



TEST REPORT

APPLICANT : Nubia Technology Co., Ltd.
PRODUCT NAME : 5G Digital Mobile Phone
MODEL NAME : NX659J
BRAND NAME : REDMAGIC
FCC ID : 2AHJO-NX659J
STANDARD(S) : 47 CFR Part 2
: 47 CFR Part 27, Subpart M
RECEIPT DATE : 2020-01-17
TEST DATE : 2020-03-12 to 2020-03-26
ISSUE DATE : 2020 -04-02

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REPORT No.: SZ20010191W05

Change History		
Version	Date	Reason for change
1.0	2020-04-02	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Nubia Technology Co., Ltd.
Applicant Address:	16/F,Building 2,chongwen Park,Nanshan zhiyuan,3370 Liuxian Road,Nanshan District,Shenzhen,China.
Manufacturer:	Nubia Technology Co., Ltd.
ManufacturerAddress:	16/F,Building 2,chongwen Park,Nanshan zhiyuan,3370 Liuxian Road,Nanshan District,Shenzhen,China.

1.2. Equipment Under Test (EUT) Description

Product Name:	5G Digital Mobile Phone	
Hardware Version:	NX659J_V1AMB	
Software Version:	NX659J_ENCommon_V1.22	
Modulation Type:	DFT-s-OFDM	PI/2 BPSK, QPSK, 16QAM,64QAM,256QAM
	CP-OFDM	QPSK, 16QAM,64QAM,256QAM
Operation Band:	Band n41	
Frequency Range:	Band n41	Tx: 2496MHz -2690MHz
		Rx: 2496MHz -2690MHz
Channel Bandwidth	Band n41	20 MHz, 40 MHz, 60 MHz, 80MHz, 100 MHz
Antenna Type:	Fixed External	
Antenna Gain:	Band n41	1.76 dBi
Accessory Information:	AC Adapter 1	
	Brand Name:	N/A
	Model No.:	CYNBY090200-A00
	Rated Input:	100-240V~ 50/60Hz Max. 0.5A
	Rated Output:	12V 1.5A /9V 2A/5V 3A

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

1.3. Maximum ERP/EIRP and Emission Designator

n41	Maximum ERP/EIRP (W)		Emission Designator (99%OBW)	
	DFT-s-OFDM		DFT-s-OFDM	
BW (MHz)	PI/2 BPSK	QPSK	PI/2 BPSK	QPSK
100	0.251	0.260	96M6G7D	96M6G7D
80	0.247	0.254	77M3G7D	77M3G7D
60	0.247	0.250	58M2G7D	58M1G7D
40	0.239	0.243	35M9G7D	35M9G7D
20	0.246	0.238	18M0G7D	17M9G7D

n41	Maximum ERP/EIRP (W)			Emission Designator (99%OBW)		
	DFT-s-OFDM			DFT-s-OFDM		
BW (MHz)	16 QAM	64 QAM	256 QAM	16 QAM	64 QAM	256 QAM
100	0.253	0.194	0.134	96M6W7D	96M4D7W	96M6D7W
80	0.232	0.190	0.121	77M2W7D	77M3D7W	77M2D7W
60	0.236	0.192	0.152	58M3W7D	58M1D7W	58M2D7W
40	0.228	0.187	0.148	35M9W7D	35M9D7W	4M50D7W
20	0.230	0.188	0.144	18M0W7D	18M0D7W	17M9D7W

n41	Maximum ERP/EIRP (W)				Emission Designator (99%OBW)			
	CP-OFDM				CP-OFDM			
BW (MHz)	QPSK	16 QAM	64 QAM	256 QAM	QPSK	16 QAM	64 QAM	256 QAM
100	0.207	0.200	0.126	0.063	97M7G7D	97M7W7D	97M7D7W	97M6D7W
80	0.198	0.194	0.122	0.061	77M6G7D	77M7W7D	77M7D7W	77M7D7W
60	0.203	0.196	0.124	0.061	58M0G7D	58M1W7D	58M0D7W	58M1D7W
40	0.197	0.184	0.120	0.059	38M0G7D	38M1W7D	38M0D7W	38M0D7W
20	0.193	0.179	0.121	0.060	18M3G7D	18M3W7D	18M3D7W	18M3D7W



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
4	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(c)(10) 27.50(d)(4),27.50 (h)(2)27.50(a)(3)	Transmitter Conducted Output Power and ERP/EIRP	Mar 12 to Mar 26,2020	Gao Mingzhou Peng Xuewei	PASS	No deviation
2.1049	Occupied Bandwidth	Mar 12 to Mar 26,2020	Gao Mingzhou	PASS	No deviation
2.1055, 27.54	Frequency Stability	Mar 12 to Mar 26,2020	Gao Mingzhou	PASS	No deviation
2.1051 , 27.53(m)(4)(a)(4)	Conducted Spurious Emissions	Mar 12 to Mar 26,2020	Gao Mingzhou	PASS	No deviation
2.1051, 27.53(m)(4)(a)(4)	Band Edge	Mar 12 to Mar 26,2020	Gao Mingzhou	PASS	No deviation
2.1051, 27.53(m)(4)(a)(4)	Radiated Spurious Emissions	Mar 12 to Mar 26,2020	Peng Xuewei	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 16.5dB contains two parts that cable loss 6.5dB and Attenuator 10dB.



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 Requirements

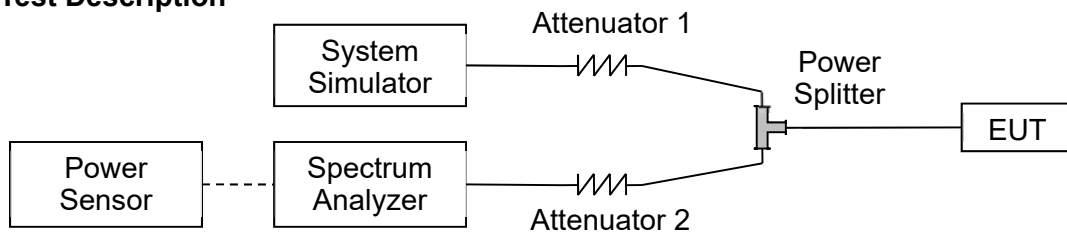
2.1. Transmitter Conducted Output Power And ERP/EIRP

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) for NR Band 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.

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 50 Ohm; 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.

$EIRP \text{ (dBm)} = \text{Conducted Output Power (dBm)} + \text{Antenna Gain (dBi)}$

$ERP \text{ (dBm)} = EIPR \text{ (dBm)} - 2.15$

2.1.4. Result

Conducted Output Power:



Band n41						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				501204	518598	535998
Frequency (MHz)				2506.02	2592.99	2679.99
20	DFT-s-OFDM PI/2 BPSK	1	0	21.53	21.27	21.45
20	DFT-s-OFDM PI/2 BPSK	1	25	21.81	21.36	22.15
20	DFT-s-OFDM PI/2 BPSK	1	50	21.11	21.42	21.75
20	DFT-s-OFDM QPSK	1	0	21.36	21.23	21.42
20	DFT-s-OFDM QPSK	1	25	21.87	21.79	22.01
20	DFT-s-OFDM QPSK	1	50	21.05	21.53	21.27
20	DFT-s-OFDM 16QAM	1	0	21.53	21.63	21.54
20	DFT-s-OFDM 16QAM	1	25	21.54	21.63	21.51
20	DFT-s-OFDM 16QAM	1	50	21.63	21.86	21.72
20	DFT-s-OFDM 64QAM	1	0	20.74	20.88	20.92
20	DFT-s-OFDM 64QAM	1	25	20.58	20.77	20.99
20	DFT-s-OFDM 64QAM	1	50	20.75	20.95	20.99
20	DFT-s-OFDM 256QAM	1	0	19.04	19.11	19.51
20	DFT-s-OFDM 256QAM	1	25	19.19	19.07	19.81
20	DFT-s-OFDM 256QAM	1	50	19.70	19.66	19.77



20	CP-OFDM QPSK	1	0	19.45	19.32	19.51
20	CP-OFDM QPSK	1	25	20.96	20.88	21.10
20	CP-OFDM QPSK	1	50	19.14	19.62	19.36
20	CP-OFDM 16QAM	1	0	19.62	19.72	19.63
20	CP-OFDM 16QAM	1	25	20.40	20.49	20.77
20	CP-OFDM 16QAM	1	50	19.72	19.95	19.81
20	CP-OFDM 64QAM	1	0	18.83	18.97	19.01
20	CP-OFDM 64QAM	1	25	18.67	18.86	19.08
20	CP-OFDM 64QAM	1	50	18.84	19.04	19.08
20	CP-OFDM 256QAM	1	0	15.27	15.34	15.74
20	CP-OFDM 256QAM	1	25	15.42	15.30	16.04
20	CP-OFDM 256QAM	1	50	15.93	15.89	16.00



Band n41						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				503202	518598	534000
Frequency (MHz)				2516.01	2592.99	2670
40	DFT-s-OFDM PI/2 BPSK	1	0	21.27	21.08	21.31
40	DFT-s-OFDM PI/2 BPSK	1	53	21.76	21.17	22.02
40	DFT-s-OFDM PI/2 BPSK	1	105	21.08	21.33	21.19
40	DFT-s-OFDM QPSK	1	0	21.32	21.19	21.38
40	DFT-s-OFDM QPSK	1	53	21.83	21.75	22.09
40	DFT-s-OFDM QPSK	1	105	21.01	21.49	21.23
40	DFT-s-OFDM 16QAM	1	0	21.49	21.59	21.50
40	DFT-s-OFDM 16QAM	1	53	21.48	21.57	21.39
40	DFT-s-OFDM 16QAM	1	105	21.59	21.82	21.68
40	DFT-s-OFDM 64QAM	1	0	20.70	20.84	20.88
40	DFT-s-OFDM 64QAM	1	53	20.54	20.73	20.95
40	DFT-s-OFDM 64QAM	1	105	20.71	20.91	20.95
40	DFT-s-OFDM 256QAM	1	0	19.18	19.25	19.65
40	DFT-s-OFDM 256QAM	1	53	19.33	19.21	19.95
40	DFT-s-OFDM 256QAM	1	105	19.84	19.80	19.91



40	CP-OFDM QPSK	1	0	19.41	19.28	19.47
40	CP-OFDM QPSK	1	53	20.92	20.84	21.18
40	CP-OFDM QPSK	1	105	19.10	19.58	19.32
40	CP-OFDM 16QAM	1	0	19.58	19.68	19.59
40	CP-OFDM 16QAM	1	53	20.36	20.45	20.89
40	CP-OFDM 16QAM	1	105	19.68	19.91	19.77
40	CP-OFDM 64QAM	1	0	18.79	18.93	18.97
40	CP-OFDM 64QAM	1	53	18.63	18.82	19.04
40	CP-OFDM 64QAM	1	105	18.80	19.00	19.04
40	CP-OFDM 256QAM	1	0	15.23	15.30	15.70
40	CP-OFDM 256QAM	1	53	15.38	15.26	16.00
40	CP-OFDM 256QAM	1	105	15.89	15.85	15.96



Band n41						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				505200	518598	531996
Frequency (MHz)				2526	2592.99	2659.95
60	DFT-s-OFDM PI/2 BPSK	1	0	21.39	21.16	21.32
60	DFT-s-OFDM PI/2 BPSK	1	81	21.88	21.79	22.17
60	DFT-s-OFDM PI/2 BPSK	1	161	21.12	21.57	21.28
60	DFT-s-OFDM QPSK	1	0	21.44	21.31	21.41
60	DFT-s-OFDM QPSK	1	81	22.01	21.82	22.22
60	DFT-s-OFDM QPSK	1	161	21.16	21.61	21.33
60	DFT-s-OFDM 16QAM	1	0	21.61	21.71	21.65
60	DFT-s-OFDM 16QAM	1	81	21.78	21.58	21.46
60	DFT-s-OFDM 16QAM	1	161	21.71	21.96	21.71
60	DFT-s-OFDM 64QAM	1	0	20.82	20.96	21.01
60	DFT-s-OFDM 64QAM	1	81	20.83	21.08	21.07
60	DFT-s-OFDM 64QAM	1	161	20.82	21.00	21.10
60	DFT-s-OFDM 256QAM	1	0	19.29	19.36	19.79
60	DFT-s-OFDM 256QAM	1	81	19.44	19.32	20.06
60	DFT-s-OFDM 256QAM	1	161	19.95	19.91	20.02



60	CP-OFDM QPSK	1	0	19.53	19.40	19.50
60	CP-OFDM QPSK	1	81	21.24	20.91	21.31
60	CP-OFDM QPSK	1	161	19.25	19.70	19.42
60	CP-OFDM 16QAM	1	0	19.70	19.80	19.74
60	CP-OFDM 16QAM	1	81	20.48	20.57	21.17
60	CP-OFDM 16QAM	1	161	19.80	20.05	19.80
60	CP-OFDM 64QAM	1	0	18.91	19.05	19.10
60	CP-OFDM 64QAM	1	81	18.75	18.95	19.18
60	CP-OFDM 64QAM	1	161	18.92	19.17	19.16
60	CP-OFDM 256QAM	1	0	15.35	15.42	15.85
60	CP-OFDM 256QAM	1	81	15.50	15.38	16.12
60	CP-OFDM 256QAM	1	161	16.01	15.97	16.08



Band n41						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				507204	518598	529998
Frequency (MHz)				2536.02	2592.99	2649.99
80	DFT-s-OFDM PI/2 BPSK	1	0	21.41	21.22	21.38
80	DFT-s-OFDM PI/2 BPSK	1	108	21.88	21.95	22.17
80	DFT-s-OFDM PI/2 BPSK	1	216	21.11	21.59	21.37
80	DFT-s-OFDM QPSK	1	0	21.39	21.26	21.41
80	DFT-s-OFDM QPSK	1	108	22.00	21.98	22.29
80	DFT-s-OFDM QPSK	1	216	21.09	21.54	21.29
80	DFT-s-OFDM 16QAM	1	0	21.56	21.66	21.57
80	DFT-s-OFDM 16QAM	1	108	21.42	21.51	21.59
80	DFT-s-OFDM 16QAM	1	216	21.66	21.89	21.75
80	DFT-s-OFDM 64QAM	1	0	20.77	20.91	20.95
80	DFT-s-OFDM 64QAM	1	108	20.61	20.80	21.02
80	DFT-s-OFDM 64QAM	1	216	20.78	20.98	21.02
80	DFT-s-OFDM 256QAM	1	0	18.31	18.38	18.78
80	DFT-s-OFDM 256QAM	1	108	18.44	18.34	19.08
80	DFT-s-OFDM 256QAM	1	216	18.97	18.93	19.04



80	CP-OFDM QPSK	1	0	19.48	19.35	19.50
80	CP-OFDM QPSK	1	108	20.92	20.90	21.21
80	CP-OFDM QPSK	1	216	19.18	19.63	19.38
80	CP-OFDM 16QAM	1	0	19.65	19.75	19.66
80	CP-OFDM 16QAM	1	108	20.43	20.52	21.12
80	CP-OFDM 16QAM	1	216	19.75	19.98	19.84
80	CP-OFDM 64QAM	1	0	18.86	19.00	19.04
80	CP-OFDM 64QAM	1	108	18.70	18.89	19.11
80	CP-OFDM 64QAM	1	216	18.87	19.07	19.11
80	CP-OFDM 256QAM	1	0	15.30	15.33	16.07
80	CP-OFDM 256QAM	1	108	15.43	15.92	16.03
80	CP-OFDM 256QAM	1	216	15.96	16.16	16.09



Band n41						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				509202	518598	528000
Frequency (MHz)				2546.01	2592.99	2640
100	DFT-s-OFDM PI/2 BPSK	1	0	21.55	21.43	21.58
100	DFT-s-OFDM PI/2 BPSK	1	136	22.11	22.09	22.23
100	DFT-s-OFDM PI/2 BPSK	1	272	21.27	21.66	21.61
100	DFT-s-OFDM QPSK	1	0	21.53	21.40	21.59
100	DFT-s-OFDM QPSK	1	136	22.13	22.05	22.39
100	DFT-s-OFDM QPSK	1	272	21.22	21.70	21.44
100	DFT-s-OFDM 16QAM	1	0	21.70	21.80	21.71
100	DFT-s-OFDM 16QAM	1	136	21.98	22.07	22.27
100	DFT-s-OFDM 16QAM	1	272	21.80	22.03	21.89
100	DFT-s-OFDM 64QAM	1	0	20.91	21.05	21.09
100	DFT-s-OFDM 64QAM	1	136	20.75	20.94	21.16
100	DFT-s-OFDM 64QAM	1	272	20.92	21.12	21.16
100	DFT-s-OFDM 256QAM	1	0	19.35	19.42	19.82
100	DFT-s-OFDM 256QAM	1	136	19.50	19.38	20.12
100	DFT-s-OFDM 256QAM	1	272	18.01	18.97	18.08



100	CP-OFDM QPSK	1	0	19.62	19.49	19.68
100	CP-OFDM QPSK	1	136	21.13	21.05	21.39
100	CP-OFDM QPSK	1	272	19.31	19.79	19.53
100	CP-OFDM 16QAM	1	0	19.79	19.89	19.80
100	CP-OFDM 16QAM	1	136	20.57	20.66	21.26
100	CP-OFDM 16QAM	1	272	19.89	20.12	19.98
100	CP-OFDM 64QAM	1	0	19.00	19.14	19.18
100	CP-OFDM 64QAM	1	136	18.84	19.03	19.25
100	CP-OFDM 64QAM	1	272	19.01	19.21	19.25
100	CP-OFDM 256QAM	1	0	15.44	15.51	15.91
100	CP-OFDM 256QAM	1	136	15.59	15.47	16.21
100	CP-OFDM 256QAM	1	272	16.10	16.06	16.17



Effective Radiated Power and Effective Isotropic Radiated Power:

Band n41									
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.		Average Power Middle Ch. / Freq.		Average Power High Ch. / Freq.	
Channel				501204		518598		535998	
Frequency (MHz)				2506.02		2592.99		2679.99	
				dbm	W	dbm	W	dbm	W
20	DFT-s-OFDM PI/2 BPSK	1	0	23.29	0.213	23.03	0.201	23.21	0.209
20	DFT-s-OFDM PI/2 BPSK	1	25	23.57	0.228	23.12	0.201	23.91	0.246
20	DFT-s-OFDM PI/2 BPSK	1	50	22.87	0.194	23.18	0.208	23.51	0.224
20	DFT-s-OFDM QPSK	1	0	23.12	0.205	22.99	0.199	23.18	0.208
20	DFT-s-OFDM QPSK	1	25	23.63	0.231	23.55	0.226	23.77	0.238
20	DFT-s-OFDM QPSK	1	50	22.81	0.191	23.29	0.213	23.03	0.201
20	DFT-s-OFDM 16QAM	1	0	23.29	0.213	23.39	0.218	23.30	0.214
20	DFT-s-OFDM 16QAM	1	25	23.30	0.214	23.39	0.218	23.27	0.212
20	DFT-s-OFDM 16QAM	1	50	23.39	0.218	23.62	0.230	23.48	0.223
20	DFT-s-OFDM 64QAM	1	0	22.50	0.178	22.64	0.184	22.68	0.185
20	DFT-s-OFDM 64QAM	1	25	22.34	0.171	22.53	0.179	22.75	0.188
20	DFT-s-OFDM 64QAM	1	50	22.51	0.178	22.71	0.187	22.75	0.188
20	DFT-s-OFDM 256QAM	1	0	20.80	0.120	20.87	0.122	21.27	0.134
20	DFT-s-OFDM 256QAM	1	25	20.95	0.124	20.83	0.121	21.57	0.144
20	DFT-s-OFDM 256QAM	1	50	21.46	0.140	21.42	0.139	21.53	0.142



20	CP-OFDM QPSK	1	0	21.21	0.132	21.08	0.128	21.27	0.134
20	CP-OFDM QPSK	1	25	22.72	0.187	22.64	0.184	22.86	0.193
20	CP-OFDM QPSK	1	50	20.90	0.123	21.38	0.137	21.12	0.129
20	CP-OFDM 16QAM	1	0	21.38	0.137	21.48	0.141	21.39	0.138
20	CP-OFDM 16QAM	1	25	22.16	0.164	22.25	0.168	22.53	0.179
20	CP-OFDM 16QAM	1	50	21.48	0.141	21.71	0.148	21.57	0.144
20	CP-OFDM 64QAM	1	0	20.59	0.115	20.73	0.118	20.77	0.119
20	CP-OFDM 64QAM	1	25	20.43	0.110	20.62	0.115	20.84	0.121
20	CP-OFDM 64QAM	1	50	20.60	0.115	20.80	0.120	20.84	0.121
20	CP-OFDM 256QAM	1	0	17.03	0.050	17.10	0.051	17.50	0.056
20	CP-OFDM 256QAM	1	25	17.18	0.052	17.06	0.051	17.80	0.060
20	CP-OFDM 256QAM	1	50	17.69	0.059	17.65	0.058	17.76	0.060

Band n41									
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.		Average Power Middle Ch. / Freq.		Average Power High Ch. / Freq.	
Channel				503202		518598		535998	
Frequency (MHz)				2516.01		2592.99		534000	
				dbm	W	2670	W	dbm	W
40	DFT-s-OFDM PI/2 BPSK	1	0	23.03	0.201	22.84	0.192	23.07	0.203
40	DFT-s-OFDM PI/2 BPSK	1	53	23.52	0.225	22.93	0.196	23.78	0.239
40	DFT-s-OFDM PI/2 BPSK	1	105	22.84	0.192	23.09	0.204	22.95	0.197



40	DFT-s-OFDM QPSK	1	0	23.08	0.203	22.95	0.197	23.14	0.206
40	DFT-s-OFDM QPSK	1	53	23.59	0.229	23.51	0.224	23.85	0.243
40	DFT-s-OFDM QPSK	1	105	22.77	0.189	23.25	0.211	22.99	0.199
40	DFT-s-OFDM 16QAM	1	0	23.25	0.211	23.35	0.216	23.26	0.212
40	DFT-s-OFDM 16QAM	1	53	23.24	0.211	23.33	0.215	23.15	0.207
40	DFT-s-OFDM 16QAM	1	105	23.35	0.216	23.58	0.228	23.44	0.221
40	DFT-s-OFDM 64QAM	1	0	22.46	0.176	22.6	0.182	22.64	0.184
40	DFT-s-OFDM 64QAM	1	53	22.3	0.170	22.49	0.177	22.71	0.187
40	DFT-s-OFDM 64QAM	1	105	22.47	0.177	22.67	0.185	22.71	0.187
40	DFT-s-OFDM 256QAM	1	0	20.94	0.124	21.01	0.126	21.41	0.138
40	DFT-s-OFDM 256QAM	1	53	21.09	0.129	20.97	0.125	21.71	0.148
40	DFT-s-OFDM 256QAM	1	105	21.60	0.145	21.56	0.143	21.67	0.147
40	CP-OFDM QPSK	1	0	21.17	0.131	21.04	0.127	21.23	0.133
40	CP-OFDM QPSK	1	53	22.68	0.185	22.60	0.182	22.94	0.197
40	CP-OFDM QPSK	1	105	20.86	0.122	21.34	0.136	21.08	0.128
40	CP-OFDM 16QAM	1	0	21.34	0.136	21.44	0.139	21.35	0.136
40	CP-OFDM 16QAM	1	53	22.12	0.163	22.21	0.166	22.65	0.184
40	CP-OFDM 16QAM	1	105	21.44	0.139	21.67	0.147	21.53	0.142
40	CP-OFDM 64QAM	1	0	20.55	0.114	20.69	0.117	20.73	0.118



40	CP-OFDM 64QAM	1	53	20.39	0.109	20.58	0.114	20.80	0.120
40	CP-OFDM 64QAM	1	105	20.56	0.114	20.76	0.119	20.80	0.120
40	CP-OFDM 256QAM	1	0	16.99	0.050	17.06	0.051	17.46	0.056
40	CP-OFDM 256QAM	1	53	17.14	0.052	17.02	0.050	17.76	0.060
40	CP-OFDM 256QAM	1	105	17.65	0.058	17.61	0.058	17.72	0.059

Band n41									
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.		Average Power Middle Ch. / Freq.		Average Power High Ch. / Freq.	
Channel				505200		518598		531996	
Frequency (MHz)				2526		2592.99		2659.95	
				dbm	W	2670	W	dbm	W
60	DFT-s-OFDM PI/2 BPSK	1	0	23.15	0.207	22.92	0.196	23.08	0.203
60	DFT-s-OFDM PI/2 BPSK	1	81	23.64	0.231	23.55	0.226	23.93	0.247
60	DFT-s-OFDM PI/2 BPSK	1	161	22.88	0.194	23.33	0.215	23.04	0.201
60	DFT-s-OFDM QPSK	1	0	23.20	0.209	23.07	0.203	23.17	0.207
60	DFT-s-OFDM QPSK	1	81	23.77	0.238	23.58	0.228	23.98	0.250
60	DFT-s-OFDM QPSK	1	161	22.92	0.196	23.37	0.217	23.09	0.204
60	DFT-s-OFDM 16QAM	1	0	23.37	0.217	23.47	0.222	23.41	0.219
60	DFT-s-OFDM 16QAM	1	81	23.54	0.226	23.34	0.216	23.22	0.210
60	DFT-s-OFDM 16QAM	1	161	23.47	0.222	23.72	0.236	23.47	0.222



60	DFT-s-OFDM 64QAM	1	0	22.58	0.181	22.72	0.187	22.77	0.189
60	DFT-s-OFDM 64QAM	1	81	22.59	0.182	22.84	0.192	22.83	0.192
60	DFT-s-OFDM 64QAM	1	161	22.58	0.181	22.76	0.189	22.86	0.193
60	DFT-s-OFDM 256QAM	1	0	21.05	0.127	21.12	0.129	21.55	0.143
60	DFT-s-OFDM 256QAM	1	81	21.20	0.132	21.08	0.128	21.82	0.152
60	DFT-s-OFDM 256QAM	1	161	21.71	0.148	21.67	0.147	21.78	0.151
60	CP-OFDM QPSK	1	0	21.29	0.135	21.16	0.131	21.26	0.134
60	CP-OFDM QPSK	1	81	23.00	0.200	22.67	0.185	23.07	0.203
60	CP-OFDM QPSK	1	161	21.01	0.126	21.46	0.140	21.18	0.131
60	CP-OFDM 16QAM	1	0	21.46	0.140	21.56	0.143	21.50	0.141
60	CP-OFDM 16QAM	1	81	22.24	0.167	22.33	0.171	22.93	0.196
60	CP-OFDM 16QAM	1	161	21.56	0.143	21.81	0.152	21.56	0.143
60	CP-OFDM 64QAM	1	0	20.67	0.117	20.81	0.121	20.86	0.122
60	CP-OFDM 64QAM	1	81	20.51	0.112	20.71	0.118	20.94	0.124
60	CP-OFDM 64QAM	1	161	20.68	0.117	20.93	0.124	20.92	0.124
60	CP-OFDM 256QAM	1	0	17.11	0.051	17.18	0.052	17.61	0.058
60	CP-OFDM 256QAM	1	81	17.26	0.053	17.14	0.052	17.88	0.061
60	CP-OFDM 256QAM	1	161	17.77	0.060	17.73	0.059	17.84	0.061



Band n41									
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.		Average Power Middle Ch. / Freq.		Average Power High Ch. / Freq.	
Channel				507204		518598		529998	
Frequency (MHz)				2536.02		2592.99		2649.99	
				dbm	W	2670	W	dbm	W
80	DFT-s-OFDM PI/2 BPSK	1	0	23.17	0.207	22.98	0.199	23.14	0.206
80	DFT-s-OFDM PI/2 BPSK	1	108	23.64	0.231	23.71	0.235	23.93	0.247
80	DFT-s-OFDM PI/2 BPSK	1	216	22.87	0.194	23.35	0.216	23.13	0.206
80	DFT-s-OFDM QPSK	1	0	23.15	0.207	23.02	0.200	23.17	0.207
80	DFT-s-OFDM QPSK	1	108	23.76	0.238	23.74	0.237	24.05	0.254
80	DFT-s-OFDM QPSK	1	216	22.85	0.193	23.3	0.214	23.05	0.202
80	DFT-s-OFDM 16QAM	1	0	23.32	0.215	23.42	0.220	23.33	0.215
80	DFT-s-OFDM 16QAM	1	108	23.18	0.208	23.27	0.212	23.35	0.216
80	DFT-s-OFDM 16QAM	1	216	23.42	0.220	23.65	0.232	23.51	0.224
80	DFT-s-OFDM 64QAM	1	0	22.53	0.179	22.67	0.185	22.71	0.187
80	DFT-s-OFDM 64QAM	1	108	22.37	0.173	22.56	0.180	22.78	0.190
80	DFT-s-OFDM 64QAM	1	216	22.54	0.179	22.74	0.188	22.78	0.190
80	DFT-s-OFDM 256QAM	1	0	20.07	0.102	20.14	0.103	20.54	0.113
80	DFT-s-OFDM 256QAM	1	108	20.2	0.105	20.1	0.102	20.84	0.121
80	DFT-s-OFDM 256QAM	1	216	20.73	0.118	20.69	0.117	20.8	0.120



80	CP-OFDM QPSK	1	0	21.24	0.133	21.11	0.129	21.26	0.134
80	CP-OFDM QPSK	1	108	22.68	0.185	22.66	0.185	22.97	0.198
80	CP-OFDM QPSK	1	216	20.94	0.124	21.39	0.138	21.14	0.130
80	CP-OFDM 16QAM	1	0	21.41	0.138	21.51	0.142	21.42	0.139
80	CP-OFDM 16QAM	1	108	22.19	0.166	22.28	0.169	22.88	0.194
80	CP-OFDM 16QAM	1	216	21.51	0.142	21.74	0.149	21.6	0.145
80	CP-OFDM 64QAM	1	0	20.62	0.115	20.76	0.119	20.8	0.120
80	CP-OFDM 64QAM	1	108	20.46	0.111	20.65	0.116	20.87	0.122
80	CP-OFDM 64QAM	1	216	20.63	0.116	20.83	0.121	20.87	0.122
80	CP-OFDM 256QAM	1	0	17.06	0.051	17.09	0.051	17.83	0.061
80	CP-OFDM 256QAM	1	108	17.19	0.052	17.68	0.059	17.79	0.060
80	CP-OFDM 256QAM	1	216	17.72	0.059	17.92	0.062	17.85	0.061



Band n41									
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.		Average Power Middle Ch. / Freq.		Average Power High Ch. / Freq.	
Channel				509202		518598		528000	
Frequency (MHz)				2546.01		2592.99		2640	
				dbm	W	2670	W	dbm	W
100	DFT-s-OFDM PI/2 BPSK	1	0	23.31	0.214	23.19	0.208	23.34	0.216
100	DFT-s-OFDM PI/2 BPSK	1	136	23.87	0.244	23.85	0.243	23.99	0.251
100	DFT-s-OFDM PI/2 BPSK	1	272	23.03	0.201	23.42	0.220	23.37	0.217
100	DFT-s-OFDM QPSK	1	0	23.29	0.213	23.16	0.207	23.35	0.216
100	DFT-s-OFDM QPSK	1	136	23.89	0.245	23.81	0.240	24.15	0.260
100	DFT-s-OFDM QPSK	1	272	22.98	0.199	23.46	0.222	23.2	0.209
100	DFT-s-OFDM 16QAM	1	0	23.46	0.222	23.56	0.227	23.47	0.222
100	DFT-s-OFDM 16QAM	1	136	23.74	0.237	23.83	0.242	24.03	0.253
100	DFT-s-OFDM 16QAM	1	272	23.56	0.227	23.79	0.239	23.65	0.232
100	DFT-s-OFDM 64QAM	1	0	22.67	0.185	22.81	0.191	22.85	0.193
100	DFT-s-OFDM 64QAM	1	136	22.51	0.178	22.7	0.186	22.92	0.196
100	DFT-s-OFDM 64QAM	1	272	22.68	0.185	22.88	0.194	22.92	0.196
100	DFT-s-OFDM 256QAM	1	0	21.11	0.129	21.18	0.131	21.58	0.144
100	DFT-s-OFDM 256QAM	1	136	21.26	0.134	21.14	0.130	21.88	0.154
100	DFT-s-OFDM 256QAM	1	272	19.77	0.095	20.73	0.118	19.84	0.096



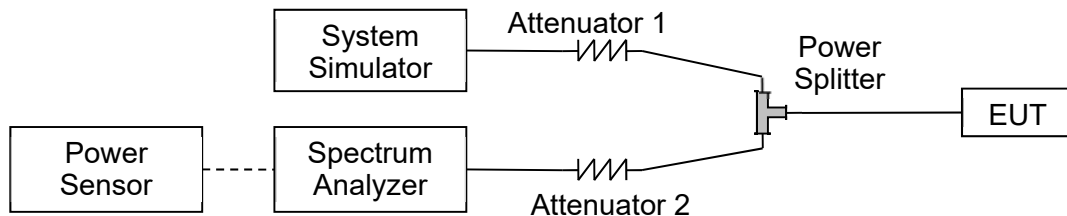
100	CP-OFDM QPSK	1	0	21.38	0.137	21.25	0.133	21.44	0.139
100	CP-OFDM QPSK	1	136	22.89	0.195	22.81	0.191	23.15	0.207
100	CP-OFDM QPSK	1	272	21.07	0.128	21.55	0.143	21.29	0.135
100	CP-OFDM 16QAM	1	0	21.55	0.143	21.65	0.146	21.56	0.143
100	CP-OFDM 16QAM	1	136	22.33	0.171	22.42	0.175	23.02	0.200
100	CP-OFDM 16QAM	1	272	21.65	0.146	21.88	0.154	21.74	0.149
100	CP-OFDM 64QAM	1	0	20.76	0.119	20.9	0.123	20.94	0.124
100	CP-OFDM 64QAM	1	136	20.60	0.115	20.79	0.120	21.01	0.126
100	CP-OFDM 64QAM	1	272	20.77	0.119	20.97	0.125	21.01	0.126
100	CP-OFDM 256QAM	1	0	17.20	0.052	17.27	0.053	17.67	0.058
100	CP-OFDM 256QAM	1	136	17.35	0.054	17.23	0.053	17.97	0.063
100	CP-OFDM 256QAM	1	272	17.86	0.061	17.82	0.061	17.93	0.062

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

NR Band n41(DFT-s-OFDM)				
BW(MHz)	ChannelLevel	Modulation	99% BW(MHz)	26dB BW(MHz)
20	Low	PI/2 BPSK	17.94	19.35
	Low	QPSK	17.89	19.70
	Low	16QAM	17.95	21.38
	Low	64QAM	17.98	23.54
	Low	256QAM	17.91	19.11
	Mid	PI/2 BPSK	17.95	19.40
	Mid	QPSK	17.91	19.45
	Mid	16QAM	17.95	21.44
	Mid	64QAM	18.02	23.68
	Mid	256QAM	17.92	19.28
	High	PI/2 BPSK	17.94	19.27
	High	QPSK	17.91	19.40
	High	16QAM	17.99	21.97
	High	64QAM	18.00	22.62
	High	256QAM	17.91	19.32
40	Low	PI/2 BPSK	35.80	37.88
	Low	QPSK	35.85	37.96
	Low	16QAM	35.84	37.96
	Low	64QAM	35.86	37.86
	Low	256QAM	35.79	37.91
	Mid	PI/2 BPSK	35.87	37.73
	Mid	QPSK	35.83	37.86
	Mid	16QAM	35.93	37.75
	Mid	64QAM	35.87	37.83
	Mid	256QAM	35.81	37.88
	High	PI/2 BPSK	35.85	37.82
	High	QPSK	35.82	37.81
	High	16QAM	35.87	37.85
	High	64QAM	35.86	37.93
	High	256QAM	35.91	37.74
60	Low	PI/2 BPSK	58.02	60.88
	Low	QPSK	57.98	60.70



	Low	16QAM	58.26	60.83
	Low	64QAM	57.95	60.86
	Low	256QAM	58.00	60.86
	Mid	PI/2 BPSK	57.99	60.81
	Mid	QPSK	58.10	60.79
	Mid	16QAM	58.21	60.82
	Mid	64QAM	58.05	60.88
	Mid	256QAM	58.21	61.03
	High	PI/2 BPSK	58.19	60.95
	High	QPSK	58.11	60.78
	High	16QAM	58.14	60.87
	High	64QAM	58.15	60.83
	High	256QAM	58.22	60.86
	80	Low	PI/2 BPSK	77.13
Low		QPSK	77.24	80.51
Low		16QAM	77.15	80.35
Low		64QAM	77.23	80.42
Low		256QAM	77.16	80.42
Mid		PI/2 BPSK	77.29	80.37
Mid		QPSK	77.34	80.52
Mid		16QAM	77.23	80.38
Mid		64QAM	77.28	80.35
Mid		256QAM	77.21	80.61
High		PI/2 BPSK	77.15	80.49
High		QPSK	77.09	80.52
High		16QAM	77.16	80.30
High		64QAM	77.28	80.45
High	256QAM	77.18	80.43	
100	Low	PI/2 BPSK	96.39	100.1
	Low	QPSK	96.52	100.0
	Low	16QAM	96.23	100.2
	Low	64QAM	96.32	100.2
	Low	256QAM	96.28	100.1
	Mid	PI/2 BPSK	96.55	100.1
	Mid	QPSK	96.63	100.2
	Mid	16QAM	96.57	100.1
	Mid	64QAM	96.39	100.2
	Mid	256QAM	96.38	100.1



	High	PI/2 BPSK	96.61	99.92
	High	QPSK	96.43	100.2
	High	16QAM	96.43	100.1
	High	64QAM	96.40	100.1
	High	256QAM	96.61	99.92

NR Band n41(CP-OFDM)				
BW(MHz)	ChannelLevel	Modulation	99% BW(MHz)	26dB BW(MHz)
20	Low	QPSK	18.30	21.67
	Low	16QAM	18.31	19.73
	Low	64QAM	18.27	19.82
	Low	256QAM	18.23	19.74
	Mid	QPSK	18.32	20.02
	Mid	16QAM	18.31	19.89
	Mid	64QAM	18.30	19.90
	Mid	256QAM	18.25	19.81
	High	QPSK	18.30	21.02
	High	16QAM	18.24	19.66
	High	64QAM	18.25	19.84
	High	256QAM	18.24	19.61
40	Low	QPSK	37.88	39.96
	Low	16QAM	37.99	40.04
	Low	64QAM	37.93	40.04
	Low	256QAM	37.81	39.88
	Mid	QPSK	38.00	39.91
	Mid	16QAM	38.03	39.82
	Mid	64QAM	37.98	39.92
	Mid	256QAM	37.88	40.04
	High	QPSK	37.98	39.94
	High	16QAM	38.09	40.04
	High	64QAM	37.97	39.89
	High	256QAM	37.88	39.77
60	Low	QPSK	57.30	60.01
	Low	16QAM	57.42	60.09
	Low	64QAM	57.79	60.70
	Low	256QAM	57.87	60.67
	Mid	QPSK	57.95	60.75
	Mid	16QAM	58.09	60.72

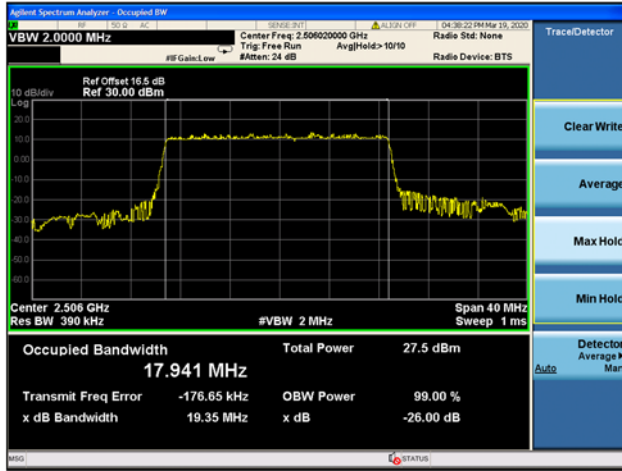


	Mid	64QAM	57.96	60.68
	Mid	256QAM	58.07	60.70
	High	QPSK	57.97	60.80
	High	16QAM	58.08	60.79
	High	64QAM	57.98	60.72
	High	256QAM	58.11	60.66
80	Low	QPSK	77.58	80.73
	Low	16QAM	77.60	80.68
	Low	64QAM	77.49	80.72
	Low	256QAM	77.46	80.68
	Mid	QPSK	77.49	80.63
	Mid	16QAM	77.66	80.89
	Mid	64QAM	77.68	80.84
	Mid	256QAM	77.68	80.76
	High	QPSK	77.42	80.80
	High	16QAM	77.64	80.79
	High	64QAM	77.52	80.76
	High	256QAM	77.56	80.75
100	Low	QPSK	97.30	101.0
	Low	16QAM	97.44	101.0
	Low	64QAM	97.61	101.0
	Low	256QAM	97.26	101.1
	Mid	QPSK	97.48	101.1
	Mid	16QAM	97.70	101.3
	Mid	64QAM	97.63	101.1
	Mid	256QAM	97.45	101.2
	High	QPSK	97.66	101.2
	High	16QAM	97.71	101.3
	High	64QAM	97.72	101.1
	High	256QAM	97.56	101.1



NR Band n41 (DFT-s-OFDM)

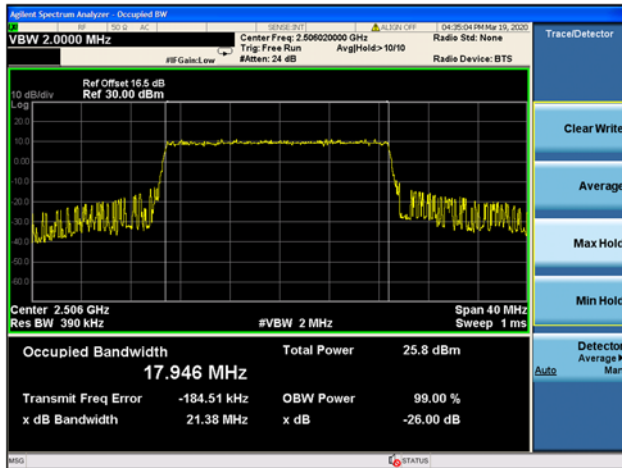
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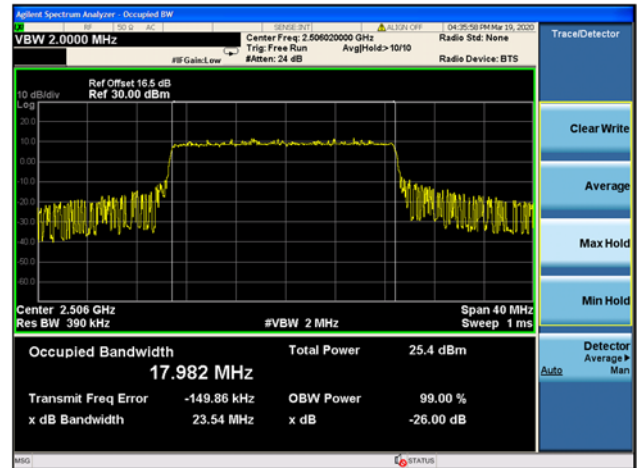
20MHz / Low CH / QPSK



20MHz / Low CH / 16QAM



20MHz / Low CH / 64QAM



20MHz / Low CH / 256QAM

