

## FCC Test Report (PART 24)

**Report No.:** RF190516E08-6

**FCC ID:** MQT-AT170R18U

**Test Model:** xCL\_AT-170-R-18U

**Received Date:** May 16, 2019

**Test Date:** June 19 to 28, 2019

**Issued Date:** July 11, 2019

**Applicant:** XAC AUTOMATION CORP.

**Address:** 4F, No. 30, INDUSTRY E. RD. IX, SCIENCE-BASED INDUSTRIAL  
PARK,HSINCHU,TAIWAN

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

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Taiwan R.O.C.

**Test Location:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan R.O.C.

**FCC Registration /  
Designation Number:** 723255 / TW2022



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### Release Control Record

Issue No.	Description	Date Issued
RF190516E08-6	Original release.	July 11, 2019

## 1 Certificate of Conformity

**Product:** Terminal

**Brand:** XAC

**Test Model:** xCL\_AT-170-R-18U


**Sample Status:** ENGINEERING SAMPLE


**Applicant:** XAC AUTOMATION CORP.

**Test Date:** June 19 to 28, 2019

**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 EMC characteristics under the conditions specified in this report.

**Prepared by :**  \_\_\_\_\_, **Date:** July 11, 2019  
Claire Kuan / Specialist

**Approved by :**  \_\_\_\_\_, **Date:** July 11, 2019  
May Chen / Manager

## 2 Summary of Test Results

Applied Standard: FCC Part 24 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 24.232	Equivalent Isotropically 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 -35.38dB at 3305.6MHz.

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

### 2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	4.9 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.1 dB
	6GHz ~ 18GHz	4.9 dB
	18GHz ~ 40GHz	5.2 dB

## 2.2 Test Site and Instruments

### For radiated spurious emissions test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 05, 2018	July 04, 2019
Pre-Amplifier EMCI	EMC001340	980142	Jan. 25, 2019	Jan. 24, 2020
Loop Antenna Electro-Metrics	EM-6879	269	Sep. 07, 2018	Sep. 06, 2019
RF Cable	NA	LOOPCAB-001	Jan. 14, 2019	Jan. 13, 2020
RF Cable	NA	LOOPCAB-002	Jan. 14, 2019	Jan. 13, 2020
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Oct. 30, 2018	Oct. 29, 2019
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Nov. 22, 2018	Nov. 21, 2019
RF Cable	8D	966-4-1	Mar. 19, 2019	Mar. 18, 2020
RF Cable	8D	966-4-2	Mar. 19, 2019	Mar. 18, 2020
RF Cable	8D	966-4-3	Mar. 19, 2019	Mar. 18, 2020
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Sep. 27, 2018	Sep. 26, 2019
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Nov. 25, 2018	Nov. 24, 2019
Pre-Amplifier EMCI	EMC12630SE	980385	Aug. 16, 2018	Aug. 15, 2019
RF Cable	EMC104-SM-SM-1200	160923	Jan. 28, 2019	Jan. 27, 2020
RF Cable	104 RF cable	131215	Jan. 10, 2019	Jan. 09, 2020
RF Cable	EMC104-SM-SM-6000	180418	May 03, 2019	May 02, 2020
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 28, 2019	Jan. 27, 2020
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 25, 2018	Nov. 24, 2019
RF Cable	EMC102-KM-KM-1200	160924	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC102-KM-KM-1200	160925	Jan. 28, 2019	Jan. 27, 2020
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA

#### Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 4.
3. Loop antenna was used for all emissions below 30 MHz.
4. Tested Date: June 19, 2019

**For other test items:**

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	June 04, 2019	June 03, 2020
Spectrum Analyzer Agilent	E4446A	MY48250253	Aug. 01, 2018	July 31, 2019
Power meter Anritsu	ML2495A	1014008	May 13, 2019	May 12, 2020
Power sensor Anritsu	MA2411B	0917122	May 13, 2019	May 12, 2020
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 15, 2019	Apr. 14, 2020
AC Power Source Extech Electronics	6205	1440452	NA	NA
DC Power Supply Topward	6603D	795558	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 09, 2019	Jan. 08, 2020
True RMS Clamp Meter FLUKE	325	31130711WS	May 21, 2019	May 20, 2020
ESG Vector signal generator Agilent	E4438C	MY45094468/005 506 602 UK6 UNJ	Nov. 19, 2018	Nov. 18, 2019
Mech Switch Absorptive Mini-Circuits	MSP4TA-18+	0140	Feb. 11, 2019	Feb. 10, 2020
FXD ATTEN Mini-Circuits	BW-S3W2+	MN71981	Feb. 11, 2019	Feb. 10, 2020
Software	ADT_RF Test Software V6.6.5.4	NA	NA	NA
Universal Radio Communication Tester R&S	CMU200	121040	Apr. 17, 2019	Apr. 16, 2020
LTE Wireless Communication Test Set Keysight	E7515A	MY55340229	May 29, 2019	May 30, 2020

- NOTE:**
1. The test was performed in Oven room 2.
  2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
  3. Tested Date: June 28, 2019



### 3 General Information

#### 3.1 General Description of EUT

Product	Terminal	
Brand	XAC	
Test Model	xCL_AT-170-R-18U	
Status of EUT	ENGINEERING SAMPLE	
Power Supply Rating	DC 3.8V from battery or DC 5V from USB adapter	
Modulation Type	WCDMA, HSDPA, HSUPA	BPSK
	LTE Band 2	QPSK, 16QAM
Operating Frequency	WCDMA, HSDPA, HSUPA	1852.4MHz ~ 1907.6MHz
	LTE Band 2	1850.7MHz ~ 1909.3MHz
Max. EIRP Power	WCDMA Band 2	27.12dBm
	LTE Band 2 (Channel Bandwidth 1.4MHz)	27.31dBm
	LTE Band 2 (Channel Bandwidth 3MHz)	27.25dBm
	LTE Band 2 (Channel Bandwidth 5MHz)	27.28dBm
	LTE Band 2 (Channel Bandwidth 10MHz)	27.30dBm
	LTE Band 2 (Channel Bandwidth 15MHz)	27.37dBm
	LTE Band 2 (Channel Bandwidth 20MHz)	27.41dBm
Emission Designator	WCDMA Band 2	4M16F9W
	LTE Band 2 (Channel Bandwidth 1.4MHz)	QPSK: 1M09G7D 16QAM: 1M10D7W
	LTE Band 2 (Channel Bandwidth 3MHz)	QPSK: 2M70G7D 16QAM: 2M68D7W
	LTE Band 2 (Channel Bandwidth 5MHz)	QPSK: 4M51G7D 16QAM: 4M52D7W
	LTE Band 2 (Channel Bandwidth 10MHz)	QPSK: 9M00G7D 16QAM: 9M00D7W
	LTE Band 2 (Channel Bandwidth 15MHz)	QPSK: 13M5G7D 16QAM: 13M5D7W
	LTE Band 2 (Channel Bandwidth 20MHz)	QPSK: 18M1G7D 16QAM: 18M0D7W
Antenna Type	Refer to Note	
Antenna Connector	Refer to Note	
Accessory Device	Battery x1 (option), Adapter x 1 (option)	
Data Cable Supplied	NA	

Note:

1. The EUT has below radios as following table:

Radio 1	Radio 2	Radio 3
WLAN+Bluetooth	WWAN	NFC

2. Simultaneously transmission condition.

Condition	Technology	
1	WWAN	NFC
2	WWAN	Bluetooth
3	WLAN 2.4GHz	NFC
4	WLAN 5GHz	NFC
5	Bluetooth	NFC

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

3. The EUT must be supplied with a power adapter or a battery as following table:

Adapter		
Brand	Model No.	Spec.
MASS POWER	NBS10B050200VUU	Input: 100-240Vac, 0.3A, 50~60Hz Output: 5Vdc, 2A DC output cable: Shielded, 1.2 m
Battery		
Brand	Model No.	Spec.
Shenzhen Rishengzhi Electronics Technology Co., Ltd.	J601	3.8Vdc, 5200mAh, 19.76Wh

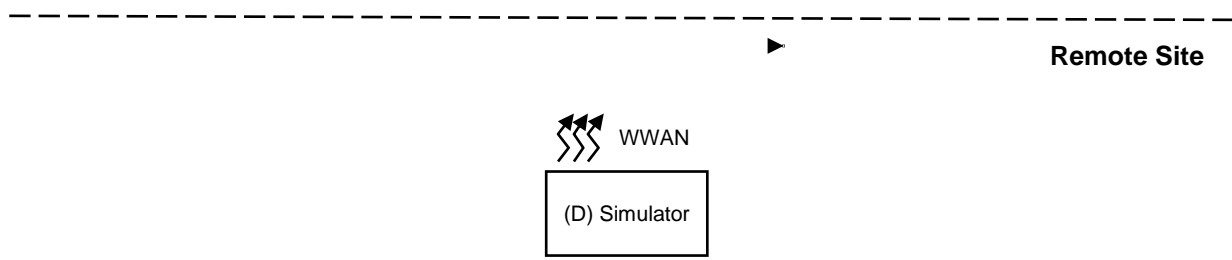
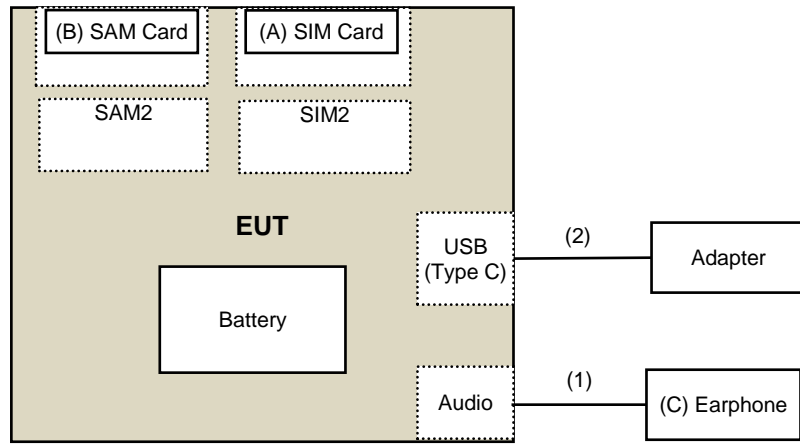
Note: From the above adapter and battery, the worst radiated emission test was found in **Adapter**. Therefore only the test data of the modes were recorded in this report.

4. The antennas provided to the EUT, please refer to the following table:

Ant. No.	RF Chain No.	Brand	Model	Ant. Net Gain (dBi)	Frequency Range	Antenna Type	Connector Type
Wi-Fi + BT	Main	awan-ant	AYF6P-100000	2.34	2.4~2.4835 GHz	FPCB	i-pex(MHF)
				4.48	5.15~5.85 GHz	FPCB	i-pex(MHF)
3G/LTE	Main	awan-ant	AXF6P-100002	3.44	699~2690 MHz	FPCB	i-pex(MHF)
3G/LTE	Aux	awan-ant	AXF6P-100003	3.75	699~2690 MHz	FPCB	i-pex(MHF)
NFC	Main	XAC	RTOS	13	13.56 MHz	Wire	None

5. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

### 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.	SIM Card	NA	NA	NA	NA	Provided by Lab
B.	SAM Card	NA	NA	NA	NA	Supplied by client
C.	Earphone	Sony	NA	NA	NA	Provided by Lab
D.	Simulator	Anritsu	MT8820C	6201127458	NA	Provided by Lab

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	Audio Cable	1	0.6	No	0	Provided by Lab
2.	USB Type C Cable	1	1.2	Yes	0	Supplied by client

### 3.3 Test Mode Applicability and Tested Channel Detail

#### WCDMA Band 2

Test Item	Available Channel	Tested Channel	Mode
EIRP	9262 to 9538	9262, 9400, 9538	WCDMA
Frequency Stability	9262 to 9538	9400	WCDMA
Occupied Bandwidth	9262 to 9538	9262, 9400, 9538	WCDMA
Band Edge	9262 to 9538	9262, 9538	WCDMA
Peak to Average Ratio	9262 to 9538	9262, 9400, 9538	WCDMA
Conducted Emission	9262 to 9538	9262, 9400, 9538	WCDMA
Radiated Emission Below 1GHz	9262 to 9538	9262, 9400, 9538	WCDMA
Radiated Emission Above 1GHz	9262 to 9538	9262, 9400, 9538	WCDMA

## LTE Band 2

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE	
EIRP	18607 to 19193	18607, 18900 19193	1.4MHz	QPSK/16QAM	1RB / 0 RB offset	
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK/16QAM	1RB / 0 RB offset	
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK/16QAM	1RB / 0 RB offset	
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK/16QAM	1RB / 0 RB offset	
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK/16QAM	1RB / 0 RB offset	
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK/16QAM	1RB / 0 RB offset	
Frequency Stability	18607 to 19193	18900	1.4MHz	QPSK	-	
	18615 to 19185	18900	3MHz	QPSK	-	
	18625 to 19175	18900	5MHz	QPSK	-	
	18650 to 19150	18900	10MHz	QPSK	-	
	18675 to 19125	18900	15MHz	QPSK	-	
	18700 to 19100	18900	20MHz	QPSK	-	
Occupied Bandwidth	18607 to 19193	18607, 18900 19193	1.4MHz	QPSK/16QAM	Full RB	
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK/16QAM	Full RB	
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK/16QAM	Full RB	
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK/16QAM	Full RB	
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK/16QAM	Full RB	
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK/16QAM	Full RB	
Peak to Average Ratio	18607 to 19193	18607, 18900 19193	1.4MHz	QPSK/16QAM	Full RB	
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK/16QAM	Full RB	
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK/16QAM	Full RB	
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK/16QAM	Full RB	
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK/16QAM	Full RB	
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK/16QAM	Full RB	
Band Edge	18607 to 19193	18607	1.4MHz	QPSK	1 RB / 0 RB Offset	
		19193			1 RB / 5 RB Offset	
		18607, 19193			6 RB / 0 RB Offset	
	18615 to 19185	18615	3MHz	QPSK	1 RB / 0 RB Offset	
		19185			1 RB / 14 RB Offset	
		18615, 19185			15 RB / 0 RB Offset	
	18625 to 19175	18625,	5MHz	QPSK	1 RB / 0 RB Offset	
		19175			1 RB / 24 RB Offset	
		18625, 19175			25 RB / 0 RB Offset	
	18650 to 19150	18650	10MHz	QPSK	1 RB / 0 RB Offset	
		19150			1 RB / 49 RB Offset	
		18650, 19150			50 RB / 0 RB Offset	
	18675 to 19125	18675,	15MHz	QPSK	1 RB / 0 RB Offset	
		19125			1 RB / 74 RB Offset	
		18675, 19125			75 RB / 0 RB Offset	
	18700 to 19100	18700.	20MHz	QPSK	1 RB / 0 RB Offset	
		19100			1 RB / 99 RB Offset	
		18700. 19100			100 RB / 0 RB Offset	
	Conducted Emission	18607 to 19193	18607, 18900 19193	1.4MHz	QPSK	1 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK	1 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK	1 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK	1 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK	1 RB / 0 RB Offset
Radiated Emission	18607 to 19193	18607, 18900 19193	1.4MHz	QPSK	1 RB / 0 RB Offset	
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK	1 RB / 0 RB Offset	
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK	1 RB / 0 RB Offset	
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK	1 RB / 0 RB Offset	
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK	1 RB / 0 RB Offset	
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK	1 RB / 0 RB Offset	

**NOTE:**

All supported modulation types were evaluated. The Worst case of QPSK was selected. Therefore, the Band Edge, Frequency Stability, Condcudeted Emission and Radiated Emission were presented under QPSK mode only.

**Test Condition:**

Test Item	Environmental Conditions	Input Power	Tested By
EIRP	25deg. C, 63%RH	120Vac, 60Hz	Jyunchun Lin
Frequency Stability	25deg. C, 63%RH	3.8Vdc	Jyunchun Lin
Occupied Bandwidth	25deg. C, 63%RH	120Vac, 60Hz	Jyunchun Lin
Band Edge	25deg. C, 63%RH	120Vac, 60Hz	Jyunchun Lin
Peak to Average Ratio	25deg. C, 63%RH	120Vac, 60Hz	Jyunchun Lin
Condcudeted Emission	25deg. C, 63%RH	120Vac, 60Hz	Jyunchun Lin
Radiated Emission Below 1GHz	25deg. C, 75%RH	120Vac, 60Hz	Robert Cheng
Radiated Emission Above 1GHz	25deg. C, 75%RH	120Vac, 60Hz	Robert Cheng

**3.4 EUT Operating Conditions**

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 Subpart E**

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

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

**ANSI 63.26-2015**

**NOTE:** 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.i.r.p.

#### 4.1.2 Test Procedures

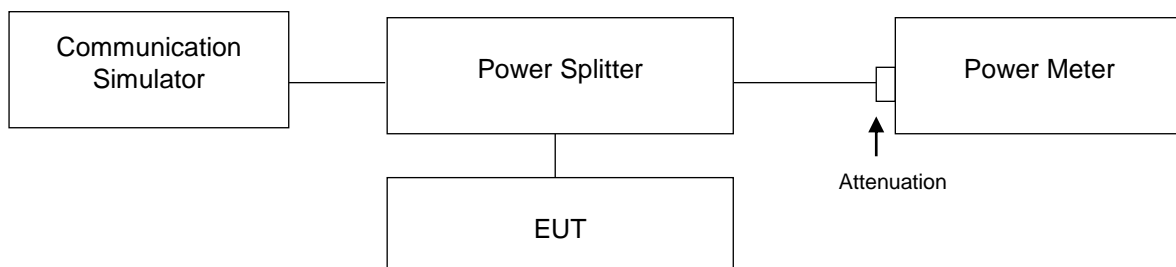
##### Conducted Power Measurement:

The EUT was set up for the maximum power with WCDMA/LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and difference RB size/ RB offset for difference bandwidth record the power level shown on power meter.

##### EIRP Measurement:

- a.  $EIRP = \text{Conducted Output power level} + \text{Antenna gain.}$

#### 4.1.3 Test Setup



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

## 4.1.4 Test Results

**CONDUCTED OUTPUT POWER (dBm)**
**WCDMA Band 2**

Band	WCDMA B2		
Channel	9262	9400	9538
Frequency (MHz)	1852.4	1880.0	1907.6
RMC	23.60	23.51	23.68
HSDPA Subtest-1	23.35	23.22	23.45
HSDPA Subtest-2	23.42	23.42	23.43
HSDPA Subtest-3	22.94	22.93	22.98
HSDPA Subtest-4	22.96	22.92	23.00
HSUPA Subtest-1	23.15	23.14	23.16
HSUPA Subtest-2	21.43	21.41	21.54
HSUPA Subtest-3	22.49	22.26	22.52
HSUPA Subtest-4	21.97	21.98	21.96
HSUPA Subtest-5	23.40	23.30	23.50

### LTE Band 2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		
			18607	18900	19193		18607	18900	19193		
			1850.7	1880	1909.3		1850.7	1880	1909.3		
			MHz	MHz	MHz						
2 / 1.4M	1	0	23.92	23.59	23.60	0	22.68	22.54	22.50	1	
	1	2	23.87	23.55	23.65	0	22.56	22.48	22.61	1	
	1	5	23.69	23.49	23.61	0	22.58	22.37	22.53	1	
	3	0	23.87	23.66	23.74	0	22.58	22.52	22.67	1	
	3	1	23.76	23.51	23.66	0	22.54	22.35	22.39	1	
	3	3	23.61	23.54	23.57	0	22.57	22.39	22.40	1	
	6	0	22.78	22.66	22.68	1	21.47	21.38	21.53	2	

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		
			18615	18900	19185		18615	18900	19185		
			1851.5	1880	1908.5		1851.5	1880	1908.5		
			MHz	MHz	MHz						
2 / 3M	1	0	23.81	23.64	23.72	0	22.67	22.49	22.44	1	
	1	7	23.74	23.65	23.64	0	22.49	22.25	22.46	1	
	1	14	23.75	23.54	23.71	0	22.45	22.46	22.44	1	
	8	0	22.85	22.62	22.70	1	21.71	21.45	21.63	2	
	8	3	22.64	22.55	22.73	1	21.60	21.38	21.40	2	
	8	7	22.71	22.49	22.51	1	21.63	21.38	21.55	2	
	15	0	22.77	22.64	22.74	1	21.50	21.43	21.56	2	

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)	
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH		
			18625	18900	19175		18625	18900	19175		
			1852.5	1880	1907.5		1852.5	1880	1907.5		
			MHz	MHz	MHz						
2 / 5M	1	0	23.84	23.61	23.65	0	22.59	22.48	22.58	1	
	1	12	23.76	23.58	23.49	0	22.64	22.37	22.45	1	
	1	24	23.71	23.60	23.67	0	22.54	22.47	22.58	1	
	12	0	22.89	22.62	22.74	1	21.61	21.42	21.48	2	
	12	6	22.65	22.52	22.57	1	21.46	21.41	21.44	2	
	12	13	22.66	22.46	22.65	1	21.59	21.34	21.40	2	
	25	0	22.72	22.49	22.61	1	21.54	21.45	21.44	2	

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			18650	18900	19150		18650	18900	19150	
			1855	1880	1905		1855	1880	1905	
			MHz	MHz	MHz		MHz	MHz	MHz	
2 / 10M	1	0	23.86	23.62	23.70	0	22.62	22.47	22.52	1
	1	24	23.72	23.65	23.64	0	22.54	22.35	22.42	1
	1	49	23.73	23.70	23.62	0	22.45	22.50	22.42	1
	25	0	22.89	22.56	22.77	1	21.53	21.52	21.59	2
	25	12	22.72	22.50	22.56	1	21.51	21.47	21.44	2
	25	25	22.59	22.53	22.62	1	21.44	21.32	21.51	2
	50	0	22.84	22.62	22.64	1	21.48	21.36	21.51	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			18675	18900	19125		18675	18900	19125	
			1857.5	1880	1902.5		1857.5	1880	1902.5	
			MHz	MHz	MHz		MHz	MHz	MHz	
2 / 15M	1	0	23.93	23.76	23.78	0	22.64	22.50	22.57	1
	1	37	23.92	23.67	23.82	0	22.61	22.44	22.63	1
	1	74	23.81	23.64	23.71	0	22.66	22.44	22.61	1
	36	0	22.98	22.68	22.84	1	21.70	21.48	21.67	2
	36	19	22.77	22.61	22.76	1	21.66	21.40	21.54	2
	36	39	22.81	22.55	22.68	1	21.68	21.44	21.60	2
	75	0	22.86	22.65	22.78	1	21.67	21.51	21.61	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			18700	18900	19100		18700	18900	19100	
			1860	1880	1900		1860	1880	1900	
			MHz	MHz	MHz		MHz	MHz	MHz	
2 / 20M	1	0	23.97	23.77	23.84	0	22.73	22.58	22.64	1
	1	50	23.92	23.71	23.82	0	22.66	22.50	22.63	1
	1	99	23.91	23.70	23.81	0	22.68	22.53	22.61	1
	50	0	22.99	22.78	22.89	1	21.75	21.58	21.73	2
	50	25	22.86	22.65	22.76	1	21.66	21.50	21.56	2
	50	50	22.83	22.62	22.73	1	21.69	21.47	21.61	2
	100	0	22.91	22.70	22.81	1	21.67	21.55	21.64	2

## EIRP POWER

Band	WCDMA B2		
Channel	9262	9400	9538
Frequency (MHz)	1852.4	1880	1907.6
RMC 12.2K	23.60	23.51	23.68
Gain (dBi)	3.44	3.44	3.44
Max EIRP Power (dBm)	27.04	26.95	27.12

**LTE Band 2**

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			18607	18900	19193		18607	18900	19193	
			1850.7 MHz	1880 MHz	1909.3 MHz		1850.7 MHz	1880 MHz	1909.3 MHz	
2 / 1.4M	1	0	23.92	23.59	23.60	0	22.68	22.54	22.50	1
Gain (dBi)			3.44	3.44	3.44	0	3.44	3.44	3.44	
Max EIRP Power (dBm)			27.36	27.03	27.04	0	26.12	25.98	25.94	

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			18615	18900	19185		18615	18900	19185	
			1851.5 MHz	1880 MHz	1908.5 MHz		1851.5 MHz	1880 MHz	1908.5 MHz	
2 / 3M	1	0	23.81	23.64	23.72	0	22.67	22.49	22.44	1
Gain (dBi)			3.44	3.44	3.44	0	3.44	3.44	3.44	
Max EIRP Power (dBm)			27.25	27.08	27.16	0	26.11	25.93	25.88	

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			18625	18900	19175		18625	18900	19175	
			1852.5 MHz	1880 MHz	1907.5 MHz		1852.5 MHz	1880 MHz	1907.5 MHz	
2 / 5M	1	0	23.84	23.61	23.65	0	22.59	22.48	22.58	1
Gain (dBi)			3.44	3.44	3.44	0	3.44	3.44	3.44	
Max EIRP Power (dBm)			27.28	27.05	27.09	0	26.03	25.92	26.02	

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			18650	18900	19150		20000	20175	20350	
			1855 MHz	1880 MHz	1905 MHz		1715 MHz	1732.5 MHz	1750 MHz	
2 / 10M	1	0	23.86	23.62	23.70	0	22.62	22.47	22.52	1
Gain (dBi)			3.44	3.44	3.44	0	3.44	3.44	3.44	
Max EIRP Power (dBm)			27.30	27.06	27.14	0	26.06	25.91	25.96	

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			18675	18900	19125		18675	18900	19125	
			1857.5	1880	1902.5		1857.5	1880	1902.5	
			MHz	MHz	MHz		MHz	MHz	MHz	
2 / 15M	1	0	23.93	23.76	23.78	0	22.64	22.50	22.57	1
Gain (dBi)			3.44	3.44	3.44		3.44	3.44	3.44	
Max EIRP Power (dBm)			27.37	27.20	27.22		26.08	25.94	26.01	

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH	Mid CH	High CH		Low CH	Mid CH	High CH	
			18700	18900	19100		18700	18900	19100	
			1860	1880	1900		1860	1880	1900	
			MHz	MHz	MHz		MHz	MHz	MHz	
2 / 20M	1	0	23.97	23.77	23.84	0	22.73	22.58	22.64	1
Gain (dBi)			3.44	3.44	3.44		3.44	3.44	3.44	
Max EIRP Power (dBm)			27.41	27.21	27.28		26.17	26.02	26.08	

## 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.

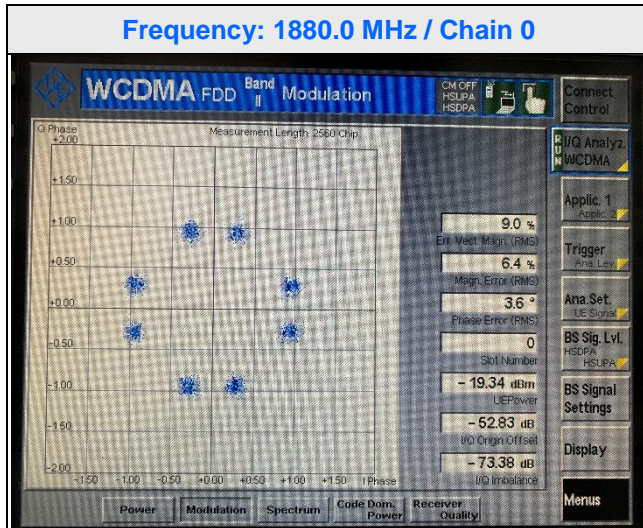
### 4.2.3 Test Setup



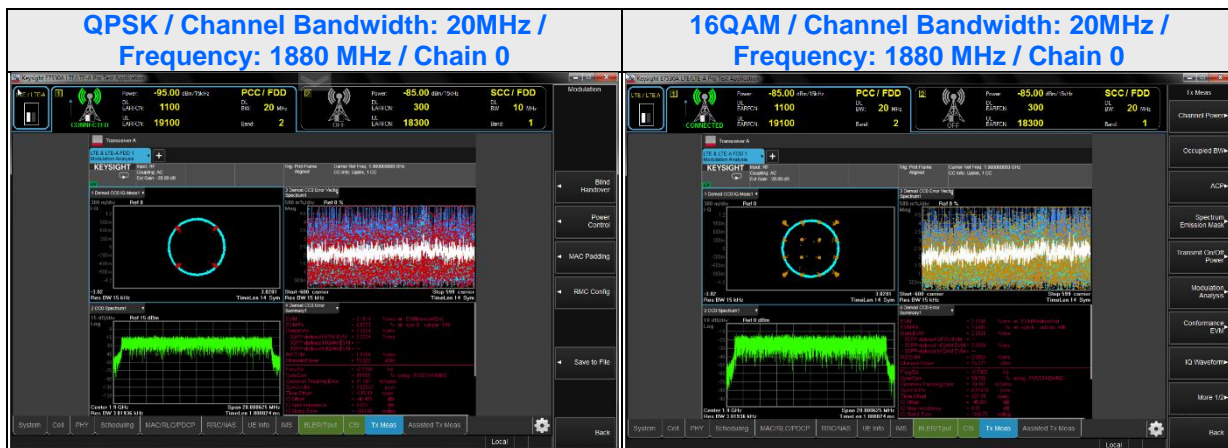


## 4.2.4 Test Results

### WCDMA B2



### LTE Band 2



### 4.3 Frequency Stability Measurement

#### 4.3.1 Limits of Frequency Stability Measurement

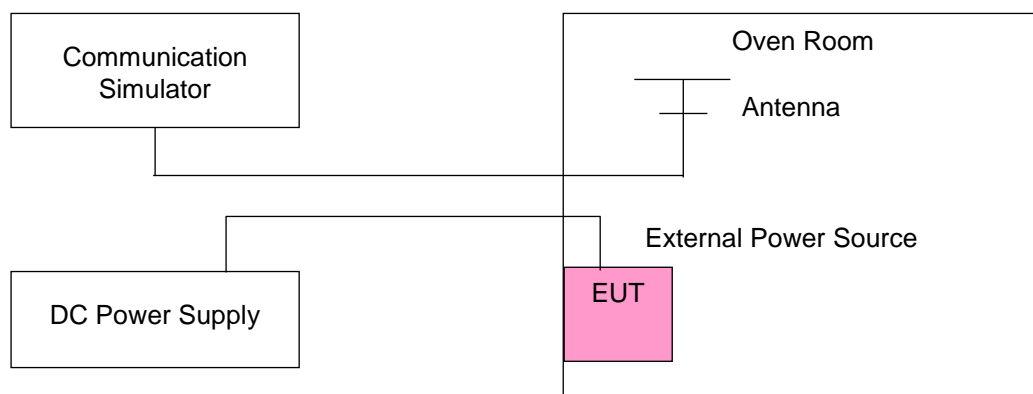
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

#### 4.3.2 Test Procedure

- 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.
- 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.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the  $\pm 0.5$  °C 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

#### WCDMA

##### Frequency Error vs. Voltage

Voltage (Volts)	Frequency Error (MHz)		Limit (MHz)	
	WCDMA B2		Low Edge	High Edge
	Low	High		
4.37	1850.34	1909.68	1850	1910
3.23	1850.42	1909.71	1850	1910

##### Frequency Error vs. Temperature.

TEMP. (°C)	Frequency Error (MHz)		Limit (MHz)	
	WCDMA B2		Low Edge	High Edge
	Low	High		
50	1850.30	1909.69	1850	1910
40	1850.26	1909.69	1850	1910
30	1850.25	1909.70	1850	1910
20	1850.33	1909.69	1850	1910
10	1850.33	1909.69	1850	1910
0	1850.38	1909.70	1850	1910
-10	1850.29	1909.70	1850	1910
-20	1850.24	1909.69	1850	1910
-30	1850.25	1909.69	1850	1910

## LTE Band 2

### Frequency Error vs. Voltage

Voltage (Volts)	Frequency Error (MHz)												Limit (MHz)	
	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz			
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low Edge	High Edge
4..37	1850.11	1909.82	1850.08	1909.94	1852.49	1907.58	1850.54	1909.48	1850.79	1909.27	1851.11	1908.88	1850	1910
3.23	1850.06	1909.92	1850.09	1909.88	1852.46	1907.49	1850.56	1909.50	1850.71	1909.31	1850.94	1909.04	1850	1910

### Frequency Error vs. Temperature

Temp. (°C)	Frequency Error (MHz)												Limit (MHz)	
	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz			
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low Edge	High Edge
50	1850.16	1909.85	1850.20	1909.76	1852.52	1907.51	1850.49	1909.57	1850.84	1909.24	1851.10	1909.00	1850	1910
40	1850.21	1909.86	1850.19	1909.79	1852.56	1907.50	1850.42	1909.54	1850.79	1909.24	1850.99	1908.88	1850	1910
30	1850.20	1909.75	1850.24	1909.94	1852.49	1907.42	1850.44	1909.43	1850.69	1909.23	1851.12	1909.01	1850	1910
20	1850.07	1909.82	1850.10	1909.79	1852.52	1907.47	1850.45	1909.39	1850.77	1909.15	1851.04	1908.99	1850	1910
10	1850.16	1909.84	1850.15	1909.85	1852.50	1907.50	1850.52	1909.48	1850.78	1909.22	1851.04	1908.96	1850	1910
0	1850.11	1909.91	1850.14	1909.89	1852.43	1907.45	1850.57	1909.40	1850.87	1909.15	1850.96	1909.01	1850	1910
-10	1850.23	1909.79	1850.13	1909.84	1852.53	1907.47	1850.45	1909.40	1850.85	1909.30	1850.95	1908.95	1850	1910
-20	1850.21	1909.75	1850.05	1909.79	1852.50	1907.53	1850.46	1909.49	1850.86	1909.31	1850.97	1909.00	1850	1910
-30	1850.08	1909.92	1850.10	1909.84	1852.43	1907.53	1850.57	1909.38	1850.87	1909.15	1851.00	1908.94	1850	1910

## 4.4 Occupied Bandwidth Measurement

### 4.4.1 Test Procedure

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. The bandwidth of the fundamental frequency was measured by spectrum analyzer with  $RBW \geq 1\% \times OBW$  and  $VBW \geq 3 \times VBW$ .

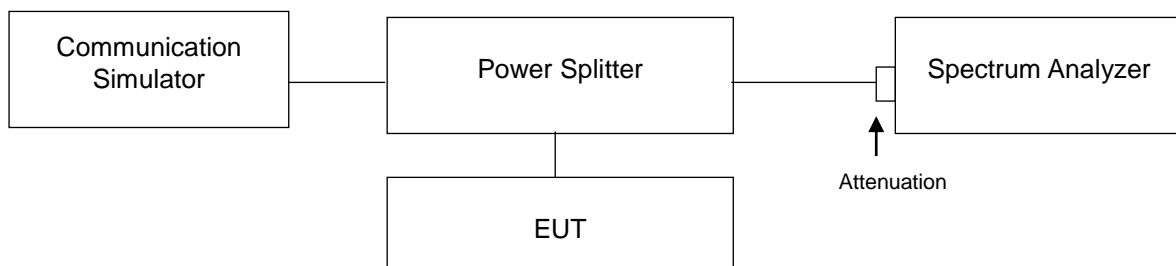
#### Occupied Bandwidth Measurement:

Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

#### 26 dB Bandwidth Measurement:

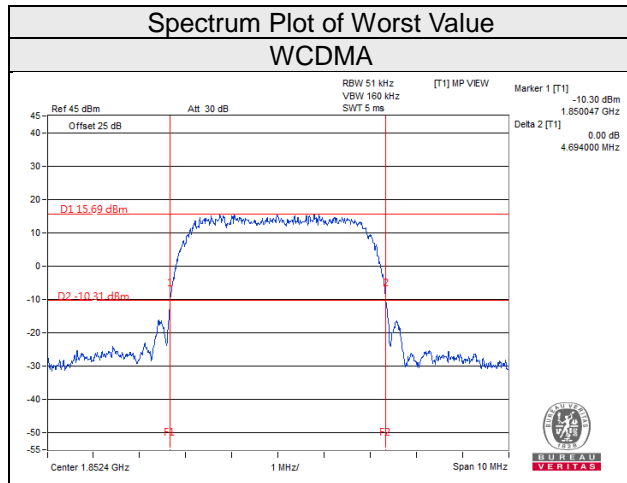
The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26dB below the transmitter power.

### 4.4.2 Test Setup



#### 4.4.3 Test Result (-26dB Bandwidth)

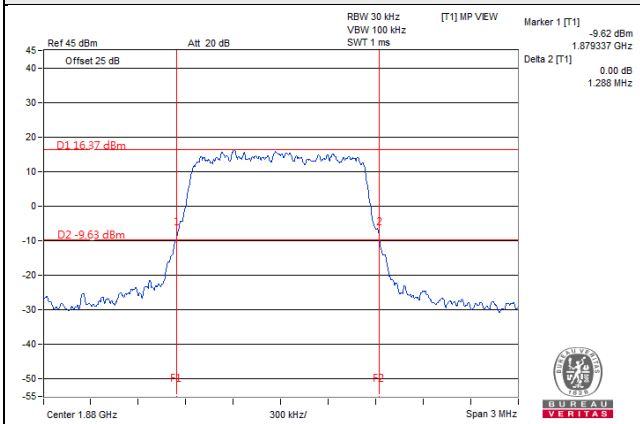
Channel	Freq. (MHz)	-26dB Bandwidth (MHz)
		WCDMA B2
9262	1852.4	4.69
9400	1880.0	4.68
9538	1907.6	4.67



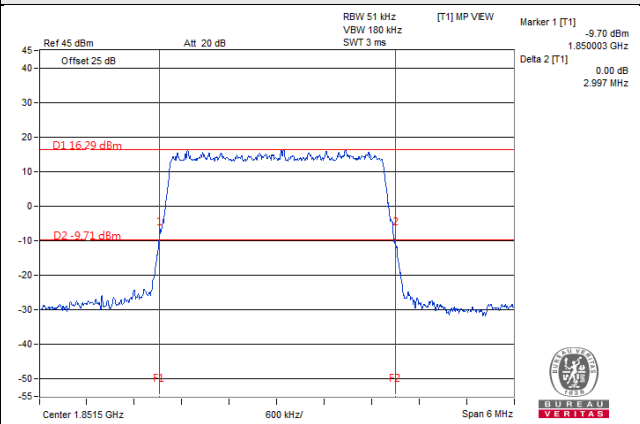
LTE Band 2							
Channel Bandwidth 1.4MHz				Channel Bandwidth 3MHz			
Channel	Frequency (MHz)	-26dB Bandwidth (MHz)		Channel	Frequency (MHz)	-26dB Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
18607	1850.7	1.28	1.29	18615	1851.5	2.99	2.96
18900	1880	1.30	1.28	18900	1880	2.97	2.96
19193	1909.3	1.30	1.31	19185	1908.5	2.97	2.95
Channel Bandwidth 5MHz				Channel Bandwidth 10MHz			
Channel	Frequency (MHz)	-26dB Bandwidth (MHz)		Channel	Frequency (MHz)	-26dB Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
18625	1852.5	4.97	5.00	18650	1855	9.90	9.96
18900	1880	5.01	5.02	18900	1880	9.88	9.93
19175	1907.5	4.95	4.94	19150	1905	9.89	9.92
Channel Bandwidth 15MHz				Channel Bandwidth 20MHz			
Channel	Frequency (MHz)	-26dB Bandwidth (MHz)		Channel	Frequency (MHz)	-26dB Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
18675	1857.5	14.74	14.72	18700	1860	19.43	19.45
18900	1880	14.80	14.78	18900	1880	19.54	19.66
19125	1902.5	14.77	14.82	19100	1900	19.39	19.57

### Spectrum Plot of Worst Value

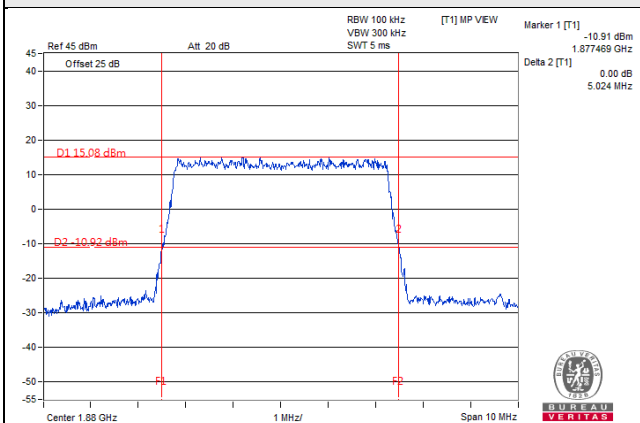
#### 1.4MHz / 16QAM



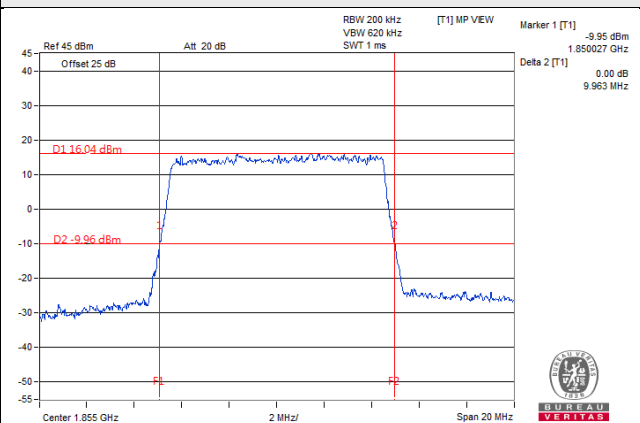
#### 3MHz / QPSK



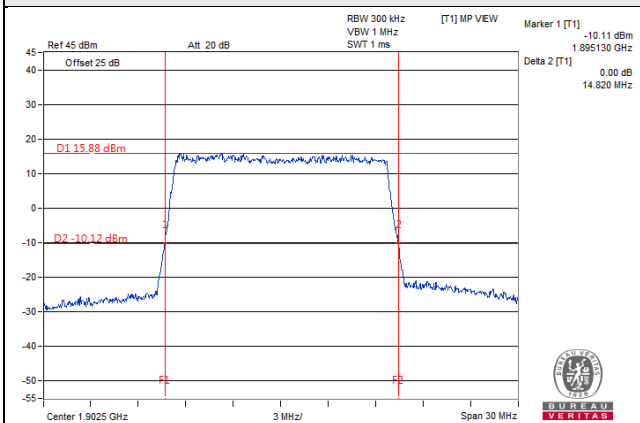
#### 5MHz / 16QAM



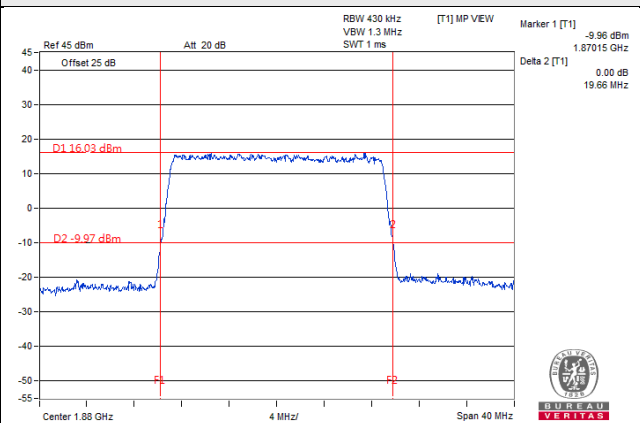
#### 10MHz / 16QAM



#### 15MHz / 16QAM



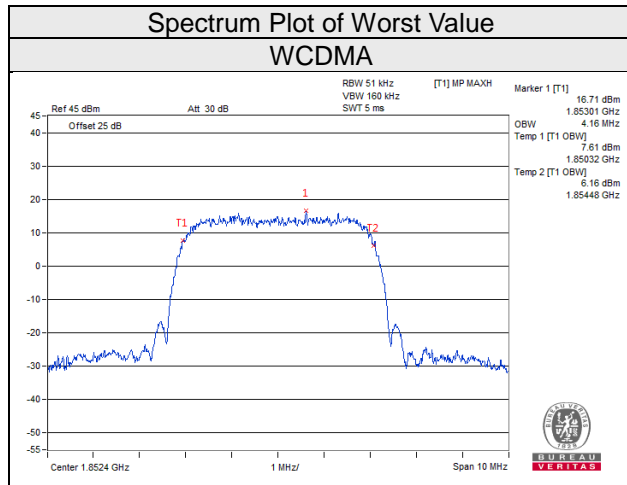
#### 20MHz / 16QAM





#### 4.4.4 Test Result (Occupied Bandwidth)

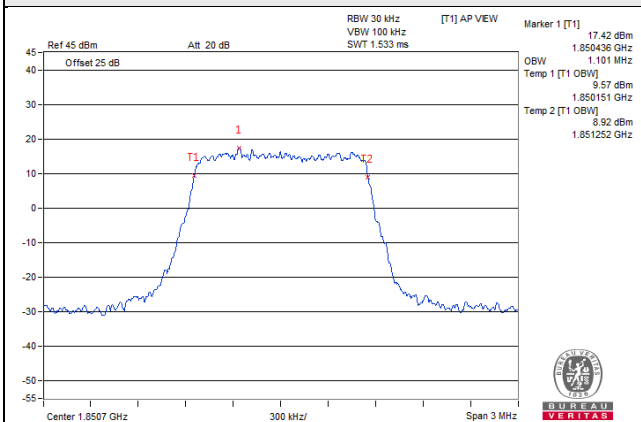
Channel	Freq. (MHz)	99% Occupied Bandwidth (MHz)
		WCDMA B2
9262	1852.4	4.16
9400	1880.0	4.16
9538	1907.6	4.16



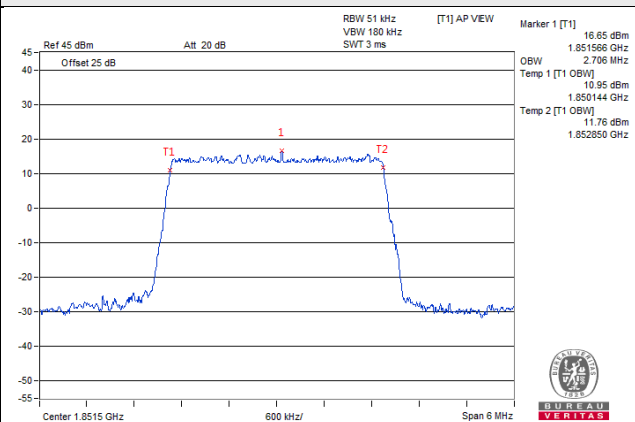
LTE Band 2							
Channel Bandwidth 1.4MHz				Channel Bandwidth 3MHz			
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
18607	1850.7	1.09	1.10	18615	1851.5	2.70	2.68
18900	1880	1.09	1.10	18900	1880	2.70	2.68
19193	1909.3	1.08	1.10	19185	1907.5	2.70	2.68
Channel Bandwidth 5MHz				Channel Bandwidth 10MHz			
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
18625	1852.5	4.51	4.52	18650	1855	9.00	8.98
18900	1880	4.51	4.50	18900	1880	9.00	9.00
19175	1907.5	4.50	4.51	19150	1905	9.00	8.98
Channel Bandwidth 15MHz				Channel Bandwidth 20MHz			
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
18675	1857.5	13.47	13.47	18700	1860	17.96	17.88
18900	1880	13.53	13.50	18900	1880	18.08	17.96
19125	1902.5	13.53	13.50	19100	1900	18.00	17.92

### Spectrum Plot of Worst Value

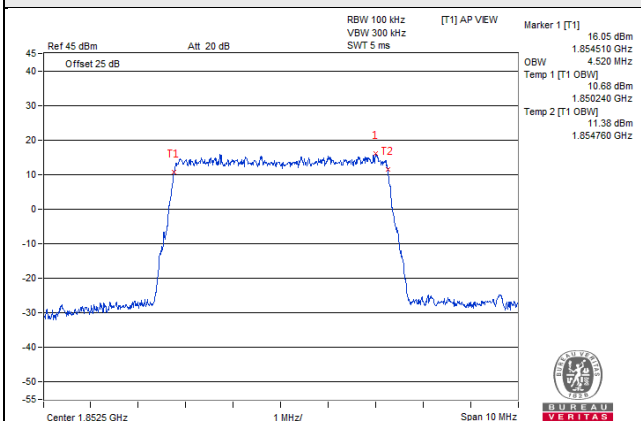
#### 1.4MHz / 16QAM



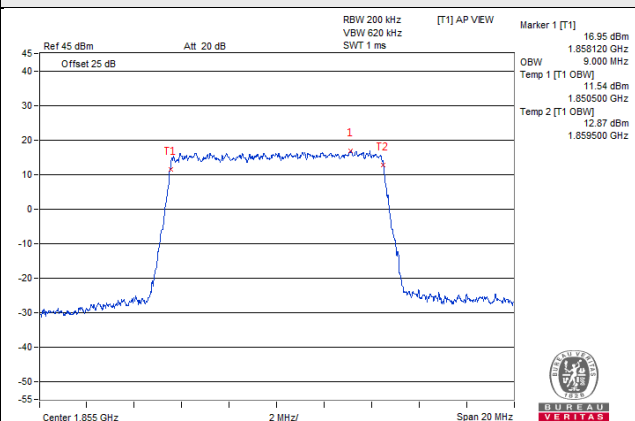
#### 3MHz / QPSK



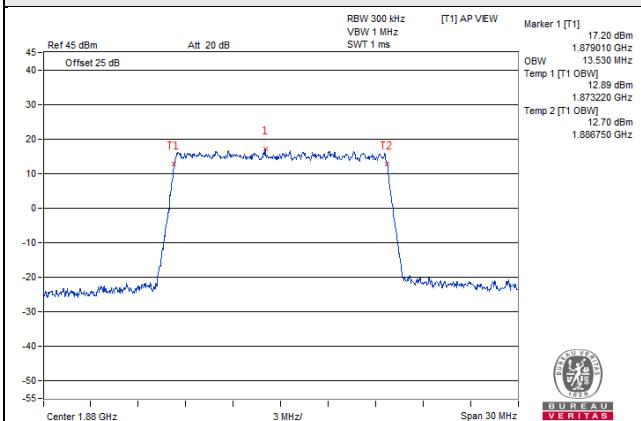
#### 5MHz / 16QAM



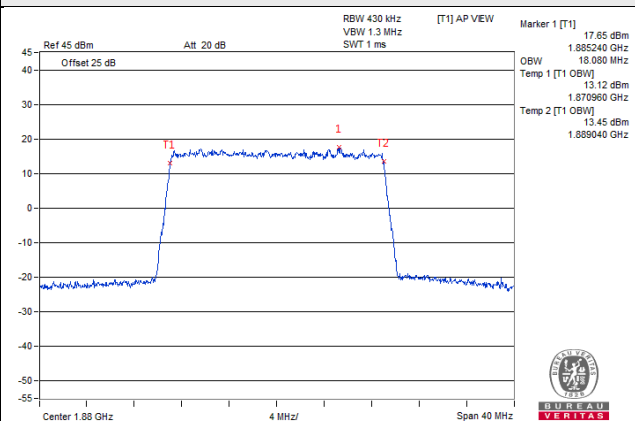
#### 10MHz / QPSK



#### 15MHz / QPSK



#### 20MHz / QPSK

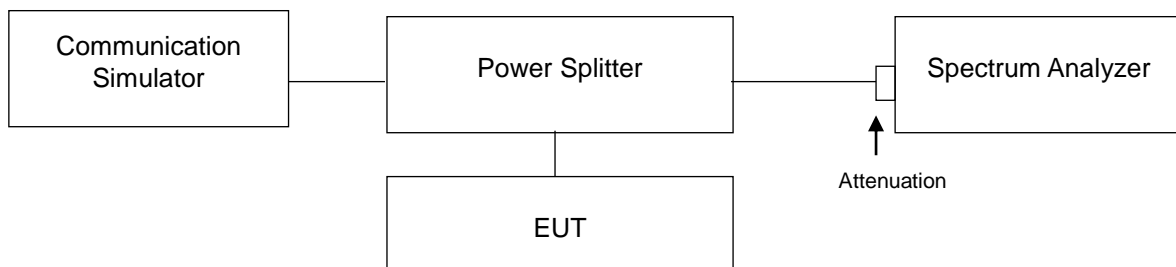


## 4.5 Band Edge Measurement

### 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.

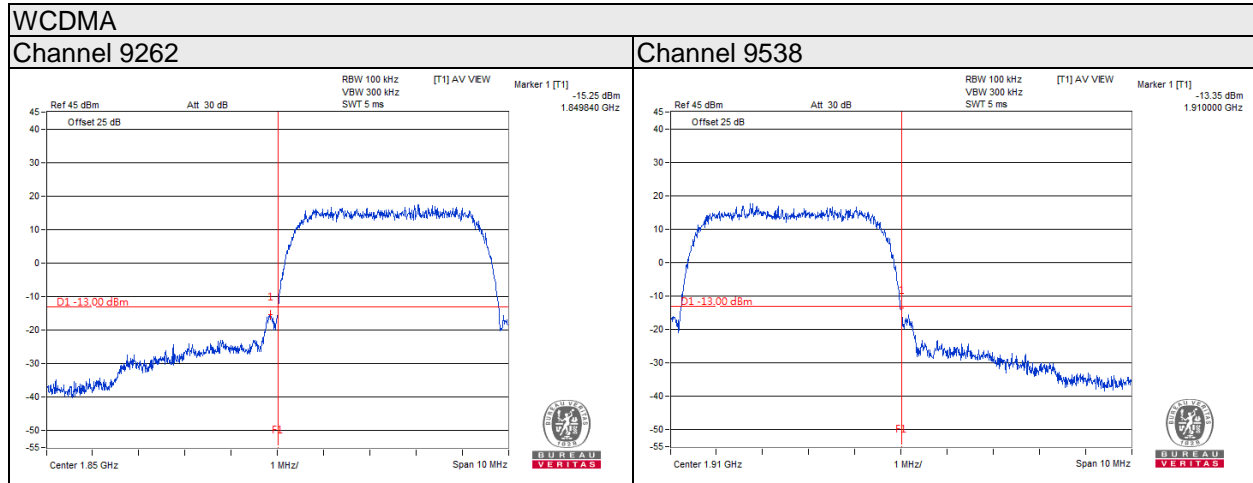
### 4.5.2 Test Setup



### 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 RB of the spectrum is  $>1\%$  emission bandwidth and VB of the spectrum is  $\geq 3 \cdot RB$ .
- c. Record the max trace plot into the test report.

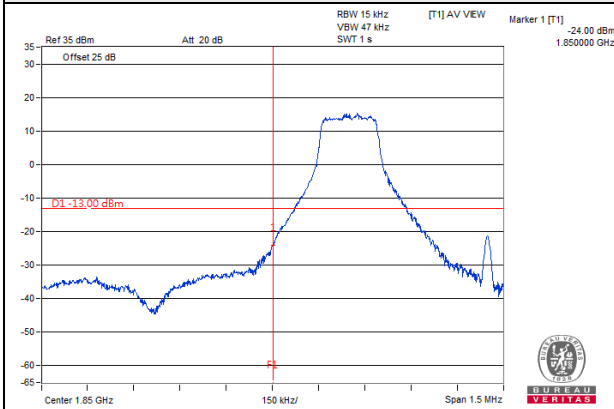
#### 4.5.4 Test Results



LTE Band 2 Channel Band width: 1.4MHz

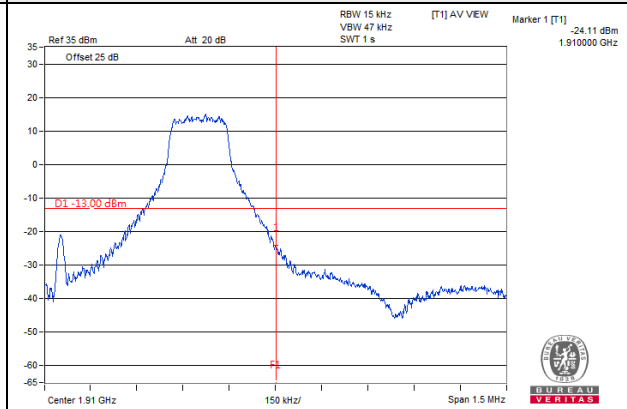
Channel 18607

1 RB

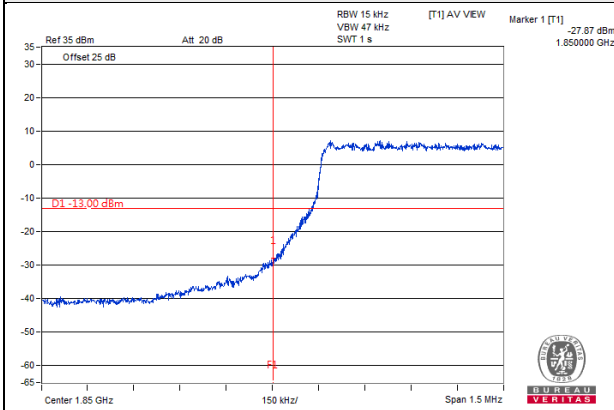


Channel 19193

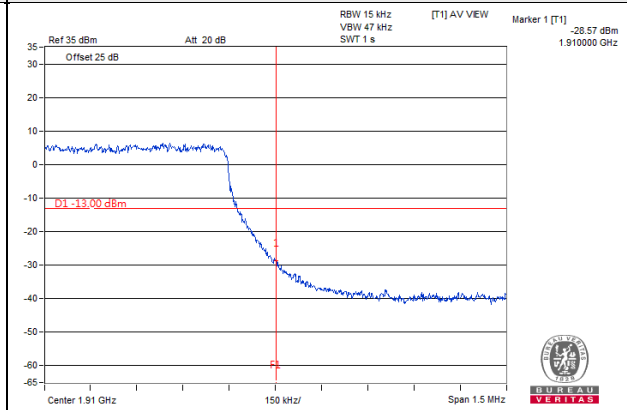
1 RB



6 RB



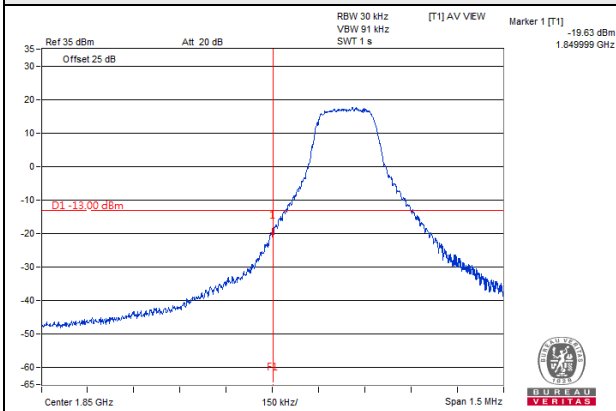
6 RB



**LTE Band 2 Channel Band width: 3MHz**

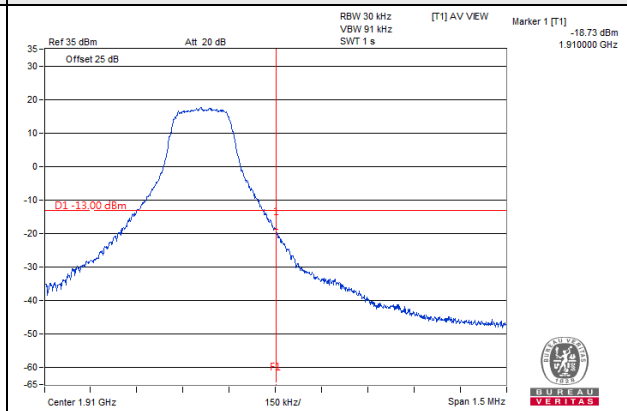
**Channel 18615**

**1 RB**

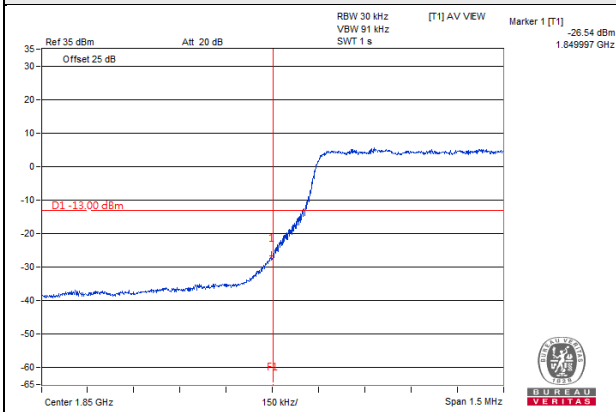


**Channel 19185**

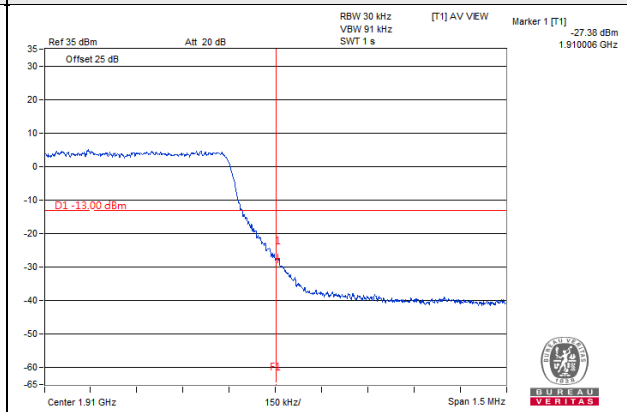
**1 RB**



**15 RB**



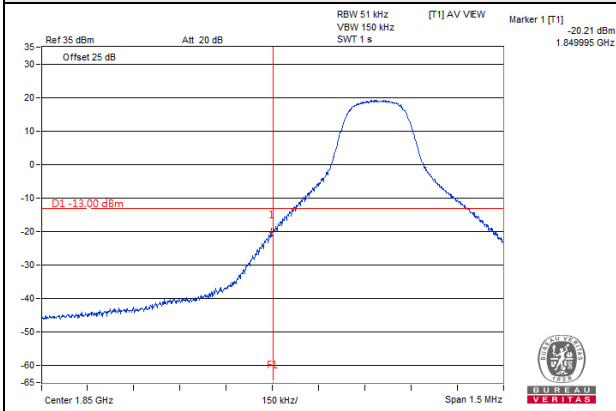
**15 RB**



LTE Band 2 Channel Band width: 5MHz

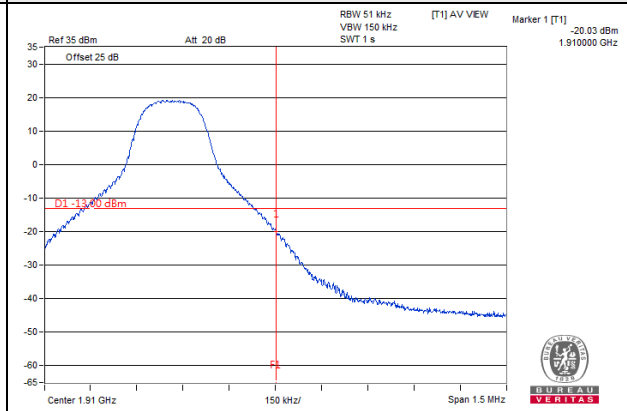
Channel 18625

1 RB

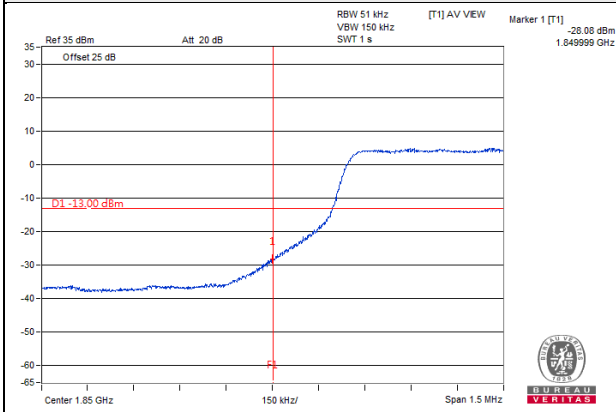


Channel 19175

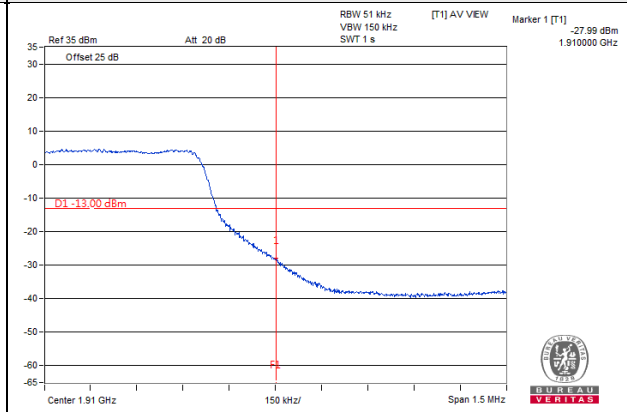
1 RB



25 RB



25 RB

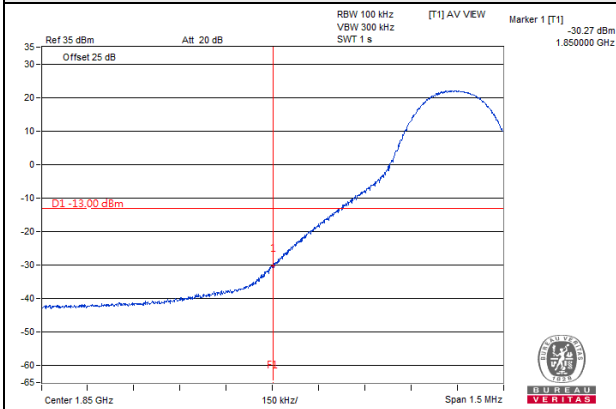




LTE Band 2 Channel Band width: 10MHz

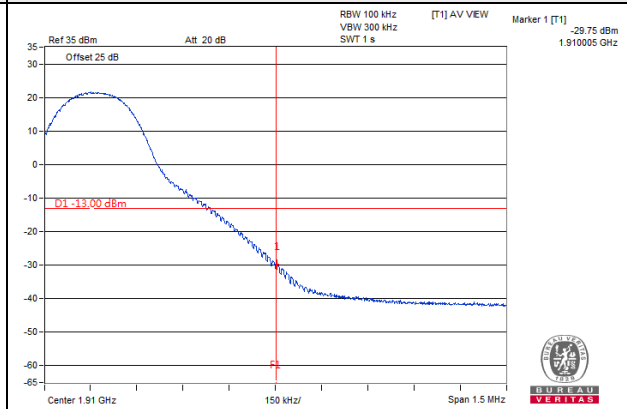
Channel 18650

1 RB

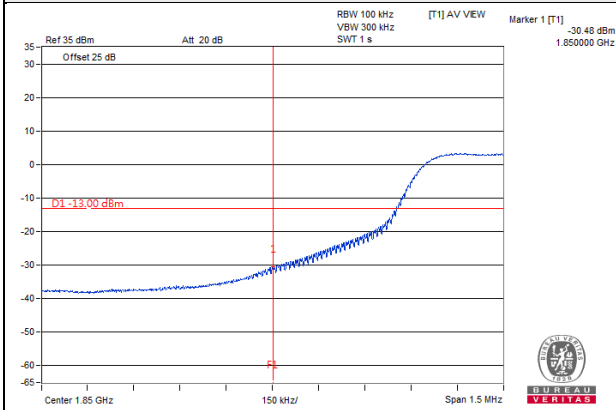


Channel 19150

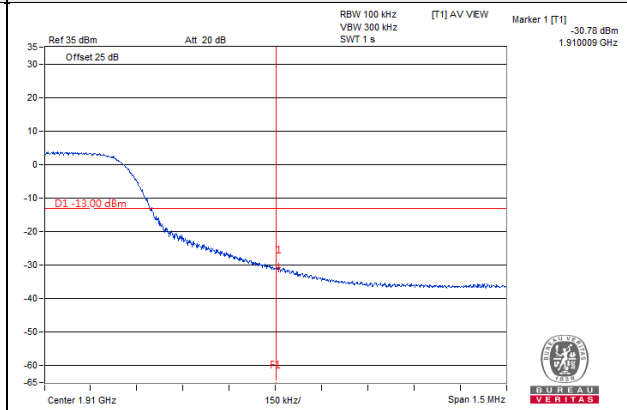
1 RB



50 RB



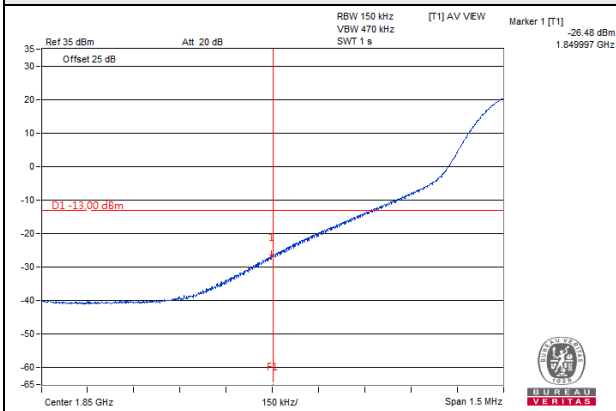
50 RB



LTE Band 2 Channel Band width: 15MHz

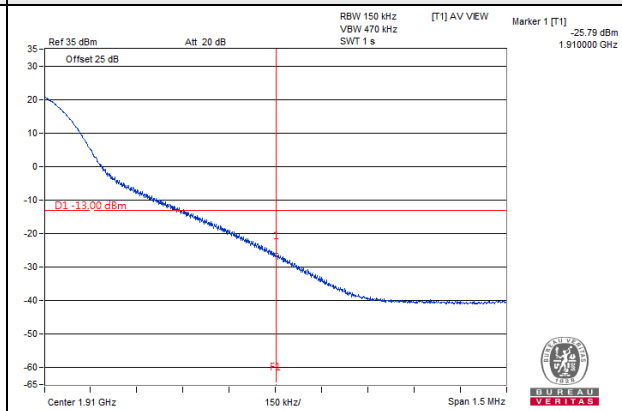
Channel 18675

1 RB

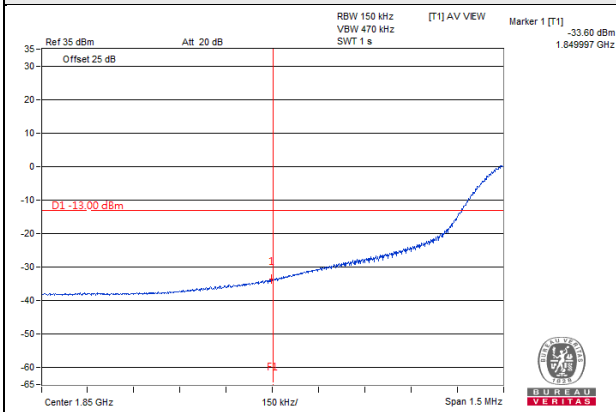


Channel 19125

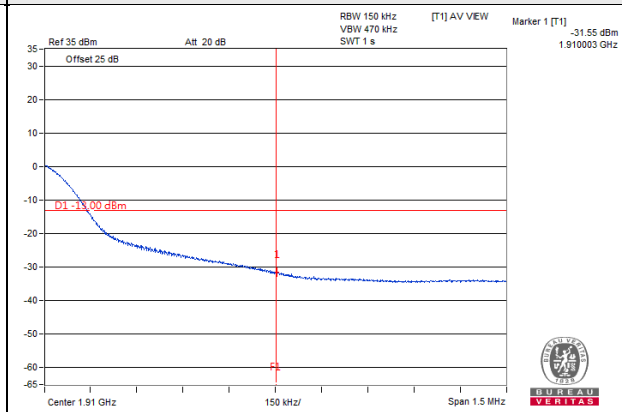
1 RB



75 RB



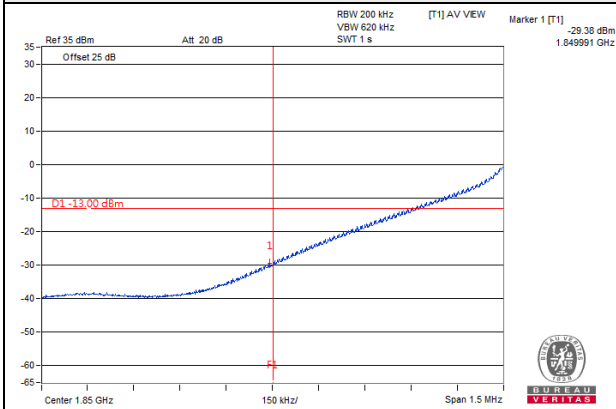
75 RB



LTE Band 2 Channel Band width: 20MHz

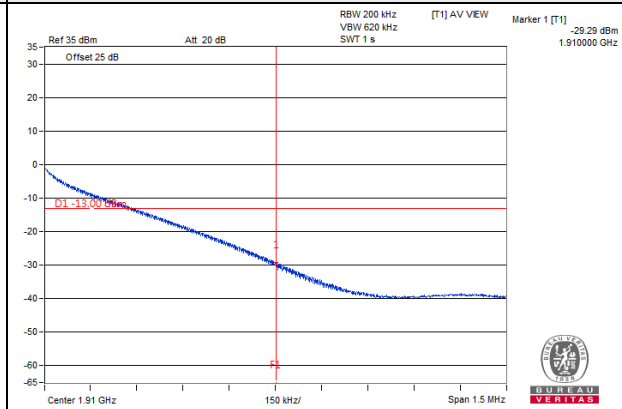
Channel 18700

1 RB

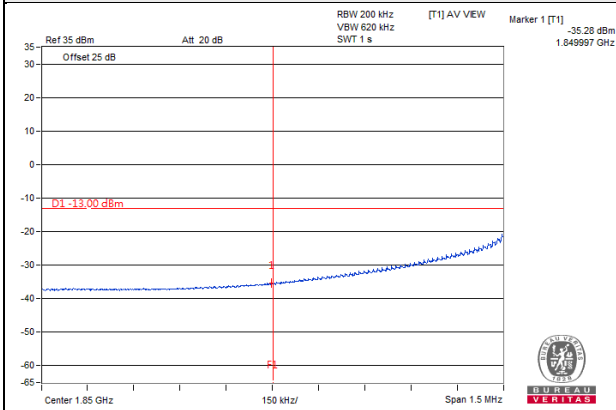


Channel 19100

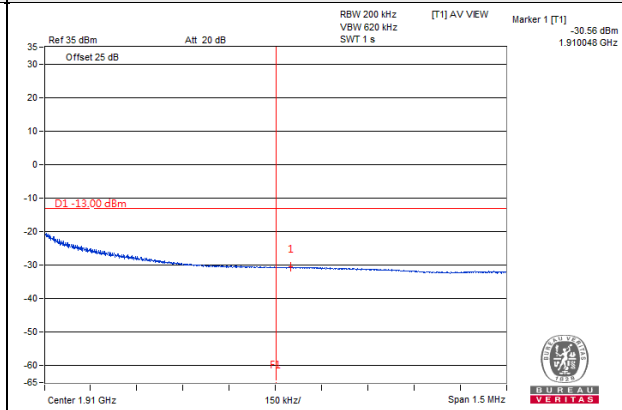
1 RB



100 RB



100 RB

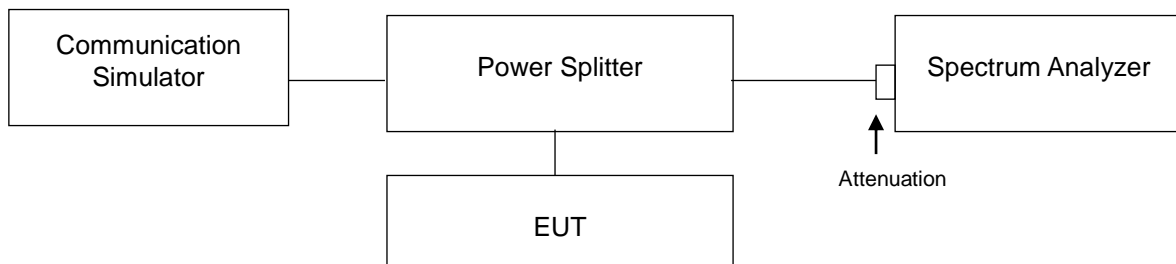


## 4.6 Peak to Average Ratio

### 4.5.1 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

### 4.5.2 Test Setup

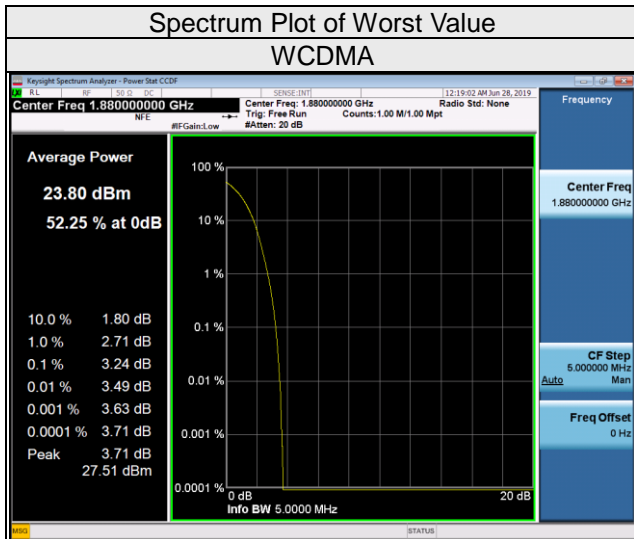


### 4.5.3 Test Procedures

1. Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

#### 4.5.4 Test Results

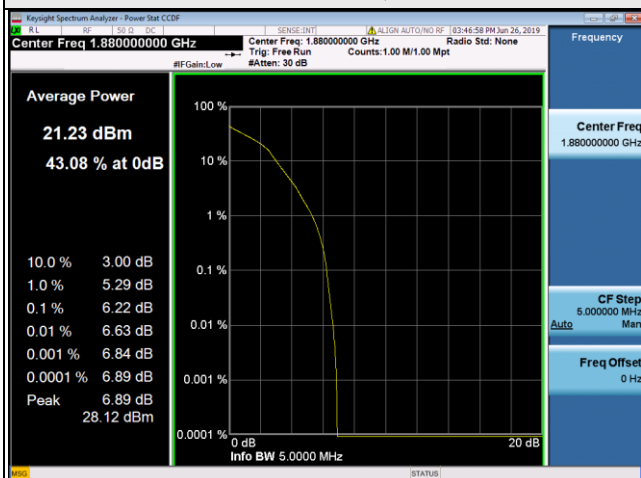
Channel	Freq. (MHz)	Peak to Average Ratio (dB)
		WCDMA
9262	1852.4	3.19
9400	1880	3.24
9538	1907.6	3.18



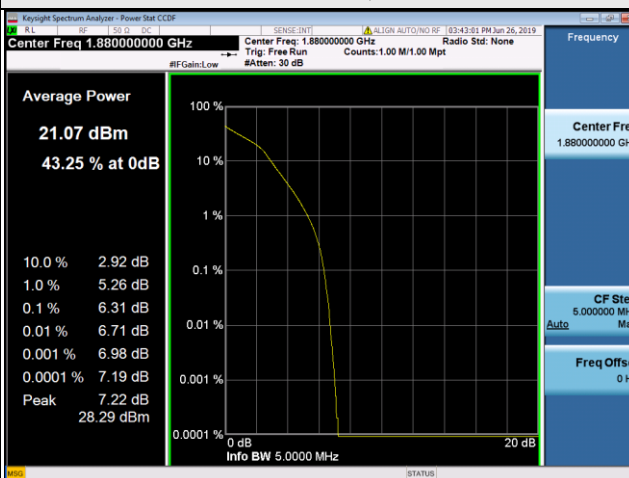
LTE Band 2							
Channel Bandwidth 1.4MHz				Channel Bandwidth 3MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
18607	1850.7	5.15	5.98	18615	1851.5	5.29	6.13
18900	1880	5.45	6.22	18900	1880	5.46	6.31
19193	1909.3	5.16	6.02	19185	1907.5	5.26	6.16
Channel Bandwidth 5MHz				Channel Bandwidth 10MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
18625	1852.5	5.34	6.16	18650	1855	5.29	6.15
18900	1880	5.44	6.26	18900	1880	5.35	6.22
19175	1907.5	5.34	6.18	19150	1905	5.24	6.15
Channel Bandwidth 15MHz				Channel Bandwidth 20MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
18675	1857.5	5.50	6.14	18700	1860	5.21	6.02
18900	1880	5.62	6.23	18900	1880	5.39	6.15
19125	1902.5	5.54	6.17	19100	1900	5.32	6.09

### Spectrum Plot of Worst Value

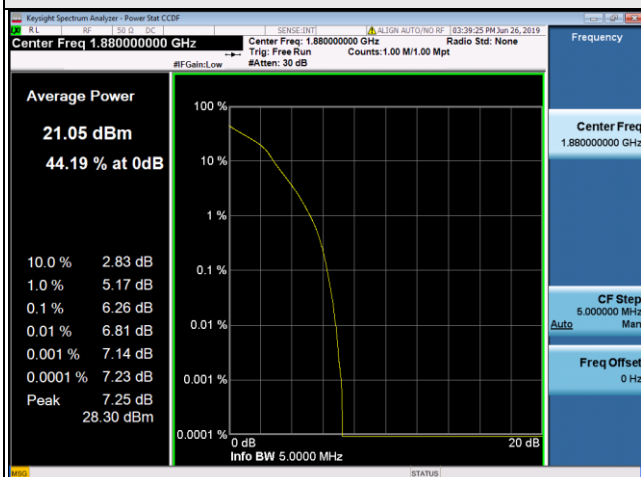
1.4MHz / 16QAM



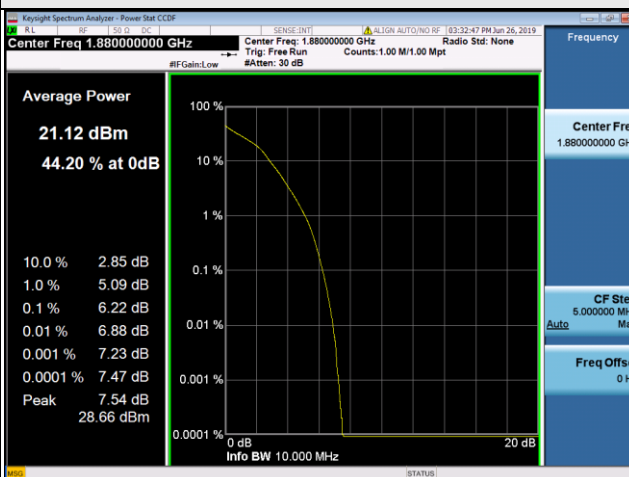
3MHz / 16QAM



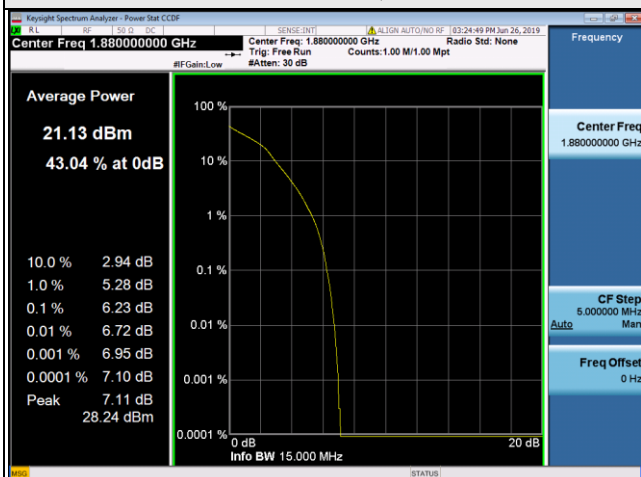
5MHz / 16QAM



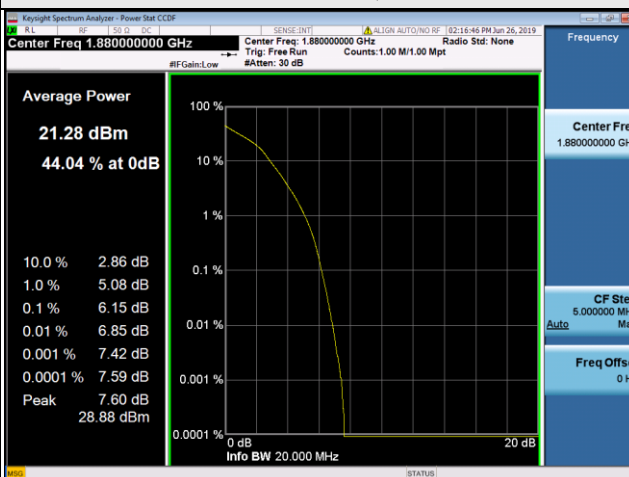
10MHz / 16QAM



15MHz / 16QAM



20MHz / 16QAM

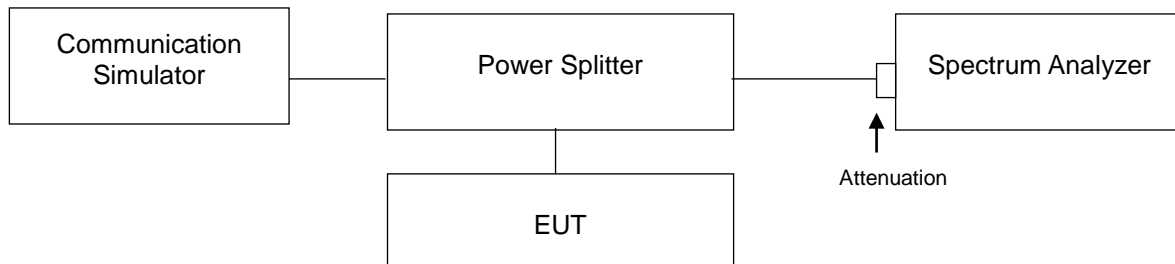


## 4.7 Conducted Spurious Emissions

### 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  $-13\text{dBm}$ .

### 4.7.2 Test Setup

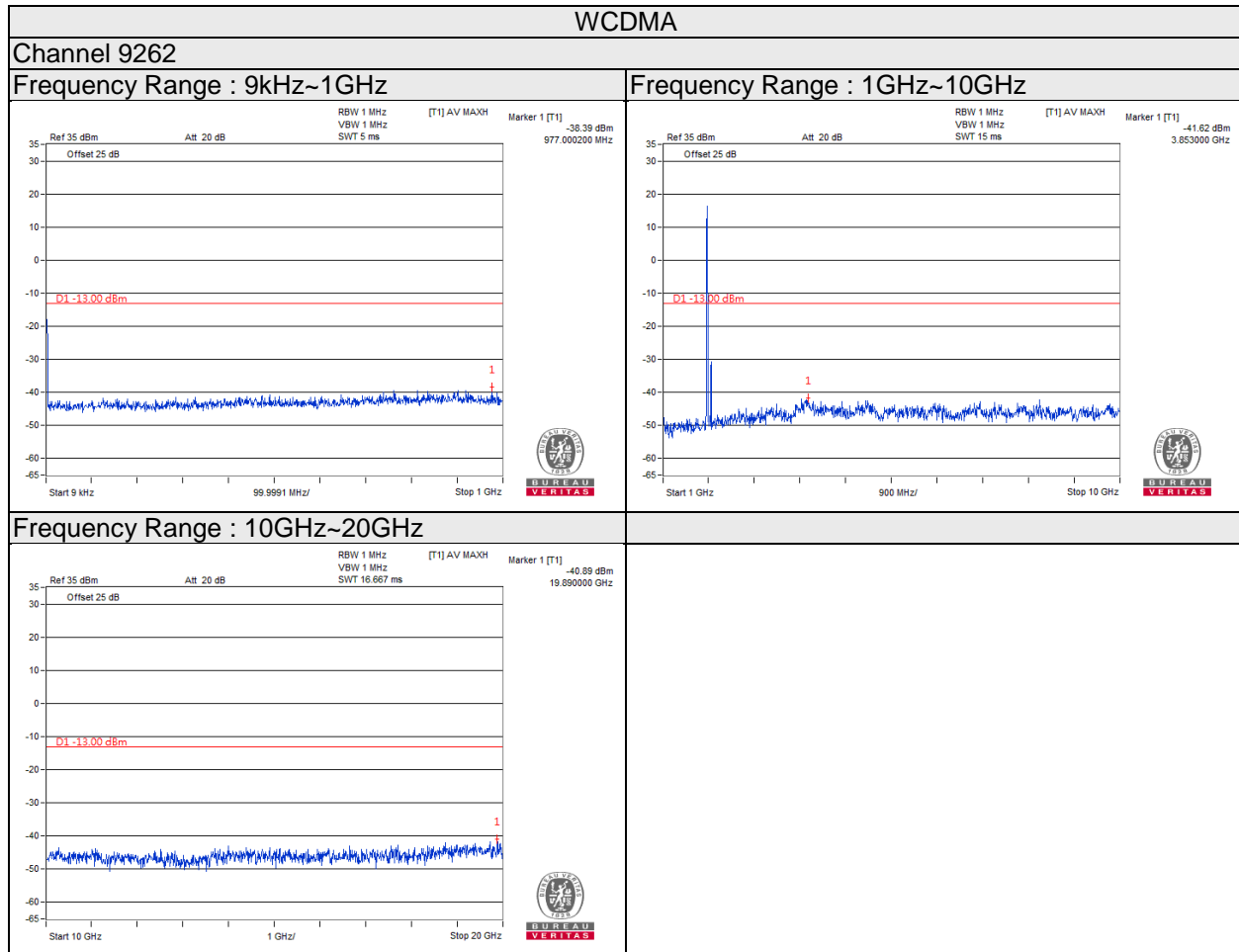


### 4.7.3 Test Procedure

- All measurements were done at middle operational frequency range.
- Measuring frequency range is from 9 kHz to the tenth harmonic of the highest fundamental frequency, it shall be connected to the pad attenuated the carried frequency.  
 RBW=1MHz and VBW=3MHz is used for conducted emission measurement.



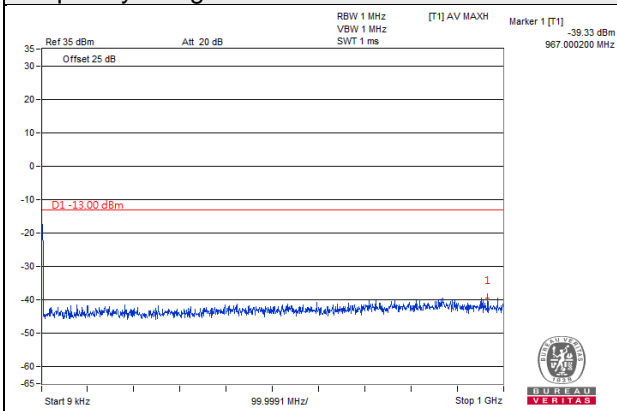
### 4.7.4 Test Results



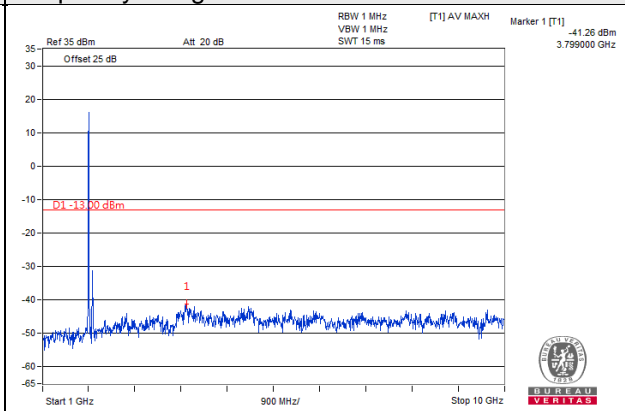
## WCDMA

### Channel 9400

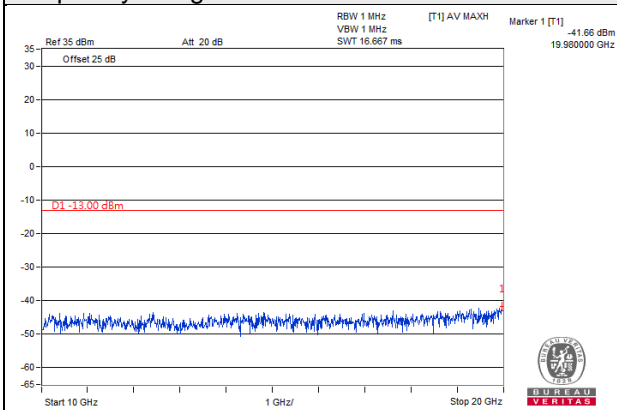
#### Frequency Range : 9kHz~1GHz



#### Frequency Range : 1GHz~10GHz



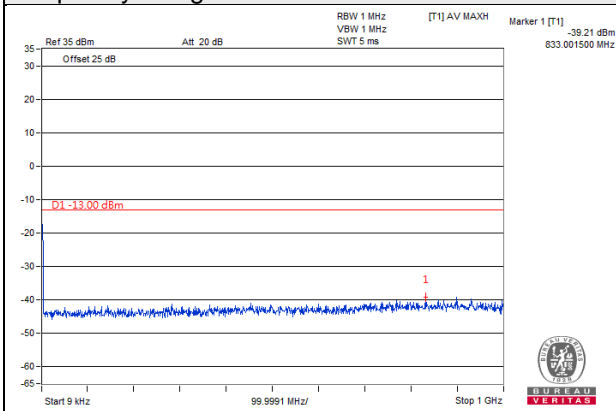
#### Frequency Range : 10GHz~20GHz



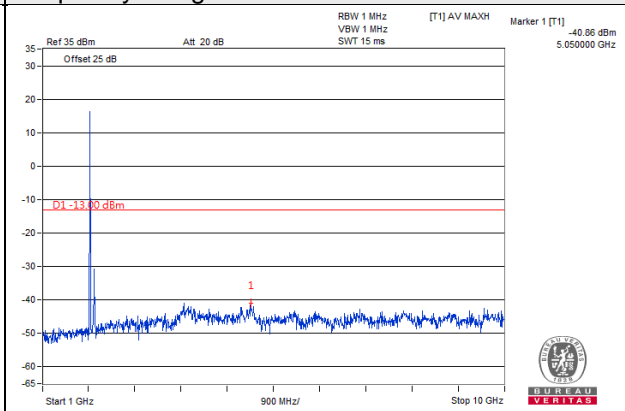
## WCDMA

### Channel 9538

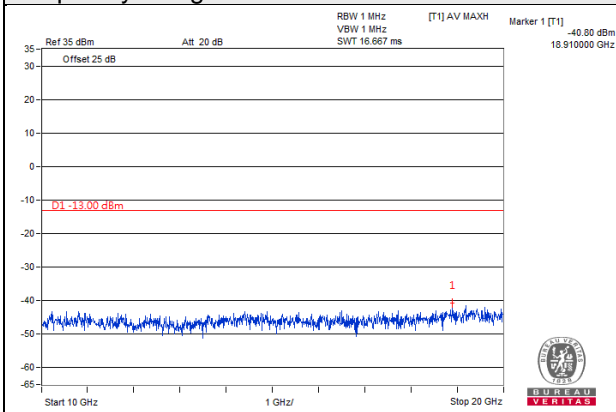
#### Frequency Range : 9kHz~1GHz



#### Frequency Range : 1GHz~10GHz



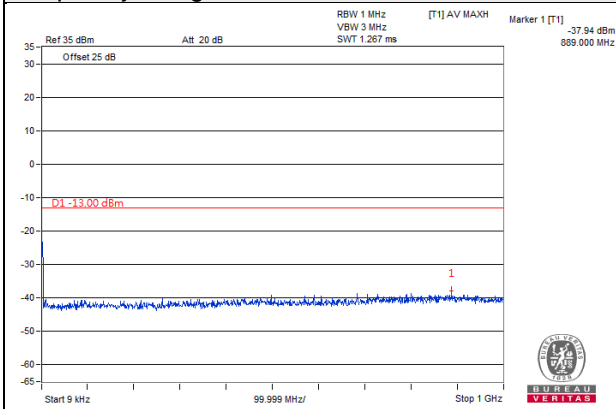
#### Frequency Range : 10GHz~20GHz



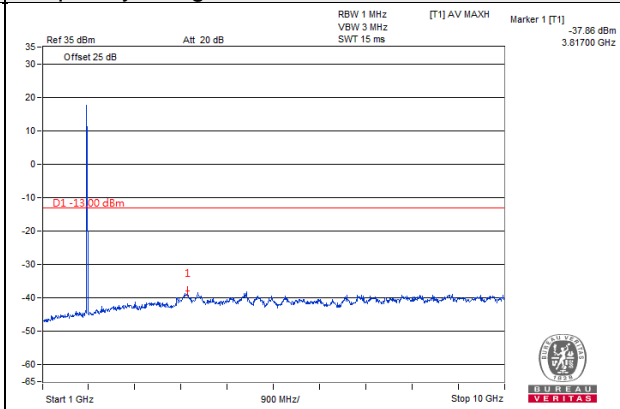
**LTE Band 2 Channel Band width: 1.4MHz**

**Channel 18607**

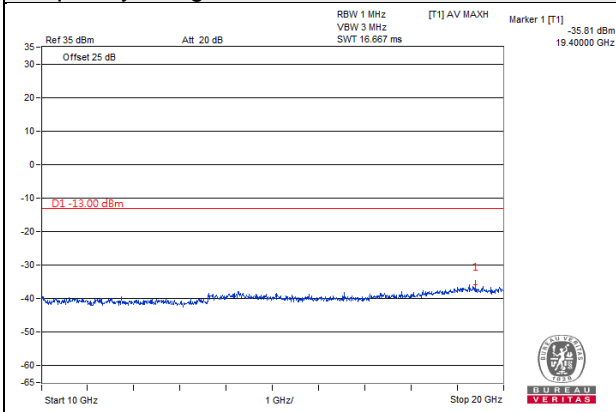
**Frequency Range : 9kHz~1GHz**



**Frequency Range : 1GHz ~10GHz**



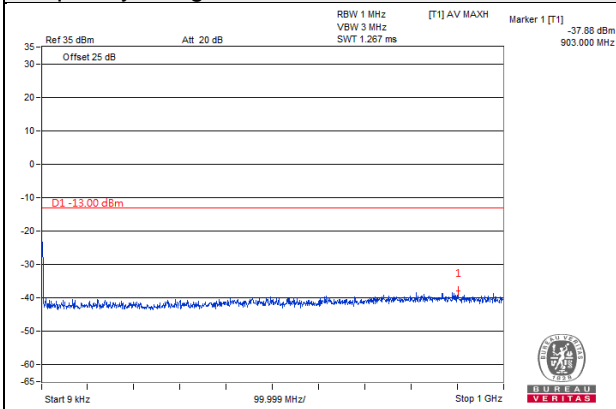
**Frequency Range : 10GHz~20GHz**



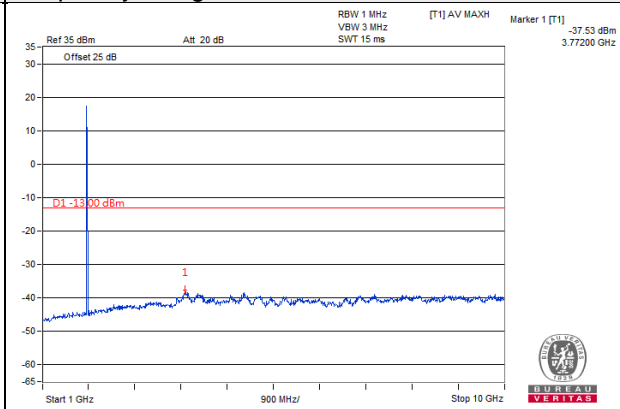
LTE Band 2 Channel Band width: 1.4MHz

Channel 18900

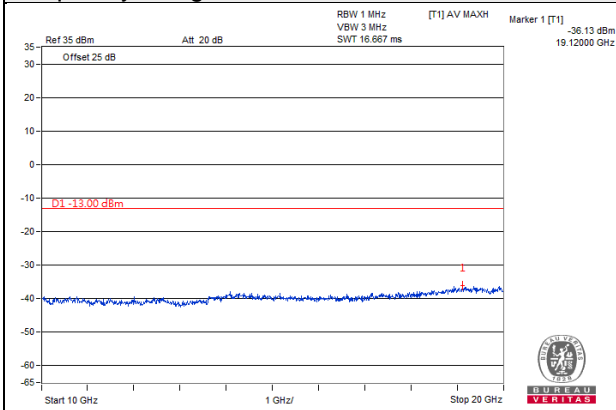
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz ~10GHz



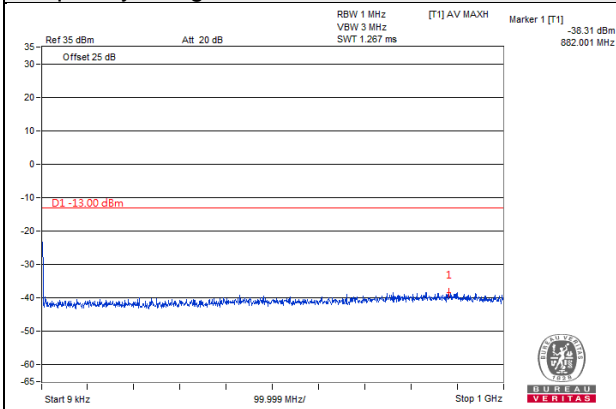
Frequency Range : 10GHz~20GHz



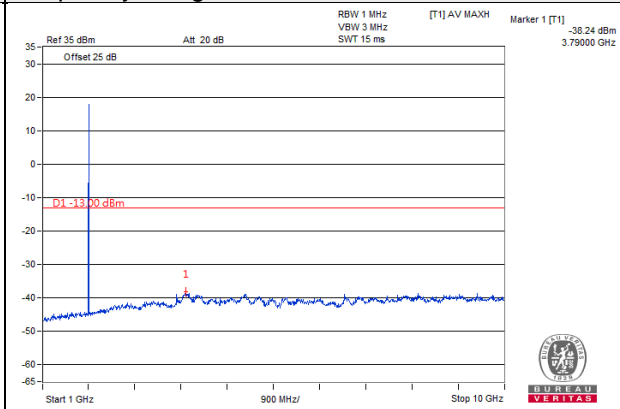
**LTE Band 2 Channel Band width: 1.4MHz**

**Channel 19193**

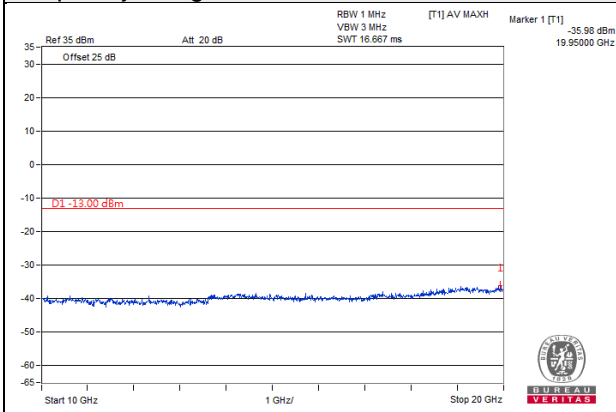
**Frequency Range : 9kHz~1GHz**



**Frequency Range : 1GHz ~10GHz**



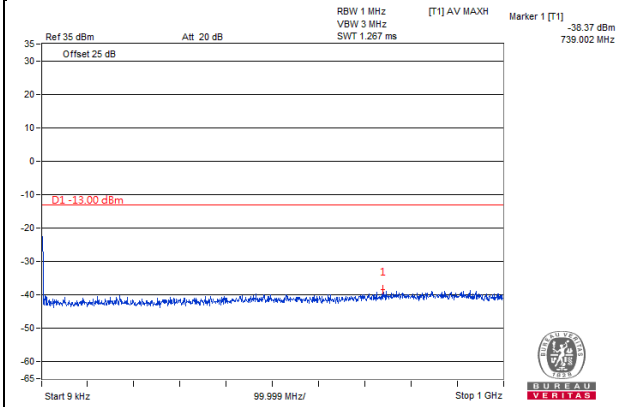
**Frequency Range : 10GHz~20GHz**



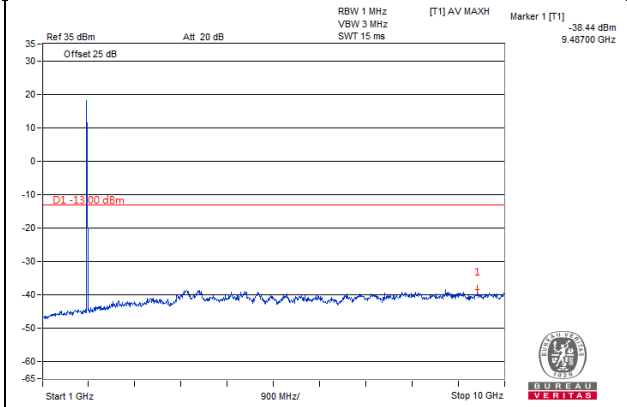
**LTE Band 2 Channel Band width: 3MHz**

**Channel 18615**

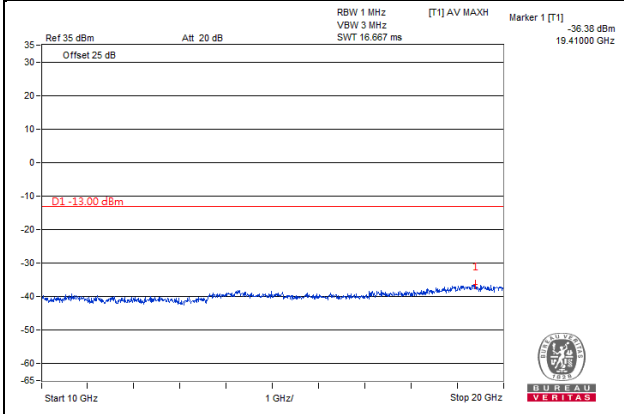
**Frequency Range : 9kHz~1GHz**



**Frequency Range : 1GHz ~10GHz**



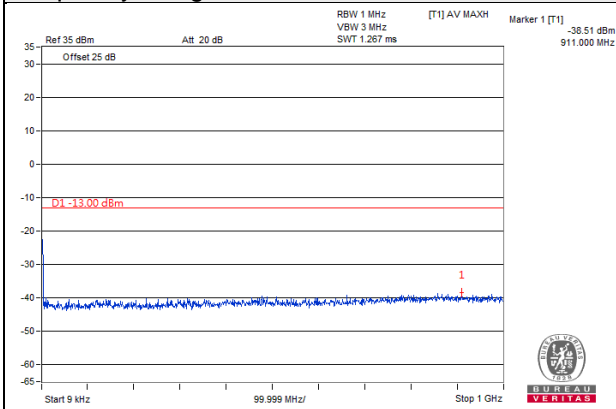
**Frequency Range : 10GHz~20GHz**



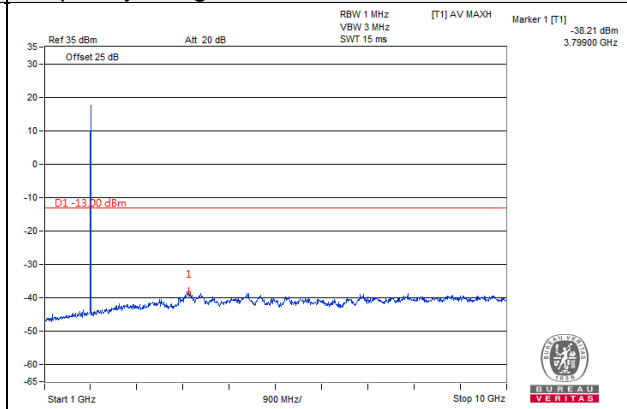
LTE Band 2 Channel Band width: 3MHz

Channel 18900

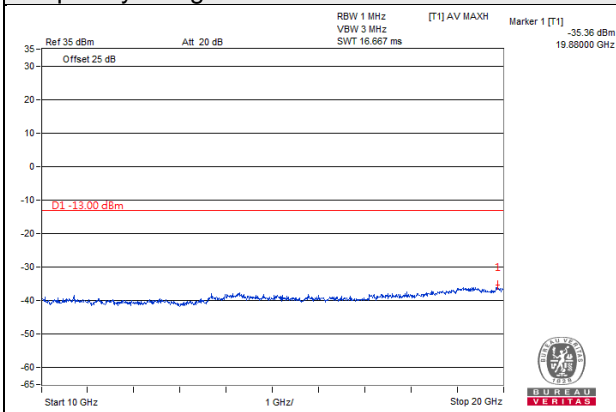
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz ~10GHz



Frequency Range : 10GHz~20GHz

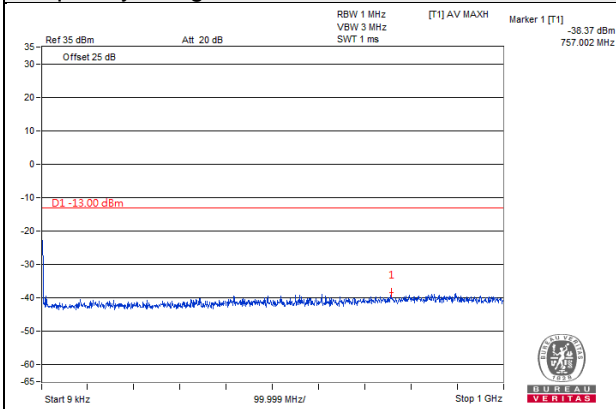




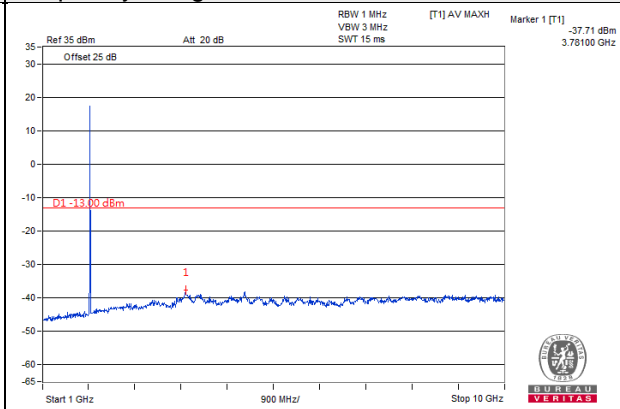
**LTE Band 2 Channel Band width: 3MHz**

**Channel 19185**

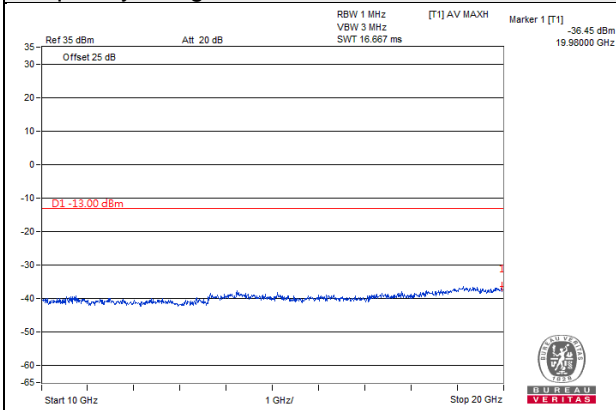
**Frequency Range : 9kHz~1GHz**



**Frequency Range : 1GHz ~10GHz**



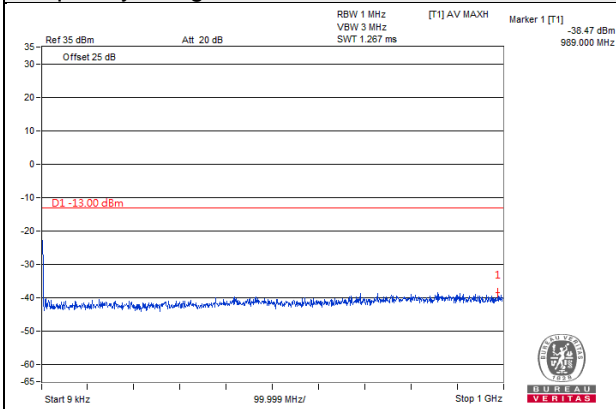
**Frequency Range : 10GHz~20GHz**



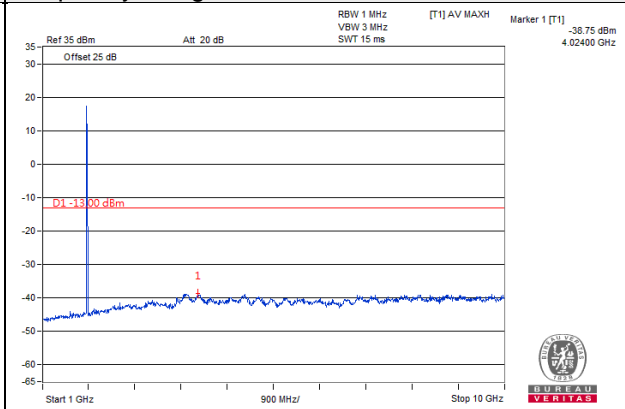
**LTE Band 2 Channel Band width: 5MHz**

**Channel 18625**

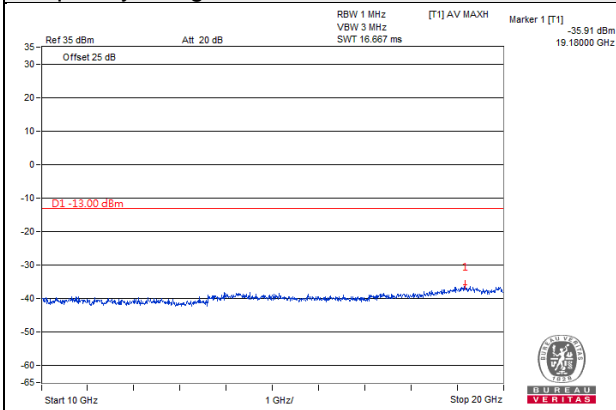
**Frequency Range : 9kHz~1GHz**



**Frequency Range : 1GHz ~10GHz**



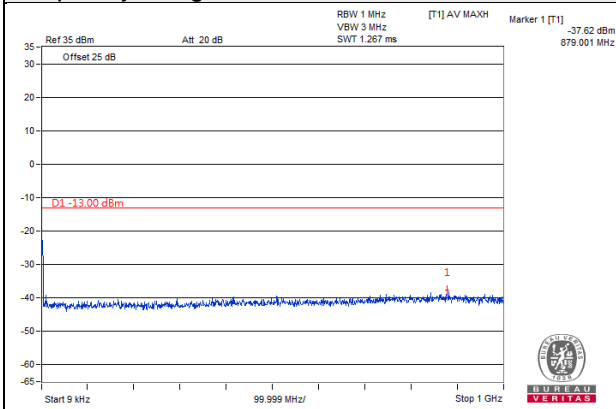
**Frequency Range : 10GHz~20GHz**



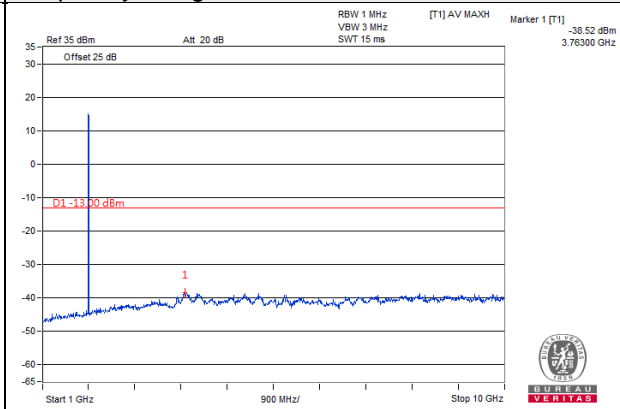
**LTE Band 2 Channel Band width: 5MHz**

**Channel 18900**

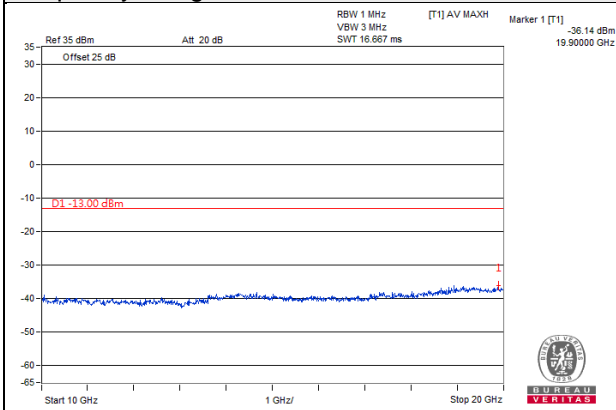
**Frequency Range : 9kHz~1GHz**



**Frequency Range : 1GHz ~10GHz**



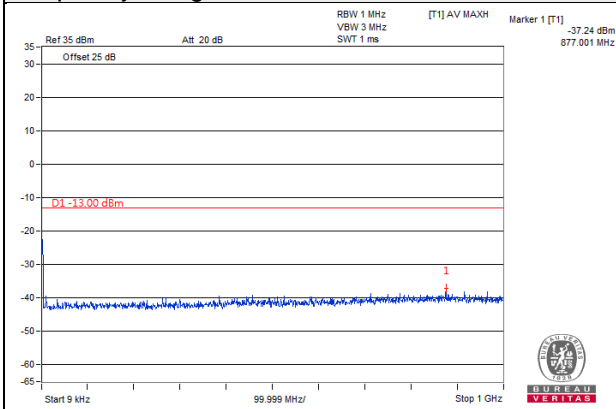
**Frequency Range : 10GHz~20GHz**



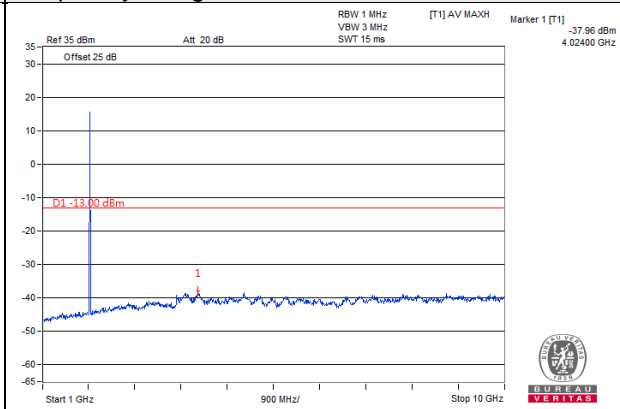
**LTE Band 2 Channel Band width: 5MHz**

**Channel 19175**

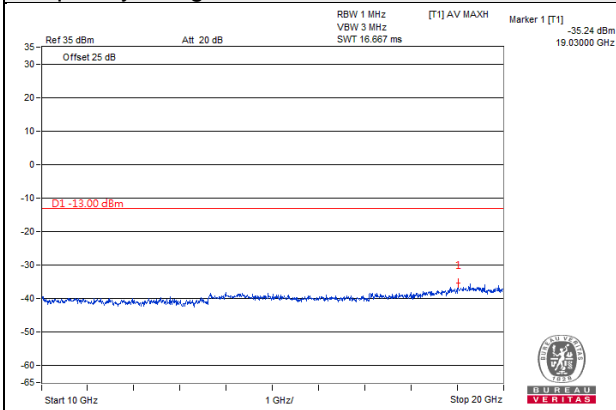
**Frequency Range : 9kHz~1GHz**



**Frequency Range : 1GHz ~10GHz**



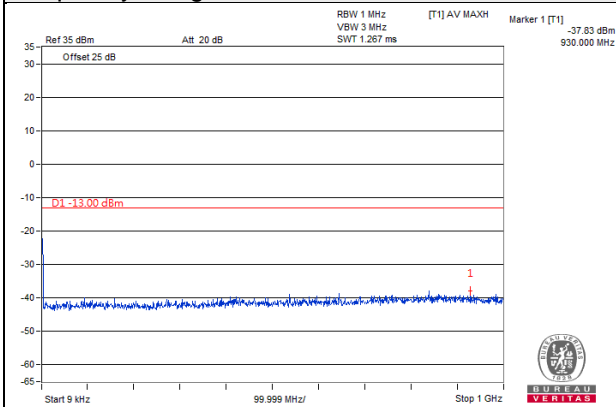
**Frequency Range : 10GHz~20GHz**



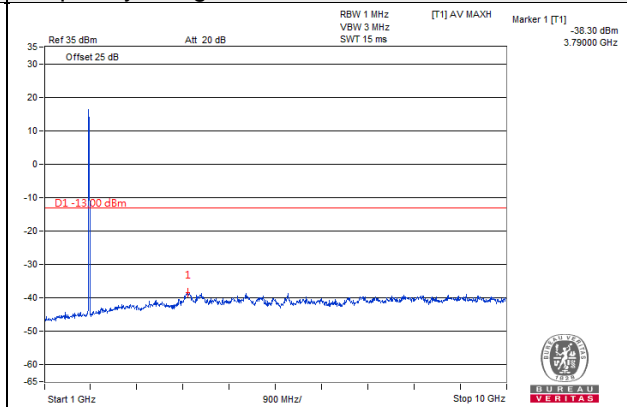
LTE Band 2 Channel Band width: 10MHz

Channel 18650

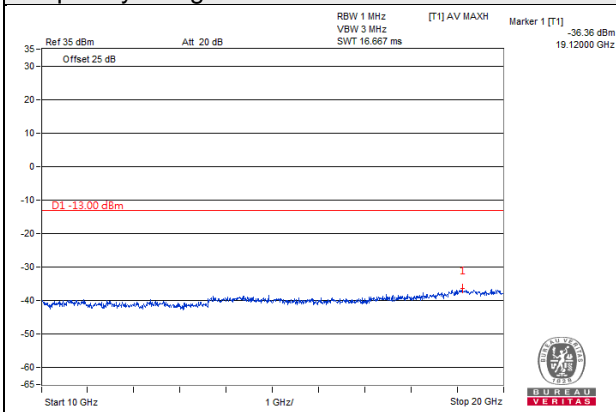
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz ~10GHz



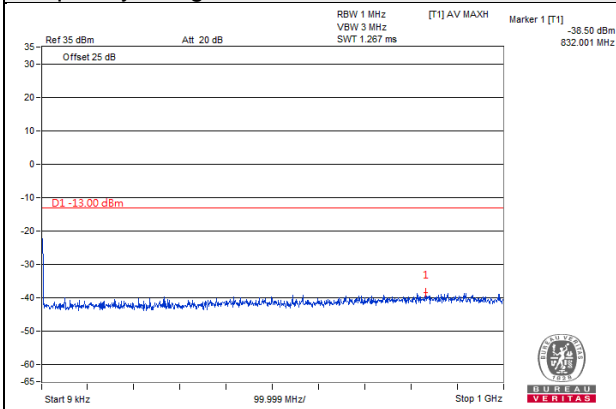
Frequency Range : 10GHz~20GHz



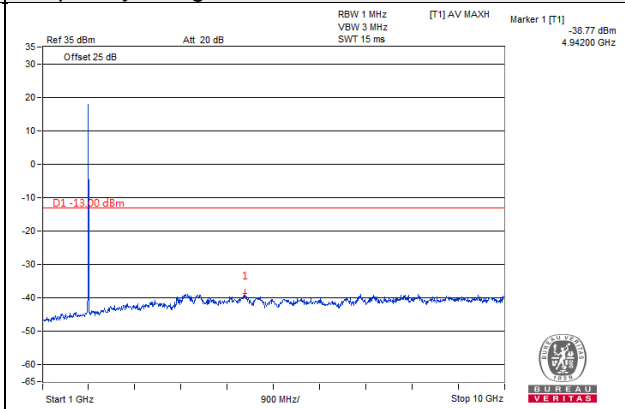
LTE Band 2 Channel Band width: 10MHz

Channel 18900

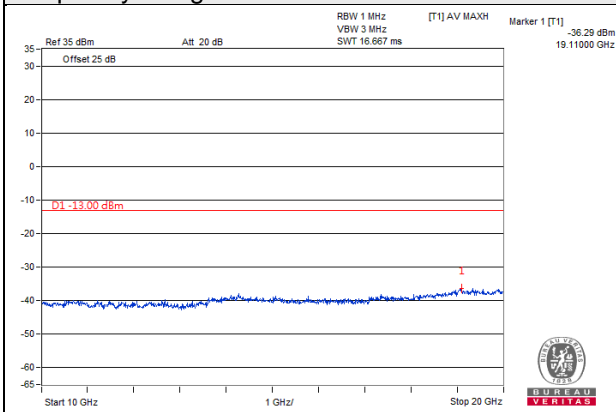
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz ~10GHz



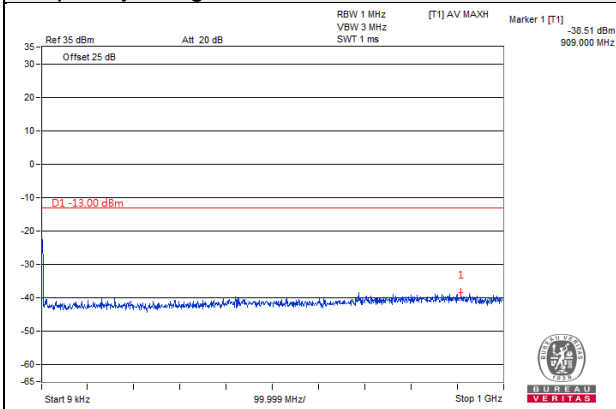
Frequency Range : 10GHz~20GHz



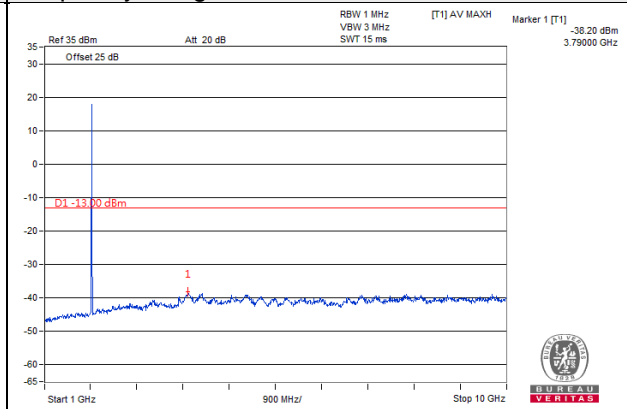
**LTE Band 2 Channel Band width: 10MHz**

**Channel 19150**

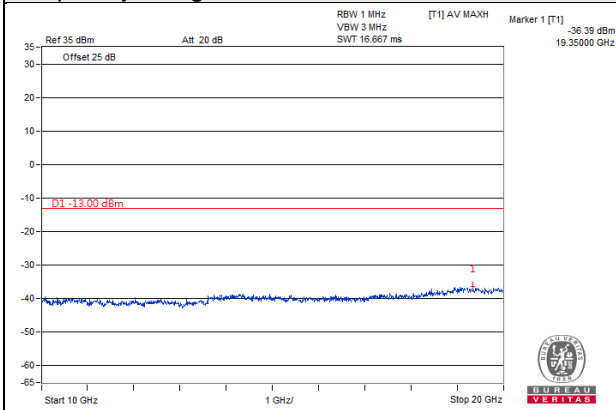
**Frequency Range : 9kHz~1GHz**



**Frequency Range : 1GHz ~10GHz**



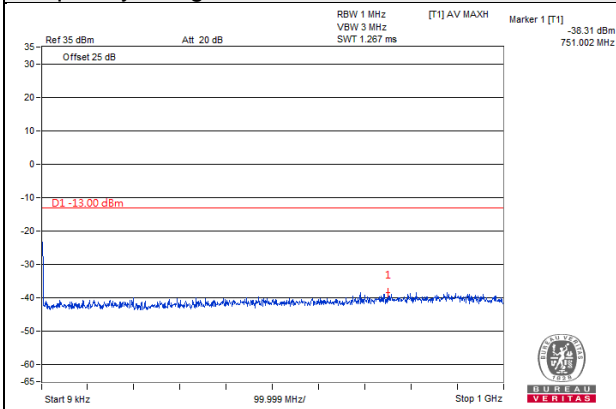
**Frequency Range : 10GHz~20GHz**



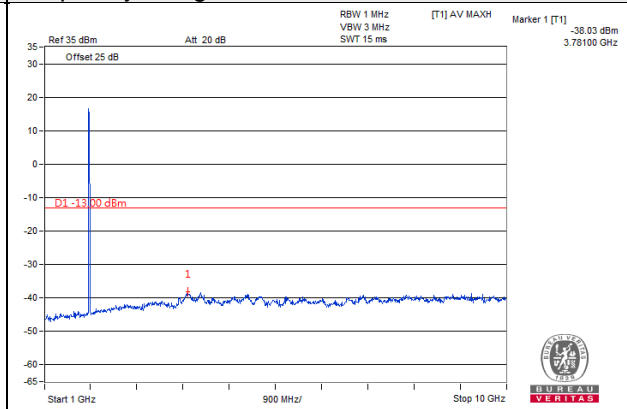
LTE Band 2 Channel Band width: 15MHz

Channel 18675

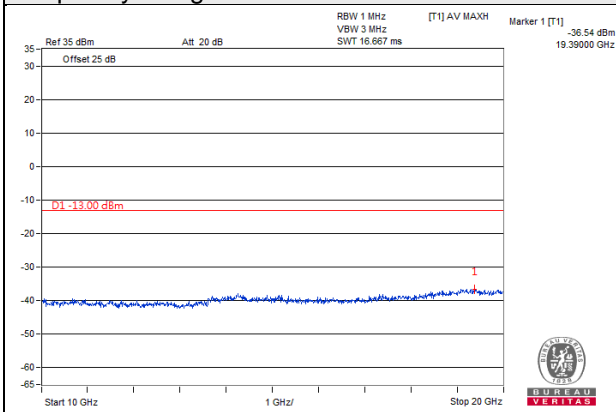
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz ~10GHz



Frequency Range : 10GHz~20GHz

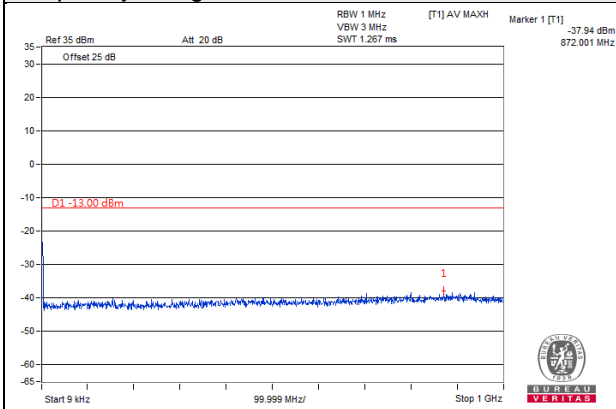




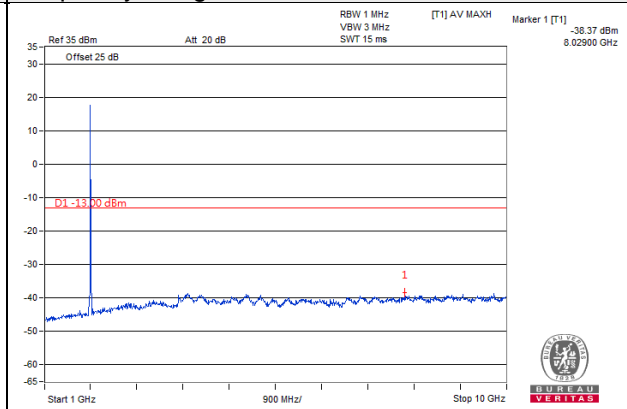
LTE Band 2 Channel Band width: 15MHz

Channel 18900

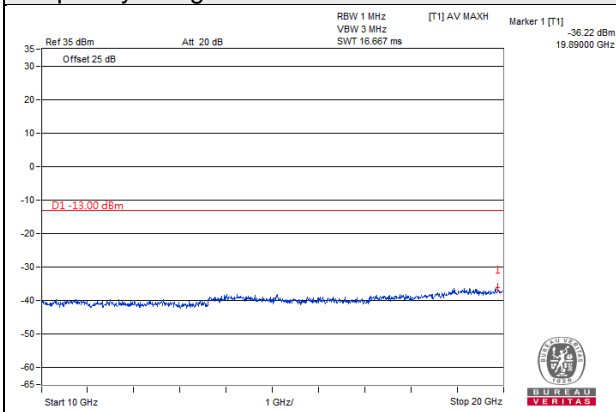
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz ~10GHz



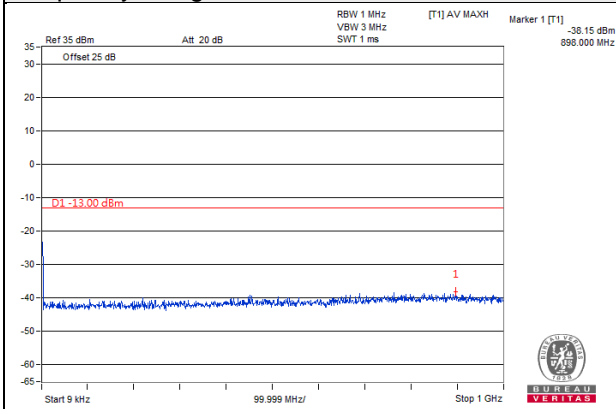
Frequency Range : 10GHz~20GHz



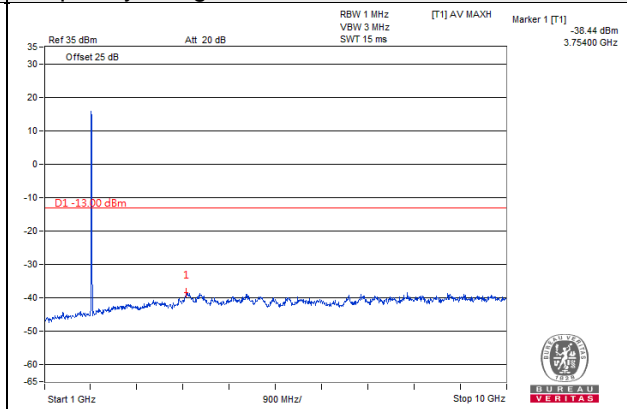
LTE Band 2 Channel Band width: 15MHz

Channel 19125

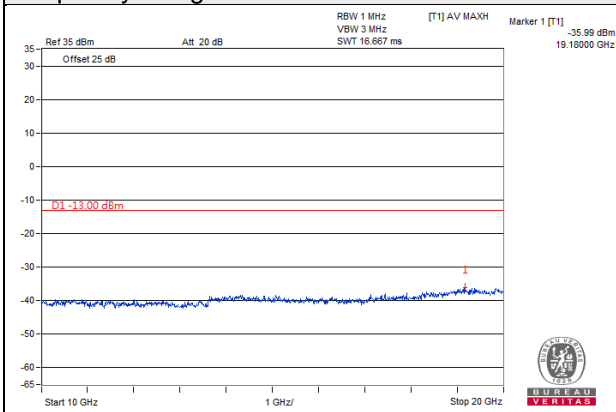
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz ~10GHz



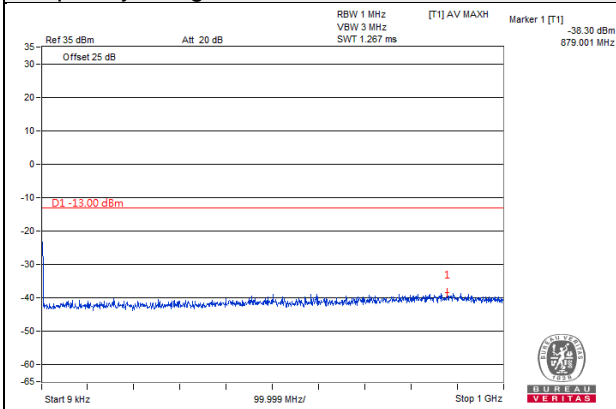
Frequency Range : 10GHz~20GHz



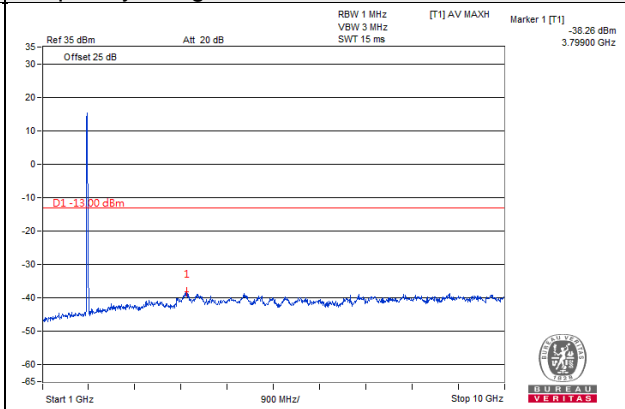
LTE Band 2 Channel Band width: 20MHz

Channel 18700

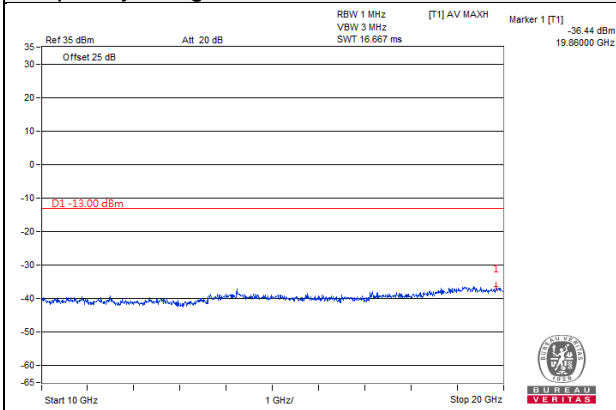
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz ~10GHz



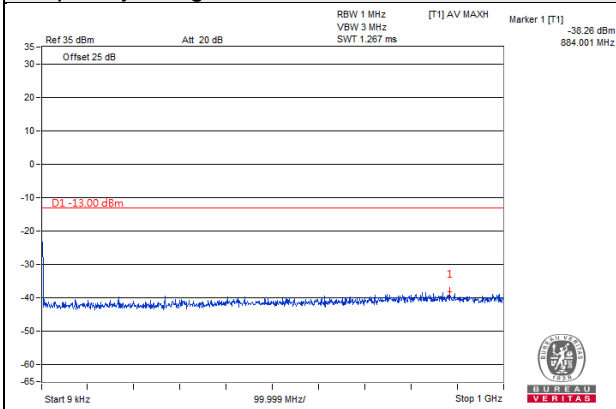
Frequency Range : 10GHz~20GHz



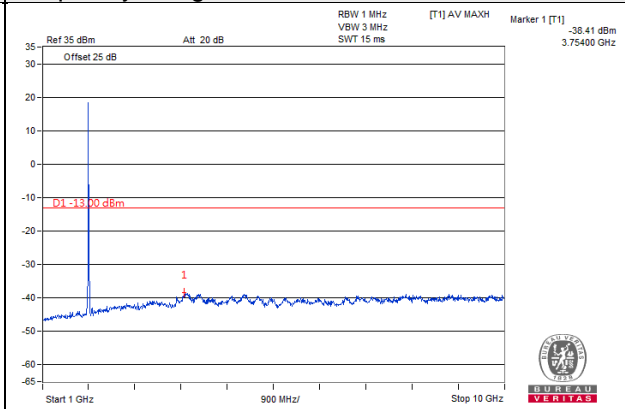
**LTE Band 2 Channel Band width: 20MHz**

**Channel 18900**

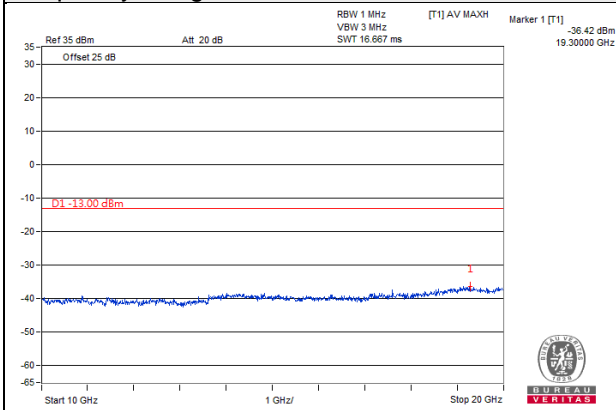
**Frequency Range : 9kHz~1GHz**



**Frequency Range : 1GHz ~10GHz**



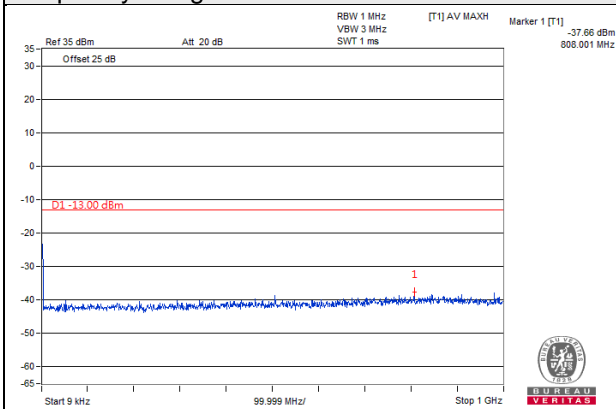
**Frequency Range : 10GHz~20GHz**



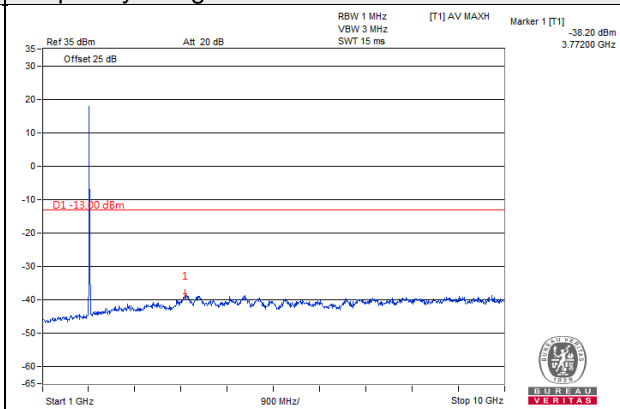
LTE Band 2 Channel Band width: 20MHz

Channel 19100

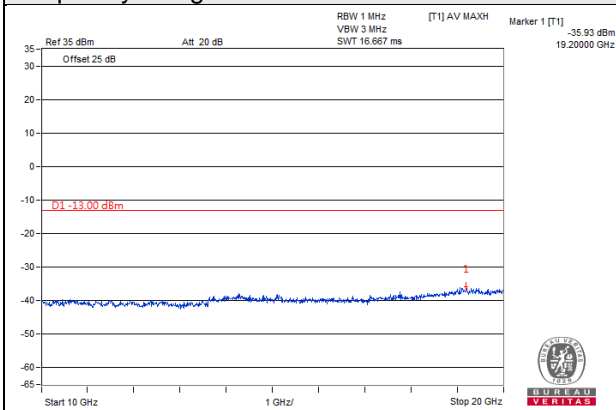
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz ~10GHz



Frequency Range : 10GHz~20GHz



## 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  $-13\text{dBm}$ .

### 4.8.2 Test Procedure

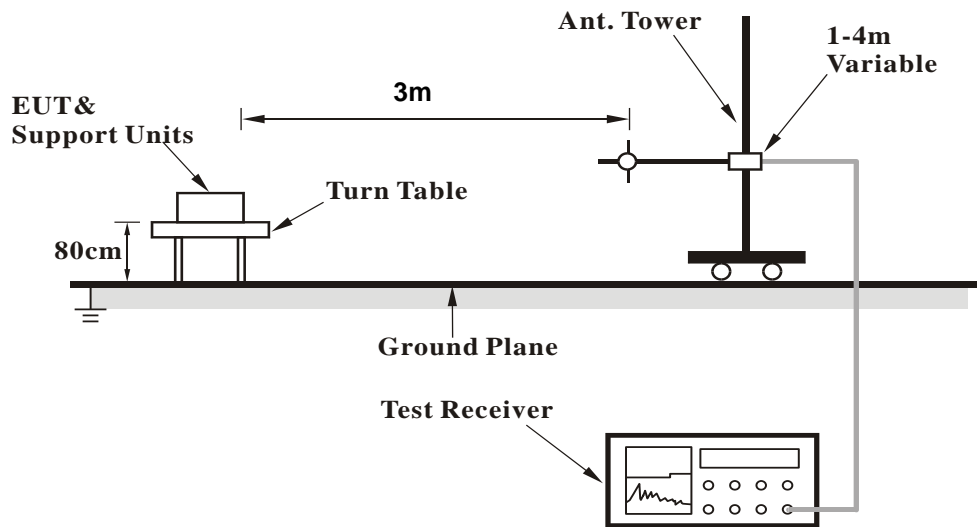
- a. The power was measured with Spectrum Analyzer.
- b. Substitution method is used for EIRP measurement. In the semi-anechoic chamber, EUT placed on the 0.8m/1.5m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical 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. Follow ANSI 63.26 section 5.2.7 d),  $\text{EIRP Value (dBm)} = \text{Read Value (dB}\mu\text{V/m)} - \text{Correction Factor @ 3m}$
- d.  $\text{Correction Factor (dB) @ 3M} = 20\log(D) - 104.8$ ; where D is the measurement distance @3m  $= -95.26\text{dB}$
- e. ERP power can be calculated form EIRP power by subtracting the gain of dipole,  $\text{ERP power} = \text{EIPR power} - 2.15\text{dBi}$ .

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

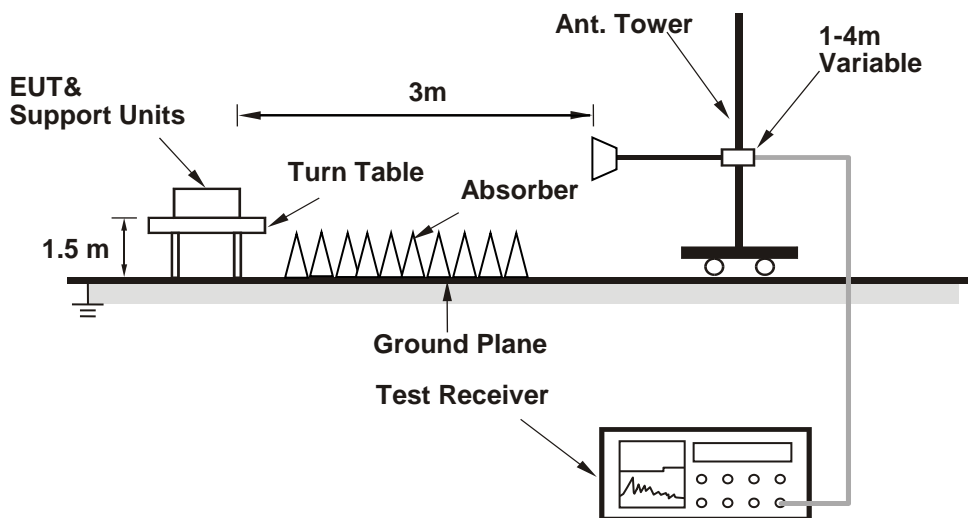
### 4.8.3 Deviation from Test Standard

No deviation.

4.8.4 Test Setup  
For Below 1GHz



For Above 1GHz:



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

#### 4.8.5 Test Results

BELOW 1GHz

#### WCDMA B2:

Mode	TX channel 9262	Frequency Range	Below 1000 MHz
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Antenna Polarity & Test Distance: Horizontal at 3 M						
No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	41.46	33.82	-95.26	-61.44	-13	-48.44
2	100.1	34.29	-95.26	-60.97	-13	-47.97
3	157.4	26.64	-95.26	-68.62	-13	-55.62
4	180.55	32.52	-95.26	-62.74	-13	-49.74
5	315.08	31.85	-95.26	-63.41	-13	-50.41
6	443.75	31.06	-95.26	-64.20	-13	-51.20
Antenna Polarity & Test Distance: Vertical at 3 M						
No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	47.53	35.01	-95.26	-60.25	-13	-47.25
2	91.77	35.65	-95.26	-59.61	-13	-46.61
3	137.99	30.67	-95.26	-64.59	-13	-51.59
4	179.89	25.83	-95.26	-69.43	-13	-56.43
5	326.98	33.43	-95.26	-61.83	-13	-48.83
6	556.74	31.68	-95.26	-63.58	-13	-50.58

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.



Mode	TX channel 9400	Frequency Range	Below 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	44.22	34.96	-95.26	-60.30	-13	-47.30
2	102.01	33.35	-95.26	-61.91	-13	-48.91
3	158.63	29.64	-95.26	-65.62	-13	-52.62
4	184.92	31.64	-95.26	-63.62	-13	-50.62
5	320.13	34.8	-95.26	-60.46	-13	-47.46
6	446.37	31.12	-95.26	-64.14	-13	-51.14

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	44.98	26.27	-95.26	-68.99	-13	-55.99
2	91.29	35.96	-95.26	-59.30	-13	-46.30
3	133.86	30.66	-95.26	-64.60	-13	-51.60
4	178.22	26.06	-95.26	-69.20	-13	-56.20
5	322.96	33.81	-95.26	-61.45	-13	-48.45
6	555.89	32.12	-95.26	-63.14	-13	-50.14

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 9538	Frequency Range	Below 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	38.93	33.68	-95.26	-61.58	-13	-48.58
2	100.28	34.26	-95.26	-61.00	-13	-48.00
3	153.77	25.57	-95.26	-69.69	-13	-56.69
4	179.37	30.7	-95.26	-64.56	-13	-51.56
5	317.03	34.99	-95.26	-60.27	-13	-47.27
6	445.57	33.24	-95.26	-62.02	-13	-49.02

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	41.31	25.88	-95.26	-69.38	-13	-56.38
2	91.88	35.95	-95.26	-59.31	-13	-46.31
3	134.4	31.13	-95.26	-64.13	-13	-51.13
4	181.97	26	-95.26	-69.26	-13	-56.26
5	321.33	33.15	-95.26	-62.11	-13	-49.11
6	557.16	32.38	-95.26	-62.88	-13	-49.88

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

### LTE Band 2: 1.4 MHz

Mode	TX channel 18607	Frequency Range	Below 1000 MHz
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#### Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	41.54	34.34	-95.26	-60.92	-13	-47.92
2	100.98	34.89	-95.26	-60.37	-13	-47.37
3	157.05	27.28	-95.26	-67.98	-13	-54.98
4	187.97	33.16	-95.26	-62.10	-13	-49.10
5	314.32	31.36	-95.26	-63.90	-13	-50.90
6	440.02	29.75	-95.26	-65.51	-13	-52.51

#### Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	56.62	34.95	-95.26	-60.31	-13	-47.31
2	93.27	35.25	-95.26	-60.01	-13	-47.01
3	134.21	30.77	-95.26	-64.49	-13	-51.49
4	178.32	25.32	-95.26	-69.94	-13	-56.94
5	326.01	33.13	-95.26	-62.13	-13	-49.13
6	553.98	32	-95.26	-63.26	-13	-50.26

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) – 104.8; where D is the measurement distance @3m.

Mode	TX channel 18900	Frequency Range	Below 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	41.2	34.03	-95.26	-61.23	-13	-48.23
2	102.59	35.2	-95.26	-60.06	-13	-47.06
3	156.56	27.37	-95.26	-67.89	-13	-54.89
4	188.64	33.76	-95.26	-61.50	-13	-48.50
5	313.2	31.49	-95.26	-63.77	-13	-50.77
6	440.08	29.54	-95.26	-65.72	-13	-52.72

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	56.95	34.19	-95.26	-61.07	-13	-48.07
2	92.73	35.45	-95.26	-59.81	-13	-46.81
3	134.24	30.8	-95.26	-64.46	-13	-51.46
4	178.19	24.62	-95.26	-70.64	-13	-57.64
5	325.71	32.87	-95.26	-62.39	-13	-49.39
6	552.23	30.97	-95.26	-64.29	-13	-51.29

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 19193	Frequency Range	Below 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	40.31	33.74	-95.26	-61.52	-13	-48.52
2	101.87	34.61	-95.26	-60.65	-13	-47.65
3	156.2	27.4	-95.26	-67.86	-13	-54.86
4	187.17	33.77	-95.26	-61.49	-13	-48.49
5	314.15	30.11	-95.26	-65.15	-13	-52.15
6	440.27	29.86	-95.26	-65.40	-13	-52.40

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	55.38	34.83	-95.26	-60.43	-13	-47.43
2	91.57	35.16	-95.26	-60.10	-13	-47.10
3	134.91	29.74	-95.26	-65.52	-13	-52.52
4	178.78	25.32	-95.26	-69.94	-13	-56.94
5	326.02	32.23	-95.26	-63.03	-13	-50.03
6	553.09	31.8	-95.26	-63.46	-13	-50.46

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

### LTE Band 2: 3 MHz

Mode	TX channel 18615	Frequency Range	Below 1000 MHz
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#### Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	41.33	33.82	-95.26	-61.44	-13	-48.44
2	100.95	35.11	-95.26	-60.15	-13	-47.15
3	157.25	27.77	-95.26	-67.49	-13	-54.49
4	188.7	33.97	-95.26	-61.29	-13	-48.29
5	313.45	30.58	-95.26	-64.68	-13	-51.68
6	439.19	30.53	-95.26	-64.73	-13	-51.73

#### Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	56.77	33.75	-95.26	-61.51	-13	-48.51
2	92.39	35.17	-95.26	-60.09	-13	-47.09
3	135.64	31.01	-95.26	-64.25	-13	-51.25
4	178.29	25.76	-95.26	-69.50	-13	-56.50
5	325.57	33.39	-95.26	-61.87	-13	-48.87
6	552.42	31.51	-95.26	-63.75	-13	-50.75

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 18900	Frequency Range	Below 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	41.95	33.37	-95.26	-61.89	-13	-48.89
2	101.44	34.65	-95.26	-60.61	-13	-47.61
3	156.06	27.71	-95.26	-67.55	-13	-54.55
4	188.15	33.87	-95.26	-61.39	-13	-48.39
5	314.95	30.78	-95.26	-64.48	-13	-51.48
6	438.85	29.9	-95.26	-65.36	-13	-52.36

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	55.19	34.25	-95.26	-61.01	-13	-48.01
2	92.59	34.5	-95.26	-60.76	-13	-47.76
3	134.18	30.25	-95.26	-65.01	-13	-52.01
4	178.69	24.63	-95.26	-70.63	-13	-57.63
5	324.14	33.27	-95.26	-61.99	-13	-48.99
6	553.44	31.75	-95.26	-63.51	-13	-50.51

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 19185	Frequency Range	Below 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	40.83	34	-95.26	-61.26	-13	-48.26
2	101.92	35.1	-95.26	-60.16	-13	-47.16
3	156.89	27.2	-95.26	-68.06	-13	-55.06
4	187.22	32.99	-95.26	-62.27	-13	-49.27
5	313.14	31.24	-95.26	-64.02	-13	-51.02
6	438.41	29.29	-95.26	-65.97	-13	-52.97

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	56.96	34.35	-95.26	-60.91	-13	-47.91
2	91.69	35.42	-95.26	-59.84	-13	-46.84
3	134.92	30.22	-95.26	-65.04	-13	-52.04
4	178.77	25.34	-95.26	-69.92	-13	-56.92
5	325.36	33.4	-95.26	-61.86	-13	-48.86
6	553.26	32.06	-95.26	-63.20	-13	-50.20

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.



### LTE Band 2: 5 MHz

Mode	TX channel 18625	Frequency Range	Below 1000 MHz
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#### Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	40.81	34.04	-95.26	-61.22	-13	-48.22
2	100.7	35.33	-95.26	-59.93	-13	-46.93
3	156.65	27.1	-95.26	-68.16	-13	-55.16
4	188.66	33.38	-95.26	-61.88	-13	-48.88
5	314.47	30.71	-95.26	-64.55	-13	-51.55
6	439.12	29.74	-95.26	-65.52	-13	-52.52

#### Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	56.04	34.93	-95.26	-60.33	-13	-47.33
2	92.8	35.1	-95.26	-60.16	-13	-47.16
3	134.83	29.86	-95.26	-65.40	-13	-52.40
4	179.16	25.49	-95.26	-69.77	-13	-56.77
5	324.55	32.98	-95.26	-62.28	-13	-49.28
6	553.32	31.4	-95.26	-63.86	-13	-50.86

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) – 104.8; where D is the measurement distance @3m.

Mode	TX channel 18900	Frequency Range	Below 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	42	33.32	-95.26	-61.94	-13	-48.94
2	102.32	35.43	-95.26	-59.83	-13	-46.83
3	156.35	26.71	-95.26	-68.55	-13	-55.55
4	188.94	33.13	-95.26	-62.13	-13	-49.13
5	314.42	30.26	-95.26	-65.00	-13	-52.00
6	438.7	30.52	-95.26	-64.74	-13	-51.74

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	56.25	33.87	-95.26	-61.39	-13	-48.39
2	92.3	35.11	-95.26	-60.15	-13	-47.15
3	135.04	30.4	-95.26	-64.86	-13	-51.86
4	177.94	25.62	-95.26	-69.64	-13	-56.64
5	326.06	33.38	-95.26	-61.88	-13	-48.88
6	553.71	31.67	-95.26	-63.59	-13	-50.59

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 19175	Frequency Range	Below 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	41.39	33.61	-95.26	-61.65	-13	-48.65
2	101.54	35.35	-95.26	-59.91	-13	-46.91
3	156.06	26.97	-95.26	-68.29	-13	-55.29
4	188.69	33.48	-95.26	-61.78	-13	-48.78
5	313.47	30.32	-95.26	-64.94	-13	-51.94
6	439.19	30.71	-95.26	-64.55	-13	-51.55

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	56.72	34.45	-95.26	-60.81	-13	-47.81
2	92.68	34.6	-95.26	-60.66	-13	-47.66
3	135.29	30.53	-95.26	-64.73	-13	-51.73
4	177.69	24.39	-95.26	-70.87	-13	-57.87
5	325.89	32.56	-95.26	-62.70	-13	-49.70
6	553.79	31.15	-95.26	-64.11	-13	-51.11

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

**LTE Band 2: 10 MHz**

Mode	TX channel 18650	Frequency Range	Below 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	41.41	33.8	-95.26	-61.46	-13	-48.46
2	100.67	35.32	-95.26	-59.94	-13	-46.94
3	157.5	26.82	-95.26	-68.44	-13	-55.44
4	188.24	33.95	-95.26	-61.31	-13	-48.31
5	314.19	30.6	-95.26	-64.66	-13	-51.66
6	440.04	30.03	-95.26	-65.23	-13	-52.23

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	56.27	33.93	-95.26	-61.33	-13	-48.33
2	91.57	35.49	-95.26	-59.77	-13	-46.77
3	134.78	31.2	-95.26	-64.06	-13	-51.06
4	178.01	24.98	-95.26	-70.28	-13	-57.28
5	325.8	32.16	-95.26	-63.10	-13	-50.10
6	552.32	31.34	-95.26	-63.92	-13	-50.92

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) – 104.8; where D is the measurement distance @3m.

Mode	TX channel 18900	Frequency Range	Below 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	42.12	33.3	-95.26	-61.96	-13	-48.96
2	101.28	35.29	-95.26	-59.97	-13	-46.97
3	156.25	27.01	-95.26	-68.25	-13	-55.25
4	187.58	33.1	-95.26	-62.16	-13	-49.16
5	314.55	31.39	-95.26	-63.87	-13	-50.87
6	438.81	29.25	-95.26	-66.01	-13	-53.01

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	55.81	34.99	-95.26	-60.27	-13	-47.27
2	91.67	35.32	-95.26	-59.94	-13	-46.94
3	134.54	30.14	-95.26	-65.12	-13	-52.12
4	178.18	24.74	-95.26	-70.52	-13	-57.52
5	325.49	32.34	-95.26	-62.92	-13	-49.92
6	552.75	31.74	-95.26	-63.52	-13	-50.52

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 19150	Frequency Range	Below 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	41.09	34.55	-95.26	-60.71	-13	-47.71
2	102.41	35.44	-95.26	-59.82	-13	-46.82
3	155.69	27.26	-95.26	-68.00	-13	-55.00
4	187.68	33.77	-95.26	-61.49	-13	-48.49
5	314.18	30.14	-95.26	-65.12	-13	-52.12
6	438.86	30.5	-95.26	-64.76	-13	-51.76

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	55.41	33.64	-95.26	-61.62	-13	-48.62
2	92.47	35.66	-95.26	-59.60	-13	-46.60
3	134.87	30.64	-95.26	-64.62	-13	-51.62
4	179.21	24.86	-95.26	-70.40	-13	-57.40
5	324.91	33.36	-95.26	-61.90	-13	-48.90
6	552.96	31.39	-95.26	-63.87	-13	-50.87

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

**LTE Band 2: 15 MHz**

Mode	TX channel 18675	Frequency Range	Below 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	40.41	33.52	-95.26	-61.74	-13	-48.74
2	102.04	35.68	-95.26	-59.58	-13	-46.58
3	155.66	28.06	-95.26	-67.20	-13	-54.20
4	187.61	32.87	-95.26	-62.39	-13	-49.39
5	314.07	30.48	-95.26	-64.78	-13	-51.78
6	438.52	29.49	-95.26	-65.77	-13	-52.77

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	55.89	34.59	-95.26	-60.67	-13	-47.67
2	91.87	34.77	-95.26	-60.49	-13	-47.49
3	135.35	30.54	-95.26	-64.72	-13	-51.72
4	178.34	25.03	-95.26	-70.23	-13	-57.23
5	324.82	32.37	-95.26	-62.89	-13	-49.89
6	553.93	30.77	-95.26	-64.49	-13	-51.49

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) – 104.8; where D is the measurement distance @3m.

Mode	TX channel 18900	Frequency Range	Below 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	42.14	33.46	-95.26	-61.80	-13	-48.80
2	101.82	34.73	-95.26	-60.53	-13	-47.53
3	156.17	27.11	-95.26	-68.15	-13	-55.15
4	187.79	32.86	-95.26	-62.40	-13	-49.40
5	314.3	30.56	-95.26	-64.70	-13	-51.70
6	438.64	29.64	-95.26	-65.62	-13	-52.62

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	55.62	34.59	-95.26	-60.67	-13	-47.67
2	92.8	34.58	-95.26	-60.68	-13	-47.68
3	134.71	31.21	-95.26	-64.05	-13	-51.05
4	178.55	25.67	-95.26	-69.59	-13	-56.59
5	325.88	33.49	-95.26	-61.77	-13	-48.77
6	552.65	31.2	-95.26	-64.06	-13	-51.06

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.



Mode	TX channel 19125	Frequency Range	Below 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	41.03	33.57	-95.26	-61.69	-13	-48.69
2	101.46	36.01	-95.26	-59.25	-13	-46.25
3	155.63	27.24	-95.26	-68.02	-13	-55.02
4	188.47	33.06	-95.26	-62.20	-13	-49.20
5	314.36	30.96	-95.26	-64.30	-13	-51.30
6	438.62	29.77	-95.26	-65.49	-13	-52.49

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	55.21	34.44	-95.26	-60.82	-13	-47.82
2	93.22	35.48	-95.26	-59.78	-13	-46.78
3	135.1	30.34	-95.26	-64.92	-13	-51.92
4	178.83	25.33	-95.26	-69.93	-13	-56.93
5	325.71	32.2	-95.26	-63.06	-13	-50.06
6	553.19	31.12	-95.26	-64.14	-13	-51.14

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

### LTE Band 2: 20 MHz

Mode	TX channel 18700	Frequency Range	Below 1000 MHz
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#### Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	40.42	34.54	-95.26	-60.72	-13	-47.72
2	101.63	34.73	-95.26	-60.53	-13	-47.53
3	157.09	27.98	-95.26	-67.28	-13	-54.28
4	188.71	32.81	-95.26	-62.45	-13	-49.45
5	314.29	30.75	-95.26	-64.51	-13	-51.51
6	438.63	29.83	-95.26	-65.43	-13	-52.43

#### Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	55.51	34.53	-95.26	-60.73	-13	-47.73
2	93.19	35.14	-95.26	-60.12	-13	-47.12
3	136.01	30.38	-95.26	-64.88	-13	-51.88
4	179.2	24.45	-95.26	-70.81	-13	-57.81
5	325.51	33.42	-95.26	-61.84	-13	-48.84
6	553.68	31.75	-95.26	-63.51	-13	-50.51

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) – 104.8; where D is the measurement distance @3m.

Mode	TX channel 18900	Frequency Range	Below 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	41.94	33.61	-95.26	-61.65	-13	-48.65
2	102.1	35.27	-95.26	-59.99	-13	-46.99
3	156.02	27.29	-95.26	-67.97	-13	-54.97
4	188.28	34.01	-95.26	-61.25	-13	-48.25
5	314.82	30.07	-95.26	-65.19	-13	-52.19
6	438.37	29.36	-95.26	-65.90	-13	-52.90

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	57.1	34.47	-95.26	-60.79	-13	-47.79
2	91.5	35.02	-95.26	-60.24	-13	-47.24
3	135.92	30.54	-95.26	-64.72	-13	-51.72
4	178.63	25.26	-95.26	-70.00	-13	-57.00
5	324.15	32.75	-95.26	-62.51	-13	-49.51
6	553.31	31.38	-95.26	-63.88	-13	-50.88

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 19100	Frequency Range	Below 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	40.6	33.64	-95.26	-61.62	-13	-48.62
2	101.64	35.29	-95.26	-59.97	-13	-46.97
3	155.67	27.61	-95.26	-67.65	-13	-54.65
4	187.28	33.8	-95.26	-61.46	-13	-48.46
5	314.84	31.32	-95.26	-63.94	-13	-50.94
6	440.1	29.92	-95.26	-65.34	-13	-52.34

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	56.47	34.34	-95.26	-60.92	-13	-47.92
2	92.45	34.71	-95.26	-60.55	-13	-47.55
3	134.93	29.99	-95.26	-65.27	-13	-52.27
4	179.23	25.07	-95.26	-70.19	-13	-57.19
5	325.89	32.71	-95.26	-62.55	-13	-49.55
6	552.65	32.23	-95.26	-63.03	-13	-50.03

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

ABOVE 1GHz

**WCDMA B2:**

Mode	TX channel 9262	Frequency Range	Above 1000 MHz
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Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3704.8	37.8	-95.26	-57.46	-13	-44.46
2	5557.2	37.97	-95.26	-57.29	-13	-44.29
3	7409.6	40.48	-95.26	-54.78	-13	-41.78

Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3704.8	34.38	-95.26	-60.88	-13	-47.88
2	5557.2	43.66	-95.26	-51.60	-13	-38.60
3	7409.6	39.75	-95.26	-55.51	-13	-42.51

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) – 104.8; where D is the measurement distance @3m.

Mode	TX channel 9400	Frequency Range	Above 1000 MHz
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Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760	37.74	-95.26	-57.52	-13	-44.52
2	5640	38.73	-95.26	-56.53	-13	-43.53
3	7520	39.84	-95.26	-55.42	-13	-42.42

Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760	34.08	-95.26	-61.18	-13	-48.18
<b>2</b>	<b>5640</b>	<b>43.84</b>	<b>-95.26</b>	<b>-51.42</b>	<b>-13</b>	<b>-38.42</b>
3	7520	40.47	-95.26	-54.79	-13	-41.79

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 9538	Frequency Range	Above 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3815.2	37.5	-95.26	-57.76	-13	-44.76
2	5722.8	38.1	-95.26	-57.16	-13	-44.16
3	7630.4	40.76	-95.26	-54.50	-13	-41.50

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3815.2	33.62	-95.26	-61.64	-13	-48.64
2	5722.8	43.58	-95.26	-51.68	-13	-38.68
3	7630.4	39.9	-95.26	-55.36	-13	-42.36

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

### LTE Band 2: 1.4 MHz

Mode	TX channel 18607	Frequency Range	Above 1000 MHz
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#### Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3701.4	37.12	-95.26	-58.14	-13	-45.14
2	5552.1	36.79	-95.26	-58.47	-13	-45.47
3	7402.8	39.12	-95.26	-56.14	-13	-43.14

#### Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3701.4	33.35	-95.26	-61.91	-13	-48.91
2	5552.1	42.66	-95.26	-52.60	-13	-39.60
3	7402.8	38.94	-95.26	-56.32	-13	-43.32

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.



Mode	TX channel 18900	Frequency Range	Above 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760	37.58	-95.26	-57.68	-13	-44.68
2	5640	37.23	-95.26	-58.03	-13	-45.03
3	7520	39.14	-95.26	-56.12	-13	-43.12

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760	33.7	-95.26	-61.56	-13	-48.56
2	5640	42.26	-95.26	-53.00	-13	-40.00
3	7520	38.69	-95.26	-56.57	-13	-43.57

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 19193	Frequency Range	Above 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3818.6	36.43	-95.26	-58.83	-13	-45.83
2	5727.9	36.48	-95.26	-58.78	-13	-45.78
3	7637.2	39.78	-95.26	-55.48	-13	-42.48

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3818.6	33.43	-95.26	-61.83	-13	-48.83
2	5727.9	42.36	-95.26	-52.90	-13	-39.90
3	7637.2	39.16	-95.26	-56.10	-13	-43.10

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

### LTE Band 2: 3 MHz

Mode	TX channel 18615	Frequency Range	Above 1000 MHz
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#### Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3703	37.69	-95.26	-57.57	-13	-44.57
2	5554.5	37.95	-95.26	-57.31	-13	-44.31
3	7406	39.76	-95.26	-55.50	-13	-42.50

#### Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3703	33	-95.26	-62.26	-13	-49.26
2	5554.5	42.71	-95.26	-52.55	-13	-39.55
3	7406	39.07	-95.26	-56.19	-13	-43.19

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 18900	Frequency Range	Above 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760	36.57	-95.26	-58.69	-13	-45.69
2	5640	36.75	-95.26	-58.51	-13	-45.51
3	7520	40.36	-95.26	-54.90	-13	-41.90

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760	34.14	-95.26	-61.12	-13	-48.12
2	5640	43.56	-95.26	-51.70	-13	-38.70
3	7520	38.62	-95.26	-56.64	-13	-43.64

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 19185	Frequency Range	Above 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3817	37.35	-95.26	-57.91	-13	-44.91
2	5725.5	36.98	-95.26	-58.28	-13	-45.28
3	7634	40.36	-95.26	-54.90	-13	-41.90

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3817	33.57	-95.26	-61.69	-13	-48.69
2	5725.5	42.75	-95.26	-52.51	-13	-39.51
3	7634	39.67	-95.26	-55.59	-13	-42.59

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

### LTE Band 2: 5 MHz

Mode	TX channel 18625	Frequency Range	Above 1000 MHz
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#### Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3705	37.04	-95.26	-58.22	-13	-45.22
2	5557.5	37.3	-95.26	-57.96	-13	-44.96
3	7410	39.47	-95.26	-55.79	-13	-42.79

#### Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3705	34.26	-95.26	-61.00	-13	-48.00
2	5557.5	42.21	-95.26	-53.05	-13	-40.05
3	7410	39.07	-95.26	-56.19	-13	-43.19

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 18900	Frequency Range	Above 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760	37.73	-95.26	-57.53	-13	-44.53
2	5640	37.79	-95.26	-57.47	-13	-44.47
3	7520	39.35	-95.26	-55.91	-13	-42.91

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760	33.43	-95.26	-61.83	-13	-48.83
2	5640	43.11	-95.26	-52.15	-13	-39.15
3	7520	38.28	-95.26	-56.98	-13	-43.98

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 19175	Frequency Range	Above 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3815	36.84	-95.26	-58.42	-13	-45.42
2	5722.5	37.6	-95.26	-57.66	-13	-44.66
3	7630	39.62	-95.26	-55.64	-13	-42.64

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3815	33.24	-95.26	-62.02	-13	-49.02
2	5722.5	42.33	-95.26	-52.93	-13	-39.93
3	7630	39.42	-95.26	-55.84	-13	-42.84

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.



### LTE Band 2: 10 MHz

Mode	TX channel 18650	Frequency Range	Above 1000 MHz
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#### Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3710	37.14	-95.26	-58.12	-13	-45.12
2	5565	37.68	-95.26	-57.58	-13	-44.58
3	7420	39.95	-95.26	-55.31	-13	-42.31

#### Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3710	34.11	-95.26	-61.15	-13	-48.15
2	5565	42.42	-95.26	-52.84	-13	-39.84
3	7420	39.5	-95.26	-55.76	-13	-42.76

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 18900	Frequency Range	Above 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760	37.77	-95.26	-57.49	-13	-44.49
2	5640	36.48	-95.26	-58.78	-13	-45.78
3	7520	39.13	-95.26	-56.13	-13	-43.13

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760	33.55	-95.26	-61.71	-13	-48.71
2	5640	42.89	-95.26	-52.37	-13	-39.37
3	7520	39.53	-95.26	-55.73	-13	-42.73

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 19150	Frequency Range	Above 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3810	36.35	-95.26	-58.91	-13	-45.91
2	5715	37.16	-95.26	-58.10	-13	-45.10
3	7620	40.12	-95.26	-55.14	-13	-42.14

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3810	32.92	-95.26	-62.34	-13	-49.34
2	5715	43.56	-95.26	-51.70	-13	-38.70
3	7620	38.93	-95.26	-56.33	-13	-43.33

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

### LTE Band 2: 15 MHz

Mode	TX channel 18675	Frequency Range	Above 1000 MHz
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#### Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3715	36.76	-95.26	-58.50	-13	-45.50
2	5572.5	37.59	-95.26	-57.67	-13	-44.67
3	7430	38.98	-95.26	-56.28	-13	-43.28

#### Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3715	32.95	-95.26	-62.31	-13	-49.31
2	5572.5	43.11	-95.26	-52.15	-13	-39.15
3	7430	38.84	-95.26	-56.42	-13	-43.42

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 18900	Frequency Range	Above 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760	37.52	-95.26	-57.74	-13	-44.74
2	5640	37	-95.26	-58.26	-13	-45.26
3	7520	39.32	-95.26	-55.94	-13	-42.94

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760	33.54	-95.26	-61.72	-13	-48.72
2	5640	43.41	-95.26	-51.85	-13	-38.85
3	7520	38.58	-95.26	-56.68	-13	-43.68

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 19125	Frequency Range	Above 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3805	37.07	-95.26	-58.19	-13	-45.19
2	5707.5	37.16	-95.26	-58.10	-13	-45.10
3	7610	39.05	-95.26	-56.21	-13	-43.21

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3805	33.88	-95.26	-61.38	-13	-48.38
2	5707.5	43.36	-95.26	-51.90	-13	-38.90
3	7610	38.36	-95.26	-56.90	-13	-43.90

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

### LTE Band 2: 20 MHz

Mode	TX channel 18700	Frequency Range	Above 1000 MHz
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#### Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3720	36.6	-95.26	-58.66	-13	-45.66
2	5580	37.03	-95.26	-58.23	-13	-45.23
3	7440	39.33	-95.26	-55.93	-13	-42.93

#### Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3720	33.23	-95.26	-62.03	-13	-49.03
2	5580	43.5	-95.26	-51.76	-13	-38.76
3	7440	39.28	-95.26	-55.98	-13	-42.98

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

Mode	TX channel 18900	Frequency Range	Above 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760	36.46	-95.26	-58.80	-13	-45.80
2	5640	36.62	-95.26	-58.64	-13	-45.64
3	7520	40.2	-95.26	-55.06	-13	-42.06

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760	33.66	-95.26	-61.60	-13	-48.60
2	5640	42.35	-95.26	-52.91	-13	-39.91
3	7520	39.25	-95.26	-56.01	-13	-43.01

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.



Mode	TX channel 19100	Frequency Range	Above 1000 MHz
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**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3800	36.42	-95.26	-58.84	-13	-45.84
2	5700	37.14	-95.26	-58.12	-13	-45.12
3	7600	39.03	-95.26	-56.23	-13	-43.23

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dB $\mu$ V/m)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3800	33.71	-95.26	-61.55	-13	-48.55
2	5700	42.86	-95.26	-52.40	-13	-39.40
3	7600	38.77	-95.26	-56.49	-13	-43.49

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), EIRP Value (dBm) = E (dB $\mu$ V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @3m.

## 5 Pictures of Test Arrangements

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

## Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are 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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