FCC Test Report
(Part 27 – 5G NR n41/n66/n71)

Report No.:	RFBCKT-WTW-P22010886-9
FCC ID:	HFSQTAD53N
Test Model:	QTAD53
Received Date:	Feb. 10, 2022
Test Date:	Feb. 27 ~ Mar. 06, 2022
Issued Date:	Mar. 30, 2022
Applicant:	Quanta Computer Inc.
Address:	NO. 188, Wenhua 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C)
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

Testing Laboratory
2021

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
RFBCKT-WTW-P22010886-9	Original release	Mar. 30, 2022

1 Certificate of Conformity

Product: 5G Hotspot

Brand: T-Mobile

Test Model: QTAD53

Sample Status: Engineering sample

Applicant: Quanta Computer Inc.

Test Date: Feb. 27 ~ Mar. 06, 2022

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

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

Prepared by : Pettie Chen , **Date:** Mar. 30, 2022

Pettie Chen / Senior Specialist

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

Jeremy Lin / Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 27 & Part 2					
FCC Clause			Test Item	Result	Remarks
n41	n66	n71			
2.1046 27.50 (h)(2)	2.1046 27.50 (d)(4)	2.1046 27.50 (c)	Equivalent Isotropically Radiated Power / Equivalent Radiated Power	Pass	Meet the requirement of limit.
2.1047	2.1047	2.1047	Modulation Characteristics	Pass	Meet the requirement of limit.
----	27.50 (d)(5)	----	Peak To Average Ratio	Pass	Meet the requirement of limit.
2.1055 27.54	2.1055 27.54	2.1055 27.54	Frequency Stability Stay with the authorized bands of operation	Pass	Meet the requirement of limit.
2.1049	2.1049	2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
2.1051 27.53 (m)(4)(6)	2.1051 27.53 (h)	2.1051 27.53 (g)	Band Edge / Out of Band Emissions Measurements	Pass	Meet the requirement of limit.
2.1051 27.53 (m)(4)(6)	2.1051 27.53 (h)	2.1051 27.53 (g)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53 (m)(4)(6)	2.1053 27.53 (h)	2.1053 27.53 (g)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -16.04dB at 5185.98MHz.

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.59 dB
	200MHz ~1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver KEYSIGHT	N9038A	MY55420137	Apr. 09, 2021	Apr. 08, 2022
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Jun. 10, 2021	Jun. 09, 2022
MXG Vector signal generator Agilent	N5182B	MY53050430	Nov. 25, 2021	Nov. 24, 2022
Radio Communication Analyzer Anritsu	MT8821C	6261806803	Feb. 16, 2022	Feb. 15, 2023
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Oct. 28, 2021	Oct. 27, 2022
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Nov. 14, 2021	Nov. 13, 2022
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Oct. 26, 2021	Oct. 25, 2022
Loop Antenna TESEQ	HLA 6121	45745	Jul. 21, 2021	Jul. 20, 2022
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Jun. 05, 2021	Jun. 04, 2022
Preamplifier Agilent (Above 1GHz)	8449B	3008A01887	Feb. 17, 2022	Feb. 16, 2023
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 15, 2022	Jan. 14, 2023
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Jan. 15, 2022	Jan. 14, 2023
RF signal cable Woken	8D-FB	Cable-CH9-01	Jun. 05, 2021	Jun. 04, 2022
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower &Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Standard Temperature And Humidity Chamber GIANT FORCE	GTH-120-40-CP-AR	MAA1306-019	Sep. 10, 2021	Sep. 09, 2022
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
True RMS Clamp Meter Fluke	325	31130711WS	Jun. 02, 2021	Jun. 01, 2022
DC power supply Keysight	U8002A	MY56330015	NA	NA

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

3 General Information

3.1 General Description of EUT

Product	5G Hotspot	
Brand	T-Mobile	
Test Model	QTAD53	
Sample Status	Engineering sample	
Power Supply Rating	5Vdc / 9Vdc / 12Vdc (Adapter) 3.85Vdc (Battery)	
Modulation Type	$\pi/2$ BPSK, QPSK, 16QAM, 64QAM, 256QAM	
Waveform Type	CP-OFDM, DFT-s-OFDM	
Operating Frequency	n41 (Channel Bandwidth 10MHz)	2501.01MHz ~ 2685.00MHz
	n41 (Channel Bandwidth 15MHz)	2503.50MHz ~ 2682.48MHz
	n41 (Channel Bandwidth 20MHz)	2506.02MHz ~ 2679.99MHz
	n41 (Channel Bandwidth 40MHz)	2516.01MHz ~ 2670.00MHz
	n41 (Channel Bandwidth 50MHz)	2521.02MHz ~ 2664.99MHz
	n41 (Channel Bandwidth 60MHz)	2526.00MHz ~ 2659.98MHz
	n41 (Channel Bandwidth 80MHz)	2536.02MHz ~ 2649.99MHz
	n41 (Channel Bandwidth 90MHz)	2541.00MHz ~ 2644.98MHz
	n41 (Channel Bandwidth 100MHz)	2546.01MHz ~ 2640.00MHz
	n66 (Channel Bandwidth 5MHz)	1712.5MHz ~ 1777.5MHz
	n66 (Channel Bandwidth 10MHz)	1715.0MHz ~ 1775.0MHz
	n66 (Channel Bandwidth 15MHz)	1717.5MHz ~ 1772.5MHz
	n66 (Channel Bandwidth 20MHz)	1720.0MHz ~ 1770.0MHz
	n66 (Channel Bandwidth 40MHz)	1730.0MHz ~ 1760.0MHz
	n71 (Channel Bandwidth 5MHz)	665.5MHz ~ 695.5MHz
	n71 (Channel Bandwidth 10MHz)	668.0MHz ~ 693.0MHz
	n71 (Channel Bandwidth 15MHz)	670.5MHz ~ 690.5MHz
	n71 (Channel Bandwidth 20MHz)	673.0MHz ~ 688.0MHz

		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
Max. EIRP Power	n41 (Channel Bandwidth 10MHz)	558.470mW (27.47dBm)	566.239mW (27.53dBm)	240.436mW (23.81dBm)	210.863mW (23.24dBm)	167.880mW (22.25dBm)
	n41 (Channel Bandwidth 15MHz)	561.048mW (27.49dBm)	568.853mW (27.55dBm)	241.546mW (23.83dBm)	211.836mW (23.26dBm)	168.655mW (22.27dBm)
	n41 (Channel Bandwidth 20MHz)	564.937mW (27.52dBm)	572.796mW (27.58dBm)	243.220mW (23.86dBm)	213.304mW (23.29dBm)	169.824mW (22.30dBm)
	n41 (Channel Bandwidth 40MHz)	571.479mW (27.57dBm)	579.429mW (27.63dBm)	246.037mW (23.91dBm)	215.774mW (23.34dBm)	171.791mW (22.35dBm)
	n41 (Channel Bandwidth 50MHz)	574.116mW (27.59dBm)	582.103mW (27.65dBm)	247.172mW (23.93dBm)	216.770mW (23.36dBm)	172.584mW (22.37dBm)
	n41 (Channel Bandwidth 60MHz)	576.766mW (27.61dBm)	584.790mW (27.67dBm)	248.313mW (23.95dBm)	217.771mW (23.38dBm)	173.380mW (22.39dBm)
	n41 (Channel Bandwidth 80MHz)	583.445mW (27.66dBm)	591.562mW (27.72dBm)	251.189mW (24.00dBm)	220.293mW (23.43dBm)	175.388mW (22.44dBm)
	n41 (Channel Bandwidth 90MHz)	588.844mW (27.70dBm)	597.035mW (27.76dBm)	253.513mW (24.04dBm)	222.331mW (23.47dBm)	177.011mW (22.48dBm)
	n41 (Channel Bandwidth 100MHz)	592.925mW (27.73dBm)	598.412mW (27.77dBm)	255.270mW (24.07dBm)	231.206mW (23.64dBm)	178.238mW (22.51dBm)
	n66 (Channel Bandwidth 5MHz)	442.588mW (26.46dBm)	452.898mW (26.56dBm)	327.341mW (25.15dBm)	308.319mW (24.89dBm)	190.985mW (22.81dBm)
	n66 (Channel Bandwidth 10MHz)	444.631mW (26.48dBm)	454.988mW (26.58dBm)	328.852mW (25.17dBm)	309.742mW (24.91dBm)	191.867mW (22.83dBm)
	n66 (Channel Bandwidth 15MHz)	456.037mW (26.59dBm)	466.659mW (26.69dBm)	337.287mW (25.28dBm)	317.687mW (25.02dBm)	196.789mW (22.94dBm)
	n66 (Channel Bandwidth 20MHz)	457.088mW (26.60dBm)	467.735mW (26.70dBm)	338.065mW (25.29dBm)	318.420mW (25.03dBm)	197.242mW (22.95dBm)
	n66 (Channel Bandwidth 40MHz)	460.257mW (26.63dBm)	469.894mW (26.72dBm)	340.408mW (25.32dBm)	320.627mW (25.06dBm)	198.609mW (22.98dBm)
Max. ERP Power		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
	n71 (Channel Bandwidth 5MHz)	186.638mW (22.71dBm)	185.353mW (22.68dBm)	143.219mW (21.56dBm)	90.782mW (19.58dBm)	65.766mW (18.18dBm)
	n71 (Channel Bandwidth 10MHz)	185.780mW (22.69dBm)	187.068mW (22.72dBm)	143.880mW (21.58dBm)	91.411mW (19.61dBm)	64.863mW (18.12dBm)
	n71 (Channel Bandwidth 15MHz)	185.780mW (22.69dBm)	187.068mW (22.72dBm)	142.561mW (21.54dBm)	92.683mW (19.67dBm)	64.714mW (18.11dBm)
	n71 (Channel Bandwidth 20MHz)	187.068mW (22.72dBm)	290.402mW (24.63dBm)	265.461mW (24.24dBm)	207.491mW (23.17dBm)	121.339mW (20.84dBm)

Emission Designator		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
	n41 (Channel Bandwidth 10MHz)	8M55G7D	8M59G7D	8M58D7W	8M56D7W	8M57D7W
	n41 (Channel Bandwidth 15MHz)	12M9G7D	12M8G7D	12M9D7W	12M8D7W	12M9D7W
	n41 (Channel Bandwidth 20MHz)	17M8G7D	17M8G7D	17M8D7W	17M8D7W	17M8D7W
	n41 (Channel Bandwidth 40MHz)	35M7G7D	35M7G7D	37M8D7W	35M7D7W	35M7D7W
	n41 (Channel Bandwidth 50MHz)	45M8G7D	45M8G7D	45M8D7W	45M8D7W	45M8D7W
	n41 (Channel Bandwidth 60MHz)	57M9G7D	57M9G7D	57M9D7W	57M9D7W	57M9D7W
	n41 (Channel Bandwidth 80MHz)	77M1G7D	77M1G7D	77M1D7W	77M1D7W	77M0D7W
	n41 (Channel Bandwidth 90MHz)	86M7G7D	86M7G7D	86M7D7W	86M7D7W	86M7D7W
	n41 (Channel Bandwidth 100MHz)	96M4G7D	96M4G7D	96M4D7W	96M3D7W	96M3D7W
	n66 (Channel Bandwidth 5MHz)	4M47G7D	4M47G7D	4M47D7W	4M47D7W	4M47D7W
	n66 (Channel Bandwidth 10MHz)	8M92G7D	8M92G7D	8M92D7W	8M92D7W	8M92D7W
	n66 (Channel Bandwidth 15MHz)	13M4G7D	13M4G7D	13M4D7W	13M4D7W	13M4D7W
	n66 (Channel Bandwidth 20MHz)	17M8G7D	17M8G7D	17M8D7W	17M8D7W	17M8D7W
	n66 (Channel Bandwidth 40MHz)	38M5G7D	38M6G7D	38M5D7W	38M5D7W	38M5D7W
	n71 (Channel Bandwidth 5MHz)	4M47G7D	4M46G7D	4M46D7W	4M46D7W	4M46D7W
	n71 (Channel Bandwidth 10MHz)	8M91G7D	8M93G7D	8M91D7W	8M93D7W	8M93D7W
	n71 (Channel Bandwidth 15MHz)	13M4G7D	13M4G7D	13M4D7W	13M4D7W	13M4D7W
	n71 (Channel Bandwidth 20MHz)	17M8G7D	17M8G7D	17M9D7W	17M8D7W	17M9D7W
Antenna Type	Refer to Note as below					
Antenna Connector	Refer to Note as below					
Accessory Device	Refer to Note as below					
Cable Supplied	Refer to Note as below					

Note:

1. The EUT contains following accessory devices.

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

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

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

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

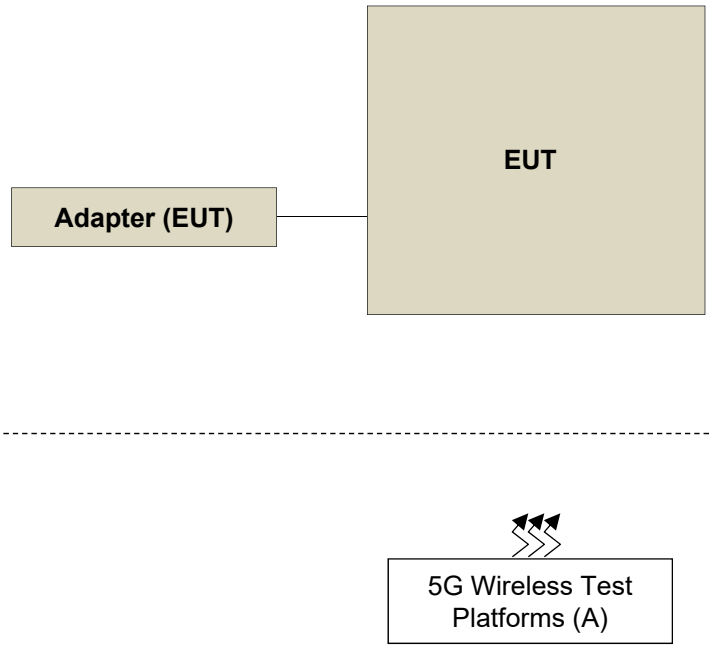
* After pre-tested, sample A was the worse and chosen for final test.

3. The following antennas were provided to the EUT.

5G FR1 Band						
Ant. No.	Type	Connector	Gain (dBi)			
			n25	n41	n66	n71
0	PIFA	MUR	1.23871	-	3.16163	0.426023
1	PIFA	IPEX	-	-	-	-
2	PIFA	IPEX	-	0.854078	-	
3	PIFA	MUR	-	-	-	-
4	PIFA	IPEX	-	-0.283214	-	-

* 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.
* The Ant. No. 2 and Ant. No. 4 output power were evaluated for the n41 frequency band, and it was found that the worst power was in the Ant. No. 2. Therefore chosen for the final test and record in the test report.
*Evaluated the output power of SCS 15kHz and SCS 30kHz on the n41 frequency band, and found that the worst power is in SCS 30kHz. Therefore, the final test is selected and recorded in the test report.

3.2 Configuration of System under Test



3.2.1 Description of Support Units

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

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
n41	X-plane
n66	X-plane
n71	X-plane

n41

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	EIRP	500202 to 537000	500202 (2501.01MHz), 518598 (2592.99MHz), 537000 (2685.00MHz)	10MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset 1 RB / 11 RB Offset 1 RB / 22 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 12 RB Offset 24 RB / 0 RB Offset
		500700 to 536496	500700 (2503.50MHz), 518598 (2592.99MHz), 536496 (2682.48MHz)	15MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset 1 RB / 19 RB Offset 1 RB / 36 RB Offset 18 RB / 0 RB Offset 18 RB / 10 RB Offset 18 RB / 20 RB Offset 36 RB / 0 RB Offset
		501204 to 535998	501204 (2506.02MHz), 518598 (2592.99MHz), 535998 (2679.99MHz)	20MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset 1 RB / 26 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 13 RB Offset 25 RB / 26 RB Offset 50 RB / 0 RB Offset
		503202 to 534000	503202 (2516.01MHz), 518598 (2592.99MHz), 534000 (2670.00MHz)	40MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset 1 RB / 53 RB Offset 1 RB / 104 RB Offset 50 RB / 0 RB Offset 50 RB / 28 RB Offset 50 RB / 56 RB Offset 100 RB / 0 RB Offset
		504204 to 532998	504204 (2521.02MHz), 518598 (2592.99MHz), 532998 (2664.99MHz)	50MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset 1 RB / 67 RB Offset 1 RB / 131 RB Offset 64 RB / 0 RB Offset 64 RB / 35 RB Offset 64 RB / 69 RB Offset 128 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	EIRP	505200 to 531996	505200 (2526.00MHz), 518598 (2592.99MHz), 531996 (2659.98MHz)	60MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset 1 RB / 81 RB Offset 1 RB / 160 RB Offset 81 RB / 0 RB Offset 81 RB / 41 RB Offset 81 RB / 81 RB Offset 162 RB / 0 RB Offset
		507204 to 529998	507204 (2536.02MHz), 518598 (2592.99MHz), 529998 (2649.99MHz)	80MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset 1 RB / 109 RB Offset 1 RB / 215 RB Offset 108 RB / 0 RB Offset 108 RB / 55 RB Offset 108 RB / 109 RB Offset 216 RB / 0 RB Offset
		508200 to 528996	508200 (2541.00MHz), 518598 (2592.99MHz), 528996 (2644.98MHz)	90MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset 1 RB / 123 RB Offset 1 RB / 243 RB Offset 120 RB / 0 RB Offset 120 RB / 63 RB Offset 120 RB / 125 RB Offset 243 RB / 0 RB Offset
-	EIRP	509202 to 528000	509202 (2546.01MHz), 518598 (2592.99MHz), 528000 (2640.00MHz)	100MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset 1 RB / 137 RB Offset 1 RB / 271 RB Offset 135 RB / 0 RB Offset 135 RB / 69 RB Offset 135 RB / 138 RB Offset 270 RB / 0 RB Offset
-	Modulation Characteristics	509202 to 528000	518598 (2592.99MHz)	100MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	273 RB / 0 RB Offset
-	Frequency Stability	500202 to 537000	500202 (2501.01MHz), 537000 (2685.00MHz)	10MHz	QPSK	24 RB / 0 RB Offset
		500700 to 536496	500700 (2503.50MHz), 536496 (2682.48MHz)	15MHz	QPSK	38 RB / 0 RB Offset
		501204 to 535998	501204 (2506.02MHz), 535998 (2679.99MHz)	20MHz	QPSK	51 RB / 0 RB Offset
		503202 to 534000	503202 (2516.01MHz), 534000 (2670.00MHz)	40MHz	QPSK	106 RB / 0 RB Offset
		504204 to 532998	504204 (2521.02MHz), 532998 (2664.99MHz)	50MHz	QPSK	133 RB / 0 RB Offset
		505200 to 531996	505200 (2526.00MHz), 531996 (2659.98MHz)	60MHz	QPSK	162 RB / 0 RB Offset
		507204 to 529998	507204 (2536.02MHz), 529998 (2649.99MHz)	80MHz	QPSK	217 RB / 0 RB Offset
		508200 to 528996	508200 (2541.00MHz), 528996 (2644.98MHz)	90MHz	QPSK	245 RB / 0 RB Offset
		509202 to 528000	509202 (2546.01MHz), 528000 (2640.00MHz)	100MHz	QPSK	273 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Emission Bandwidth	500202 to 537000	500202 (2501.01MHz), 518598 (2592.99MHz), 537000 (2685.00MHz)	10MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	24 RB / 0 RB Offset
		500700 to 536496	500700 (2503.50MHz), 518598 (2592.99MHz), 536496 (2682.48MHz)	15MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	38 RB / 0 RB Offset
		501204 to 535998	501204 (2506.02MHz), 518598 (2592.99MHz), 535998 (2679.99MHz)	20MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	51 RB / 0 RB Offset
		503202 to 534000	503202 (2516.01MHz), 518598 (2592.99MHz), 534000 (2670.00MHz)	40MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	106 RB / 0 RB Offset
		504204 to 532998	504204 (2521.02MHz), 518598 (2592.99MHz), 532998 (2664.99MHz)	50MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	133 RB / 0 RB Offset
		505200 to 531996	505200 (2526.00MHz), 518598 (2592.99MHz), 531996 (2659.98MHz)	60MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	162 RB / 0 RB Offset
		507204 to 529998	507204 (2536.02MHz), 518598 (2592.99MHz), 529998 (2649.99MHz)	80MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	217 RB / 0 RB Offset
		508200 to 528996	508200 (2541.00MHz), 518598 (2592.99MHz), 528996 (2644.98MHz)	90MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	245 RB / 0 RB Offset
		509202 to 528000	509202 (2546.01MHz), 518598 (2592.99MHz), 528000 (2640.00MHz)	100MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	273 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Out-of-Band Emissions	500202 to 537000	500202 (2501.01MHz), 537000 (2685.00MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 23 RB Offset 24 RB / 0 RB Offset
		500700 to 536496	500700 (2503.50MHz), 536496 (2682.48MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 37 RB Offset 38 RB / 0 RB Offset
		501204 to 535998	501204 (2506.02MHz), 535998 (2679.99MHz)	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 50 RB Offset 51 RB / 0 RB Offset
		503202 to 534000	503202 (2516.01MHz), 534000 (2670.00MHz)	40MHz	QPSK	1 RB / 0 RB Offset 1 RB / 105 RB Offset 106 RB / 0 RB Offset
		504204 to 532998	504204 (2521.02MHz), 532998 (2664.99MHz)	50MHz	QPSK	1 RB / 0 RB Offset 1 RB / 132 RB Offset 133 RB / 0 RB Offset
		505200 to 531996	505200 (2526.00MHz), 531996 (2659.98MHz)	60MHz	QPSK	1 RB / 0 RB Offset 1 RB / 161 RB Offset 162 RB / 0 RB Offset
		507204 to 529998	507204 (2536.02MHz), 529998 (2649.99MHz)	80MHz	QPSK	1 RB / 0 RB Offset 1 RB / 216 RB Offset 217 RB / 0 RB Offset
		508200 to 528996	508200 (2541.00MHz), 528996 (2644.98MHz)	90MHz	QPSK	1 RB / 0 RB Offset 1 RB / 244 RB Offset 245 RB / 0 RB Offset
		509202 to 528000	509202 (2546.01MHz), 528000 (2640.00MHz)	100MHz	QPSK	1 RB / 0 RB Offset 1 RB / 272 RB Offset 273 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Peak to Average Ratio	500202 to 537000	500202 (2501.01MHz), 518598 (2592.99MHz), 537000 (2685.00MHz)	10MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		500700 to 536496	500700 (2503.50MHz), 518598 (2592.99MHz), 536496 (2682.48MHz)	15MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		501204 to 535998	501204 (2506.02MHz), 518598 (2592.99MHz), 535998 (2679.99MHz)	20MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		503202 to 534000	503202 (2516.01MHz), 518598 (2592.99MHz), 534000 (2670.00MHz)	40MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		504204 to 532998	504204 (2521.02MHz), 518598 (2592.99MHz), 532998 (2664.99MHz)	50MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		505200 to 531996	505200 (2526.00MHz), 518598 (2592.99MHz), 531996 (2659.98MHz)	60MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		507204 to 529998	507204 (2536.02MHz), 518598 (2592.99MHz), 529998 (2649.99MHz)	80MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		508200 to 528996	508200 (2541.00MHz), 518598 (2592.99MHz), 528996 (2644.98MHz)	90MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		509202 to 528000	509202 (2546.01MHz), 518598 (2592.99MHz), 528000 (2640.00MHz)	100MHz	$\pi/2$ 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	500202 to 537000	500202 (2501.01MHz), 518598 (2592.99MHz), 537000 (2685.00MHz)	10MHz	QPSK	1 RB / 1 RB Offset
		500700 to 536496	500700 (2503.50MHz), 518598 (2592.99MHz), 536496 (2682.48MHz)	15MHz	QPSK	1 RB / 1 RB Offset
		501204 to 535998	501204 (2506.02MHz), 518598 (2592.99MHz), 535998 (2679.99MHz)	20MHz	QPSK	1 RB / 1 RB Offset
		503202 to 534000	503202 (2516.01MHz), 518598 (2592.99MHz), 534000 (2670.00MHz)	40MHz	QPSK	1 RB / 1 RB Offset
		504204 to 532998	504204 (2521.02MHz), 518598 (2592.99MHz), 532998 (2664.99MHz)	50MHz	QPSK	1 RB / 1 RB Offset
		505200 to 531996	505200 (2526.00MHz), 518598 (2592.99MHz), 531996 (2659.98MHz)	60MHz	QPSK	1 RB / 1 RB Offset
		507204 to 529998	507204 (2536.02MHz), 518598 (2592.99MHz), 529998 (2649.99MHz)	80MHz	QPSK	1 RB / 1 RB Offset
		508200 to 528996	508200 (2541.00MHz), 518598 (2592.99MHz), 528996 (2644.98MHz)	90MHz	QPSK	1 RB / 1 RB Offset
		509202 to 528000	509202 (2546.01MHz), 518598 (2592.99MHz), 528000 (2640.00MHz)	100MHz	QPSK	1 RB / 1 RB Offset
-	Radiated Emission Below 1GHz	509202 to 528000	518598 (2592.99MHz)	100MHz	QPSK	1 RB / 1 RB Offset
-	Radiated Emission Above 1GHz	500202 to 537000	500202 (2501.01MHz), 518598 (2592.99MHz), 537000 (2685.00MHz)	10MHz	QPSK	1 RB / 1 RB Offset
		504204 to 532998	504204 (2521.02MHz), 518598 (2592.99MHz), 532998 (2664.99MHz)	50MHz	QPSK	1 RB / 1 RB Offset
		509202 to 528000	509202 (2546.01MHz), 518598 (2592.99MHz), 528000 (2640.00MHz)	100MHz	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.

n66

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	EIRP	342500 to 355500	342500 (1712.5MHz), 349000 (1745.0MHz), 355500 (1777.5MHz)	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
		343000 to 355000	343000 (1715.0MHz), 349000 (1745.0MHz), 355000 (1775.0MHz)	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
		343500 to 354500	343500 (1717.5MHz), 349000 (1745.0MHz), 354500 (1772.5MHz)	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
		344000 to 354000	344000 (1720.0MHz), 349000 (1745.0MHz), 354000 (1770.0MHz)	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
		346000 to 352000	346000 (1730.0MHz), 349000 (1745.0MHz), 352000 (1760.0MHz)	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
-	Modulation characteristics	346000 to 352000	349000 (1745.0MHz)	40MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	216 RB / 0 RB Offset
-	Frequency Stability	342500 to 355500	342500 (1712.5MHz), 355500 (1777.5MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		343000 to 355000	343000 (1715.0MHz), 355000 (1775.0MHz)	10MHz	QPSK	52 RB / 0 RB Offset
		343500 to 354500	343500 (1717.5MHz), 354500 (1772.5MHz)	15MHz	QPSK	79 RB / 0 RB Offset
		344000 to 354000	344000 (1720.0MHz), 354000 (1770.0MHz)	20MHz	QPSK	106 RB / 0 RB Offset
		346000 to 352000	346000 (1730.0MHz), 352000 (1760.0MHz)	40MHz	QPSK	216 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Occupied Bandwidth	342500 to 355500	342500 (1712.5MHz), 349000 (1745.0MHz), 355500 (1777.5MHz)	5MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	25 RB / 0 RB Offset
		343000 to 355000	343000 (1715.0MHz), 349000 (1745.0MHz), 355000 (1775.0MHz)	10MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	52 RB / 0 RB Offset
		343500 to 354500	343500 (1717.5MHz), 349000 (1745.0MHz), 354500 (1772.5MHz)	15MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	79 RB / 0 RB Offset
		344000 to 354000	344000 (1720.0MHz), 349000 (1745.0MHz), 354000 (1770.0MHz)	20MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	106 RB / 0 RB Offset
		346000 to 352000	346000 (1730.0MHz), 349000 (1745.0MHz), 352000 (1760.0MHz)	40MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	216 RB / 0 RB Offset
-	Band Edge	342500 to 355500	342500 (1712.5MHz), 355500 (1777.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		343000 to 355000	343000 (1715.0MHz), 355000 (1775.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 51 RB Offset 52 RB / 0 RB Offset
		343500 to 354500	343500 (1717.5MHz), 354500 (1772.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 78 RB Offset 79 RB / 0 RB Offset
		344000 to 354000	344000 (1720.0MHz), 354000 (1770.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 105 RB Offset 106 RB / 0 RB Offset
		346000 to 352000	346000 (1730.0MHz), 352000 (1760.0MHz)	40MHz	QPSK	1 RB / 0 RB Offset 1 RB / 215 RB Offset 216 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Peak to Average Ratio	342500 to 355500	342500 (1712.5MHz), 349000 (1745.0MHz), 355500 (1777.5MHz)	5MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		343000 to 355000	343000 (1715.0MHz), 349000 (1745.0MHz), 355000 (1775.0MHz)	10MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		343500 to 354500	343500 (1717.5MHz), 349000 (1745.0MHz), 354500 (1772.5MHz)	15MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		344000 to 354000	344000 (1720.0MHz), 349000 (1745.0MHz), 354000 (1770.0MHz)	20MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		346000 to 352000	346000 (1730.0MHz), 349000 (1745.0MHz), 352000 (1760.0MHz)	40MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
-	Conducted Emission	342500 to 355500	342500 (1712.5MHz), 349000 (1745.0MHz), 355500 (1777.5MHz)	5MHz	QPSK	1 RB / 1 RB Offset
		343000 to 355000	343000 (1715.0MHz), 349000 (1745.0MHz), 355000 (1775.0MHz)	10MHz	QPSK	1 RB / 1 RB Offset
		343500 to 354500	343500 (1717.5MHz), 349000 (1745.0MHz), 354500 (1772.5MHz)	15MHz	QPSK	1 RB / 1 RB Offset
		344000 to 354000	344000 (1720.0MHz), 349000 (1745.0MHz), 354000 (1770.0MHz)	20MHz	QPSK	1 RB / 1 RB Offset
		346000 to 352000	346000 (1730.0MHz), 349000 (1745.0MHz), 352000 (1760.0MHz)	40MHz	QPSK	1 RB / 1 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission Below 1GHz	346000 to 352000	349000 (1745.0MHz)	40MHz	QPSK	1 RB / 1 RB Offset
-	Radiated Emission Above 1GHz	342500 to 355500	342500 (1712.5MHz), 349000 (1745.0MHz), 355500 (1777.5MHz)	5MHz	QPSK	1 RB / 1 RB Offset
		344000 to 354000	344000 (1720.0MHz), 349000 (1745.0MHz), 354000 (1770.0MHz)	20MHz	QPSK	1 RB / 1 RB Offset
		346000 to 352000	346000 (1730.0MHz), 349000 (1745.0MHz), 352000 (1760.0MHz)	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.

n71

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	ERP	133100 to 139100	133100 (665.5MHz), 136100 (680.5MHz), 139100 (695.5MHz)	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
		133600 to 138600	133600 (668.0MHz), 136100 (680.5MHz), 138600 (693.0MHz)	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
		134100 to 138100	134100 (670.5MHz), 136100 (680.5MHz), 138100 (690.5MHz)	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
		134600 to 137600	134600 (673.0MHz), 136100 (680.5MHz), 137600 (688.0MHz)	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
-	Modulation Characteristics	134600 to 137600	136100 (680.5MHz)	20MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	106 RB / 0 RB Offset
-	Frequency Stability	133100 to 139100	133100 (665.5MHz), 139100 (695.5MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		133600 to 138600	133600 (668.0MHz), 138600 (693.0MHz)	10MHz	QPSK	52 RB / 0 RB Offset
		134100 to 138100	134100 (670.5MHz), 138100 (690.5MHz)	15MHz	QPSK	79 RB / 0 RB Offset
		134600 to 137600	134600 (673.0MHz), 137600 (688.0MHz)	20MHz	QPSK	106 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Emission Bandwidth	133100 to 139100	133100 (665.5MHz), 136100 (680.5MHz), 139100 (695.5MHz)	5MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	25 RB / 0 RB Offset
		133600 to 138600	133600 (668.0MHz), 136100 (680.5MHz), 138600 (693.0MHz)	10MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	52 RB / 0 RB Offset
		134100 to 138100	134100 (670.5MHz), 136100 (680.5MHz), 138100 (690.5MHz)	15MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	79 RB / 0 RB Offset
		134600 to 137600	134600 (673.0MHz), 136100 (680.5MHz), 137600 (688.0MHz)	20MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	106 RB / 0 RB Offset
-	Band Edge	133100 to 139100	133100 (665.5MHz), 139100 (695.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		133600 to 138600	133600 (668.0MHz), 138600 (693.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 51 RB Offset 52 RB / 0 RB Offset
		134100 to 138100	134100 (670.5MHz), 138100 (690.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 78 RB Offset 79 RB / 0 RB Offset
		134600 to 137600	134600 (673.0MHz), 137600 (688.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 105 RB Offset 106 RB / 0 RB Offset
-	Peak to Average Ratio	133100 to 139100	133100 (665.5MHz), 136100 (680.5MHz), 139100 (695.5MHz)	5MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		133600 to 138600	133600 (668.0MHz), 136100 (680.5MHz), 138600 (693.0MHz)	10MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		134100 to 138100	134100 (670.5MHz), 136100 (680.5MHz), 138100 (690.5MHz)	15MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 1 RB Offset
		134600 to 137600	134600 (673.0MHz), 136100 (680.5MHz), 137600 (688.0MHz)	20MHz	$\pi/2$ 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	133100 to 139100	133100 (665.5MHz), 136100 (680.5MHz), 139100 (695.5MHz)	5MHz	QPSK	1 RB / 1 RB Offset
		133600 to 138600	133600 (668.0MHz), 136100 (680.5MHz), 138600 (693.0MHz)	10MHz	QPSK	1 RB / 1 RB Offset
		134100 to 138100	134100 (670.5MHz), 136100 (680.5MHz), 138100 (690.5MHz)	15MHz	QPSK	1 RB / 1 RB Offset
		134600 to 137600	134600 (673.0MHz), 136100 (680.5MHz), 137600 (688.0MHz)	20MHz	QPSK	1 RB / 1 RB Offset
-	Radiated Emission Below 1GHz	134600 to 137600	136100 (680.5MHz)	20MHz	QPSK	1 RB / 1 RB Offset
-	Radiated Emission Above 1GHz	133100 to 139100	133100 (665.5MHz), 136100 (680.5MHz), 139100 (695.5MHz)	5MHz	QPSK	1 RB / 1 RB Offset
		134600 to 137600	134600 (673.0MHz), 136100 (680.5MHz), 137600 (688.0MHz)	20MHz	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 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.

Test Condition:

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

3.4 EUT Operating Conditions

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

3.5 General Description of Applied Standards and References

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

Test Standard:

FCC 47 CFR Part 2

FCC 47 CFR Part 27

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

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

References Test Guidance:

KDB 971168 D01 Power Meas License Digital Systems v03r01

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

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

For n41:
Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

For n66:
Mobile / Portable station are limited to 1 watts e.i.r.p.

For n71:
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 band are limited to 3 watts ERP.

4.1.2 Test Procedures

Conducted Power Measurement:

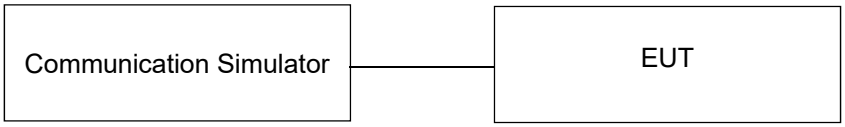
The EUT was set up for the maximum power with 5GNR link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

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 41 (Power Class 2)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		509202	518598	528000
		Frequency (MHz)		2546.01	2592.99	2640
100M	$\pi/2$ BPSK	1	1	26.81	26.88	25.47
100M	QPSK	1	1	26.93	26.92	25.81
		1	137	25.38	25.32	25.41
		1	271	26.58	25.88	25.32
		135	0	25.84	25.64	25.33
		135	69	25.77	25.26	25.27
		135	138	25.05	25.11	25.11
		270	0	25.88	25.68	25.47
100M	16QAM	1	1	23.12	22.85	23.22
100M	64QAM	1	1	22.34	22.65	22.43
100M	256QAM	1	1	21.45	21.66	21.42
BW	MCS Index	Channel		508200	518598	528996
		Frequency (MHz)		2541	2592.99	2644.98
90M	$\pi/2$ BPSK	1	1	26.78	26.85	25.44
90M	QPSK	1	1	26.91	26.88	25.78
		1	123	25.35	25.29	25.38
		1	243	26.55	25.85	25.29
		120	0	25.74	25.61	25.30
		120	63	25.09	25.23	25.24
		120	125	25.02	25.08	25.08
		243	0	25.71	25.65	25.44
90M	16QAM	1	1	23.09	22.82	23.19
90M	64QAM	1	1	22.31	22.62	22.40
90M	256QAM	1	1	21.42	21.63	21.39
BW	MCS Index	Channel		507204	518598	529998
		Frequency (MHz)		2536.02	2592.99	2649.99
80M	$\pi/2$ BPSK	1	1	26.74	26.81	25.40
80M	QPSK	1	1	26.87	26.84	25.74
		1	109	25.31	25.25	25.34
		1	215	26.51	25.81	25.25
		108	0	25.70	25.57	25.26
		108	55	25.05	25.19	25.20
		108	109	24.98	25.04	25.04
		216	0	25.67	25.61	25.40
80M	16QAM	1	1	23.05	22.78	23.15
80M	64QAM	1	1	22.27	22.58	22.36
80M	256QAM	1	1	21.38	21.59	21.35

NR Band 41 (Power Class 2)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		505200	518598	531996
		Frequency (MHz)		2526	2592.99	2659.98
60M	$\pi/2$ BPSK	1	1	26.69	26.76	25.35
60M	QPSK	1	1	26.82	26.79	25.69
		1	81	25.26	25.20	25.29
		1	160	26.46	25.76	25.20
		81	0	25.65	25.52	25.21
		81	41	25.00	25.14	25.15
		81	81	24.93	24.99	24.99
		162	0	25.62	25.56	25.35
60M	16QAM	1	1	23.00	22.73	23.10
60M	64QAM	1	1	22.22	22.53	22.31
60M	256QAM	1	1	21.33	21.54	21.30
BW	MCS Index	Channel		504204	518598	532998
		Frequency (MHz)		2521.02	2592.99	2664.99
50M	$\pi/2$ BPSK	1	1	26.67	26.74	25.33
50M	QPSK	1	1	26.80	26.77	25.67
		1	67	25.24	25.18	25.27
		1	131	26.44	25.74	25.18
		64	0	25.63	25.50	25.19
		64	35	24.98	25.12	25.13
		64	69	24.91	24.97	24.97
		128	0	25.60	25.54	25.33
50M	16QAM	1	1	22.98	22.71	23.08
50M	64QAM	1	1	22.20	22.51	22.29
50M	256QAM	1	1	21.31	21.52	21.28
BW	MCS Index	Channel		503202	518598	534000
		Frequency (MHz)		2516.01	2592.99	2670
40M	$\pi/2$ BPSK	1	1	26.65	26.72	25.31
40M	QPSK	1	1	26.78	26.75	25.65
		1	53	25.22	25.16	25.25
		1	104	26.42	25.72	25.16
		50	0	25.61	25.48	25.17
		50	28	24.96	25.10	25.11
		50	56	24.89	24.95	24.95
		100	0	25.58	25.52	25.31
40M	16QAM	1	1	22.96	22.69	23.06
40M	64QAM	1	1	22.18	22.49	22.27
40M	256QAM	1	1	21.29	21.50	21.26

NR Band 41 (Power Class 2)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		501204	518598	535998
		Frequency (MHz)		2506.02	2592.99	2679.99
20M	$\pi/2$ BPSK	1	1	26.60	26.67	25.26
20M	QPSK	1	1	26.73	26.70	25.60
		1	26	25.17	25.11	25.20
		1	49	26.37	25.67	25.11
		25	0	25.56	25.43	25.12
		25	13	24.91	25.05	25.06
		25	26	24.84	24.90	24.90
		50	0	25.53	25.47	25.26
20M	16QAM	1	1	22.91	22.64	23.01
20M	64QAM	1	1	22.13	22.44	22.22
20M	256QAM	1	1	21.24	21.45	21.21
BW	MCS Index	Channel		500700	518598	536496
		Frequency (MHz)		2503.5	2592.99	2682.48
15M	$\pi/2$ BPSK	1	1	26.57	26.64	25.23
15M	QPSK	1	1	26.70	26.67	25.57
		1	19	25.14	25.08	25.17
		1	36	26.34	25.64	25.08
		18	0	25.53	25.40	25.09
		18	10	24.88	25.02	25.03
		18	20	24.81	24.87	24.87
		36	0	25.50	25.44	25.23
15M	16QAM	1	1	22.88	22.61	22.98
15M	64QAM	1	1	22.10	22.41	22.19
15M	256QAM	1	1	21.21	21.42	21.18
BW	MCS Index	Channel		500202	518598	537000
		Frequency (MHz)		2501.01	2592.99	2685
10M	$\pi/2$ BPSK	1	1	26.55	26.62	25.21
10M	QPSK	1	1	26.68	26.65	25.55
		1	11	25.12	25.06	25.15
		1	22	26.32	25.62	25.06
		12	0	25.51	25.38	25.07
		12	6	24.86	25.00	25.01
		12	12	24.79	24.85	24.85
		24	0	25.48	25.42	25.21
10M	16QAM	1	1	22.86	22.59	22.96
10M	64QAM	1	1	22.08	22.39	22.17
10M	256QAM	1	1	21.19	21.40	21.16

NR Band 41 (Power Class 3)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		509202	518598	528000
		Frequency (MHz)		2546.01	2592.99	2640
100M	$\pi/2$ BPSK	1	1	25.78	25.55	25.58
100M	QPSK	1	1	25.86	25.84	25.77
		1	137	25.82	25.80	25.68
		1	271	25.53	25.44	25.52
		135	0	24.77	24.66	24.34
		135	69	25.70	25.45	25.34
		135	138	24.65	24.42	24.37
		270	0	24.45	24.33	24.32
100M	16QAM	1	1	24.90	24.88	24.77
100M	64QAM	1	1	22.79	22.56	22.53
100M	256QAM	1	1	21.45	21.28	21.25
BW	MCS Index	Channel		508200	518598	528996
		Frequency (MHz)		2541	2592.99	2644.98
90M	$\pi/2$ BPSK	1	1	25.71	25.53	25.56
90M	QPSK	1	1	25.84	25.76	25.67
		1	123	25.78	25.75	25.63
		1	243	25.53	25.44	25.45
		120	0	24.73	24.66	24.25
		120	63	25.54	25.42	25.27
		120	125	24.61	24.33	24.30
		243	0	24.41	24.24	24.31
90M	16QAM	1	1	24.88	24.82	24.72
90M	64QAM	1	1	22.75	22.51	22.51
90M	256QAM	1	1	21.38	21.23	21.16
BW	MCS Index	Channel		507204	518598	529998
		Frequency (MHz)		2536.02	2592.99	2649.99
80M	$\pi/2$ BPSK	1	1	25.75	25.48	25.52
80M	QPSK	1	1	25.84	25.74	25.70
		1	109	25.72	25.75	25.61
		1	215	25.44	25.36	25.52
		108	0	24.73	24.57	24.33
		108	55	25.55	25.37	25.25
		108	109	24.63	24.40	24.31
		216	0	24.35	24.27	24.24
80M	16QAM	1	1	24.90	24.84	24.74
80M	64QAM	1	1	22.70	22.52	22.47
80M	256QAM	1	1	21.39	21.19	21.20

NR Band 41 (Power Class 3)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		505200	518598	531996
		Frequency (MHz)		2526	2592.99	2659.98
60M	$\pi/2$ BPSK	1	1	25.68	25.49	25.56
60M	QPSK	1	1	25.83	25.77	25.68
		1	81	25.77	25.71	25.62
		1	160	25.46	25.37	25.49
		81	0	24.75	24.56	24.30
		81	41	25.55	25.38	25.32
		81	81	24.65	24.36	24.27
		162	0	24.40	24.26	24.26
60M	16QAM	1	1	24.89	24.80	24.73
60M	64QAM	1	1	22.72	22.54	22.47
60M	256QAM	1	1	21.43	21.21	21.21
BW	MCS Index	Channel		504204	518598	532998
		Frequency (MHz)		2521.02	2592.99	2664.99
50M	$\pi/2$ BPSK	1	1	25.69	25.54	25.56
50M	QPSK	1	1	25.82	25.73	25.73
		1	67	25.75	25.80	25.65
		1	131	25.45	25.39	25.51
		64	0	24.70	24.65	24.31
		64	35	25.56	25.39	25.30
		64	69	24.59	24.38	24.35
		128	0	24.37	24.28	24.25
50M	16QAM	1	1	24.88	24.79	24.70
50M	64QAM	1	1	22.71	22.48	22.49
50M	256QAM	1	1	21.42	21.20	21.25
BW	MCS Index	Channel		503202	518598	534000
		Frequency (MHz)		2516.01	2592.99	2670
40M	$\pi/2$ BPSK	1	1	25.68	25.50	25.53
40M	QPSK	1	1	25.82	25.77	25.65
		1	53	25.73	25.80	25.61
		1	104	25.52	25.40	25.50
		50	0	24.70	24.65	24.27
		50	28	25.55	25.36	25.30
		50	56	24.58	24.39	24.37
		100	0	24.37	24.24	24.27
40M	16QAM	1	1	24.80	24.82	24.74
40M	64QAM	1	1	22.79	22.54	22.50
40M	256QAM	1	1	21.41	21.18	21.24

NR Band 41 (Power Class 3)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		501204	518598	535998
		Frequency (MHz)		2506.02	2592.99	2679.99
20M	$\pi/2$ BPSK	1	1	25.74	25.54	25.55
20M	QPSK	1	1	25.78	25.74	25.69
		1	26	25.78	25.76	25.61
		1	49	25.43	25.36	25.44
		25	0	24.74	24.62	24.26
		25	13	25.51	25.37	25.30
		25	26	24.61	24.40	24.35
		50	0	24.37	24.26	24.30
20M	16QAM	1	1	24.85	24.79	24.74
20M	64QAM	1	1	22.70	22.51	22.48
20M	256QAM	1	1	21.45	21.25	21.15
BW	MCS Index	Channel		500700	518598	536496
		Frequency (MHz)		2503.5	2592.99	2682.48
15M	$\pi/2$ BPSK	1	1	25.68	25.47	25.52
15M	QPSK	1	1	25.84	25.82	25.74
		1	19	25.79	25.79	25.62
		1	36	25.46	25.36	25.50
		18	0	24.70	24.61	24.27
		18	10	25.51	25.36	25.29
		18	20	24.55	24.33	24.36
		36	0	24.44	24.31	24.30
15M	16QAM	1	1	24.90	24.79	24.67
15M	64QAM	1	1	22.71	22.47	22.47
15M	256QAM	1	1	21.38	21.19	21.25
BW	MCS Index	Channel		500202	518598	537000
		Frequency (MHz)		2501.01	2592.99	2685
10M	$\pi/2$ BPSK	1	1	25.72	25.45	25.58
10M	QPSK	1	1	25.81	25.83	25.71
		1	11	25.76	25.77	25.58
		1	22	25.43	25.38	25.50
		12	0	24.69	24.57	24.25
		12	6	25.59	25.40	25.34
		12	12	24.62	24.40	24.37
		24	0	24.37	24.26	24.22
10M	16QAM	1	1	24.83	24.85	24.68
10M	64QAM	1	1	22.76	22.52	22.47
10M	256QAM	1	1	21.42	21.24	21.16

NR Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		346000	349000	352000
		Frequency (MHz)		1730	1745	1760
40M	$\pi/2$ BPSK	1	1	23.44	23.33	23.47
40M	QPSK	1	1	23.49	23.39	23.56
		1	108	23.42	23.39	23.41
		1	214	23.32	23.31	23.40
		108	0	22.27	22.33	22.41
		108	54	23.37	23.32	23.48
		108	108	22.16	22.22	22.30
		216	0	22.26	22.32	22.40
40M	16QAM	1	1	22.02	22.08	22.16
40M	64QAM	1	1	21.76	21.82	21.90
40M	256QAM	1	1	19.68	19.74	19.82
BW	MCS Index	Channel		344000	349000	354000
		Frequency (MHz)		1720	1745	1770
20M	$\pi/2$ BPSK	1	1	23.36	23.25	23.39
20M	QPSK	1	1	23.44	23.34	23.49
		1	53	23.34	23.31	23.33
		1	104	23.24	23.23	23.32
		50	0	22.19	22.25	22.33
		50	28	23.29	23.24	23.30
		50	56	22.08	22.14	22.22
		100	0	22.18	22.24	22.32
20M	16QAM	1	1	21.94	22.00	22.08
20M	64QAM	1	1	21.68	21.74	21.82
20M	256QAM	1	1	19.60	19.66	19.74
BW	MCS Index	Channel		343500	349000	354500
		Frequency (MHz)		1717.5	1745	1772.5
15M	$\pi/2$ BPSK	1	1	23.33	23.22	23.36
15M	QPSK	1	1	23.41	23.31	23.46
		1	40	23.31	23.28	23.30
		1	77	23.21	23.20	23.29
		36	0	22.16	22.22	22.30
		36	22	23.26	23.21	23.27
		36	43	22.05	22.11	22.19
		75	0	22.15	22.21	22.29
15M	16QAM	1	1	21.91	21.97	22.05
15M	64QAM	1	1	21.65	21.71	21.79
15M	256QAM	1	1	19.57	19.63	19.71

NR Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		343000	349000	355000
		Frequency (MHz)		1715	1745	1775
10M	$\pi/2$ BPSK	1	1	23.29	23.18	23.32
10M	QPSK	1	1	23.37	23.27	23.42
		1	26	23.27	23.24	23.26
		1	50	23.17	23.16	23.25
		25	0	22.12	22.18	22.26
		25	14	23.22	23.17	23.23
		25	27	22.01	22.07	22.15
		50	0	22.11	22.17	22.25
10M	16QAM	1	1	21.87	21.93	22.01
10M	64QAM	1	1	21.61	21.67	21.75
10M	256QAM	1	1	19.53	19.59	19.67
BW	MCS Index	Channel		342500	349000	355500
		Frequency (MHz)		1712.5	1745	1777.5
5M	$\pi/2$ BPSK	1	1	23.27	23.16	23.30
5M	QPSK	1	1	23.35	23.25	23.40
		1	13	23.25	23.22	23.24
		1	23	23.15	23.14	23.23
		12	0	22.10	22.16	22.24
		12	7	23.20	23.15	23.21
		12	13	21.99	22.05	22.13
		25	0	22.09	22.15	22.23
5M	16QAM	1	1	21.85	21.91	21.99
5M	64QAM	1	1	21.59	21.65	21.73
5M	256QAM	1	1	19.51	19.57	19.65

NR Band 71						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		134600	136100	137600
		Frequency (MHz)		673	680.5	688
20M	$\pi/2$ BPSK	1	1	24.44	24.38	24.24
20M	QPSK	1	1	24.49	24.39	24.39
		1	53	24.48	24.44	24.38
		1	104	24.46	24.42	24.36
		50	0	23.40	23.39	23.33
		50	28	23.43	23.36	23.30
		50	56	23.40	23.36	23.30
		100	0	23.45	23.41	23.35
20M	16QAM	1	1	23.32	23.28	23.22
20M	64QAM	1	1	21.40	21.36	21.30
20M	256QAM	1	1	19.90	19.86	19.80
BW	MCS Index	Channel		134100	136100	138100
		Frequency (MHz)		670.5	680.5	690.5
15M	$\pi/2$ BPSK	1	1	24.41	24.36	24.29
15M	QPSK	1	1	24.34	24.43	24.37
		1	40	24.44	24.32	24.29
		1	77	24.38	24.24	24.19
		36	0	23.36	23.37	23.22
		36	22	23.21	23.18	23.22
		36	43	23.32	23.30	23.12
		75	0	23.39	23.35	23.28
15M	16QAM	1	1	23.26	23.24	23.20
15M	64QAM	1	1	21.39	21.28	21.20
15M	256QAM	1	1	19.83	19.77	19.71
BW	MCS Index	Channel		133600	136100	138600
		Frequency (MHz)		668	680.5	693
10M	$\pi/2$ BPSK	1	1	24.41	24.34	24.24
10M	QPSK	1	1	24.37	24.32	24.24
		1	26	24.44	24.37	24.25
		1	50	24.29	24.30	24.29
		25	0	23.27	23.36	23.19
		25	14	23.26	23.30	23.22
		25	27	23.31	23.18	23.26
		50	0	23.39	23.31	23.24
10M	16QAM	1	1	23.30	23.22	23.16
10M	64QAM	1	1	21.33	21.31	21.28
10M	256QAM	1	1	19.81	19.84	19.80

NR Band 71						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		133100	136100	139100
		Frequency (MHz)		665.5	680.5	695.5
5M	$\pi/2$ BPSK	1	1	24.40	24.43	24.34
5M	QPSK	1	1	24.31	24.35	24.29
		1	13	24.40	24.32	24.23
		1	23	24.28	24.35	24.25
		12	0	23.29	23.35	23.20
		12	7	23.29	23.29	23.19
		12	13	23.29	23.31	23.13
		25	0	23.41	23.28	23.19
5M	16QAM	1	1	23.28	23.24	23.22
5M	64QAM	1	1	21.30	21.26	21.27
5M	256QAM	1	1	19.90	19.80	19.72

EIRP / ERP Power (dBm)

NR Band 41 (Power Class 2)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		509202	518598	528000
		Frequency (MHz)		2546.01	2592.99	2640
100M	$\pi/2$ BPSK	1	1	27.66	27.73	26.32
100M	QPSK	1	1	27.62	27.77	26.66
		1	137	26.07	26.17	26.26
		1	271	27.27	26.73	26.17
		135	0	26.51	26.49	26.18
		135	69	26.07	26.11	26.12
		135	138	25.86	25.96	25.96
		270	0	26.59	26.53	26.32
100M	16QAM	1	1	23.91	23.70	24.07
100M	64QAM	1	1	23.64	23.50	23.28
100M	256QAM	1	1	22.40	22.51	22.27
BW	MCS Index	Channel		508200	518598	528996
		Frequency (MHz)		2541	2592.99	2644.98
90M	$\pi/2$ BPSK	1	1	27.63	27.70	26.29
90M	QPSK	1	1	27.76	27.73	26.63
		1	123	26.20	26.14	26.23
		1	243	27.40	26.70	26.14
		120	0	26.59	26.46	26.15
		120	63	25.94	26.08	26.09
		120	125	25.87	25.93	25.93
		243	0	26.56	26.50	26.29
90M	16QAM	1	1	23.94	23.67	24.04
90M	64QAM	1	1	23.16	23.47	23.25
90M	256QAM	1	1	22.27	22.48	22.24
BW	MCS Index	Channel		507204	518598	529998
		Frequency (MHz)		2536.02	2592.99	2649.99
80M	$\pi/2$ BPSK	1	1	27.59	27.66	26.25
80M	QPSK	1	1	27.72	27.69	26.59
		1	109	26.16	26.10	26.19
		1	215	27.36	26.66	26.10
		108	0	26.55	26.42	26.11
		108	55	25.90	26.04	26.05
		108	109	25.83	25.89	25.89
		216	0	26.52	26.46	26.25
80M	16QAM	1	1	23.90	23.63	24.00
80M	64QAM	1	1	23.12	23.43	23.21
80M	256QAM	1	1	22.23	22.44	22.20

NR Band 41 (Power Class 2)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		505200	518598	531996
		Frequency (MHz)		2526	2592.99	2659.98
60M	$\pi/2$ BPSK	1	1	27.54	27.61	26.20
60M	QPSK	1	1	27.67	27.64	26.54
		1	81	26.11	26.05	26.14
		1	160	27.31	26.61	26.05
		81	0	26.50	26.37	26.06
		81	41	25.85	25.99	26.00
		81	81	25.78	25.84	25.84
		162	0	26.47	26.41	26.20
60M	16QAM	1	1	23.85	23.58	23.95
60M	64QAM	1	1	23.07	23.38	23.16
60M	256QAM	1	1	22.18	22.39	22.15
BW	MCS Index	Channel		504204	518598	532998
		Frequency (MHz)		2521.02	2592.99	2664.99
50M	$\pi/2$ BPSK	1	1	27.52	27.59	26.18
50M	QPSK	1	1	27.65	27.62	26.52
		1	67	26.09	26.03	26.12
		1	131	27.29	26.59	26.03
		64	0	26.48	26.35	26.04
		64	35	25.83	25.97	25.98
		64	69	25.76	25.82	25.82
		128	0	26.45	26.39	26.18
50M	16QAM	1	1	23.83	23.56	23.93
50M	64QAM	1	1	23.05	23.36	23.14
50M	256QAM	1	1	22.16	22.37	22.13
BW	MCS Index	Channel		503202	518598	534000
		Frequency (MHz)		2516.01	2592.99	2670
40M	$\pi/2$ BPSK	1	1	27.50	27.57	26.16
40M	QPSK	1	1	27.63	27.60	26.50
		1	53	26.07	26.01	26.10
		1	104	27.27	26.57	26.01
		50	0	26.46	26.33	26.02
		50	28	25.81	25.95	25.96
		50	56	25.74	25.80	25.80
		100	0	26.43	26.37	26.16
40M	16QAM	1	1	23.81	23.54	23.91
40M	64QAM	1	1	23.03	23.34	23.12
40M	256QAM	1	1	22.14	22.35	22.11

NR Band 41 (Power Class 2)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		501204	518598	535998
		Frequency (MHz)		2506.02	2592.99	2679.99
20M	$\pi/2$ BPSK	1	1	27.45	27.52	26.11
20M	QPSK	1	1	27.58	27.55	26.45
		1	26	26.02	25.96	26.05
		1	49	27.22	26.52	25.96
		25	0	26.41	26.28	25.97
		25	13	25.76	25.90	25.91
		25	26	25.69	25.75	25.75
		50	0	26.38	26.32	26.11
20M	16QAM	1	1	23.76	23.49	23.86
20M	64QAM	1	1	22.98	23.29	23.07
20M	256QAM	1	1	22.09	22.30	22.06
BW	MCS Index	Channel		500700	518598	536496
		Frequency (MHz)		2503.5	2592.99	2682.48
15M	$\pi/2$ BPSK	1	1	27.42	27.49	26.08
15M	QPSK	1	1	27.55	27.52	26.42
		1	19	25.99	25.93	26.02
		1	36	27.19	26.49	25.93
		18	0	26.38	26.25	25.94
		18	10	25.73	25.87	25.88
		18	20	25.66	25.72	25.72
		36	0	26.35	26.29	26.08
15M	16QAM	1	1	23.73	23.46	23.83
15M	64QAM	1	1	22.95	23.26	23.04
15M	256QAM	1	1	22.06	22.27	22.03
BW	MCS Index	Channel		500202	518598	537000
		Frequency (MHz)		2501.01	2592.99	2685
10M	$\pi/2$ BPSK	1	1	27.40	27.47	26.06
10M	QPSK	1	1	27.53	27.50	26.40
		1	11	25.97	25.91	26.00
		1	22	27.17	26.47	25.91
		12	0	26.36	26.23	25.92
		12	6	25.71	25.85	25.86
		12	12	25.64	25.70	25.70
		24	0	26.33	26.27	26.06
10M	16QAM	1	1	23.71	23.44	23.81
10M	64QAM	1	1	22.93	23.24	23.02
10M	256QAM	1	1	22.04	22.25	22.01

NR Band 41 (Power Class 3)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		509202	518598	528000
		Frequency (MHz)		2546.01	2592.99	2640
100M	$\pi/2$ BPSK	1	1	26.63	26.40	26.43
100M	QPSK	1	1	26.71	26.69	26.62
		1	137	26.67	26.65	26.53
		1	271	26.38	26.29	26.37
		135	0	25.62	25.51	25.19
		135	69	26.55	26.30	26.19
		135	138	25.50	25.27	25.22
		270	0	25.30	25.18	25.17
100M	16QAM	1	1	25.75	25.73	25.62
100M	64QAM	1	1	23.64	23.41	23.38
100M	256QAM	1	1	22.30	22.13	22.10
BW	MCS Index	Channel		508200	518598	528996
		Frequency (MHz)		2541	2592.99	2644.98
90M	$\pi/2$ BPSK	1	1	26.56	26.38	26.41
90M	QPSK	1	1	26.69	26.61	26.52
		1	123	26.63	26.60	26.48
		1	243	26.38	26.29	26.30
		120	0	25.58	25.51	25.10
		120	63	26.39	26.27	26.12
		120	125	25.46	25.18	25.15
		243	0	25.26	25.09	25.16
90M	16QAM	1	1	25.73	25.67	25.57
90M	64QAM	1	1	23.60	23.36	23.36
90M	256QAM	1	1	22.23	22.08	22.01
BW	MCS Index	Channel		507204	518598	529998
		Frequency (MHz)		2536.02	2592.99	2649.99
80M	$\pi/2$ BPSK	1	1	26.60	26.33	26.37
80M	QPSK	1	1	26.69	26.59	26.55
		1	109	26.57	26.60	26.46
		1	215	26.29	26.21	26.37
		108	0	25.58	25.42	25.18
		108	55	26.40	26.22	26.10
		108	109	25.48	25.25	25.16
		216	0	25.20	25.12	25.09
80M	16QAM	1	1	25.75	25.69	25.59
80M	64QAM	1	1	23.55	23.37	23.32
80M	256QAM	1	1	22.24	22.04	22.05

NR Band 41 (Power Class 3)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		505200	518598	531996
		Frequency (MHz)		2526	2592.99	2659.98
60M	$\pi/2$ BPSK	1	1	26.53	26.34	26.41
60M	QPSK	1	1	26.68	26.62	26.53
		1	81	26.62	26.56	26.47
		1	160	26.31	26.22	26.34
		81	0	25.60	25.41	25.15
		81	41	26.40	26.23	26.17
		81	81	25.50	25.21	25.12
		162	0	25.25	25.11	25.11
60M	16QAM	1	1	25.74	25.65	25.58
60M	64QAM	1	1	23.57	23.39	23.32
60M	256QAM	1	1	22.28	22.06	22.06
BW	MCS Index	Channel		504204	518598	532998
		Frequency (MHz)		2521.02	2592.99	2664.99
50M	$\pi/2$ BPSK	1	1	26.54	26.39	26.41
50M	QPSK	1	1	26.67	26.58	26.58
		1	67	26.60	26.65	26.50
		1	131	26.30	26.24	26.36
		64	0	25.55	25.50	25.16
		64	35	26.41	26.24	26.15
		64	69	25.44	25.23	25.20
		128	0	25.22	25.13	25.10
50M	16QAM	1	1	25.73	25.64	25.55
50M	64QAM	1	1	23.56	23.33	23.34
50M	256QAM	1	1	22.27	22.05	22.10
BW	MCS Index	Channel		503202	518598	534000
		Frequency (MHz)		2516.01	2592.99	2670
40M	$\pi/2$ BPSK	1	1	26.53	26.35	26.38
40M	QPSK	1	1	26.67	26.62	26.50
		1	53	26.58	26.65	26.46
		1	104	26.37	26.25	26.35
		50	0	25.55	25.50	25.12
		50	28	26.40	26.21	26.15
		50	56	25.43	25.24	25.22
		100	0	25.22	25.09	25.12
40M	16QAM	1	1	25.65	25.67	25.59
40M	64QAM	1	1	23.64	23.39	23.35
40M	256QAM	1	1	22.26	22.03	22.09

NR Band 41 (Power Class 3)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		501204	518598	535998
		Frequency (MHz)		2506.02	2592.99	2679.99
20M	$\pi/2$ BPSK	1	1	26.59	26.39	26.40
20M	QPSK	1	1	26.63	26.59	26.54
		1	26	26.63	26.61	26.46
		1	49	26.28	26.21	26.29
		25	0	25.59	25.47	25.11
		25	13	26.36	26.22	26.15
		25	26	25.46	25.25	25.20
		50	0	25.22	25.11	25.15
20M	16QAM	1	1	25.70	25.64	25.59
20M	64QAM	1	1	23.55	23.36	23.33
20M	256QAM	1	1	22.30	22.10	22.00
BW	MCS Index	Channel		500700	518598	536496
		Frequency (MHz)		2503.5	2592.99	2682.48
15M	$\pi/2$ BPSK	1	1	26.53	26.32	26.37
15M	QPSK	1	1	26.69	26.67	26.59
		1	19	26.64	26.64	26.47
		1	36	26.31	26.21	26.35
		18	0	25.55	25.46	25.12
		18	10	26.36	26.21	26.14
		18	20	25.40	25.18	25.21
		36	0	25.29	25.16	25.15
15M	16QAM	1	1	25.75	25.64	25.52
15M	64QAM	1	1	23.56	23.32	23.32
15M	256QAM	1	1	22.23	22.04	22.10
BW	MCS Index	Channel		500202	518598	537000
		Frequency (MHz)		2501.01	2592.99	2685
10M	$\pi/2$ BPSK	1	1	26.57	26.30	26.43
10M	QPSK	1	1	26.66	26.68	26.56
		1	11	26.61	26.62	26.43
		1	22	26.28	26.23	26.35
		12	0	25.54	25.42	25.10
		12	6	26.44	26.25	26.19
		12	12	25.47	25.25	25.22
		24	0	25.22	25.11	25.07
10M	16QAM	1	1	25.68	25.70	25.53
10M	64QAM	1	1	23.61	23.37	23.32
10M	256QAM	1	1	22.27	22.09	22.01

NR Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		346000	349000	352000
		Frequency (MHz)		1730	1745	1760
40M	$\pi/2$ BPSK	1	1	26.60	26.49	26.63
40M	QPSK	1	1	26.65	26.55	26.72
		1	108	26.58	26.55	26.57
		1	214	26.48	26.47	26.56
		108	0	25.43	25.49	25.57
		108	54	26.53	26.48	26.64
		108	108	25.32	25.38	25.46
		216	0	25.42	25.48	25.56
40M	16QAM	1	1	25.18	25.24	25.32
40M	64QAM	1	1	24.92	24.98	25.06
40M	256QAM	1	1	22.84	22.90	22.98
BW	MCS Index	Channel		344000	349000	354000
		Frequency (MHz)		1720	1745	1770
20M	$\pi/2$ BPSK	1	1	26.57	26.46	26.60
20M	QPSK	1	1	26.65	26.55	26.70
		1	53	26.55	26.52	26.54
		1	104	26.45	26.44	26.53
		50	0	25.40	25.46	25.54
		50	28	26.50	26.45	26.51
		50	56	25.29	25.35	25.43
		100	0	25.39	25.45	25.53
20M	16QAM	1	1	25.15	25.21	25.29
20M	64QAM	1	1	24.89	24.95	25.03
20M	256QAM	1	1	22.81	22.87	22.95
BW	MCS Index	Channel		343500	349000	354500
		Frequency (MHz)		1717.5	1745	1772.5
15M	$\pi/2$ BPSK	1	1	26.56	26.45	26.59
15M	QPSK	1	1	26.64	26.54	26.69
		1	40	26.54	26.51	26.53
		1	77	26.44	26.43	26.52
		36	0	25.39	25.45	25.53
		36	22	26.49	26.44	26.50
		36	43	25.28	25.34	25.42
		75	0	25.38	25.44	25.52
15M	16QAM	1	1	25.14	25.20	25.28
15M	64QAM	1	1	24.88	24.94	25.02
15M	256QAM	1	1	22.80	22.86	22.94

NR Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		343000	349000	355000
		Frequency (MHz)		1715	1745	1775
10M	$\pi/2$ BPSK	1	1	26.45	26.34	26.48
10M	QPSK	1	1	26.53	26.43	26.58
		1	26	26.43	26.40	26.42
		1	50	26.33	26.32	26.41
		25	0	25.28	25.34	25.42
		25	14	26.38	26.33	26.39
		25	27	25.17	25.23	25.31
		50	0	25.27	25.33	25.41
10M	16QAM	1	1	25.03	25.09	25.17
10M	64QAM	1	1	24.77	24.83	24.91
10M	256QAM	1	1	22.69	22.75	22.83
BW	MCS Index	Channel		342500	349000	355500
		Frequency (MHz)		1712.5	1745	1777.5
5M	$\pi/2$ BPSK	1	1	26.43	26.32	26.46
5M	QPSK	1	1	26.51	26.41	26.56
		1	13	26.41	26.38	26.40
		1	23	26.31	26.30	26.39
		12	0	25.26	25.32	25.40
		12	7	26.36	26.31	26.37
		12	13	25.15	25.21	25.29
		25	0	25.25	25.31	25.39
5M	16QAM	1	1	25.01	25.07	25.15
5M	64QAM	1	1	24.75	24.81	24.89
5M	256QAM	1	1	22.67	22.73	22.81

NR Band 71						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		134600	136100	137600
		Frequency (MHz)		673	680.5	688
20M	$\pi/2$ BPSK	1	1	22.72	22.66	22.52
20M	QPSK	1	1	22.77	22.67	22.67
		1	53	22.76	22.72	22.66
		1	104	22.74	22.70	22.64
		50	0	21.68	21.67	21.61
		50	28	21.71	21.64	21.58
		50	56	21.68	21.64	21.58
		100	0	21.73	21.69	21.63
20M	16QAM	1	1	21.60	21.56	21.50
20M	64QAM	1	1	19.68	19.64	19.58
20M	256QAM	1	1	18.18	18.14	18.08
BW	MCS Index	Channel		134100	136100	138100
		Frequency (MHz)		670.5	680.5	690.5
15M	$\pi/2$ BPSK	1	1	22.69	22.64	22.57
15M	QPSK	1	1	22.62	22.71	22.65
		1	40	22.72	22.60	22.57
		1	77	22.66	22.52	22.47
		36	0	21.64	21.65	21.50
		36	22	21.49	21.46	21.50
		36	43	21.60	21.58	21.40
		75	0	21.67	21.63	21.56
15M	16QAM	1	1	21.54	21.52	21.48
15M	64QAM	1	1	19.67	19.56	19.48
15M	256QAM	1	1	18.11	18.05	17.99
BW	MCS Index	Channel		133600	136100	138600
		Frequency (MHz)		668	680.5	693
10M	$\pi/2$ BPSK	1	1	22.69	22.62	22.52
10M	QPSK	1	1	22.65	22.60	22.52
		1	26	22.72	22.65	22.53
		1	50	22.57	22.58	22.57
		25	0	21.55	21.64	21.47
		25	14	21.54	21.58	21.50
		25	27	21.59	21.46	21.54
		50	0	21.67	21.59	21.52
10M	16QAM	1	1	21.58	21.50	21.44
10M	64QAM	1	1	19.61	19.59	19.56
10M	256QAM	1	1	18.09	18.12	18.08

NR Band 71						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		133100	136100	139100
		Frequency (MHz)		665.5	680.5	695.5
5M	$\pi/2$ BPSK	1	1	22.68	22.71	22.62
5M	QPSK	1	1	22.59	22.63	22.57
		1	13	22.68	22.60	22.51
		1	23	22.56	22.63	22.53
		12	0	21.57	21.63	21.48
		12	7	21.57	21.57	21.47
		12	13	21.57	21.59	21.41
		25	0	21.69	21.56	21.47
5M	16QAM	1	1	21.56	21.52	21.50
5M	64QAM	1	1	19.58	19.54	19.55
5M	256QAM	1	1	18.18	18.08	18.00

4.2 Modulation Characteristics Measurement

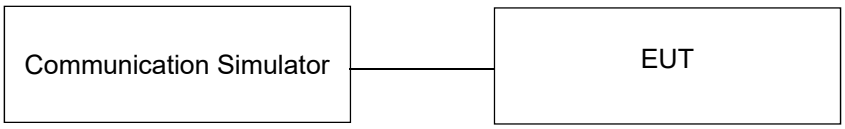
4.2.1 Limits of Modulation Characteristics

N/A

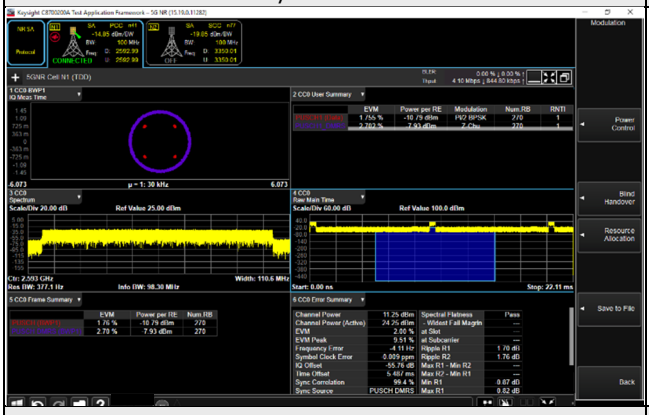
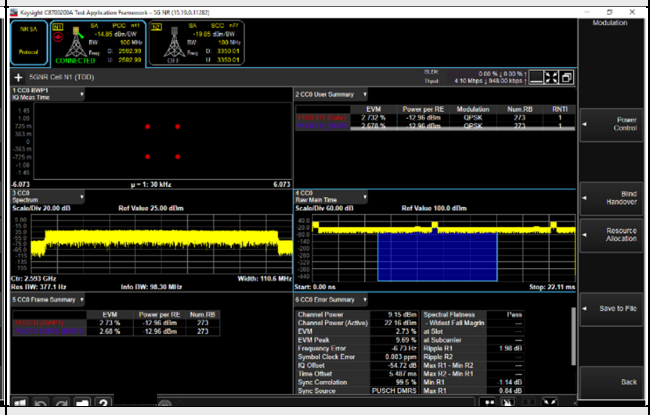
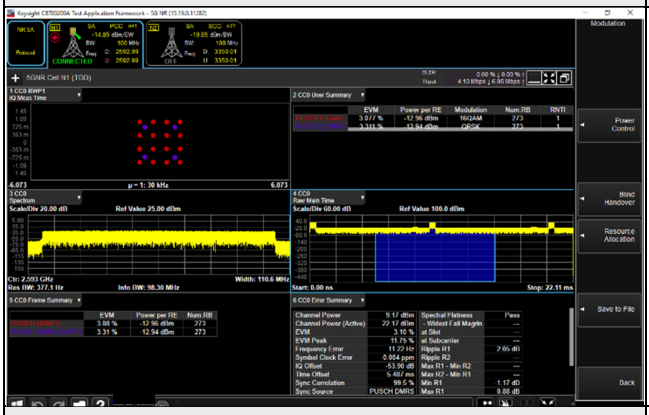
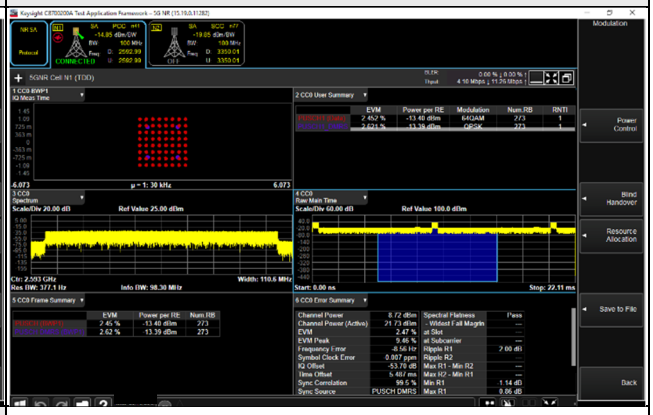
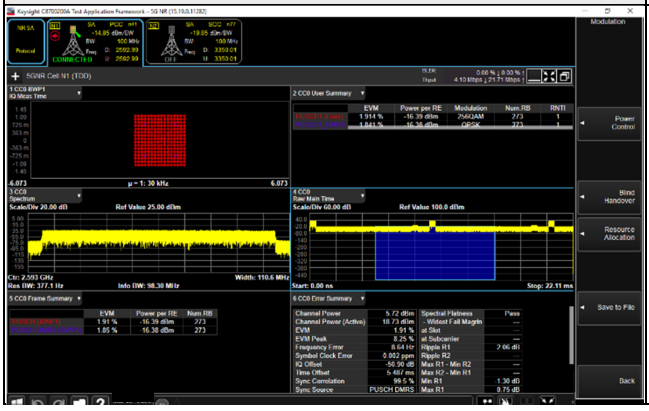
4.2.2 Test Procedure

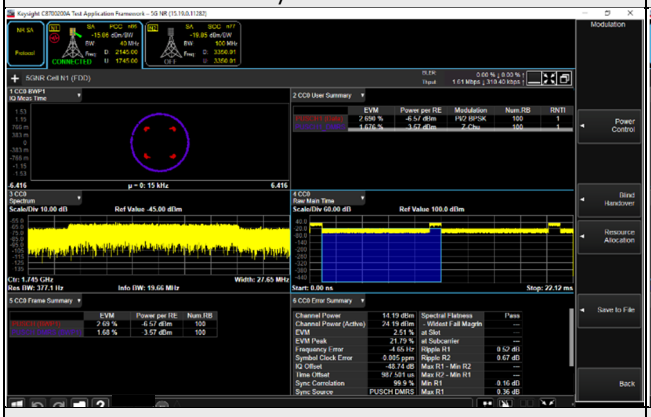
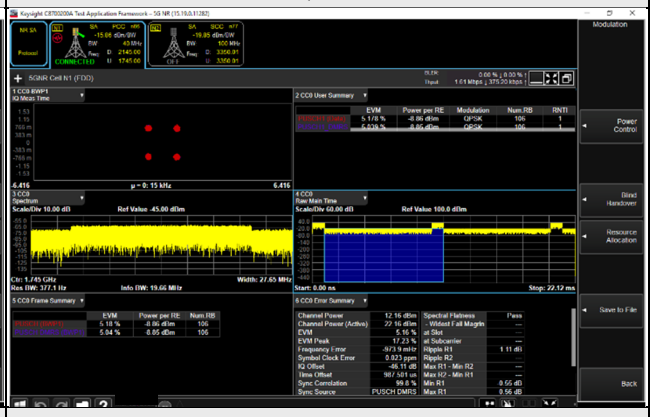
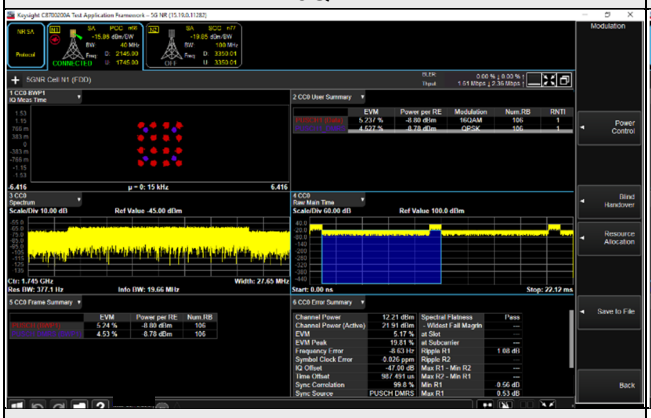
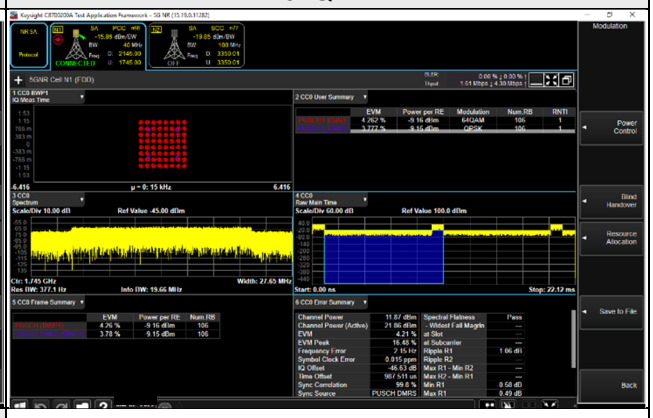
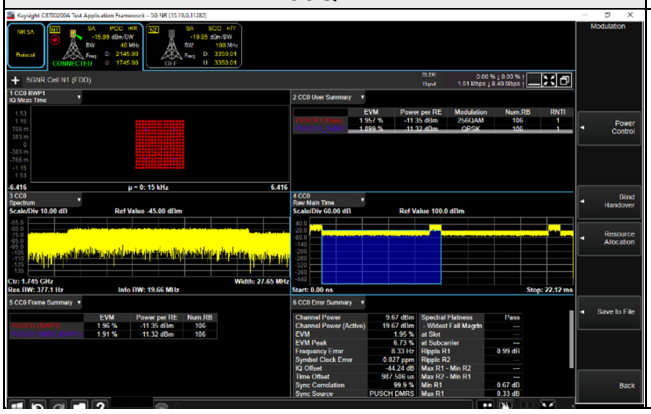
Connect the EUT to Communication Simulator via the antenna connector, The frequency band is set as EUT supported Modulation and Channels, the EUT output is matched with 50 ohm load, the waveform quality and constellation of the EUT was tested.

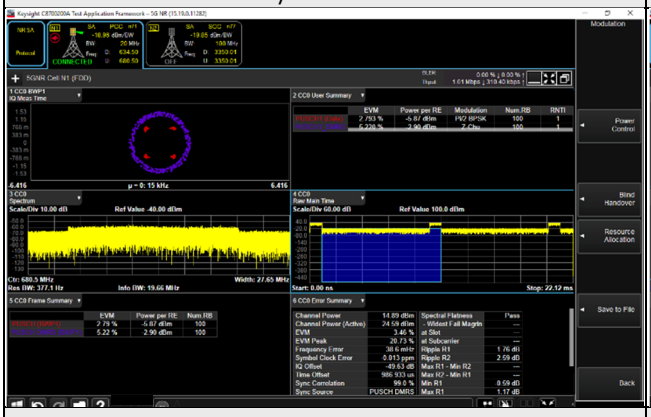
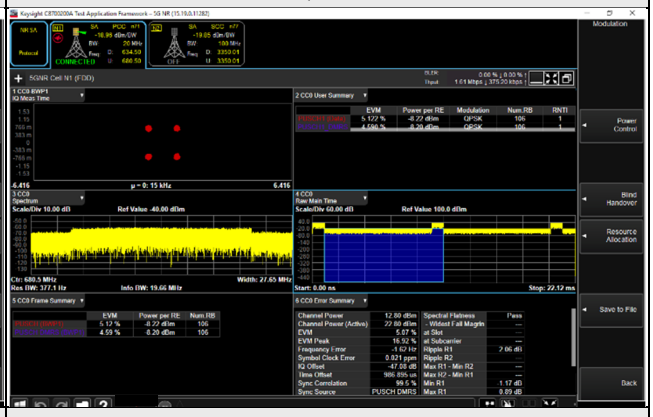
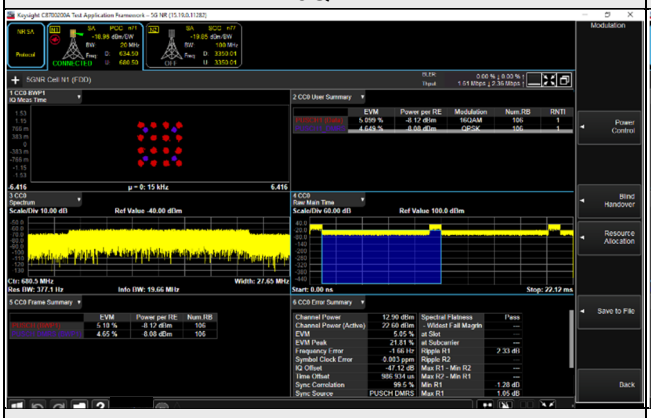
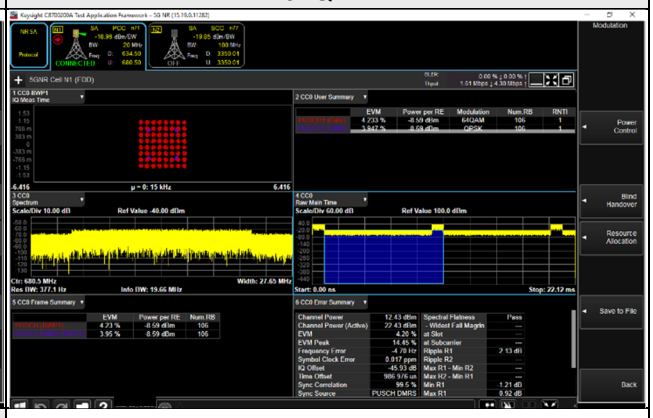
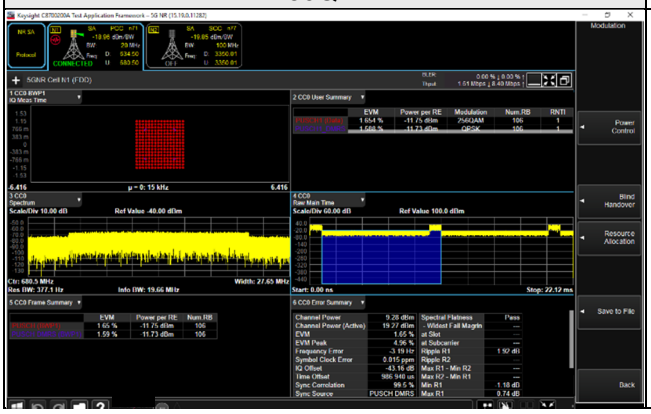
4.2.3 Test Setup



4.2.4 Test Results

n41	
Spectrum Plot of Measurement Value	
Channel: 518598 / Frequency (MHz): 2592.99MHz	
$\pi/2$ BPSK	QPSK
	
16QAM	64QAM
	
256QAM	
	

n66	
Spectrum Plot of Measurement Value	
Channel: 349000 / Frequency (MHz): 1745.0MHz	
$\pi/2$ BPSK	QPSK
	
16QAM	64QAM
	
256QAM	
	

n71	
Spectrum Plot of Measurement Value	
Channel: 136100 / Frequency (MHz): 680.5MHz	
$\pi/2$ BPSK	QPSK
	
16QAM	64QAM
	
256QAM	
	

4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

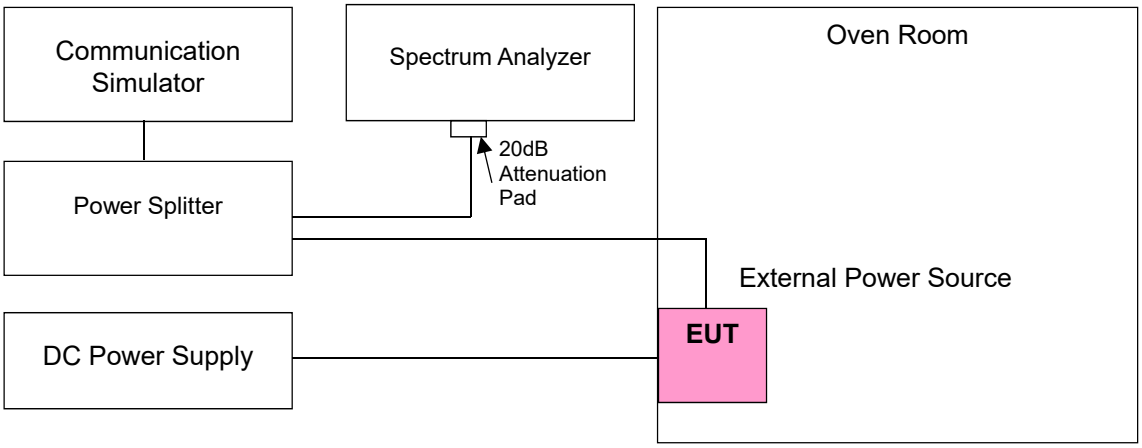
According to the FCC part 2.1055 shall be tested the frequency stability. The rule is defined that" The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block." The test extreme voltage is according to the 2.1055(d)(1) Vary primary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

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 Setup



4.3.4 Test Results

Frequency Error vs. Voltage

Voltage (Vdc)	n41			
	Channel Bandwidth 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	2501.010004	0.002	2685.000001	0.000
3.28	2501.009997	-0.001	2684.999997	-0.001
4.43	2501.010002	0.001	2685.000002	0.001

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

Frequency Error vs. Temperature

Temp. (℃)	n41			
	Channel Bandwidth 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2501.010002	0.001	2684.999998	-0.001
-20	2501.010004	0.002	2684.999996	-0.001
-10	2501.009999	0.000	2685.000001	0.000
0	2501.010002	0.001	2685.000001	0.000
10	2501.009997	-0.001	2685.000002	0.001
20	2501.009996	-0.002	2684.999998	-0.001
30	2501.009996	-0.002	2684.999996	-0.001
40	2501.009996	-0.002	2685.000002	0.001
50	2501.009997	-0.001	2685.000004	0.001

Frequency Error vs. Voltage

Voltage (Vdc)	n41			
	Channel Bandwidth 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	2503.499996	-0.002	2679.989996	-0.001
3.28	2503.499996	-0.002	2679.990004	0.001
4.43	2503.499999	0.000	2679.990004	0.001

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

Frequency Error vs. Temperature

Temp. (℃)	n41			
	Channel Bandwidth 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2506.020003	0.001	2679.989996	-0.001
-20	2503.500004	0.002	2679.989998	-0.001
-10	2503.499996	-0.002	2679.990003	0.001
0	2503.500003	0.001	2679.989996	-0.001
10	2503.499996	-0.002	2679.989997	-0.001
20	2503.499997	-0.001	2679.990003	0.001
30	2503.499997	-0.001	2679.989999	0.000
40	2503.499998	-0.001	2679.990004	0.001
50	2503.499999	0.000	2679.989998	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	n41			
	Channel Bandwidth 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	2506.019999	0.000	2679.989997	-0.001
3.28	2506.020001	0.000	2679.989998	-0.001
4.43	2506.019999	0.000	2679.990001	0.000

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

Frequency Error vs. Temperature

Temp. (℃)	n41			
	Channel Bandwidth 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2506.020004	0.002	2679.989999	0.000
-20	2506.020001	0.000	2679.990003	0.001
-10	2506.020001	0.000	2679.989996	-0.001
0	2506.019998	-0.001	2679.990001	0.000
10	2506.019997	-0.001	2679.989997	-0.001
20	2506.019998	-0.001	2679.989998	-0.001
30	2506.019996	-0.002	2679.989997	-0.001
40	2506.020003	0.001	2679.989997	-0.001
50	2506.020004	0.002	2679.989996	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	n41			
	Channel Bandwidth 40 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	2516.010001	0.000	2669.999997	-0.001
3.28	2516.009996	-0.002	2669.999997	-0.001
4.43	2516.010004	0.002	2669.999999	0.000

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

Frequency Error vs. Temperature

Temp. (℃)	n41			
	Channel Bandwidth 40 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2516.010001	0.000	2670.000004	0.001
-20	2516.010004	0.002	2670.000001	0.000
-10	2516.009996	-0.002	2669.999997	-0.001
0	2516.009996	-0.002	2670.000004	0.001
10	2516.009999	0.000	2669.999999	0.000
20	2516.010001	0.000	2669.999996	-0.001
30	2516.010001	0.000	2669.999999	0.000
40	2516.010001	0.000	2670.000002	0.001
50	2516.009996	-0.002	2669.999999	0.000

Frequency Error vs. Voltage

Voltage (Vdc)	n41			
	Channel Bandwidth 50 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	2521.019996	-0.002	2664.989998	-0.001
3.28	2521.019999	0.000	2664.989996	-0.001
4.43	2521.020004	0.002	2664.990002	0.001

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

Frequency Error vs. Temperature

Temp. (℃)	n41			
	Channel Bandwidth 50 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2521.020004	0.002	2664.989998	-0.001
-20	2521.020004	0.002	2664.989996	-0.001
-10	2521.020002	0.001	2664.990001	0.000
0	2521.019997	-0.001	2664.990002	0.001
10	2521.020001	0.000	2664.989999	0.000
20	2521.020002	0.001	2664.990002	0.001
30	2521.020004	0.002	2664.990004	0.001
40	2521.019997	-0.001	2664.989997	-0.001
50	2521.019997	-0.001	2664.989998	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	n41			
	Channel Bandwidth 60 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	2525.999999	0.000	2659.979997	-0.001
3.28	2525.999997	-0.001	2659.979999	0.000
4.43	2525.999999	0.000	2659.979996	-0.001

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

Frequency Error vs. Temperature

Temp. (℃)	n41			
	Channel Bandwidth 60 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2526.000001	0.000	2659.979997	-0.001
-20	2525.999997	-0.001	2659.980003	0.001
-10	2525.999999	0.000	2659.980002	0.001
0	2526.000003	0.001	2659.980001	0.000
10	2525.999997	-0.001	2659.980001	0.000
20	2526.000001	0.000	2659.979998	-0.001
30	2525.999998	-0.001	2659.979998	-0.001
40	2526.000002	0.001	2659.980002	0.001
50	2525.999998	-0.001	2659.979999	0.000

Frequency Error vs. Voltage

Voltage (Vdc)	n41			
	Channel Bandwidth 80 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	2536.020003	0.001	2649.990004	0.001
3.28	2536.019999	0.000	2649.989997	-0.001
4.43	2536.020004	0.002	2649.990004	0.001

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

Frequency Error vs. Temperature

Temp. (℃)	n41			
	Channel Bandwidth 80 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2536.019998	-0.001	2649.990001	0.000
-20	2536.019996	-0.002	2649.989999	0.000
-10	2536.019996	-0.002	2649.990002	0.001
0	2536.020003	0.001	2649.989999	0.000
10	2536.020004	0.002	2649.989996	-0.001
20	2536.020004	0.002	2649.989998	-0.001
30	2536.019998	-0.001	2649.990001	0.000
40	2536.019998	-0.001	2649.989998	-0.001
50	2536.019997	-0.001	2649.989998	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	n41			
	Channel Bandwidth 90 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	2540.999997	-0.001	2644.980001	0.000
3.28	2541.000004	0.002	2644.979998	-0.001
4.43	2540.999997	-0.001	2644.979996	-0.001

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

Frequency Error vs. Temperature

Temp. (℃)	n41			
	Channel Bandwidth 90 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2541.000003	0.001	2644.980002	0.001
-20	2541.000002	0.001	2644.979997	-0.001
-10	2540.999999	0.000	2644.980001	0.000
0	2541.000003	0.001	2644.980002	0.001
10	2540.999998	-0.001	2644.980002	0.001
20	2540.999997	-0.001	2644.980003	0.001
30	2540.999998	-0.001	2644.979996	-0.001
40	2540.999999	0.000	2644.979996	-0.001
50	2540.999999	0.000	2644.979996	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	n41			
	Channel Bandwidth 100 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	2546.009996	-0.002	2639.999996	-0.001
3.28	2546.010001	0.000	2640.000003	0.001
4.43	2546.009999	0.000	2639.999997	-0.001

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

Frequency Error vs. Temperature

Temp. (℃)	n41			
	Channel Bandwidth 100 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	2546.010002	0.001	2640.000004	0.001
-20	2546.010003	0.001	2639.999997	-0.001
-10	2546.009998	-0.001	2639.999996	-0.001
0	2546.010001	0.000	2640.000002	0.001
10	2546.009996	-0.002	2640.000003	0.001
20	2546.010003	0.001	2639.999997	-0.001
30	2546.010001	0.000	2640.000001	0.000
40	2546.010002	0.001	2639.999997	-0.001
50	2546.009998	-0.001	2640.000002	0.001

Frequency Error vs. Voltage

Voltage (Vdc)	n66			
	Channel Bandwidth 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	1712.500002	0.001	1777.500000	-0.002
3.28	1712.499997	-0.002	1777.500000	-0.002
4.43	1712.499996	-0.002	1777.500000	-0.002

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

Frequency Error vs. Temperature

Temp. (℃)	n66			
	Channel Bandwidth 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1712.500004	0.002	1777.500000	0.002
-20	1712.499996	-0.002	1777.500000	-0.001
-10	1712.499999	-0.001	1777.500000	0.002
0	1712.500001	0.001	1777.500000	-0.001
10	1712.499996	-0.002	1777.500000	0.002
20	1712.499998	-0.001	1777.500000	-0.001
30	1712.499999	-0.001	1777.500000	0.002
40	1712.500003	0.002	1777.500000	-0.001
50	1712.499998	-0.001	1777.500000	-0.002

Frequency Error vs. Voltage

Voltage (Vdc)	n66			
	Channel Bandwidth 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	1715.000004	0.002	1774.999997	-0.002
3.28	1715.000003	0.002	1775.000001	0.001
4.43	1715.000004	0.002	1775.000002	0.001

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

Frequency Error vs. Temperature

Temp. (℃)	n66			
	Channel Bandwidth 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1714.999998	-0.001	1774.999996	-0.002
-20	1715.000003	0.002	1775.000001	0.001
-10	1714.999996	-0.002	1775.000003	0.002
0	1714.999996	-0.002	1775.000001	0.001
10	1714.999996	-0.002	1775.000001	0.001
20	1715.000004	0.002	1774.999996	-0.002
30	1715.000003	0.002	1775.000001	0.001
40	1714.999998	-0.001	1775.000001	0.001
50	1714.999998	-0.001	1775.000002	0.001

Frequency Error vs. Voltage

Voltage (Vdc)	n66			
	Channel Bandwidth 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	1717.500004	0.002	1772.500003	0.002
3.28	1717.499998	-0.001	1772.499998	-0.001
4.43	1717.500004	0.002	1772.500003	0.002

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

Frequency Error vs. Temperature

Temp. (℃)	n66			
	Channel Bandwidth 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1717.500001	0.001	1772.500004	0.002
-20	1717.500004	0.002	1772.499998	-0.001
-10	1717.499999	-0.001	1772.500003	0.002
0	1717.500003	0.002	1772.500001	0.001
10	1717.499999	-0.001	1772.499997	-0.002
20	1717.500002	0.001	1772.499997	-0.002
30	1717.499999	-0.001	1772.500001	0.001
40	1717.500004	0.002	1772.499998	-0.001
50	1717.499996	-0.002	1772.500001	0.001

Frequency Error vs. Voltage

Voltage (Vdc)	n66			
	Channel Bandwidth 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	1719.999999	-0.001	1769.999996	-0.002
3.28	1720.000004	0.002	1769.999997	-0.002
4.43	1720.000001	0.001	1769.999999	-0.001

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

Frequency Error vs. Temperature

Temp. (℃)	n66			
	Channel Bandwidth 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1720.000003	0.002	1770.000003	0.002
-20	1719.999999	-0.001	1769.999998	-0.001
-10	1719.999996	-0.002	1769.999996	-0.002
0	1719.999998	-0.001	1770.000002	0.001
10	1719.999999	-0.001	1770.000003	0.002
20	1719.999996	-0.002	1770.000001	0.001
30	1720.000003	0.002	1769.999997	-0.002
40	1719.999997	-0.002	1769.999996	-0.002
50	1719.999998	-0.001	1770.000002	0.001

Frequency Error vs. Voltage

Voltage (Vdc)	n66			
	Channel Bandwidth 40 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	1729.999997	-0.002	1759.999996	-0.002
3.28	1729.999998	-0.001	1759.999997	-0.002
4.43	1729.999998	-0.001	1759.999996	-0.002

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

Frequency Error vs. Temperature

Temp. (℃)	n66			
	Channel Bandwidth 40 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1729.999996	-0.002	1759.999997	-0.002
-20	1730.000002	0.001	1760.000003	0.002
-10	1729.999996	-0.002	1760.000003	0.002
0	1729.999998	-0.001	1760.000001	0.001
10	1730.000003	0.002	1760.000001	0.001
20	1730.000002	0.001	1760.000003	0.002
30	1730.000003	0.002	1760.000003	0.002
40	1730.000001	0.001	1759.999998	-0.001
50	1730.000004	0.002	1759.999996	-0.002

Frequency Error vs. Voltage

Voltage (Vdc)	n71			
	Channel Bandwidth 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	665.499996	-0.006	695.500000	0.001
3.28	665.500001	0.002	695.500000	-0.004
4.43	665.499998	-0.003	695.500000	0.001

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

Frequency Error vs. Temperature

Temp. (℃)	n71			
	Channel Bandwidth 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	665.500001	0.002	695.500000	0.001
-20	665.499998	-0.003	695.500000	-0.003
-10	665.499997	-0.005	695.500000	0.001
0	665.499998	-0.003	695.500000	-0.001
10	665.500002	0.003	695.500000	-0.001
20	665.499998	-0.003	695.500000	-0.006
30	665.499999	-0.002	695.500000	-0.001
40	665.500001	0.002	695.500000	0.004
50	665.499997	-0.005	695.500000	-0.004

Frequency Error vs. Voltage

Voltage (Vdc)	n71			
	Channel Bandwidth 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	667.999996	-0.006	693.000001	0.001
3.28	668.000001	0.002	693.000001	0.001
4.43	667.999998	-0.003	693.000001	0.001

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

Frequency Error vs. Temperature

Temp. (℃)	n71			
	Channel Bandwidth 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	668.000002	0.003	692.999998	-0.003
-20	667.999997	-0.005	692.999998	-0.003
-10	667.999996	-0.006	693.000002	0.003
0	668.000003	0.005	693.000003	0.004
10	667.999998	-0.003	692.999998	-0.003
20	667.999997	-0.005	693.000002	0.003
30	668.000002	0.003	692.999997	-0.004
40	668.000003	0.005	693.000004	0.006
50	667.999997	-0.005	693.000003	0.004

Frequency Error vs. Voltage

Voltage (Vdc)	n71			
	Channel Bandwidth 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	670.499996	-0.006	690.500004	0.006
3.28	670.500001	0.002	690.499999	-0.001
4.43	670.500003	0.005	690.499998	-0.003

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

Frequency Error vs. Temperature

Temp. (℃)	n71			
	Channel Bandwidth 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	670.499996	-0.006	690.499998	-0.003
-20	670.500002	0.003	690.500004	0.006
-10	670.499999	-0.002	690.500003	0.004
0	670.500001	0.002	690.499996	-0.006
10	670.499999	-0.002	690.500001	0.001
20	670.499998	-0.003	690.500003	0.004
30	670.500001	0.002	690.500003	0.004
40	670.499999	-0.002	690.500002	0.003
50	670.499998	-0.003	690.499999	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	n71			
	Channel Bandwidth 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	673.000002	0.003	688.000001	0.001
3.28	673.000002	0.003	687.999998	-0.003
4.43	672.999996	-0.006	687.999996	-0.006

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

Frequency Error vs. Temperature

Temp. (℃)	n71			
	Channel Bandwidth 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	673.000001	0.002	688.000003	0.004
-20	672.999997	-0.005	688.000003	0.004
-10	672.999998	-0.003	688.000004	0.006
0	672.999996	-0.006	687.999998	-0.003
10	672.999997	-0.005	688.000003	0.004
20	672.999998	-0.003	688.000001	0.001
30	672.999996	-0.006	688.000001	0.001
40	673.000002	0.003	687.999998	-0.003
50	673.000001	0.002	687.999998	-0.003

4.4 Occupied Bandwidth Measurement

4.4.1 Limits of Occupied Bandwidth Measurement

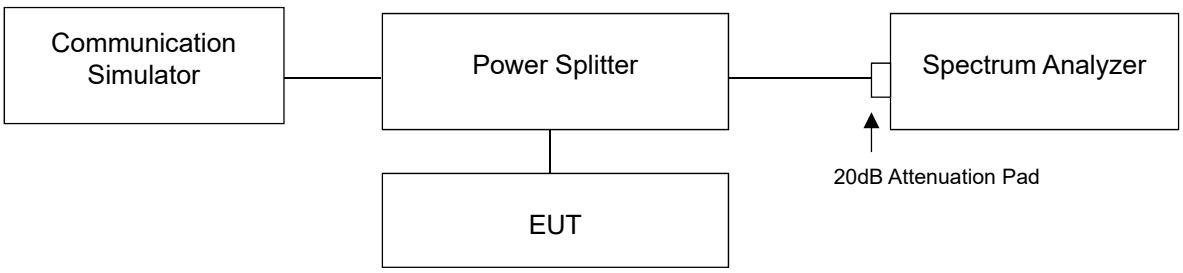
The occupied bandwidth (OBW), that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 % of the total mean power radiated by a given emission.

4.4.2 Test Procedure

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

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

4.4.3 Test Setup



4.4.4 Test Result

Occupied Bandwidth

n41, Channel Bandwidth: 10MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
500202	2501.01	8.55	8.59	8.56	8.56	8.57
518598	2592.99	8.55	8.59	8.58	8.56	8.57
537000	2685.00	8.55	8.59	8.57	8.56	8.57
n41, Channel Bandwidth: 15MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
500700	2503.50	12.87	12.83	12.85	12.82	12.86
518598	2592.99	12.87	12.83	12.85	12.82	12.86
536496	2682.48	12.86	12.83	12.85	12.81	12.86
n41, Channel Bandwidth 20MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
501204	2506.02	17.84	17.84	17.82	17.84	17.84
518598	2592.99	17.83	17.83	17.81	17.83	17.84
535998	2679.99	17.82	17.82	17.79	17.82	17.82
n41, Channel Bandwidth 40MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
503202	2516.01	35.69	35.73	35.76	35.72	35.74
518598	2592.99	35.61	35.64	35.68	35.64	35.67
534000	2670.00	35.56	35.59	35.59	35.59	35.62
n41, Channel Bandwidth 50MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
504204	2521.02	45.77	45.77	45.76	45.80	45.75
518598	2592.99	45.66	45.64	45.62	45.69	45.62
532998	2664.99	45.58	45.58	45.56	45.62	45.57

n41, Channel Bandwidth 60MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
505200	2526.00	57.89	57.90	57.89	57.89	57.91
518598	2592.99	57.72	57.71	57.70	57.68	57.74
531996	2659.98	57.65	57.67	57.67	57.64	57.70
n41, Channel Bandwidth 80MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
507204	2536.02	77.07	77.13	77.08	77.10	77.00
518598	2592.99	76.91	76.98	76.91	76.94	77.00
529998	2649.99	76.88	77.07	77.02	77.03	76.95
n41, Channel Bandwidth 90MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
508200	2541.00	86.54	86.56	86.59	86.56	86.53
518598	2592.99	86.40	86.41	86.47	86.43	86.43
528996	2644.98	86.66	86.69	86.71	86.68	86.68
n41, Channel Bandwidth 100MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
509202	2546.01	96.03	95.97	95.97	95.90	95.94
518598	2592.99	95.95	95.90	95.91	95.83	95.91
528000	2640.00	96.40	96.35	96.36	96.29	96.33