TEST REPORT

APPLICANT	:	Nubia Technology Co., Ltd.
PRODUCT NAME	:	5G Mobile Phone
MODEL NAME	:	NX679J
BRAND NAME	:	REDMAGIC
FCC ID	:	2AHJO-NX679J
STANDARD(S)	:	47 CFR Part 24, Subpart E 47 CFR Part 27, Subpart M&O
RECEIPT DATE	:	2021-11-02
TEST DATE	:	2021-11-02 to 2021-12-02
ISSUE DATE	:	2022-01-11

Edited by: Chenhaiju

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DIRECTORY

1. Technical Information ····· 4
1.1. Applicant and Manufacturer Information ····· 4
1.2. Equipment Under Test (EUT) Description ····· 4
1.3. Maximum ERP/EIRP and Emission Designator ····· 6
1.4. Test Standards and Results ····· 8
1.5. Environmental Conditions ····· 10
2. 47 CFR Part 2, Part 27M&O Requirements ····· 11
2.1. Transmitter Conducted Output Power And ERP/EIRP ····· 11
2.2. Occupied Bandwidth ····· 20
2.3. Frequency Stability ····· 74
2.4. Peak to Average Ratio ····· 76
2.5. Conducted Spurious Emissions ····· 85
2.6. Band Edge ····· 117
2.7. Radiated Spurious Emissions ····· 140
Annex A Test Uncertainty ····· 167
Annex B Testing Laboratory Information ····· 168

Change History		
Version	**Date**	**Reason for change**
1.0	2022-01-11	First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Nubia Technology Co., Ltd.
Applicant Address:	Room 1801, Building 2, Chongwen Park, Nanshan Zhiyuan, No.3370, Liuxian Rd, Nanshan District, Shenzhen City, Guangdong Province, P. R. China
Manufacturer:	Nubia Technology Co., Ltd.
Manufacturer Address:	Room 1801, Building 2, Chongwen Park, Nanshan Zhiyuan, No.3370, Liuxian Rd, Nanshan District, Shenzhen City, Guangdong Province, P. R. China

1.2. Equipment Under Test (EUT) Description

Product Name:	5G Mobile Phone	
Hardware Version:	NX679J_V1AMB	
Software Version:	NX679J_UNCommon_V4.01	
IMEI:	869351050017208	
Modulation Type:	DFT-s-OFDM	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM
	CP-OFDM	QPSK, 16QAM, 64QAM, 256QAM
Operation Band:	N41, N77, N78	
Frequency Range:	N41	Tx: 2496MHz-2690MHz
		Rx: 2496MHz-2690MHz
	N77	Tx: 3700MHz-3980MHz
		Rx: 3700MHz-3980MHz
	N78	Tx: 3700MHz-3800MHz
		Rx: 3700MHz-3800MHz
Channel Bandwidth	N41	20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 80MHz,90MHz,100MHz
	N77	20MHz, 30MHz, 40MHz, 60MHz, 80MHz, 100MHz
	N78	20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 80MHz,90MHz,100MHz
Antenna Type:	PIFA Antenna	
Antenna Gain:	N41	0.00 dBi

	N77	-2.80 dBi
	N78	-2.00 dBi
Accessory Information:	**DC Adapter**	
	Brand Name:	nubia
	Model No.:	STC-A59152050AC-Z
	Serial No.:	(N/A, marked #1 by test site)
	Rated Input:	100-240V～1.5A, 50/60Hz
	Rated Output:	5.0V/3.0A, 9.0V/3.0A, 15.0V/3.0A, 20.0V/3.25A PPS: 5.0V-11.0V/5.0A, 5.0V-20.0V/3.25A
	Manufacturer	ShenZhen KunXing Technology Co.,Ltd.
	Battery	
	Brand Name:	nubia
	Model No.:	Li3945T44P8h556490
	Serial No.:	(N/A, marked #1 by test site)
	Capacity:	2190mAh
	Rated Voltage:	7.74V
	Charge Limit:	8.9V
	Manufacturer:	Dongguan Amperex Technology Limited

Note 1: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

Note 2: Because the Band77 frequency range covers Band78, it is test data used be the Band77.

1.3. Maximum ERP/EIRP and Emission Designator

N41	Maximum ERP/EIRP（W）					
	DFT-s-OFDM					CP-OFDM
BW(MHz)	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	QPSK
100	0.175	0.176	0.171	0.149	0.097	0.174
90	0.167	/	/	/	/	/
80	0.168	/	/	/	/	/
70	0.169	/	/	/	/	/
60	0.165	/	/	/	/	/
50	0.167	/	/	/	/	/
40	0.174	/	/	/	/	/
30	0.174	/	/	/	/	/
20	0.175	/	/	/	/	/

N41	Emission Designator (99%OBW)					
	DFT-s-OFDM					CP-OFDM
BW(MHz)	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	QPSK
100	97M4G7D	97M5G7D	97M5W7D	97M4D7W	97M4D7W	97M0G7D
90	87M0G7D	86M7G7D	86M7W7D	86M7D7W	86M5D7W	86M5G7D
80	78M0G7D	78M2G7D	78M1W7D	77M8D7W	77M7D7W	77M8G7D
70	64M2G7D	64M2G7D	64M3W7D	64M2D7W	64M2D7W	67M5G7D
60	57M9G7D	58M1G7D	58M0W7D	57M9D7W	57M9D7W	57M9G7D
50	46M1G7D	46M1G7D	46M2W7D	46M1D7W	46M0D7W	46M1G7D
40	36M1G7D	36M1G7D	36M1W7D	36M1D7W	36M1D7W	36M1G7D
30	27M0G7D	27M0G7D	27M0W7D	27M0D7W	27M1D7W	27M0G7D
20	18M0G7D	18M0G7D	18M0W7D	18M0D7W	17M9D7W	17M9G7D

N77	Maximum ERP/EIRP（W）					
	DFT-s-OFDM					CP-OFDM
BW(MHz)	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	QPSK
100	0.088	0.089	0.067	0.046	0.030	0.058
80	0.084	/	/	/	/	/

60	0.084	/	/	/	/	/
40	0.088	/	/	/	/	/
30	0.087	/	/	/	/	/
20	0.085	/	/	/	/	/

N77	**Emission Designator (99%OBW)**					
	DFT-s-OFDM					**CP-OFDM**
BW(MHz)	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	QPSK
100	97M3G7D	97M1G7D	97M0W7D	97M2D7W	96M6D7W	96M8G7D
80	77M7G7D	78M0G7D	77M6W7D	78M0D7W	77M6D7W	77M4G7D
60	58M4G7D	58M2G7D	58M2W7D	58M3D7W	58M2D7W	58M4G7D
40	36M0G7D	36M1G7D	36M0W7D	36M0D7W	36M0D7W	35M9G7D
30	26M9G7D	27M0G7D	27M0W7D	27M0D7W	27M0D7W	26M9G7D
20	18M0G7D	17M9G7D	17M9W7D	17M9D7W	17M9D7W	17M8G7D

1.4. Test Standards and Results

The objective of the report is to perform testing according to Part 2, Part 27 for the EUT FCC ID Certification:

No	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 27	Miscellaneous Wireless Communications Services

Test detailed items/section required by FCC rules and results are as below:

Section	Description	Test Date	Test Engineer	Result	Method Determination /Remark
2.1046 27.50(h)(2) 27.50(j)(3)	Transmitter Conducted Output Power and ERP/EIRP	Nov. 2 to 11, 2021	Li hanbin Yin Xiaogang	PASS	No deviation
2.1049	Occupied Bandwidth	Nov. 4 to 15, 2021	Chen Haiju Li hanbin	PASS	No deviation
2.1055	Frequency Stability	Nov. 3 to 13, 2021	Chen Haiju	PASS	No deviation
27.50(j)(4)	Peak to Average Radio	Nov. 5 to 14, 2021	Chen Haiju Li hanbin	PASS	No deviation
2.1051 27.53(m)(4) 27.53(l)(2)	Conducted Spurious Emissions	Nov. 5 to 19, 2021	Chen Haiju	PASS	No deviation
2.1051 27.53(m)(4) 27.53(l)(2)	Band Edge	Nov. 8 to.21, 2021	Li hanbin	PASS	No deviation
2.1051 27.53(m)(4)	Radiated Spurious Emissions	Dec. 23 to.25, 2021	Yin Xiaogang	PASS	No deviation

Note 1: The tests were performed according to the method of measurements prescribed in KDB971168 D01 v03 and ANSI/TIA-603-E-2016.

Note 2: The path loss during the RF test is calibrated to correct the results by the offset setting in the test equipments. The ref offset 26.5dB contains two parts that cable loss 16.5dB and Attenuator 10dB.

Note 3: When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.

1.5. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 -60
Atmospheric Pressure (kPa):	86-106

2. 47 CFR Part 2, Part 27M&O Requirements

2.1. Transmitter Conducted Output Power And ERP/EIRP

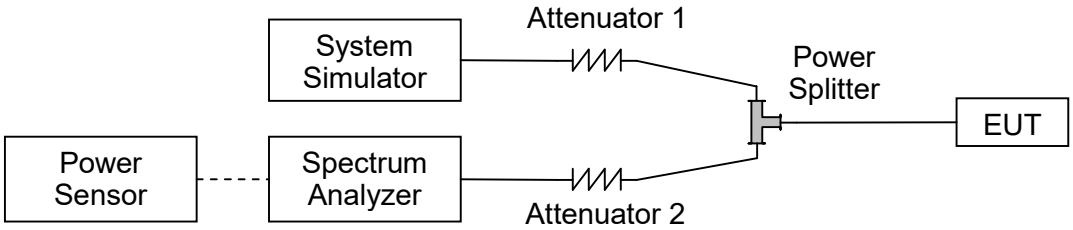
2.1.1. Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

According to FCC section 27.50(h)(2) for N41, Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

According to FCC section 27.50(j)(3) for N77, Mobile and portable stations are limited to 1 Watt EIRP. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

2.1.2. Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

2.1.3. Test procedure

KDB 971168 D01v03 Section 5.2 and ANSI/TIA-603-E-2016.

EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

ERP (dBm) = EIPR (dBm) - 2.15

2.1.4. Conducted Output Power:

N41

BW [MHz]	Modulation	RB Size	RB Offset	Low Channel	Middle Channel	High Channel
Channel				509202	518598	528000
Frequency (MHz)				2546	2593	2640
100	DFT-s-OFDM PI/2 BPSK	1	1	22.21	22.40	22.33
100		1	136	22.20	22.39	22.35
100		1	272	21.97	21.84	21.91
100		135	1	22.29	22.40	22.30
100		135	67	22.32	22.44	22.42
100		135	136	22.31	22.39	22.44
100		270	0	22.26	22.41	22.40
100	DFT-s-OFDM QPSK	1	1	22.27	22.46	22.32
100		1	136	22.28	22.34	22.28
100		1	272	22.04	21.84	21.94
100		135	1	22.29	22.45	22.25
100		135	67	22.27	22.43	22.37
100		135	136	22.28	22.37	22.40
100		270	0	22.26	22.38	22.33
100	DFT-s-OFDM 16QAM	1	1	22.16	22.34	22.31
100	DFT-s-OFDM 64QAM	1	1	21.49	21.72	21.60
100	DFT-s-OFDM 256QAM	1	1	19.63	19.88	19.72
Channel				508200	518598	528996
Frequency (MHz)				2541	2593	2645
90	DFT-s-OFDM PI/2 BPSK	1	1	22.19	22.23	22.16
Channel				507204	518598	529998
Frequency (MHz)				2536	2593	2650
80	DFT-s-OFDM PI/2 BPSK	1	1	22.14	22.25	22.12
Channel				506202	518598	531000
Frequency (MHz)				2531	2593	2655

70	DFT-s-OFDM PI/2 BPSK	1	1	22.13	22.27	21.95
Channel				505200	518598	531996
Frequency (MHz)				2526	2593	2660
60	DFT-s-OFDM PI/2 BPSK	1	1	22.18	22.14	22.10
Channel				504204	518598	532998
Frequency (MHz)				2521	2593	2665
50	DFT-s-OFDM PI/2 BPSK	1	1	22.16	22.19	22.23
Channel				503202	518598	534000
Frequency (MHz)				2516	2593	2670
40	DFT-s-OFDM PI/2 BPSK	1	1	22.34	22.40	22.37
Channel				502200	518598	534996
Frequency (MHz)				2511	2593	2675
30	DFT-s-OFDM PI/2 BPSK	1	1	22.30	22.41	22.37
Channel				501204	518598	535998
Frequency (MHz)				2506	2593	2680
20	DFT-s-OFDM PI/2 BPSK	1	1	22.09	22.43	22.41
BW [MHz]	Modulation	RB Size	RB Offset	Low Channel	Middle Channel	High Channel
Channel				509202	518598	528000
Frequency (MHz)				2546	2593	2640
100	CP-OFDM QPSK	1	1	22.33	22.41	22.13
100	CP-OFDM 16QAM	1	1	22.30	22.31	22.06
100	CP-OFDM 64QAM	1	1	20.53	20.78	20.50
100	CP-OFDM 256QAM	1	1	17.65	17.84	17.76

N77

BW [MHz]	Modulation	RB Size	RB Offset	Low Channel	Middle Channel	High Channel
Channel				650000	656000	662000
Frequency (MHz)				3750	3840	3930
100	DFT-s-OFDM PI/2 BPSK	1	1	22.09	21.89	21.98
100		1	136	22.25	21.99	22.15
100		1	272	21.71	21.51	21.78
100		135	1	21.65	21.54	21.57
100		135	67	22.20	22.00	22.21
100		135	136	21.62	21.59	21.68
100		270	0	21.69	21.52	21.70
100	DFT-s-OFDM QPSK	1	1	22.23	22.29	22.01
100		1	136	22.12	22.01	22.13
100		1	272	21.89	22.03	21.98
100		135	1	22.02	22.05	22.01
100		135	67	21.21	21.23	21.18
100		135	136	21.15	21.04	21.17
100		270	0	21.18	20.94	21.18
100	DFT-s-OFDM 16QAM	1	1	21.08	20.83	20.93
100	DFT-s-OFDM 64QAM	1	1	19.45	19.18	19.23
100	DFT-s-OFDM 256QAM	1	1	17.55	17.26	17.32
Channel				649334	656000	662666
Frequency (MHz)				3740	3840	3940
80	DFT-s-OFDM PI/2 BPSK	1	1	22.05	21.86	21.79
Channel				648668	656000	663332
Frequency (MHz)				3730	3840	3950
60	DFT-s-OFDM PI/2 BPSK	1	1	22.03	21.96	21.91
Channel				648000	656000	664000
Frequency (MHz)				3720	3840	3960
40	DFT-s-OFDM PI/2 BPSK	1	1	22.18	22.24	22.12

Channel				647668	656000	664332
Frequency (MHz)				3715	3840	3965
30	DFT-s-OFDM PI/2 BPSK	1	1	22.19	22.05	22.20
Channel				647334	656000	664666
Frequency (MHz)				3710	3840	3970
20	DFT-s-OFDM PI/2 BPSK	1	1	22.01	22.02	22.08
BW [MHz]	Modulation	RB Size	RB Offset	Low Channel	Middle Channel	High Channel
Channel				650000	656000	662000
Frequency (MHz)				3750	3840	3930
100	CP-OFDM QPSK	1	1	20.42	20.15	20.20
100	CP-OFDM 16QAM	1	1	20.01	19.70	19.80
100	CP-OFDM 64QAM	1	1	18.37	18.16	18.19
100	CP-OFDM 256QAM	1	1	15.48	15.14	15.19

Effective Radiated Power and Effective Isotropic Radiated Power:

N41				Measured EIRP					
BW [MHz]	Modulation	RB Size	RB Offset	LowCh. /Freq.	MiddlCh./Freq.	HighCh. / Freq.	LowCh. / EIRP	MiddleCh./EIRP	HighCh. / EIRP
Channel				509202	518598	528000	509202	518598	528000
Frequency (MHz)				2546	2593	2640	2546	2593	2640
				dBm			W		
100	DFT-s-OFDM PI/2 BPSK	1	1	22.21	22.40	22.33	0.166	0.174	0.171
100		1	136	22.20	22.39	22.35	0.166	0.173	0.172
100		1	272	21.97	21.84	21.91	0.157	0.153	0.155
100		135	1	22.29	22.40	22.30	0.169	0.174	0.170
100		135	67	22.32	22.44	22.42	0.171	0.175	0.175
100		135	136	22.31	22.39	22.44	0.170	0.173	0.175
100		270	0	22.26	22.41	22.40	0.168	0.174	0.174
100	DFT-s-OFDM QPSK	1	1	22.27	22.46	22.32	0.169	0.176	0.171
100		1	136	22.28	22.34	22.28	0.169	0.171	0.169
100		1	272	22.04	21.84	21.94	0.160	0.153	0.156
100		135	1	22.29	22.45	22.25	0.169	0.176	0.168
100		135	67	22.27	22.43	22.37	0.169	0.175	0.173
100		135	136	22.28	22.37	22.40	0.169	0.173	0.174
100		270	0	22.26	22.38	22.33	0.168	0.173	0.171
100	DFT-s-OFDM 16QAM	1	1	22.16	22.34	22.31	0.164	0.171	0.170
100	DFT-s-OFDM 64QAM	1	1	21.49	21.72	21.60	0.141	0.149	0.145
100	DFT-s-OFDM 256QAM	1	1	19.63	19.88	19.72	0.092	0.097	0.094
Channel				508200	518598	528996	508200	518598	528996
Frequency (MHz)				2541	2593	2645	2541	2593	2645
90	DFT-s-OFDM PI/2 BPSK	1	1	22.19	22.23	22.16	0.166	0.167	0.164
Channel				507204	518598	529998	507204	518598	529998
Frequency (MHz)				2536	2593	2650	2536	2593	2650
80	DFT-s-OFDM PI/2 BPSK	1	1	22.14	22.25	22.12	0.164	0.168	0.163
Channel				506202	518598	531000	506202	518598	531000
Frequency (MHz)				2531	2593	2655	2531	2593	2655
70	DFT-s-OFDM	1	1	22.13	22.27	21.95	0.163	0.169	0.157

	PI/2 BPSK								
Channel				505200	518598	531996	505200	518598	531996
Frequency (MHz)				2526	2593	2660	2526	2593	2660
60	DFT-s-OFDM PI/2 BPSK	1	1	22.18	22.14	22.10	0.165	0.164	0.162
Channel				504204	518598	532998	504204	518598	532998
Frequency (MHz)				2521	2593	2665	2521	2593	2665
50	DFT-s-OFDM PI/2 BPSK	1	1	22.16	22.19	22.23	0.164	0.166	0.167
Channel				503202	518598	534000	503202	518598	534000
Frequency (MHz)				2516	2593	2670	2516	2593	2670
40	DFT-s-OFDM PI/2 BPSK	1	1	22.34	22.40	22.37	0.171	0.174	0.173
Channel				502200	518598	534996	502200	518598	534996
Frequency (MHz)				2511	2593	2675	2511	2593	2675
30	DFT-s-OFDM PI/2 BPSK	1	1	22.30	22.41	22.37	0.170	0.174	0.173
Channel				501204	518598	535998	501204	518598	535998
Frequency (MHz)				2506	2593	2680	2506	2593	2680
20	DFT-s-OFDM PI/2 BPSK	1	1	22.09	22.43	22.41	0.162	0.175	0.174
Channel				509202	518598	528000	509202	518598	528000
Frequency (MHz)				2546	2593	2640	2546	2593	2640
100	CP-OFDM QPSK	1	1	22.33	22.41	22.13	0.171	0.174	0.163
100	CP-OFDM 16QAM	1	1	22.30	22.31	22.06	0.170	0.170	0.161
100	CP-OFDM 64QAM	1	1	20.53	20.78	20.50	0.113	0.120	0.112
100	CP-OFDM 256QAM	1	1	17.65	17.84	17.76	0.058	0.061	0.060

N77				Measured EIRP					
BW [MHz]	Modulation	RB Size	RB Offset	LowCh. /Freq.	MiddlCh./Freq.	HighCh. / Freq.	LowCh. / EIRP	MiddleCh./EIRP	HighCh. / EIRP
Channel				650000	656000	662000	650000	656000	662000
Frequency (MHz)				3750	3840	3930	3750	3840	3930
				dBm			W		
100	DFT-s-OFDM PI/2 BPSK	1	1	19.29	19.09	19.18	0.085	0.081	0.083
100		1	136	19.45	19.19	19.35	0.088	0.083	0.086
100		1	272	18.91	18.71	18.98	0.078	0.074	0.079
100		135	1	18.85	18.74	18.77	0.077	0.075	0.075
100		135	67	19.4	19.2	19.41	0.087	0.083	0.087
100		135	136	18.82	18.79	18.88	0.076	0.076	0.077
100		270	0	18.89	18.72	18.9	0.077	0.074	0.078
100	DFT-s-OFDM QPSK	1	1	19.43	19.49	19.21	0.088	0.089	0.083
100		1	136	19.32	19.21	19.33	0.086	0.083	0.086
100		1	272	19.09	19.23	19.18	0.081	0.084	0.083
100		135	1	19.22	19.25	19.21	0.084	0.084	0.083
100		135	67	18.41	18.43	18.38	0.069	0.070	0.069
100		135	136	18.35	18.24	18.37	0.068	0.067	0.069
100		270	0	18.38	18.14	18.38	0.069	0.065	0.069
100	DFT-s-OFDM 16QAM	1	1	18.28	18.03	18.13	0.067	0.064	0.065
100	DFT-s-OFDM 64QAM	1	1	16.65	16.38	16.43	0.046	0.043	0.044
100	DFT-s-OFDM 256QAM	1	1	14.75	14.46	14.52	0.030	0.028	0.028
Channel				649334	656000	662666	649334	656000	662666
Frequency (MHz)				3740	3840	3940	3740	3840	3940
80	DFT-s-OFDM PI/2 BPSK	1	1	19.25	19.06	18.99	0.084	0.081	0.079
Channel				648668	656000	663332	648668	656000	663332
Frequency (MHz)				3730	3840	3950	3730	3840	3950
60	DFT-s-OFDM PI/2 BPSK	1	1	19.23	19.16	19.11	0.084	0.082	0.081
Channel				648000	656000	664000	648000	656000	664000
Frequency (MHz)				3720	3840	3960	3720	3840	3960
40	DFT-s-OFDM PI/2 BPSK	1	1	19.38	19.44	19.32	0.087	0.088	0.086

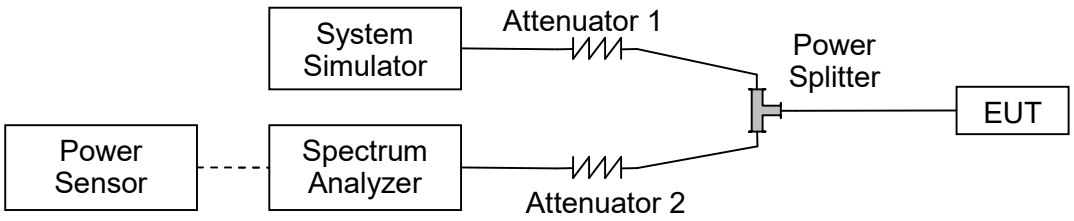
Channel				647668	656000	664332	647668	656000	664332
Frequency (MHz)				3715	3840	3965	3715	3840	3965
30	DFT-s-OFDM PI/2 BPSK	1	1	19.39	19.25	19.4	0.087	0.084	0.087
Channel				647334	656000	664666	647334	656000	664666
Frequency (MHz)				3710	3840	3970	3710	3840	3970
20	DFT-s-OFDM PI/2 BPSK	1	1	19.21	19.22	19.28	0.083	0.084	0.085
Channel				650000	656000	662000	650000	656000	662000
Frequency (MHz)				3750	3840	3930	3750	3840	3930
100	CP-OFDM QPSK	1	1	17.62	17.35	17.4	0.058	0.054	0.055
100	CP-OFDM 16QAM	1	1	17.21	16.9	17	0.053	0.049	0.050
100	CP-OFDM 64QAM	1	1	15.57	15.36	15.39	0.036	0.034	0.035
100	CP-OFDM 256QAM	1	1	12.68	12.34	12.39	0.019	0.017	0.017

2.2. Occupied Bandwidth

2.2.1. Requirement

According to FCC section 2.1049, the occupied bandwidth 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 percent of the total mean power radiated by a given emission. Occupied bandwidth is also known as the 99% emission bandwidth.

2.2.2. Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

2.2.3. Test procedure

KDB 971168 D01v03 Section 4.1 and ANSI/TIA-603-E-2016.

2.2.4. Test Result

N41					
BW(MHz)	Channel Level	Modulation		99% BW(MHz)	26dB BW(MHz)
20	Low	DFT-s-OFDM	PI/2 BPSK	17.807	18.47
	Low		QPSK	17.974	18.42
	Low		16QAM	17.935	18.39
	Low		64QAM	17.969	18.38
	Low		256QAM	17.784	18.33
	Low	CP-OFDM	QPSK	17.849	18.31
	Mid	DFT-s-OFDM	PI/2 BPSK	17.949	18.44
	Mid		QPSK	18.035	18.53
	Mid		16QAM	18.007	18.55
	Mid		64QAM	17.985	18.41
	Mid		256QAM	17.918	18.62
	Mid	CP-OFDM	QPSK	17.889	18.3
	High	DFT-s-OFDM	PI/2 BPSK	17.882	18.42
	High		QPSK	17.931	18.4
	High		16QAM	17.78	18.43
	High		64QAM	17.792	18.63
	High		256QAM	17.816	18.38
	High	CP-OFDM	QPSK	17.908	18.47
30	Low	DFT-s-OFDM	PI/2 BPSK	26.988	27.63
	Low		QPSK	26.923	27.76
	Low		16QAM	26.983	27.63
	Low		64QAM	27.01	27.62
	Low		256QAM	27.079	27.78
	Low	CP-OFDM	QPSK	26.997	27.66
	Mid	DFT-s-OFDM	PI/2 BPSK	26.924	27.84
	Mid		QPSK	26.97	27.58
	Mid		16QAM	26.751	27.52
	Mid		64QAM	26.843	27.7
	Mid		256QAM	26.853	27.5
	Mid	CP-OFDM	QPSK	27.029	27.57
	High	DFT-s-OFDM	PI/2 BPSK	26.783	28.17
	High		QPSK	26.817	28.39
	High		16QAM	26.726	28.26

	High		64QAM	26.752	27.85
	High		256QAM	26.719	28.05
	High	CP-OFDM	QPSK	26.775	28.07
40	Low	DFT-s-OFDM	PI/2 BPSK	36.108	37.0
	Low		QPSK	35.931	36.7
	Low		16QAM	35.92	36.95
	Low		64QAM	36.067	36.87
	Low		256QAM	35.921	36.79
	Low	CP-OFDM	QPSK	35.973	36.84
	Mid	DFT-s-OFDM	PI/2 BPSK	36.102	36.93
	Mid		QPSK	36.07	36.85
	Mid		16QAM	36.012	36.71
	Mid		64QAM	36.042	36.86
	Mid		256QAM	35.95	36.82
	Mid	CP-OFDM	QPSK	35.956	36.78
	High	DFT-s-OFDM	PI/2 BPSK	35.992	36.88
	High		QPSK	36.059	36.74
	High		16QAM	36.104	36.9
	High		64QAM	35.954	36.86
	High		256QAM	36.103	36.95
	High	CP-OFDM	QPSK	36.088	36.76
50	Low	DFT-s-OFDM	PI/2 BPSK	46.034	47.14
	Low		QPSK	46.13	47.08
	Low		16QAM	46.017	46.99
	Low		64QAM	45.439	46.68
	Low		256QAM	45.829	46.92
	Low	CP-OFDM	QPSK	46.066	46.91
	Mid	DFT-s-OFDM	PI/2 BPSK	46.059	47.1
	Mid		QPSK	45.882	46.82
	Mid		16QAM	46.104	47.08
	Mid		64QAM	46.077	46.95
	Mid		256QAM	45.973	46.91
	Mid	CP-OFDM	QPSK	46.011	46.95
	High	DFT-s-OFDM	PI/2 BPSK	45.983	46.98
	High		QPSK	45.65	46.88
	High		16QAM	46.236	47.05
	High		64QAM	46.042	47.01
	High		256QAM	45.621	46.68

	High	CP-OFDM	QPSK	45.807	47.1
60	Low	DFT-s-OFDM	PI/2 BPSK	57.861	60.13
	Low		QPSK	58.079	59.84
	Low		16QAM	58.041	59.79
	Low		64QAM	57.923	59.88
	Low		256QAM	57.881	59.72
	Low	CP-OFDM	QPSK	57.898	60.14
	Mid	DFT-s-OFDM	PI/2 BPSK	57.894	59.87
	Mid		QPSK	58.0	59.95
	Mid		16QAM	57.877	60.01
	Mid		64QAM	57.828	59.72
	Mid		256QAM	57.917	59.78
	Mid	CP-OFDM	QPSK	57.763	59.85
	High	DFT-s-OFDM	PI/2 BPSK	57.713	59.97
	High		QPSK	57.958	59.72
	High		16QAM	57.98	59.74
	High		64QAM	57.753	59.85
	High		256QAM	57.725	59.72
	High	CP-OFDM	QPSK	57.944	59.87
70	Low	DFT-s-OFDM	PI/2 BPSK	64.235	66.47
	Low		QPSK	64.141	64.141
	Low		16QAM	64.166	64.166
	Low		64QAM	64.210	64.21
	Low		256QAM	64.238	64.238
	Low	CP-OFDM	QPSK	67.451	67.451
	Mid	DFT-s-OFDM	PI/2 BPSK	64.155	64.155
	Mid		QPSK	64.130	64.130
	Mid		16QAM	64.223	64.233
	Mid		64QAM	64.199	64.199
	Mid		256QAM	64.216	64.216
	Mid	CP-OFDM	QPSK	67.436	67.436
	High	DFT-s-OFDM	PI/2 BPSK	64.207	64.207
	High		QPSK	64.146	64.146
	High		16QAM	64.252	64.252
	High		64QAM	64.094	64.094
	High		256QAM	64.139	64.139
	High	CP-OFDM	QPSK	67.377	67.377
	Low		PI/2 BPSK	77.978	79.17

80	Low	DFT-s-OFDM	QPSK	78.155	79.48
	Low		16QAM	78.138	79.37
	Low		64QAM	77.69	79.32
	Low		256QAM	77.662	79.28
	Low	CP-OFDM	QPSK	77.778	79.27
	Mid	DFT-s-OFDM	PI/2 BPSK	77.558	79.0
	Mid		QPSK	77.924	79.51
	Mid		16QAM	77.898	79.66
	Mid		64QAM	77.676	79.16
	Mid		256QAM	77.449	79.25
	Mid	CP-OFDM	QPSK	77.256	78.81
	High	DFT-s-OFDM	PI/2 BPSK	77.217	79.19
	High		QPSK	77.824	79.24
	High		16QAM	77.91	79.55
	High		64QAM	77.746	79.47
	High		256QAM	77.47	79.2
	High	CP-OFDM	QPSK	77.699	79.39
90	Low	DFT-s-OFDM	PI/2 BPSK	86.157	88.2
	Low		QPSK	86.694	88.42
	Low		16QAM	86.706	88.29
	Low		64QAM	86.674	88.26
	Low		256QAM	86.537	88.14
	Low	CP-OFDM	QPSK	86.451	88.05
	Mid	DFT-s-OFDM	PI/2 BPSK	86.499	88.11
	Mid		QPSK	86.419	88.35
	Mid		16QAM	86.605	88.3
	Mid		64QAM	86.32	87.93
	Mid		256QAM	86.122	88.1
	Mid	CP-OFDM	QPSK	86.177	88.17
	High	DFT-s-OFDM	PI/2 BPSK	86.275	88.22
	High		QPSK	86.441	88.21
	High		16QAM	86.461	88.1
	High		64QAM	86.535	88.37
	High		256QAM	85.827	88.48
	High	CP-OFDM	QPSK	86.296	88.05
	Low	DFT-s-OFDM	PI/2 BPSK	97.349	99.07
	Low		QPSK	97.467	99.27
	Low		16QAM	97.505	99.32

100	Low		64QAM	97.381	99.21
	Low		256QAM	97.144	98.82
	Low	CP-OFDM	QPSK	96.521	100.3
	Mid	DFT-s-OFDM	PI/2 BPSK	96.457	99.47
	Mid		QPSK	97.374	99.12
	Mid		16QAM	97.252	99.21
	Mid		64QAM	97.279	99.08
	Mid		256QAM	96.73	98.88
	Mid	CP-OFDM	QPSK	96.728	99.13
	High	DFT-s-OFDM	PI/2 BPSK	96.513	99.86
	High		QPSK	96.381	98.71
	High		16QAM	96.257	99.5
	High		64QAM	97.079	99.18
	High		256QAM	97.371	99.14
	High	CP-OFDM	QPSK	96.998	99.18

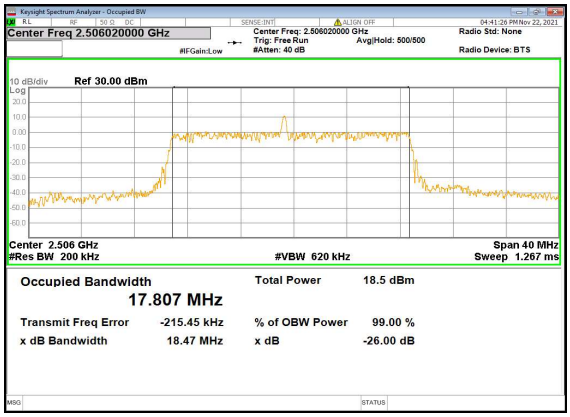
N77					
BW(MHz)	**Channel Level**	**Modulation**		**99% BW(MHz)**	**26dB BW(MHz)**
20	Low	DFT-s-OFDM	PI/2 BPSK	17.97	18.41
	Low		QPSK	17.852	18.44
	Low		16QAM	17.778	18.29
	Low		64QAM	17.875	18.45
	Low		256QAM	17.914	18.33
	Low	CP-OFDM	QPSK	17.764	18.34
	Mid	DFT-s-OFDM	PI/2 BPSK	17.811	18.32
	Mid		QPSK	17.875	18.43
	Mid		16QAM	17.918	18.42
	Mid		64QAM	17.722	18.37
	Mid		256QAM	17.814	18.29
	Mid	CP-OFDM	QPSK	17.751	18.34
	High	DFT-s-OFDM	PI/2 BPSK	17.925	18.52
	High		QPSK	17.915	18.42
	High		16QAM	17.887	18.33
	High		64QAM	17.935	18.39
	High		256QAM	17.869	18.35
	High	CP-OFDM	QPSK	17.762	18.44
	Low		PI/2 BPSK	26.925	27.57

30	Low	DFT-s-OFDM	QPSK	26.745	27.48
	Low		16QAM	26.558	27.37
	Low		64QAM	27.026	27.64
	Low		256QAM	27.036	27.66
	Low	CP-OFDM	QPSK	26.886	27.53
	Mid	DFT-s-OFDM	PI/2 BPSK	26.667	27.39
	Mid		QPSK	26.997	27.66
	Mid		16QAM	26.91	27.42
	Mid		64QAM	26.592	27.44
	Mid		256QAM	26.529	27.28
	Mid	CP-OFDM	QPSK	26.881	27.47
	High	DFT-s-OFDM	PI/2 BPSK	26.725	28.03
	High		QPSK	26.919	27.56
	High		16QAM	26.991	27.67
	High		64QAM	26.804	27.48
	High		256QAM	26.844	27.56
	High	CP-OFDM	QPSK	26.832	27.42
40	Low	DFT-s-OFDM	PI/2 BPSK	35.97	36.83
	Low		QPSK	35.754	36.98
	Low		16QAM	35.867	36.59
	Low		64QAM	35.996	36.8
	Low		256QAM	35.854	36.52
	Low	CP-OFDM	QPSK	35.904	36.74
	Mid	DFT-s-OFDM	PI/2 BPSK	35.924	36.77
	Mid		QPSK	35.825	36.74
	Mid		16QAM	35.918	36.73
	Mid		64QAM	35.845	36.87
	Mid		256QAM	36.02	36.77
	Mid	CP-OFDM	QPSK	35.803	36.63
	High	DFT-s-OFDM	PI/2 BPSK	35.639	36.58
	High		QPSK	36.06	36.84
	High		16QAM	35.981	36.68
	High		64QAM	35.832	36.92
	High		256QAM	36.005	36.75
	High	CP-OFDM	QPSK	35.8	36.68
	Low	DFT-s-OFDM	PI/2 BPSK	58.229	59.46
	Low		QPSK	57.811	59.44
	Low		16QAM	58.024	59.33

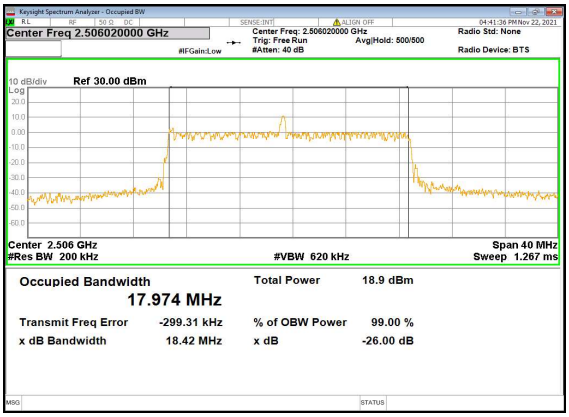
60	Low		64QAM	57.935	59.75
	Low		256QAM	57.729	59.07
	Low	CP-OFDM	QPSK	57.706	59.58
	Mid	DFT-s-OFDM	PI/2 BPSK	58.357	59.41
	Mid		QPSK	58.181	59.48
	Mid		16QAM	58.13	59.41
	Mid		64QAM	58.266	59.36
	Mid		256QAM	58.108	59.38
	Mid	CP-OFDM	QPSK	58.347	59.58
	High	DFT-s-OFDM	PI/2 BPSK	58.313	59.34
	High		QPSK	58.2	59.22
	High		16QAM	58.218	59.33
	High		64QAM	57.812	58.88
	High		256QAM	58.145	59.21
	High	CP-OFDM	QPSK	58.335	59.35
80	Low	DFT-s-OFDM	PI/2 BPSK	77.698	79.35
	Low		QPSK	77.861	79.27
	Low		16QAM	77.493	79.18
	Low		64QAM	77.729	79.17
	Low		256QAM	77.228	79.12
	Low	CP-OFDM	QPSK	76.971	78.83
	Mid	DFT-s-OFDM	PI/2 BPSK	77.631	79.34
	Mid		QPSK	77.673	79.24
	Mid		16QAM	77.606	79.33
	Mid		64QAM	78.028	79.45
	Mid		256QAM	77.07	79.04
	Mid	CP-OFDM	QPSK	77.382	79.07
	High	DFT-s-OFDM	PI/2 BPSK	76.968	78.78
	High		QPSK	77.974	79.29
	High		16QAM	77.57	79.28
	High		64QAM	77.934	79.35
	High		256QAM	77.62	79.27
	High	CP-OFDM	QPSK	77.28	78.82
	Low	DFT-s-OFDM	PI/2 BPSK	97.085	99.13
	Low		QPSK	97.091	99.05
	Low		16QAM	97.01	98.97
	Low		64QAM	97.239	99.12
	Low		256QAM	96.616	98.59

100	Low	CP-OFDM	QPSK	96.839	98.78
	Mid	DFT-s-OFDM	PI/2 BPSK	97.308	99.04
	Mid		QPSK	96.581	99.44
	Mid		16QAM	96.411	99.47
	Mid		64QAM	97.015	98.98
	Mid		256QAM	96.428	98.79
	Mid	CP-OFDM	QPSK	96.658	98.92
	High	DFT-s-OFDM	PI/2 BPSK	96.677	98.49
	High		QPSK	96.788	99.04
	High		16QAM	97.002	99.08
	High		64QAM	96.901	98.92
	High		256QAM	96.485	98.64
	High	CP-OFDM	QPSK	96.679	98.89

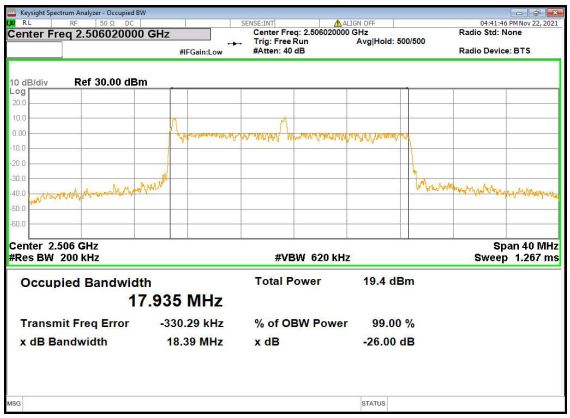
N41(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Low_CH



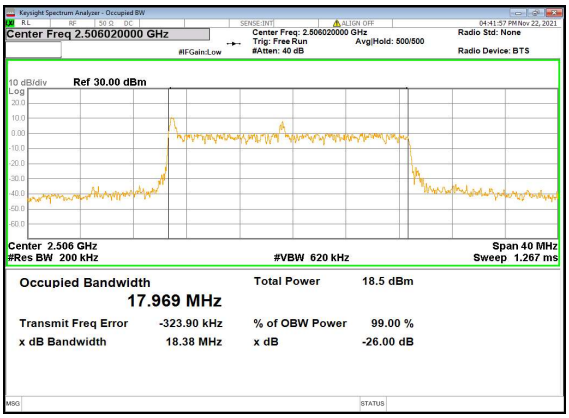
N41(20M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



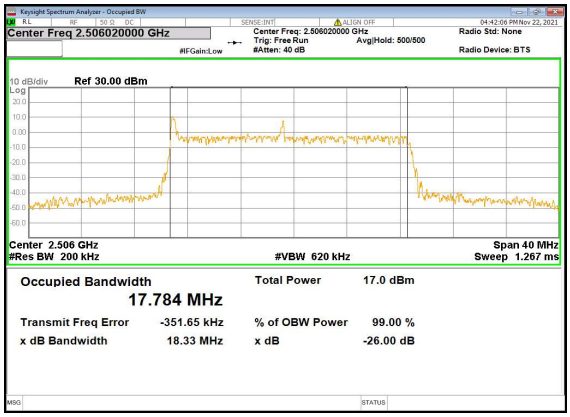
N41(20M)_DFT-s-OFDM_16QAM_Outer_Full_Low_CH



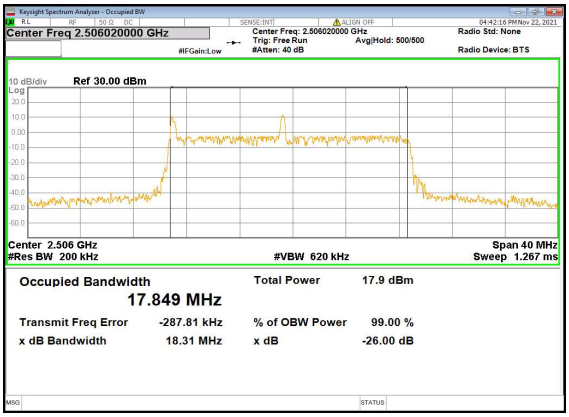
N41(20M)_DFT-s-OFDM_64QAM_Outer_Full_Low_CH



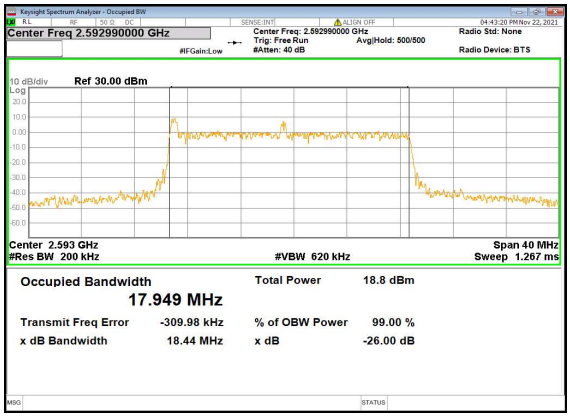
N41(20M)_DFT-s-OFDM_256QAM_Outer_Full_Low_CH



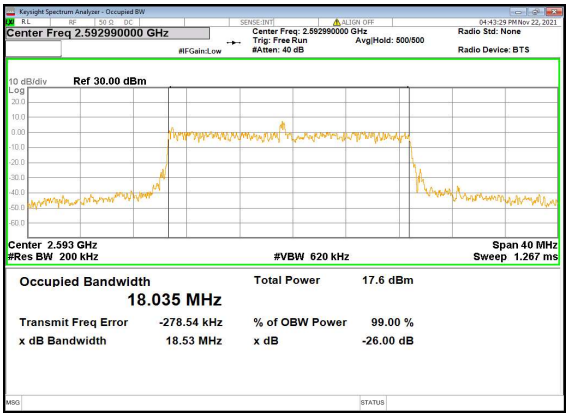
N41(20M)_CP-OFDM_QPSK_Outer_Full_Low_CH



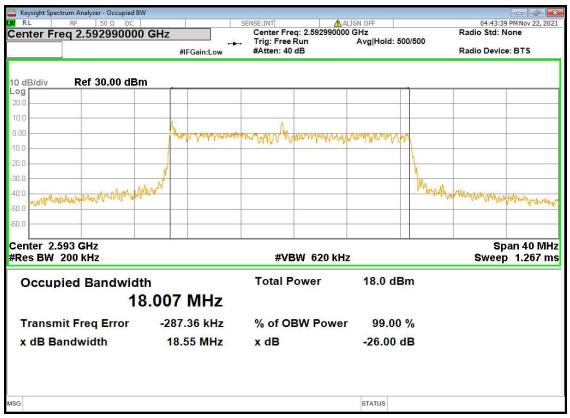
N41(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



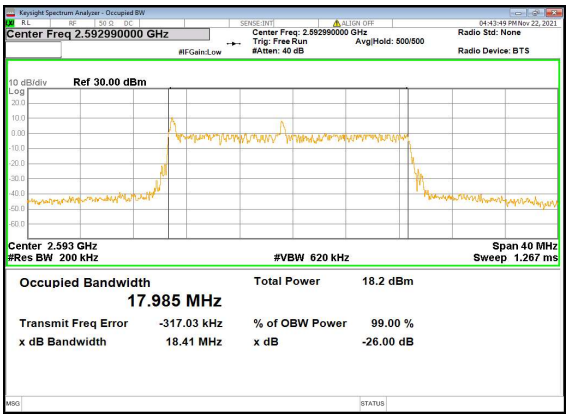
N41(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



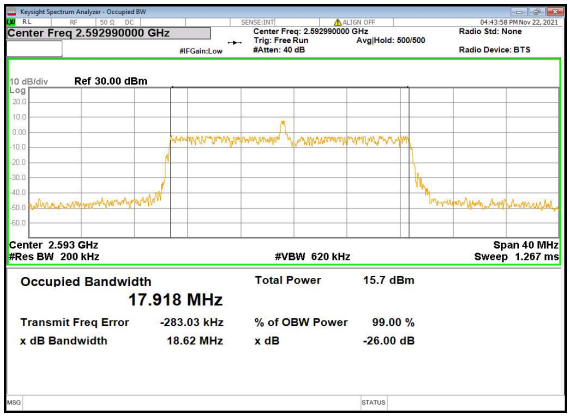
N41(20M)_DFT-s-OFDM_16QAM_Outer_Full_Mid_CH



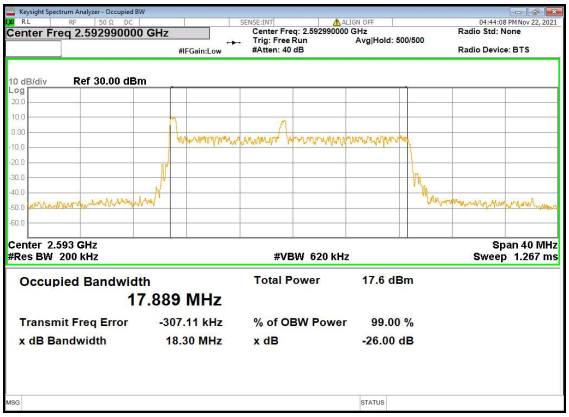
N41(20M)_DFT-s-OFDM_64QAM_Outer_Full_Mid_CH



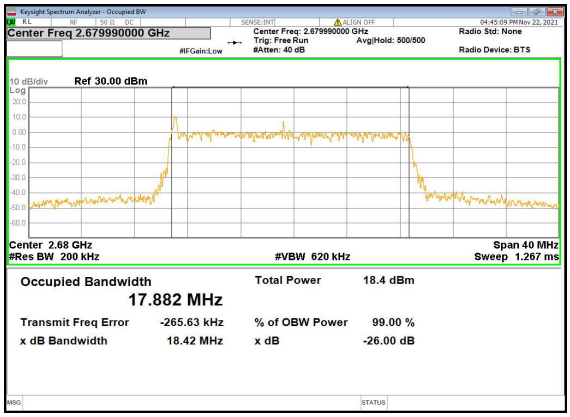
N41(20M)_DFT-s-OFDM_256QAM_Outer_Full_Mid_CH



N41(20M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



N41(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_High_CH



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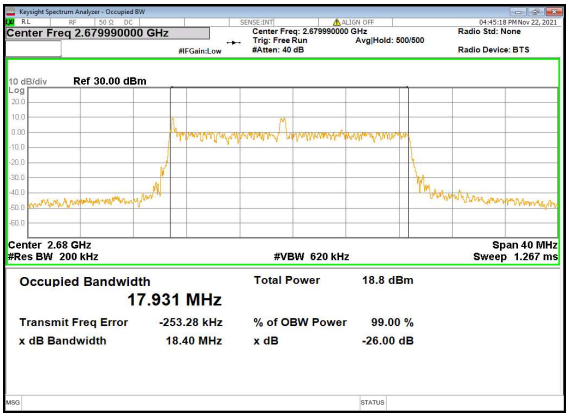
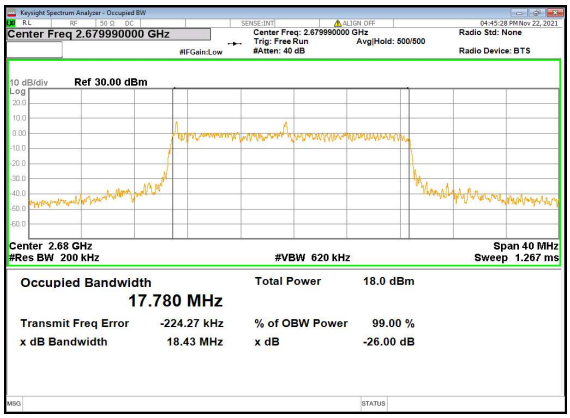


N41(20M)_DFT-s-OFDM_16QAM_Outer_Full_High_CH



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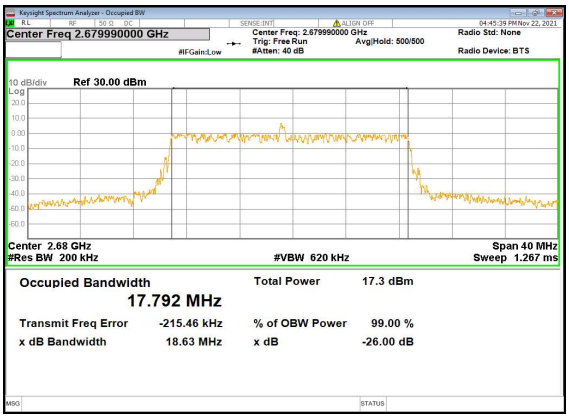
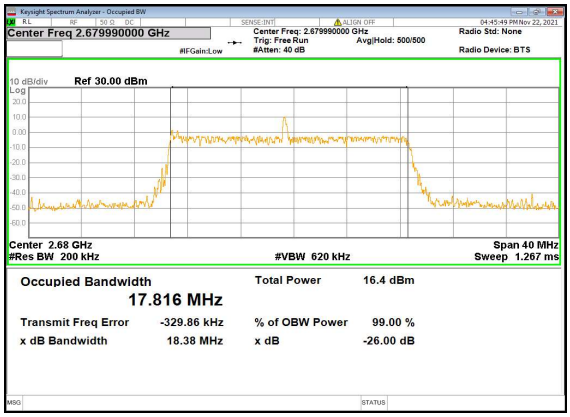
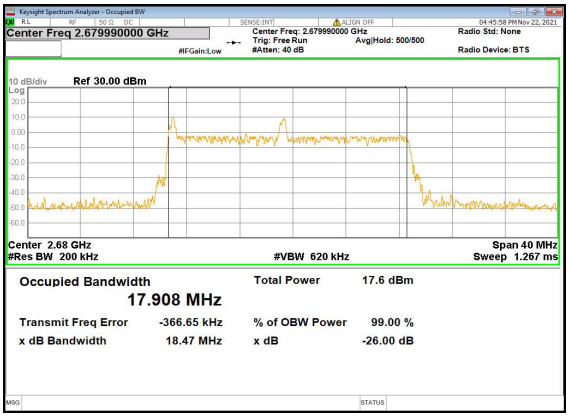


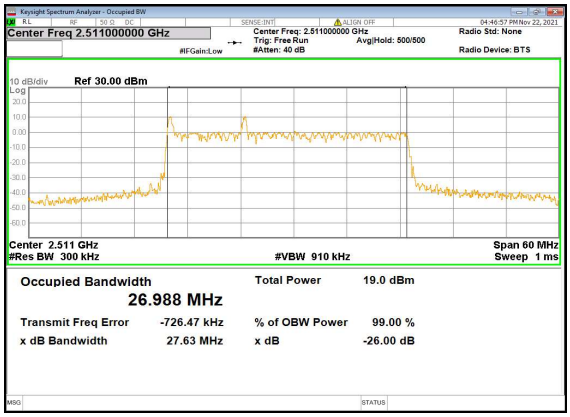
N41(20M)_DFT-s-OFDM_256QAM_Outer_Full_High_CH



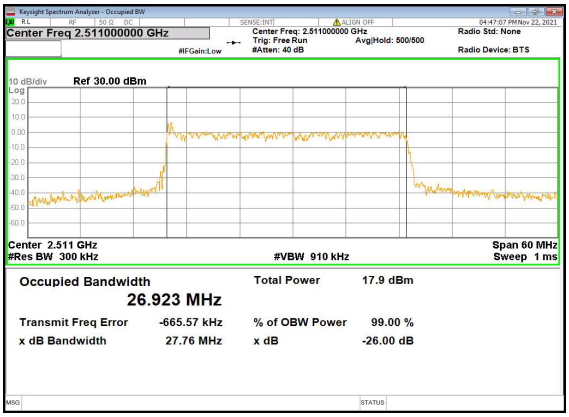
N41(20M)_CP-OFDM_QPSK_Outer_Full_High_CH



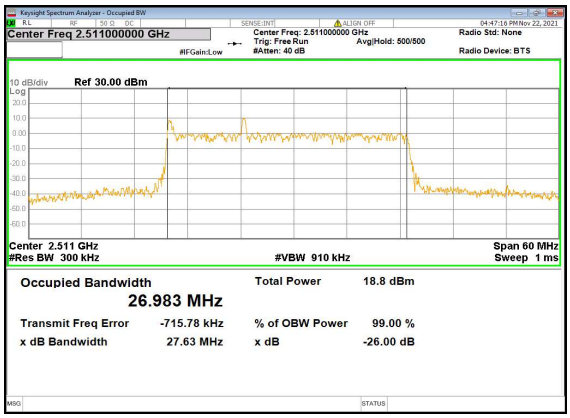
N41(30M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Low_CH



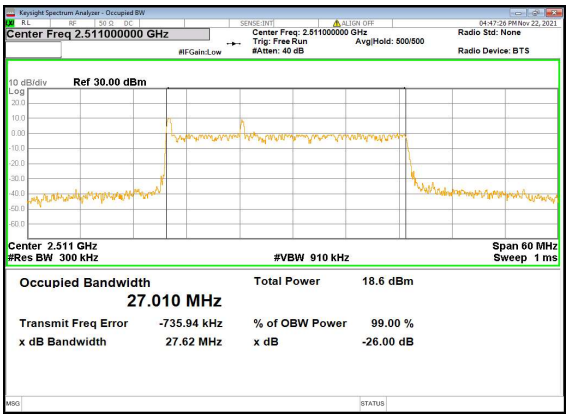
N41(30M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



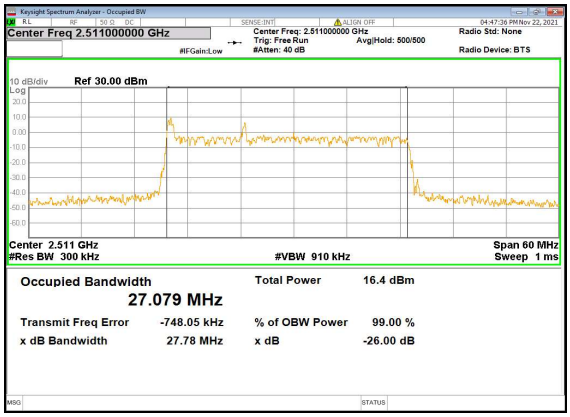
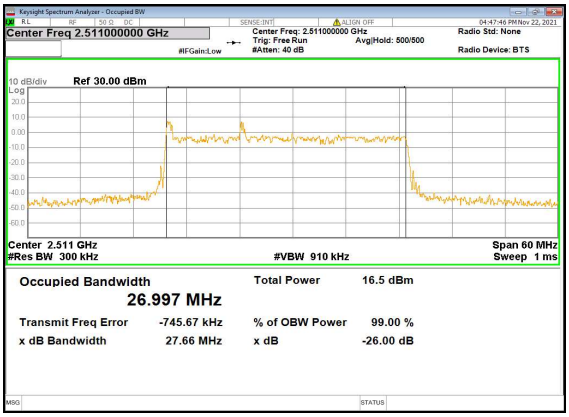
N41(30M)_DFT-s-OFDM_16QAM_Outer_Full_Low_CH



N41(30M)_DFT-s-OFDM_64QAM_Outer_Full_Low_CH



N41(30M)_DFT-s-OFDM_256QAM_Outer_Full_Low_CH



N41(30M)_CP-OFDM_QPSK_Outer_Full_Low_CH