Element Materials Technology
(formerly PCTEST)
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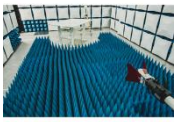


MEASUREMENT REPORT
PART 27

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:
1/22/2025
Test Site/Location:
Element Materials Technology, Morgan Hill, CA, USA
Test Report Serial No.:
1C2410210073-10-R1.BCG

FCC ID:	**BCGA3267**
Applicant Name:	**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.

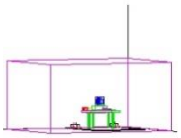
This revised Test Report (S/N: 1C2410210073-10-R1.BCG) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose accordingly.

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.

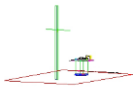
RJ Ortanez
Executive Vice President

ACCREDITED
CERT #2041.02

TABLE OF CONTENTS



PART 27 MEASUREMENT REPORT



Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	EIRP		Emission Designator
					Max. Power [W]	Max. Power [dBm]	
LTE Band 30	5 MHz	QPSK	2307.5 - 2312.5	4.5473	0.223	23.49	4M55G7W
		16QAM	2307.5 - 2312.5	4.5491	0.220	23.43	4M55D7W
		64QAM	2307.5 - 2312.5	4.5457	0.222	23.46	4M55D7W
		256QAM	2307.5 - 2312.5	4.5462	0.164	22.14	4M55D7W
	10MHz	QPSK	2310	9.0714	0.211	23.24	9M07G7W
		16QAM	2310	9.0552	0.222	23.46	9M06D7W
		64QAM	2310	9.0457	0.218	23.38	9M05D7W
		256QAM	2310	9.0402	0.171	22.32	9M04D7W
LTE Band 7	5 MHz	QPSK	2502.5 - 2567.5	4.5589	0.548	27.39	4M56G7W
		16QAM	2502.5 - 2567.5	4.5678	0.457	26.60	4M57D7W
		64QAM	2502.5 - 2567.5	4.5649	0.359	25.55	4M56D7W
		256QAM	2502.5 - 2567.5	4.5754	0.187	22.71	4M58D7W
	10 MHz	QPSK	2505 - 2565	9.0645	0.575	27.60	9M06G7W
		16QAM	2505 - 2565	9.0935	0.455	26.58	9M09D7W
		64QAM	2505 - 2565	9.0709	0.362	25.59	9M07D7W
		256QAM	2505 - 2565	9.0855	0.184	22.65	9M09D7W
	15 MHz	QPSK	2507.5 - 2562.5	13.6117	0.566	27.53	13M6G7W
		16QAM	2507.5 - 2562.5	13.6275	0.457	26.60	13M6D7W
		64QAM	2507.5 - 2562.5	13.5839	0.359	25.55	13M6D7W
		256QAM	2507.5 - 2562.5	13.5813	0.182	22.61	13M6D7W
	20 MHz	QPSK	2510 - 2560	18.0651	0.571	27.57	18M1G7W
		16QAM	2510 - 2560	18.1220	0.463	26.66	18M1D7W
		64QAM	2510 - 2560	18.1211	0.364	25.61	18M1D7W
		256QAM	2510 - 2560	18.1132	0.187	22.72	18M1D7W
LTE Band 41 (PC2)	5 MHz	QPSK	2498.5 - 2687.5	4.5347	0.773	28.88	4M53G7W
		16QAM	2498.5 - 2687.5	4.5396	0.619	27.92	4M54D7W
		64QAM	2498.5 - 2687.5	4.5428	0.484	26.85	4M54D7W
		256QAM	2498.5 - 2687.5	4.5415	0.250	23.98	4M54D7W
	10 MHz	QPSK	2501 - 2685	9.0441	0.762	28.82	9M04G7W
		16QAM	2501 - 2685	9.0318	0.614	27.88	9M03D7W
		64QAM	2501 - 2685	9.0359	0.490	26.90	9M04D7W
		256QAM	2501 - 2685	9.0534	0.248	23.94	9M05D7W
	15 MHz	QPSK	2503.5 - 2682.5	13.5464	0.776	28.90	13M5G7W
		16QAM	2503.5 - 2682.5	13.5131	0.607	27.83	13M5D7W
		64QAM	2503.5 - 2682.5	13.5319	0.489	26.89	13M5D7W
		256QAM	2503.5 - 2682.5	13.5117	0.252	24.01	13M5D7W
	20 MHz	QPSK	2506 - 2680	18.0431	0.767	28.85	18M0G7W
		16QAM	2506 - 2680	18.0767	0.604	27.81	18M1D7W
		64QAM	2506 - 2680	18.0254	0.488	26.88	18M0D7W
		256QAM	2506 - 2680	17.9891	0.252	24.02	18M0D7W
LTE Band 41(PC3)	5 MHz	QPSK	2498.5 - 2687.5	4.5347	0.561	27.49	4M53G7W
		16QAM	2498.5 - 2687.5	4.5396	0.457	26.60	4M54D7W
		64QAM	2498.5 - 2687.5	4.5428	0.355	25.50	4M54D7W
		256QAM	2498.5 - 2687.5	4.5415	0.187	22.73	4M54D7W
	10 MHz	QPSK	2501 - 2685	9.0441	0.575	27.60	9M04G7W
		16QAM	2501 - 2685	9.0318	0.454	26.57	9M03D7W
		64QAM	2501 - 2685	9.0359	0.360	25.56	9M04D7W
		256QAM	2501 - 2685	9.0534	0.186	22.70	9M05D7W
	15 MHz	QPSK	2503.5 - 2682.5	13.5464	0.574	27.59	13M5G7W
		16QAM	2503.5 - 2682.5	13.5131	0.455	26.58	13M5D7W
		64QAM	2503.5 - 2682.5	13.5319	0.366	25.63	13M5D7W
		256QAM	2503.5 - 2682.5	13.5117	0.187	22.72	13M5D7W
	20 MHz	QPSK	2506 - 2680	18.0431	0.562	27.50	18M0G7W
		16QAM	2506 - 2680	18.0767	0.458	26.61	18M1D7W
		64QAM	2506 - 2680	18.0254	0.363	25.60	18M0D7W
		256QAM	2506 - 2680	17.9891	0.189	22.77	18M0D7W
ULCA LTE Band 7	20 + 20 MHz	QPSK	2520 - 2550	37.6111	0.545	27.36	37M6G7W
		16QAM	2520 - 2550	37.6294	0.330	25.18	37M6D7W
		64QAM	2520 - 2550	37.5362	0.256	24.09	37M5D7W
		256QAM	2520 - 2550	37.5561	0.168	22.25	37M6D7W
ULCA LTE Band 41(PC2)	20 + 20 MHz	QPSK	2516 - 2670	37.5502	0.745	28.72	37M6G7W
		16QAM	2516 - 2670	37.5014	0.373	25.72	37M5D7W
		64QAM	2516 - 2670	37.4841	0.335	25.25	37M5D7W
		256QAM	2516 - 2670	37.4343	0.215	23.32	37M4D7W
ULCA LTE Band 41(PC3)	20 + 20 MHz	QPSK	2516 - 2670	37.5502	0.566	27.53	37M6G7W
		16QAM	2516 - 2670	37.5014	0.211	23.24	37M5D7W
		64QAM	2516 - 2670	37.4841	0.220	23.42	37M5D7W
		256QAM	2516 - 2670	37.4343	0.215	23.33	37M4D7W

EUT Overview

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	EIRP		Emission Designator
					Max. Power [W]	Max. Power [dBm]	
NR Band n30	5 MHz	π/2 BPSK	2307.5 - 2312.5	4.4744	0.224	23.50	4M47G7W
		QPSK	2307.5 - 2312.5	4.4664	0.218	23.39	4M47G7W
		16QAM	2307.5 - 2312.5	4.4808	0.224	23.50	4M48D7W
		64QAM	2307.5 - 2312.5	4.4922	0.222	23.47	4M49D7W
		256QAM	2307.5 - 2312.5	4.4947	0.183	22.62	4M49D7W
	10MHz	π/2 BPSK	2310	8.9046	0.224	23.50	8M90G7W
		QPSK	2310	9.2986	0.223	23.48	9M30G7W
		16QAM	2310	9.3238	0.219	23.40	9M32D7W
		64QAM	2310	9.3122	0.214	23.31	9M31D7W
		256QAM	2310	9.2743	0.197	22.94	9M27D7W
NR Band n7	5 MHz	π/2 BPSK	2502.5 - 2567.5	4.4771	0.568	27.54	4M48G7W
		QPSK	2502.5 - 2567.5	4.4873	0.575	27.60	4M49G7W
		16QAM	2502.5 - 2567.5	4.4453	0.458	26.61	4M45D7W
		64QAM	2502.5 - 2567.5	4.4938	0.364	25.61	4M49D7W
		256QAM	2502.5 - 2567.5	4.4945	0.185	22.68	4M49D7W
	10MHz	π/2 BPSK	2505 - 2565	8.9498	0.575	27.60	8M95G7W
		QPSK	2505 - 2565	9.2959	0.568	27.54	9M30G7W
		16QAM	2505 - 2565	9.2882	0.457	26.60	9M29D7W
		64QAM	2505 - 2565	9.3197	0.361	25.57	9M32D7W
		256QAM	2505 - 2565	9.3071	0.186	22.69	9M31D7W
	15 MHz	π/2 BPSK	2507.5 - 2562.5	13.4043	0.552	27.42	13M4G7W
		QPSK	2507.5 - 2562.5	14.0634	0.575	27.60	14M1G7W
		16QAM	2507.5 - 2562.5	14.1513	0.449	26.52	14M2D7W
		64QAM	2507.5 - 2562.5	14.1442	0.352	25.46	14M1D7W
		256QAM	2507.5 - 2562.5	14.1513	0.185	22.68	14M2D7W
	20MHz	π/2 BPSK	2510 - 2560	17.9302	0.575	27.60	17M9G7W
		QPSK	2510 - 2560	18.9543	0.570	27.56	19M0G7W
		16QAM	2510 - 2560	19.0472	0.449	26.52	19M0D7W
		64QAM	2510 - 2560	18.9844	0.363	25.60	19M0D7W
		256QAM	2510 - 2560	18.9811	0.185	22.67	19M0D7W
	25MHz	π/2 BPSK	2512.5 - 2557.5	22.8464	0.575	27.60	22M8G7W
		QPSK	2512.5 - 2557.5	23.9060	0.575	27.60	23M9G7W
		16QAM	2512.5 - 2557.5	23.8603	0.463	26.66	23M9D7W
		64QAM	2512.5 - 2557.5	23.8553	0.362	25.59	23M9D7W
		256QAM	2512.5 - 2557.5	23.7912	0.189	22.76	23M8D7W
	30MHz	π/2 BPSK	2515 - 2555	28.6134	0.560	27.48	28M6G7W
		QPSK	2515 - 2555	28.6231	0.575	27.60	28M6G7W
		16QAM	2515 - 2555	28.7021	0.457	26.60	28M7D7W
		64QAM	2515 - 2555	28.5834	0.358	25.54	28M6D7W
		256QAM	2515 - 2555	28.6561	0.183	22.63	28M7D7W
	35MHz	π/2 BPSK	2517.5 - 2552.5	32.2301	0.575	27.60	32M2G7W
		QPSK	2517.5 - 2552.5	33.7503	0.575	27.60	33M8G7W
		16QAM	2517.5 - 2552.5	33.6114	0.458	26.61	33M6D7W
		64QAM	2517.5 - 2552.5	33.7434	0.361	25.58	33M7D7W
		256QAM	2517.5 - 2552.5	33.6283	0.187	22.73	33M6D7W
	40MHz	π/2 BPSK	2520 - 2550	38.6762	0.570	27.56	38M7G7W
		QPSK	2520 - 2550	38.5293	0.575	27.60	38M5G7W
		16QAM	2520 - 2550	38.4672	0.463	26.66	38M5D7W
		64QAM	2520 - 2550	38.6953	0.367	25.65	38M7D7W
		256QAM	2520 - 2550	38.6614	0.187	22.73	38M7D7W

EUT Overview

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	EIRP		Emission Designator
					Max. Power [W]	Max. Power [dBm]	
NR Band n41 (PC2)	10 MHz	π/2 BPSK	2501 - 2685	8.6078	0.776	28.90	8M61G7W
		QPSK	2501 - 2685	8.6187	0.764	28.83	8M62G7W
		16QAM	2501 - 2685	8.6107	0.652	28.14	8M61D7W
		64QAM	2501 - 2685	8.6143	0.494	26.94	8M61D7W
		256QAM	2501 - 2685	8.5909	0.284	24.54	8M59D7W
	15 MHz	π/2 BPSK	2503.5 - 2682.5	12.8174	0.776	28.90	12M8G7W
		QPSK	2503.5 - 2682.5	13.5654	0.767	28.85	13M6G7W
		16QAM	2503.5 - 2682.5	13.6393	0.619	27.92	13M6D7W
		64QAM	2503.5 - 2682.5	13.6064	0.423	26.26	13M6D7W
		256QAM	2503.5 - 2682.5	13.5854	0.284	24.53	13M6D7W
	20 MHz	π/2 BPSK	2506 - 2680	17.9413	0.776	28.90	17M9G7W
		QPSK	2506 - 2680	18.2644	0.770	28.87	18M3G7W
		16QAM	2506 - 2680	18.2634	0.648	28.11	18M3D7W
		64QAM	2506 - 2680	18.2193	0.438	26.41	18M2D7W
		256QAM	2506 - 2680	18.3274	0.284	24.54	18M3D7W
	30MHz	π/2 BPSK	2511 - 2675	26.8649	0.771	28.87	26M9G7W
		QPSK	2511 - 2675	27.9146	0.755	28.78	27M9G7W
		16QAM	2511 - 2675	27.9612	0.624	27.95	28M0D7W
		64QAM	2511 - 2675	27.9779	0.479	26.80	28M0D7W
		256QAM	2511 - 2675	27.9968	0.279	24.46	28M0D7W
	40 MHz	π/2 BPSK	2516 - 2670	35.7943	0.775	28.90	35M8G7W
		QPSK	2516 - 2670	37.9021	0.745	28.72	37M9G7W
		16QAM	2516 - 2670	37.9689	0.611	27.86	38M0D7W
		64QAM	2516 - 2670	37.9173	0.460	26.63	37M9D7W
		256QAM	2516 - 2670	37.9059	0.291	24.63	37M9D7W
	50 MHz	π/2 BPSK	2521 - 2665	45.7852	0.770	28.87	45M8G7W
		QPSK	2521 - 2665	47.6361	0.755	28.78	47M6G7W
		16QAM	2521 - 2665	47.7725	0.586	27.68	47M8D7W
		64QAM	2521 - 2665	47.6251	0.440	26.43	47M6D7W
		256QAM	2521 - 2665	47.6121	0.276	24.41	47M6D7W
	60 MHz	π/2 BPSK	2526 - 2660	58.0244	0.776	28.90	58M0G7W
		QPSK	2526 - 2660	58.0570	0.752	28.76	58M1G7W
		16QAM	2526 - 2660	57.9994	0.581	27.65	58M0D7W
		64QAM	2526 - 2660	57.9672	0.430	26.33	58M0D7W
		256QAM	2526 - 2660	57.9708	0.279	24.45	58M0D7W
	70 MHz	π/2 BPSK	2531 - 2655	64.3932	0.776	28.90	64M4G7W
		QPSK	2531 - 2655	67.5391	0.768	28.86	67M5G7W
		16QAM	2531 - 2655	67.6364	0.621	27.93	67M6D7W
		64QAM	2531 - 2655	67.5254	0.448	26.51	67M5D7W
		256QAM	2531 - 2655	67.7433	0.276	24.40	67M7D7W
	80 MHz	π/2 BPSK	2536 - 2650	77.3600	0.776	28.90	77M4G7W
		QPSK	2536 - 2650	77.6235	0.774	28.89	77M6G7W
		16QAM	2536 - 2650	77.7960	0.597	27.76	77M8D7W
		64QAM	2536 - 2650	77.7164	0.451	26.54	77M7D7W
		256QAM	2536 - 2650	77.5993	0.281	24.48	77M6D7W
	90 MHz	π/2 BPSK	2541 - 2645	86.9924	0.776	28.90	87M0G7W
		QPSK	2541 - 2645	87.7052	0.753	28.77	87M7G7W
		16QAM	2541 - 2645	87.8374	0.634	28.02	87M8D7W
		64QAM	2541 - 2645	87.7010	0.451	26.54	87M7D7W
		256QAM	2541 - 2645	87.6610	0.294	24.69	87M7D7W
	100 MHz	π/2 BPSK	2546 - 2640	96.6585	0.776	28.90	96M7G7W
		QPSK	2546 - 2640	97.6667	0.733	28.65	97M7G7W
		16QAM	2546 - 2640	97.7016	0.595	27.74	97M7D7W
		64QAM	2546 - 2640	97.7430	0.439	26.42	97M7D7W
		256QAM	2546 - 2640	97.5976	0.290	24.62	97M6D7W

EUT Overview

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	EIRP		Emission Designator
					Max. Power [W]	Max. Power [dBm]	
NR Band n41 (PC3)	10 MHz	π/2 BPSK	2501 - 2685	8.6078	0.555	27.44	8M61G7W
		QPSK	2501 - 2685	8.6187	0.557	27.46	8M62G7W
		16QAM	2501 - 2685	8.6107	0.460	26.62	8M61D7W
		64QAM	2501 - 2685	8.6143	0.291	24.64	8M61D7W
		256QAM	2501 - 2685	8.5909	0.202	23.06	8M59D7W
	15 MHz	π/2 BPSK	2503.5 - 2682.5	12.8174	0.564	27.51	12M8G7W
		QPSK	2503.5 - 2682.5	13.5654	0.562	27.49	13M6G7W
		16QAM	2503.5 - 2682.5	13.6393	0.456	26.59	13M6D7W
		64QAM	2503.5 - 2682.5	13.6064	0.312	24.94	13M6D7W
		256QAM	2503.5 - 2682.5	13.5854	0.198	22.97	13M6D7W
	20 MHz	π/2 BPSK	2506 - 2680	17.9413	0.569	27.55	17M9G7W
		QPSK	2506 - 2680	18.2644	0.563	27.50	18M3G7W
		16QAM	2506 - 2680	18.2634	0.454	26.57	18M3D7W
		64QAM	2506 - 2680	18.2193	0.298	24.74	18M2D7W
		256QAM	2506 - 2680	18.3274	0.194	22.87	18M3D7W
	30MHz	π/2 BPSK	2511 - 2675	26.8649	0.571	27.57	26M9G7W
		QPSK	2511 - 2675	27.9146	0.573	27.58	27M9G7W
		16QAM	2511 - 2675	27.9612	0.458	26.61	28M0D7W
		64QAM	2511 - 2675	27.9779	0.311	24.93	28M0D7W
		256QAM	2511 - 2675	27.9968	0.201	23.04	28M0D7W
	40 MHz	π/2 BPSK	2516 - 2670	35.7943	0.575	27.60	35M8G7W
		QPSK	2516 - 2670	37.9021	0.575	27.60	37M9G7W
		16QAM	2516 - 2670	37.9689	0.481	26.82	38M0D7W
		64QAM	2516 - 2670	37.9173	0.316	24.99	37M9D7W
		256QAM	2516 - 2670	37.9059	0.205	23.13	37M9D7W
	50 MHz	π/2 BPSK	2521 - 2665	45.7852	0.569	27.55	45M8G7W
		QPSK	2521 - 2665	47.6361	0.556	27.45	47M6G7W
		16QAM	2521 - 2665	47.7725	0.453	26.56	47M8D7W
		64QAM	2521 - 2665	47.6251	0.298	24.75	47M6D7W
		256QAM	2521 - 2665	47.6121	0.205	23.11	47M6D7W
	60 MHz	π/2 BPSK	2526 - 2660	58.0244	0.571	27.57	58M0G7W
		QPSK	2526 - 2660	58.0570	0.555	27.44	58M1G7W
		16QAM	2526 - 2660	57.9994	0.448	26.52	58M0D7W
		64QAM	2526 - 2660	57.9672	0.293	24.67	58M0D7W
		256QAM	2526 - 2660	57.9708	0.198	22.97	58M0D7W
	70 MHz	π/2 BPSK	2531 - 2655	64.3932	0.553	27.43	64M4G7W
		QPSK	2531 - 2655	67.5391	0.573	27.58	67M5G7W
		16QAM	2531 - 2655	67.6364	0.466	26.68	67M6D7W
		64QAM	2531 - 2655	67.5254	0.295	24.70	67M5D7W
		256QAM	2531 - 2655	67.7433	0.207	23.15	67M7D7W
	80 MHz	π/2 BPSK	2536 - 2650	77.3600	0.575	27.60	77M4G7W
		QPSK	2536 - 2650	77.6235	0.565	27.52	77M6G7W
		16QAM	2536 - 2650	77.7960	0.469	26.71	77M8D7W
		64QAM	2536 - 2650	77.7164	0.299	24.75	77M7D7W
		256QAM	2536 - 2650	77.5993	0.204	23.11	77M6D7W
	90 MHz	π/2 BPSK	2541 - 2645	86.9924	0.571	27.57	87M0G7W
		QPSK	2541 - 2645	87.7052	0.572	27.58	87M7G7W
		16QAM	2541 - 2645	87.8374	0.467	26.69	87M8D7W
		64QAM	2541 - 2645	87.7010	0.302	24.79	87M7D7W
		256QAM	2541 - 2645	87.6610	0.203	23.08	87M7D7W
	100 MHz	π/2 BPSK	2546 - 2640	96.6585	0.568	27.54	96M7G7W
		QPSK	2546 - 2640	97.6667	0.567	27.53	97M7G7W
		16QAM	2546 - 2640	97.7016	0.483	26.84	97M7D7W
		64QAM	2546 - 2640	97.7430	0.307	24.86	97M7D7W
		256QAM	2546 - 2640	97.5976	0.197	22.96	97M6D7W

EUT Overview

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 Washington DC LLC 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

Measurements for LTE Band 41, FR1 Band n41, and LTE ULCA B41 were performed with NS04 for all antennas. Measurements for LTE Band 30 were performed with NS21 for all antennas.

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:

1. All the above simultaneous transmission configurations have been tested and the worst case configuration was found to be Config 1.
2. Specific 2.4GHz Wi-Fi antenna that can only transmit simultaneously with 2.4GHz Bluetooth antenna is listed in the SAR test report. For BT (2.4GHz) in connected mode and disconnected mode, and Wi-Fi (2.4GHz) - 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 manufacturer were used for testing.

Band	Antenna Gain [dBi]			
	Antenna 4	Antenna 2b	Antenna 3a	Antenna 1b
LTE Band 30	1.8	-1.7	3.0	-4.0
NR Band n30				
LTE Band 7	1.6	-0.7	2.9	-2.8
NR Band n7				
LTE Band 41	1.2	-1.2	1.9	-3.7
NR Band n41				

Table 2-2. Highest Antenna Gain

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:	A2538	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.

All possible simultaneous transmission configurations have been investigated and the worst case config has been reported.

Description	LTE B41	Bluetooth	UNII
Antenna	Antenna 3a	Antenna 3a	Antenna 3a
Channel	40640	78	36
Operating Frequency (MHz)	2595	2480	5180
Mode/Modulation	QPSK/1RB/20MHz	GFSK ePA	802.11n

Table 2-4. Worst Case Simultaneous Transmission Configuration

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

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
BW = 8.45 MHz
D = Amplitude/Angle Modulated
7 = Quantized/Digital Info
W = Combination of Any

Spurious Radiated Emission

Example: Spurious emission at 3700.40 MHz

The receive 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 3700.40 MHz. So 6.1 dB is added to the signal generator reading of –30.9 dBm yielding –24.80 dBm. The fundamental EIRP was 25.50 dBm so this harmonic was 25.50 dBm – (-24.80) = 50.3 dBc.

7.0 TEST RESULTS

7.1 Summary

Company Name: Apple Inc.

FCC ID: BCGA3267

FCC Classification: PCS Licensed Transmitter (PCB)

Mode(s): LTE/NR/ULCA

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 (LTE Band 30)	2.1051, 27.53(a)	Undesirable emissions must meet the limits detailed in 27.53(a)	PASS	Sections 7.3, 7.4
	Conducted Band Edge / Spurious Emissions (LTE Band 7)	2.1051, 27.53(m)	Undesirable emissions must meet the limits detailed in 27.53(m)	PASS	Sections 7.3, 7.4
	Conducted Band Edge / Spurious Emissions (LTE Band 41)			PASS	Sections 7.3, 7.4
	Conducted Band Edge / Spurious Emissions (NR Band n41)			PASS	Sections 7.3, 7.4
	Transmitter Conducted Output Power	2.1046	N/A	N/A	See RF Exposure Report
	Additional Maximum Power Reduction (A-MPR)	2.1046	N/A	N/A	Section 7.5
	Effective Radiated Power / Equivalent Isotropic Radiated Power (LTE Band 30)	27.50(a)(3)	< 0.25 Watts max. EIRP	PASS	Section 7.6
	Effective Radiated Power / Equivalent Isotropic Radiated Power (LTE Band 7)	27.50(h)(2)	< 2 Watts max. EIRP	PASS	Section 7.6
	Effective Radiated Power / Equivalent Isotropic Radiated Power (LTE Band 41)			PASS	Section 7.6
	Effective Radiated Power / Equivalent Isotropic Radiated Power (NR Band n41)			PASS	Section 7.6
	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
RADIATED	Radiated Spurious Emissions (LTE Band 30)	2.1053, 27.53(a)	> 70 + 10log10(P[Watts])	PASS	Section 7.7
	Radiated Spurious Emissions (LTE Band 7)	2.1053, 27.53(m)	Undesirable emissions must meet the limits detailed in 27.53(m)	PASS	Section 7.7
	Radiated Spurious Emissions (LTE Band 41)			PASS	Section 7.7
	Radiated Spurious Emissions (NR Band n41)			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 port 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 was 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.

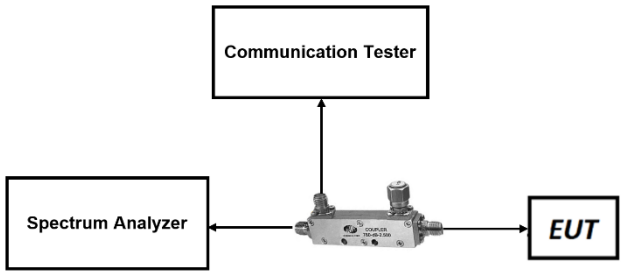


Figure 7-1. LTE Test Instrument & Measurement Setup

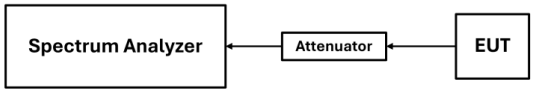
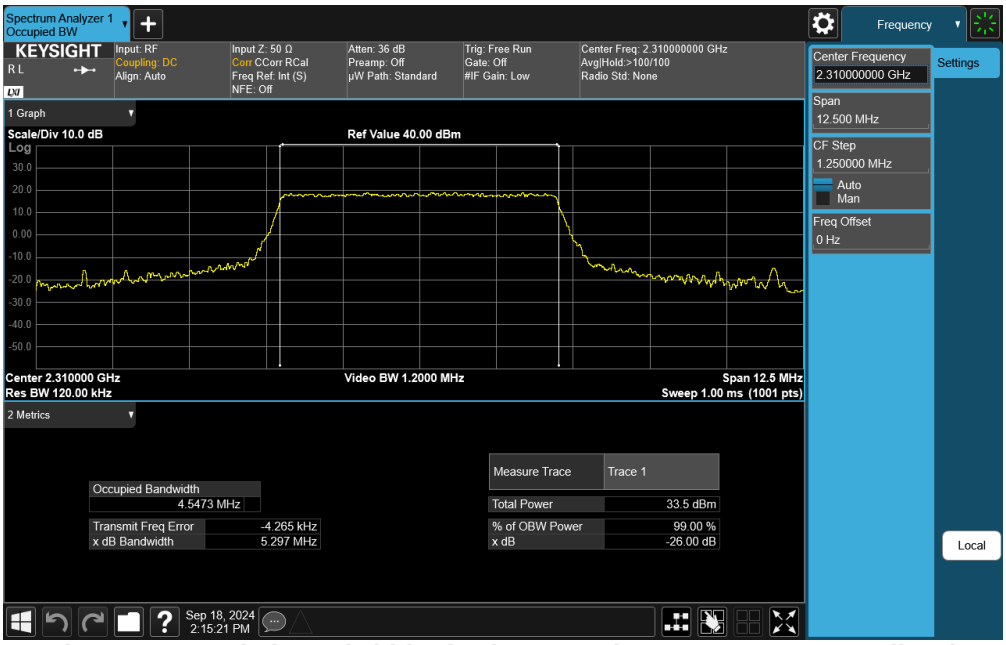


Figure 7-2. FR1 Test Instrument & Measurement Setup

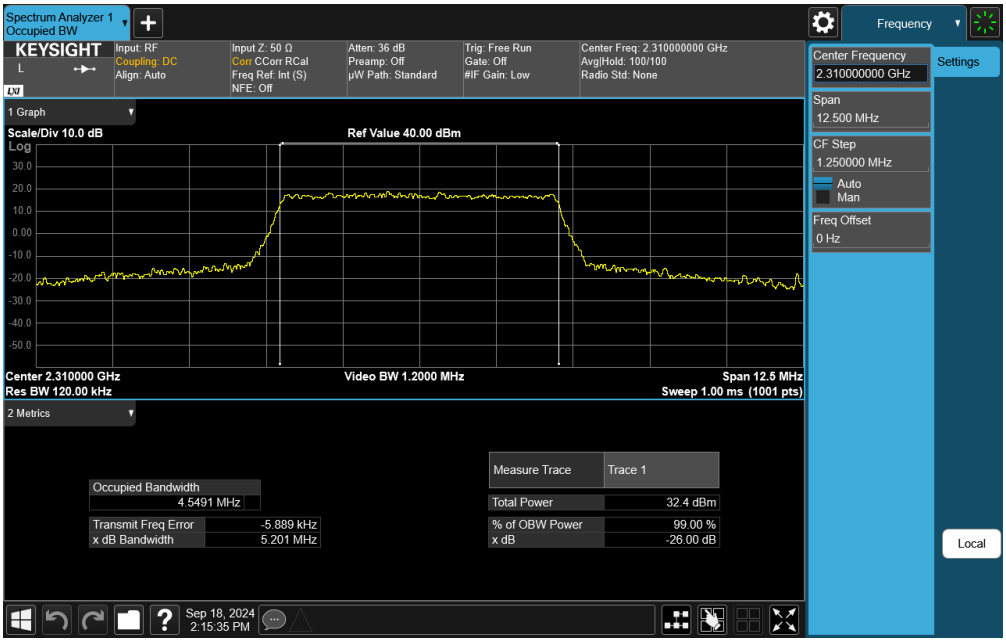
Test Notes

None.

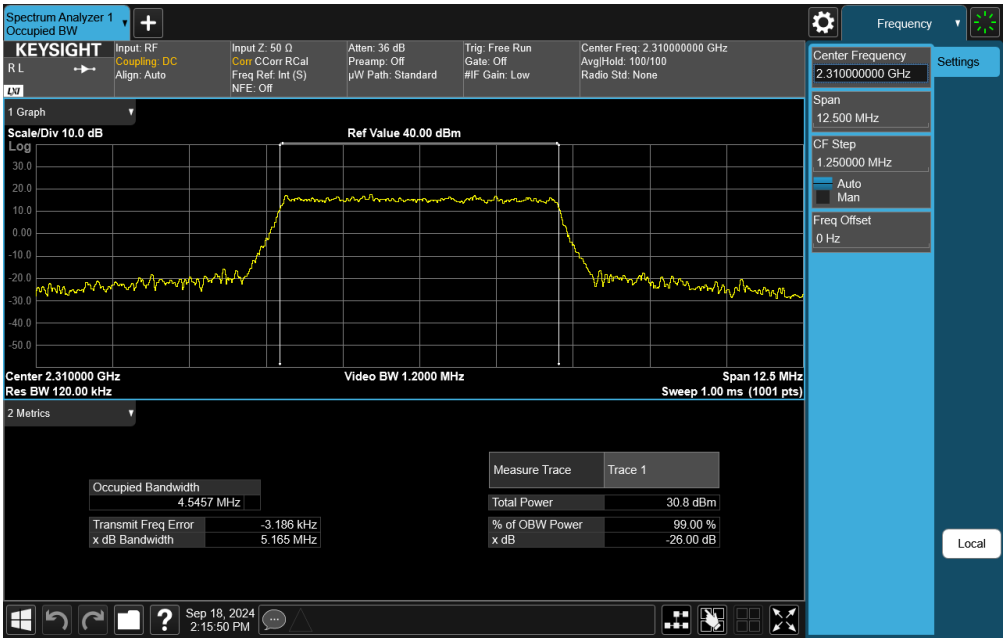
LTE Band 30



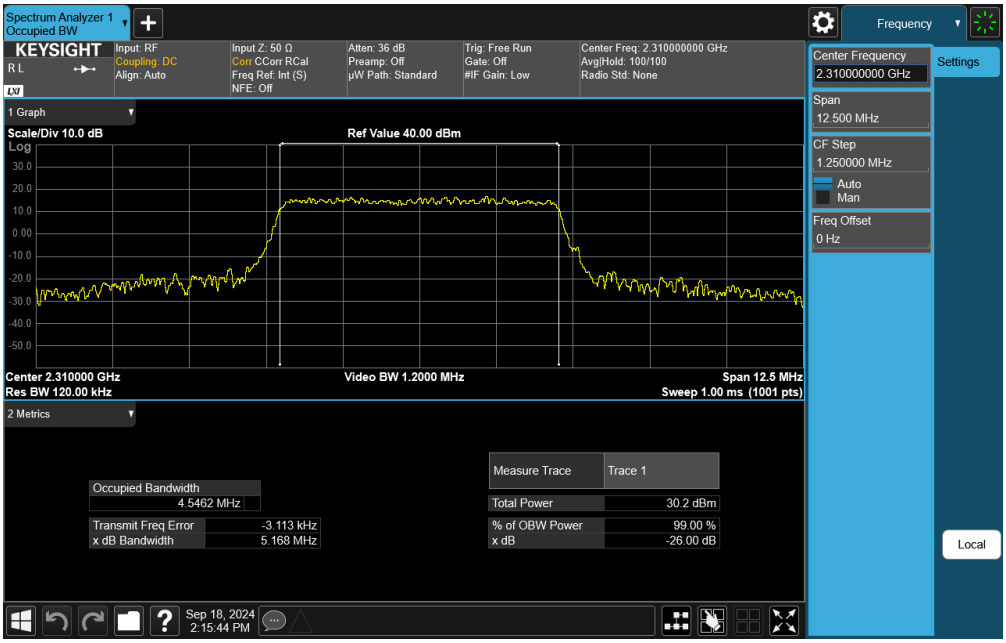
Plot 7-1. Occupied Bandwidth Plot (LTE Band 30 - 5MHz QPSK - Full RB)



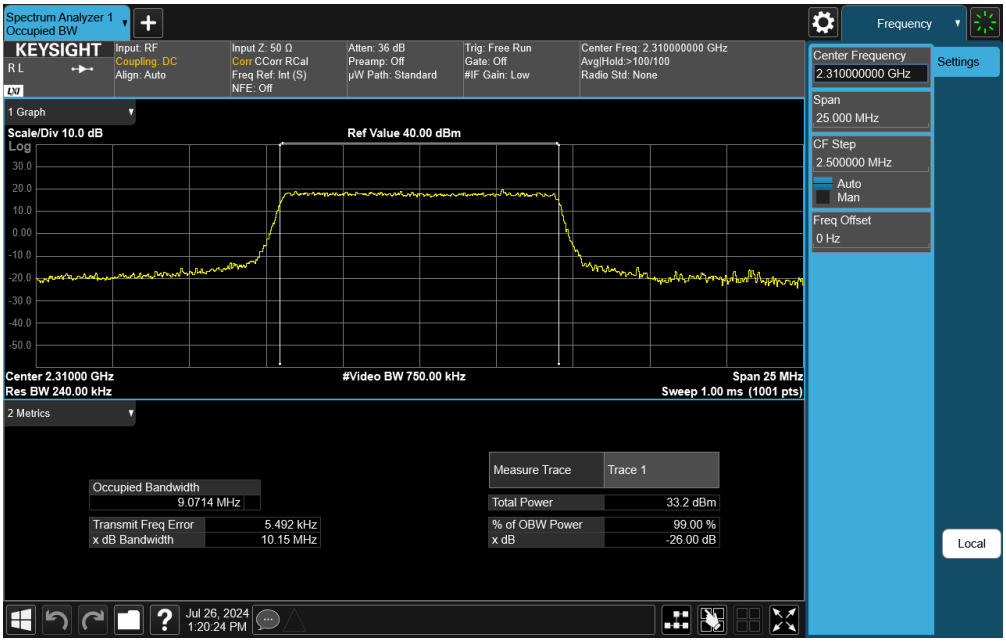
Plot 7-2. Occupied Bandwidth Plot (LTE Band 30 - 5MHz 16-QAM - Full RB)



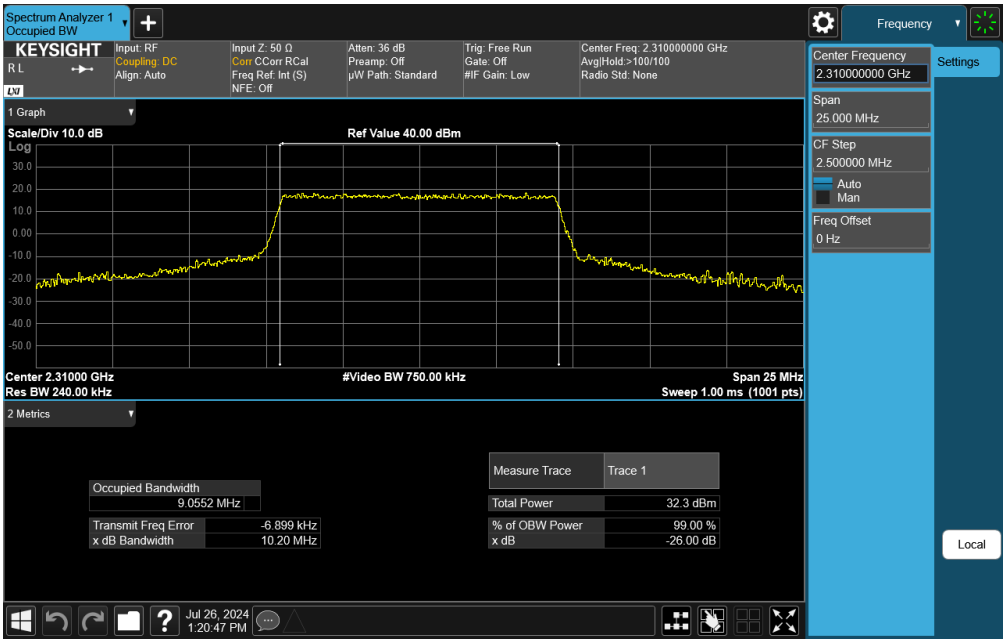
Plot 7-3. Occupied Bandwidth Plot (LTE Band 30 - 5MHz 64-QAM - Full RB)



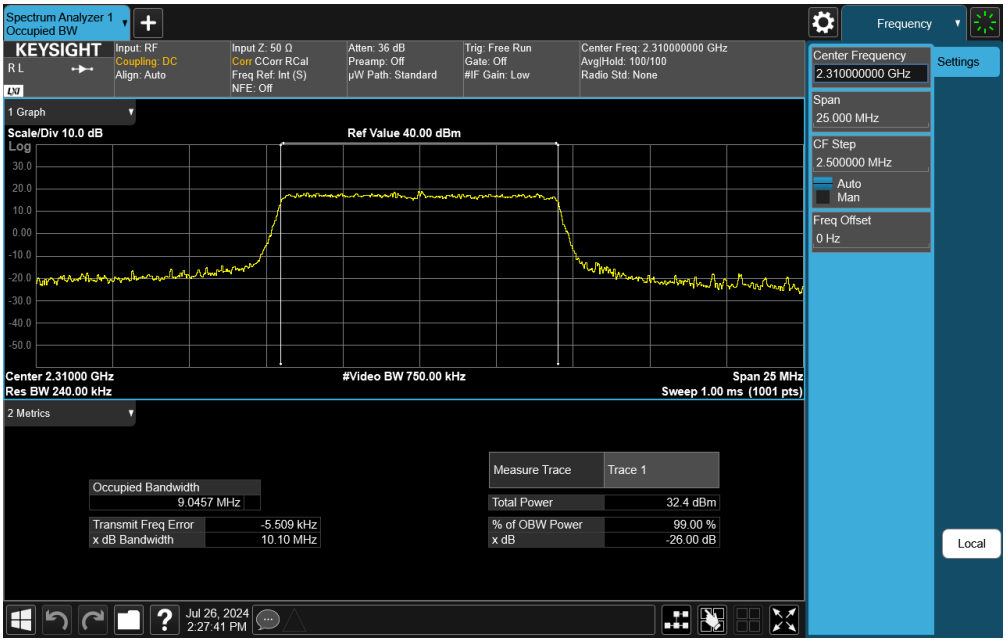
Plot 7-4. Occupied Bandwidth Plot (LTE Band 30 - 5MHz 256-QAM - Full RB)



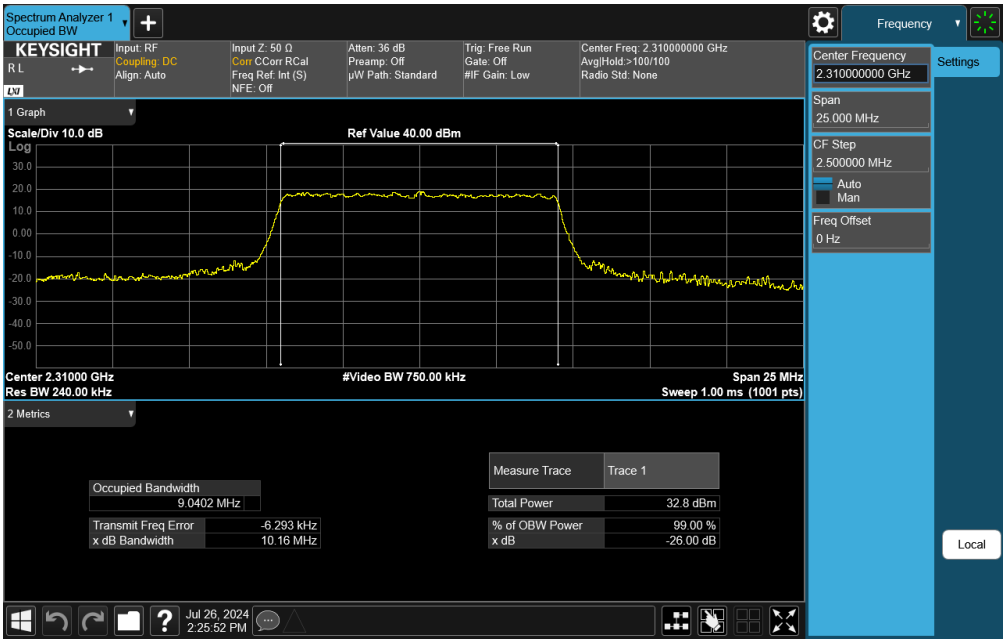
Plot 7-5. Occupied Bandwidth Plot (LTE Band 30 - 10MHz QPSK - Full RB)



Plot 7-6. Occupied Bandwidth Plot (LTE Band 30 - 10MHz 16-QAM - Full RB)

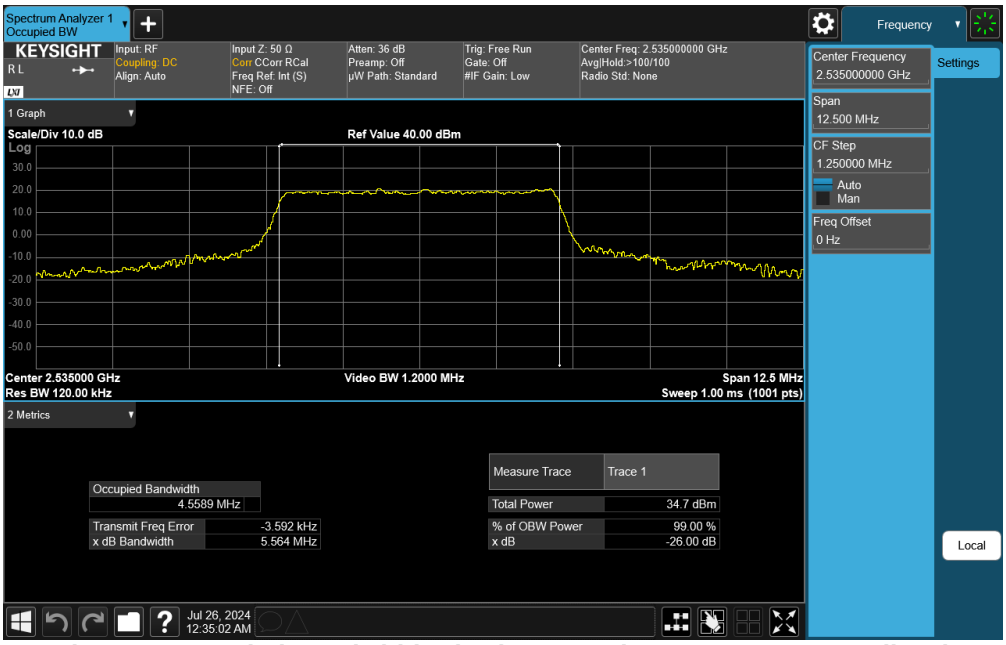


Plot 7-7. Occupied Bandwidth Plot (LTE Band 30 - 10MHz 64-QAM - Full RB)

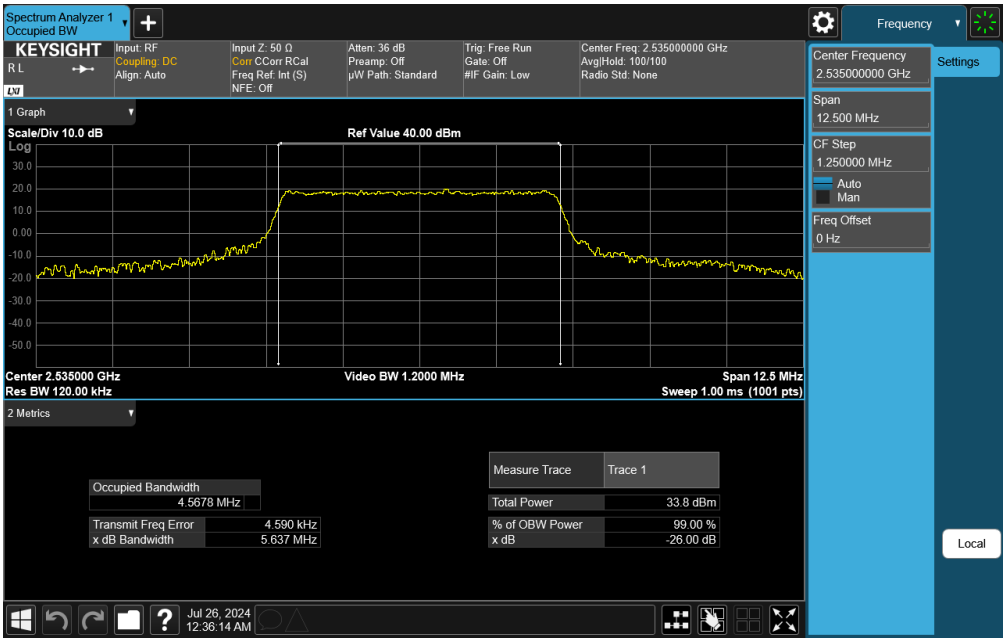


Plot 7-8. Occupied Bandwidth Plot (LTE Band 30 - 10MHz 256-QAM - Full RB)

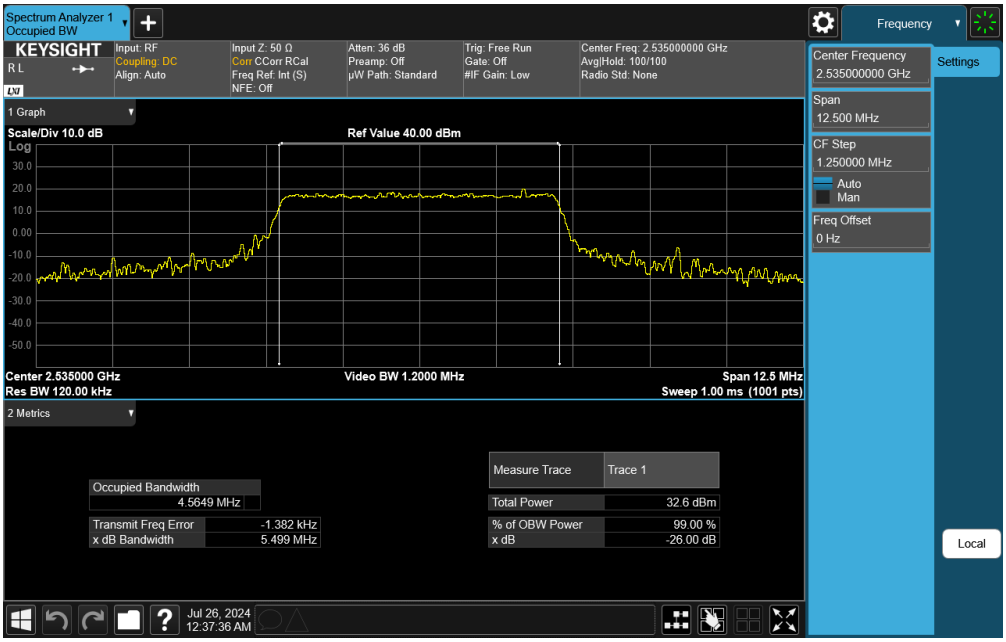
LTE Band 7



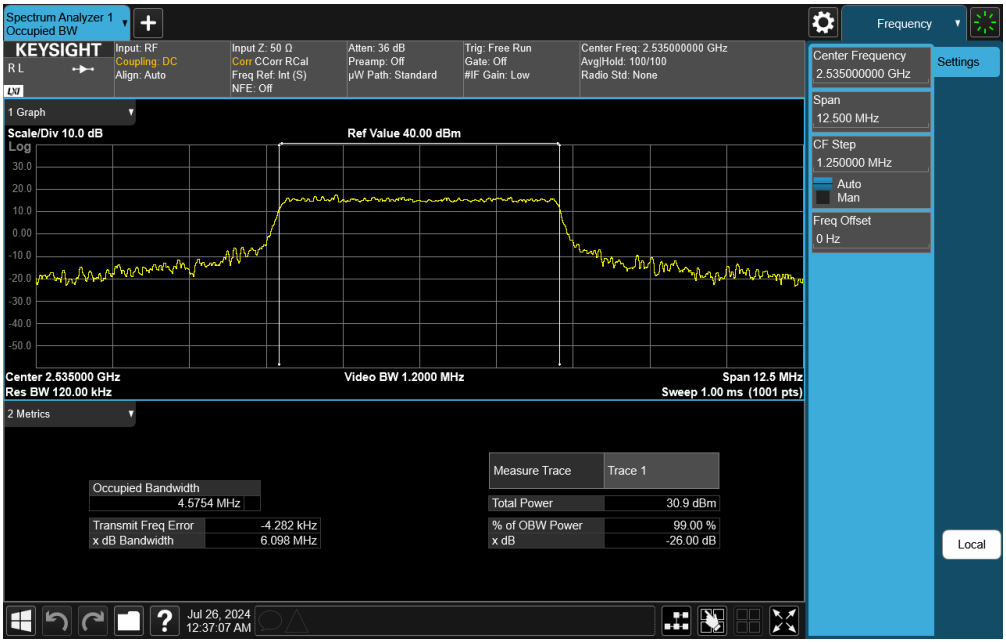
Plot 7-9. Occupied Bandwidth Plot (LTE Band 7 - 5MHz QPSK - Full RB)



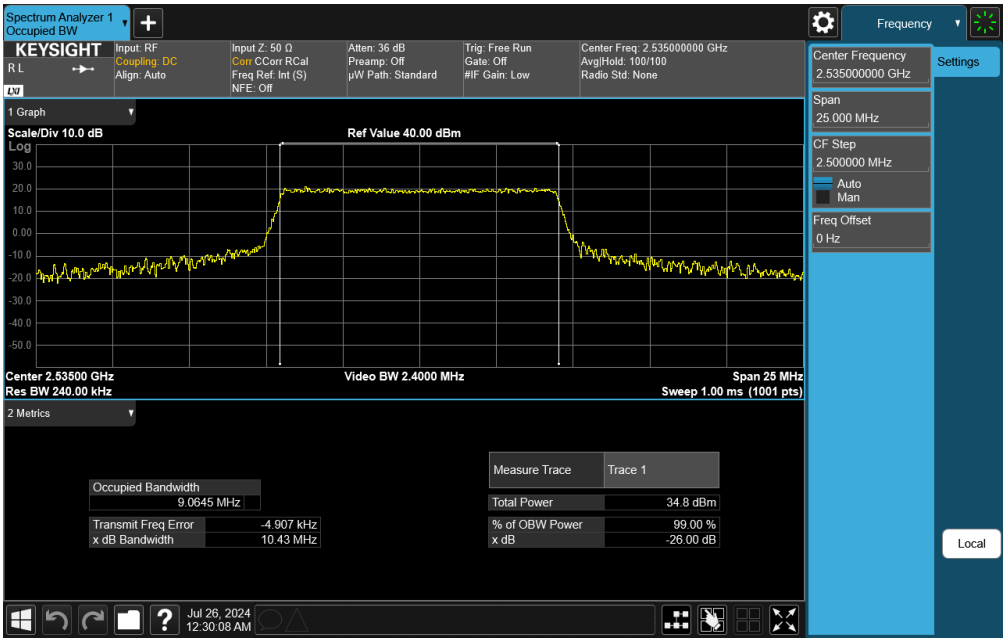
Plot 7-10. Occupied Bandwidth Plot (LTE Band 7 - 5MHz 16-QAM - Full RB)



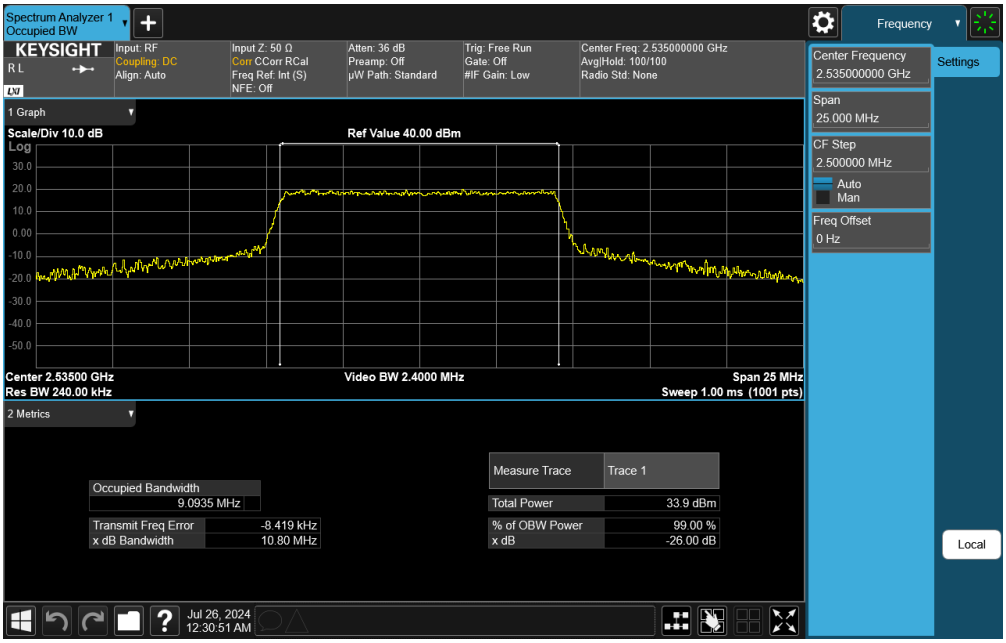
Plot 7-11. Occupied Bandwidth Plot (LTE Band 7 - 5MHz 64-QAM - Full RB)



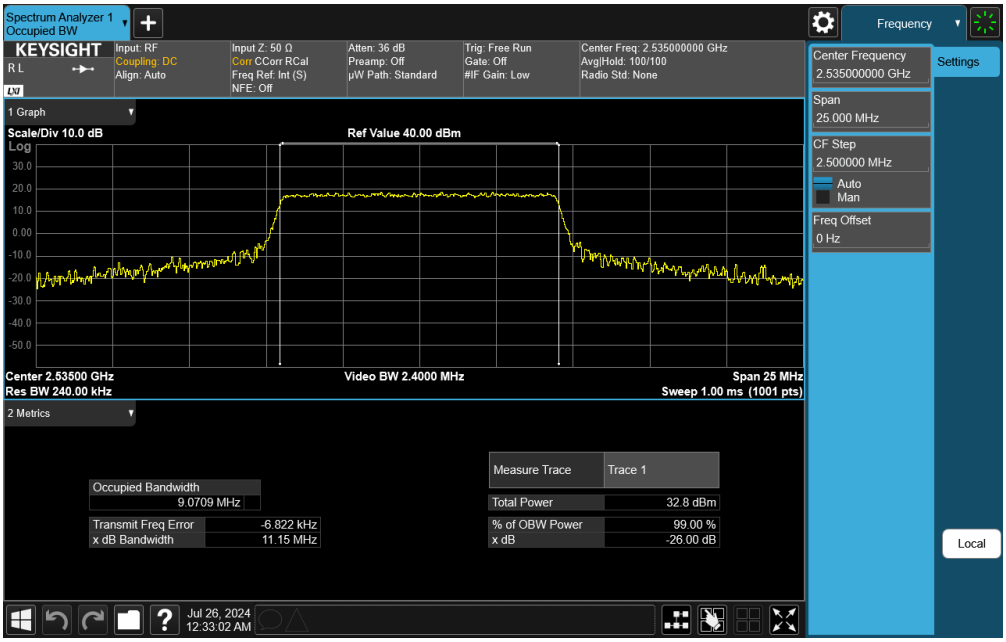
Plot 7-12. Occupied Bandwidth Plot (LTE Band 7 - 5MHz 256-QAM - Full RB)



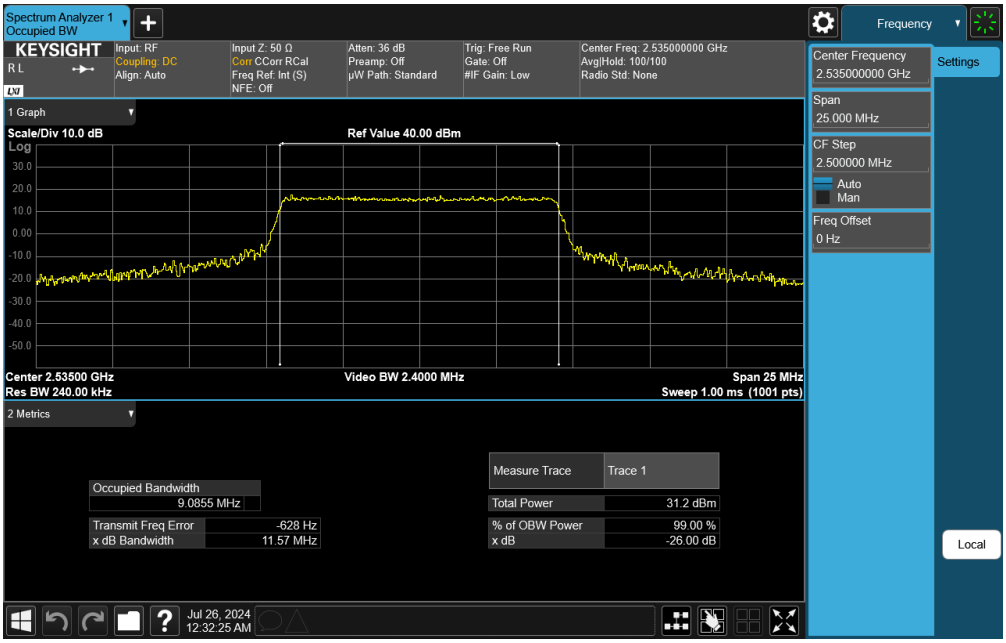
Plot 7-13. Occupied Bandwidth Plot (LTE Band 7 - 10MHz QPSK - Full RB)



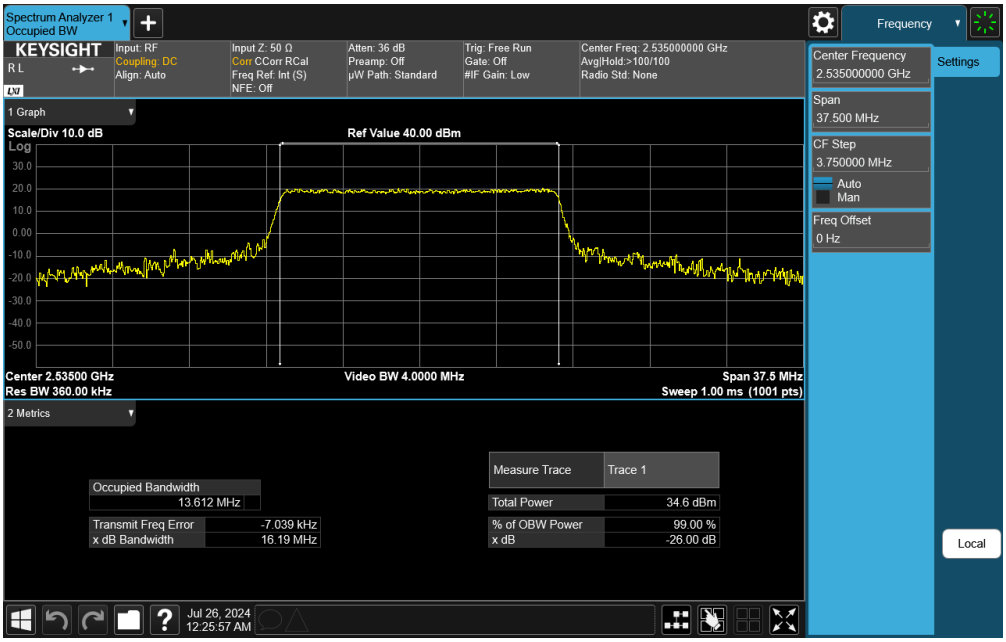
Plot 7-14. Occupied Bandwidth Plot (LTE Band 7 - 10MHz 16-QAM - Full RB)



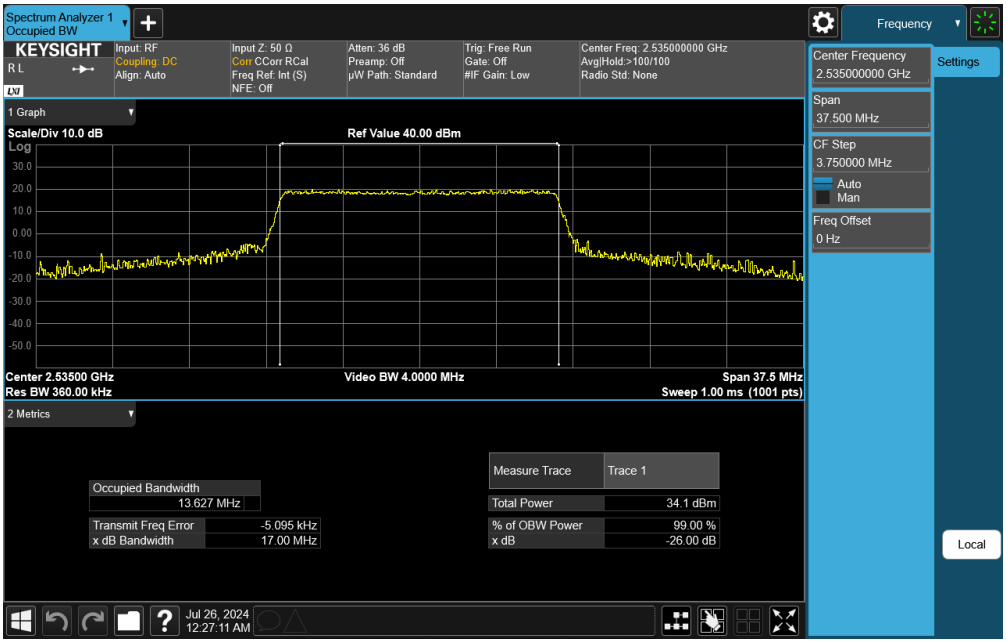
Plot 7-15. Occupied Bandwidth Plot (LTE Band 7 - 10MHz 64-QAM - Full RB)



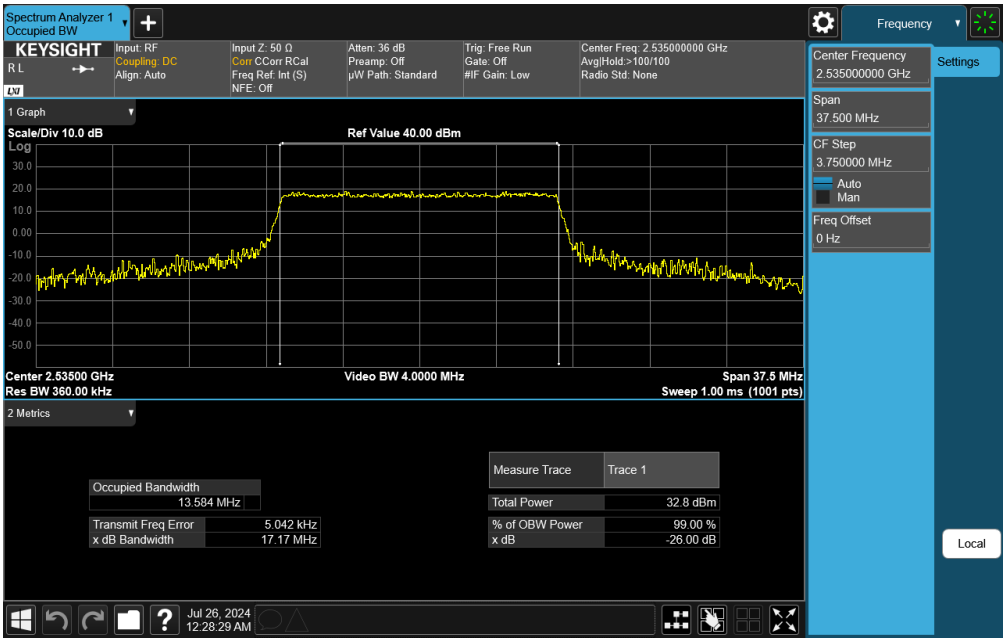
Plot 7-16. Occupied Bandwidth Plot (LTE Band 7 - 10MHz 256-QAM - Full RB)



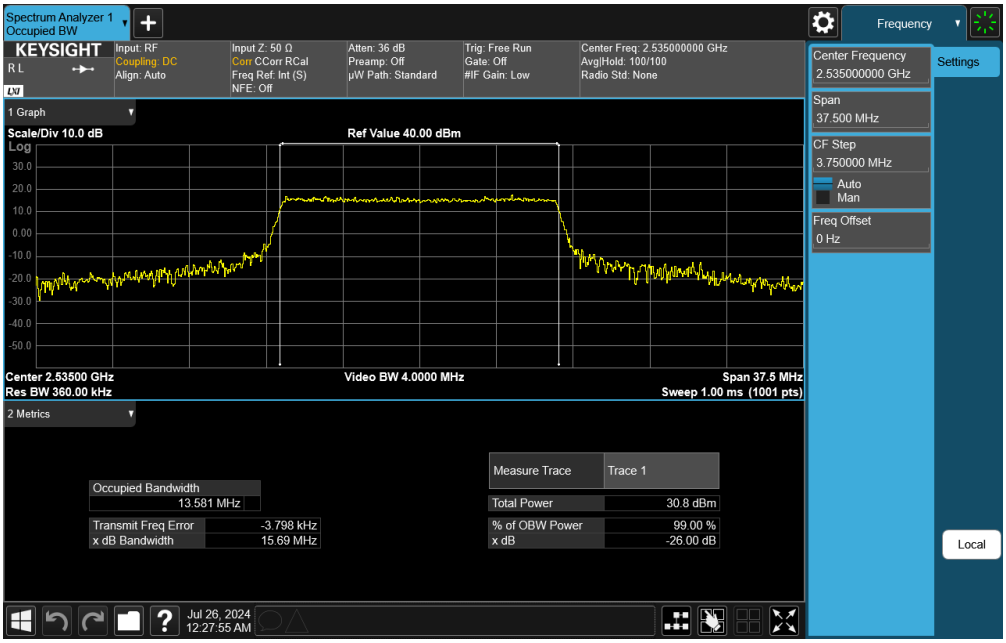
Plot 7-17. Occupied Bandwidth Plot (LTE Band 7 - 15MHz QPSK - Full RB)



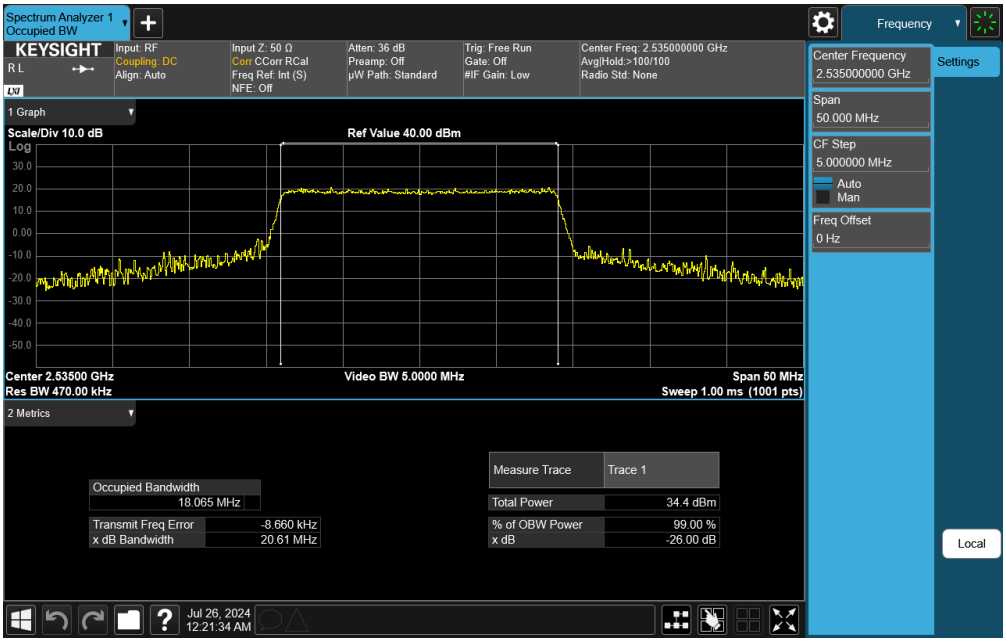
Plot 7-18. Occupied Bandwidth Plot (LTE Band 7 - 15MHz 16-QAM - Full RB)



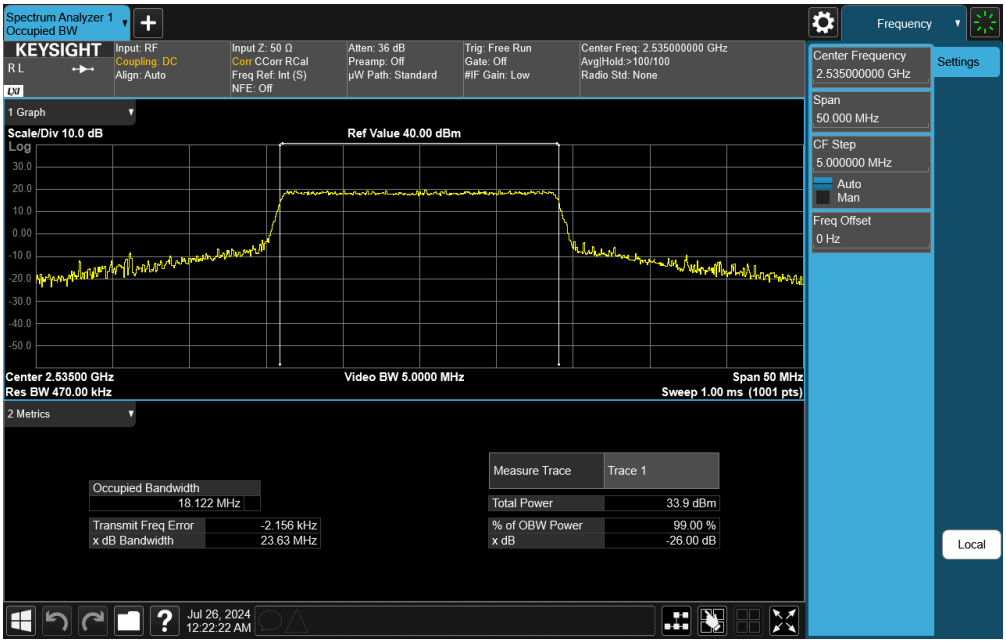
Plot 7-19. Occupied Bandwidth Plot (LTE Band 7 - 15MHz 64-QAM - Full RB)



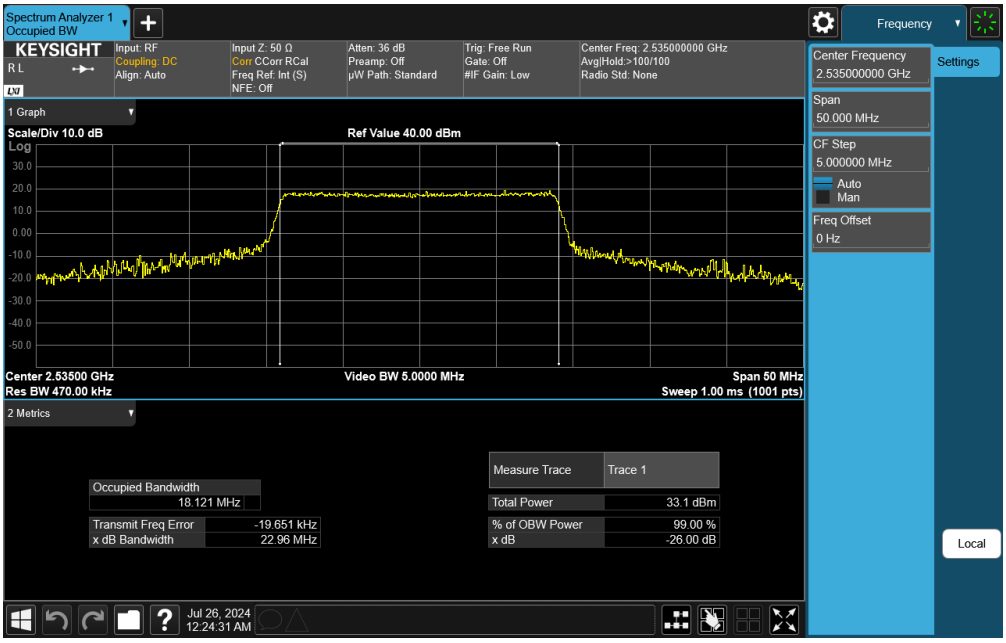
Plot 7-20. Occupied Bandwidth Plot (LTE Band 7 - 15MHz 256-QAM - Full RB)



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



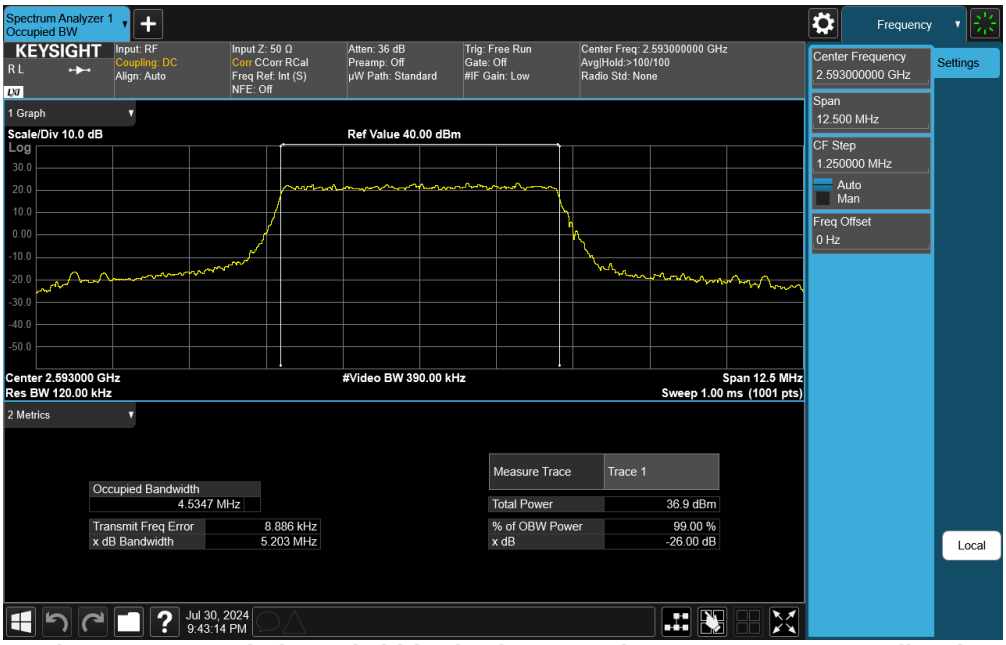
Plot 7-22. Occupied Bandwidth Plot (LTE Band 7 - 20MHz 16-QAM - Full RB)



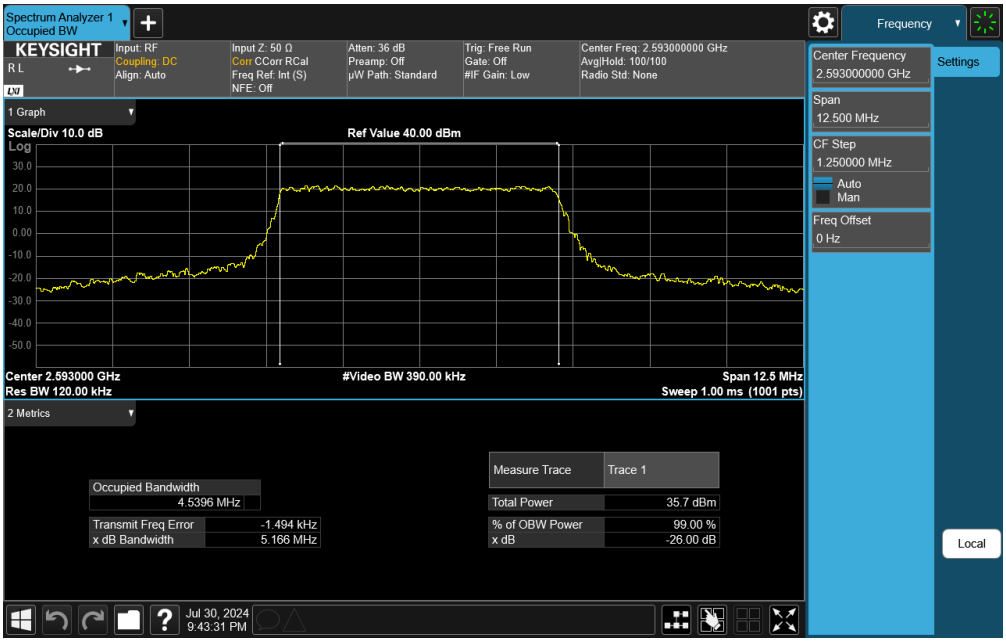
Plot 7-23. Occupied Bandwidth Plot (LTE Band 7 - 20MHz 64-QAM - Full RB)

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

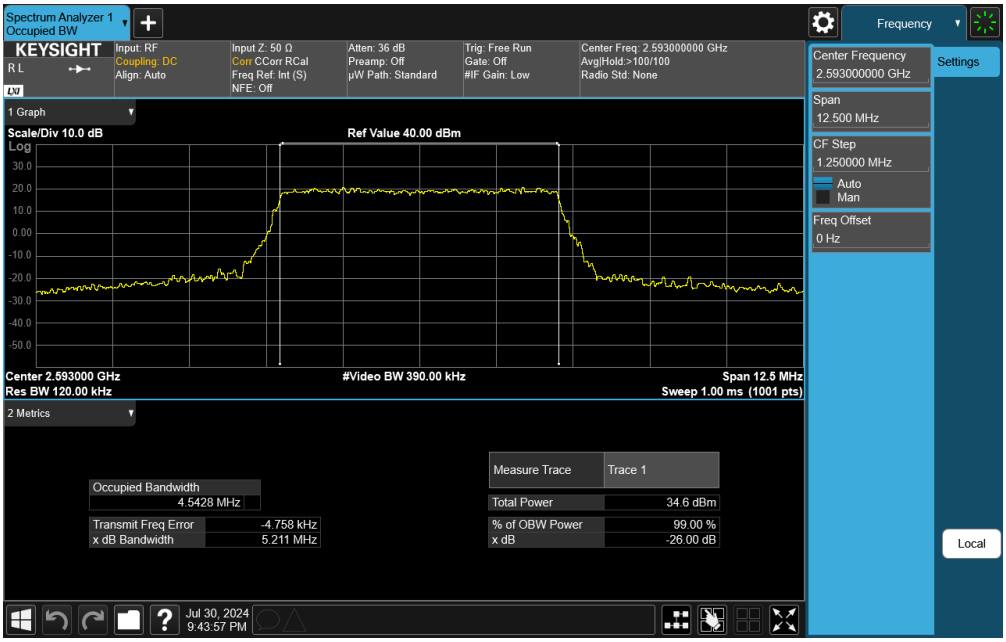
LTE Band 41



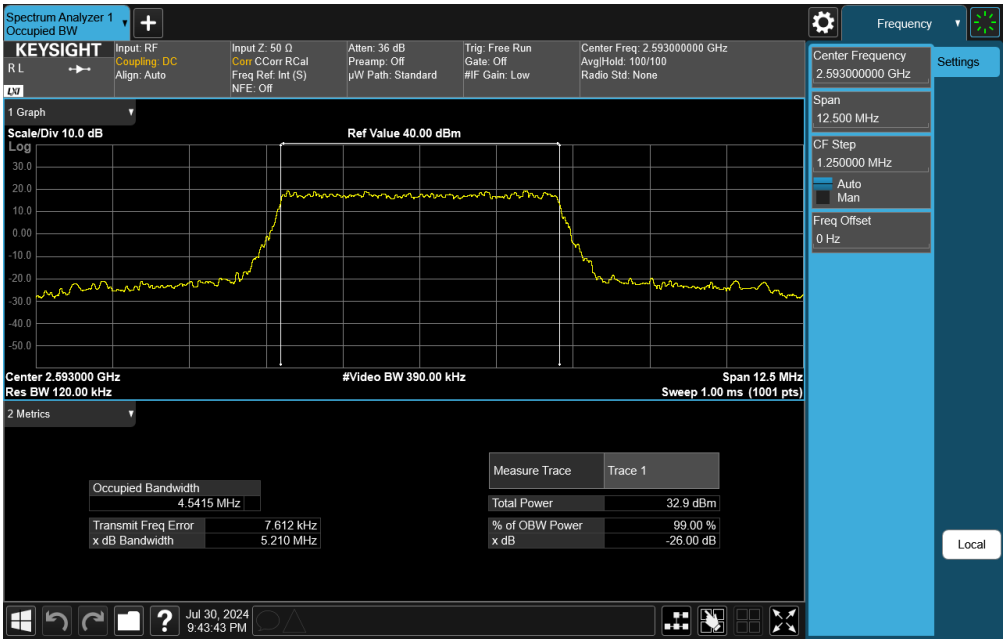
Plot 7-25. Occupied Bandwidth Plot (LTE Band 41 - 5MHz QPSK - Full RB)



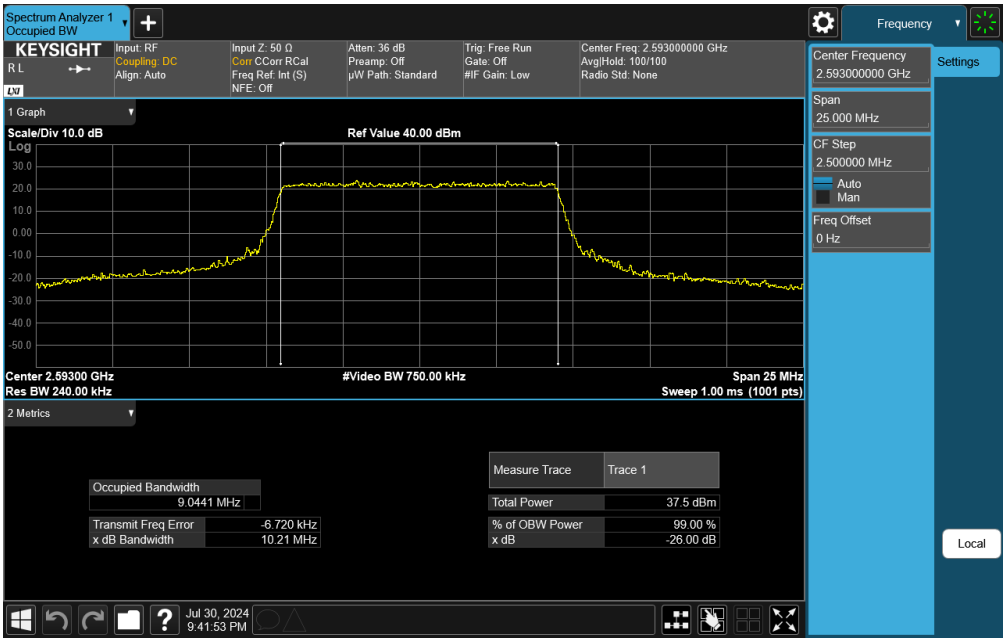
Plot 7-26. Occupied Bandwidth Plot (LTE Band 41 - 5MHz 16-QAM - Full RB)



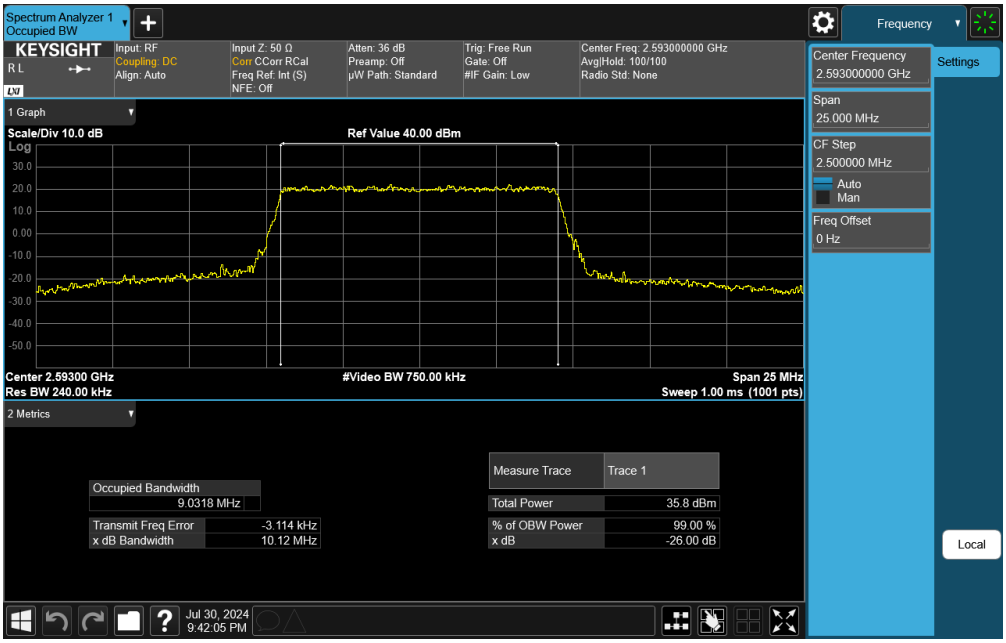
Plot 7-27. Occupied Bandwidth Plot (LTE Band 41 - 5MHz 64-QAM - Full RB)



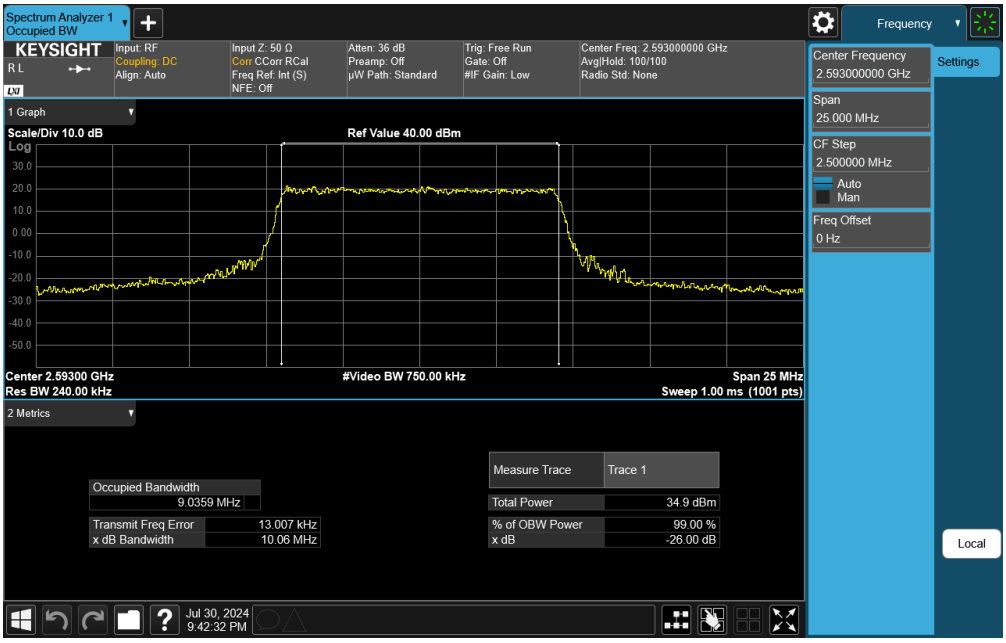
Plot 7-28. Occupied Bandwidth Plot (LTE Band 41 - 5MHz 256-QAM - Full RB)



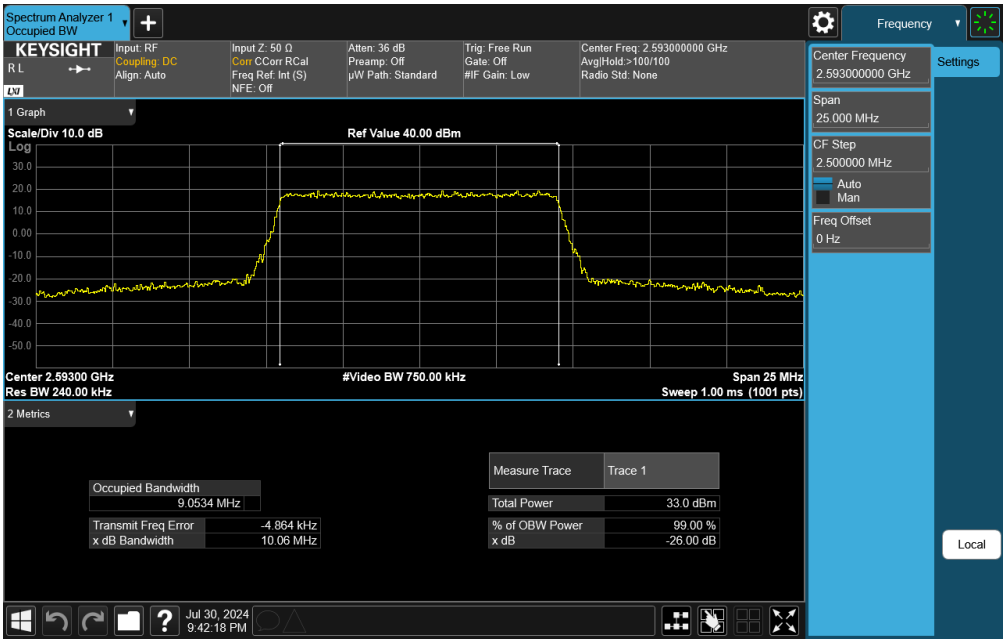
Plot 7-29. Occupied Bandwidth Plot (LTE Band 41 - 10MHz QPSK - Full RB)



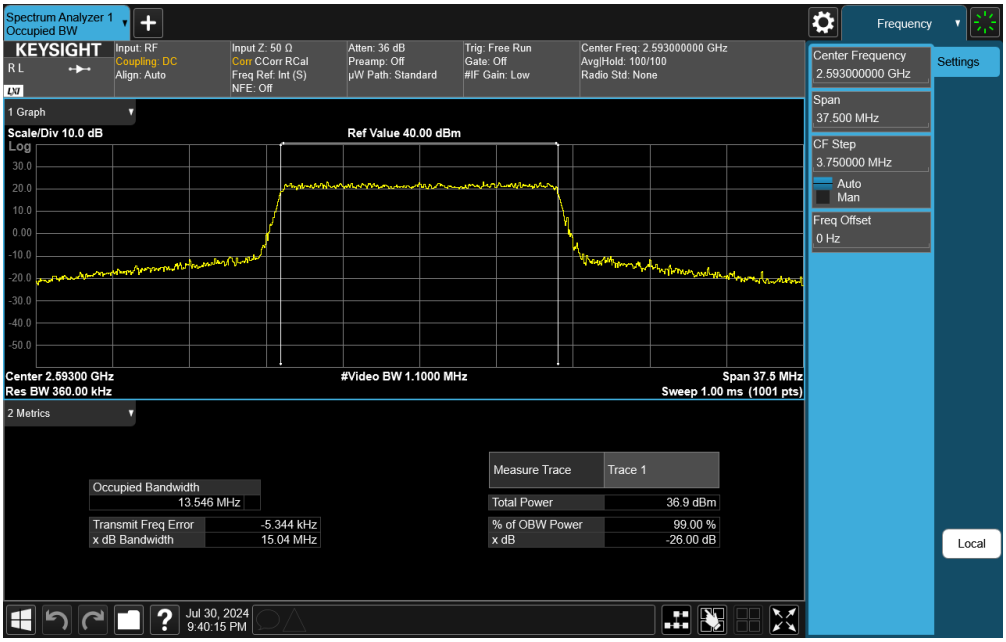
Plot 7-30. Occupied Bandwidth Plot (LTE Band 41 - 10MHz 16-QAM - Full RB)



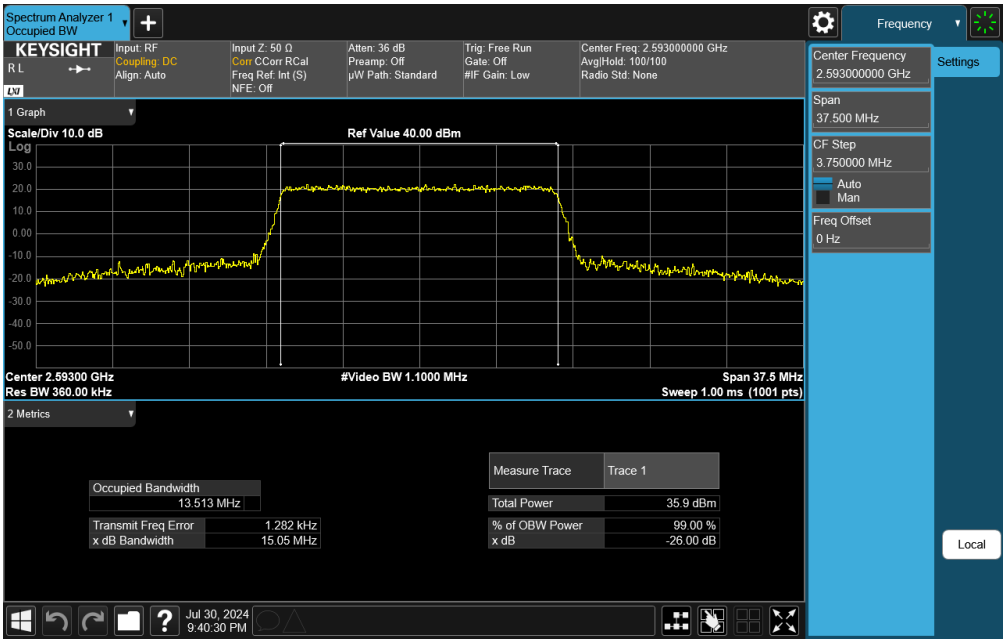
Plot 7-31. Occupied Bandwidth Plot (LTE Band 41 - 10MHz 64-QAM - Full RB)



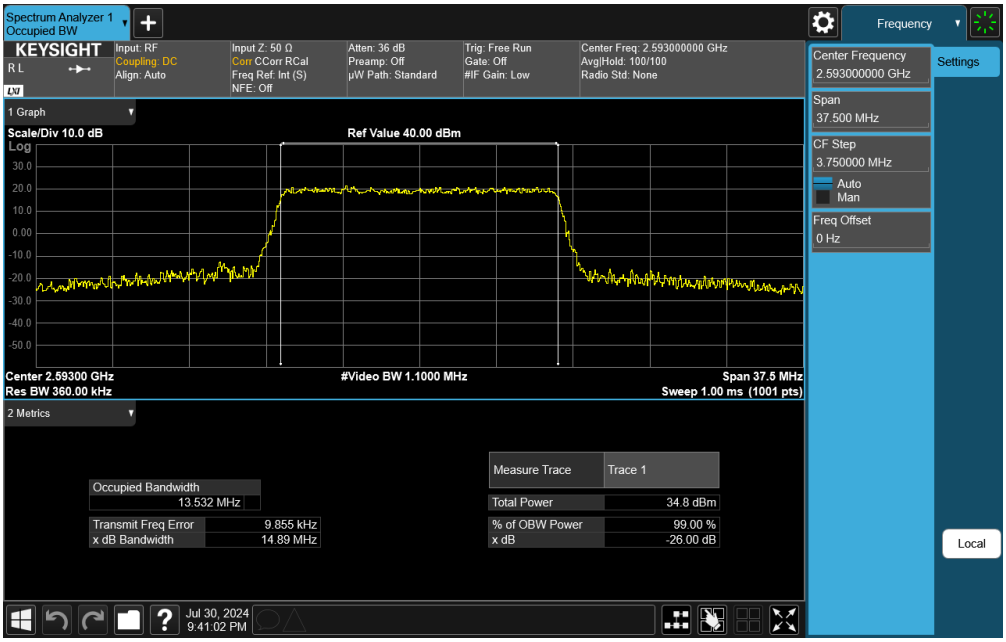
Plot 7-32. Occupied Bandwidth Plot (LTE Band 41 - 10MHz 256-QAM - Full RB)



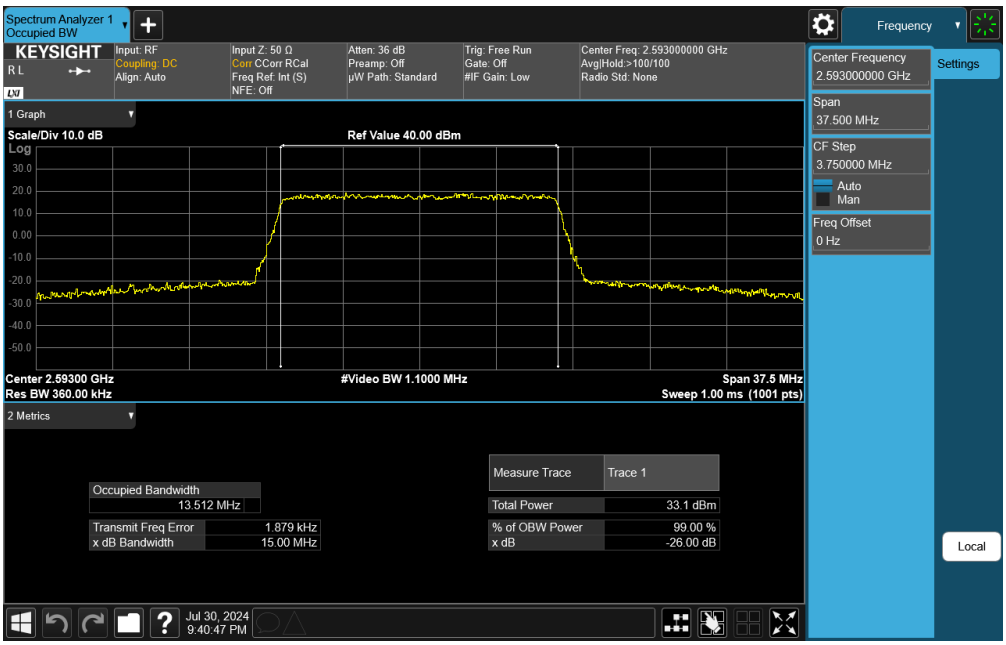
Plot 7-33. Occupied Bandwidth Plot (LTE Band 41 - 15MHz QPSK - Full RB)



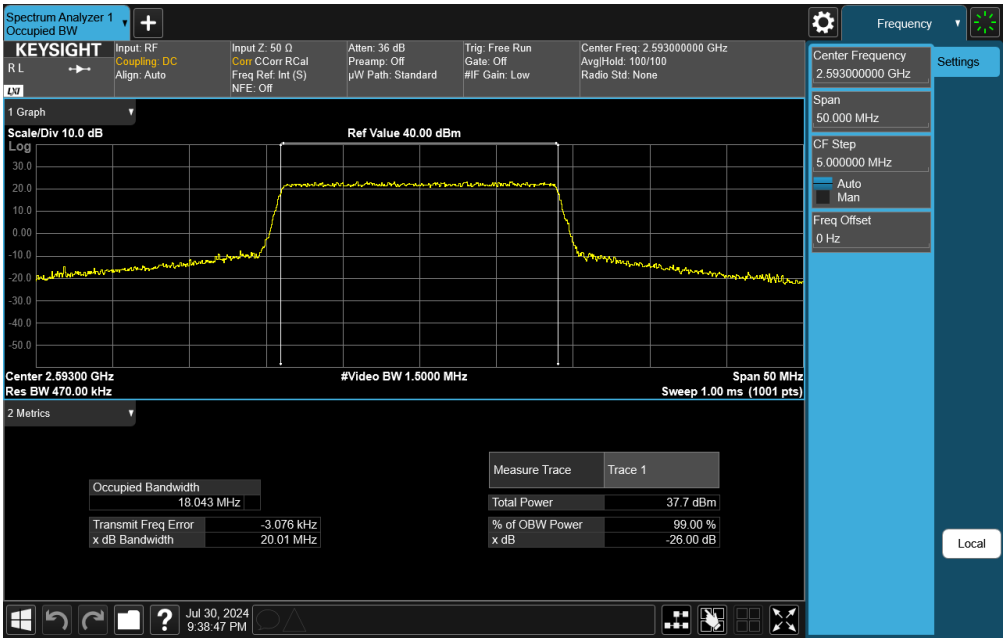
Plot 7-34. Occupied Bandwidth Plot (LTE Band 41 - 15MHz 16-QAM - Full RB)



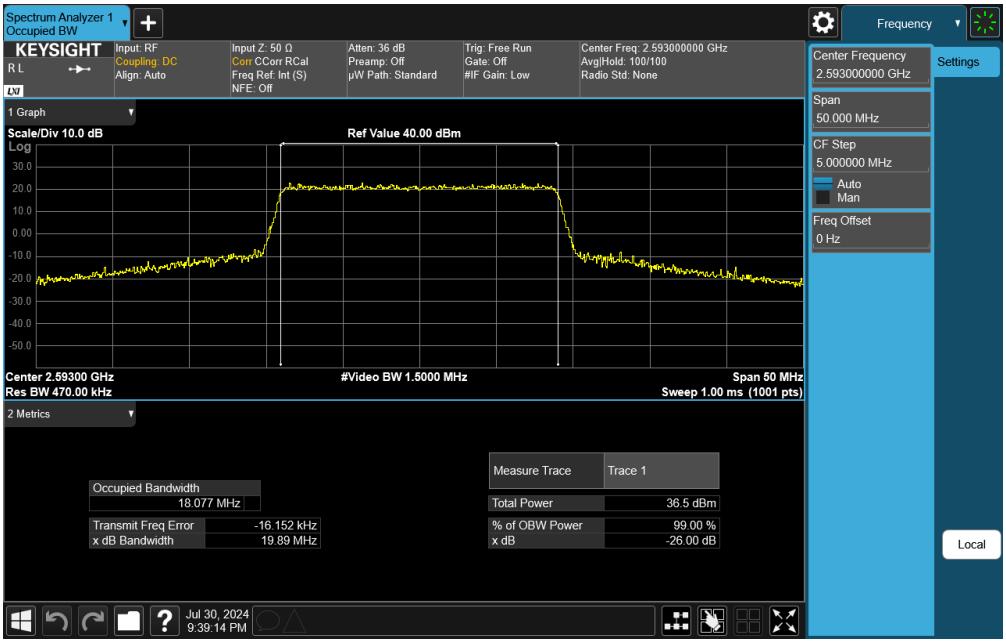
Plot 7-35. Occupied Bandwidth Plot (LTE Band 41 - 15MHz 64-QAM - Full RB)



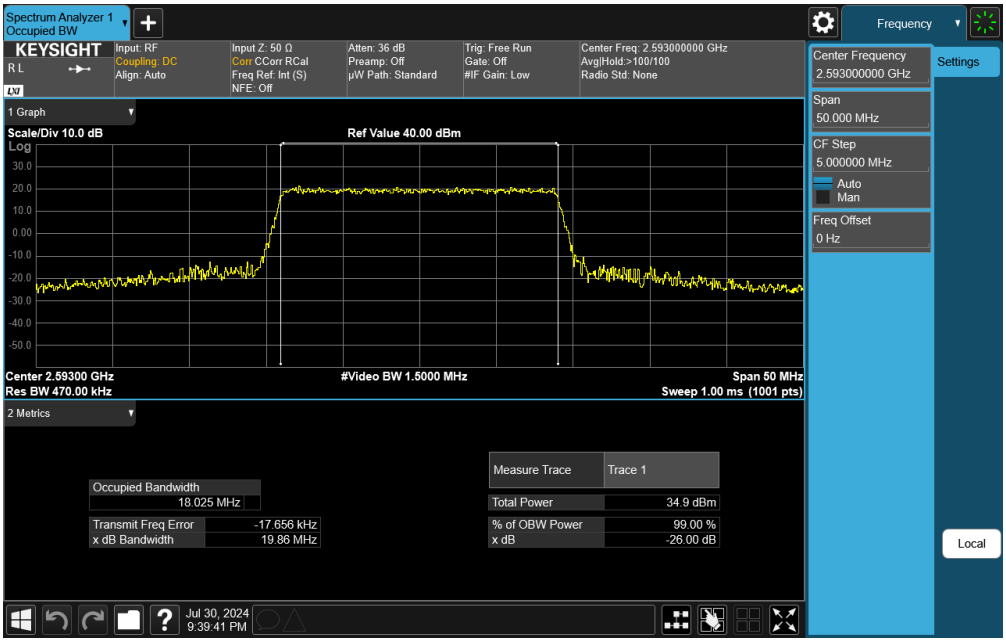
Plot 7-36. Occupied Bandwidth Plot (LTE Band 41 - 15MHz 256-QAM - Full RB)



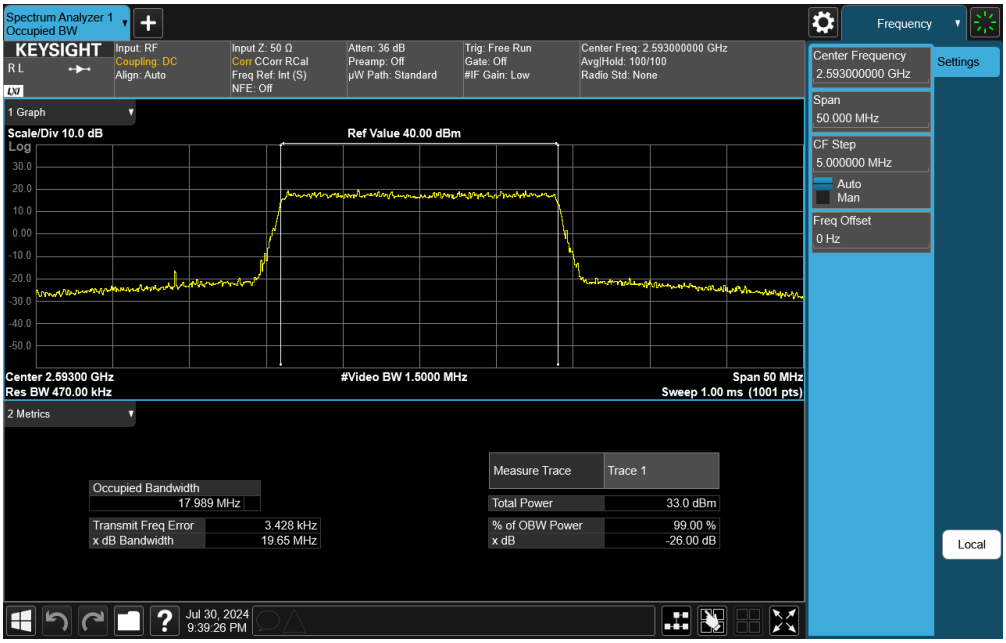
Plot 7-37. Occupied Bandwidth Plot (LTE Band 41 - 20MHz QPSK - Full RB)



Plot 7-38. Occupied Bandwidth Plot (LTE Band 41 - 20MHz 16-QAM - Full RB)



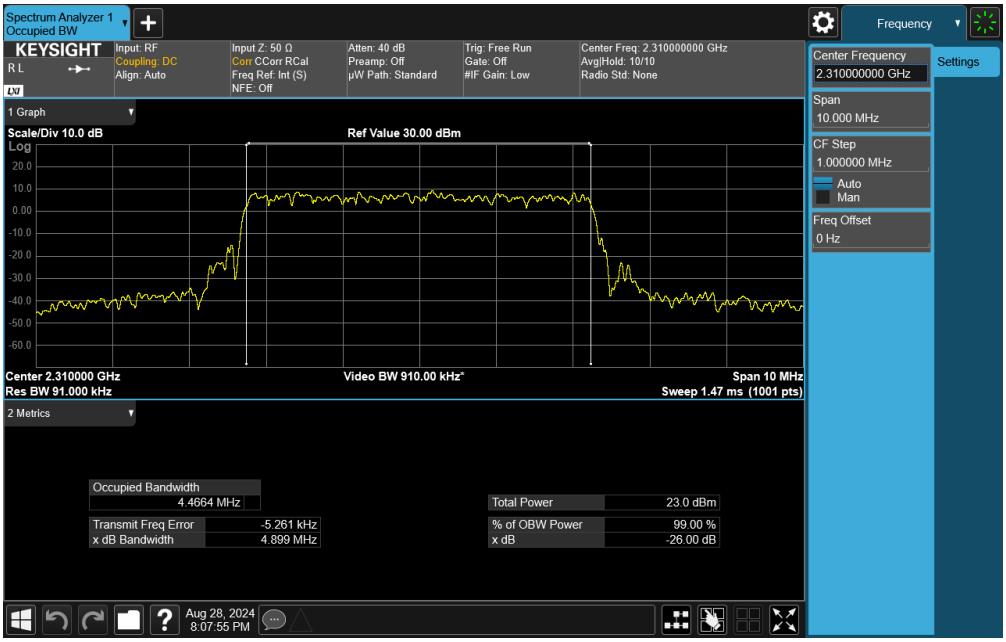
Plot 7-39. Occupied Bandwidth Plot (LTE Band 41 - 20MHz 64-QAM - Full RB)



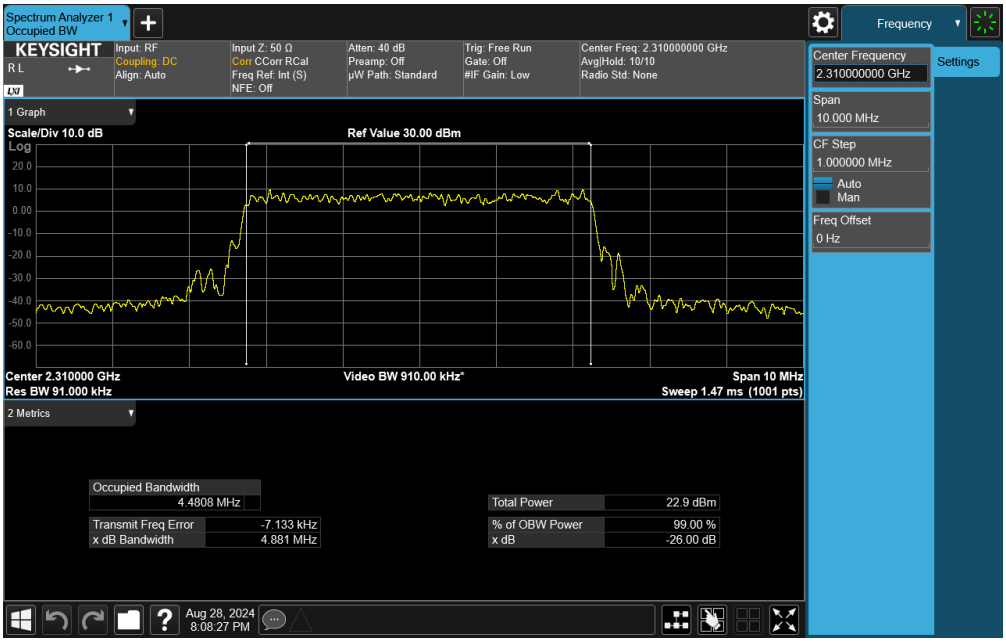
Plot 7-40. Occupied Bandwidth Plot (LTE Band 41 - 20MHz 256-QAM - Full RB)

NR Band n30

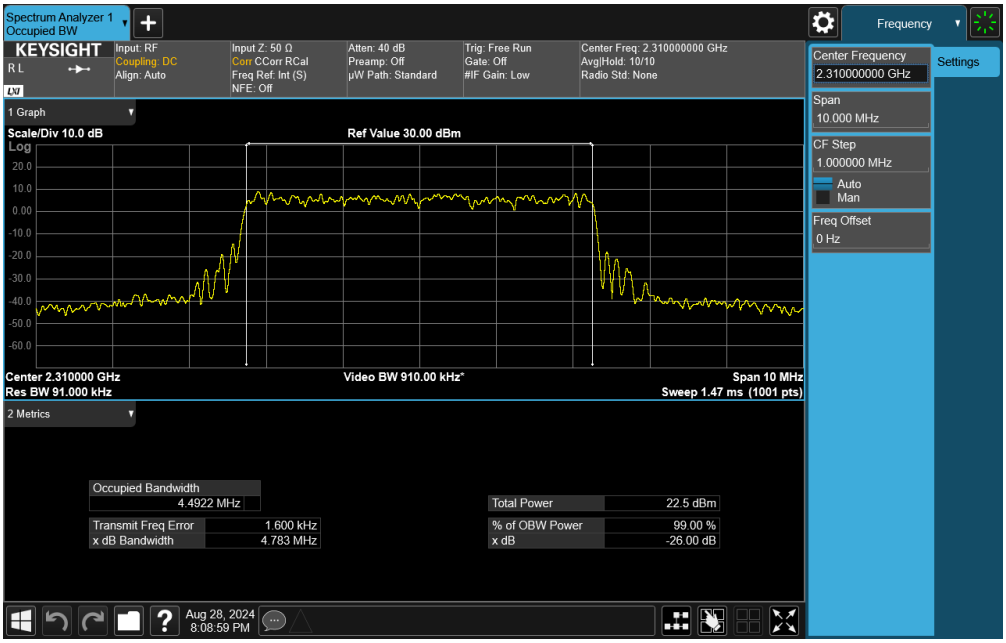
Plot 7-41. Occupied Bandwidth Plot (NR Band n30 - 5MHz DFT-s-OFDM π/2 BPSK - Full RB)



Plot 7-42. Occupied Bandwidth Plot (NR Band n30 - 5MHz CP-OFDM QPSK - Full RB)

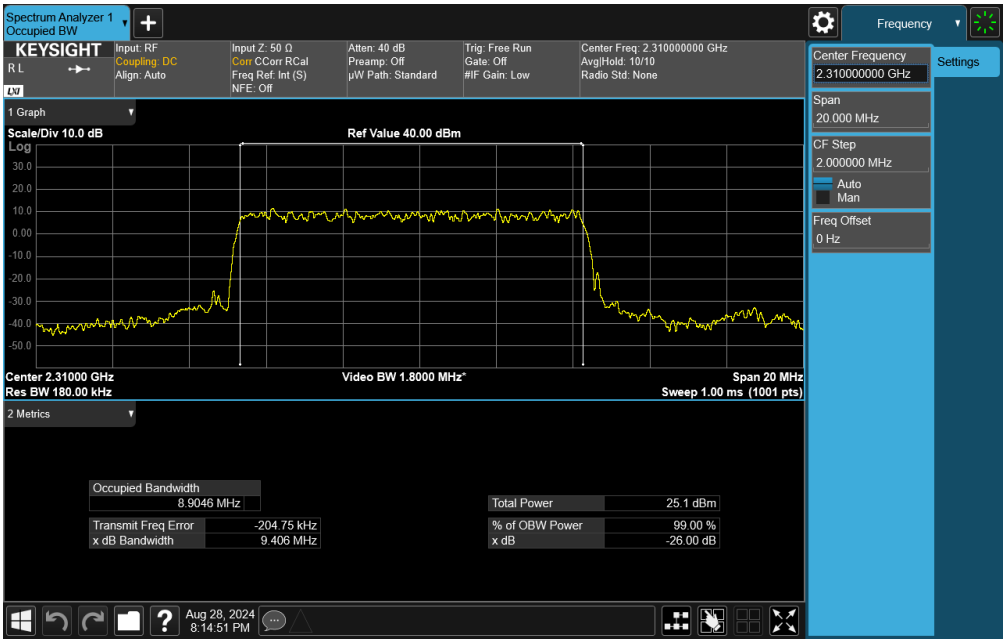


Plot 7-43. Occupied Bandwidth Plot (NR Band n30 - 5MHz CP-OFDM 16-QAM - Full RB)

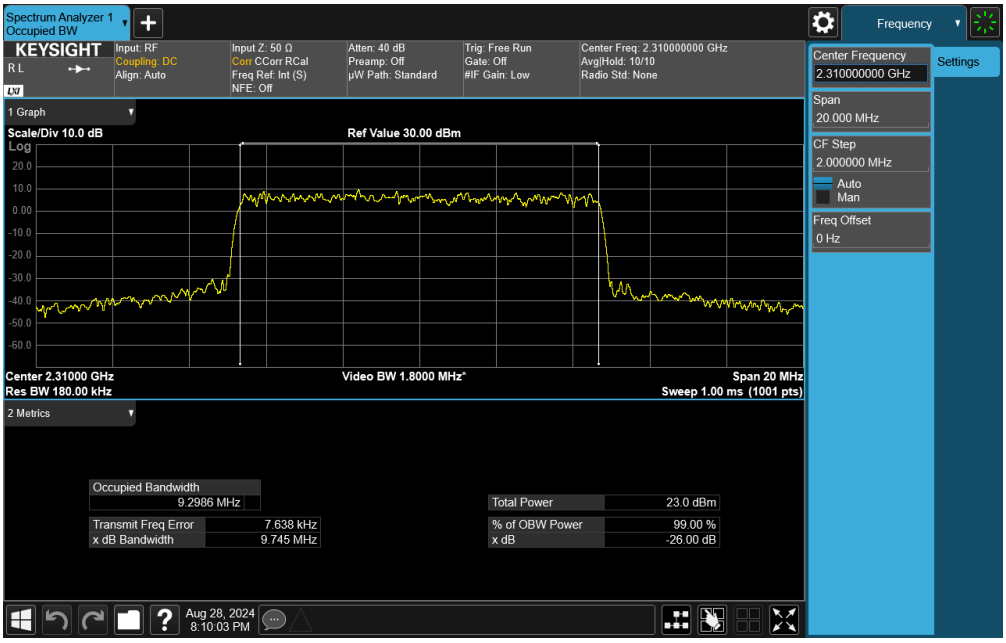


Plot 7-44. Occupied Bandwidth Plot (NR Band n30 - 5MHz CP-OFDM 64-QAM - Full RB)

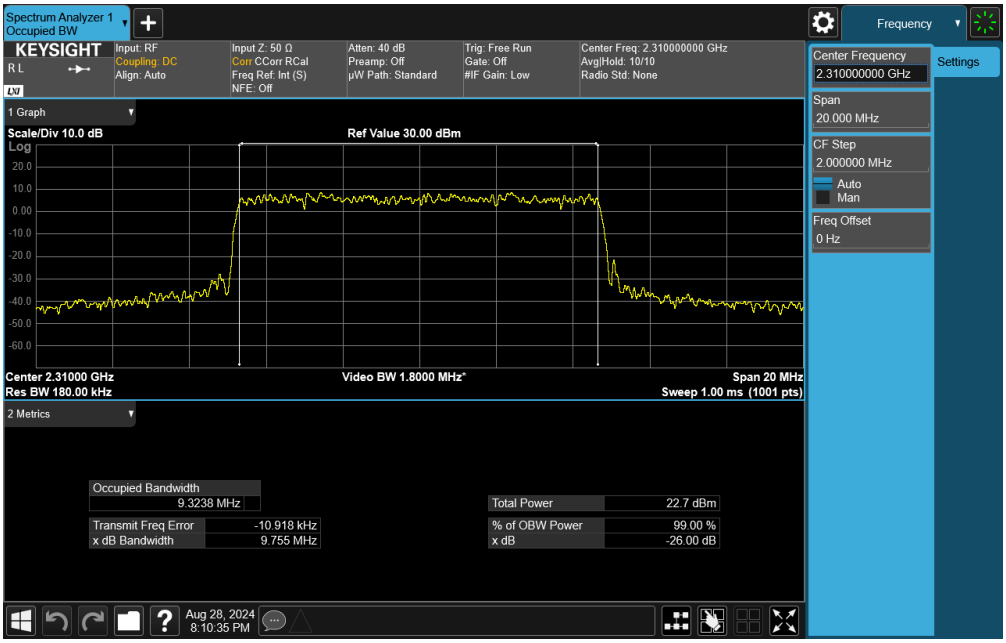
Plot 7-45. Occupied Bandwidth Plot (NR Band n30 - 5MHz CP-OFDM 256-QAM - Full RB)



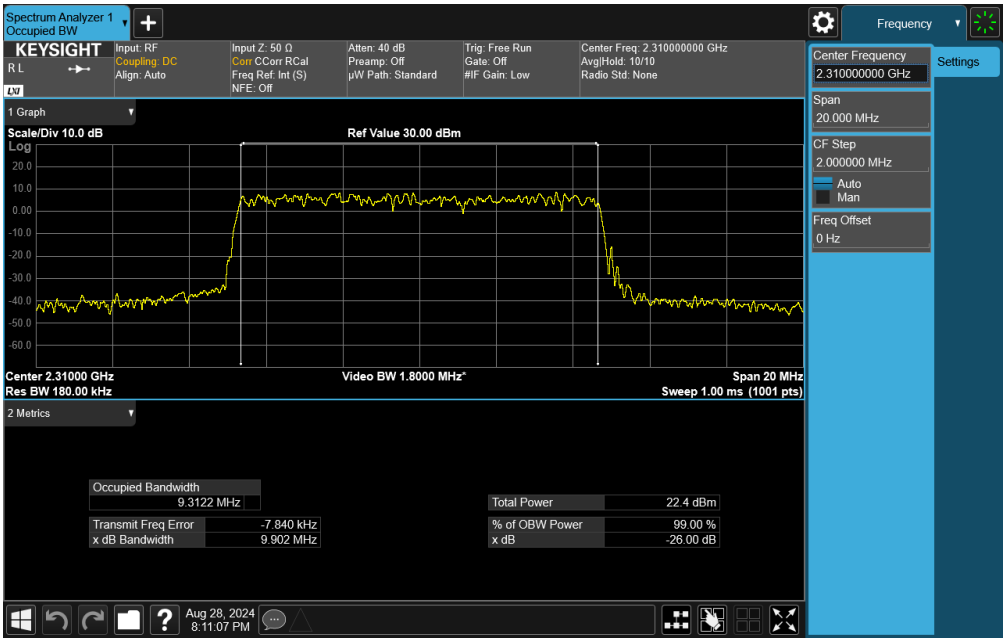
Plot 7-46. Occupied Bandwidth Plot (NR Band n30 - 10MHz DFT-s-OFDM π/2 BPSK - Full RB)



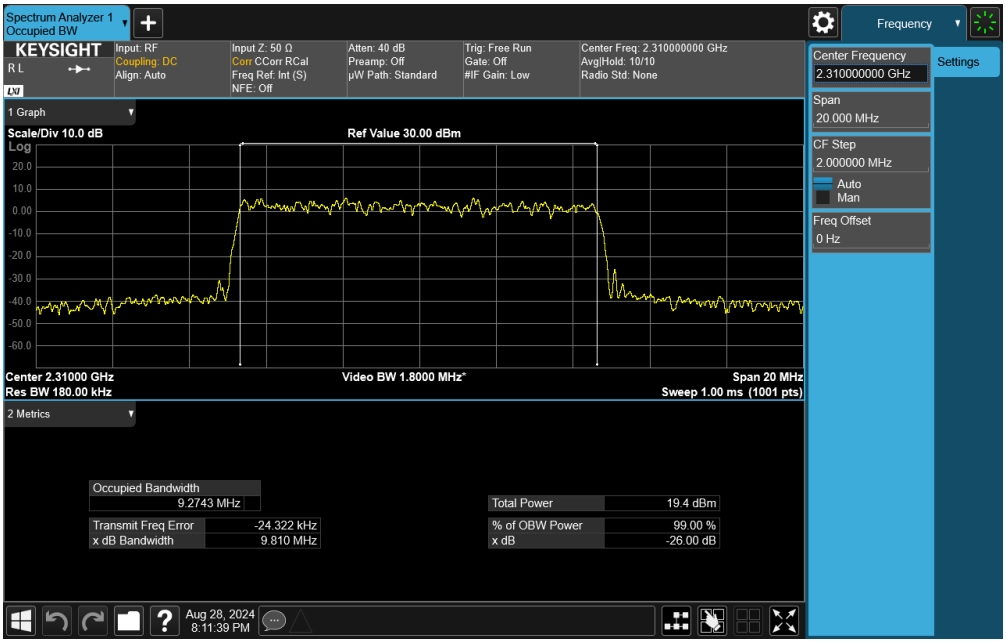
Plot 7-47. Occupied Bandwidth Plot (NR Band n30 - 10MHz CP-OFDM QPSK - Full RB)



Plot 7-48. Occupied Bandwidth Plot (NR Band n30 - 10MHz CP-OFDM 16-QAM - Full RB)



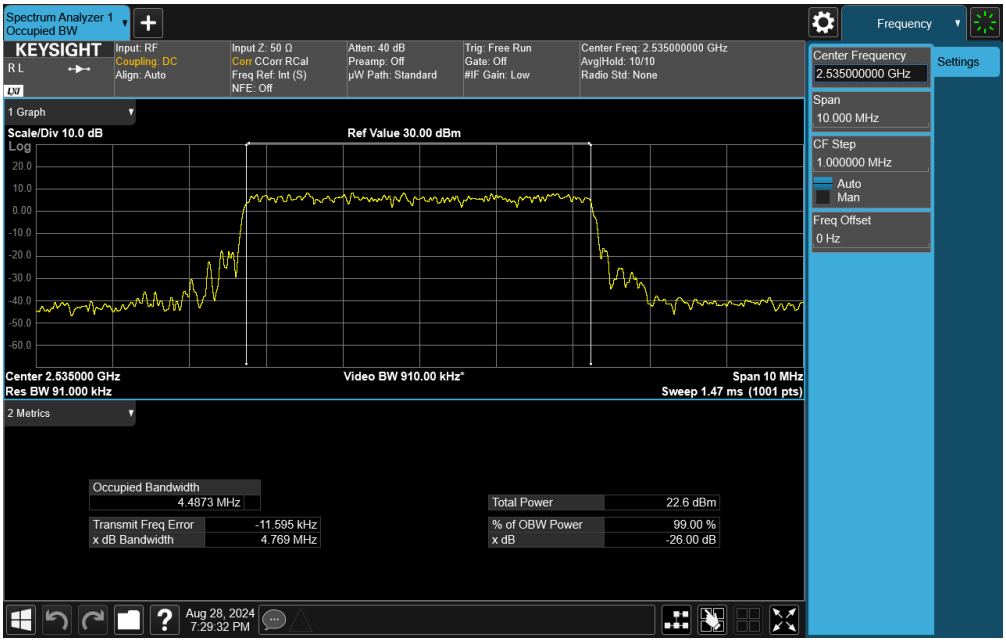
Plot 7-49. Occupied Bandwidth Plot (NR Band n30 - 10MHz CP-OFDM 64-QAM - Full RB)



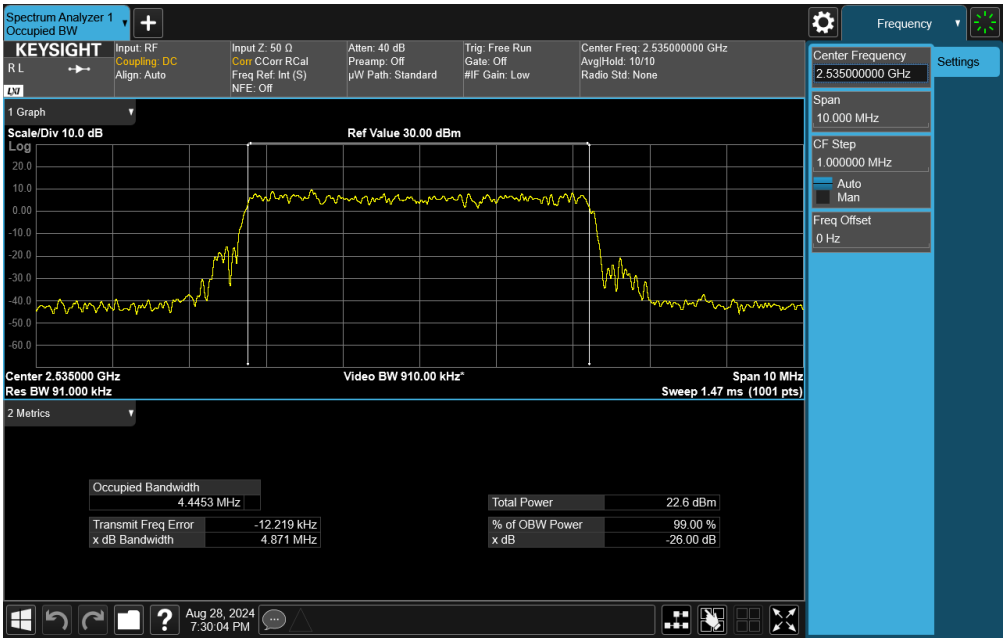
Plot 7-50. Occupied Bandwidth Plot (NR Band n30 - 10MHz CP-OFDM 256-QAM - Full RB)

NR Band n7

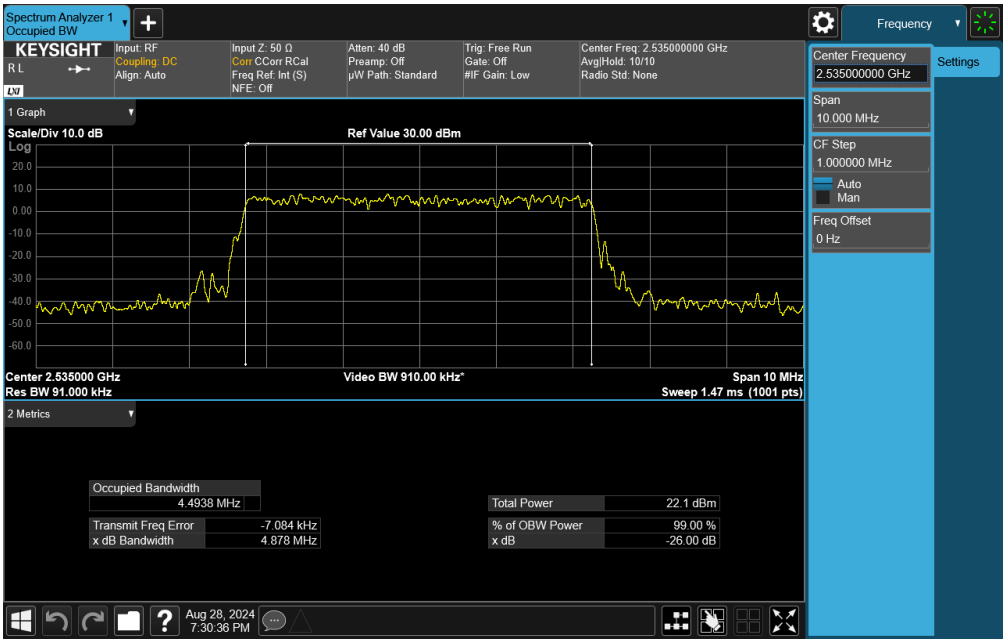
Plot 7-51. Occupied Bandwidth Plot (NR Band n7 - 5MHz DFT-s-OFDM π/2 BPSK - Full RB)



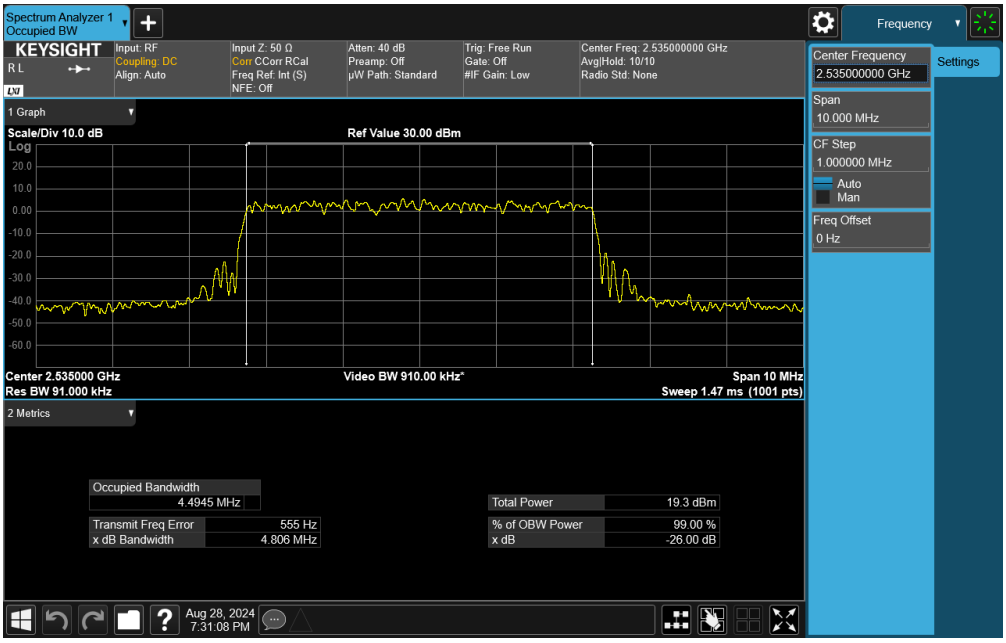
Plot 7-52. Occupied Bandwidth Plot (NR Band n7 - 5MHz CP-OFDM QPSK - Full RB)



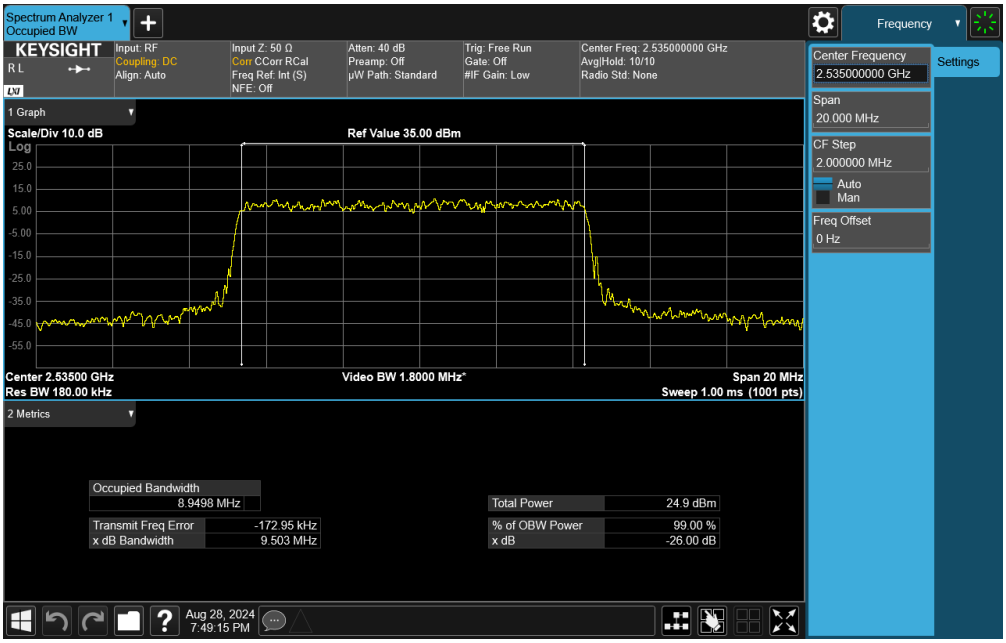
Plot 7-53. Occupied Bandwidth Plot (NR Band n7 - 5MHz CP-OFDM 16-QAM - Full RB)



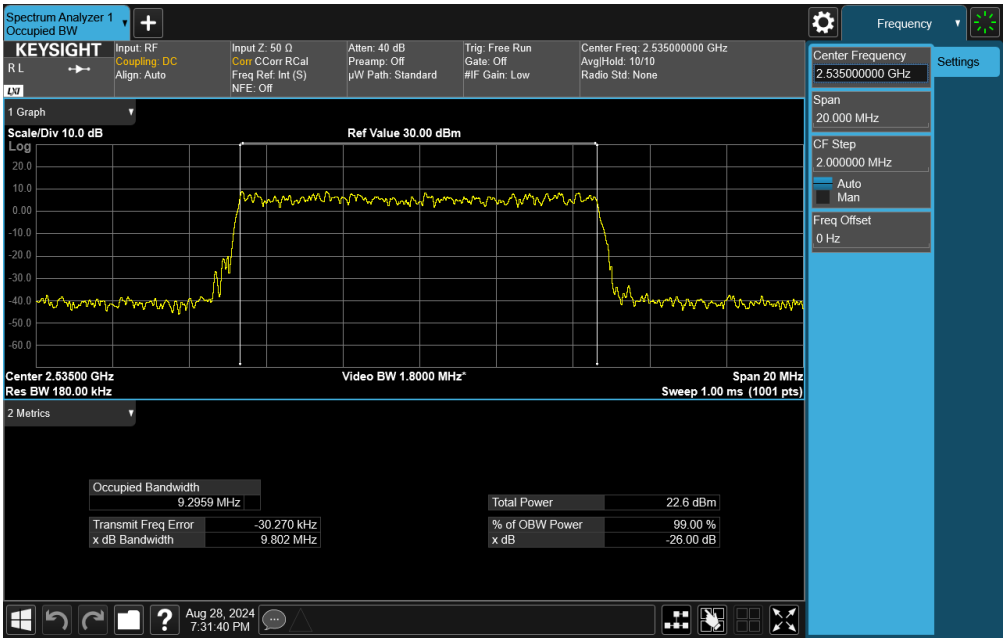
Plot 7-54. Occupied Bandwidth Plot (NR Band n7 - 5MHz CP-OFDM 64-QAM - Full RB)



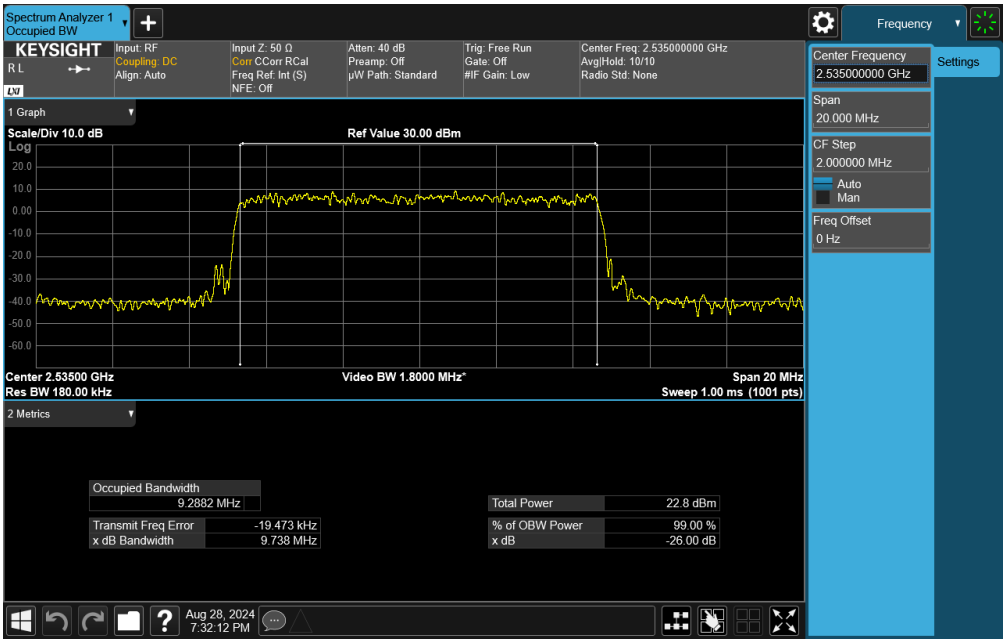
Plot 7-55. Occupied Bandwidth Plot (NR Band n7 - 5MHz CP-OFDM 256-QAM - Full RB)



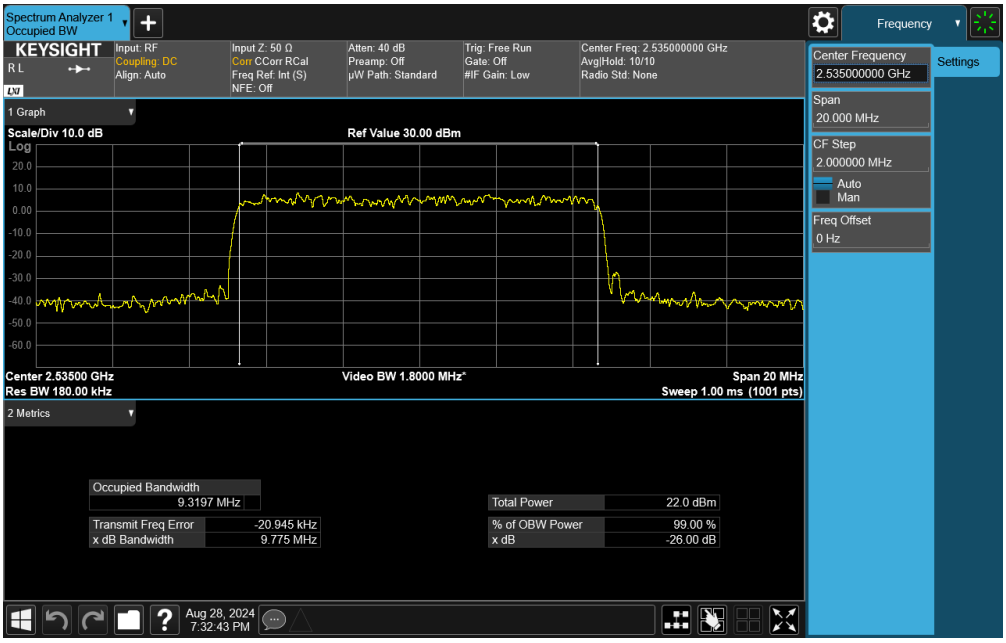
Plot 7-56. Occupied Bandwidth Plot (NR Band n7 - 10MHz DFT-s-OFDM π/2 BPSK - Full RB)



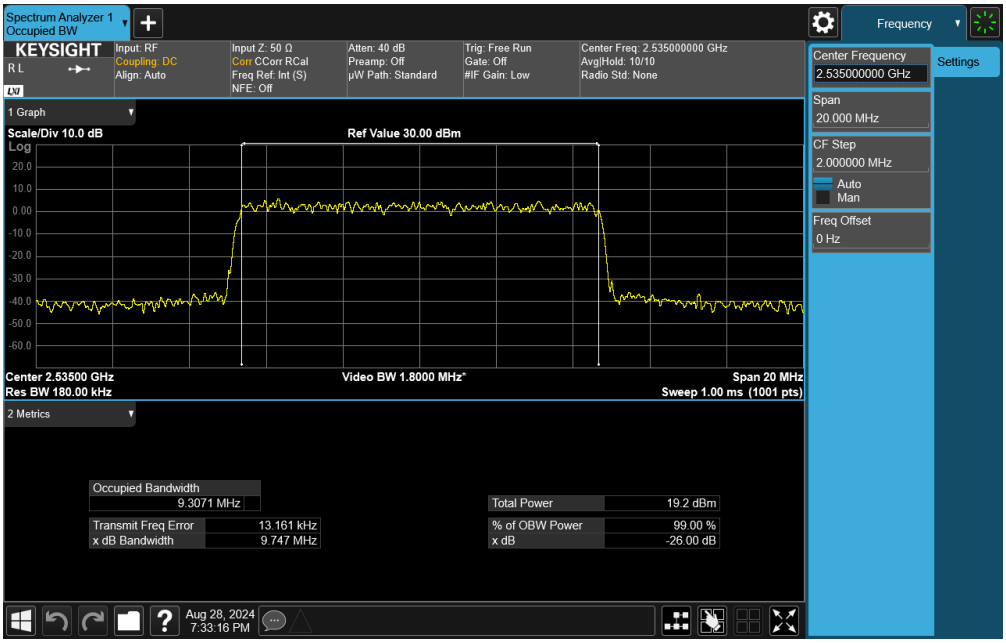
Plot 7-57. Occupied Bandwidth Plot (NR Band n7 - 10MHz CP-OFDM QPSK - Full RB)



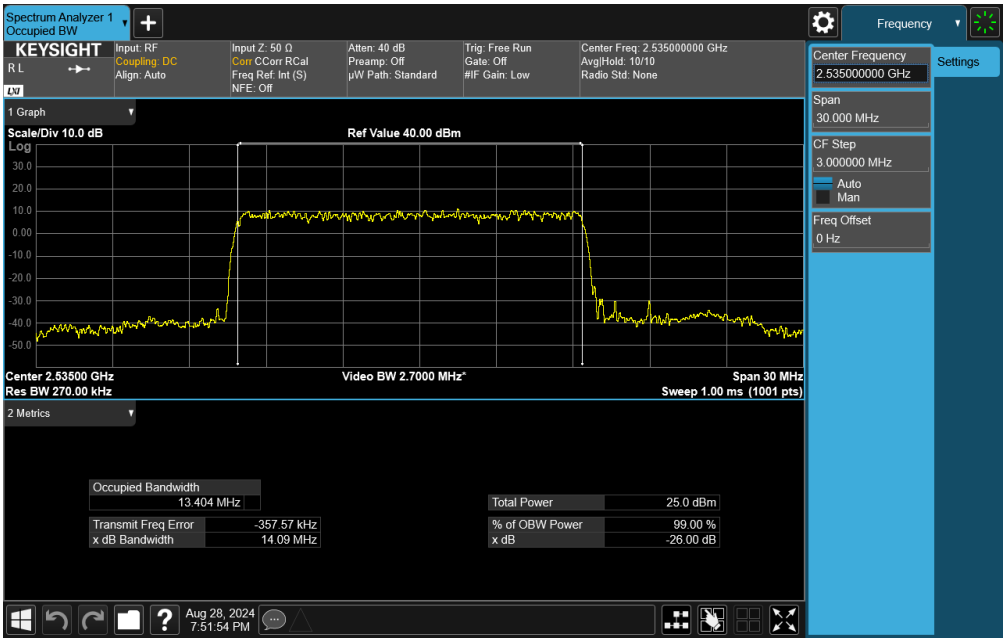
Plot 7-58. Occupied Bandwidth Plot (NR Band n7 - 10MHz CP-OFDM 16-QAM - Full RB)



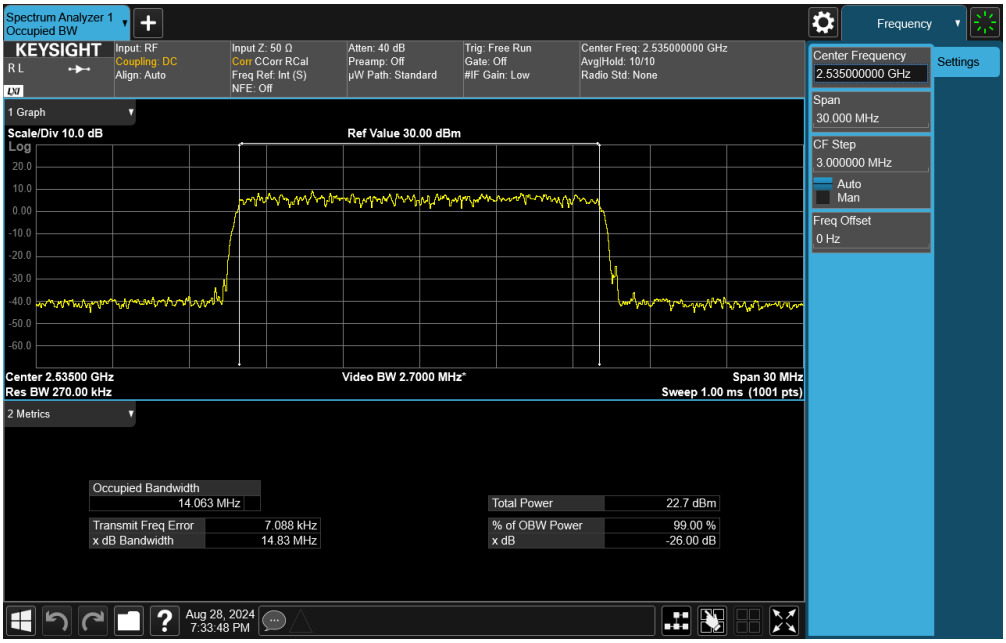
Plot 7-59. Occupied Bandwidth Plot (NR Band n7 - 10MHz CP-OFDM 64-QAM - Full RB)



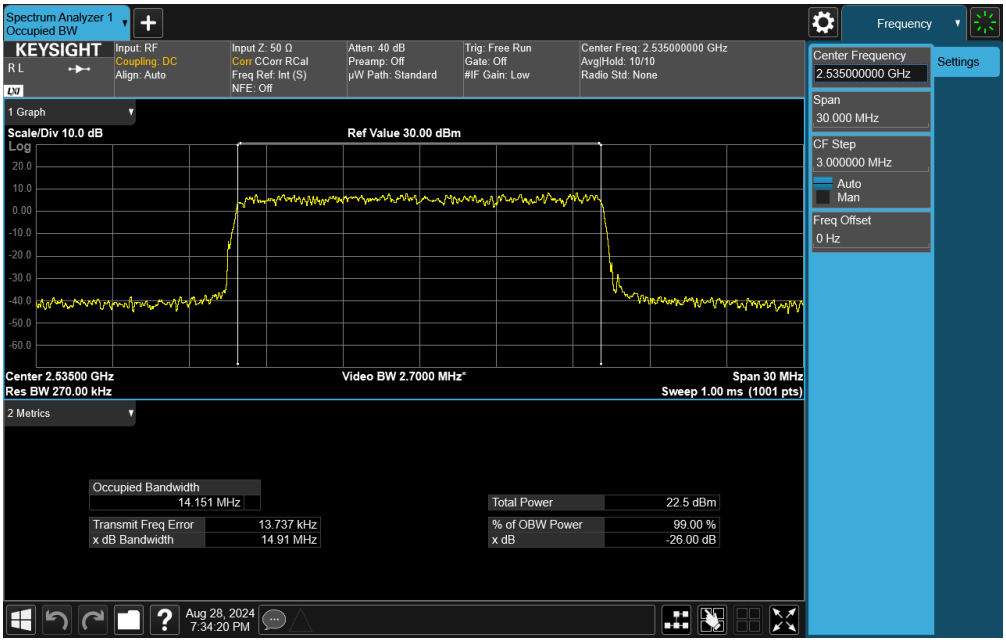
Plot 7-60. Occupied Bandwidth Plot (NR Band n7 - 10MHz CP-OFDM 256-QAM - Full RB)



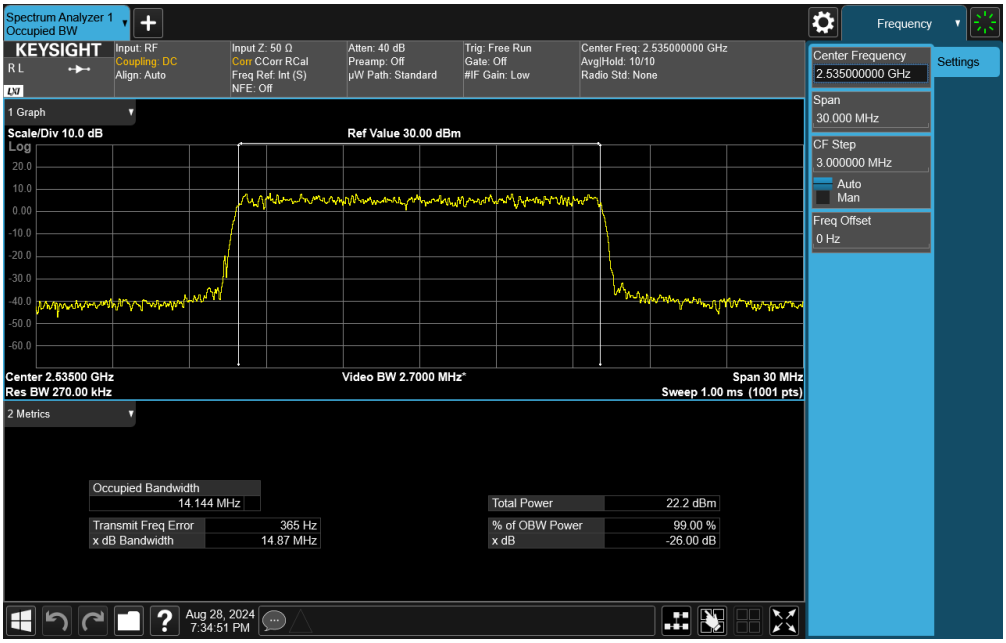
Plot 7-61. Occupied Bandwidth Plot (NR Band n7 - 15MHz DFT-s-OFDM π/2 BPSK - Full RB)



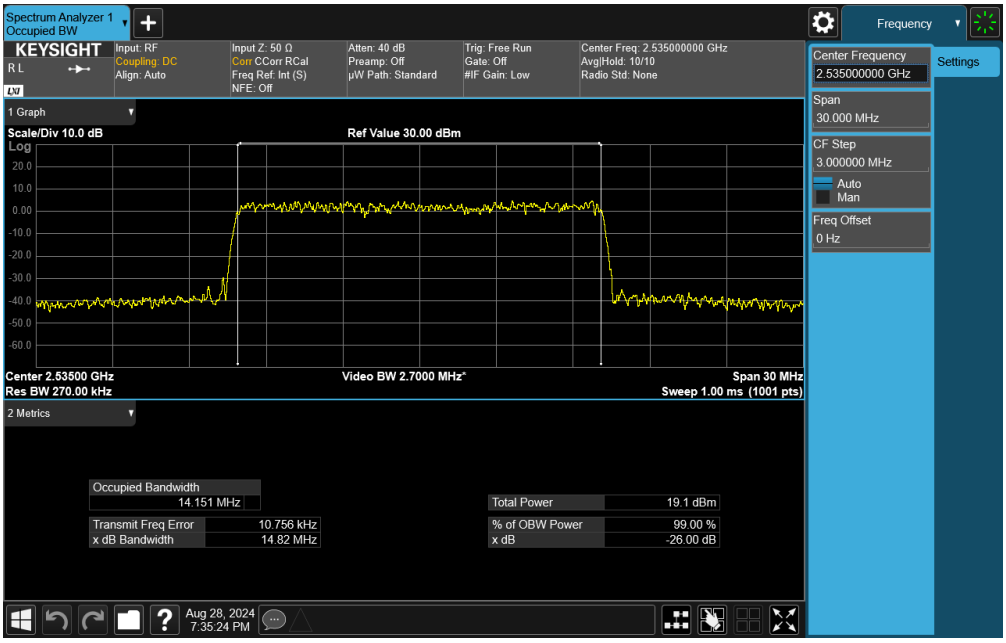
Plot 7-62. Occupied Bandwidth Plot (NR Band n7 - 15MHz CP-OFDM QPSK - Full RB)



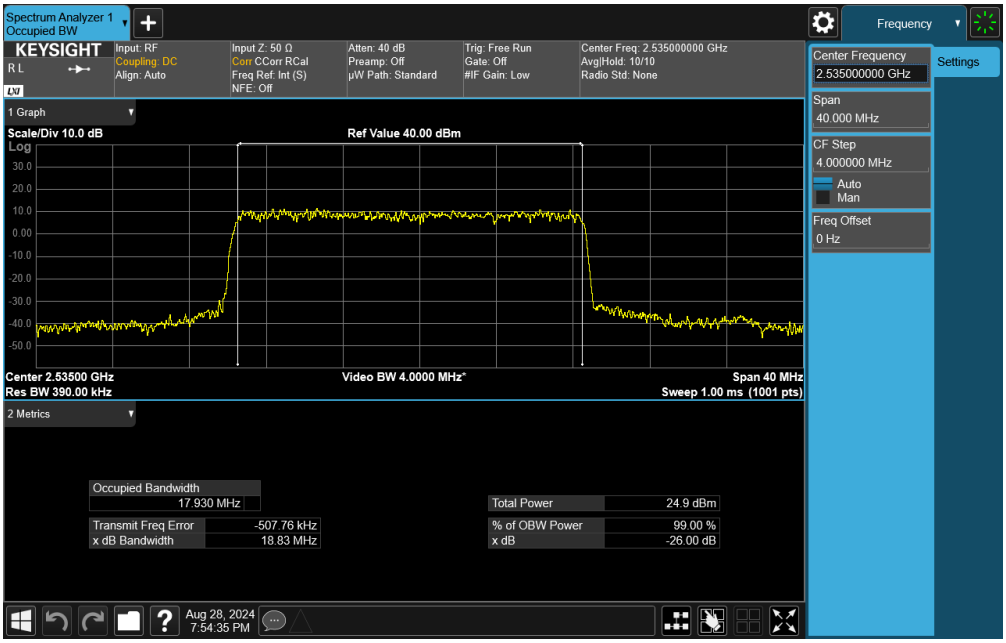
Plot 7-63. Occupied Bandwidth Plot (NR Band n7 - 15MHz CP-OFDM 16-QAM - Full RB)



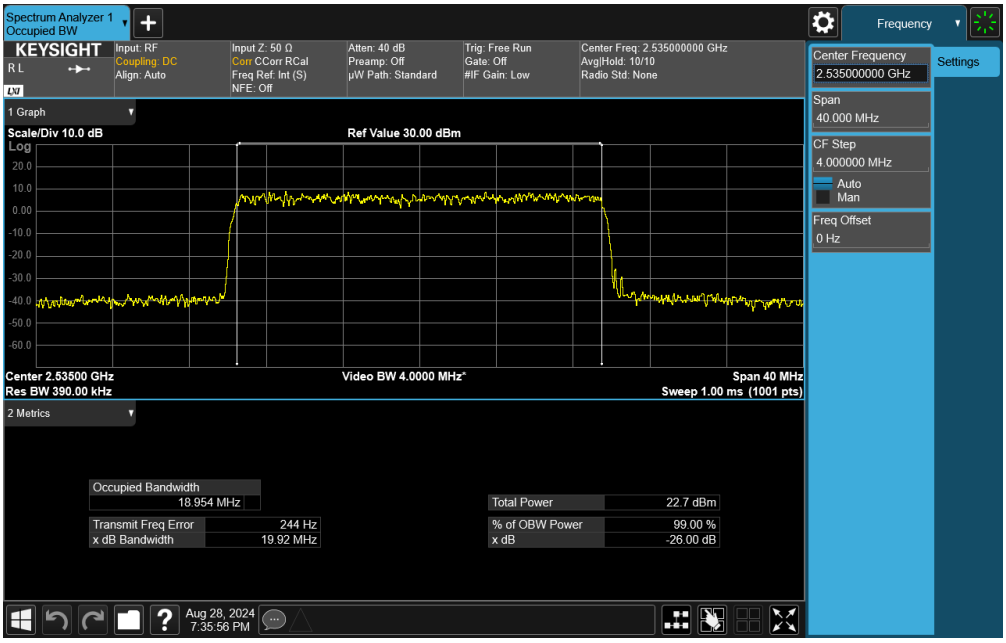
Plot 7-64. Occupied Bandwidth Plot (NR Band n7 - 15MHz CP-OFDM 64-QAM - Full RB)



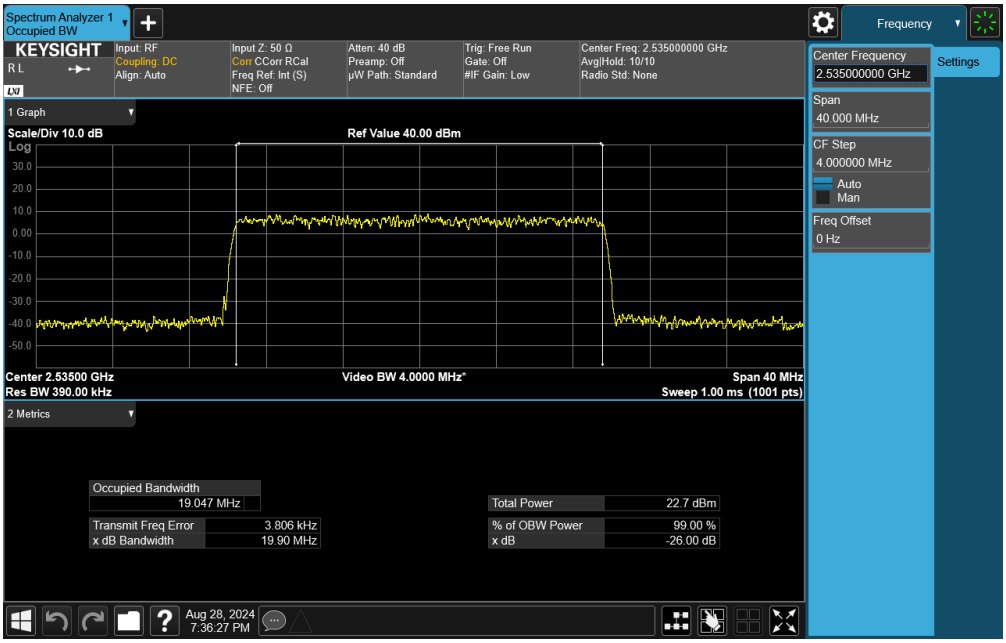
Plot 7-65. Occupied Bandwidth Plot (NR Band n7 - 15MHz CP-OFDM 256-QAM - Full RB)



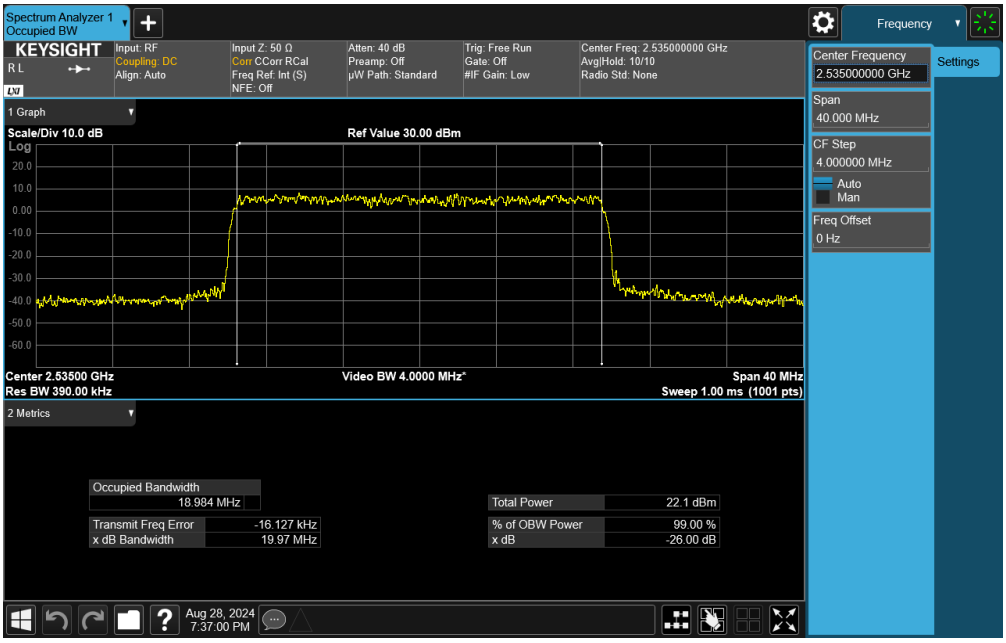
Plot 7-66. Occupied Bandwidth Plot (NR Band n7 - 20MHz DFT-s-OFDM π/2 BPSK - Full RB)



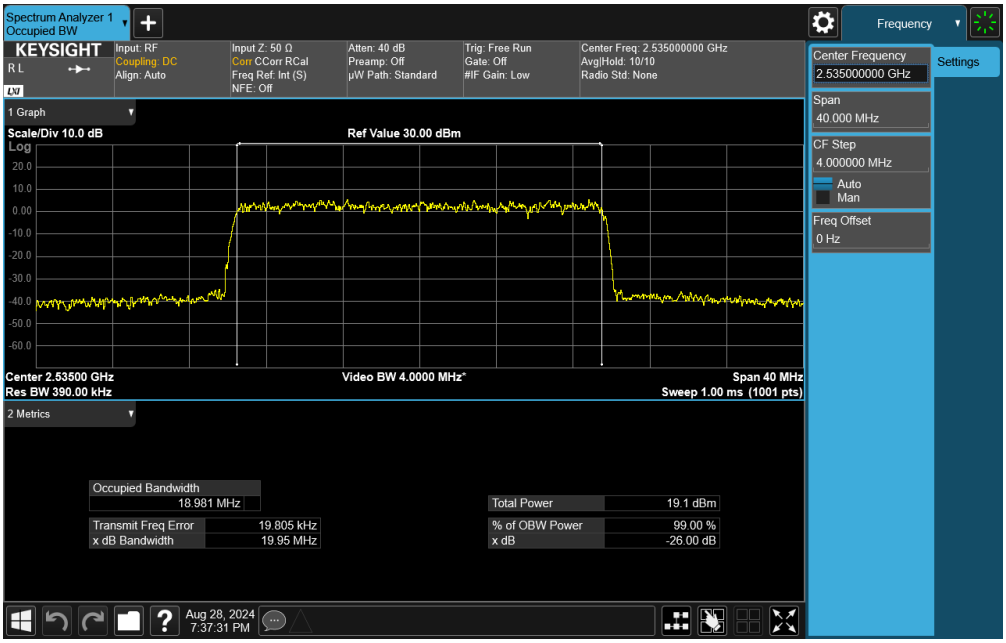
Plot 7-67. Occupied Bandwidth Plot (NR Band n7 - 20MHz CP-OFDM QPSK - Full RB)



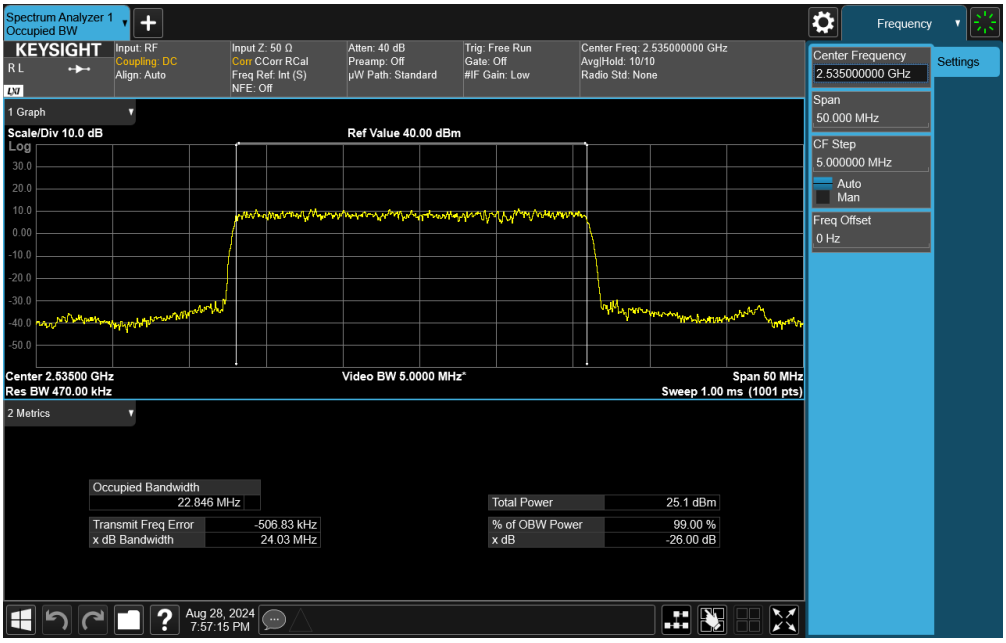
Plot 7-68. Occupied Bandwidth Plot (NR Band n7 - 20MHz CP-OFDM 16-QAM - Full RB)



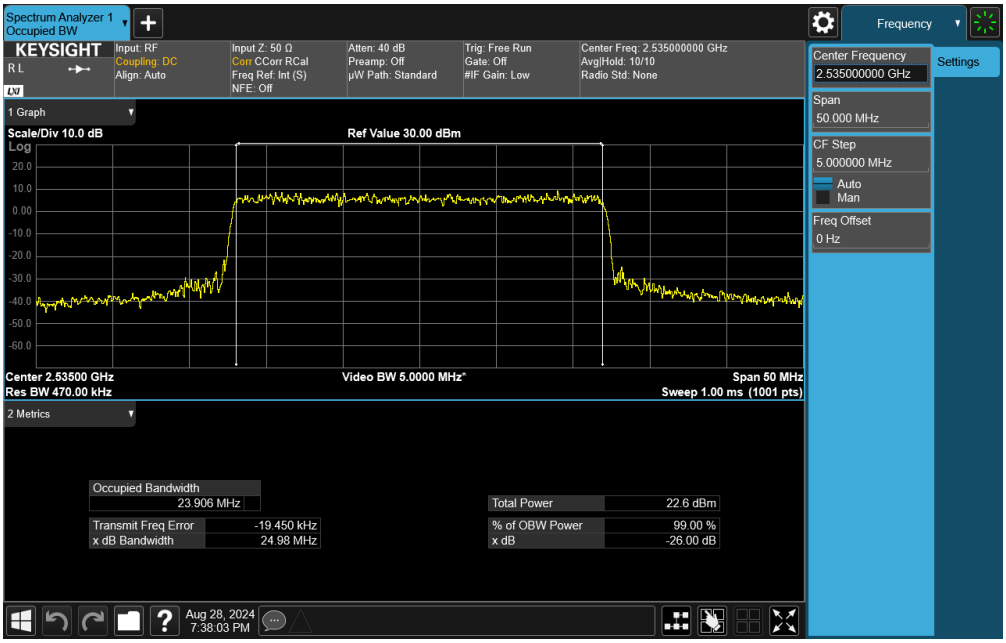
Plot 7-69. Occupied Bandwidth Plot (NR Band n7 - 20MHz CP-OFDM 64-QAM - Full RB)



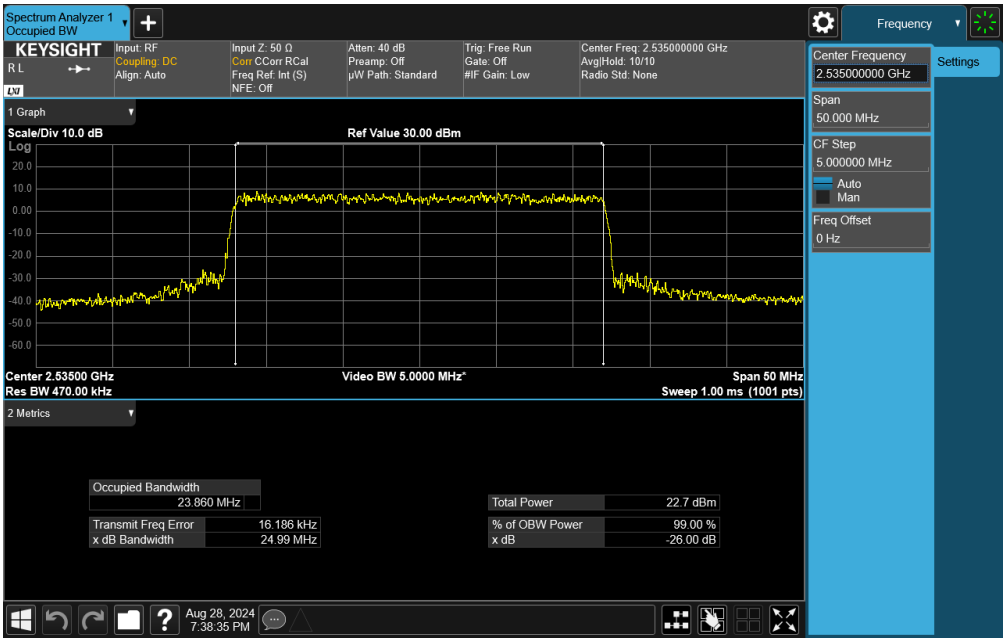
Plot 7-70. Occupied Bandwidth Plot (NR Band n7 - 20MHz CP-OFDM 256-QAM - Full RB)



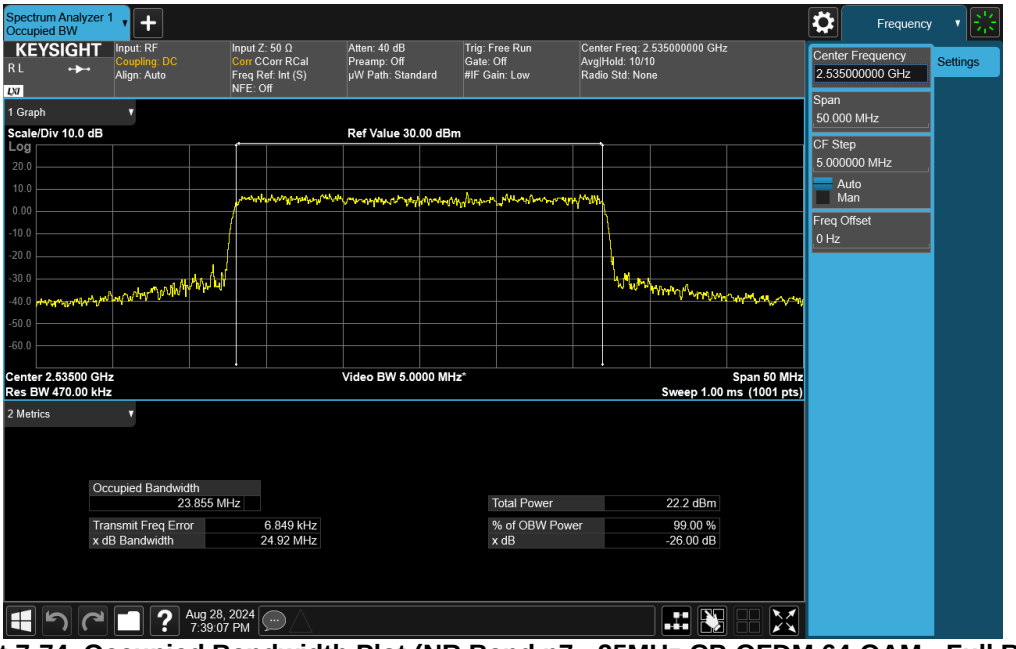
Plot 7-71. Occupied Bandwidth Plot (NR Band n7 - 25MHz DFT-s-OFDM π/2 BPSK - Full RB)



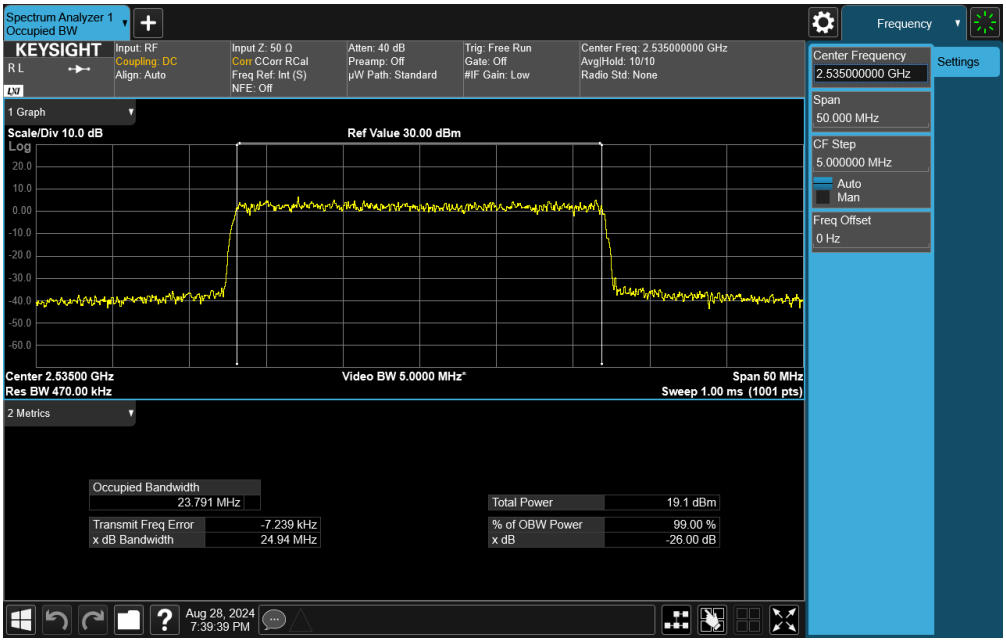
Plot 7-72. Occupied Bandwidth Plot (NR Band n7 - 25MHz CP-OFDM QPSK - Full RB)



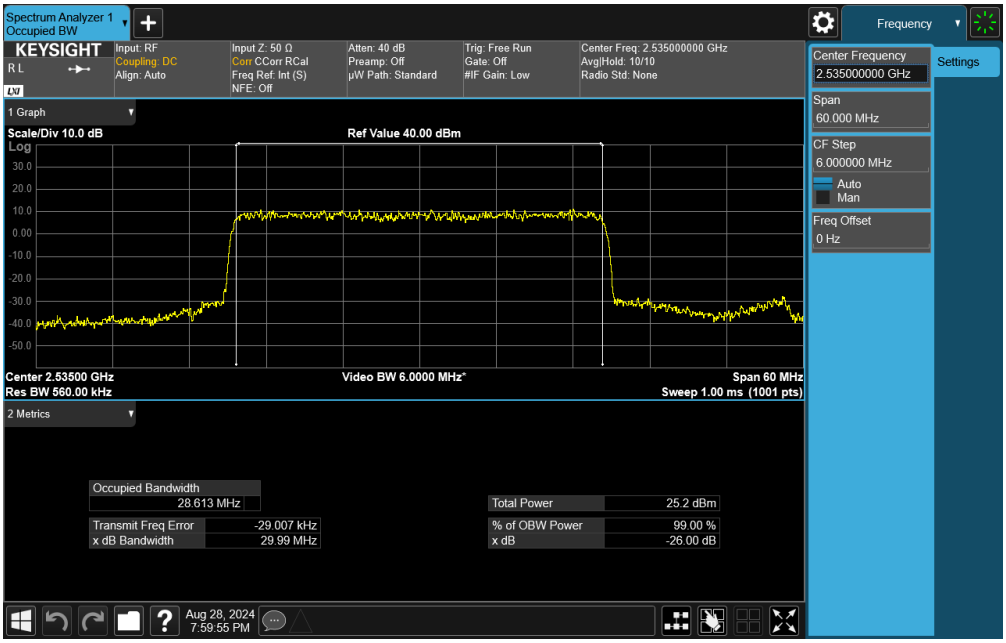
Plot 7-73. Occupied Bandwidth Plot (NR Band n7 - 25MHz CP-OFDM 16-QAM - Full RB)



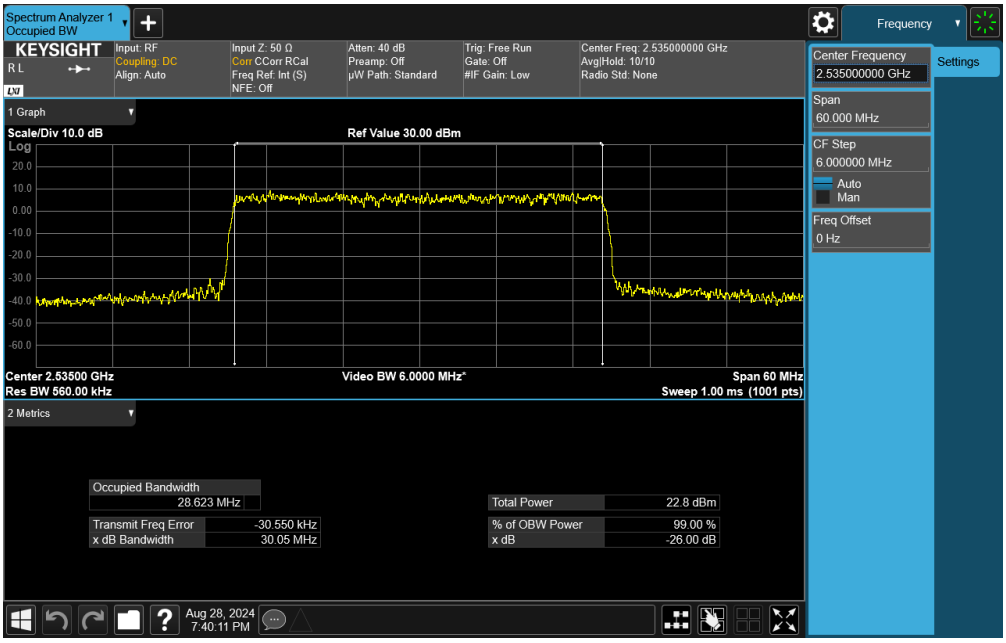
Plot 7-74. Occupied Bandwidth Plot (NR Band n7 - 25MHz CP-OFDM 64-QAM - Full RB)



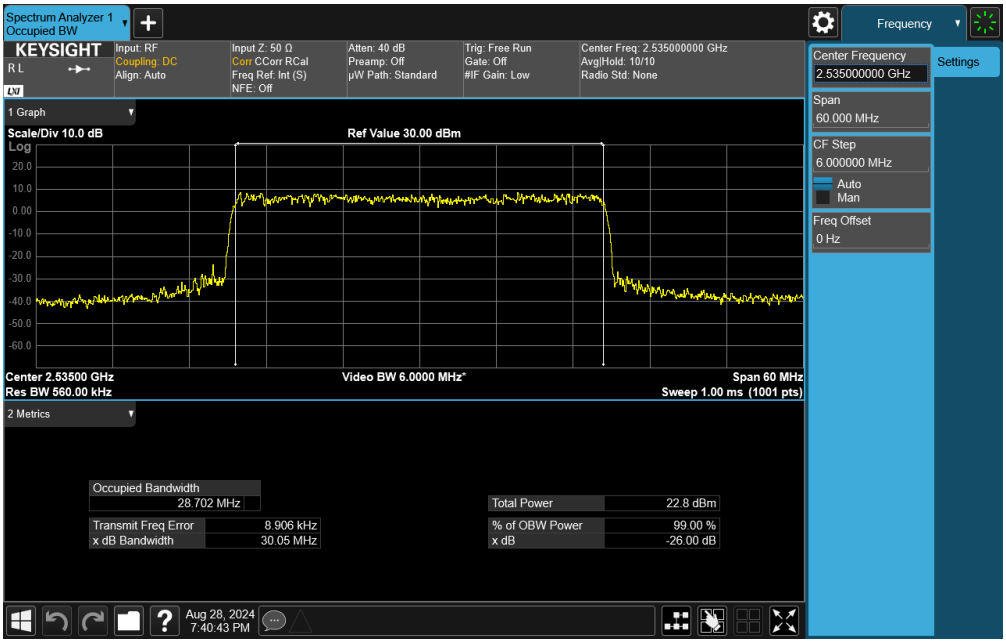
Plot 7-75. Occupied Bandwidth Plot (NR Band n7 - 25MHz CP-OFDM 256-QAM - Full RB)



Plot 7-76. Occupied Bandwidth Plot (NR Band n7 - 30MHz DFT-s-OFDM π/2 BPSK - Full RB)

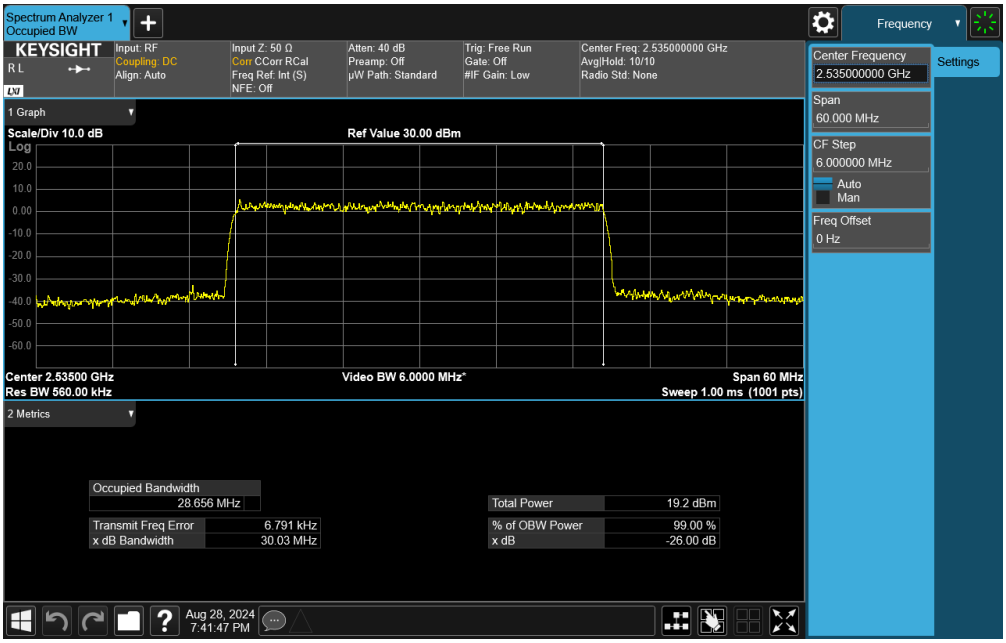


Plot 7-77. Occupied Bandwidth Plot (NR Band n7 - 30MHz CP-OFDM QPSK - Full RB)

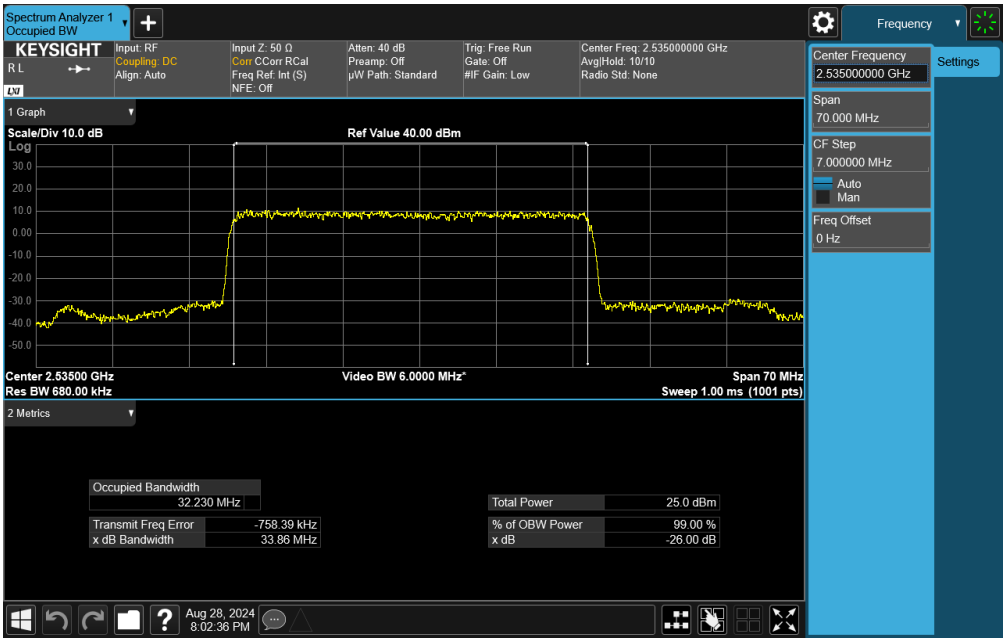


Plot 7-78. Occupied Bandwidth Plot (NR Band n7 - 30MHz CP-OFDM 16-QAM - Full RB)

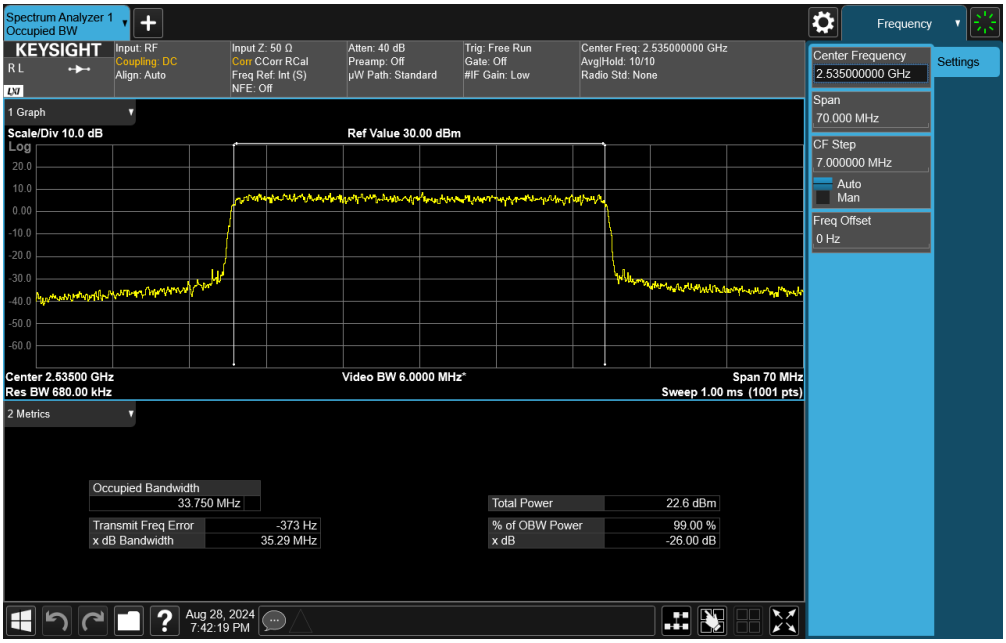
Plot 7-79. Occupied Bandwidth Plot (NR Band n7 - 30MHz CP-OFDM 64-QAM - Full RB)



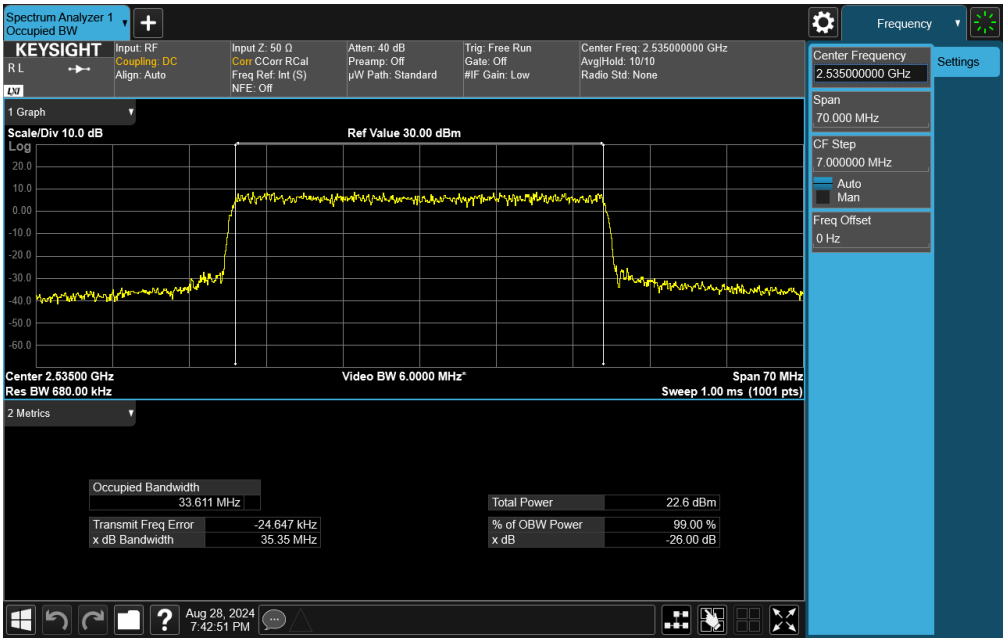
Plot 7-80. Occupied Bandwidth Plot (NR Band n7 - 30MHz CP-OFDM 256-QAM - Full RB)



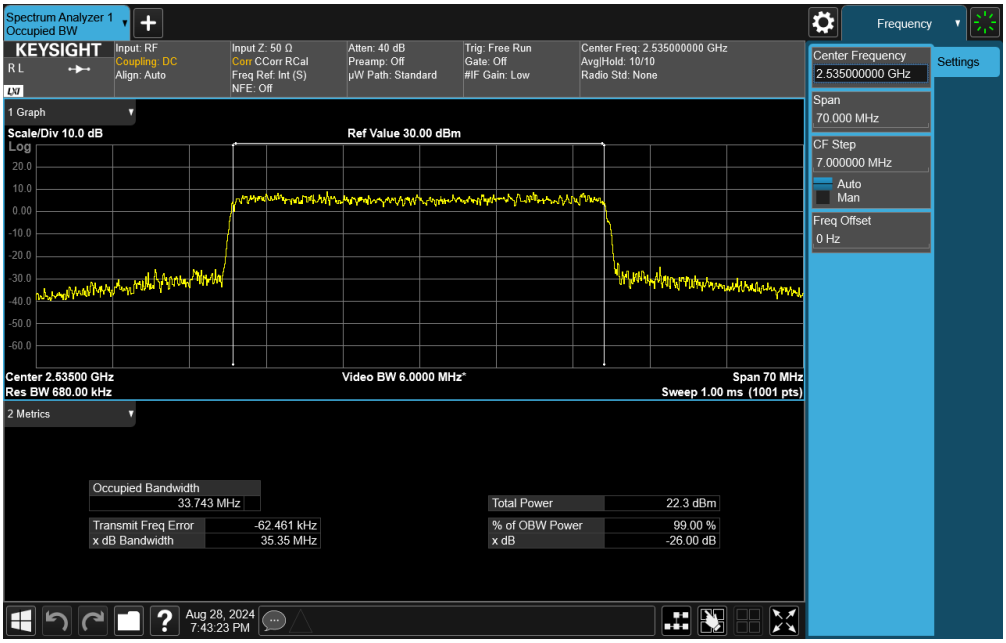
Plot 7-81. Occupied Bandwidth Plot (NR Band n7 - 35MHz DFT-s-OFDM π/2 BPSK - Full RB)



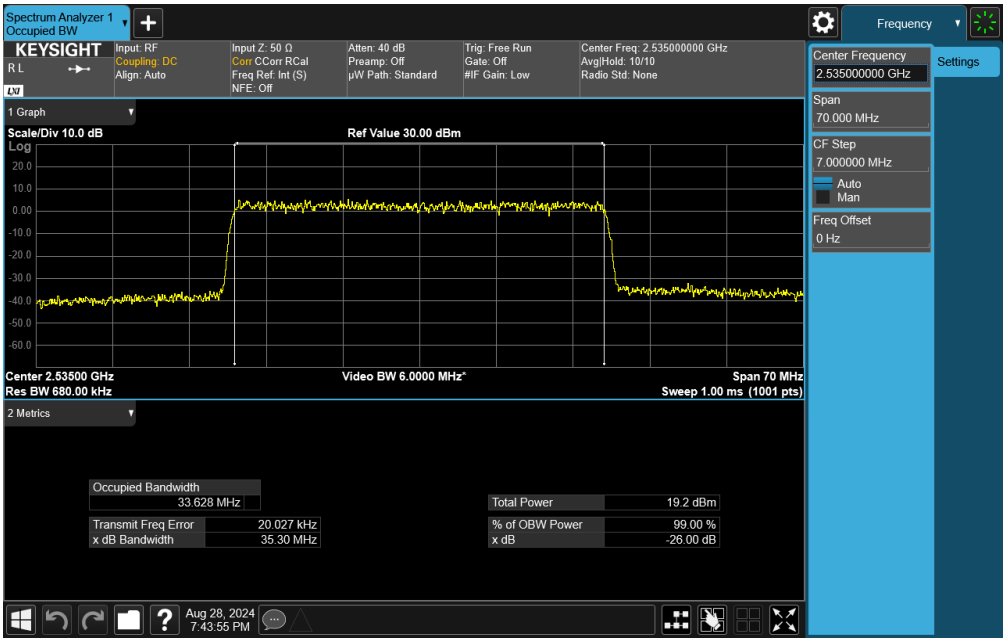
Plot 7-82. Occupied Bandwidth Plot (NR Band n7 - 35MHz CP-OFDM QPSK - Full RB)



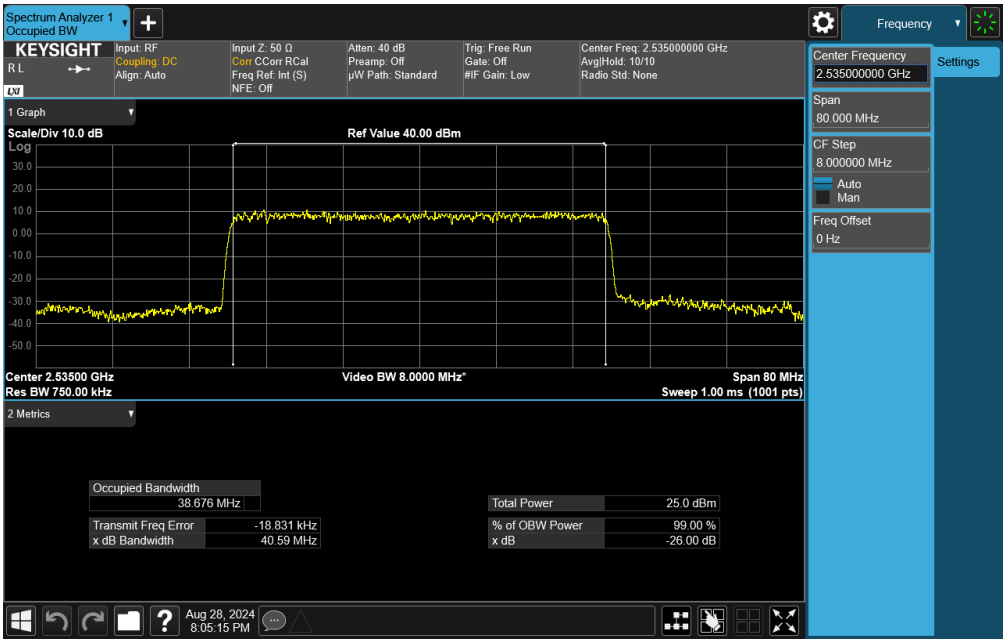
Plot 7-83. Occupied Bandwidth Plot (NR Band n7 - 35MHz CP-OFDM 16-QAM - Full RB)



Plot 7-84. Occupied Bandwidth Plot (NR Band n7 - 35MHz CP-OFDM 64-QAM - Full RB)



Plot 7-85. Occupied Bandwidth Plot (NR Band n7 - 35MHz CP-OFDM 256-QAM - Full RB)



Plot 7-86. Occupied Bandwidth Plot (NR Band n7 - 40MHz DFT-s-OFDM π/2 BPSK - Full RB)