



Element Materials Technology

(formerly PCTEST)

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PART 27 MEASUREMENT REPORT

Applicant Name:

Apple Inc.
One Apple Park Way
Cupertino, CA 95014
United States

Date of Testing:

7/1/2024 - 12/27/2024

Test Report Issue Date:

1/22/2025

Test Site/Location:

Element Materials Technology Morgan Hill, CA, USA

Test Report Serial No.:

1C2410210075-09-R1.BCG

FCC ID:	BCGA3269
APPLICANT:	Apple Inc.

Application Type:

Certification

Model:

A3269, A3271

EUT Type:

Tablet Device

FCC Classification:

PCS Licensed Transmitter (PCB)

FCC Rule Part:

27

Test Procedure(s):

ANSI C63.26-2015, TIA-603-E-2016, KDB 971168 D01 v03r01

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947. Test results reported herein relate only to the item(s) tested.

This revised Test Report (S/N: 1C2410210075-09-R1.BCG) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose accordingly.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

RJ Ortiz
Executive Vice President



CERT #2041.02

FCC ID: BCGA3269		PART 27 MEASUREMENT REPORT	
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Approved by: Technical Manager Page 1 of 351

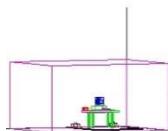
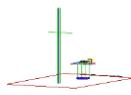
V2.2 09/07/2023

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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	ERP		Emission Designator
					Max. Power [W]	Max. Power [dBm]	
LTE Band 71	5 MHz	QPSK	665.5 - 695.5	4.5647	0.146	21.65	4M56G7W
		16QAM	665.5 - 695.5	4.5641	0.115	20.59	4M56D7W
		64QAM	665.5 - 695.5	4.5651	0.091	19.60	4M57D7W
		256QAM	665.5 - 695.5	4.5680	0.046	16.66	4M57D7W
	10 MHz	QPSK	668.0 - 693.0	9.0384	0.146	21.65	9M04G7W
		16QAM	668.0 - 693.0	9.0421	0.117	20.69	9M04D7W
		64QAM	668.0 - 693.0	9.0459	0.093	19.70	9M05D7W
		256QAM	668.0 - 693.0	9.0737	0.046	16.66	9M07D7W
	15 MHz	QPSK	670.5 - 690.5	13.5722	0.144	21.58	13M6G7W
		16QAM	670.5 - 690.5	13.5911	0.116	20.66	13M6D7W
		64QAM	670.5 - 690.5	13.5877	0.092	19.66	13M6D7W
		256QAM	670.5 - 690.5	13.5618	0.047	16.73	13M6D7W
	20 MHz	QPSK	673.0 - 688.0	17.9892	0.146	21.64	18M0G7W
		16QAM	673.0 - 688.0	18.0288	0.115	20.60	18M0D7W
		64QAM	673.0 - 688.0	18.0794	0.093	19.67	18M1D7W
		256QAM	673.0 - 688.0	18.0254	0.047	16.73	18M0D7W
LTE Band 12	1.4 MHz	QPSK	699.7 - 715.3	1.1144	0.123	20.90	1M11G7W
		16QAM	699.7 - 715.3	1.1174	0.094	19.74	1M12D7W
		64QAM	699.7 - 715.3	1.1167	0.076	18.82	1M12D7W
		256QAM	699.7 - 715.3	1.1157	0.039	15.91	1M12D7W
	3 MHz	QPSK	700.5 - 714.5	2.7348	0.140	21.45	2M73G7W
		16QAM	700.5 - 714.5	2.7361	0.110	20.41	2M74D7W
		64QAM	700.5 - 714.5	2.7365	0.090	19.52	2M74D7W
		256QAM	700.5 - 714.5	2.7329	0.046	16.59	2M73D7W
	5 MHz	QPSK	701.5 - 713.5	4.5486	0.136	21.35	4M55G7W
		16QAM	701.5 - 713.5	4.5514	0.107	20.31	4M55D7W
		64QAM	701.5 - 713.5	4.5562	0.087	19.41	4M56D7W
		256QAM	701.5 - 713.5	4.5695	0.045	16.51	4M57D7W
	10 MHz	QPSK	704.0 - 711.0	9.0426	0.138	21.40	9M04G7W
		16QAM	704.0 - 711.0	9.0701	0.108	20.35	9M07D7W
		64QAM	704.0 - 711.0	9.0598	0.087	19.42	9M06D7W
		256QAM	704.0 - 711.0	9.0521	0.043	16.33	9M05D7W
LTE Band 17	5 MHz	QPSK	706.5 - 713.5	4.5486	0.139	21.43	4M55G7W
		16QAM	706.5 - 713.5	4.5514	0.111	20.45	4M55D7W
		64QAM	706.5 - 713.5	4.5562	0.087	19.42	4M56D7W
		256QAM	706.5 - 713.5	4.5695	0.045	16.55	4M57D7W
	10 MHz	QPSK	709.0 - 711.0	9.0426	0.140	21.45	9M04G7W
		16QAM	709.0 - 711.0	9.0701	0.110	20.42	9M07D7W
		64QAM	709.0 - 711.0	9.0598	0.088	19.44	9M06D7W
		256QAM	709.0 - 711.0	9.0521	0.044	16.45	9M05D7W
LTE Band 13	5 MHz	QPSK	779.5 - 784.5	4.5515	0.126	21.02	4M55G7W
		16QAM	779.5 - 784.5	4.5506	0.100	20.00	4M55D7W
		64QAM	779.5 - 784.5	4.5588	0.081	19.08	4M56D7W
		256QAM	779.5 - 784.5	4.5616	0.041	16.09	4M56D7W
	10 MHz	QPSK	782.0	9.0201	0.125	20.97	9M02G7W
		16QAM	782.0	9.0355	0.094	19.73	9M04D7W
		64QAM	782.0	9.0360	0.080	19.01	9M04D7W
		256QAM	782.0	9.0270	0.040	16.02	9M03D7W

Overview Table (<1GHz Band)

FCC ID: BCGA3269	 element	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device			

V2.2 09/07/2023

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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	ERP		Emission Designator
					Max. Power [W]	Max. Power [dBm]	
NR Band n71	5 MHz	TT/2 BPSK	665.5 - 695.5	4.4526	0.146	21.65	4M45G7W
		QPSK	665.5 - 695.5	4.4797	0.146	21.65	4M48G7W
		16QAM	665.5 - 695.5	4.4830	0.116	20.65	4M48D7W
		64QAM	665.5 - 695.5	4.4499	0.092	19.65	4M45D7W
		256QAM	665.5 - 695.5	4.4991	0.047	16.73	4M50D7W
	10 MHz	TT/2 BPSK	668.0 - 693.0	8.9453	0.146	21.65	8M95G7W
		QPSK	668.0 - 693.0	9.2956	0.146	21.65	9M30G7W
		16QAM	668.0 - 693.0	9.2411	0.116	20.64	9M24D7W
		64QAM	668.0 - 693.0	9.2988	0.091	19.60	9M30D7W
		256QAM	668.0 - 693.0	9.2893	0.047	16.74	9M29D7W
	15 MHz	TT/2 BPSK	670.5 - 690.5	13.4000	0.146	21.65	13M4G7W
		QPSK	670.5 - 690.5	14.1503	0.146	21.65	14M2G7W
		16QAM	670.5 - 690.5	14.1308	0.117	20.69	14M1D7W
		64QAM	670.5 - 690.5	14.1648	0.094	19.71	14M2D7W
		256QAM	670.5 - 690.5	14.0677	0.047	16.74	14M1D7W
	20 MHz	TT/2 BPSK	673.0 - 688.0	17.8654	0.146	21.65	17M9G7W
		QPSK	673.0 - 688.0	18.9783	0.145	21.60	19M0G7W
		16QAM	673.0 - 688.0	18.9128	0.117	20.68	18M9D7W
		64QAM	673.0 - 688.0	18.9134	0.094	19.71	18M9D7W
		256QAM	673.0 - 688.0	18.9094	0.047	16.76	18M9D7W
NR Band n12	5 MHz	TT/2 BPSK	701.5 - 713.5	4.4787	0.140	21.45	4M48G7W
		QPSK	701.5 - 713.5	4.4673	0.139	21.43	4M47G7W
		16QAM	701.5 - 713.5	4.4818	0.110	20.41	4M48D7W
		64QAM	701.5 - 713.5	4.4855	0.087	19.38	4M49D7W
		256QAM	701.5 - 713.5	4.4741	0.044	16.48	4M47D7W
	10 MHz	TT/2 BPSK	704.0 - 711.0	8.9190	0.140	21.45	8M92G7W
		QPSK	704.0 - 711.0	9.3155	0.139	21.44	9M32G7W
		16QAM	704.0 - 711.0	9.2256	0.107	20.29	9M23D7W
		64QAM	704.0 - 711.0	9.3016	0.087	19.41	9M30D7W
		256QAM	704.0 - 711.0	9.2791	0.045	16.50	9M28D7W
	15 MHz	TT/2 BPSK	706.5 - 708.5	13.4039	0.138	21.40	13M4G7W
		QPSK	706.5 - 708.5	14.1127	0.140	21.45	14M1G7W
		16QAM	706.5 - 708.5	14.0764	0.108	20.35	14M1D7W
		64QAM	706.5 - 708.5	14.1115	0.088	19.43	14M1D7W
		256QAM	706.5 - 708.5	14.1025	0.043	16.36	14M1D7W

Overview Table (<1GHz Band)

FCC ID: BCGA3269	 element	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device			

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	PAR at 0.1% [dB]	EIRP		Emission Designator
						Max. Power [W]	Max. Power [dBm]	
WCDMA1700	5 MHz	Spread Spectrum	1712.4 - 1752.6	4.1601	2.94	0.490	26.90	4M16F9W
LTE Band 4	1.4 MHz	QPSK	1710.7 - 1754.3	1.1133	5.00	0.490	26.90	1M11G7W
		16QAM	1710.7 - 1754.3	1.1196	5.83	0.389	25.90	1M12D7W
		64QAM	1710.7 - 1754.3	1.1159	6.48	0.294	24.68	1M12D7W
		256QAM	1710.7 - 1754.3	1.1125	6.82	0.157	21.97	1M11D7W
	3 MHz	QPSK	1711.5 - 1753.5	2.7392	4.68	0.484	26.85	2M74G7W
		16QAM	1711.5 - 1753.5	2.7423	5.72	0.391	25.92	2M74D7W
		64QAM	1711.5 - 1753.5	2.7354	6.48	0.304	24.83	2M74D7W
		256QAM	1711.5 - 1753.5	2.7329	6.71	0.158	21.99	2M73D7W
	5 MHz	QPSK	1712.5 - 1752.5	4.5564	4.90	0.488	26.88	4M56G7W
		16QAM	1712.5 - 1752.5	4.5696	5.86	0.388	25.89	4M57D7W
		64QAM	1712.5 - 1752.5	4.5675	6.47	0.307	24.87	4M57D7W
		256QAM	1712.5 - 1752.5	4.5898	6.70	0.158	21.99	4M59D7W
	10MHz	QPSK	1715.0 - 1750.0	9.0680	5.01	0.490	26.90	9M07G7W
		16QAM	1715.0 - 1750.0	9.0959	5.89	0.390	25.91	9M10D7W
		64QAM	1715.0 - 1750.0	9.0887	6.49	0.307	24.87	9M09D7W
		256QAM	1715.0 - 1750.0	9.0868	6.70	0.155	21.90	9M09D7W
	15 MHz	QPSK	1717.5 - 1747.5	13.6326	5.04	0.490	26.90	13M6G7W
		16QAM	1717.5 - 1747.5	13.5889	5.93	0.386	25.87	13M6D7W
		64QAM	1717.5 - 1747.5	13.6176	6.48	0.302	24.80	13M6D7W
		256QAM	1717.5 - 1747.5	13.5987	6.73	0.158	22.00	13M6D7W
	20 MHz	QPSK	1720.0 - 1745.0	18.0605	4.95	0.490	26.90	18M1G7W
		16QAM	1720.0 - 1745.0	18.1154	5.88	0.387	25.88	18M1D7W
		64QAM	1720.0 - 1745.0	18.0947	6.46	0.299	24.76	18M1D7W
		256QAM	1720.0 - 1745.0	18.0946	6.71	0.156	21.94	18M1D7W
LTE Band 66	1.4 MHz	QPSK	1710.7 - 1779.3	1.1133	5.03	0.490	26.90	1M11G7W
		16QAM	1710.7 - 1779.3	1.1196	5.84	0.380	25.80	1M12D7W
		64QAM	1710.7 - 1779.3	1.1159	6.49	0.306	24.86	1M12D7W
		256QAM	1710.7 - 1779.3	1.1125	6.68	0.156	21.94	1M11D7W
	3 MHz	QPSK	1711.5 - 1778.5	2.7392	4.70	0.483	26.84	2M74G7W
		16QAM	1711.5 - 1778.5	2.7423	5.76	0.389	25.90	2M74D7W
		64QAM	1711.5 - 1778.5	2.7354	6.53	0.309	24.90	2M74D7W
		256QAM	1711.5 - 1778.5	2.7329	6.69	0.158	22.00	2M73D7W
	5 MHz	QPSK	1712.5 - 1777.5	4.5564	4.92	0.490	26.90	4M56G7W
		16QAM	1712.5 - 1777.5	4.5696	5.89	0.386	25.87	4M57D7W
		64QAM	1712.5 - 1777.5	4.5675	6.52	0.304	24.83	4M57D7W
		256QAM	1712.5 - 1777.5	4.5898	6.70	0.159	22.01	4M59D7W
	10 MHz	QPSK	1715.0 - 1775.0	9.0680	5.02	0.490	26.90	9M07G7W
		16QAM	1715.0 - 1775.0	9.0959	5.93	0.378	25.77	9M10D7W
		64QAM	1715.0 - 1775.0	9.0887	6.53	0.307	24.87	9M09D7W
		256QAM	1715.0 - 1775.0	9.0868	6.72	0.159	22.02	9M09D7W
	15 MHz	QPSK	1717.5 - 1772.5	13.6326	5.01	0.484	26.85	13M6G7W
		16QAM	1717.5 - 1772.5	13.5889	5.95	0.385	25.86	13M6D7W
		64QAM	1717.5 - 1772.5	13.6176	6.51	0.310	24.91	13M6D7W
		256QAM	1717.5 - 1772.5	13.5987	6.71	0.157	21.96	13M6D7W
	20 MHz	QPSK	1720.0 - 1770.0	18.0605	4.93	0.483	26.84	18M1G7W
		16QAM	1720.0 - 1770.0	18.1154	5.90	0.385	25.86	18M1D7W
		64QAM	1720.0 - 1770.0	18.0947	6.49	0.307	24.87	18M1D7W
		256QAM	1720.0 - 1770.0	18.0946	6.69	0.157	21.97	18M1D7W

Overview Table (>1GHz Bands)

FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device			

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	PAR at 0.1% [dB]	EIRP		Emission Designator
						Max. Power [W]	Max. Power [dBm]	
NR Band n66	5 MHz	TT/2 BPSK	1712.5 - 1777.5	4.4594	4.00	0.490	26.90	4M46G7W
		QPSK	1712.5 - 1777.5	4.4783	5.40	0.485	26.86	4M48G7W
		16QAM	1712.5 - 1777.5	4.4853	6.27	0.393	25.94	4M49D7W
		64QAM	1712.5 - 1777.5	4.4936	6.72	0.310	24.92	4M49D7W
		256QAM	1712.5 - 1777.5	4.4492	6.74	0.154	21.87	4M45D7W
	10 MHz	TT/2 BPSK	1715.0 - 1775.0	8.9513	4.23	0.488	26.88	8M95G7W
		QPSK	1715.0 - 1775.0	9.3509	5.62	0.490	26.90	9M35G7W
		16QAM	1715.0 - 1775.0	9.3263	6.33	0.388	25.89	9M33D7W
		64QAM	1715.0 - 1775.0	9.3287	6.68	0.310	24.91	9M33D7W
		256QAM	1715.0 - 1775.0	9.3272	6.79	0.159	22.02	9M33D7W
	15 MHz	TT/2 BPSK	1717.5 - 1772.5	13.3511	4.09	0.490	26.90	13M4G7W
		QPSK	1717.5 - 1772.5	14.1698	5.46	0.482	26.83	14M2G7W
		16QAM	1717.5 - 1772.5	14.1326	6.29	0.391	25.92	14M1D7W
		64QAM	1717.5 - 1772.5	14.1324	6.67	0.311	24.93	14M1D7W
		256QAM	1717.5 - 1772.5	14.1772	6.68	0.155	21.91	14M2D7W
	20 MHz	TT/2 BPSK	1720.0 - 1770.0	17.8937	4.20	0.489	26.89	17M9G7W
		QPSK	1720.0 - 1770.0	19.0110	5.56	0.490	26.90	19M0G7W
		16QAM	1720.0 - 1770.0	18.9670	6.32	0.388	25.89	19M0D7W
		64QAM	1720.0 - 1770.0	19.0544	6.64	0.310	24.91	19M1D7W
		256QAM	1720.0 - 1770.0	18.9956	6.43	0.158	22.00	19M0D7W
	25 MHz	TT/2 BPSK	1722.5 - 1767.5	22.8907	3.98	0.490	26.90	22M9G7W
		QPSK	1722.5 - 1767.5	23.8303	5.34	0.486	26.87	23M8G7W
		16QAM	1722.5 - 1767.5	23.8556	6.25	0.387	25.88	23M9D7W
		64QAM	1722.5 - 1767.5	23.8189	6.56	0.306	24.86	23M8D7W
		256QAM	1722.5 - 1767.5	23.7661	6.80	0.158	21.98	23M8D7W
	30 MHz	TT/2 BPSK	1725.0 - 1765.0	28.5848	4.18	0.485	26.86	28M6G7W
		QPSK	1725.0 - 1765.0	28.6363	5.54	0.490	26.90	28M6G7W
		16QAM	1725.0 - 1765.0	28.6300	6.31	0.389	25.90	28M6D7W
		64QAM	1725.0 - 1765.0	28.6625	6.64	0.310	24.91	28M7D7W
		256QAM	1725.0 - 1765.0	28.6420	6.65	0.158	22.00	28M6D7W
	35 MHz	TT/2 BPSK	1727.5 - 1762.5	32.2110	4.23	0.490	26.90	32M2G7W
		QPSK	1727.5 - 1762.5	33.6386	5.55	0.490	26.90	33M6G7W
		16QAM	1727.5 - 1762.5	33.6808	6.33	0.385	25.85	33M7D7W
		64QAM	1727.5 - 1762.5	33.7007	6.58	0.311	24.93	33M7D7W
		256QAM	1727.5 - 1762.5	33.6720	6.68	0.158	21.99	33M7D7W
	40 MHz	TT/2 BPSK	1730.0 - 1760.0	38.6689	4.19	0.490	26.90	38M7G7W
		QPSK	1730.0 - 1760.0	38.7591	5.48	0.488	26.88	38M8G7W
		16QAM	1730.0 - 1760.0	38.6885	6.29	0.386	25.87	38M7D7W
		64QAM	1730.0 - 1760.0	38.6756	6.57	0.305	24.85	38M7D7W
		256QAM	1730.0 - 1760.0	38.6294	6.64	0.157	21.97	38M6D7W
NR Band n70	5 MHz	TT/2 BPSK	1697.5 - 1707.5	4.4815	4.00	0.239	23.79	4M48G7W
		QPSK	1697.5 - 1707.5	4.4750	5.35	0.240	23.80	4M48G7W
		16QAM	1697.5 - 1707.5	4.4855	6.39	0.189	22.76	4M49D7W
		64QAM	1697.5 - 1707.5	4.4719	6.66	0.149	21.72	4M47D7W
		256QAM	1697.5 - 1707.5	4.4751	6.81	0.078	18.90	4M48D7W
	10 MHz	TT/2 BPSK	1700 - 1705	8.9749	4.19	0.234	23.69	8M97G7W
		QPSK	1700 - 1705	9.2967	5.57	0.240	23.80	9M30G7W
		16QAM	1700 - 1705	9.3065	6.34	0.191	22.81	9M31D7W
		64QAM	1700 - 1705	9.2571	6.54	0.149	21.74	9M26D7W
		256QAM	1700 - 1705	9.3150	6.68	0.078	18.91	9M32D7W
	15 MHz	TT/2 BPSK	1702.5	13.4567	4.13	0.230	23.62	13M5G7W
		QPSK	1702.5	14.1613	5.48	0.234	23.69	14M2G7W
		16QAM	1702.5	14.2103	6.37	0.179	22.54	14M2D7W
		64QAM	1702.5	14.1131	6.64	0.146	21.64	14M1D7W
		256QAM	1702.5	14.1320	6.57	0.072	18.57	14M1D7W

Overview Table (>1GHz Bands)

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1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada.

1.2 Element Materials Technology Test Location

These measurement tests were conducted at the Element Materials Technology facility located at 18855 Adams Court, Morgan Hill, CA 95037. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014 and KDB 414788 D01 v01r01.

1.3 Test Facility / Accreditations

Measurements were performed at Element Materials Technology

- Element Materials Technology is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.02 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.
- Element Materials Technology TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).
- Element Materials Technology facility is a registered (22831) test laboratory with the site description on file with ISED.
- Element Washington DC LLC is a Recognized U.S. Certification Assessment Body (CAB # US0110) for ISED Canada as designated by NIST under the U.S. and Canada Mutual Agreements (MRAs).

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Apple Tablet Device FCC ID: BCGA3269**. The test data contained in this report pertains only to the emissions due to the EUT's licensed transmitters that operate under the provisions of Part 27.

Test Device Serial No.: RTF5C4W1KX, XD4R967RNY, TJ4463YD19, DLXH57000060000RJY, DLXH570002H0000RJY

2.2 Device Capabilities

This device contains the following capabilities:

850/1700/1900 WCDMA/HSPA, Multi-band LTE, 5G NR (FR1), 802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII, 802.11a/ax WIFI 6E, 802.15.4, Bluetooth (1x, EDR, LE1M, LE2M, HDR4, HDR8), NB UNII (1x, HDR4, HDR8), WPT

This device supports BT Beamforming

This device supports simultaneous transmission operations, which allows for multiple transmitters to transmit simultaneously on the same antenna. The table below shows all configurations possible.

Antenna	Simultaneous Tx Config	Bluetooth 2.4GHz	Thread	WLAN	NB UNII	WIFI 5GHz	WIFI 6GHz	LTE / FR1 NR		
		BDR, EDR, HDR4/8, LE1/2M	802.15.4	802.11 b/g/n/ax	BDR, HDR4/8	802.11 a/n/ac/ax	802.11 a/ax	LB	MB/HB	Ultra High Band
Ant 3b	Config 1	✗	✗	✗	✓	✗	✗	✗	✓	✗
Ant 3b	Config 2	✗	✗	✗	✗	✓	✗	✗	✓	✗
Ant 3b	Config 3	✗	✗	✗	✗	✗	✓	✗	✓	✗
Ant 3a	Config 4	✓	✗	✗	✗	✗	✗	✗	✗	✓
Ant 3a	Config 5	✗	✓	✗	✗	✗	✗	✗	✗	✓
Ant 3a	Config 6	✗	✗	✓	✗	✗	✗	✗	✗	✓
Ant 1a	Config 7	✓	✗	✗	✗	✗	✗	✗	✗	✓
Ant 1a	Config 8	✗	✓	✗	✗	✗	✗	✗	✗	✓
Ant 1a	Config 9	✗	✗	✓	✗	✗	✗	✗	✗	✓
Ant 1b	Config 10	✗	✗	✗	✓	✗	✗	✗	✓	✗
Ant 1b	Config 11	✗	✗	✗	✗	✓	✗	✗	✓	✗
Ant 1b	Config 12	✗	✗	✗	✗	✗	✓	✗	✓	✗

Table 2-1. Simultaneous Transmission Configurations

✓ = Support; ✗ = Not Support

Note:

All the above simultaneous transmission configurations have been tested and the worst-case configuration was found to be Config 2 and reported in RF UNII OFDM and RF FCC Part 27b test reports.

Specific 2.4 GHz Wi-Fi antenna that can only transmit simultaneously with 2.4 GHz Bluetooth antenna is listed in the SAR test report. For BT (2.4 GHz), in both connected and disconnected modes, and Wi-Fi (2.4 GHz) – Wi-Fi max power will not exceed minimum of (13.5dBm, SAR max cap, Reg max cap) power. Bluetooth can simultaneously transmit with IEEE 802.11a/n/ac/ax 5/6 GHz on separate antenna.

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2.3 Antenna Description

The following antenna gains provided by the manufacturer were used for testing.

Band	Antenna Gain [dBi]			
	Antenna 4	Antenna 1b	Antenna 3b	Antenna 2
LTE Band 12/17	-2.1	✗	✗	-1.6
NR Band 12				
LTE Band 13	-2.5	✗	✗	-2.2
LTE Band 4/66				
NR Band n66	0.7	-1.1	-2.6	1.7
WCDMA1700				
LTE Band 71	-1.9	✗	✗	-1.7
NR Band n71				
NR Band 70	-1.9	-3.3	-5.1	-1.8

Table 2-2. Highest Antenna Gains

✗ = Not Support

2.4 Test Support Equipment

Test Support Equipment					
1	Apple MacBook Pro w/AC/DC Adapter	Model: A2141 Model: A2166	S/N: C02H604EQ05D S/N: C4H042705ZNP0WA6		
2	Apple USB-C Cable	Model: Spartan	S/N: GXK1336018XKTR024		
3	USB-C Cable w/ AC Adapter	Model: A246C Model: A2305	S/N: DWH80115BK826GV19 S/N: C4H95160004PF4F4V		
4	Apple Pencil	Model: A2538	S/N: KJ26TCFXJW		
5	DC Power Supply	Model: KPS3010D	S/N: N/A		

Table 2-3. Test Support Equipment

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2.5 Test Configuration

The EUT was tested per the guidance of ANSI C63.26 2015, TIA-603-E-2016 and KDB 971168 D01 v03r01. See Section 7.0 of this test report for a description of the radiated and antenna port conducted emissions tests.

For emissions from 1GHz – 18GHz, low, mid, and high channels were tested with highest power and worst case configuration. The emissions below 1GHz and above 18GHz were tested with the highest transmitting power and the worst case channel.

The EUT was manipulated through three orthogonal planes of X-orientation (flatbed), Y-orientation (landscape), and Z-orientation (portrait) during the testing. Only the worst case emissions were reported in this test report.

2.6 Software and Firmware

The test was conducted with firmware version 22D20 installed on the EUT.

2.7 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

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3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

The measurement procedures described in the documents titled “American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services” (ANSI C63.26-2015 and TIA-603-E-2016) and “Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission Systems” (KDB 971168 D01 v03r01) were used in the measurement of the EUT.

Deviation from Measurement Procedure.....None

3.2 Radiated Spurious Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. The test site inside the chamber is a 6m x 5.2m elliptical, obstruction-free area in accordance with Figure 5.7 of Clause 5 in ANSI C63.4-2014. Absorbers are arranged 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 above 1GHz. For measurements below 1GHz, the absorbers are removed. A raised turntable is used for radiated measurement. The turn table is a continuously rotatable, remote-controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm tall test table made of Styrodur is placed on top of the turn table. A Styrodur pedestal is placed on top of the test table to bring the total table height to 1.5m.

The equipment under test was transmitting while connected to its integral antenna and is placed on a turntable 3 meters from the receive antenna. The receive antenna height is adjusted between 1 and 4 meter height, the turntable is rotated through 360 degrees, and the EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer.

For radiated spurious emissions measurements and calculations, conversion method is used per the formulas in KDB 971168 Section 5.8.4. Field Strength (EIRP) is calculated using the following formulas:

$$E_{\text{dB}\mu\text{V/m}} = \text{Measured amplitude level}_{\text{dBm}} + 107 + \text{Cable Loss}_{\text{dB}} + \text{Antenna Factor}_{\text{dB/m}}$$

And

$$\text{EIRP}_{\text{dBm}} = E_{\text{dB}\mu\text{V/m}} + 20\log D - 104.8; \text{ where } D \text{ is the measurement distance in meters.}$$

All radiated measurements are performed in a chamber that meets the site requirements per ANSI C63.4-2014.

Per KDB 414788 D01 v01r01, radiated emission test sites other than open-field test sites (e.g., shielded anechoic chambers), may be employed for emission measurements below 30MHz if characterized so that the measurements correspond to those obtained at an open-field test site. To determine test site equivalency, a reference sample transmitting at 149kHz was measured on an open field test site (asphalt with no ground plane) and then measured in the 3m semi-anechoic chamber. A calibrated 60cm loop antenna was used while the reference device was rotated through the X, Y and Z axis in order to capture the worst case level. A maximum deviation of 2.77dB at 149kHz was measured when comparing the 3 meter semi-anechoic chamber to the open field site.

Radiated spurious emission levels are investigated with the receive antenna horizontally and vertically polarized per ANSI C63.26-2015 and TIA-603-E-2016.

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4.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.23-2012. All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty (\pm dB)
Conducted Bench Top Measurements	2.07
Radiated Disturbance (<30MHz)	4.12
Radiated Disturbance (30MHz-1GHz)	4.85
Radiated Disturbance (1-18GHz)	5.08
Radiated Disturbance (>18GHz)	5.22

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5.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST). Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
ATM	180-442A-KF	20dB Nominal Gain Horn Antenna	3/14/2024	Annual	3/14/2025	T058701-01
ESPEC	SU-241	Tabletop Temperature Chamber	10/24/2024	Annual	10/24/2025	92009574
ETS-Lindgren	3117	Double Ridged Guide Antenna (1-18 GHz)	4/9/2024	Annual	4/9/2025	00218555
Fairview Microwave/MCL	FMCA1975-36/BW-K10-2W44+	30MHz-40GHz RF Cable/Attenuator *	6/10/2024	Annual	6/10/2025	-
Fairview Microwave	M2CP1122-10	RF Directional Coupler *	6/10/2024	Annual	6/10/2025	1946
Keysight Technology	N9040B	UXA Signal Analyzer	5/28/2024	Annual	5/28/2025	MY57212015
Rohde & Schwarz	FSW67	Signal and Spectrum Analyzer (2Hz-67GHz)	7/5/2024	Annual	7/5/2025	101366
Rohde & Schwarz	TS-PR18	Pre-Amplifier (1GHz - 18GHz)	3/1/2024	Annual	3/1/2025	102143
Rohde & Schwarz	FSV40	Signal Analyzer (10Hz-40GHz)	5/29/2024	Annual	5/29/2025	101619
Rohde & Schwarz	ESW44	EMI Test Receiver	5/1/2024	Annual	5/1/2025	101867
Rohde & Schwarz	TS-PR8	Pre-Amplifier (30MHz - 8GHz)	7/3/2024	Annual	7/3/2025	102356
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	12/27/2023	Annual	12/27/2024	164715
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	10/21/2024	Annual	10/21/2025	187423
Rohde & Schwarz	TS-PR1840	Pre-Amplifier (18GHz - 40GHz)	6/10/2024	Annual	6/10/2025	100057
Rohde & Schwarz	HFH2-Z2	Loop Antenna	6/21/2024	Annual	6/21/2025	100519
Rohde & Schwarz	ENV216	Two-Line V-Network	4/24/2024	Annual	4/24/2025	101364
Schwarzbeck	VULB 9162	Bilog Antenna (30MHz - 6GHz)	4/29/2024	Annual	4/29/2025	00304

Table 5-1. Test Equipment

Notes:

1. For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.
2. * denotes passive equipment that have been internally verified/calibrated.

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6.0 SAMPLE CALCULATIONS

Emission Designator

Emission Designator = 4M16F9W

WCDMA BW = 4.16 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

$\pi/2$ BPSK / QPSK Modulation

Emission Designator = 8M62G7W

BW = 8.62 MHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination of Any

QAM Modulation

Emission Designator = 8M45D7W

LTE BW = 8.45 MHz

D = Amplitude/Angle Modulated

7 = Quantized/Digital Info

W = Combination of Any

Spurious Radiated Emission

Example: Middle Channel LTE Mode 2nd Harmonic (1564 MHz)

The average spectrum analyzer reading at 3 meters with the EUT on the turntable was -81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of -81.0 dBm on the spectrum analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 1564 MHz. So 6.1 dB is added to the signal generator reading of -30.9 dBm yielding -24.80 dBm. The fundamental EIRP was 25.501 dBm so this harmonic was 25.501 dBm $-(-24.80)$.

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7.0 TEST RESULTS

7.1 Summary

Company Name: Apple Inc.
 FCC ID: BCGA3269
 FCC Classification: PCS Licensed Transmitter (PCB)
 Mode(s): WCDMA/LTE/NR

Test Condition	Test Description	FCC Part Section(s)	Test Limit	Test Result	Reference
CONDUCTED	Occupied Bandwidth	2.1049	N/A	N/A	Section 7.2
	Conducted Band Edge / Spurious Emissions	2.1051, 27.53	-13 dBm at Band Edge and for all out-of-band emissions	PASS	Sections 7.3, 7.4
	Conducted Band Edge / Spurious Emissions (LTE Band 13)	2.1051, 27.53	-13 dBm at Band Edge and for all out-of-band emissions < -70 dBW/MHz (for wideband signals) < -80 dBW (for discrete emissions less than 700Hz BW) For all emissions in the band 1559 - 1610 MHz	PASS	Sections 7.3, 7.4
	Peak-Average Ratio	27.50(d)(5)	< 13 dB	PASS	Section 7.5
	Transmitter Conducted Output Power	2.1046	N/A	N/A	See RF Exposure Report
	Frequency Stability	2.1055, 27.54	Fundamental emissions stay within authorized frequency block over the temperature and voltage range as tested	PASS	Section 7.8
	Effective Radiated Power / Equivalent Isotropic Radiated Power (LTE Band 71)	27.50(b)(10)	< 3 Watts max. ERP	PASS	Section 7.6
	Effective Radiated Power / Equivalent Isotropic Radiated Power (NR Band n71)			PASS	Section 7.6
	Effective Radiated Power / Equivalent Isotropic Radiated Power (LTE Band 12/17)			PASS	Section 7.6
	Effective Radiated Power / Equivalent Isotropic Radiated Power (NR Band 12)			PASS	Section 7.6
	Effective Radiated Power / Equivalent Isotropic Radiated Power (LTE Band 13)	27.50(c)(10)	< 3 Watts max. ERP	PASS	Section 7.6
	Equivalent Isotropic Radiated Power (WCDMA)	27.50(d)(4)	< 1 Watts max. EIRP	PASS	Section 7.6
	Equivalent Isotropic Radiated Power (NR Band n66)			PASS	Section 7.6
	Equivalent Isotropic Radiated Power (LTE Band 4/66)			PASS	Section 7.6
	Equivalent Isotropic Radiated Power (NR Band n70)			PASS	Section 7.6
RADIATED	Radiated Spurious Emissions (LTE Band 13)	2.1053, 27.53(f)	-13 dBm for all out-of-band emissions < -70 dBW/MHz (for wideband signals) < -80 dBW (for discrete emissions less than 700Hz BW) For all emissions in the band 1559 - 1610 MHz	PASS	Section 7.7
	Radiated Spurious Emissions	2.1053, 27.53	-13 dBm for all out-of-band emissions	PASS	Section 7.7

Table 7-1. Summary of Test Results

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Notes:

1. All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
2. The analyzer plots were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables, directional couplers, and attenuators used as part of the system to maintain a link between the call box and the EUT at all frequencies of interest.
3. All antenna ports conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables, attenuators, and couplers.
4. All conducted emissions measurements are performed with automated test software to capture the corresponding plots necessary to show compliance. The measurement software utilized is Element EMC Software Tool v1.1.
5. For radiated spurious emissions, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is Element "Chamber Automation," Version 3.1.0.

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7.2 Occupied Bandwidth

§2.1049

Test Overview

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 radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are reported in this section. All ports were tested and only the worst case data were reported.

Test Procedure Used

KDB 971168 D01 v03r01 – Section 4.2

Test Settings

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

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Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

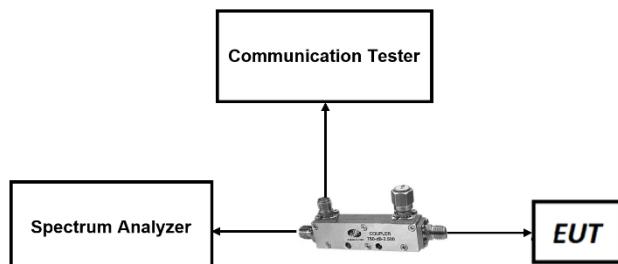


Figure 7-1. LTE Test Instrument & Measurement Setup

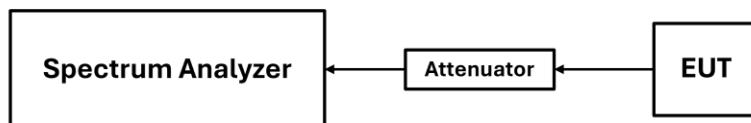


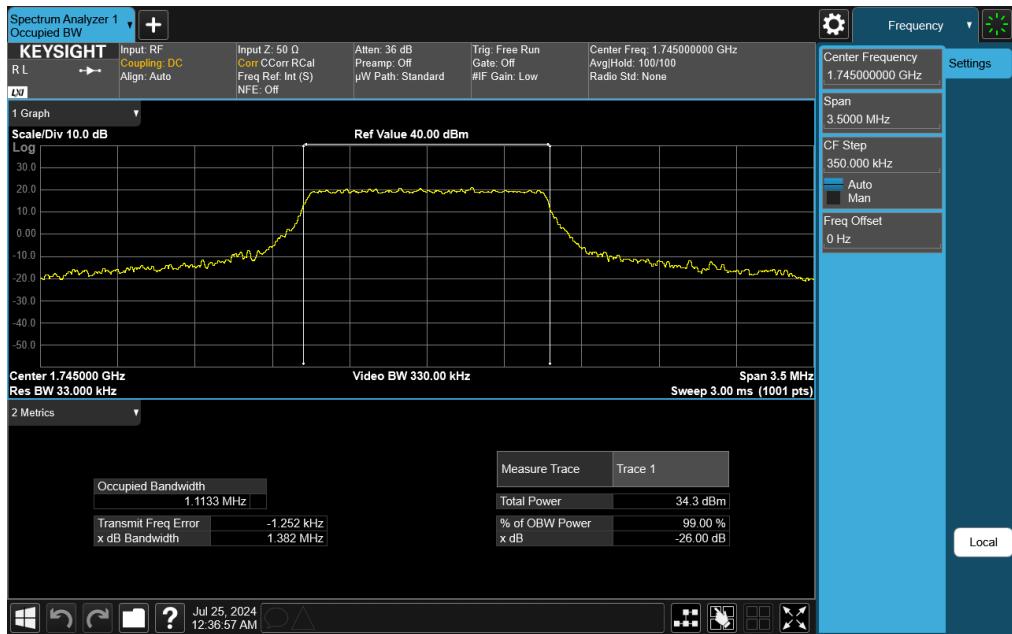
Figure 7-2. FR1 Test Instrument & Measurement Setup

Test Notes

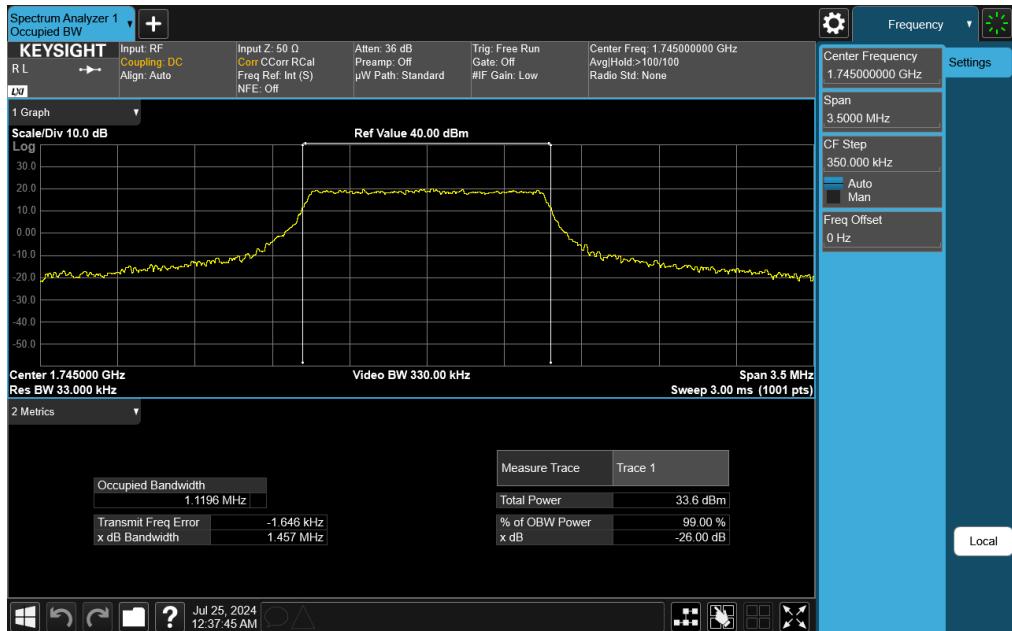
None.

FCC ID: BCGA3269	 element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 66/4

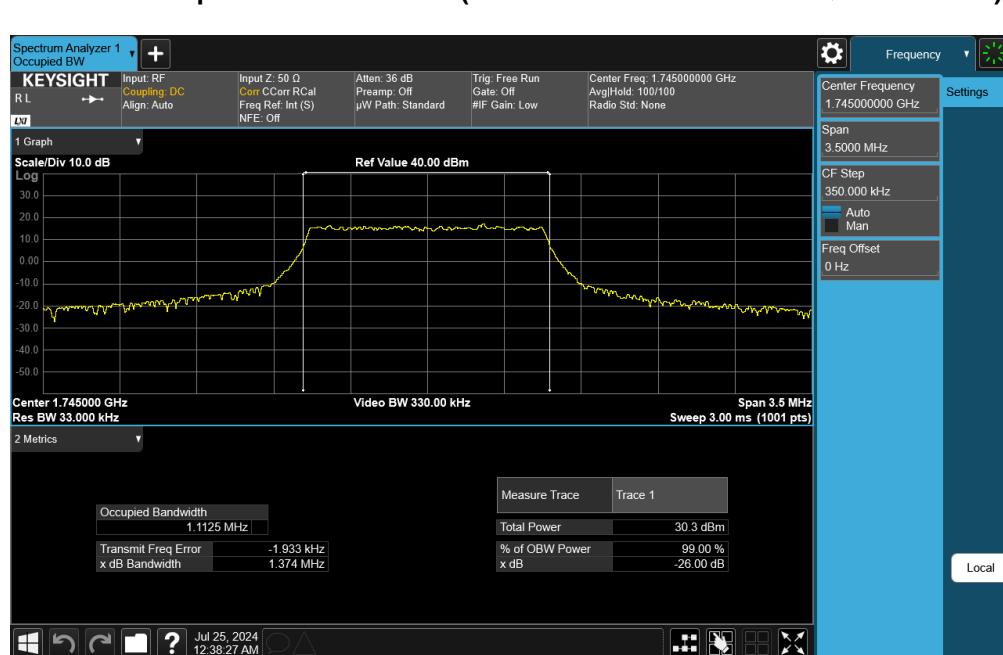
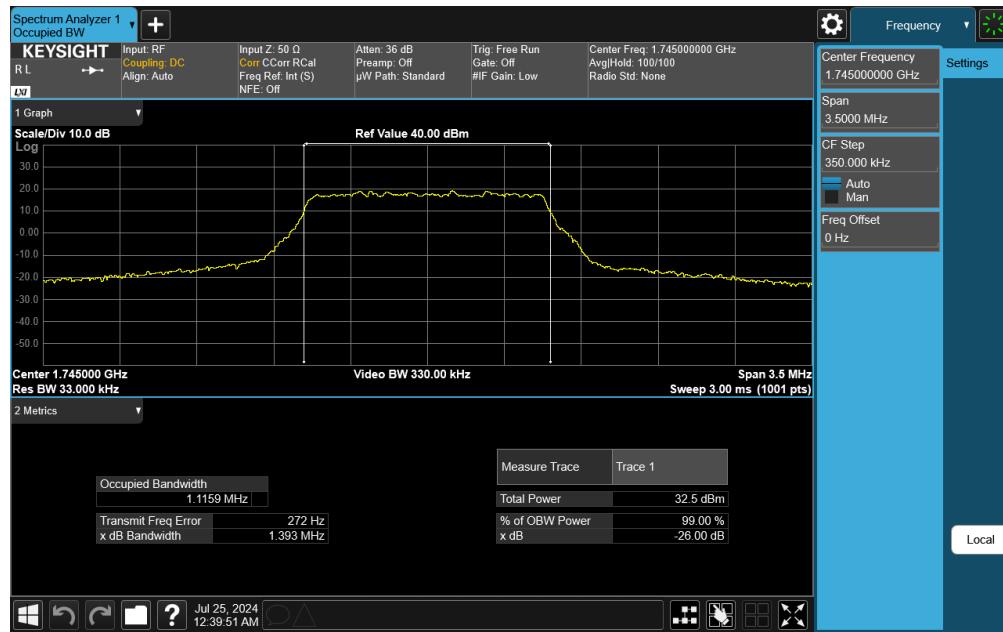


Plot 7-1. Occupied Bandwidth Plot (LTE Band 66/4 - 1.4MHz QPSK - Full RB)

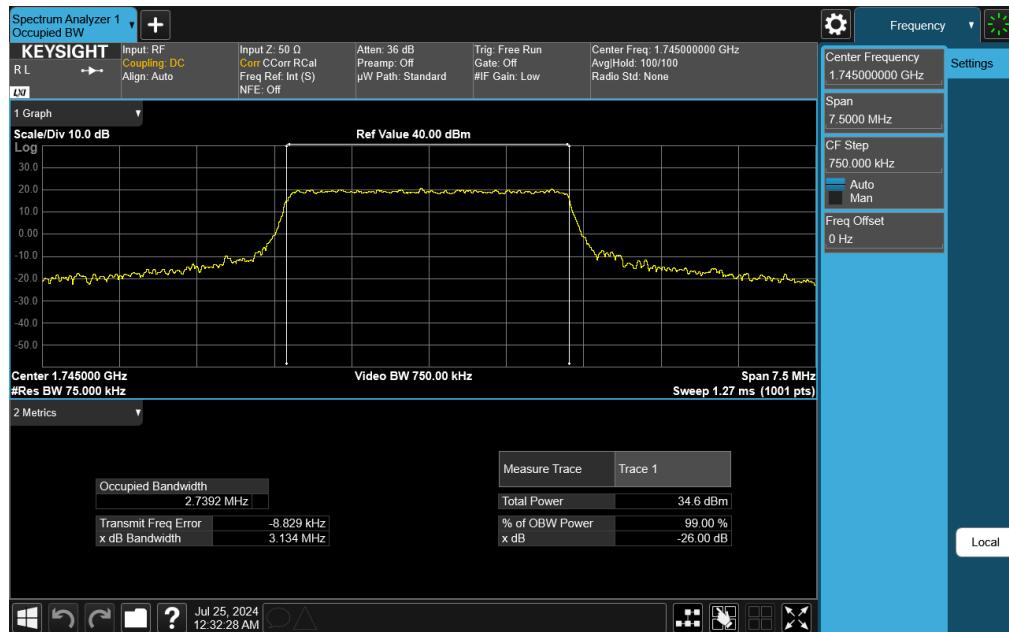


Plot 7-2. Occupied Bandwidth Plot (LTE Band 66/4 - 1.4MHz 16-QAM - Full RB)

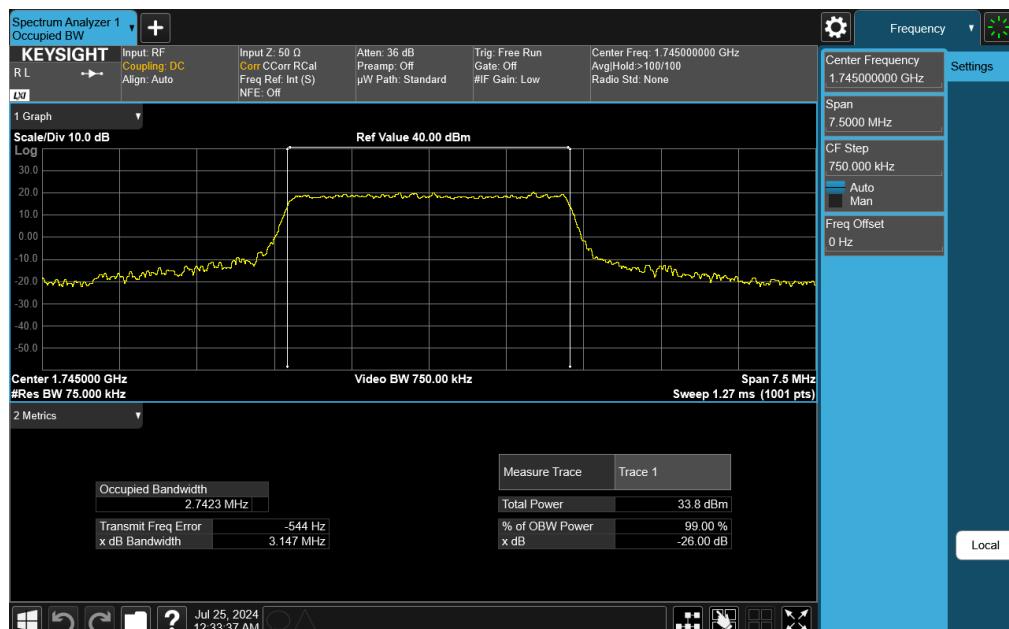
FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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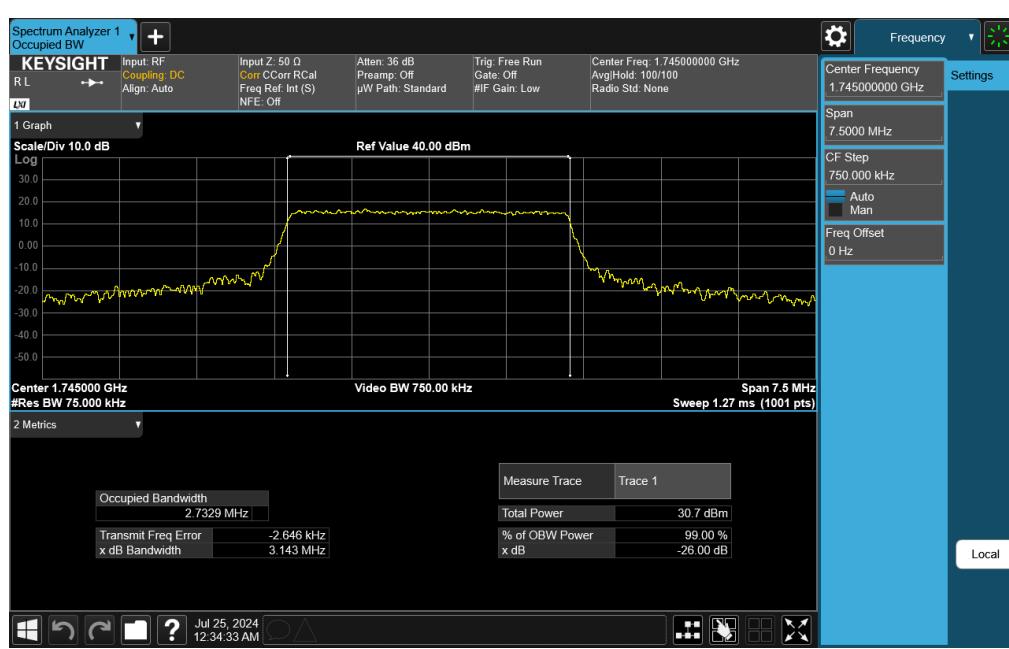
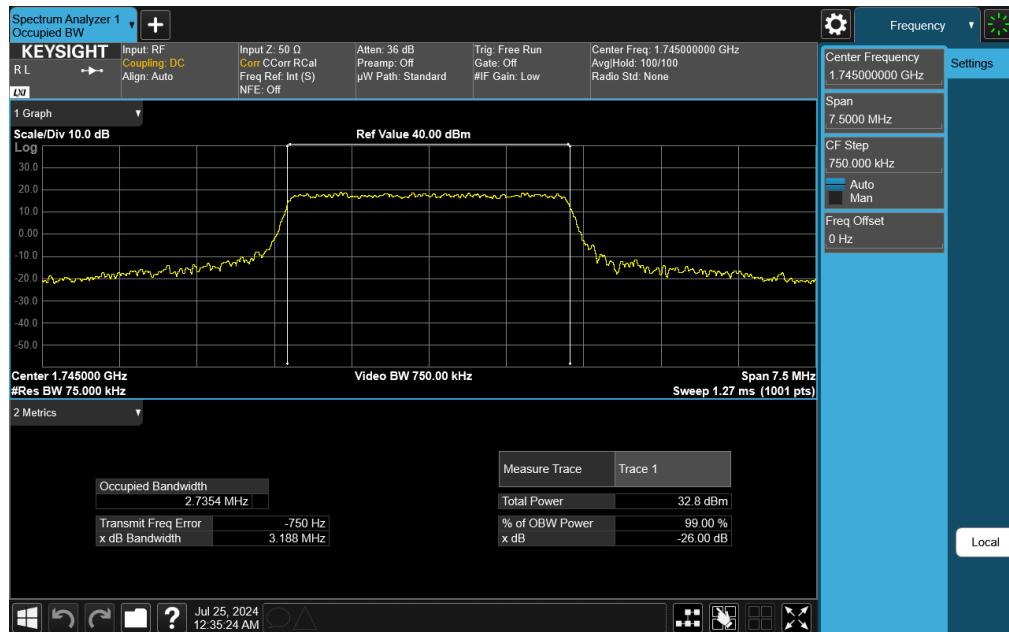


Plot 7-5. Occupied Bandwidth Plot (LTE Band 66/4 - 3MHz QPSK - Full RB)

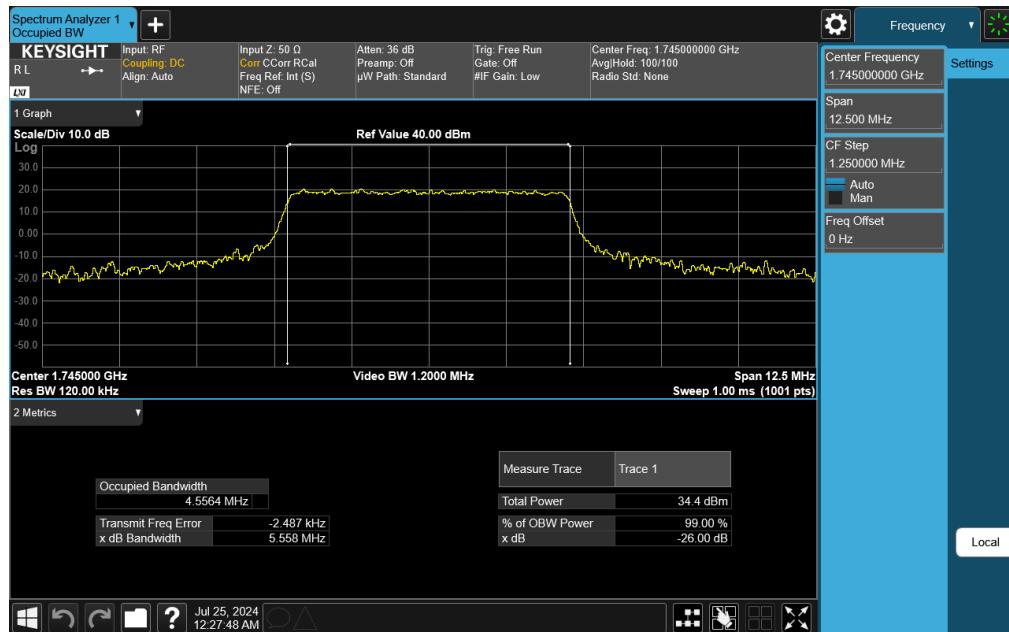


Plot 7-6. Occupied Bandwidth Plot (LTE Band 66/4 - 3MHz 16-QAM - Full RB)

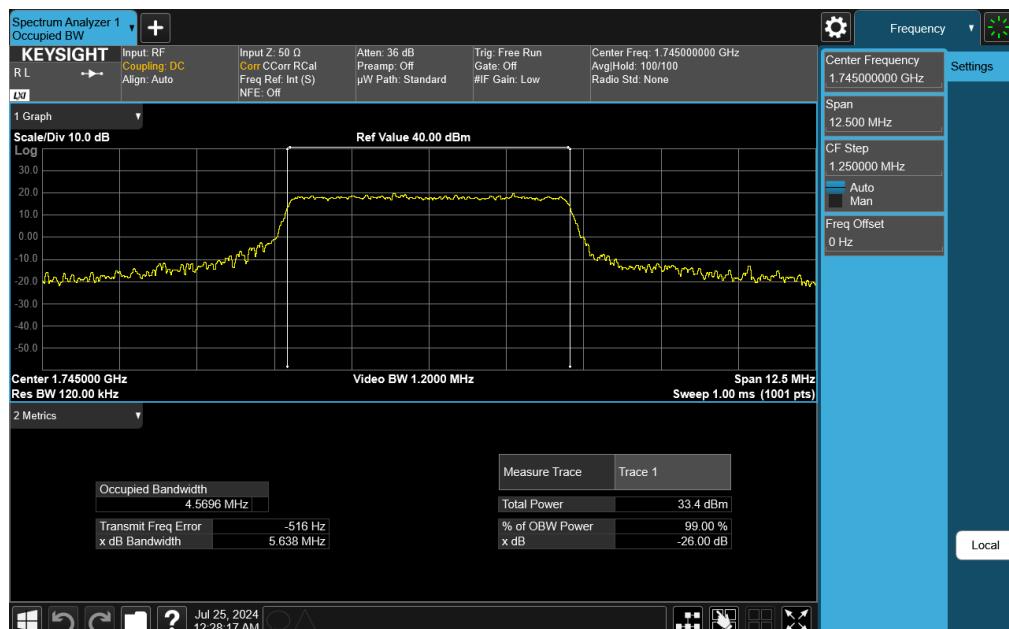
FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 21 of 351	



FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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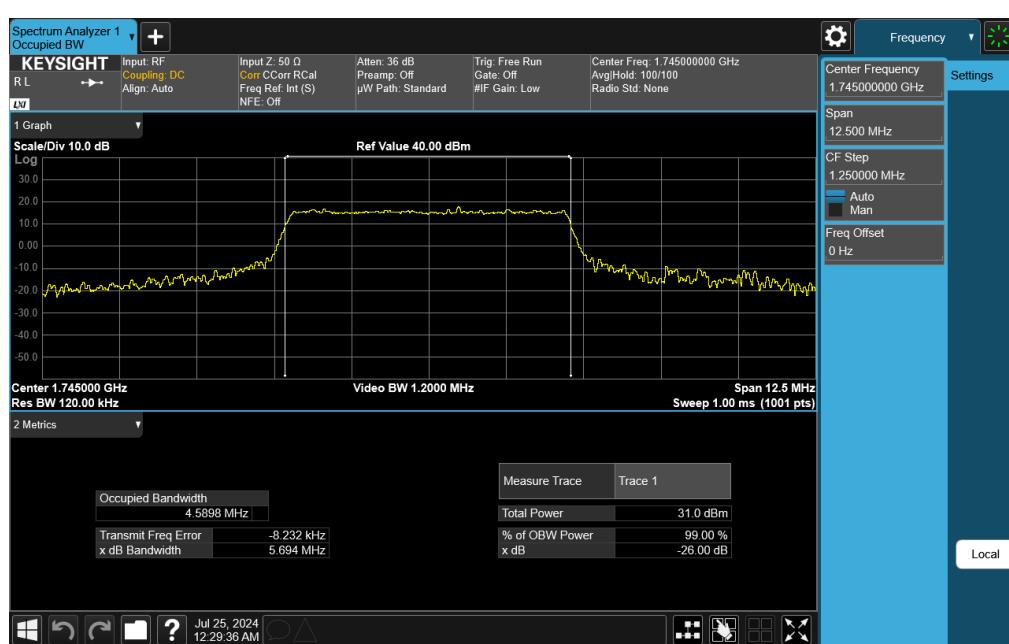
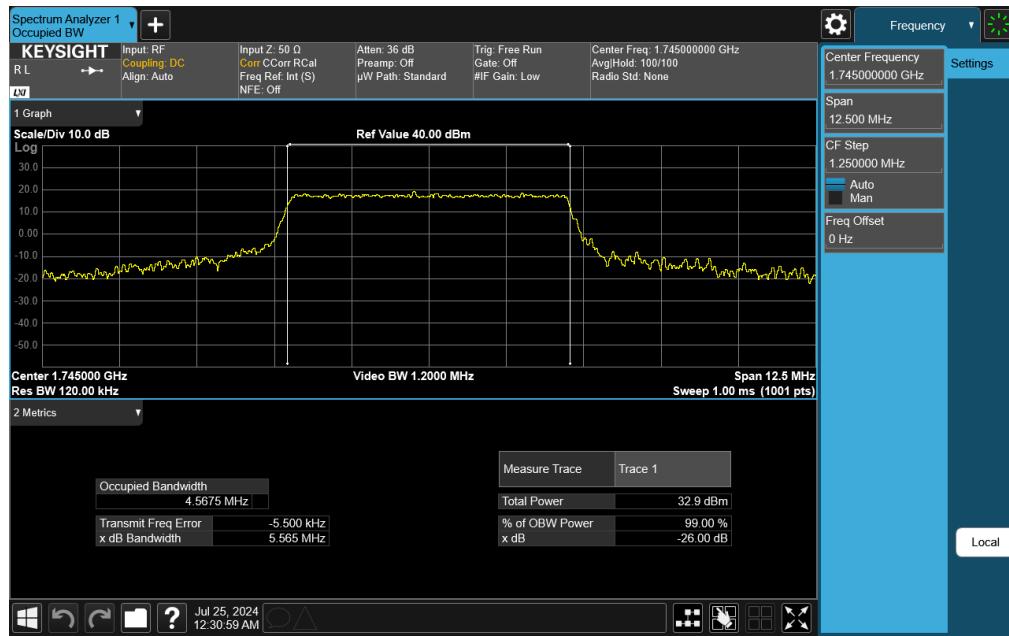


Plot 7-9. Occupied Bandwidth Plot (LTE Band 66/4 - 5MHz QPSK - Full RB)

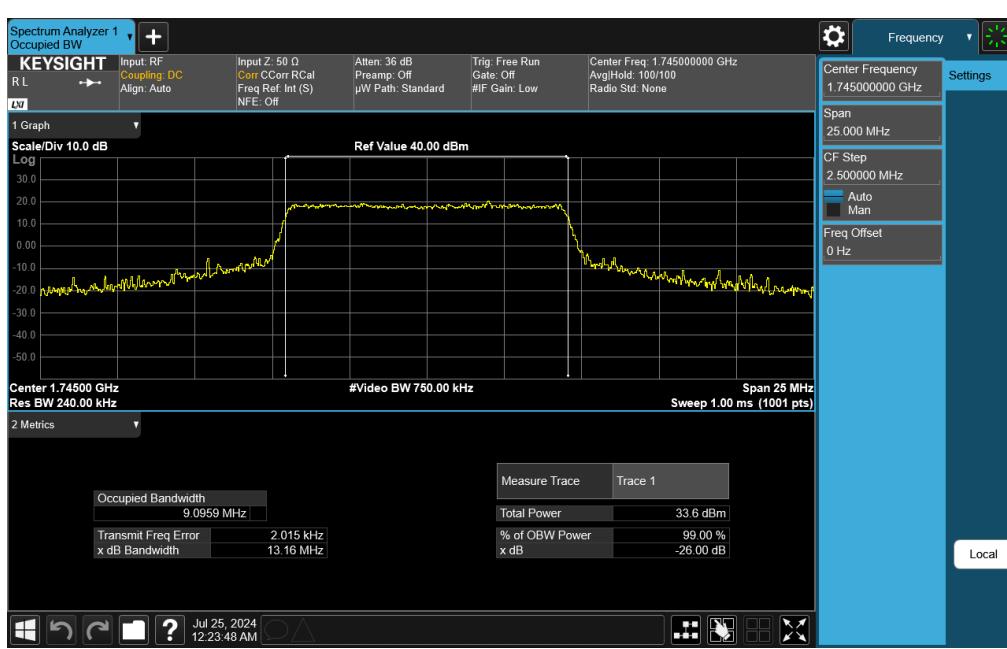
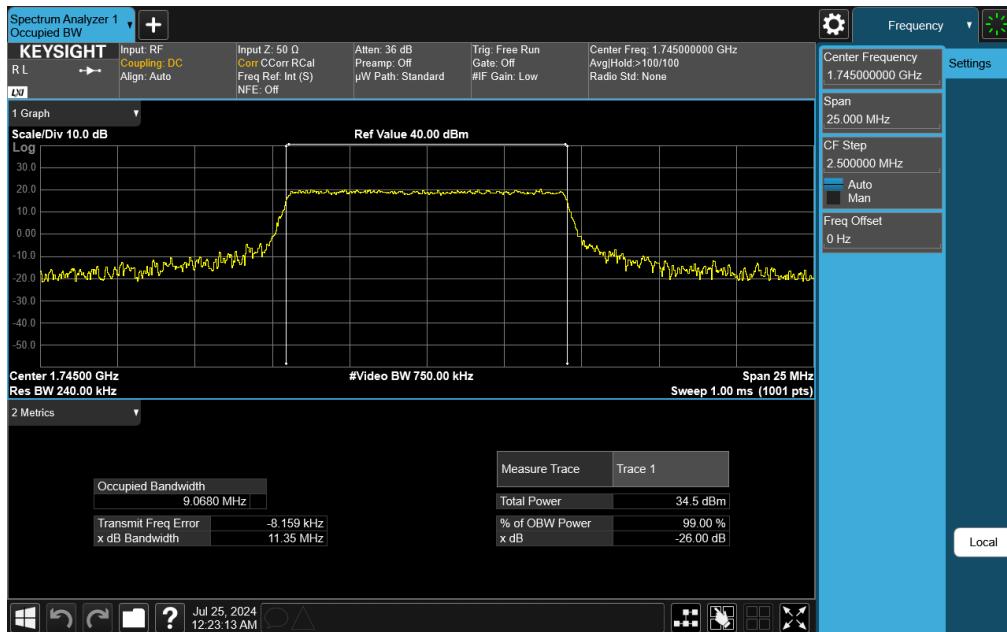


Plot 7-10. Occupied Bandwidth Plot (LTE Band 66/4 - 5MHz 16-QAM - Full RB)

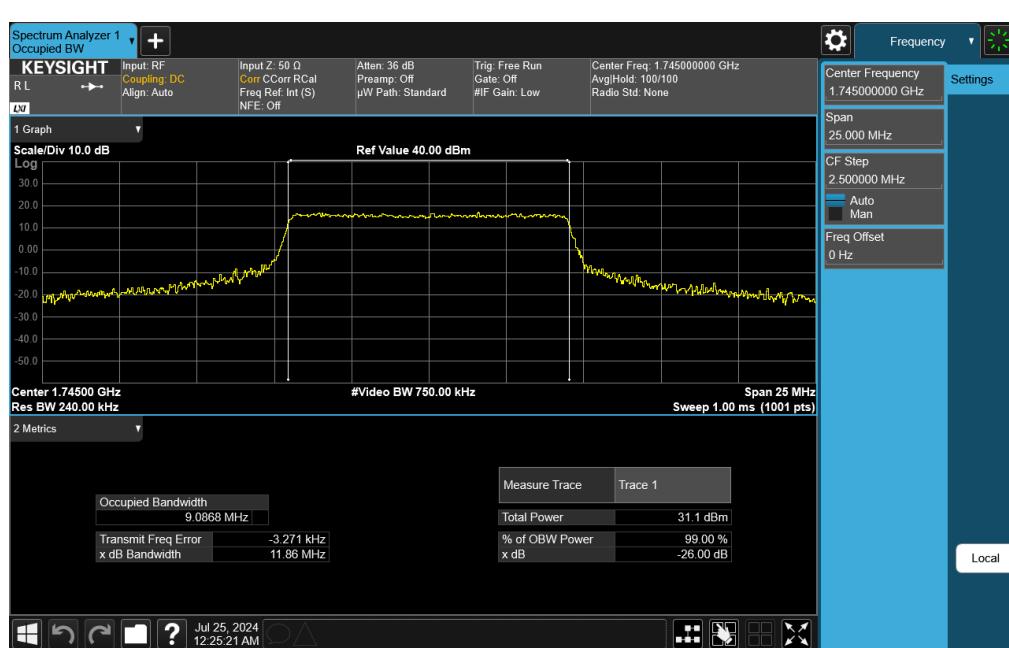
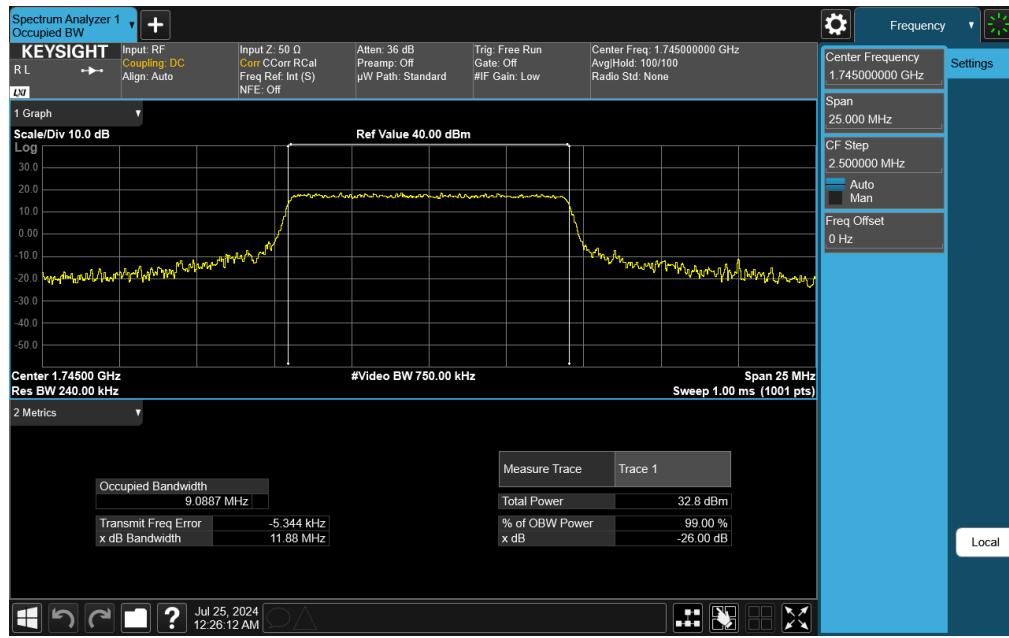
FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device		Page 23 of 351



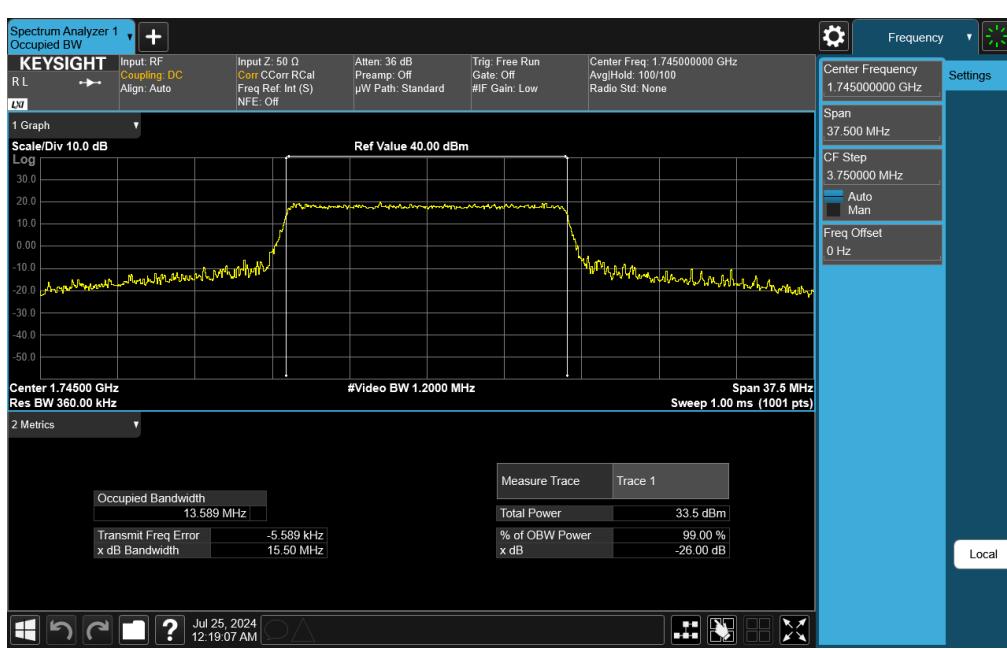
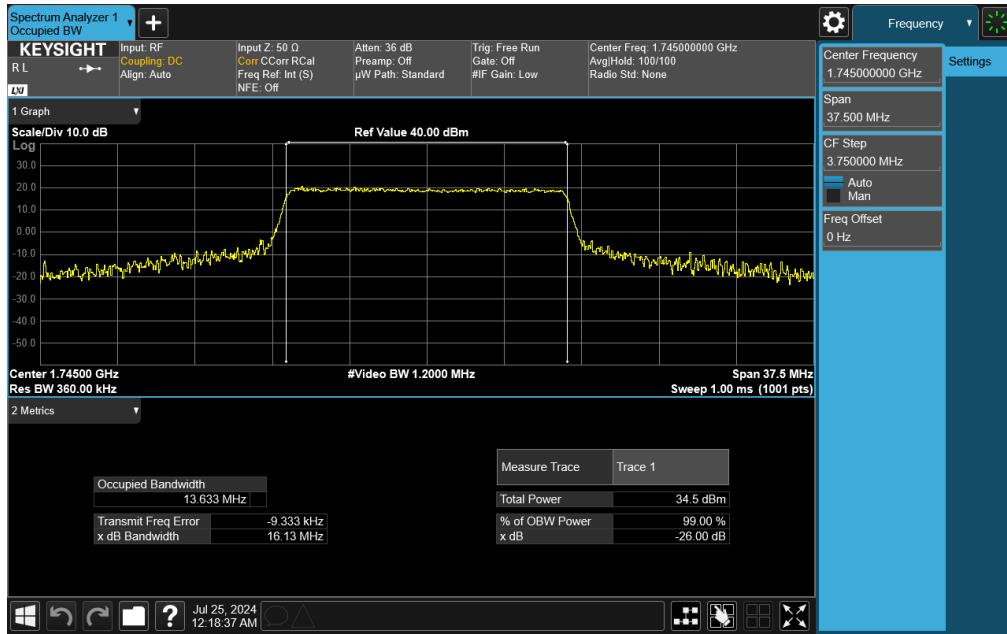
FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 24 of 351	



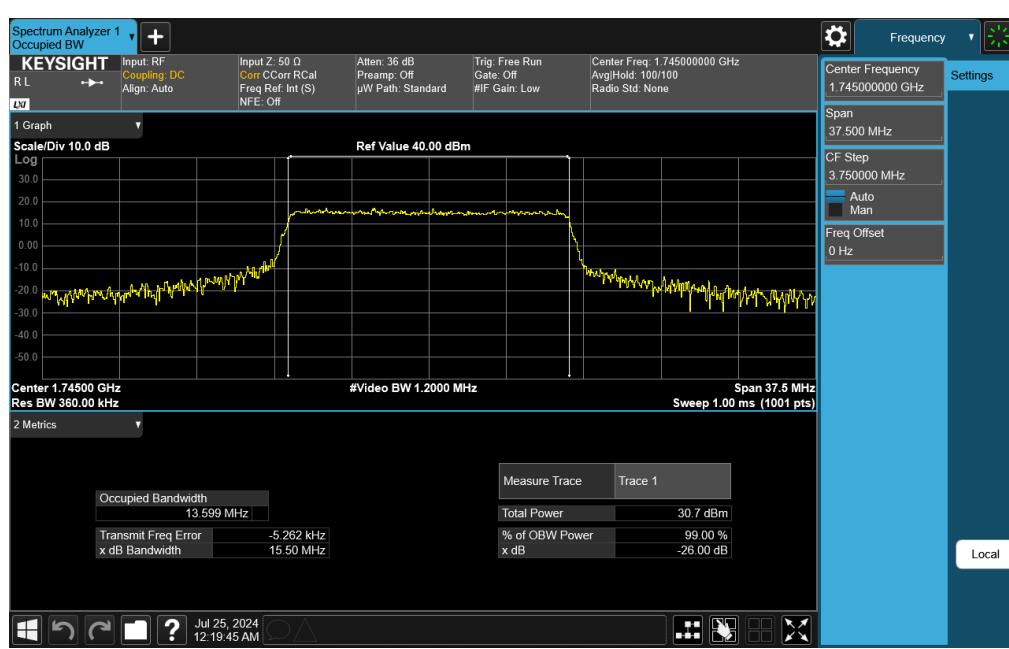
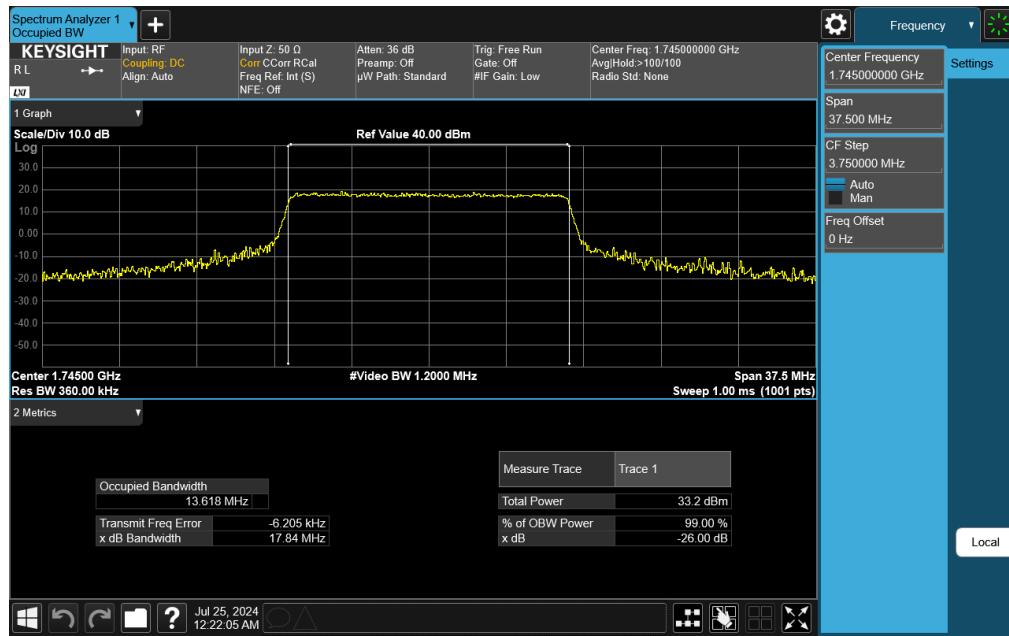
FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 25 of 351	



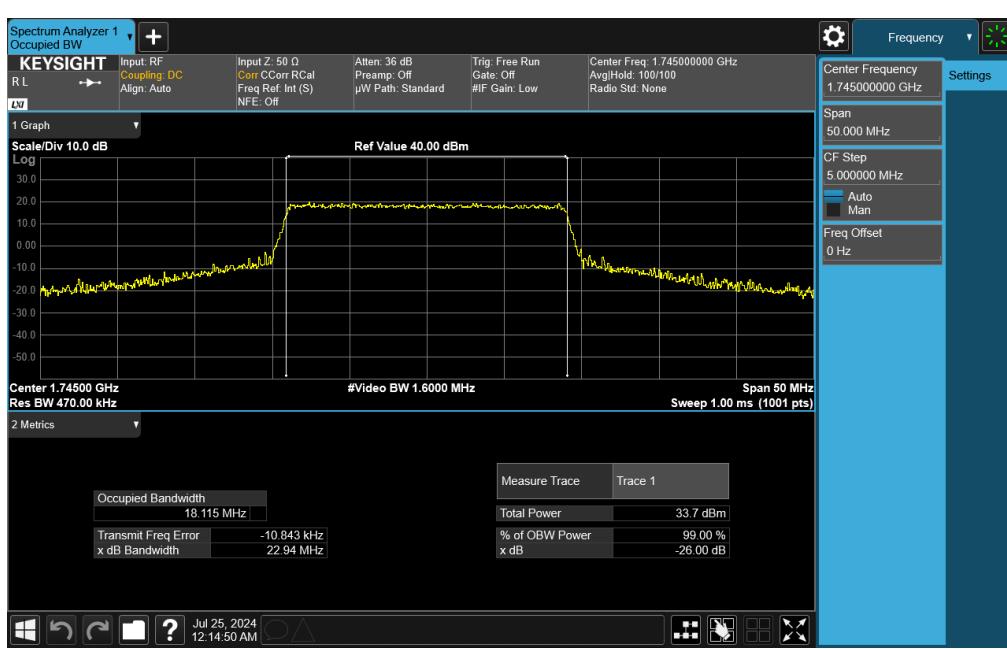
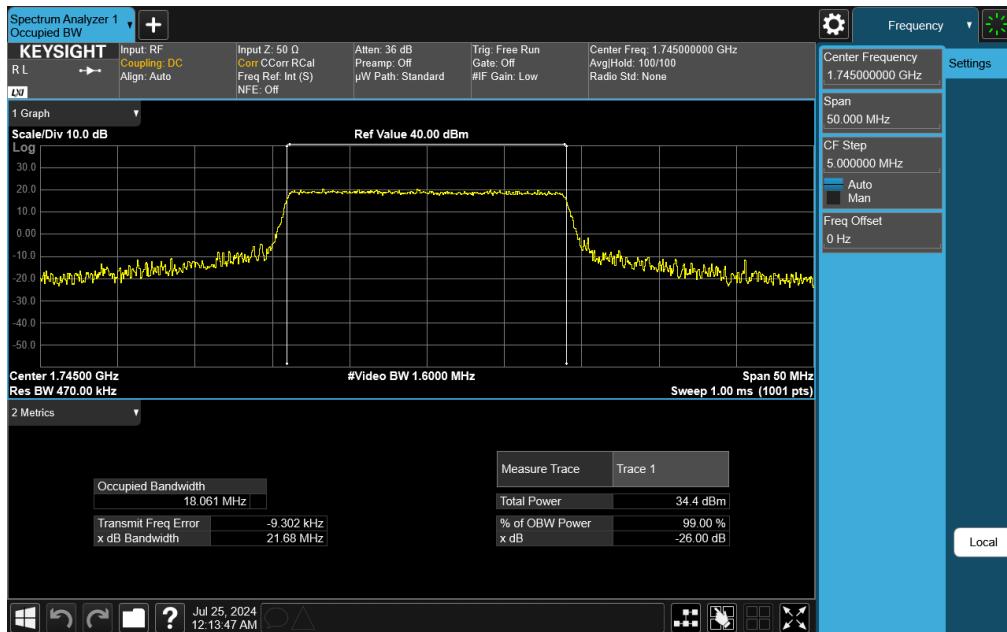
FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device		Page 26 of 351



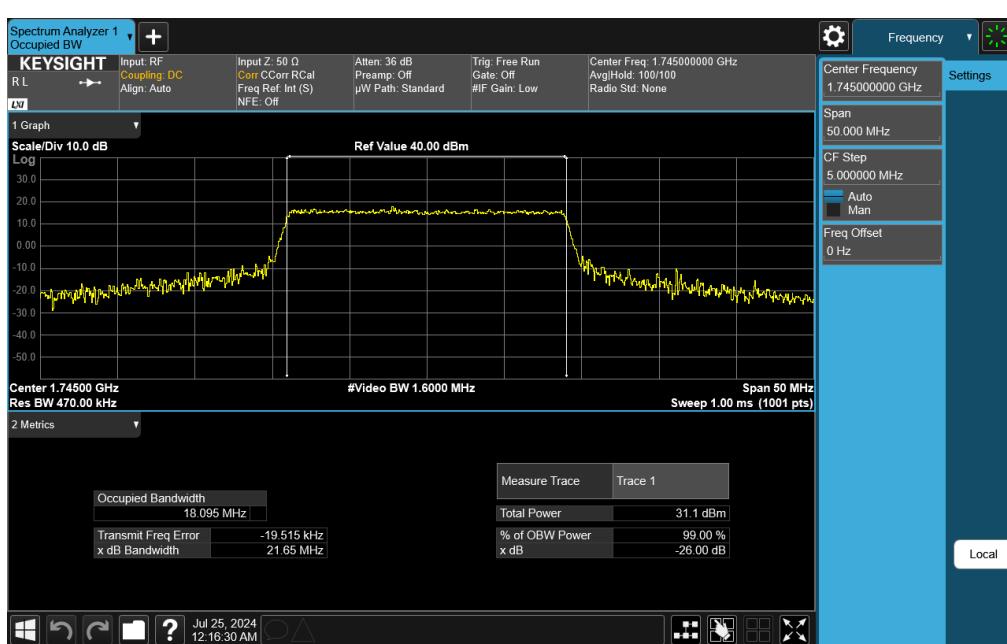
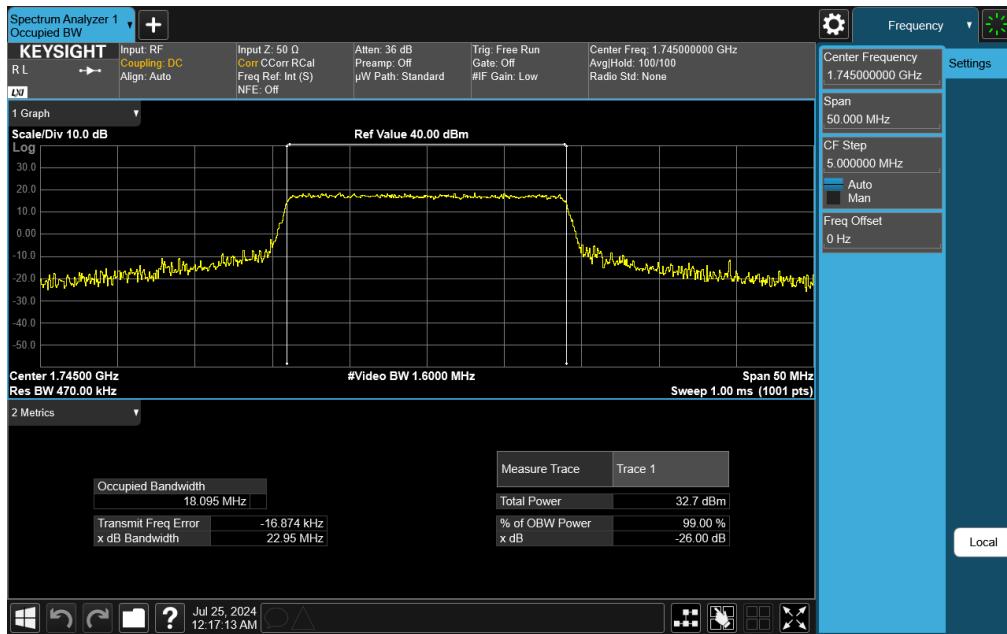
FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 27 of 351



FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device		Page 28 of 351

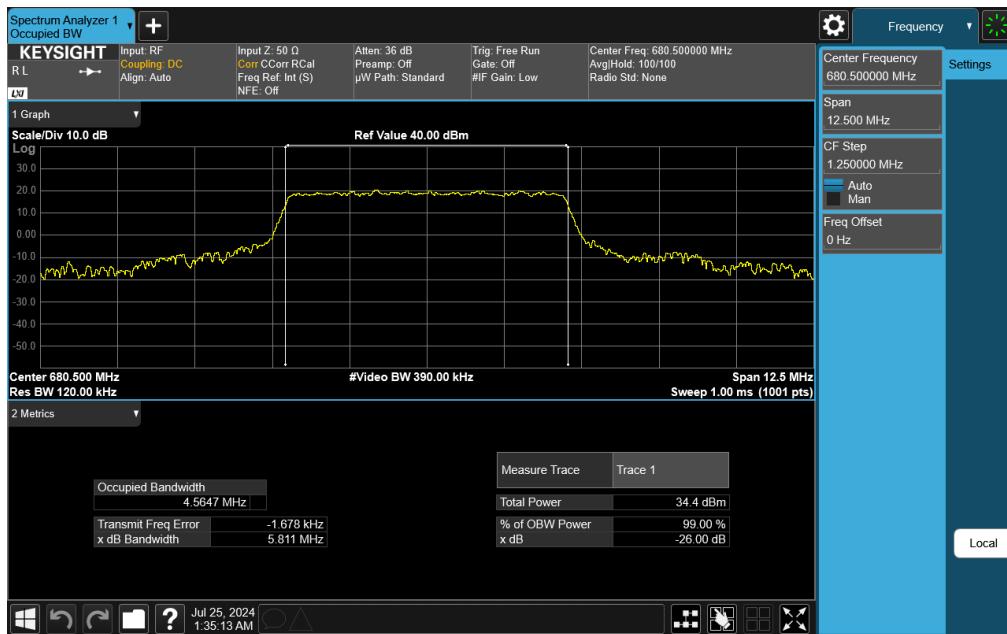


FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 29 of 351

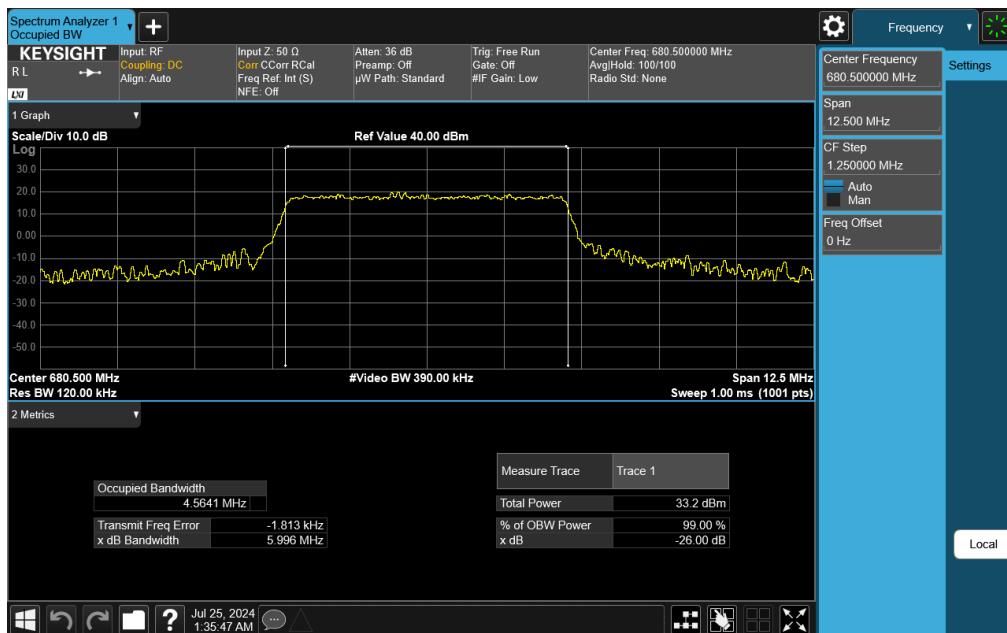


FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 30 of 351	

LTE Band 71

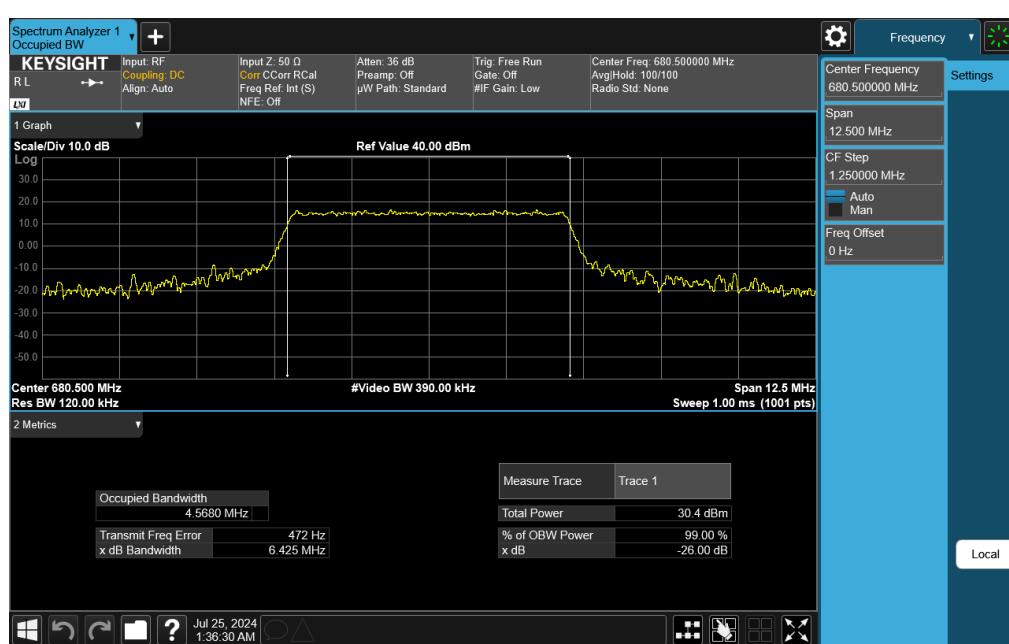
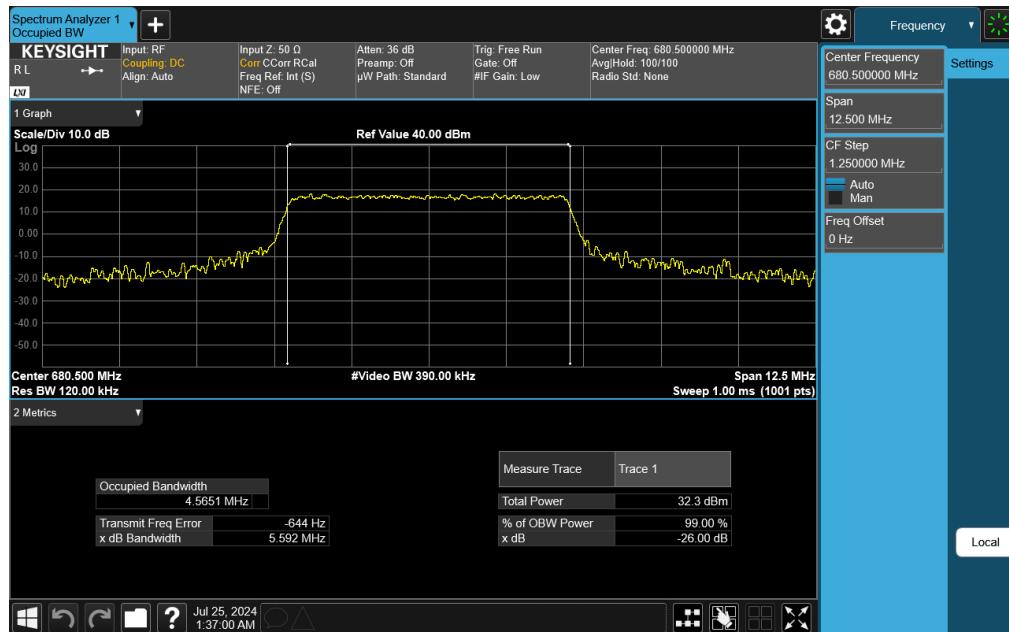


Plot 7-25. Occupied Bandwidth Plot (LTE Band 71 - 5MHz QPSK - Full RB)

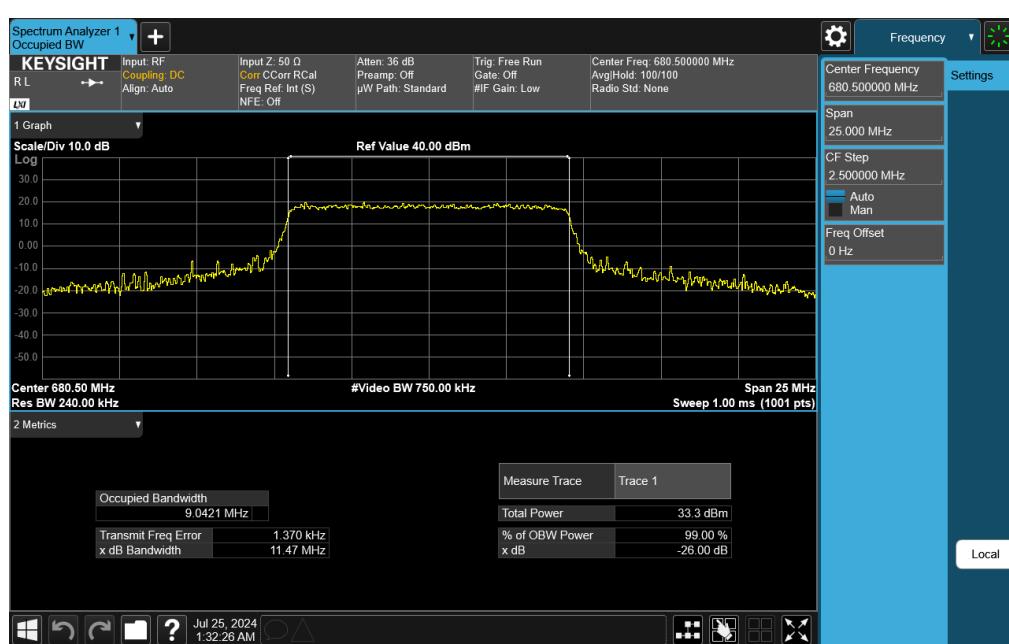
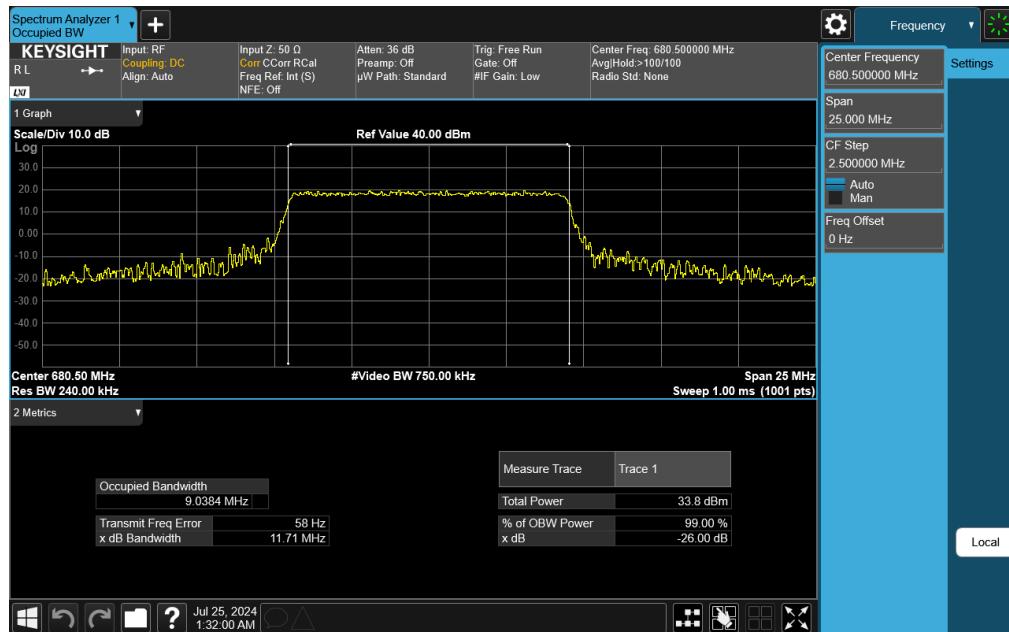


Plot 7-26. Occupied Bandwidth Plot (LTE Band 71 - 5MHz 16-QAM - Full RB)

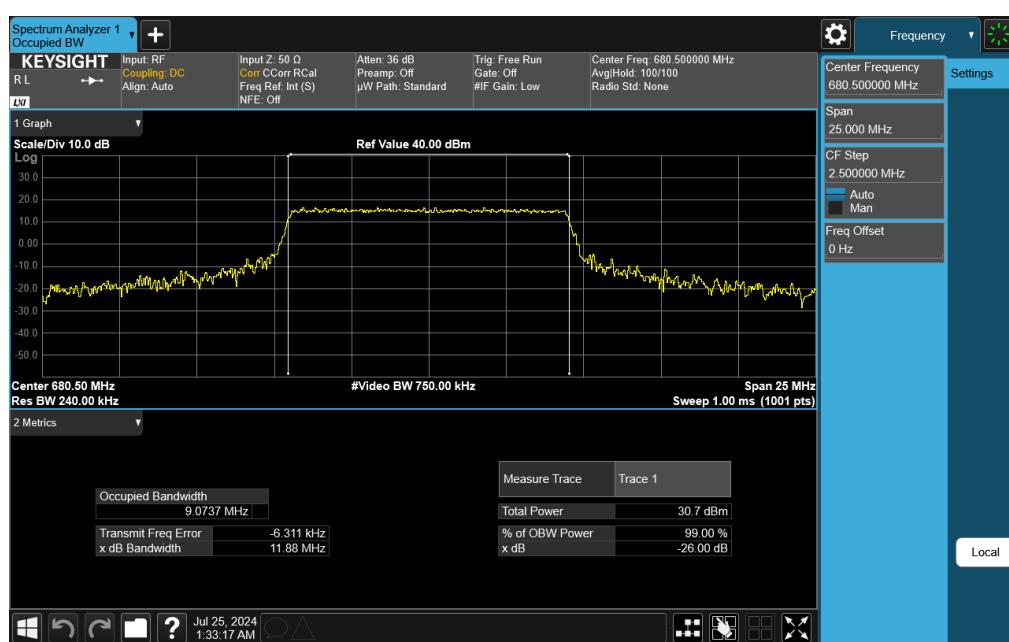
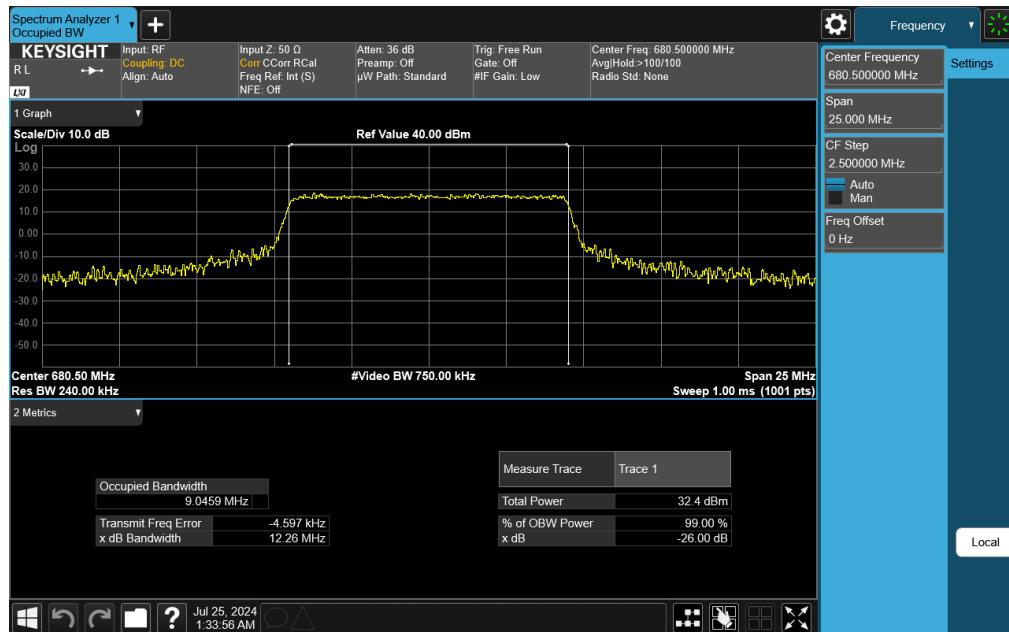
FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 31 of 351



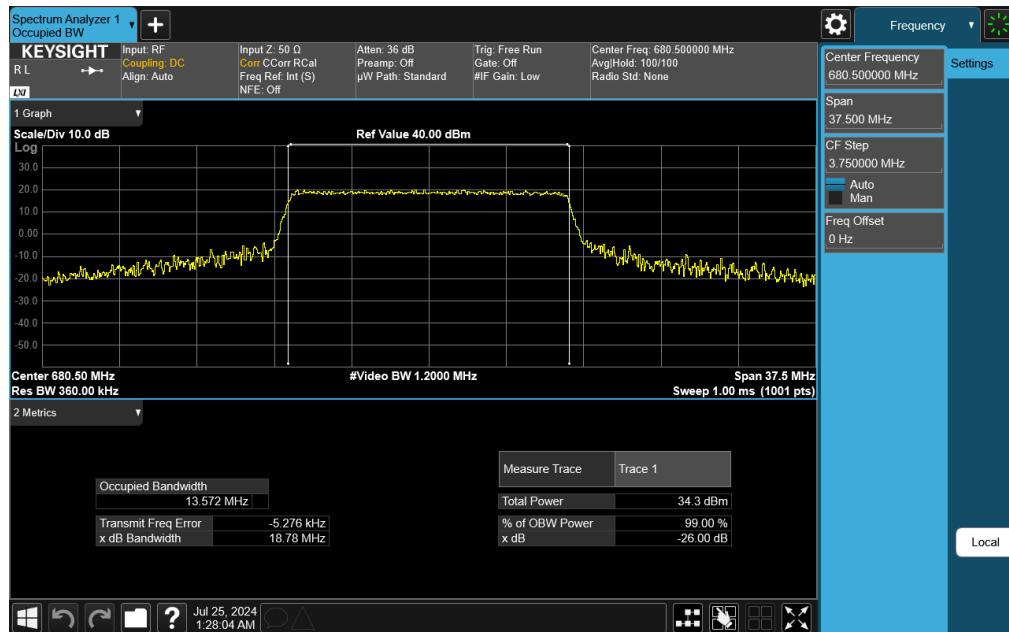
FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 32 of 351	



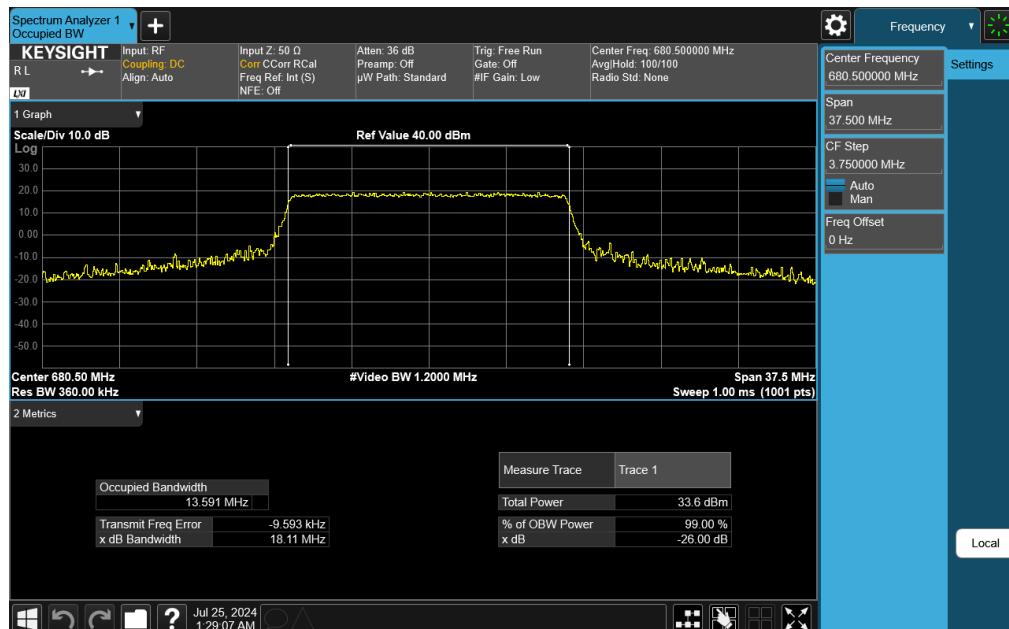
FCC ID: BCGA3269	e element		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device		Page 33 of 351



FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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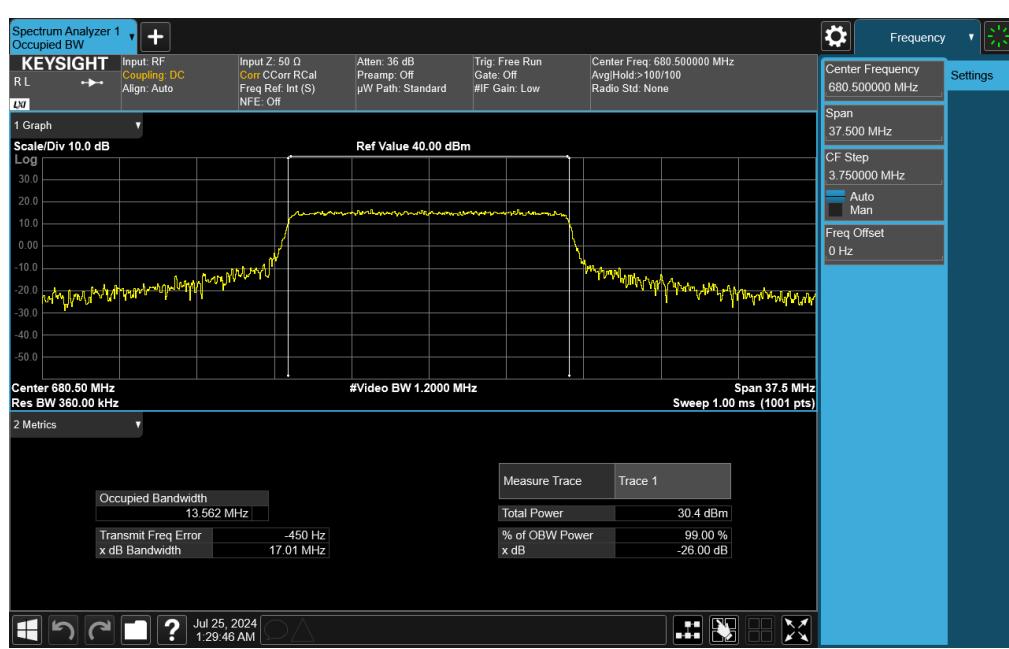
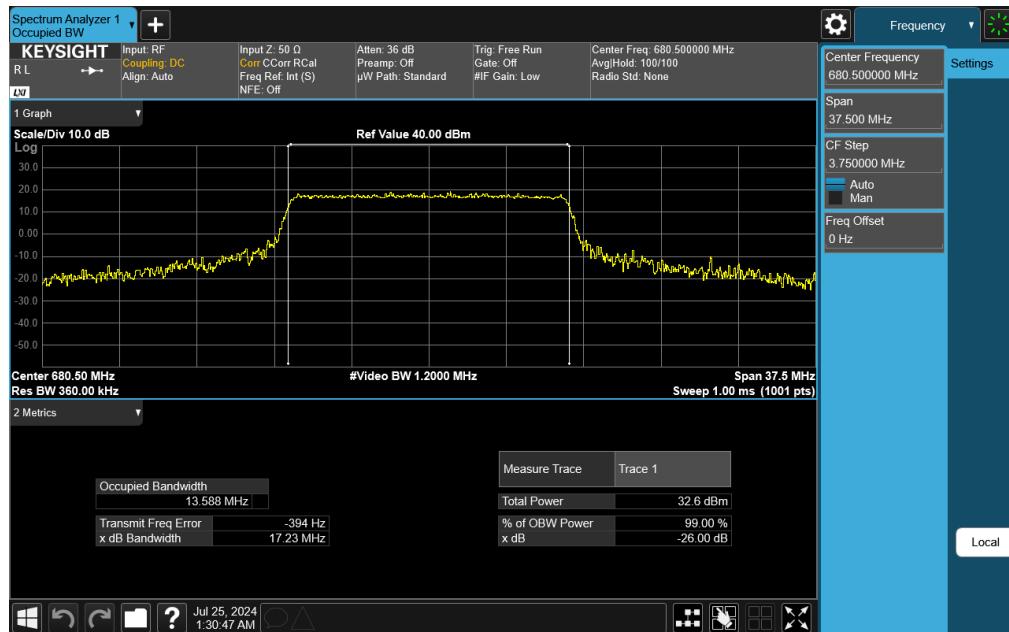


Plot 7-33. Occupied Bandwidth Plot (LTE Band 71 - 15MHz QPSK - Full RB)

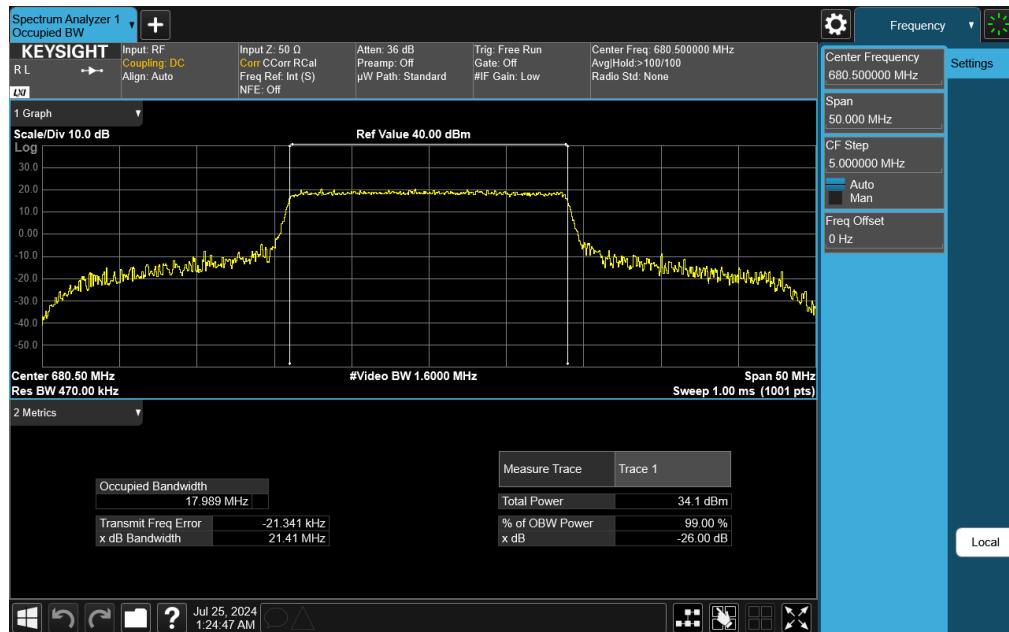


Plot 7-34. Occupied Bandwidth Plot (LTE Band 71 - 15MHz 16-QAM - Full RB)

FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 35 of 351	



FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 36 of 351	

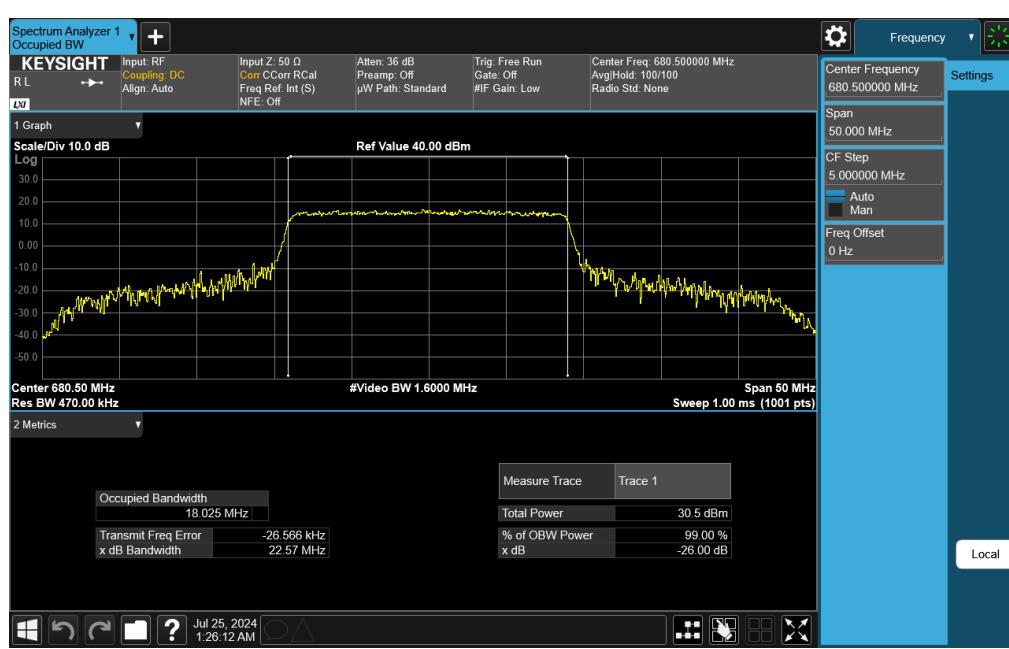
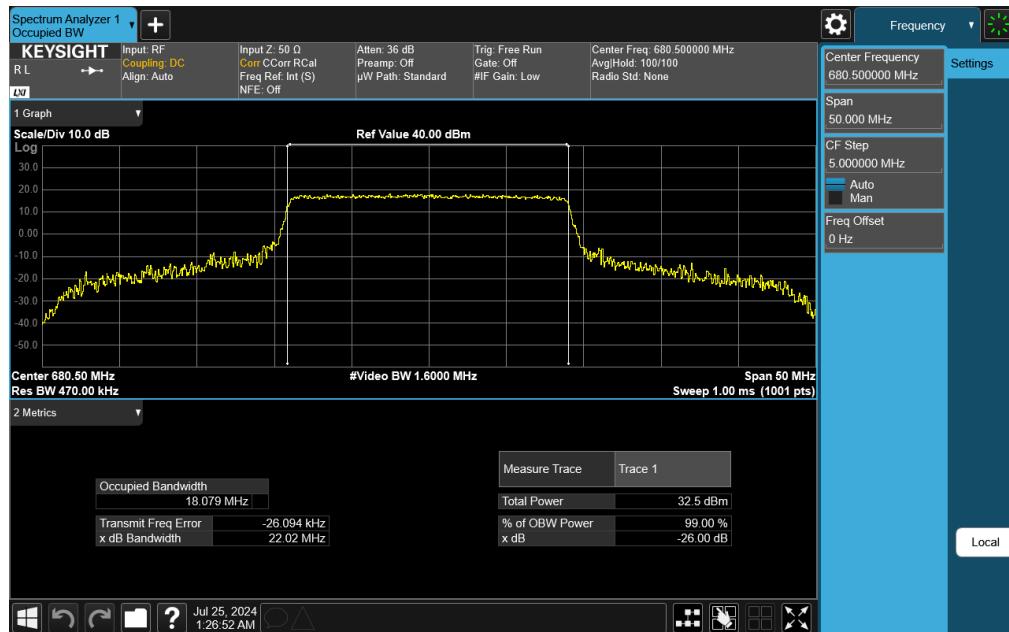


Plot 7-37. Occupied Bandwidth Plot (LTE Band 71 - 20MHz QPSK - Full RB)



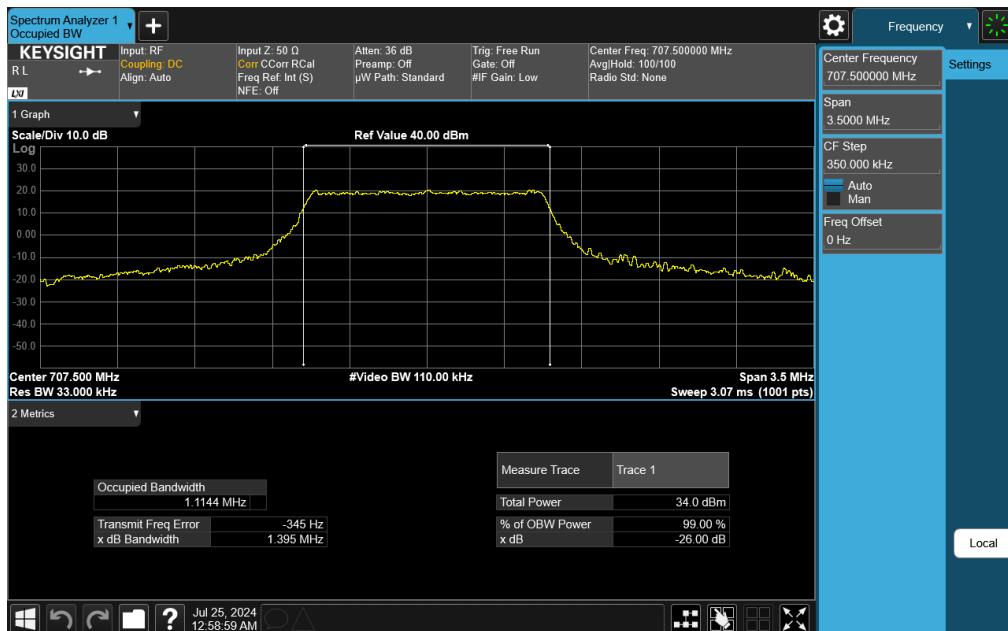
Plot 7-38. Occupied Bandwidth Plot (LTE Band 71 - 20MHz 16-QAM - Full RB)

FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 37 of 351	

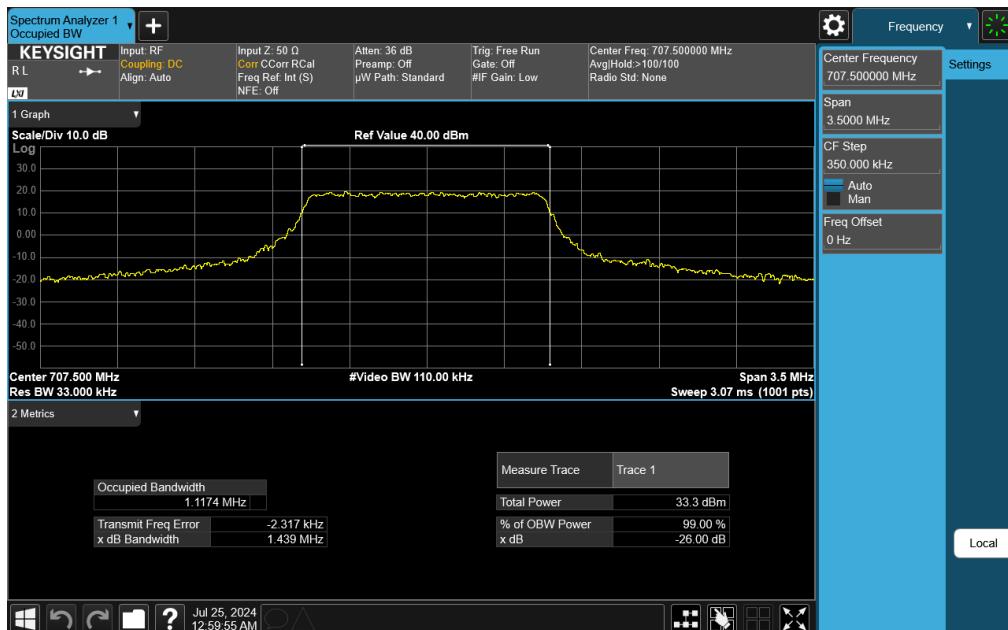


FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 12/17

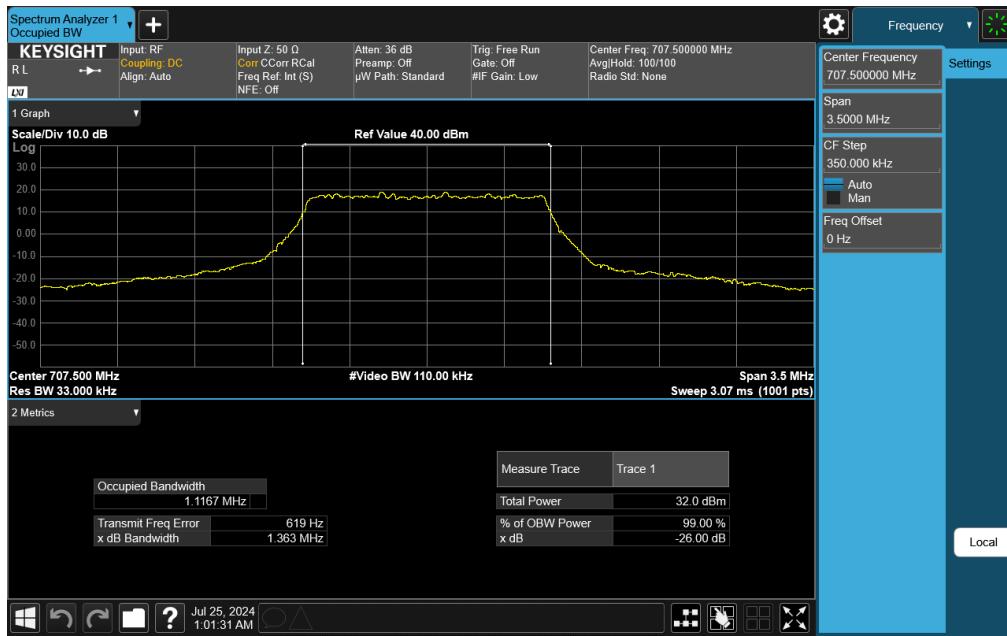


Plot 7-41. Occupied Bandwidth Plot (LTE Band 12 – 1.4MHz QPSK - Full RB)

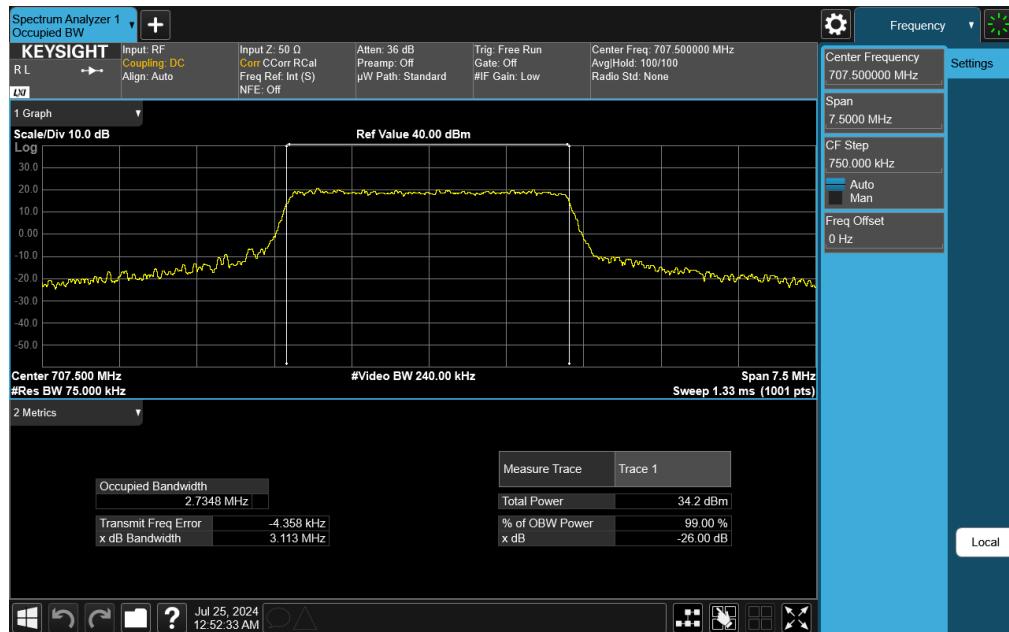


Plot 7-42. Occupied Bandwidth Plot (LTE Band 12 – 1.4MHz 16-QAM - Full RB)

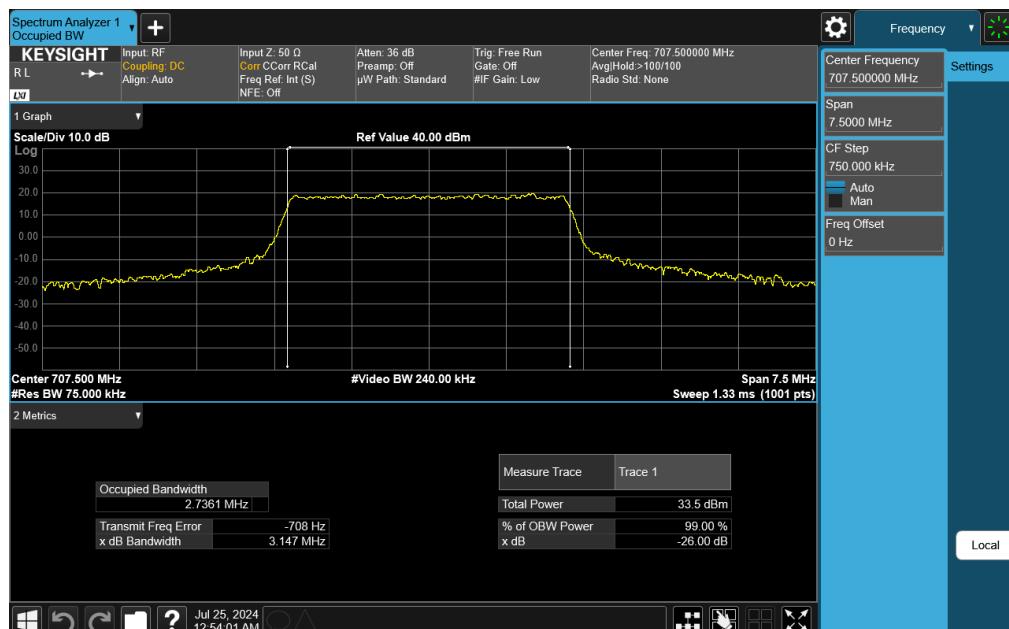
FCC ID: BCGA3269	 element	PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 39 of 351



FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
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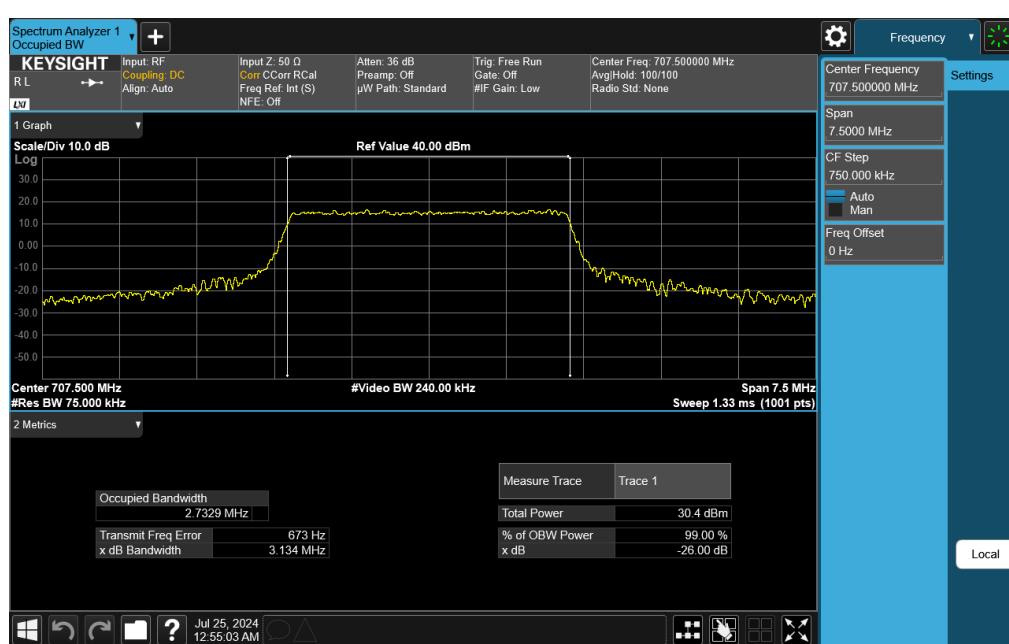
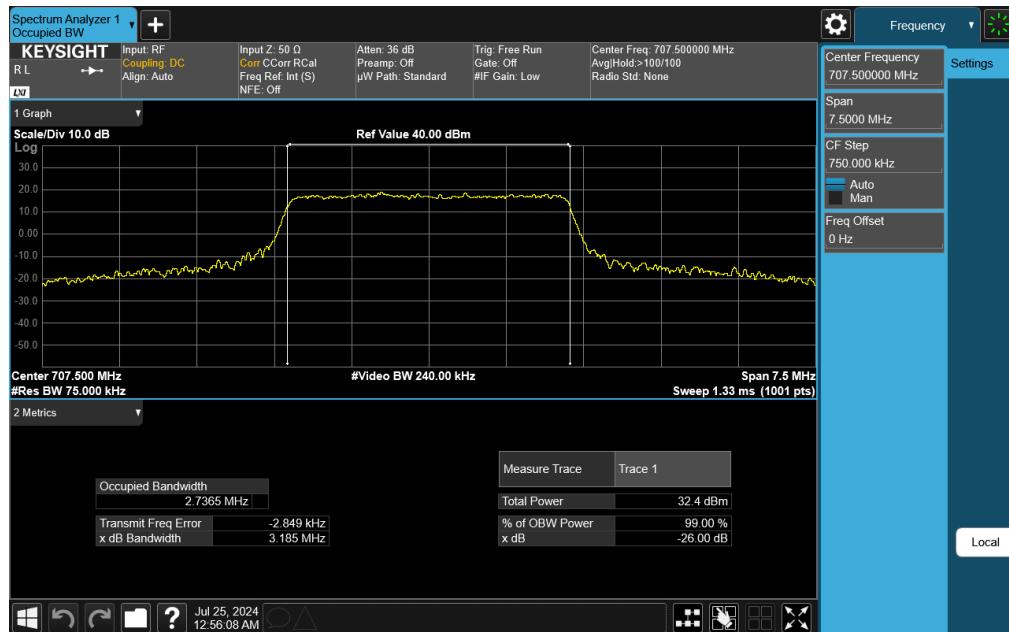


Plot 7-45. Occupied Bandwidth Plot (LTE Band 12 - 3MHz QPSK - Full RB)

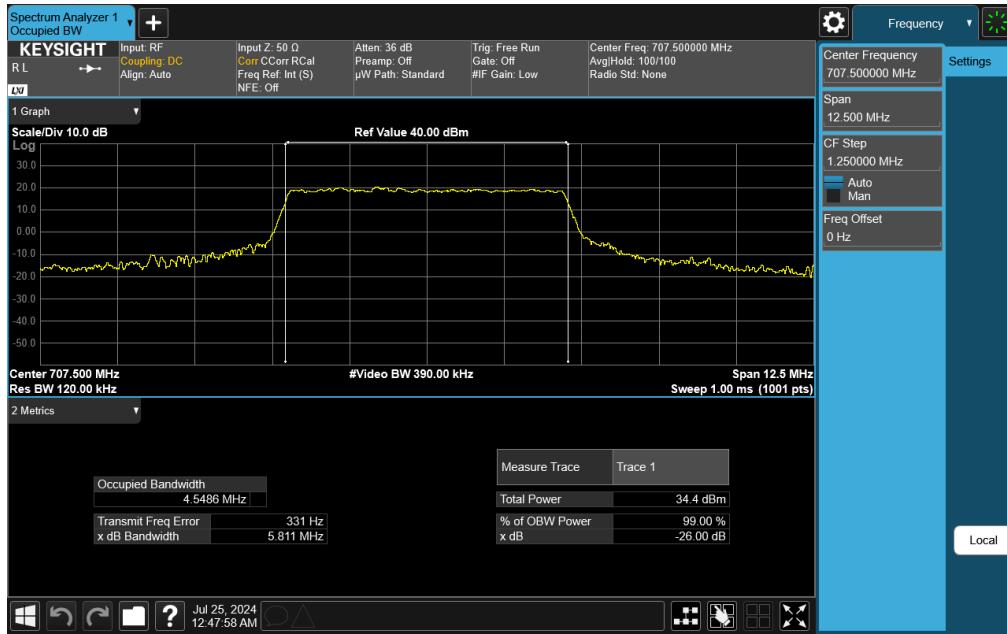


Plot 7-46. Occupied Bandwidth Plot (LTE Band 12 - 3MHz 16-QAM - Full RB)

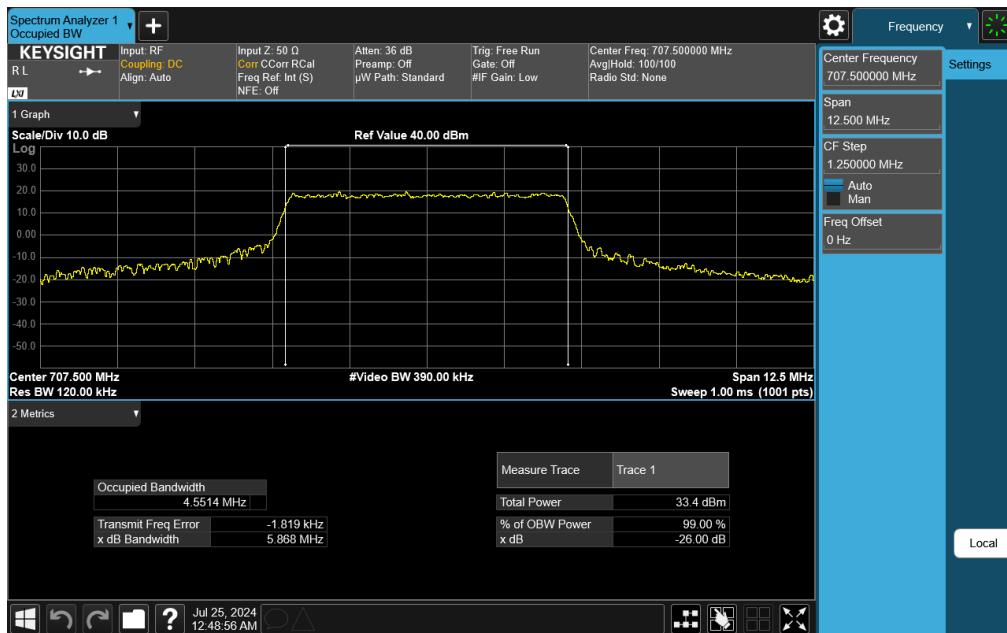
FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 41 of 351	



FCC ID: BCGA3269	 element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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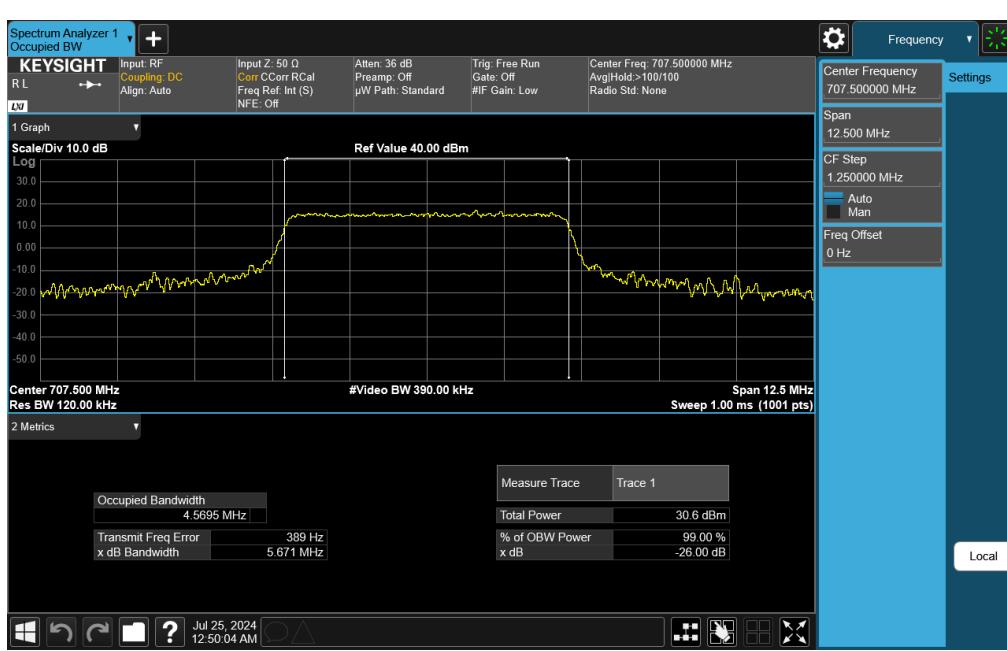
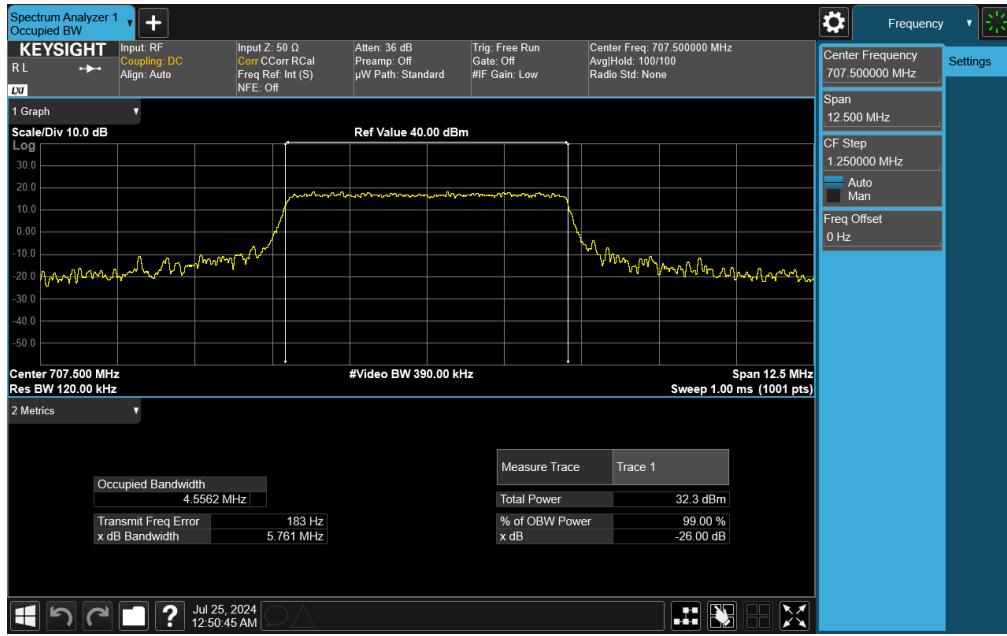


Plot 7-49. Occupied Bandwidth Plot (LTE Band 12/17 - 5MHz QPSK - Full RB)

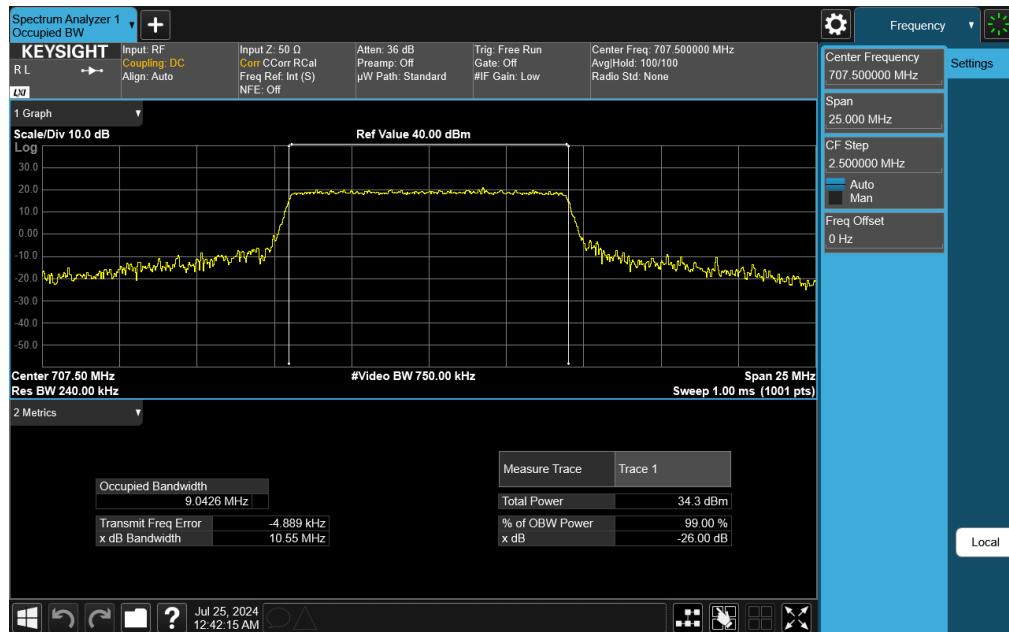


Plot 7-50. Occupied Bandwidth Plot (LTE Band 12/17 - 5MHz 16-QAM - Full RB)

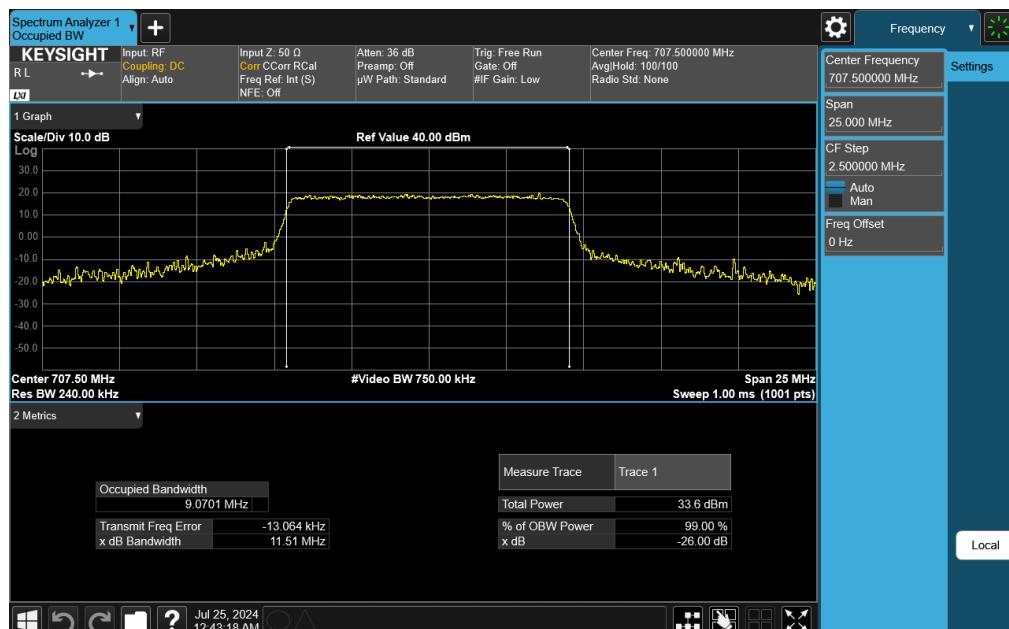
FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device		Page 43 of 351



FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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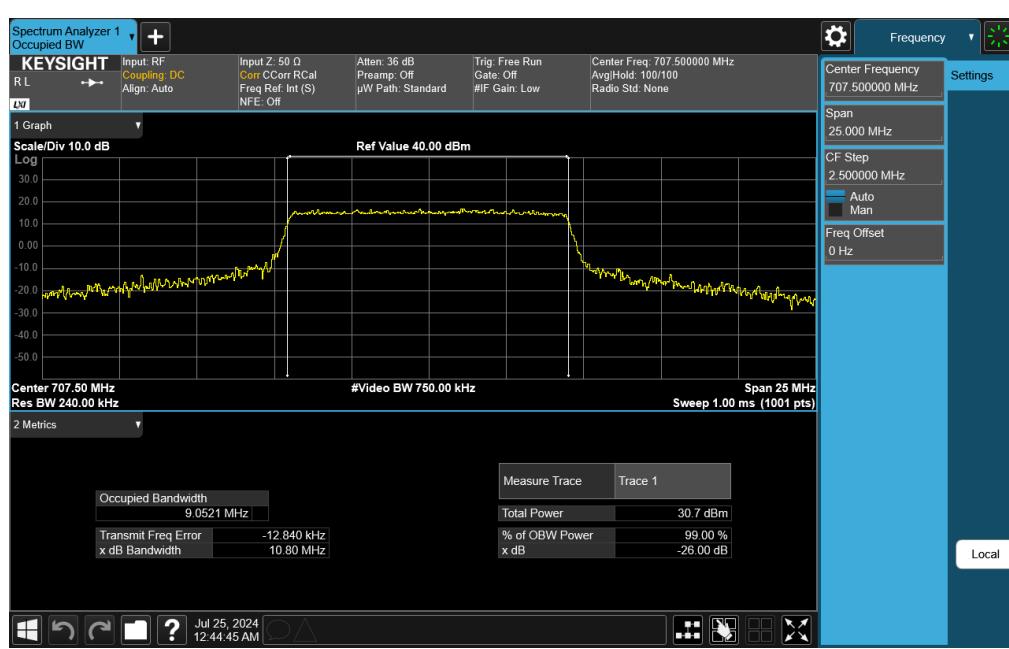


Plot 7-53. Occupied Bandwidth Plot (LTE Band 12/17 - 10MHz QPSK - Full RB)



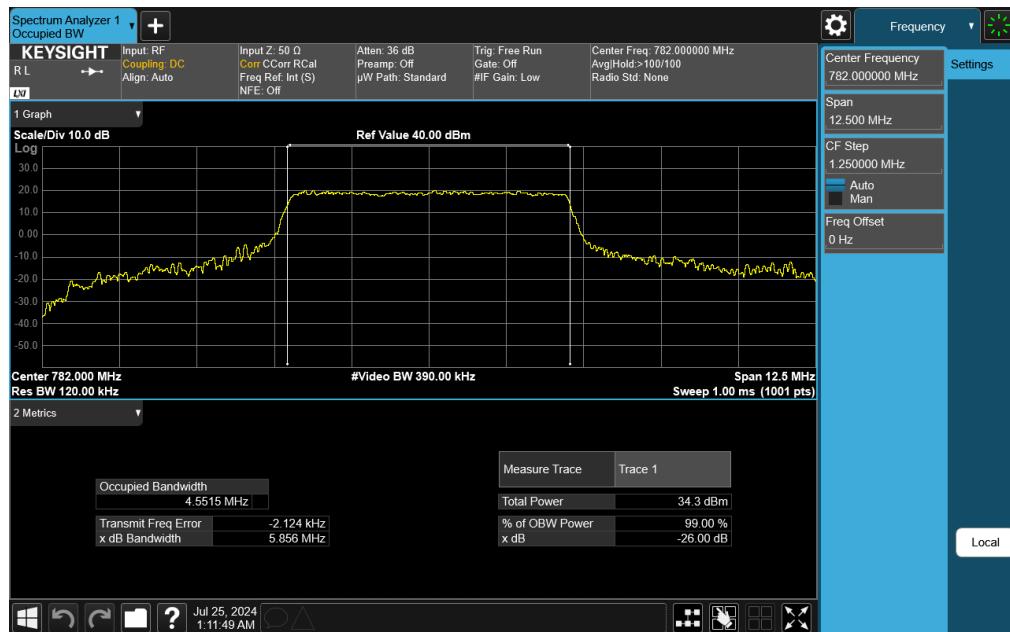
Plot 7-54. Occupied Bandwidth Plot (LTE Band 12/17 - 10MHz 16-QAM - Full RB)

FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device		Page 45 of 351

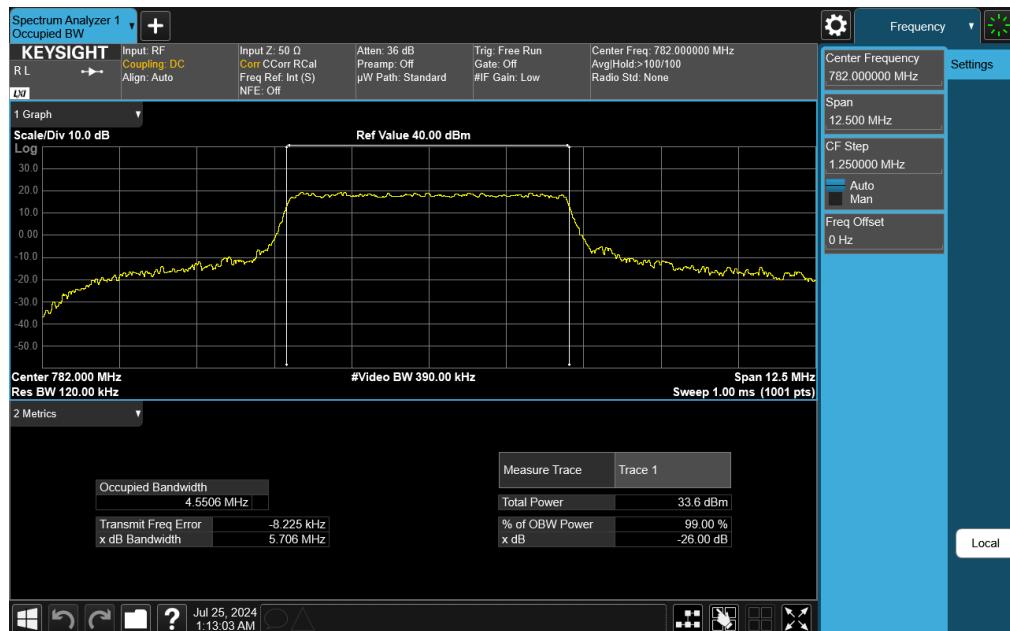


FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device		Page 46 of 351

LTE Band 13

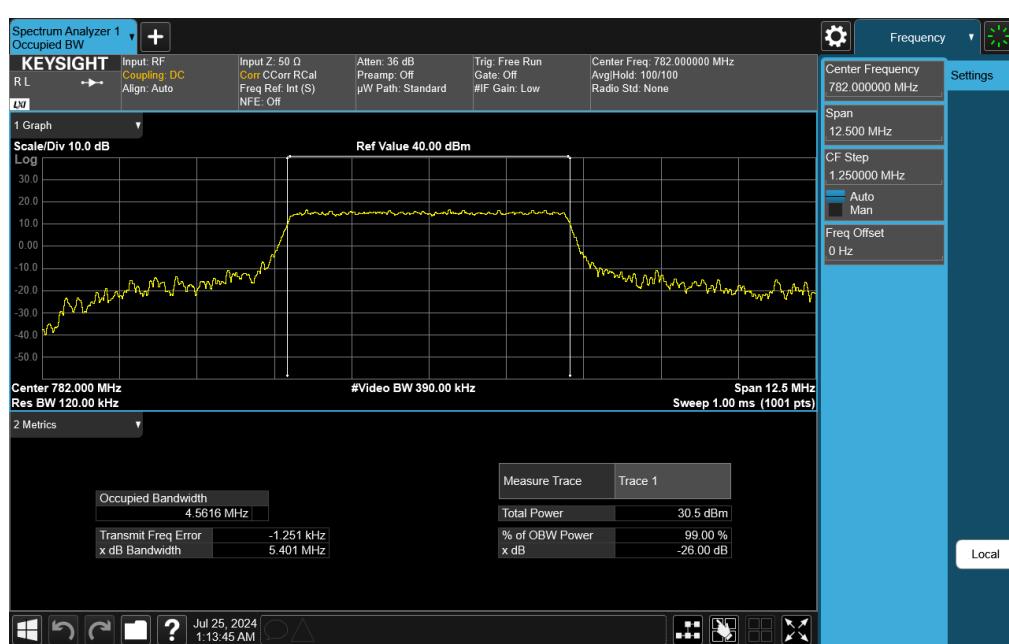
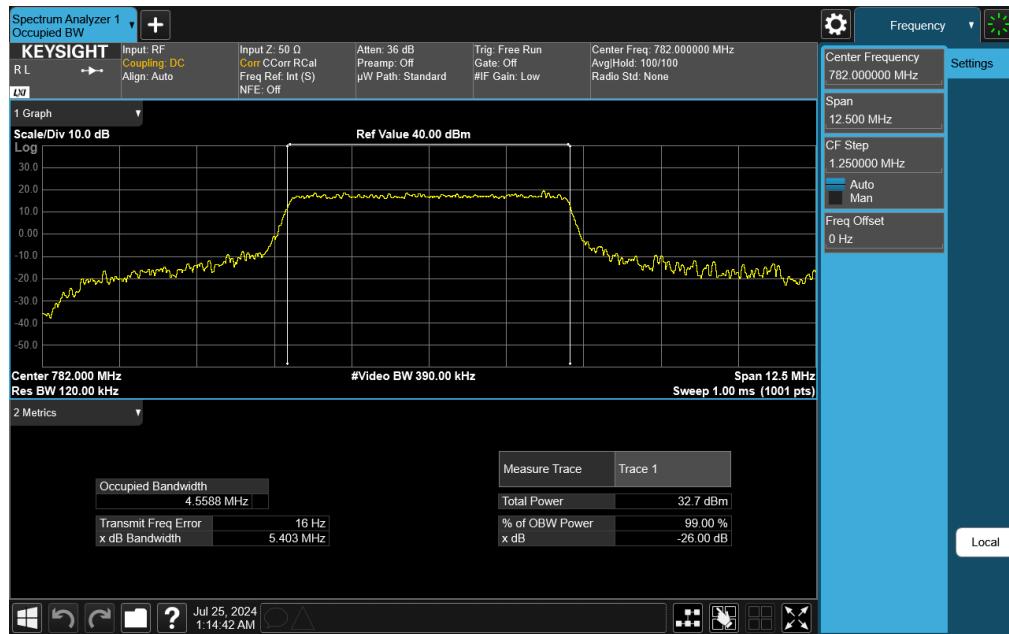


Plot 7-57. Occupied Bandwidth Plot (LTE Band 13 - 5MHz QPSK - Full RB)

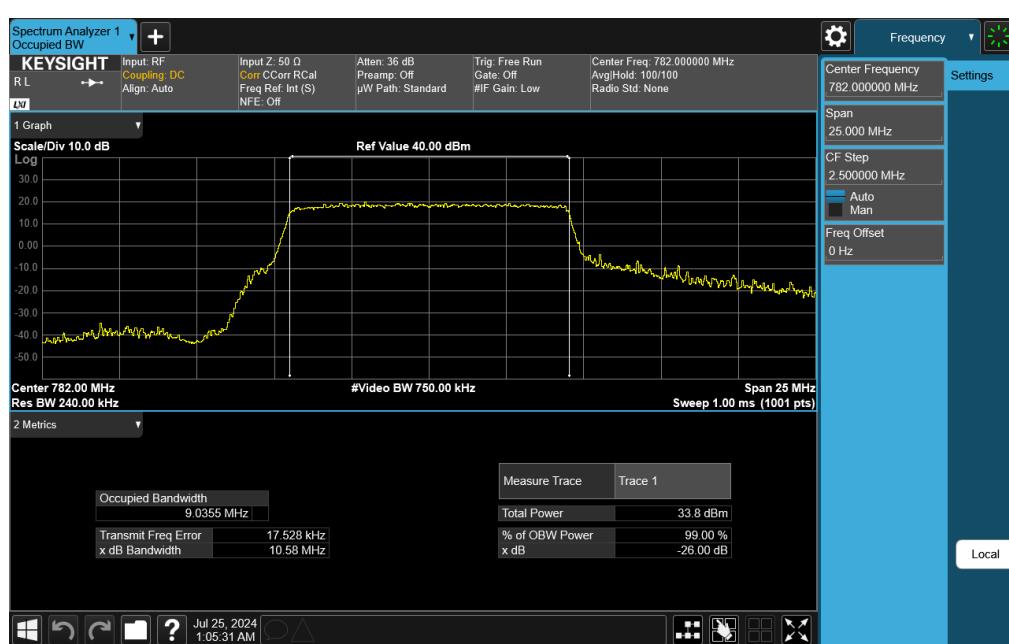
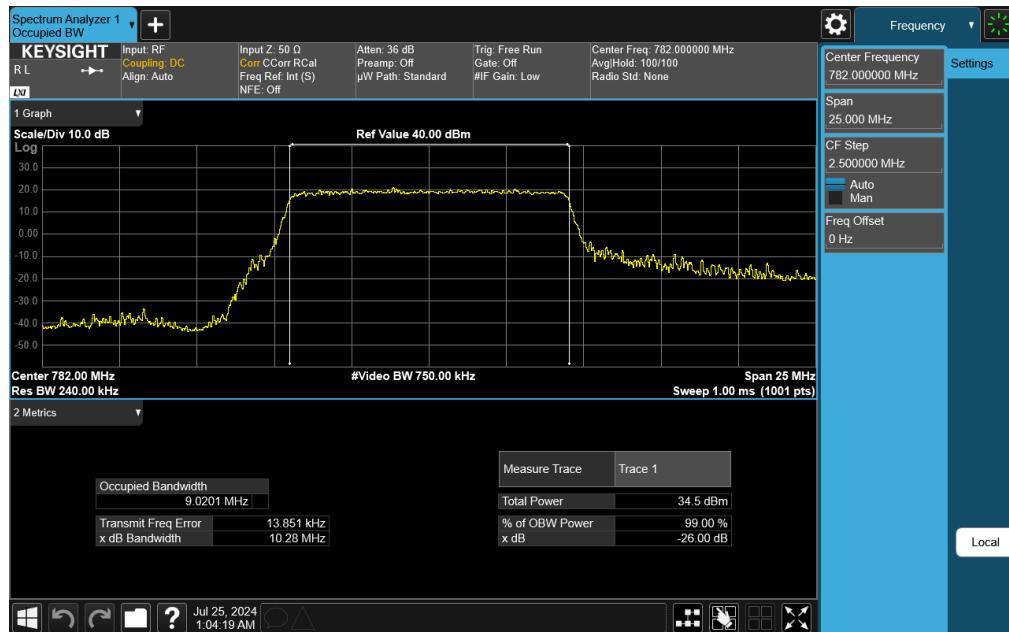


Plot 7-58. Occupied Bandwidth Plot (LTE Band 13 - 5MHz 16-QAM - Full RB)

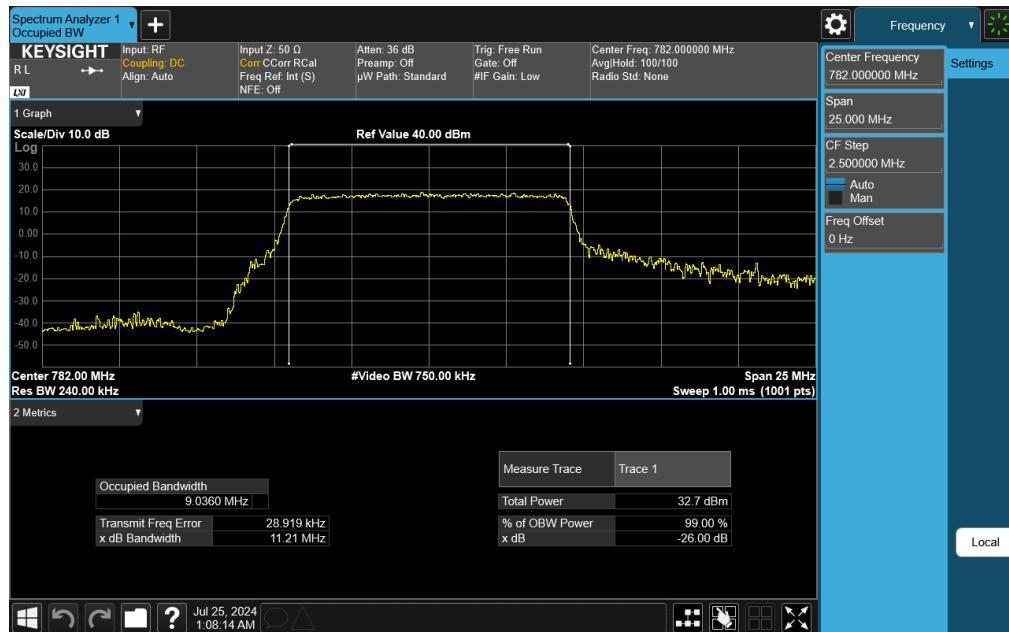
FCC ID: BCGA3269	 element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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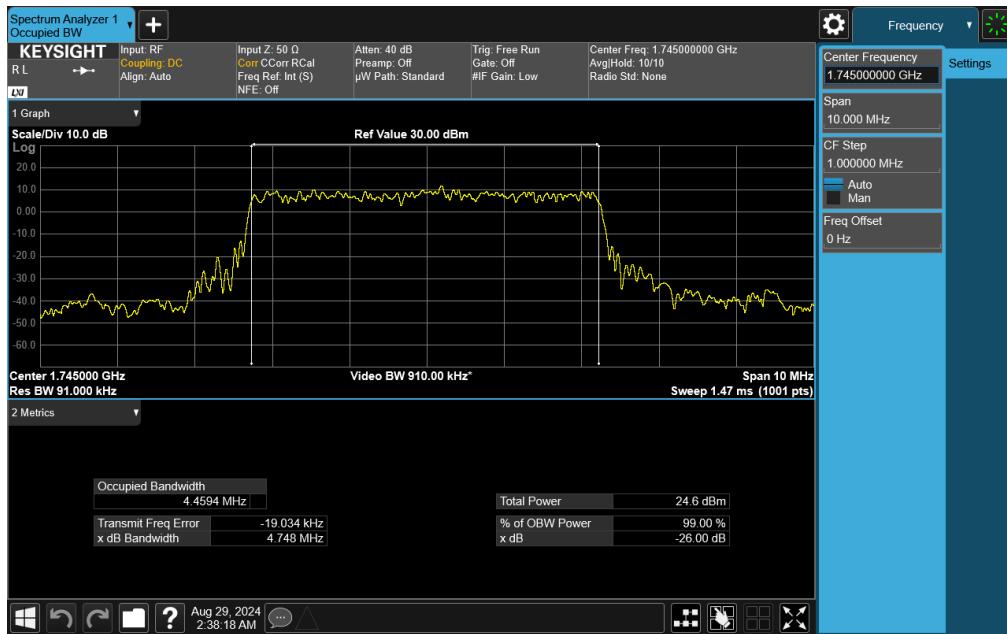
Plot 7-63. Occupied Bandwidth Plot (LTE Band 13 - 10MHz 64-QAM - Full RB)



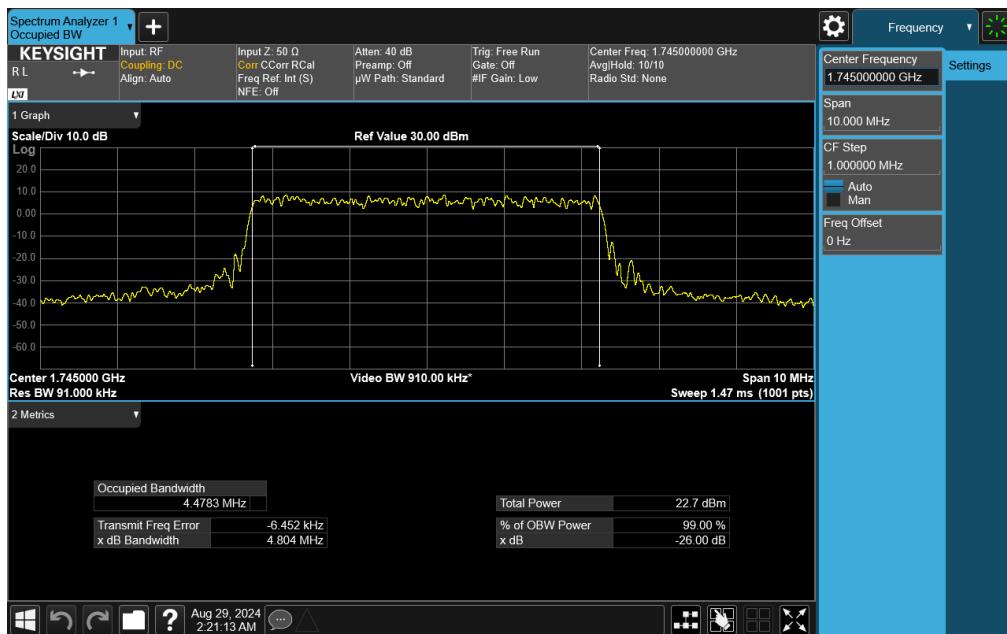
Plot 7-64. Occupied Bandwidth Plot (LTE Band 13 - 10MHz 256-QAM - Full RB)

FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device		Page 50 of 351

NR Band n66



Plot 7-65. Occupied Bandwidth Plot (NR Band n66 - 5MHz DFT-s-OFDM $\pi/2$ BPSK - Full RB)

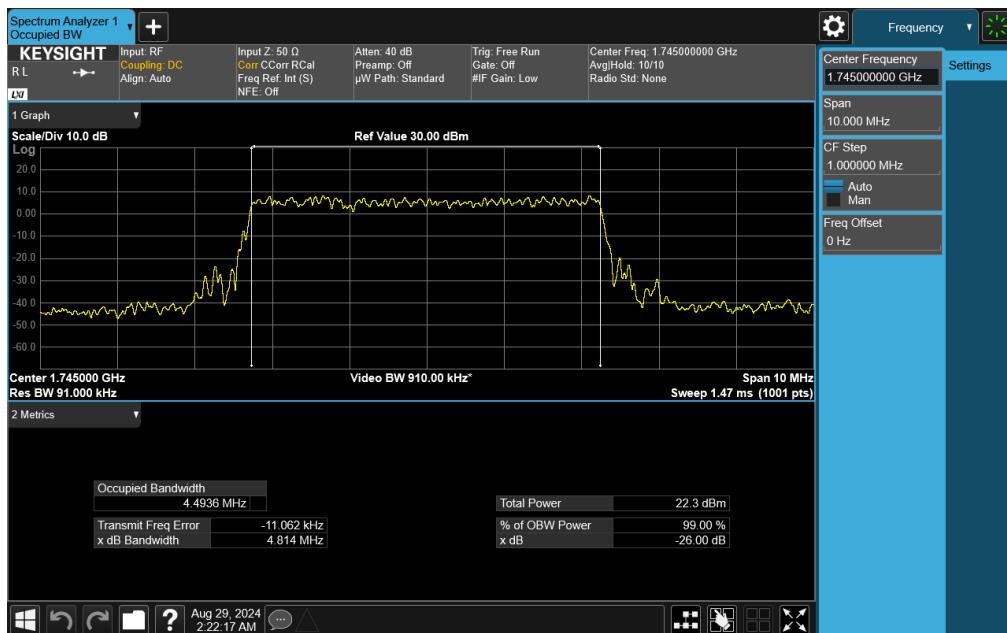


Plot 7-66. Occupied Bandwidth Plot (NR Band n66 - 5MHz CP-OFDM QPSK - Full RB)

FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 51 of 351	

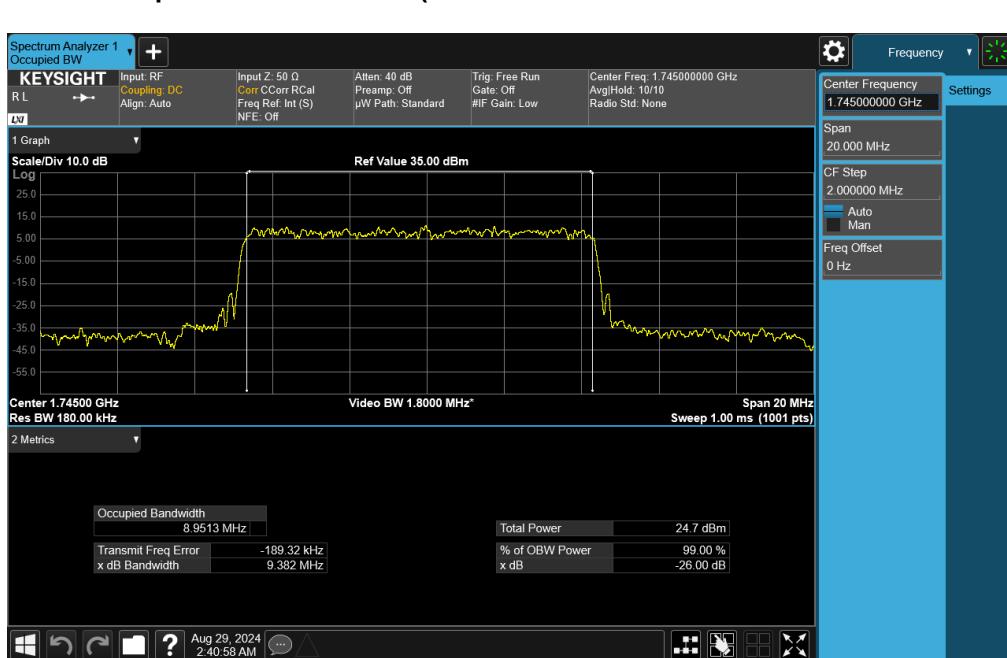
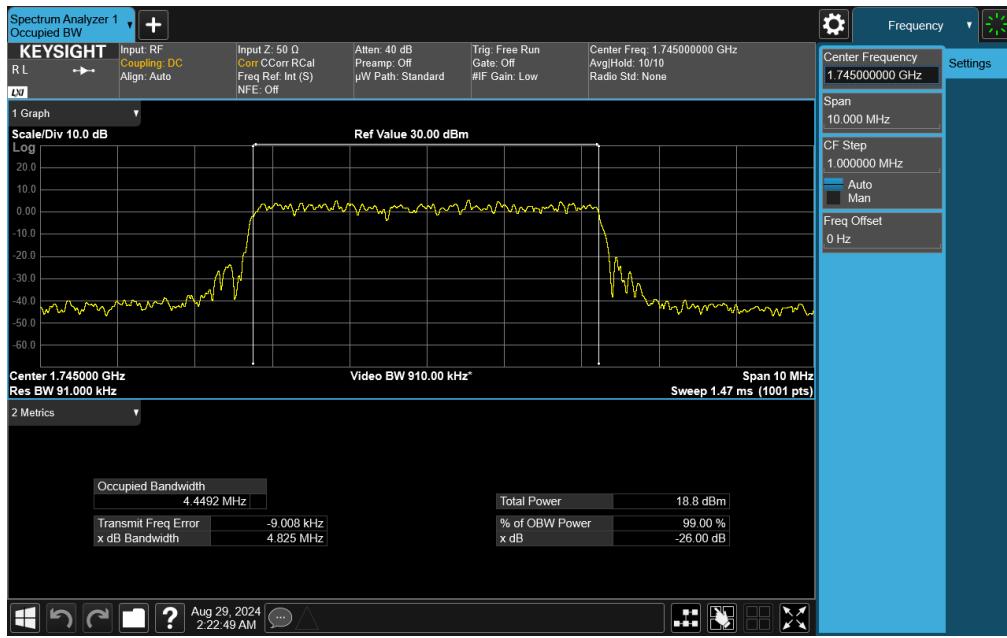


Plot 7-67. Occupied Bandwidth Plot (NR Band n66 - 5MHz CP-OFDM 16QAM - Full RB)

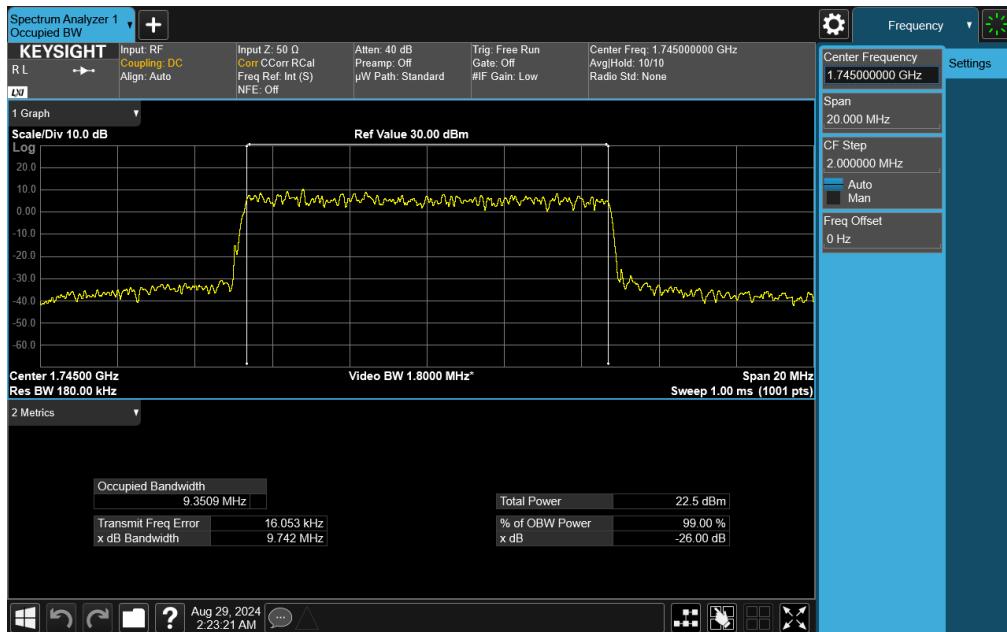


Plot 7-68. Occupied Bandwidth Plot (NR Band n66 - 5MHz CP-OFDM 64QAM - Full RB)

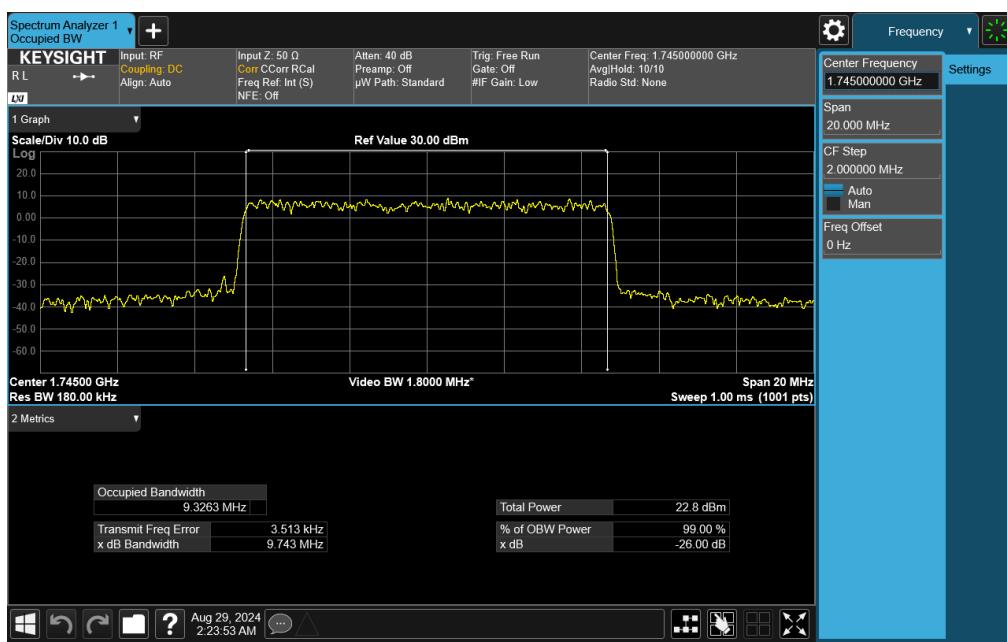
FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 52 of 351



FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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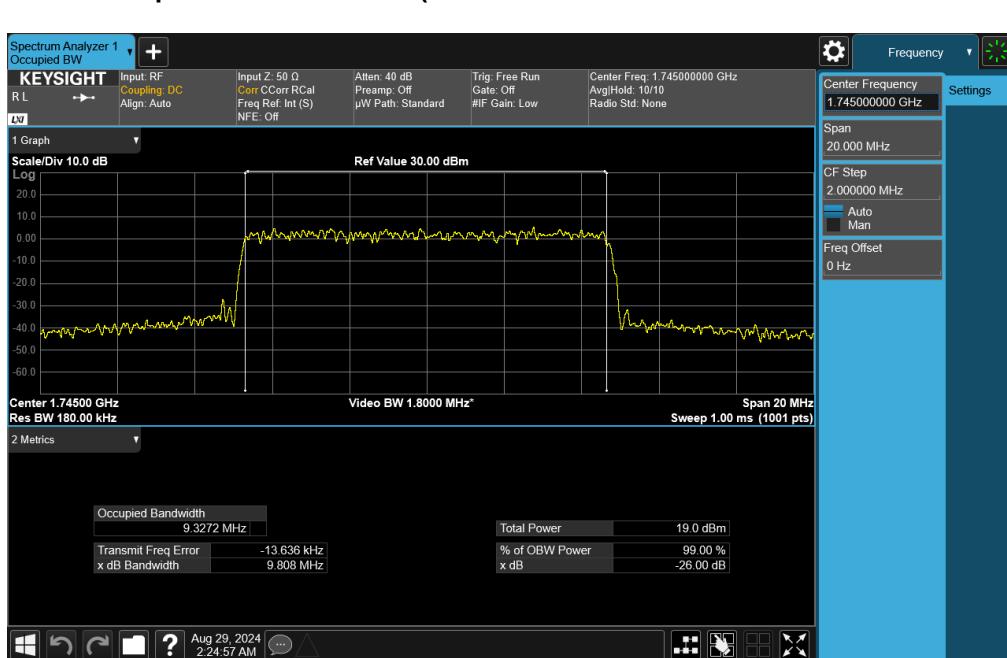
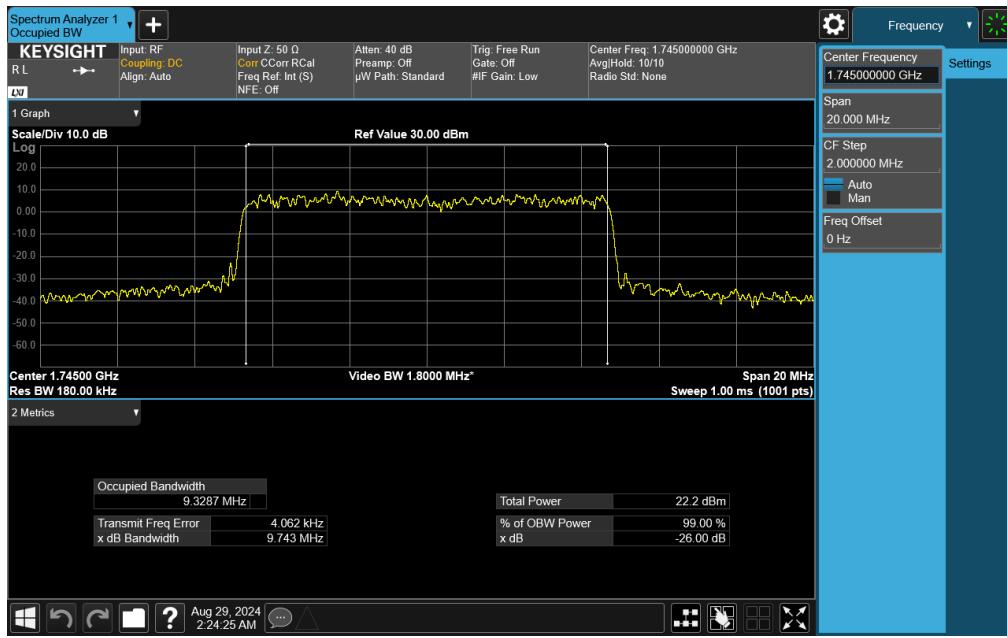


Plot 7-71. Occupied Bandwidth Plot (NR Band n66 - 10MHz CP-OFDM QPSK - Full RB)

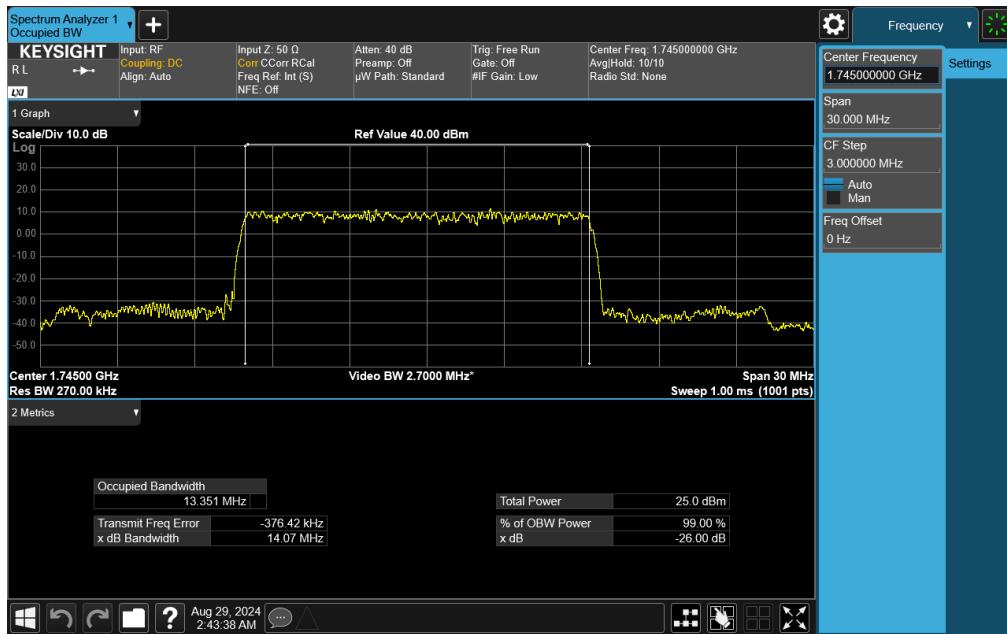


Plot 7-72. Occupied Bandwidth Plot (NR Band n66 - 10MHz CP-OFDM 16QAM - Full RB)

FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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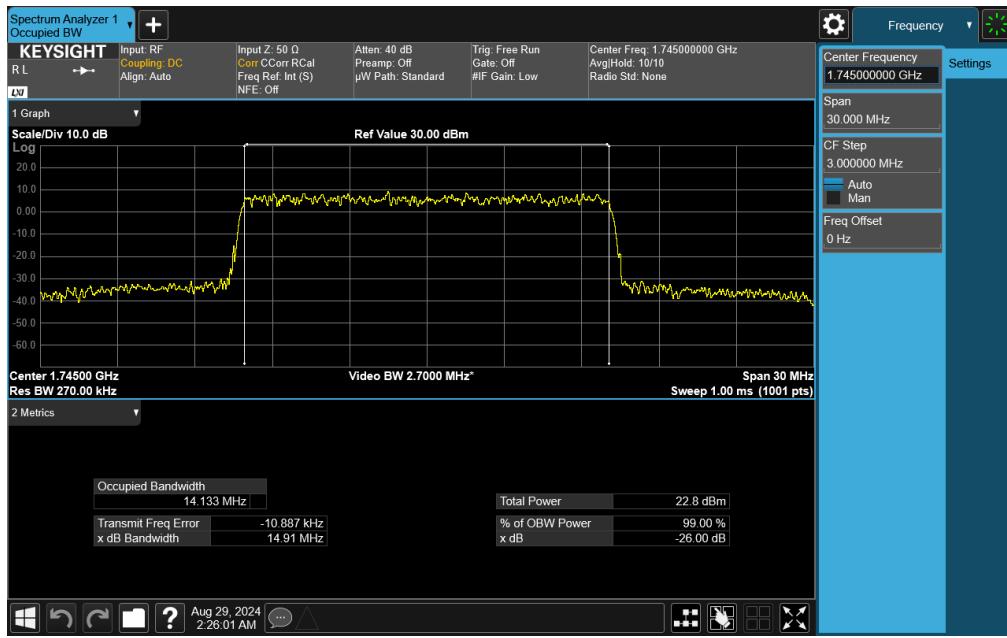


Plot 7-75. Occupied Bandwidth Plot (NR Band n66 - 15MHz DFT-s-OFDM $\pi/2$ BPSK - Full RB)



Plot 7-76. Occupied Bandwidth Plot (NR Band n66 - 15MHz CP-OFDM QPSK - Full RB)

FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device		Page 56 of 351

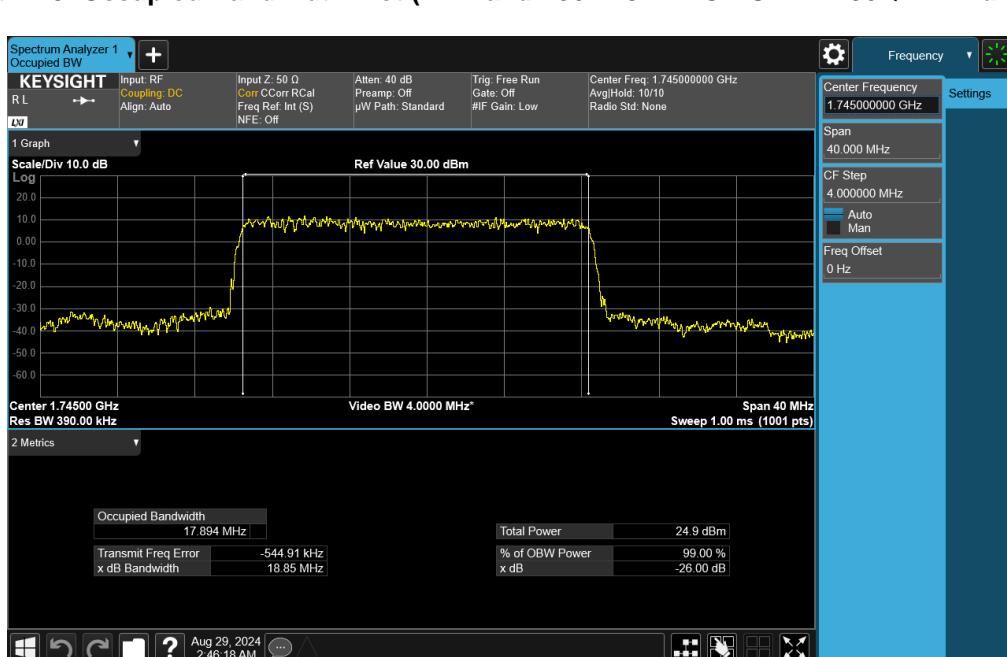


Plot 7-77. Occupied Bandwidth Plot (NR Band n66 - 15MHz CP-OFDM 16QAM - Full RB)

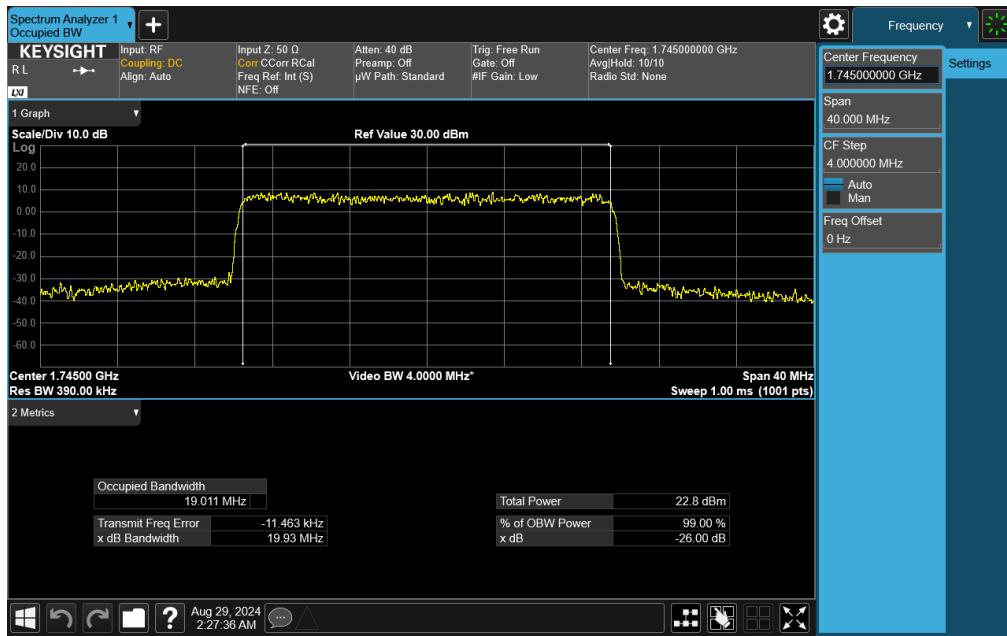


Plot 7-78. Occupied Bandwidth Plot (NR Band n66 - 15MHz CP-OFDM 64QAM - Full RB)

FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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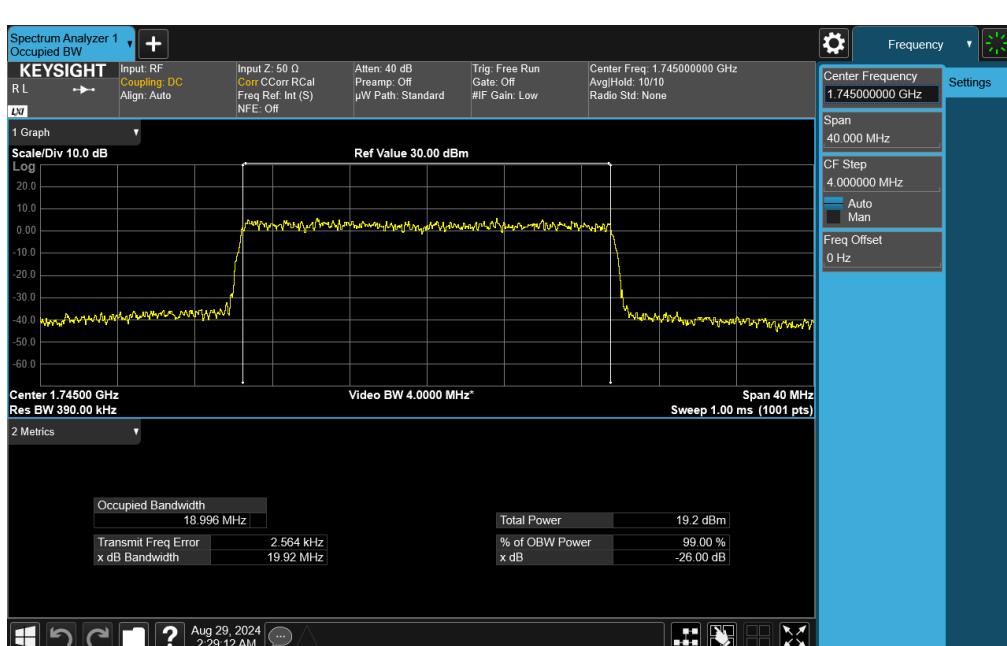


Plot 7-81. Occupied Bandwidth Plot (NR Band n66 - 20MHz CP-OFDM QPSK - Full RB)

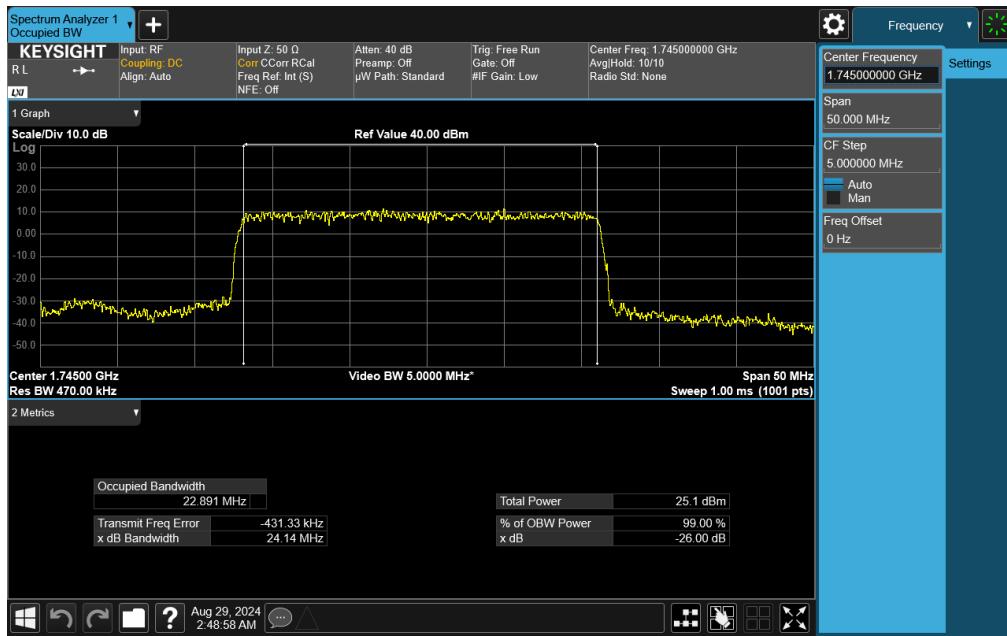


Plot 7-82. Occupied Bandwidth Plot (NR Band n66 - 20MHz CP-OFDM 16QAM - Full RB)

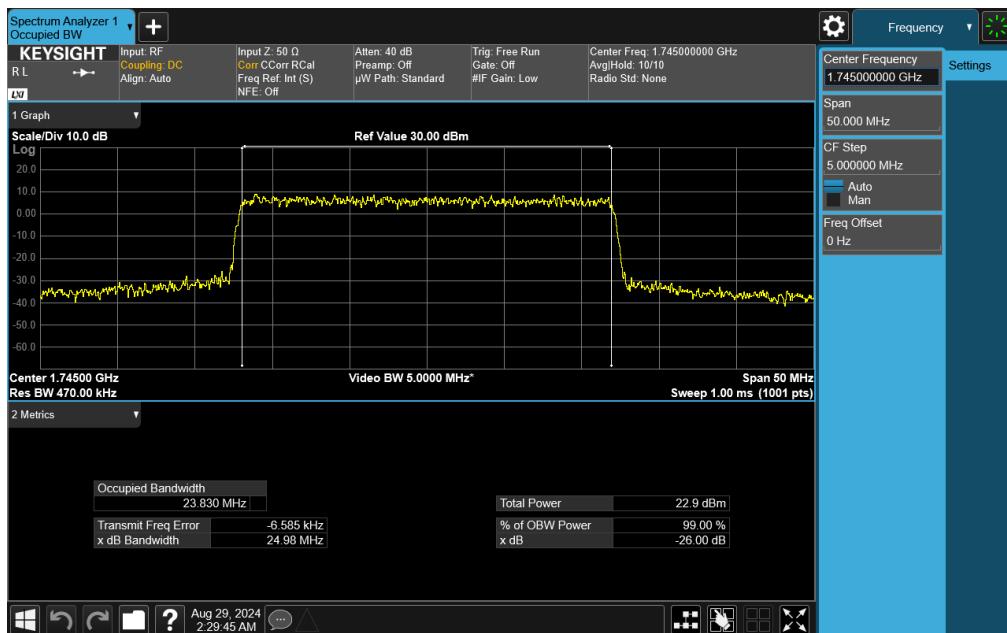
FCC ID: BCGA3269	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 59 of 351



FCC ID: BCGA3269	 element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device		Page 60 of 351

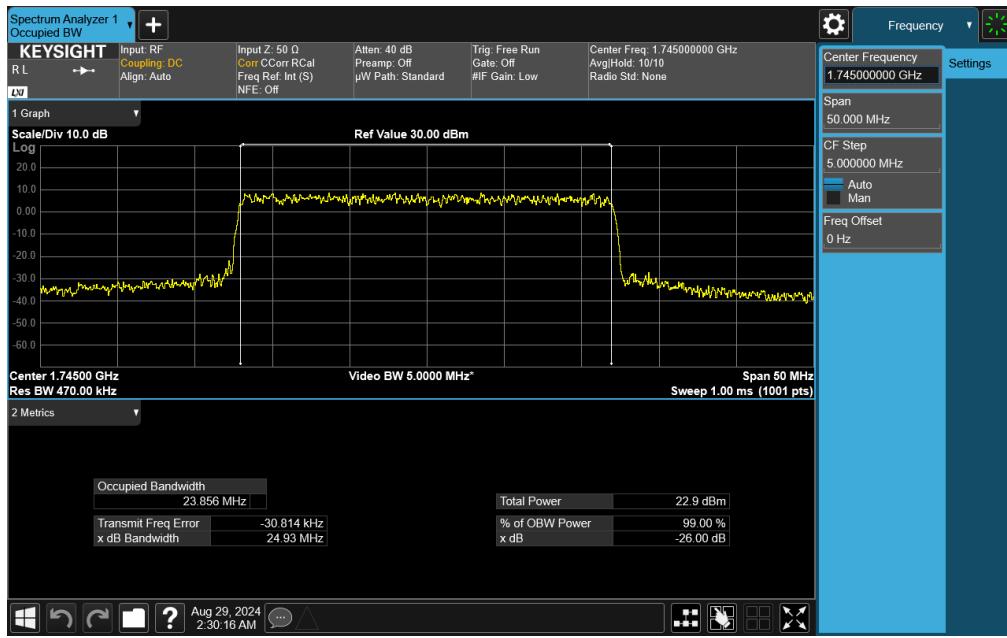


Plot 7-85. Occupied Bandwidth Plot (NR Band n66 - 25MHz DFT-s-OFDM $\pi/2$ BPSK - Full RB)

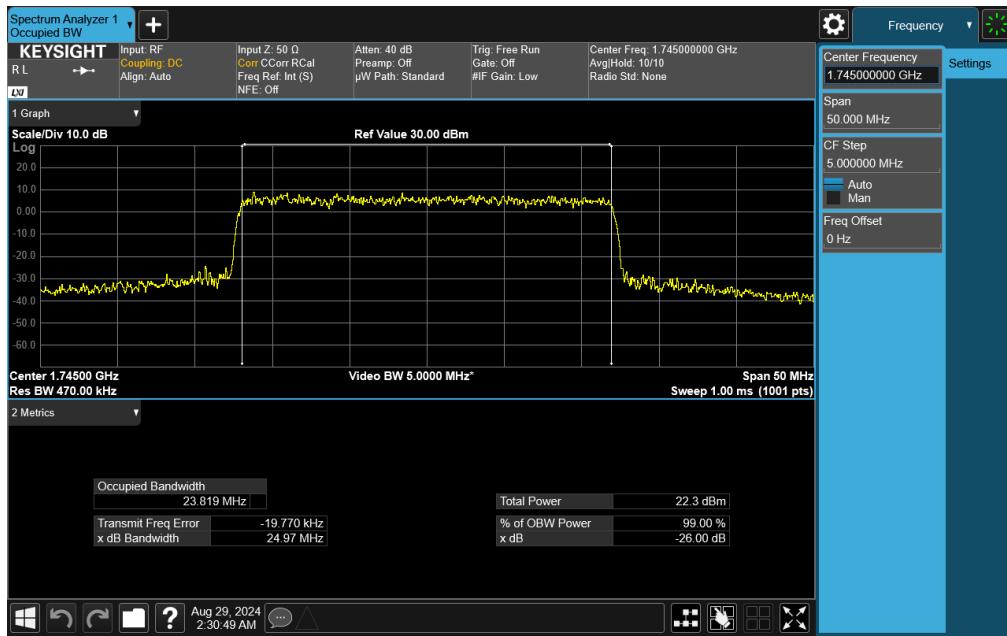


Plot 7-86. Occupied Bandwidth Plot (NR Band n66 - 25MHz CP-OFDM QPSK - Full RB)

FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 61 of 351	



Plot 7-87. Occupied Bandwidth Plot (NR Band n66 - 25MHz CP-OFDM 16QAM - Full RB)

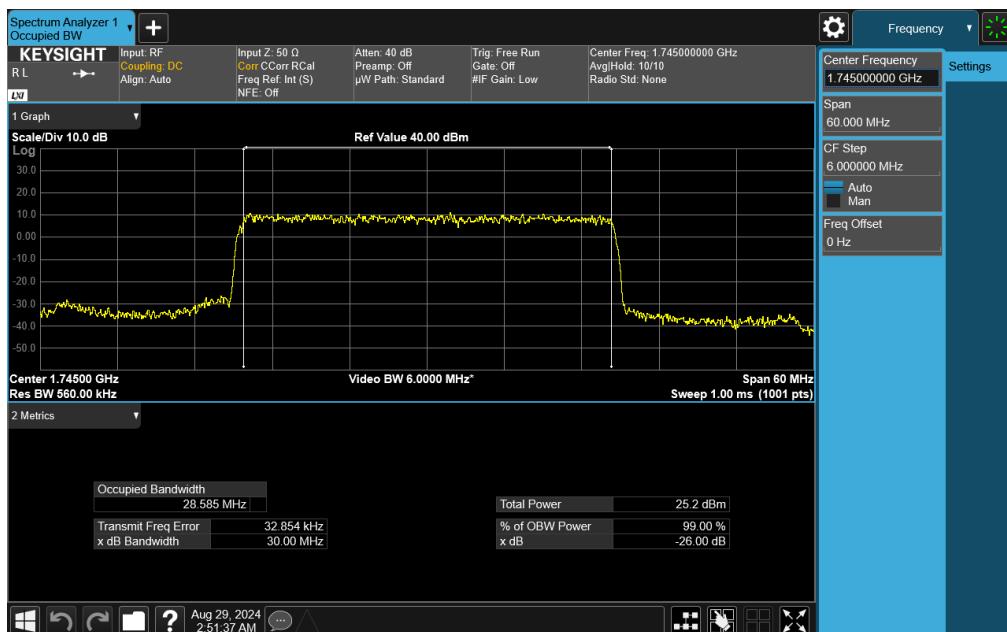


Plot 7-88. Occupied Bandwidth Plot (NR Band n66 - 25MHz CP-OFDM 64QAM - Full RB)

FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device		Page 62 of 351

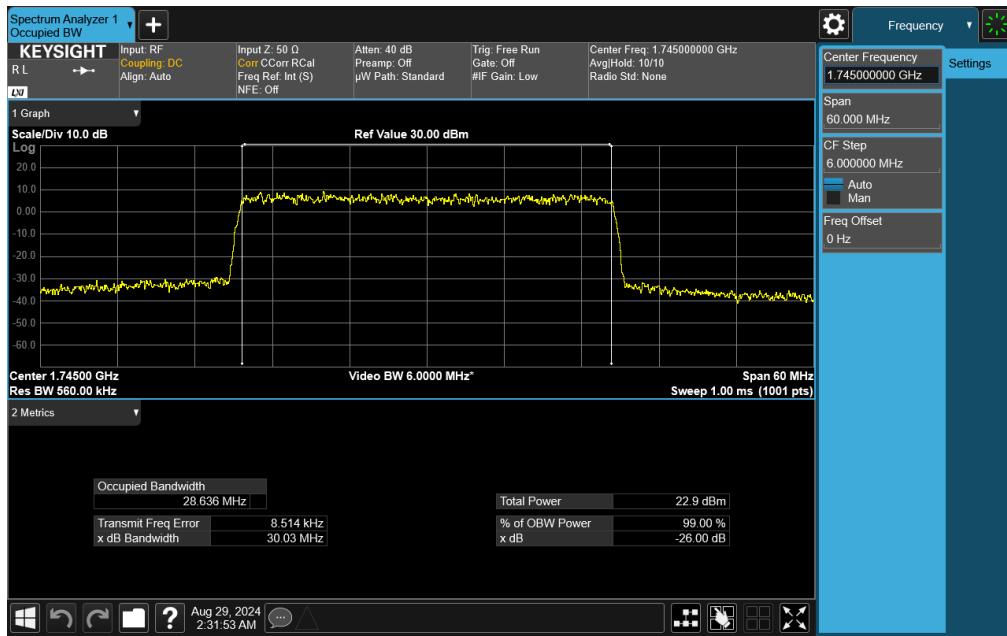


Plot 7-89. Occupied Bandwidth Plot (NR Band n66 - 25MHz CP-OFDM 256QAM - Full RB)



Plot 7-90. Occupied Bandwidth Plot (NR Band n66 - 30MHz DFT-s-OFDM $\pi/2$ BPSK - Full RB)

FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device		Page 63 of 351

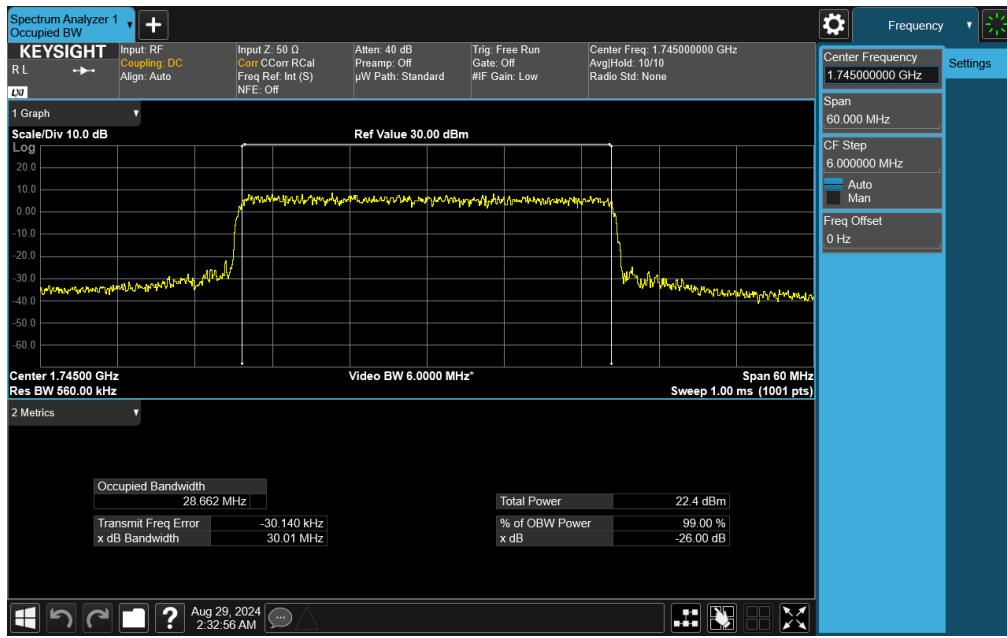


Plot 7-91. Occupied Bandwidth Plot (NR Band n66 - 30MHz CP-OFDM QPSK - Full RB)



Plot 7-92. Occupied Bandwidth Plot (NR Band n66 - 30MHz CP-OFDM 16QAM - Full RB)

FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device	Page 64 of 351	



Plot 7-93. Occupied Bandwidth Plot (NR Band n66 - 30MHz CP-OFDM 64QAM - Full RB)



Plot 7-94. Occupied Bandwidth Plot (NR Band n66 - 30MHz CP-OFDM 256QAM - Full RB)

FCC ID: BCGA3269	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2410210075-09-R1.BCG	Test Dates: 7/1/2024 - 12/27/2024	EUT Type: Tablet Device		Page 65 of 351