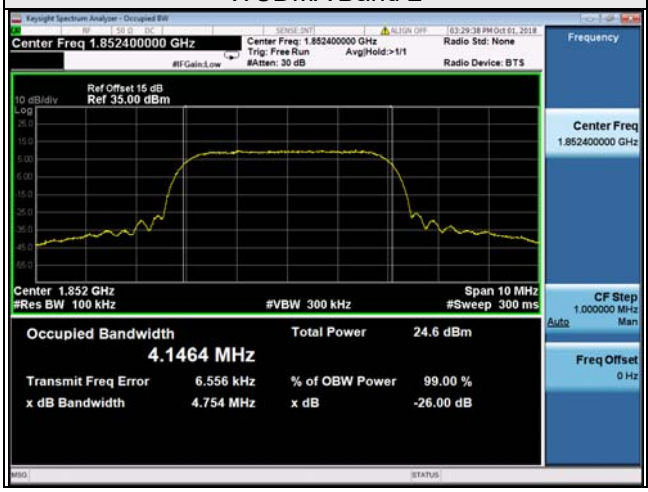
4.4.2 Test Setup



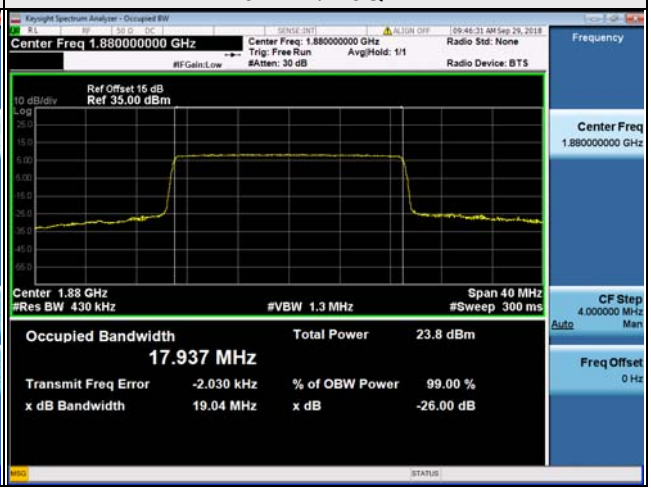
4.4.3 Test Result

PCS			
Channel	Frequency (MHz)	Occupied Bandwidth (kHz)	26dBc Bandwidth (kHz)
512	1850.2	245.17	315.00
661	1880.0	247.06	319.90
810	1909.8	243.61	313.10
EDGE			
Channel	Frequency (MHz)	Occupied Bandwidth (kHz)	26dBc Bandwidth (kHz)
512	1850.2	243.31	308.30
661	1880.0	244.94	309.30
810	1909.8	241.91	303.80
WCDMA Band 2			
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26dBc Bandwidth (MHz)
9262	1852.4	4.15	4.75
9400	1880.0	4.15	4.75
9538	1907.6	4.14	4.75

Occupied Bandwidth	
Spectrum Plot of Worst Value	
PCS	EDGE
	
WCDMA Band 2	
	

26dBc Bandwidth	
Spectrum Plot of Worst Value	
PCS	EDGE
	
WCDMA Band 2	
	

LTE Band 2, Channel Bandwidth: 1.4MHz							
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			26dBc Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
18607	1850.7	1.09	1.09	1.09	1.25	1.25	1.26
18900	1880.0	1.09	1.09	1.09	1.26	1.26	1.26
19193	1909.3	1.09	1.09	1.09	1.29	1.27	1.26
LTE Band 2, Channel Bandwidth: 3MHz							
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			26dBc Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
18615	1851.5	2.70	2.70	2.70	2.92	2.91	2.91
18900	1880.0	2.70	2.70	2.70	2.92	2.94	2.91
19185	1908.5	2.70	2.70	2.70	2.94	2.94	2.92
LTE Band 2, Channel Bandwidth: 5MHz							
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			26dBc Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
18625	1852.5	4.49	4.49	4.51	4.84	4.82	4.86
18900	1880.0	4.49	4.49	4.50	4.82	4.82	4.85
19175	1907.5	4.49	4.49	4.50	4.85	4.83	4.84
LTE Band 2, Channel Bandwidth: 10MHz							
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			26dBc Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
18650	1855.0	8.96	8.96	8.96	9.52	9.51	9.52
18900	1880.0	8.96	8.96	8.96	9.52	9.53	9.54
19150	1905.0	8.96	8.97	8.96	9.54	9.54	9.53
LTE Band 2, Channel Bandwidth: 15MHz							
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			26dBc Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
18675	1857.5	13.43	13.42	13.41	14.24	14.23	14.23
18900	1880.0	13.45	13.43	13.42	14.27	14.23	14.24
19125	1902.5	13.47	13.45	13.43	14.31	14.27	14.27
LTE Band 2, Channel Bandwidth: 20MHz							
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			26dBc Bandwidth (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
18700	1860.0	17.87	17.89	17.88	19.00	18.99	18.99
18900	1880.0	17.93	17.94	17.92	19.05	19.04	19.03
19100	1900.0	17.91	17.93	17.92	19.06	19.04	19.03

Occupied Bandwidth	
Spectrum Plot of Worst Value	
1.4MHz / QPSK	3MHz / QPSK
5MHz / 64QAM	10MHz / 16QAM
15MHz / QPSK	20MHz / 16QAM
	

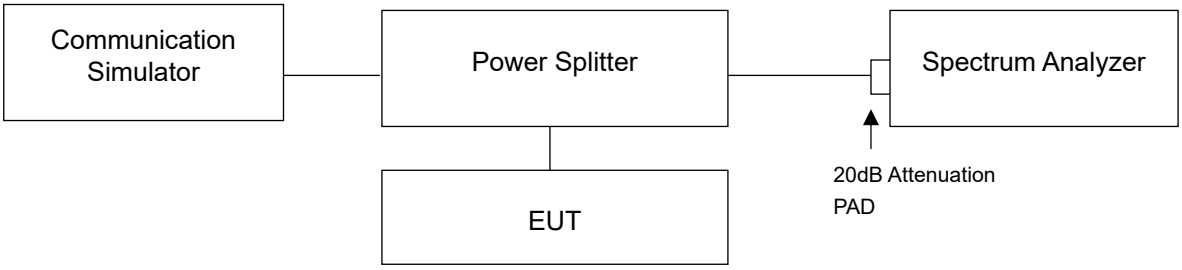
26dBc Bandwidth	
Spectrum Plot of Worst Value	
1.4MHz / QPSK	3MHz / 16QAM
5MHz / 64QAM	10MHz / 16QAM
15MHz / QPSK	20MHz / QPSK

4.5 Band Edge Measurement

4.5.1 Limits of Band Edge Measurement

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. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

4.5.2 Test Setup



4.5.3 Test Procedures

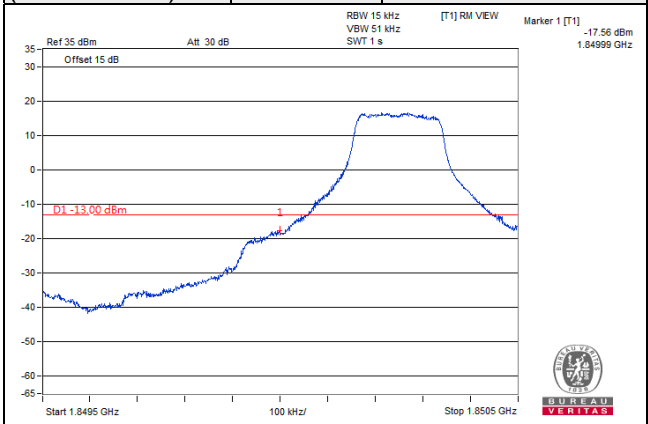
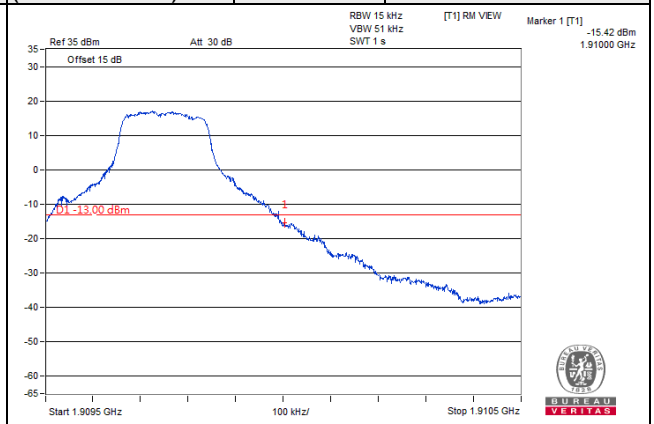
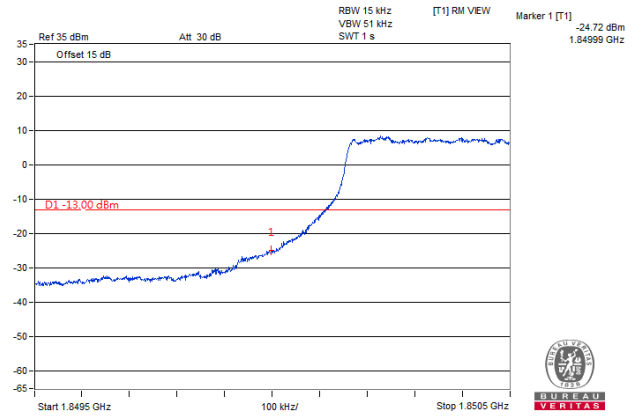
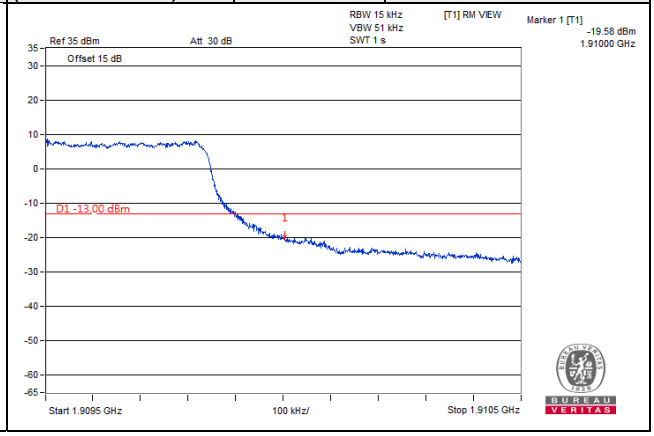
a. All measurements were done at low and high operational frequency range.
b. The center frequency of spectrum is the band edge frequency and span is 1.5MHz. RB of the spectrum is 10kHz and VB of the spectrum is 30kHz (PCS / EDGE).
c. The center frequency of spectrum is the band edge frequency and span is 10MHz. RB of the spectrum is 51kHz(100kHz) and VB of the spectrum is 150kHz(300kHz) (WCDMA).
d. The center frequency of spectrum is the band edge frequency and span is 1.5MHz. RB of the spectrum is 30kHz(15kHz) and VB of the spectrum is 100kHz(51kHz) (LTE Channel Bandwidth 1.4MHz).
e. The center frequency of spectrum is the band edge frequency and span is 1.5MHz. RB of the spectrum is 51kHz(30kHz) and VB of the spectrum is 150kHz(100kHz) (LTE Channel Bandwidth 3MHz).
f. The center frequency of spectrum is the band edge frequency and span is 1.5MHz. RB of the spectrum is 51kHz(62kHz) and VB of the spectrum is 150kHz(200kHz) (LTE Channel Bandwidth 5MHz).
g. The center frequency of spectrum is the band edge frequency and span is 1.5MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (LTE Channel Bandwidth 10MHz).
h. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 200kHz(150kHz) and VB of the spectrum is 620kHz(470kHz) (LTE Channel Bandwidth 15MHz).
i. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 430kHz(200kHz) and VB of the spectrum is 1200kHz (1MHz)(LTE Channel Bandwidth 20MHz).
j. Record the max trace plot into the test report.

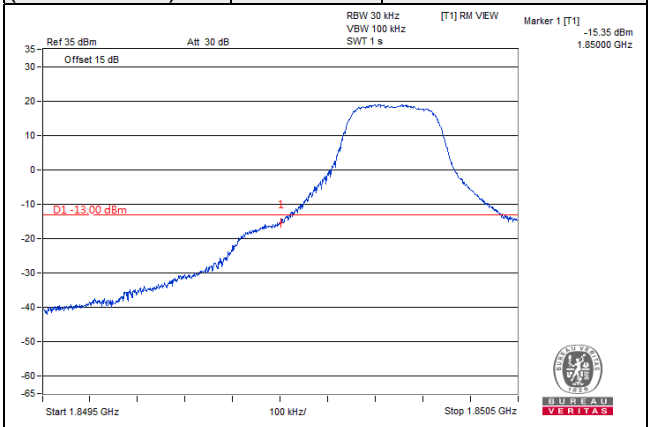
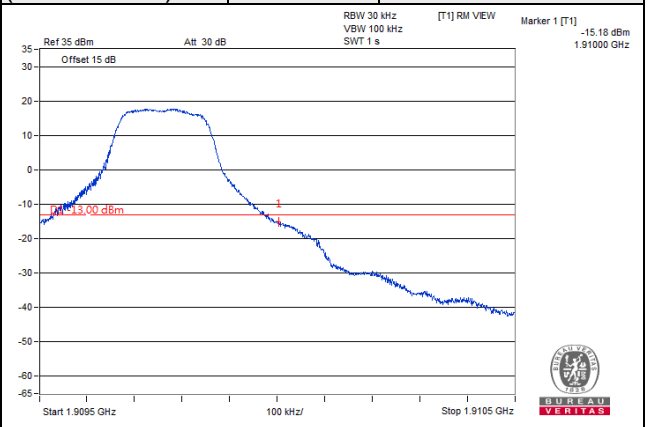
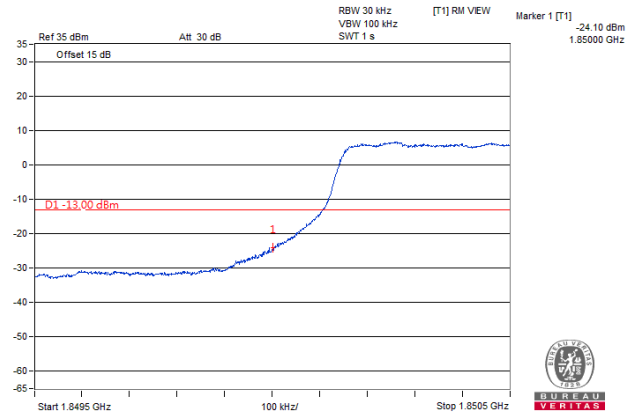
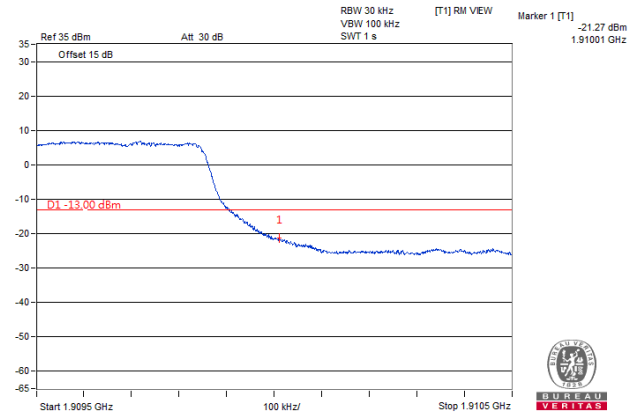
4.5.4 Test Results

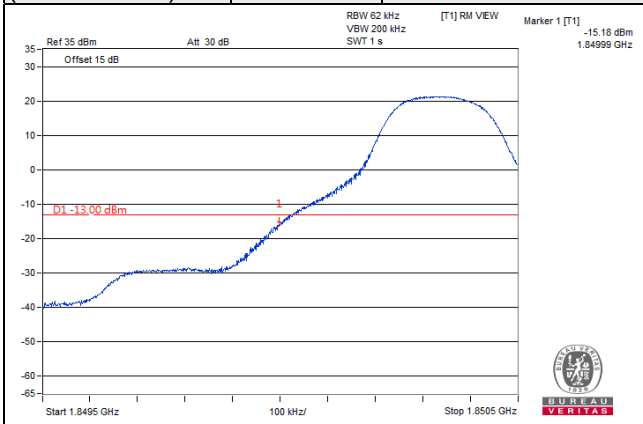
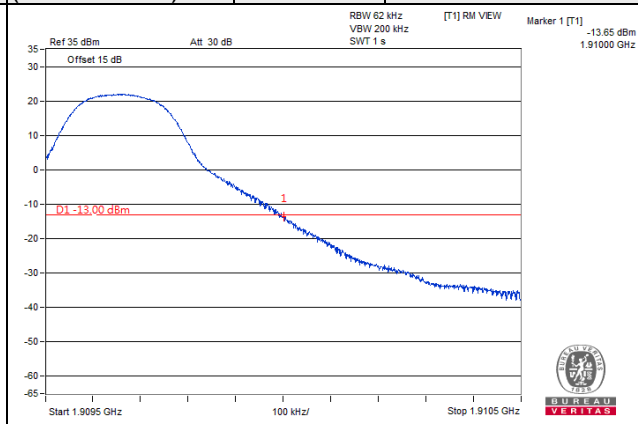
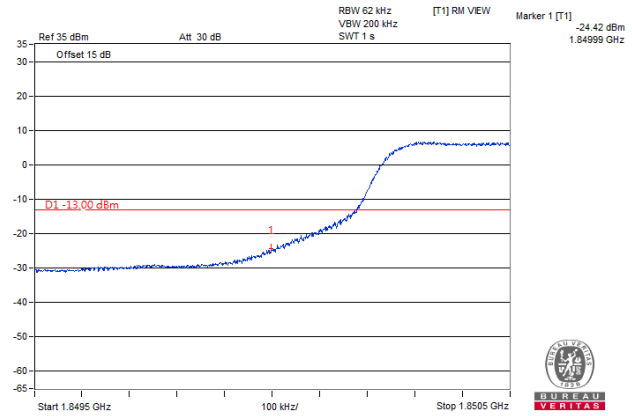
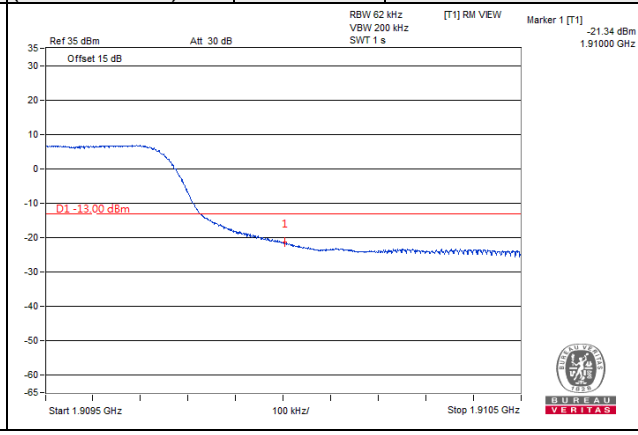
PCS			
Channel	512 (1850.2MHz)	Channel	810 (1909.8MHz)

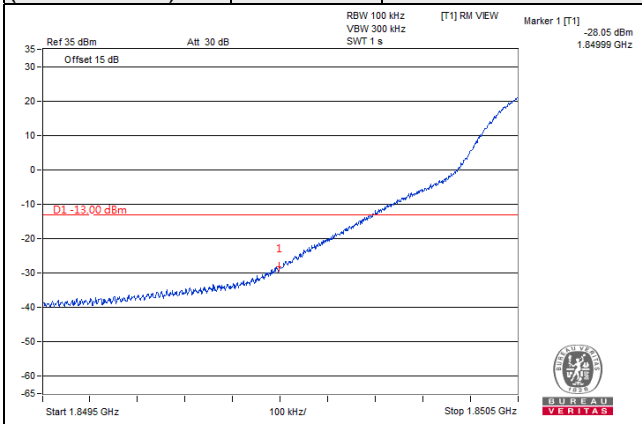
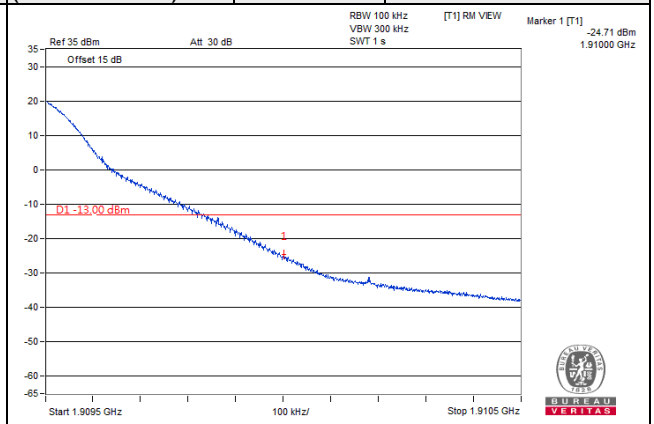
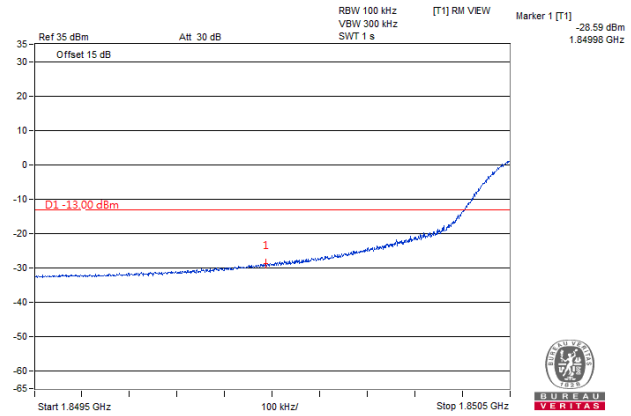
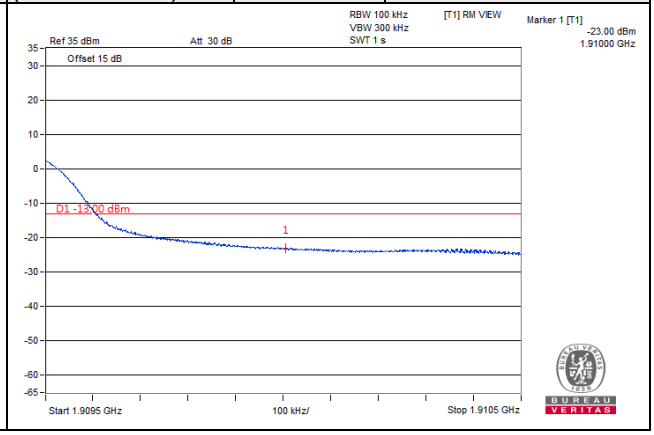
EDGE			
Channel	512 (1850.2MHz)	Channel	810 (1909.8MHz)

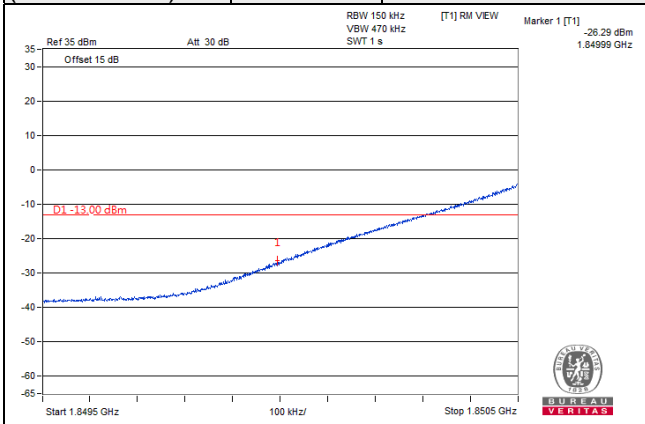
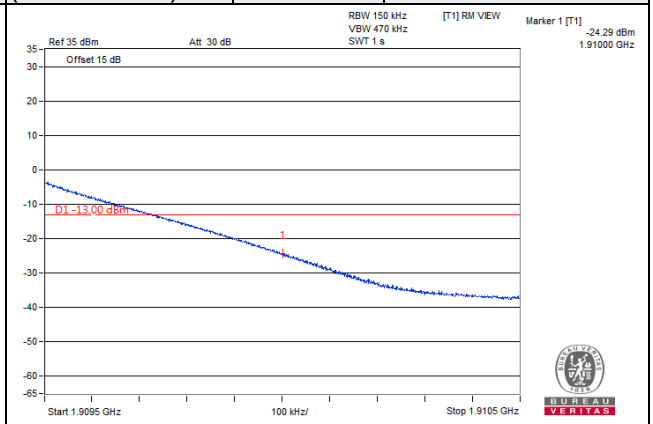
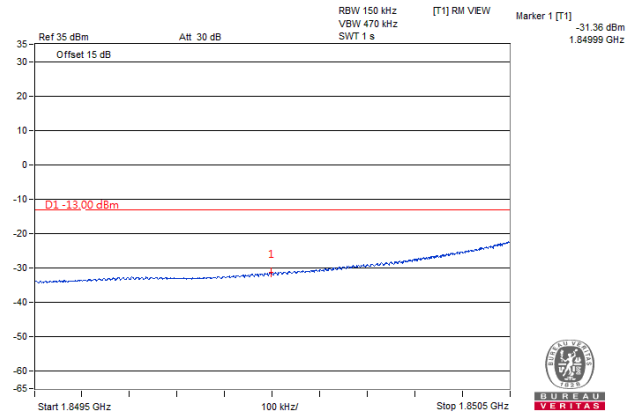
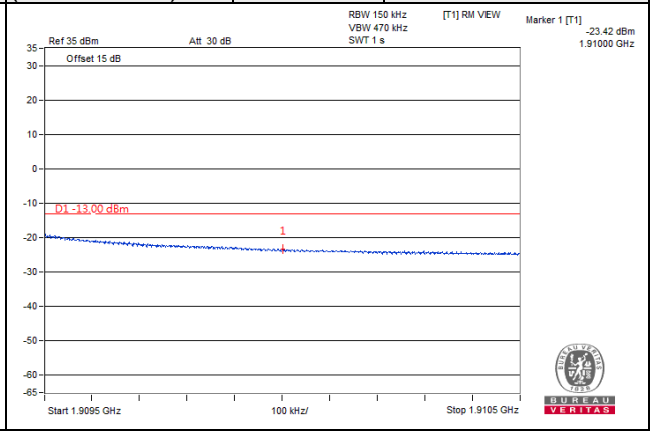
WCDMA Band 2			
Channel	9262 (1852.4MHz)	Channel	9538 (1907.6MHz)

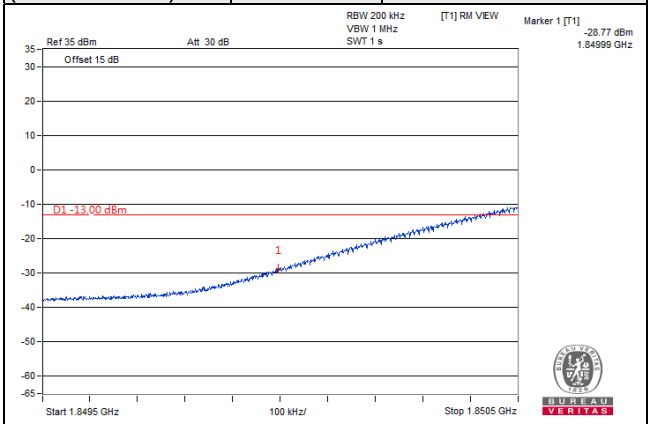
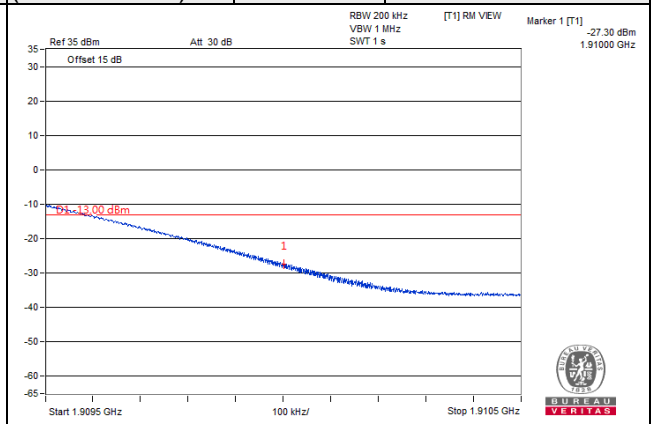
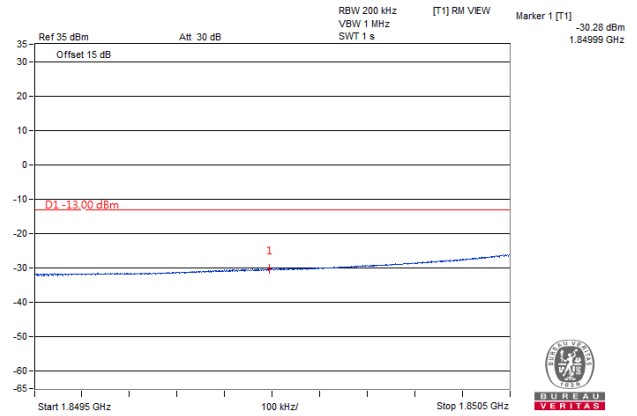
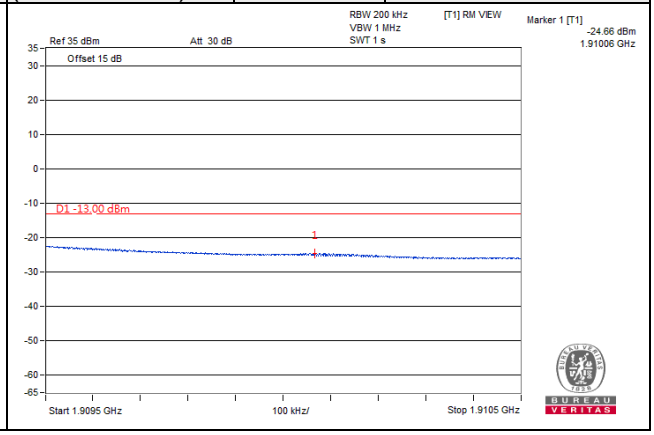
LTE Band 2, Channel Bandwidth 1.4MHz					
Channel 18607 (1850.70MHz)	QPSK	1 RB / 0 RB Offset	Channel 19193 (1909.30MHz)	QPSK	1 RB / 5 RB Offset
					
Channel 18607 (1850.70MHz)	QPSK	6 RB / 0 RB Offset	Channel 19193 (1909.30MHz)	QPSK	6 RB / 0 RB Offset
					

LTE Band 2, Channel Bandwidth 3MHz					
Channel 18615 (1851.50MHz)	QPSK	1 RB / 0 RB Offset	Channel 19185 (1908.50MHz)	QPSK	1 RB / 14 RB Offset
					
Channel 18615 (1851.50MHz)	QPSK	15 RB / 0 RB Offset	Channel 19185 (1908.50MHz)	QPSK	15 RB / 0 RB Offset
					

LTE Band 2, Channel Bandwidth 5MHz					
Channel 18625 (1852.50MHz)	QPSK	1 RB / 0 RB Offset	Channel 19175 (1907.50MHz)	QPSK	1 RB / 24 RB Offset
					
Channel 18625 (1852.50MHz)	QPSK	25 RB / 0 RB Offset	Channel 19175 (1907.50MHz)	QPSK	25 RB / 0 RB Offset
					

LTE Band 2, Channel Bandwidth 10MHz					
Channel 18650 (1855.00MHz)	QPSK	1 RB / 0 RB Offset	Channel 19150 (1905.00MHz)	QPSK	1 RB / 49 RB Offset
					
Channel 18650 (1855.00MHz)	QPSK	50 RB / 0 RB Offset	Channel 19150 (1905.00MHz)	QPSK	50 RB / 0 RB Offset
					

LTE Band 2, Channel Bandwidth 15MHz					
Channel 18675 (1857.50MHz)	QPSK	1 RB / 0 RB Offset	Channel 19125 (1902.50MHz)	QPSK	1 RB / 74 RB Offset
					
Channel 18675 (1857.50MHz)	QPSK	75 RB / 0 RB Offset	Channel 19125 (1902.50MHz)	QPSK	75 RB / 0 RB Offset
					

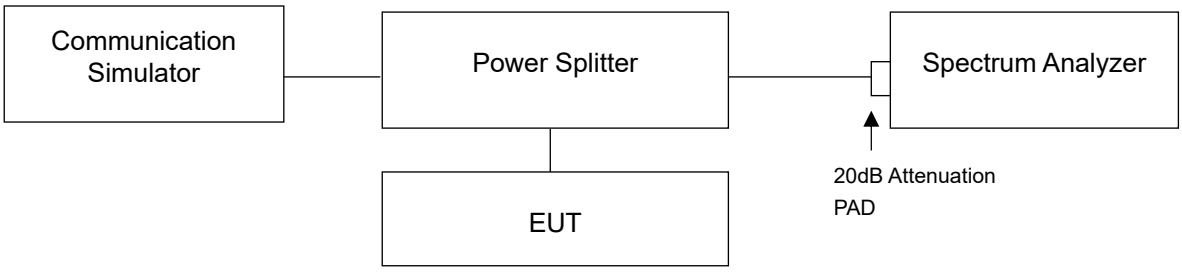
LTE Band 2, Channel Bandwidth 20MHz					
Channel 18700 (1860.00MHz)	QPSK	1 RB / 0 RB Offset	Channel 19100 (1900.00 MHz)	QPSK	1 RB / 99 RB Offset
					
Channel 18700 (1860.00MHz)	QPSK	100 RB / 0 RB Offset	Channel 19100 (1900.00 MHz)	QPSK	100 RB / 0 RB Offset
					

4.6 Peak to Average Ratio

4.6.1 Limits of Peak to Average Ratio Measurement

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

4.6.2 Test Setup

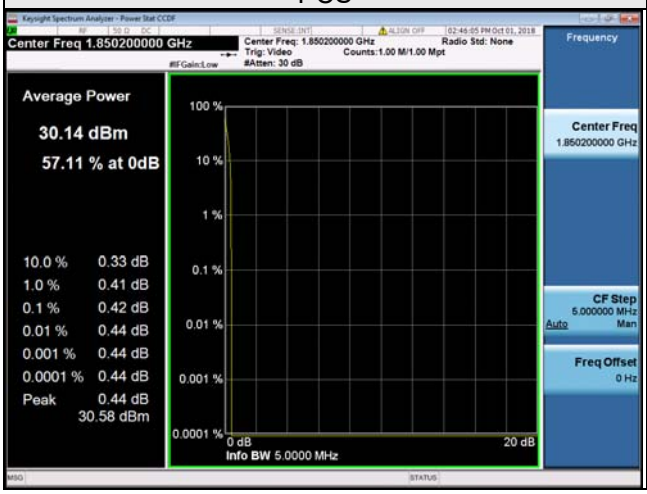
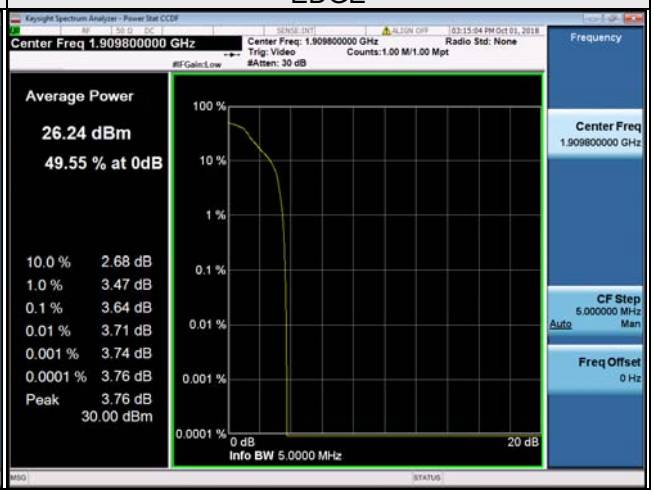


4.6.3 Test Procedures

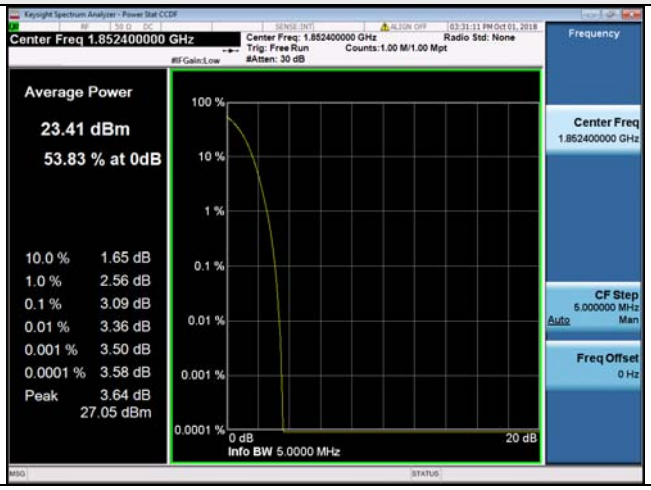
a. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
b. Set the number of counts to a value that stabilizes the measured CCDF curve;
c. Record the maximum PAPR level associated with a probability of 0.1%.

4.6.4 Test Results

Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		PCS	EDGE
512	1850.2	0.42	3.52
661	1880.0	0.38	3.54
810	1909.8	0.34	3.64

Spectrum Plot of Worst Value	
PCS	EDGE
	

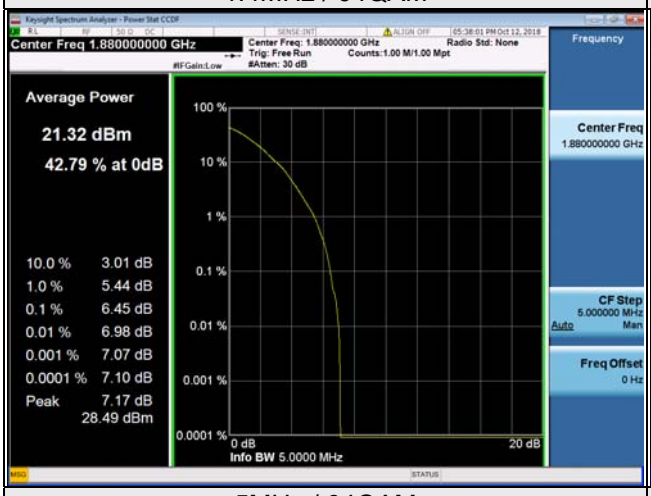
Channel	Frequency (MHz)	Peak To Average Ratio (dB)
		WCDMA Band 2
9262	1852.4	3.09
9400	1880.0	2.91
9538	1907.6	3.00

Spectrum Plot of Worst Value
WCDMA Band 3


LTE Band 2, Channel Bandwidth 1.4MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
18607	1850.7	3.98	5.06	6.42
18900	1880.0	3.58	4.88	6.45
19193	1909.3	2.56	4.29	5.94
LTE Band 2, Channel Bandwidth 3MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
18615	1851.5	4.01	5.37	6.78
18900	1880.0	3.83	4.95	6.42
19185	1908.5	3.42	4.92	6.22
LTE Band 2, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
18625	1852.5	4.07	5.32	6.85
18900	1880.0	3.58	4.92	6.33
19175	1907.5	3.60	4.97	6.43
LTE Band 2, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
18650	1855.0	4.10	5.23	6.62
18900	1880.0	3.46	4.38	5.97
19150	1905.0	2.73	3.98	5.32
LTE Band 2, Channel Bandwidth 15MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
18675	1857.5	4.27	5.24	6.60
18900	1880.0	3.15	4.17	5.71
19125	1902.5	2.82	4.05	5.44
LTE Band 2, Channel Bandwidth 20MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
18700	1860.0	4.28	5.30	6.72
18900	1880.0	3.17	4.20	5.54
19100	1900.0	3.72	4.84	6.12

Spectrum Plot of Worst Value

1.4MHz / 64QAM



3MHz / 64QAM

5MHz / 64QAM

10MHz / 64QAM

15MHz / 64QAM

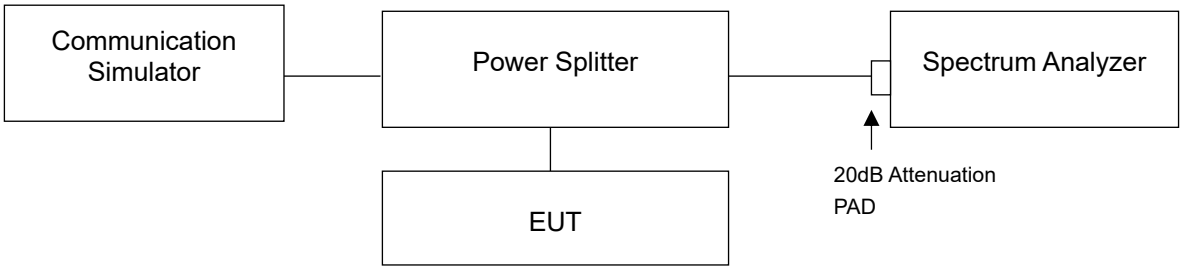
20MHz / 64QAM

4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

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 –13dBm.

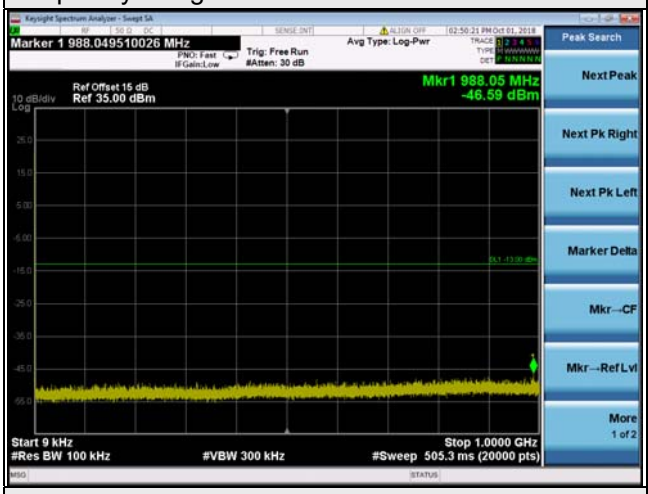
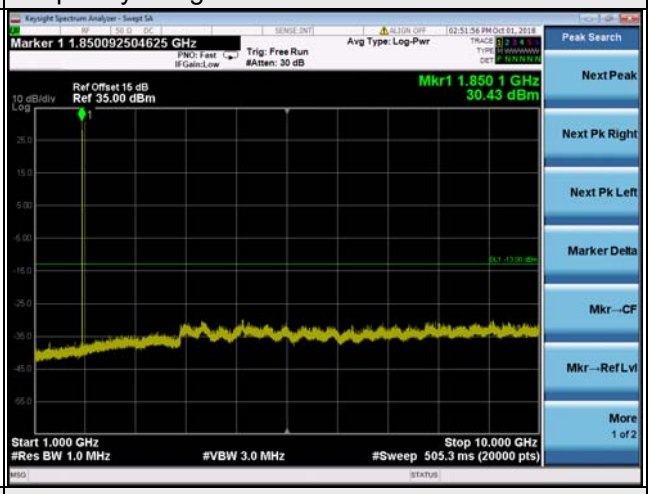
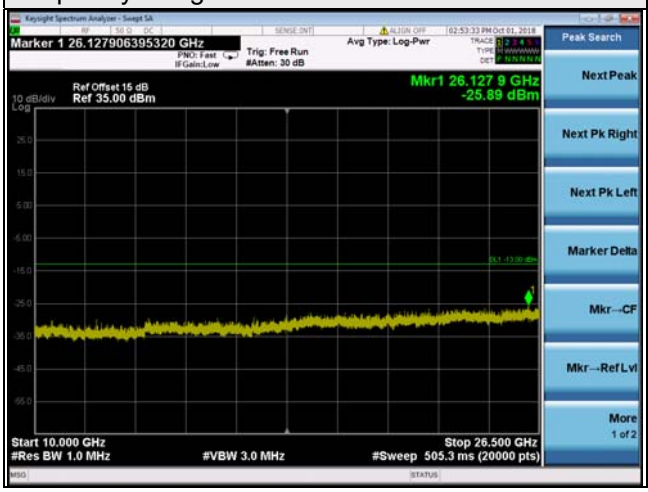
4.7.2 Test Setup

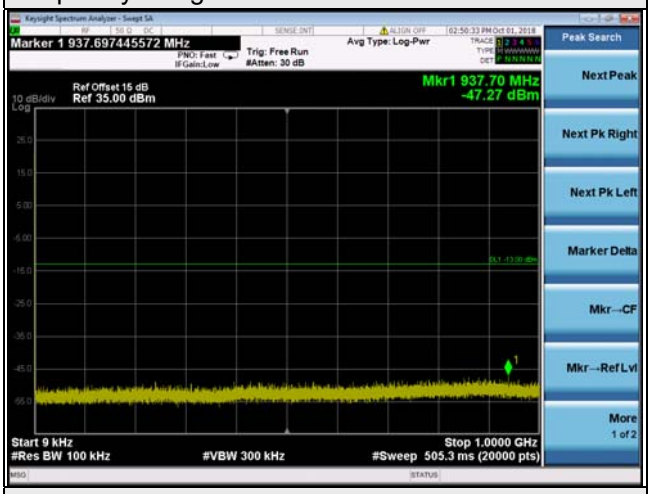
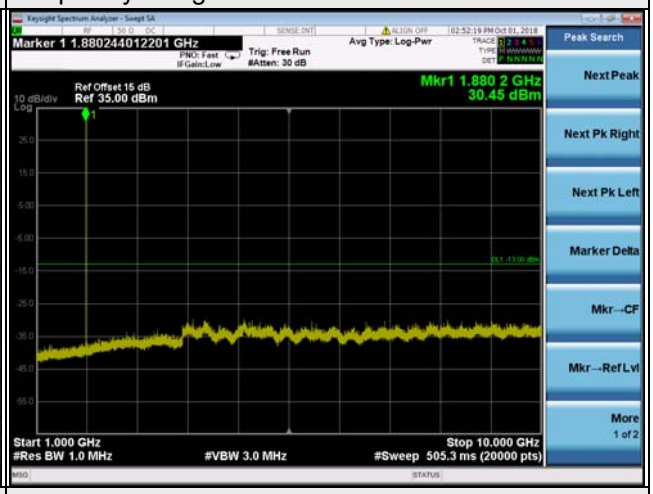
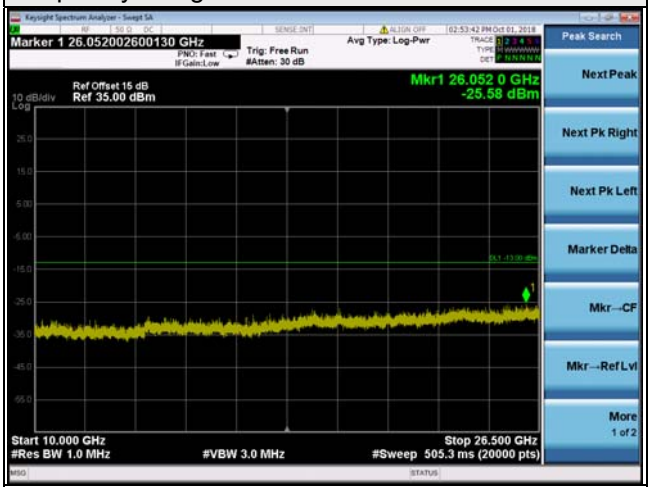


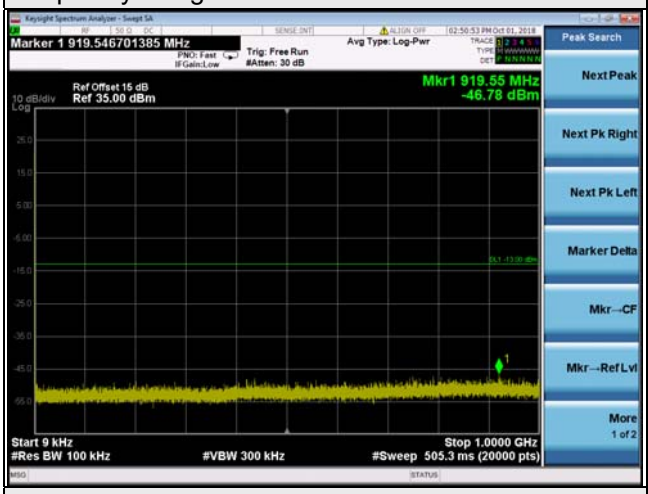
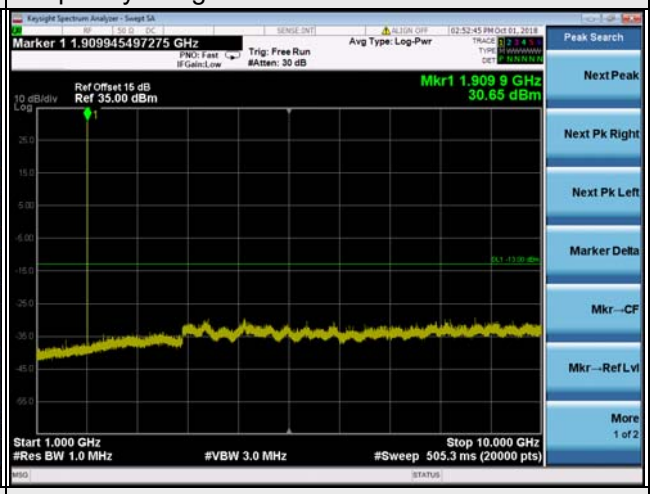
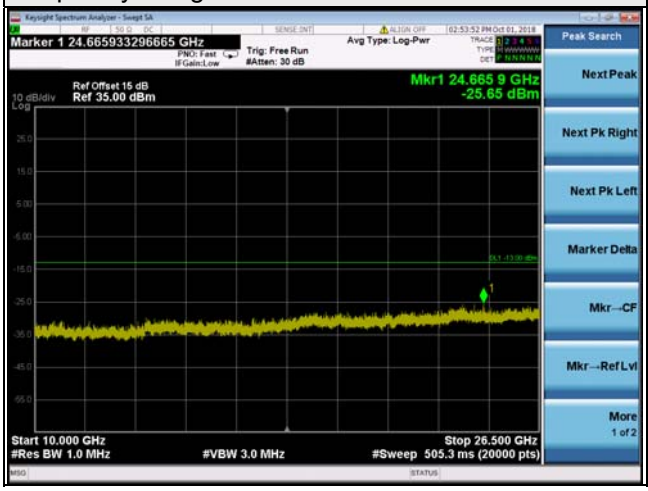
4.7.3 Test Procedure

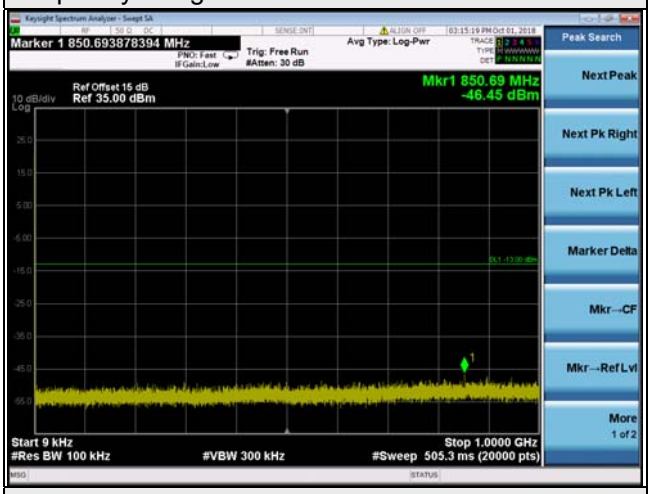
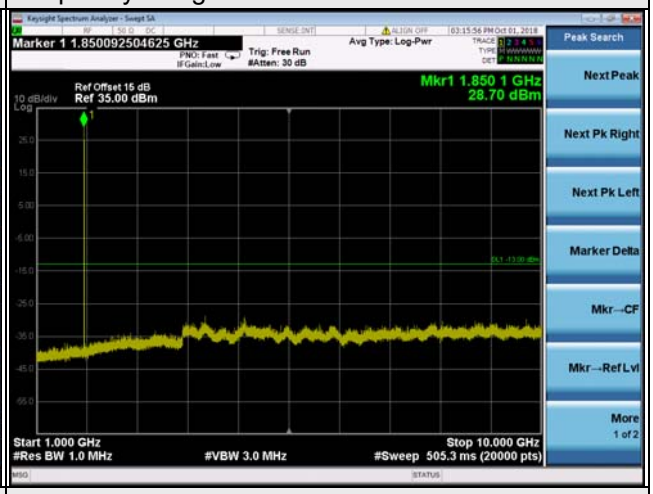
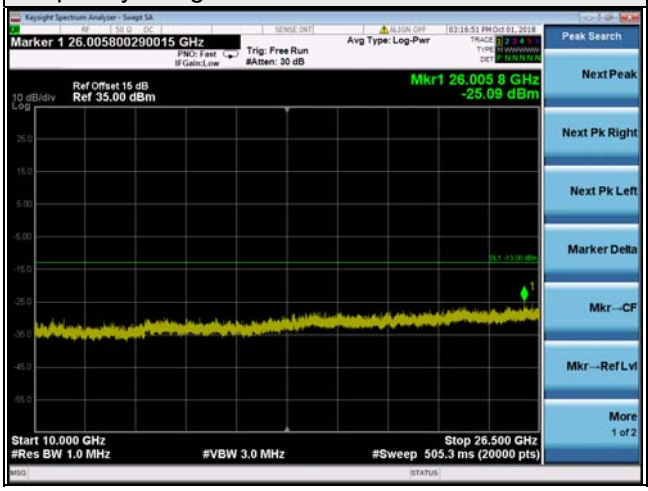
a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
b. Measuring frequency range is from 9 kHz to 1GHz. 20dB attenuation pad is connected with spectrum. RBW=100kHz and VBW=300kHz is used for conducted emission measurement.
c. Measuring frequency range is from 1GHz to 26.5GHz. 20dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

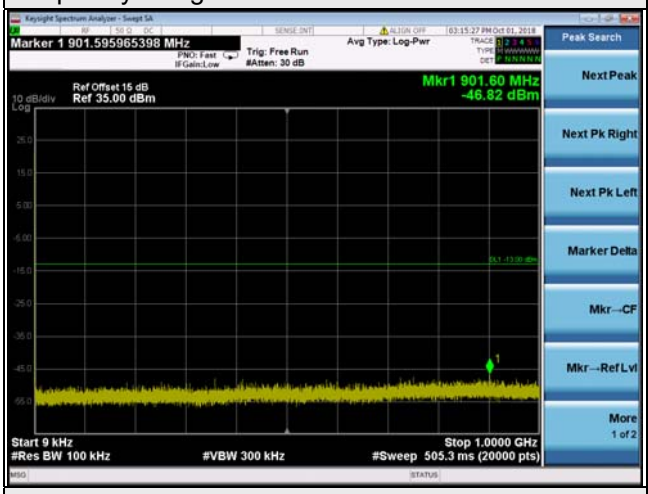
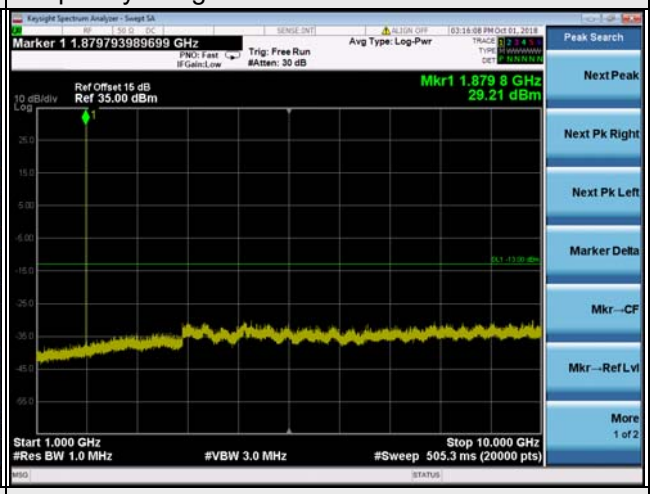
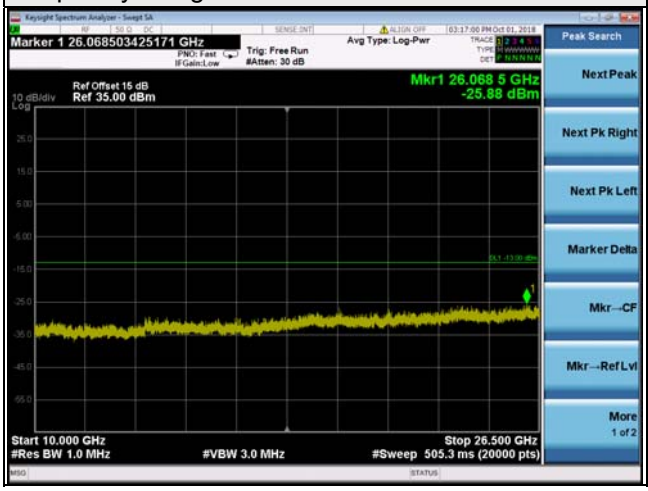
4.7.4 Test Results

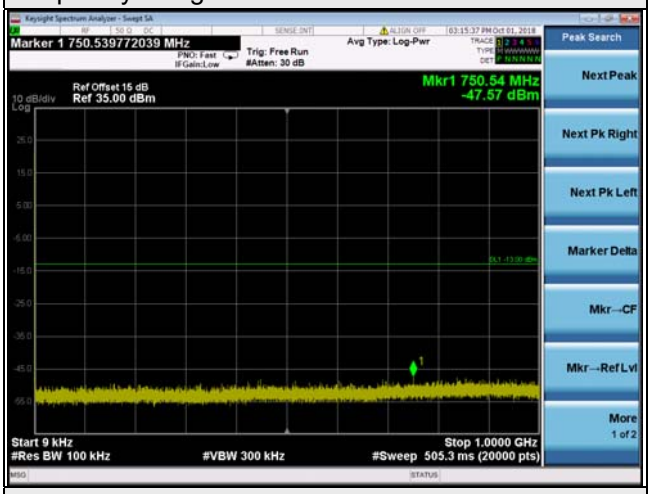
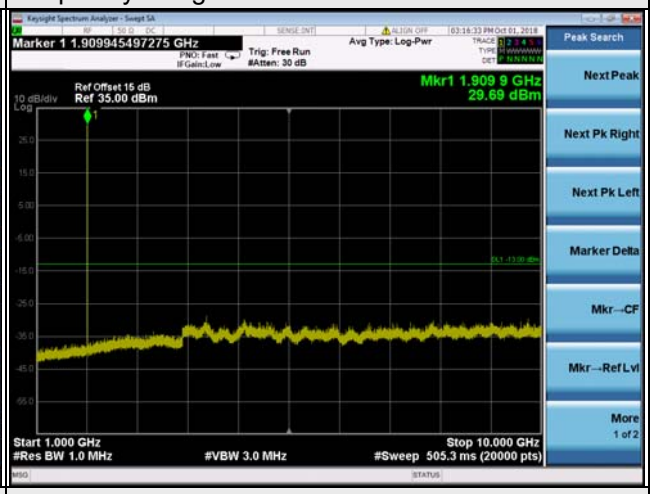
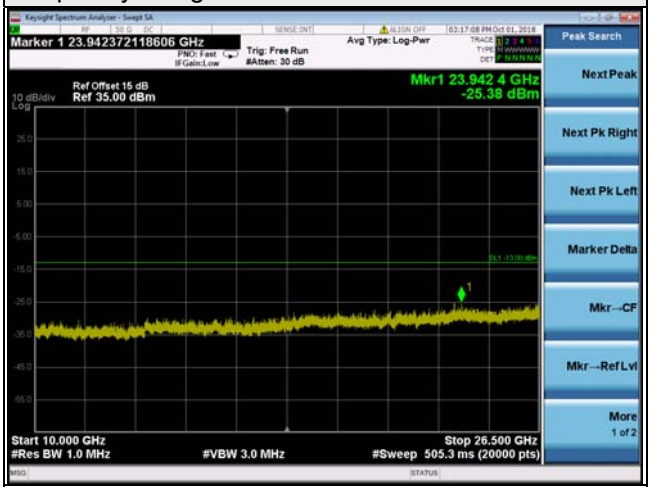
PCS	
Channel 512 (1850.2MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

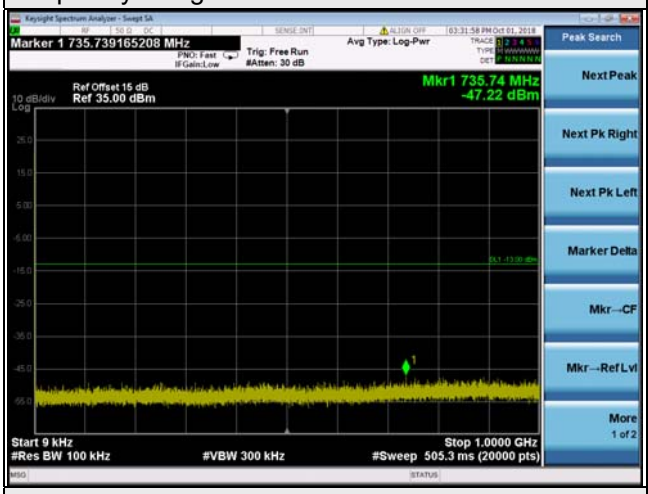
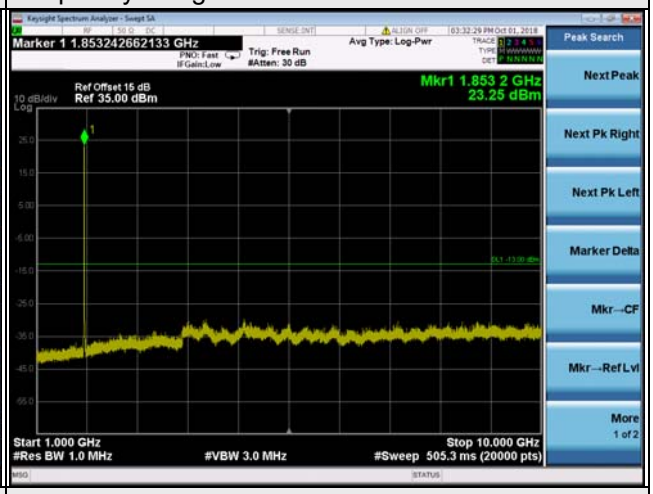
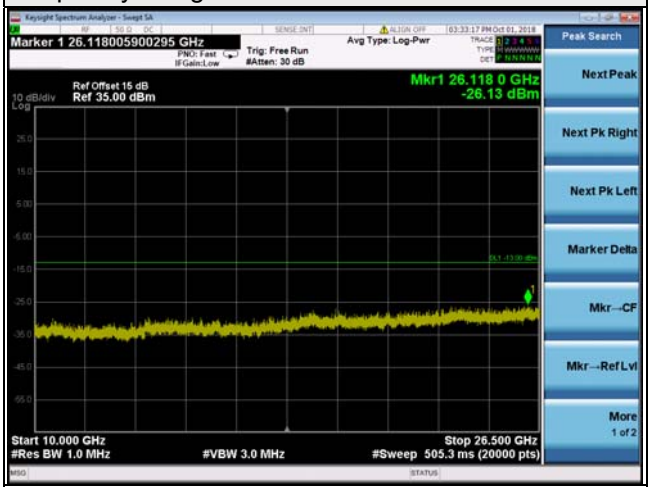
PCS	
Channel 661 (1880.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

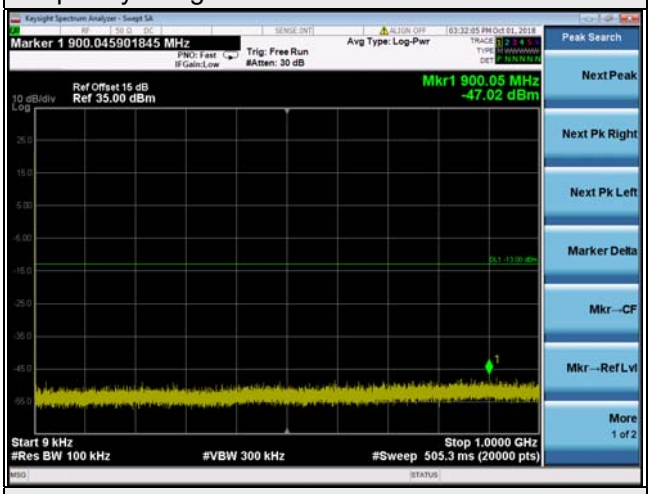
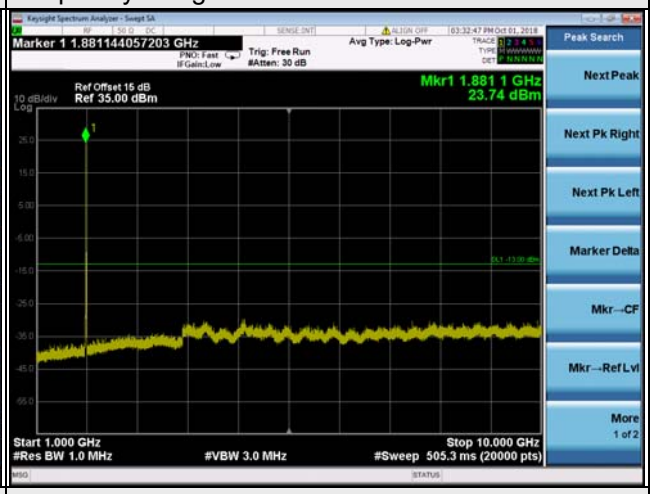
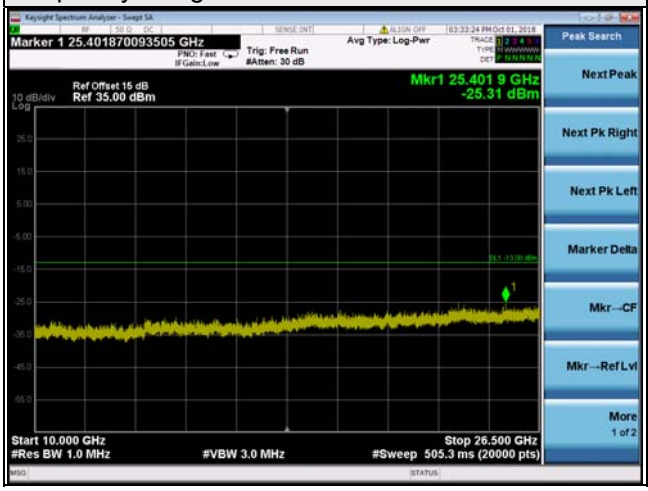
PCS	
Channel 810 (1909.8MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

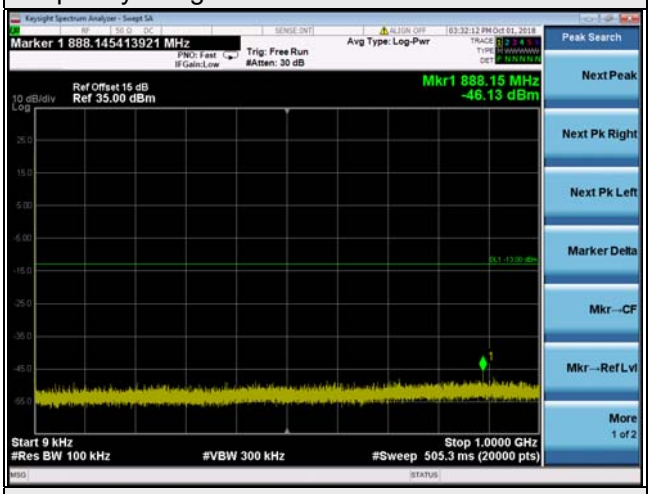
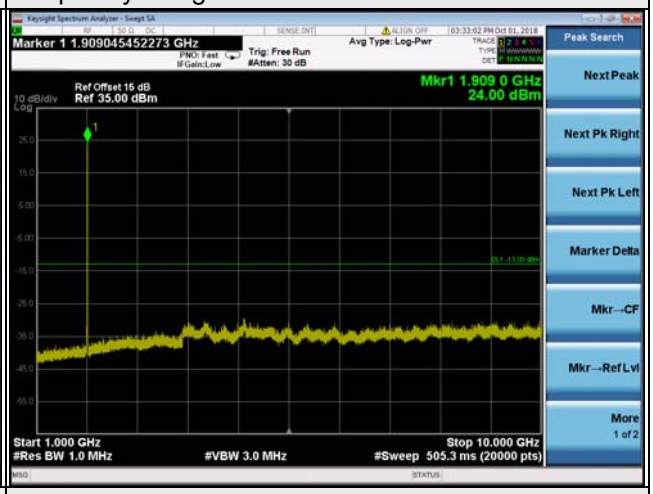
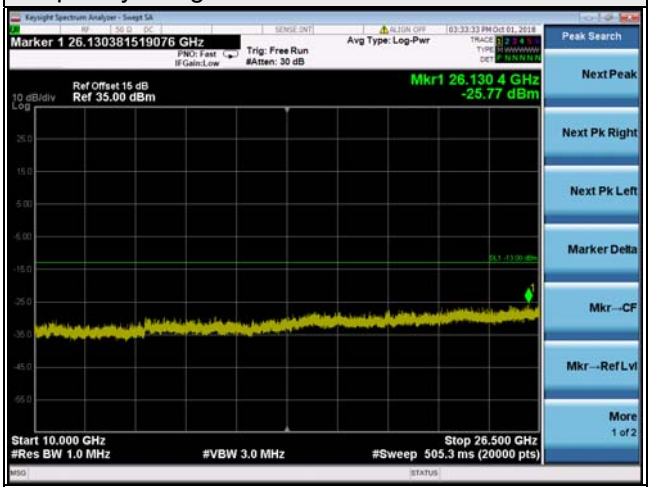
EDGE	
Channel 512 (1850.2MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

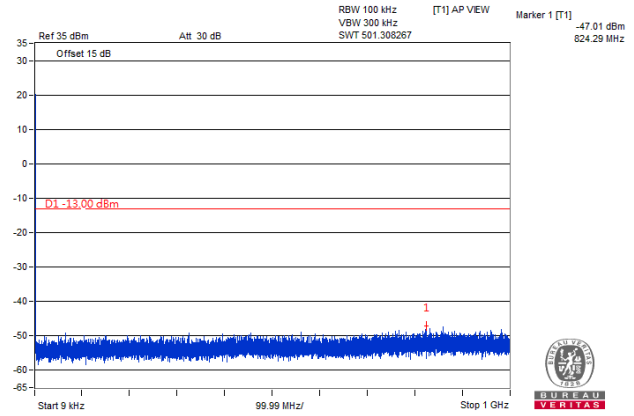
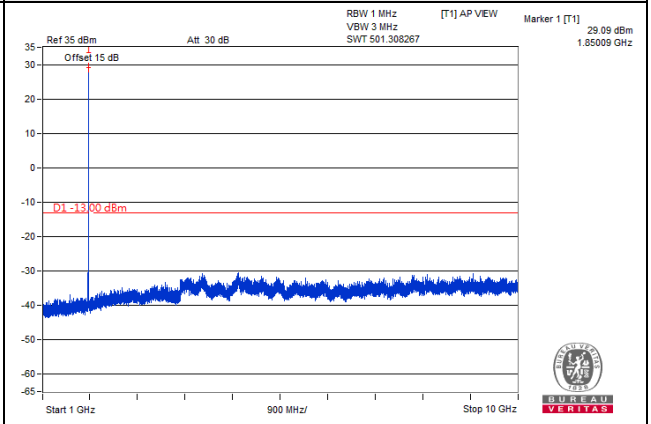
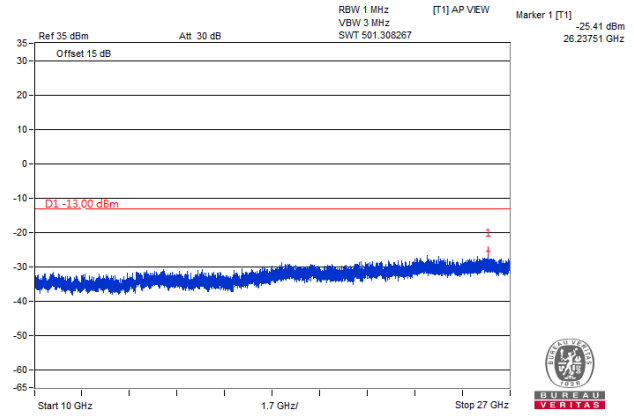
EDGE	
Channel 661 (1880.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

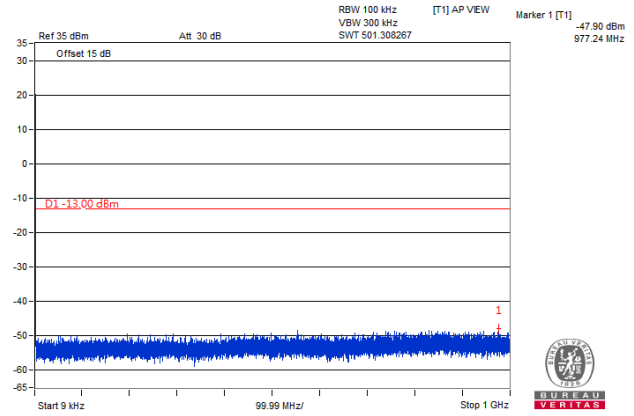
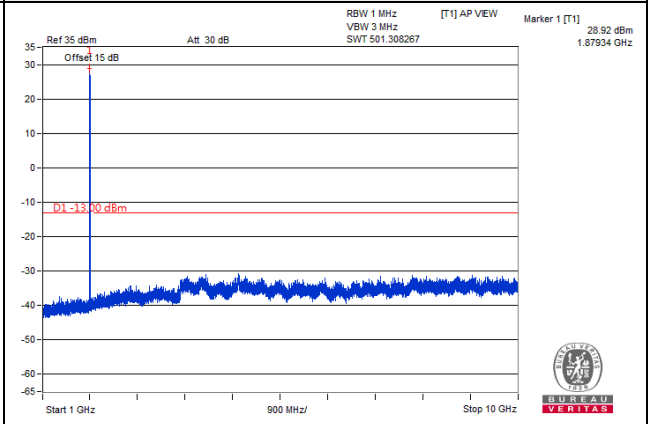
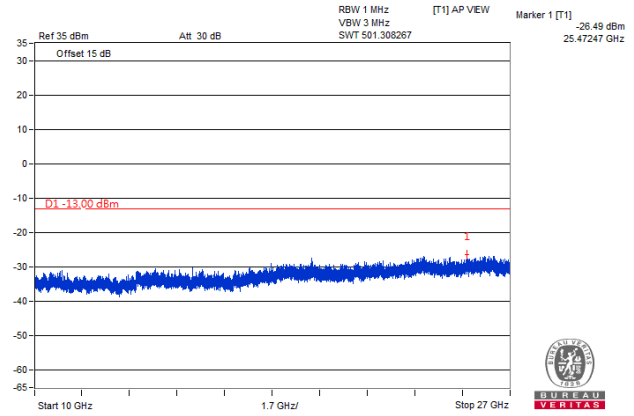
EDGE	
Channel 810 (1909.8MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

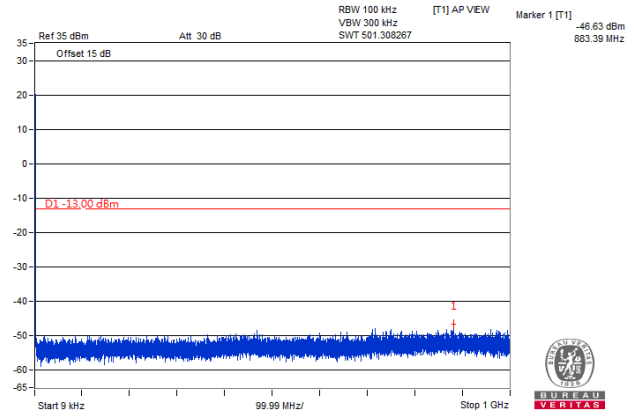
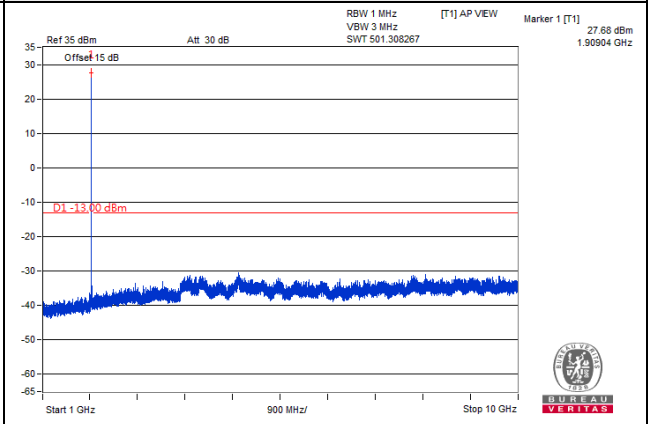
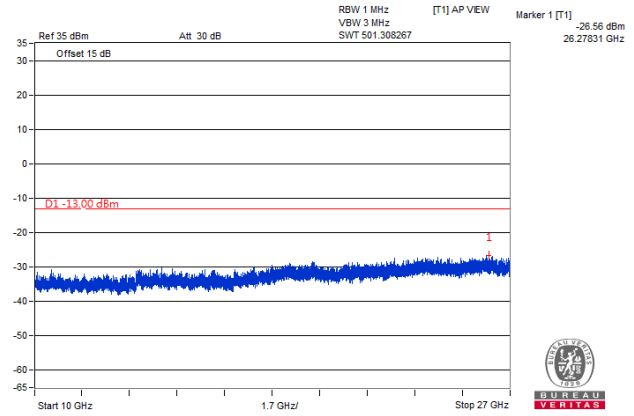
WCDMA Band 2	
Channel 9262 (1852.4MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

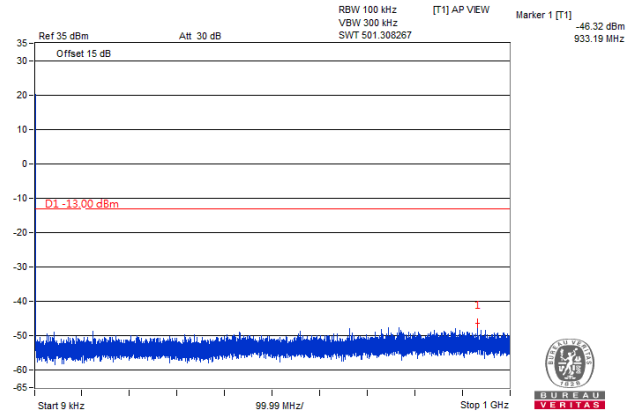
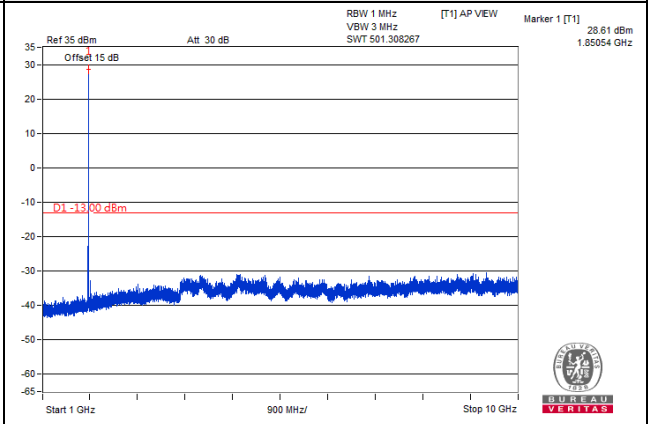
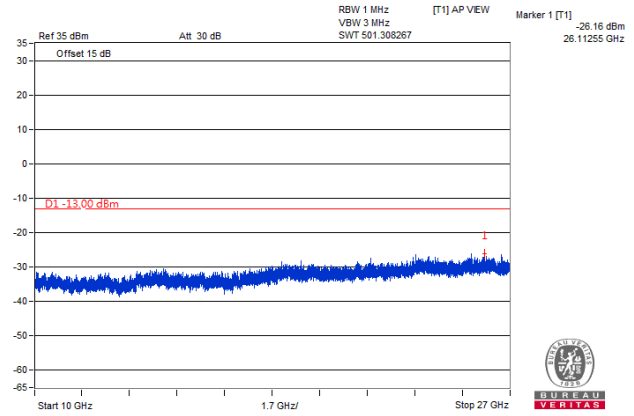
WCDMA Band 2	
Channel 9400 (1880.0MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

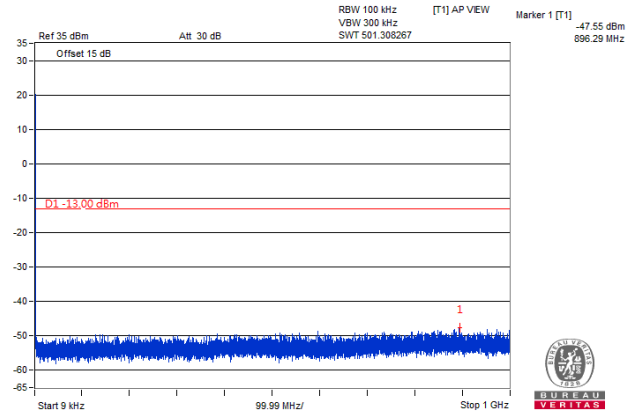
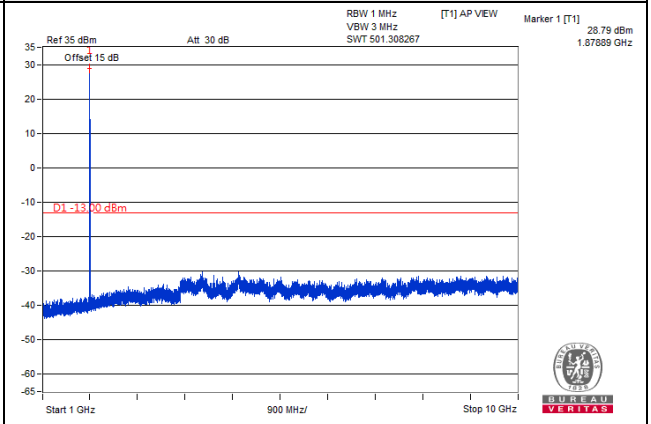
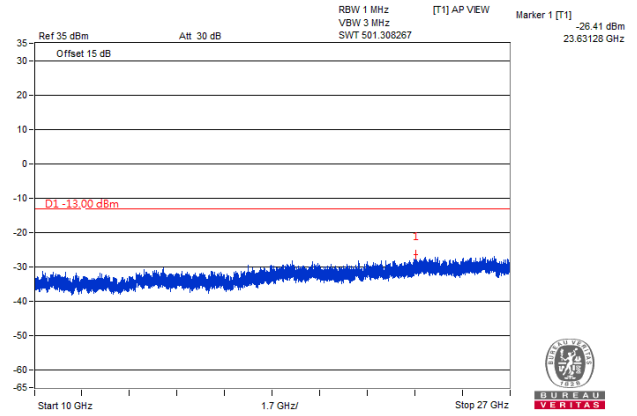
WCDMA Band 2	
Channel 9538 (1907.6MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

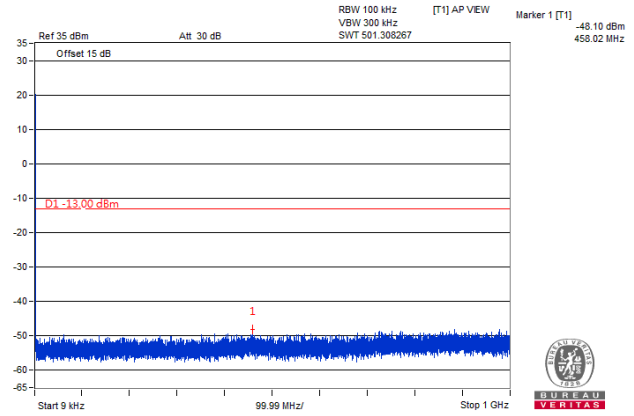
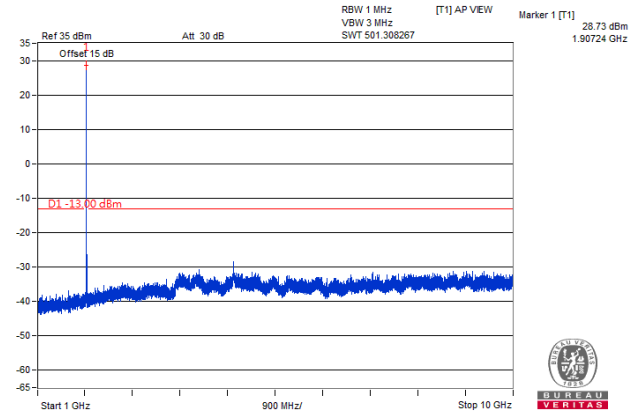
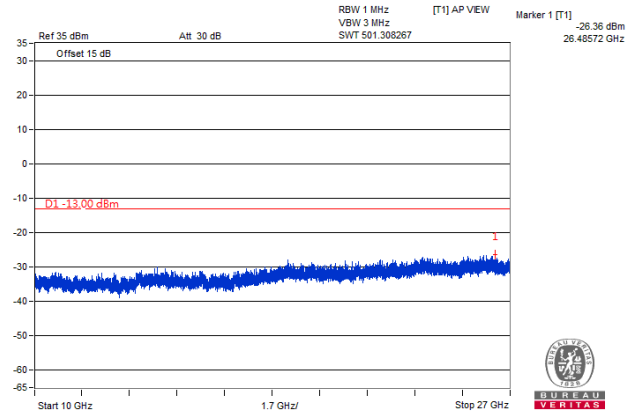
LTE Band 2, Channel Bandwidth 1.4MHz	
Channel 18607 (1850.70MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

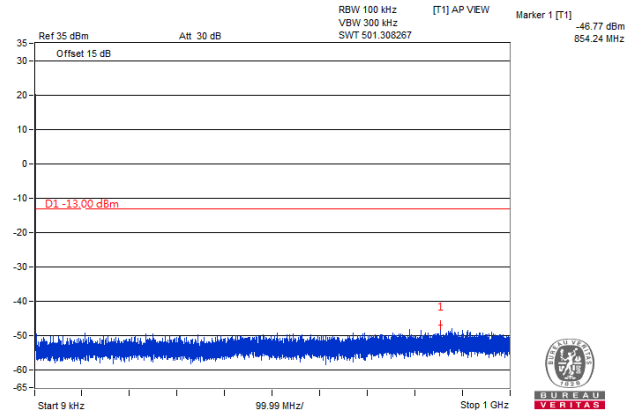
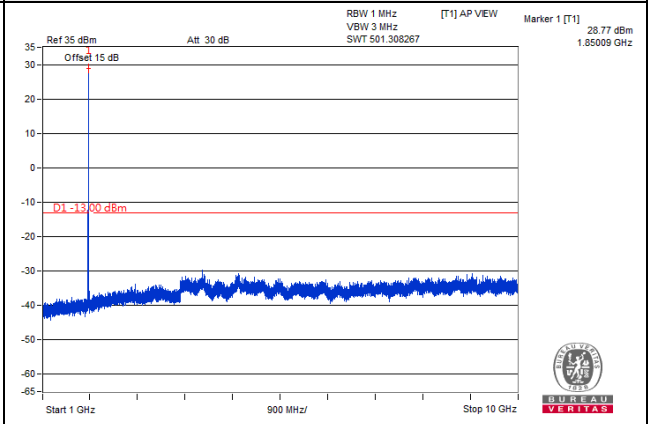
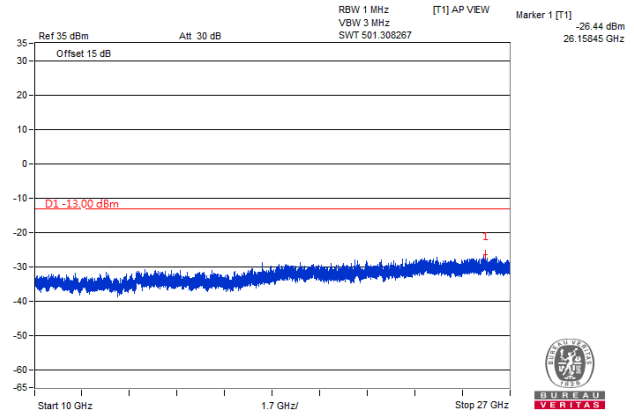
LTE Band 2, Channel Bandwidth 1.4MHz	
Channel 18900 (1880.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

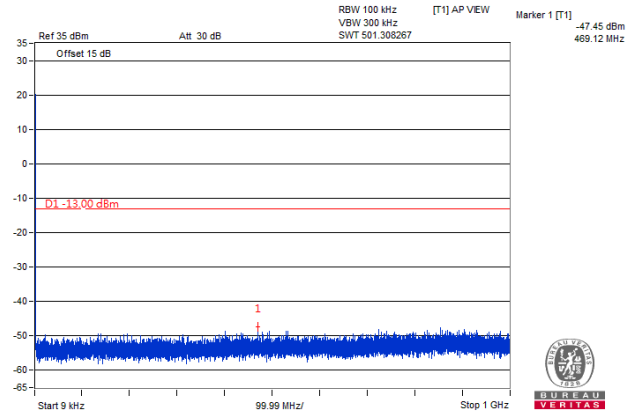
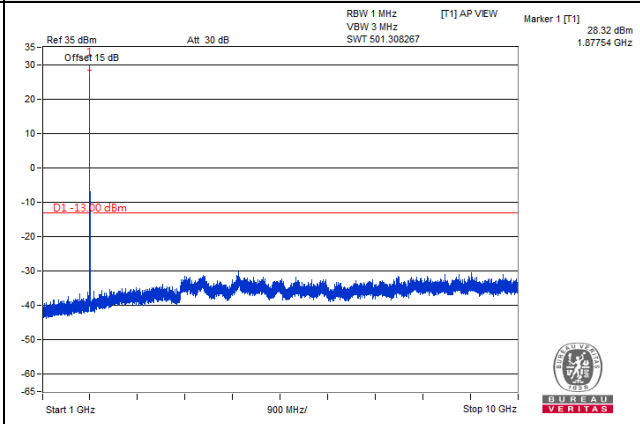
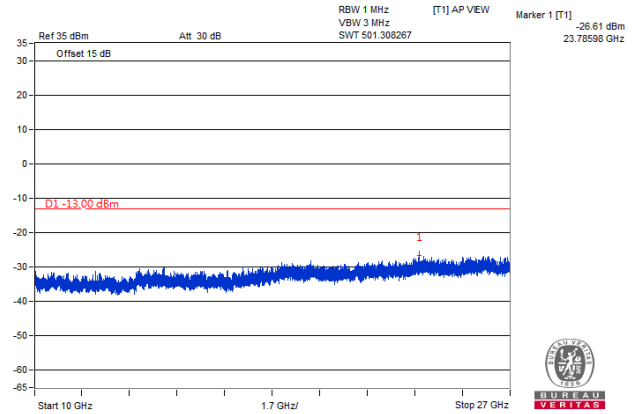
LTE Band 2, Channel Bandwidth 1.4MHz	
Channel 19193 (1909.30MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

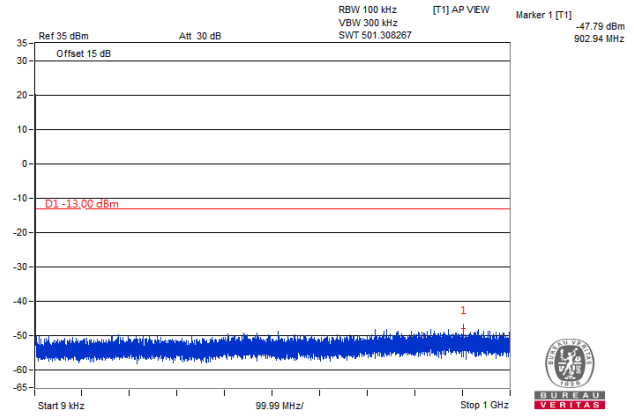
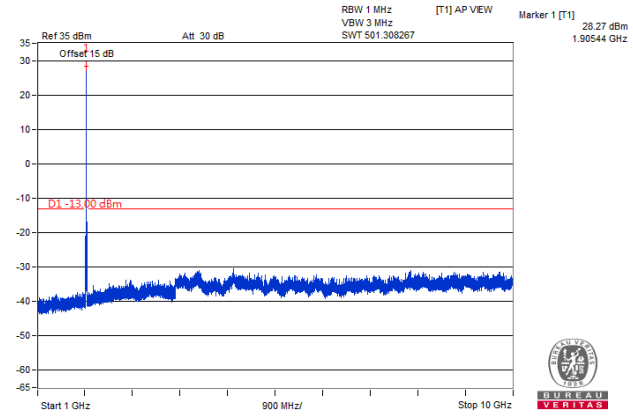
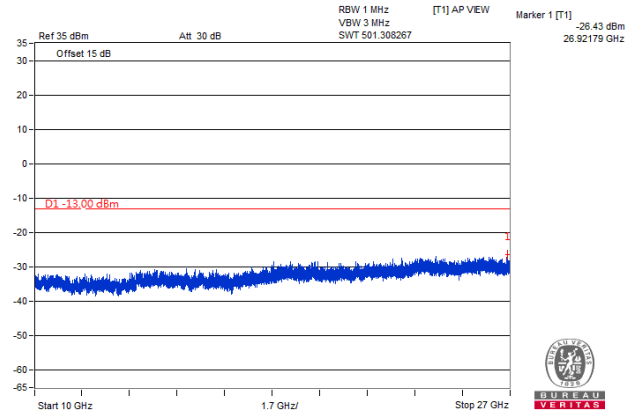
LTE Band 2, Channel Bandwidth 3MHz	
Channel 18615 (1851.50MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

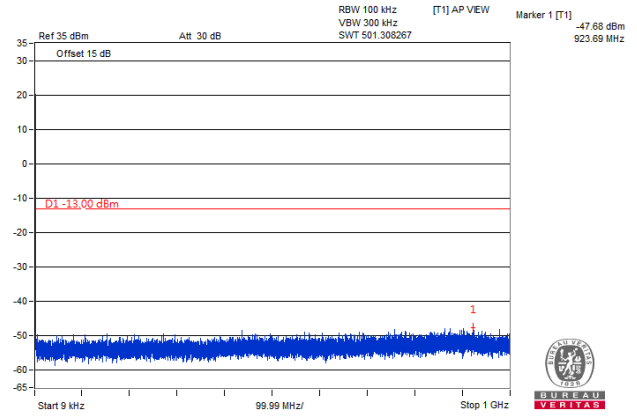
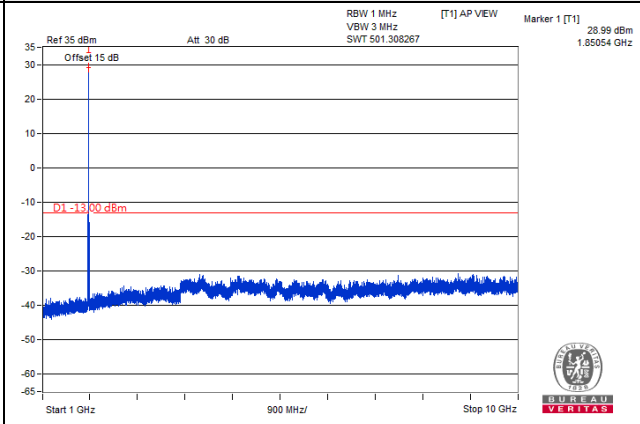
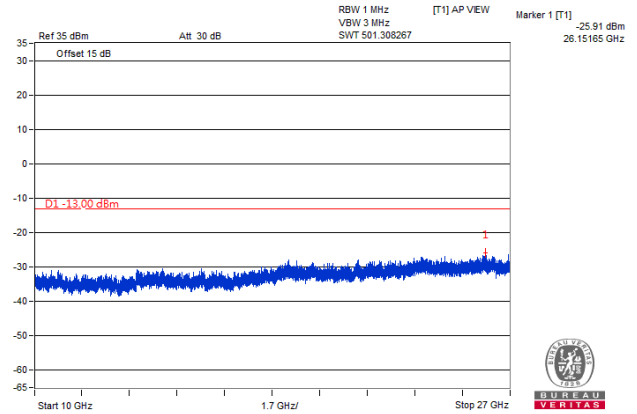
LTE Band 2, Channel Bandwidth 3MHz	
Channel 18900 (1880.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

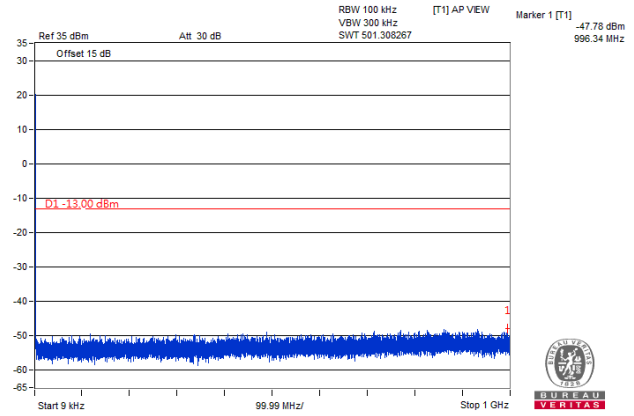
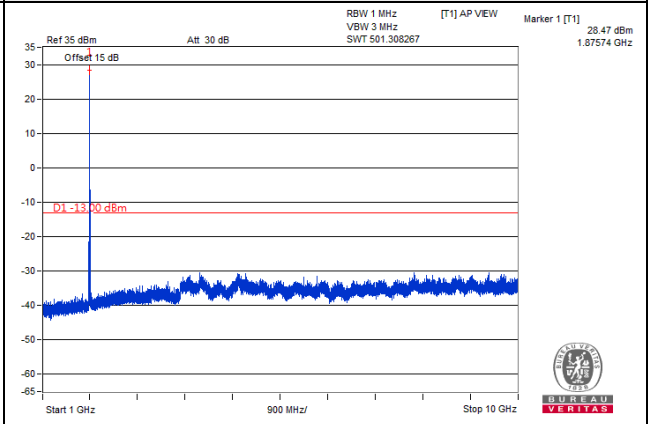
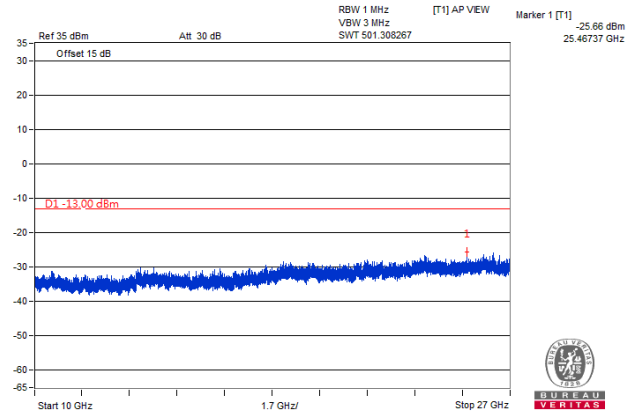
LTE Band 2, Channel Bandwidth 3MHz	
Channel 19185 (1908.50MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

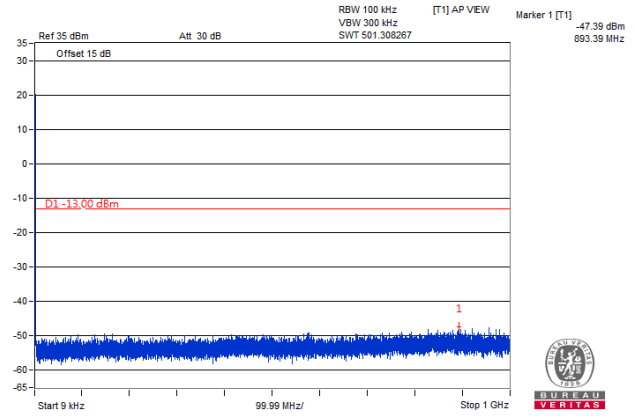
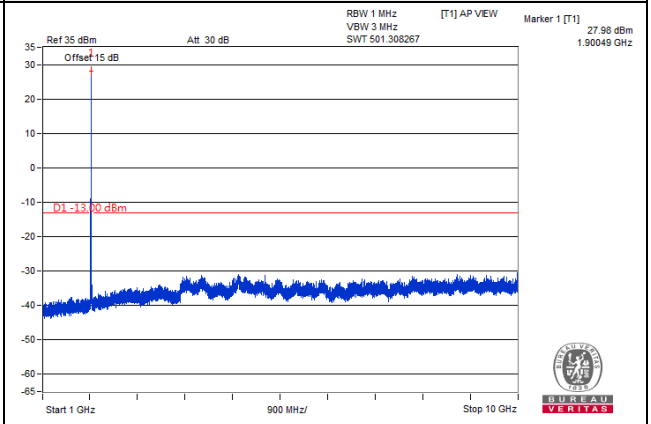
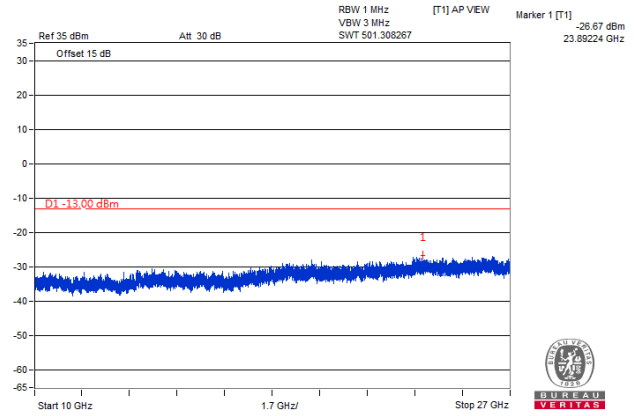
LTE Band 2, Channel Bandwidth 5MHz	
Channel 18625 (1852.50MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

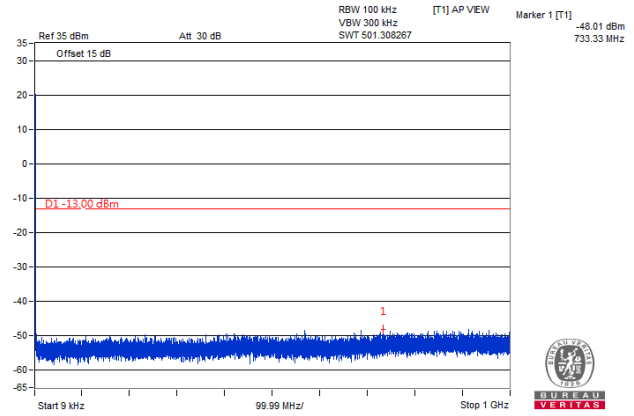
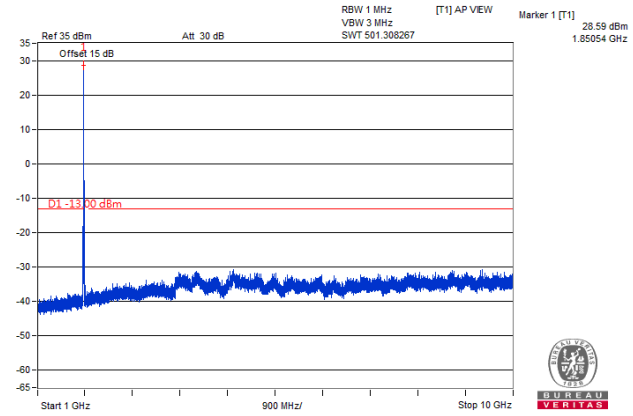
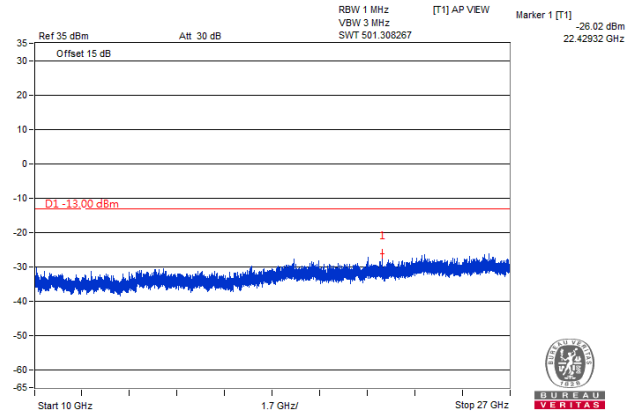
LTE Band 2, Channel Bandwidth 5MHz	
Channel 18900 (1880.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

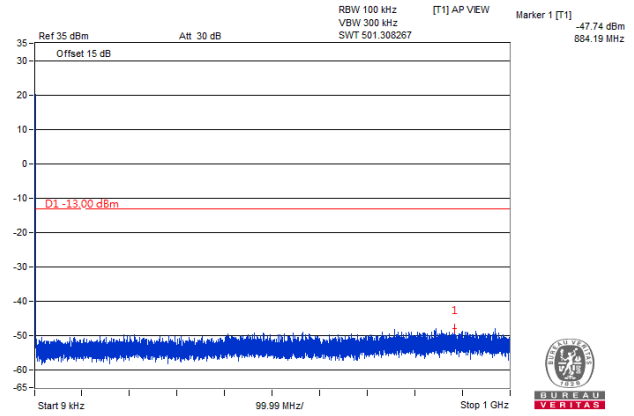
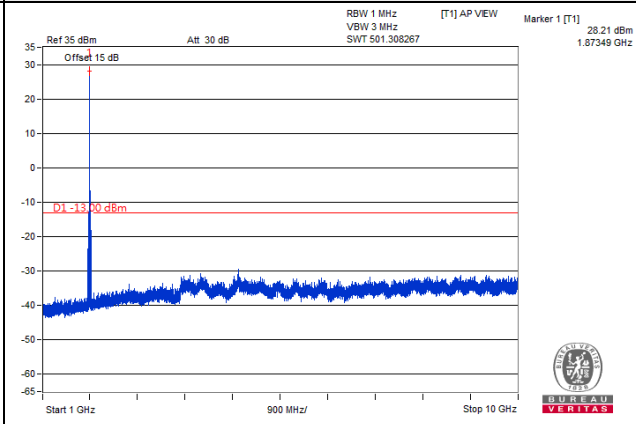
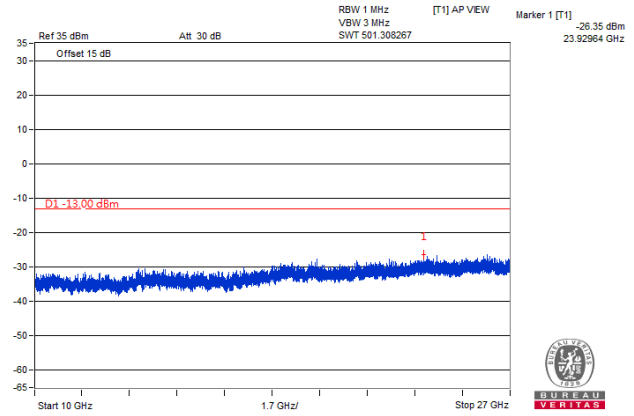
LTE Band 2, Channel Bandwidth 5MHz	
Channel 19175 (1907.50MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

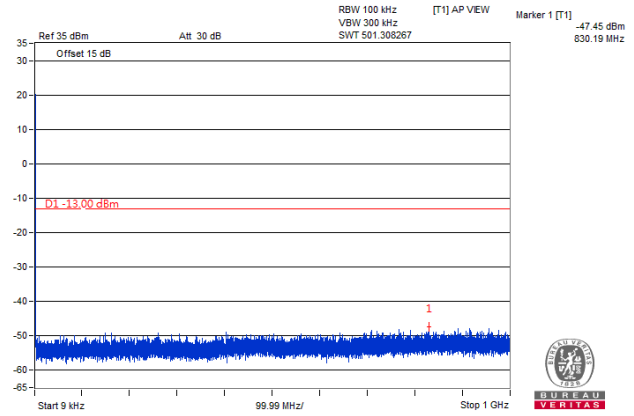
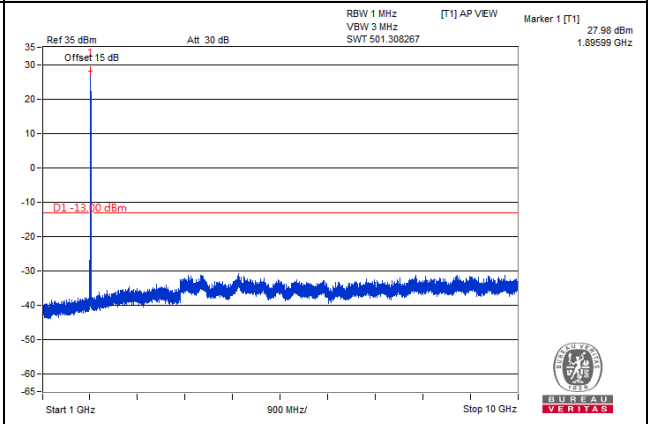
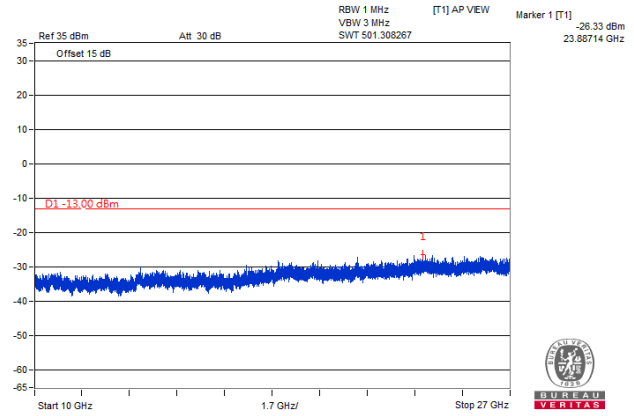
LTE Band 2, Channel Bandwidth 10MHz	
Channel 18650 (1855.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

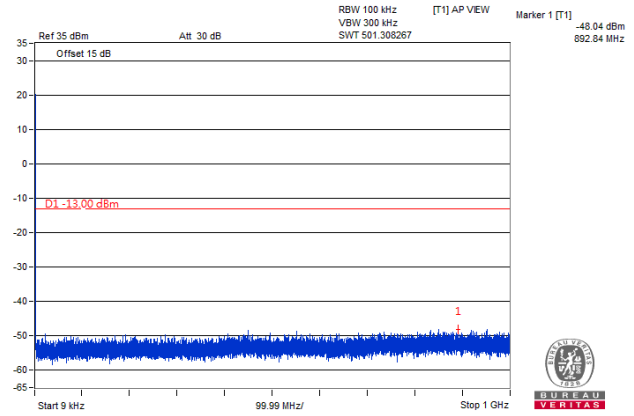
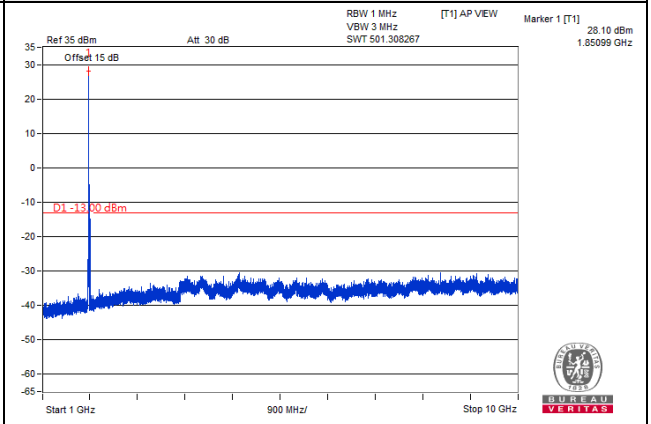
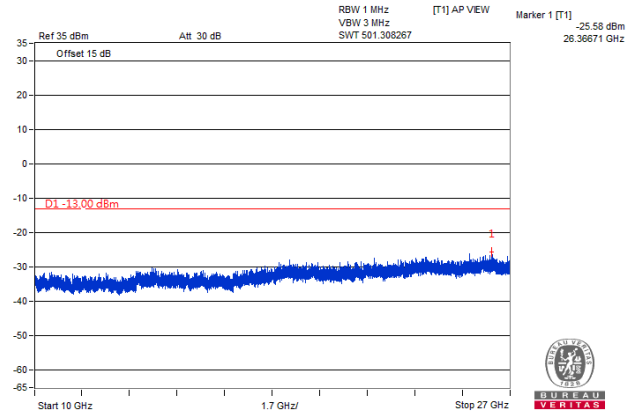
LTE Band 2, Channel Bandwidth 10MHz	
Channel 18900 (1880.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

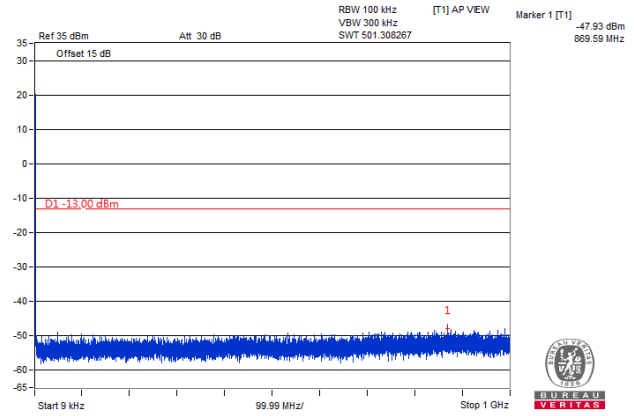
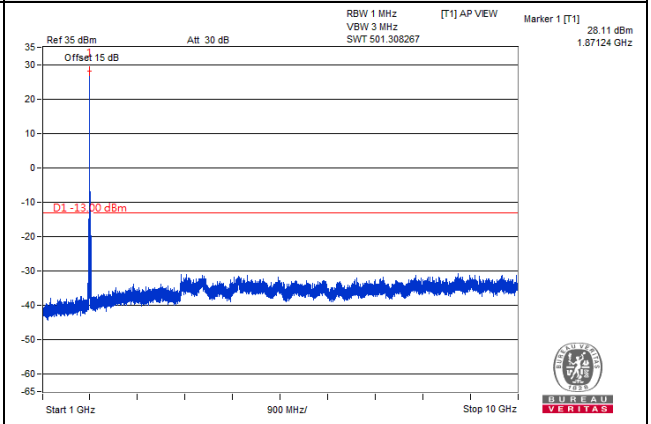
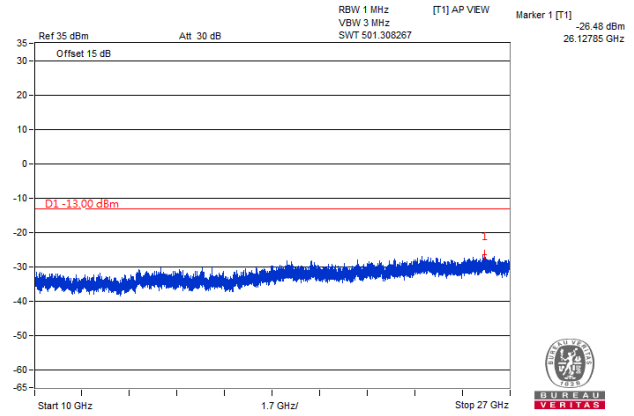
LTE Band 2, Channel Bandwidth 10MHz	
Channel 19150 (1905.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

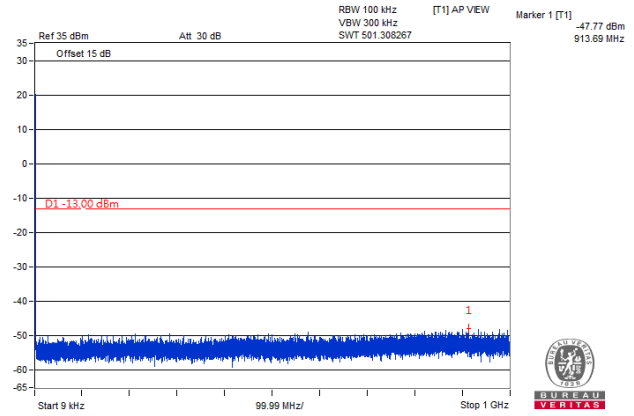
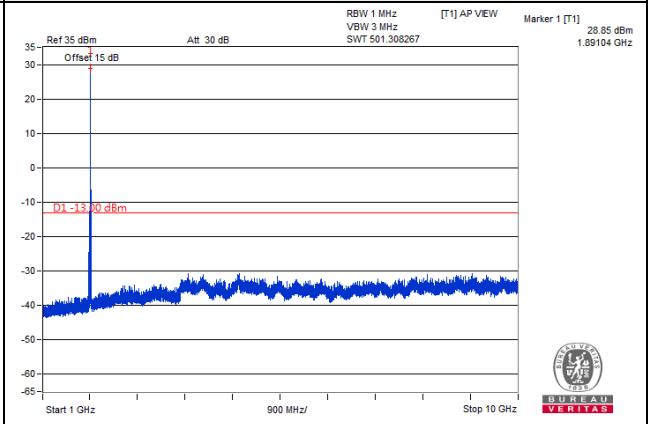
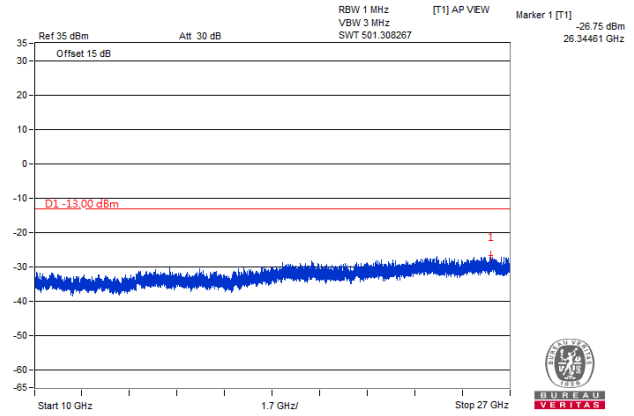
LTE Band 2, Channel Bandwidth 15MHz	
Channel 18675 (1857.50MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 2, Channel Bandwidth 15MHz	
Channel 18900 (1880.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 2, Channel Bandwidth 15MHz	
Channel 19125 (1902.50MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 2, Channel Bandwidth 20MHz	
Channel 18700 (1860.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 2, Channel Bandwidth 20MHz	
Channel 18900 (1880.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

LTE Band 2, Channel Bandwidth 20MHz	
Channel 19100 (1900.00MHz)	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~26.5GHz	
	

4.8 Radiated Emission Measurement

4.8.1 Limits of Radiated Emission Measurement

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 –13dBm.

4.8.2 Test Procedure

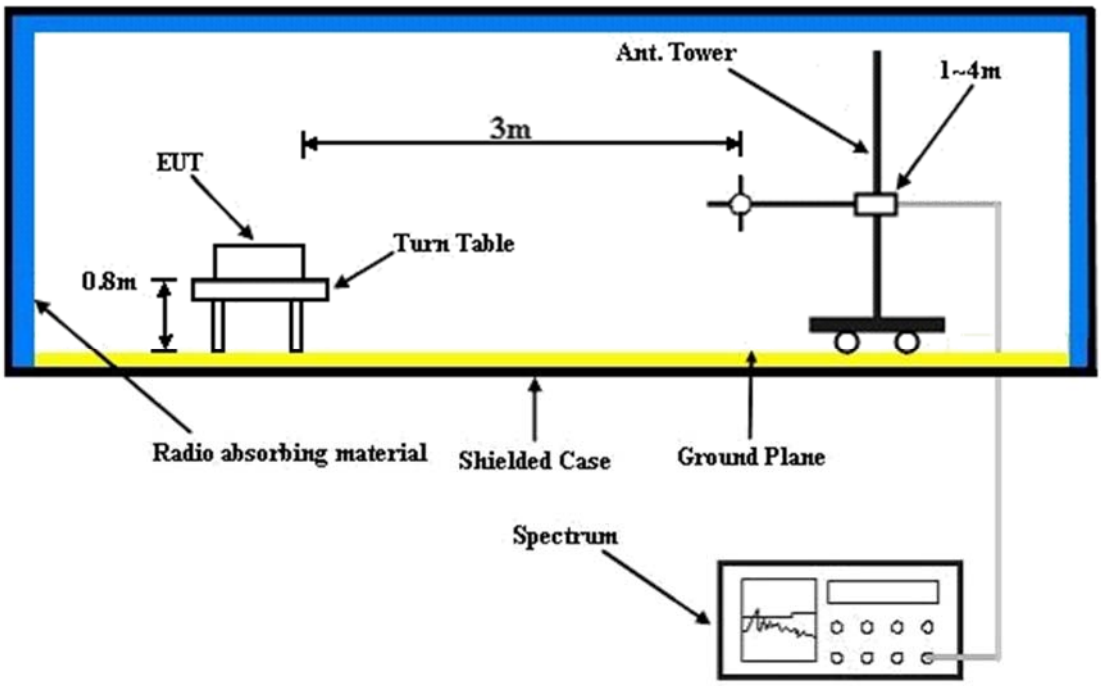
a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step a. Record the power level of S.G
c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.
d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15dBi.

NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.8.3 Deviation from Test Standard

No deviation.

4.8.4 Test Setup



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

4.8.5 Test Results

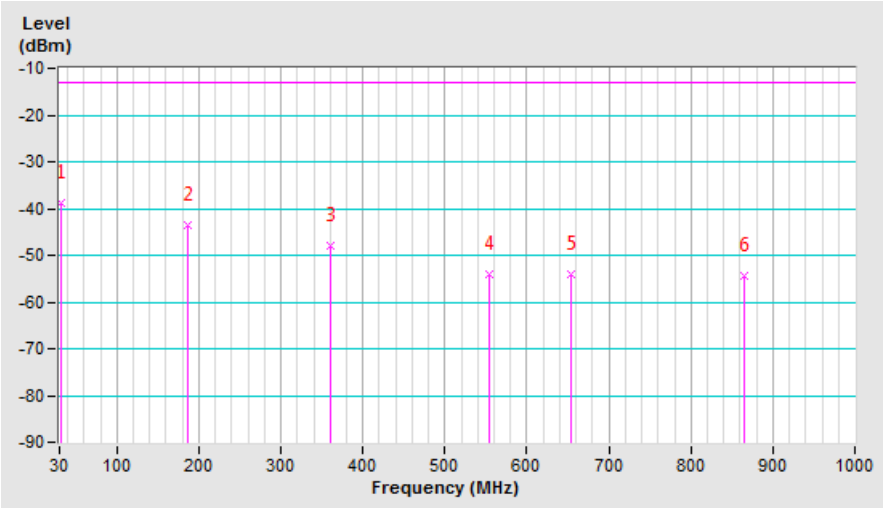
Test Mode A

Below 1GHz
PCS Mode

Mode	TX channel 661 (1880.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	31.94	-45.0	-20.4	-18.3	-38.7	-13.0	-25.7
2	186.17	-49.9	-41.0	-2.6	-43.6	-13.0	-30.6
3	359.80	-54.2	-51.9	4.0	-47.9	-13.0	-34.9
4	553.80	-60.4	-57.8	3.7	-54.1	-13.0	-41.1
5	653.71	-60.2	-57.5	3.6	-53.9	-13.0	-40.9
6	864.20	-60.8	-57.7	3.2	-54.5	-13.0	-41.5

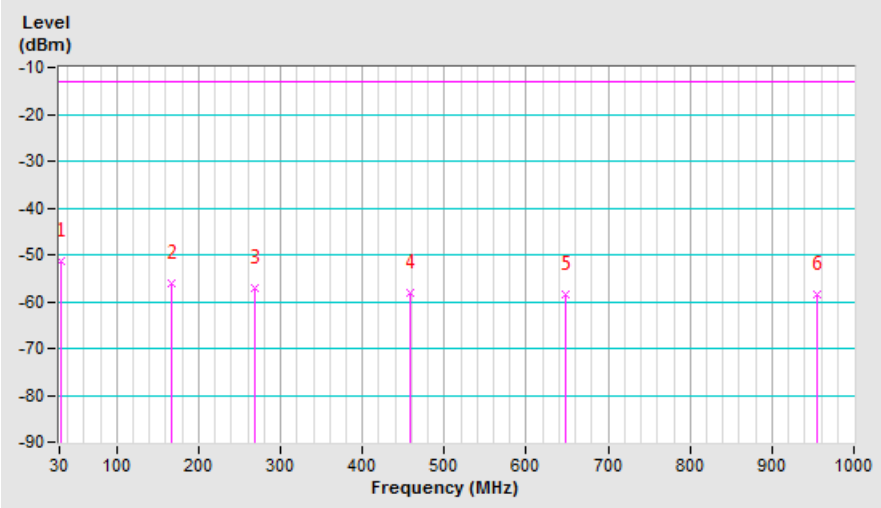
Remarks:
1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode	TX channel 661 (1880.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	32.91	-40.7	-33.6	-17.7	-51.3	-13.0	-38.3
2	167.74	-53.0	-53.3	-2.9	-56.2	-13.0	-43.2
3	267.65	-58.7	-55.6	-1.6	-57.2	-13.0	-44.2
4	457.77	-58.1	-61.7	3.5	-58.2	-13.0	-45.2
5	647.89	-64.2	-62.3	3.7	-58.6	-13.0	-45.6
6	954.41	-68.0	-62.4	3.8	-58.6	-13.0	-45.6

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

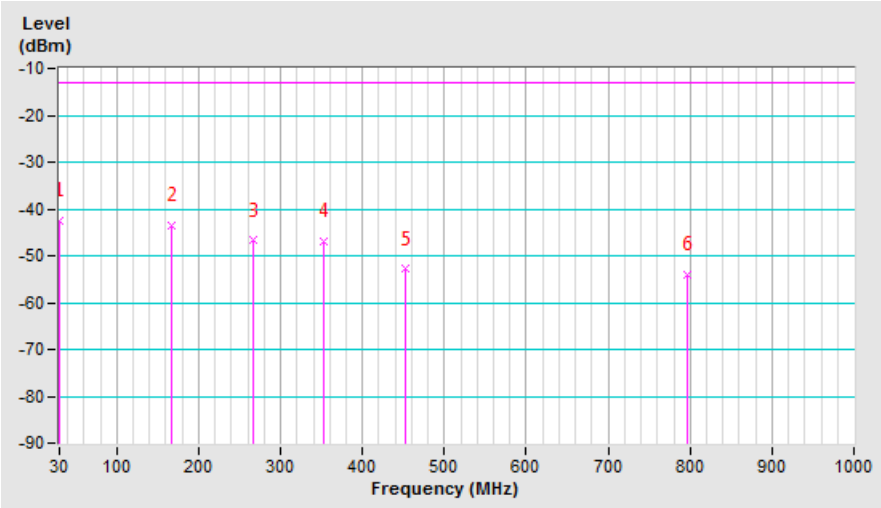


EDGE Mode

Mode	TX channel 512 (1850.2MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	30.00	-48.7	-23.0	-19.4	-42.4	-13.0	-29.4
2	166.77	-49.8	-40.6	-2.9	-43.5	-13.0	-30.5
3	266.68	-53.1	-45.2	-1.6	-46.8	-13.0	-33.8
4	352.04	-53.3	-50.9	3.9	-47.0	-13.0	-34.0
5	451.95	-59.2	-56.4	3.5	-52.9	-13.0	-39.9
6	796.30	-60.3	-58.0	4.0	-54.0	-13.0	-41.0

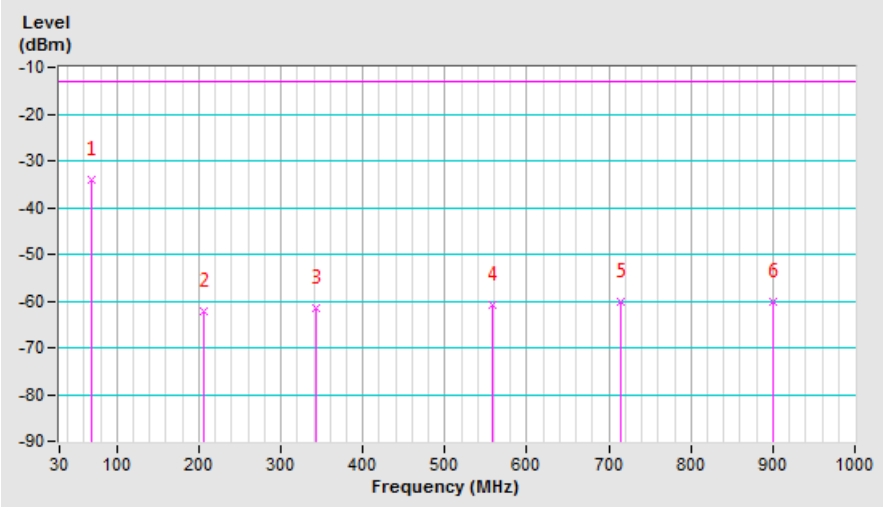
Remarks:
1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode	TX channel 512 (1850.2MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	68.80	-27.4	-33.2	-0.8	-34.0	-13.0	-21.0
2	206.54	-59.8	-60.3	-2.0	-62.3	-13.0	-49.3
3	343.31	-60.9	-65.5	4.0	-61.5	-13.0	-48.5
4	558.65	-62.4	-64.6	3.7	-60.9	-13.0	-47.9
5	713.85	-66.4	-63.8	3.5	-60.3	-13.0	-47.3
6	901.06	-68.3	-63.5	3.5	-60.0	-13.0	-47.0

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

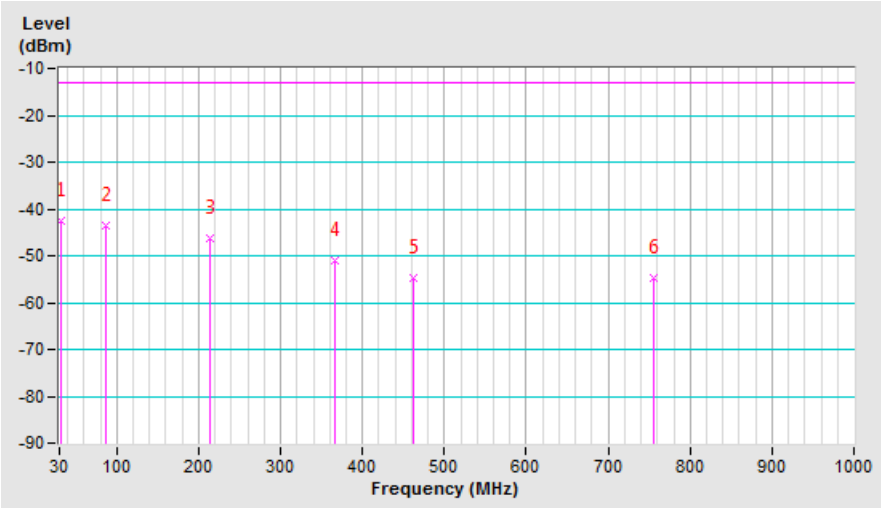


WCDMA Band 2 Mode

Mode	TX channel 9262 (1852.4MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	32.91	-49.0	-25.0	-17.7	-42.7	-13.0	-29.7
2	86.26	-49.9	-43.7	0.1	-43.6	-13.0	-30.6
3	213.33	-52.6	-44.3	-2.0	-46.3	-13.0	-33.3
4	365.62	-57.2	-54.7	3.8	-50.9	-13.0	-37.9
5	462.62	-60.9	-58.0	3.4	-54.6	-13.0	-41.6
6	755.56	-61.1	-58.6	3.8	-54.8	-13.0	-41.8

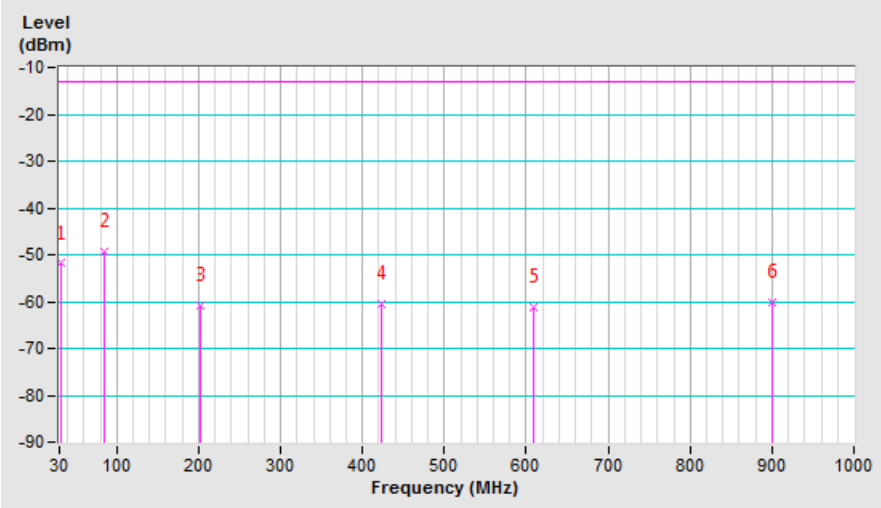
Remarks:
1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode	TX channel 9262 (1852.4MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	31.94	-41.4	-33.6	-18.3	-51.9	-13.0	-38.9
2	84.32	-44.2	-49.6	0.4	-49.2	-13.0	-36.2
3	202.66	-59.4	-58.8	-2.1	-60.9	-13.0	-47.9
4	423.82	-60.1	-63.8	3.4	-60.4	-13.0	-47.4
5	608.12	-65.6	-64.9	3.6	-61.3	-13.0	-48.3
6	901.06	-68.3	-63.5	3.5	-60.0	-13.0	-47.0

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

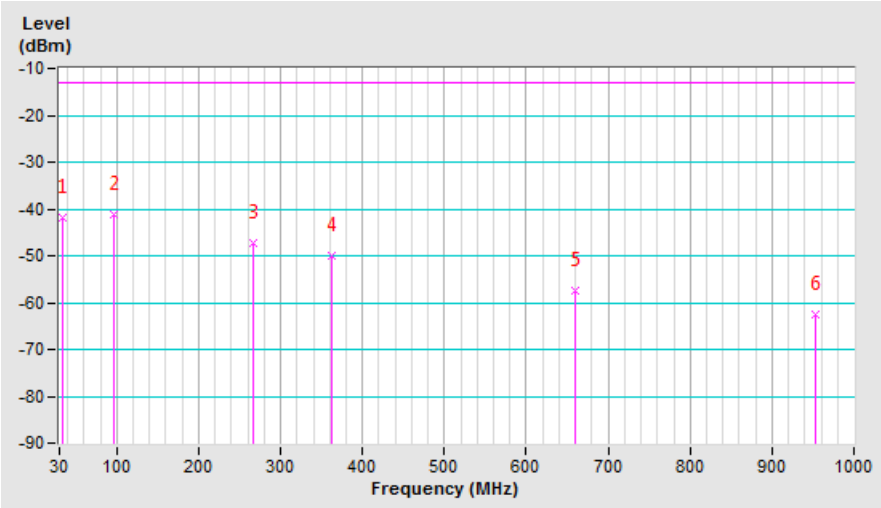


LTE Band 2, Channel Bandwidth: 1.4MHz

Mode	TX channel 18607 (1850.70MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	34.85	-48.3	-25.5	-16.5	-42.0	-13.0	-29.0
2	96.93	-47.6	-40.1	-1.2	-41.3	-13.0	-28.3
3	265.71	-53.7	-45.8	-1.6	-47.4	-13.0	-34.4
4	362.71	-56.4	-54.0	3.9	-50.1	-13.0	-37.1
5	659.53	-63.8	-61.2	3.7	-57.5	-13.0	-44.5
6	952.47	-68.8	-66.3	3.8	-62.5	-13.0	-49.5

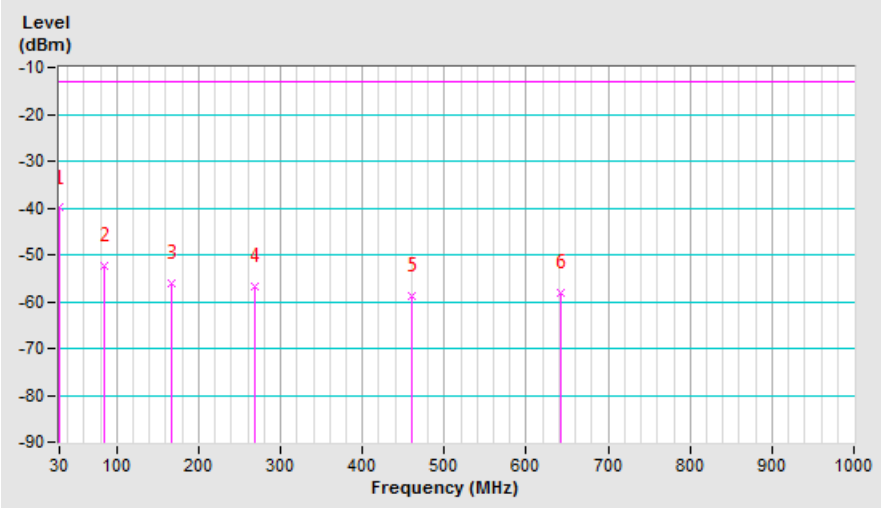
Remarks:
1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode	TX channel 18607 (1850.70MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	30.00	-30.1	-20.6	-19.4	-40.0	-13.0	-27.0
2	85.29	-47.0	-52.8	0.3	-52.5	-13.0	-39.5
3	167.74	-53.0	-53.3	-2.9	-56.2	-13.0	-43.2
4	268.62	-58.4	-55.2	-1.5	-56.7	-13.0	-43.7
5	459.71	-58.7	-62.1	3.4	-58.7	-13.0	-45.7
6	643.04	-63.3	-61.8	3.7	-58.1	-13.0	-45.1

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

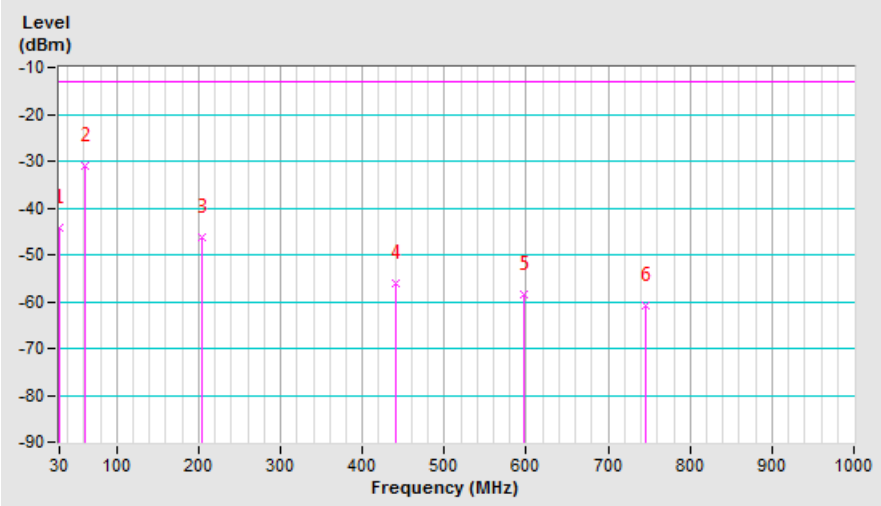


LTE Band 2, Channel Bandwidth: 3MHz

Mode	TX channel 18615 (1851.50MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	30.00	-50.7	-25.0	-19.4	-44.4	-13.0	-31.4
2	**61.04**	**-37.2**	**-27.7**	**-3.2**	**-30.9**	**-13.0**	**-17.9**
3	204.60	-52.6	-44.3	-2.0	-46.3	-13.0	-33.3
4	441.28	-62.3	-59.5	3.5	-56.0	-13.0	-43.0
5	597.45	-64.9	-62.5	3.9	-58.6	-13.0	-45.6
6	745.86	-67.2	-64.7	3.8	-60.9	-13.0	-47.9

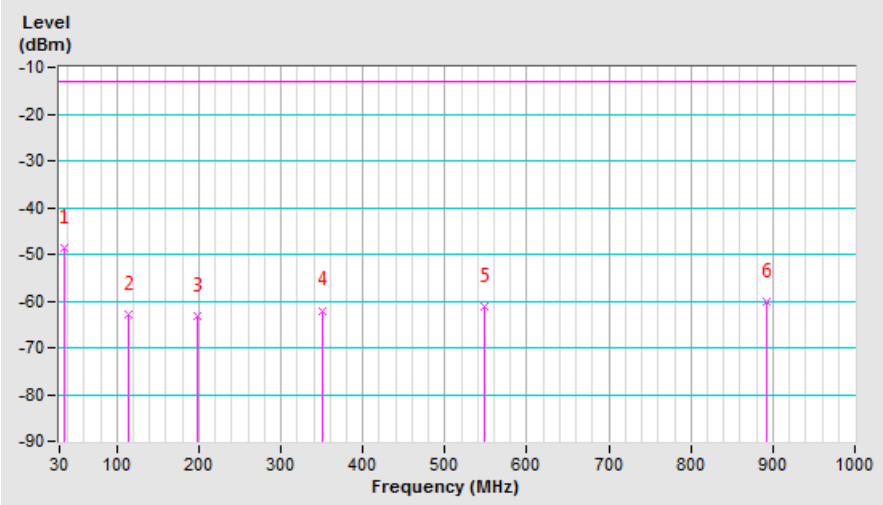
Remarks:
1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode	TX channel 18615 (1851.50MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	35.82	-38.9	-32.7	-15.9	-48.6	-13.0	-35.6
2	113.42	-55.4	-60.1	-2.7	-62.8	-13.0	-49.8
3	198.78	-62.1	-60.7	-2.4	-63.1	-13.0	-50.1
4	350.10	-61.5	-65.9	3.9	-62.0	-13.0	-49.0
5	548.95	-62.9	-65.1	3.8	-61.3	-13.0	-48.3
6	892.33	-68.3	-63.5	3.5	-60.0	-13.0	-47.0

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

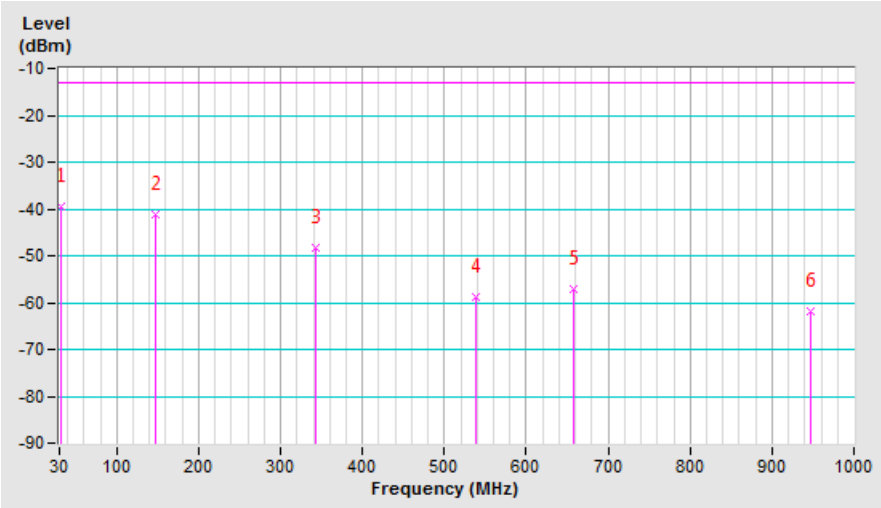


LTE Band 2, Channel Bandwidth: 5MHz

Mode	TX channel 18625 (1852.50MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	31.94	-45.9	-21.3	-18.3	-39.6	-13.0	-26.6
2	146.40	-47.5	-38.2	-3.0	-41.2	-13.0	-28.2
3	343.31	-54.7	-52.4	4.0	-48.4	-13.0	-35.4
4	538.28	-65.0	-62.5	3.8	-58.7	-13.0	-45.7
5	657.59	-63.5	-60.9	3.7	-57.2	-13.0	-44.2
6	946.65	-68.1	-65.6	3.8	-61.8	-13.0	-48.8

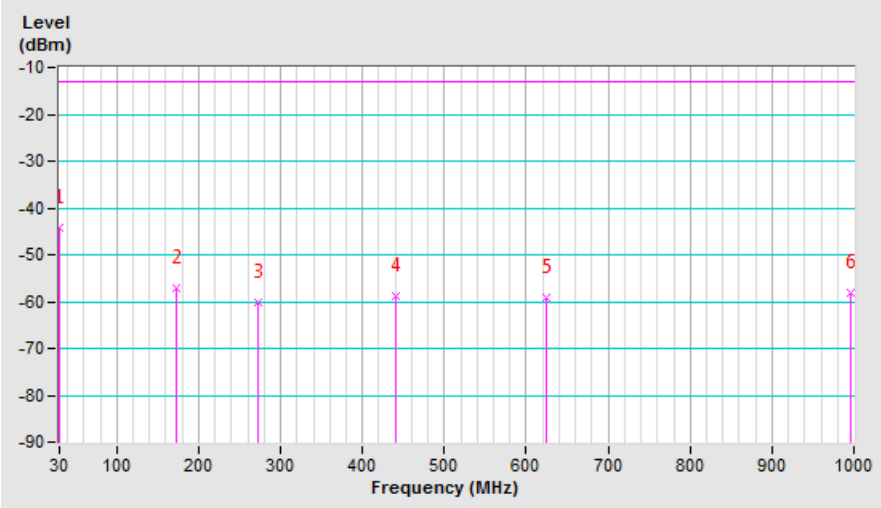
Remarks:
1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode	TX channel 18625 (1852.50MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	30.97	-33.9	-25.3	-18.8	-44.1	-13.0	-31.1
2	172.59	-53.7	-54.3	-2.9	-57.2	-13.0	-44.2
3	271.53	-62.3	-58.7	-1.4	-60.1	-13.0	-47.1
4	440.31	-58.9	-62.4	3.5	-58.9	-13.0	-45.9
5	624.61	-64.2	-63.0	3.7	-59.3	-13.0	-46.3
6	996.12	-68.3	-61.5	3.3	-58.2	-13.0	-45.2

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

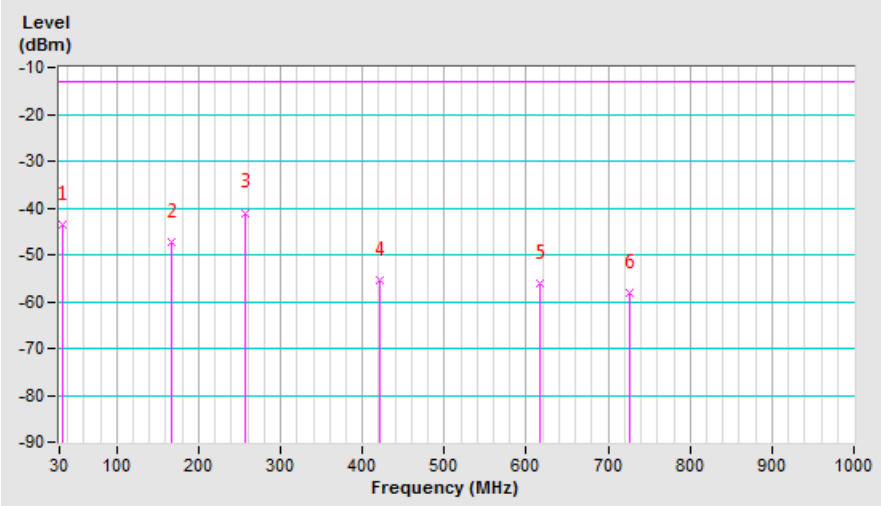


LTE Band 2, Channel Bandwidth: 10MHz

Mode	TX channel 18650 (1855.00MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	34.85	-50.0	-27.2	-16.5	-43.7	-13.0	-30.7
2	166.77	-53.5	-44.3	-2.9	-47.2	-13.0	-34.2
3	256.01	-47.3	-39.5	-1.5	-41.0	-13.0	-28.0
4	420.91	-61.7	-58.9	3.5	-55.4	-13.0	-42.4
5	616.85	-62.3	-59.7	3.7	-56.0	-13.0	-43.0
6	725.49	-64.5	-61.9	3.7	-58.2	-13.0	-45.2

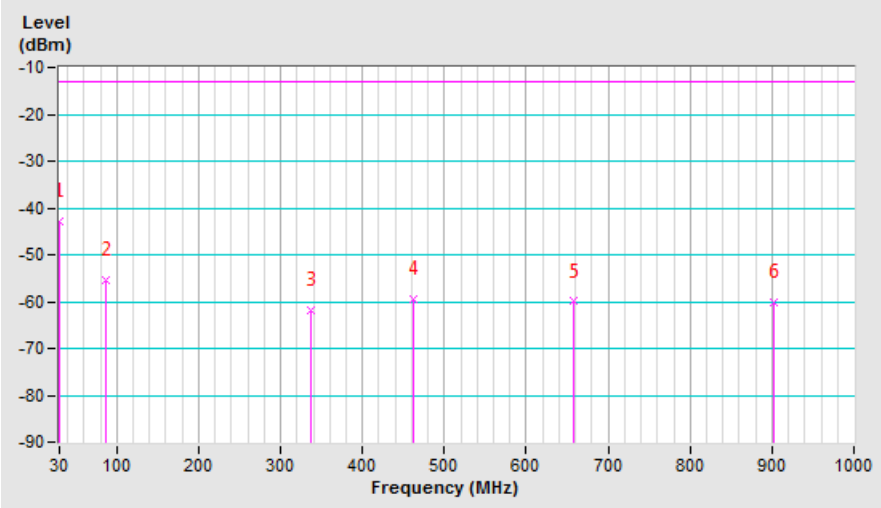
Remarks:
1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode	TX channel 18650 (1855.00MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	30.97	-32.6	-24.0	-18.8	-42.8	-13.0	-29.8
2	87.23	-49.1	-55.2	-0.1	-55.3	-13.0	-42.3
3	336.52	-61.1	-65.7	4.0	-61.7	-13.0	-48.7
4	462.62	-59.3	-62.8	3.4	-59.4	-13.0	-46.4
5	657.59	-65.6	-63.7	3.7	-60.0	-13.0	-47.0
6	903.00	-68.7	-63.9	3.6	-60.3	-13.0	-47.3

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

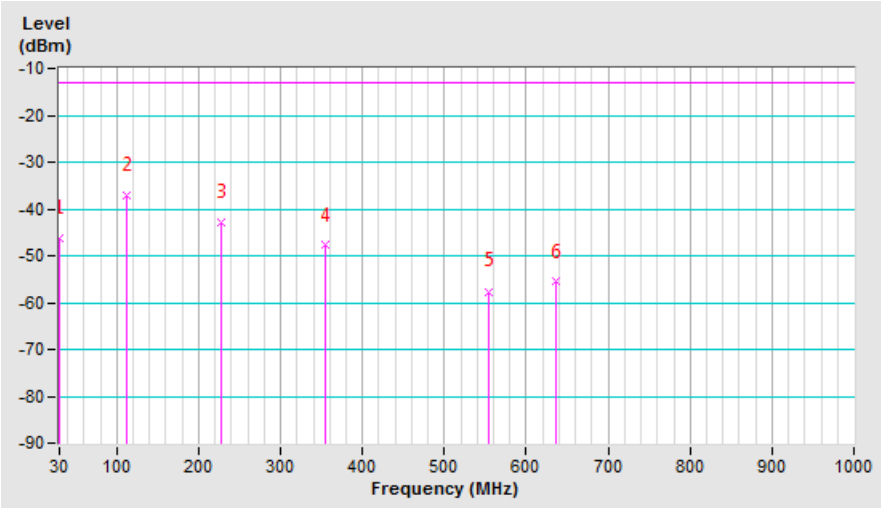


LTE Band 2, Channel Bandwidth: 15MHz

Mode	TX channel 18675 (1857.50MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	30.00	-52.7	-27.0	-19.4	-46.4	-13.0	-33.4
2	111.48	-43.3	-34.5	-2.5	-37.0	-13.0	-24.0
3	227.88	-49.2	-41.2	-1.7	-42.9	-13.0	-29.9
4	353.98	-54.1	-51.7	3.9	-47.8	-13.0	-34.8
5	554.77	-63.9	-61.4	3.8	-57.6	-13.0	-44.6
6	637.22	-61.9	-59.2	3.6	-55.6	-13.0	-42.6

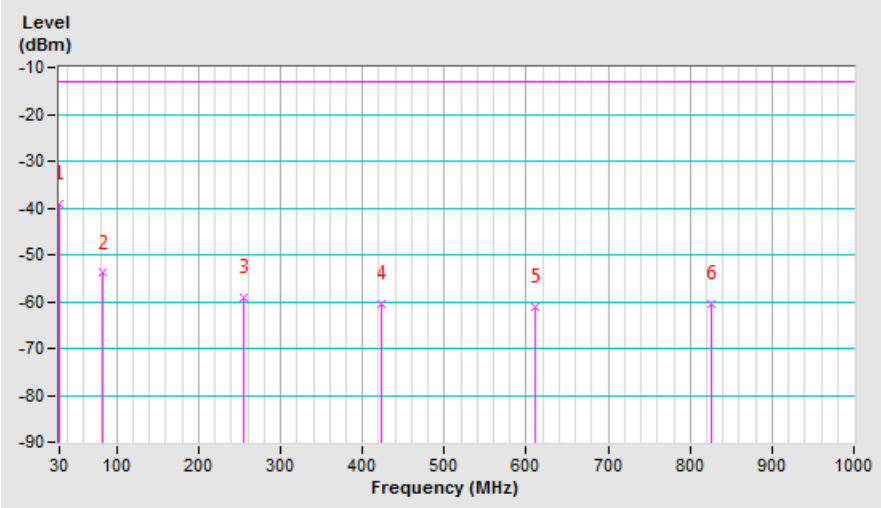
Remarks:
1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode	TX channel 18675 (1857.50MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	30.00	-29.3	-19.8	-19.4	-39.2	-13.0	-26.2
2	82.38	-49.4	-54.3	0.4	-53.9	-13.0	-40.9
3	255.04	-59.7	-57.9	-1.4	-59.3	-13.0	-46.3
4	423.82	-60.3	-64.0	3.4	-60.6	-13.0	-47.6
5	610.06	-65.8	-64.9	3.7	-61.2	-13.0	-48.2
6	825.40	-67.9	-64.3	3.9	-60.4	-13.0	-47.4

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

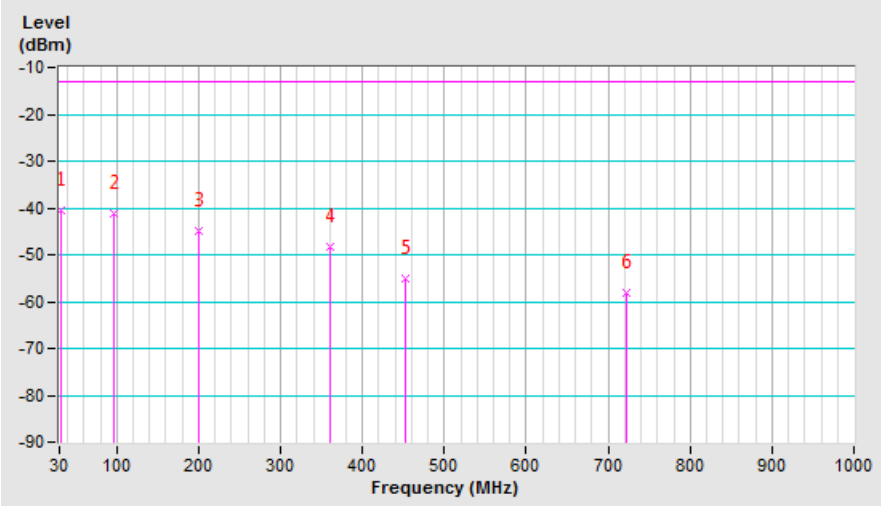


LTE Band 2, Channel Bandwidth: 20MHz

Mode	TX channel 18700 (1860.00MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	31.94	-46.9	-22.3	-18.3	-40.6	-13.0	-27.6
2	96.93	-47.6	-40.1	-1.2	-41.3	-13.0	-28.3
3	199.75	-51.3	-42.6	-2.4	-45.0	-13.0	-32.0
4	359.80	-54.7	-52.4	4.0	-48.4	-13.0	-35.4
5	451.95	-61.5	-58.7	3.5	-55.2	-13.0	-42.2
6	721.61	-64.4	-61.7	3.6	-58.1	-13.0	-45.1

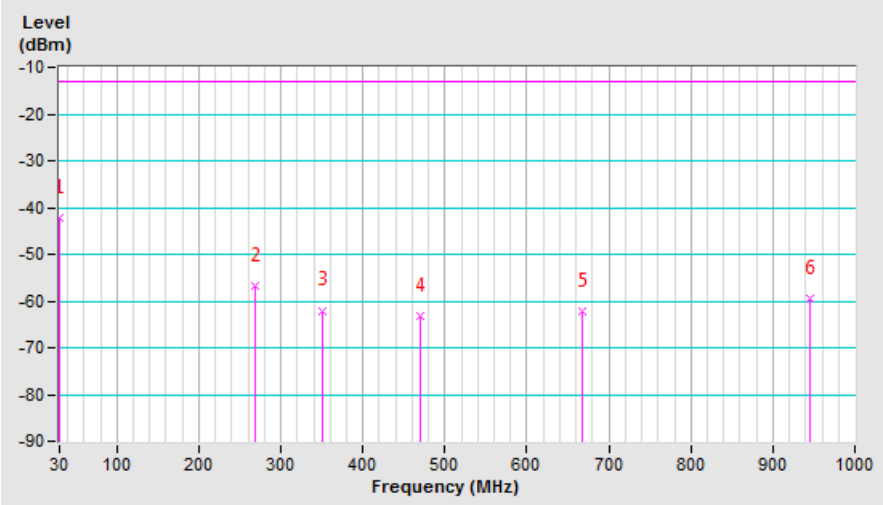
Remarks:
1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode	TX channel 18700 (1860.00MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	30.97	-31.9	-23.3	-18.8	-42.1	-13.0	-29.1
2	268.62	-58.4	-55.2	-1.5	-56.7	-13.0	-43.7
3	350.10	-61.5	-65.9	3.9	-62.0	-13.0	-49.0
4	470.38	-63.1	-66.9	3.6	-63.3	-13.0	-50.3
5	667.29	-67.7	-65.9	3.6	-62.3	-13.0	-49.3
6	944.71	-68.6	-63.1	3.7	-59.4	-13.0	-46.4

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



Above 1GHz
PCS Mode

Mode	TX channel 512 (1850.2MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3700.40	-59.2	-50.7	1.4	-49.3	-13.0	-36.3
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	3700.40	-61.2	-53.0	1.4	-51.6	-13.0	-38.6

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 661 (1880.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3760.00	-59.0	-50.5	1.3	-49.2	-13.0	-36.2
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	3760.00	-61.1	-52.8	1.3	-51.5	-13.0	-38.5

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 810 (1909.8MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3819.60	-59.1	-50.8	1.4	-49.4	-13.0	-36.4
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	3819.60	-61.6	-53.4	1.4	-52.0	-13.0	-39.0

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

EDGE Mode

Mode	TX channel 512 (1850.2MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3700.40	-60.1	-51.6	1.4	-50.2	-13.0	-37.2
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	3700.40	-63.4	-55.2	1.4	-53.8	-13.0	-40.8

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 661 (1880.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3760.00	-60.3	-51.8	1.3	-50.5	-13.0	-37.5
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	3760.00	-60.3	-52.0	1.3	-50.7	-13.0	-37.7

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 810 (1909.8MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3819.60	-60.0	-51.7	1.4	-50.3	-13.0	-37.3
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	3819.60	-61.5	-53.3	1.4	-51.9	-13.0	-38.9

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

WCDMA Band 2 Mode

Mode	TX channel 9262 (1852.4MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3704.80	-58.8	-50.3	1.4	-48.9	-13.0	-35.9
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	3704.80	-60.9	-52.7	1.4	-51.3	-13.0	-38.3

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 9400 (1880.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3760.00	-58.6	-50.1	1.3	-48.8	-13.0	-35.8
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	3760.00	-60.7	-52.4	1.3	-51.1	-13.0	-38.1

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 9538 (1907.6MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3815.20	-59.2	-50.9	1.4	-49.5	-13.0	-36.5
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	3815.20	-61.0	-52.8	1.4	-51.4	-13.0	-38.4

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

LTE Band 2, Channel Bandwidth: 1.4MHz

Mode	TX channel 18607 (1850.70MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3701.40	-58.9	-50.4	1.4	-49.0	-13.0	-36.0
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	3701.40	-60.1	-51.9	1.4	-50.5	-13.0	-37.5

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 18900 (1880.00MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3760.00	-58.6	-50.1	1.3	-48.8	-13.0	-35.8
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	3760.00	-59.9	-51.6	1.3	-50.3	-13.0	-37.3

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 19193 (1909.30MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3818.60	-59.1	-50.8	1.4	-49.4	-13.0	-36.4
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	3818.60	-60.0	-51.8	1.4	-50.4	-13.0	-37.4

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

LTE Band 2, Channel Bandwidth: 3MHz

Mode	TX channel 18615 (1851.50MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3703.00	-58.8	-50.3	1.4	-48.9	-13.0	-35.9
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	3703.00	-60.0	-51.8	1.4	-50.4	-13.0	-37.4

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 18900 (1880.00MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3760.00	-58.5	-50.0	1.3	-48.7	-13.0	-35.7
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	3760.00	-59.8	-51.5	1.3	-50.2	-13.0	-37.2

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 19185 (1908.50MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3817.00	-58.6	-50.3	1.4	-48.9	-13.0	-35.9
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	3817.00	-59.9	-51.7	1.4	-50.3	-13.0	-37.3

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

LTE Band 2, Channel Bandwidth: 5MHz

Mode	TX channel 18625 (1852.50MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3705.00	-58.6	-50.1	1.4	-48.7	-13.0	-35.7
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	3705.00	-59.5	-51.3	1.4	-49.9	-13.0	-36.9

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 18900 (1880.00MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3760.00	-58.5	-50.0	1.3	-48.7	-13.0	-35.7
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	3760.00	-59.4	-51.1	1.3	-49.8	-13.0	-36.8

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 19175 (1907.50MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3815.00	-58.7	-50.4	1.4	-49.0	-13.0	-36.0
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	3815.00	-59.6	-51.4	1.4	-50.0	-13.0	-37.0

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

LTE Band 2, Channel Bandwidth: 10MHz

Mode	TX channel 18650 (1855.00MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3710.00	-58.9	-50.4	1.4	-49.0	-13.0	-36.0
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	3710.00	-59.6	-51.4	1.4	-50.0	-13.0	-37.0

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 18900 (1880.00MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3760.00	-58.7	-50.2	1.3	-48.9	-13.0	-35.9
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	3760.00	-59.5	-51.2	1.3	-49.9	-13.0	-36.9

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 19150 (1905.00MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3810.00	-58.8	-50.4	1.3	-49.1	-13.0	-36.1
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	3810.00	-59.8	-51.5	1.3	-50.2	-13.0	-37.2

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

LTE Band 2, Channel Bandwidth: 15MHz

Mode	TX channel 18675 (1857.50MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3715.00	-58.6	-50.1	1.4	-48.7	-13.0	-35.7
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	3715.00	-60.1	-51.9	1.4	-50.5	-13.0	-37.5

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 18900 (1880.00MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3760.00	-58.5	-50.0	1.3	-48.7	-13.0	-35.7
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	3760.00	-59.9	-51.6	1.3	-50.3	-13.0	-37.3

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 19125 (1902.50MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3805.00	-58.8	-50.4	1.3	-49.1	-13.0	-36.1
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	3805.00	-60.0	-51.8	1.3	-50.5	-13.0	-37.5

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

LTE Band 2, Channel Bandwidth: 20MHz

Mode	TX channel 18700 (1860.00MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3720.00	-58.9	-50.4	1.4	-49.0	-13.0	-36.0
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	3720.00	-60.0	-51.8	1.4	-50.4	-13.0	-37.4

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 18900 (1880.00MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3760.00	-58.4	-49.9	1.3	-48.6	-13.0	-35.6
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	3760.00	-59.3	-51.0	1.3	-49.7	-13.0	-36.7

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 19100 (1900.00MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	3800.00	-59.1	-50.7	1.3	-49.4	-13.0	-36.4
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	3800.00	-60.0	-51.8	1.3	-50.5	-13.0	-37.5

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

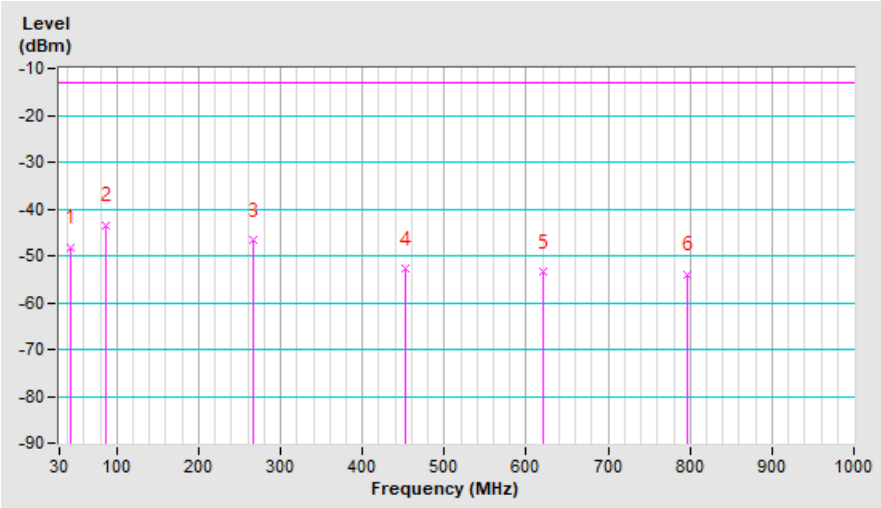
Test Mode B

Below 1GHz
PCS Mode

Mode	TX channel 661 (1880.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	44.55	-54.7	-37.5	-10.9	-48.4	-13.0	-35.4
2	86.26	-49.9	-43.7	0.1	-43.6	-13.0	-30.6
3	266.68	-53.1	-45.2	-1.6	-46.8	-13.0	-33.8
4	451.95	-59.2	-56.4	3.5	-52.9	-13.0	-39.9
5	619.76	-59.9	-57.3	3.7	-53.6	-13.0	-40.6
6	796.30	-60.3	-58.0	4.0	-54.0	-13.0	-41.0

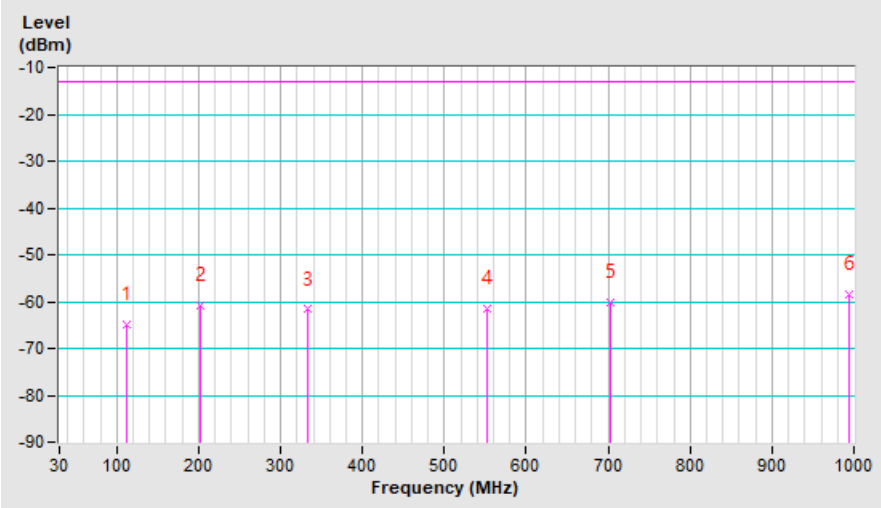
Remarks:
1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode	TX channel 661 (1880.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	112.45	-57.4	-62.3	-2.5	-64.8	-13.0	-51.8
2	202.66	-59.4	-58.8	-2.1	-60.9	-13.0	-47.9
3	333.61	-61.2	-65.7	4.0	-61.7	-13.0	-48.7
4	551.86	-63.2	-65.4	3.8	-61.6	-13.0	-48.6
5	702.21	-66.2	-63.7	3.4	-60.3	-13.0	-47.3
6	993.21	-68.5	-61.9	3.4	-58.5	-13.0	-45.5

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



Above 1GHz
PCS Mode

Mode	TX channel 661 (1880.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

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	3760.00	-60.7	-52.2	1.3	-50.9	-13.0	-37.9
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	3760.00	-60.7	-52.4	1.3	-51.1	-13.0	-38.1

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

5 Pictures of Test Arrangements

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

Appendix – Information on 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.

If you have any comments, please feel free to contact us at the following:

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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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