

FCC Test Report

(PART 27)

Report No.: RF191015C02-4

FCC ID: RC6-GRN70C

Test Model: GRN70C

Received Date: Oct. 15, 2019

Test Date: Oct. 23 ~ Oct. 30, 2019

Issued Date: Dec. 12, 2019

Applicant: Amigo Technology Inc

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration /
Designation Number: 788550 / TW0003



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Table of Contents

Release Control Record	4
1 Certificate of Conformity	5
2 Summary of Test Results	6
2.1 Measurement Uncertainty	6
2.2 Test Site and Instruments	7
3 General Information	8
3.1 General Description of EUT	8
3.2 Configuration of System under Test	9
3.2.1 Description of Support Units	9
3.3 Test Mode Applicability and Tested Channel Detail	9
3.4 EUT Operating Conditions	11
3.5 General Description of Applied Standards and references	11
4 Test Types and Results	12
4.1 Output Power Measurement	12
4.1.1 Limits of Output Power Measurement	12
4.1.2 Test Procedures	12
4.1.3 Test Setup	13
4.1.4 Test Results	14
4.2 Modulation Characteristics Measurement	28
4.2.1 Limits of Modulation Characteristics	28
4.2.2 Test Setup	28
4.2.3 Test Procedure	28
4.2.4 Test Results	28
4.3 Frequency Stability Measurement	29
4.3.1 Limits of Frequency Stability Measurement	29
4.3.2 Test Procedure	29
4.3.3 Test Setup	29
4.3.4 Test Results	30
4.4 Occupied Bandwidth Measurement	36
4.4.1 Limits of Occupied Bandwidth Measurement	36
4.4.2 Test Procedure	36
4.4.3 Test Setup	36
4.4.4 Test Result	37
4.5 Band Edge Measurement	40
4.5.1 Limits of Band Edge Measurement	40
4.5.2 Test Setup	40
4.5.3 Test Procedures	40
4.5.4 Test Results	41
4.6 Peak to Average Ratio	47
4.6.1 Limits of Peak to Average Ratio Measurement	47
4.6.2 Test Setup	47
4.6.3 Test Procedures	47
4.6.4 Test Results	48
4.7 Conducted Spurious Emissions	51
4.7.1 Limits of Conducted Spurious Emissions Measurement	51
4.7.2 Test Setup	51
4.7.3 Test Procedure	51
4.7.4 Test Results	52
4.8 Radiated Emission Measurement	58
4.8.1 Limits of Radiated Emission Measurement	58
4.8.2 Test Procedure	58
4.8.3 Deviation from Test Standard	58
4.8.4 Test Setup	59

4.8.5 Test Results	60
5 Pictures of Test Arrangements.....	72
Appendix – Information of the Testing Laboratories	73

Release Control Record

Issue No.	Description	Date Issued
RF191015C02-4	Original Release	Dec. 12, 2019

1 Certificate of Conformity

Product: 4G Mesh Router

Brand: Amigo

Test Model: GRN70C

Sample Status: Engineering Sample

Applicant: Amigo Technology Inc

Test Date: Oct. 23 ~ Oct. 30, 2019

Standards: FCC Part 27, Subpart C, L

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

Prepared by : Gina Liu, **Date:** Dec. 12, 2019
Gina Liu / Specialist

Approved by : Dylan Chiou, **Date:** Dec. 12, 2019
Dylan Chiou / Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 27 & Part 2 (LTE 4)			
FCC Clause	Test Item	Result	Remarks
2.1046 27.50(d)(4)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
27.50(d)(5)	Peak to Average Ratio	Pass	Meet the requirement of limit.
27.53(h)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(h)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -30.3 dB at 74.62 MHz.

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	30 MHz ~ 200 MHz	3.59 dB
	200 MHz ~ 1000 MHz	3.60 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	2.29 dB
	18 GHz ~ 40 GHz	2.29 dB

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent Technologies	N9038A	MY55420137	Apr. 15, 2019	Apr. 14, 2020
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Jun. 12, 2019	Jun. 11, 2020
BILOG Antenna SCHWARZBECK	VULB 9168	9168-160	Nov. 21, 2018	Nov. 20, 2019
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Nov. 25, 2018	Nov. 24, 2019
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Nov. 25, 2018	Nov. 24, 2019
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-969	Nov. 25, 2018	Nov. 24, 2019
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 15, 2019	Apr. 14, 2020
MXG Vector signal generator Agilent	N5182B	MY53050430	Nov. 29, 2018	Nov. 28, 2019
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Jul. 11, 2019	Jul. 10, 2020
Preamplifier Agilent (Above 1GHz)	8449B	3008A02367	Feb. 19, 2019	Feb. 18, 2020
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 19, 2019	Jan. 18, 2020
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Jul. 11, 2019	Jul. 10, 2020
RF signal cable WOKEN	8D-FB	Cable-CH9-01	Jul. 30, 2019	Jul. 29, 2020
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Radio Communication Analyzer Anritsu	MT8820C	6201300640	Aug. 16, 2019	Aug. 15, 2021
Temperature & Humidity Chamber	GTH-120-40-CP-AR	MAA1306-019	Sep. 06, 2019	Sep. 05, 2020
AC Power Source	6905S	1991553	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 / 24 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Chamber 9.

3 General Information

3.1 General Description of EUT

Product	4G Mesh Router	
Brand	Amigo	
Test Model	GRN70C	
Status of EUT	Engineering Sample	
Power Supply Rating	12 Vdc (adapter)	
Modulation Type	LTE	QPSK, 16QAM
Frequency Range	LTE Band 4 (Channel Bandwidth: 1.4 MHz)	1710.7 ~ 1754.3 MHz
	LTE Band 4 (Channel Bandwidth: 3 MHz)	1711.5 ~ 1753.5 MHz
	LTE Band 4 (Channel Bandwidth: 5 MHz)	1712.5 ~ 1752.5 MHz
	LTE Band 4 (Channel Bandwidth: 10 MHz)	1715.0 ~ 1750.0 MHz
	LTE Band 4 (Channel Bandwidth: 15 MHz)	1717.5 ~ 1747.5 MHz
	LTE Band 4 (Channel Bandwidth: 20 MHz)	1720.0 ~ 1745.0 MHz
Emission Designator	LTE Band 4 (Channel Bandwidth: 1.4 MHz)	1M09D7W
	LTE Band 4 (Channel Bandwidth: 3 MHz)	2M70G7D
	LTE Band 4 (Channel Bandwidth: 5 MHz)	4M49D7W
	LTE Band 4 (Channel Bandwidth: 10 MHz)	8M96D7W
	LTE Band 4 (Channel Bandwidth: 15 MHz)	13M4G7D
	LTE Band 4 (Channel Bandwidth: 20 MHz)	17M9D7W
Max. EIRP Power	LTE Band 4 (Channel Bandwidth: 1.4 MHz)	446.684 mW (26.50dBm)
	LTE Band 4 (Channel Bandwidth: 3 MHz)	489.779 mW (26.90dBm)
	LTE Band 4 (Channel Bandwidth: 5 MHz)	426.580 mW (26.30dBm)
	LTE Band 4 (Channel Bandwidth: 10 MHz)	457.088 mW (26.60dBm)
	LTE Band 4 (Channel Bandwidth: 15 MHz)	446.684 mW (26.50dBm)
	LTE Band 4 (Channel Bandwidth: 20 MHz)	426.580 mW (26.30dBm)
Antenna Type	Fixed External Antenna with 4.7 dBi gain	
Accessory Device	Refer to Note as below	
Data Cable Supplied	Refer to Note as below	

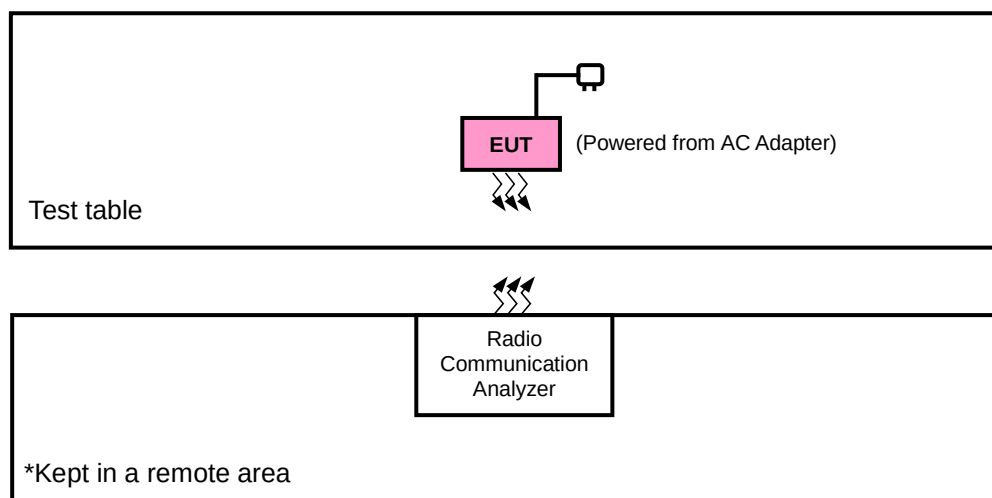
Note:

- The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter	Channel Well Technology	2ABB018F US	I/P: 100-240 Vac, 50/60 Hz, 0.6 A O/P: 12.0 Vdc, 1.5 A 1.2m non-shielded cable w/o core

- The above EUT information is declared by manufacturer and for more detailed features description, please refers 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.

3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis, and antenna ports

The worst case was found when positioned as the table below. Following channel(s) was (were) selected for the final test as listed below:

Band	EIRP	Radiated Emission
LTE Band 4	Z-plane	Z-plane

LTE Band 4

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-	Modulation Characteristics	20050 to 20300	20175	20 MHz	QPSK, 16QAM	100 RB / 0 RB Offset
-	Frequency Stability	19957 to 20393	19957, 20393	1.4 MHz	QPSK	1 RB / 0 RB Offset
		19965 to 20385	19965, 20385	3 MHz	QPSK	1 RB / 0 RB Offset
		19975 to 20375	19975, 20375	5 MHz	QPSK	1 RB / 0 RB Offset
		20000 to 20350	20000, 20350	10 MHz	QPSK	1 RB / 0 RB Offset
		20025 to 20325	20025, 20325	15 MHz	QPSK	1 RB / 0 RB Offset
		20050 to 20300	20050, 20300	20 MHz	QPSK	1 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Occupied Bandwidth	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK, 16QAM	50 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK, 16QAM	75 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK, 16QAM	100 RB / 0 RB Offset
-	Peak to Average Ratio	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-	Band Edge	19957 to 20393	19957	1.4 MHz	QPSK	1 RB / 0 RB Offset
			20393	1.4 MHz	QPSK	6 RB / 0 RB Offset
		19965 to 20385	19965	3 MHz	QPSK	1 RB / 5 RB Offset
			20385	3 MHz	QPSK	6 RB / 0 RB Offset
		19975 to 20375	19975	5 MHz	QPSK	1 RB / 0 RB Offset
			20375	5 MHz	QPSK	15 RB / 0 RB Offset
		20000 to 20350	20000	10 MHz	QPSK	1 RB / 14 RB Offset
			20350	10 MHz	QPSK	15 RB / 0 RB Offset
		20025 to 20325	20025	15 MHz	QPSK	1 RB / 0 RB Offset
			20325	15 MHz	QPSK	25 RB / 0 RB Offset
		20050 to 20300	20050	20 MHz	QPSK	1 RB / 24 RB Offset
			20300	20 MHz	QPSK	25 RB / 0 RB Offset
		19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK	1 RB / 0 RB Offset
			19965, 20175, 20385	3 MHz	QPSK	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK	1 RB / 0 RB Offset
			20000, 20175, 20350	10 MHz	QPSK	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK	1 RB / 0 RB Offset
			20050, 20175, 20300	20 MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK	1 RB / 0 RB Offset

Note:

1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.
2. For radiated emission above 1 GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5 MHz & highest channel bandwidth for final test.
3. For radiated emission below 1 GHz, choose the maximum EIRP power worst channel for final test.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
EIRP	25 deg. C, 65 % RH	120 Vac, 60 Hz	Greg Lin, Han Wu
Modulation Characteristics	25 deg. C, 65 % RH	120 Vac, 60 Hz	James Yang
Frequency Stability	25 deg. C, 65 % RH	120 Vac, 60 Hz	James Yang
Occupied Bandwidth	25 deg. C, 65 % RH	120 Vac, 60 Hz	James Yang
Band Edge	25 deg. C, 65 % RH	120 Vac, 60 Hz	James Yang
Peak to Average Ratio	25 deg. C, 65 % RH	120 Vac, 60 Hz	James Yang
Conducted Emission	25 deg. C, 65 % RH	120 Vac, 60 Hz	James Yang
Radiated Emission	25 deg. C, 65 % RH	120 Vac, 60 Hz	Greg Lin, Han Wu

3.4 EUT Operating Conditions

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

3.5 General Description of Applied Standards and references

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

Test Standard:

FCC 47 CFR Part 2

FCC 47 CFR Part 27

ANSI 63.26-2015

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

References Test Guidance:

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-E 2016

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

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

4.1.2 Test Procedures

EIRP / ERP Measurement:

- All measurements were done at low, middle and high operational frequency range. RBW and VBW is 10 MHz for LTE mode.
- Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
- The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step b. Record the power level of S.G.
- $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $E.R.P \text{ power} = E.I.R.P \text{ power} - 2.15 \text{ dB}$.

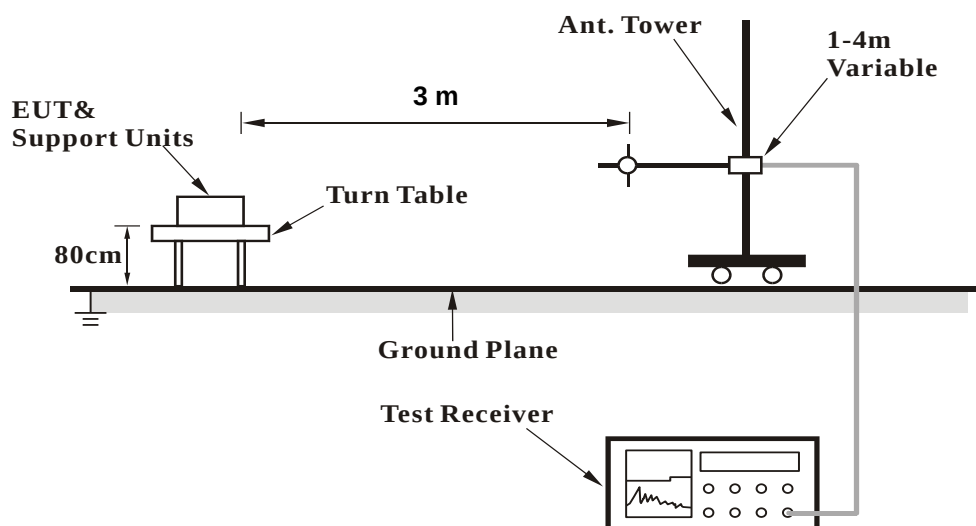
Conducted Power Measurement:

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

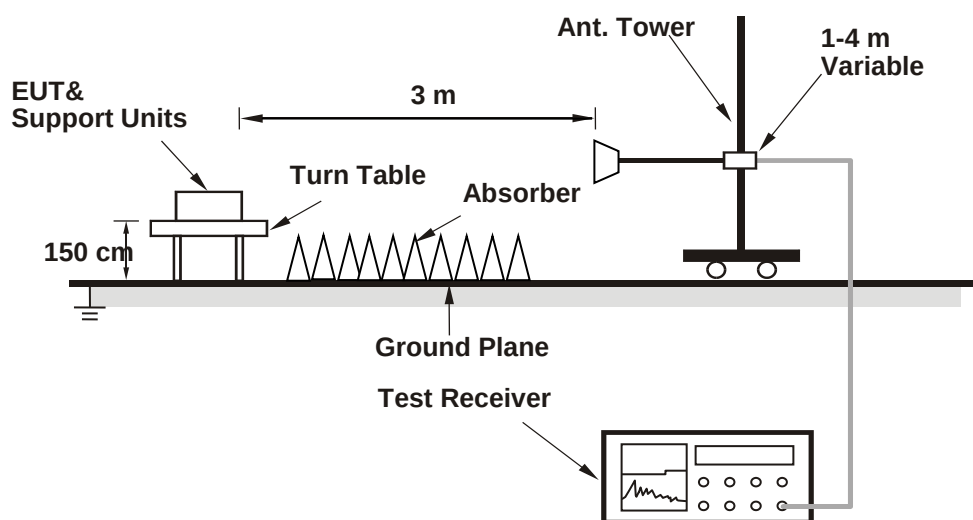
4.1.3 Test Setup

EIRP / ERP Measurement:

<Radiated Emission below or equal 1 GHz>

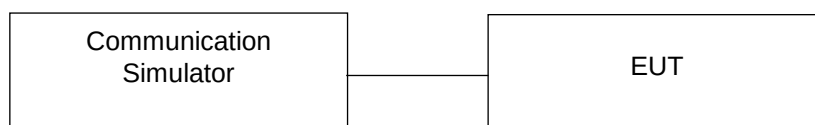


<Radiated Emission above 1 GHz>



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

Conducted Power Measurement:



4.1.4 Test Results

Conducted Output Power (dBm)

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 19957	Mid Ch 20175	High Ch 20393		Low Ch 19957	Mid Ch 20175	High Ch 20393	
			1710.7 MHz	1732.5 MHz	1754.3 MHz		1710.7 MHz	1732.5 MHz	1754.3 MHz	
4 / 1.4M	1	0	22.69	22.71	22.56	0	21.43	21.71	21.31	1
	1	2	22.47	22.49	22.57	0	21.51	21.58	21.62	1
	1	5	22.16	22.25	22.50	0	21.38	21.58	21.50	1
	3	0	22.57	22.59	22.65	0	21.68	21.59	21.47	1
	3	1	22.62	22.69	22.60	0	21.66	21.70	21.52	1
	3	3	22.26	22.37	22.33	0	21.66	21.58	21.55	1
	6	0	21.44	21.58	21.47	1	20.62	20.76	20.60	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 19965	Mid Ch 20175	High Ch 20385		Low Ch 19965	Mid Ch 20175	High Ch 20385	
			1711.5 MHz	1732.5 MHz	1753.5 MHz		1711.5 MHz	1732.5 MHz	1753.5 MHz	
4 / 3M	1	0	22.67	22.73	22.18	0	21.48	21.58	21.30	1
	1	7	22.71	22.53	22.43	0	21.33	21.12	21.42	1
	1	14	22.62	22.14	22.42	0	21.52	21.50	21.56	1
	8	0	21.52	21.62	21.33	1	20.48	20.57	20.47	2
	8	3	21.63	21.46	21.51	1	20.51	20.61	20.55	2
	8	7	21.54	21.48	21.37	1	20.60	20.56	20.65	2
	15	0	21.63	21.50	21.48	1	20.30	20.60	20.42	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 19975	Mid Ch 20175	High Ch 20375		Low CH 19975	Mid CH 20175	High CH 20375	
			1712.5 MHz	1732.5 MHz	1752.5 MHz		1712.5 MHz	1732.5 MHz	1752.5 MHz	
4 / 5M	1	0	22.24	22.52	22.26	0	21.07	21.20	21.02	1
	1	12	22.49	22.44	22.51	0	21.13	20.60	21.13	1
	1	24	22.21	22.02	22.34	0	20.90	20.84	21.54	1
	12	0	21.48	21.45	21.32	1	20.35	20.57	20.32	2
	12	6	21.41	21.48	21.56	1	20.35	20.60	20.63	2
	12	13	21.45	21.44	21.51	1	20.33	20.37	20.70	2
	25	0	21.53	21.45	21.41	1	20.45	20.50	20.50	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 20000	Mid Ch 20175	High Ch 20350		Low Ch 20000	Mid Ch 20175	High Ch 20350	
			1715.0 MHz	1732.5 MHz	1750.0 MHz		1715.0 MHz	1732.5 MHz	1750.0 MHz	
4 / 10M	1	0	22.25	22.64	22.37	0	21.12	21.27	21.34	1
	1	24	22.51	22.31	22.48	0	21.18	21.25	21.26	1
	1	49	22.56	21.82	22.46	0	21.23	20.91	21.48	1
	25	0	21.56	21.66	21.39	1	20.63	20.83	20.55	2
	25	12	21.48	21.49	21.49	1	20.64	20.57	20.63	2
	25	25	21.47	21.50	21.48	1	20.61	20.48	20.69	2
	50	0	21.62	21.49	21.48	1	20.85	20.43	20.58	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 20025	Mid Ch 20175	High Ch 20325		Low Ch 20025	Mid Ch 20175	High Ch 20325	
			1717.5 MHz	1732.5 MHz	1747.5 MHz		1717.5 MHz	1732.5 MHz	1747.5 MHz	
4 / 15M	1	0	22.76	23.08	22.67	0	21.64	21.82	21.79	1
	1	37	22.74	22.56	22.80	0	21.76	21.63	21.18	1
	1	74	22.82	22.60	22.57	0	21.69	21.50	21.18	1
	36	0	21.59	21.81	21.60	1	20.59	20.79	20.68	2
	36	19	21.71	21.66	21.68	1	20.82	20.63	20.76	2
	36	39	21.69	21.60	21.53	1	20.83	20.52	20.58	2
	75	0	21.49	21.54	21.70	1	20.84	20.47	20.82	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 20050	Mid Ch 20175	High Ch 20300		Low Ch 20050	Mid Ch 20175	High Ch 20300	
			1720.0 MHz	1732.5 MHz	1745.0 MHz		1720.0 MHz	1732.5 MHz	1745.0 MHz	
4 / 20M	1	0	22.54	22.87	22.70	0	22.07	21.88	21.76	1
	1	50	22.74	22.80	22.51	0	21.94	21.83	21.70	1
	1	99	22.57	22.25	22.57	0	21.64	21.54	21.73	1
	50	0	21.78	21.71	21.81	1	20.87	20.92	20.74	2
	50	25	21.79	21.64	21.70	1	20.87	20.76	20.73	2
	50	50	21.89	21.57	21.63	1	20.87	20.61	20.72	2
	100	0	21.84	21.67	21.59	1	20.79	20.55	20.67	2

EIRP Power (dBm)

Modulation Type: QPSK

LTE Band 4, Channel Bandwidth: 1.4MHz

MODE		TX Channel 19957					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1710.70 (PK)	-15.20	22.80	0.70	23.50	30.00	-6.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1710.70 (PK)	-13.20	24.60	0.70	25.30	30.00	-4.70

MODE		TX Channel 20175					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	-14.60	23.80	0.60	24.40	30.00	-5.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	-13.00	25.30	0.60	25.90	30.00	-4.10

MODE		TX Channel 20393					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1754.30 (PK)	-15.10	23.70	0.50	24.20	30.00	-5.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1754.30 (PK)	-12.90	26.00	0.50	26.50	30.00	-3.50

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

LTE Band 4, Channel Bandwidth: 3MHz

MODE		TX Channel 19965					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1711.50 (PK)	-14.70	23.30	0.70	24.00	30.00	-6.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1711.50 (PK)	-13.20	24.60	0.70	25.30	30.00	-4.70

MODE		TX Channel 20175					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	-14.80	23.60	0.60	24.20	30.00	-5.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	-12.70	25.60	0.60	26.20	30.00	-3.80

MODE		TX Channel 20385					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1753.50 (PK)	-15.30	23.50	0.50	24.00	30.00	-6.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1753.50 (PK)	-12.50	26.40	0.50	26.90	30.00	-3.10

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

LTE Band 4, Channel Bandwidth: 5MHz

MODE		TX Channel 19975					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1712.50 (PK)	-15.30	22.80	0.70	23.50	30.00	-6.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1712.50 (PK)	-13.00	24.90	0.70	25.60	30.00	-4.40

MODE		TX Channel 20175					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	-15.10	23.30	0.60	23.90	30.00	-6.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	-12.80	25.50	0.60	26.10	30.00	-3.90

MODE		TX Channel 20375					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1752.50 (PK)	-14.90	23.90	0.50	24.40	30.00	-5.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1752.50 (PK)	-13.00	25.80	0.50	26.30	30.00	-3.70

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

LTE Band 4, Channel Bandwidth: 10MHz

MODE		TX Channel 20000					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1715.00 (PK)	-15.30	22.80	0.70	23.50	30.00	-6.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1715.00 (PK)	-13.00	24.90	0.70	25.60	30.00	-4.40

MODE		TX Channel 20175					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	-14.80	23.60	0.60	24.20	30.00	-5.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	-12.80	25.50	0.60	26.10	30.00	-3.90

MODE		TX Channel 20350					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1750.00 (PK)	-14.70	24.10	0.50	24.60	30.00	-5.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1750.00 (PK)	-12.70	26.10	0.50	26.60	30.00	-3.40

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

LTE Band 4, Channel Bandwidth: 15MHz

MODE		TX Channel 20025					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1717.50 (PK)	-14.80	23.30	0.70	24.00	30.00	-6.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1717.50 (PK)	-13.00	25.00	0.70	25.70	30.00	-4.30

MODE		TX Channel 20175					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	-15.30	23.10	0.60	23.70	30.00	-6.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	-13.20	25.10	0.60	25.70	30.00	-4.30

MODE		TX Channel 20325					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1747.50 (PK)	-14.90	23.80	0.50	24.30	30.00	-5.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1747.50 (PK)	-12.70	26.00	0.50	26.50	30.00	-3.50

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

LTE Band 4, Channel Bandwidth: 20MHz

MODE		TX Channel 20050					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1720.00 (PK)	-14.60	23.60	0.70	24.30	30.00	-5.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1720.00 (PK)	-12.50	25.50	0.70	26.20	30.00	-3.80

MODE		TX Channel 20175					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	-14.70	23.70	0.60	24.30	30.00	-5.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	-12.70	25.60	0.60	26.20	30.00	-3.80

MODE		TX Channel 20300					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1745.00 (PK)	-15.10	23.60	0.50	24.10	30.00	-5.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1745.00 (PK)	-12.90	25.80	0.50	26.30	30.00	-3.70

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

Modulation Type: 16QAM

LTE Band 4, Channel Bandwidth: 1.4MHz

MODE		TX Channel 19957					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1710.70 (PK)	12.80	22.30	0.70	23.00	30.00	-7.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1710.70 (PK)	16.00	25.20	0.70	25.90	30.00	-4.10

MODE		TX Channel 20175					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	13.70	22.80	0.60	23.40	30.00	-6.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	16.10	24.80	0.60	25.40	30.00	-4.60

MODE		TX Channel 20393					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1754.30 (PK)	13.90	22.70	0.50	23.20	30.00	-6.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1754.30 (PK)	16.80	25.00	0.50	25.50	30.00	-4.50

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

LTE Band 4, Channel Bandwidth: 3MHz

MODE		TX Channel 19965					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1711.50 (PK)	13.00	22.40	0.70	23.10	30.00	-6.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1711.50 (PK)	16.20	25.40	0.70	26.10	30.00	-3.90

MODE		TX Channel 20175					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	13.40	22.50	0.60	23.10	30.00	-6.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	16.40	25.10	0.60	25.70	30.00	-4.30

MODE		TX Channel 20385					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1753.50 (PK)	13.60	22.40	0.50	22.90	30.00	-7.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1753.50 (PK)	17.00	25.20	0.50	25.70	30.00	-4.30

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

LTE Band 4, Channel Bandwidth: 5MHz

MODE		TX Channel 19975					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1712.50 (PK)	13.30	22.70	0.70	23.40	30.00	-6.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1712.50 (PK)	15.90	25.10	0.70	25.80	30.00	-4.20

MODE		TX Channel 20175					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	14.10	23.20	0.60	23.80	30.00	-6.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	16.60	25.30	0.60	25.90	30.00	-4.10

MODE		TX Channel 20375					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1752.50 (PK)	14.00	22.80	0.50	23.30	30.00	-6.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1752.50 (PK)	16.80	25.10	0.50	25.60	30.00	-4.40

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

LTE Band 4, Channel Bandwidth: 10MHz

MODE		TX Channel 20000					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1715.00 (PK)	13.10	22.50	0.70	23.20	30.00	-6.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1715.00 (PK)	15.70	24.80	0.70	25.50	30.00	-4.50

MODE		TX Channel 20175					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	14.00	23.10	0.60	23.70	30.00	-6.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	16.30	25.00	0.60	25.60	30.00	-4.40

MODE		TX Channel 20350					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1750.00 (PK)	13.50	22.40	0.50	22.90	30.00	-7.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1750.00 (PK)	16.80	25.10	0.50	25.60	30.00	-4.40

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

LTE Band 4, Channel Bandwidth: 15MHz

MODE		TX Channel 20025					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1717.50 (PK)	13.60	22.90	0.70	23.60	30.00	-6.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1717.50 (PK)	15.00	24.00	0.70	24.70	30.00	-5.30

MODE		TX Channel 20175					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	-15.90	22.50	0.60	23.10	30.00	-6.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	-13.60	24.70	0.60	25.30	30.00	-4.70

MODE		TX Channel 20325					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1747.50 (PK)	-16.00	22.70	0.50	23.20	30.00	-6.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1747.50 (PK)	-13.20	25.50	0.50	26.00	30.00	-4.00

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

LTE Band 4, Channel Bandwidth: 20MHz

MODE		TX Channel 20050					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1720.00 (PK)	-15.40	22.80	0.70	23.50	30.00	-6.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1720.00 (PK)	-13.20	24.80	0.70	25.50	30.00	-4.50

MODE		TX Channel 20175					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	-15.60	22.80	0.60	23.40	30.00	-6.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1732.50 (PK)	-13.10	25.20	0.60	25.80	30.00	-4.20

MODE		TX Channel 20300					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1745.00 (PK)	-15.60	23.10	0.50	23.60	30.00	-6.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	READING (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dB)
1	1745.00 (PK)	-13.90	24.80	0.50	25.30	30.00	-4.70

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

4.2 Modulation Characteristics Measurement

4.2.1 Limits of Modulation Characteristics

N/A

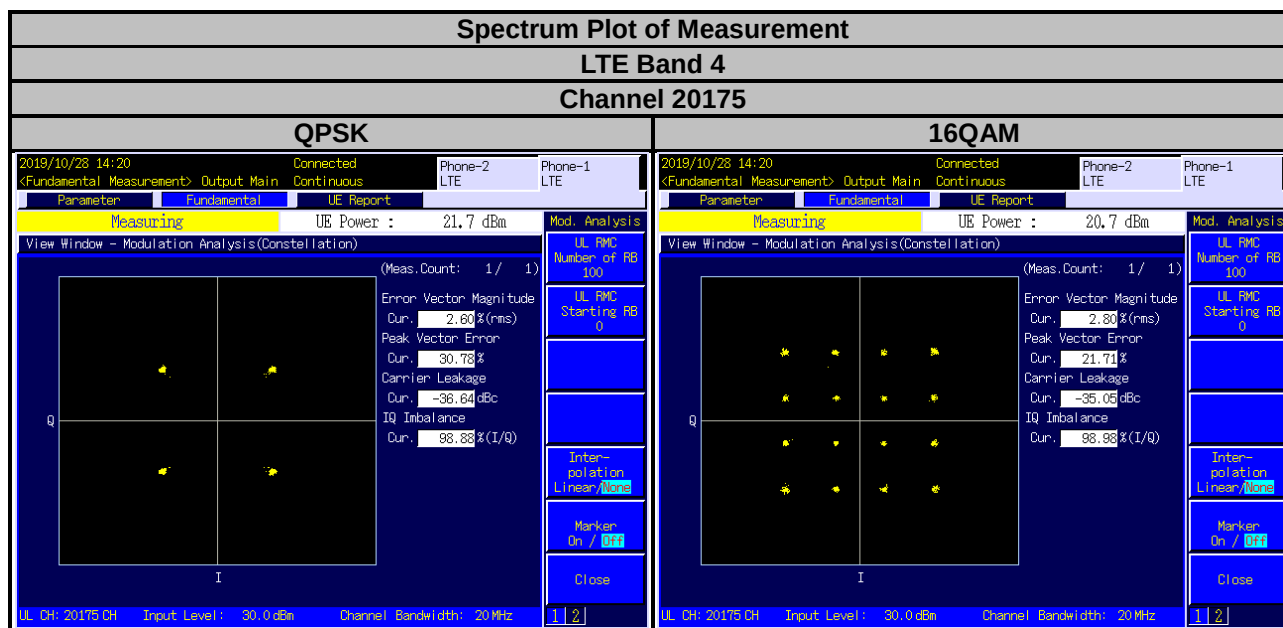
4.2.2 Test Setup



4.2.3 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.

4.2.4 Test Results



4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

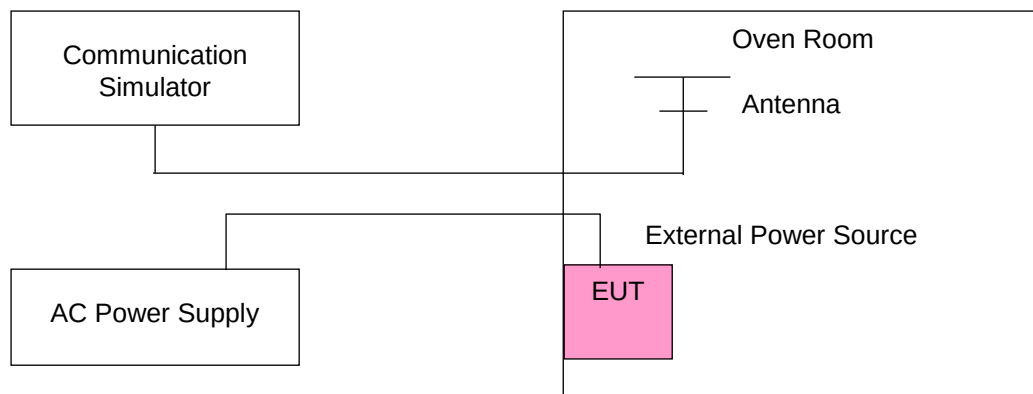
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

4.3.2 Test Procedure

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the AC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

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

4.3.3 Test Setup



4.3.4 Test Results

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
102	1710.700002	0.001	1754.300002	0.001
120	1710.700004	0.002	1754.300002	0.001
138	1710.700002	0.001	1754.300002	0.001

Note: The applicant defined the normal working voltage of the adapter is from 102 Vac to 138 Vac.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1710.700002	0.001	3.00	1754.300003
-20	1710.700003	0.002	2.00	1754.300002
-10	1710.700003	0.002	2.60	1754.300003
0	1710.700001	0.001	2.90	1754.300003
10	1710.700002	0.001	2.20	1754.300002
20	1710.699997	-0.002	-4.00	1754.299996
30	1710.699996	-0.002	-1.60	1754.299998
40	1710.699997	-0.002	-1.20	1754.299999
50	1710.699999	-0.001	-2.60	1754.299997

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
102	1711.500002	0.001	1753.500002	0.001
120	1711.500001	0.001	1753.500001	0.001
138	1711.500001	0.001	1753.500004	0.002

Note: The applicant defined the normal working voltage of the adapter is from 102 Vac to 138 Vac.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1711.500003	0.002	1753.500001	0.001
-20	1711.500002	0.001	1753.500001	0.001
-10	1711.500003	0.002	1753.500001	0.001
0	1711.500002	0.001	1753.500004	0.002
10	1711.500002	0.001	1753.500003	0.002
20	1711.499996	-0.002	1753.499997	-0.002
30	1711.499996	-0.002	1753.499997	-0.002
40	1711.499998	-0.001	1753.499997	-0.002
50	1711.499997	-0.002	1753.499998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
102	1712.500004	0.002	1752.500002	0.001
120	1712.500003	0.002	1752.500003	0.001
138	1712.500003	0.002	1752.500004	0.002

Note: The applicant defined the normal working voltage of the adapter is from 102 Vac to 138 Vac.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1712.500003	0.002	1752.500003	0.001
-20	1712.500003	0.002	1752.500003	0.002
-10	1712.500004	0.002	1752.500002	0.001
0	1712.500003	0.001	1752.500003	0.002
10	1712.500004	0.002	1752.500001	0.001
20	1712.499997	-0.002	1752.499999	-0.001
30	1712.499996	-0.002	1752.499997	-0.001
40	1712.499998	-0.001	1752.499998	-0.001
50	1712.499997	-0.002	1752.499996	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
102	1715.000002	0.001	1750.000002	0.001
120	1715.000002	0.001	1750.000001	0.001
138	1715.000003	0.001	1750.000001	0.001

Note: The applicant defined the normal working voltage of the adapter is from 102 Vac to 138 Vac.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1715.000002	0.001	1750.000002	0.001
-20	1715.000001	0.001	1750.000003	0.002
-10	1715.000003	0.002	1750.000004	0.002
0	1715.000002	0.001	1750.000003	0.002
10	1715.000003	0.002	1750.000004	0.002
20	1714.999998	-0.001	1749.999999	-0.001
30	1714.999999	-0.001	1749.999999	-0.001
40	1714.999998	-0.001	1749.999997	-0.002
50	1714.999996	-0.002	1749.999999	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
102	1717.500001	0.001	1747.500004	0.002
120	1717.500003	0.002	1747.500003	0.002
138	1717.500003	0.001	1747.500003	0.002

Note: The applicant defined the normal working voltage of the adapter is from 102 Vac to 138 Vac.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1717.500001	0.001	1747.500002	0.001
-20	1717.500001	0.001	1747.500002	0.001
-10	1717.500003	0.002	1747.500003	0.002
0	1717.500002	0.001	1747.500003	0.002
10	1717.500004	0.002	1747.500003	0.001
20	1717.499997	-0.002	1747.499997	-0.002
30	1717.499999	-0.001	1747.499998	-0.001
40	1717.499997	-0.002	1747.499996	-0.002
50	1717.499997	-0.002	1747.499999	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
102	1720.000001	0.001	1745.000002	0.001
120	1720.000002	0.001	1745.000002	0.001
138	1720.000003	0.002	1745.000002	0.001

Note: The applicant defined the normal working voltage of the adapter is from 102 Vac to 138 Vac.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1720.000003	0.002	1745.000003	0.002
-20	1720.000001	0.001	1745.000002	0.001
-10	1720.000003	0.002	1745.000003	0.002
0	1720.000002	0.001	1745.000002	0.001
10	1720.000003	0.002	1745.000002	0.001
20	1719.999998	-0.001	1744.999998	-0.001
30	1719.999998	-0.001	1744.999998	-0.001
40	1719.999998	-0.001	1744.999997	-0.002
50	1719.999998	-0.001	1744.999997	-0.002

4.4 Occupied Bandwidth Measurement

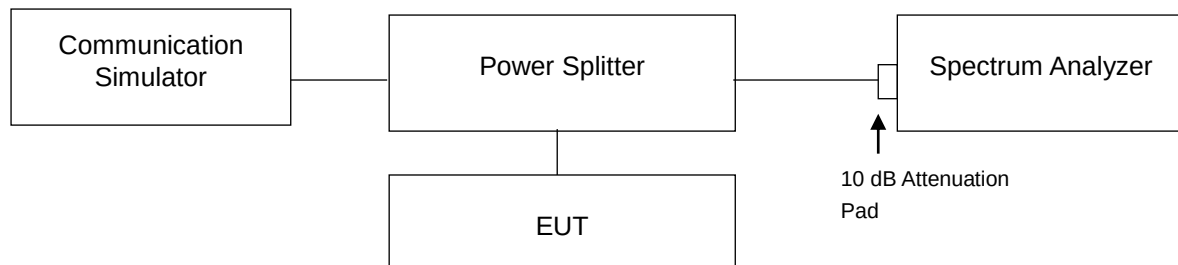
4.4.1 Limits of Occupied Bandwidth Measurement

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

4.4.2 Test Procedure

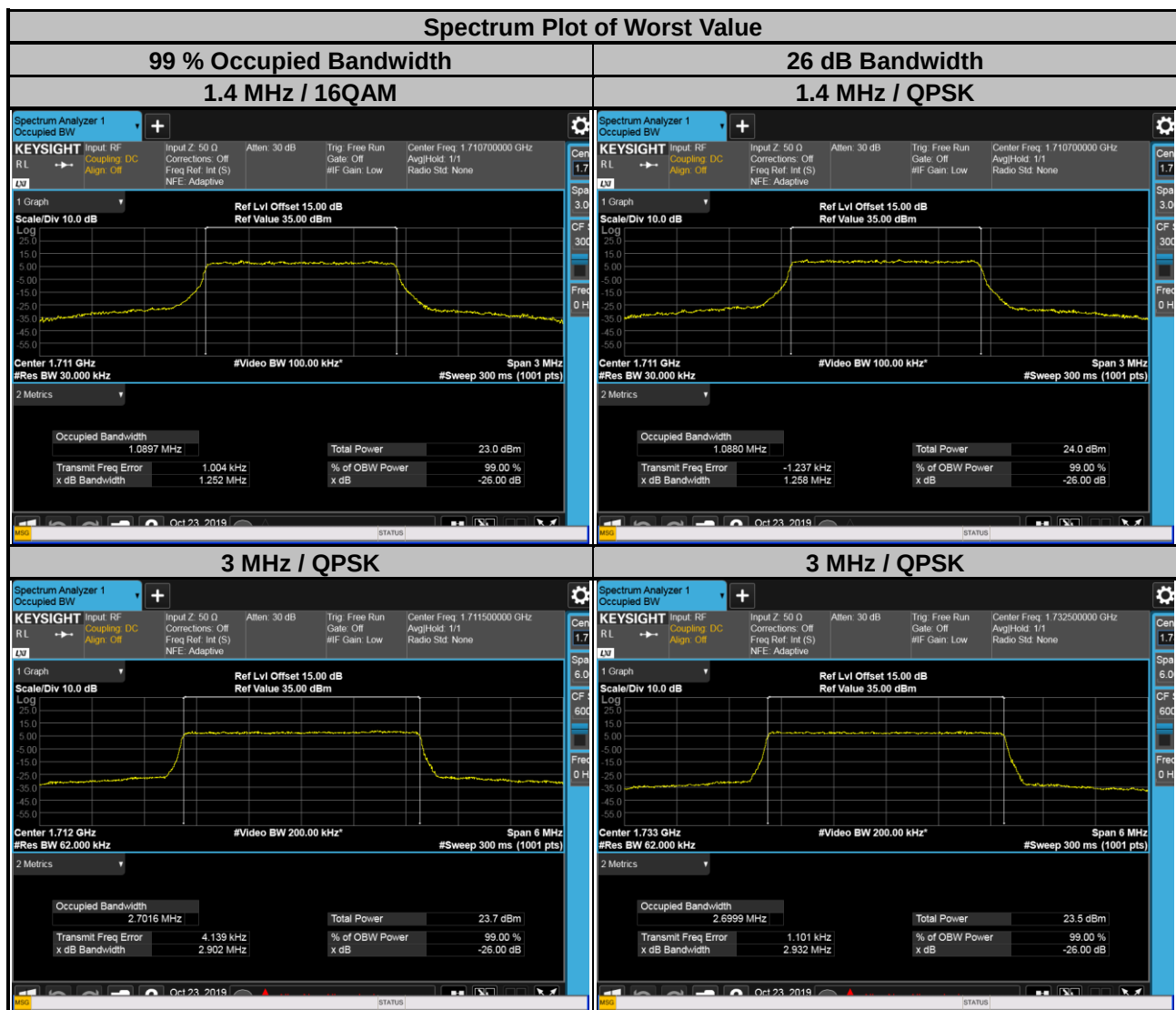
- The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

4.4.3 Test Setup

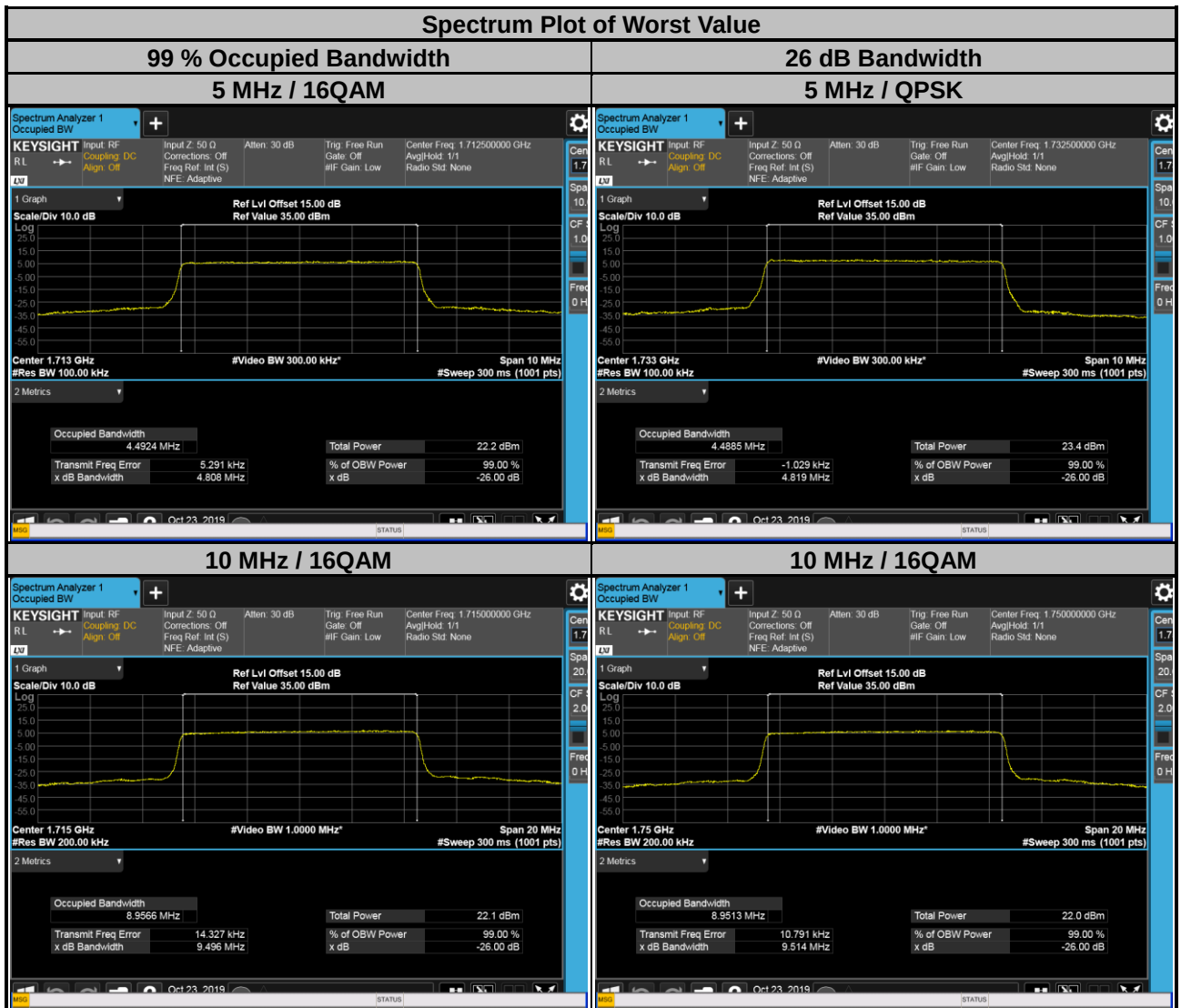


4.4.4 Test Result

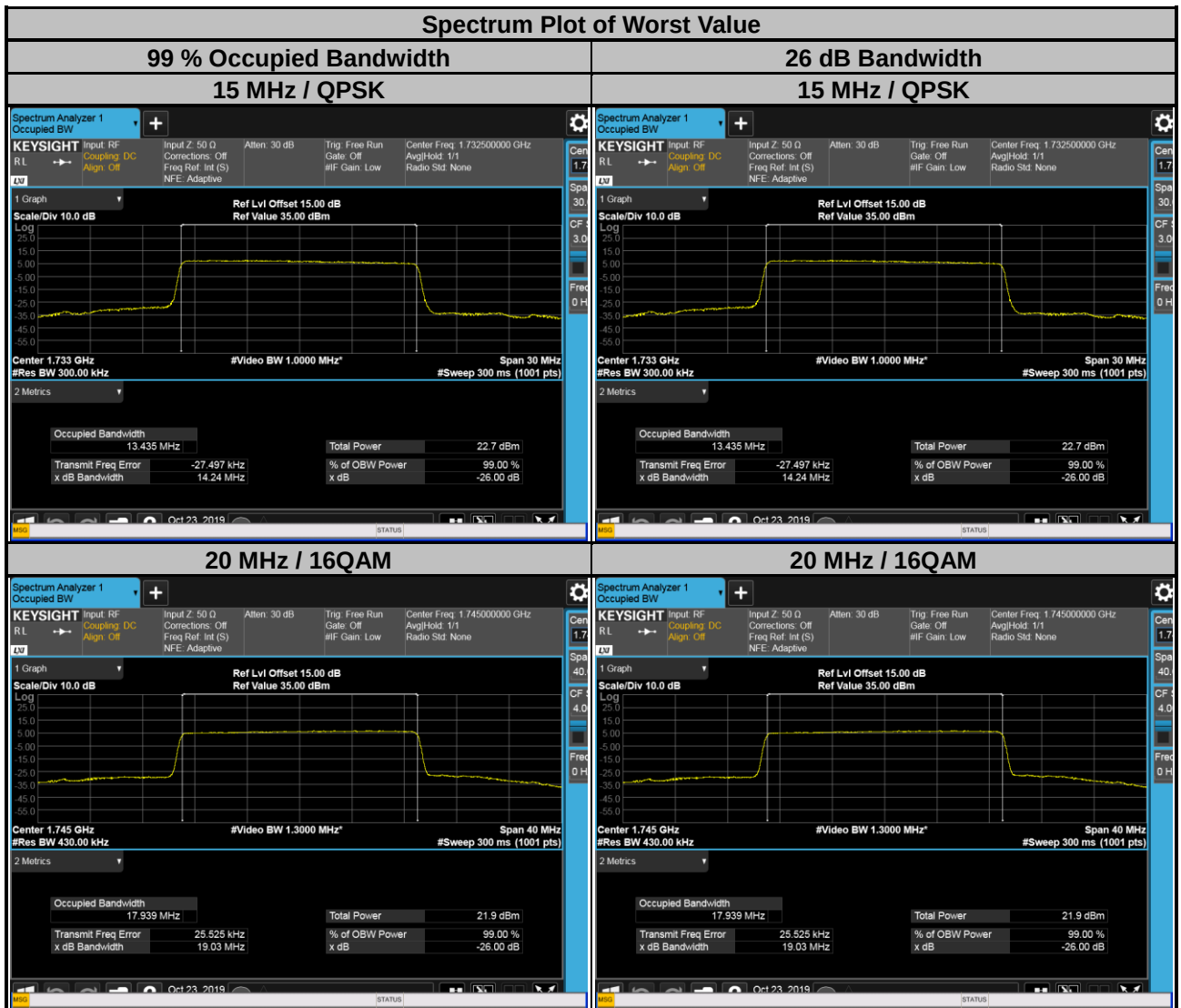
LTE Band 4					
Channel Bandwidth: 1.4 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
19957	1710.7	1.0880	1.0897	1.258	1.252
20175	1732.5	1.0877	1.0895	1.249	1.243
20393	1754.3	1.0862	1.0891	1.255	1.254
Channel Bandwidth: 3 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
19965	1711.5	2.7016	2.6988	2.902	2.917
20175	1732.5	2.6999	2.6966	2.932	2.925
20385	1753.5	2.7007	2.6952	2.921	2.917



LTE Band 4					
Channel Bandwidth: 5 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
19975	1712.5	4.4923	4.4924	4.814	4.808
20175	1732.5	4.4885	4.4900	4.819	4.815
20375	1752.5	4.4878	4.4890	4.815	4.811
Channel Bandwidth: 10 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
20000	1715.0	8.9523	8.9566	9.489	9.496
20175	1732.5	8.9547	8.9538	9.510	9.504
20350	1750.0	8.9502	8.9513	9.496	9.514



LTE Band 4					
Channel Bandwidth: 15 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
20025	1717.5	13.419	13.402	14.22	14.21
20175	1732.5	13.435	13.422	14.24	14.23
20325	1747.5	13.434	13.421	14.23	14.23
Channel Bandwidth: 20 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
20050	1720.0	17.824	17.853	18.94	18.96
20175	1732.5	17.889	17.906	19.00	19.00
20300	1745.0	17.909	17.939	19.01	19.03

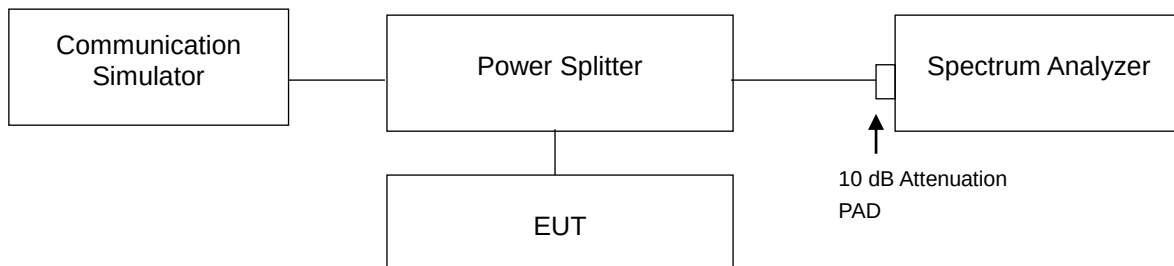


4.5 Band Edge Measurement

4.5.1 Limits of Band Edge Measurement

For operations in the 1710–1755 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log (P)$ dB.

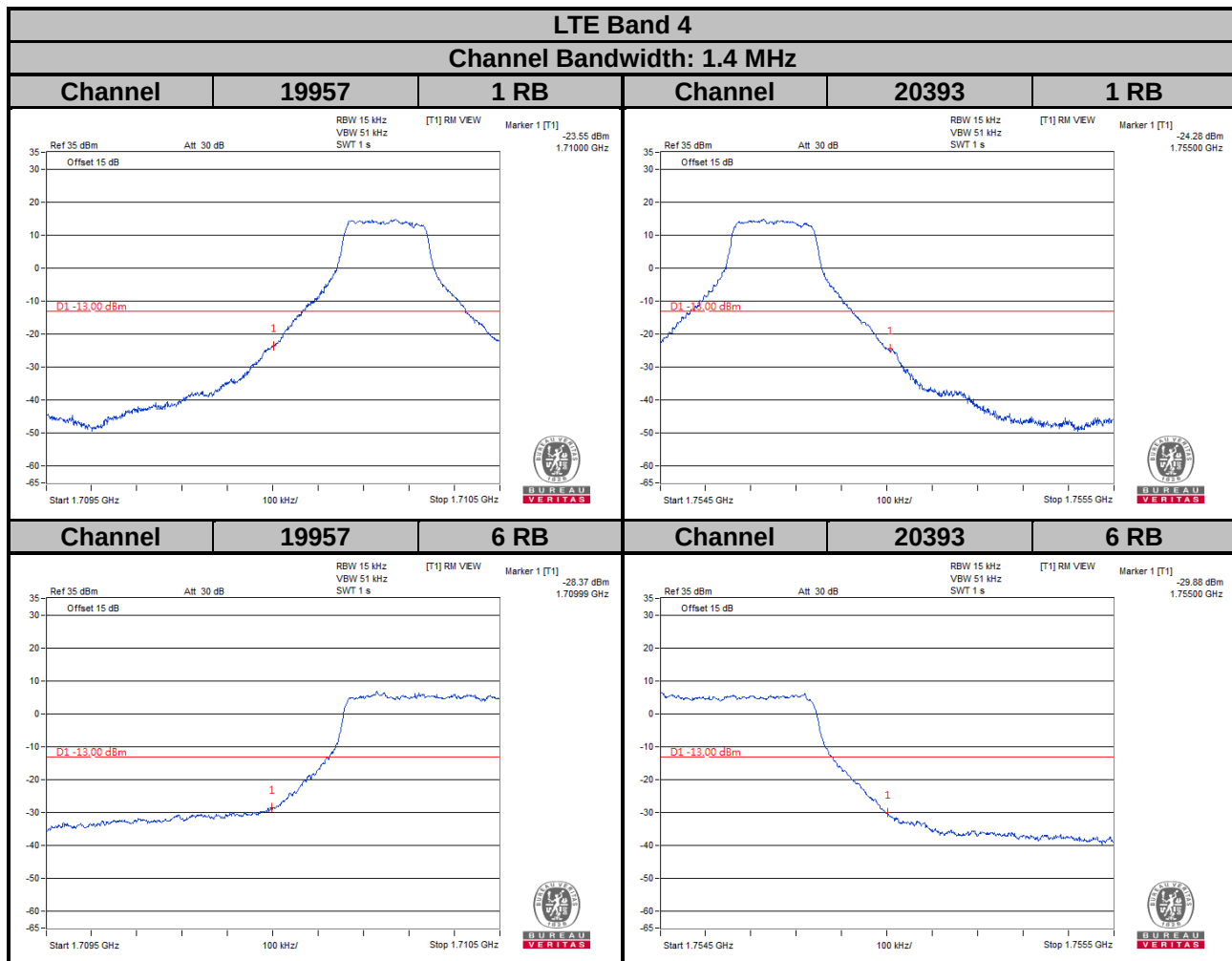
4.5.2 Test Setup

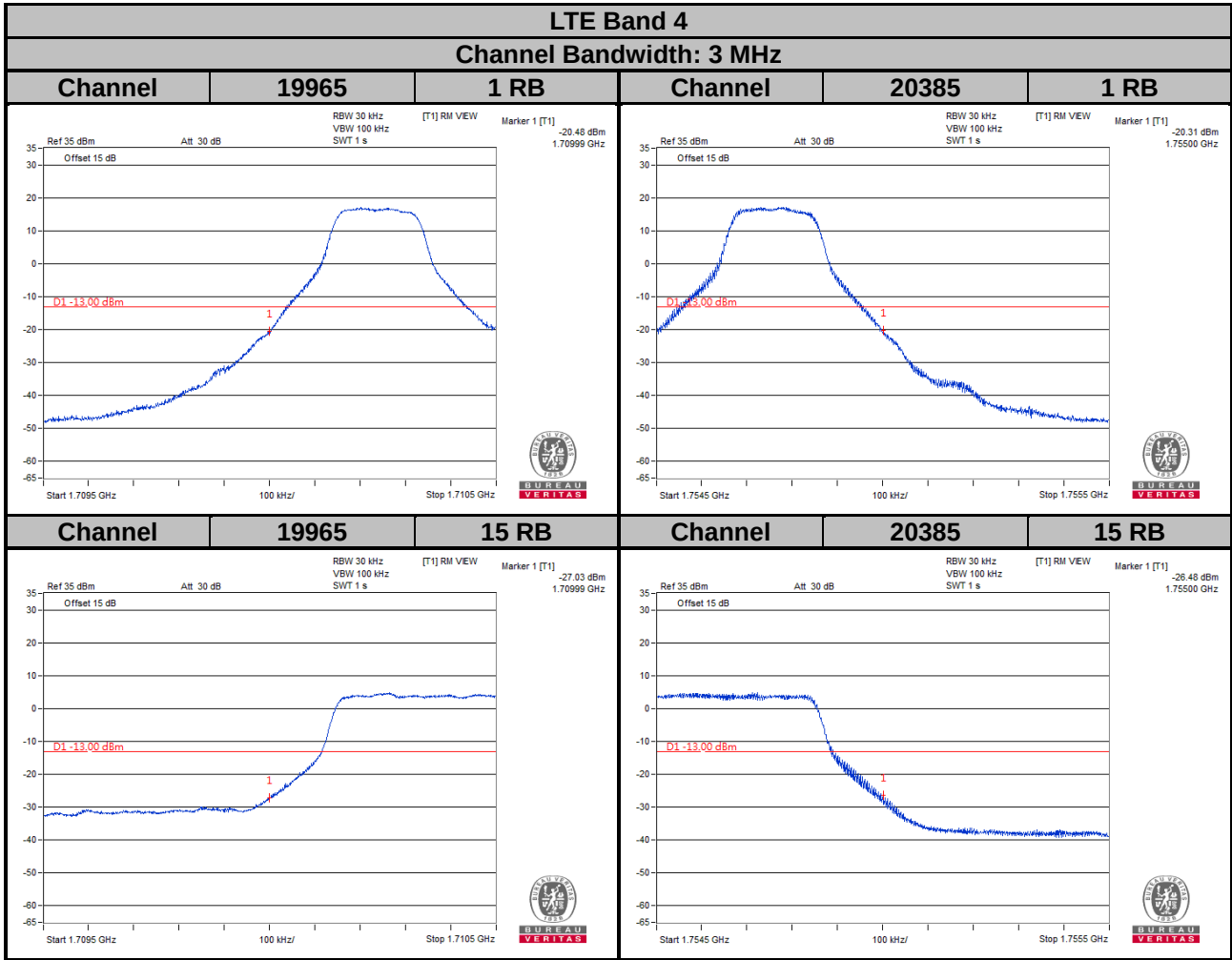


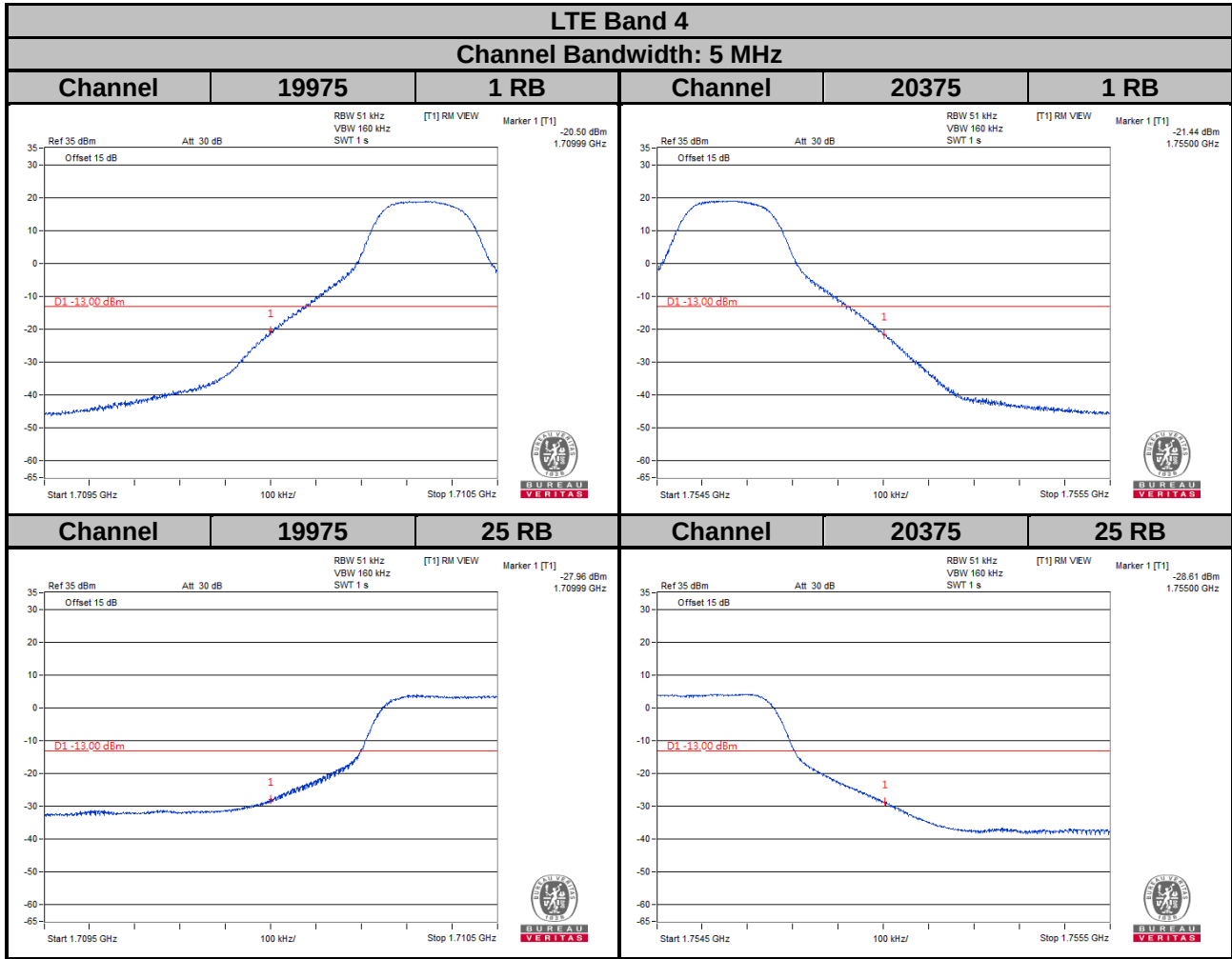
4.5.3 Test Procedures

- All measurements were done at low and high operational frequency range.
- The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 15 kHz and VB of the spectrum is 51 kHz (LTE Bandwidth 1.4 MHz).
- The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 30 kHz and VB of the spectrum is 100 kHz (LTE Bandwidth 3 MHz).
- The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 51 kHz and VB of the spectrum is 160 kHz (LTE Bandwidth 5 MHz).
- The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 100 kHz and VB of the spectrum is 300 kHz (LTE Bandwidth 10 MHz).
- The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 150 kHz and VB of the spectrum is 470 kHz (LTE Bandwidth 15 MHz).
- The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 200 kHz and VB of the spectrum is 1 MHz (LTE Bandwidth 20 MHz).
- Record the max. trace plot into the test report.

4.5.4 Test Results

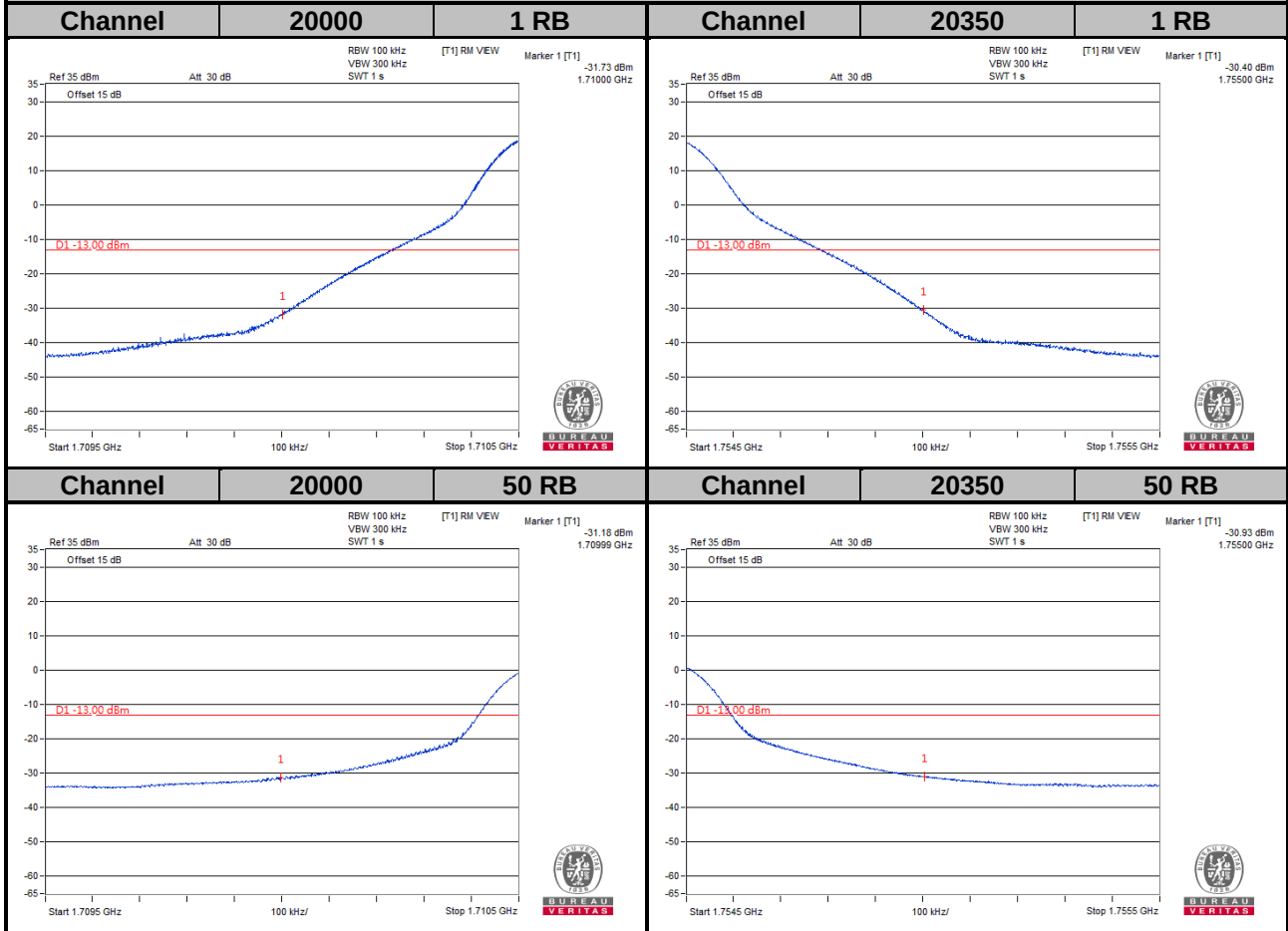


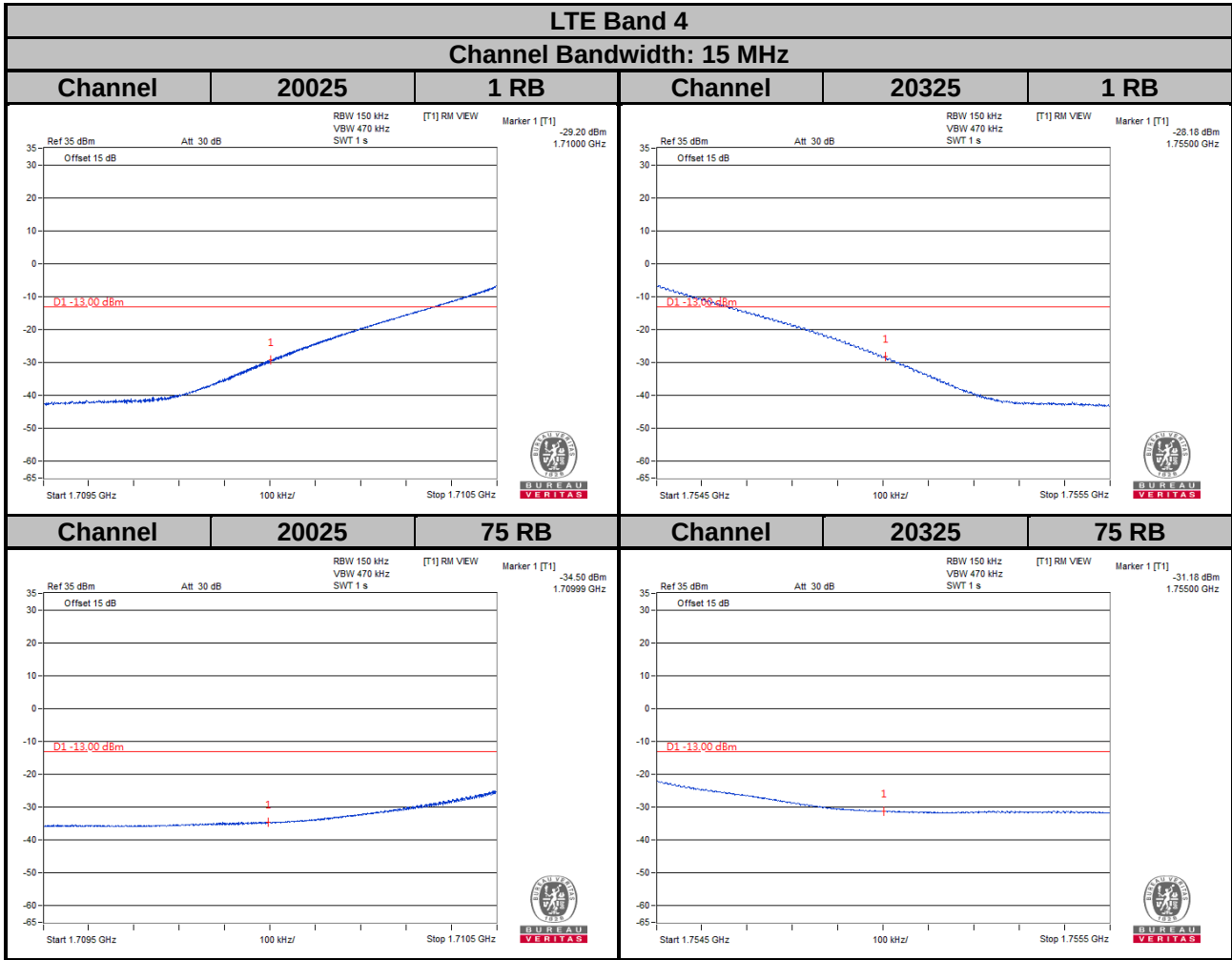


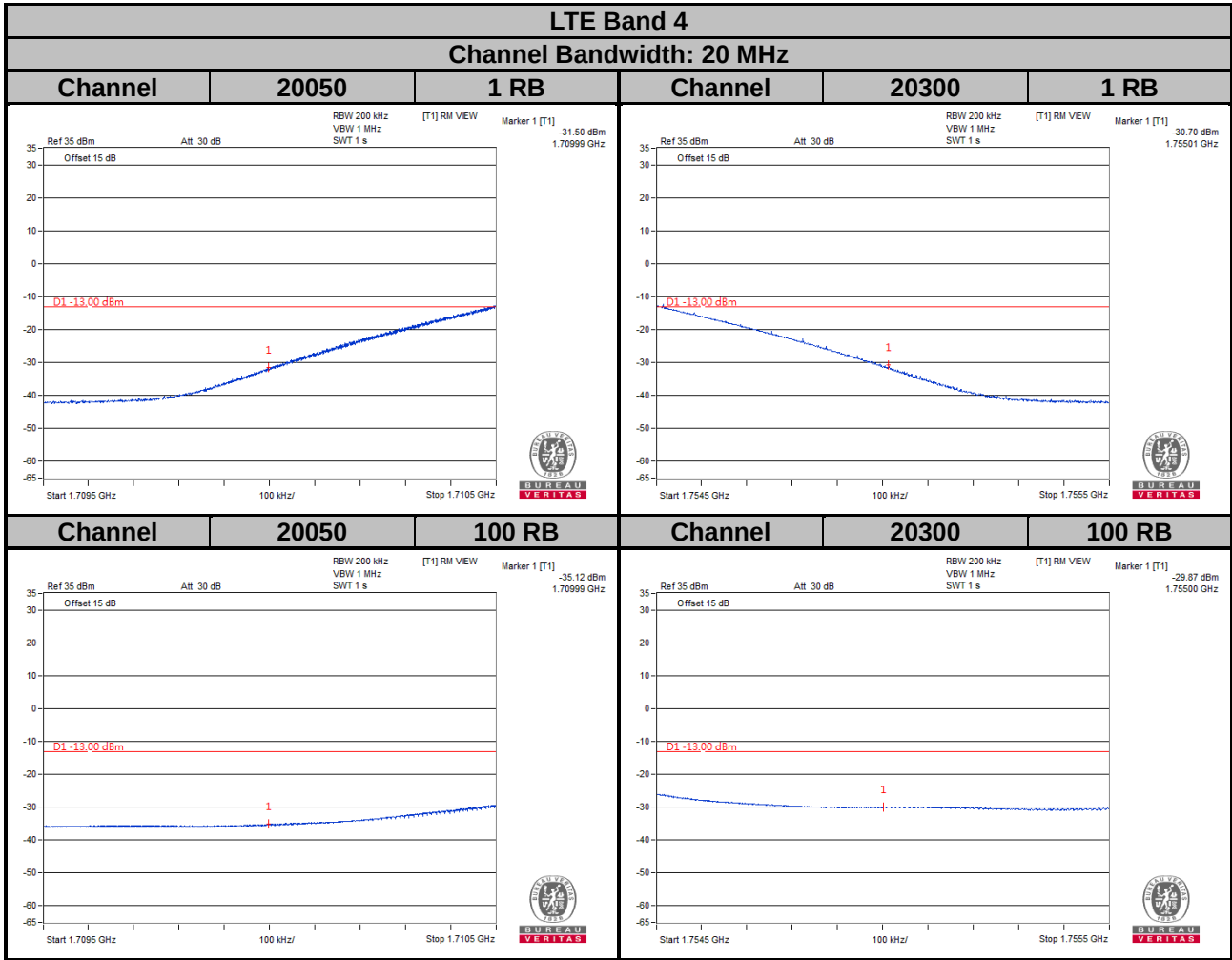


LTE Band 4

Channel Bandwidth: 10 MHz





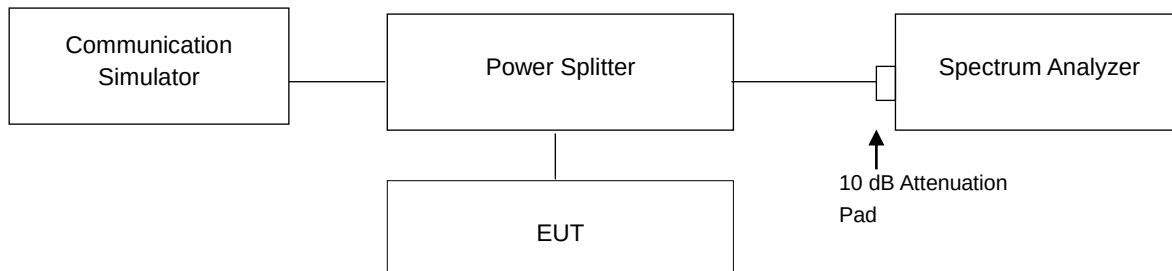


4.6 Peak to Average Ratio

4.6.1 Limits of Peak to Average Ratio Measurement

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

4.6.2 Test Setup

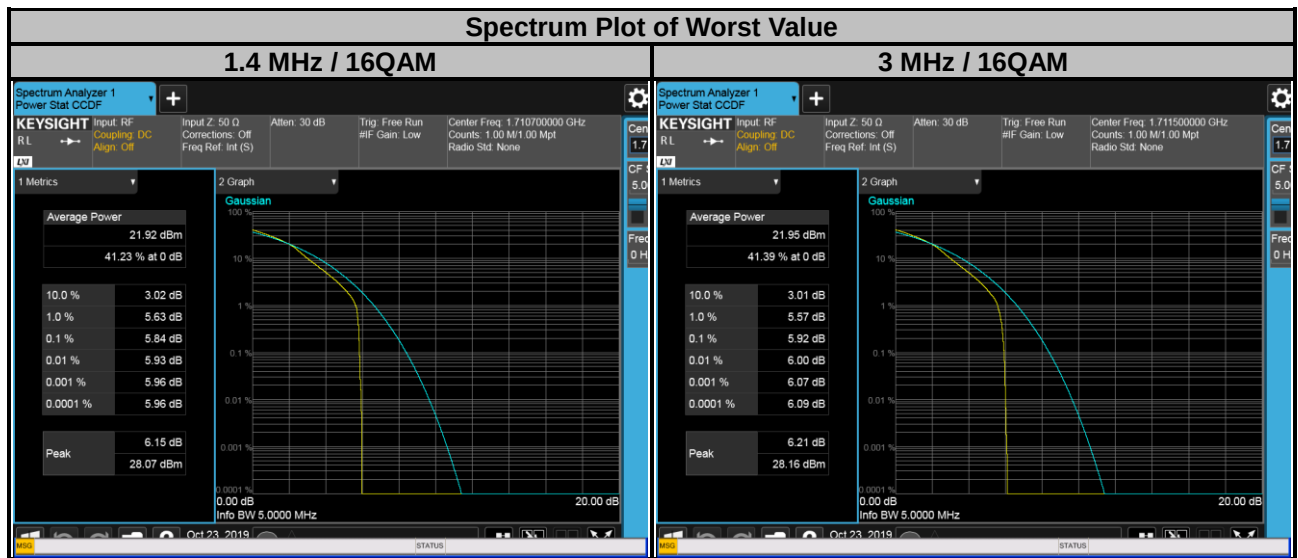


4.6.3 Test Procedures

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

4.6.4 Test Results

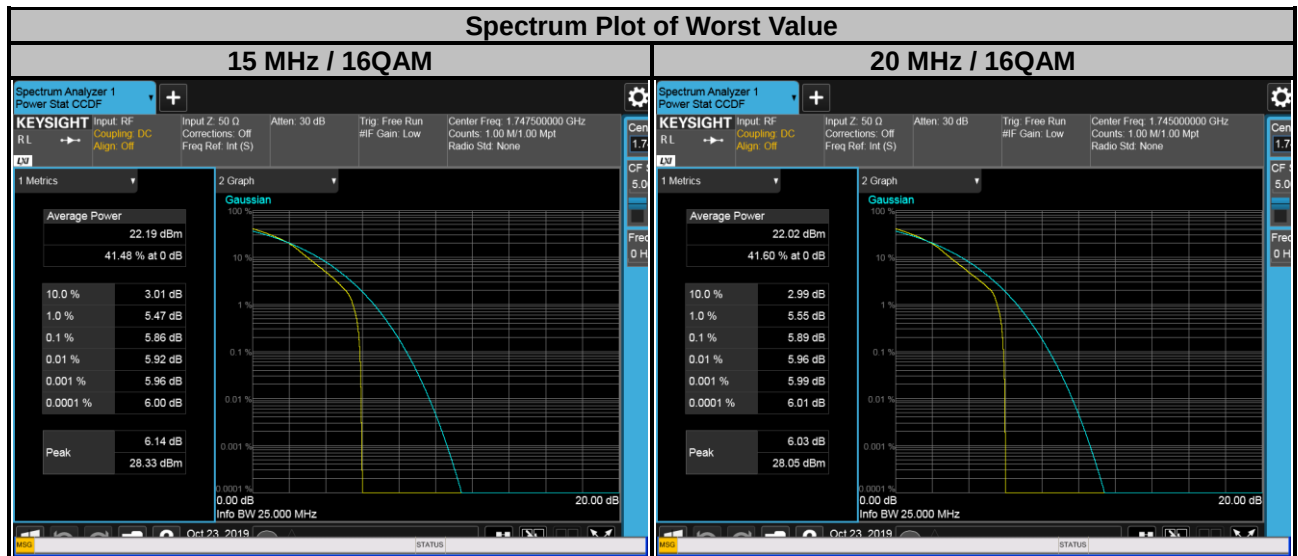
LTE Band 4							
Channel Bandwidth: 1.4 MHz				Channel Bandwidth: 3 MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
19957	1710.7	5.11	5.84	19965	1711.5	5.14	5.92
20175	1732.5	4.91	5.67	20175	1732.5	4.98	5.80
20393	1754.3	4.54	5.39	20385	1753.5	4.77	5.49



LTE Band 4							
Channel Bandwidth: 5 MHz				Channel Bandwidth: 10 MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
19975	1712.5	5.10	5.93	20000	1715.0	5.10	5.90
20175	1732.5	4.87	5.56	20175	1732.5	4.77	5.54
20375	1752.5	4.87	5.62	20350	1750.0	5.05	5.84



LTE Band 4							
Channel Bandwidth: 15 MHz				Channel Bandwidth: 20 MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
20025	1717.5	5.11	5.82	20050	1720.0	5.07	5.81
20175	1732.5	4.69	5.39	20175	1732.5	4.63	5.38
20325	1747.5	5.04	5.86	20300	1745.0	5.00	5.89

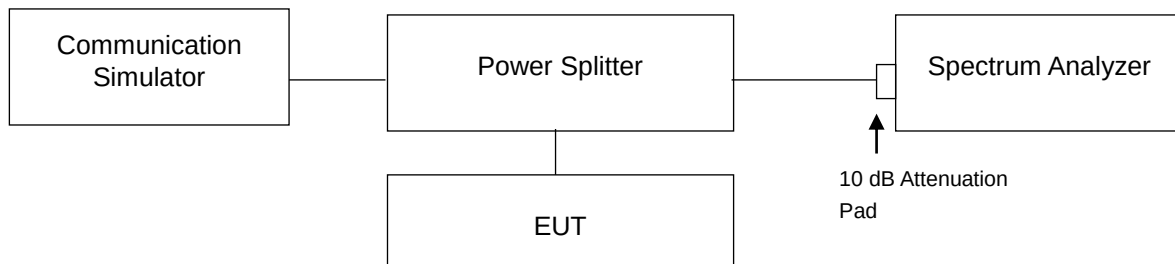


4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log (P)$ dB. The limit of emission is equal to -13 dBm.

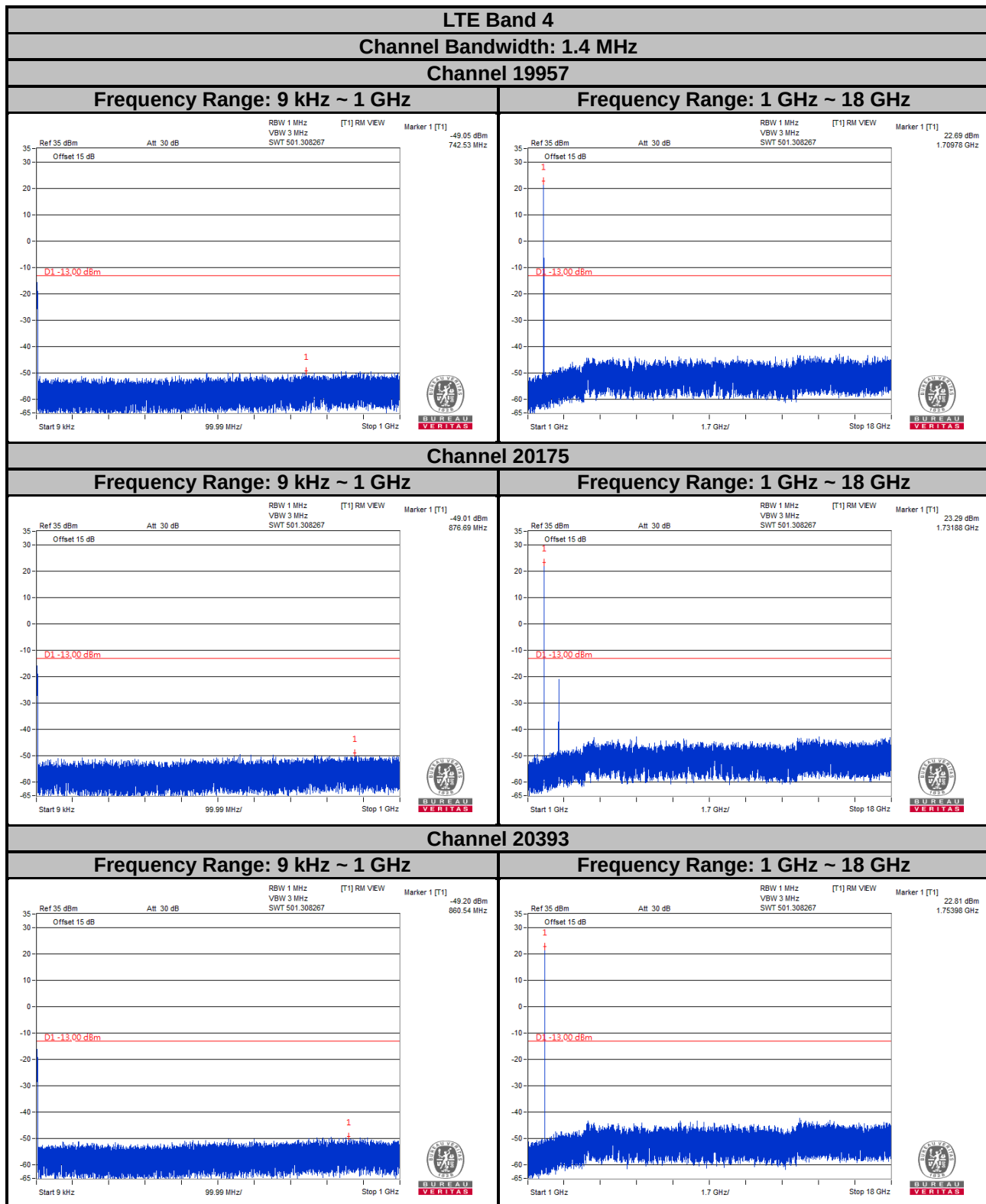
4.7.2 Test Setup



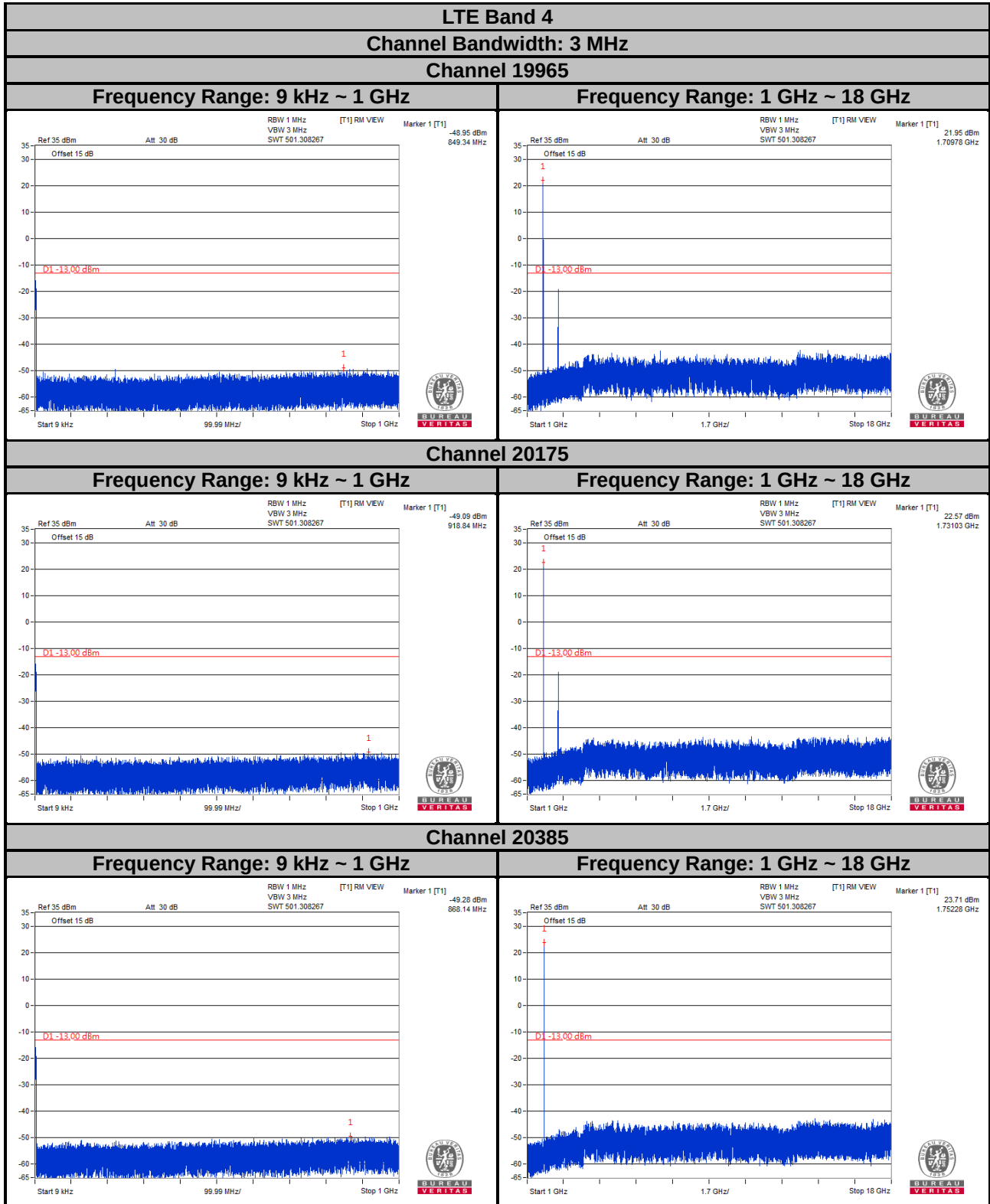
4.7.3 Test Procedure

- The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 9 kHz to 1 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 1 MHz and VBW = 3 MHz is used for conducted emission measurement.
- Measuring frequency range is from 1 GHz to 18 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 1 MHz and VBW = 3 MHz is used for conducted emission measurement.

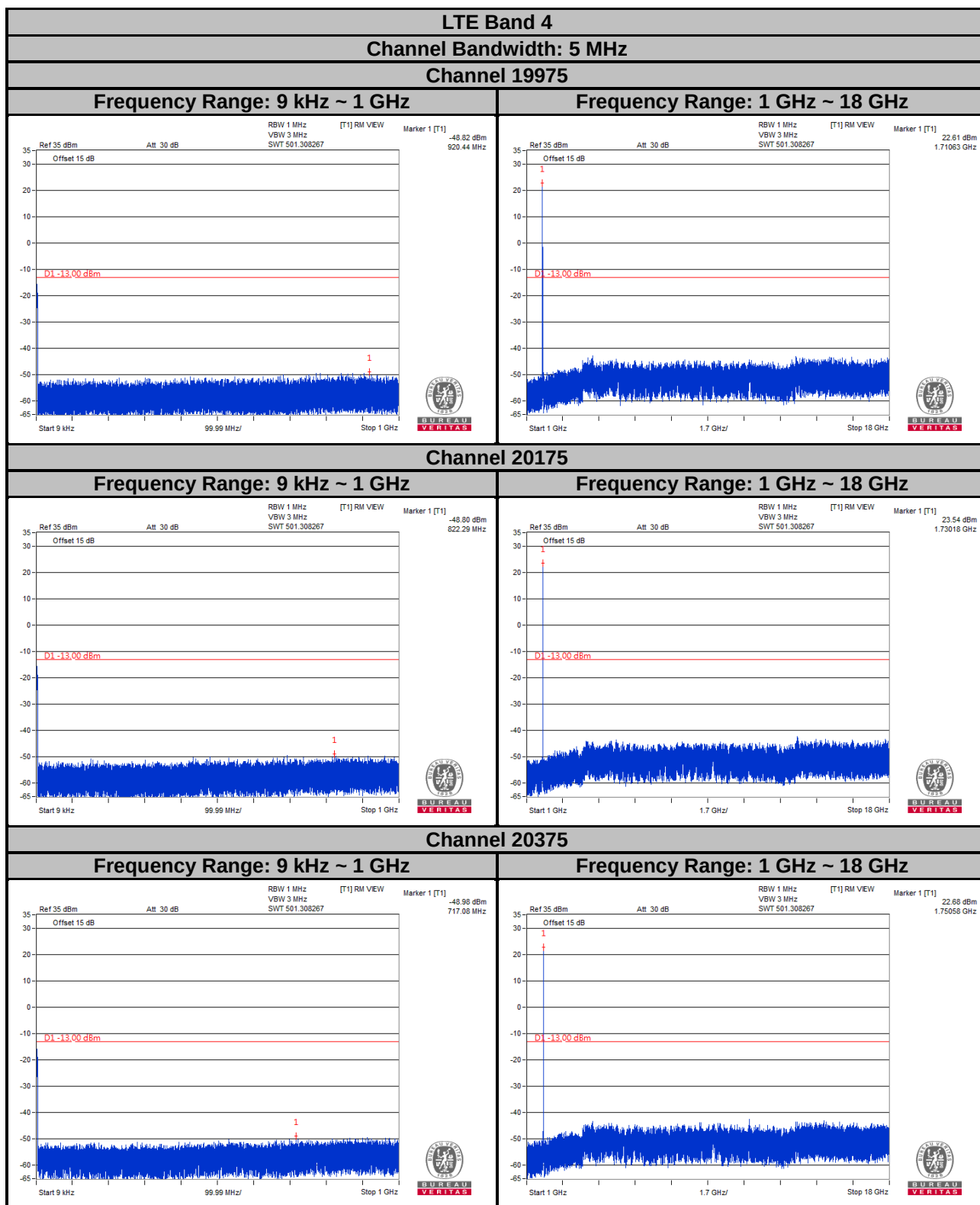
4.7.4 Test Results



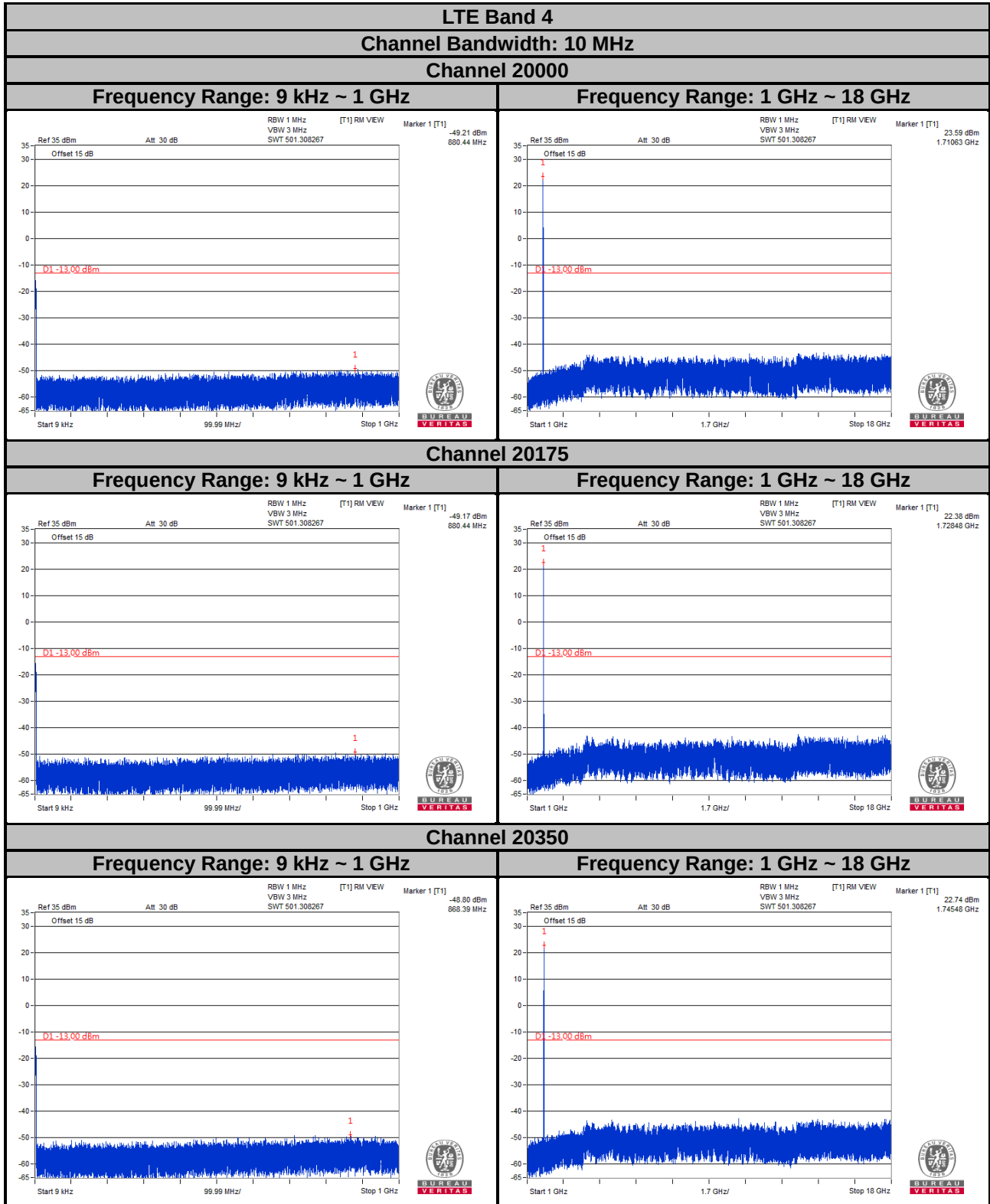
Note: The signal over the limit in 9 kHz is from spectrum analyzer.



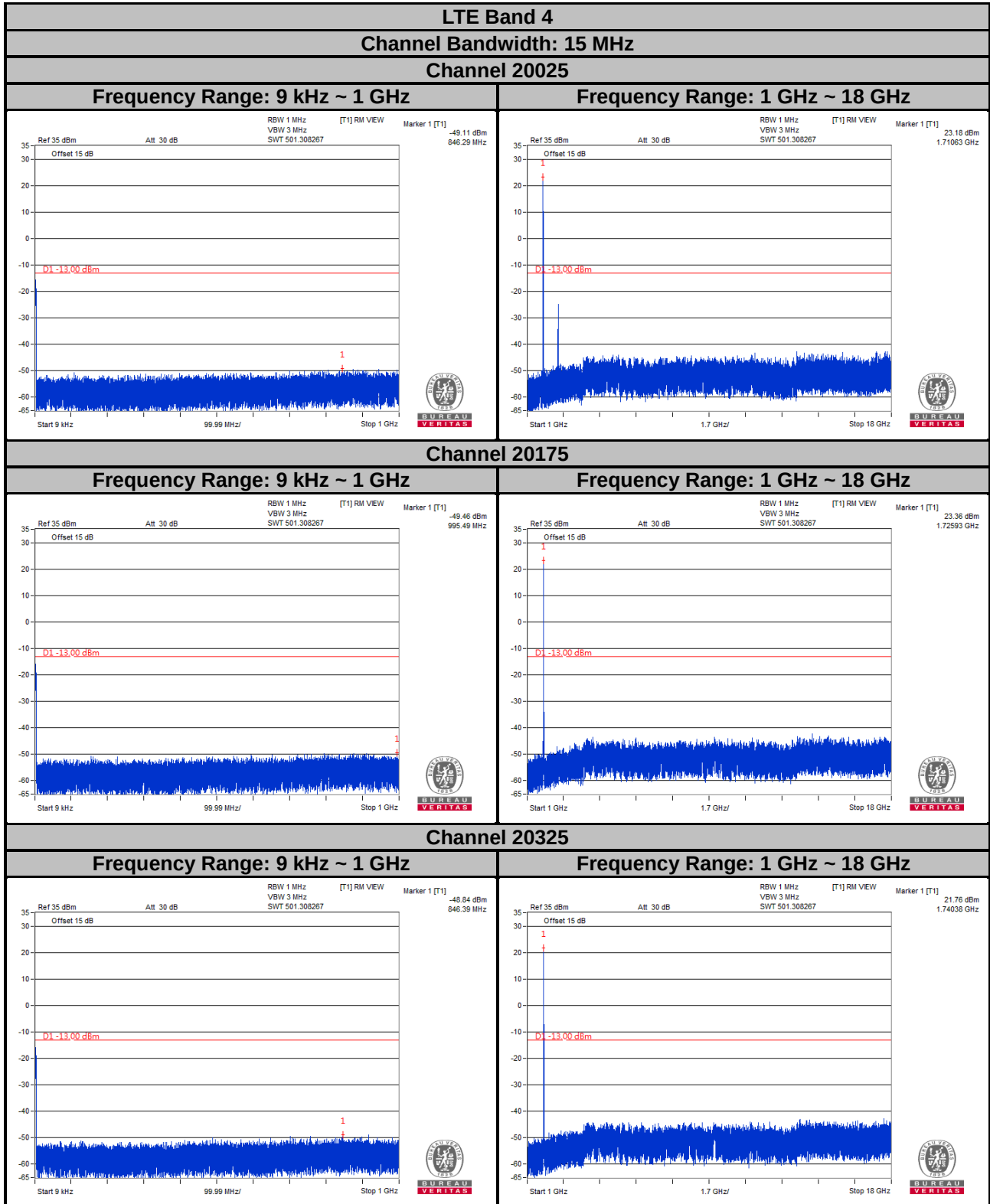
Note: The signal over the limit in 9 kHz is from spectrum analyzer.



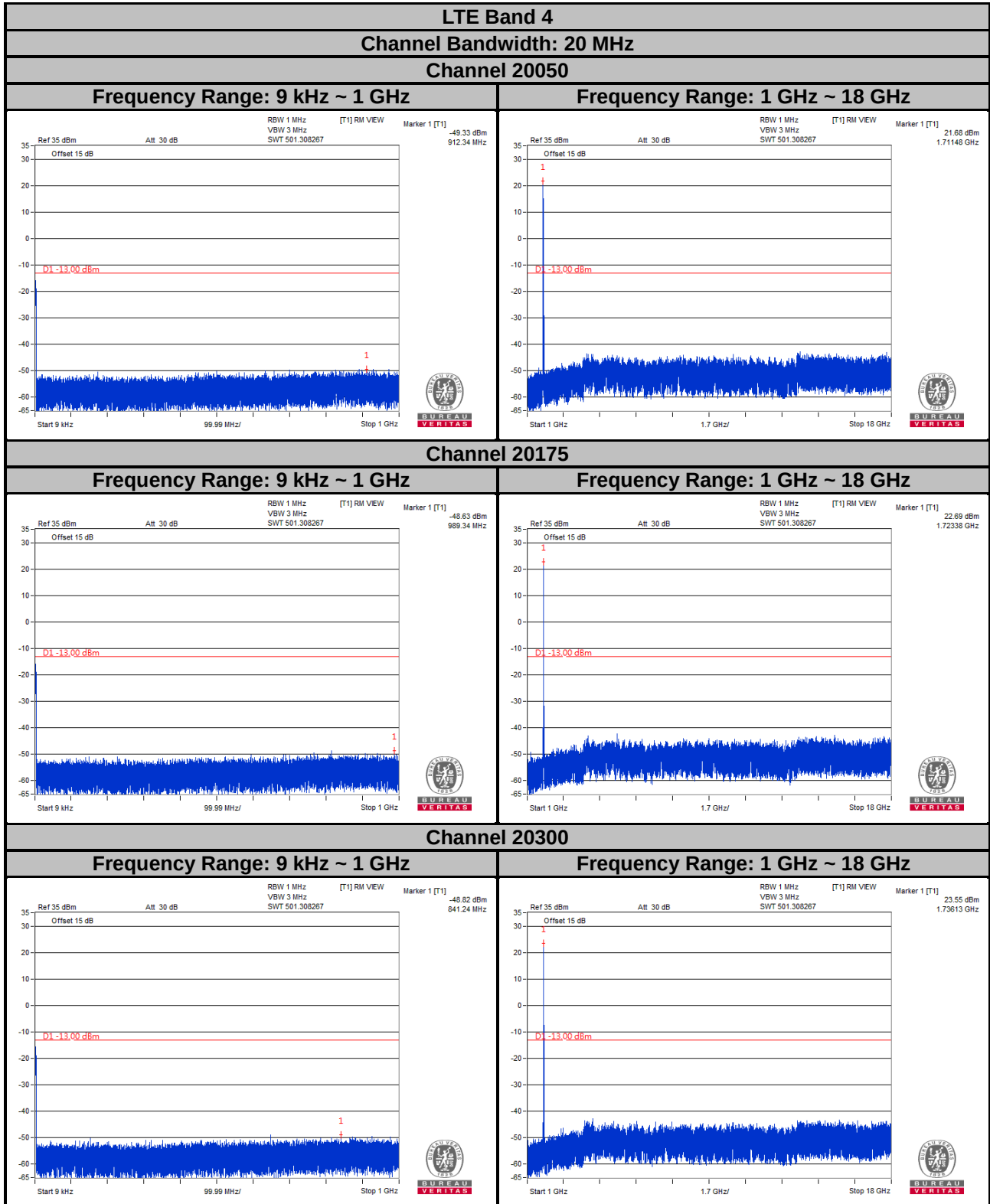
Note: The signal over the limit in 9 kHz is from spectrum analyzer.



Note: The signal over the limit in 9 kHz is from spectrum analyzer.



Note: The signal over the limit in 9 kHz is from spectrum analyzer.



Note: The signal over the limit in 9 kHz is from spectrum analyzer.

4.8 Radiated Emission Measurement

4.8.1 Limits of Radiated Emission Measurement

- a. The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log (P)$ dB. The limit of emission is equal to -13 dBm.

4.8.2 Test Procedure

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G.
- c. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $E.R.P \text{ power} = E.I.R.P \text{ power} - 2.15 \text{ dB}.$

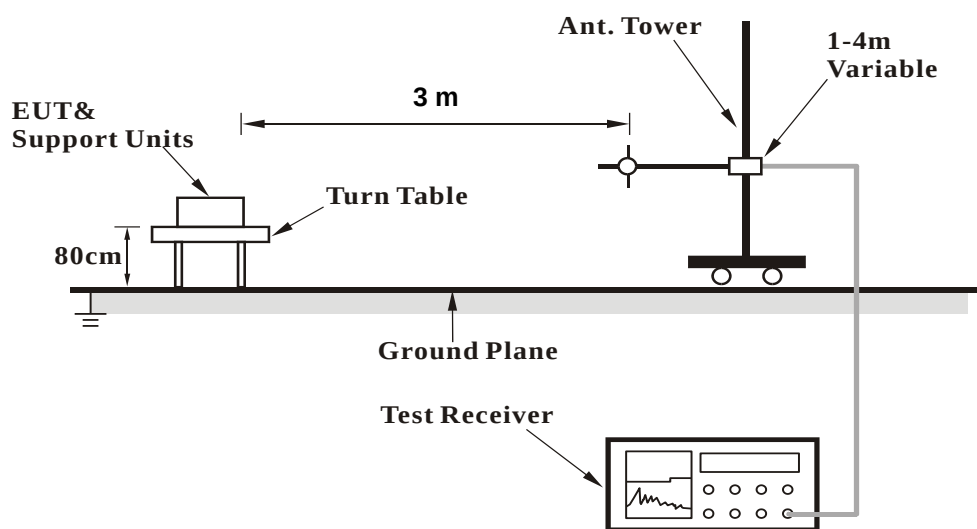
Note: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

4.8.3 Deviation from Test Standard

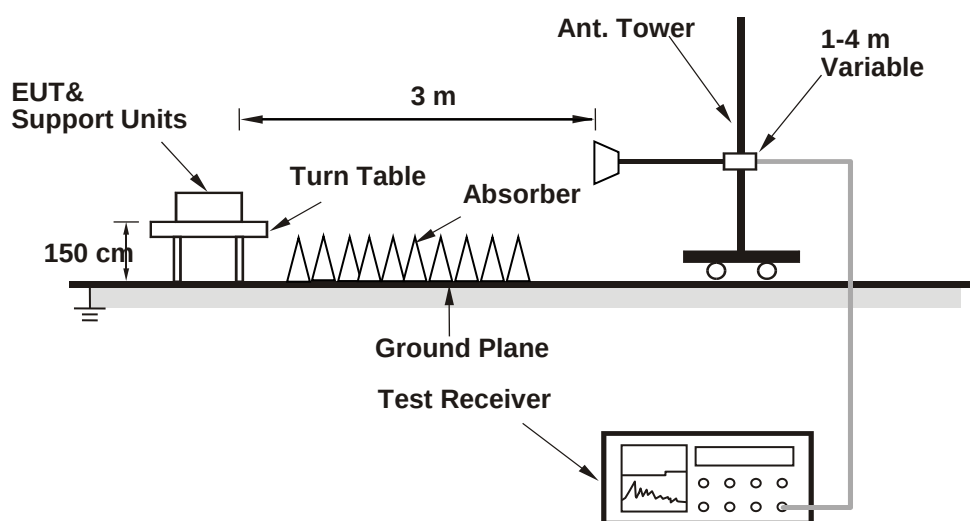
No deviation.

4.8.4 Test Setup

<Radiated Emission below or equal 1 GHz>



<Radiated Emission above 1 GHz>



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

4.8.5 Test Results

Below 1GHz

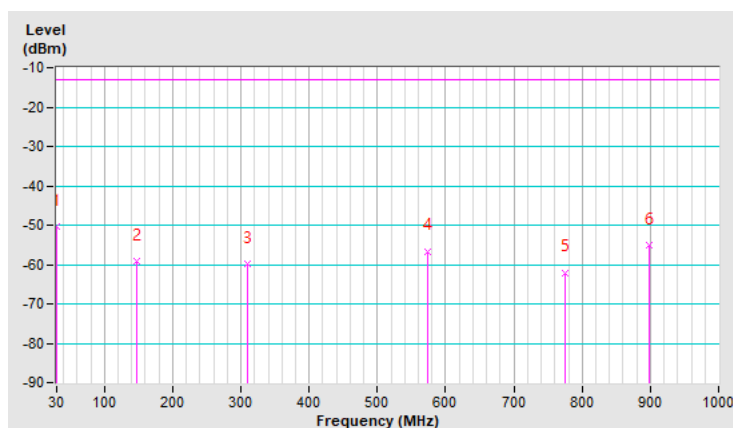
LTE Band 4, Channel Bandwidth: 1.4MHz

Mode	TX channel 20393 (1754.3MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-54.5	-31.1	-19.4	-50.5	-13.0	-37.5
2	147.37	-54.2	-56.1	-2.9	-59.0	-13.0	-46.0
3	309.36	-55.5	-63.6	3.9	-59.7	-13.0	-46.7
4	574.17	-57.5	-60.3	3.7	-56.6	-13.0	-43.6
5	774.96	-66.8	-66.0	4.0	-62.0	-13.0	-49.0
6	899.12	-62.8	-58.7	3.5	-55.2	-13.0	-42.2

Remarks:

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

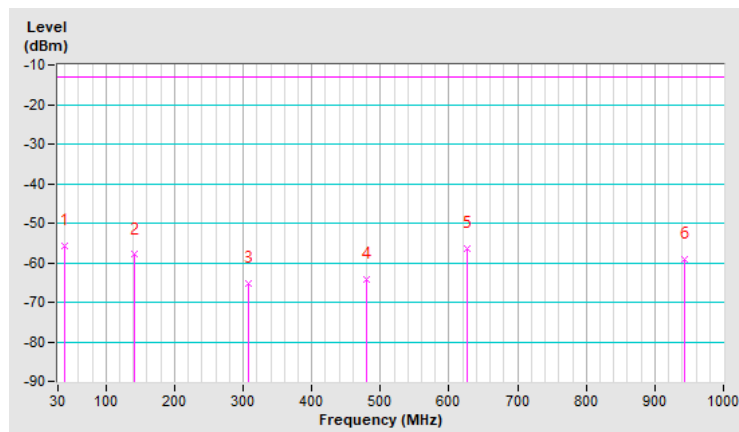


Mode	TX channel 20393 (1754.3MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	39.70	-46.2	-42.1	-13.7	-55.8	-13.0	-42.8
2	141.55	-55.6	-55.0	-3.0	-58.0	-13.0	-45.0
3	307.42	-65.3	-69.1	3.9	-65.2	-13.0	-52.2
4	480.08	-64.1	-67.9	3.6	-64.3	-13.0	-51.3
5	625.58	-61.3	-60.1	3.7	-56.4	-13.0	-43.4
6	943.74	-68.2	-62.8	3.7	-59.1	-13.0	-46.1

Remarks:

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



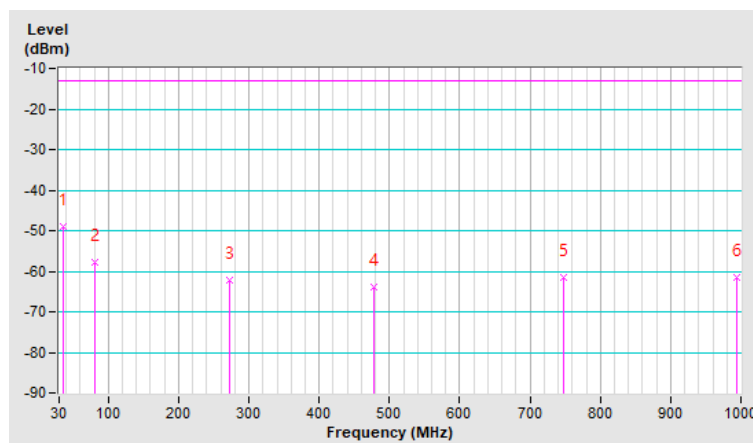
LTE Band 4, Channel Bandwidth: 5MHz

Mode	TX channel 20375 (1752.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	36.79	-52.3	-33.7	-15.2	-48.9	-13.0	-35.9
2	80.44	-52.9	-58.3	0.5	-57.8	-13.0	-44.8
3	272.5	-58.0	-60.8	-1.5	-62.3	-13.0	-49.3
4	478.14	-63.8	-67.6	3.7	-63.9	-13.0	-50.9
5	746.83	-65.4	-65.1	3.7	-61.4	-13.0	-48.4
6	993.21	-70.5	-65.0	3.4	-61.6	-13.0	-48.6

Remarks:

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

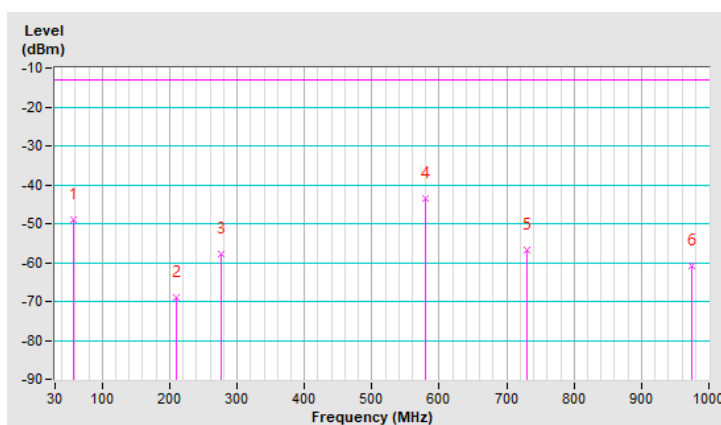


Mode	TX channel 20375 (1752.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	57.16	-42.0	-44.2	-4.7	-48.9	-13.0	-35.9
2	209.45	-66.0	-67.1	-2.0	-69.1	-13.0	-56.1
3	276.38	-61.0	-56.1	-1.6	-57.7	-13.0	-44.7
4	579.02	-45.6	-47.3	3.7	-43.6	-13.0	-30.6
5	729.37	-63.1	-60.3	3.6	-56.7	-13.0	-43.7
6	974.78	-70.1	-64.4	3.6	-60.8	-13.0	-47.8

Remarks:

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



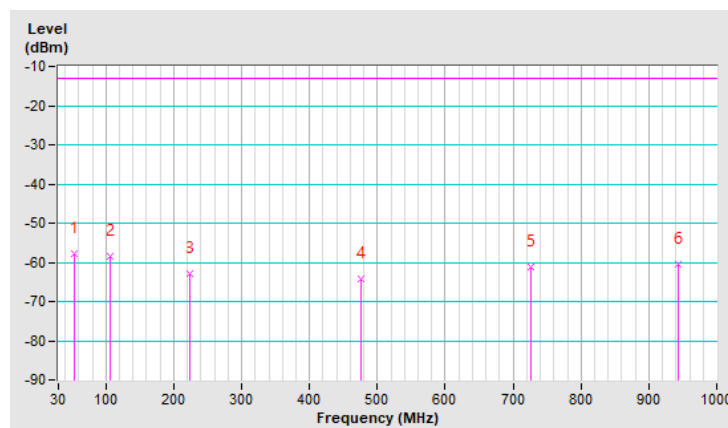
LTE Band 4, Channel Bandwidth: 20MHz

Mode	TX channel 20300 (1745.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	54.25	-55.8	-52.1	-5.7	-57.8	-13.0	-44.8
2	105.66	-50.3	-56.2	-2.2	-58.4	-13.0	-45.4
3	223.03	-54.7	-60.8	-2.0	-62.8	-13.0	-49.8
4	475.23	-64.0	-67.8	3.6	-64.2	-13.0	-51.2
5	725.49	-64.7	-64.8	3.7	-61.1	-13.0	-48.1
6	942.77	-68.9	-64.3	3.8	-60.5	-13.0	-47.5

Remarks:

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

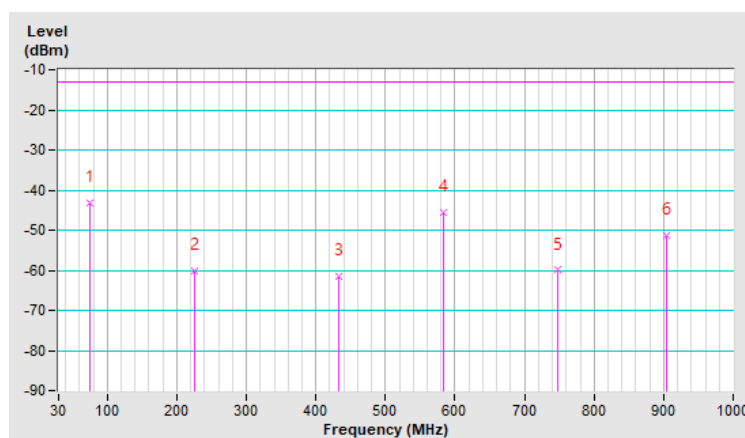


Mode	TX channel 20300 (1745.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	74.62	-37.7	-43.4	0.1	-43.3	-13.0	-30.3
2	225.94	-56.2	-58.5	-1.7	-60.2	-13.0	-47.2
3	432.55	-61.3	-65.0	3.5	-61.5	-13.0	-48.5
4	582.90	-47.8	-49.3	3.8	-45.5	-13.0	-32.5
5	746.83	-67.0	-63.7	3.7	-60.0	-13.0	-47.0
6	903.97	-59.9	-55.1	3.6	-51.5	-13.0	-38.5

Remarks:

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



Above 1GHz

LTE Band 4, Channel Bandwidth 1.4MHz

Mode	TX channel 19957 (1710.70MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3421.40	-58.8	-50.2	1.3	-48.9	-13.0	-35.9
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3421.40	-60.2	-52.1	1.3	-50.8	-13.0	-37.8

Remarks:

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

Mode	TX channel 20175 (1732.50MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-58.7	-50.3	1.4	-48.9	-13.0	-35.9
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-60.3	-52.5	1.4	-51.1	-13.0	-38.1

Remarks:

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

Mode	TX channel 20393 (1754.30MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3508.60	-59.2	-50.9	1.4	-49.5	-13.0	-36.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3508.60	-59.9	-52.2	1.4	-50.8	-13.0	-37.8

Remarks:

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

LTE Band 4, Channel Bandwidth 5MHz

Mode	TX channel 19975 (1712.50MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3425.00	-69.1	-60.5	1.3	-59.2	-13.0	-46.2
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3425.00	-69.3	-61.2	1.3	-59.9	-13.0	-46.9

Remarks:

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

Mode	TX channel 20175 (1732.50MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-69	-60.6	1.4	-59.2	-13.0	-46.2
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-69.1	-61.3	1.4	-59.9	-13.0	-46.9

Remarks:

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

Mode	TX channel 20375 (1752.50MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3505.00	-68.7	-60.5	1.5	-59.0	-13.0	-46.0
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3505.00	-69.0	-61.4	1.5	-59.9	-13.0	-46.9

Remarks:

1. $EIRP (dBm) = S.G \text{ Value (dBm)} + \text{Correction Factor (dB)}$.
2. $\text{Correction Factor (dB)} = \text{Substitution Antenna Gain (dB)} + \text{Cable Loss (dB)}$.

LTE Band 4, Channel Bandwidth 20MHz

Mode	TX channel 20050 (1720.00MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3440.00	-68.7	-60.2	1.3	-58.9	-13.0	-45.9
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3440.00	-69.6	-61.6	1.3	-60.3	-13.0	-47.3

Remarks:

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

Mode	TX channel 20175 (1732.50MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-68.5	-60.1	1.4	-58.7	-13.0	-45.7
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-69.3	-61.5	1.4	-60.1	-13.0	-47.1

Remarks:

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

Mode	TX channel 20300 (1745.00MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3490.00	-68.5	-60.3	1.5	-58.8	-13.0	-45.8
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3490.00	-69.1	-61.5	1.5	-60.0	-13.0	-47.0

Remarks:

1. $EIRP (dBm) = S.G \text{ Value (dBm)} + \text{Correction Factor (dB)}$.
2. $\text{Correction Factor (dB)} = \text{Substitution Antenna Gain (dB)} + \text{Cable Loss (dB)}$.

5 Pictures of Test Arrangements

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

Appendix – Information of the Testing Laboratories

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

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

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Tel: 886-3-3183232

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Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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