

FCC Test Report

(PART 27)

Report No.: RF171016C36-1

FCC ID: 2AGDE-WRT3061

Test Model: WRT3061

Received Date: Oct. 16, 2017

Test Date: Nov. 04, 2017 ~ Dec. 07, 2017

Issued Date: Dec. 07, 2017

Applicant: WondaLink Inc.

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R.O.C

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

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
(R.O.C)

Test Location: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan
Hsien 333, Taiwan, R.O.C.

**FCC Registration /
Designation Number:** 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
RF171016C36-1	Original Release	Dec. 07, 2017

1 Certificate of Conformity

Product: VoLTE& LTE Router

Brand: WondaLink

Test Model: WRT3061

Sample Status: Identical Prototype

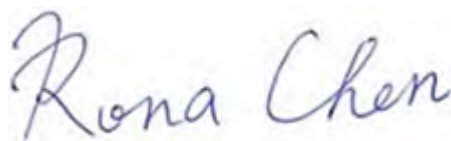
Applicant: WondaLink Inc.

Test Date: Nov. 04, 2017 ~ Dec. 07, 2017

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 EMC characteristics under the conditions specified in this report.

Prepared by :



Date:

Dec. 07, 2017

Rona Chen / Specialist

Approved by :



Date:

Dec. 07, 2017

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.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049 27.53(h)	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 -25.90 dB at 3465.00 MHz.

Applied Standard: FCC Part 27 & Part 2 (LTE 12)			
FCC Clause	Test Item	Result	Remarks
2.1046 27.50(c)(10)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049 27.53(g)	Occupied Bandwidth	Pass	Meet the requirement of limit.
27.50(d)(5)	Peak to Average Ratio	Pass	Meet the requirement of limit.
27.53(g)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(g)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(g)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -28.60 dB at 1422.00 MHz.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) ($\pm$)
Conducted Emissions at mains ports	150 kHz ~ 30 MHz	2.44 dB
Radiated Emissions up to 1 GHz	30 MHz ~ 200 MHz	2.93 dB
	200 MHz ~ 1000 MHz	2.95 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 dB

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver KEYSIGHT	N9038A	MY55420137	Mar. 27, 2017	Mar. 26, 2018
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	May 11, 2017	May 10, 2018
BILOG Antenna SCHWARZBECK	VULB9168	9168-148	Dec. 28, 2016	Dec. 27, 2017
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Dec. 27, 2016	Dec. 26, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 14, 2016	Dec. 13, 2017
Loop Antenna EMCI	EM-6879	269	Aug. 11, 2017	Aug. 10, 2018
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Aug. 08, 2017	Aug. 07, 2018
Preamplifier Agilent (Above 1GHz)	8449B	3008A01638	Feb. 22, 2017	Feb. 21, 2018
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-02 (248780+MY1337 7)	Aug. 08, 2017	Aug. 07, 2018
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250 795/4)	Aug. 08, 2017	Aug. 07, 2018
RF signal cable Woken	8D-FB	Cable-CH9-01	Aug. 01, 2017	Jul. 31, 2018
Power Meter Anritsu	ML2495A	1012010	Aug. 15, 2017	Aug. 14, 2018
Power Sensor Anritsu	MA2411B	1315050	Aug. 15, 2017	Aug. 14, 2018
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 07, 2017	Jun. 06, 2018
JFW 20dB attenuation	50HF-020-SMA	NA	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. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1 GHz if tested.
 4. The IC Site Registration No. is IC7450F-9.

3 General Information

3.1 General Description of EUT

Product	VoLTE& LTE Router	
Brand	WondaLink	
Test Model	WRT3061	
Status of EUT	Identical Prototype	
Power Supply Rating	12.0 Vdc (Adapter) 7.4 Vdc (Li-ion battery)	
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
	LTE Band 12 (Channel Bandwidth: 1.4 MHz)	699.7 ~ 715.3 MHz
	LTE Band 12 (Channel Bandwidth: 3 MHz)	700.5 ~ 714.5 MHz
	LTE Band 12 (Channel Bandwidth: 5 MHz)	701.5 ~ 713.5 MHz
	LTE Band 12 (Channel Bandwidth: 10 MHz)	704.0 ~ 711.0 MHz
Emission Designator	LTE Band 4 (Channel Bandwidth: 1.4 MHz)	1M89W7D
	LTE Band 4 (Channel Bandwidth: 3 MHz)	2M70G7D
	LTE Band 4 (Channel Bandwidth: 5 MHz)	4M49G7D
	LTE Band 4 (Channel Bandwidth: 10 MHz)	8M97W7D
	LTE Band 4 (Channel Bandwidth: 15 MHz)	13M47G7D
	LTE Band 4 (Channel Bandwidth: 20 MHz)	17M97W7D
	LTE Band 12 (Channel Bandwidth: 1.4 MHz)	1M09W7D
	LTE Band 12 (Channel Bandwidth: 3 MHz)	2M70G7D
	LTE Band 12 (Channel Bandwidth: 5 MHz)	4M49W7D
	LTE Band 12 (Channel Bandwidth: 10 MHz)	8M97W7D
Max. ERP Power	LTE Band 12 (Channel Bandwidth: 1.4 MHz)	181.97 mW (22.60 dBm)
	LTE Band 12 (Channel Bandwidth: 3 MHz)	194.98 mW (22.90 dBm)
	LTE Band 12 (Channel Bandwidth: 5 MHz)	165.96 mW (22.20 dBm)
	LTE Band 12 (Channel Bandwidth: 10 MHz)	173.78 mW (22.40 dBm)
Max. EIRP Power	LTE Band 4 (Channel Bandwidth: 1.4 MHz)	138.04 mW (21.40 dBm)
	LTE Band 4 (Channel Bandwidth: 3 MHz)	144.54 mW (21.60 dBm)
	LTE Band 4 (Channel Bandwidth: 5 MHz)	263.03 mW (24.20 dBm)
	LTE Band 4 (Channel Bandwidth: 10 MHz)	186.21 mW (22.70 dBm)
	LTE Band 4 (Channel Bandwidth: 15 MHz)	186.21 mW (22.70 dBm)
	LTE Band 4 (Channel Bandwidth: 20 MHz)	194.98 mW (22.90 dBm)
Antenna Type	Fixed Internal Antenna	
Accessory Device	Refer to Note as below	
Data Cable Supplied	Refer to Note as below	

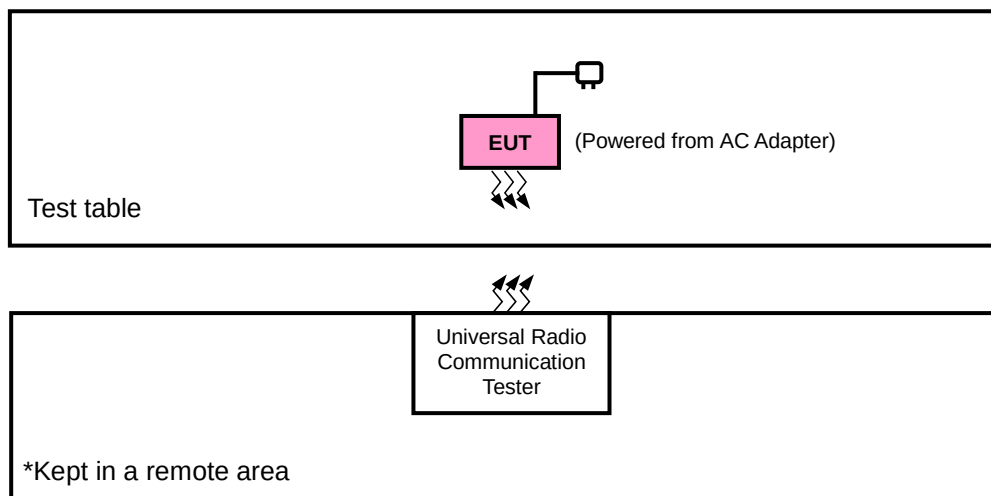
Note:

1. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter	TUE	KSAS0501200350M2	I/P: 100-240 Vac, 50/60 Hz, 1.2 A O/P: 12 Vdc, 3.5 A 1.45m non-shielded cable w/o core
Battery	Coppercell	CP6000-TE	7.4 Vdc, 5800 mAh

2. 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.

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:

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 / 5 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK, 16QAM	1 RB / 14 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK, 16QAM	1 RB / 49 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK, 16QAM	1 RB / 74 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK, 16QAM	1 RB / 99 RB Offset
-	Frequency Stability	19957 to 20393	19957, 20393	1.4 MHz	QPSK	1 RB / 5 RB Offset
		19965 to 20385	19965, 20385	3 MHz	QPSK	1 RB / 14 RB Offset
		19975 to 20375	19975, 20375	5 MHz	QPSK	1 RB / 24 RB Offset
		20000 to 20350	20000, 20350	10 MHz	QPSK	1 RB / 49 RB Offset
		20025 to 20325	20025, 20325	15 MHz	QPSK	1 RB / 74 RB Offset
		20050 to 20300	20050, 20300	20 MHz	QPSK	1 RB / 99 RB Offset
-	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 / 2 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK, 16QAM	1 RB / 7 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK, 16QAM	12 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK, 16QAM	36 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK, 16QAM	50 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	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	50 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK	1 RB / 49 RB Offset
			19975, 20175, 20375	5 MHz	QPSK	50 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK	1 RB / 0 RB Offset
			20000, 20175, 20350	10 MHz	QPSK	75 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK	1 RB / 74 RB Offset
			20025, 20175, 20325	15 MHz	QPSK	75 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK	1 RB / 0 RB Offset
			20050, 20175, 20300	20 MHz	QPSK	100 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK	1 RB / 99 RB Offset
			20050, 20175, 20300	20 MHz	QPSK	100 RB / 0 RB Offset
-	Conducted Emission	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK	1 RB / 2 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK	1 RB / 7 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK	12 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK	50 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK	36 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK	50 RB / 0 RB Offset
-	Radiated Emission Below 1GHz	19957 to 20393	19957	1.4 MHz	QPSK	1 RB / 5 RB Offset
		19965 to 20385	19965	3 MHz	QPSK	1 RB / 14 RB Offset
		19975 to 20375	19975	5 MHz	QPSK	1 RB / 24 RB Offset
		20000 to 20350	20000	10 MHz	QPSK	1 RB / 49 RB Offset
		20025 to 20325	20025	15 MHz	QPSK	1 RB / 74 RB Offset
		20050 to 20300	20050	20 MHz	QPSK	1 RB / 99 RB Offset
-	Radiated Emission Above 1GHz	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK	1 RB / 5 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK	1 RB / 14 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK	1 RB / 24 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK	1 RB / 49 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK	1 RB / 74 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK	1 RB / 99 RB Offset

Note:

1. For radiated emission below 1GHz, the low, mid and high channels were pre-tested in chamber. The low channel was the worst case and chosen for final test.
2. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

LTE Band 12

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	ERP	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK, 16QAM	1 RB / 2 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK, 16QAM	1 RB / 7 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK, 16QAM	1 RB / 12 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
-	Frequency Stability	23017 to 23173	23017, 23173	1.4 MHz	QPSK	1 RB / 2 RB Offset
		23025 to 23165	23025, 23165	3 MHz	QPSK	1 RB / 7 RB Offset
		23035 to 23155	23035, 23155	5 MHz	QPSK	1 RB / 12 RB Offset
		23060 to 23130	23060, 23130	10 MHz	QPSK	1 RB / 24 RB Offset
-	Occupied Bandwidth	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK, 16QAM	50 RB / 0 RB Offset
-	Peak to Average Ratio	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-	Band Edge	23017 to 23173	23017	1.4 MHz	QPSK	1 RB / 0 RB Offset
			23173	1.4 MHz	QPSK	6 RB / 0 RB Offset
		23025 to 23165	23025	3 MHz	QPSK	1 RB / 5 RB Offset
			23165	3 MHz	QPSK	6 RB / 0 RB Offset
		23035 to 23155	23035	5 MHz	QPSK	1 RB / 0 RB Offset
			23155	5 MHz	QPSK	15 RB / 0 RB Offset
		23060 to 23130	23060	10 MHz	QPSK	1 RB / 14 RB Offset
			23130	10 MHz	QPSK	15 RB / 0 RB Offset
		23017 to 23173	23017	1.4 MHz	QPSK	1 RB / 0 RB Offset
			23173	1.4 MHz	QPSK	25 RB / 0 RB Offset
		23025 to 23165	23025	3 MHz	QPSK	1 RB / 24 RB Offset
			23165	3 MHz	QPSK	25 RB / 0 RB Offset
-	Conducted Emission	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK	1 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Below 1GHz	23017 to 23173	23017	1.4 MHz	QPSK	1 RB / 0 RB Offset
		23025 to 23165	23025	3 MHz	QPSK	1 RB / 2 RB Offset
		23035 to 23155	23035	5 MHz	QPSK	1 RB / 7 RB Offset
		23060 to 23130	23060	10 MHz	QPSK	1 RB / 12 RB Offset
-	Radiated Emission Above 1GHz	23017 to 23173	23017, 23095, 23173	1.4 MHz	QPSK	1 RB / 24 RB Offset
		23025 to 23165	23025, 23095, 23165	3 MHz	QPSK	1 RB / 2 RB Offset
		23035 to 23155	23035, 23095, 23155	5 MHz	QPSK	1 RB / 7 RB Offset
		23060 to 23130	23060, 23095, 23130	10 MHz	QPSK	1 RB / 12 RB Offset

Note:

- For radiated emission below 1GHz, the low, mid and high channels were pre-tested in chamber. The low channel was the worst case and chosen for final test.
- This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
ERP / EIRP	25 deg. C, 65 % RH	120 Vac, 60 Hz	James Yang Greg Lin
Frequency Stability	25 deg. C, 65 % RH	7.4 Vdc	Carlos Chen
Occupied Bandwidth	25 deg. C, 65 % RH	7.4 Vdc	Carlos Chen
Band Edge	25 deg. C, 65 % RH	7.4 Vdc	Carlos Chen
Peak to Average Ratio	25 deg. C, 65 % RH	7.4 Vdc	Carlos Chen
Conducted Emission	25 deg. C, 65 % RH	7.4 Vdc	Carlos Chen
Radiated Emission	25 deg. C, 65 % RH	120 Vac, 60 Hz	James Yang Greg Lin

3.4 EUT Operating Conditions

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

3.5 General Description of Applied Standards

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

FCC 47 CFR Part 2

FCC 47 CFR Part 27

KDB 971168 D01 Power Meas License Digital Systems v02r02

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

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

Portable stations (hand-held devices) operating in the 704-716 MHz band are limited to 3 watts ERP

4.1.2 Test Procedures

EIRP / ERP Measurement:

- a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 5 MHz for WCDMA and 10 MHz for LTE mode.
- b. 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.
- c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step b. Record the power level of S.G.
- d. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$. E.R.P power can be calculated from E.I.R.P power by subtracting the gain of dipole, $E.R.P \text{ power} = E.I.P.R \text{ power} - 2.15 \text{ dBi}$.

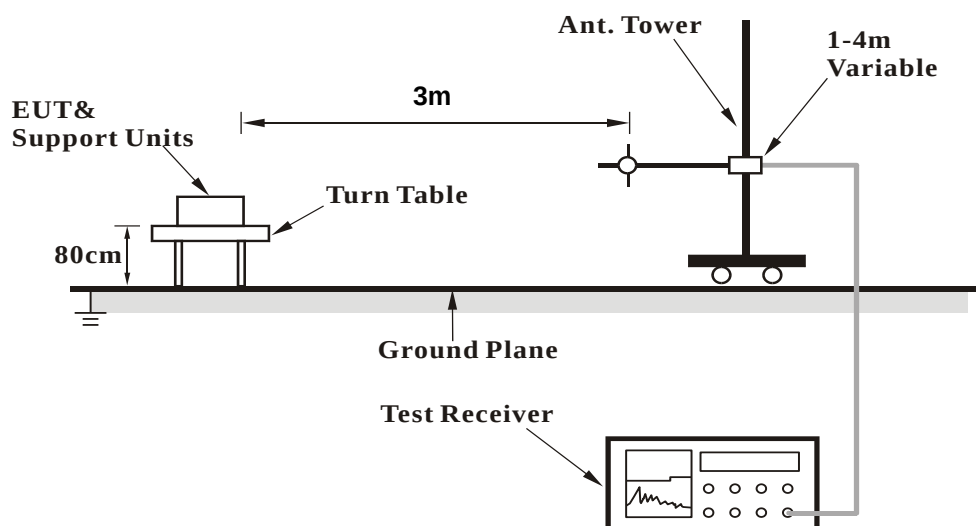
Conducted Power Measurement:

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

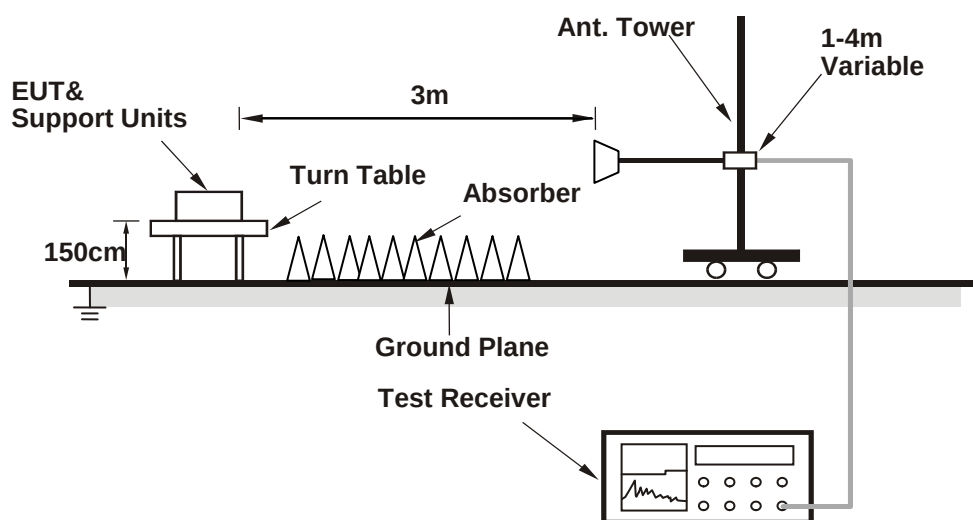
4.1.3 Test Setup

EIRP / ERP Measurement:

<Radiated Emission below or equal 1 GHz>

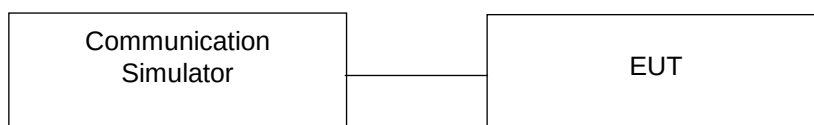


<Radiated Emission above 1 GHz>



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	22.92	22.69	22.85	0	21.92	21.71	21.83	1
	1	2	22.70	22.58	22.68	0	21.74	21.40	21.69	1
	1	5	22.56	22.46	22.49	0	21.70	21.33	21.53	1
	3	0	22.55	22.42	22.54	0	21.57	21.29	21.57	1
	3	1	22.43	22.30	22.37	0	21.53	21.14	21.36	1
	3	3	22.45	22.33	22.44	0	21.48	21.13	21.45	1
	6	0	21.91	21.50	21.75	1	20.85	20.52	20.64	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	23.00	22.75	22.96	0	21.94	21.65	21.95	1
	1	7	22.89	22.62	22.79	0	21.78	21.70	21.74	1
	1	14	22.55	22.51	22.69	0	21.62	21.43	21.53	1
	8	0	21.97	21.66	21.78	1	20.64	20.71	20.73	2
	8	3	21.72	21.54	21.65	1	20.65	20.43	20.56	2
	8	7	21.69	21.29	21.51	1	20.55	20.41	20.44	2
	15	0	21.95	21.50	21.77	1	20.85	20.51	20.76	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	23.15	22.99	23.06	0	22.06	21.93	22.03	1
	1	12	23.07	22.79	22.98	0	21.97	21.82	21.95	1
	1	24	22.87	22.67	22.82	0	21.77	21.53	21.58	1
	12	0	22.05	21.80	21.95	1	20.86	20.70	20.75	2
	12	6	21.77	21.58	21.76	1	20.86	20.52	20.71	2
	12	13	21.75	21.54	21.72	1	20.76	20.46	20.57	2
	25	0	22.07	21.83	21.87	1	20.92	20.71	20.95	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	23.32	23.05	23.17	0	22.25	22.02	22.13	1
	1	24	23.13	22.95	23.06	0	22.05	21.92	22.01	1
	1	49	23.04	22.83	22.96	0	21.95	21.73	21.93	1
	25	0	22.10	22.03	22.04	1	21.09	20.77	20.94	2
	25	12	21.96	21.71	21.85	1	20.96	20.74	20.82	2
	25	25	21.88	21.74	21.74	1	20.78	20.71	20.74	2
	50	0	22.10	21.84	22.00	1	21.10	20.95	21.01	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	23.43	23.22	23.30	0	22.41	22.17	22.27	1
	1	37	23.25	23.06	23.16	0	22.24	22.00	22.13	1
	1	74	23.15	22.94	22.98	0	22.00	21.85	22.08	1
	36	0	22.32	22.05	22.19	1	21.16	20.82	21.09	2
	36	19	22.14	21.81	22.02	1	21.02	20.85	21.01	2
	36	39	22.00	21.80	21.89	1	20.96	20.70	20.87	2
	75	0	22.32	21.95	22.08	1	21.26	21.02	21.08	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	23.52	23.32	23.43	0	22.50	22.29	22.41	1
	1	50	23.39	23.18	23.33	0	22.37	22.10	22.23	1
	1	99	23.30	23.10	23.20	0	22.24	22.03	22.08	1
	50	0	22.42	22.21	22.32	1	21.35	21.15	21.13	2
	50	25	22.24	22.00	22.10	1	21.12	20.98	21.09	2
	50	50	22.18	21.89	21.98	1	21.12	20.85	21.05	2
	100	0	22.38	22.16	22.27	1	21.31	21.18	21.29	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 23017	Mid Ch 23095	High Ch 23173		Low Ch 23017	Mid Ch 23095	High Ch 23173	
			699.7 MHz	707.5 MHz	715.3 MHz		699.7 MHz	707.5 MHz	715.3 MHz	
12 / 1.4M	1	0	23.45	23.28	23.36	0	22.38	22.22	22.23	1
	1	2	23.26	23.18	23.16	0	22.29	22.13	22.26	1
	1	5	23.09	23.02	22.94	0	22.21	21.80	21.93	1
	3	0	22.35	22.20	22.28	0	21.21	21.09	21.19	1
	3	1	22.20	21.93	22.06	0	20.95	20.94	20.85	1
	3	3	22.10	21.89	21.92	0	20.96	20.81	20.98	1
	6	0	22.34	22.12	22.27	1	21.22	21.01	21.13	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 23025	Mid Ch 23095	High Ch 23165		Low Ch 23025	Mid Ch 23095	High Ch 23165	
			700.5 MHz	707.5 MHz	714.5 MHz		700.5 MHz	707.5 MHz	714.5 MHz	
12 / 3M	1	0	23.61	23.46	23.48	0	22.63	22.39	22.39	1
	1	7	23.43	23.27	23.34	0	22.44	22.28	22.23	1
	1	14	23.25	23.15	23.24	0	22.32	22.13	22.19	1
	8	0	22.44	22.28	22.35	1	21.22	21.14	21.15	2
	8	3	22.33	22.12	22.16	1	21.19	21.09	21.16	2
	8	7	22.29	21.98	22.08	1	21.11	21.03	21.08	2
	15	0	22.43	22.26	22.29	1	21.36	21.25	21.30	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 23035	Mid Ch 23095	High Ch 23155		Low Ch 23035	Mid Ch 23095	High Ch 23155	
			701.5 MHz	707.5 MHz	713.5 MHz		701.5 MHz	707.5 MHz	713.5 MHz	
12 / 5M	1	0	23.69	23.54	23.58	0	22.60	22.47	22.56	1
	1	12	23.57	23.35	23.51	0	22.54	22.43	22.37	1
	1	24	23.37	23.17	23.21	0	22.35	22.06	22.35	1
	12	0	22.54	22.42	22.43	1	21.54	21.41	21.37	2
	12	6	22.37	22.22	22.29	1	21.30	21.23	21.31	2
	12	13	22.30	22.16	22.18	1	21.27	21.21	21.06	2
	25	0	22.59	22.32	22.35	1	21.50	21.37	21.40	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 23060	Mid Ch 23095	High Ch 23130		Low Ch 23060	Mid Ch 23095	High Ch 23130	
			704.0 MHz	707.5 MHz	711.0 MHz		704.0 MHz	707.5 MHz	711.0 MHz	
12 / 10M	1	0	23.85	23.66	23.72	0	22.78	22.59	22.68	1
	1	24	23.73	23.55	23.63	0	22.63	22.42	22.54	1
	1	49	23.58	23.45	23.35	0	22.45	22.26	22.43	1
	25	0	22.76	22.56	22.57	1	21.66	21.41	21.50	2
	25	12	22.58	22.38	22.36	1	21.46	21.35	21.33	2
	25	25	22.50	22.24	22.26	1	21.37	21.20	21.29	2
	50	0	22.65	22.55	22.59	1	21.66	21.38	21.47	2

ERP Power (dBm)

QPSK

LTE Band 12, Channel Bandwidth: 1.4MHz

MODE		TX Channel 23017					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	699.70	-7.70	16.80	3.50	20.30	34.80	-14.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	699.70	-13.50	14.00	3.50	17.50	34.80	-17.30

MODE		TX Channel 23095					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	707.50	-6.20	18.50	3.50	22.00	34.80	-12.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	707.50	-12.10	15.60	3.50	19.10	34.80	-15.70

MODE		TX Channel 23173					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	715.30	-5.90	19.10	3.50	22.60	34.80	-12.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	751.30	-11.60	16.70	3.70	20.40	34.80	-14.40

NOTE: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB)

LTE Band 12, Channel Bandwidth: 3MHz

MODE		TX Channel 23025					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	700.50	-9.20	15.30	3.50	18.80	34.80	-16.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	700.50	-15.10	12.50	3.50	16.00	34.80	-18.80

MODE		TX Channel 23095					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	707.5	-7.60	17.10	3.50	20.60	34.80	-14.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	707.5	-13.40	14.40	3.50	17.90	34.80	-16.90

MODE		TX Channel 23165					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	714.5	-5.60	19.40	3.50	22.90	34.80	-11.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	714.5	-11.40	16.20	3.50	19.70	34.80	-15.10

NOTE: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB)

LTE Band 12, Channel Bandwidth: 5MHz

MODE		TX Channel 23035					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	701.50	-7.10	17.50	3.40	20.90	34.80	-13.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	701.50	-11.40	16.30	3.40	19.70	34.80	-15.10

MODE		TX Channel 23095					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	707.50	-6.10	18.70	3.50	22.20	34.80	-12.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	707.50	-10.40	17.40	3.50	20.90	34.80	-13.90

MODE		TX Channel 23155					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	713.50	-6.40	18.60	3.50	22.10	34.80	-12.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	713.50	-10.60	17.20	3.50	20.70	34.80	-14.10

NOTE: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB)

LTE Band 12, Channel Bandwidth: 10MHz

MODE		TX Channel 23060					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	704.00	-6.30	18.40	3.50	21.90	34.80	-12.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	704.00	-14.20	13.40	3.50	16.90	34.80	-17.90

MODE		TX Channel 23095					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	707.50	-7.40	17.40	3.50	20.90	34.80	-13.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	707.50	-12.20	15.50	3.50	19.00	34.80	-15.80

MODE		TX Channel 23130					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	711.00	-6.10	18.90	3.50	22.40	34.80	-12.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	711.00	-11.10	16.50	3.50	20.00	34.80	-14.80

NOTE: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB)

16QAM

LTE Band 12, Channel Bandwidth: 1.4MHz

MODE		TX Channel 23017					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	699.70	-8.20	16.30	3.50	19.80	34.80	-15.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	699.70	-13.70	13.80	3.50	17.30	34.80	-17.50

MODE		TX Channel 23095					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	707.50	-6.90	17.90	3.50	21.40	34.80	-13.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	707.50	-12.40	15.30	3.50	18.80	34.80	-16.00

MODE		TX Channel 23173					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	715.30	-6.00	19.00	3.50	22.50	34.80	-12.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	715.30	-11.40	16.20	3.50	19.70	34.80	-15.10

NOTE: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB)

LTE Band 12, Channel Bandwidth: 3MHz

MODE		TX Channel 23025					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	700.50	-9.50	15.00	3.50	18.50	34.80	-16.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	700.50	-15.20	12.40	3.50	15.90	34.80	-18.90

MODE		TX Channel 23095					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	707.50	-8.60	16.10	3.50	19.60	34.80	-15.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	707.50	-13.60	14.20	3.50	17.70	34.80	-17.10

MODE		TX Channel 23165					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	714.50	-6.40	18.60	3.50	22.10	34.80	-12.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	714.50	-12.00	15.60	3.50	19.10	34.80	-15.70

NOTE: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB)

LTE Band 12, Channel Bandwidth: 5MHz

MODE		TX Channel 23035					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	701.50	-7.90	16.70	3.40	20.10	34.80	-14.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	701.50	-11.70	16.00	3.40	19.40	34.80	-15.40

MODE		TX Channel 23095					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	707.50	-6.20	18.50	3.50	22.00	34.80	-12.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	707.50	-10.60	17.20	3.50	20.70	34.80	-14.10

MODE		TX Channel 23155					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	713.50	-6.80	18.20	3.50	21.70	34.80	-13.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	713.50	-11.40	16.30	3.50	19.80	34.80	-15.00

NOTE: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB)

LTE Band 12, Channel Bandwidth: 10MHz

MODE		TX Channel 23060					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	704.00	-6.90	17.80	3.50	21.30	34.80	-13.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	704.00	-14.80	12.90	3.50	16.40	34.80	-18.40

MODE		TX Channel 23095					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	707.50	-7.90	16.90	3.50	20.40	34.80	-14.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	707.50	-12.80	15.00	3.50	18.50	34.80	-16.30

MODE		TX Channel 23130					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	711.00	-6.90	18.10	3.50	21.60	34.80	-13.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	711.00	-11.20	16.40	3.50	19.90	34.80	-14.90

NOTE: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB)

EIRP Power (dBm)

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	-17.30	20.70	0.70	21.40	30.00	-8.60
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	1710.70	-22.10	15.70	0.70	16.40	30.00	-13.60

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	-17.60	20.80	0.60	21.40	30.00	-8.60
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	-22.50	15.80	0.60	16.40	30.00	-13.60

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	-18.30	20.50	0.50	21.00	30.00	-9.00
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	1754.30	-22.80	16.10	0.50	16.60	30.00	-13.40

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	-17.80	20.20	0.70	20.90	30.00	-9.10
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	1711.50	-23.70	14.10	0.70	14.80	30.00	-15.20

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	-17.40	21.00	0.60	21.60	30.00	-8.40
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	1732.50	-23.30	15.00	0.60	15.60	30.00	-14.40

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	-18.20	20.60	0.50	21.10	30.00	-8.90
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	1753.50	-23.50	15.40	0.50	15.90	30.00	-14.10

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	-14.60	23.50	0.70	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	1712.50	-19.40	18.50	0.70	19.20	30.00	-10.80

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	-16.40	22.00	0.60	22.60	30.00	-7.40
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	1732.50	-22.10	16.20	0.60	16.80	30.00	-13.20

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	-16.80	22.00	0.50	22.50	30.00	-7.50
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	1752.50	-22.80	16.00	0.50	16.50	30.00	-13.50

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	-16.50	21.60	0.70	22.30	30.00	-7.70
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	1715.00	-21.30	16.60	0.70	17.30	30.00	-12.70

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	-16.80	21.60	0.60	22.20	30.00	-7.80
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	-20.70	17.60	0.60	18.20	30.00	-11.80

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	-16.60	22.20	0.50	22.70	30.00	-7.30
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	1750.00	-21.80	17.00	0.50	17.50	30.00	-12.50

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	-16.10	22.00	0.70	22.70	30.00	-7.30
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	1717.50	-20.30	17.70	0.70	18.40	30.00	-11.60

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	-16.80	21.60	0.60	22.20	30.00	-7.80
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	-21.50	16.80	0.60	17.40	30.00	-12.60

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	-16.60	22.10	0.50	22.60	30.00	-7.40
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	1747.50	-21.60	17.10	0.50	17.60	30.00	-12.40

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	-16.40	21.80	0.70	22.50	30.00	-7.50
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	-21.20	16.80	0.70	17.50	30.00	-12.50

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	-16.50	21.90	0.60	22.50	30.00	-7.50
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	1732.50	-21.60	16.70	0.60	17.30	30.00	-12.70

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	-16.30	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	1745.00	-22.30	16.40	0.50	16.90	30.00	-13.10

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

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	-18.20	19.80	0.70	20.50	30.00	-9.50
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	-22.90	14.90	0.70	15.60	30.00	-14.40

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	-18.20	20.20	0.60	20.80	30.00	-9.20
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	-22.80	15.50	0.60	16.10	30.00	-13.90

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	-18.90	19.90	0.50	20.40	30.00	-9.60
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	1754.30	-23.70	15.20	0.50	15.70	30.00	-14.30

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	-18.70	19.30	0.70	20.00	30.00	-10.00
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	-24.60	13.20	0.70	13.90	30.00	-16.10

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	-18.00	20.40	0.60	21.00	30.00	-9.00
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	1732.50	-23.60	14.70	0.60	15.30	30.00	-14.70

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	-18.60	20.20	0.50	20.70	30.00	-9.30
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	1753.50	-24.30	14.60	0.50	15.10	30.00	-14.90

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	-15.50	22.60	0.70	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	1712.50	-20.10	17.80	0.70	18.50	30.00	-11.50

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	-16.70	21.70	0.60	22.30	30.00	-7.70
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	-22.30	16.00	0.60	16.60	30.00	-13.40

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	-17.50	21.30	0.50	21.80	30.00	-8.20
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	1752.50	-23.20	15.60	0.50	16.10	30.00	-13.90

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	-16.90	21.20	0.70	21.90	30.00	-8.10
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	1715.00	-22.30	15.60	0.70	16.30	30.00	-13.70

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	-17.30	21.10	0.60	21.70	30.00	-8.30
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	-20.90	17.40	0.60	18.00	30.00	-12.00

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	-17.20	21.60	0.50	22.10	30.00	-7.90
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	1750.00	-22.80	16.00	0.50	16.50	30.00	-13.50

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	-17.00	21.10	0.70	21.80	30.00	-8.20
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	1717.50	-21.00	17.00	0.70	17.70	30.00	-12.30

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	-17.00	21.40	0.60	22.00	30.00	-8.00
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	1732.50	-22.00	16.30	0.60	16.90	30.00	-13.10

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	-16.80	21.90	0.50	22.40	30.00	-7.60
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	1747.50	-22.30	16.40	0.50	16.90	30.00	-13.10

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	-16.60	21.60	0.70	22.30	30.00	-7.70
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	-21.30	16.70	0.70	17.40	30.00	-12.60

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	-17.30	21.10	0.60	21.70	30.00	-8.30
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	-21.70	16.60	0.60	17.20	30.00	-12.80

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	-16.80	21.90	0.50	22.40	30.00	-7.60
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	1745.00	-22.80	15.90	0.50	16.40	30.00	-13.60

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

4.2 Frequency Stability Measurement

4.2.1 Limits of Frequency Stability Measurement

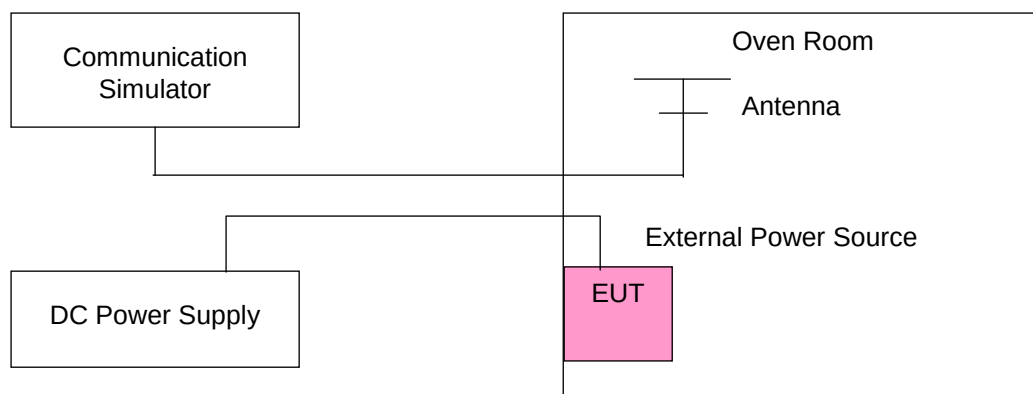
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

4.2.2 Test Procedure

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

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

4.2.3 Test Setup



4.2.4 Test Results

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4				Limit (ppm)
	Channel Bandwidth: 1.4 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
12	1710.700003	0.002	1754.300004	0.002	2.5
10	1710.700002	0.001	1754.300004	0.002	2.5
14	1710.700003	0.002	1754.300001	0.001	2.5

Note: The applicant defined the normal working voltage of the battery is from 10 Vdc to 14 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4				Limit (ppm)
	Channel Bandwidth: 1.4 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-30	1710.700002	0.001	1754.300002	0.001	2.5
-20	1710.700003	0.002	1754.300002	0.001	2.5
-10	1710.700002	0.001	1754.300003	0.002	2.5
0	1710.700004	0.002	1754.300002	0.001	2.5
10	1710.699996	-0.002	1754.299996	-0.002	2.5
20	1710.699997	-0.002	1754.299998	-0.001	2.5
30	1710.699998	-0.001	1754.299998	-0.001	2.5
40	1710.699996	-0.002	1754.299998	-0.001	2.5
50	1710.699997	-0.002	1754.299999	-0.001	2.5

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4				Limit (ppm)
	Channel Bandwidth: 3 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
12	1711.500002	0.001	1753.500004	0.002	2.5
10	1711.500001	0.001	1753.500002	0.001	2.5
14	1711.500004	0.002	1753.500003	0.002	2.5

Note: The applicant defined the normal working voltage of the battery is from 10 Vdc to 14 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4				Limit (ppm)
	Channel Bandwidth: 3 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-30	1711.500002	0.001	1753.500002	0.001	2.5
-20	1711.500004	0.002	1753.500004	0.002	2.5
-10	1711.500002	0.001	1753.500003	0.002	2.5
0	1711.500004	0.002	1753.500003	0.002	2.5
10	1711.499997	-0.002	1753.499999	-0.001	2.5
20	1711.499996	-0.002	1753.499997	-0.002	2.5
30	1711.499999	-0.001	1753.499997	-0.002	2.5
40	1711.499997	-0.002	1753.499999	-0.001	2.5
50	1711.499999	-0.001	1753.499999	-0.001	2.5

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4				Limit (ppm)
	Channel Bandwidth: 5 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
12	1712.500002	0.001	1752.500004	0.002	2.5
10	1712.500003	0.002	1752.500003	0.002	2.5
14	1712.500003	0.002	1752.500001	0.001	2.5

Note: The applicant defined the normal working voltage of the battery is from 10 Vdc to 14 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4				Limit (ppm)
	Channel Bandwidth: 5 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-30	1712.500003	0.001	1752.500003	0.002	2.5
-20	1712.500003	0.002	1752.500003	0.002	2.5
-10	1712.500002	0.001	1752.500002	0.001	2.5
0	1712.500002	0.001	1752.500003	0.002	2.5
10	1712.499998	-0.001	1752.499997	-0.002	2.5
20	1712.499998	-0.001	1752.499996	-0.002	2.5
30	1712.499999	-0.001	1752.499998	-0.001	2.5
40	1712.499997	-0.002	1752.499998	-0.001	2.5
50	1712.499997	-0.002	1752.499996	-0.002	2.5

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4				Limit (ppm)
	Channel Bandwidth: 10 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
12	1715.000001	0.001	1750.000002	0.001	2.5
10	1715.000003	0.002	1750.000003	0.002	2.5
14	1715.000004	0.002	1750.000004	0.002	2.5

Note: The applicant defined the normal working voltage of the battery is from 10 Vdc to 14 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4				Limit (ppm)
	Channel Bandwidth: 10 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-30	1715.000004	0.002	1750.000002	0.001	2.5
-20	1715.000002	0.001	1750.000002	0.001	2.5
-10	1715.000001	0.001	1750.000001	0.001	2.5
0	1715.000002	0.001	1750.000001	0.001	2.5
10	1714.999996	-0.002	1749.999998	-0.001	2.5
20	1714.999998	-0.001	1749.999996	-0.002	2.5
30	1714.999997	-0.002	1749.999998	-0.001	2.5
40	1714.999998	-0.001	1749.999997	-0.001	2.5
50	1714.999998	-0.001	1749.999998	-0.001	2.5

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4				Limit (ppm)
	Channel Bandwidth: 15 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
12	1717.500002	0.001	1747.500004	0.002	2.5
10	1717.500002	0.001	1747.500003	0.001	2.5
14	1717.500003	0.001	1747.500003	0.002	2.5

Note: The applicant defined the normal working voltage of the battery is from 10 Vdc to 14 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4				Limit (ppm)
	Channel Bandwidth: 15 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-30	1717.500001	0.001	1747.500003	0.002	2.5
-20	1717.500004	0.002	1747.500004	0.002	2.5
-10	1717.500002	0.001	1747.500002	0.001	2.5
0	1717.500003	0.002	1747.500002	0.001	2.5
10	1717.499999	-0.001	1747.499997	-0.002	2.5
20	1717.499997	-0.002	1747.499996	-0.002	2.5
30	1717.499998	-0.001	1747.499999	-0.001	2.5
40	1717.499999	-0.001	1747.499996	-0.002	2.5
50	1717.499998	-0.001	1747.499998	-0.001	2.5

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4				Limit (ppm)
	Channel Bandwidth: 20 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
12	1720.000002	0.001	1745.000003	0.002	2.5
10	1720.000002	0.001	1745.000004	0.002	2.5
14	1720.000004	0.002	1745.000002	0.001	2.5

Note: The applicant defined the normal working voltage of the battery is from 10 Vdc to 14 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4				Limit (ppm)
	Channel Bandwidth: 20 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-30	1720.000001	0.001	1745.000002	0.001	2.5
-20	1720.000003	0.002	1745.000002	0.001	2.5
-10	1720.000003	0.002	1745.000001	0.001	2.5
0	1720.000003	0.001	1745.000002	0.001	2.5
10	1719.999999	-0.001	1744.999997	-0.002	2.5
20	1719.999998	-0.001	1744.999998	-0.001	2.5
30	1719.999997	-0.002	1744.999998	-0.001	2.5
40	1719.999997	-0.002	1744.999996	-0.002	2.5
50	1719.999996	-0.002	1744.999997	-0.002	2.5

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12				Limit (ppm)
	Channel Bandwidth: 1.4 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
12	699.700001	0.002	715.300004	0.006	2.5
10	699.700002	0.002	715.300003	0.004	2.5
14	699.700003	0.004	715.300004	0.005	2.5

Note: The applicant defined the normal working voltage of the battery is from 10 Vdc to 14 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12				Limit (ppm)
	Channel Bandwidth: 1.4 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-30	699.700001	0.002	715.300001	0.002	2.5
-20	699.700002	0.002	715.300003	0.004	2.5
-10	699.700003	0.005	715.300002	0.003	2.5
0	699.700002	0.003	715.300002	0.003	2.5
10	699.699996	-0.006	715.299997	-0.004	2.5
20	699.699998	-0.003	715.299997	-0.004	2.5
30	699.699998	-0.004	715.299998	-0.003	2.5
40	699.699999	-0.002	715.299997	-0.005	2.5
50	699.699999	-0.002	715.299999	-0.002	2.5

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12				Limit (ppm)
	Channel Bandwidth: 3 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
12	700.500002	0.002	714.500002	0.003	2.5
10	700.500004	0.005	714.500001	0.002	2.5
14	700.500001	0.002	714.500004	0.006	2.5

Note: The applicant defined the normal working voltage of the battery is from 10 Vdc to 14 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12				Limit (ppm)
	Channel Bandwidth: 3 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-30	700.500002	0.002	714.500002	0.002	2.5
-20	700.500004	0.005	714.500001	0.002	2.5
-10	700.500004	0.006	714.500003	0.004	2.5
0	700.500003	0.004	714.500002	0.003	2.5
10	700.499998	-0.003	714.499997	-0.004	2.5
20	700.499997	-0.005	714.499997	-0.004	2.5
30	700.499999	-0.002	714.499999	-0.002	2.5
40	700.499997	-0.004	714.499998	-0.003	2.5
50	700.499996	-0.006	714.499997	-0.005	2.5

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12				Limit (ppm)
	Channel Bandwidth: 5 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
12	701.500003	0.005	713.500003	0.004	2.5
10	701.500004	0.006	713.500002	0.003	2.5
14	701.500003	0.004	713.500004	0.005	2.5

Note: The applicant defined the normal working voltage of the battery is from 10 Vdc to 14 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12				Limit (ppm)
	Channel Bandwidth: 5 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-30	701.500002	0.003	713.500004	0.006	2.5
-20	701.500003	0.004	713.500003	0.004	2.5
-10	701.500002	0.003	713.500004	0.005	2.5
0	701.500003	0.004	713.500003	0.004	2.5
10	701.499996	-0.005	713.499997	-0.005	2.5
20	701.499998	-0.002	713.499999	-0.002	2.5
30	701.499997	-0.004	713.499997	-0.005	2.5
40	701.499999	-0.002	713.499996	-0.005	2.5
50	701.499998	-0.003	713.499999	-0.002	2.5

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12				Limit (ppm)
	Channel Bandwidth: 10 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
12	704.000003	0.005	711.000002	0.003	2.5
10	704.000003	0.004	711.000002	0.003	2.5
14	704.000002	0.002	711.000001	0.002	2.5

Note: The applicant defined the normal working voltage of the battery is from 10 Vdc to 14 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12				Limit (ppm)
	Channel Bandwidth: 10 MHz				
	Low Channel		High Channel		
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-30	704.000001	0.002	711.000003	0.005	2.5
-20	704.000002	0.003	711.000003	0.005	2.5
-10	704.000002	0.003	711.000003	0.004	2.5
0	704.000003	0.004	711.000003	0.004	2.5
10	703.999998	-0.003	710.999997	-0.004	2.5
20	703.999997	-0.004	710.999997	-0.004	2.5
30	703.999996	-0.005	710.999998	-0.003	2.5
40	703.999996	-0.006	710.999998	-0.003	2.5
50	703.999999	-0.002	710.999998	-0.003	2.5

4.3 Occupied Bandwidth Measurement

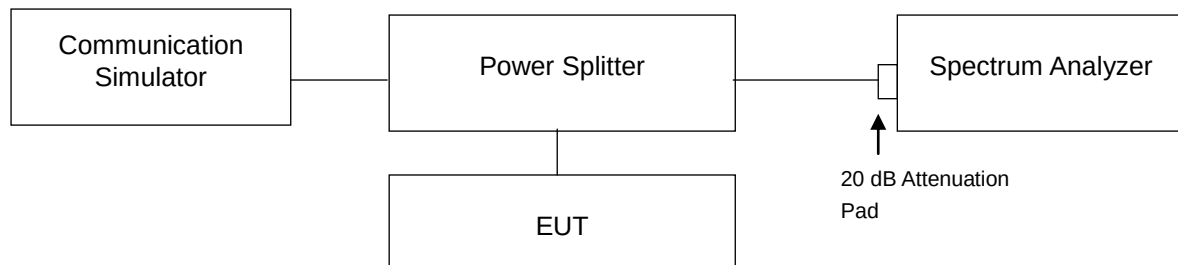
4.3.1 Limits of Occupied Bandwidth Measurement

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.

4.3.2 Test Procedure

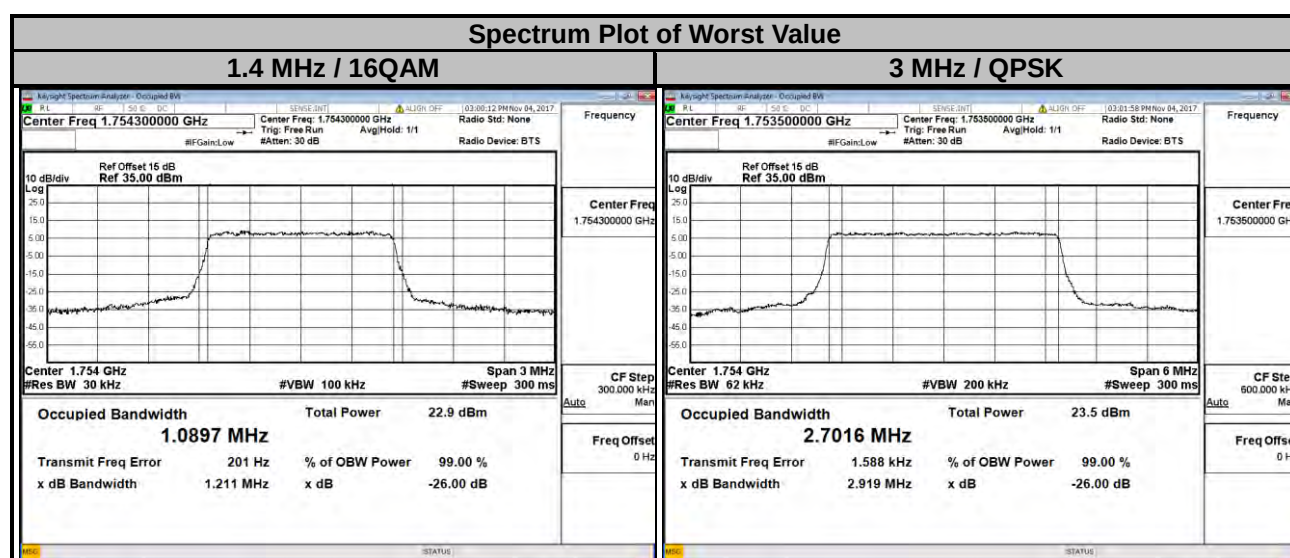
- The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

4.3.3 Test Setup



4.3.4 Test Result

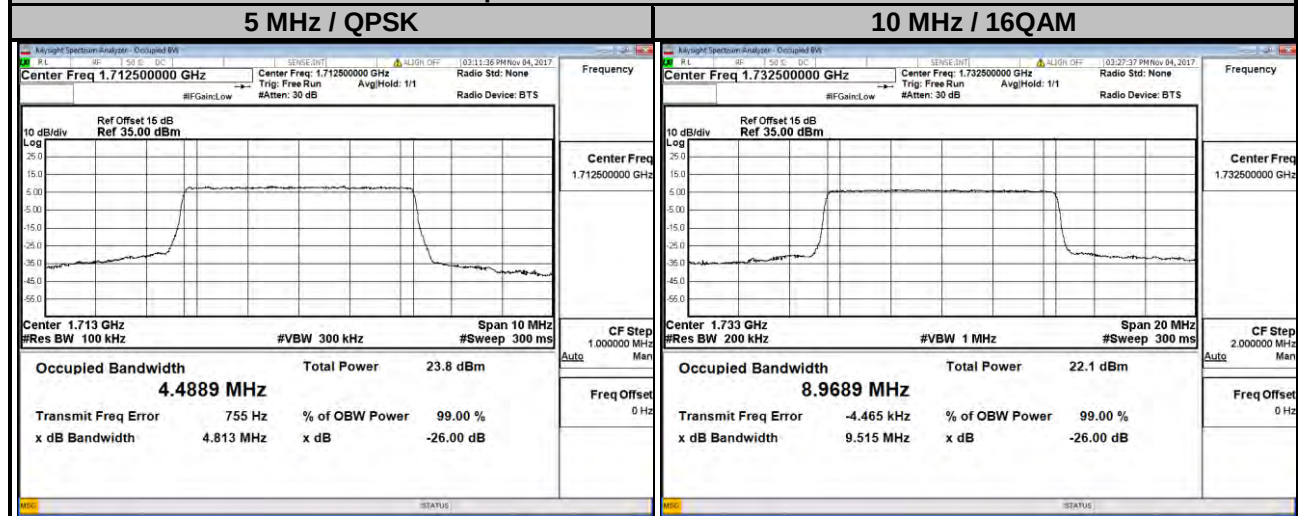
LTE Band 4							
Channel Bandwidth: 1.4 MHz				Channel Bandwidth: 3 MHz			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
19957	1710.7	1.09	1.09	19965	1711.5	2.70	2.70
20175	1732.5	1.09	1.09	20175	1732.5	2.70	2.69
20393	1754.3	1.09	1.09	20385	1753.5	2.70	2.70



LTE Band 4

Channel Bandwidth: 5 MHz				Channel Bandwidth: 10 MHz			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
19975	1712.5	4.49	4.49	20000	1715.0	8.96	8.97
20175	1732.5	4.49	4.49	20175	1732.5	8.96	8.97
20375	1752.5	4.49	4.49	20350	1750.0	8.96	8.97

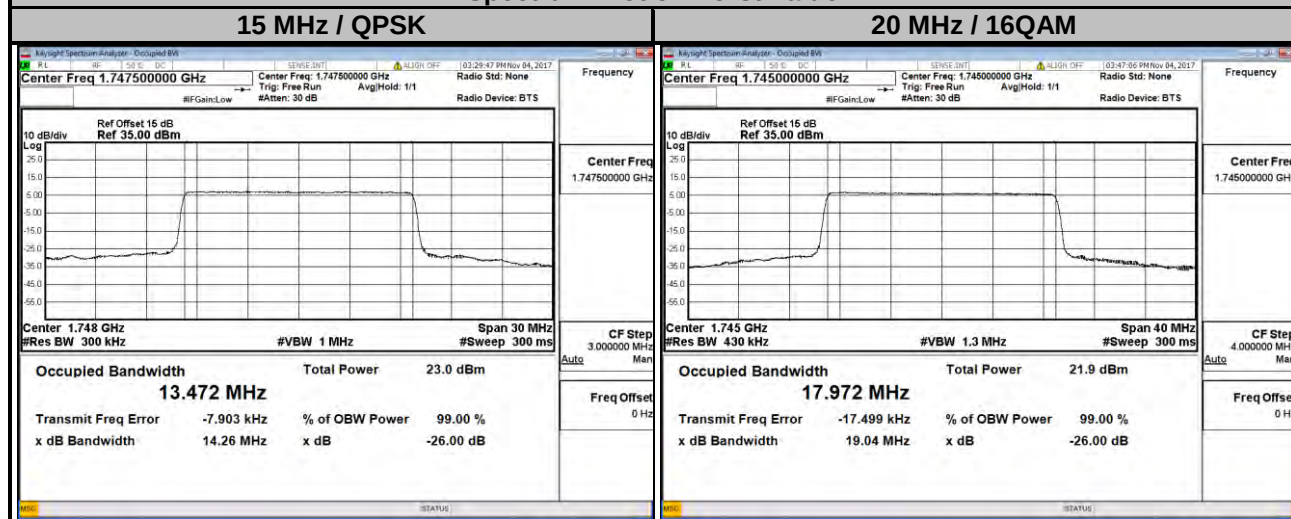
Spectrum Plot of Worst Value



LTE Band 4

Channel Bandwidth: 15 MHz				Channel Bandwidth: 20 MHz			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
20025	1717.5	13.47	13.46	20050	1720.0	17.94	17.96
20175	1732.5	13.46	13.45	20175	1732.5	17.93	17.95
20325	1747.5	13.47	13.46	20300	1745.0	17.95	17.97

Spectrum Plot of Worst Value

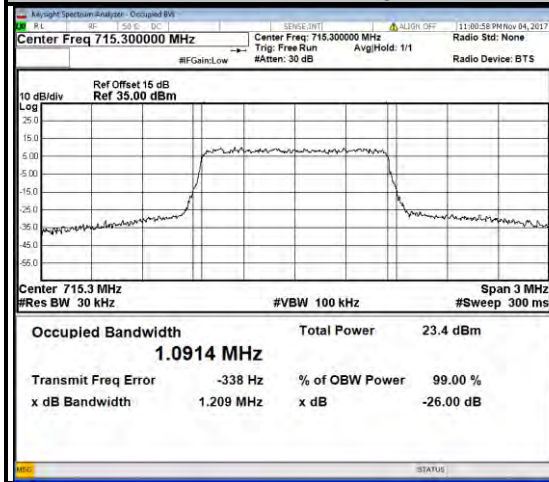


LTE Band 12

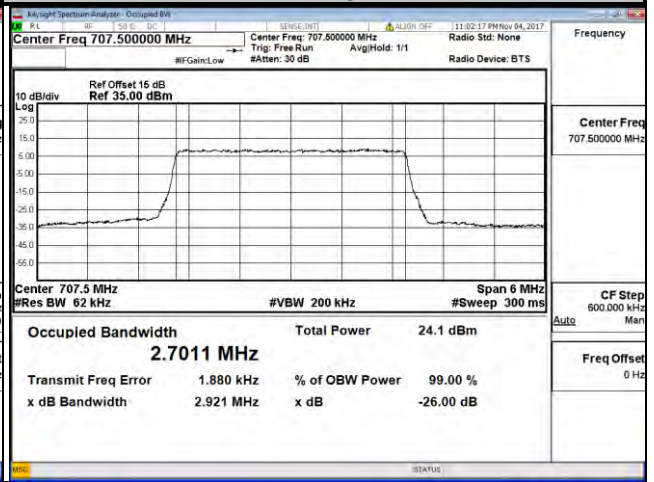
Channel Bandwidth: 1.4 MHz				Channel Bandwidth: 3 MHz			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
23017	699.7	1.09	1.09	23025	700.5	2.70	2.70
23095	707.5	1.09	1.09	23095	707.5	2.70	2.70
23173	715.3	1.09	1.09	23165	714.5	2.70	2.70

Spectrum Plot of Worst Value

1.4 MHz / 16QAM



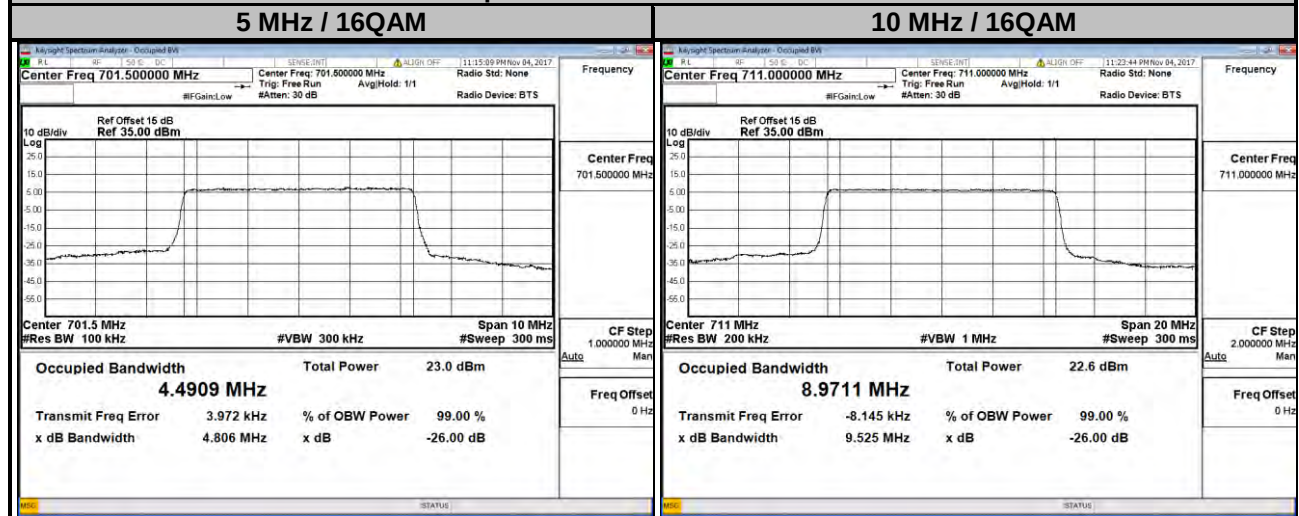
3 MHz / QPSK



LTE Band 12

Channel Bandwidth: 5 MHz				Channel Bandwidth: 10 MHz			
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
23035	701.5	4.49	4.49	23060	704.0	8.96	8.96
23095	707.5	4.49	4.49	23095	707.5	8.96	8.97
23155	713.5	4.49	4.49	23130	711.0	8.97	8.97

Spectrum Plot of Worst Value



4.4 Band Edge Measurement

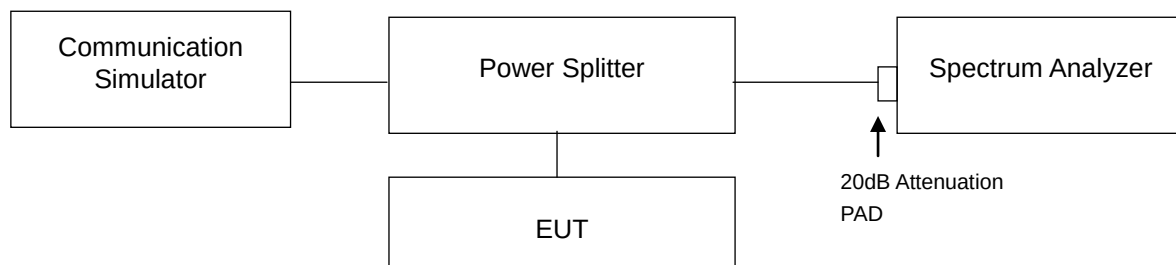
4.4.1 Limits of Band Edge Measurement

For operations in the 704-716 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater.

However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

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 $43 + 10 \log_{10}(P)$ dB.

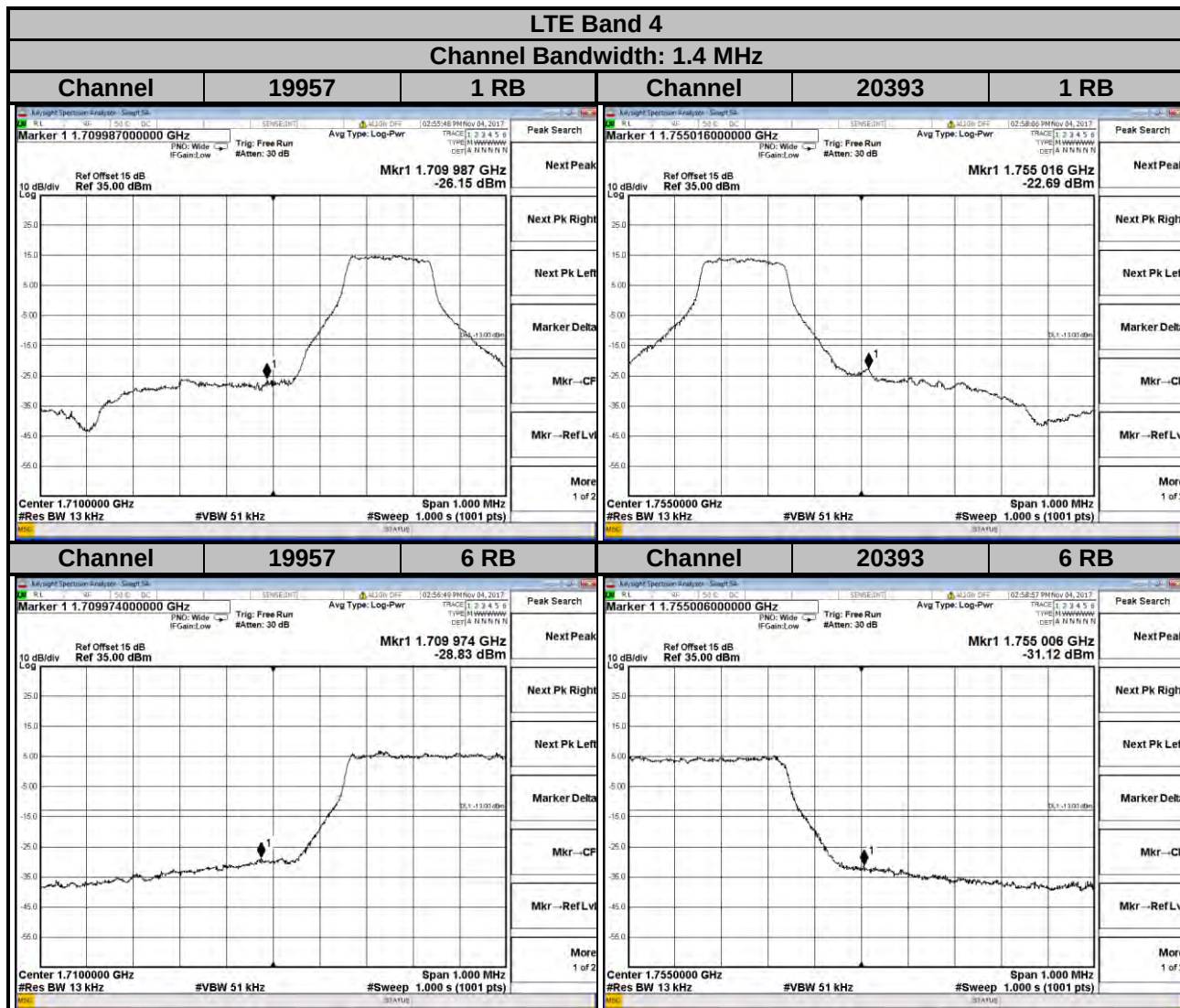
4.4.2 Test Setup

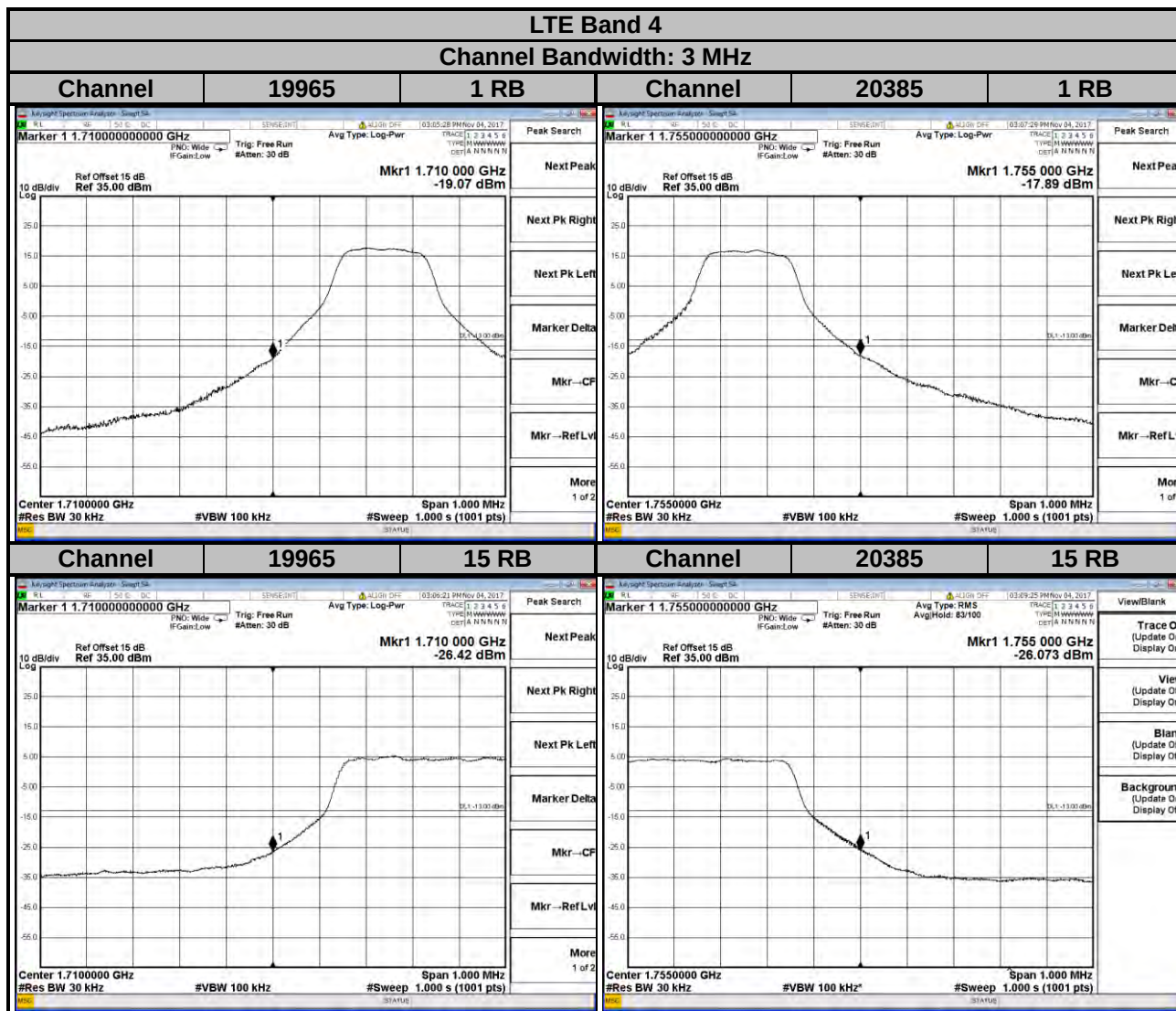


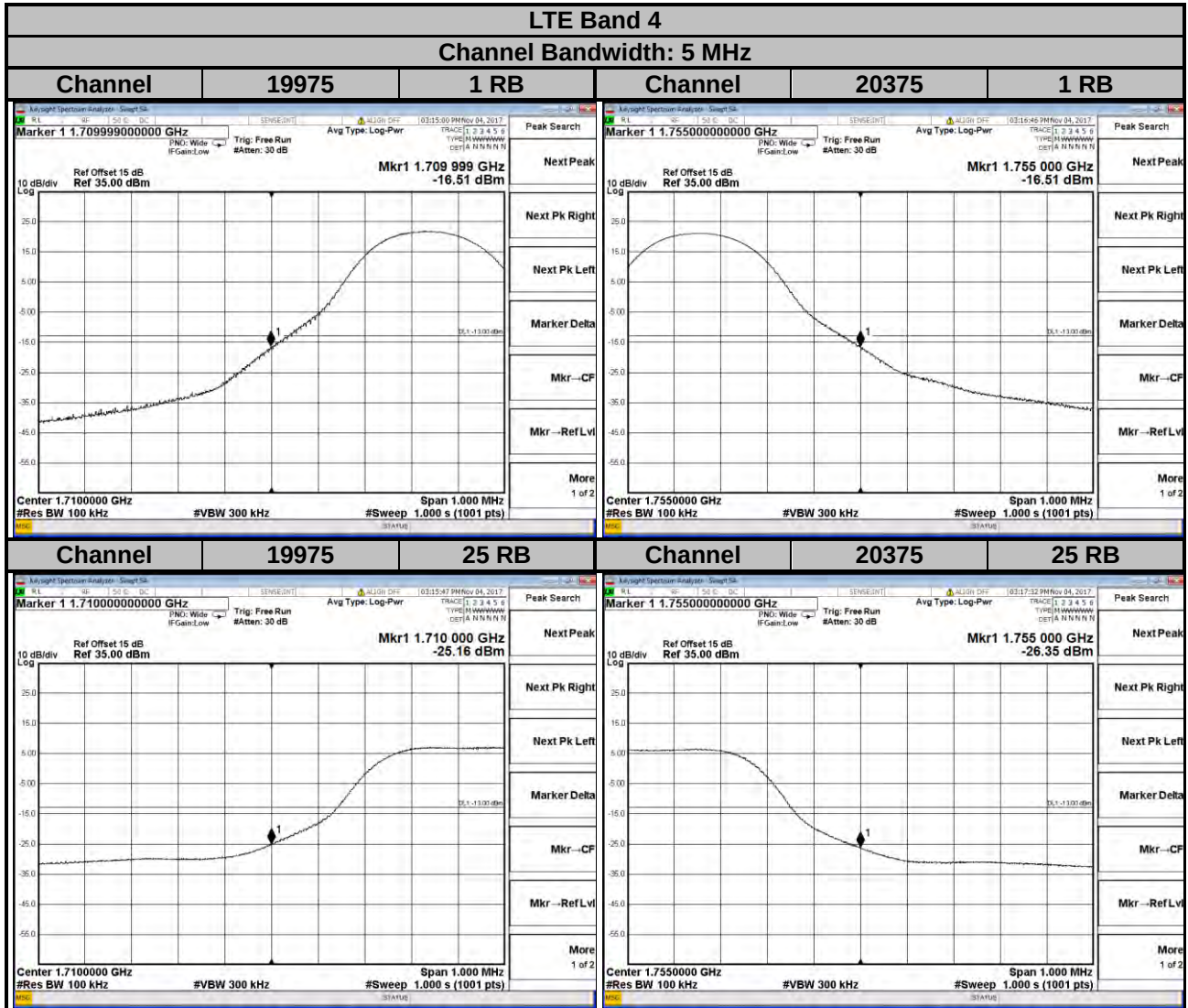
4.4.3 Test Procedures

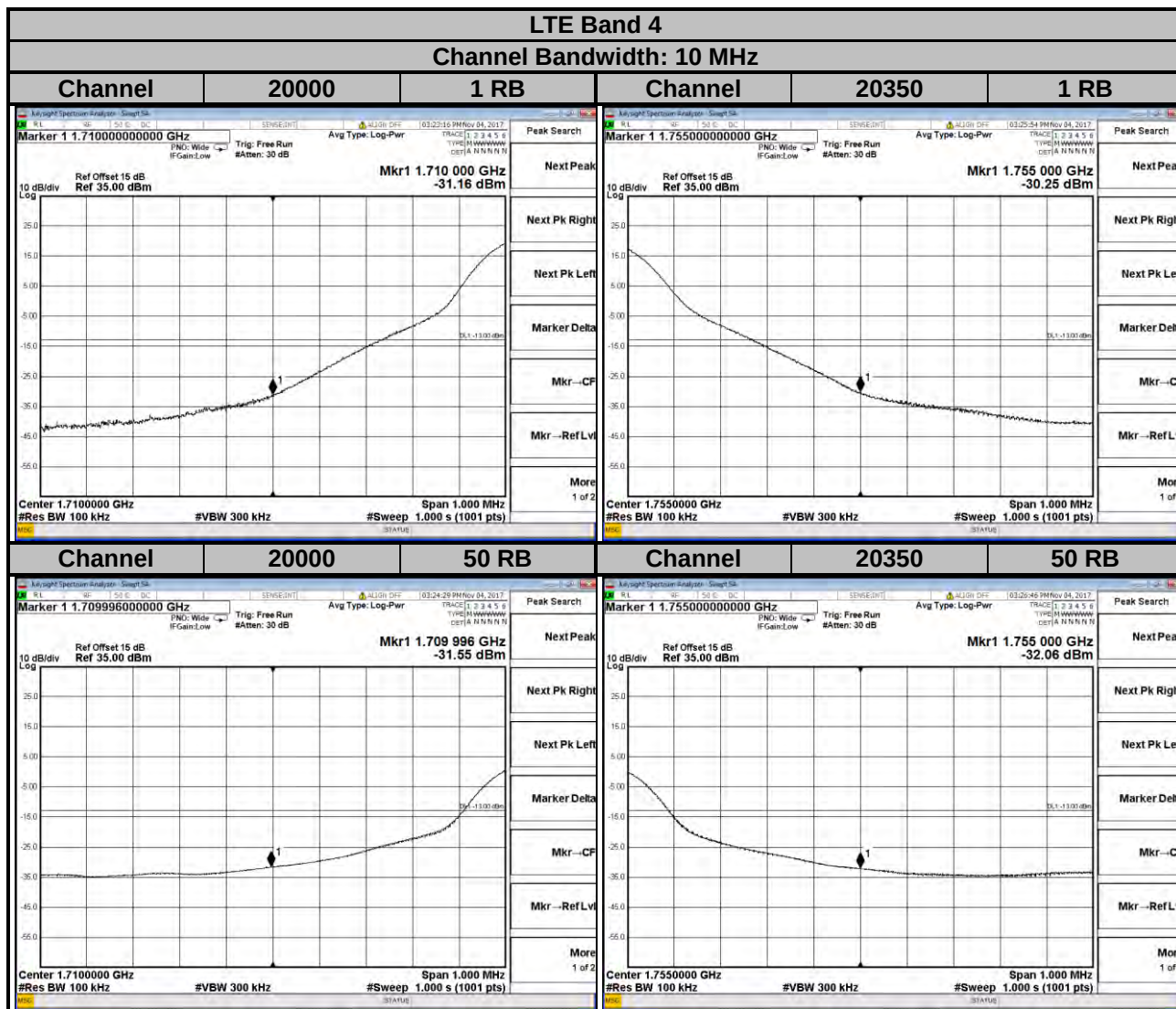
- All measurements were done at low and high operational frequency range.
- The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 13 kHz and VB of the spectrum is 51 kHz (LTE Bandwidth 1.4 MHz).
- The center frequency of spectrum is the band edge frequency 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 100 kHz and VB of the spectrum is 300 kHz (LTE Bandwidth 5 MHz/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 180 kHz and VB of the spectrum is 560 kHz (LTE Bandwidth 20 MHz).
- Record the max. trace plot into the test report.

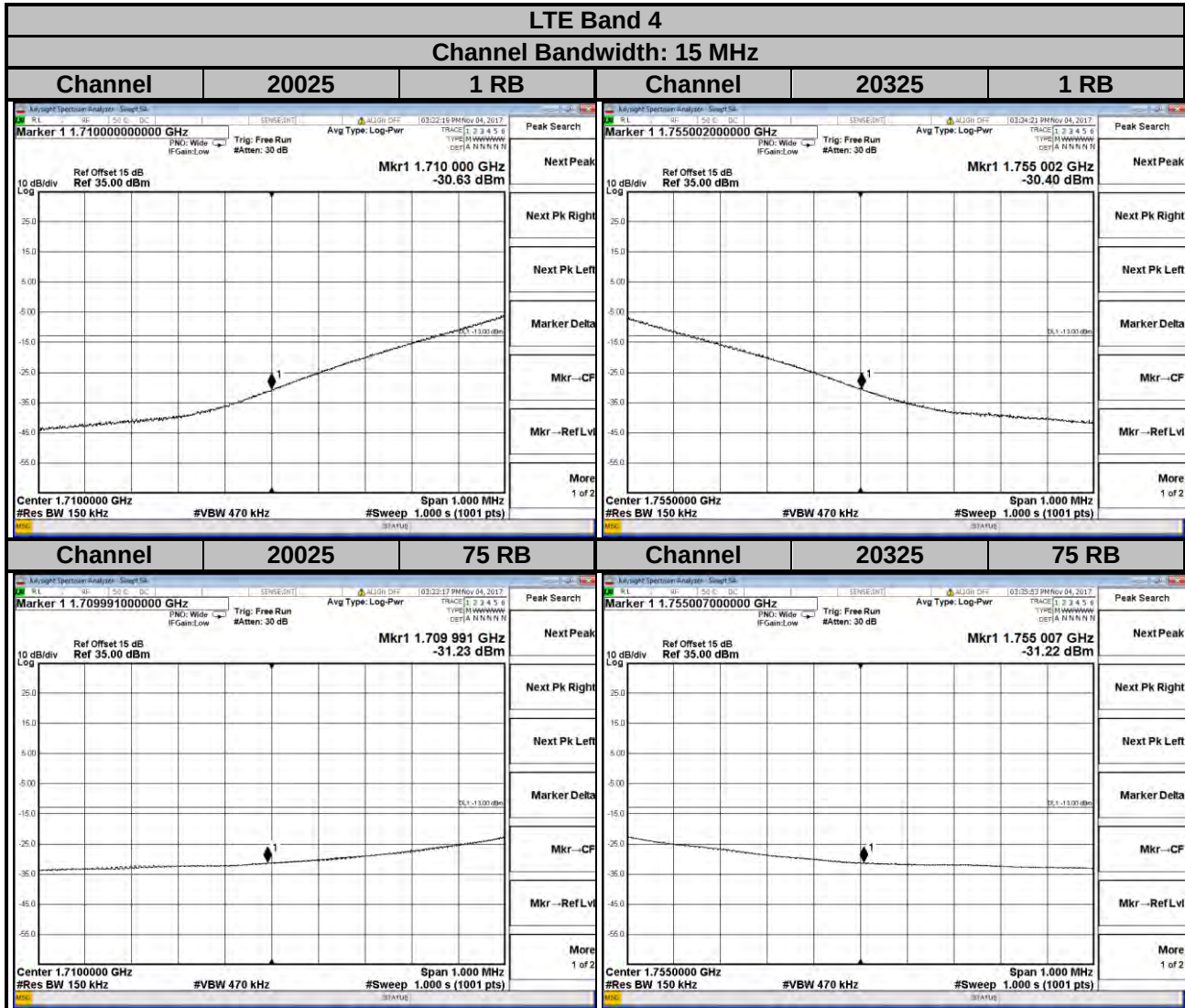
4.4.4 Test Results

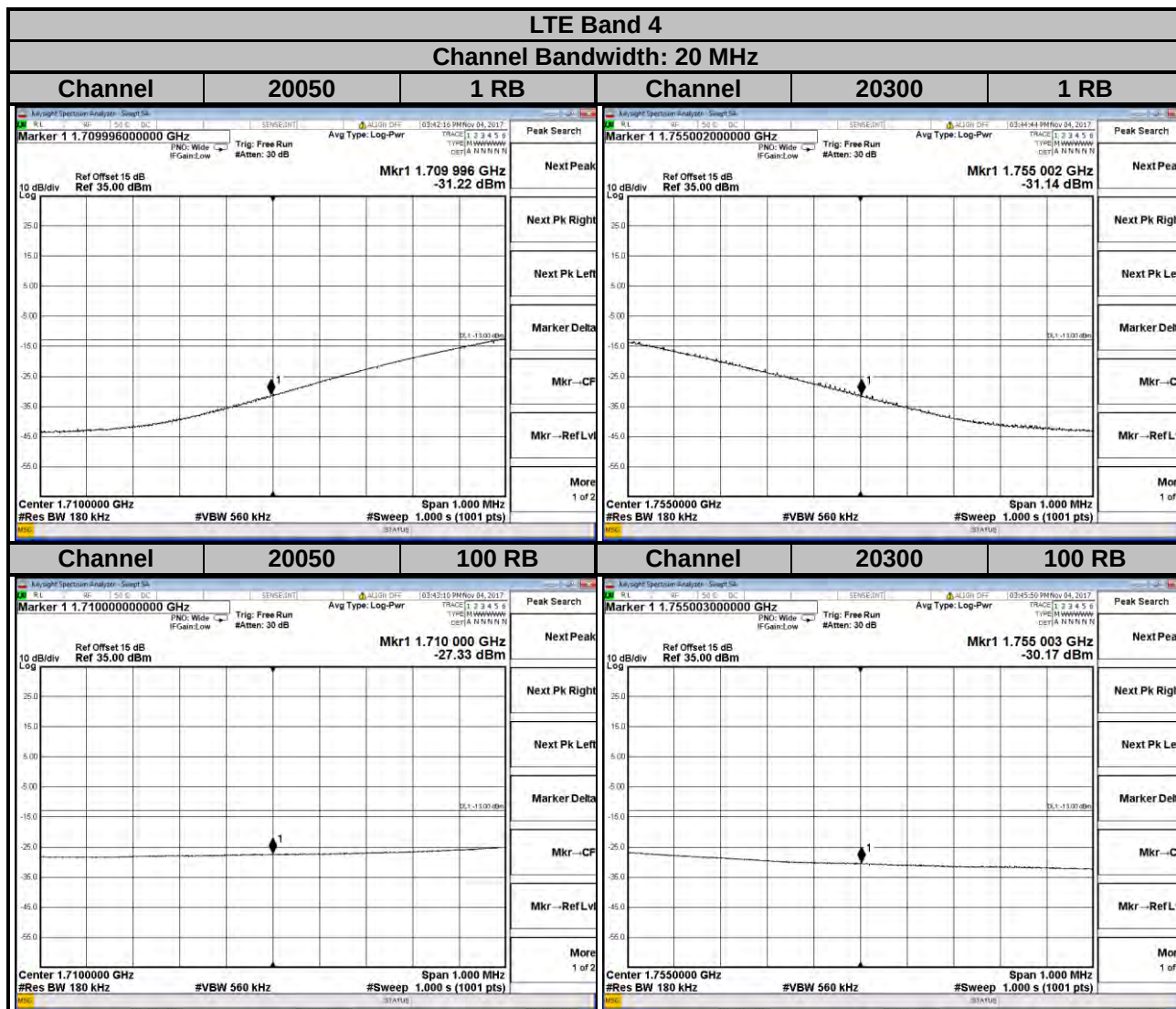


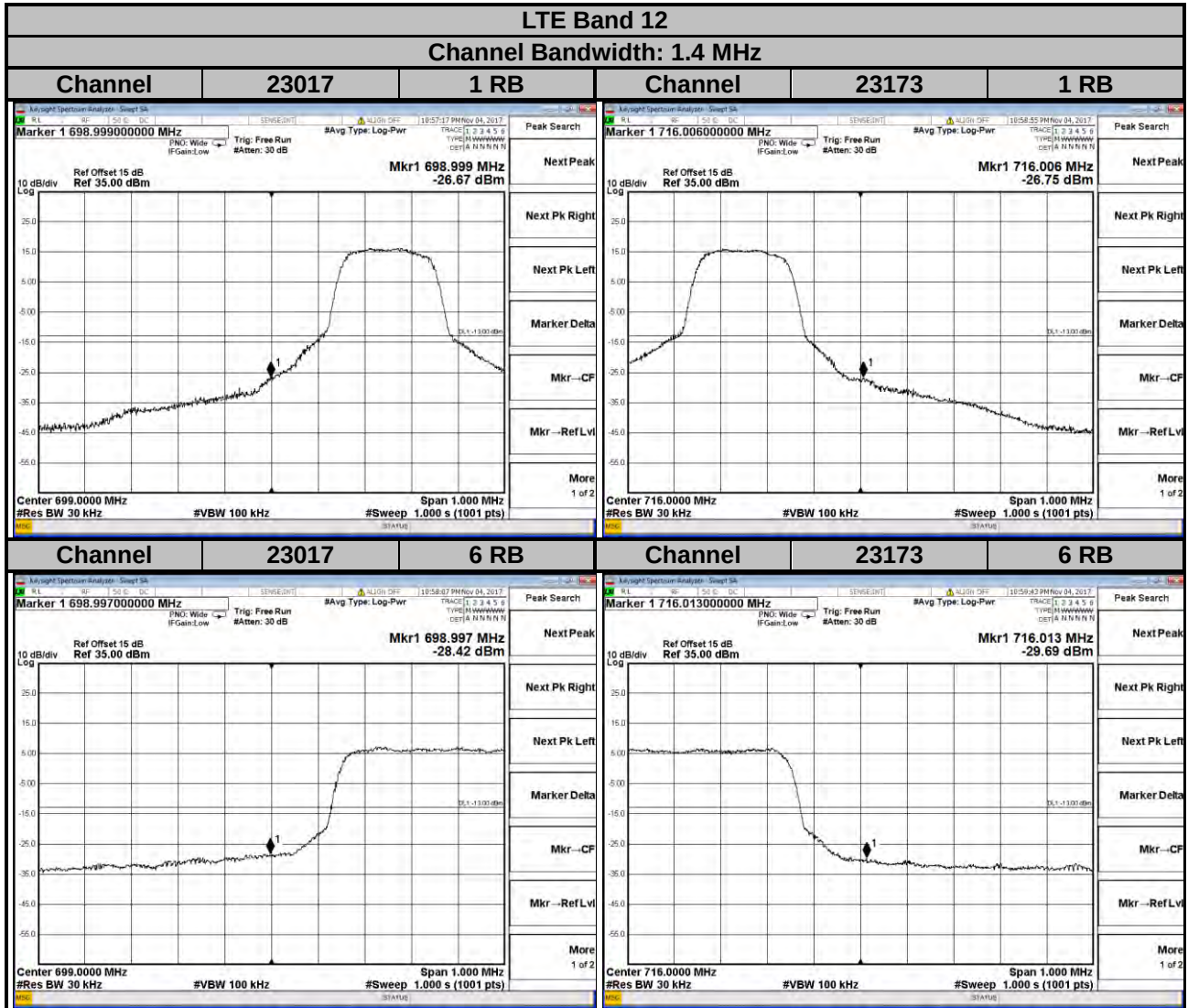


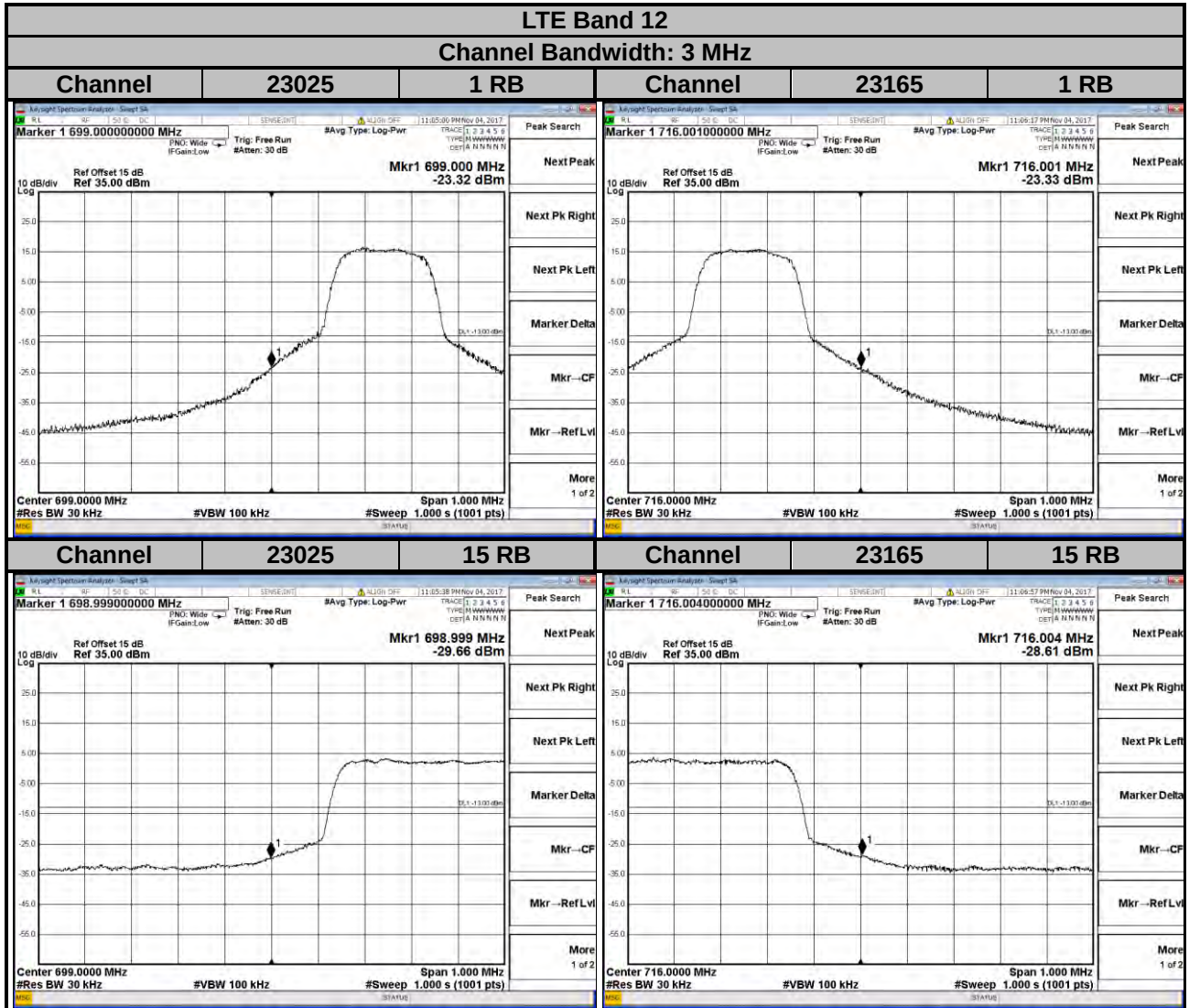


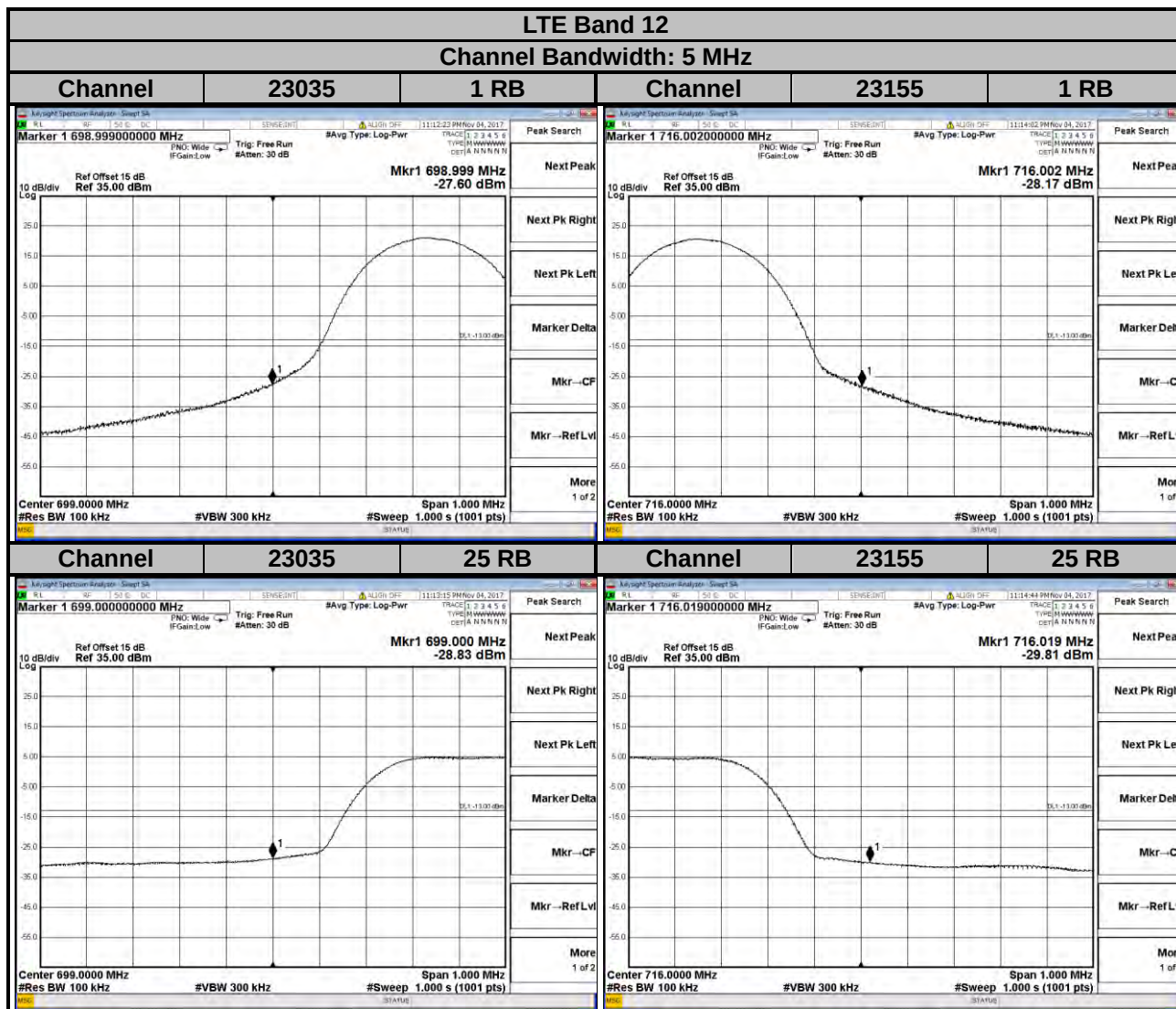


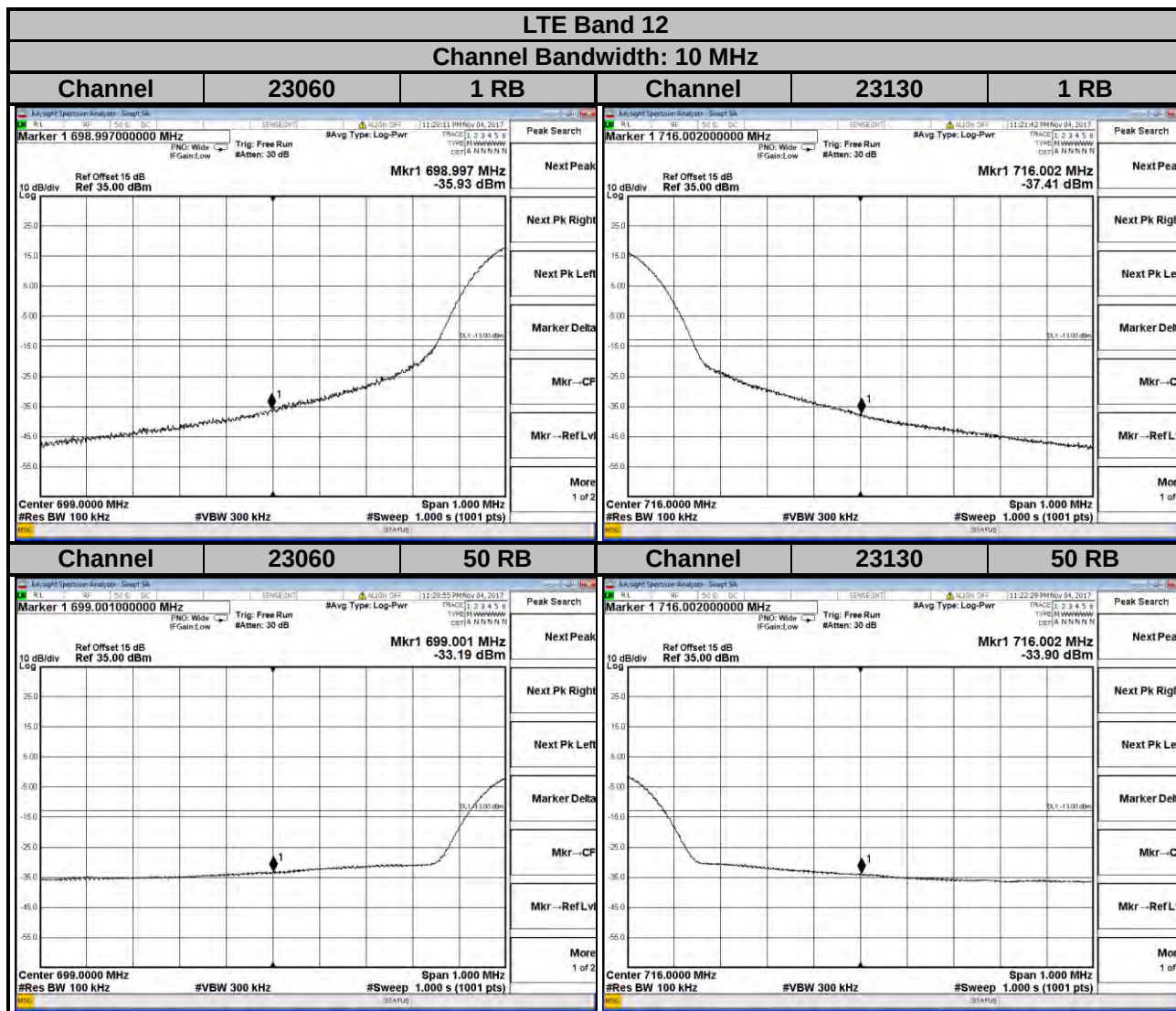










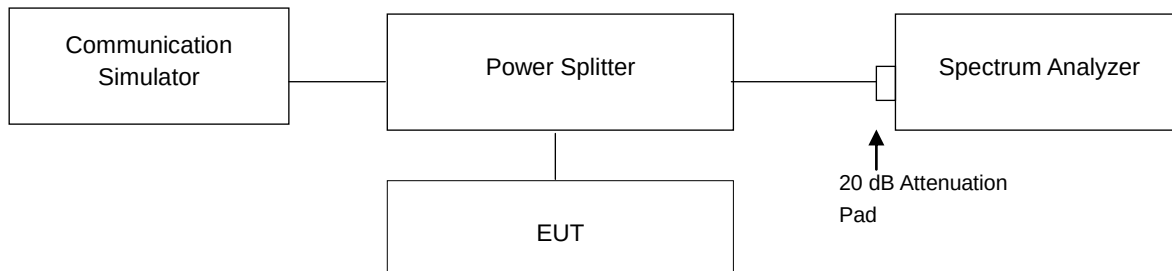


4.5 Peak to Average Ratio

4.5.1 Limits of Peak to Average Ratio Measurement

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

4.5.2 Test Setup

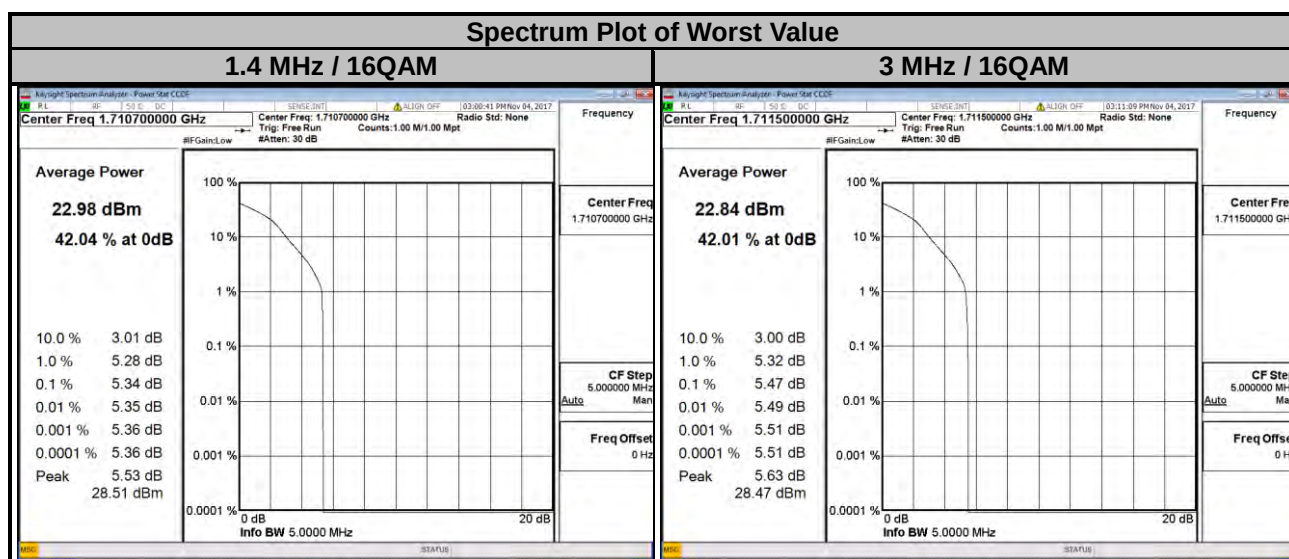


4.5.3 Test Procedures

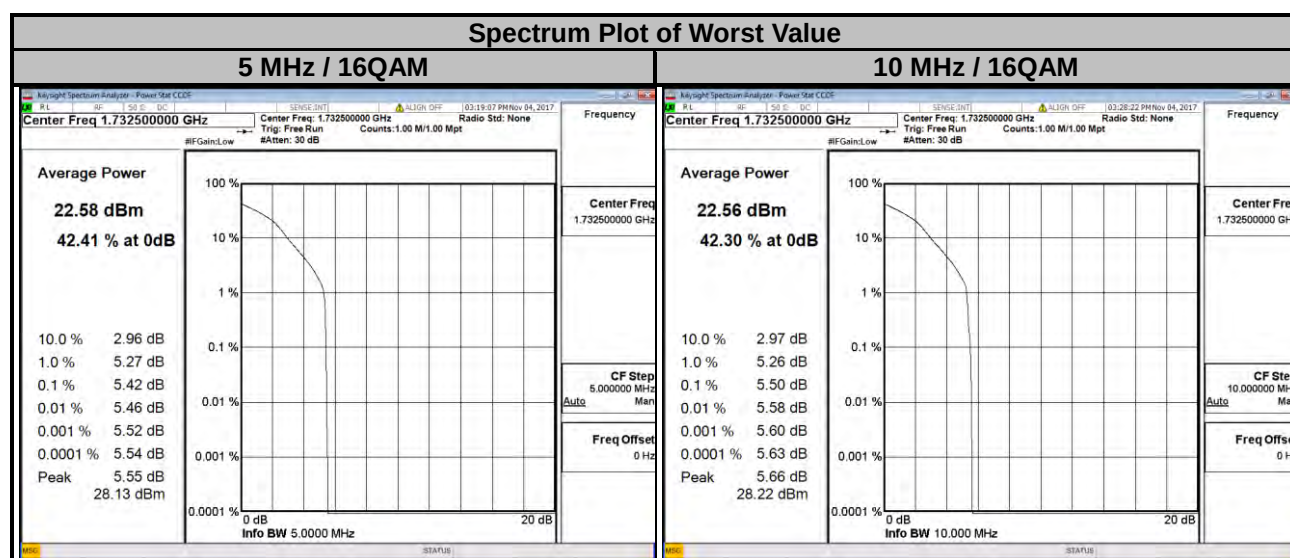
1. Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1 %.

4.5.4 Test Results

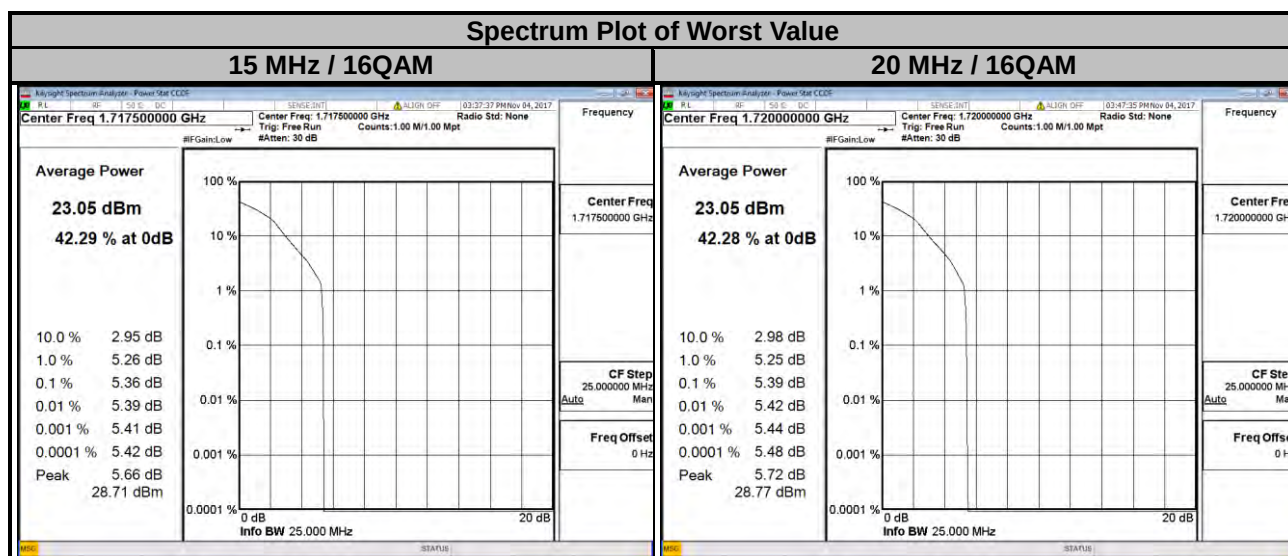
LTE Band 4							
Channel Bandwidth: 1.4 MHz				Channel Bandwidth: 3 MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
19957	1710.7	4.49	5.34	19965	1711.5	4.58	5.47
20175	1732.5	4.39	5.28	20175	1732.5	4.46	5.36
20393	1754.3	3.71	4.44	20385	1753.5	3.87	4.79



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	4.54	5.33	20000	1715.0	4.39	5.19
20175	1732.5	4.58	5.42	20175	1732.5	4.69	5.50
20375	1752.5	4.02	4.78	20350	1750.0	3.93	4.74



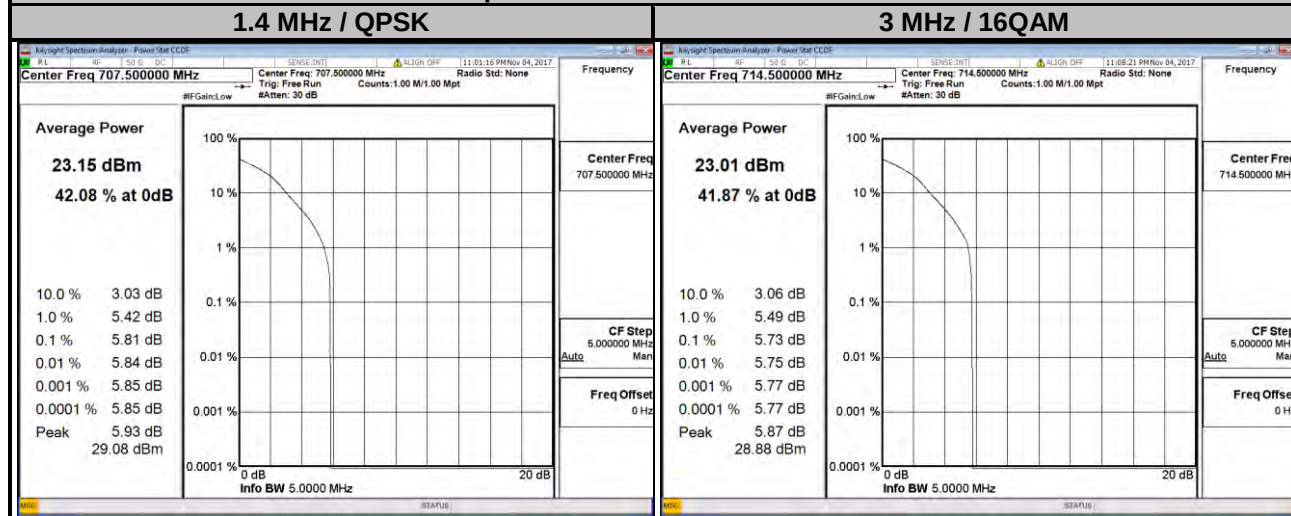
LTE Band 4							
Channel Bandwidth: 15 MHz				Channel Bandwidth: 20 MHz			
Channel	Frequency (MHz)	Peak to Average Ratio (dB)		Channel	Frequency (MHz)	Peak to Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
20025	1717.5	4.51	5.36	20050	1720.0	4.61	5.39
20175	1732.5	4.59	5.30	20175	1732.5	4.59	5.36
20325	1747.5	3.68	4.46	20300	1745.0	3.90	4.69



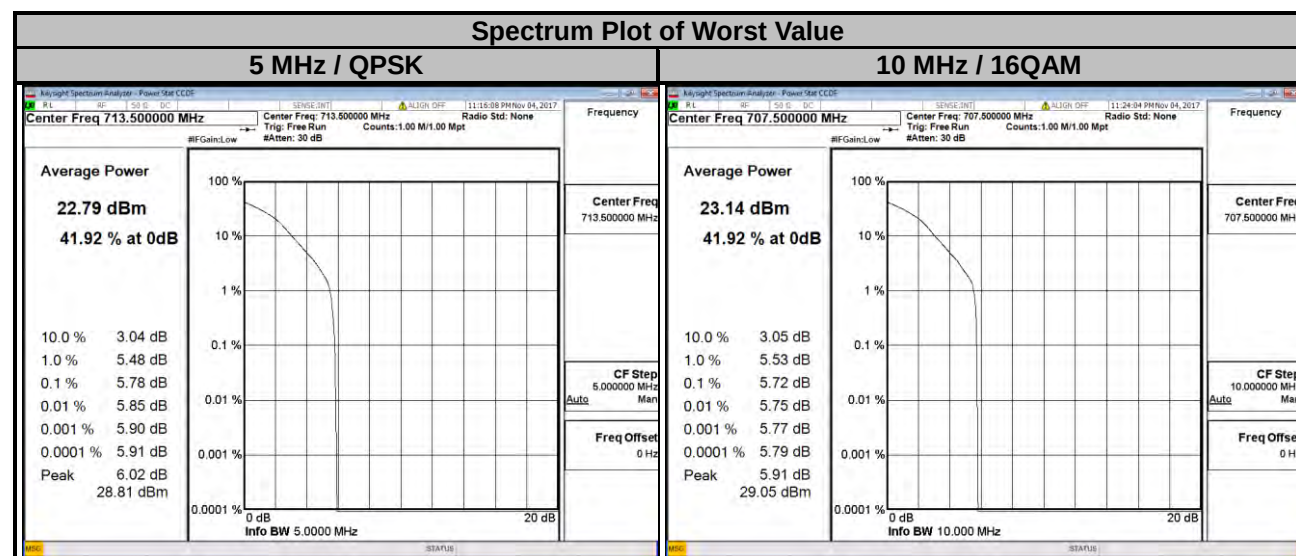
LTE Band 12

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
23017	699.7	4.45	5.13	23025	700.5	4.44	5.27
23095	707.5	5.13	5.81	23095	707.5	4.88	5.66
23173	715.3	4.51	4.92	23165	714.5	4.93	5.73

Spectrum Plot of Worst Value



LTE Band 12							
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
23035	701.5	4.55	5.30	23060	704.0	4.34	5.05
23095	707.5	4.96	5.67	23095	707.5	4.95	5.72
23155	713.5	4.94	5.78	23130	711.0	4.89	5.62

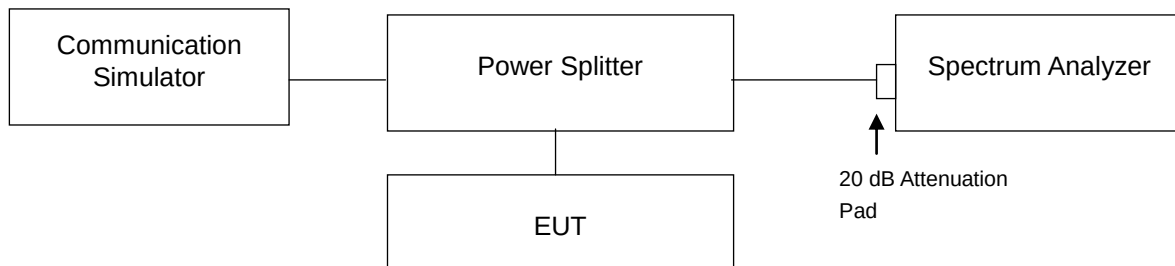


4.6 Conducted Spurious Emissions

4.6.1 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 $43 + 10 \log_{10}(P)$ dB. The limit of emission is equal to -13 dBm.

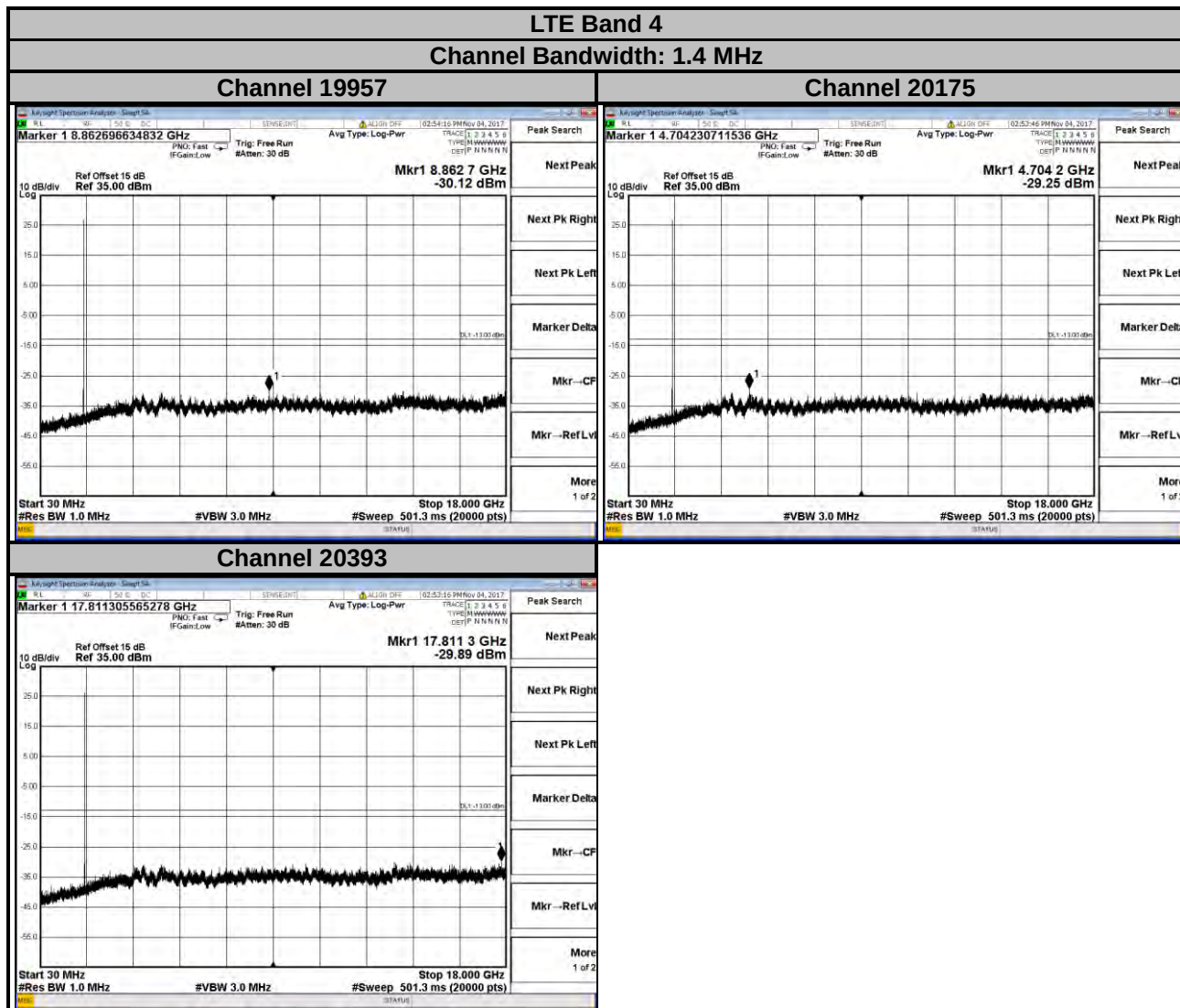
4.6.2 Test Setup

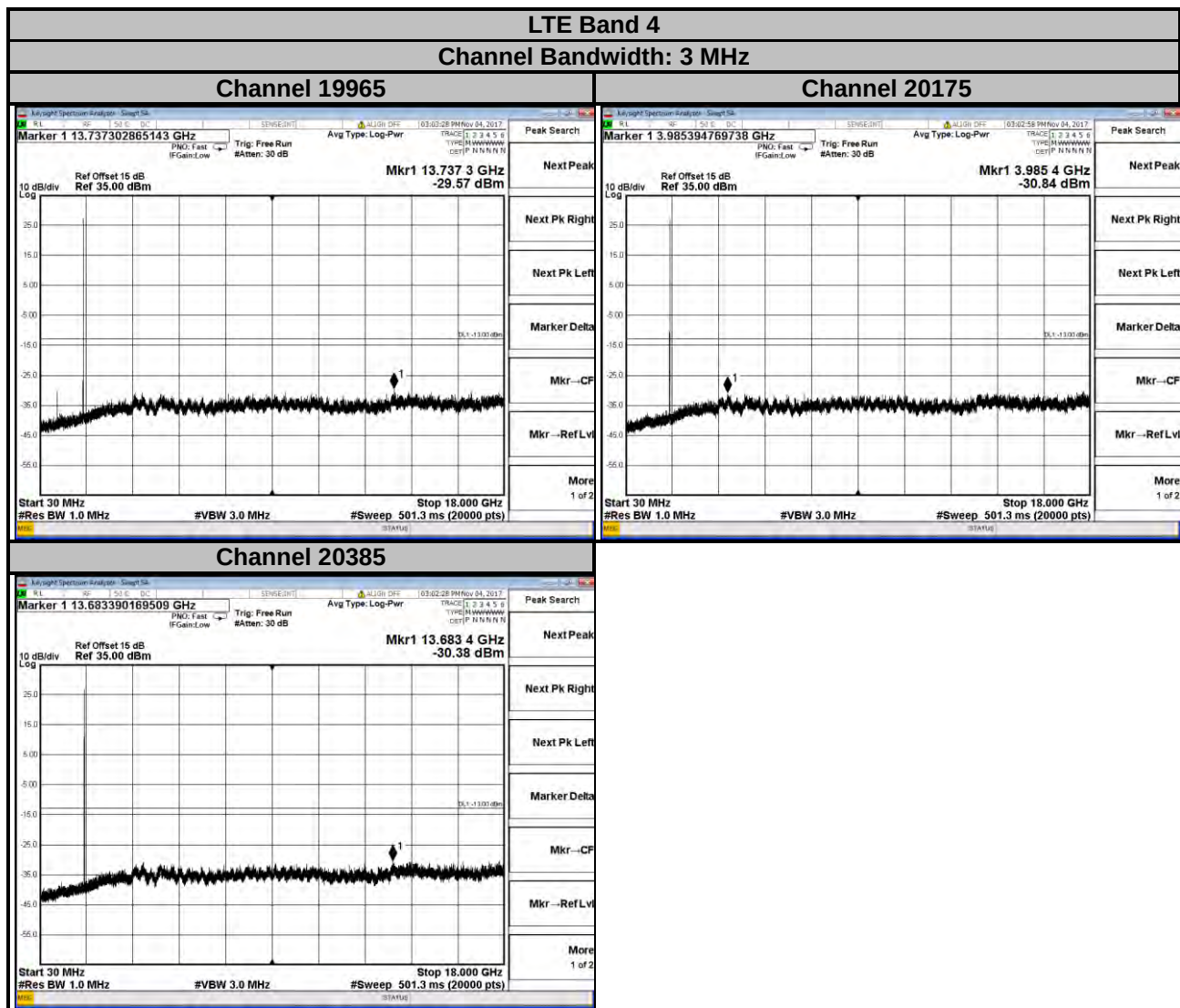


4.6.3 Test Procedure

- 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 30 MHz to 18 GHz for LTE Band 4. 10 dB attenuation pad is connected with spectrum. RBW = 100 kHz and VBW = 300 kHz are used for conducted emission measurement.

4.6.4 Test Results

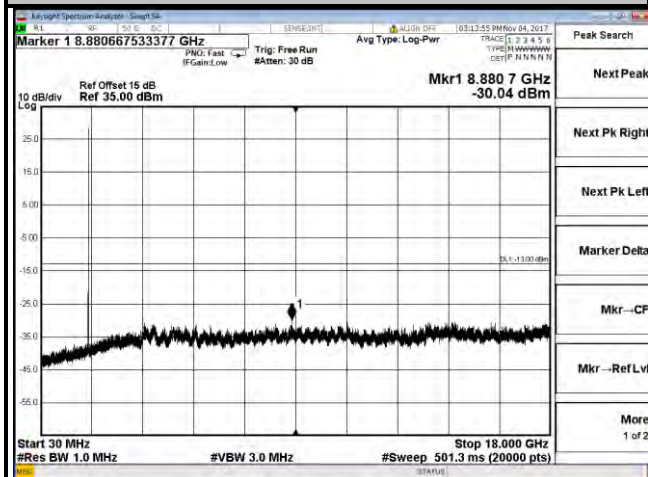




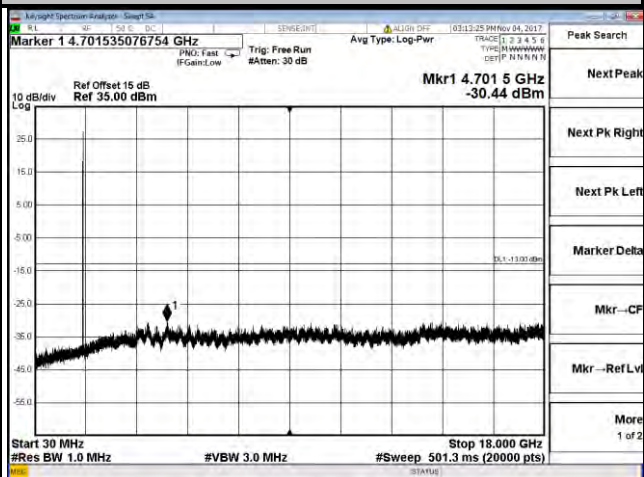
LTE Band 4

Channel Bandwidth: 5 MHz

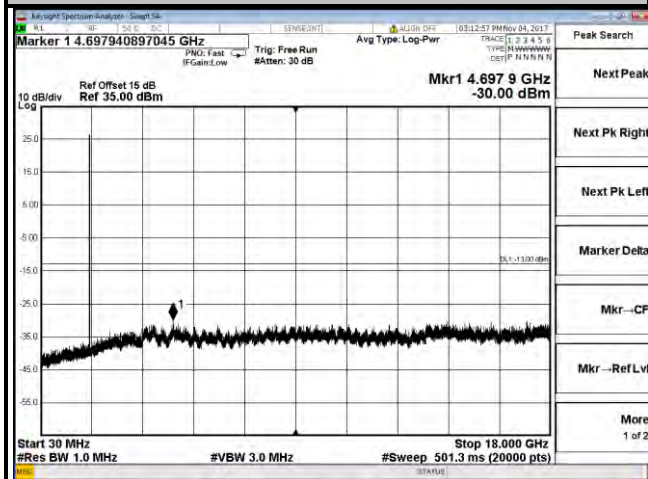
Channel 19975



Channel 10175



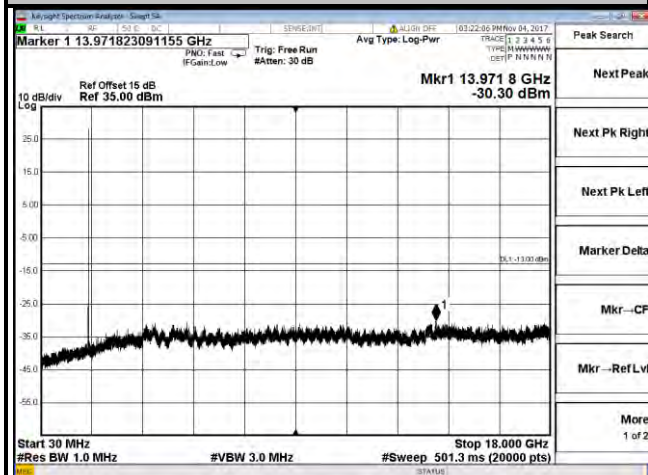
Channel 20375



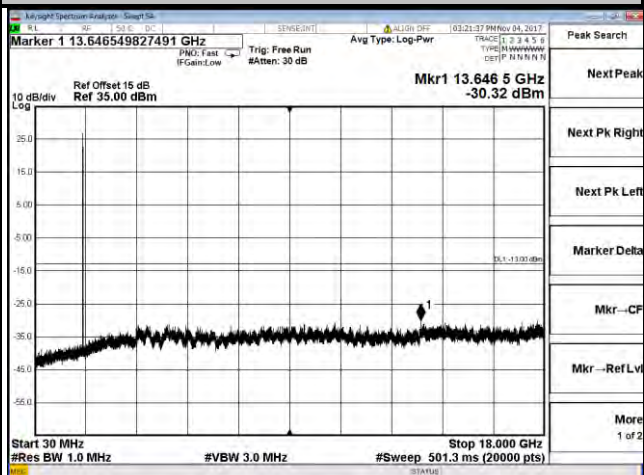
LTE Band 4

Channel Bandwidth: 10 MHz

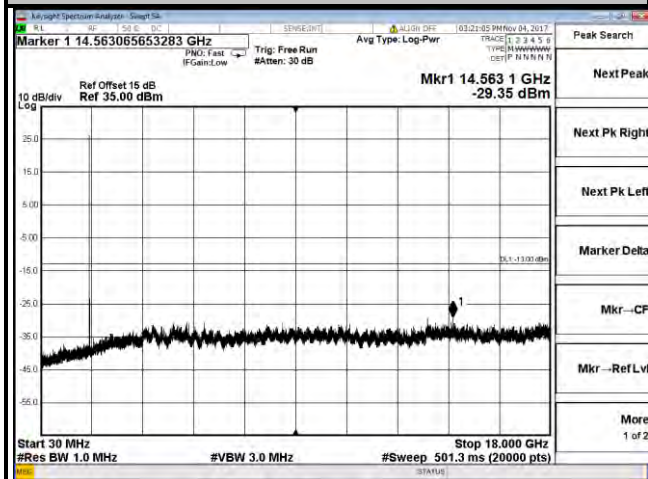
Channel 20000



Channel 17175



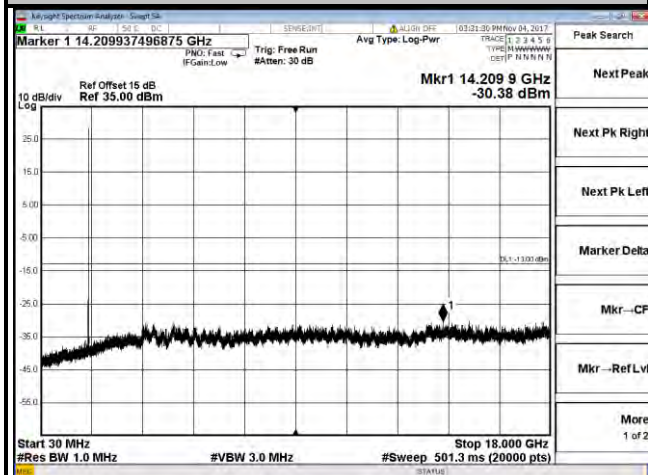
Channel 20350



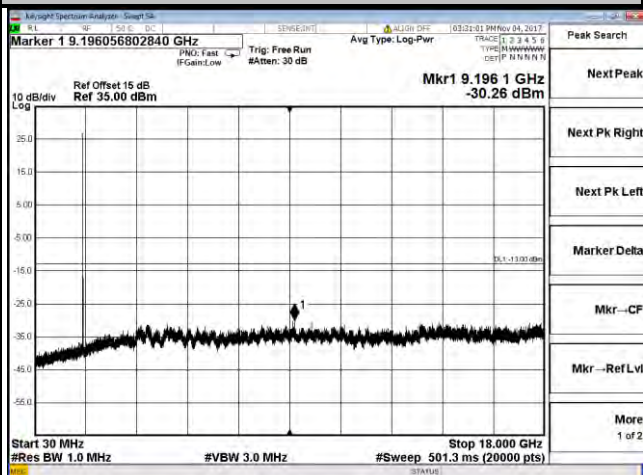
LTE Band 4

Channel Bandwidth: 15 MHz

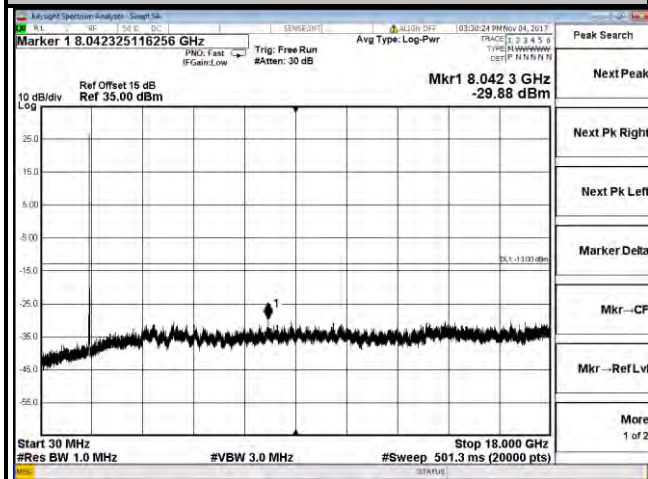
Channel 20025



Channel 10175



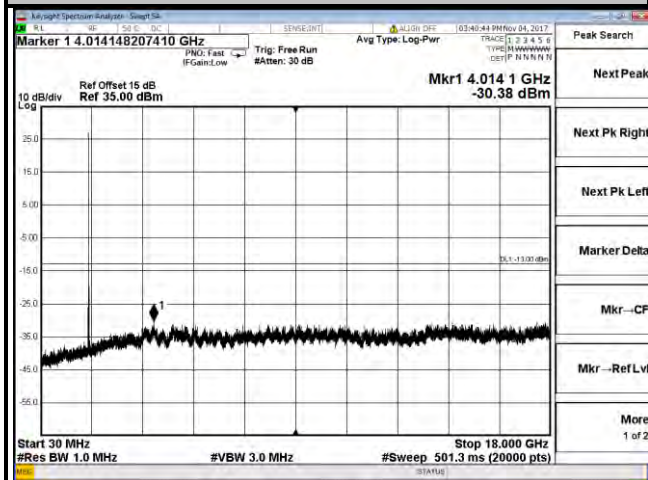
Channel 20325



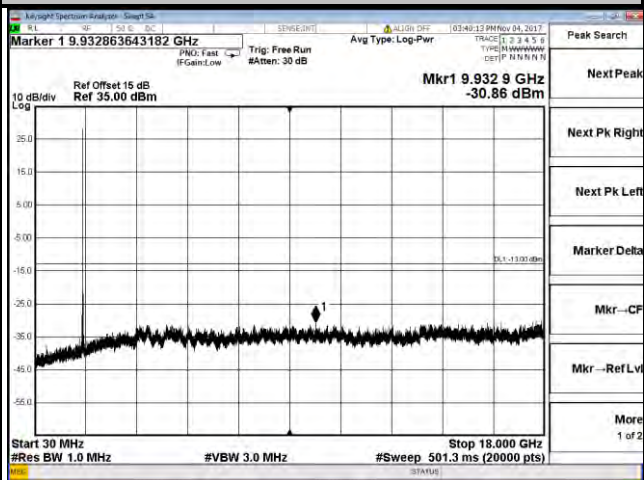
LTE Band 4

Channel Bandwidth: 20 MHz

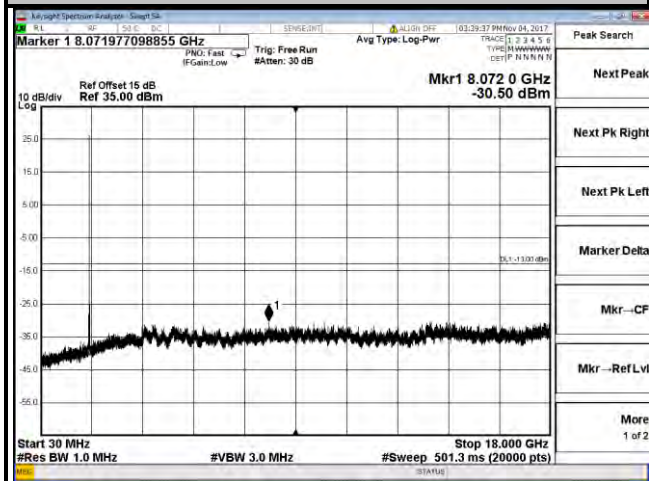
Channel 20050

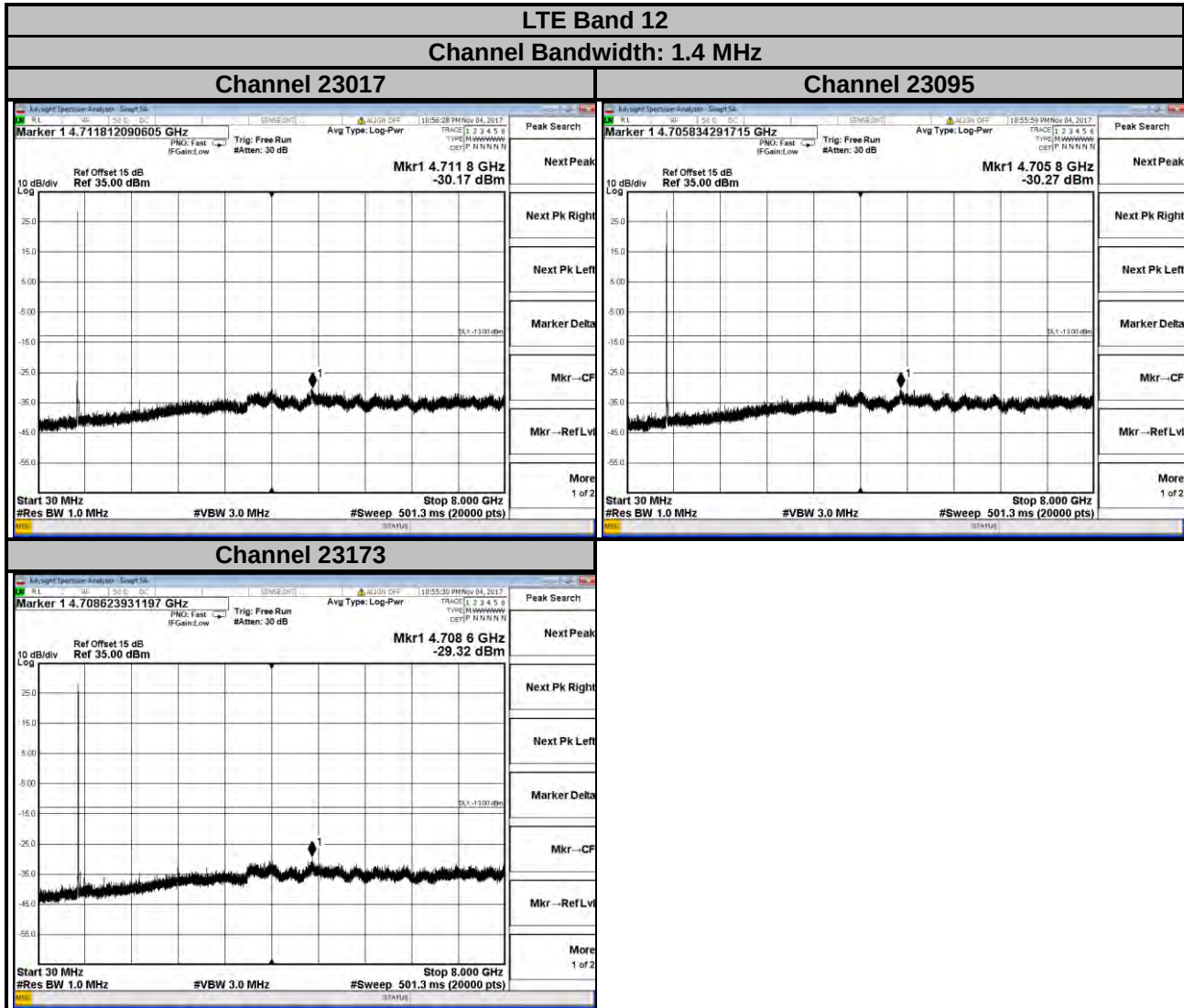


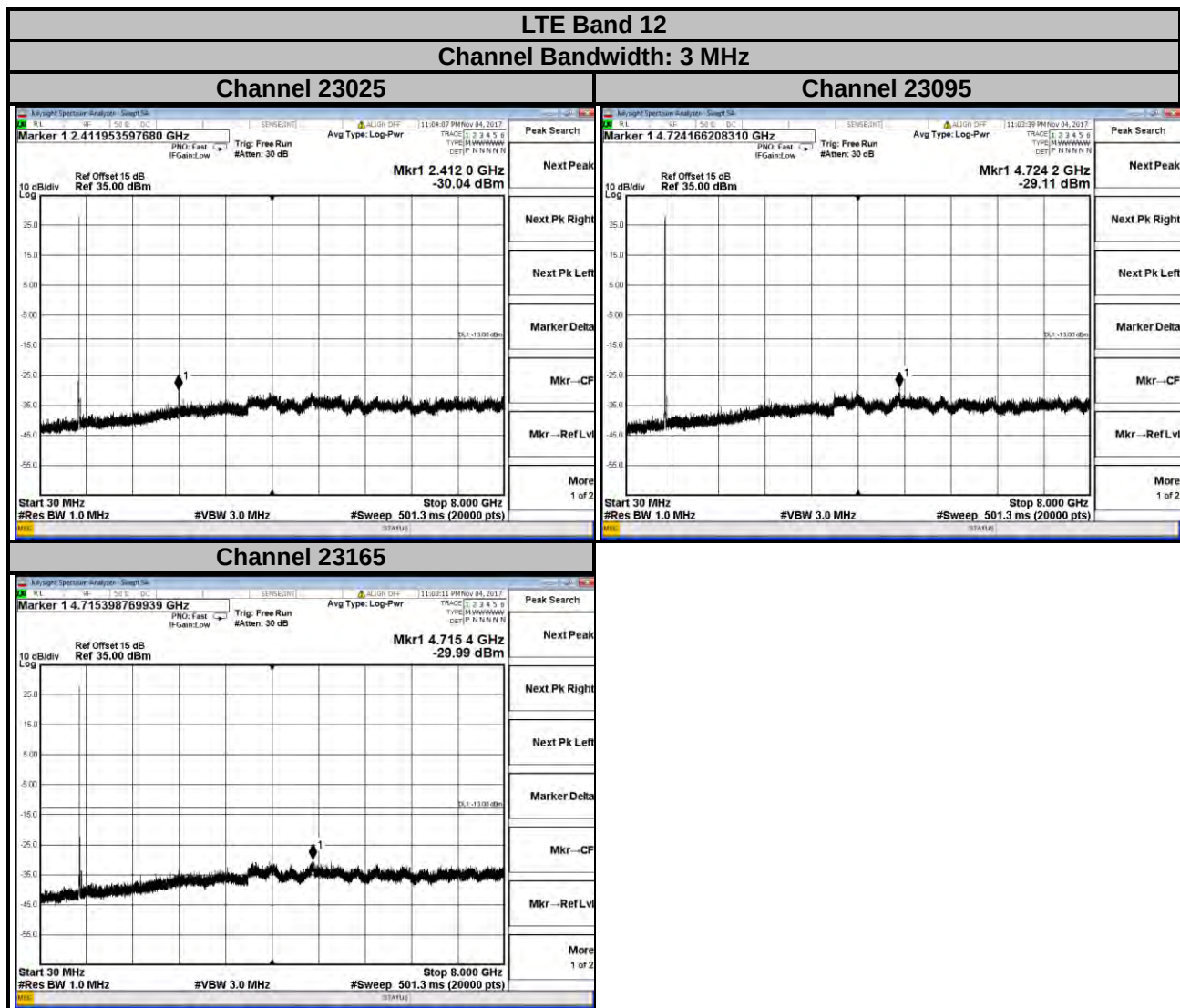
Channel 17175

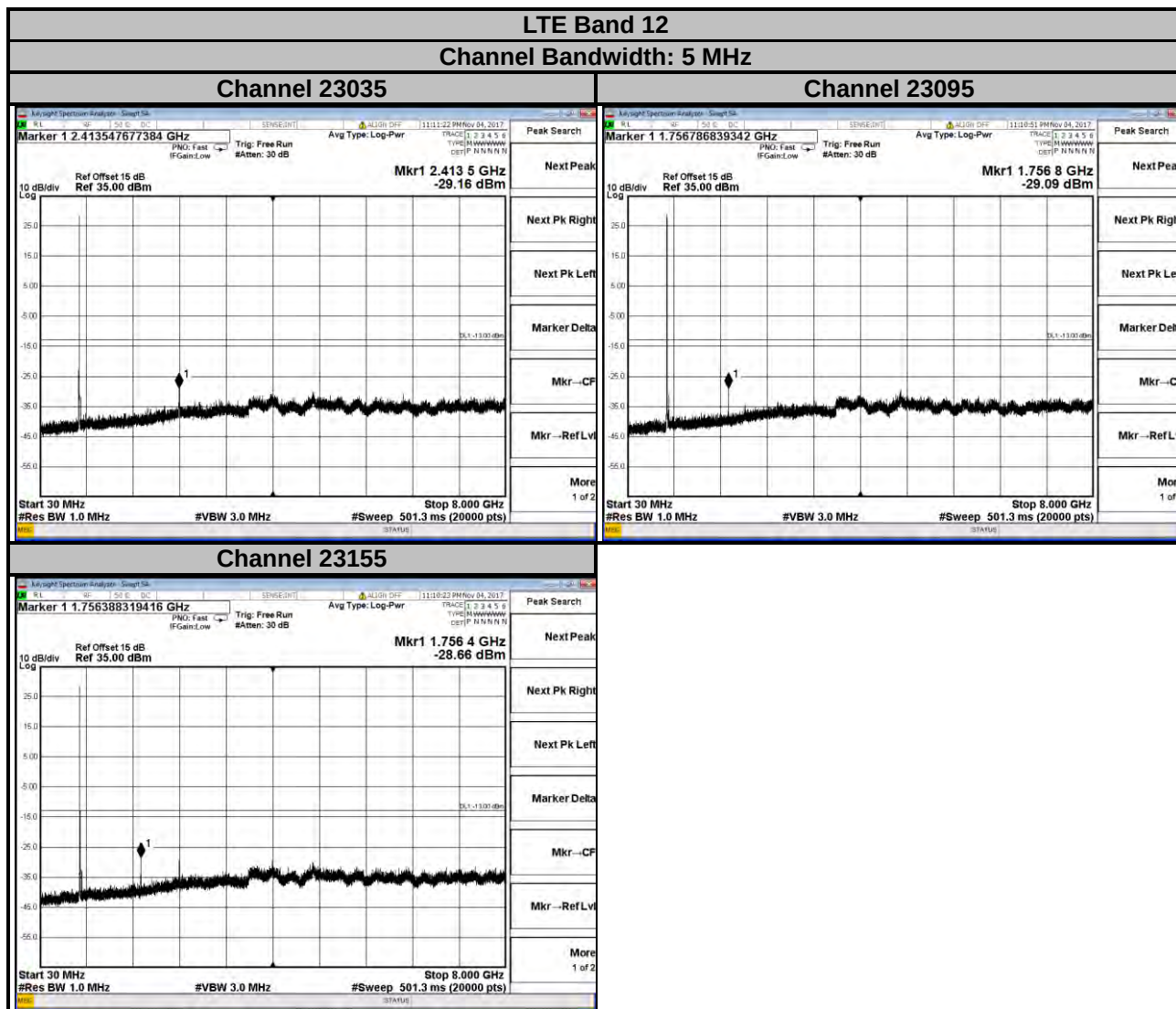


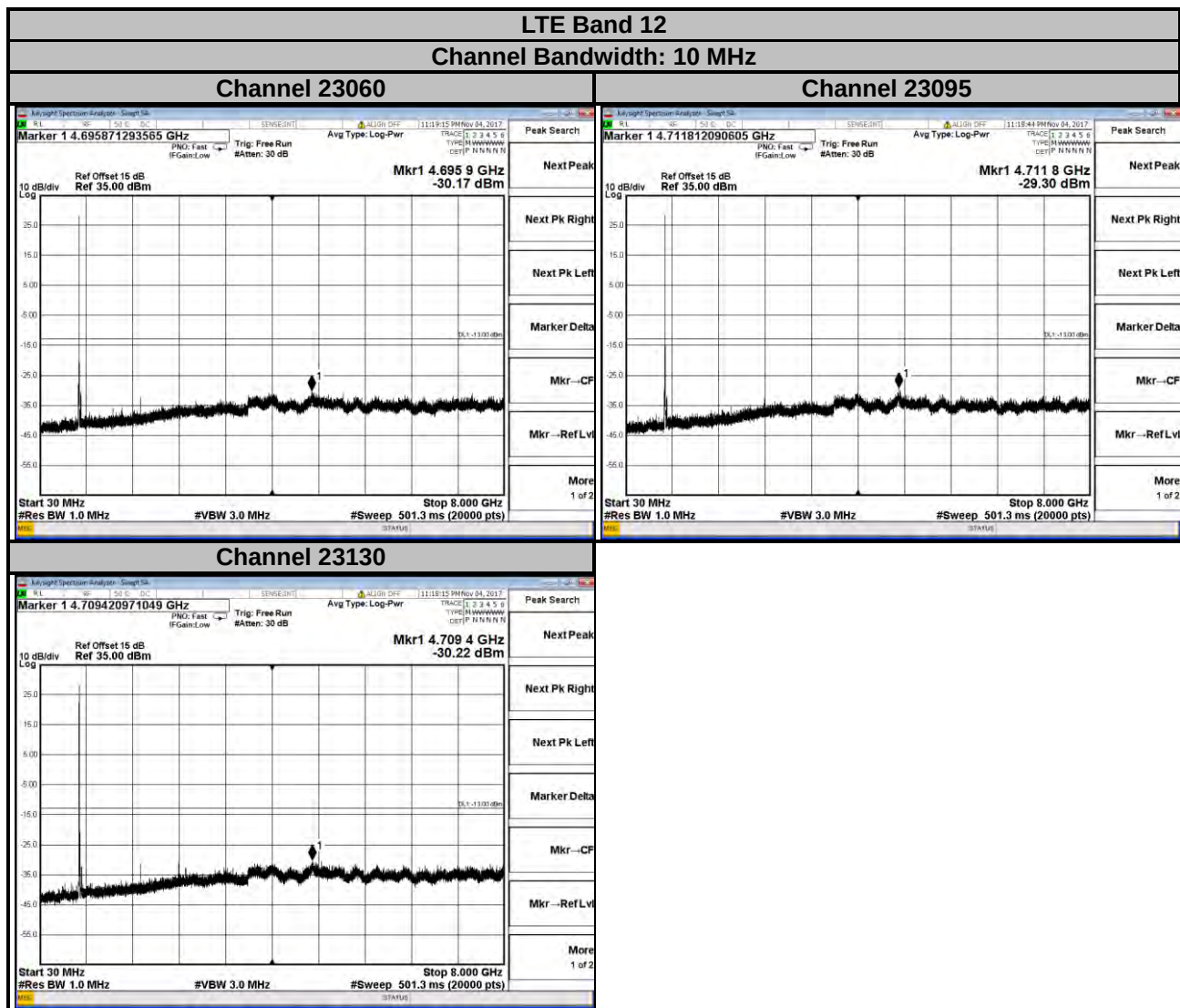
Channel 20300











4.7 Radiated Emission Measurement

4.7.1 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 $43 + 10 \log_{10}(P)$ dB. The limit of emission is equal to -13 dBm.

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

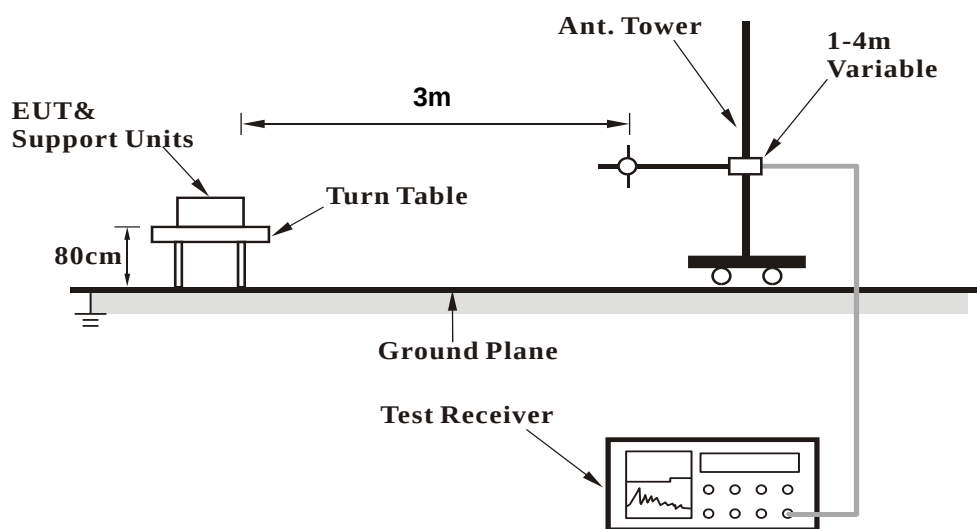
Note: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

4.7.3 Deviation from Test Standard

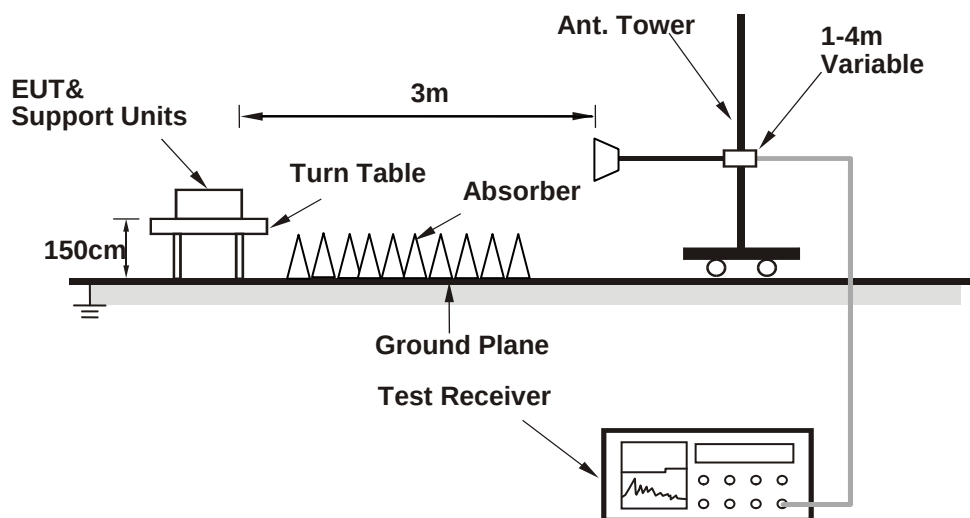
No deviation.

4.7.4 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).

4.7.5 Test Results

Below 1GHz

LTE Band 4

Channel Bandwidth: 1.4MHz

Mode	TX channel 19957 (1710.7MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	20deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-52.80	-29.40	-19.40	-48.80	-13.00	-35.80
2	237.58	-50.20	-55.80	-1.40	-57.20	-13.00	-44.20
3	375.32	-55.30	-60.80	3.70	-57.10	-13.00	-44.10
4	624.61	-55.30	-57.00	3.70	-53.30	-13.00	-40.30
5	768.17	-65.10	-64.60	4.00	-60.60	-13.00	-47.60
6	874.87	-65.60	-61.80	3.40	-58.40	-13.00	-45.40
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	62.98	-47.20	-51.50	-2.40	-53.90	-13.00	-40.90
2	236.61	-51.30	-51.90	-1.50	-53.40	-13.00	-40.40
3	375.32	-54.80	-58.90	3.70	-55.20	-13.00	-42.20
4	537.31	-49.90	-52.50	3.80	-48.70	-13.00	-35.70
5	624.61	-49.10	-47.90	3.70	-44.20	-13.00	-31.20
6	874.87	-63.70	-59.60	3.40	-56.20	-13.00	-43.20

Remarks:

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

Channel Bandwidth: 3MHz

Mode	TX channel 19965 (1711.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	20deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	31.94	-54.70	-33.00	-18.30	-51.30	-13.00	-38.30
2	202.66	-50.80	-56.70	-2.10	-58.80	-13.00	-45.80
3	375.32	-54.50	-60.00	3.70	-56.30	-13.00	-43.30
4	624.61	-55.90	-57.60	3.70	-53.90	-13.00	-40.90
5	768.17	-63.90	-63.40	4.00	-59.40	-13.00	-46.40
6	874.87	-67.10	-63.30	3.40	-59.90	-13.00	-46.90
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	32.91	-39.50	-32.40	-17.70	-50.10	-13.00	-37.10
2	205.57	-55.70	-55.90	-2.00	-57.90	-13.00	-44.90
3	375.32	-55.00	-59.10	3.70	-55.40	-13.00	-42.40
4	624.61	-50.00	-48.80	3.70	-45.10	-13.00	-32.10
5	849.65	-66.10	-62.70	3.40	-59.30	-13.00	-46.30
6	950.53	-68.50	-62.90	3.70	-59.20	-13.00	-46.20

Remarks:

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

Channel Bandwidth: 5MHz

Mode	TX channel 19975 (1712.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	20deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	34.85	-58.70	-39.10	-16.50	-55.60	-13.00	-42.60
2	132.82	-55.60	-58.40	-3.30	-61.70	-13.00	-48.70
3	237.58	-47.60	-53.20	-1.40	-54.60	-13.00	-41.60
4	375.32	-54.90	-60.40	3.70	-56.70	-13.00	-43.70
5	624.61	-53.50	-55.20	3.70	-51.50	-13.00	-38.50
6	874.87	-64.50	-60.70	3.40	-57.30	-13.00	-44.30
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	67.83	-46.60	-52.50	-1.00	-53.50	-13.00	-40.50
2	236.61	-51.10	-51.70	-1.50	-53.20	-13.00	-40.20
3	375.32	-52.80	-56.90	3.70	-53.20	-13.00	-40.20
4	533.43	-54.50	-57.20	3.80	-53.40	-13.00	-40.40
5	624.61	-49.10	-47.90	3.70	-44.20	-13.00	-31.20
6	874.87	-65.00	-60.90	3.40	-57.50	-13.00	-44.50

Remarks:

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

Channel Bandwidth: 10MHz

Mode	TX channel 20000 (1715.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	20deg. C, 65%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	30.97	-57.40	-34.90	-18.80	-53.70	-13.00	-40.70
2	237.58	-48.10	-53.70	-1.40	-55.10	-13.00	-42.10
3	375.32	-54.60	-60.10	3.70	-56.40	-13.00	-43.40
4	624.61	-53.90	-55.60	3.70	-51.90	-13.00	-38.90
5	768.17	-65.00	-64.50	4.00	-60.50	-13.00	-47.50
6	874.87	-64.80	-61.00	3.40	-57.60	-13.00	-44.60
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	68.80	-46.10	-51.90	-0.80	-52.70	-13.00	-39.70
2	237.58	-52.90	-53.50	-1.40	-54.90	-13.00	-41.90
3	375.32	-54.60	-58.70	3.70	-55.00	-13.00	-42.00
4	509.18	-56.20	-59.90	3.80	-56.10	-13.00	-43.10
5	624.61	-48.90	-47.70	3.70	-44.00	-13.00	-31.00
6	874.87	-64.20	-60.10	3.40	-56.70	-13.00	-43.70

Remarks:

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

Channel Bandwidth: 15MHz

Mode	TX channel 20025 (1717.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	20deg. C, 65%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	30.97	-51.80	-29.30	-18.80	-48.10	-13.00	-35.10
2	236.61	-47.40	-53.00	-1.50	-54.50	-13.00	-41.50
3	375.32	-54.40	-59.90	3.70	-56.20	-13.00	-43.20
4	624.61	-54.00	-55.70	3.70	-52.00	-13.00	-39.00
5	729.37	-60.70	-60.60	3.60	-57.00	-13.00	-44.00
6	874.87	-64.60	-60.80	3.40	-57.40	-13.00	-44.40
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	39.70	-42.80	-38.70	-13.70	-52.40	-13.00	-39.40
2	236.61	-52.50	-53.10	-1.50	-54.60	-13.00	-41.60
3	375.32	-53.70	-57.80	3.70	-54.10	-13.00	-41.10
4	540.22	-53.10	-55.70	3.80	-51.90	-13.00	-38.90
5	624.61	-48.70	-47.50	3.70	-43.80	-13.00	-30.80
6	874.87	-63.10	-59.00	3.40	-55.60	-13.00	-42.60

Remarks:

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

Channel Bandwidth: 20MHz

Mode	TX channel 20050 (1720.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	20deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	31.94	-56.60	-34.90	-18.30	-53.20	-13.00	-40.20
2	238.55	-48.70	-54.10	-1.50	-55.60	-13.00	-42.60
3	375.32	-54.90	-60.40	3.70	-56.70	-13.00	-43.70
4	624.61	-53.70	-55.40	3.70	-51.70	-13.00	-38.70
5	796.30	-64.90	-63.30	4.00	-59.30	-13.00	-46.30
6	874.87	-64.60	-60.80	3.40	-57.40	-13.00	-44.40
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	32.91	-40.70	-33.60	-17.70	-51.30	-13.00	-38.30
2	235.64	-52.10	-52.80	-1.50	-54.30	-13.00	-41.30
3	375.32	-53.80	-57.90	3.70	-54.20	-13.00	-41.20
4	556.71	-56.50	-58.60	3.70	-54.90	-13.00	-41.90
5	624.61	-49.10	-47.90	3.70	-44.20	-13.00	-31.20
6	849.65	-63.90	-60.50	3.40	-57.10	-13.00	-44.10

Remarks:

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

LTE Band 12

Channel Bandwidth: 1.4MHz

Mode	TX channel 23017 (699.7MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	20deg. C, 65%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	30.97	-49.10	-26.60	-18.80	-45.40	-13.00	-32.40
2	236.61	-47.80	-53.40	-1.50	-54.90	-13.00	-41.90
3	375.32	-55.10	-60.60	3.70	-56.90	-13.00	-43.90
4	624.61	-53.60	-55.30	3.70	-51.60	-13.00	-38.60
5	768.17	-63.20	-62.70	4.00	-58.70	-13.00	-45.70
6	836.07	-57.80	-54.70	3.80	-50.90	-13.00	-37.90
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	51.34	-46.50	-46.40	-7.30	-53.70	-13.00	-40.70
2	236.61	-51.30	-51.90	-1.50	-53.40	-13.00	-40.40
3	441.28	-53.60	-57.20	3.50	-53.70	-13.00	-40.70
4	624.61	-49.50	-48.30	3.70	-44.60	-13.00	-31.60
5	746.83	-60.90	-57.60	3.70	-53.90	-13.00	-40.90
6	953.44	-64.80	-59.20	3.80	-55.40	-13.00	-42.40

Remarks:

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

Channel Bandwidth: 3MHz

Mode	TX channel 23025 (700.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	20deg. C, 65%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	33.88	-56.70	-36.70	-17.10	-53.80	-13.00	-40.80
2	237.58	-48.20	-53.80	-1.40	-55.20	-13.00	-42.20
3	375.32	-55.20	-60.70	3.70	-57.00	-13.00	-44.00
4	624.61	-54.20	-55.90	3.70	-52.20	-13.00	-39.20
5	768.17	-63.60	-63.10	4.00	-59.10	-13.00	-46.10
6	836.07	-62.90	-59.80	3.80	-56.00	-13.00	-43.00
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	32.91	-38.40	-31.30	-17.70	-49.00	-13.00	-36.00
2	236.61	-51.10	-51.70	-1.50	-53.20	-13.00	-40.20
3	375.32	-53.90	-58.00	3.70	-54.30	-13.00	-41.30
4	526.64	-47.00	-50.20	3.90	-46.30	-13.00	-33.30
5	624.61	-49.10	-47.90	3.70	-44.20	-13.00	-31.20
6	836.07	-60.30	-56.80	3.80	-53.00	-13.00	-40.00

Remarks:

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

Channel Bandwidth: 5MHz

Mode	TX channel 23035 (701.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	20deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	32.91	-51.70	-30.90	-17.70	-48.60	-13.00	-35.60
2	238.55	-48.60	-54.00	-1.50	-55.50	-13.00	-42.50
3	375.32	-54.10	-59.60	3.70	-55.90	-13.00	-42.90
4	624.61	-53.70	-55.40	3.70	-51.70	-13.00	-38.70
5	836.07	-59.60	-56.50	3.80	-52.70	-13.00	-39.70
6	935.98	-67.30	-62.80	3.70	-59.10	-13.00	-46.10
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	67.83	-45.90	-51.80	-1.00	-52.80	-13.00	-39.80
2	236.61	-52.10	-52.70	-1.50	-54.20	-13.00	-41.20
3	375.32	-54.00	-58.10	3.70	-54.40	-13.00	-41.40
4	533.43	-55.70	-58.40	3.80	-54.60	-13.00	-41.60
5	624.61	-49.10	-47.90	3.70	-44.20	-13.00	-31.20
6	836.07	-56.40	-52.90	3.80	-49.10	-13.00	-36.10

Remarks:

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

Channel Bandwidth: 10MHz

Mode	TX channel 23060 (704MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	20deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	32.91	-55.30	-34.50	-17.70	-52.20	-13.00	-39.20
2	237.58	-49.50	-55.10	-1.40	-56.50	-13.00	-43.50
3	375.32	-55.00	-60.50	3.70	-56.80	-13.00	-43.80
4	624.61	-54.00	-55.70	3.70	-52.00	-13.00	-39.00
5	768.17	-63.90	-63.40	4.00	-59.40	-13.00	-46.40
6	836.07	-57.30	-54.20	3.80	-50.40	-13.00	-37.40
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	32.91	-40.10	-33.00	-17.70	-50.70	-13.00	-37.70
2	236.61	-51.70	-52.30	-1.50	-53.80	-13.00	-40.80
3	375.32	-55.50	-59.60	3.70	-55.90	-13.00	-42.90
4	471.35	-53.70	-57.50	3.60	-53.90	-13.00	-40.90
5	624.61	-49.30	-48.10	3.70	-44.40	-13.00	-31.40
6	836.07	-56.70	-53.20	3.80	-49.40	-13.00	-36.40

Remarks:

1. Output Power (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 (1710.7MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%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	3421.40	-55.20	-46.60	1.30	-45.30	-13.00	-32.30
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	3421.40	-56.70	-48.60	1.30	-47.30	-13.00	-34.30

Remarks:

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

Mode	TX channel 20175 (1732.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%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	3465.00	-51.30	-42.90	1.40	-41.50	-13.00	-28.50
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	3465.00	-52.70	-44.90	1.40	-43.50	-13.00	-30.50

Remarks:

1. Output Power (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	Above 1000MHz
Environmental Conditions	25deg. C, 65%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	3508.60	-50.70	-42.40	1.40	-41.00	-13.00	-28.00
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	3508.60	-51.80	-44.10	1.40	-42.70	-13.00	-29.70

Remarks:

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

Channel Bandwidth: 3MHz

Mode	TX channel 19965 (1711.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%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	3423.00	-56.30	-47.70	1.30	-46.40	-13.00	-33.40
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	3423.00	-56.80	-48.70	1.30	-47.40	-13.00	-34.40

Remarks:

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

Mode	TX channel 20175 (1732.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%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	3465.00	-51.90	-43.50	1.40	-42.10	-13.00	-29.10
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	3465.00	-52.30	-44.50	1.40	-43.10	-13.00	-30.10

Remarks:

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

Mode	TX channel 20385 (1753.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%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	3507.00	-50.80	-42.50	1.40	-41.10	-13.00	-28.10
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	3507.00	-51.20	-43.50	1.40	-42.10	-13.00	-29.10

Remarks:

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

Channel Bandwidth: 5MHz

Mode	TX channel 19975 (1712.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%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	3425.00	-54.10	-45.50	1.30	-44.20	-13.00	-31.20
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	3425.00	-55.60	-47.50	1.30	-46.20	-13.00	-33.20

Remarks:

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

Mode	TX channel 20175 (1732.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	25deg. C, 65%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	3465.00	-49.80	-41.40	1.40	-40.00	-13.00	-27.00
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	3465.00	-51.20	-43.40	1.40	-42.00	-13.00	-29.00

Remarks:

1. Output Power (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	Above 1000MHz
Environmental Conditions	25deg. C, 65%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	3505.00	-50.90	-42.70	1.50	-41.20	-13.00	-28.20
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	3505.00	-51.80	-44.20	1.50	-42.70	-13.00	-29.70

Remarks:

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

Channel Bandwidth: 10MHz

Mode	TX channel 20000 (1715.0MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

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	3430.00	-52.90	-44.40	1.40	-43.00	-13.00	-30.00
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	3430.00	-55.80	-47.80	1.40	-46.40	-13.00	-33.40

Remarks:

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

Mode	TX channel 20175 (1732.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

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	-53.60	-45.20	1.40	-43.80	-13.00	-30.80
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	3465.00	-52.70	-44.90	1.40	-43.50	-13.00	-30.50

Remarks:

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

Mode	TX channel 20350 (1750.0MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

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	3500.00	-53.80	-45.60	1.50	-44.10	-13.00	-31.10
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	3500.00	-54.70	-47.10	1.50	-45.60	-13.00	-32.60

Remarks:

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

Channel Bandwidth: 15MHz

Mode	TX channel 20025 (1717.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

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	3435.00	-52.20	-43.60	1.30	-42.30	-13.00	-29.30
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	3435.00	-53.50	-45.40	1.30	-44.10	-13.00	-31.10

Remarks:

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

Mode	TX channel 20175 (1732.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

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	-48.70	-40.30	1.40	-38.90	-13.00	-25.90
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	3465.00	-48.10	-40.30	1.40	-38.90	-13.00	-25.90

Remarks:

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

Mode	TX channel 20325 (1747.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

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	3495.00	-52.70	-44.50	1.50	-43.00	-13.00	-30.00
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	3495.00	-49.80	-42.20	1.50	-40.70	-13.00	-27.70

Remarks:

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

Channel Bandwidth: 20MHz

Mode	TX channel 20050 (1720.0MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

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	-51.40	-42.90	1.30	-41.60	-13.00	-28.60
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	3440.00	-52.70	-44.70	1.30	-43.40	-13.00	-30.40

Remarks:

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

Mode	TX channel 20175 (1732.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

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	-49.40	-41.00	1.40	-39.60	-13.00	-26.60
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	3465.00	-49.20	-41.40	1.40	-40.00	-13.00	-27.00

Remarks:

1. Output Power (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	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

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	-52.40	-44.20	1.50	-42.70	-13.00	-29.70
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	3490.00	-51.80	-44.20	1.50	-42.70	-13.00	-29.70

Remarks:

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

LTE Band 12

Channel Bandwidth: 1.4MHz

Mode	TX channel 23017 (699.7MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1399.40	-52.40	-46.20	0.90	-45.30	-13.00	-32.30
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1399.40	-54.10	-49.00	0.90	-48.10	-13.00	-35.10

Remarks:

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

Mode	TX channel 23095 (707.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1415.00	-50.00	-43.50	0.90	-42.60	-13.00	-29.60
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1415.00	-50.00	-44.60	0.90	-43.70	-13.00	-30.70

Remarks:

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

Mode	TX channel 23173 (715.3MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1430.60	-51.10	-44.40	1.00	-43.40	-13.00	-30.40
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1430.60	-50.50	-45.00	1.00	-44.00	-13.00	-31.00

Remarks:

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

Channel Bandwidth: 3MHz

Mode	TX channel 23025 (700.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1401.00	-52.40	-46.10	0.90	-45.20	-13.00	-32.20
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1401.00	-55.10	-50.00	0.90	-49.10	-13.00	-36.10

Remarks:

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

Mode	TX channel 23095 (707.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1415.00	-49.70	-43.10	0.90	-42.20	-13.00	-29.20
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1415.00	-50.10	-44.80	0.90	-43.90	-13.00	-30.90

Remarks:

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

Mode	TX channel 23165 (714.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1429.00	-53.10	-46.50	1.00	-45.50	-13.00	-32.50
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1429.00	-51.20	-45.70	1.00	-44.70	-13.00	-31.70

Remarks:

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

Channel Bandwidth: 5MHz

Mode	TX channel 23035 (701.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1403.00	-52.50	-46.10	0.90	-45.20	-13.00	-32.20
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1403.00	-53.50	-48.40	0.90	-47.50	-13.00	-34.50

Remarks:

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

Mode	TX channel 23095 (707.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1415.00	-51.50	-45.00	0.90	-44.10	-13.00	-31.10
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1415.00	-49.50	-44.10	0.90	-43.20	-13.00	-30.20

Remarks:

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

Mode	TX channel 23155 (713.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1427.00	-53.60	-47.00	1.00	-46.00	-13.00	-33.00
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1427.00	-53.80	-48.30	1.00	-47.30	-13.00	-34.30

Remarks:

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

Channel Bandwidth: 10MHz

Mode	TX channel 23060 (704MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1408.00	-54.60	-48.10	0.90	-47.20	-13.00	-34.20
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1408.00	-54.40	-49.10	0.90	-48.20	-13.00	-35.20

Remarks:

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

Mode	TX channel 23095 (707.5MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1415.00	-51.20	-44.60	0.90	-43.70	-13.00	-30.70
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1415.00	-50.20	-44.90	0.90	-44.00	-13.00	-31.00

Remarks:

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

Mode	TX channel 23130 (711MHz)	Frequency Range	Above 1000MHz
Environmental Conditions	20deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	James Yang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1422.00	-49.10	-42.60	1.00	-41.60	-13.00	-28.60
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1422.00	-49.50	-44.10	1.00	-43.10	-13.00	-30.10

Remarks:

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

5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

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

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

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