

FCC Test Report

(Part 27 – WCDMA B4, LTE B4/B7/B12/B13/B38/B41/B66/B71)

Report No.: RFBCKT-WTW-P22010886-5

FCC ID: HFSQTAD53N

Test Model: QTAD53

Received Date: Feb. 10, 2022

Test Date: Feb. 17 ~ Mar. 08, 2022

Issued Date: Mar. 30, 2022

Applicant: Quanta Computer Inc.

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



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Release Control Record

Issue No.	Description	Date Issued
RFBCKT-WTW-P22010886-5	Original release	Mar. 30, 2022

1 Certificate of Conformity

Product: 5G Hotspot

Brand: T-Mobile

Test Model: QTAD53

Sample Status: Engineering sample

Applicant: Quanta Computer Inc.

Test Date: Feb. 17 ~ Mar. 08, 2022

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

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 : Polly Chien , **Date:** Mar. 30, 2022
Polly Chien / Specialist

Approved by : Jeremy Lin , **Date:** Mar. 30, 2022
Jeremy Lin / Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 27 & Part 2							
FCC Clause					Test Item	Result	Remarks
WCDMA B4 / LTE B4	LTE B12 / LTE B71	LTE B13	LTE B7 / LTE B38 / LTE B41	LTE B66			
2.1046 27.50 (d)(4)	2.1046 27.50 (c)	2.1046 27.50 (b)	2.1046 27.50 (h)(2)	2.1046 27.50 (d)(4)	Equivalent Isotropically Radiated Power / Equivalent Radiated Power	Pass	Meet the requirement of limit.
2.1047	2.1047	2.1047	2.1047	2.1047	Modulation Characteristics	Pass	Meet the requirement of limit.
27.50 (d)(5)	----	----	----	27.50 (d)(5)	Peak To Average Ratio	Pass	Meet the requirement of limit.
2.1055 27.54	2.1055 27.54	2.1055 27.54	2.1055 27.54	2.1055 27.54	Frequency Stability Stay with the authorized bands of operation	Pass	Meet the requirement of limit.
2.1049	2.1049	2.1049	2.1049	2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
2.1051 27.53 (h)	2.1051 27.53 (g)	2.1051 27.53 (c)	2.1051 27.53 (m)(4)(6)	2.1051 27.53 (h)	Band Edge / Out of Band Emissions Measurements	Pass	Meet the requirement of limit.
2.1051 27.53 (h)	2.1051 27.53 (g)	2.1051 27.53 (c)(f)	2.1051 27.53 (m)(4)(6)	2.1051 27.53 (h)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53 (h)	2.1053 27.53 (g)	2.1053 27.53 (c)(f)	2.1053 27.53 (m)(4)(6)	2.1053 27.53 (h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -6.62dB at 5186.00MHz.

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	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.59 dB
	200MHz ~ 1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver KEYSIGHT	N9038A	MY55420137	Apr. 09, 2021	Apr. 08, 2022
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Jun. 10, 2021	Jun. 09, 2022
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Oct. 28, 2021	Oct. 27, 2022
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Nov. 14, 2021	Nov. 13, 2022
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Oct. 26, 2021	Oct. 25, 2022
Loop Antenna TESEQ	HLA 6121	45745	Jul. 21, 2021	Jul. 20, 2022
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Jun. 05, 2021	Jun. 04, 2022
Preamplifier Agilent (Above 1GHz)	8449B	3008A01962	Oct. 05, 2021	Oct. 04, 2022
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 15, 2022	Jan. 14, 2023
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795 /4)	Jan. 15, 2022	Jan. 14, 2023
RF signal cable Woken	8D-FB	Cable-CH9-01	Jun. 05, 2021	Jun. 04, 2022
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower & Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Standard Temperature And Humidity Chamber GIANT FORCE	GTH-120-40-CP-AR	MAA1306-019	Sep. 10, 2021	Sep. 09, 2022
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
True RMS Clamp Meter Fluke	325	31130711WS	Jun. 02, 2021	Jun. 01, 2022
DC power supply Keysight	U8002A	MY56330015	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 9.

3 General Information

3.1 General Description of EUT

Product	5G Hotspot
Brand	T-Mobile
Test Model	QTAD53
Sample Status	Engineering sample
Power Supply Rating	5Vdc / 9Vdc / 12Vdc (Adapter) 3.85Vdc (Battery)
Modulation Type	WCDMA: BPSK, QPSK HSDPA: BPSK HSUPA: QPSK LTE: QPSK, 16QAM, 64QAM, 256QAM

Operating Frequency	WCDMA Band 4	1712.4MHz ~ 1752.6MHz
	LTE Band 4 (Channel Bandwidth 1.4MHz)	1710.7MHz ~ 1754.3MHz
	LTE Band 4 (Channel Bandwidth 3MHz)	1711.5MHz ~ 1753.5MHz
	LTE Band 4 (Channel Bandwidth 5MHz)	1712.5MHz ~ 1752.5MHz
	LTE Band 4 (Channel Bandwidth 10MHz)	1715.0MHz ~ 1750.0MHz
	LTE Band 4 (Channel Bandwidth 15MHz)	1717.5MHz ~ 1747.5MHz
	LTE Band 4 (Channel Bandwidth 20MHz)	1720.0MHz ~ 1745.0MHz
	LTE Band 7 (Channel Bandwidth 5MHz)	2502.5MHz ~ 2567.5MHz
	LTE Band 7 (Channel Bandwidth 10MHz)	2505.0MHz ~ 2565.0MHz
	LTE Band 7 (Channel Bandwidth 15MHz)	2507.5MHz ~ 2562.5MHz
	LTE Band 7 (Channel Bandwidth 20MHz)	2510.0MHz ~ 2560.0MHz
	LTE Band 12 (Channel Bandwidth 1.4MHz)	699.7MHz ~ 715.3MHz
	LTE Band 12 (Channel Bandwidth 3MHz)	700.5MHz ~ 714.5MHz
	LTE Band 12 (Channel Bandwidth 5MHz)	701.5MHz ~ 713.5MHz
	LTE Band 12 (Channel Bandwidth 10MHz)	704.0MHz ~ 711.0MHz
	LTE Band 13 (Channel Bandwidth 5MHz)	779.5MHz ~ 784.5MHz
	LTE Band 13 (Channel Bandwidth 10MHz)	782.0MHz
	LTE Band 38 (Channel Bandwidth 5MHz)	2572.5MHz ~ 2617.5MHz
	LTE Band 38 (Channel Bandwidth 10MHz)	2575.0MHz ~ 2615.0MHz
	LTE Band 38 (Channel Bandwidth 15MHz)	2577.5MHz ~ 2612.5MHz
	LTE Band 38 (Channel Bandwidth 20MHz)	2580.0MHz ~ 2610.0MHz
	LTE Band 41 (Channel Bandwidth 5MHz)	2498.5MHz ~ 2687.5MHz
	LTE Band 41 (Channel Bandwidth 10MHz)	2501.0MHz ~ 2685.0 MHz
	LTE Band 41 (Channel Bandwidth 15MHz)	2503.5MHz ~ 2682.5MHz
	LTE Band 41 (Channel Bandwidth 20MHz)	2506.0MHz ~ 2680.0 MHz
	LTE Band 66 (Channel Bandwidth 1.4MHz)	1710.7MHz ~ 1779.3MHz
	LTE Band 66 (Channel Bandwidth 3MHz)	1711.5MHz ~ 1778.5MHz
	LTE Band 66 (Channel Bandwidth 5MHz)	1712.5MHz ~ 1777.5MHz
	LTE Band 66 (Channel Bandwidth 10MHz)	1715.0MHz ~ 1775.0MHz
	LTE Band 66 (Channel Bandwidth 15MHz)	1717.5MHz ~ 1772.5MHz
	LTE Band 66 (Channel Bandwidth 20MHz)	1720.0MHz ~ 1770.0MHz
	LTE Band 71 (Channel Bandwidth 5MHz)	665.5MHz ~ 695.5MHz
	LTE Band 71 (Channel Bandwidth 10MHz)	668.0MHz ~ 693.0MHz
	LTE Band 71 (Channel Bandwidth 15MHz)	670.5MHz ~ 690.5MHz
	LTE Band 71 (Channel Bandwidth 20MHz)	673.0MHz ~ 688.0MHz

Max. EIRP Power	WCDMA Band 4	434.510mW(26.38dBm)			
		QPSK	16QAM	64QAM	256QAM
	LTE Band 4 (Channel Bandwidth 1.4MHz)	451.856mW (26.55dBm)	375.837mW (25.75dBm)	295.801mW (24.71dBm)	150.661mW (21.78dBm)
	LTE Band 4 (Channel Bandwidth 3MHz)	452.898mW (26.56dBm)	379.315mW (25.79dBm)	299.226mW (24.76dBm)	151.356mW (21.80dBm)
	LTE Band 4 (Channel Bandwidth 5MHz)	447.713mW (26.51dBm)	370.681mW (25.69dBm)	295.121mW (24.70dBm)	150.661mW (21.78dBm)
	LTE Band 4 (Channel Bandwidth 10MHz)	453.942mW (26.57dBm)	376.704mW (25.76dBm)	294.442mW (24.69dBm)	149.624mW (21.75dBm)
	LTE Band 4 (Channel Bandwidth 15MHz)	452.898mW (26.56dBm)	372.392mW (25.71dBm)	293.765mW (24.68dBm)	151.705mW (21.81dBm)
	LTE Band 4 (Channel Bandwidth 20MHz)	454.988mW (26.58dBm)	379.315mW (25.79dBm)	299.916mW (24.77dBm)	152.757mW (21.84dBm)
	LTE Band 7 (Channel Bandwidth 5MHz)	246.037mW (23.91dBm)	212.814mW (23.28dBm)	165.577mW (22.19dBm)	85.310mW (19.31dBm)
	LTE Band 7 (Channel Bandwidth 10MHz)	248.313mW (23.95dBm)	212.814mW (23.28dBm)	164.816mW (22.17dBm)	85.310mW (19.31dBm)
	LTE Band 7 (Channel Bandwidth 15MHz)	248.313mW (23.95dBm)	213.304mW (23.29dBm)	166.725mW (22.22dBm)	85.114mW (19.30dBm)
	LTE Band 7 (Channel Bandwidth 20MHz)	250.611mW (23.99dBm)	214.289mW (23.31dBm)	166.725mW (22.22dBm)	86.298mW (19.36dBm)
	LTE Band 38 (Channel Bandwidth 5MHz)	279.254mW (24.46dBm)	228.034mW (23.58dBm)	170.608mW (22.32dBm)	89.536mW (19.52dBm)
	LTE Band 38 (Channel Bandwidth 10MHz)	279.898mW (24.47dBm)	224.905mW (23.52dBm)	169.434mW (22.29dBm)	89.743mW (19.53dBm)
	LTE Band 38 (Channel Bandwidth 15MHz)	279.898mW (24.47dBm)	227.510mW (23.57dBm)	169.824mW (22.30dBm)	89.331mW (19.51dBm)
	LTE Band 38 (Channel Bandwidth 20MHz)	281.190mW (24.49dBm)	229.087mW (23.60dBm)	171.002mW (22.33dBm)	90.573mW (19.57dBm)
		QPSK	16QAM	64QAM	256QAM
	LTE Band 41 (Channel Bandwidth 5MHz)	613.762mW (27.88dBm)	502.343mW (27.01dBm)	390.841mW (25.92dBm)	200.909mW (23.03dBm)
	LTE Band 41 (Channel Bandwidth 10MHz)	613.762mW (27.88dBm)	500.035mW (26.99dBm)	384.592mW (25.85dBm)	200.447mW (23.02dBm)
	LTE Band 41 (Channel Bandwidth 15MHz)	610.942mW (27.86dBm)	502.343mW (27.01dBm)	392.645mW (25.94dBm)	198.609mW (22.98dBm)
	LTE Band 41 (Channel Bandwidth 20MHz)	610.942mW (27.86dBm)	504.661mW (27.03dBm)	393.550mW (25.95dBm)	199.526mW (23.00dBm)
	LTE Band 66 (Channel Bandwidth 1.4MHz)	460.257mW (26.63dBm)	379.315mW (25.79dBm)	284.446mW (24.54dBm)	153.815mW (21.87dBm)
	LTE Band 66 (Channel Bandwidth 3MHz)	460.257mW (26.63dBm)	377.572mW (25.77dBm)	283.139mW (24.52dBm)	154.882mW (21.90dBm)
	LTE Band 66 (Channel Bandwidth 5MHz)	461.318mW (26.64dBm)	379.315mW (25.79dBm)	285.102mW (24.55dBm)	153.109mW (21.85dBm)
	LTE Band 66 (Channel Bandwidth 10MHz)	458.142mW (26.61dBm)	380.189mW (25.80dBm)	282.488mW (24.51dBm)	153.815mW (21.87dBm)
	LTE Band 66 (Channel Bandwidth 15MHz)	460.257mW (26.63dBm)	379.315mW (25.79dBm)	285.102mW (24.55dBm)	153.109mW (21.85dBm)
	LTE Band 66 (Channel Bandwidth 20MHz)	465.586mW (26.68dBm)	381.066mW (25.81dBm)	287.740mW (24.59dBm)	154.882mW (21.90dBm)

Max. ERP Power		QPSK	16QAM	64QAM	256QAM
	LTE Band 12 (Channel Bandwidth 1.4MHz)	160.694mW (22.06dBm)	132.739mW (21.23dBm)	96.828mW (19.86dBm)	46.238mW (16.65dBm)
	LTE Band 12 (Channel Bandwidth 3MHz)	159.588mW (22.03dBm)	133.968mW (21.27dBm)	98.175mW (19.92dBm)	46.026mW (16.63dBm)
	LTE Band 12 (Channel Bandwidth 5MHz)	159.221mW (22.02dBm)	133.660mW (21.26dBm)	97.499mW (19.89dBm)	46.238mW (16.65dBm)
	LTE Band 12 (Channel Bandwidth 10MHz)	161.065mW (22.07dBm)	133.968mW (21.27dBm)	98.628mW (19.94dBm)	46.452mW (16.67dBm)
	LTE Band 13 (Channel Bandwidth 5MHz)	66.988mW (18.26dBm)	54.200mW (17.34dBm)	42.658mW (16.30dBm)	21.380mW (13.30dBm)
	LTE Band 13 (Channel Bandwidth 10MHz)	67.608mW (18.30dBm)	54.954mW (17.40dBm)	43.251mW (16.36dBm)	21.677mW (13.36dBm)
	LTE Band 71 (Channel Bandwidth 5MHz)	151.008mW (21.79dBm)	119.124mW (20.76dBm)	93.111mW (19.69dBm)	45.814mW (16.61dBm)
	LTE Band 71 (Channel Bandwidth 10MHz)	151.008mW (21.79dBm)	117.490mW (20.70dBm)	93.325mW (19.70dBm)	45.604mW (16.59dBm)
	LTE Band 71 (Channel Bandwidth 15MHz)	149.968mW (21.76dBm)	118.850mW (20.75dBm)	94.189mW (19.74dBm)	45.709mW (16.60dBm)
	LTE Band 71 (Channel Bandwidth 20MHz)	171.002mW (22.33dBm)	119.399mW (20.77dBm)	94.406mW (19.75dBm)	46.238mW (16.65dBm)

Emission Designator	WCDMA Band 4	4M17F9W			
		QPSK	16QAM	64QAM	256QAM
	LTE Band 4 (Channel Bandwidth 1.4MHz)	1M09G7D	1M09D7W	1M09D7W	1M08D7W
	LTE Band 4 (Channel Bandwidth 3MHz)	2M70G7D	2M70D7W	2M70D7W	2M70D7W
	LTE Band 4 (Channel Bandwidth 5MHz)	4M50G7D	4M49D7W	4M50D7W	4M49D7W
	LTE Band 4 (Channel Bandwidth 10MHz)	8M99G7D	8M98D7W	8M98D7W	8M98D7W
	LTE Band 4 (Channel Bandwidth 15MHz)	13M5G7D	13M5D7W	13M5D7W	13M5D7W
	LTE Band 4 (Channel Bandwidth 20MHz)	18M0G7D	18M0D7W	18M0D7W	18M0D7W
	LTE Band 7 (Channel Bandwidth 5MHz)	4M50G7D	4M49D7W	4M50D7W	4M49D7W
	LTE Band 7 (Channel Bandwidth 10MHz)	8M98G7D	8M98D7W	8M98D7W	8M98D7W
	LTE Band 7 (Channel Bandwidth 15MHz)	13M5G7D	13M5D7W	13M5D7W	13M5D7W
	LTE Band 7 (Channel Bandwidth 20MHz)	18M0G7D	18M0D7W	18M0D7W	18M0D7W
	LTE Band 12 (Channel Bandwidth 1.4MHz)	1M09G7D	1M09D7W	1M09D7W	1M09D7W
	LTE Band 12 (Channel Bandwidth 3MHz)	2M70G7D	2M70D7W	2M70D7W	2M70D7W
	LTE Band 12 (Channel Bandwidth 5MHz)	4M50G7D	4M49D7W	4M50D7W	4M49D7W
	LTE Band 12 (Channel Bandwidth 10MHz)	8M99G7D	8M99D7W	8M99D7W	8M98D7W
	LTE Band 13 (Channel Bandwidth 5MHz)	4M49G7D	4M49D7W	4M49D7W	4M49D7W
	LTE Band 13 (Channel Bandwidth 10MHz)	8M96G7D	8M96D7W	8M96D7W	8M95D7W
	LTE Band 38 (Channel Bandwidth 5MHz)	4M49G7D	4M49D7W	4M50D7W	4M48D7W
	LTE Band 38 (Channel Bandwidth 10MHz)	8M97G7D	8M98D7W	8M97D7W	8M96D7W
	LTE Band 38 (Channel Bandwidth 15MHz)	13M5G7D	13M4D7W	13M5D7W	13M4D7W
	LTE Band 38 (Channel Bandwidth 20MHz)	17M9G7D	17M9D7W	17M9D7W	17M9D7W
	LTE Band 41 (Channel Bandwidth 5MHz)	4M50G7D	4M49D7W	4M50D7W	4M48D7W
	LTE Band 41 (Channel Bandwidth 10MHz)	8M97G7D	8M98D7W	8M97D7W	8M96D7W
	LTE Band 41 (Channel Bandwidth 15MHz)	13M5G7D	13M5D7W	13M5D7W	13M4D7W
	LTE Band 41 (Channel Bandwidth 20MHz)	17M9G7D	17M9D7W	17M9D7W	17M9D7W
	LTE Band 66 (Channel Bandwidth 1.4MHz)	1M09G7D	1M09D7W	1M09D7W	1M09D7W
	LTE Band 66 (Channel Bandwidth 3MHz)	2M70G7D	2M70D7W	2M70D7W	2M70D7W
	LTE Band 66 (Channel Bandwidth 5MHz)	4M50G7D	4M49D7W	4M50D7W	4M49D7W
	LTE Band 66 (Channel Bandwidth 10MHz)	8M98G7D	8M98D7W	8M98D7W	8M97D7W
	LTE Band 66 (Channel Bandwidth 15MHz)	13M5G7D	13M5D7W	13M4D7W	13M4D7W
	LTE Band 66 (Channel Bandwidth 20MHz)	17M9G7D	17M9D7W	17M9D7W	17M9D7W
	LTE Band 71 (Channel Bandwidth 5MHz)	4M49G7D	4M49D7W	4M49D7W	4M49D7W
	LTE Band 71 (Channel Bandwidth 10MHz)	8M97G7D	8M97D7W	8M97D7W	8M97D7W
	LTE Band 71 (Channel Bandwidth 15MHz)	13M5G7D	13M4D7W	13M5D7W	13M5D7W
	LTE Band 71 (Channel Bandwidth 20MHz)	17M9G7D	18M0D7W	17M9D7W	17M9D7W
Antenna Type	Refer to Note as below				
Antenna Connector	Refer to Note as below				
Accessory Device	Refer to Note as below				
Cable Supplied	Refer to Note as below				

Note:

1. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter 1	TEN PAO INTERNATIONAL LTD.	S018BYU1200150	I/P: 100-240Vac, 50/60Hz, 600mA O/P: 5Vdc/9Vdc/12Vdc=3A/2A/1.5A
Adapter 2	Aohai Technology Co., Ltd	A138A-120150U-US2	I/P: 100-240V~50/60Hz, 0.5A O/P: 5Vdc, 2.5A/9Vdc, 2A/12Vdc, 1.5A
USB cable 1	Electronics Taiwan Ltd.	DDEMU110079	0.95m shielded USB cable without core
USB cable 2	IMEX INC	60-6382-520-FA	0.97m shielded USB cable without core
Battery	VEKEN	141033	3.85Vdc, 6460mAh, 24.87Wh

* After pre-tested, adapter 2 and USB cable 1 were the worst case and chosen for final test.

2. There are two sources for EUT's memory. Only the supplier is different and the rest of the specifications are the same.

Sample	Item	Brand	Model
A	Memory - Main	Nanya Technology Corporation	NM4888KSPAXAI-3E
B	Memory - Second	Jeju Semiconductor Corp.	JSFDDQ5QHAFGD-405

* After pre-tested, sample A was the worse and chosen for final test.

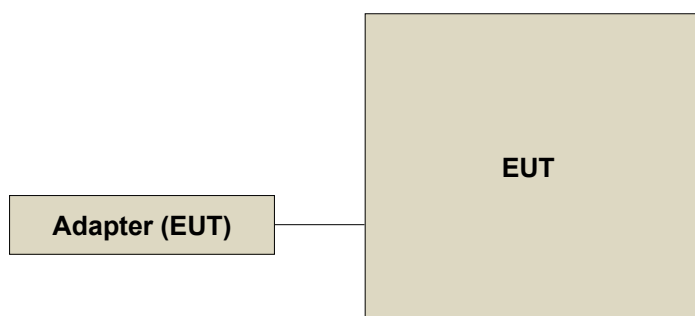
3. The following antennas were provided to the EUT.

LTE Band											
Ant. No.	Type	Connector	Gain (dBi)								
			WCDMA B4	B4	B7	B12	B13	B38	B41	B66	B71
0	PIFA	MUR	3.16163	3.16163	1.15435	0.154297	-3.23099	0.371642	1.15435	3.16163	0.426023
1	PIFA	IPEX	-	-	-	-	-	-	-	-	-
2	PIFA	IPEX	0.805343	0.805343	0.854078	-	-	0.910513	0.854078	0.805343	-
3	PIFA	MUR	-	-	-	-	-	-	-	-	-
4	PIFA	IPEX	-	-	-	-	-	-	0.283214	-	-

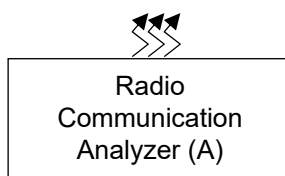
* There are diversity on WCDMA and LTE mode. The max. gain are chosen for final test.

* The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.2 Configuration of System under Test



Remote site



3.2.1 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Radio Communication Analyzer	Anritsu	MT8821C	6261806803	NA	-

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

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	Radiated Emission
WCDMA Band 4	X-plane
LTE Band 4	X-plane
LTE Band 7	X-plane
LTE Band 12	X-plane
LTE Band 13	X-plane
LTE Band 38	X-plane
LTE Band 41	X-plane
LTE Band 66	X-plane
LTE Band 71	X-plane

WCDMA Band 4

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	EIRP	1312 to 1513	1312 (1712.4MHz), 1413 (1732.6MHz), 1513 (1752.6MHz)	WCDMA, HSDPA, HSUPA
-	Modulation Characteristics	1312 to 1513	1413 (1732.6MHz)	WCDMA, HSDPA, HSUPA
-	Frequency Stability	1312 to 1513	1312 (1712.4MHz), 1513 (1752.6MHz)	WCDMA
-	Occupied Bandwidth	1312 to 1513	1312 (1712.4MHz), 1413 (1732.6MHz), 1513 (1752.6MHz)	WCDMA, HSDPA, HSUPA
-	Band Edge	1312 to 1513	1312 (1712.4MHz), 1513 (1752.6MHz)	WCDMA, HSDPA, HSUPA
-	Peak To Average Ratio	1312 to 1513	1312 (1712.4MHz), 1413 (1732.6MHz), 1513 (1752.6MHz)	WCDMA, HSDPA, HSUPA
-	Conducted Emission	1312 to 1513	1312 (1712.4MHz), 1413 (1732.6MHz), 1513 (1752.6MHz)	WCDMA, HSDPA, HSUPA
-	Radiated Emission Below 1GHz	1312 to 1513	1413 (1732.6MHz)	WCDMA
-	Radiated Emission Above 1GHz	1312 to 1513	1312 (1712.4MHz), 1413 (1732.6MHz), 1513 (1752.6MHz)	WCDMA

Note: For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.

LTE Band 4

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	19957 to 20393	19957 (1710.7MHz), 20175 (1732.5MHz), 20393 (1754.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 2 RB Offset 1 RB / 5 RB Offset 3 RB / 0 RB Offset 3 RB / 1 RB Offset 3 RB / 3 RB Offset 6 RB / 0 RB Offset
		19965 to 20385	19965 (1711.5MHz), 20175 (1732.5MHz), 20385 (1753.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 7 RB Offset 1 RB / 14 RB Offset 8 RB / 0 RB Offset 8 RB / 3 RB Offset 8 RB / 7 RB Offset 15 RB / 0 RB Offset
		19975 to 20375	19975 (1712.5MHz), 20175 (1732.5MHz), 20375 (1752.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		20000 to 20350	20000 (1715.0MHz), 20175 (1732.5MHz), 20350 (1750.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 12 RB Offset 25 RB / 25 RB Offset 50 RB / 0 RB Offset
		20025 to 20325	20025 (1717.5MHz), 20175 (1732.5MHz), 20325 (1747.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 37 RB Offset 1 RB / 74 RB Offset 36 RB / 0 RB Offset 36 RB / 19 RB Offset 36 RB / 39 RB Offset 75 RB / 0 RB Offset
		20050 to 20300	20050 (1720.0MHz), 20175 (1732.5MHz), 20300 (1745.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 50 RB Offset 1 RB / 99 RB Offset 50 RB / 0 RB Offset 50 RB / 25 RB Offset 50 RB / 50 RB Offset 100 RB / 0 RB Offset
-	Modulation Characteristics	20050 to 20300	20175 (1732.5MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Frequency Stability	19957 to 20393	19957 (1710.7MHz), 20393 (1754.3MHz)	1.4MHz	QPSK	6 RB / 0 RB Offset
		19965 to 20385	19965 (1711.5MHz), 20385 (1753.5MHz)	3MHz	QPSK	15 RB / 0 RB Offset
		19975 to 20375	19975 (1712.5MHz), 20375 (1752.5MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		20000 to 20350	20000 (1715.0MHz), 20350 (1750.0MHz)	10MHz	QPSK	50 RB / 0 RB Offset
		20025 to 20325	20025 (1717.5MHz), 20325 (1747.5MHz)	15MHz	QPSK	75 RB / 0 RB Offset
		20050 to 20300	20050 (1720.0MHz), 20300 (1745.0MHz)	20MHz	QPSK	100 RB / 0 RB Offset
-	Emission Bandwidth	19957 to 20393	19957 (1710.7MHz), 20175 (1732.5MHz), 20393 (1754.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	6 RB / 0RB Offset
		19965 to 20385	19965 (1711.5MHz), 20175 (1732.5MHz), 20385 (1753.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	15 RB / 0RB Offset
		19975 to 20375	19975 (1712.5MHz), 20175 (1732.5MHz), 20375 (1752.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	25RB / 0RB Offset
		20000 to 20350	20000 (1715.0MHz), 20175 (1732.5MHz), 20350 (1750.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	50RB / 0RB Offset
		20025 to 20325	20025 (1717.5MHz), 20175 (1732.5MHz), 20325 (1747.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	75 RB / 0 RB Offset
		20050 to 20300	20050 (1720.0MHz), 20175 (1732.5MHz), 20300 (1745.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset
-	Band Edge	19957 to 20393	19957 (1710.7MHz), 20393 (1754.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset 1 RB / 5 RB Offset 6 RB / 0 RB Offset
		19965 to 20385	19965 (1711.5MHz), 20385 (1753.5MHz)	3MHz	QPSK	1 RB / 0 RB Offset 1 RB / 14 RB Offset 15 RB / 0 RB Offset
		19975 to 20375	19975 (1712.5MHz), 20375 (1752.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		20000 to 20350	20000 (1715.0MHz), 20350 (1750.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
		20025 to 20325	20025 (1717.5MHz), 20325 (1747.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 74 RB Offset 75 RB / 0 RB Offset
		20050 to 20300	20050 (1720.0MHz), 20300 (1745.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 99 RB Offset 100 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Peak To Average Ratio	19957 to 20393	19957 (1710.7MHz), 20175 (1732.5MHz), 20393 (1754.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	3 RB / 0 RB Offset
		19965 to 20385	19965 (1711.5MHz), 20175 (1732.5MHz), 20385 (1753.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		19975 to 20375	19975 (1712.5MHz), 20175 (1732.5MHz), 20375 (1752.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 24 RB Offset
		20000 to 20350	20000 (1715.0MHz), 20175 (1732.5MHz), 20350 (1750.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 24 RB Offset
		20025 to 20325	20025 (1717.5MHz), 20175 (1732.5MHz), 20325 (1747.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		20050 to 20300	20050 (1720.0MHz), 20175 (1732.5MHz), 20300 (1745.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
-	Conducted Emission	19957 to 20393	19957 (1710.7MHz), 20175 (1732.5MHz), 20393 (1754.3MHz)	1.4MHz	QPSK	3 RB / 0 RB Offset
		19965 to 20385	19965 (1711.5MHz), 20175 (1732.5MHz), 20385 (1753.5MHz)	3MHz	QPSK	1 RB / 0 RB Offset
		19975 to 20375	19975 (1712.5MHz), 20175 (1732.5MHz), 20375 (1752.5MHz)	5MHz	QPSK	1 RB / 24 RB Offset
		20000 to 20350	20000 (1715.0MHz), 20175 (1732.5MHz), 20350 (1750.0MHz)	10MHz	QPSK	1 RB / 24 RB Offset
		20025 to 20325	20025 (1717.5MHz), 20175 (1732.5MHz), 20325 (1747.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset
		20050 to 20300	20050 (1720.0MHz), 20175 (1732.5MHz), 20300 (1745.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission Below 1GHz	19957 to 20393	20393 (1754.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	19957 to 20393	19957 (1710.7MHz), 20175 (1732.5MHz), 20393 (1754.3MHz)	1.4MHz	QPSK	3 RB / 0 RB Offset
		19975 to 20375	19975 (1712.5MHz), 20175 (1732.5MHz), 20375 (1752.5MHz)	5MHz	QPSK	1 RB / 24 RB Offset
		20050 to 20300	20050 (1720.0MHz), 20175 (1732.5MHz), 20300 (1745.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM, 64QAM and 256QAM, measured value of QPSK is higher than 16QAM, 64QAM and 256QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under QPSK mode only.

LTE Band 7

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	EIRP	20775 to 21425	20775 (2502.5MHz), 21100 (2535.0MHz), 21425 (2567.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		20800 to 21400	20800 (2505.0MHz), 21100 (2535.0MHz), 21400 (2565.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 12 RB Offset 25 RB / 25 RB Offset 50 RB / 0 RB Offset
		20825 to 21375	20825 (2507.5MHz), 21100 (2535.0MHz), 21375 (2562.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 37 RB Offset 1 RB / 74 RB Offset 36 RB / 0 RB Offset 36 RB / 19 RB Offset 36 RB / 39 RB Offset 75 RB / 0 RB Offset
		20850 to 21350	20850 (2510.0MHz), 21100 (2535.0MHz), 21350 (2560.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 50 RB Offset 1 RB / 99 RB Offset 50 RB / 0 RB Offset 50 RB / 25 RB Offset 50 RB / 50 RB Offset 100 RB / 0 RB Offset
-	Modulation Characteristics	20850 to 21350	21100 (2535.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset
-	Frequency Stability	20775 to 21425	20775 (2502.5MHz), 21425 (2567.5MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		20800 to 21400	20800 (2505.0MHz), 21400 (2565.0MHz)	10MHz	QPSK	50 RB / 0 RB Offset
		20825 to 21375	20825 (2507.5MHz), 21375 (2562.5MHz)	15MHz	QPSK	75 RB / 0 RB Offset
		20850 to 21350	20850 (2510.0MHz), 21350 (2560.0MHz)	20MHz	QPSK	100 RB / 0 RB Offset
-	Emission Bandwidth	20775 to 21425	20775 (2502.5MHz), 21100 (2535.0MHz), 21425 (2567.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	25 RB / 0 RB Offset
		20800 to 21400	20800 (2505.0MHz), 21100 (2535.0MHz), 21400 (2565.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	50 RB / 0 RB Offset
		20825 to 21375	20825 (2507.5MHz), 21100 (2535.0MHz), 21375 (2562.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	75 RB / 0 RB Offset
		20850 to 21350	20850 (2510.0MHz), 21100 (2535.0MHz), 21350 (2560.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Out-of-Band Emissions	20775 to 21425	20775 (2502.5MHz), 21425 (2567.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		20800 to 21400	20800 (2505.0MHz), 21400 (2565.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
		20825 to 21375	20825 (2507.5MHz), 21375 (2562.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 74 RB Offset 75 RB / 0 RB Offset
		20850 to 21350	20850 (2510.0MHz), 21350 (2560.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 99 RB Offset 100 RB / 0 RB Offset
-	Peak to Average Ratio	20775 to 21425	20775 (2502.5MHz), 21100 (2535.0MHz), 21425 (2567.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		20800 to 21400	20800 (2505.0MHz), 21100 (2535.0MHz), 21400 (2565.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		20825 to 21375	20825 (2507.5MHz), 21100 (2535.0MHz), 21375 (2562.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		20850 to 21350	20850 (2510.0MHz), 21100 (2535.0MHz), 21350 (2560.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
-	Conducted Emission	20775 to 21425	20775 (2502.5MHz), 21100 (2535.0MHz), 21425 (2567.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		20800 to 21400	20800 (2505.0MHz), 21100 (2535.0MHz), 21400 (2565.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset
		20825 to 21375	20825 (2507.5MHz), 21100 (2535.0MHz), 21375 (2562.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset
		20850 to 21350	20850 (2510.0MHz), 21100 (2535.0MHz), 21350 (2560.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Below 1GHz	20850 to 21350	20850 (2510.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	20775 to 21425	20775 (2502.5MHz), 21100 (2535.0MHz), 21425 (2567.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		20850 to 21350	20850 (2510.0MHz), 21100 (2535.0MHz), 21350 (2560.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM, 64QAM and 256QAM, measured value of QPSK is higher than 16QAM, 64QAM and 256QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under QPSK mode only.

LTE Band 12

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	ERP	23017 to 23173	23017 (699.7MHz), 23095 (707.5MHz), 23173 (715.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 2 RB Offset 1 RB / 5 RB Offset 3 RB / 0 RB Offset 3 RB / 1 RB Offset 3 RB / 3 RB Offset 6 RB / 0 RB Offset
		23025 to 23165	23025 (700.5MHz), 23095 (707.5MHz), 23165 (714.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 7 RB Offset 1 RB / 14 RB Offset 8 RB / 0 RB Offset 8 RB / 3 RB Offset 8 RB / 7 RB Offset 15 RB / 0 RB Offset
		23035 to 23155	23035 (701.5MHz), 23095 (707.5MHz), 23155 (713.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		23060 to 23130	23060 (704.0MHz), 23095 (707.5MHz), 23130 (711.0 MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 12 RB Offset 25 RB / 25 RB Offset 50 RB / 0 RB Offset
-	Modulation Characteristics	23060 to 23130	23095 (707.5MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	50 RB / 0 RB Offset
-	Frequency Stability	23017 to 23173	23017 (699.7MHz), 23173 (715.3MHz)	1.4MHz	QPSK	6 RB / 0 RB Offset
		23025 to 23165	23025 (700.5MHz), 23165 (714.5MHz)	3MHz	QPSK	15 RB / 0 RB Offset
		23035 to 23155	23035 (701.5MHz), 23155 (713.5MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		23060 to 23130	23060 (704.0MHz), 23130 (711.0MHz)	10MHz	QPSK	50 RB / 0 RB Offset
-	Emission Bandwidth	23017 to 23173	23017 (699.7MHz), 23095 (707.5MHz), 23173 (715.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	6 RB / 0 RB Offset
		23025 to 23165	23025 (700.5MHz), 23095 (707.5MHz), 23165 (714.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	15 RB / 0 RB Offset
		23035 to 23155	23035 (701.5MHz), 23095 (707.5MHz), 23155 (713.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	25 RB / 0 RB Offset
		23060 to 23130	23060 (704.0MHz), 23095 (707.5MHz), 23130 (711.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	50 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Band Edge	23017 to 23173	23017 (699.7MHz), 23173 (715.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset 1 RB / 5 RB Offset 6 RB / 0 RB Offset
		23025 to 23165	23025 (700.5MHz), 23165 (714.5MHz)	3MHz	QPSK	1 RB / 0 RB Offset 1 RB / 14 RB Offset 15 RB / 0 RB Offset
		23035 to 23155	23035 (701.5MHz), 23155 (713.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		23060 to 23130	23060 (704.0MHz), 23130 (711.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
-	Peak to Average Ratio	23017 to 23173	23017 (699.7MHz), 23095 (707.5MHz), 23173 (715.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 2 RB Offset
		23025 to 23165	23025 (700.5MHz), 23095 (707.5MHz), 23165 (714.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 7 RB Offset
		23035 to 23155	23035 (701.5MHz), 23095 (707.5MHz), 23155 (713.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 12 RB Offset
		23060 to 23130	23060 (704.0MHz), 23095 (707.5MHz), 23130 (711.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
-	Conducted Emission	23017 to 23173	23017 (699.7MHz), 23095 (707.5MHz), 23173 (715.3MHz)	1.4MHz	QPSK	1 RB / 2 RB Offset
		23025 to 23165	23025 (700.5MHz), 23095 (707.5MHz), 23165 (714.5MHz)	3MHz	QPSK	1 RB / 7 RB Offset
		23035 to 23155	23035 (701.5MHz), 23095 (707.5MHz), 23155 (713.5MHz)	5MHz	QPSK	1 RB / 12 RB Offset
		23060 to 23130	23060 (704.0MHz), 23095 (707.5MHz), 23130 (711.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission Below 1GHz	23035 to 23155	23035 (701.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	23017 to 23173	23017 (699.7MHz), 23095 (707.5MHz), 23173 (715.3MHz)	1.4MHz	QPSK	1 RB / 2 RB Offset
		23035 to 23155	23035 (701.5MHz), 23095 (707.5MHz), 23155 (713.5MHz)	5MHz	QPSK	1 RB / 12 RB Offset
		23060 to 23130	23060 (704.0MHz), 23095 (707.5MHz), 23130 (711.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM, 64QAM and 256QAM, measured value of QPSK is higher than 16QAM, 64QAM and 256QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under QPSK mode only.

LTE Band 13

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	ERP	23205 to 23255	23205 (779.5MHz), 23230 (782.0MHz), 23255 (784.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		23230	23230 (782.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 12 RB Offset 25 RB / 25 RB Offset 50 RB / 0 RB Offset
-	Modulation Characteristics	23230	23230 (782.0MHz),	10MHz	QPSK / 16QAM / 64QAM / 256QAM	50 RB / 0 RB Offset
-	Frequency Stability	23205 to 23255	23205 (779.5MHz), 23255 (784.5MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		23230	23230 (782.0MHz),	10MHz	QPSK	50 RB / 0 RB Offset
-	Emission Bandwidth	23205 to 23255	23205 (779.5MHz), 23230 (782.0MHz), 23255 (784.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	25 RB / 0 RB Offset
		23230	23230 (782.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	50 RB / 0 RB Offset
-	Band Edge	23205 to 23255	23205 (779.5MHz), 23255 (784.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		23230	23230 (782.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
-	Peak to Average Ratio	23205 to 23255	23205 (779.5MHz), 23230 (782.0MHz), 23255 (784.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		23230	23230 (782.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
-	Conducted Emission	23205 to 23255	23205 (779.5MHz), 23230 (782.0MHz), 23255 (784.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		23230	23230 (782.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission Below 1GHz	23205 to 23255	23205 (779.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	23205 to 23255	23205 (779.5MHz), 23230 (782.0MHz), 23255 (784.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		23230	23230 (782.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM, 64QAM and 256QAM, measured value of QPSK is higher than 16QAM, 64QAM and 256QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under QPSK mode only.

LTE Band 38

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	EIRP	37775 to 38225	37775 (2572.5MHz), 38000 (2595.0MHz), 38225 (2617.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		37800 to 38200	37800 (2575.0MHz), 38000 (2595.0MHz), 38200 (2615.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 12 RB Offset 25 RB / 25 RB Offset 50 RB / 0 RB Offset
		37825 to 38175	37825 (2577.5MHz), 38000 (2595.0MHz), 38175 (2612.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 37 RB Offset 1 RB / 74 RB Offset 36 RB / 0 RB Offset 36 RB / 19 RB Offset 36 RB / 39 RB Offset 75 RB / 0 RB Offset
		37850 to 38150	37850 (2580.0MHz), 38000 (2595.0MHz), 38150 (2610.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 50 RB Offset 1 RB / 99 RB Offset 50 RB / 0 RB Offset 50 RB / 25 RB Offset 50 RB / 50 RB Offset 100 RB / 0 RB Offset
-	Modulation Characteristics	37850 to 38150	38000 (2595.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset
-	Frequency Stability	37775 to 38225	37775 (2572.5MHz), 38225 (2617.5MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		37800 to 38200	37800 (2575.0MHz), 38200 (2615.0MHz)	10MHz	QPSK	50 RB / 0 RB Offset
		37825 to 38175	37825 (2577.5MHz), 38175 (2612.5MHz)	15MHz	QPSK	75 RB / 0 RB Offset
		37850 to 38150	37850 (2580.0MHz), 38150 (2610.0MHz)	20MHz	QPSK	100 RB / 0 RB Offset
-	Emission Bandwidth	37775 to 38225	37775 (2572.5MHz), 38000 (2595.0MHz), 38225 (2617.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	25 RB / 0 RB Offset
		37800 to 38200	37800 (2575.0MHz), 38000 (2595.0MHz), 38200 (2615.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	50 RB / 0 RB Offset
		37825 to 38175	37825 (2577.5MHz), 38000 (2595.0MHz), 38175 (2612.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	75 RB / 0 RB Offset
		37850 to 38150	37850 (2580.0MHz), 38000 (2595.0MHz), 38150 (2610.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Out-of-Band Emissions	37775 to 38225	37775 (2572.5MHz), 38225 (2617.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		37800 to 38200	37800 (2575.0MHz), 38200 (2615.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
		37825 to 38175	37825 (2577.5MHz), 38175 (2612.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 74 RB Offset 75 RB / 0 RB Offset
		37850 to 38150	37850 (2580.0MHz), 38150 (2610.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 99 RB Offset 100 RB / 0 RB Offset
-	Peak to Average Ratio	37775 to 38225	37775 (2572.5MHz), 38000 (2595.0MHz), 38225 (2617.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		37800 to 38200	37800 (2575.0MHz), 38000 (2595.0MHz), 38200 (2615.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		37825 to 38175	37825 (2577.5MHz), 38000 (2595.0MHz), 38175 (2612.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		37850 to 38150	37850 (2580.0MHz), 38000 (2595.0MHz), 38150 (2610.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
-	Conducted Emission	37775 to 38225	37775 (2572.5MHz), 38000 (2595.0MHz), 38225 (2617.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		37800 to 38200	37800 (2575.0MHz), 38000 (2595.0MHz), 38200 (2615.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset
		37825 to 38175	37825 (2577.5MHz), 38000 (2595.0MHz), 38175 (2612.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset
		37850 to 38150	37850 (2580.0MHz), 38000 (2595.0MHz), 38150 (2610.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Below 1GHz	37850 to 38150	38150 (2610.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	37775 to 38225	37775 (2572.5MHz), 38000 (2595.0MHz), 38225 (2617.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		37850 to 38150	37850 (2580.0MHz), 38000 (2595.0MHz), 38150 (2610.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM, 64QAM and 256QAM, measured value of QPSK is higher than 16QAM, 64QAM and 256QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under QPSK mode only.

LTE Band 41

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	EIRP	39675 to 41565	39675 (2498.5MHz), 40620 (2593.0MHz), 41565 (2687.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		39700 to 41540	39700 (2501.0MHz), 40620 (2593.0MHz), 41540 (2685.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 12 RB Offset 25 RB / 25 RB Offset 50 RB / 0 RB Offset
		39725 to 41515	39725 (2503.5MHz), 40620 (2593.0MHz), 41515 (2682.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 37 RB Offset 1 RB / 74 RB Offset 36 RB / 0 RB Offset 36 RB / 19 RB Offset 36 RB / 39 RB Offset 75 RB / 0 RB Offset
		39750 to 41490	39750 (2506.0MHz), 40620 (2593.0MHz), 41490 (2680.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 50 RB Offset 1 RB / 99 RB Offset 50 RB / 0 RB Offset 50 RB / 25 RB Offset 50 RB / 50 RB Offset 100 RB / 0 RB Offset
-	Modulation Characteristics	39750 to 41490	40620 (2593.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset
-	Frequency Stability	39675 to 41565	39675 (2498.5MHz), 41565 (2687.5MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		39700 to 41540	39700 (2501.0MHz), 41540 (2685.0MHz)	10MHz	QPSK	50 RB / 0 RB Offset
		39725 to 41515	39725 (2503.5MHz), 41515 (2682.5MHz)	15MHz	QPSK	75 RB / 0 RB Offset
		39750 to 41490	39750 (2506.0MHz), 41490 (2680.0MHz)	20MHz	QPSK	100 RB / 0 RB Offset
-	Emission Bandwidth	39675 to 41565	39675 (2498.5MHz), 40620 (2593.0MHz), 41565 (2687.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	25 RB / 0 RB Offset
		39700 to 41540	39700 (2501.0MHz), 40620 (2593.0MHz), 41540 (2685.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	50 RB / 0 RB Offset
		39725 to 41515	39725 (2503.5MHz), 40620 (2593.0MHz), 41515 (2682.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	75 RB / 0 RB Offset
		39750 to 41490	39750 (2506.0MHz), 40620 (2593.0MHz), 41490 (2680.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Out-of-Band Emissions	39675 to 41565	39675 (2498.5MHz), 41565 (2687.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		39700 to 41540	39700 (2501.0MHz), 41540 (2685.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
		39725 to 41515	39725 (2503.5MHz), 41515 (2682.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 74 RB Offset 75 RB / 0 RB Offset
		39750 to 41490	39750 (2506.0MHz), 41490 (2680.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 99 RB Offset 100 RB / 0 RB Offset
-	Peak to Average Ratio	39675 to 41565	39675 (2498.5MHz), 40620 (2593.0MHz), 41565 (2687.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		39700 to 41540	39700 (2501.0MHz), 40620 (2593.0MHz), 41540 (2685.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		39725 to 41515	39725 (2503.5MHz), 40620 (2593.0MHz), 41515 (2682.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		39750 to 41490	39750 (2506.0MHz), 40620 (2593.0MHz), 41490 (2680.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
-	Conducted Emission	39675 to 41565	39675 (2498.5MHz), 40620 (2593.0MHz), 41565 (2687.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		39700 to 41540	39700 (2501.0MHz), 40620 (2593.0MHz), 41540 (2685.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset
		39725 to 41515	39725 (2503.5MHz), 40620 (2593.0MHz), 41515 (2682.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset
		39750 to 41490	39750 (2506.0MHz), 40620 (2593.0MHz), 41490 (2680.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Below 1GHz	39750 to 41490	40620 (2593.0MHz)	5MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	39675 to 41565	39675 (2498.5MHz), 40620 (2593.0MHz), 41565 (2687.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		39750 to 41490	39750 (2506.0MHz), 40620 (2593.0MHz), 41490 (2680.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM, 64QAM and 256QAM, measured value of QPSK is higher than 16QAM, 64QAM and 256QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under QPSK mode only.

LTE Band 66

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	131979 to 132665	131979 (1710.7MHz), 132322 (1745.0MHz), 132665 (1779.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 2 RB Offset 1 RB / 5 RB Offset 3 RB / 0 RB Offset 3 RB / 1 RB Offset 3 RB / 3 RB Offset 6 RB / 0 RB Offset
		131987 to 132657	131987 (1711.5MHz), 132322 (1745.0MHz), 132657 (1778.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 7 RB Offset 1 RB / 14 RB Offset 8 RB / 0 RB Offset 8 RB / 3 RB Offset 8 RB / 7 RB Offset 15 RB / 0 RB Offset
		131997 to 132647	131997 (1712.5MHz), 132322 (1745.0MHz), 132647 (1777.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		132022 to 132622	132022 (1715.0MHz), 132322 (1745.0MHz), 132622 (1775.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 12 RB Offset 25 RB / 25 RB Offset 50 RB / 0 RB Offset
		132047 to 132597	132047 (1717.5MHz), 132322 (1745.0MHz), 132597 (1772.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 37 RB Offset 1 RB / 74 RB Offset 36 RB / 0 RB Offset 36 RB / 19 RB Offset 36 RB / 39 RB Offset 75 RB / 0 RB Offset
		132072 to 132572	132072 (1720.0MHz), 132322 (1745.0MHz), 132572 (1770.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 50 RB Offset 1 RB / 99 RB Offset 50 RB / 0 RB Offset 50 RB / 25 RB Offset 50 RB / 50 RB Offset 100 RB / 0 RB Offset
-	Modulation Characteristics	132072 to 132572	132322 (1745.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Frequency Stability	131979 to 132665	131979 (1710.7MHz), 132665 (1779.3MHz)	1.4MHz	QPSK	6 RB / 0 RB Offset
		131987 to 132657	131987 (1711.5MHz), 132657 (1778.5MHz)	3MHz	QPSK	15 RB / 0 RB Offset
		131997 to 132647	131997 (1712.5MHz), 132647 (1777.5MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		132022 to 132622	132022 (1715.0MHz), 132622 (1775.0MHz)	10MHz	QPSK	50 RB / 0 RB Offset
		132047 to 132597	132047 (1717.5MHz), 132597 (1772.5MHz)	15MHz	QPSK	75 RB / 0 RB Offset
		132072 to 132572	132072 (1720.0MHz), 132572 (1770.0MHz)	20MHz	QPSK	100 RB / 0 RB Offset
-	Emission Bandwidth	131979 to 132665	131979 (1710.7MHz), 132322 (1745.0MHz), 132665 (1779.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	6 RB / 0RB Offset
		131987 to 132657	131987 (1711.5MHz), 132322 (1745.0MHz), 132657 (1778.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	15 RB / 0RB Offset
		131997 to 132647	131997 (1712.5MHz), 132322 (1745.0MHz), 132647 (1777.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	25RB / 0RB Offset
		132022 to 132622	132022 (1715.0MHz), 132322 (1745.0MHz), 132622 (1775.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	50RB / 0RB Offset
		132047 to 132597	132047 (1717.5MHz), 132322 (1745.0MHz), 132597 (1772.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	75 RB / 0 RB Offset
		132072 to 132572	132072 (1720.0MHz), 132322 (1745.0MHz), 132572 (1770.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset
-	Band Edge	131979 to 132665	131979 (1710.7MHz), 132665 (1779.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset 1 RB / 5 RB Offset 6 RB / 0 RB Offset
		131987 to 132657	131987 (1711.5MHz), 132657 (1778.5MHz)	3MHz	QPSK	1 RB / 0 RB Offset 1 RB / 14 RB Offset 15 RB / 0 RB Offset
		131997 to 132647	131997 (1712.5MHz), 132647 (1777.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		132022 to 132622	132022 (1715.0MHz), 132622 (1775.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
		132047 to 132597	132047 (1717.5MHz), 132597 (1772.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 74 RB Offset 75 RB / 0 RB Offset
		132072 to 132572	132072 (1720.0MHz), 132572 (1770.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 99 RB Offset 100 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Peak to Average Ratio	131979 to 132665	131979 (1710.7MHz), 132322 (1745.0MHz), 132665 (1779.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	3 RB / 0 RB Offset
		131987 to 132657	131987 (1711.5MHz), 132322 (1745.0MHz), 132657 (1778.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		131997 to 132647	131997 (1712.5MHz), 132322 (1745.0MHz), 132647 (1777.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		132022 to 132622	132022 (1715.0MHz), 132322 (1745.0MHz), 132622 (1775.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		132047 to 132597	132047 (1717.5MHz), 132322 (1745.0MHz), 132597 (1772.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		132072 to 132572	132072 (1720.0MHz), 132322 (1745.0MHz), 132572 (1770.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
-	Conducted Emission	131979 to 132665	131979 (1710.7MHz), 132322 (1745.0MHz), 132665 (1779.3MHz)	1.4MHz	QPSK	3 RB / 0 RB Offset
		131987 to 132657	131987 (1711.5MHz), 132322 (1745.0MHz), 132657 (1778.5MHz)	3MHz	QPSK	1 RB / 0 RB Offset
		131997 to 132647	131997 (1712.5MHz), 132322 (1745.0MHz), 132647 (1777.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		132022 to 132622	132022 (1715.0MHz), 132322 (1745.0MHz), 132622 (1775.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset
		132047 to 132597	132047 (1717.5MHz), 132322 (1745.0MHz), 132597 (1772.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132072 (1720.0MHz), 132322 (1745.0MHz), 132572 (1770.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission Below 1GHz	132072 to 132572	132322 (1745.0MHz)	20MHz	QPSK	3 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	131979 to 132665	131979 (1710.7MHz), 132322 (1745.0MHz), 132665 (1779.3MHz)	1.4MHz	QPSK	3 RB / 0 RB Offset
		131997 to 132647	131997 (1712.5MHz), 132322 (1745.0MHz), 132647 (1777.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132072 (1720.0MHz), 132322 (1745.0MHz), 132572 (1770.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM, 64QAM and 256QAM, measured value of QPSK is higher than 16QAM, 64QAM and 256QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under QPSK mode only.

LTE Band 71

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	ERP	133147 to 133447	133147 (665.5MHz), 133297 (680.5MHz), 133447 (695.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		133172 to 133422	133172 (668.0MHz), 133297 (680.5MHz), 133422 (693.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 12 RB Offset 25 RB / 25 RB Offset 50 RB / 0 RB Offset
		133197 to 133397	133197 (670.5MHz), 133297 (680.5MHz), 133397 (690.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 37 RB Offset 1 RB / 74 RB Offset 36 RB / 0 RB Offset 36 RB / 19 RB Offset 36 RB / 39 RB Offset 75 RB / 0 RB Offset
		133222 to 133372	133222 (673.0MHz), 133297 (680.5MHz), 133372 (688.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 50 RB Offset 1 RB / 99 RB Offset 50 RB / 0 RB Offset 50 RB / 25 RB Offset 50 RB / 50 RB Offset 100 RB / 0 RB Offset
-	Modulation Characteristics	133222 to 133372	133297 (680.5MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset
-	Frequency Stability	133147 to 133447	133147 (665.5MHz), 133447 (695.5MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		133172 to 133422	133172 (668.0MHz), 133422 (693.0MHz)	10MHz	QPSK	50 RB / 0 RB Offset
		133197 to 133397	133197 (670.5MHz), 133397 (690.5MHz)	15MHz	QPSK	75 RB / 0 RB Offset
		133222 to 133372	133222 (673.0MHz), 133372 (688.0MHz)	20MHz	QPSK	100 RB / 0 RB Offset
-	Emission Bandwidth	133147 to 133447	133147 (665.5MHz), 133297 (680.5MHz), 133447 (695.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	25 RB / 0 RB Offset
		133172 to 133422	133172 (668.0MHz), 133297 (680.5MHz), 133422 (693.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	50 RB / 0 RB Offset
		133197 to 133397	133197 (670.5MHz), 133297 (680.5MHz), 133397 (690.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	75 RB / 0 RB Offset
		133222 to 133372	133222 (673.0MHz), 133297 (680.5MHz), 133372 (688.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Band Edge	133147 to 133447	133147 (665.5MHz), 133447 (695.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		133172 to 133422	133172 (668.0MHz), 133422 (693.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
		133197 to 133397	133197 (670.5MHz), 133397 (690.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 74 RB Offset 75 RB / 0 RB Offset
		133222 to 133372	133222 (673.0MHz), 133372 (688.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 99 RB Offset 100 RB / 0 RB Offset
-	Peak to Average Ratio	133147 to 133447	133147 (665.5MHz), 133297 (680.5MHz), 133447 (695.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		133172 to 133422	133172 (668.0MHz), 133297 (680.5MHz), 133422 (693.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		133197 to 133397	133197 (670.5MHz), 133297 (680.5MHz), 133397 (690.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		133222 to 133372	133222 (673.0MHz), 133297 (680.5MHz), 133372 (688.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
-	Conducted Emission	133147 to 133447	133147 (665.5MHz), 133297 (680.5MHz), 133447 (695.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		133172 to 133422	133172 (668.0MHz), 133297 (680.5MHz), 133422 (693.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset
		133197 to 133397	133197 (670.5MHz), 133297 (680.5MHz), 133397 (690.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset
		133222 to 133372	133222 (673.0MHz), 133297 (680.5MHz), 133372 (688.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Below 1GHz	133147 to 133447	133447 (695.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	133147 to 133447	133147 (665.5MHz), 133297 (680.5MHz), 133447 (695.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		133222 to 133372	133222 (673.0MHz), 133297 (680.5MHz), 133372 (688.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM, 64QAM and 256QAM, measured value of QPSK is higher than 16QAM, 64QAM and 256QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under QPSK mode only.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
EIRP / ERP	25deg. C, 60%RH	120Vac, 60Hz	James Yang
Modulation Characteristics	25deg. C, 60%RH	120Vac, 60Hz	James Yang
Frequency Stability	25deg. C, 60%RH	3.85Vdc	James Yang
Occupied Bandwidth	25deg. C, 60%RH	120Vac, 60Hz	James Yang
Band Edge	25deg. C, 60%RH	120Vac, 60Hz	James Yang
Peak To Average Ratio	25deg. C, 60%RH	120Vac, 60Hz	James Yang
Conducted Emission	25deg. C, 60%RH	120Vac, 60Hz	Willy Cheng
Radiated Emission	23deg. C, 65%RH, 22deg. C, 66%RH, 22deg. C, 68%RH	120Vac, 60Hz	Jones Chang, Rex Wang, Greg Lin

3.4 EUT Operating Conditions

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

3.5 General Description of Applied Standards and References

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

Test Standard:

FCC 47 CFR Part 2

FCC 47 CFR Part 27

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

References Test Guidance:

KDB 971168 D01 Power Meas License Digital Systems v03r01

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

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

For WCDMA Band 4, LTE Band 4, LTE Band 66:
Mobile / Portable station are limited to 1 watts e.i.r.p.

For LTE Band 12, LTE Band 13, LTE Band 71:

Control and mobile stations in the 698-746 MHz, 746-757 MHz, 787-788 MHz and 805-806 MHz band are limited to 30 watts ERP.

Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink, 746-757 MHz, 787-788 MHz and 805-806 MHz band are limited to 3 watts ERP.

For LTE Band 7, LTE Band 38, LTE Band 41:

Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

4.1.2 Test Procedures

Conducted Power Measurement:

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

Maximum EIRP / ERP

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation as follows:

$$\text{EIRP} = P_{\text{Meas}} + G_T$$

$$\text{ERP} = P_{\text{Meas}} + G_T - 2.15$$

where

ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively
(expressed in the same units as P_{Meas} , e.g., dBm or dBW)

P_{Meas} measured transmitter output power or PSD, in dBm or dBW

G_T gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

4.1.3 Test Setup

Conducted Power Measurement:



4.1.4 Test Results

Conducted Output Power (dBm)

Band	WCDMA IV		
TX Channel	1312	1413	1513
Frequency	1712.4	1732.6	1752.6
RMC 12.2K	23.22	23.17	23.19
HSDPA Subtest-1	22.23	22.21	22.20
HSDPA Subtest-2	22.19	22.17	22.18
HSDPA Subtest-3	21.79	21.72	21.76
HSDPA Subtest-4	21.72	21.70	21.69
DC-HSDPA Subtest-1	22.10	22.08	22.07
DC-HSDPA Subtest-2	22.06	22.04	22.06
DC-HSDPA Subtest-3	21.61	21.59	21.63
DC-HSDPA Subtest-4	21.55	21.57	21.56
HSUPA Subtest-1	23.00	22.92	22.88
HSUPA Subtest-2	20.59	20.57	20.55
HSUPA Subtest-3	21.45	21.44	21.47
HSUPA Subtest-4	20.14	20.05	20.14
HSUPA Subtest-5	23.20	23.11	22.93
HSPA+ Subtest-1	19.64	19.55	19.64

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20050	20175	20300
		Frequency (MHz)		1720	1732.5	1745
20M	QPSK	1	0	23.36	23.41	23.42
		1	50	23.31	23.39	23.36
		1	99	23.37	23.27	23.24
		50	0	22.43	22.46	22.56
		50	25	22.51	22.41	22.38
		50	50	22.46	22.36	22.33
		100	0	22.28	22.31	22.41
20M	16QAM	1	0	22.63	22.53	22.50
		1	50	22.58	22.48	22.45
		1	99	22.56	22.46	22.43
		50	0	21.48	21.38	21.35
		50	25	21.43	21.33	21.30
		50	50	21.36	21.26	21.23
		100	0	21.34	21.24	21.21
20M	64QAM	1	0	21.61	21.51	21.48
		1	50	21.58	21.48	21.45
		1	99	21.52	21.42	21.39
		50	0	20.44	20.34	20.31
		50	25	20.56	20.46	20.43
		50	50	20.49	20.39	20.36
		100	0	20.46	20.36	20.33
20M	256QAM	1	0	18.68	18.58	18.55
		1	50	18.64	18.54	18.51
		1	99	18.57	18.47	18.44
		50	0	18.47	18.37	18.34
		50	25	18.54	18.44	18.41
		50	50	18.44	18.34	18.31
		100	0	18.41	18.31	18.28

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20025	20175	20325
		Frequency (MHz)		1717.5	1732.5	1747.5
15M	QPSK	1	0	23.40	23.38	23.39
		1	37	23.38	23.36	23.33
		1	74	23.32	23.19	23.15
		36	0	22.51	22.45	22.38
		36	19	22.43	22.36	22.36
		36	39	22.45	22.35	22.32
		75	0	22.31	22.30	22.24
15M	16QAM	1	0	22.55	22.52	22.49
		1	37	22.53	22.41	22.41
		1	74	22.49	22.38	22.39
		36	0	21.40	21.33	21.30
		36	19	21.36	21.28	21.30
		36	39	21.35	21.23	21.17
		75	0	21.29	21.20	21.21
15M	64QAM	1	0	21.51	21.44	21.41
		1	37	21.52	21.45	21.41
		1	74	21.43	21.39	21.39
		36	0	20.40	20.28	20.26
		36	19	20.51	20.42	20.35
		36	39	20.49	20.32	20.32
		75	0	20.46	20.30	20.26
15M	256QAM	1	0	18.65	18.48	18.46
		1	37	18.60	18.51	18.41
		1	74	18.51	18.43	18.36
		36	0	18.45	18.30	18.34
		36	19	18.47	18.35	18.35
		36	39	18.36	18.26	18.22
		75	0	18.31	18.23	18.19

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20000	20175	20350
		Frequency (MHz)		1715	1732.5	1750
10M	QPSK	1	0	23.41	23.39	23.32
		1	24	23.35	23.33	23.28
		1	49	23.30	23.22	23.20
		25	0	22.53	22.46	22.38
		25	12	22.47	22.33	22.31
		25	25	22.38	22.31	22.28
		50	0	22.39	22.29	22.25
10M	16QAM	1	0	22.60	22.51	22.47
		1	24	22.51	22.43	22.35
		1	49	22.56	22.37	22.43
		25	0	21.42	21.30	21.32
		25	12	21.41	21.30	21.22
		25	25	21.28	21.25	21.20
		50	0	21.24	21.23	21.11
10M	64QAM	1	0	21.53	21.45	21.48
		1	24	21.53	21.40	21.45
		1	49	21.49	21.35	21.37
		25	0	20.38	20.28	20.22
		25	12	20.48	20.43	20.38
		25	25	20.46	20.32	20.32
		50	0	20.40	20.28	20.30
10M	256QAM	1	0	18.59	18.57	18.46
		1	24	18.58	18.48	18.44
		1	49	18.54	18.47	18.43
		25	0	18.37	18.27	18.26
		25	12	18.53	18.37	18.41
		25	25	18.36	18.26	18.29
		50	0	18.36	18.29	18.18

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19975	20175	20375
		Frequency (MHz)		1712.5	1732.5	1752.5
5M	QPSK	1	0	23.33	23.34	23.33
		1	12	23.29	23.32	23.35
		1	24	23.31	23.21	23.16
		12	0	22.48	22.38	22.39
		12	6	22.42	22.36	22.35
		12	13	22.36	22.36	22.28
		25	0	22.36	22.24	22.18
5M	16QAM	1	0	22.53	22.51	22.41
		1	12	22.53	22.38	22.45
		1	24	22.46	22.40	22.34
		12	0	21.41	21.36	21.32
		12	6	21.36	21.28	21.24
		12	13	21.26	21.21	21.22
		25	0	21.30	21.19	21.11
5M	64QAM	1	0	21.54	21.50	21.46
		1	12	21.53	21.39	21.38
		1	24	21.47	21.41	21.39
		12	0	20.43	20.25	20.25
		12	6	20.47	20.44	20.39
		12	13	20.43	20.32	20.28
		25	0	20.36	20.27	20.28
5M	256QAM	1	0	18.60	18.51	18.46
		1	12	18.62	18.45	18.44
		1	24	18.55	18.41	18.36
		12	0	18.40	18.29	18.26
		12	6	18.51	18.34	18.38
		12	13	18.38	18.27	18.28
		25	0	18.31	18.23	18.26

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19965	20175	20385
		Frequency (MHz)		1711.5	1732.5	1753.5
3M	QPSK	1	0	23.38	23.40	23.37
		1	7	23.35	23.37	23.27
		1	14	23.37	23.27	23.15
		8	0	22.47	22.46	22.41
		8	3	22.46	22.41	22.28
		8	7	22.46	22.32	22.32
		15	0	22.32	22.23	22.23
3M	16QAM	1	0	22.63	22.51	22.45
		1	7	22.54	22.48	22.43
		1	14	22.46	22.36	22.43
		8	0	21.39	21.37	21.27
		8	3	21.40	21.29	21.29
		8	7	21.29	21.18	21.20
		15	0	21.32	21.21	21.20
3M	64QAM	1	0	21.60	21.51	21.44
		1	7	21.53	21.39	21.42
		1	14	21.46	21.35	21.31
		8	0	20.43	20.24	20.31
		8	3	20.54	20.46	20.34
		8	7	20.49	20.38	20.26
		15	0	20.41	20.33	20.29
3M	256QAM	1	0	18.64	18.49	18.45
		1	7	18.54	18.54	18.50
		1	14	18.49	18.37	18.35
		8	0	18.45	18.29	18.27
		8	3	18.49	18.39	18.34
		8	7	18.39	18.29	18.26
		15	0	18.35	18.24	18.26

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19957	20175	20393
		Frequency (MHz)		1710.7	1732.5	1754.3
1.4M	QPSK	1	0	23.39	23.35	23.39
		1	2	23.37	23.32	23.27
		1	5	23.34	23.23	23.19
		3	0	23.32	23.30	23.26
		3	1	23.29	23.19	23.14
		3	3	23.21	23.10	23.06
		6	0	22.38	22.26	22.26
1.4M	16QAM	1	0	22.59	22.50	22.45
		1	2	22.48	22.44	22.37
		1	5	22.55	22.44	22.37
		3	0	22.27	22.25	22.21
		3	1	22.24	22.14	22.09
		3	3	22.16	22.05	22.01
		6	0	21.31	21.24	21.19
1.4M	64QAM	1	0	21.55	21.45	21.41
		1	2	21.49	21.43	21.45
		1	5	21.49	21.36	21.35
		3	0	21.25	21.23	21.19
		3	1	21.22	21.12	21.07
		3	3	21.14	21.03	20.99
		6	0	20.37	20.33	20.28
1.4M	256QAM	1	0	18.62	18.51	18.54
		1	2	18.56	18.49	18.46
		1	5	18.52	18.47	18.40
		3	0	18.43	18.30	18.24
		3	1	18.44	18.41	18.33
		3	3	18.40	18.28	18.23
		6	0	18.37	18.23	18.28

LTE Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20850	21100	21350
		Frequency (MHz)		2510	2535	2560
20M	QPSK	1	0	22.84	22.81	22.83
		1	50	22.79	22.76	22.81
		1	99	22.72	22.71	22.78
		50	0	22.23	22.14	22.22
		50	25	22.17	22.09	21.98
		50	50	22.13	22.05	21.94
		100	0	22.11	22.03	21.92
20M	16QAM	1	0	22.16	22.08	21.97
		1	50	22.11	22.03	21.92
		1	99	22.08	22	21.89
		50	0	21.06	20.98	20.87
		50	25	21.03	20.95	20.84
		50	50	21.01	20.93	20.82
		100	0	20.87	20.79	20.68
20M	64QAM	1	0	21.07	20.99	20.88
		1	50	21.05	20.97	20.86
		1	99	21.03	20.95	20.84
		50	0	20.06	19.98	19.87
		50	25	20.04	19.96	19.85
		50	50	20.03	19.95	19.84
		100	0	20.01	19.93	19.82
20M	256QAM	1	0	18.21	18.13	18.02
		1	50	18.18	18.10	17.99
		1	99	18.15	18.07	17.96
		50	0	18.12	18.04	17.93
		50	25	18.14	18.06	17.95
		50	50	18.11	18.03	17.92
		100	0	18.07	17.99	17.88

LTE Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20825	21100	21375
		Frequency (MHz)		2507.5	2535	2562.5
15M	QPSK	1	0	22.80	22.76	22.76
		1	37	22.70	22.73	22.77
		1	74	22.62	22.65	22.71
		36	0	22.17	22.08	22.21
		36	19	22.14	22.03	21.93
		36	39	22.03	22.04	21.91
		75	0	22.11	22.00	21.87
15M	16QAM	1	0	22.14	22.02	21.92
		1	37	22.02	22.01	21.87
		1	74	22.07	21.93	21.85
		36	0	20.97	20.98	20.78
		36	19	20.98	20.86	20.80
		36	39	21.01	20.89	20.75
		75	0	20.79	20.78	20.67
15M	64QAM	1	0	21.07	20.92	20.84
		1	37	21.05	20.94	20.83
		1	74	20.94	20.93	20.78
		36	0	19.99	19.90	19.81
		36	19	20.01	19.90	19.78
		36	39	19.94	19.89	19.76
		75	0	19.98	19.87	19.76
15M	256QAM	1	0	18.12	18.09	18.02
		1	37	18.15	18.05	17.91
		1	74	18.06	18.06	17.88
		36	0	18.03	18.01	17.86
		36	19	18.10	18.02	17.93
		36	39	18.10	17.97	17.82
		75	0	17.98	17.91	17.86

LTE Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20800	21100	21400
		Frequency (MHz)		2505	2535	2565
10M	QPSK	1	0	22.75	22.74	22.80
		1	24	22.69	22.76	22.75
		1	49	22.72	22.69	22.69
		25	0	22.17	22.12	22.22
		25	12	22.16	22.03	21.90
		25	25	22.05	22.00	21.93
		50	0	22.08	22.00	21.84
10M	16QAM	1	0	22.13	21.99	21.90
		1	24	22.06	21.94	21.91
		1	49	22.06	21.98	21.87
		25	0	21.05	20.91	20.84
		25	12	20.97	20.88	20.74
		25	25	20.94	20.88	20.75
		50	0	20.81	20.73	20.64
10M	64QAM	1	0	20.99	20.91	20.88
		1	24	21.02	20.96	20.82
		1	49	21.02	20.91	20.82
		25	0	20.03	19.93	19.81
		25	12	20.03	19.95	19.80
		25	25	20.00	19.88	19.78
		50	0	19.97	19.89	19.79
10M	256QAM	1	0	18.16	18.03	17.92
		1	24	18.15	18.10	17.94
		1	49	18.13	18.02	17.92
		25	0	18.12	18.00	17.90
		25	12	18.13	17.98	17.85
		25	25	18.11	17.97	17.88
		50	0	17.99	17.98	17.82

LTE Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20775	21100	21425
		Frequency (MHz)		2502.5	2535	2567.5
5M	QPSK	1	0	22.76	22.72	22.74
		1	12	22.71	22.75	22.74
		1	24	22.70	22.68	22.70
		12	0	22.17	22.10	22.12
		12	6	22.13	22.09	21.91
		12	13	22.05	21.96	21.94
		25	0	22.07	21.95	21.82
5M	16QAM	1	0	22.13	22.02	21.89
		1	12	22.01	21.93	21.87
		1	24	22.06	21.99	21.80
		12	0	21.02	20.93	20.77
		12	6	20.98	20.92	20.77
		12	13	20.95	20.85	20.75
		25	0	20.84	20.74	20.60
5M	64QAM	1	0	21.04	20.92	20.78
		1	12	21.01	20.88	20.85
		1	24	21.03	20.94	20.74
		12	0	19.96	19.90	19.84
		12	6	20.00	19.88	19.79
		12	13	20.00	19.85	19.78
		25	0	19.97	19.87	19.72
5M	256QAM	1	0	18.16	18.12	17.99
		1	12	18.09	18.09	17.95
		1	24	18.14	18.06	17.91
		12	0	18.02	17.96	17.90
		12	6	18.06	17.96	17.87
		12	13	18.02	18.02	17.87
		25	0	18.03	17.92	17.79

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23060	23095	23130
		Frequency (MHz)		704	707.5	711
10M	QPSK	1	0	24.07	24.03	24.03
		1	24	23.89	24	23.98
		1	49	24.04	23.97	23.95
		25	0	23.35	23.34	23.24
		25	12	23.31	23.24	23.22
		25	25	23.24	23.17	23.15
		50	0	23.23	23.22	23.12
10M	16QAM	1	0	23.27	23.2	23.18
		1	24	23.24	23.17	23.15
		1	49	23.15	23.08	23.06
		25	0	21.99	21.92	21.9
		25	12	21.98	21.91	21.89
		25	25	21.92	21.85	21.83
		50	0	21.91	21.84	21.82
10M	64QAM	1	0	21.94	21.87	21.85
		1	24	21.91	21.84	21.82
		1	49	21.87	21.80	21.78
		25	0	20.98	20.91	20.89
		25	12	20.96	20.89	20.87
		25	25	20.93	20.86	20.84
		50	0	20.91	20.84	20.82
10M	256QAM	1	0	18.67	18.60	18.58
		1	24	18.65	18.58	18.56
		1	49	18.64	18.57	18.55
		25	0	18.63	18.56	18.54
		25	12	18.59	18.52	18.50
		25	25	18.57	18.50	18.48
		50	0	18.54	18.47	18.45

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23035	23095	23155
		Frequency (MHz)		701.5	707.5	713.5
5M	QPSK	1	0	24.02	23.99	23.98
		1	12	24.01	23.93	23.95
		1	24	24.02	23.87	23.86
		12	0	23.33	23.17	23.20
		12	6	23.26	23.24	23.22
		12	13	23.19	23.09	23.08
		25	0	23.14	23.10	23.06
5M	16QAM	1	0	23.26	23.11	23.16
		1	12	23.22	23.16	23.08
		1	24	23.11	23.01	23.04
		12	0	21.89	21.84	21.84
		12	6	21.89	21.91	21.82
		12	13	21.88	21.76	21.81
		25	0	21.83	21.80	21.75
5M	64QAM	1	0	21.87	21.80	21.80
		1	12	21.89	21.75	21.75
		1	24	21.82	21.78	21.77
		12	0	20.90	20.88	20.82
		12	6	20.90	20.88	20.77
		12	13	20.93	20.78	20.76
		25	0	20.91	20.77	20.80
5M	256QAM	1	0	18.58	18.57	18.57
		1	12	18.65	18.58	18.54
		1	24	18.54	18.50	18.53
		12	0	18.58	18.48	18.47
		12	6	18.50	18.46	18.46
		12	13	18.51	18.40	18.45
		25	0	18.49	18.37	18.45

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23025	23095	23165
		Frequency (MHz)		700.5	707.5	714.5
3M	QPSK	1	0	24.03	24.01	24.02
		1	7	24.02	23.99	23.91
		1	14	23.96	23.91	23.85
		8	0	23.25	23.20	23.20
		8	3	23.21	23.21	23.17
		8	7	23.16	23.07	23.09
		15	0	23.12	23.06	23.06
3M	16QAM	1	0	23.27	23.16	23.18
		1	7	23.16	23.11	23.08
		1	14	23.08	23.00	23.05
		8	0	21.89	21.88	21.80
		8	3	21.97	21.83	21.82
		8	7	21.82	21.84	21.79
		15	0	21.87	21.79	21.82
3M	64QAM	1	0	21.92	21.85	21.75
		1	7	21.90	21.77	21.75
		1	14	21.77	21.72	21.70
		8	0	20.94	20.87	20.88
		8	3	20.89	20.82	20.77
		8	7	20.87	20.78	20.75
		15	0	20.81	20.81	20.82
3M	256QAM	1	0	18.63	18.58	18.54
		1	7	18.60	18.53	18.50
		1	14	18.59	18.53	18.49
		8	0	18.54	18.51	18.44
		8	3	18.59	18.51	18.50
		8	7	18.53	18.45	18.46
		15	0	18.46	18.37	18.44

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23017	23095	23173
		Frequency (MHz)		699.7	707.5	715.3
1.4M	QPSK	1	0	24.06	23.96	24.01
		1	2	24.05	23.96	23.88
		1	5	24.00	23.93	23.86
		3	0	23.93	23.83	23.88
		3	1	23.92	23.83	23.75
		3	3	23.87	23.80	23.73
		6	0	23.21	23.13	23.06
1.4M	16QAM	1	0	23.19	23.11	23.18
		1	2	23.23	23.17	23.08
		1	5	23.08	22.98	23.05
		3	0	22.90	22.80	22.85
		3	1	22.89	22.80	22.72
		3	3	22.84	22.77	22.70
		6	0	21.86	21.81	21.74
1.4M	64QAM	1	0	21.86	21.83	21.77
		1	2	21.83	21.78	21.73
		1	5	21.79	21.77	21.78
		3	0	21.85	21.75	21.80
		3	1	21.84	21.75	21.67
		3	3	21.79	21.72	21.65
		6	0	20.88	20.76	20.80
1.4M	256QAM	1	0	18.65	18.51	18.55
		1	2	18.64	18.53	18.56
		1	5	18.61	18.54	18.55
		3	0	18.57	18.56	18.46
		3	1	18.54	18.46	18.44
		3	3	18.47	18.47	18.38
		6	0	18.52	18.45	18.45

LTE Band 13				
BW	MCS Index	RB Size	RB Offset	Low
		Channel		23230
		Frequency (MHz)		782
10M	QPSK	1	0	23.55
		1	24	23.42
		1	49	23.68
		25	0	22.85
		25	12	22.73
		25	25	22.66
		50	0	22.64
10M	16QAM	1	0	22.78
		1	24	22.74
		1	49	22.66
		25	0	21.77
		25	12	21.75
		25	25	21.72
		50	0	21.67
10M	64QAM	1	0	21.74
		1	24	21.72
		1	49	21.69
		25	0	20.67
		25	12	20.65
		25	25	20.64
		50	0	20.63
10M	256QAM	1	0	18.74
		1	24	18.71
		1	49	18.65
		25	0	18.58
		25	12	18.56
		25	25	18.54
		50	0	18.52

LTE Band 13						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23205	23230	23255
		Frequency (MHz)		779.5	782	784.5
5M	QPSK	1	0	23.61	23.49	23.42
		1	12	23.64	23.36	23.29
		1	24	23.58	23.62	23.55
		12	0	22.80	22.79	22.72
		12	6	22.58	22.67	22.60
		12	13	22.54	22.60	22.53
		25	0	22.51	22.58	22.51
5M	16QAM	1	0	22.68	22.72	22.65
		1	12	22.68	22.68	22.61
		1	24	22.59	22.60	22.53
		12	0	21.62	21.71	21.64
		12	6	21.63	21.69	21.62
		12	13	21.59	21.66	21.59
		25	0	21.52	21.61	21.54
5M	64QAM	1	0	21.59	21.68	21.61
		1	12	21.64	21.66	21.59
		1	24	21.56	21.63	21.56
		12	0	20.57	20.61	20.54
		12	6	20.53	20.59	20.52
		12	13	20.50	20.58	20.51
		25	0	20.50	20.57	20.50
5M	256QAM	1	0	18.62	18.68	18.61
		1	12	18.59	18.65	18.58
		1	24	18.58	18.59	18.52
		12	0	18.48	18.52	18.45
		12	6	18.50	18.50	18.43
		12	13	18.44	18.48	18.41
		25	0	18.45	18.46	18.39

LTE Band 38						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		37850	38000	38150
		Frequency (MHz)		2580	2595	2610
20M	QPSK	1	0	23.58	23.09	23.10
		1	50	23.56	23.46	23.43
		1	99	23.48	23.38	23.35
		50	0	23.02	22.92	22.89
		50	25	22.97	22.87	22.84
		50	50	22.87	22.77	22.74
		100	0	22.76	22.66	22.63
20M	16QAM	1	0	22.69	22.59	22.56
		1	50	22.59	22.49	22.46
		1	99	22.49	22.39	22.36
		50	0	21.46	21.36	21.33
		50	25	21.38	21.28	21.25
		50	50	21.37	21.27	21.24
		100	0	21.24	21.14	21.11
20M	64QAM	1	0	21.42	21.32	21.29
		1	50	21.41	21.31	21.28
		1	99	21.38	21.28	21.25
		50	0	20.74	20.64	20.61
		50	25	20.71	20.61	20.58
		50	50	20.67	20.57	20.54
		100	0	20.63	20.53	20.50
20M	256QAM	1	0	18.66	18.56	18.53
		1	50	18.65	18.55	18.52
		1	99	18.64	18.54	18.51
		50	0	18.62	18.52	18.49
		50	25	18.59	18.49	18.46
		50	50	18.57	18.47	18.44
		100	0	18.55	18.45	18.42

LTE Band 38						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		37825	38000	38175
		Frequency (MHz)		2577.5	2595	2612.5
15M	QPSK	1	0	23.56	23.45	23.39
		1	37	23.51	23.43	23.33
		1	74	23.41	23.37	23.32
		36	0	23.01	22.88	22.84
		36	19	22.95	22.83	22.76
		36	39	22.87	22.74	22.66
		75	0	22.74	22.57	22.60
15M	16QAM	1	0	22.66	22.53	22.50
		1	37	22.54	22.44	22.43
		1	74	22.41	22.30	22.36
		36	0	21.43	21.32	21.24
		36	19	21.38	21.20	21.16
		36	39	21.34	21.27	21.23
		75	0	21.14	21.12	21.03
15M	64QAM	1	0	21.39	21.25	21.25
		1	37	21.38	21.21	21.23
		1	74	21.37	21.25	21.15
		36	0	20.73	20.57	20.61
		36	19	20.68	20.57	20.49
		36	39	20.66	20.47	20.45
		75	0	20.63	20.46	20.41
15M	256QAM	1	0	18.58	18.55	18.48
		1	37	18.56	18.55	18.43
		1	74	18.60	18.46	18.41
		36	0	18.52	18.44	18.40
		36	19	18.50	18.42	18.37
		36	39	18.49	18.42	18.37
		75	0	18.45	18.41	18.36

LTE Band 38						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		37800	38000	38200
		Frequency (MHz)		2575	2595	2615
10M	QPSK	1	0	23.56	23.48	23.47
		1	24	23.52	23.39	23.33
		1	49	23.46	23.38	23.28
		25	0	22.98	22.82	22.89
		25	12	22.94	22.82	22.77
		25	25	22.78	22.72	22.64
		50	0	22.74	22.59	22.59
10M	16QAM	1	0	22.61	22.54	22.55
		1	24	22.57	22.39	22.46
		1	49	22.43	22.37	22.31
		25	0	21.42	21.33	21.31
		25	12	21.33	21.20	21.19
		25	25	21.32	21.27	21.22
		50	0	21.18	21.06	21.01
10M	64QAM	1	0	21.38	21.32	21.21
		1	24	21.31	21.22	21.26
		1	49	21.30	21.21	21.25
		25	0	20.70	20.62	20.55
		25	12	20.69	20.61	20.50
		25	25	20.64	20.52	20.48
		50	0	20.59	20.53	20.40
10M	256QAM	1	0	18.62	18.54	18.51
		1	24	18.62	18.48	18.50
		1	49	18.57	18.51	18.50
		25	0	18.61	18.49	18.48
		25	12	18.57	18.43	18.43
		25	25	18.53	18.42	18.41
		50	0	18.55	18.35	18.34

LTE Band 38						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		37775	38000	38225
		Frequency (MHz)		2572.5	2595	2617.5
5M	QPSK	1	0	23.55	23.44	23.42
		1	12	23.54	23.40	23.33
		1	24	23.43	23.28	23.35
		12	0	22.98	22.89	22.88
		12	6	22.92	22.86	22.84
		12	13	22.79	22.76	22.72
		25	0	22.67	22.61	22.59
5M	16QAM	1	0	22.67	22.55	22.56
		1	12	22.52	22.45	22.38
		1	24	22.39	22.29	22.34
		12	0	21.43	21.32	21.30
		12	6	21.30	21.21	21.20
		12	13	21.32	21.19	21.20
		25	0	21.22	21.08	21.03
5M	64QAM	1	0	21.35	21.32	21.21
		1	12	21.41	21.26	21.25
		1	24	21.28	21.20	21.15
		12	0	20.65	20.56	20.53
		12	6	20.68	20.59	20.51
		12	13	20.63	20.48	20.49
		25	0	20.53	20.48	20.44
5M	256QAM	1	0	18.61	18.53	18.43
		1	12	18.57	18.50	18.51
		1	24	18.57	18.49	18.46
		12	0	18.55	18.52	18.44
		12	6	18.52	18.42	18.41
		12	13	18.55	18.39	18.36
		25	0	18.48	18.39	18.41

LTE Band 41 (Power Class 2)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		39750	40620	41490
		Frequency (MHz)		2506	2593	2680
20M	QPSK	1	0	26.48	26.71	26.49
		1	50	26.41	26.69	26.46
		1	99	26.18	26.65	26.42
		50	0	25.32	25.85	25.62
		50	25	25.34	25.83	25.60
		50	50	25.35	25.79	25.56
		100	0	25.53	25.86	25.63
20M	16QAM	1	0	25.50	25.88	25.65
		1	50	25.48	25.87	25.64
		1	99	25.52	25.85	25.62
		50	0	24.33	24.89	24.66
		50	25	24.55	24.85	24.62
		50	50	24.31	24.83	24.60
		100	0	24.17	24.89	24.66
20M	64QAM	1	0	24.02	24.80	24.57
		1	50	24.10	24.73	24.50
		1	99	24.01	24.70	24.47
		50	0	23.73	23.91	23.68
		50	25	23.30	23.88	23.65
		50	50	23.45	23.84	23.61
		100	0	23.29	23.85	23.62
20M	256QAM	1	0	21.60	21.85	21.62
		1	50	21.23	21.81	21.58
		1	99	21.50	21.74	21.51
		50	0	21.47	21.69	21.46
		50	25	21.43	21.65	21.42
		50	50	21.48	21.63	21.40
		100	0	21.27	21.65	21.42

LTE Band 41 (Power Class 2)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		39725	40620	41515
		Frequency (MHz)		2503.5	2593	2682.5
15M	QPSK	1	0	26.21	26.71	26.68
		1	37	26.13	26.69	26.61
		1	74	26.28	26.56	26.61
		36	0	25.42	25.75	25.77
		36	19	25.20	25.75	25.77
		36	39	25.33	25.78	25.75
		75	0	25.13	25.85	25.79
15M	16QAM	1	0	25.46	25.86	25.82
		1	37	25.37	25.78	25.84
		1	74	25.40	25.82	25.74
		36	0	24.35	24.81	24.77
		36	19	24.25	24.80	24.77
		36	39	24.38	24.79	24.78
		75	0	24.25	24.80	24.79
15M	64QAM	1	0	24.12	24.79	24.67
		1	37	24.15	24.66	24.66
		1	74	23.91	24.61	24.62
		36	0	23.54	23.83	23.78
		36	19	23.40	23.86	23.78
		36	39	23.37	23.80	23.77
		75	0	23.36	23.77	23.73
15M	256QAM	1	0	21.58	21.75	21.72
		1	37	21.21	21.70	21.63
		1	74	21.20	21.67	21.64
		36	0	21.46	21.82	21.80
		36	19	21.37	21.82	21.79
		36	39	21.16	21.75	21.71
		75	0	21.00	21.83	21.76

LTE Band 41 (Power Class 2)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		39700	40620	41540
		Frequency (MHz)		2501	2593	2685
10M	QPSK	1	0	26.45	26.67	26.73
		1	24	26.41	26.65	26.60
		1	49	26.17	26.56	26.52
		25	0	25.56	25.75	25.78
		25	12	25.26	25.75	25.70
		25	25	25.22	25.73	25.67
		50	0	25.42	25.81	25.77
10M	16QAM	1	0	25.32	25.84	25.78
		1	24	25.34	25.79	25.84
		1	49	25.28	25.81	25.79
		25	0	24.36	24.87	24.86
		25	12	24.22	24.81	24.72
		25	25	24.27	24.80	24.80
		50	0	24.14	24.88	24.86
10M	64QAM	1	0	23.94	24.70	24.67
		1	24	24.13	24.68	24.69
		1	49	23.85	24.62	24.61
		25	0	23.43	23.88	23.80
		25	12	23.25	23.84	23.77
		25	25	23.51	23.80	23.73
		50	0	23.47	23.77	23.74
10M	256QAM	1	0	21.58	21.70	21.68
		1	24	21.18	21.64	21.64
		1	49	21.40	21.70	21.57
		25	0	21.38	21.85	21.84
		25	12	21.17	21.87	21.77
		25	25	21.41	21.82	21.79
		50	0	20.97	21.75	21.80

LTE Band 41 (Power Class 2)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		39675	40620	41565
		Frequency (MHz)		2498.5	2593	2687.5
5M	QPSK	1	0	26.33	26.73	26.72
		1	12	26.16	26.61	26.57
		1	24	26.16	26.57	26.58
		12	0	25.42	25.75	25.72
		12	6	25.44	25.74	25.75
		12	13	25.42	25.69	25.73
		25	0	25.30	25.77	25.77
5M	16QAM	1	0	25.33	25.86	25.80
		1	12	25.25	25.86	25.78
		1	24	25.25	25.83	25.73
		12	0	24.32	24.82	24.83
		12	6	24.50	24.81	24.74
		12	13	24.11	24.80	24.70
		25	0	24.09	24.89	24.78
5M	64QAM	1	0	24.05	24.77	24.77
		1	12	24.08	24.65	24.69
		1	24	23.97	24.69	24.66
		12	0	23.53	23.89	23.79
		12	6	23.59	23.79	23.79
		12	13	23.35	23.82	23.81
		25	0	23.36	23.81	23.74
5M	256QAM	1	0	21.31	21.75	21.72
		1	12	21.28	21.69	21.70
		1	24	21.21	21.67	21.57
		12	0	21.46	21.86	21.85
		12	6	21.14	21.88	21.81
		12	13	21.08	21.76	21.80
		25	0	21.27	21.80	21.80

LTE Band 41 (Power Class 2)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		39675	40620	41565
		Frequency (MHz)		2498.5	2593	2687.5
5M	QPSK	1	0	26.33	26.73	26.72
		1	12	26.16	26.61	26.57
		1	24	26.16	26.57	26.58
		12	0	25.42	25.75	25.72
		12	6	25.44	25.74	25.75
		12	13	25.42	25.69	25.73
		25	0	25.30	25.77	25.77
5M	16QAM	1	0	25.33	25.86	25.80
		1	12	25.25	25.86	25.78
		1	24	25.25	25.83	25.73
		12	0	24.32	24.82	24.83
		12	6	24.50	24.81	24.74
		12	13	24.11	24.80	24.70
		25	0	24.09	24.89	24.78
5M	64QAM	1	0	24.05	24.77	24.77
		1	12	24.08	24.65	24.69
		1	24	23.97	24.69	24.66
		12	0	23.53	23.89	23.79
		12	6	23.59	23.79	23.79
		12	13	23.35	23.82	23.81
		25	0	23.36	23.81	23.74
5M	256QAM	1	0	21.31	21.75	21.72
		1	12	21.28	21.69	21.70
		1	24	21.21	21.67	21.57
		12	0	21.46	21.86	21.85
		12	6	21.14	21.88	21.81
		12	13	21.08	21.76	21.80
		25	0	21.27	21.80	21.80

LTE Band 41 (Power Class 3)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		39750	40620	41490
		Frequency (MHz)		2506	2593	2680
20M	QPSK	1	0	23.38	23.31	23.29
		1	50	23.31	23.28	23.21
		1	99	23.16	23.13	23.07
		50	0	22.40	22.37	22.22
		50	25	22.38	22.35	22.19
		50	50	22.33	22.30	22.13
		100	0	22.31	22.28	22.23
20M	16QAM	1	0	22.38	22.35	22.69
		1	50	22.36	22.33	22.59
		1	99	22.30	22.27	22.49
		50	0	21.41	21.38	21.46
		50	25	21.33	21.30	21.38
		50	50	21.29	21.26	21.37
		100	0	21.25	21.22	21.24
20M	64QAM	1	0	21.10	21.07	21.42
		1	50	21.08	21.05	21.41
		1	99	20.99	20.96	21.38
		50	0	20.51	20.48	20.74
		50	25	20.38	20.35	20.71
		50	50	20.33	20.30	20.67
		100	0	20.27	20.24	20.63
20M	256QAM	1	0	18.38	18.35	18.53
		1	50	18.31	18.28	18.52
		1	99	18.28	18.25	18.51
		50	0	18.25	18.22	18.49
		50	25	18.31	18.28	18.46
		50	50	18.26	18.23	18.44
		100	0	18.15	18.12	18.42

LTE Band 41 (Power Class 3)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		39725	40620	41515
		Frequency (MHz)		2503.5	2593	2682.5
15M	QPSK	1	0	23.28	23.32	23.22
		1	37	23.31	23.28	23.17
		1	74	23.14	23.04	23.01
		36	0	22.40	22.34	22.22
		36	19	22.31	22.35	22.17
		36	39	22.23	22.29	22.20
		75	0	22.22	22.24	22.19
15M	16QAM	1	0	22.30	22.33	22.23
		1	37	22.32	22.25	22.18
		1	74	22.26	22.17	22.14
		36	0	21.33	21.38	21.22
		36	19	21.28	21.29	21.22
		36	39	21.19	21.18	21.17
		75	0	21.22	21.19	21.04
15M	64QAM	1	0	21.02	21.04	20.98
		1	37	21.05	21.00	20.96
		1	74	20.90	20.89	20.81
		36	0	20.45	20.40	20.33
		36	19	20.28	20.26	20.20
		36	39	20.31	20.21	20.16
		75	0	20.23	20.14	20.15
15M	256QAM	1	0	18.30	18.35	18.22
		1	37	18.23	18.19	18.13
		1	74	18.24	18.20	18.17
		36	0	18.22	18.13	18.04
		36	19	18.29	18.26	18.14
		36	39	18.26	18.16	18.07
		75	0	18.11	18.02	17.96

LTE Band 41 (Power Class 3)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		39700	40620	41540
		Frequency (MHz)		2501	2593	2685
10M	QPSK	1	0	23.29	23.25	23.23
		1	24	23.23	23.25	23.22
		1	49	23.07	23.11	23.05
		25	0	22.34	22.33	22.24
		25	12	22.38	22.33	22.23
		25	25	22.27	22.26	22.23
		50	0	22.31	22.18	22.15
10M	16QAM	1	0	22.29	22.25	22.26
		1	24	22.35	22.28	22.28
		1	49	22.29	22.23	22.19
		25	0	21.31	21.30	21.30
		25	12	21.23	21.22	21.25
		25	25	21.27	21.17	21.19
		50	0	21.15	21.15	21.17
10M	64QAM	1	0	21.00	20.97	20.93
		1	24	21.03	21.00	20.93
		1	49	20.91	20.86	20.84
		25	0	20.45	20.38	20.37
		25	12	20.35	20.30	20.26
		25	25	20.31	20.20	20.19
		50	0	20.20	20.18	20.11
10M	256QAM	1	0	18.36	18.27	18.31
		1	24	18.30	18.20	18.14
		1	49	18.23	18.24	18.11
		25	0	18.22	18.16	18.08
		25	12	18.21	18.22	18.17
		25	25	18.23	18.23	18.10
		50	0	18.09	18.10	18.04

LTE Band 41 (Power Class 3)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		39675	40620	41565
		Frequency (MHz)		2498.5	2593	2687.5
5M	QPSK	1	0	23.34	23.31	23.22
		1	12	23.24	23.24	23.19
		1	24	23.11	23.10	23.01
		12	0	22.30	22.32	22.27
		12	6	22.36	22.34	22.29
		12	13	22.23	22.29	22.20
		25	0	22.30	22.21	22.23
5M	16QAM	1	0	22.35	22.34	22.29
		1	12	22.35	22.25	22.30
		1	24	22.30	22.24	22.17
		12	0	21.33	21.37	21.33
		12	6	21.26	21.22	21.21
		12	13	21.22	21.24	21.18
		25	0	21.25	21.22	21.12
5M	64QAM	1	0	21.10	20.98	21.02
		1	12	21.08	21.01	20.93
		1	24	20.92	20.87	20.86
		12	0	20.51	20.47	20.39
		12	6	20.35	20.31	20.25
		12	13	20.28	20.20	20.18
		25	0	20.19	20.18	20.18
5M	256QAM	1	0	18.34	18.31	18.28
		1	12	18.21	18.18	18.23
		1	24	18.19	18.15	18.23
		12	0	18.22	18.15	18.12
		12	6	18.28	18.25	18.22
		12	13	18.16	18.22	18.16
		25	0	18.13	18.06	18.06

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132072	132322	132572
		Frequency (MHz)		1720	1745	1770
20M	QPSK	1	0	23.52	23.48	23.36
		1	50	23.51	23.46	23.34
		1	99	23.49	23.44	23.32
		50	0	22.72	22.67	22.55
		50	25	22.68	22.63	22.51
		50	50	22.66	22.61	22.49
		100	0	22.56	22.51	22.39
20M	16QAM	1	0	22.65	22.60	22.48
		1	50	22.64	22.59	22.47
		1	99	22.63	22.58	22.46
		50	0	21.56	21.51	21.39
		50	25	21.52	21.47	21.35
		50	50	21.48	21.43	21.31
		100	0	21.42	21.37	21.25
20M	64QAM	1	0	21.43	21.38	21.26
		1	50	21.41	21.36	21.24
		1	99	21.37	21.32	21.20
		50	0	20.67	20.62	20.50
		50	25	20.63	20.58	20.46
		50	50	20.58	20.53	20.41
		100	0	20.56	20.51	20.39
20M	256QAM	1	0	18.74	18.69	18.57
		1	50	18.72	18.67	18.55
		1	99	18.67	18.62	18.50
		50	0	18.66	18.61	18.49
		50	25	18.64	18.59	18.47
		50	50	18.63	18.58	18.46
		100	0	18.62	18.57	18.45

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132047	132322	132597
		Frequency (MHz)		1717.5	1745	1772.5
15M	QPSK	1	0	23.44	23.47	23.36
		1	37	23.43	23.43	23.29
		1	74	23.44	23.42	23.26
		36	0	22.62	22.65	22.50
		36	19	22.67	22.59	22.49
		36	39	22.57	22.55	22.45
		75	0	22.50	22.50	22.30
15M	16QAM	1	0	22.60	22.53	22.41
		1	37	22.63	22.52	22.40
		1	74	22.55	22.58	22.40
		36	0	21.53	21.47	21.30
		36	19	21.52	21.42	21.35
		36	39	21.44	21.43	21.24
		75	0	21.34	21.37	21.23
15M	64QAM	1	0	21.39	21.38	21.25
		1	37	21.35	21.34	21.22
		1	74	21.27	21.22	21.20
		36	0	20.63	20.57	20.50
		36	19	20.58	20.51	20.44
		36	39	20.58	20.48	20.39
		75	0	20.50	20.48	20.34
15M	256QAM	1	0	18.69	18.62	18.51
		1	37	18.65	18.65	18.49
		1	74	18.66	18.62	18.50
		36	0	18.63	18.60	18.39
		36	19	18.60	18.51	18.41
		36	39	18.58	18.56	18.40
		75	0	18.59	18.55	18.43

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132022	132322	132622
		Frequency (MHz)		1715	1745	1775
10M	QPSK	1	0	23.45	23.44	23.29
		1	24	23.42	23.41	23.25
		1	49	23.41	23.39	23.30
		25	0	22.63	22.63	22.55
		25	12	22.63	22.59	22.51
		25	25	22.64	22.57	22.39
		50	0	22.54	22.44	22.31
10M	16QAM	1	0	22.64	22.57	22.48
		1	24	22.59	22.55	22.47
		1	49	22.56	22.51	22.39
		25	0	21.50	21.49	21.32
		25	12	21.43	21.40	21.31
		25	25	21.47	21.35	21.27
		50	0	21.32	21.34	21.19
10M	64QAM	1	0	21.34	21.35	21.23
		1	24	21.32	21.31	21.16
		1	49	21.27	21.24	21.14
		25	0	20.63	20.55	20.46
		25	12	20.55	20.50	20.43
		25	25	20.52	20.46	20.34
		50	0	20.51	20.43	20.30
10M	256QAM	1	0	18.64	18.62	18.48
		1	24	18.71	18.64	18.52
		1	49	18.62	18.56	18.41
		25	0	18.66	18.51	18.45
		25	12	18.57	18.51	18.42
		25	25	18.63	18.57	18.41
		50	0	18.53	18.56	18.40

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		131997	132322	132647
		Frequency (MHz)		1712.5	1745	1777.5
5M	QPSK	1	0	23.48	23.44	23.34
		1	12	23.44	23.41	23.27
		1	24	23.45	23.43	23.27
		12	0	22.63	22.61	22.55
		12	6	22.66	22.56	22.43
		12	13	22.58	22.56	22.43
		25	0	22.56	22.45	22.39
5M	16QAM	1	0	22.63	22.50	22.43
		1	12	22.63	22.58	22.39
		1	24	22.55	22.53	22.45
		12	0	21.46	21.49	21.34
		12	6	21.52	21.47	21.34
		12	13	21.40	21.35	21.21
		25	0	21.39	21.37	21.25
5M	64QAM	1	0	21.34	21.36	21.21
		1	12	21.39	21.32	21.21
		1	24	21.33	21.22	21.12
		12	0	20.65	20.58	20.48
		12	6	20.54	20.50	20.39
		12	13	20.51	20.44	20.32
		25	0	20.52	20.47	20.39
5M	256QAM	1	0	18.67	18.69	18.51
		1	12	18.66	18.59	18.52
		1	24	18.61	18.60	18.45
		12	0	18.66	18.58	18.48
		12	6	18.55	18.57	18.38
		12	13	18.57	18.57	18.42
		25	0	18.56	18.48	18.38

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		131987	132322	132657
		Frequency (MHz)		1711.5	1745	1778.5
3M	QPSK	1	0	23.47	23.41	23.35
		1	7	23.46	23.40	23.32
		1	14	23.45	23.44	23.25
		8	0	22.67	22.65	22.51
		8	3	22.61	22.54	22.41
		8	7	22.60	22.57	22.40
		15	0	22.51	22.41	22.35
3M	16QAM	1	0	22.58	22.57	22.39
		1	7	22.57	22.54	22.38
		1	14	22.61	22.48	22.40
		8	0	21.51	21.43	21.33
		8	3	21.52	21.44	21.29
		8	7	21.41	21.40	21.27
		15	0	21.35	21.36	21.23
3M	64QAM	1	0	21.36	21.31	21.26
		1	7	21.35	21.26	21.16
		1	14	21.36	21.30	21.11
		8	0	20.62	20.58	20.48
		8	3	20.59	20.52	20.38
		8	7	20.56	20.47	20.34
		15	0	20.48	20.49	20.31
3M	256QAM	1	0	18.74	18.61	18.52
		1	7	18.65	18.57	18.53
		1	14	18.66	18.56	18.41
		8	0	18.64	18.51	18.49
		8	3	18.64	18.53	18.40
		8	7	18.63	18.49	18.45
		15	0	18.59	18.57	18.35

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		131979	132322	132665
		Frequency (MHz)		1710.7	1745	1779.3
1.4M	QPSK	1	0	23.47	23.46	23.26
		1	2	23.41	23.43	23.31
		1	5	23.43	23.37	23.28
		3	0	23.39	23.33	23.13
		3	1	23.28	23.30	23.18
		3	3	23.30	23.24	23.15
		6	0	22.49	22.41	22.37
1.4M	16QAM	1	0	22.57	22.56	22.42
		1	2	22.63	22.58	22.43
		1	5	22.53	22.50	22.45
		3	0	22.33	22.27	22.07
		3	1	22.22	22.24	22.12
		3	3	22.24	22.18	22.09
		6	0	21.40	21.34	21.17
1.4M	64QAM	1	0	21.38	21.37	21.18
		1	2	21.32	21.27	21.24
		1	5	21.30	21.30	21.20
		3	0	21.31	21.25	21.05
		3	1	21.20	21.22	21.10
		3	3	21.22	21.16	21.07
		6	0	20.56	20.51	20.29
1.4M	256QAM	1	0	18.71	18.59	18.50
		1	2	18.71	18.62	18.53
		1	5	18.65	18.58	18.47
		3	0	18.59	18.52	18.45
		3	1	18.60	18.55	18.45
		3	3	18.63	18.53	18.45
		6	0	18.57	18.56	18.44

LTE Band 71						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		133222	133297	133372
		Frequency (MHz)		673	680.5	688
20M	QPSK	1	0	24.05	23.87	23.60
		1	50	23.47	23.40	23.37
		1	99	23.44	23.37	23.34
		50	0	22.52	22.45	22.42
		50	25	22.47	22.40	22.37
		50	50	22.43	22.36	22.33
		100	0	22.41	22.34	22.31
20M	16QAM	1	0	22.49	22.42	22.39
		1	50	22.47	22.40	22.37
		1	99	22.45	22.38	22.35
		50	0	21.53	21.46	21.43
		50	25	21.49	21.42	21.39
		50	50	21.44	21.37	21.34
		100	0	21.42	21.35	21.32
20M	64QAM	1	0	21.47	21.40	21.37
		1	50	21.46	21.39	21.36
		1	99	21.43	21.36	21.33
		50	0	20.45	20.38	20.35
		50	25	20.43	20.36	20.33
		50	50	20.41	20.34	20.31
		100	0	20.37	20.30	20.27
20M	256QAM	1	0	18.37	18.30	18.27
		1	50	18.34	18.27	18.24
		1	99	18.31	18.24	18.21
		50	0	18.24	18.17	18.14
		50	25	18.22	18.15	18.12
		50	50	18.23	18.16	18.13
		100	0	18.21	18.14	18.11

LTE Band 71						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		133197	133297	133397
		Frequency (MHz)		670.5	680.5	690.5
15M	QPSK	1	0	23.48	23.38	23.33
		1	37	23.47	23.30	23.34
		1	74	23.38	23.34	23.28
		36	0	22.48	22.41	22.33
		36	19	22.39	22.33	22.31
		36	39	22.39	22.33	22.29
		75	0	22.35	22.27	22.30
15M	16QAM	1	0	22.46	22.35	22.33
		1	37	22.47	22.40	22.30
		1	74	22.38	22.38	22.34
		36	0	21.45	21.44	21.39
		36	19	21.44	21.38	21.37
		36	39	21.39	21.31	21.31
		75	0	21.39	21.31	21.32
15M	64QAM	1	0	21.46	21.39	21.32
		1	37	21.36	21.35	21.35
		1	74	21.42	21.35	21.29
		36	0	20.39	20.30	20.34
		36	19	20.39	20.26	20.31
		36	39	20.39	20.34	20.27
		75	0	20.30	20.28	20.17
15M	256QAM	1	0	18.32	18.21	18.20
		1	37	18.29	18.18	18.21
		1	74	18.31	18.20	18.15
		36	0	18.18	18.12	18.09
		36	19	18.15	18.10	18.04
		36	39	18.21	18.09	18.04
		75	0	18.17	18.06	18.11

LTE Band 71						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		133172	133297	133422
		Frequency (MHz)		668	680.5	693
10M	QPSK	1	0	23.51	23.35	23.37
		1	24	23.37	23.33	23.34
		1	49	23.38	23.34	23.34
		25	0	22.42	22.43	22.37
		25	12	22.47	22.30	22.32
		25	25	22.40	22.29	22.23
		50	0	22.35	22.25	22.22
10M	16QAM	1	0	22.40	22.36	22.32
		1	24	22.39	22.33	22.35
		1	49	22.42	22.37	22.27
		25	0	21.46	21.41	21.40
		25	12	21.39	21.38	21.36
		25	25	21.34	21.32	21.30
		50	0	21.42	21.35	21.32
10M	64QAM	1	0	21.39	21.35	21.29
		1	24	21.38	21.36	21.35
		1	49	21.42	21.33	21.32
		25	0	20.44	20.29	20.31
		25	12	20.42	20.26	20.30
		25	25	20.38	20.28	20.25
		50	0	20.32	20.28	20.20
10M	256QAM	1	0	18.31	18.21	18.19
		1	24	18.26	18.17	18.14
		1	49	18.21	18.23	18.14
		25	0	18.24	18.17	18.04
		25	12	18.19	18.09	18.11
		25	25	18.19	18.11	18.06
		50	0	18.19	18.13	18.03

LTE Band 71						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		133147	133297	133447
		Frequency (MHz)		665.5	680.5	695.5
5M	QPSK	1	0	23.51	23.34	23.36
		1	12	23.38	23.38	23.34
		1	24	23.41	23.28	23.25
		12	0	22.51	22.45	22.41
		12	6	22.47	22.38	22.30
		12	13	22.42	22.29	22.32
		25	0	22.34	22.31	22.26
5M	16QAM	1	0	22.48	22.42	22.37
		1	12	22.42	22.30	22.35
		1	24	22.42	22.28	22.34
		12	0	21.46	21.36	21.42
		12	6	21.45	21.40	21.29
		12	13	21.39	21.30	21.28
		25	0	21.32	21.27	21.30
5M	64QAM	1	0	21.39	21.39	21.33
		1	12	21.37	21.36	21.35
		1	24	21.41	21.36	21.33
		12	0	20.45	20.31	20.32
		12	6	20.38	20.35	20.23
		12	13	20.33	20.34	20.23
		25	0	20.28	20.20	20.17
5M	256QAM	1	0	18.33	18.25	18.27
		1	12	18.27	18.18	18.14
		1	24	18.28	18.20	18.13
		12	0	18.21	18.17	18.09
		12	6	18.14	18.05	18.08
		12	13	18.18	18.15	18.09
		25	0	18.11	18.04	18.02

EIRP / ERP Power (dBm)

Band	WCDMA IV		
TX Channel	1312	1413	1513
Frequency	1712.4	1732.6	1752.6
RMC 12.2K	26.38	26.33	26.35
HSDPA Subtest-1	25.39	25.37	25.36
HSDPA Subtest-2	25.35	25.33	25.34
HSDPA Subtest-3	24.95	24.88	24.92
HSDPA Subtest-4	24.88	24.86	24.85
DC-HSDPA Subtest-1	25.26	25.24	25.23
DC-HSDPA Subtest-2	25.22	25.20	25.22
DC-HSDPA Subtest-3	24.77	24.75	24.79
DC-HSDPA Subtest-4	24.71	24.73	24.72
HSUPA Subtest-1	26.16	26.08	26.04
HSUPA Subtest-2	23.75	23.73	23.71
HSUPA Subtest-3	24.61	24.60	24.63
HSUPA Subtest-4	23.30	23.21	23.30
HSUPA Subtest-5	26.36	26.27	26.09
HSPA+ Subtest-1	22.80	22.71	22.80

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20050	20175	20300
		Frequency (MHz)		1720	1732.5	1745
20M	QPSK	1	0	26.52	26.57	26.58
		1	50	26.47	26.55	26.52
		1	99	26.53	26.43	26.40
		50	0	25.59	25.62	25.72
		50	25	25.67	25.57	25.54
		50	50	25.62	25.52	25.49
		100	0	25.44	25.47	25.57
20M	16QAM	1	0	25.79	25.69	25.66
		1	50	25.74	25.64	25.61
		1	99	25.72	25.62	25.59
		50	0	24.64	24.54	24.51
		50	25	24.59	24.49	24.46
		50	50	24.52	24.42	24.39
		100	0	24.50	24.40	24.37
20M	64QAM	1	0	24.77	24.67	24.64
		1	50	24.74	24.64	24.61
		1	99	24.68	24.58	24.55
		50	0	23.60	23.50	23.47
		50	25	23.72	23.62	23.59
		50	50	23.65	23.55	23.52
		100	0	23.62	23.52	23.49
20M	256QAM	1	0	21.84	21.74	21.71
		1	50	21.80	21.70	21.67
		1	99	21.73	21.63	21.60
		50	0	21.63	21.53	21.50
		50	25	21.70	21.60	21.57
		50	50	21.60	21.50	21.47
		100	0	21.57	21.47	21.44

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20025	20175	20325
		Frequency (MHz)		1717.5	1732.5	1747.5
15M	QPSK	1	0	26.56	26.54	26.55
		1	37	26.54	26.52	26.49
		1	74	26.48	26.35	26.31
		36	0	25.67	25.61	25.54
		36	19	25.59	25.52	25.52
		36	39	25.61	25.51	25.48
		75	0	25.47	25.46	25.40
15M	16QAM	1	0	25.71	25.68	25.65
		1	37	25.69	25.57	25.57
		1	74	25.65	25.54	25.55
		36	0	24.56	24.49	24.46
		36	19	24.52	24.44	24.46
		36	39	24.51	24.39	24.33
		75	0	24.45	24.36	24.37
15M	64QAM	1	0	24.67	24.60	24.57
		1	37	24.68	24.61	24.57
		1	74	24.59	24.55	24.55
		36	0	23.56	23.44	23.42
		36	19	23.67	23.58	23.51
		36	39	23.65	23.48	23.48
		75	0	23.62	23.46	23.42
15M	256QAM	1	0	21.81	21.64	21.62
		1	37	21.76	21.67	21.57
		1	74	21.67	21.59	21.52
		36	0	21.61	21.46	21.50
		36	19	21.63	21.51	21.51
		36	39	21.52	21.42	21.38
		75	0	21.47	21.39	21.35

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20000	20175	20350
		Frequency (MHz)		1715	1732.5	1750
10M	QPSK	1	0	26.57	26.55	26.48
		1	24	26.51	26.49	26.44
		1	49	26.46	26.38	26.36
		25	0	25.69	25.62	25.54
		25	12	25.63	25.49	25.47
		25	25	25.54	25.47	25.44
		50	0	25.55	25.45	25.41
10M	16QAM	1	0	25.76	25.67	25.63
		1	24	25.67	25.59	25.51
		1	49	25.72	25.53	25.59
		25	0	24.58	24.46	24.48
		25	12	24.57	24.46	24.38
		25	25	24.44	24.41	24.36
		50	0	24.40	24.39	24.27
10M	64QAM	1	0	24.69	24.61	24.64
		1	24	24.69	24.56	24.61
		1	49	24.65	24.51	24.53
		25	0	23.54	23.44	23.38
		25	12	23.64	23.59	23.54
		25	25	23.62	23.48	23.48
		50	0	23.56	23.44	23.46
10M	256QAM	1	0	21.75	21.73	21.62
		1	24	21.74	21.64	21.60
		1	49	21.70	21.63	21.59
		25	0	21.53	21.43	21.42
		25	12	21.69	21.53	21.57
		25	25	21.52	21.42	21.45
		50	0	21.52	21.45	21.34

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19975	20175	20375
		Frequency (MHz)		1712.5	1732.5	1752.5
5M	QPSK	1	0	26.49	26.50	26.49
		1	12	26.45	26.48	26.51
		1	24	26.47	26.37	26.32
		12	0	25.64	25.54	25.55
		12	6	25.58	25.52	25.51
		12	13	25.52	25.52	25.44
		25	0	25.52	25.40	25.34
5M	16QAM	1	0	25.69	25.67	25.57
		1	12	25.69	25.54	25.61
		1	24	25.62	25.56	25.50
		12	0	24.57	24.52	24.48
		12	6	24.52	24.44	24.40
		12	13	24.42	24.37	24.38
		25	0	24.46	24.35	24.27
5M	64QAM	1	0	24.70	24.66	24.62
		1	12	24.69	24.55	24.54
		1	24	24.63	24.57	24.55
		12	0	23.59	23.41	23.41
		12	6	23.63	23.60	23.55
		12	13	23.59	23.48	23.44
		25	0	23.52	23.43	23.44
5M	256QAM	1	0	21.76	21.67	21.62
		1	12	21.78	21.61	21.60
		1	24	21.71	21.57	21.52
		12	0	21.56	21.45	21.42
		12	6	21.67	21.50	21.54
		12	13	21.54	21.43	21.44
		25	0	21.47	21.39	21.42

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19965	20175	20385
		Frequency (MHz)		1711.5	1732.5	1753.5
3M	QPSK	1	0	26.54	26.56	26.53
		1	7	26.51	26.53	26.43
		1	14	26.53	26.43	26.31
		8	0	25.63	25.62	25.57
		8	3	25.62	25.57	25.44
		8	7	25.62	25.48	25.48
		15	0	25.48	25.39	25.39
3M	16QAM	1	0	25.79	25.67	25.61
		1	7	25.70	25.64	25.59
		1	14	25.62	25.52	25.59
		8	0	24.55	24.53	24.43
		8	3	24.56	24.45	24.45
		8	7	24.45	24.34	24.36
		15	0	24.48	24.37	24.36
3M	64QAM	1	0	24.76	24.67	24.60
		1	7	24.69	24.55	24.58
		1	14	24.62	24.51	24.47
		8	0	23.59	23.40	23.47
		8	3	23.70	23.62	23.50
		8	7	23.65	23.54	23.42
		15	0	23.57	23.49	23.45
3M	256QAM	1	0	21.80	21.65	21.61
		1	7	21.70	21.70	21.66
		1	14	21.65	21.53	21.51
		8	0	21.61	21.45	21.43
		8	3	21.65	21.55	21.50
		8	7	21.55	21.45	21.42
		15	0	21.51	21.40	21.42

LTE Band 4						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19957	20175	20393
		Frequency (MHz)		1710.7	1732.5	1754.3
1.4M	QPSK	1	0	26.55	26.51	26.55
		1	2	26.53	26.48	26.43
		1	5	26.50	26.39	26.35
		3	0	26.48	26.46	26.42
		3	1	26.45	26.35	26.30
		3	3	26.37	26.26	26.22
		6	0	25.54	25.42	25.42
1.4M	16QAM	1	0	25.75	25.66	25.61
		1	2	25.64	25.60	25.53
		1	5	25.71	25.60	25.53
		3	0	25.43	25.41	25.37
		3	1	25.40	25.30	25.25
		3	3	25.32	25.21	25.17
		6	0	24.47	24.40	24.35
1.4M	64QAM	1	0	24.71	24.61	24.57
		1	2	24.65	24.59	24.61
		1	5	24.65	24.52	24.51
		3	0	24.41	24.39	24.35
		3	1	24.38	24.28	24.23
		3	3	24.30	24.19	24.15
		6	0	23.53	23.49	23.44
1.4M	256QAM	1	0	21.78	21.67	21.70
		1	2	21.72	21.65	21.62
		1	5	21.68	21.63	21.56
		3	0	21.59	21.46	21.40
		3	1	21.60	21.57	21.49
		3	3	21.56	21.44	21.39
		6	0	21.53	21.39	21.44

LTE Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20850	21100	21350
		Frequency (MHz)		2510	2535	2560
20M	QPSK	1	0	23.99	23.96	23.98
		1	50	23.94	23.91	23.96
		1	99	23.87	23.86	23.93
		50	0	23.38	23.29	23.37
		50	25	23.32	23.24	23.13
		50	50	23.28	23.20	23.09
		100	0	23.26	23.18	23.07
20M	16QAM	1	0	23.31	23.23	23.12
		1	50	23.26	23.18	23.07
		1	99	23.23	23.15	23.04
		50	0	22.21	22.13	22.02
		50	25	22.18	22.10	21.99
		50	50	22.16	22.08	21.97
		100	0	22.02	21.94	21.83
20M	64QAM	1	0	22.22	22.14	22.03
		1	50	22.20	22.12	22.01
		1	99	22.18	22.10	21.99
		50	0	21.21	21.13	21.02
		50	25	21.19	21.11	21.00
		50	50	21.18	21.10	20.99
		100	0	21.16	21.08	20.97
20M	256QAM	1	0	19.36	19.28	19.17
		1	50	19.33	19.25	19.14
		1	99	19.30	19.22	19.11
		50	0	19.27	19.19	19.08
		50	25	19.29	19.21	19.10
		50	50	19.26	19.18	19.07
		100	0	19.22	19.14	19.03

LTE Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20825	21100	21375
		Frequency (MHz)		2507.5	2535	2562.5
15M	QPSK	1	0	23.95	23.91	23.91
		1	37	23.85	23.88	23.92
		1	74	23.77	23.80	23.86
		36	0	23.32	23.23	23.36
		36	19	23.29	23.18	23.08
		36	39	23.18	23.19	23.06
		75	0	23.26	23.15	23.02
15M	16QAM	1	0	23.29	23.17	23.07
		1	37	23.17	23.16	23.02
		1	74	23.22	23.08	23.00
		36	0	22.12	22.13	21.93
		36	19	22.13	22.01	21.95
		36	39	22.16	22.04	21.90
		75	0	21.94	21.93	21.82
15M	64QAM	1	0	22.22	22.07	21.99
		1	37	22.20	22.09	21.98
		1	74	22.09	22.08	21.93
		36	0	21.14	21.05	20.96
		36	19	21.16	21.05	20.93
		36	39	21.09	21.04	20.91
		75	0	21.13	21.02	20.91
15M	256QAM	1	0	19.27	19.24	19.17
		1	37	19.30	19.20	19.06
		1	74	19.21	19.21	19.03
		36	0	19.18	19.16	19.01
		36	19	19.25	19.17	19.08
		36	39	19.25	19.12	18.97
		75	0	19.13	19.06	19.01

LTE Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20800	21100	21400
		Frequency (MHz)		2505	2535	2565
10M	QPSK	1	0	23.90	23.89	23.95
		1	24	23.84	23.91	23.90
		1	49	23.87	23.84	23.84
		25	0	23.32	23.27	23.37
		25	12	23.31	23.18	23.05
		25	25	23.20	23.15	23.08
		50	0	23.23	23.15	22.99
10M	16QAM	1	0	23.28	23.14	23.05
		1	24	23.21	23.09	23.06
		1	49	23.21	23.13	23.02
		25	0	22.20	22.06	21.99
		25	12	22.12	22.03	21.89
		25	25	22.09	22.03	21.90
		50	0	21.96	21.88	21.79
10M	64QAM	1	0	22.14	22.06	22.03
		1	24	22.17	22.11	21.97
		1	49	22.17	22.06	21.97
		25	0	21.18	21.08	20.96
		25	12	21.18	21.10	20.95
		25	25	21.15	21.03	20.93
		50	0	21.12	21.04	20.94
10M	256QAM	1	0	19.31	19.18	19.07
		1	24	19.30	19.25	19.09
		1	49	19.28	19.17	19.07
		25	0	19.27	19.15	19.05
		25	12	19.28	19.13	19.00
		25	25	19.26	19.12	19.03
		50	0	19.14	19.13	18.97

LTE Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20775	21100	21425
		Frequency (MHz)		2502.5	2535	2567.5
5M	QPSK	1	0	23.91	23.87	23.89
		1	12	23.86	23.90	23.89
		1	24	23.85	23.83	23.85
		12	0	23.32	23.25	23.27
		12	6	23.28	23.24	23.06
		12	13	23.20	23.11	23.09
		25	0	23.22	23.10	22.97
5M	16QAM	1	0	23.28	23.17	23.04
		1	12	23.16	23.08	23.02
		1	24	23.21	23.14	22.95
		12	0	22.17	22.08	21.92
		12	6	22.13	22.07	21.92
		12	13	22.10	22.00	21.90
		25	0	21.99	21.89	21.75
5M	64QAM	1	0	22.19	22.07	21.93
		1	12	22.16	22.03	22.00
		1	24	22.18	22.09	21.89
		12	0	21.11	21.05	20.99
		12	6	21.15	21.03	20.94
		12	13	21.15	21.00	20.93
		25	0	21.12	21.02	20.87
5M	256QAM	1	0	19.31	19.27	19.14
		1	12	19.24	19.24	19.10
		1	24	19.29	19.21	19.06
		12	0	19.17	19.11	19.05
		12	6	19.21	19.11	19.02
		12	13	19.17	19.17	19.02
		25	0	19.18	19.07	18.94

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23060	23095	23130
		Frequency (MHz)		704	707.5	711
10M	QPSK	1	0	22.07	22.03	22.03
		1	24	21.89	22.00	21.98
		1	49	22.04	21.97	21.95
		25	0	21.35	21.34	21.24
		25	12	21.31	21.24	21.22
		25	25	21.24	21.17	21.15
		50	0	21.23	21.22	21.12
10M	16QAM	1	0	21.27	21.20	21.18
		1	24	21.24	21.17	21.15
		1	49	21.15	21.08	21.06
		25	0	19.99	19.92	19.90
		25	12	19.98	19.91	19.89
		25	25	19.92	19.85	19.83
		50	0	19.91	19.84	19.82
10M	64QAM	1	0	19.94	19.87	19.85
		1	24	19.91	19.84	19.82
		1	49	19.87	19.80	19.78
		25	0	18.98	18.91	18.89
		25	12	18.96	18.89	18.87
		25	25	18.93	18.86	18.84
		50	0	18.91	18.84	18.82
10M	256QAM	1	0	16.67	16.60	16.58
		1	24	16.65	16.58	16.56
		1	49	16.64	16.57	16.55
		25	0	16.63	16.56	16.54
		25	12	16.59	16.52	16.50
		25	25	16.57	16.50	16.48
		50	0	16.54	16.47	16.45

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23035	23095	23155
		Frequency (MHz)		701.5	707.5	713.5
5M	QPSK	1	0	22.02	21.99	21.98
		1	12	22.01	21.93	21.95
		1	24	22.02	21.87	21.86
		12	0	21.33	21.17	21.20
		12	6	21.26	21.24	21.22
		12	13	21.19	21.09	21.08
		25	0	21.14	21.10	21.06
5M	16QAM	1	0	21.26	21.11	21.16
		1	12	21.22	21.16	21.08
		1	24	21.11	21.01	21.04
		12	0	19.89	19.84	19.84
		12	6	19.89	19.91	19.82
		12	13	19.88	19.76	19.81
		25	0	19.83	19.80	19.75
5M	64QAM	1	0	19.87	19.80	19.80
		1	12	19.89	19.75	19.75
		1	24	19.82	19.78	19.77
		12	0	18.90	18.88	18.82
		12	6	18.90	18.88	18.77
		12	13	18.93	18.78	18.76
		25	0	18.91	18.77	18.80
5M	256QAM	1	0	16.58	16.57	16.57
		1	12	16.65	16.58	16.54
		1	24	16.54	16.50	16.53
		12	0	16.58	16.48	16.47
		12	6	16.50	16.46	16.46
		12	13	16.51	16.40	16.45
		25	0	16.49	16.37	16.45

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23025	23095	23165
		Frequency (MHz)		700.5	707.5	714.5
3M	QPSK	1	0	22.03	22.01	22.02
		1	7	22.02	21.99	21.91
		1	14	21.96	21.91	21.85
		8	0	21.25	21.20	21.20
		8	3	21.21	21.21	21.17
		8	7	21.16	21.07	21.09
		15	0	21.12	21.06	21.06
3M	16QAM	1	0	21.27	21.16	21.18
		1	7	21.16	21.11	21.08
		1	14	21.08	21.00	21.05
		8	0	19.89	19.88	19.80
		8	3	19.97	19.83	19.82
		8	7	19.82	19.84	19.79
		15	0	19.87	19.79	19.82
3M	64QAM	1	0	19.92	19.85	19.75
		1	7	19.90	19.77	19.75
		1	14	19.77	19.72	19.70
		8	0	18.94	18.87	18.88
		8	3	18.89	18.82	18.77
		8	7	18.87	18.78	18.75
		15	0	18.81	18.81	18.82
3M	256QAM	1	0	16.63	16.58	16.54
		1	7	16.60	16.53	16.50
		1	14	16.59	16.53	16.49
		8	0	16.54	16.51	16.44
		8	3	16.59	16.51	16.50
		8	7	16.53	16.45	16.46
		15	0	16.46	16.37	16.44

LTE Band 12						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23017	23095	23173
		Frequency (MHz)		699.7	707.5	715.3
1.4M	QPSK	1	0	22.06	21.96	22.01
		1	2	22.05	21.96	21.88
		1	5	22.00	21.93	21.86
		3	0	21.93	21.83	21.88
		3	1	21.92	21.83	21.75
		3	3	21.87	21.80	21.73
		6	0	21.21	21.13	21.06
1.4M	16QAM	1	0	21.19	21.11	21.18
		1	2	21.23	21.17	21.08
		1	5	21.08	20.98	21.05
		3	0	20.90	20.80	20.85
		3	1	20.89	20.80	20.72
		3	3	20.84	20.77	20.70
		6	0	19.86	19.81	19.74
1.4M	64QAM	1	0	19.86	19.83	19.77
		1	2	19.83	19.78	19.73
		1	5	19.79	19.77	19.78
		3	0	19.85	19.75	19.80
		3	1	19.84	19.75	19.67
		3	3	19.79	19.72	19.65
		6	0	18.88	18.76	18.80
1.4M	256QAM	1	0	16.65	16.51	16.55
		1	2	16.64	16.53	16.56
		1	5	16.61	16.54	16.55
		3	0	16.57	16.56	16.46
		3	1	16.54	16.46	16.44
		3	3	16.47	16.47	16.38
		6	0	16.52	16.45	16.45

LTE Band 13				
BW	MCS Index	RB Size	RB Offset	Low
		Channel		23230
		Frequency (MHz)		782
10M	QPSK	1	0	18.17
		1	24	18.04
		1	49	18.30
		25	0	17.47
		25	12	17.35
		25	25	17.28
		50	0	17.26
10M	16QAM	1	0	17.40
		1	24	17.36
		1	49	17.28
		25	0	16.39
		25	12	16.37
		25	25	16.34
		50	0	16.29
10M	64QAM	1	0	16.36
		1	24	16.34
		1	49	16.31
		25	0	15.29
		25	12	15.27
		25	25	15.26
		50	0	15.25
10M	256QAM	1	0	13.36
		1	24	13.33
		1	49	13.27
		25	0	13.20
		25	12	13.18
		25	25	13.16
		50	0	13.14

LTE Band 13						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23205	23230	23255
		Frequency (MHz)		779.5	782	784.5
5M	QPSK	1	0	18.23	18.11	18.04
		1	12	18.26	17.98	17.91
		1	24	18.20	18.24	18.17
		12	0	17.42	17.41	17.34
		12	6	17.20	17.29	17.22
		12	13	17.16	17.22	17.15
		25	0	17.13	17.20	17.13
5M	16QAM	1	0	17.30	17.34	17.27
		1	12	17.30	17.30	17.23
		1	24	17.21	17.22	17.15
		12	0	16.24	16.33	16.26
		12	6	16.25	16.31	16.24
		12	13	16.21	16.28	16.21
		25	0	16.14	16.23	16.16
5M	64QAM	1	0	16.21	16.30	16.23
		1	12	16.26	16.28	16.21
		1	24	16.18	16.25	16.18
		12	0	15.19	15.23	15.16
		12	6	15.15	15.21	15.14
		12	13	15.12	15.20	15.13
		25	0	15.12	15.19	15.12
5M	256QAM	1	0	13.24	13.30	13.23
		1	12	13.21	13.27	13.20
		1	24	13.20	13.21	13.14
		12	0	13.10	13.14	13.07
		12	6	13.12	13.12	13.05
		12	13	13.06	13.10	13.03
		25	0	13.07	13.08	13.01

LTE Band 38						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		37850	38000	38150
		Frequency (MHz)		2580	2595	2610
20M	QPSK	1	0	24.49	24.00	24.01
		1	50	24.47	24.37	24.34
		1	99	24.39	24.29	24.26
		50	0	23.93	23.83	23.80
		50	25	23.88	23.78	23.75
		50	50	23.78	23.68	23.65
		100	0	23.67	23.57	23.54
20M	16QAM	1	0	23.60	23.50	23.47
		1	50	23.50	23.40	23.37
		1	99	23.40	23.30	23.27
		50	0	22.37	22.27	22.24
		50	25	22.29	22.19	22.16
		50	50	22.28	22.18	22.15
		100	0	22.15	22.05	22.02
20M	64QAM	1	0	22.33	22.23	22.20
		1	50	22.32	22.22	22.19
		1	99	22.29	22.19	22.16
		50	0	21.65	21.55	21.52
		50	25	21.62	21.52	21.49
		50	50	21.58	21.48	21.45
		100	0	21.54	21.44	21.41
20M	256QAM	1	0	19.57	19.47	19.44
		1	50	19.56	19.46	19.43
		1	99	19.55	19.45	19.42
		50	0	19.53	19.43	19.40
		50	25	19.50	19.40	19.37
		50	50	19.48	19.38	19.35
		100	0	19.46	19.36	19.33

LTE Band 38						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		37825	38000	38175
		Frequency (MHz)		2577.5	2595	2612.5
15M	QPSK	1	0	24.47	24.36	24.30
		1	37	24.42	24.34	24.24
		1	74	24.32	24.28	24.23
		36	0	23.92	23.79	23.75
		36	19	23.86	23.74	23.67
		36	39	23.78	23.65	23.57
		75	0	23.65	23.48	23.51
15M	16QAM	1	0	23.57	23.44	23.41
		1	37	23.45	23.35	23.34
		1	74	23.32	23.21	23.27
		36	0	22.34	22.23	22.15
		36	19	22.29	22.11	22.07
		36	39	22.25	22.18	22.14
		75	0	22.05	22.03	21.94
15M	64QAM	1	0	22.30	22.16	22.16
		1	37	22.29	22.12	22.14
		1	74	22.28	22.16	22.06
		36	0	21.64	21.48	21.52
		36	19	21.59	21.48	21.40
		36	39	21.57	21.38	21.36
		75	0	21.54	21.37	21.32
15M	256QAM	1	0	19.49	19.46	19.39
		1	37	19.47	19.46	19.34
		1	74	19.51	19.37	19.32
		36	0	19.43	19.35	19.31
		36	19	19.41	19.33	19.28
		36	39	19.40	19.33	19.28
		75	0	19.36	19.32	19.27

LTE Band 38						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		37800	38000	38200
		Frequency (MHz)		2575	2595	2615
10M	QPSK	1	0	24.47	24.39	24.38
		1	24	24.43	24.30	24.24
		1	49	24.37	24.29	24.19
		25	0	23.89	23.73	23.80
		25	12	23.85	23.73	23.68
		25	25	23.69	23.63	23.55
		50	0	23.65	23.50	23.50
10M	16QAM	1	0	23.52	23.45	23.46
		1	24	23.48	23.30	23.37
		1	49	23.34	23.28	23.22
		25	0	22.33	22.24	22.22
		25	12	22.24	22.11	22.10
		25	25	22.23	22.18	22.13
		50	0	22.09	21.97	21.92
10M	64QAM	1	0	22.29	22.23	22.12
		1	24	22.22	22.13	22.17
		1	49	22.21	22.12	22.16
		25	0	21.61	21.53	21.46
		25	12	21.60	21.52	21.41
		25	25	21.55	21.43	21.39
		50	0	21.50	21.44	21.31
10M	256QAM	1	0	19.53	19.45	19.42
		1	24	19.53	19.39	19.41
		1	49	19.48	19.42	19.41
		25	0	19.52	19.40	19.39
		25	12	19.48	19.34	19.34
		25	25	19.44	19.33	19.32
		50	0	19.46	19.26	19.25

LTE Band 38						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		37775	38000	38225
		Frequency (MHz)		2572.5	2595	2617.5
5M	QPSK	1	0	24.46	24.35	24.33
		1	12	24.45	24.31	24.24
		1	24	24.34	24.19	24.26
		12	0	23.89	23.80	23.79
		12	6	23.83	23.77	23.75
		12	13	23.70	23.67	23.63
		25	0	23.58	23.52	23.50
5M	16QAM	1	0	23.58	23.46	23.47
		1	12	23.43	23.36	23.29
		1	24	23.30	23.20	23.25
		12	0	22.34	22.23	22.21
		12	6	22.21	22.12	22.11
		12	13	22.23	22.10	22.11
		25	0	22.13	21.99	21.94
5M	64QAM	1	0	22.26	22.23	22.12
		1	12	22.32	22.17	22.16
		1	24	22.19	22.11	22.06
		12	0	21.56	21.47	21.44
		12	6	21.59	21.50	21.42
		12	13	21.54	21.39	21.40
		25	0	21.44	21.39	21.35
5M	256QAM	1	0	19.52	19.44	19.34
		1	12	19.48	19.41	19.42
		1	24	19.48	19.40	19.37
		12	0	19.46	19.43	19.35
		12	6	19.43	19.33	19.32
		12	13	19.46	19.30	19.27
		25	0	19.39	19.30	19.32

LTE Band 41 (Power Class 2)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		39750	40620	41490
		Frequency (MHz)		2506	2593	2680
20M	QPSK	1	0	27.63	27.86	27.64
		1	50	27.56	27.84	27.61
		1	99	27.33	27.80	27.57
		50	0	26.47	27.00	26.77
		50	25	26.49	26.98	26.75
		50	50	26.50	26.94	26.71
		100	0	26.68	27.01	26.78
20M	16QAM	1	0	26.65	27.03	26.80
		1	50	26.63	27.02	26.79
		1	99	26.67	27.00	26.77
		50	0	25.48	26.04	25.81
		50	25	25.70	26.00	25.77
		50	50	25.46	25.98	25.75
		100	0	25.32	26.04	25.81
20M	64QAM	1	0	25.17	25.95	25.72
		1	50	25.25	25.88	25.65
		1	99	25.16	25.85	25.62
		50	0	24.88	25.06	24.83
		50	25	24.45	25.03	24.80
		50	50	24.60	24.99	24.76
		100	0	24.44	25.00	24.77
20M	256QAM	1	0	22.75	23.00	22.77
		1	50	22.38	22.96	22.73
		1	99	22.65	22.89	22.66
		50	0	22.62	22.84	22.61
		50	25	22.58	22.80	22.57
		50	50	22.63	22.78	22.55
		100	0	22.42	22.80	22.57

LTE Band 41 (Power Class 2)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		39725	40620	41515
		Frequency (MHz)		2503.5	2593	2682.5
15M	QPSK	1	0	27.36	27.86	27.83
		1	37	27.28	27.84	27.76
		1	74	27.43	27.71	27.76
		36	0	26.57	26.90	26.92
		36	19	26.35	26.90	26.92
		36	39	26.48	26.93	26.90
		75	0	26.28	27.00	26.94
15M	16QAM	1	0	26.61	27.01	26.97
		1	37	26.52	26.93	26.99
		1	74	26.55	26.97	26.89
		36	0	25.50	25.96	25.92
		36	19	25.40	25.95	25.92
		36	39	25.53	25.94	25.93
		75	0	25.40	25.95	25.94
15M	64QAM	1	0	25.27	25.94	25.82
		1	37	25.30	25.81	25.81
		1	74	25.06	25.76	25.77
		36	0	24.69	24.98	24.93
		36	19	24.55	25.01	24.93
		36	39	24.52	24.95	24.92
		75	0	24.51	24.92	24.88
15M	256QAM	1	0	22.73	22.90	22.87
		1	37	22.36	22.85	22.78
		1	74	22.35	22.82	22.79
		36	0	22.61	22.97	22.95
		36	19	22.52	22.97	22.94
		36	39	22.31	22.90	22.86
		75	0	22.15	22.98	22.91

LTE Band 41 (Power Class 2)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		39700	40620	41540
		Frequency (MHz)		2501	2593	2685
10M	QPSK	1	0	27.60	27.82	27.88
		1	24	27.56	27.80	27.75
		1	49	27.32	27.71	27.67
		25	0	26.71	26.90	26.93
		25	12	26.41	26.90	26.85
		25	25	26.37	26.88	26.82
		50	0	26.57	26.96	26.92
10M	16QAM	1	0	26.47	26.99	26.93
		1	24	26.49	26.94	26.99
		1	49	26.43	26.96	26.94
		25	0	25.51	26.02	26.01
		25	12	25.37	25.96	25.87
		25	25	25.42	25.95	25.95
		50	0	25.29	26.03	26.01
10M	64QAM	1	0	25.09	25.85	25.82
		1	24	25.28	25.83	25.84
		1	49	25.00	25.77	25.76
		25	0	24.58	25.03	24.95
		25	12	24.40	24.99	24.92
		25	25	24.66	24.95	24.88
		50	0	24.62	24.92	24.89
10M	256QAM	1	0	22.73	22.85	22.83
		1	24	22.33	22.79	22.79
		1	49	22.55	22.85	22.72
		25	0	22.53	23.00	22.99
		25	12	22.32	23.02	22.92
		25	25	22.56	22.97	22.94
		50	0	22.12	22.90	22.95

LTE Band 41 (Power Class 2)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		39675	40620	41565
		Frequency (MHz)		2498.5	2593	2687.5
5M	QPSK	1	0	27.48	27.88	27.87
		1	12	27.31	27.76	27.72
		1	24	27.31	27.72	27.73
		12	0	26.57	26.90	26.87
		12	6	26.59	26.89	26.90
		12	13	26.57	26.84	26.88
		25	0	26.45	26.92	26.92
5M	16QAM	1	0	26.48	27.01	26.95
		1	12	26.40	27.01	26.93
		1	24	26.40	26.98	26.88
		12	0	25.47	25.97	25.98
		12	6	25.65	25.96	25.89
		12	13	25.26	25.95	25.85
		25	0	25.24	26.04	25.93
5M	64QAM	1	0	25.20	25.92	25.92
		1	12	25.23	25.80	25.84
		1	24	25.12	25.84	25.81
		12	0	24.68	25.04	24.94
		12	6	24.74	24.94	24.94
		12	13	24.50	24.97	24.96
		25	0	24.51	24.96	24.89
5M	256QAM	1	0	22.46	22.90	22.87
		1	12	22.43	22.84	22.85
		1	24	22.36	22.82	22.72
		12	0	22.61	23.01	23.00
		12	6	22.29	23.03	22.96
		12	13	22.23	22.91	22.95
		25	0	22.42	22.95	22.95

LTE Band 41 (Power Class 3)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		39750	40620	41490
		Frequency (MHz)		2506	2593	2680
20M	QPSK	1	0	24.53	24.46	24.44
		1	50	24.46	24.43	24.36
		1	99	24.31	24.28	24.22
		50	0	23.55	23.52	23.37
		50	25	23.53	23.50	23.34
		50	50	23.48	23.45	23.28
		100	0	23.46	23.43	23.38
20M	16QAM	1	0	23.53	23.50	23.84
		1	50	23.51	23.48	23.74
		1	99	23.45	23.42	23.64
		50	0	22.56	22.53	22.61
		50	25	22.48	22.45	22.53
		50	50	22.44	22.41	22.52
		100	0	22.40	22.37	22.39
20M	64QAM	1	0	22.25	22.22	22.57
		1	50	22.23	22.20	22.56
		1	99	22.14	22.11	22.53
		50	0	21.66	21.63	21.89
		50	25	21.53	21.50	21.86
		50	50	21.48	21.45	21.82
		100	0	21.42	21.39	21.78
20M	256QAM	1	0	19.53	19.50	19.68
		1	50	19.46	19.43	19.67
		1	99	19.43	19.40	19.66
		50	0	19.40	19.37	19.64
		50	25	19.46	19.43	19.61
		50	50	19.41	19.38	19.59
		100	0	19.30	19.27	19.57

LTE Band 41 (Power Class 3)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		39725	40620	41515
		Frequency (MHz)		2503.5	2593	2682.5
15M	QPSK	1	0	24.43	24.47	24.37
		1	37	24.46	24.43	24.32
		1	74	24.29	24.19	24.16
		36	0	23.55	23.49	23.37
		36	19	23.46	23.50	23.32
		36	39	23.38	23.44	23.35
		75	0	23.37	23.39	23.34
15M	16QAM	1	0	23.45	23.48	23.38
		1	37	23.47	23.40	23.33
		1	74	23.41	23.32	23.29
		36	0	22.48	22.53	22.37
		36	19	22.43	22.44	22.37
		36	39	22.34	22.33	22.32
		75	0	22.37	22.34	22.19
15M	64QAM	1	0	22.17	22.19	22.13
		1	37	22.20	22.15	22.11
		1	74	22.05	22.04	21.96
		36	0	21.60	21.55	21.48
		36	19	21.43	21.41	21.35
		36	39	21.46	21.36	21.31
		75	0	21.38	21.29	21.30
15M	256QAM	1	0	19.45	19.50	19.37
		1	37	19.38	19.34	19.28
		1	74	19.39	19.35	19.32
		36	0	19.37	19.28	19.19
		36	19	19.44	19.41	19.29
		36	39	19.41	19.31	19.22
		75	0	19.26	19.17	19.11

LTE Band 41 (Power Class 3)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		39700	40620	41540
		Frequency (MHz)		2501	2593	2685
10M	QPSK	1	0	24.44	24.40	24.38
		1	24	24.38	24.40	24.37
		1	49	24.22	24.26	24.20
		25	0	23.49	23.48	23.39
		25	12	23.53	23.48	23.38
		25	25	23.42	23.41	23.38
		50	0	23.46	23.33	23.30
10M	16QAM	1	0	23.44	23.40	23.41
		1	24	23.50	23.43	23.43
		1	49	23.44	23.38	23.34
		25	0	22.46	22.45	22.45
		25	12	22.38	22.37	22.40
		25	25	22.42	22.32	22.34
		50	0	22.30	22.30	22.32
10M	64QAM	1	0	22.15	22.12	22.08
		1	24	22.18	22.15	22.08
		1	49	22.06	22.01	21.99
		25	0	21.60	21.53	21.52
		25	12	21.50	21.45	21.41
		25	25	21.46	21.35	21.34
		50	0	21.35	21.33	21.26
10M	256QAM	1	0	19.51	19.42	19.46
		1	24	19.45	19.35	19.29
		1	49	19.38	19.39	19.26
		25	0	19.37	19.31	19.23
		25	12	19.36	19.37	19.32
		25	25	19.38	19.38	19.25
		50	0	19.24	19.25	19.19

LTE Band 41 (Power Class 3)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		39675	40620	41565
		Frequency (MHz)		2498.5	2593	2687.5
5M	QPSK	1	0	24.49	24.46	24.37
		1	12	24.39	24.39	24.34
		1	24	24.26	24.25	24.16
		12	0	23.45	23.47	23.42
		12	6	23.51	23.49	23.44
		12	13	23.38	23.44	23.35
		25	0	23.45	23.36	23.38
5M	16QAM	1	0	23.50	23.49	23.44
		1	12	23.50	23.40	23.45
		1	24	23.45	23.39	23.32
		12	0	22.48	22.52	22.48
		12	6	22.41	22.37	22.36
		12	13	22.37	22.39	22.33
		25	0	22.40	22.37	22.27
5M	64QAM	1	0	22.25	22.13	22.17
		1	12	22.23	22.16	22.08
		1	24	22.07	22.02	22.01
		12	0	21.66	21.62	21.54
		12	6	21.50	21.46	21.40
		12	13	21.43	21.35	21.33
		25	0	21.34	21.33	21.33
5M	256QAM	1	0	19.49	19.46	19.43
		1	12	19.36	19.33	19.38
		1	24	19.34	19.30	19.38
		12	0	19.37	19.30	19.27
		12	6	19.43	19.40	19.37
		12	13	19.31	19.37	19.31
		25	0	19.28	19.21	19.21

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132072	132322	132572
		Frequency (MHz)		1720	1745	1770
20M	QPSK	1	0	26.68	26.64	26.52
		1	50	26.67	26.62	26.50
		1	99	26.65	26.60	26.48
		50	0	25.88	25.83	25.71
		50	25	25.84	25.79	25.67
		50	50	25.82	25.77	25.65
		100	0	25.72	25.67	25.55
20M	16QAM	1	0	25.81	25.76	25.64
		1	50	25.80	25.75	25.63
		1	99	25.79	25.74	25.62
		50	0	24.72	24.67	24.55
		50	25	24.68	24.63	24.51
		50	50	24.64	24.59	24.47
		100	0	24.58	24.53	24.41
20M	64QAM	1	0	24.59	24.54	24.42
		1	50	24.57	24.52	24.40
		1	99	24.53	24.48	24.36
		50	0	23.83	23.78	23.66
		50	25	23.79	23.74	23.62
		50	50	23.74	23.69	23.57
		100	0	23.72	23.67	23.55
20M	256QAM	1	0	21.90	21.85	21.73
		1	50	21.88	21.83	21.71
		1	99	21.83	21.78	21.66
		50	0	21.82	21.77	21.65
		50	25	21.80	21.75	21.63
		50	50	21.79	21.74	21.62
		100	0	21.78	21.73	21.61

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132047	132322	132597
		Frequency (MHz)		1717.5	1745	1772.5
15M	QPSK	1	0	26.60	26.63	26.52
		1	37	26.59	26.59	26.45
		1	74	26.60	26.58	26.42
		36	0	25.78	25.81	25.66
		36	19	25.83	25.75	25.65
		36	39	25.73	25.71	25.61
		75	0	25.66	25.66	25.46
15M	16QAM	1	0	25.76	25.69	25.57
		1	37	25.79	25.68	25.56
		1	74	25.71	25.74	25.56
		36	0	24.69	24.63	24.46
		36	19	24.68	24.58	24.51
		36	39	24.60	24.59	24.40
		75	0	24.50	24.53	24.39
15M	64QAM	1	0	24.55	24.54	24.41
		1	37	24.51	24.50	24.38
		1	74	24.43	24.38	24.36
		36	0	23.79	23.73	23.66
		36	19	23.74	23.67	23.60
		36	39	23.74	23.64	23.55
		75	0	23.66	23.64	23.50
15M	256QAM	1	0	21.85	21.78	21.67
		1	37	21.81	21.81	21.65
		1	74	21.82	21.78	21.66
		36	0	21.79	21.76	21.55
		36	19	21.76	21.67	21.57
		36	39	21.74	21.72	21.56
		75	0	21.75	21.71	21.59

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132022	132322	132622
		Frequency (MHz)		1715	1745	1775
10M	QPSK	1	0	26.61	26.60	26.45
		1	24	26.58	26.57	26.41
		1	49	26.57	26.55	26.46
		25	0	25.79	25.79	25.71
		25	12	25.79	25.75	25.67
		25	25	25.80	25.73	25.55
		50	0	25.70	25.60	25.47
10M	16QAM	1	0	25.80	25.73	25.64
		1	24	25.75	25.71	25.63
		1	49	25.72	25.67	25.55
		25	0	24.66	24.65	24.48
		25	12	24.59	24.56	24.47
		25	25	24.63	24.51	24.43
		50	0	24.48	24.50	24.35
10M	64QAM	1	0	24.50	24.51	24.39
		1	24	24.48	24.47	24.32
		1	49	24.43	24.40	24.30
		25	0	23.79	23.71	23.62
		25	12	23.71	23.66	23.59
		25	25	23.68	23.62	23.50
		50	0	23.67	23.59	23.46
10M	256QAM	1	0	21.80	21.78	21.64
		1	24	21.87	21.80	21.68
		1	49	21.78	21.72	21.57
		25	0	21.82	21.67	21.61
		25	12	21.73	21.67	21.58
		25	25	21.79	21.73	21.57
		50	0	21.69	21.72	21.56

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		131997	132322	132647
		Frequency (MHz)		1712.5	1745	1777.5
5M	QPSK	1	0	26.64	26.60	26.50
		1	12	26.60	26.57	26.43
		1	24	26.61	26.59	26.43
		12	0	25.79	25.77	25.71
		12	6	25.82	25.72	25.59
		12	13	25.74	25.72	25.59
		25	0	25.72	25.61	25.55
5M	16QAM	1	0	25.79	25.66	25.59
		1	12	25.79	25.74	25.55
		1	24	25.71	25.69	25.61
		12	0	24.62	24.65	24.50
		12	6	24.68	24.63	24.50
		12	13	24.56	24.51	24.37
		25	0	24.55	24.53	24.41
5M	64QAM	1	0	24.50	24.52	24.37
		1	12	24.55	24.48	24.37
		1	24	24.49	24.38	24.28
		12	0	23.81	23.74	23.64
		12	6	23.70	23.66	23.55
		12	13	23.67	23.60	23.48
		25	0	23.68	23.63	23.55
5M	256QAM	1	0	21.83	21.85	21.67
		1	12	21.82	21.75	21.68
		1	24	21.77	21.76	21.61
		12	0	21.82	21.74	21.64
		12	6	21.71	21.73	21.54
		12	13	21.73	21.73	21.58
		25	0	21.72	21.64	21.54

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		131987	132322	132657
		Frequency (MHz)		1711.5	1745	1778.5
3M	QPSK	1	0	26.63	26.57	26.51
		1	7	26.62	26.56	26.48
		1	14	26.61	26.60	26.41
		8	0	25.83	25.81	25.67
		8	3	25.77	25.70	25.57
		8	7	25.76	25.73	25.56
		15	0	25.67	25.57	25.51
3M	16QAM	1	0	25.74	25.73	25.55
		1	7	25.73	25.70	25.54
		1	14	25.77	25.64	25.56
		8	0	24.67	24.59	24.49
		8	3	24.68	24.60	24.45
		8	7	24.57	24.56	24.43
		15	0	24.51	24.52	24.39
3M	64QAM	1	0	24.52	24.47	24.42
		1	7	24.51	24.42	24.32
		1	14	24.52	24.46	24.27
		8	0	23.78	23.74	23.64
		8	3	23.75	23.68	23.54
		8	7	23.72	23.63	23.50
		15	0	23.64	23.65	23.47
3M	256QAM	1	0	21.90	21.77	21.68
		1	7	21.81	21.73	21.69
		1	14	21.82	21.72	21.57
		8	0	21.80	21.67	21.65
		8	3	21.80	21.69	21.56
		8	7	21.79	21.65	21.61
		15	0	21.75	21.73	21.51

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		131979	132322	132665
		Frequency (MHz)		1710.7	1745	1779.3
1.4M	QPSK	1	0	26.63	26.62	26.42
		1	2	26.57	26.59	26.47
		1	5	26.59	26.53	26.44
		3	0	26.55	26.49	26.29
		3	1	26.44	26.46	26.34
		3	3	26.46	26.40	26.31
		6	0	25.65	25.57	25.53
1.4M	16QAM	1	0	25.73	25.72	25.58
		1	2	25.79	25.74	25.59
		1	5	25.69	25.66	25.61
		3	0	25.49	25.43	25.23
		3	1	25.38	25.40	25.28
		3	3	25.40	25.34	25.25
		6	0	24.56	24.50	24.33
1.4M	64QAM	1	0	24.54	24.53	24.34
		1	2	24.48	24.43	24.40
		1	5	24.46	24.46	24.36
		3	0	24.47	24.41	24.21
		3	1	24.36	24.38	24.26
		3	3	24.38	24.32	24.23
		6	0	23.72	23.67	23.45
1.4M	256QAM	1	0	21.87	21.75	21.66
		1	2	21.87	21.78	21.69
		1	5	21.81	21.74	21.63
		3	0	21.75	21.68	21.61
		3	1	21.76	21.71	21.61
		3	3	21.79	21.69	21.61
		6	0	21.73	21.72	21.60

LTE Band 71						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		133222	133297	133372
		Frequency (MHz)		673	680.5	688
20M	QPSK	1	0	22.33	22.15	21.88
		1	50	21.75	21.68	21.65
		1	99	21.72	21.65	21.62
		50	0	20.80	20.73	20.70
		50	25	20.75	20.68	20.65
		50	50	20.71	20.64	20.61
		100	0	20.69	20.62	20.59
20M	16QAM	1	0	20.77	20.70	20.67
		1	50	20.75	20.68	20.65
		1	99	20.73	20.66	20.63
		50	0	19.81	19.74	19.71
		50	25	19.77	19.70	19.67
		50	50	19.72	19.65	19.62
		100	0	19.70	19.63	19.60
20M	64QAM	1	0	19.75	19.68	19.65
		1	50	19.74	19.67	19.64
		1	99	19.71	19.64	19.61
		50	0	18.73	18.66	18.63
		50	25	18.71	18.64	18.61
		50	50	18.69	18.62	18.59
		100	0	18.65	18.58	18.55
20M	256QAM	1	0	16.65	16.58	16.55
		1	50	16.62	16.55	16.52
		1	99	16.59	16.52	16.49
		50	0	16.52	16.45	16.42
		50	25	16.50	16.43	16.40
		50	50	16.51	16.44	16.41
		100	0	16.49	16.42	16.39

LTE Band 71						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		133197	133297	133397
		Frequency (MHz)		670.5	680.5	690.5
15M	QPSK	1	0	21.76	21.66	21.61
		1	37	21.75	21.58	21.62
		1	74	21.66	21.62	21.56
		36	0	20.76	20.69	20.61
		36	19	20.67	20.61	20.59
		36	39	20.67	20.61	20.57
		75	0	20.63	20.55	20.58
15M	16QAM	1	0	20.74	20.63	20.61
		1	37	20.75	20.68	20.58
		1	74	20.66	20.66	20.62
		36	0	19.73	19.72	19.67
		36	19	19.72	19.66	19.65
		36	39	19.67	19.59	19.59
		75	0	19.67	19.59	19.60
15M	64QAM	1	0	19.74	19.67	19.60
		1	37	19.64	19.63	19.63
		1	74	19.70	19.63	19.57
		36	0	18.67	18.58	18.62
		36	19	18.67	18.54	18.59
		36	39	18.67	18.62	18.55
		75	0	18.58	18.56	18.45
15M	256QAM	1	0	16.60	16.49	16.48
		1	37	16.57	16.46	16.49
		1	74	16.59	16.48	16.43
		36	0	16.46	16.40	16.37
		36	19	16.43	16.38	16.32
		36	39	16.49	16.37	16.32
		75	0	16.45	16.34	16.39

LTE Band 71						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		133172	133297	133422
		Frequency (MHz)		668	680.5	693
10M	QPSK	1	0	21.79	21.63	21.65
		1	24	21.65	21.61	21.62
		1	49	21.66	21.62	21.62
		25	0	20.70	20.71	20.65
		25	12	20.75	20.58	20.60
		25	25	20.68	20.57	20.51
		50	0	20.63	20.53	20.50
10M	16QAM	1	0	20.68	20.64	20.60
		1	24	20.67	20.61	20.63
		1	49	20.70	20.65	20.55
		25	0	19.74	19.69	19.68
		25	12	19.67	19.66	19.64
		25	25	19.62	19.60	19.58
		50	0	19.70	19.63	19.60
10M	64QAM	1	0	19.67	19.63	19.57
		1	24	19.66	19.64	19.63
		1	49	19.70	19.61	19.60
		25	0	18.72	18.57	18.59
		25	12	18.70	18.54	18.58
		25	25	18.66	18.56	18.53
		50	0	18.60	18.56	18.48
10M	256QAM	1	0	16.59	16.49	16.47
		1	24	16.54	16.45	16.42
		1	49	16.49	16.51	16.42
		25	0	16.52	16.45	16.32
		25	12	16.47	16.37	16.39
		25	25	16.47	16.39	16.34
		50	0	16.47	16.41	16.31

LTE Band 71						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		133147	133297	133447
		Frequency (MHz)		665.5	680.5	695.5
5M	QPSK	1	0	21.79	21.62	21.64
		1	12	21.66	21.66	21.62
		1	24	21.69	21.56	21.53
		12	0	20.79	20.73	20.69
		12	6	20.75	20.66	20.58
		12	13	20.70	20.57	20.60
		25	0	20.62	20.59	20.54
5M	16QAM	1	0	20.76	20.70	20.65
		1	12	20.70	20.58	20.63
		1	24	20.70	20.56	20.62
		12	0	19.74	19.64	19.70
		12	6	19.73	19.68	19.57
		12	13	19.67	19.58	19.56
		25	0	19.60	19.55	19.58
5M	64QAM	1	0	19.67	19.67	19.61
		1	12	19.65	19.64	19.63
		1	24	19.69	19.64	19.61
		12	0	18.73	18.59	18.60
		12	6	18.66	18.63	18.51
		12	13	18.61	18.62	18.51
		25	0	18.56	18.48	18.45
5M	256QAM	1	0	16.61	16.53	16.55
		1	12	16.55	16.46	16.42
		1	24	16.56	16.48	16.41
		12	0	16.49	16.45	16.37
		12	6	16.42	16.33	16.36
		12	13	16.46	16.43	16.37
		25	0	16.39	16.32	16.30

4.2 Modulation Characteristics Measurement

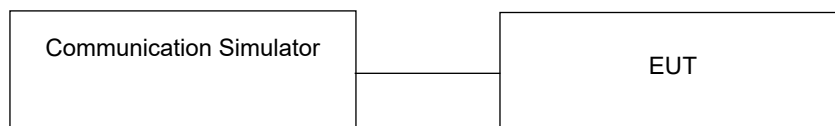
4.2.1 Limits of Modulation Characteristics

N/A

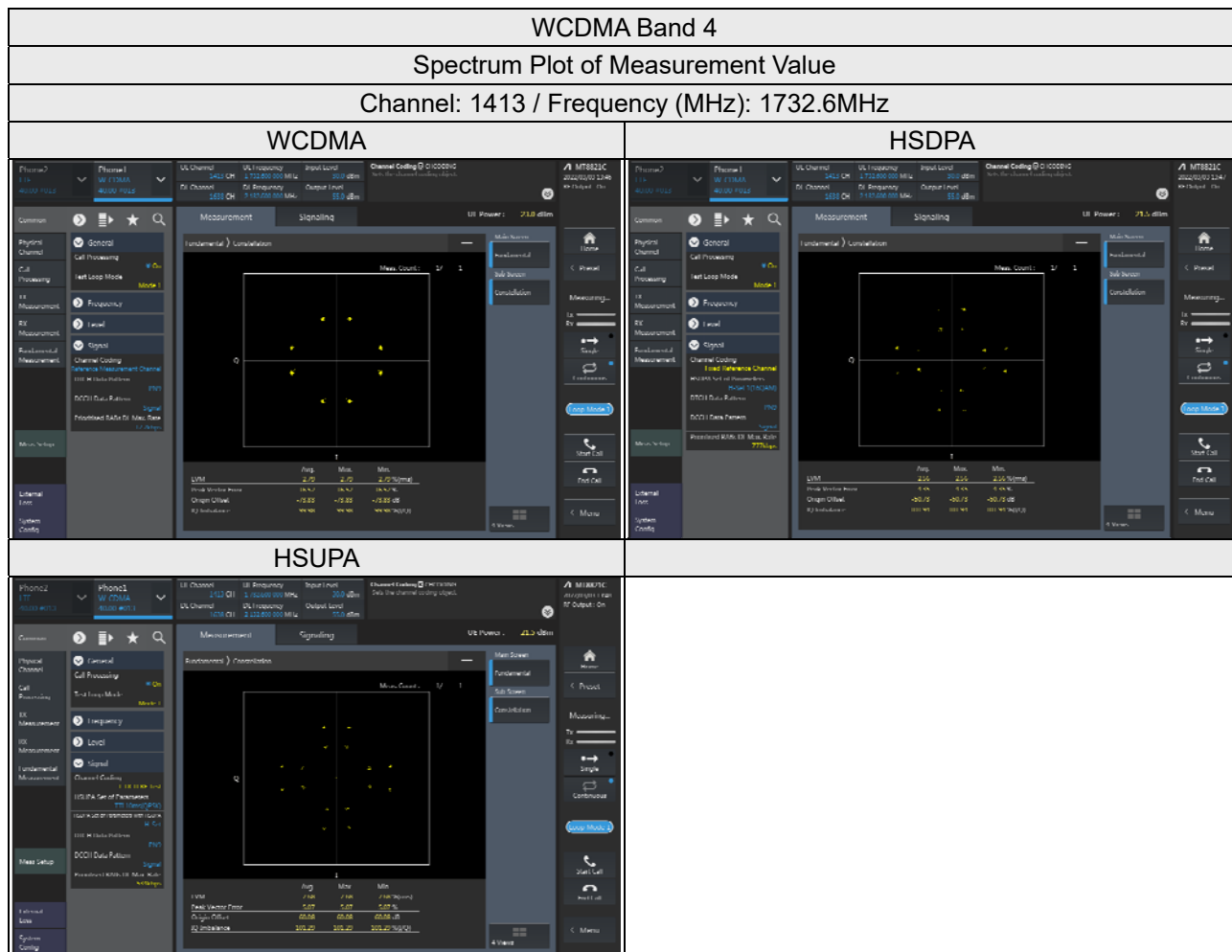
4.2.2 Test Procedure

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

4.2.3 Test Setup



4.2.4 Test Results

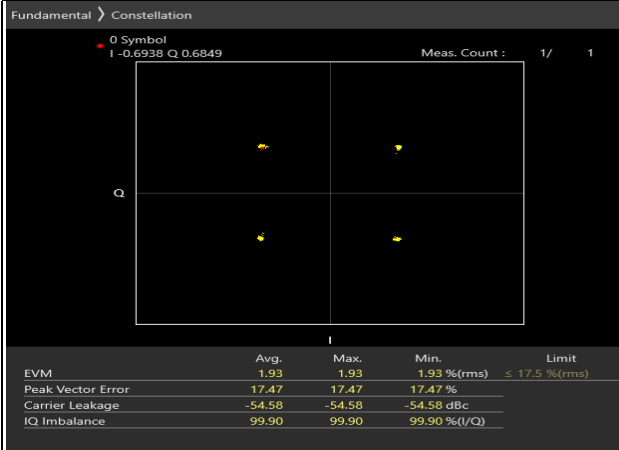


LTE Band 4

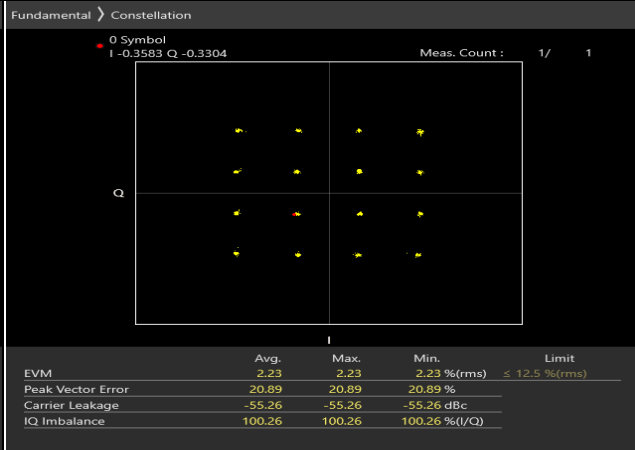
Spectrum Plot of Measurement Value

Channel: 20175 / Frequency (MHz): 1732.5MHz

QPSK



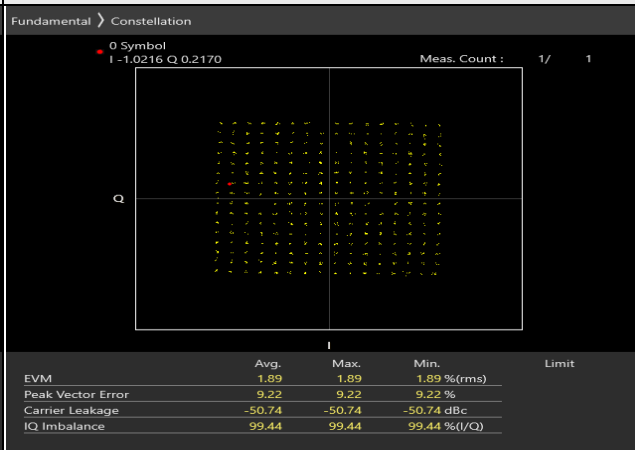
16QAM



64QAM



256QAM

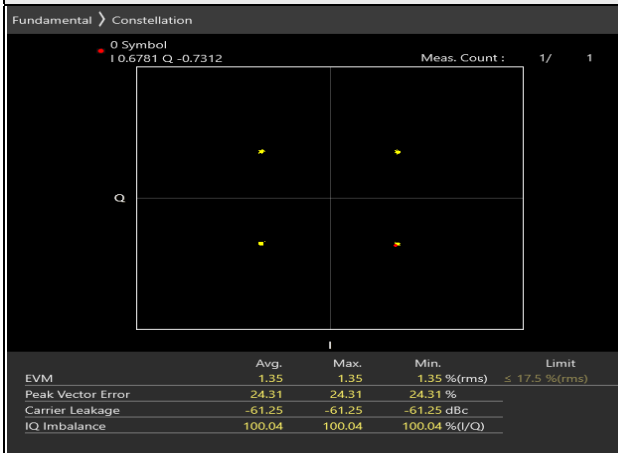


LTE Band 7

Spectrum Plot of Measurement Value

Channel: 21100 / Frequency (MHz): 2535.0MHz

QPSK



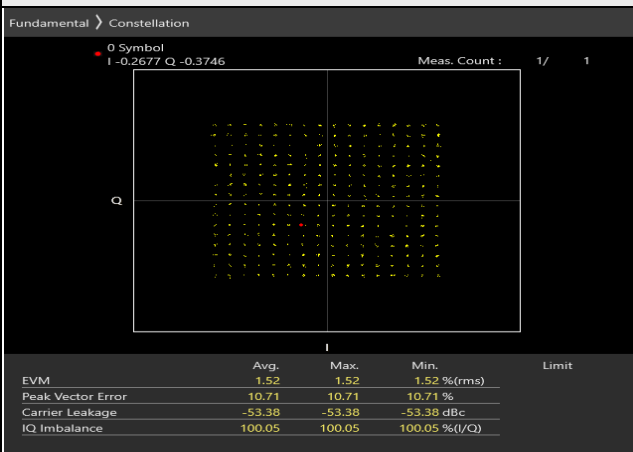
16QAM



64QAM



256QAM



LTE Band 12

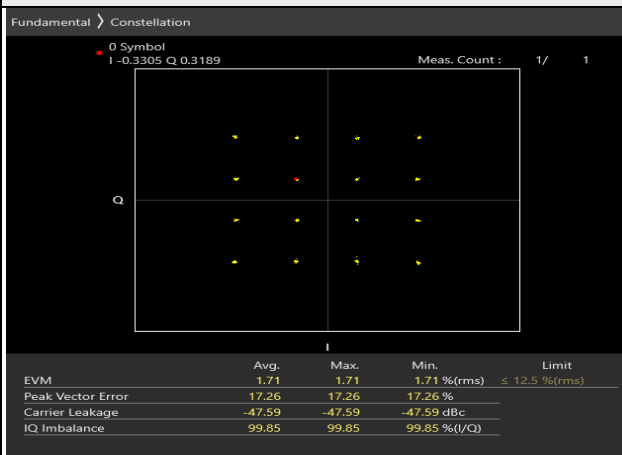
Spectrum Plot of Measurement Value

Channel: 23095 / Frequency (MHz): 707.5MHz

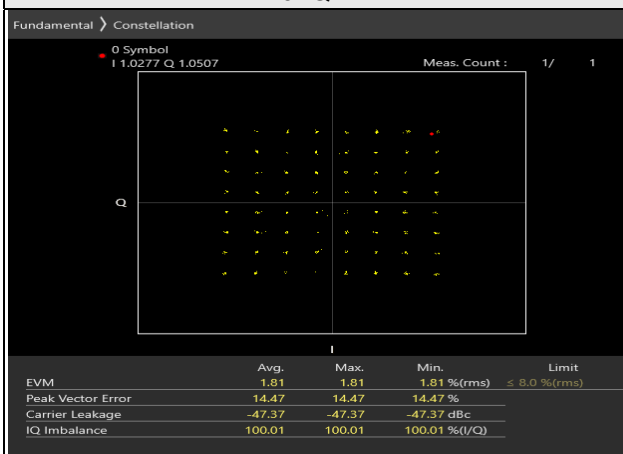
QPSK



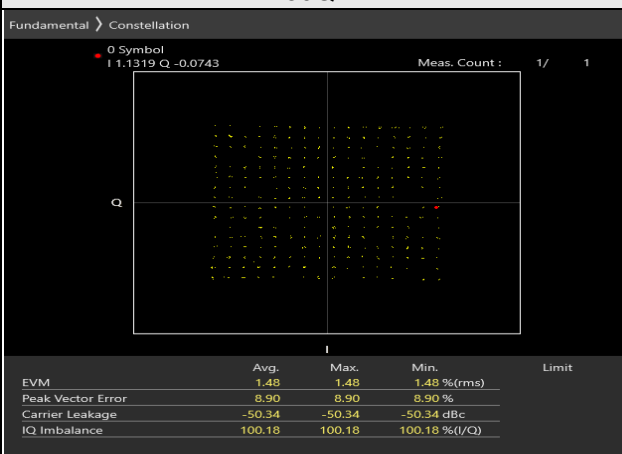
16QAM



64QAM



256QAM

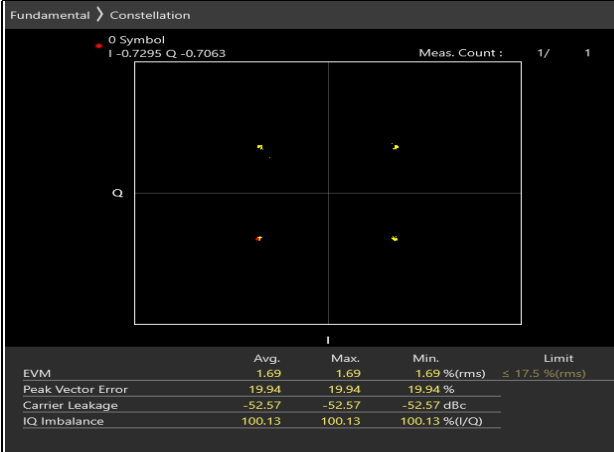


LTE Band 13

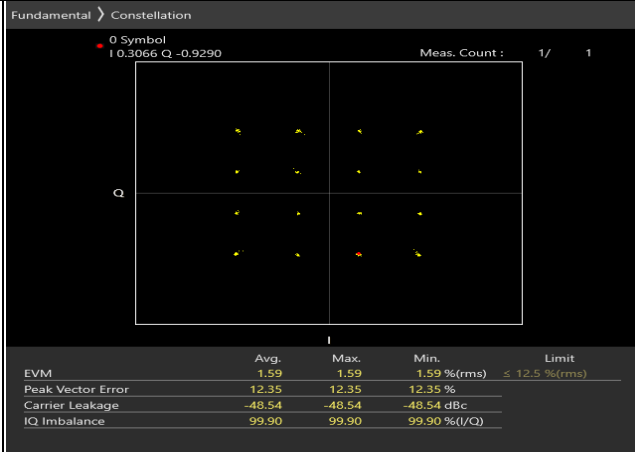
Spectrum Plot of Measurement Value

Channel: 23230 / Frequency (MHz): 782.0MHz

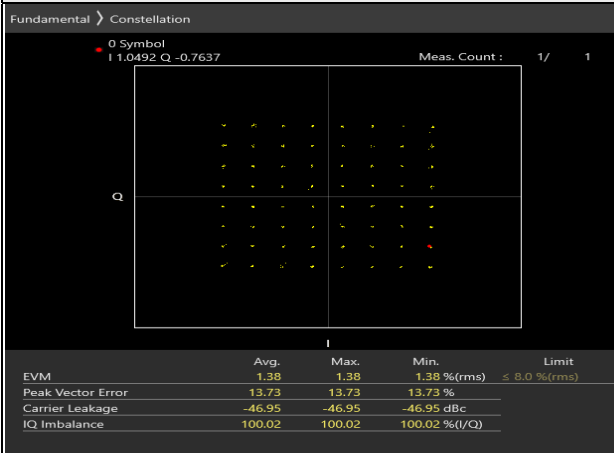
QPSK



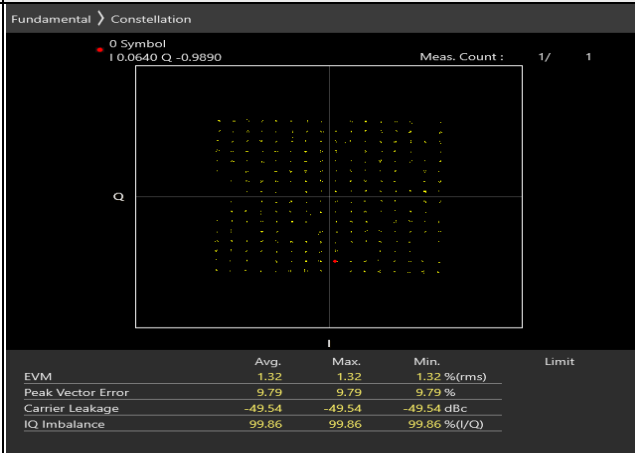
16QAM



64QAM



256QAM

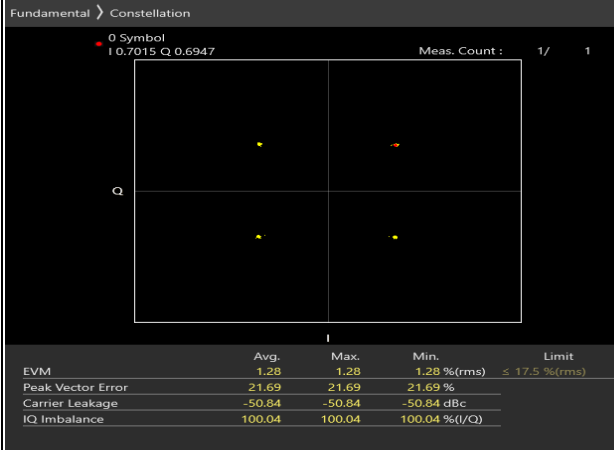


LTE Band 38

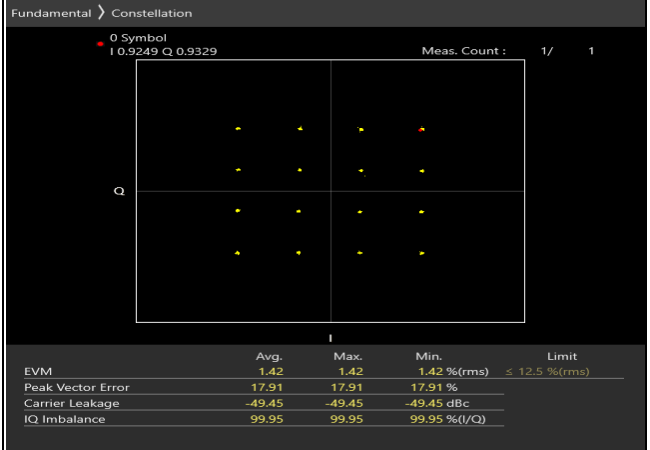
Spectrum Plot of Measurement Value

Channel: 38000 / Frequency (MHz): 2595.0MHz

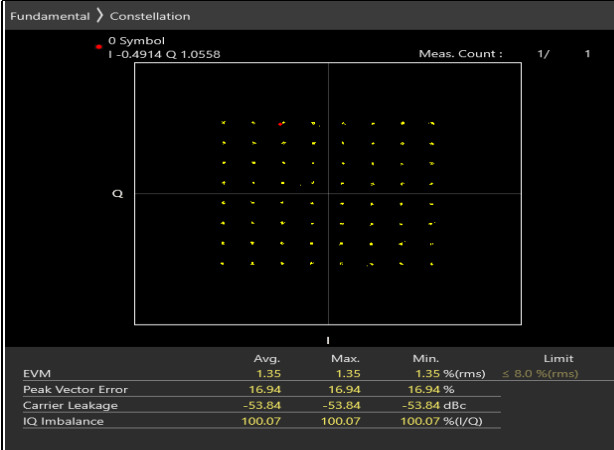
QPSK



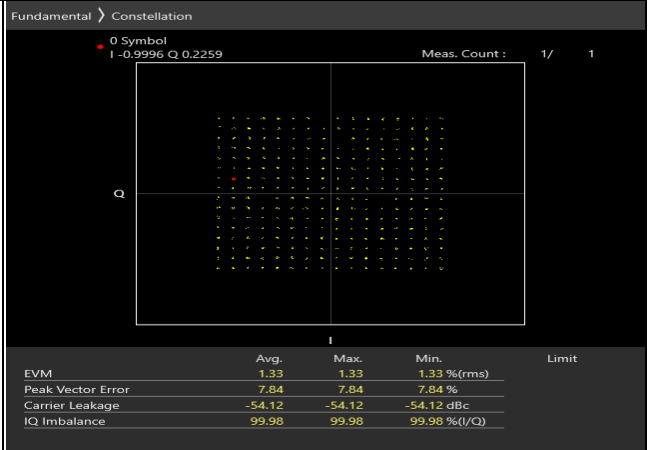
16QAM



64QAM



256QAM

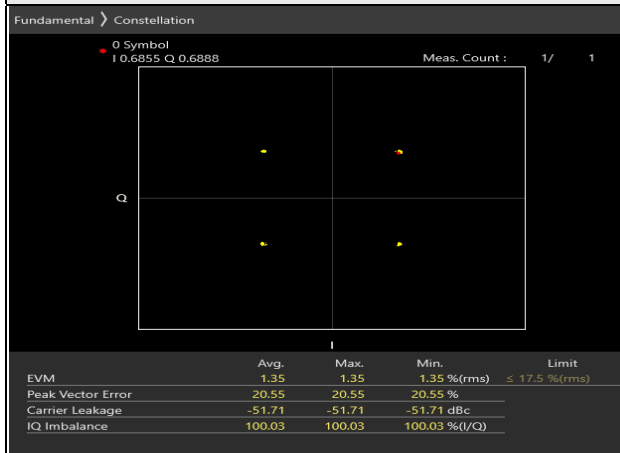


LTE Band 41

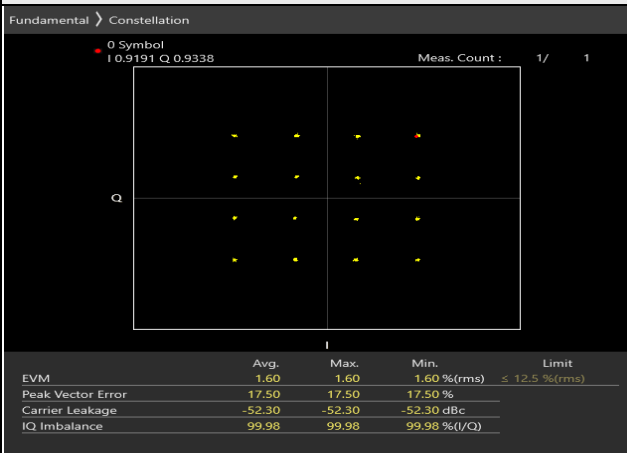
Spectrum Plot of Measurement Value

Channel: 40620 / Frequency (MHz): 2593.0MHz

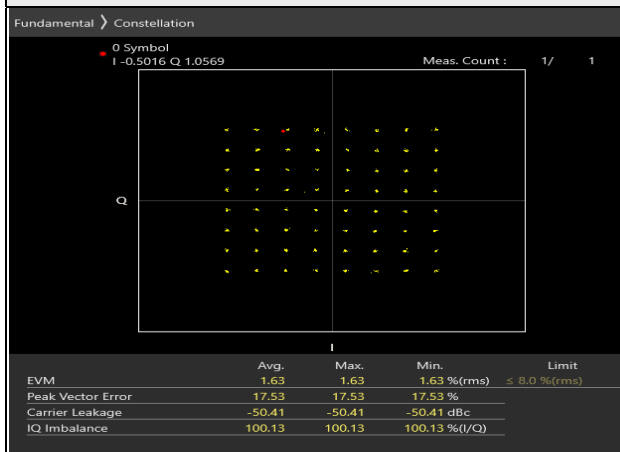
QPSK



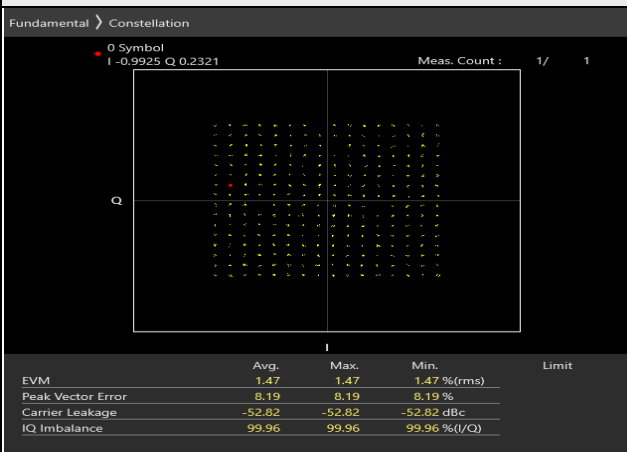
16QAM



64QAM



256QAM

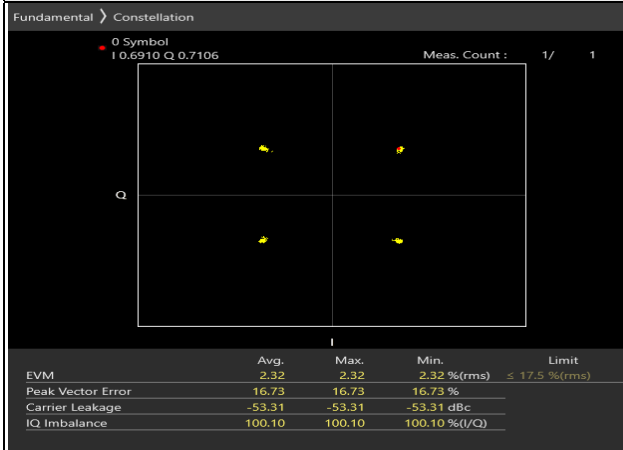


LTE Band 66

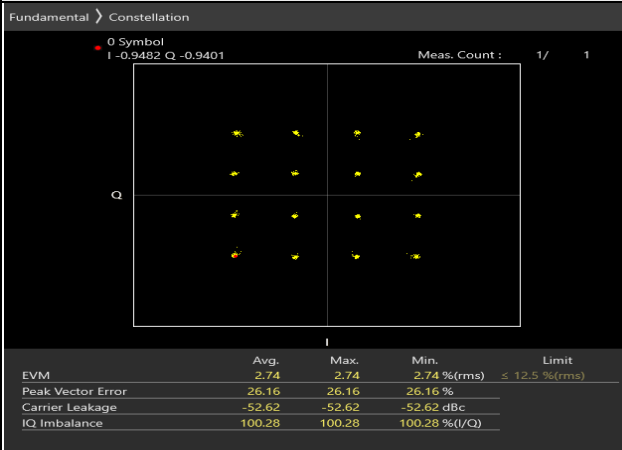
Spectrum Plot of Measurement Value

Channel: 132322 / Frequency (MHz): 1745.0MHz

QPSK



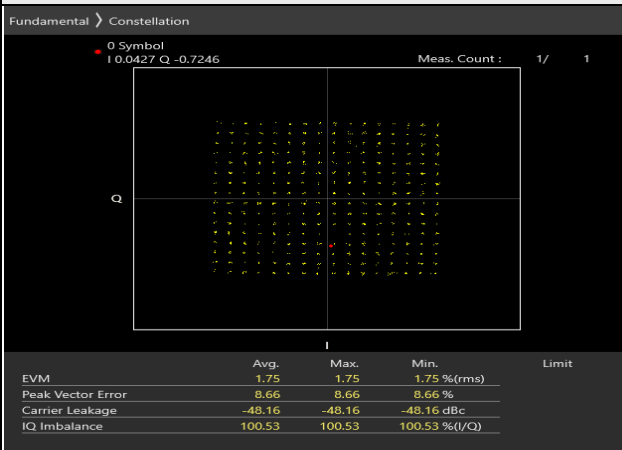
16QAM



64QAM



256QAM

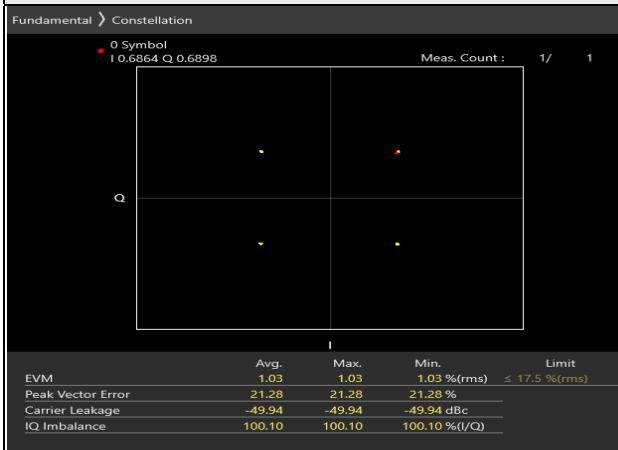


LTE Band 71

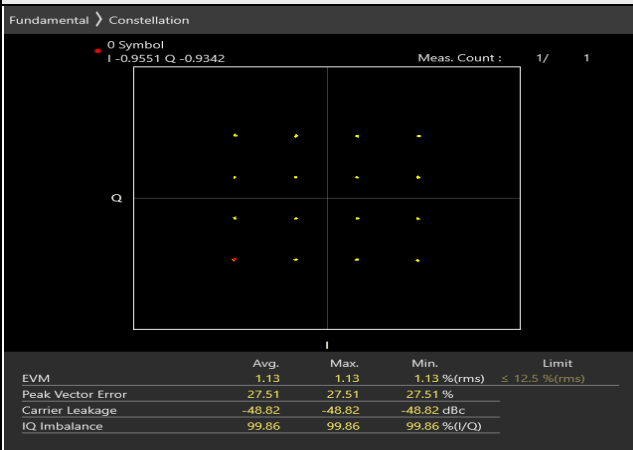
Spectrum Plot of Measurement Value

Channel: 133297 / Frequency (MHz): 680.5MHz

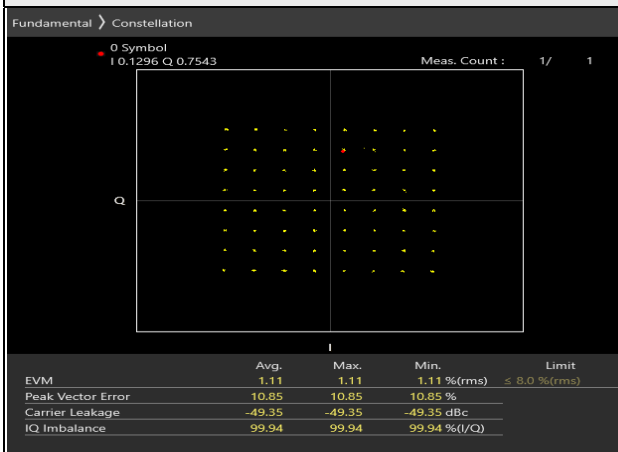
QPSK



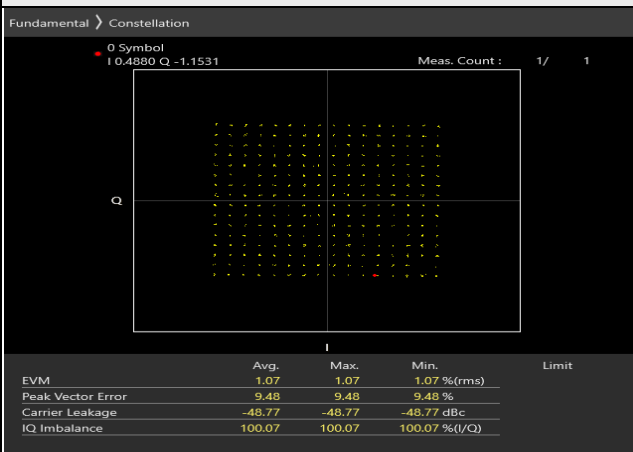
16QAM



64QAM



256QAM



4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

According to the FCC part 2.1055 shall be tested the frequency stability. The rule is defined that "The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block." The test extreme voltage is according to the 2.1055(d)(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment and the extreme temperature rule is comply with specification of EUT $-30^{\circ}\text{C} \sim 50^{\circ}\text{C}$.

4.3.2 Test Procedure

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

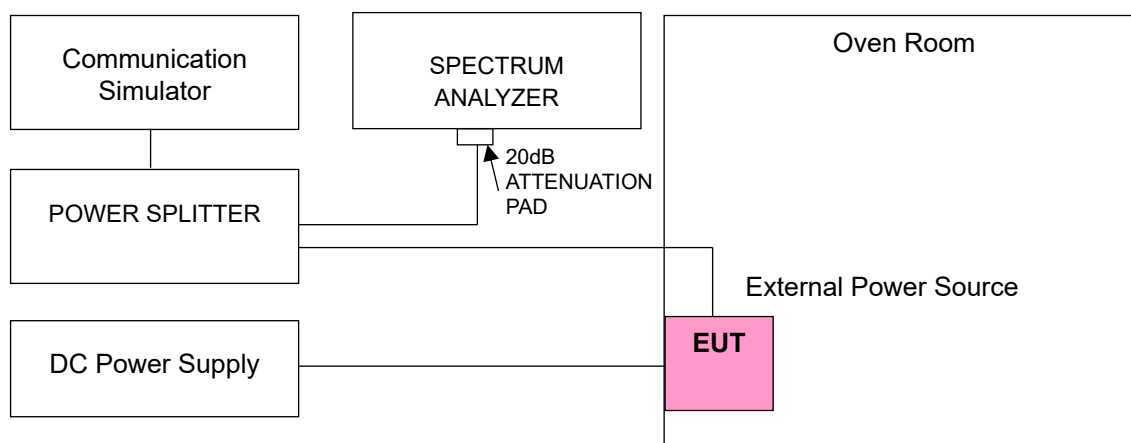
Note: The frequency error was recorded frequency error from the communication simulator.

4.3.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Radio Communication Analyzer Anritsu	MT8821C	6261806803	Feb. 16, 2022	Feb. 15, 2023
Temperature & Humidity Chamber TERCHY	HRM-120RF	931022	Jan. 03, 2022	Jan. 02, 2023
Digital Multimeter Fluke	87-III	70360742	Jun. 24, 2021	Jun. 23, 2022
DC Power Supply Topward	6306A	727263	NA	NA

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

4.3.4 Test Setup



4.3.5 Test Results

Frequency Error vs. Voltage

Voltage (Vdc)	WCDMA Band 4			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	1712.399998	-0.001	1752.600002	0.001
3.85	1712.399998	-0.001	1752.599998	-0.001
3.28	1712.400003	0.002	1752.600003	0.002

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	WCDMA Band 4			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1712.399998	-0.001	1752.599998	-0.001
-20	1712.400003	0.002	1752.600003	0.002
-10	1712.400001	0.001	1752.600003	0.002
0	1712.400004	0.002	1752.600001	0.001
10	1712.399996	-0.002	1752.599996	-0.002
20	1712.400001	0.001	1752.599996	-0.002
30	1712.400003	0.002	1752.599996	-0.002
40	1712.399996	-0.002	1752.599998	-0.001
50	1712.400002	0.001	1752.599997	-0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 4			
	Channel Bandwidth 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	1710.699997	-0.002	1754.299996	-0.002
3.85	1710.700002	0.001	1754.300002	0.001
3.28	1710.700002	0.001	1754.300002	0.001

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

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	1754.299996	-0.002
-20	1710.700002	0.001	1754.300002	0.001
-10	1710.700004	0.002	1754.299996	-0.002
0	1710.699998	-0.001	1754.300002	0.001
10	1710.700004	0.002	1754.300004	0.002
20	1710.699999	-0.001	1754.300001	0.001
30	1710.699997	-0.002	1754.300001	0.001
40	1710.700003	0.002	1754.300004	0.002
50	1710.700004	0.002	1754.300004	0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 4			
	Channel Bandwidth 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	1711.500001	0.001	1753.499997	-0.002
3.85	1711.500004	0.002	1753.500002	0.001
3.28	1711.500002	0.001	1753.500002	0.001

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

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	1711.499998	-0.001	1753.500003	0.002
-20	1711.499997	-0.002	1753.500002	0.001
-10	1711.500001	0.001	1753.500004	0.002
0	1711.499996	-0.002	1753.499997	-0.002
10	1711.499999	-0.001	1753.500002	0.001
20	1711.500004	0.002	1753.500004	0.002
30	1711.499996	-0.002	1753.500001	0.001
40	1711.499998	-0.001	1753.500001	0.001
50	1711.500003	0.002	1753.499999	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 4			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	1712.499998	-0.001	1752.499998	-0.001
3.85	1712.499997	-0.002	1752.500002	0.001
3.28	1712.500004	0.002	1752.500003	0.002

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1712.500001	0.001	1752.500004	0.002
-20	1712.500004	0.002	1752.499998	-0.001
-10	1712.499997	-0.002	1752.500001	0.001
0	1712.499996	-0.002	1752.500001	0.001
10	1712.500002	0.001	1752.499999	-0.001
20	1712.499999	-0.001	1752.499997	-0.002
30	1712.499998	-0.001	1752.499999	-0.001
40	1712.500004	0.002	1752.499996	-0.002
50	1712.499997	-0.002	1752.500003	0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 4			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	1715.000004	0.002	1749.999997	-0.002
3.85	1715.000002	0.001	1750.000004	0.002
3.28	1715.000003	0.002	1749.999997	-0.002

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1714.999998	-0.001	1750.000002	0.001
-20	1714.999999	-0.001	1749.999998	-0.001
-10	1715.000001	0.001	1749.999997	-0.002
0	1715.000004	0.002	1749.999998	-0.001
10	1715.000003	0.002	1749.999996	-0.002
20	1715.000001	0.001	1749.999999	-0.001
30	1715.000004	0.002	1749.999996	-0.002
40	1715.000003	0.002	1749.999997	-0.002
50	1714.999996	-0.002	1749.999996	-0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 4			
	Channel Bandwidth 15MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	1717.499996	-0.002	1747.500004	0.002
3.85	1717.500003	0.002	1747.499999	-0.001
3.28	1717.499999	-0.001	1747.500004	0.002

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth 15MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1717.499999	-0.001	1747.500002	0.001
-20	1717.500002	0.001	1747.499996	-0.002
-10	1717.500003	0.002	1747.500002	0.001
0	1717.499999	-0.001	1747.499996	-0.002
10	1717.499998	-0.001	1747.500002	0.001
20	1717.500001	0.001	1747.499997	-0.002
30	1717.500002	0.001	1747.500004	0.002
40	1717.499996	-0.002	1747.500001	0.001
50	1717.500004	0.002	1747.500001	0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 4			
	Channel Bandwidth 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	1719.999998	-0.001	1744.999997	-0.002
3.85	1719.999998	-0.001	1745.000003	0.002
3.28	1720.000003	0.002	1745.000002	0.001

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4			
	Channel Bandwidth 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1720.000003	0.002	1745.000004	0.002
-20	1720.000003	0.002	1745.000003	0.002
-10	1719.999997	-0.002	1745.000002	0.001
0	1720.000001	0.001	1745.000003	0.002
10	1719.999999	-0.001	1745.000001	0.001
20	1719.999998	-0.001	1744.999997	-0.002
30	1720.000001	0.001	1745.000003	0.002
40	1719.999999	-0.001	1744.999996	-0.002
50	1720.000001	0.001	1744.999996	-0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 7			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	2502.499997	-0.001	2567.500002	0.001
3.85	2502.500004	0.002	2567.500001	0.000
3.28	2502.499997	-0.001	2567.500001	0.000

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 7			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2502.500001	0.000	2567.499996	-0.002
-20	2502.499999	0.000	2567.499997	-0.001
-10	2502.500004	0.002	2567.499997	-0.001
0	2502.499998	-0.001	2567.499999	0.000
10	2502.499998	-0.001	2567.500003	0.001
20	2502.499996	-0.002	2567.500002	0.001
30	2502.500002	0.001	2567.500003	0.001
40	2502.500003	0.001	2567.499997	-0.001
50	2502.500001	0.000	2567.500003	0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 7			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	2505.000004	0.002	2564.999999	0.000
3.85	2504.999996	-0.002	2564.999999	0.000
3.28	2504.999998	-0.001	2565.000002	0.001

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 7			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2504.999997	-0.001	2564.999999	0.000
-20	2504.999998	-0.001	2565.000003	0.001
-10	2504.999999	0.000	2565.000004	0.002
0	2505.000004	0.002	2564.999999	0.000
10	2505.000003	0.001	2564.999997	-0.001
20	2504.999997	-0.001	2564.999999	0.000
30	2504.999998	-0.001	2565.000001	0.000
40	2505.000001	0.000	2565.000004	0.002
50	2504.999998	-0.001	2565.000004	0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 7			
	Channel Bandwidth 15MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	2507.500003	0.001	2562.499997	-0.001
3.85	2507.500002	0.001	2562.499997	-0.001
3.28	2507.499998	-0.001	2562.500004	0.002

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 7			
	Channel Bandwidth 15MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2507.499997	-0.001	2562.500004	0.002
-20	2507.499997	-0.001	2562.499997	-0.001
-10	2507.499997	-0.001	2562.499996	-0.002
0	2507.500001	0.000	2562.499997	-0.001
10	2507.499998	-0.001	2562.500002	0.001
20	2507.499997	-0.001	2562.500003	0.001
30	2507.499996	-0.002	2562.500004	0.002
40	2507.499997	-0.001	2562.499999	0.000
50	2507.500001	0.000	2562.499997	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 7			
	Channel Bandwidth 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	2510.000002	0.001	2560.000004	0.002
3.85	2510.000004	0.002	2560.000001	0.000
3.28	2509.999998	-0.001	2560.000002	0.001

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 7			
	Channel Bandwidth 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2510.000002	0.001	2559.999996	-0.002
-20	2510.000001	0.000	2560.000002	0.001
-10	2510.000002	0.001	2560.000003	0.001
0	2510.000003	0.001	2559.999996	-0.002
10	2510.000004	0.002	2560.000003	0.001
20	2509.999996	-0.002	2560.000003	0.001
30	2510.000001	0.000	2560.000001	0.000
40	2509.999997	-0.001	2560.000004	0.002
50	2509.999996	-0.002	2559.999999	0.000

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 12			
	Channel Bandwidth 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	699.700002	0.003	715.300001	0.001
3.85	699.700002	0.003	715.299997	-0.004
3.28	699.699999	-0.001	715.300003	0.004

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

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	699.700001	0.001	715.300001	0.001
-20	699.699999	-0.001	715.300004	0.006
-10	699.699998	-0.003	715.300003	0.004
0	699.699999	-0.001	715.300001	0.001
10	699.699998	-0.003	715.300004	0.006
20	699.699996	-0.006	715.300004	0.006
30	699.700001	0.001	715.299999	-0.001
40	699.700002	0.003	715.299996	-0.006
50	699.699999	-0.001	715.299996	-0.006

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 12			
	Channel Bandwidth 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	700.499997	-0.004	714.499997	-0.004
3.85	700.499999	-0.001	714.500001	0.001
3.28	700.499998	-0.003	714.499998	-0.003

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

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	700.499997	-0.004	714.499997	-0.004
-20	700.499997	-0.004	714.500003	0.004
-10	700.500001	0.001	714.500003	0.004
0	700.499997	-0.004	714.499996	-0.006
10	700.499998	-0.003	714.499999	-0.001
20	700.500004	0.006	714.500004	0.006
30	700.499997	-0.004	714.500001	0.001
40	700.500004	0.006	714.499998	-0.003
50	700.499999	-0.001	714.499999	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 12			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	701.500002	0.003	713.500003	0.004
3.85	701.499996	-0.006	713.499999	-0.001
3.28	701.500004	0.006	713.499999	-0.001

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	701.500004	0.006	713.499998	-0.003
-20	701.500002	0.003	713.499996	-0.006
-10	701.500001	0.001	713.500002	0.003
0	701.500003	0.004	713.500002	0.003
10	701.499999	-0.001	713.500003	0.004
20	701.500001	0.001	713.500004	0.006
30	701.500001	0.001	713.500004	0.006
40	701.499997	-0.004	713.499999	-0.001
50	701.500002	0.003	713.499999	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 12			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	703.999996	-0.006	710.999999	-0.001
3.85	703.999999	-0.001	710.999998	-0.003
3.28	703.999999	-0.001	710.999997	-0.004

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 12			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	704.000001	0.001	710.999997	-0.004
-20	703.999998	-0.003	710.999996	-0.006
-10	704.000003	0.004	710.999999	-0.001
0	703.999996	-0.006	711.000001	0.001
10	703.999998	-0.003	711.000001	0.001
20	704.000004	0.006	711.000003	0.004
30	704.000002	0.003	711.000004	0.006
40	704.000004	0.006	710.999999	-0.001
50	703.999999	-0.001	711.000001	0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 13			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	779.500001	0.001	784.499996	-0.005
3.85	779.500003	0.004	784.499996	-0.005
3.28	779.499999	-0.001	784.500003	0.004

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 13			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	779.500004	0.005	784.499998	-0.003
-20	779.500002	0.003	784.500003	0.004
-10	779.500004	0.005	784.499998	-0.003
0	779.499998	-0.003	784.499997	-0.004
10	779.499996	-0.005	784.500003	0.004
20	779.500004	0.005	784.500003	0.004
30	779.499998	-0.003	784.500002	0.003
40	779.499996	-0.005	784.500001	0.001
50	779.499998	-0.003	784.499998	-0.003

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 13	
	Channel Bandwidth 10MHz	
	Frequency (MHz)	Frequency Error (ppm)
4.43	781.999996	-0.005
3.85	782.000002	0.003
3.28	781.999998	-0.003

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

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

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 38			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	2572.500004	0.002	2617.499999	0.000
3.85	2572.499996	-0.002	2617.499999	0.000
3.28	2572.499999	0.000	2617.499996	-0.002

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 38			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2572.499996	-0.002	2617.500003	0.001
-20	2572.499997	-0.001	2617.500003	0.001
-10	2572.500004	0.002	2617.500002	0.001
0	2572.500001	0.000	2617.500001	0.000
10	2572.500001	0.000	2617.499998	-0.001
20	2572.500001	0.000	2617.499996	-0.002
30	2572.499999	0.000	2617.500001	0.000
40	2572.499996	-0.002	2617.500001	0.000
50	2572.499999	0.000	2617.499997	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 38			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	2575.000004	0.002	2615.000001	0.000
3.85	2574.999999	0.000	2614.999997	-0.001
3.28	2575.000002	0.001	2614.999996	-0.002

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 38			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2575.000004	0.002	2615.000002	0.001
-20	2574.999996	-0.002	2615.000003	0.001
-10	2574.999996	-0.002	2614.999997	-0.001
0	2575.000004	0.002	2615.000004	0.002
10	2574.999997	-0.001	2614.999998	-0.001
20	2575.000004	0.002	2614.999996	-0.002
30	2574.999996	-0.002	2615.000001	0.000
40	2574.999997	-0.001	2615.000002	0.001
50	2575.000004	0.002	2614.999996	-0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 38			
	Channel Bandwidth 15MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	2577.499999	0.000	2612.499996	-0.002
3.85	2577.500004	0.002	2612.499998	-0.001
3.28	2577.499999	0.000	2612.500004	0.002

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 38			
	Channel Bandwidth 15MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2577.500003	0.001	2612.500002	0.001
-20	2577.499997	-0.001	2612.499998	-0.001
-10	2577.500004	0.002	2612.500004	0.002
0	2577.500003	0.001	2612.500004	0.002
10	2577.499999	0.000	2612.499996	-0.002
20	2577.500002	0.001	2612.499996	-0.002
30	2577.500004	0.002	2612.500004	0.002
40	2577.499996	-0.002	2612.499999	0.000
50	2577.500002	0.001	2612.500002	0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 38			
	Channel Bandwidth 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	2579.999997	-0.001	2609.999999	0.000
3.85	2580.000004	0.002	2610.000001	0.000
3.28	2579.999997	-0.001	2610.000000	0.000

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 38			
	Channel Bandwidth 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2579.999996	-0.002	2610.000004	0.002
-20	2580.000002	0.001	2609.999996	-0.002
-10	2580.000002	0.001	2610.000002	0.001
0	2579.999998	-0.001	2609.999996	-0.002
10	2580.000001	0.000	2610.000002	0.001
20	2580.000002	0.001	2609.999998	-0.001
30	2579.999997	-0.001	2609.999996	-0.002
40	2580.000003	0.001	2609.999999	0.000
50	2579.999997	-0.001	2609.999998	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 41			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	2498.499997	-0.001	2687.499997	-0.001
3.85	2498.499999	0.000	2687.499997	-0.001
3.28	2498.500003	0.001	2687.500003	0.001

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 41			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2498.500002	0.001	2687.500004	0.001
-20	2498.499999	0.000	2687.500003	0.001
-10	2498.500002	0.001	2687.499999	0.000
0	2498.500002	0.001	2687.499998	-0.001
10	2498.500003	0.001	2687.500003	0.001
20	2498.499998	-0.001	2687.499998	-0.001
30	2498.500003	0.001	2687.499997	-0.001
40	2498.500002	0.001	2687.499997	-0.001
50	2498.500001	0.000	2687.499996	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 41			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	2500.999999	0.000	2684.999999	0.000
3.85	2500.999998	-0.001	2684.999999	0.000
3.28	2500.999999	0.000	2684.999998	-0.001

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 41			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2500.999999	0.000	2685.000003	0.001
-20	2501.000001	0.000	2684.999997	-0.001
-10	2501.000002	0.001	2685.000003	0.001
0	2501.000001	0.000	2684.999998	-0.001
10	2500.999998	-0.001	2685.000004	0.001
20	2500.999998	-0.001	2685.000004	0.001
30	2500.999997	-0.001	2685.000002	0.001
40	2501.000002	0.001	2684.999999	0.000
50	2501.000003	0.001	2685.000001	0.000

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 41			
	Channel Bandwidth 15MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	2503.499997	-0.001	2682.499997	-0.001
3.85	2503.500004	0.002	2682.500001	0.000
3.28	2503.499999	0.000	2682.499997	-0.001

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 41			
	Channel Bandwidth 15MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2503.499999	0.000	2682.500001	0.000
-20	2503.499999	0.000	2682.500002	0.001
-10	2503.500001	0.000	2682.499998	-0.001
0	2503.500003	0.001	2682.499997	-0.001
10	2503.500004	0.002	2682.499996	-0.001
20	2503.500003	0.001	2682.499996	-0.001
30	2503.500003	0.001	2682.500003	0.001
40	2503.500001	0.000	2682.500004	0.001
50	2503.499998	-0.001	2682.499997	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 41			
	Channel Bandwidth 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	2506.000003	0.001	2679.999999	0.000
3.85	2506.000001	0.000	2680.000001	0.000
3.28	2505.999999	0.000	2680.000002	0.001

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 41			
	Channel Bandwidth 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2505.999997	-0.001	2679.999996	-0.001
-20	2506.000002	0.001	2679.999999	0.000
-10	2505.999998	-0.001	2680.000001	0.000
0	2505.999998	-0.001	2679.999996	-0.001
10	2506.000002	0.001	2680.000004	0.001
20	2506.000001	0.000	2680.000001	0.000
30	2505.999996	-0.002	2679.999997	-0.001
40	2505.999996	-0.002	2679.999996	-0.001
50	2505.999998	-0.001	2680.000001	0.000

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 66			
	Channel Bandwidth 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	1710.700002	0.001	1779.300003	0.002
3.85	1710.700002	0.001	1779.299996	-0.002
3.28	1710.700002	0.001	1779.300003	0.002

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

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	1710.700004	0.002	1779.299997	-0.002
-20	1710.699998	-0.001	1779.300002	0.001
-10	1710.700002	0.001	1779.299998	-0.001
0	1710.699998	-0.001	1779.299999	-0.001
10	1710.699998	-0.001	1779.300004	0.002
20	1710.699996	-0.002	1779.299998	-0.001
30	1710.700001	0.001	1779.299998	-0.001
40	1710.699999	-0.001	1779.299998	-0.001
50	1710.699996	-0.002	1779.299999	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 66			
	Channel Bandwidth 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	1711.500003	0.002	1778.499997	-0.002
3.85	1711.499998	-0.001	1778.499997	-0.002
3.28	1711.499996	-0.002	1778.500003	0.002

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

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	1711.499998	-0.001	1778.500003	0.002
-20	1711.500002	0.001	1778.500001	0.001
-10	1711.499996	-0.002	1778.499997	-0.002
0	1711.499998	-0.001	1778.500004	0.002
10	1711.499998	-0.001	1778.499999	-0.001
20	1711.499997	-0.002	1778.500003	0.002
30	1711.499997	-0.002	1778.500002	0.001
40	1711.500001	0.001	1778.500004	0.002
50	1711.500001	0.001	1778.499996	-0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 66			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	1712.499998	-0.001	1777.500004	0.002
3.85	1712.500004	0.002	1777.500003	0.002
3.28	1712.500001	0.001	1777.500001	0.001

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1712.500002	0.001	1777.500003	0.002
-20	1712.499996	-0.002	1777.499998	-0.001
-10	1712.499998	-0.001	1777.500001	0.001
0	1712.500002	0.001	1777.500002	0.001
10	1712.500001	0.001	1777.500002	0.001
20	1712.499999	-0.001	1777.500003	0.002
30	1712.500004	0.002	1777.500004	0.002
40	1712.500003	0.002	1777.499996	-0.002
50	1712.500002	0.001	1777.500004	0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 66			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	1715.000001	0.001	1775.000003	0.002
3.85	1714.999999	-0.001	1775.000004	0.002
3.28	1714.999999	-0.001	1775.000001	0.001

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1714.999996	-0.002	1774.999997	-0.002
-20	1715.000002	0.001	1775.000003	0.002
-10	1715.000002	0.001	1775.000003	0.002
0	1714.999999	-0.001	1775.000001	0.001
10	1715.000001	0.001	1775.000002	0.001
20	1715.000003	0.002	1774.999998	-0.001
30	1715.000001	0.001	1775.000004	0.002
40	1715.000001	0.001	1774.999997	-0.002
50	1715.000002	0.001	1774.999999	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 66			
	Channel Bandwidth 15MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	1717.499997	-0.002	1772.499998	-0.001
3.85	1717.500001	0.001	1772.500001	0.001
3.28	1717.499997	-0.002	1772.500003	0.002

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth 15MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1717.499998	-0.001	1772.500003	0.002
-20	1717.500003	0.002	1772.499999	-0.001
-10	1717.499998	-0.001	1772.499997	-0.002
0	1717.499998	-0.001	1772.499996	-0.002
10	1717.500001	0.001	1772.499999	-0.001
20	1717.499998	-0.001	1772.499996	-0.002
30	1717.499997	-0.002	1772.499998	-0.001
40	1717.500003	0.002	1772.499998	-0.001
50	1717.499999	-0.001	1772.500004	0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 66			
	Channel Bandwidth 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	1719.999998	-0.001	1770.000003	0.002
3.85	1720.000001	0.001	1770.000003	0.002
3.28	1720.000002	0.001	1769.999998	-0.001

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1719.999999	-0.001	1769.999996	-0.002
-20	1720.000004	0.002	1770.000002	0.001
-10	1719.999996	-0.002	1770.000004	0.002
0	1719.999998	-0.001	1769.999997	-0.002
10	1720.000002	0.001	1770.000001	0.001
20	1720.000002	0.001	1769.999997	-0.002
30	1719.999999	-0.001	1769.999999	-0.001
40	1719.999998	-0.001	1769.999997	-0.002
50	1719.999998	-0.001	1769.999996	-0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 71			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	665.499999	-0.002	695.499998	-0.003
3.85	665.500003	0.005	695.500002	0.003
3.28	665.500004	0.006	695.499999	-0.001

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 71			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	665.499999	-0.002	695.500004	0.006
-20	665.499997	-0.005	695.500004	0.006
-10	665.499996	-0.006	695.500003	0.004
0	665.499996	-0.006	695.499999	-0.001
10	665.500004	0.006	695.499997	-0.004
20	665.500002	0.003	695.500002	0.003
30	665.499998	-0.003	695.500001	0.001
40	665.500002	0.003	695.499998	-0.003
50	665.499998	-0.003	695.499998	-0.003

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 71			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	668.000003	0.004	693.000001	0.001
3.85	667.999998	-0.003	692.999998	-0.003
3.28	667.999997	-0.004	693.000001	0.001

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 71			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	668.000001	0.001	692.999999	-0.001
-20	667.999997	-0.004	693.000001	0.001
-10	667.999999	-0.001	692.999997	-0.004
0	667.999998	-0.003	693.000003	0.004
10	667.999999	-0.001	693.000002	0.003
20	668.000003	0.004	693.000001	0.001
30	667.999996	-0.006	692.999997	-0.004
40	668.000001	0.001	693.000002	0.003
50	668.000004	0.006	692.999997	-0.004

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 71			
	Channel Bandwidth 15MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	670.499997	-0.004	690.499998	-0.003
3.85	670.499997	-0.004	690.500002	0.003
3.28	670.500002	0.003	690.500002	0.003

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 71			
	Channel Bandwidth 15MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	670.500002	0.003	690.499999	-0.001
-20	670.499999	-0.001	690.499997	-0.004
-10	670.499997	-0.004	690.499997	-0.004
0	670.500001	0.001	690.499996	-0.006
10	670.499998	-0.003	690.499998	-0.003
20	670.499999	-0.001	690.500003	0.004
30	670.500003	0.004	690.499999	-0.001
40	670.499998	-0.003	690.499998	-0.003
50	670.499996	-0.006	690.499997	-0.004

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 71			
	Channel Bandwidth 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.43	672.999997	-0.004	688.000001	0.001
3.85	673.000003	0.004	688.000004	0.006
3.28	672.999999	-0.001	687.999997	-0.004

Note: The applicant defined the normal working voltage is from 3.28Vdc to 4.43Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 71			
	Channel Bandwidth 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	672.999999	-0.001	688.000002	0.003
-20	672.999998	-0.003	688.000001	0.001
-10	673.000001	0.001	688.000004	0.006
0	672.999996	-0.006	687.999998	-0.003
10	673.000002	0.003	688.000003	0.004
20	673.000002	0.003	688.000002	0.003
30	673.000001	0.001	687.999996	-0.006
40	673.000001	0.001	688.000003	0.004
50	672.999996	-0.006	688.000001	0.001

4.4 Occupied Bandwidth Measurement

4.4.1 Limits of Occupied Bandwidth Measurement

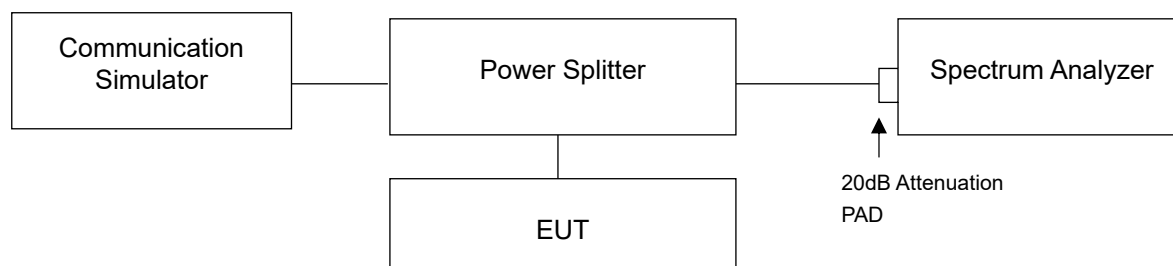
The occupied bandwidth (OBW), that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 % of the total mean power radiated by a given emission.

4.4.2 Test Procedure

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Measurement method, please refer to section 5.4.4 of ANSI C63.26. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

For the 26dBc bandwidth measurement method, please refer to section 5.4.3 of ANSI C63.26.

4.4.3 Test Setup

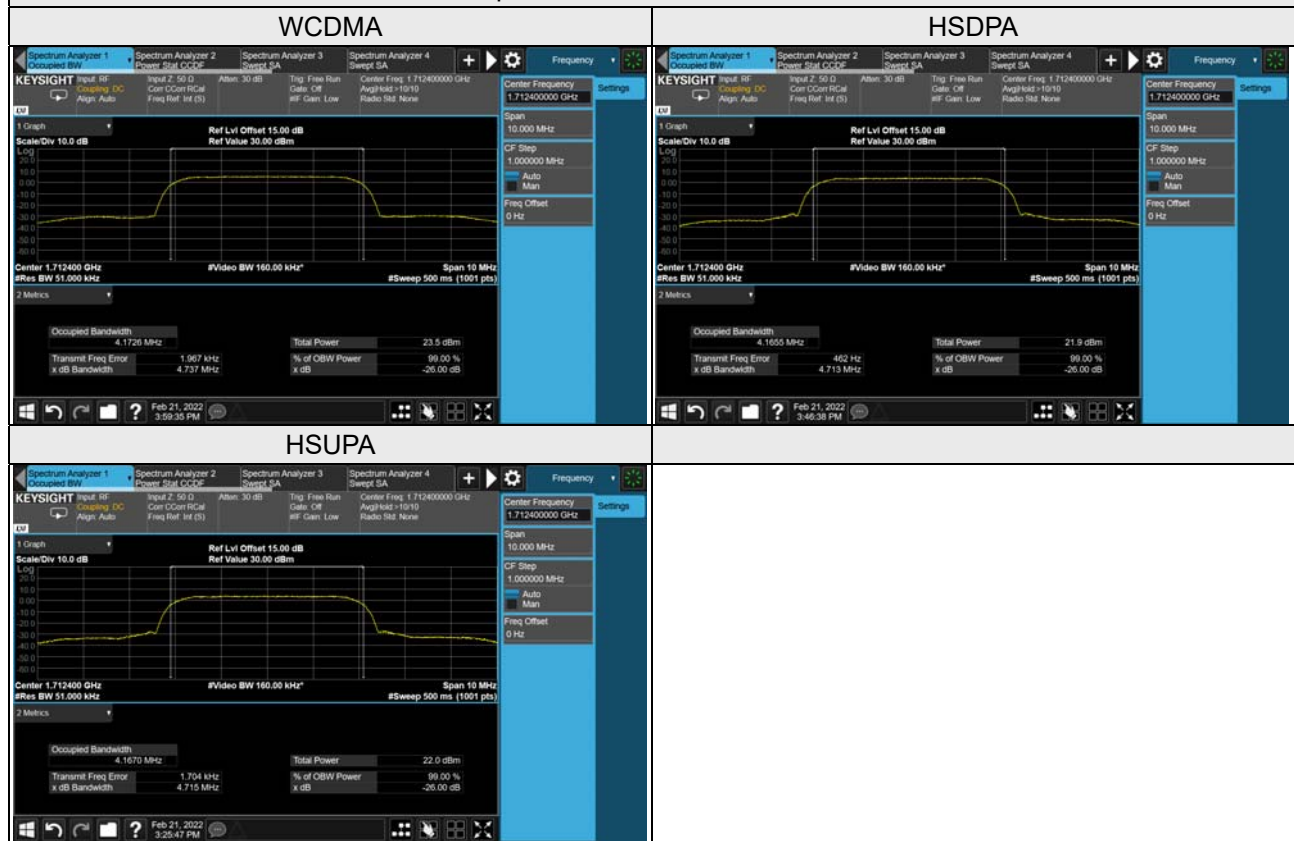


4.4.4 Test Result

Occupied Bandwidth

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		WCDMA	HSDPA	HSUPA
1312	1712.4	4.17	4.17	4.17
1413	1732.6	4.16	4.16	4.16
1513	1752.6	4.17	4.16	4.16

Spectrum Plot of Worst Value

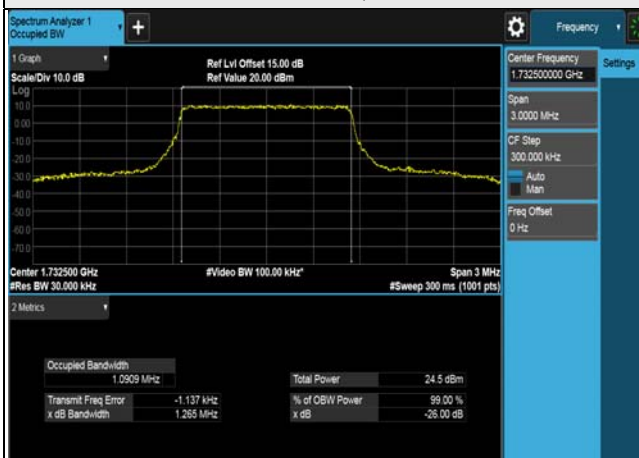


LTE Band 4, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
19957	1710.7	1.0891	1.0881	1.0894	1.0839
20175	1732.5	1.0909	1.0888	1.0888	1.0837
20393	1754.3	1.0902	1.0871	1.0882	1.0840
LTE Band 4, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
19965	1711.5	2.6988	2.6982	2.6970	2.6951
20175	1732.5	2.6951	2.6953	2.6938	2.6970
20385	1753.5	2.6943	2.6948	2.6974	2.6941
LTE Band 4, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
19975	1712.5	4.4968	4.4937	4.4947	4.4883
20175	1732.5	4.4942	4.4920	4.4951	4.4872
20375	1752.5	4.4913	4.4939	4.4911	4.4877
LTE Band 4, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20000	1715.0	8.9801	8.9774	8.9736	8.9731
20175	1732.5	8.9850	8.9835	8.9840	8.9796
20350	1750.0	8.9772	8.9730	8.9726	8.9657
LTE Band 4, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20025	1717.5	13.4480	13.4317	13.4225	13.4246
20175	1732.5	13.4882	13.4771	13.4705	13.4706
20325	1747.5	13.4614	13.4494	13.4363	13.4365

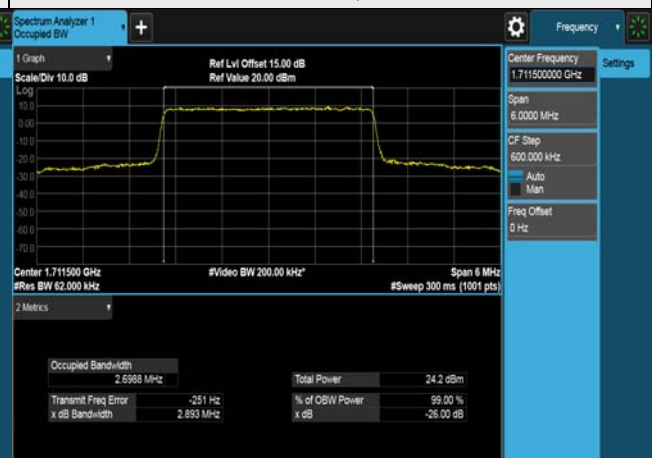
LTE Band 4, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20050	1720.0	17.8933	17.9049	17.8960	17.8972
20175	1732.5	17.9848	18.0011	17.9880	17.9921
20300	1745.0	17.9383	17.9411	17.9234	17.9217

Spectrum Plot of Worst Value

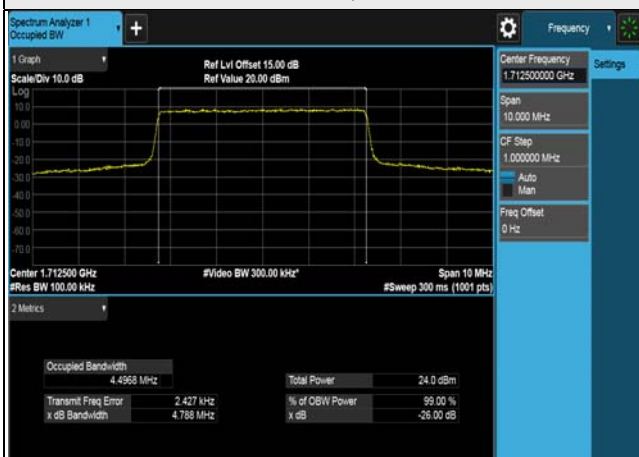
1.4MHz / QPSK



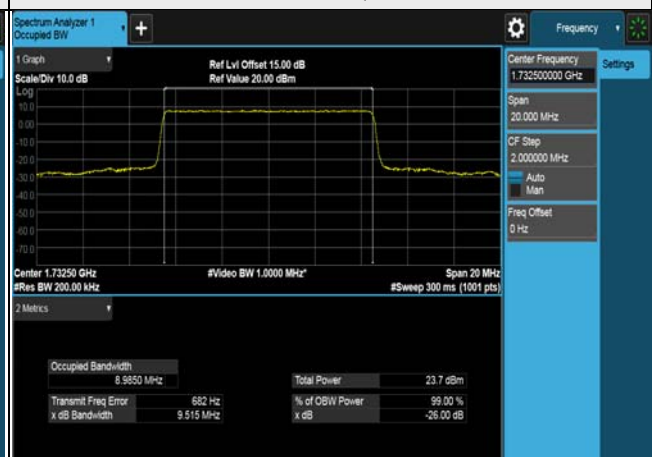
3MHz / QPSK



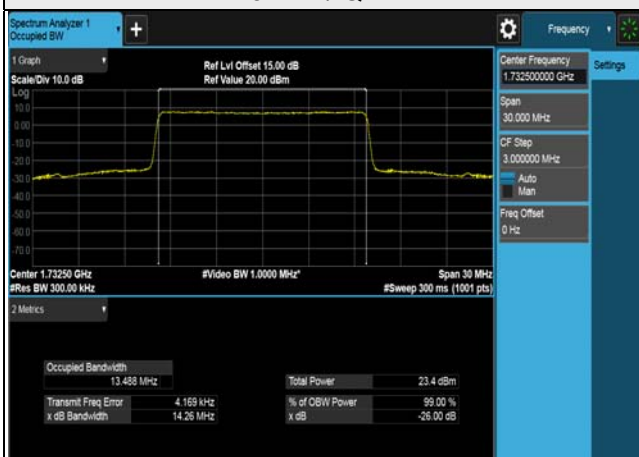
5MHz / QPSK



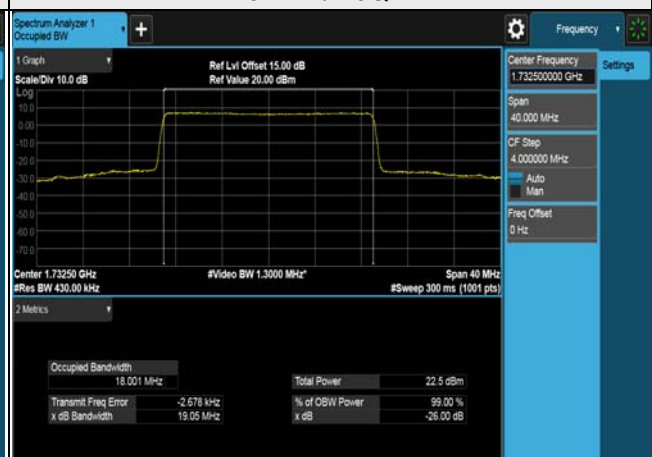
10MHz / QPSK



15MHz / QPSK



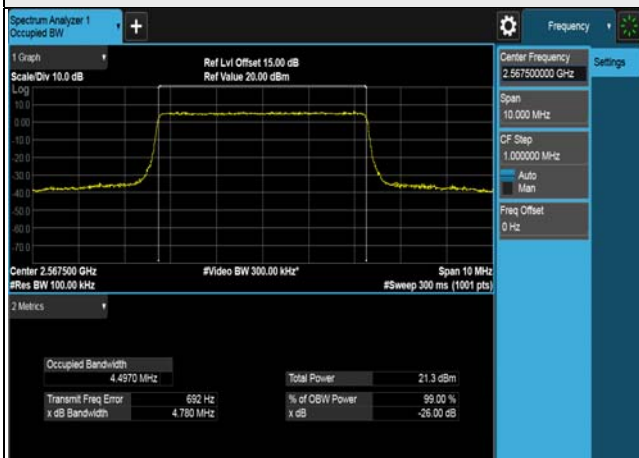
20MHz / 16QAM



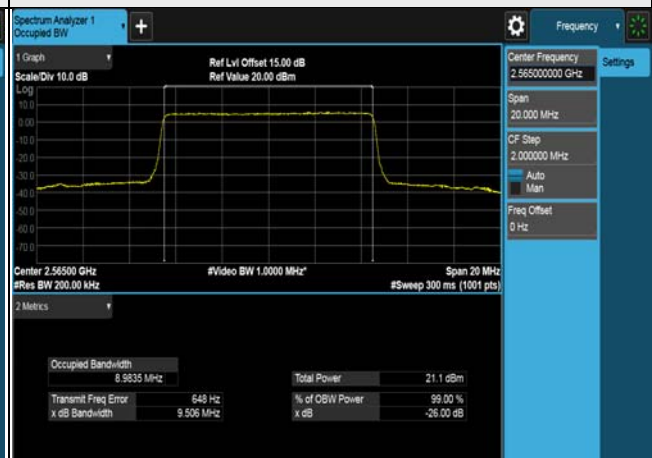
LTE Band 7, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20775	2502.5	4.4893	4.4929	4.4951	4.4879
21100	2535.0	4.4968	4.4895	4.4922	4.4895
21425	2567.5	4.4935	4.4923	4.4970	4.4893
LTE Band 7, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20800	2505.0	8.9727	8.9740	8.9734	8.9730
21100	2535.0	8.9793	8.9790	8.9795	8.9707
21400	2565.0	8.9815	8.9768	8.9835	8.9745
LTE Band 7, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20825	2507.5	13.4576	13.4470	13.4344	13.4436
21100	2535.0	13.4719	13.4695	13.4619	13.4725
21375	2562.5	13.4814	13.4761	13.4721	13.4775
LTE Band 7, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20850	2510.0	17.8989	17.9194	17.9142	17.9230
21100	2535.0	17.9666	17.9858	17.9774	17.9803
21350	2560.0	17.9735	17.9839	17.9785	17.9808

Spectrum Plot of Worst Value

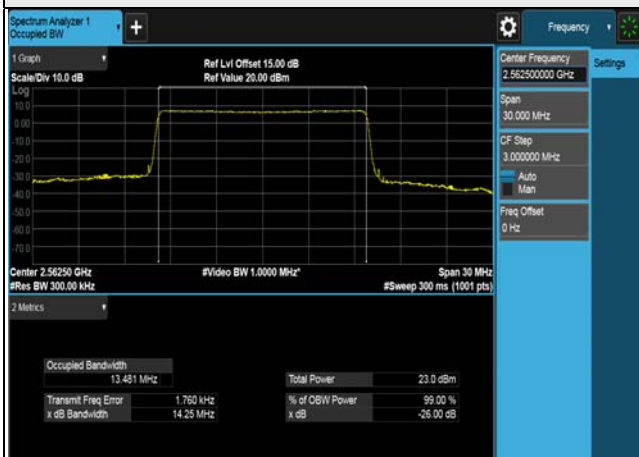
5MHz / 64QAM



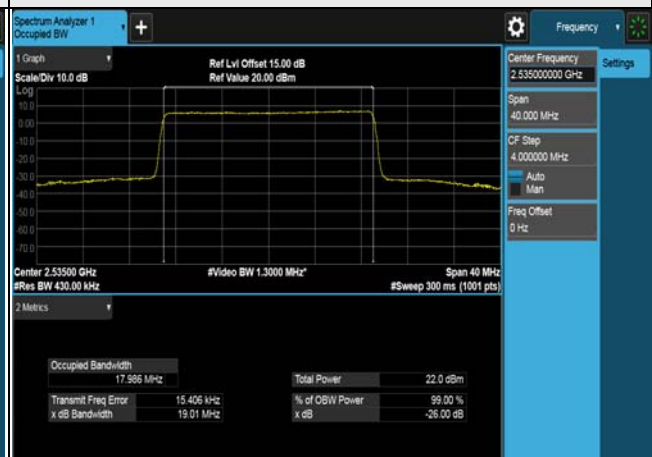
10MHz / 64QAM



15MHz / QPSK



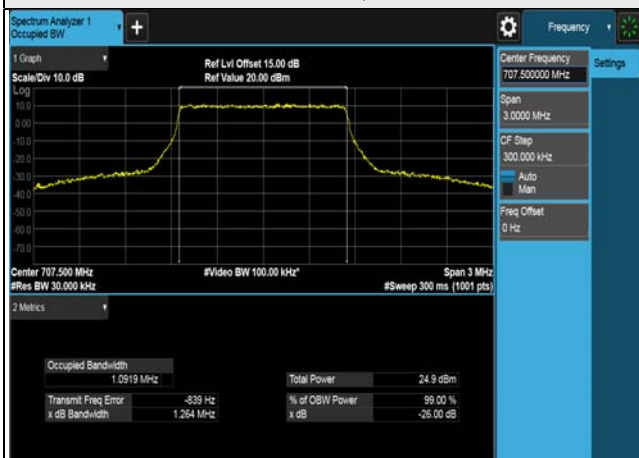
20MHz / 16QAM



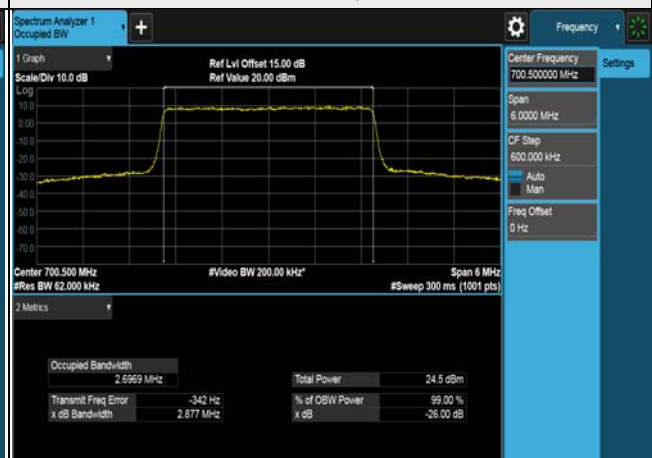
LTE Band 12, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
23017	699.7	1.0881	1.0878	1.0891	1.0826
23095	707.5	1.0919	1.0882	1.0883	1.0860
23173	715.3	1.0918	1.0870	1.0889	1.0839
LTE Band 12, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
23025	700.5	2.6969	2.6962	2.6962	2.6960
23095	707.5	2.6933	2.6949	2.6967	2.6952
23165	714.5	2.6950	2.6945	2.6935	2.6936
LTE Band 12, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
23035	701.5	4.4921	4.4901	4.4941	4.4861
23095	707.5	4.4977	4.4942	4.4952	4.4896
23155	713.5	4.4868	4.4825	4.4854	4.4809
LTE Band 12, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
23060	704.0	8.9646	8.9599	8.9642	8.9569
23095	707.5	8.9880	8.9877	8.9900	8.9836
23130	711.0	8.9704	8.9665	8.9678	8.9675

Spectrum Plot of Worst Value

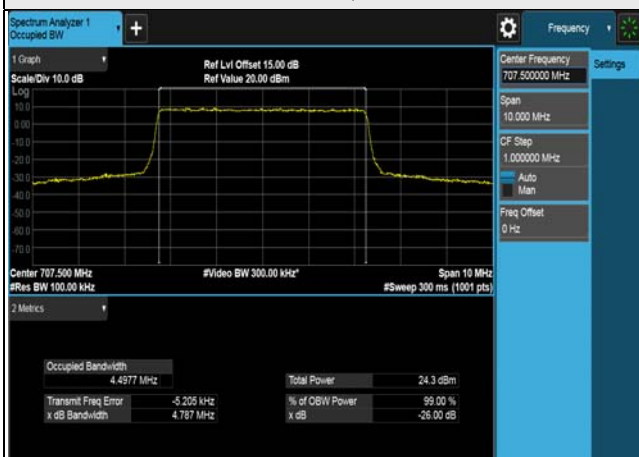
1.4MHz / QPSK



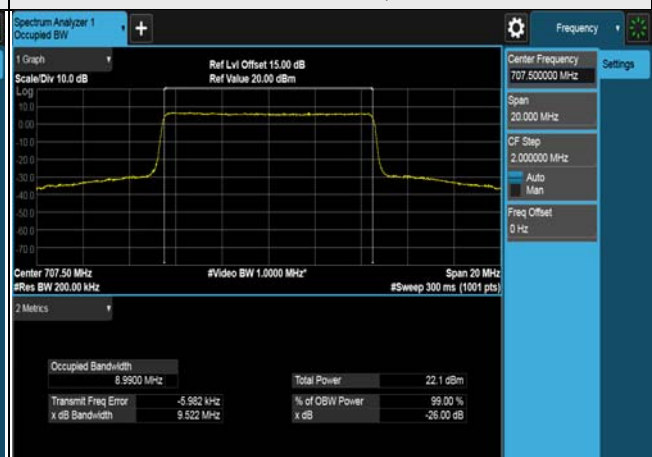
3MHz / QPSK



5MHz / QPSK



10MHz / 64QAM



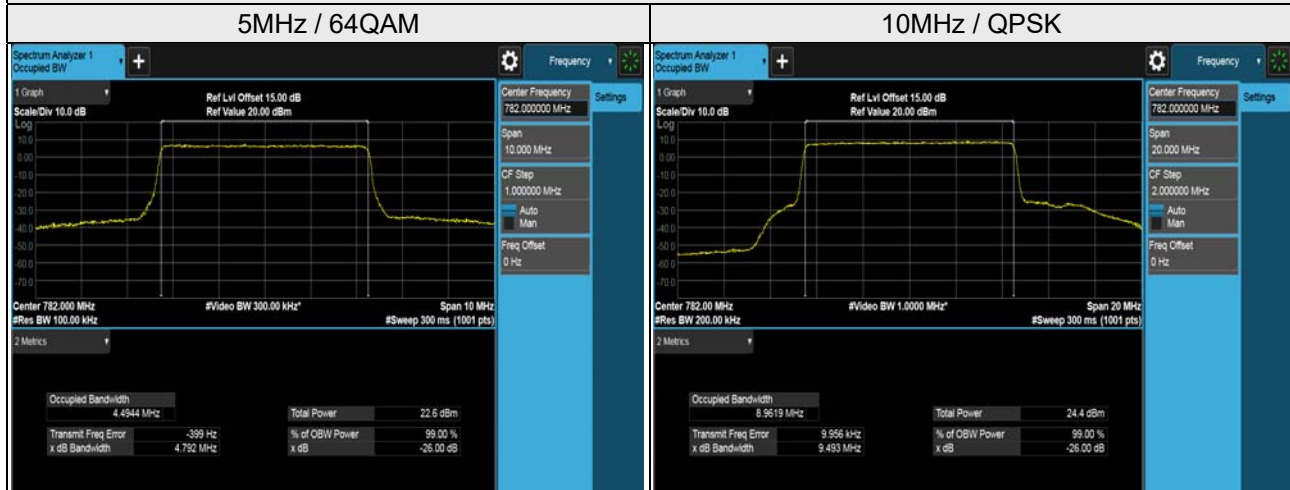
LTE Band 13, Channel Bandwidth 5MHz

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
23205	779.5	4.4893	4.4843	4.4874	4.4799
23230	782.0	4.4920	4.4912	4.4944	4.4878
23255	784.5	4.4922	4.4889	4.4934	4.4843

LTE Band 13, Channel Bandwidth 10MHz

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
23230	782.0	8.9619	8.9581	8.9563	8.9531

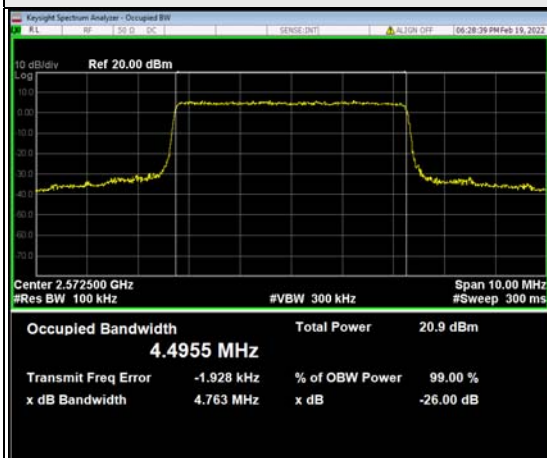
Spectrum Plot of Worst Value



LTE Band 38, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
37775	2572.5	4.4838	4.4852	4.4955	4.4779
38000	2595.0	4.4934	4.4864	4.4912	4.4796
38225	2617.5	4.4916	4.4868	4.4935	4.4785
LTE Band 38, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
37800	2575.0	8.9680	8.9753	8.9678	8.9552
38000	2595.0	8.9709	8.9719	8.9643	8.9583
38200	2615.0	8.9688	8.9650	8.9649	8.9624
LTE Band 38, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
37825	2577.5	13.4552	13.4419	13.4494	13.4344
38000	2595.0	13.4515	13.4437	13.4408	13.4304
38175	2612.5	13.4492	13.4418	13.4445	13.4377
LTE Band 38, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
37850	2580.0	17.9145	17.9087	17.9301	17.9167
38000	2595.0	17.9073	17.9043	17.9287	17.9123
38150	2610.0	17.9199	17.9159	17.9332	17.9195

Spectrum Plot of Worst Value

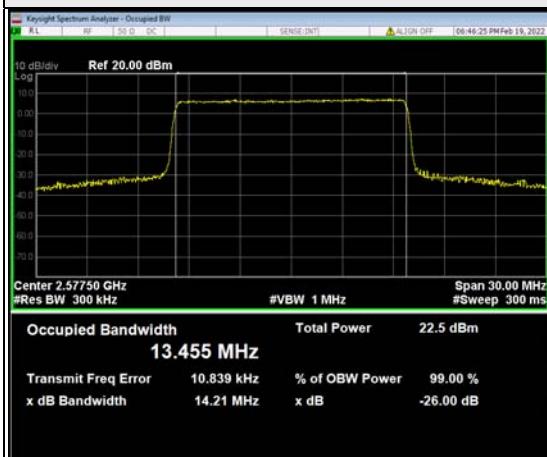
5MHz / 64QAM



10MHz / 16QAM



15MHz / QPSK



20MHz / 64QAM



LTE Band 41, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
39675	2498.5	4.4887	4.4880	4.4976	4.4770
40620	2593.0	4.4934	4.4888	4.4948	4.4776
41565	2687.5	4.4962	4.4902	4.4953	4.4814
LTE Band 41, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
39700	2501.0	8.9743	8.9765	8.9678	8.9613
40620	2593.0	8.9717	8.9673	8.9625	8.9561
41540	2685.0	8.9710	8.9668	8.9698	8.9624
LTE Band 41, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
39725	2503.5	13.4474	13.4432	13.4429	13.4428
40620	2593.0	13.4440	13.4396	13.4415	13.4294
41515	2682.5	13.4585	13.4487	13.4498	13.4335
LTE Band 41, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
39750	2506.0	17.9003	17.8989	17.9215	17.9084
40620	2593.0	17.9138	17.9099	17.9231	17.9186
41490	2680.0	17.9230	17.9194	17.9371	17.9137

Spectrum Plot of Worst Value

5MHz / 64QAM



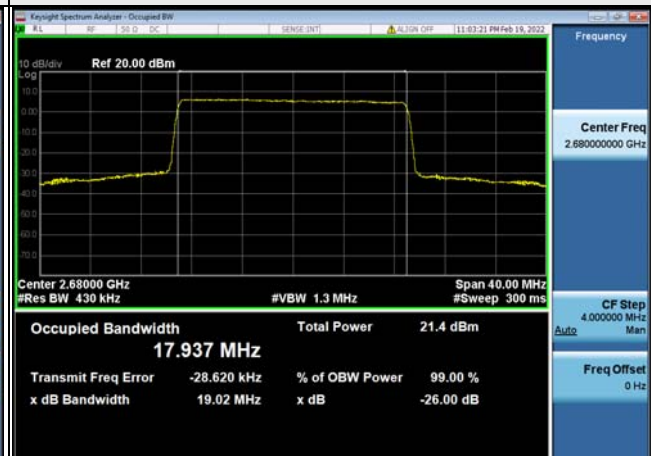
10MHz / 16QAM



15MHz / QPSK



20MHz / 64QAM



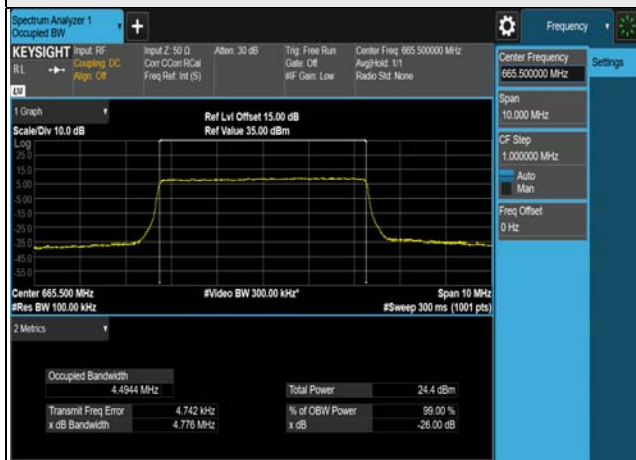
LTE Band 66, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131979	1710.7	1.0883	1.0883	1.0892	1.0849
132322	1745.0	1.0933	1.0897	1.0878	1.0840
132665	1779.3	1.0896	1.0881	1.0888	1.0842
LTE Band 66, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131987	1711.5	2.6973	2.6971	2.6950	2.6935
132322	1745.0	2.6991	2.7000	2.6967	2.6939
132657	1778.5	2.6968	2.6954	2.6941	2.6963
LTE Band 66, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131997	1712.5	4.4946	4.4935	4.4964	4.4877
132322	1745.0	4.4993	4.4936	4.4936	4.4869
132647	1777.5	4.4936	4.4879	4.4913	4.4883
LTE Band 66, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132022	1715.0	8.9762	8.9690	8.9756	8.9676
132322	1745.0	8.9842	8.9790	8.9749	8.9673
132622	1775.0	8.9668	8.9657	8.9692	8.9659
LTE Band 66, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132047	1717.5	13.4448	13.4286	13.4210	13.4257
132322	1745.0	13.4675	13.4487	13.4373	13.4393
132597	1772.5	13.4466	13.4362	13.4331	13.4277

LTE Band 66, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132072	1720.0	17.8837	17.9059	17.8924	17.8911
132322	1745.0	17.9269	17.9356	17.9154	17.9137
132572	1770.0	17.9165	17.9296	17.9208	17.9250

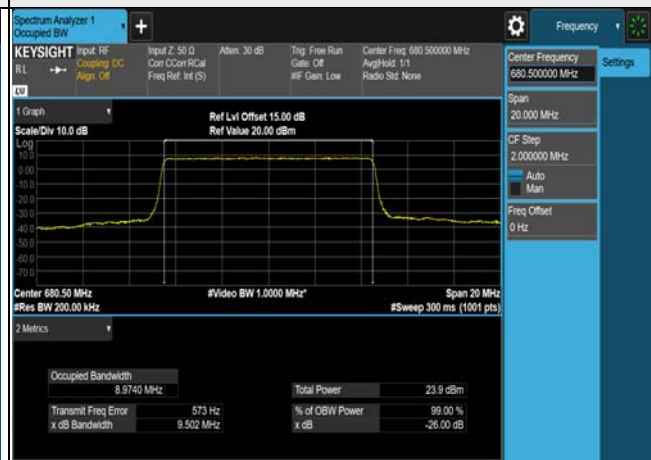
LTE Band 71, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
133147	665.5	4.4944	4.4879	4.4919	4.4846
133297	680.5	4.4920	4.4891	4.4942	4.4866
133447	695.5	4.4906	4.4857	4.4885	4.4798
LTE Band 71, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
133172	668.0	8.9617	8.9595	8.9624	8.9588
133297	680.5	8.9740	8.9711	8.9675	8.9645
133422	693.0	8.9631	8.9560	8.9653	8.9597
LTE Band 71, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
133197	670.5	13.4395	13.4272	13.4266	13.4299
133297	680.5	13.4530	13.4444	13.4415	13.4454
133397	690.5	13.4560	13.4430	13.4445	13.4466
LTE Band 71, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
133222	673.0	17.9034	17.9180	17.9024	17.9079
133297	680.5	17.9389	17.9492	17.9442	17.9389
133372	688.0	17.9272	17.9408	17.9333	17.9318

Spectrum Plot of Worst Value

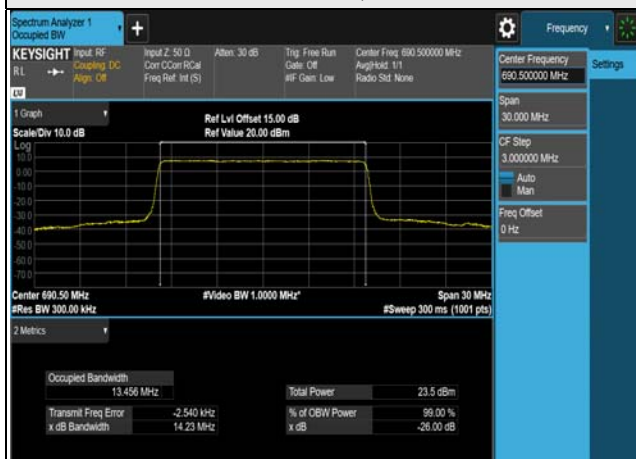
5MHz / QPSK



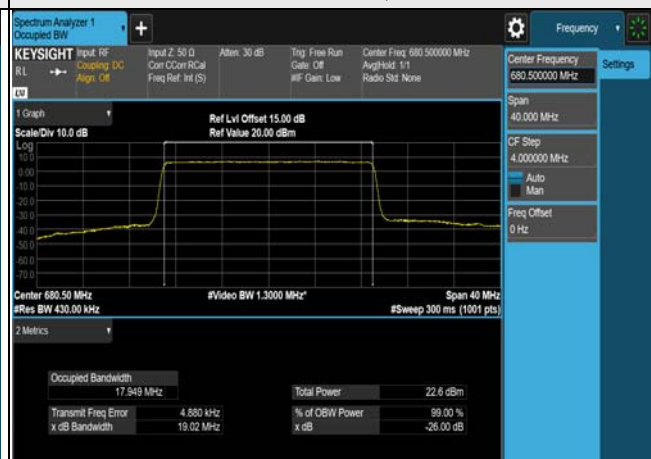
10MHz / QPSK



15MHz / QPSK



20MHz / 16QAM



26dB Bandwidth

Channel	Frequency (MHz)	26dB Bandwidth (MHz)		
		WCDMA	HSDPA	HSUPA
1312	1712.4	4.74	4.71	4.72
1413	1732.6	4.72	4.71	4.71
1513	1752.6	4.73	4.70	4.70

Spectrum Plot of Worst Value

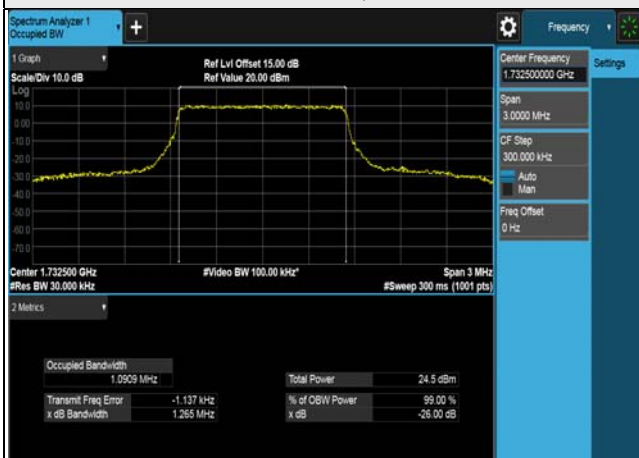


LTE Band 4, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
19957	1710.7	1.260	1.259	1.264	1.235
20175	1732.5	1.265	1.258	1.259	1.242
20393	1754.3	1.258	1.257	1.256	1.230
LTE Band 4, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
19965	1711.5	2.893	2.896	2.871	2.878
20175	1732.5	2.891	2.895	2.869	2.884
20385	1753.5	2.886	2.886	2.868	2.881
LTE Band 4, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
19975	1712.5	4.788	4.785	4.799	4.790
20175	1732.5	4.787	4.787	4.790	4.788
20375	1752.5	4.803	4.781	4.780	4.777
LTE Band 4, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20000	1715.0	9.521	9.509	9.513	9.511
20175	1732.5	9.515	9.521	9.523	9.520
20350	1750.0	9.526	9.514	9.510	9.497
LTE Band 4, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20025	1717.5	14.229	14.227	14.216	14.221
20175	1732.5	14.264	14.263	14.253	14.250
20325	1747.5	14.274	14.265	14.223	14.221

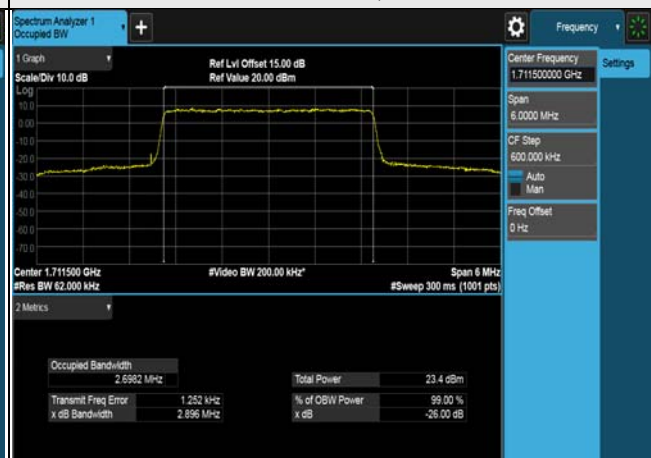
LTE Band 4, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20050	1720.0	19.015	19.009	19.004	19.002
20175	1732.5	19.062	19.046	19.055	19.037
20300	1745.0	19.028	19.042	19.020	19.009

Spectrum Plot of Worst Value

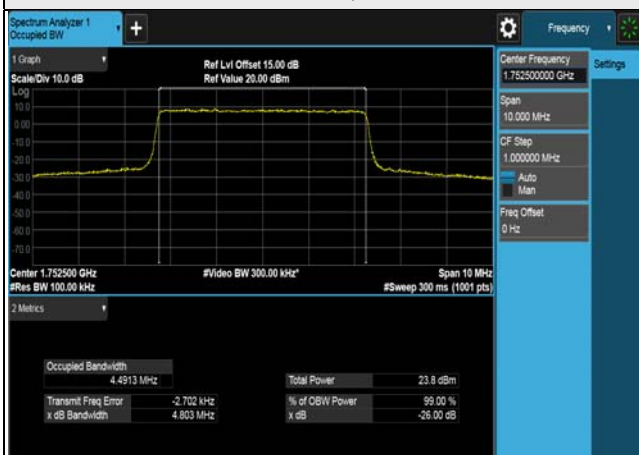
1.4MHz / QPSK



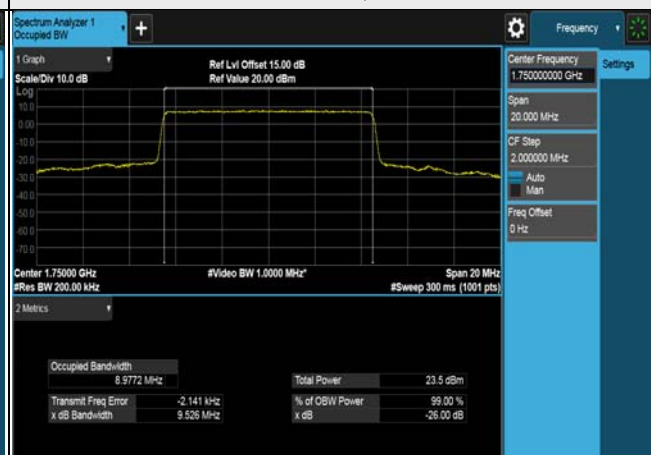
3MHz / 16QAM



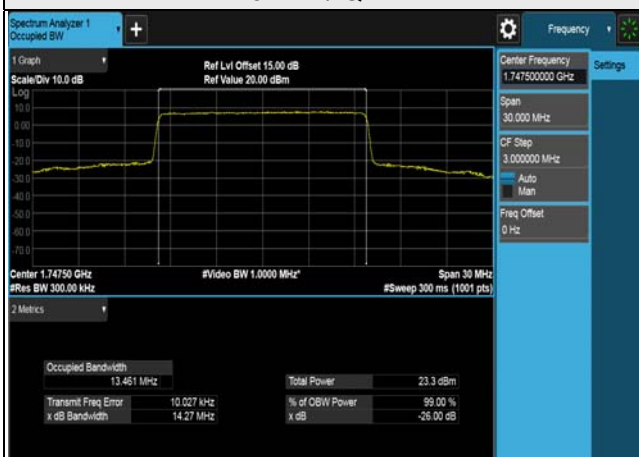
5MHz / QPSK



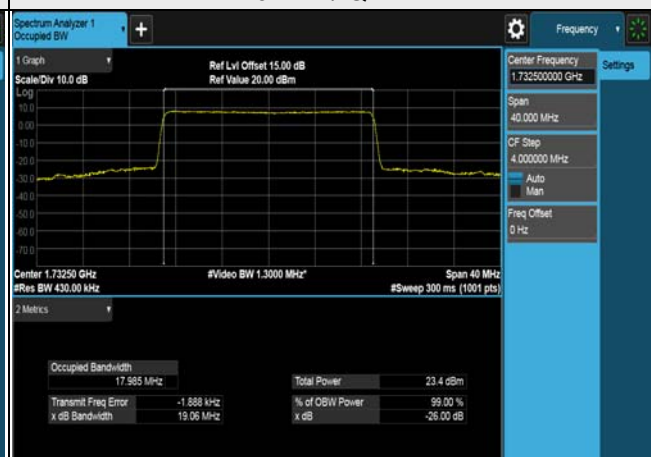
10MHz / QPSK



15MHz / QPSK



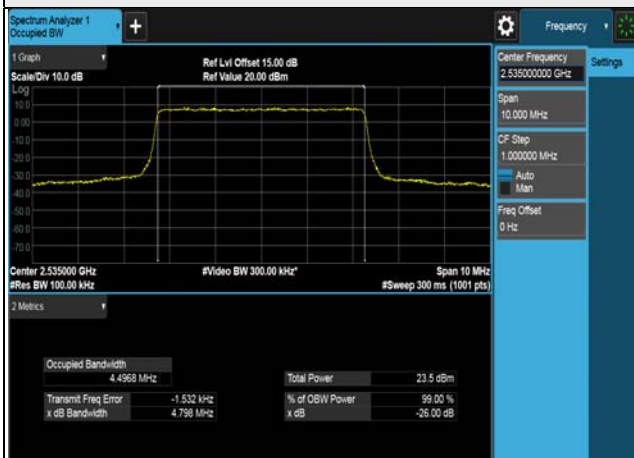
20MHz / QPSK



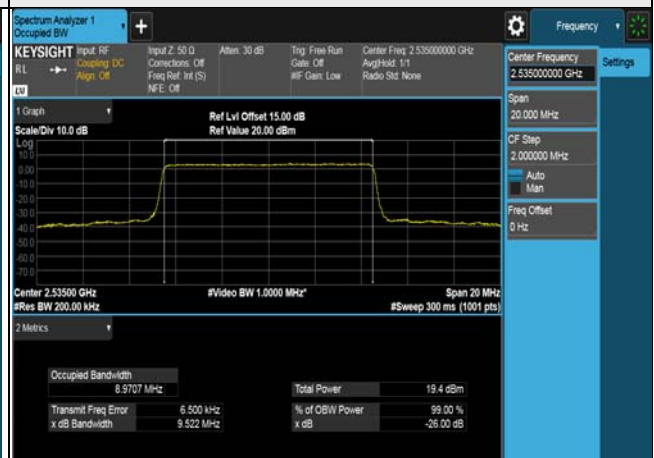
LTE Band 7, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20775	2502.5	4.777	4.782	4.775	4.777
21100	2535.0	4.798	4.778	4.786	4.798
21425	2567.5	4.783	4.776	4.780	4.787
LTE Band 7, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20800	2505.0	9.497	9.490	9.518	9.505
21100	2535.0	9.507	9.500	9.516	9.522
21400	2565.0	9.502	9.498	9.506	9.505
LTE Band 7, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20825	2507.5	14.221	14.245	14.214	14.229
21100	2535.0	14.235	14.236	14.241	14.232
21375	2562.5	14.254	14.247	14.239	14.255
LTE Band 7, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20850	2510.0	19.010	19.003	18.997	19.000
21100	2535.0	19.024	19.013	19.030	19.023
21350	2560.0	19.028	19.034	19.029	19.027

Spectrum Plot of Worst Value

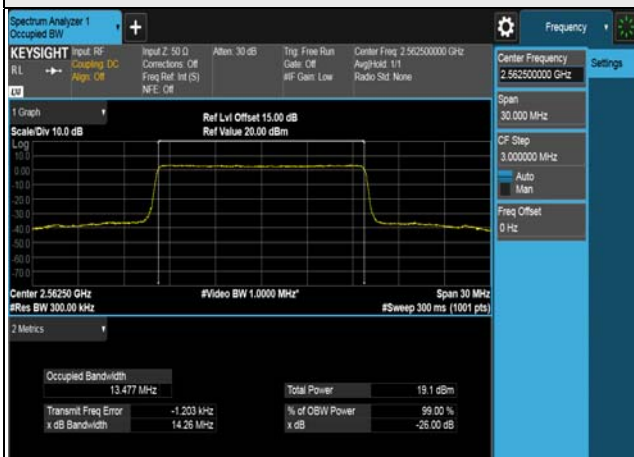
5MHz / QPSK



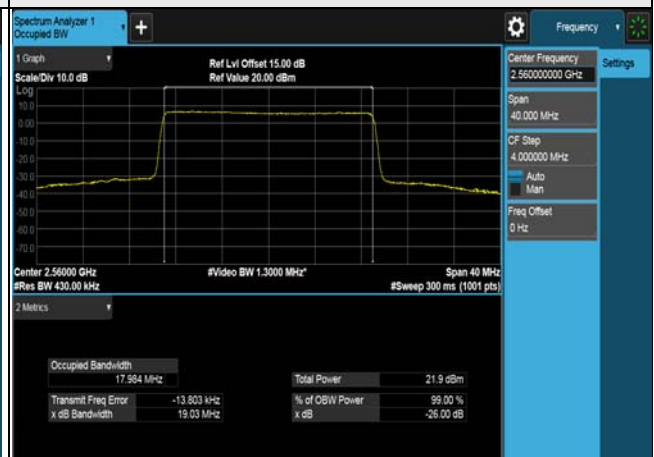
10MHz / 256QAM



15MHz / 256QAM



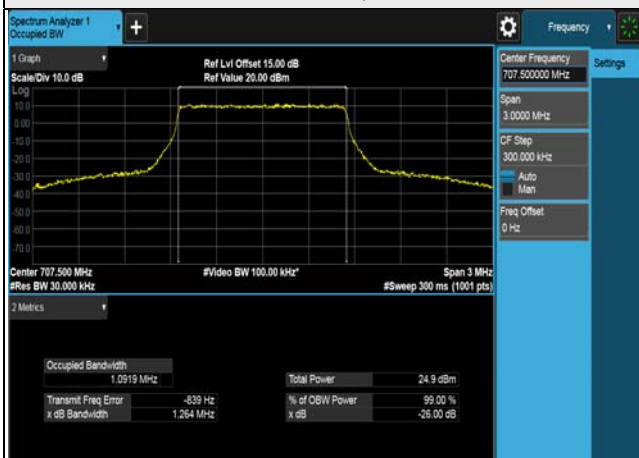
20MHz / 16QAM



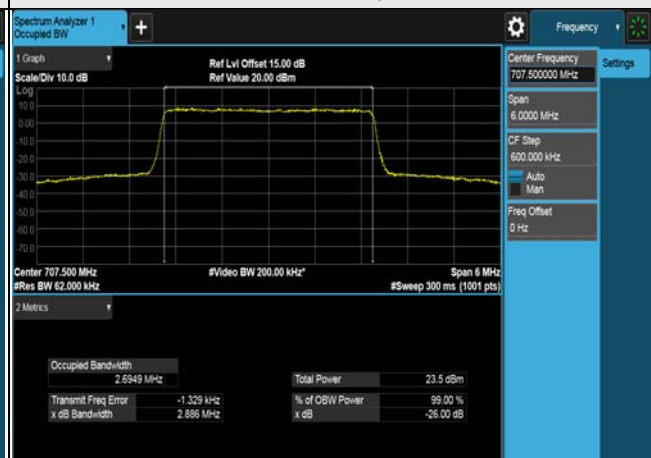
LTE Band 12, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
23017	699.7	1.255	1.259	1.256	1.232
23095	707.5	1.264	1.254	1.260	1.235
23173	715.3	1.254	1.258	1.259	1.241
LTE Band 12, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
23025	700.5	2.877	2.884	2.875	2.878
23095	707.5	2.873	2.886	2.876	2.882
23165	714.5	2.872	2.878	2.869	2.874
LTE Band 12, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
23035	701.5	4.790	4.773	4.787	4.779
23095	707.5	4.787	4.784	4.804	4.783
23155	713.5	4.773	4.765	4.780	4.773
LTE Band 12, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
23060	704.0	9.498	9.482	9.508	9.503
23095	707.5	9.509	9.515	9.522	9.515
23130	711.0	9.503	9.487	9.506	9.499

Spectrum Plot of Worst Value

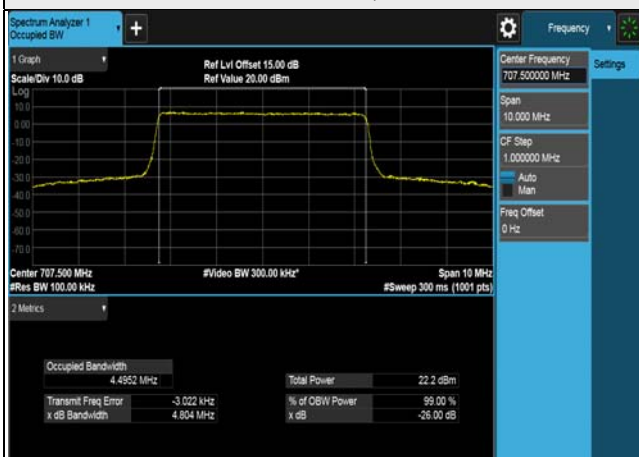
1.4MHz / QPSK



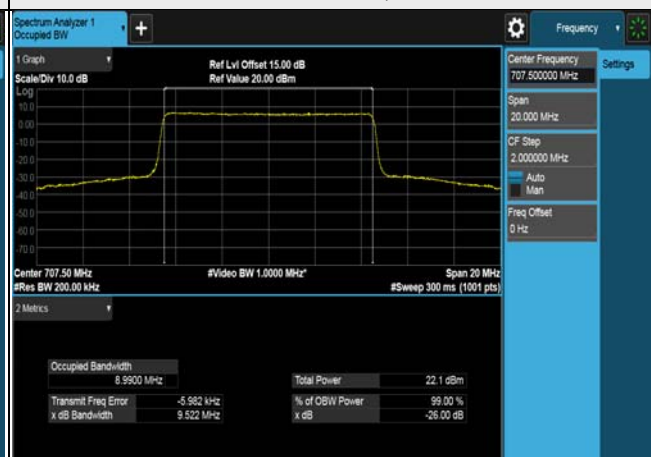
3MHz / 16QAM



5MHz / 64QAM



10MHz / 64QAM



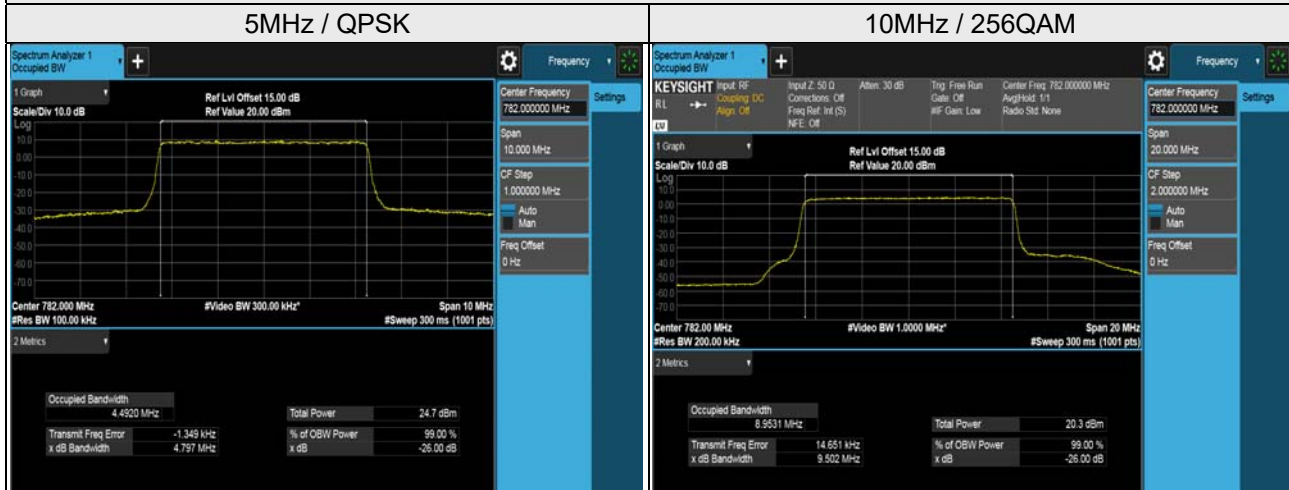
LTE Band 13, Channel Bandwidth 5MHz

Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
23205	779.5	4.794	4.768	4.773	4.773
23230	782.0	4.797	4.783	4.792	4.790
23255	784.5	4.786	4.779	4.793	4.790

LTE Band 13, Channel Bandwidth 10MHz

Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
23230	782.0	9.493	9.498	9.497	9.502

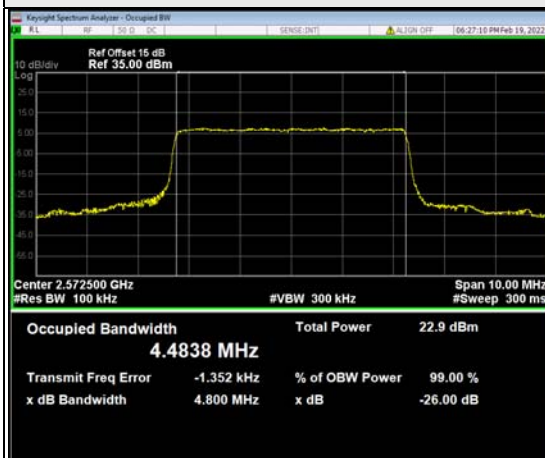
Spectrum Plot of Worst Value



LTE Band 38, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
37775	2572.5	4.800	4.779	4.763	4.765
38000	2595.0	4.777	4.776	4.782	4.752
38225	2617.5	4.791	4.773	4.772	4.764
LTE Band 38, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
37800	2575.0	9.483	9.498	9.486	9.487
38000	2595.0	9.487	9.487	9.489	9.489
38200	2615.0	9.486	9.485	9.489	9.505
LTE Band 38, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
37825	2577.5	14.214	14.227	14.243	14.213
38000	2595.0	14.219	14.225	14.226	14.212
38175	2612.5	14.220	14.227	14.232	14.232
LTE Band 38, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
37850	2580.0	19.000	19.014	19.024	19.003
38000	2595.0	18.990	19.009	19.013	19.002
38150	2610.0	19.002	19.000	19.018	19.004

Spectrum Plot of Worst Value

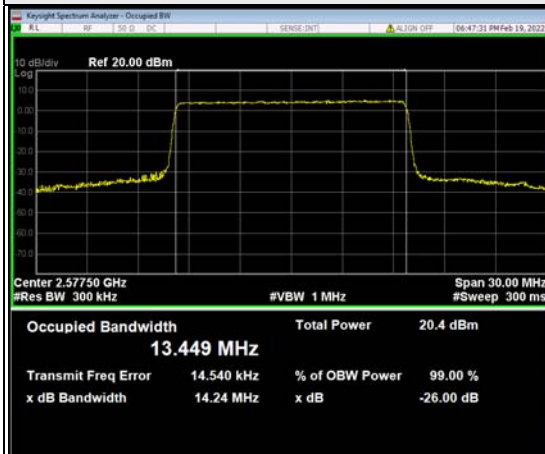
5MHz / QPSK



10MHz / 256QAM



15MHz / 64QAM



20MHz / 64QAM



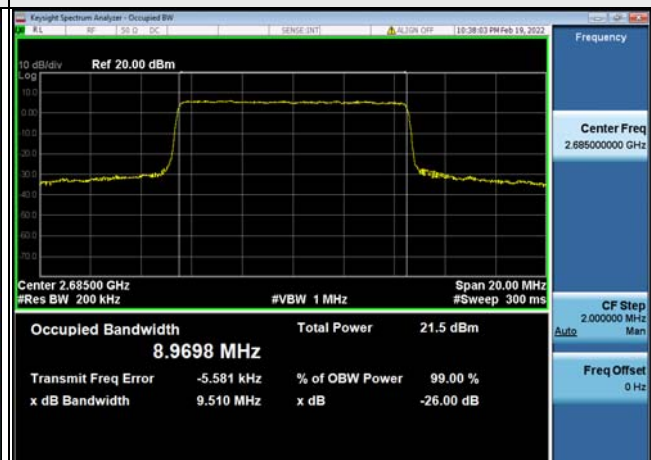
LTE Band 41, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
39675	2498.5	4.781	4.793	4.777	4.783
40620	2593.0	4.786	4.777	4.765	4.773
41565	2687.5	4.788	4.781	4.766	4.776
LTE Band 41, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
39700	2501.0	9.492	9.491	9.485	9.480
40620	2593.0	9.492	9.486	9.487	9.490
41540	2685.0	9.497	9.495	9.510	9.494
LTE Band 41, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
39725	2503.5	14.219	14.217	14.218	14.219
40620	2593.0	14.209	14.223	14.234	14.225
41515	2682.5	14.226	14.218	14.248	14.217
LTE Band 41, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
39750	2506.0	18.987	18.998	19.008	19.000
40620	2593.0	18.998	18.996	19.010	18.999
41490	2680.0	18.998	18.994	19.022	19.001

Spectrum Plot of Worst Value

5MHz / 16QAM



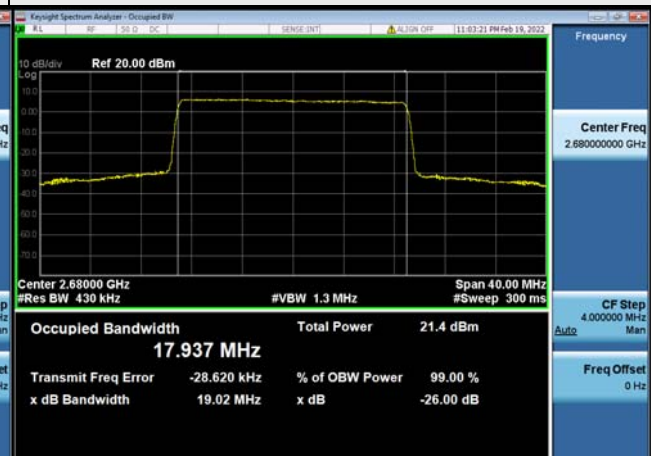
10MHz / 64QAM



15MHz / 64QAM



20MHz / 64QAM



LTE Band 66, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131979	1710.7	1.257	1.260	1.257	1.233
132322	1745.0	1.280	1.274	1.268	1.226
132665	1779.3	1.259	1.247	1.247	1.247
LTE Band 66, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131987	1711.5	2.886	2.894	2.864	2.886
132322	1745.0	2.894	2.904	2.881	2.883
132657	1778.5	2.883	2.887	2.869	2.884
LTE Band 66, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131997	1712.5	4.819	4.790	4.802	4.781
132322	1745.0	4.838	4.807	4.788	4.786
132647	1777.5	4.779	4.781	4.767	4.778
LTE Band 66, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132022	1715.0	9.518	9.494	9.506	9.512
132322	1745.0	9.554	9.518	9.508	9.503
132622	1775.0	9.503	9.497	9.496	9.506
LTE Band 66, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132047	1717.5	14.222	14.220	14.219	14.220
132322	1745.0	14.254	14.258	14.237	14.219
132597	1772.5	14.238	14.225	14.217	14.228

LTE Band 66, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132072	1720.0	19.003	19.016	19.000	18.997
132322	1745.0	19.027	19.037	19.017	18.984
132572	1770.0	19.010	19.018	19.012	19.005

Spectrum Plot of Worst Value

1.4MHz / QPSK



3MHz / 16QAM



5MHz / QPSK



10MHz / QPSK



15MHz / 16QAM



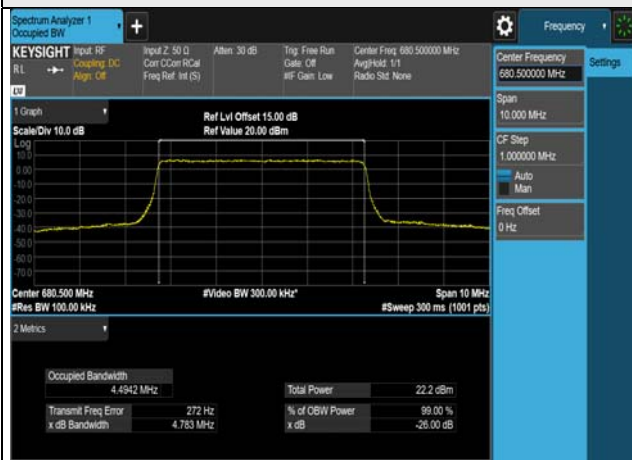
20MHz / 16QAM



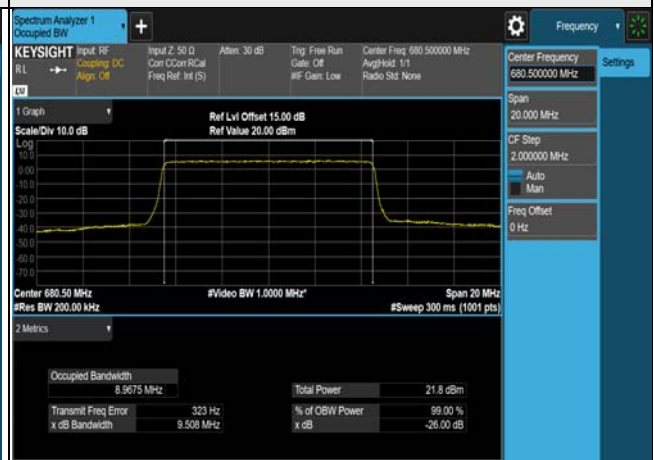
LTE Band 71, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
133147	665.5	4.776	4.768	4.779	4.782
133297	680.5	4.781	4.781	4.783	4.779
133447	695.5	4.770	4.769	4.782	4.783
LTE Band 71, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
133172	668.0	9.500	9.486	9.492	9.493
133297	680.5	9.502	9.498	9.508	9.498
133422	693.0	9.498	9.488	9.492	9.495
LTE Band 71, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
133197	670.5	14.210	14.213	14.220	14.227
133297	680.5	14.229	14.227	14.233	14.221
133397	690.5	14.231	14.229	14.218	14.236
LTE Band 71, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
133222	673.0	18.992	18.986	18.991	18.991
133297	680.5	19.011	19.021	19.020	19.009
133372	688.0	19.022	19.014	19.010	19.009

Spectrum Plot of Worst Value

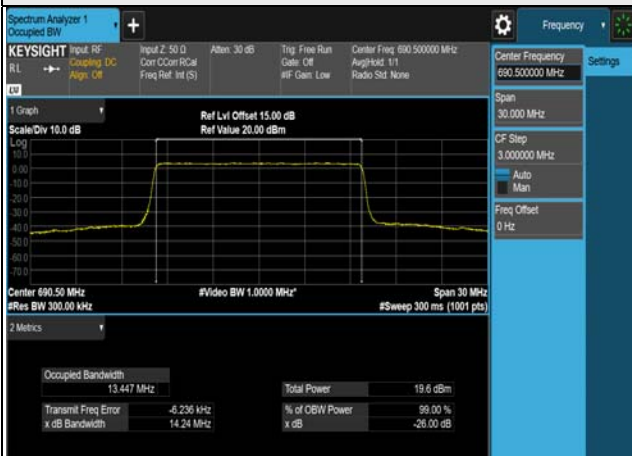
5MHz / 64QAM



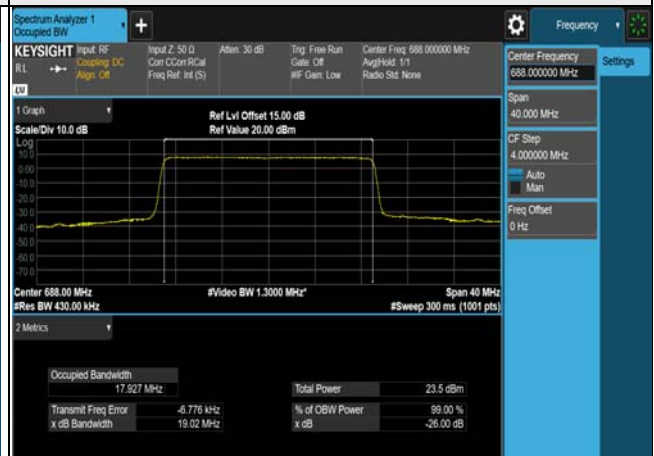
10MHz / 64QAM



15MHz / 256QAM



20MHz / QPSK



4.5 Channel Edge / Out-of-Band Emissions Measurement

4.5.1 Limits of Band Edge / Out-of-Band Emissions Measurement

For WCDMA Band 4, LTE Band 4, LTE Band 66:

According to FCC 27.53(h) for operations in the 1695-1710MHz, 1710-1755MHz, 1755-1780 MHz, 1915-1920MHz, 1995-2000 MHz, 2000-2020MHz, 2110-2155MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log (P)$ dB.

For LTE Band 7, LTE Band 38, LTE Band 41:

According to FCC 27.53(m)(4) specified that power of any emission outside of the channel edge must be attenuated below the transmitting power (P) by a factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5MHz. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed.

For LTE Band 12, LTE Band 71:

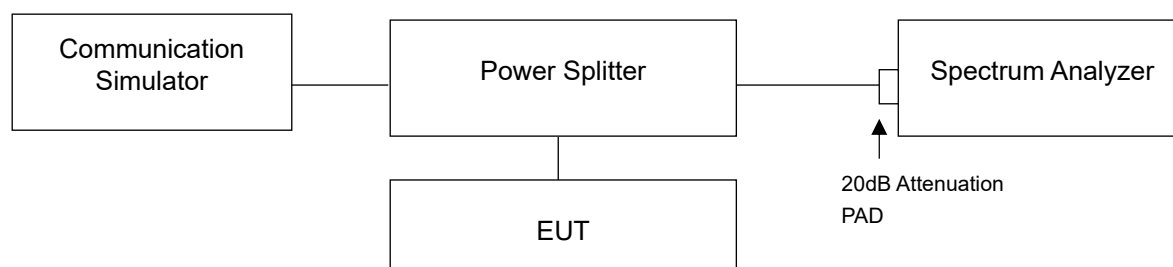
According to FCC 27.53(g) for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater.

For LTE Band 13:

According to FCC 27.53(c)(2) for on any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB.

According to 27.53(c)(4) On all frequencies between 763-775MHz and 793-805MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations

4.5.2 Test Setup



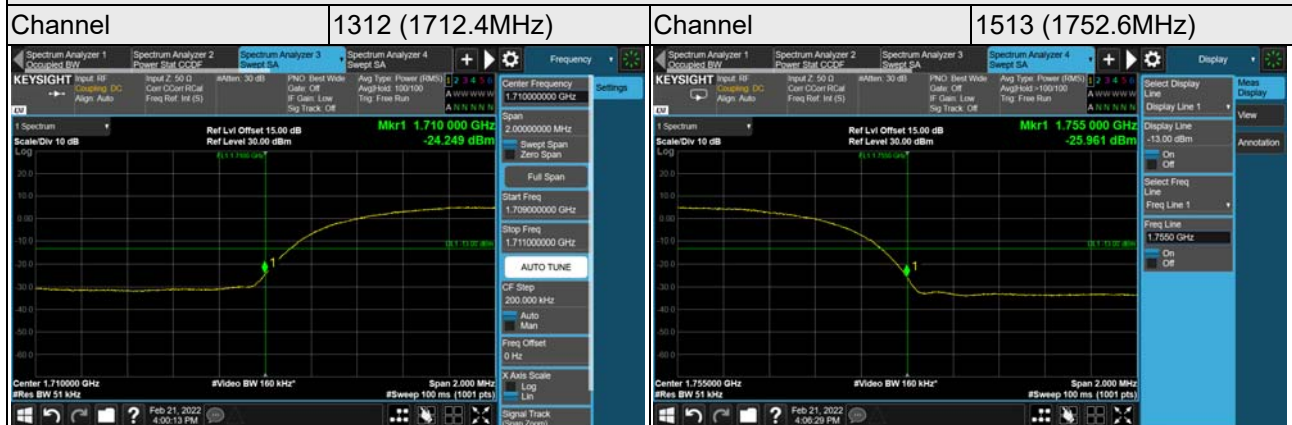
4.5.3 Test Procedures

- a. The EUT was set up for the rated peak power. The power was measured with Spectrum Analyzer. Band edge measurements were done at 2 channels: low and high operational frequency range.
- b. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 51kHz and VB of the spectrum is 160kHz (WCDMA / HSDPA / HSUPA).
- c. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 15kHz and VB of the spectrum is 51kHz (LTE Channel Bandwidth 1.4MHz).
- d. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 30kHz and VB of the spectrum is 100kHz (LTE Channel Bandwidth 3MHz).
- e. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 51kHz and VB of the spectrum is 160kHz (LTE Channel Bandwidth 5MHz).
- f. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (LTE Channel Bandwidth 10MHz).
- g. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 150kHz and VB of the spectrum is 470kHz (LTE Channel Bandwidth 15MHz).
- h. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 200kHz and VB of the spectrum is 1MHz (LTE Channel Bandwidth 20MHz).
- i. Except LTE Band 12 measurement procedure refer 27.53(g).
- j. LTE Band 7, Band 38, Band 41 measurement, for 5 MHz and 10 MHz channel BW mode, extend the 1% range from 1M to 2M above and below the channel edge and then reduce the limit further by 10 log $(1000/100) = 10\text{dB}$ (i.e. total $-10 + -10 = -20\text{dB}$) to compensate for the integration from 100k to 1M.
- k. Record the max trace plot into the test report.

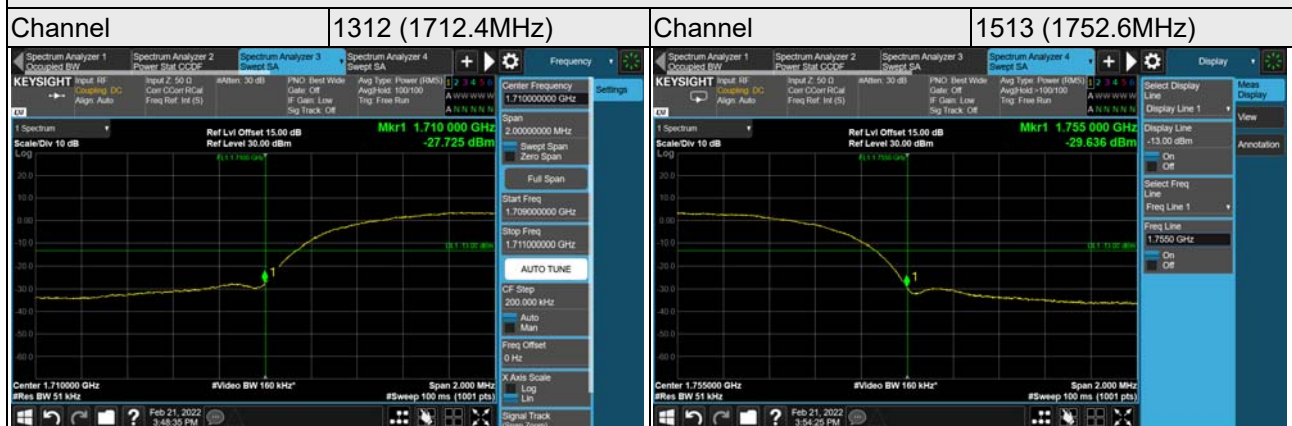
4.5.4 Test Results

Band Edge

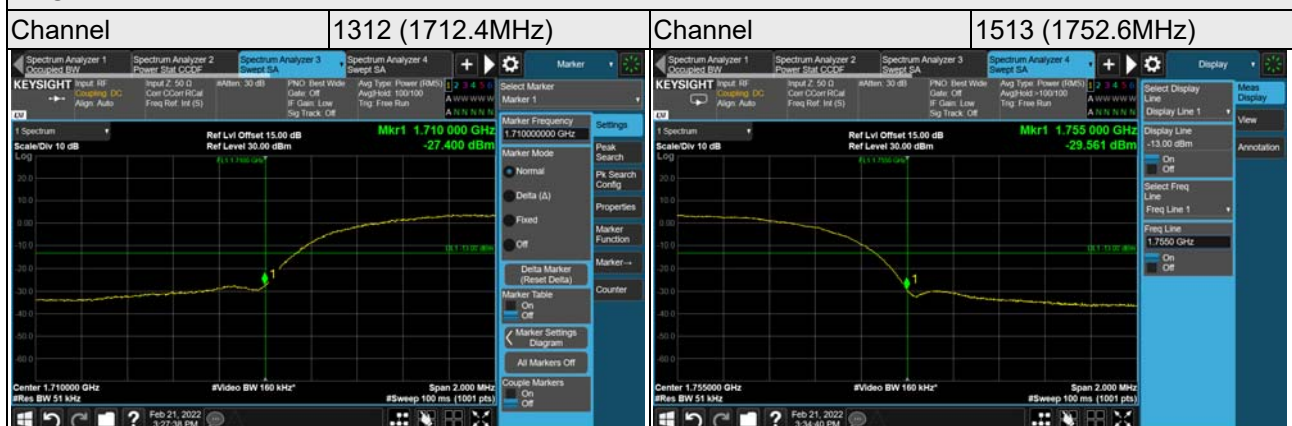
WCDMA Band 4



HSDPA



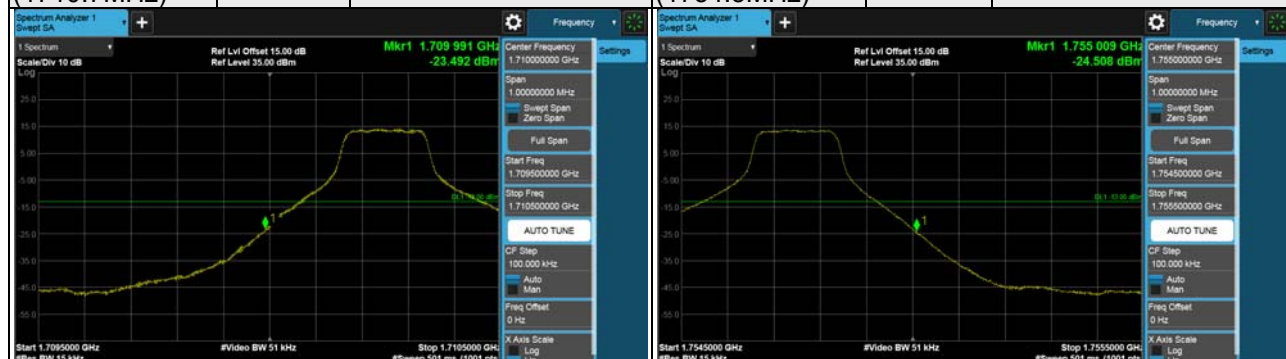
HSUPA



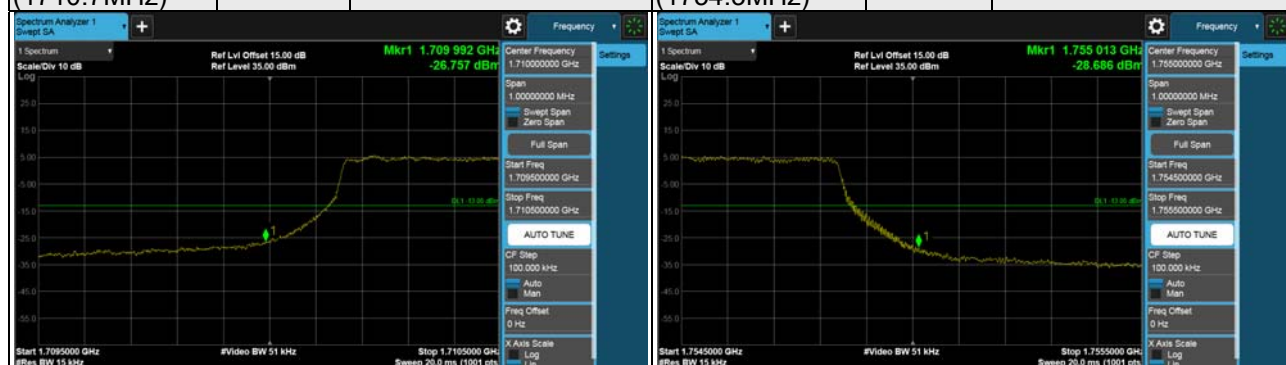
Band Edge

LTE Band 4, Channel Bandwidth 1.4MHz

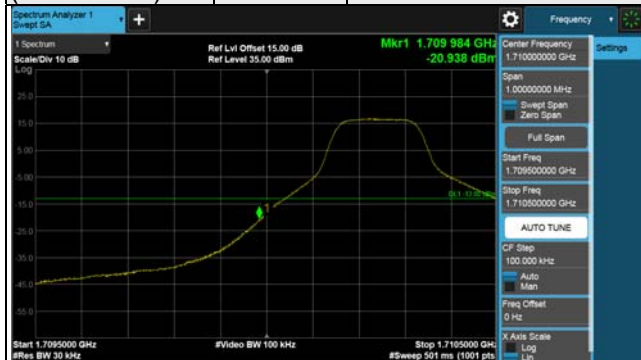
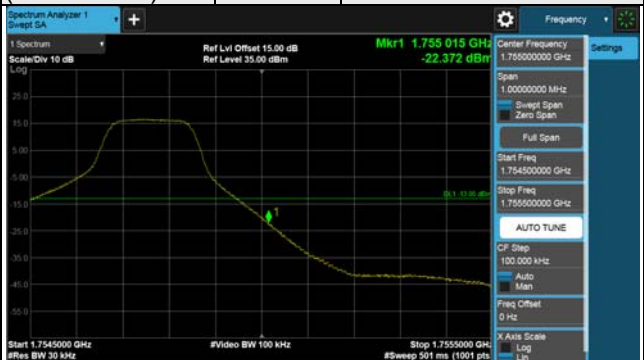
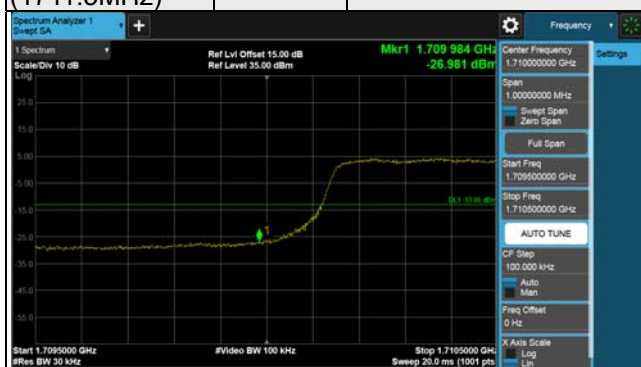
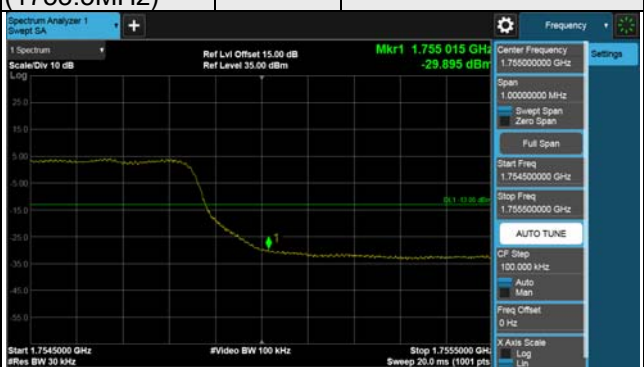
Channel 19957 (1710.7MHz)	QPSK	1 RB / 0 RB Offset	Channel 20393 (1754.3MHz)	QPSK	1 RB / 5 RB Offset
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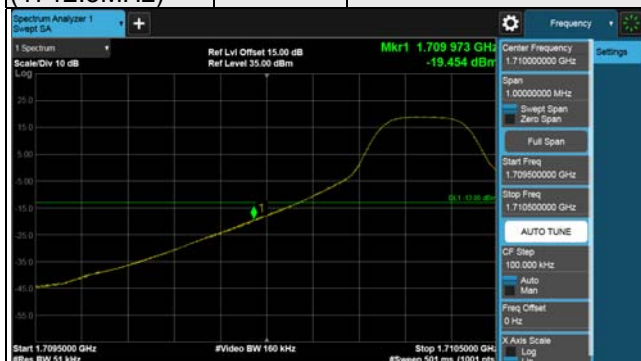
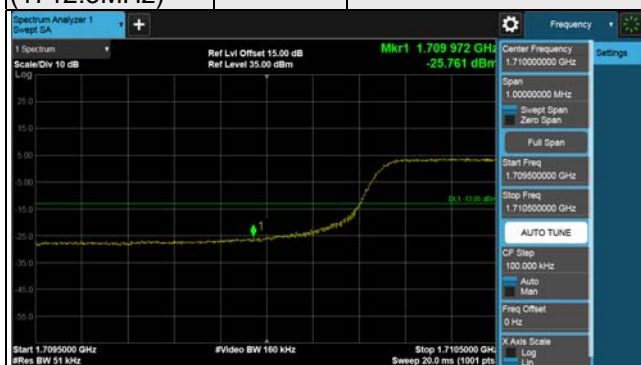
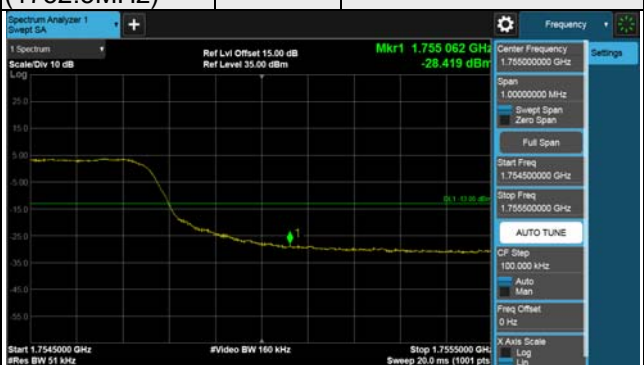
Channel 19957 (1710.7MHz)	QPSK	6 RB / 0 RB Offset	Channel 20393 (1754.3MHz)	QPSK	6 RB / 0 RB Offset
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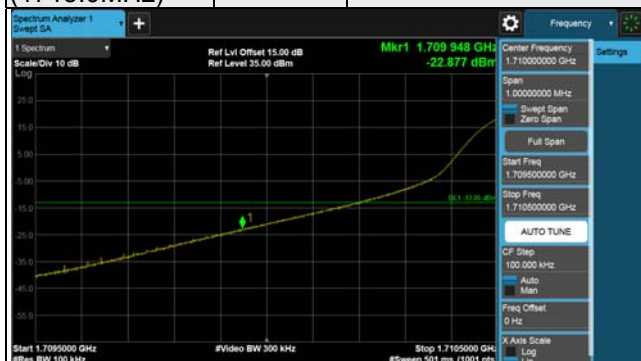
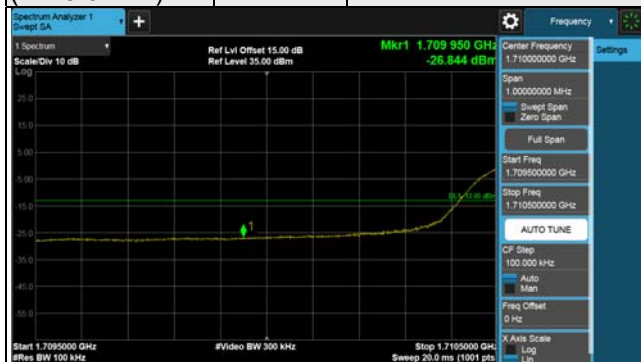
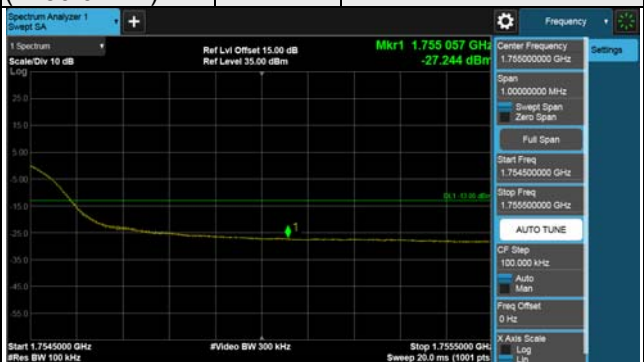
LTE Band 4, Channel Bandwidth 3MHz

Channel 19965 (1711.5MHz)	QPSK	1 RB / 0 RB Offset	Channel 20385 (1753.5MHz)	QPSK	1 RB / 14 RB Offset
					
Channel 19965 (1711.5MHz)	QPSK	15 RB / 0 RB Offset	Channel 20385 (1753.5MHz)	QPSK	15 RB / 0 RB Offset
					

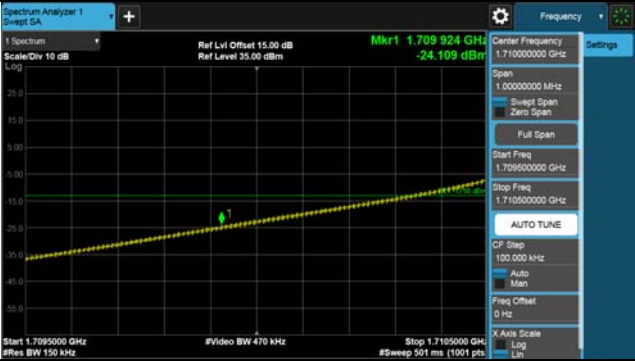
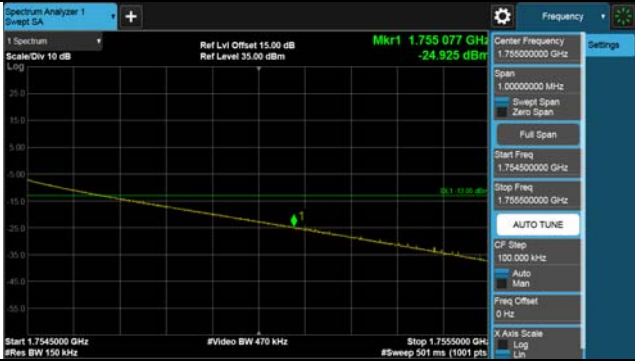
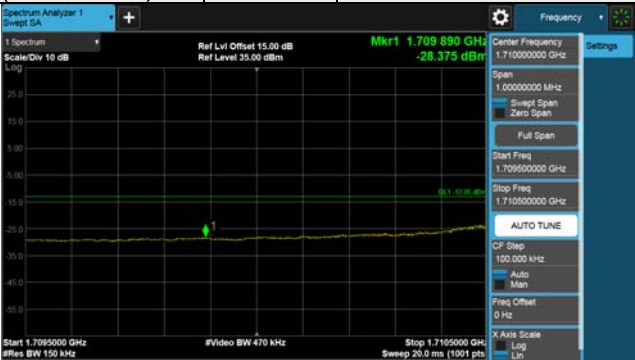
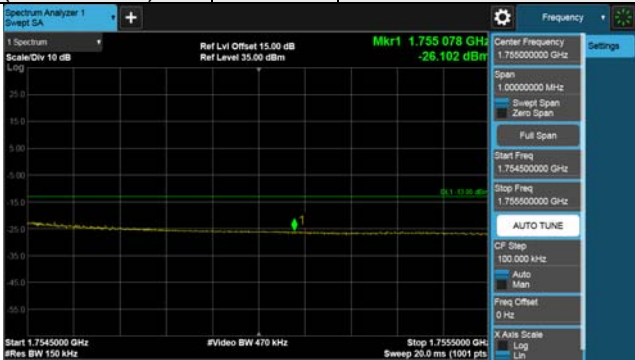
LTE Band 4, Channel Bandwidth 5MHz

Channel 19975 (1712.5MHz)	QPSK	1 RB / 0 RB Offset	Channel 20375 (1752.5MHz)	QPSK	1 RB / 24 RB Offset
					
Channel 19975 (1712.5MHz)	QPSK	25 RB / 0 RB Offset	Channel 20375 (1752.5MHz)	QPSK	25 RB / 0 RB Offset
					

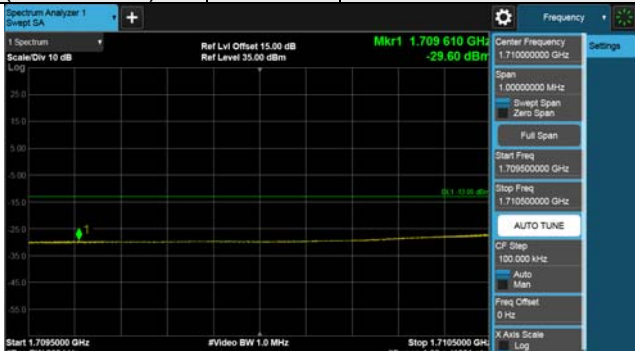
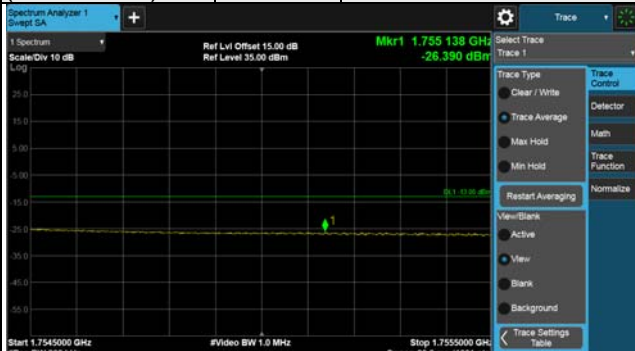
LTE Band 4, Channel Bandwidth 10MHz

Channel 20000 (1715.0MHz)	QPSK	1 RB / 0 RB Offset	Channel 20350 (1750.0MHz)	QPSK	1 RB / 49 RB Offset
					
Channel 20000 (1715.0MHz)	QPSK	50 RB / 0 RB Offset	Channel 20350 (1750.0MHz)	QPSK	50 RB / 0 RB Offset
					

LTE Band 4, Channel Bandwidth 15MHz

Channel 20025 (1717.5MHz)	QPSK	1 RB / 0 RB Offset	Channel 20325 (1747.5MHz)	QPSK	1 RB / 74 RB Offset
					
Channel 20025 (1717.5MHz)	QPSK	75 RB / 0 RB Offset	Channel 20325 (1747.5MHz)	QPSK	75 RB / 0 RB Offset
					

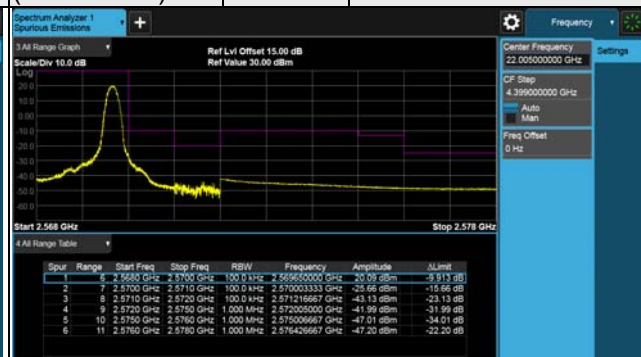
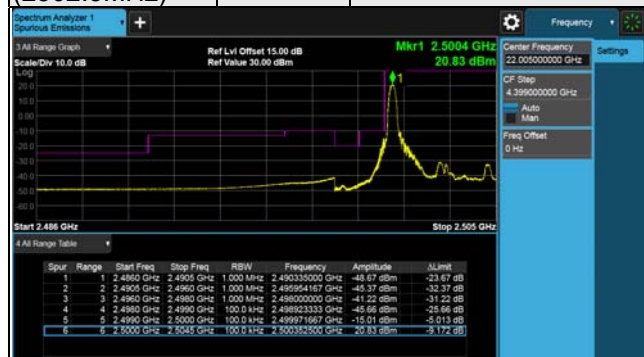
LTE Band 4, Channel Bandwidth 20MHz

Channel 20050 (1720.0MHz)	QPSK	1 RB / 0 RB Offset	Channel 20300 (1745.0MHz)	QPSK	1 RB / 99 RB Offset
					
Channel 20050 (1720.0MHz)	QPSK	100 RB / 0 RB Offset	Channel 20300 (1745.0MHz)	QPSK	100 RB / 0 RB Offset
					

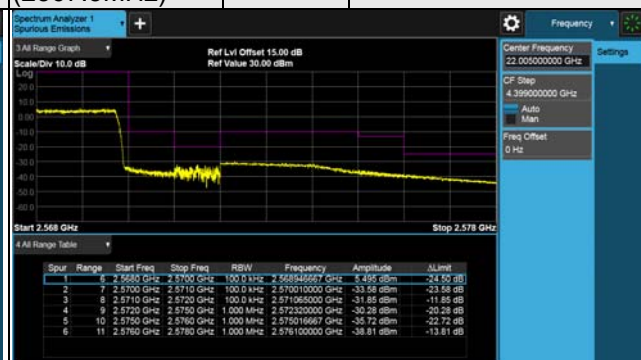
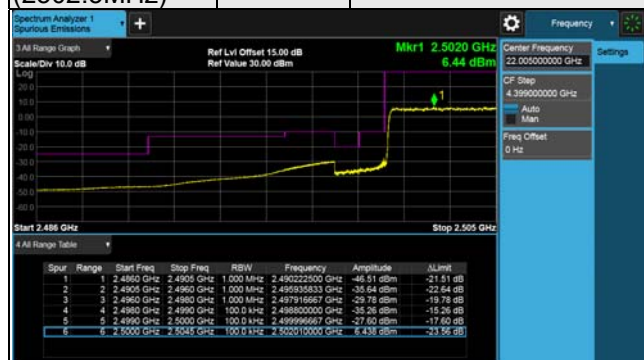
Out-of-Band Emission

LTE Band 7, Channel Bandwidth 5MHz

Channel 20775 (2502.5MHz)	QPSK	1 RB / 0 RB Offset	Channel 21425 (2567.5MHz)	QPSK	1 RB / 24 RB Offset
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Channel 20775 (2502.5MHz)	QPSK	25 RB / 0 RB Offset	Channel 21425 (2567.5MHz)	QPSK	25 RB / 0 RB Offset
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LTE Band 7, Channel Bandwidth 10MHz

Channel 20800
(2505.0MHz)

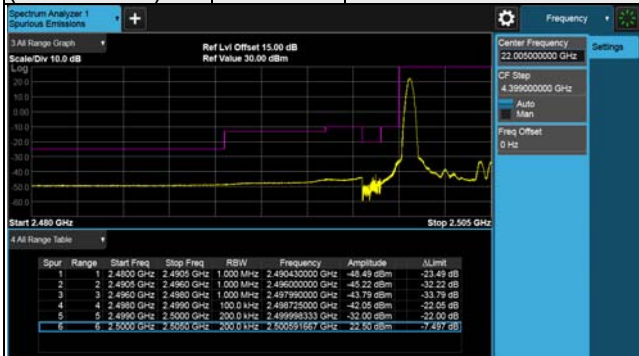
QPSK

1 RB / 0 RB Offset

Channel 21400
(2565.0MHz)

QPSK

1 RB / 49 RB Offset



Channel 20800
(2505.0MHz)

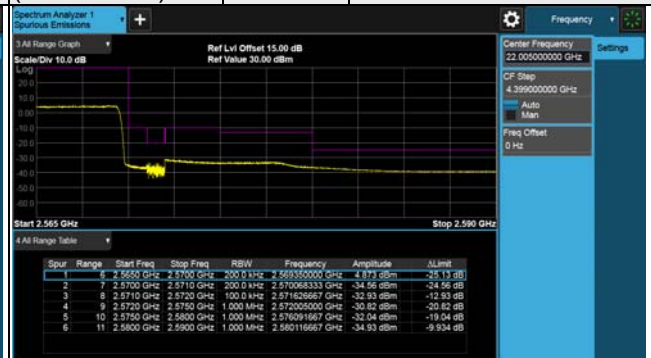
QPSK

50 RB / 0 RB Offset

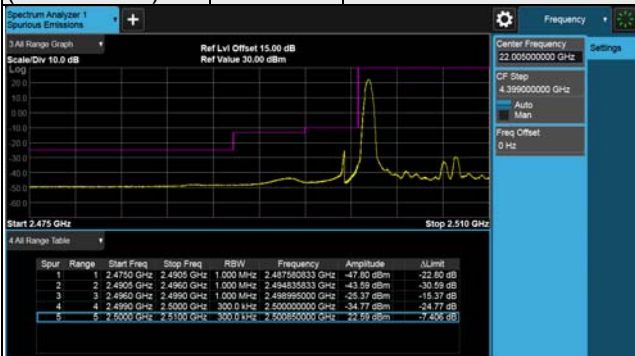
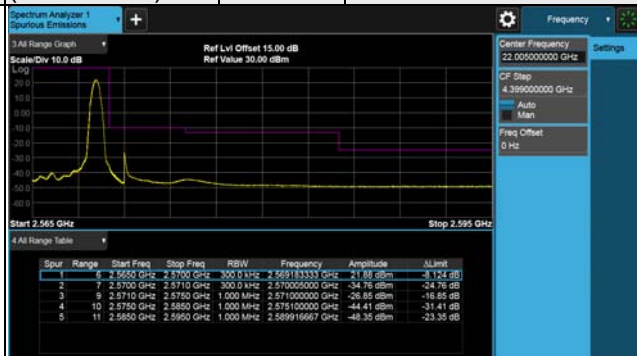
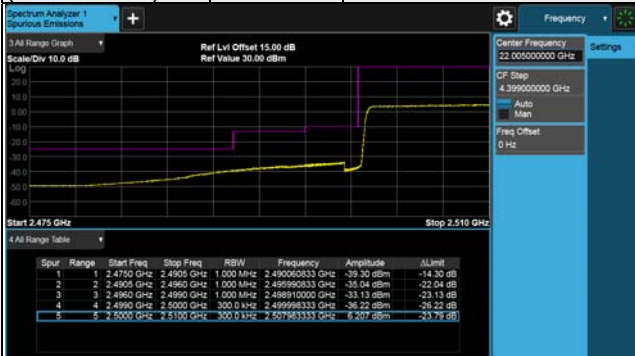
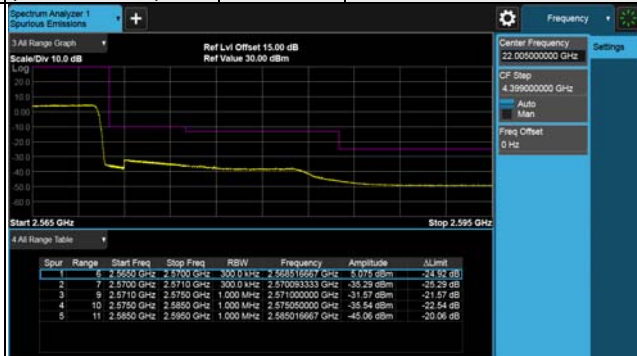
Channel 21400
(2565.0MHz)

QPSK

50 RB / 0 RB Offset



LTE Band 7, Channel Bandwidth 15MHz

Channel 20825 (2507.5MHz)	QPSK	1 RB / 0 RB Offset	Channel 21375 (2562.5MHz)	QPSK	1 RB / 74 RB Offset																																																																																																
																																																																																																					
<table><tr><th>Spur</th><th>Range</th><th>Start Freq</th><th>Stop Freq</th><th>RBW</th><th>Frequency</th><th>Amplitude</th><th>ULimit</th></tr><tr><td>1</td><td>1</td><td>2.4750 GHz</td><td>2.4905 GHz</td><td>1.000 MHz</td><td>2.487500000 GHz</td><td>-47.80 dBm</td><td>-32.80 dB</td></tr><tr><td>2</td><td>2</td><td>2.4905 GHz</td><td>2.4960 GHz</td><td>1.000 MHz</td><td>2.494830000 GHz</td><td>-43.59 dBm</td><td>-30.59 dB</td></tr><tr><td>3</td><td>3</td><td>2.4960 GHz</td><td>2.4990 GHz</td><td>1.000 MHz</td><td>2.496950000 GHz</td><td>-25.37 dBm</td><td>-15.37 dB</td></tr><tr><td>4</td><td>4</td><td>2.4990 GHz</td><td>2.5000 GHz</td><td>300.0 kHz</td><td>2.500000000 GHz</td><td>-34.77 dBm</td><td>-24.77 dB</td></tr><tr><td>5</td><td>5</td><td>2.5000 GHz</td><td>2.5100 GHz</td><td>300.0 kHz</td><td>2.500950000 GHz</td><td>-24.59 dBm</td><td>-14.59 dB</td></tr></table>			Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	ULimit	1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.487500000 GHz	-47.80 dBm	-32.80 dB	2	2	2.4905 GHz	2.4960 GHz	1.000 MHz	2.494830000 GHz	-43.59 dBm	-30.59 dB	3	3	2.4960 GHz	2.4990 GHz	1.000 MHz	2.496950000 GHz	-25.37 dBm	-15.37 dB	4	4	2.4990 GHz	2.5000 GHz	300.0 kHz	2.500000000 GHz	-34.77 dBm	-24.77 dB	5	5	2.5000 GHz	2.5100 GHz	300.0 kHz	2.500950000 GHz	-24.59 dBm	-14.59 dB	<table><tr><th>Spur</th><th>Range</th><th>Start Freq</th><th>Stop Freq</th><th>RBW</th><th>Frequency</th><th>Amplitude</th><th>ULimit</th></tr><tr><td>1</td><td>6</td><td>2.5650 GHz</td><td>2.5700 GHz</td><td>300.0 kHz</td><td>2.569133333 GHz</td><td>-21.68 dBm</td><td>-8.124 dB</td></tr><tr><td>2</td><td>7</td><td>2.5700 GHz</td><td>2.5710 GHz</td><td>300.0 kHz</td><td>2.570000000 GHz</td><td>-24.78 dBm</td><td>-24.78 dB</td></tr><tr><td>3</td><td>9</td><td>2.5710 GHz</td><td>2.5750 GHz</td><td>1.000 MHz</td><td>2.571000000 GHz</td><td>-26.85 dBm</td><td>-16.85 dB</td></tr><tr><td>4</td><td>10</td><td>2.5750 GHz</td><td>2.5850 GHz</td><td>1.000 MHz</td><td>2.575100000 GHz</td><td>-44.41 dBm</td><td>-31.41 dB</td></tr><tr><td>5</td><td>11</td><td>2.5850 GHz</td><td>2.5950 GHz</td><td>1.000 MHz</td><td>2.589916667 GHz</td><td>-48.35 dBm</td><td>-23.35 dB</td></tr></table>			Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	ULimit	1	6	2.5650 GHz	2.5700 GHz	300.0 kHz	2.569133333 GHz	-21.68 dBm	-8.124 dB	2	7	2.5700 GHz	2.5710 GHz	300.0 kHz	2.570000000 GHz	-24.78 dBm	-24.78 dB	3	9	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571000000 GHz	-26.85 dBm	-16.85 dB	4	10	2.5750 GHz	2.5850 GHz	1.000 MHz	2.575100000 GHz	-44.41 dBm	-31.41 dB	5	11	2.5850 GHz	2.5950 GHz	1.000 MHz	2.589916667 GHz	-48.35 dBm	-23.35 dB
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