Element Materials Technology
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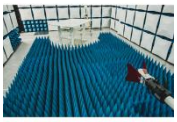

PART 27 MEASUREMENT REPORT

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

Date of Testing:
7/1/2024 - 12/9/2024
Test Report Issue Date:
1/15/2025
Test Site/Location:
Element Materials Technology Morgan Hill, CA, USA
Test Report Serial No.:
1C2410210073-09-R2.BCG

FCC ID:	**BCGA3267**
APPLICANT:	**Apple Inc.**

Application Type:	Certification
Model:	A3267, A3270
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: 1C2410210073-09-R2.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 Ortanez
Executive Vice President

ACCREDITED
CERT #2041.02

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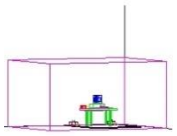
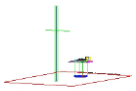


PART 27 MEASUREMENT REPORT



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	4.5552	0.153	21.85	4M56G7W
		16QAM	665.5 - 695.5	4.5940	0.132	21.20	4M59D7W
		64QAM	665.5 - 695.5	4.5658	0.097	19.88	4M57D7W
		256QAM	665.5 - 695.5	4.5644	0.049	16.89	4M56D7W
	10 MHz	QPSK	668.0 - 693.0	9.0468	0.146	21.65	9M05G7W
		16QAM	668.0 - 693.0	9.0630	0.124	20.95	9M06D7W
		64QAM	668.0 - 693.0	9.0756	0.098	19.92	9M08D7W
		256QAM	668.0 - 693.0	9.0750	0.048	16.83	9M08D7W
	15 MHz	QPSK	670.5 - 690.5	13.5966	0.140	21.47	13M6G7W
		16QAM	670.5 - 690.5	13.5589	0.117	20.70	13M6D7W
		64QAM	670.5 - 690.5	13.5986	0.093	19.67	13M6D7W
		256QAM	670.5 - 690.5	13.5708	0.047	16.68	13M6D7W
	20 MHz	QPSK	673.0 - 688.0	18.0264	0.141	21.50	18M0G7W
		16QAM	673.0 - 688.0	18.0739	0.130	21.13	18M1D7W
		64QAM	673.0 - 688.0	18.0440	0.096	19.84	18M0D7W
		256QAM	673.0 - 688.0	18.0066	0.046	16.66	18M0D7W
LTE Band 12	1.4 MHz	QPSK	699.7 - 715.3	1.1124	0.150	21.76	1M11G7W
		16QAM	699.7 - 715.3	1.1148	0.110	20.43	1M11D7W
		64QAM	699.7 - 715.3	1.1130	0.083	19.20	1M11D7W
		256QAM	699.7 - 715.3	1.1138	0.045	16.53	1M11D7W
	3 MHz	QPSK	700.5 - 714.5	2.7330	0.164	22.14	2M73G7W
		16QAM	700.5 - 714.5	2.7308	0.131	21.17	2M73D7W
		64QAM	700.5 - 714.5	2.7454	0.105	20.23	2M75D7W
		256QAM	700.5 - 714.5	2.7479	0.053	17.27	2M75D7W
	5 MHz	QPSK	701.5 - 713.5	4.5600	0.168	22.25	4M56G7W
		16QAM	701.5 - 713.5	4.5606	0.133	21.23	4M56D7W
		64QAM	701.5 - 713.5	4.5529	0.102	20.09	4M55D7W
		256QAM	701.5 - 713.5	4.5502	0.053	17.23	4M55D7W
	10 MHz	QPSK	704.0 - 711.0	9.0401	0.168	22.25	9M04G7W
		16QAM	704.0 - 711.0	9.0352	0.134	21.27	9M04D7W
		64QAM	704.0 - 711.0	9.0369	0.106	20.27	9M04D7W
		256QAM	704.0 - 711.0	9.0469	0.054	17.34	9M05D7W
LTE Band 17	5 MHz	QPSK	706.5 - 713.5	4.5600	0.166	22.19	4M56G7W
		16QAM	706.5 - 713.5	4.5606	0.133	21.24	4M56D7W
		64QAM	706.5 - 713.5	4.5529	0.106	20.27	4M55D7W
		256QAM	706.5 - 713.5	4.5502	0.054	17.36	4M55D7W
	10 MHz	QPSK	709.0 - 711.0	9.0401	0.162	22.09	9M04G7W
		16QAM	709.0 - 711.0	9.0352	0.134	21.26	9M04D7W
		64QAM	709.0 - 711.0	9.0369	0.103	20.14	9M04D7W
		256QAM	709.0 - 711.0	9.0469	0.054	17.36	9M05D7W
LTE Band 13	5 MHz	QPSK	779.5 - 784.5	4.5450	0.168	22.25	4M55G7W
		16QAM	779.5 - 784.5	4.5441	0.140	21.46	4M54D7W
		64QAM	779.5 - 784.5	4.5610	0.111	20.45	4M56D7W
		256QAM	779.5 - 784.5	4.5760	0.053	17.23	4M58D7W
	10 MHz	QPSK	782.0	9.0374	0.158	21.98	9M04G7W
		16QAM	782.0	9.0640	0.143	21.54	9M06D7W
		64QAM	782.0	9.0048	0.106	20.26	9M00D7W
		256QAM	782.0	9.0430	0.055	17.38	9M04D7W

Overview Table (<1GHz Band)

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	ERP		Emission Designator
					Max. Power [W]	Max. Power [dBm]	
NR Band n71	5 MHz	π/2 BPSK	665.5 - 695.5	4.4938	0.153	21.85	4M49G7W
		QPSK	665.5 - 695.5	4.4633	0.152	21.83	4M46G7W
		16QAM	665.5 - 695.5	4.4666	0.122	20.86	4M47D7W
		64QAM	665.5 - 695.5	4.4769	0.097	19.86	4M48D7W
		256QAM	665.5 - 695.5	4.4908	0.050	16.97	4M49D7W
	10 MHz	π/2 BPSK	668.0 - 693.0	8.9273	0.152	21.81	8M93G7W
		QPSK	668.0 - 693.0	9.2843	0.153	21.85	9M28G7W
		16QAM	668.0 - 693.0	9.3067	0.122	20.85	9M31D7W
		64QAM	668.0 - 693.0	9.3141	0.097	19.88	9M31D7W
		256QAM	668.0 - 693.0	9.2709	0.050	16.96	9M27D7W
	15 MHz	π/2 BPSK	670.5 - 690.5	13.3546	0.153	21.85	13M4G7W
		QPSK	670.5 - 690.5	14.0736	0.151	21.80	14M1G7W
		16QAM	670.5 - 690.5	14.1255	0.122	20.87	14M1D7W
		64QAM	670.5 - 690.5	14.1150	0.096	19.83	14M1D7W
		256QAM	670.5 - 690.5	14.1114	0.050	16.97	14M1D7W
	20 MHz	π/2 BPSK	673.0 - 688.0	17.7884	0.153	21.85	17M8G7W
		QPSK	673.0 - 688.0	18.9186	0.152	21.82	18M9G7W
		16QAM	673.0 - 688.0	18.9471	0.120	20.80	18M9D7W
		64QAM	673.0 - 688.0	18.9975	0.098	19.91	19M0D7W
		256QAM	673.0 - 688.0	18.8971	0.050	16.98	18M9D7W
NR Band n12	5 MHz	π/2 BPSK	701.5 - 713.5	4.4791	0.168	22.25	4M48G7W
		QPSK	701.5 - 713.5	4.4709	0.167	22.22	4M47G7W
		16QAM	701.5 - 713.5	4.4759	0.132	21.21	4M48D7W
		64QAM	701.5 - 713.5	4.4617	0.104	20.16	4M46D7W
		256QAM	701.5 - 713.5	4.4739	0.055	17.37	4M47D7W
	10 MHz	π/2 BPSK	704.0 - 711.0	8.9115	0.166	22.19	8M91G7W
		QPSK	704.0 - 711.0	9.2903	0.168	22.25	9M29G7W
		16QAM	704.0 - 711.0	9.3024	0.133	21.25	9M30D7W
		64QAM	704.0 - 711.0	9.3170	0.106	20.24	9M32D7W
		256QAM	704.0 - 711.0	9.2913	0.054	17.35	9M29D7W
	15 MHz	π/2 BPSK	706.5 - 708.5	13.4118	0.167	22.23	13M4G7W
		QPSK	706.5 - 708.5	14.1964	0.168	22.25	14M2G7W
		16QAM	706.5 - 708.5	14.1248	0.133	21.23	14M1D7W
		64QAM	706.5 - 708.5	14.1605	0.104	20.19	14M2D7W
		256QAM	706.5 - 708.5	14.1010	0.054	17.33	14M1D7W

Overview Table (<1GHz Band)

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	4.1641	2.86	0.461	26.64	4M16F9W
LTE Band 4	1.4 MHz	QPSK	1710.7 - 1754.3	1.1122	5.02	0.465	26.67	1M11G7W
		16QAM	1710.7 - 1754.3	1.1217	5.79	0.386	25.87	1M12D7W
		64QAM	1710.7 - 1754.3	1.1068	6.48	0.305	24.84	1M11D7W
		256QAM	1710.7 - 1754.3	1.1098	6.64	0.147	21.68	1M11D7W
	3 MHz	QPSK	1711.5 - 1753.5	2.7427	4.67	0.454	26.57	2M74G7W
		16QAM	1711.5 - 1753.5	2.7495	5.71	0.391	25.92	2M75D7W
		64QAM	1711.5 - 1753.5	2.7353	6.46	0.314	24.97	2M74D7W
		256QAM	1711.5 - 1753.5	2.7293	6.67	0.150	21.75	2M73D7W
	5 MHz	QPSK	1712.5 - 1752.5	4.5587	4.89	0.468	26.70	4M56G7W
		16QAM	1712.5 - 1752.5	4.5500	5.88	0.405	26.07	4M55D7W
		64QAM	1712.5 - 1752.5	4.5703	6.44	0.317	25.01	4M57D7W
		256QAM	1712.5 - 1752.5	4.5645	6.68	0.148	21.71	4M56D7W
	10MHz	QPSK	1715.0 - 1750.0	9.0642	4.98	0.452	26.55	9M06G7W
		16QAM	1715.0 - 1750.0	9.0575	5.88	0.394	25.96	9M06D7W
		64QAM	1715.0 - 1750.0	9.0813	6.45	0.305	24.84	9M08D7W
		256QAM	1715.0 - 1750.0	9.0754	6.65	0.151	21.79	9M08D7W
	15 MHz	QPSK	1717.5 - 1747.5	13.6136	5.00	0.444	26.47	13M6G7W
		16QAM	1717.5 - 1747.5	13.5891	5.90	0.385	25.86	13M6D7W
		64QAM	1717.5 - 1747.5	13.5782	6.45	0.294	24.68	13M6D7W
		256QAM	1717.5 - 1747.5	13.6056	6.67	0.144	21.59	13M6D7W
	20 MHz	QPSK	1720.0 - 1745.0	18.1304	4.90	0.439	26.42	18M1G7W
		16QAM	1720.0 - 1745.0	18.0912	5.85	0.406	26.09	18M1D7W
		64QAM	1720.0 - 1745.0	18.0969	6.44	0.293	24.67	18M1D7W
		256QAM	1720.0 - 1745.0	18.0697	6.62	0.142	21.51	18M1D7W
LTE Band 66	1.4 MHz	QPSK	1710.7 - 1779.3	1.1122	5.06	0.463	26.66	1M11G7W
		16QAM	1710.7 - 1779.3	1.1217	5.88	0.372	25.71	1M12D7W
		64QAM	1710.7 - 1779.3	1.1068	6.53	0.291	24.64	1M11D7W
		256QAM	1710.7 - 1779.3	1.1098	6.78	0.152	21.81	1M11D7W
	3 MHz	QPSK	1711.5 - 1778.5	2.7427	4.73	0.463	26.66	2M74G7W
		16QAM	1711.5 - 1778.5	2.7495	5.76	0.372	25.71	2M75D7W
		64QAM	1711.5 - 1778.5	2.7353	6.55	0.296	24.71	2M74D7W
		256QAM	1711.5 - 1778.5	2.7293	7.26	0.149	21.74	2M73D7W
	5 MHz	QPSK	1712.5 - 1777.5	4.5587	4.96	0.468	26.70	4M56G7W
		16QAM	1712.5 - 1777.5	4.5500	5.91	0.371	25.69	4M55D7W
		64QAM	1712.5 - 1777.5	4.5703	6.53	0.296	24.72	4M57D7W
		256QAM	1712.5 - 1777.5	4.5645	6.74	0.153	21.84	4M56D7W
	10 MHz	QPSK	1715.0 - 1775.0	9.0642	5.07	0.465	26.67	9M06G7W
		16QAM	1715.0 - 1775.0	9.0575	5.95	0.373	25.72	9M06D7W
		64QAM	1715.0 - 1775.0	9.0813	6.52	0.295	24.70	9M08D7W
		256QAM	1715.0 - 1775.0	9.0754	6.74	0.152	21.81	9M08D7W
	15 MHz	QPSK	1717.5 - 1772.5	13.6136	5.07	0.456	26.59	13M6G7W
		16QAM	1717.5 - 1772.5	13.5891	5.96	0.368	25.66	13M6D7W
		64QAM	1717.5 - 1772.5	13.5782	6.53	0.280	24.47	13M6D7W
		256QAM	1717.5 - 1772.5	13.6056	6.72	0.148	21.71	13M6D7W
	20 MHz	QPSK	1720.0 - 1770.0	18.1304	4.97	0.468	26.70	18M1G7W
		16QAM	1720.0 - 1770.0	18.0912	5.92	0.355	25.50	18M1D7W
		64QAM	1720.0 - 1770.0	18.0969	6.51	0.290	24.62	18M1D7W
		256QAM	1720.0 - 1770.0	18.0697	6.72	0.150	21.77	18M1D7W

Overview Table (>1GHz Bands)

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	π/2 BPSK	1712.5 - 1777.5	4.4873	4.00	0.468	26.70	4M49G7W
		QPSK	1712.5 - 1777.5	4.4694	5.41	0.465	26.67	4M47G7W
		16QAM	1712.5 - 1777.5	4.4659	6.46	0.372	25.70	4M47D7W
		64QAM	1712.5 - 1777.5	4.4998	6.53	0.290	24.62	4M50D7W
		256QAM	1712.5 - 1777.5	4.4791	6.50	0.150	21.75	4M48D7W
	10 MHz	π/2 BPSK	1715.0 - 1775.0	8.9621	4.25	0.468	26.70	8M96G7W
		QPSK	1715.0 - 1775.0	9.2941	5.61	0.465	26.67	9M29G7W
		16QAM	1715.0 - 1775.0	9.3119	6.24	0.372	25.71	9M31D7W
		64QAM	1715.0 - 1775.0	9.3316	6.69	0.296	24.71	9M33D7W
		256QAM	1715.0 - 1775.0	9.3032	6.92	0.150	21.76	9M30D7W
	15 MHz	π/2 BPSK	1717.5 - 1772.5	13.4548	4.11	0.465	26.67	13M5G7W
		QPSK	1717.5 - 1772.5	14.1086	5.46	0.468	26.70	14M1G7W
		16QAM	1717.5 - 1772.5	14.1648	6.38	0.361	25.58	14M2D7W
		64QAM	1717.5 - 1772.5	14.1212	6.50	0.294	24.69	14M1D7W
		256QAM	1717.5 - 1772.5	14.1624	6.60	0.151	21.78	14M2D7W
	20 MHz	π/2 BPSK	1720.0 - 1770.0	17.9251	4.15	0.468	26.70	17M9G7W
		QPSK	1720.0 - 1770.0	18.8973	5.51	0.468	26.70	18M9G7W
		16QAM	1720.0 - 1770.0	19.0106	6.32	0.363	25.60	19M0D7W
		64QAM	1720.0 - 1770.0	18.8944	6.58	0.293	24.67	18M9D7W
		256QAM	1720.0 - 1770.0	19.0262	6.65	0.150	21.76	19M0D7W
	25 MHz	π/2 BPSK	1722.5 - 1767.5	22.9309	4.01	0.461	26.64	22M9G7W
		QPSK	1722.5 - 1767.5	23.8328	5.26	0.468	26.70	23M8G7W
		16QAM	1722.5 - 1767.5	23.8015	6.22	0.370	25.68	23M8D7W
		64QAM	1722.5 - 1767.5	23.7887	6.53	0.296	24.71	23M8D7W
		256QAM	1722.5 - 1767.5	23.8738	6.74	0.152	21.82	23M9D7W
	30 MHz	π/2 BPSK	1725.0 - 1765.0	28.6934	4.08	0.468	26.70	28M7G7W
		QPSK	1725.0 - 1765.0	28.6793	5.39	0.463	26.66	28M7G7W
		16QAM	1725.0 - 1765.0	28.6646	6.35	0.369	25.67	28M7D7W
		64QAM	1725.0 - 1765.0	28.6013	6.64	0.284	24.54	28M6D7W
		256QAM	1725.0 - 1765.0	28.6589	6.57	0.148	21.71	28M7D7W
	35 MHz	π/2 BPSK	1727.5 - 1762.5	32.1887	4.15	0.455	26.58	32M2G7W
		QPSK	1727.5 - 1762.5	33.6308	5.50	0.468	26.70	33M6G7W
		16QAM	1727.5 - 1762.5	33.6300	6.42	0.371	25.69	33M6D7W
		64QAM	1727.5 - 1762.5	33.6856	6.52	0.296	24.71	33M7D7W
		256QAM	1727.5 - 1762.5	33.6518	6.56	0.148	21.71	33M7D7W
	40 MHz	π/2 BPSK	1730.0 - 1760.0	38.6852	4.03	0.468	26.70	38M7G7W
		QPSK	1730.0 - 1760.0	38.7368	5.33	0.468	26.70	38M7G7W
		16QAM	1730.0 - 1760.0	38.6862	6.27	0.371	25.69	38M7D7W
		64QAM	1730.0 - 1760.0	38.6211	6.55	0.295	24.70	38M6D7W
		256QAM	1730.0 - 1760.0	38.6427	6.66	0.151	21.78	38M6D7W
NR Band n70	5 MHz	π/2 BPSK	1697.5 - 1707.5	4.4691	4.03	0.295	24.70	4M47G7W
		QPSK	1697.5 - 1707.5	4.4990	5.38	0.294	24.68	4M50G7W
		16QAM	1697.5 - 1707.5	4.4795	6.48	0.234	23.69	4M48D7W
		64QAM	1697.5 - 1707.5	4.4639	6.60	0.186	22.69	4M46D7W
		256QAM	1697.5 - 1707.5	4.4824	6.66	0.094	19.75	4M48D7W
	10 MHz	π/2 BPSK	1700.0 - 1705.0	8.9541	4.22	0.288	24.59	8M95G7W
		QPSK	1700.0 - 1705.0	9.2914	5.52	0.295	24.70	9M29G7W
		16QAM	1700.0 - 1705.0	9.3064	6.38	0.236	23.72	9M31D7W
		64QAM	1700.0 - 1705.0	9.2872	6.67	0.187	22.71	9M29D7W
		256QAM	1700.0 - 1705.0	9.3409	6.65	0.091	19.57	9M34D7W
	15 MHz	π/2 BPSK	1702.5	13.4537	4.23	0.294	24.69	13M5G7W
		QPSK	1702.5	14.0973	5.45	0.294	24.68	14M1G7W
		16QAM	1702.5	14.1088	6.35	0.223	23.49	14M1D7W
		64QAM	1702.5	14.1602	6.70	0.177	22.49	14M2D7W
		256QAM	1702.5	14.1362	6.68	0.094	19.71	14M1D7W

Overview Table (>1GHz Bands)

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).

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Apple Tablet Device FCC ID: BCGA3267**. 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.: WJR90Q30N3, LYHQ6QQTKY, D4WG6WKFL6, DLXH5R0001N0000RMD, DLXH5R0001E0000RMD

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 3a	Config 1	✓	×	×	×	✓	×	×	✓	×
Ant 3a	Config 2	×	✓	×	×	✓	×	×	✓	×
Ant 3a	Config 3	×	×	✓	✓	×	×	×	✓	×
Ant 3a	Config 4	✓	×	×	×	×	✓	×	✓	×
Ant 3a	Config 5	×	✓	×	×	×	✓	×	✓	×
Ant 3a	Config 6	✓	×	×	×	✓	×	×	×	×
Ant 3a	Config 7	×	✓	×	×	✓	×	×	×	×
Ant 3a	Config 8	×	×	✓	✓	×	×	×	×	×
Ant 3a	Config 9	✓	×	×	×	×	✓	×	×	×
Ant 3a	Config 10	×	✓	×	×	×	✓	×	×	×
Ant 1a	Config 11	✓	×	×	×	×	×	×	×	✓
Ant 1a	Config 12	×	✓	×	×	×	×	×	×	✓
Ant 1a	Config 13	×	×	✓	×	×	×	×	×	✓
Ant 1b	Config 14	×	×	×	×	×	✓	×	×	✓
Ant 1b	Config 15	×	×	×	×	✓	×	×	×	✓
Ant 1b	Config 16	×	×	×	✓	×	×	×	×	✓

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 1 and reported in RF Bluetooth, 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.

2.3 Antenna Description

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

Band	Antenna Gain [dBi]				
	Antenna 4	Antenna 3b	Antenna 2b	Antenna 3a	Antenna 1b
LTE Band 12/17	-1.3	-2.0	×	×	×
NR Band 12					
LTE Band 13	-1.3	-2.1	×	×	×
LTE Band 4/66	1.0	×	-2.3	0.1	-2.2
NR Band n66					
WCDMA1700					
LTE Band 71	-1.7	-2.7	×	×	×
NR Band n71					
NR Band 70	-1.0	×	-4.2	-1.2	-3.3

Table 2-2. Highest Antenna Gains

× = Not Support

2.4 Test Support Equipment

1	Apple MacBook Pro	Model:	A2141	S/N:	C02H604EQ05D
	w/AC/DC Adapter	Model:	A2166	S/N:	C4H042705ZNPM0WA6
2	Apple USB-C Cable	Model:	Spartan	S/N:	GXK1336018XKTR024
3	USB-C Cable	Model:	A246C	S/N:	DWH80115BK826GV19
	w/ AC Adapter	Model:	A2305	S/N:	C4H95160004PF4F4V
4	Apple Pencil	Model:	B532	S/N:	KJ26TCFXJW
5	DC Power Supply	Model:	KPS3010D	S/N:	N/A

Table 2-3. Test Support Equipment

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.

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:

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

And

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

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.

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 (±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

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.

6.0 SAMPLE CALCULATIONS

Emission Designator

WCDMA Emission Designator

Emission Designator = 4M16F9W
WCDMA BW = 4.16 MHz
F = Frequency Modulation
9 = Composite Digital Info
W = Combination (Audio/Data)

π/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 analzyer. 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).

7.0 TEST RESULTS

7.1 Summary

Company Name: Apple Inc.

FCC ID: BCGA3267

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

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.

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 ≥ 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

Test Setup

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

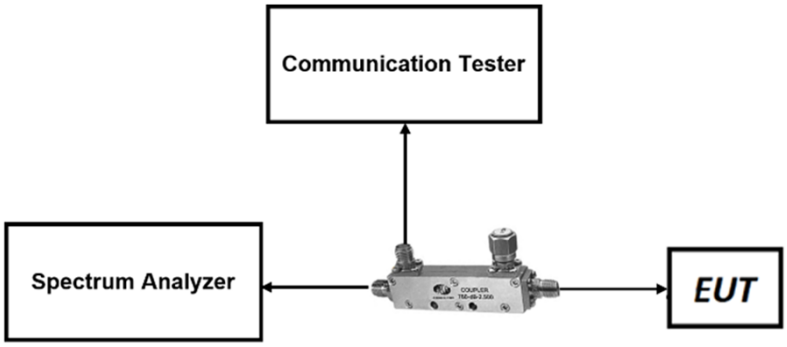


Figure 7-1. LTE Test Instrument & Measurement Setup

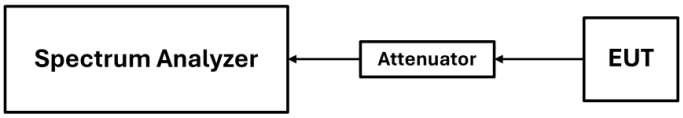
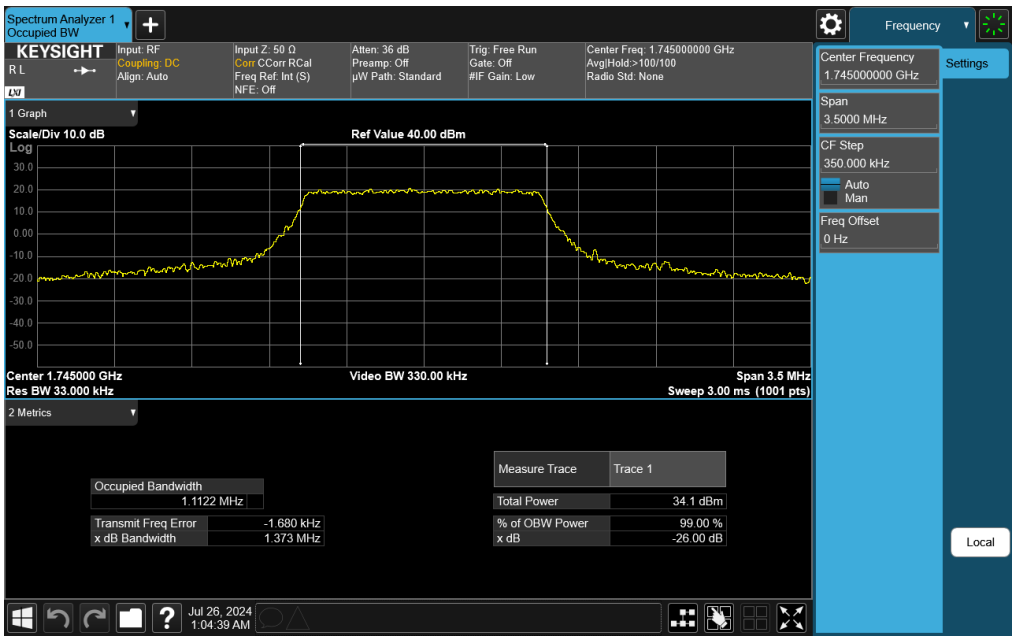


Figure 7-2. FR1 Test Instrument & Measurement Setup

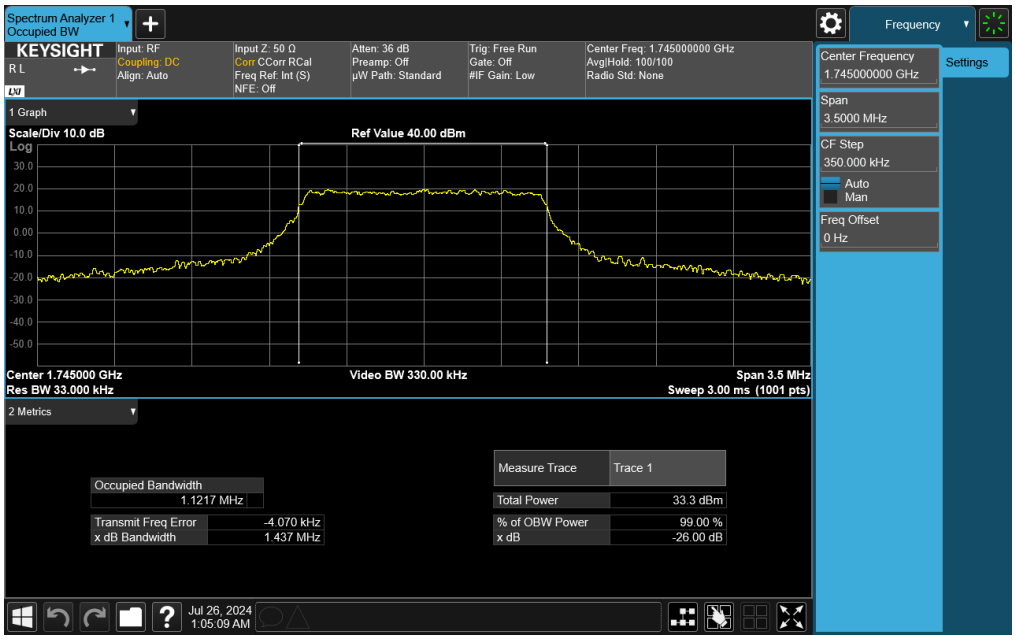
Test Notes

None.

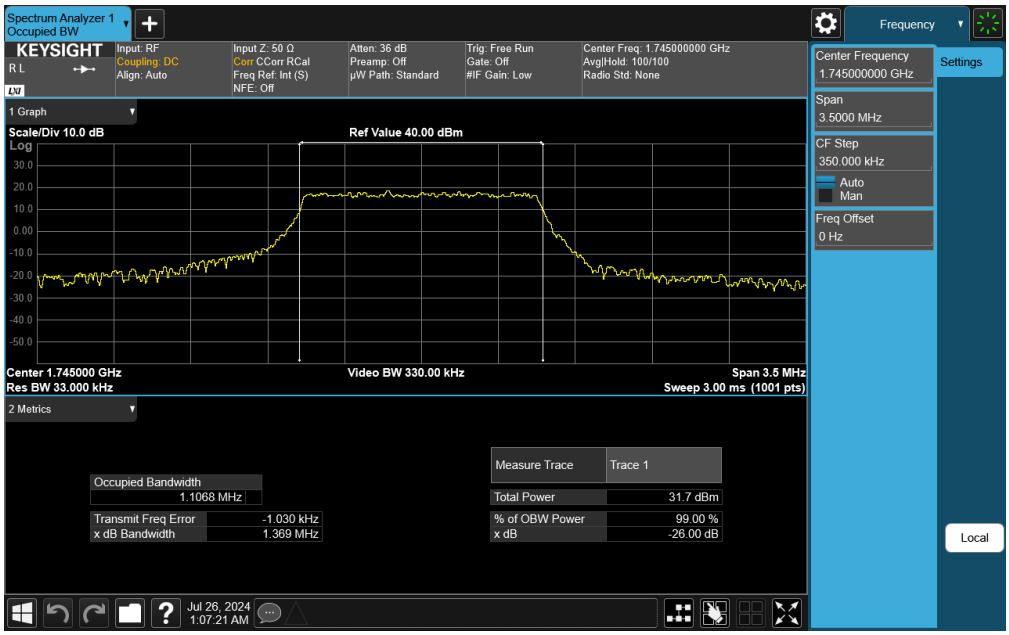
LTE Band 66/4



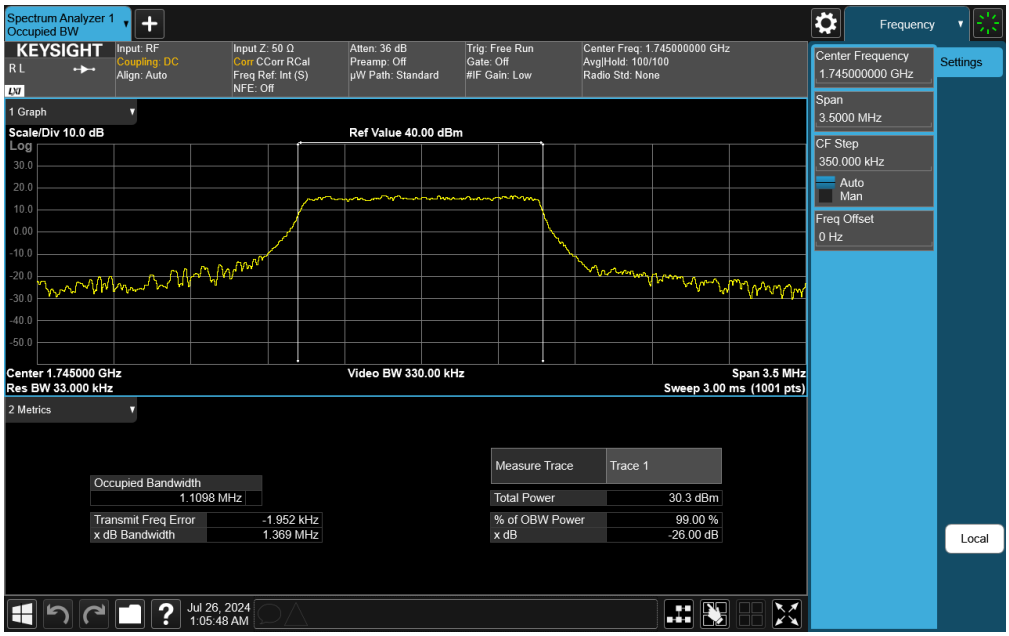
Plot 7-1. Occupied Bandwidth Plot (LTE Band 66/4 - 1.4MHz QPSK - Full RB)



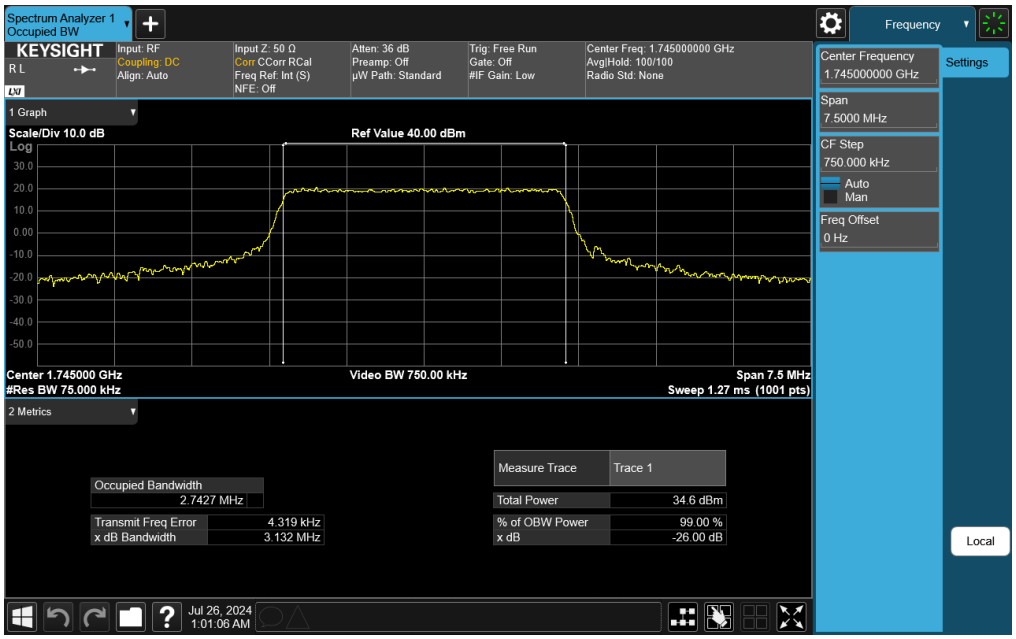
Plot 7-2. Occupied Bandwidth Plot (LTE Band 66/4 - 1.4MHz 16-QAM - Full RB)



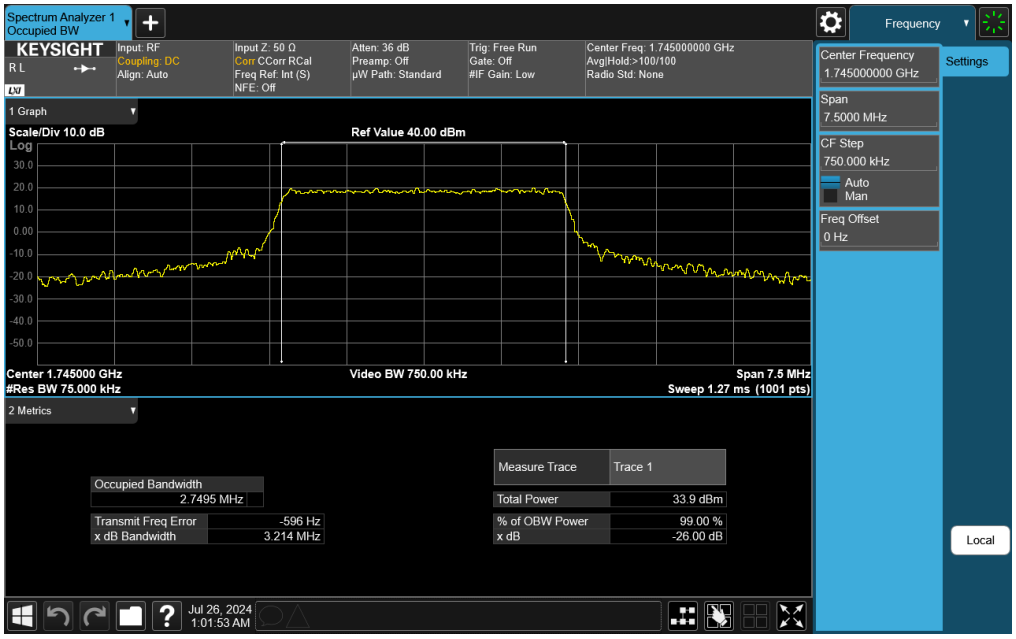
Plot 7-3. Occupied Bandwidth Plot (LTE Band 66/4 - 1.4MHz 64-QAM - Full RB)



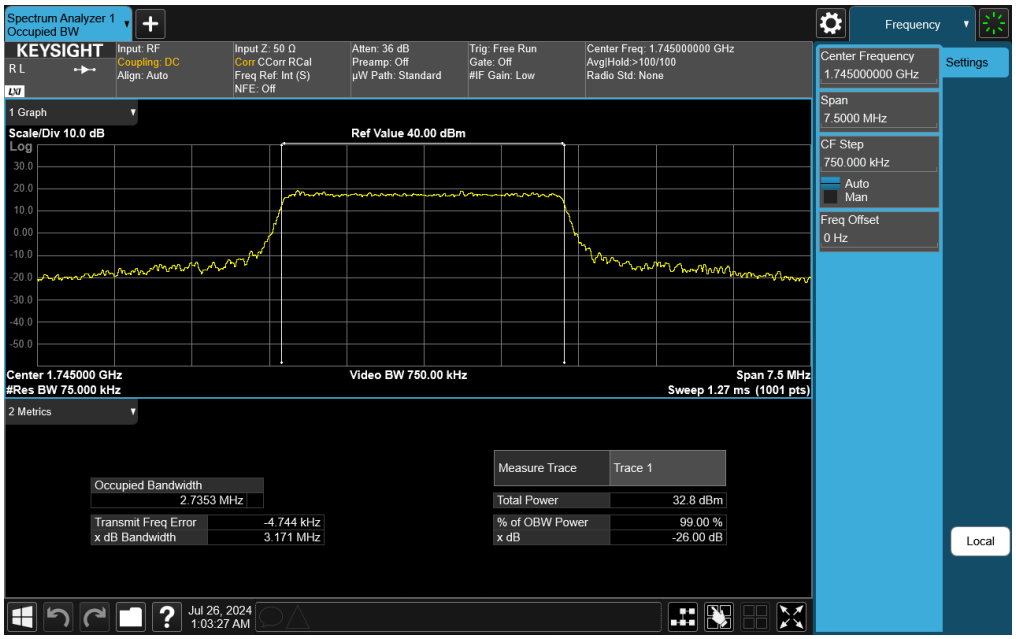
Plot 7-4. Occupied Bandwidth Plot (LTE Band 66/4 - 1.4MHz 256-QAM - Full RB)



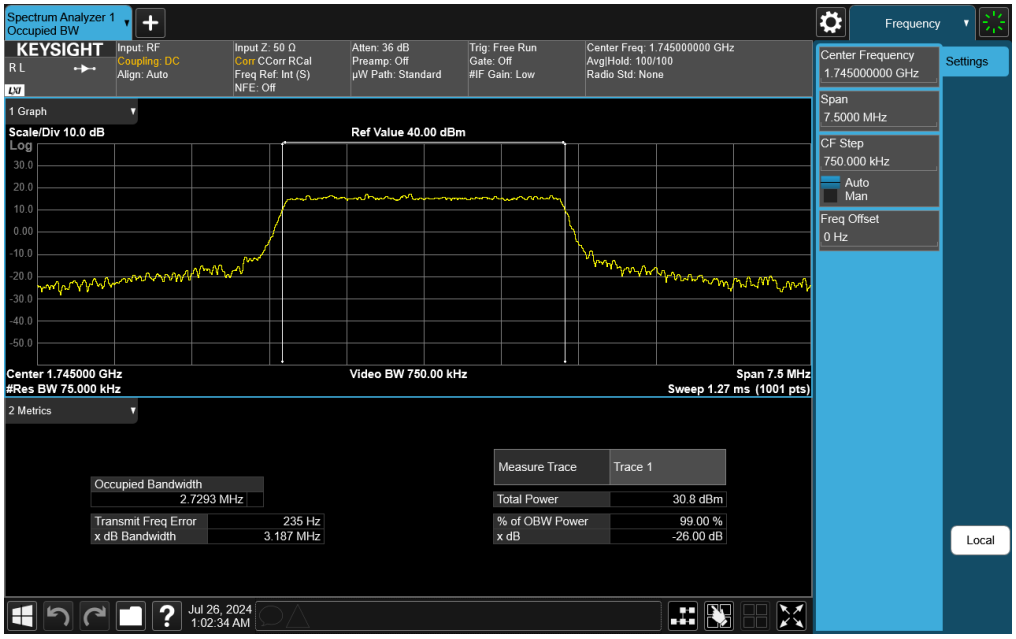
Plot 7-5. Occupied Bandwidth Plot (LTE Band 66/4 - 3MHz QPSK - Full RB)



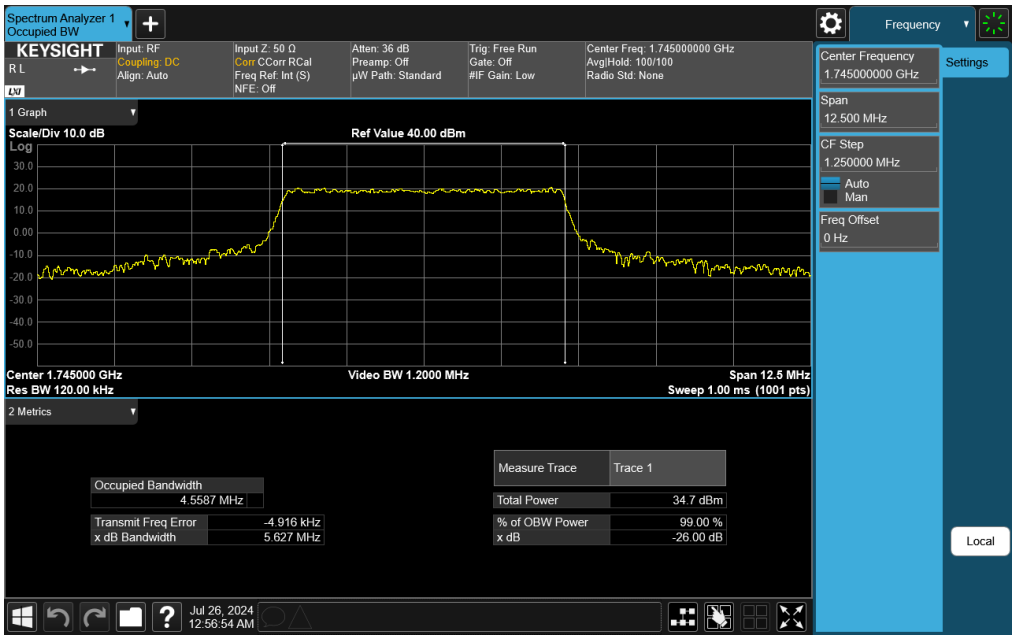
Plot 7-6. Occupied Bandwidth Plot (LTE Band 66/4 - 3MHz 16-QAM - Full RB)



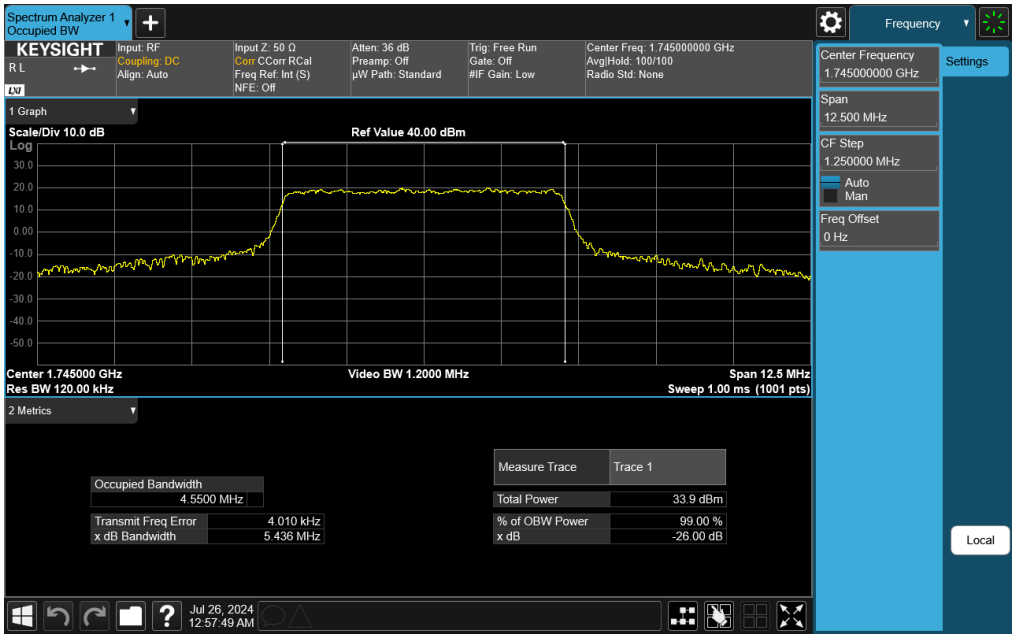
Plot 7-7. Occupied Bandwidth Plot (LTE Band 66/4 - 3MHz 64-QAM - Full RB)



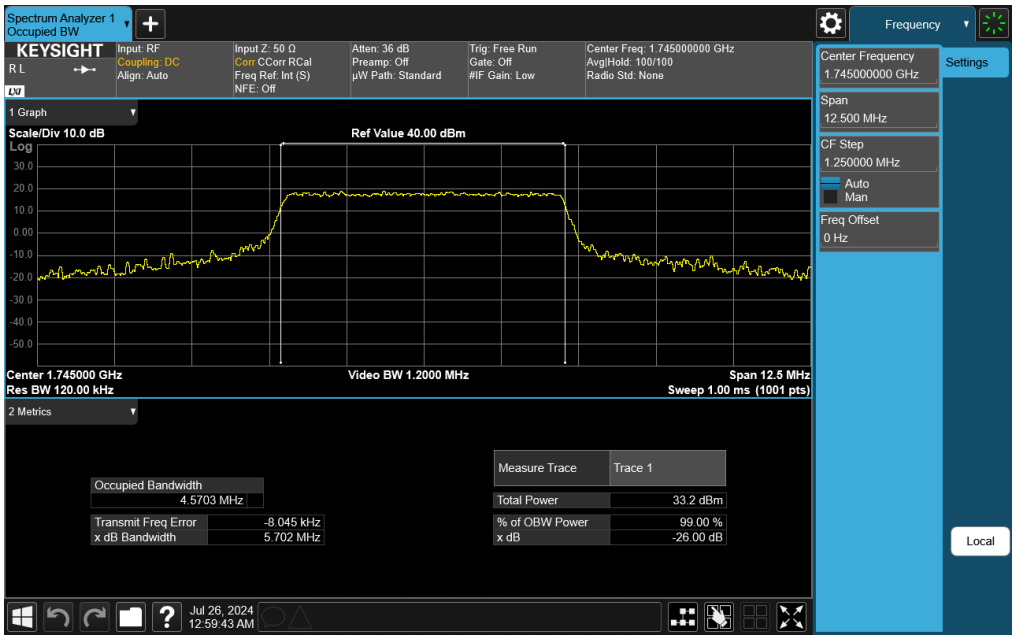
32Plot 7-8. Occupied Bandwidth Plot (LTE Band 66/4 - 3MHz 256-QAM - Full RB)



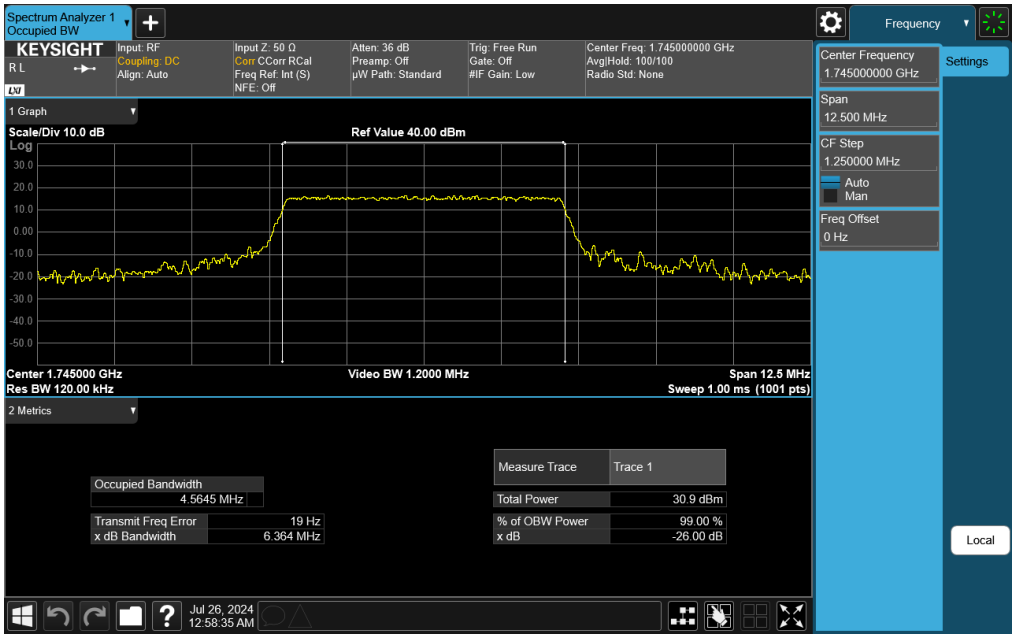
Plot 7-9. Occupied Bandwidth Plot (LTE Band 66/4 - 5MHz QPSK - Full RB)



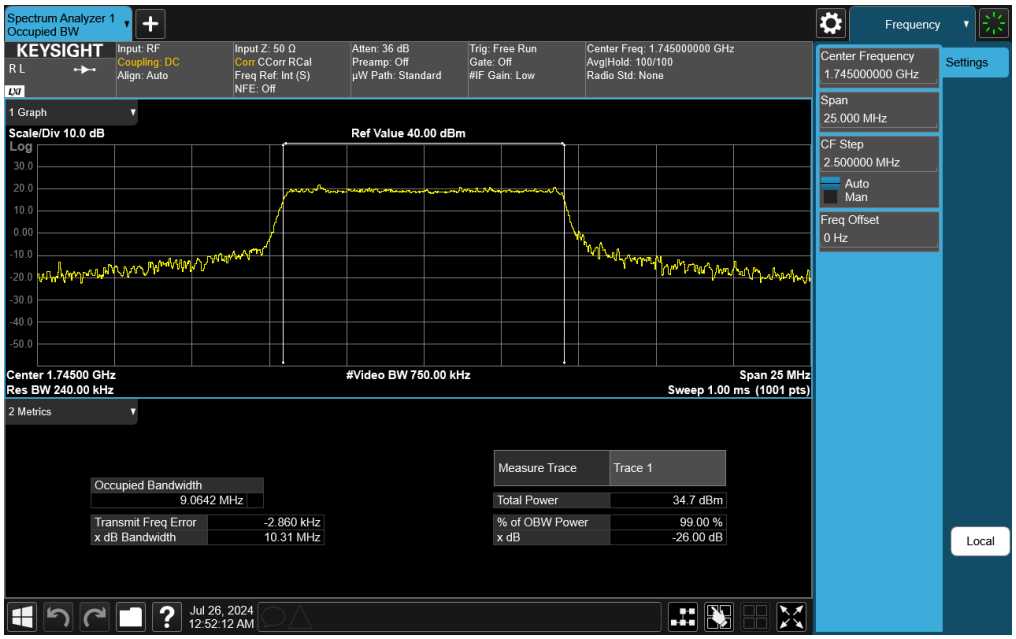
Plot 7-10. Occupied Bandwidth Plot (LTE Band 66/4 - 5MHz 16-QAM - Full RB)



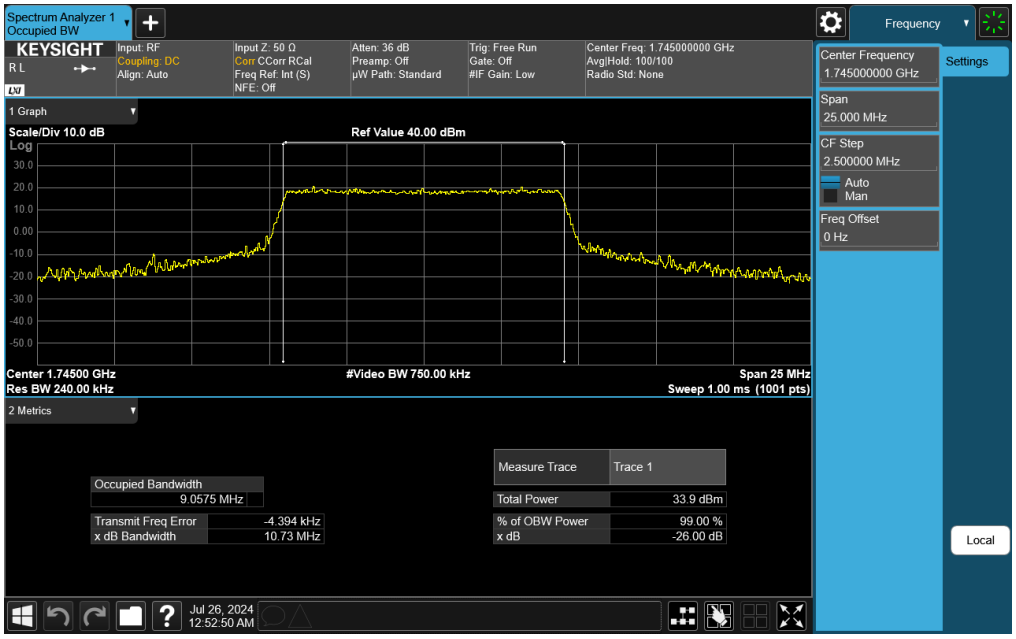
Plot 7-11. Occupied Bandwidth Plot (LTE Band 66/4 - 5MHz 64-QAM - Full RB)



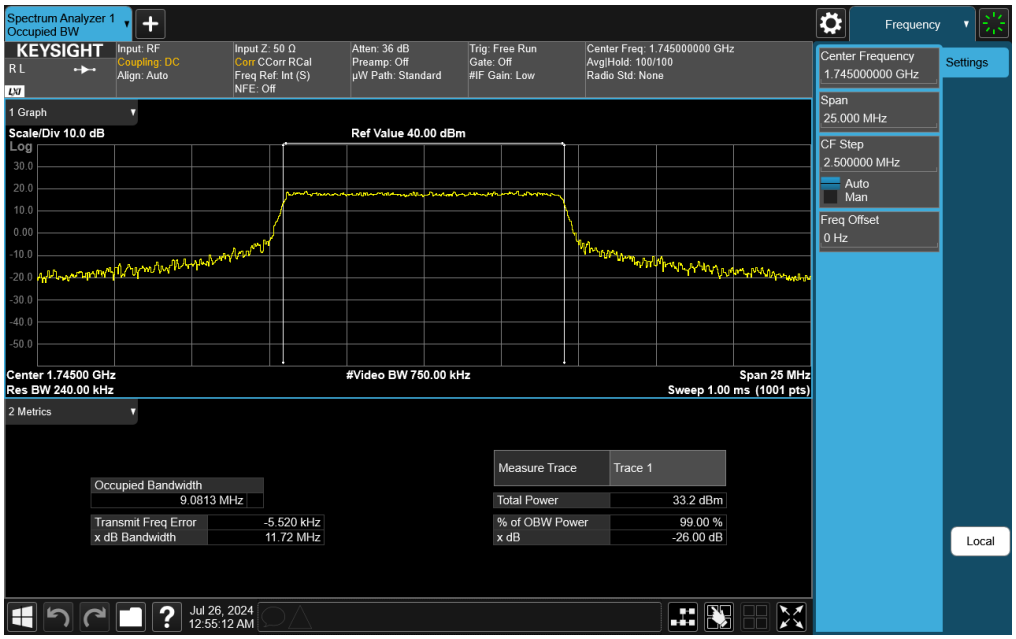
Plot 7-12. Occupied Bandwidth Plot (LTE Band 66/4 - 5MHz 256-QAM - Full RB)



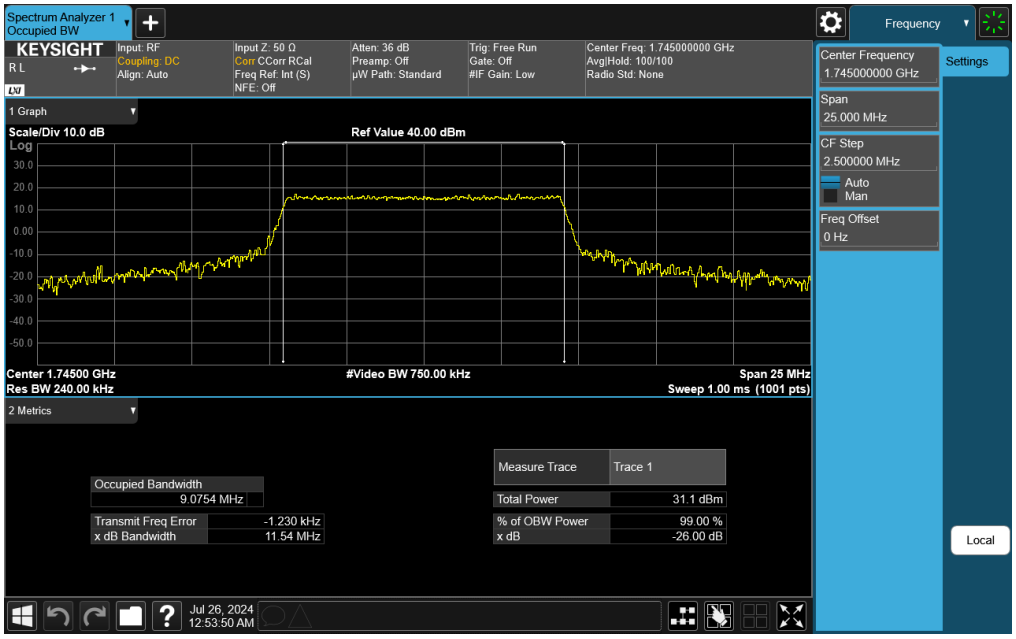
Plot 7-13. Occupied Bandwidth Plot (LTE Band 66/4 - 10MHz QPSK - Full RB)



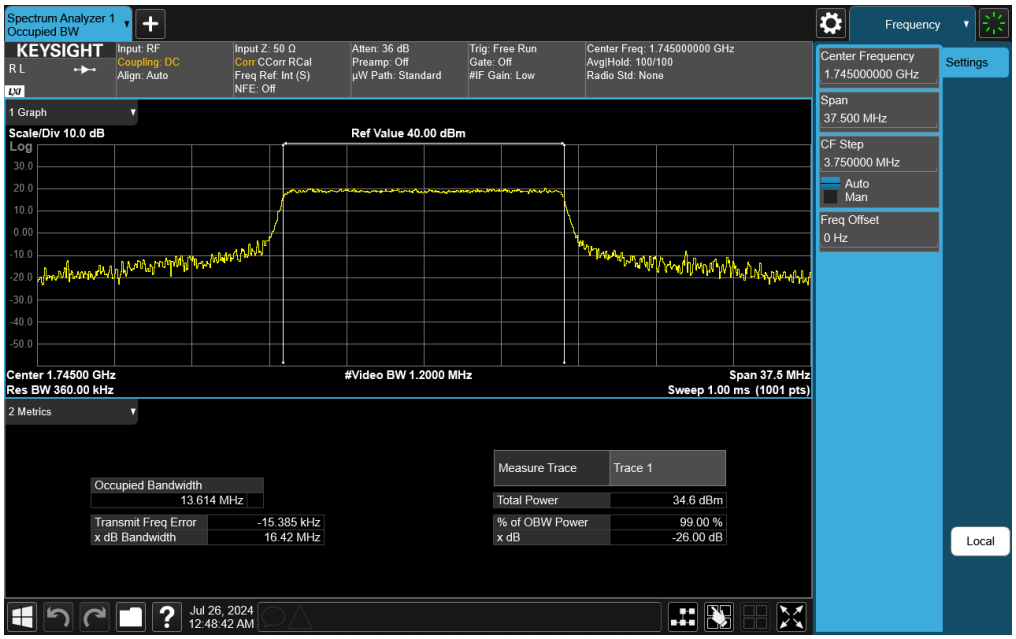
Plot 7-14. Occupied Bandwidth Plot (LTE Band 66/4 - 10MHz 16-QAM - Full RB)



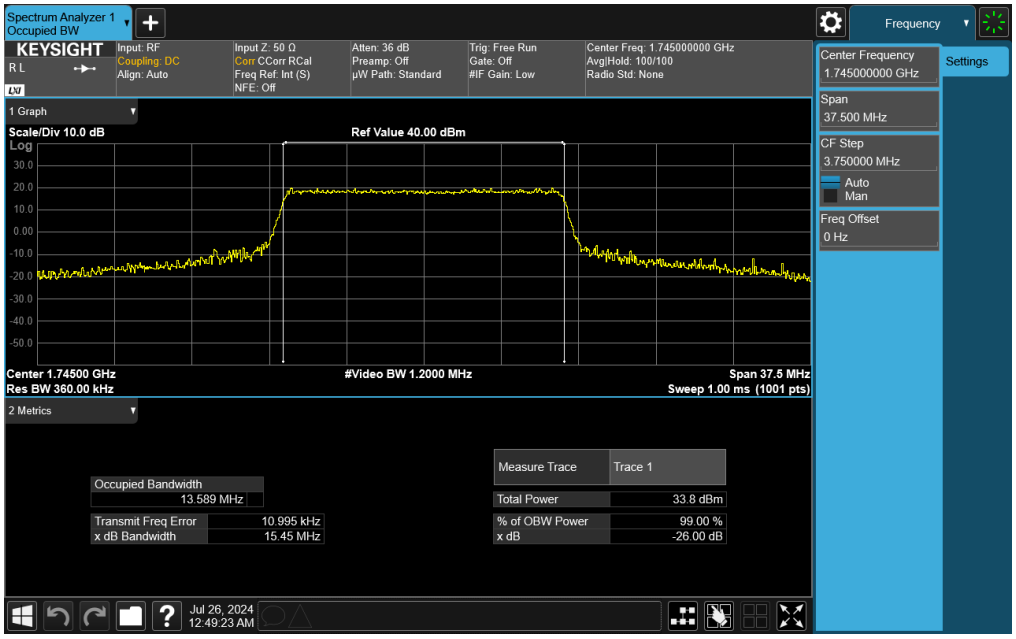
Plot 7-15. Occupied Bandwidth Plot (LTE Band 66/4 - 10MHz 64-QAM - Full RB)



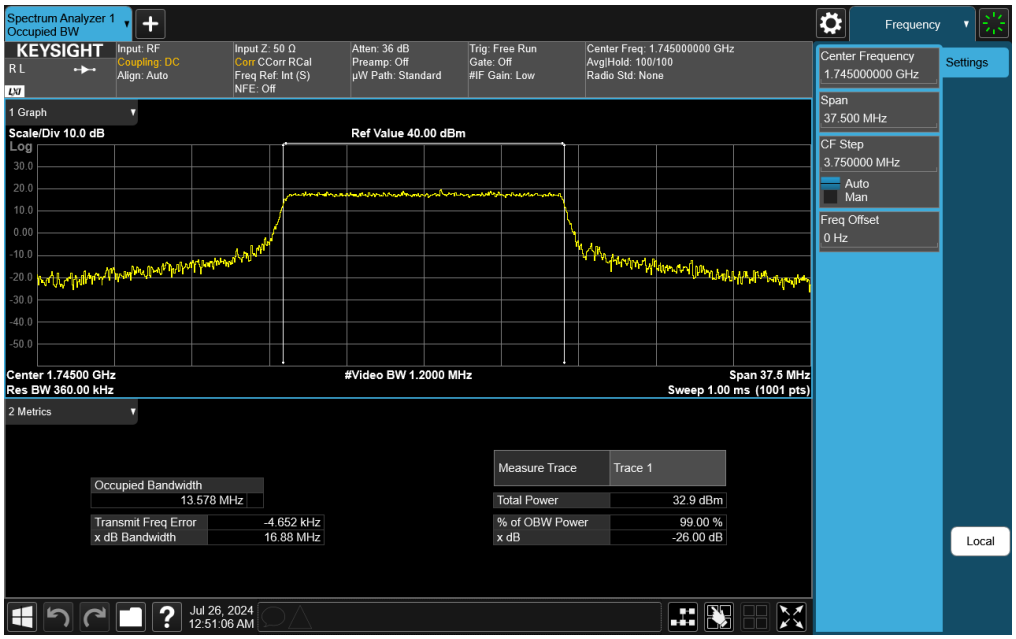
Plot 7-16. Occupied Bandwidth Plot (LTE Band 66/4 - 10MHz 256-QAM - Full RB)



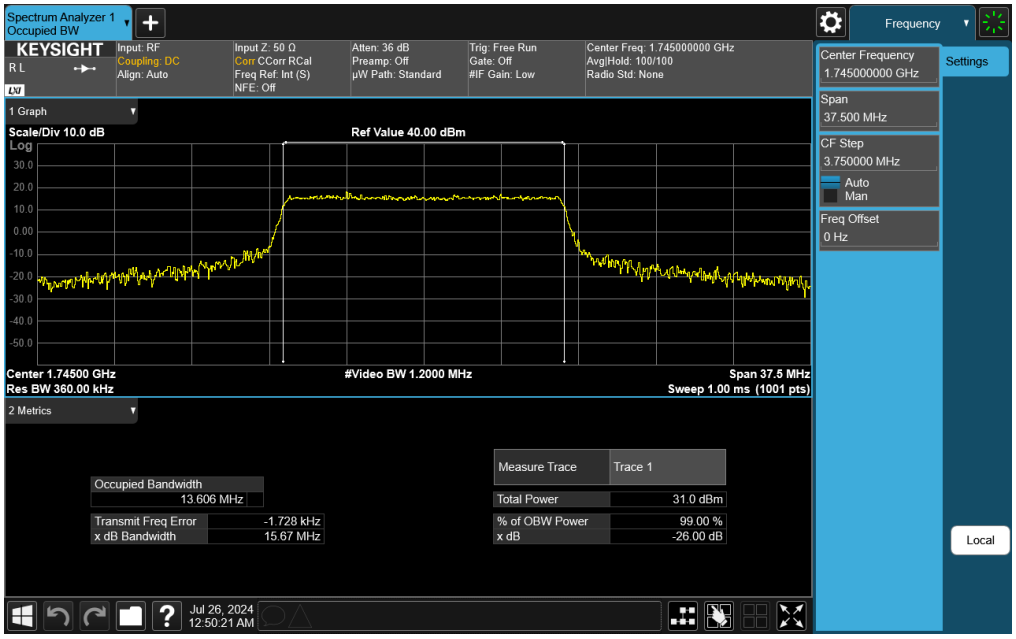
Plot 7-17. Occupied Bandwidth Plot (LTE Band 66/4 - 15MHz QPSK - Full RB)



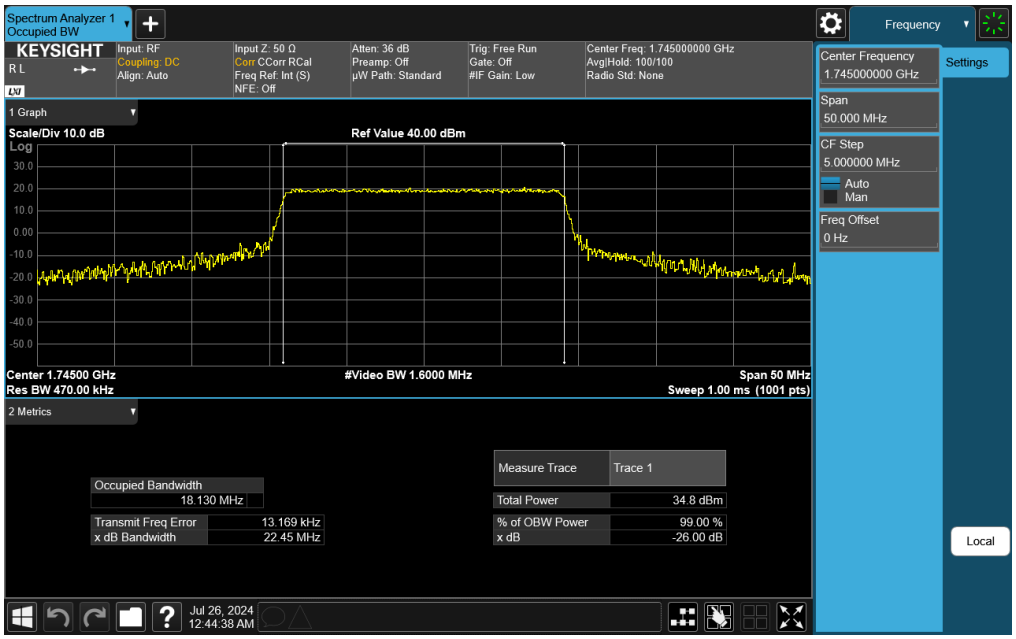
Plot 7-18. Occupied Bandwidth Plot (LTE Band 66/4 - 15MHz 16-QAM - Full RB)



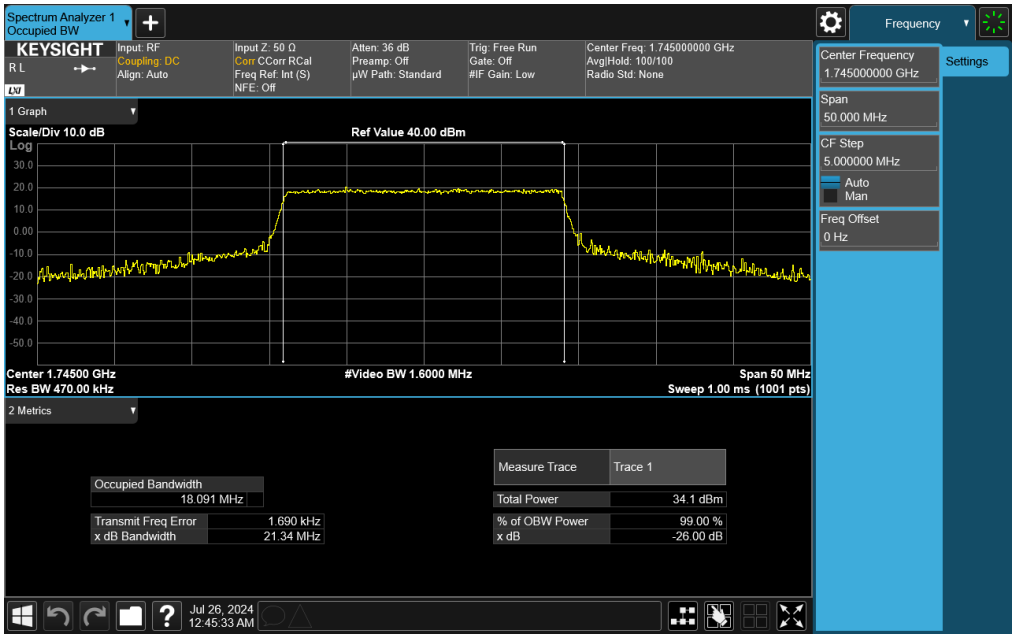
Plot 7-19. Occupied Bandwidth Plot (LTE Band 66/4 - 15MHz 64-QAM - Full RB)



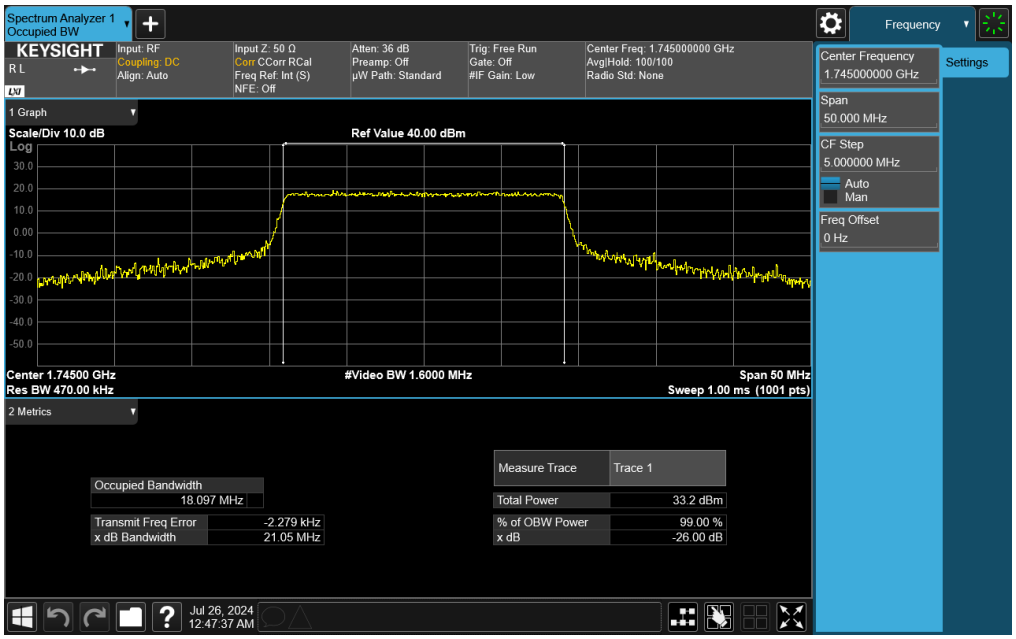
Plot 7-20. Occupied Bandwidth Plot (LTE Band 66/4 - 15MHz 256-QAM - Full RB)



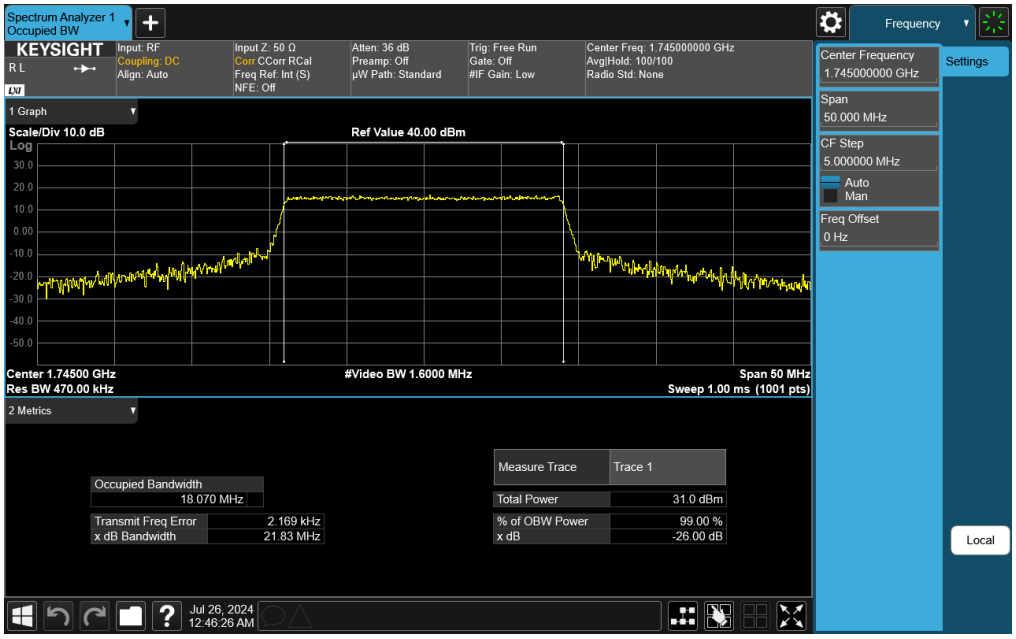
Plot 7-21. Occupied Bandwidth Plot (LTE Band 66/4 - 20MHz QPSK - Full RB)



Plot 7-22. Occupied Bandwidth Plot (LTE Band 66/4 - 20MHz 16-QAM - Full RB)

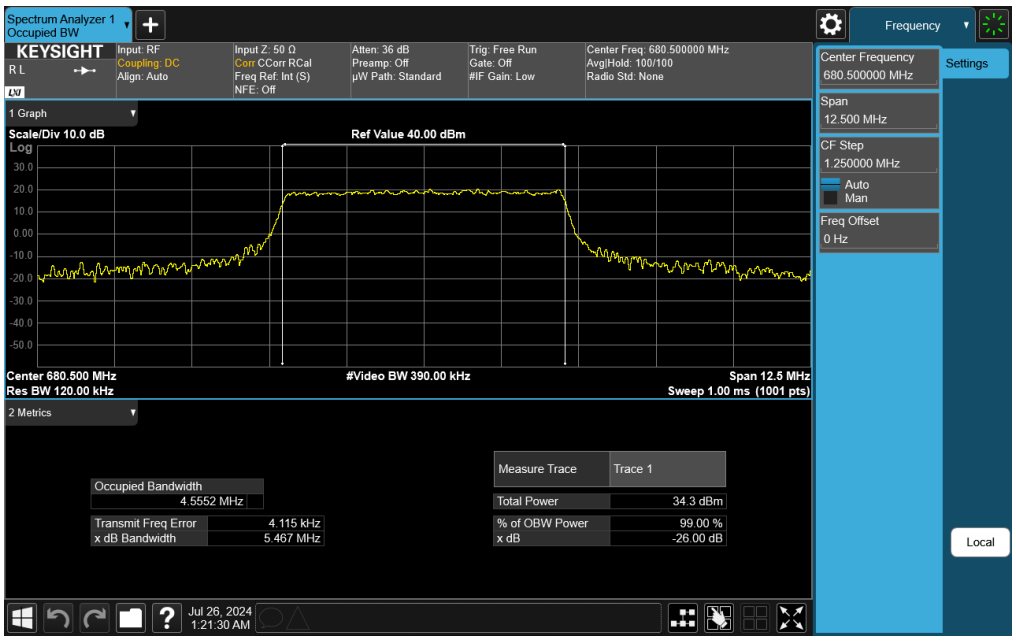


Plot 7-23. Occupied Bandwidth Plot (LTE Band 66/4 - 20MHz 64-QAM - Full RB)

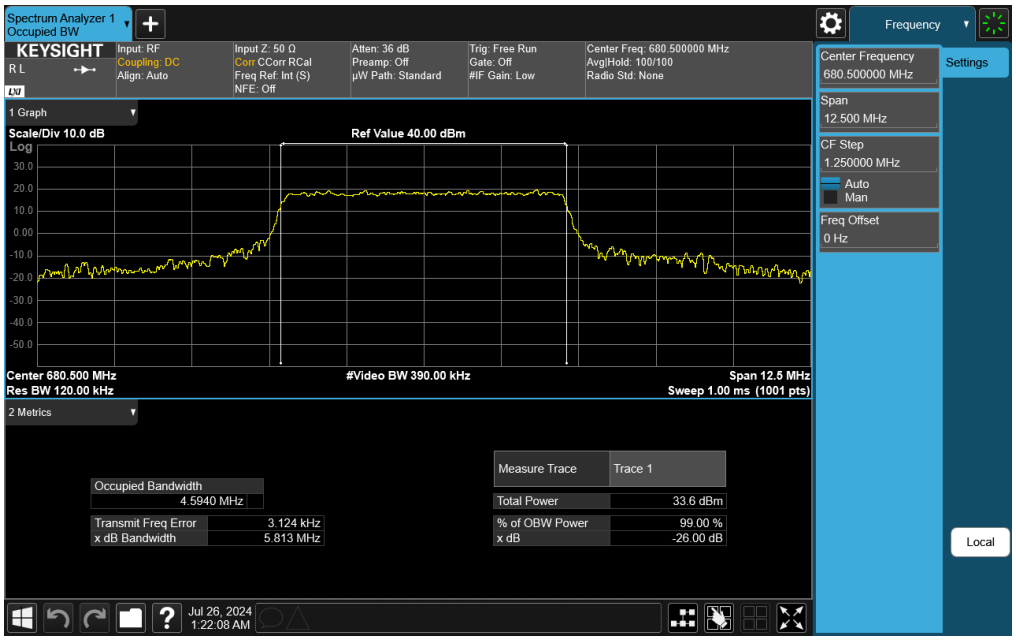


Plot 7-24. Occupied Bandwidth Plot (LTE Band 66/4 - 20MHz 256-QAM - Full RB)

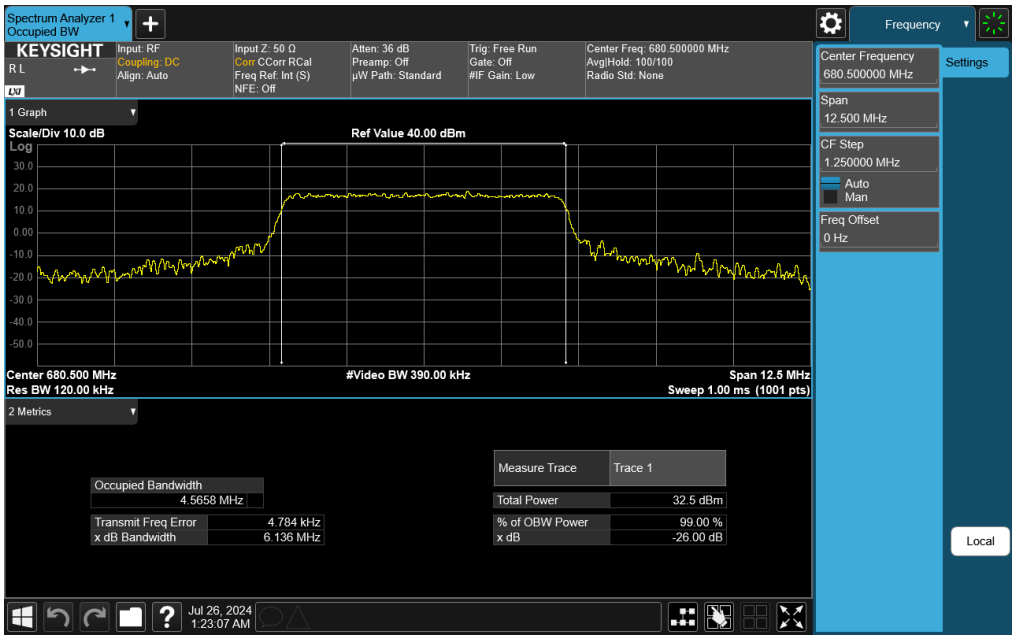
LTE Band 71



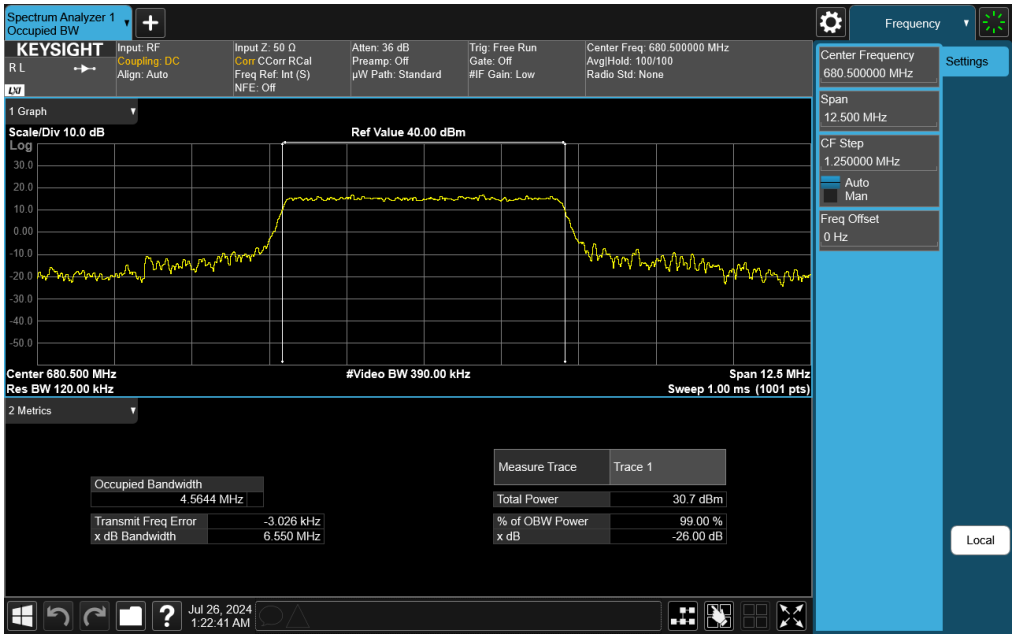
Plot 7-25. Occupied Bandwidth Plot (LTE Band 71 - 5MHz QPSK - Full RB)



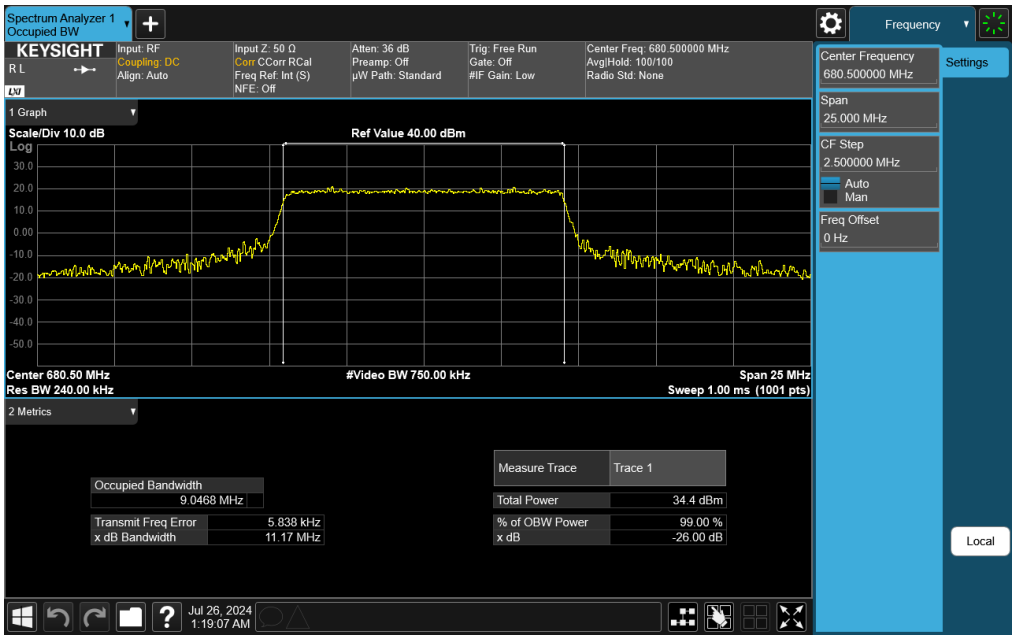
Plot 7-26. Occupied Bandwidth Plot (LTE Band 71 - 5MHz 16-QAM - Full RB)



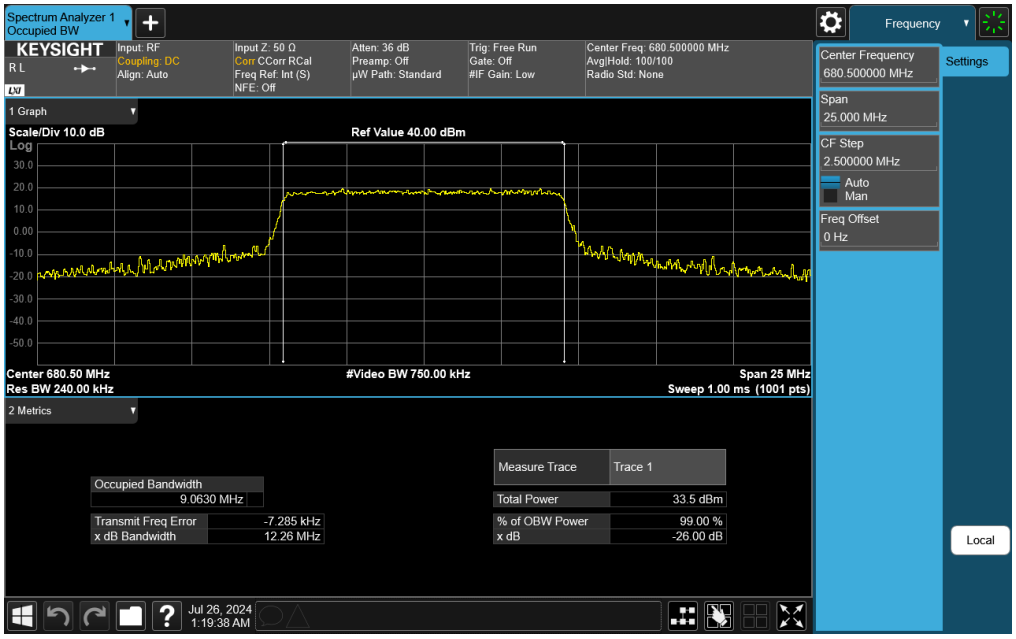
Plot 7-27. Occupied Bandwidth Plot (LTE Band 71 - 5MHz 64-QAM - Full RB)



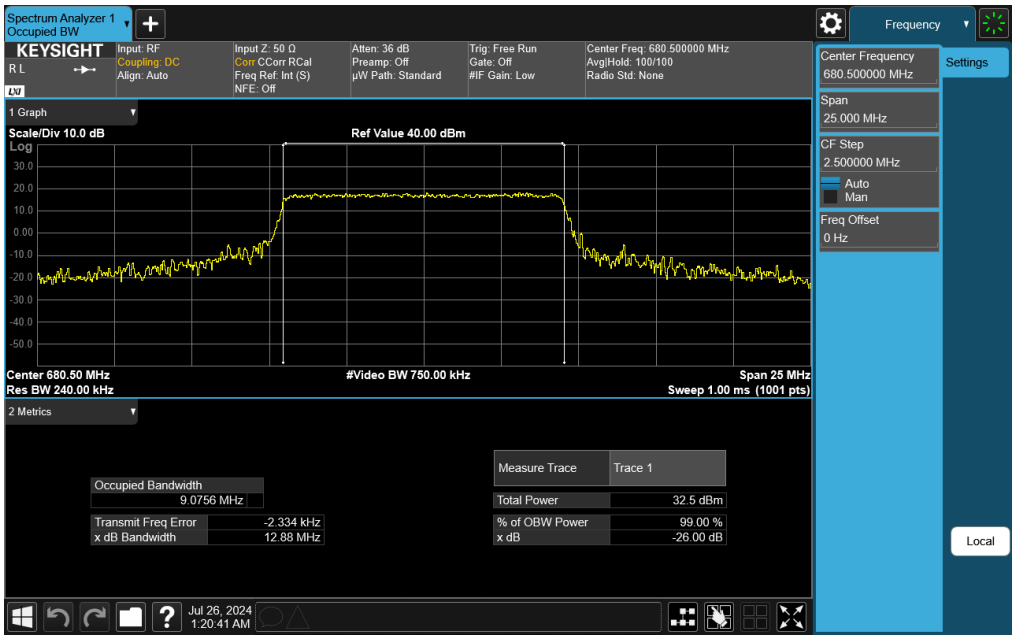
Plot 7-28. Occupied Bandwidth Plot (LTE Band 71 - 5MHz 256-QAM - Full RB)



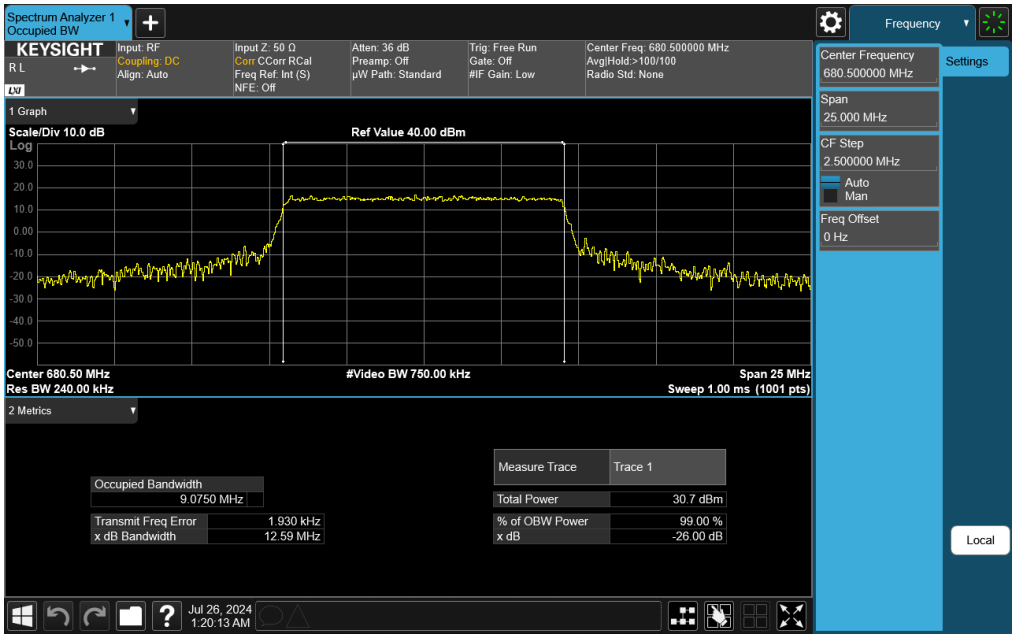
Plot 7-29. Occupied Bandwidth Plot (LTE Band 71 - 10MHz QPSK - Full RB)



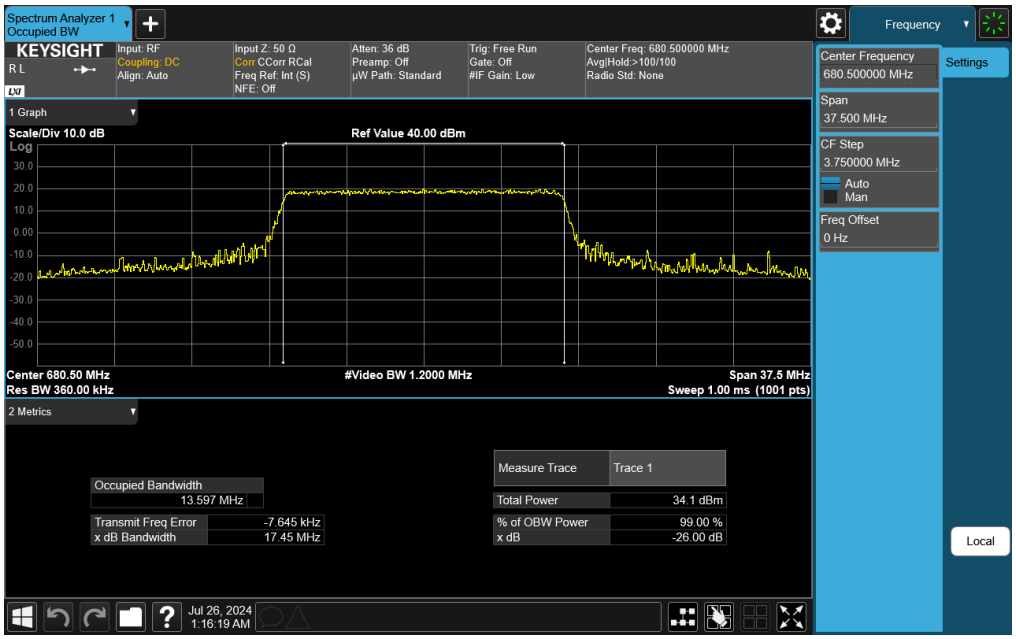
Plot 7-30. Occupied Bandwidth Plot (LTE Band 71 - 10MHz 16-QAM - Full RB)



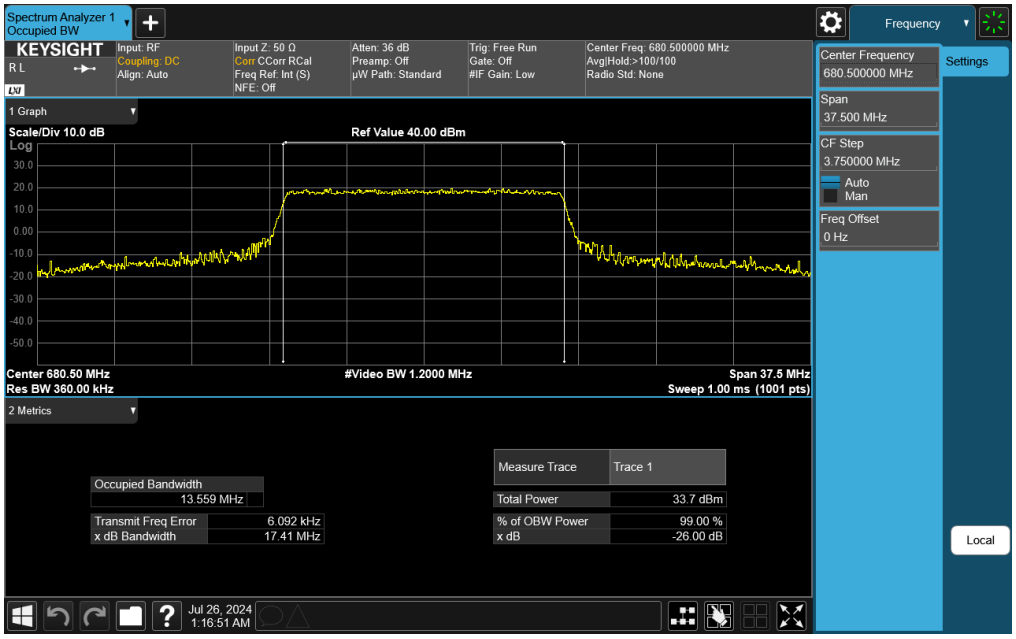
Plot 7-31. Occupied Bandwidth Plot (LTE Band 71 - 10MHz 64-QAM - Full RB)



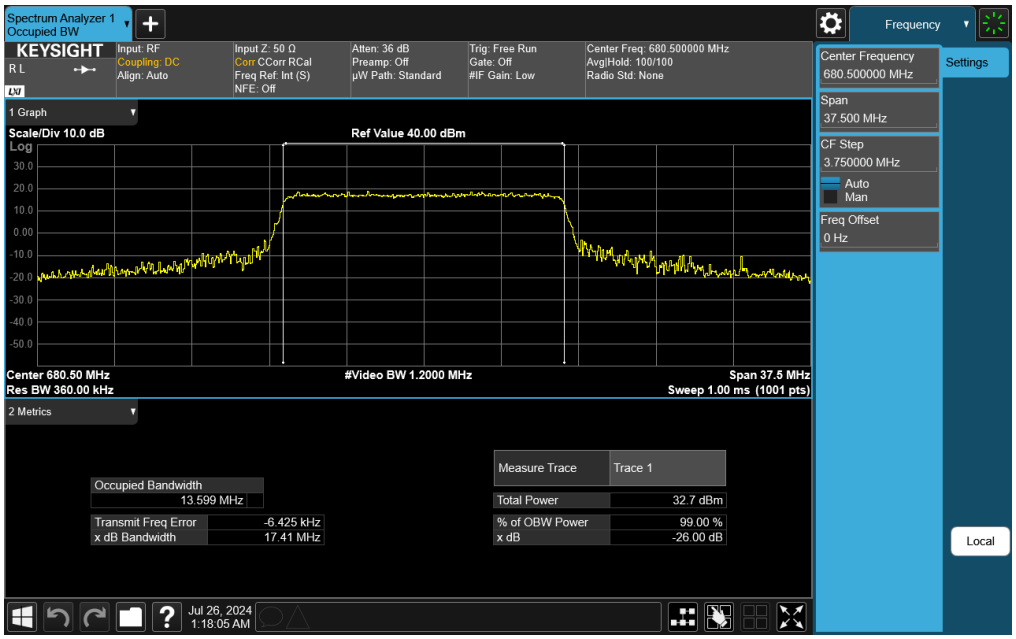
Plot 7-32. Occupied Bandwidth Plot (LTE Band 71 - 10MHz 256-QAM - Full RB)



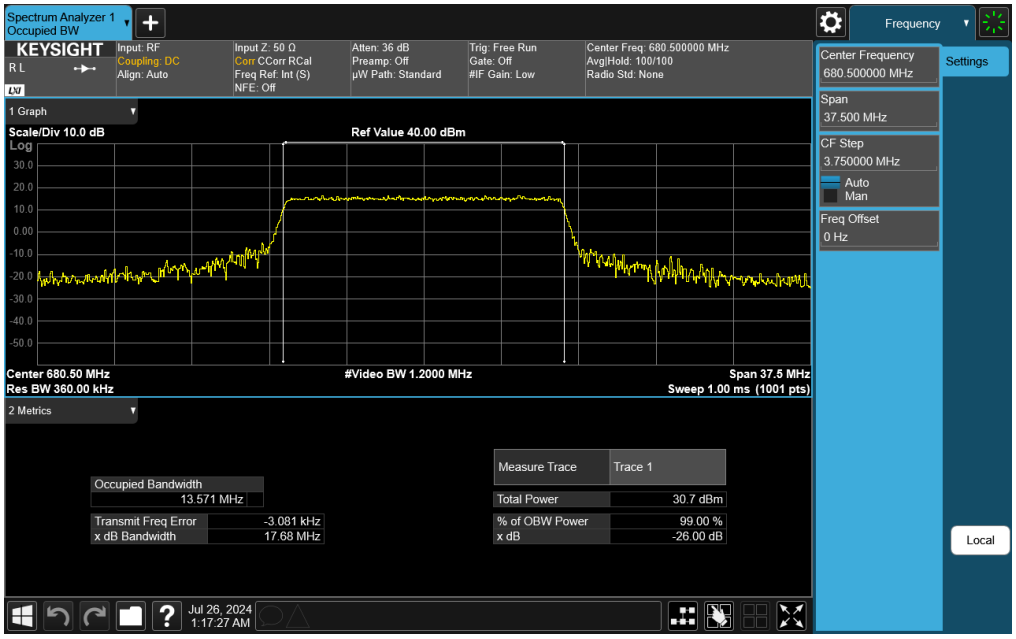
Plot 7-33. Occupied Bandwidth Plot (LTE Band 71 - 15MHz QPSK - Full RB)



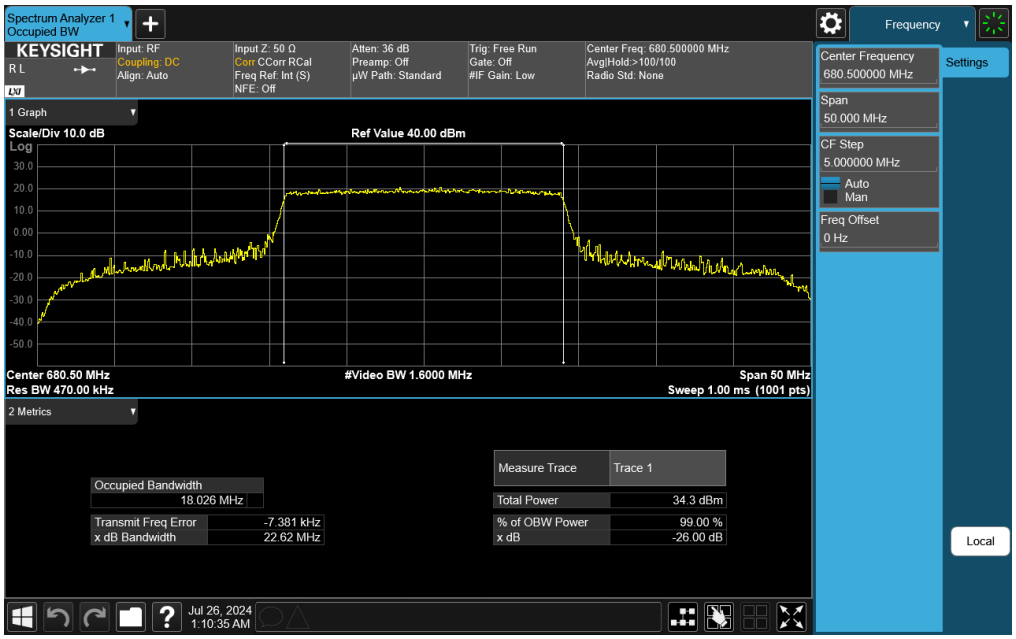
Plot 7-34. Occupied Bandwidth Plot (LTE Band 71 - 15MHz 16-QAM - Full RB)



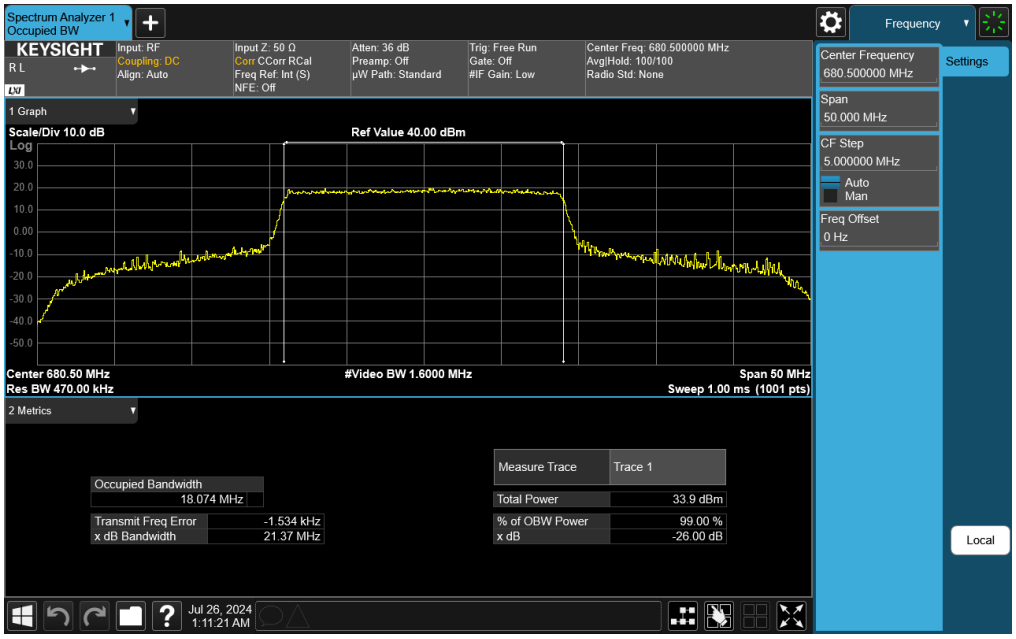
Plot 7-35. Occupied Bandwidth Plot (LTE Band 71 - 15MHz 64-QAM - Full RB)



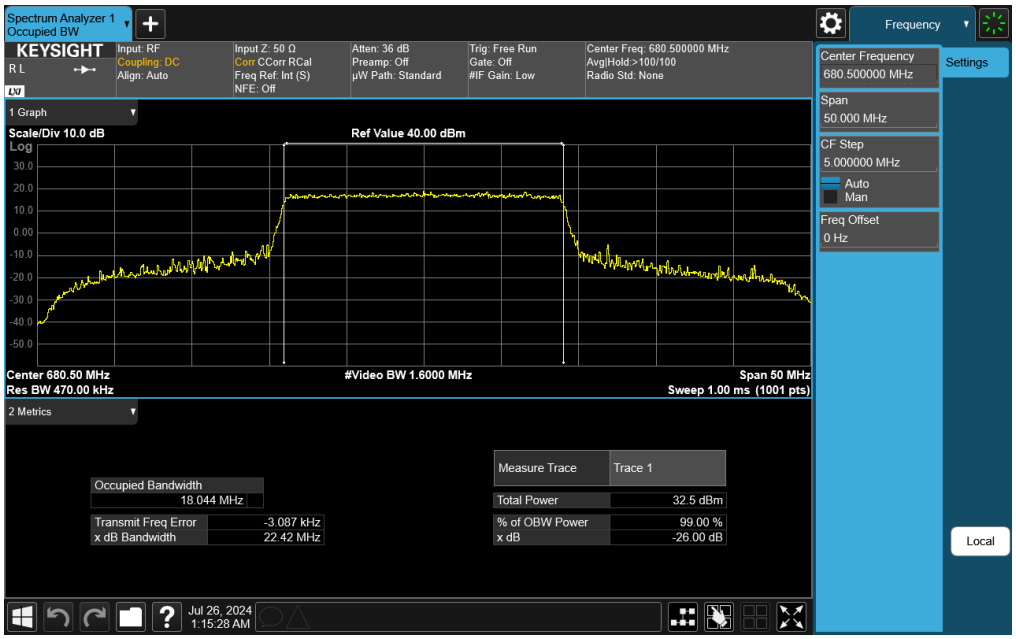
Plot 7-36. Occupied Bandwidth Plot (LTE Band 71 - 15MHz 256-QAM - Full RB)



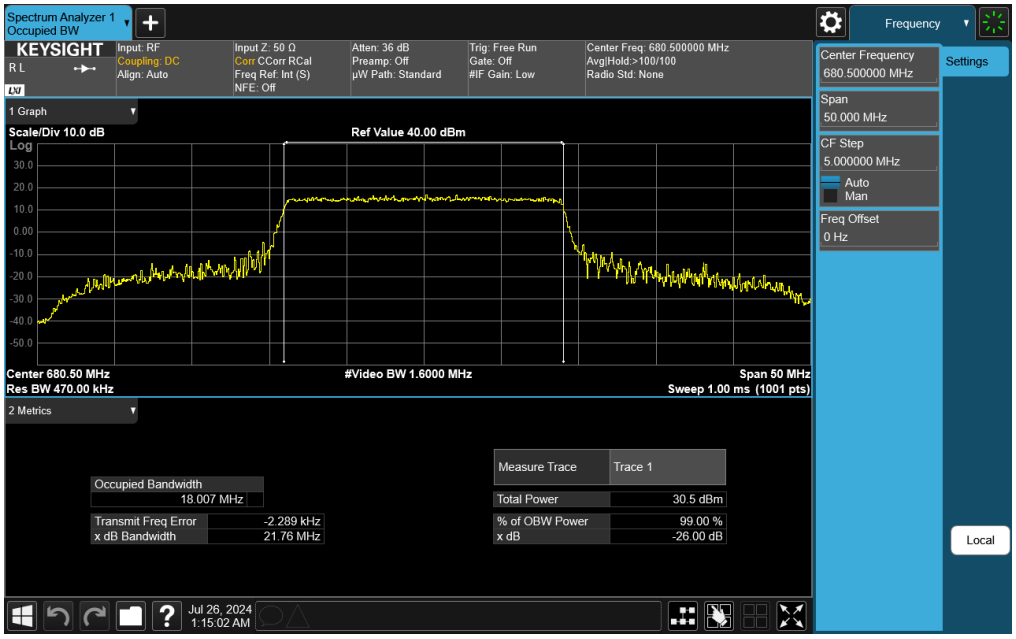
Plot 7-37. Occupied Bandwidth Plot (LTE Band 71 - 20MHz QPSK - Full RB)



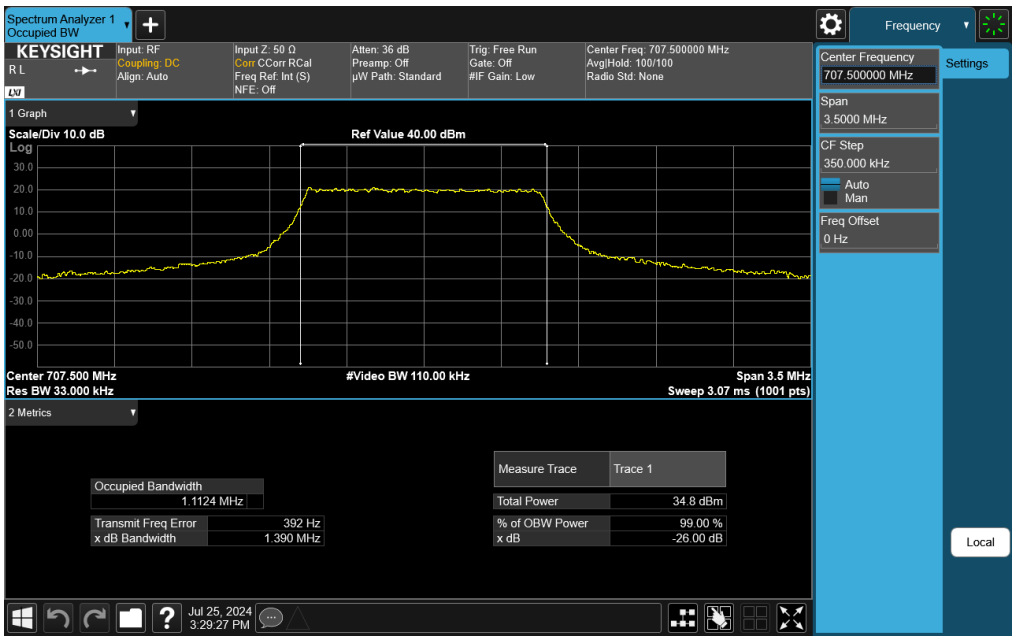
Plot 7-38. Occupied Bandwidth Plot (LTE Band 71 - 20MHz 16-QAM - Full RB)



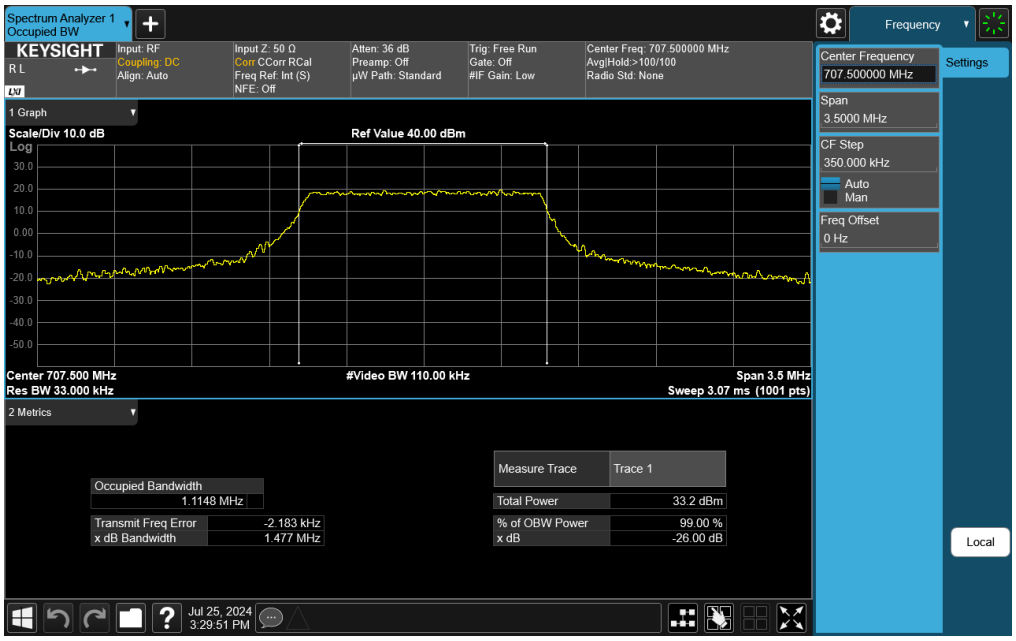
Plot 7-39. Occupied Bandwidth Plot (LTE Band 71 - 20MHz 64-QAM - Full RB)



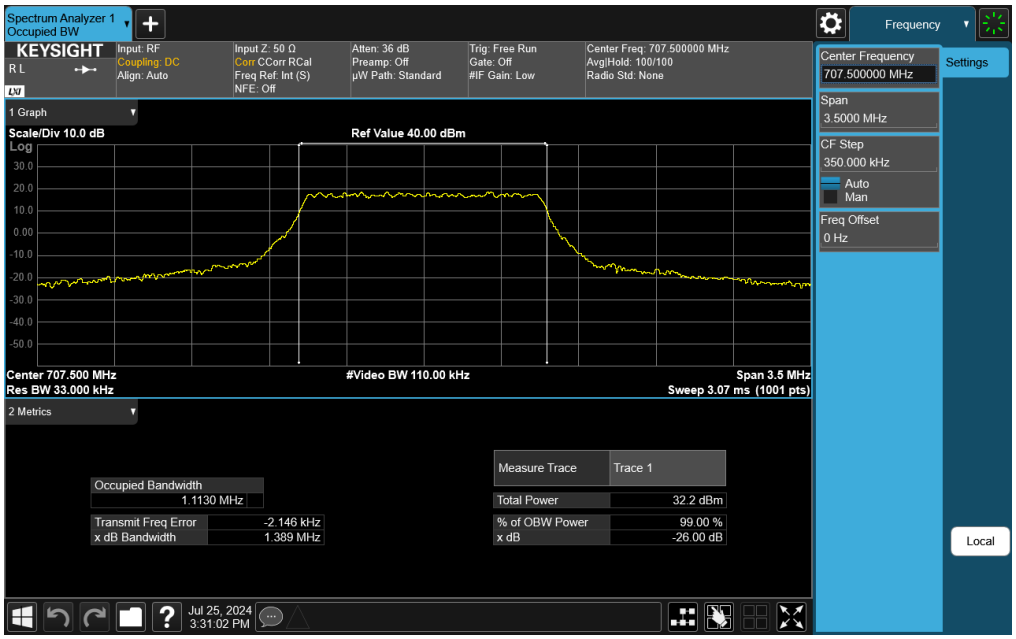
Plot 7-40. Occupied Bandwidth Plot (LTE Band 71 - 20MHz 256-QAM - Full RB)



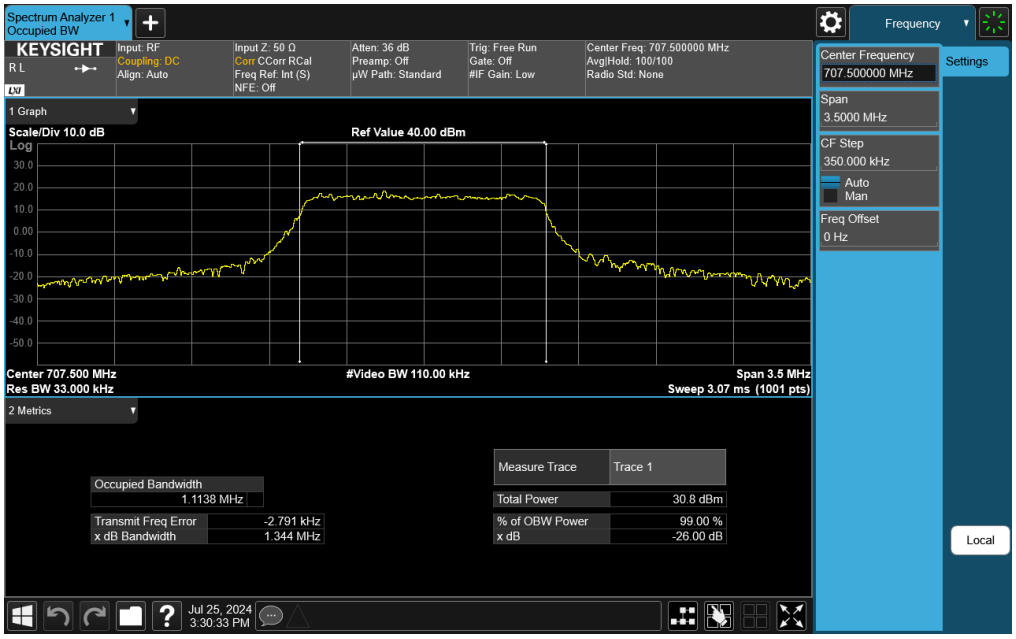
Plot 7-41. Occupied Bandwidth Plot (LTE Band 12 – 1.4MHz QPSK - Full RB)



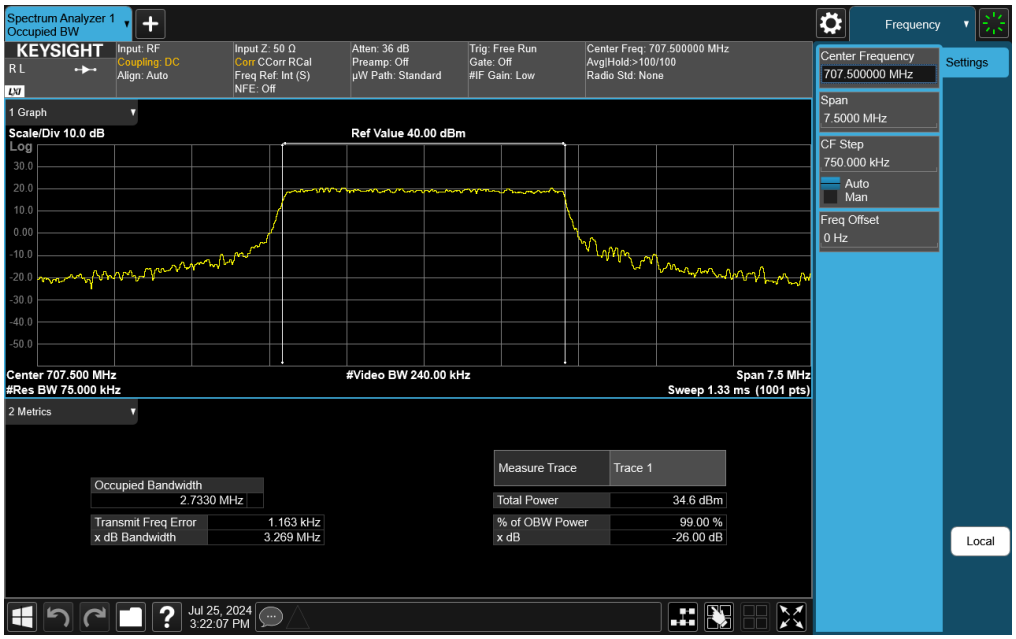
Plot 7-42. Occupied Bandwidth Plot (LTE Band 12 – 1.4MHz 16-QAM - Full RB)



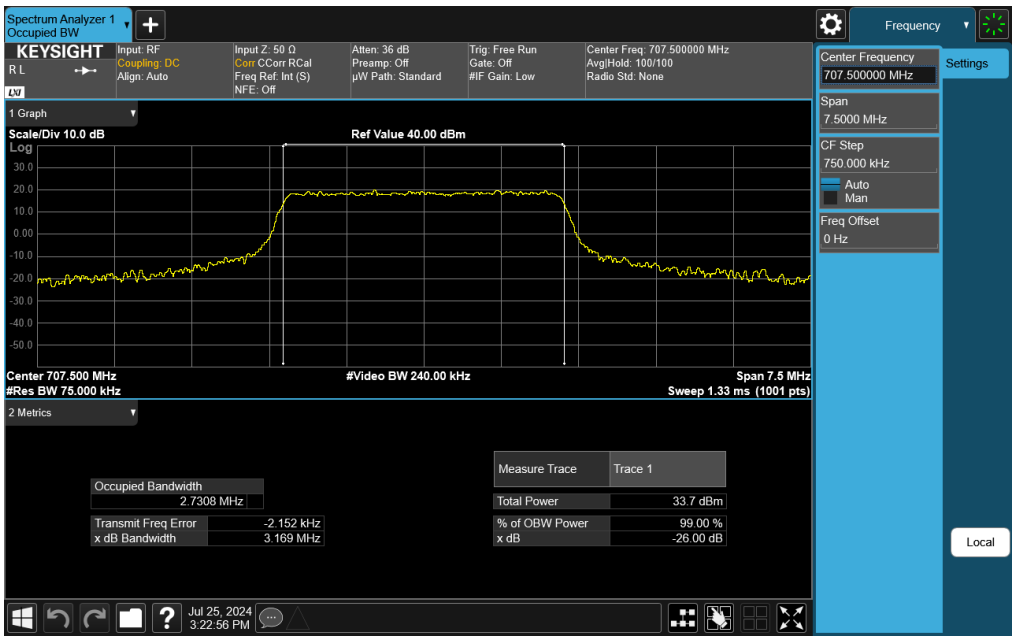
Plot 7-43. Occupied Bandwidth Plot (LTE Band 12 – 1.4MHz 64-QAM - Full RB)



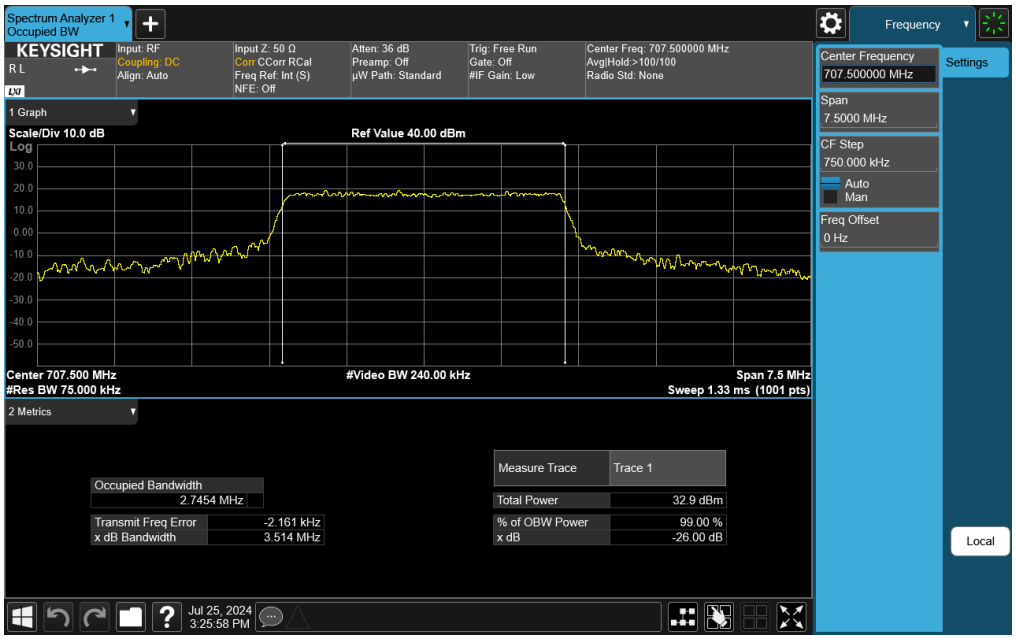
Plot 7-44. Occupied Bandwidth Plot (LTE Band 12 – 1.4MHz 256-QAM - Full RB)



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

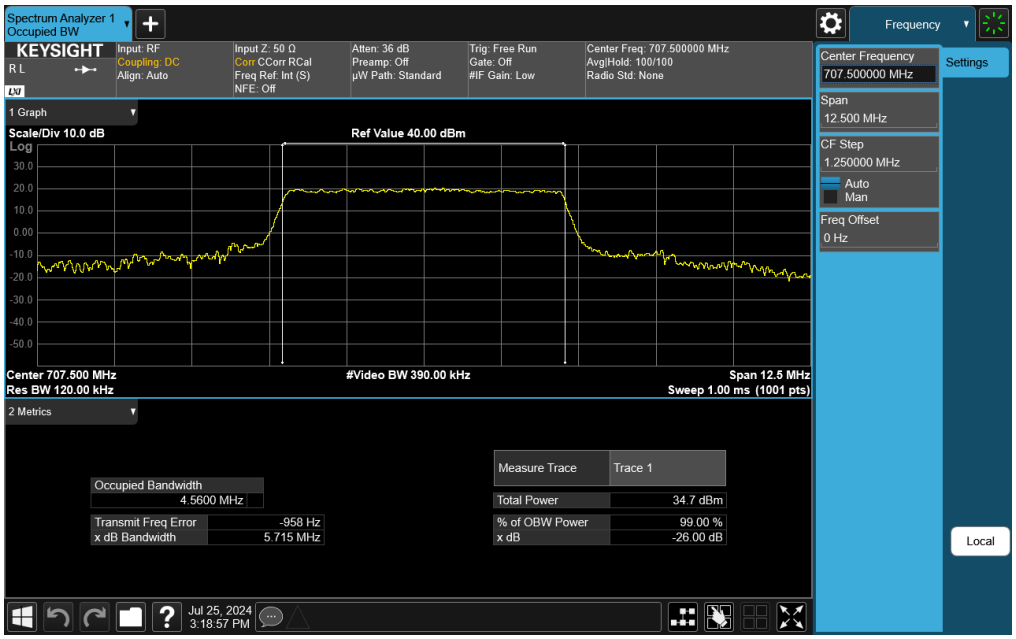


Plot 7-46. Occupied Bandwidth Plot (LTE Band 12 - 3MHz 16-QAM - Full RB)

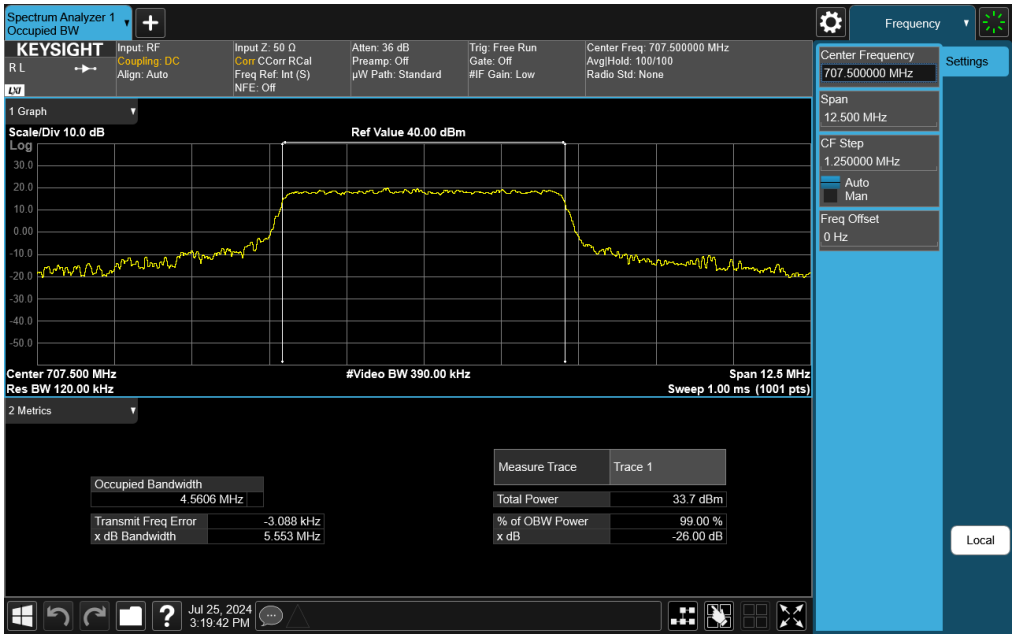


Plot 7-47. Occupied Bandwidth Plot (LTE Band 12 - 3MHz 64-QAM - Full RB)

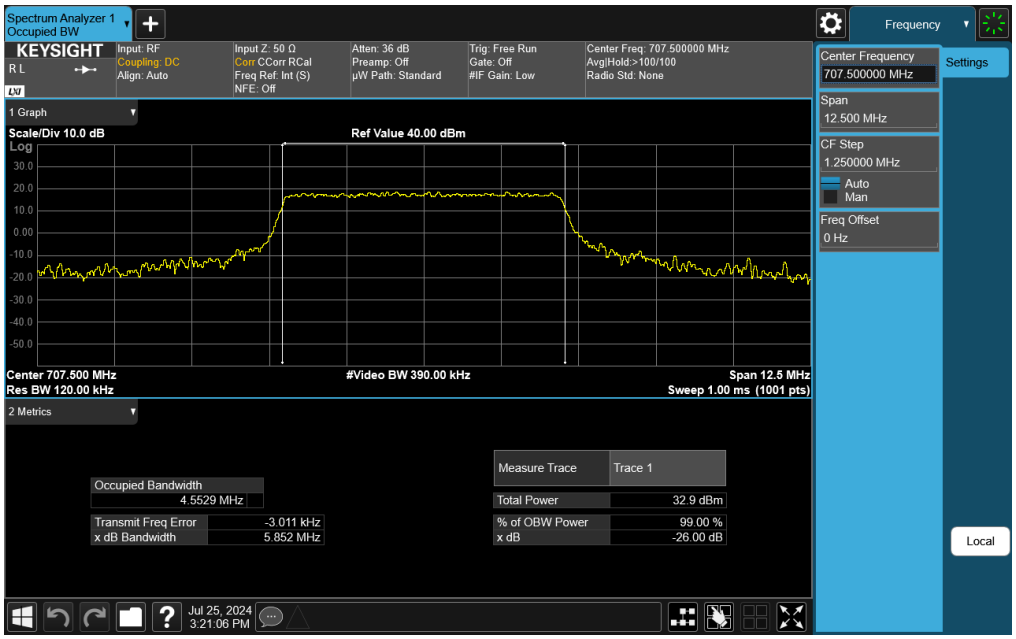
Plot 7-48. Occupied Bandwidth Plot (LTE Band 12 - 3MHz 256-QAM - Full RB)



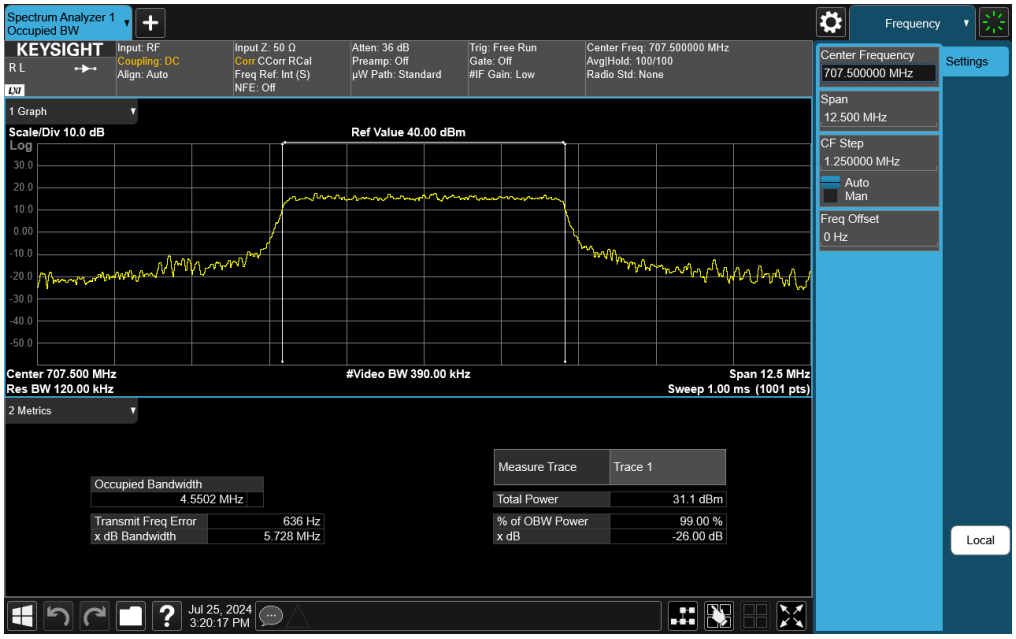
Plot 7-49. Occupied Bandwidth Plot (LTE Band 12/17 - 5MHz QPSK - Full RB)



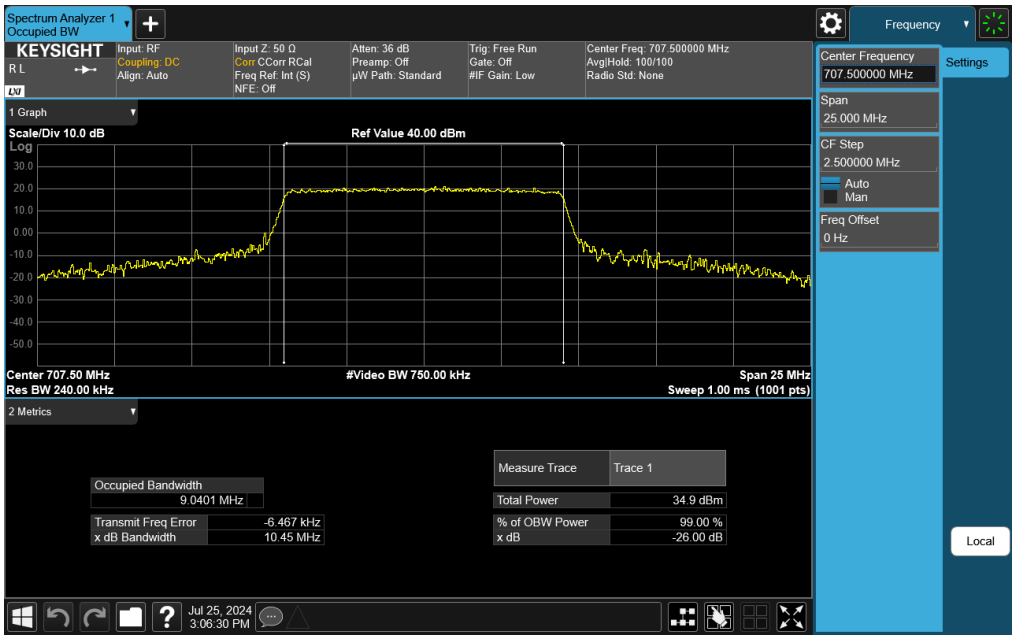
Plot 7-50. Occupied Bandwidth Plot (LTE Band 12/17 - 5MHz 16-QAM - Full RB)



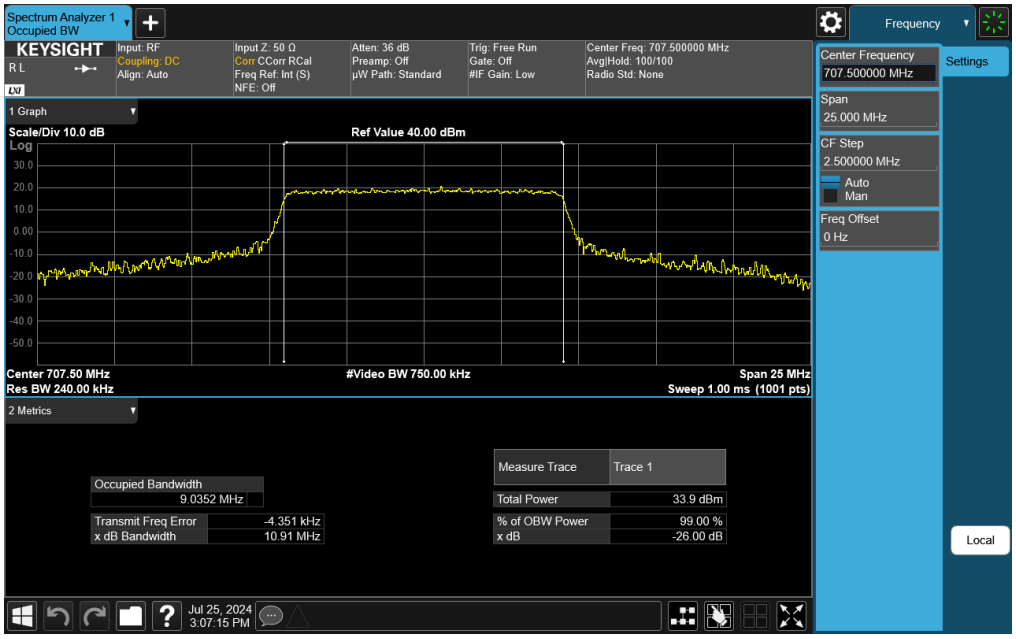
Plot 7-51. Occupied Bandwidth Plot (LTE Band 12/17 - 5MHz 64-QAM - Full RB)



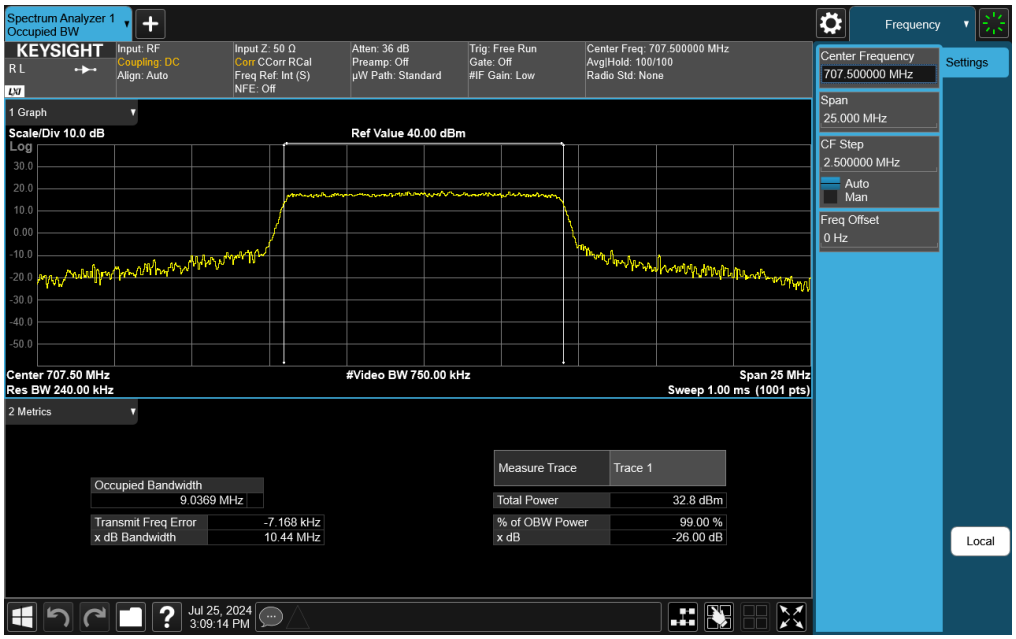
Plot 7-52. Occupied Bandwidth Plot (LTE Band 12/17 - 5MHz 256-QAM - Full RB)



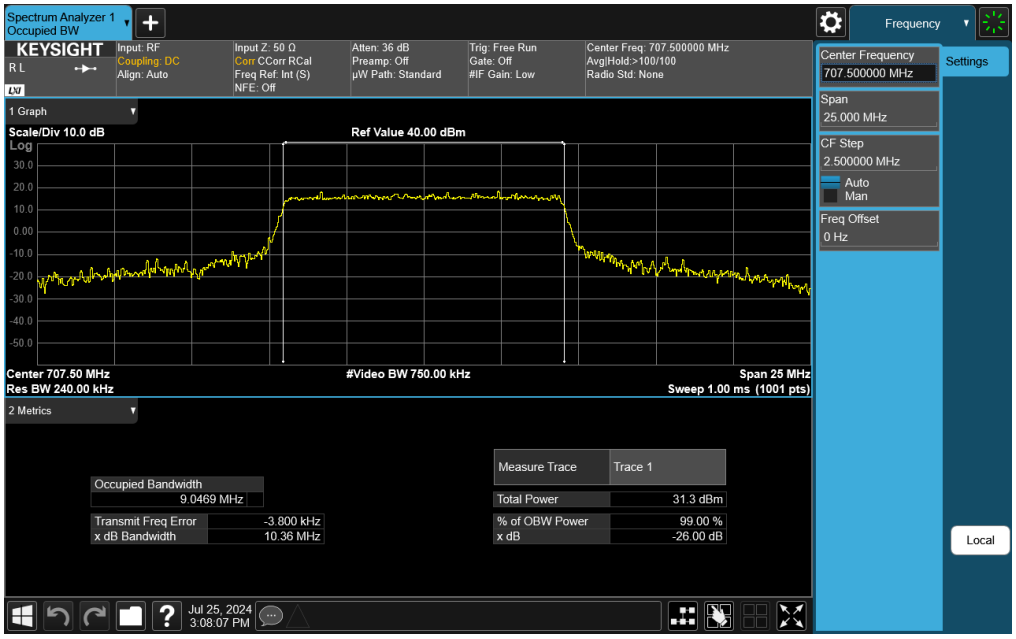
Plot 7-53. Occupied Bandwidth Plot (LTE Band 12/17 - 10MHz QPSK - Full RB)



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

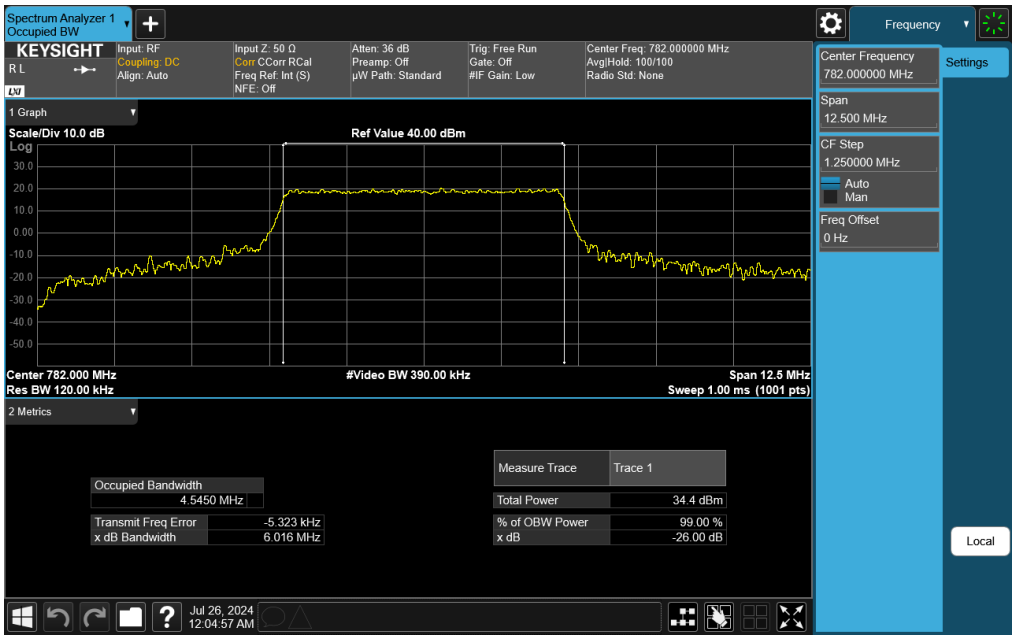


Plot 7-55. Occupied Bandwidth Plot (LTE Band 12/17 - 10MHz 64-QAM - Full RB)

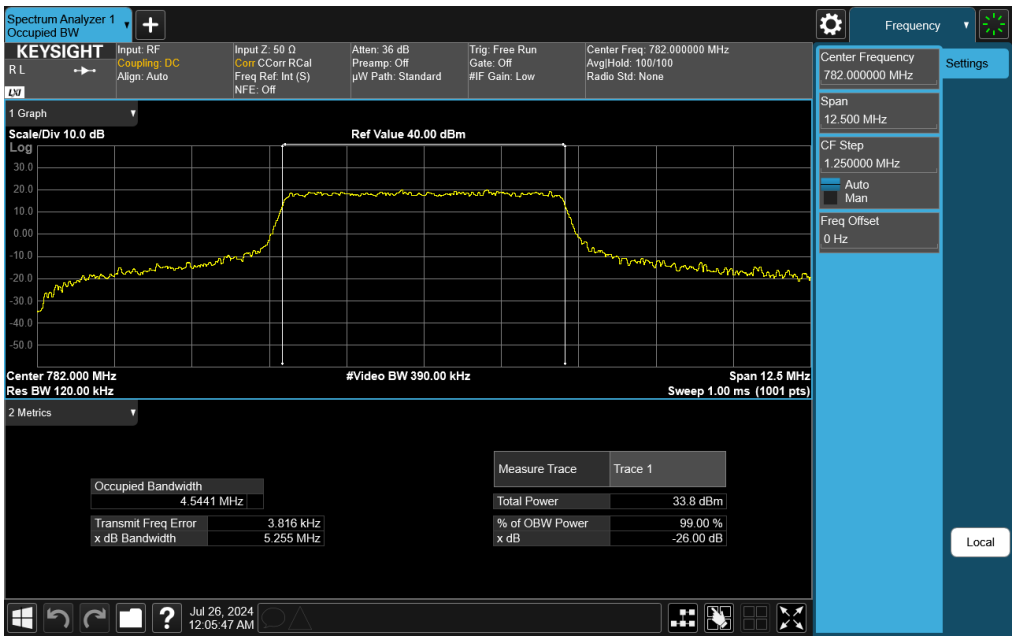


Plot 7-56. Occupied Bandwidth Plot (LTE Band 12/17 - 10MHz 256-QAM - Full RB)

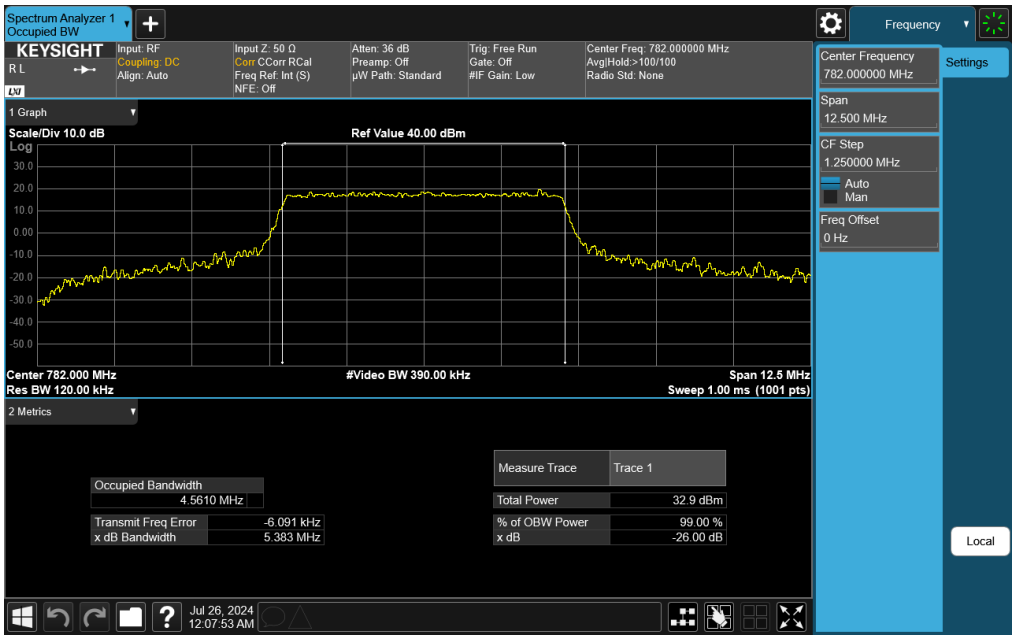
LTE Band 13



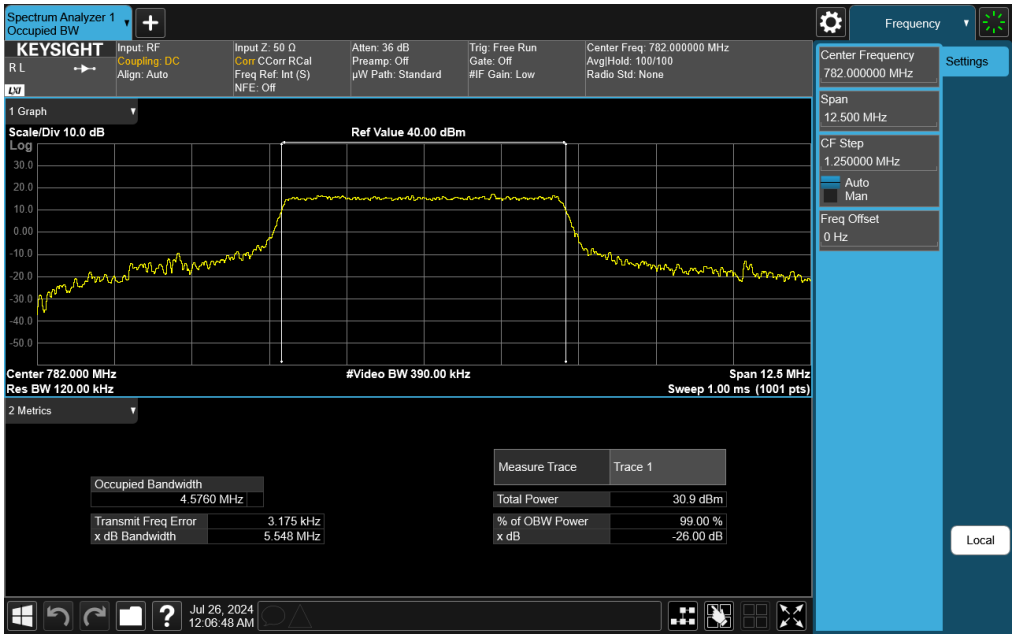
Plot 7-57. Occupied Bandwidth Plot (LTE Band 13 - 5MHz QPSK - Full RB)



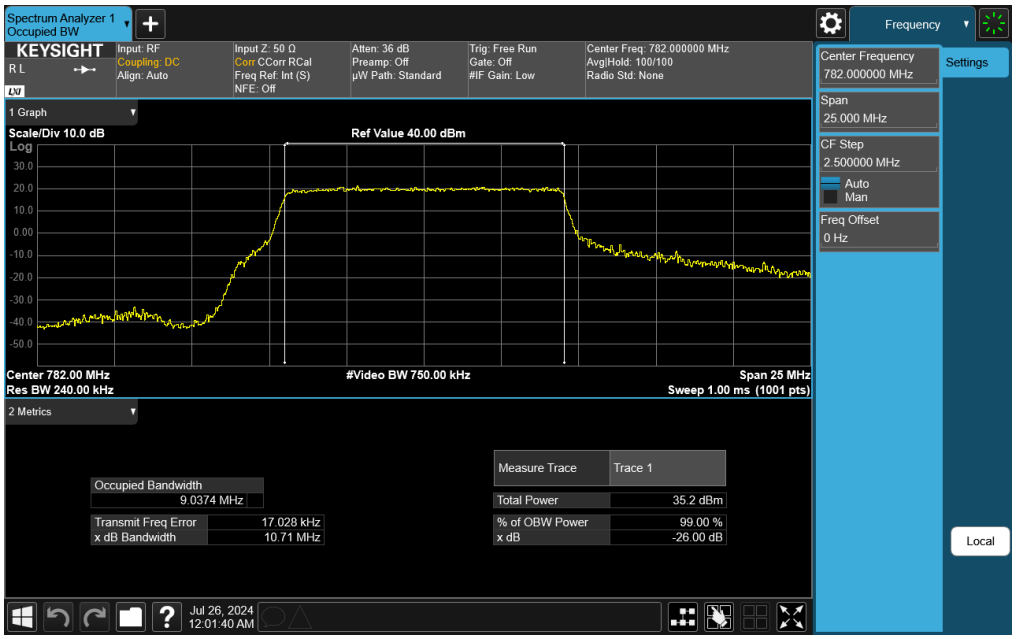
Plot 7-58. Occupied Bandwidth Plot (LTE Band 13 - 5MHz 16-QAM - Full RB)



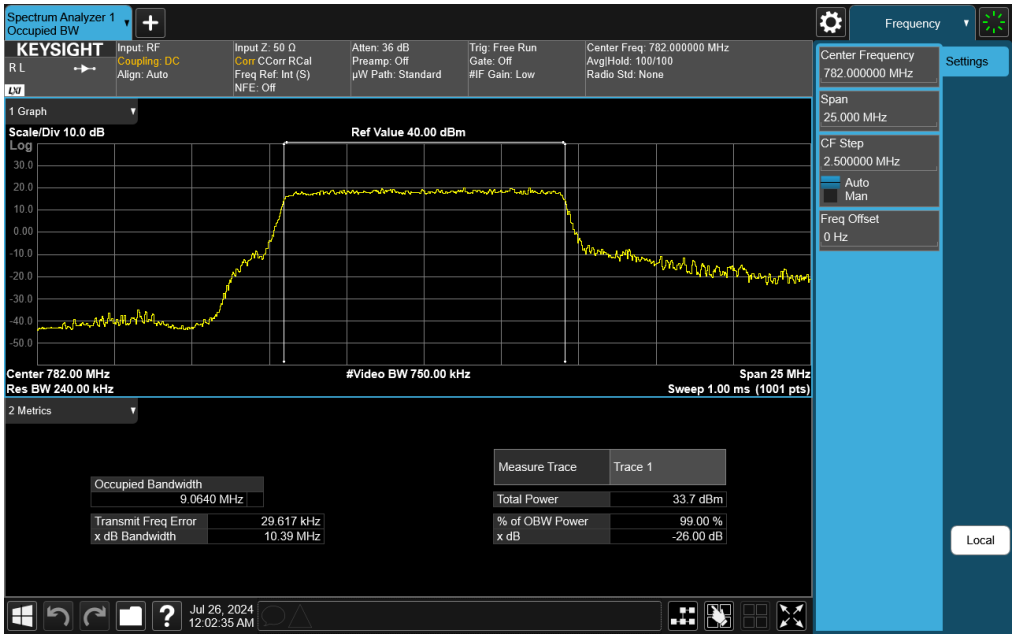
Plot 7-59. Occupied Bandwidth Plot (LTE Band 13 - 5MHz 64-QAM - Full RB)



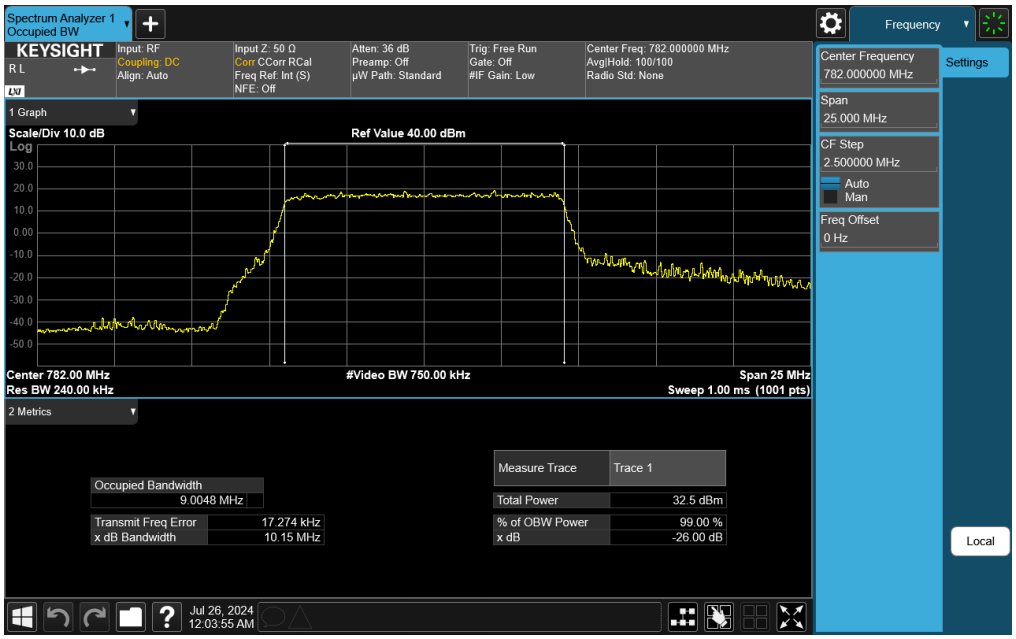
Plot 7-60. Occupied Bandwidth Plot (LTE Band 13 - 5MHz 256-QAM - Full RB)



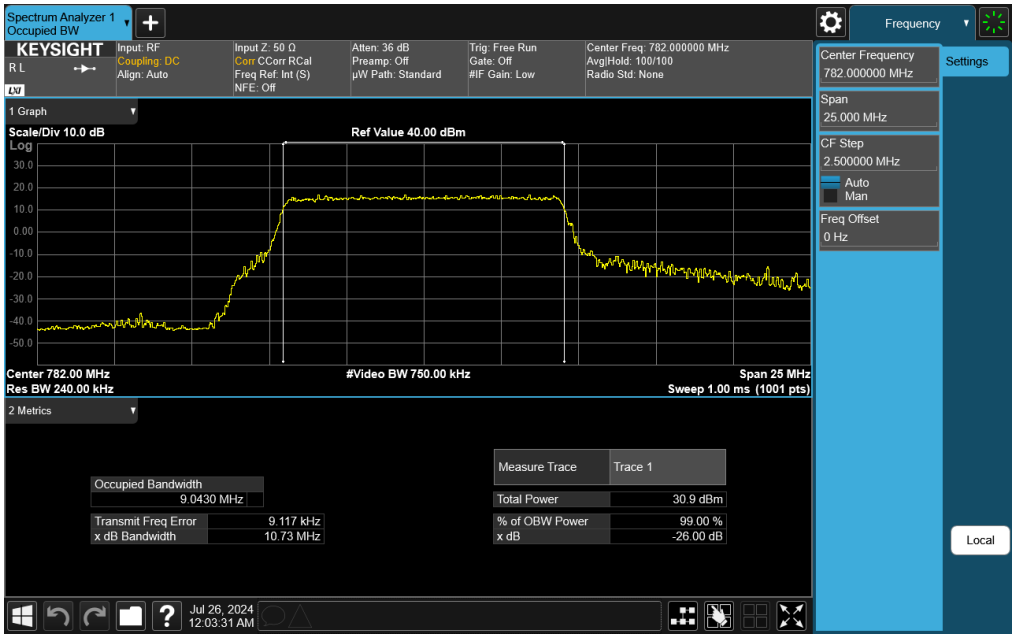
Plot 7-61. Occupied Bandwidth Plot (LTE Band 13 - 10MHz QPSK - Full RB)



Plot 7-62. Occupied Bandwidth Plot (LTE Band 13 - 10MHz 16-QAM - Full RB)

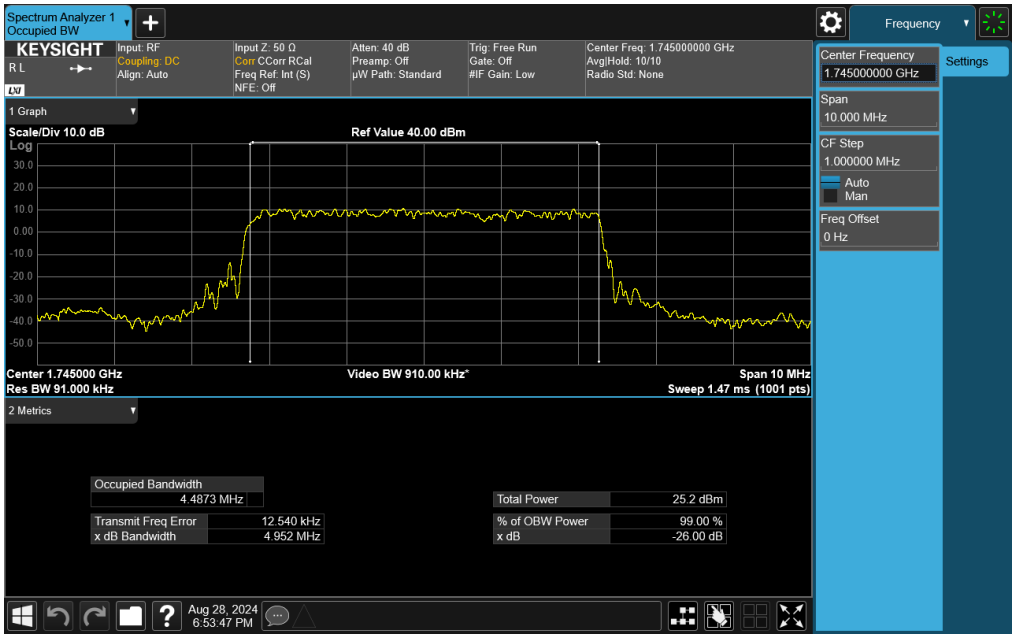


Plot 7-63. Occupied Bandwidth Plot (LTE Band 13 - 10MHz 64-QAM - Full RB)

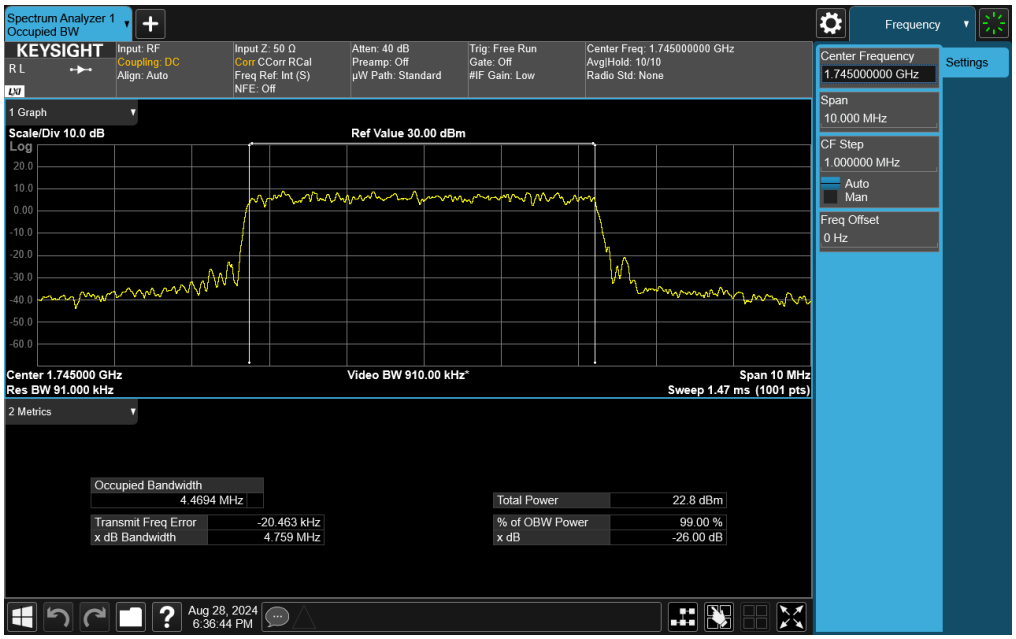


Plot 7-64. Occupied Bandwidth Plot (LTE Band 13 - 10MHz 256-QAM - Full RB)

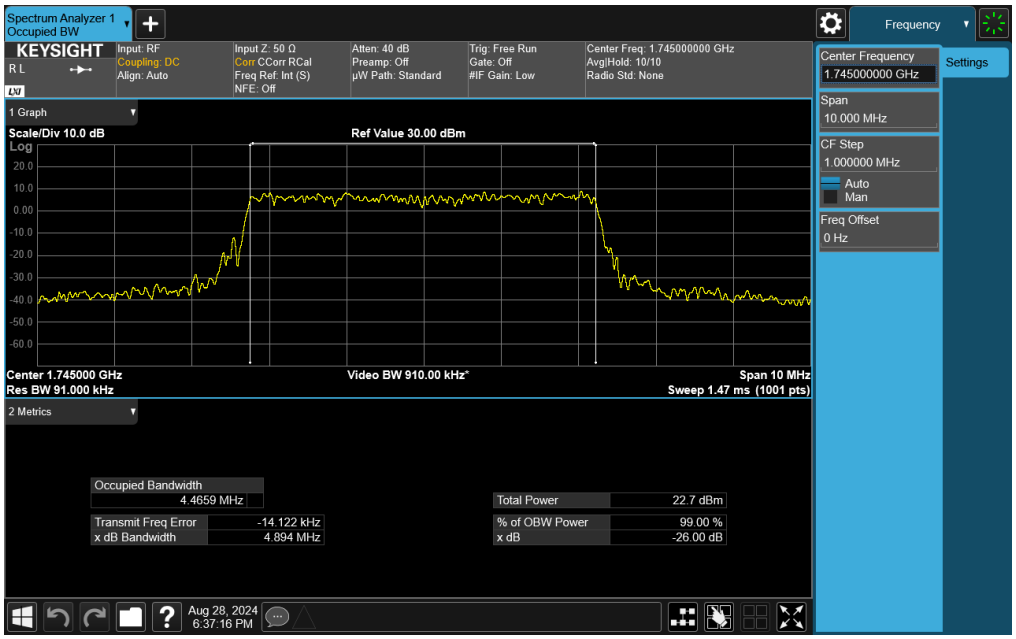
NR Band n66



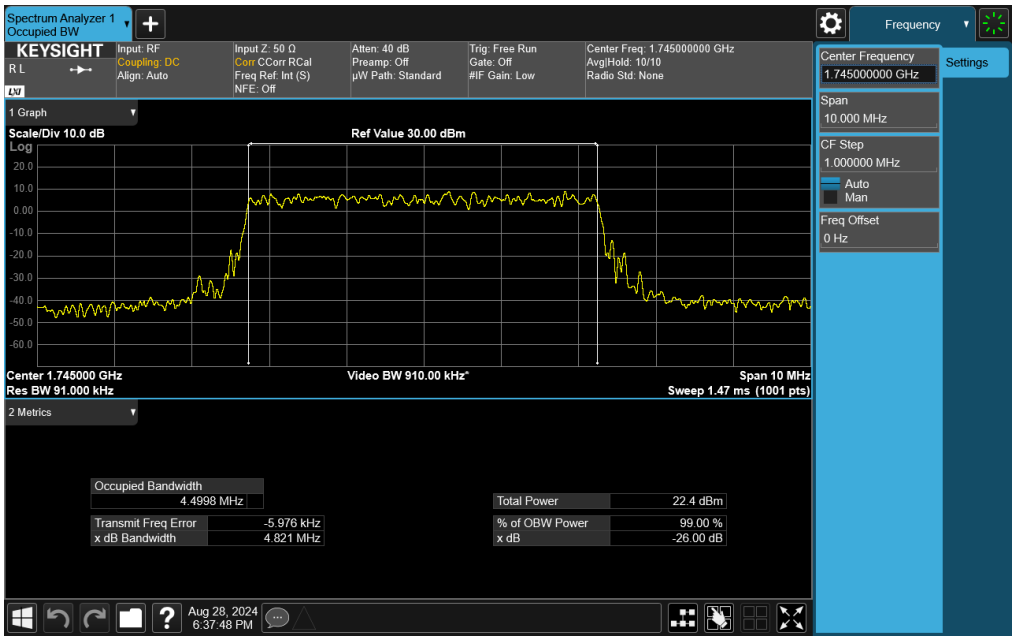
Plot 7-65. Occupied Bandwidth Plot (NR Band n66 - 5MHz DFT-s-OFDM π/2 BPSK - Full RB)



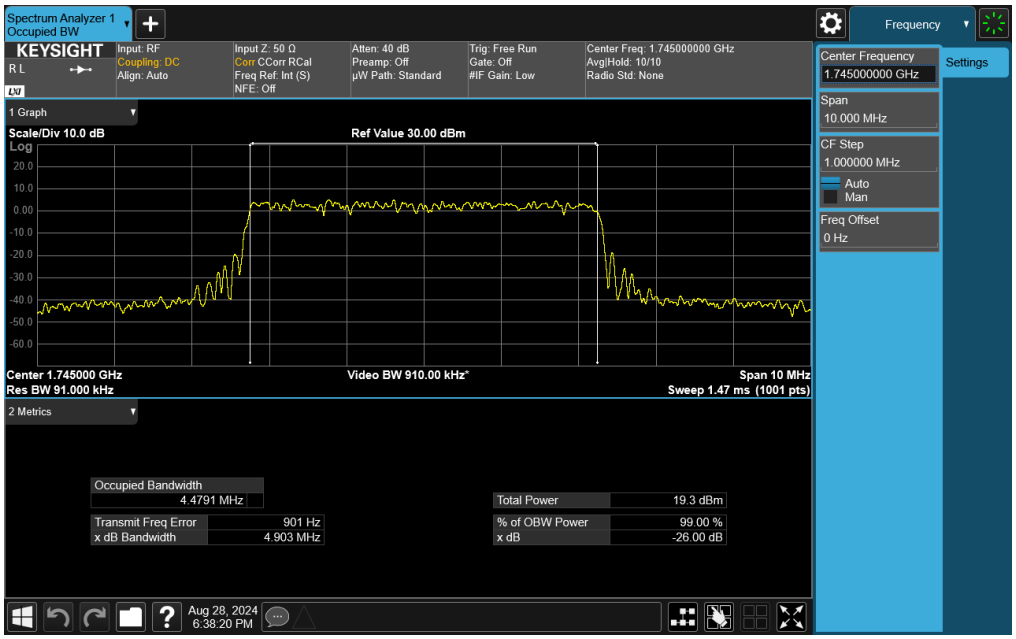
Plot 7-66. Occupied Bandwidth Plot (NR Band n66 - 5MHz CP-OFDM QPSK - Full RB)



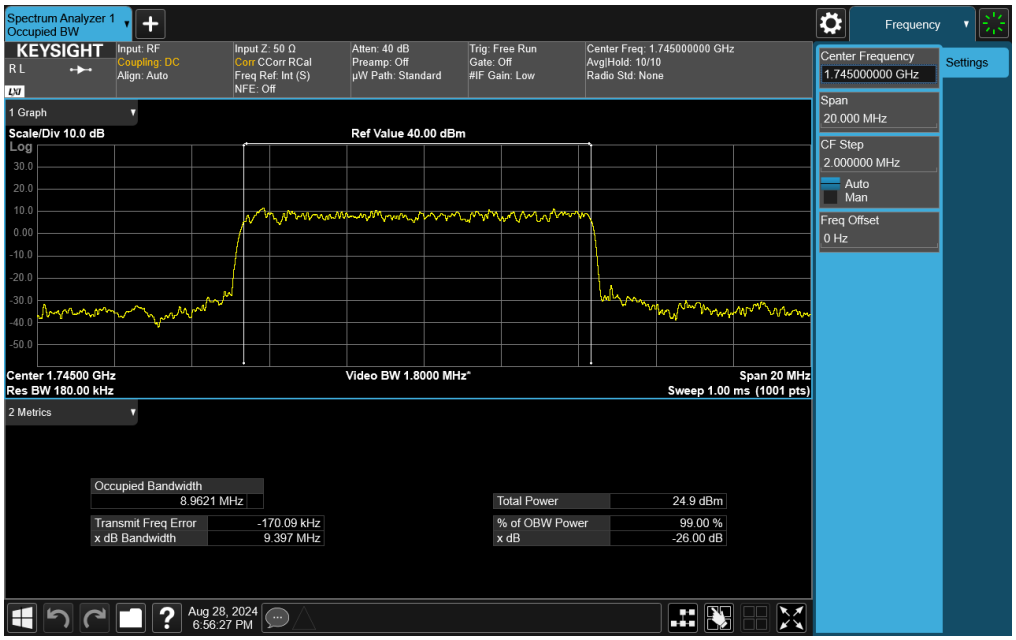
Plot 7-67. Occupied Bandwidth Plot (NR Band n66 - 5MHz CP-OFDM 16QAM - Full RB)



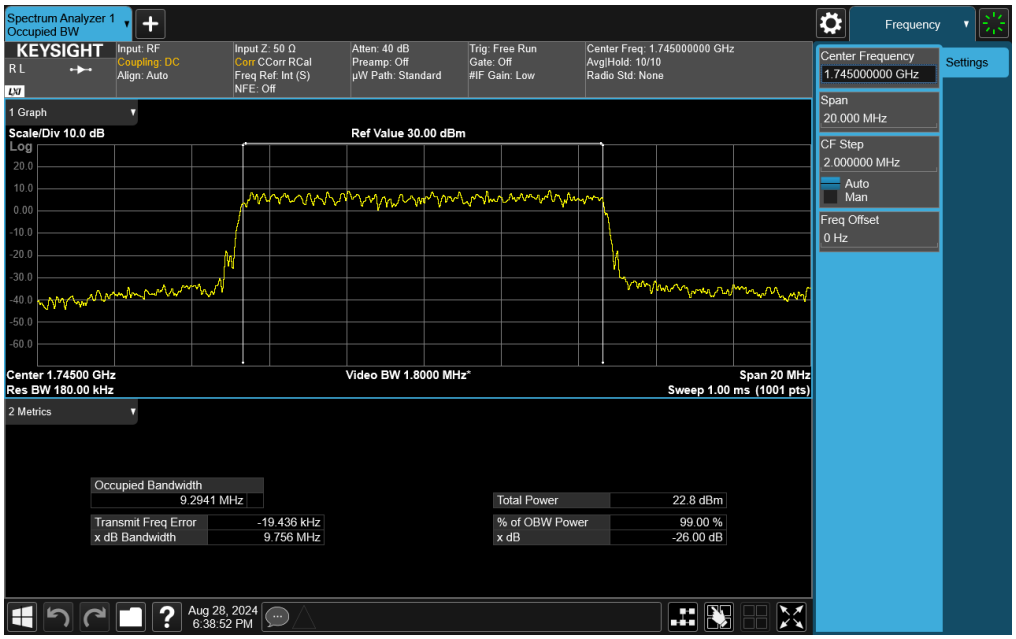
Plot 7-68. Occupied Bandwidth Plot (NR Band n66 - 5MHz CP-OFDM 64QAM - Full RB)



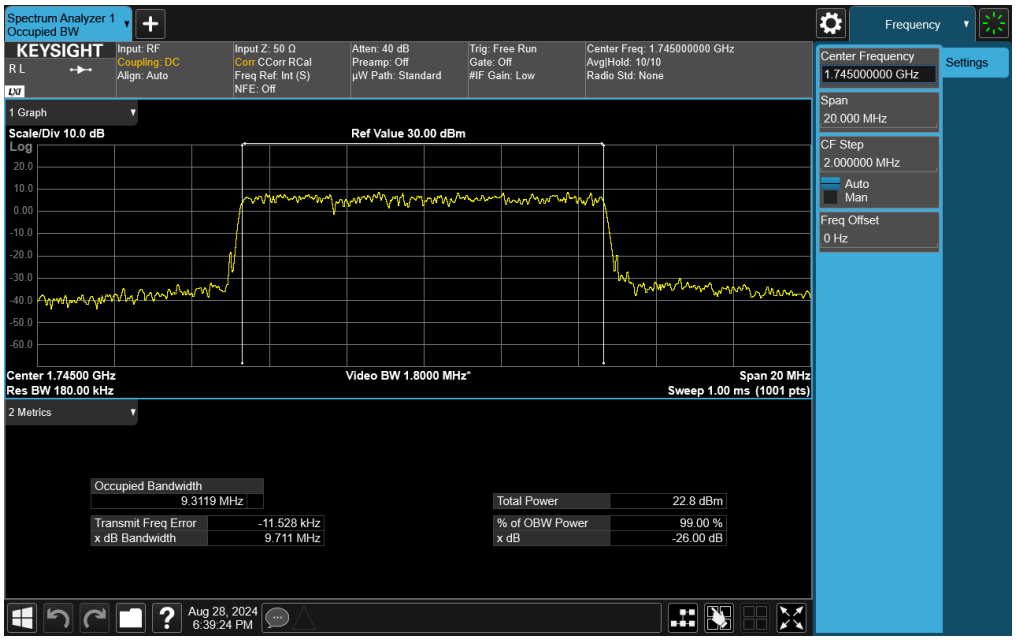
Plot 7-69. Occupied Bandwidth Plot (NR Band n66 - 5MHz CP-OFDM 256QAM - Full RB)



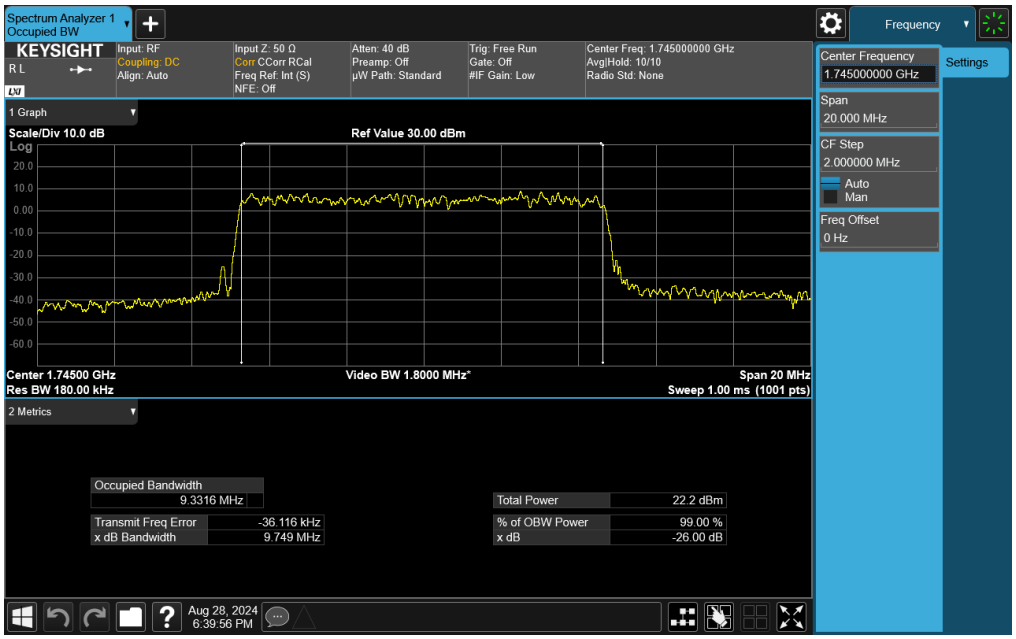
Plot 7-70. Occupied Bandwidth Plot (NR Band n66 - 10MHz DFT-s-OFDM π/2 BPSK - Full RB)



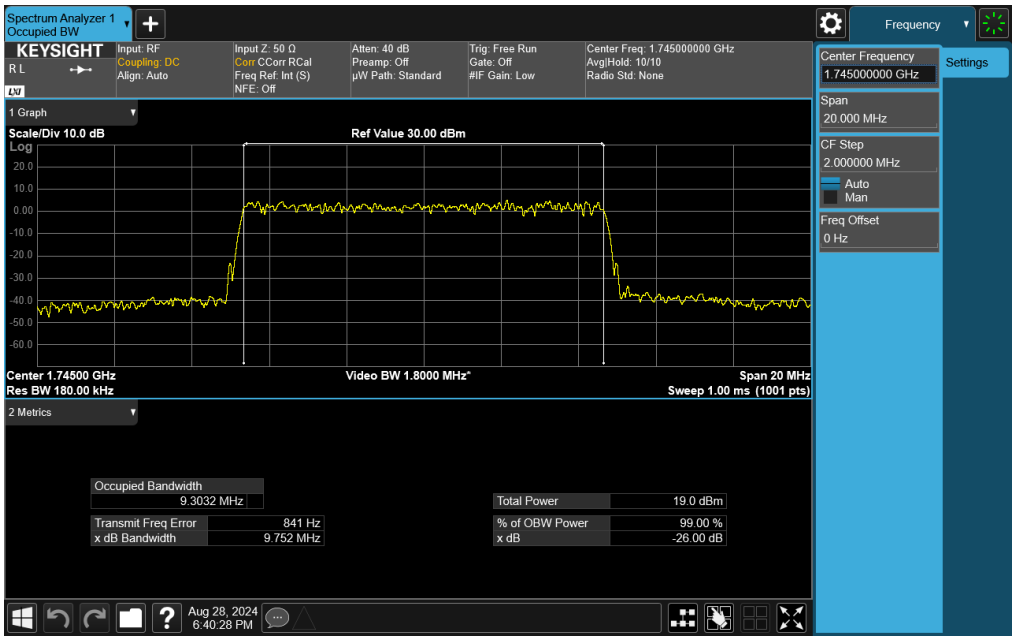
Plot 7-71. Occupied Bandwidth Plot (NR Band n66 - 10MHz CP-OFDM QPSK - Full RB)



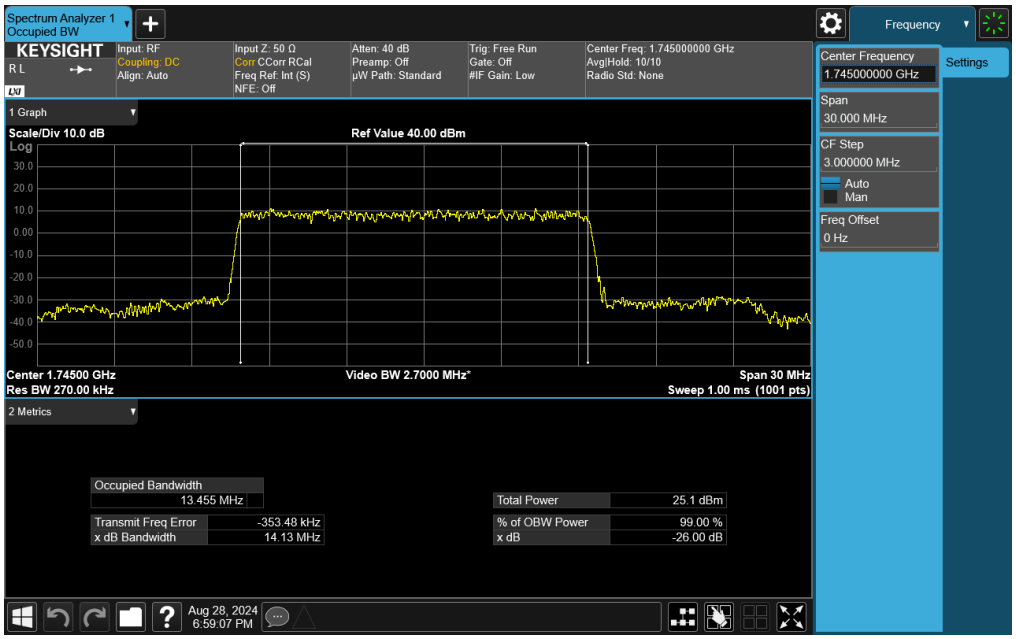
Plot 7-72. Occupied Bandwidth Plot (NR Band n66 - 10MHz CP-OFDM 16QAM - Full RB)



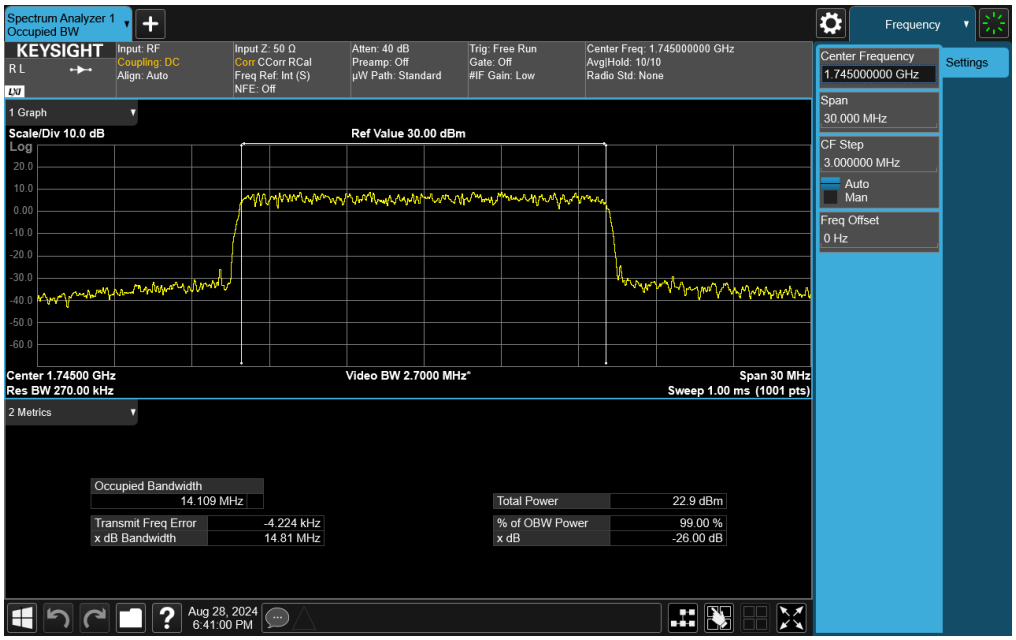
Plot 7-73. Occupied Bandwidth Plot (NR Band n66 - 10MHz CP-OFDM 64QAM - Full RB)



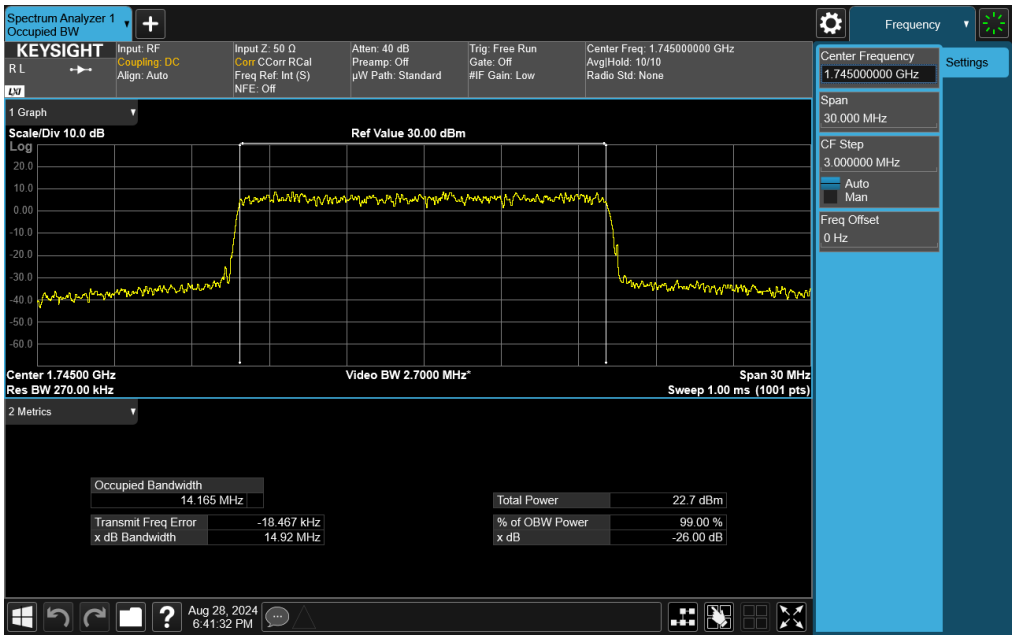
Plot 7-74. Occupied Bandwidth Plot (NR Band n66 - 10MHz CP-OFDM 256QAM - Full RB)



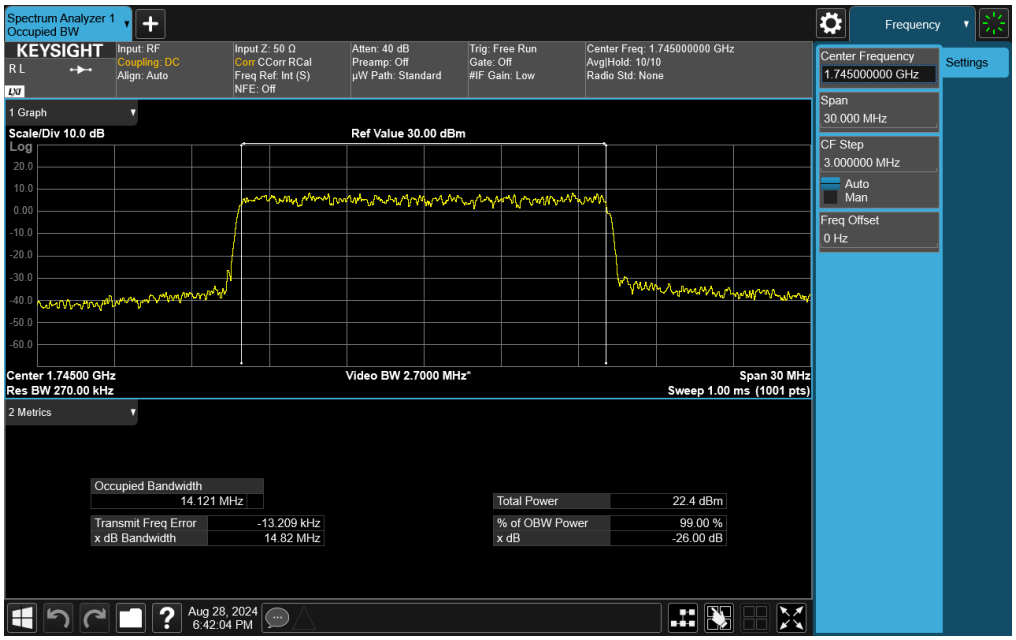
Plot 7-75. Occupied Bandwidth Plot (NR Band n66 - 15MHz DFT-s-OFDM π/2 BPSK - Full RB)



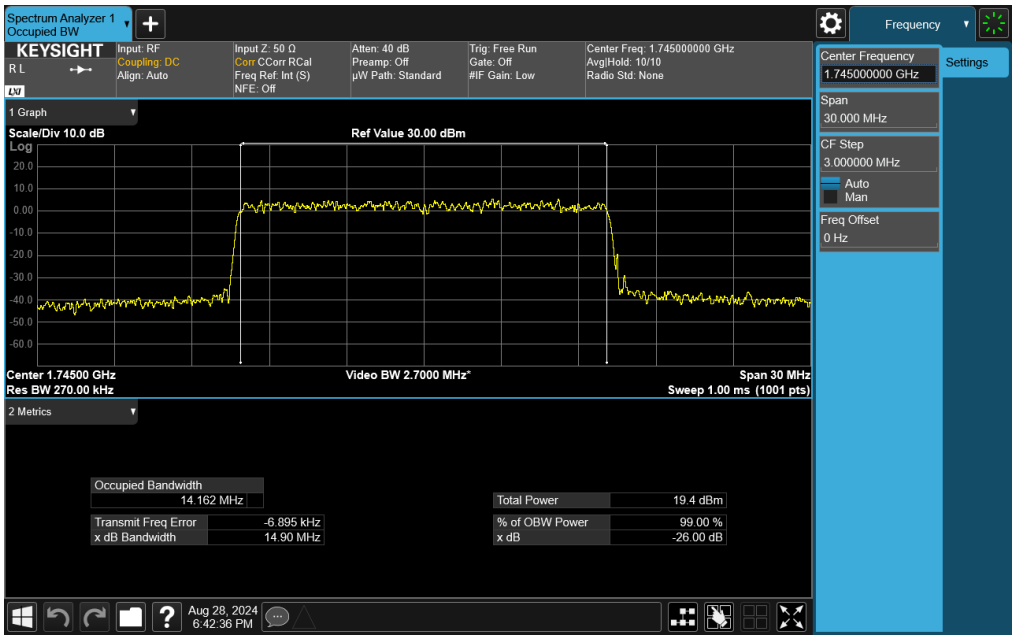
Plot 7-76. Occupied Bandwidth Plot (NR Band n66 - 15MHz CP-OFDM QPSK - Full RB)



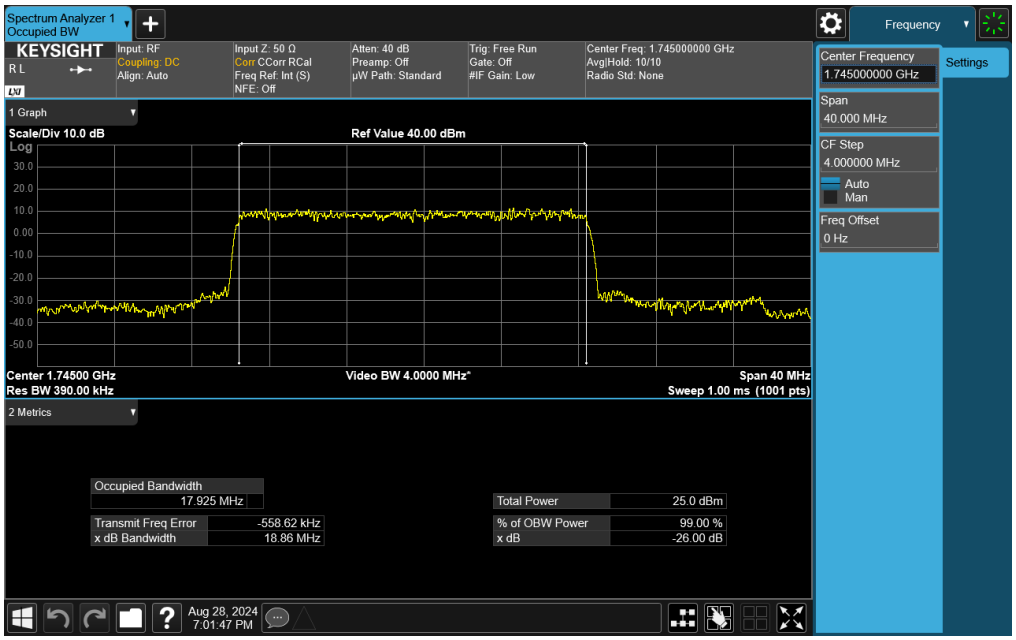
Plot 7-77. Occupied Bandwidth Plot (NR Band n66 - 15MHz CP-OFDM 16QAM - Full RB)



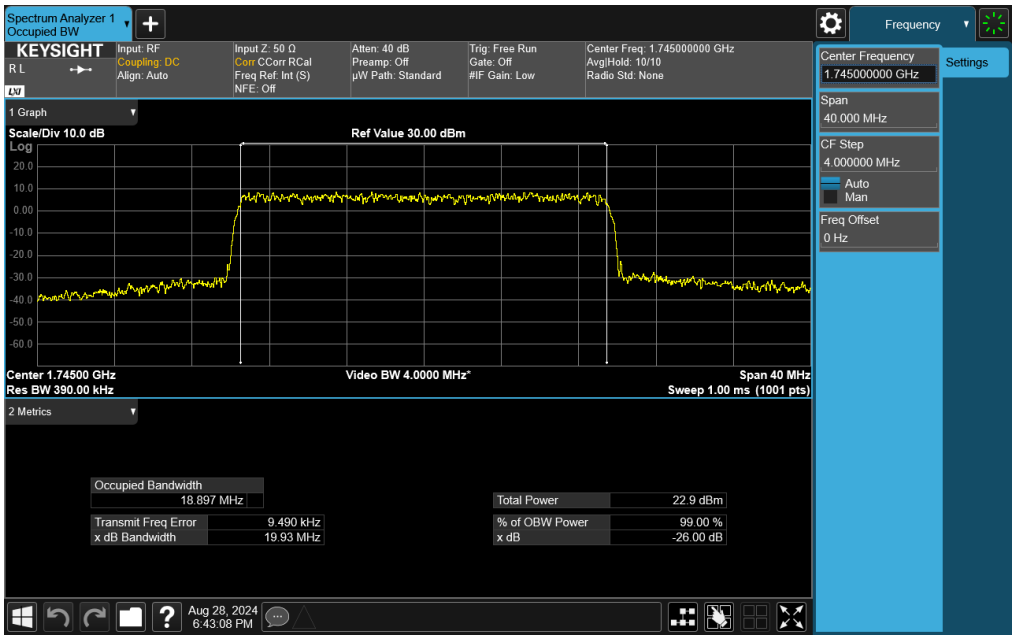
Plot 7-78. Occupied Bandwidth Plot (NR Band n66 - 15MHz CP-OFDM 64QAM - Full RB)



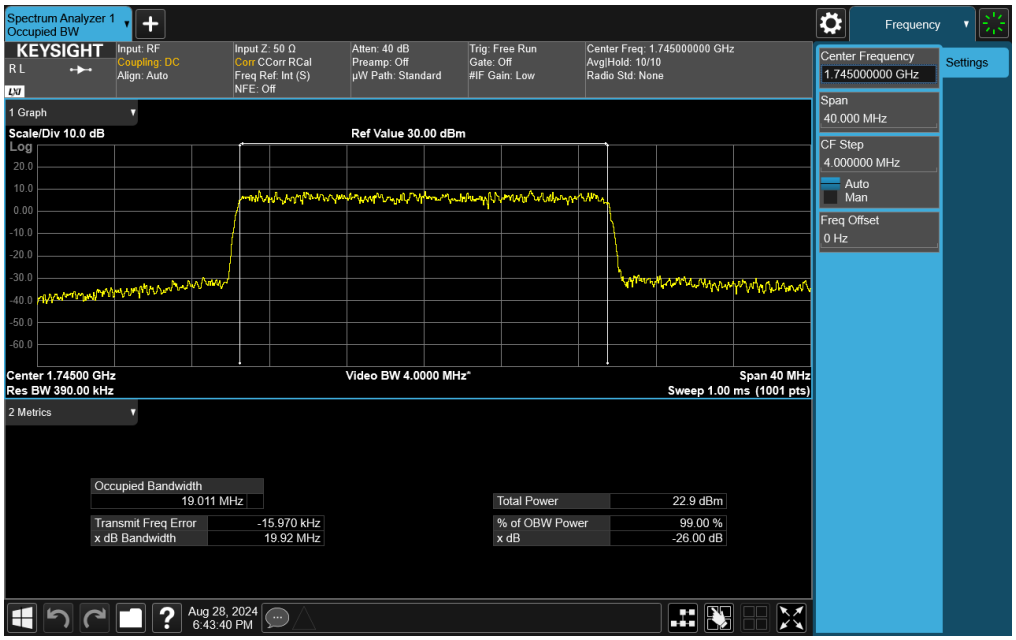
Plot 7-79. Occupied Bandwidth Plot (NR Band n66 - 15MHz CP-OFDM 256QAM - Full RB)



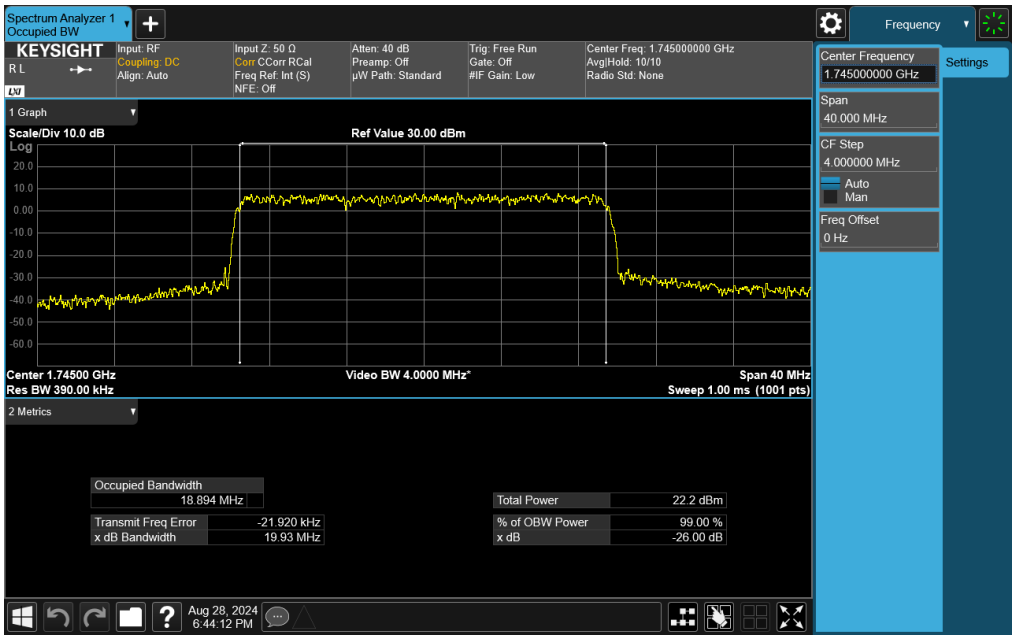
Plot 7-80. Occupied Bandwidth Plot (NR Band n66 - 20MHz DFT-s-OFDM π/2 BPSK - Full RB)



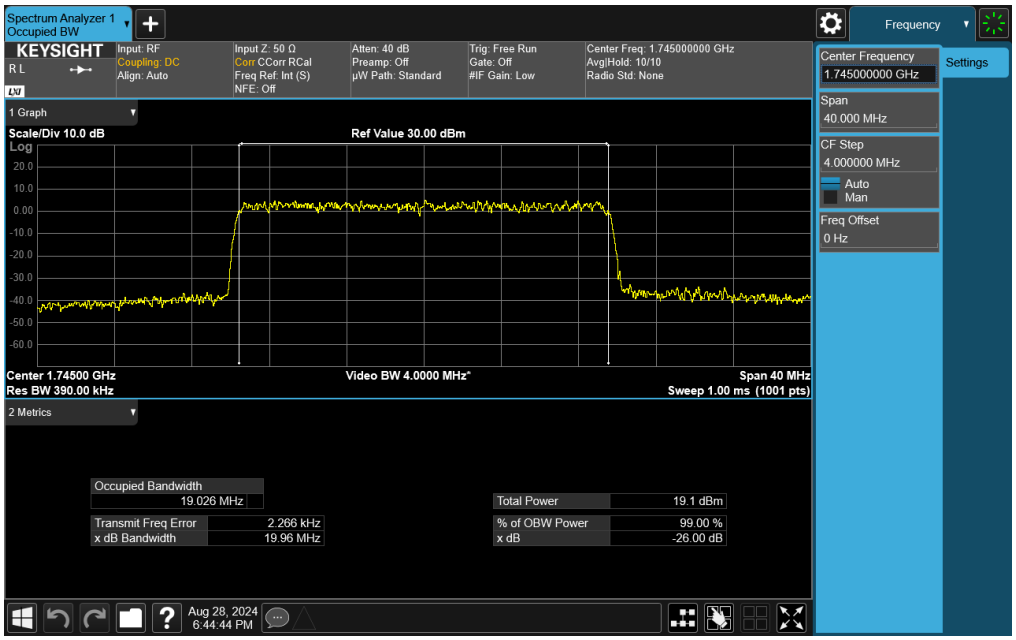
Plot 7-81. Occupied Bandwidth Plot (NR Band n66 - 20MHz CP-OFDM QPSK - Full RB)



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



Plot 7-83. Occupied Bandwidth Plot (NR Band n66 - 20MHz CP-OFDM 64QAM - Full RB)



Plot 7-84. Occupied Bandwidth Plot (NR Band n66 - 20MHz CP-OFDM 256QAM - Full RB)