FCC Test Report (PART 24)

Report No.:	RF180206E03-3
FCC ID:	S9GM510
Test Model:	M510
Received Date:	Feb. 06, 2018
Test Date:	Mar. 07 to 13, 2018
Issued Date:	Apr. 24, 2018
Applicant:	Ruckus Wireless, Inc.
Address:	350 West Java Drive, Sunnyvale, CA 94089
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, 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
RF180206E03-3	Original release.	Apr. 24, 2018

1 Certificate of Conformity

Product:	M510 Access Point
Brand:	Ruckus Wireless
Test Model:	M510
Sample Status:	ENGINEERING SAMPLE
Applicant:	Ruckus Wireless, Inc.
Test Date:	Mar. 07 to 13, 2018
Standards:	FCC Part 24

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:** Apr. 24, 2018

Claire Kuan / Specialist

Approved by : _____ , **Date:** Apr. 24, 2018

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.
2.1047	Modulation characteristics	PASS	Meet the requirement
2.1046 24.232(d)	Peak To Average Ratio	PASS	Meet the requirement of limit.
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 -19.09dB at 19076MHz.

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	5.33 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.10 dB
	6GHz ~ 18GHz	4.85 dB
	18GHz ~ 40GHz	5.24 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 08, 2017	July 07, 2018
Pre-Amplifier EMCI	EMC001340	980142	Feb. 09, 2018	Feb. 08, 2019
Loop Antenna(*) Electro-Metrics	EM-6879	264	Dec. 16, 2016	Dec. 15, 2018
RF Cable	5D-FB	LOOPCAB-001 LOOPCAB-002	Jan. 15, 2018	Jan. 14, 2019
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Nov. 09, 2017	Nov. 08, 2018
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Nov. 29, 2017	Nov. 28, 2018
RF Cable	8D	966-4-1 966-4-2 966-4-3	Apr. 01, 2017	Mar. 31, 2018
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Oct. 03, 2017	Oct. 02, 2018
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Dec. 12, 2017	Dec. 11, 2018
Pre-Amplifier EMCI	EMC12630SE	980385	Jan. 29, 2018	Jan. 28, 2019
RF Cable	EMC104-SM-SM-1200 EMC104-SM-SM-2000 EMC104-SM-SM-5000	160923 150318 150321	Jan. 29, 2018	Jan. 28, 2019
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 29, 2018	Jan. 28, 2019
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Dec. 14, 2017	Dec. 13, 2018
RF Cable	EMC102-KM-KM-1200	160925	Jan. 29, 2018	Jan. 28, 2019
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208410	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP02	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 calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 4.
4. The CANADA Site Registration No. is 20331-2
5. Loop antenna was used for all emissions below 30 MHz.
6. Tested Date: Mar. 07, 2018

For other test items:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	July 01, 2017	June 30, 2018
Spectrum Analyzer Agilent	E4446A	MY48250254	Nov. 21, 2017	Nov. 20, 2018
Power meter Anritsu	ML2495A	1014008	May 11, 2017	May 10, 2018
Power sensor Anritsu	MA2411B	0917122	May 11, 2017	May 10, 2018
AC Power Source Extech Electronics	6205	1440452	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 10, 2018	Jan. 09, 2019
DC Power Supply Topward	6603D	795558	NA	NA
True RMS Clamp Meter FLUKE	325	31130711WS	May 29, 2017	May 28, 2018
ESG Vector signal generator Agilent	E4438C	MY45094468/005 506 602 UK6 UNJ	Nov. 26, 2017	Nov. 25, 2018
ESG Vector signal generator Agilent	E4438C	MY47271330 506 602 UNJ	Oct. 11, 2017	Oct. 10, 2018
Mech Switch Absorptive Mini-Circuits	MSP4TA-18+	0140	Feb. 12, 2018	Feb. 11, 2019
FXD ATTEN Mini-Circuits	BW-S3W2+	MN71981	Feb. 12, 2018	Feb. 11, 2019
Software	ADT_RF Test Software V6.6.5.4	NA	NA	NA

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: Mar. 08 to 13, 2018

3 General Information

3.1 General Description of EUT

Product	M510 Access Point	
Brand	Ruckus Wireless	
Test Model	M510	
Status of EUT	ENGINEERING SAMPLE	
Power Supply Rating	DC 48V from POE or DC 12V from adapter or DC 12V from Terminal	
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	305.49mW(24.85dBm)
	LTE Band 2 (Channel Bandwidth 1.4MHz)	242.66mW(23.85dBm)
	LTE Band 2 (Channel Bandwidth 3MHz)	243.22mW(23.86dBm)
	LTE Band 2 (Channel Bandwidth 5MHz)	236.59mW(23.74dBm)
	LTE Band 2 (Channel Bandwidth 10MHz)	238.23mW(23.77dBm)
	LTE Band 2 (Channel Bandwidth 15MHz)	242.66mW(23.85dBm)
	LTE Band 2 (Channel Bandwidth 20MHz)	236.05mW(23.73dBm)
Emission Designator	WCDMA	4M14F9W
	LTE Band 2 (Channel Bandwidth 1.4MHz)	QPSK: 1M11G7D
		16QAM: 1M11D7W
	LTE Band 2 (Channel Bandwidth 3MHz)	QPSK: 2M71G7D
		16QAM: 2M69D7W
	LTE Band 2 (Channel Bandwidth 5MHz)	QPSK: 4M51G7D
		16QAM: 4M53D7W
	LTE Band 2 (Channel Bandwidth 10MHz)	QPSK: 8M98G7D
		16QAM: 8M98D7W
	LTE Band 2 (Channel Bandwidth 15MHz)	QPSK: 13M4G7D
		16QAM: 13M5D7W
	LTE Band 2 (Channel Bandwidth 20MHz)	QPSK: 18M0G7D
		16QAM: 18M0D7W
Antenna Type	Refer to Note	
Antenna Connector	Refer to Note	
Accessory Device	NA	
Data Cable Supplied	NA	

Note:

1. The EUT is a WLAN, WWAN and GPS device.
2. Simultaneously transmission condition.

Condition	Technology			
1	WLAN 2.4GHz	WLAN 5GHz	WWAN WCDMA	GPS
2	WLAN 2.4GHz	WLAN 5GHz	WWAN LTE	GPS
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.				

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

PoE (only for test)		
Brand	Model No.	Spec.
Ruckus Wireless, Inc	740-64214-001	Input: 100-240V, 0.75A, 50/60Hz Output: 48V, 0.5A
Adapter (only for test)		
Brand	Model No.	Spec.
Ruckus Wireless, Inc	NBS24J120200B3	Input: 100-240V, 0.6A, 50/60Hz Output: 12V, 2.0A

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

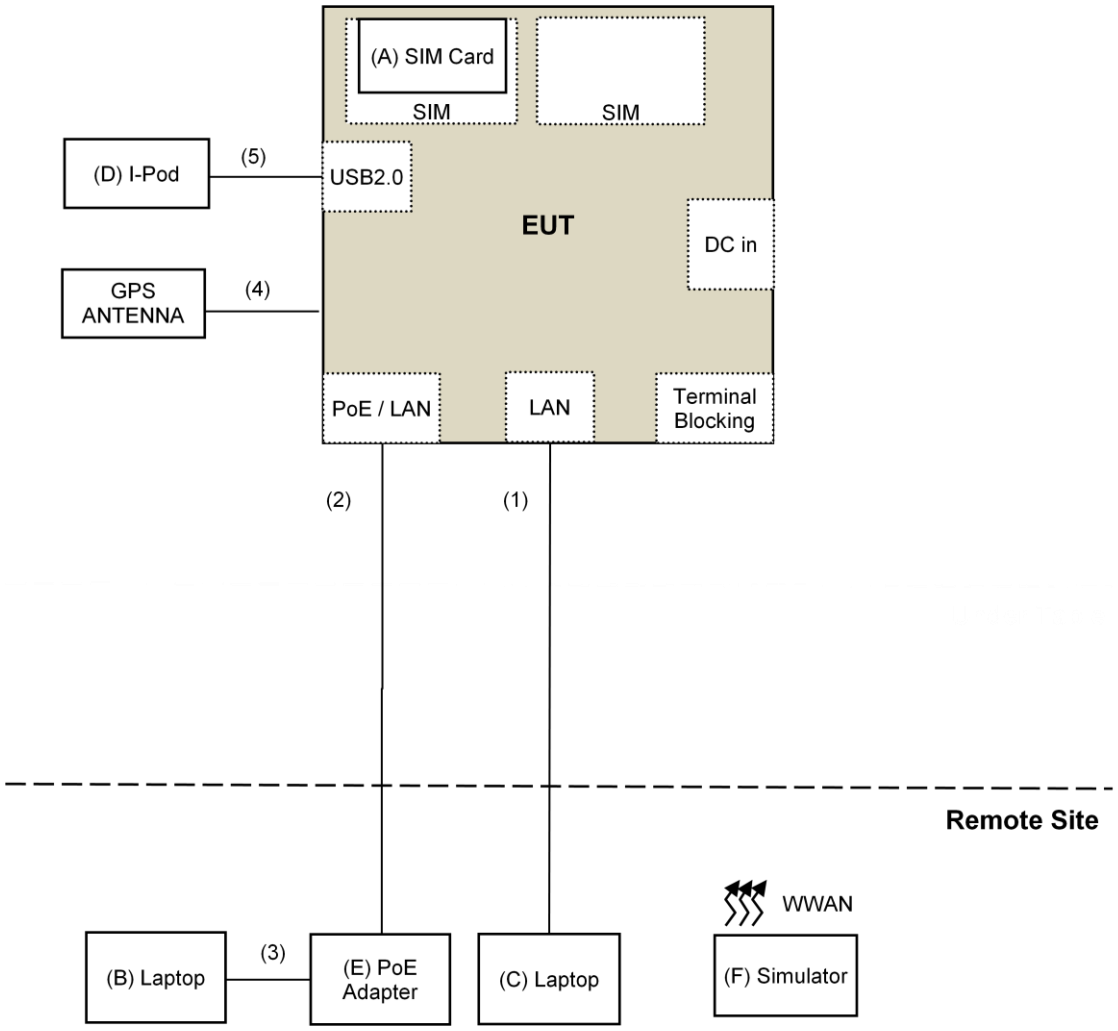
WLAN								
Antenna NO.	Transmitter Circuit	Antenna Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connecter Type	Cable Length (mm)	Cable Loss (dB)	Excluding cable loss Antenna Gain(dBi)
1	5GHz_chain_0 2.4GHz_chain_1	1	2.4~2.4835	PIFA	i-pex (MHF)	120	0	1
		3	5.15~5.85				0	3
2	5GHz_chain_1 2.4GHz_chain_0	1.2	2.4~2.4835	PIFA	i-pex (MHF)	70	0	1.2
		3	5.15~5.85				0	3

GPS						
Antenna Net Gain(dBi)	Frequency range (MHz)	Antenna Type	Connecter Type	Cable Length (mm)	Cable Loss (dB)	Excluding cable loss Antenna Gain(dBi)
1.66	1575.42	Dipole	i-pex (MHF)	80	0.34	2

WWAN						
Antenna NO.	Antenna Type	Brand	Model	Band	Freq. Range	Gain (dBi)
1 (Main)	Dipole	Aristotle	RFA-LTE-C55-B70-C255	WCDMA II (B2)	1850~1910	1.66
				WCDMA IV (B4)	1710~1755	1.66
				WCDMA V (B5)	824~849	1.66
				LTE Band (2)	1850~1910	1.66
				LTE Band (4)	1710~1755	1.66
				LTE Band (12)	698~716	1.53
2 (Aux)	Dipole	Aristotle	RFA-LTE-C55-B70-C255	WCDMA II (B2)	1850~1910	1.5
				WCDMA IV (B4)	1710~1755	1.5
				WCDMA V (B5)	824~849	1.5
				LTE Band (2)	1850~1910	1.5
				LTE Band (4)	1710~1755	1.5
				LTE Band (12)	698~716	1.37

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	R&S	CMW-Z04	NA	NA	Provided by Lab
B.	Laptop	DELL	E6420	B92T3R1	FCC DoC	Provided by Lab
C.	Laptop	DELL	E6420	482T3R1	FCC DoC	Provided by Lab
D.	iPod	Apple	MD778TA/A	CC4JL03FF4T1	NA	Provided by Lab
E.	PoE Adapter	Ruckus	740-64214-001	NA	NA	Supplied by client
F.	Simulator	R&S	CMW500	151084	NA	Provided by Lab (for LTE)
	Simulator	R&S	CMU200	121040	NA	Provided by Lab (for WCDMA)

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.	RJ-45 Cable	1	10	No	0	Provided by Lab
2.	RJ-45 Cable	1	10	No	0	Provided by Lab
3.	RJ-45 Cable	1	3	No	0	Provided by Lab
4.	GPS Cable	1	5	No	0	Supplied by client
5.	USB Cable	1	0.1	Yes	0	Provided by Lab

3.3 Test Mode Applicability and Tested Channel Detail

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

Test results are presented in the report as below.

Test Mode	Test Condition
A	Power from POE
B	Power from adapter
C	Power from Terminal

The worst radiated emission was found in **Mode A**. Therefore only the test data of the modes were recorded in this report.

WCDMA Band II

Test Item	Available Channel	Tested Channel	Mode
EIRP	9262 to 9538	9262, 9400, 9538	WCDMA
Modulation Characteristics	9262 to 9538	9400	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

Test Condition:

Test Item	Environmental Conditions	Input Power (System)	Tested By
EIRP	25deg. C, 63%RH	120Vac, 60Hz	Jyunchun Lin
Modulation Characteristics	25deg. C, 63%RH	120Vac, 60Hz	Jyunchun Lin
Frequency Stability	23deg. C, 68%RH	120Vac, 60Hz	Jyunchun Lin
Occupied Bandwidth	23deg. C, 68%RH	120Vac, 60Hz	Jyunchun Lin
Band Edge	23deg. C, 68%RH	120Vac, 60Hz	Jyunchun Lin
Peak to Average Ratio	23deg. C, 68%RH	120Vac, 60Hz	Jyunchun Lin
Conducted Emission	23deg. C, 68%RH	120Vac, 60Hz	Jyunchun Lin
Radiated Emission Below 1GHz	25deg. C, 66%RH	120Vac, 60Hz	Weiwei Lo
Radiated Emission Above 1GHz	23deg. C, 68%RH	120Vac, 60Hz	Weiwei Lo

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
Modulation Characteristics	18700 to 19100	18900	20MHz	QPSK / 16QAM	-
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	Full RB
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK	Full RB
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK	Full RB
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK	Full RB
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK	Full RB
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK	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

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
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 Output power, Frequency Stability, Peak to Average Ratio, Emission Mask, Conducted Emission and Radiated Emission were presented under QPSK mode only.

Test Condition:

Test Item	Environmental Conditions	Input Power (System)	Tested By
EIRP	24deg. C, 63%RH	120Vac, 60Hz	Allen Chuang
Modulation Characteristics	24deg. C, 63%RH	120Vac, 60Hz	Allen Chuang
Frequency Stability	23deg. C, 68%RH	120Vac, 60Hz	Allen Chuang
Occupied Bandwidth	23deg. C, 68%RH	120Vac, 60Hz	Allen Chuang
Band Edge	23deg. C, 68%RH	120Vac, 60Hz	Allen Chuang
Peak to Average Ratio	23deg. C, 68%RH	120Vac, 60Hz	Allen Chuang
Conducted Emission	23deg. C, 68%RH	120Vac, 60Hz	Allen Chuang
Radiated Emission Below 1GHz	25deg. C, 66%RH	120Vac, 60Hz	Eason Tseng
Radiated Emission Above 1GHz	23deg. C, 68%RH	120Vac, 60Hz	Eason Tseng

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

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

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 record the power level shown on simulator.

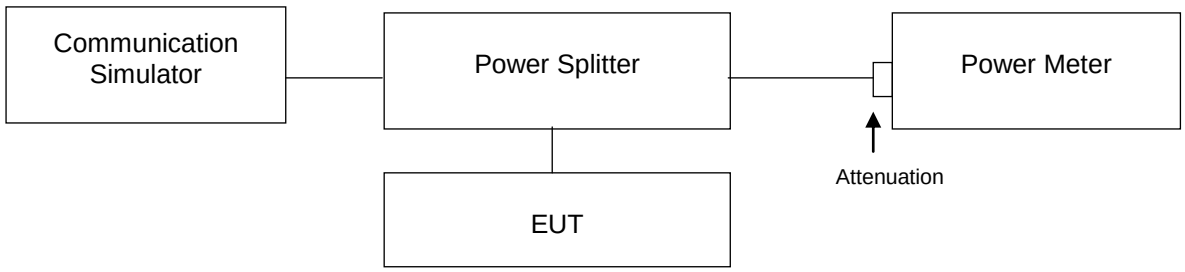
Conducted Power Measurement:

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

EIRP / ERP Measurement:

1. EIRP = Conducted output power level + Antenna gain
2. ERP power = EIRP power - 2.15dBi.

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 II

Band	WCDMA II		
Channel	9262	9400	9538
Frequency (MHz)	1852.4	1880.0	1907.6
RMC	23.19	23.18	23.07
HSDPA Subtest-1	21.72	21.73	21.34
HSDPA Subtest-2	22.13	22.12	21.74
HSDPA Subtest-3	21.64	21.64	21.25
HSDPA Subtest-4	21.63	21.62	21.24
HSUPA Subtest-1	20.54	20.53	20.33
HSUPA Subtest-2	21.37	21.33	21.14
HSUPA Subtest-3	20.78	20.75	20.54
HSUPA Subtest-4	19.09	19.06	18.85
HSUPA Subtest-5	21.18	21.14	20.96

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		MHz	MHz	MHz	
2 / 1.4M	1	0	22.19	22.18	22.13	0	21.14	21.17	21.07	1
	1	2	22.04	22.04	22.01	0	21.02	21.02	20.97	1
	1	5	21.89	21.82	21.83	0	20.74	20.85	20.70	1
	3	0	22.04	22.00	22.00	0	20.97	20.92	20.91	1
	3	1	21.93	21.80	21.90	0	20.84	20.73	20.78	1
	3	3	21.67	21.74	21.67	0	20.74	20.69	20.63	1
	6	0	20.99	20.99	21.09	1	19.95	20.01	20.03	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		MHz	MHz	MHz	
2 / 3M	1	0	22.10	22.20	22.09	0	21.08	21.11	21.01	1
	1	7	21.99	22.09	22.00	0	20.97	21.07	20.98	1
	1	14	21.74	21.82	21.81	0	20.78	20.83	20.82	1
	8	0	21.13	21.10	21.04	1	19.93	19.96	20.01	2
	8	3	20.98	20.95	20.91	1	19.94	19.96	19.86	2
	8	7	20.85	20.74	20.81	1	19.83	19.85	19.62	2
	15	0	20.97	21.09	20.92	1	20.01	19.98	19.89	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		MHz	MHz	MHz	
2 / 5M	1	0	21.96	22.08	22.07	0	20.87	21.03	21.03	1
	1	12	21.81	21.97	21.91	0	20.79	20.92	20.85	1
	1	24	21.70	21.77	21.81	0	20.56	20.80	20.71	1
	12	0	20.94	21.07	20.80	1	19.76	19.97	19.68	2
	12	6	20.84	20.95	20.68	1	19.78	19.89	19.68	2
	12	13	20.63	20.75	20.44	1	19.62	19.70	19.50	2
	25	0	20.93	21.04	21.00	1	19.71	20.01	19.92	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	21.89	22.11	22.10	0	20.87	21.05	21.07	1
	1	24	21.76	21.99	21.95	0	20.75	20.90	20.95	1
	1	49	21.59	21.74	21.86	0	20.53	20.80	20.79	1
	25	0	20.77	20.86	20.81	1	19.71	19.73	19.76	2
	25	12	20.67	20.70	20.66	1	19.64	19.66	19.57	2
	25	25	20.51	20.53	20.44	1	19.49	19.46	19.43	2
	50	0	20.76	21.10	21.05	1	19.80	20.01	19.89	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	21.87	22.08	22.19	0	20.83	21.01	21.16	1
	1	37	21.78	21.92	22.06	0	20.67	20.91	21.02	1
	1	74	21.50	21.80	21.98	0	20.58	20.79	20.92	1
	36	0	20.80	20.97	21.15	1	19.62	19.75	19.99	2
	36	19	20.66	20.82	21.06	1	19.66	19.78	20.01	2
	36	39	20.49	20.74	20.79	1	19.51	19.54	19.79	2
	75	0	20.70	21.04	21.18	1	19.69	19.92	20.00	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	21.87	21.98	22.07	0	20.84	20.94	21.05	1
	1	50	21.76	21.88	21.94	0	20.75	20.77	20.88	1
	1	99	21.62	21.72	21.73	0	20.52	20.68	20.64	1
	50	0	20.84	21.07	21.00	1	19.80	19.97	19.85	2
	50	25	20.69	20.95	20.88	1	19.68	19.90	19.78	2
	50	50	20.54	20.76	20.66	1	19.44	19.68	19.60	2
	100	0	20.71	20.81	21.03	1	19.79	19.76	20.01	2

EIRP POWER

WCDMA II

Channel Number	Freq. (MHz)	Conducted Average Power (dBm)	Gain	EIRP(dBm)	EIRP(mW)	Pass /Fail	Setting
9262	1852.4	23.19	1.66	24.85	305.49	Pass	Max
9400	1880	23.18	1.66	24.84	304.79	Pass	Max
9538	1907.6	23.07	1.66	24.73	297.17	Pass	Max

LTE Band 2

QPSK

1.4MHz

Channel Number	Freq. (MHz)	Conducted Average Power (dBm)	Gain	EIRP(dBm)	EIRP(mW)	Pass /Fail	Setting
18607	1850.7	22.19	1.66	23.85	242.66	Pass	Max
18900	1880	22.18	1.66	23.84	242.10	Pass	Max
19193	1909.3	22.13	1.66	23.79	239.33	Pass	Max

3MHz

Channel Number	Freq. (MHz)	Conducted Average Power (dBm)	Gain	EIRP(dBm)	EIRP(mW)	Pass /Fail	Setting
18615	1851.5	22.10	1.66	23.76	237.68	Pass	Max
18900	1880	22.20	1.66	23.86	243.22	Pass	Max
19185	1908.5	22.09	1.66	23.75	237.14	Pass	Max

5MHz

Channel Number	Freq. (MHz)	Conducted Average Power (dBm)	Gain	EIRP(dBm)	EIRP(mW)	Pass /Fail	Setting
18625	1852.5	21.96	1.66	23.62	230.14	Pass	Max
18900	1880	22.08	1.66	23.74	236.59	Pass	Max
19175	1907.5	22.07	1.66	23.73	236.05	Pass	Max

10MHz

Channel Number	Freq. (MHz)	Conducted Average Power (dBm)	Gain	EIRP(dBm)	EIRP(mW)	Pass /Fail	Setting
18650	1855	21.89	1.66	23.55	226.46	Pass	Max
18900	1880	22.11	1.66	23.77	238.23	Pass	Max
19150	1905	22.10	1.66	23.76	237.68	Pass	Max

15MHz

Channel Number	Freq. (MHz)	Conducted Average Power (dBm)	Gain	EIRP(dBm)	EIRP(mW)	Pass /Fail	Setting
18675	1857.5	21.87	1.66	23.53	225.42	Pass	Max
18900	1880	22.08	1.66	23.74	236.59	Pass	Max
19125	1902.5	22.19	1.66	23.85	242.66	Pass	Max

20MHz

Channel Number	Freq. (MHz)	Conducted Average Power (dBm)	Gain	EIRP(dBm)	EIRP(mW)	Pass /Fail	Setting
18700	1860	21.87	1.66	23.53	225.42	Pass	Max
18900	1880	21.98	1.66	23.64	231.21	Pass	Max
19100	1900	22.07	1.66	23.73	236.05	Pass	Max

16QAM

1.4MHz

Channel Number	Freq. (MHz)	Conducted Average Power (dBm)	Gain	EIRP(dBm)	EIRP(mW)	Pass /Fail	Setting
18607	1850.7	21.14	1.66	22.80	190.55	Pass	Max
18900	1880	21.17	1.66	22.83	191.87	Pass	Max
19193	1909.3	21.07	1.66	22.73	187.50	Pass	Max

3MHz

Channel Number	Freq. (MHz)	Conducted Average Power (dBm)	Gain	EIRP(dBm)	EIRP(mW)	Pass /Fail	Setting
18615	1851.5	21.08	1.66	22.74	187.93	Pass	Max
18900	1880	21.11	1.66	22.77	189.23	Pass	Max
19185	1908.5	21.01	1.66	22.67	184.93	Pass	Max

5MHz

Channel Number	Freq. (MHz)	Conducted Average Power (dBm)	Gain	EIRP(dBm)	EIRP(mW)	Pass /Fail	Setting
18625	1852.5	20.87	1.66	22.53	179.06	Pass	Max
18900	1880	21.03	1.66	22.69	185.78	Pass	Max
19175	1907.5	21.03	1.66	22.69	185.78	Pass	Max

10MHz

Channel Number	Freq. (MHz)	Conducted Average Power (dBm)	Gain	EIRP(dBm)	EIRP(mW)	Pass /Fail	Setting
18650	1855	20.87	1.66	22.53	179.06	Pass	Max
18900	1880	21.05	1.66	22.71	186.64	Pass	Max
19150	1905	21.07	1.66	22.73	187.50	Pass	Max

15MHz

Channel Number	Freq. (MHz)	Conducted Average Power (dBm)	Gain	EIRP(dBm)	EIRP(mW)	Pass /Fail	Setting
18675	1857.5	20.83	1.66	22.49	177.42	Pass	Max
18900	1880	21.01	1.66	22.67	184.93	Pass	Max
19125	1902.5	21.16	1.66	22.82	191.43	Pass	Max

20MHz

Channel Number	Freq. (MHz)	Conducted Average Power (dBm)	Gain	EIRP(dBm)	EIRP(mW)	Pass /Fail	Setting
18700	1860	20.84	1.66	22.50	177.83	Pass	Max
18900	1880	20.94	1.66	22.60	181.97	Pass	Max
19100	1900	21.05	1.66	22.71	186.64	Pass	Max

4.2 Modulation characteristics Measurement

4.2.1 Limits of Modulation characteristics

N/A

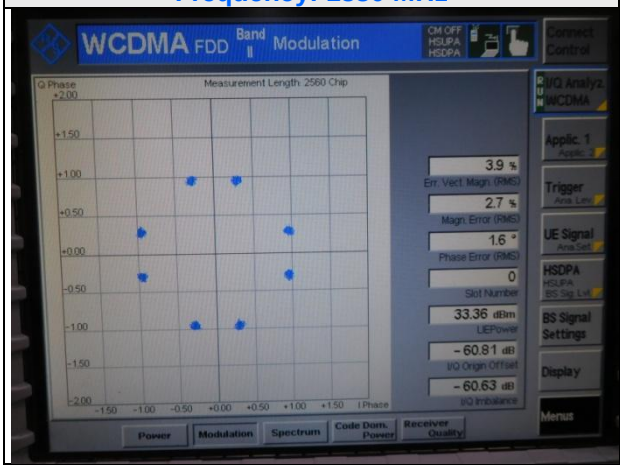
4.2.2 Test Procedure

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.

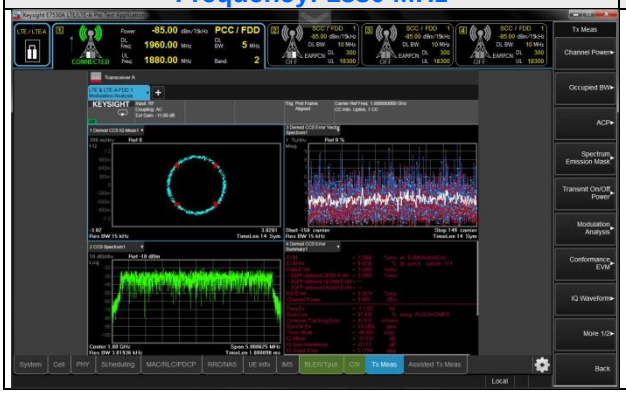
4.2.3 Test Setup

4.2.4 Test Results

WCDMA Band 2

WCDMA Band 2 / Frequency: 1880 MHz


LTE Band 2

QPSK / Channel Bandwidth: 20MHz / Frequency: 1880 MHz	16QAM / Channel Bandwidth: 20MHz / Frequency: 1880 MHz
	

4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stabiliity Measurement

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

4.3.2 Test Procedure

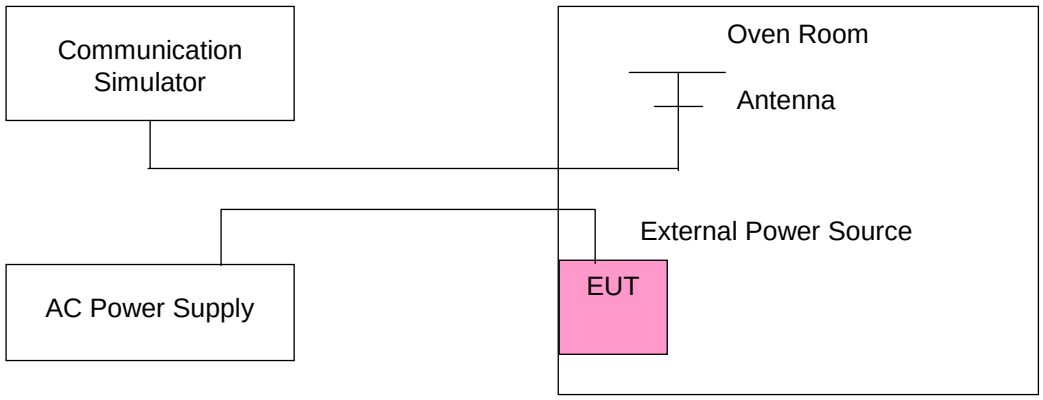
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected the external power supply to control the AC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5 ℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

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

4.3.3 Test Setup



4.3.4 Test Results

WCDMA

Frequency Error vs. Voltage

Voltage (Volts)	Frequency Error (MHz)
	WCDMA
102	1880.000020
138	1880.000043

Frequency Error vs. Temperature.

TEMP. (℃)	Frequency Error (MHz)
	WCDMA
75	1880.000042
70	1880.000049
60	1880.000031
50	1880.000039
40	1880.000034
30	1880.000033
20	1880.000041
10	1880.000048
0	1880.000032
-10	1880.000042
-20	1880.000030
-30	1880.000045

LTE

Frequency Error vs. Voltage

Voltage (Volts)	Frequency Error (MHz)					
	LTE Band 2					
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz
102	1880.000049	1880.000020	1880.000037	1880.000038	1880.000035	1880.000024
138	1880.000025	1880.000031	1880.000031	1880.000042	1880.000033	1880.000031

Frequency Error vs. Temperature

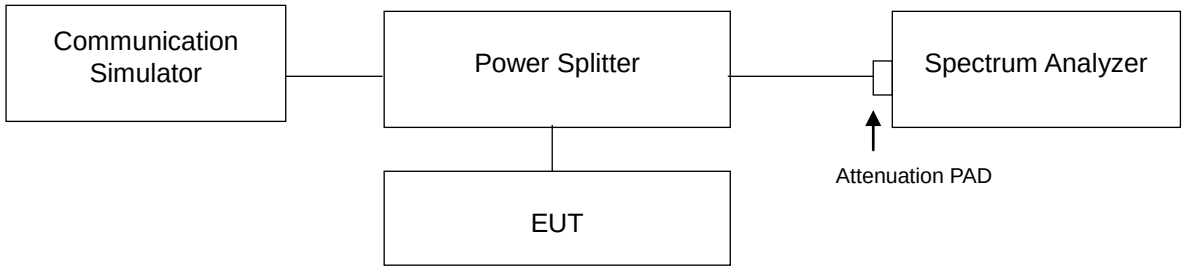
Temp. (℃)	Frequency Error (MHz)					
	LTE Band 2					
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz
75	1880.000027	1880.000032	1880.000037	1880.000021	1880.000033	1880.000048
70	1880.000048	1880.000044	1880.000026	1880.000020	1880.000030	1880.000046
60	1880.000031	1880.000028	1880.000039	1880.000028	1880.000045	1880.000029
50	1880.000040	1880.000025	1880.000047	1880.000021	1880.000021	1880.000043
40	1880.000046	1880.000034	1880.000031	1880.000023	1880.000024	1880.000034
30	1880.000027	1880.000034	1880.000033	1880.000034	1880.000020	1880.000024
20	1880.000048	1880.000047	1880.000028	1880.000032	1880.000047	1880.000032
10	1880.000038	1880.000040	1880.000049	1880.000047	1880.000031	1880.000045
0	1880.000048	1880.000026	1880.000026	1880.000031	1880.000044	1880.000036
-10	1880.000035	1880.000035	1880.000021	1880.000030	1880.000043	1880.000026
-20	1880.000027	1880.000031	1880.000042	1880.000029	1880.000035	1880.000030
-30	1880.000036	1880.000023	1880.000042	1880.000030	1880.000048	1880.000022

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

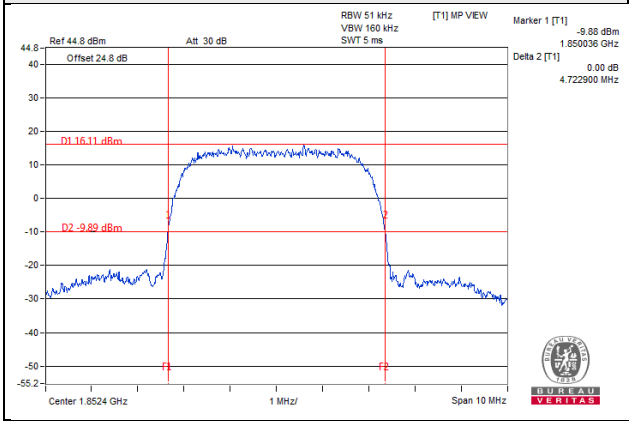
4.4.2 Test Setup



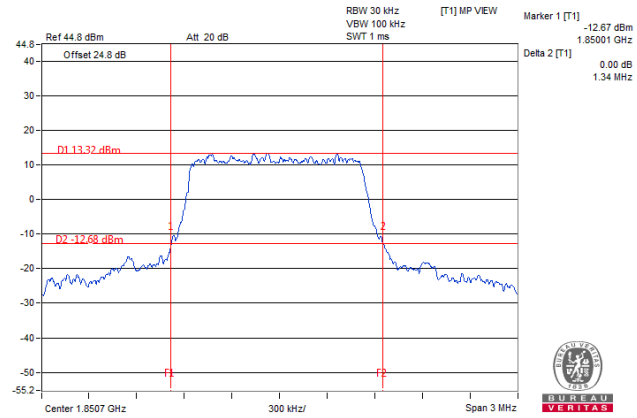
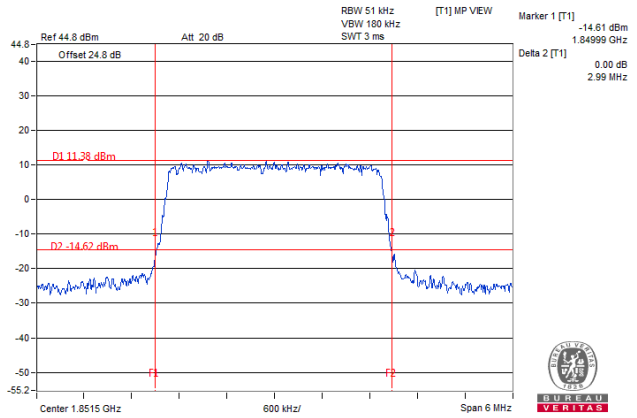
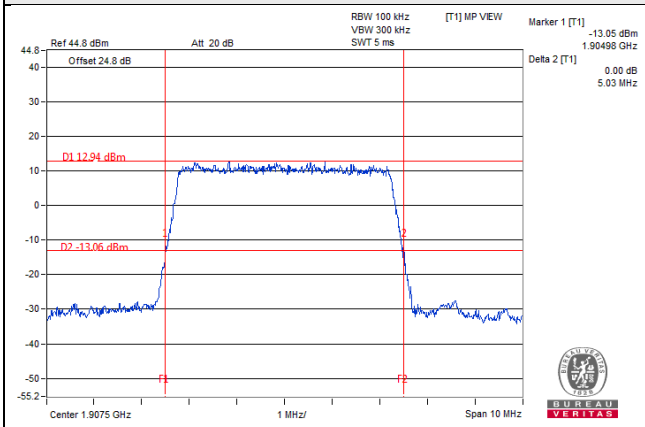
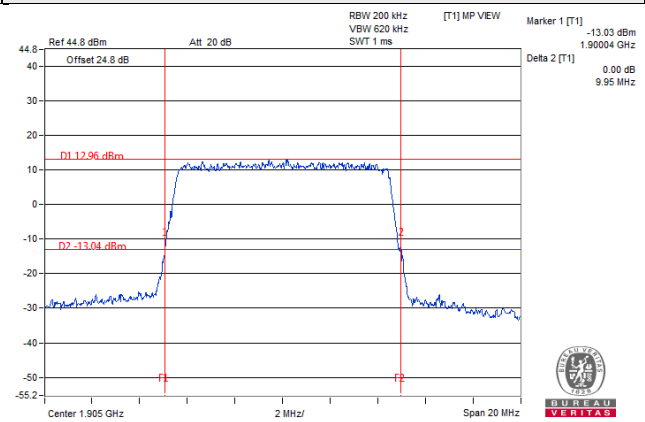
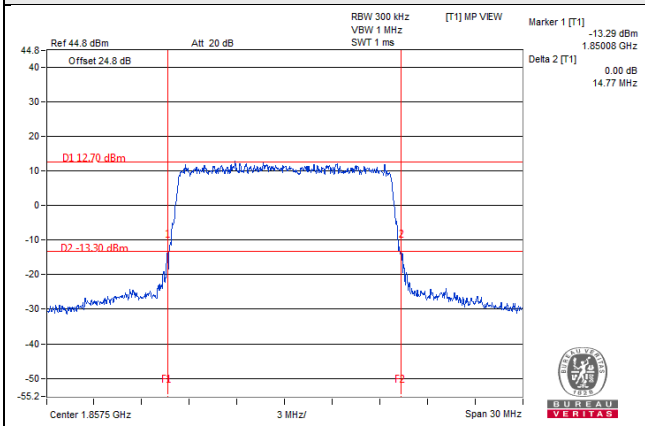
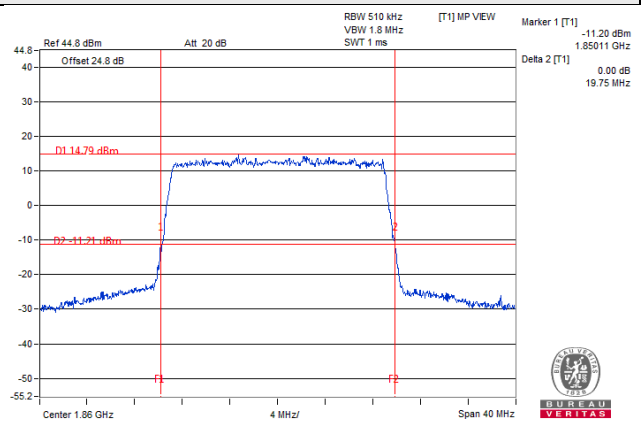
4.4.3 Test Result (-26dB Bandwidth)

Channel	FREQ. (MHz)	-26dB Bandwidth (MHz)
		WCDMA
9262	1852.4	4.72
9400	1880.0	4.67
9538	1907.6	4.68

Spectrum Plot of Worst Value
WCDMA



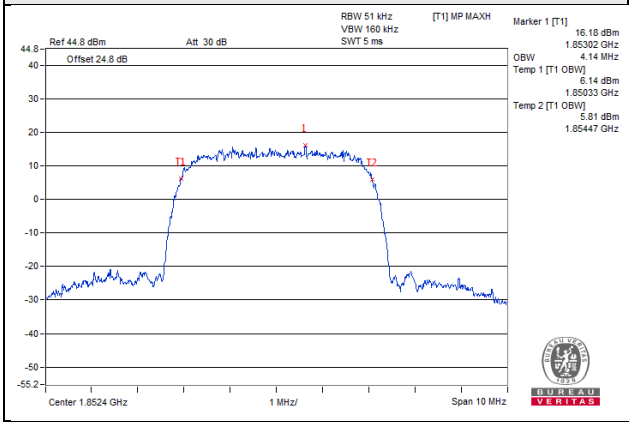
LTE Band 2							
Channel Bandwidth 1.4MHz				Channel Bandwidth 3MHz			
Channel	Frequency (MHz)	-26dB Bandwidth (MHz)		Channel	Frequency (MHz)	-26dB Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
18607	1850.7	1.34	1.34	18615	18515	2.95	2.99
18900	1880	1.30	1.32	18900	1880	2.98	2.96
19193	1909.3	1.29	1.29	19185	19075	2.97	2.96
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	5.02	5.00	18650	1855	9.87	9.84
18900	1880	5.02	5.01	18900	1880	9.79	9.85
19175	1907.5	5.03	4.98	19150	1905	9.95	9.95
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	14.72	14.77	18700	1860	19.73	19.75
18900	1880	14.74	14.68	18900	1880	19.69	19.62
19125	1902.5	14.76	14.75	19100	1900	19.64	19.67

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

4.4.4 Test Result (Occupied Bandwidth)

Channel	FREQ. (MHz)	99% Occupied Bandwidth (MHz)
		WCDMA
9262	1852.4	4.14
9400	1880.0	4.13
9538	1907.6	4.12

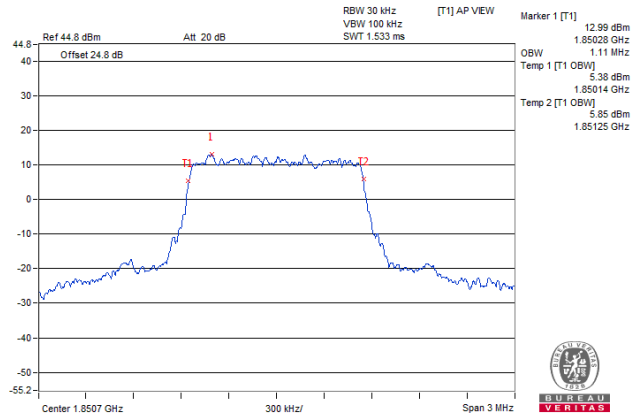
Spectrum Plot of Worst Value
WCDMA



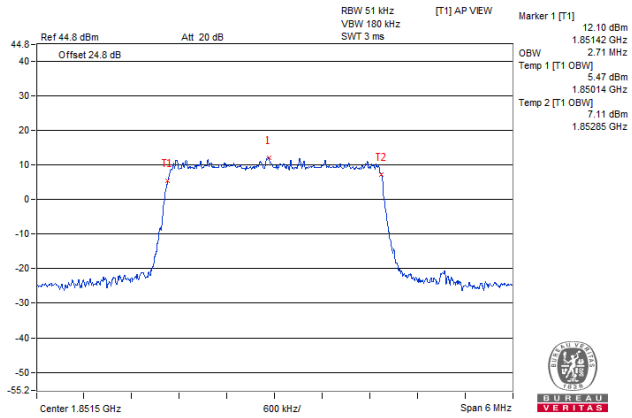
LTE Band 2							
Channel Bandwidth 1.4MHz				Channel Bandwidth 3MHz			
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
18607	1850.7	1.11	1.10	18615	18515	2.71	2.69
18900	1880	1.10	1.11	18900	1880	2.70	2.69
19193	1909.3	1.10	1.10	19185	19075	2.70	2.69
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	8.98	8.96
18900	1880	4.51	4.50	18900	1880	8.98	8.98
19175	1907.5	4.51	4.53	19150	1905	8.96	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	13.44	13.44	18700	1860	17.96	17.92
18900	1880	13.41	13.44	18900	1880	17.92	17.92
19125	1902.5	13.44	13.47	19100	1900	18.00	17.96

Spectrum Plot of Worst Value

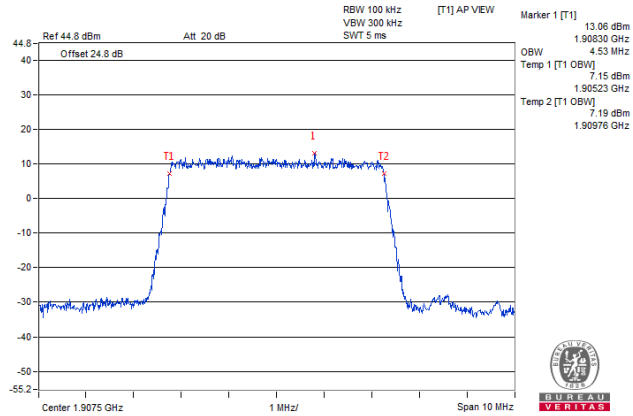
1.4MHz / QPSK



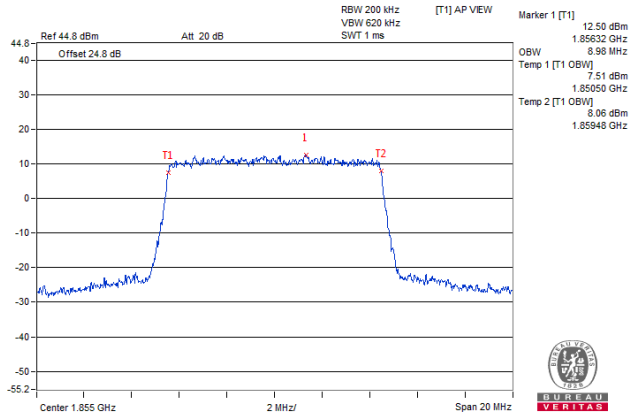
3MHz / QPSK



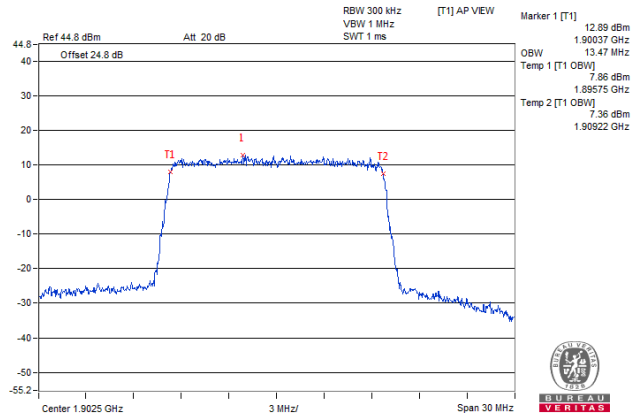
5MHz / 16QAM



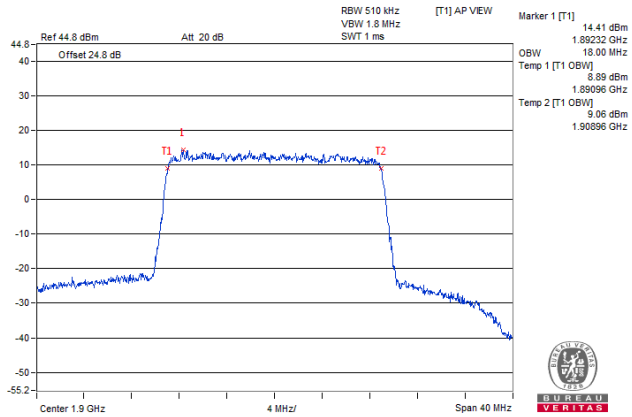
10MHz / QPSK



15MHz / 16QAM



20MHz / QPSK

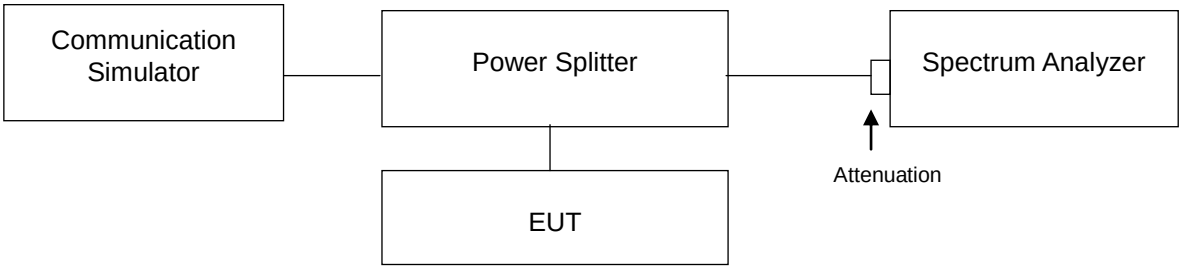


4.5 Band Edge Measurement

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.

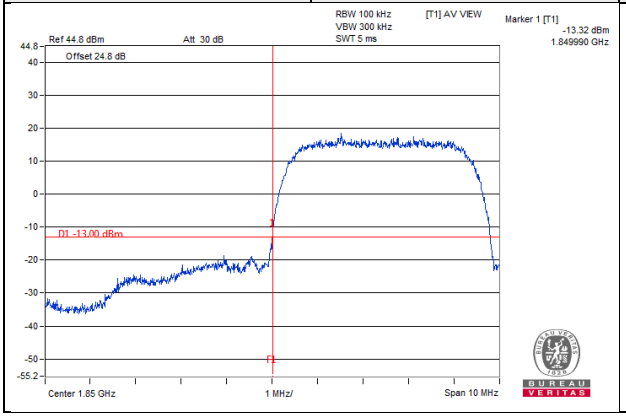
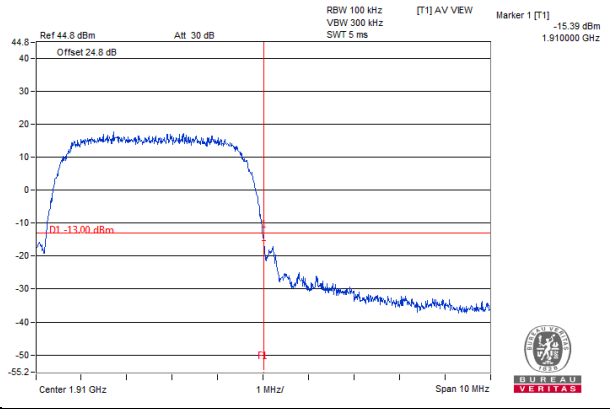
4.5.2 Test Setup

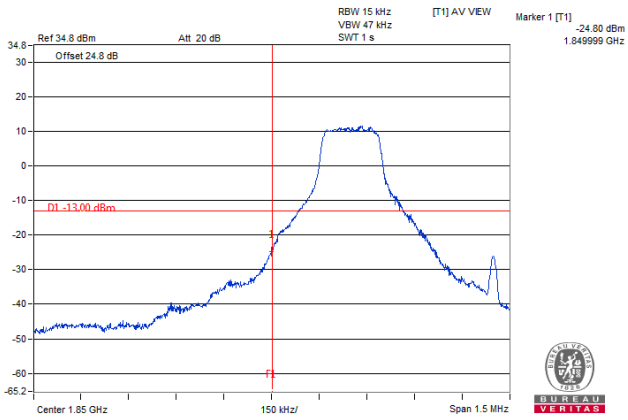
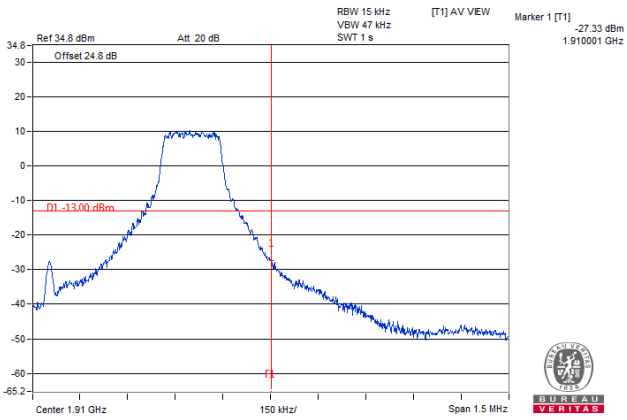
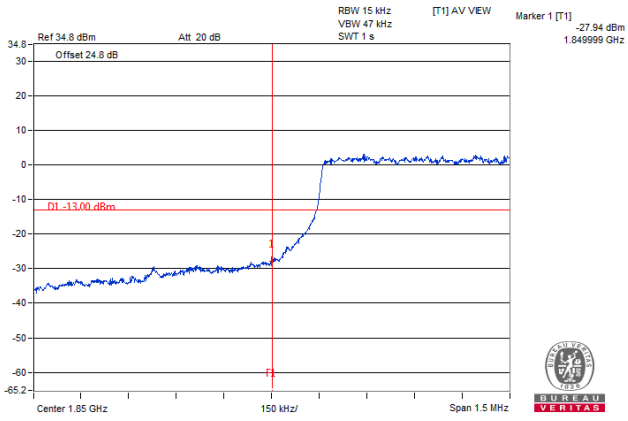
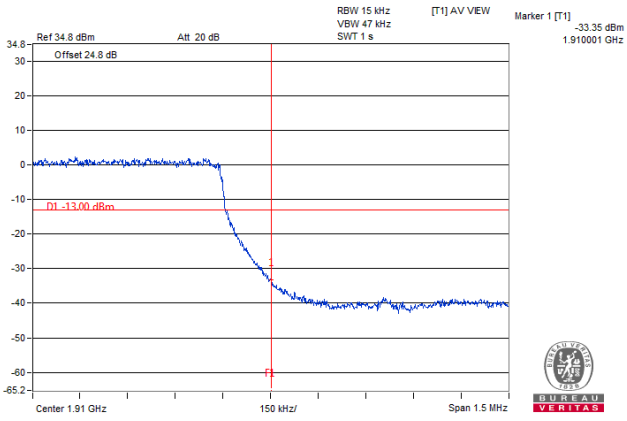


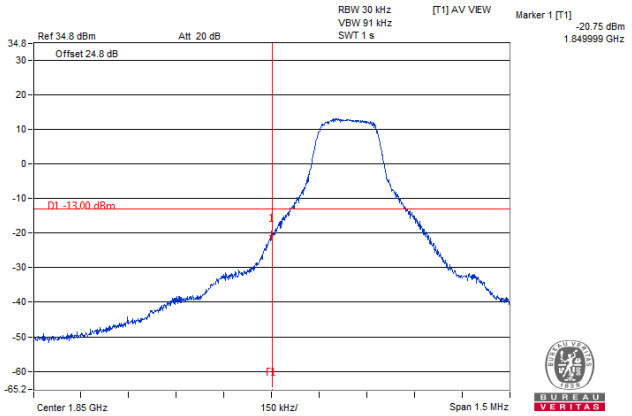
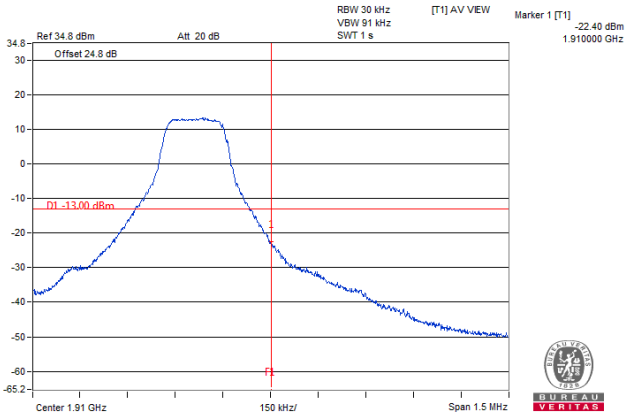
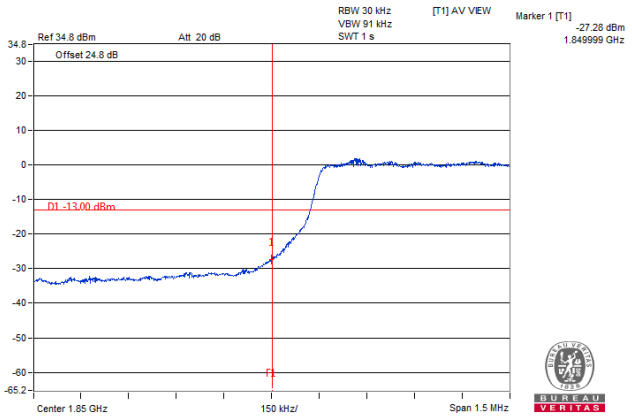
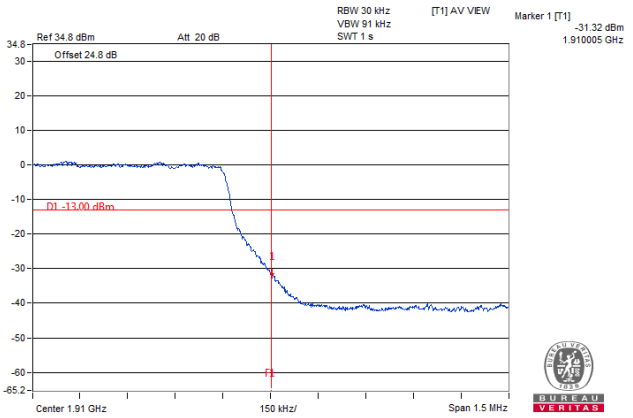
4.5.3 Test Procedures

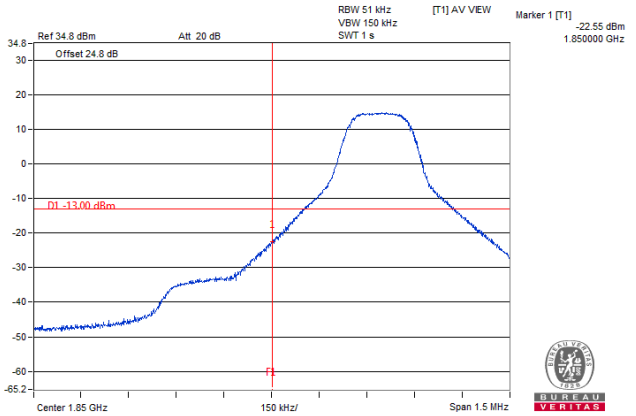
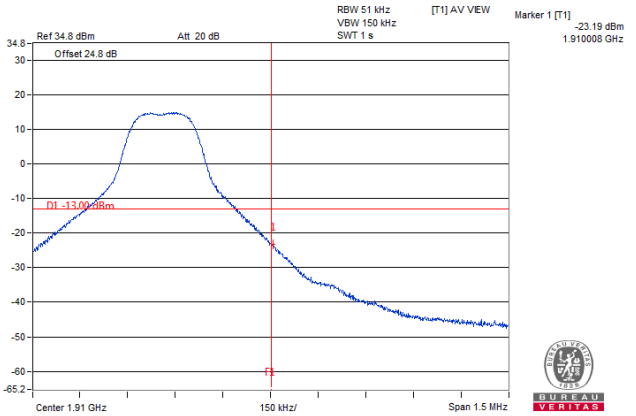
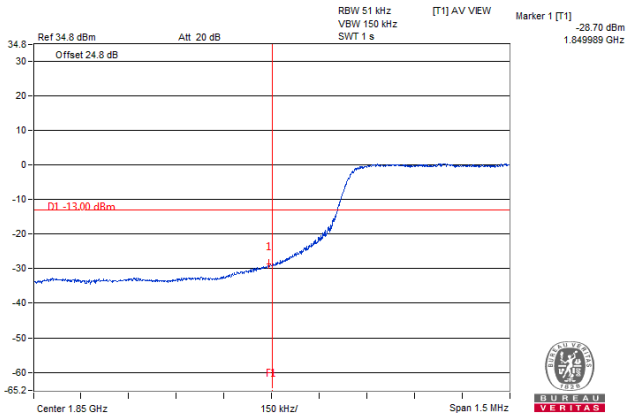
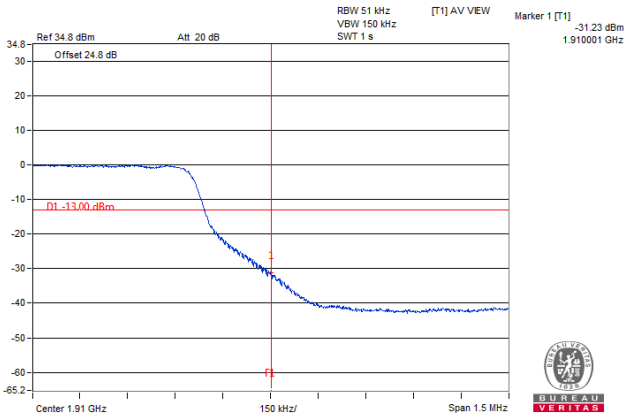
a. All measurements were done at low and high operational frequency range.
b. The center frequency of spectrum is the band edge frequency and s RB of the spectrum is >1% EMISSION BANDWIDTH and VB of the spectrum is ≧ 3*RB.
c. Record the max trace plot into the test report.

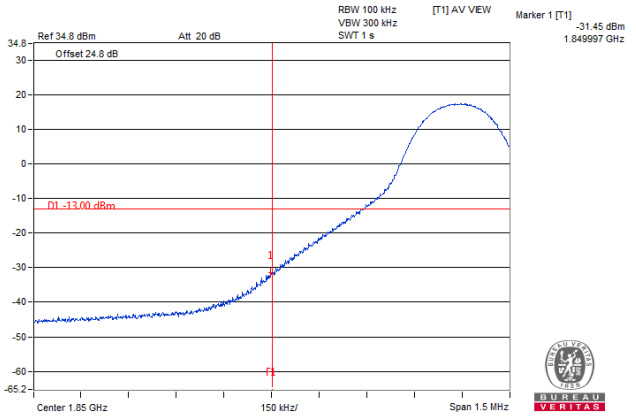
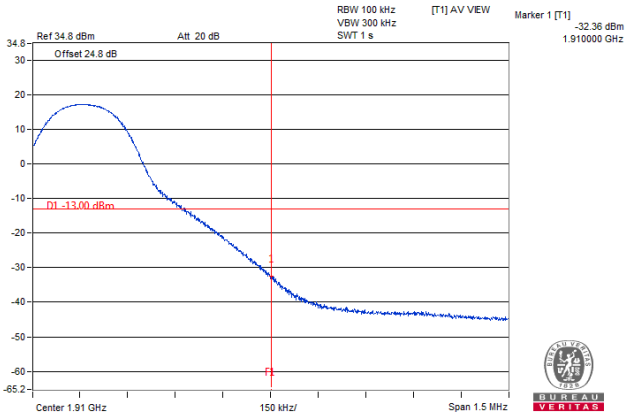
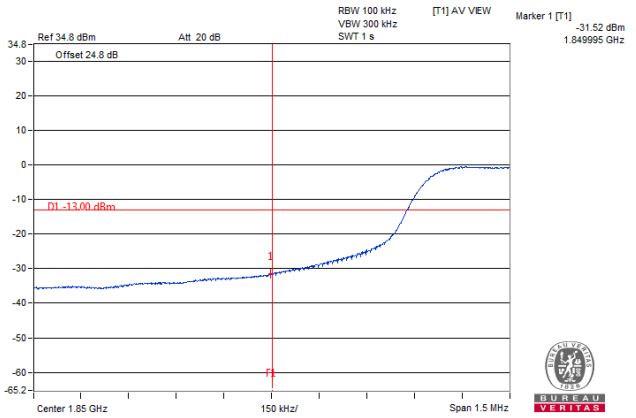
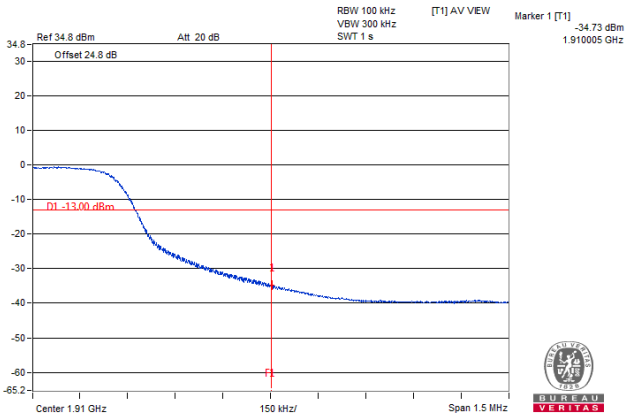
4.5.4 Test Results

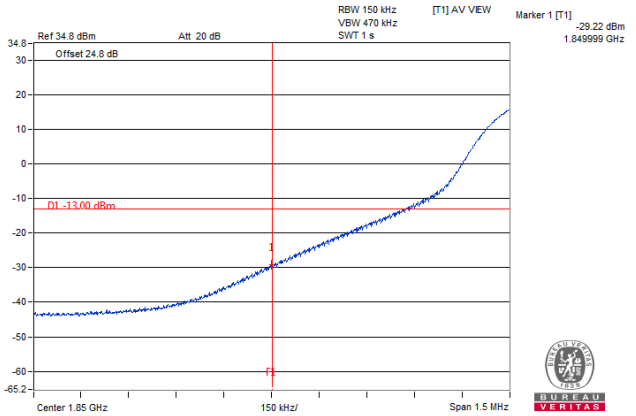
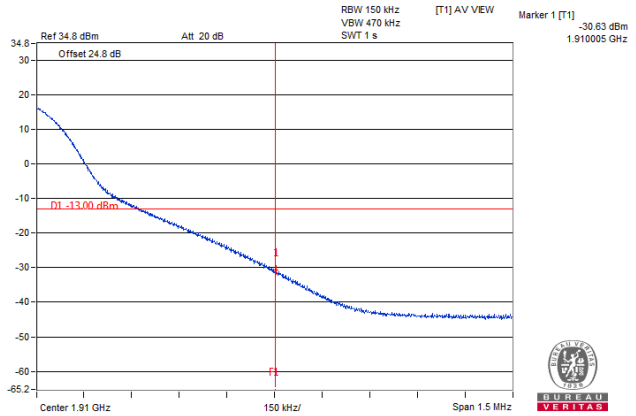
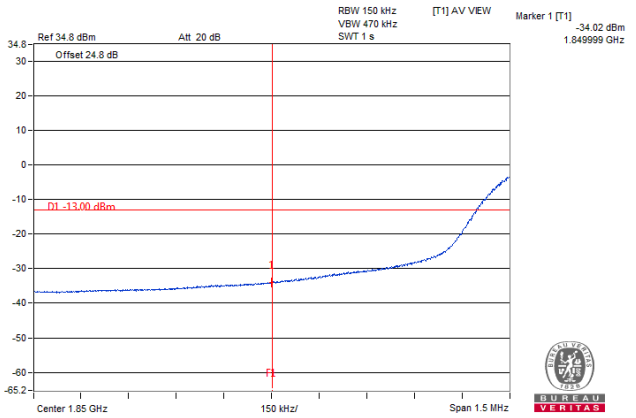
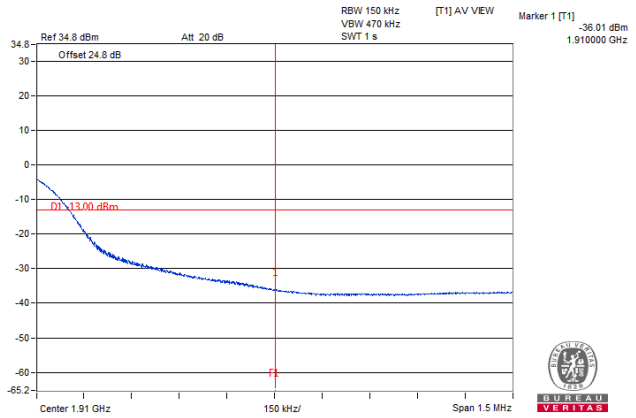
WCDMA			
Channel	9262	Channel	9538
			

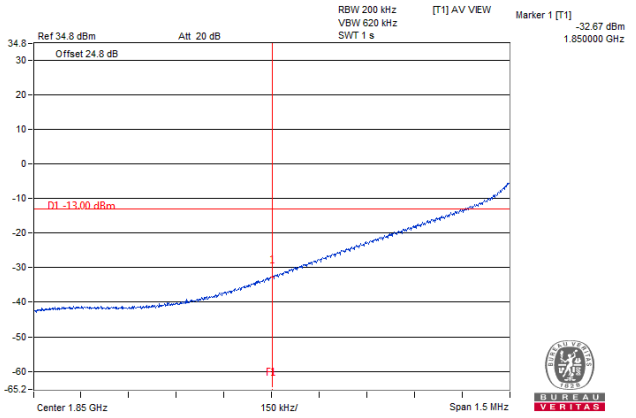
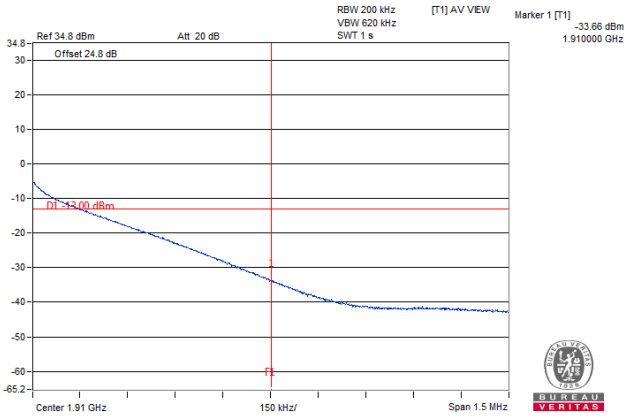
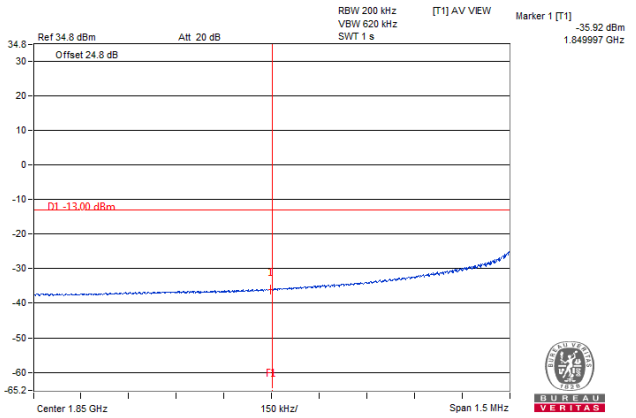
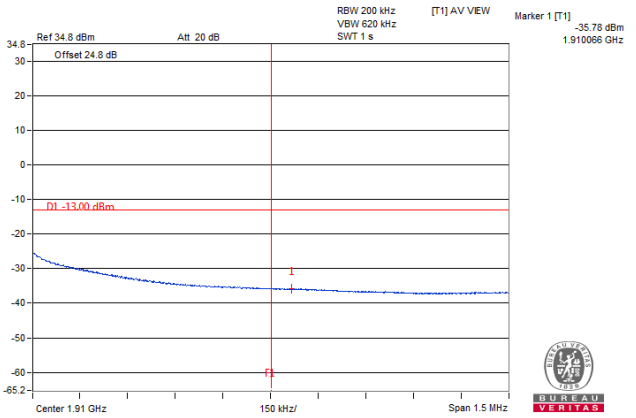
LTE Band 2					
Channel Bandwidth 1.4MHz					
Channel	18607	1 RB	Channel	19193	1 RB
					
Channel	18607	6 RB	Channel	19193	6 RB
					

LTE Band 2					
Channel Bandwidth 3MHz					
Channel	18615	1 RB	Channel	19185	1 RB
					
Channel	18615	15 RB	Channel	19185	15 RB
					

LTE Band 2					
Channel Bandwidth 5MHz					
Channel	18625	1 RB	Channel	19175	1 RB
					
Channel	18625	25 RB	Channel	19175	25 RB
					

LTE Band 2					
Channel Bandwidth 10MHz					
Channel	18650	1 RB	Channel	19150	1 RB
					
Channel	18650	50 RB	Channel	19150	50 RB
					

LTE Band 2					
Channel Bandwidth 15MHz					
Channel	18675	1 RB	Channel	19125	1 RB
					
Channel	18675	75 RB	Channel	19125	75 RB
					

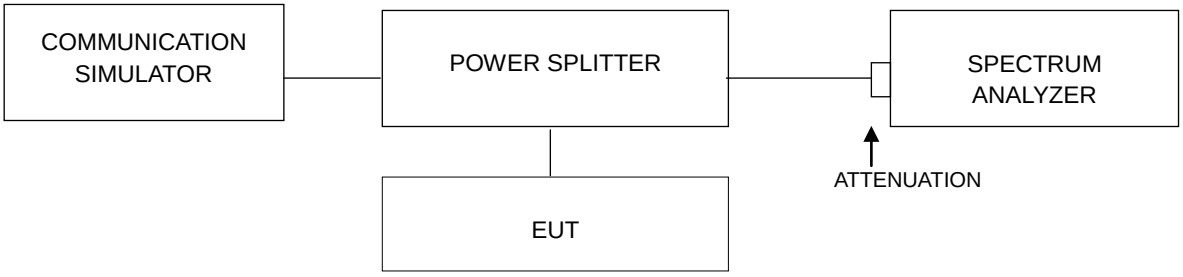
LTE Band 2					
Channel Bandwidth 20MHz					
Channel	18700	1 RB	Channel	19100	1 RB
					
Channel	18700	100 RB	Channel	19100	100 RB
					

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



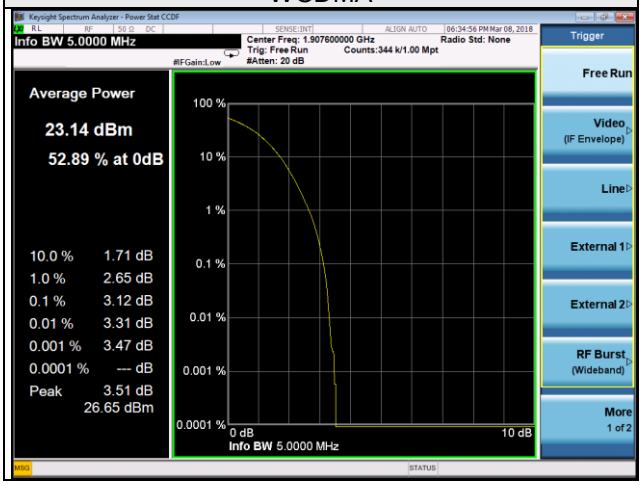
4.5.3 Test Procedures

1. Set resolution/measurement bandwidth ≥ 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%.

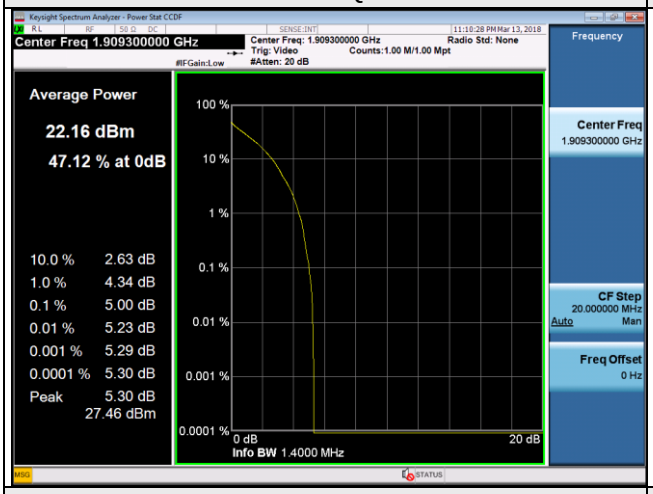
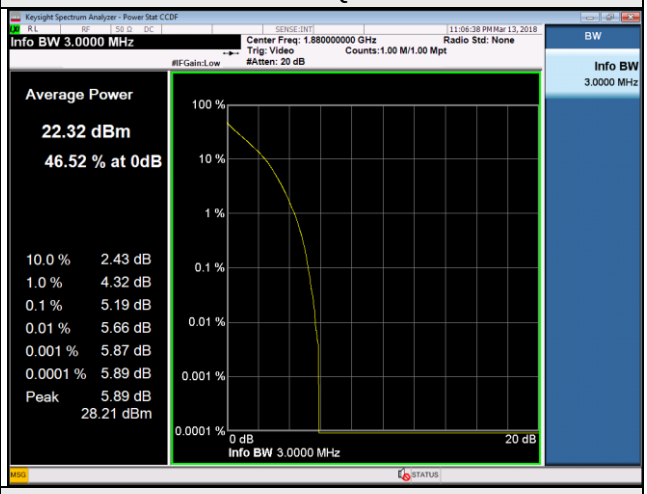
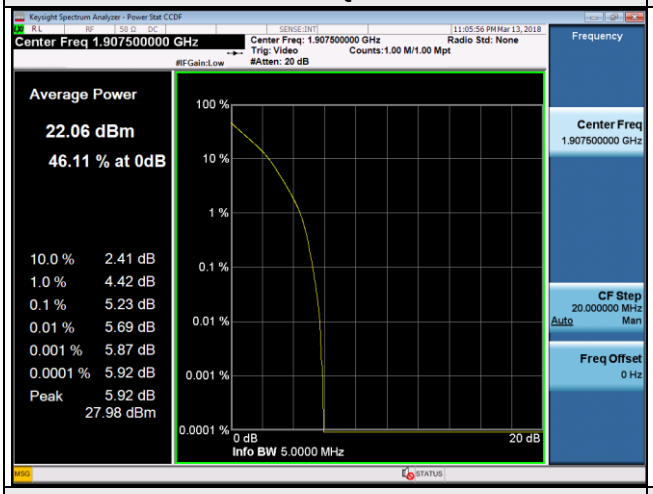
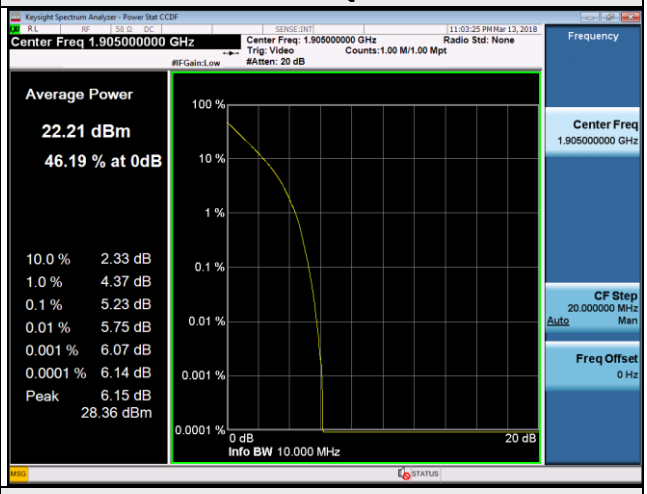
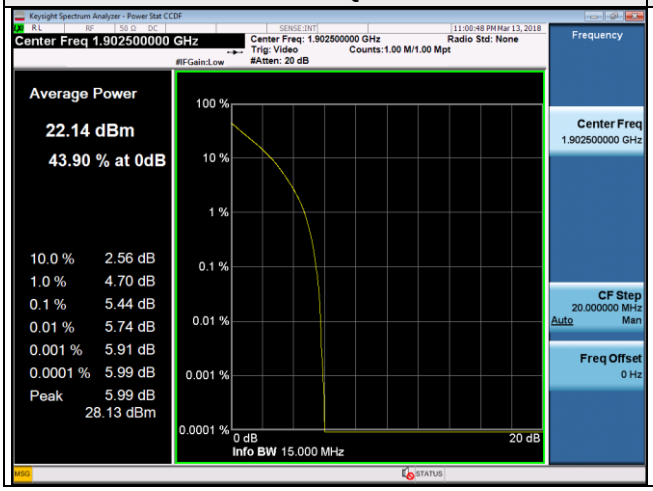
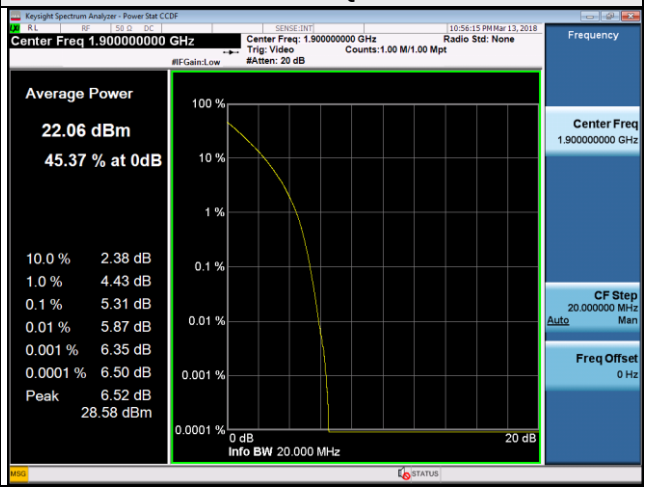
4.5.4 Test Results

Channel	Freq. (MHz)	Peak to Average Ratio (dB)
		WCDMA II
9262	1852.4	2.76
9400	1880	3.05
9538	1907.6	3.12

Spectrum Plot of Worst Value
WCDMA



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			QPSK
18607	1850.7	4.56	18615	1851.5	4.74
18900	1880	4.96	18900	1880	5.19
19193	1909.3	5.00	19185	1907.5	5.16
Channel Bandwidth 5MHz			Channel Bandwidth 10MHz		
Channel	Frequency (MHz)	Peak To Average Ratio (dB)	Channel	Frequency (MHz)	Peak To Average Ratio (dB)
		QPSK			QPSK
18625	1852.5	4.82	18650	1855	4.85
18900	1880	5.20	18900	1880	5.08
19175	1907.5	5.23	19150	1905	5.23
Channel Bandwidth 15MHz			Channel Bandwidth 20MHz		
Channel	Frequency (MHz)	Peak To Average Ratio (dB)	Channel	Frequency (MHz)	Peak To Average Ratio (dB)
		QPSK			QPSK
18675	1857.5	5.10	18700	1860	5.05
18900	1880	5.28	18900	1880	5.09
19125	1902.5	5.44	19100	1900	5.31

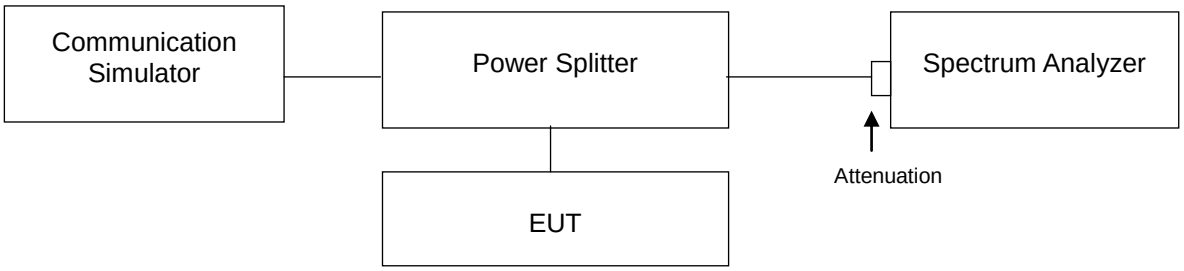
Spectrum Plot of Worst Value	
1.4MHz / QPSK	3MHz / QPSK
	
5MHz / QPSK	10MHz / QPSK
	
15MHz / QPSK	20MHz / QPSK
	

4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

4.7.2 Test Setup



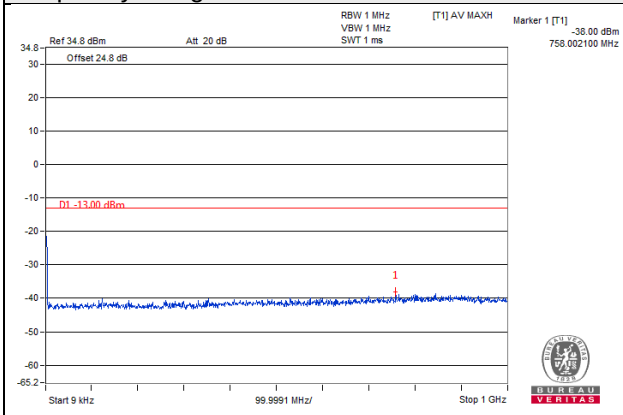
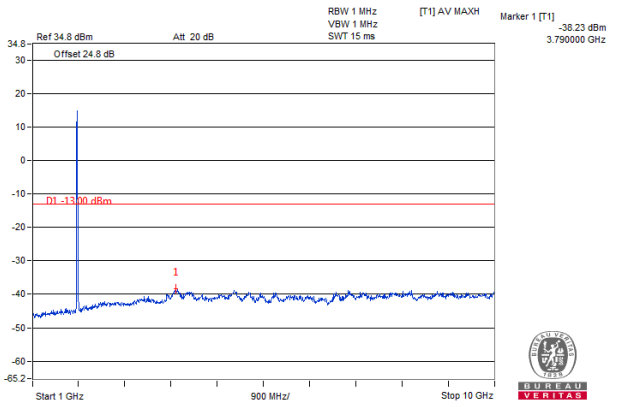
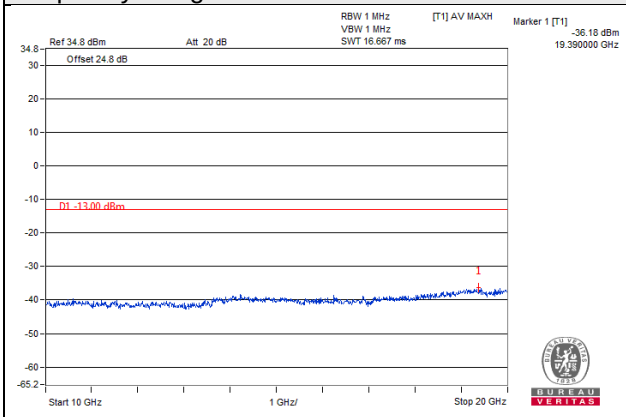
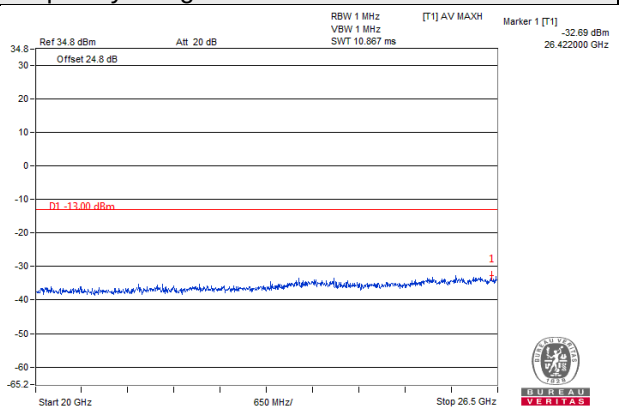
4.7.3 Test Procedure

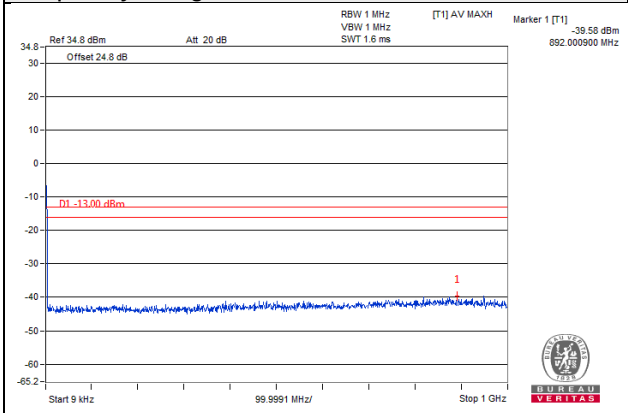
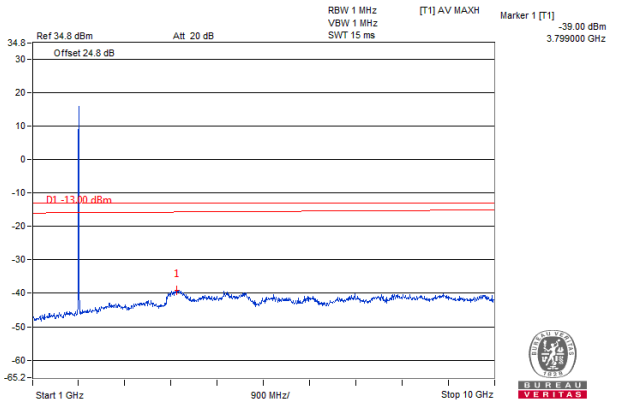
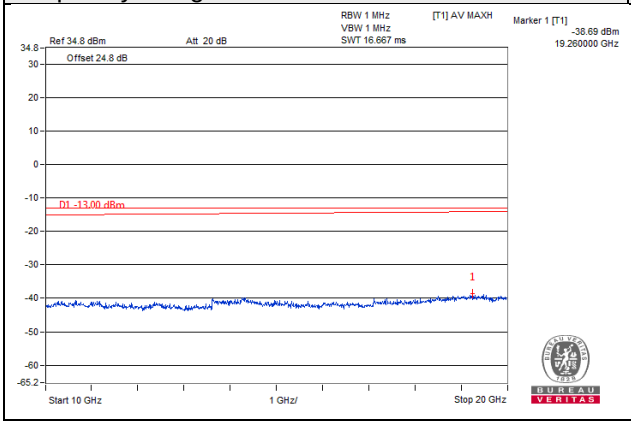
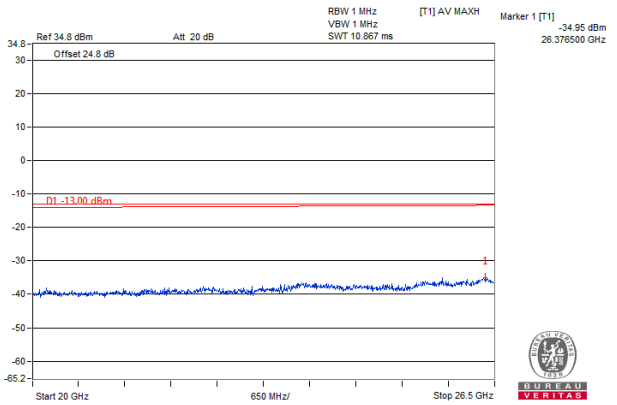
a. All measurements were done at middle operational frequency range.

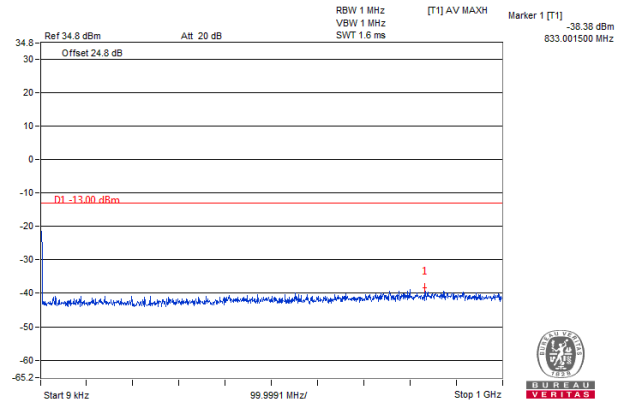
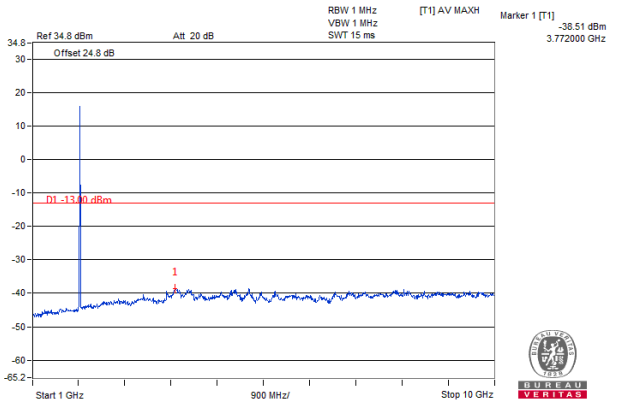
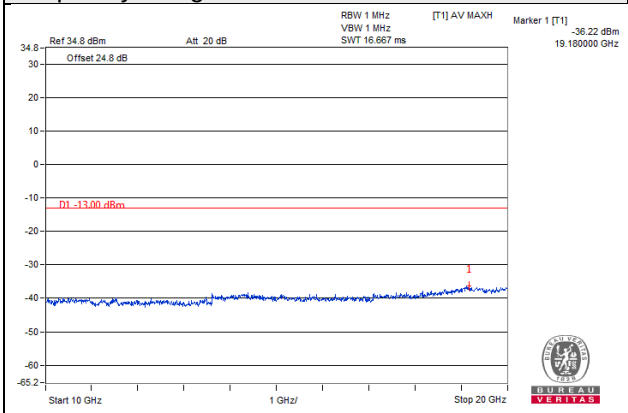
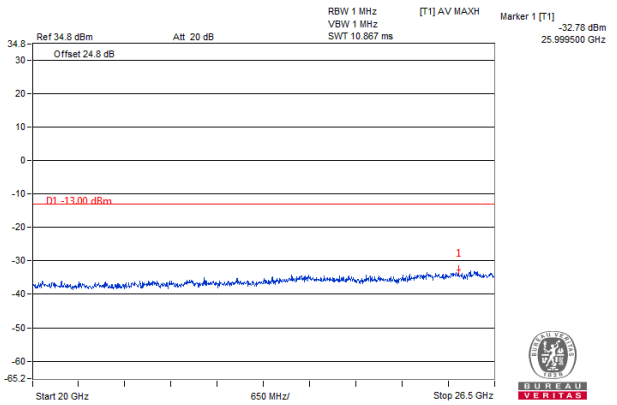
b. When the spectrum scanned from 9 kHz to suitable frequency, it shall be connected to the 20dB pad attenuated the carried frequency.

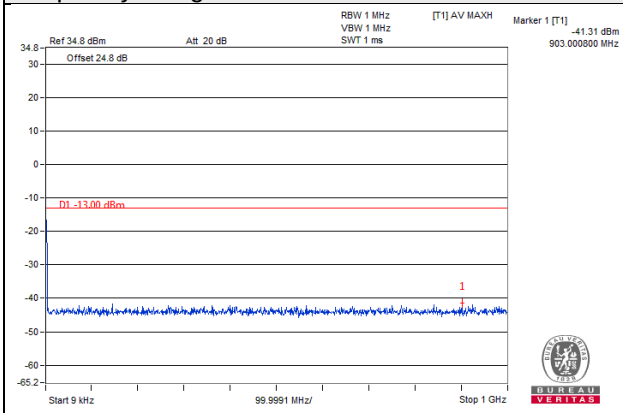
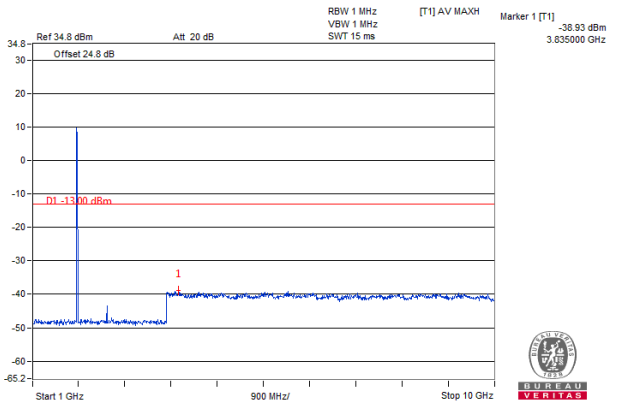
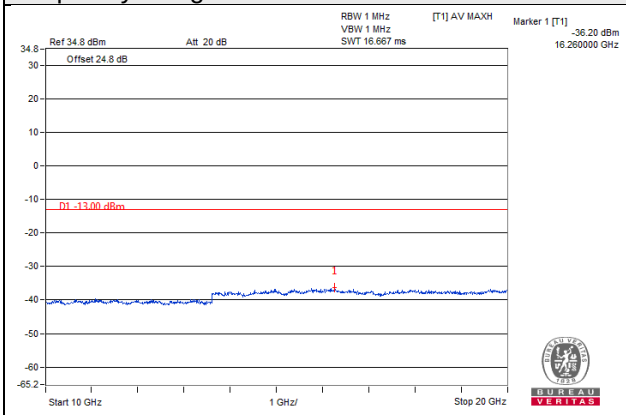
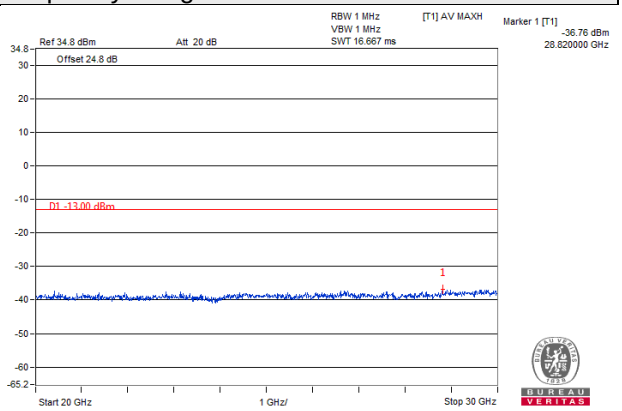
c. RBW=1MHz and VBW=1MHz is used for conducted emission measurement.

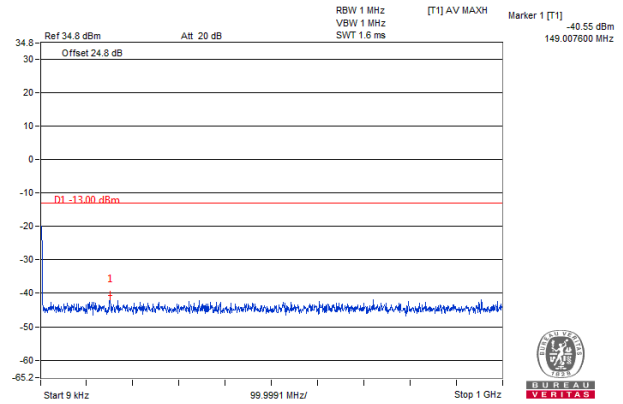
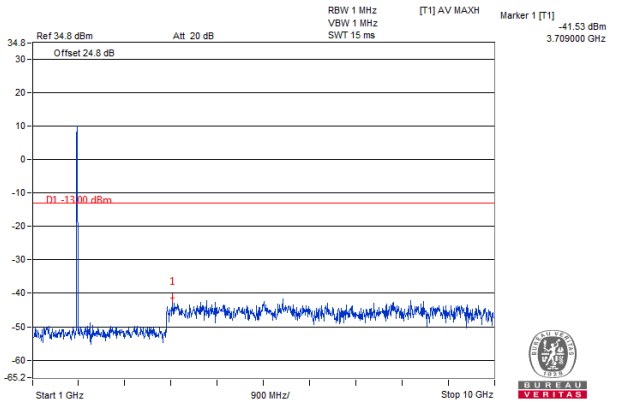
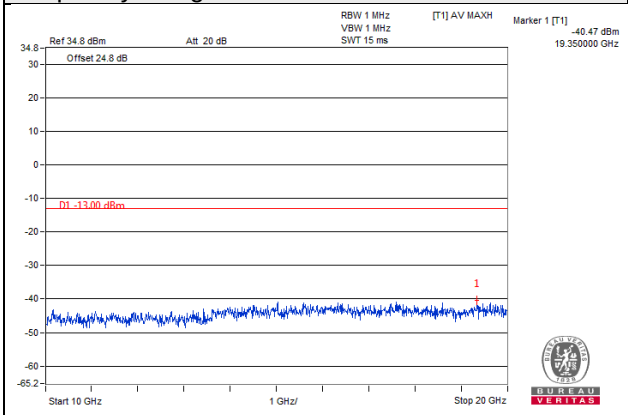
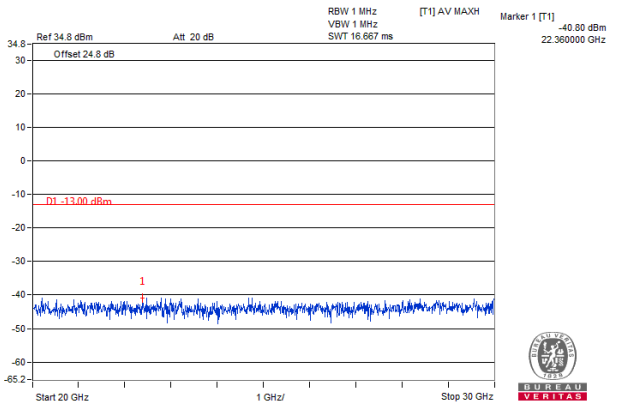
4.7.4 Test Results

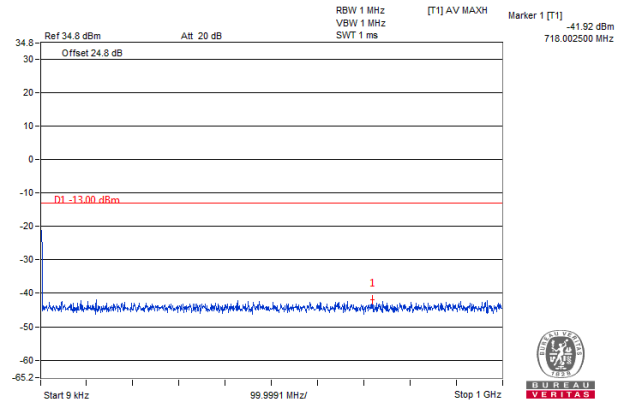
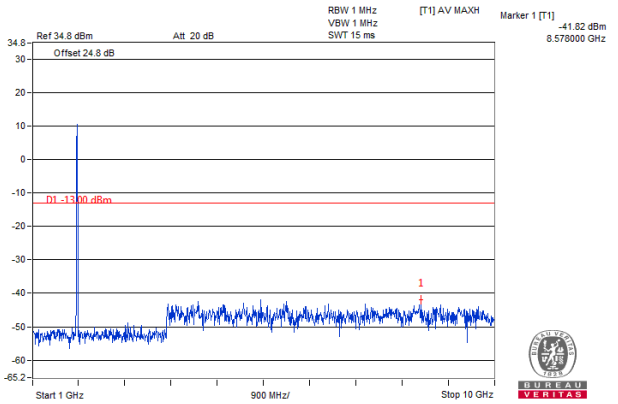
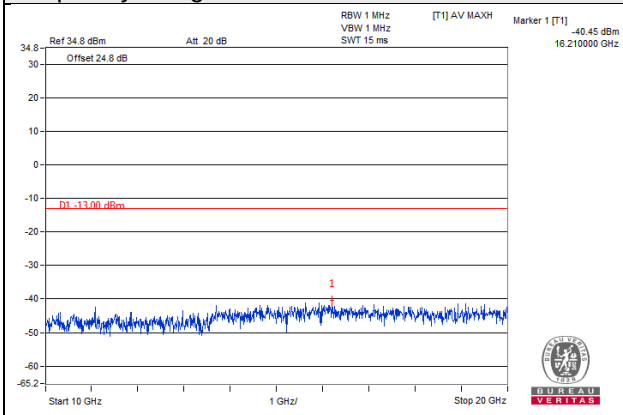
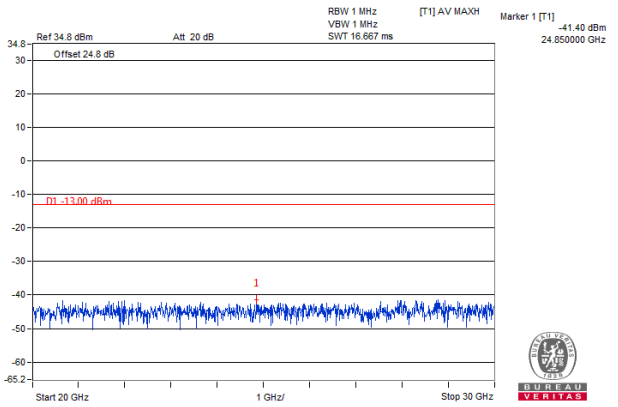
WCDMA	
Channel 9262	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~26.5GHz
	

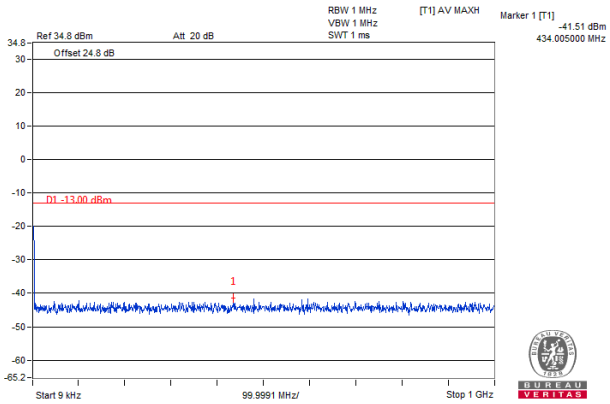
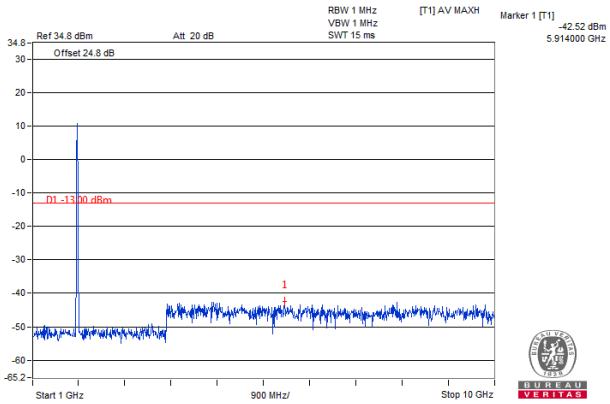
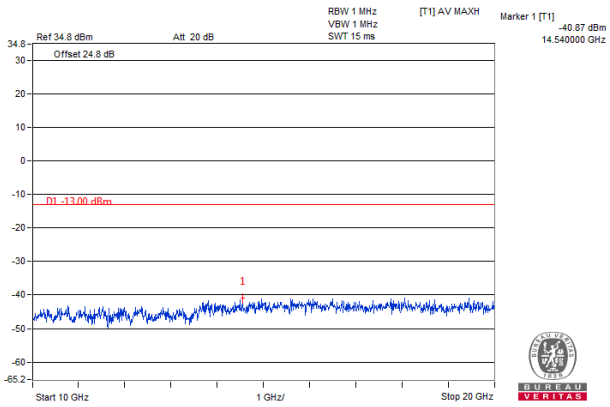
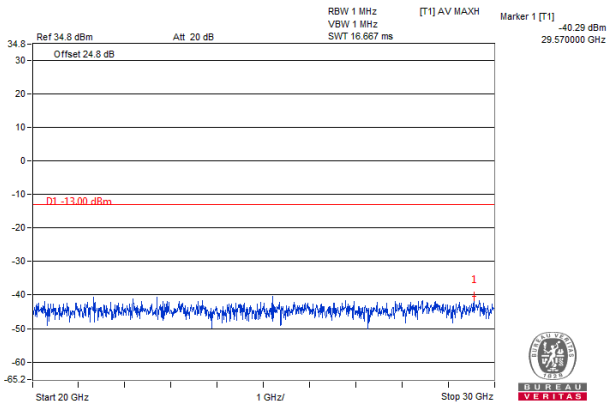
Channel 9400	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~26.5GHz
	

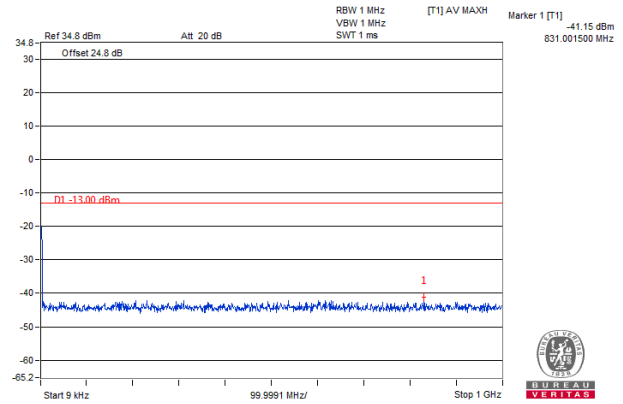
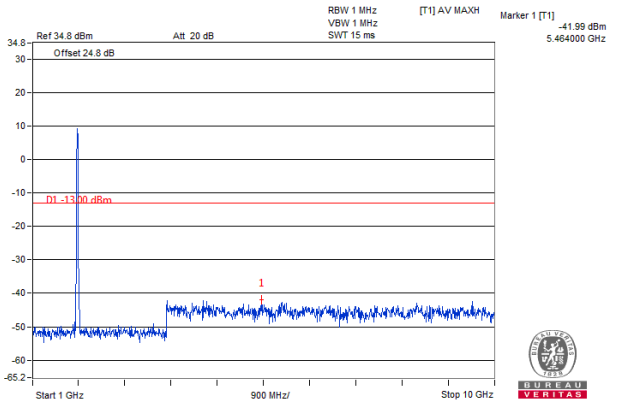
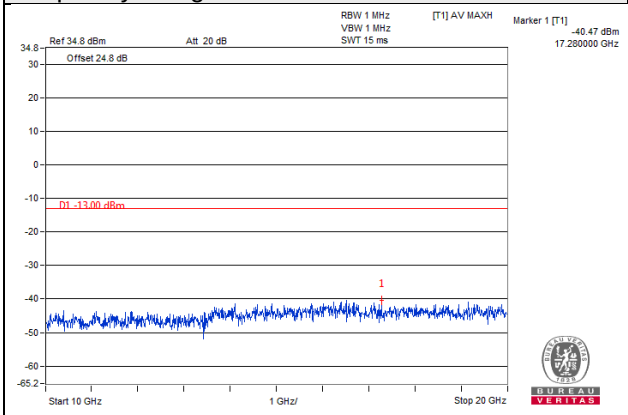
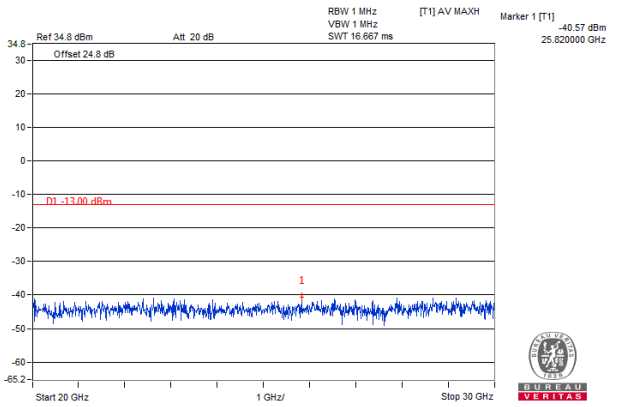
Channel 9538	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~26.5GHz
	

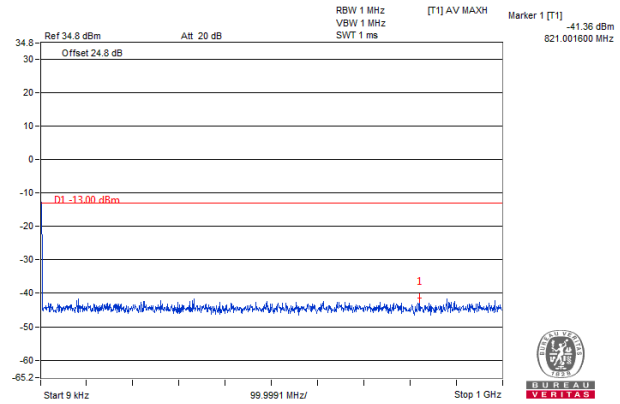
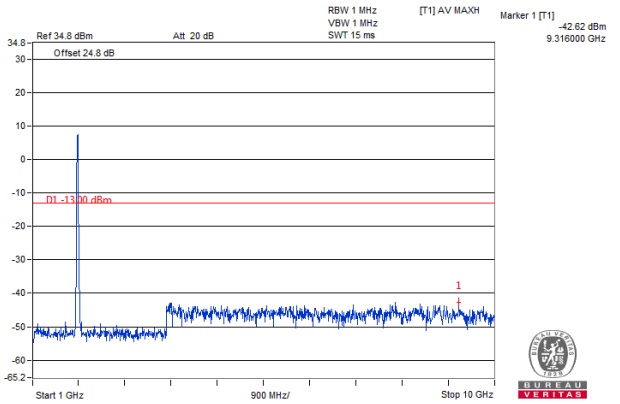
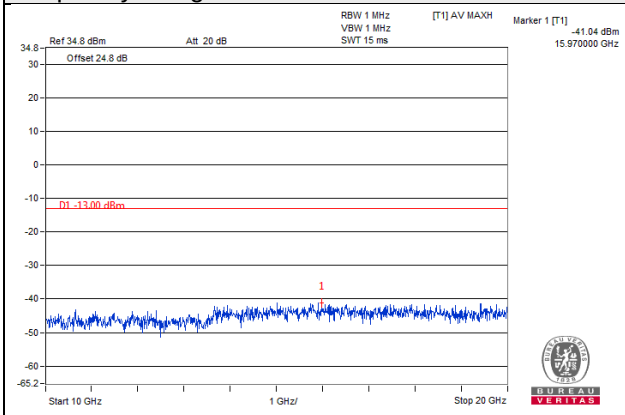
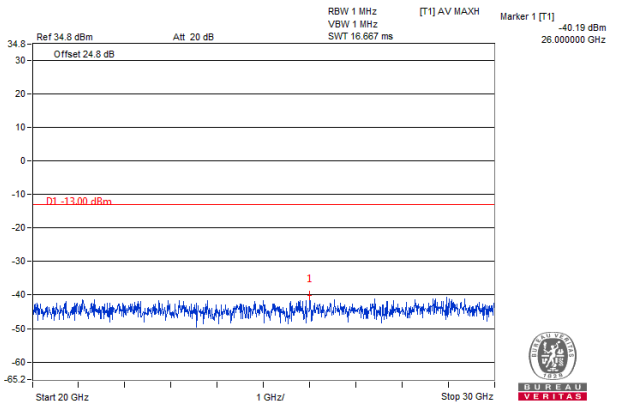
LTE Band 2 Channel Band width: 1.4MHz	
Channel 18607	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

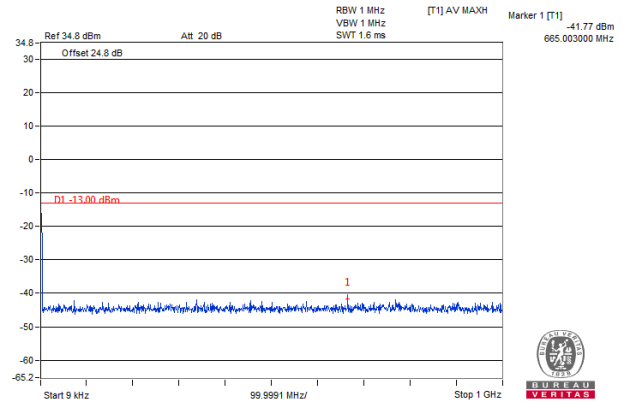
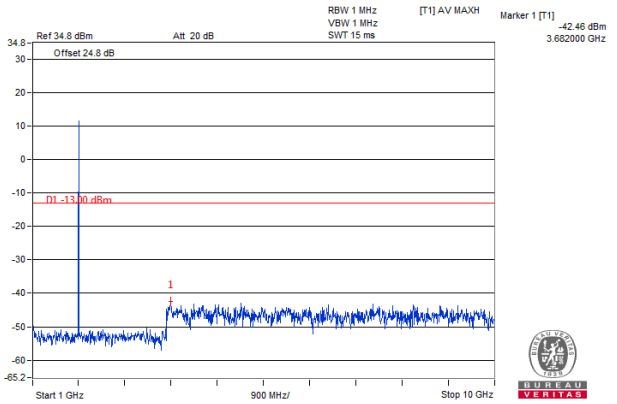
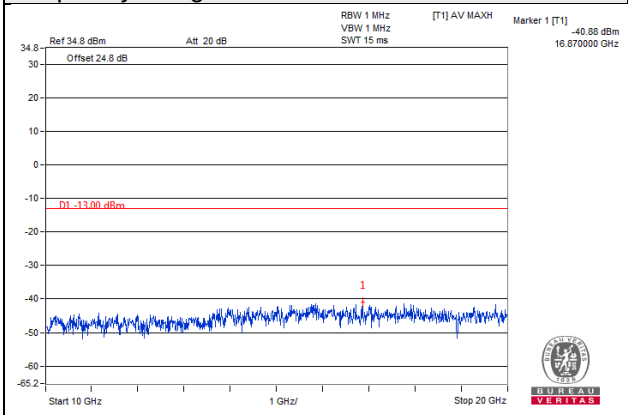
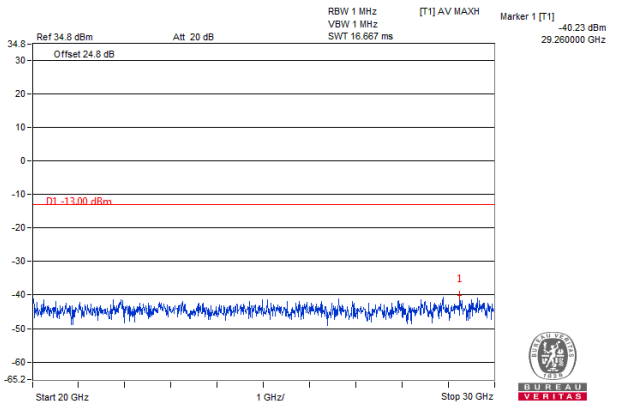
LTE Band 2 Channel Band width: 3MHz	
Channel 18615	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

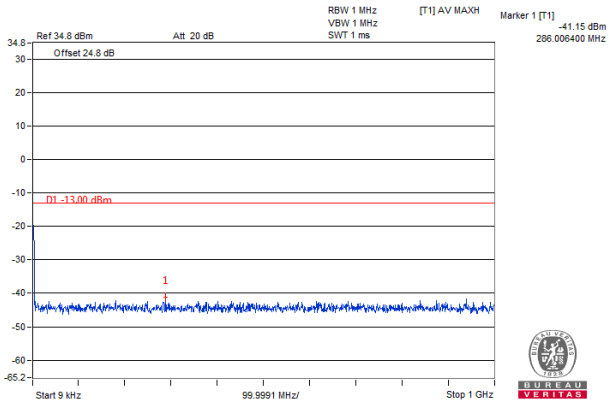
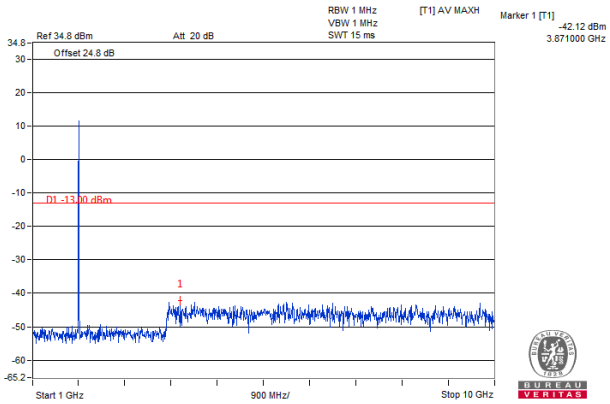
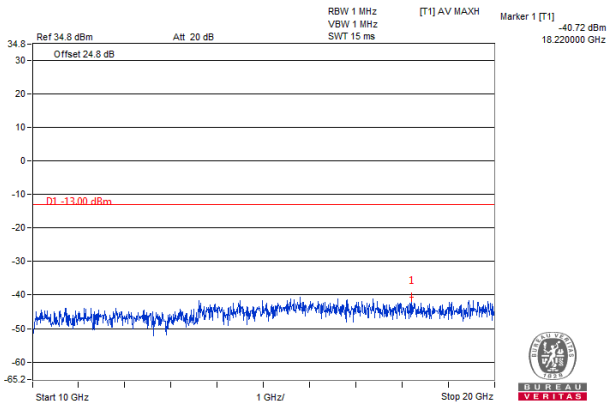
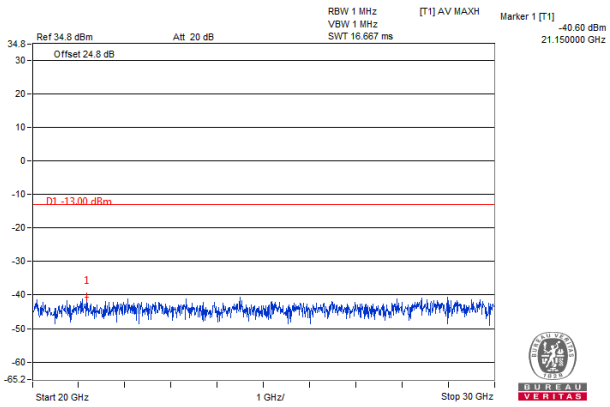
LTE Band 2 Channel Band width: 5MHz	
Channel 18625	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

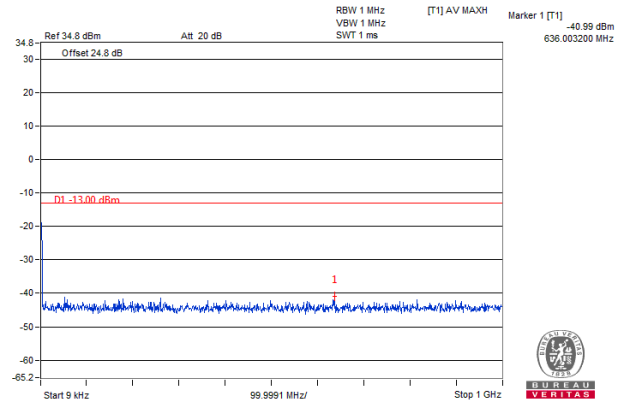
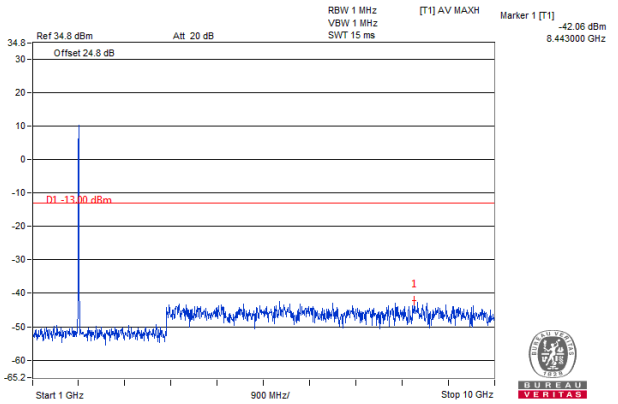
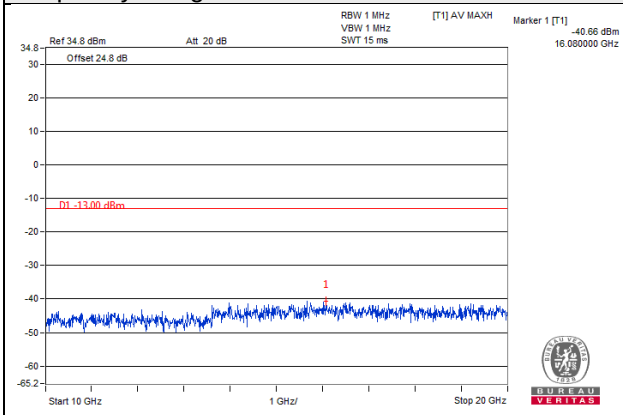
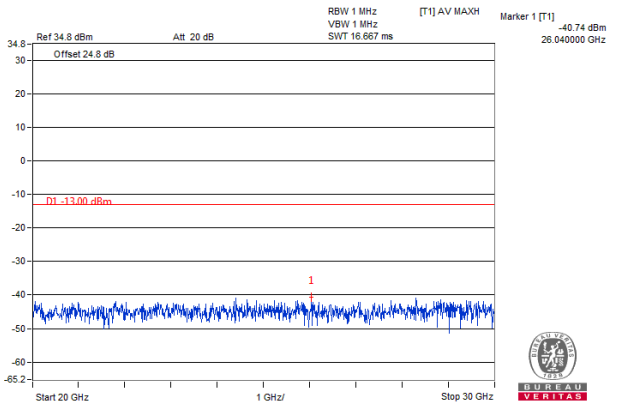
LTE Band 2 Channel Band width: 10MHz	
Channel 18650	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

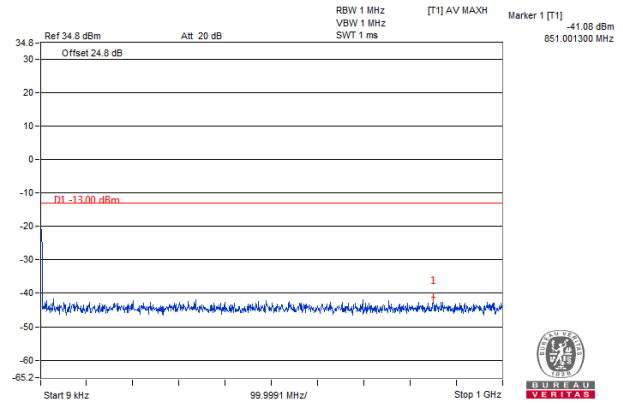
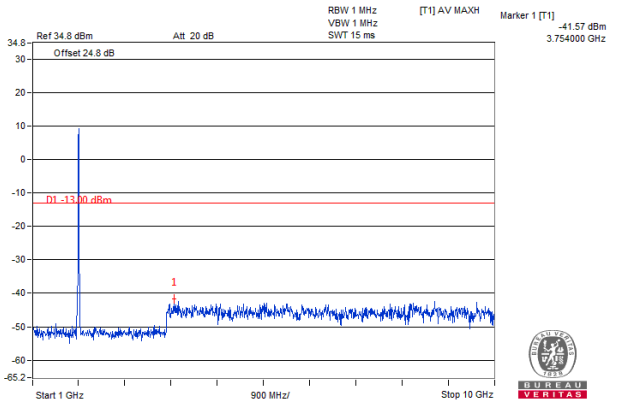
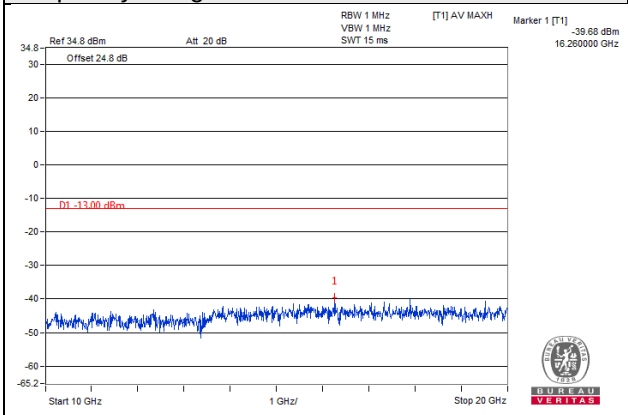
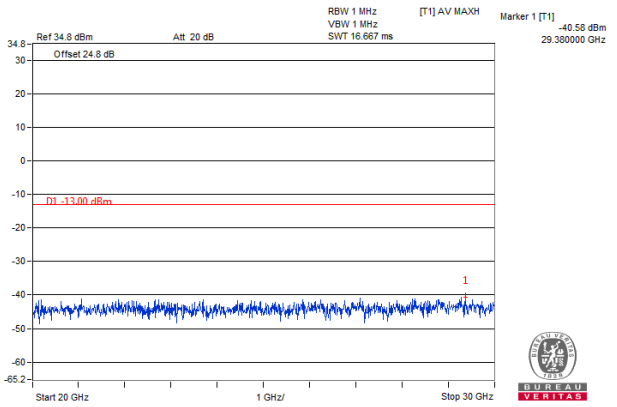
LTE Band 2 Channel Band width: 15MHz	
Channel 18675	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

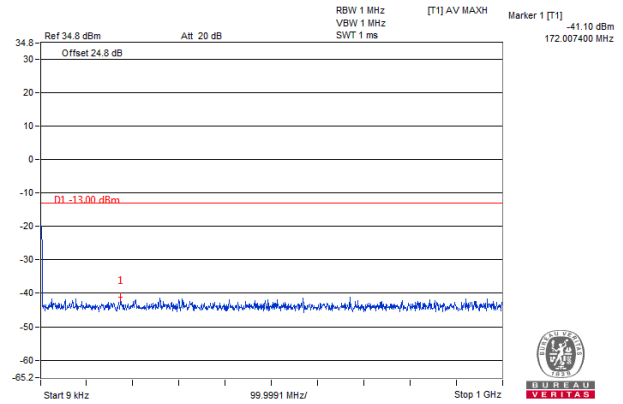
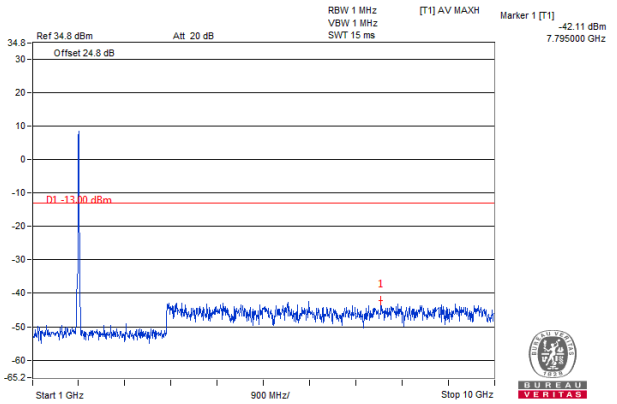
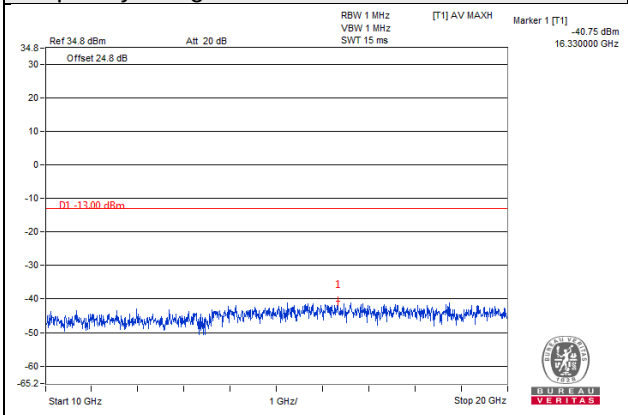
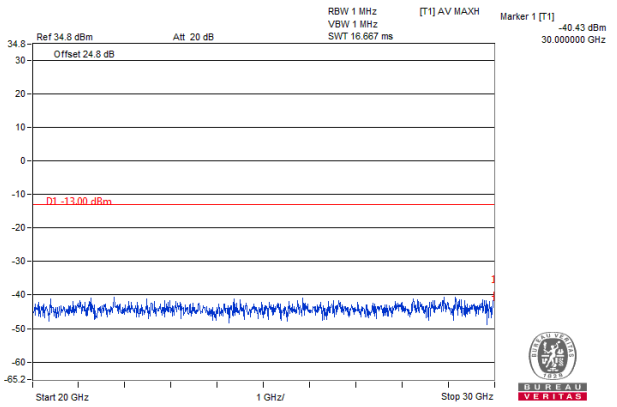
LTE Band 2 Channel Band width: 20MHz	
Channel 18700	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

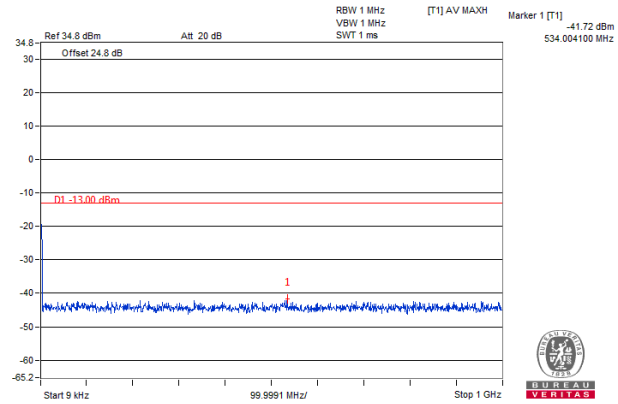
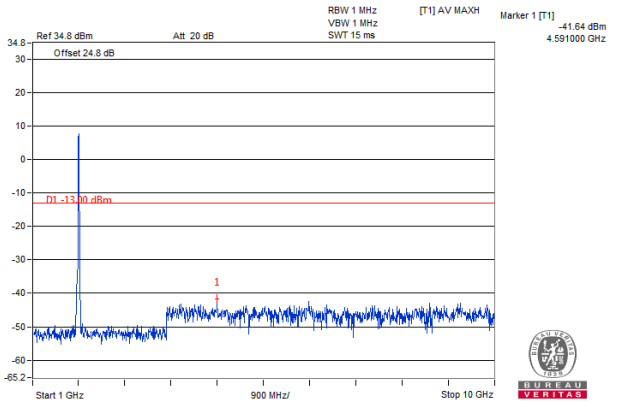
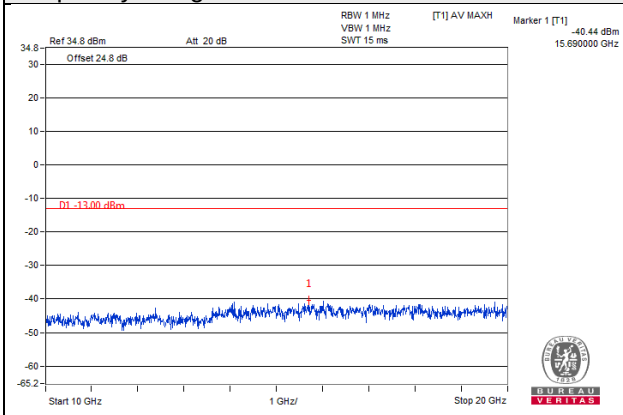
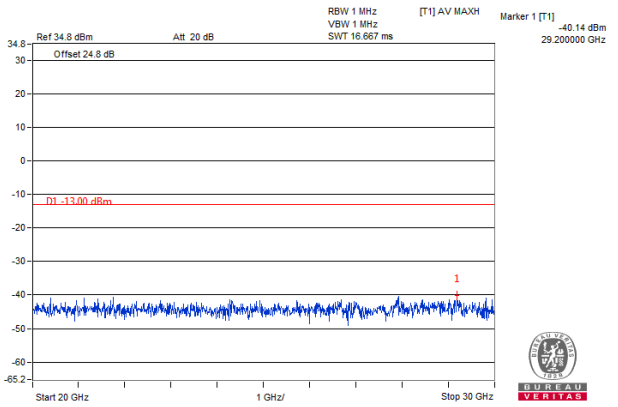
LTE Band 2 Channel Band width: 1.4MHz	
Channel 18900	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

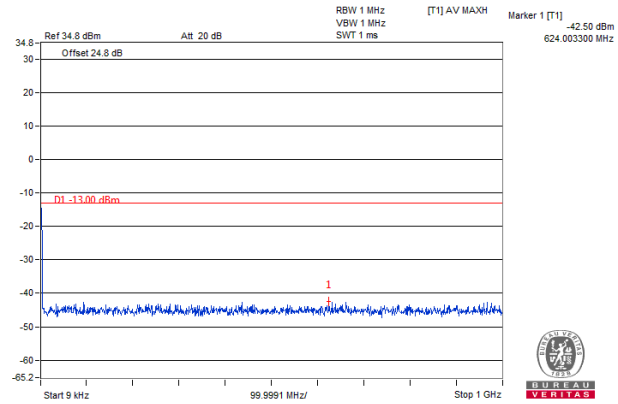
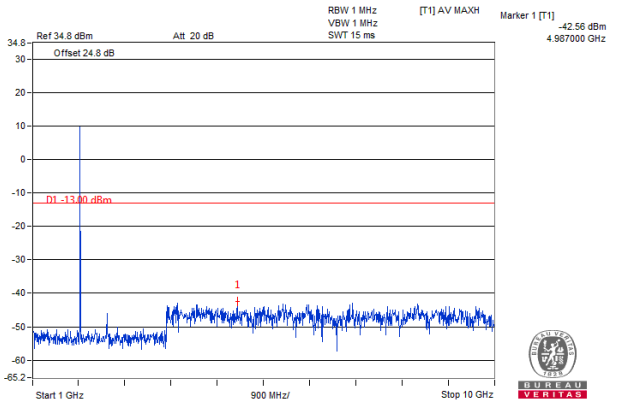
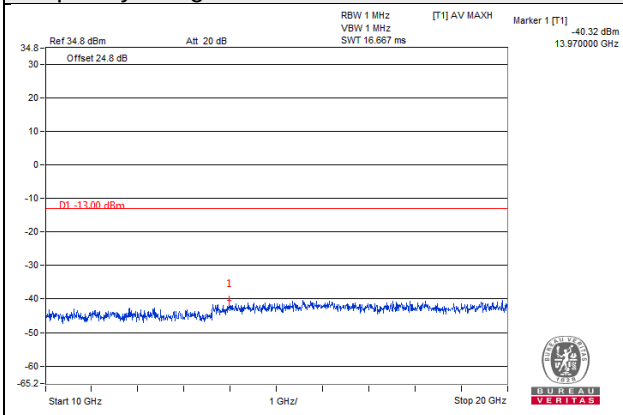
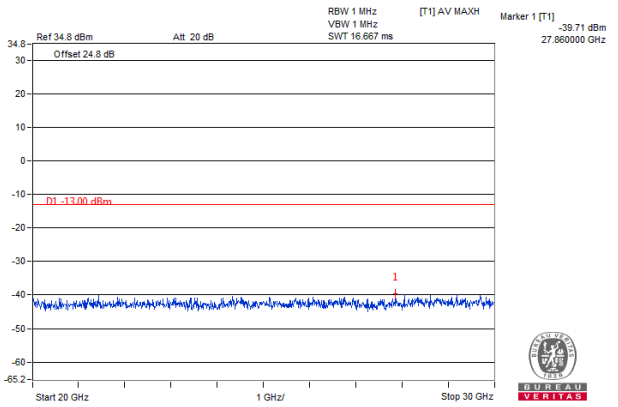
LTE Band 2 Channel Band width: 3MHz	
Channel 18900	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

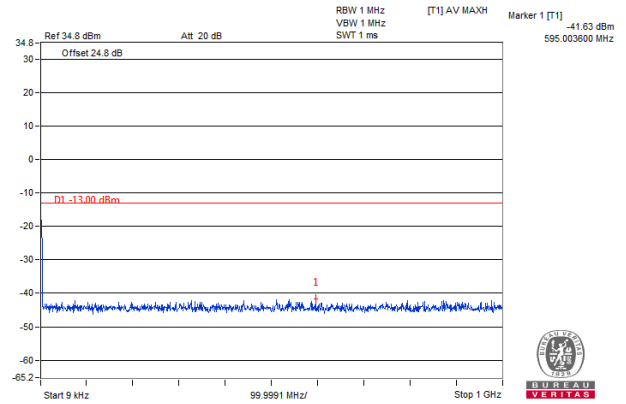
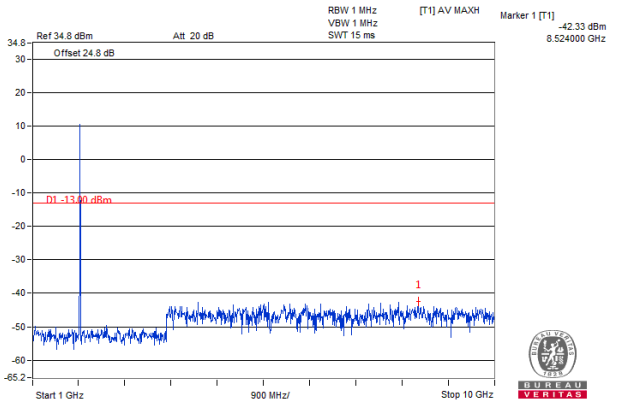
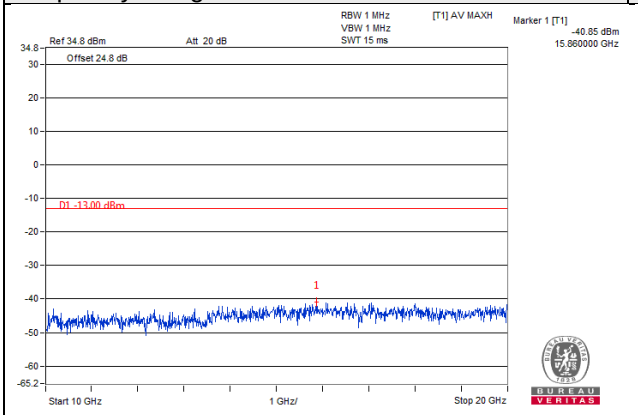
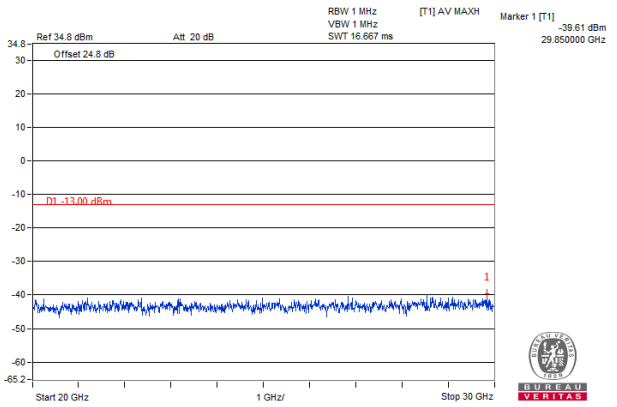
LTE Band 2 Channel Band width: 5MHz	
Channel 18900	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

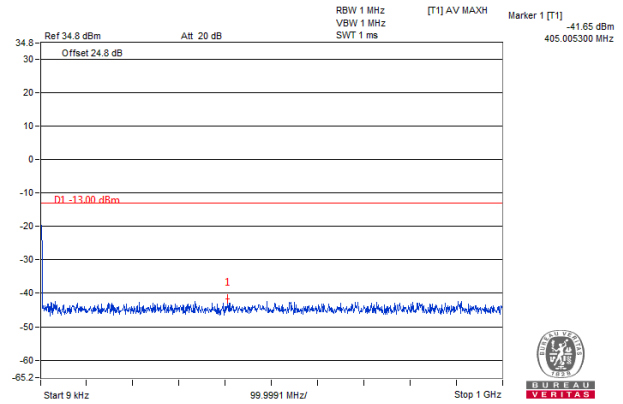
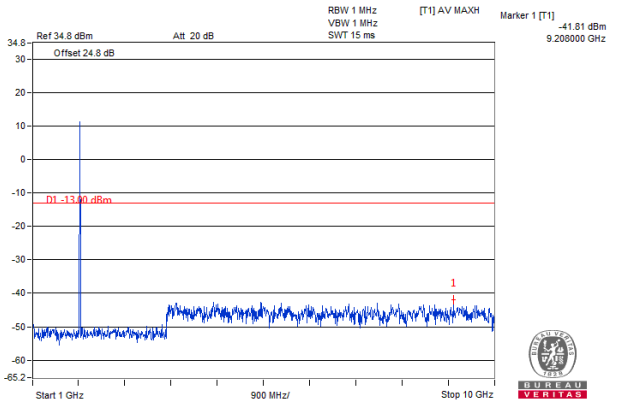
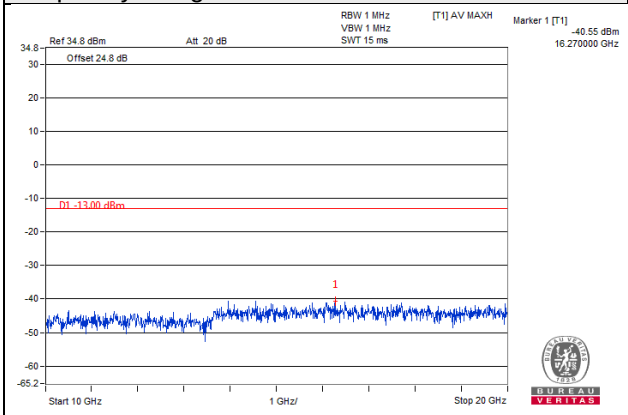
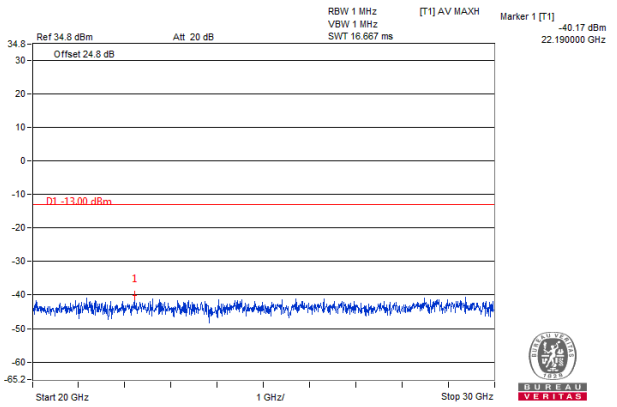
LTE Band 2 Channel Band width: 10MHz	
Channel 18900	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

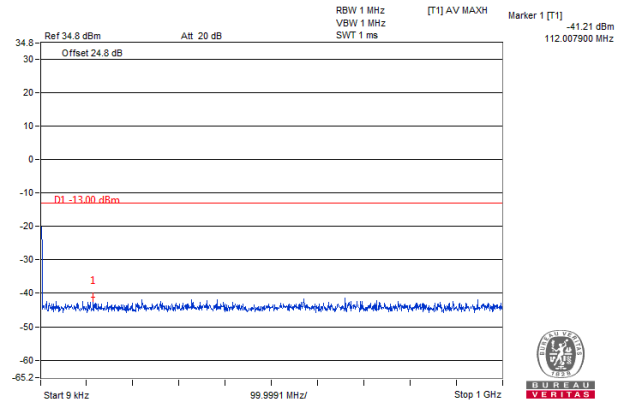
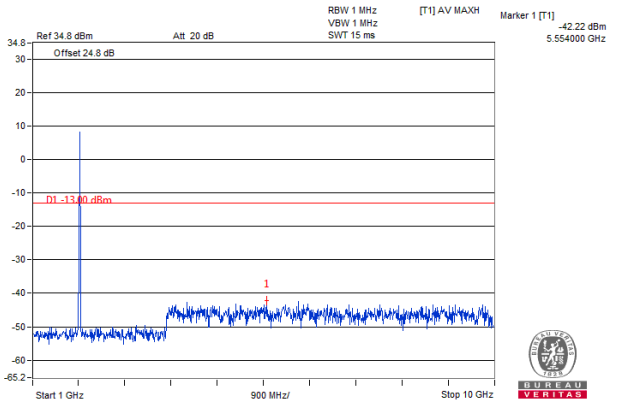
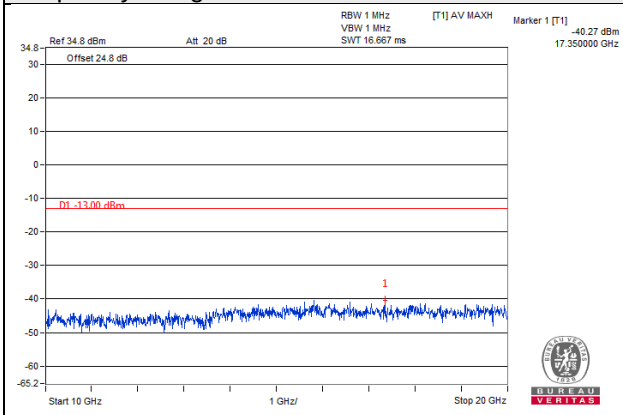
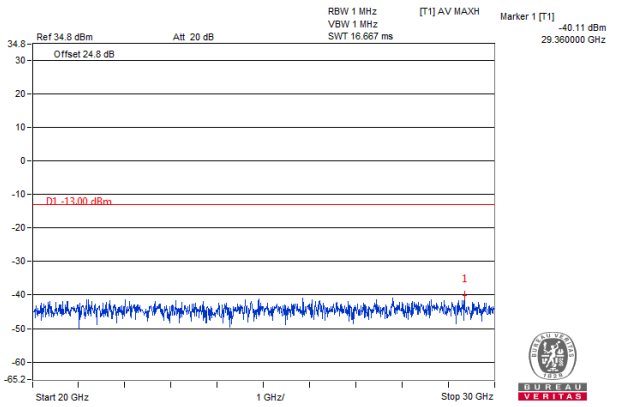
LTE Band 2 Channel Band width: 15MHz	
Channel 18900	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

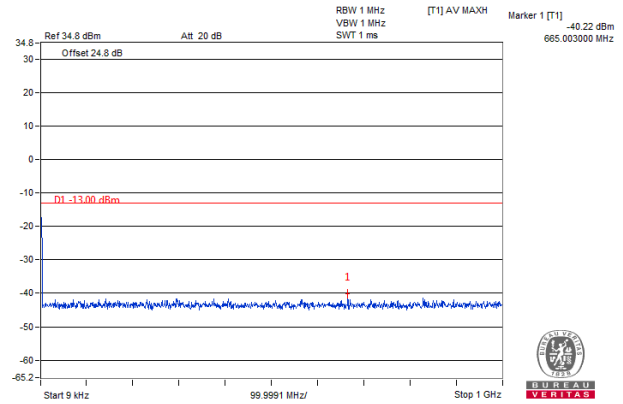
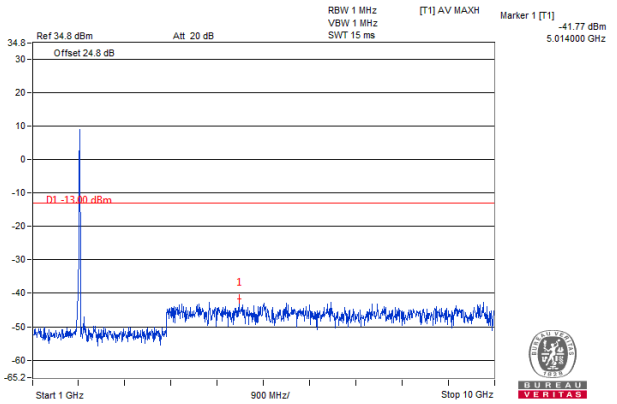
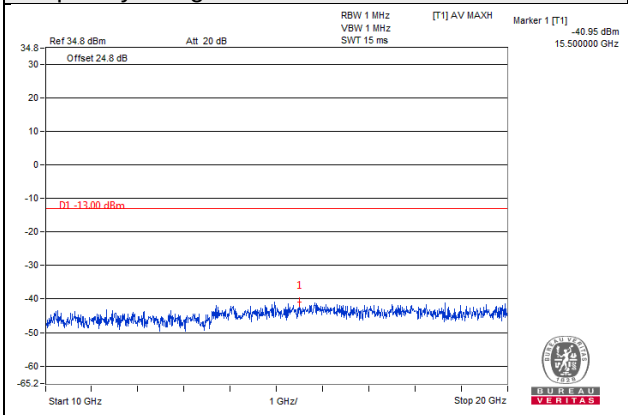
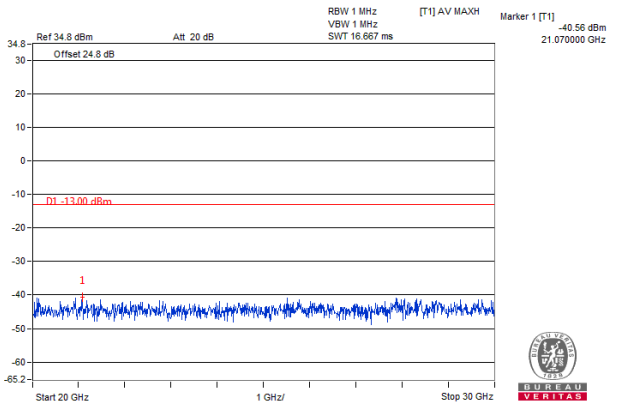
LTE Band 2 Channel Band width: 20MHz	
Channel 18900	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

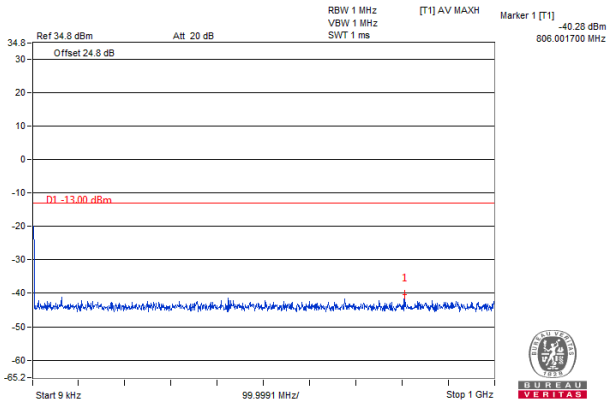
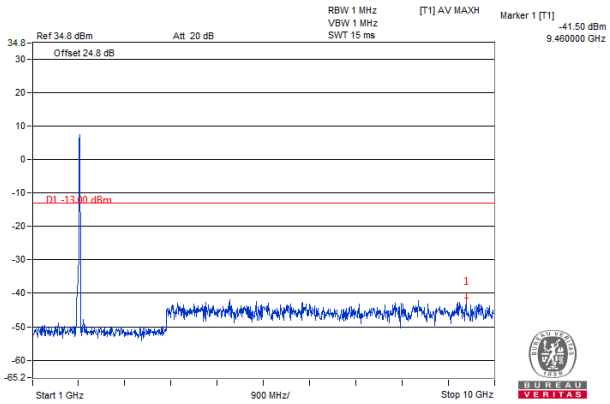
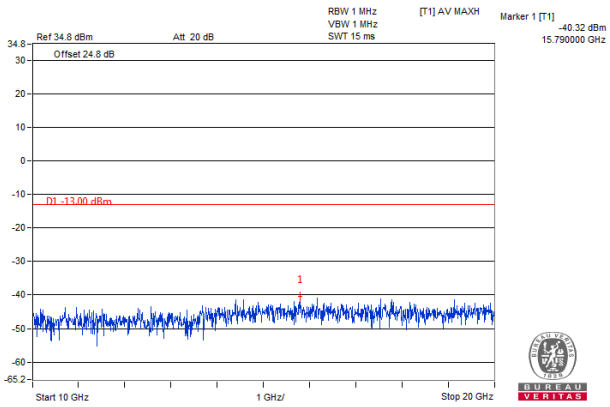
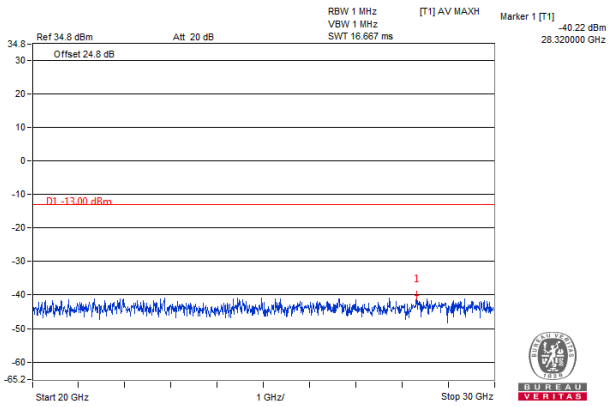
LTE Band 2 Channel Band width: 1.4MHz	
Channel 19193	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

LTE Band 2 Channel Band width: 3MHz	
Channel 19185	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

LTE Band 2 Channel Band width: 5MHz	
Channel 19175	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

LTE Band 2 Channel Band width: 10MHz	
Channel 19150	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

LTE Band 2 Channel Band width: 15MHz	
Channel 19125	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

LTE Band 2 Channel Band width: 20MHz	
Channel 19100	
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz ~10GHz
	
Frequency Range : 10GHz~20GHz	Frequency Range : 20GHz~30GHz
	

4.8 Radiated Emission Measurement

4.8.1 Limits of Radiated Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

4.8.2 Test Procedure

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

d. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution antenna.

e. ERP power can be calculated form EIRP power by subtracting the gain of dipole, ERP power = EIPR power - 2.15dBi.

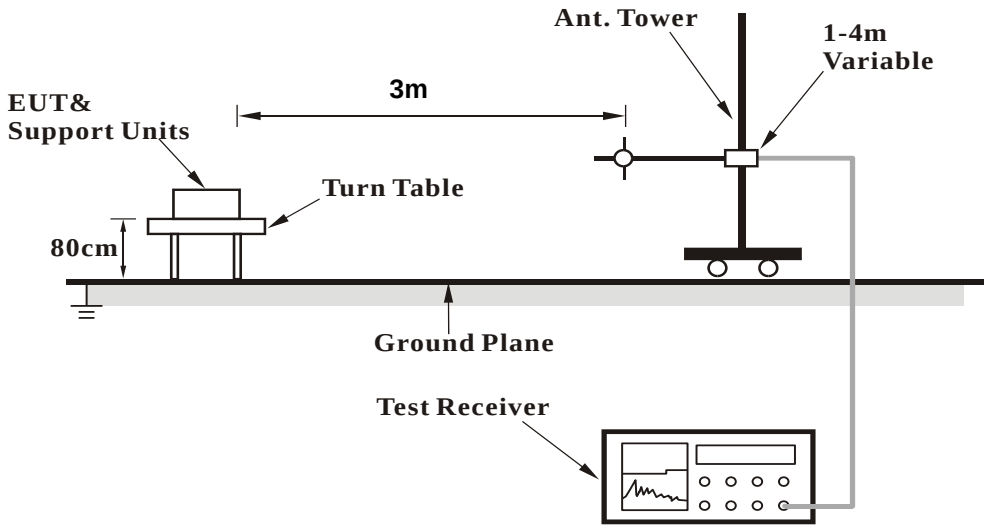
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/1MHz.

4.8.3 Deviation from Test Standard

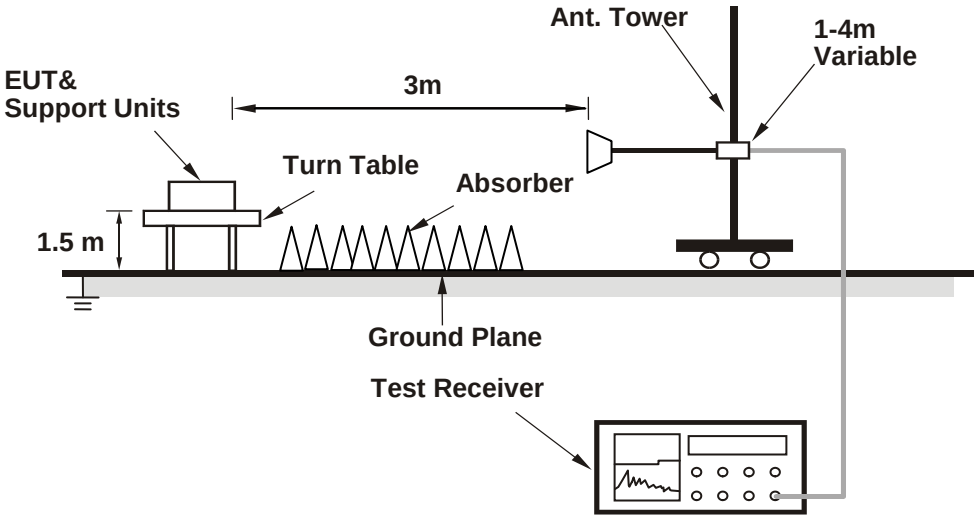
No deviation.

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:

Mode	TX channel 9262	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	84.39	34.28	-59.08	-1.53	-60.60	-13	-47.60
2	272.26	39.20	-56.04	3.39	-52.65	-13	-39.65
3	303.79	40.69	-55.21	3.69	-51.52	-13	-38.52
4	313.58	40.99	-55.36	3.68	-51.68	-13	-38.68
5	341.92	40.74	-63.43	2.62	-60.81	-13	-47.81
6	354.67	41.77	-54.31	7.16	-47.15	-13	-34.15
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	30.46	35.44	-28.97	-16.14	-45.12	-13	-32.12
2	74.01	34.61	-60.53	-2.12	-62.65	-13	-49.65
3	254.66	35.19	-83.65	-2.04	-85.69	-13	-72.69
4	346.6	38.34	-56.65	2.41	-54.24	-13	-41.24
5	419.26	39.20	-57.28	3.49	-53.79	-13	-40.79
6	464.34	38.04	-55.57	1.92	-53.65	-13	-40.65

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

Mode	TX channel 9400	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	84.53	32.95	-60.38	-1.52	-61.90	-13	-48.90
2	271.55	38.48	-56.77	3.40	-53.37	-13	-40.37
3	304.62	39.30	-56.62	3.68	-52.94	-13	-39.94
4	314.25	40.11	-56.27	3.68	-52.59	-13	-39.59
5	342.63	40.53	-63.60	2.63	-60.98	-13	-47.98
6	355.53	40.30	-55.78	7.15	-48.63	-13	-35.63
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	31.33	34.51	-30.43	-15.89	-46.32	-13	-33.32
2	73.44	32.40	-62.84	-2.16	-65.00	-13	-52.00
3	253.17	33.82	-84.69	-2.03	-86.72	-13	-73.72
4	347.61	36.05	-58.93	2.39	-56.54	-13	-43.54
5	420.78	37.78	-58.68	3.48	-55.20	-13	-42.20
6	465.27	37.35	-56.27	1.92	-54.35	-13	-41.35

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

Mode	TX channel 9538	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	85.48	31.95	-61.22	-1.46	-62.68	-13	-49.68
2	271.53	37.94	-57.31	3.40	-53.91	-13	-40.91
3	304.91	38.13	-57.80	3.68	-54.12	-13	-41.12
4	314.69	38.88	-57.51	3.68	-53.84	-13	-40.84
5	343.59	39.35	-64.73	2.63	-62.10	-13	-49.10
6	356.51	39.22	-56.86	7.13	-49.73	-13	-36.73
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	31.96	34.13	-31.18	-15.71	-46.89	-13	-33.89
2	73.59	31.23	-63.98	-2.15	-66.13	-13	-53.13
3	253.85	33.52	-85.14	-2.03	-87.18	-13	-74.18
4	347.19	34.99	-60.00	2.40	-57.60	-13	-44.60
5	421.07	37.64	-58.81	3.48	-55.34	-13	-42.34
6	465.68	36.86	-56.76	1.92	-54.84	-13	-41.84

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

LTE Band 2: 1.4 MHz

Mode	TX channel 18607	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	87.21	30.12	-62.75	-1.36	-64.12	-13	-51.12
2	270.43	35.60	-59.65	3.41	-56.24	-13	-43.24
3	305.44	37.03	-58.92	3.68	-55.24	-13	-42.24
4	316.82	37.70	-58.78	3.67	-55.11	-13	-42.11
5	342.31	37.63	-66.52	2.63	-63.89	-13	-50.89
6	354.98	37.56	-58.52	7.16	-51.36	-13	-38.36
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	30.24	33.94	-30.34	-16.21	-46.55	-13	-33.55
2	76.29	33.45	-61.30	-1.99	-63.29	-13	-50.29
3	255.35	35.28	-83.71	-2.04	-85.75	-13	-72.75
4	349.9	37.10	-57.88	2.36	-55.51	-13	-42.51
5	421.29	36.75	-59.70	3.48	-56.23	-13	-43.23
6	464.73	36.62	-56.99	1.92	-55.07	-13	-42.07

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

Mode	TX channel 18900	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	87.51	29.05	-63.77	-1.35	-65.12	-13	-52.12
2	271.16	33.01	-62.24	3.40	-58.83	-13	-45.83
3	303.29	34.96	-60.92	3.69	-57.23	-13	-44.23
4	316.78	34.27	-62.21	3.67	-58.54	-13	-45.54
5	340.97	37.17	-67.05	2.62	-64.43	-13	-51.43
6	353.14	35.53	-60.55	7.19	-53.36	-13	-40.36
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	31.52	33.23	-31.82	-15.84	-47.66	-13	-34.66
2	76.35	32.67	-62.07	-1.99	-64.06	-13	-51.06
3	254.64	34.68	-84.15	-2.04	-86.19	-13	-73.19
4	350.11	34.48	-60.50	2.36	-58.13	-13	-45.13
5	423.62	34.85	-61.57	3.46	-58.12	-13	-45.12
6	467.24	35.18	-58.45	1.92	-56.53	-13	-43.53

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

Mode	TX channel 19193	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	87.94	28.48	-64.27	-1.32	-65.59	-13	-52.59
2	271.45	31.88	-63.37	3.40	-59.97	-13	-46.97
3	303.88	34.79	-61.11	3.69	-57.42	-13	-44.42
4	316.26	34.20	-62.26	3.67	-58.59	-13	-45.59
5	341.22	35.74	-68.47	2.62	-65.85	-13	-52.85
6	353.15	34.06	-62.02	7.19	-54.83	-13	-41.83
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	31.85	32.72	-32.53	-15.74	-48.27	-13	-35.27
2	76.38	31.63	-63.10	-1.99	-65.09	-13	-52.09
3	254.79	33.86	-85.01	-2.04	-87.05	-13	-74.05
4	349.43	33.57	-61.41	2.37	-59.04	-13	-46.04
5	423.01	33.84	-62.59	3.46	-59.13	-13	-46.13
6	467.63	33.87	-59.76	1.92	-57.85	-13	-44.85

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

LTE Band 2: 3 MHz

Mode	TX channel 18615	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	86.44	28.47	-64.53	-1.41	-65.94	-13	-52.94
2	270.5	34.08	-61.17	3.41	-57.76	-13	-44.76
3	305.11	35.93	-60.01	3.68	-56.33	-13	-43.33
4	316.6	35.90	-60.57	3.67	-56.90	-13	-43.90
5	343.8	34.78	-69.29	2.63	-66.66	-13	-53.66
6	354.03	35.69	-60.39	7.17	-53.22	-13	-40.22
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	30.67	31.44	-33.10	-16.08	-49.18	-13	-36.18
2	77.12	29.78	-64.83	-1.94	-66.77	-13	-53.77
3	256.03	32.06	-87.08	-2.05	-89.12	-13	-76.12
4	349.73	33.19	-61.79	2.37	-59.42	-13	-46.42
5	423.54	32.59	-63.84	3.46	-60.38	-13	-47.38
6	467.64	31.96	-61.67	1.92	-59.76	-13	-46.76

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

Mode	TX channel 18900	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	86.4	28.31	-64.70	-1.41	-66.11	-13	-53.11
2	271.46	33.01	-62.24	3.40	-58.84	-13	-45.84
3	305.77	35.55	-60.41	3.68	-56.73	-13	-43.73
4	316.09	35.58	-60.87	3.68	-57.20	-13	-44.20
5	343.1	33.73	-70.38	2.63	-67.75	-13	-54.75
6	354.94	35.16	-60.92	7.16	-53.76	-13	-40.76
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	33.41	30.35	-33.99	-16.18	-50.17	-13	-37.17
2	77.95	28.33	-66.13	-1.90	-68.03	-13	-55.03
3	256.53	30.99	-88.25	-2.05	-90.30	-13	-77.30
4	349.28	32.21	-62.77	2.37	-60.40	-13	-47.40
5	423.61	31.94	-64.48	3.46	-61.03	-13	-48.03
6	466.76	31.57	-62.06	1.92	-60.14	-13	-47.14

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

Mode	TX channel 19185	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	87.77	25.91	-66.87	-1.33	-68.20	-13	-55.20
2	271.81	30.90	-64.35	3.40	-60.95	-13	-47.95
3	303.92	33.38	-62.52	3.69	-58.83	-13	-45.83
4	316.58	33.33	-63.14	3.67	-59.47	-13	-46.47
5	341.64	34.34	-69.85	2.62	-67.22	-13	-54.22
6	354.49	32.02	-64.06	7.17	-56.90	-13	-43.90
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	32.19	32.64	-32.81	-15.64	-48.45	-13	-35.45
2	76.35	31.05	-63.69	-1.99	-65.68	-13	-52.68
3	254.83	32.49	-86.39	-2.04	-88.42	-13	-75.42
4	350.74	31.25	-63.72	2.35	-61.37	-13	-48.37
5	422.8	32.60	-63.83	3.46	-60.37	-13	-47.37
6	465.66	32.16	-61.46	1.92	-59.54	-13	-46.54

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

LTE Band 2: 5 MHz

Mode	TX channel 18625	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	87.43	27.53	-65.30	-1.35	-66.65	-13	-53.65
2	271.02	33.55	-61.70	3.41	-58.29	-13	-45.29
3	305.02	34.48	-61.45	3.68	-57.77	-13	-44.77
4	317.02	34.85	-61.64	3.67	-57.97	-13	-44.97
5	344.46	33.53	-70.50	2.63	-67.87	-13	-54.87
6	354.16	35.40	-60.68	7.17	-53.51	-13	-40.51
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	30.21	29.82	-34.44	-16.22	-50.66	-13	-37.66
2	76.62	27.69	-67.00	-1.97	-68.98	-13	-55.98
3	256.46	30.41	-88.82	-2.05	-90.87	-13	-77.87
4	350.32	31.33	-63.64	2.36	-61.29	-13	-48.29
5	423.85	30.92	-65.50	3.46	-62.05	-13	-49.05
6	467.06	31.48	-62.15	1.92	-60.23	-13	-47.23

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

Mode	TX channel 18900	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	87.09	26.90	-65.99	-1.37	-67.36	-13	-54.36
2	271.41	31.60	-63.65	3.40	-60.25	-13	-47.25
3	306.49	35.02	-60.96	3.67	-57.29	-13	-44.29
4	316.93	34.18	-62.31	3.67	-58.63	-13	-45.63
5	342.53	33.25	-70.89	2.63	-68.26	-13	-55.26
6	354.48	34.41	-61.67	7.17	-54.51	-13	-41.51
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	33.77	29.21	-37.19	-15.18	-52.37	-13	-39.37
2	77.54	27.24	-67.29	-1.92	-69.21	-13	-56.21
3	256.69	29.88	-89.40	-2.05	-91.45	-13	-78.45
4	350.19	31.19	-63.78	2.36	-61.42	-13	-48.42
5	423.04	30.53	-65.90	3.46	-62.44	-13	-49.44
6	466.31	30.51	-63.11	1.92	-61.20	-13	-48.20

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

Mode	TX channel 19175	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	87.65	26.11	-66.69	-1.34	-68.02	-13	-55.02
2	271.27	31.19	-64.06	3.40	-60.65	-13	-47.65
3	306.53	33.68	-62.30	3.67	-58.63	-13	-45.63
4	317.86	33.31	-63.22	3.67	-59.55	-13	-46.55
5	342.28	32.51	-71.64	2.63	-69.02	-13	-56.02
6	353.87	33.91	-62.17	7.18	-55.00	-13	-42.00
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	31.65	31.28	-33.85	-15.80	-49.65	-13	-36.65
2	76.15	29.45	-65.32	-2.00	-67.32	-13	-54.32
3	255.05	30.86	-88.06	-2.04	-90.10	-13	-77.10
4	351.38	29.70	-65.27	2.34	-62.93	-13	-49.93
5	424.11	29.99	-66.43	3.45	-62.97	-13	-49.97
6	465.6	31.07	-62.55	1.92	-60.63	-13	-47.63

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

LTE Band 2: 10 MHz

Mode	TX channel 18650	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	87.84	26.01	-66.75	-1.33	-68.08	-13	-55.08
2	271.79	30.19	-65.06	3.40	-61.66	-13	-48.66
3	306.9	33.20	-62.79	3.67	-59.12	-13	-46.12
4	318.39	32.69	-63.86	3.67	-60.19	-13	-47.19
5	342.62	31.28	-72.85	2.63	-70.23	-13	-57.23
6	353.19	32.44	-63.64	7.19	-56.45	-13	-43.45
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	31.17	29.76	-35.08	-15.94	-51.02	-13	-38.02
2	75.62	26.38	-68.48	-2.03	-70.52	-13	-57.52
3	256.5	29.79	-89.45	-2.05	-91.50	-13	-78.50
4	349.66	30.17	-64.81	2.37	-62.44	-13	-49.44
5	424.21	30.87	-65.55	3.45	-62.09	-13	-49.09
6	467.32	30.98	-62.65	1.92	-60.74	-13	-47.74

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

Mode	TX channel 18900	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	86.97	25.23	-67.68	-1.38	-69.06	-13	-56.06
2	271.24	28.70	-66.55	3.40	-63.14	-13	-50.14
3	307.47	32.09	-63.92	3.66	-60.25	-13	-47.25
4	318.29	31.96	-64.58	3.67	-60.91	-13	-47.91
5	340.64	30.95	-73.29	2.62	-70.67	-13	-57.67
6	352.13	32.35	-63.73	7.20	-56.53	-13	-43.53
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	33.16	27.95	-38.08	-15.36	-53.44	-13	-40.44
2	77.23	26.96	-67.63	-1.94	-69.57	-13	-56.57
3	256.47	29.68	-89.55	-2.05	-91.60	-13	-78.60
4	350.27	31.12	-63.85	2.36	-61.50	-13	-48.50
5	422.45	30.43	-66.01	3.47	-62.54	-13	-49.54
6	466.45	29.38	-64.24	1.92	-62.33	-13	-49.33

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

Mode	TX channel 19150	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	88.26	25.77	-66.92	-1.30	-68.22	-13	-55.22
2	271.58	30.53	-64.72	3.40	-61.32	-13	-48.32
3	307.52	32.90	-63.11	3.66	-59.45	-13	-46.45
4	317.53	32.76	-63.75	3.67	-60.08	-13	-47.08
5	343.03	31.26	-72.85	2.63	-70.22	-13	-57.22
6	352.89	32.71	-63.37	7.19	-56.18	-13	-43.18
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	31.9	30.33	-34.95	-15.73	-50.67	-13	-37.67
2	77.47	26.97	-67.58	-1.92	-69.50	-13	-56.50
3	254.7	28.88	-89.97	-2.04	-92.01	-13	-79.01
4	351.44	28.40	-66.57	2.34	-64.23	-13	-51.23
5	423.06	28.64	-67.79	3.46	-64.33	-13	-51.33
6	465.59	29.80	-63.82	1.92	-61.90	-13	-48.90

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

LTE Band 2: 15 MHz

Mode	TX channel 18675	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	88.03	24.66	-68.07	-1.32	-69.39	-13	-56.39
2	270.98	29.69	-65.56	3.41	-62.15	-13	-49.15
3	307.57	32.82	-63.19	3.66	-59.53	-13	-46.53
4	318.47	31.88	-64.67	3.67	-61.00	-13	-48.00
5	342.09	29.86	-74.30	2.62	-71.68	-13	-58.68
6	353.99	31.75	-64.33	7.17	-57.16	-13	-44.16
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	31.65	28.54	-36.59	-15.80	-52.39	-13	-39.39
2	75.86	24.98	-69.84	-2.02	-71.86	-13	-58.86
3	256.05	28.10	-91.04	-2.05	-93.09	-13	-80.09
4	347.93	29.90	-65.08	2.39	-62.69	-13	-49.69
5	424.41	28.98	-67.43	3.45	-63.98	-13	-50.98
6	467.17	28.61	-65.02	1.92	-63.10	-13	-50.10

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

Mode	TX channel 18900	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	89.51	23.47	-69.01	-1.23	-70.24	-13	-57.24
2	273.39	28.76	-66.48	3.37	-63.11	-13	-50.11
3	306.44	31.85	-64.13	3.67	-60.46	-13	-47.46
4	318.19	30.42	-66.12	3.67	-62.45	-13	-49.45
5	341.91	30.19	-73.98	2.62	-71.36	-13	-58.36
6	353.63	31.79	-64.29	7.18	-57.11	-13	-44.11
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	32.53	25.62	-40.04	-15.54	-55.58	-13	-42.58
2	76.15	24.32	-70.45	-2.00	-72.45	-13	-59.45
3	256.38	29.26	-89.95	-2.05	-92.00	-13	-79.00
4	348.57	30.18	-64.80	2.38	-62.42	-13	-49.42
5	421.92	29.21	-67.23	3.47	-63.76	-13	-50.76
6	466.88	27.44	-66.19	1.92	-64.27	-13	-51.27

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

Mode	TX channel 19125	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	88.86	25.45	-67.14	-1.27	-68.41	-13	-55.41
2	271.79	30.18	-65.07	3.40	-61.67	-13	-48.67
3	308.38	32.73	-63.31	3.66	-59.65	-13	-46.65
4	318.3	31.92	-64.63	3.67	-60.96	-13	-47.96
5	344	30.56	-73.50	2.63	-70.87	-13	-57.87
6	353.19	31.45	-64.63	7.19	-57.44	-13	-44.44
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	31.13	29.03	-35.79	-15.95	-51.73	-13	-38.73
2	77.35	26.78	-67.79	-1.93	-69.72	-13	-56.72
3	254.5	27.86	-90.94	-2.04	-92.98	-13	-79.98
4	351.57	27.08	-67.89	2.34	-65.55	-13	-52.55
5	423.07	27.79	-68.64	3.46	-65.18	-13	-52.18
6	465.48	29.58	-64.04	1.92	-62.12	-13	-49.12

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

LTE Band 2: 20 MHz

Mode	TX channel 18700	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	88.88	23.74	-68.84	-1.27	-70.11	-13	-57.11
2	271.97	29.42	-65.82	3.39	-62.43	-13	-49.43
3	308.09	31.87	-64.16	3.66	-60.50	-13	-47.50
4	318.82	31.70	-64.87	3.67	-61.20	-13	-48.20
5	341.32	29.44	-74.76	2.62	-72.14	-13	-59.14
6	353.68	30.59	-65.49	7.18	-58.31	-13	-45.31
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	31.7	27.96	-37.20	-15.78	-52.98	-13	-39.98
2	75.94	23.60	-71.21	-2.01	-73.22	-13	-60.22
3	255.68	27.47	-91.59	-2.04	-93.63	-13	-80.63
4	347.87	28.40	-66.58	2.39	-64.19	-13	-51.19
5	423.84	28.43	-67.99	3.46	-64.54	-13	-51.54
6	466.29	27.60	-66.02	1.92	-64.11	-13	-51.11

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

Mode	TX channel 18900	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	89.97	22.47	-69.93	-1.20	-71.13	-13	-58.13
2	272.89	28.36	-66.88	3.38	-63.50	-13	-50.50
3	305.91	31.25	-64.71	3.67	-61.04	-13	-48.04
4	318.93	29.64	-66.93	3.67	-63.26	-13	-50.26
5	341.04	29.24	-74.98	2.62	-72.36	-13	-59.36
6	353.17	30.90	-65.18	7.19	-57.99	-13	-44.99
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	31.85	23.75	-41.50	-15.74	-57.24	-13	-44.24
2	75.81	23.23	-71.60	-2.02	-73.62	-13	-60.62
3	257.11	27.99	-91.38	-2.05	-93.43	-13	-80.43
4	349.7	28.40	-66.58	2.37	-64.21	-13	-51.21
5	422.01	26.49	-69.95	3.47	-66.48	-13	-53.48
6	466.15	25.96	-67.66	1.92	-65.75	-13	-52.75

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

Mode	TX channel 19100	Frequency Range	Below 1000 MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	88.6	25.29	-67.34	-1.28	-68.63	-13	-55.63
2	271.74	29.43	-65.82	3.40	-62.42	-13	-49.42
3	308.88	31.35	-64.70	3.66	-61.05	-13	-48.05
4	318.99	31.21	-65.36	3.67	-61.70	-13	-48.70
5	344.86	29.18	-74.83	2.63	-72.20	-13	-59.20
6	353.78	30.24	-65.84	7.18	-58.66	-13	-45.66
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	30.57	27.02	-37.46	-16.11	-53.57	-13	-40.57
2	77.61	24.94	-69.58	-1.92	-71.50	-13	-58.50
3	252.96	25.74	-92.73	-2.03	-94.76	-13	-81.76
4	351.76	24.63	-70.34	2.34	-68.00	-13	-55.00
5	424.28	25.19	-71.23	3.45	-67.77	-13	-54.77
6	465.54	26.93	-66.69	1.92	-64.77	-13	-51.77

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

ABOVE 1GHz

WCDMA:

Mode	TX channel 9262	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3704.8	36.63	-67.32	7.71	-59.61	-13	-46.61
2	5557.2	49.99	-54.89	7.08	-47.81	-13	-34.81
3	7409.6	45.67	-56.95	4.62	-52.33	-13	-39.33
4	9262	46.17	-56.05	4.23	-51.82	-13	-38.82
5	11114.4	49.94	-51.59	3.25	-48.34	-13	-35.34
6	12966.8	48.36	-52.52	4.44	-48.08	-13	-35.08
7	14819.2	50.91	-46.72	3.44	-43.28	-13	-30.28
8	16671.6	52.33	-45.02	3.70	-41.32	-13	-28.32
9	18524	60.47	-36.88	3.70	-33.18	-13	-20.18
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3704.8	36.76	-67.19	7.71	-59.48	-13	-46.48
2	5557.2	43.49	-61.39	7.08	-54.31	-13	-41.31
3	7409.6	45.23	-57.39	4.62	-52.77	-13	-39.77
4	9262	46.66	-55.56	4.23	-51.33	-13	-38.33
5	11114.4	48.58	-52.95	3.25	-49.70	-13	-36.70
6	12966.8	48.44	-52.44	4.44	-48.00	-13	-35.00
7	14819.2	51.71	-45.92	3.44	-42.48	-13	-29.48
8	16671.6	52.41	-44.94	3.70	-41.24	-13	-28.24
9	18524	61.52	-35.83	3.70	-32.13	-13	-19.13

Remarks:

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

Mode	TX channel 9400	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3760	36.60	-67.55	7.68	-59.87	-13	-46.87
2	5640	50.50	-54.24	7.02	-47.22	-13	-34.22
3	7520	45.53	-57.09	4.53	-52.56	-13	-39.56
4	9400	46.53	-55.34	4.21	-51.14	-13	-38.14
5	11280	50.13	-51.36	3.48	-47.88	-13	-34.88
6	13160	49.23	-51.38	4.06	-47.31	-13	-34.31
7	15040	50.58	-46.77	3.70	-43.07	-13	-30.07
8	16920	51.42	-45.93	3.70	-42.23	-13	-29.23
9	18800	61.31	-36.04	3.70	-32.34	-13	-19.34
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3760	37.7	-66.45	7.68	-58.77	-13	-45.77
2	5640	42.67	-62.07	7.02	-55.05	-13	-42.05
3	7520	44.96	-57.66	4.53	-53.13	-13	-40.13
4	9400	46.25	-55.62	4.21	-51.42	-13	-38.42
5	11280	47.62	-53.87	3.48	-50.39	-13	-37.39
6	13160	48.1	-52.51	4.06	-48.44	-13	-35.44
7	15040	51.23	-46.12	3.70	-42.42	-13	-29.42
8	16920	52.58	-44.77	3.70	-41.07	-13	-28.07
9	18800	61.24	-36.11	3.70	-32.41	-13	-19.41

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

Mode	TX channel 9538	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3815.2	36.55	-67.80	7.64	-60.16	-13	-47.16
2	5722.8	51.20	-53.41	6.96	-46.44	-13	-33.44
3	7630.4	46.15	-56.47	4.43	-52.04	-13	-39.04
4	9538	45.79	-55.83	4.18	-51.65	-13	-38.65
5	11445.6	49.72	-51.74	3.71	-48.03	-13	-35.03
6	13353.2	49.76	-50.58	3.60	-46.97	-13	-33.97
7	15260.8	50.22	-47.13	3.70	-43.43	-13	-30.43
8	17168.4	51.42	-45.93	3.70	-42.23	-13	-29.23
9	**19076**	**61.93**	**-35.81**	**3.72**	**-32.09**	**-13**	**-19.09**
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3815.2	37.79	-66.56	7.64	-58.92	-13	-45.92
2	5722.8	42.62	-61.99	6.96	-55.02	-13	-42.02
3	7630.4	44.74	-57.88	4.43	-53.45	-13	-40.45
4	9538	46.98	-54.64	4.18	-50.46	-13	-37.46
5	11445.6	48.16	-53.30	3.71	-49.59	-13	-36.59
6	13353.2	47.68	-52.66	3.60	-49.05	-13	-36.05
7	15260.8	50.35	-47.00	3.70	-43.30	-13	-30.30
8	17168.4	52.31	-45.04	3.70	-41.34	-13	-28.34
9	19076	61.38	-36.36	3.72	-32.64	-13	-19.64

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

LTE Bnad 2: 1.4 MHz

Mode	TX channel 18607	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3701.4	39.60	-64.55	7.68	-56.87	-13	-43.87
2	5552.1	54.09	-50.65	7.02	-43.63	-13	-30.63
3	7402.8	50.79	-51.83	4.53	-47.30	-13	-34.30
4	9253.5	51.44	-50.43	4.21	-46.23	-13	-33.23
5	11104.2	54.23	-47.26	3.48	-43.78	-13	-30.78
6	12954.9	50.12	-50.49	4.06	-46.42	-13	-33.42
7	14805.6	52.36	-44.99	3.70	-41.29	-13	-28.29
8	16656.3	50.91	-46.44	3.70	-42.74	-13	-29.74
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3701.4	41.65	-62.54	7.72	-54.82	-13	-41.82
2	5552.1	52.31	-52.50	7.08	-45.41	-13	-32.41
3	7402.8	46.84	-55.88	4.63	-51.25	-13	-38.25
4	9253.5	46.57	-55.33	4.23	-51.10	-13	-38.10
5	11104.2	49.11	-52.14	3.24	-48.90	-13	-35.90
6	12954.9	48.34	-52.64	4.44	-48.20	-13	-35.20
7	14805.6	51.95	-45.11	3.42	-41.70	-13	-28.70
8	16656.3	50.96	-46.39	3.70	-42.69	-13	-29.69

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

Mode	TX channel 18900	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3760	36.21	-67.94	7.68	-60.26	-13	-47.26
2	5640	39.86	-64.88	7.02	-57.86	-13	-44.86
3	7520	45.80	-56.82	4.53	-52.29	-13	-39.29
4	9400	47.41	-54.46	4.21	-50.26	-13	-37.26
5	11280	48.64	-52.85	3.48	-49.37	-13	-36.37
6	13160	48.30	-52.31	4.06	-48.24	-13	-35.24
7	15040	48.65	-48.70	3.70	-45.00	-13	-32.00
8	16920	48.91	-48.44	3.70	-44.74	-13	-31.74
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3760	41.75	-62.40	7.68	-54.72	-13	-41.72
2	5640	52.03	-52.71	7.02	-45.69	-13	-32.69
3	7520	46.85	-55.77	4.53	-51.24	-13	-38.24
4	9400	47.57	-54.30	4.21	-50.10	-13	-37.10
5	11280	48.44	-53.05	3.48	-49.57	-13	-36.57
6	13160	49.32	-51.70	4.48	-47.22	-13	-34.22
7	15040	52.72	-44.69	3.76	-40.93	-13	-27.93
8	16920	50.26	-47.09	3.70	-43.39	-13	-30.39

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

Mode	TX channel 19193	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3818.6	36.21	-67.94	7.68	-60.26	-13	-47.26
2	5727.9	39.86	-64.88	7.02	-57.86	-13	-44.86
3	7637.2	45.80	-56.82	4.53	-52.29	-13	-39.29
4	9546.5	47.41	-54.46	4.21	-50.26	-13	-37.26
5	11455.8	48.64	-52.85	3.48	-49.37	-13	-36.37
6	13365.1	48.30	-52.31	4.06	-48.24	-13	-35.24
7	15274.4	48.65	-48.70	3.70	-45.00	-13	-32.00
8	17183.7	48.91	-48.44	3.70	-44.74	-13	-31.74
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3818.6	42.03	-62.08	7.64	-54.44	-13	-41.44
2	5727.9	52.52	-52.16	6.96	-45.20	-13	-32.20
3	7637.2	47.19	-55.33	4.43	-50.90	-13	-37.90
4	9546.5	46.66	-55.19	4.18	-51.01	-13	-38.01
5	11455.8	49.77	-51.97	3.73	-48.24	-13	-35.24
6	13365.1	48.69	-52.38	4.53	-47.85	-13	-34.85
7	15274.4	51.76	-45.99	4.11	-41.89	-13	-28.89
8	17183.7	51.47	-45.88	3.70	-42.18	-13	-29.18

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

LTE Bnad 2: 3 MHz

Mode	TX channel 18615	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3703	36.21	-67.94	7.68	-60.26	-13	-47.26
2	5554.5	39.86	-64.88	7.02	-57.86	-13	-44.86
3	7406	45.80	-56.82	4.53	-52.29	-13	-39.29
4	9257.5	47.41	-54.46	4.21	-50.26	-13	-37.26
5	11109	48.64	-52.85	3.48	-49.37	-13	-36.37
6	12960.5	48.30	-52.31	4.06	-48.24	-13	-35.24
7	14812	48.65	-48.70	3.70	-45.00	-13	-32.00
8	16663.5	48.91	-48.44	3.70	-44.74	-13	-31.74
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3703	41.10	-63.09	7.72	-55.37	-13	-42.37
2	5554.5	51.98	-52.82	7.08	-45.74	-13	-32.74
3	7406	46.50	-56.22	4.63	-51.59	-13	-38.59
4	9257.5	46.04	-55.86	4.23	-51.63	-13	-38.63
5	11109	48.50	-52.75	3.24	-49.51	-13	-36.51
6	12960.5	49.26	-51.72	4.44	-47.28	-13	-34.28
7	14812	52.46	-44.61	3.43	-41.19	-13	-28.19
8	16663.5	51.53	-45.82	3.70	-42.12	-13	-29.12

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

Mode	TX channel 18900	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3760	36.21	-67.94	7.68	-60.26	-13	-47.26
2	5640	39.86	-64.88	7.02	-57.86	-13	-44.86
3	7520	45.80	-56.82	4.53	-52.29	-13	-39.29
4	9400	47.41	-54.46	4.21	-50.26	-13	-37.26
5	11280	48.64	-52.85	3.48	-49.37	-13	-36.37
6	13160	48.30	-52.31	4.06	-48.24	-13	-35.24
7	15040	48.65	-48.70	3.70	-45.00	-13	-32.00
8	16920	48.91	-48.44	3.70	-44.74	-13	-31.74
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3760	41.97	-62.18	7.68	-54.50	-13	-41.50
2	5640	52.09	-52.65	7.02	-45.63	-13	-32.63
3	7520	46.10	-56.52	4.53	-51.99	-13	-38.99
4	9400	45.77	-56.10	4.21	-51.90	-13	-38.90
5	11280	47.95	-53.54	3.48	-50.06	-13	-37.06
6	13160	48.75	-52.27	4.48	-47.79	-13	-34.79
7	15040	52.48	-44.93	3.76	-41.17	-13	-28.17
8	16920	51.94	-45.41	3.70	-41.71	-13	-28.71

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

Mode	TX channel 19185	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3817	36.21	-67.94	7.68	-60.26	-13	-47.26
2	5725.5	39.86	-64.88	7.02	-57.86	-13	-44.86
3	7634	45.80	-56.82	4.53	-52.29	-13	-39.29
4	9542.5	47.41	-54.46	4.21	-50.26	-13	-37.26
5	11451	48.64	-52.85	3.48	-49.37	-13	-36.37
6	13359.5	48.30	-52.31	4.06	-48.24	-13	-35.24
7	15268	48.65	-48.70	3.70	-45.00	-13	-32.00
8	17176.5	48.91	-48.44	3.70	-44.74	-13	-31.74
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3817	42.03	-62.08	7.64	-54.44	-13	-41.44
2	5725.5	52.00	-52.69	6.96	-45.72	-13	-32.72
3	7634	47.38	-55.14	4.43	-50.71	-13	-37.71
4	9542.5	47.28	-54.57	4.18	-50.39	-13	-37.39
5	11451	49.36	-52.37	3.72	-48.65	-13	-35.65
6	13359.5	48.05	-53.02	4.52	-48.49	-13	-35.49
7	15268	52.55	-45.19	4.10	-41.10	-13	-28.10
8	17176.5	51.34	-46.01	3.70	-42.31	-13	-29.31

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

LTE Bnad 2: 5 MHz

Mode	TX channel 18625	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3705	36.21	-67.94	7.68	-60.26	-13	-47.26
2	5557.5	39.86	-64.88	7.02	-57.86	-13	-44.86
3	7410	45.80	-56.82	4.53	-52.29	-13	-39.29
4	9262.5	47.41	-54.46	4.21	-50.26	-13	-37.26
5	11115	48.64	-52.85	3.48	-49.37	-13	-36.37
6	12967.5	48.30	-52.31	4.06	-48.24	-13	-35.24
7	14820	48.65	-48.70	3.70	-45.00	-13	-32.00
8	16672.5	48.91	-48.44	3.70	-44.74	-13	-31.74
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3705	41.79	-62.40	7.71	-54.68	-13	-41.68
2	5557.5	52.49	-52.31	7.08	-45.23	-13	-32.23
3	7410	46.71	-56.00	4.62	-51.38	-13	-38.38
4	9262.5	46.88	-55.02	4.23	-50.79	-13	-37.79
5	11115	47.84	-53.42	3.25	-50.17	-13	-37.17
6	12967.5	49.64	-51.34	4.44	-46.90	-13	-33.90
7	14820	53.43	-43.66	3.44	-40.22	-13	-27.22
8	16672.5	52.26	-45.09	3.70	-41.39	-13	-28.39

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

Mode	TX channel 18900	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3760	36.21	-67.94	7.68	-60.26	-13	-47.26
2	5640	39.86	-64.88	7.02	-57.86	-13	-44.86
3	7520	45.80	-56.82	4.53	-52.29	-13	-39.29
4	9400	47.41	-54.46	4.21	-50.26	-13	-37.26
5	11280	48.64	-52.85	3.48	-49.37	-13	-36.37
6	13160	48.30	-52.31	4.06	-48.24	-13	-35.24
7	15040	48.65	-48.70	3.70	-45.00	-13	-32.00
8	16920	48.91	-48.44	3.70	-44.74	-13	-31.74
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3760	41.41	-62.74	7.68	-55.06	-13	-42.06
2	5640	51.80	-52.94	7.02	-45.92	-13	-32.92
3	7520	46.13	-56.49	4.53	-51.96	-13	-38.96
4	9400	45.82	-56.05	4.21	-51.85	-13	-38.85
5	11280	49.08	-52.41	3.48	-48.93	-13	-35.93
6	13160	49.84	-51.18	4.48	-46.70	-13	-33.70
7	15040	51.49	-45.92	3.76	-42.16	-13	-29.16
8	16920	51.87	-45.48	3.70	-41.78	-13	-28.78

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

Mode	TX channel 19175	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3815	36.26	-67.89	7.68	-60.21	-13	-47.21
2	5722.5	39.20	-65.54	7.02	-58.52	-13	-45.52
3	7630	46.79	-55.83	4.53	-51.30	-13	-38.30
4	9537.5	46.68	-55.19	4.21	-50.99	-13	-37.99
5	11445	48.53	-52.96	3.48	-49.48	-13	-36.48
6	13352.5	48.63	-51.98	4.06	-47.91	-13	-34.91
7	15260	48.64	-48.71	3.70	-45.01	-13	-32.01
8	17167.5	48.13	-49.22	3.70	-45.52	-13	-32.52
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3815	41.86	-62.26	7.64	-54.61	-13	-41.61
2	5722.5	52.69	-52.00	6.96	-45.03	-13	-32.03
3	7630	47.58	-54.95	4.44	-50.51	-13	-37.51
4	9537.5	47.71	-54.14	4.18	-49.96	-13	-36.96
5	11445	47.81	-53.91	3.71	-50.20	-13	-37.20
6	13352.5	49.00	-52.06	4.52	-47.54	-13	-34.54
7	15260	54.23	-43.50	4.09	-39.42	-13	-26.42
8	17167.5	52.17	-45.18	3.70	-41.48	-13	-28.48

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

LTE Bnad 2: 10 MHz

Mode	TX channel 18650	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3710	36.39	-67.76	7.68	-60.08	-13	-47.08
2	5565	39.65	-65.09	7.02	-58.07	-13	-45.07
3	7420	45.49	-57.13	4.53	-52.60	-13	-39.60
4	9275	47.58	-54.29	4.21	-50.09	-13	-37.09
5	11130	49.46	-52.03	3.48	-48.55	-13	-35.55
6	12985	47.44	-53.17	4.06	-49.10	-13	-36.10
7	14840	47.71	-49.64	3.70	-45.94	-13	-32.94
8	16695	48.04	-49.31	3.70	-45.61	-13	-32.61
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3710	41.75	-62.43	7.71	-54.72	-13	-41.72
2	5565	52.58	-52.22	7.07	-45.14	-13	-32.14
3	7420	46.55	-56.16	4.61	-51.54	-13	-38.54
4	9275	47.44	-54.46	4.23	-50.23	-13	-37.23
5	11130	47.68	-53.60	3.27	-50.33	-13	-37.33
6	12985	48.98	-52.01	4.44	-47.56	-13	-34.56
7	14840	53.69	-43.42	3.47	-39.96	-13	-26.96
8	16695	51.53	-45.82	3.70	-42.12	-13	-29.12

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

Mode	TX channel 18900	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3760	35.95	-68.20	7.68	-60.52	-13	-47.52
2	5640	39.76	-64.98	7.02	-57.96	-13	-44.96
3	7520	45.95	-56.67	4.53	-52.14	-13	-39.14
4	9400	46.64	-55.23	4.21	-51.03	-13	-38.03
5	11280	48.47	-53.02	3.48	-49.54	-13	-36.54
6	13160	48.25	-52.36	4.06	-48.29	-13	-35.29
7	15040	48.64	-48.71	3.70	-45.01	-13	-32.01
8	16920	47.76	-49.59	3.70	-45.89	-13	-32.89
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3760	41.16	-62.99	7.68	-55.31	-13	-42.31
2	5640	51.98	-52.76	7.02	-45.74	-13	-32.74
3	7520	47.1	-55.52	4.53	-50.99	-13	-37.99
4	9400	46.91	-54.96	4.21	-50.76	-13	-37.76
5	11280	48	-53.49	3.48	-50.01	-13	-37.01
6	13160	49.65	-51.37	4.48	-46.89	-13	-33.89
7	15040	54.63	-42.78	3.76	-39.02	-13	-26.02
8	16920	51.41	-45.94	3.70	-42.24	-13	-29.24

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

Mode	TX channel 19150	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3810	36.83	-67.32	7.68	-59.64	-13	-46.64
2	5715	39.25	-65.49	7.02	-58.47	-13	-45.47
3	7620	45.88	-56.74	4.53	-52.21	-13	-39.21
4	9525	47.03	-54.84	4.21	-50.64	-13	-37.64
5	11430	50.02	-51.47	3.48	-47.99	-13	-34.99
6	13335	47.50	-53.11	4.06	-49.04	-13	-36.04
7	15240	47.76	-49.59	3.70	-45.89	-13	-32.89
8	17145	47.91	-49.44	3.70	-45.74	-13	-32.74
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3810	42.13	-61.99	7.65	-54.34	-13	-41.34
2	5715	51.74	-52.95	6.97	-45.98	-13	-32.98
3	7620	47.48	-55.06	4.44	-50.61	-13	-37.61
4	9525	46.8	-55.05	4.18	-50.87	-13	-37.87
5	11430	48.23	-53.47	3.69	-49.78	-13	-36.78
6	13335	48.87	-52.19	4.52	-47.67	-13	-34.67
7	15240	54.63	-43.07	4.06	-39.02	-13	-26.02
8	17145	51.3	-46.05	3.70	-42.35	-13	-29.35

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

LTE Bnad 2: 15 MHz

Mode	TX channel 18675	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3715	36.79	-67.36	7.68	-59.68	-13	-46.68
2	5572.5	40.14	-64.60	7.02	-57.58	-13	-44.58
3	7430	44.54	-58.08	4.53	-53.55	-13	-40.55
4	9287.5	48.08	-53.79	4.21	-49.59	-13	-36.59
5	11145	49.29	-52.20	3.48	-48.72	-13	-35.72
6	13002.5	46.78	-53.83	4.06	-49.76	-13	-36.76
7	14860	48.16	-49.19	3.70	-45.49	-13	-32.49
8	16717.5	48.56	-48.79	3.70	-45.09	-13	-32.09
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3715	42.58	-61.60	7.71	-53.89	-13	-40.89
2	5572.5	51.83	-52.96	7.07	-45.89	-13	-32.89
3	7430	46.87	-55.83	4.61	-51.22	-13	-38.22
4	9287.5	46.99	-54.90	4.23	-50.68	-13	-37.68
5	11145	47.97	-53.34	3.29	-50.04	-13	-37.04
6	13002.5	48.84	-52.15	4.45	-47.70	-13	-34.70
7	14860	54.19	-42.95	3.50	-39.46	-13	-26.46
8	16717.5	50.72	-46.63	3.70	-42.93	-13	-29.93

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

Mode	TX channel 18900	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3760	36.54	-67.61	7.68	-59.93	-13	-46.93
2	5640	39.73	-65.01	7.02	-57.99	-13	-44.99
3	7520	46.16	-56.46	4.53	-51.93	-13	-38.93
4	9400	46.49	-55.38	4.21	-51.18	-13	-38.18
5	11280	49.88	-51.61	3.48	-48.13	-13	-35.13
6	13160	47.21	-53.40	4.06	-49.33	-13	-36.33
7	15040	47.81	-49.54	3.70	-45.84	-13	-32.84
8	16920	47.95	-49.40	3.70	-45.70	-13	-32.70
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3760	42.67	-61.48	7.68	-53.80	-13	-40.80
2	5640	50.75	-53.99	7.02	-46.97	-13	-33.97
3	7520	47.47	-55.15	4.53	-50.62	-13	-37.62
4	9400	47.67	-54.20	4.21	-50.00	-13	-37.00
5	11280	47.26	-54.23	3.48	-50.75	-13	-37.75
6	13160	49.18	-51.84	4.48	-47.36	-13	-34.36
7	15040	54.77	-42.64	3.76	-38.88	-13	-25.88
8	16920	50.4	-46.95	3.70	-43.25	-13	-30.25

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

Mode	TX channel 19125	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3805	36.77	-67.38	7.68	-59.70	-13	-46.70
2	5707.5	38.27	-66.47	7.02	-59.45	-13	-46.45
3	7610	46.15	-56.47	4.53	-51.94	-13	-38.94
4	9512.5	48.00	-53.87	4.21	-49.67	-13	-36.67
5	11415	50.29	-51.20	3.48	-47.72	-13	-34.72
6	13317.5	46.81	-53.80	4.06	-49.73	-13	-36.73
7	15220	47.31	-50.04	3.70	-46.34	-13	-33.34
8	17122.5	48.51	-48.84	3.70	-45.14	-13	-32.14
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3805	42.15	-61.97	7.65	-54.32	-13	-41.32
2	5707.5	51.32	-53.38	6.97	-46.40	-13	-33.40
3	7610	47.91	-54.63	4.45	-50.18	-13	-37.18
4	9512.5	47.37	-54.48	4.19	-50.30	-13	-37.30
5	11415	48.55	-53.13	3.67	-49.46	-13	-36.46
6	13317.5	48.23	-52.83	4.51	-48.31	-13	-35.31
7	15220	54.89	-42.78	4.03	-38.76	-13	-25.76
8	17122.5	52.21	-45.14	3.70	-41.44	-13	-28.44

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

LTE Bnad 2: 20 MHz

Mode	TX channel 18700	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3720	37.09	-67.06	7.68	-59.38	-13	-46.38
2	5580	40.62	-64.12	7.02	-57.10	-13	-44.10
3	7440	45.23	-57.39	4.53	-52.86	-13	-39.86
4	9300	48.03	-53.84	4.21	-49.64	-13	-36.64
5	11160	49.89	-51.60	3.48	-48.12	-13	-35.12
6	13020	47.12	-53.49	4.06	-49.42	-13	-36.42
7	14880	48.31	-49.04	3.70	-45.34	-13	-32.34
8	16740	48.07	-49.28	3.70	-45.58	-13	-32.58
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3720	42.37	-61.81	7.70	-54.10	-13	-41.10
2	5580	51.19	-53.60	7.06	-46.53	-13	-33.53
3	7440	45.98	-56.71	4.60	-52.11	-13	-39.11
4	9300	47.93	-53.96	4.23	-49.74	-13	-36.74
5	11160	48.91	-52.42	3.31	-49.10	-13	-36.10
6	13020	47.96	-53.03	4.45	-48.58	-13	-35.58
7	14880	54.15	-43.02	3.53	-39.50	-13	-26.50
8	16740	51.09	-46.26	3.70	-42.56	-13	-29.56

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

Mode	TX channel 18900	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3760	37.29	-66.86	7.68	-59.18	-13	-46.18
2	5640	40.39	-64.35	7.02	-57.33	-13	-44.33
3	7520	45.07	-57.55	4.53	-53.02	-13	-40.02
4	9400	48.82	-53.05	4.21	-48.85	-13	-35.85
5	11280	50.65	-50.84	3.48	-47.36	-13	-34.36
6	13160	47.81	-52.80	4.06	-48.73	-13	-35.73
7	15040	47.8	-49.55	3.70	-45.85	-13	-32.85
8	16920	48.73	-48.62	3.70	-44.92	-13	-31.92
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3760	42.98	-61.17	7.68	-53.49	-13	-40.49
2	5640	51.56	-53.18	7.02	-46.16	-13	-33.16
3	7520	45.46	-57.16	4.53	-52.63	-13	-39.63
4	9400	48.45	-53.42	4.21	-49.22	-13	-36.22
5	11280	48.00	-53.49	3.48	-50.01	-13	-37.01
6	13160	48.35	-52.67	4.48	-48.19	-13	-35.19
7	15040	55.02	-42.39	3.76	-38.63	-13	-25.63
8	16920	50.72	-46.63	3.70	-42.93	-13	-29.93

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

Mode	TX channel 19100	Frequency Range	Above 1000MHz

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3800	36.27	-67.88	7.68	-60.20	-13	-47.20
2	5700	41.28	-63.46	7.02	-56.44	-13	-43.44
3	7600	45.10	-57.52	4.53	-52.99	-13	-39.99
4	9500	47.28	-54.59	4.21	-50.39	-13	-37.39
5	11400	49.55	-51.94	3.48	-48.46	-13	-35.46
6	13300	48.05	-52.56	4.06	-48.49	-13	-35.49
7	15200	47.97	-49.38	3.70	-45.68	-13	-32.68
8	17100	48.52	-48.83	3.70	-45.13	-13	-32.13
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Emission Value (dBm)	Limit (dBm)	Margin (dB)
1	3800	43.19	-60.94	7.65	-53.28	-13	-40.28
2	5700	51.49	-53.21	6.98	-46.23	-13	-33.23
3	7600	45.63	-56.92	4.46	-52.46	-13	-39.46
4	9500	48.28	-53.58	4.19	-49.39	-13	-36.39
5	11400	49.20	-52.46	3.65	-48.81	-13	-35.81
6	13300	47.54	-53.51	4.51	-49.00	-13	-36.00
7	15200	53.97	-43.67	4.00	-39.68	-13	-26.68
8	17100	50.88	-46.47	3.70	-42.77	-13	-29.77

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

5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

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