

TEST REPORT



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1. Report No : DRTFCC2407-0081

2. Customer

• Name (FCC) : BLUEBIRD INC.

• Address (FCC) : 3F, 115, Irwon-ro, Gangnam-gu, Seoul, 06355, Korea

3. Use of Report : FCC Certification

4. Product Name / Model Name : Enterprise Full Touch Handheld Computer / S50
FCC ID : SS4S50F1

5. FCC Regulation(s): Part 22, 24, 27, 90

Test Method Used : KDB971168 D01v03, ANSI/TIA-603-E-2016, ANSI C63.26-2015

6. Date of Test : 2024.02.20 ~ 2024.07.24

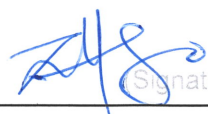
7. Location of Test : ☒ Permanent Testing Lab ☐ On Site Testing

8. Testing Environment : See appended test report.

9. Test Result : Refer to the attached test result.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

This test report is not related to KOLAS accreditation.

Affirmation	Tested by		Technical Manager	
	Name : SeokHo Han		Name : JaeJin Lee	

2024 . 07 . 24 .

Dt&C Co., Ltd.

If this report is required to confirmation of authenticity, please contact to report@dtnc.net

Test Report Version

Test Report No.	Date	Description	Revised by	Reviewed by
DRTFCC2407-0081	Jul. 24, 2024	Initial issue	SeokHo Han	JaeJin Lee

Table of Contents

1. GENERAL INFORMATION	6
2. INTRODUCTION	11
2.1. EUT DESCRIPTION	11
2.2. TESTING ENVIRONMENT	11
2.3. MEASURING INSTRUMENT CALIBRATION.....	11
2.4. MEASUREMENT UNCERTAINTY	11
2.5. TEST FACILITY.....	11
3. DESCRIPTION OF TESTS.....	12
3.1. MAXIMUM OUTPUT POWER	12
3.2. PEAK TO AVERAGE RATIO	13
3.3. OCCUPIED BANDWIDTH	14
3.4. BAND EDGE EMISSIONS AT ANTENNA TERMINAL	15
3.5. SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL	17
3.6. UNDESIRABLE EMISSIONS	18
3.7. FREQUENCY STABILITY	19
4. LIST OF TEST EQUIPMENT	20
5. SUMMARY OF TEST RESULTS.....	21
6. SAMPLE CALCULATION	22
7. TEST DATA.....	23
7.1. OCCUPIED BANDWIDTH	23
7.2. PEAK TO AVERAGE RATIO	23
7.3. BAND EDEG EMISSIONS (Conducted).....	23
7.4. SPURIOUS AND HARMONICS EMISSIONS (Conducted)	23
7.5. MAXIMUM OUTPUT POWER	24
7.5.1. LTE Band 71.....	24
7.5.2. LTE Band 12(17)	26
7.5.3. LTE Band 13.....	28
7.5.4. LTE Band 14.....	29
7.5.5. LTE Band 5.....	30
7.5.6. LTE Band 66(4)	32
7.5.7. LTE Band 2.....	34
7.5.8. LTE Band 7.....	36
7.5.9. LTE Band 38.....	38
7.6. UNDESIRABLE EMISSIONS (Radiated)	40
7.6.1. LTE Band 71.....	40
7.6.2. LTE Band 12(17)	40
7.6.3. LTE Band 13.....	41
7.6.4. LTE Band 14.....	41
7.6.5. LTE Band 5.....	42
7.6.6. LTE Band 66(4)	42
7.6.7. LTE Band 2.....	43
7.6.8. LTE Band 7.....	43

7.6.9. LTE Band 38.....	44
7.7. FREQUENCY STABILITY	45
7.7.1. LTE Band 71.....	45
7.7.2. LTE Band 12(17)	46
7.7.3. LTE Band 13.....	47
7.7.4. LTE Band 14.....	48
7.7.5. LTE Band 5.....	49
7.7.6. LTE Band 66(4)	50
7.7.7. LTE Band 2.....	51
7.7.8. LTE Band 7.....	52
7.7.9. LTE Band 38.....	53
8. TEST PLOTS	54
8.1. OCCUPIED BANDWIDTH.....	54
8.1.1. LTE Band 71.....	54
8.1.2. LTE Band 12(17)	62
8.1.3. LTE Band 13.....	70
8.1.4. LTE Band 14.....	74
8.1.5. LTE Band 5.....	78
8.1.6. LTE Band 66(4)	86
8.1.7. LTE Band 2.....	98
8.1.8. LTE Band 7.....	110
8.1.9. LTE Band 38.....	118
8.2. PEAK TO AVERAGE RATIO	126
8.2.1. LTE Band 71.....	126
8.2.2. LTE Band 12(17)	134
8.2.3. LTE Band 13.....	142
8.2.4. LTE Band 14.....	146
8.2.5. LTE Band 5.....	150
8.2.6. LTE Band 66(4)	158
8.2.7. LTE Band 2.....	170
8.2.8. LTE Band 7.....	182
8.2.9. LTE Band 38.....	190
8.3. BAND EDGE EMISSIONS(Conducted).....	198
8.3.1. LTE Band 71.....	198
8.3.2. LTE Band 12(17)	206
8.3.3. LTE Band 13.....	214
8.3.4. LTE Band 14.....	220
8.3.5. LTE Band 5.....	222
8.3.6. LTE Band 66(4)	230
8.3.7. LTE Band 2.....	242
8.3.8. LTE Band 7.....	254
8.3.9. LTE Band 38.....	260
8.4. SPURIOUS AND HARMONICS EMISSIONS(Conducted)	266
8.4.1. LTE Band 71.....	266

8.4.2. LTE Band 12(17)	269
8.4.3. LTE Band 13.....	272
8.4.4. LTE Band 14.....	274
8.4.5. LTE Band 5.....	276
8.4.6. LTE Band 66(4)	278
8.4.7. LTE Band 2.....	281
8.4.8. LTE Band 7.....	284
8.4.9. LTE Band 38.....	287

1. GENERAL INFORMATION

Equipment Class	PCS Licensed Transmitter held to ear(PCE)	
Product Name	Enterprise Full Touch Handheld Computer	
Model Name(s)	S50, S70	
PMN(Product Marketing Name)	Enterprise Full Touch Handheld Computer	
FVIN(Firmware Version Identification Number)	R1.00	
EUT Serial Number	Conducted: S50A5LAWBA320, S50A5LAWBA326 Radiated: S50A5LAWBA321	
Supplying power	DC 3.85 V	
Modulation Type	QPSK, 16QAM, 64QAM, 256QAM	
Channel Bandwidth(MHz)	LTE Band 71: 20, 15, 10, 5 LTE Band 12: 10, 5, 3, 1.4 LTE Band 17: 10, 5 LTE Band 13: 10, 5 LTE Band 14: 10, 5 LTE Band 5: 10, 5, 3, 1.4 LTE Band 66: 20, 15, 10, 5, 3, 1.4 LTE Band 4: 20, 15, 10, 5, 3, 1.4 LTE Band 2: 20, 15, 10, 5, 3, 1.4 LTE Band 7: 20, 15, 10, 5 LTE Band 38: 20, 15, 10, 5	
Antenna Type	LDS Antenna	
Antenna Gain	LTE Band	Gain(dBi)
	71	Ant 0: -5.44
	12(17)	Ant 0: -5.44
	13	Ant 0: -4.50
	14	Ant 0: -3.84
	5	Ant 0: -1.91
	66(4)	Ant 0: 0.30
	2	Ant 0: 0.77
	7	Ant 0: -2.11
	38	Ant 0: 2.21

Mode	TX Frequency (MHz)	Emission Designator	Modulation	Conducted output power		ERP	
				dBm	W	dBm	W
LTE Band 71	673 ~ 688	17M8G7D	QPSK	22.23	0.167	14.64	0.029
LTE Band 71	673 ~ 688	17M8W7D	16QAM	21.39	0.138	13.80	0.024
LTE Band 71	673 ~ 688	17M8W7D	64QAM	20.34	0.108	12.75	0.019
LTE Band 71	673 ~ 688	17M8W7D	256QAM	17.35	0.054	9.76	0.009
LTE Band 71	670.5 ~ 690.5	13M4G7D	QPSK	21.99	0.158	14.40	0.028
LTE Band 71	670.5 ~ 690.5	13M4W7D	16QAM	21.12	0.129	13.53	0.023
LTE Band 71	670.5 ~ 690.5	13M4W7D	64QAM	20.07	0.102	12.48	0.018
LTE Band 71	670.5 ~ 690.5	13M4W7D	256QAM	17.13	0.052	9.54	0.009
LTE Band 71	668 ~ 693	8M93G7D	QPSK	22.16	0.164	14.57	0.029
LTE Band 71	668 ~ 693	8M92W7D	16QAM	21.31	0.135	13.72	0.024
LTE Band 71	668 ~ 693	8M93W7D	64QAM	20.29	0.107	12.70	0.019
LTE Band 71	668 ~ 693	8M97W7D	256QAM	17.23	0.053	9.64	0.009
LTE Band 71	665.5 ~ 695.5	4M48G7D	QPSK	21.94	0.156	14.35	0.027
LTE Band 71	665.5 ~ 695.5	4M48W7D	16QAM	21.13	0.130	13.54	0.023
LTE Band 71	665.5 ~ 695.5	4M48W7D	64QAM	20.07	0.102	12.48	0.018
LTE Band 71	665.5 ~ 695.5	4M47W7D	256QAM	17.13	0.052	9.54	0.009
LTE Band 12(17)	704 ~ 711	8M95G7D	QPSK	21.89	0.155	14.30	0.027
LTE Band 12(17)	704 ~ 711	8M92W7D	16QAM	21.08	0.128	13.49	0.022
LTE Band 12(17)	704 ~ 711	8M93W7D	QPSK	20.08	0.102	12.49	0.018
LTE Band 12(17)	704 ~ 711	8M94W7D	16QAM	17.05	0.051	9.46	0.009
LTE Band 12(17)	701.5 ~ 713.5	4M48G7D	QPSK	21.85	0.153	14.26	0.027
LTE Band 12(17)	701.5 ~ 713.5	4M48W7D	16QAM	21.04	0.127	13.45	0.022
LTE Band 12(17)	701.5 ~ 713.5	4M48W7D	64QAM	19.99	0.100	12.40	0.017
LTE Band 12(17)	701.5 ~ 713.5	4M47W7D	256QAM	17.02	0.050	9.43	0.009
LTE Band 12	700.5 ~ 714.5	2M69G7D	QPSK	21.83	0.152	14.24	0.027
LTE Band 12	700.5 ~ 714.5	2M68W7D	16QAM	21.02	0.126	13.43	0.022
LTE Band 12	700.5 ~ 714.5	2M68W7D	64QAM	20.01	0.100	12.42	0.017
LTE Band 12	700.5 ~ 714.5	2M68W7D	256QAM	16.99	0.050	9.40	0.009
LTE Band 12	699.7 ~ 715.3	1M08G7D	QPSK	21.67	0.147	14.08	0.026
LTE Band 12	699.7 ~ 715.3	1M08W7D	16QAM	20.86	0.122	13.27	0.021
LTE Band 12	699.7 ~ 715.3	1M08W7D	64QAM	19.84	0.096	12.25	0.017
LTE Band 12	699.7 ~ 715.3	1M08W7D	256QAM	16.80	0.048	9.21	0.008
LTE Band 13	782 ~ 782	8M91G7D	QPSK	21.83	0.152	15.18	0.033
LTE Band 13	782 ~ 782	8M90W7D	16QAM	20.95	0.124	14.30	0.027
LTE Band 13	782 ~ 782	8M94W7D	64QAM	19.88	0.097	13.23	0.021
LTE Band 13	782 ~ 782	8M94W7D	256QAM	16.94	0.049	10.29	0.011
LTE Band 13	779.5 ~ 784.5	4M47G7D	QPSK	21.82	0.152	15.17	0.033
LTE Band 13	779.5 ~ 784.5	4M46W7D	16QAM	20.93	0.124	14.28	0.027
LTE Band 13	779.5 ~ 784.5	4M47W7D	64QAM	19.86	0.097	13.21	0.021
LTE Band 13	779.5 ~ 784.5	4M46W7D	256QAM	16.91	0.049	10.26	0.011

Mode	TX Frequency (MHz)	Emission Designator	Modulation	Conducted output power		ERP	
				dBm	W	dBm	W
LTE Band 14	793 ~ 793	8M91G7D	QPSK	22.84	0.192	16.85	0.048
LTE Band 14	793 ~ 793	8M91W7D	16QAM	21.96	0.157	15.97	0.040
LTE Band 14	793 ~ 793	8M93W7D	64QAM	20.80	0.120	14.81	0.030
LTE Band 14	793 ~ 793	8M90W7D	256QAM	17.86	0.061	11.87	0.015
LTE Band 14	790.5 ~ 795.5	4M48G7D	QPSK	22.78	0.190	16.79	0.048
LTE Band 14	790.5 ~ 795.5	4M47W7D	16QAM	21.95	0.157	15.96	0.039
LTE Band 14	790.5 ~ 795.5	4M49W7D	64QAM	20.86	0.122	14.87	0.031
LTE Band 14	790.5 ~ 795.5	4M47W7D	256QAM	17.92	0.062	11.93	0.016
LTE Band 5	829 ~ 844	8M93G7D	QPSK	22.25	0.168	18.19	0.066
LTE Band 5	829 ~ 844	8M93W7D	16QAM	21.27	0.134	17.21	0.053
LTE Band 5	829 ~ 844	8M95W7D	64QAM	20.23	0.105	16.17	0.041
LTE Band 5	829 ~ 844	8M96W7D	256QAM	17.33	0.054	13.27	0.021
LTE Band 5	826.5 ~ 846.5	4M48G7D	QPSK	22.14	0.164	18.08	0.064
LTE Band 5	826.5 ~ 846.5	4M47W7D	16QAM	21.26	0.134	17.20	0.052
LTE Band 5	826.5 ~ 846.5	4M47W7D	64QAM	20.15	0.104	16.09	0.041
LTE Band 5	826.5 ~ 846.5	4M48W7D	256QAM	17.32	0.054	13.26	0.021
LTE Band 5	825.5 ~ 847.5	2M69G7D	QPSK	22.17	0.165	18.11	0.065
LTE Band 5	825.5 ~ 847.5	2M68W7D	16QAM	21.24	0.133	17.18	0.052
LTE Band 5	825.5 ~ 847.5	2M68W7D	64QAM	20.20	0.105	16.14	0.041
LTE Band 5	825.5 ~ 847.5	2M68W7D	256QAM	17.33	0.054	13.27	0.021
LTE Band 5	824.7 ~ 848.3	1M09G7D	QPSK	22.13	0.163	18.07	0.064
LTE Band 5	824.7 ~ 848.3	1M09W7D	16QAM	21.15	0.130	17.09	0.051
LTE Band 5	824.7 ~ 848.3	1M10W7D	64QAM	20.09	0.102	16.03	0.040
LTE Band 5	824.7 ~ 848.3	1M08W7D	256QAM	17.29	0.054	13.23	0.021

Mode	TX Frequency (MHz)	Emission Designator	Modulation	Conducted output power		EIRP	
				dBm	W	dBm	W
LTE Band 66(4)	1 720 ~ 1 770	17M9G7D	QPSK	22.45	0.176	22.75	0.188
LTE Band 66(4)	1 720 ~ 1 770	17M9W7D	16QAM	21.54	0.143	21.84	0.153
LTE Band 66(4)	1 720 ~ 1 770	17M9W7D	64QAM	20.55	0.114	20.85	0.122
LTE Band 66(4)	1 720 ~ 1 770	17M9W7D	256QAM	17.39	0.055	17.69	0.059
LTE Band 66(4)	1 717.5 ~ 1 772.5	13M4G7D	QPSK	22.34	0.171	22.64	0.184
LTE Band 66(4)	1 717.5 ~ 1 772.5	13M4W7D	16QAM	21.47	0.140	21.77	0.150
LTE Band 66(4)	1 717.5 ~ 1 772.5	13M5W7D	64QAM	20.49	0.112	20.79	0.120
LTE Band 66(4)	1 717.5 ~ 1 772.5	13M4W7D	256QAM	17.37	0.055	17.67	0.058
LTE Band 66(4)	1 715 ~ 1 775	8M97G7D	QPSK	22.40	0.174	22.70	0.186
LTE Band 66(4)	1 715 ~ 1 775	8M94W7D	16QAM	21.50	0.141	21.80	0.151
LTE Band 66(4)	1 715 ~ 1 775	9M00W7D	64QAM	20.54	0.113	20.84	0.121
LTE Band 66(4)	1 715 ~ 1 775	8M97W7D	256QAM	17.50	0.056	17.80	0.060
LTE Band 66(4)	1 712.5 ~ 1 777.5	4M48G7D	QPSK	22.40	0.174	22.70	0.186
LTE Band 66(4)	1 712.5 ~ 1 777.5	4M47W7D	16QAM	21.49	0.141	21.79	0.151
LTE Band 66(4)	1 712.5 ~ 1 777.5	4M48W7D	64QAM	20.46	0.111	20.76	0.119
LTE Band 66(4)	1 712.5 ~ 1 777.5	4M48W7D	256QAM	17.57	0.057	17.87	0.061
LTE Band 66(4)	1 711.5 ~ 1 778.5	2M69G7D	QPSK	22.44	0.175	22.74	0.188
LTE Band 66(4)	1 711.5 ~ 1 778.5	2M69W7D	16QAM	21.57	0.144	21.87	0.154
LTE Band 66(4)	1 711.5 ~ 1 778.5	2M69W7D	64QAM	20.57	0.114	20.87	0.122
LTE Band 66(4)	1 711.5 ~ 1 778.5	2M69W7D	256QAM	17.58	0.057	17.88	0.061
LTE Band 66(4)	1 710.7 ~ 1 779.3	1M08G7D	QPSK	22.40	0.174	22.70	0.186
LTE Band 66(4)	1 710.7 ~ 1 779.3	1M08W7D	16QAM	21.50	0.141	21.80	0.151
LTE Band 66(4)	1 710.7 ~ 1 779.3	1M08W7D	64QAM	20.47	0.111	20.77	0.119
LTE Band 66(4)	1 710.7 ~ 1 779.3	1M08W7D	256QAM	17.59	0.057	17.89	0.062
LTE Band 2	1 860 ~ 1 900	17M9G7D	QPSK	22.47	0.177	23.24	0.211
LTE Band 2	1 860 ~ 1 900	17M9W7D	16QAM	21.49	0.141	22.26	0.168
LTE Band 2	1 860 ~ 1 900	17M9W7D	64QAM	20.44	0.111	21.21	0.132
LTE Band 2	1 860 ~ 1 900	17M9W7D	256QAM	17.51	0.056	18.28	0.067
LTE Band 2	1 857.5 ~ 1 902.5	13M4G7D	QPSK	22.14	0.164	22.91	0.195
LTE Band 2	1 857.5 ~ 1 902.5	13M4W7D	16QAM	21.26	0.134	22.03	0.160
LTE Band 2	1 857.5 ~ 1 902.5	13M4W7D	64QAM	20.27	0.106	21.04	0.127
LTE Band 2	1 857.5 ~ 1 902.5	13M4W7D	256QAM	17.28	0.053	18.05	0.064
LTE Band 2	1 855 ~ 1 905	8M96G7D	QPSK	22.33	0.171	23.10	0.204
LTE Band 2	1 855 ~ 1 905	8M94W7D	16QAM	21.44	0.139	22.21	0.166
LTE Band 2	1 855 ~ 1 905	8M97W7D	64QAM	20.43	0.110	21.20	0.132
LTE Band 2	1 855 ~ 1 905	8M96W7D	256QAM	17.39	0.055	18.16	0.065
LTE Band 2	1 852.5 ~ 1 907.5	4M47G7D	QPSK	22.36	0.172	23.13	0.206
LTE Band 2	1 852.5 ~ 1 907.5	4M47W7D	16QAM	21.45	0.140	22.22	0.167
LTE Band 2	1 852.5 ~ 1 907.5	4M48W7D	64QAM	20.44	0.111	21.21	0.132
LTE Band 2	1 852.5 ~ 1 907.5	4M48W7D	256QAM	17.45	0.056	18.22	0.066
LTE Band 2	1 851.5 ~ 1 908.5	2M68G7D	QPSK	22.16	0.164	22.93	0.196
LTE Band 2	1 851.5 ~ 1 908.5	2M69W7D	16QAM	21.35	0.136	22.12	0.163
LTE Band 2	1 851.5 ~ 1 908.5	2M69W7D	64QAM	20.24	0.106	21.01	0.126
LTE Band 2	1 851.5 ~ 1 908.5	2M68W7D	256QAM	17.29	0.054	18.06	0.064
LTE Band 2	1 850.7 ~ 1 909.3	1M08G7D	QPSK	22.42	0.175	23.19	0.208
LTE Band 2	1 850.7 ~ 1 909.3	1M08W7D	16QAM	21.43	0.139	22.20	0.166
LTE Band 2	1 850.7 ~ 1 909.3	1M08W7D	64QAM	20.43	0.110	21.20	0.132
LTE Band 2	1 850.7 ~ 1 909.3	1M08W7D	256QAM	17.52	0.056	18.29	0.067

Mode	TX Frequency (MHz)	Emission Designator	Modulation	Conducted output power		EIRP	
				dBm	W	dBm	W
LTE Band 7	2 510 ~ 2 560	17M9G7D	QPSK	22.78	0.190	20.67	0.117
LTE Band 7	2 510 ~ 2 560	17M9W7D	16QAM	21.87	0.154	19.76	0.095
LTE Band 7	2 510 ~ 2 560	17M9W7D	64QAM	20.84	0.121	18.73	0.075
LTE Band 7	2 510 ~ 2 560	17M9W7D	256QAM	17.87	0.061	15.76	0.038
LTE Band 7	2 507.5 ~ 2 562.5	13M4G7D	QPSK	22.60	0.182	20.49	0.112
LTE Band 7	2 507.5 ~ 2 562.5	13M4W7D	16QAM	21.76	0.150	19.65	0.092
LTE Band 7	2 507.5 ~ 2 562.5	13M4W7D	64QAM	20.72	0.118	18.61	0.073
LTE Band 7	2 507.5 ~ 2 562.5	13M4W7D	256QAM	17.71	0.059	15.60	0.036
LTE Band 7	2 505 ~ 2 565	8M94G7D	QPSK	22.70	0.186	20.59	0.115
LTE Band 7	2 505 ~ 2 565	8M94W7D	16QAM	21.89	0.155	19.78	0.095
LTE Band 7	2 505 ~ 2 565	8M95W7D	64QAM	20.85	0.122	18.74	0.075
LTE Band 7	2 505 ~ 2 565	8M94W7D	256QAM	17.72	0.059	15.61	0.036
LTE Band 7	2 502.5 ~ 2 567.5	4M47G7D	QPSK	22.61	0.182	20.50	0.112
LTE Band 7	2 502.5 ~ 2 567.5	4M48W7D	16QAM	21.81	0.152	19.70	0.093
LTE Band 7	2 502.5 ~ 2 567.5	4M48W7D	64QAM	20.72	0.118	18.61	0.073
LTE Band 7	2 502.5 ~ 2 567.5	4M47W7D	256QAM	17.70	0.059	15.59	0.036
LTE Band 38	2 580 ~ 2 610	17M9G7D	QPSK	22.67	0.185	24.88	0.308
LTE Band 38	2 580 ~ 2 610	17M8W7D	16QAM	21.85	0.153	24.06	0.255
LTE Band 38	2 580 ~ 2 610	17M8W7D	64QAM	20.64	0.116	22.85	0.193
LTE Band 38	2 580 ~ 2 610	17M9W7D	256QAM	17.75	0.060	19.96	0.099
LTE Band 38	2 577.5 ~ 2 612.5	13M5G7D	QPSK	22.49	0.177	24.70	0.295
LTE Band 38	2 577.5 ~ 2 612.5	13M4W7D	16QAM	21.61	0.145	23.82	0.241
LTE Band 38	2 577.5 ~ 2 612.5	13M4W7D	64QAM	20.53	0.113	22.74	0.188
LTE Band 38	2 577.5 ~ 2 612.5	13M4W7D	256QAM	17.64	0.058	19.85	0.097
LTE Band 38	2 575 ~ 2 615	8M93G7D	QPSK	22.57	0.181	24.78	0.301
LTE Band 38	2 575 ~ 2 615	8M92W7D	16QAM	21.76	0.150	23.97	0.249
LTE Band 38	2 575 ~ 2 615	8M94W7D	64QAM	20.72	0.118	22.93	0.196
LTE Band 38	2 575 ~ 2 615	8M92W7D	256QAM	17.65	0.058	19.86	0.097
LTE Band 38	2 572.5 ~ 2 617.5	4M47G7D	QPSK	22.45	0.176	24.66	0.292
LTE Band 38	2 572.5 ~ 2 617.5	4M48W7D	16QAM	21.61	0.145	23.82	0.241
LTE Band 38	2 572.5 ~ 2 617.5	4M48W7D	64QAM	20.53	0.113	22.74	0.188
LTE Band 38	2 572.5 ~ 2 617.5	4M47W7D	256QAM	17.59	0.057	19.80	0.095

2. INTRODUCTION

2.1. EUT DESCRIPTION

The Equipment Under Test (EUT) supports 850/1900 GSM, 850/1700/1900 WCDMA, Multi-band LTE/5GNR, 2.4/5/6GHz WLAN, Bluetooth(BDR, EDR, BLE) and NFC.

2.2. TESTING ENVIRONMENT

Ambient Condition	
▪ Temperature	+20 °C ~ +25 °C
▪ Relative Humidity	39 % ~ 45 %

2.3. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

2.4. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with requirements of ANSI C 63.4-2014. All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95 % level of confidence.

Parameter	Measurement uncertainty
Antenna-port conducted Disturbance	1.0 dB (The confidence level is about 95 %, $k = 2$)
Radiated Disturbance (1 GHz Below)	5.0 dB (The confidence level is about 95 %, $k = 2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	4.8 dB (The confidence level is about 95 %, $k = 2$)
Radiated Disturbance (18 GHz Above)	5.0 dB (The confidence level is about 95 %, $k = 2$)

2.5. TEST FACILITY

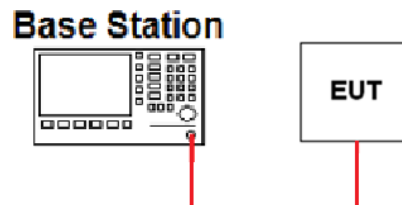
Dt&C Co., Ltd.		
The 3 m test site and conducted measurement facility used to collect the radiated data are located at the 42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 17042.		
The test site complies with the requirements of Part 2.948 according to ANSI C63.4-2014.		
- FCC & IC MRA Designation No. : KR0034		
- ISED#: 5740A		
www.dtnet.net		
Telephone	:	+ 82-31-321-2664
FAX	:	+ 82-31-321-1664

3. DESCRIPTION OF TESTS

3.1. MAXIMUM OUTPUT POWER

Conducted Output Power

Test Set-up



Test Procedure

- KDB971168 D01v03 - Section 5.2.4
- ANSI C63.26-2015 – Section 5.2.4.2

When an average power meter is used to perform RF output power measurements, the fundamental condition that measurements be performed only over durations of active transmissions at maximum output power level applies. Thus, an average power meter can always be used to perform the measurement when the EUT can be configured to transmit continuously.

If the EUT cannot be configured to transmit continuously (i.e., burst duty cycle < 98%), then the following options can be implemented to facilitate measurement of the average power with an average power meter:

- a) A gated average power meter can be used to perform the measurement if the gating parameters can be adjusted such that the power is measured only during active transmission bursts at maximum output power levels.
- b) A conventional average power meter with no signal gating capability can also be used if the measured burst duty cycle is constant (i.e., duty cycle variations are less than or equal to $\pm 2\%$) by performing the measurement over the on/off burst cycles and then correcting (increasing) the measured level by a factor equal to $[10 \log (1/\text{duty cycle})]$.

- ERP & EIRP (Effective Radiated Power & Equivalent Isotropic Radiated Power)

Test Procedure

- KDB971168 D01v03 - Section 5.6
- ANSI C63.26-2015 – Section 5.2.5.5

Determining ERP and EIRP from conducted RF output power measurement results

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

where:

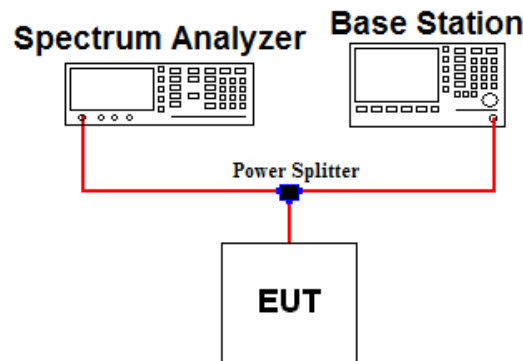
ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas} , typically dBW or dBm);

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

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

3.2. PEAK TO AVERAGE RATIO

Test set-up



Test Procedure

- KDB971168 D01v03 - Section 5.7.2
- ANSI C63.26-2015 – Section 5.2.3.4

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The present of time the signal spends at or above the level defines the probability for that particular power level.

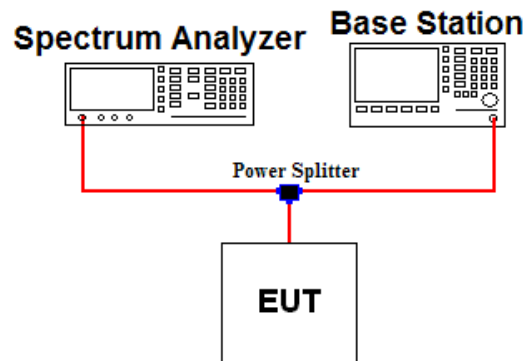
Test setting

The spectrum Analyzer's CCDF measurement function is enabled.

1. Set resolution/measurement bandwidth $\geq$ OBW or specified reference bandwidth.
2. Set the number of counts to a value that stabilizes the measured CCDF curve.
3. Set the measurement interval as follows:
 - 1) For continuous transmissions, set to the greater of $[10 \times (\text{number of points in sweep}) \times (\text{transmission symbol period})]$ or 1 ms.
 - 2) For burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize. Set the measurement interval to a time that is less than or equal to the burst duration.
 - 3) If there are several carriers in a single antenna port, the peak power shall be determined for each individual carrier (by disabling the other carriers while measuring the required carrier) and the total peak power calculated from the sum of the individual carrier peak powers.
4. Record the maximum PAPR level associated with a probability of 0.1 %.
5. The peak power level is calculated from the sum of the PAPR value from step d) to the measured average power.

3.3. OCCUPIED BANDWIDTH

Test set-up



Test Procedure

- KDB971168 D01v03 - Section 4.3
- ANSI C63.26-2015 – Section 5.4.4

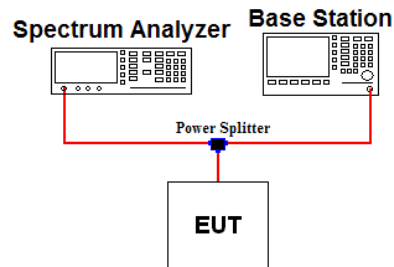
The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power of a given emission.

Test setting

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99 % occupied bandwidth and the 26 dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. $RBW = 1 \% \sim 5 \%$ of the expected OBW & $VBW \geq 3 \times RBW$
3. Detector = Peak
4. Trance mode = Max hold
5. Sweep = Auto couple
6. The trace was allowed to stabilize
7. If necessary, step 2 ~ 6 were repeated after changing the RBW such that it would be within 1 % ~ 5 % of the 99 % occupied bandwidth observed in step 6.

3.4. BAND EDGE EMISSIONS AT ANTENNA TERMINAL

Test set-up



Test Procedure

- KDB971168 D01v03 - Section 6
- ANSI C63.26-2015 – Section 5.7

All out of band emissions are measured by means of a calibrated spectrum analyzer. The EUT was setup to maximum output power at its lowest and highest channel with all bandwidths, modulations and RB configurations.

Test setting

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW $\geq 1\%$ of the emission bandwidth or Specified bandwidth
4. VBW $\geq 3 \times$ RBW
5. Detector = RMS & Trace mode = Max hold or Average
6. Sweep time = Auto couple or 1 s for band edge
7. Number of sweep point $\geq 2 \times$ span / RBW
8. The trace was allowed to stabilize

Note 1: Per Part 22.917(b)(1) / 24.238(b) / 27.53(h) in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to demonstrate compliance with the out-of-band emissions limit.

Note 2: Per Part 27.53(g) for operations in the 600 MHz band and the 698-746 MHz band, compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

Note 3: Per Part 27.53(c.4) for all frequencies between 763 MHz - 775 MHz and 793 MHz - 805 MHz, the FCC limit is $65 + 10 \log_{10}(P[\text{Watts}]) = -35$ dBm in a 6.25 kHz bandwidth.

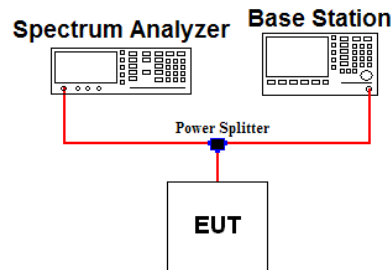
Note 4: For part 27.53(m)(4) the attenuation factor shall be not less than $40 + 10 \log(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log(P)$ dB on all frequencies between 2 490.5 MHz and 2 496 MHz and $55 + 10 \log(P)$ dB at or below 2 490.5 MHz.

Note 5: Per Part 90.543(e) for operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

- (1) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations.
- (2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.
- (3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least $43 + 10 \log (P)$ dB.
- (4) Compliance with the provisions of paragraphs (e)(1) and (2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.
- (5) Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed.

3.5. SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL

Test set-up



Test Procedure

- KDB971168 D01v03 - Section 6
- ANSI C63.26-2015 – Section 5.7

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The EUT was setup to maximum output power at its low, middle, high channel with all bandwidths, modulations and RB configurations. The spectrum is scanned from 9 kHz up to a frequency including its 10th harmonic.

The power of any spurious emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB.

Test setting

1. RBW = 100 kHz(Below 1 GHz) or 1 MHz(Above 1 GHz) & VBW $\geq 3 \times$ RBW (Refer to Note 2)
2. Detector = RMS & Trace mode = Max hold or Average
3. Sweep time = Auto couple
4. Number of sweep point $\geq 2 \times$ span / RBW
5. The trace was allowed to stabilize

Note 1: For TDD signal, the trace mode was set to average and trigger was set to free run.

And added $10 \log (1/\text{duty cycle})$ to the measured power level. (Path loss was applied to the spectrum correction factor, and $10 \log (1/\text{duty cycle})$ was applied to the spectrum offset function during measurement.

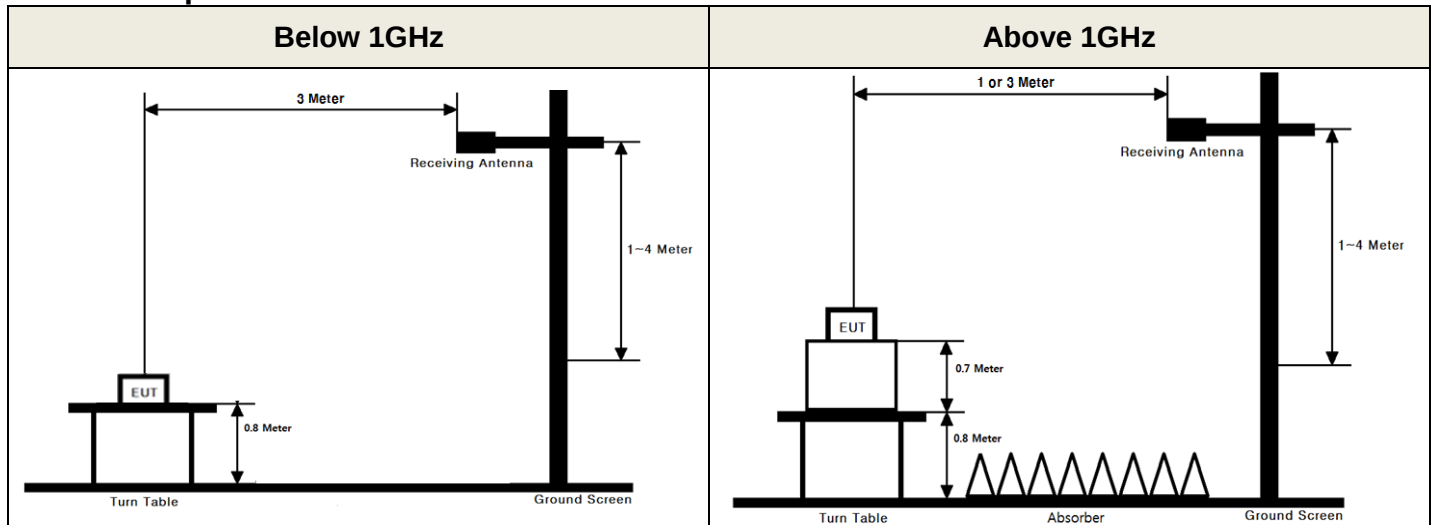
EUT duty cycle (TDD Bands)

Band	$T_{\text{on}}(\text{ms})$	$T_{\text{on+off}}(\text{ms})$	Duty cycle = $T_{\text{on}} / (T_{\text{on+off}})$	$10 \log (1/\text{duty cycle})$
38	2	5	0.4	3.98 dB

Note 2: Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for frequencies less than 1 GHz and 1 MHz or greater for frequencies greater than 1GHz.

3.6. UNDESIRABLE EMISSIONS

Test Set-up



These measurements were performed at 3 test site. The equipment under test is placed on a non-conductive table 0.8 or 1.5 meters above a turntable which is flush with the ground plane and 3 meters from the receive antenna. For measurements above 1 GHz absorbers are placed on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1 GHz, the absorbers are removed.

Test Procedure

- KDB971168 D01v03 - Section 6
- ANSI C63.26-2015 – Section 5.5
- ANSI/TIA-603-E-2016 - Section 2.2.12

Test setting

1. RBW = 100 kHz for below 1 GHz and 1 MHz for above 1 GHz / VBW $\geq 3 \times$ RBW
2. Detector = RMS & Trace mode = power averaging (rms)
3. Sweep time = Auto couple
4. Number of sweep point $\geq 2 \times$ span / RBW
5. The trace was allowed to stabilize

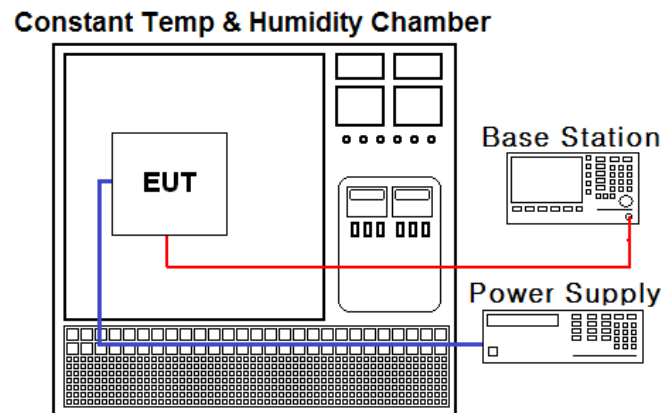
Note1: If duty cycle < 98%, add $10 \log (1/\text{duty cycle})$ to the measured power level to compute the average power during continuous transmission. Please refer to the section 3.4 note 1 for duty cycle.

The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. For radiated power measurements below 1 GHz, a half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading.

For radiated power measurements above 1 GHz, a Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. The difference between the gain of the horn and an isotropic antenna are taken into consideration. This measurement was performed with the EUT oriented in 3 orthogonal axis.

3.7. FREQUENCY STABILITY

Test Set-up



Test Procedure

- KDB971168 D01v03 - Section 9
- ANSI/TIA-603-E-2016

The frequency stability of the transmitter is measured by:

a.) **Temperature:**

The temperature is varied from -30 °C to +50 °C using an environmental chamber.

b.) **Primary Supply Voltage:**

The primary supply voltage is varied from 85 % to 115 % of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

Specification:

Part 24.235, Part 27.54: The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Part 22.355: The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ (± 2.5 ppm) of the center frequency.

Part 90.539(e): The frequency stability of mobile, portable and control transmitters operating in the wideband segment must be 1.25 parts per million or better when AFC is locked to a base station, and 5 parts per million or better when AFC is not locked.

Time Period and Procedure:

1. The carrier frequency of the transmitter is measured at room temperature.
(20 °C to provide a reference)
2. The equipment is turned on in a "standby" condition for one minute before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10 °C intervals ranging from -30 °C to +50 °C.
A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

4. LIST OF TEST EQUIPMENT

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal. Date (yy/mm/dd)	S/N
Spectrum Analyzer	Agilent Technologies	N9020A	23/12/15	24/12/15	MY50110097
Spectrum Analyzer	Agilent Technologies	N9020A	23/12/15	24/12/15	MY50410163
Spectrum Analyzer	KEYSIGHT	N9030B	23/12/15	24/12/15	MY55480168
DC power supply	H.P	66332A	23/12/15	24/12/15	US37471368
Multimeter	FLUKE	17B+	23/12/15	24/12/15	36390701WS
Power Splitter	Anritsu	K241B	23/06/23	24/06/23	020611
			24/06/04	25/06/04	
Temp & Humi	SJ Science	SJ-TH-S50	23/06/22	24/06/22	SJ-TH-S50-130930
			24/06/11	25/06/11	
Radio Communication Analyzer	Anritsu	MT8821C	23/12/15	24/12/15	6262062793
Thermohygrometer	BODYCOM	BJ5478	23/12/15	24/12/15	120612-1
Thermohygrometer	BODYCOM	BJ5478	23/12/15	24/12/15	120612-2
Signal Generator	Rohde Schwarz	SMBV100A	23/12/15	24/12/15	255571
Signal Generator	ANRITSU	MG3695C	23/12/15	24/12/15	173501
Loop Antenna	ETS-Lindgren	6502	23/11/09	24/11/09	00060496
BILOG ANTENNA	Schwarzbeck	VULB9160	23/12/15	24/12/15	3362
Dipole Antenna	Schwarzbeck	UHA9105	22/12/16	24/12/16	2262
HORN ANT	ETS	3117	23/12/15	24/12/15	00140394
HORN ANT	A.H.Systems	SAS-574	23/06/23	24/06/23	155
			24/06/11	25/06/11	
PreAmplifier	H.P	8447D	23/12/15	24/12/15	2944A07774
PreAmplifier	Agilent	8449B	23/12/15	24/12/15	3008A02108
PreAmplifier	tsj	MLA-1840-J02-45	23/06/23	24/06/23	16966-10728
			24/06/03	25/06/03	
High Pass Filter	Wainwright Instruments	WHKX12-935-1000-15000-40SS	23/12/15	24/12/15	7
High Pass Filter	Wainwright Instruments	WHKX10-2838-3300-18000-60SS	23/12/15	24/12/15	2
High Pass Filter	Wainwright Instruments	WHKX6-6320-8000-26500-40CC	23/12/15	24/12/15	2
Cable	HUBER+SUHNER	SUCOFLEX100	24/01/03	25/01/03	M-1
Cable	HUBER+SUHNER	SUCOFLEX100	24/01/03	25/01/03	M-2
Cable	Junkosha	MWX241/B	24/01/03	25/01/03	M-3
Cable	Junkosha	MWX221	24/01/03	25/01/03	M-4
Cable	Junkosha	MWX221	24/01/03	25/01/03	M-5
Cable	JUNFLON	J12J101757-00	24/01/03	25/01/03	M-7
Cable	HUBER+SUHNER	SUCOFLEX104	24/01/03	25/01/03	M-8
Cable	HUBER+SUHNER	SUCOFLEX106	24/01/03	25/01/03	M-9
Cable	Junkosha	MWX315	24/01/03	25/01/03	M-10
Cable	DTNC	Cable	24/01/03	25/01/03	RFC-69
Cable	Junkosha	MWX241	24/01/03	25/01/03	mmW-1
Cable	Junkosha	MWX241	24/01/03	25/01/03	mmW-4
Test Software	tsj	Radiated Emission Measurement	NA	NA	Version 2.00.0185
Test Software	tsj	Noise Terminal Measurement	NA	NA	Version 2.00.0190

Note1: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017.

Note2: The cable is not a regular calibration item, so it has been calibrated by Dt&C itself.

5. SUMMARY OF TEST RESULTS

FCC Part Section(s)	Test Description	Test Limit	Status Note 1
2.1046	Conducted Output Power	N/A	C
2.1049	Occupied Bandwidth	N/A	C
22.913(d) 24.232(d) 27.50(d.5)	Peak to Average Ratio	< 13 dB	C
2.1051 22.917(a) 24.238(a) 27.53(g) 27.53(h) 27.53(c)	Band Edge / Conducted Spurious Emissions	> 43 + 10log ₁₀ (P) dB at Band edge and for all out-of-band emissions	C
27.53(c.4)	Undesirable emissions in 763 ~ 775MHz & 793 ~ 806MHz	>65 + 10 log (P) dB in a 6.25 kHz band segment frequencies between 763-775 MHz and 793-805 MHz	C
27.53(m)	Band Edge / Conducted Spurious Emissions	> 40 + 10log ₁₀ (P) dB at channel edge and 5 MHz from the channel edge > 43 + 10log ₁₀ (P) dB at 5 MHz and X MHz from the channel edge > 55 + 10log ₁₀ (P) dB at all frequencies more than X MHz from the channel edge	C
90.543(e)	Band Edge / Conducted Spurious Emissions	>65 + 10 log (P) dB in a 6.25 kHz band segment frequencies between 769-775MHz and 799-805MHz >43 + 10 log (P) dB at frequency between 775-788 MHz, above 805 MHz, and below 758 MHz	C
2.1055 22.355 24.235 27.54 90.539(e)	Frequency Stability	Refer to section 3.7 of this report.	C
27.50(b.10) 27.50(c.10) 90.542(a.7)	Radiated Output Power (B12, 17, 13, 14, 71)	< 3 Watts max. ERP	C
22.913(a.5)	Radiated Output Power (B5)	For mobile equipment: < 7 Watts max. ERP	C
27.50(d)(4)	Radiated Output Power (B66, 4)	For mobile equipment: < 1 Watts max. EIRP	C
24.232(c) 27.50(h.2)	Radiated Output Power (B2, 7, 38)	For mobile equipment: < 2 Watts max. EIRP	C
2.1053 22.917(a) 24.238(a) 27.53(g) 27.53(h) 90.543(c)	Undesirable Emissions (B5, 2, 66, 4, 12, 17, 13, 14, 71)	> 43 + 10log ₁₀ (P) dB for all out-of-band emissions	C Note2
27.53(f) 90.543(f)	Undesirable Emissions in 1559 ~ 1610 MHz (B13, 14)	< -70 dBW/MHz (for wideband signals) < -80 dBW (for discrete emissions of less than 700 Hz bandwidth)	C Note2
27.53(m)(4)	Undesirable Emissions (B7, 38)	> 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge where X is the greater of 6 megahertz or the actual emission bandwidth	C Note2
Note 1: C=Comply NC=Not Comply NT=Not Tested NA=Not Applicable Note 2: This test item was performed in three orthogonal EUT positions and the worst case data was reported. Note 3: LTE Band 12 (699 ~ 716 MHz) overlaps the entire frequency range of LTE Band 17 (704 ~ 716 MHz). Therefore, test data provided in this test report covers Band 17 as well as Band 12. LTE Band 66 (1710 ~ 1780 MHz) overlaps the entire frequency range of LTE Band 4 (1710 ~ 1750 MHz). Therefore, test data provided in this test report covers Band 4 as well as Band 66.			

6. SAMPLE CALCULATION

A. Emission Designator

LTE Band 5(QPSK)

Emission Designator = **8M93G7D**

LTE OBW = 8.931 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data Transmission

LTE Band 5(16QAM)

Emission Designator = **8M93W7D**

LTE OBW = 8.929 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data Transmission

LTE Band 5(64QAM)

Emission Designator = **8M95W7D**

LTE OBW = 8.954 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data Transmission

LTE Band 5(256QAM)

Emission Designator = **8M96W7D**

LTE OBW = 8.962 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data Transmission

B. For substitution method

Unwanted emissions

- 1) The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1 GHz respectively above ground.
- 2) The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
- 3) Vary the measurement antenna height through 1 m to 4 m and the rotate EUT through 360° in order to determine the maximum emission level.
- 4) Record the measured emission level and frequency using the available test method.
If required by the test method, add $10 \log(1/\text{duty cycle})$ to measured emission level.
- 5) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.
- 6) Vary the measurement antenna height between 1 m to 4 m to maximize the received (measured) signal amplitude. And adjust the signal generator output power level until the amplitude detected by the measurement instrument equals the previously measured emission level.
- 7) The conducted power at the terminal of the substitute antenna is measured.
- 8) Record the level at substituted antenna terminal.
- 9) The result is calculated as below;

Result: EIRP(dBm) = Level at Substitute antenna terminal + Substitute Antenna Gain (dBi)

Result: ERP(dBm) = Level at Substitute antenna terminal + Substitute Antenna Gain (dBd)

Where, TX Antenna Gain (dBd) = TX Antenna Gain (dBi) - 2.15 dB

7. TEST DATA

7.1. OCCUPIED BANDWIDTH

- Plots of the EUT's Occupied Bandwidth are shown in Clause 8.1

7.2. PEAK TO AVERAGE RATIO

- Plots of the EUT's Peak- to- Average Ratio are shown in Clause 8.2

7.3. BAND EDEG EMISSIONS (Conducted)

- Plots of the EUT's Band Edge Emissions are shown in Clause 8.3

7.4. SPURIOUS AND HARMONICS EMISSIONS (Conducted)

- Plots of the EUT's Spurious Emissions are shown in Clause 8.4

7.5. MAXIMUM OUTPUT POWER

- Test Notes

1) The EUT was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the below table.

2) EIRP = Conducted Output Power(dBm) + Antenna gain(dBi), ERP = EIRP – 2.15(dB)

7.5.1. LTE Band 71

Channel Bandwidth (MHz)	Frequency (MHz)	Modulation	RB Size/ Offset	Conducted Output Power (dBm)	Antenna Gain(dBi)	EIRP (dBm)	ERP (dBm)
20	673	QPSK	1/50	22.10	-5.44	16.66	14.51
		16QAM	1/50	21.29	-5.44	15.85	13.70
		64QAM	1/50	20.23	-5.44	14.79	12.64
		256QAM	1/50	17.27	-5.44	11.83	9.68
	680.5	QPSK	1/50	22.02	-5.44	16.58	14.43
		16QAM	1/50	21.17	-5.44	15.73	13.58
		64QAM	1/50	20.13	-5.44	14.69	12.54
		256QAM	1/50	17.18	-5.44	11.74	9.59
	688	QPSK	1/50	22.23	-5.44	16.79	14.64
		16QAM	1/50	21.39	-5.44	15.95	13.80
		64QAM	1/50	20.34	-5.44	14.90	12.75
		256QAM	1/50	17.35	-5.44	11.91	9.76
15	670.5	QPSK	1/36	21.96	-5.44	16.52	14.37
		16QAM	1/36	21.11	-5.44	15.67	13.52
		64QAM	1/36	20.05	-5.44	14.61	12.46
		256QAM	1/36	17.13	-5.44	11.69	9.54
	680.5	QPSK	1/36	21.95	-5.44	16.51	14.36
		16QAM	1/36	21.09	-5.44	15.65	13.50
		64QAM	1/36	20.02	-5.44	14.58	12.43
		256QAM	1/36	17.06	-5.44	11.62	9.47
	690.5	QPSK	1/36	21.99	-5.44	16.55	14.40
		16QAM	1/36	21.12	-5.44	15.68	13.53
		64QAM	1/36	20.07	-5.44	14.63	12.48
		256QAM	1/36	17.09	-5.44	11.65	9.50
10	668	QPSK	1/25	22.04	-5.44	16.60	14.45
		16QAM	1/25	21.23	-5.44	15.79	13.64
		64QAM	1/25	20.23	-5.44	14.79	12.64
		256QAM	1/25	17.23	-5.44	11.79	9.64
	680.5	QPSK	1/25	22.03	-5.44	16.59	14.44
		16QAM	1/25	21.18	-5.44	15.74	13.59
		64QAM	1/25	20.19	-5.44	14.75	12.60
		256QAM	1/25	17.17	-5.44	11.73	9.58
	693	QPSK	1/25	22.16	-5.44	16.72	14.57
		16QAM	1/25	21.31	-5.44	15.87	13.72
		64QAM	1/25	20.29	-5.44	14.85	12.70
		256QAM	1/25	17.23	-5.44	11.79	9.64

Channel Bandwidth (MHz)	Frequency (MHz)	Modulation	RB Size/ Offset	Conducted Output Power (dBm)	Antenna Gain(dBi)	EIRP (dBm)	ERP (dBm)
5	665.5	QPSK	1/12	21.89	-5.44	16.45	14.30
		16QAM	1/12	21.07	-5.44	15.63	13.48
		64QAM	1/12	20.03	-5.44	14.59	12.44
		256QAM	1/12	17.08	-5.44	11.64	9.49
	680.5	QPSK	1/12	21.84	-5.44	16.40	14.25
		16QAM	1/12	21.03	-5.44	15.59	13.44
		64QAM	1/12	20.00	-5.44	14.56	12.41
		256QAM	1/12	17.03	-5.44	11.59	9.44
	695.5	QPSK	1/12	21.94	-5.44	16.50	14.35
		16QAM	1/12	21.13	-5.44	15.69	13.54
		64QAM	1/12	20.07	-5.44	14.63	12.48
		256QAM	1/12	17.13	-5.44	11.69	9.54

7.5.2. LTE Band 12(17)

Channel Bandwidth (MHz)	Frequency (MHz)	Modulation	RB Size/ Offset	Conducted Output Power (dBm)	Antenna Gain(dBi)	EIRP (dBm)	ERP (dBm)
10	704	QPSK	1/25	21.82	-5.44	16.38	14.23
		16QAM	1/25	20.97	-5.44	15.53	13.38
		64QAM	1/25	19.98	-5.44	14.54	12.39
		256QAM	1/25	17.01	-5.44	11.57	9.42
	707.5	QPSK	1/25	21.89	-5.44	16.45	14.30
		16QAM	1/25	21.08	-5.44	15.64	13.49
		64QAM	1/25	20.08	-5.44	14.64	12.49
		256QAM	1/25	17.05	-5.44	11.61	9.46
	711	QPSK	1/25	21.85	-5.44	16.41	14.26
		16QAM	1/25	21.04	-5.44	15.60	13.45
		64QAM	1/25	20.01	-5.44	14.57	12.42
		256QAM	1/25	17.04	-5.44	11.60	9.45
5	701.5	QPSK	1/12	21.76	-5.44	16.32	14.17
		16QAM	1/12	20.95	-5.44	15.51	13.36
		64QAM	1/12	19.94	-5.44	14.50	12.35
		256QAM	1/12	16.95	-5.44	11.51	9.36
	707.5	QPSK	1/12	21.85	-5.44	16.41	14.26
		16QAM	1/12	21.04	-5.44	15.60	13.45
		64QAM	1/12	19.99	-5.44	14.55	12.40
		256QAM	1/12	17.02	-5.44	11.58	9.43
	713.5	QPSK	1/12	21.81	-5.44	16.37	14.22
		16QAM	1/12	20.97	-5.44	15.53	13.38
		64QAM	1/12	19.88	-5.44	14.44	12.29
		256QAM	1/12	16.96	-5.44	11.52	9.37
3	700.5	QPSK	1/7	21.76	-5.44	16.32	14.17
		16QAM	1/7	20.94	-5.44	15.50	13.35
		64QAM	1/7	19.95	-5.44	14.51	12.36
		256QAM	1/7	16.94	-5.44	11.50	9.35
	707.5	QPSK	1/7	21.83	-5.44	16.39	14.24
		16QAM	1/7	21.02	-5.44	15.58	13.43
		64QAM	1/7	20.01	-5.44	14.57	12.42
		256QAM	1/7	16.99	-5.44	11.55	9.40
	714.5	QPSK	1/7	21.80	-5.44	16.36	14.21
		16QAM	1/7	20.99	-5.44	15.55	13.40
		64QAM	1/7	19.97	-5.44	14.53	12.38
		256QAM	1/7	16.97	-5.44	11.53	9.38

Channel Bandwidth (MHz)	Frequency (MHz)	Modulation	RB Size/ Offset	Conducted Output Power (dBm)	Antenna Gain(dBi)	EIRP (dBm)	ERP (dBm)
1.4	699.7	QPSK	1/2	21.56	-5.44	16.12	13.97
		16QAM	1/2	20.75	-5.44	15.31	13.16
		64QAM	1/2	19.58	-5.44	14.14	11.99
		256QAM	1/2	16.75	-5.44	11.31	9.16
	707.5	QPSK	1/2	21.67	-5.44	16.23	14.08
		16QAM	1/2	20.86	-5.44	15.42	13.27
		64QAM	1/2	19.84	-5.44	14.40	12.25
		256QAM	1/2	16.80	-5.44	11.36	9.21
	715.3	QPSK	1/2	21.63	-5.44	16.19	14.04
		16QAM	1/2	20.81	-5.44	15.37	13.22
		64QAM	1/2	19.81	-5.44	14.37	12.22
		256QAM	1/2	16.78	-5.44	11.34	9.19

7.5.3. LTE Band 13

Channel Bandwidth (MHz)	Frequency (MHz)	Modulation	RB Size/ Offset	Conducted Output Power (dBm)	Antenna Gain(dBi)	EIRP (dBm)	ERP (dBm)
10	782	QPSK	1/0	21.83	-4.50	17.33	15.18
		16QAM	1/0	20.95	-4.50	16.45	14.30
		64QAM	1/0	19.88	-4.50	15.38	13.23
		256QAM	1/0	16.94	-4.50	12.44	10.29
5	779.5	QPSK	1/0	21.82	-4.50	17.32	15.17
		16QAM	1/0	20.93	-4.50	16.43	14.28
		64QAM	1/0	19.86	-4.50	15.36	13.21
		256QAM	1/0	16.91	-4.50	12.41	10.26
	782	QPSK	1/0	21.80	-4.50	17.30	15.15
		16QAM	1/0	20.92	-4.50	16.42	14.27
		64QAM	1/0	19.83	-4.50	15.33	13.18
		256QAM	1/0	16.90	-4.50	12.40	10.25
	784.5	QPSK	1/0	21.72	-4.50	17.22	15.07
		16QAM	1/0	20.88	-4.50	16.38	14.23
		64QAM	1/0	19.75	-4.50	15.25	13.10
		256QAM	1/0	16.89	-4.50	12.39	10.24

7.5.4. LTE Band 14

Channel Bandwidth (MHz)	Frequency (MHz)	Modulation	RB Size/ Offset	Conducted Output Power (dBm)	Antenna Gain(dBi)	EIRP (dBm)	ERP (dBm)
10	793	QPSK	1/25	22.84	-3.84	19.00	16.85
		16QAM	1/25	21.96	-3.84	18.12	15.97
		64QAM	1/25	20.80	-3.84	16.96	14.81
		256QAM	1/25	17.86	-3.84	14.02	11.87
5	790.5	QPSK	1/12	22.78	-3.84	18.94	16.79
		16QAM	1/12	21.95	-3.84	18.11	15.96
		64QAM	1/12	20.86	-3.84	17.02	14.87
		256QAM	1/12	17.85	-3.84	14.01	11.86
	793	QPSK	1/12	22.75	-3.84	18.91	16.76
		16QAM	1/12	21.94	-3.84	18.10	15.95
		64QAM	1/12	20.82	-3.84	16.98	14.83
		256QAM	1/12	17.87	-3.84	14.03	11.88
	795.5	QPSK	1/12	22.73	-3.84	18.89	16.74
		16QAM	1/12	21.89	-3.84	18.05	15.90
		64QAM	1/12	20.76	-3.84	16.92	14.77
		256QAM	1/12	17.92	-3.84	14.08	11.93

7.5.5. LTE Band 5

Channel Bandwidth (MHz)	Frequency (MHz)	Modulation	RB Size/ Offset	Conducted Output Power (dBm)	Antenna Gain(dBi)	EIRP (dBm)	ERP (dBm)
10	829	QPSK	1/25	22.25	-1.91	20.34	18.19
		16QAM	1/25	21.26	-1.91	19.35	17.20
		64QAM	1/25	20.22	-1.91	18.31	16.16
		256QAM	1/25	17.23	-1.91	15.32	13.17
	836.5	QPSK	1/25	22.20	-1.91	20.29	18.14
		16QAM	1/25	21.27	-1.91	19.36	17.21
		64QAM	1/25	20.23	-1.91	18.32	16.17
		256QAM	1/25	17.26	-1.91	15.35	13.20
	844	QPSK	1/25	22.14	-1.91	20.23	18.08
		16QAM	1/25	21.23	-1.91	19.32	17.17
		64QAM	1/25	20.12	-1.91	18.21	16.06
		256QAM	1/25	17.33	-1.91	15.42	13.27
5	826.5	QPSK	1/12	22.14	-1.91	20.23	18.08
		16QAM	1/12	21.24	-1.91	19.33	17.18
		64QAM	1/12	20.15	-1.91	18.24	16.09
		256QAM	1/12	17.32	-1.91	15.41	13.26
	836.5	QPSK	1/12	22.13	-1.91	20.22	18.07
		16QAM	1/12	21.26	-1.91	19.35	17.20
		64QAM	1/12	20.11	-1.91	18.20	16.05
		256QAM	1/12	17.29	-1.91	15.38	13.23
	846.5	QPSK	1/12	22.12	-1.91	20.21	18.06
		16QAM	1/12	21.26	-1.91	19.35	17.20
		64QAM	1/12	20.14	-1.91	18.23	16.08
		256QAM	1/12	17.23	-1.91	15.32	13.17
3	825.5	QPSK	1/7	22.17	-1.91	20.26	18.11
		16QAM	1/7	21.24	-1.91	19.33	17.18
		64QAM	1/7	20.19	-1.91	18.28	16.13
		256QAM	1/7	17.25	-1.91	15.34	13.19
	836.5	QPSK	1/7	22.14	-1.91	20.23	18.08
		16QAM	1/7	21.20	-1.91	19.29	17.14
		64QAM	1/7	20.20	-1.91	18.29	16.14
		256QAM	1/7	17.33	-1.91	15.42	13.27
	847.5	QPSK	1/7	22.13	-1.91	20.22	18.07
		16QAM	1/7	21.19	-1.91	19.28	17.13
		64QAM	1/7	20.19	-1.91	18.28	16.13
		256QAM	1/7	17.32	-1.91	15.41	13.26

Channel Bandwidth (MHz)	Frequency (MHz)	Modulation	RB Size/ Offset	Conducted Output Power (dBm)	Antenna Gain(dBi)	EIRP (dBm)	ERP (dBm)
1.4	824.7	QPSK	1/2	22.13	-1.91	20.22	18.07
		16QAM	1/2	21.15	-1.91	19.24	17.09
		64QAM	1/2	20.03	-1.91	18.12	15.97
		256QAM	1/2	17.29	-1.91	15.38	13.23
	836.5	QPSK	1/2	22.07	-1.91	20.16	18.01
		16QAM	1/2	21.09	-1.91	19.18	17.03
		64QAM	1/2	20.09	-1.91	18.18	16.03
		256QAM	1/2	17.26	-1.91	15.35	13.20
	848.3	QPSK	1/2	22.06	-1.91	20.15	18.00
		16QAM	1/2	21.13	-1.91	19.22	17.07
		64QAM	1/2	20.06	-1.91	18.15	16.00
		256QAM	1/2	17.25	-1.91	15.34	13.19

7.5.6. LTE Band 66(4)

Channel Bandwidth (MHz)	Frequency (MHz)	Modulation	RB Size/ Offset	Conducted Output Power (dBm)	Antenna Gain(dBi)	EIRP (dBm)
20	1 720	QPSK	1/50	22.30	0.30	22.60
		16QAM	1/50	21.43	0.30	21.73
		64QAM	1/50	20.43	0.30	20.73
		256QAM	1/50	17.24	0.30	17.54
	1 745	QPSK	1/50	22.45	0.30	22.75
		16QAM	1/50	21.54	0.30	21.84
		64QAM	1/50	20.55	0.30	20.85
		256QAM	1/50	17.39	0.30	17.69
	1 770	QPSK	1/50	22.37	0.30	22.67
		16QAM	1/50	21.45	0.30	21.75
		64QAM	1/50	20.48	0.30	20.78
		256QAM	1/50	17.39	0.30	17.69
15	1 717.5	QPSK	1/36	22.16	0.30	22.46
		16QAM	1/36	21.35	0.30	21.65
		64QAM	1/36	20.28	0.30	20.58
		256QAM	1/36	17.34	0.30	17.64
	1 745	QPSK	1/36	22.34	0.30	22.64
		16QAM	1/36	21.47	0.30	21.77
		64QAM	1/36	20.49	0.30	20.79
		256QAM	1/36	17.37	0.30	17.67
	1 772.5	QPSK	1/36	22.19	0.30	22.49
		16QAM	1/36	21.34	0.30	21.64
		64QAM	1/36	20.27	0.30	20.57
		256QAM	1/36	17.29	0.30	17.59
10	1 715	QPSK	1/25	22.24	0.30	22.54
		16QAM	1/25	21.38	0.30	21.68
		64QAM	1/25	20.36	0.30	20.66
		256QAM	1/25	17.37	0.30	17.67
	1 745	QPSK	1/25	22.40	0.30	22.70
		16QAM	1/25	21.50	0.30	21.80
		64QAM	1/25	20.54	0.30	20.84
		256QAM	1/25	17.50	0.30	17.80
	1 775	QPSK	1/25	22.29	0.30	22.59
		16QAM	1/25	21.44	0.30	21.74
		64QAM	1/25	20.39	0.30	20.69
		256QAM	1/25	17.44	0.30	17.74

Channel Bandwidth (MHz)	Frequency (MHz)	Modulation	RB Size/ Offset	Conducted Output Power (dBm)	Antenna Gain(dBi)	EIRP (dBm)
5	1 712.5	QPSK	1/12	22.16	0.30	22.46
		16QAM	1/12	21.29	0.30	21.59
		64QAM	1/12	20.29	0.30	20.59
		256QAM	1/12	17.34	0.30	17.64
	1 745	QPSK	1/12	22.40	0.30	22.70
		16QAM	1/12	21.49	0.30	21.79
		64QAM	1/12	20.46	0.30	20.76
		256QAM	1/12	17.57	0.30	17.87
	1 777.5	QPSK	1/12	22.19	0.30	22.49
		16QAM	1/12	21.33	0.30	21.63
		64QAM	1/12	20.32	0.30	20.62
		256QAM	1/12	17.31	0.30	17.61
3	1 711.5	QPSK	1/7	22.29	0.30	22.59
		16QAM	1/7	21.44	0.30	21.74
		64QAM	1/7	20.46	0.30	20.76
		256QAM	1/7	17.47	0.30	17.77
	1 745	QPSK	1/7	22.44	0.30	22.74
		16QAM	1/7	21.57	0.30	21.87
		64QAM	1/7	20.57	0.30	20.87
		256QAM	1/7	17.58	0.30	17.88
	1 778.5	QPSK	1/7	22.31	0.30	22.61
		16QAM	1/7	21.45	0.30	21.75
		64QAM	1/7	20.44	0.30	20.74
		256QAM	1/7	17.44	0.30	17.74
1.4	1 710.7	QPSK	1/2	22.27	0.30	22.57
		16QAM	1/2	21.39	0.30	21.69
		64QAM	1/2	20.38	0.30	20.68
		256QAM	1/2	17.39	0.30	17.69
	1 745	QPSK	1/2	22.40	0.30	22.70
		16QAM	1/2	21.50	0.30	21.80
		64QAM	1/2	20.47	0.30	20.77
		256QAM	1/2	17.59	0.30	17.89
	1 779.3	QPSK	1/2	22.28	0.30	22.58
		16QAM	1/2	21.36	0.30	21.66
		64QAM	1/2	20.37	0.30	20.67
		256QAM	1/2	17.40	0.30	17.70

7.5.7. LTE Band 2

Channel Bandwidth (MHz)	Frequency (MHz)	Modulation	RB Size/ Offset	Conducted Output Power (dBm)	Antenna Gain(dBi)	EIRP (dBm)
20	1 860	QPSK	1/0	22.39	0.77	23.16
		16QAM	1/0	21.45	0.77	22.22
		64QAM	1/0	20.34	0.77	21.11
		256QAM	1/0	17.46	0.77	18.23
	1 880	QPSK	1/0	22.47	0.77	23.24
		16QAM	1/0	21.49	0.77	22.26
		64QAM	1/0	20.44	0.77	21.21
		256QAM	1/0	17.46	0.77	18.23
	1 900	QPSK	1/0	22.42	0.77	23.19
		16QAM	1/0	21.45	0.77	22.22
		64QAM	1/0	20.36	0.77	21.13
		256QAM	1/0	17.51	0.77	18.28
15	1 857.5	QPSK	1/0	22.09	0.77	22.86
		16QAM	1/0	21.24	0.77	22.01
		64QAM	1/0	20.18	0.77	20.95
		256QAM	1/0	17.27	0.77	18.04
	1 880	QPSK	1/0	22.14	0.77	22.91
		16QAM	1/0	21.26	0.77	22.03
		64QAM	1/0	20.27	0.77	21.04
		256QAM	1/0	17.20	0.77	17.97
	1 902.5	QPSK	1/0	22.12	0.77	22.89
		16QAM	1/0	21.24	0.77	22.01
		64QAM	1/0	20.15	0.77	20.92
		256QAM	1/0	17.28	0.77	18.05
10	1 855	QPSK	1/0	22.25	0.77	23.02
		16QAM	1/0	21.39	0.77	22.16
		64QAM	1/0	20.34	0.77	21.11
		256QAM	1/0	17.35	0.77	18.12
	1 880	QPSK	1/0	22.33	0.77	23.10
		16QAM	1/0	21.44	0.77	22.21
		64QAM	1/0	20.43	0.77	21.20
		256QAM	1/0	17.35	0.77	18.12
	1 905	QPSK	1/0	22.29	0.77	23.06
		16QAM	1/0	21.43	0.77	22.20
		64QAM	1/0	20.34	0.77	21.11
		256QAM	1/0	17.39	0.77	18.16

Channel Bandwidth (MHz)	Frequency (MHz)	Modulation	RB Size/ Offset	Conducted Output Power (dBm)	Antenna Gain(dBi)	EIRP (dBm)
5	1 852.5	QPSK	1/0	22.27	0.77	23.04
		16QAM	1/0	21.43	0.77	22.20
		64QAM	1/0	20.26	0.77	21.03
		256QAM	1/0	17.44	0.77	18.21
	1 880	QPSK	1/0	22.36	0.77	23.13
		16QAM	1/0	21.45	0.77	22.22
		64QAM	1/0	20.44	0.77	21.21
		256QAM	1/0	17.35	0.77	18.12
	1 907.5	QPSK	1/0	22.28	0.77	23.05
		16QAM	1/0	21.45	0.77	22.22
		64QAM	1/0	20.31	0.77	21.08
		256QAM	1/0	17.45	0.77	18.22
3	1 851.5	QPSK	1/0	22.13	0.77	22.90
		16QAM	1/0	21.33	0.77	22.10
		64QAM	1/0	20.22	0.77	20.99
		256QAM	1/0	17.24	0.77	18.01
	1 880	QPSK	1/0	22.16	0.77	22.93
		16QAM	1/0	21.35	0.77	22.12
		64QAM	1/0	20.24	0.77	21.01
		256QAM	1/0	17.11	0.77	17.88
	1 908.5	QPSK	1/0	22.15	0.77	22.92
		16QAM	1/0	21.35	0.77	22.12
		64QAM	1/0	20.23	0.77	21.00
		256QAM	1/0	17.29	0.77	18.06
1.4	1 850.7	QPSK	1/0	22.22	0.77	22.99
		16QAM	1/0	21.30	0.77	22.07
		64QAM	1/0	20.33	0.77	21.10
		256QAM	1/0	17.37	0.77	18.14
	1 880	QPSK	1/0	22.42	0.77	23.19
		16QAM	1/0	21.43	0.77	22.20
		64QAM	1/0	20.43	0.77	21.20
		256QAM	1/0	17.52	0.77	18.29
	1 909.3	QPSK	1/0	22.30	0.77	23.07
		16QAM	1/0	21.38	0.77	22.15
		64QAM	1/0	20.37	0.77	21.14
		256QAM	1/0	17.43	0.77	18.20

7.5.8. LTE Band 7

Channel Bandwidth (MHz)	Frequency (MHz)	Modulation	RB Size/ Offset	Conducted Output Power (dBm)	Antenna Gain(dBi)	EIRP (dBm)
20	2 510	QPSK	1/99	22.43	-2.11	20.32
		16QAM	1/99	21.62	-2.11	19.51
		64QAM	1/99	20.47	-2.11	18.36
		256QAM	1/99	17.62	-2.11	15.51
	2 535	QPSK	1/99	22.78	-2.11	20.67
		16QAM	1/99	21.84	-2.11	19.73
		64QAM	1/99	20.84	-2.11	18.73
		256QAM	1/99	17.87	-2.11	15.76
	2 560	QPSK	1/99	22.68	-2.11	20.57
		16QAM	1/99	21.87	-2.11	19.76
		64QAM	1/99	20.71	-2.11	18.60
		256QAM	1/99	17.79	-2.11	15.68
15	2 507.5	QPSK	1/74	22.28	-2.11	20.17
		16QAM	1/74	21.45	-2.11	19.34
		64QAM	1/74	20.40	-2.11	18.29
		256QAM	1/74	17.47	-2.11	15.36
	2 535	QPSK	1/74	22.60	-2.11	20.49
		16QAM	1/74	21.76	-2.11	19.65
		64QAM	1/74	20.72	-2.11	18.61
		256QAM	1/74	17.71	-2.11	15.60
	2 562.5	QPSK	1/74	22.53	-2.11	20.42
		16QAM	1/74	21.67	-2.11	19.56
		64QAM	1/74	20.53	-2.11	18.42
		256QAM	1/74	17.57	-2.11	15.46
10	2 505	QPSK	1/49	22.38	-2.11	20.27
		16QAM	1/49	21.53	-2.11	19.42
		64QAM	1/49	20.51	-2.11	18.40
		256QAM	1/49	17.52	-2.11	15.41
	2 535	QPSK	1/49	22.70	-2.11	20.59
		16QAM	1/49	21.89	-2.11	19.78
		64QAM	1/49	20.85	-2.11	18.74
		256QAM	1/49	17.72	-2.11	15.61
	2 565	QPSK	1/49	22.61	-2.11	20.50
		16QAM	1/49	21.80	-2.11	19.69
		64QAM	1/49	20.73	-2.11	18.62
		256QAM	1/49	17.60	-2.11	15.49

Channel Bandwidth (MHz)	Frequency (MHz)	Modulation	RB Size/ Offset	Conducted Output Power (dBm)	Antenna Gain(dBi)	EIRP (dBm)
5	2 502.5	QPSK	1/24	22.37	-2.11	20.26
		16QAM	1/24	21.55	-2.11	19.44
		64QAM	1/24	20.47	-2.11	18.36
		256QAM	1/24	17.47	-2.11	15.36
	2 535	QPSK	1/24	22.61	-2.11	20.50
		16QAM	1/24	21.81	-2.11	19.70
		64QAM	1/24	20.72	-2.11	18.61
		256QAM	1/24	17.70	-2.11	15.59
	2 567.5	QPSK	1/24	22.52	-2.11	20.41
		16QAM	1/24	21.72	-2.11	19.61
		64QAM	1/24	20.56	-2.11	18.45
		256QAM	1/24	17.60	-2.11	15.49

7.5.9. LTE Band 38

Channel Bandwidth (MHz)	Frequency (MHz)	Modulation	RB Size/ Offset	Conducted Output Power (dBm)	Antenna Gain(dBi)	EIRP (dBm)
20	2 580	QPSK	1/50	22.67	2.21	24.88
		16QAM	1/50	21.85	2.21	24.06
		64QAM	1/50	20.64	2.21	22.85
		256QAM	1/50	17.64	2.21	19.85
	2 595	QPSK	1/50	22.55	2.21	24.76
		16QAM	1/50	21.70	2.21	23.91
		64QAM	1/50	20.48	2.21	22.69
		256QAM	1/50	17.74	2.21	19.95
	2 610	QPSK	1/50	22.57	2.21	24.78
		16QAM	1/50	21.75	2.21	23.96
		64QAM	1/50	20.57	2.21	22.78
		256QAM	1/50	17.75	2.21	19.96
15	2 577.5	QPSK	1/36	22.49	2.21	24.70
		16QAM	1/36	21.61	2.21	23.82
		64QAM	1/36	20.53	2.21	22.74
		256QAM	1/36	17.53	2.21	19.74
	2 595	QPSK	1/36	22.43	2.21	24.64
		16QAM	1/36	21.56	2.21	23.77
		64QAM	1/36	20.44	2.21	22.65
		256QAM	1/36	17.62	2.21	19.83
	2 612.5	QPSK	1/36	22.46	2.21	24.67
		16QAM	1/36	21.57	2.21	23.78
		64QAM	1/36	20.47	2.21	22.68
		256QAM	1/36	17.64	2.21	19.85
10	2 575	QPSK	1/25	22.57	2.21	24.78
		16QAM	1/25	21.76	2.21	23.97
		64QAM	1/25	20.72	2.21	22.93
		256QAM	1/25	17.45	2.21	19.66
	2 595	QPSK	1/25	22.46	2.21	24.67
		16QAM	1/25	21.65	2.21	23.86
		64QAM	1/25	20.61	2.21	22.82
		256QAM	1/25	17.65	2.21	19.86
	2 615	QPSK	1/25	22.49	2.21	24.70
		16QAM	1/25	21.64	2.21	23.85
		64QAM	1/25	20.63	2.21	22.84
		256QAM	1/25	17.56	2.21	19.77

Channel Bandwidth (MHz)	Frequency (MHz)	Modulation	RB Size/ Offset	Conducted Output Power (dBm)	Antenna Gain(dBi)	EIRP (dBm)
5	2 572.5	QPSK	1/12	22.45	2.21	24.66
		16QAM	1/12	21.61	2.21	23.82
		64QAM	1/12	20.53	2.21	22.74
		256QAM	1/12	17.53	2.21	19.74
	2 595	QPSK	1/12	22.37	2.21	24.58
		16QAM	1/12	21.53	2.21	23.74
		64QAM	1/12	20.46	2.21	22.67
		256QAM	1/12	17.54	2.21	19.75
	2 617.5	QPSK	1/12	22.42	2.21	24.63
		16QAM	1/12	21.55	2.21	23.76
		64QAM	1/12	20.45	2.21	22.66
		256QAM	1/12	17.59	2.21	19.80

7.6. UNDESIRABLE EMISSIONS (Radiated)

- Test Notes

- 1) The frequency spectrum is examined from 9 kHz to the 10 th harmonic of the fundamental frequency of the transmitter. No other spurious and harmonic emissions were reported greater than listed emissions.
- 2) For Band below 1GHz:
Result(dBm) = Level at Substitute antenna terminal(dBm) + Substitute Antenna Gain (dBd)
For Band above 1GHz:
Result(dBm) = Level at Substitute antenna terminal(dBm) + Substitute Antenna Gain (dBi)
- 3) Limit
Band 71/12(17)/13/14/5/66(4)/2 = -13dBm
Band 7/38 = -25dBm
Limit for 1 559 MHz ~ 1 610 MHz in Band 13/14 = -40dBm/MHz (equivalent isotropically radiated power for wideband signals)

7.6.1. LTE Band 71

Channel Bandwidth (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBd)	Result (dBm)	Limit (dBm)	Margin (dB)
20	673	1/50	QPSK	1 345.28	V	-68.87	2.32	-66.55	-13.00	53.55
				2 019.71	V	-67.01	2.96	-64.05	-13.00	51.05
				2 692.95	V	-67.00	4.21	-62.79	-13.00	49.79
				3 365.90	V	-67.72	5.86	-61.86	-13.00	48.86
	680.5	1/50	QPSK	1 361.05	V	-68.05	2.54	-65.51	-13.00	52.51
				2 041.65	V	-66.10	3.07	-63.03	-13.00	50.03
				2 722.92	V	-67.22	4.29	-62.93	-13.00	49.93
				3 402.49	V	-67.74	5.95	-61.79	-13.00	48.79
	688	1/50	QPSK	1 375.84	V	-68.84	2.74	-66.10	-13.00	53.10
				2 064.36	V	-67.08	3.15	-63.93	-13.00	50.93
				2 751.68	V	-67.18	4.36	-62.82	-13.00	49.82
				3 440.60	V	-67.84	6.09	-61.75	-13.00	48.75

7.6.2. LTE Band 12(17)

Channel Bandwidth (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBd)	Result (dBm)	Limit (dBm)	Margin (dB)
10	704	1/25	QPSK	1 408.14	V	-64.30	3.12	-61.18	-13.00	48.18
				2 111.43	V	-66.53	3.22	-63.31	-13.00	50.31
				2 815.44	V	-66.76	4.59	-62.17	-13.00	49.17
				3 519.90	V	-67.52	6.32	-61.20	-13.00	48.20
	707.5	1/25	QPSK	1 415.24	V	-66.83	3.17	-63.66	-13.00	50.66
				2 121.91	V	-66.76	3.20	-63.56	-13.00	50.56
				2 829.38	V	-66.78	4.64	-62.14	-13.00	49.14
				3 537.32	V	-67.36	6.31	-61.05	-13.00	48.05
	711	1/25	QPSK	1 422.16	V	-64.94	3.22	-61.72	-13.00	48.72
				2 132.84	V	-66.55	3.18	-63.37	-13.00	50.37
				2 844.40	V	-66.96	4.69	-62.27	-13.00	49.27
				3 555.25	V	-67.90	6.29	-61.61	-13.00	48.61

7.6.3. LTE Band 13

Channel Bandwidth (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBd)	Result (dBm)	Limit (dBm)	Margin (dB)
10	782	1/0	QPSK	1 555.16	V	-62.88	3.74	-59.14	-13.00	46.14
				2 332.77	H	-61.80	3.76	-58.04	-13.00	45.04
				3 108.35	H	-68.23	5.21	-63.02	-13.00	50.02
				3 887.56	V	-67.59	6.83	-60.76	-13.00	47.76

UNDESIRABLE EMISSIONS IN 1 559 MHz ~ 1 610 MHz (LTE Band 13)

Channel Bandwidth (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBi)	Result (dBm)	Limit (dBm)	Margin (dB)
10	782	1/25	QPSK	1 564.22	V	-63.51	5.95	-57.56	-40.00	17.56
		1/49	QPSK	1 572.72	V	-68.82	6.01	-62.81	-40.00	22.81

7.6.4. LTE Band 14

Channel Bandwidth (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBd)	Result (dBm)	Limit (dBm)	Margin (dB)
10	793	1/25	QPSK	2 379.21	V	-62.06	3.81	-58.25	-13.00	45.25
				3 172.70	V	-66.44	5.34	-61.10	-13.00	48.10
				3 964.48	V	-67.72	6.91	-60.81	-13.00	47.81

UNDESIRABLE EMISSIONS IN 1 559 MHz ~ 1 610 MHz (LTE Band 14)

Channel Bandwidth (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBi)	Result (dBm)	Limit (dBm)	Margin (dB)
10	793	1/25	QPSK	1 586.16	H	-67.25	6.11	-61.14	-40.00	21.14

7.6.5. LTE Band 5

Channel Bandwidth (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBd)	Result (dBm)	Limit (dBm)	Margin (dB)
10	829	1/25	QPSK	1 657.66	V	-69.11	4.06	-65.05	-13.00	52.05
				2 487.27	V	-61.76	3.64	-58.12	-13.00	45.12
				3 315.93	V	-67.82	5.69	-62.13	-13.00	49.13
				4 145.48	V	-69.65	7.14	-62.51	-13.00	49.51
	836.5	1/25	QPSK	1 672.95	V	-69.20	4.01	-65.19	-13.00	52.19
				2 509.85	V	-62.38	3.64	-58.74	-13.00	45.74
				3 346.47	V	-68.06	5.82	-62.24	-13.00	49.24
				4 182.71	V	-69.41	7.19	-62.22	-13.00	49.22
	844	1/25	QPSK	1 687.84	V	-68.98	3.95	-65.03	-13.00	52.03
				2 532.30	V	-63.49	3.82	-59.67	-13.00	46.67
				3 376.33	V	-67.98	5.89	-62.09	-13.00	49.09
				4 220.28	V	-69.24	7.21	-62.03	-13.00	49.03

7.6.6. LTE Band 66(4)

Channel Bandwidth (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBi)	Result (dBm)	Limit (dBm)	Margin (dB)
20	1720	1/50	QPSK	3 440.15	V	-66.17	8.23	-57.94	-13.00	44.94
				5 160.18	V	-63.33	10.15	-53.18	-13.00	40.18
				6 879.84	V	-67.32	11.41	-55.91	-13.00	42.91
				8 600.15	V	-66.81	12.93	-53.88	-13.00	40.88
				10 320.61	H	-61.33	12.87	-48.46	-13.00	35.46
	1745	1/50	QPSK	3 490.12	V	-65.20	8.44	-56.76	-13.00	43.76
				5 235.34	V	-63.79	10.22	-53.57	-13.00	40.57
				6 980.82	V	-67.52	11.56	-55.96	-13.00	42.96
				8 724.92	V	-66.11	12.98	-53.13	-13.00	40.13
				10 470.56	H	-55.00	13.09	-41.91	-13.00	28.91
	1770	1/50	QPSK	3 540.17	V	-65.61	8.46	-57.15	-13.00	44.15
				5 310.24	V	-62.92	10.22	-52.70	-13.00	39.70
				7 080.01	V	-67.96	11.69	-56.27	-13.00	43.27
				8 850.53	V	-66.13	12.96	-53.17	-13.00	40.17
				10 620.52	H	-52.54	13.02	-39.52	-13.00	26.52

7.6.7. LTE Band 2

Channel Bandwidth (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBi)	Result (dBm)	Limit (dBm)	Margin (dB)
20	1860	1/0	QPSK	3 702.14	H	-66.34	8.34	-58.00	-13.00	45.00
				5 562.29	H	-67.34	10.32	-57.02	-13.00	44.02
				7 421.60	H	-67.35	12.06	-55.29	-13.00	42.29
				9 281.17	H	-66.06	13.01	-53.05	-13.00	40.05
	1880	1/0	QPSK	3 742.28	H	-66.79	8.29	-58.50	-13.00	45.50
				5 613.33	H	-62.06	10.41	-51.65	-13.00	38.65
				7 493.10	H	-67.78	12.15	-55.63	-13.00	42.63
				9 371.98	H	-65.61	12.99	-52.62	-13.00	39.62
	1900	1/0	QPSK	3 782.23	H	-64.58	8.41	-56.17	-13.00	43.17
				5 682.11	H	-66.69	10.50	-56.19	-13.00	43.19
				7 582.41	H	-68.16	12.18	-55.98	-13.00	42.98
				9 482.82	H	-65.53	12.95	-52.58	-13.00	39.58

7.6.8. LTE Band 7

Channel Bandwidth (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBi)	Result (dBm)	Limit (dBm)	Margin (dB)
20	2510	1/99	QPSK	5 037.79	V	-68.24	10.01	-58.23	-25.00	33.23
				7 556.78	V	-64.39	12.20	-52.19	-25.00	27.19
				10 075.04	V	-60.93	12.89	-48.04	-25.00	23.04
				12 595.25	V	-62.95	13.29	-49.66	-25.00	24.66
	2535	1/99	QPSK	5 086.07	V	-68.28	10.05	-58.23	-25.00	33.23
				7 631.79	V	-65.59	12.20	-53.39	-25.00	28.39
				10 176.28	V	-61.92	12.87	-49.05	-25.00	24.05
				12 721.79	V	-62.29	13.36	-48.93	-25.00	23.93
	2560	1/99	QPSK	5 137.60	V	-68.38	10.12	-58.26	-25.00	33.26
				7 706.64	V	-63.89	12.22	-51.67	-25.00	26.67
				10 275.98	V	-62.68	12.87	-49.81	-25.00	24.81
				12 844.80	V	-61.63	13.49	-48.14	-25.00	23.14

7.6.9. LTE Band 38

Channel Bandwidth (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBi)	Result (dBm)	Limit (dBm)	Margin (dB)
20	2 580	1/50	QPSK	5 160.51	V	-64.22	10.15	-54.07	-25.00	29.07
				7 740.19	H	-62.53	12.25	-50.28	-25.00	25.28
				10 320.34	V	-56.49	12.87	-43.62	-25.00	18.62
				12 900.72	V	-61.92	13.47	-48.45	-25.00	23.45
	2 595	1/50	QPSK	5 190.87	V	-68.05	10.20	-57.85	-25.00	32.85
				7 785.27	H	-59.69	12.31	-47.38	-25.00	22.38
				10 380.26	V	-55.38	12.99	-42.39	-25.00	17.39
				12 975.54	V	-61.79	13.57	-48.22	-25.00	23.22
	2 610	1/50	QPSK	5 219.99	V	-68.21	10.21	-58.00	-25.00	33.00
				7 830.22	H	-61.43	12.34	-49.09	-25.00	24.09
				10 440.39	V	-53.53	13.09	-40.44	-25.00	15.44
				13 050.13	V	-61.86	13.68	-48.18	-25.00	23.18

7.7. FREQUENCY STABILITY

- Test Notes

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

7.7.1. LTE Band 71

OPERATING FREQUENCY : 680.5 MHz
REFERENCE VOLTAGE : 3.85 V DC
LIMIT(FCC) : The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

VOLTAGE (%)	POWER (V DC)	TEMP (°C)	FREQ (Hz)	Deviation	
				(%)	(ppm)
100 %	3.85	+20	680,500,009	0.0000013	0.013
100 %		-30	680,500,008	0.0000012	0.012
100 %		-20	680,500,006	0.0000009	0.009
100 %		-10	680,500,008	0.0000012	0.012
100 %		0	680,500,005	0.0000007	0.007
100 %		+10	680,500,007	0.0000010	0.010
100 %		+20	680,500,009	0.0000013	0.013
100 %		+30	680,500,007	0.0000010	0.010
100 %		+40	680,500,005	0.0000007	0.007
100 %		+50	680,500,006	0.0000009	0.009
115 %	4.43	+20	680,500,007	0.0000010	0.010
BAT End Point	3.15	+20	680,500,009	0.0000013	0.013

7.7.2. LTE Band 12(17)

OPERATING FREQUENCY : 707.5 MHz
 REFERENCE VOLTAGE : 3.85 V DC
 LIMIT(FCC) : The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

VOLTAGE (%)	POWER (V DC)	TEMP (°C)	FREQ (Hz)	Deviation	
				(%)	(ppm)
100 %	3.85	+20	707,500,003	0.0000004	0.004
100 %		-30	707,500,004	0.0000006	0.006
100 %		-20	707,500,004	0.0000006	0.006
100 %		-10	707,500,003	0.0000004	0.004
100 %		0	707,500,003	0.0000004	0.004
100 %		+10	707,500,001	0.0000001	0.001
100 %		+20	707,500,003	0.0000004	0.004
100 %		+30	707,500,003	0.0000004	0.004
100 %		+40	707,500,005	0.0000007	0.007
100 %		+50	707,500,004	0.0000006	0.006
115 %	4.43	+20	707,500,003	0.0000004	0.004
BAT End Point	3.15	+20	707,500,002	0.0000003	0.003

7.7.3. LTE Band 13

OPERATING FREQUENCY : 782 MHz
 REFERENCE VOLTAGE : 3.85 V DC
 LIMIT(FCC) : The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

VOLTAGE (%)	POWER (V DC)	TEMP (°C)	FREQ (Hz)	Deviation	
				(%)	(ppm)
100 %	3.85	+20	782,000,005	0.0000006	0.006
100 %		-30	782,000,004	0.0000005	0.005
100 %		-20	782,000,005	0.0000006	0.006
100 %		-10	782,000,006	0.0000008	0.008
100 %		0	782,000,004	0.0000005	0.005
100 %		+10	782,000,004	0.0000005	0.005
100 %		+20	782,000,005	0.0000006	0.006
100 %		+30	782,000,004	0.0000005	0.005
100 %		+40	782,000,006	0.0000008	0.008
100 %		+50	782,000,003	0.0000004	0.004
115 %	4.43	+20	782,000,005	0.0000006	0.006
BAT End Point	3.15	+20	782,000,007	0.0000009	0.009

7.7.4. LTE Band 14

OPERATING FREQUENCY : 793 MHz
 REFERENCE VOLTAGE : 3.85 V DC
 DEVIATION LIMIT(FCC) : ± 0.000125 % or 1.25 ppm

VOLTAGE (%)	POWER (V DC)	TEMP (°C)	FREQ (Hz)	Deviation	
				(%)	(ppm)
100 %	3.85	+20	793,000,003	0.0000004	0.004
100 %		-30	793,000,003	0.0000004	0.004
100 %		-20	793,000,004	0.0000005	0.005
100 %		-10	793,000,002	0.0000003	0.003
100 %		0	793,000,001	0.0000001	0.001
100 %		+10	793,000,003	0.0000004	0.004
100 %		+20	793,000,003	0.0000004	0.004
100 %		+30	793,000,004	0.0000005	0.005
100 %		+40	793,000,002	0.0000003	0.003
100 %		+50	793,000,004	0.0000005	0.005
115 %	4.43	+20	793,000,005	0.0000006	0.006
BAT End Point	3.15	+20	793,000,003	0.0000004	0.004

7.7.5. LTE Band 5

OPERATING FREQUENCY : 836.5 MHz
 REFERENCE VOLTAGE : 3.85 V DC
 LIMIT(FCC) : ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (V DC)	TEMP (°C)	FREQ (Hz)	Deviation	
				(%)	(ppm)
100 %	3.85	+20	836,499,997	-0.0000003	-0.003
100 %		-30	836,499,997	-0.0000004	-0.004
100 %		-20	836,499,998	-0.0000003	-0.003
100 %		-10	836,499,998	-0.0000003	-0.003
100 %		0	836,499,998	-0.0000002	-0.002
100 %		+10	836,499,999	-0.0000002	-0.002
100 %		+20	836,499,997	-0.0000003	-0.003
100 %		+30	836,499,996	-0.0000004	-0.004
100 %		+40	836,499,997	-0.0000004	-0.004
100 %		+50	836,499,998	-0.0000002	-0.002
115 %	4.43	+20	836,499,999	-0.0000002	-0.002
BAT End Point	3.15	+20	836,499,996	-0.0000005	-0.005

7.7.6. LTE Band 66(4)

OPERATING FREQUENCY : 1 755 MHz
 REFERENCE VOLTAGE : 3.85 V DC
 LIMIT(FCC) : The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.
 :

VOLTAGE (%)	POWER (V DC)	TEMP (°C)	FREQ (Hz)	Deviation	
				(%)	(ppm)
100 %	3.85	+20	1,755,000,016	0.0000009	0.009
100 %		-30	1,755,000,012	0.0000007	0.007
100 %		-20	1,755,000,011	0.0000006	0.006
100 %		-10	1,755,000,015	0.0000009	0.009
100 %		0	1,755,000,014	0.0000008	0.008
100 %		+10	1,755,000,012	0.0000007	0.007
100 %		+20	1,755,000,016	0.0000009	0.009
100 %		+30	1,755,000,014	0.0000008	0.008
100 %		+40	1,755,000,015	0.0000009	0.009
100 %		+50	1,755,000,010	0.0000006	0.006
115 %	4.43	+20	1,755,000,011	0.0000006	0.006
BAT End Point	3.15	+20	1,755,000,010	0.0000006	0.006

7.7.7. LTE Band 2

OPERATING FREQUENCY : 1 880 MHz
 REFERENCE VOLTAGE : 3.85 V DC
 LIMIT(FCC) : The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

VOLTAGE (%)	POWER (V DC)	TEMP (°C)	FREQ (Hz)	Deviation	
				(%)	(ppm)
100 %	3.85	+20	1,879,999,997	-0.0000002	-0.002
100 %		-30	1,879,999,999	-0.0000001	-0.001
100 %		-20	1,879,999,995	-0.0000003	-0.003
100 %		-10	1,879,999,998	-0.0000001	-0.001
100 %		0	1,879,999,997	-0.0000002	-0.002
100 %		+10	1,879,999,995	-0.0000003	-0.003
100 %		+20	1,879,999,997	-0.0000002	-0.002
100 %		+30	1,879,999,996	-0.0000002	-0.002
100 %		+40	1,879,999,998	-0.0000001	-0.001
100 %		+50	1,879,999,997	-0.0000002	-0.002
115 %	4.43	+20	1,879,999,996	-0.0000002	-0.002
BAT End Point	3.15	+20	1,879,999,998	-0.0000001	-0.001

7.7.8. LTE Band 7

OPERATING FREQUENCY : 2 535 MHz
 REFERENCE VOLTAGE : 3.85 V DC
 LIMIT(FCC) : The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

VOLTAGE (%)	POWER (V DC)	TEMP (°C)	FREQ (Hz)	Deviation	
				(%)	(ppm)
100 %	3.85	+20	2,535,000,011	0.0000004	0.004
100 %		-30	2,535,000,008	0.0000003	0.003
100 %		-20	2,535,000,013	0.0000005	0.005
100 %		-10	2,535,000,011	0.0000004	0.004
100 %		0	2,535,000,007	0.0000003	0.003
100 %		+10	2,535,000,010	0.0000004	0.004
100 %		+20	2,535,000,011	0.0000004	0.004
100 %		+30	2,535,000,013	0.0000005	0.005
100 %		+40	2,535,000,014	0.0000006	0.006
100 %		+50	2,535,000,014	0.0000006	0.006
115 %	4.43	+20	2,535,000,011	0.0000004	0.004
BAT End Point	3.15	+20	2,535,000,015	0.0000006	0.006

7.7.9. LTE Band 38

OPERATING FREQUENCY : 2 595 MHz
 REFERENCE VOLTAGE : 3.85 V DC
 LIMIT(FCC) : The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

VOLTAGE (%)	POWER (V DC)	TEMP (°C)	FREQ (Hz)	Deviation	
				(%)	(ppm)
100 %	3.85	+20	2,594,999,994	-0.0000002	-0.002
100 %		-30	2,594,999,995	-0.0000002	-0.002
100 %		-20	2,594,999,993	-0.0000003	-0.003
100 %		-10	2,594,999,993	-0.0000003	-0.003
100 %		0	2,594,999,994	-0.0000002	-0.002
100 %		+10	2,594,999,996	-0.0000002	-0.002
100 %		+20	2,594,999,994	-0.0000002	-0.002
100 %		+30	2,594,999,996	-0.0000002	-0.002
100 %		+40	2,594,999,996	-0.0000002	-0.002
100 %		+50	2,594,999,992	-0.0000003	-0.003
115 %	4.43	+20	2,594,999,994	-0.0000002	-0.002
BAT End Point	3.15	+20	2,594,999,995	-0.0000002	-0.002

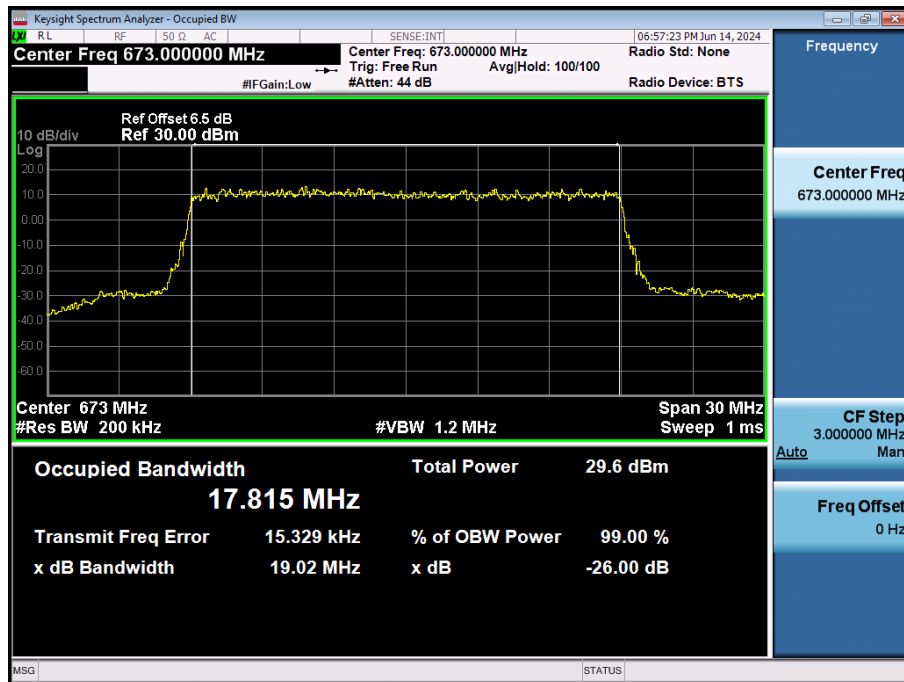
8. TEST PLOTS

- Test Notes:

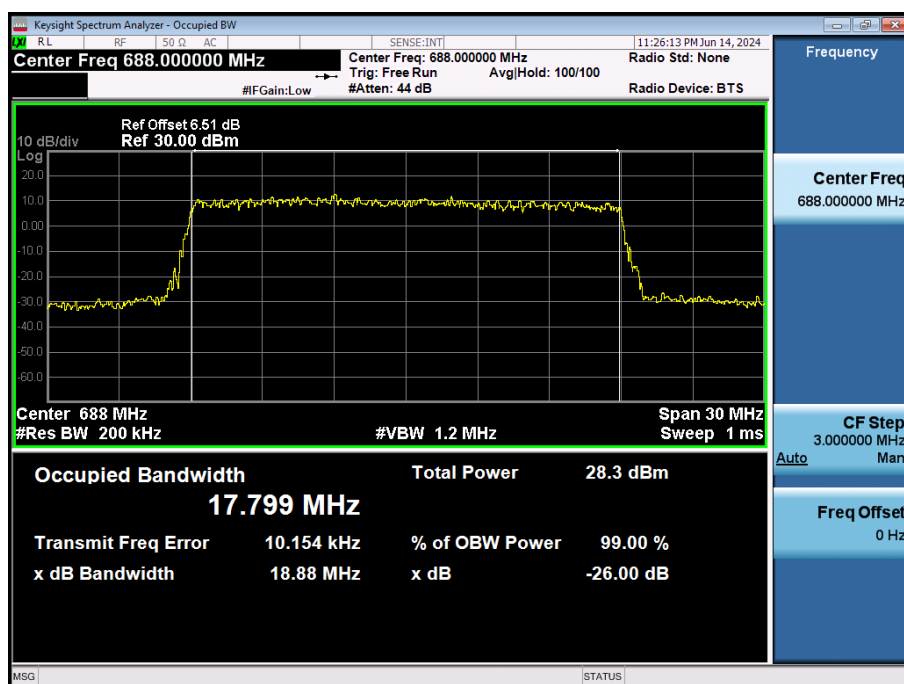
All bandwidths, RB configurations, and modulations were investigated.
The worst case test results are reported.

8.1. OCCUPIED BANDWIDTH

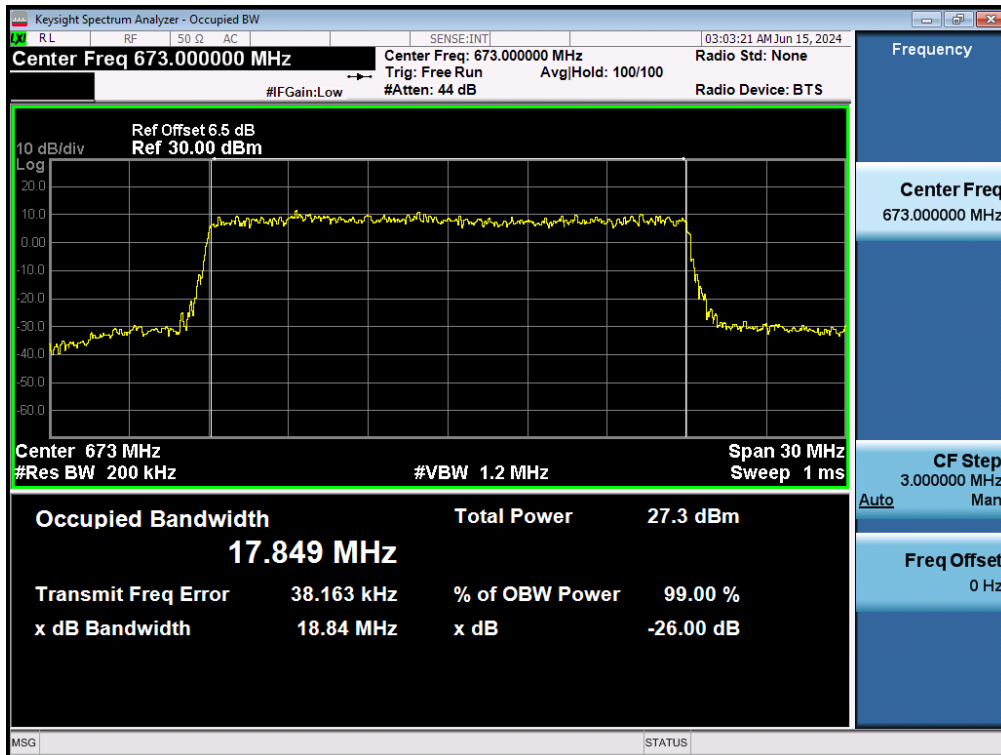
8.1.1. LTE Band 71



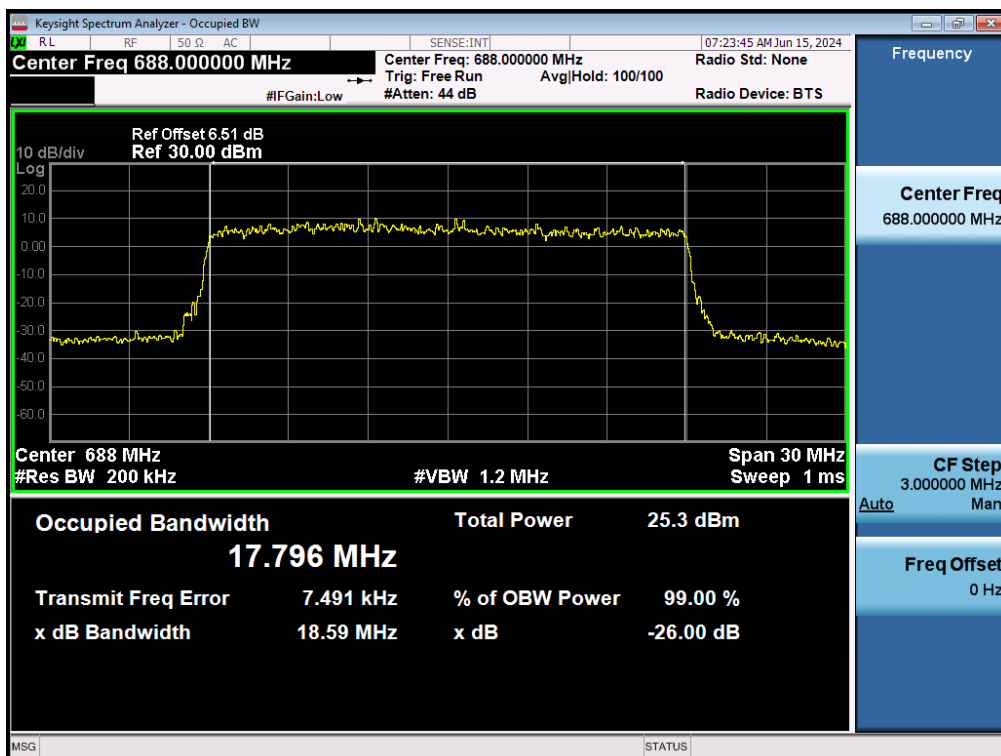
LTE Band 71 / 20 MHz / QPSK / FULL RB Size



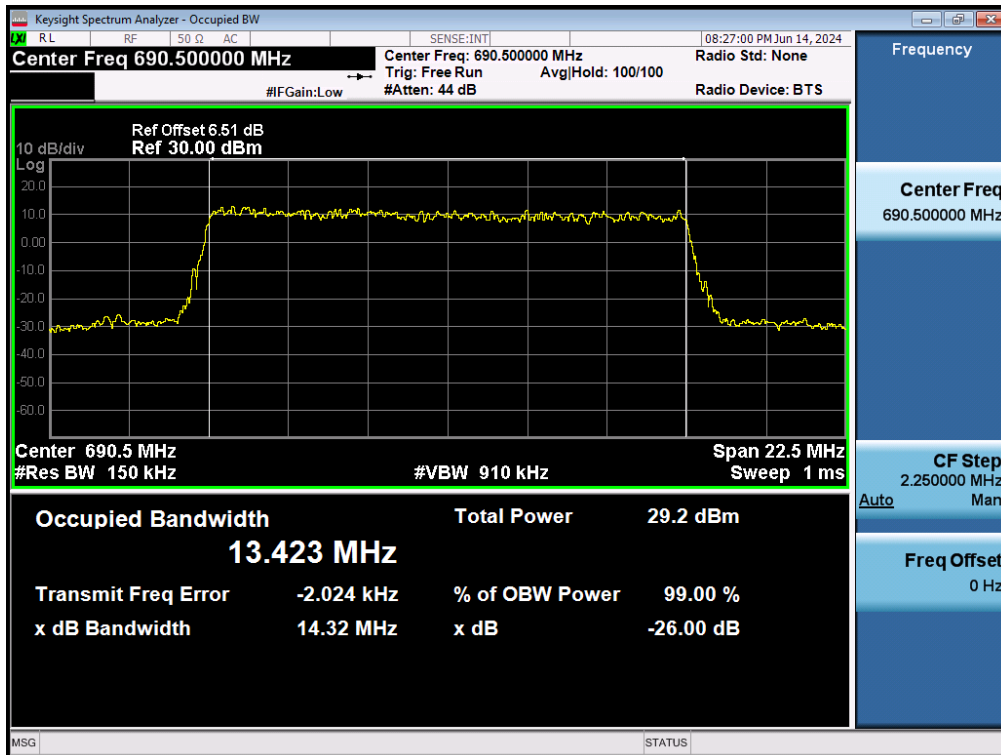
LTE Band 71 / 20 MHz / 16QAM / FULL RB Size



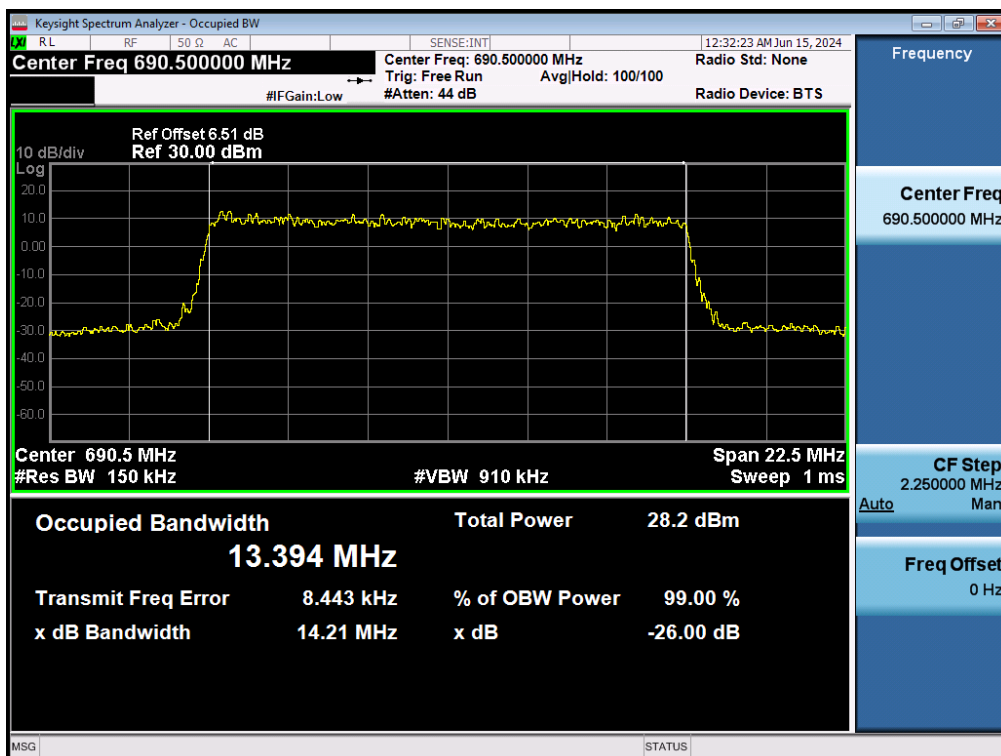
LTE Band 71 / 20 MHz / 64QAM / FULL RB Size



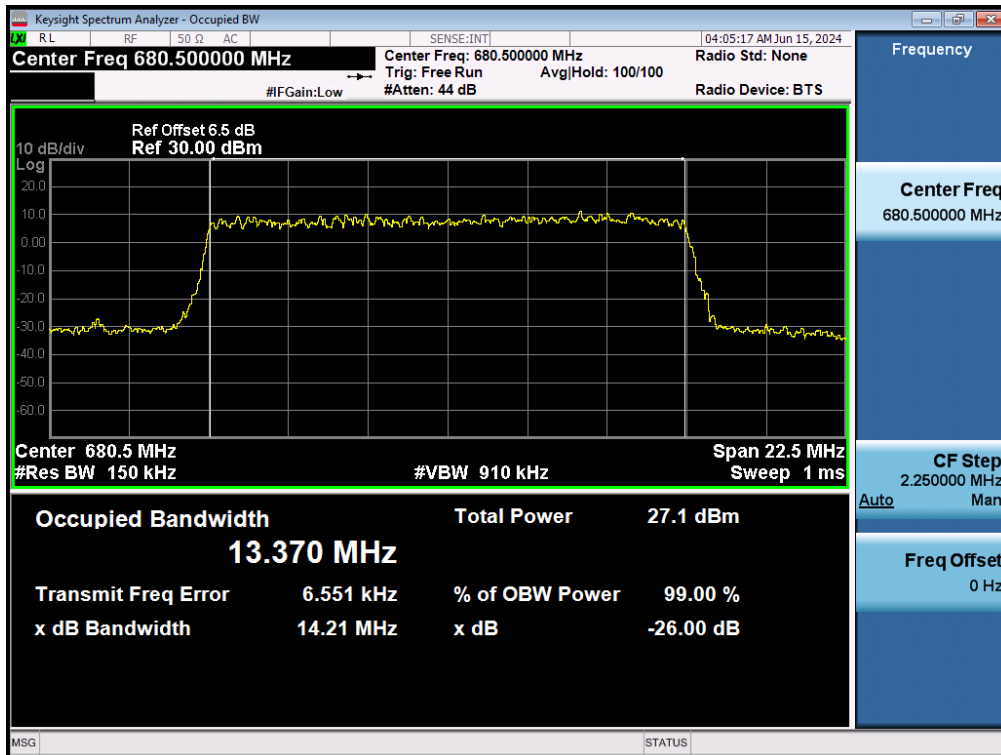
LTE Band 71 / 20 MHz / 256QAM / FULL RB Size



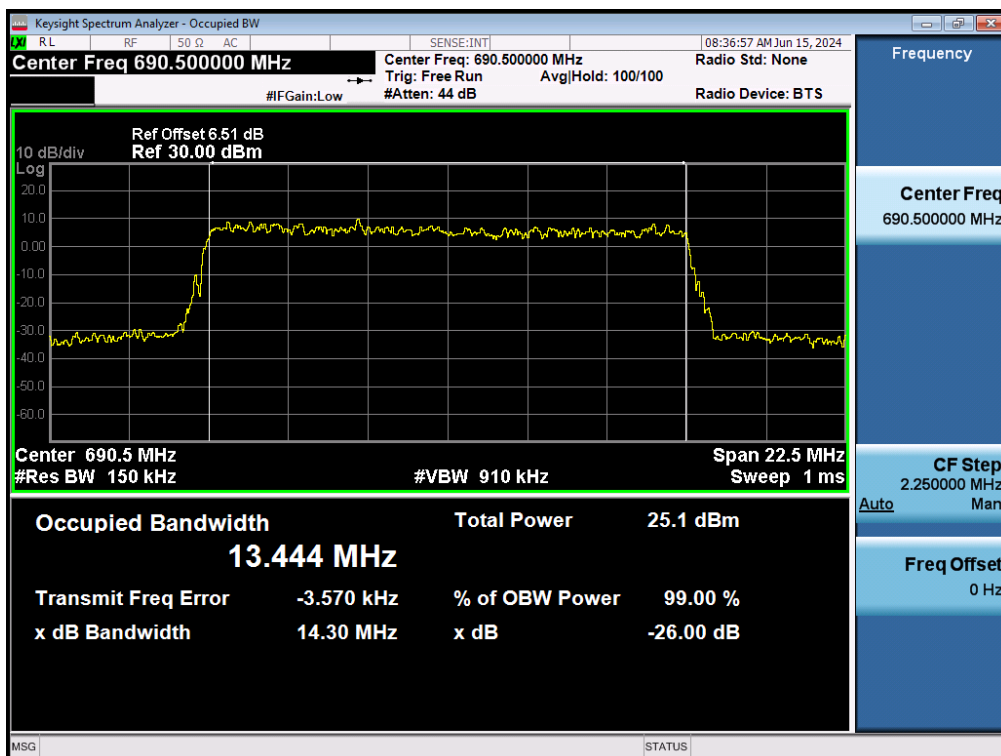
LTE Band 71 / 15 MHz / QPSK / FULL RB Size



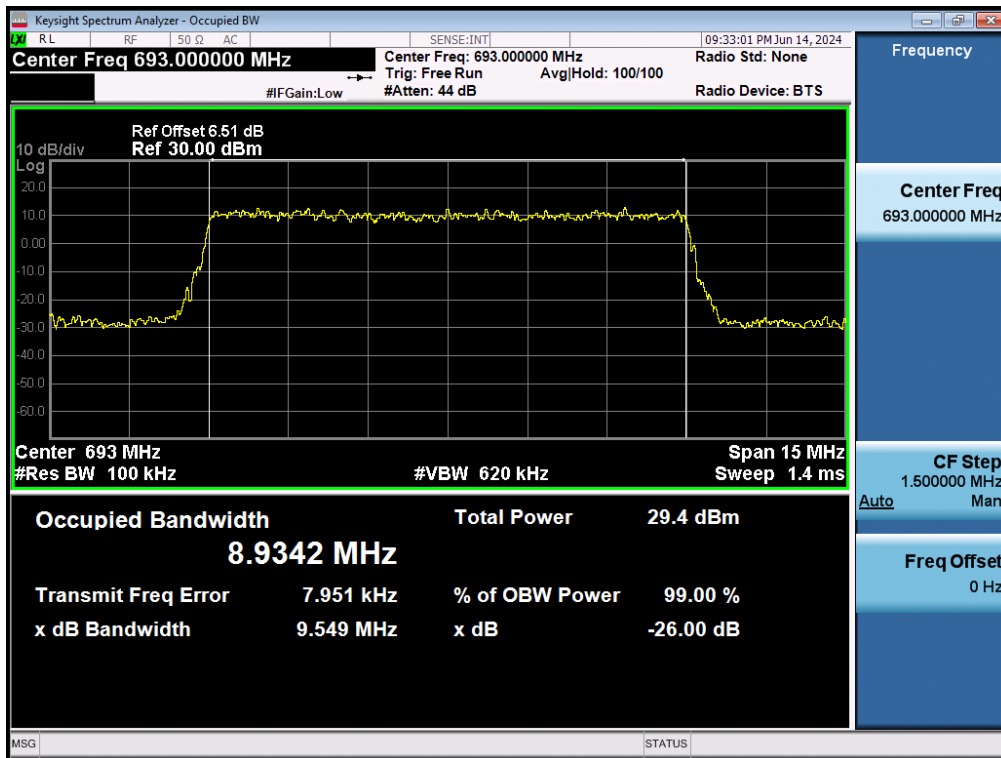
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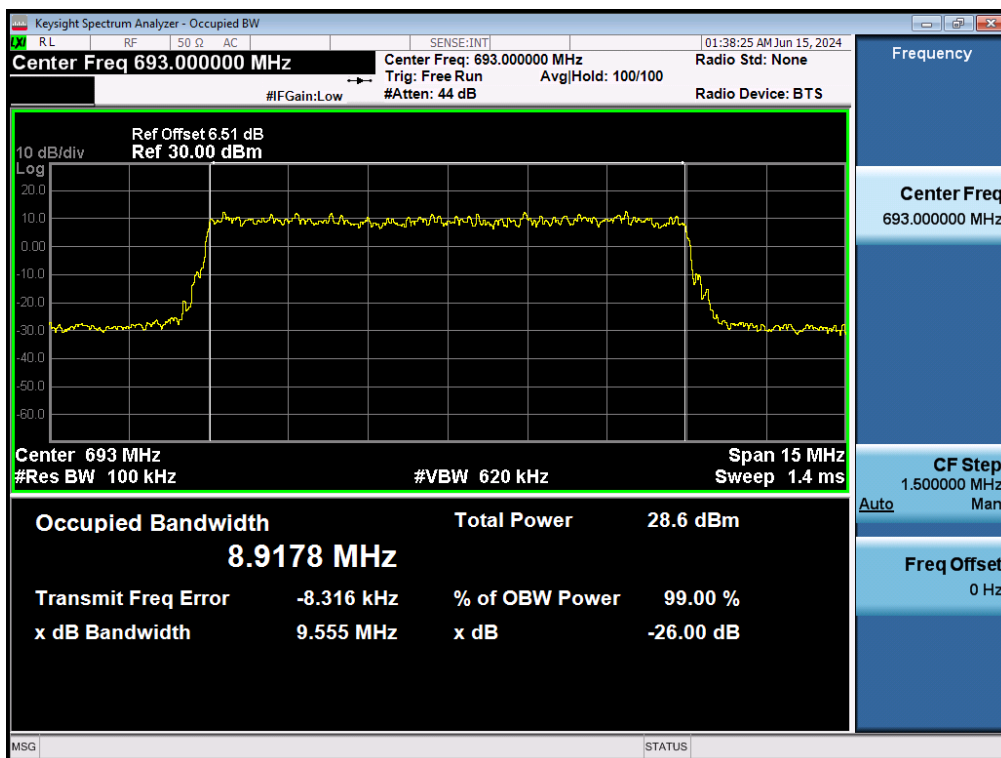
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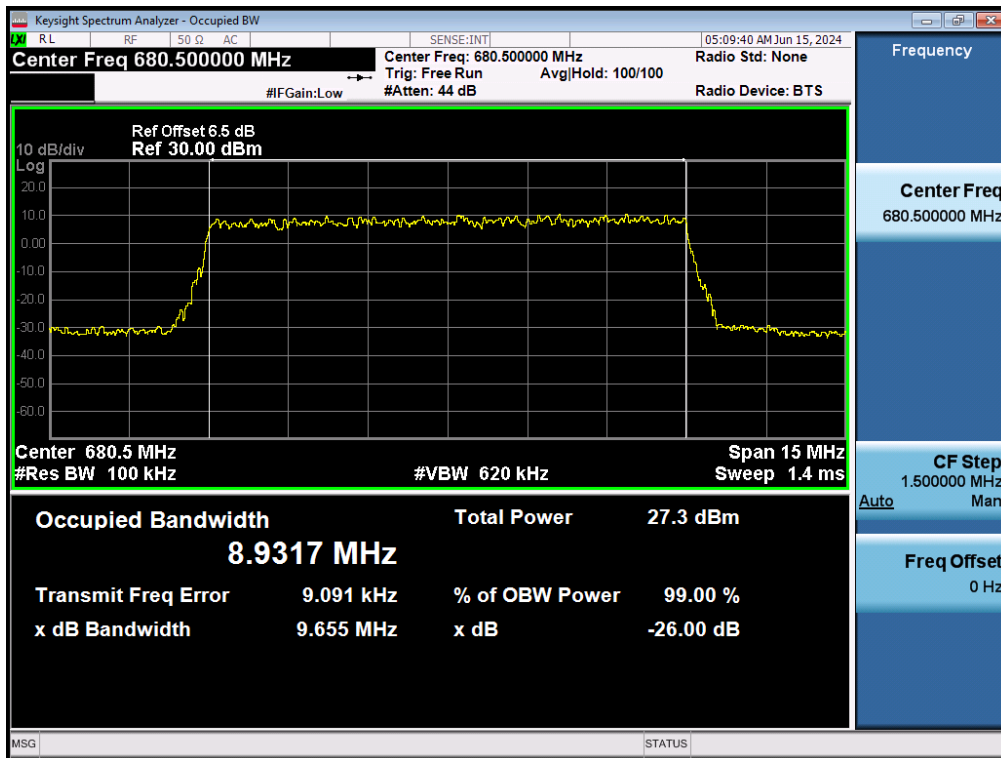
LTE Band 71 / 15 MHz / 256QAM / FULL RB Size



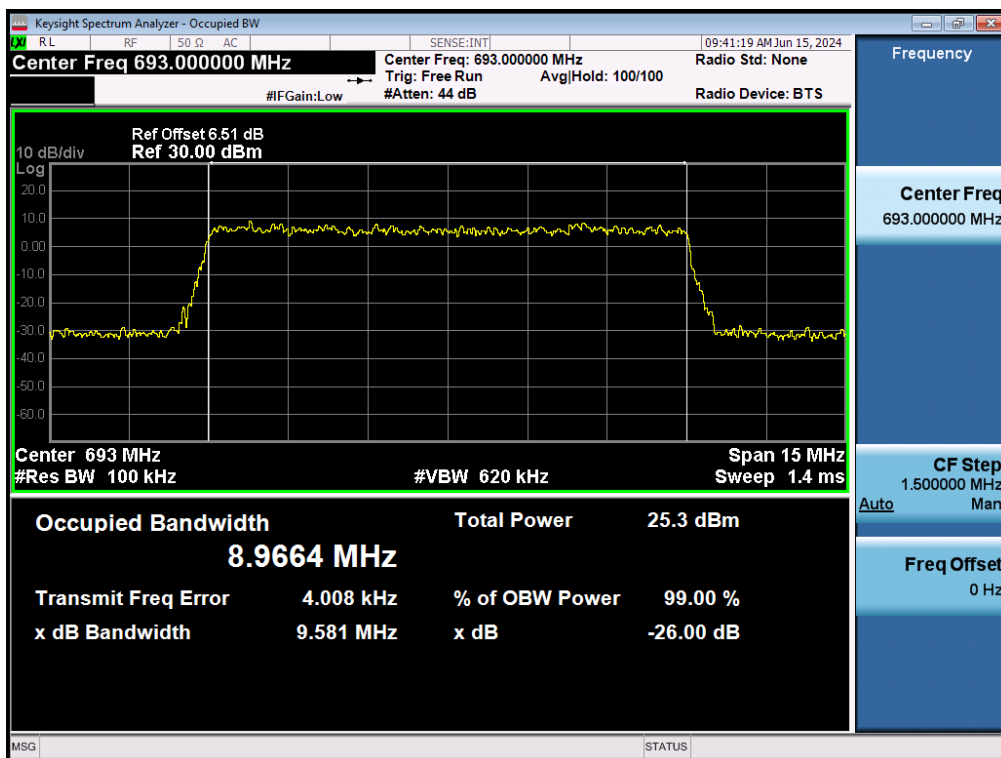
LTE Band 71 / 10 MHz / QPSK / FULL RB Size



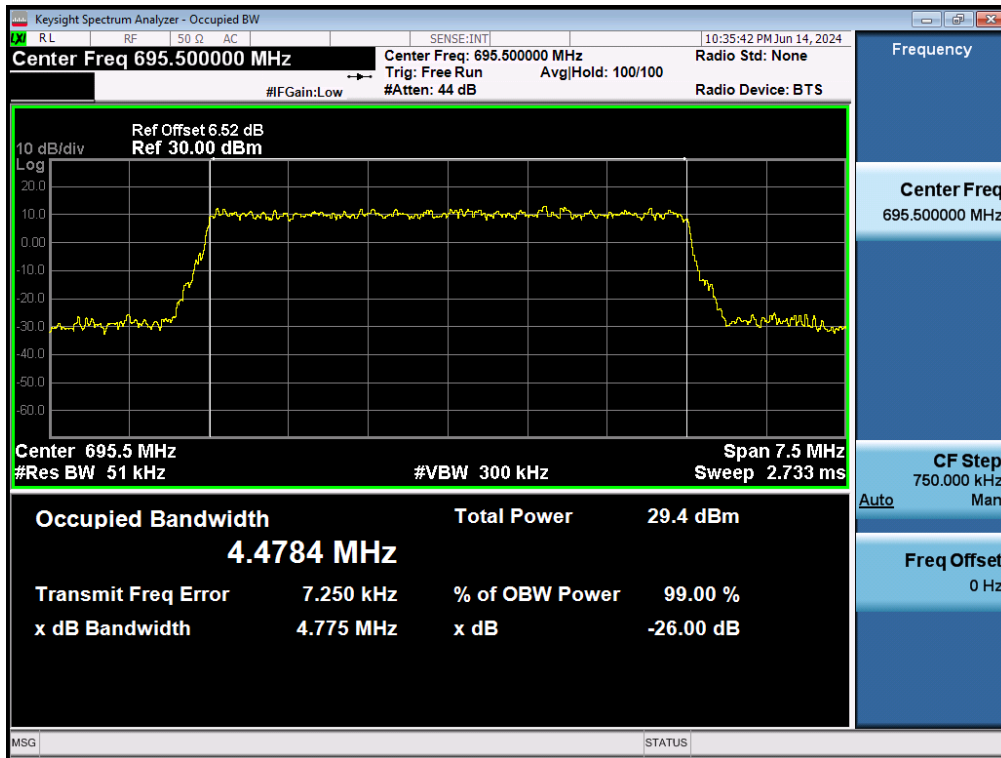
LTE Band 71 / 10 MHz / 16QAM / FULL RB Size



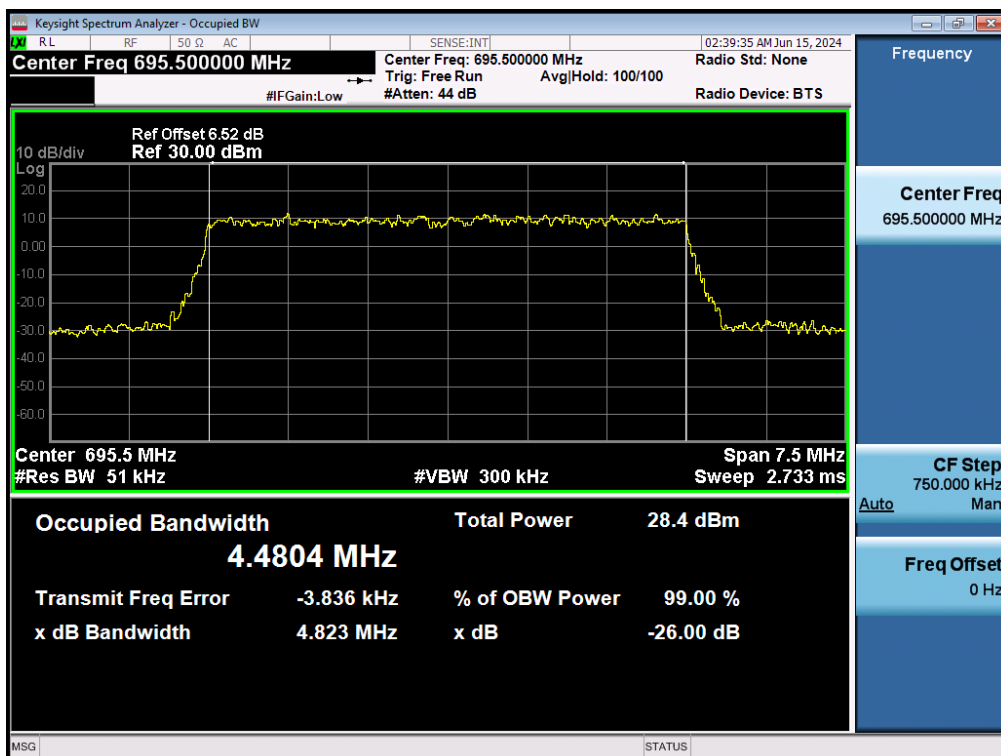
LTE Band 71 / 10 MHz / 64QAM / FULL RB Size



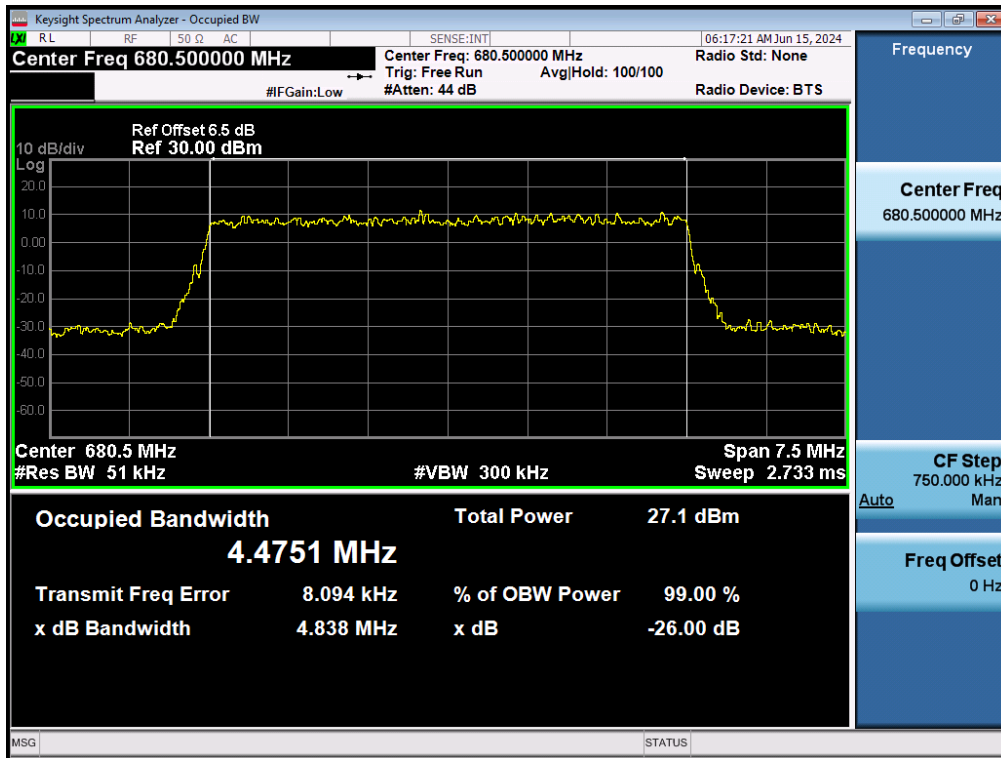
LTE Band 71 / 10 MHz / 256QAM / FULL RB Size



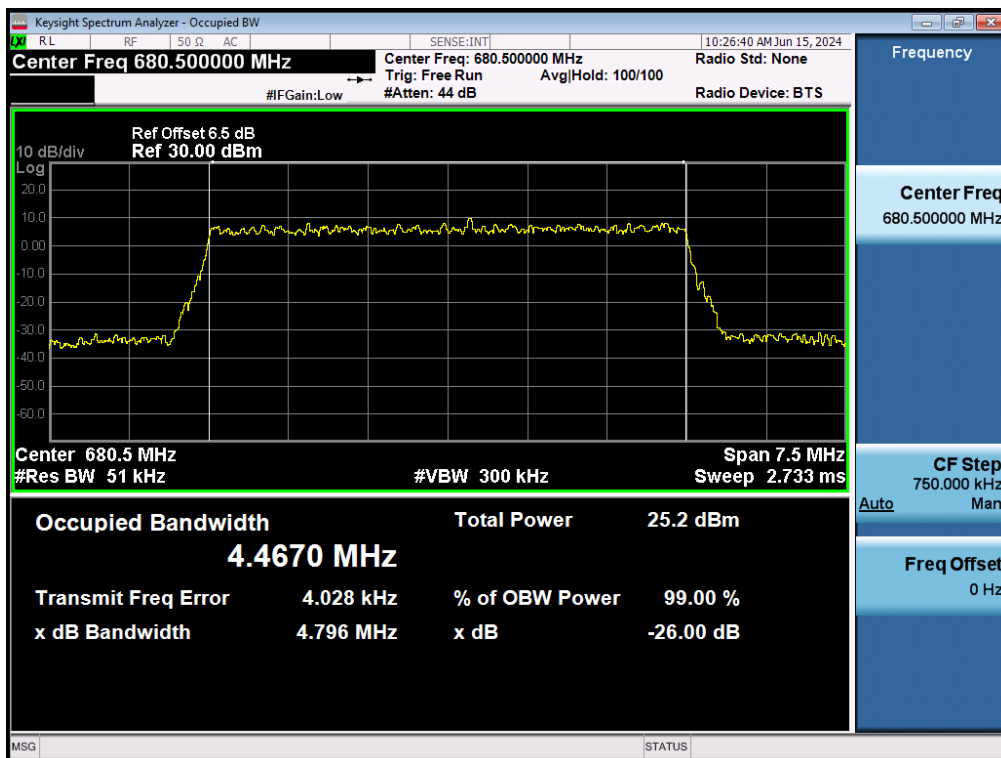
LTE Band 71 / 5 MHz / QPSK / FULL RB Size



LTE Band 71 / 5 MHz / 16QAM / FULL RB Size

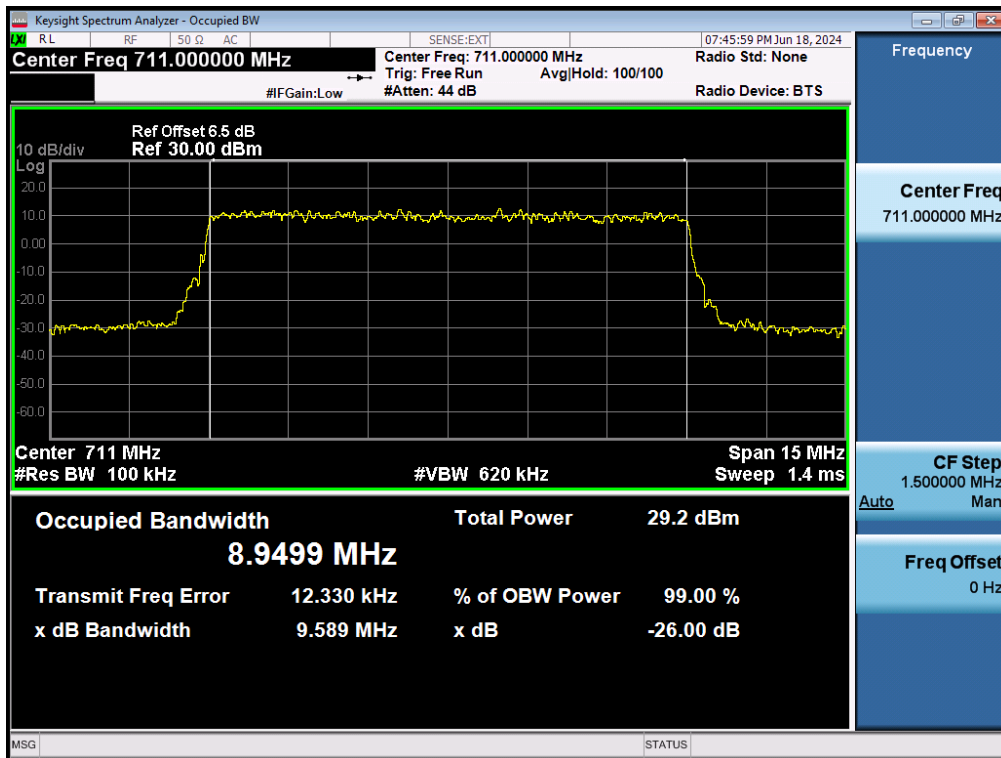


LTE Band 71 / 5 MHz / 64QAM / FULL RB Size

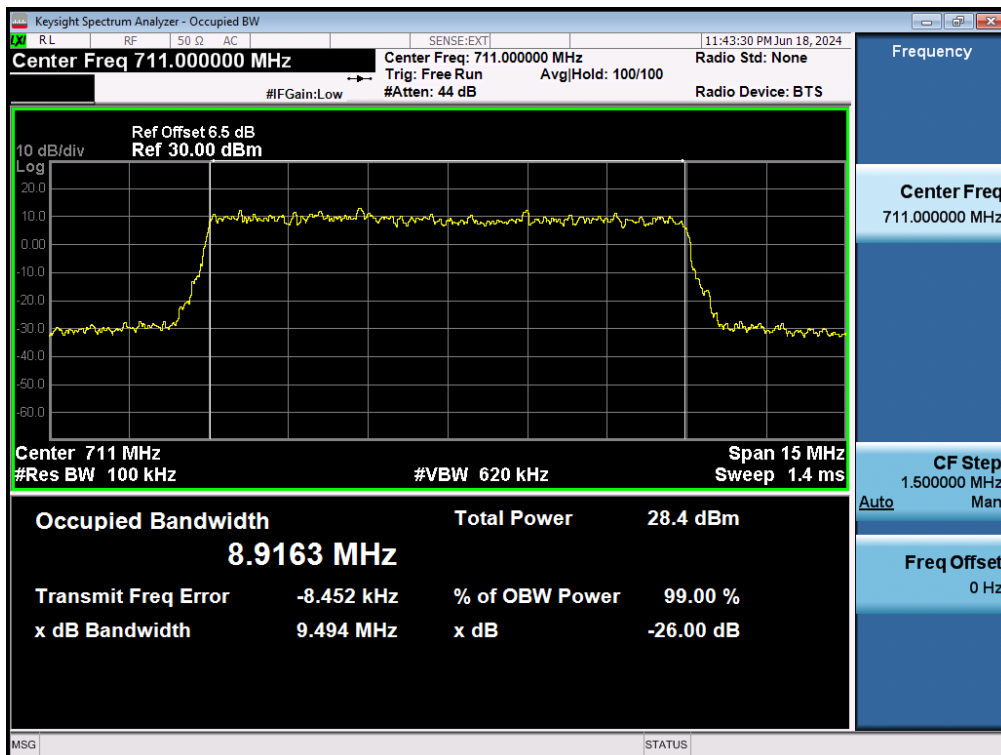


LTE Band 71 / 5 MHz / 256QAM / FULL RB Size

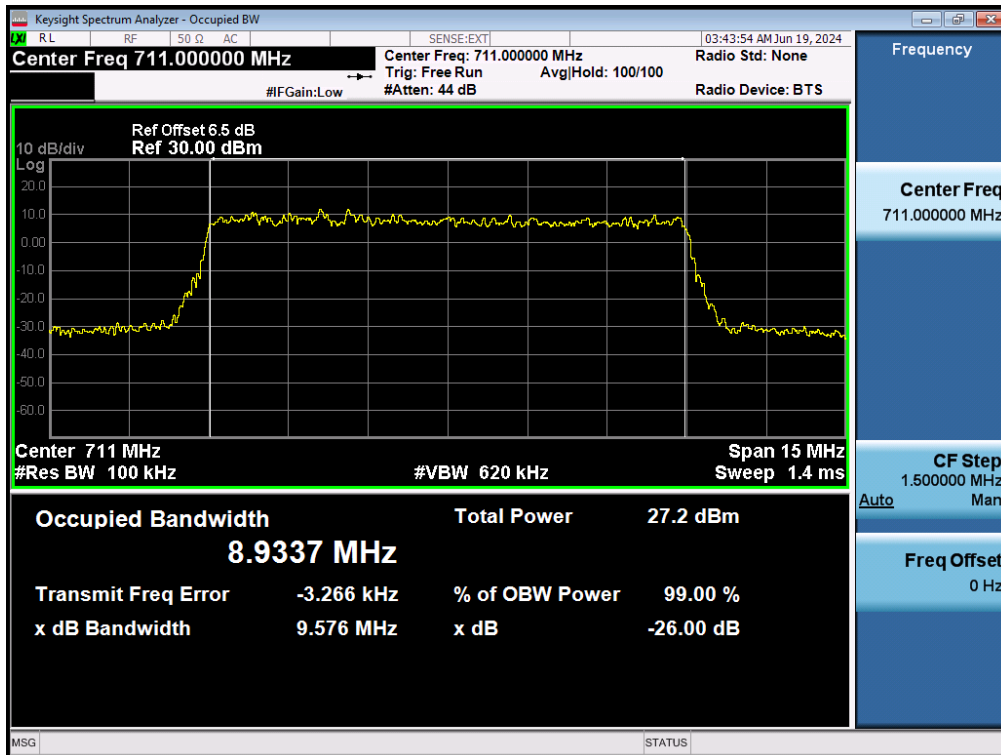
8.1.2. LTE Band 12(17)



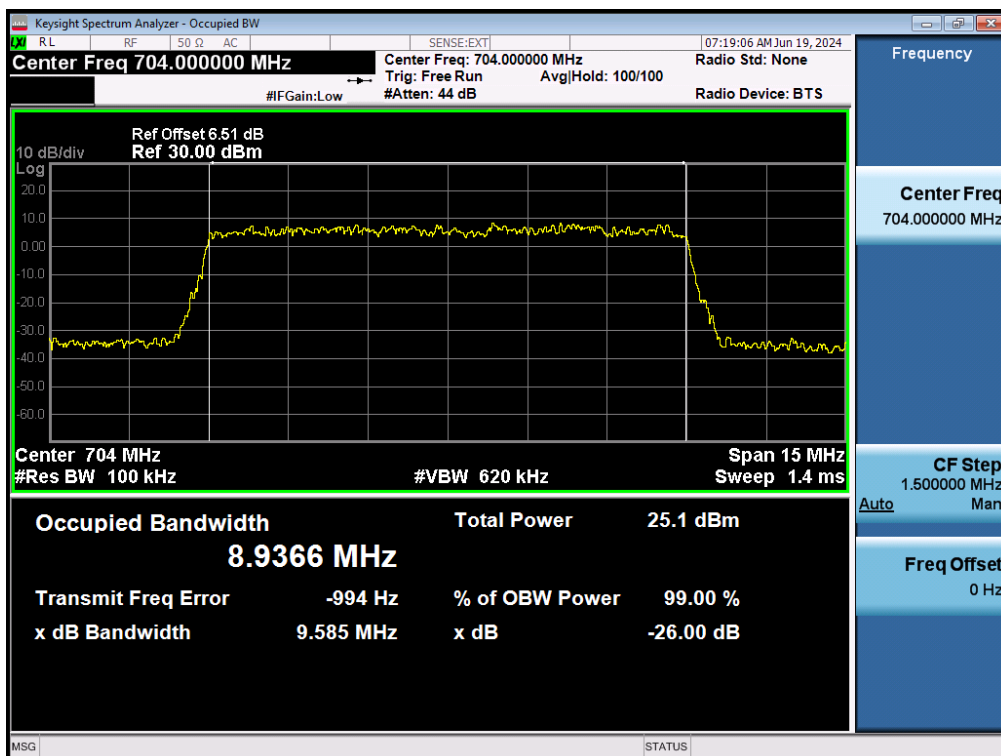
LTE Band 12 / 10 MHz / QPSK / FULL RB Size



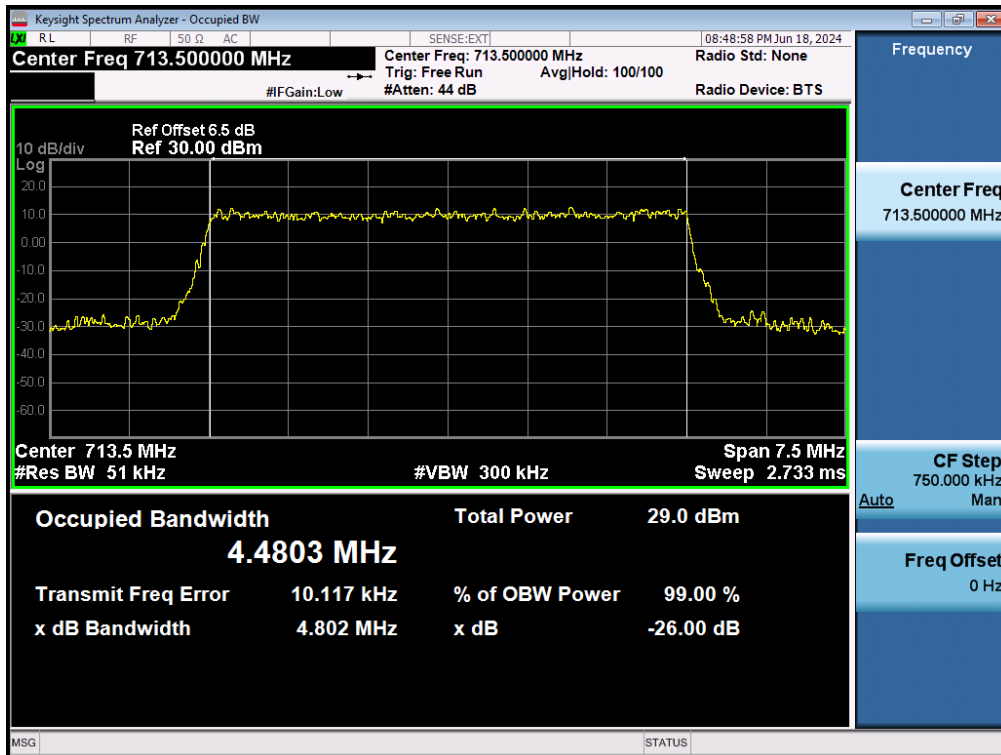
LTE Band 12 / 10 MHz / 16QAM / FULL RB Size



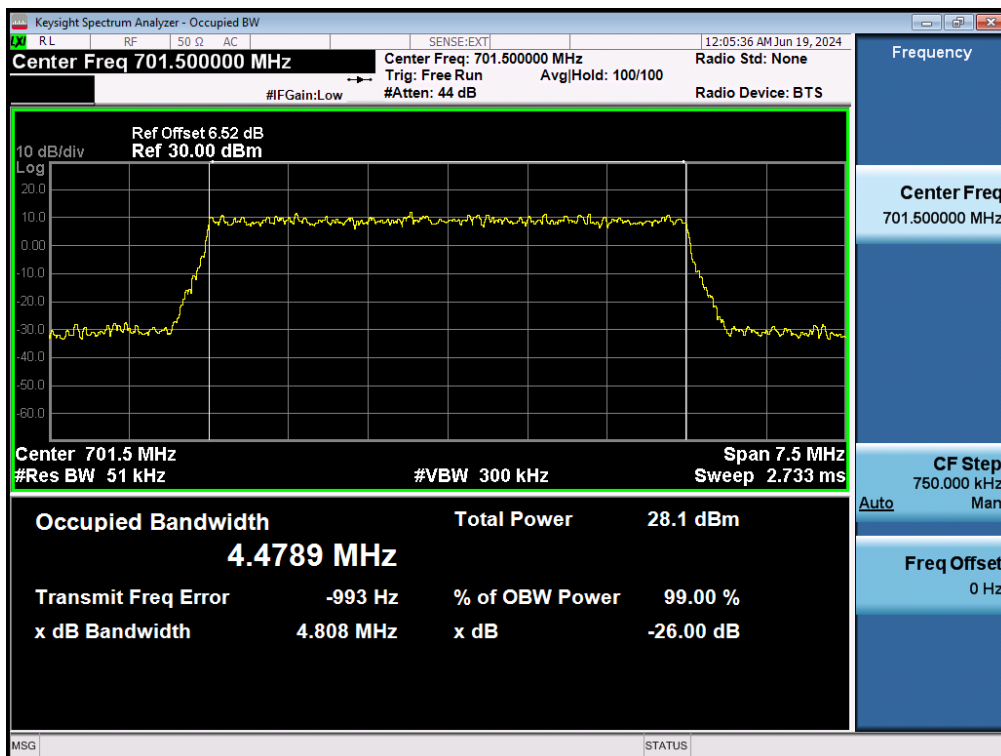
LTE Band 12 / 10 MHz / 64QAM / FULL RB Size



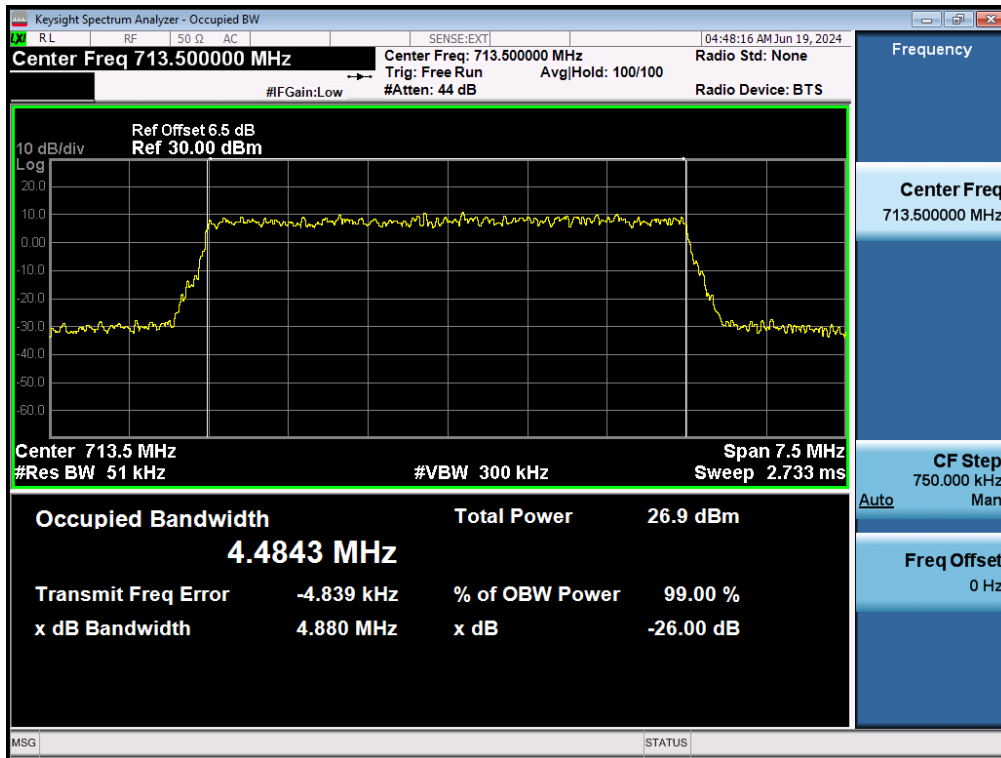
LTE Band 12 / 10 MHz / 256QAM / FULL RB Size



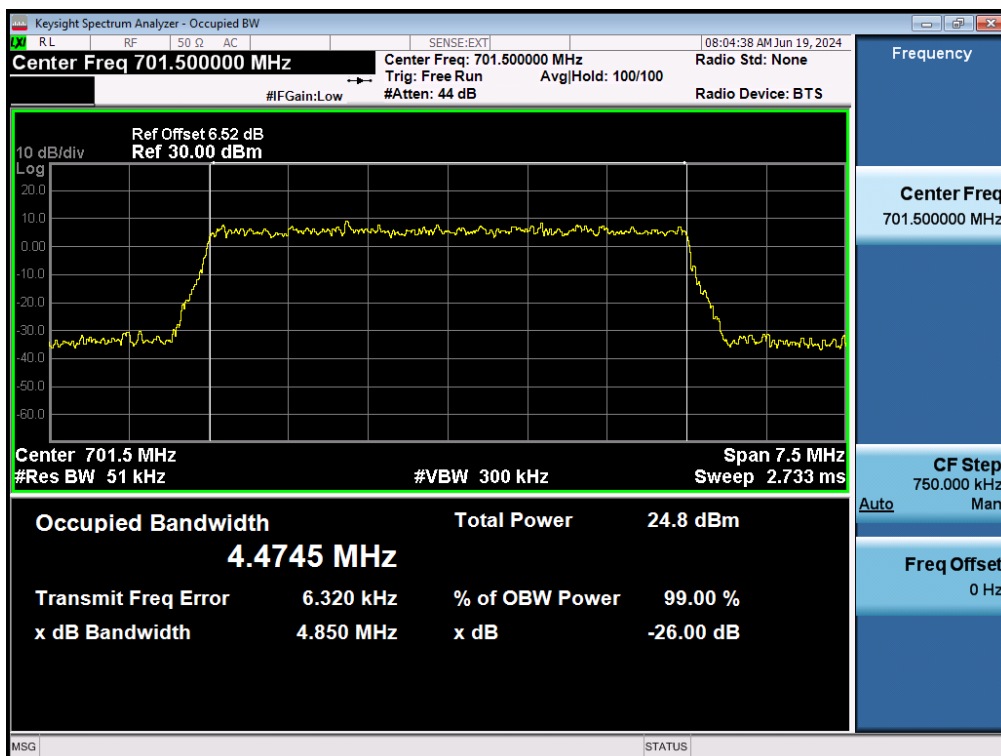
LTE Band 12 / 5 MHz / QPSK / FULL RB Size



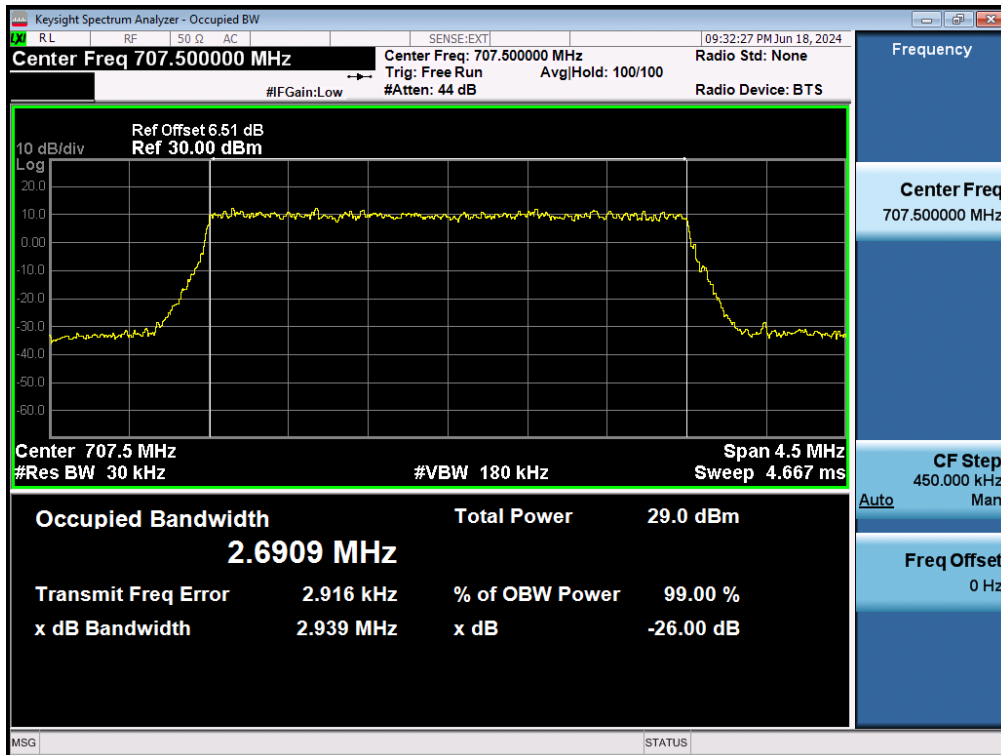
LTE Band 12 / 5 MHz / 16QAM / FULL RB Size



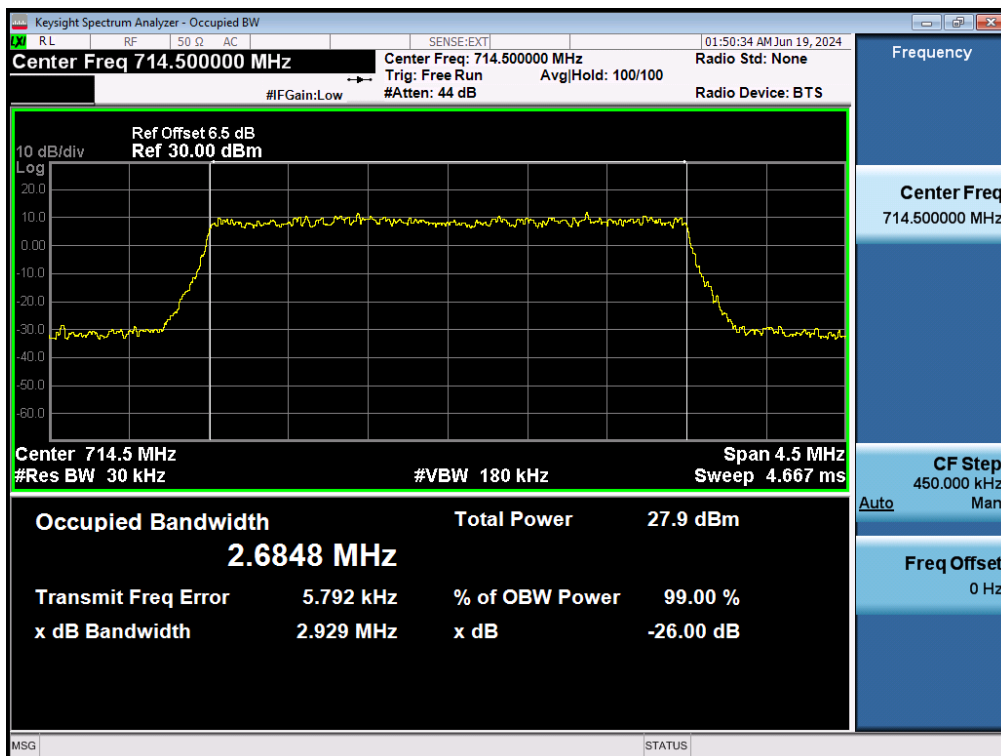
LTE Band 12 / 5 MHz / 64QAM / FULL RB Size



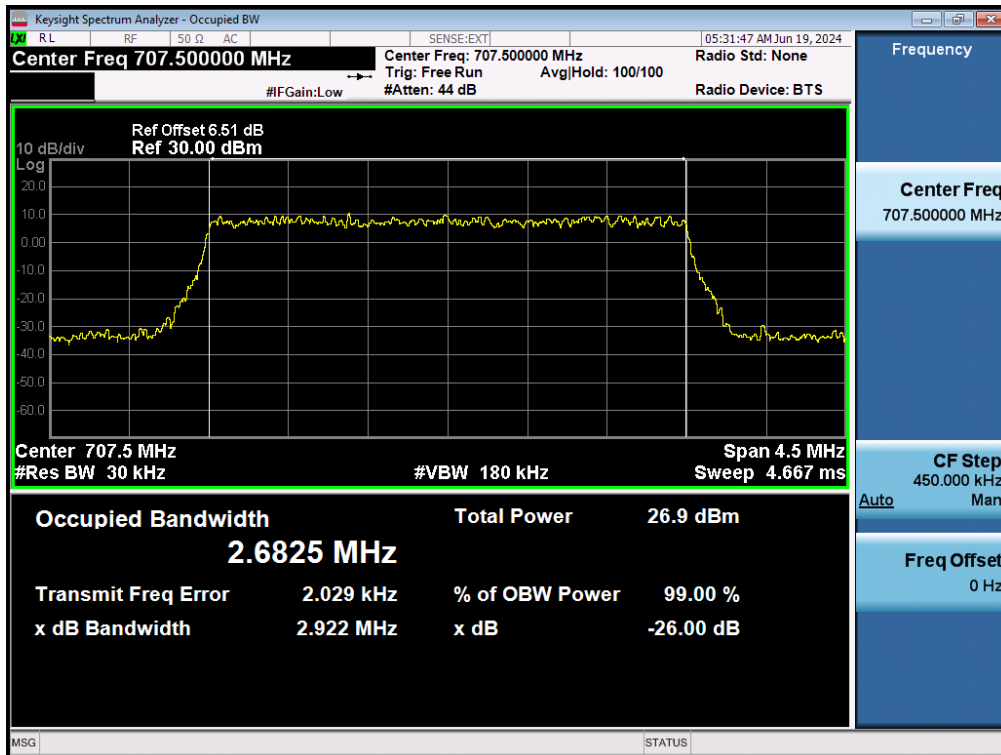
LTE Band 12 / 5 MHz / 256QAM / FULL RB Size



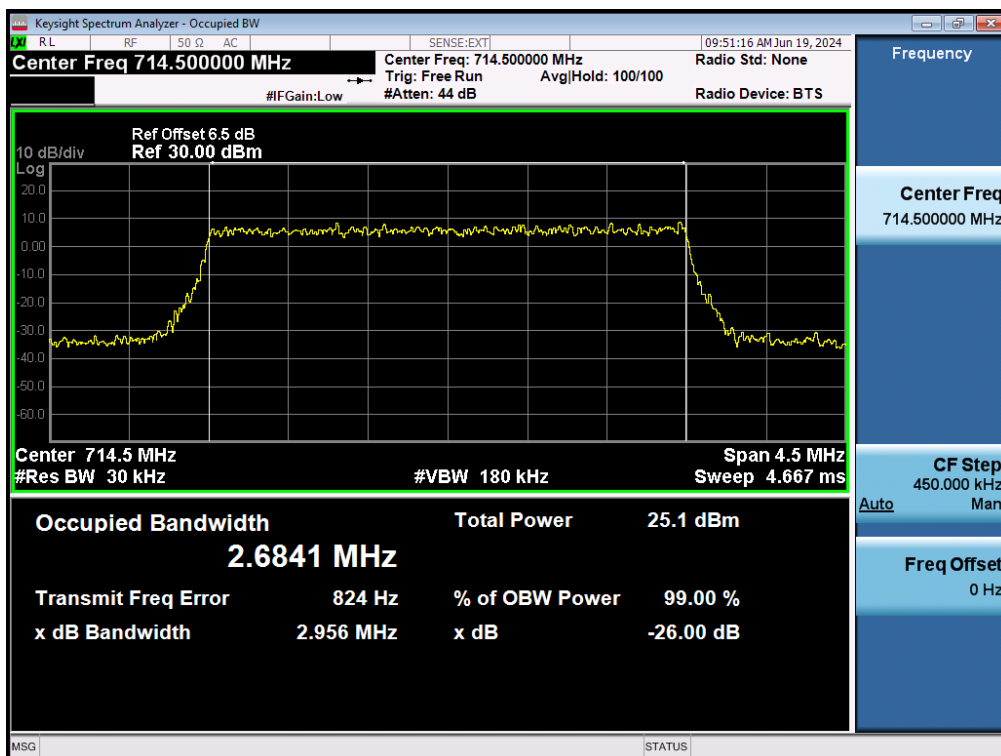
LTE Band 12 / 3 MHz / QPSK / FULL RB Size



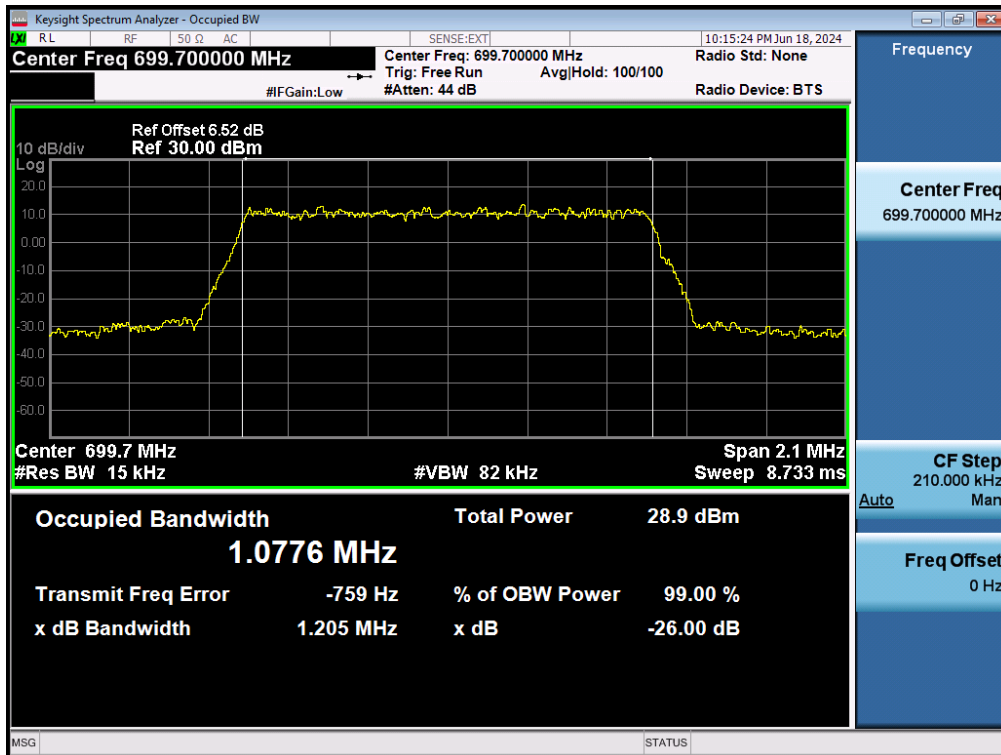
LTE Band 12 / 3 MHz / 16QAM / FULL RB Size



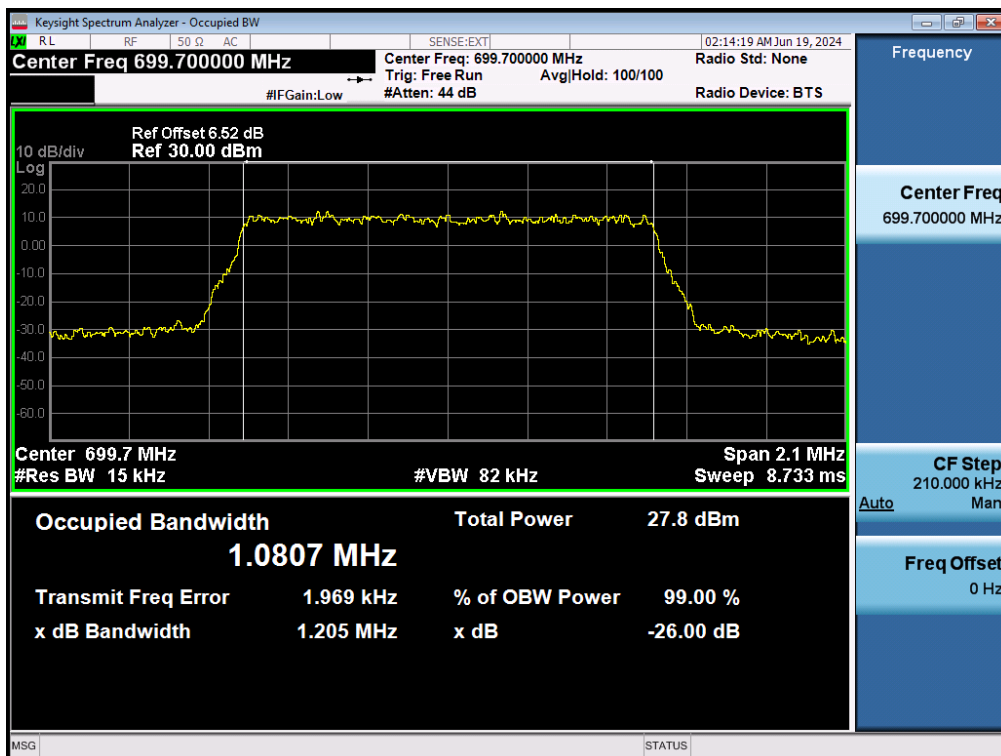
LTE Band 12 / 3 MHz / 64QAM / FULL RB Size



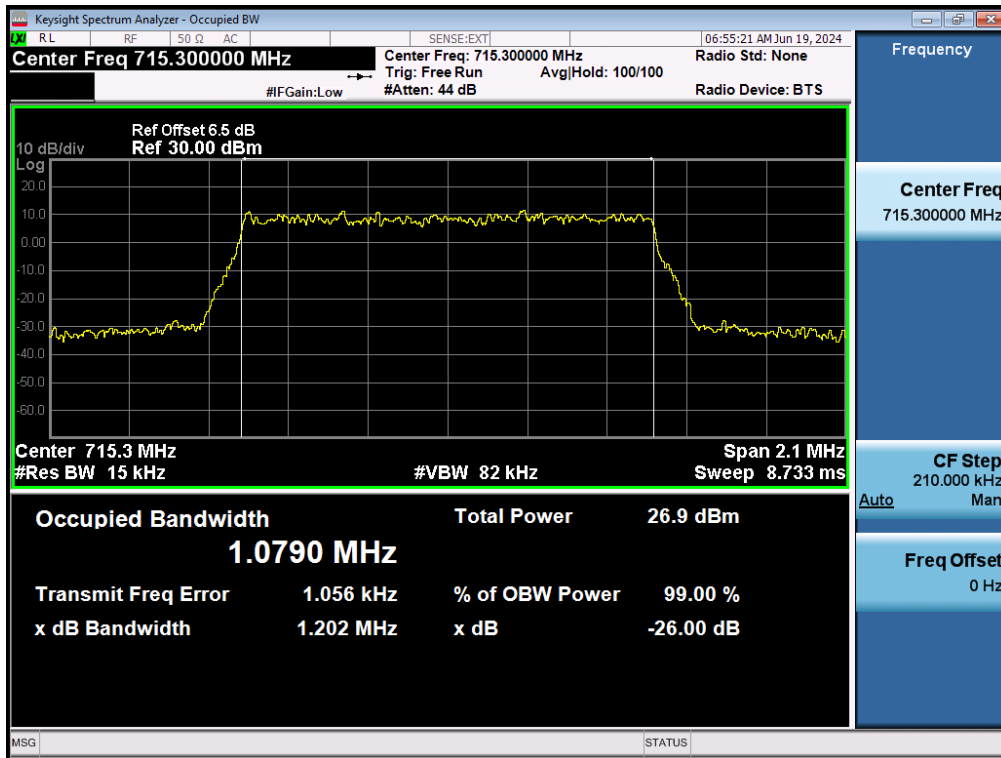
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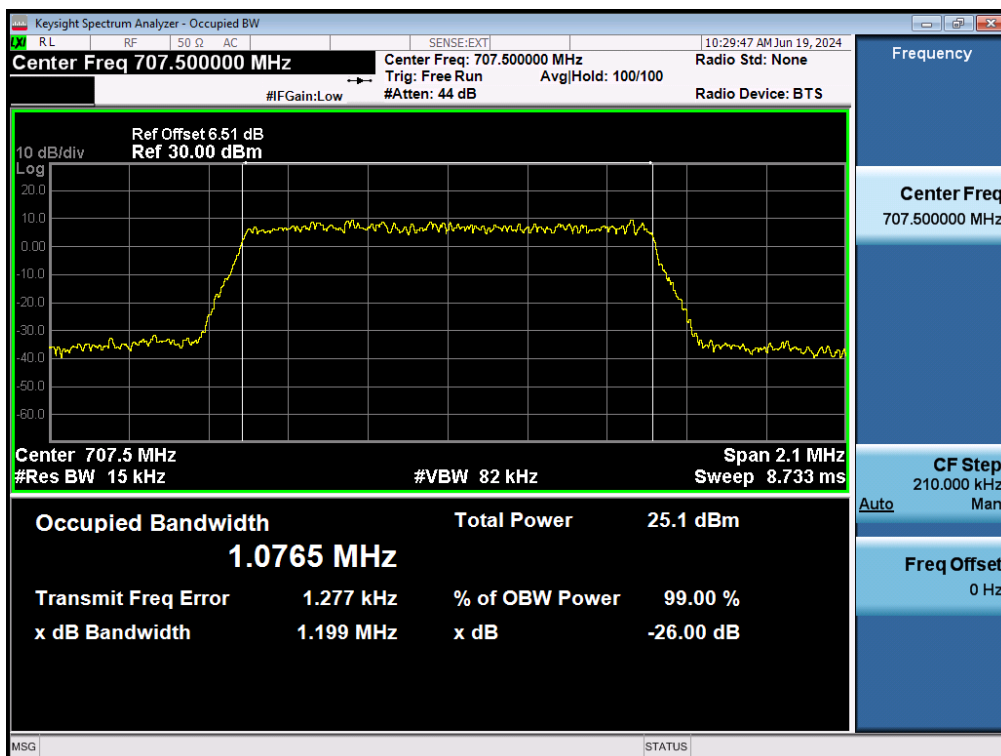
LTE Band 12 / 1.4 MHz / QPSK / FULL RB Size



LTE Band 12 / 1.4 MHz / 16QAM / FULL RB Size

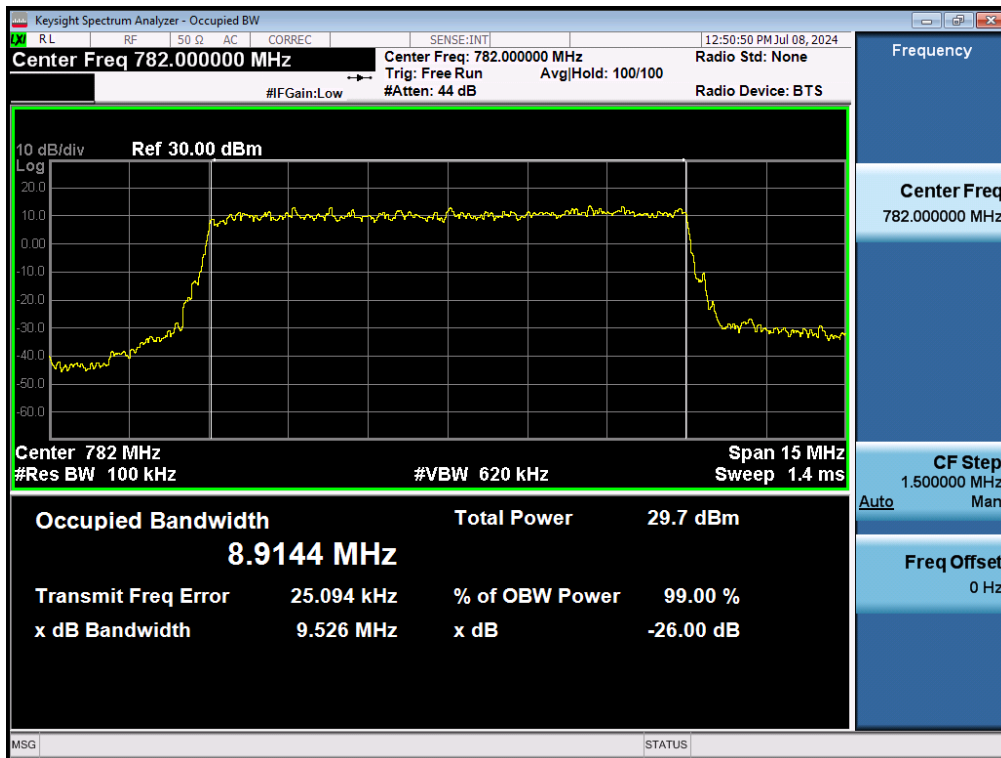


LTE Band 12 / 1.4 MHz / 64QAM / FULL RB Size

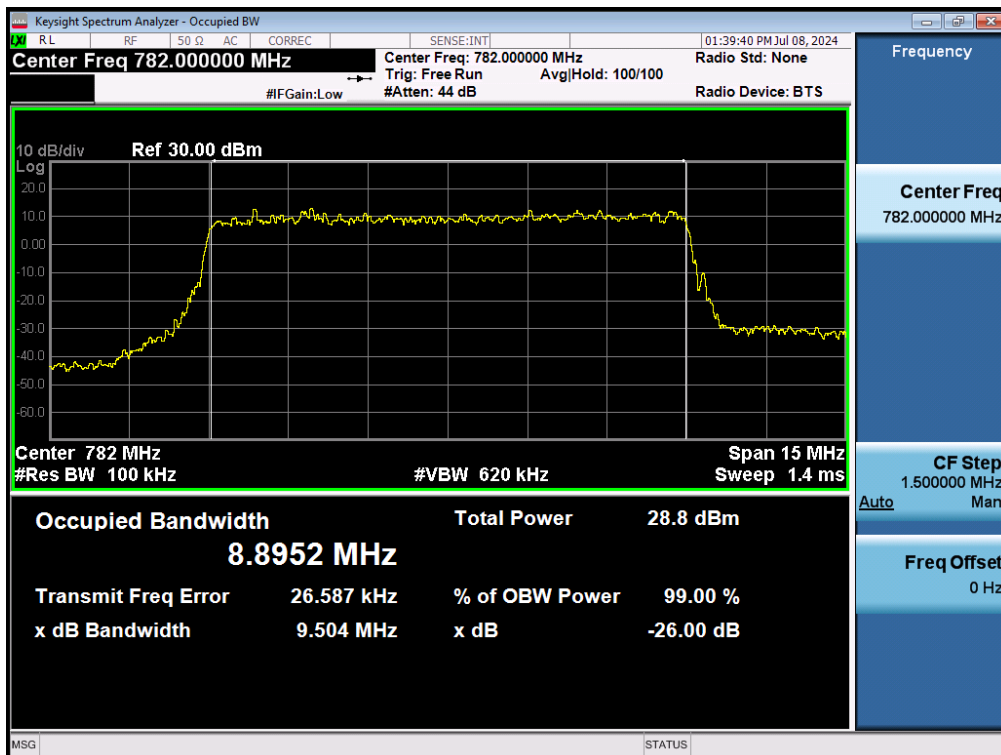


LTE Band 12 / 1.4 MHz / 256QAM / FULL RB Size

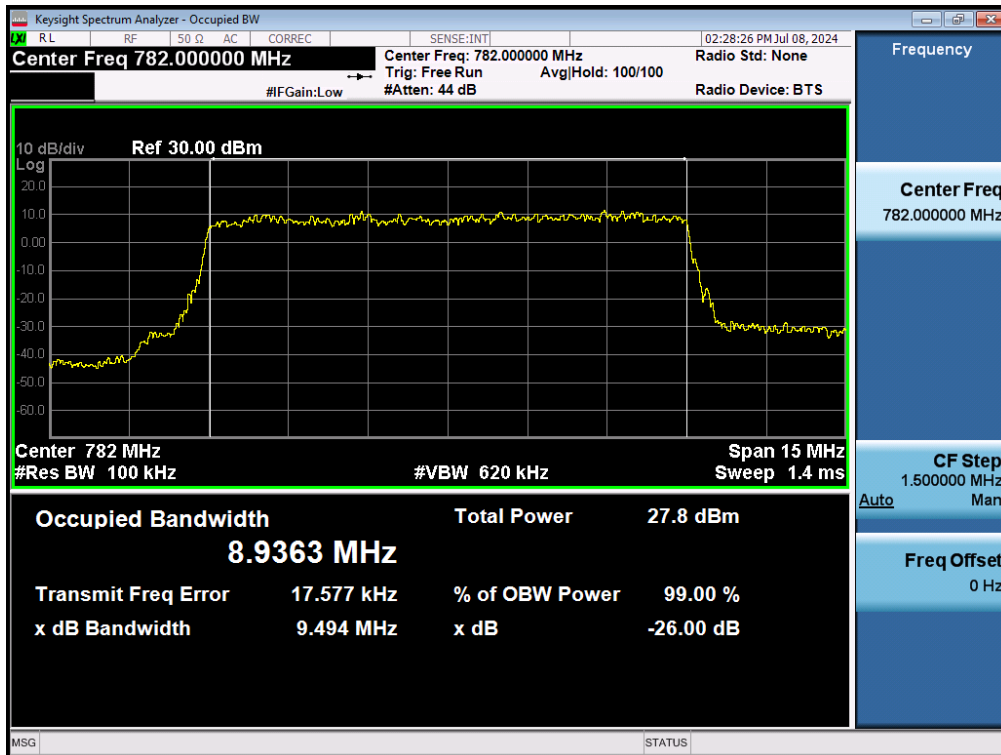
8.1.3. LTE Band 13



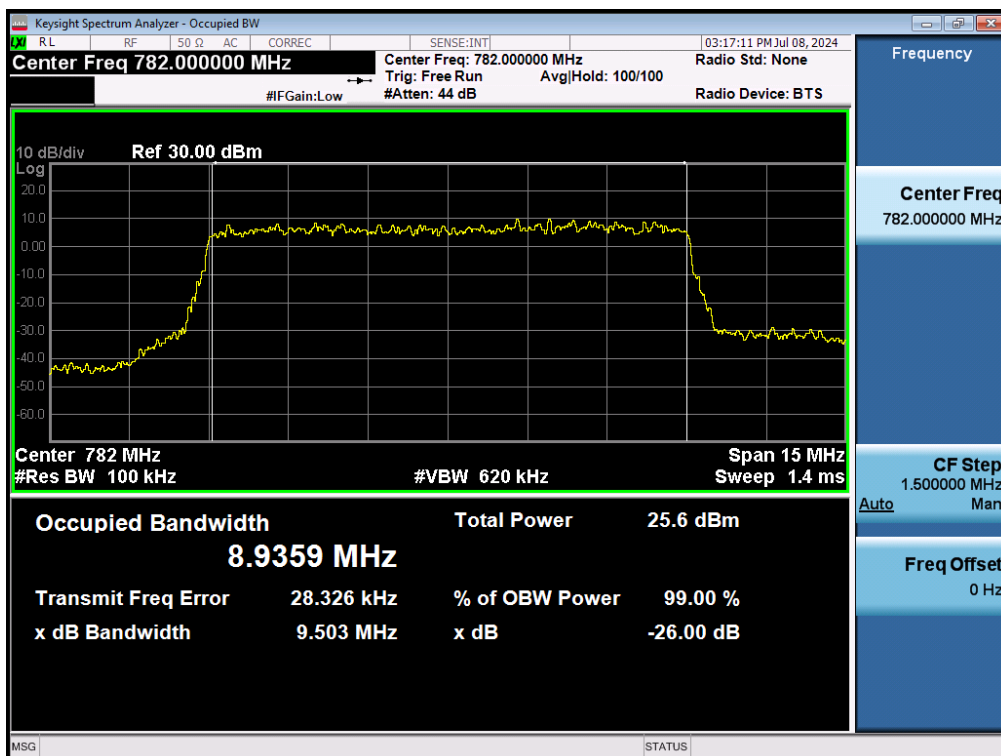
LTE Band 13 / 10 MHz / QPSK / FULL RB Size



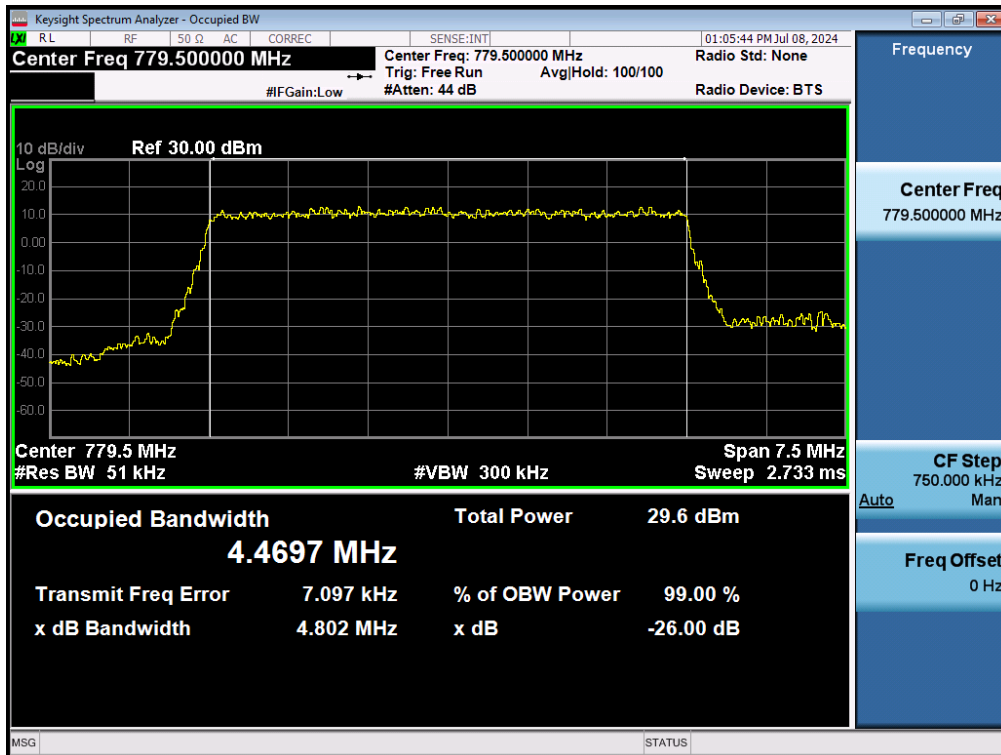
LTE Band 13 / 10 MHz / 16QAM / FULL RB Size



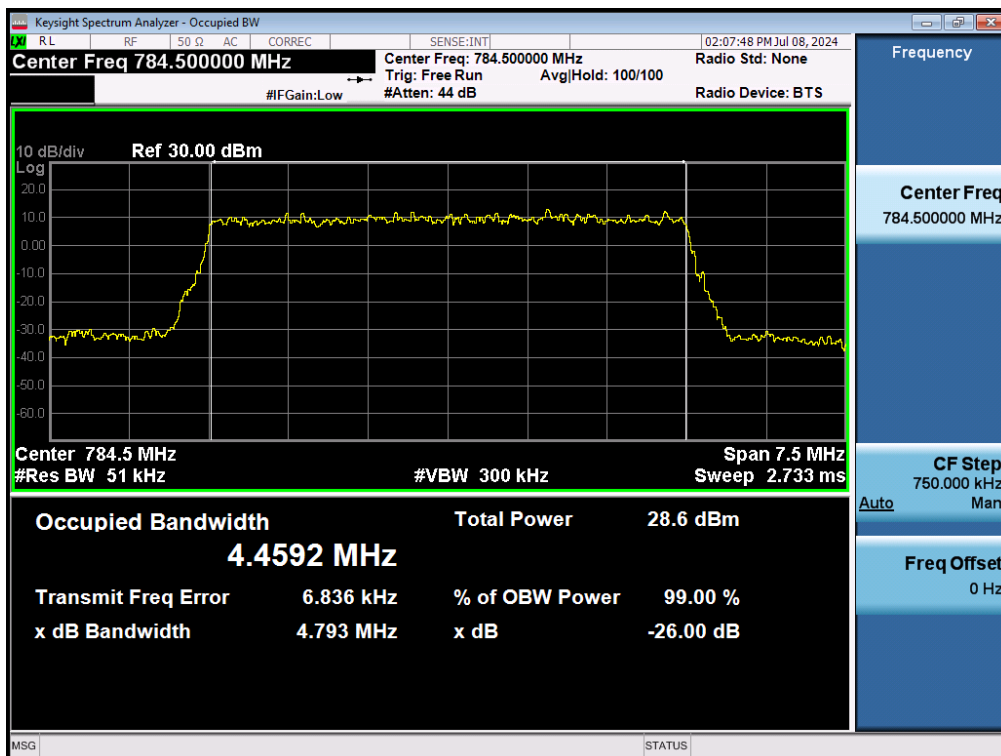
LTE Band 13 / 10 MHz / 64QAM / FULL RB Size



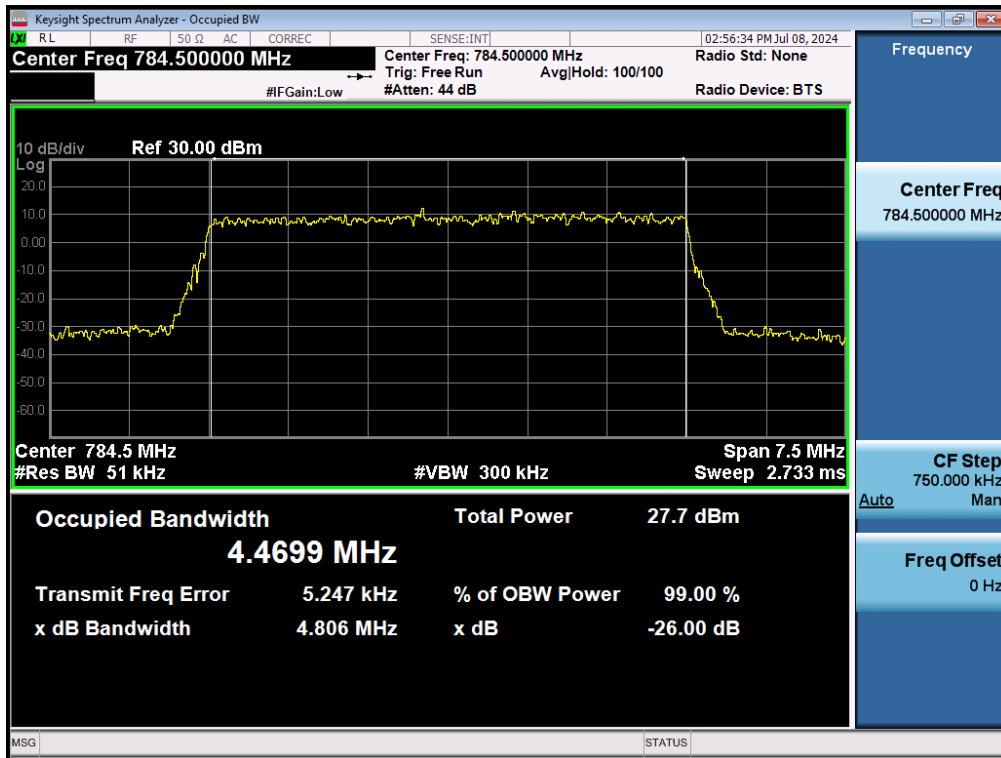
LTE Band 13 / 10 MHz / 256QAM / FULL RB Size



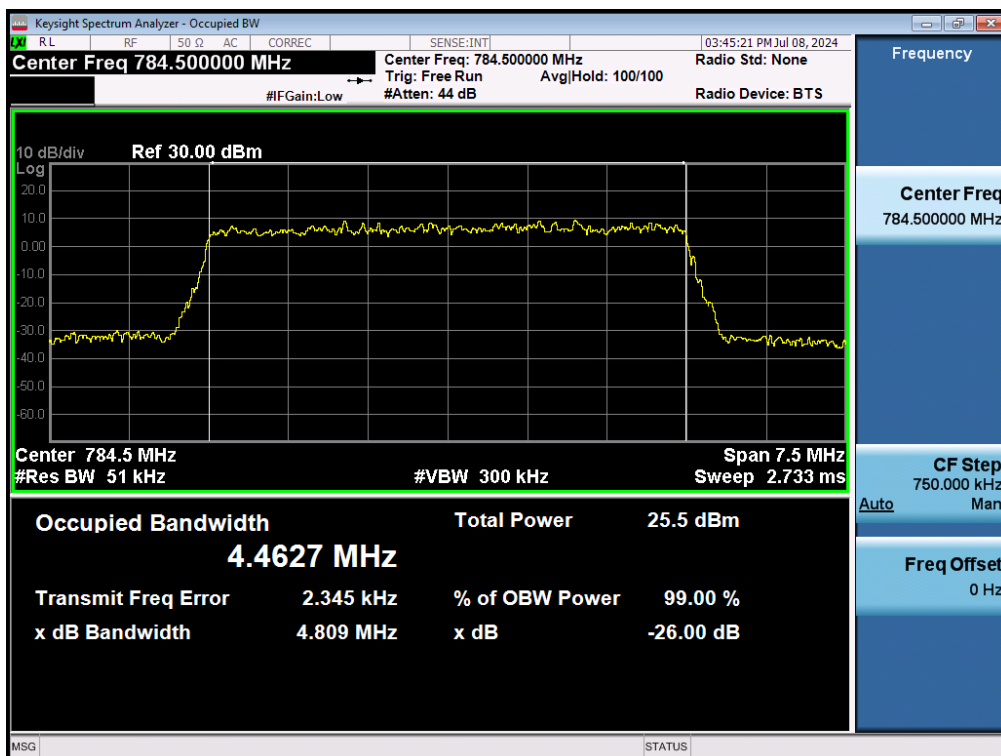
LTE Band 13 / 5 MHz / QPSK / FULL RB Size



LTE Band 13 / 5 MHz / 16QAM / FULL RB Size

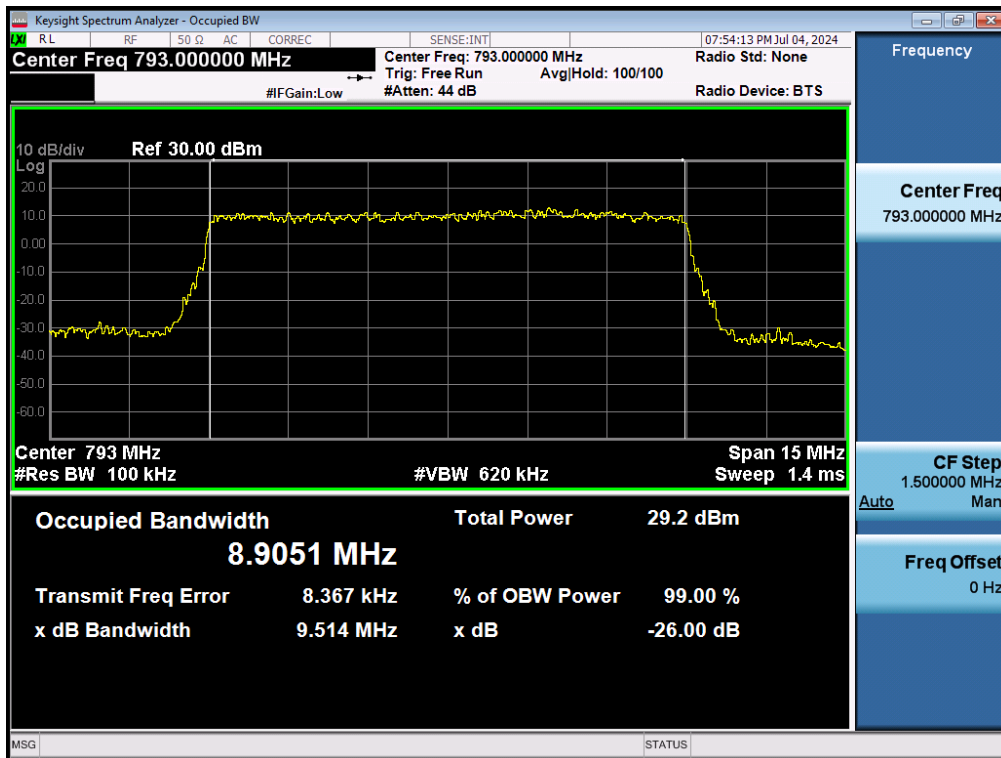


LTE Band 13 / 5 MHz / 64QAM / FULL RB Size

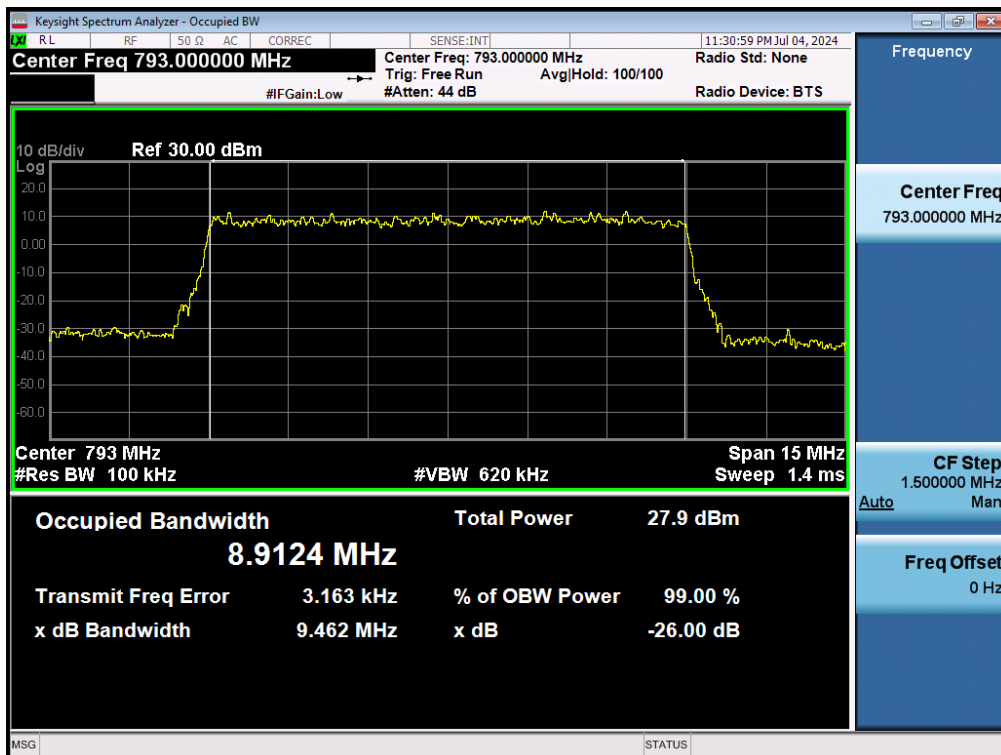


LTE Band 13 / 5 MHz / 256QAM / FULL RB Size

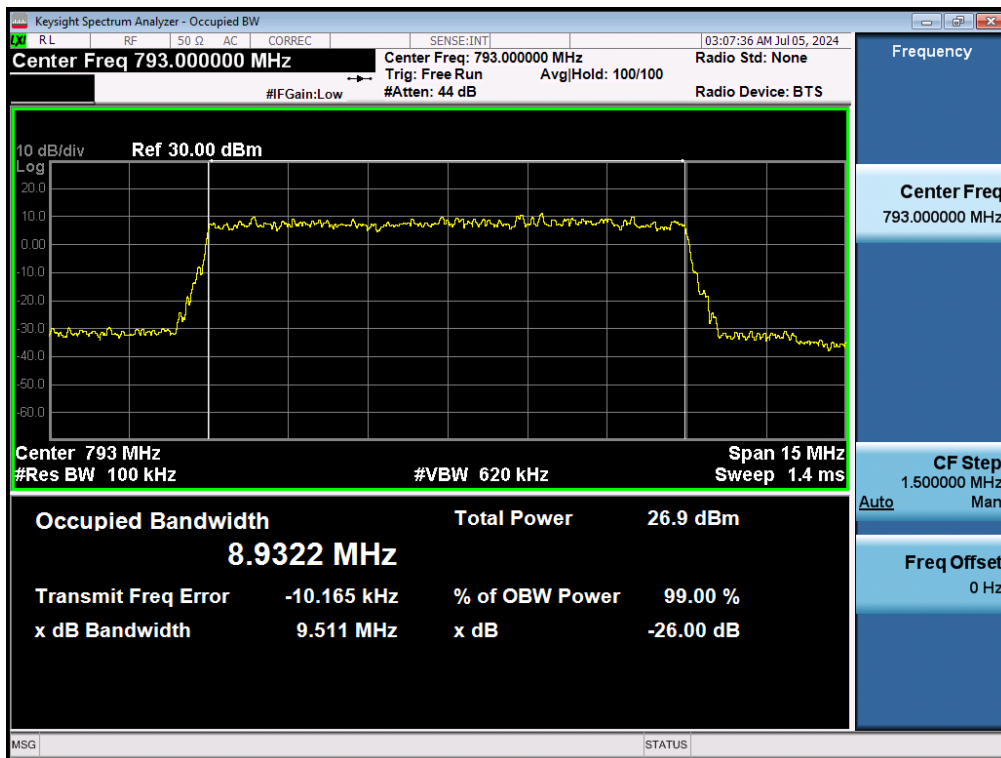
8.1.4. LTE Band 14



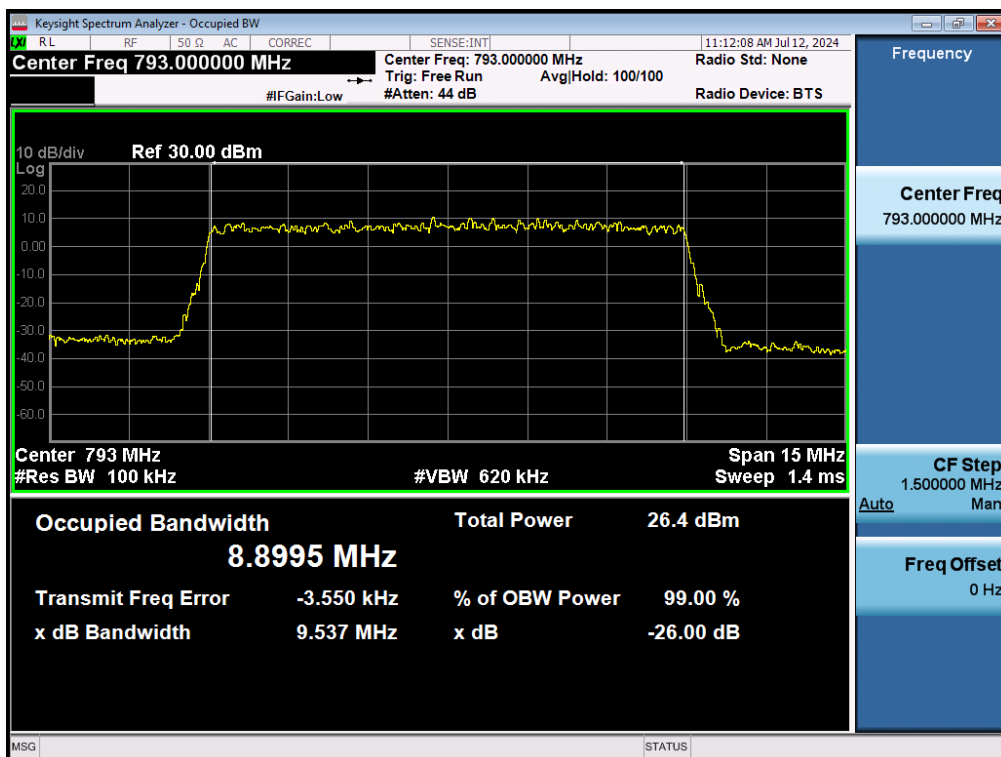
LTE Band 14 / 10 MHz / QPSK / FULL RB Size



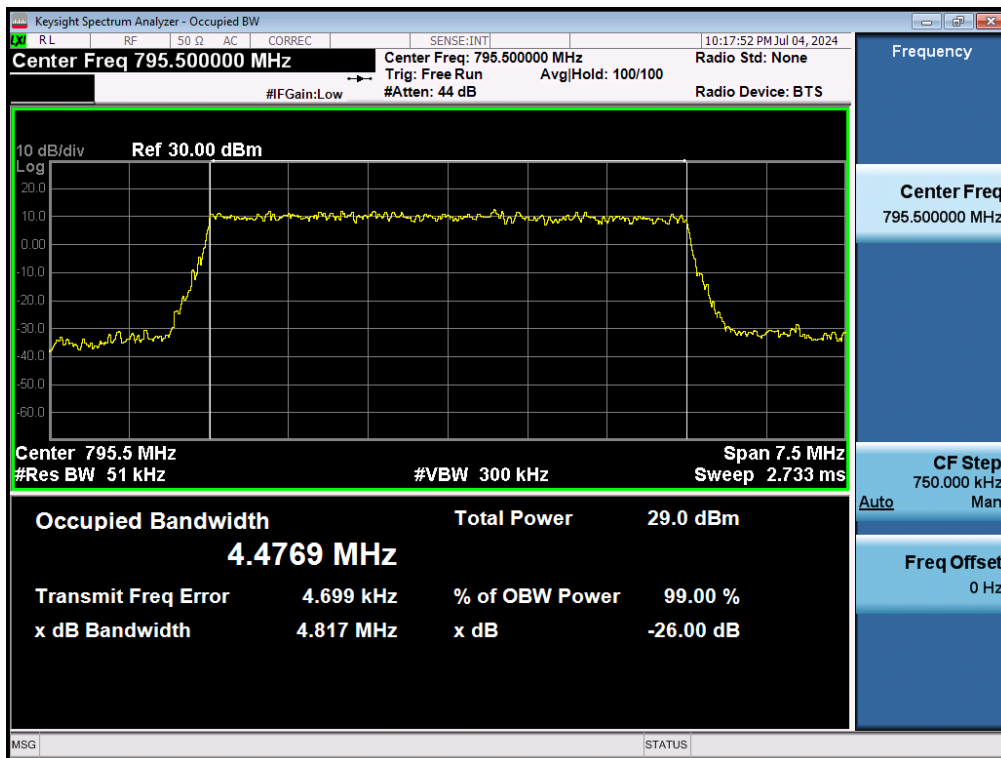
LTE Band 14 / 10 MHz / 16QAM / FULL RB Size



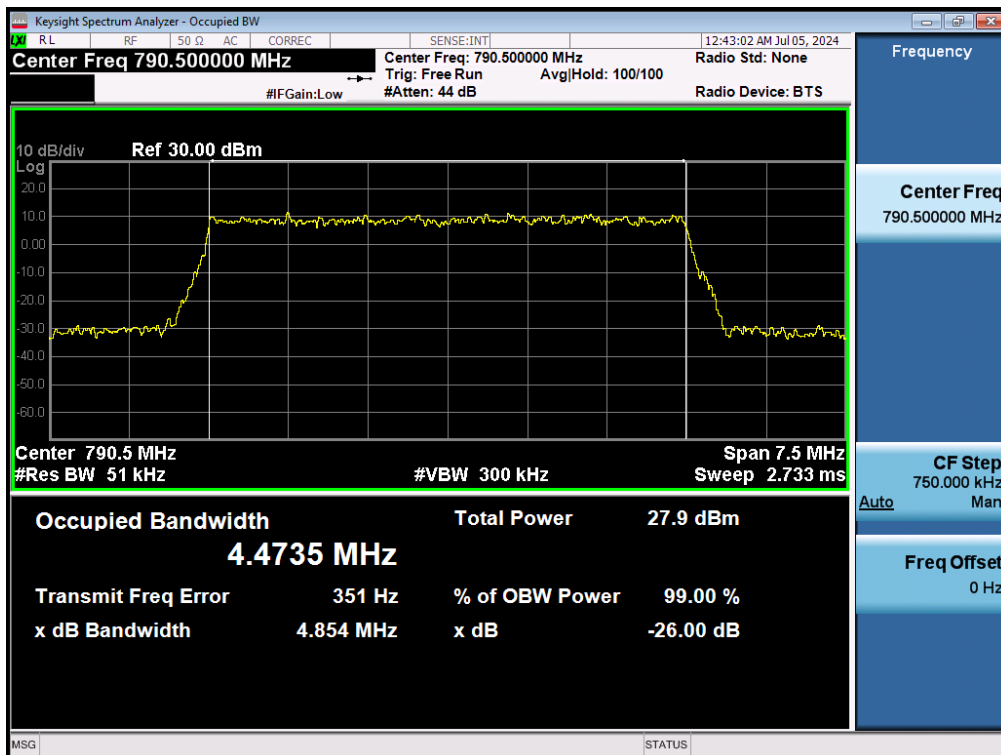
LTE Band 14 / 10 MHz / 64QAM / FULL RB Size



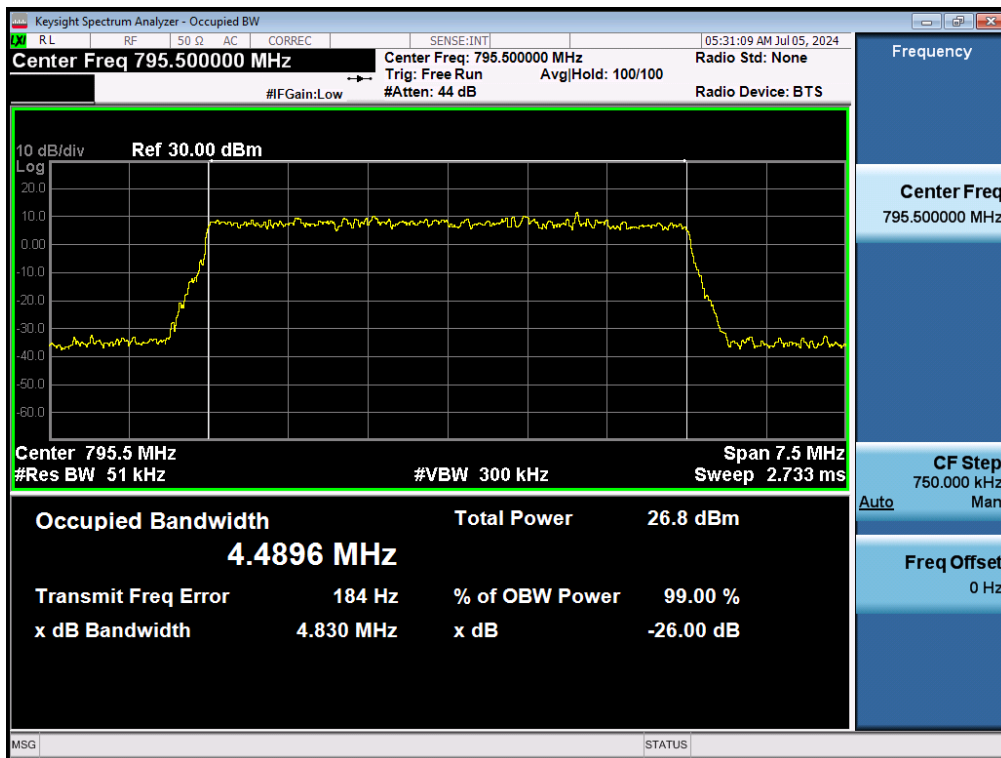
LTE Band 14 / 10 MHz / 256QAM / FULL RB Size



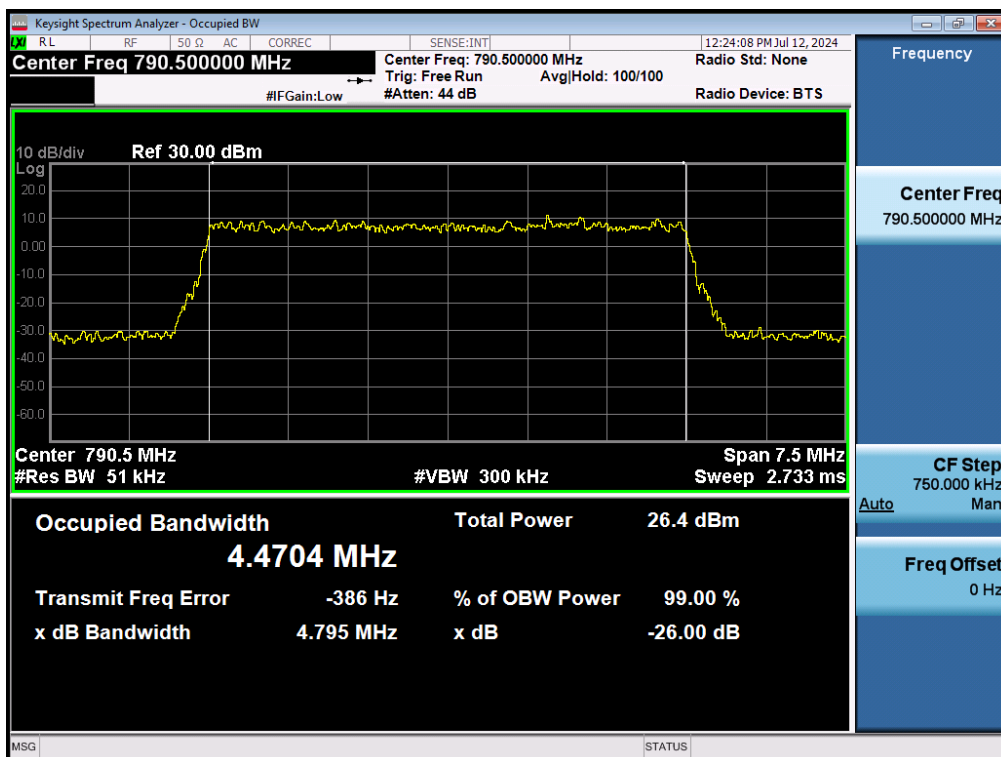
LTE Band 14 / 5 MHz / QPSK / FULL RB Size



LTE Band 14 / 5 MHz / 16QAM / FULL RB Size

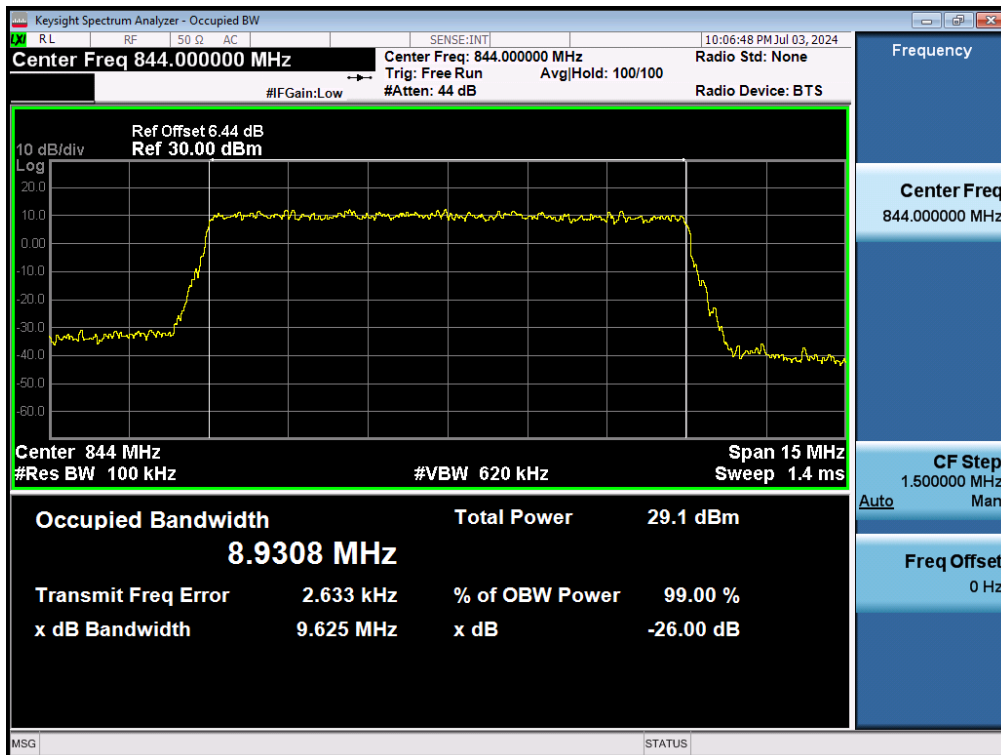


LTE Band 14 / 5 MHz / 64QAM / FULL RB Size

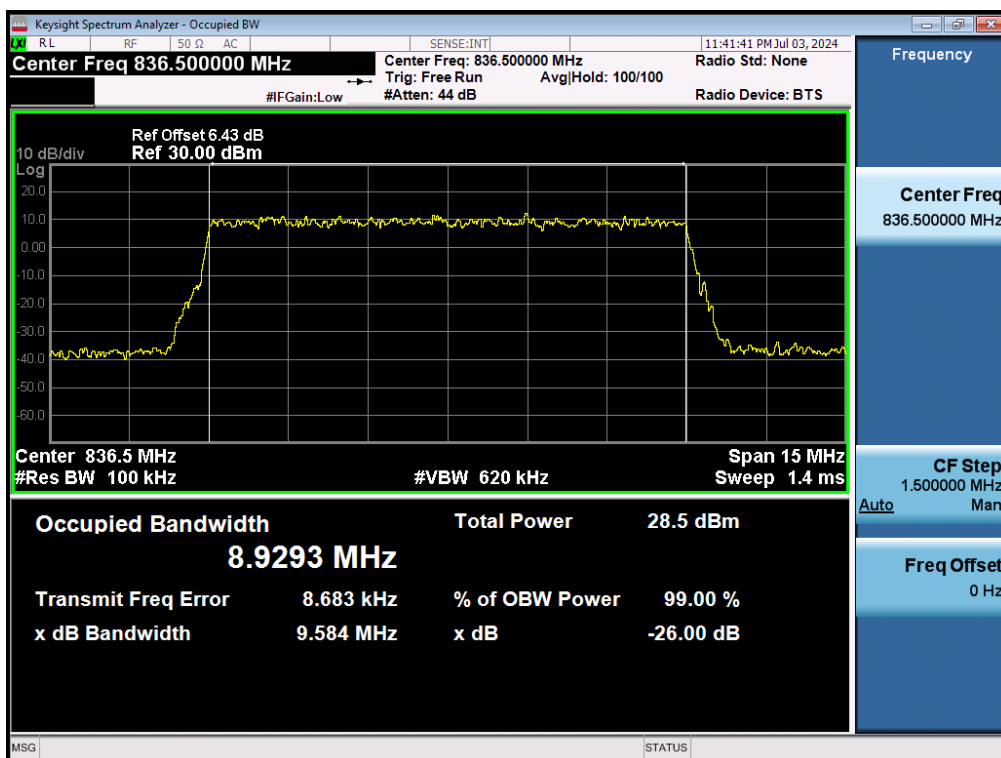


LTE Band 14 / 5 MHz / 256QAM / FULL RB Size

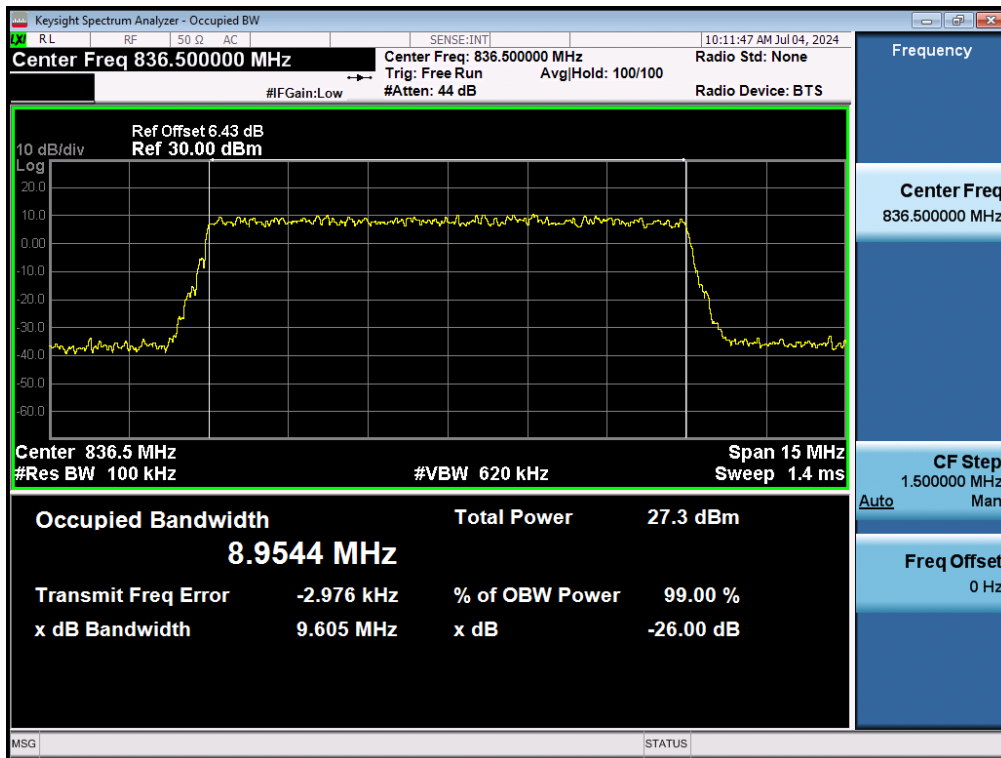
8.1.5. LTE Band 5



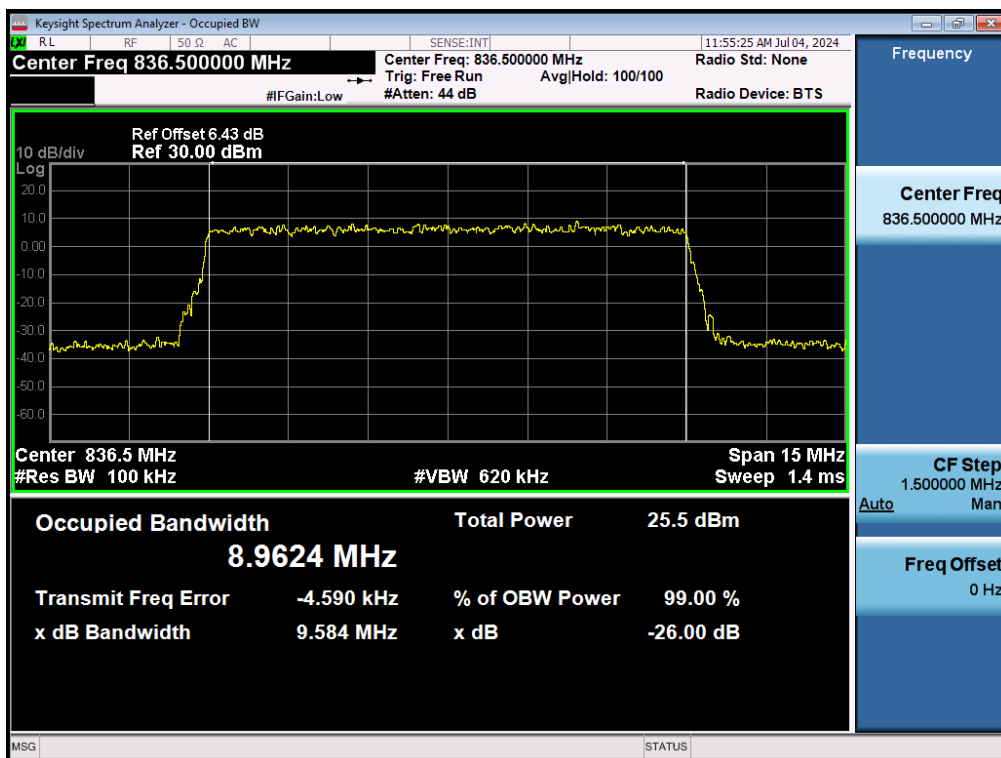
LTE Band 5 / 10 MHz / QPSK / FULL RB Size



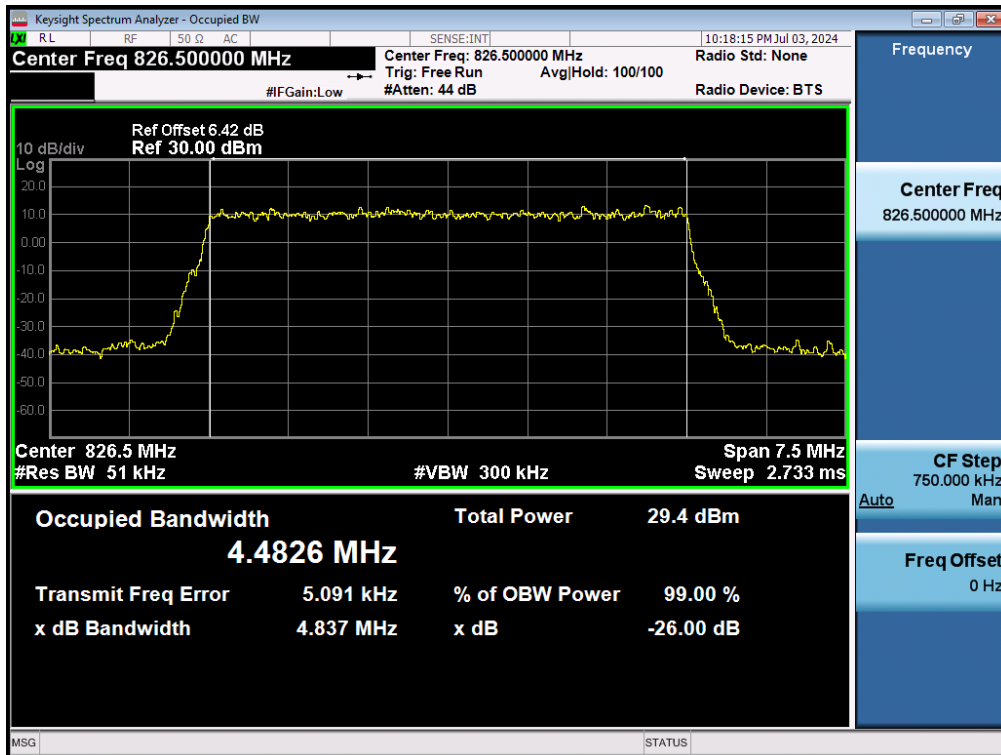
LTE Band 5 / 10 MHz / 16QAM / FULL RB Size



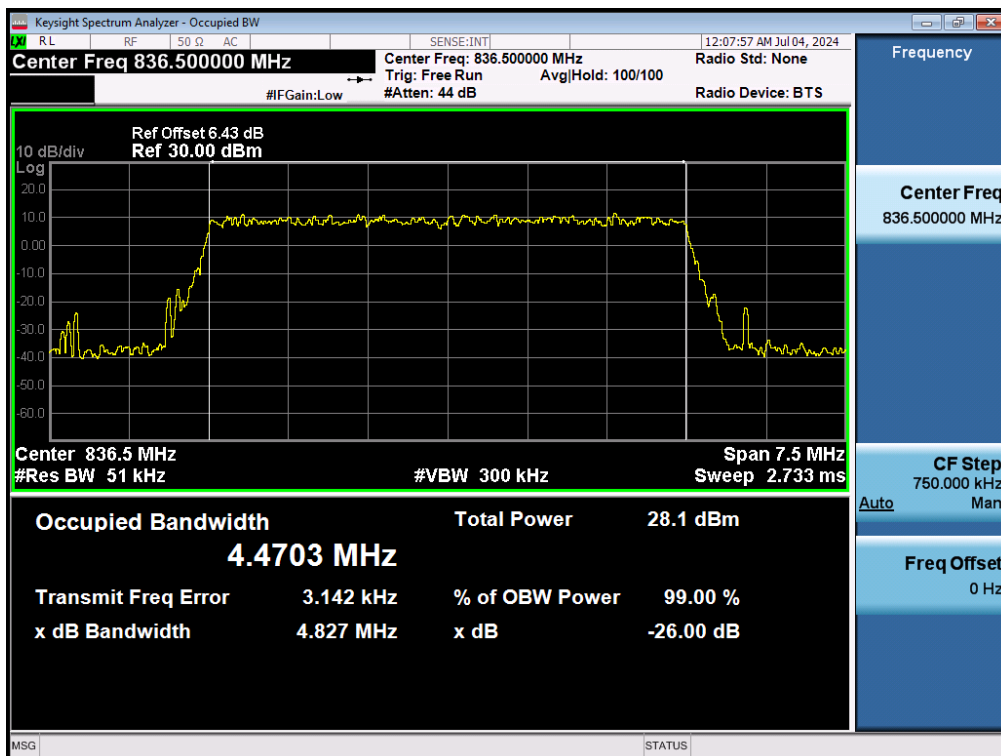
LTE Band 5 / 10 MHz / 64QAM / FULL RB Size



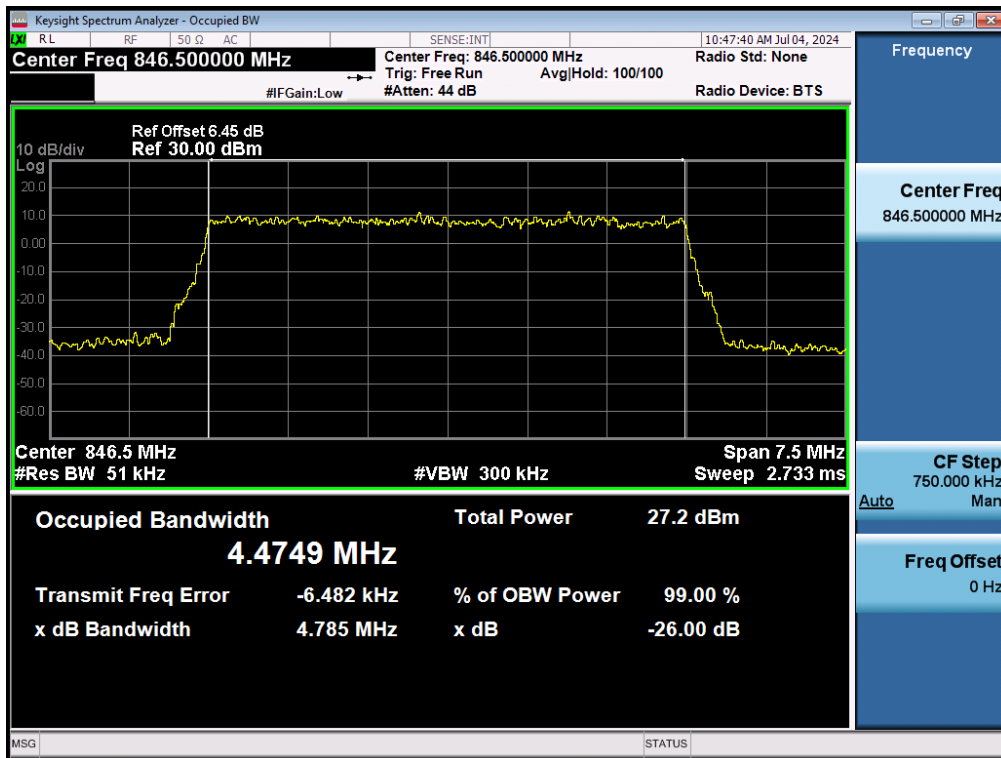
LTE Band 5 / 10 MHz / 256QAM / FULL RB Size



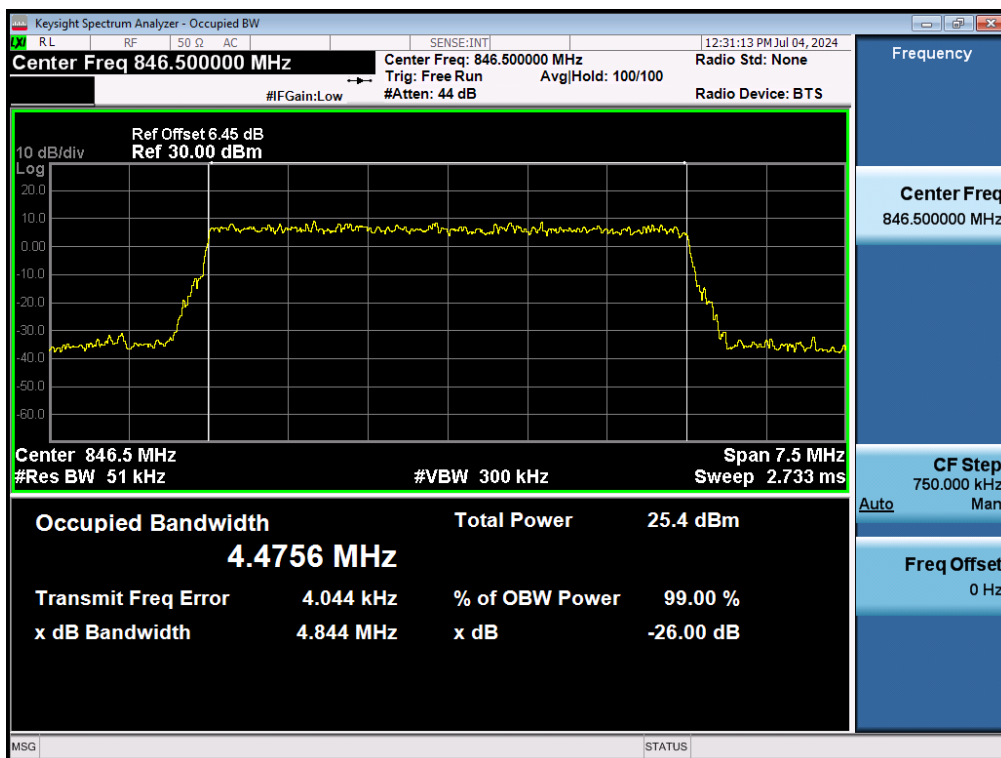
LTE Band 5 / 5 MHz / QPSK / FULL RB Size



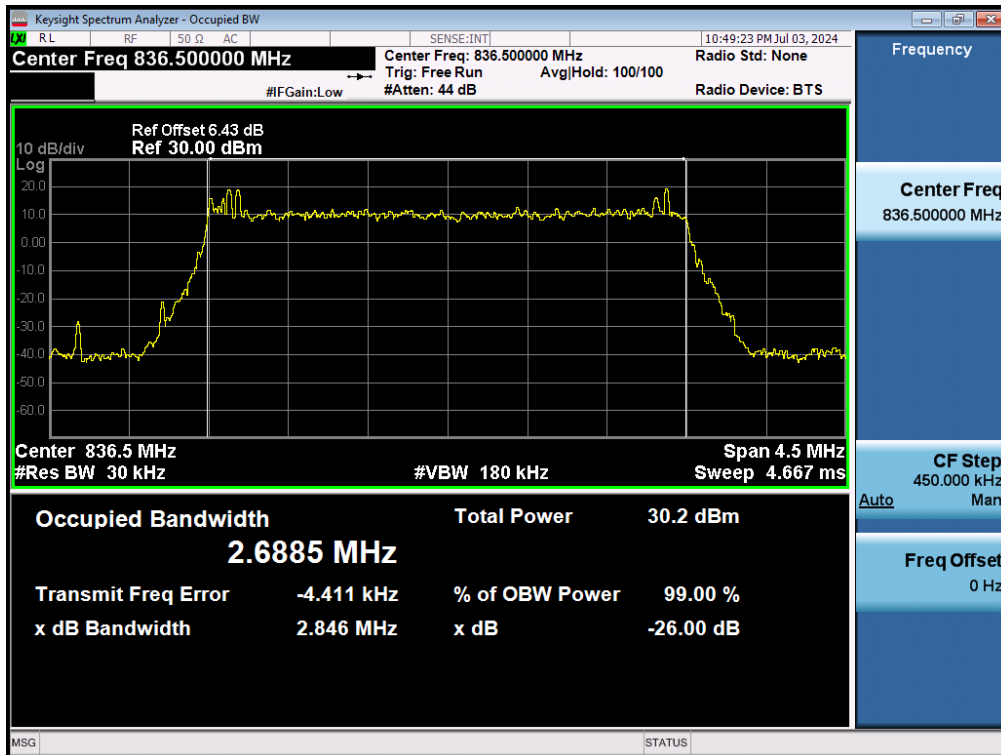
LTE Band 5 / 5 MHz / 16QAM / FULL RB Size



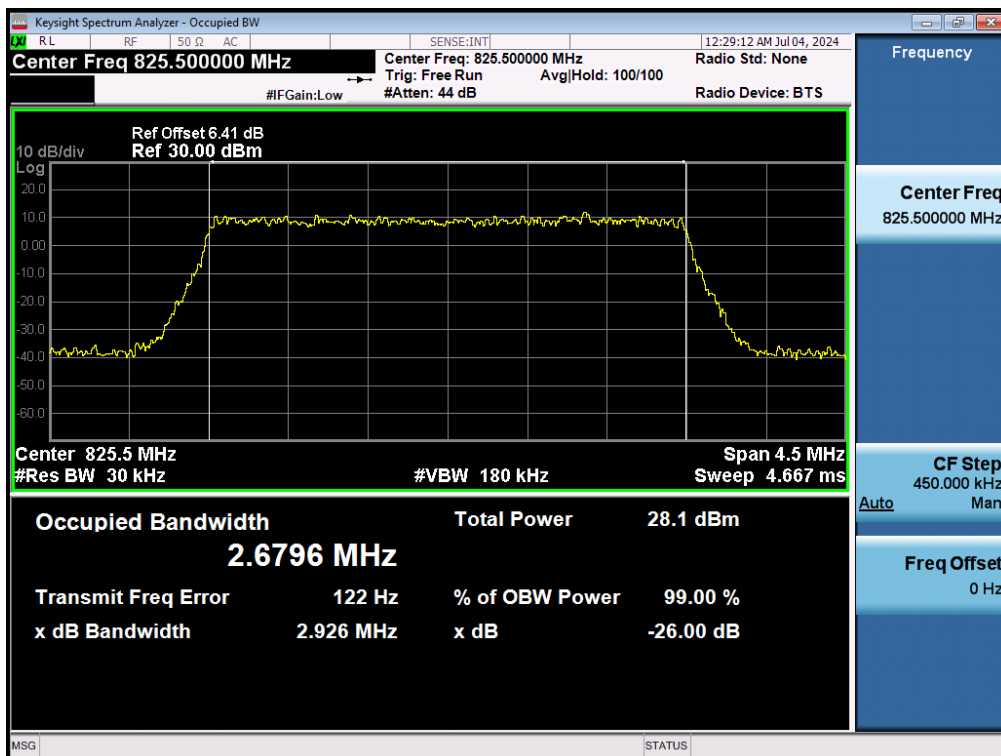
LTE Band 5 / 5 MHz / 64QAM / FULL RB Size



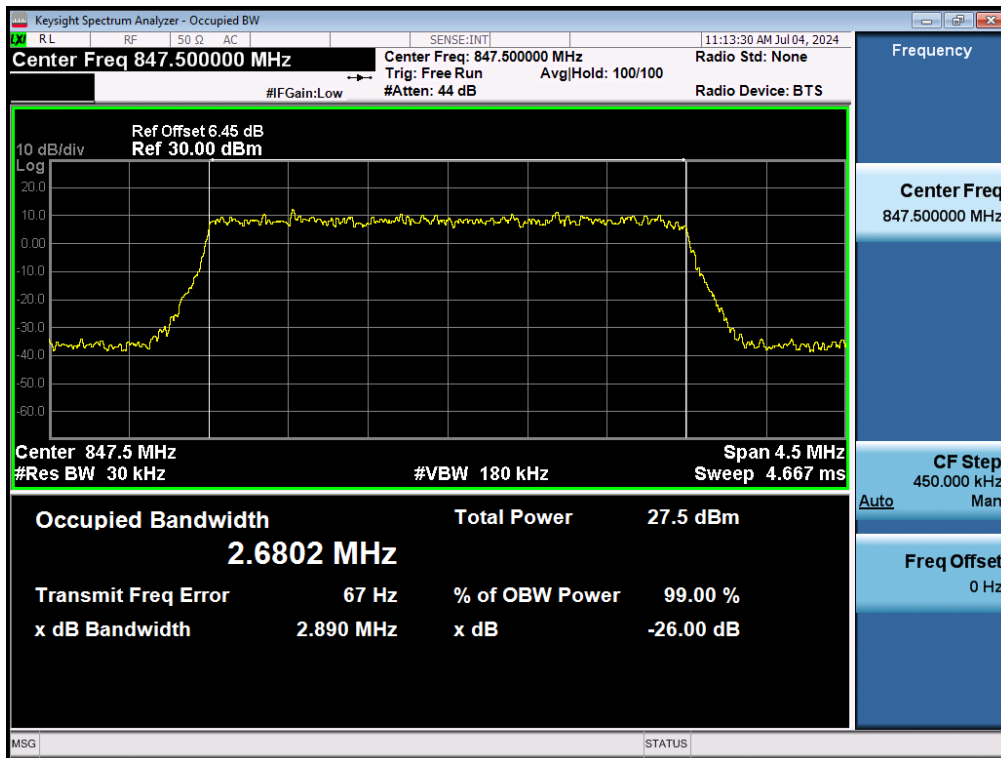
LTE Band 5 / 5 MHz / 256QAM / FULL RB Size



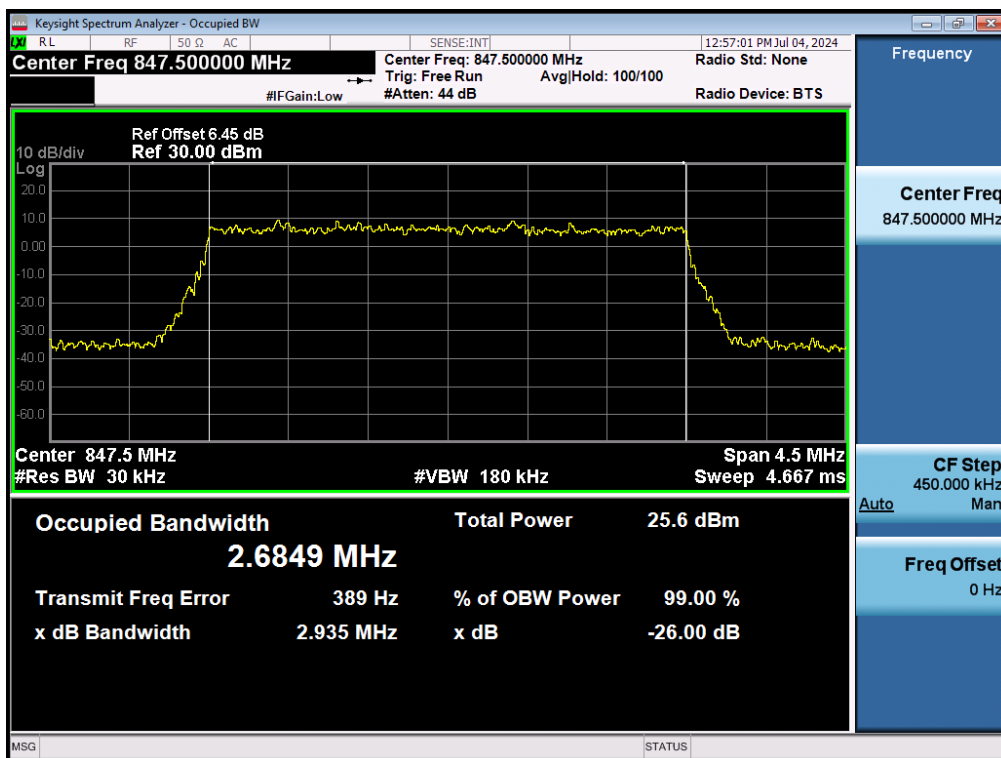
LTE Band 5 / 3 MHz / QPSK / FULL RB Size



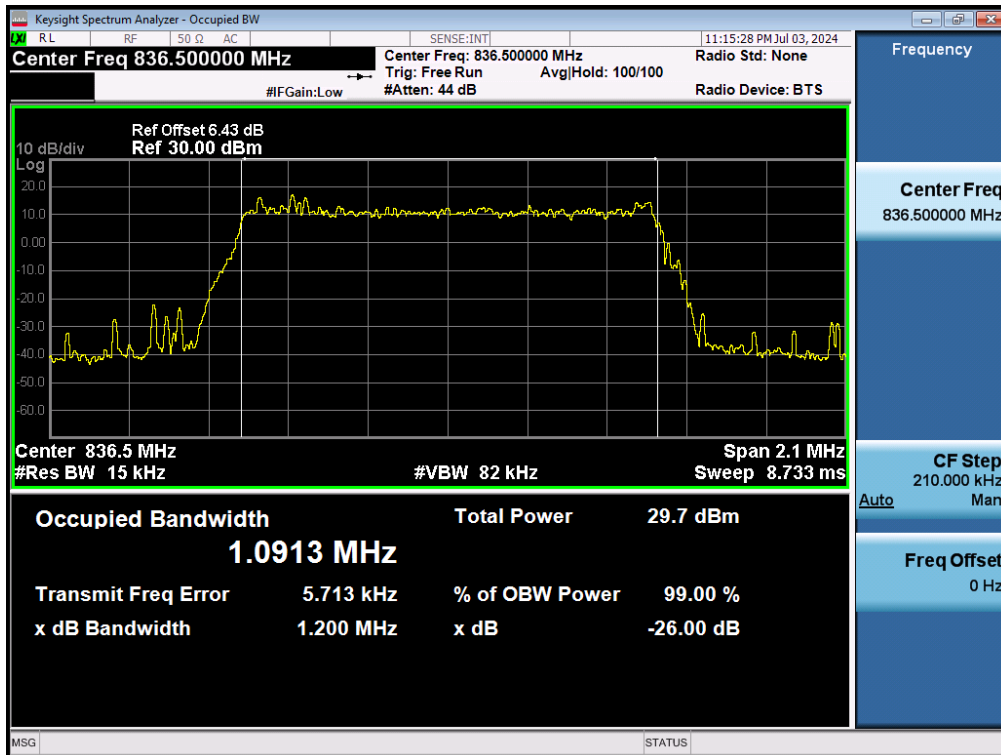
LTE Band 5 / 3 MHz / 16QAM / FULL RB Size



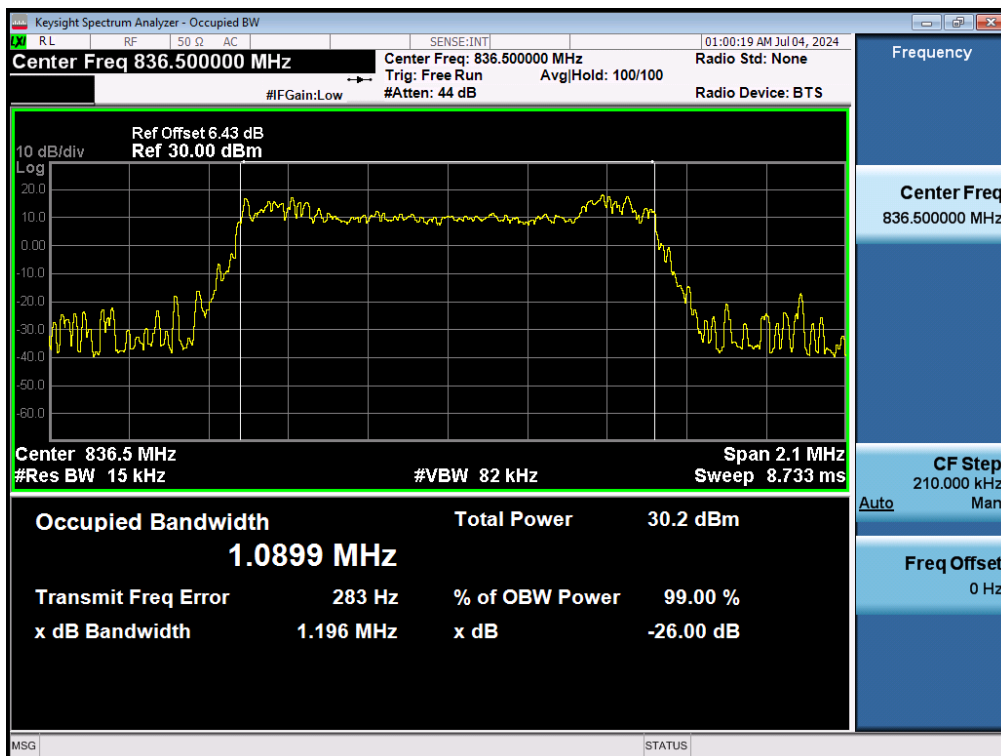
LTE Band 5 / 3 MHz / 64QAM / FULL RB Size



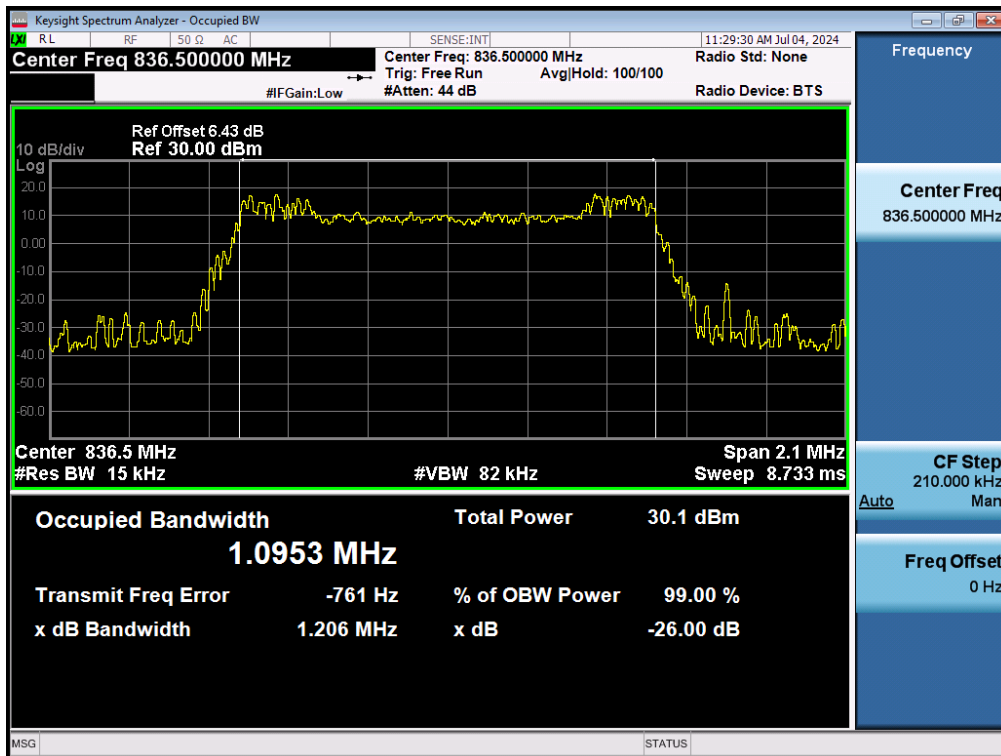
LTE Band 5 / 3 MHz / 256QAM / FULL RB Size



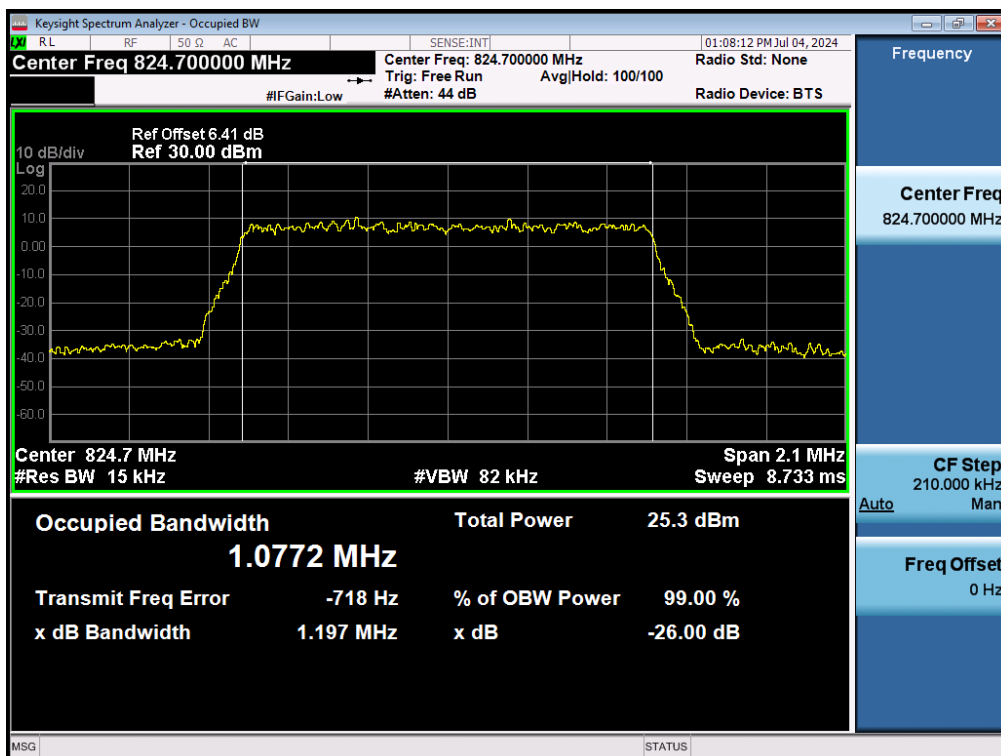
LTE Band 5 / 1.4 MHz / QPSK / FULL RB Size



LTE Band 5 / 1.4 MHz / 16QAM / FULL RB Size

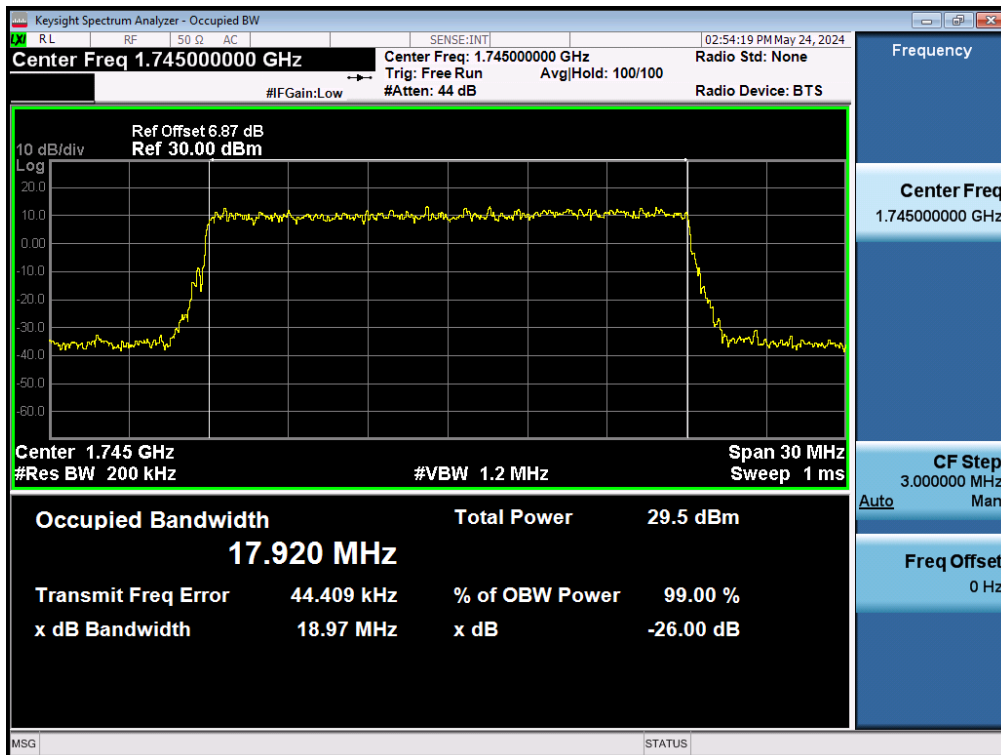


LTE Band 5 / 1.4 MHz / 64QAM / FULL RB Size

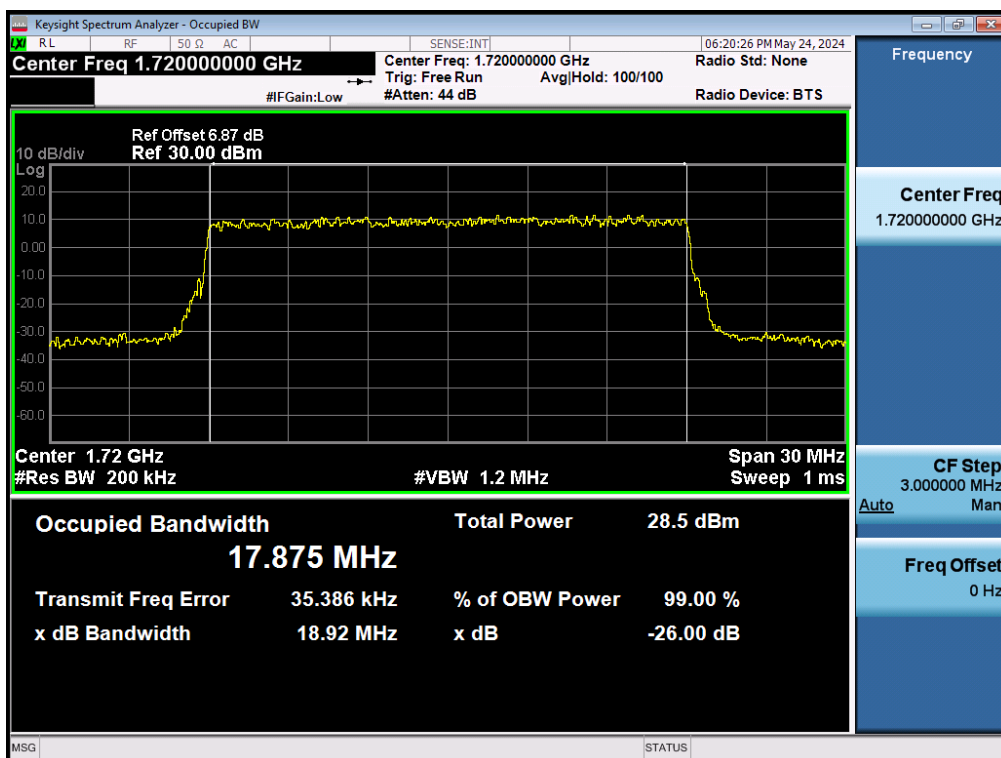


LTE Band 5 / 1.4 MHz / 256QAM / FULL RB Size

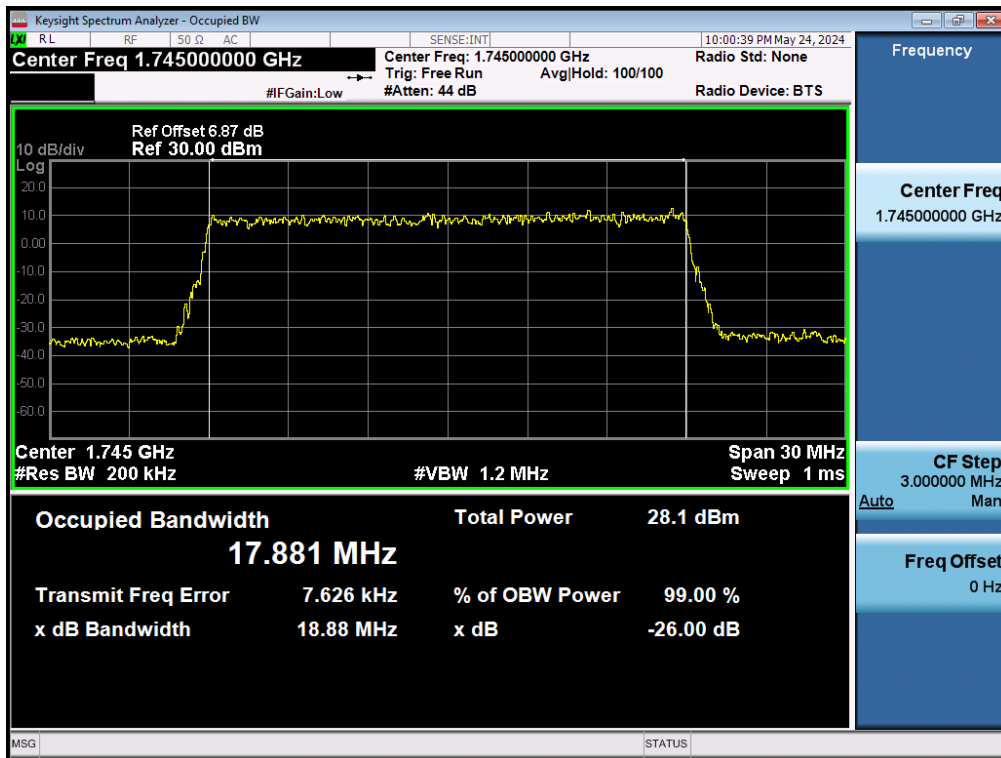
8.1.6. LTE Band 66(4)



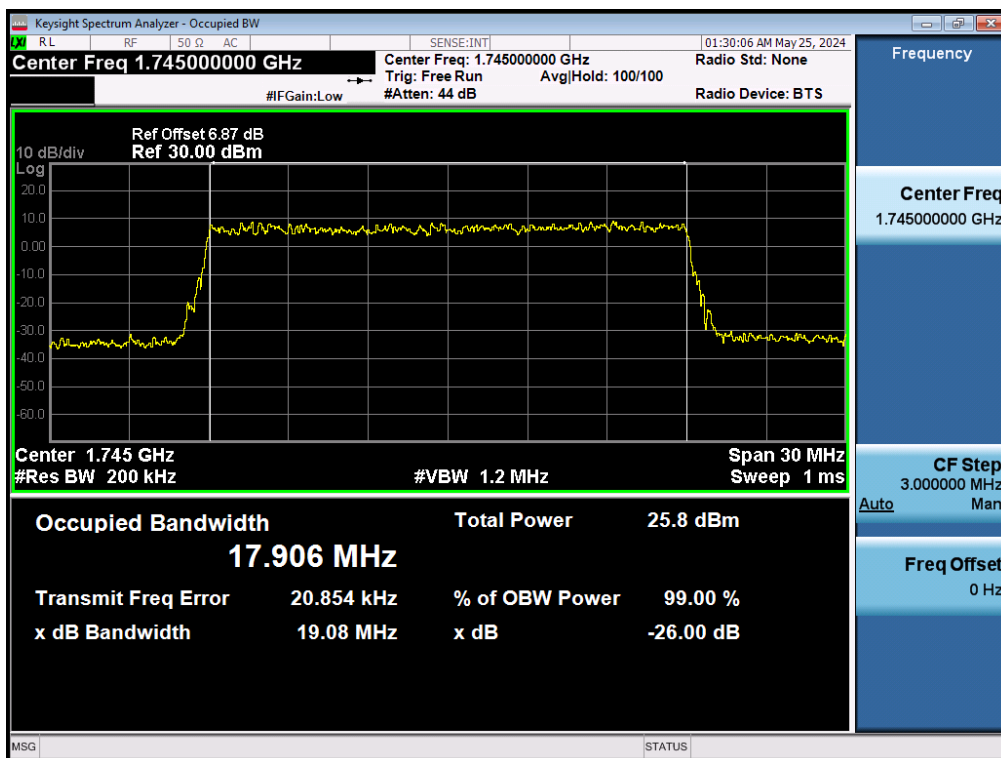
LTE Band 66 / 20 MHz / QPSK / FULL RB Size



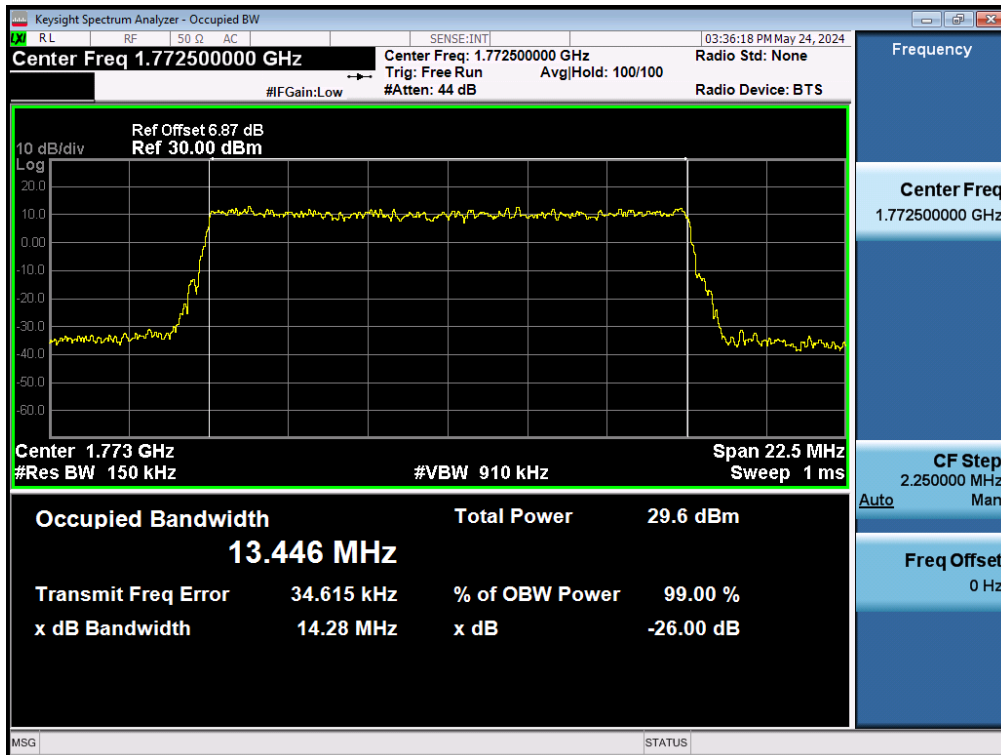
LTE Band 66 / 20 MHz / 16QAM / FULL RB Size



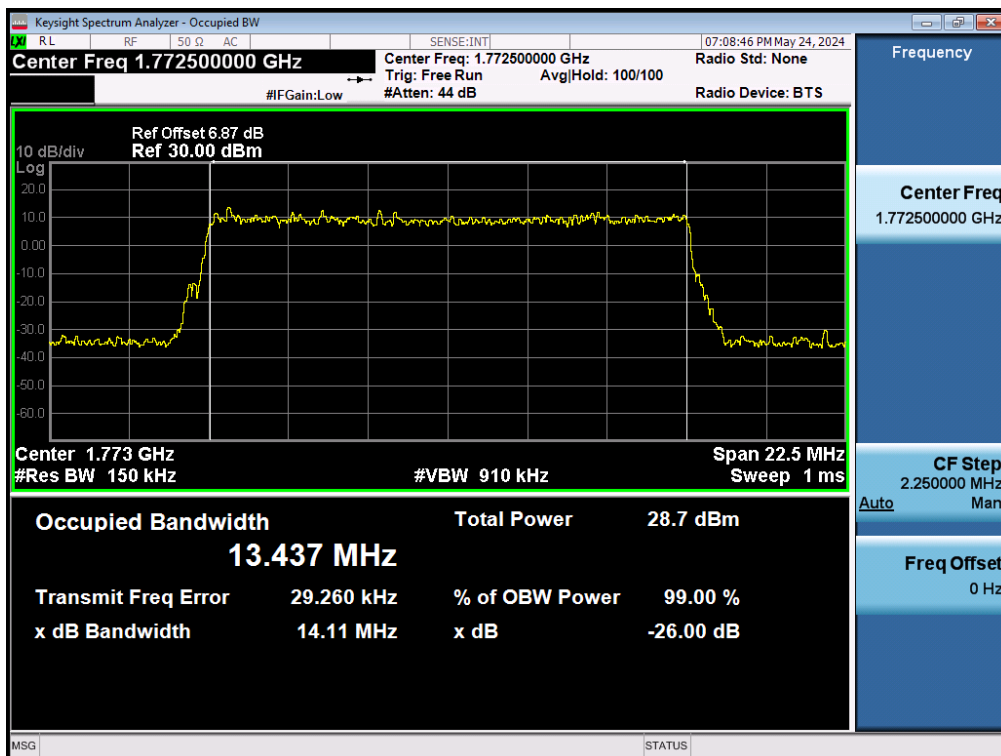
LTE Band 66 / 20 MHz / 64QAM / FULL RB Size



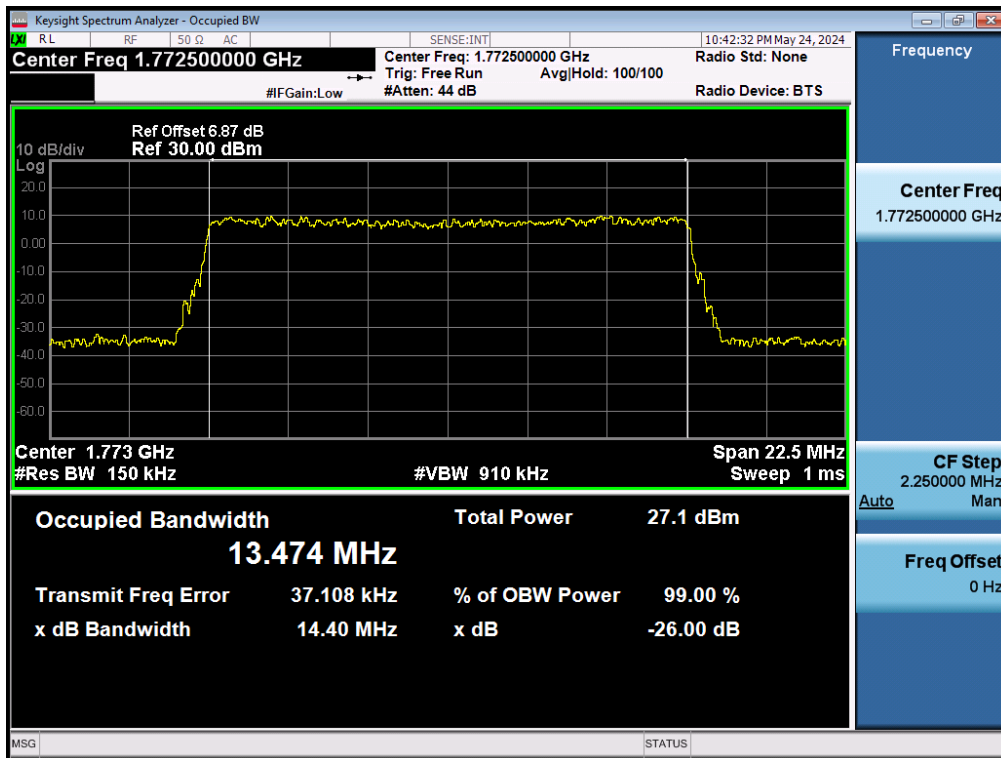
LTE Band 66 / 20 MHz / 256QAM / FULL RB Size



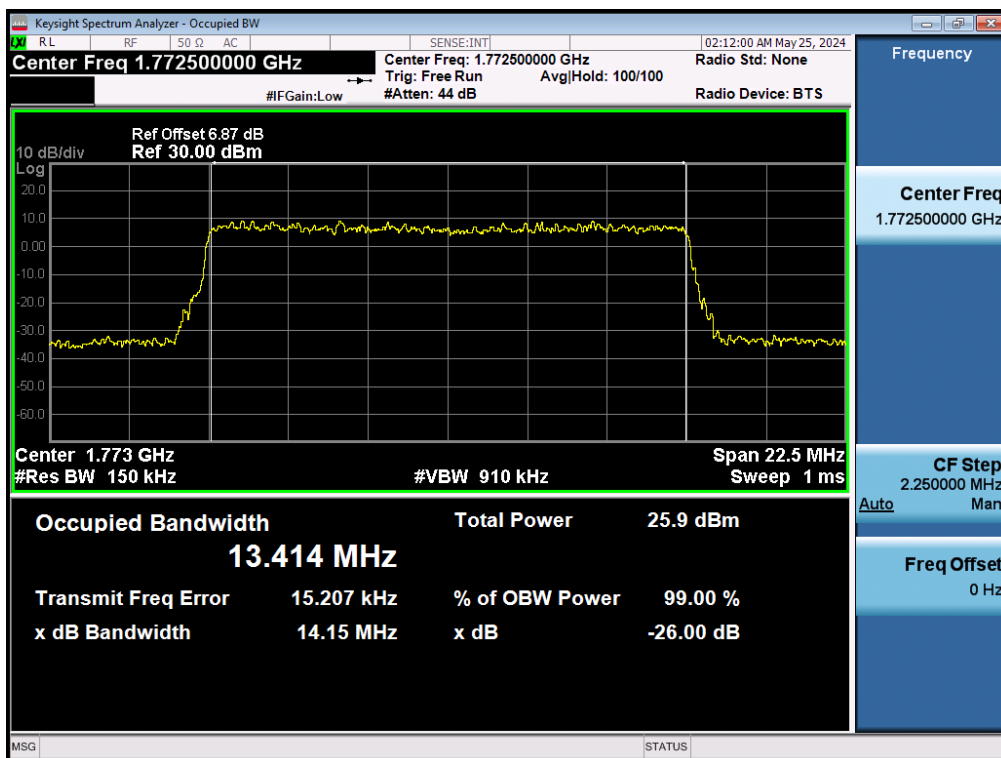
LTE Band 66 / 15 MHz / QPSK / FULL RB Size



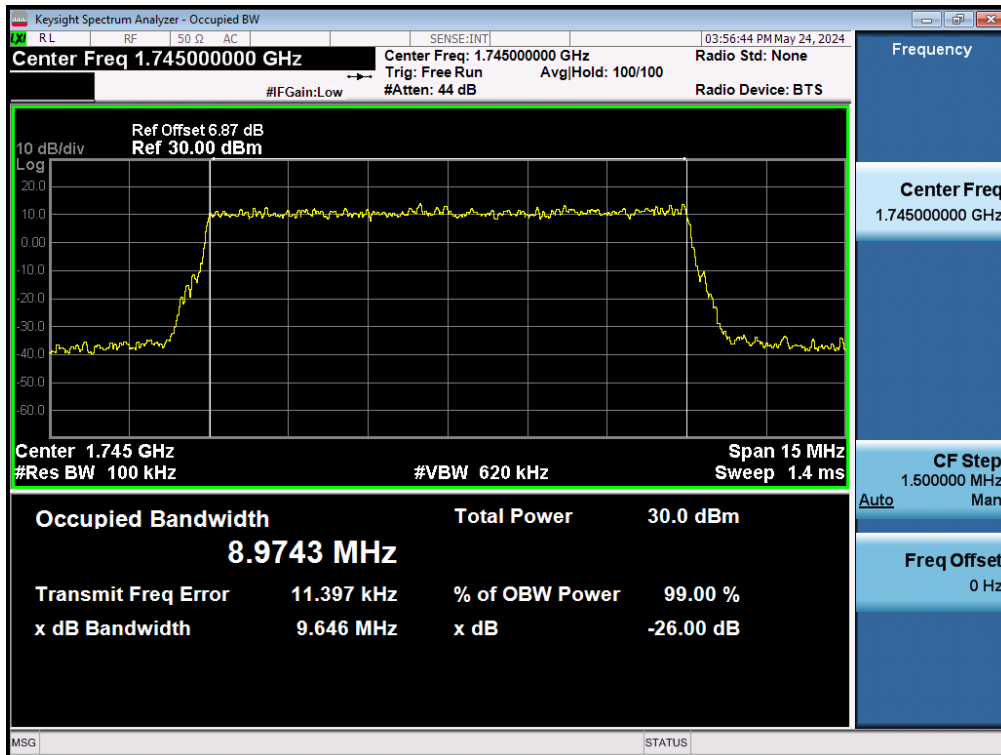
LTE Band 66 / 15 MHz / 16QAM / FULL RB Size



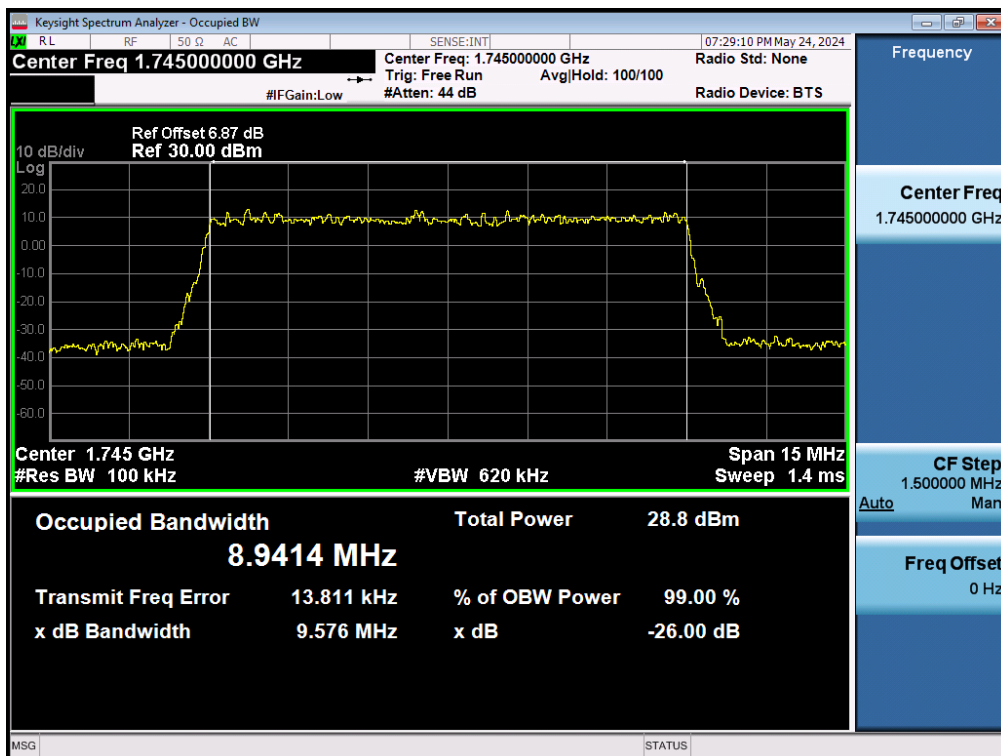
LTE Band 66 / 15 MHz / 64QAM / FULL RB Size



LTE Band 66 / 15 MHz / 256QAM / FULL RB Size



LTE Band 66 / 10 MHz / QPSK / FULL RB Size



LTE Band 66 / 10 MHz / 16QAM / FULL RB Size