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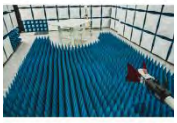

MEASUREMENT REPORT
LTE/Sub 6GHz NR

Applicant Name:
Samsung Electronics Co., Ltd.
129, Samsung-ro,
Yeongtong-gu, Suwon-si
Gyeonggi-do, 16677, Korea

Date of Testing:
3/23 - 5/7/2020
Test Site/Location:
PCTEST Lab. Columbia, MD, USA
Test Report Serial No.:
1M2003200047-11.A3L

FCC ID:	**A3LSMA716U**
APPLICANT:	**Samsung Electronics Co., Ltd.**

Application Type:	Certification
Model:	SM-A716U
EUT Type:	Portable Handset
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	22, 24, & 27
Test Procedure(s):	ANSI C63.26-2015, ANSI/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.

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.

Randy Ortanez
President

ACCREDITED
TESTING CERT#2041.01

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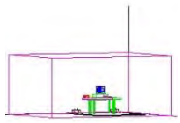


MEASUREMENT REPORT
FCC Part 22, 24, & 27

Mode	FCC Rule Part	Tx Frequency (MHz)	ERP		EIRP		Emission Designator	Modulation
			Max. Power (W)	Max. Power (dBm)	Max. Power (W)	Max. Power (dBm)		
LTE Band 71	27	665.5 - 695.5	0.112	20.50			4M51G7D	QPSK
LTE Band 71	27	665.5 - 695.5	0.092	19.66			4M51W7D	16QAM
LTE Band 71	27	665.5 - 695.5	0.057	17.57			4M51W7D	64QAM
LTE Band 71	27	668 - 693	0.106	20.26			8M97G7D	QPSK
LTE Band 71	27	668 - 693	0.096	19.82			8M98W7D	16QAM
LTE Band 71	27	668 - 693	0.069	18.37			8M97W7D	64QAM
LTE Band 71	27	670.5 - 690.5	0.102	20.07			13M5G7D	QPSK
LTE Band 71	27	670.5 - 690.5	0.089	19.50			13M4W7D	16QAM
LTE Band 71	27	670.5 - 690.5	0.059	17.73			13M4W7D	64QAM
LTE Band 71	27	673 - 688	0.101	20.04			17M9G7D	QPSK
LTE Band 71	27	673 - 688	0.084	19.22			17M9W7D	16QAM
LTE Band 71	27	673 - 688	0.060	17.80			17M9W7D	64QAM
LTE Band 12	27	699.7 - 715.3	0.103	20.11	0.168	22.26	1M09G7D	QPSK
LTE Band 12	27	699.7 - 715.3	0.094	19.72	0.154	21.87	1M10W7D	16QAM
LTE Band 12	27	699.7 - 715.3	0.063	18.01	0.104	20.16	1M10W7D	64QAM
LTE Band 12	27	700.5 - 714.5	0.103	20.11	0.168	22.26	2M70G7D	QPSK
LTE Band 12	27	700.5 - 714.5	0.089	19.49	0.146	21.64	2M70W7D	16QAM
LTE Band 12	27	700.5 - 714.5	0.072	18.55	0.117	20.70	2M70W7D	64QAM
LTE Band 12	27	701.5 - 713.5	0.105	20.23	0.173	22.38	4M53G7D	QPSK
LTE Band 12	27	701.5 - 713.5	0.088	19.46	0.145	21.61	4M51W7D	16QAM
LTE Band 12	27	701.5 - 713.5	0.070	18.43	0.114	20.58	4M54W7D	64QAM
LTE Band 12	27	704 - 711	0.120	20.79	0.197	22.94	8M94G7D	QPSK
LTE Band 12	27	704 - 711	0.100	20.00	0.164	22.15	8M95W7D	16QAM
LTE Band 12	27	704 - 711	0.077	18.84	0.126	20.99	8M97W7D	64QAM
LTE Band 13	27	779.5 - 784.5	0.085	19.32	0.140	21.47	4M52G7D	QPSK
LTE Band 13	27	779.5 - 784.5	0.070	18.46	0.115	20.61	4M52W7D	16QAM
LTE Band 13	27	779.5 - 784.5	0.054	17.30	0.088	19.45	4M54W7D	64QAM
LTE Band 13	27	782	0.088	19.45	0.145	21.60	8M99G7D	QPSK
LTE Band 13	27	782	0.073	18.62	0.119	20.77	8M99W7D	16QAM
LTE Band 13	27	782	0.058	17.62	0.095	19.77	8M99W7D	64QAM
LTE Band 26/5	22H	824.7 - 848.3	0.068	18.36	0.112	20.51	1M10G7D	QPSK
LTE Band 26/5	22H	824.7 - 848.3	0.051	17.12	0.084	19.27	1M10W7D	16QAM
LTE Band 26/5	22H	824.7 - 848.3	0.043	16.38	0.071	18.53	1M10W7D	64QAM
LTE Band 26/5	22H	825.5 - 847.5	0.065	18.11	0.106	20.26	2M70G7D	QPSK
LTE Band 26/5	22H	825.5 - 847.5	0.059	17.70	0.097	19.85	2M70W7D	16QAM
LTE Band 26/5	22H	825.5 - 847.5	0.040	16.03	0.066	18.18	2M70W7D	64QAM
LTE Band 26/5	22H	826.5 - 846.5	0.066	18.20	0.108	20.35	4M52G7D	QPSK
LTE Band 26/5	22H	826.5 - 846.5	0.060	17.78	0.098	19.93	4M52W7D	16QAM
LTE Band 26/5	22H	826.5 - 846.5	0.043	16.30	0.070	18.45	4M52W7D	64QAM
LTE Band 26/5	22H	829 - 844	0.070	18.44	0.115	20.59	9M00G7D	QPSK
LTE Band 26/5	22H	829 - 844	0.057	17.54	0.093	19.69	8M96W7D	16QAM
LTE Band 26/5	22H	829 - 844	0.046	16.64	0.076	18.79	9M02W7D	64QAM
LTE Band 26	22H	831.5 - 841.5	0.071	18.51	0.116	20.66	13M5G7D	QPSK
LTE Band 26	22H	831.5 - 841.5	0.060	17.77	0.098	19.92	13M5W7D	16QAM
LTE Band 26	22H	831.5 - 841.5	0.044	16.47	0.073	18.62	13M5W7D	64QAM

EUT Overview (<1 GHz)

Mode	FCC Rule Part	Tx Frequency (MHz)	ERP		EIRP		Emission Designator	Modulation
			Max. Power (W)	Max. Power (dBm)	Max. Power (W)	Max. Power (dBm)		
n71	27	665.5 - 695.5	0.053	17.21			4M56G7D	QPSK
n71	27	665.5 - 695.5	0.036	15.62			4M51W7D	16QAM
n71	27	665.5 - 695.5	0.031	14.96			4M49W7D	64QAM
n71	27	665.5 - 695.5	0.019	12.70			4M50W7D	256QAM
n71	27	665.5 - 695.5	0.051	17.06			4M56G7D	BPSK
n71	27	668 - 693	0.051	17.09			9M31G7D	QPSK
n71	27	668 - 693	0.037	15.62			9M35W7D	16QAM
n71	27	668 - 693	0.032	15.00			9M34W7D	64QAM
n71	27	668 - 693	0.020	13.03			9M32W7D	256QAM
n71	27	668 - 693	0.051	17.08			8M98G7D	BPSK
n71	27	670.5 - 690.5	0.063	17.98			14M2G7D	QPSK
n71	27	670.5 - 690.5	0.042	16.28			14M1W7D	16QAM
n71	27	670.5 - 690.5	0.029	14.60			14M2W7D	64QAM
n71	27	670.5 - 690.5	0.022	13.50			14M2W7D	256QAM
n71	27	670.5 - 690.5	0.060	17.79			13M5G7D	BPSK
n71	27	673 - 688	0.062	17.95			18M9G7D	QPSK
n71	27	673 - 688	0.048	16.79			19M0W7D	16QAM
n71	27	673 - 688	0.030	14.73			18M9W7D	64QAM
n71	27	673 - 688	0.023	13.63			18M9W7D	256QAM
n71	27	673 - 688	0.059	17.72			17M9G7D	BPSK
n5	22H	824.7 - 848.3	0.029	14.65	0.048	16.80	4M54G7D	QPSK
n5	22H	824.7 - 848.3	0.023	13.65	0.038	15.80	4M54W7D	16QAM
n5	22H	824.7 - 848.3	0.012	10.72	0.019	12.87	4M50W7D	64QAM
n5	22H	824.7 - 848.3	0.007	8.44	0.011	10.59	4M51W7D	256QAM
n5	22H	824.7 - 848.3	0.026	14.09	0.042	16.24	4M52G7D	BPSK
n5	22H	825.5 - 847.5	0.030	14.80	0.050	16.95	9M32G7D	QPSK
n5	22H	825.5 - 847.5	0.023	13.61	0.038	15.76	9M36W7D	16QAM
n5	22H	825.5 - 847.5	0.016	12.00	0.026	14.15	9M36W7D	64QAM
n5	22H	825.5 - 847.5	0.010	9.91	0.016	12.06	9M34W7D	256QAM
n5	22H	825.5 - 847.5	0.026	14.17	0.043	16.32	8M97G7D	BPSK
n5	22H	826.5 - 846.5	0.030	14.80	0.050	16.95	14M2G7D	QPSK
n5	22H	826.5 - 846.5	0.023	13.70	0.038	15.85	14M2W7D	16QAM
n5	22H	826.5 - 846.5	0.016	12.07	0.026	14.22	14M2W7D	64QAM
n5	22H	826.5 - 846.5	0.010	9.98	0.016	12.13	14M2W7D	256QAM
n5	22H	826.5 - 846.5	0.026	14.23	0.043	16.38	13M5G7D	BPSK
n5	22H	829 - 844	0.027	14.35	0.045	16.50	19M0G7D	QPSK
n5	22H	829 - 844	0.022	13.42	0.036	15.57	19M0W7D	16QAM
n5	22H	829 - 844	0.018	12.49	0.029	14.64	18M9W7D	64QAM
n5	22H	829 - 844	0.011	10.40	0.018	12.55	18M9W7D	256QAM
n5	22H	829 - 844	0.026	14.20	0.043	16.35	17M9G7D	BPSK

EUT Overview (<1 GHz)

Mode	FCC Rule Part	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
			Max. Power (W)	Max. Power (dBm)		
LTE Band 66/4	27	1710.7 - 1779.3	0.212	23.27	1M10G7D	QPSK
LTE Band 66/4	27	1710.7 - 1779.3	0.183	22.62	1M09W7D	16QAM
LTE Band 66/4	27	1710.7 - 1779.3	0.135	21.32	1M10W7D	64QAM
LTE Band 66/4	27	1711.5 - 1778.5	0.212	23.26	2M70G7D	QPSK
LTE Band 66/4	27	1711.5 - 1778.5	0.193	22.85	2M70W7D	16QAM
LTE Band 66/4	27	1711.5 - 1778.5	0.134	21.28	2M70W7D	64QAM
LTE Band 66/4	27	1712.5 - 1777.5	0.215	23.33	4M53G7D	QPSK
LTE Band 66/4	27	1712.5 - 1777.5	0.174	22.40	4M51W7D	16QAM
LTE Band 66/4	27	1712.5 - 1777.5	0.157	21.95	4M53W7D	64QAM
LTE Band 66/4	27	1715 - 1775	0.212	23.26	9M02G7D	QPSK
LTE Band 66/4	27	1715 - 1775	0.184	22.66	9M00W7D	16QAM
LTE Band 66/4	27	1715 - 1775	0.140	21.45	9M00W7D	64QAM
LTE Band 66/4	27	1717.5 - 1772.5	0.223	23.48	13M5G7D	QPSK
LTE Band 66/4	27	1717.5 - 1772.5	0.177	22.47	13M5W7D	16QAM
LTE Band 66/4	27	1717.5 - 1772.5	0.154	21.88	13M5W7D	64QAM
LTE Band 66/4	27	1720 - 1770	0.222	23.47	18M0G7D	QPSK
LTE Band 66/4	27	1720 - 1770	0.191	22.82	17M9W7D	16QAM
LTE Band 66/4	27	1720 - 1770	0.148	21.70	18M0W7D	64QAM
LTE Band 25/2	24E	1850.7 - 1914.3	0.213	23.28	1M10G7D	QPSK
LTE Band 25/2	24E	1850.7 - 1914.3	0.160	22.05	1M10W7D	16QAM
LTE Band 25/2	24E	1850.7 - 1914.3	0.138	21.41	1M10W7D	64QAM
LTE Band 25/2	24E	1851.5 - 1913.5	0.215	23.33	2M70G7D	QPSK
LTE Band 25/2	24E	1851.5 - 1913.5	0.175	22.43	2M70W7D	16QAM
LTE Band 25/2	24E	1851.5 - 1913.5	0.147	21.68	2M70W7D	64QAM
LTE Band 25/2	24E	1852.5 - 1912.5	0.222	23.46	4M52G7D	QPSK
LTE Band 25/2	24E	1852.5 - 1912.5	0.191	22.82	4M50W7D	16QAM
LTE Band 25/2	24E	1852.5 - 1912.5	0.144	21.58	4M52W7D	64QAM
LTE Band 25/2	24E	1855 - 1910	0.217	23.37	8M98G7D	QPSK
LTE Band 25/2	24E	1855 - 1910	0.178	22.51	8M98W7D	16QAM
LTE Band 25/2	24E	1855 - 1910	0.144	21.58	8M99W7D	64QAM
LTE Band 25/2	24E	1857.5 - 1907.5	0.216	23.35	13M4G7D	QPSK
LTE Band 25/2	24E	1857.5 - 1907.5	0.169	22.29	13M4W7D	16QAM
LTE Band 25/2	24E	1857.5 - 1907.5	0.146	21.64	13M5W7D	64QAM
LTE Band 25/2	24E	1860 - 1905	0.233	23.67	17M9G7D	QPSK
LTE Band 25/2	24E	1860 - 1905	0.195	22.91	17M9W7D	16QAM
LTE Band 25/2	24E	1860 - 1905	0.153	21.84	17M9W7D	64QAM

EUT Overview (Mid Bands)

Mode	FCC Rule Part	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
			Max. Power (W)	Max. Power (dBm)		
n66	27	1712.5 - 1777.5	0.156	21.94	4M53G7D	QPSK
n66	27	1712.5 - 1777.5	0.123	20.90	4M54W7D	16QAM
n66	27	1712.5 - 1777.5	0.089	19.48	4M52W7D	64QAM
n66	27	1712.5 - 1777.5	0.054	17.31	4M53W7D	256QAM
n66	27	1712.5 - 1777.5	0.144	21.58	4M52G7D	BPSK
n66	27	1715 - 1775	0.172	22.35	9M38G7D	QPSK
n66	27	1715 - 1775	0.121	20.84	9M38W7D	16QAM
n66	27	1715 - 1775	0.087	19.42	9M37W7D	64QAM
n66	27	1715 - 1775	0.053	17.25	9M31W7D	256QAM
n66	27	1715 - 1775	0.146	21.65	9M00G7D	BPSK
n66	27	1717.5 - 1772.5	0.159	22.01	14M2G7D	QPSK
n66	27	1717.5 - 1772.5	0.126	21.00	14M2W7D	16QAM
n66	27	1717.5 - 1772.5	0.091	19.58	14M2W7D	64QAM
n66	27	1717.5 - 1772.5	0.055	17.41	14M2W7D	256QAM
n66	27	1717.5 - 1772.5	0.147	21.66	13M5G7D	BPSK
n66	27	1720 - 1770	0.148	21.69	19M0G7D	QPSK
n66	27	1720 - 1770	0.115	20.59	19M0W7D	16QAM
n66	27	1720 - 1770	0.083	19.17	19M0W7D	64QAM
n66	27	1720 - 1770	0.050	17.00	19M0W7D	256QAM
n66	27	1720 - 1770	0.144	21.59	18M0G7D	BPSK
n2	24E	1852.5 - 1907.5	0.263	24.20	4M50G7D	QPSK
n2	24E	1852.5 - 1907.5	0.211	23.25	4M51W7D	16QAM
n2	24E	1852.5 - 1907.5	0.177	22.48	4M53W7D	64QAM
n2	24E	1852.5 - 1907.5	0.102	20.07	4M51W7D	256QAM
n2	24E	1852.5 - 1907.5	0.239	23.78	4M51G7D	BPSK
n2	24E	1855 - 1905	0.269	24.29	9M34G7D	QPSK
n2	24E	1855 - 1905	0.198	22.96	9M36W7D	16QAM
n2	24E	1855 - 1905	0.166	22.19	9M32W7D	64QAM
n2	24E	1855 - 1905	0.095	19.78	9M34W7D	256QAM
n2	24E	1855 - 1905	0.252	24.02	8M99G7D	BPSK
n2	24E	1857.5 - 1902.5	0.246	23.91	14M2G7D	QPSK
n2	24E	1857.5 - 1902.5	0.200	23.01	14M2W7D	16QAM
n2	24E	1857.5 - 1902.5	0.155	21.89	14M2W7D	64QAM
n2	24E	1857.5 - 1902.5	0.112	20.50	14M2W7D	256QAM
n2	24E	1857.5 - 1902.5	0.244	23.88	13M5G7D	BPSK
n2	24E	1860 - 1900	0.263	24.20	18M9G7D	QPSK
n2	24E	1860 - 1900	0.214	23.31	19M0W7D	16QAM
n2	24E	1860 - 1900	0.179	22.54	18M9W7D	64QAM
n2	24E	1860 - 1900	0.103	20.13	18M9W7D	256QAM
n2	24E	1860 - 1900	0.259	24.14	17M9G7D	BPSK

EUT Overview (Mid Bands)

Mode	FCC Rule Part	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
			Max. Power (W)	Max. Power (dBm)		
LTE Band 30	27	2307.5 - 2312.5	0.188	22.73	4M52G7D	QPSK
LTE Band 30	27	2307.5 - 2312.5	0.158	21.97	4M52W7D	16QAM
LTE Band 30	27	2307.5 - 2312.5	0.123	20.89	4M51W7D	64QAM
LTE Band 30	27	2310	0.193	22.86	9M00G7D	QPSK
LTE Band 30	27	2310	0.157	21.95	8M99W7D	16QAM
LTE Band 30	27	2310	0.131	21.19	9M00W7D	64QAM
LTE Band 7	27	2502.5 - 2567.5	0.103	20.12	4M51G7D	QPSK
LTE Band 7	27	2502.5 - 2567.5	0.088	19.42	4M51W7D	16QAM
LTE Band 7	27	2502.5 - 2567.5	0.070	18.42	4M55W7D	64QAM
LTE Band 7	27	2505 - 2565	0.102	20.08	9M03G7D	QPSK
LTE Band 7	27	2505 - 2565	0.090	19.52	9M00W7D	16QAM
LTE Band 7	27	2505 - 2565	0.072	18.55	9M01W7D	64QAM
LTE Band 7	27	2507.5 - 2562.5	0.103	20.11	13M5G7D	QPSK
LTE Band 7	27	2507.5 - 2562.5	0.092	19.63	13M5W7D	16QAM
LTE Band 7	27	2507.5 - 2562.5	0.073	18.63	13M5W7D	64QAM
LTE Band 7	27	2510 - 2560	0.099	19.93	18M0G7D	QPSK
LTE Band 7	27	2510 - 2560	0.083	19.17	17M9W7D	16QAM
LTE Band 7	27	2510 - 2560	0.066	18.17	18M0W7D	64QAM
LTE Band 41 (PC2)	27	2498.5 - 2687.5	0.311	24.93	4M52G7D	QPSK
LTE Band 41 (PC2)	27	2498.5 - 2687.5	0.240	23.80	4M53W7D	16QAM
LTE Band 41 (PC2)	27	2498.5 - 2687.5	0.223	23.48	4M54W7D	64QAM
LTE Band 41 (PC2)	27	2501 - 2685	0.310	24.92	9M03G7D	QPSK
LTE Band 41 (PC2)	27	2501 - 2685	0.235	23.72	8M97W7D	16QAM
LTE Band 41 (PC2)	27	2501 - 2685	0.222	23.46	8M97W7D	64QAM
LTE Band 41 (PC2)	27	2503.5 - 2682.5	0.317	25.01	13M5G7D	QPSK
LTE Band 41 (PC2)	27	2503.5 - 2682.5	0.227	23.55	13M5W7D	16QAM
LTE Band 41 (PC2)	27	2503.5 - 2682.5	0.216	23.33	13M5W7D	64QAM
LTE Band 41 (PC2)	27	2506 - 2680	0.297	24.73	18M0G7D	QPSK
LTE Band 41 (PC2)	27	2506 - 2680	0.222	23.47	17M9W7D	16QAM
LTE Band 41 (PC2)	27	2506 - 2680	0.199	22.98	18M0W7D	64QAM
LTE Band 41 (PC3)	27	2498.5 - 2687.5	0.105	20.22	4M52G7D	QPSK
LTE Band 41 (PC3)	27	2498.5 - 2687.5	0.083	19.19	4M52W7D	16QAM
LTE Band 41 (PC3)	27	2498.5 - 2687.5	0.081	19.10	4M51W7D	64QAM
LTE Band 41 (PC3)	27	2501 - 2685	0.106	20.25	8M97G7D	QPSK
LTE Band 41 (PC3)	27	2501 - 2685	0.092	19.63	8M98W7D	16QAM
LTE Band 41 (PC3)	27	2501 - 2685	0.077	18.86	9M01W7D	64QAM
LTE Band 41 (PC3)	27	2503.5 - 2682.5	0.104	20.16	13M5G7D	QPSK
LTE Band 41 (PC3)	27	2503.5 - 2682.5	0.091	19.58	13M5W7D	16QAM
LTE Band 41 (PC3)	27	2503.5 - 2682.5	0.080	19.03	13M5W7D	64QAM
LTE Band 41 (PC3)	27	2506 - 2680	0.103	20.14	17M9G7D	QPSK
LTE Band 41 (PC3)	27	2506 - 2680	0.090	19.53	17M9W7D	16QAM
LTE Band 41 (PC3)	27	2506 - 2680	0.080	19.03	18M0W7D	64QAM

EUT Overview (High Bands)

Mode	FCC Rule Part	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
			Max. Power (W)	Max. Power (dBm)		
n41	27	2506 - 2687.5	0.187	22.72	18M3G7D	QPSK
n41	27	2506 - 2687.5	0.142	21.51	18M3W7D	16QAM
n41	27	2506 - 2687.5	0.110	20.40	18M3W7D	64QAM
n41	27	2506 - 2687.5	0.076	18.79	18M3W7D	256QAM
n41	27	2506 - 2687.5	0.170	22.30	18M0G7D	BPSK
n41	27	2516 - 2685	0.184	22.64	37M9G7D	QPSK
n41	27	2516 - 2685	0.147	21.68	37M9W7D	16QAM
n41	27	2516 - 2685	0.114	20.57	37M8W7D	64QAM
n41	27	2516 - 2685	0.079	18.96	37M8W7D	256QAM
n41	27	2516 - 2685	0.173	22.38	35M8G7D	BPSK
n41	27	2521 - 2682.5	0.187	22.71	47M7G7D	QPSK
n41	27	2521 - 2682.5	0.145	21.60	47M8W7D	16QAM
n41	27	2521 - 2682.5	0.086	19.33	47M7W7D	64QAM
n41	27	2521 - 2682.5	0.059	17.72	47M6W7D	256QAM
n41	27	2521 - 2682.5	0.169	22.28	46M0G7D	BPSK
n41	27	2526 - 2680	0.196	22.92	58M1G7D	QPSK
n41	27	2526 - 2680	0.156	21.93	58M3W7D	16QAM
n41	27	2526 - 2680	0.121	20.82	57M9W7D	64QAM
n41	27	2526 - 2680	0.083	19.21	58M2W7D	256QAM
n41	27	2526 - 2680	0.178	22.50	58M0G7D	BPSK
n41	27	2536 - 2687.5	0.244	23.87	77M9G7D	QPSK
n41	27	2536 - 2687.5	0.194	22.87	77M8W7D	16QAM
n41	27	2536 - 2687.5	0.150	21.76	77M7W7D	64QAM
n41	27	2536 - 2687.5	0.096	19.82	77M6W7D	256QAM
n41	27	2536 - 2687.5	0.250	23.98	77M5G7D	BPSK
n41	27	2541 - 2685	0.237	23.74	87M6G7D	QPSK
n41	27	2541 - 2685	0.187	22.72	87M8W7D	16QAM
n41	27	2541 - 2685	0.140	21.45	87M4W7D	64QAM
n41	27	2541 - 2685	0.092	19.62	87M6W7D	256QAM
n41	27	2541 - 2685	0.231	23.64	86M8G7D	BPSK
n41	27	2546 - 2682.5	0.221	23.45	97M7G7D	QPSK
n41	27	2546 - 2682.5	0.203	23.08	97M2W7D	16QAM
n41	27	2546 - 2682.5	0.167	22.24	97M4W7D	64QAM
n41	27	2546 - 2682.5	0.105	20.22	97M3W7D	256QAM
n41	27	2546 - 2682.5	0.218	23.39	96M2G7D	BPSK

EUT Overview (High 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 PCTEST Test Location

These measurement tests were conducted at the PCTEST facility located at 7185 Oakland Mills Road, Columbia, MD 21046. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014.

1.3 Test Facility / Accreditations

Measurements were performed at PCTEST located in Columbia, MD 21046, U.S.A.

- PCTEST is an ISO 17025-2005 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 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.

- PCTEST 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).

- PCTEST facility is a registered (2451B) test laboratory with the site description on file with ISED.

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSMA716U**. The test data contained in this report pertains only to the emissions due to the EUT's LTE function.

Test Device Serial No.: 05500,05633,19097, 19410, 43014, 06656, 11985, 12058, 05203, 19071

2.2 Device Capabilities

This device contains the following capabilities:

800/850/1900 CDMA (BC0, BC1, BC10), 850/1900 GSM/GPRS/EDGE, 850/1700/1900 WCDMA/HSPA, Multi-band LTE, 5G NR (n71, n5, n66, n2, n41), 802.11b/g/n WLAN, 802.11a/n/ac UNII, Bluetooth (1x, EDR, LE), NFC, ANT+

LTE Band 26 (814.7 – 849 MHz) overlaps the entire frequency range of LTE Band 5 (824 – 849 MHz). Therefore, test data provided in this report covers Band 5 and the portion of Band 26 subject to Part 22.

LTE Band 66 (1710 - 1780 MHz) overlaps the entire frequency range of LTE Band 4 (1710 - 1755 MHz). Therefore, test data provided in this report covers Band 4 as well as Band 66.

LTE Band 25 (1850 - 1915 MHz) overlaps the entire frequency range of LTE Band 2 (1850 - 1910 MHz). Therefore, test data provided in this report covers Band 2 as well as Band 25.

Sub 6GHz NR Band n71 (663 – 698 MHz) operates using 15kHz Subcarrier Spacing with both CP-OFDM and DFT-s OFDM waveforms. The band supports BPSK, QPSK, 16QAM, 64QAM, and 256QAM modulation. The test data provided in this report represents the worst case configuration.

Sub 6GHz NR Band n5 (824 – 849 MHz) operates using 15kHz Subcarrier Spacing with both CP-OFDM and DFT-s OFDM waveforms. The band supports BPSK, QPSK, 16QAM, 64QAM, and 256QAM modulation. The test data provided in this report represents the worst case configurations.

Sub 6GHz NR Band n66 (1710 – 1780 MHz) operates using 15kHz Subcarrier Spacing with both CP-OFDM and DFT-s OFDM waveforms. The band supports BPSK, QPSK, 16QAM, 64QAM, and 256QAM modulation. The test data provided in this report represents the worst case configurations.

Sub 6GHz NR Band n2 (1850 – 1910 MHz) operates using 15kHz Subcarrier Spacing with both CP-OFDM and DFT-s OFDM waveforms. The band supports BPSK, QPSK, 16QAM, 64QAM, and 256QAM modulation. The test data provided in this report represents the worst case configurations.

Sub 6GHz NR Band n41 (2496 – 2690 MHz) operates using 30kHz Subcarrier Spacing with both CP-OFDM and DFT-s OFDM waveforms. The band supports BPSK, QPSK, 16QAM, 64QAM, and 256QAM modulation. The test data provided in this report represents the worst case configurations.

This device uses a tuner circuit that dynamically updates the antenna impedance parameters to optimize antenna performance for certain bands and modes of operation. The tuner for this device was set to simulate a "free space" condition where the transmit antenna is matched to the medium into which it is transmitting and, thus, the power is at its maximum level.

2.3 Test Configuration

The EUT was tested per the guidance of ANSI/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.

2.4 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 Measurement Procedure

The measurement procedures described in the document titled "Land Mobile FM or PM – Communications Equipment – Measurements and Performance Standards" (ANSI/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.

3.2 Radiated Power and 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. Radiated power levels are also investigated with the receive antenna horizontally and vertically polarized. The maximized power level is recorded using the spectrum analyzer "Channel Power" function with the integration band set to the emissions' occupied bandwidth, a RMS detector, RBW = 100kHz, VBW = 300kHz, and a 1 second sweep time over a minimum of 10 sweeps, per the guidelines of KDB 971168 D01 v03r01.

Per the guidance of ANSI/TIA-603-E-2016, a half-wave dipole is then substituted in place of the EUT. For emissions above 1GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer level previously recorded from the spurious emission from the EUT. The power of the emission is calculated using the following formula:

$$P_{d\ [dBm]} = P_{g\ [dBm]} - \text{cable loss}_{\ [dB]} + \text{antenna gain}_{\ [dBd/dBi]}$$

Where, P_d is the dipole equivalent power, P_g is the generator output into the substitution antenna, and the antenna gain is the gain of the substitute antenna used relative to either a half-wave dipole (dBd) or an isotropic source (dBi). The substitute level is equal to $P_{g\ [dBm]}$ – cable loss $_{[dB]}$.

The calculated P_d levels are then compared to the absolute spurious emission limit of -13dBm which is equivalent to the required minimum attenuation of 43 + 10 $\log_{10}$(Power $_{[Watts]}$). For Band 7 and 41, the calculated P_d levels are compared to the absolute spurious emission limit of -25dBm which is equivalent to the required minimum attenuation of 55 + 10 $\log_{10}$(Power $_{[Watts]}$). For Band 30, the calculated P_d levels are compared to the absolute spurious emission limit of -40dBm which is equivalent to the required minimum attenuation of 70 + 10 $\log_{10}$(Power $_{[Watts]}$).

All radiated measurements are performed in a chamber that meets the site requirements per ANSI C63.4-2014. Additionally, radiated emissions below 30MHz are also validated on an Open Area Test Site to assert correlation with the chamber measurements per the requirements of KDB 474788 D01.

4.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. 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	1.13
Radiated Disturbance (<1GHz)	4.98
Radiated Disturbance (>1GHz)	5.07
Radiated Disturbance (>18GHz)	5.09

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
-	LTx1	Licensed Transmitter Cable Set	6/4/2019	Annual	6/4/2020	LTx1
-	LTx3	LIcensed Transmitter Cable Set	10/30/2019	Annual	10/30/2020	LTx3
Agilent	N9020A	MXA Signal Analyzer	4/20/2019	Annual	4/20/2020	US46470561
Agilent	N9038A	MXE EMI Receiver	7/17/2019	Annual	7/17/2020	MY51210133
Agilent	N9030A	PXA Signal Analyzer (44GHz)	6/12/2019	Annual	6/12/2020	MY52350166
Rohde & Schwarz	TC-TA18	Vivaldi Antenna	8/17/2018	Biennial	8/17/2020	101072
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			112347
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			102060
Rohde & Schwarz	ESU26	EMI Test Receiver (26.5GHz)	6/5/2019	Annual	6/5/2020	100348
Rohde & Schwarz	SFUNIT-Rx	Shielded Filter Unit	7/8/2019	Annual	7/8/2020	9105-2404
Sunol	DRH-118	Horn Antenna (1-18GHz)	10/3/2019	Biennial	10/3/2021	A051107
Com-Power	AL-130	9kHz - 30MHz Loop Antenna	10/10/2019	Biennial	10/10/2021	121034

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. Equipment with a calibration date of "N/A" shown in this list was not used to make direct calibrated measurements.

6.0 SAMPLE CALCULATIONS

Emission Designator

QPSK/BPSK Modulation

Emission Designator = 8M62G7D

LTE BW = 8.62 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data transmission, telemetry, telecommand

QAM Modulation

Emission Designator = 8M45W7D

LTE BW = 8.45 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data transmission, telemetry, telecommand

Spurious Radiated Emission – LTE Band

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: Samsung Electronics Co., Ltd.

FCC ID: A3LSMA716U

FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)

Mode(s): LTE

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
2.1049	Occupied Bandwidth	N/A	CONDUCTED	PASS	Section 7.2
2.1051 22.917(a) 24.238(a) 27.53(c) 27.53(g) 27.53(h)	Out of Band Emissions	> 43 + 10 $\log_{10}$ (P[Watts]) at Band Edge and for all out-of-band emissions			Section 7.3, 7.4
27.53(m)	Out of Band Emissions	Undesirable emissions must meet the limits detailed in 27.53(m)			Section 7.3, 7.4
27.53(a)	Out of Band Emissions	Undesirable emissions must meet the limits detailed in 27.53(a)			Section 7.3, 7.4
24.232(d)	Peak-Average Ratio	< 13 dB			Section 7.5
2.1046	Transmitter Conducted Output Power	N/A			See RF Exposure Report
22.917(a) 27.53(h)	Uplink Carrier Aggregation	>43 + 10log(P[Watts]) at Band Edge and for all out-of-band emissions			Section 7.6
2.1055 22.355 24.235 27.54	Frequency Stability	< 2.5 ppm (Part 22) and fundamental emissions stay within authorized frequency block (Part 24, 27)			Section 7.8

Table 7-1. Summary of Conducted Test Results

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
22.913(a)(5)	Effective Radiated Power / Equivalent Isotropic Radiated Power (Band 5/26)	< 7 Watts max. ERP	RADIATED	PASS	Section 7.6
27.50(b)(10) 27.50(c)(10)	Effective Radiated Power / Equivalent Isotropic Radiated Power (Band 71, 12, 13)	< 3 Watts max. ERP			Section 7.6
24.232(c) 27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 2/25, 7, 41)	< 2 Watts max. EIRP			Section 7.6
27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4/66)	< 1 Watts max. EIRP			Section 7.6
27.50(a)(3)	Equivalent Isotropic Radiated Power (Band 30)	< 0.25 Watts max. EIRP			Section 7.6
2.1053 22.917(a) 24.238(a) 27.53(c) 27.53(g) 27.53(h)	Undesirable Emissions (Band 12, 13, 26/5, 66/4, 25/2)	> 43 + 10 $\log_{10}$ (P[Watts]) for all out-of-band emissions			Section 7.7
27.53(f)	Undesirable Emissions (Band 13)	< -70 dBW/MHz (for wideband signals) < -80 dBW (for discrete emissions less than 700Hz BW) For all emissions in the band 1559 – 1610 MHz			Section 7.7
27.53(a)	Undesirable Emissions (Band 30)	> 70 + 10 $\log_{10}$ (P[Watts])			Section 7.7
27.53(m)	Undesirable Emissions (Band 7, 41)	Undesirable emissions must meet the limits detailed in 27.53(m)			Section 7.7
27.53(m) 27.53(c) 27.53(g)	Uplink Carrier Aggregation	Undesirable emissions must meet the limits detailed in 27.53(m)			Section 7.7

Table 7-2. Summary of Radiated 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 (Sections 7.2, 7.3, 7.4, 7.5) 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) For conducted spurious emissions, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is PCTEST "LTE Automation," Version 5.3.

7.2 Occupied Bandwidth

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.

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.

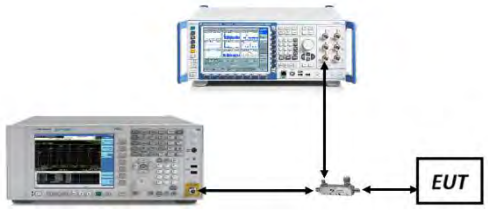
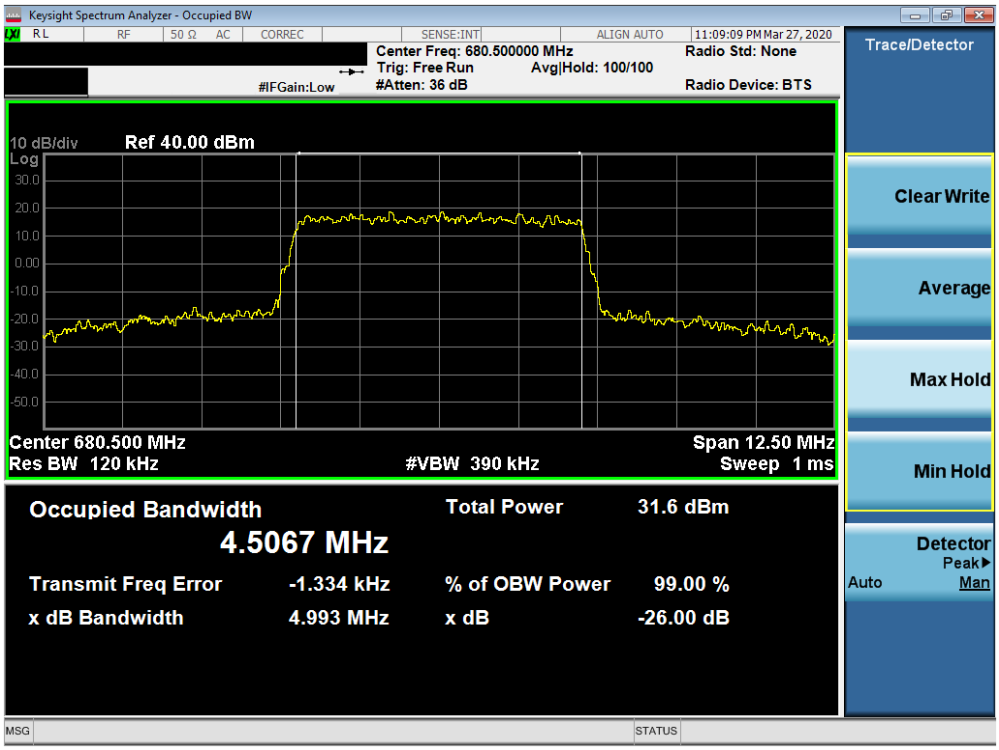


Figure 7-1. Test Instrument & Measurement Setup

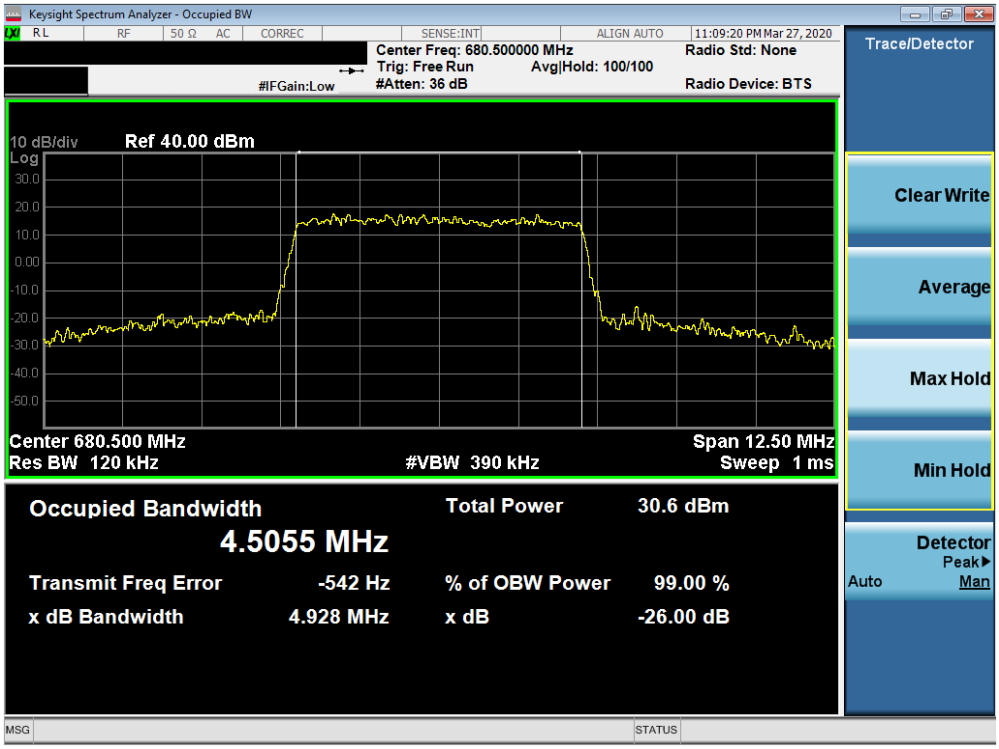
Test Notes

None.

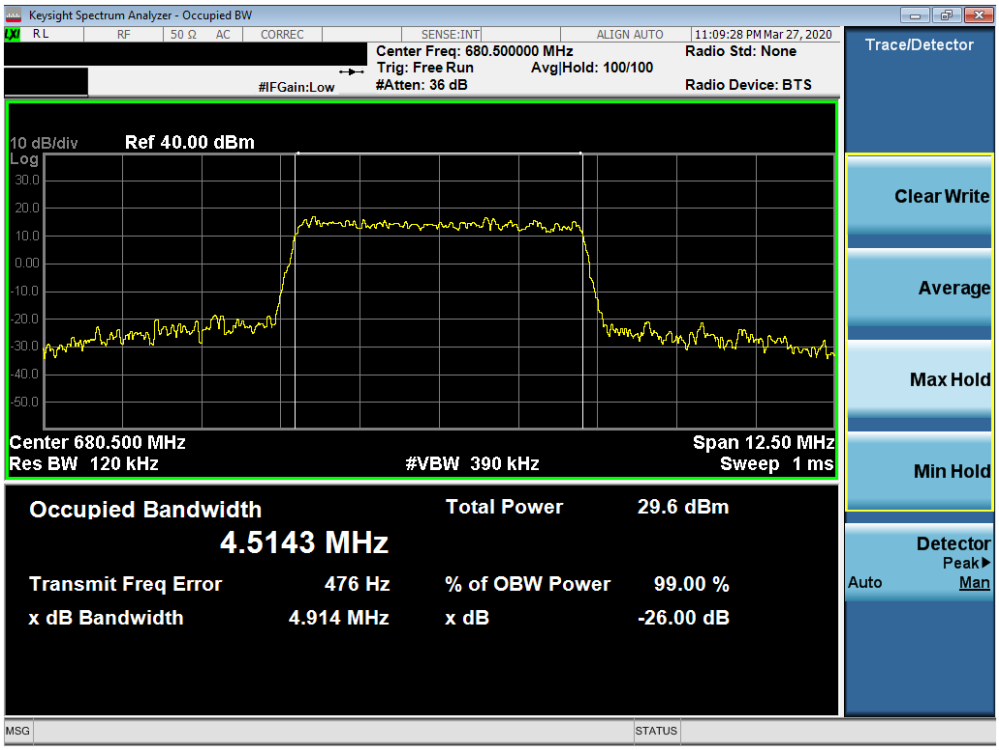
Band 71



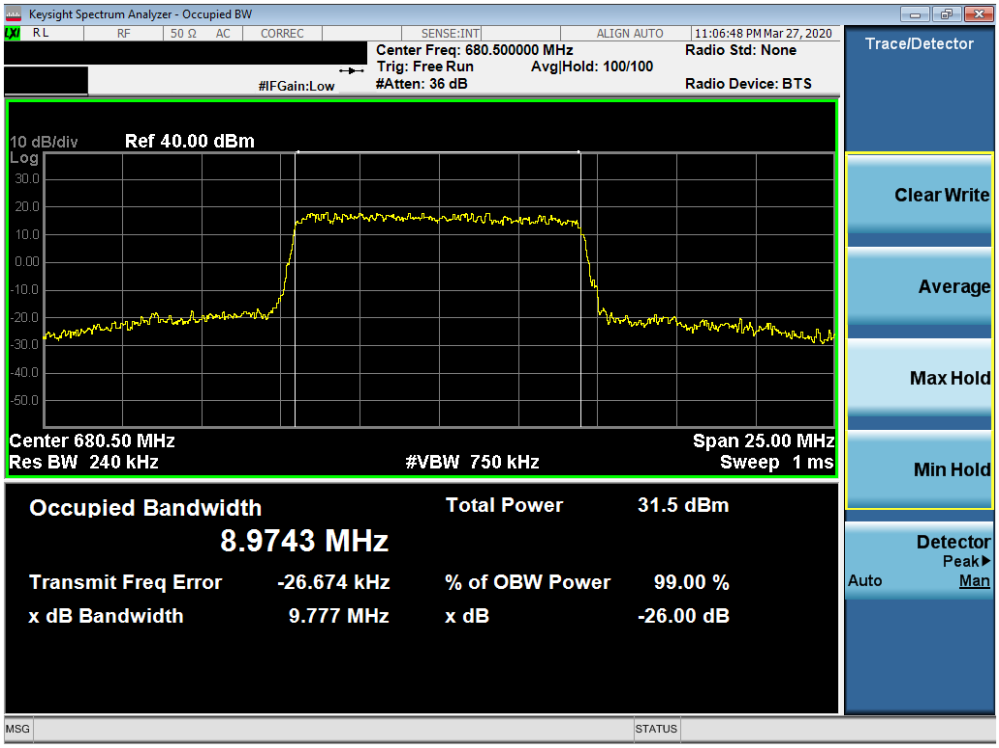
Plot 7-1. Occupied Bandwidth Plot (Band 71 - 5.0MHz QPSK - Full RB Configuration)



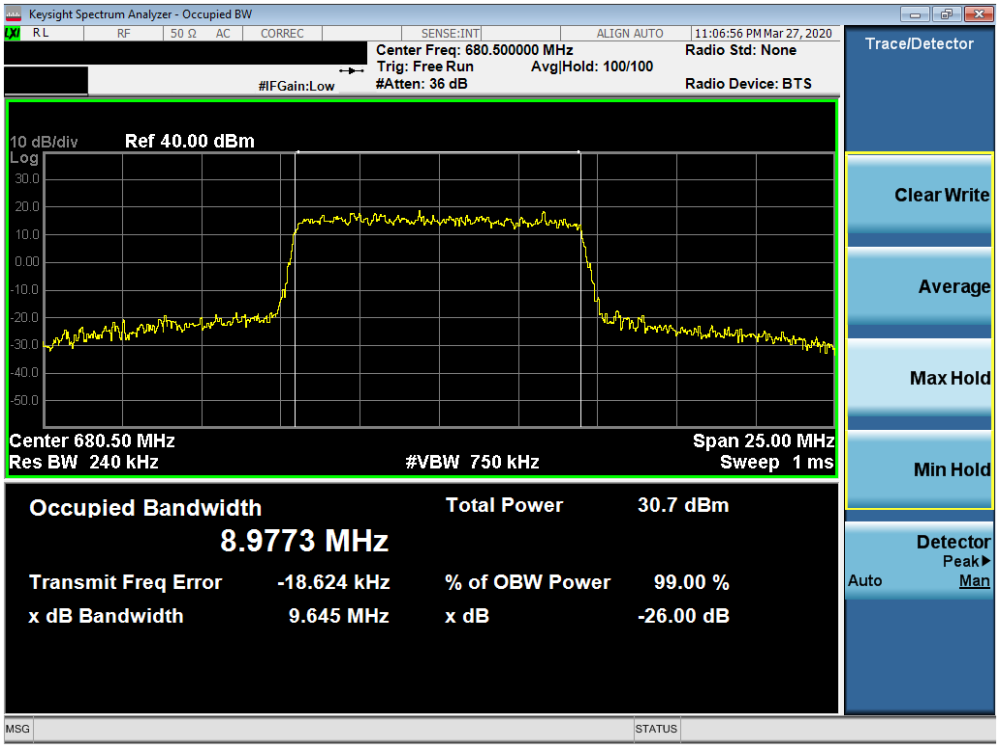
Plot 7-2. Occupied Bandwidth Plot (Band 71 - 5.0MHz 16-QAM - Full RB Configuration)



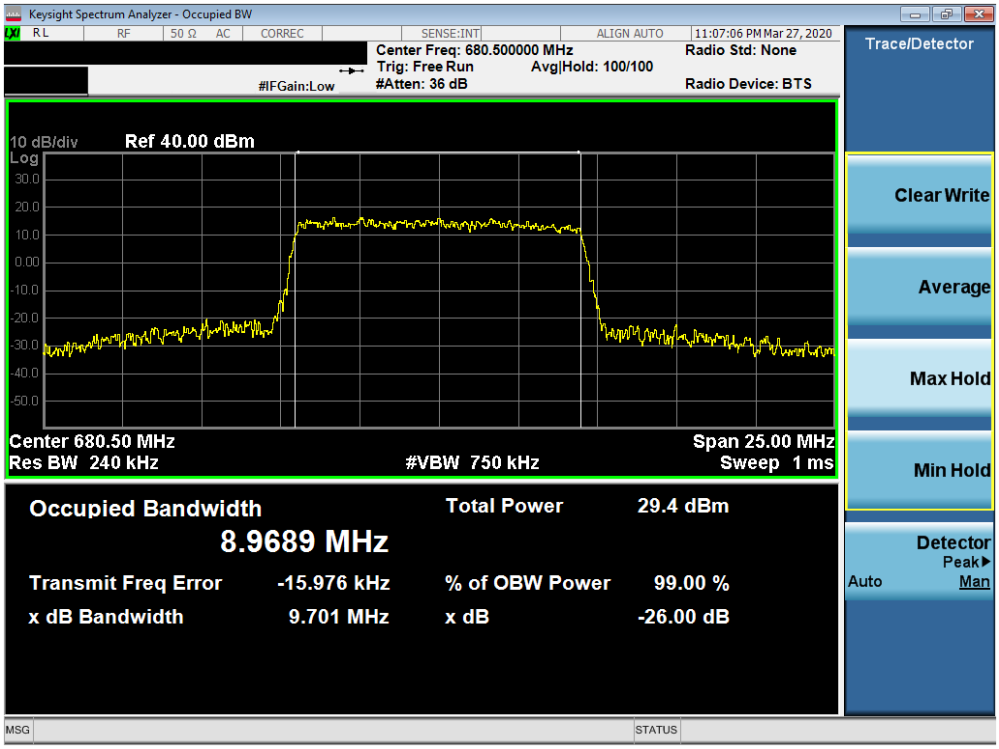
Plot 7-3. Occupied Bandwidth Plot (Band 71 - 5.0MHz 64-QAM - Full RB Configuration)



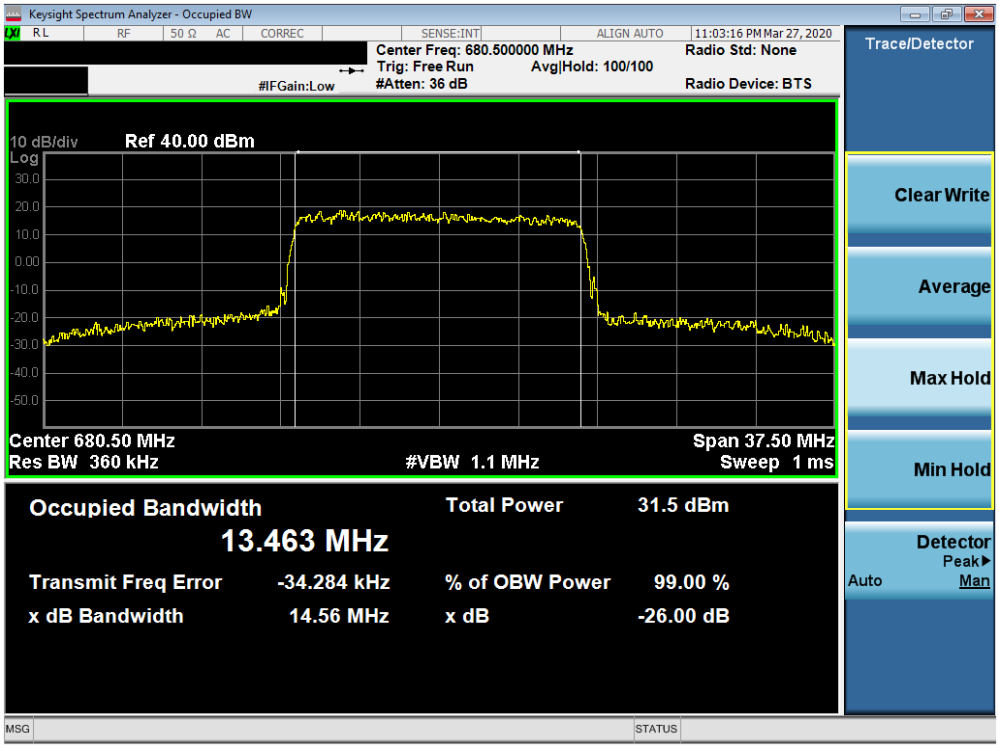
Plot 7-4. Occupied Bandwidth Plot (Band 71 - 10.0MHz QPSK - Full RB Configuration)



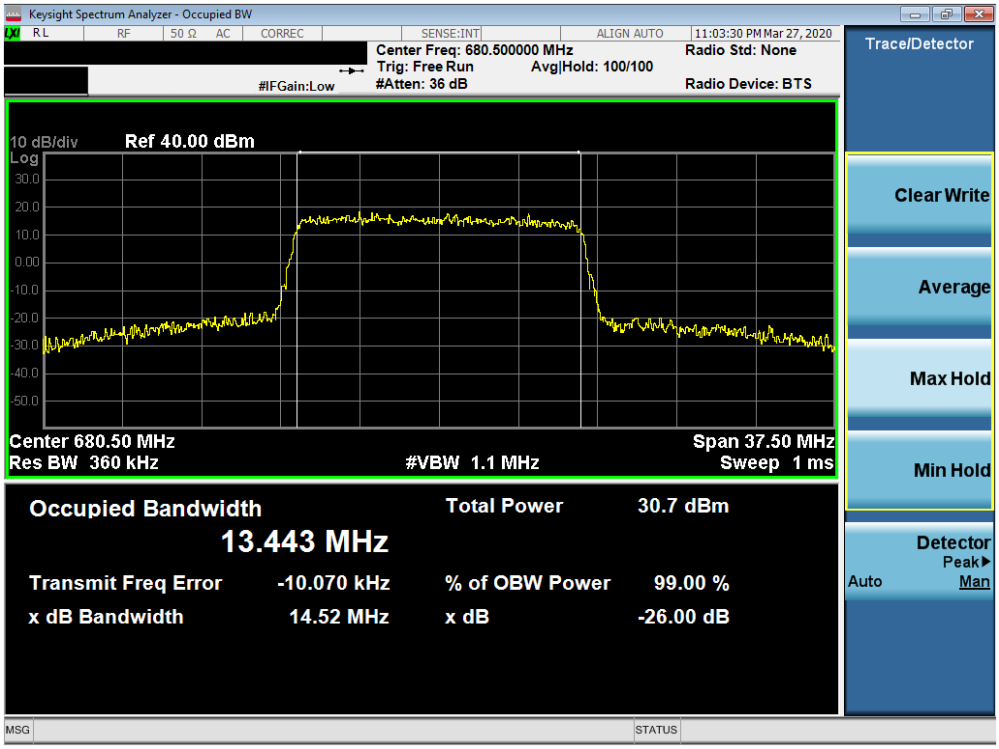
Plot 7-5. Occupied Bandwidth Plot (Band 71 - 10.0MHz 16-QAM - Full RB Configuration)



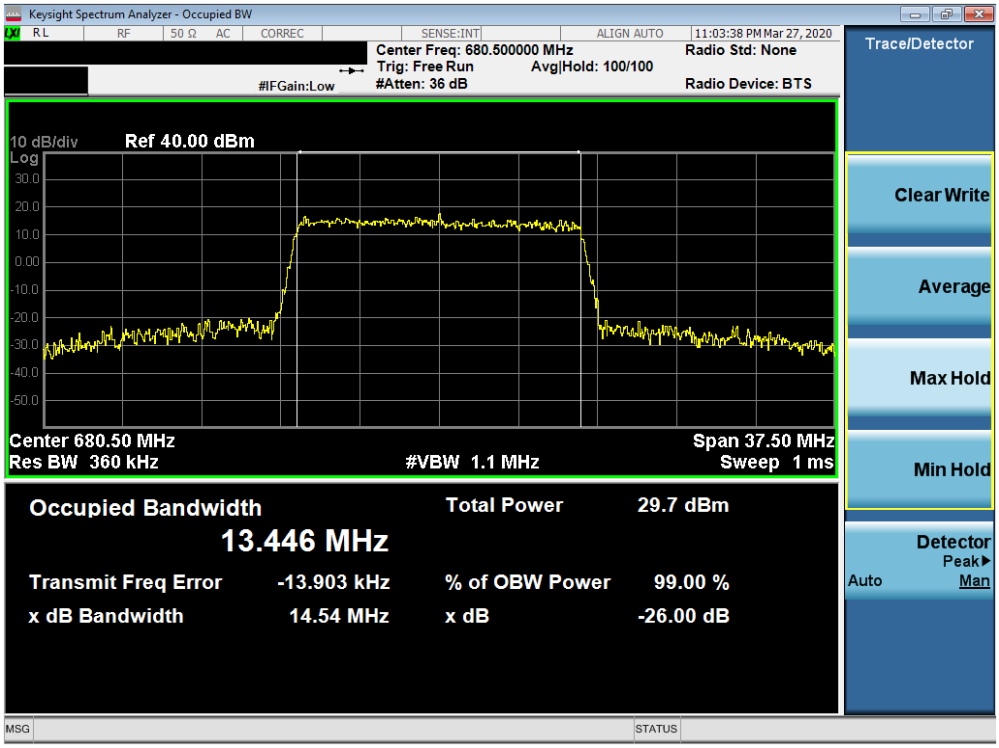
Plot 7-6. Occupied Bandwidth Plot (Band 71 - 10.0MHz 64-QAM - Full RB Configuration)



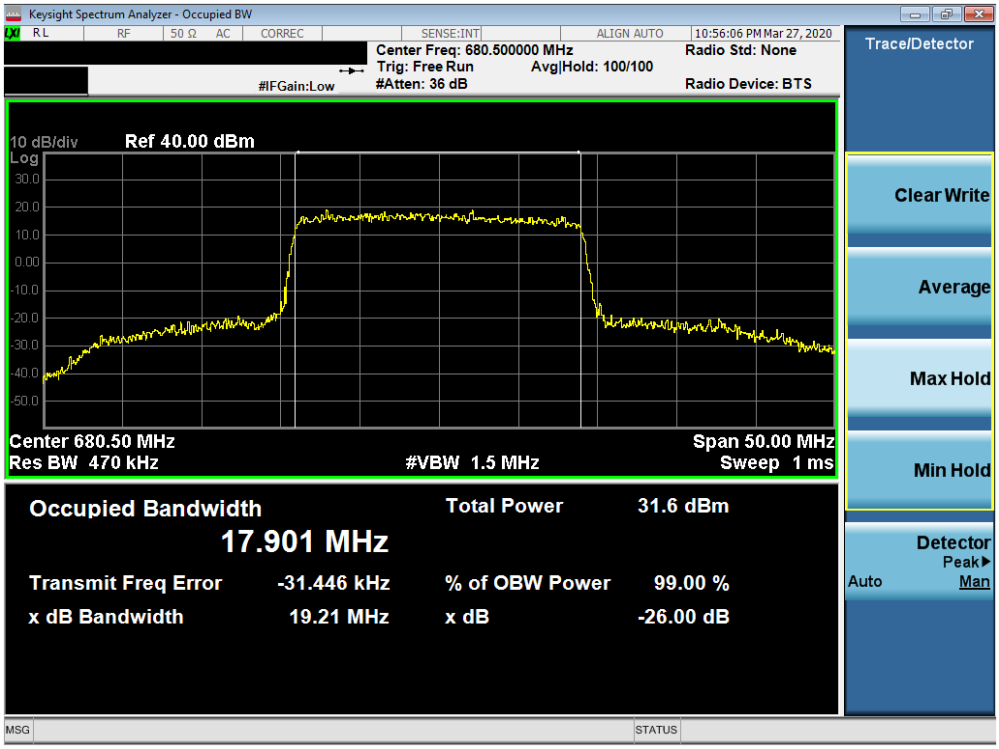
Plot 7-7. Occupied Bandwidth Plot (Band 71 - 15.0MHz QPSK - Full RB Configuration)



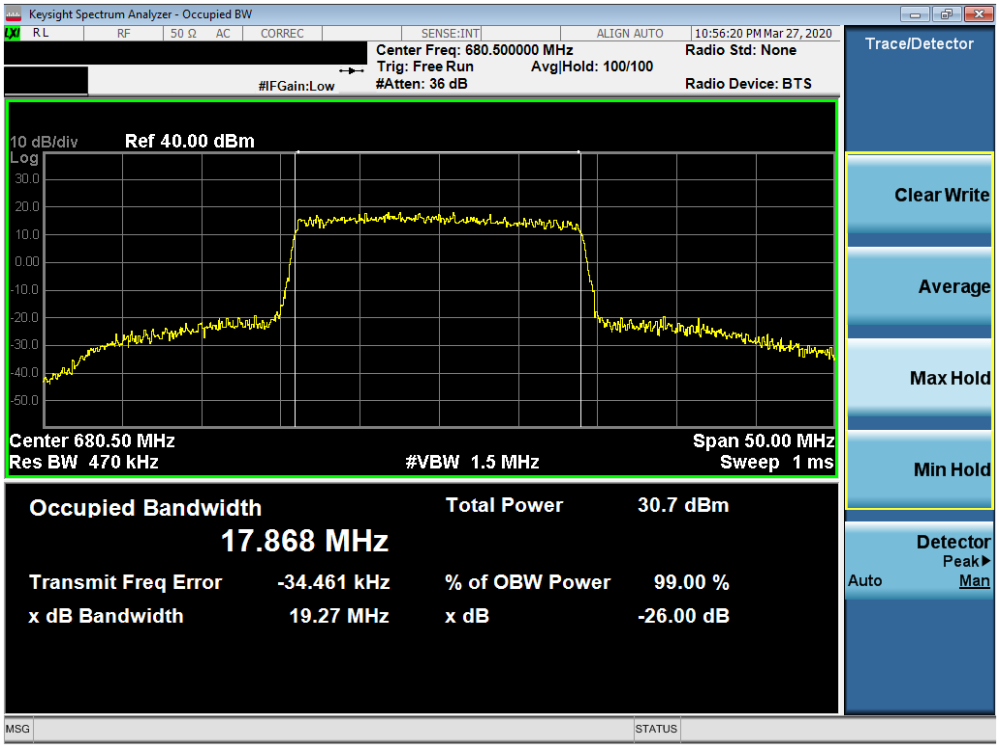
Plot 7-8. Occupied Bandwidth Plot (Band 71 - 15.0MHz 16-QAM - Full RB Configuration)



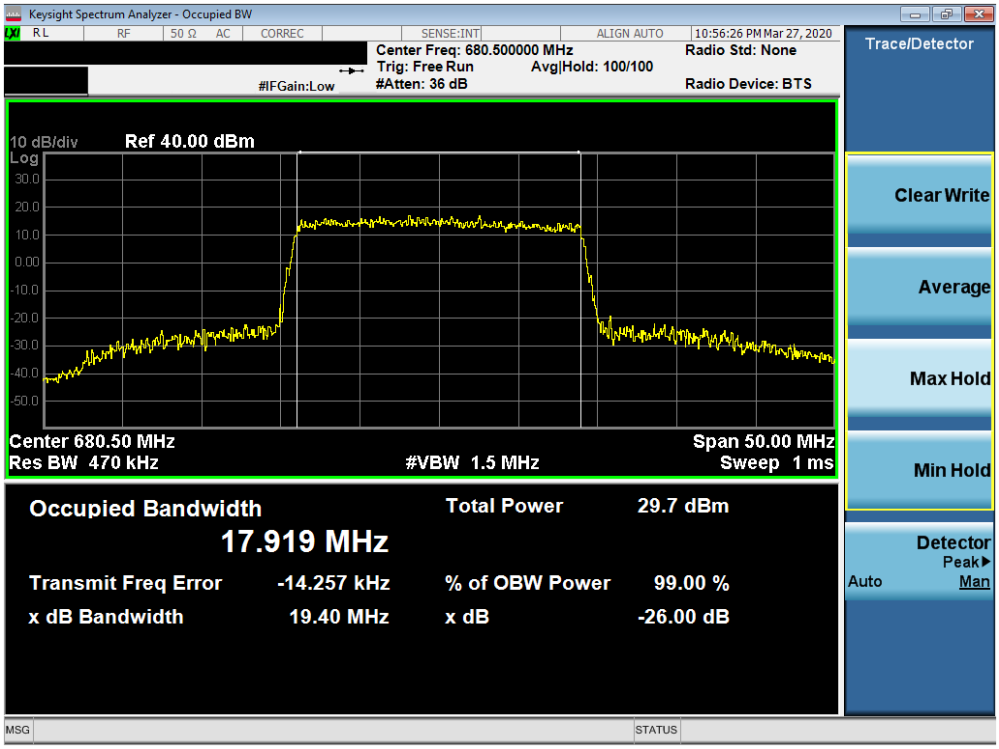
Plot 7-9. Occupied Bandwidth Plot (Band 71 - 15.0MHz 64-QAM - Full RB Configuration)



Plot 7-10. Occupied Bandwidth Plot (Band 71 - 20.0MHz QPSK - Full RB Configuration)

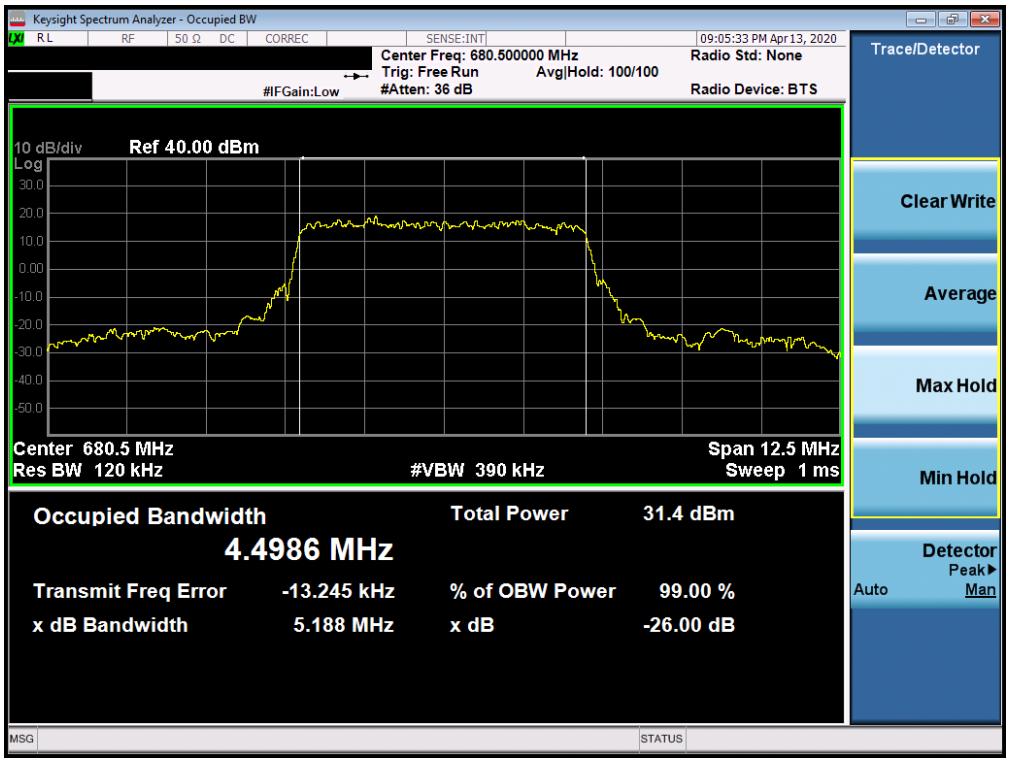


Plot 7-11. Occupied Bandwidth Plot (Band 71 - 20.0MHz 16-QAM - Full RB Configuration)

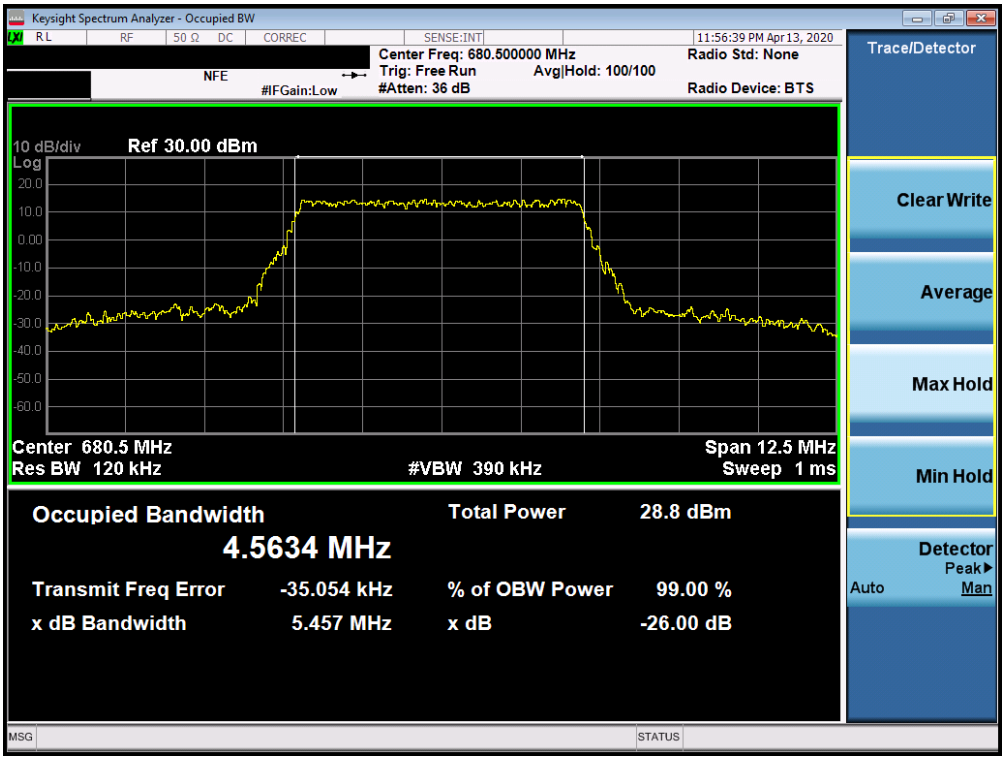


Plot 7-12. Occupied Bandwidth Plot (Band 71 - 20.0MHz 64-QAM - Full RB Configuration)

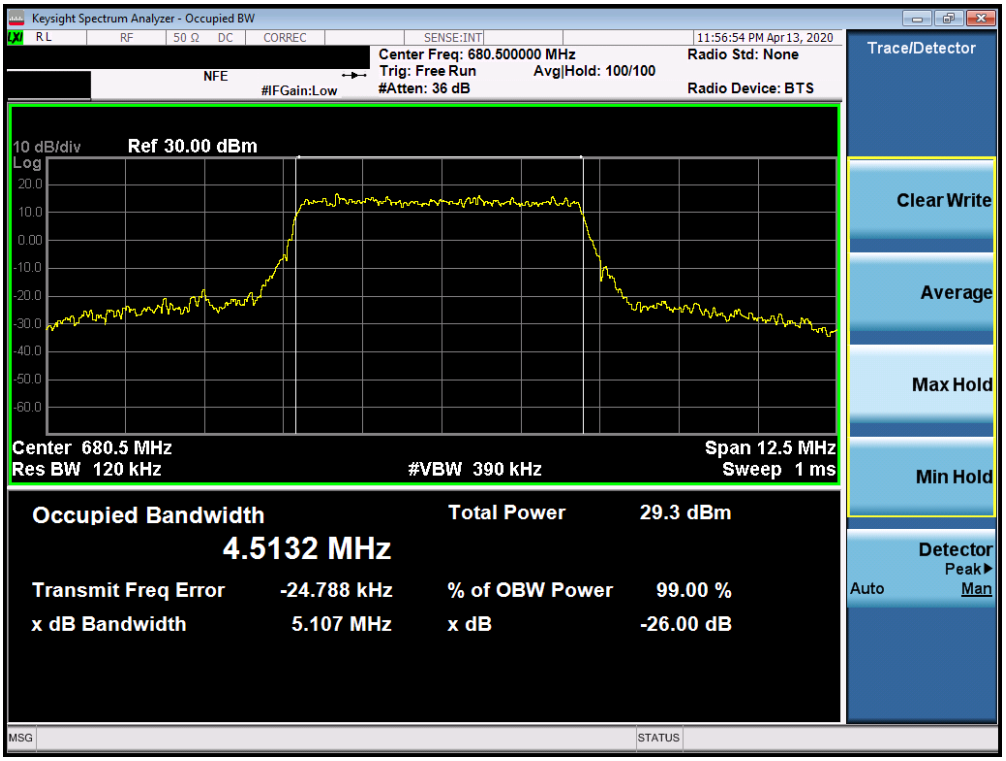
NR Band n71



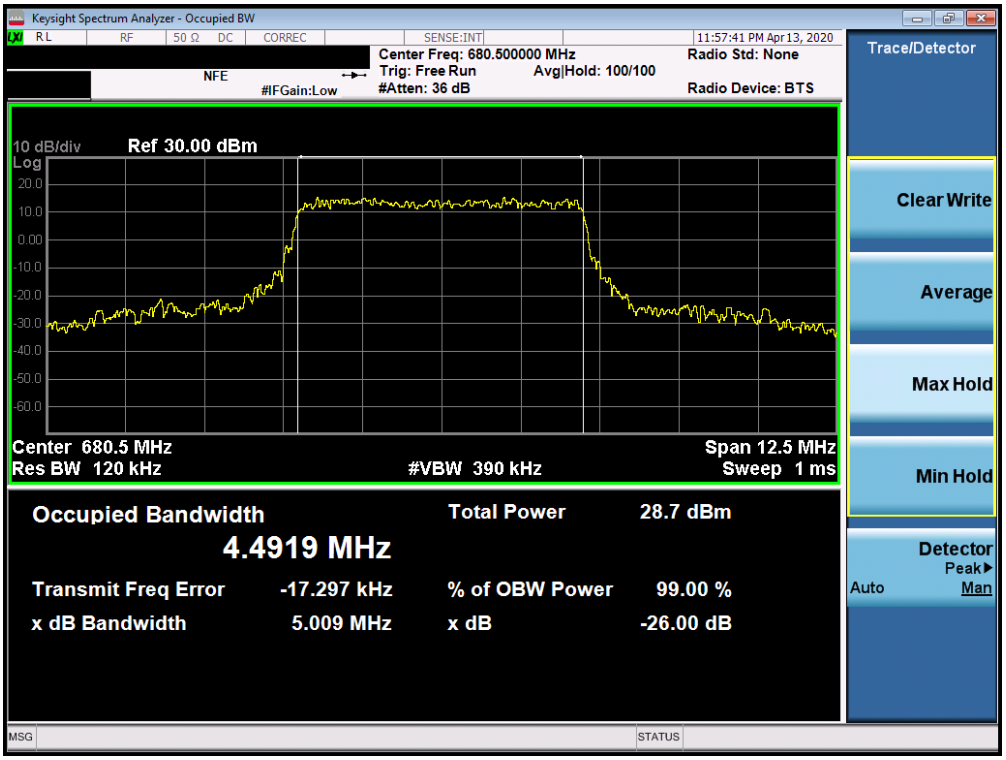
Plot 7-13. Occupied Bandwidth Plot (n71 5MHz BPSK-DFT-s-OFDM- Full RB Configuration)



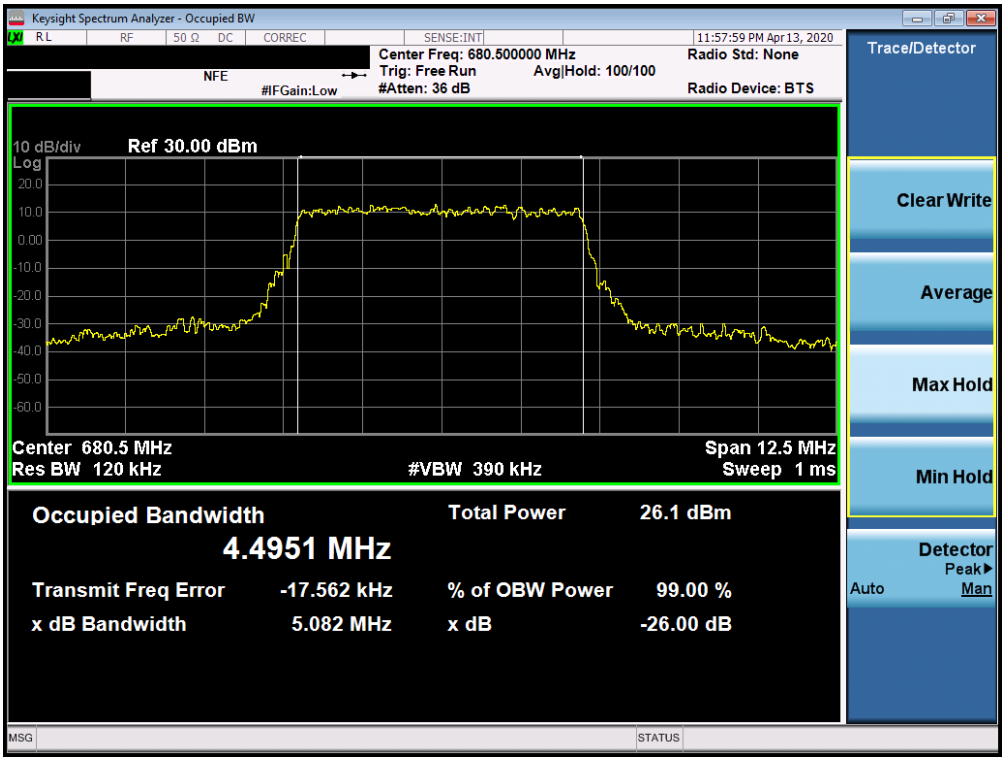
Plot 7-14. Occupied Bandwidth Plot (n71 5MHz QPSK-CP-OFDM - Full RB Configuration)



Plot 7-15. Occupied Bandwidth Plot (n71 5MHz 16QAM-CP-OFDM - Full RB Configuration)



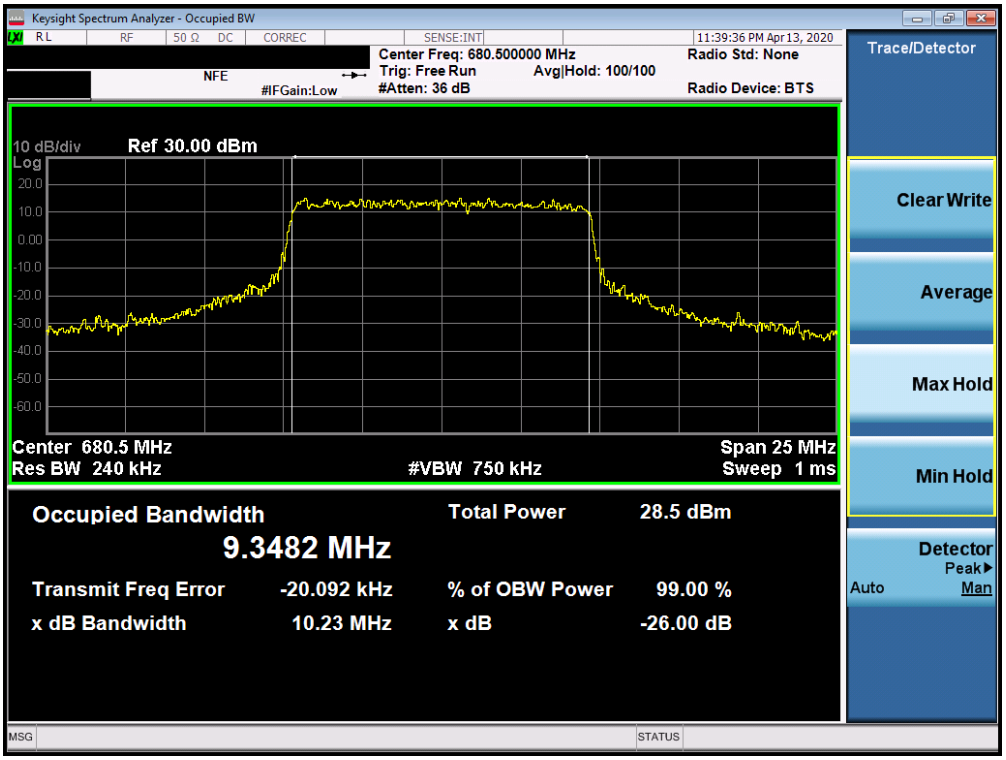
Plot 7-16. Occupied Bandwidth Plot (n71 5MHz 64QAM-CP-OFDM- Full RB Configuration)



Plot 7-17. Occupied Bandwidth Plot (n71 5MHz 256QAM-CP-OFDM- Full RB Configuration)

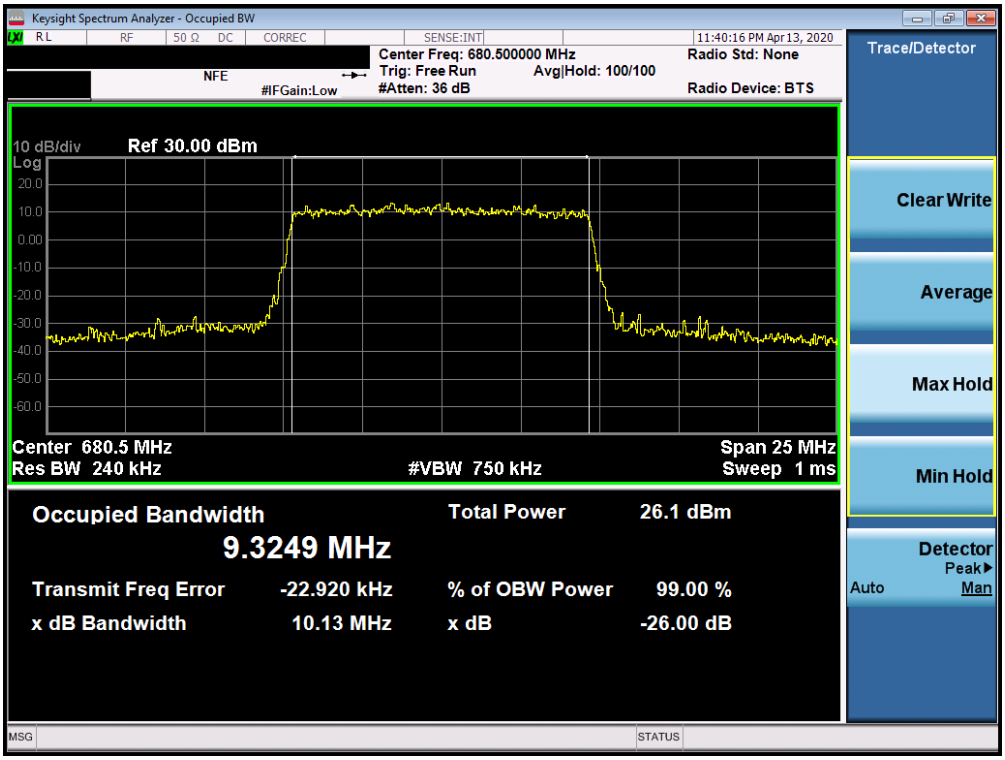
Plot 7-18. Occupied Bandwidth Plot (n71 10MHz BPSK-DFT-s-OFDM - Full RB Configuration)

Plot 7-19. Occupied Bandwidth Plot (n71 10MHz QPSK-CP-OFDM - Full RB Configuration)

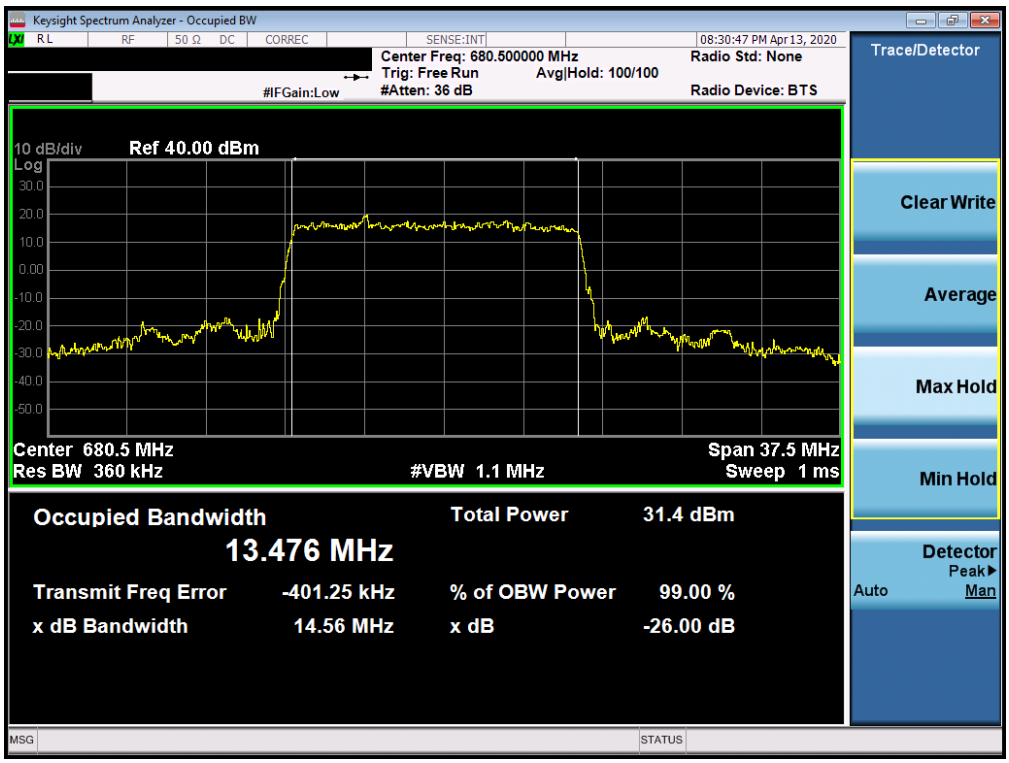


Plot 7-20. Occupied Bandwidth Plot (n71 10MHz 16QAM-CP-OFDM - Full RB Configuration)

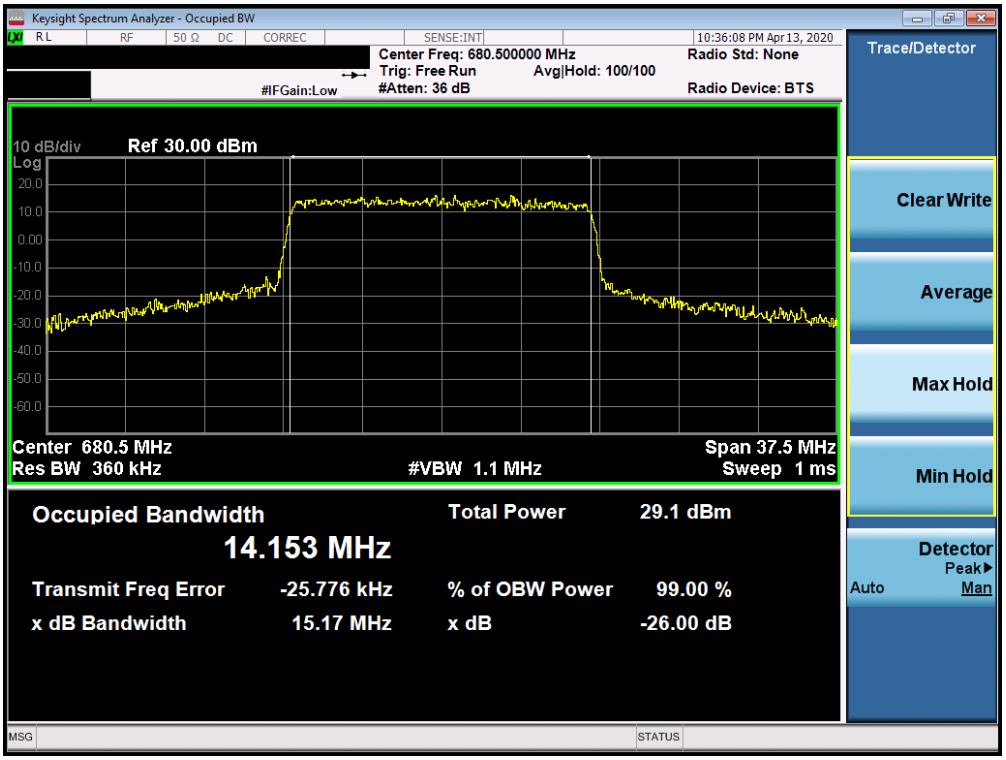
Plot 7-21. Occupied Bandwidth Plot (n71 10MHz 64QAM-CP-OFDM- Full RB Configuration)



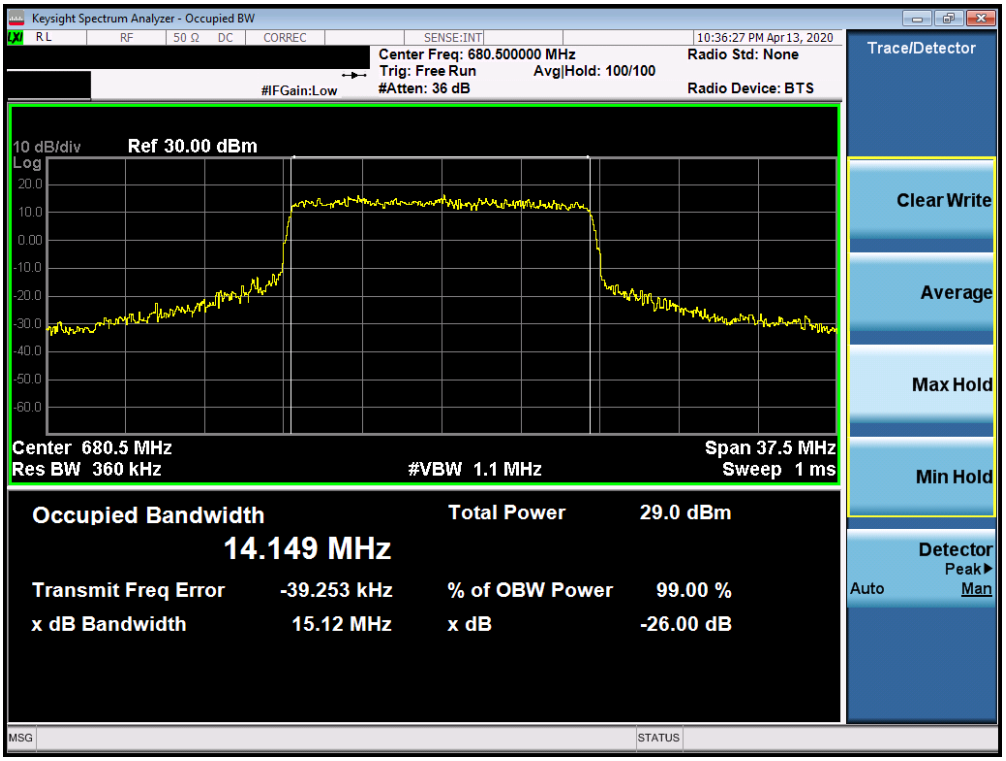
Plot 7-22. Occupied Bandwidth Plot (n71 10MHz 256QAM-CP-OFDM- Full RB Configuration)



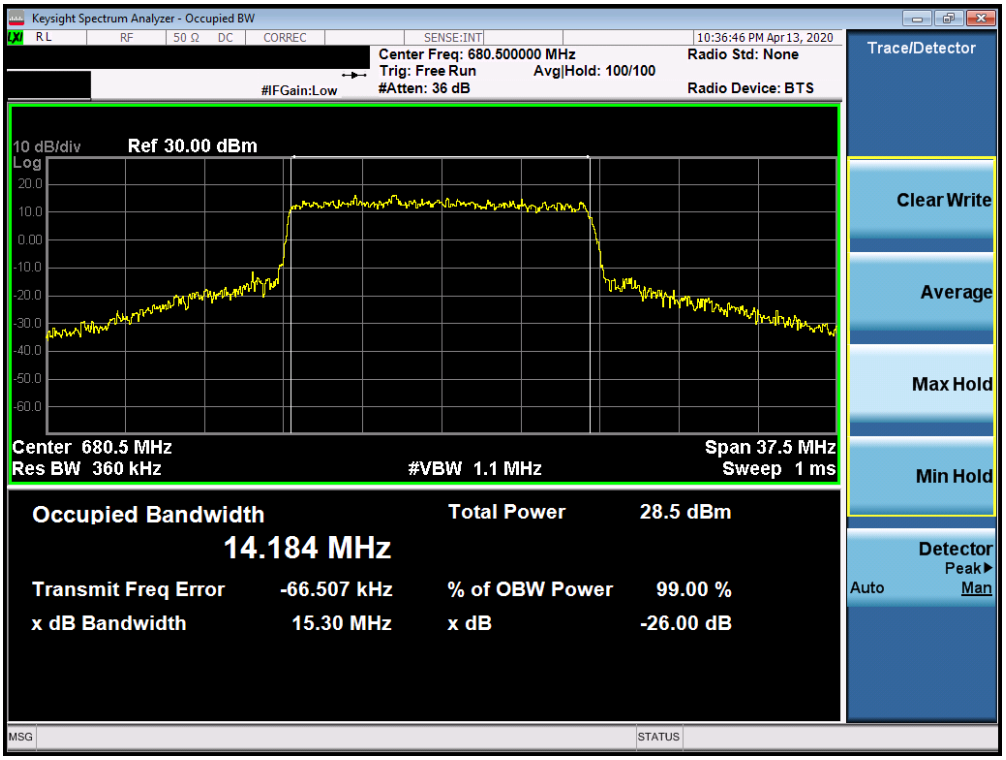
Plot 7-23. Occupied Bandwidth Plot (n71 15MHz BPSK-DFT-s-OFDM - Full RB Configuration)



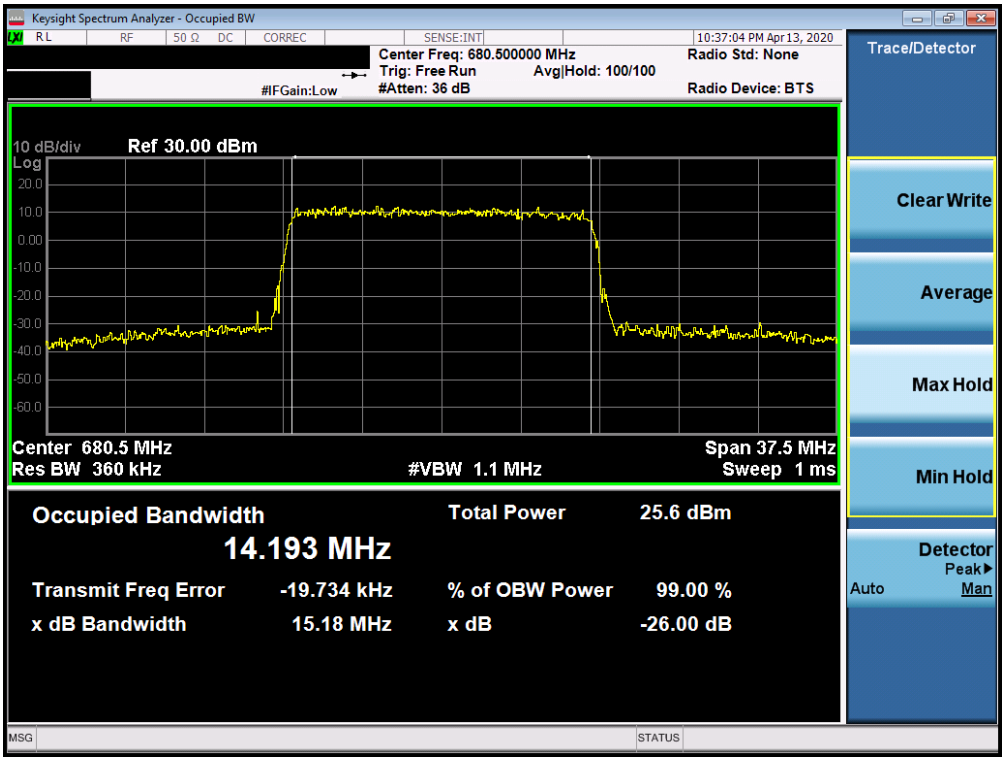
Plot 7-24. Occupied Bandwidth Plot (n71 15MHz QPSK-CP-OFDM - Full RB Configuration)



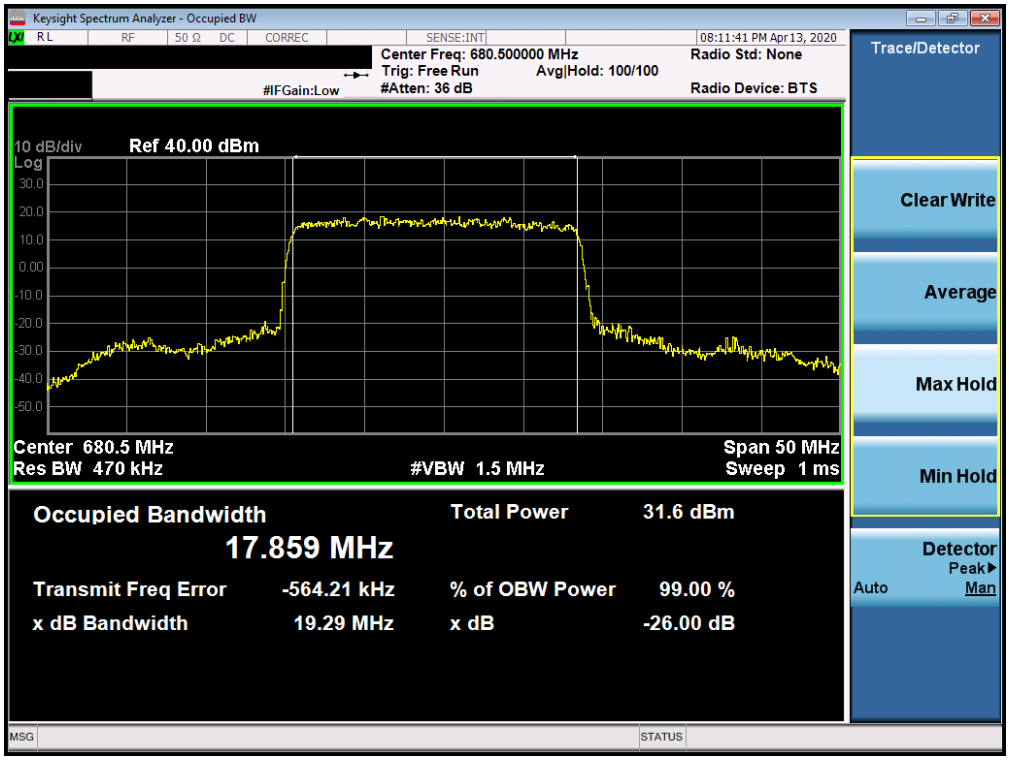
Plot 7-25. Occupied Bandwidth Plot (n71 15MHz 16QAM-CP-OFDM - Full RB Configuration)



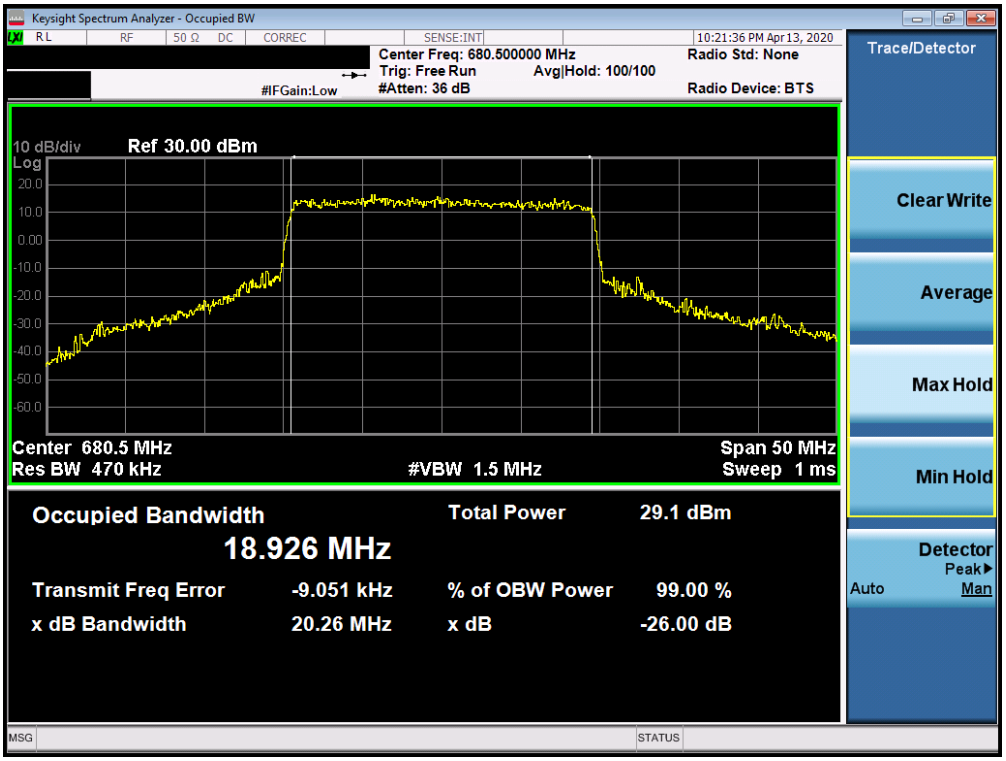
Plot 7-26. Occupied Bandwidth Plot (n71 15MHz 64QAM-CP-OFDM- Full RB Configuration)



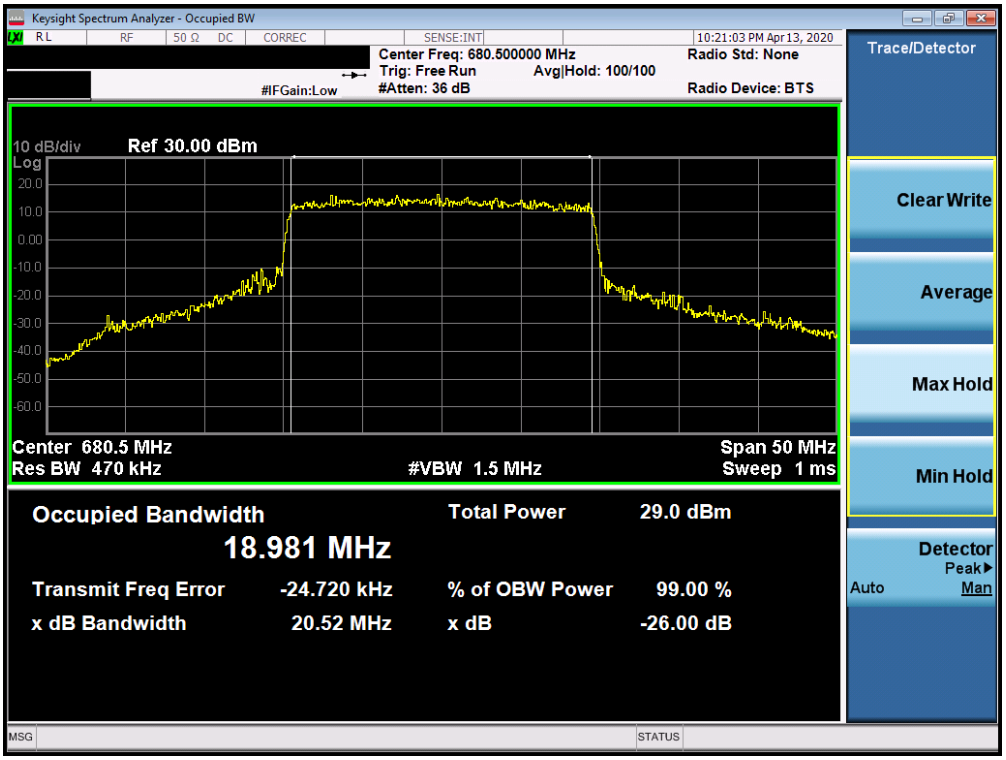
Plot 7-27. Occupied Bandwidth Plot (n71 15MHz 256QAM-CP-OFDM- Full RB Configuration)



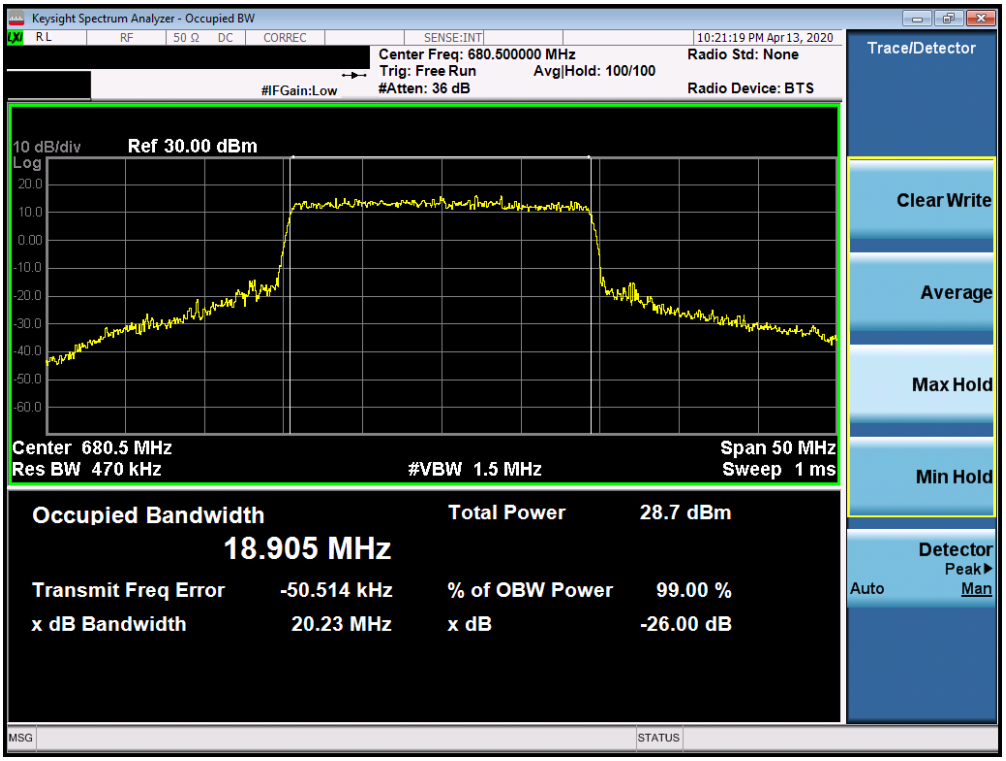
Plot 7-28. Occupied Bandwidth Plot (n71 20MHz BPSK-DFT-s-OFDM - Full RB Configuration)



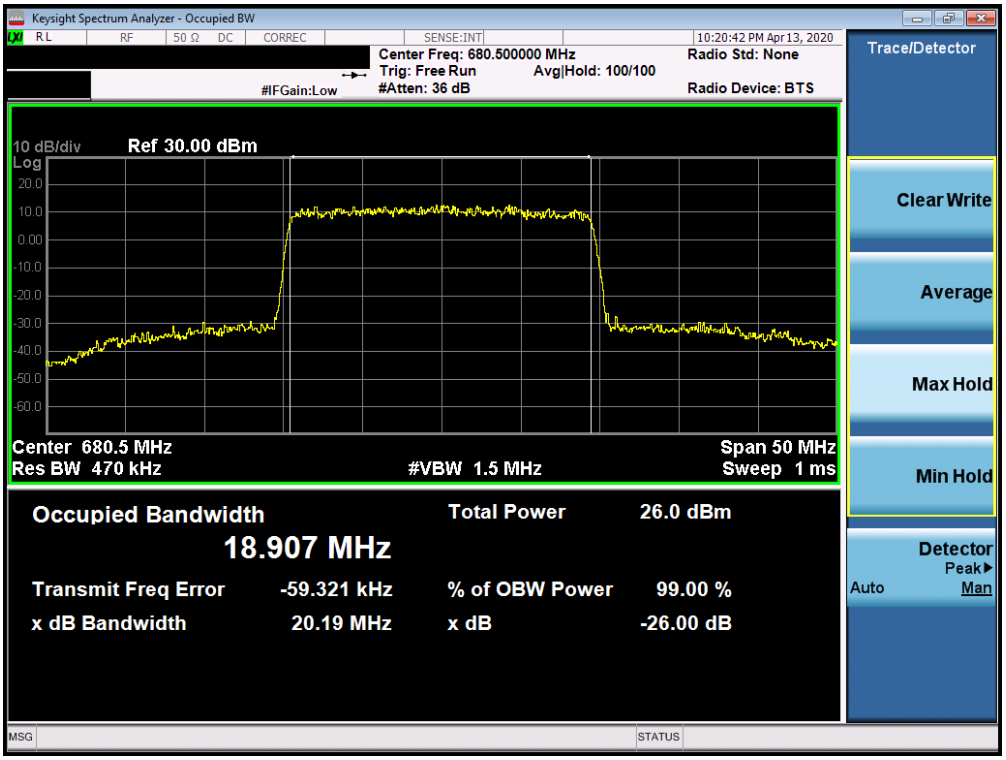
Plot 7-29. Occupied Bandwidth Plot (n71 20MHz QPSK-CP-OFDM - Full RB Configuration)



Plot 7-30. Occupied Bandwidth Plot (n71 20MHz 16QAM-CP-OFDM - Full RB Configuration)

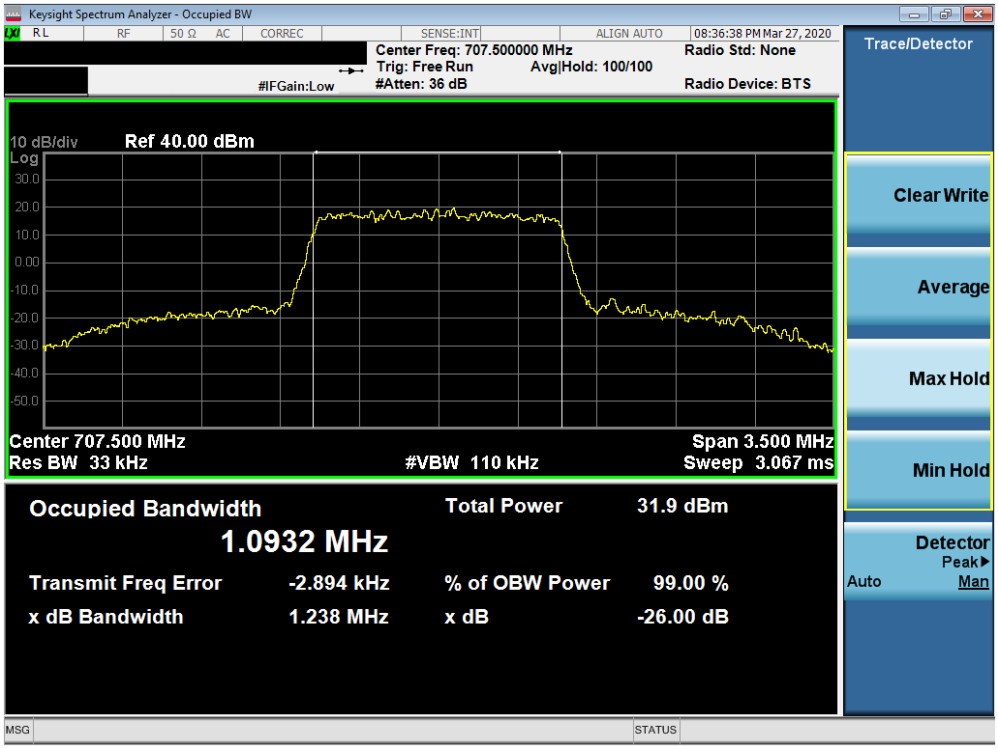


Plot 7-31. Occupied Bandwidth Plot (n71 20MHz 64QAM-CP-OFDM- Full RB Configuration)

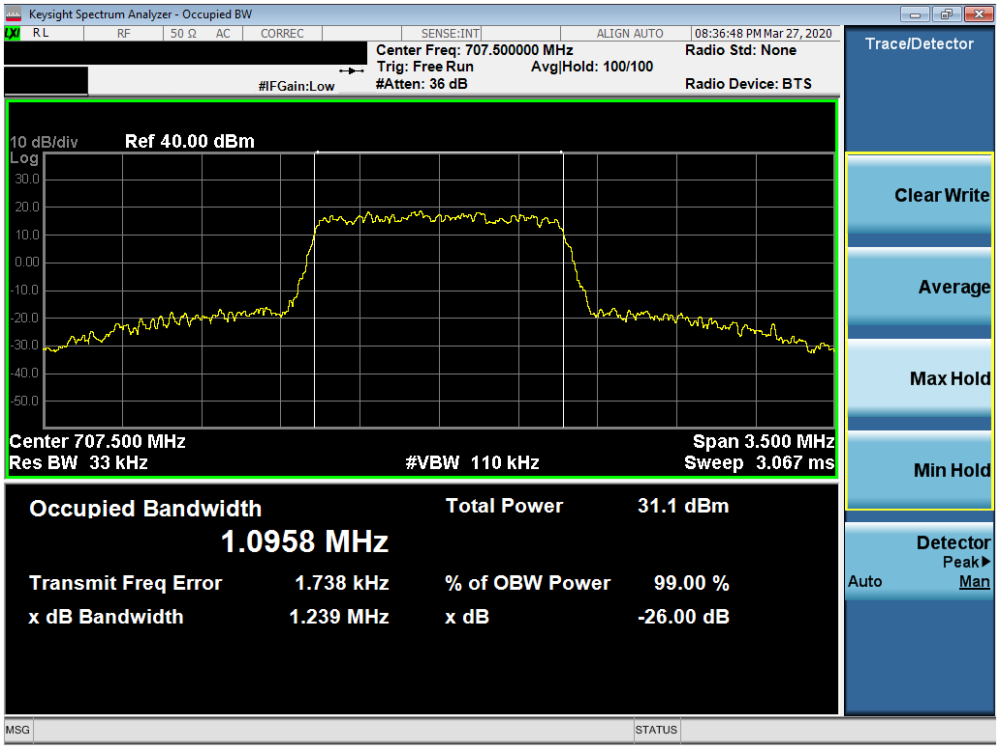


Plot 7-32. Occupied Bandwidth Plot (n71 20MHz 256QAM-CP-OFDM- Full RB Configuration)

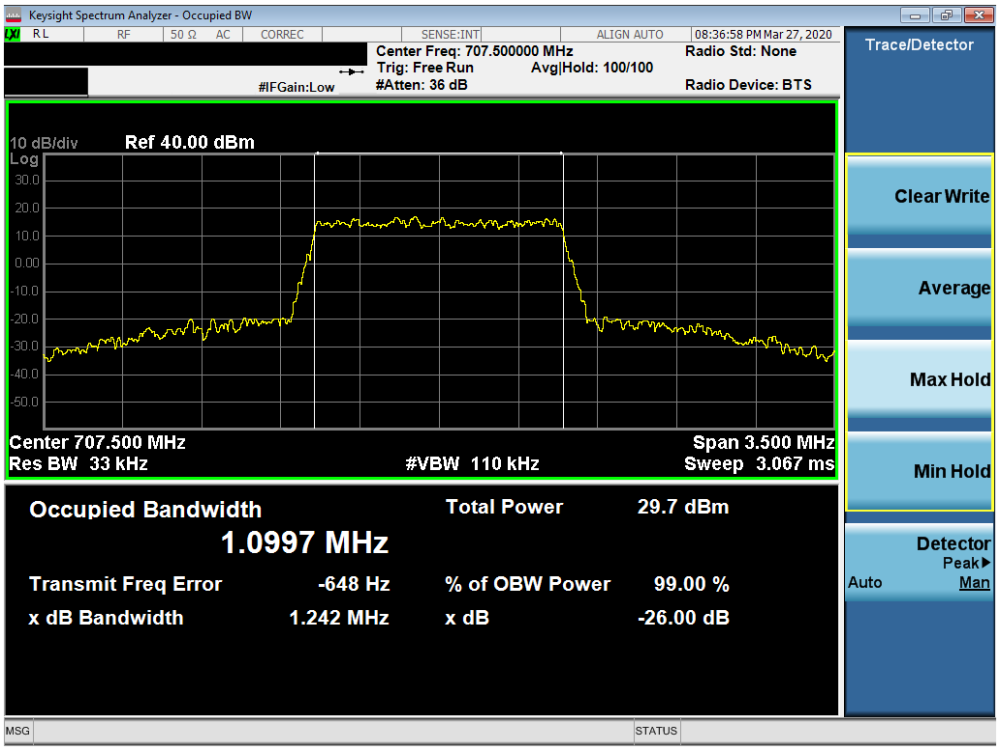
Band 12



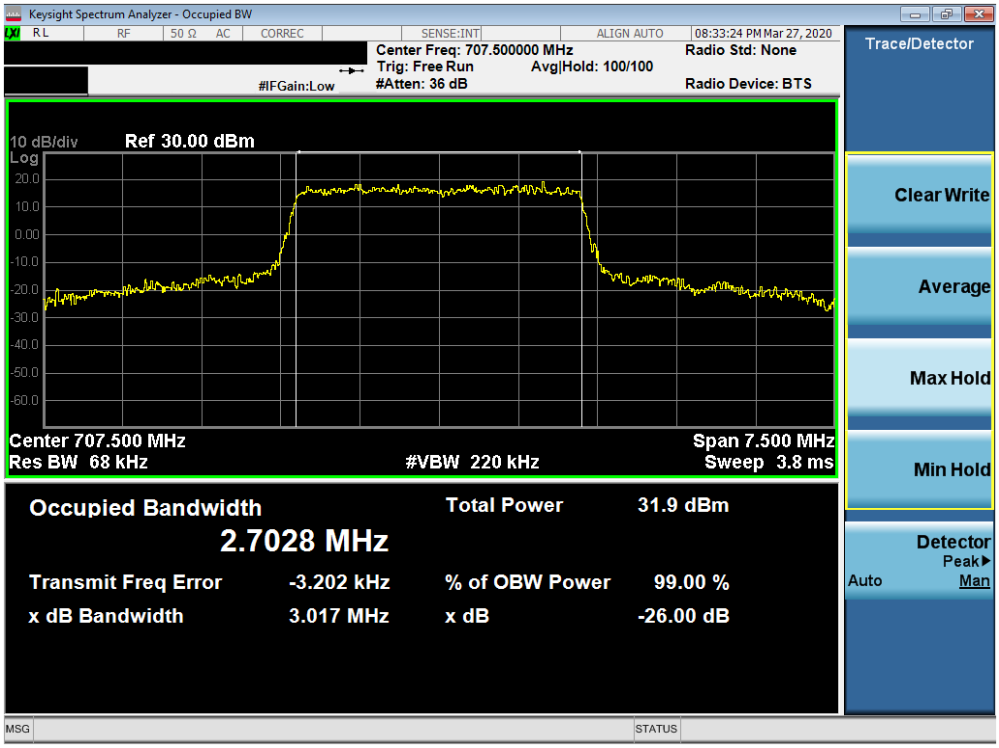
Plot 7-33. Occupied Bandwidth Plot (Band 12 - 1.4MHz QPSK - Full RB Configuration)



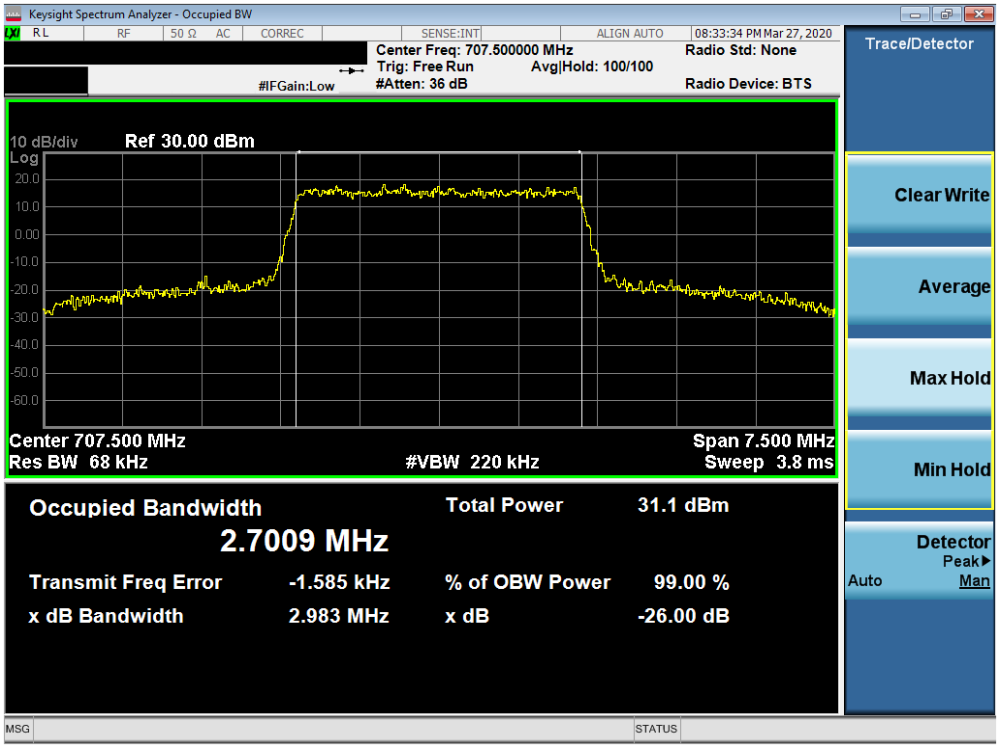
Plot 7-34. Occupied Bandwidth Plot (Band 12 - 1.4MHz 16-QAM - Full RB Configuration)



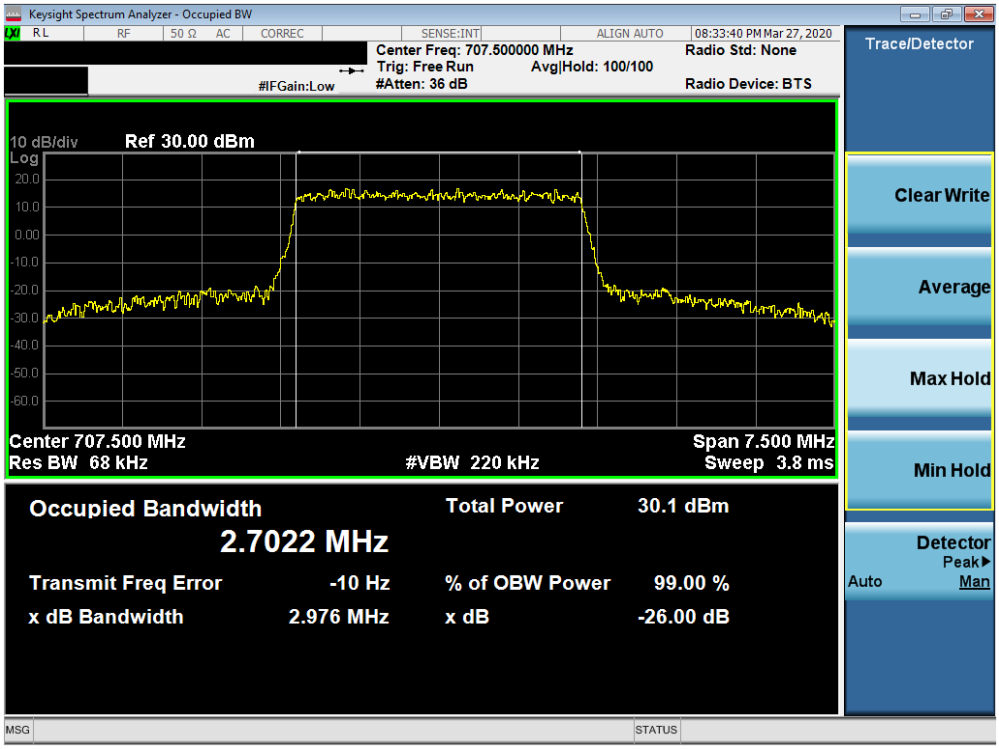
Plot 7-35. Occupied Bandwidth Plot (Band 12 - 1.4MHz 64-QAM - Full RB Configuration)



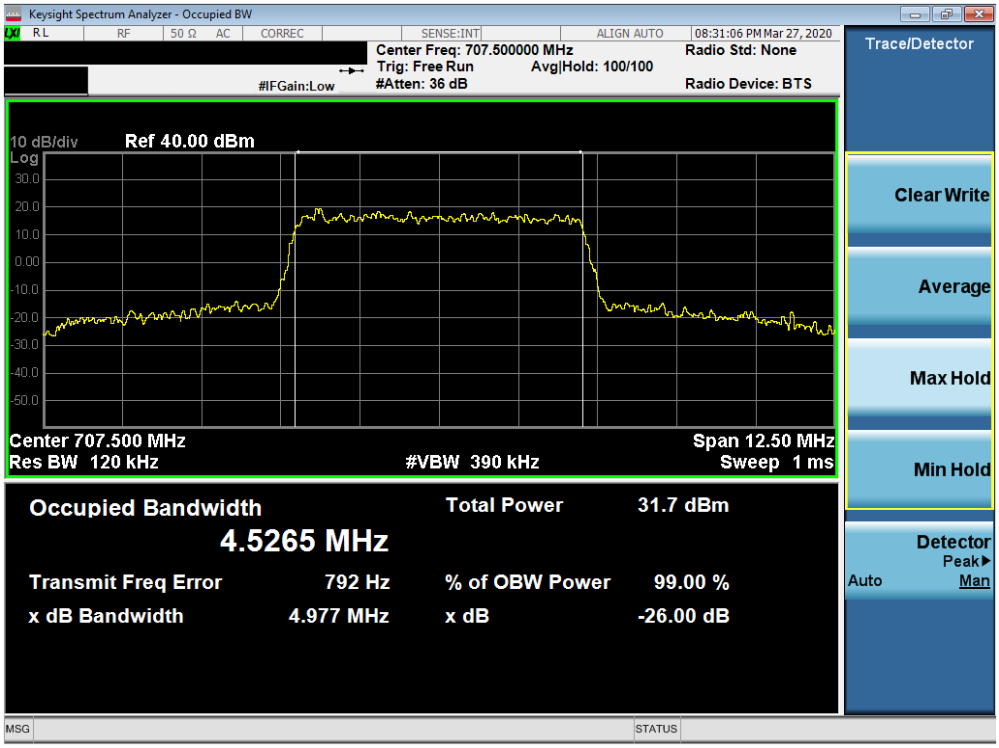
Plot 7-36. Occupied Bandwidth Plot (Band 12 - 3.0MHz QPSK - Full RB Configuration)



Plot 7-37. Occupied Bandwidth Plot (Band 12 - 3.0MHz 16-QAM - Full RB Configuration)

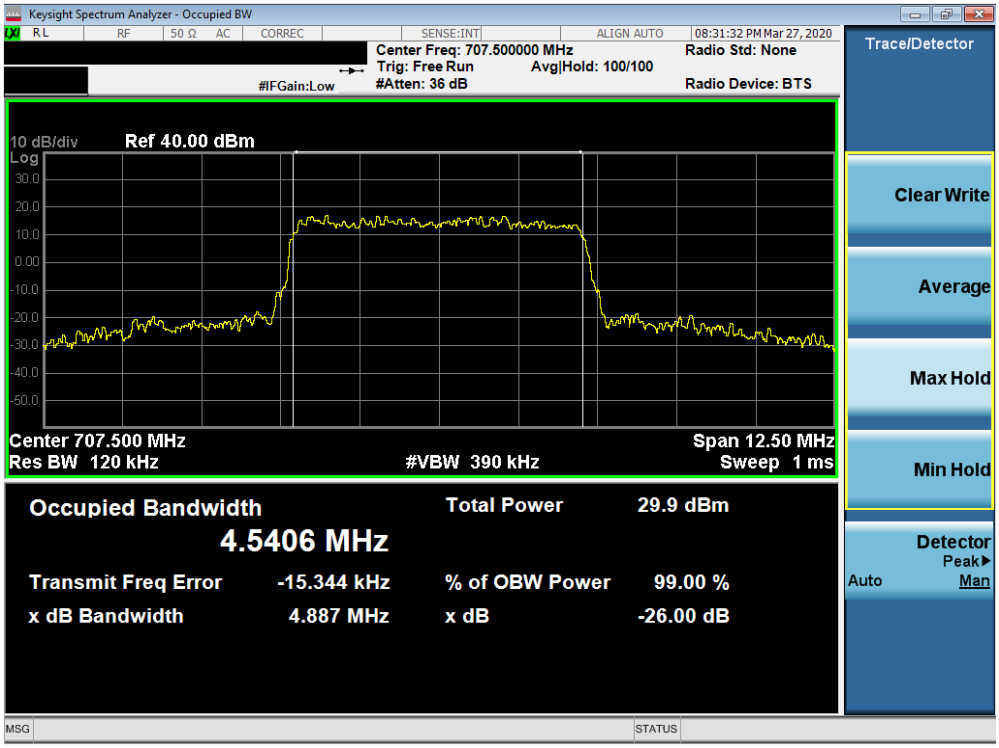


Plot 7-38. Occupied Bandwidth Plot (Band 12 - 3.0MHz 64-QAM - Full RB Configuration)

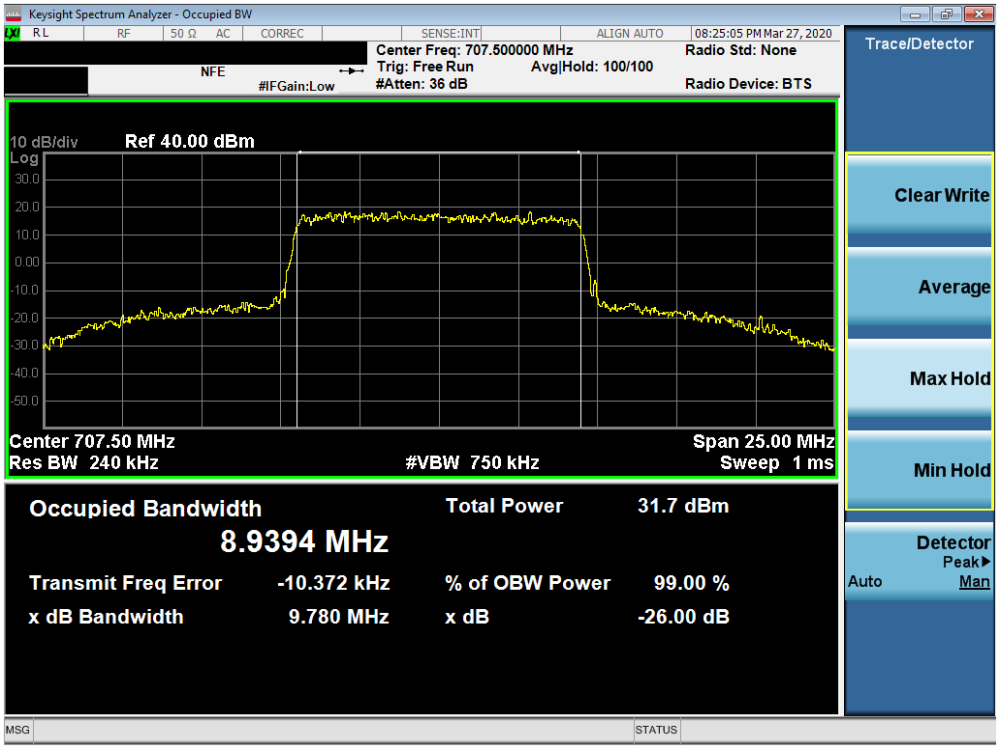


Plot 7-39. Occupied Bandwidth Plot (Band 12 - 5.0MHz QPSK - Full RB Configuration)

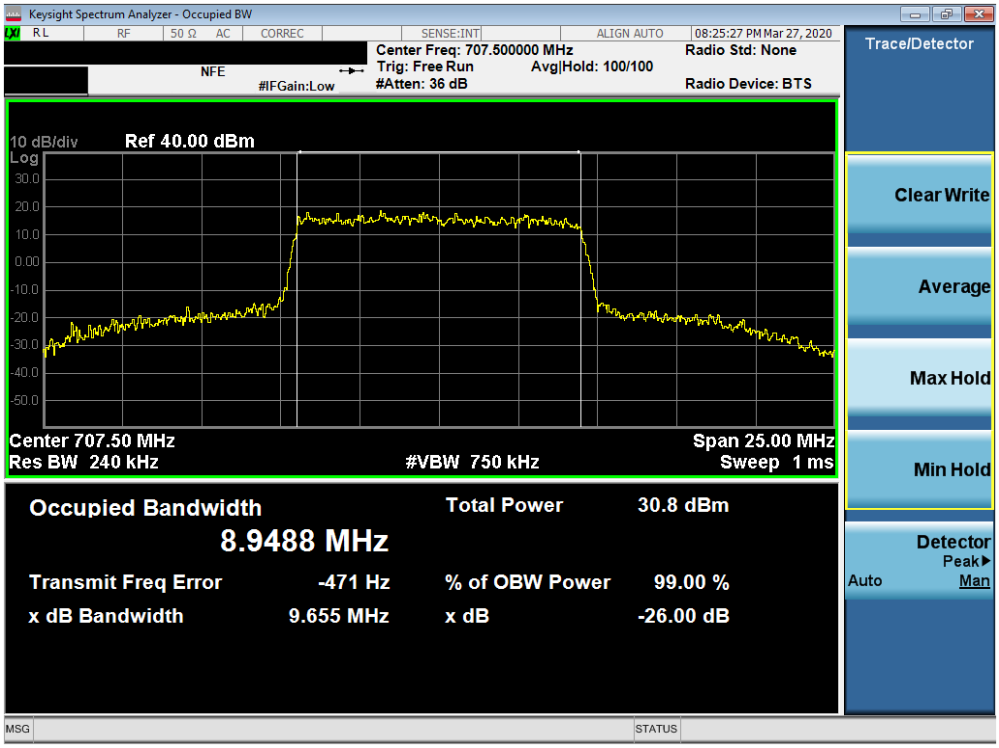
Plot 7-40. Occupied Bandwidth Plot (Band 12 - 5.0MHz 16-QAM - Full RB Configuration)



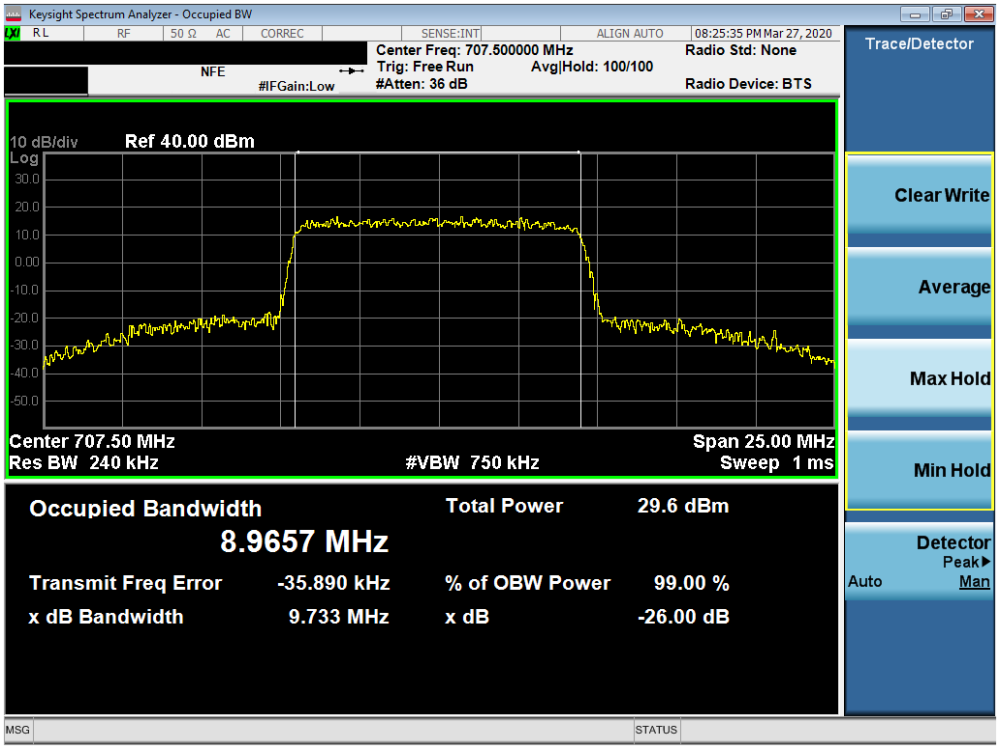
Plot 7-41. Occupied Bandwidth Plot (Band 12 - 5.0MHz 64-QAM - Full RB Configuration)



Plot 7-42. Occupied Bandwidth Plot (Band 12 - 10.0MHz QPSK - Full RB Configuration)

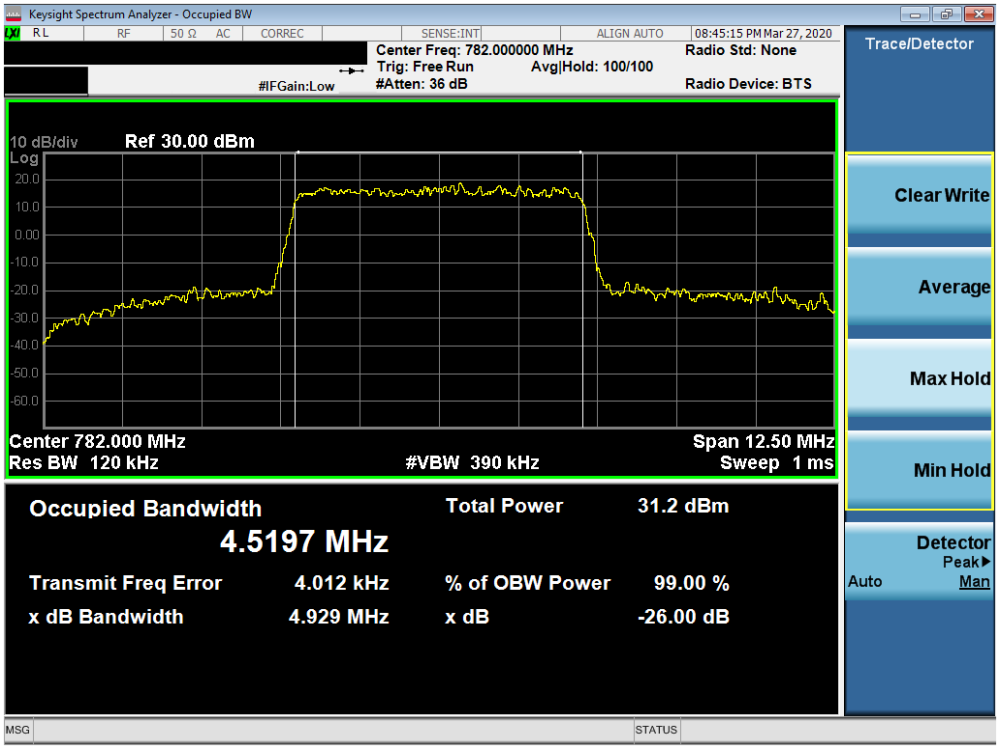


Plot 7-43. Occupied Bandwidth Plot (Band 12 - 10.0MHz 16-QAM - Full RB Configuration)

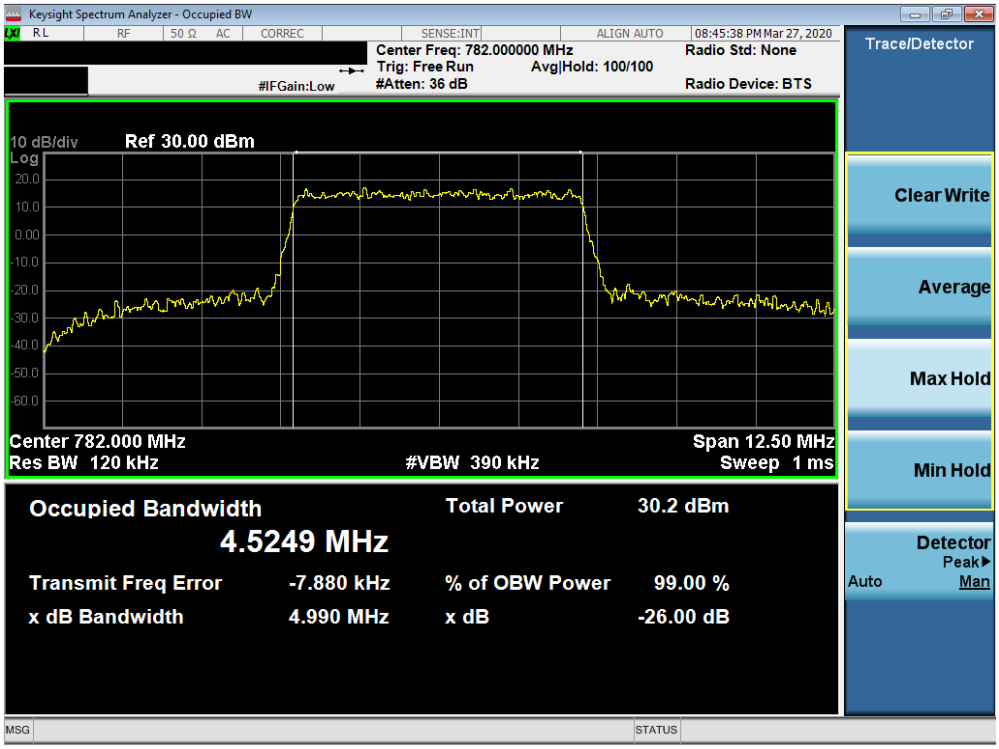


Plot 7-44. Occupied Bandwidth Plot (Band 12 - 10.0MHz 64-QAM - Full RB Configuration)

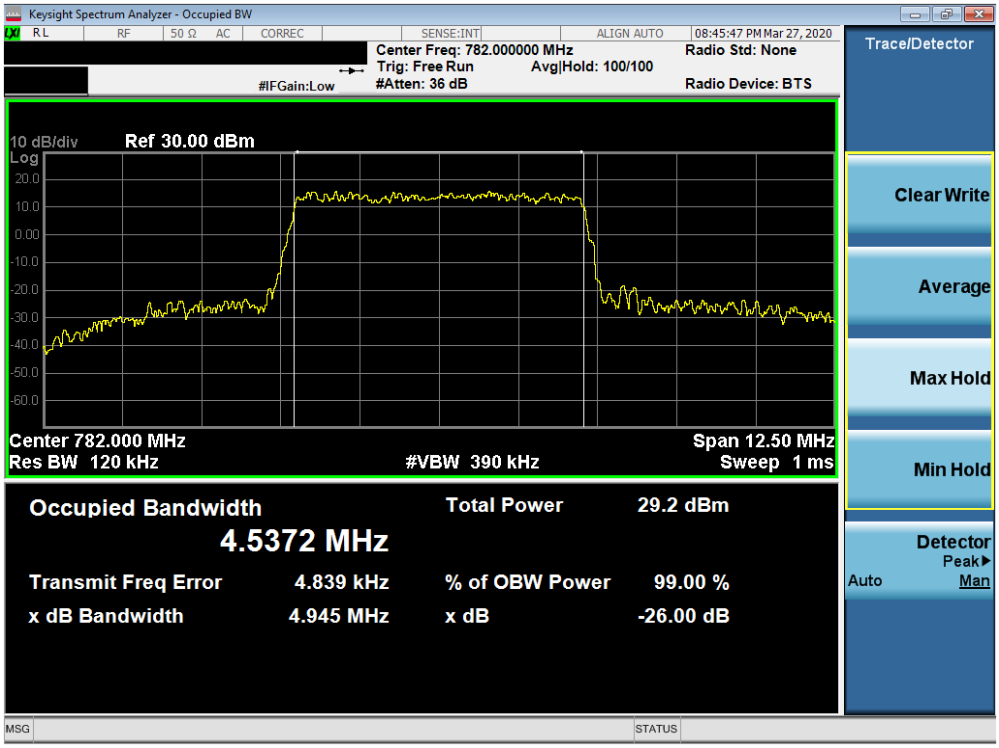
Band 13



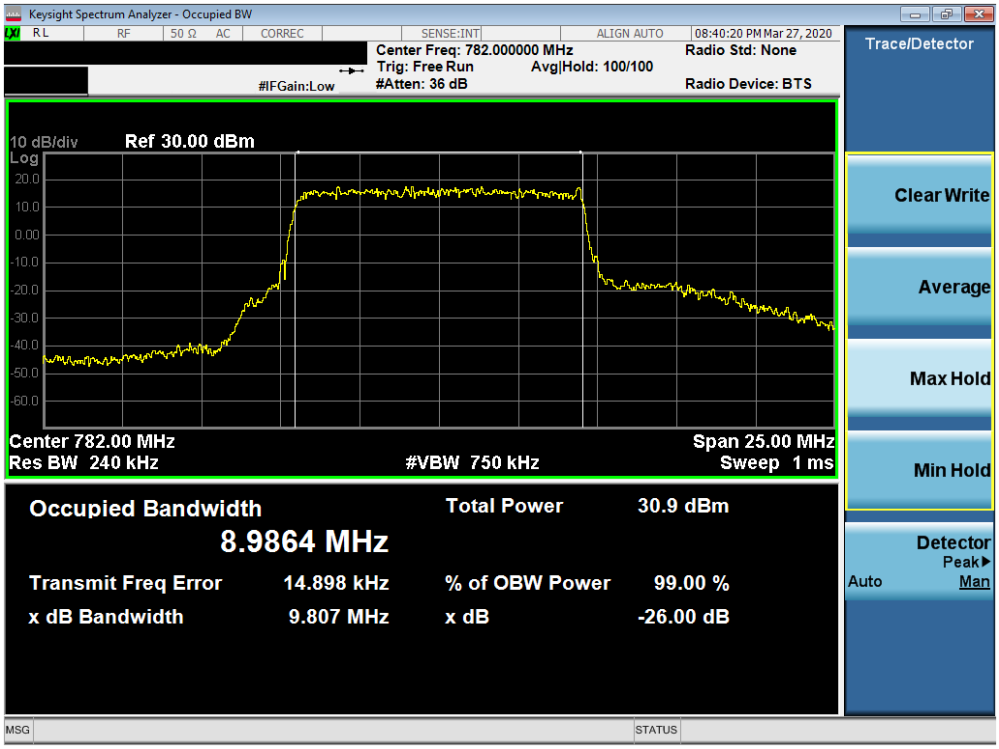
Plot 7-45. Occupied Bandwidth Plot (Band 13 - 5.0MHz QPSK - Full RB Configuration)



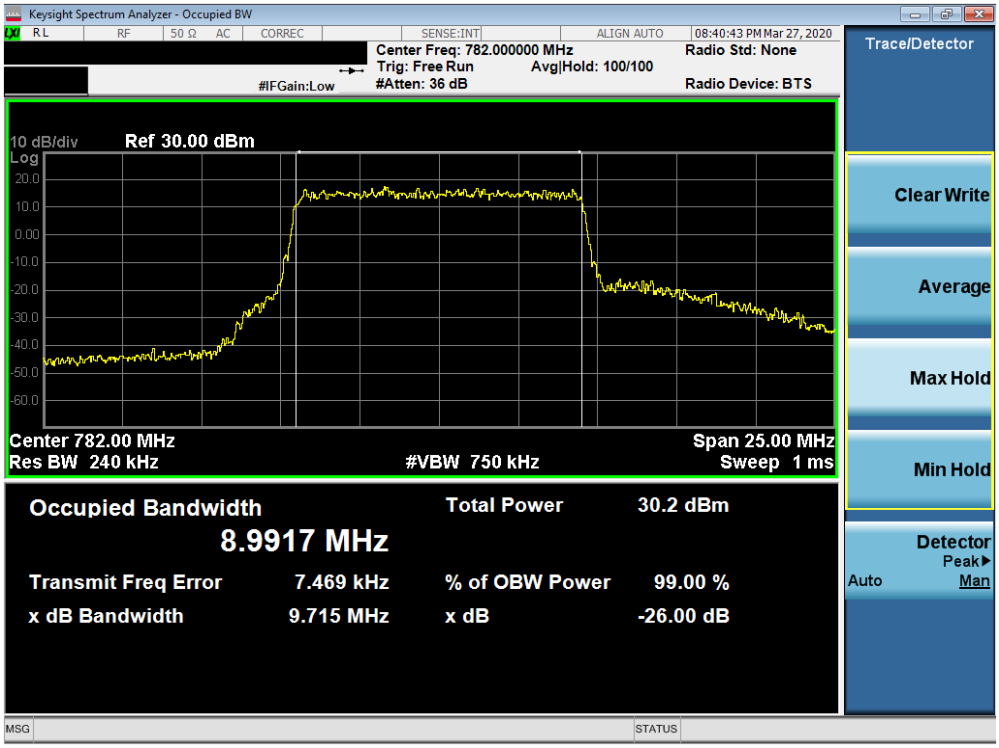
Plot 7-46. Occupied Bandwidth Plot (Band 13 - 5.0MHz 16-QAM - Full RB Configuration)



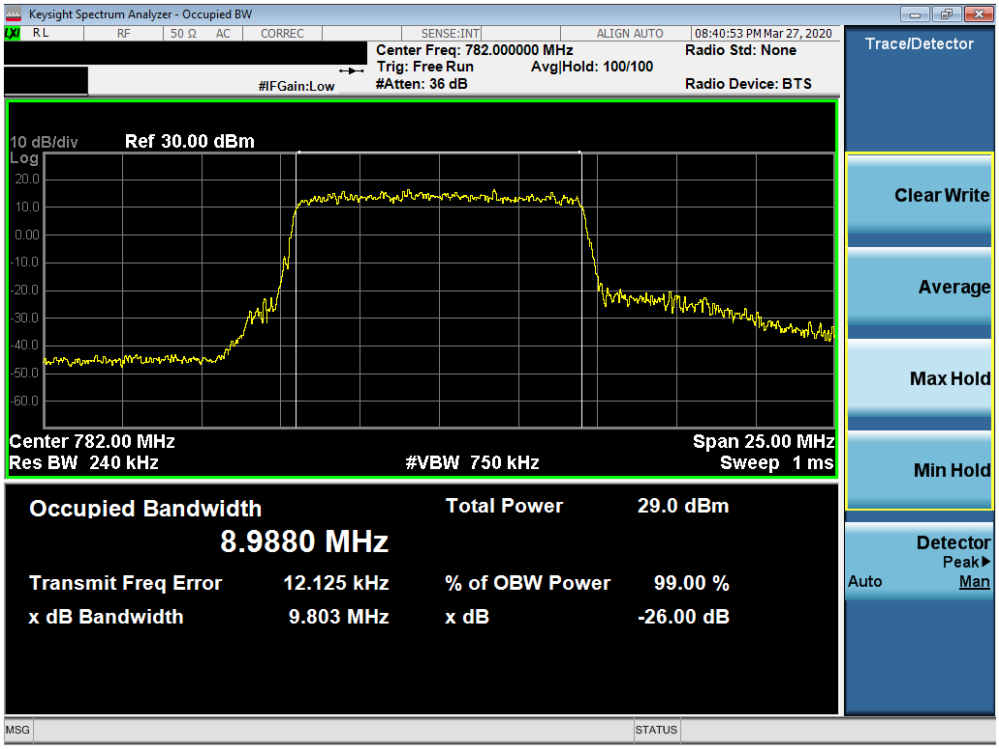
Plot 7-47. Occupied Bandwidth Plot (Band 13 - 5.0MHz 64-QAM - Full RB Configuration)



Plot 7-48. Occupied Bandwidth Plot (Band 13 - 10.0MHz QPSK - Full RB Configuration)

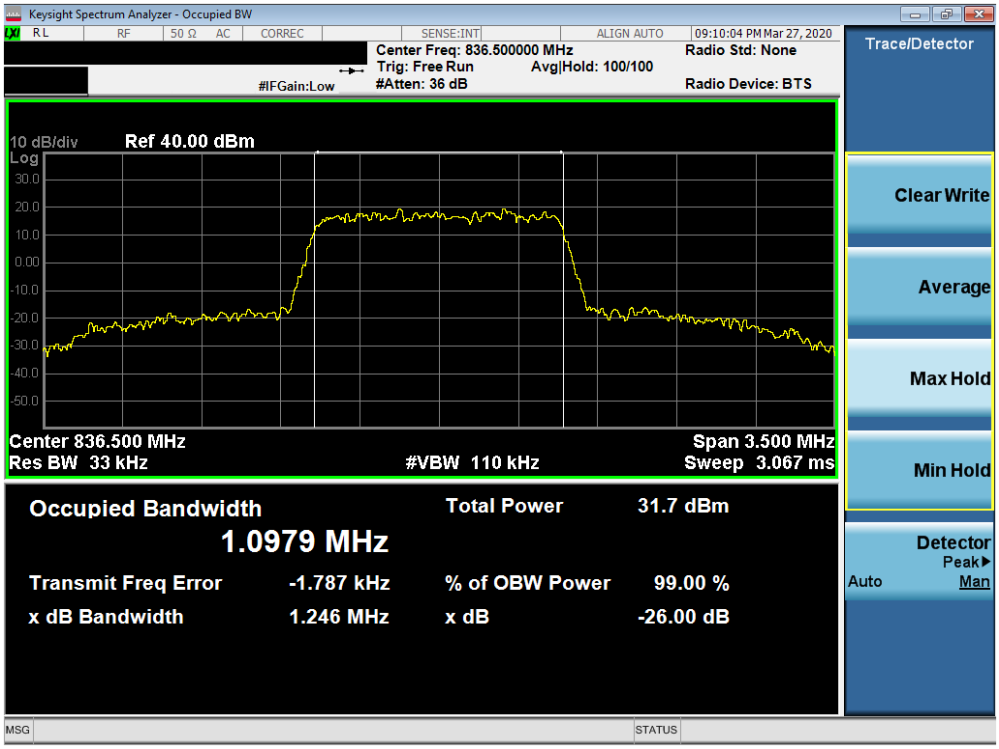


Plot 7-49. Occupied Bandwidth Plot (Band 13 - 10.0MHz 16-QAM - Full RB Configuration)

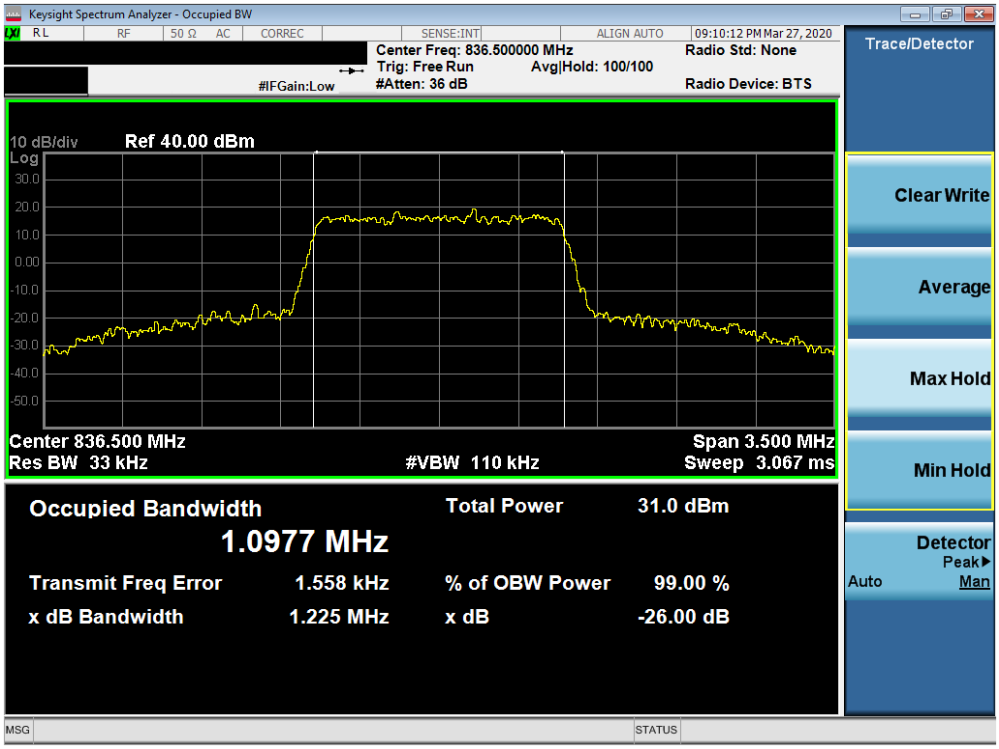


Plot 7-50. Occupied Bandwidth Plot (Band 13 - 10.0MHz 64-QAM - Full RB Configuration)

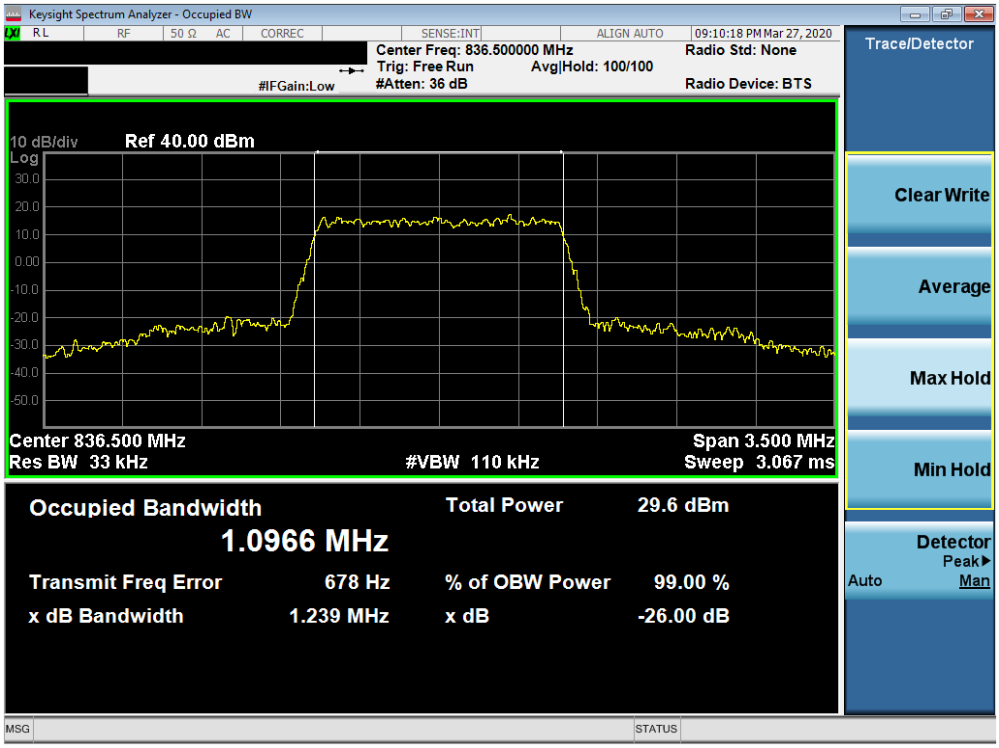
Band 26/5



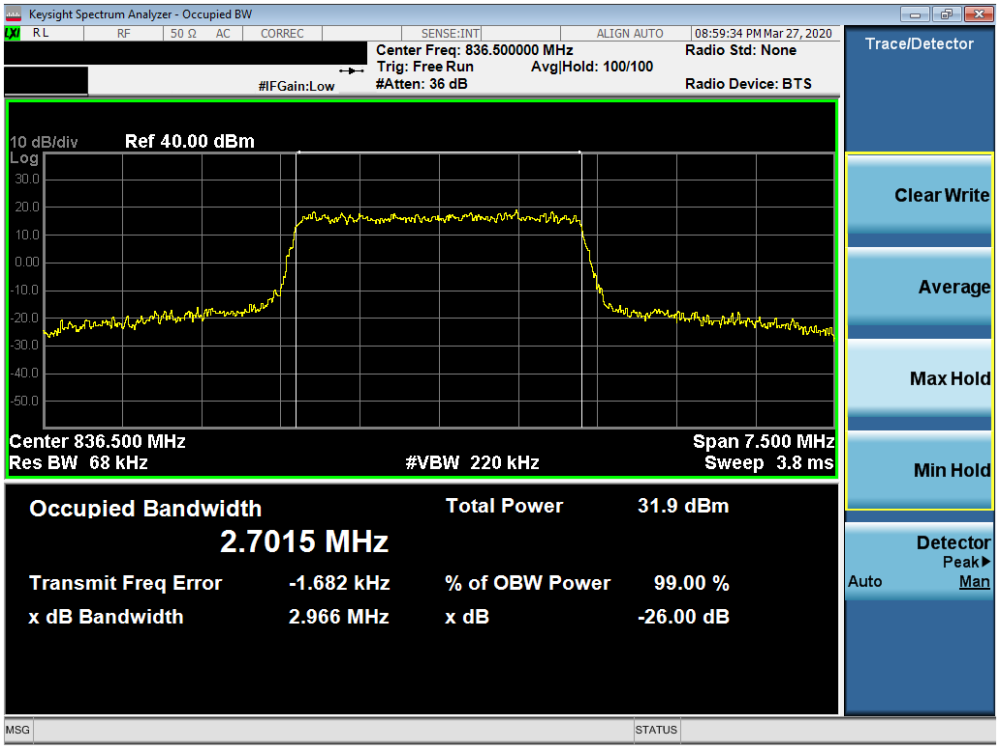
Plot 7-51. Occupied Bandwidth Plot (Band 26/5 - 1.4MHz QPSK - Full RB Configuration)



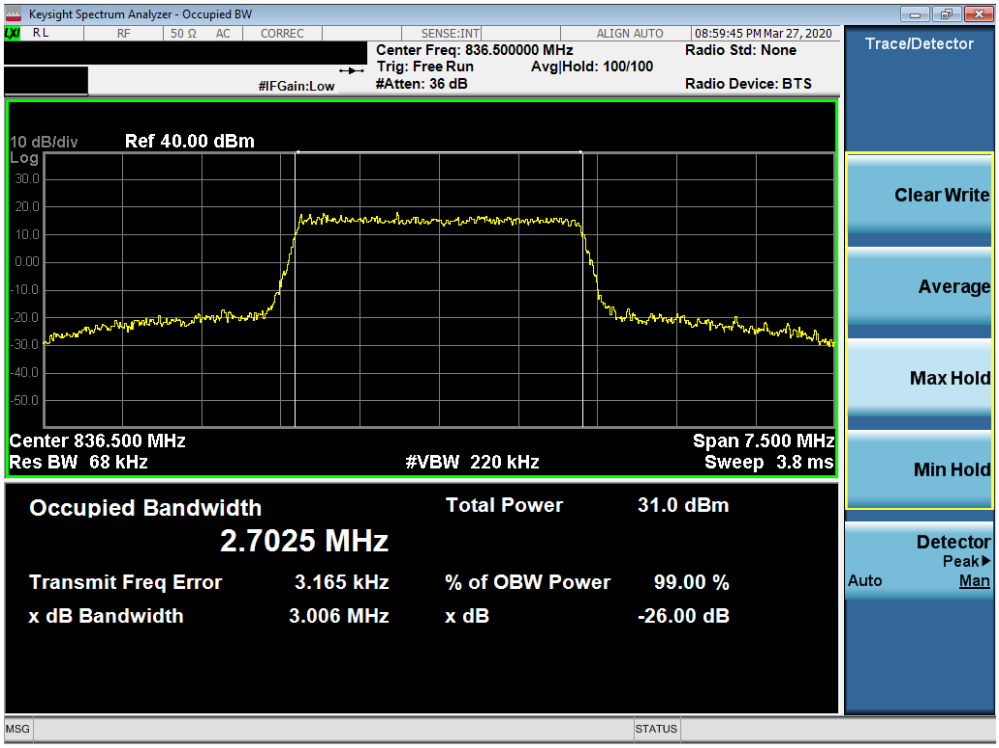
Plot 7-52. Occupied Bandwidth Plot (Band 26/5 - 1.4MHz 16-QAM - Full RB Configuration)



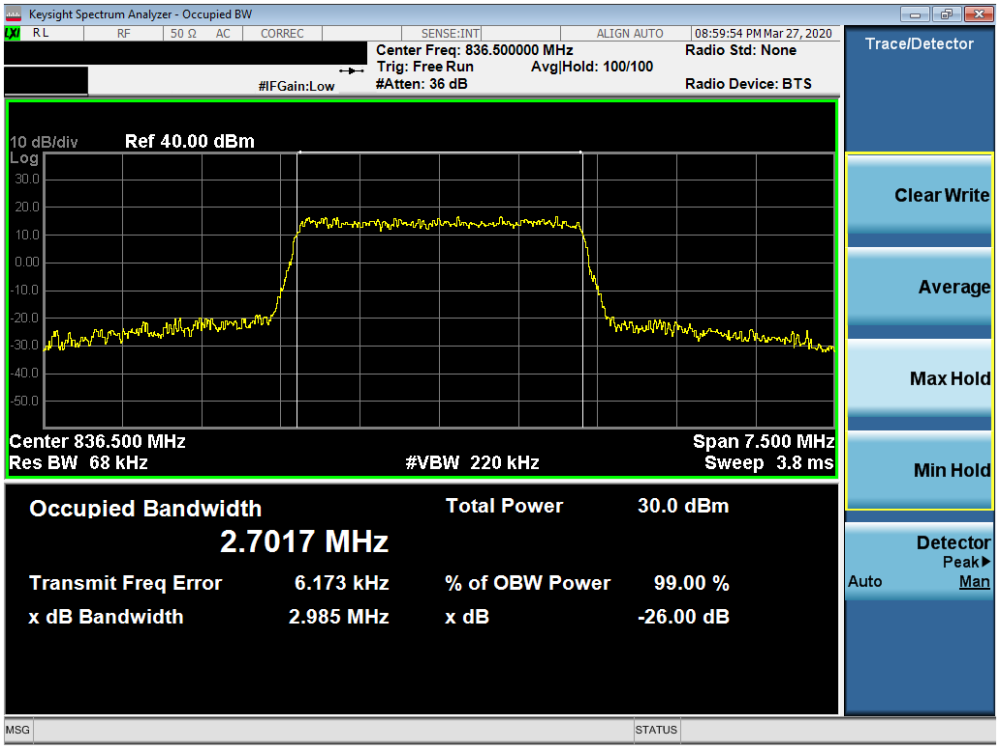
Plot 7-53. Occupied Bandwidth Plot (Band 26/5 - 1.4MHz 64-QAM - Full RB Configuration)



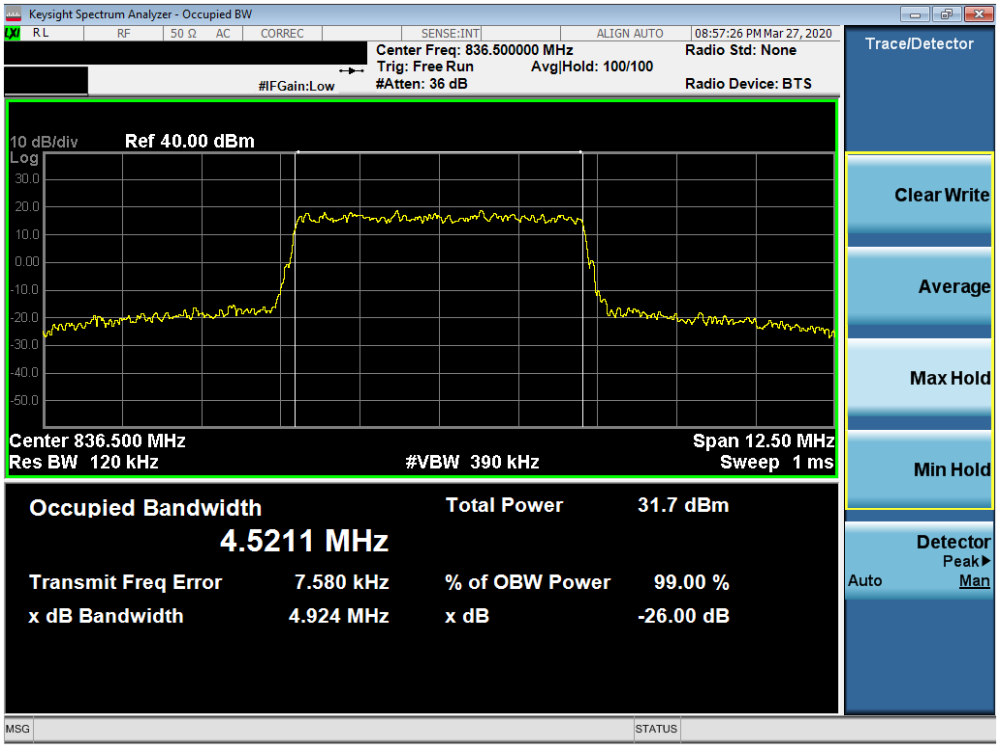
Plot 7-54. Occupied Bandwidth Plot (Band 26/5 - 3.0MHz QPSK - Full RB Configuration)



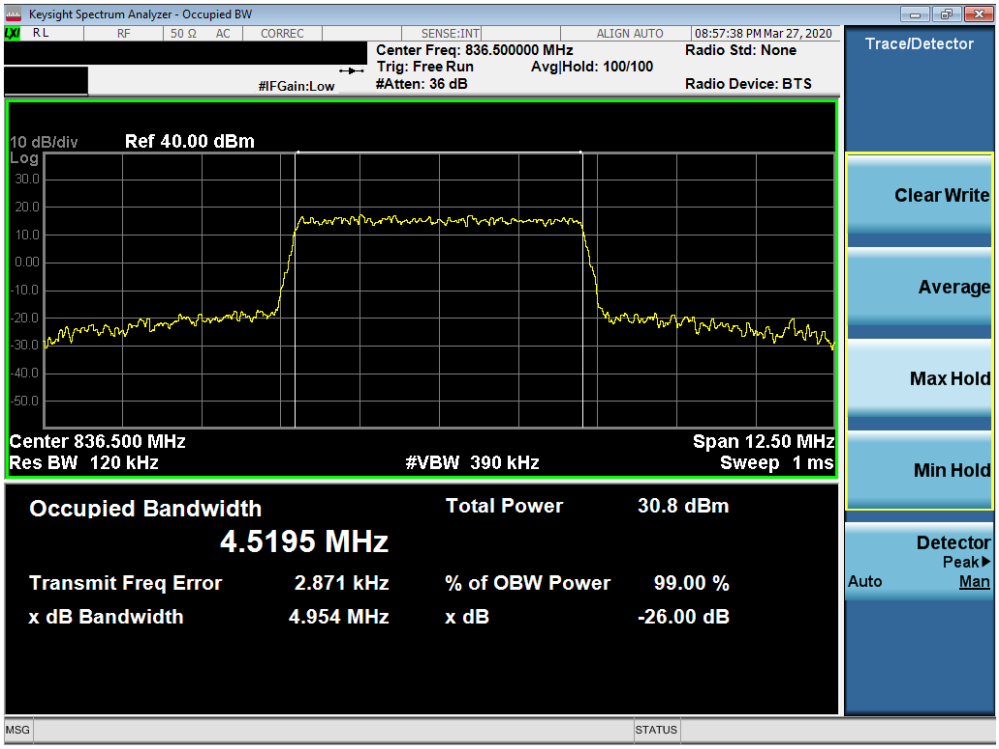
Plot 7-55. Occupied Bandwidth Plot (Band 26/5 - 3.0MHz 16-QAM - Full RB Configuration)



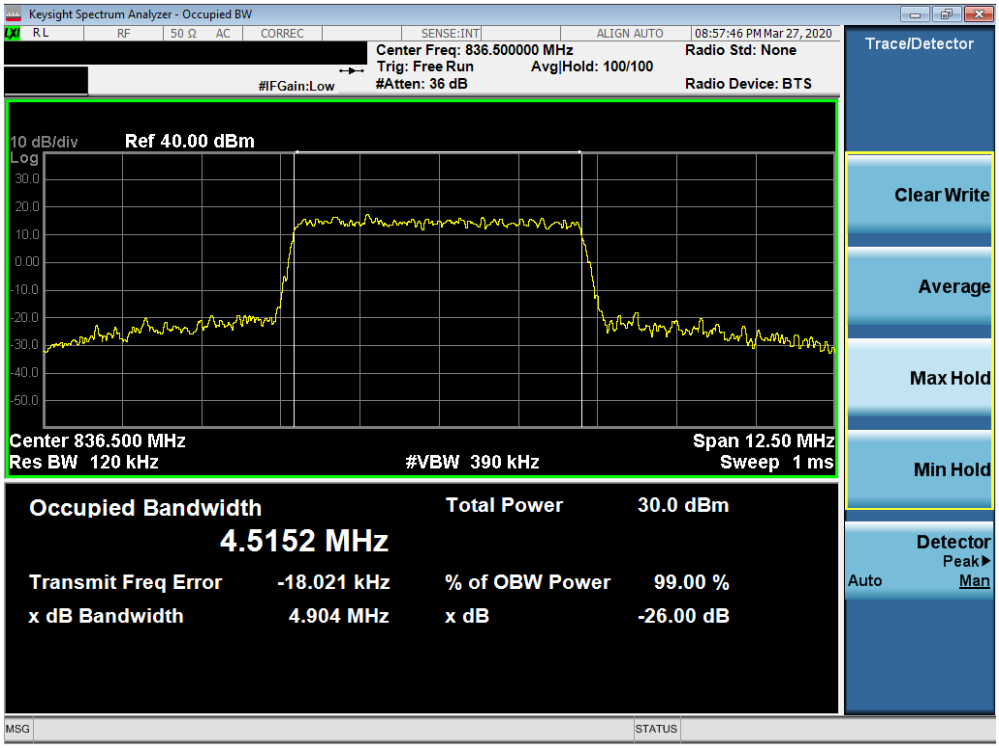
Plot 7-56. Occupied Bandwidth Plot (Band 26/5 - 3.0MHz 64-QAM - Full RB Configuration)



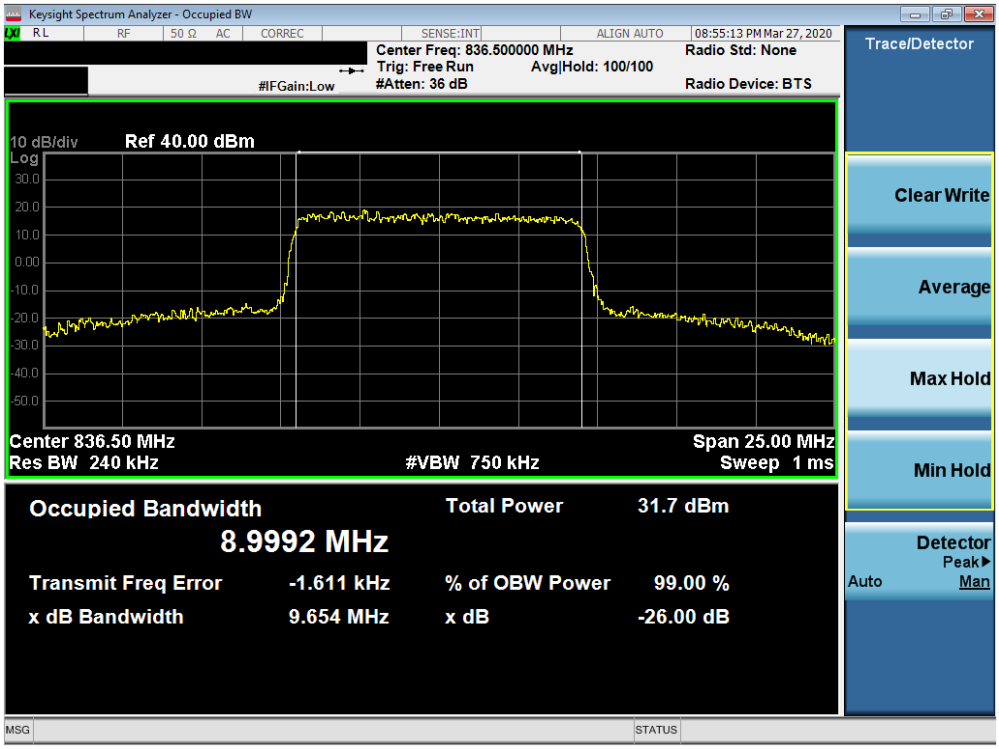
Plot 7-57. Occupied Bandwidth Plot (Band 26/5 - 5.0MHz QPSK - Full RB Configuration)



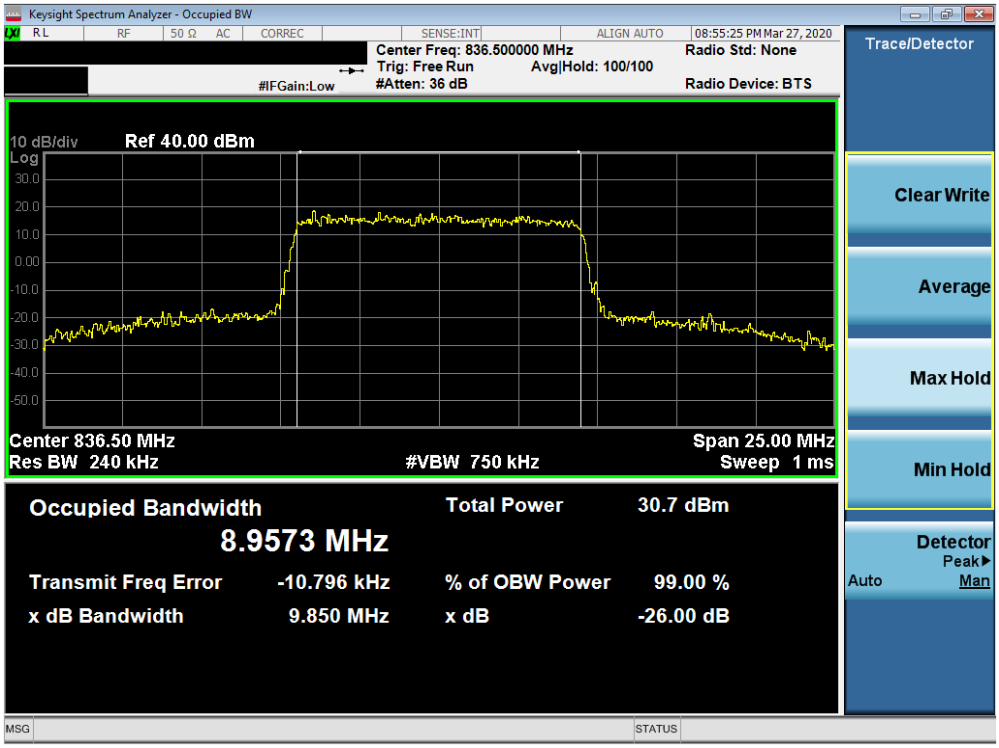
Plot 7-58. Occupied Bandwidth Plot (Band 26/5 - 5.0MHz 16-QAM - Full RB Configuration)



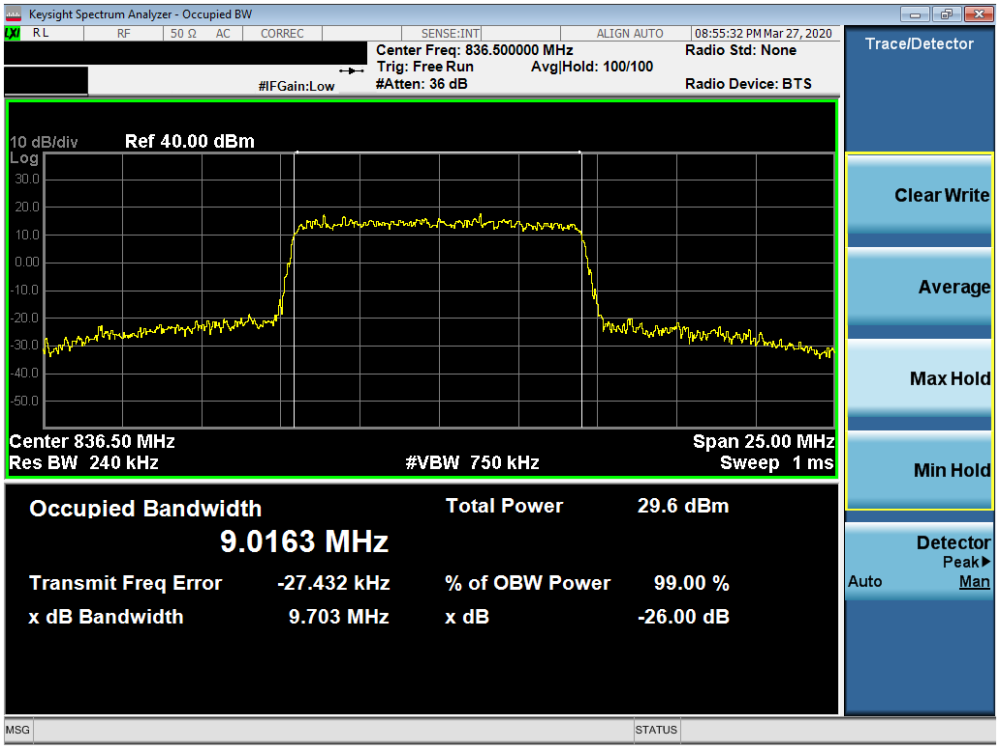
Plot 7-59. Occupied Bandwidth Plot (Band 26/5 - 5.0MHz 64-QAM - Full RB Configuration)



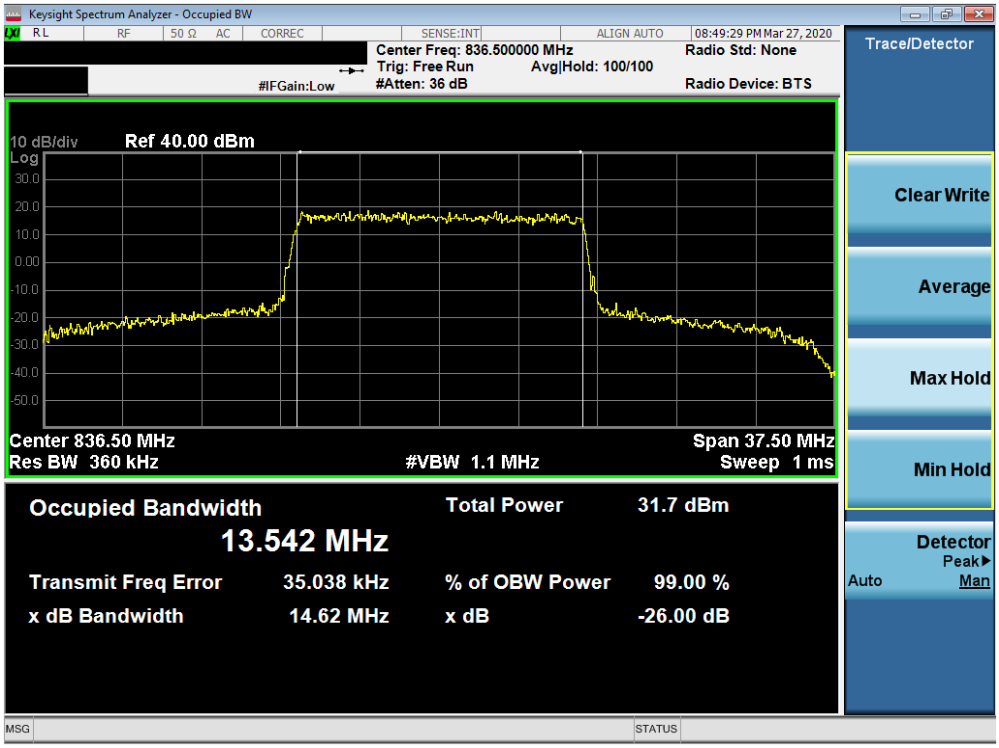
Plot 7-60. Occupied Bandwidth Plot (Band 26/5 - 10.0MHz QPSK - Full RB Configuration)



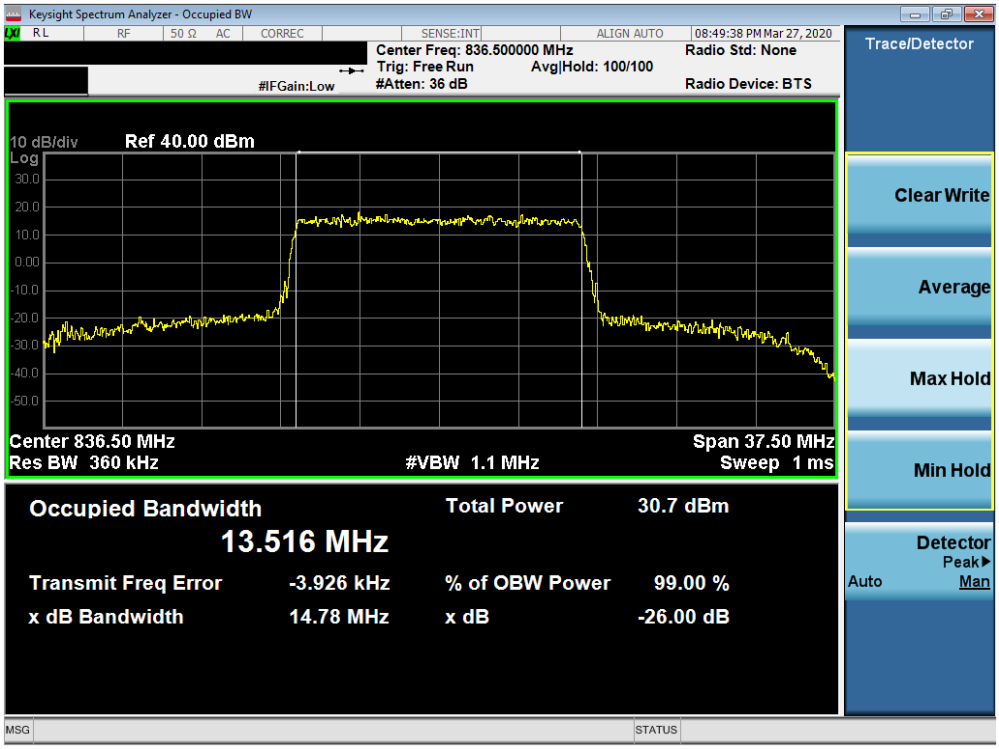
Plot 7-61. Occupied Bandwidth Plot (Band 26/5 - 10.0MHz 16-QAM - Full RB Configuration)



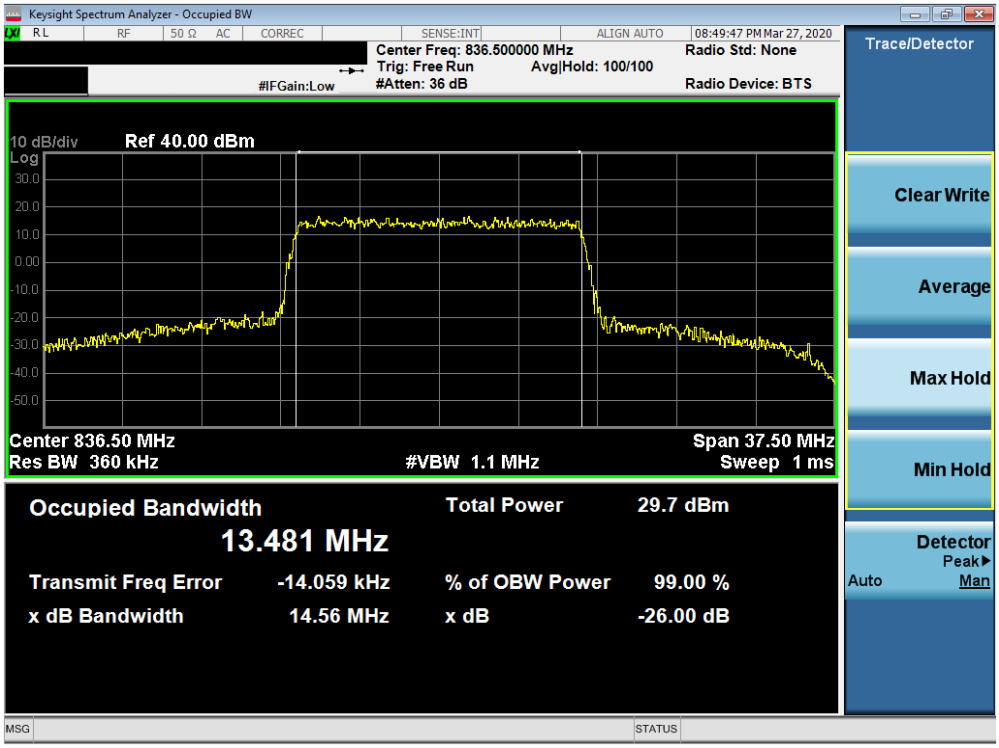
Plot 7-62. Occupied Bandwidth Plot (Band 26/5 - 10.0MHz 64-QAM - Full RB Configuration)



Plot 7-63. Occupied Bandwidth Plot (Band 26 - 15.0MHz QPSK - Full RB Configuration)

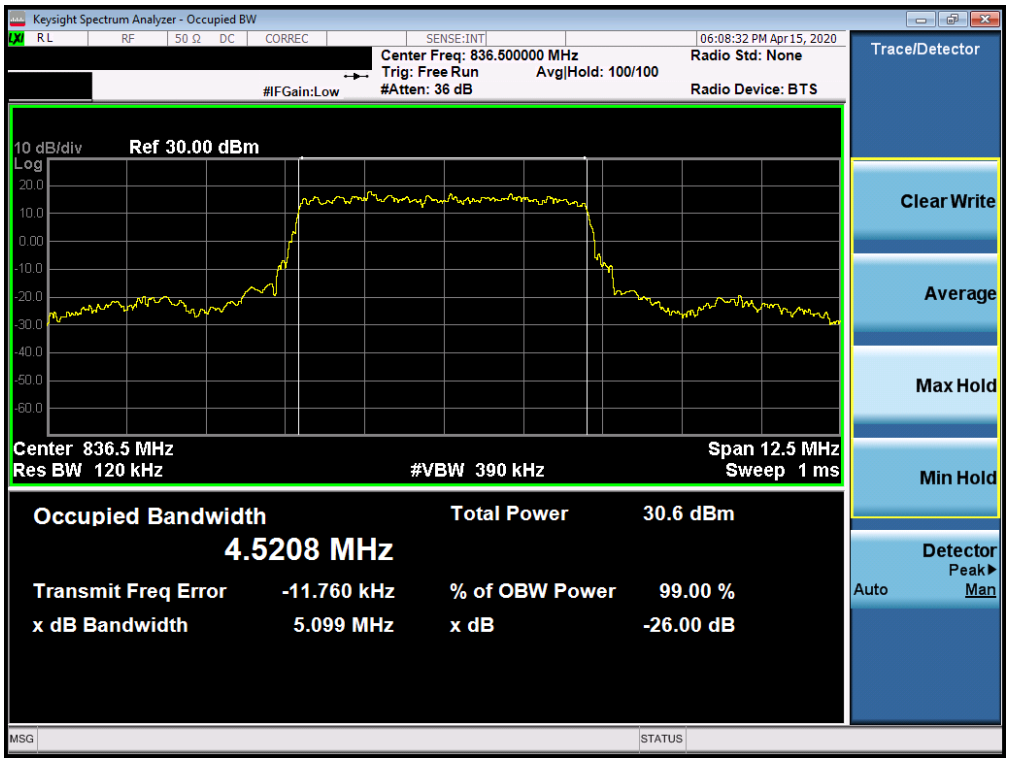


Plot 7-64. Occupied Bandwidth Plot (Band 26 - 15.0MHz 16-QAM - Full RB Configuration)

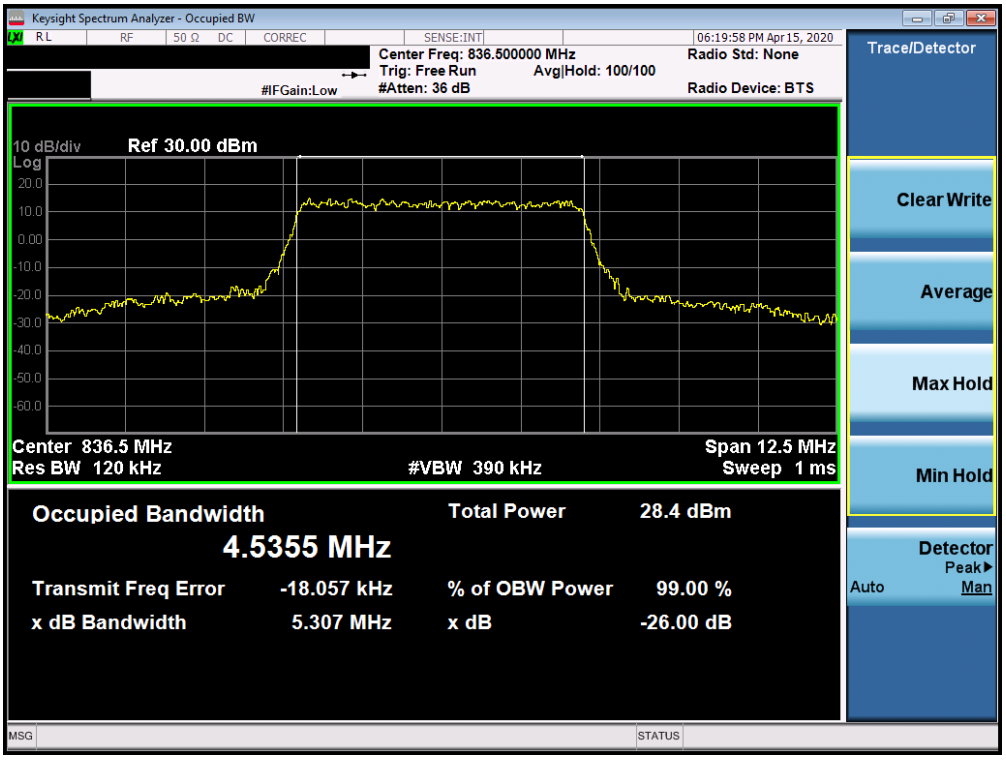


Plot 7-65. Occupied Bandwidth Plot (Band 26 - 15.0MHz 64-QAM - Full RB Configuration)

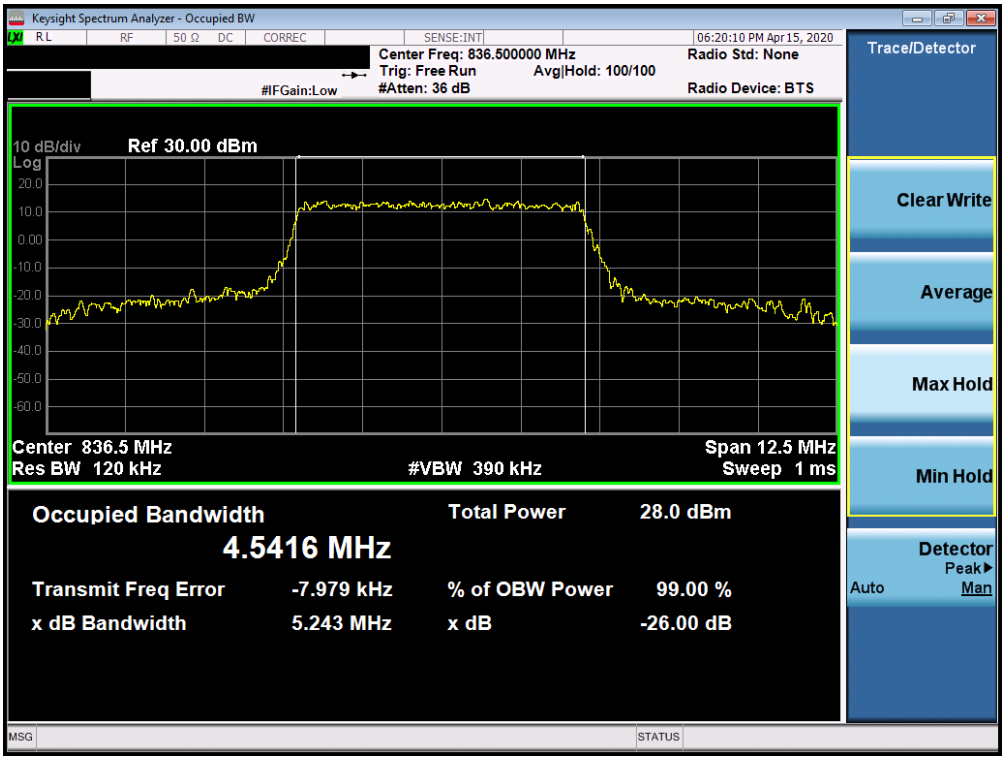
NR Band n5



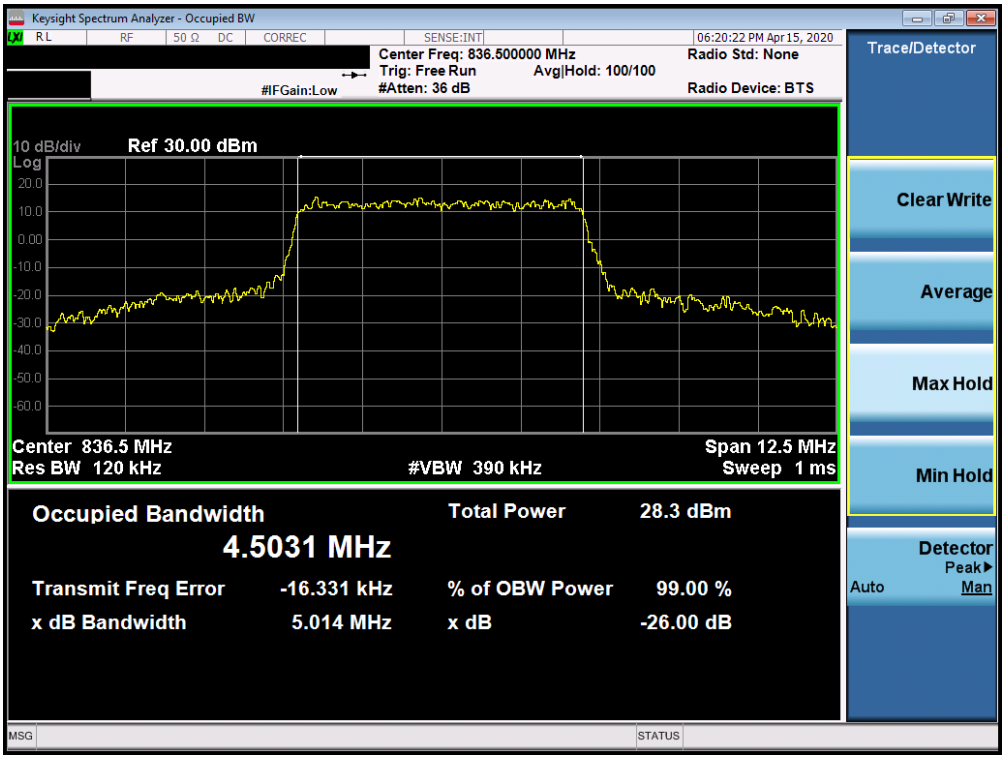
Plot 7-66. Occupied Bandwidth Plot (n5 5MHz BPSK-DFT-s-OFDM - Full RB Configuration)



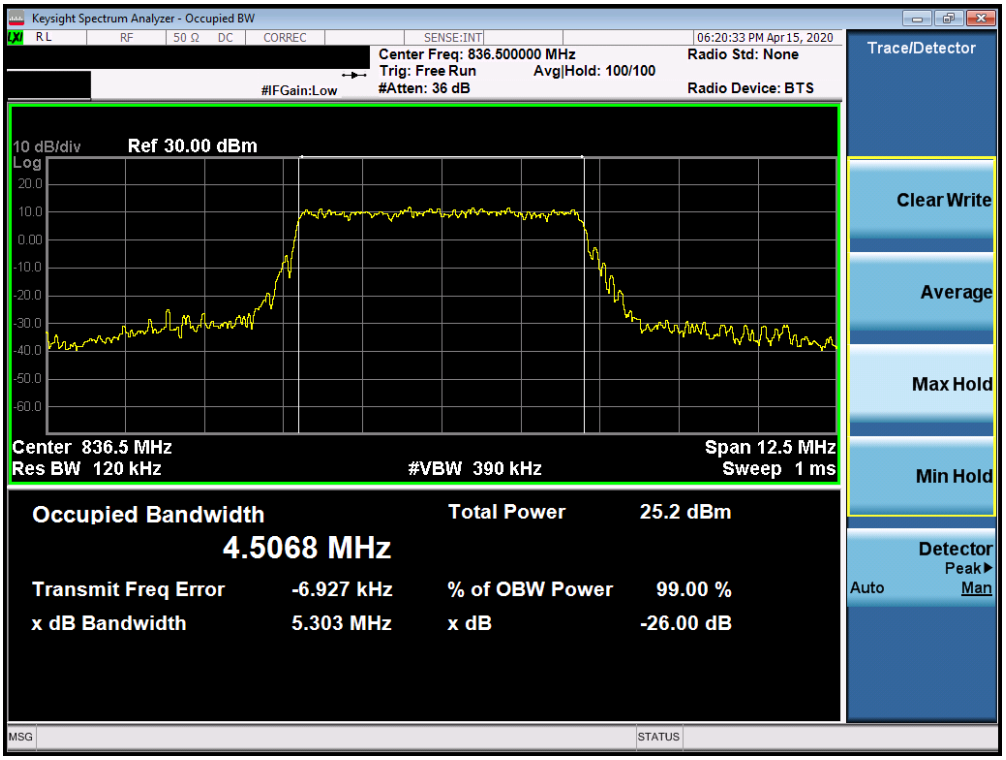
Plot 7-67. Occupied Bandwidth Plot (n5 5MHz QPSK-CP-OFDM - Full RB Configuration)



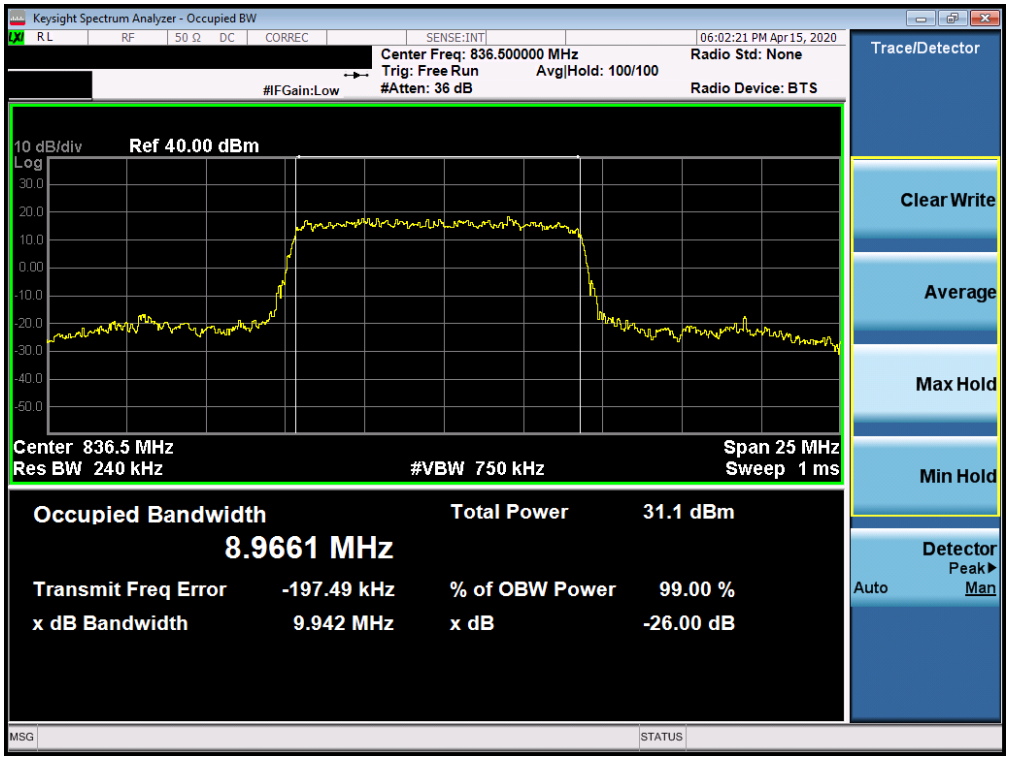
Plot 7-68. Occupied Bandwidth Plot (n5 5MHz 16QAM-CP-OFDM - Full RB Configuration)



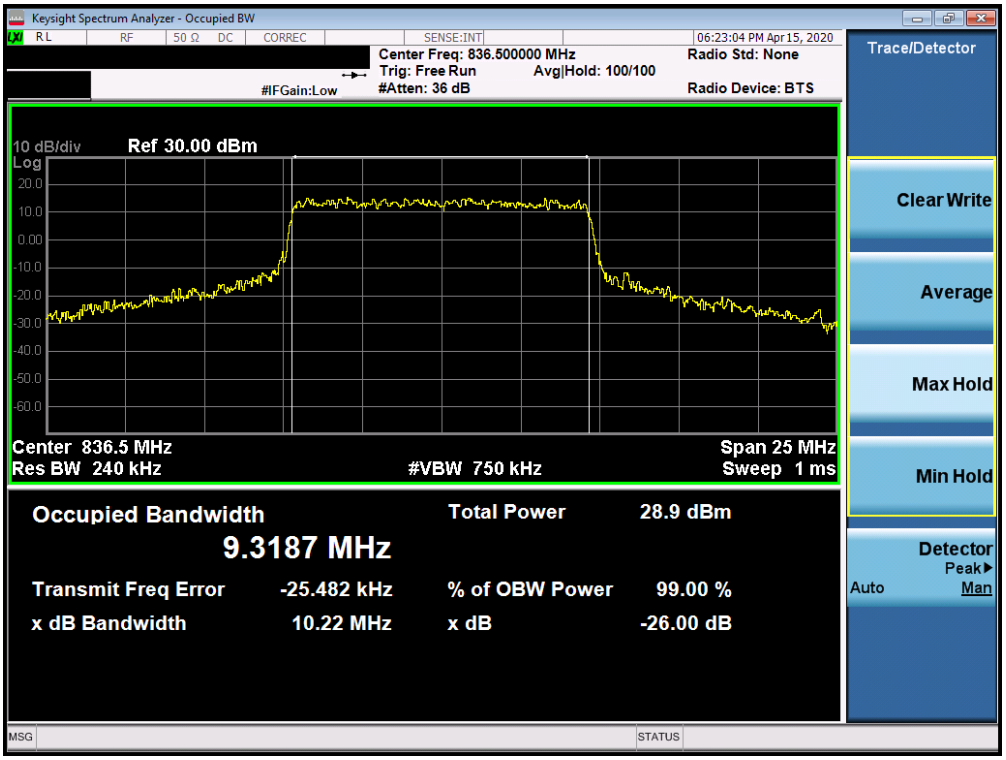
Plot 7-69. Occupied Bandwidth Plot (n5 5MHz 64QAM-CP-OFDM- Full RB Configuration)



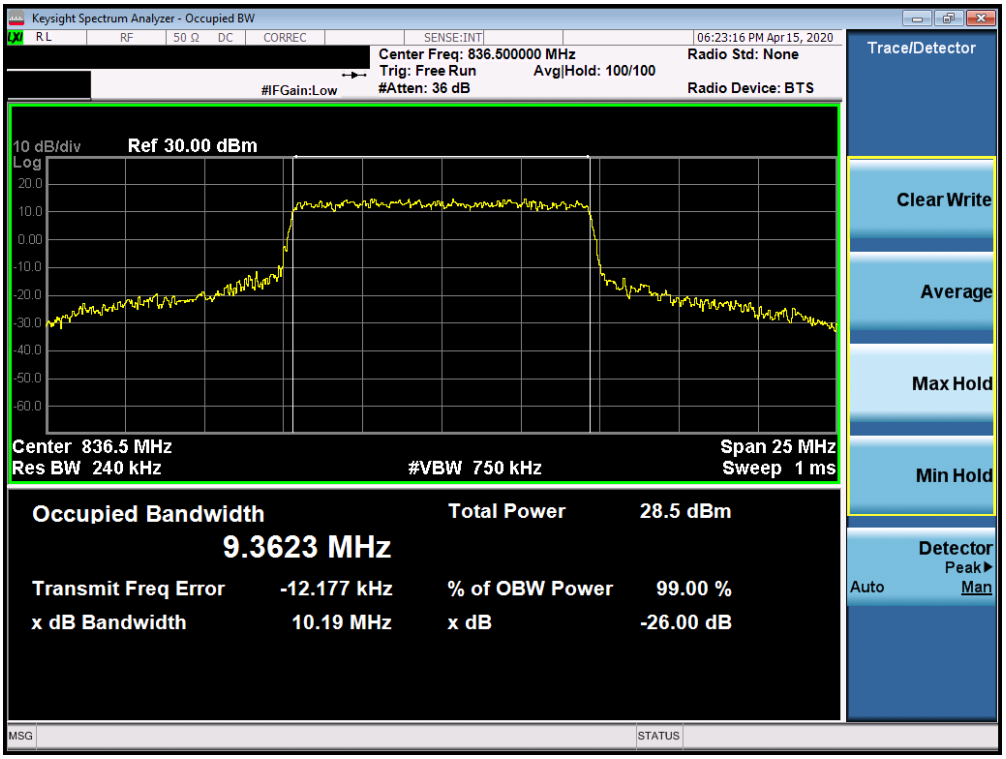
Plot 7-70. Occupied Bandwidth Plot (n5 5MHz 256QAM-CP-OFDM- Full RB Configuration)



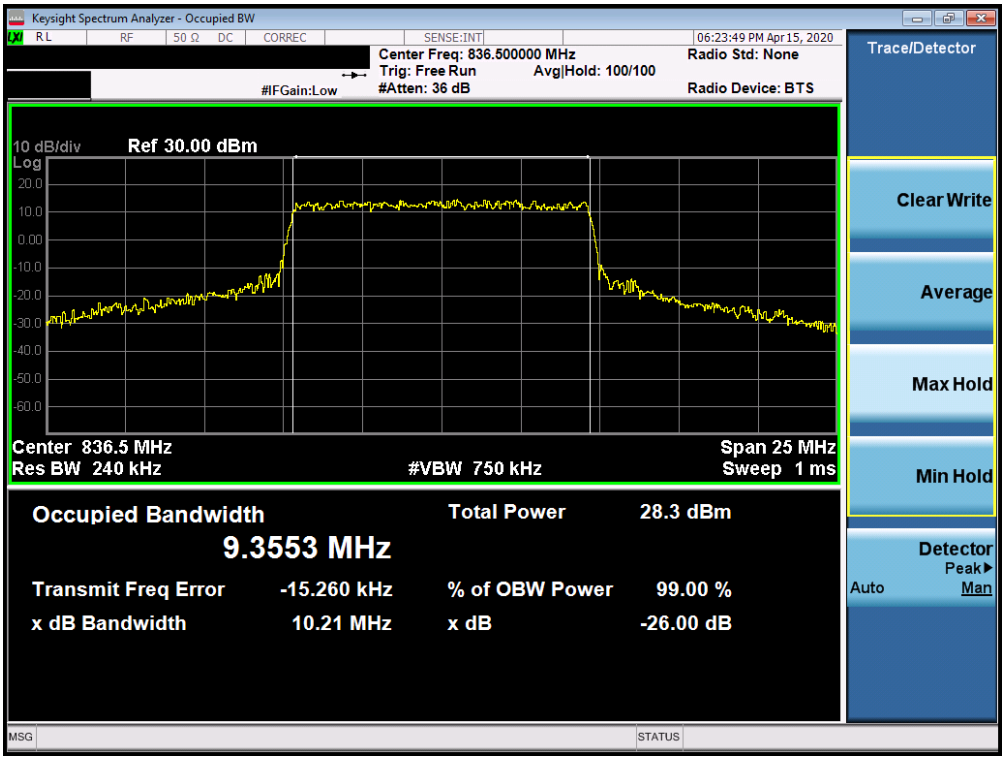
Plot 7-71. Occupied Bandwidth Plot (n5 10MHz BPSK-DFT-s-OFDM - Full RB Configuration)



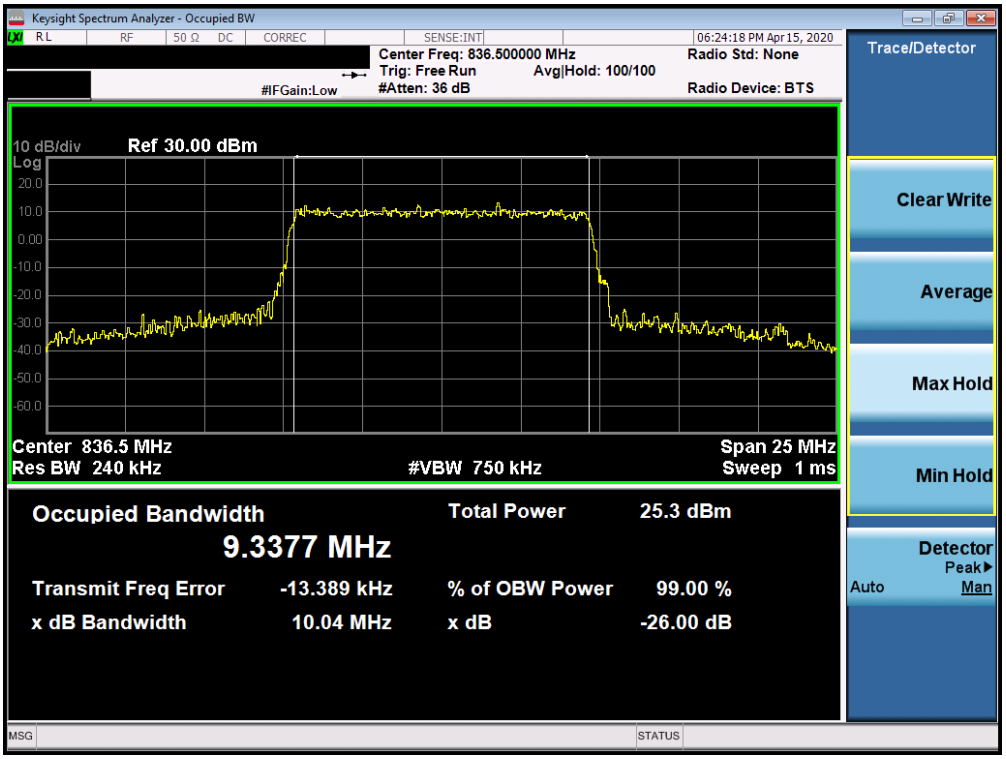
Plot 7-72. Occupied Bandwidth Plot (n5 10MHz QPSK-CP-OFDM - Full RB Configuration)



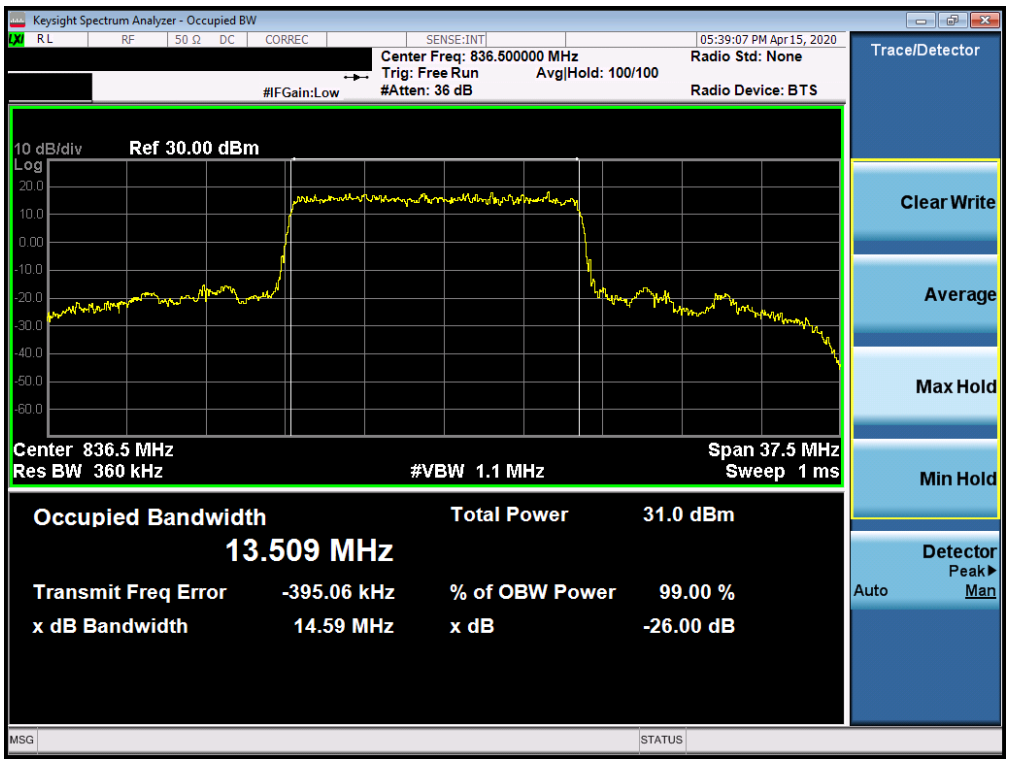
Plot 7-73. Occupied Bandwidth Plot (n5 10MHz 16QAM-CP-OFDM - Full RB Configuration)



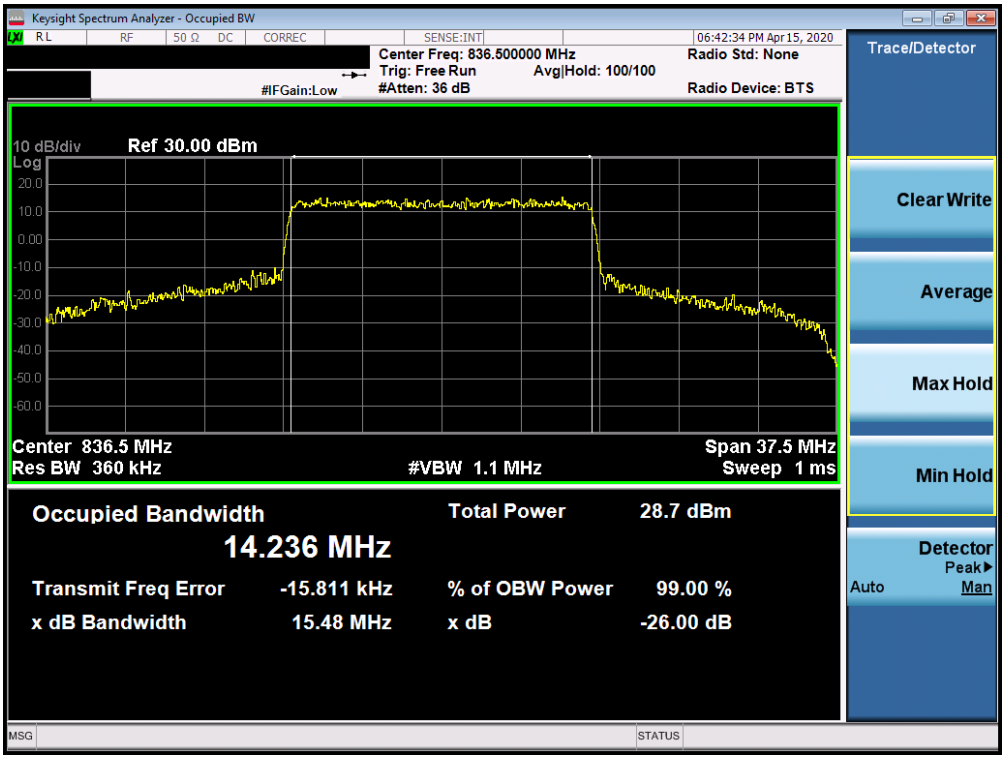
Plot 7-74. Occupied Bandwidth Plot (n5 10MHz 64QAM-CP-OFDM- Full RB Configuration)



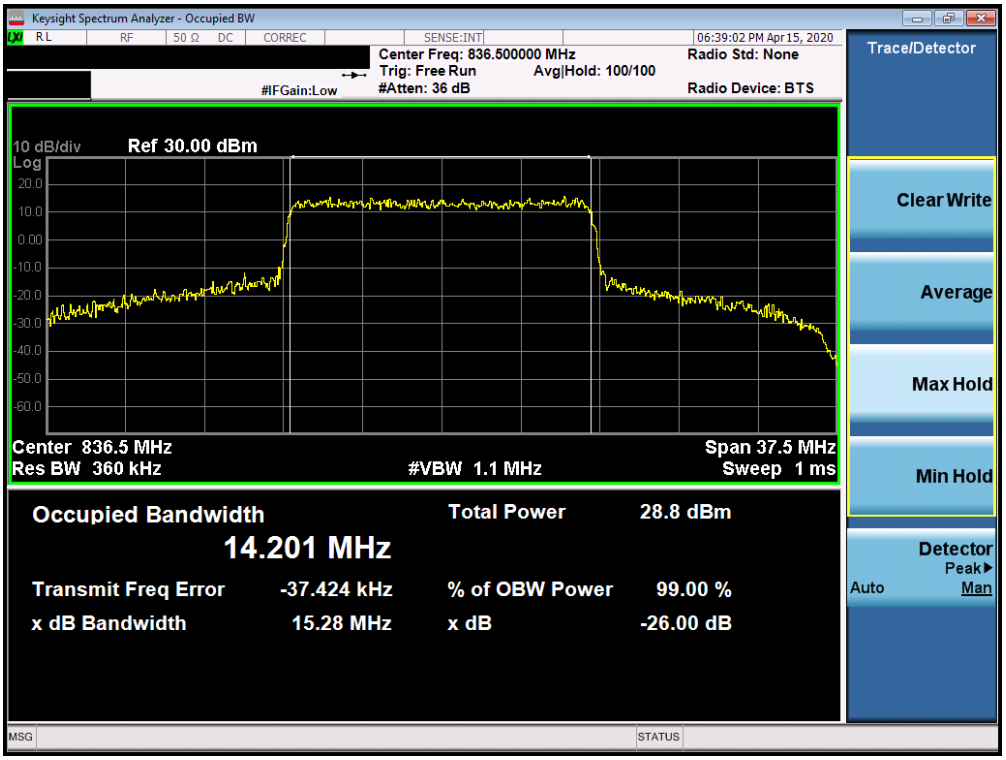
Plot 7-75. Occupied Bandwidth Plot (n5 10MHz 256QAM-CP-OFDM- Full RB Configuration)



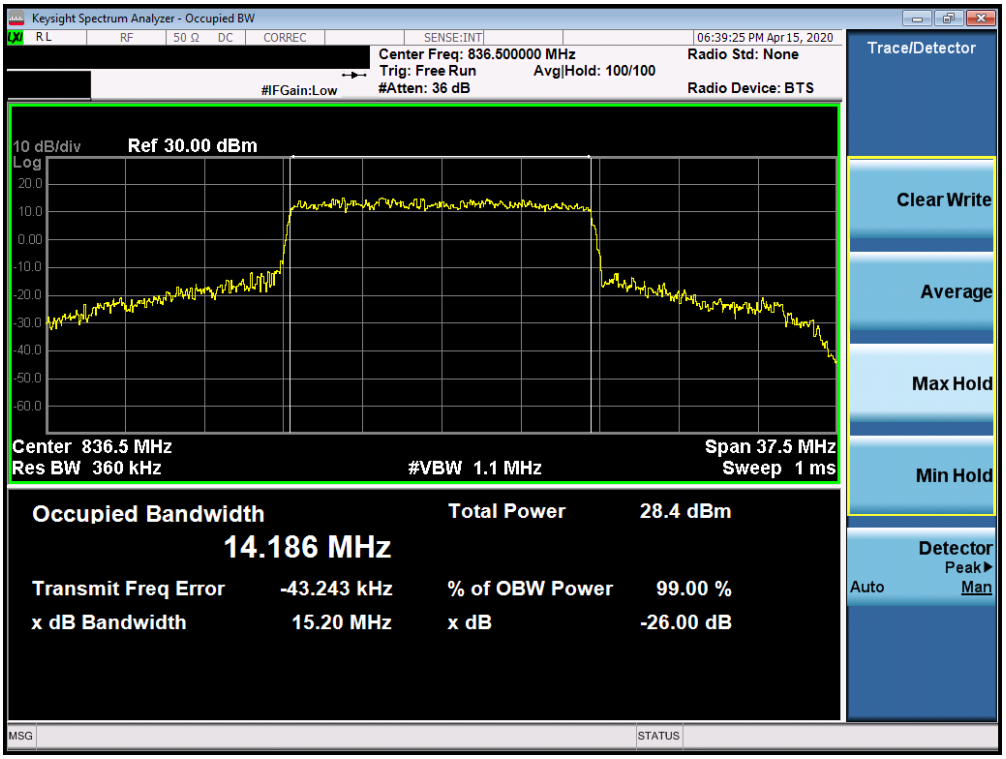
Plot 7-76. Occupied Bandwidth Plot (n5 15MHz BPSK-DFT-s-OFDM - Full RB Configuration)



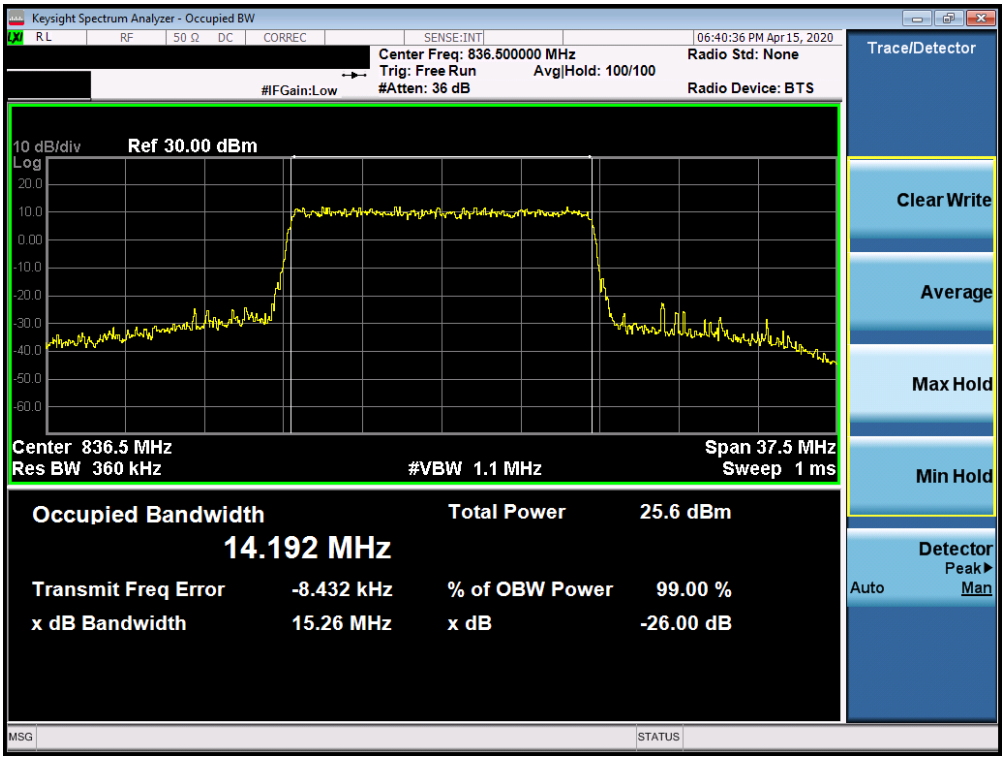
Plot 7-77. Occupied Bandwidth Plot (n5 15MHz QPSK-CP-OFDM - Full RB Configuration)



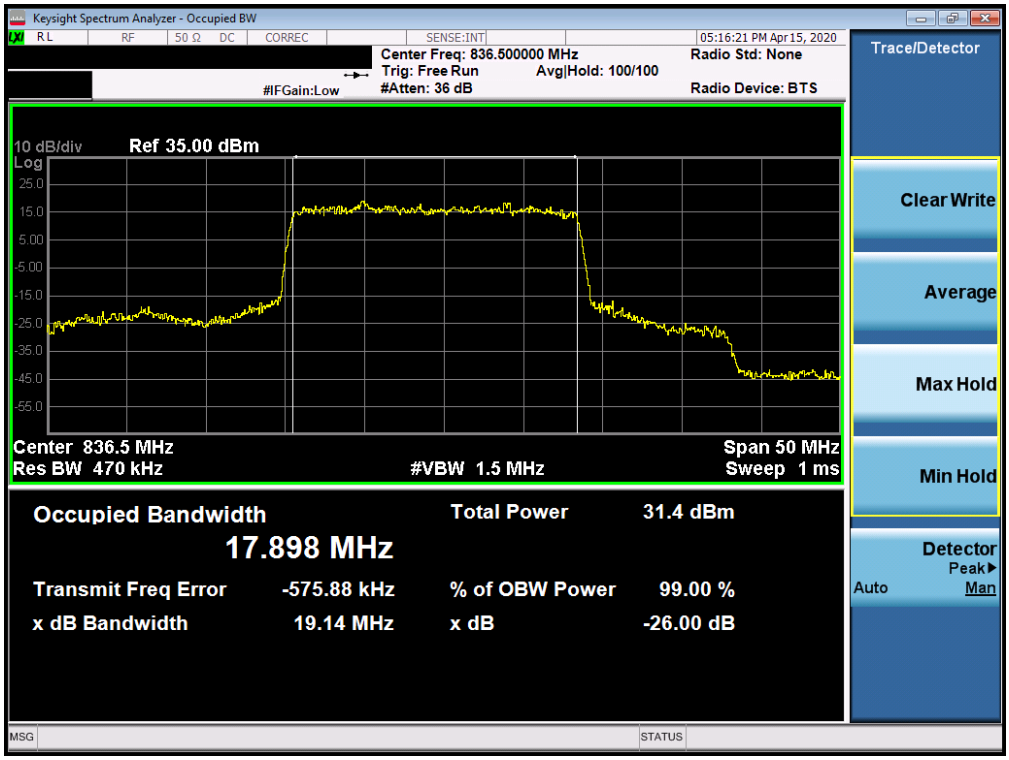
Plot 7-78. Occupied Bandwidth Plot (n5 15MHz 16QAM-CP-OFDM - Full RB Configuration)



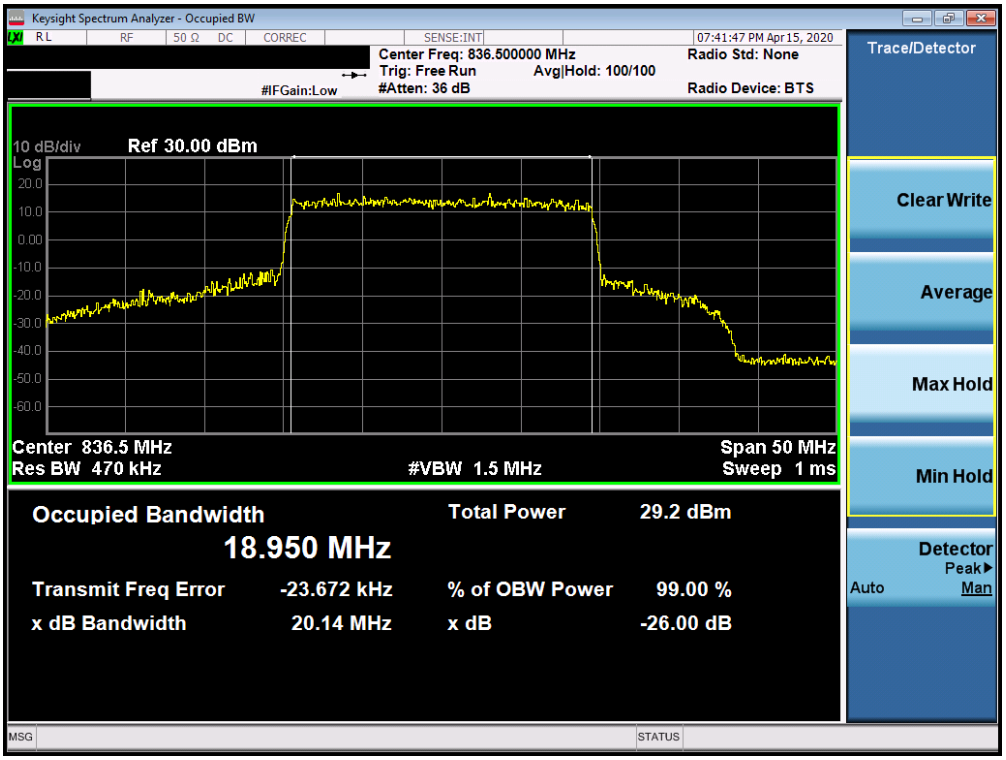
Plot 7-79. Occupied Bandwidth Plot (n5 15MHz 64QAM-CP-OFDM- Full RB Configuration)



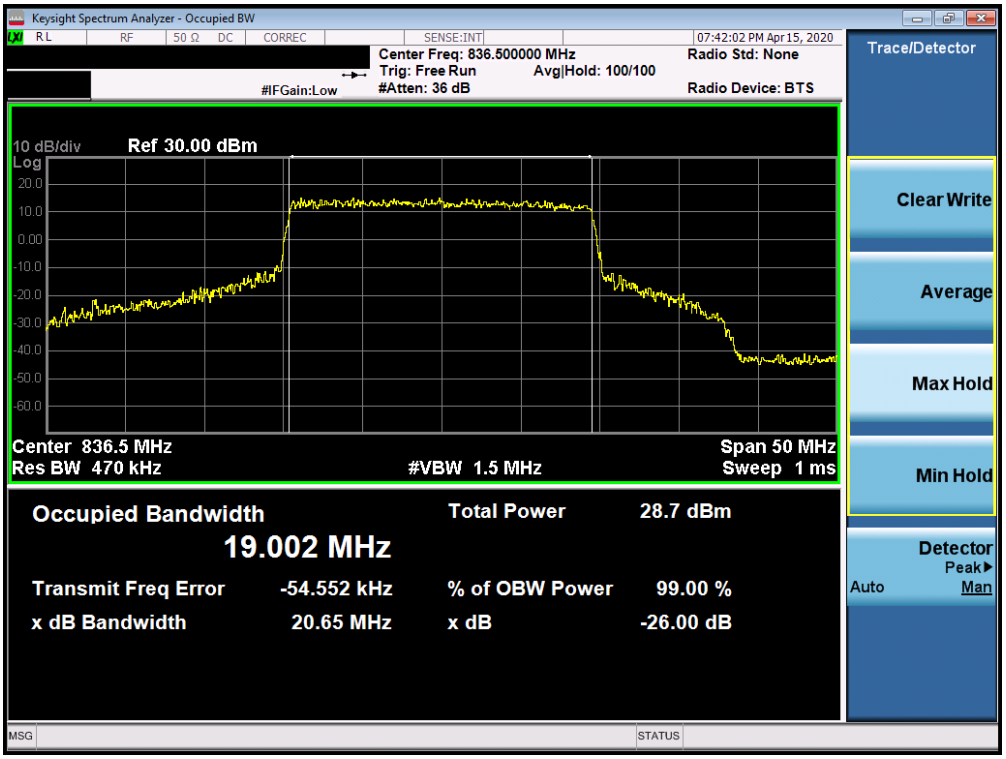
Plot 7-80. Occupied Bandwidth Plot (n5 15MHz 256QAM-CP-OFDM- Full RB Configuration)



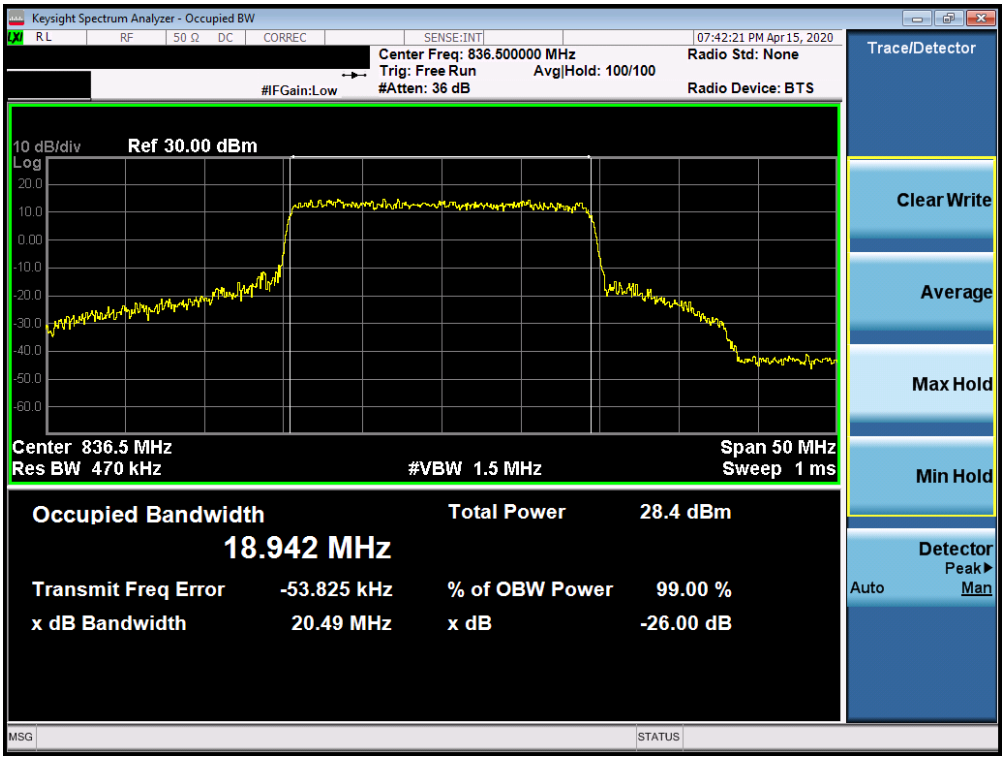
Plot 7-81. Occupied Bandwidth Plot (n5 20MHz BPSK-DFT-s-OFDM - Full RB Configuration)



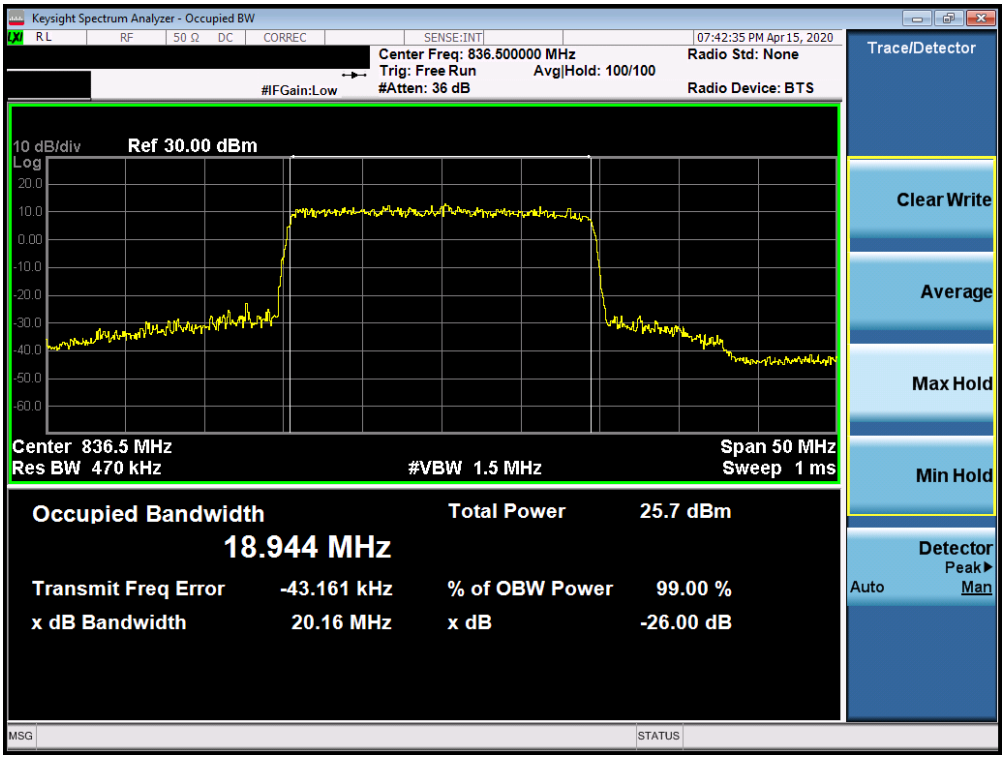
Plot 7-82. Occupied Bandwidth Plot (n5 20MHz QPSK-CP-OFDM - Full RB Configuration)



Plot 7-83. Occupied Bandwidth Plot (n5 20MHz 16QAM-CP-OFDM - Full RB Configuration)

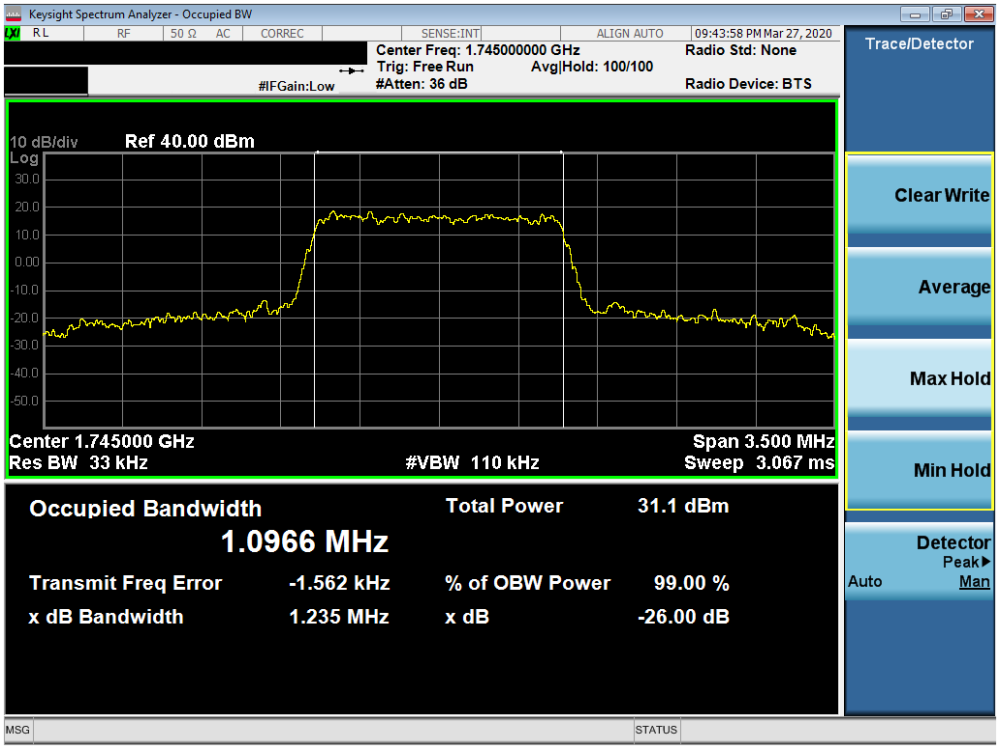


Plot 7-84. Occupied Bandwidth Plot (n5 20MHz 64QAM-CP-OFDM- Full RB Configuration)

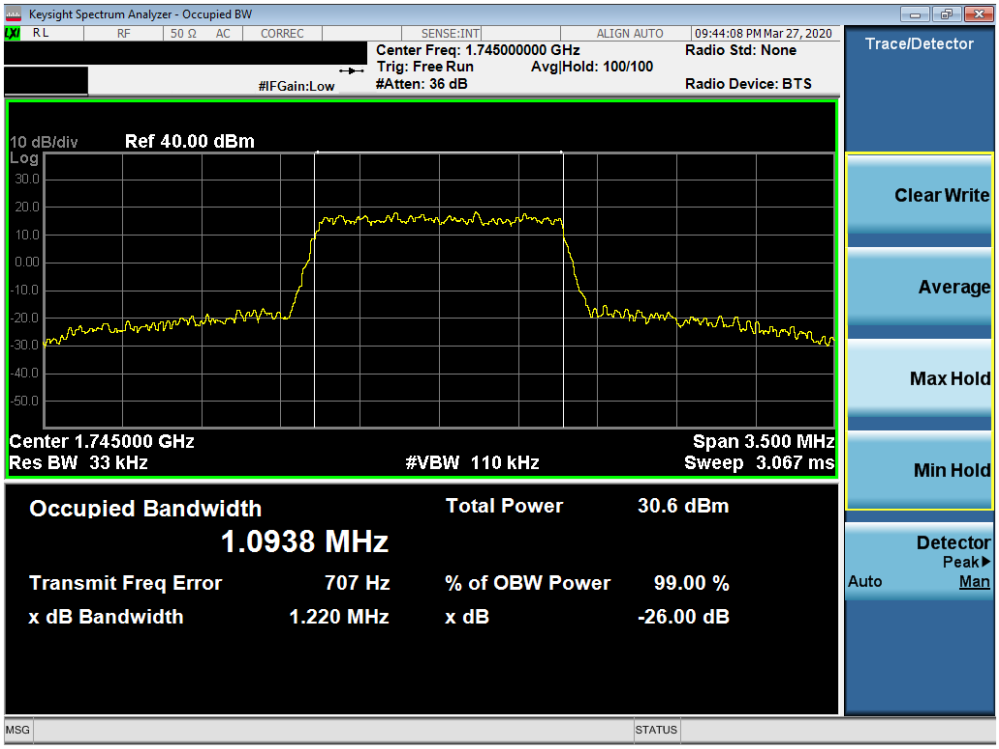


Plot 7-85. Occupied Bandwidth Plot (n5 20MHz 256QAM-CP-OFDM- Full RB Configuration)

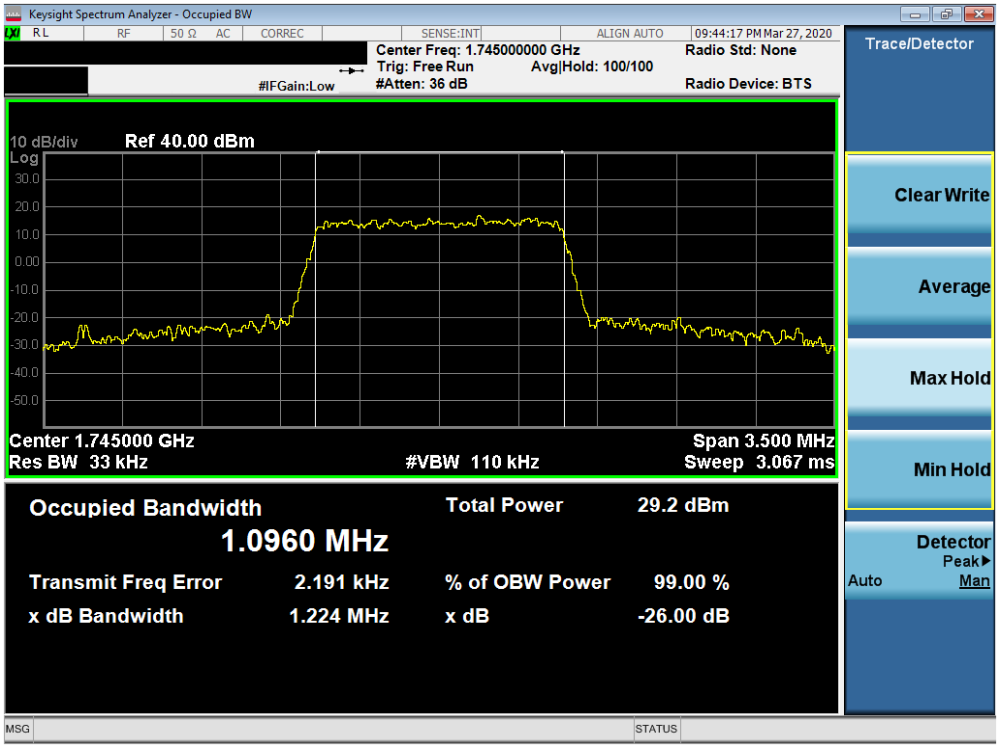
Band 66/4



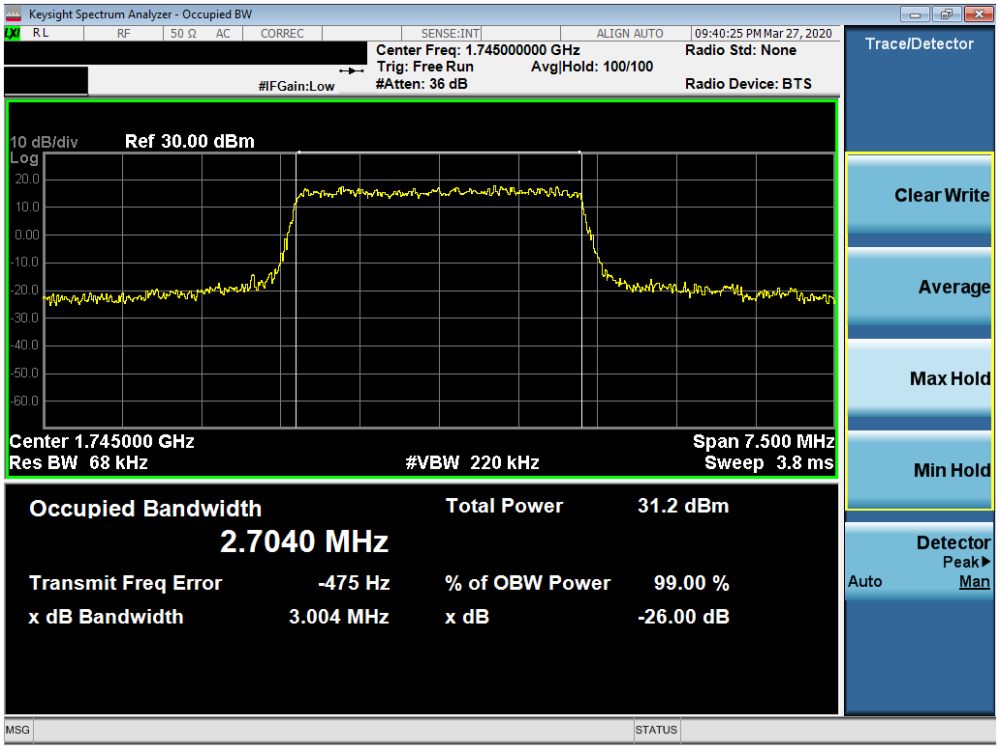
Plot 7-86. Occupied Bandwidth Plot (Band 66/4 - 1.4MHz QPSK - Full RB Configuration)



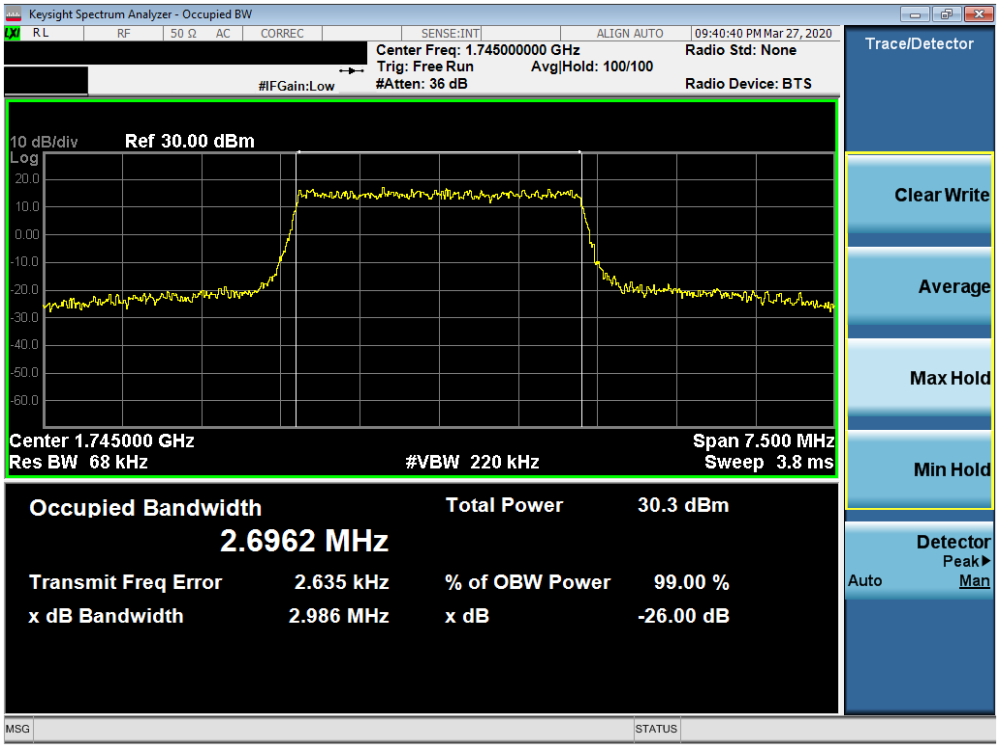
Plot 7-87. Occupied Bandwidth Plot (Band 66/4 - 1.4MHz 16-QAM - Full RB Configuration)



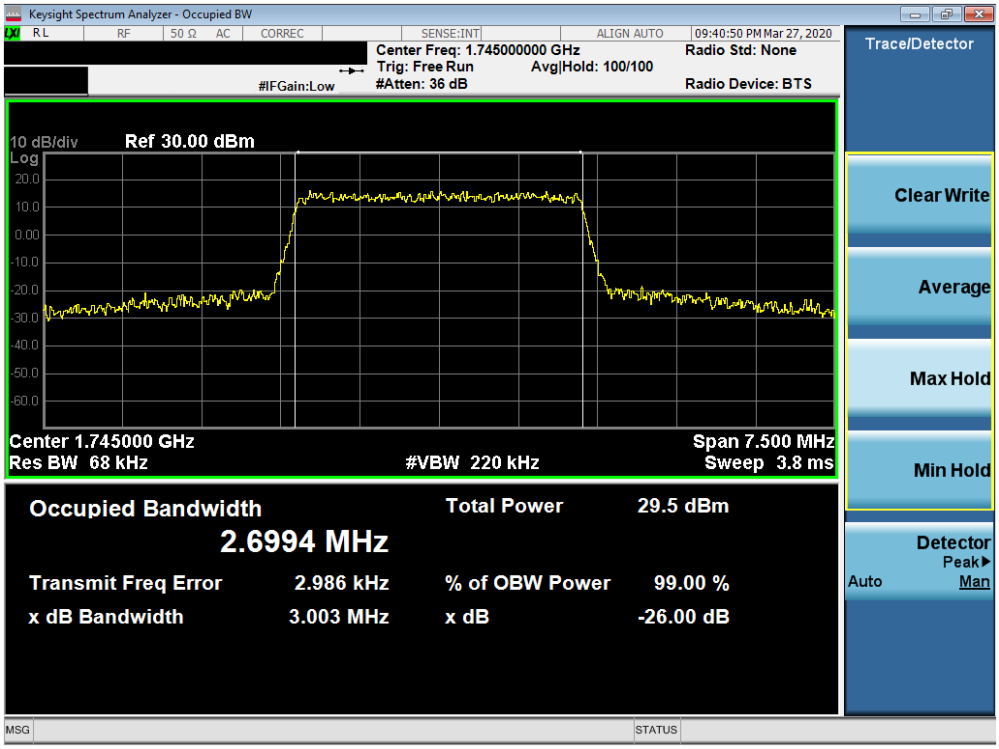
Plot 7-88. Occupied Bandwidth Plot (Band 66/4 - 1.4MHz 64-QAM - Full RB Configuration)



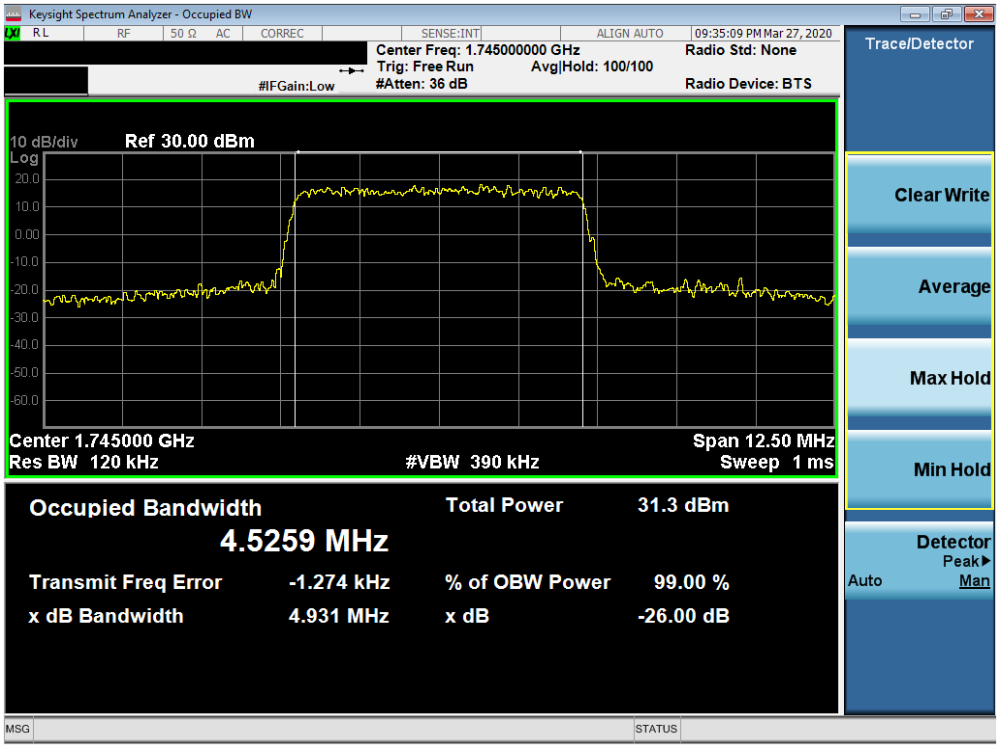
Plot 7-89. Occupied Bandwidth Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)



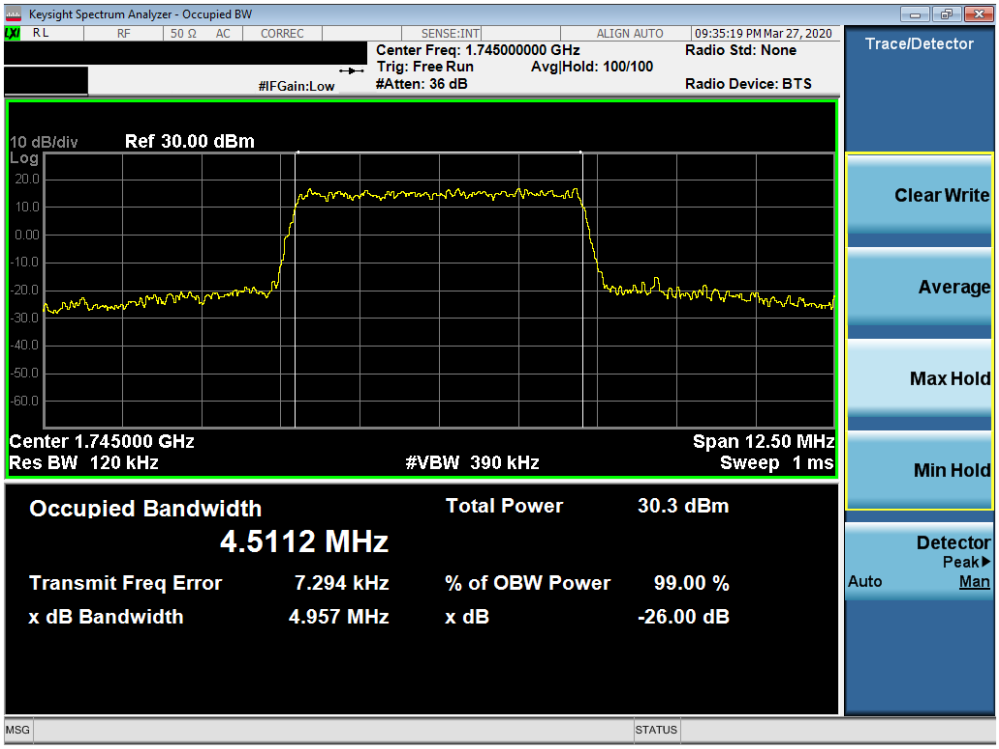
Plot 7-90. Occupied Bandwidth Plot (Band 66/4 - 3.0MHz 16-QAM - Full RB Configuration)



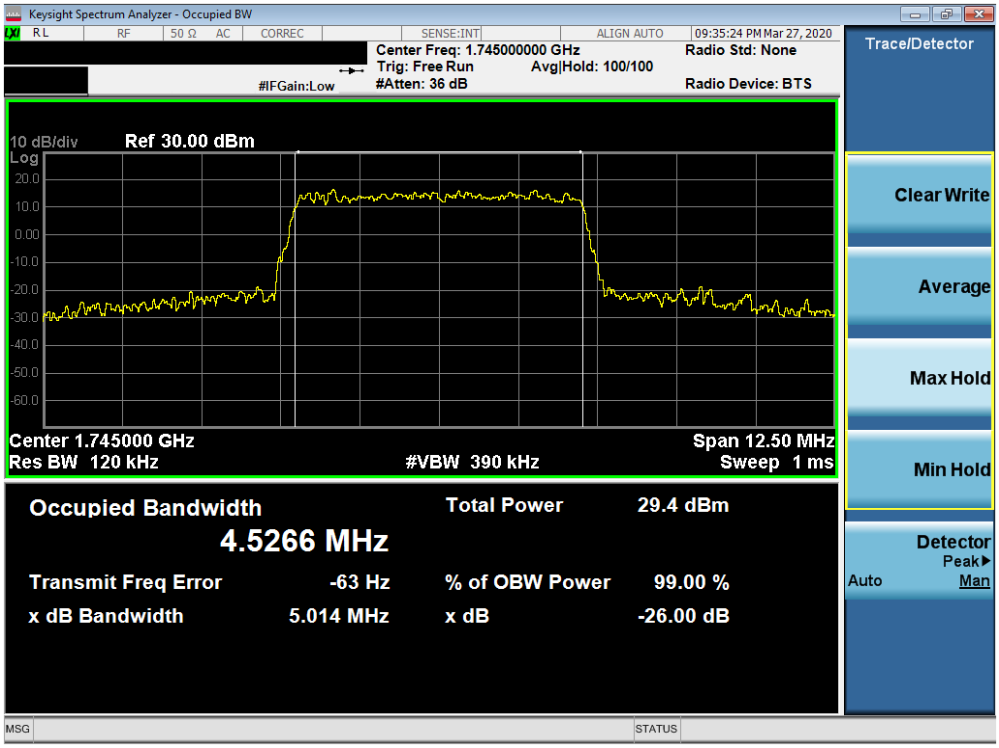
Plot 7-91. Occupied Bandwidth Plot (Band 66/4 - 3.0MHz 64-QAM - Full RB Configuration)



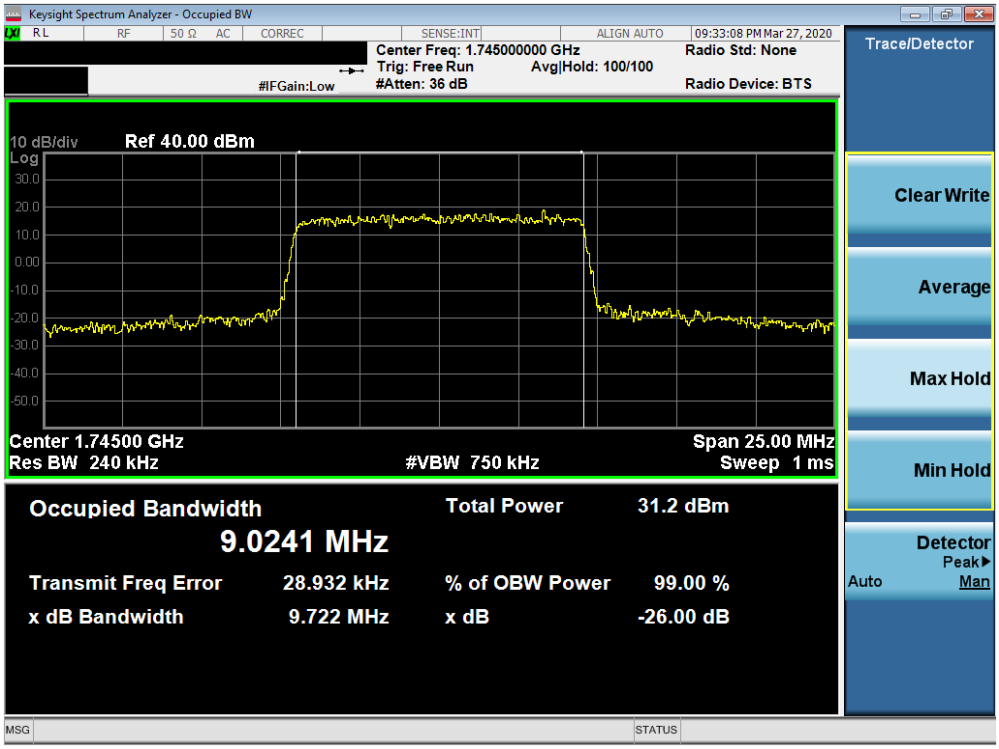
Plot 7-92. Occupied Bandwidth Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)



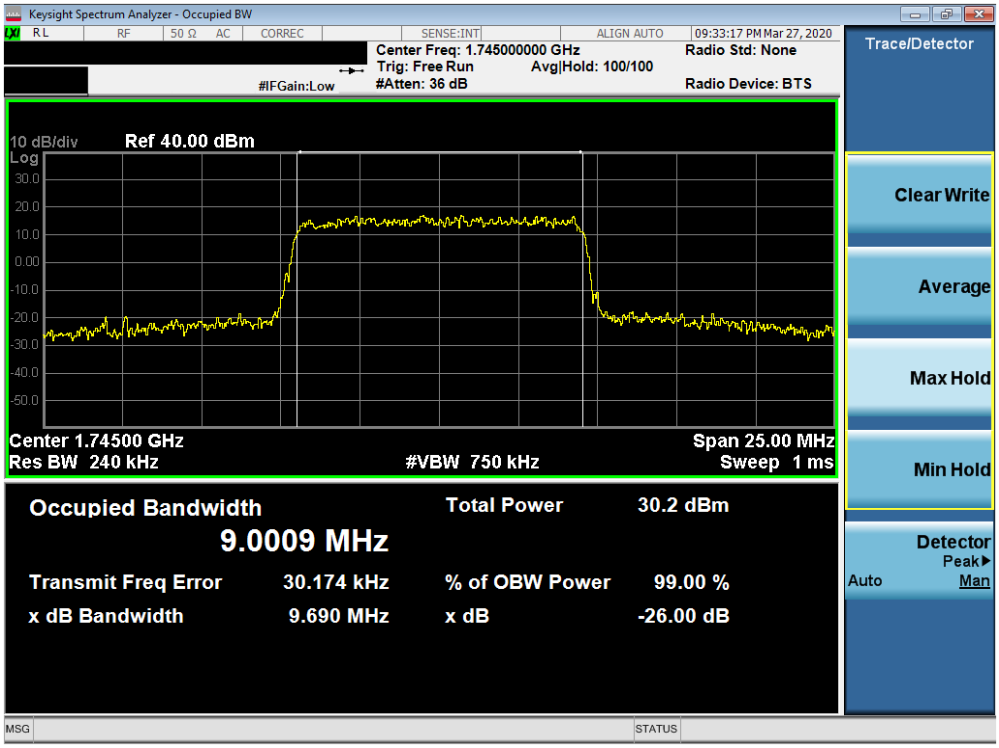
Plot 7-93. Occupied Bandwidth Plot (Band 66/4 - 5.0MHz 16-QAM - Full RB Configuration)



Plot 7-94. Occupied Bandwidth Plot (Band 66/4 - 5.0MHz 64-QAM - Full RB Configuration)

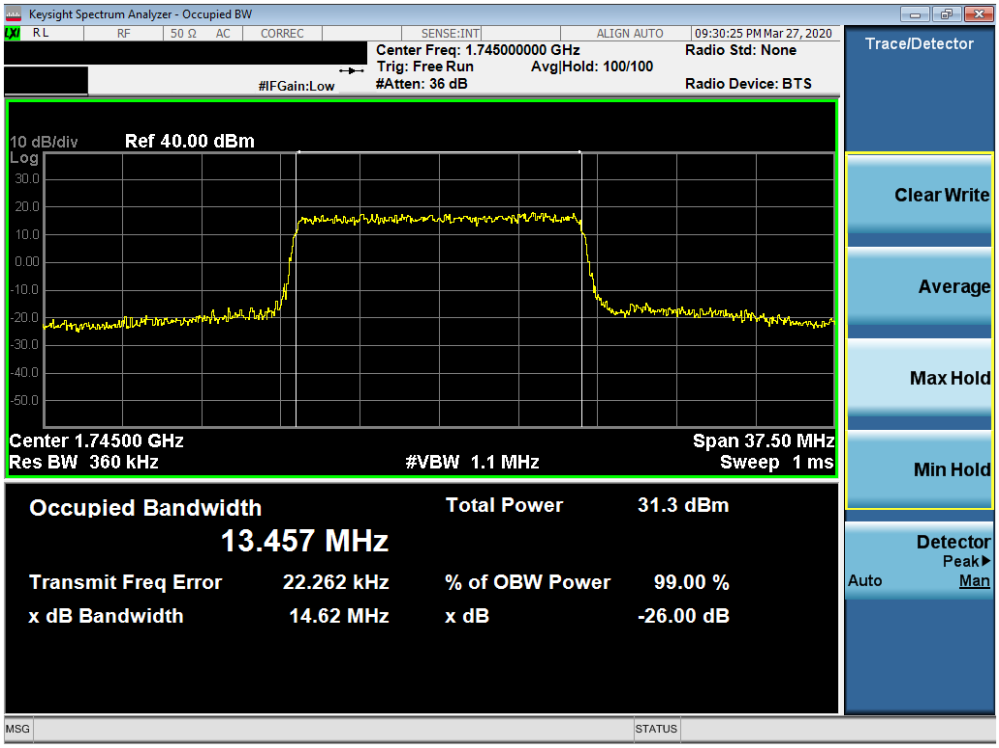


Plot 7-95. Occupied Bandwidth Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)

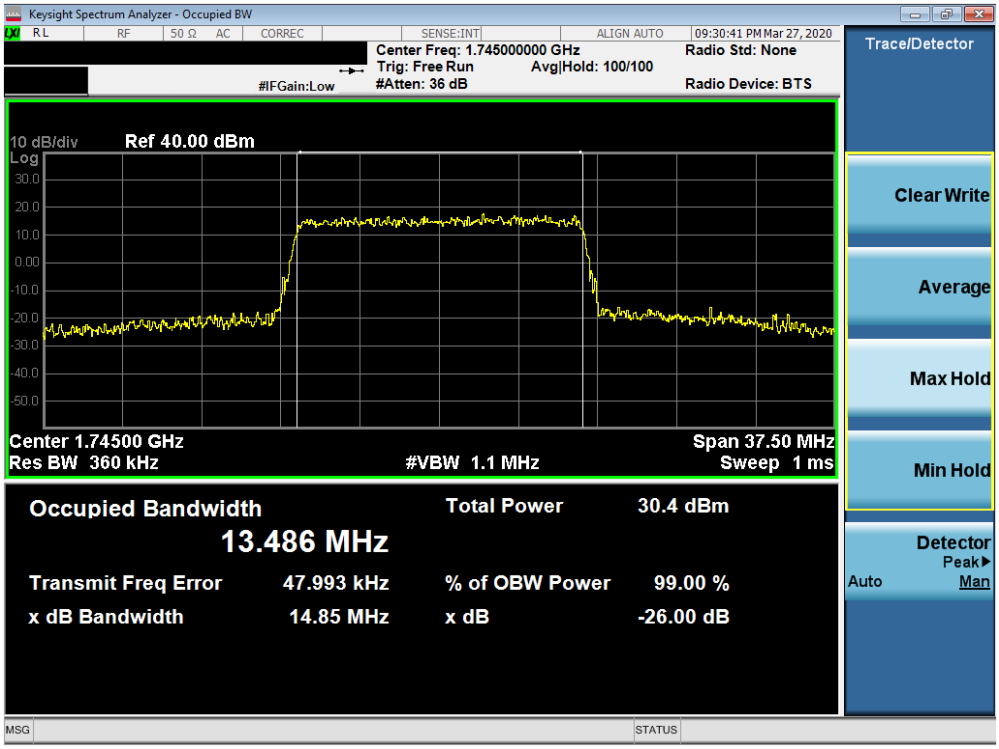


Plot 7-96. Occupied Bandwidth Plot (Band 66/4 - 10.0MHz 16-QAM - Full RB Configuration)

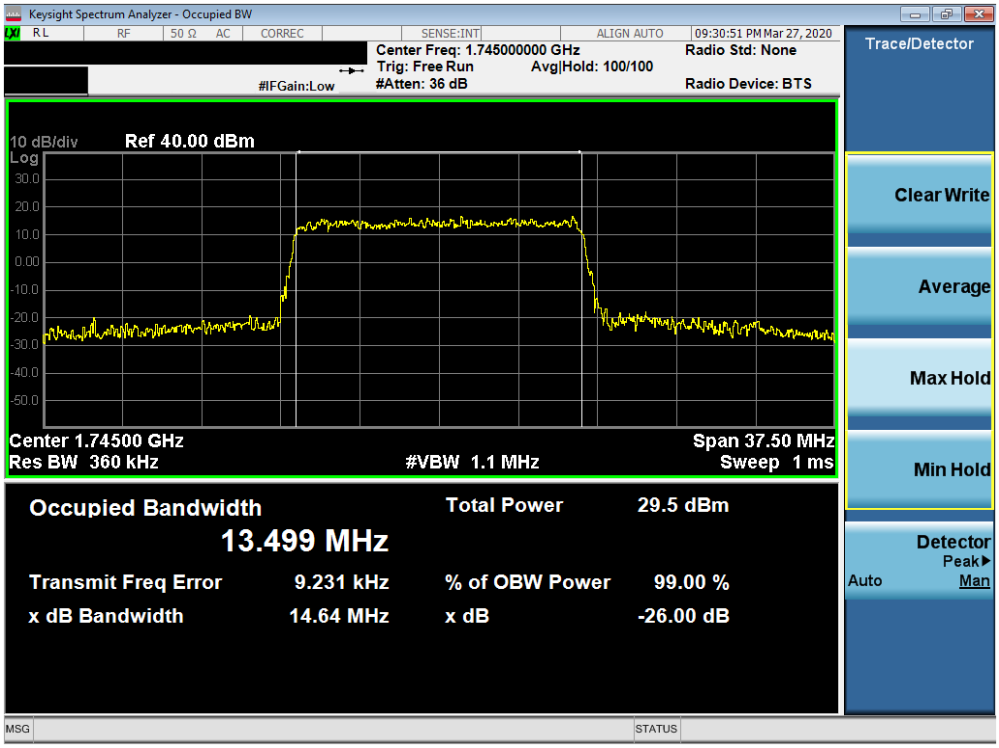
Plot 7-97. Occupied Bandwidth Plot (Band 66/4 - 10.0MHz 64-QAM - Full RB Configuration)



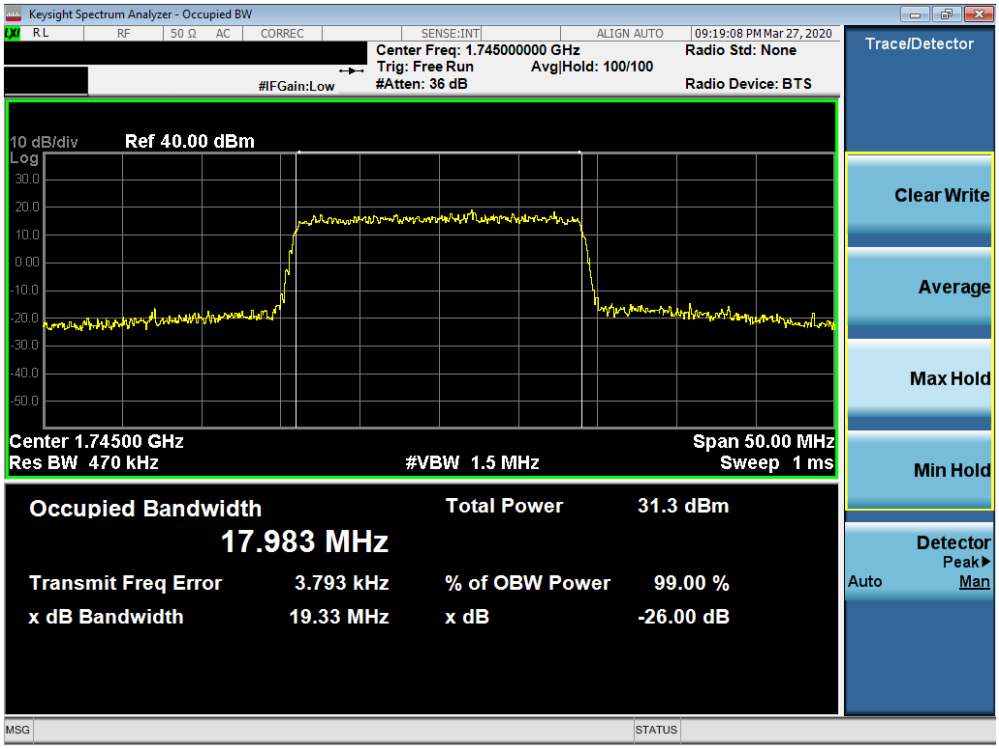
Plot 7-98. Occupied Bandwidth Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)



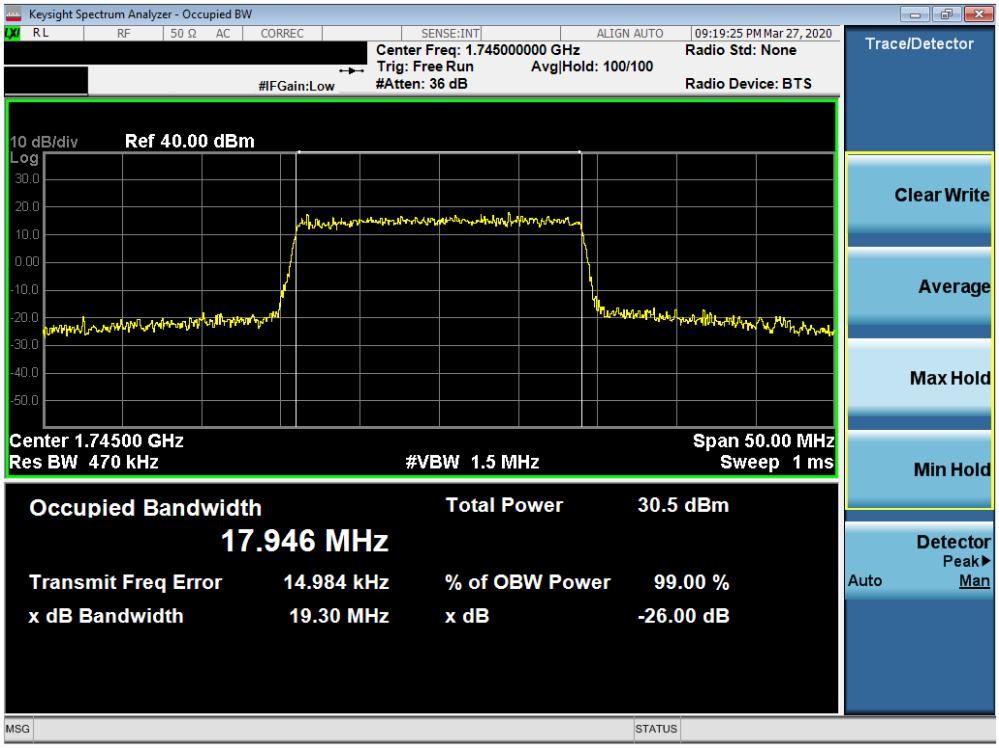
Plot 7-99. Occupied Bandwidth Plot (Band 66/4 - 15.0MHz 16-QAM - Full RB Configuration)



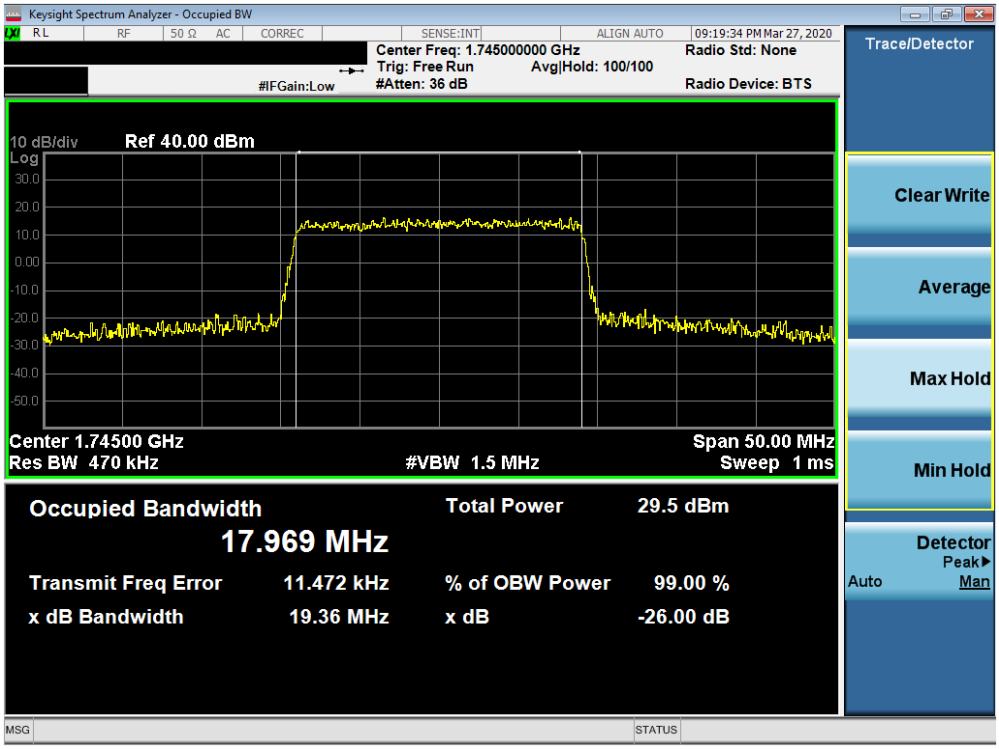
Plot 7-100. Occupied Bandwidth Plot (Band 66/4 - 15.0MHz 64-QAM - Full RB Configuration)



Plot 7-101. Occupied Bandwidth Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

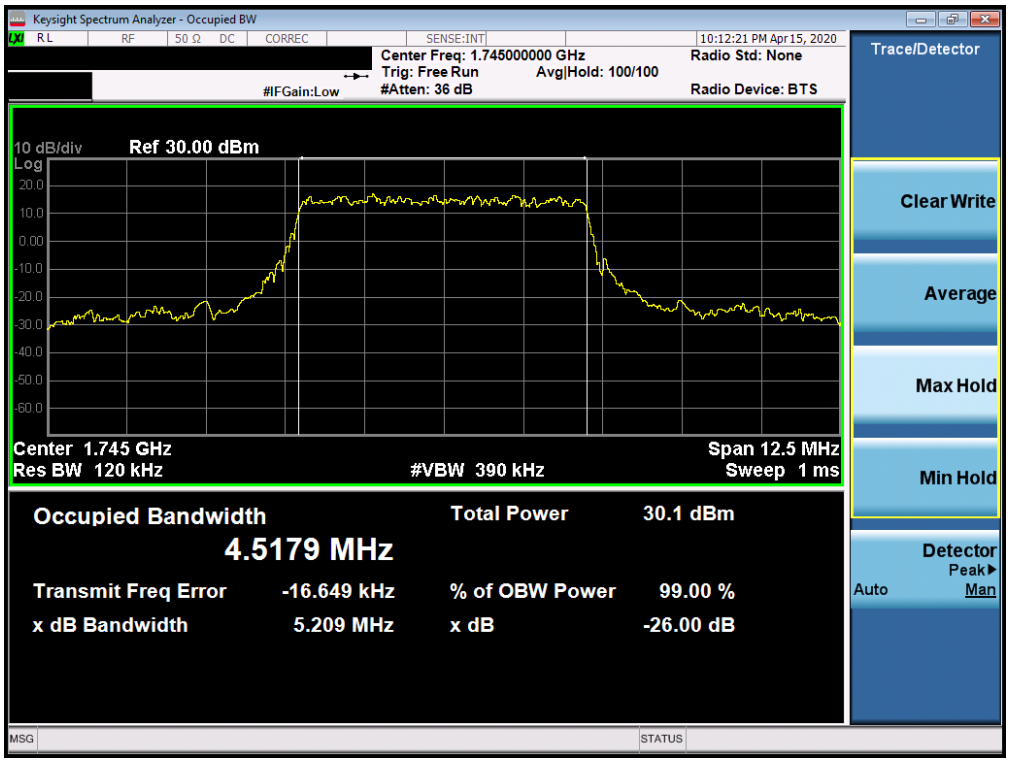


Plot 7-102. Occupied Bandwidth Plot (Band 66/4 - 20.0MHz 16-QAM - Full RB Configuration)

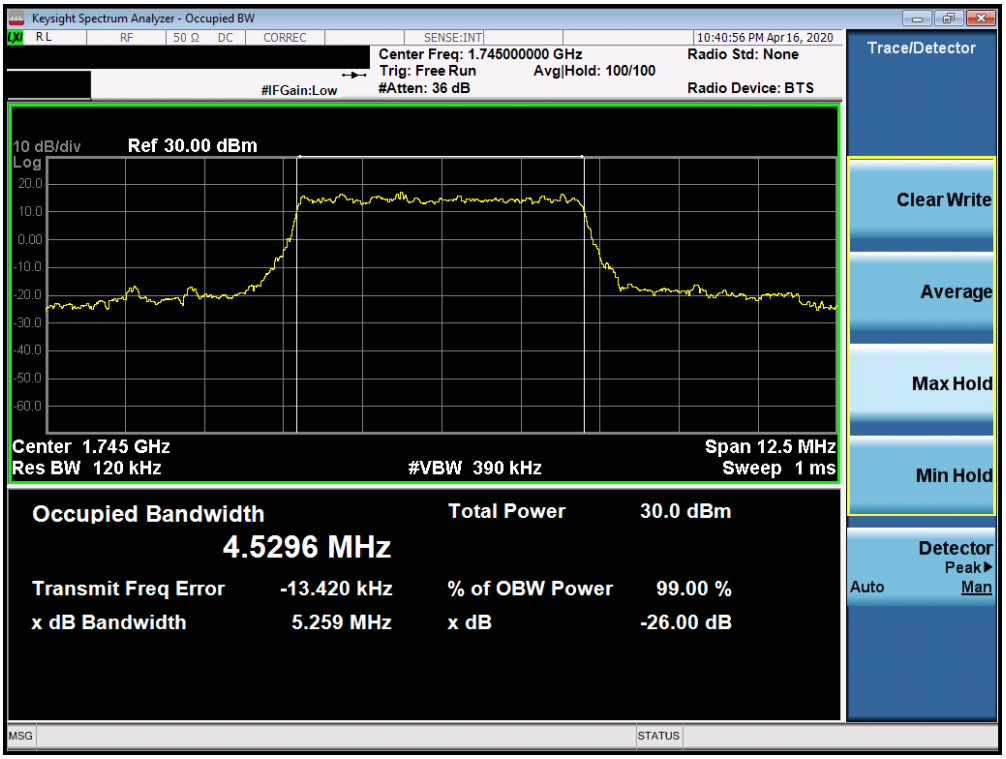


Plot 7-103. Occupied Bandwidth Plot (Band 66/4 - 20.0MHz 64-QAM - Full RB Configuration)

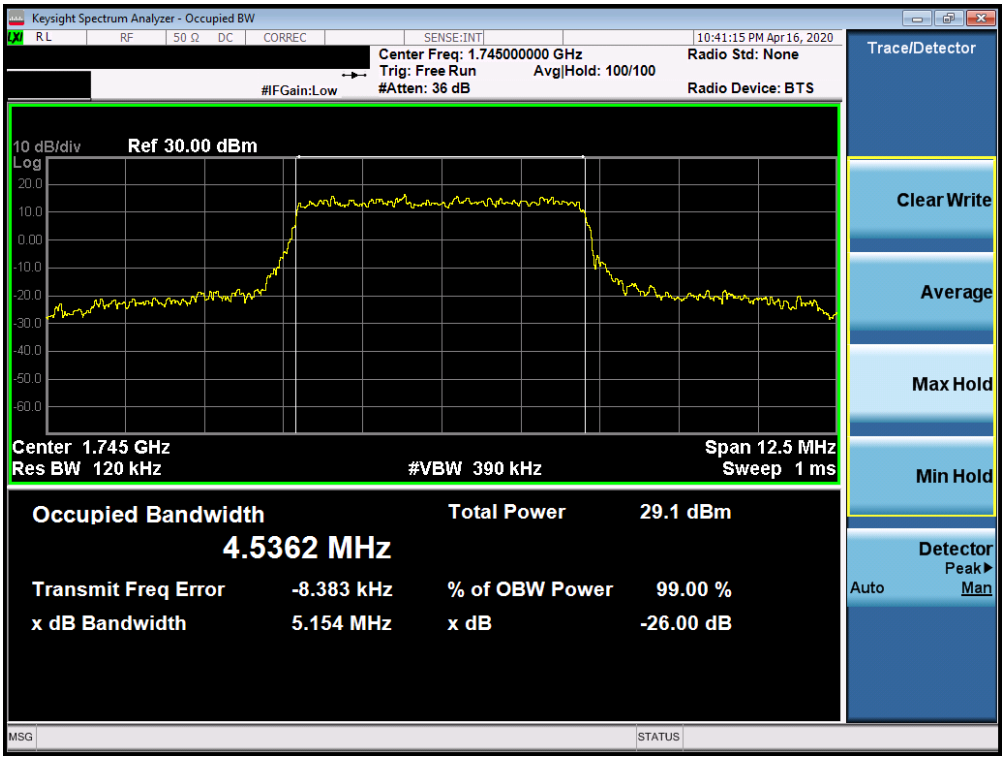
NR Band n66



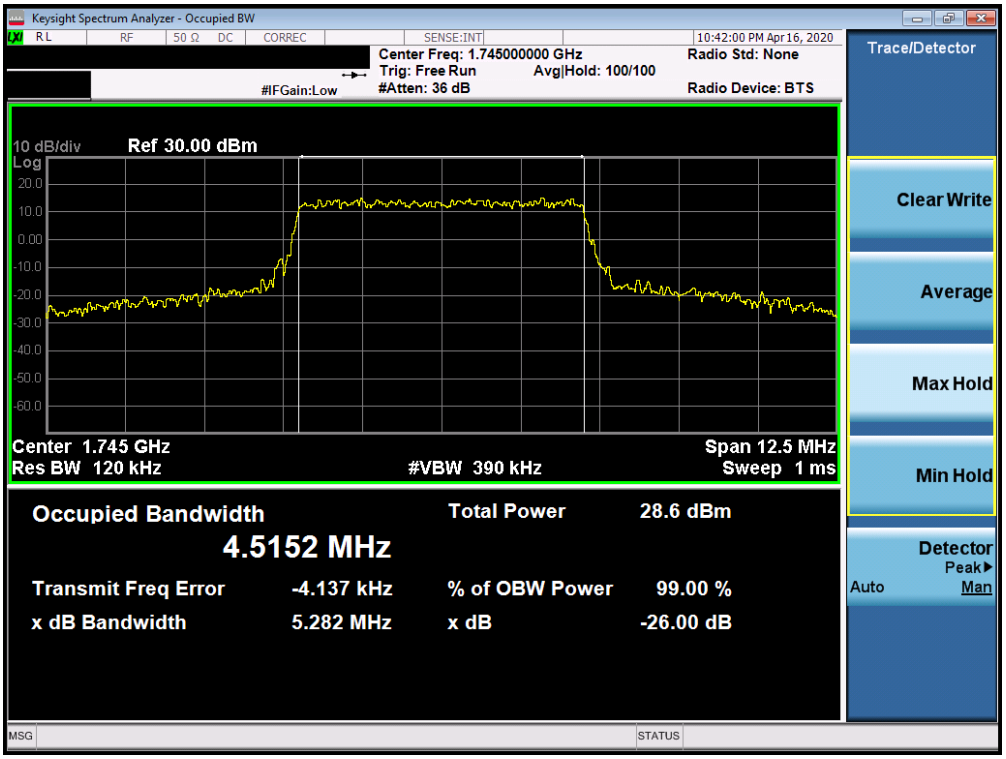
Plot 7-104. Occupied Bandwidth Plot (n66 5MHz BPSK-DFT-s-OFDM - Full RB Configuration)



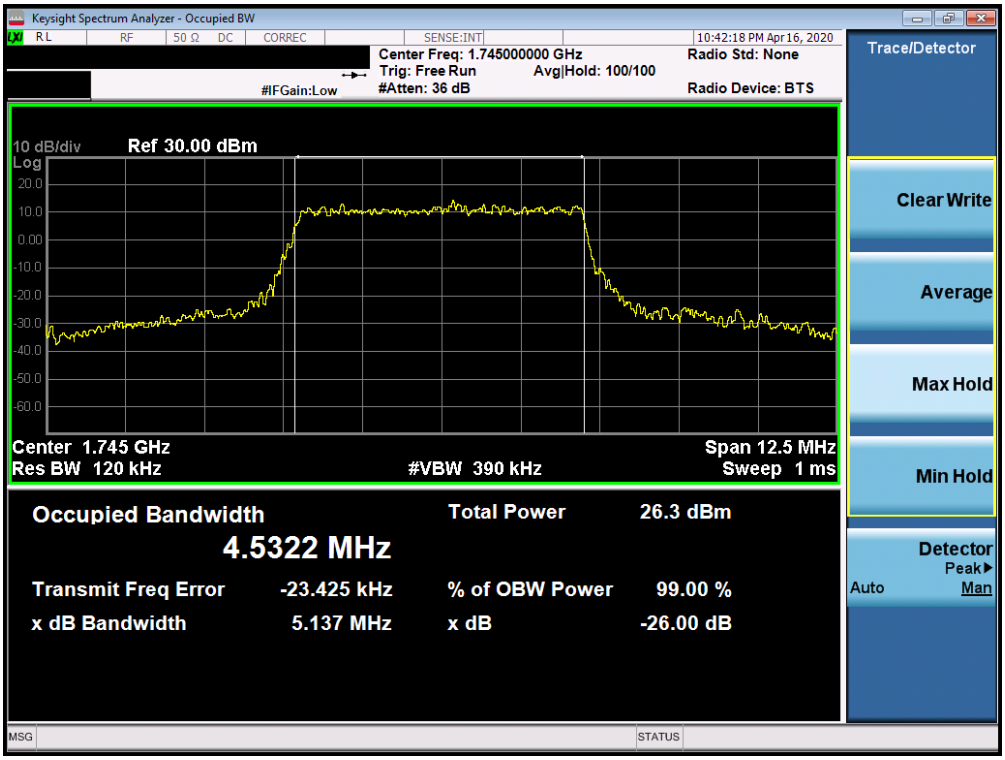
Plot 7-105. Occupied Bandwidth Plot (n66 5MHz QPSK-CP-OFDM - Full RB Configuration)



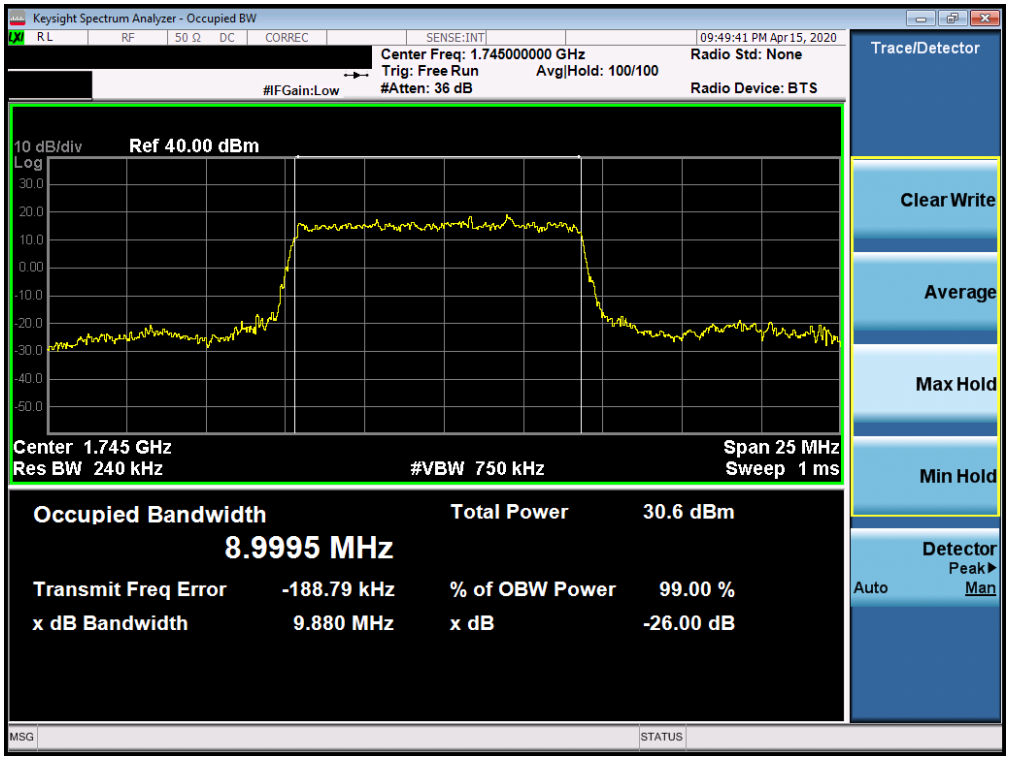
Plot 7-106. Occupied Bandwidth Plot (n66 5MHz 16QAM-CP-OFDM - Full RB Configuration)



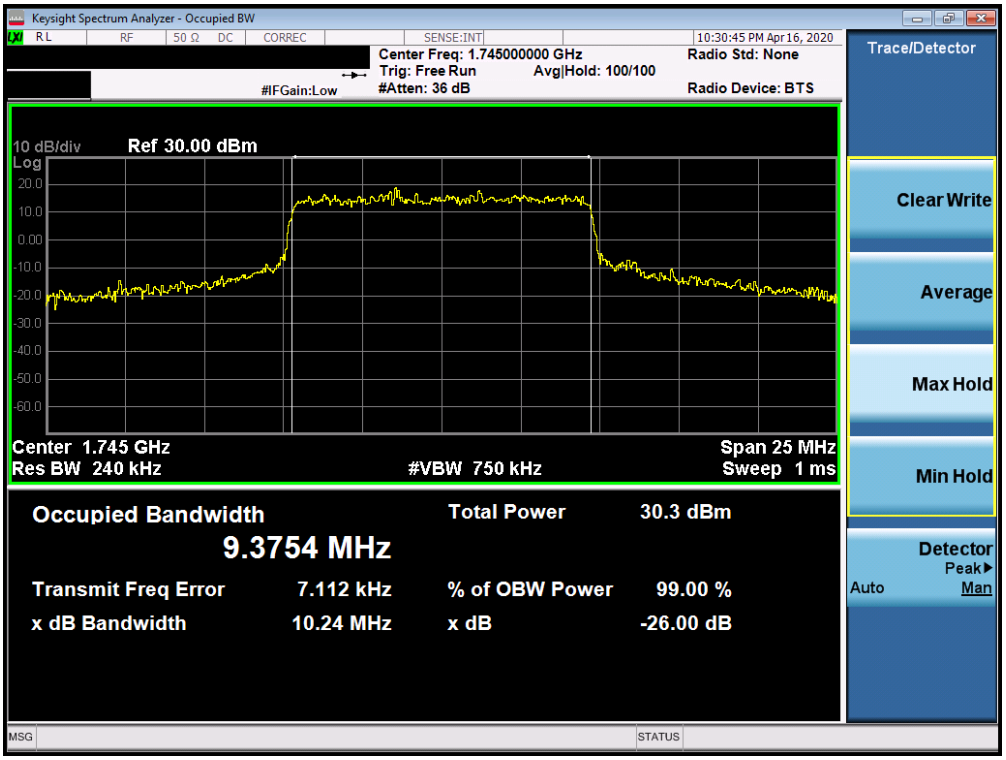
Plot 7-107. Occupied Bandwidth Plot (n66 5MHz 64QAM-CP-OFDM- Full RB Configuration)



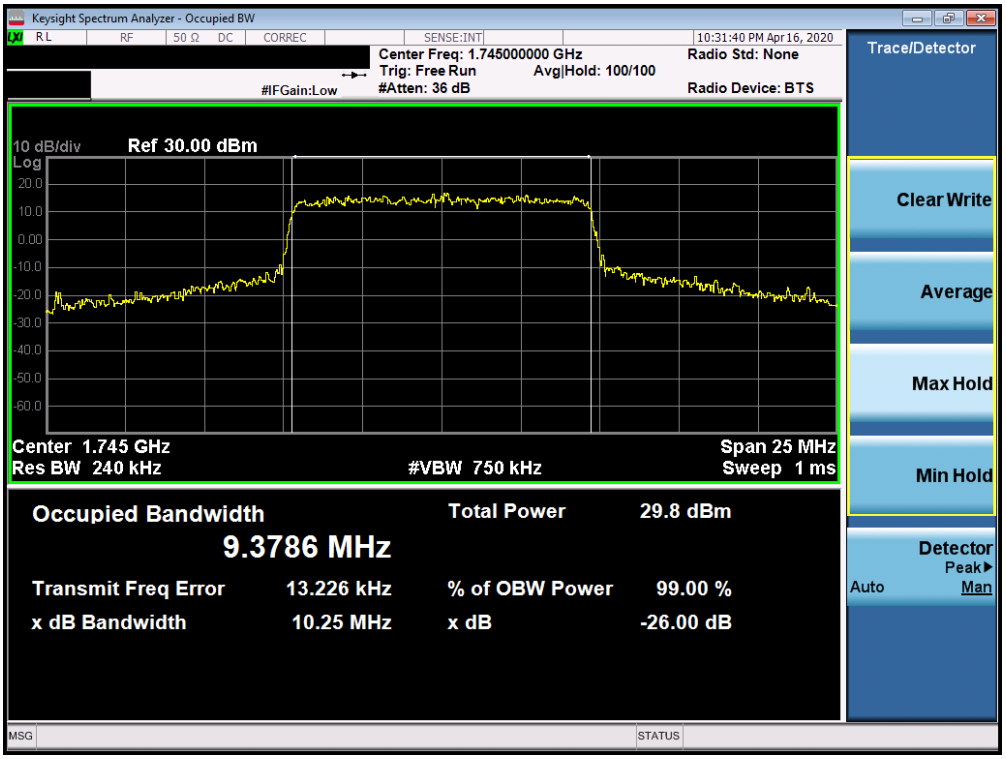
Plot 7-108. Occupied Bandwidth Plot (n66 5MHz 256QAM-CP-OFDM - Full RB Configuration)



Plot 7-109. Occupied Bandwidth Plot (n66 10MHz BPSK-DFT-s-OFDM - Full RB Configuration)



Plot 7-110. Occupied Bandwidth Plot (n66 10MHz QPSK-CP-OFDM - Full RB Configuration)



Plot 7-111. Occupied Bandwidth Plot (n66 10MHz 16QAM-CP-OFDM - Full RB Configuration)