FCC Test Report

(ENDC: n7 + LTE B2/B5/B12/B13/B66)

Report No.:	RFBFLF-WTW-P21010278-23
FCC ID:	MSQI007D
Test Model:	ASUS_I007D
Received Date:	Jan. 04, 2021
Test Date:	Feb. 26 ~ Apr. 19, 2021
Issued Date:	Apr. 19, 2021
Applicant:	ASUSTeK COMPUTER INC.
Address:	1F., No. 15, Lide Rd., Beitou Dist., Taipei City 112, Taiwan
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN
FCC Registration / Designation Number:	788550 / TW0003

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Release Control Record

Issue No.	Description	Date Issued
RFBFLF-WTW-P21010278-23	Original release	Apr. 19, 2021

1 Certificate of Conformity

Product:	EXP21 Smartphone
Brand:	ASUS
Test Model:	ASUS_I007D
Sample Status:	Engineering sample
Applicant:	ASUSTeK COMPUTER INC.
Test Date:	Feb. 26 ~ Apr. 19, 2021
Standards:	FCC Part 22, Subpart H FCC Part 24, Subpart E FCC Part 27, Subpart C, F, H, L, M

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 : Celine Chou , **Date:** Apr. 19, 2021

Celine Chou / Senior Specialist

Approved by : Bruce Chen , **Date:** Apr. 19, 2021

Bruce Chen / Senior Project Engineer

2 Summary of Test Results

For n7

Applied Standard: FCC Part 27 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 27.50 (h)(2)	Equivalent Radiated Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement of limit.
----	Peak To Average Ratio	Pass	Meet the requirement of limit.
2.1055 27.54	Frequency Stability Stay with the authorized bands of operation	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
2.1051 27.53 (m)(4)(6)	Out of Band Emissions Measurements	Pass	Meet the requirement of limit.
2.1051 27.53 (m)(4)(6)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53 (m)(4)(6)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -20.50dB at 5070.00MHz.

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

For LTE Band 2

Applied Standard: FCC Part 24 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 24.232	Effective Isotropically Radiated Power	Pass	Meet the requirement of limit.
2.1046 24.232 (d)	Peak To Average Ratio	Pass	Refer to Note 1
2.1047	Modulation Characteristics	Pass	Refer to Note 1
2.1055 24.235	Frequency Stability	Pass	Refer to Note 1
2.1049	Occupied Bandwidth	Pass	Refer to Note 1
24.238	Band Edge Measurements	Pass	Refer to Note 1
2.1051 24.238	Conducted Spurious Emissions	Pass	Refer to Note 1
2.1053 24.238	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -33.00dB at 3800.00MHz.

Note:

1. This report is a partial report. Therefore, only test item of Transmitter Output Power and Effective Isotropically Radiated Power and Radiated Spurious Emissions tests were performed for this report. Other testing data please refer to BV CPS report no.: RFBFLF-WTW-P21010278-10.
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

For LTE Band 5

Applied Standard: FCC Part 22 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 22.913 (a)	Effective radiated power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Refer to Note 1
22.913 (d)	Peak To Average Ratio	Pass	Refer to Note 1
2.1055 22.355	Frequency Stability	Pass	Refer to Note 1
2.1049	Occupied Bandwidth	Pass	Refer to Note 1
22.917	Band Edge Measurements	Pass	Refer to Note 1
2.1051 22.917	Conducted Spurious Emissions	Pass	Refer to Note 1
2.1053 22.917	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -40.59dB at 1649.40MHz.

Note:

1. This report is a partial report. Therefore, only test item of Transmitter Output Power and Effective Radiated Power and Radiated Spurious Emissions tests were performed for this report. Other testing data please refer to BV CPS report no.: RFBFLF-WTW-P21010278-9.
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

For LTE Band 12, LTE Band 13, LTE Band 66

Applied Standard: FCC Part 27 & Part 2					
FCC Clause			Test Item	Result	Remarks
LTE B12	LTE B13	LTE B66			
2.1046 27.50 (c)	2.1046 27.50 (b)	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	Modulation Characteristics	Pass	Refer to Note 1
----	----	27.50 (d)(5)	Peak To Average Ratio	Pass	Refer to Note 1
2.1055 27.54	2.1055 27.54	2.1055 27.54	Frequency Stability Stay with the authorized bands of operation	Pass	Refer to Note 1
2.1049	2.1049	2.1049	Occupied Bandwidth	Pass	Refer to Note 1
2.1051 27.53 (g)	2.1051 27.53 (c)	2.1051 27.53 (h)	Band Edge / Out of Band Emissions Measurements	Pass	Refer to Note 1
2.1051 27.53 (g)	2.1051 27.53 (c)(f)	2.1051 27.53 (h)	Conducted Spurious Emissions	Pass	Refer to Note 1
2.1053 27.53 (g)	2.1053 27.53 (c)(f)	2.1053 27.53 (h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -13.40dB at 1564.00MHz.

Note:

1. This report is a partial report. Therefore, only test item of Transmitter Output Power and Equivalent Isotropically Radiated Power / Equivalent Radiated Power and Radiated Spurious Emissions tests were performed for this report. Other testing data please refer to BV CPS report no.: RFBFLF-WTW-P21010278-11.
2. 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. 16, 2020	Apr. 15, 2021
			Apr. 09, 2021	Apr. 08, 2022
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Jun. 12, 2020	Jun. 11, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSW43	101866	Dec. 14, 2020	Dec. 13, 2021
MXG Vector signal generator Agilent	N5182B	MY53050430	Nov. 25, 2020	Nov. 24, 2021
5G Wireless Test Platforms Keysight	E7515B	MY60102114	May 28, 2020	May 27, 2021
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Nov. 06, 2020	Nov. 05, 2021
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-969	Nov. 22, 2020	Nov. 21, 2021
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Nov. 06, 2020	Nov. 05, 2021
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Nov. 22, 2020	Nov. 21, 2021
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 22, 2020	Nov. 21, 2021
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Jun. 08, 2020	Jun. 07, 2021
Preamplifier Agilent (Above 1GHz)	8449B	3008A02367	Feb. 17, 2021	Feb. 16, 2022
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 16, 2021	Jan. 15, 2022
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Jan. 16, 2021	Jan. 15, 2022
RF signal cable Woken	8D-FB	Cable-CH9-01	Jun. 08, 2020	Jun. 07, 2021
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
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, 2020	Sep. 09, 2021

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
True RMS Clamp Meter Fluke	325	31130711WS	Jun. 06, 2020	Jun. 05, 2021
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	EXP21 Smartphone
Brand	ASUS
Test Model	ASUS_I007D
Sample Status	Engineering sample
Power Supply Rating	7.74 Vdc (Battery) 5 Vdc / 9 Vdc / 12 Vdc / 15Vdc / 20Vdc (Adapter)

n7

Modulation Type	$\pi/2$ BPSK, QPSK, 16QAM, 64QAM, 256QAM					
Waveform Type	CP-OFDM, DFT-s-OFDM					
Operating Frequency	n7 (Channel Bandwidth 5MHz)	2502.5MHz ~ 2567.5MHz				
	n7 (Channel Bandwidth 10MHz)	2505.0MHz ~ 2565.0MHz				
	n7 (Channel Bandwidth 15MHz)	2507.5MHz ~ 2562.5MHz				
	n7 (Channel Bandwidth 20MHz)	2510.0MHz ~ 2560.0MHz				
	n7 (Channel Bandwidth 25MHz)	2512.5MHz ~ 2557.5MHz				
	n7 (Channel Bandwidth 30MHz)	2515.0MHz ~ 2555.0MHz				
	n7 (Channel Bandwidth 40MHz)	2520.0MHz ~ 2550.0MHz				
Max. EIRP Power		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
	n7 (Channel Bandwidth 5MHz)	255.859mW (24.08dBm)	255.859mW (24.08dBm)	199.986mW (23.01dBm)	145.881mW (21.64dBm)	90.573mW (19.57dBm)
	n7 (Channel Bandwidth 10MHz)	253.513mW (24.04dBm)	254.683mW (24.06dBm)	202.768mW (23.07dBm)	145.211mW (21.62dBm)	89.743mW (19.53dBm)
	n7 (Channel Bandwidth 15MHz)	251.768mW (24.01dBm)	251.768mW (24.01dBm)	203.236mW (23.08dBm)	142.889mW (21.55dBm)	89.950mW (19.54dBm)
	n7 (Channel Bandwidth 20MHz)	257.040mW (24.10dBm)	257.632mW (24.11dBm)	203.236mW (23.08dBm)	145.881mW (21.64dBm)	91.201mW (19.60dBm)
	n7 (Channel Bandwidth 25MHz)	251.768mW (24.01dBm)	255.270mW (24.07dBm)	200.909mW (23.03dBm)	143.219mW (21.56dBm)	90.991mW (19.59dBm)
	n7 (Channel Bandwidth 30MHz)	254.683mW (24.06dBm)	255.859mW (24.08dBm)	201.837mW (23.05dBm)	143.219mW (21.56dBm)	90.157mW (19.55dBm)
	n7 (Channel Bandwidth 40MHz)	252.930mW (24.03dBm)	259.418mW (24.14dBm)	199.526mW (23.00dBm)	144.877mW (21.61dBm)	90.365mW (19.56dBm)
Emission Designator		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
	n7 (Channel Bandwidth 5MHz)	4M47G7D	4M47G7D	4M47D7W	4M47D7W	4M47D7W
	n7 (Channel Bandwidth 10MHz)	9M21G7D	9M29G7D	9M29D7W	9M29D7W	9M29D7W
	n7 (Channel Bandwidth 15MHz)	14M0G7D	14M1G7D	14M1D7W	14M1D7W	14M1D7W
	n7 (Channel Bandwidth 20MHz)	18M8G7D	18M9G7D	18M9D7W	18M9D7W	18M9D7W
	n7 (Channel Bandwidth 25MHz)	23M1G7D	23M9G7D	23M9D7W	23M9D7W	23M9D7W
	n7 (Channel Bandwidth 30MHz)	26M8G7D	27M8G7D	27M8D7W	27M8D7W	27M8D7W
	n7 (Channel Bandwidth 40MHz)	35M7G7D	37M8G7D	37M8D7W	37M8D7W	37M8D7W

LTE Band

Modulation Type	QPSK, 16QAM, 64QAM, 256QAM				
Operating Frequency	LTE Band 2 (Channel Bandwidth 1.4MHz)	1850.7MHz ~ 1909.3MHz			
	LTE Band 2 (Channel Bandwidth 3MHz)	1851.5MHz ~ 1908.5MHz			
	LTE Band 2 (Channel Bandwidth 5MHz)	1852.5MHz ~ 1907.5MHz			
	LTE Band 2 (Channel Bandwidth 10MHz)	1855.0MHz ~ 1905.0MHz			
	LTE Band 2 (Channel Bandwidth 15MHz)	1857.5MHz ~ 1902.5MHz			
	LTE Band 2 (Channel Bandwidth 20MHz)	1860.0MHz ~ 1900.0MHz			
	LTE Band 5 (Channel Bandwidth 1.4MHz)	824.7MHz ~ 848.3MHz			
	LTE Band 5 (Channel Bandwidth 3MHz)	825.5MHz ~ 847.5MHz			
	LTE Band 5 (Channel Bandwidth 5MHz)	826.5MHz ~ 846.5MHz			
	LTE Band 5 (Channel Bandwidth 10MHz)	829.0MHz ~ 844.0MHz			
	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 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			
Max. EIRP Power		QPSK	16QAM	64QAM	256QAM
	LTE Band 2 (Channel Bandwidth 1.4MHz)	171.791mW (22.35dBm)	132.434mW (21.22dBm)	106.414mW (20.27dBm)	50.816mW (17.06dBm)
	LTE Band 2 (Channel Bandwidth 3MHz)	168.267mW (22.26dBm)	139.316mW (21.44dBm)	106.905mW (20.29dBm)	49.774mW (16.97dBm)
	LTE Band 2 (Channel Bandwidth 5MHz)	163.682mW (22.14dBm)	138.357mW (21.41dBm)	106.414mW (20.27dBm)	48.865mW (16.89dBm)
	LTE Band 2 (Channel Bandwidth 10MHz)	166.341mW (22.21dBm)	136.458mW (21.35dBm)	101.625mW (20.07dBm)	51.523mW (17.12dBm)
	LTE Band 2 (Channel Bandwidth 15MHz)	172.584mW (22.37dBm)	141.579mW (21.51dBm)	110.154mW (20.42dBm)	51.523mW (17.12dBm)
	LTE Band 2 (Channel Bandwidth 20MHz)	173.780mW (22.40dBm)	138.357mW (21.41dBm)	108.393mW (20.35dBm)	52.119mW (17.17dBm)

Max. EIRP Power		QPSK	16QAM	64QAM	256QAM
	LTE Band 66 (Channel Bandwidth 1.4MHz)	162.555mW (22.11dBm)	125.314mW (20.98dBm)	103.039mW (20.13dBm)	42.756mW (16.31dBm)
	LTE Band 66 (Channel Bandwidth 3MHz)	155.597mW (21.92dBm)	123.595mW (20.92dBm)	100.925mW (20.04dBm)	46.559mW (16.68dBm)
	LTE Band 66 (Channel Bandwidth 5MHz)	160.694mW (22.06dBm)	125.603mW (20.99dBm)	100.462mW (20.02dBm)	46.881mW (16.71dBm)
	LTE Band 66 (Channel Bandwidth 10MHz)	161.436mW (22.08dBm)	122.744mW (20.89dBm)	102.094mW (20.09dBm)	48.865mW (16.89dBm)
	LTE Band 66 (Channel Bandwidth 15MHz)	161.436mW (22.08dBm)	126.765mW (21.03dBm)	104.954mW (20.21dBm)	48.865mW (16.89dBm)
	LTE Band 66 (Channel Bandwidth 20MHz)	162.930mW (22.12dBm)	128.529mW (21.09dBm)	104.713mW (20.20dBm)	48.641mW (16.87dBm)
Max. ERP Power		QPSK	16QAM	64QAM	256QAM
	LTE Band 5 (Channel Bandwidth 1.4MHz)	116.145mW (20.65dBm)	94.624mW (19.76dBm)	69.663mW (18.43dBm)	33.189mW (15.21dBm)
	LTE Band 5 (Channel Bandwidth 3MHz)	118.032mW (20.72dBm)	94.842mW (19.77dBm)	69.343mW (18.41dBm)	33.574mW (15.26dBm)
	LTE Band 5 (Channel Bandwidth 5MHz)	114.815mW (20.60dBm)	93.325mW (19.70dBm)	70.469mW (18.48dBm)	34.674mW (15.40dBm)
	LTE Band 5 (Channel Bandwidth 10MHz)	119.674mW (20.78dBm)	92.470mW (19.66dBm)	69.984mW (18.45dBm)	35.727mW (15.53dBm)
	LTE Band 12 (Channel Bandwidth 1.4MHz)	106.905mW (20.29dBm)	87.902mW (19.44dBm)	69.343mW (18.41dBm)	31.769mW (15.02dBm)
	LTE Band 12 (Channel Bandwidth 3MHz)	108.393mW (20.35dBm)	83.946mW (19.24dBm)	68.234mW (18.34dBm)	33.266mW (15.22dBm)
	LTE Band 12 (Channel Bandwidth 5MHz)	110.917mW (20.45dBm)	87.498mW (19.42dBm)	72.277mW (18.59dBm)	32.359mW (15.10dBm)
	LTE Band 12 (Channel Bandwidth 10MHz)	111.429mW (20.47dBm)	86.298mW (19.36dBm)	70.632mW (18.49dBm)	32.137mW (15.07dBm)
	LTE Band 13 (Channel Bandwidth 5MHz)	66.527mW (18.23dBm)	54.325mW (17.35dBm)	41.879mW (16.22dBm)	19.815mW (12.97dBm)
	LTE Band 13 (Channel Bandwidth 10MHz)	67.608mW (18.30dBm)	53.088mW (17.25dBm)	41.976mW (16.23dBm)	19.143mW (12.82dBm)
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
Battery	SCUD	C21P2002	Rating: 7.74Vdc, 15.2Wh
Adapter	AOHAI	A320Q-200325C-US	I/P: 100-240Vac, 50/60Hz,1.5A O/P: 5Vdc, 3A; 9Vdc, 3A; 12Vdc, 3A; 15Vdc, 3A; 20Vdc, 3.25A
Type A to Type C USB Cable	Luxshare	LA9U2026-CS-R	0.5m
Type C to Type C Cable	Luxshare	LA9UC006-CS-R	1.2m
Bluetooth Earphone	Bang & Olufsen	EQ Earbud R	FCC ID: TTUBEOPLAYEQR IC: 3775B-BEOPLAYEQR
		EQ Earbud L	FCC ID: TTUBEOPLAYEQL IC: 3775B-BEOPLAYEQL
Bluetooth Earphone Charging Case	Bang & Olufsen	EQ Charging case	I/P: 5Vdc/500mA O/P: 5Vdc/ R170mA; L170mA

2. The following antennas were provided to the EUT.

Ant. No.	Brand	Model	Ant. Type	Connecter	Frequency Range
Ant 0	ASUS	ZS675KW	PIFA	LCP+Ipex	610-960MHz, 1710-2690MHz
Ant 1	ASUS	ZS675KW	PIFA	LCP+Ipex	1427-1510MHz, 1710-2690MHz
Ant 2	ASUS	ZS675KW	PIFA	LCP+Ipex	610-960MHz, 1427-1510MHz, 1710-2690MHz
Ant 3	INPAQ	ZS675KW	PIFA	Ipex	1575-1610MHz, 2400-2500MHz, 5150-5850MHz, 5925-7125MHz
Ant 4	INPAQ	ZS675KW	PIFA	Ipex	1176±10MHz, 2400-2500MHz, 5150-5850MHz, 5925-7125MHz
Ant 5	INPAQ	ZS675KW	PIFA	LCP+Ipex	3300-4000MHz, 4400-5000MHz
Ant 6	INPAQ	ZS675KW	PIFA	Ipex	1427-1510MHz, 2400-2500MHz, 5150-5850MHz, 5925-7125MHz
Ant 7	INPAQ	ZS675KW	PIFA	LCP+Ipex	3300-4000MHz, 4400-5000MHz
Ant 8	ASUS	ZS675KW	PIFA	LCP+Ipex	1427-1510MHz, 1710-2690MHz
Ant 9	ASUS	ZS675KW	PIFA	LCP+Ipex	1710-2690MHz
Ant 10	INPAQ	ZS675KW	PIFA	Ipex	3300-4000MHz, 4400-5000MHz
Ant 11	INPAQ	ZS675KW	PIFA	Ipex	3300-4000MHz, 4400-5000MHz

2G / 3G Band												
Band	Freq. Range (MHz)	Gain (dBi)										
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Ant. 4	Ant. 5	Ant. 6	Ant. 7	Ant. 8	Ant. 9	Ant. 10	Ant. 11
GSM-850	824 ~ 849	-1.891		-4.526									
GSM-1900	1850 ~ 1910		-1.887	-1.394						-2.89579			
WCDMA B2	1850 ~ 1910		-1.887	-1.394						-2.89579			
WCDMA B4	1710 ~ 1755		-2.884	-3.228						-3.13552			
WCDMA B5	824 ~ 849	-1.891		-4.526									
CDMA BC0	815 ~ 849	-1.891		-4.526									
CDMA BC1	1850 ~ 1910		-1.887	-1.394						-2.89579			
CDMA BC10	806 ~ 901	-1.891		-4.526									

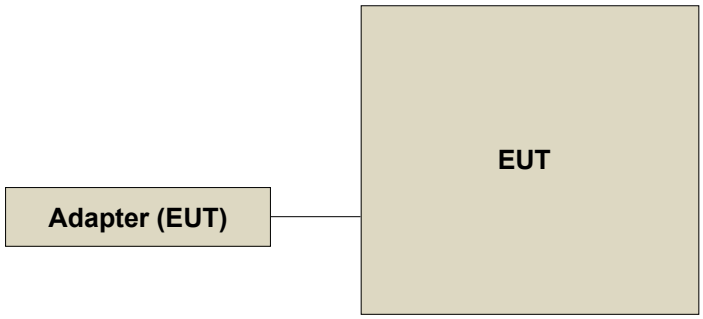
LTE Band												
Band	Freq. Range (MHz)	Gain (dBi)										
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Ant. 4	Ant. 5	Ant. 6	Ant. 7	Ant. 8	Ant. 9	Ant. 10	Ant. 11
LTE B2	1850 ~ 1910		-1.887	-1.394						-2.89579	-1.804		
LTE B4	1710 ~ 1755		-2.884	-3.228						-3.13552	-1.706		
LTE B5	824 ~ 849	-1.891		-4.526									
LTE B7	2500 ~ 2570		0.185	-0.657						-0.50837	-1.117		
LTE B12	698 ~ 716	-2.135		-4.343									
LTE B13	777 ~ 787	-4.37		-8.13									
LTE B14	788 ~ 798	-4.37		-7.931									
LTE B17	704 ~ 716	-2.135		-4.343									
LTE B25	1850 ~ 1915		-1.887	-1.394						-2.89579			
LTE B26	814 ~ 849	-1.891		-4.526									
LTE B30	2305 ~ 2315		-1.326	-2.669						-1.28433			
LTE B66	1710 ~ 1780		-2.884	-2.478						-3.0668	-1.685		
LTE B71	663 ~ 698	-5.741		-7.388									
T-LTE B38	2570 ~ 2620		0.724	-0.912						-0.59557			
T-LTE B40	2300 ~ 2400		-1.326	-2.669						-1.28433			
T-LTE B41	2496 ~ 2690		1.143	-0.657						-0.59557			
T-LTE B42	3400 ~ 3600						0.313		0.5277			-2.493	-0.35195
T-LTE B43	3600 ~ 3800						-0.434		0.5277			-0.477	-0.161
T-LTE B48	3550 ~ 3700						-0.434		0.5277			-0.477	-0.161
5G FR1 Band													
Band	Freq. Range (MHz)	Gain (dBi)										
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Ant. 4	Ant. 5	Ant. 6	Ant. 7	Ant. 8	Ant. 9	Ant. 10	Ant. 11
n2	1850 ~ 1910		-1.887	-1.394						-2.89579	-1.804		
n5	824 ~ 849	-1.891		-4.526									
n7	2500 ~ 2570		0.185	-0.657						-0.50837	-1.117		
n12	699 ~ 716	-2.135		-4.343									
n13	777 ~ 787	-4.37		-8.13									
n14	788 ~ 798	-4.37		-7.931									
n25	1850 ~ 1915		-1.887	-1.394						-2.89579	-1.627		
n26	814 ~ 849	-1.891		-4.526									
n30	2305 ~ 2315		-1.326	-2.669						-1.28433			
n38	2570 ~ 2620		0.724	-0.912						-0.59557	-1.3		
n41	2496 ~ 2690		1.143	-0.657						-0.59557	-0.076		
n66	1710 ~ 1780		-2.884	-2.478						-3.0668	-1.685		
n71	663 ~ 698	-5.741		-7.388									
n77	3300 ~ 4200						0.313		0.5277			2.017	0.19902
n78	3300 ~ 3800						0.313		0.5277			2.017	-0.161

* 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. The EUT supports the following ENDC configuration.

	FCC 5G FR1			ENDC
	Band	SCS	Bandwidth (MHz)	
5GNR	n2	15kHz	5/10/15/20	Band 5/12/13/14/30/66
	n5	15kHz	5/10/15/20	Band 2/7/12/30/48/66
	n7	15kHz	5/10/15/20/25/30/40	Band 2/5/12/13/66
	n12	15kHz	5/10/15	Band 2/66
	n14	15kHz	5/10	Band 2
	n25	15kHz	5/10/15/20/25/30/40	Band 12/66
	n30	15kHz	5/10	Band 2/5/66
	n38	30kHz	20/30/40	Band 2/4/5/12/66/71
	n41	30kHz	20/30/40/50/60/80/90/100	Band 2/4/12/25/26/66
	n66	15kHz	5/10/15/20/30/40	Band 2/5/7/12/13/14/30/48/71
	n71	15kHz	5/10/15/20	Band 2/7/66
	n77	30kHz	20/30/40/50/60/70/80/90/100	Band 7/41
	n78	30kHz	20/30/40/50/60/70/80/90/100	Band 2/4/5/7/12/13/38/66/71

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.	5G Wireless Test Platforms	Keysight	E7515B	MY58300759	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
n7	Y-plane
LTE Band 2	Y-plane
LTE Band 5	Y-plane
LTE Band 12	Y-plane
LTE Band 13	Y-plane
LTE Band 66	Y-plane

n7

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	EIRP	500500 to 513500	500500 (2502.5MHz), 507000 (2535.0MHz), 513500 (2567.5MHz)	5MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset 1 RB / 13 RB Offset 1 RB / 23 RB Offset 12 RB / 0 RB Offset 12 RB / 7 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		501000 to 513000	501000 (2505.0MHz), 507000 (2535.0MHz), 513000 (2565.0MHz)	10MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset 1 RB / 26 RB Offset 1 RB / 50 RB Offset 25 RB / 0 RB Offset 25 RB / 14 RB Offset 25 RB / 27 RB Offset 50 RB / 0 RB Offset
		501500 to 512500	501500 (2507.5MHz), 507000 (2535.0MHz), 512500 (2562.5MHz)	15MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset 1 RB / 40 RB Offset 1 RB / 77 RB Offset 36 RB / 0 RB Offset 36 RB / 22 RB Offset 36 RB / 43 RB Offset 75 RB / 0 RB Offset
		502000 to 512000	502000 (2510.0MHz), 507000 (2535.0MHz), 512000 (2560.0MHz)	20MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset 1 RB / 53 RB Offset 1 RB / 104 RB Offset 50RB / 0 RB Offset 50 RB / 28 RB Offset 50 RB / 56 RB Offset 100 RB / 0 RB Offset
		502500 to 511500	502500 (2512.5MHz), 507000 (2535.0MHz), 511500 (2557.5MHz)	25MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset 1 RB / 67 RB Offset 1 RB / 131 RB Offset 64RB / 0 RB Offset 64 RB / 35 RB Offset 64 RB / 69 RB Offset 128 RB / 0 RB Offset
		503000 to 511000	503000 (2515.0MHz), 507000 (2535.0MHz), 511000 (2555.0MHz)	30MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset 1 RB / 80 RB Offset 1 RB / 158 RB Offset 80RB / 0 RB Offset 80 RB / 40 RB Offset 80 RB / 80 RB Offset 160 RB / 0 RB Offset
		504000 to 510000	504000 (2520.0MHz), 507000 (2535.0MHz), 510000 (2550.0MHz)	40MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset 1 RB / 108 RB Offset 1 RB / 214 RB Offset 108RB / 0 RB Offset 108 RB / 54 RB Offset 108 RB / 108 RB Offset 216 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Modulation Characteristics	504000 to 510000	507000 (2535.0MHz)	40MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	216 RB / 0 RB Offset
-	Frequency Stability	500500 to 513500	500500 (2502.5MHz), 513500 (2567.5MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		501000 to 513000	501000 (2505.0MHz), 513000 (2565.0MHz)	10MHz	QPSK	52 RB / 0 RB Offset
		501500 to 512500	501500 (2507.5MHz), 512500 (2562.5MHz)	15MHz	QPSK	79 RB / 0 RB Offset
		502000 to 512000	502000 (2510.0MHz), 512000 (2560.0MHz)	20MHz	QPSK	106 RB / 0 RB Offset
		502500 to 511500	502500 (2512.5MHz), 511500 (2557.5MHz)	25MHz	QPSK	133 RB / 0 RB Offset
		503000 to 511000	503000 (2515.0MHz), 511000 (2555.0MHz)	30MHz	QPSK	160 RB / 0 RB Offset
		504000 to 510000	504000 (2520.0MHz), 510000 (2550.0MHz)	40MHz	QPSK	216 RB / 0 RB Offset
-	Emission Bandwidth	500500 to 513500	500500 (2502.5MHz), 507000 (2535.0MHz), 513500 (2567.5MHz)	5MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	25 RB / 0 RB Offset
		501000 to 513000	501000 (2505.0MHz), 507000 (2535.0MHz), 513000 (2565.0MHz)	10MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	52 RB / 0 RB Offset
		501500 to 512500	501500 (2507.5MHz), 507000 (2535.0MHz), 512500 (2562.5MHz)	15MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	79 RB / 0 RB Offset
		502000 to 512000	502000 (2510.0MHz), 507000 (2535.0MHz), 512000 (2560.0MHz)	20MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	106 RB / 0 RB Offset
		502500 to 511500	502500 (2512.5MHz), 507000 (2535.0MHz), 511500 (2557.5MHz)	25MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	133 RB / 0 RB Offset
		503000 to 511000	503000 (2515.0MHz), 507000 (2535.0MHz), 511000 (2555.0MHz)	30MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	160 RB / 0 RB Offset
		504000 to 510000	504000 (2520.0MHz), 507000 (2535.0MHz), 510000 (2550.0MHz)	40MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	216 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Out-of-Band Emissions	500500 to 513500	500500 (2502.5MHz), 513500 (2567.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		501000 to 513000	501000 (2505.0MHz), 513000 (2565.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 51 RB Offset 52 RB / 0 RB Offset
		501500 to 512500	501500 (2507.5MHz), 512500 (2562.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 78 RB Offset 79 RB / 0 RB Offset
		502000 to 512000	502000 (2510.0MHz), 512000 (2560.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 105 RB Offset 106 RB / 0 RB Offset
		502500 to 511500	502500 (2512.5MHz), 511500 (2557.5MHz)	25MHz	QPSK	1 RB / 0 RB Offset 1 RB / 132 RB Offset 133 RB / 0 RB Offset
		503000 to 511000	503000 (2515.0MHz), 511000 (2555.0MHz)	30MHz	QPSK	1 RB / 0 RB Offset 1 RB / 159 RB Offset 160 RB / 0 RB Offset
		504000 to 510000	504000 (2520.0MHz), 510000 (2550.0MHz)	40MHz	QPSK	1 RB / 0 RB Offset 1 RB / 215 RB Offset 216 RB / 0 RB Offset
-	Peak to Average Ratio	500500 to 513500	500500 (2502.5MHz), 507000 (2535.0MHz), 513500 (2567.5MHz)	5MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		501000 to 513000	501000 (2505.0MHz), 507000 (2535.0MHz), 513000 (2565.0MHz)	10MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		501500 to 512500	501500 (2507.5MHz), 507000 (2535.0MHz), 512500 (2562.5MHz)	15MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		502000 to 512000	502000 (2510.0MHz), 507000 (2535.0MHz), 512000 (2560.0MHz)	20MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		502500 to 511500	502500 (2512.5MHz), 507000 (2535.0MHz), 511500 (2557.5MHz)	25MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		503000 to 511000	503000 (2515.0MHz), 507000 (2535.0MHz), 511000 (2555.0MHz)	30MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		504000 to 510000	504000 (2520.0MHz), 507000 (2535.0MHz), 510000 (2550.0MHz)	40MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Conducted Emission	500500 to 513500	500500 (2502.5MHz), 507000 (2535.0MHz), 513500 (2567.5MHz)	5MHz	QPSK	1 RB / 1 RB Offset
		501000 to 513000	501000 (2505.0MHz), 507000 (2535.0MHz), 513000 (2565.0MHz)	10MHz	QPSK	1 RB / 1 RB Offset
		501500 to 512500	501500 (2507.5MHz), 507000 (2535.0MHz), 512500 (2562.5MHz)	15MHz	QPSK	1 RB / 1 RB Offset
		502000 to 512000	502000 (2510.0MHz), 507000 (2535.0MHz), 512000 (2560.0MHz)	20MHz	QPSK	1 RB / 1 RB Offset
		502500 to 511500	502500 (2512.5MHz), 507000 (2535.0MHz), 511500 (2557.5MHz)	25MHz	QPSK	1 RB / 1 RB Offset
		503000 to 511000	503000 (2515.0MHz), 507000 (2535.0MHz), 511000 (2555.0MHz)	30MHz	QPSK	1 RB / 1 RB Offset
		504000 to 510000	504000 (2520.0MHz), 507000 (2535.0MHz), 510000 (2550.0MHz)	40MHz	QPSK	1 RB / 1 RB Offset
-	Radiated Emission Below 1GHz	502000 to 512000	507000 (2535.0MHz)	20MHz	QPSK	1 RB / 1 RB Offset
-	Radiated Emission Above 1GHz	500500 to 513500	500500 (2502.5MHz), 507000 (2535.0MHz), 513500 (2567.5MHz)	5MHz	QPSK	1 RB / 1 RB Offset
		502000 to 512000	502000 (2510.0MHz), 507000 (2535.0MHz), 512000 (2560.0MHz)	20MHz	QPSK	1 RB / 1 RB Offset
		504000 to 510000	504000 (2520.0MHz), 507000 (2535.0MHz), 510000 (2550.0MHz)	40MHz	QPSK	1 RB / 1 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 38.521-1 Section 6.5.3.1.4, choose the lowest, mid and highest channel bandwidth for final test.
3. Only output power, modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under $\pi/2$ BPSK, QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under worse mode according to the maximum output power.

LTE Band 2

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	18607 to 19193	18607 (1850.7MHz), 18900 (1880.0MHz), 19193 (1909.3MHz)	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
		18615 to 19185	18615 (1851.5MHz), 18900 (1880.0MHz), 19185 (1908.5MHz)	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
		18625 to 19175	18625 (1852.5MHz), 18900 (1880.0MHz), 19175 (1907.5MHz)	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
		18650 to 19150	18650 (1855.0MHz), 18900 (1880.0MHz), 19150 (1905.0MHz)	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
		18675 to 19125	18675 (1857.5MHz), 18900 (1880.0MHz), 19125 (1902.5MHz)	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
		18700 to 19100	18700 (1860.0MHz), 18900 (1880.0MHz), 19100 (1900.0MHz)	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

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission Below 1GHz	18700 to 19100	19100 (1900.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	18607 to 19193	18607 (1850.7MHz), 18900 (1880.0MHz), 19193 (1909.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset
		18625 to 19175	18625 (1852.5MHz), 18900 (1880.0MHz), 19175 (1907.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18700 (1860.0MHz), 18900 (1880.0MHz), 19100 (1900.0MHz)	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 the radiated emission test items was performed under QPSK mode only.

LTE Band 5

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	ERP	20407 to 20643	20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz)	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
		20415 to 20635	20415 (825.5MHz), 20525 (836.5MHz), 20635 (847.5MHz)	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
		20425 to 20625	20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz)	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
		20450 to 20600	20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz)	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
-	Radiated Emission Below 1GHz	20407 to 20643	20407 (824.7MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	20407 to 20643	20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset
		20425 to 20625	20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		20450 to 20600	20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz)	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 the radiated emission test items was 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
-	Radiated Emission Below 1GHz	23060 to 23130	23130 (711.0MHz)	10MHz	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 / 0 RB Offset
		23035 to 23155	23035 (701.5MHz), 23095 (707.5MHz), 23155 (713.5MHz)	5MHz	QPSK	1 RB / 0 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 the radiated emission test items was 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
-	Radiated Emission Below 1GHz	23230	23230 (782.0MHz)	10MHz	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 lowest & 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 the radiated emission test items was 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

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission Below 1GHz	131979 to 132665	132322 (1745.0MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	131979 to 132665	131979 (1710.7MHz), 132322 (1745.0MHz), 132665 (1779.3MHz)	1.4MHz	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
		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 the radiated emission test items was 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	7.74Vdc	James Yang
Occupied Bandwidth	25deg. C, 60%RH	120Vac, 60Hz	James Yang
Out-of-Band Emissions	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	James Yang
Radiated Emission	23deg. C, 67%RH 25deg. C, 65%RH	120Vac, 60Hz	Adair Peng Tank Wu

3.4 EUT Operating Conditions

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

3.5 General Description of Applied Standards and References

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

Test Standard:

FCC 47 CFR Part 2

FCC 47 CFR Part 22

FCC 47 CFR Part 24

FCC 47 CFR Part 27

ANSI/TIA/EIA-603-D-2010

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

References Test Guidance:

KDB 971168 D01 Power Meas License Digital Systems v03r01

KDB 971168 D02 Misc Rev Approv License Devices v02r01

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

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

For n7:
Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

For LTE Band 2:
Mobile / Portable station are limited to 2 watts e.i.r.p.

For LTE Band 5:
Mobile / Portable station are limited to 7 watts e.r.p.

For LTE Band 12, LTE Band 13:
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 66:
Mobile / Portable station are limited to 1 watts e.i.r.p.

4.1.2 Test Procedures

Conducted Power Measurement:

The EUT was set up for the maximum power with 5GNR and 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:

$EIRP = P_{Meas} + G_T$

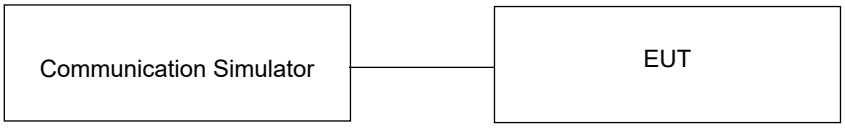
$ERP = P_{Meas} + G_T - 2.15$

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)

NR Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		504000	507000	510000
		Frequency (MHz)		2520	2535	2550
40M	$\pi/2$ BPSK	1	1	23.32	23.84	23.69
		1	108	23.05	23.62	23.36
		1	214	23.21	23.62	23.48
		108	0	22.86	23.39	23.07
		108	54	23.07	23.61	23.38
		108	108	22.86	23.27	23.20
		216	0	22.88	23.30	23.17
40M	QPSK	1	1	23.59	23.95	23.71
		1	108	23.09	23.63	23.44
		1	214	23.21	23.76	23.59
		108	0	22.35	22.81	22.75
		108	54	23.81	23.89	23.83
		108	108	22.42	22.83	22.76
		216	0	22.38	22.85	22.67
40M	16QAM	1	1	22.32	22.81	22.71
40M	64QAM	1	1	20.88	21.42	21.26
40M	256QAM	1	1	18.87	19.37	19.23
BW	MCS Index	Channel		503000	507000	511000
		Frequency (MHz)		2515	2535	2555
30M	$\pi/2$ BPSK	1	1	23.28	23.87	23.63
		1	80	23.03	23.54	23.32
		1	158	23.21	23.67	23.51
		80	0	22.78	23.36	23.07
		80	40	23.06	23.57	23.37
		80	80	22.85	23.28	23.19
		160	0	22.87	23.27	23.16
30M	QPSK	1	1	23.37	23.84	23.68
		1	80	23.17	23.57	23.43
		1	158	23.27	23.75	23.51
		80	0	22.41	22.85	22.66
		80	40	23.73	23.89	23.76
		80	80	22.38	22.85	22.74
		160	0	22.43	22.81	22.67
30M	16QAM	1	1	22.40	22.86	22.71
30M	64QAM	1	1	20.96	21.37	21.22
30M	256QAM	1	1	18.92	19.36	19.18

NR Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		502500	507000	511500
		Frequency (MHz)		2512.5	2535	2557.5
25M	$\pi/2$ BPSK	1	1	23.31	23.82	23.64
		1	67	23.01	23.56	23.39
		1	131	23.20	23.62	23.53
		64	0	22.85	23.35	23.07
		64	35	23.10	23.55	23.35
		64	69	22.86	23.30	23.20
		128	0	22.87	23.30	23.24
25M	QPSK	1	1	23.41	23.88	23.72
		1	67	23.08	23.56	23.49
		1	131	23.22	23.68	23.56
		64	0	22.36	22.89	22.72
		64	35	23.73	23.80	23.81
		64	69	22.37	22.90	22.76
		128	0	22.36	22.88	22.67
25M	16QAM	1	1	22.35	22.84	22.73
25M	64QAM	1	1	20.89	21.37	21.26
25M	256QAM	1	1	18.84	19.40	19.18
BW	MCS Index	Channel		502000	507000	512000
		Frequency (MHz)		2510	2535	2560
20M	$\pi/2$ BPSK	1	1	23.35	23.91	23.71
		1	53	23.11	23.62	23.42
		1	104	23.23	23.70	23.58
		50	0	22.86	23.40	23.15
		50	28	23.15	23.65	23.42
		50	56	22.87	23.34	23.23
		100	0	22.88	23.32	23.24
20M	QPSK	1	1	23.45	23.92	23.76
		1	53	23.18	23.65	23.49
		1	104	23.29	23.76	23.60
		50	0	22.44	22.91	22.75
		50	28	23.81	23.89	23.84
		50	56	22.45	22.92	22.76
		100	0	22.44	22.91	22.75
20M	16QAM	1	1	22.42	22.89	22.73
20M	64QAM	1	1	20.98	21.45	21.29
20M	256QAM	1	1	18.94	19.41	19.25

NR Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		501500	507000	512500
		Frequency (MHz)		2507.5	2535	2562.5
15M	$\pi/2$ BPSK	1	1	23.32	23.82	23.64
		1	40	23.02	23.60	23.42
		1	77	23.16	23.63	23.58
		36	0	22.80	23.37	23.06
		36	22	23.06	23.62	23.33
		36	43	22.80	23.31	23.21
		75	0	22.80	23.27	23.15
15M	QPSK	1	1	23.37	23.82	23.68
		1	40	23.15	23.55	23.43
		1	77	23.19	23.69	23.56
		36	0	22.34	22.88	22.75
		36	22	23.18	23.58	23.45
		36	43	22.36	22.82	22.67
		75	0	22.37	22.90	22.66
15M	16QAM	1	1	22.39	22.89	22.64
15M	64QAM	1	1	20.96	21.36	21.27
15M	256QAM	1	1	18.87	19.35	19.21
BW	MCS Index	Channel		501000	507000	513000
		Frequency (MHz)		2505	2535	2565
10M	$\pi/2$ BPSK	1	1	23.33	23.85	23.62
		1	26	23.06	23.62	23.36
		1	50	23.17	23.62	23.49
		25	0	22.77	23.34	23.10
		25	14	23.09	23.60	23.42
		25	27	22.77	23.27	23.22
		50	0	22.86	23.29	23.18
10M	QPSK	1	1	23.45	23.87	23.70
		1	26	23.15	23.65	23.41
		1	50	23.23	23.68	23.53
		25	0	22.40	22.90	22.65
		25	14	23.17	23.57	23.49
		25	27	22.35	22.87	22.66
		50	0	22.41	22.81	22.65
10M	16QAM	1	1	22.41	22.88	22.70
10M	64QAM	1	1	20.92	21.43	21.21
10M	256QAM	1	1	18.90	19.34	19.20

NR Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		500500	507000	513500
		Frequency (MHz)		2502.5	2535	2567.5
5M	$\pi/2$ BPSK	1	1	23.34	23.89	23.69
		1	13	23.01	23.55	23.35
		1	23	23.14	23.61	23.51
		12	0	22.81	23.40	23.06
		12	7	23.14	23.60	23.38
		12	13	22.87	23.29	23.14
		25	0	22.88	23.31	23.14
5M	QPSK	1	1	23.40	23.89	23.76
		1	13	23.13	23.56	23.46
		1	23	23.20	23.70	23.58
		12	0	22.41	22.84	22.67
		12	7	23.16	23.64	23.43
		12	13	22.36	22.87	22.74
		25	0	22.41	22.82	22.72
5M	16QAM	1	1	22.41	22.82	22.65
5M	64QAM	1	1	20.93	21.45	21.20
5M	256QAM	1	1	18.85	19.38	19.18

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18700	18900	19100
		Frequency (MHz)		1860	1880	1900
20M	QPSK	1	0	23.78	23.46	23.79
		1	50	23.77	23.56	23.77
		1	99	23.62	23.44	23.71
		50	0	22.62	22.60	22.53
		50	25	22.80	22.70	22.49
		50	50	22.56	22.51	22.43
		100	0	22.74	22.58	22.49
20M	16QAM	1	0	22.59	22.74	22.81
		1	50	22.59	22.46	22.70
		1	99	22.71	22.48	22.55
		50	0	21.59	21.57	21.45
		50	25	21.53	21.48	21.37
		50	50	21.42	21.55	21.37
		100	0	21.44	21.63	21.35
20M	64QAM	1	0	21.60	21.52	21.74
		1	50	21.48	21.69	21.58
		1	99	21.74	21.63	21.50
		50	0	20.68	20.51	20.52
		50	25	20.39	20.70	20.35
		50	50	20.50	20.59	20.58
		100	0	20.47	20.45	20.64
20M	256QAM	1	0	18.56	18.18	18.51
		1	50	18.16	18.37	18.32
		1	99	18.35	18.18	17.95
		50	0	18.01	18.30	18.08
		50	25	18.08	18.31	18.37
		50	50	18.23	18.39	18.19
		100	0	18.17	18.13	18.21

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18675	18900	19125
		Frequency (MHz)		1857.5	1880	1902.5
15M	QPSK	1	0	23.76	23.35	23.70
		1	37	23.47	23.38	23.62
		1	74	23.71	23.48	23.57
		36	0	22.78	22.58	22.80
		36	19	22.53	22.45	22.49
		36	39	22.57	22.50	22.74
		75	0	22.72	22.56	22.44
15M	16QAM	1	0	22.55	22.90	22.52
		1	37	22.65	22.66	22.68
		1	74	22.48	22.52	22.44
		36	0	21.42	21.41	21.58
		36	19	21.52	21.42	21.54
		36	39	21.61	21.41	21.53
		75	0	21.57	21.40	21.31
15M	64QAM	1	0	21.66	21.82	21.63
		1	37	21.62	21.47	21.67
		1	74	21.70	21.64	21.69
		36	0	20.62	20.50	20.66
		36	19	20.67	20.49	20.64
		36	39	20.49	20.35	20.61
		75	0	20.65	20.42	20.59
15M	256QAM	1	0	18.18	17.85	18.52
		1	37	18.29	17.90	18.19
		1	74	18.08	18.16	18.26
		36	0	17.30	17.09	17.38
		36	19	17.13	16.80	17.37
		36	39	17.31	17.24	17.26
		75	0	17.07	16.86	17.10

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18650	18900	19150
		Frequency (MHz)		1855	1880	1905
10M	QPSK	1	0	23.59	23.50	23.54
		1	24	23.47	23.61	23.36
		1	49	23.36	23.36	23.40
		25	0	22.59	22.58	22.73
		25	12	22.58	22.24	22.77
		25	25	22.59	22.62	22.54
		50	0	22.33	22.43	22.56
10M	16QAM	1	0	22.63	22.70	22.74
		1	24	22.61	22.54	22.57
		1	49	22.42	22.56	22.34
		25	0	21.27	21.41	21.42
		25	12	21.44	21.34	21.28
		25	25	21.53	21.31	21.47
		50	0	21.42	21.19	21.24
10M	64QAM	1	0	21.44	21.36	21.47
		1	24	21.33	21.31	21.45
		1	49	21.32	21.31	21.34
		25	0	20.64	20.34	20.40
		25	12	20.24	20.48	20.38
		25	25	20.47	20.34	20.45
		50	0	20.68	20.48	20.36
10M	256QAM	1	0	18.29	18.49	18.51
		1	24	17.94	18.10	18.05
		1	49	17.86	18.23	18.08
		25	0	17.28	17.06	17.17
		25	12	16.92	17.24	17.08
		25	25	17.13	17.04	17.17
		50	0	17.21	17.12	17.02

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18625	18900	19175
		Frequency (MHz)		1852.5	1880	1907.5
5M	QPSK	1	0	23.54	23.49	23.36
		1	12	23.44	23.37	23.39
		1	24	23.50	23.53	23.31
		12	0	22.47	22.60	22.54
		12	6	22.62	22.37	22.54
		12	13	22.60	22.44	22.42
		25	0	22.49	22.51	22.55
5M	16QAM	1	0	22.74	22.81	22.57
		1	12	22.48	22.62	22.29
		1	24	22.46	22.51	22.63
		12	0	21.38	21.44	21.34
		12	6	21.45	21.31	21.18
		12	13	21.50	21.40	21.29
		25	0	21.57	21.47	21.24
5M	64QAM	1	0	21.44	21.63	21.59
		1	12	21.65	21.58	21.64
		1	24	21.67	21.56	21.56
		12	0	20.61	20.37	20.35
		12	6	20.28	20.33	20.35
		12	13	20.49	20.18	20.36
		25	0	20.62	20.50	20.31
5M	256QAM	1	0	18.00	18.07	17.99
		1	12	17.91	18.28	18.03
		1	24	18.29	18.01	18.06
		12	0	17.51	17.18	17.36
		12	6	17.27	17.05	17.30
		12	13	17.18	17.04	16.89
		25	0	17.24	17.07	17.12

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18615	18900	19185
		Frequency (MHz)		1851.5	1880	1908.5
3M	QPSK	1	0	23.59	23.48	23.65
		1	7	23.56	23.34	23.39
		1	14	23.43	23.49	23.57
		8	0	22.75	22.33	22.51
		8	3	22.55	22.29	22.58
		8	7	22.42	22.35	22.42
		15	0	22.67	22.55	22.55
3M	16QAM	1	0	22.47	22.83	22.56
		1	7	22.44	22.43	22.36
		1	14	22.43	22.55	22.47
		8	0	21.61	21.37	21.38
		8	3	21.45	21.29	21.15
		8	7	21.14	21.18	21.52
		15	0	21.48	21.32	21.35
3M	64QAM	1	0	21.68	21.31	21.47
		1	7	21.69	21.45	21.52
		1	14	21.51	21.40	21.47
		8	0	20.47	20.47	20.30
		8	3	20.51	20.38	20.59
		8	7	20.29	20.40	20.28
		15	0	20.47	20.43	20.33
3M	256QAM	1	0	18.32	18.17	18.14
		1	7	18.28	17.96	18.13
		1	14	18.36	18.01	18.04
		8	0	17.20	17.00	17.03
		8	3	17.06	17.06	17.54
		8	7	17.46	17.31	17.26
		15	0	17.13	17.14	17.28

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18607	18900	19193
		Frequency (MHz)		1850.7	1880	1909.3
1.4M	QPSK	1	0	23.59	23.39	23.64
		1	2	23.56	23.65	23.40
		1	5	23.56	23.21	23.46
		3	0	23.60	23.64	23.45
		3	1	23.42	23.31	23.55
		3	3	23.75	23.57	23.59
		6	0	22.43	22.37	22.75
1.4M	16QAM	1	0	22.60	22.61	22.49
		1	2	22.40	22.56	22.32
		1	5	22.45	22.29	22.38
		3	0	22.31	22.27	22.47
		3	1	22.48	22.27	22.44
		3	3	22.30	22.47	22.41
		6	0	21.18	21.44	21.35
1.4M	64QAM	1	0	21.54	21.35	21.57
		1	2	21.52	21.35	21.67
		1	5	21.36	21.27	21.26
		3	0	21.28	21.56	21.28
		3	1	21.50	21.37	21.36
		3	3	21.29	21.16	21.26
		6	0	20.40	20.60	20.38
1.4M	256QAM	1	0	17.96	18.02	18.42
		1	2	18.32	18.13	18.38
		1	5	17.94	17.99	17.95
		3	0	18.45	18.26	18.19
		3	1	18.37	18.25	18.06
		3	3	18.26	18.01	17.89
		6	0	17.18	17.09	17.19

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20450	20525	20600
		Frequency (MHz)		829	836.5	844
10M	QPSK	1	0	24.37	24.82	24.46
		1	24	24.56	24.71	24.47
		1	49	24.39	24.34	24.00
		25	0	23.33	23.79	23.53
		25	12	23.36	23.75	23.64
		25	25	23.51	23.73	23.41
		50	0	23.42	23.78	23.32
10M	16QAM	1	0	23.44	23.63	23.70
		1	24	23.35	23.57	23.44
		1	49	23.09	23.34	23.16
		25	0	22.36	22.62	22.53
		25	12	22.47	22.83	22.53
		25	25	22.29	22.37	22.17
		50	0	22.62	22.63	22.49
10M	64QAM	1	0	22.35	22.49	22.03
		1	24	22.28	22.38	22.20
		1	49	21.57	21.78	21.56
		25	0	21.30	21.36	21.02
		25	12	21.27	21.25	21.01
		25	25	20.74	20.74	20.38
		50	0	20.71	21.16	20.79
10M	256QAM	1	0	18.82	19.57	18.74
		1	24	18.82	19.04	18.95
		1	49	19.09	19.15	18.55
		25	0	18.37	18.39	18.23
		25	12	18.22	18.61	18.27
		25	25	18.06	18.33	18.24
		50	0	18.28	18.16	17.90

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20425	20525	20625
		Frequency (MHz)		826.5	836.5	846.5
5M	QPSK	1	0	24.43	24.50	24.39
		1	12	24.38	24.64	24.17
		1	24	24.26	24.49	23.86
		12	0	23.42	23.65	23.45
		12	6	23.26	23.59	23.33
		12	13	23.24	23.63	23.37
		25	0	23.63	23.63	23.45
5M	16QAM	1	0	23.27	23.57	23.39
		1	12	23.40	23.74	23.53
		1	24	23.03	23.27	23.05
		12	0	22.47	22.87	22.60
		12	6	22.33	22.64	22.39
		12	13	22.12	22.61	22.31
		25	0	22.33	22.55	22.55
5M	64QAM	1	0	22.16	22.52	22.12
		1	12	21.97	22.39	21.88
		1	24	21.35	21.75	21.39
		12	0	21.29	21.49	21.14
		12	6	21.14	21.42	20.94
		12	13	20.78	20.67	20.60
		25	0	20.50	20.98	20.53
5M	256QAM	1	0	18.92	19.24	19.22
		1	12	18.96	19.44	18.96
		1	24	18.89	19.31	18.82
		12	0	17.96	18.32	18.07
		12	6	18.10	18.24	17.94
		12	13	18.30	18.32	17.89
		25	0	18.33	18.14	17.83

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20415	20525	20635
		Frequency (MHz)		825.5	836.5	847.5
3M	QPSK	1	0	24.39	24.76	24.03
		1	7	24.29	24.65	24.18
		1	14	24.06	24.16	23.96
		8	0	23.14	23.62	23.47
		8	3	23.18	23.80	23.63
		8	7	23.29	23.42	22.96
		15	0	23.47	23.57	23.28
3M	16QAM	1	0	23.49	23.81	23.40
		1	7	23.36	23.64	23.44
		1	14	23.26	23.19	23.06
		8	0	22.46	22.75	22.41
		8	3	22.29	22.79	22.14
		8	7	22.17	22.39	22.34
		15	0	22.47	22.68	22.34
3M	64QAM	1	0	22.04	22.45	21.97
		1	7	21.81	22.30	21.92
		1	14	21.51	21.73	21.19
		8	0	21.11	21.38	21.08
		8	3	20.91	20.98	20.89
		8	7	20.53	20.77	20.32
		15	0	20.49	20.72	20.52
3M	256QAM	1	0	19.04	19.30	18.73
		1	7	18.89	19.15	18.76
		1	14	18.48	19.04	18.48
		8	0	18.04	18.28	18.09
		8	3	17.98	18.18	18.13
		8	7	17.84	18.15	17.87
		15	0	17.82	18.25	17.66

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20407	20525	20643
		Frequency (MHz)		824.7	836.5	848.3
1.4M	QPSK	1	0	24.48	24.66	24.09
		1	2	24.33	24.59	24.30
		1	5	24.11	24.32	24.17
		3	0	24.55	24.69	24.64
		3	1	24.37	24.49	24.53
		3	3	24.31	24.61	24.25
		6	0	23.49	23.72	23.12
1.4M	16QAM	1	0	23.41	23.50	23.45
		1	2	23.54	23.80	23.55
		1	5	23.24	23.24	23.01
		3	0	23.36	23.73	23.53
		3	1	23.18	23.60	23.27
		3	3	23.30	23.42	23.03
		6	0	22.42	22.51	22.44
1.4M	64QAM	1	0	22.23	22.47	22.01
		1	2	21.90	22.14	21.86
		1	5	21.27	21.53	21.39
		3	0	22.15	22.25	22.06
		3	1	22.02	22.19	21.86
		3	3	21.38	21.85	21.50
		6	0	20.75	20.65	20.33
1.4M	256QAM	1	0	18.88	18.93	19.16
		1	2	19.25	19.25	18.89
		1	5	18.79	18.81	18.60
		3	0	18.99	19.20	18.97
		3	1	18.78	19.19	19.08
		3	3	19.00	19.11	18.62
		6	0	18.40	18.57	17.72

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	24.75	24.47	24.35
		1	24	24.69	24.58	24.38
		1	49	24.54	24.29	24.45
		25	0	23.61	23.52	23.25
		25	12	23.54	23.23	23.33
		25	25	23.66	23.28	23.33
		50	0	23.60	23.26	23.21
10M	16QAM	1	0	23.65	23.35	23.24
		1	24	23.51	23.28	23.19
		1	49	23.44	23.46	23.20
		25	0	22.58	22.46	22.29
		25	12	22.62	22.40	22.26
		25	25	22.77	22.42	22.26
		50	0	22.77	22.54	22.39
10M	64QAM	1	0	22.77	22.36	22.39
		1	24	22.68	22.32	22.20
		1	49	22.44	22.22	22.16
		25	0	21.50	21.18	21.31
		25	12	21.40	21.23	21.11
		25	25	21.23	21.14	21.21
		50	0	21.26	21.40	21.00
10M	256QAM	1	0	19.35	19.04	18.83
		1	24	19.27	18.81	19.06
		1	49	19.01	19.03	18.87
		25	0	18.23	17.80	17.97
		25	12	18.48	18.34	18.14
		25	25	18.33	18.21	18.03
		50	0	18.28	18.08	17.94

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	24.74	24.55	24.38
		1	12	24.45	24.37	24.27
		1	24	24.39	24.27	24.20
		12	0	23.40	23.24	23.36
		12	6	23.72	23.43	23.27
		12	13	23.58	23.46	23.34
		25	0	23.66	23.52	23.42
5M	16QAM	1	0	23.70	23.58	23.30
		1	12	23.34	23.19	23.09
		1	24	23.55	23.08	23.26
		12	0	22.64	22.54	22.41
		12	6	22.53	22.41	22.50
		12	13	22.71	22.44	22.18
		25	0	22.56	22.46	22.44
5M	64QAM	1	0	22.87	22.32	22.34
		1	12	22.83	22.22	22.25
		1	24	22.08	22.15	21.80
		12	0	21.60	21.18	21.20
		12	6	21.35	21.01	20.96
		12	13	21.39	21.21	21.01
		25	0	21.55	21.04	21.14
5M	256QAM	1	0	19.31	19.10	19.22
		1	12	18.94	19.38	18.56
		1	24	18.69	18.88	18.81
		12	0	18.14	17.89	17.78
		12	6	17.87	18.09	17.95
		12	13	18.28	18.11	17.68
		25	0	18.45	17.95	17.82

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	24.63	24.26	24.44
		1	7	24.49	24.16	24.30
		1	14	24.36	24.24	24.30
		8	0	23.51	23.08	23.13
		8	3	23.64	23.20	23.28
		8	7	23.58	23.27	23.14
		15	0	23.39	23.03	23.38
3M	16QAM	1	0	23.31	23.15	23.22
		1	7	23.52	23.34	23.27
		1	14	23.49	23.13	22.88
		8	0	22.75	22.40	22.31
		8	3	22.80	22.12	22.21
		8	7	22.57	22.49	22.36
		15	0	22.49	22.16	22.20
3M	64QAM	1	0	22.62	22.05	22.28
		1	7	22.50	22.35	22.30
		1	14	22.24	21.83	21.77
		8	0	21.20	21.05	21.05
		8	3	21.35	20.89	20.79
		8	7	21.35	20.95	21.07
		15	0	21.50	20.95	20.88
3M	256QAM	1	0	19.38	18.95	19.17
		1	7	19.51	19.07	18.82
		1	14	18.86	19.02	18.95
		8	0	18.18	17.78	17.91
		8	3	18.31	18.22	18.05
		8	7	18.15	17.69	17.94
		15	0	18.00	17.75	17.76

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	24.48	24.39	24.30
		1	2	24.45	24.16	24.19
		1	5	24.24	24.39	24.02
		3	0	24.50	24.30	23.97
		3	1	24.57	24.25	24.30
		3	3	24.47	24.46	24.00
		6	0	23.32	23.19	23.52
1.4M	16QAM	1	0	23.72	23.42	23.04
		1	2	23.45	23.28	23.26
		1	5	23.24	23.35	22.96
		3	0	23.66	23.28	23.36
		3	1	23.44	23.38	23.47
		3	3	23.66	23.48	23.29
		6	0	22.61	22.19	22.35
1.4M	64QAM	1	0	22.36	22.15	22.12
		1	2	22.70	22.21	22.25
		1	5	22.09	21.98	21.88
		3	0	22.21	22.10	22.23
		3	1	22.42	21.93	21.93
		3	3	22.12	21.96	21.98
		6	0	21.13	20.91	21.15
1.4M	256QAM	1	0	19.23	19.06	18.56
		1	2	19.21	18.87	19.18
		1	5	19.10	18.94	18.85
		3	0	19.30	18.69	18.84
		3	1	19.29	18.87	18.70
		3	3	19.13	18.92	18.82
		6	0	18.03	18.19	17.91

LTE Band 13				
BW	MCS Index	RB Size	RB Offset	Low
		Channel		23230
		Frequency (MHz)		782
10M	QPSK	1	0	24.82
		1	24	24.77
		1	49	24.52
		25	0	23.58
		25	12	23.72
		25	25	23.57
		50	0	23.44
10M	16QAM	1	0	23.54
		1	24	23.77
		1	49	23.50
		25	0	22.66
		25	12	22.72
		25	25	22.43
		50	0	22.77
10M	64QAM	1	0	22.69
		1	24	22.75
		1	49	22.30
		25	0	21.78
		25	12	21.48
		25	25	21.63
		50	0	21.51
10M	256QAM	1	0	19.34
		1	24	19.15
		1	49	19.24
		25	0	18.08
		25	12	17.91
		25	25	18.24
		50	0	18.31

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	24.42	24.75	24.60
		1	12	24.62	24.61	24.58
		1	24	24.21	24.63	24.50
		12	0	23.62	23.85	23.50
		12	6	23.41	23.35	23.34
		12	13	23.56	23.51	23.41
		25	0	23.66	23.66	23.47
5M	16QAM	1	0	23.54	23.61	23.50
		1	12	23.52	23.87	23.54
		1	24	23.26	23.53	23.32
		12	0	22.56	22.53	22.58
		12	6	22.62	22.44	22.50
		12	13	22.49	22.62	22.68
		25	0	22.49	22.66	22.54
5M	64QAM	1	0	22.54	22.49	22.35
		1	12	22.54	22.74	22.44
		1	24	22.10	22.48	22.21
		12	0	21.16	21.49	21.12
		12	6	21.44	21.46	21.11
		12	13	21.17	21.70	21.22
		25	0	21.36	21.57	21.44
5M	256QAM	1	0	19.21	19.02	19.11
		1	12	19.43	19.49	19.33
		1	24	18.74	19.17	19.05
		12	0	17.90	18.22	17.91
		12	6	17.94	18.25	17.90
		12	13	18.31	18.06	18.37
		25	0	18.20	18.29	17.88

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	23.20	23.65	23.80
		1	50	23.04	23.57	23.60
		1	99	22.85	23.06	23.52
		50	0	22.39	22.55	22.83
		50	25	22.36	22.47	22.76
		50	50	22.26	22.68	22.83
		100	0	22.33	22.60	22.83
20M	16QAM	1	0	22.78	22.76	22.69
		1	50	22.56	22.41	22.46
		1	99	22.53	22.53	22.71
		50	0	21.24	21.46	21.49
		50	25	21.45	21.70	21.42
		50	50	21.19	21.38	21.37
		100	0	21.40	21.52	21.49
20M	64QAM	1	0	21.32	21.74	21.88
		1	50	21.45	21.75	21.66
		1	99	21.20	21.53	21.75
		50	0	20.52	20.62	20.59
		50	25	20.58	20.59	20.81
		50	50	20.18	20.90	20.63
		100	0	20.53	20.83	20.56
20M	256QAM	1	0	17.80	18.19	18.44
		1	50	17.82	18.40	18.56
		1	99	17.42	17.73	18.10
		50	0	17.03	17.01	17.61
		50	25	17.07	17.04	17.42
		50	50	16.99	17.29	17.37
		100	0	17.18	17.09	17.30

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	23.10	23.63	23.76
		1	37	23.01	23.29	23.58
		1	74	22.57	23.03	23.24
		36	0	22.32	22.30	22.68
		36	19	22.49	22.62	22.66
		36	39	22.23	22.38	22.65
		75	0	22.15	22.32	22.73
15M	16QAM	1	0	22.71	22.72	22.53
		1	37	22.56	22.45	22.49
		1	74	22.29	22.32	22.45
		36	0	21.41	21.56	21.37
		36	19	21.50	21.69	21.52
		36	39	21.33	21.54	21.30
		75	0	21.45	21.59	21.38
15M	64QAM	1	0	21.35	21.70	21.89
		1	37	21.20	21.66	21.77
		1	74	20.93	21.61	21.65
		36	0	20.51	20.59	20.55
		36	19	20.26	20.77	20.69
		36	39	20.21	20.68	20.52
		75	0	20.38	20.78	20.84
15M	256QAM	1	0	17.62	18.18	18.45
		1	37	17.49	18.11	18.57
		1	74	17.45	17.79	17.88
		36	0	16.98	16.82	17.31
		36	19	16.91	16.81	17.47
		36	39	16.87	17.08	17.41
		75	0	17.18	17.06	17.37

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	23.09	23.40	23.77
		1	24	22.98	23.33	23.49
		1	49	22.59	23.13	23.32
		25	0	22.45	22.28	22.57
		25	12	22.17	22.43	22.69
		25	25	22.31	22.28	22.80
		50	0	22.33	22.31	22.65
10M	16QAM	1	0	22.54	22.57	22.49
		1	24	22.32	22.35	22.42
		1	49	22.18	22.16	22.29
		25	0	21.03	21.68	21.39
		25	12	21.23	21.46	21.58
		25	25	21.16	21.53	21.29
		50	0	21.32	21.54	21.35
10M	64QAM	1	0	21.03	21.39	21.77
		1	24	21.24	21.43	21.52
		1	49	20.89	21.05	21.45
		25	0	20.53	20.60	20.42
		25	12	20.37	20.55	20.43
		25	25	20.40	20.86	20.54
		50	0	20.13	20.49	20.66
10M	256QAM	1	0	17.84	18.27	18.57
		1	24	17.75	17.90	17.88
		1	49	17.14	17.96	17.70
		25	0	16.78	17.04	17.19
		25	12	17.01	16.95	17.29
		25	25	16.87	16.93	17.26
		50	0	17.20	17.02	17.51

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	23.05	23.74	23.43
		1	12	23.18	23.52	23.43
		1	24	22.63	22.90	23.14
		12	0	22.06	22.49	22.38
		12	6	22.21	22.53	22.72
		12	13	22.24	22.28	22.60
		25	0	22.07	22.21	22.54
5M	16QAM	1	0	22.61	22.57	22.49
		1	12	22.30	22.27	22.55
		1	24	22.32	22.40	22.67
		12	0	21.42	21.38	21.42
		12	6	21.24	21.46	21.36
		12	13	21.09	21.52	21.26
		25	0	21.38	21.43	21.55
5M	64QAM	1	0	21.15	21.42	21.71
		1	12	21.06	21.58	21.62
		1	24	21.00	21.45	21.40
		12	0	20.28	20.53	20.51
		12	6	20.17	20.86	20.54
		12	13	20.41	20.53	20.57
		25	0	20.36	20.58	20.74
5M	256QAM	1	0	17.70	18.14	18.21
		1	12	17.83	18.02	18.39
		1	24	17.23	17.32	17.93
		12	0	16.86	17.26	16.96
		12	6	16.73	16.88	17.33
		12	13	16.78	17.01	16.86
		25	0	16.69	17.13	17.39

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	22.99	23.60	23.54
		1	7	23.11	23.31	23.61
		1	14	22.52	22.95	23.09
		8	0	22.18	22.33	22.72
		8	3	22.19	22.38	22.49
		8	7	22.06	22.32	22.37
		15	0	22.01	22.51	22.82
3M	16QAM	1	0	22.59	22.21	22.58
		1	7	22.26	22.26	22.60
		1	14	22.52	22.34	22.46
		8	0	21.35	21.48	21.60
		8	3	21.29	21.33	21.34
		8	7	21.11	21.50	21.49
		15	0	21.16	21.27	21.28
3M	64QAM	1	0	21.34	21.61	21.66
		1	7	21.05	21.69	21.67
		1	14	21.07	21.25	21.72
		8	0	20.45	20.71	20.60
		8	3	20.31	20.56	20.40
		8	7	20.35	20.73	20.75
		15	0	20.41	20.48	20.43
3M	256QAM	1	0	17.85	18.00	17.99
		1	7	17.80	18.32	18.37
		1	14	17.35	17.44	17.58
		8	0	17.02	16.94	17.39
		8	3	16.93	17.22	17.04
		8	7	16.84	16.87	16.92
		15	0	16.88	17.09	17.14

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	22.86	23.30	23.68
		1	2	22.84	23.44	23.54
		1	5	22.77	23.18	23.38
		3	0	23.38	23.37	23.55
		3	1	23.33	23.32	23.52
		3	3	23.43	23.41	23.79
		6	0	22.29	22.38	22.51
1.4M	16QAM	1	0	22.58	22.51	22.66
		1	2	22.29	22.51	22.44
		1	5	22.20	22.51	22.44
		3	0	22.34	22.59	22.22
		3	1	22.35	22.62	22.45
		3	3	22.18	22.39	22.25
		6	0	21.36	21.25	21.41
1.4M	64QAM	1	0	21.23	21.66	21.62
		1	2	21.27	21.74	21.77
		1	5	20.83	21.47	21.33
		3	0	21.52	21.76	21.48
		3	1	21.07	21.47	21.66
		3	3	21.27	21.81	21.37
		6	0	20.42	20.61	20.76
1.4M	256QAM	1	0	17.79	17.80	17.72
		1	2	17.75	17.77	17.54
		1	5	16.99	17.60	17.81
		3	0	17.63	17.99	17.97
		3	1	17.51	17.84	17.49
		3	3	17.80	17.79	17.97
		6	0	16.81	17.09	16.71

EIRP / ERP Power (dBm)

NR Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		504000	507000	510000
		Frequency (MHz)		2520	2535	2550
40M	$\pi/2$ BPSK	1	1	23.51	24.03	23.88
		1	108	23.24	23.81	23.55
		1	214	23.40	23.81	23.67
		108	0	23.05	23.58	23.26
		108	54	23.26	23.80	23.57
		108	108	23.05	23.46	23.39
		216	0	23.07	23.49	23.36
40M	QPSK	1	1	23.78	24.14	23.90
		1	108	23.28	23.82	23.63
		1	214	23.40	23.95	23.78
		108	0	22.54	23.00	22.94
		108	54	24.00	24.08	24.02
		108	108	22.61	23.02	22.95
		216	0	22.57	23.04	22.86
40M	16QAM	1	1	22.51	23.00	22.90
40M	64QAM	1	1	21.07	21.61	21.45
40M	256QAM	1	1	19.06	19.56	19.42
BW	MCS Index	Channel		503000	507000	511000
		Frequency (MHz)		2515	2535	2555
30M	$\pi/2$ BPSK	1	1	23.47	24.06	23.82
		1	80	23.22	23.73	23.51
		1	158	23.40	23.86	23.70
		80	0	22.97	23.55	23.26
		80	40	23.25	23.76	23.56
		80	80	23.04	23.47	23.38
		160	0	23.06	23.46	23.35
30M	QPSK	1	1	23.56	24.03	23.87
		1	80	23.36	23.76	23.62
		1	158	23.46	23.94	23.70
		80	0	22.60	23.04	22.85
		80	40	23.92	24.08	23.95
		80	80	22.57	23.04	22.93
		160	0	22.62	23.00	22.86
30M	16QAM	1	1	22.59	23.05	22.90
30M	64QAM	1	1	21.15	21.56	21.41
30M	256QAM	1	1	19.11	19.55	19.37

NR Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		502500	507000	511500
		Frequency (MHz)		2512.5	2535	2557.5
25M	$\pi/2$ BPSK	1	1	23.50	24.01	23.83
		1	67	23.20	23.75	23.58
		1	131	23.39	23.81	23.72
		64	0	23.04	23.54	23.26
		64	35	23.29	23.74	23.54
		64	69	23.05	23.49	23.39
		128	0	23.06	23.49	23.43
25M	QPSK	1	1	23.60	24.07	23.91
		1	67	23.27	23.75	23.68
		1	131	23.41	23.87	23.75
		64	0	22.55	23.08	22.91
		64	35	23.92	23.99	24.00
		64	69	22.56	23.09	22.95
		128	0	22.55	23.07	22.86
25M	16QAM	1	1	22.54	23.03	22.92
25M	64QAM	1	1	21.08	21.56	21.45
25M	256QAM	1	1	19.03	19.59	19.37
BW	MCS Index	Channel		502000	507000	512000
		Frequency (MHz)		2510	2535	2560
20M	$\pi/2$ BPSK	1	1	23.54	24.10	23.90
		1	53	23.30	23.81	23.61
		1	104	23.42	23.89	23.77
		50	0	23.05	23.59	23.34
		50	28	23.34	23.84	23.61
		50	56	23.06	23.53	23.42
		100	0	23.07	23.51	23.43
20M	QPSK	1	1	23.64	24.11	23.95
		1	53	23.37	23.84	23.68
		1	104	23.48	23.95	23.79
		50	0	22.63	23.10	22.94
		50	28	24.00	24.08	24.03
		50	56	22.64	23.11	22.95
		100	0	22.63	23.10	22.94
20M	16QAM	1	1	22.61	23.08	22.92
20M	64QAM	1	1	21.17	21.64	21.48
20M	256QAM	1	1	19.13	19.60	19.44

NR Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		501500	507000	512500
		Frequency (MHz)		2507.5	2535	2562.5
15M	$\pi/2$ BPSK	1	1	23.51	24.01	23.83
		1	40	23.21	23.79	23.61
		1	77	23.35	23.82	23.77
		36	0	22.99	23.56	23.25
		36	22	23.25	23.81	23.52
		36	43	22.99	23.50	23.40
		75	0	22.99	23.46	23.34
15M	QPSK	1	1	23.56	24.01	23.87
		1	40	23.34	23.74	23.62
		1	77	23.38	23.88	23.75
		36	0	22.53	23.07	22.94
		36	22	23.37	23.77	23.64
		36	43	22.55	23.01	22.86
		75	0	22.56	23.09	22.85
15M	16QAM	1	1	22.58	23.08	22.83
15M	64QAM	1	1	21.15	21.55	21.46
15M	256QAM	1	1	19.06	19.54	19.40
BW	MCS Index	Channel		501000	507000	513000
		Frequency (MHz)		2505	2535	2565
10M	$\pi/2$ BPSK	1	1	23.52	24.04	23.81
		1	26	23.25	23.81	23.55
		1	50	23.36	23.81	23.68
		25	0	22.96	23.53	23.29
		25	14	23.28	23.79	23.61
		25	27	22.96	23.46	23.41
		50	0	23.05	23.48	23.37
10M	QPSK	1	1	23.64	24.06	23.89
		1	26	23.34	23.84	23.60
		1	50	23.42	23.87	23.72
		25	0	22.59	23.09	22.84
		25	14	23.36	23.76	23.68
		25	27	22.54	23.06	22.85
		50	0	22.60	23.00	22.84
10M	16QAM	1	1	22.60	23.07	22.89
10M	64QAM	1	1	21.11	21.62	21.40
10M	256QAM	1	1	19.09	19.53	19.39

NR Band 7						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		500500	507000	513500
		Frequency (MHz)		2502.5	2535	2567.5
5M	$\pi/2$ BPSK	1	1	23.53	24.08	23.88
		1	13	23.20	23.74	23.54
		1	23	23.33	23.80	23.70
		12	0	23.00	23.59	23.25
		12	7	23.33	23.79	23.57
		12	13	23.06	23.48	23.33
		25	0	23.07	23.50	23.33
5M	QPSK	1	1	23.59	24.08	23.95
		1	13	23.32	23.75	23.65
		1	23	23.39	23.89	23.77
		12	0	22.60	23.03	22.86
		12	7	23.35	23.83	23.62
		12	13	22.55	23.06	22.93
		25	0	22.60	23.01	22.91
5M	16QAM	1	1	22.60	23.01	22.84
5M	64QAM	1	1	21.12	21.64	21.39
5M	256QAM	1	1	19.04	19.57	19.37

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18700	18900	19100
		Frequency (MHz)		1860	1880	1900
20M	QPSK	1	0	22.39	22.06	22.40
		1	50	22.37	22.16	22.38
		1	99	22.23	22.04	22.32
		50	0	21.23	21.20	21.13
		50	25	21.41	21.30	21.09
		50	50	21.17	21.11	21.04
		100	0	21.35	21.18	21.09
20M	16QAM	1	0	21.20	21.34	21.41
		1	50	21.20	21.07	21.30
		1	99	21.31	21.09	21.16
		50	0	20.19	20.18	20.05
		50	25	20.14	20.08	19.98
		50	50	20.03	20.16	19.97
		100	0	20.05	20.24	19.96
20M	64QAM	1	0	20.21	20.13	20.35
		1	50	20.08	20.30	20.18
		1	99	20.35	20.23	20.10
		50	0	19.29	19.11	19.12
		50	25	18.99	19.31	18.96
		50	50	19.11	19.19	19.19
		100	0	19.08	19.06	19.25
20M	256QAM	1	0	17.17	16.78	17.11
		1	50	16.76	16.97	16.93
		1	99	16.95	16.79	16.56
		50	0	16.61	16.90	16.68
		50	25	16.69	16.91	16.98
		50	50	16.84	16.99	16.80
		100	0	16.78	16.74	16.82

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18675	18900	19125
		Frequency (MHz)		1857.5	1880	1902.5
15M	QPSK	1	0	22.37	21.95	22.30
		1	37	22.08	21.99	22.22
		1	74	22.32	22.08	22.18
		36	0	21.38	21.19	21.40
		36	19	21.14	21.05	21.10
		36	39	21.18	21.11	21.35
		75	0	21.33	21.17	21.05
15M	16QAM	1	0	21.16	21.51	21.12
		1	37	21.25	21.26	21.28
		1	74	21.09	21.12	21.04
		36	0	20.03	20.01	20.18
		36	19	20.13	20.02	20.15
		36	39	20.22	20.02	20.13
		75	0	20.18	20.00	19.91
15M	64QAM	1	0	20.27	20.42	20.23
		1	37	20.22	20.07	20.27
		1	74	20.31	20.24	20.29
		36	0	19.22	19.10	19.27
		36	19	19.28	19.10	19.24
		36	39	19.09	18.96	19.22
		75	0	19.26	19.02	19.20
15M	256QAM	1	0	16.78	16.45	17.12
		1	37	16.89	16.51	16.79
		1	74	16.69	16.77	16.87
		36	0	15.91	15.69	15.98
		36	19	15.74	15.41	15.97
		36	39	15.91	15.84	15.86
		75	0	15.67	15.47	15.71

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18650	18900	19150
		Frequency (MHz)		1855	1880	1905
10M	QPSK	1	0	22.20	22.11	22.15
		1	24	22.08	22.21	21.96
		1	49	21.97	21.97	22.00
		25	0	21.20	21.18	21.33
		25	12	21.19	20.85	21.37
		25	25	21.20	21.22	21.15
		50	0	20.93	21.03	21.16
10M	16QAM	1	0	21.23	21.31	21.35
		1	24	21.22	21.14	21.17
		1	49	21.03	21.16	20.94
		25	0	19.88	20.01	20.02
		25	12	20.05	19.94	19.88
		25	25	20.14	19.92	20.08
		50	0	20.03	19.80	19.84
10M	64QAM	1	0	20.05	19.97	20.07
		1	24	19.94	19.91	20.05
		1	49	19.92	19.92	19.94
		25	0	19.24	18.94	19.00
		25	12	18.84	19.09	18.98
		25	25	19.08	18.94	19.06
		50	0	19.29	19.09	18.97
10M	256QAM	1	0	16.89	17.10	17.12
		1	24	16.54	16.71	16.65
		1	49	16.46	16.84	16.69
		25	0	15.88	15.67	15.78
		25	12	15.53	15.85	15.69
		25	25	15.73	15.65	15.78
		50	0	15.82	15.72	15.63

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18625	18900	19175
		Frequency (MHz)		1852.5	1880	1907.5
5M	QPSK	1	0	22.14	22.10	21.96
		1	12	22.04	21.97	22.00
		1	24	22.11	22.14	21.92
		12	0	21.08	21.21	21.15
		12	6	21.23	20.97	21.15
		12	13	21.20	21.05	21.02
		25	0	21.10	21.12	21.16
5M	16QAM	1	0	21.35	21.41	21.17
		1	12	21.08	21.23	20.90
		1	24	21.07	21.11	21.23
		12	0	19.99	20.04	19.95
		12	6	20.05	19.92	19.78
		12	13	20.11	20.00	19.90
		25	0	20.18	20.08	19.84
5M	64QAM	1	0	20.05	20.24	20.19
		1	12	20.26	20.18	20.25
		1	24	20.27	20.16	20.17
		12	0	19.22	18.98	18.96
		12	6	18.89	18.94	18.96
		12	13	19.09	18.79	18.97
		25	0	19.23	19.11	18.91
5M	256QAM	1	0	16.61	16.68	16.60
		1	12	16.52	16.89	16.64
		1	24	16.89	16.62	16.67
		12	0	16.11	15.78	15.97
		12	6	15.87	15.65	15.91
		12	13	15.79	15.65	15.49
		25	0	15.85	15.67	15.73

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18615	18900	19185
		Frequency (MHz)		1851.5	1880	1908.5
3M	QPSK	1	0	22.20	22.09	22.26
		1	7	22.17	21.95	22.00
		1	14	22.04	22.10	22.18
		8	0	21.36	20.94	21.12
		8	3	21.15	20.90	21.19
		8	7	21.03	20.96	21.03
		15	0	21.27	21.16	21.16
3M	16QAM	1	0	21.08	21.44	21.17
		1	7	21.04	21.03	20.97
		1	14	21.04	21.15	21.08
		8	0	20.21	19.98	19.99
		8	3	20.05	19.90	19.75
		8	7	19.74	19.78	20.13
		15	0	20.08	19.93	19.95
3M	64QAM	1	0	20.29	19.91	20.08
		1	7	20.29	20.05	20.12
		1	14	20.12	20.01	20.08
		8	0	19.08	19.08	18.91
		8	3	19.11	18.99	19.20
		8	7	18.89	19.01	18.88
		15	0	19.08	19.03	18.94
3M	256QAM	1	0	16.93	16.77	16.74
		1	7	16.89	16.56	16.74
		1	14	16.97	16.61	16.65
		8	0	15.81	15.61	15.64
		8	3	15.66	15.67	16.15
		8	7	16.07	15.91	15.86
		15	0	15.74	15.74	15.89

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18607	18900	19193
		Frequency (MHz)		1850.7	1880	1909.3
1.4M	QPSK	1	0	22.20	22.00	22.25
		1	2	22.17	22.25	22.01
		1	5	22.17	21.82	22.07
		3	0	22.21	22.25	22.06
		3	1	22.03	21.91	22.15
		3	3	22.35	22.18	22.19
		6	0	21.04	20.98	21.35
1.4M	16QAM	1	0	21.21	21.22	21.10
		1	2	21.00	21.17	20.93
		1	5	21.06	20.90	20.99
		3	0	20.92	20.87	21.08
		3	1	21.09	20.88	21.05
		3	3	20.90	21.08	21.02
		6	0	19.78	20.05	19.95
1.4M	64QAM	1	0	20.15	19.95	20.17
		1	2	20.13	19.95	20.27
		1	5	19.97	19.88	19.87
		3	0	19.89	20.17	19.89
		3	1	20.11	19.98	19.97
		3	3	19.89	19.77	19.87
		6	0	19.01	19.21	18.99
1.4M	256QAM	1	0	16.56	16.62	17.03
		1	2	16.93	16.73	16.99
		1	5	16.55	16.60	16.55
		3	0	17.06	16.86	16.80
		3	1	16.98	16.85	16.66
		3	3	16.86	16.62	16.50
		6	0	15.79	15.69	15.80

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20450	20525	20600
		Frequency (MHz)		829	836.5	844
10M	QPSK	1	0	20.33	20.78	20.42
		1	24	20.52	20.67	20.43
		1	49	20.35	20.30	19.96
		25	0	19.29	19.75	19.49
		25	12	19.32	19.71	19.60
		25	25	19.47	19.69	19.37
		50	0	19.38	19.74	19.28
10M	16QAM	1	0	19.40	19.59	19.66
		1	24	19.31	19.53	19.40
		1	49	19.05	19.30	19.12
		25	0	18.32	18.58	18.49
		25	12	18.43	18.79	18.49
		25	25	18.25	18.33	18.13
		50	0	18.58	18.59	18.45
10M	64QAM	1	0	18.31	18.45	17.99
		1	24	18.24	18.34	18.16
		1	49	17.53	17.74	17.52
		25	0	17.26	17.32	16.98
		25	12	17.23	17.21	16.97
		25	25	16.70	16.70	16.34
		50	0	16.67	17.12	16.75
10M	256QAM	1	0	14.78	15.53	14.70
		1	24	14.78	15.00	14.91
		1	49	15.05	15.11	14.51
		25	0	14.33	14.35	14.19
		25	12	14.18	14.57	14.23
		25	25	14.02	14.29	14.20
		50	0	14.24	14.12	13.86

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20425	20525	20625
		Frequency (MHz)		826.5	836.5	846.5
5M	QPSK	1	0	20.39	20.46	20.35
		1	12	20.34	20.60	20.13
		1	24	20.22	20.45	19.82
		12	0	19.38	19.61	19.41
		12	6	19.22	19.55	19.29
		12	13	19.20	19.59	19.33
		25	0	19.59	19.59	19.41
5M	16QAM	1	0	19.23	19.53	19.35
		1	12	19.36	19.70	19.49
		1	24	18.99	19.23	19.01
		12	0	18.43	18.83	18.56
		12	6	18.29	18.60	18.35
		12	13	18.08	18.57	18.27
		25	0	18.29	18.51	18.51
5M	64QAM	1	0	18.12	18.48	18.08
		1	12	17.93	18.35	17.84
		1	24	17.31	17.71	17.35
		12	0	17.25	17.45	17.10
		12	6	17.10	17.38	16.90
		12	13	16.74	16.63	16.56
		25	0	16.46	16.94	16.49
5M	256QAM	1	0	14.88	15.20	15.18
		1	12	14.92	15.40	14.92
		1	24	14.85	15.27	14.78
		12	0	13.92	14.28	14.03
		12	6	14.06	14.20	13.90
		12	13	14.26	14.28	13.85
		25	0	14.29	14.10	13.79

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20415	20525	20635
		Frequency (MHz)		825.5	836.5	847.5
3M	QPSK	1	0	20.35	20.72	19.99
		1	7	20.25	20.61	20.14
		1	14	20.02	20.12	19.92
		8	0	19.10	19.58	19.43
		8	3	19.14	19.76	19.59
		8	7	19.25	19.38	18.92
		15	0	19.43	19.53	19.24
3M	16QAM	1	0	19.45	19.77	19.36
		1	7	19.32	19.60	19.40
		1	14	19.22	19.15	19.02
		8	0	18.42	18.71	18.37
		8	3	18.25	18.75	18.10
		8	7	18.13	18.35	18.30
		15	0	18.43	18.64	18.30
3M	64QAM	1	0	18.00	18.41	17.93
		1	7	17.77	18.26	17.88
		1	14	17.47	17.69	17.15
		8	0	17.07	17.34	17.04
		8	3	16.87	16.94	16.85
		8	7	16.49	16.73	16.28
		15	0	16.45	16.68	16.48
3M	256QAM	1	0	15.00	15.26	14.69
		1	7	14.85	15.11	14.72
		1	14	14.44	15.00	14.44
		8	0	14.00	14.24	14.05
		8	3	13.94	14.14	14.09
		8	7	13.80	14.11	13.83
		15	0	13.78	14.21	13.62

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20407	20525	20643
		Frequency (MHz)		824.7	836.5	848.3
1.4M	QPSK	1	0	20.44	20.62	20.05
		1	2	20.29	20.55	20.26
		1	5	20.07	20.28	20.13
		3	0	20.51	20.65	20.60
		3	1	20.33	20.45	20.49
		3	3	20.27	20.57	20.21
		6	0	19.45	19.68	19.08
1.4M	16QAM	1	0	19.37	19.46	19.41
		1	2	19.50	19.76	19.51
		1	5	19.20	19.20	18.97
		3	0	19.32	19.69	19.49
		3	1	19.14	19.56	19.23
		3	3	19.26	19.38	18.99
		6	0	18.38	18.47	18.40
1.4M	64QAM	1	0	18.19	18.43	17.97
		1	2	17.86	18.10	17.82
		1	5	17.23	17.49	17.35
		3	0	18.11	18.21	18.02
		3	1	17.98	18.15	17.82
		3	3	17.34	17.81	17.46
		6	0	16.71	16.61	16.29
1.4M	256QAM	1	0	14.84	14.89	15.12
		1	2	15.21	15.21	14.85
		1	5	14.75	14.77	14.56
		3	0	14.95	15.16	14.93
		3	1	14.74	15.15	15.04
		3	3	14.96	15.07	14.58
		6	0	14.36	14.53	13.68

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	20.47	20.18	20.07
		1	24	20.41	20.30	20.10
		1	49	20.25	20.00	20.16
		25	0	19.32	19.24	18.96
		25	12	19.25	18.95	19.05
		25	25	19.38	19.00	19.04
		50	0	19.31	18.98	18.93
10M	16QAM	1	0	19.36	19.07	18.95
		1	24	19.23	18.99	18.91
		1	49	19.15	19.17	18.92
		25	0	18.29	18.17	18.01
		25	12	18.33	18.12	17.98
		25	25	18.49	18.13	17.97
		50	0	18.48	18.25	18.11
10M	64QAM	1	0	18.49	18.08	18.10
		1	24	18.40	18.04	17.91
		1	49	18.15	17.93	17.88
		25	0	17.22	16.89	17.03
		25	12	17.12	16.94	16.83
		25	25	16.95	16.85	16.92
		50	0	16.98	17.12	16.72
10M	256QAM	1	0	15.07	14.76	14.54
		1	24	14.99	14.52	14.77
		1	49	14.73	14.74	14.58
		25	0	13.95	13.52	13.68
		25	12	14.19	14.06	13.85
		25	25	14.05	13.92	13.75
		50	0	14.00	13.80	13.66

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	20.45	20.27	20.10
		1	12	20.17	20.09	19.99
		1	24	20.11	19.99	19.92
		12	0	19.11	18.95	19.08
		12	6	19.44	19.15	18.99
		12	13	19.29	19.18	19.05
		25	0	19.38	19.23	19.13
5M	16QAM	1	0	19.42	19.29	19.02
		1	12	19.05	18.91	18.81
		1	24	19.26	18.80	18.98
		12	0	18.36	18.25	18.13
		12	6	18.24	18.12	18.21
		12	13	18.43	18.16	17.90
		25	0	18.27	18.18	18.15
5M	64QAM	1	0	18.59	18.03	18.05
		1	12	18.54	17.94	17.96
		1	24	17.79	17.87	17.52
		12	0	17.31	16.89	16.92
		12	6	17.07	16.72	16.67
		12	13	17.10	16.92	16.72
		25	0	17.27	16.75	16.86
5M	256QAM	1	0	15.03	14.82	14.93
		1	12	14.65	15.10	14.27
		1	24	14.41	14.60	14.53
		12	0	13.86	13.61	13.49
		12	6	13.59	13.81	13.67
		12	13	14.00	13.82	13.40
		25	0	14.16	13.67	13.54

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	20.35	19.98	20.16
		1	7	20.20	19.88	20.02
		1	14	20.08	19.95	20.02
		8	0	19.23	18.80	18.84
		8	3	19.35	18.91	19.00
		8	7	19.30	18.98	18.85
		15	0	19.10	18.75	19.10
3M	16QAM	1	0	19.03	18.87	18.94
		1	7	19.24	19.05	18.99
		1	14	19.21	18.84	18.60
		8	0	18.46	18.12	18.02
		8	3	18.52	17.84	17.93
		8	7	18.29	18.20	18.08
		15	0	18.21	17.87	17.91
3M	64QAM	1	0	18.34	17.77	18.00
		1	7	18.22	18.06	18.02
		1	14	17.96	17.54	17.48
		8	0	16.91	16.76	16.77
		8	3	17.06	16.61	16.50
		8	7	17.06	16.67	16.78
		15	0	17.22	16.67	16.59
3M	256QAM	1	0	15.10	14.67	14.88
		1	7	15.22	14.79	14.54
		1	14	14.58	14.74	14.66
		8	0	13.89	13.50	13.62
		8	3	14.02	13.93	13.77
		8	7	13.87	13.41	13.66
		15	0	13.71	13.47	13.48

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	20.19	20.11	20.02
		1	2	20.17	19.88	19.90
		1	5	19.96	20.10	19.73
		3	0	20.22	20.02	19.69
		3	1	20.29	19.97	20.02
		3	3	20.18	20.17	19.71
		6	0	19.03	18.90	19.23
1.4M	16QAM	1	0	19.44	19.14	18.76
		1	2	19.17	19.00	18.98
		1	5	18.96	19.07	18.68
		3	0	19.37	19.00	19.07
		3	1	19.16	19.10	19.19
		3	3	19.37	19.20	19.01
		6	0	18.33	17.91	18.07
1.4M	64QAM	1	0	18.08	17.86	17.83
		1	2	18.41	17.92	17.97
		1	5	17.81	17.70	17.59
		3	0	17.92	17.81	17.94
		3	1	18.14	17.65	17.64
		3	3	17.83	17.68	17.70
		6	0	16.85	16.63	16.86
1.4M	256QAM	1	0	14.95	14.78	14.28
		1	2	14.93	14.58	14.90
		1	5	14.82	14.66	14.57
		3	0	15.02	14.41	14.56
		3	1	15.00	14.59	14.41
		3	3	14.85	14.64	14.53
		6	0	13.75	13.90	13.62

LTE Band 13				
BW	MCS Index	RB Size	RB Offset	Low
		Channel		23230
		Frequency (MHz)		782
10M	QPSK	1	0	18.30
		1	24	18.25
		1	49	18.00
		25	0	17.06
		25	12	17.20
		25	25	17.05
		50	0	16.92
10M	16QAM	1	0	17.02
		1	24	17.25
		1	49	16.98
		25	0	16.14
		25	12	16.20
		25	25	15.91
		50	0	16.25
10M	64QAM	1	0	16.17
		1	24	16.23
		1	49	15.78
		25	0	15.26
		25	12	14.96
		25	25	15.11
		50	0	14.99
10M	256QAM	1	0	12.82
		1	24	12.63
		1	49	12.72
		25	0	11.56
		25	12	11.39
		25	25	11.72
		50	0	11.79

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	17.90	18.23	18.08
		1	12	18.10	18.09	18.06
		1	24	17.69	18.11	17.98
		12	0	17.10	17.33	16.98
		12	6	16.89	16.83	16.82
		12	13	17.04	16.99	16.89
		25	0	17.14	17.14	16.95
5M	16QAM	1	0	17.02	17.09	16.98
		1	12	17.00	17.35	17.02
		1	24	16.74	17.01	16.80
		12	0	16.04	16.01	16.06
		12	6	16.10	15.92	15.98
		12	13	15.97	16.10	16.16
		25	0	15.97	16.14	16.02
5M	64QAM	1	0	16.02	15.97	15.83
		1	12	16.02	16.22	15.92
		1	24	15.58	15.96	15.69
		12	0	14.64	14.97	14.60
		12	6	14.92	14.94	14.59
		12	13	14.65	15.18	14.70
		25	0	14.84	15.05	14.92
5M	256QAM	1	0	12.69	12.50	12.59
		1	12	12.91	12.97	12.81
		1	24	12.22	12.65	12.53
		12	0	11.38	11.70	11.39
		12	6	11.42	11.73	11.38
		12	13	11.79	11.54	11.85
		25	0	11.68	11.77	11.36

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	21.52	21.97	22.12
		1	50	21.35	21.89	21.91
		1	99	21.17	21.38	21.83
		50	0	20.71	20.86	21.15
		50	25	20.67	20.79	21.07
		50	50	20.58	20.99	21.15
		100	0	20.64	20.92	21.15
20M	16QAM	1	0	21.09	21.08	21.00
		1	50	20.87	20.72	20.78
		1	99	20.84	20.84	21.03
		50	0	19.55	19.78	19.81
		50	25	19.77	20.01	19.74
		50	50	19.50	19.69	19.69
		100	0	19.72	19.83	19.81
20M	64QAM	1	0	19.64	20.06	20.20
		1	50	19.76	20.07	19.98
		1	99	19.52	19.85	20.07
		50	0	18.83	18.93	18.91
		50	25	18.90	18.91	19.12
		50	50	18.49	19.22	18.95
		100	0	18.84	19.14	18.88
20M	256QAM	1	0	16.12	16.50	16.75
		1	50	16.14	16.72	16.87
		1	99	15.74	16.05	16.42
		50	0	15.34	15.33	15.92
		50	25	15.39	15.36	15.74
		50	50	15.31	15.60	15.69
		100	0	15.49	15.41	15.61

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	21.42	21.95	22.08
		1	37	21.33	21.61	21.90
		1	74	20.89	21.34	21.55
		36	0	20.64	20.62	21.00
		36	19	20.81	20.94	20.98
		36	39	20.54	20.69	20.97
		75	0	20.46	20.64	21.05
15M	16QAM	1	0	21.03	21.03	20.84
		1	37	20.87	20.76	20.81
		1	74	20.61	20.63	20.76
		36	0	19.72	19.88	19.69
		36	19	19.82	20.01	19.84
		36	39	19.65	19.86	19.62
		75	0	19.76	19.91	19.69
15M	64QAM	1	0	19.66	20.02	20.21
		1	37	19.51	19.98	20.09
		1	74	19.25	19.93	19.97
		36	0	18.83	18.91	18.87
		36	19	18.57	19.09	19.01
		36	39	18.53	19.00	18.83
		75	0	18.70	19.10	19.15
15M	256QAM	1	0	15.93	16.50	16.76
		1	37	15.81	16.43	16.89
		1	74	15.76	16.11	16.19
		36	0	15.30	15.14	15.63
		36	19	15.22	15.13	15.78
		36	39	15.19	15.39	15.73
		75	0	15.49	15.38	15.69

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	21.41	21.72	22.08
		1	24	21.29	21.65	21.80
		1	49	20.90	21.45	21.64
		25	0	20.77	20.60	20.88
		25	12	20.49	20.74	21.00
		25	25	20.62	20.59	21.12
		50	0	20.65	20.63	20.97
10M	16QAM	1	0	20.85	20.89	20.81
		1	24	20.63	20.67	20.73
		1	49	20.49	20.48	20.61
		25	0	19.35	20.00	19.71
		25	12	19.55	19.78	19.89
		25	25	19.48	19.84	19.61
		50	0	19.64	19.85	19.66
10M	64QAM	1	0	19.35	19.70	20.09
		1	24	19.56	19.74	19.84
		1	49	19.21	19.37	19.76
		25	0	18.85	18.91	18.74
		25	12	18.68	18.86	18.75
		25	25	18.72	19.17	18.86
		50	0	18.44	18.80	18.98
10M	256QAM	1	0	16.15	16.58	16.89
		1	24	16.07	16.21	16.20
		1	49	15.46	16.28	16.01
		25	0	15.10	15.35	15.50
		25	12	15.33	15.27	15.60
		25	25	15.19	15.25	15.58
		50	0	15.51	15.33	15.83

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	21.37	22.06	21.74
		1	12	21.50	21.84	21.75
		1	24	20.94	21.21	21.46
		12	0	20.38	20.81	20.69
		12	6	20.52	20.84	21.03
		12	13	20.56	20.60	20.91
		25	0	20.39	20.52	20.86
5M	16QAM	1	0	20.93	20.89	20.81
		1	12	20.62	20.58	20.86
		1	24	20.64	20.71	20.99
		12	0	19.73	19.70	19.74
		12	6	19.56	19.78	19.67
		12	13	19.41	19.83	19.58
		25	0	19.69	19.74	19.87
5M	64QAM	1	0	19.46	19.73	20.02
		1	12	19.37	19.89	19.94
		1	24	19.32	19.76	19.71
		12	0	18.60	18.84	18.83
		12	6	18.49	19.17	18.85
		12	13	18.73	18.85	18.89
		25	0	18.67	18.90	19.06
5M	256QAM	1	0	16.02	16.46	16.53
		1	12	16.14	16.33	16.71
		1	24	15.55	15.64	16.25
		12	0	15.17	15.58	15.28
		12	6	15.04	15.19	15.65
		12	13	15.09	15.33	15.18
		25	0	15.00	15.44	15.70

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	21.31	21.92	21.86
		1	7	21.42	21.63	21.92
		1	14	20.84	21.27	21.40
		8	0	20.49	20.65	21.04
		8	3	20.50	20.70	20.80
		8	7	20.38	20.63	20.68
		15	0	20.33	20.83	21.13
3M	16QAM	1	0	20.91	20.53	20.89
		1	7	20.58	20.58	20.92
		1	14	20.83	20.66	20.78
		8	0	19.66	19.80	19.92
		8	3	19.60	19.65	19.65
		8	7	19.43	19.81	19.81
		15	0	19.48	19.58	19.59
3M	64QAM	1	0	19.65	19.93	19.98
		1	7	19.37	20.00	19.98
		1	14	19.38	19.57	20.04
		8	0	18.77	19.03	18.91
		8	3	18.63	18.87	18.72
		8	7	18.67	19.04	19.06
		15	0	18.73	18.80	18.75
3M	256QAM	1	0	16.17	16.32	16.30
		1	7	16.11	16.63	16.68
		1	14	15.67	15.75	15.90
		8	0	15.34	15.25	15.70
		8	3	15.25	15.54	15.36
		8	7	15.16	15.19	15.24
		15	0	15.20	15.40	15.46

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	21.18	21.62	22.00
		1	2	21.16	21.76	21.86
		1	5	21.09	21.49	21.69
		3	0	21.70	21.69	21.87
		3	1	21.65	21.63	21.84
		3	3	21.75	21.72	22.11
		6	0	20.61	20.69	20.82
1.4M	16QAM	1	0	20.89	20.82	20.98
		1	2	20.60	20.82	20.75
		1	5	20.52	20.82	20.76
		3	0	20.65	20.90	20.54
		3	1	20.66	20.94	20.76
		3	3	20.49	20.71	20.56
		6	0	19.68	19.56	19.72
1.4M	64QAM	1	0	19.55	19.98	19.93
		1	2	19.58	20.05	20.09
		1	5	19.15	19.79	19.64
		3	0	19.84	20.08	19.80
		3	1	19.38	19.79	19.97
		3	3	19.59	20.13	19.69
		6	0	18.74	18.93	19.07
1.4M	256QAM	1	0	16.11	16.11	16.04
		1	2	16.07	16.09	15.86
		1	5	15.30	15.91	16.13
		3	0	15.94	16.31	16.29
		3	1	15.82	16.16	15.81
		3	3	16.12	16.11	16.29
		6	0	15.13	15.40	15.03

4.2 Modulation Characteristics Measurement

4.2.1 Limits of Modulation Characteristics

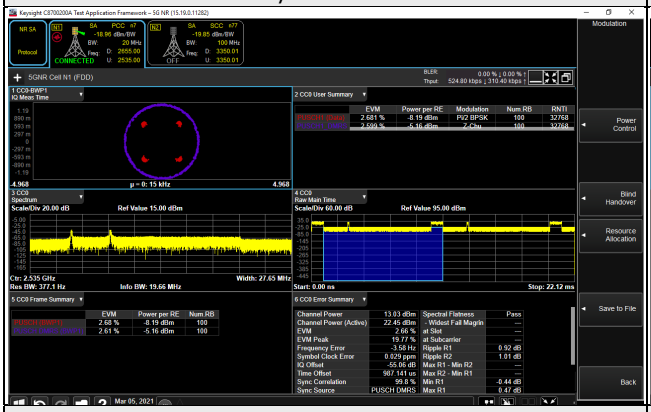
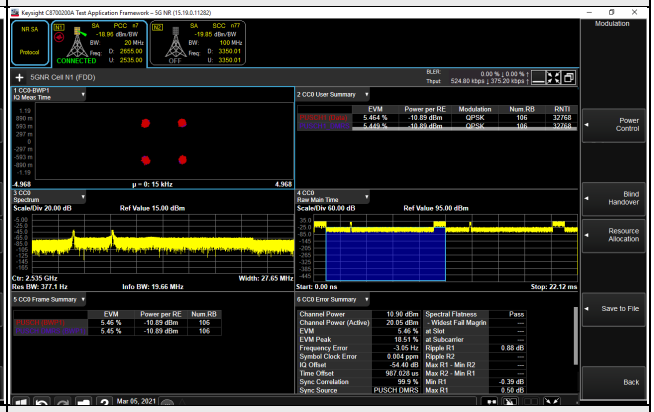
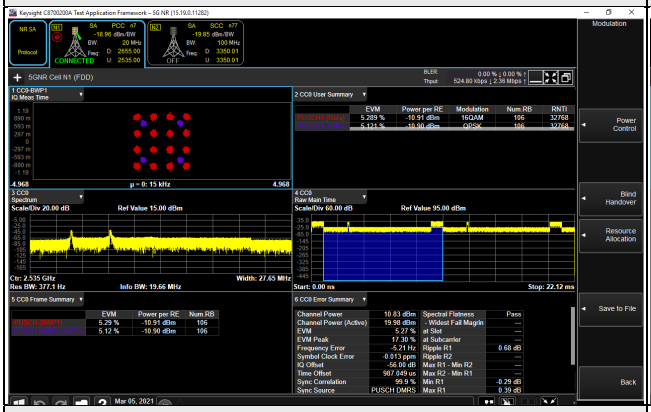
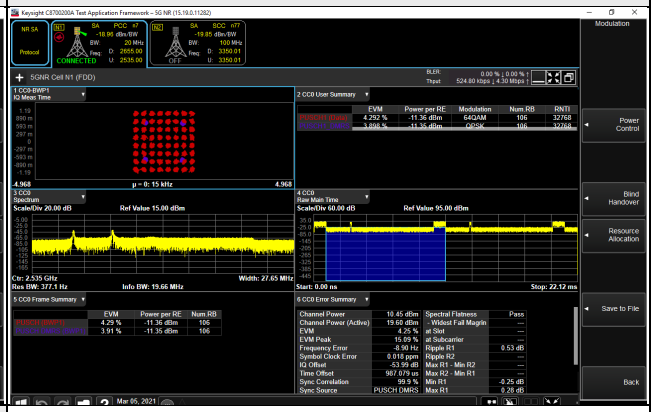
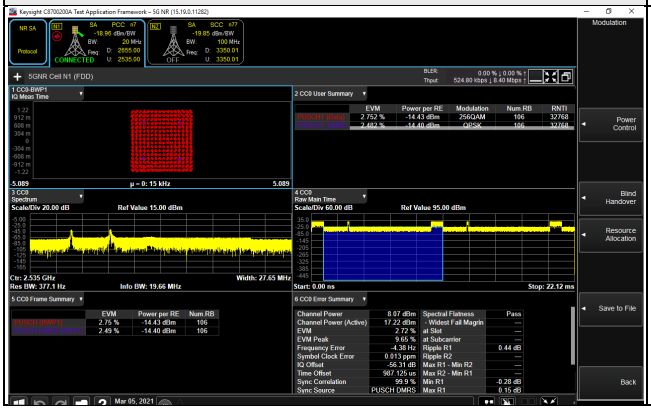
N/A

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

n7	
Spectrum Plot of Measurement Value	
Channel: 507000 / Frequency (MHz): 2535.0MHz	
$\pi/2$ BPSK	QPSK
	
16QAM	64QAM
	
256QAM	
	

4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stabiliity Measurement

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

4.3.2 Test Procedure

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

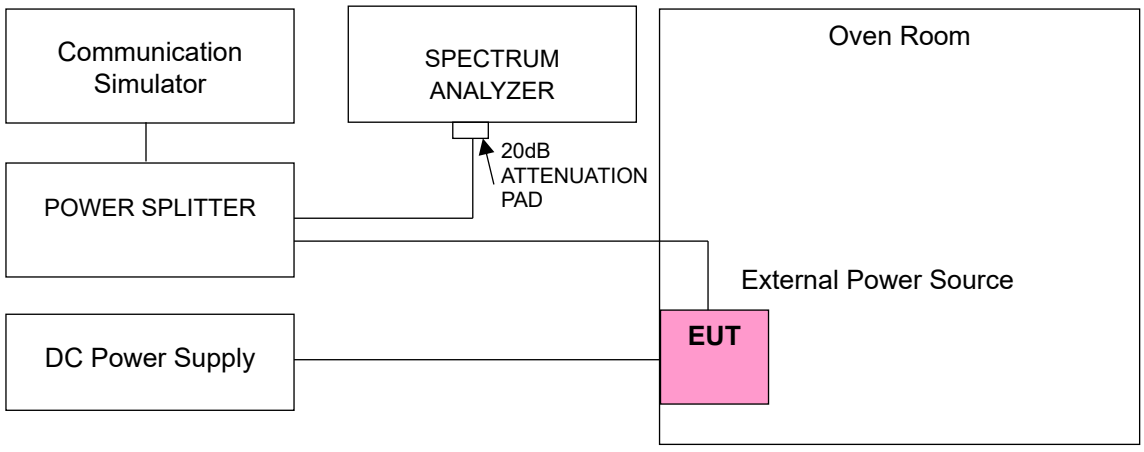
Note: The frequency error was recorded frequency error from the communication simulator.

4.3.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
5G Wireless Test Platforms Keysight	E7515B	MY60102114	May 28, 2020	May 27, 2021
Temperature & Humidity Chamber TERCHY	HRM-120RF	931022	Dec. 24, 2020	Dec. 23, 2021
Digital Multimeter Fluke	87-III	70360742	Jun. 23, 2020	Jun. 22, 2021
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 Conducted Setup



4.3.5 Test Results

Frequency Error vs. Voltage

Voltage (Vdc)	n7			
	Channel Bandwidth 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
8.90	2502.500004	0.001	2567.500000	0.002
7.74	2502.500001	0.000	2567.500000	0.002
6.58	2502.500002	0.001	2567.500000	0.001

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	n7			
	Channel Bandwidth 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2502.500004	0.002	2567.500000	0.001
-20	2502.500001	0.001	2567.500000	0.001
-10	2502.500002	0.001	2567.500000	0.001
0	2502.500003	0.001	2567.500000	0.001
10	2502.499999	0.000	2567.500000	-0.001
20	2502.499996	-0.001	2567.500000	-0.001
30	2502.499999	0.000	2567.500000	-0.001
40	2502.499997	-0.001	2567.500000	-0.001
50	2502.499998	-0.001	2567.500000	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	n7			
	Channel Bandwidth 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
8.90	2505.000002	0.001	2565.000004	0.001
7.74	2505.000002	0.001	2565.000003	0.001
6.58	2505.000002	0.001	2565.000001	0.000

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	n7			
	Channel Bandwidth 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2505.000004	0.002	2565.000001	0.000
-20	2505.000004	0.002	2565.000002	0.001
-10	2505.000003	0.001	2565.000002	0.001
0	2505.000003	0.001	2565.000003	0.001
10	2504.999997	-0.001	2564.999998	-0.001
20	2504.999996	-0.002	2564.999998	-0.001
30	2504.999997	-0.001	2564.999998	-0.001
40	2504.999998	-0.001	2564.999997	-0.001
50	2504.999997	-0.001	2564.999999	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	n7			
	Channel Bandwidth 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
8.90	2507.500004	0.002	2562.500003	0.001
7.74	2507.500001	0.001	2562.500003	0.001
6.58	2507.500003	0.001	2562.500002	0.001

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	n7			
	Channel Bandwidth 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2507.500003	0.001	2562.500003	0.001
-20	2507.500003	0.001	2562.500003	0.001
-10	2507.500002	0.001	2562.500003	0.001
0	2507.500003	0.001	2562.500002	0.001
10	2507.499997	-0.001	2562.499999	-0.001
20	2507.499998	-0.001	2562.499998	-0.001
30	2507.499998	-0.001	2562.499998	-0.001
40	2507.499998	-0.001	2562.499999	-0.001
50	2507.499998	-0.001	2562.499997	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	n7			
	Channel Bandwidth 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
8.90	2510.000004	0.002	2560.000002	0.001
7.74	2510.000002	0.001	2560.000002	0.001
6.58	2510.000003	0.001	2560.000002	0.001

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	n7			
	Channel Bandwidth 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2510.000004	0.001	2560.000003	0.001
-20	2510.000002	0.001	2560.000003	0.001
-10	2510.000001	0.000	2560.000002	0.001
0	2510.000002	0.001	2560.000003	0.001
10	2509.999996	-0.001	2559.999998	-0.001
20	2509.999996	-0.002	2559.999997	-0.001
30	2509.999997	-0.001	2559.999998	-0.001
40	2509.999998	-0.001	2559.999998	-0.001
50	2509.999997	-0.001	2559.999997	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	n7			
	Channel Bandwidth 25 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
8.90	2512.500002	0.001	2557.500003	0.001
7.74	2512.500002	0.001	2557.500003	0.001
6.58	2512.500004	0.002	2557.500003	0.001

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	n7			
	Channel Bandwidth 25 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2512.500002	0.001	2557.500004	0.001
-20	2512.500001	0.000	2557.500003	0.001
-10	2512.500002	0.001	2557.500004	0.001
0	2512.500002	0.001	2557.500003	0.001
10	2512.499998	-0.001	2557.499999	0.000
20	2512.499998	-0.001	2557.499997	-0.001
30	2512.499998	-0.001	2557.499999	-0.001
40	2512.499997	-0.001	2557.499997	-0.001
50	2512.499998	-0.001	2557.499998	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	n7			
	Channel Bandwidth 30 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
8.90	2515.000001	0.001	2555.000002	0.001
7.74	2515.000003	0.001	2555.000003	0.001
6.58	2515.000002	0.001	2555.000002	0.001

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	n7			
	Channel Bandwidth 30 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2515.000001	0.001	2555.000002	0.001
-20	2515.000002	0.001	2555.000002	0.001
-10	2515.000003	0.001	2555.000003	0.001
0	2515.000003	0.001	2555.000002	0.001
10	2514.999999	-0.001	2554.999998	-0.001
20	2514.999999	-0.001	2554.999997	-0.001
30	2514.999998	-0.001	2554.999998	-0.001
40	2514.999998	-0.001	2554.999997	-0.001
50	2514.999997	-0.001	2554.999996	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	n7			
	Channel Bandwidth 40 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
8.90	2520.000003	0.001	2550.000001	0.001
7.74	2520.000001	0.000	2550.000003	0.001
6.58	2520.000003	0.001	2550.000002	0.001

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	n7			
	Channel Bandwidth 40 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2520.000001	0.001	2550.000002	0.001
-20	2520.000003	0.001	2550.000002	0.001
-10	2520.000002	0.001	2550.000002	0.001
0	2520.000002	0.001	2550.000003	0.001
10	2519.999997	-0.001	2549.999998	-0.001
20	2519.999996	-0.001	2549.999998	-0.001
30	2519.999999	-0.001	2549.999999	-0.001
40	2519.999997	-0.001	2549.999998	-0.001
50	2519.999996	-0.002	2549.999997	-0.001

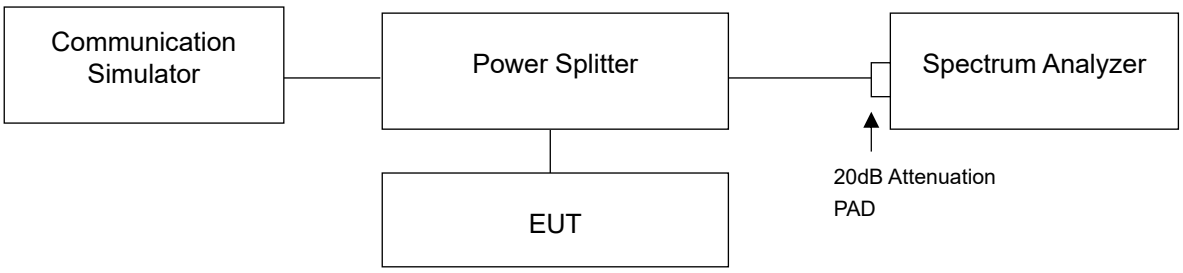
4.4 Occupied Bandwidth Measurement

4.4.1 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.

4.4.2 Test Setup



4.4.3 Test Result

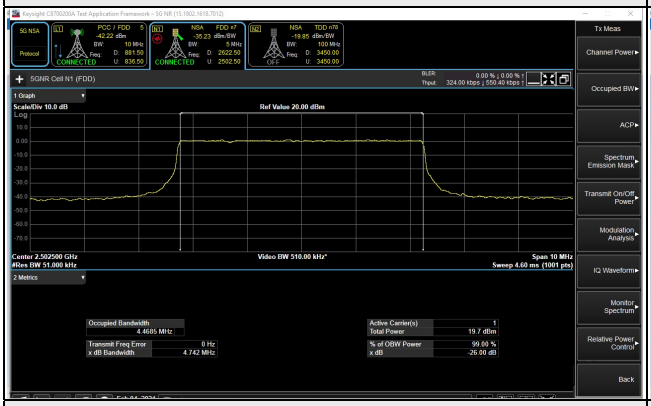
Occupied Bandwidth

n7, Channel Bandwidth 5MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
500500	2502.5	4.46	4.47	4.47	4.47	4.47
507000	2535.0	4.47	4.47	4.47	4.47	4.47
513500	2567.5	4.47	4.47	4.47	4.47	4.47
n7, Channel Bandwidth 10MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
501000	2505.0	9.21	9.29	9.29	9.29	9.29
507000	2535.0	9.18	9.29	9.29	9.29	9.29
513000	2565.0	9.21	9.29	9.29	9.29	9.29
n7, Channel Bandwidth 15MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
501500	2507.5	13.95	14.11	14.12	14.11	14.11
507000	2535.0	13.99	14.11	14.12	14.12	14.11
512500	2562.5	13.99	14.11	14.11	14.11	14.11
n7, Channel Bandwidth 20MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
502000	2510.0	18.65	18.91	18.91	18.91	18.91
507000	2535.0	18.68	18.91	18.90	18.90	18.90
512000	2560.0	18.75	18.90	18.91	18.89	18.90
n7, Channel Bandwidth 25MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
502500	2512.5	23.12	23.86	23.91	23.91	23.90
507000	2535.0	23.05	23.93	23.94	23.94	23.88
511500	2557.5	23.05	23.89	23.89	23.89	23.74

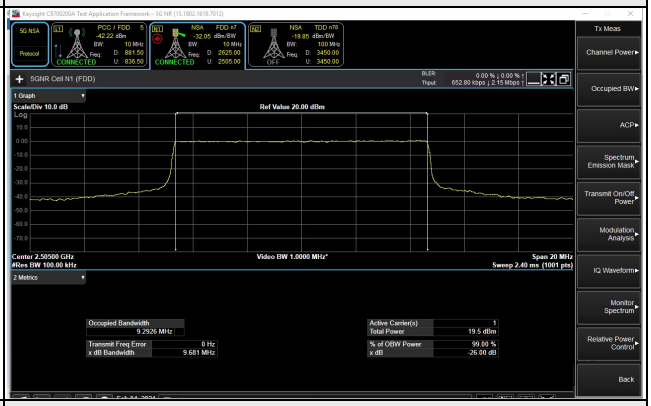
n7, Channel Bandwidth 30MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
503000	2515.0	26.75	27.83	27.84	27.83	27.83
507000	2535.0	26.72	27.80	27.79	27.79	27.78
511000	2555.0	26.75	27.79	27.79	27.80	27.77
n7, Channel Bandwidth 40MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
504000	2520.0	35.68	37.82	37.82	37.82	37.82
507000	2535.0	35.65	37.74	37.74	37.75	37.74
510000	2550.0	35.58	37.73	37.73	37.73	37.70

Spectrum Plot of Worst Value

5MHz / 16QAM



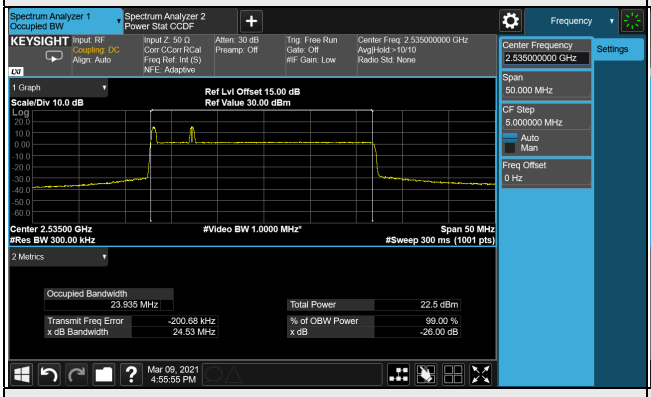
10MHz / 64QAM



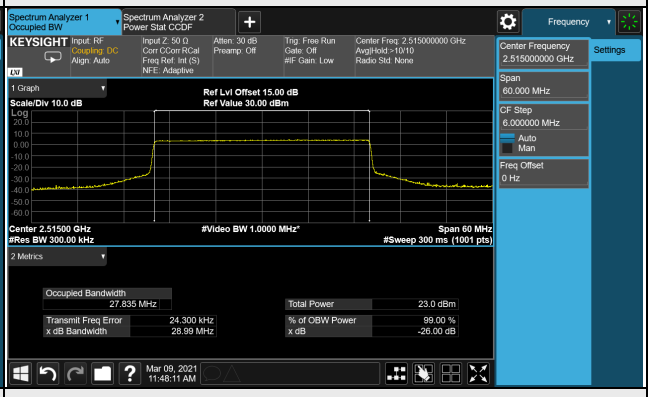
15MHz / 16QAM

20MHz / 64QAM

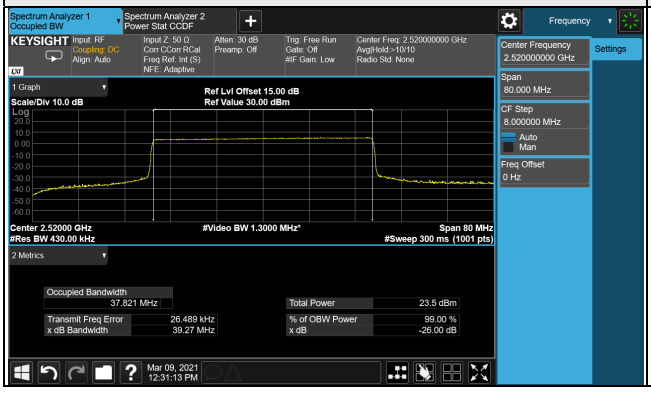
25MHz / 16QAM



30MHz / 16QAM



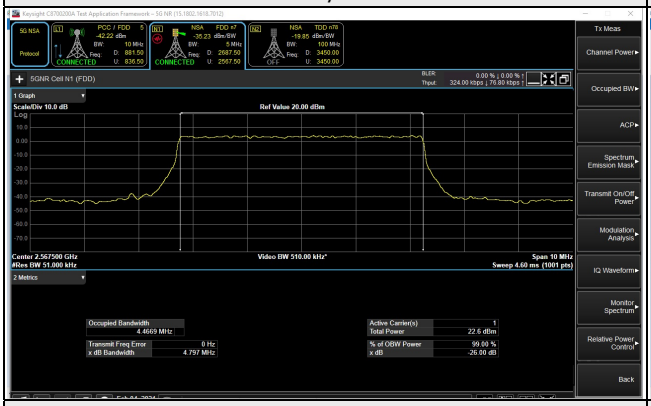
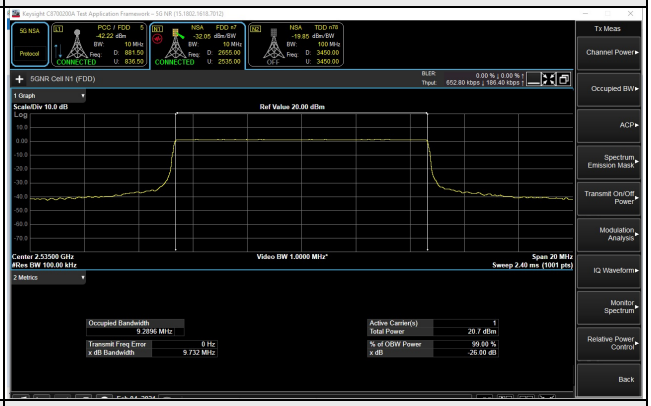
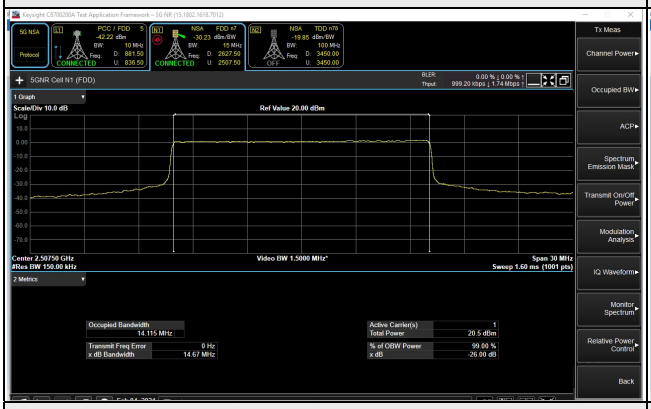
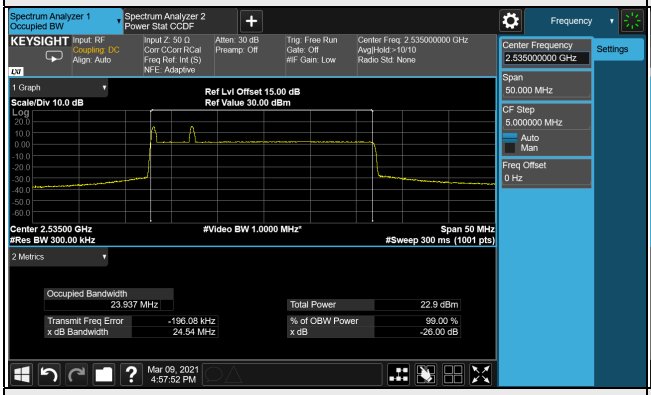
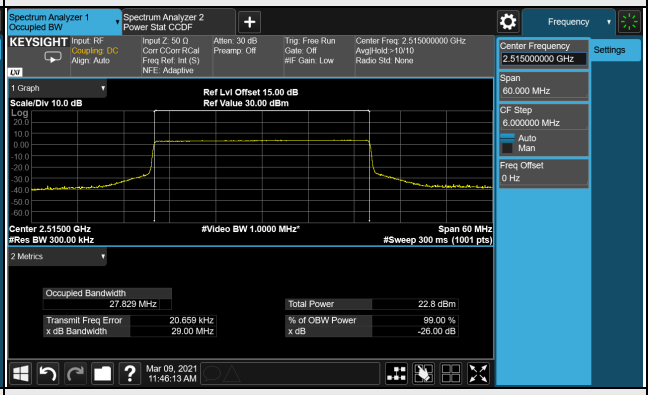
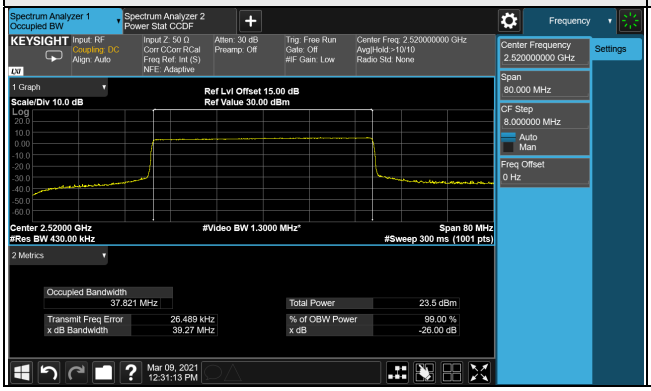
40MHz / 16QAM



26dB Bandwidth

n7, Channel Bandwidth 5MHz						
Channel	Frequency (MHz)	26dB Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
500500	2502.5	4.74	4.75	4.74	4.78	4.69
507000	2535.0	4.78	4.73	4.76	4.73	4.73
513500	2567.5	4.80	4.73	4.73	4.73	4.73
n7, Channel Bandwidth 10MHz						
Channel	Frequency (MHz)	26dB Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
501000	2505.0	9.27	9.67	9.67	9.68	9.66
507000	2535.0	9.26	9.73	9.65	9.65	9.67
513000	2565.0	9.28	9.70	9.66	9.66	9.64
n7, Channel Bandwidth 15MHz						
Channel	Frequency (MHz)	26dB Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
501500	2507.5	13.90	14.63	14.67	14.63	14.60
507000	2535.0	13.89	14.61	14.64	14.63	14.61
512500	2562.5	13.91	14.62	14.62	14.61	14.60
n7, Channel Bandwidth 20MHz						
Channel	Frequency (MHz)	26dB Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
502000	2510.0	18.48	19.60	19.58	19.56	19.56
507000	2535.0	18.49	19.58	19.58	19.55	19.56
512000	2560.0	18.48	19.58	19.58	19.55	19.56
n7, Channel Bandwidth 25MHz						
Channel	Frequency (MHz)	26dB Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
502500	2512.5	23.64	24.47	24.49	24.44	24.45
507000	2535.0	23.68	24.53	24.54	24.53	24.48
511500	2557.5	23.63	24.52	24.52	24.49	24.41

n7, Channel Bandwidth 30MHz						
Channel	Frequency (MHz)	26dB Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
503000	2515.0	27.84	29.00	28.99	28.99	28.92
507000	2535.0	27.81	28.90	28.92	28.89	28.86
511000	2555.0	27.85	28.88	28.88	28.85	28.85
n7, Channel Bandwidth 40MHz						
Channel	Frequency (MHz)	26dB Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
504000	2520.0	37.05	39.26	39.27	39.22	39.25
507000	2535.0	37.04	39.21	39.20	39.23	39.19
510000	2550.0	37.04	39.24	39.20	39.20	39.19

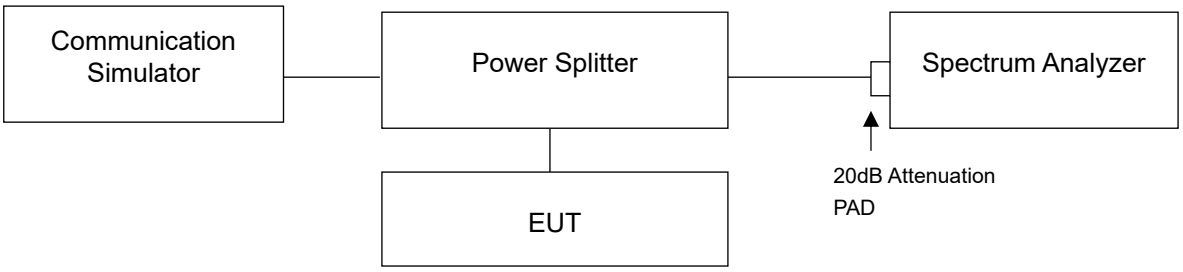
Spectrum Plot of Worst Value	
5MHz / $\pi/2$ BPSK	10MHz / QPSK
	
15MHz / 16QAM	20MHz / QPSK
	
25MHz / 16QAM	30MHz / QPSK
	
40MHz / 16QAM	
	

4.5 Out-of-Band Emissions Measurement

4.5.1 Limits of Out-of-Band Emissions Measurement

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 that 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.

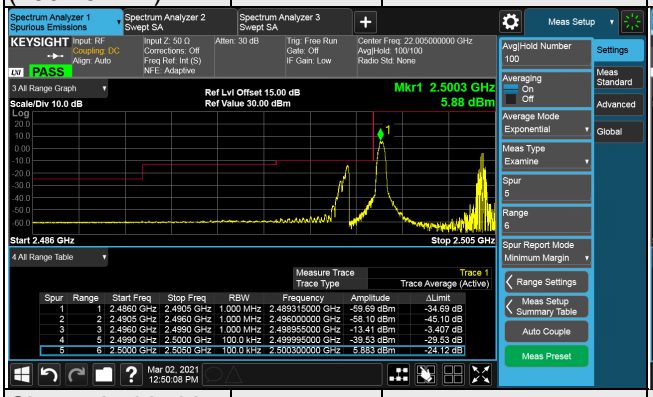
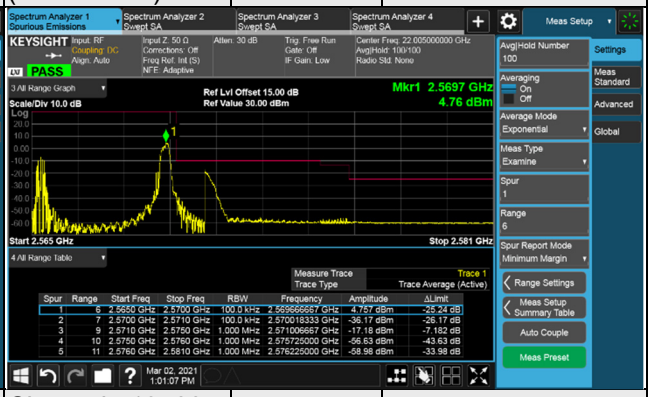
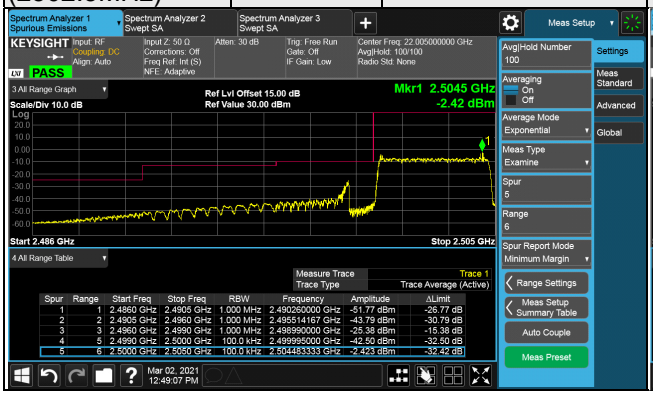
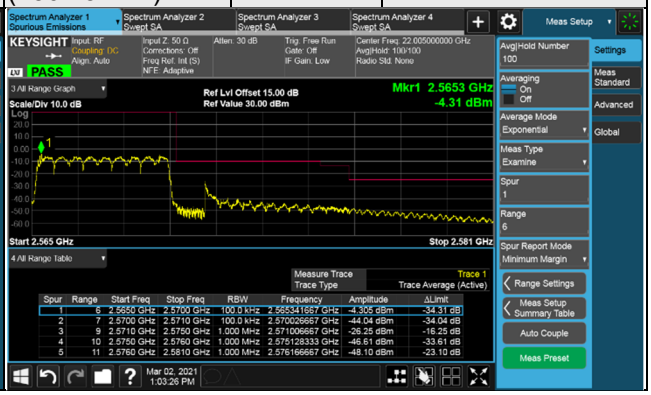
4.5.2 Test Setup

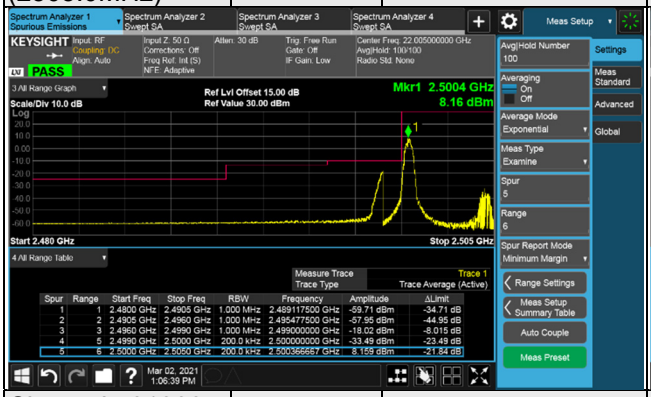
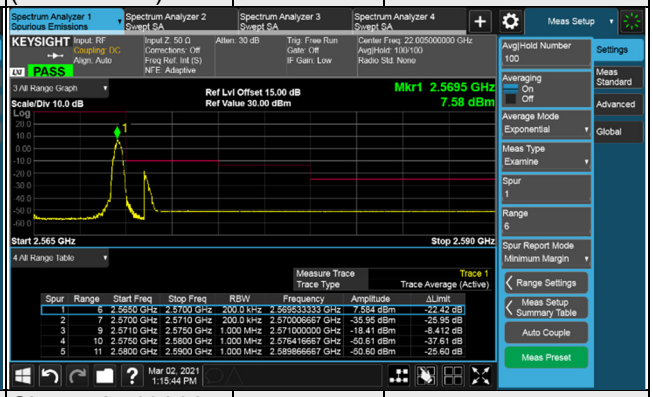


4.5.3 Test Procedures

a. The testing follows ANSI C63.26 section 5.7
b. The EUT was connected to spectrum analyzer and system simulator via a power divider.
c. The band edges of low and high channels for the highest RF powers were measured.
d. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
e. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
f. Set spectrum analyzer with RMS detector.
g. Checked that all the results comply with the emission limit line.

4.5.4 Test Results

n7, Channel Bandwidth 5MHz					
Channel 500500 (2502.5MHz)	QPSK	1 RB / 0 RB Offset	Channel 513500 (2567.5MHz)	QPSK	1 RB / 24 RB Offset
					
Channel 500500 (2502.5MHz)	QPSK	25 RB / 0 RB Offset	Channel 513500 (2567.5MHz)	QPSK	25 RB / 0 RB Offset
					

n7, Channel Bandwidth 10MHz					
Channel 501000 (2505.0MHz)	QPSK	1 RB / 0 RB Offset	Channel 513000 (2565.0MHz)	QPSK	1 RB / 51 RB Offset
					
Channel 501000 (2505.0MHz)	QPSK	52 RB / 0 RB Offset	Channel 513000 (2565.0MHz)	QPSK	52 RB / 0 RB Offset