

FCC Test Report

(PART 27)

Report No.: RF181126C15-2

FCC ID: N7NHL78

Test Model: HL7800

Received Date: Nov. 26, 2018

Test Date: Jun. 30 ~ Jul. 09, 2018 (Cat-M1)
Dec. 06, 2018 ~ May 17, 2019 (NB-IoT)

Issued Date: May 30, 2019

Applicant: Sierra Wireless Inc.

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

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(R.O.C)

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FCC Registration /
Designation Number: 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
RF181126C15-2	Original Release	May 30, 2019

1 Certificate of Conformity

Product: Embedded Module

Brand: AirPrime

Test Model: HL7800

Sample Status: Engineering Sample

Applicant: Sierra Wireless Inc.

Test Date: Jun. 30 ~ Jul. 09, 2018 (Cat-M1)
Dec. 06, 2018 ~ May 17, 2019 (NB-IoT)

Standards: FCC Part 27, Subpart C, H, F, L

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

Prepared by :  , **Date:** May 30, 2019
Ivonne Wu / Supervisor

Approved by :  , **Date:** May 30, 2019
Dylan Chiou / Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 27 & Part 2 (LTE 4)			
FCC Clause	Test Item	Result	Remarks
2.1046 27.50(d)(4)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
27.50(d)(5)	Peak to Average Ratio	Pass	Meet the requirement of limit.
27.53(h)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(h)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -23.28 dB at 6980.00 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.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
---	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 -30.13 dB at 1415.00 MHz.

Applied Standard: FCC Part 27 & Part 2 (LTE 13)			
FCC Clause	Test Item	Result	Remarks
2.1046 27.50(b)(10)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
---	Peak to Average Ratio	Pass	Meet the requirement of limit.
27.53(c)(2)(4)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(c)(2)&(f)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(c)(2)&(f)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -13.24 dB at 1564.00 MHz.

Applied Standard: FCC Part 27 & Part 2 (LTE 17)			
FCC Clause	Test Item	Result	Remarks
2.1046 27.50(c)(10)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
---	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 -32.86 dB at 2112.30 MHz.

Applied Standard: FCC Part 27 & Part 2 (LTE 66)			
FCC Clause	Test Item	Result	Remarks
2.1046 27.50(d)(4)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
27.50(d)(5)	Peak to Average Ratio	Pass	Meet the requirement of limit.
27.53(h)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(h)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -29.69 dB at 3490.00 MHz.

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	9 kHz ~ 30 MHz	3.04 dB
	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

Test Date: Jun. 30 ~ Jul. 09, 2018

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent	N9038A	MY51210203	Mar. 16, 2018	Mar. 15, 2019
Spectrum Analyzer Agilent	N9010A	MY52220314	Nov. 24, 2017	Nov. 23, 2018
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Jan. 11, 2018	Jan. 10, 2019
Double Ridge Guide Horn Antenna EMCO	3115	5619	Nov. 30, 2017	Nov. 29, 2018
BILOG Antenna SCHWARZBECK	VULB 9168	9168-153	Dec. 06, 2017	Dec. 05, 2018
Radio Communication Analyzer Anritsu	MT8820C	6201300640	Aug. 16, 2017	Aug. 15, 2019
Preamplifier EMCI	EMC 012645	980115	Oct. 20, 2017	Oct. 19, 2018
Preamplifier EMCI	EMC 184045	980116	Oct. 20, 2017	Oct. 19, 2018
Preamplifier EMCI	EMC 330H	980112	Oct. 13, 2017	Oct. 12, 2018
Power Meter Anritsu	ML2495A	1012010	Aug. 15, 2017	Aug. 14, 2018
Power Sensor Anritsu	MA2411B	1315050	Aug. 15, 2017	Aug. 14, 2018
RF Coaxial Cable HUBER+SUHNNER	EMC104-SM-SM-800 0&3000	140811+170717	Oct. 20, 2017	Oct. 19, 2018
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM- 1000(140807)	Oct. 20, 2017	Oct. 19, 2018
RF Coaxial Cable Worken	8D-FB	Cable-Ch10-01	Oct. 20, 2017	Oct. 19, 2018
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
DC Power Supply Topward	33010D	807748	Oct. 25, 2016	Oct. 24, 2018
STANDARD TEMPERATURE & HUMIDITY CHAMBER TERCHY	MHU-225AU	920842	Jun. 01, 2018	May 30, 2019

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 10.

Test Date: Dec. 06, 2018 ~ May 17, 2019

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent	N9038A	MY52260177	Aug. 20, 2018	Aug. 19, 2019
Spectrum Analyzer Keysight	N9010A	MY56070348	Sep. 06, 2018	Sep. 05, 2019
Spectrum Analyzer ROHDE & SCHWARZ	FSW26	102023	Oct. 11, 2018	Oct. 10, 2019
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Nov. 25, 2018	Nov. 24, 2019
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Nov. 23, 2018	Nov. 22, 2019
Double Ridge Guide Horn Antenna EMCO	3115	5619	Nov. 25, 2018	Nov. 24, 2019
BILOG Antenna SCHWARZBECK	VULB 9168	9168-153	Nov. 23, 2018	Nov. 22, 2019
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 16, 2018	Apr. 15, 2019
			Apr. 15, 2019	Apr. 14, 2020
MXG Vector signal generator Agilent	N5182B	MY53050430	Nov. 19, 2018	Nov. 18, 2019
Preamplifier EMCI	EMC 012645	980115	Oct. 12, 2018	Oct. 11, 2019
Preamplifier EMCI	EMC 330H	980112	Oct. 12, 2018	Oct. 11, 2019
RF Coaxial Cable HUBER+SUHNNER	EMC104-SM-SM-800 0&3000	140811+170717	Oct. 12, 2018	Oct. 11, 2019
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM-1 000(140807)	Oct. 12, 2018	Oct. 11, 2019
RF Coaxial Cable WOKEN	8D-FB	Cable-Ch10-01	Oct. 12, 2018	Oct. 11, 2019
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
Radio Communication Analyzer ANRITSU	MT8821C	6201664741	Jul. 04, 2018	Jul. 03, 2019
Temperature & Humidity Chamber	GTH-120-40-CP-AR	MAA1306-019	Sep. 05, 2018	Sep. 04, 2019
DC Power Supply Topward	33010D	807748	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 10.

3 General Information

3.1 General Description of EUT

Product	Embedded Module		
Brand	AirPrime		
Test Model	HL7800		
Status of EUT	Engineering Sample		
Power Supply Rating	5.0 Vdc (host equipment) 12.0 Vdc (adapter)		
Modulation Type	Cat-M1	QPSK, 16QAM	
	NB-IoT	BPSK, QPSK	
Frequency Range	Cat-M1	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
		LTE Band 13 (Channel Bandwidth: 5 MHz)	779.5 ~ 784.5 MHz
		LTE Band 13 (Channel Bandwidth: 10 MHz)	782.0 MHz
		LTE Band 17 (Channel Bandwidth: 5 MHz)	706.5 ~ 713.5 MHz
		LTE Band 17 (Channel Bandwidth: 10 MHz)	709.0 ~ 711.0 MHz
		LTE Band 66 (Channel Bandwidth: 1.4 MHz)	1710.7 ~ 1779.3 MHz
		LTE Band 66 (Channel Bandwidth: 3 MHz)	1711.5 ~ 1778.5 MHz
		LTE Band 66 (Channel Bandwidth: 5 MHz)	1712.5 ~ 1777.5 MHz
		LTE Band 66 (Channel Bandwidth: 10 MHz)	1715.0 ~ 1775.0 MHz
		LTE Band 66 (Channel Bandwidth: 15 MHz)	1717.5 ~ 1772.5 MHz
		LTE Band 66 (Channel Bandwidth: 20 MHz)	1720.0 ~ 1770.0 MHz
	NB-IoT	LTE Band 4	1710.1 ~ 1754.9 MHz
		LTE Band 12	699.1 ~ 715.9 MHz
		LTE Band 13	777.1 ~ 786.9 MHz
		LTE Band 17	704.1 ~ 715.9 MHz
		LTE Band 66	1710.1 ~ 1779.9 MHz

Emission Designator	Cat-M1	LTE Band 4 (Channel Bandwidth: 1.4 MHz)	1M09G7D
		LTE Band 4 (Channel Bandwidth: 3 MHz)	1M09G7D
		LTE Band 4 (Channel Bandwidth: 5 MHz)	1M09G7D
		LTE Band 4 (Channel Bandwidth: 10 MHz)	1M09G7D
		LTE Band 4 (Channel Bandwidth: 15 MHz)	1M10G7D
		LTE Band 4 (Channel Bandwidth: 20 MHz)	1M09G7D
		LTE Band 12 (Channel Bandwidth: 1.4 MHz)	1M09G7D
		LTE Band 12 (Channel Bandwidth: 3 MHz)	1M09G7D
		LTE Band 12 (Channel Bandwidth: 5 MHz)	1M08G7D
		LTE Band 12 (Channel Bandwidth: 10 MHz)	1M09G7D
		LTE Band 13 (Channel Bandwidth: 5 MHz)	1M09G7D
		LTE Band 13 (Channel Bandwidth: 10 MHz)	1M09G7D
		LTE Band 17 (Channel Bandwidth: 5 MHz)	1M09G7D
		LTE Band 17 (Channel Bandwidth: 10 MHz)	1M09G7D
		LTE Band 66 (Channel Bandwidth: 1.4 MHz)	1M09G7D
		LTE Band 66 (Channel Bandwidth: 3 MHz)	1M08G7D
		LTE Band 66 (Channel Bandwidth: 5 MHz)	1M09G7D
		LTE Band 66 (Channel Bandwidth: 10 MHz)	1M09G7D
		LTE Band 66 (Channel Bandwidth: 15 MHz)	1M10G7D
		LTE Band 66 (Channel Bandwidth: 20 MHz)	1M09G7D
	NB-IoT	LTE Band 4	1K94G7D
		LTE Band 12	1K92G7D
		LTE Band 13	1K94G7D
		LTE Band 17	1K92G7D
		LTE Band 66	1K97G7D
Max. ERP Power	Cat-M1	LTE Band 12 (Channel Bandwidth: 1.4 MHz)	329.61 mW
		LTE Band 12 (Channel Bandwidth: 3 MHz)	314.05 mW
		LTE Band 12 (Channel Bandwidth: 5 MHz)	292.42 mW
		LTE Band 12 (Channel Bandwidth: 10 MHz)	277.97 mW
		LTE Band 13 (Channel Bandwidth: 5 MHz)	283.79 mW
		LTE Band 13 (Channel Bandwidth: 10 MHz)	264.85 mW
		LTE Band 17 (Channel Bandwidth: 5 MHz)	285.76 mW
		LTE Band 17 (Channel Bandwidth: 10 MHz)	265.46 mW
	NB-IoT	LTE Band 12	171.40 mW (BPSK) 213.80 mW (QPSK)
		LTE Band 13	152.41 mW (BPSK) 186.64 mW (QPSK)
		LTE Band 17	138.68 mW (BPSK) 144.21 mW (QPSK)

Max. EIRP Power	Cat-M1	LTE Band 4 (Channel Bandwidth: 1.4 MHz)	314.77 mW
		LTE Band 4 (Channel Bandwidth: 3 MHz)	297.17 mW
		LTE Band 4 (Channel Bandwidth: 5 MHz)	276.69 mW
		LTE Band 4 (Channel Bandwidth: 10 MHz)	263.63 mW
		LTE Band 4 (Channel Bandwidth: 15 MHz)	247.74 mW
		LTE Band 4 (Channel Bandwidth: 20 MHz)	234.42 mW
		LTE Band 66 (Channel Bandwidth: 1.4 MHz)	289.07 mW
		LTE Band 66 (Channel Bandwidth: 3 MHz)	269.77 mW
		LTE Band 66 (Channel Bandwidth: 5 MHz)	254.68 mW
		LTE Band 66 (Channel Bandwidth: 10 MHz)	239.88 mW
		LTE Band 66 (Channel Bandwidth: 15 MHz)	223.36 mW
		LTE Band 66 (Channel Bandwidth: 20 MHz)	209.89 mW
	NB-IoT	LTE Band 4	229.61 mW (BPSK) 272.90 mW (QPSK)
		LTE Band 66	245.47 mW (BPSK) 294.44 mW (QPSK)
Antenna Type	Dipole Antenna with 2 dBi gain		
Accessory Device	Refer to Note as below		
Data Cable Supplied	Refer to Note as below		

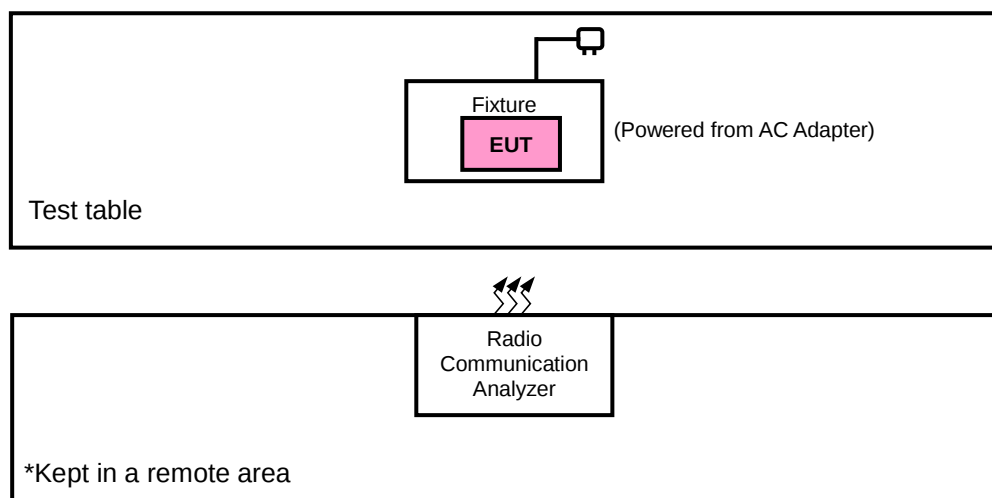
Note:

1. This report is issued as a supplementary report to BV CPS report no.: RF180425C07A-2. The difference compared with original report is enabled NB-IoT function via software (as listed below). All the test items for NB-IoT were tested. For Cat-M1, only the worst case of radiated spurious emissions for LTE B4/B14 and effective radiated power for LTE B12/B25 in the original report were verified, and the other test data from the original report are kept in this report.

Report No.	FCC ID	Model	Difference
RF180425C07A-2	N7NHL78M	HL7800-M	Support Cat-M1
RF181126C15-2	N7NHL78	HL7800	Support Cat-M1 and NB-IoT

2. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

3.2 Configuration of System under Test



3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	Adapter	N/A	N/A	N/A	N/A

No.	Signal Cable Description Of The Above Support Units
1.	N/A

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item 1 was provided by client.

3.3 Test Mode Applicability and Tested Channel Detail

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

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

Band	ERP / EIRP	Radiated Emission
LTE Band 4	X-plane (Cat-M1) Z-plane (NB-IoT)	Z-axis
LTE Band 12	X-plane (Cat-M1) Z-plane (NB-IoT)	Z-axis
LTE Band 13	X-plane (Cat-M1) X-plane (NB-IoT)	Z-axis (Cat-M1) X-axis (NB-IoT)
LTE Band 17	X-plane (Cat-M1) Z-plane (NB-IoT)	Z-axis
LTE Band 66	X-plane (Cat-M1) Z-plane (NB-IoT)	Z-axis

Cat-M1

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
-	Modulation characteristics	19975 to 20375	20175	5 MHz	QPSK, 16QAM	5 RB / 0 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
			20393	1.4 MHz	QPSK	50 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3 MHz	QPSK	1 RB / 49 RB Offset
			20385	3 MHz	QPSK	50 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK	1 RB / 0 RB Offset
			20375	5 MHz	QPSK	75 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10 MHz	QPSK	1 RB / 74 RB Offset
			20350	10 MHz	QPSK	75 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15 MHz	QPSK	1 RB / 0 RB Offset
			20325	15 MHz	QPSK	100 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK	1 RB / 99 RB Offset
			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	19957 to 20393	19957, 20175, 20393	1.4 MHz	QPSK	1 RB / 2 RB Offset
		19975 to 20375	19975, 20175, 20375	5 MHz	QPSK	12 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20 MHz	QPSK	50 RB / 0 RB Offset

Note: 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
-	Modulation characteristics	23035 to 23155	23095	5 MHz	QPSK, 16QAM	5 RB / 0 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, 23095, 23173	1.4 MHz	QPSK	1 RB / 0 RB Offset
			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, 23095, 23130	10 MHz	QPSK	1 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
-	Radiated 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
-	Radiated 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

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

LTE Band 13

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	ERP	23205 to 23255	23205, 23230, 23255	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23230	23230	10 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
-	Modulation characteristics	23205 to 23255	23230	5 MHz	QPSK, 16QAM	5 RB / 0 RB Offset
-	Frequency Stability	23205 to 23255	23205, 23255	5 MHz	QPSK	1 RB / 0 RB Offset
		23230	23230	10 MHz	QPSK	1 RB / 24 RB Offset
-	Occupied Bandwidth	23205 to 23255	23205, 23230, 23255	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		23230	23230	10 MHz	QPSK, 16QAM	50 RB / 0 RB Offset
-	Peak to Average Ratio	23205 to 23255	23205, 23230, 23255	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23230	23230	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
-	Band Edge	23205 to 23255	23205	5 MHz	QPSK	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			23255	5 MHz	QPSK	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		23230	23230	10 MHz	QPSK	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
-	Conducted Emission	23205 to 23255	23205, 23230, 23255	5 MHz	QPSK	1 RB / 0 RB Offset
		23230	23230	10 MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission	23205 to 23255	23205, 23230, 23255	5 MHz	QPSK	1 RB / 0 RB Offset
		23230	23230	10 MHz	QPSK	1 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

LTE Band 17

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	ERP	23755 to 23825	23755, 23790, 23825	5 MHz	QPSK, 16QAM	1 RB / 12 RB Offset
		23780 to 23800	23780, 23790, 23800	10 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
-	Modulation characteristics	23755 to 23825	23790	5 MHz	QPSK, 16QAM	5 RB / 0 RB Offset
-	Frequency Stability	23755 to 23825	23755, 23825	5 MHz	QPSK	1 RB / 12 RB Offset
		23780 to 23800	23780, 23800	10 MHz	QPSK	1 RB / 24 RB Offset
-	Occupied Bandwidth	23755 to 23825	23755, 23790, 23825	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		23780 to 23800	23780, 23790, 23800	10 MHz	QPSK, 16QAM	50 RB / 0 RB Offset
-	Peak to Average Ratio	23755 to 23825	23755, 23790, 23825	5 MHz	QPSK, 16QAM	1 RB / 12 RB Offset
		23780 to 23800	23780, 23790, 23800	10 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
-	Band Edge	23755 to 23825	23755	5 MHz	QPSK	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			23825	5 MHz	QPSK	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		23780 to 23800	23780	10 MHz	QPSK	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
-	Conducted Emission	23755 to 23825	23755, 23790, 23825	5 MHz	QPSK	1 RB / 12 RB Offset
		23780 to 23800	23780, 23790, 23800	10 MHz	QPSK	1 RB / 24 RB Offset
-	Radiated Emission	23755 to 23825	23755, 23790, 23825	5 MHz	QPSK	1 RB / 12 RB Offset
		23780 to 23800	23780, 23790, 23800	10 MHz	QPSK	1 RB / 24 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

LTE Band 66

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	131979 to 132665	131979, 132322, 132665	1.4 MHz	QPSK, 16QAM	1 RB / 5 RB Offset
		131987 to 132657	131987, 132322, 132657	3 MHz	QPSK, 16QAM	1 RB / 14 RB Offset
		131997 to 132647	131997, 132322, 132647	5 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
		132022 to 132622	132022, 132322, 132622	10 MHz	QPSK, 16QAM	1 RB / 49 RB Offset
		132047 to 132597	132047, 132322, 132597	15 MHz	QPSK, 16QAM	1 RB / 74 RB Offset
		132072 to 132572	132072, 132322, 132572	20 MHz	QPSK, 16QAM	1 RB / 99 RB Offset
-	Modulation characteristics	131997 to 132647	132322	5 MHz	QPSK, 16QAM	5 RB / 0 RB Offset
-	Frequency Stability	131979 to 132665	131979, 132665	1.4 MHz	QPSK	1 RB / 5 RB Offset
		131987 to 132657	131987, 132657	3 MHz	QPSK	1 RB / 14 RB Offset
		131997 to 132647	131997, 132647	5 MHz	QPSK	1 RB / 24 RB Offset
		132022 to 132622	132022, 132622	10 MHz	QPSK	1 RB / 49 RB Offset
		132047 to 132597	132047, 132597	15 MHz	QPSK	1 RB / 74 RB Offset
		132072 to 132572	132072, 132572	20 MHz	QPSK	1 RB / 99 RB Offset
-	Occupied Bandwidth	131979 to 132665	131979, 132322, 132665	1.4 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		131987 to 132657	131987, 132322, 132657	3 MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		131997 to 132647	131997, 132322, 132647	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		132022 to 132622	132022, 132322, 132622	10 MHz	QPSK, 16QAM	50 RB / 0 RB Offset
		132047 to 132597	132047, 132322, 132597	15 MHz	QPSK, 16QAM	75 RB / 0 RB Offset
		132072 to 132572	132072, 132322, 132572	20 MHz	QPSK, 16QAM	100 RB / 0 RB Offset
-	Peak to Average Ratio	131979 to 132665	131979, 132322, 132665	1.4 MHz	QPSK, 16QAM	1 RB / 2 RB Offset
		131987 to 132657	131987, 132322, 132657	3 MHz	QPSK, 16QAM	1 RB / 7 RB Offset
		131997 to 132647	131997, 132322, 132647	5 MHz	QPSK, 16QAM	12 RB / 0 RB Offset
		132022 to 132622	132022, 132322, 132622	10 MHz	QPSK, 16QAM	1 RB / 24 RB Offset
		132047 to 132597	132047, 132322, 132597	15 MHz	QPSK, 16QAM	36 RB / 0 RB Offset
		132072 to 132572	132072, 132322, 132572	20 MHz	QPSK, 16QAM	50 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Band Edge	131979 to 132665	131979	1.4 MHz	QPSK	1 RB / 0 RB Offset
			132665	1.4 MHz	QPSK	6 RB / 0 RB Offset
		131987 to 132657	131987	3 MHz	QPSK	1 RB / 5 RB Offset
			132657	3 MHz	QPSK	6 RB / 0 RB Offset
		131997 to 132647	131997	5 MHz	QPSK	1 RB / 0 RB Offset
			132647	5 MHz	QPSK	15 RB / 0 RB Offset
		132022 to 132622	132022	10 MHz	QPSK	1 RB / 14 RB Offset
			132622	10 MHz	QPSK	15 RB / 0 RB Offset
		132047 to 132597	132047	15 MHz	QPSK	1 RB / 0 RB Offset
			132597	15 MHz	QPSK	25 RB / 0 RB Offset
		132072 to 132572	132072	20 MHz	QPSK	1 RB / 24 RB Offset
			132572	20 MHz	QPSK	25 RB / 0 RB Offset
		131979 to 132665	131979, 132322, 132665	1.4 MHz	QPSK	1 RB / 0 RB Offset
			131987, 132322, 132657	3 MHz	QPSK	50 RB / 0 RB Offset
		131987 to 132657	131987, 132322, 132657	3 MHz	QPSK	1 RB / 49 RB Offset
			131997, 132322, 132647	5 MHz	QPSK	50 RB / 0 RB Offset
		132022 to 132622	132022, 132322, 132622	10 MHz	QPSK	1 RB / 0 RB Offset
			132047, 132322, 132597	15 MHz	QPSK	75 RB / 0 RB Offset
		132047 to 132597	132047, 132322, 132597	15 MHz	QPSK	1 RB / 74 RB Offset
			132072, 132322, 132572	20 MHz	QPSK	75 RB / 0 RB Offset
		132072 to 132572	132072, 132322, 132572	20 MHz	QPSK	1 RB / 0 RB Offset
			132072, 132322, 132572	20 MHz	QPSK	100 RB / 0 RB Offset
-	Conducted Emission	131979 to 132665	131979, 132322, 132665	1.4 MHz	QPSK	1 RB / 2 RB Offset
		131987 to 132657	131987, 132322, 132657	3 MHz	QPSK	1 RB / 7 RB Offset
		131997 to 132647	131997, 132322, 132647	5 MHz	QPSK	12 RB / 0 RB Offset
		132022 to 132622	132022, 132322, 132622	10 MHz	QPSK	50 RB / 0 RB Offset
		132047 to 132597	132047, 132322, 132597	15 MHz	QPSK	36 RB / 0 RB Offset
		132072 to 132572	132072, 132322, 132572	20 MHz	QPSK	50 RB / 0 RB Offset
-	Radiated Emission	131979 to 132665	131979, 132322, 132665	1.4 MHz	QPSK	50 RB / 0 RB Offset
		131997 to 132647	131997, 132322, 132647	5 MHz	QPSK	1 RB / 2 RB Offset
		132072 to 132572	132072, 132322, 132572	20 MHz	QPSK	12 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

NB-IoT

LTE Band 4

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Sub-carrier Bandwidth	Modulation	N _{tones}
-	EIRP	19951 to 20399	19951, 20175, 20399	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	3@3
-	Modulation Characteristics	19951 to 20399	20175	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
-	Frequency Stability	19951 to 20399	19951, 20399	15 kHz	QPSK	3@3
-	Occupied Bandwidth	19951 to 20399	19951	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
						12@0
			20195	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
						12@0
			20399	3.75 kHz	BPSK	1@47
				15 kHz	QPSK	1@11
						3@3
						12@0
-	Peak to Average Ratio	19951 to 20399	20195	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
-	Band Edge	19951 to 20399	19951	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
						12@0
			20399	3.75 kHz	BPSK	1@47
				15 kHz	QPSK	1@11
						3@3
						12@0
-	Conducted Emission	19951 to 20399	19951, 20175, 20399	15 kHz	QPSK	3@3
-	Radiated Emission	19951 to 20399	19951, 20175, 20399	15 kHz	QPSK	3@3

Note:

1. Selection is tested with Stand-alone, In-band and Guard-band, the worst case was found in Stand-alone.
2. For radiated emission and conducted emission test, pre-tested BPSK, QPSK modulation type and found QPSK was the worst, therefore chosen for the final test.
3. The emission measurement was based on the worst maximum conducted power.

LTE Band 12

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Sub-carrier Bandwidth	Modulation	N _{tones}
-	ERP	23011 to 23179	23011, 23095, 23179	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	3@3
-	Modulation Characteristics	23011 to 23179	23095	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
-	Frequency Stability	23011 to 23179	23011, 23179	15 kHz	QPSK	3@3
-	Occupied Bandwidth	23011 to 23179	23011	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
						12@0
			23095	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
						12@0
			23179	3.75 kHz	BPSK	1@47
				15 kHz	QPSK	1@11
						3@3
						12@0
-	Band Edge	23011 to 23179	23011	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
						12@0
			23179	3.75 kHz	BPSK	1@47
				15 kHz	QPSK	1@11
						3@3
						12@0
-	Peak to Average Ratio	23011 to 23179	23095	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
-	Conducted Emission	23011 to 23179	23011, 23095, 23179	15 kHz	QPSK	3@3
-	Radiated Emission	23011 to 23179	23011, 23095, 23179	15 kHz	QPSK	3@3

Note:

1. Selection is tested with Stand-alone, In-band and Guard-band, the worst case was found in Stand-alone.
2. For radiated emission and conducted emission test, pre-tested BPSK, QPSK modulation type and found QPSK was the worst, therefore chosen for the final test.
3. The emission measurement was based on the worst maximum conducted power.

LTE Band 13

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Sub-carrier Bandwidth	Modulation	N _{tones}
-	ERP	23181 to 23279	23181, 23230, 23279	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	3@3
-	Modulation Characteristics	23181 to 23279	23230	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
-	Frequency Stability	23181 to 23279	23181, 23279	15 kHz	QPSK	3@3
-	Occupied Bandwidth	23181 to 23279	23181	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
						12@0
			23230	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
						12@0
			23279	3.75 kHz	BPSK	1@47
				15 kHz	QPSK	1@11
						3@3
						12@0
-	Band Edge	23181 to 23279	23181	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
						12@0
			23279	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@11
						3@3
						12@0
-	Peak to Average Ratio	23181 to 23279	23230	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
-	Conducted Emission	23181 to 23279	23181, 23230, 23279	15 kHz	QPSK	3@3
-	Radiated Emission	23181 to 23279	23181, 23230, 23279	15 kHz	QPSK	3@3

Note:

1. Selection is tested with Stand-alone, In-band and Guard-band, the worst case was found in Stand-alone.
2. For radiated emission and conducted emission test, pre-tested BPSK, QPSK modulation type and found QPSK was the worst, therefore chosen for the final test.
3. The emission measurement was based on the worst maximum conducted power.

LTE Band 17

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Sub-carrier Bandwidth	Modulation	N _{tones}
-	ERP	23731 to 23849	23731, 23790, 23849	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	3@3
-	Modulation Characteristics	23731 to 23849	23790	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
-	Frequency Stability	23731 to 23849	23731, 23849	15 kHz	QPSK	3@3
-	Occupied Bandwidth	23731 to 23849	23731	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
						12@0
			23790	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
						12@0
			23849	3.75 kHz	BPSK	1@47
				15 kHz	QPSK	1@11
						3@3
						12@0
-	Band Edge	23731 to 23849	23731	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
						12@0
			23849	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@11
						3@3
						12@0
-	Peak to Average Ratio	23731 to 23849	23790	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
-	Conducted Emission	23731 to 23849	23731, 23790, 23849	15 kHz	QPSK	3@3
-	Radiated Emission	23731 to 23849	23731, 23790, 23849	15 kHz	QPSK	3@3

Note:

1. Selection is tested with Stand-alone, In-band and Guard-band, the worst case was found in Stand-alone.
2. For radiated emission and conducted emission test, pre-tested BPSK, QPSK modulation type and found QPSK was the worst, therefore chosen for the final test.
3. The emission measurement was based on the worst maximum conducted power.

LTE Band 66

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Sub-carrier Bandwidth	Modulation	N _{tones}
-	EIRP	131973 to 132671	131973, 132322, 132671	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	3@3
-	Modulation Characteristics	19951 to 20399	132322	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
-	Frequency Stability	131973 to 132671	131973, 132671	15 kHz	QPSK	3@3
-	Occupied Bandwidth	131973 to 132671	131973	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
						12@0
			132322	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
						12@0
			132671	3.75 kHz	BPSK	1@47
				15 kHz	QPSK	1@11
						3@3
						12@0
-	Peak to Average Ratio	131973 to 132671	132322	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
-	Band Edge	131973 to 132671	131973	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@0
						3@3
			132671	3.75 kHz	BPSK	1@0
				15 kHz	QPSK	1@11
						3@3
						12@0
						12@0
-	Conducted Emission	131973 to 132671	131973, 132322, 132671	15 kHz	QPSK	3@3
-	Radiated Emission	131973 to 132671	131973, 132322, 132671	15 kHz	QPSK	3@3

Note:

1. Selection is tested with Stand-alone, In-band and Guard-band, the worst case was found in Stand-alone.
2. For radiated emission and conducted emission test, pre-tested BPSK, QPSK modulation type and found QPSK was the worst, therefore chosen for the final test.
3. The emission measurement was based on the worst maximum conducted power.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
ERP / EIRP	25 deg. C, 65 % RH	12 Vdc	Jisyong Wang / Thomas Wei
Modulation Characteristics	25 deg. C, 65 % RH	12 Vdc	Getaz Yang
Frequency Stability	25 deg. C, 65 % RH	12 Vdc	Getaz Yang
Occupied Bandwidth	25 deg. C, 65 % RH	12 Vdc	Getaz Yang
Band Edge	25 deg. C, 65 % RH	12 Vdc	Getaz Yang
Peak to Average Ratio	25 deg. C, 65 % RH	12 Vdc	Getaz Yang
Conducted Emission	25 deg. C, 65 % RH	12 Vdc	Getaz Yang
Radiated Emission	25 deg. C, 65 % RH	12 Vdc	Jisyong Wang / Thomas Wei

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 v03r01

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

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

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

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

Portable stations (hand-held devices) operating in the 746-757 MHz, 776-788 MHz and 805-806 MHz band are limited to 3 watts ERP

Portable stations (hand-held device) operating in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink 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 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 form E.I.R.P power by subtracting the gain of dipole, $E.R.P \text{ power} = E.I.R.P \text{ power} - 2.15 \text{ dB}$.

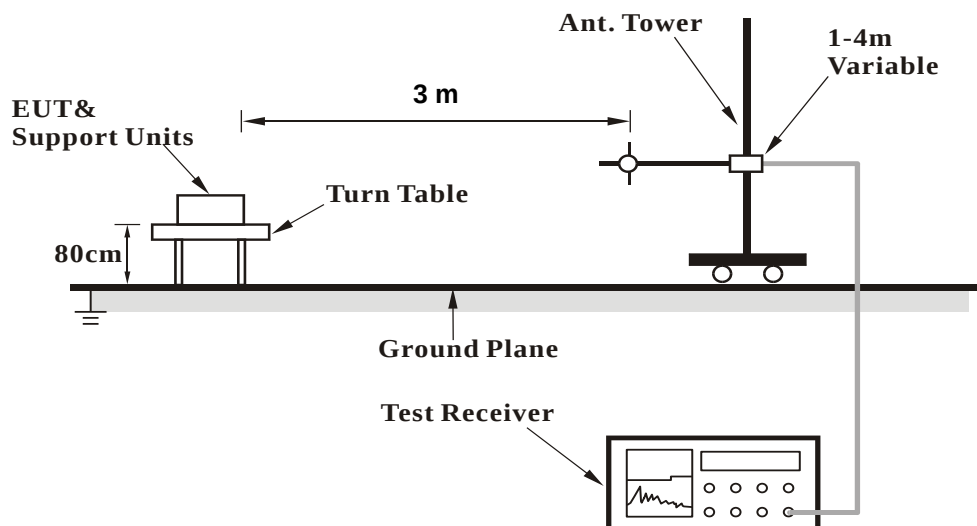
Conducted Power Measurement:

- 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.

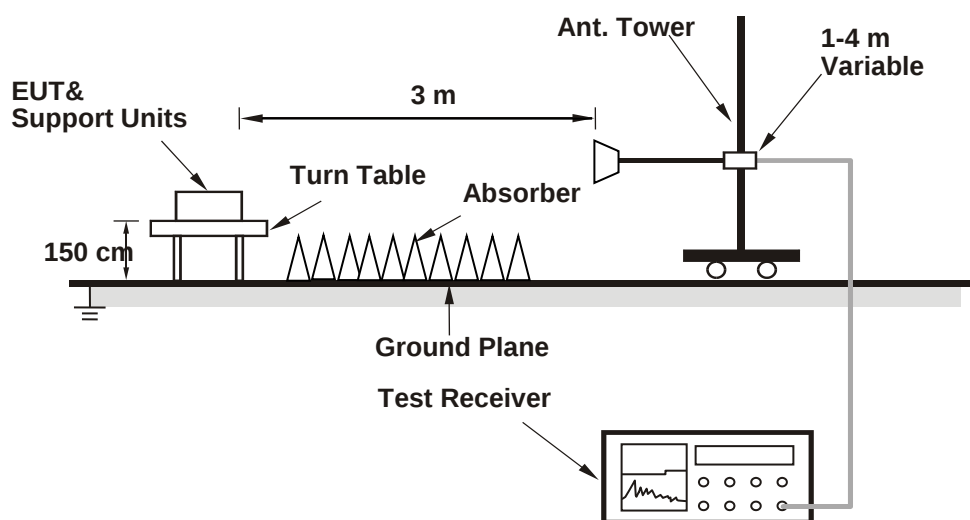
4.1.3 Test Setup

EIRP / ERP Measurement:

<Radiated Emission below or equal 1 GHz>

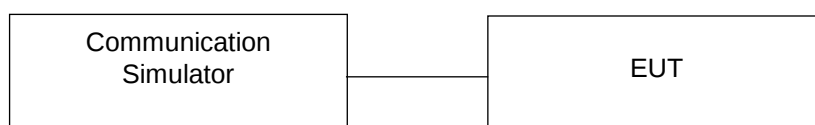


<Radiated Emission above 1 GHz>



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)

Cat-M1

LTE Band 4								
BW (MHz): 1.4								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	19957	1710.7	QPSK	1	0	0	-85	24.08
			QPSK	1	5	0	-85	23.69
			QPSK	3	3	0	-85	21.96
			QPSK	6	0	0	-85	21.12
			16QAM	1	0	0	-85	21.57
			16QAM	1	5	0	-85	21.64
			16QAM	3	0	0	-85	20.77
Mid. Range	20175	1732.5	16QAM	5	0	0	-85	20.41
			QPSK	1	0	0	-85	24.04
			QPSK	1	5	0	-85	23.62
			QPSK	3	3	0	-85	21.99
			QPSK	6	0	0	-85	21.14
			16QAM	1	0	0	-85	21.56
			16QAM	1	5	0	-85	21.64
High Range	20393	1754.3	16QAM	3	0	0	-85	20.81
			16QAM	5	0	0	-85	20.47
			QPSK	1	0	0	-85	23.85
			QPSK	1	5	0	-85	23.47
			QPSK	3	3	0	-85	21.88
			QPSK	6	0	0	-85	20.97
			16QAM	1	0	0	-85	21.37
			16QAM	1	5	0	-85	21.51
			16QAM	3	0	0	-85	20.68
			16QAM	5	0	0	-85	20.37

LTE Band 4								
BW (MHz): 3								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	19965	1711.5	QPSK	1	0	0	-85	22.92
			QPSK	1	5	0	-85	22.91
			QPSK	1	0	1	-85	22.84
			QPSK	1	5	1	-85	22.92
			QPSK	3	3	0	-85	21.93
			QPSK	3	3	1	-85	21.81
			QPSK	6	0	0	-85	21.01
			QPSK	6	0	1	-85	20.94
			16QAM	1	0	0	-85	21.11
			16QAM	1	5	0	-85	21.12
			16QAM	1	0	1	-85	22.87
			16QAM	1	5	1	-85	22.86
			16QAM	3	0	0	-85	20.58
			16QAM	3	3	1	-85	20.55
			16QAM	5	0	0	-85	20.39
			16QAM	5	0	1	-85	20.32
Mid. Range	20175	1732.5	QPSK	1	0	0	-85	22.81
			QPSK	1	5	0	-85	22.78
			QPSK	1	0	1	-85	22.82
			QPSK	1	5	1	-85	22.84
			QPSK	3	3	0	-85	21.84
			QPSK	3	3	1	-85	21.82
			QPSK	6	0	0	-85	20.94
			QPSK	6	0	1	-85	20.96
			16QAM	1	0	0	-85	20.99
			16QAM	1	5	0	-85	20.98
			16QAM	1	0	1	-85	21.02
			16QAM	1	5	1	-85	20.84
			16QAM	3	0	0	-85	20.47
			16QAM	3	3	1	-85	20.44
			16QAM	5	0	0	-85	21.19
			16QAM	5	0	1	-85	21.12
High Range	20385	1753.5	QPSK	1	0	0	-85	22.59
			QPSK	1	5	0	-85	22.58
			QPSK	1	0	1	-85	22.68
			QPSK	1	5	1	-85	22.71
			QPSK	3	3	0	-85	21.61
			QPSK	3	3	1	-85	21.77
			QPSK	6	0	0	-85	20.76
			QPSK	6	0	1	-85	20.89
			16QAM	1	0	0	-85	20.85
			16QAM	1	5	0	-85	20.87
			16QAM	1	0	1	-85	20.95
			16QAM	1	5	1	-85	20.99
			16QAM	3	0	0	-85	20.43
			16QAM	3	3	1	-85	20.75
			16QAM	5	0	0	-85	20.3
			16QAM	5	0	1	-85	20.31

LTE Band 4								
BW (MHz): 5								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	19975	1712.5	QPSK	1	0	0	-85	22.77
			QPSK	1	5	0	-85	22.75
			QPSK	1	0	1	-85	22.67
			QPSK	1	5	1	-85	22.69
			QPSK	1	0	3	-85	22.76
			QPSK	1	5	3	-85	22.81
			QPSK	3	0	0	-85	21.74
			QPSK	3	3	3	-85	21.97
			QPSK	6	0	0	-85	21.92
			QPSK	6	0	1	-85	21.79
			QPSK	6	0	3	-85	21.96
			16QAM	1	0	0	-85	23.12
			16QAM	1	5	0	-85	23.18
			16QAM	1	0	1	-85	22.35
			16QAM	1	5	1	-85	22.84
			16QAM	1	0	3	-85	22.89
			16QAM	1	5	3	-85	22.23
			16QAM	3	0	0	-85	21.72
			16QAM	3	3	3	-85	21.84
			16QAM	5	0	0	-85	20.86
			16QAM	5	0	1	-85	20.48
			16QAM	5	0	3	-85	20.58
Mid. Range	20175	1732.5	QPSK	1	0	0	-85	22.79
			QPSK	1	5	0	-85	22.84
			QPSK	1	0	1	-85	22.86
			QPSK	1	5	1	-85	22.81
			QPSK	1	0	3	-85	22.98
			QPSK	1	5	3	-85	22.94
			QPSK	3	0	0	-85	21.79
			QPSK	3	3	3	-85	21.91
			QPSK	6	0	0	-85	21.68
			QPSK	6	0	1	-85	21.76
			QPSK	6	0	3	-85	21.87
			16QAM	1	0	0	-85	23.01
			16QAM	1	5	0	-85	22.99
			16QAM	1	0	1	-85	22.98
			16QAM	1	5	1	-85	22.17
			16QAM	1	0	3	-85	22.96
			16QAM	1	5	3	-85	22.23
			16QAM	3	0	0	-85	21.76
			16QAM	3	3	3	-85	21.86
			16QAM	5	0	0	-85	20.47
			16QAM	5	0	1	-85	20.42
			16QAM	5	0	3	-85	20.44

LTE Band 4								
BW (MHz): 5								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
High Range	20375	1752.5	QPSK	1	0	0	-85	22.67
			QPSK	1	5	0	-85	22.97
			QPSK	1	0	1	-85	22.89
			QPSK	1	5	1	-85	22.71
			QPSK	1	0	3	-85	22.91
			QPSK	1	5	3	-85	22.67
			QPSK	3	0	0	-85	21.77
			QPSK	3	3	3	-85	21.94
			QPSK	6	0	0	-85	21.81
			QPSK	6	0	1	-85	21.78
			QPSK	6	0	3	-85	22.01
			16QAM	1	0	0	-85	22.17
			16QAM	1	5	0	-85	22.83
			16QAM	1	0	1	-85	22.14
			16QAM	1	5	1	-85	22.13
			16QAM	1	0	3	-85	22.13
			16QAM	1	5	3	-85	22.23
			16QAM	3	0	0	-85	21.56
			16QAM	3	3	3	-85	21.96
			16QAM	5	0	0	-85	20.42
			16QAM	5	0	1	-85	20.44
			16QAM	5	0	3	-85	20.44

LTE Band 4								
BW (MHz): 10								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	20000	1715	QPSK	1	0	0	-85	22.76
			QPSK	1	5	0	-85	22.96
			QPSK	1	0	3	-85	22.99
			QPSK	1	5	3	-85	22.87
			QPSK	1	0	7	-85	22.81
			QPSK	1	5	7	-85	22.85
			QPSK	4	0	0	-85	22.86
			QPSK	4	2	7	-85	22.83
			QPSK	6	0	0	-85	21.81
			QPSK	6	0	7	-85	21.92
			16QAM	1	0	0	-85	23.05
			16QAM	1	5	0	-85	22.99
			16QAM	1	0	3	-85	23.01
			16QAM	1	5	3	-85	23.01
			16QAM	1	0	7	-85	22.98
			16QAM	1	5	7	-85	22.93
			16QAM	4	2	0	-85	22.16
			16QAM	4	2	7	-85	22.23
			16QAM	5	0	0	-85	21.59
			16QAM	5	0	7	-85	21.68
Mid. Range	20175	1732.5	QPSK	1	0	0	-85	22.91
			QPSK	1	5	0	-85	22.96
			QPSK	1	0	3	-85	22.89
			QPSK	1	5	3	-85	22.83
			QPSK	1	0	7	-85	22.86
			QPSK	1	5	7	-85	22.78
			QPSK	4	0	0	-85	22.87
			QPSK	4	2	7	-85	22.88
			QPSK	6	0	0	-85	21.94
			QPSK	6	0	7	-85	21.92
			16QAM	1	0	0	-85	22.97
			16QAM	1	5	0	-85	22.43
			16QAM	1	0	3	-85	23.06
			16QAM	1	5	3	-85	23.02
			16QAM	1	0	7	-85	22.04
			16QAM	1	5	7	-85	22.97
			16QAM	4	2	0	-85	22.17
			16QAM	4	2	7	-85	22.1
			16QAM	5	0	0	-85	21.56
			16QAM	5	0	7	-85	21.72
High Range	20350	1750	QPSK	1	0	0	-85	22.71
			QPSK	1	5	0	-85	22.76
			QPSK	1	5	7	-85	22.77
			QPSK	1	0	3	-85	22.72
			QPSK	1	5	3	-85	22.76
			QPSK	1	0	7	-85	22.73
			QPSK	4	0	0	-85	22.68
			QPSK	4	2	7	-85	22.78
			QPSK	6	0	0	-85	21.87
			QPSK	6	0	7	-85	21.87
			16QAM	1	0	0	-85	22.91
			16QAM	1	5	0	-85	22.96
			16QAM	1	0	3	-85	22.13
			16QAM	1	5	3	-85	21.97
			16QAM	1	0	7	-85	21.97
			16QAM	1	5	7	-85	21.96
			16QAM	4	2	0	-85	22.08
			16QAM	4	2	7	-85	22.98
			16QAM	5	0	0	-85	21.65
			16QAM	5	0	7	-85	21.54

LTE Band 4								
BW (MHz): 15								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	20025	1717.5	QPSK	1	0	0	-85	22.96
			QPSK	1	5	0	-85	22.91
			QPSK	1	0	5	-85	22.93
			QPSK	1	5	5	-85	22.92
			QPSK	1	0	11	-85	22.92
			QPSK	1	5	11	-85	22.93
			QPSK	3	0	0	-85	23.01
			QPSK	3	3	11	-85	22.94
			QPSK	6	0	0	-85	23.05
			QPSK	6	0	11	-85	22.95
			16QAM	1	0	0	-85	23.01
			16QAM	1	5	0	-85	23.02
			16QAM	1	0	5	-85	23.04
			16QAM	1	5	5	-85	23
			16QAM	1	0	11	-85	22.99
			16QAM	1	5	11	-85	23
			16QAM	3	0	0	-85	22.69
			16QAM	3	3	11	-85	22.9
			16QAM	5	0	0	-85	22.56
			16QAM	5	0	11	-85	22.84
Mid. Range	20175	1732.5	QPSK	1	0	0	-85	22.82
			QPSK	1	5	0	-85	22.93
			QPSK	1	0	5	-85	22.87
			QPSK	1	5	5	-85	22.91
			QPSK	1	0	11	-85	22.93
			QPSK	1	5	11	-85	22.87
			QPSK	3	0	0	-85	22.98
			QPSK	3	3	11	-85	22.94
			QPSK	6	0	0	-85	22.91
			QPSK	6	0	11	-85	22.98
			16QAM	1	0	0	-85	22.87
			16QAM	1	5	0	-85	23.02
			16QAM	1	0	5	-85	23.01
			16QAM	1	5	5	-85	22.99
			16QAM	1	0	11	-85	23.01
			16QAM	1	5	11	-85	23.02
			16QAM	3	0	0	-85	22.97
			16QAM	3	3	11	-85	22.91
			16QAM	5	0	0	-85	22.76
			16QAM	5	0	11	-85	22.82
High Range	20325	1747.5	QPSK	1	0	0	-85	22.76
			QPSK	1	5	11	-85	22.72
			QPSK	1	0	5	-85	22.71
			QPSK	1	5	5	-85	22.77
			QPSK	1	0	11	-85	22.76
			QPSK	3	0	0	-85	22.91
			QPSK	3	3	11	-85	22.75
			QPSK	6	0	0	-85	22.84
			QPSK	6	0	11	-85	22.85
			16QAM	1	0	0	-85	23.03
			16QAM	1	5	0	-85	23.01
			16QAM	1	0	5	-85	22.45
			16QAM	1	5	5	-85	22.47
			16QAM	1	0	11	-85	22.33
			16QAM	1	5	11	-85	21.84
			16QAM	3	0	0	-85	22.89
			16QAM	3	3	11	-85	22.65
			16QAM	5	0	0	-85	22.52
			16QAM	5	0	11	-85	22.65
			16QAM	5	0	11	-85	22.86

LTE Band 4								
BW (MHz): 20								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	20050	1720	QPSK	1	0	0	-85	23.01
			QPSK	1	5	0	-85	22.84
			QPSK	1	0	7	-85	22.91
			QPSK	1	5	7	-85	22.96
			QPSK	1	0	15	-85	22.85
			QPSK	1	5	15	-85	22.88
			QPSK	3	0	0	-85	23.01
			QPSK	3	3	15	-85	22.86
			QPSK	6	0	0	-85	22.97
			QPSK	6	0	15	-85	22.89
			16QAM	1	0	0	-85	22.99
			16QAM	1	5	0	-85	22.87
			16QAM	1	0	7	-85	22.93
			16QAM	1	5	7	-85	22.9
			16QAM	1	0	15	-85	23.03
			16QAM	1	5	15	-85	23.02
			16QAM	3	0	0	-85	22.91
			16QAM	3	3	15	-85	22.93
			16QAM	5	0	0	-85	22.78
			16QAM	5	0	15	-85	22.88
Mid. Range	20175	1732.5	QPSK	1	0	0	-85	22.97
			QPSK	1	5	0	-85	22.88
			QPSK	1	0	7	-85	22.86
			QPSK	1	5	7	-85	22.74
			QPSK	1	0	15	-85	22.71
			QPSK	1	5	15	-85	22.74
			QPSK	3	0	0	-85	22.99
			QPSK	3	3	15	-85	22.76
			QPSK	6	0	0	-85	22.91
			QPSK	6	0	15	-85	22.93
			16QAM	1	0	0	-85	22.89
			16QAM	1	5	0	-85	22.96
			16QAM	1	0	7	-85	22.93
			16QAM	1	5	7	-85	22.97
			16QAM	1	0	15	-85	23.01
			16QAM	1	5	15	-85	22.93
			16QAM	3	0	0	-85	22.87
			16QAM	3	3	15	-85	22.94
			16QAM	5	0	0	-85	22.68
			16QAM	5	0	15	-85	22.75
High Range	20300	1745	QPSK	1	0	0	-85	22.85
			QPSK	1	5	0	-85	22.87
			QPSK	1	0	7	-85	22.77
			QPSK	1	5	7	-85	22.87
			QPSK	1	0	15	-85	22.81
			QPSK	1	5	15	-85	22.77
			QPSK	3	0	0	-85	22.95
			QPSK	3	3	15	-85	22.69
			QPSK	6	0	0	-85	22.87
			QPSK	6	0	15	-85	22.78
			16QAM	1	0	0	-85	23.02
			16QAM	1	5	0	-85	23.05
			16QAM	1	0	7	-85	22.98
			16QAM	1	5	7	-85	22.97
			16QAM	1	0	15	-85	22.57
			16QAM	1	5	15	-85	22.21
			16QAM	3	0	0	-85	22.77
			16QAM	3	3	15	-85	22.72
			16QAM	5	0	0	-85	22.68
			16QAM	5	0	15	-85	22.69

LTE Band 12								
BW (MHz): 1.4								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	23017	699.7	QPSK	1	0	0	-85	24.21
			QPSK	1	5	0	-85	23.77
			QPSK	3	3	0	-85	22.17
			QPSK	6	0	0	-85	21.26
			16QAM	1	0	0	-85	23.57
			16QAM	1	5	0	-85	22.82
			16QAM	3	0	0	-85	22.11
Mid. Range	23095	707.5	16QAM	5	0	0	-85	22.1
			QPSK	1	0	0	-85	23.91
			QPSK	1	5	0	-85	23.77
			QPSK	3	3	0	-85	22.16
			QPSK	6	0	0	-85	21.25
			16QAM	1	0	0	-85	23.57
			16QAM	1	5	0	-85	23.81
High Range	23173	715.3	16QAM	3	0	0	-85	22.06
			16QAM	5	0	0	-85	22.09
			QPSK	1	0	0	-85	24.13
			QPSK	1	5	0	-85	23.67
			QPSK	3	3	0	-85	22.06
			QPSK	6	0	0	-85	21.13
			16QAM	1	0	0	-85	23.49
			16QAM	1	5	0	-85	23.72
			16QAM	3	0	0	-85	21.99
			16QAM	5	0	0	-85	21.87

LTE Band 12								
BW (MHz): 3								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	23025	700.5	QPSK	1	0	0	-85	23.65
			QPSK	1	5	0	-85	23.82
			QPSK	1	0	1	-85	23.77
			QPSK	1	5	1	-85	23.81
			QPSK	3	3	0	-85	23.51
			QPSK	3	3	1	-85	23.61
			QPSK	6	0	0	-85	23.52
			QPSK	6	0	1	-85	22.99
			16QAM	1	0	0	-85	22.64
			16QAM	1	5	0	-85	22.76
			16QAM	1	0	1	-85	22.88
			16QAM	1	5	1	-85	22.67
			16QAM	3	0	0	-85	21.84
			16QAM	3	3	1	-85	21.81
			16QAM	5	0	0	-85	21.43
			16QAM	5	0	1	-85	21.44
Mid. Range	23095	707.5	QPSK	1	0	0	-85	23.67
			QPSK	1	5	0	-85	23.66
			QPSK	1	0	1	-85	23.81
			QPSK	1	5	1	-85	23.79
			QPSK	3	3	0	-85	23.49
			QPSK	3	3	1	-85	23.52
			QPSK	6	0	0	-85	23.24
			QPSK	6	0	1	-85	22.96
			16QAM	1	0	0	-85	22.56
			16QAM	1	5	0	-85	22.66
			16QAM	1	0	1	-85	22.57
			16QAM	1	5	1	-85	22.78
			16QAM	3	0	0	-85	21.79
			16QAM	3	3	1	-85	21.8
			16QAM	5	0	0	-85	21.53
			16QAM	5	0	1	-85	21.44
High Range	23165	714.5	QPSK	1	0	0	-85	23.79
			QPSK	1	5	0	-85	23.83
			QPSK	1	0	1	-85	23.85
			QPSK	1	5	1	-85	23.72
			QPSK	3	3	0	-85	23.56
			QPSK	3	3	1	-85	23.61
			QPSK	6	0	0	-85	23.26
			QPSK	6	0	1	-85	23.31
			16QAM	1	0	0	-85	22.88
			16QAM	1	5	0	-85	22.78
			16QAM	1	0	1	-85	22.68
			16QAM	1	5	1	-85	22.74
			16QAM	3	0	0	-85	21.81
			16QAM	3	3	1	-85	21.67
			16QAM	6	0	0	-85	21.54
			16QAM	6	0	1	-85	21.63

LTE Band 12								
BW (MHz): 5								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	23035	701.5	QPSK	1	0	0	-85	23.01
			QPSK	1	5	0	-85	22.95
			QPSK	1	0	1	-85	22.95
			QPSK	1	5	1	-85	22.89
			QPSK	1	0	3	-85	22.86
			QPSK	1	5	3	-85	22.91
			QPSK	3	0	0	-85	21.01
			QPSK	3	3	3	-85	21.93
			QPSK	6	0	0	-85	21.99
			QPSK	6	0	1	-85	21.02
			QPSK	6	0	3	-85	21.98
			16QAM	1	0	0	-85	23.17
			16QAM	1	5	0	-85	23.02
			16QAM	1	0	1	-85	22.91
			16QAM	1	5	1	-85	22.94
			16QAM	1	0	3	-85	22.98
			16QAM	1	5	3	-85	22.94
			16QAM	3	0	0	-85	22.04
			16QAM	3	3	3	-85	22.02
			16QAM	5	0	0	-85	22.02
			16QAM	5	0	1	-85	22.03
			16QAM	5	0	3	-85	22.01
Mid. Range	23095	707.5	QPSK	1	0	0	-85	22.89
			QPSK	1	5	0	-85	22.77
			QPSK	1	0	1	-85	22.98
			QPSK	1	5	1	-85	22.94
			QPSK	1	0	3	-85	22.97
			QPSK	1	5	3	-85	22.9
			QPSK	3	0	0	-85	21.95
			QPSK	3	3	3	-85	21.89
			QPSK	6	0	0	-85	21.92
			QPSK	6	0	1	-85	21.89
			QPSK	6	0	3	-85	21.76
			16QAM	1	0	0	-85	22.97
			16QAM	1	5	0	-85	22.91
			16QAM	1	0	1	-85	22.94
			16QAM	1	5	1	-85	22.88
			16QAM	1	0	3	-85	22.88
			16QAM	1	5	3	-85	22.79
			16QAM	3	0	0	-85	21.96
			16QAM	3	3	3	-85	21.87
			16QAM	5	0	0	-85	21.98
			16QAM	5	0	1	-85	21.76
			16QAM	5	0	3	-85	21.79

LTE Band 12								
BW (MHz): 5								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
High Range	23155	713.5	QPSK	1	0	0	-85	22.98
			QPSK	1	5	0	-85	22.98
			QPSK	1	0	1	-85	22.96
			QPSK	1	5	1	-85	22.93
			QPSK	1	0	3	-85	22.94
			QPSK	1	5	3	-85	22.89
			QPSK	3	0	0	-85	21.94
			QPSK	3	3	3	-85	21.99
			QPSK	6	0	0	-85	21.87
			QPSK	6	0	1	-85	21.85
			QPSK	6	0	3	-85	21.84
			16QAM	1	0	0	-85	23.01
			16QAM	1	5	0	-85	22.99
			16QAM	1	0	1	-85	22.96
			16QAM	1	5	1	-85	22.97
			16QAM	1	0	3	-85	22.87
			16QAM	1	5	3	-85	22.89
			16QAM	3	0	0	-85	21.94
			16QAM	3	3	3	-85	21.85
			16QAM	6	0	0	-85	21.67
			16QAM	6	0	1	-85	21.74
			16QAM	6	0	3	-85	21.59

LTE Band 12								
BW (MHz): 10								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	23060	704	QPSK	1	0	0	-85	23.02
			QPSK	1	5	0	-85	23.01
			QPSK	1	0	3	-85	23.04
			QPSK	1	5	3	-85	23.03
			QPSK	1	0	7	-85	23.02
			QPSK	1	5	7	-85	23.01
			QPSK	4	0	0	-85	22.91
			QPSK	4	2	7	-85	23.05
			QPSK	6	0	0	-85	21.89
			QPSK	6	0	7	-85	21.76
			16QAM	1	0	0	-85	23.01
			16QAM	1	5	0	-85	22.99
			16QAM	1	0	3	-85	22.91
			16QAM	1	5	3	-85	22.96
			16QAM	1	0	7	-85	23.04
			16QAM	1	5	7	-85	22.98
			16QAM	4	2	0	-85	23.02
			16QAM	4	2	7	-85	23.01
			16QAM	6	0	0	-85	21.97
			16QAM	6	0	7	-85	21.88
Mid. Range	23095	707.5	QPSK	1	0	0	-85	23.07
			QPSK	1	5	0	-85	23.04
			QPSK	1	0	3	-85	23.02
			QPSK	1	5	3	-85	23.01
			QPSK	1	0	7	-85	23.05
			QPSK	1	5	7	-85	22.99
			QPSK	4	0	0	-85	22.98
			QPSK	4	2	7	-85	23.01
			QPSK	6	0	0	-85	21.88
			QPSK	6	0	7	-85	21.78
			16QAM	1	0	0	-85	22.99
			16QAM	1	5	0	-85	22.94
			16QAM	1	0	3	-85	22.91
			16QAM	1	5	3	-85	23.01
			16QAM	1	0	7	-85	22.95
			16QAM	1	5	7	-85	23.02
			16QAM	4	2	0	-85	22.96
			16QAM	4	2	7	-85	21.67
			16QAM	6	0	0	-85	21.87
			16QAM	6	0	7	-85	21.89
High Range	23130	711	QPSK	1	0	0	-85	23.12
			QPSK	1	5	0	-85	23.11
			QPSK	1	5	7	-85	23.05
			QPSK	1	0	3	-85	23.07
			QPSK	1	5	3	-85	23.09
			QPSK	1	0	7	-85	22.98
			QPSK	4	0	0	-85	22.95
			QPSK	4	2	7	-85	22.97
			QPSK	6	0	0	-85	21.87
			QPSK	6	0	7	-85	21.99
			16QAM	1	0	0	-85	23.04
			16QAM	1	5	0	-85	23.12
			16QAM	1	0	3	-85	23.09
			16QAM	1	5	3	-85	22.98
			16QAM	1	0	7	-85	22.95
			16QAM	1	5	7	-85	22.94
			16QAM	4	2	0	-85	22.94
			16QAM	4	2	7	-85	22.99
			16QAM	6	0	0	-85	21.87
			16QAM	6	0	7	-85	21.78

LTE Band 13								
BW (MHz): 5								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	23205	779.5	QPSK	1	0	0	-85	23.21
			QPSK	1	5	0	-85	23.24
			QPSK	1	0	1	-85	23.42
			QPSK	1	5	1	-85	23.38
			QPSK	1	0	3	-85	22.41
			QPSK	1	5	3	-85	23.38
			QPSK	3	0	0	-85	22.52
			QPSK	3	3	3	-85	22.54
			QPSK	6	0	0	-85	22.57
			QPSK	6	0	1	-85	22.59
			QPSK	6	0	3	-85	22.78
			16QAM	1	0	0	-85	22.59
			16QAM	1	5	0	-85	22.56
			16QAM	1	0	1	-85	22.58
			16QAM	1	5	1	-85	22.58
			16QAM	1	0	3	-85	22.77
			16QAM	1	5	3	-85	22.73
			16QAM	3	0	0	-85	22.34
			16QAM	3	3	3	-85	22.46
			16QAM	5	0	0	-85	20.94
			16QAM	5	0	1	-85	21.17
Mid. Range	23230	782	16QAM	5	0	3	-85	21.18
			QPSK	1	0	0	-85	23.32
			QPSK	1	5	0	-85	23.36
			QPSK	1	0	1	-85	23.39
			QPSK	1	5	1	-85	23.33
			QPSK	1	0	3	-85	23.49
			QPSK	1	5	3	-85	23.67
			QPSK	3	0	0	-85	22.64
			QPSK	3	3	3	-85	22.63
			QPSK	6	0	0	-85	22.62
			QPSK	6	0	1	-85	22.67
			QPSK	6	0	3	-85	22.88
			16QAM	1	0	0	-85	22.75
			16QAM	1	5	0	-85	22.61
			16QAM	1	0	1	-85	22.71
			16QAM	1	5	1	-85	22.69
			16QAM	1	0	3	-85	22.83
			16QAM	1	5	3	-85	22.83
			16QAM	3	0	0	-85	22.22
			16QAM	3	3	3	-85	22.45
			16QAM	5	0	0	-85	20.97
			16QAM	5	0	1	-85	21.05
			16QAM	5	0	3	-85	21.27

LTE Band 13								
BW (MHz): 5								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
High Range	23255	784.5	QPSK	1	0	0	-85	23.41
			QPSK	1	5	0	-85	23.42
			QPSK	1	0	1	-85	23.47
			QPSK	1	5	1	-85	23.49
			QPSK	1	0	3	-85	23.66
			QPSK	1	5	3	-85	23.54
			QPSK	3	0	0	-85	22.79
			QPSK	3	3	3	-85	22.6
			QPSK	6	0	0	-85	22.78
			QPSK	6	0	1	-85	22.77
			QPSK	6	0	3	-85	22.93
			16QAM	1	0	0	-85	22.77
			16QAM	1	5	0	-85	22.77
			16QAM	1	0	1	-85	22.83
			16QAM	1	5	1	-85	22.76
			16QAM	1	0	3	-85	22.94
			16QAM	1	5	3	-85	22.88
			16QAM	3	0	0	-85	22.43
			16QAM	3	3	3	-85	22.59
			16QAM	5	0	0	-85	21.15
			16QAM	5	0	1	-85	21.22
			16QAM	5	0	3	-85	21.48

LTE Band 13								
BW (MHz): 10								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Mid. Range	23230	782	QPSK	1	0	0	-85	23.02
			QPSK	1	5	0	-85	23.01
			QPSK	1	0	3	-85	23.17
			QPSK	1	5	3	-85	23.24
			QPSK	1	0	7	-85	23.27
			QPSK	1	5	7	-85	23.24
			QPSK	4	0	0	-85	23.15
			QPSK	4	2	7	-85	23.17
			QPSK	6	0	0	-85	22.55
			QPSK	6	0	7	-85	22.84
			16QAM	1	0	0	-85	22.49
			16QAM	1	5	0	-85	23.01
			16QAM	1	0	3	-85	23.19
			16QAM	1	5	3	-85	23.12
			16QAM	1	0	7	-85	22.77
			16QAM	1	5	7	-85	22.89
			16QAM	4	2	0	-85	22.15
			16QAM	4	2	7	-85	22.81
			16QAM	5	0	0	-85	22.02
			16QAM	5	0	7	-85	22.78

LTE Band 17								
BW (MHz): 5								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	23755	706.5	QPSK	1	0	0	-85	23.62
			QPSK	1	5	0	-85	23.71
			QPSK	1	0	1	-85	23.61
			QPSK	1	5	1	-85	23.69
			QPSK	1	0	3	-85	23.79
			QPSK	1	5	3	-85	23.71
			QPSK	3	0	0	-85	22.94
			QPSK	3	3	3	-85	22.82
			QPSK	6	0	0	-85	22.94
			QPSK	6	0	1	-85	22.94
			QPSK	6	0	3	-85	22.98
			16QAM	1	0	0	-85	23.01
			16QAM	1	5	0	-85	22.93
			16QAM	1	0	1	-85	22.96
			16QAM	1	5	1	-85	22.93
			16QAM	1	0	3	-85	23.01
			16QAM	1	5	3	-85	22.97
			16QAM	3	0	0	-85	22.56
			16QAM	3	3	3	-85	22.61
			16QAM	5	0	0	-85	21.34
			16QAM	5	0	1	-85	21.31
Mid. Range	23790	710	16QAM	5	0	3	-85	21.37
			QPSK	1	0	0	-85	23.67
			QPSK	1	5	0	-85	23.68
			QPSK	1	0	1	-85	23.45
			QPSK	1	5	1	-85	23.64
			QPSK	1	0	3	-85	23.71
			QPSK	1	5	3	-85	23.66
			QPSK	3	0	0	-85	22.98
			QPSK	3	3	3	-85	22.82
			QPSK	6	0	0	-85	22.94
			QPSK	6	0	1	-85	22.93
			QPSK	6	0	3	-85	22.91
			16QAM	1	0	0	-85	23
			16QAM	1	5	0	-85	22.94
			16QAM	1	0	1	-85	22.89
			16QAM	1	5	1	-85	22.94
			16QAM	1	0	3	-85	23.03
			16QAM	1	5	3	-85	22.99
			16QAM	3	0	0	-85	22.59
			16QAM	3	3	3	-85	22.56
			16QAM	5	0	0	-85	21.31
			16QAM	5	0	1	-85	21.34
			16QAM	5	0	3	-85	21.29

LTE Band 17								
BW (MHz): 5								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
High Range	23825	713.5	QPSK	1	0	0	-85	23.61
			QPSK	1	5	0	-85	23.67
			QPSK	1	0	1	-85	23.76
			QPSK	1	5	1	-85	23.68
			QPSK	1	0	3	-85	23.64
			QPSK	1	5	3	-85	23.61
			QPSK	3	0	0	-85	22.92
			QPSK	3	3	3	-85	22.79
			QPSK	6	0	0	-85	22.94
			QPSK	6	0	1	-85	22.97
			QPSK	6	0	3	-85	22.93
			16QAM	1	0	0	-85	22.97
			16QAM	1	5	0	-85	22.98
			16QAM	1	0	1	-85	23.04
			16QAM	1	5	1	-85	22.97
			16QAM	1	0	3	-85	22.94
			16QAM	1	5	3	-85	22.96
			16QAM	3	0	0	-85	22.56
			16QAM	3	3	3	-85	22.97
			16QAM	5	0	0	-85	21.33
			16QAM	5	0	1	-85	21.34
			16QAM	5	0	3	-85	21.45

LTE Band 17								
BW (MHz): 10								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	23780	709	QPSK	1	0	0	-85	23.73
			QPSK	1	5	0	-85	23.42
			QPSK	1	0	3	-85	23.68
			QPSK	1	5	3	-85	23.73
			QPSK	1	0	7	-85	23.41
			QPSK	1	5	7	-85	23.39
			QPSK	4	0	0	-85	23.71
			QPSK	4	2	7	-85	23.52
			QPSK	6	0	0	-85	22.91
			QPSK	6	0	7	-85	22.85
			16QAM	1	0	0	-85	23.34
			16QAM	1	5	0	-85	23.12
			16QAM	1	0	3	-85	23.44
			16QAM	1	5	3	-85	23.26
			16QAM	1	0	7	-85	23.16
			16QAM	1	5	7	-85	22.98
			16QAM	4	2	0	-85	23.12
			16QAM	4	2	7	-85	23.02
			16QAM	5	0	0	-85	22.71
			16QAM	5	0	7	-85	22.52
Mid. Range	23790	710	QPSK	1	0	0	-85	23.71
			QPSK	1	5	0	-85	23.44
			QPSK	1	0	3	-85	23.64
			QPSK	1	5	3	-85	23.18
			QPSK	1	0	7	-85	23.44
			QPSK	1	5	7	-85	23.34
			QPSK	4	0	0	-85	23.67
			QPSK	4	2	7	-85	23.69
			QPSK	6	0	0	-85	22.91
			QPSK	6	0	7	-85	22.88
			16QAM	1	0	0	-85	23.38
			16QAM	1	5	0	-85	23.02
			16QAM	1	0	3	-85	23.41
			16QAM	1	5	3	-85	23.25
			16QAM	1	0	7	-85	23.22
			16QAM	1	5	7	-85	23.46
			16QAM	4	2	0	-85	22.69
			16QAM	4	2	7	-85	22.82
			16QAM	5	0	0	-85	22.72
			16QAM	5	0	7	-85	22.91
High Range	23800	711	QPSK	1	0	0	-85	23.42
			QPSK	1	5	0	-85	23.59
			QPSK	1	5	7	-85	23.57
			QPSK	1	0	3	-85	23.57
			QPSK	1	5	3	-85	23.61
			QPSK	1	0	7	-85	23.32
			QPSK	4	0	0	-85	23.64
			QPSK	4	2	7	-85	23.67
			QPSK	6	0	0	-85	22.87
			QPSK	6	0	7	-85	22.75
			16QAM	1	0	0	-85	23.03
			16QAM	1	5	0	-85	23.07
			16QAM	1	0	3	-85	23.16
			16QAM	1	5	3	-85	23.12
			16QAM	1	0	7	-85	23.27
			16QAM	1	5	7	-85	23.36
			16QAM	4	2	0	-85	23.01
			16QAM	4	2	7	-85	22.97
			16QAM	5	0	0	-85	22.76
			16QAM	5	0	7	-85	22.75

LTE Band 66								
BW (MHz): 1.4								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	131979	1710.7	QPSK	1	0	0	-85	23.58
			QPSK	1	5	0	-85	23.53
			QPSK	3	3	0	-85	22.31
			QPSK	6	0	0	-85	21.18
			16QAM	1	0	0	-85	21.99
			16QAM	1	5	0	-85	22.02
			16QAM	3	0	0	-85	21.69
Mid. Range	132322	1745	16QAM	5	0	0	-85	21.16
			QPSK	1	0	0	-85	23.63
			QPSK	1	5	0	-85	23.54
			QPSK	3	3	0	-85	22.43
			QPSK	6	0	0	-85	21.24
			16QAM	1	0	0	-85	23.42
			16QAM	1	5	0	-85	23.37
High Range	132665	1779.3	16QAM	3	0	0	-85	22.36
			16QAM	5	0	0	-85	22.37
			QPSK	1	0	0	-85	23.17
			QPSK	1	5	0	-85	23.19
			QPSK	3	3	0	-85	22.02
			QPSK	6	0	0	-85	20.66
			16QAM	1	0	0	-85	21.71
			16QAM	1	5	0	-85	21.88
			16QAM	3	0	0	-85	21.32
			16QAM	5	0	0	-85	20.97

LTE Band 66								
BW (MHz): 3								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	131987	1711.5	QPSK	1	0	0	-85	23.02
			QPSK	1	5	0	-85	22.97
			QPSK	1	0	1	-85	23.12
			QPSK	1	5	1	-85	22.94
			QPSK	3	3	0	-85	21.99
			QPSK	3	3	1	-85	21.86
			QPSK	6	0	0	-85	20.83
			QPSK	6	0	1	-85	20.81
			16QAM	1	0	0	-85	22.02
			16QAM	1	5	0	-85	22.12
			16QAM	1	0	1	-85	22.02
			16QAM	1	5	1	-85	22.11
			16QAM	3	0	0	-85	21.67
			16QAM	3	3	1	-85	21.39
			16QAM	5	0	0	-85	20.76
			16QAM	5	0	1	-85	20.82
Mid. Range	132322	1745	QPSK	1	0	0	-85	23.12
			QPSK	1	5	0	-85	23.02
			QPSK	1	0	1	-85	23.32
			QPSK	1	5	1	-85	23.33
			QPSK	3	3	0	-85	21.99
			QPSK	3	3	1	-85	21.97
			QPSK	6	0	0	-85	20.91
			QPSK	6	0	1	-85	20.83
			16QAM	1	0	0	-85	23.03
			16QAM	1	5	0	-85	23.05
			16QAM	1	0	1	-85	23.14
			16QAM	1	5	1	-85	23.03
			16QAM	3	0	0	-85	22.18
			16QAM	3	3	1	-85	22.08
			16QAM	5	0	0	-85	21.97
			16QAM	5	0	1	-85	22.12
High Range	132657	1778.5	QPSK	1	0	0	-85	22.91
			QPSK	1	5	0	-85	22.95
			QPSK	1	0	1	-85	22.94
			QPSK	1	5	1	-85	22.89
			QPSK	3	3	0	-85	21.58
			QPSK	3	3	1	-85	21.54
			QPSK	6	0	0	-85	20.59
			QPSK	6	0	1	-85	20.43
			16QAM	1	0	0	-85	21.77
			16QAM	1	5	0	-85	21.78
			16QAM	1	0	1	-85	21.76
			16QAM	1	5	1	-85	21.33
			16QAM	3	0	0	-85	21.26
			16QAM	3	3	1	-85	21.56
			16QAM	5	0	0	-85	20.58
			16QAM	5	0	1	-85	20.44

LTE Band 66								
BW (MHz): 5								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	131997	1712.5	QPSK	1	0	0	-85	22.97
			QPSK	1	5	0	-85	22.91
			QPSK	1	0	1	-85	22.94
			QPSK	1	5	1	-85	22.89
			QPSK	1	0	3	-85	21.89
			QPSK	1	5	3	-85	21.88
			QPSK	3	0	0	-85	21.77
			QPSK	3	3	3	-85	21.92
			QPSK	6	0	0	-85	21.84
			QPSK	6	0	1	-85	21.65
			QPSK	6	0	3	-85	21.55
			16QAM	1	0	0	-85	22.17
			16QAM	1	5	0	-85	23.06
			16QAM	1	0	1	-85	23.02
			16QAM	1	5	1	-85	23.01
			16QAM	1	0	3	-85	23.14
			16QAM	1	5	3	-85	23.12
			16QAM	3	0	0	-85	22.72
			16QAM	3	3	3	-85	22.87
			16QAM	5	0	0	-85	21.11
			16QAM	5	0	1	-85	21.32
			16QAM	5	0	3	-85	21.23
Mid. Range	132322	1745	QPSK	1	0	0	-85	23.07
			QPSK	1	5	0	-85	23.01
			QPSK	1	0	1	-85	23.13
			QPSK	1	5	1	-85	23.09
			QPSK	1	0	3	-85	23.13
			QPSK	1	5	3	-85	23.01
			QPSK	3	0	0	-85	22.37
			QPSK	3	3	3	-85	21.97
			QPSK	6	0	0	-85	21.83
			QPSK	6	0	1	-85	22.17
			QPSK	6	0	3	-85	22.25
			16QAM	1	0	0	-85	23.16
			16QAM	1	5	0	-85	23.14
			16QAM	1	0	1	-85	23.21
			16QAM	1	5	1	-85	23.04
			16QAM	1	0	3	-85	23.12
			16QAM	1	5	3	-85	23.12
			16QAM	3	0	0	-85	22.03
			16QAM	3	3	3	-85	22.02
			16QAM	5	0	0	-85	22.07
			16QAM	5	0	1	-85	22.14
			16QAM	5	0	3	-85	22.14

LTE Band 66								
BW (MHz): 5								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
High Range	132647	1777.5	QPSK	1	0	0	-85	22.93
			QPSK	1	5	0	-85	22.69
			QPSK	1	0	1	-85	22.73
			QPSK	1	5	1	-85	22.78
			QPSK	1	0	3	-85	22.67
			QPSK	1	5	3	-85	22.88
			QPSK	3	0	0	-85	21.84
			QPSK	3	3	3	-85	21.78
			QPSK	6	0	0	-85	21.79
			QPSK	6	0	1	-85	21.62
			QPSK	6	0	3	-85	21.68
			16QAM	1	0	0	-85	22.56
			16QAM	1	5	0	-85	23.02
			16QAM	1	0	1	-85	23.01
			16QAM	1	5	1	-85	23.07
			16QAM	1	0	3	-85	22.99
			16QAM	1	5	3	-85	22.91
			16QAM	3	0	0	-85	22.24
			16QAM	3	3	3	-85	22.21
			16QAM	5	0	0	-85	20.72
			16QAM	5	0	1	-85	20.66
			16QAM	5	0	3	-85	20.73

LTE Band 66								
BW (MHz): 10								
Test Frequency ID	N _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
			Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	132022	1715	QPSK	1	0	0	-85	23.01
			QPSK	1	5	0	-85	22.94
			QPSK	1	0	3	-85	23.02
			QPSK	1	5	3	-85	22.98
			QPSK	1	0	7	-85	23.04
			QPSK	1	5	7	-85	22.95
			QPSK	4	0	0	-85	23.01
			QPSK	4	2	7	-85	22.96
			QPSK	6	0	0	-85	22.04
			QPSK	6	0	7	-85	21.95
			16QAM	1	0	0	-85	23.18
			16QAM	1	5	0	-85	23.02
			16QAM	1	0	3	-85	23.01
			16QAM	1	5	3	-85	22.99
			16QAM	1	0	7	-85	22.94
			16QAM	1	5	7	-85	22.93
			16QAM	4	2	0	-85	21.95
			16QAM	4	2	7	-85	21.89
			16QAM	6	0	0	-85	21.82
			16QAM	6	0	7	-85	21.8
Mid. Range	132322	1745	QPSK	1	0	0	-85	23.01
			QPSK	1	5	0	-85	22.96
			QPSK	1	0	3	-85	23.01
			QPSK	1	5	3	-85	23.04
			QPSK	1	0	7	-85	23.01
			QPSK	1	5	7	-85	23.04
			QPSK	4	0	0	-85	23.15
			QPSK	4	2	7	-85	23.02
			QPSK	6	0	0	-85	21.91
			QPSK	6	0	7	-85	21.93
			16QAM	1	0	0	-85	23.12
			16QAM	1	5	0	-85	23.22
			16QAM	1	0	3	-85	23.32
			16QAM	1	5	3	-85	23.06
			16QAM	1	0	7	-85	23.04
			16QAM	1	5	7	-85	23.01
			16QAM	4	2	0	-85	23.01
			16QAM	4	2	7	-85	23.14
			16QAM	5	0	0	-85	22.11
			16QAM	5	0	7	-85	22.03
High Range	132622	1775	QPSK	1	0	0	-85	22.67
			QPSK	1	5	0	-85	22.65
			QPSK	1	5	7	-85	22.72
			QPSK	1	0	3	-85	22.7
			QPSK	1	5	3	-85	22.68
			QPSK	1	0	7	-85	22.71
			QPSK	4	0	0	-85	22.98
			QPSK	4	2	7	-85	22.88
			QPSK	6	0	0	-85	21.23
			QPSK	6	0	7	-85	21.18
			16QAM	1	0	0	-85	22.75
			16QAM	1	5	0	-85	22.88
			16QAM	1	0	3	-85	22.67
			16QAM	1	5	3	-85	22.75
			16QAM	1	0	7	-85	22.81
			16QAM	1	5	7	-85	22.69
			16QAM	4	2	0	-85	21.02
			16QAM	4	2	7	-85	21.33
			16QAM	6	0	0	-85	21.14
			16QAM	6	0	7	-85	20.87

LTE Band 66								
BW (MHz): 15		Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
Test Frequency ID	N _{UL}		Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	132047	1717.5	QPSK	1	0	0	-85	22.96
			QPSK	1	5	0	-85	23.03
			QPSK	1	0	5	-85	22.97
			QPSK	1	5	5	-85	23.04
			QPSK	1	0	11	-85	23.11
			QPSK	1	5	11	-85	23.05
			QPSK	3	0	0	-85	23.13
			QPSK	3	3	11	-85	22.88
			QPSK	6	0	0	-85	22.77
			QPSK	6	0	11	-85	22.54
			16QAM	1	0	0	-85	22.44
			16QAM	1	5	0	-85	22.17
			16QAM	1	0	5	-85	22.39
			16QAM	1	5	5	-85	22.56
			16QAM	1	0	11	-85	22.53
			16QAM	1	5	11	-85	22.47
			16QAM	3	0	0	-85	23.44
			16QAM	3	3	11	-85	22.61
			16QAM	5	0	0	-85	22.97
			16QAM	5	0	11	-85	22.45
Mid. Range	132322	1745	QPSK	1	0	0	-85	23.14
			QPSK	1	5	0	-85	23.1
			QPSK	1	0	5	-85	22.93
			QPSK	1	5	5	-85	22.92
			QPSK	1	0	11	-85	22.93
			QPSK	1	5	11	-85	22.91
			QPSK	3	0	0	-85	23.13
			QPSK	3	3	11	-85	22.94
			QPSK	6	0	0	-85	22.87
			QPSK	6	0	11	-85	23.02
			16QAM	1	0	0	-85	23.23
			16QAM	1	5	0	-85	23.19
			16QAM	1	0	5	-85	23.02
			16QAM	1	5	5	-85	23.16
			16QAM	1	0	11	-85	23.01
			16QAM	1	5	11	-85	23.12
			16QAM	3	0	0	-85	23.04
			16QAM	3	3	11	-85	23.11
			16QAM	5	0	0	-85	23.12
			16QAM	5	0	11	-85	22.67
High Range	132597	1772.5	QPSK	1	0	0	-85	22.78
			QPSK	1	5	11	-85	22.89
			QPSK	1	0	5	-85	22.91
			QPSK	1	5	5	-85	22.93
			QPSK	1	0	11	-85	22.87
			QPSK	1	5	11	-85	22.95
			QPSK	3	0	0	-85	23.04
			QPSK	3	3	11	-85	23.01
			QPSK	6	0	0	-85	22.84
			QPSK	6	0	11	-85	21.87
			16QAM	1	0	0	-85	22.96
			16QAM	1	5	0	-85	22.96
			16QAM	1	0	5	-85	22.95
			16QAM	1	5	5	-85	22.91
			16QAM	1	0	11	-85	22.89
			16QAM	1	5	11	-85	22.76
			16QAM	3	0	0	-85	23.01
			16QAM	3	3	11	-85	23.03
			16QAM	5	0	0	-85	22.84
			16QAM	5	0	11	-85	21.56

LTE Band 66								
BW (MHz): 20		Frequency of Uplink (MHz)	Test Configuration Initial of Power				EUT	
Test Frequency ID	N _{UL}		Modulation	RB Size	RB Offset	Narrowband Index	Cell Power (dBm/15 kHz)	Power (dBm)
Low Range	132072	1720	QPSK	1	0	0	-85	23.11
			QPSK	1	5	0	-85	23.02
			QPSK	1	0	7	-85	23.02
			QPSK	1	5	7	-85	23.01
			QPSK	1	0	15	-85	23.02
			QPSK	1	5	15	-85	22.99
			QPSK	3	0	0	-85	23.14
			QPSK	3	3	15	-85	22.66
			QPSK	6	0	0	-85	22.76
			QPSK	6	0	15	-85	22.95
			16QAM	1	0	0	-85	22.67
			16QAM	1	5	0	-85	22.87
			16QAM	1	0	7	-85	23.01
			16QAM	1	5	7	-85	22.87
			16QAM	1	0	15	-85	22.84
			16QAM	1	5	15	-85	22.76
			16QAM	3	0	0	-85	23.09
			16QAM	3	3	15	-85	23.23
			16QAM	5	0	0	-85	23.07
			16QAM	5	0	15	-85	22.95
Mid. Range	132322	1745	QPSK	1	0	0	-85	22.97
			QPSK	1	5	0	-85	23.21
			QPSK	1	0	7	-85	22.95
			QPSK	1	5	7	-85	22.97
			QPSK	1	0	15	-85	22.91
			QPSK	1	5	15	-85	22.91
			QPSK	3	0	0	-85	23.19
			QPSK	3	3	15	-85	22.82
			QPSK	6	0	0	-85	23.01
			QPSK	6	0	15	-85	22.78
			16QAM	1	0	0	-85	23.03
			16QAM	1	5	0	-85	23.12
			16QAM	1	0	7	-85	22.87
			16QAM	1	5	7	-85	22.93
			16QAM	1	0	15	-85	23.13
			16QAM	1	5	15	-85	23.12
			16QAM	3	0	0	-85	22.87
			16QAM	3	3	15	-85	22.94
			16QAM	5	0	0	-85	22.84
			16QAM	5	0	15	-85	22.88
High Range	132572	1770	QPSK	1	0	0	-85	22.86
			QPSK	1	5	0	-85	22.79
			QPSK	1	0	7	-85	22.84
			QPSK	1	5	7	-85	22.87
			QPSK	1	0	15	-85	22.79
			QPSK	1	5	15	-85	22.81
			QPSK	3	0	0	-85	22.87
			QPSK	3	3	15	-85	22.75
			QPSK	6	0	0	-85	22.72
			QPSK	6	0	15	-85	22.65
			16QAM	1	0	0	-85	22.81
			16QAM	1	5	0	-85	22.88
			16QAM	1	0	7	-85	22.91
			16QAM	1	5	7	-85	23.02
			16QAM	1	0	15	-85	22.98
			16QAM	1	5	15	-85	22.99
			16QAM	3	0	0	-85	23.05
			16QAM	3	3	15	-85	23.01
			16QAM	5	0	0	-85	22.67
			16QAM	5	0	15	-85	22.5

NB-IoT

LTE Band 4							
Stand-alone							
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
			Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
19951	0	1710.1	BPSK	1@0	3.75	-110	20.62
			QPSK	1@0	15	-110	21.14
			QPSK	3@3	15	-110	21.23
			QPSK	12@0	15	-110	20.33
20175	0	1732.5	BPSK	1@0	3.75	-110	22.84
			BPSK	1@47	3.75	-110	22.83
			QPSK	1@0	15	-110	22.96
			QPSK	1@11	15	-110	22.89
			QPSK	3@3	15	-110	23.13
20399	0	1754.9	QPSK	12@0	15	-110	22.79
			BPSK	1@47	3.75	-110	21.25
			QPSK	1@11	15	-110	21.21
			QPSK	3@3	15	-110	21.33
			QPSK	12@0	15	-110	20.31

LTE Band 4							
In-Band	BW (MHz): 3						
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
			Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
19956	0	1710.6	BPSK	1@0	3.75	-110	22.86
			QPSK	1@0	15	-110	23.01
			QPSK	3@3	15	-110	23.11
			QPSK	12@0	15	-110	22.71
20166	0	1731.6	BPSK	1@0	3.75	-110	22.92
			BPSK	1@47	3.75	-110	22.87
			QPSK	1@0	15	-110	23.01
			QPSK	1@11	15	-110	22.89
			QPSK	3@3	15	-110	23.02
			QPSK	12@0	15	-110	22.99
20394	0	1754.4	BPSK	1@47	3.75	-110	22.66
			QPSK	1@11	15	-110	22.79
			QPSK	3@3	15	-110	22.88
			QPSK	12@0	15	-110	22.74

LTE Band 4							
In-Band	BW (MHz): 10	NB-IoT PRB: 30					
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
			Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
20010	-2	1715.99	BPSK	1@0	3.75	-110	22.91
			QPSK	1@0	15	-110	22.99
			QPSK	3@3	15	-110	23.05
			QPSK	12@0	15	-110	23
20185	-2	1733.49	BPSK	1@0	3.75	-110	22.83
			BPSK	1@47	3.75	-110	22.93
			QPSK	1@0	15	-110	22.86
			QPSK	1@11	15	-110	22.97
			QPSK	3@3	15	-110	23.12
			QPSK	12@0	15	-110	22.89
20360	-2	1750.99	BPSK	1@47	3.75	-110	22.65
			QPSK	1@11	15	-110	22.79
			QPSK	3@3	15	-110	22.85
			QPSK	12@0	15	-110	22.74

LTE Band 4							
In-Band	BW (MHz): 10	NB-IoT PRB: 35	Test Configuration Initial of Power			EUT	
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
20019	-2	1716.89	BPSK	1@0	3.75	-110	22.88
			QPSK	1@0	15	-110	22.67
			QPSK	3@3	15	-110	23.04
			QPSK	12@0	15	-110	22.85
20194	-2	1734.39	BPSK	1@0	3.75	-110	22.88
			BPSK	1@47	3.75	-110	22.82
			QPSK	1@0	15	-110	22.94
			QPSK	1@11	15	-110	22.95
			QPSK	3@3	15	-110	23.01
20369	-2	1751.89	QPSK	12@0	15	-110	22.99
			BPSK	1@47	3.75	-110	22.79
			QPSK	1@11	15	-110	22.84
			QPSK	3@3	15	-110	22.91
			QPSK	12@0	15	-110	22.89

LTE Band 4							
Guard-Band	BW (MHz): 5						
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
			Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
19951	0	1710.1	BPSK	1@0	3.75	-110	22.85
			QPSK	1@0	15	-110	22.97
			QPSK	3@3	15	-110	23.12
			QPSK	12@0	15	-110	22.86
20151	0	1730.1	BPSK	1@0	3.75	-110	22.95
			BPSK	1@47	3.75	-110	22.92
			QPSK	1@0	15	-110	23.03
			QPSK	1@11	15	-110	22.99
			QPSK	3@3	15	-110	23.1
20399	0	1754.9	QPSK	12@0	15	-110	22.99
			BPSK	1@47	3.75	-110	22.64
			QPSK	1@11	15	-110	22.75
			QPSK	3@3	15	-110	22.89
			QPSK	12@0	15	-110	22.83

LTE Band 12							
Stand-alone							
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
			Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
23011	0	699.1	BPSK	1@0	3.75	-110	22.93
			QPSK	1@0	15	-110	22.95
			QPSK	3@3	15	-110	22.96
			QPSK	12@0	15	-110	21.62
23095	0	707.5	BPSK	1@0	3.75	-110	24.26
			BPSK	1@47	3.75	-110	24.35
			QPSK	1@0	15	-110	24.36
			QPSK	1@11	15	-110	24.29
			QPSK	3@3	15	-110	24.51
23179	0	715.9	QPSK	12@0	15	-110	24.19
			BPSK	1@47	3.75	-110	22.84
			QPSK	1@11	15	-110	22.9
			QPSK	3@3	15	-110	22.91
			QPSK	12@0	15	-110	21.67

LTE Band 12							
In-Band							
BW (MHz): 3							
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
			Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
23016	0	699.6	BPSK	1@0	3.75	-110	24.31
			QPSK	1@0	15	-110	24.45
			QPSK	3@3	15	-110	24.37
			QPSK	12@0	15	-110	24.23
23086	0	706.6	BPSK	1@0	3.75	-110	24.28
			BPSK	1@47	3.75	-110	24.33
			QPSK	1@0	15	-110	24.33
			QPSK	1@11	15	-110	24.31
			QPSK	3@3	15	-110	24.5
23174	0	715.4	QPSK	12@0	15	-110	24.17
			BPSK	1@47	3.75	-110	24.12
			QPSK	1@11	15	-110	24.26
			QPSK	3@3	15	-110	24.32
			QPSK	12@0	15	-110	24.11

LTE Band 12							
In-Band							
BW (MHz): 10 NB-IoT PRB: 30							
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
			Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
23070	-2	704.99	BPSK	1@0	3.75	-110	24.26
			QPSK	1@0	15	-110	24.08
			QPSK	3@3	15	-110	24.42
			QPSK	12@0	15	-110	24.04
23105	-2	708.49	BPSK	1@0	3.75	-110	24.29
			BPSK	1@47	3.75	-110	24.28
			QPSK	1@0	15	-110	24.03
			QPSK	1@11	15	-110	24.39
			QPSK	3@3	15	-110	24.49
23140	-2	711.99	QPSK	12@0	15	-110	24.13
			BPSK	1@47	3.75	-110	24.23
			QPSK	1@11	15	-110	24.32
			QPSK	3@3	15	-110	24.41
			QPSK	12@0	15	-110	24.16

LTE Band 12							
In-Band	BW (MHz): 10	NB-IoT PRB: 35	Test Configuration Initial of Power			EUT	
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
23079	-2	705.89	BPSK	1@0	3.75	-110	24.36
			QPSK	1@0	15	-110	24.11
			QPSK	3@3	15	-110	24.41
			QPSK	12@0	15	-110	24.16
23114	-2	709.39	BPSK	1@0	3.75	-110	24.27
			BPSK	1@47	3.75	-110	24.22
			QPSK	1@0	15	-110	24.11
			QPSK	1@11	15	-110	24.28
			QPSK	3@3	15	-110	24.45
23149	-2	712.89	QPSK	12@0	15	-110	24.28
			BPSK	1@47	3.75	-110	24.29
			QPSK	1@11	15	-110	24.31
			QPSK	3@3	15	-110	24.37
			QPSK	12@0	15	-110	24.1

LTE Band 12							
Guard-Band	BW (MHz): 5						
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
			Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
23011	0	699.1	BPSK	1@0	3.75	-110	24.16
			QPSK	1@0	15	-110	24.37
			QPSK	3@3	15	-110	24.45
			QPSK	12@0	15	-110	24.42
23071	0	705.1	BPSK	1@0	3.75	-110	24.22
			BPSK	1@47	3.75	-110	24.23
			QPSK	1@0	15	-110	24.32
			QPSK	1@11	15	-110	24.29
			QPSK	3@3	15	-110	24.44
23179	0	715.9	QPSK	12@0	15	-110	24.36
			BPSK	1@47	3.75	-110	24.19
			QPSK	1@11	15	-110	24.32
			QPSK	3@3	15	-110	24.41
			QPSK	12@0	15	-110	24.3

LTE Band 13							
Stand-alone							
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
			Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
23181	0	777.1	BPSK	1@0	3.75	-110	22.24
			QPSK	1@0	15	-110	22.31
			QPSK	3@3	15	-110	22.33
			QPSK	12@0	15	-110	21.1
23230	0	782	BPSK	1@0	3.75	-110	23.45
			BPSK	1@47	3.75	-110	23.44
			QPSK	1@0	15	-110	23.5
			QPSK	1@11	15	-110	23.49
			QPSK	3@3	15	-110	23.49
23279	0	786.9	QPSK	12@0	15	-110	23.53
			BPSK	1@47	3.75	-110	22.31
			QPSK	1@11	15	-110	22.32
			QPSK	3@3	15	-110	22.34
			QPSK	12@0	15	-110	21.04

LTE Band 13							
In-Band	BW (MHz): 5						
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
			Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
23187	0	777.7	BPSK	1@0	3.75	-110	23.45
			QPSK	1@0	15	-110	23.48
			QPSK	3@3	15	-110	23.52
			QPSK	12@0	15	-110	23.41
23221	0	781.1	BPSK	1@0	3.75	-110	23.56
			BPSK	1@47	3.75	-110	23.42
			QPSK	1@0	15	-110	23.47
			QPSK	1@11	15	-110	23.43
			QPSK	3@3	15	-110	23.65
23273	0	786.3	QPSK	12@0	15	-110	23.49
			BPSK	1@47	3.75	-110	23.67
			QPSK	1@11	15	-110	23.56
			QPSK	3@3	15	-110	23.64
			QPSK	12@0	15	-110	23.56

LTE Band 13							
In-Band	BW (MHz): 10	NB-IoT PRB: 30					
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
			Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
23240	-2	782.99	BPSK	1@0	3.75	-110	23.51
			BPSK	1@47	3.75	-110	23.65
			QPSK	1@0	15	-110	23.52
			QPSK	1@11	15	-110	23.64
			QPSK	3@3	15	-110	23.41
			QPSK	12@0	15	-110	23.64

LTE Band 13							
In-Band	BW (MHz): 10	NB-IoT PRB: 35	Test Configuration Initial of Power			EUT	
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
23249	-2	783.89	BPSK	1@0	3.75	-110	23.6
			BPSK	1@47	3.75	-110	23.52
			QPSK	1@0	15	-110	23.45
			QPSK	1@11	15	-110	23.53
			QPSK	3@3	15	-110	23.71
			QPSK	12@0	15	-110	23.62

LTE Band 13							
Guard-Band	BW (MHz): 5						
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
			Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
23181	0	777.1	BPSK	1@0	3.75	-110	23.49
			QPSK	1@0	15	-110	23.65
			QPSK	3@3	15	-110	23.49
			QPSK	12@0	15	-110	23.61
23206	0	779.6	BPSK	1@0	3.75	-110	23.33
			BPSK	1@47	3.75	-110	23.47
			QPSK	1@0	15	-110	23.36
			QPSK	1@11	15	-110	23.37
			QPSK	3@3	15	-110	23.42
			QPSK	12@0	15	-110	23.38
23279	0	786.9	BPSK	1@47	3.75	-110	23.71
			QPSK	1@11	15	-110	23.62
			QPSK	3@3	15	-110	23.42
			QPSK	12@0	15	-110	23.49

LTE Band 17							
Stand-alone							
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
			Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
23731	0	704.1	BPSK	1@0	3.75	-110	22.23
			QPSK	1@0	15	-110	22.46
			QPSK	3@3	15	-110	22.34
			QPSK	12@0	15	-110	21.62
23790	0	710	BPSK	1@0	3.75	-110	24.21
			BPSK	1@47	3.75	-110	24.3
			QPSK	1@0	15	-110	24.27
			QPSK	1@11	15	-110	24.18
			QPSK	3@3	15	-110	24.38
23849	0	715.9	QPSK	12@0	15	-110	24.22
			BPSK	1@47	3.75	-110	22.34
			QPSK	1@11	15	-110	22.4
			QPSK	3@3	15	-110	22.39
			QPSK	12@0	15	-110	21.67

LTE Band 17							
In-Band							
BW (MHz): 5							
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
			Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
23737	0	704.7	BPSK	1@0	3.75	-110	24.3
			QPSK	1@0	15	-110	24.22
			QPSK	3@3	15	-110	24.27
			QPSK	12@0	15	-110	24.23
23781	0	709.1	BPSK	1@0	3.75	-110	24.28
			BPSK	1@47	3.75	-110	24.29
			QPSK	1@0	15	-110	24.3
			QPSK	1@11	15	-110	24.31
			QPSK	3@3	15	-110	24.35
23843	0	715.3	QPSK	12@0	15	-110	24.07
			BPSK	1@47	3.75	-110	24.02
			QPSK	1@11	15	-110	24.16
			QPSK	3@3	15	-110	24.26
			QPSK	12@0	15	-110	24.18

LTE Band 17							
In-Band							
BW (MHz): 5 NB-IoT PRB: 30							
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
			Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
23790	-2	709.99	BPSK	1@0	3.75	-110	24.26
			QPSK	1@0	15	-110	24.08
			QPSK	3@3	15	-110	24.26
			QPSK	12@0	15	-110	24.04
23800	-2	710.99	BPSK	1@0	3.75	-110	24.29
			BPSK	1@47	3.75	-110	24.28
			QPSK	1@0	15	-110	24.03
			QPSK	1@11	15	-110	24.33
			QPSK	3@3	15	-110	24.31
23810	-2	711.99	QPSK	12@0	15	-110	24.13
			BPSK	1@47	3.75	-110	24.23
			QPSK	1@11	15	-110	24.24
			QPSK	3@3	15	-110	24.11
			QPSK	12@0	15	-110	24.16

LTE Band 17							
In-Band	BW (MHz): 10	NB-IoT PRB: 35	Test Configuration Initial of Power			EUT	
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
23799	-2	710.89	BPSK	1@0	3.75	-110	24.16
			QPSK	1@0	15	-110	24.11
			QPSK	3@3	15	-110	24.31
			QPSK	12@0	15	-110	24.16
23809	-2	711.89	BPSK	1@0	3.75	-110	24.27
			BPSK	1@47	3.75	-110	24.16
			QPSK	1@0	15	-110	24.11
			QPSK	1@11	15	-110	24.28
			QPSK	3@3	15	-110	24.34
23819	-2	712.89	QPSK	12@0	15	-110	24.26
			BPSK	1@47	3.75	-110	24.21
			QPSK	1@11	15	-110	24.3
			QPSK	3@3	15	-110	24.31
			QPSK	12@0	15	-110	24.1

LTE Band 17							
Guard-Band	BW (MHz): 5		Test Configuration Initial of Power			EUT	
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
23731	0	704.1	BPSK	1@0	3.75	-110	24.16
			QPSK	1@0	15	-110	24.19
			QPSK	3@3	15	-110	24.25
			QPSK	12@0	15	-110	24.12
23766	0	707.6	BPSK	1@0	3.75	-110	24.22
			BPSK	1@47	3.75	-110	24.23
			QPSK	1@0	15	-110	24.32
			QPSK	1@11	15	-110	24.29
			QPSK	3@3	15	-110	24.13
23849	0	715.9	QPSK	12@0	15	-110	24.36
			BPSK	1@47	3.75	-110	24.19
			QPSK	1@11	15	-110	24.32
			QPSK	3@3	15	-110	24.34
			QPSK	12@0	15	-110	24.3

LTE Band 66							
Stand-alone		Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
N _{UL}	M _{UL}		Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
131973	0	1710.1	BPSK	1@0	3.75	-110	21.48
			QPSK	1@0	15	-110	21.58
			QPSK	3@3	15	-110	21.66
			QPSK	12@0	15	-110	20.39
132322	0	1745	BPSK	1@0	3.75	-110	23.01
			BPSK	1@47	3.75	-110	23.07
			QPSK	1@0	15	-110	23.06
			QPSK	1@11	15	-110	23.11
			QPSK	3@3	15	-110	23.65
132671	0	1779.9	QPSK	12@0	15	-110	23.22
			BPSK	1@47	3.75	-110	21.54
			QPSK	1@11	15	-110	21.69
			QPSK	3@3	15	-110	21.7
			QPSK	12@0	15	-110	20.41

LTE Band 66							
In-Band	BW (MHz): 3	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
N _{UL}	M _{UL}		Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
131978	0	1710.6	BPSK	1@0	3.75	-110	22.49
			QPSK	1@0	15	-110	22.92
			QPSK	3@3	15	-110	23.11
			QPSK	12@0	15	-110	23.03
132313	0	1744.1	BPSK	1@0	3.75	-110	22.47
			BPSK	1@47	3.75	-110	22.45
			QPSK	1@0	15	-110	22.98
			QPSK	1@11	15	-110	22.95
			QPSK	3@3	15	-110	23.24
132666	0	1779.4	QPSK	12@0	15	-110	23.1
			BPSK	1@47	3.75	-110	22.49
			QPSK	1@11	15	-110	23.01
			QPSK	3@3	15	-110	23.12
			QPSK	12@0	15	-110	23.05

LTE Band 66							
In-Band	BW (MHz): 10	NB-IoT PRB: 30	Test Configuration Initial of Power			EUT	
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
132032	-2	1715.99	BPSK	1@0	3.75	-110	22.77
			QPSK	1@0	15	-110	22.75
			QPSK	3@3	15	-110	23.24
			QPSK	12@0	15	-110	23.2
132332	-2	1745.99	BPSK	1@0	3.75	-110	22.81
			BPSK	1@47	3.75	-110	22.79
			QPSK	1@0	15	-110	22.83
			QPSK	1@11	15	-110	22.77
			QPSK	3@3	15	-110	23.15
132632	-2	1775.99	QPSK	12@0	15	-110	23.16
			BPSK	1@47	3.75	-110	22.81
			QPSK	1@11	15	-110	22.79
			QPSK	3@3	15	-110	23.16
			QPSK	12@0	15	-110	23.11

LTE Band 66							
In-Band	BW (MHz): 10	NB-IoT PRB: 35					
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
			Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
132041	-2	1716.89	BPSK	1@0	3.75	-110	22.7
			QPSK	1@0	15	-110	22.74
			QPSK	3@3	15	-110	23.22
			QPSK	12@0	15	-110	23.16
132341	-2	1746.89	BPSK	1@0	3.75	-110	22.75
			BPSK	1@47	3.75	-110	22.74
			QPSK	1@0	15	-110	22.87
			QPSK	1@11	15	-110	22.91
			QPSK	3@3	15	-110	23.1
132641	-2	1776.89	QPSK	12@0	15	-110	23.13
			BPSK	1@47	3.75	-110	22.83
			QPSK	1@11	15	-110	22.84
			QPSK	3@3	15	-110	23.22
			QPSK	12@0	15	-110	23.19

LTE Band 66							
Guard-Band	BW (MHz): 5	NB-IoT PRB: 35					
N _{UL}	M _{UL}	Frequency of Uplink (MHz)	Test Configuration Initial of Power			EUT	
			Modulation	N _{tones}	Sub-carrier Spacing (kHz)	Cell Power (dBm/15 kHz)	Power (dBm)
131973	0	1710.1	BPSK	1@0	3.75	-110	22.79
			QPSK	1@0	15	-110	22.63
			QPSK	3@3	15	-110	23.04
			QPSK	12@0	15	-110	23.01
132298	0	1742.6	BPSK	1@0	3.75	-110	22.81
			BPSK	1@47	3.75	-110	22.67
			QPSK	1@0	15	-110	22.89
			QPSK	1@11	15	-110	22.91
			QPSK	3@3	15	-110	23.15
132671	0	1779.9	QPSK	12@0	15	-110	23.17
			BPSK	1@47	3.75	-110	22.77
			QPSK	1@11	15	-110	22.69
			QPSK	3@3	15	-110	23.11
			QPSK	12@0	15	-110	23.04

ERP Power (dBm)

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LTE Band 12							
Channel Bandwidth: 1.4 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23017	699.7	-3.13	30.36	25.08	322.11	H
	23095	707.5	-3.04	30.17	24.98	314.77	
	23173	715.3	-3.01	30.17	25.01	316.96	
	23017	699.7	-10.56	32.03	19.32	85.51	V
	23095	707.5	-10.84	31.98	18.99	79.25	
	23173	715.3	-10.74	32.06	19.17	82.60	
Channel Bandwidth: 1.4 MHz / 16QAM							
X	23017	699.7	-4.02	30.36	24.19	262.42	H
	23095	707.5	-4.00	30.17	24.02	252.35	
	23173	715.3	-3.94	30.17	24.08	255.86	
	23017	699.7	-11.55	32.03	18.33	68.08	V
	23095	707.5	-11.83	31.98	18.00	63.10	
	23173	715.3	-11.73	32.06	18.18	65.77	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

LTE Band 12							
Channel Bandwidth: 3 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23025	700.5	-3.05	30.17	24.97	314.05	H
	23095	707.5	-3.22	30.17	24.80	302.00	
	23165	714.5	-3.17	30.18	24.86	306.20	
	23025	700.5	-10.70	31.96	19.11	81.47	V
	23095	707.5	-11.05	31.98	18.78	75.51	
	23165	714.5	-10.92	32.03	18.96	78.70	
Channel Bandwidth: 3 MHz / 16QAM							
X	23025	700.5	-4.08	30.17	23.94	247.74	H
	23095	707.5	-4.25	30.17	23.77	238.23	
	23165	714.5	-4.20	30.18	23.83	241.55	
	23025	700.5	-11.73	31.96	18.08	64.27	V
	23095	707.5	-12.08	31.98	17.75	59.57	
	23165	714.5	-11.95	32.03	17.93	62.09	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

LTE Band 12							
Channel Bandwidth: 5 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23035	701.5	-3.36	30.17	24.66	292.42	H
	23095	707.5	-3.53	30.17	24.49	281.19	
	23155	713.5	-3.48	30.18	24.55	285.10	
	23035	701.5	-11.01	31.96	18.80	75.86	V
	23095	707.5	-11.36	31.98	18.47	70.31	
	23155	713.5	-11.23	32.03	18.65	73.28	
Channel Bandwidth: 5 MHz / 16QAM							
X	23035	701.5	-4.39	30.17	23.63	230.67	H
	23095	707.5	-4.56	30.17	23.46	221.82	
	23155	713.5	-4.51	30.18	23.52	224.91	
	23035	701.5	-12.04	31.96	17.77	59.84	V
	23095	707.5	-12.39	31.98	17.44	55.46	
	23155	713.5	-12.26	32.03	17.62	57.81	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

LTE Band 12							
Channel Bandwidth: 10 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23060	704.0	-3.58	30.17	24.44	277.97	H
	23095	707.5	-3.75	30.17	24.27	267.30	
	23130	711.0	-3.70	30.18	24.33	271.02	
	23060	704.0	-11.23	31.96	18.58	72.11	V
	23095	707.5	-11.58	31.98	18.25	66.83	
	23130	711.0	-11.45	32.03	18.43	69.66	
Channel Bandwidth: 10 MHz / 16QAM							
X	23060	704.0	-4.69	30.17	23.33	215.28	H
	23095	707.5	-4.86	30.17	23.16	207.01	
	23130	711.0	-4.81	30.18	23.22	209.89	
	23060	704.0	-12.34	31.96	17.47	55.85	V
	23095	707.5	-12.69	31.98	17.14	51.76	
	23130	711.0	-12.56	32.03	17.32	53.95	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

LTE Band 13							
Channel Bandwidth: 5 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23205	779.5	-5.70	32.24	24.39	274.79	H
	23230	782.0	-5.49	32.17	24.53	283.79	
	23255	784.5	-5.46	32.11	24.50	281.84	
	23205	779.5	-11.89	32.43	18.39	69.02	V
	23230	782.0	-11.50	32.42	18.77	75.34	
	23255	784.5	-11.72	32.46	18.59	72.28	
Channel Bandwidth: 5 MHz / 16QAM							
X	23205	779.5	-6.71	32.24	23.38	217.77	H
	23230	782.0	-6.50	32.17	23.52	224.91	
	23255	784.5	-6.47	32.11	23.49	223.36	
	23205	779.5	-12.90	32.43	17.38	54.70	V
	23230	782.0	-12.51	32.42	17.76	59.70	
	23255	784.5	-12.73	32.46	17.58	57.28	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

LTE Band 13							
Channel Bandwidth: 10 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23230	782.0	-5.79	32.17	24.23	264.85	H
	23230	782.0	-11.80	32.42	18.47	70.31	V
Channel Bandwidth: 10 MHz / 16QAM							
X	23230	782.0	-6.78	32.17	23.24	210.86	H
	23230	782.0	-12.79	32.42	17.48	55.98	V

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

LTE Band 17							
Channel Bandwidth: 5 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23755	706.5	-3.65	30.36	24.56	285.76	H
	23790	710.0	-3.57	30.17	24.45	278.61	
	23825	713.5	-3.54	30.17	24.48	280.54	
	23755	706.5	-11.35	32.03	18.53	71.29	V
	23790	710.0	-11.58	31.98	18.25	66.83	
	23825	713.5	-11.52	32.06	18.39	69.02	
Channel Bandwidth: 5 MHz / 16QAM							
X	23755	706.5	-4.67	30.36	23.54	225.94	H
	23790	710.0	-4.59	30.17	23.43	220.29	
	23825	713.5	-4.56	30.17	23.46	221.82	
	23755	706.5	-12.37	32.03	17.51	56.36	V
	23790	710.0	-12.60	31.98	17.23	52.84	
	23825	713.5	-12.54	32.06	17.37	54.58	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

LTE Band 17							
Channel Bandwidth: 10 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23780	709.0	-3.78	30.17	24.24	265.46	H
	23790	710.0	-3.89	30.17	24.13	258.82	
	23800	711.0	-3.87	30.18	24.16	260.62	
	23780	709.0	-11.60	31.96	18.21	66.22	V
	23790	710.0	-11.90	31.98	17.93	62.09	
	23800	711.0	-11.81	32.03	18.07	64.12	
Channel Bandwidth: 10 MHz / 16QAM							
X	23780	709.0	-4.77	30.17	23.25	211.35	H
	23790	710.0	-4.88	30.17	23.14	206.06	
	23800	711.0	-4.86	30.18	23.17	207.49	
	23780	709.0	-12.59	31.96	17.22	52.72	V
	23790	710.0	-12.89	31.98	16.94	49.43	
	23800	711.0	-12.80	32.03	17.08	51.05	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

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LTE Band 12							
BPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
Z	23011	699.1	-13.40	30.36	14.81	30.27	H
	23095	707.5	-13.04	30.17	14.98	31.48	
	23179	715.9	-13.12	30.17	14.90	30.90	
	23011	699.1	-7.67	32.03	22.21	166.34	V
	23095	707.5	-7.49	31.98	22.34	171.40	
	23179	715.9	-7.65	32.06	22.26	168.27	
QPSK							
Z	23011	699.1	-12.62	30.36	15.59	36.22	H
	23095	707.5	-12.28	30.17	15.74	37.50	
	23179	715.9	-12.36	30.17	15.66	36.81	
	23011	699.1	-6.76	32.03	23.12	205.12	V
	23095	707.5	-6.53	31.98	23.30	213.80	
	23179	715.9	-6.69	32.06	23.22	209.89	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

LTE Band 13							
BPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
X	23181	777.1	-8.26	32.24	21.83	152.41	H
	23230	782.0	-8.28	32.17	21.74	149.28	
	23279	786.9	-8.34	32.11	21.62	145.21	
	23181	777.1	-14.78	32.43	15.50	35.48	V
	23230	782.0	-14.85	32.42	15.42	34.83	
	23279	786.9	-14.99	32.46	15.32	34.04	
QPSK							
X	23181	777.1	-7.38	32.24	22.71	186.64	H
	23230	782.0	-7.38	32.17	22.64	183.65	
	23279	786.9	-7.41	32.11	22.55	179.89	
	23181	777.1	-13.95	32.43	16.33	42.95	V
	23230	782.0	-14.03	32.42	16.24	42.07	
	23279	786.9	-14.13	32.46	16.18	41.50	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

LTE Band 17							
BPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (mW)	Polarization (H/V)
Z	23731	704.1	-14.40	30.36	13.81	24.04	H
	23790	710	-14.48	30.17	13.54	22.59	
	23849	715.9	-14.36	30.17	13.66	23.23	
	23731	704.1	-8.46	32.03	21.42	138.68	V
	23790	710	-8.55	31.98	21.28	134.28	
	23849	715.9	-8.53	32.06	21.38	137.40	
QPSK							
Z	23731	704.1	-14.33	30.36	13.88	24.43	H
	23790	710	-14.38	30.17	13.64	23.12	
	23849	715.9	-14.31	30.17	13.71	23.50	
	23731	704.1	-8.29	32.03	21.59	144.21	V
	23790	710	-8.50	31.98	21.33	135.83	
	23849	715.9	-8.45	32.06	21.46	139.96	

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

EIRP Power (dBm)

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LTE Band 4							
Channel Bandwidth: 1.4 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	19957	1710.7	-11.47	36.45	24.98	314.77	H
	20175	1732.5	-11.91	36.80	24.89	308.32	
	20393	1754.3	-12.19	36.94	24.75	298.54	
	19957	1710.7	-18.49	37.28	18.79	75.68	V
	20175	1732.5	-19.10	37.63	18.53	71.29	
	20393	1754.3	-19.40	37.64	18.24	66.68	
Channel Bandwidth: 1.4 MHz / 16QAM							
X	19957	1710.7	-12.48	36.45	23.97	249.46	H
	20175	1732.5	-12.92	36.80	23.88	244.34	
	20393	1754.3	-13.20	36.94	23.74	236.59	
	19957	1710.7	-19.50	37.28	17.78	59.98	V
	20175	1732.5	-20.11	37.63	17.52	56.49	
	20393	1754.3	-20.41	37.64	17.23	52.84	

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 4							
Channel Bandwidth: 3 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	19965	1711.5	-11.72	36.45	24.73	297.17	H
	20175	1732.5	-12.16	36.80	24.64	291.07	
	20385	1753.5	-12.44	36.94	24.50	281.84	
	19965	1711.5	-18.74	37.28	18.54	71.45	V
	20175	1732.5	-19.35	37.63	18.28	67.30	
	20385	1753.5	-19.65	37.64	17.99	62.95	
Channel Bandwidth: 3 MHz / 16QAM							
X	19965	1711.5	-12.71	36.45	23.74	236.59	H
	20175	1732.5	-13.15	36.80	23.65	231.74	
	20385	1753.5	-13.43	36.94	23.51	224.39	
	19965	1711.5	-19.73	37.28	17.55	56.89	V
	20175	1732.5	-20.34	37.63	17.29	53.58	
	20385	1753.5	-20.64	37.64	17.00	50.12	

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 4							
Channel Bandwidth: 5 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	19975	1712.5	-12.03	36.45	24.42	276.69	H
	20175	1732.5	-12.47	36.80	24.33	271.02	
	20375	1752.5	-12.75	36.94	24.19	262.42	
	19975	1712.5	-19.05	37.28	18.23	66.53	V
	20175	1732.5	-19.66	37.63	17.97	62.66	
	20375	1752.5	-19.96	37.64	17.68	58.61	
Channel Bandwidth: 5 MHz / 16QAM							
X	19975	1712.5	-13.05	36.45	23.40	218.78	H
	20175	1732.5	-13.49	36.80	23.31	214.29	
	20375	1752.5	-13.77	36.94	23.17	207.49	
	19975	1712.5	-20.07	37.28	17.21	52.60	V
	20175	1732.5	-20.68	37.63	16.95	49.55	
	20375	1752.5	-20.98	37.64	16.66	46.34	

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 4							
Channel Bandwidth: 10 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	20000	1715.0	-12.43	36.64	24.21	263.63	H
	20175	1732.5	-12.68	36.80	24.12	258.23	
	20350	1750.0	-12.82	36.80	23.98	250.03	
	20000	1715.0	-19.42	37.44	18.02	63.39	V
	20175	1732.5	-19.87	37.63	17.76	59.70	
	20350	1750.0	-20.17	37.64	17.47	55.85	
Channel Bandwidth: 10 MHz / 16QAM							
X	20000	1715.0	-13.44	36.64	23.20	208.93	H
	20175	1732.5	-13.69	36.80	23.11	204.64	
	20350	1750.0	-13.83	36.80	22.97	198.15	
	20000	1715.0	-20.43	37.44	17.01	50.23	V
	20175	1732.5	-20.88	37.63	16.75	47.32	
	20350	1750.0	-21.18	37.64	16.46	44.26	

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 4							
Channel Bandwidth: 15 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	20025	1717.5	-12.51	36.45	23.94	247.74	H
	20175	1732.5	-12.95	36.80	23.85	242.66	
	20325	1747.5	-13.23	36.94	23.71	234.96	
	20025	1717.5	-19.53	37.28	17.75	59.57	V
	20175	1732.5	-20.14	37.63	17.49	56.10	
	20325	1747.5	-20.44	37.64	17.20	52.48	
Channel Bandwidth: 15 MHz / 16QAM							
X	20025	1717.5	-13.53	36.45	22.92	195.88	H
	20175	1732.5	-13.97	36.80	22.83	191.87	
	20325	1747.5	-14.25	36.94	22.69	185.78	
	20025	1717.5	-20.55	37.28	16.73	47.10	V
	20175	1732.5	-21.16	37.63	16.47	44.36	
	20325	1747.5	-21.46	37.64	16.18	41.50	

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 4							
Channel Bandwidth: 20 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	20050	1720.0	-12.75	36.45	23.70	234.42	H
	20175	1732.5	-13.19	36.80	23.61	229.61	
	20300	1745.0	-13.47	36.94	23.47	222.33	
	20050	1720.0	-19.77	37.28	17.51	56.36	V
	20175	1732.5	-20.38	37.63	17.25	53.09	
	20300	1745.0	-20.68	37.64	16.96	49.66	
Channel Bandwidth: 20 MHz / 16QAM							
X	20050	1720.0	-13.77	36.45	22.68	185.35	H
	20175	1732.5	-14.21	36.80	22.59	181.55	
	20300	1745.0	-14.49	36.94	22.45	175.79	
	20050	1720.0	-20.79	37.28	16.49	44.57	V
	20175	1732.5	-21.40	37.63	16.23	41.98	
	20300	1745.0	-21.70	37.64	15.94	39.26	

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 66							
Channel Bandwidth: 1.4 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	131979	1710.7	-11.88	36.45	24.57	286.42	H
	132322	1745.0	-12.19	36.80	24.61	289.07	
	132665	1779.3	-12.74	36.94	24.20	263.03	
	131979	1710.7	-18.86	37.28	18.42	69.50	V
	132322	1745.0	-19.05	37.63	18.58	72.11	
	132665	1779.3	-19.37	37.64	18.27	67.14	
Channel Bandwidth: 1.4 MHz / 16QAM							
X	131979	1710.7	-12.90	36.45	23.55	226.46	H
	132322	1745.0	-13.21	36.80	23.59	228.56	
	132665	1779.3	-13.76	36.94	23.18	207.97	
	131979	1710.7	-19.88	37.28	17.40	54.95	V
	132322	1745.0	-20.07	37.63	17.56	57.02	
	132665	1779.3	-20.39	37.64	17.25	53.09	

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 66							
Channel Bandwidth: 3 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	131987	1711.5	-12.18	36.45	24.27	267.30	H
	132322	1745.0	-12.49	36.80	24.31	269.77	
	132657	1778.5	-13.04	36.94	23.90	245.47	
	131987	1711.5	-19.16	37.28	18.12	64.86	V
	132322	1745.0	-19.35	37.63	18.28	67.30	
	132657	1778.5	-19.67	37.64	17.97	62.66	
Channel Bandwidth: 3 MHz / 16QAM							
X	131987	1711.5	-13.16	36.45	23.29	213.30	H
	132322	1745.0	-13.47	36.80	23.33	215.28	
	132657	1778.5	-14.02	36.94	22.92	195.88	
	131987	1711.5	-20.14	37.28	17.14	51.76	V
	132322	1745.0	-20.33	37.63	17.30	53.70	
	132657	1778.5	-20.65	37.64	16.99	50.00	

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 66							
Channel Bandwidth: 5 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	131997	1712.5	-12.43	36.45	24.02	252.35	H
	132322	1745.0	-12.74	36.80	24.06	254.68	
	132647	1777.5	-13.29	36.94	23.65	231.74	
	131997	1712.5	-19.41	37.28	17.87	61.24	V
	132322	1745.0	-19.60	37.63	18.03	63.53	
	132647	1777.5	-19.92	37.64	17.72	59.16	
Channel Bandwidth: 5 MHz / 16QAM							
X	131997	1712.5	-13.46	36.45	22.99	199.07	H
	132322	1745.0	-13.77	36.80	23.03	200.91	
	132647	1777.5	-14.32	36.94	22.62	182.81	
	131997	1712.5	-20.44	37.28	16.84	48.31	V
	132322	1745.0	-20.63	37.63	17.00	50.12	
	132647	1777.5	-20.95	37.64	16.69	46.67	

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 66							
Channel Bandwidth: 10 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	132022	1715.0	-12.88	36.64	23.76	237.68	H
	132322	1745.0	-13.00	36.80	23.80	239.88	
	132622	1775.0	-13.41	36.80	23.39	218.27	
	132022	1715.0	-19.83	37.44	17.61	57.68	V
	132322	1745.0	-19.86	37.63	17.77	59.84	
	132622	1775.0	-20.18	37.64	17.46	55.72	
Channel Bandwidth: 10 MHz / 16QAM							
X	132022	1715.0	-13.87	36.64	22.77	189.23	H
	132322	1745.0	-13.99	36.80	22.81	190.99	
	132622	1775.0	-14.40	36.80	22.40	173.78	
	132022	1715.0	-20.82	37.44	16.62	45.92	V
	132322	1745.0	-20.85	37.63	16.78	47.64	
	132622	1775.0	-21.17	37.64	16.47	44.36	

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 66							
Channel Bandwidth: 15 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	132047	1717.5	-13.00	36.45	23.45	221.31	H
	132322	1745.0	-13.31	36.80	23.49	223.36	
	132597	1772.5	-13.86	36.94	23.08	203.24	
	132047	1717.5	-19.98	37.28	17.30	53.70	V
	132322	1745.0	-20.17	37.63	17.46	55.72	
	132597	1772.5	-20.49	37.64	17.15	51.88	
Channel Bandwidth: 15 MHz / 16QAM							
X	132047	1717.5	-14.02	36.45	22.43	174.98	H
	132322	1745.0	-14.33	36.80	22.47	176.60	
	132597	1772.5	-14.88	36.94	22.06	160.69	
	132047	1717.5	-21.00	37.28	16.28	42.46	V
	132322	1745.0	-21.19	37.63	16.44	44.06	
	132597	1772.5	-21.51	37.64	16.13	41.02	

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 66							
Channel Bandwidth: 20 MHz / QPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	132072	1720.0	-13.27	36.45	23.18	207.97	H
	132322	1745.0	-13.58	36.80	23.22	209.89	
	132572	1770.0	-14.13	36.94	22.81	190.99	
	132072	1720.0	-20.25	37.28	17.03	50.47	V
	132322	1745.0	-20.44	37.63	17.19	52.36	
	132572	1770.0	-20.76	37.64	16.88	48.75	
Channel Bandwidth: 20 MHz / 16QAM							
X	132072	1720.0	-14.26	36.45	22.19	165.58	H
	132322	1745.0	-14.57	36.80	22.23	167.11	
	132572	1770.0	-15.12	36.94	21.82	152.05	
	132072	1720.0	-21.24	37.28	16.04	40.18	V
	132322	1745.0	-21.43	37.63	16.20	41.69	
	132572	1770.0	-21.75	37.64	15.89	38.82	

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

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LTE Band 4							
BPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Z	19951	1710.1	-18.93	36.45	17.52	56.49	H
	20175	1732.5	-19.20	36.80	17.60	57.54	
	20399	1754.9	-19.50	36.94	17.44	55.46	
	19951	1710.1	-13.76	37.28	23.52	224.91	V
	20175	1732.5	-14.02	37.63	23.61	229.61	
	20399	1754.9	-14.21	37.64	23.43	220.29	
QPSK							
Z	19951	1710.1	-18.10	36.45	18.35	68.39	H
	20175	1732.5	-18.38	36.80	18.42	69.50	
	20399	1754.9	-18.67	36.94	18.27	67.14	
	19951	1710.1	-12.99	37.28	24.29	268.53	V
	20175	1732.5	-13.27	37.63	24.36	272.90	
	20399	1754.9	-13.42	37.64	24.22	264.24	

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

LTE Band 66							
BPSK							
Plane	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Z	131973	1710.1	-18.88	36.45	17.57	57.15	H
	132322	1745.0	-19.07	36.80	17.73	59.29	
	132671	1779.9	-19.30	36.94	17.64	58.08	
	131973	1710.1	-13.60	37.28	23.68	233.35	V
	132322	1745.0	-13.73	37.63	23.90	245.47	
	132671	1779.9	-13.85	37.64	23.79	239.33	
QPSK							
Z	131973	1710.1	-18.07	36.45	18.38	68.87	H
	132322	1745.0	-18.21	36.80	18.59	72.28	
	132671	1779.9	-18.49	36.94	18.45	69.98	
	131973	1710.1	-12.91	37.28	24.37	273.53	V
	132322	1745.0	-12.94	37.63	24.69	294.44	
	132671	1779.9	-13.22	37.64	24.42	276.69	

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

4.2 Modulation Characteristics Measurement

4.2.1 Limits of Modulation Characteristics

N/A

4.2.2 Test Setup

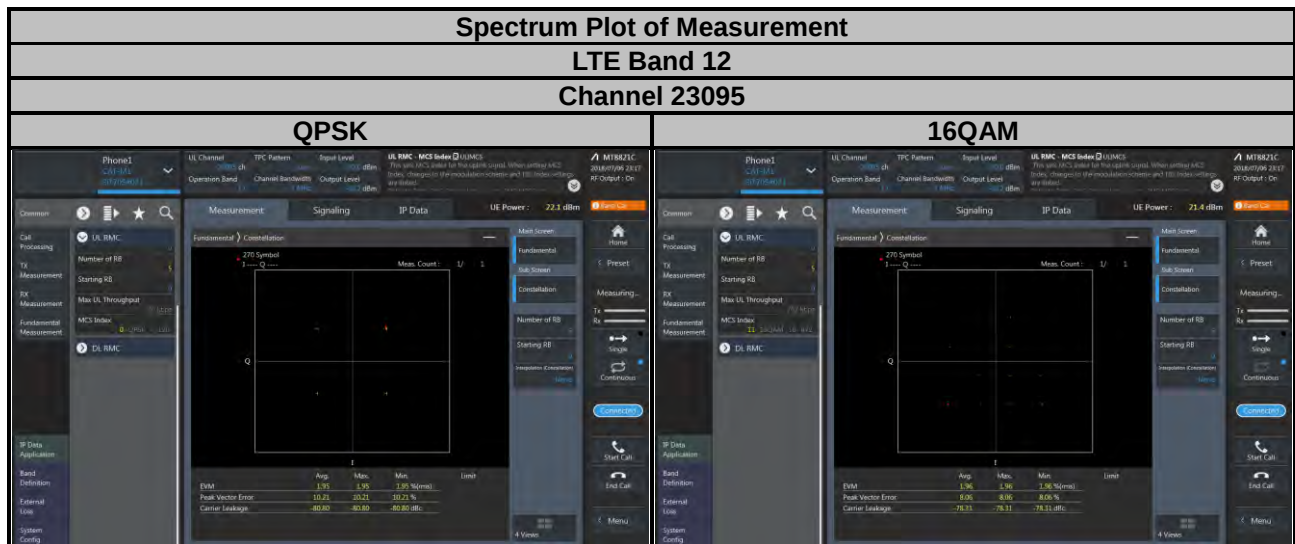
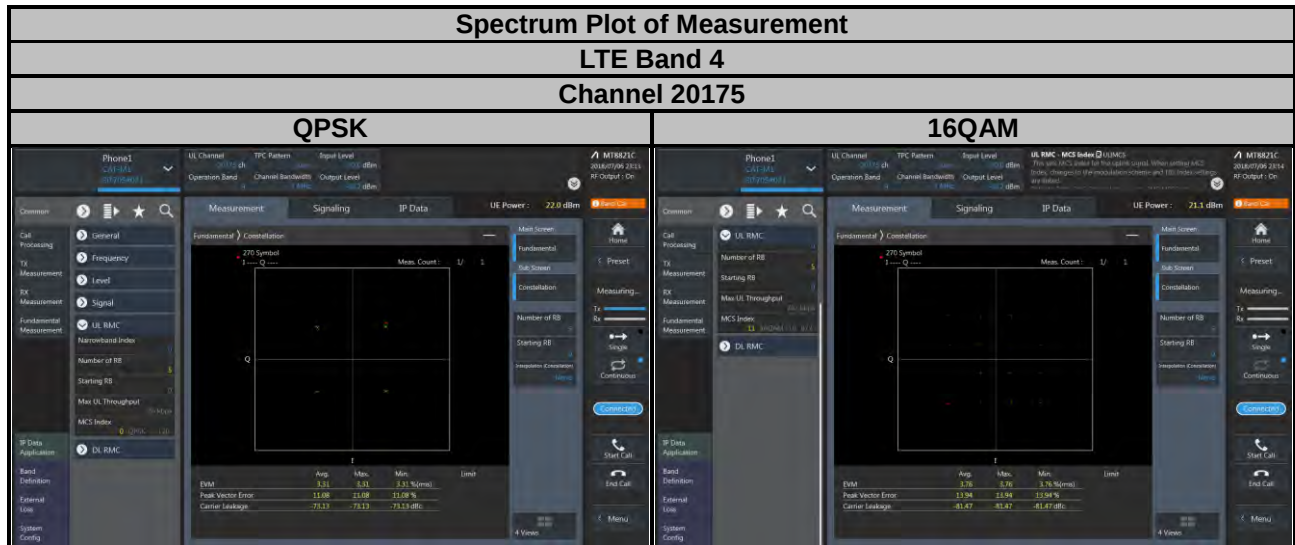


4.2.3 Test Procedure

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

4.2.4 Test Results

Cat-M1



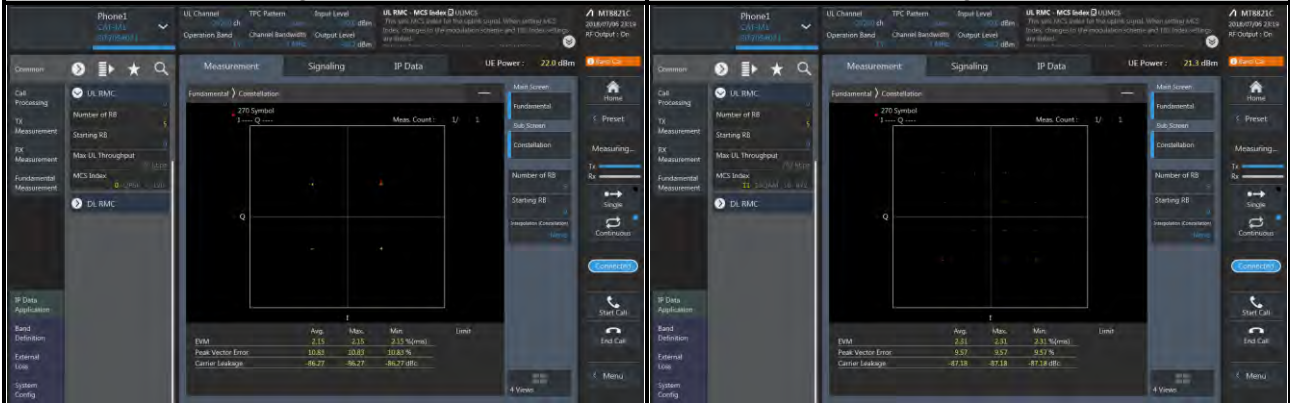
Spectrum Plot of Measurement

LTE Band 13

Channel 23230

QPSK

16QAM



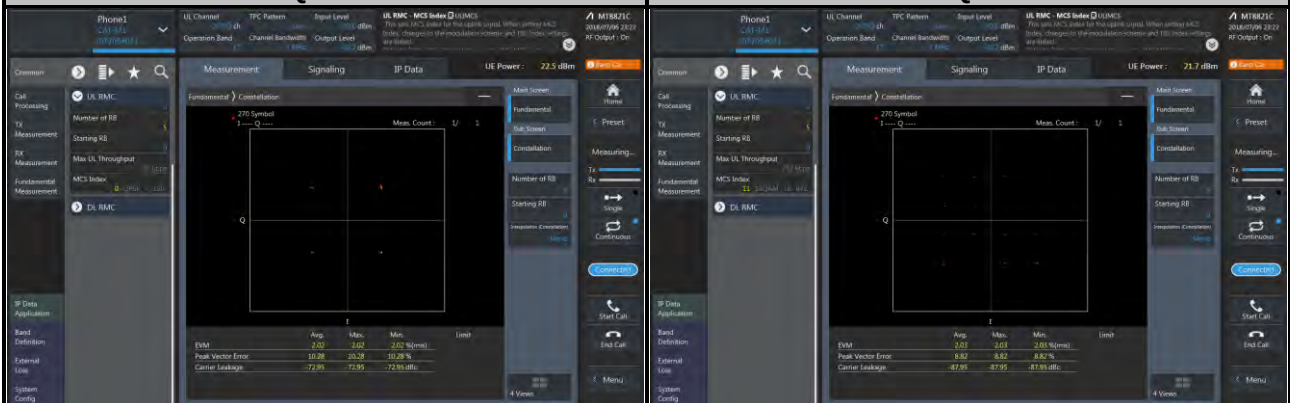
Spectrum Plot of Measurement

LTE Band 17

Channel 23790

QPSK

16QAM



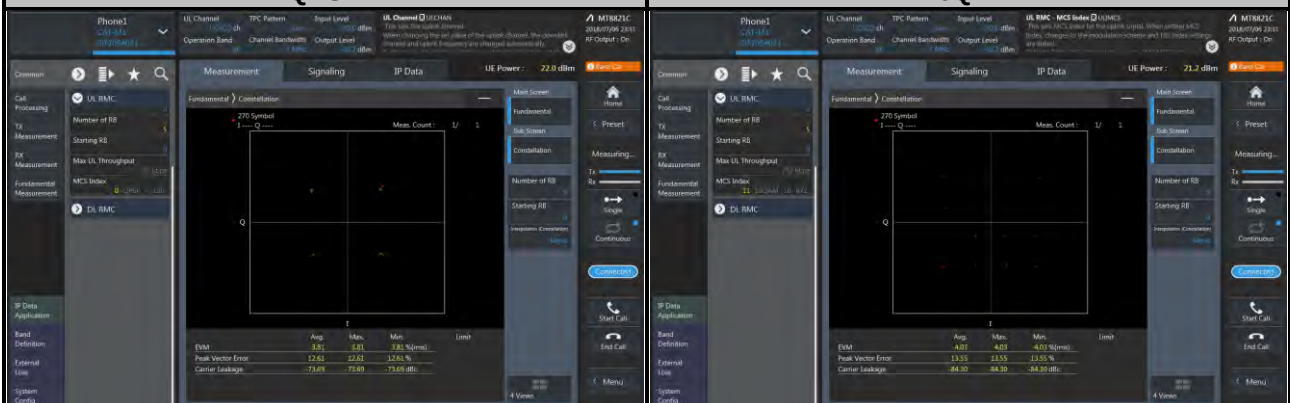
Spectrum Plot of Measurement

LTE Band 66

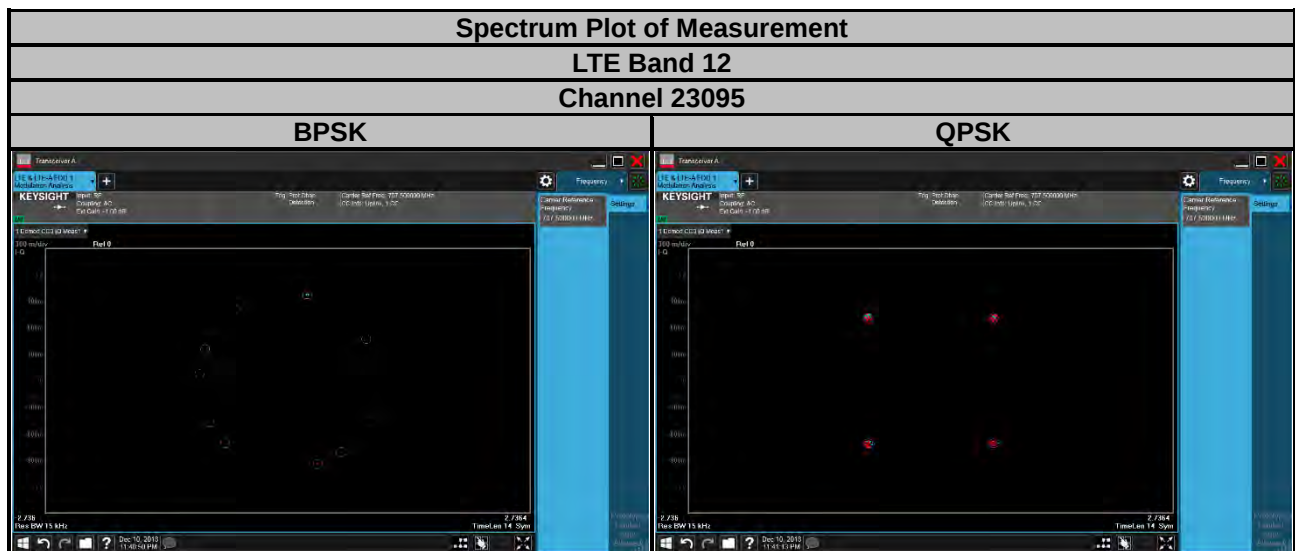
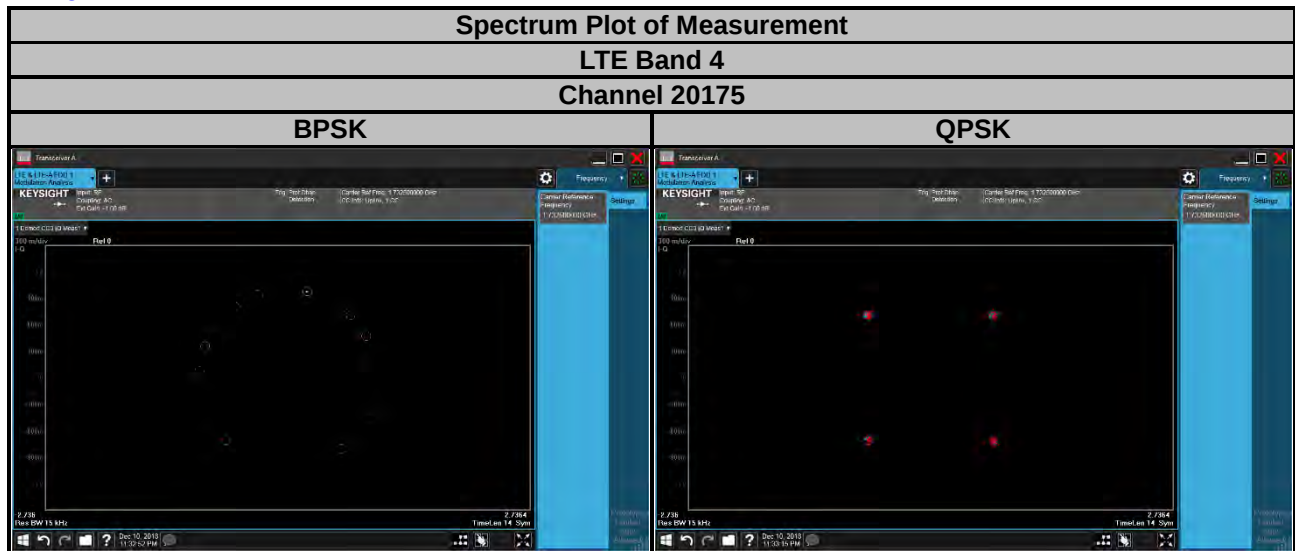
Channel 132322

QPSK

16QAM



NB-IoT



Spectrum Plot of Measurement

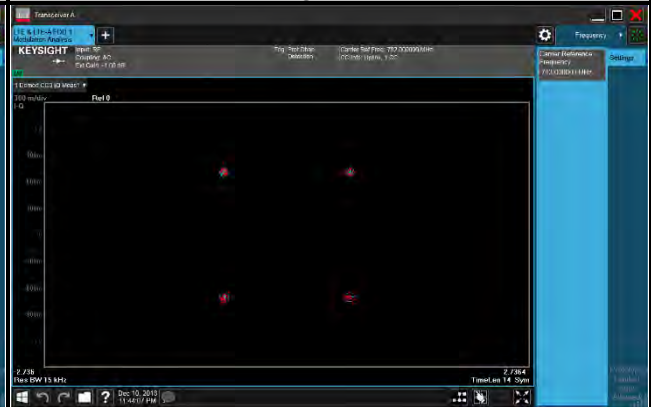
LTE Band 13

Channel 23230

BPSK



QPSK

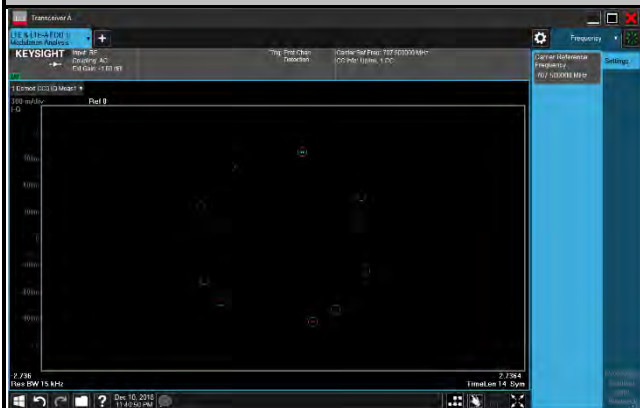


Spectrum Plot of Measurement

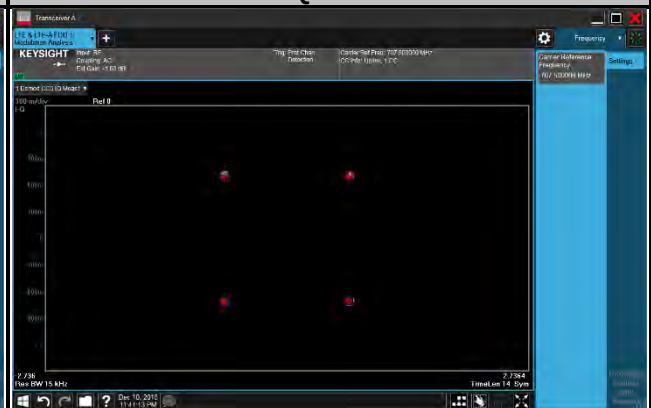
LTE Band 17

Channel 23790

BPSK



QPSK

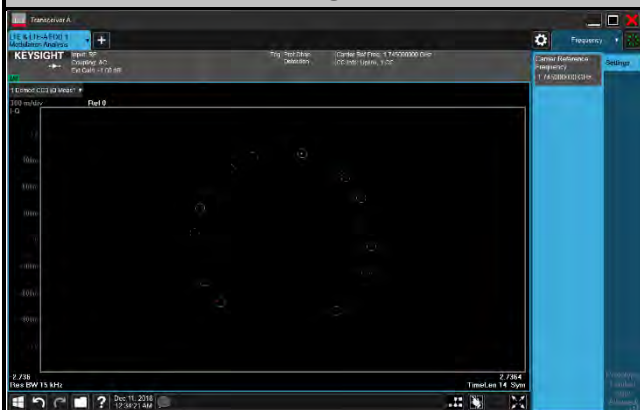


Spectrum Plot of Measurement

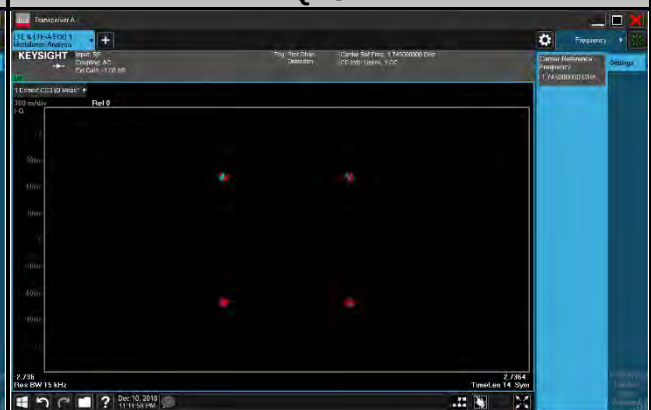
LTE Band 66

Channel 132322

BPSK



QPSK



4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

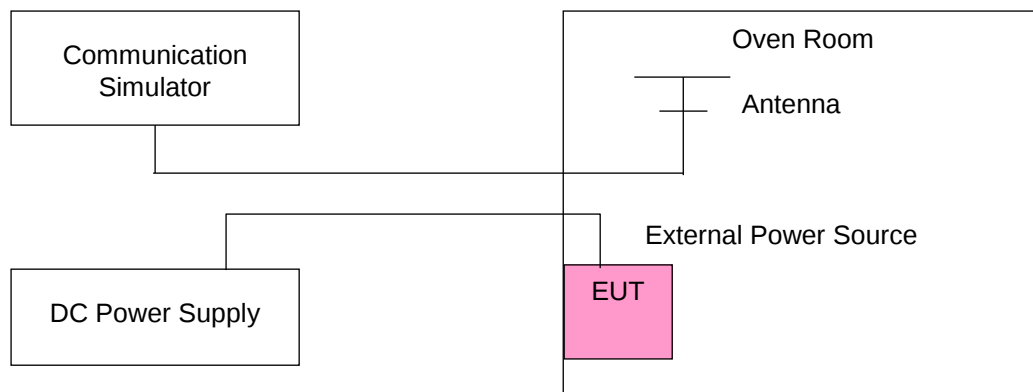
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

4.3.2 Test Procedure

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

4.3.3 Test Setup



4.3.4 Test Results

Cat-M1

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	1710.700002	0.001	1754.300002	0.001
10.2	1710.700002	0.001	1754.300001	0.001
13.8	1710.700004	0.002	1754.300002	0.001

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1710.700002	0.001	1754.300002	0.001
-20	1710.700003	0.002	1754.300002	0.001
-10	1710.700001	0.001	1754.300004	0.002
0	1710.700002	0.001	1754.300003	0.002
10	1710.700003	0.002	1754.300003	0.002
20	1710.700002	0.001	1754.300002	0.001
30	1710.699997	-0.002	1754.299997	-0.002
40	1710.699997	-0.002	1754.299997	-0.002
50	1710.699996	-0.002	1754.299997	-0.002
60	1710.699997	-0.002	1754.299998	-0.001
70	1710.699996	-0.002	1754.299997	-0.002
80	1710.699996	-0.002	1754.299997	-0.002
85	1710.699998	-0.001	1754.299998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	1711.500002	0.001	1753.500004	0.002
10.2	1711.500002	0.001	1753.500002	0.001
13.8	1711.500002	0.001	1753.500002	0.001

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1711.500002	0.001	1753.500003	0.001
-20	1711.500002	0.001	1753.500003	0.002
-10	1711.500003	0.002	1753.500004	0.002
0	1711.500003	0.002	1753.500001	0.001
10	1711.500001	0.001	1753.500003	0.002
20	1711.500001	0.001	1753.500004	0.002
30	1711.499998	-0.001	1753.499998	-0.001
40	1711.499997	-0.002	1753.499998	-0.001
50	1711.499996	-0.002	1753.499999	-0.001
60	1711.499996	-0.002	1753.499999	-0.001
70	1711.499996	-0.002	1753.499998	-0.001
50	1711.499999	-0.001	1753.499997	-0.002
85	1711.499996	-0.002	1753.499996	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	1712.500003	0.002	1752.500003	0.002
10.2	1712.500002	0.001	1752.500004	0.002
13.8	1712.500003	0.002	1752.500003	0.002

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1712.500004	0.002	1752.500002	0.001
-20	1712.500004	0.002	1752.500004	0.002
-10	1712.500004	0.002	1752.500004	0.002
0	1712.500003	0.002	1752.500003	0.002
10	1712.500003	0.002	1752.500002	0.001
20	1712.500002	0.001	1752.500003	0.001
30	1712.499998	-0.001	1752.499997	-0.002
40	1712.499996	-0.002	1752.499999	-0.001
50	1712.499997	-0.002	1752.499998	-0.001
60	1712.499997	-0.002	1752.499996	-0.002
70	1712.499999	-0.001	1752.499999	-0.001
50	1712.499999	-0.001	1752.499999	-0.001
85	1712.499997	-0.002	1752.499997	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	1715.000002	0.001	1750.000003	0.002
10.2	1715.000002	0.001	1750.000003	0.002
13.8	1715.000003	0.002	1750.000003	0.001

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1715.000002	0.001	1750.000003	0.002
-20	1715.000003	0.002	1750.000001	0.001
-10	1715.000002	0.001	1750.000002	0.001
0	1715.000003	0.002	1750.000002	0.001
10	1715.000002	0.001	1750.000002	0.001
20	1715.000003	0.002	1750.000004	0.002
30	1714.999998	-0.001	1749.999996	-0.002
40	1714.999997	-0.002	1749.999999	-0.001
50	1714.999996	-0.002	1749.999999	-0.001
60	1714.999996	-0.002	1749.999996	-0.002
70	1714.999998	-0.001	1749.999997	-0.002
50	1714.999997	-0.002	1749.999997	-0.002
85	1714.999996	-0.002	1749.999996	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	1717.500002	0.001	1747.500002	0.001
10.2	1717.500002	0.001	1747.500003	0.002
13.8	1717.500004	0.002	1747.500002	0.001

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1717.500003	0.002	1747.500001	0.001
-20	1717.500002	0.001	1747.500003	0.002
-10	1717.500004	0.002	1747.500003	0.002
0	1717.500002	0.001	1747.500003	0.002
10	1717.500004	0.002	1747.500004	0.002
20	1717.500004	0.002	1747.500003	0.002
30	1717.499999	-0.001	1747.499997	-0.002
40	1717.499999	-0.001	1747.499997	-0.002
50	1717.499998	-0.001	1747.499996	-0.002
60	1717.499997	-0.002	1747.499996	-0.002
70	1717.499999	-0.001	1747.499997	-0.002
50	1717.499997	-0.002	1747.499999	-0.001
85	1717.499999	-0.001	1747.499997	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	1720.000003	0.002	1745.000004	0.002
10.2	1720.000004	0.002	1745.000003	0.002
13.8	1720.000001	0.001	1745.000002	0.001

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1720.000001	0.001	1745.000004	0.002
-20	1720.000004	0.002	1745.000002	0.001
-10	1720.000002	0.001	1745.000002	0.001
0	1720.000004	0.002	1745.000003	0.002
10	1720.000003	0.002	1745.000001	0.001
20	1720.000001	0.001	1745.000004	0.002
30	1719.999998	-0.001	1744.999999	-0.001
40	1719.999998	-0.001	1744.999999	-0.001
50	1719.999998	-0.001	1744.999999	-0.001
60	1719.999996	-0.002	1744.999998	-0.001
70	1719.999999	-0.001	1744.999996	-0.002
50	1719.999999	-0.001	1744.999997	-0.002
85	1719.999998	-0.001	1744.999998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	699.700002	0.002	715.300003	0.004
10.2	699.700002	0.003	715.300003	0.004
13.8	699.700001	0.001	715.300004	0.006

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	699.700002	0.002	715.300002	0.002
-20	699.700004	0.006	715.300003	0.004
-10	699.700002	0.003	715.300004	0.005
0	699.700001	0.002	715.300002	0.003
10	699.700003	0.004	715.300002	0.003
20	699.700002	0.003	715.300003	0.004
30	699.699998	-0.003	715.299998	-0.003
40	699.699998	-0.003	715.299998	-0.003
50	699.699999	-0.002	715.299999	-0.001
60	699.699997	-0.005	715.299996	-0.005
70	699.699997	-0.005	715.299998	-0.003
80	699.699996	-0.005	715.299998	-0.002
85	699.699997	-0.004	715.299999	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	700.500003	0.004	714.500004	0.005
10.2	700.500004	0.006	714.500003	0.004
13.8	700.500003	0.004	714.500003	0.004

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	700.500002	0.003	714.500002	0.003
-20	700.500004	0.005	714.500002	0.003
-10	700.500002	0.003	714.500003	0.005
0	700.500002	0.003	714.500002	0.002
10	700.500001	0.002	714.500002	0.003
20	700.500003	0.005	714.500002	0.003
30	700.499996	-0.005	714.499997	-0.004
40	700.499998	-0.003	714.499998	-0.002
50	700.499998	-0.003	714.499998	-0.003
60	700.499997	-0.004	714.499996	-0.005
70	700.499999	-0.002	714.499998	-0.003
50	700.499998	-0.003	714.499998	-0.003
85	700.499997	-0.005	714.499998	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	701.500003	0.005	713.500001	0.002
10.2	701.500001	0.002	713.500001	0.002
13.8	701.500003	0.004	713.500002	0.003

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	701.500001	0.002	713.500001	0.002
-20	701.500004	0.005	713.500001	0.001
-10	701.500004	0.005	713.500002	0.002
0	701.500004	0.005	713.500002	0.002
10	701.500003	0.005	713.500003	0.004
20	701.500004	0.006	713.500002	0.003
30	701.499999	-0.002	713.499997	-0.005
40	701.499998	-0.003	713.499996	-0.005
50	701.499996	-0.005	713.499998	-0.003
60	701.499998	-0.003	713.499997	-0.004
70	701.499999	-0.002	713.499998	-0.003
50	701.499996	-0.005	713.499996	-0.005
85	701.499997	-0.005	713.499998	-0.003

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	704.000001	0.002	711.000002	0.002
10.2	704.000001	0.001	711.000004	0.005
13.8	704.000004	0.005	711.000002	0.003

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	704.000003	0.005	711.000003	0.004
-20	704.000004	0.006	711.000003	0.005
-10	704.000003	0.004	711.000004	0.005
0	704.000001	0.001	711.000003	0.004
10	704.000002	0.003	711.000004	0.006
20	704.000003	0.004	711.000004	0.005
30	703.999998	-0.002	710.999998	-0.003
40	703.999998	-0.003	710.999996	-0.006
50	703.999998	-0.003	710.999997	-0.005
60	703.999998	-0.003	710.999997	-0.005
70	703.999999	-0.002	710.999997	-0.004
50	703.999997	-0.005	710.999997	-0.004
85	703.999997	-0.004	710.999999	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 13			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	779.500001	0.001	784.500003	0.004
10.2	779.500004	0.005	784.500003	0.003
13.8	779.500003	0.004	784.500003	0.003

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 13			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	779.500001	0.001	784.500002	0.002
-20	779.500002	0.003	784.500004	0.005
-10	779.500002	0.002	784.500003	0.004
0	779.500002	0.002	784.500004	0.005
10	779.500004	0.005	784.500002	0.002
20	779.500001	0.002	784.500003	0.003
30	779.499996	-0.005	784.499996	-0.005
40	779.499997	-0.004	784.499997	-0.004
50	779.499997	-0.004	784.499996	-0.005
60	779.499999	-0.002	784.499999	-0.001
70	779.499998	-0.002	784.499998	-0.003
80	779.499998	-0.003	784.499997	-0.003
85	779.499998	-0.003	784.499997	-0.004

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 13	
	Channel Bandwidth: 10 MHz	
	Frequency (MHz)	Frequency Error (ppm)
12	782.000002	0.003
10.2	782.000004	0.005
13.8	782.000002	0.003

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 13	
	Channel Bandwidth: 10 MHz	
	Frequency (MHz)	Frequency Error (ppm)
-30	782.000002	0.003
-20	782.000001	0.001
-10	782.000003	0.004
0	782.000004	0.005
10	782.000002	0.002
20	782.000004	0.005
30	781.999998	-0.003
40	781.999997	-0.004
50	781.999999	-0.002
60	781.999999	-0.002
70	781.999996	-0.005
50	781.999998	-0.003
85	781.999999	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 17			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	706.500002	0.002	713.500003	0.004
10.2	706.500001	0.002	713.500002	0.002
13.8	706.500003	0.005	713.500004	0.005

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 17			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	706.500003	0.004	713.500001	0.002
-20	706.500002	0.003	713.500001	0.002
-10	706.500004	0.005	713.500002	0.002
0	706.500004	0.005	713.500002	0.003
10	706.500003	0.005	713.500003	0.004
20	706.500003	0.005	713.500003	0.004
30	706.499999	-0.002	713.499997	-0.004
40	706.499997	-0.005	713.499997	-0.004
50	706.499997	-0.005	713.499998	-0.002
60	706.499998	-0.003	713.499997	-0.005
70	706.499998	-0.004	713.499997	-0.004
80	706.499998	-0.004	713.499999	-0.001
85	706.499996	-0.005	713.499999	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 17			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	709.000003	0.004	711.000001	0.001
10.2	709.000003	0.004	711.000001	0.002
13.8	709.000002	0.002	711.000001	0.002

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 17			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	709.000004	0.005	711.000004	0.005
-20	709.000001	0.002	711.000002	0.002
-10	709.000003	0.004	711.000001	0.002
0	709.000003	0.004	711.000002	0.002
10	709.000002	0.003	711.000002	0.002
20	709.000003	0.004	711.000003	0.005
30	708.999996	-0.005	710.999999	-0.002
40	708.999998	-0.003	710.999997	-0.005
50	708.999999	-0.002	710.999999	-0.002
60	708.999998	-0.003	710.999999	-0.002
70	708.999998	-0.004	710.999998	-0.003
50	708.999998	-0.003	710.999997	-0.004
85	708.999997	-0.005	710.999997	-0.004

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	1710.700004	0.002	1779.300004	0.002
10.2	1710.700004	0.002	1779.300002	0.001
13.8	1710.700004	0.002	1779.300004	0.002

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1710.700002	0.001	1779.300003	0.002
-20	1710.700002	0.001	1779.300001	0.001
-10	1710.700004	0.002	1779.300001	0.001
0	1710.700001	0.001	1779.300003	0.001
10	1710.700001	0.001	1779.300001	0.001
20	1710.700004	0.002	1779.300001	0.001
30	1710.699998	-0.001	1779.299996	-0.002
40	1710.699998	-0.001	1779.299997	-0.001
50	1710.699997	-0.002	1779.299996	-0.002
60	1710.699999	-0.001	1779.299999	-0.001
70	1710.699998	-0.001	1779.299997	-0.002
80	1710.699996	-0.002	1779.299996	-0.002
85	1710.699997	-0.002	1779.299999	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	1711.500003	0.002	1778.500004	0.002
10.2	1711.500001	0.001	1778.500003	0.002
13.8	1711.500001	0.001	1778.500004	0.002

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1711.500002	0.001	1778.500002	0.001
-20	1711.500001	0.001	1778.500003	0.002
-10	1711.500002	0.001	1778.500002	0.001
0	1711.500003	0.002	1778.500002	0.001
10	1711.500003	0.002	1778.500003	0.002
20	1711.500003	0.002	1778.500002	0.001
30	1711.499997	-0.002	1778.499996	-0.002
40	1711.499997	-0.002	1778.499998	-0.001
50	1711.499999	-0.001	1778.499999	-0.001
60	1711.499997	-0.002	1778.499999	-0.001
70	1711.499999	-0.001	1778.499997	-0.002
50	1711.499997	-0.002	1778.499999	-0.001
85	1711.499998	-0.001	1778.499996	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	1712.500001	0.001	1777.500003	0.002
10.2	1712.500002	0.001	1777.500001	0.001
13.8	1712.500002	0.001	1777.500002	0.001

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1712.500002	0.001	1777.500003	0.002
-20	1712.500003	0.002	1777.500002	0.001
-10	1712.500004	0.002	1777.500003	0.001
0	1712.500002	0.001	1777.500002	0.001
10	1712.500001	0.001	1777.500002	0.001
20	1712.500003	0.002	1777.500002	0.001
30	1712.499998	-0.001	1777.499999	-0.001
40	1712.499997	-0.002	1777.499999	-0.001
50	1712.499997	-0.002	1777.499997	-0.002
60	1712.499996	-0.002	1777.499998	-0.001
70	1712.499999	-0.001	1777.499996	-0.002
50	1712.499997	-0.002	1777.499998	-0.001
85	1712.499999	-0.001	1777.499999	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	1715.000004	0.002	1775.000004	0.002
10.2	1715.000001	0.001	1775.000002	0.001
13.8	1715.000003	0.002	1775.000002	0.001

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3.30	1715.000003	1775.000003	0.002
-20	2.80	1715.000003	1775.000003	0.002
-10	1.00	1715.000001	1775.000002	0.001
0	1.20	1715.000001	1775.000003	0.002
10	3.70	1715.000004	1775.000002	0.001
20	1.80	1715.000002	1775.000004	0.002
30	-1.60	1714.999998	1774.999997	-0.002
40	-3.90	1714.999996	1774.999997	-0.002
50	-3.40	1714.999997	1774.999997	-0.002
60	-1.40	1714.999999	1774.999997	-0.002
70	-3.10	1714.999997	1774.999998	-0.001
50	-2.60	1714.999997	1774.999996	-0.002
85	-2.20	1714.999998	1774.999998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	1717.500002	0.001	1772.500001	0.001
10.2	1717.500002	0.001	1772.500004	0.002
13.8	1717.500001	0.001	1772.500004	0.002

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1717.500004	0.002	1772.500004	0.002
-20	1717.500004	0.002	1772.500004	0.002
-10	1717.500003	0.002	1772.500003	0.002
0	1717.500002	0.001	1772.500002	0.001
10	1717.500002	0.001	1772.500002	0.001
20	1717.500002	0.001	1772.500002	0.001
30	1717.499997	-0.002	1772.499997	-0.002
40	1717.499999	-0.001	1772.499997	-0.001
50	1717.499998	-0.001	1772.499999	-0.001
60	1717.499999	-0.001	1772.499996	-0.002
70	1717.499997	-0.002	1772.499997	-0.002
50	1717.499997	-0.002	1772.499997	-0.001
85	1717.499997	-0.002	1772.499999	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	1720.000002	0.001	1770.000002	0.001
10.2	1720.000002	0.001	1770.000002	0.001
13.8	1720.000003	0.002	1770.000003	0.002

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1720.000003	0.002	1770.000003	0.002
-20	1720.000003	0.002	1770.000003	0.001
-10	1720.000004	0.002	1770.000002	0.001
0	1720.000002	0.001	1770.000002	0.001
10	1720.000004	0.002	1770.000003	0.002
20	1720.000004	0.002	1770.000001	0.001
30	1719.999997	-0.002	1769.999997	-0.002
40	1719.999998	-0.001	1769.999998	-0.001
50	1719.999997	-0.002	1769.999996	-0.002
60	1719.999996	-0.002	1769.999997	-0.002
70	1719.999996	-0.002	1769.999998	-0.001
50	1719.999996	-0.002	1769.999998	-0.001
85	1719.999996	-0.002	1769.999999	-0.001

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Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 4			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	1710.100003	0.002	1754.900002	0.001
10.2	1710.100003	0.002	1754.900003	0.002
13.8	1710.100002	0.001	1754.900004	0.002

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1710.100001	0.001	1754.900004	0.002
-20	1710.100004	0.002	1754.900002	0.001
-10	1710.100002	0.001	1754.900001	0.001
0	1710.100004	0.002	1754.900001	0.001
10	1710.100004	0.002	1754.900004	0.002
20	1710.099997	-0.002	1754.899998	-0.001
30	1710.099997	-0.002	1754.899999	-0.001
40	1710.099997	-0.002	1754.899997	-0.002
50	1710.099998	-0.001	1754.899999	-0.001
60	1710.099997	-0.002	1754.899999	-0.001
70	1710.099996	-0.002	1754.899999	-0.001
80	1710.099999	-0.001	1754.899996	-0.002
85	1710.099999	-0.001	1754.899996	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 12			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	699.100003	0.005	715.900003	0.004
10.2	699.100002	0.003	715.900002	0.003
13.8	699.100004	0.005	715.900002	0.002

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	699.100003	0.005	715.900002	0.003
-20	699.100003	0.004	715.900003	0.004
-10	699.100002	0.002	715.900002	0.003
0	699.100003	0.004	715.900003	0.005
10	699.100002	0.003	715.900004	0.006
20	699.099997	-0.005	715.899998	-0.003
30	699.099999	-0.002	715.899999	-0.002
40	699.099996	-0.005	715.899996	-0.005
50	699.099997	-0.004	715.899996	-0.005
60	699.099997	-0.005	715.899996	-0.006
70	699.099997	-0.005	715.899998	-0.003
80	699.099997	-0.004	715.899996	-0.005
85	699.099997	-0.004	715.899999	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 13			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	777.100003	0.004	786.900003	0.003
10.2	777.100004	0.005	786.900002	0.002
13.8	777.100003	0.004	786.900001	0.002

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 13			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	777.100002	0.002	786.900004	0.005
-20	777.100002	0.002	786.900003	0.003
-10	777.100002	0.003	786.900002	0.003
0	777.100002	0.002	786.900001	0.001
10	777.100003	0.003	786.900001	0.001
20	777.099998	-0.002	786.899997	-0.004
30	777.099998	-0.003	786.899998	-0.003
40	777.099999	-0.001	786.899999	-0.002
50	777.099999	-0.001	786.899998	-0.002
60	777.099998	-0.003	786.899998	-0.003
70	777.099997	-0.003	786.899996	-0.005
80	777.099997	-0.004	786.899997	-0.004
85	777.099998	-0.002	786.899998	-0.003

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 17			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	699.100003	0.004	715.900003	0.005
10.2	699.100002	0.003	715.900003	0.004
13.8	699.100003	0.005	715.900002	0.002

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 17			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	699.100003	0.005	715.900002	0.002
-20	699.100003	0.004	715.900002	0.003
-10	699.100001	0.002	715.900003	0.004
0	699.100002	0.003	715.900003	0.004
10	699.100002	0.003	715.900003	0.005
20	699.099997	-0.004	715.899997	-0.004
30	699.099999	-0.002	715.899998	-0.003
40	699.099997	-0.004	715.899998	-0.003
50	699.099998	-0.003	715.899997	-0.005
60	704.099998	-0.003	715.899996	-0.006
70	704.099997	-0.005	715.899998	-0.003
80	704.099997	-0.004	715.899996	-0.005
85	699.099998	-0.002	715.899999	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
12	1710.100002	0.001	1779.900002	0.001
10.2	1710.100003	0.002	1779.900003	0.002
13.8	1710.100003	0.002	1779.900001	0.001

Note: The fixture defined the normal working voltage of the adapter is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1710.100002	0.001	1779.900003	0.002
-20	1710.100004	0.002	1779.900003	0.002
-10	1710.100004	0.002	1779.900002	0.001
0	1710.100002	0.001	1779.900003	0.002
10	1710.100004	0.002	1779.900001	0.001
20	1710.099999	-0.001	1779.899999	-0.001
30	1710.099998	-0.001	1779.899998	-0.001
40	1710.099996	-0.002	1779.899996	-0.002
50	1710.099997	-0.002	1779.899999	-0.001
60	1710.099998	-0.001	1779.899999	-0.001
70	1710.099996	-0.002	1779.899999	-0.001
80	1710.099997	-0.002	1779.899996	-0.002
85	1710.099999	-0.001	1779.899997	-0.002

4.4 Occupied Bandwidth Measurement

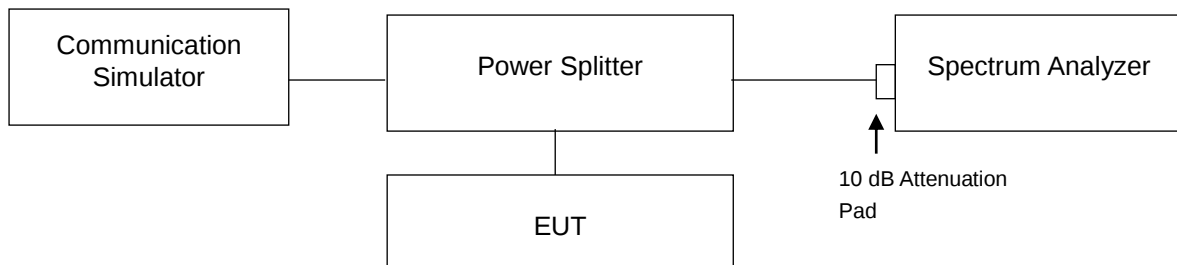
4.4.1 Limits of Occupied Bandwidth Measurement

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

4.4.2 Test Procedure

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

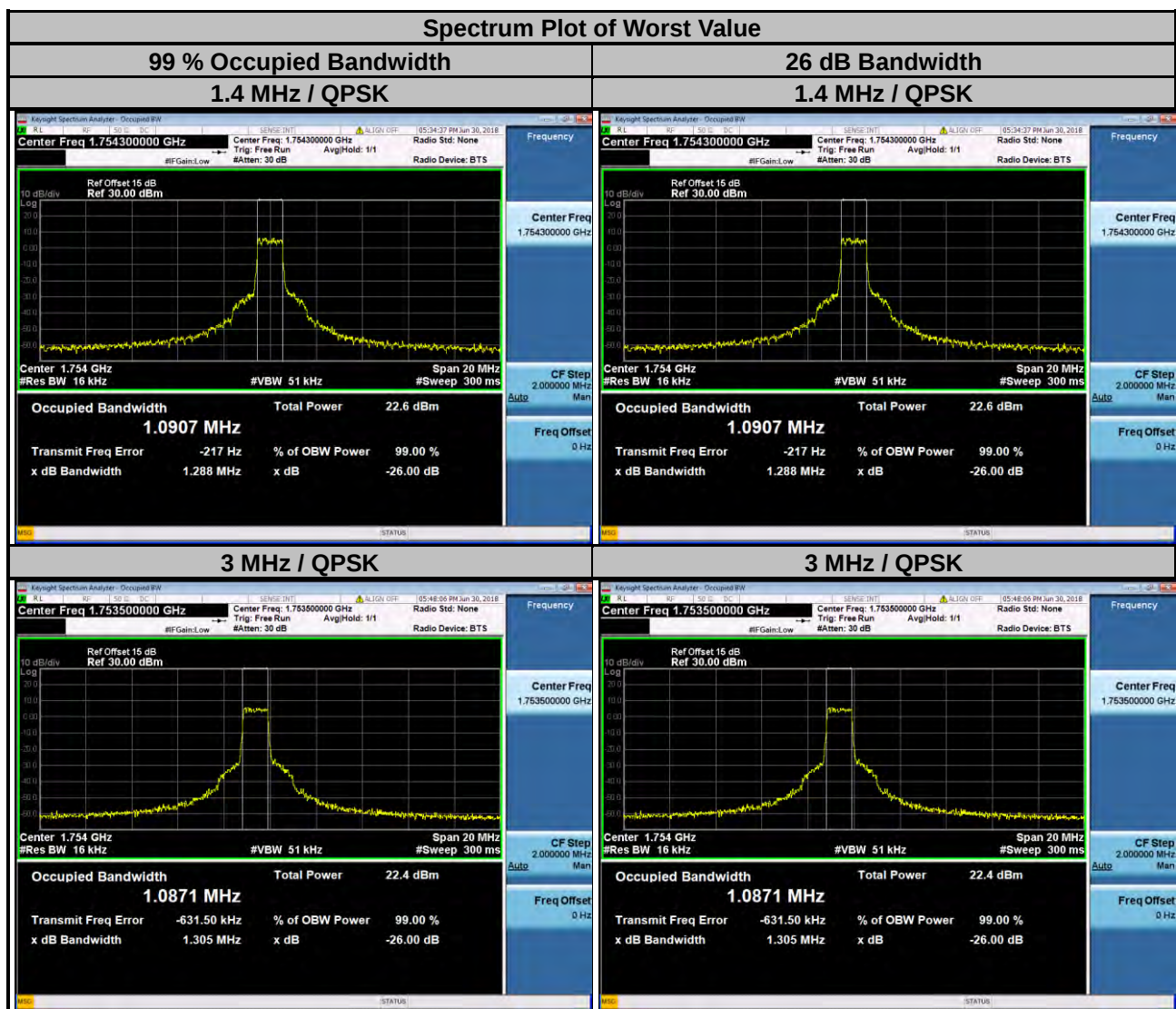
4.4.3 Test Setup



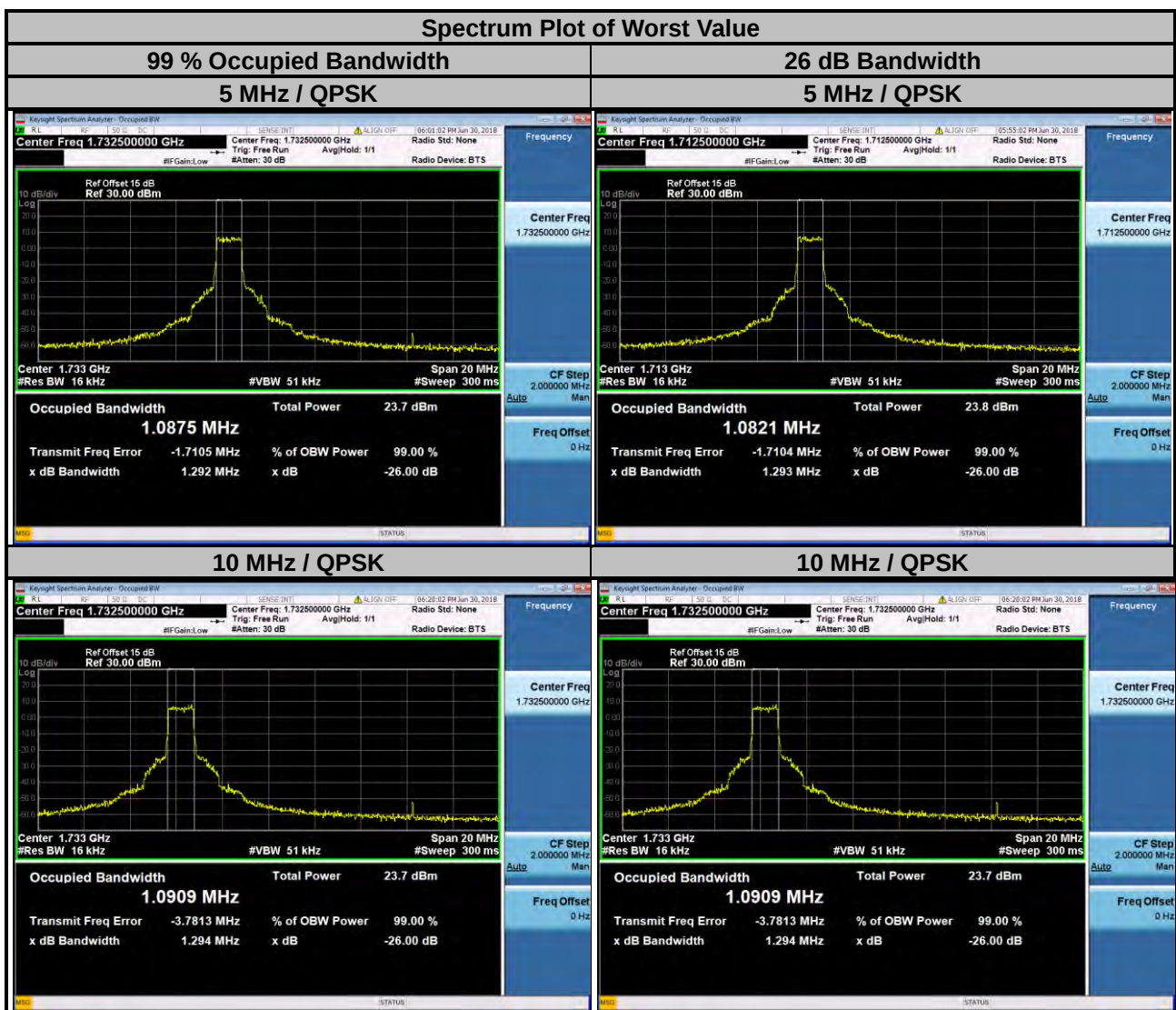
4.4.4 Test Result

Cat-M1

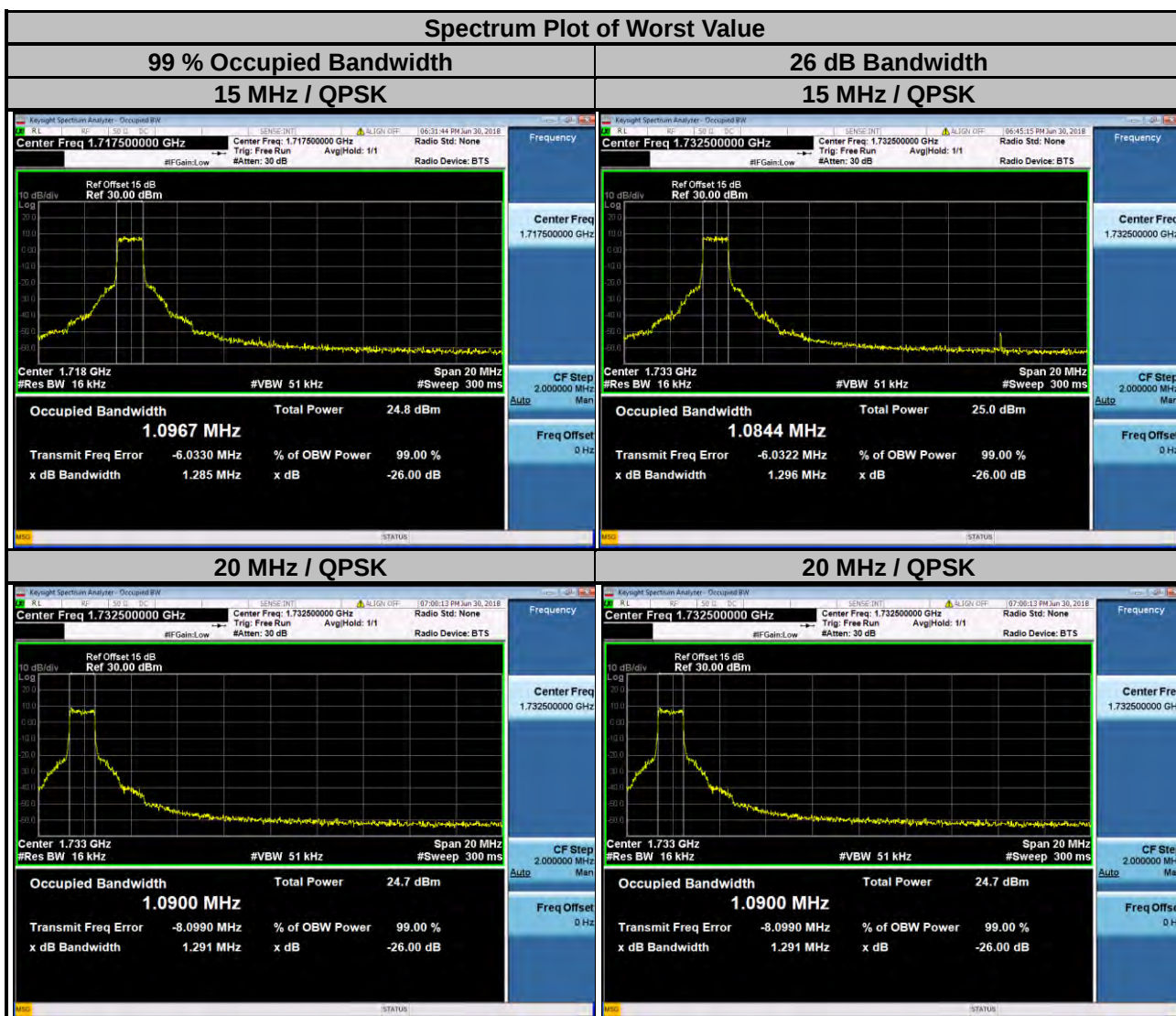
LTE Band 4					
Channel Bandwidth: 1.4 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
19957	1710.7	1.0862	0.9147	1.288	1.248
20175	1732.5	1.0898	0.9127	1.272	1.245
20393	1754.3	1.0907	0.9136	1.288	1.247
Channel Bandwidth: 3 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
19965	1711.5	1.0804	0.9160	1.277	1.231
20175	1732.5	1.0863	0.9203	1.261	1.229
20385	1753.5	1.0871	0.9216	1.305	1.215



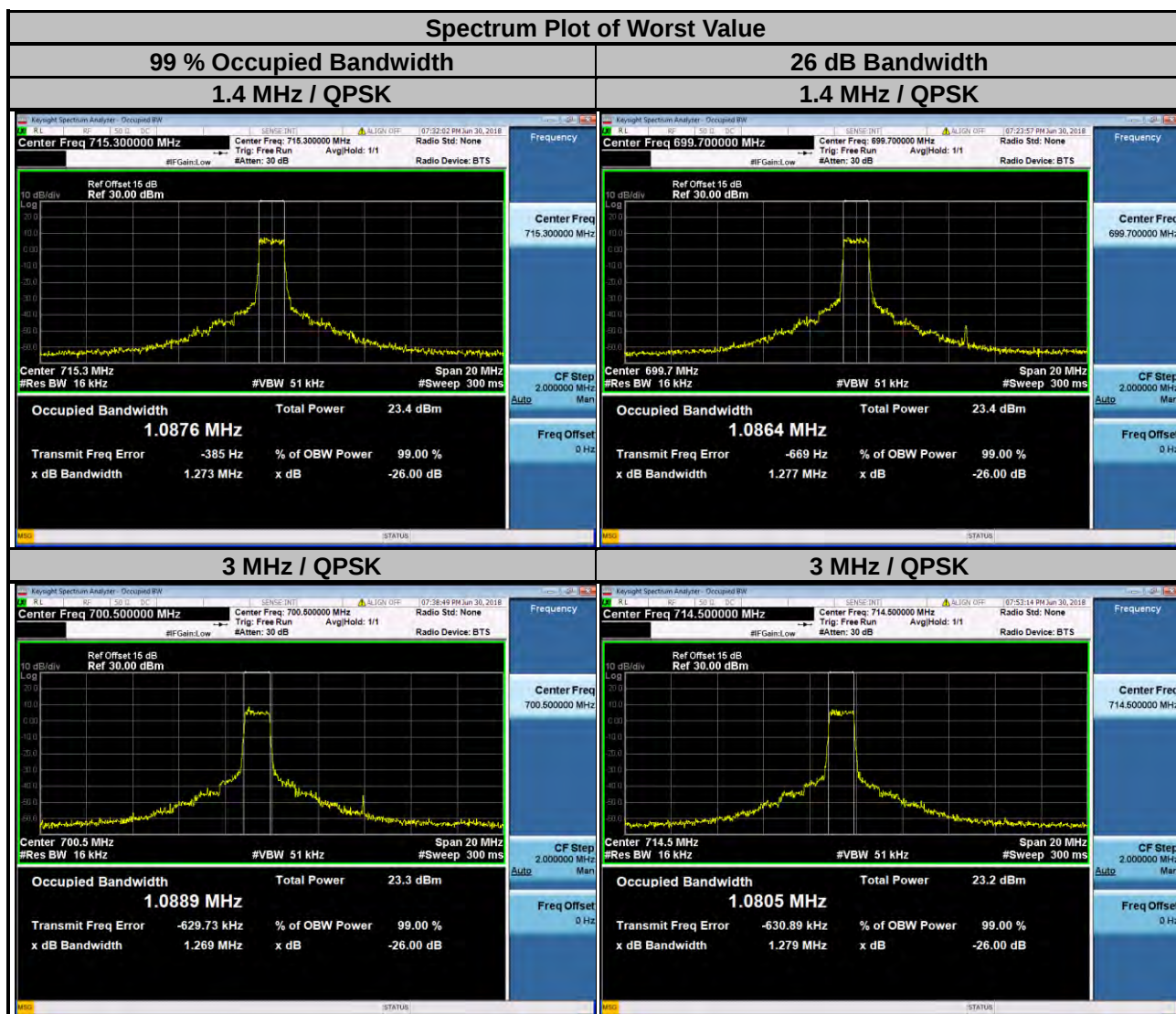
LTE Band 4					
Channel Bandwidth: 5 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
19975	1712.5	1.0821	0.9209	1.293	1.240
20175	1732.5	1.0875	0.9147	1.292	1.212
20375	1752.5	1.0823	0.9204	1.287	1.202
Channel Bandwidth: 10 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
20000	1715.0	1.0890	0.9155	1.273	1.274
20175	1732.5	1.0909	0.9161	1.294	1.235
20350	1750.0	1.0895	0.9206	1.292	1.246



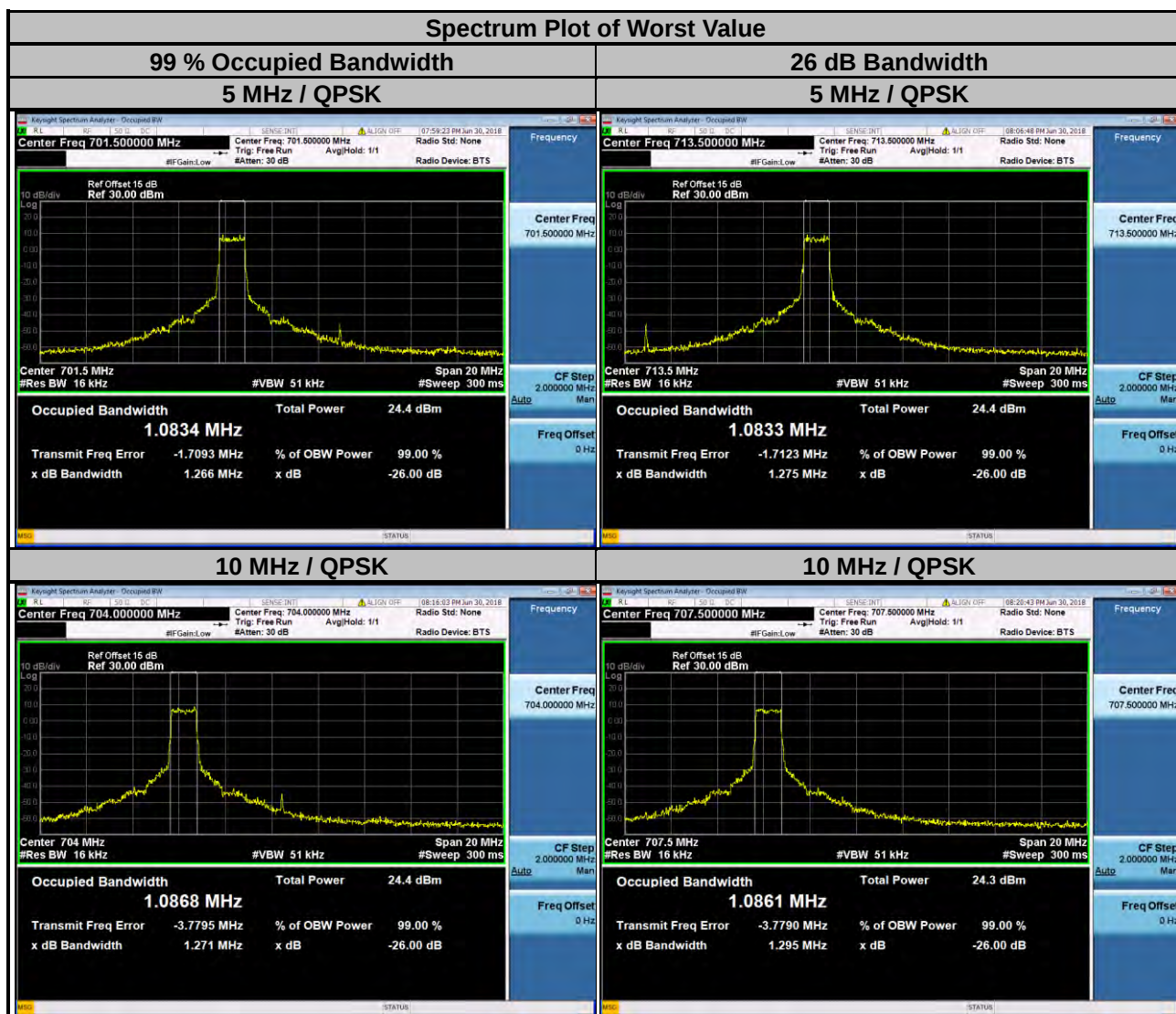
LTE Band 4					
Channel Bandwidth: 15 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
20025	1717.5	1.0967	0.9179	1.285	1.278
20175	1732.5	1.0844	0.9184	1.296	1.245
20325	1747.5	1.0844	0.9122	1.284	1.257
Channel Bandwidth: 20 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
20050	1720.0	1.0871	0.9164	1.291	1.263
20175	1732.5	1.0900	0.9162	1.291	1.212
20300	1745.0	1.0884	0.9161	1.283	1.264



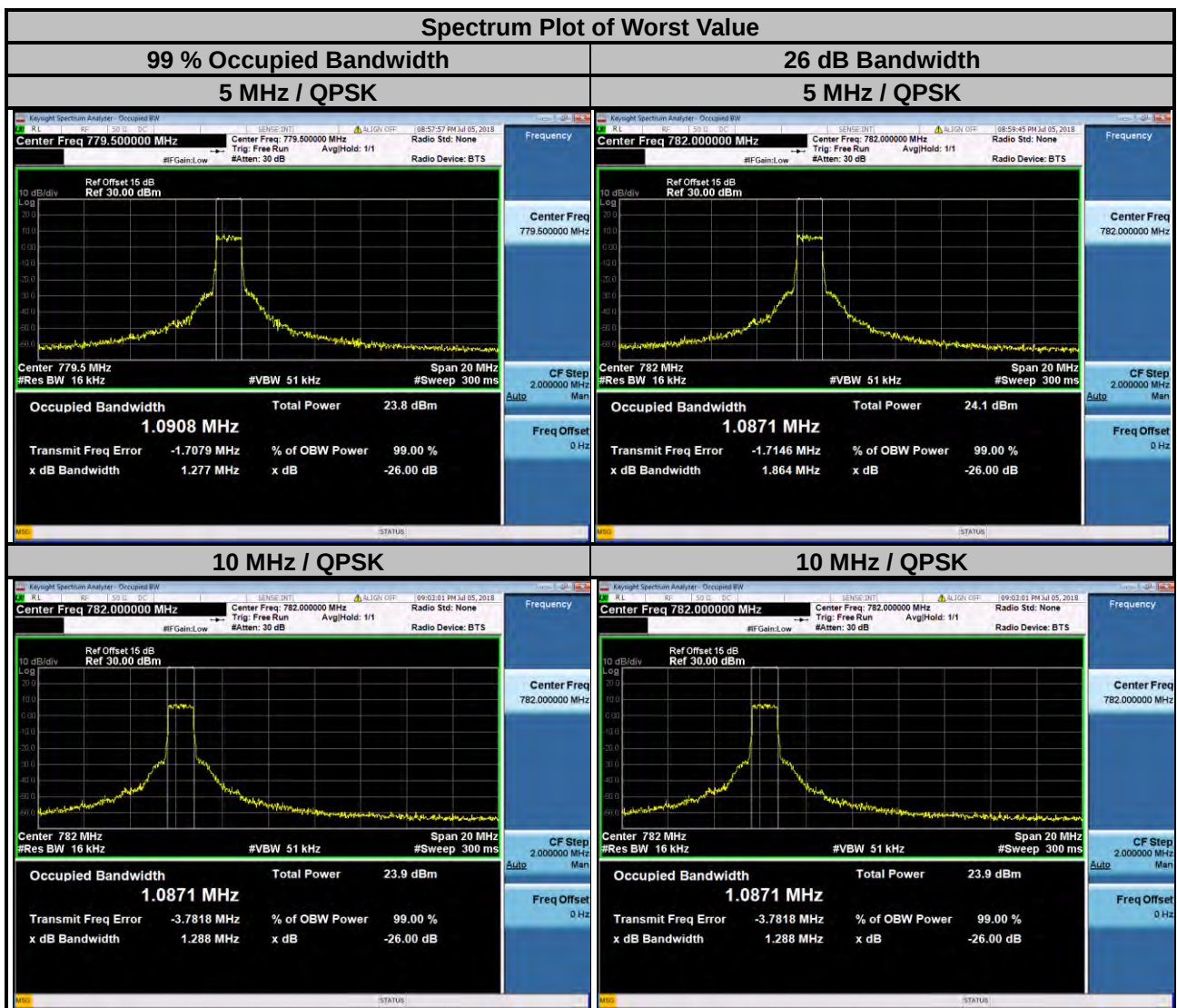
LTE Band 12					
Channel Bandwidth: 1.4 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
23017	699.7	1.0864	0.9114	1.277	1.231
23095	707.5	1.0864	0.9134	1.273	1.188
23173	715.3	1.0876	0.9124	1.273	1.227
Channel Bandwidth: 3 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
23025	700.5	1.0889	0.9181	1.269	1.246
23095	707.5	1.0786	0.9147	1.256	1.234
23165	714.5	1.0805	0.9148	1.279	1.236



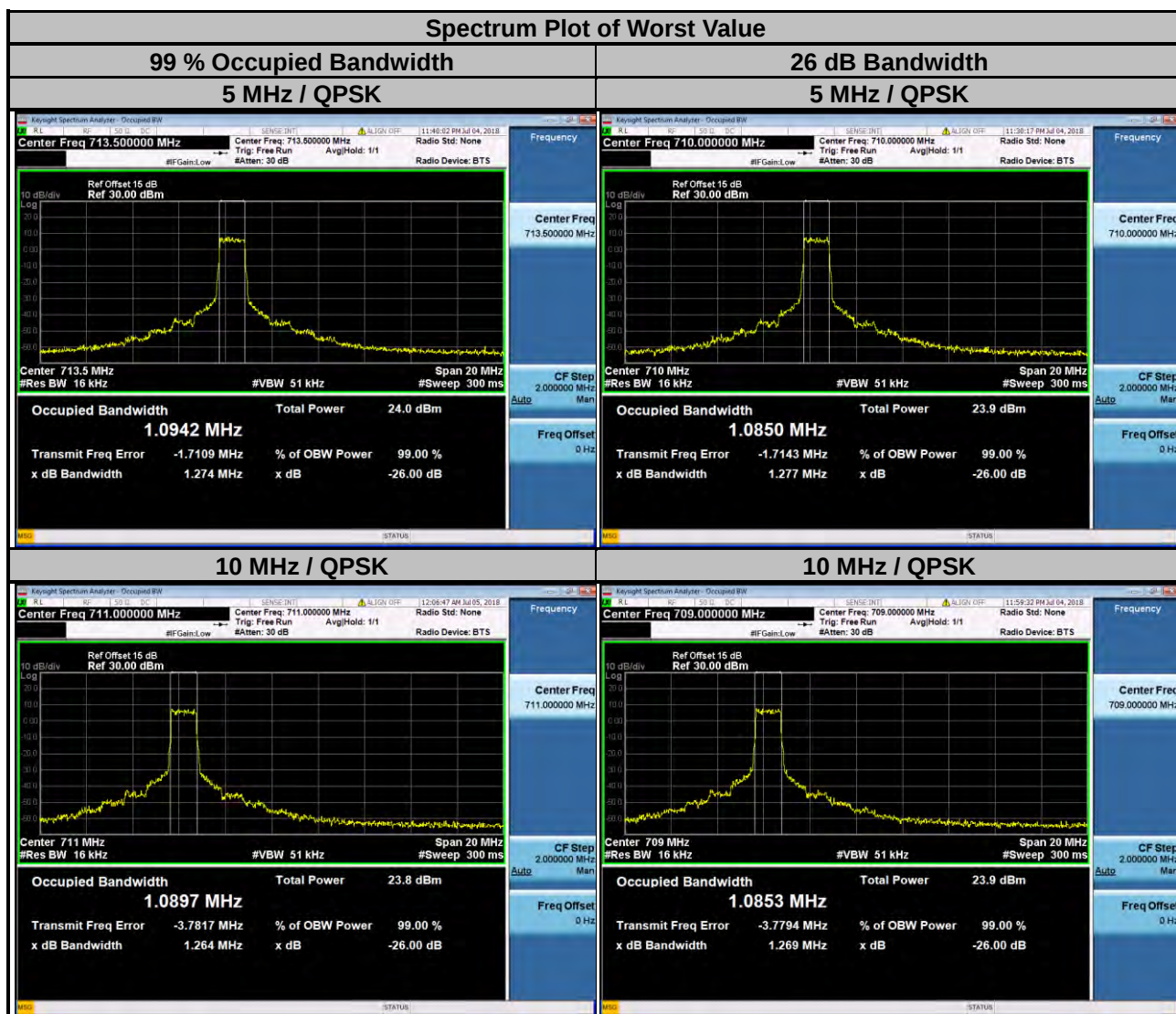
LTE Band 12					
Channel Bandwidth: 5 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
23035	701.5	1.0834	0.9176	1.266	1.178
23095	707.5	1.0793	0.9192	1.262	1.248
23155	713.5	1.0833	0.9100	1.275	1.218
Channel Bandwidth: 10 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
23060	704.0	1.0868	0.9145	1.271	1.222
23095	707.5	1.0861	0.9126	1.295	1.227
23130	711.0	1.0868	0.9145	1.276	1.165



LTE Band 13					
Channel Bandwidth: 5 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
23205	779.5	1.0908	0.9137	1.277	1.242
23230	782.0	1.0871	0.9086	1.864	1.252
23255	784.5	1.0780	0.9168	1.283	1.213
Channel Bandwidth: 10 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
23230	782.0	1.0871	0.9121	1.288	1.236

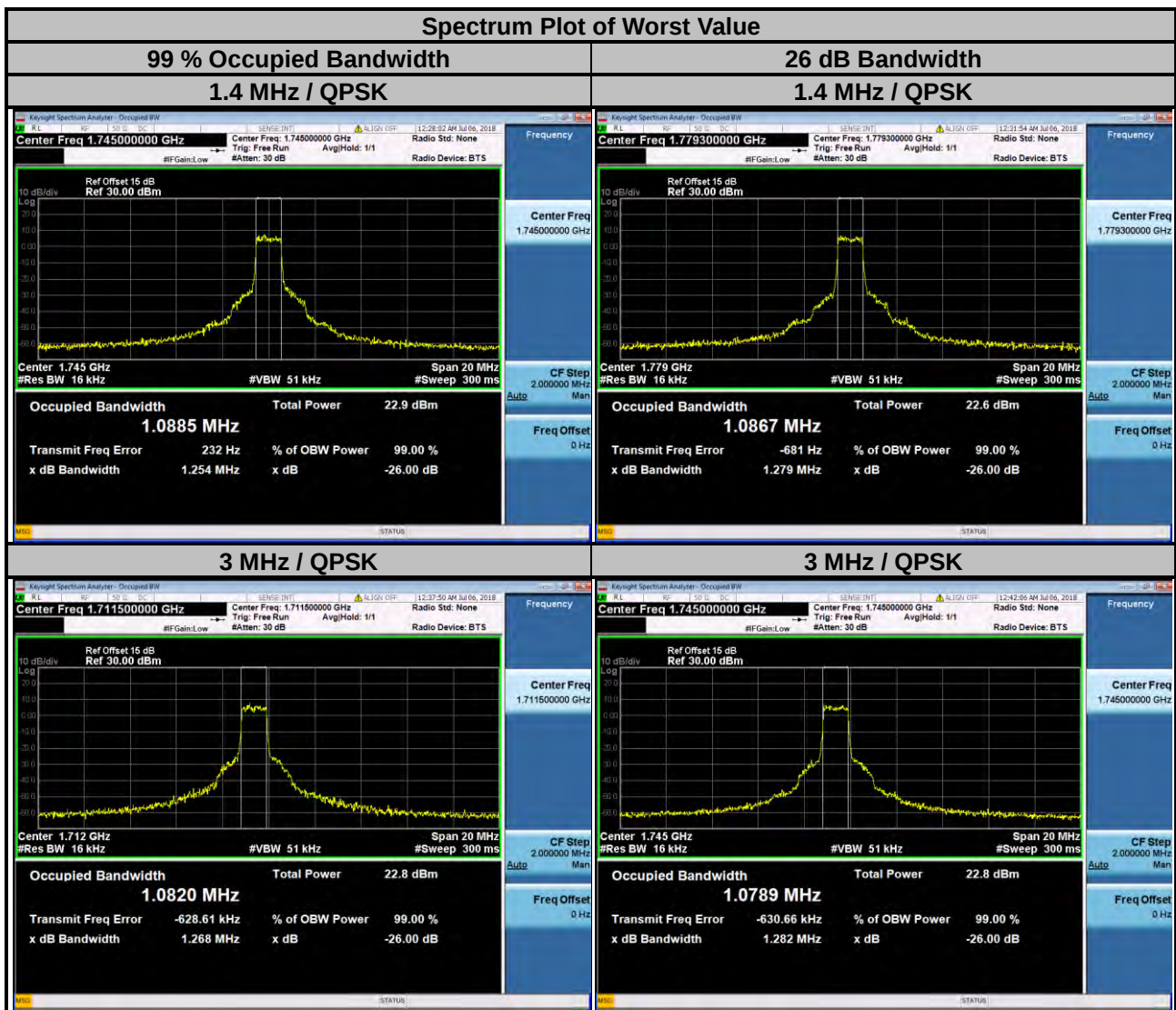


LTE Band 17					
Channel Bandwidth: 5 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
23755	706.5	1.0888	0.9244	1.273	1.207
23790	710.0	1.0850	0.9132	1.277	1.242
23825	713.5	1.0942	0.9168	1.274	1.219
Channel Bandwidth: 10 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
23780	709.0	1.0853	0.9162	1.269	1.218
23790	710.0	1.0894	0.9128	1.246	1.217
23800	711.0	1.0897	0.9154	1.264	1.221

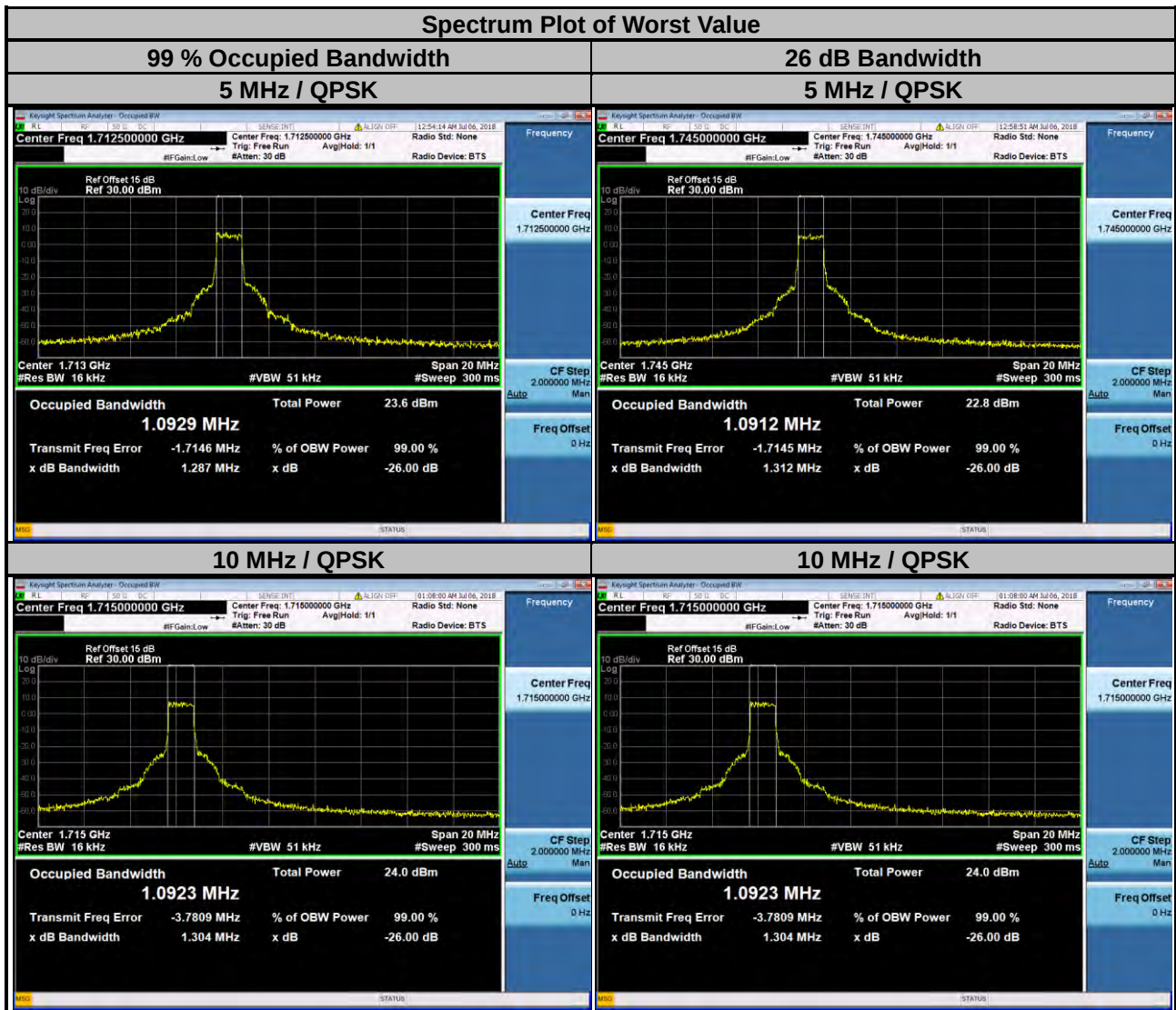


LTE Band 66					
Channel Bandwidth: 1.4 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
131979	1710.7	1.0877	0.9155	1.275	1.292
132322	1745.0	1.0885	0.9166	1.254	1.285
132665	1779.3	1.0867	0.9150	1.279	1.251

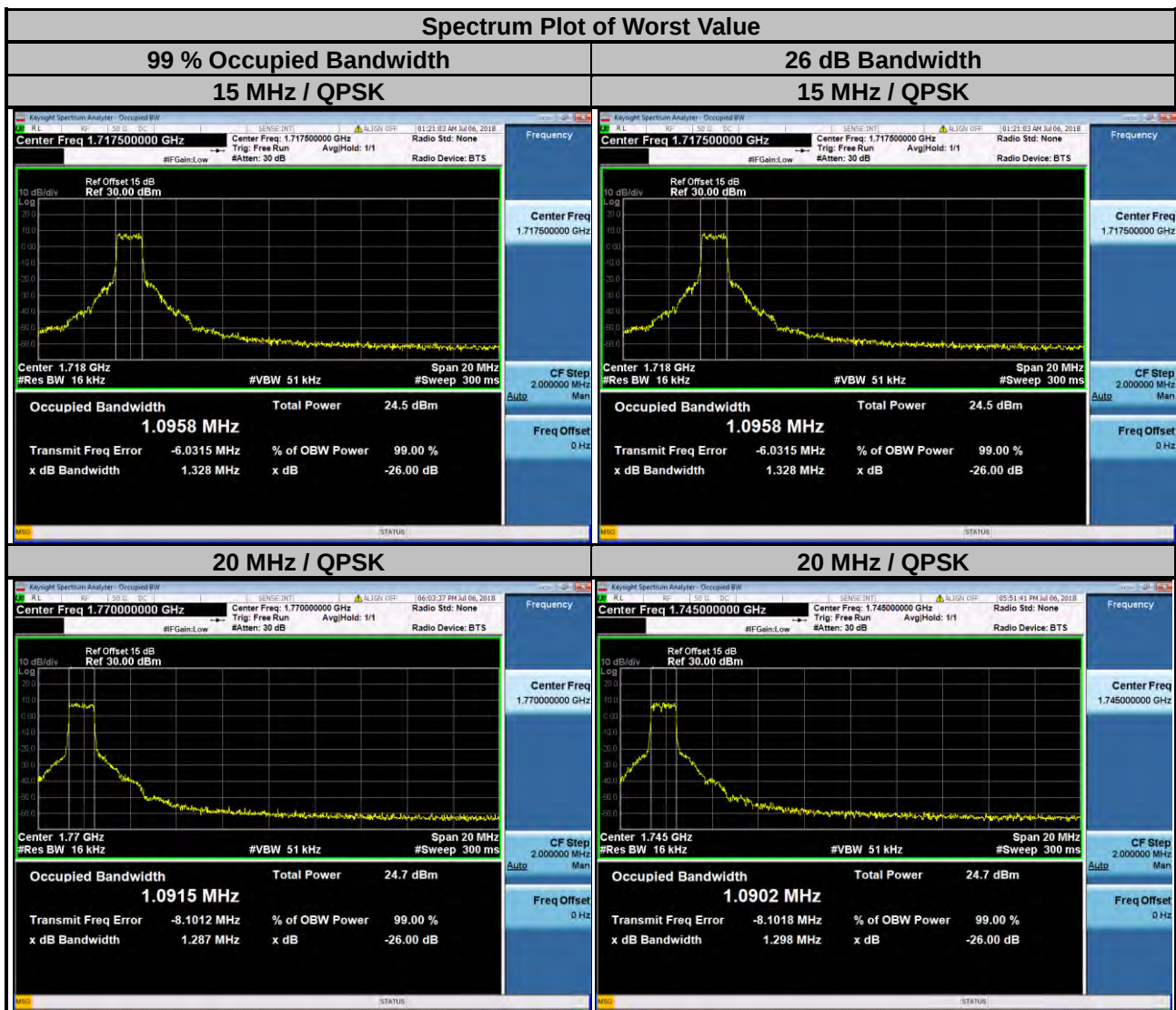
Channel Bandwidth: 3 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
131987	1711.5	1.0820	0.9245	1.268	1.268
132322	1745.0	1.0789	0.9109	1.282	1.238
132657	1778.5	1.0806	0.9107	1.264	1.264



LTE Band 66					
Channel Bandwidth: 5 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
131997	1712.5	1.0929	0.9145	1.287	1.233
132322	1745.0	1.0912	0.9128	1.312	1.274
132647	1777.5	1.0869	0.9141	1.281	1.258
Channel Bandwidth: 10 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
132022	1715.0	1.0923	0.9174	1.304	1.253
132322	1745.0	1.0900	0.9160	1.282	1.285
132622	1775.0	1.0858	0.9116	1.258	1.257

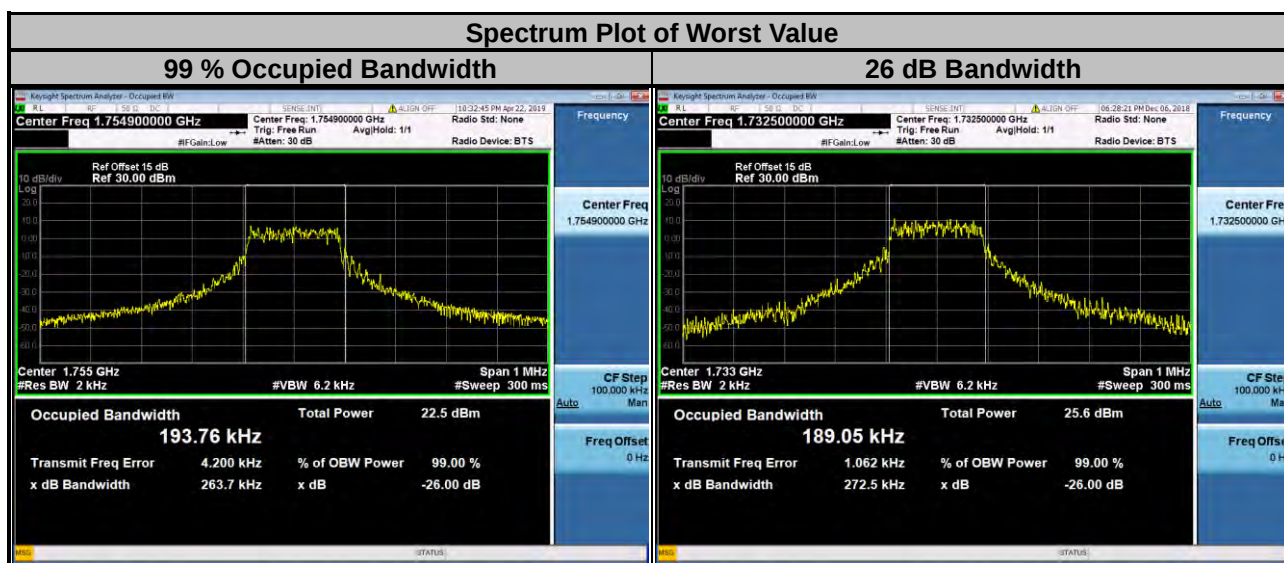


LTE Band 66					
Channel Bandwidth: 15 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
132047	1717.5	1.0958	0.9259	1.328	1.259
132322	1745.0	1.0936	0.9182	1.277	1.292
132597	1772.5	1.0825	0.9102	1.281	1.217
Channel Bandwidth: 20 MHz					
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)		26 dB Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
132072	1720.0	1.0897	0.9155	1.295	1.300
132322	1745.0	1.0902	0.9203	1.298	1.291
132572	1770.0	1.0915	0.9182	1.287	1.269

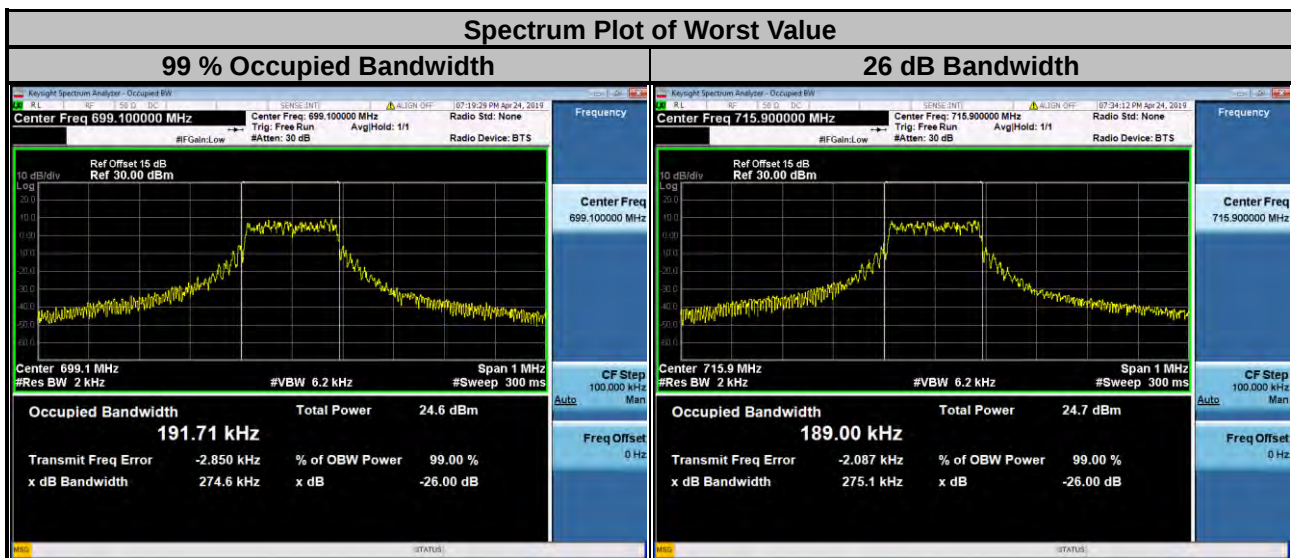


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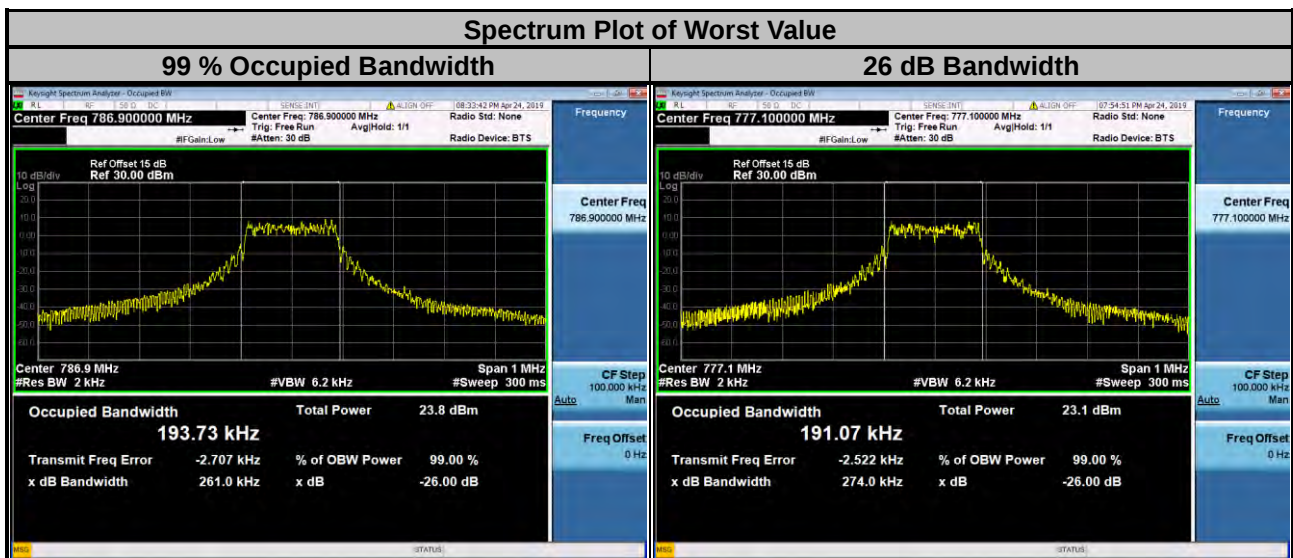
LTE Band 4						
Channel	Frequency (MHz)	Modulation	N _{tones}	Sub-carrier Spacing (kHz)	99 % Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
19951	1710.1	BPSK	1@0	3.75	65.04	106.60
		QPSK	1@0	15	95.50	112.10
		QPSK	3@3	15	103.06	181.30
		QPSK	12@0	15	193.36	271.50
20175	1732.5	BPSK	1@0	3.75	54.98	37.63
		QPSK	1@0	15	97.55	113.00
		QPSK	3@3	15	102.93	155.50
		QPSK	12@0	15	189.05	272.50
20399	1754.9	BPSK	1@47	3.75	58.04	37.80
		QPSK	1@11	15	95.61	115.00
		QPSK	3@3	15	100.68	156.50
		QPSK	12@0	15	193.76	263.70



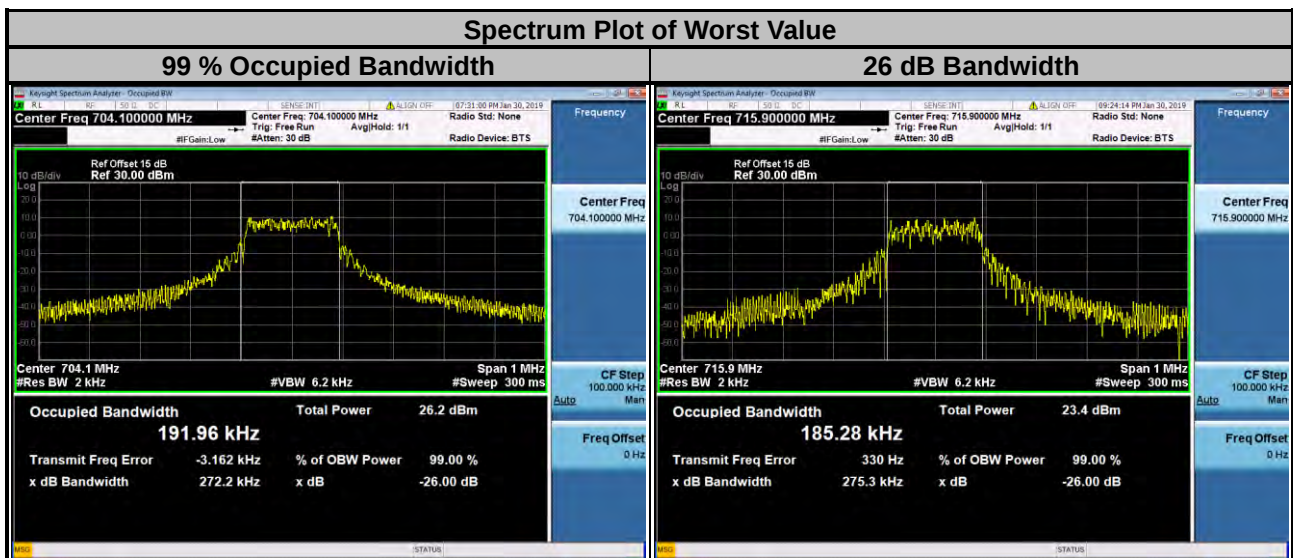
LTE Band 12						
Channel	Frequency (MHz)	Modulation	N _{tones}	Sub-carrier Spacing (kHz)	99 % Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
23011	699.1	BPSK	1@0	3.75	55.76	37.61
		QPSK	1@0	15	95.09	114.20
		QPSK	3@3	15	112.51	171.50
		QPSK	12@0	15	191.71	274.60
23095	707.5	BPSK	1@0	3.75	53.24	37.32
		QPSK	1@0	15	96.17	112.60
		QPSK	3@3	15	95.78	152.70
		QPSK	12@0	15	188.56	259.10
23179	715.9	BPSK	1@47	3.75	55.21	37.58
		QPSK	1@11	15	95.22	113.90
		QPSK	3@3	15	111.99	170.10
		QPSK	12@0	15	189.00	275.10



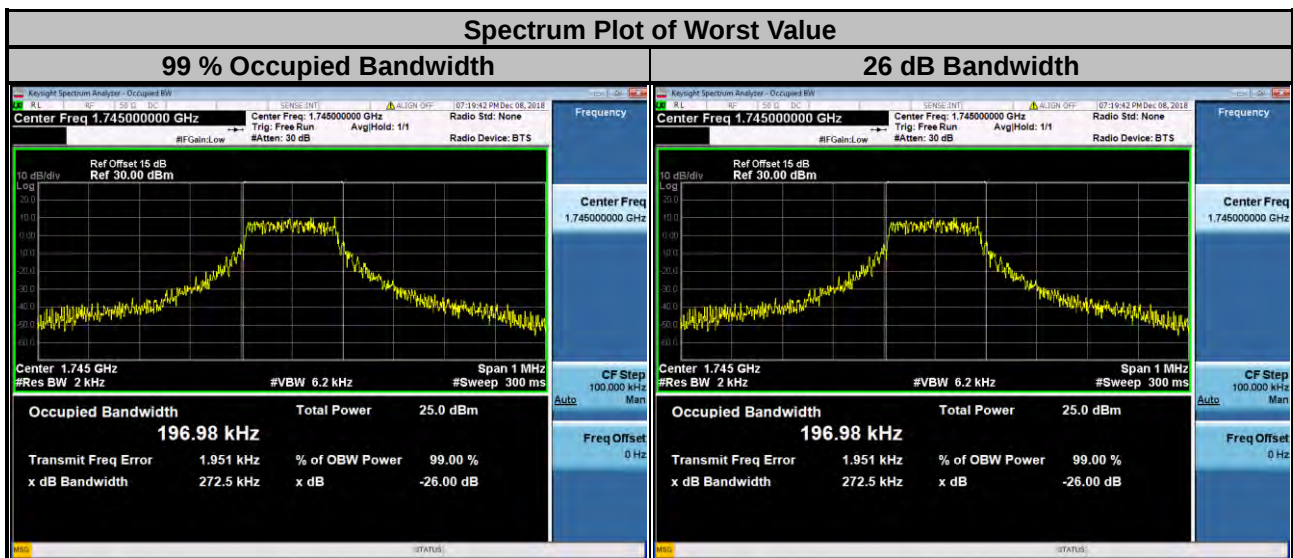
LTE Band 13						
Channel	Frequency (MHz)	Modulation	N _{tones}	Sub-carrier Spacing (kHz)	99 % Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
23181	777.1	BPSK	1@0	3.75	54.93	37.38
		QPSK	1@0	15	95.53	126.40
		QPSK	3@3	15	108.86	170.80
		QPSK	12@0	15	191.07	274.00
23230	782	BPSK	1@0	3.75	55.31	37.57
		QPSK	1@0	15	97.13	100.50
		QPSK	3@3	15	98.43	152.30
		QPSK	12@0	15	184.67	263.60
23279	786.9	BPSK	1@47	3.75	51.22	37.04
		QPSK	1@11	15	91.53	112.80
		QPSK	3@3	15	112.65	182.60
		QPSK	12@0	15	193.73	261.00



LTE Band 17						
Channel	Frequency (MHz)	Modulation	N _{tones}	Sub-carrier Spacing (kHz)	99 % Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
23731	704.1	BPSK	1@0	3.75	107.49	110.10
		QPSK	1@0	15	118.54	135.30
		QPSK	3@3	15	109.63	169.90
		QPSK	12@0	15	191.96	272.20
23790	710	BPSK	1@0	3.75	108.86	110.70
		QPSK	1@0	15	119.12	136.30
		QPSK	3@3	15	115.18	170.10
		QPSK	12@0	15	188.82	274.50
23849	715.9	BPSK	1@47	3.75	108.83	110.40
		QPSK	1@11	15	116.97	135.90
		QPSK	3@3	15	111.71	182.80
		QPSK	12@0	15	185.28	275.30



LTE Band 66						
Channel	Frequency (MHz)	Modulation	N _{tones}	Sub-carrier Spacing (kHz)	99 % Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
131973	1710.1	BPSK	1@0	3.75	58.50	37.68
		QPSK	1@0	15	96.78	114.00
		QPSK	3@3	15	111.98	169.70
		QPSK	12@0	15	195.23	265.60
132322	1745	BPSK	1@0	3.75	55.70	37.67
		QPSK	1@0	15	98.35	114.90
		QPSK	3@3	15	110.72	153.20
		QPSK	12@0	15	196.98	272.50
132671	1779.9	BPSK	1@47	3.75	52.40	37.37
		QPSK	1@11	15	94.42	113.40
		QPSK	3@3	15	110.86	182.50
		QPSK	12@0	15	194.32	260.10



4.5 Band Edge Measurement

4.5.1 Limits of Band Edge Measurement

For operations in the 698-787 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.

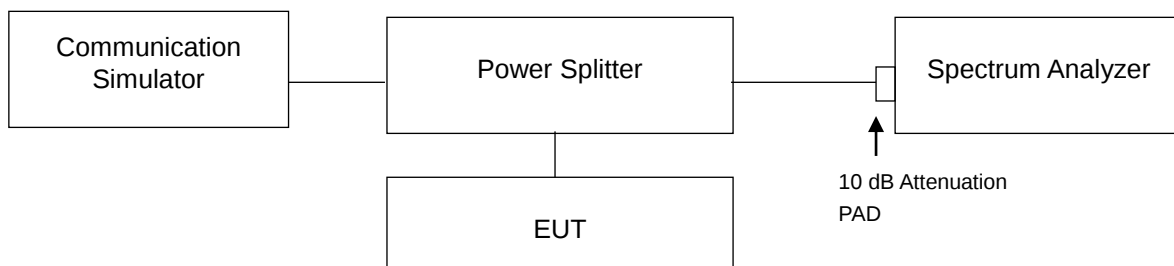
However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

For operations in the 746-758 MHz band and the 776-788 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.

On all frequencies between 763-775 MHz and 793-805 MHz, by a factor no less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.

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

4.5.2 Test Setup

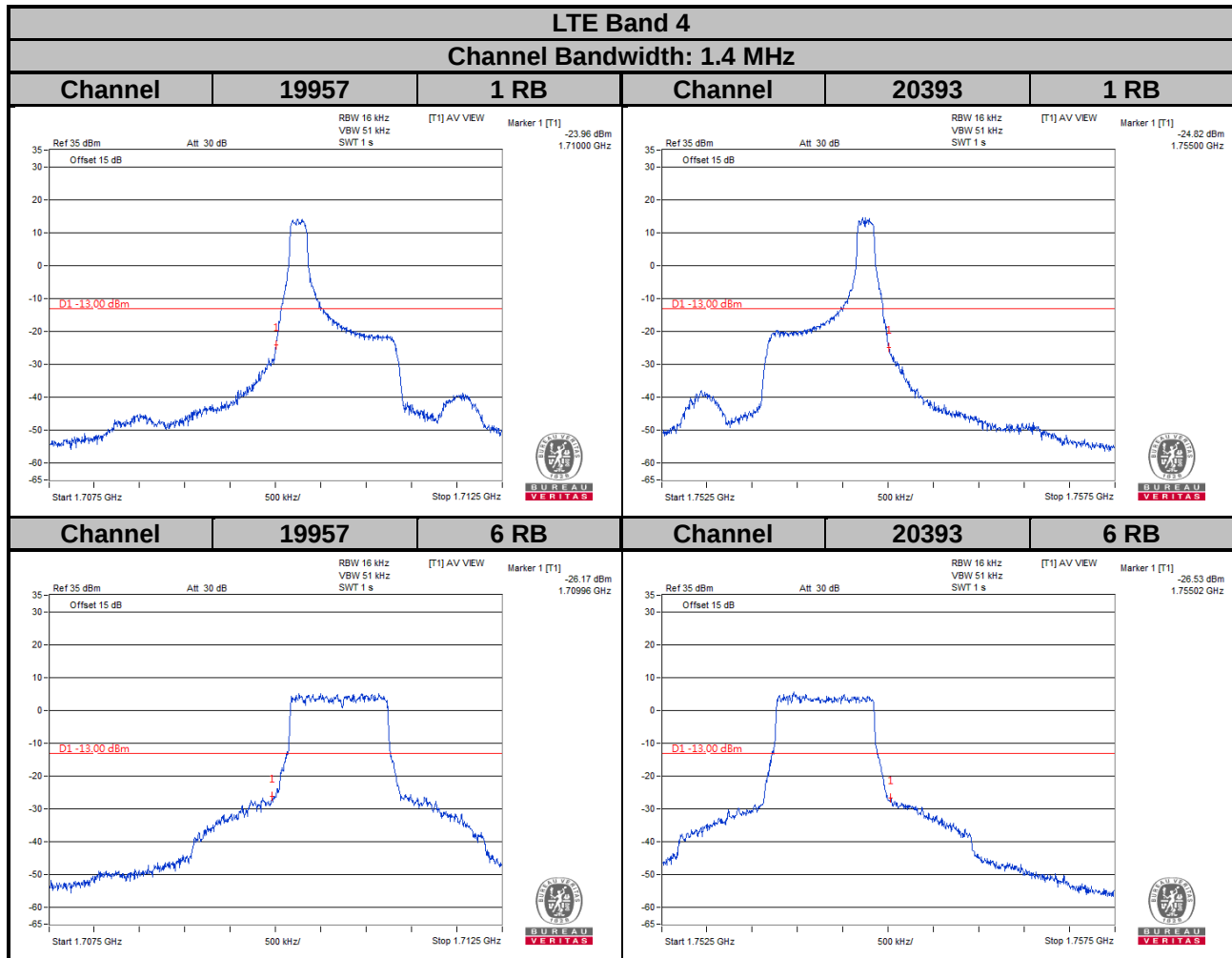


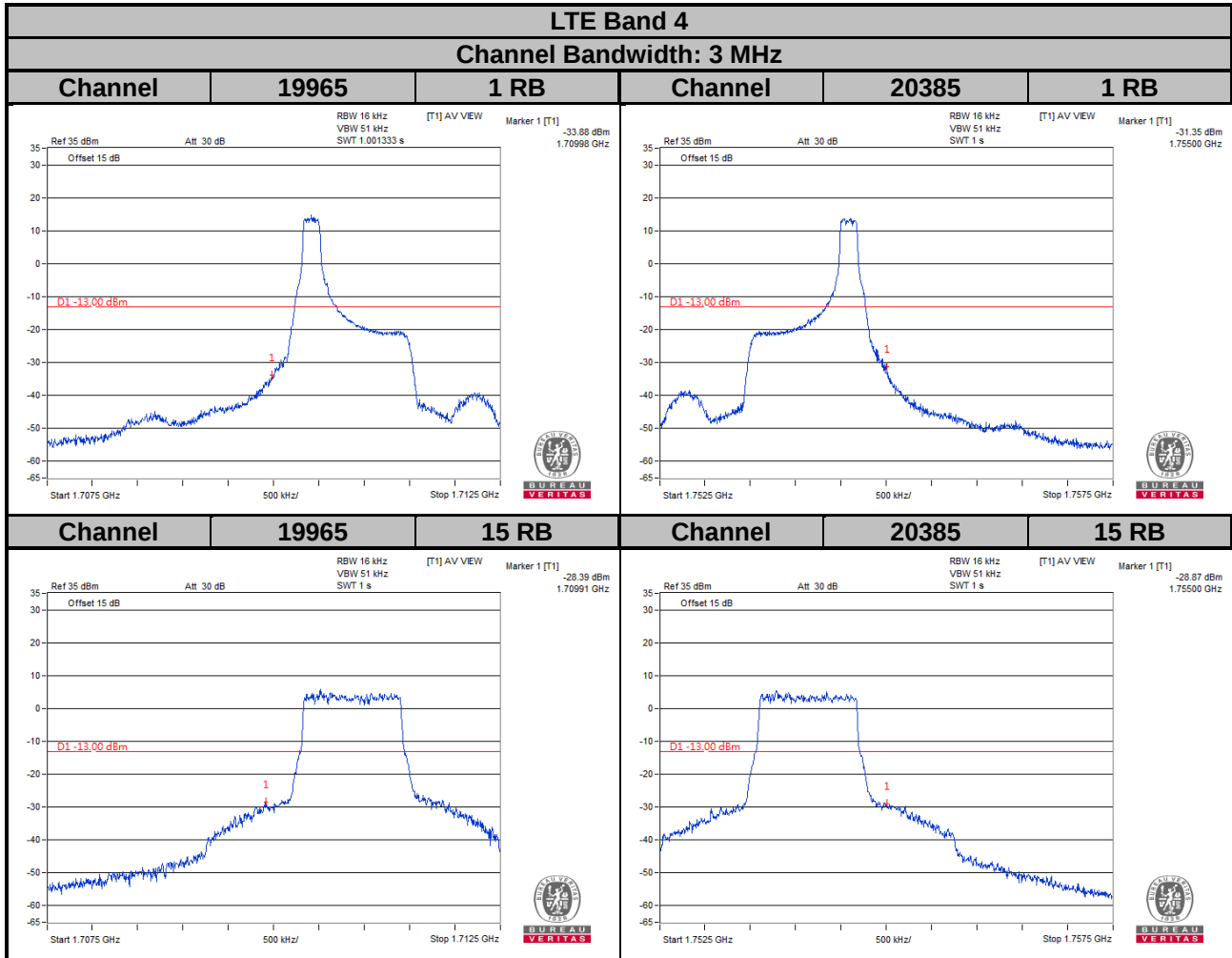
4.5.3 Test Procedures

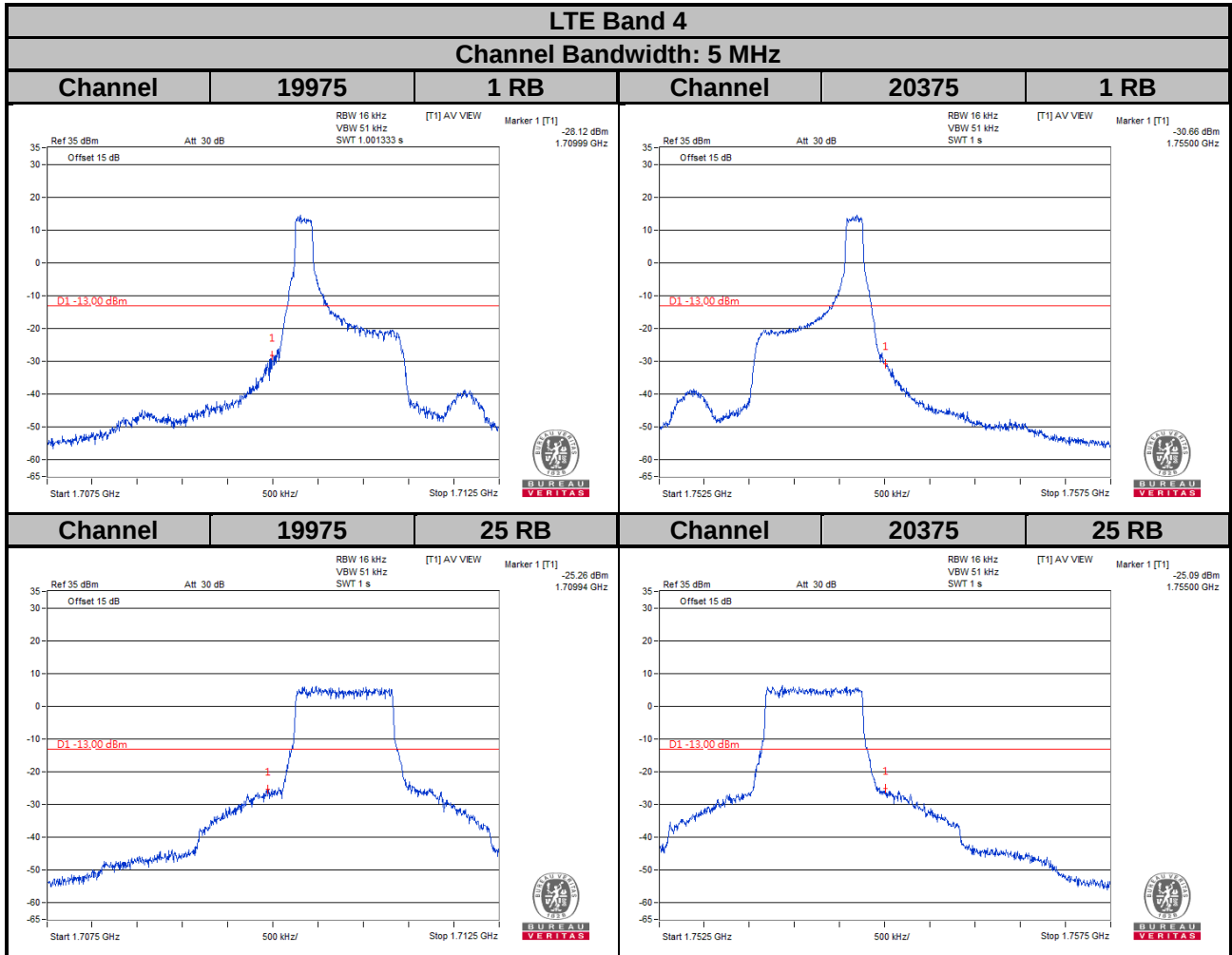
- a. All measurements were done at low and high operational frequency range.
- b. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 30 kHz and VB of the spectrum is 100 kHz (LTE Bandwidth 1.4 MHz) for Cat-M1.
- c. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 62 kHz and VB of the spectrum is 200 kHz (LTE Bandwidth 3 MHz) for Cat-M1.
- d. 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) for Cat-M1.
- e. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 200 kHz and VB of the spectrum is 1 MHz (LTE Bandwidth 10 MHz) for Cat-M1.
- f. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 300 kHz and VB of the spectrum is 1 MHz (LTE Bandwidth 15 MHz) for Cat-M1.
- g. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 300 kHz and VB of the spectrum is 1 MHz (LTE Bandwidth 20 MHz) for Cat-M1.
- h. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 51 Hz and VB of the spectrum is 160 Hz (BPSK) for NB-IoT.
- i. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 200 Hz or 2 kHz and VB of the spectrum is 620 Hz or 6.2 kHz (QPSK) for NB-IoT.
- a. Record the max. trace plot into the test report.

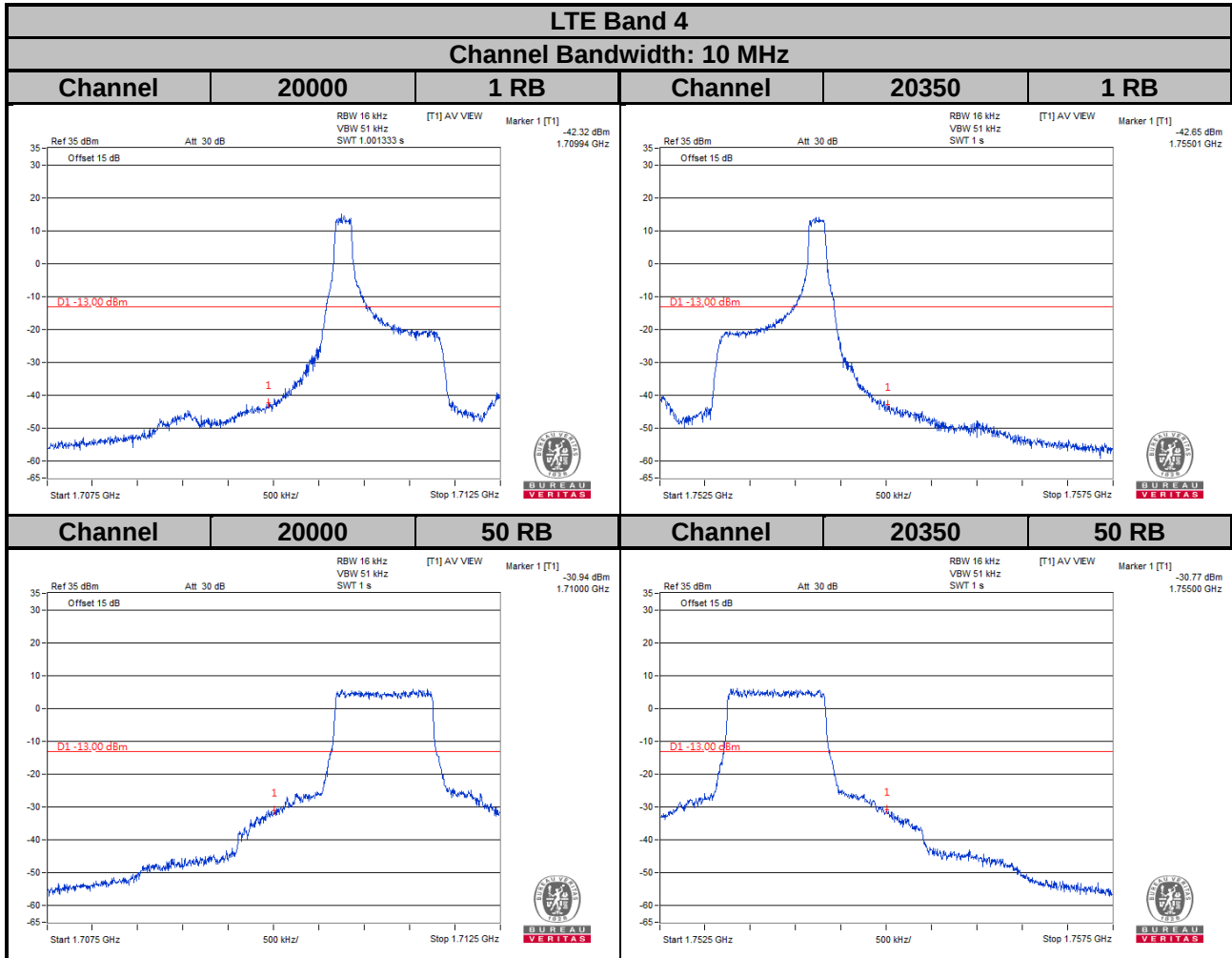
4.5.4 Test Results

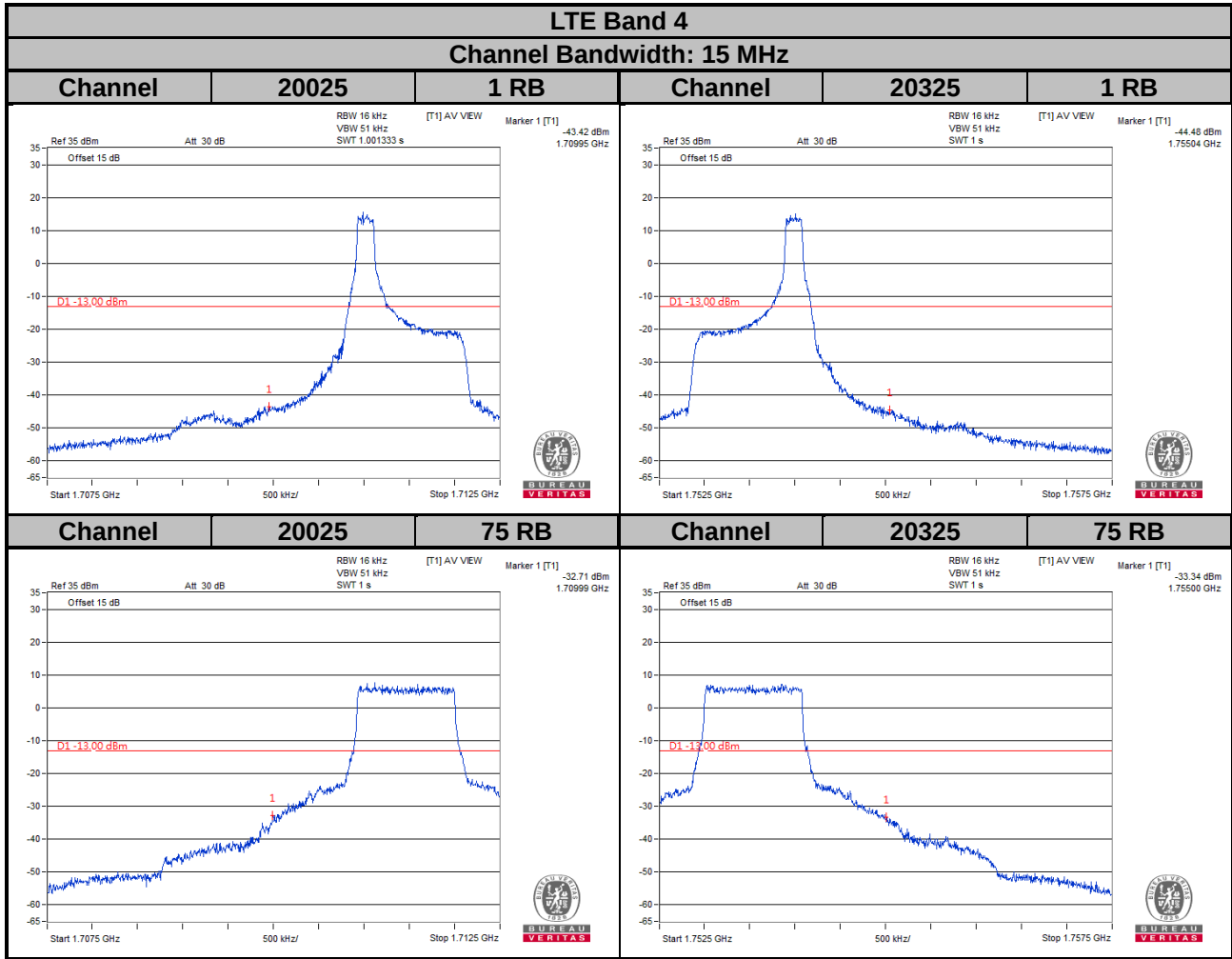
Cat-M1

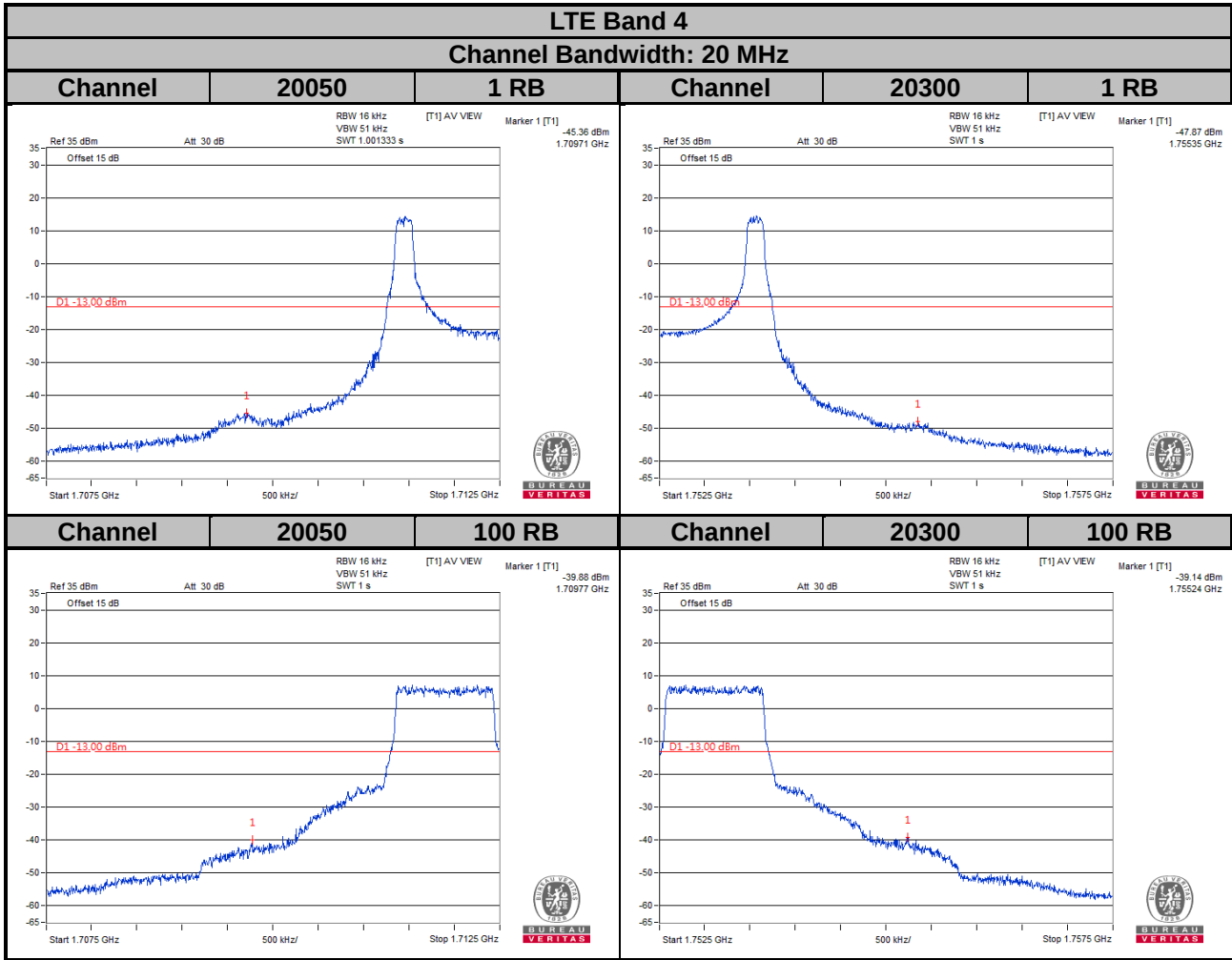






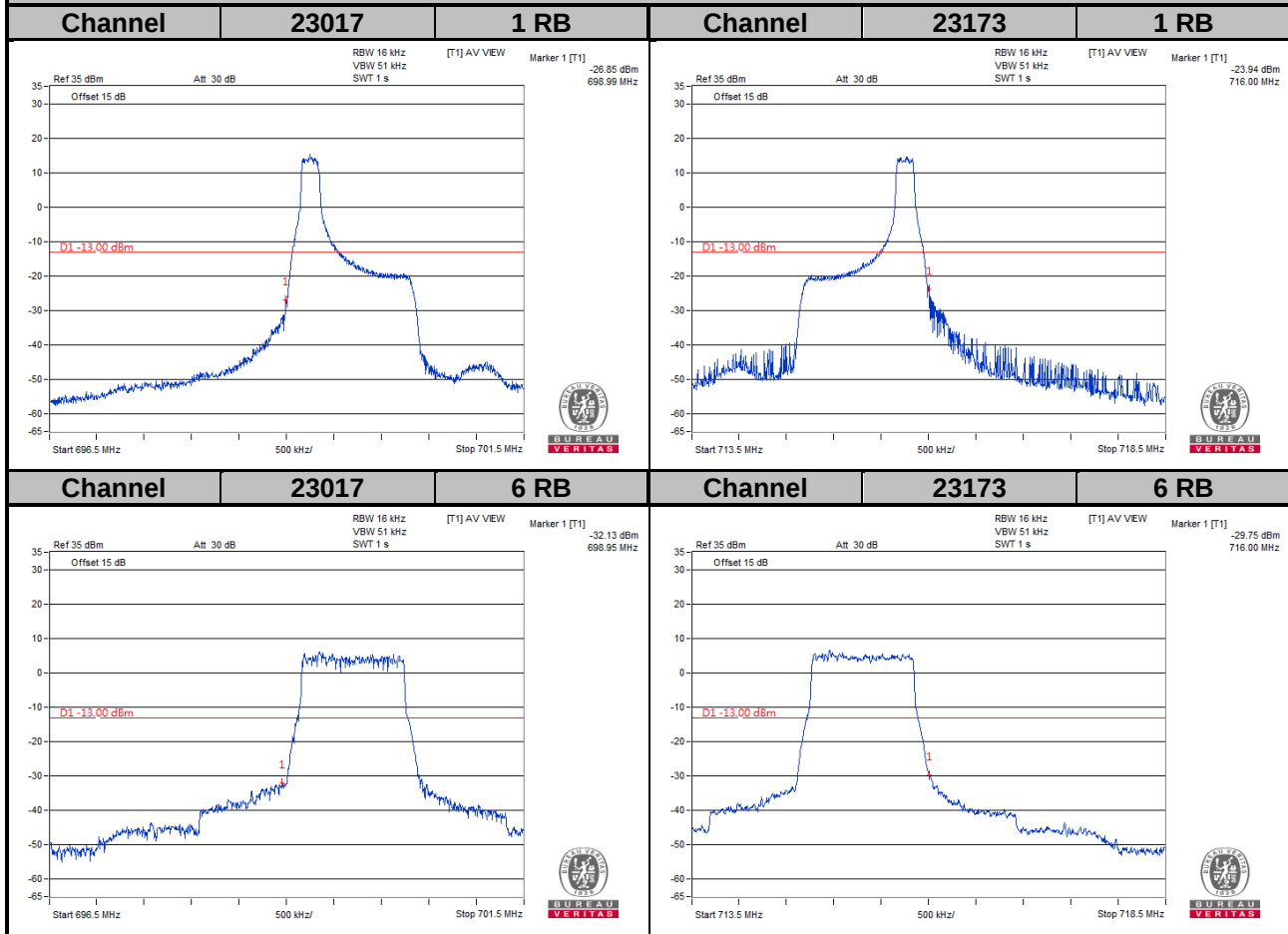


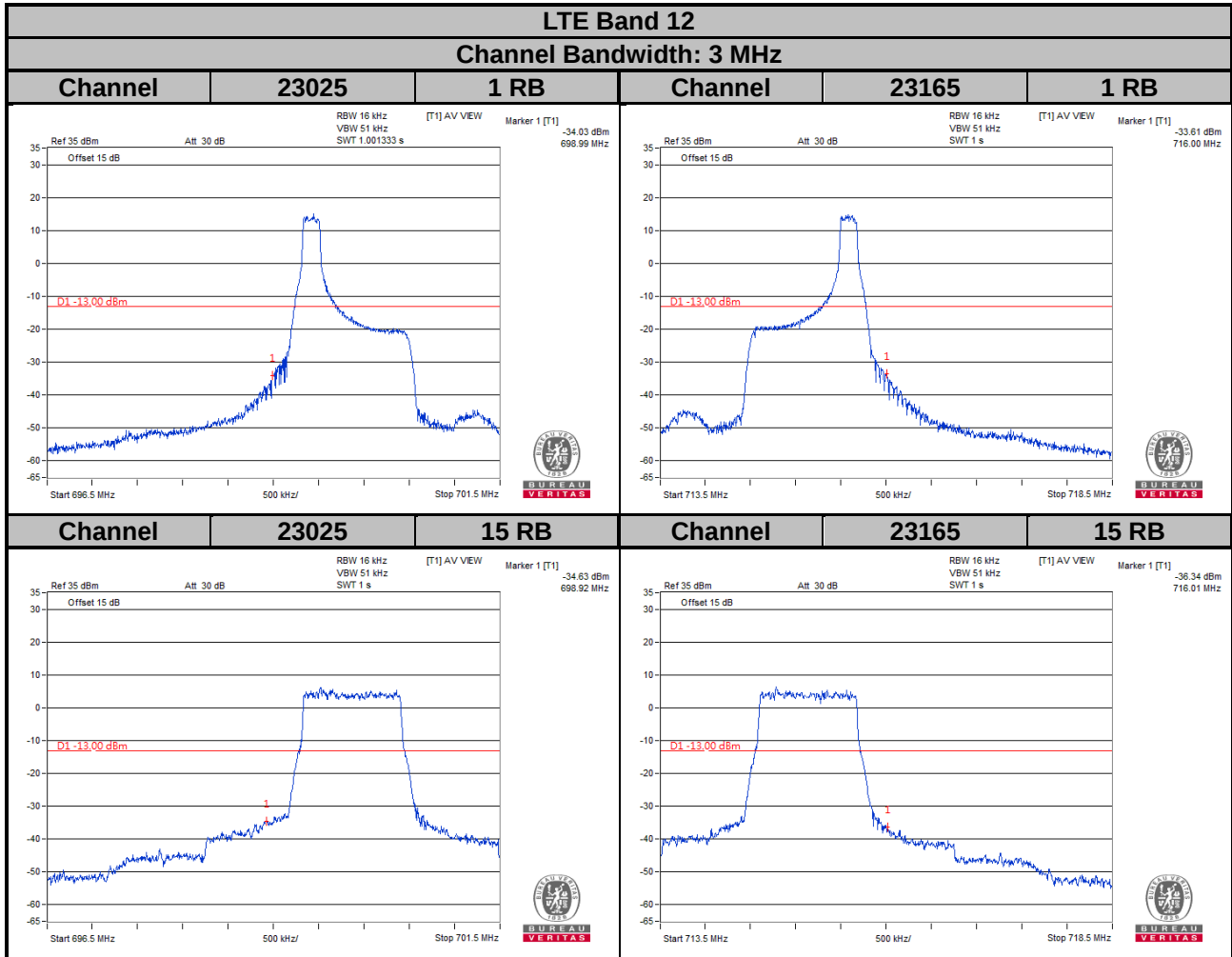




LTE Band 12

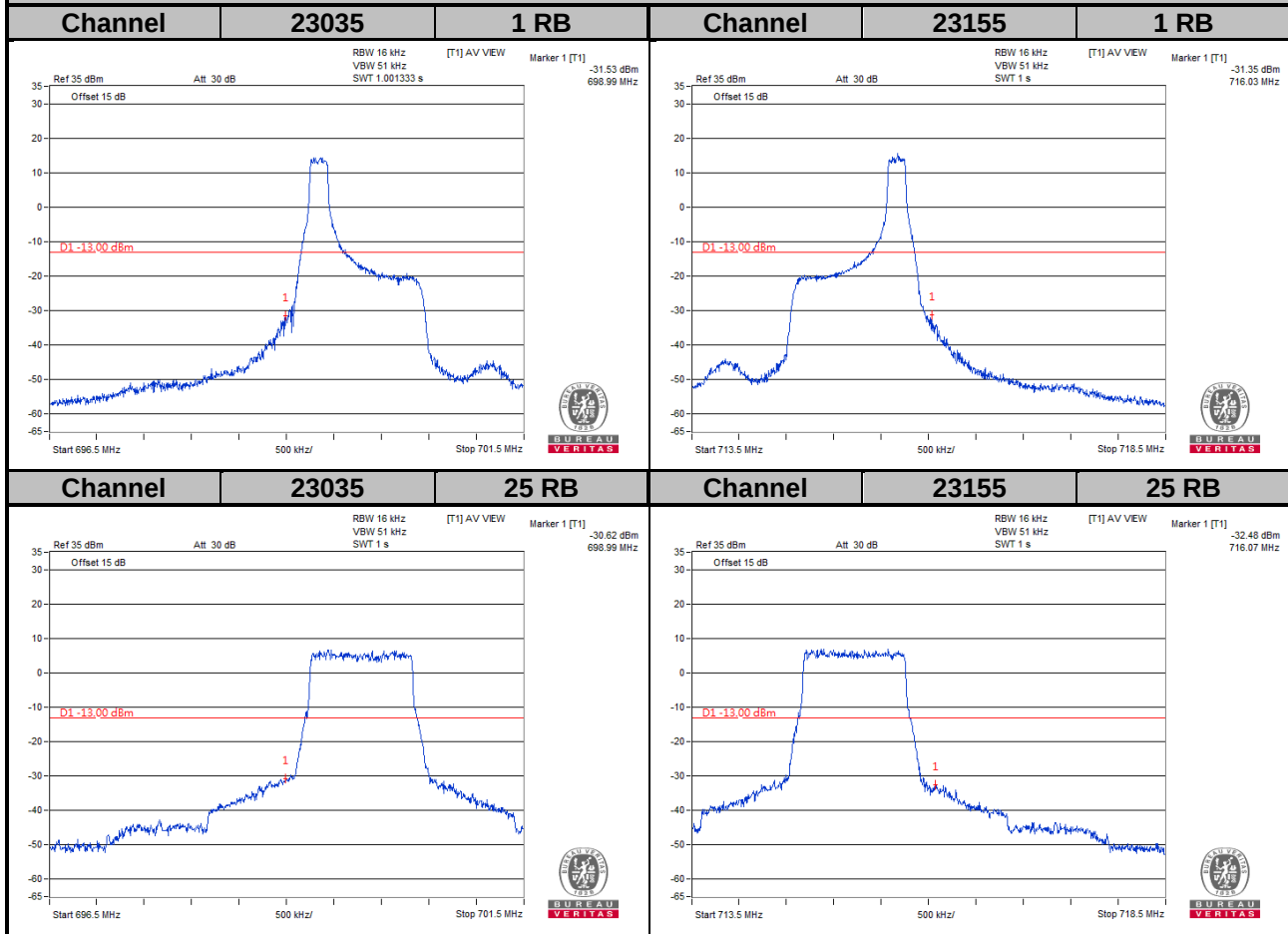
Channel Bandwidth: 1.4 MHz

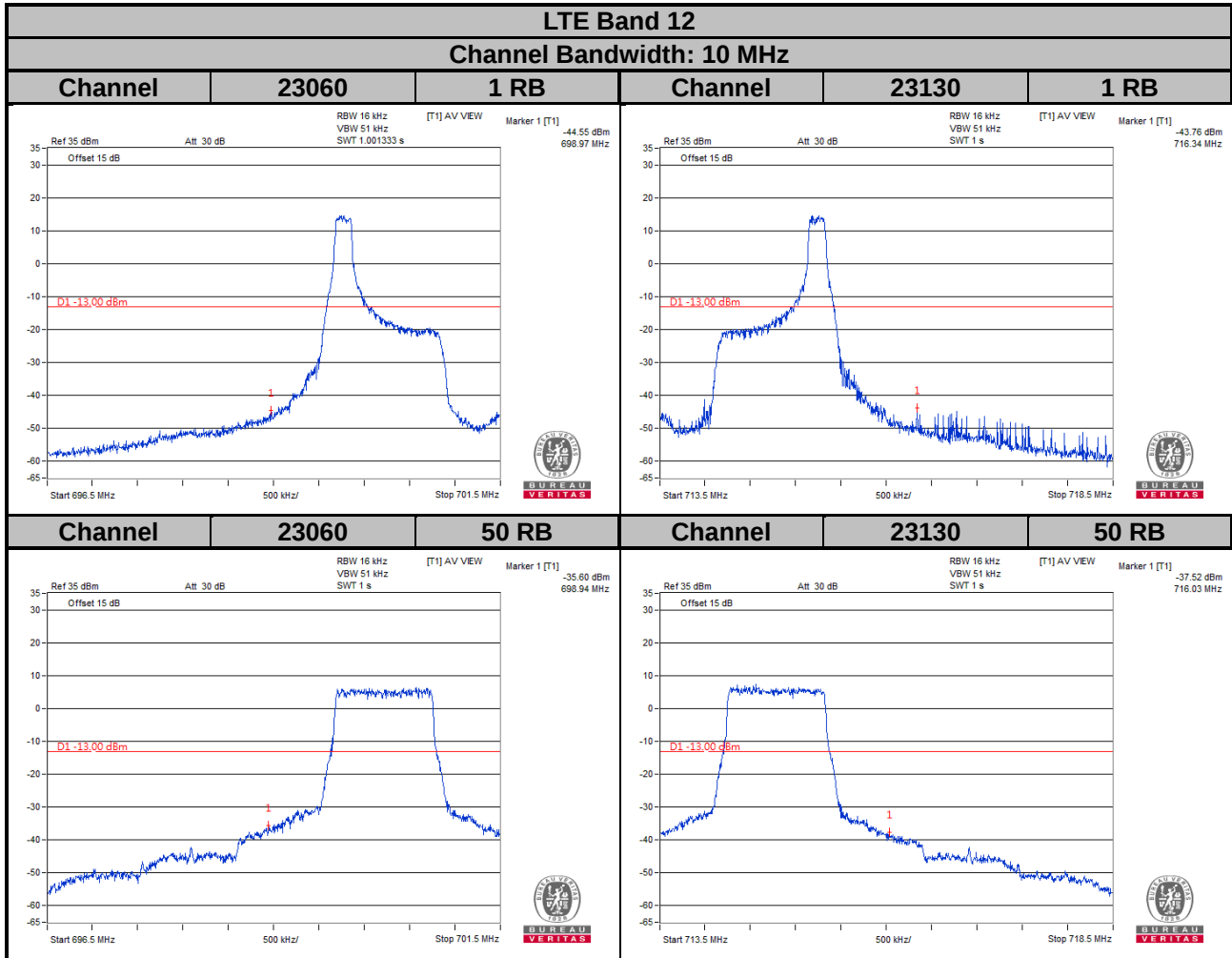




LTE Band 12

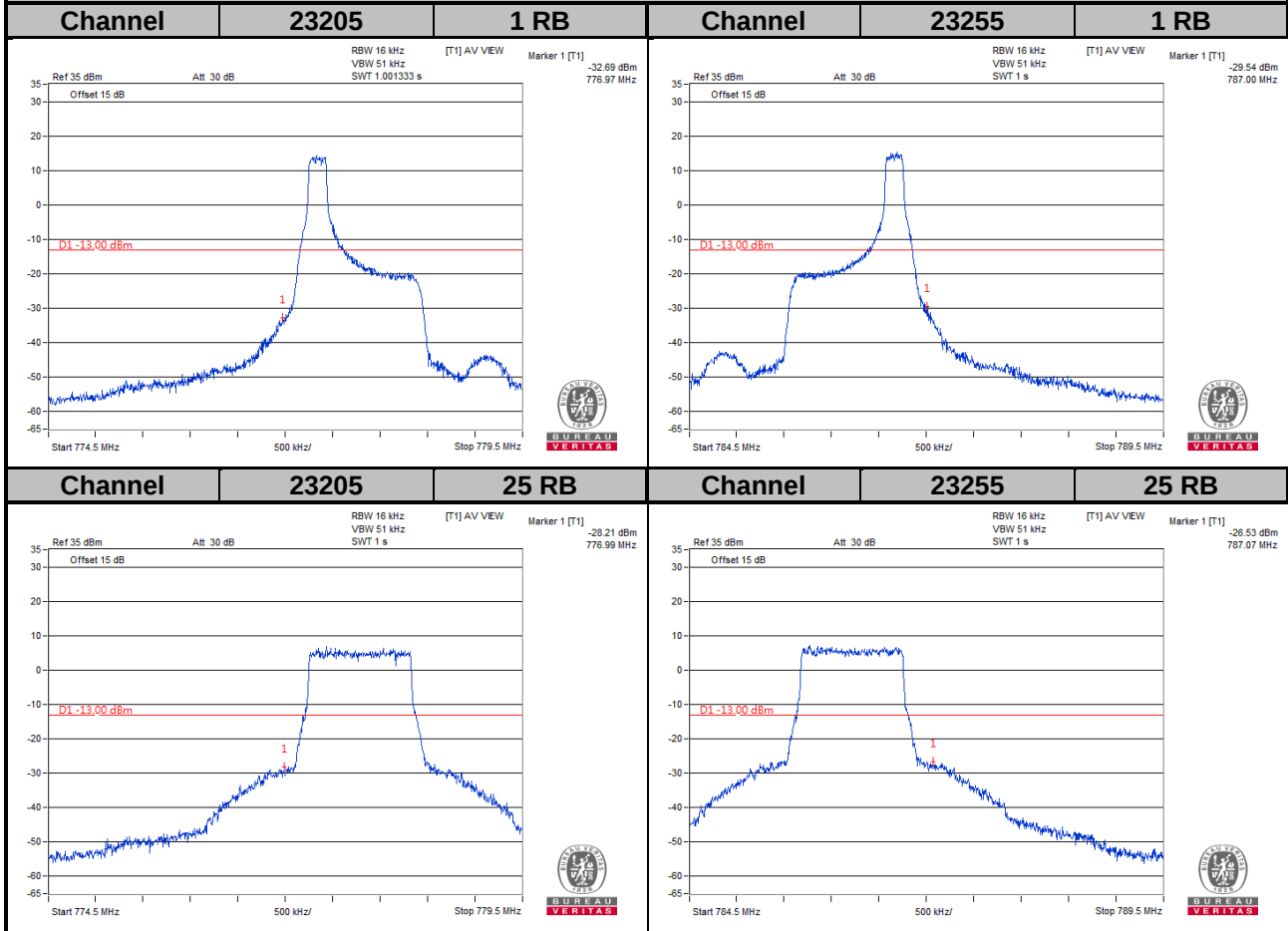
Channel Bandwidth: 5 MHz

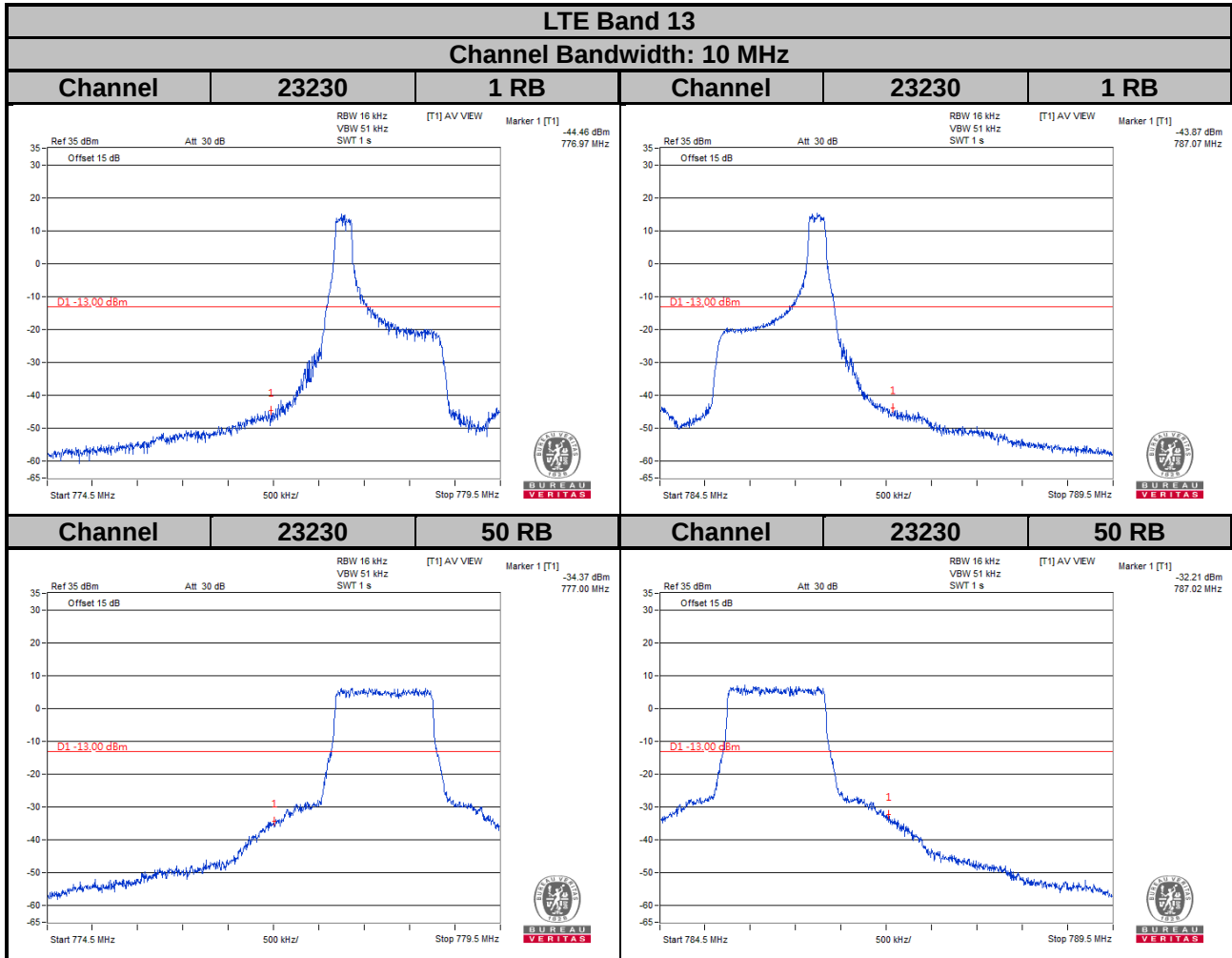


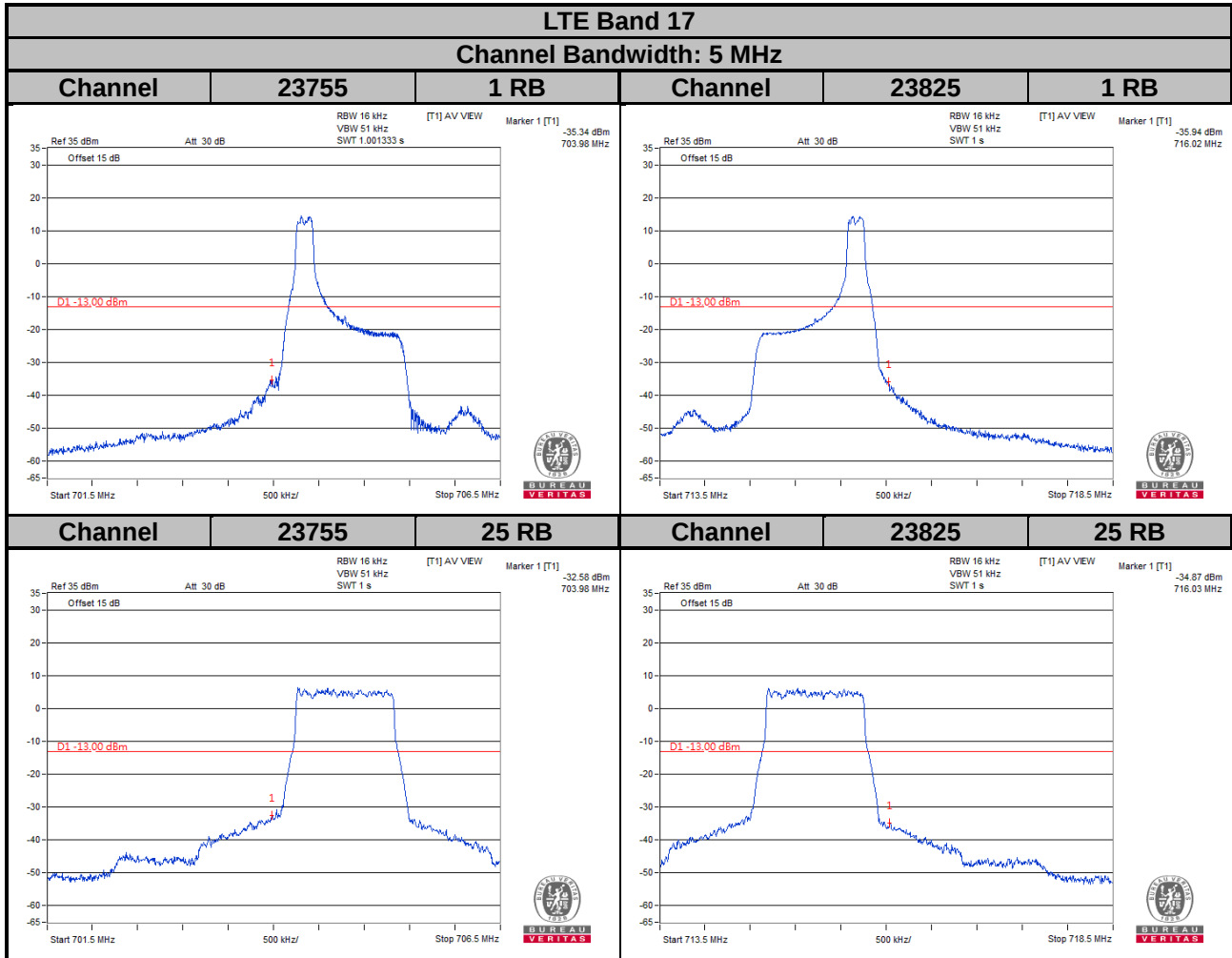


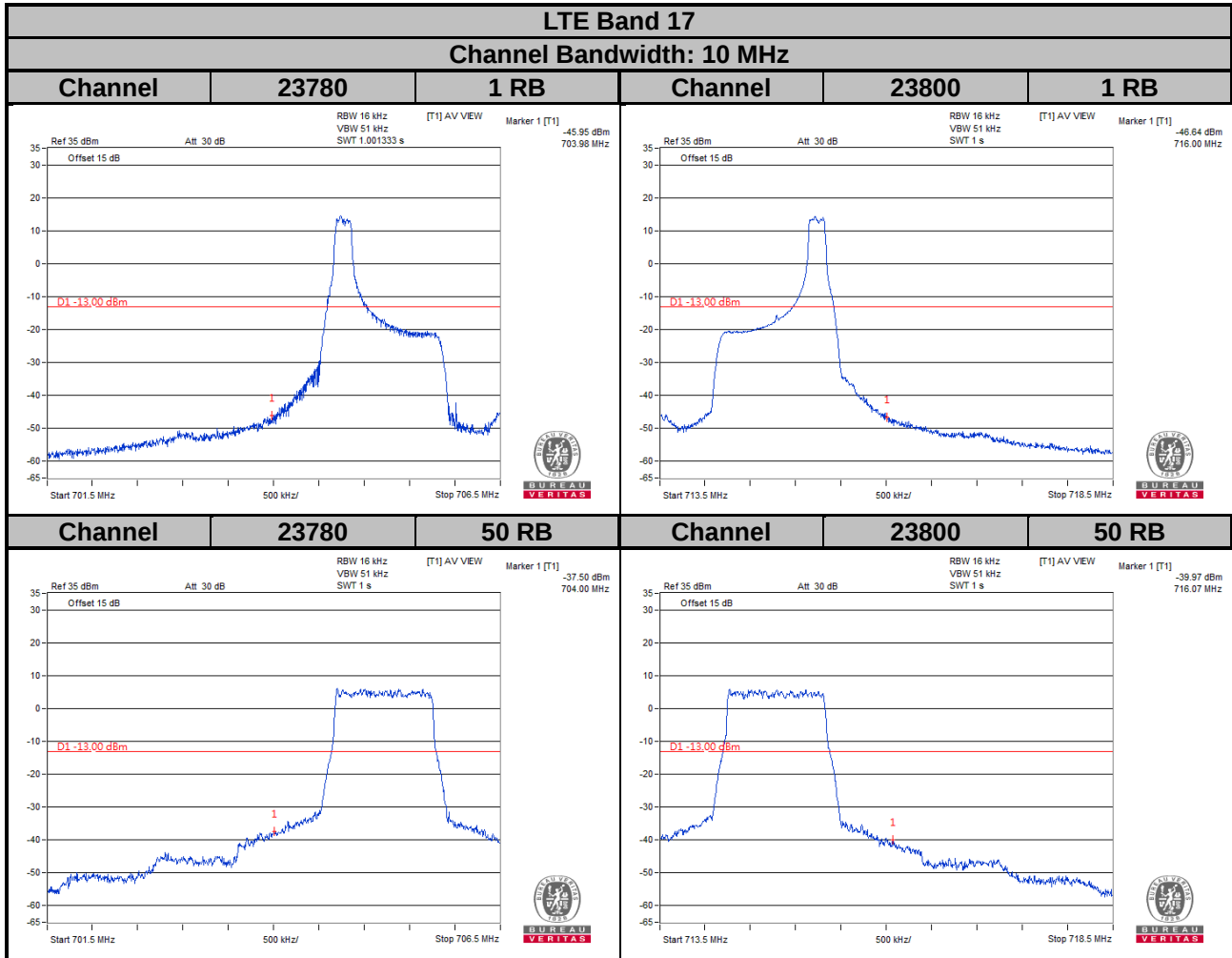
LTE Band 13

Channel Bandwidth: 5 MHz



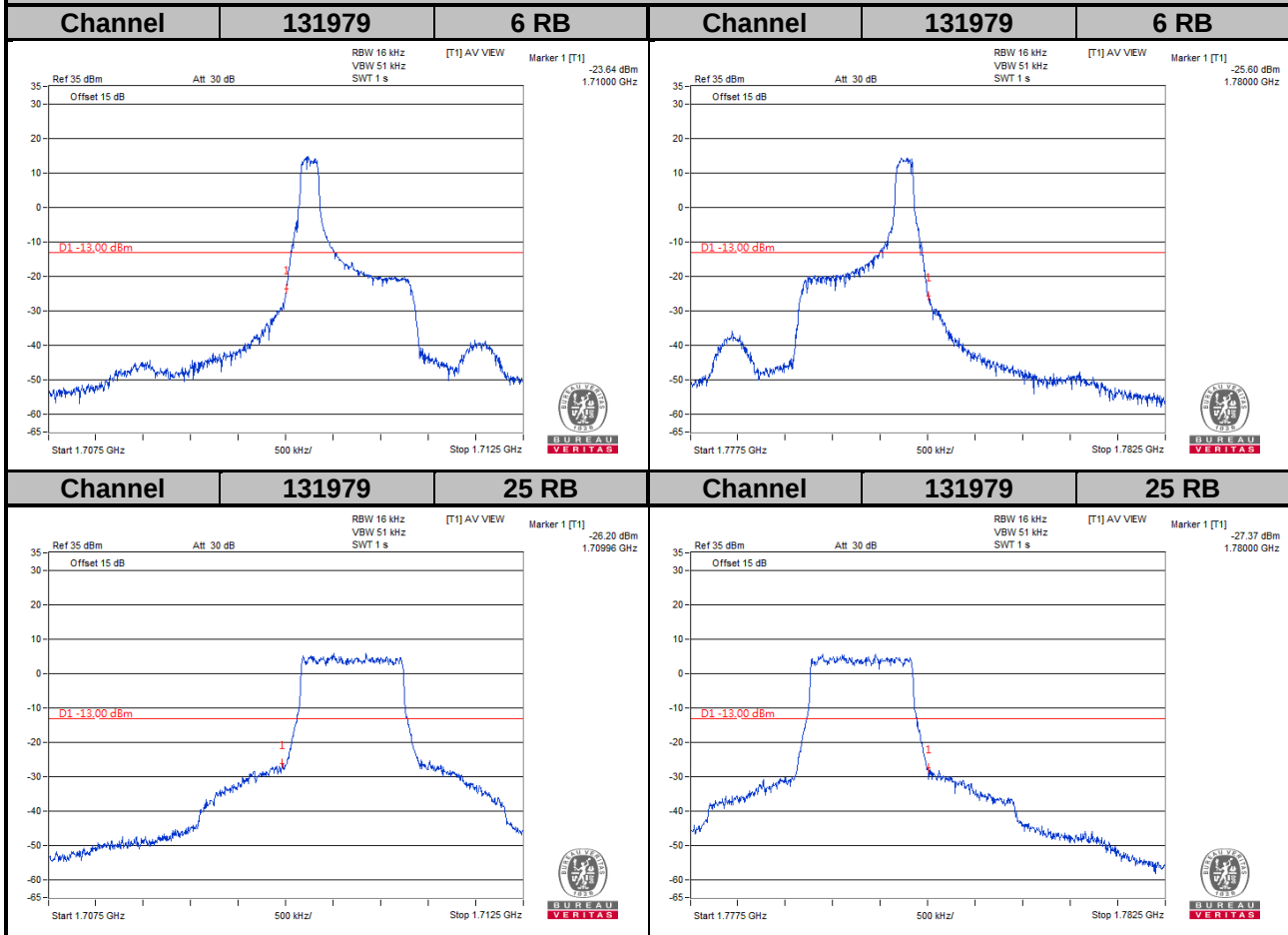


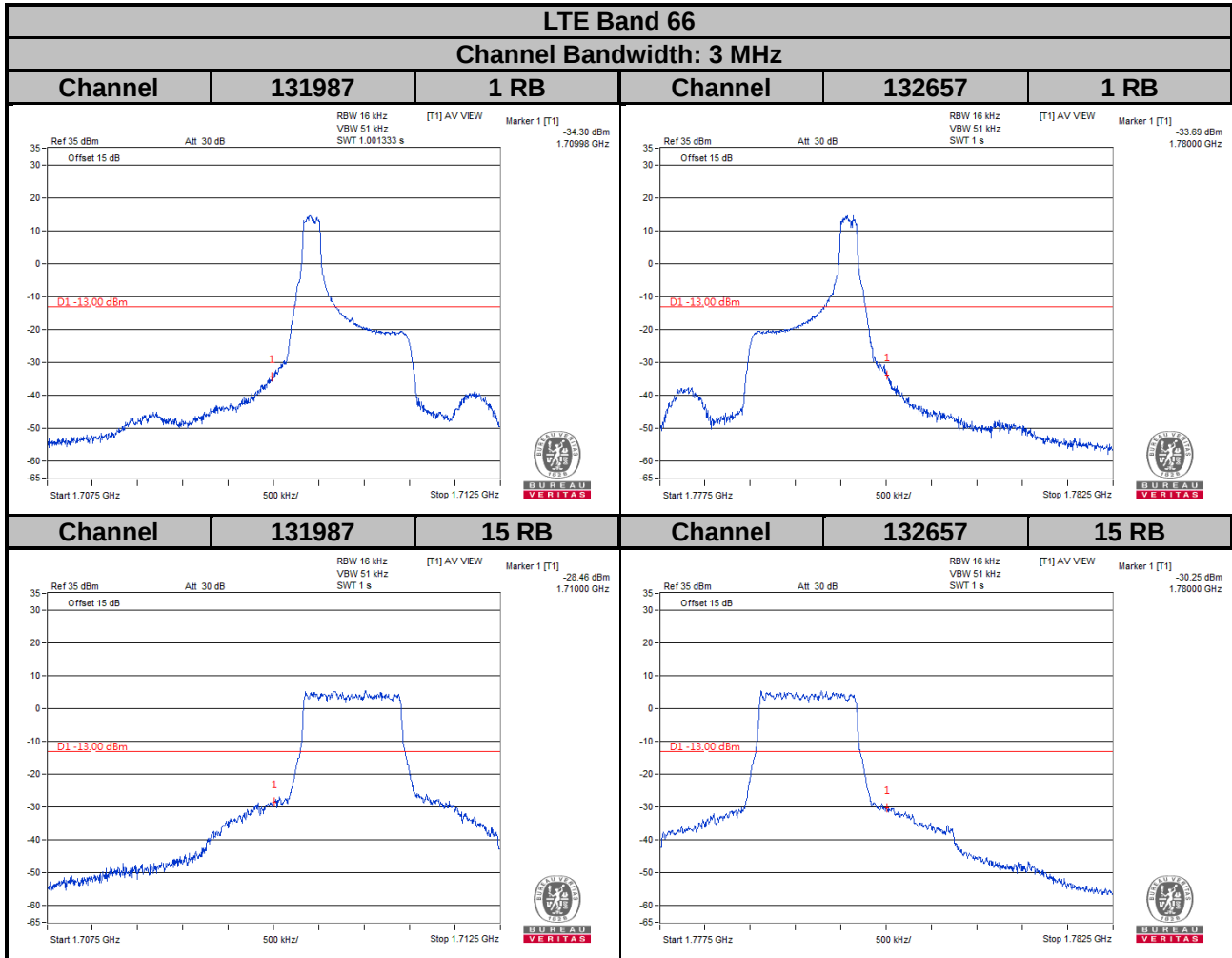




LTE Band 66

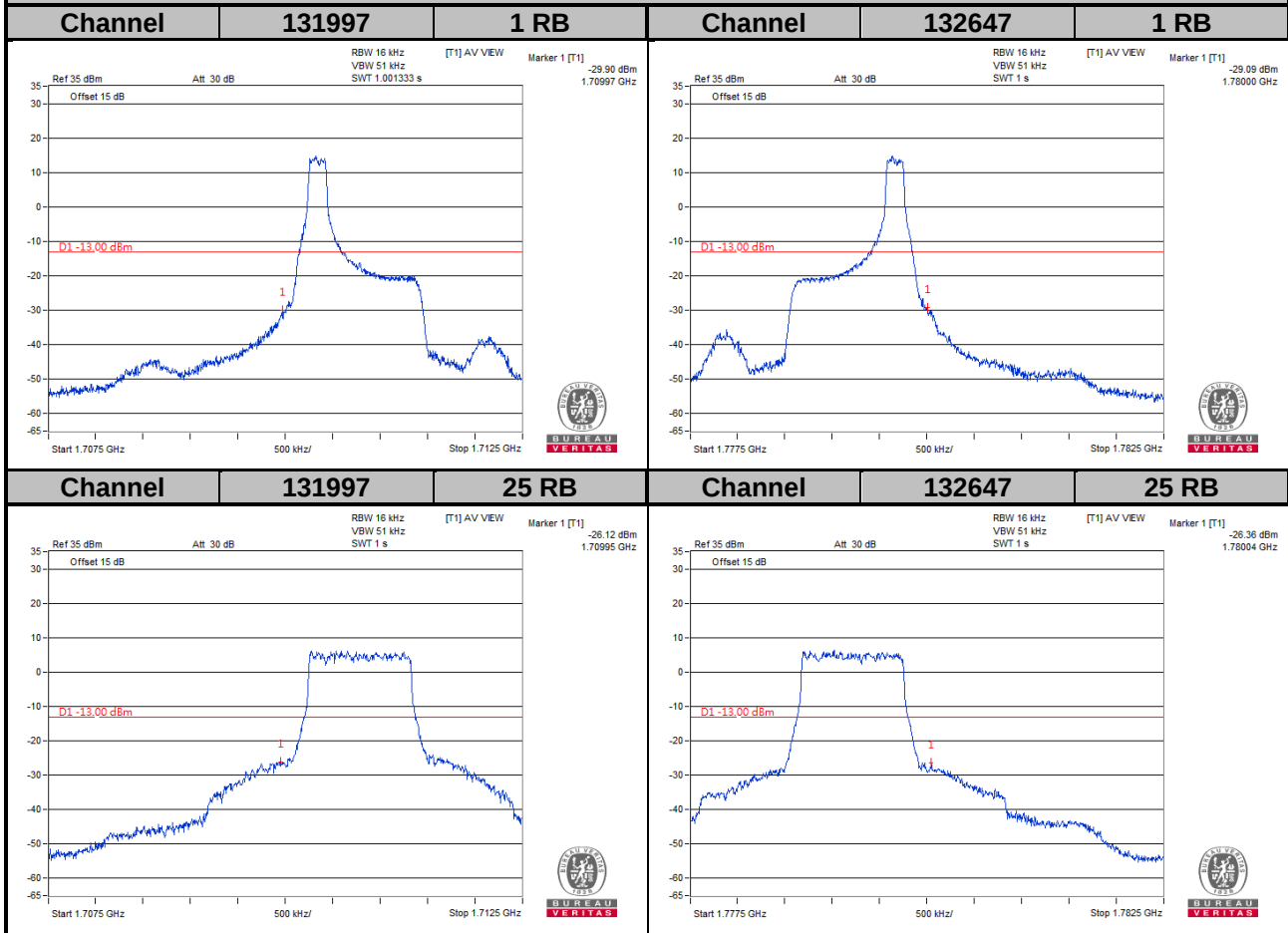
Channel Bandwidth: 1.4 MHz





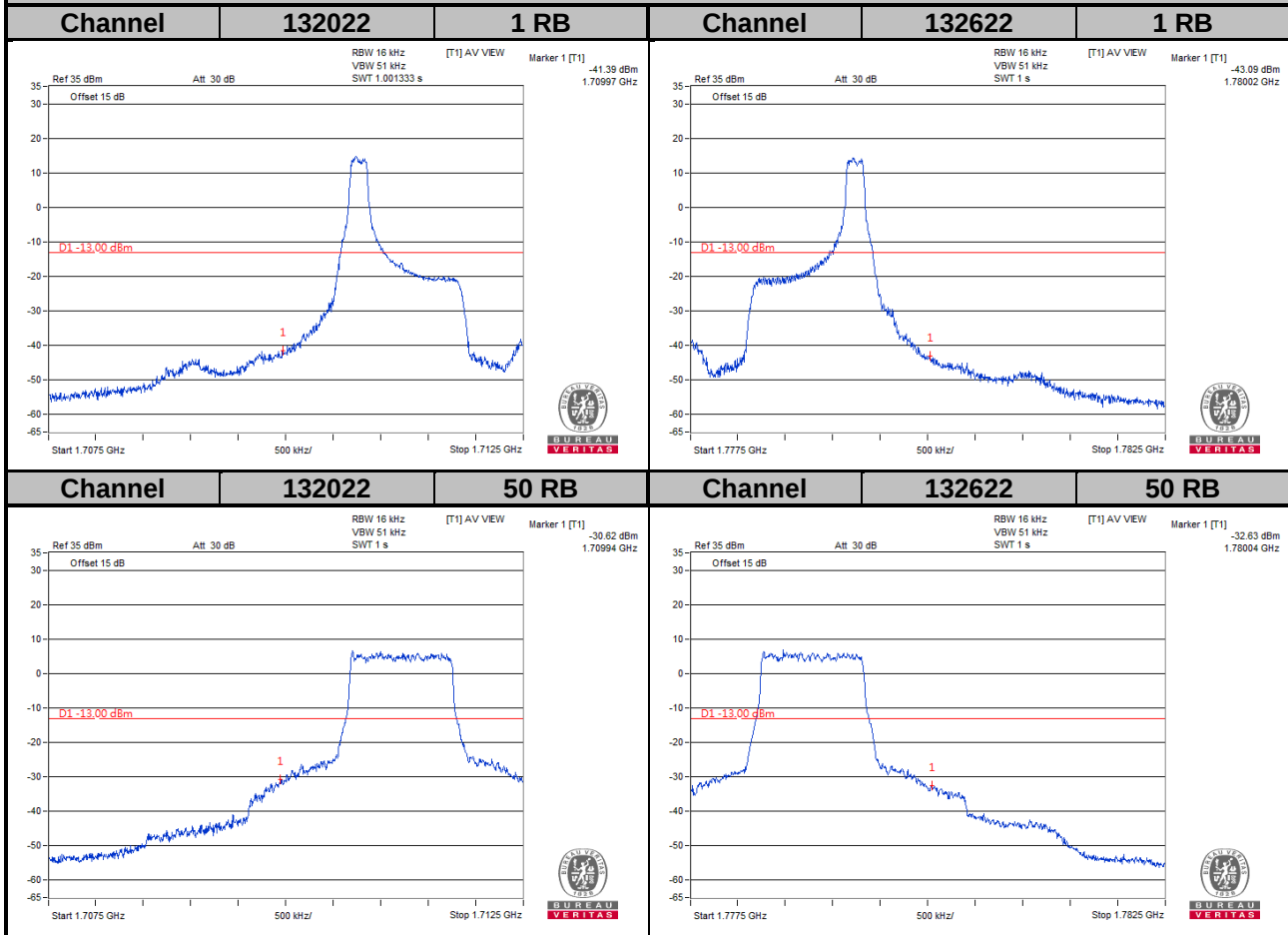
LTE Band 66

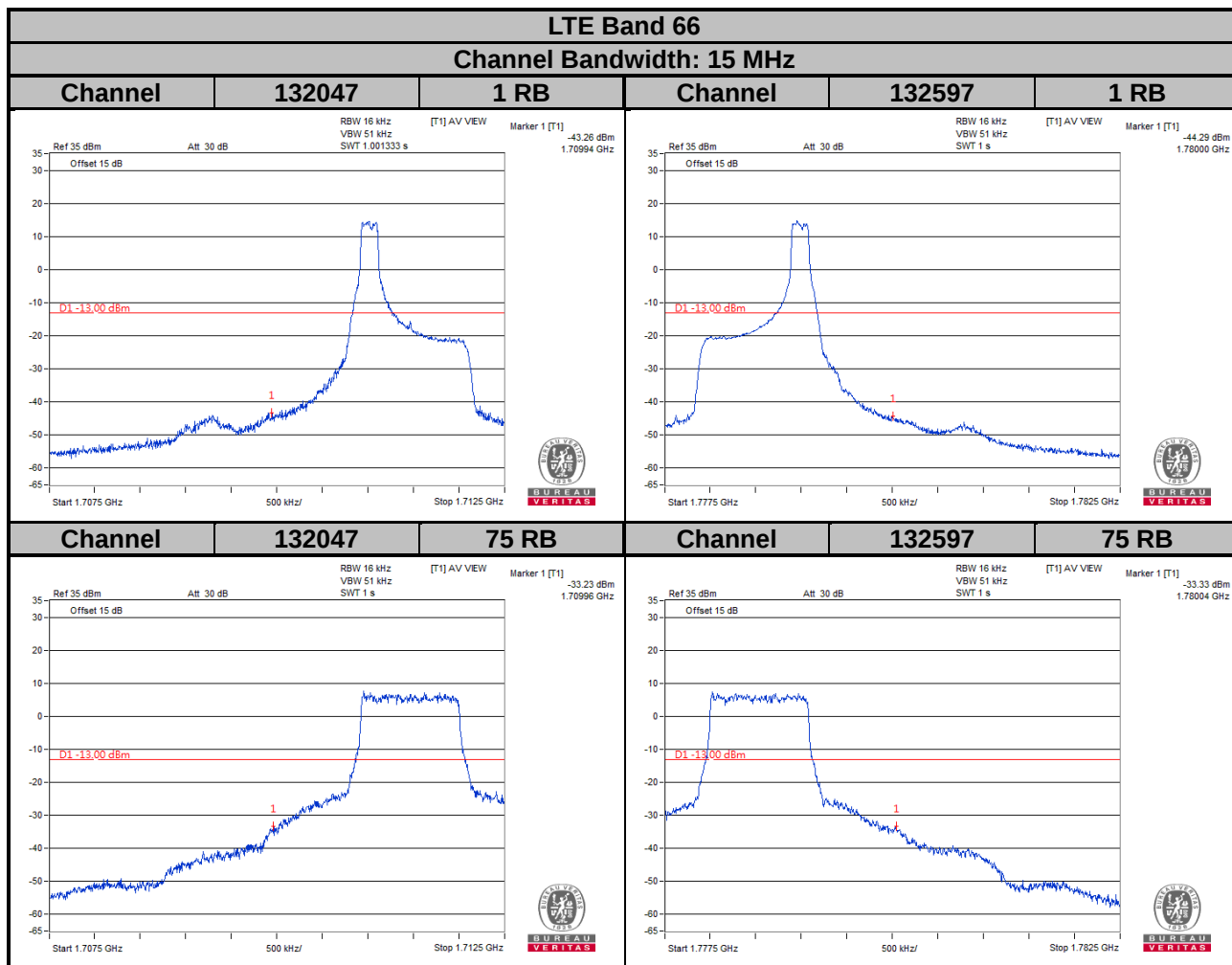
Channel Bandwidth: 5 MHz

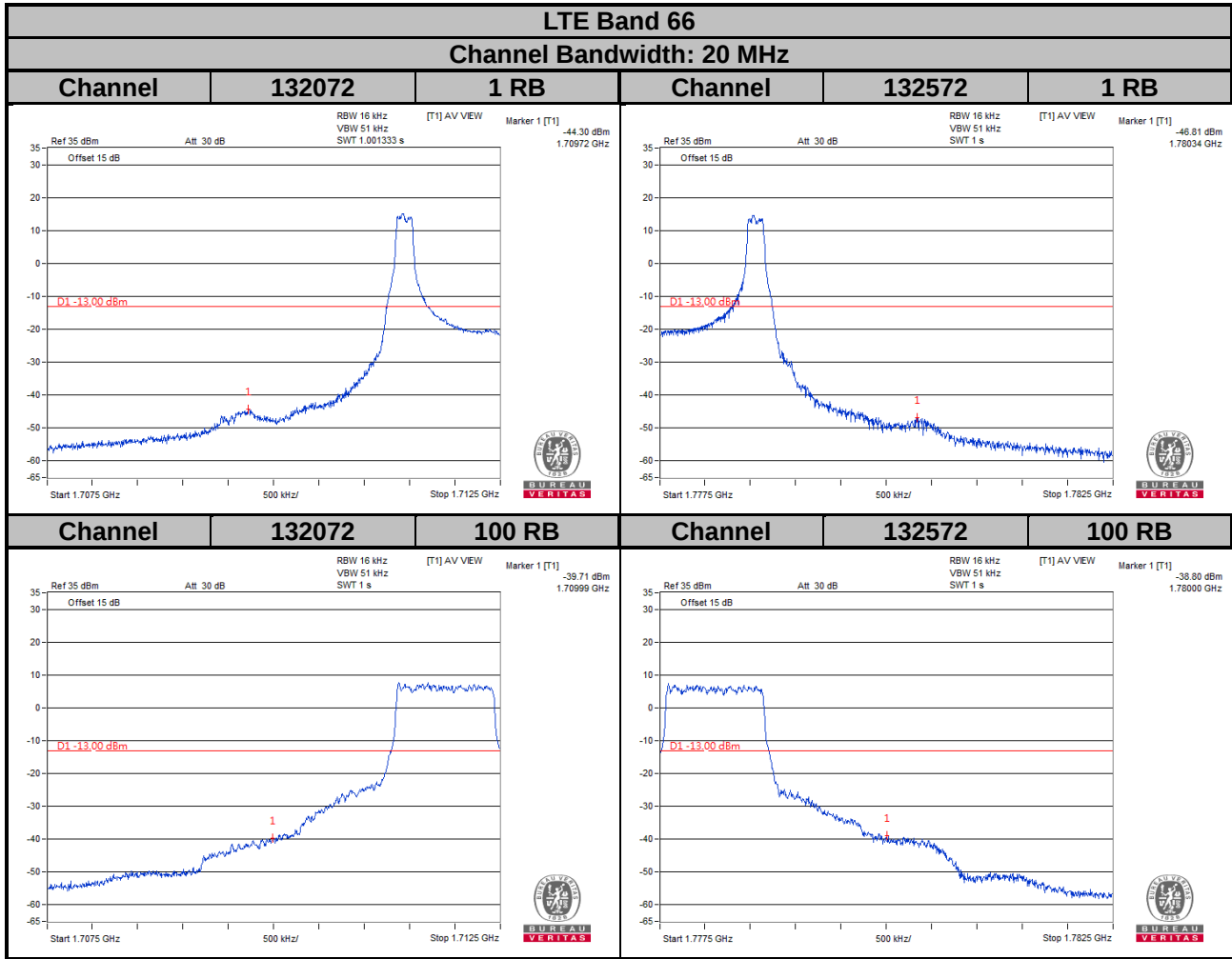


LTE Band 66

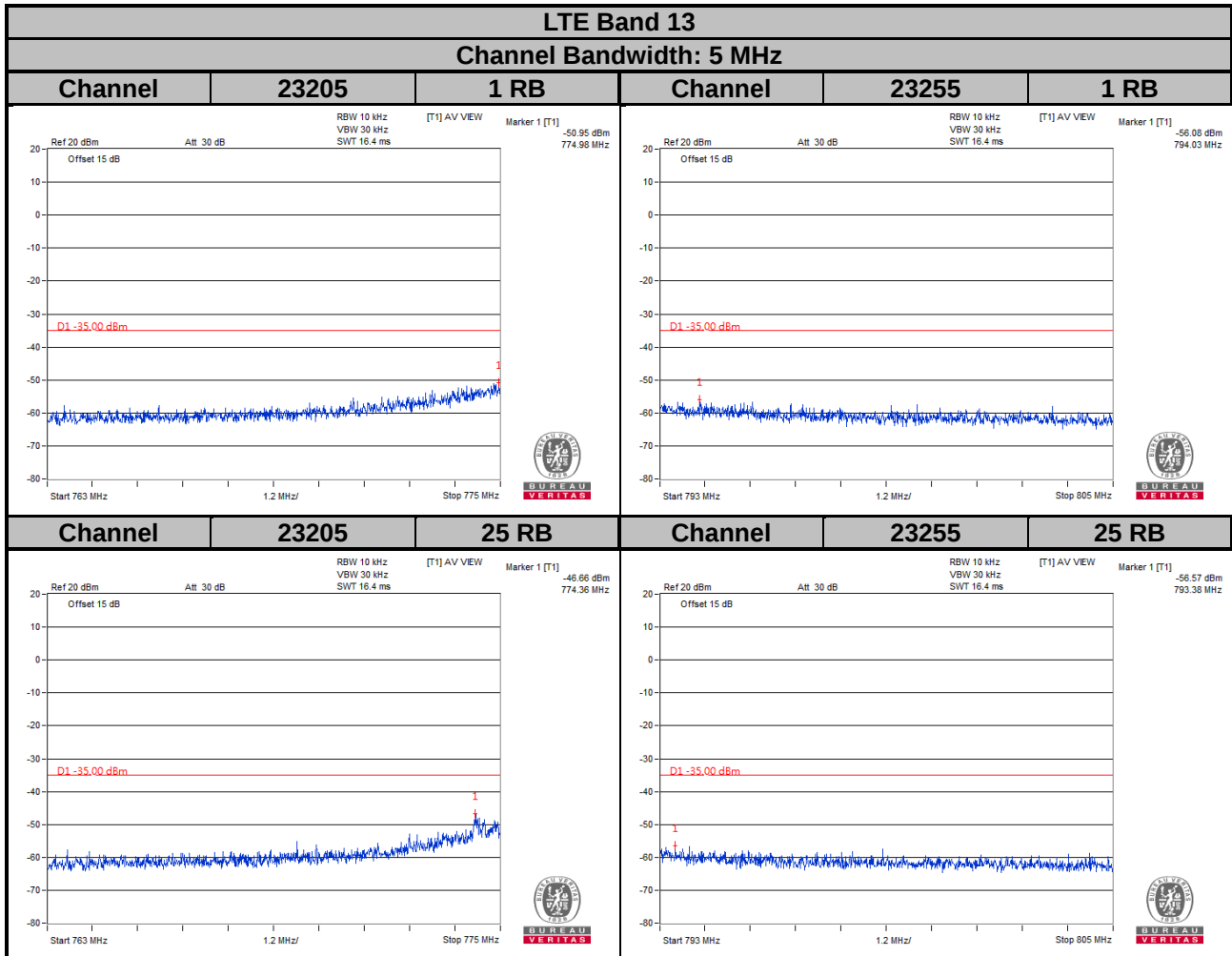
Channel Bandwidth: 10 MHz







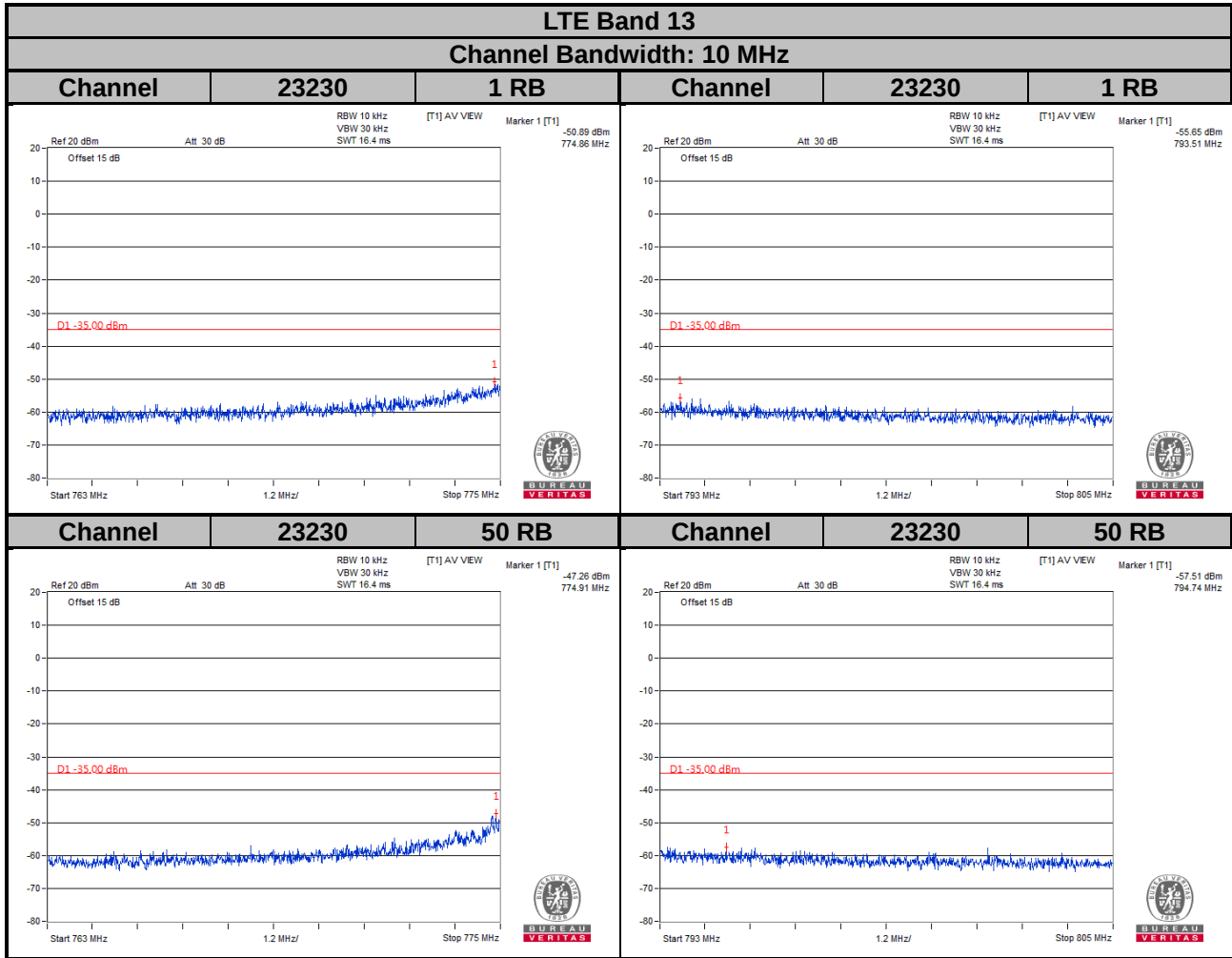
Emission Mask



For the 763 - 775 MHz and 793 - 805 MHz band, the FCC limit is $65 + 10\log(P[\text{watt}])$ in a 6.25 kHz bandwidth. Since it was not possible to set the resolution bandwidth to 6.25 kHz with the available equipment, a bandwidth of 10 kHz was used instead to show compliance. By using a 10 kHz bandwidth on the spectrum analyzer.

$$10\log(10\text{kHz}/6.25\text{kHz}) = 2.04 \text{ dB}$$

$$\text{Limit line} = -35 \text{ dBm} + 2.04 \text{ dB} = -32.96 \text{ dBm}$$

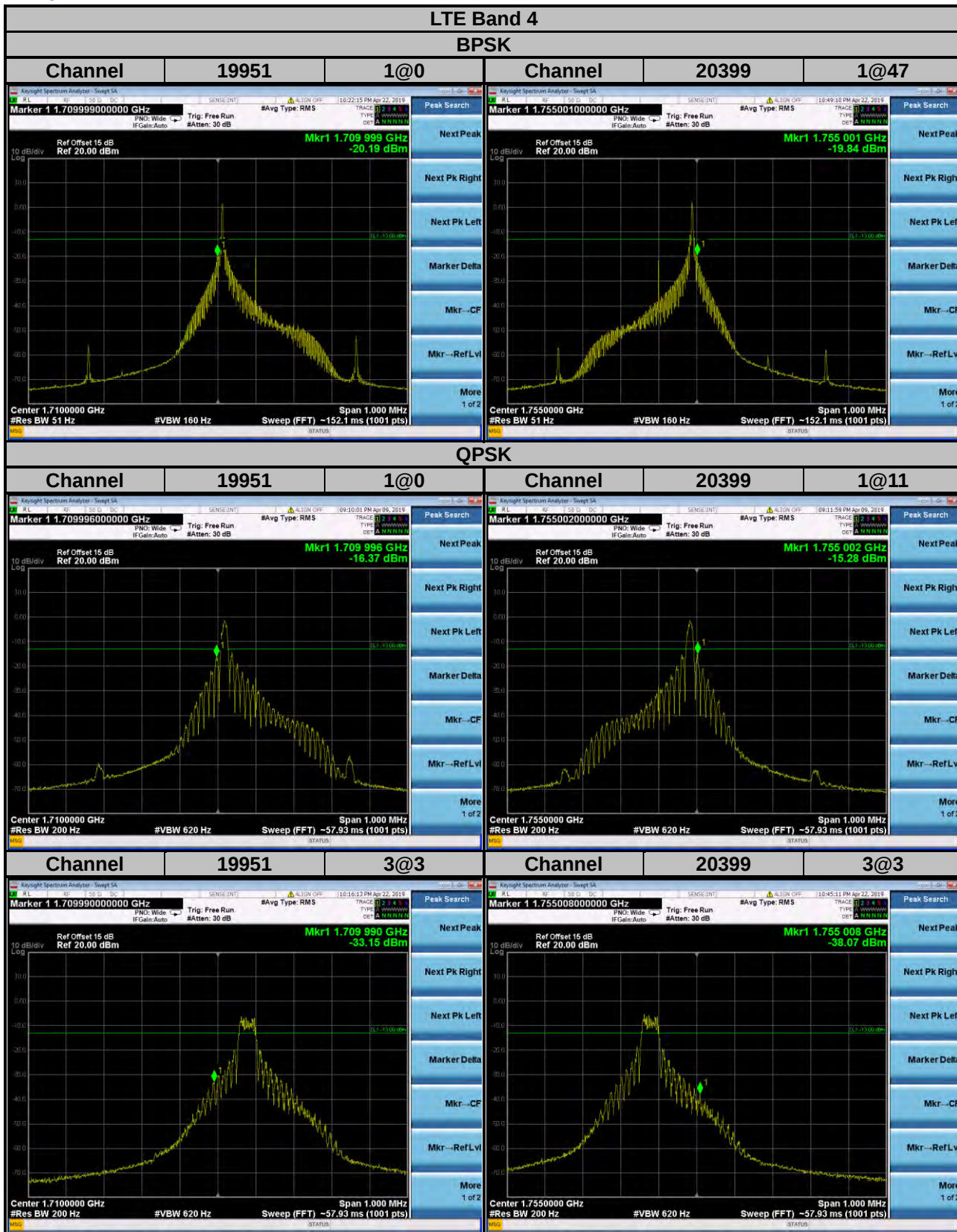


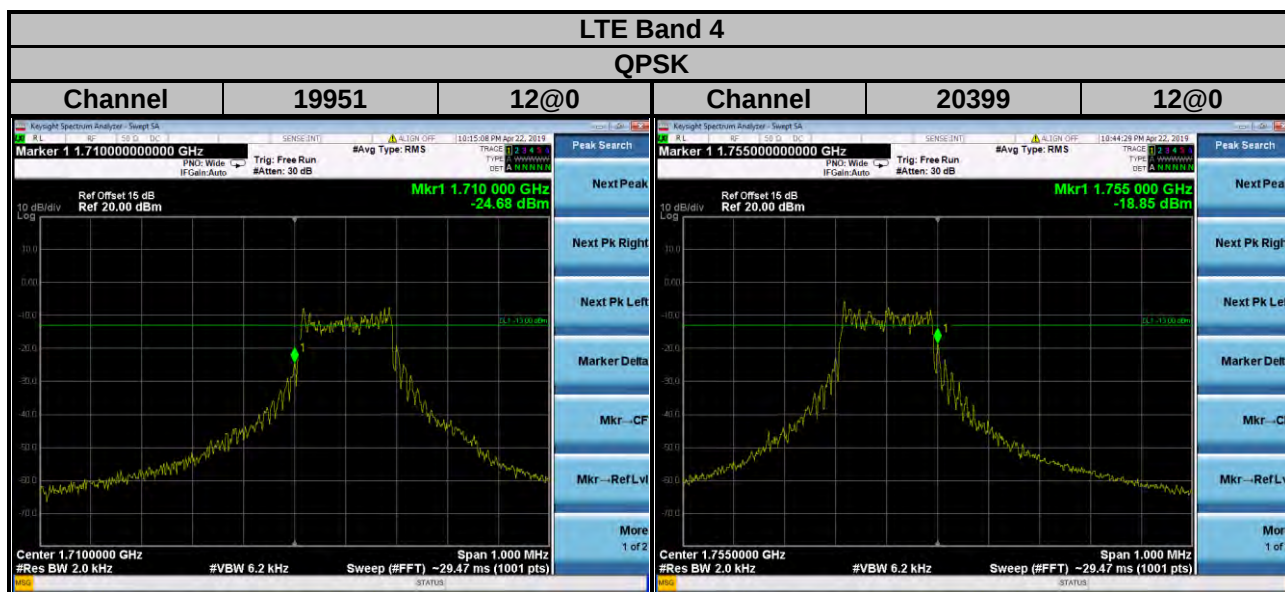
For the 763 - 775 MHz and 793 - 805 MHz band, the FCC limit is $65 + 10\log(P[\text{watt}])$ in a 6.25 kHz bandwidth. Since it was not possible to set the resolution bandwidth to 6.25 kHz with the available equipment, a bandwidth of 10 kHz was used instead to show compliance. By using a 10 kHz bandwidth on the spectrum analyzer.

$$10\log(10\text{kHz}/6.25\text{kHz}) = 2.04 \text{ dB}$$

$$\text{Limit line} = -35 \text{ dBm} + 2.04 \text{ dB} = -32.96 \text{ dBm}$$

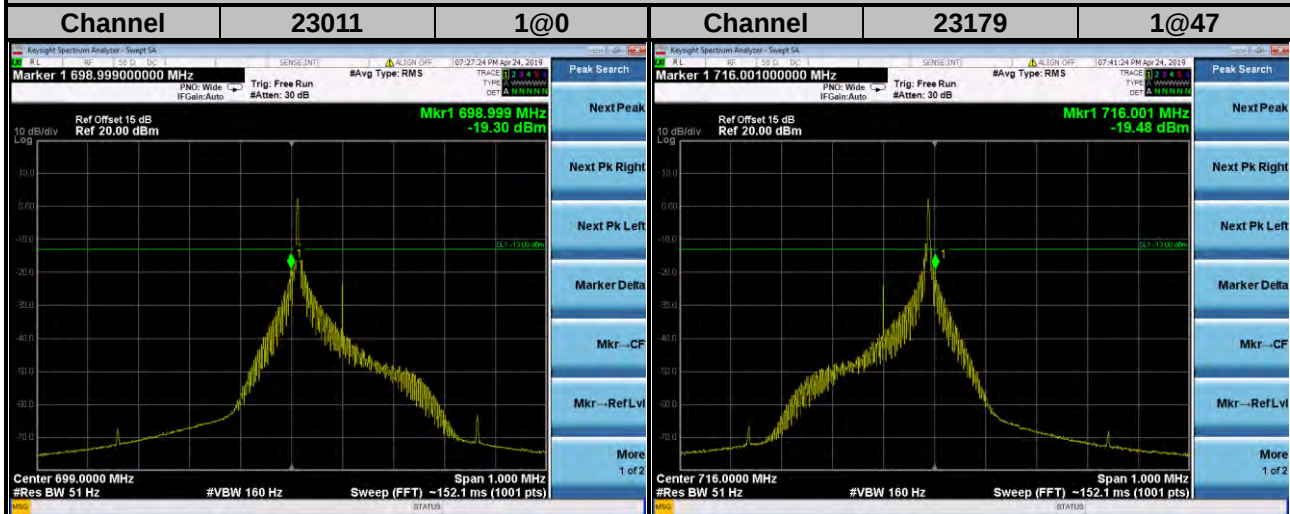
NB-IoT



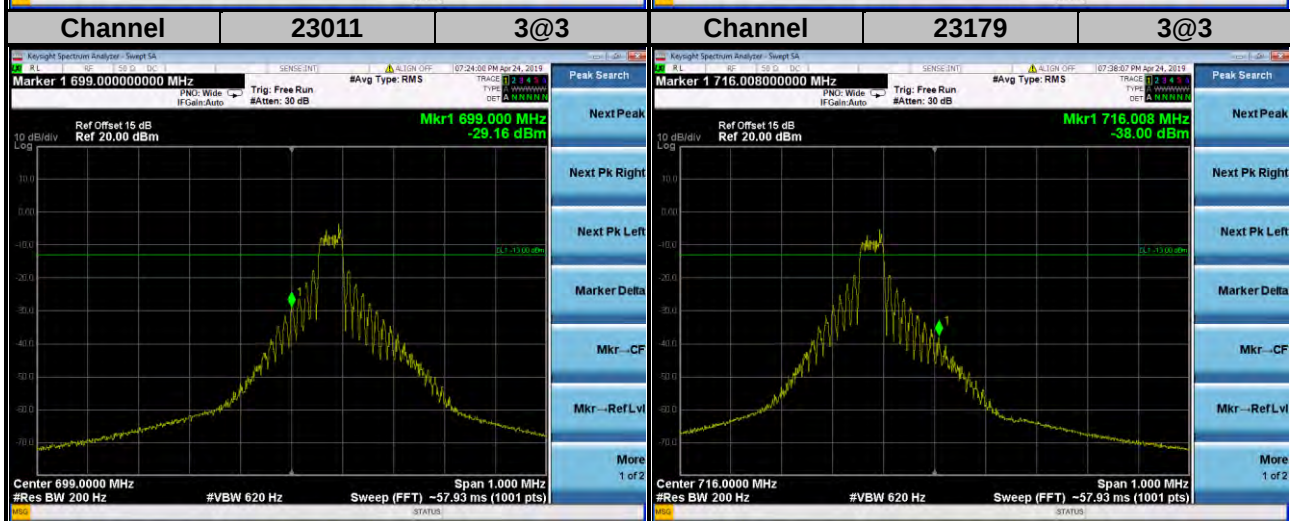
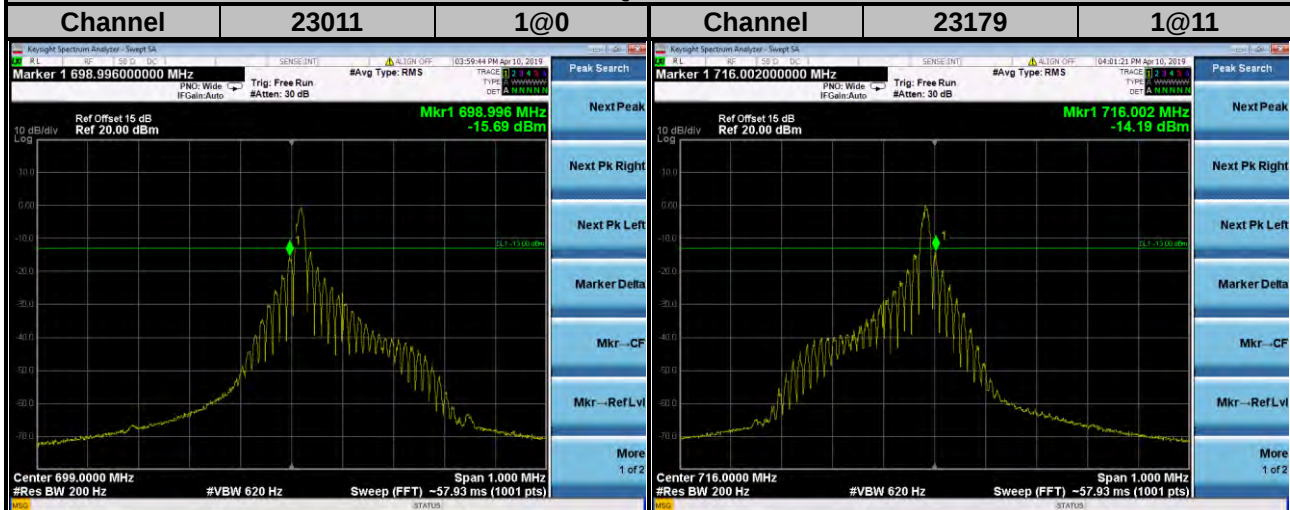


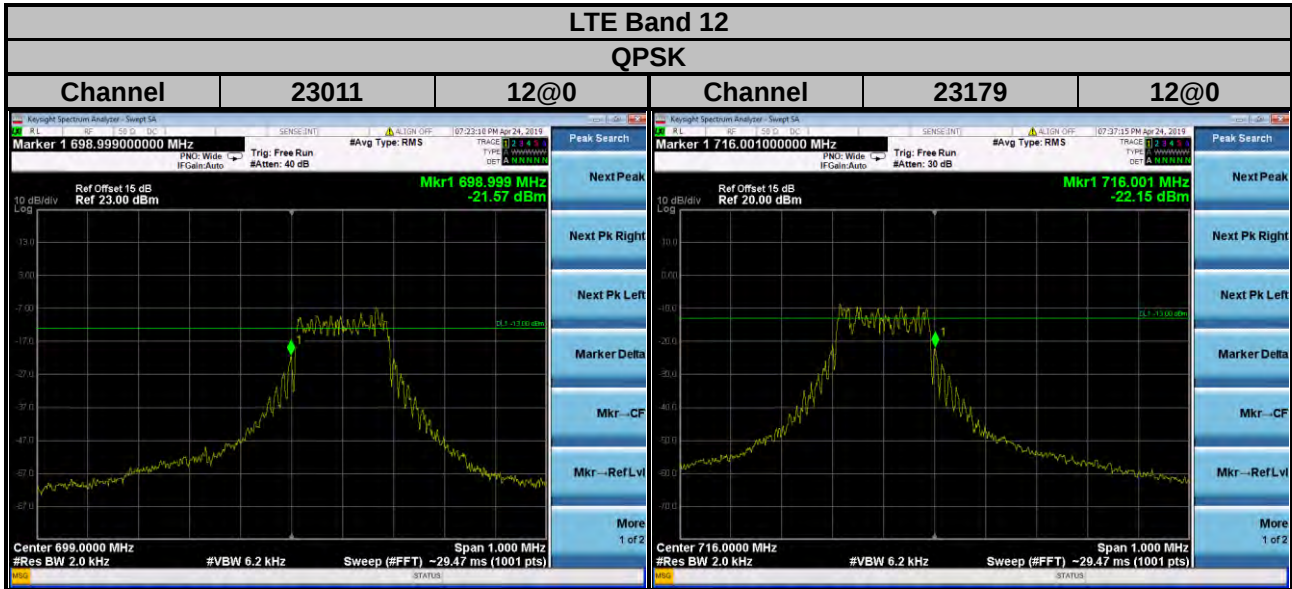
LTE Band 12

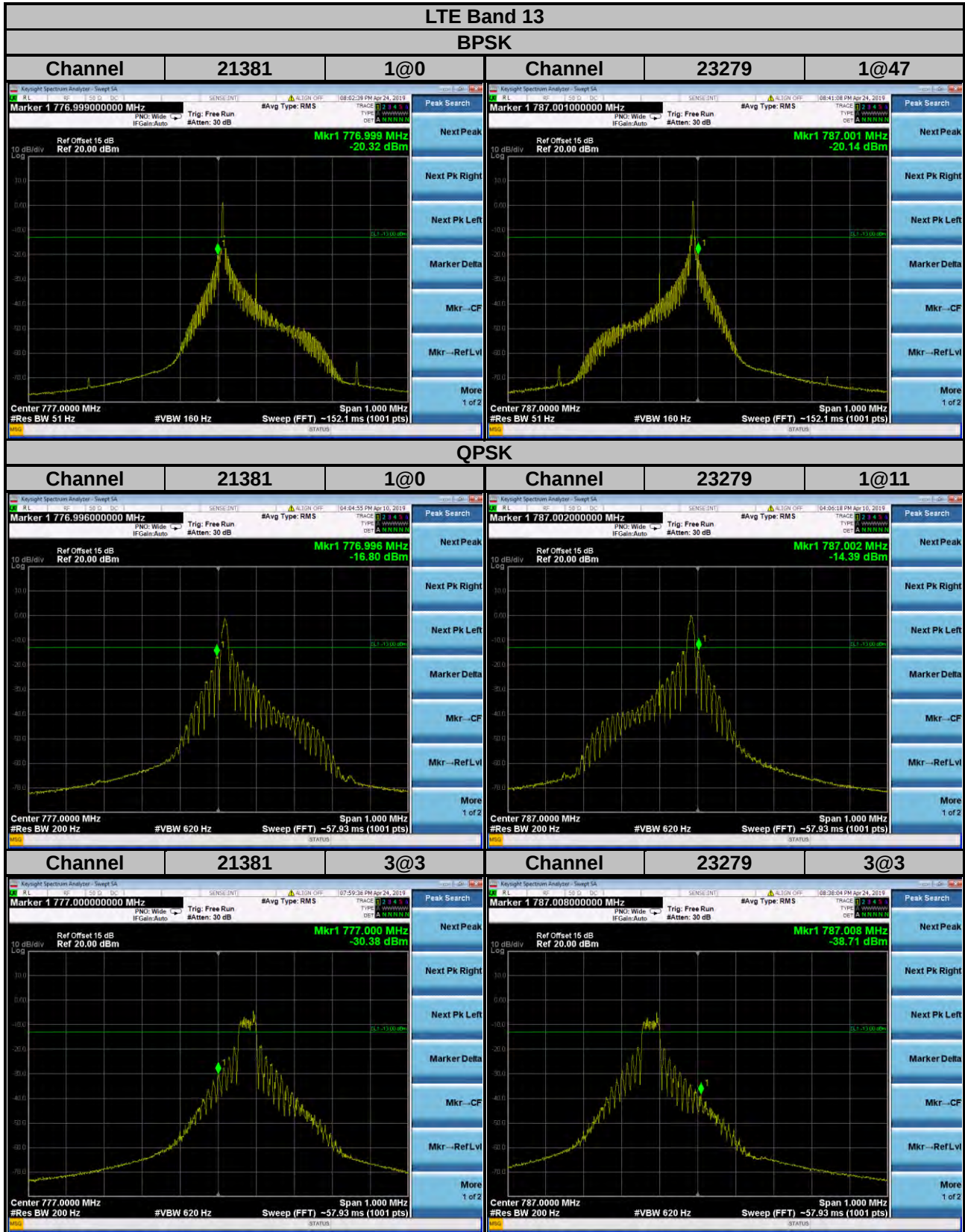
BPSK

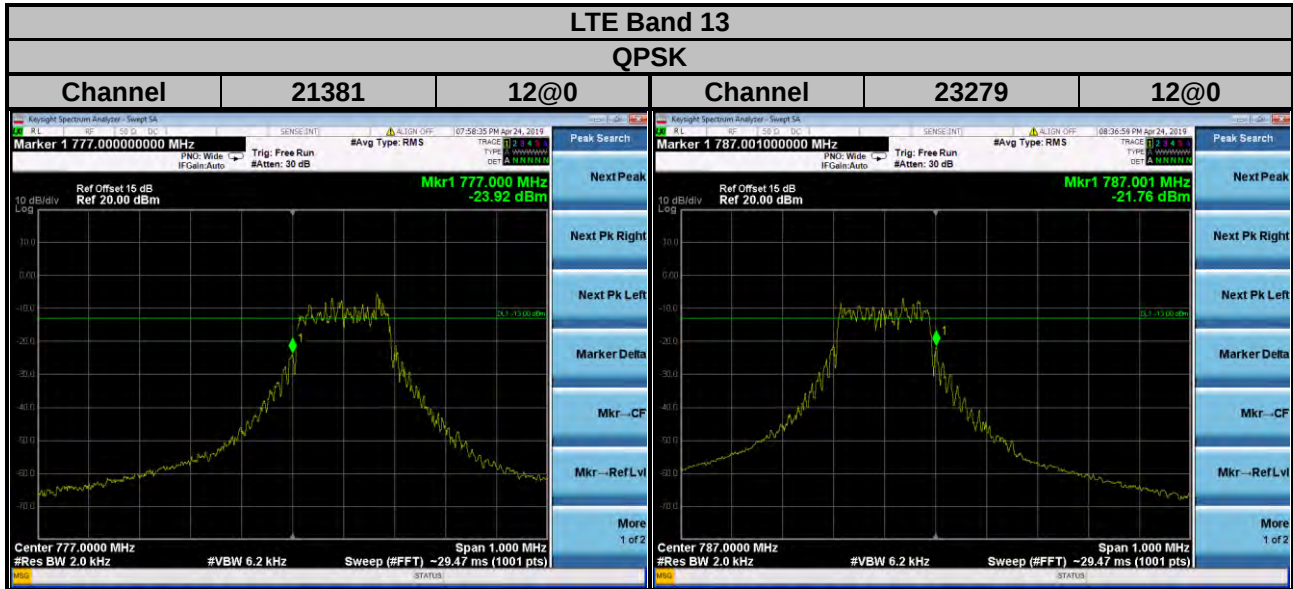


QPSK



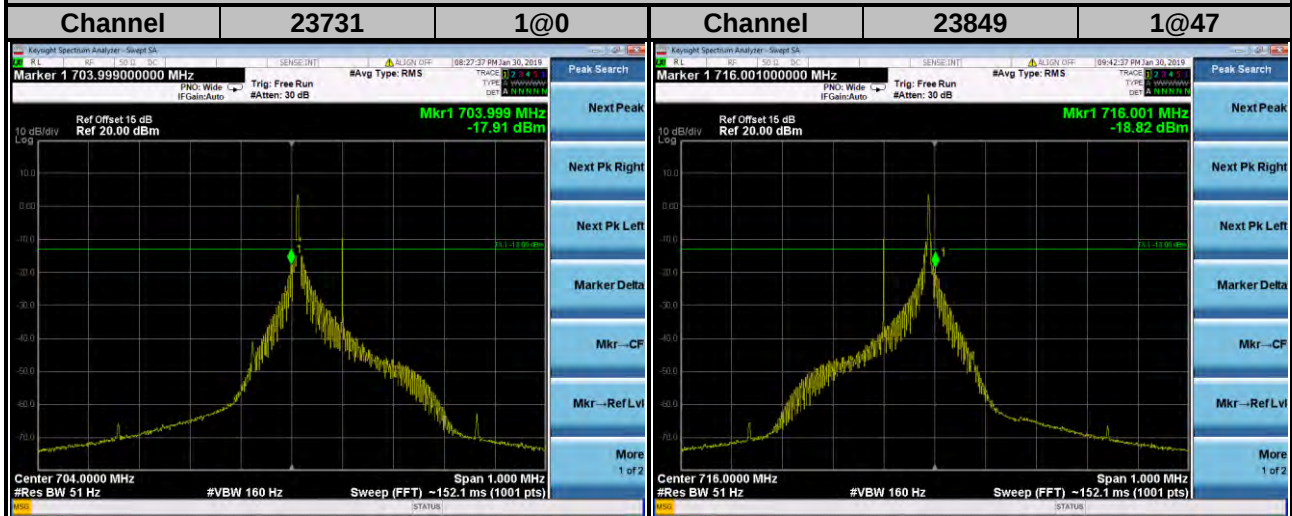




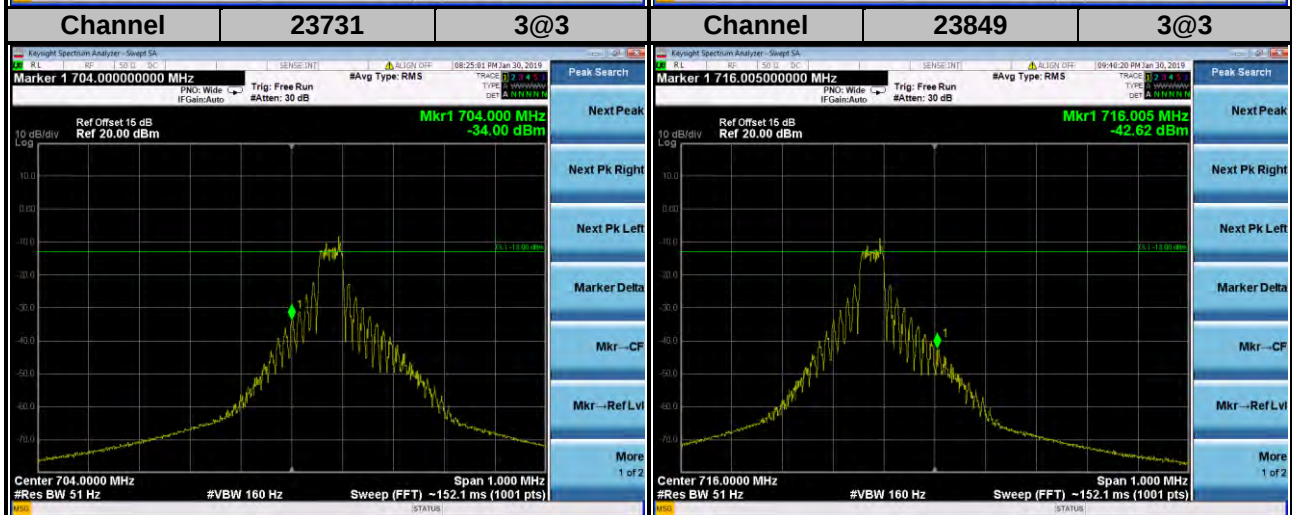
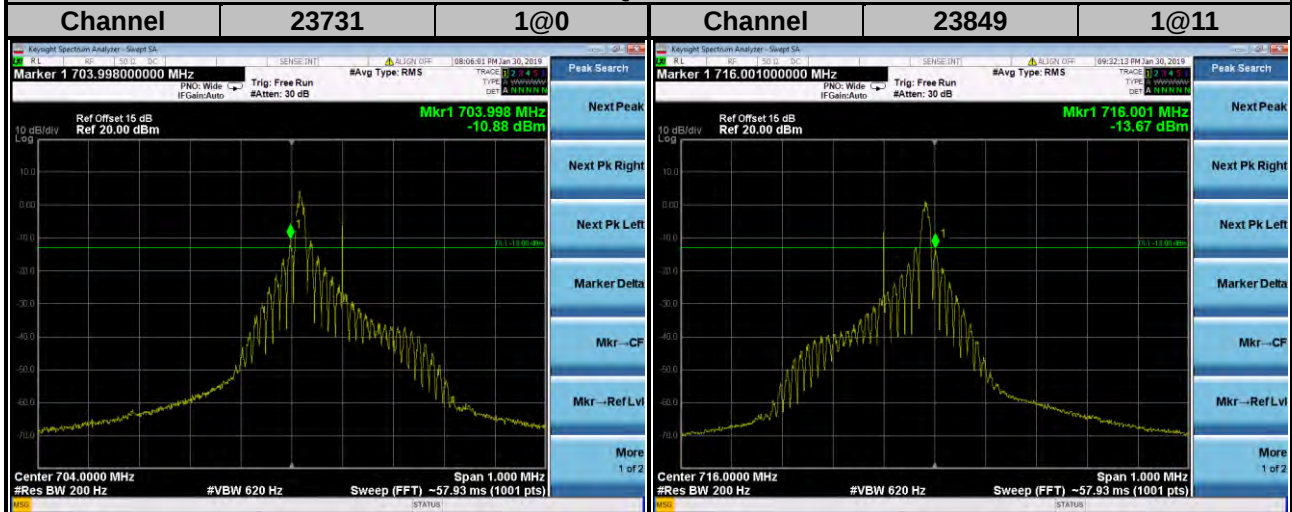


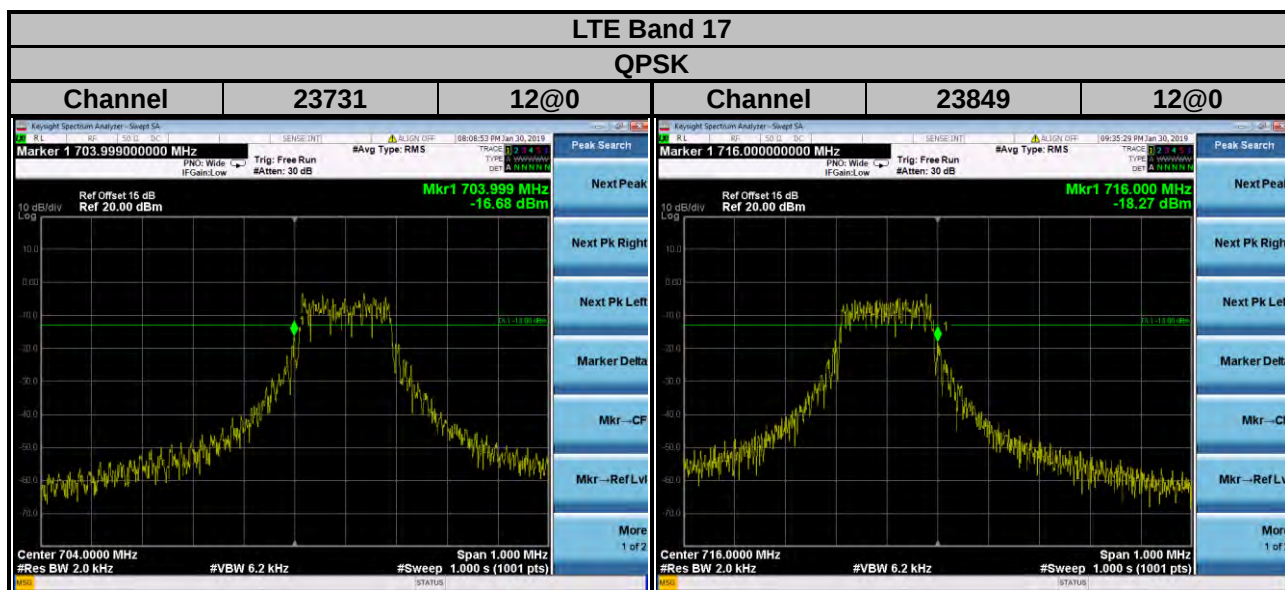
LTE Band 17

BPSK



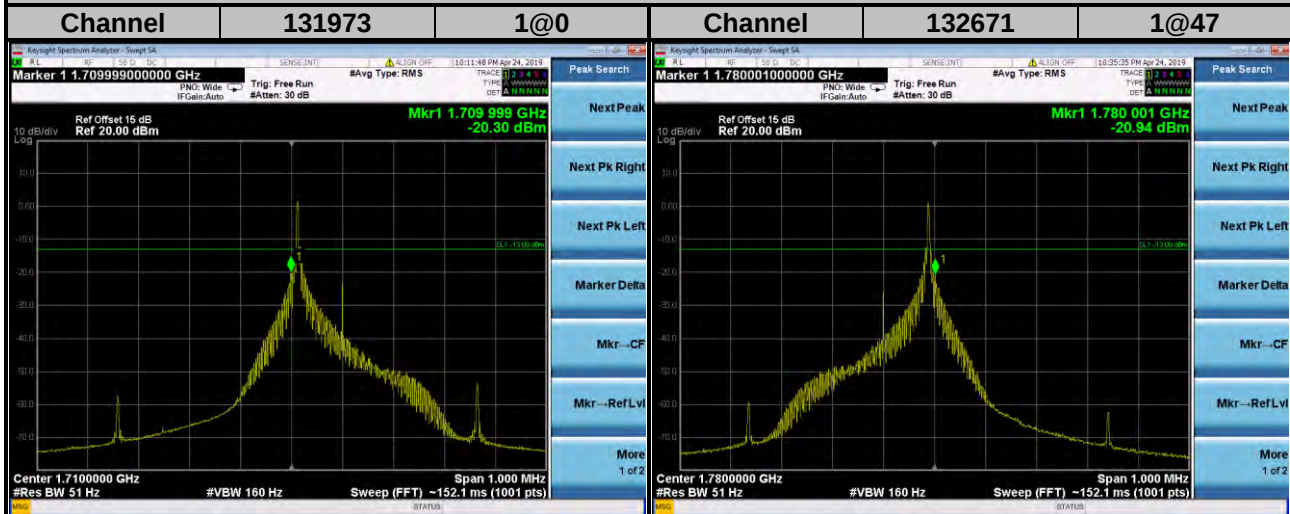
QPSK



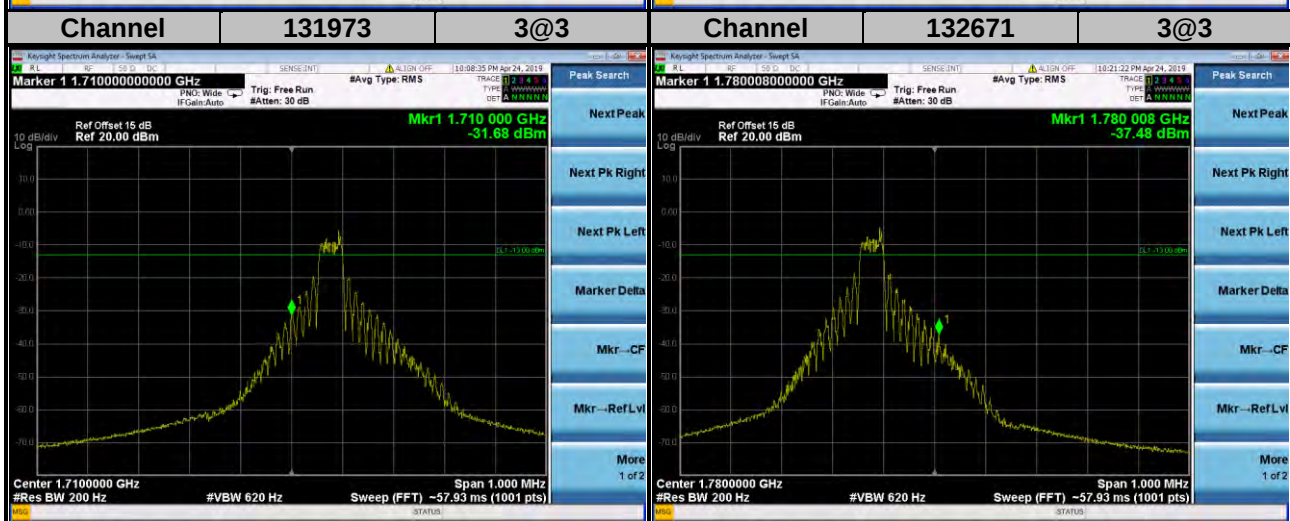
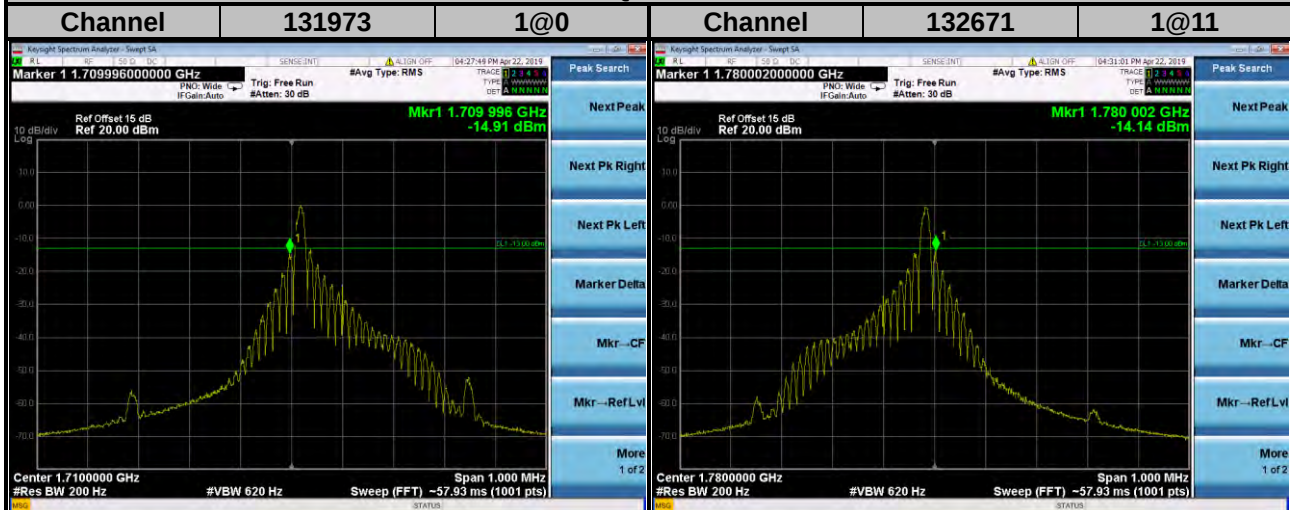


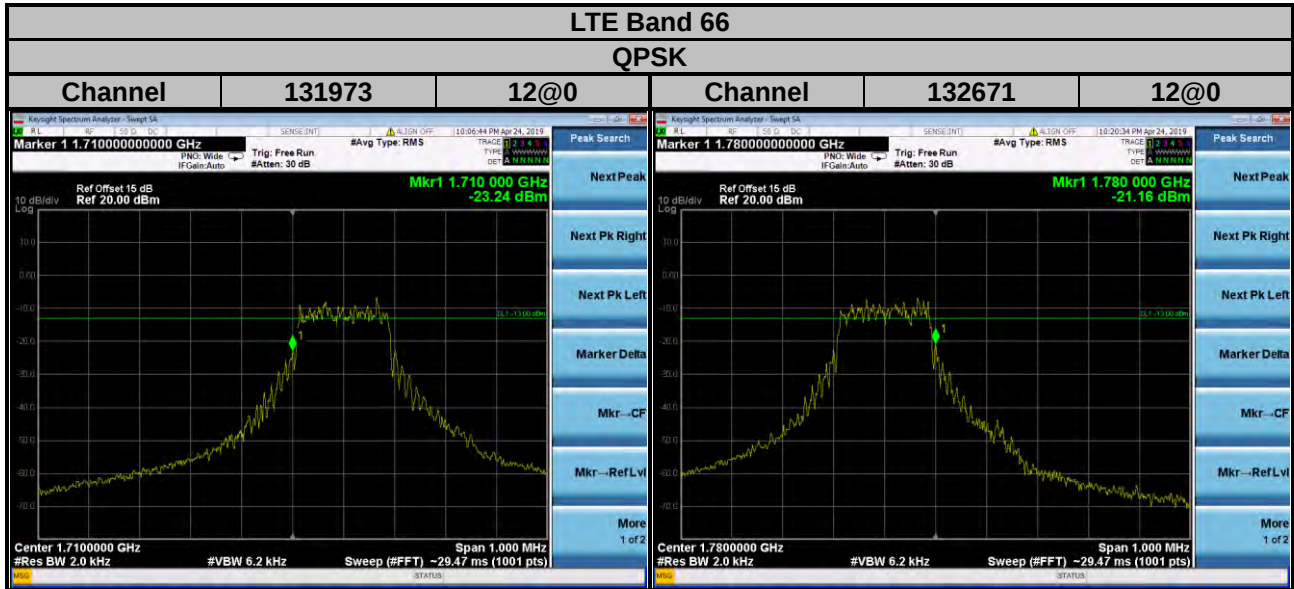
LTE Band 66

BPSK

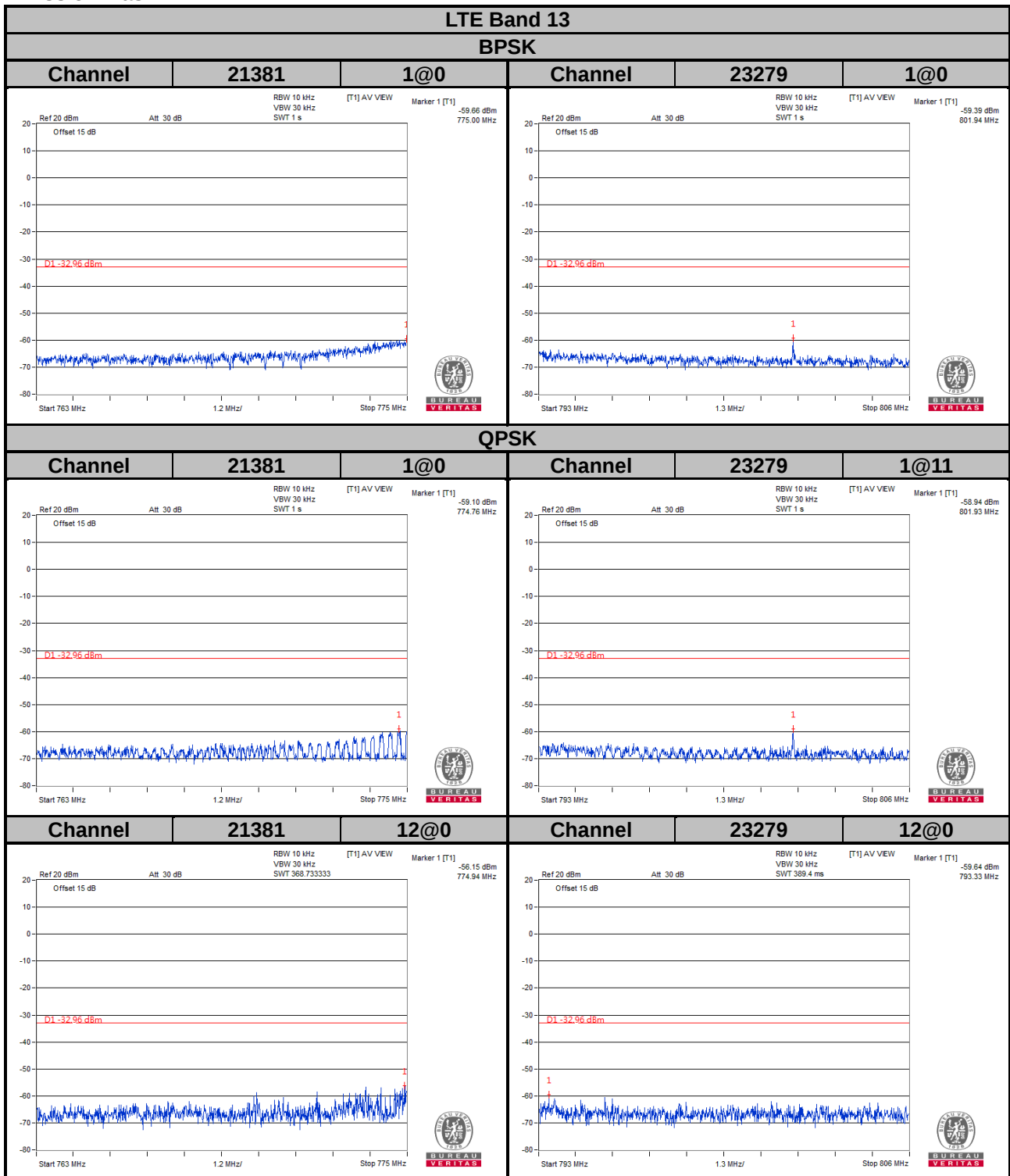


QPSK





Emission Mask



For the 763 - 775 MHz and 793 - 805 MHz band, the FCC limit is $65 + 10\log(P[\text{watt}])$ in a 6.25 kHz bandwidth. Since it was not possible to set the resolution bandwidth to 6.25 kHz with the available equipment, a bandwidth of 10 kHz was used instead to show compliance. By using a 10 kHz bandwidth on the spectrum analyzer.

$$10\log(10\text{kHz}/6.25\text{kHz}) = 2.04 \text{ dB}$$

$$\text{Limit line} = -35 \text{ dBm} + 2.04 \text{ dB} = -32.96 \text{ dBm}$$