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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:
4/26 - 07/29/2020
Test Site/Location:
PCTEST Lab. Columbia, MD, USA
Test Report Serial No.:
1M2004230075-03-R1.A3L

FCC ID:	**A3LSMT978U**
APPLICANT:	**Samsung Electronics Co., Ltd.**

Application Type:	Certification
Model:	SM-T978U
EUT Type:	Portable Tablet
FCC Classification:	PCS Licensed Transmitter (PCB)
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.

This revised Test Report (S/N: 1M2004230075-03-R1.A3L) 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 of it 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.

Randy Ortanez
President

ACCREDITED
CERT #2041.01

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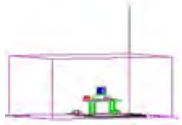
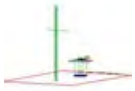


MEASUREMENT REPORT
FCC Part 22, 24, & 27



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	0.081	19.11			4M50G7D	QPSK
LTE Band 71	27	665.5 - 695.5	0.067	18.28			4M49W7D	16QAM
LTE Band 71	27	665.5 - 695.5	0.046	16.60			4M51W7D	64QAM
LTE Band 71	27	665.5 - 695.5	0.024	13.75			4M49W7D	256QAM
LTE Band 71	27	668 - 693	0.083	19.19			9M03G7D	QPSK
LTE Band 71	27	668 - 693	0.069	18.42			8M98W7D	16QAM
LTE Band 71	27	668 - 693	0.050	16.97			9M01W7D	64QAM
LTE Band 71	27	668 - 693	0.026	14.09			9M00W7D	256QAM
LTE Band 71	27	670.5 - 690.5	0.082	19.16			13M5G7D	QPSK
LTE Band 71	27	670.5 - 690.5	0.069	18.38			13M5W7D	16QAM
LTE Band 71	27	670.5 - 690.5	0.046	16.62			13M5W7D	64QAM
LTE Band 71	27	670.5 - 690.5	0.027	14.28			13M5W7D	256QAM
LTE Band 71	27	673 - 688	0.086	19.36			18M0G7D	QPSK
LTE Band 71	27	673 - 688	0.072	18.57			18M0W7D	16QAM
LTE Band 71	27	673 - 688	0.047	16.72			17M9W7D	64QAM
LTE Band 71	27	673 - 688	0.027	14.34			18M0W7D	256QAM
LTE Band 12	27	699.7 - 715.3	0.075	18.78	0.124	20.93	1M09G7D	QPSK
LTE Band 12	27	699.7 - 715.3	0.061	17.87	0.100	20.02	1M10W7D	16QAM
LTE Band 12	27	699.7 - 715.3	0.048	16.85	0.079	19.00	1M09W7D	64QAM
LTE Band 12	27	699.7 - 715.3	0.022	13.41	0.036	15.56	1M09W7D	256QAM
LTE Band 12	27	700.5 - 714.5	0.078	18.91	0.128	21.06	2M70G7D	QPSK
LTE Band 12	27	700.5 - 714.5	0.064	18.07	0.105	20.22	2M70W7D	16QAM
LTE Band 12	27	700.5 - 714.5	0.051	17.04	0.083	19.19	2M70W7D	64QAM
LTE Band 12	27	700.5 - 714.5	0.023	13.55	0.037	15.70	2M70W7D	256QAM
LTE Band 12	27	701.5 - 713.5	0.078	18.90	0.127	21.05	4M50G7D	QPSK
LTE Band 12	27	701.5 - 713.5	0.064	18.05	0.105	20.20	4M50W7D	16QAM
LTE Band 12	27	701.5 - 713.5	0.051	17.08	0.084	19.23	4M51W7D	64QAM
LTE Band 12	27	701.5 - 713.5	0.025	14.06	0.042	16.21	4M50W7D	256QAM
LTE Band 12	27	704 - 711	0.077	18.87	0.126	21.02	9M01G7D	QPSK
LTE Band 12	27	704 - 711	0.064	18.09	0.106	20.24	8M96W7D	16QAM
LTE Band 12	27	704 - 711	0.050	17.03	0.083	19.18	8M97W7D	64QAM
LTE Band 12	27	704 - 711	0.023	13.68	0.038	15.83	8M95W7D	256QAM
LTE Band 13	27	779.5 - 784.5	0.084	19.22	0.137	21.37	4M50G7D	QPSK
LTE Band 13	27	779.5 - 784.5	0.070	18.42	0.114	20.57	4M50W7D	16QAM
LTE Band 13	27	779.5 - 784.5	0.053	17.24	0.087	19.39	4M52W7D	64QAM
LTE Band 13	27	779.5 - 784.5	0.028	14.42	0.045	16.57	4M49W7D	256QAM
LTE Band 13	27	782	0.084	19.24	0.138	21.39	8M94G7D	QPSK
LTE Band 13	27	782	0.071	18.53	0.117	20.68	8M94W7D	16QAM
LTE Band 13	27	782	0.054	17.36	0.089	19.51	8M94W7D	64QAM
LTE Band 13	27	782	0.027	14.25	0.044	16.40	8M94W7D	256QAM
LTE Band 26/5	22H	824.7 - 848.3	0.075	18.74	0.123	20.89	1M09G7D	QPSK
LTE Band 26/5	22H	824.7 - 848.3	0.061	17.84	0.100	19.99	1M10W7D	16QAM
LTE Band 26/5	22H	824.7 - 848.3	0.047	16.77	0.078	18.92	1M10W7D	64QAM
LTE Band 26/5	22H	824.7 - 848.3	0.025	13.99	0.041	16.14	1M09W7D	256QAM
LTE Band 26/5	22H	825.5 - 847.5	0.079	18.95	0.129	21.10	2M70G7D	QPSK
LTE Band 26/5	22H	825.5 - 847.5	0.061	17.88	0.101	20.03	2M71W7D	16QAM
LTE Band 26/5	22H	825.5 - 847.5	0.049	16.93	0.081	19.08	2M70W7D	64QAM
LTE Band 26/5	22H	825.5 - 847.5	0.026	14.18	0.043	16.33	2M70W7D	256QAM
LTE Band 26/5	22H	826.5 - 846.5	0.077	18.84	0.126	20.99	4M50G7D	QPSK
LTE Band 26/5	22H	826.5 - 846.5	0.062	17.94	0.102	20.09	4M51W7D	16QAM
LTE Band 26/5	22H	826.5 - 846.5	0.051	17.05	0.083	19.20	4M52W7D	64QAM
LTE Band 26/5	22H	826.5 - 846.5	0.025	13.91	0.040	16.06	4M50W7D	256QAM
LTE Band 26/5	22H	829 - 844	0.079	18.97	0.129	21.12	9M03G7D	QPSK
LTE Band 26/5	22H	829 - 844	0.067	18.23	0.109	20.38	8M96W7D	16QAM
LTE Band 26/5	22H	829 - 844	0.049	16.87	0.080	19.02	8M99W7D	64QAM
LTE Band 26/5	22H	829 - 844	0.024	13.82	0.040	15.97	8M97W7D	256QAM
LTE Band 26	22H	831.5 - 841.5	0.077	18.87	0.126	21.02	13M5G7D	QPSK
LTE Band 26	22H	831.5 - 841.5	0.065	18.16	0.107	20.31	13M5W7D	16QAM
LTE Band 26	22H	831.5 - 841.5	0.045	16.53	0.074	18.68	13M5W7D	64QAM
LTE Band 26	22H	831.5 - 841.5	0.024	13.81	0.039	15.96	13M5W7D	256QAM

EUT Overview (<1 GHz)

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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		ERP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	Max. Power [W]	Max. Power [dBm]	
NR Band n71	20 MHz	π/2 BPSK	673.0 - 688.0	0.129	21.10	0.078	18.95	17M9G7D
		QPSK	673.0 - 688.0	0.130	21.14	0.079	18.99	18M0G7D
		16QAM	673.0 - 688.0	0.097	19.88	0.059	17.73	17M9W7D
		64QAM	673.0 - 688.0	0.073	18.65	0.045	16.50	17M9W7D
		256QAM	673.0 - 688.0	0.046	16.60	0.028	14.45	17M9W7D
	15 MHz	π/2 BPSK	670.5 - 690.5	0.138	21.39	0.084	19.24	13M5G7D
		QPSK	670.5 - 690.5	0.140	21.46	0.085	19.31	13M5G7D
		16QAM	670.5 - 690.5	0.107	20.30	0.065	18.15	13M5W7D
		64QAM	670.5 - 690.5	0.079	18.98	0.048	16.83	13M5W7D
		256QAM	670.5 - 690.5	0.053	17.23	0.032	15.08	13M5W7D
	10 MHz	π/2 BPSK	668.0 - 693.0	0.136	21.33	0.083	19.18	9M03G7D
		QPSK	668.0 - 693.0	0.134	21.27	0.082	19.12	9M03G7D
		16QAM	668.0 - 693.0	0.102	20.08	0.062	17.93	9M00W7D
		64QAM	668.0 - 693.0	0.074	18.72	0.045	16.57	9M02W7D
		256QAM	668.0 - 693.0	0.051	17.05	0.031	14.90	9M01W7D
	5 MHz	π/2 BPSK	665.5 - 695.5	0.136	21.32	0.083	19.17	4M53G7D
		QPSK	665.5 - 695.5	0.135	21.30	0.082	19.15	4M54G7D
		16QAM	665.5 - 695.5	0.107	20.29	0.065	18.14	4M53W7D
		64QAM	665.5 - 695.5	0.084	19.26	0.051	17.11	4M53W7D
		256QAM	665.5 - 695.5	0.056	17.45	0.034	15.30	4M53W7D

EUT Overview (NR n71)

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	ERP		EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	Max. Power [W]	Max. Power [dBm]	
NR Band n5	20 MHz	π/2 BPSK	834.0 - 839.0	0.107	20.29	0.175	22.44	18M0G7D
		QPSK	834.0 - 839.0	0.103	20.11	0.168	22.26	18M0G7D
		16QAM	834.0 - 839.0	0.081	19.06	0.132	21.21	17M9W7D
		64QAM	834.0 - 839.0	0.059	17.67	0.096	19.82	17M9W7D
		256QAM	834.0 - 839.0	0.038	15.85	0.063	18.00	17M8W7D
	15 MHz	π/2 BPSK	831.5 - 841.5	0.102	20.10	0.168	22.25	13M5G7D
		QPSK	831.5 - 841.5	0.104	20.19	0.171	22.34	13M5G7D
		16QAM	831.5 - 841.5	0.078	18.90	0.127	21.05	13M5W7D
		64QAM	831.5 - 841.5	0.057	17.53	0.093	19.68	13M5W7D
		256QAM	831.5 - 841.5	0.038	15.85	0.063	18.00	13M5W7D
	10 MHz	π/2 BPSK	829.0 - 844.0	0.110	20.42	0.181	22.57	9M03G7D
		QPSK	829.0 - 844.0	0.107	20.31	0.176	22.46	9M02G7D
		16QAM	829.0 - 844.0	0.083	19.21	0.137	21.36	9M00W7D
		64QAM	829.0 - 844.0	0.059	17.70	0.097	19.85	9M01W7D
		256QAM	829.0 - 844.0	0.040	15.98	0.065	18.13	8M97W7D
	5 MHz	π/2 BPSK	826.5 - 846.5	0.102	20.10	0.168	22.25	4M53G7D
		QPSK	826.5 - 846.5	0.102	20.08	0.167	22.23	4M50G7D
		16QAM	826.5 - 846.5	0.080	19.05	0.132	21.20	4M53W7D
		64QAM	826.5 - 846.5	0.058	17.64	0.095	19.79	4M53W7D
		256QAM	826.5 - 846.5	0.038	15.85	0.063	18.00	4M51W7D

EUT Overview (NR n5)

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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	0.217	23.37	1M10G7D	QPSK
LTE Band 66/4	27	1710.7 - 1779.3	0.175	22.42	1M10W7D	16QAM
LTE Band 66/4	27	1710.7 - 1779.3	0.109	20.38	1M10W7D	64QAM
LTE Band 66/4	27	1710.7 - 1779.3	0.097	19.87	1M09W7D	256QAM
LTE Band 66/4	27	1711.5 - 1778.5	0.242	23.83	2M70G7D	QPSK
LTE Band 66/4	27	1711.5 - 1778.5	0.187	22.72	2M70W7D	16QAM
LTE Band 66/4	27	1711.5 - 1778.5	0.113	20.51	2M70W7D	64QAM
LTE Band 66/4	27	1711.5 - 1778.5	0.098	19.90	2M71W7D	256QAM
LTE Band 66/4	27	1712.5 - 1777.5	0.242	23.84	4M52G7D	QPSK
LTE Band 66/4	27	1712.5 - 1777.5	0.182	22.60	4M52W7D	16QAM
LTE Band 66/4	27	1712.5 - 1777.5	0.115	20.60	4M53W7D	64QAM
LTE Band 66/4	27	1712.5 - 1777.5	0.099	19.96	4M50W7D	256QAM
LTE Band 66/4	27	1715 - 1775	0.240	23.80	9M04G7D	QPSK
LTE Band 66/4	27	1715 - 1775	0.170	22.31	8M98W7D	16QAM
LTE Band 66/4	27	1715 - 1775	0.106	20.24	8M99W7D	64QAM
LTE Band 66/4	27	1715 - 1775	0.092	19.64	8M98W7D	256QAM
LTE Band 66/4	27	1717.5 - 1772.5	0.224	23.50	13M5G7D	QPSK
LTE Band 66/4	27	1717.5 - 1772.5	0.169	22.29	13M5W7D	16QAM
LTE Band 66/4	27	1717.5 - 1772.5	0.112	20.50	13M5W7D	64QAM
LTE Band 66/4	27	1717.5 - 1772.5	0.095	19.78	13M5W7D	256QAM
LTE Band 66/4	27	1720 - 1770	0.233	23.67	18M0G7D	QPSK
LTE Band 66/4	27	1720 - 1770	0.205	23.11	18M0W7D	16QAM
LTE Band 66/4	27	1720 - 1770	0.160	22.05	18M0W7D	64QAM
LTE Band 66/4	27	1720 - 1770	0.099	19.94	18M0W7D	256QAM
LTE Band 25/2	24E	1850.7 - 1914.3	0.230	23.62	1M10G7D	QPSK
LTE Band 25/2	24E	1850.7 - 1914.3	0.168	22.25	1M10W7D	16QAM
LTE Band 25/2	24E	1850.7 - 1914.3	0.119	20.76	1M10W7D	64QAM
LTE Band 25/2	24E	1850.7 - 1914.3	0.078	18.92	1M09W7D	256QAM
LTE Band 25/2	24E	1851.5 - 1913.5	0.228	23.57	2M70G7D	QPSK
LTE Band 25/2	24E	1851.5 - 1913.5	0.203	23.07	2M71W7D	16QAM
LTE Band 25/2	24E	1851.5 - 1913.5	0.118	20.72	2M71W7D	64QAM
LTE Band 25/2	24E	1851.5 - 1913.5	0.074	18.70	2M70W7D	256QAM
LTE Band 25/2	24E	1852.5 - 1912.5	0.235	23.71	4M52G7D	QPSK
LTE Band 25/2	24E	1852.5 - 1912.5	0.202	23.05	4M51W7D	16QAM
LTE Band 25/2	24E	1852.5 - 1912.5	0.118	20.73	4M52W7D	64QAM
LTE Band 25/2	24E	1852.5 - 1912.5	0.081	19.07	4M50W7D	256QAM
LTE Band 25/2	24E	1855 - 1910	0.239	23.79	9M03G7D	QPSK
LTE Band 25/2	24E	1855 - 1910	0.202	23.05	8M98W7D	16QAM
LTE Band 25/2	24E	1855 - 1910	0.129	21.09	9M01W7D	64QAM
LTE Band 25/2	24E	1855 - 1910	0.077	18.84	8M99W7D	256QAM
LTE Band 25/2	24E	1857.5 - 1907.5	0.232	23.66	13M5G7D	QPSK
LTE Band 25/2	24E	1857.5 - 1907.5	0.196	22.93	13M5W7D	16QAM
LTE Band 25/2	24E	1857.5 - 1907.5	0.130	21.13	13M5W7D	64QAM
LTE Band 25/2	24E	1857.5 - 1907.5	0.074	18.67	13M5W7D	256QAM
LTE Band 25/2	24E	1860 - 1905	0.236	23.72	18M0G7D	QPSK
LTE Band 25/2	24E	1860 - 1905	0.198	22.97	18M0W7D	16QAM
LTE Band 25/2	24E	1860 - 1905	0.127	21.02	17M9W7D	64QAM
LTE Band 25/2	24E	1860 - 1905	0.073	18.65	18M0W7D	256QAM

EUT Overview (Mid Bands)

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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
NR Band n66	20 MHz	π/2 BPSK	1720 - 1770	0.294	24.68	18M0G7D
		QPSK	1720 - 1770	0.298	24.75	19M0G7D
		16QAM	1720 - 1770	0.235	23.71	19M0W7D
		64QAM	1720 - 1770	0.161	22.07	19M0W7D
		256QAM	1720 - 1770	0.108	20.34	19M0W7D
	15 MHz	π/2 BPSK	1717.5 - 1772.5	0.303	24.82	13M5G7D
		QPSK	1717.5 - 1772.5	0.290	24.63	14M1G7D
		16QAM	1717.5 - 1772.5	0.228	23.59	14M2W7D
		64QAM	1717.5 - 1772.5	0.162	22.11	14M2W7D
		256QAM	1717.5 - 1772.5	0.110	20.40	14M2W7D
	10 MHz	π/2 BPSK	1715 - 1775	0.281	24.49	9M00G7D
		QPSK	1715 - 1775	0.293	24.67	9M34G7D
		16QAM	1715 - 1775	0.231	23.63	9M33W7D
		64QAM	1715 - 1775	0.168	22.25	9M32W7D
		256QAM	1715 - 1775	0.114	20.57	9M32W7D
	5 MHz	π/2 BPSK	1712.5 - 1777.5	0.275	24.39	4M48G7D
		QPSK	1712.5 - 1777.5	0.288	24.59	4M49G7D
		16QAM	1712.5 - 1777.5	0.226	23.55	4M50W7D
		64QAM	1712.5 - 1777.5	0.165	22.17	4M50W7D
		256QAM	1712.5 - 1777.5	0.112	20.51	4M49W7D

EUT Overview (NR n66)

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
NR Band n25/2	20 MHz	π/2 BPSK	1860 - 1905	0.329	25.17	18M0G7D
		QPSK	1860 - 1905	0.329	25.18	19M0G7D
		16QAM	1860 - 1905	0.253	24.03	19M0W7D
		64QAM	1860 - 1905	0.191	22.82	19M1W7D
		256QAM	1860 - 1905	0.123	20.90	19M0W7D
	15 MHz	π/2 BPSK	1857.5 - 1907.5	0.333	25.23	13M5G7D
		QPSK	1857.5 - 1907.5	0.341	25.33	14M2G7D
		16QAM	1857.5 - 1907.5	0.282	24.50	14M2W7D
		64QAM	1857.5 - 1907.5	0.191	22.81	14M2W7D
		256QAM	1857.5 - 1907.5	0.121	20.84	14M2W7D
	10 MHz	π/2 BPSK	1855 - 1910	0.364	25.61	8M96G7D
		QPSK	1855 - 1910	0.321	25.06	9M32G7D
		16QAM	1855 - 1910	0.259	24.13	9M33W7D
		64QAM	1855 - 1910	0.196	22.91	9M35W7D
		256QAM	1855 - 1910	0.124	20.92	9M37W7D
	5 MHz	π/2 BPSK	1852.5 - 1912.5	0.333	25.23	4M52G7D
		QPSK	1852.5 - 1912.5	0.320	25.06	4M51G7D
		16QAM	1852.5 - 1912.5	0.247	23.93	4M52W7D
		64QAM	1852.5 - 1912.5	0.192	22.84	4M52W7D
		256QAM	1852.5 - 1912.5	0.122	20.87	4M51W7D

EUT Overview (NR n25/2)

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Mode	FCC Rule Part	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
			Max. Power (W)	Max. Power (dBm)		
LTE Band 7	27	2502.5 - 2567.5	0.127	21.03	4M52G7D	QPSK
LTE Band 7	27	2502.5 - 2567.5	0.110	20.42	4M50W7D	16QAM
LTE Band 7	27	2502.5 - 2567.5	0.100	20.01	4M54W7D	64QAM
LTE Band 7	27	2502.5 - 2567.5	0.042	16.22	4M51W7D	256QAM
LTE Band 7	27	2505 - 2565	0.127	21.04	9M03G7D	QPSK
LTE Band 7	27	2505 - 2565	0.114	20.56	8M97W7D	16QAM
LTE Band 7	27	2505 - 2565	0.086	19.34	9M00W7D	64QAM
LTE Band 7	27	2505 - 2565	0.046	16.61	8M98W7D	256QAM
LTE Band 7	27	2507.5 - 2562.5	0.127	21.05	13M5G7D	QPSK
LTE Band 7	27	2507.5 - 2562.5	0.115	20.62	13M5W7D	16QAM
LTE Band 7	27	2507.5 - 2562.5	0.087	19.37	13M5W7D	64QAM
LTE Band 7	27	2507.5 - 2562.5	0.046	16.63	13M5W7D	256QAM
LTE Band 7	27	2510 - 2560	0.132	21.21	18M0G7D	QPSK
LTE Band 7	27	2510 - 2560	0.113	20.53	18M0W7D	16QAM
LTE Band 7	27	2510 - 2560	0.087	19.41	17M9W7D	64QAM
LTE Band 7	27	2510 - 2560	0.043	16.33	17M9W7D	256QAM
LTE Band 41 (PC2)	27	2498.5 - 2687.5	0.467	26.70	4M51G7D	QPSK
LTE Band 41 (PC2)	27	2498.5 - 2687.5	0.344	25.37	4M53W7D	16QAM
LTE Band 41 (PC2)	27	2498.5 - 2687.5	0.255	24.06	4M53W7D	64QAM
LTE Band 41 (PC2)	27	2498.5 - 2687.5	0.144	21.60	4M50W7D	256QAM
LTE Band 41 (PC2)	27	2501 - 2685	0.473	26.75	9M01G7D	QPSK
LTE Band 41 (PC2)	27	2501 - 2685	0.336	25.26	8M99W7D	16QAM
LTE Band 41 (PC2)	27	2501 - 2685	0.236	23.74	8M99W7D	64QAM
LTE Band 41 (PC2)	27	2501 - 2685	0.129	21.11	8M98W7D	256QAM
LTE Band 41 (PC2)	27	2503.5 - 2682.5	0.463	26.66	13M5G7D	QPSK
LTE Band 41 (PC2)	27	2503.5 - 2682.5	0.320	25.06	13M5W7D	16QAM
LTE Band 41 (PC2)	27	2503.5 - 2682.5	0.248	23.94	13M5W7D	64QAM
LTE Band 41 (PC2)	27	2503.5 - 2682.5	0.131	21.19	13M5W7D	256QAM
LTE Band 41 (PC2)	27	2506 - 2680	0.466	26.68	17M9G7D	QPSK
LTE Band 41 (PC2)	27	2506 - 2680	0.458	26.61	17M9W7D	16QAM
LTE Band 41 (PC2)	27	2506 - 2680	0.268	24.28	17M9W7D	64QAM
LTE Band 41 (PC2)	27	2506 - 2680	0.152	21.82	17M9W7D	256QAM

EUT Overview (High Bands)

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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
NR Band n41	100 MHz	π/2 BPSK	2546.0 - 2640.0	0.330	25.19	97M2G7D
		QPSK	2546.0 - 2640.0	0.337	25.28	96M9G7D
		16QAM	2546.0 - 2640.0	0.246	23.91	97M0W7D
		64QAM	2546.0 - 2640.0	0.188	22.74	96M8W7D
		256QAM	2546.0 - 2640.0	0.122	20.88	96M7W7D
	90 MHz	π/2 BPSK	2541.0 - 2645.0	0.301	24.79	87M2G7D
		QPSK	2541.0 - 2645.0	0.298	24.75	87M6G7D
		16QAM	2541.0 - 2645.0	0.224	23.51	87M7W7D
		64QAM	2541.0 - 2645.0	0.175	22.43	87M6W7D
		256QAM	2541.0 - 2645.0	0.112	20.50	87M6W7D
	80 MHz	π/2 BPSK	2536.0 - 2650.0	0.360	25.56	77M3G7D
		QPSK	2536.0 - 2650.0	0.383	25.83	77M9G7D
		16QAM	2536.0 - 2650.0	0.244	23.88	77M6W7D
		64QAM	2536.0 - 2650.0	0.186	22.69	77M5W7D
		256QAM	2536.0 - 2650.0	0.122	20.86	77M6W7D
	60 MHz	π/2 BPSK	2526.0 - 2660.0	0.339	25.30	58M0G7D
		QPSK	2526.0 - 2660.0	0.363	25.60	58M2G7D
		16QAM	2526.0 - 2660.0	0.265	24.23	58M3W7D
		64QAM	2526.0 - 2660.0	0.201	23.04	58M3W7D
		256QAM	2526.0 - 2660.0	0.132	21.21	58M0W7D
	50 MHz	π/2 BPSK	2521.0 - 2665.0	0.343	25.35	46M1G7D
		QPSK	2521.0 - 2665.0	0.366	25.64	47M6G7D
		16QAM	2521.0 - 2665.0	0.266	24.25	47M6W7D
		64QAM	2521.0 - 2665.0	0.205	23.11	47M8W7D
		256QAM	2521.0 - 2665.0	0.135	21.30	47M7W7D
	40 MHz	π/2 BPSK	2516.0 - 2670.0	0.369	25.67	35M9G7D
		QPSK	2516.0 - 2670.0	0.378	25.78	36M0G7D
		16QAM	2516.0 - 2670.0	0.226	23.55	35M9W7D
		64QAM	2516.0 - 2670.0	0.215	23.33	36M0W7D
		256QAM	2516.0 - 2670.0	0.140	21.45	35M9W7D
	20 MHz	π/2 BPSK	2506.0 - 2680.0	0.346	25.39	18M0G7D
		QPSK	2506.0 - 2680.0	0.356	25.52	18M0G7D
		16QAM	2506.0 - 2680.0	0.220	23.43	18M0W7D
		64QAM	2506.0 - 2680.0	0.206	23.15	18M1W7D
		256QAM	2506.0 - 2680.0	0.129	21.12	18M1W7D

EUT Overview (NR n41)

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1.0 INTRODUCTION

1.1 Scope

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

1.2 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.

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Tablet FCC ID: A3LSMT978U**. The test data contained in this report pertains only to the emissions due to the EUT's LTE function.

Test Device Serial No.: 04097, 03743

2.2 Device Capabilities

This device contains the following capabilities:

850/1700/1900 WCDMA/HSPA, Multi-band LTE, 5G NR (n71, n5, n66, n25, n2, n41), 802.11b/g/n/ac/ax WLAN, 802.11a/n/ac/ax UNII, Bluetooth (1x, EDR, LE)

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 n25 (1850 – 1915 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.

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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.

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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 $_{[Watts]}$).

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.

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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

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5.0 TEST EQUIPMENT CALIBRATION DATA

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

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	LTx2	Licensed Transmitter Cable Set	4/9/2020	Annual	4/9/2021	LTx2
-	LTx3	Licensed Transmitter Cable Set	10/30/2019	Annual	10/30/2020	LTx3
Agilent	N9038A	MXE EMI Receiver	7/17/2019	Annual	7/17/2020	MY51210133
Anritsu	MT8821C	Radio Communication Analyzer	3/10/2020	Annual	3/10/2021	6200901190
Anritsu	MS46322A	Vector Network Analyzer	8/19/2019	Annual	8/19/2020	1521001
Anritsu	36585K-2F	Precision Autocal 2-Port	7/16/2019	Annual	7/16/2020	1628014
Com-Power	AL-130	9kHz - 30MHz Loop Antenna	10/10/2019	Biennial	10/10/2021	121034
EMCO	3160-09	Small Horn (18 - 26.5GHz)	8/9/2018	Biennial	8/9/2020	135427
Espec	ESX-2CA	Environmental Chamber	6/13/2019	Annual	6/13/2020	17620
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	2/14/2019	Biennial	2/14/2021	125518
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	3/12/2020	Biennial	3/12/2022	128337
ETS-Lindgren	3115	Double Ridged Guide Horn 750MHz - 18GHz	3/12/2020	Biennial	3/12/2022	150693
Mini Circuits	TVA-11-422	RF Power Amp	N/A			QA1317001
Mini-Circuits	SSG-4000HP	Synthesized Signal Generator	N/A			11403100002
Rohde & Schwarz	CMU200	Base Station Simulator	N/A			107826
Rohde & Schwarz	CMU200	Base Station Simulator	N/A			836536/0005
Rohde & Schwarz	CMW500	Radio Communication Tester	8/26/2019	Annual	8/26/2020	100976
Rohde & Schwarz	CMW500	Radio Communication Tester	6/26/2019	Annual	6/26/2020	112347
Rohde & Schwarz	TS-PR26	18-26.5 GHz Pre-Amplifier	11/1/2019	Annual	11/1/2020	100040
Rohde & Schwarz	TC-TA18	Cross-Pol Antenna 400MHz-18GHz	12/12/2018	Biennial	12/12/2020	101058
Rohde & Schwarz	SFUNIT-Rx	Shielded Filter Unit	7/11/2019	Annual	7/11/2020	102134
Rohde & Schwarz	SFUNIT-Rx	Shielded Filter Unit	7/8/2019	Annual	7/8/2020	102133
Sunol	DRH-118	Horn Antenna (1-18GHz)	10/3/2019	Biennial	10/3/2021	A050307
Sunol	DRH-118	Horn Antenna (1-18 GHz)	8/27/2019	Biennial	8/27/2021	A042511

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.

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6.0 SAMPLE CALCULATIONS

Emission Designator

QPSK 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).

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7.0 TEST RESULTS

7.1 Summary

Company Name: Samsung Electronics Co., Ltd.

FCC ID: A3LSMT978U

FCC Classification: PCS Licensed Transmitter (PCB)

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) 27.53(m)	Uplink Carrier Aggregation	Undesirable emissions must meet the limits detailed in 22.917(a), 27.53(h), 27.53(m)			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 7.10

Table 7-1. Summary of Conducted Test Results

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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 7.7
27.50(b)(10) 27.50(c)(10)	Effective Radiated Power / Equivalent Isotropic Radiated Power (Band 71, 12, 13)	< 3 Watts max. ERP			Section 7.7
24.232(c) 27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 2/25, 7, 41)	< 2 Watts max. EIRP			Section 7.7
27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4/66)	< 1 Watts max. EIRP			Section 7.7
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 7.8
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 7.8
27.53(m)	Undesirable Emissions (Band 7, 41)	Undesirable emissions must meet the limits detailed in 27.53(m)			Section 7.8
22.917(a) 27.53(h) 27.53(m)	Uplink Carrier Aggregation	Undesirable emissions must meet the limits detailed in 22.917(a), 27.53(h), 27.53(m)			Section 7.8

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.

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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.

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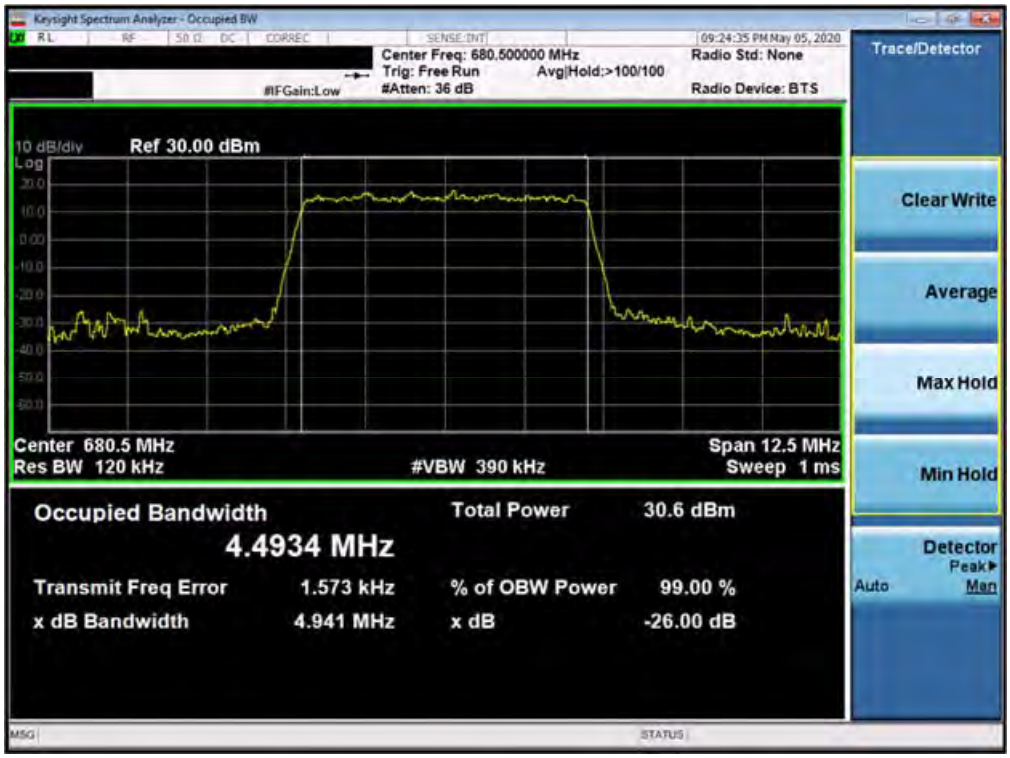
Band 71

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)

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

Plot 7-4. Occupied Bandwidth Plot (Band 71 - 5.0MHz 256-QAM - Full RB Configuration)

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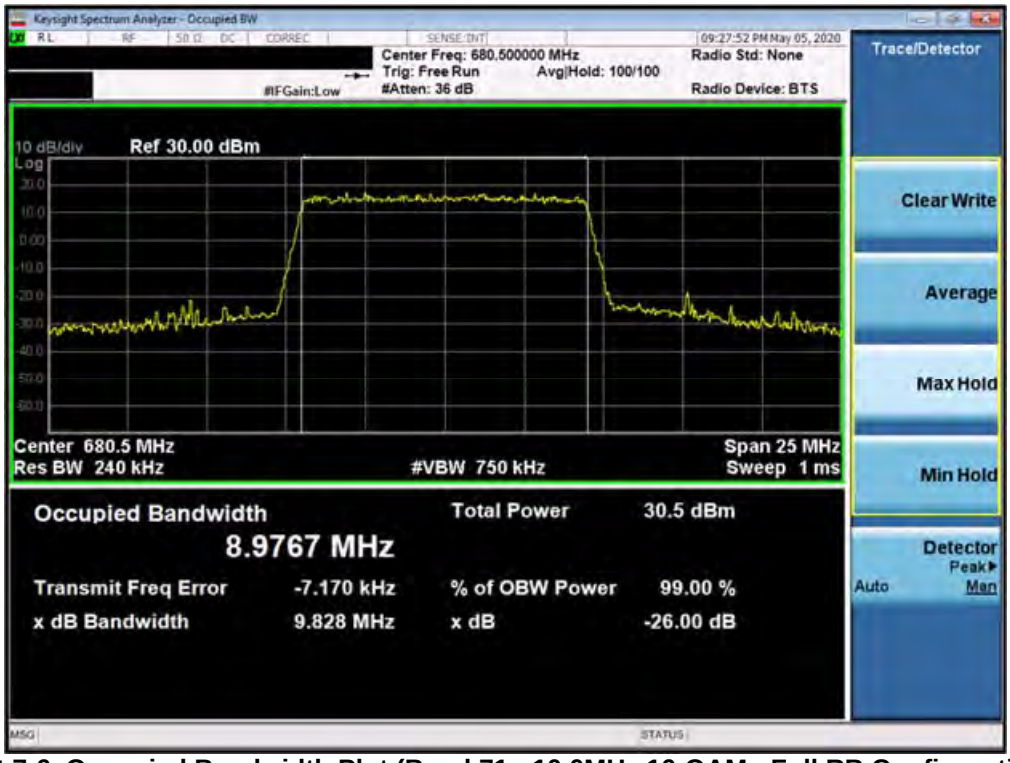
Plot 7-5. Occupied Bandwidth Plot (Band 71 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-6. Occupied Bandwidth Plot (Band 71 - 10.0MHz 16-QAM - Full RB Configuration)

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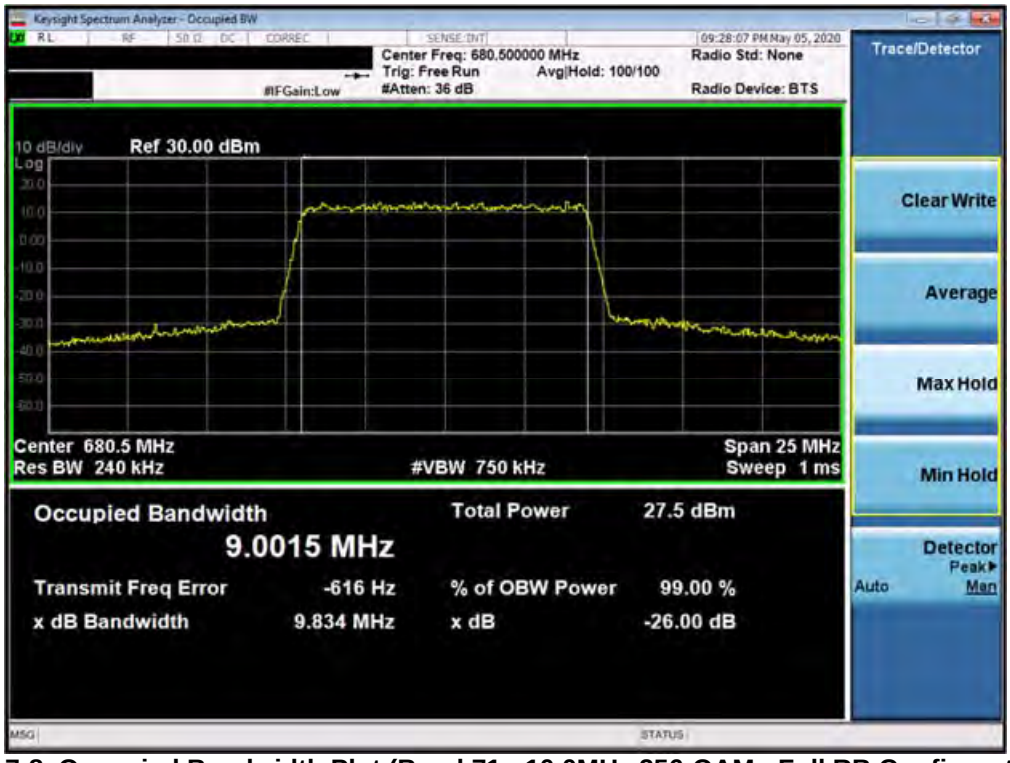
Plot 7-7. Occupied Bandwidth Plot (Band 71 - 10.0MHz 64-QAM - Full RB Configuration)



Plot 7-8. Occupied Bandwidth Plot (Band 71 - 10.0MHz 256-QAM - Full RB Configuration)

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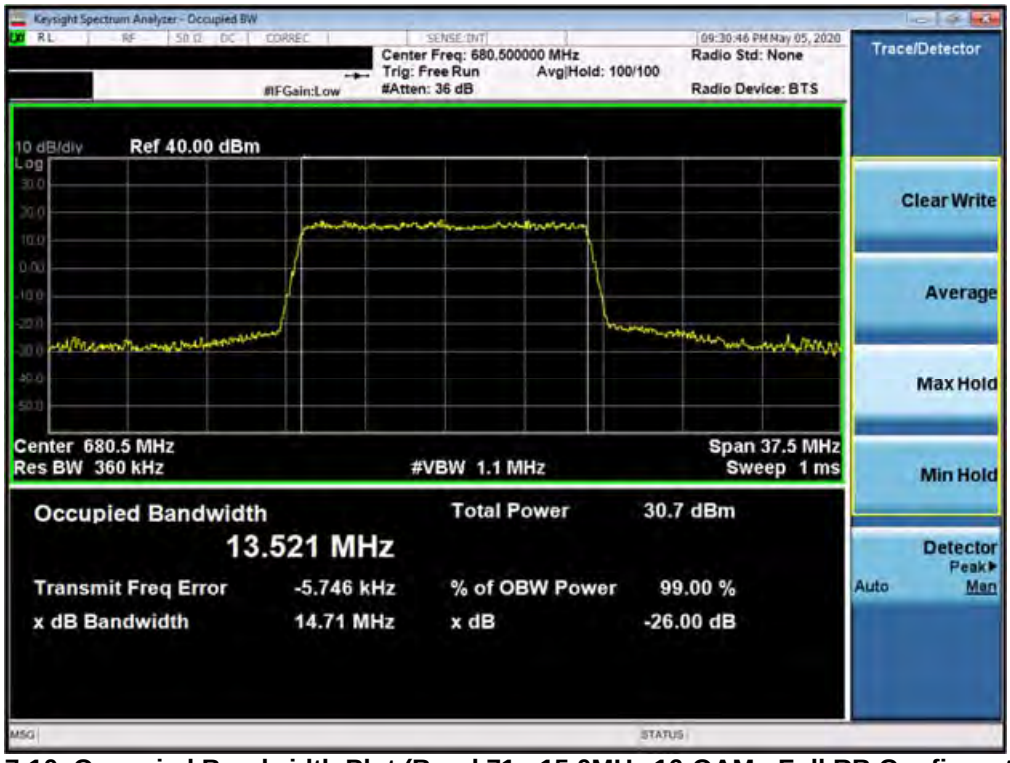
Plot 7-9. Occupied Bandwidth Plot (Band 71 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-10. Occupied Bandwidth Plot (Band 71 - 15.0MHz 16-QAM - Full RB Configuration)

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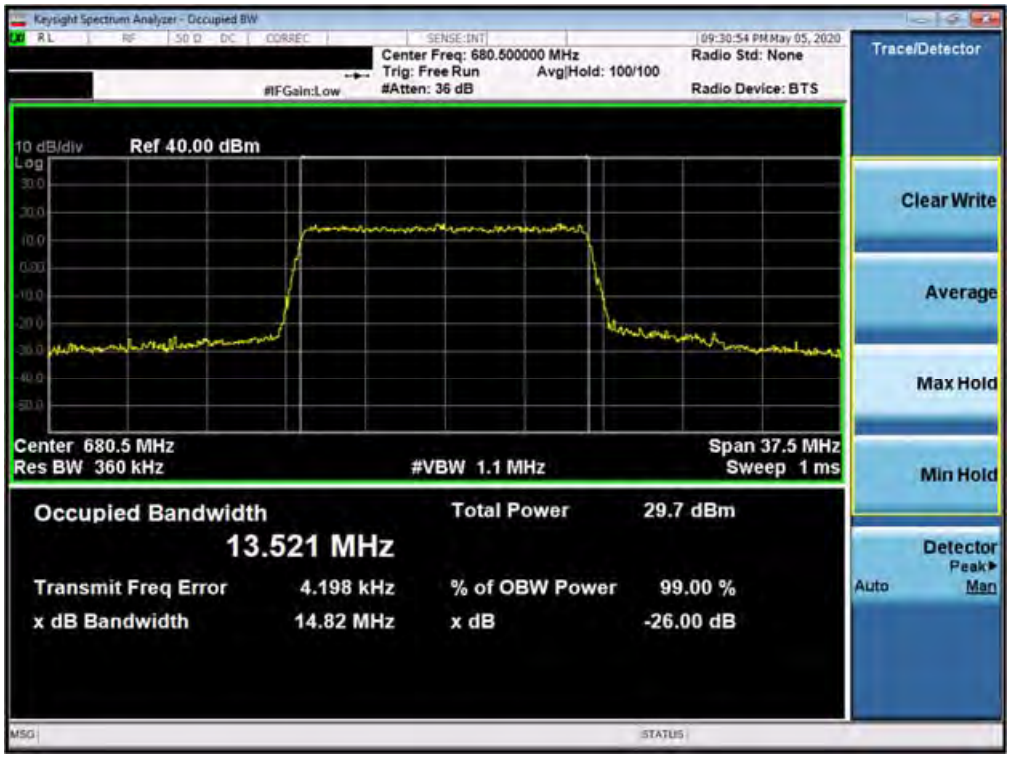

Plot 7-11. Occupied Bandwidth Plot (Band 71 - 15.0MHz 64-QAM - Full RB Configuration)

Plot 7-12. Occupied Bandwidth Plot (Band 71 - 15.0MHz 256-QAM - Full RB Configuration)

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Plot 7-13. Occupied Bandwidth Plot (Band 71 - 20.0MHz QPSK - Full RB Configuration)

Plot 7-14. Occupied Bandwidth Plot (Band 71 - 20.0MHz 16-QAM - Full RB Configuration)

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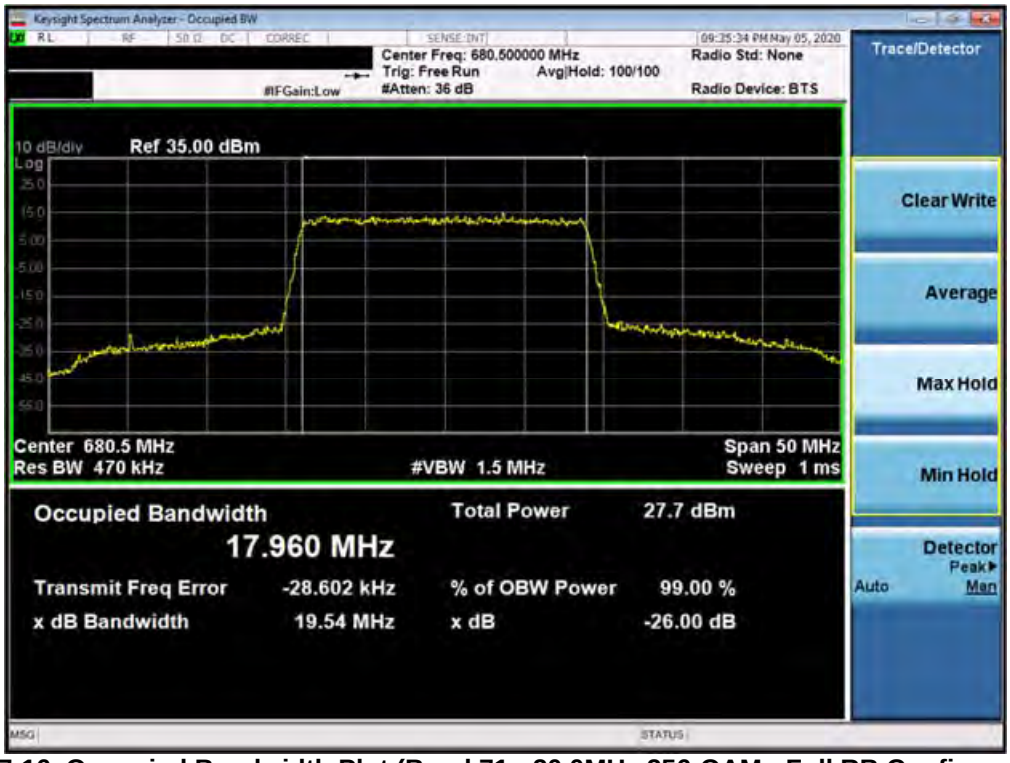
Plot 7-15. Occupied Bandwidth Plot (Band 71 - 20.0MHz 64-QAM - Full RB Configuration)



Plot 7-16. Occupied Bandwidth Plot (Band 71 - 20.0MHz 256-QAM - Full RB Configuration)

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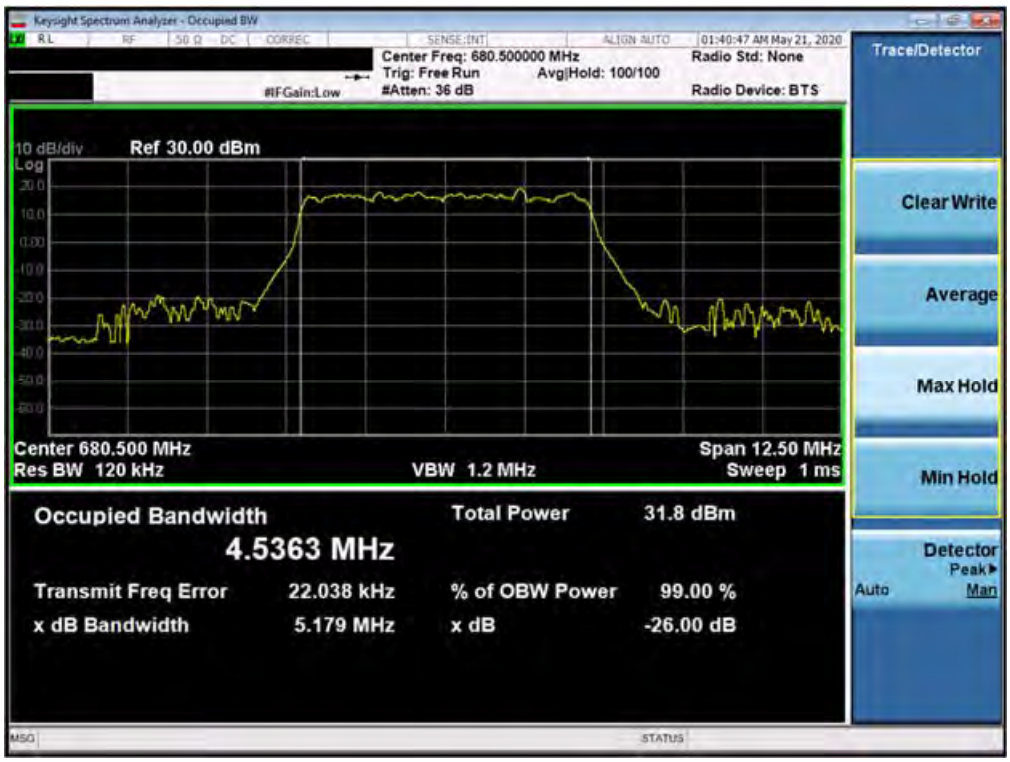
NR Band n71

Plot 7-17. Occupied Bandwidth Plot (n71 5MHz BPSK-DFT-s-OFDM- Full RB Configuration)



Plot 7-18. Occupied Bandwidth Plot (n71 5MHz QPSK-CP-OFDM - Full RB Configuration)

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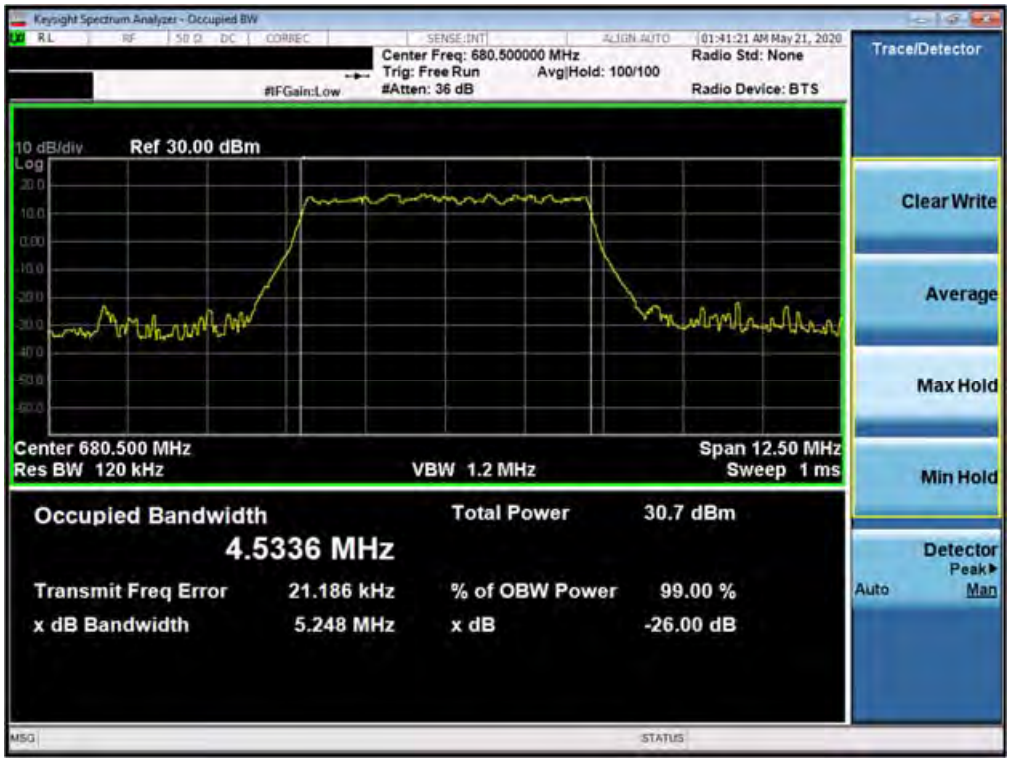
Plot 7-19. Occupied Bandwidth Plot (n71 5MHz 16QAM-CP-OFDM - Full RB Configuration)



Plot 7-20. Occupied Bandwidth Plot (n71 5MHz 64QAM-CP-OFDM- Full RB Configuration)

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Plot 7-21. Occupied Bandwidth Plot (n71 5MHz 256QAM-CP-OFDM- Full RB Configuration)

Plot 7-22. Occupied Bandwidth Plot (n71 10MHz BPSK-DFT-s-OFDM - Full RB Configuration)

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Plot 7-23. Occupied Bandwidth Plot (n71 10MHz QPSK-CP-OFDM - Full RB Configuration)

Plot 7-24. Occupied Bandwidth Plot (n71 10MHz 16QAM-CP-OFDM - Full RB Configuration)

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Plot 7-25. Occupied Bandwidth Plot (n71 10MHz 64QAM-CP-OFDM- Full RB Configuration)

Plot 7-26. Occupied Bandwidth Plot (n71 10MHz 256QAM-CP-OFDM- Full RB Configuration)

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Plot 7-27. Occupied Bandwidth Plot (n71 15MHz BPSK-DFT-s-OFDM - Full RB Configuration)

Plot 7-28. Occupied Bandwidth Plot (n71 15MHz QPSK-CP-OFDM - Full RB Configuration)

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Plot 7-29. Occupied Bandwidth Plot (n71 15MHz 16QAM-CP-OFDM - Full RB Configuration)

Plot 7-30. Occupied Bandwidth Plot (n71 15MHz 64QAM-CP-OFDM- Full RB Configuration)

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Plot 7-31. Occupied Bandwidth Plot (n71 15MHz 256QAM-CP-OFDM- Full RB Configuration)

Plot 7-32. Occupied Bandwidth Plot (n71 20MHz BPSK-DFT-s-OFDM - Full RB Configuration)

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Plot 7-33. Occupied Bandwidth Plot (n71 20MHz QPSK-CP-OFDM - Full RB Configuration)

Plot 7-34. Occupied Bandwidth Plot (n71 20MHz 16QAM-CP-OFDM - Full RB Configuration)

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Plot 7-35. Occupied Bandwidth Plot (n71 20MHz 64QAM-CP-OFDM- Full RB Configuration)

Plot 7-36. Occupied Bandwidth Plot (n71 20MHz 256QAM-CP-OFDM- Full RB Configuration)

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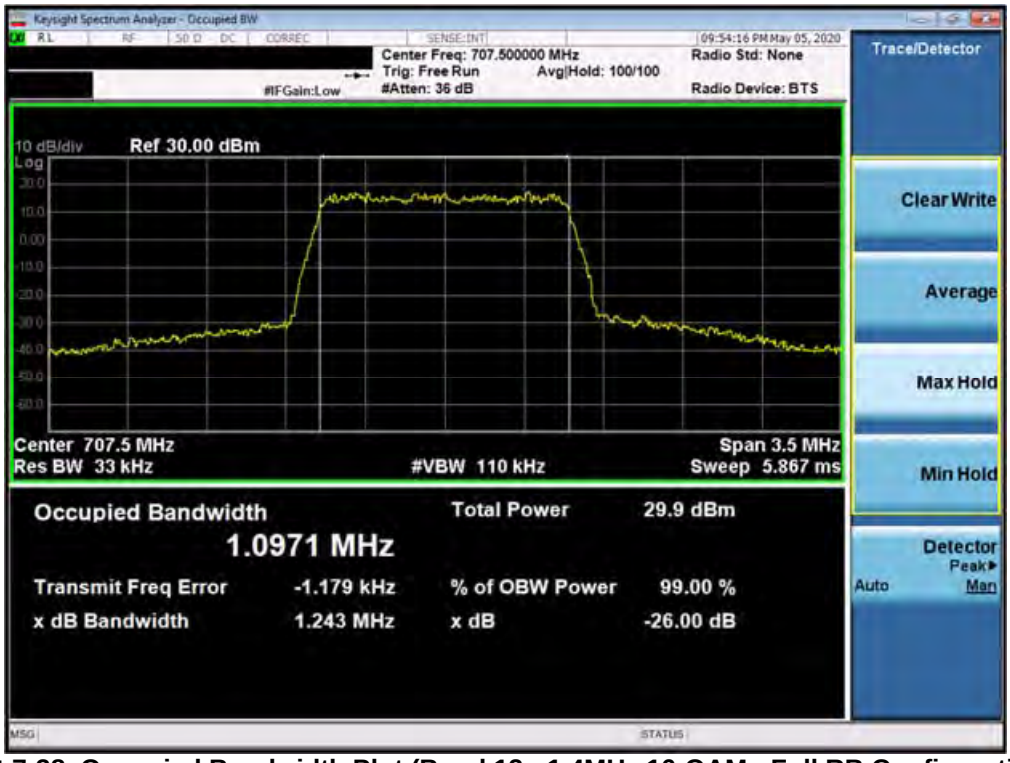
Band 12

Plot 7-37. Occupied Bandwidth Plot (Band 12 - 1.4MHz QPSK - Full RB Configuration)



Plot 7-38. Occupied Bandwidth Plot (Band 12 - 1.4MHz 16-QAM - Full RB Configuration)

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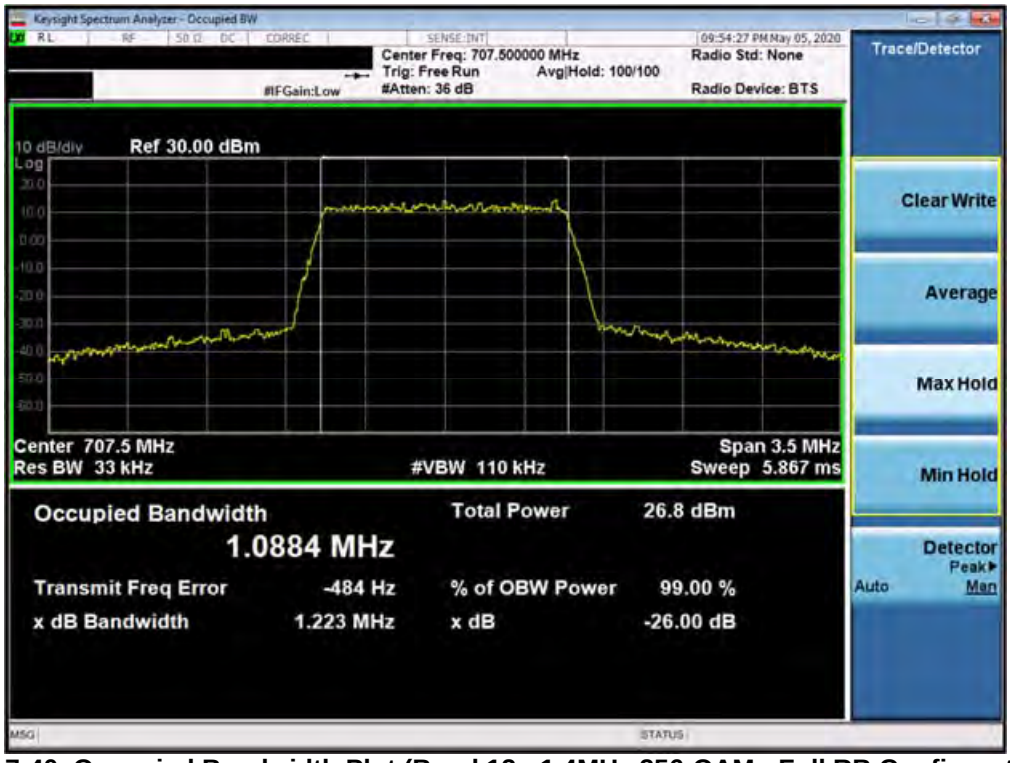
Plot 7-39. Occupied Bandwidth Plot (Band 12 - 1.4MHz 64-QAM - Full RB Configuration)



Plot 7-40. Occupied Bandwidth Plot (Band 12 - 1.4MHz 256-QAM - Full RB Configuration)

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Plot 7-41. Occupied Bandwidth Plot (Band 12 - 3.0MHz QPSK - Full RB Configuration)

Plot 7-42. Occupied Bandwidth Plot (Band 12 - 3.0MHz 16-QAM - Full RB Configuration)

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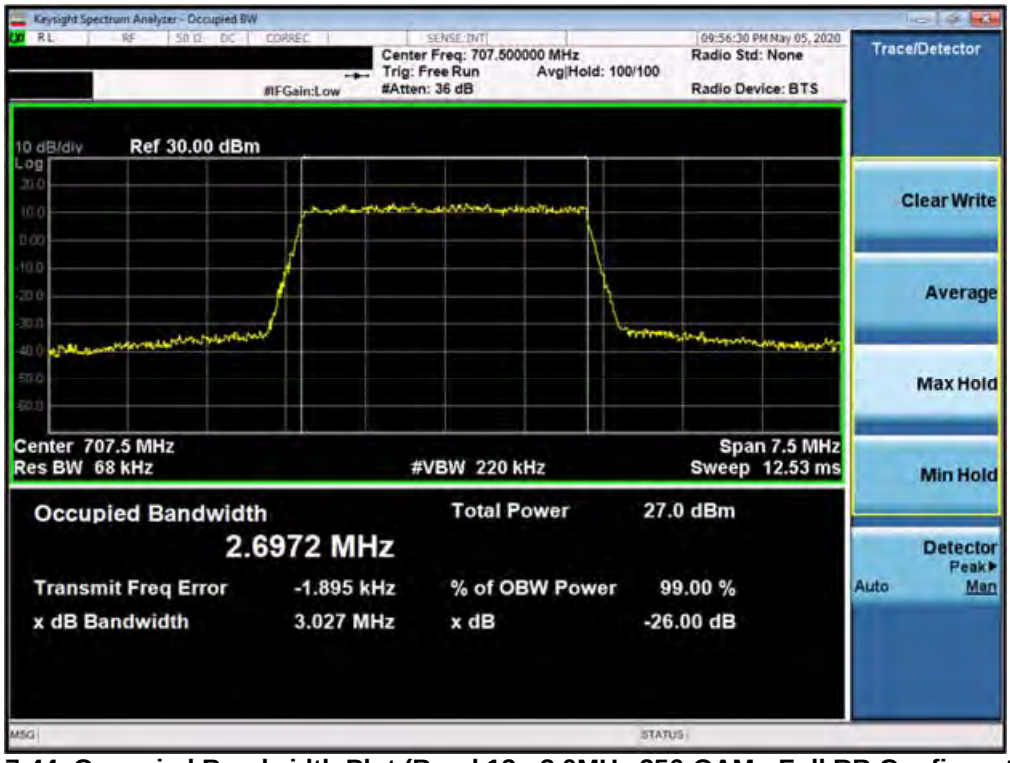
Plot 7-43. Occupied Bandwidth Plot (Band 12 - 3.0MHz 64-QAM - Full RB Configuration)



Plot 7-44. Occupied Bandwidth Plot (Band 12 - 3.0MHz 256-QAM - Full RB Configuration)

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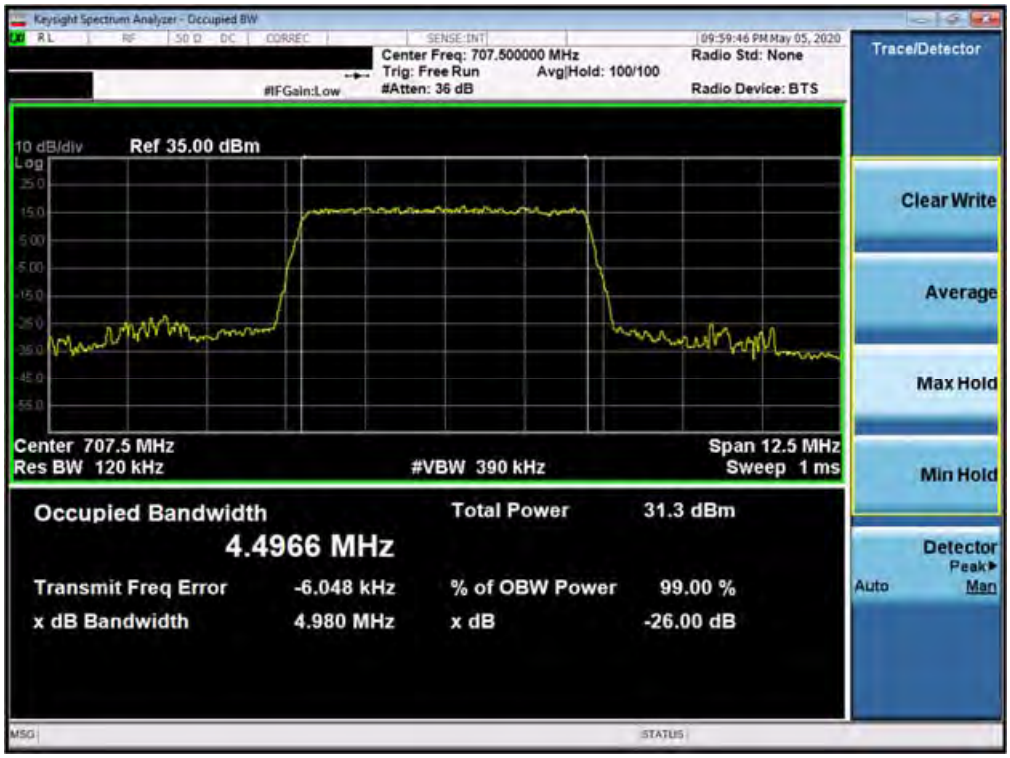
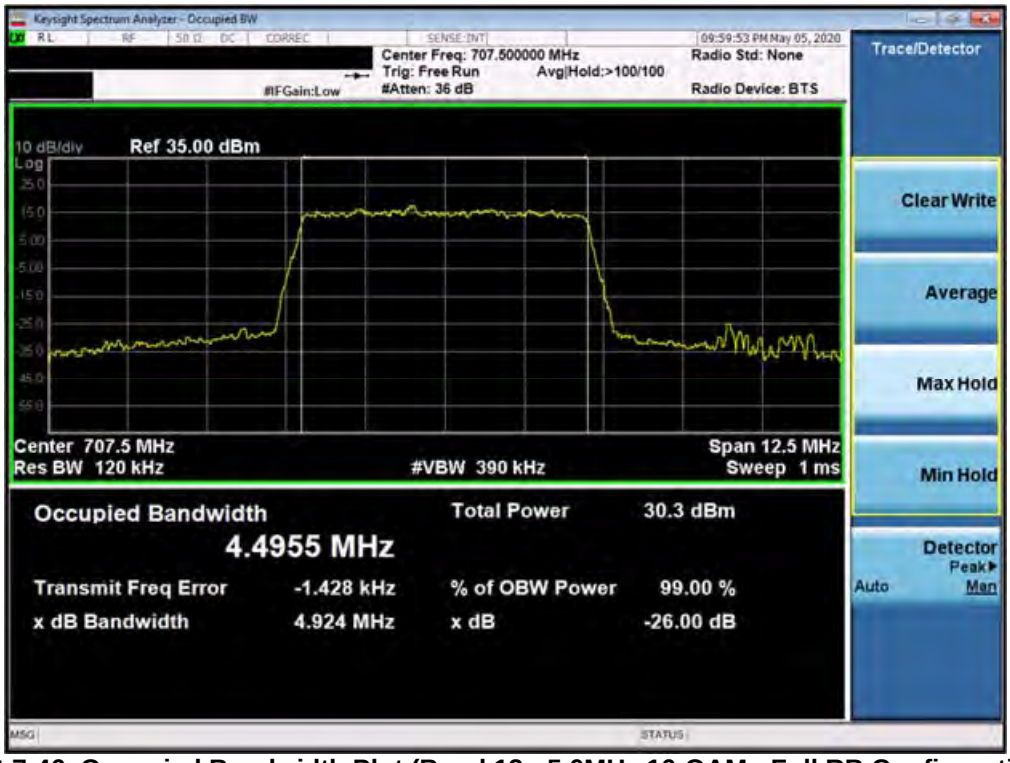


Plot 7-45. Occupied Bandwidth Plot (Band 12 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-46. Occupied Bandwidth Plot (Band 12 - 5.0MHz 16-QAM - Full RB Configuration)

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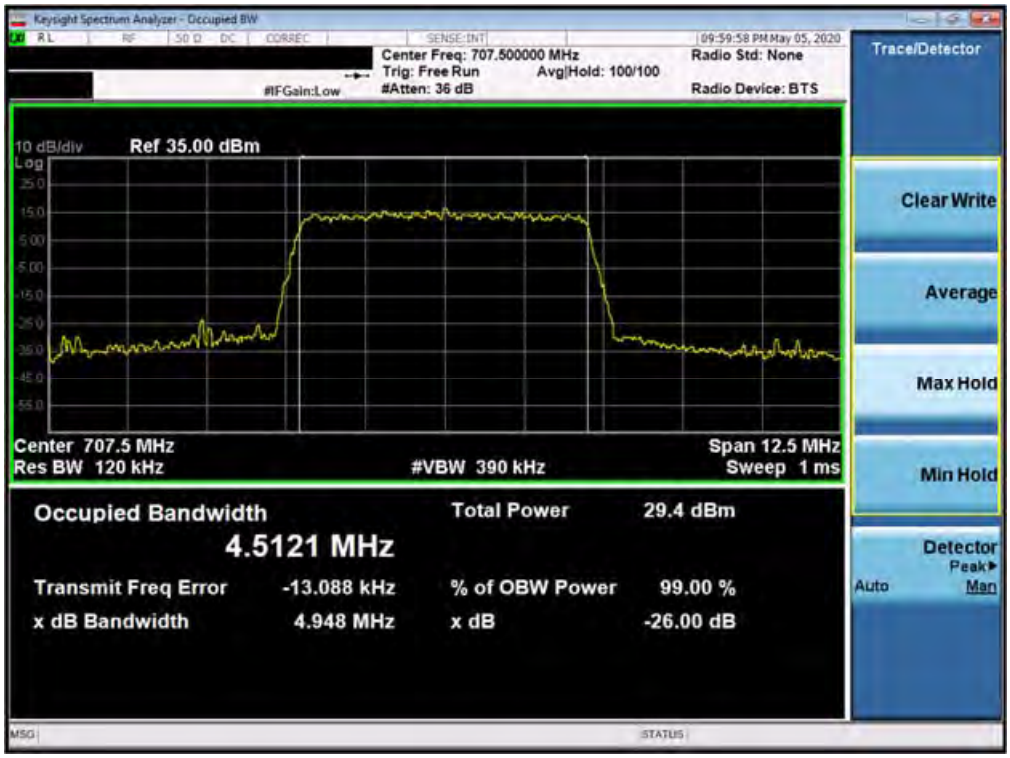
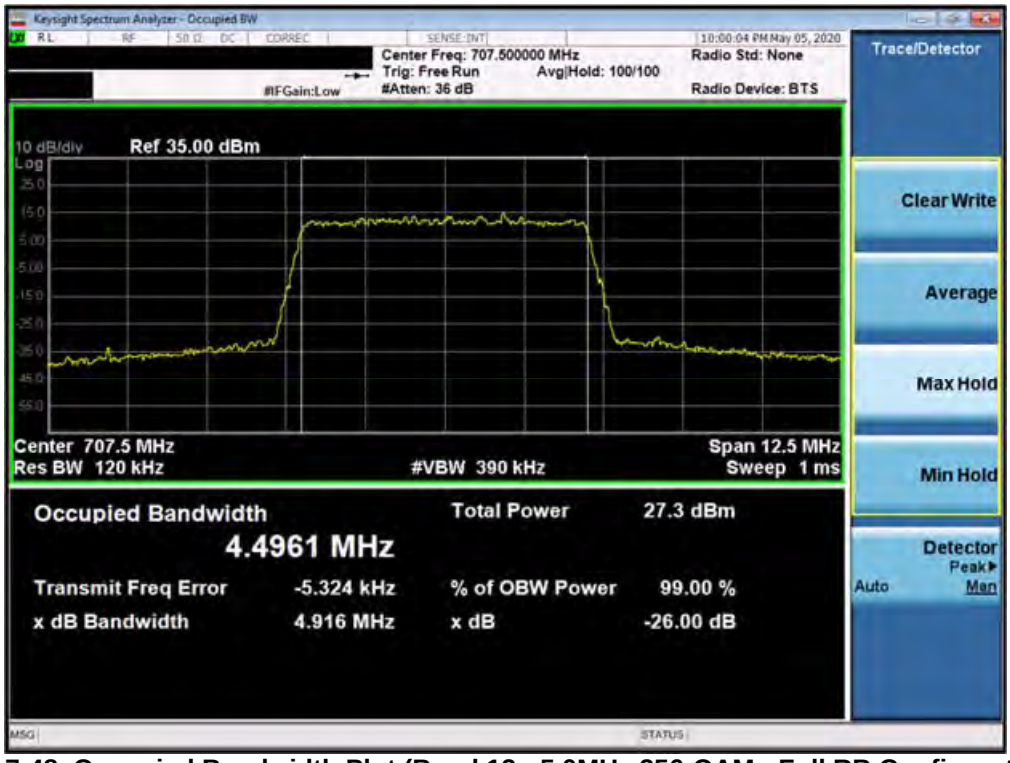


Plot 7-47. Occupied Bandwidth Plot (Band 12 - 5.0MHz 64-QAM - Full RB Configuration)



Plot 7-48. Occupied Bandwidth Plot (Band 12 - 5.0MHz 256-QAM - Full RB Configuration)

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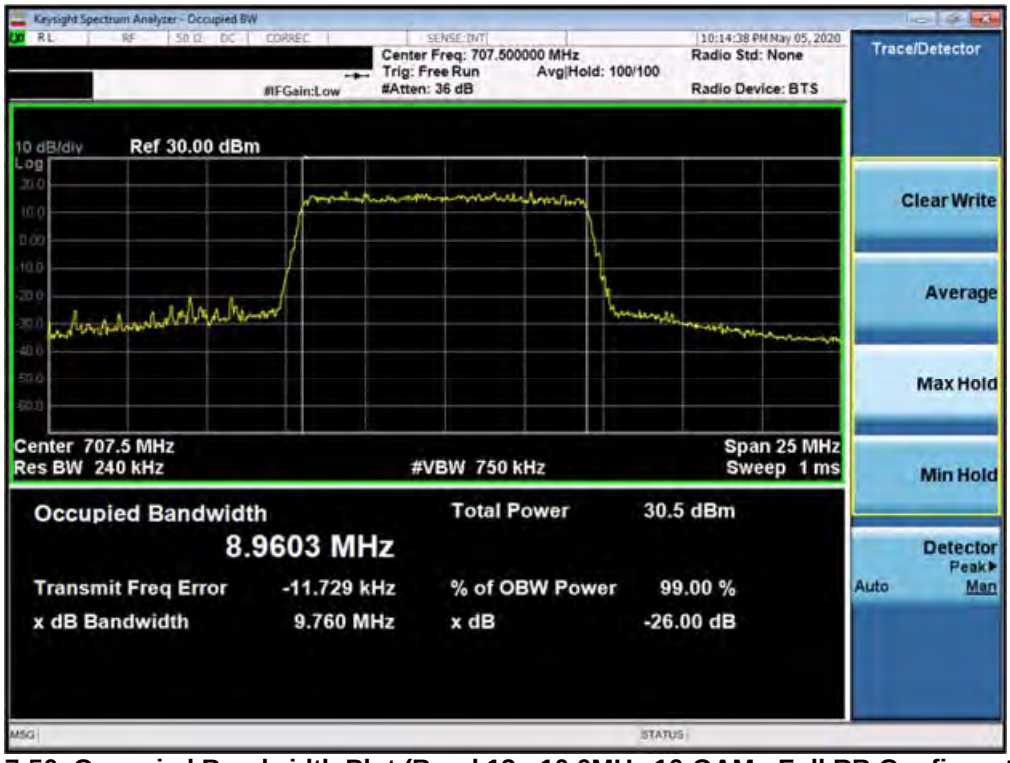
Plot 7-49. Occupied Bandwidth Plot (Band 12 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-50. Occupied Bandwidth Plot (Band 12 - 10.0MHz 16-QAM - Full RB Configuration)

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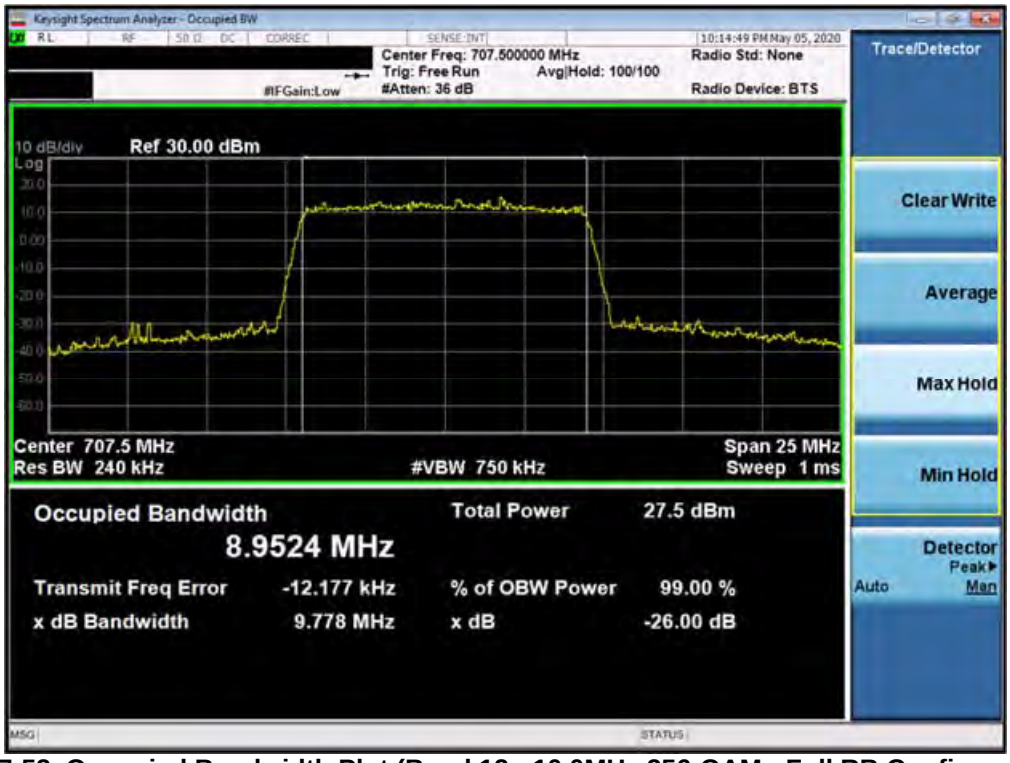
Plot 7-51. Occupied Bandwidth Plot (Band 12 - 10.0MHz 64-QAM - Full RB Configuration)



Plot 7-52. Occupied Bandwidth Plot (Band 12 - 10.0MHz 256-QAM - Full RB Configuration)

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Band 13

Plot 7-53. Occupied Bandwidth Plot (Band 13 - 5.0MHz QPSK - Full RB Configuration)

Plot 7-54. Occupied Bandwidth Plot (Band 13 - 5.0MHz 16-QAM - Full RB Configuration)

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Plot 7-55. Occupied Bandwidth Plot (Band 13 - 5.0MHz 64-QAM - Full RB Configuration)

Plot 7-56. Occupied Bandwidth Plot (Band 13 - 5.0MHz 256-QAM - Full RB Configuration)

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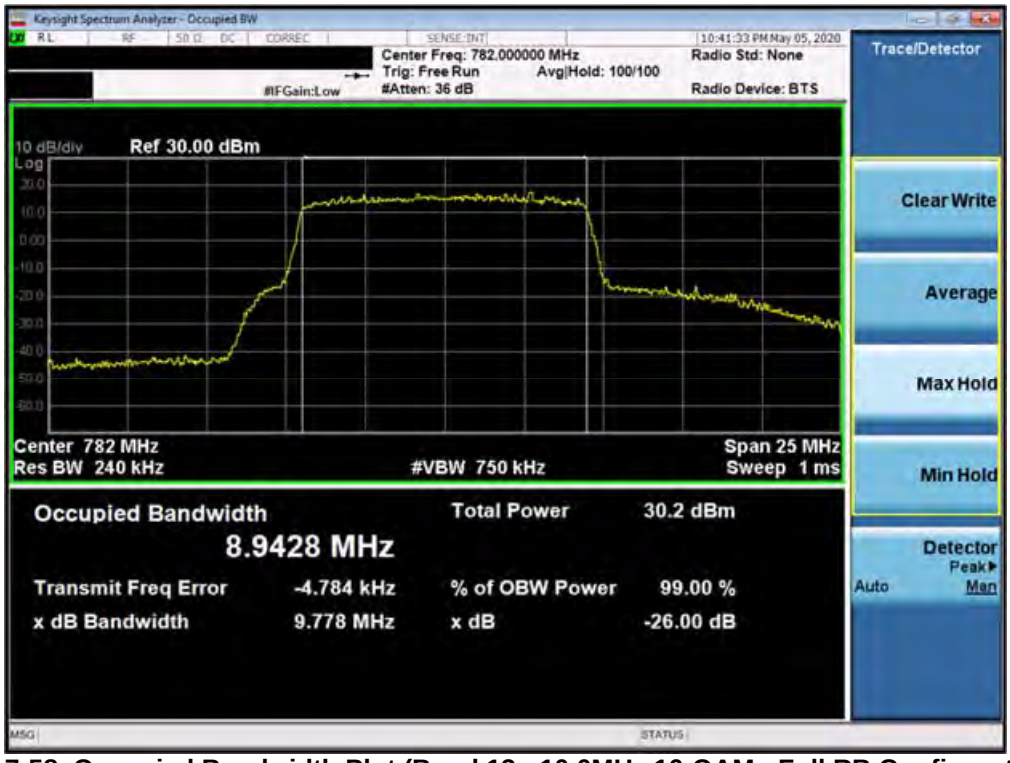
Plot 7-57. Occupied Bandwidth Plot (Band 13 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-58. Occupied Bandwidth Plot (Band 13 - 10.0MHz 16-QAM - Full RB Configuration)

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Plot 7-59. Occupied Bandwidth Plot (Band 13 - 10.0MHz 64-QAM - Full RB Configuration)

Plot 7-60. Occupied Bandwidth Plot (Band 13 - 10.0MHz 256-QAM - Full RB Configuration)

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Band 26/5

Plot 7-61. Occupied Bandwidth Plot (Band 26/5 - 1.4MHz QPSK - Full RB Configuration)

Plot 7-62. Occupied Bandwidth Plot (Band 26/5 - 1.4MHz 16-QAM - Full RB Configuration)

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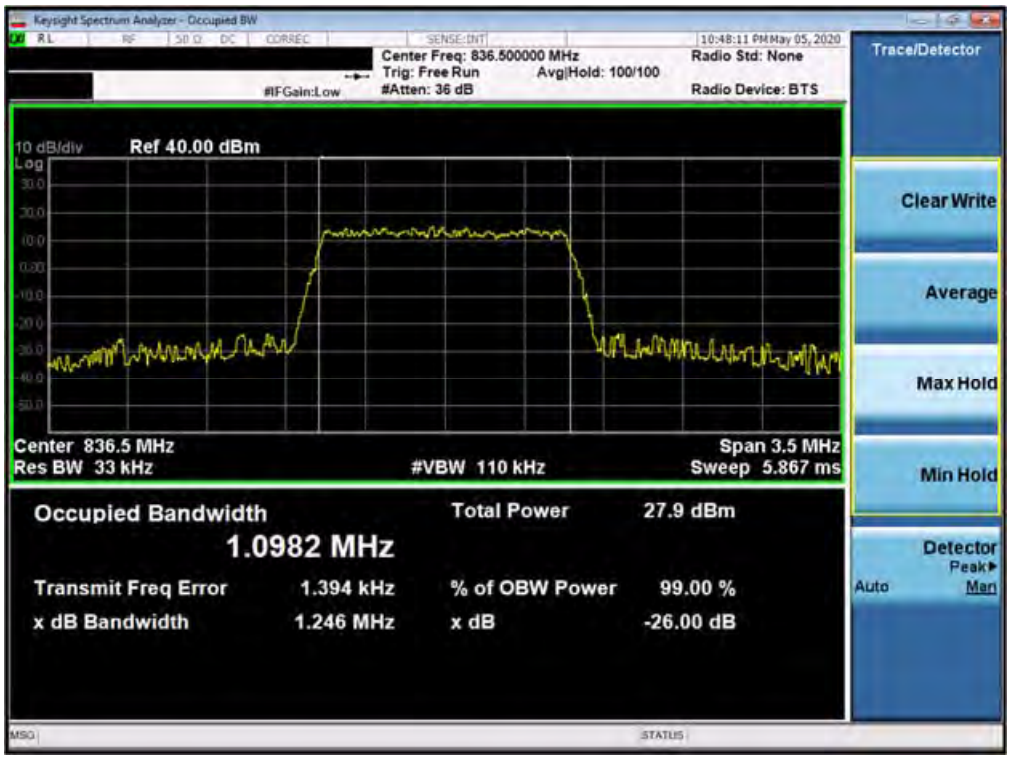

Plot 7-63. Occupied Bandwidth Plot (Band 26/5 - 1.4MHz 64-QAM - Full RB Configuration)

Plot 7-64. Occupied Bandwidth Plot (Band 26/5 - 1.4MHz 256-QAM - Full RB Configuration)

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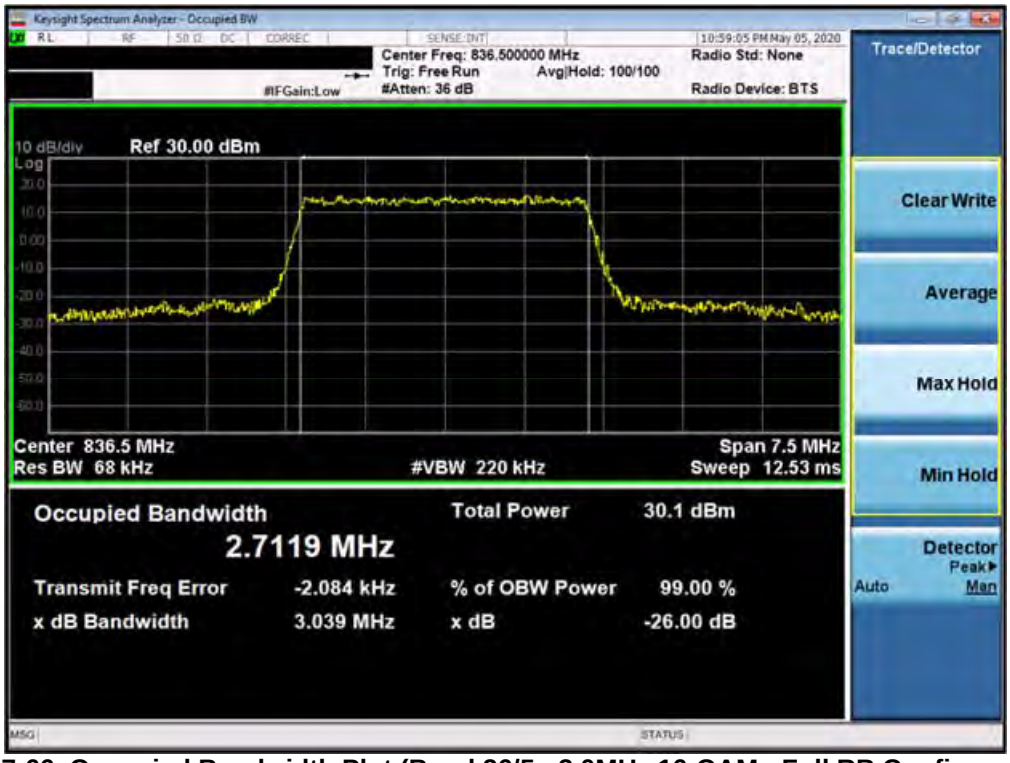
Plot 7-65. Occupied Bandwidth Plot (Band 26/5 - 3.0MHz QPSK - Full RB Configuration)



Plot 7-66. Occupied Bandwidth Plot (Band 26/5 - 3.0MHz 16-QAM - Full RB Configuration)

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Plot 7-67. Occupied Bandwidth Plot (Band 26/5 - 3.0MHz 64-QAM - Full RB Configuration)

Plot 7-68. Occupied Bandwidth Plot (Band 26/5 - 3.0MHz 256-QAM - Full RB Configuration)

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Plot 7-69. Occupied Bandwidth Plot (Band 26/5 - 5.0MHz QPSK - Full RB Configuration)

Plot 7-70. Occupied Bandwidth Plot (Band 26/5 - 5.0MHz 16-QAM - Full RB Configuration)

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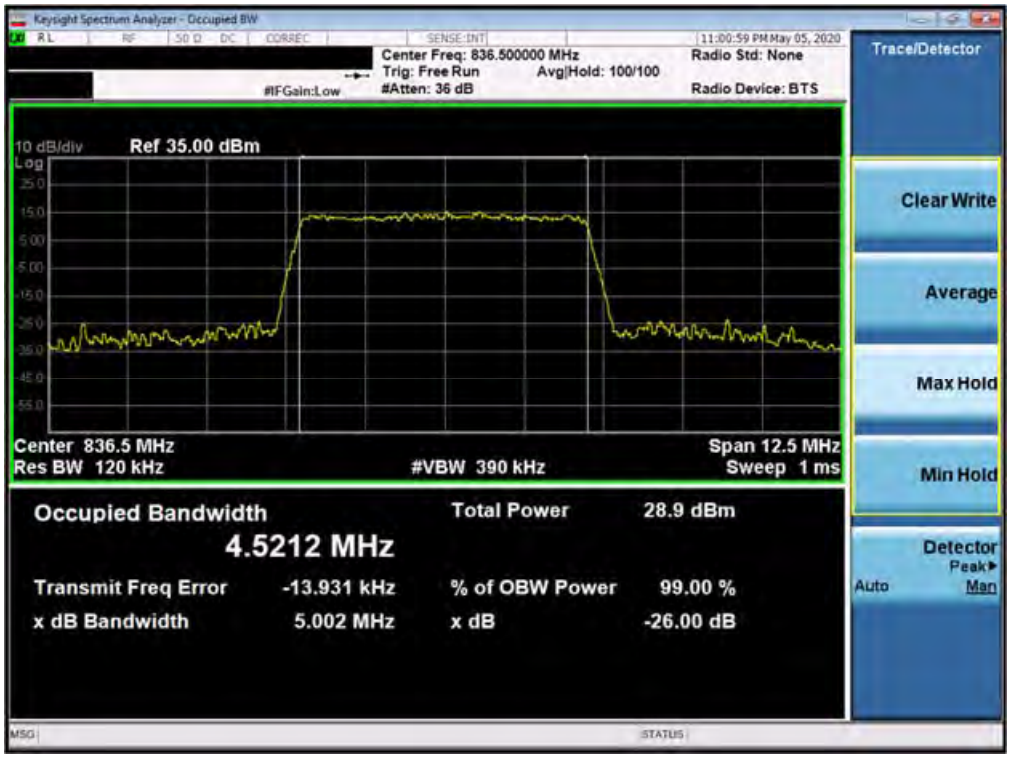

Plot 7-71. Occupied Bandwidth Plot (Band 26/5 - 5.0MHz 64-QAM - Full RB Configuration)

Plot 7-72. Occupied Bandwidth Plot (Band 26/5 - 5.0MHz 256-QAM - Full RB Configuration)

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Plot 7-73. Occupied Bandwidth Plot (Band 26/5 - 10.0MHz QPSK - Full RB Configuration)

Plot 7-74. Occupied Bandwidth Plot (Band 26/5 - 10.0MHz 16-QAM - Full RB Configuration)

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Plot 7-75. Occupied Bandwidth Plot (Band 26/5 - 10.0MHz 64-QAM - Full RB Configuration)

Plot 7-76. Occupied Bandwidth Plot (Band 26/5 - 10.0MHz 256-QAM - Full RB Configuration)

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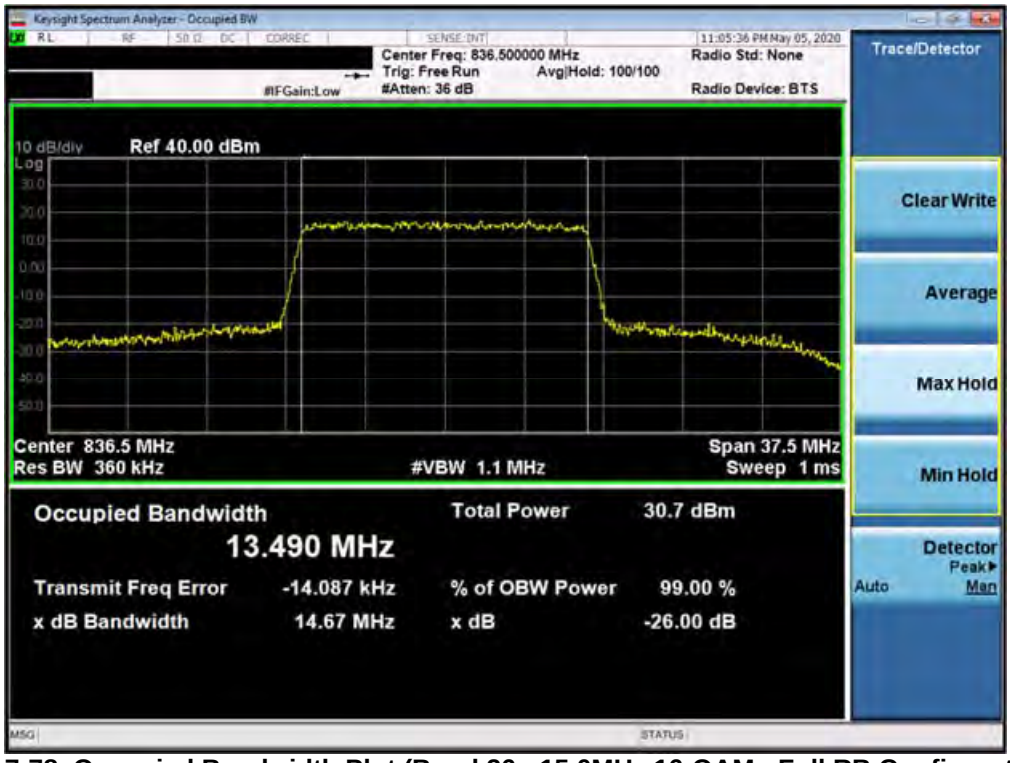
Plot 7-77. Occupied Bandwidth Plot (Band 26 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-78. Occupied Bandwidth Plot (Band 26 - 15.0MHz 16-QAM - Full RB Configuration)

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Plot 7-79. Occupied Bandwidth Plot (Band 26 - 15.0MHz 64-QAM - Full RB Configuration)

Plot 7-80. Occupied Bandwidth Plot (Band 26 - 15.0MHz 256-QAM - Full RB Configuration)

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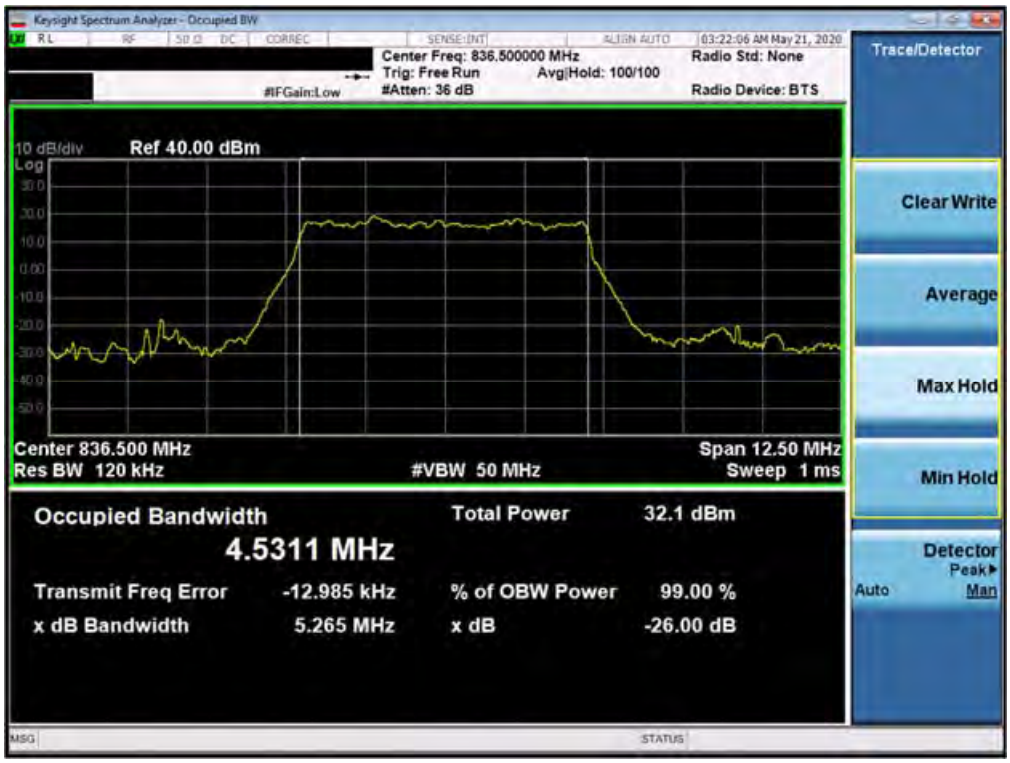
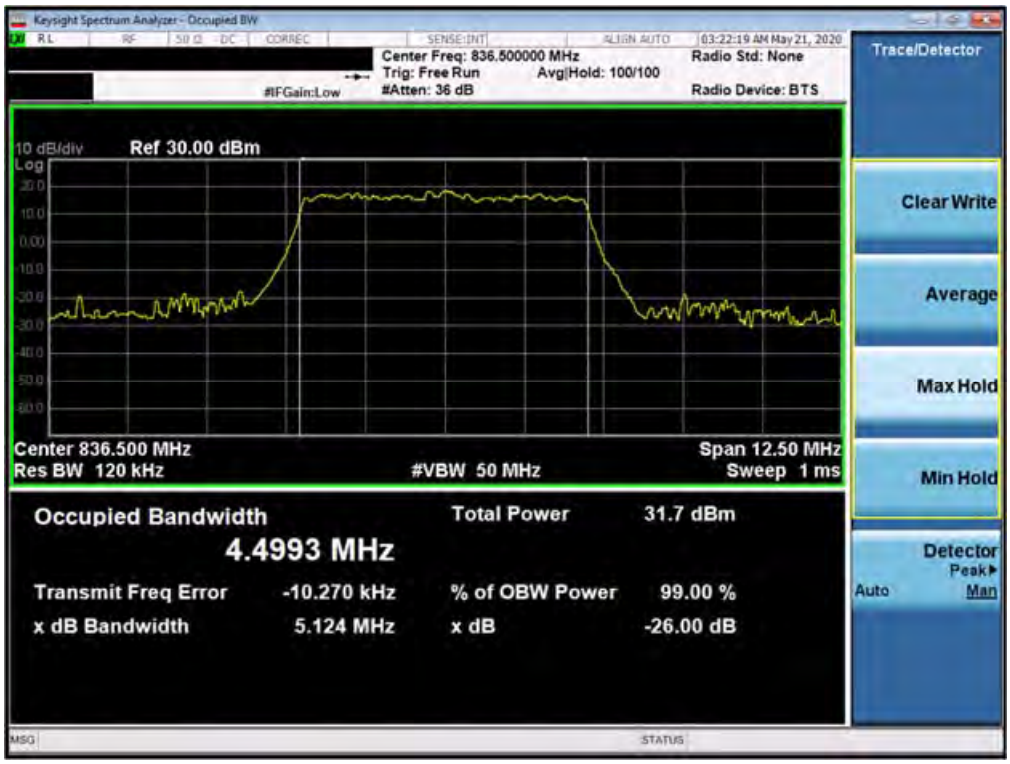
NR Band n5



Plot 7-81. Occupied Bandwidth Plot (n5 5MHz BPSK-DFT-s-OFDM - Full RB Configuration)



Plot 7-82. Occupied Bandwidth Plot (n5 5MHz QPSK-CP-OFDM - Full RB Configuration)

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Plot 7-83. Occupied Bandwidth Plot (n5 5MHz 16QAM-CP-OFDM - Full RB Configuration)

Plot 7-84. Occupied Bandwidth Plot (n5 5MHz 64QAM-CP-OFDM- Full RB Configuration)

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Plot 7-85. Occupied Bandwidth Plot (n5 5MHz 256QAM-CP-OFDM- Full RB Configuration)

Plot 7-86. Occupied Bandwidth Plot (n5 10MHz BPSK-DFT-s-OFDM - Full RB Configuration)

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Plot 7-87. Occupied Bandwidth Plot (n5 10MHz QPSK-CP-OFDM - Full RB Configuration)

Plot 7-88. Occupied Bandwidth Plot (n5 10MHz 16QAM-CP-OFDM - Full RB Configuration)

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Plot 7-89. Occupied Bandwidth Plot (n5 10MHz 64QAM-CP-OFDM- Full RB Configuration)

Plot 7-90. Occupied Bandwidth Plot (n5 10MHz 256QAM-CP-OFDM- Full RB Configuration)

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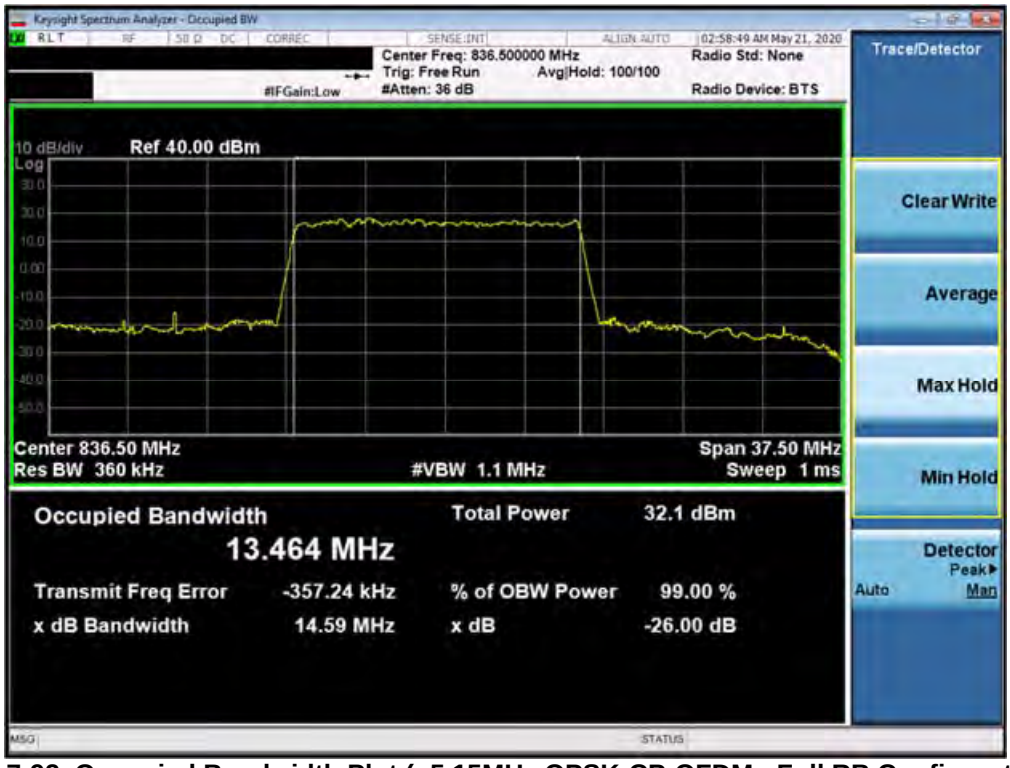
Plot 7-91. Occupied Bandwidth Plot (n5 15MHz BPSK-DFT-s-OFDM - Full RB Configuration)



Plot 7-92. Occupied Bandwidth Plot (n5 15MHz QPSK-CP-OFDM - Full RB Configuration)

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Plot 7-93. Occupied Bandwidth Plot (n5 15MHz 16QAM-CP-OFDM - Full RB Configuration)

Plot 7-94. Occupied Bandwidth Plot (n5 15MHz 64QAM-CP-OFDM- Full RB Configuration)

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Plot 7-95. Occupied Bandwidth Plot (n5 15MHz 256QAM-CP-OFDM- Full RB Configuration)

Plot 7-96. Occupied Bandwidth Plot (n5 20MHz BPSK-DFT-s-OFDM - Full RB Configuration)

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Plot 7-97. Occupied Bandwidth Plot (n5 20MHz QPSK-CP-OFDM - Full RB Configuration)

Plot 7-98. Occupied Bandwidth Plot (n5 20MHz 16QAM-CP-OFDM - Full RB Configuration)

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Plot 7-99. Occupied Bandwidth Plot (n5 20MHz 64QAM-CP-OFDM- Full RB Configuration)

Plot 7-100. Occupied Bandwidth Plot (n5 20MHz 256QAM-CP-OFDM- Full RB Configuration)

Band 66/4

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Plot 7-101. Occupied Bandwidth Plot (Band 66/4 - 1.4MHz QPSK - Full RB Configuration)

Plot 7-102. Occupied Bandwidth Plot (Band 66/4 - 1.4MHz 16-QAM - Full RB Configuration)

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Plot 7-103. Occupied Bandwidth Plot (Band 66/4 - 1.4MHz 64-QAM - Full RB Configuration)

Plot 7-104. Occupied Bandwidth Plot (Band 66/4 - 1.4MHz 256-QAM - Full RB Configuration)

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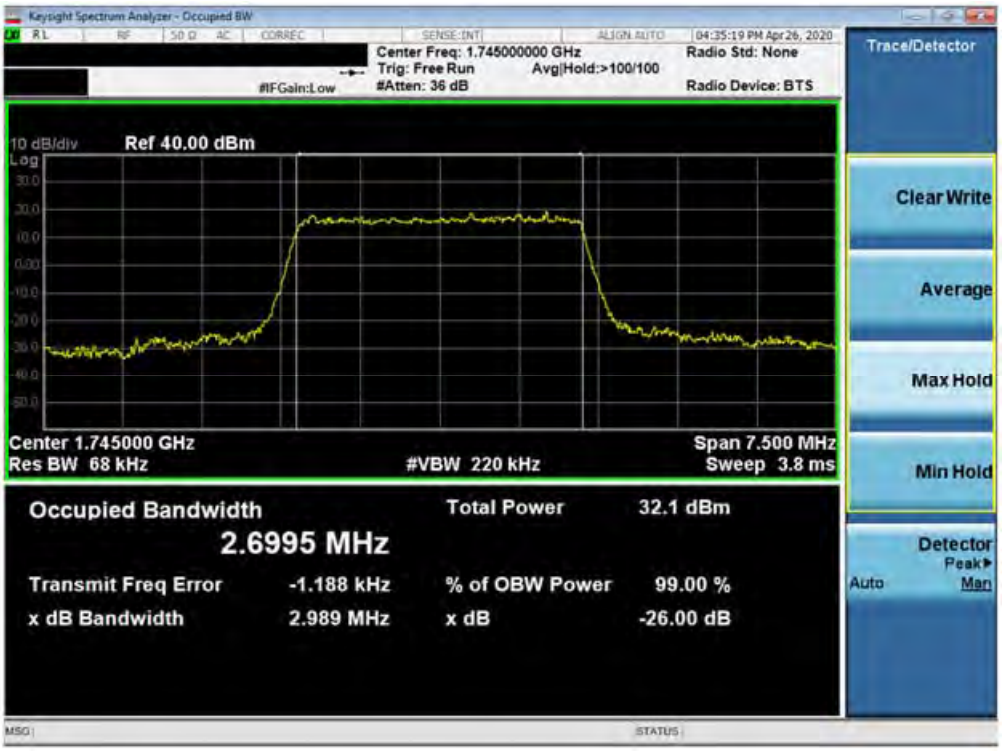
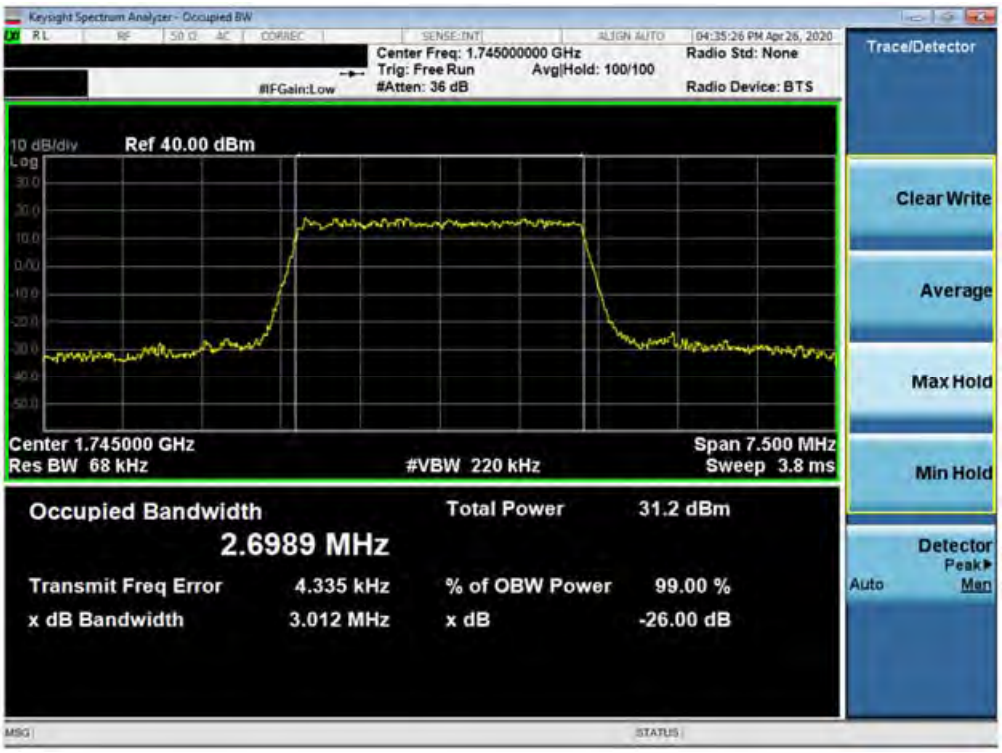


Plot 7-105. Occupied Bandwidth Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)



Plot 7-106. Occupied Bandwidth Plot (Band 66/4 - 3.0MHz 16-QAM - Full RB Configuration)

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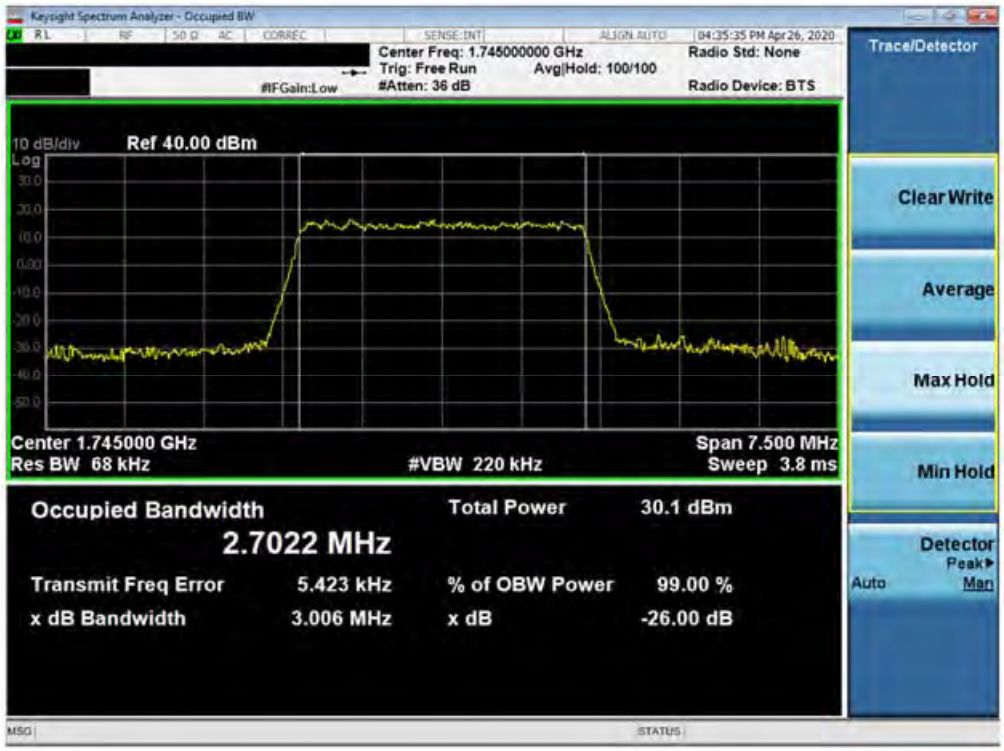
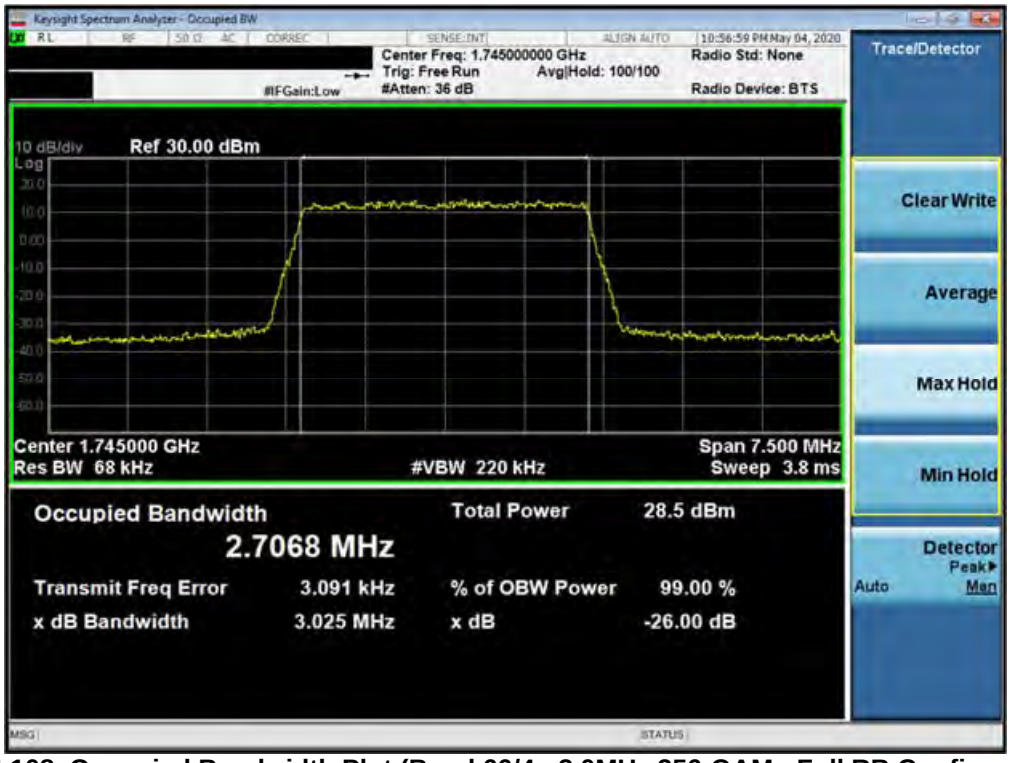


Plot 7-107. Occupied Bandwidth Plot (Band 66/4 - 3.0MHz 64-QAM - Full RB Configuration)



Plot 7-108. Occupied Bandwidth Plot (Band 66/4 - 3.0MHz 256-QAM - Full RB Configuration)

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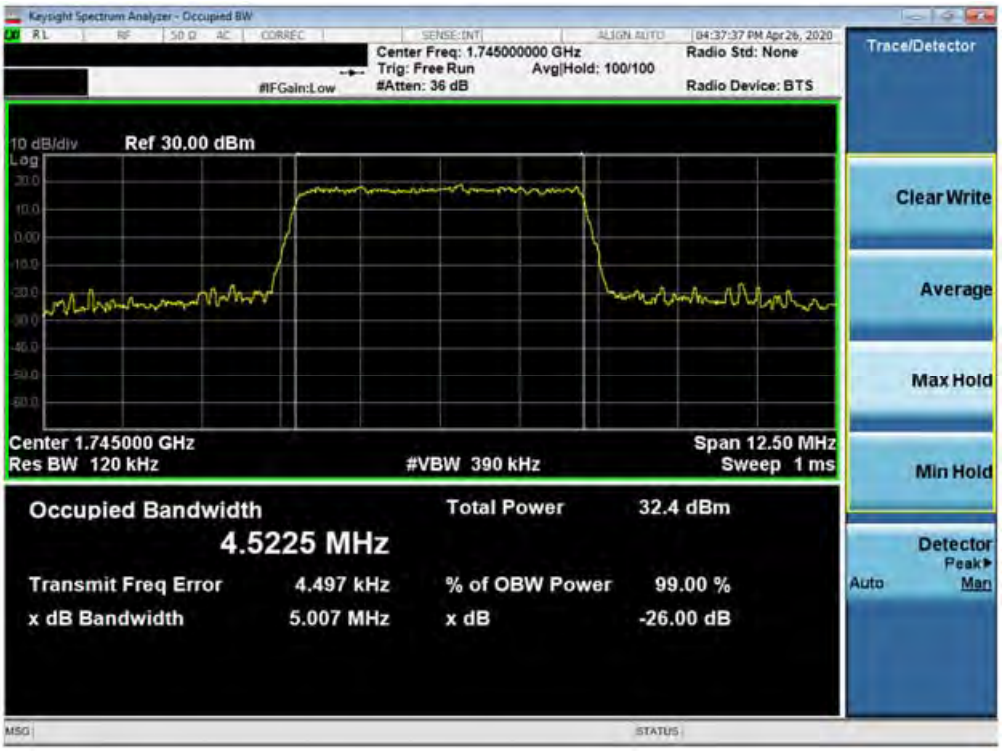
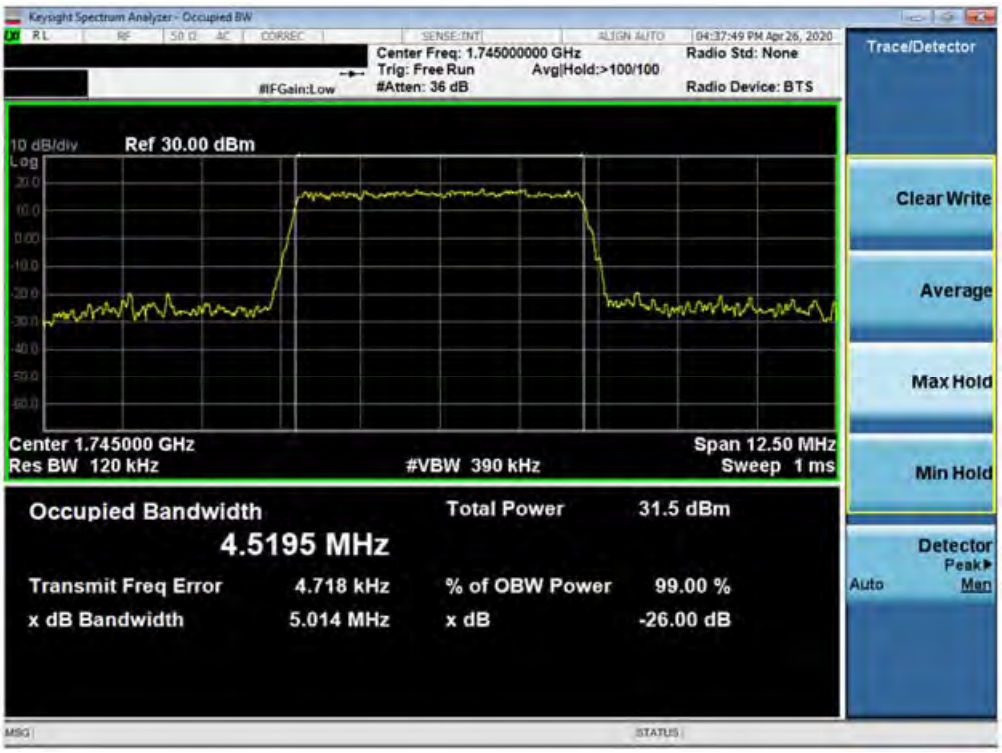


Plot 7-109. Occupied Bandwidth Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-110. Occupied Bandwidth Plot (Band 66/4 - 5.0MHz 16-QAM - Full RB Configuration)

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Plot 7-111. Occupied Bandwidth Plot (Band 66/4 - 5.0MHz 64-QAM - Full RB Configuration)

Plot 7-112. Occupied Bandwidth Plot (Band 66/4 - 5.0MHz 256-QAM - Full RB Configuration)

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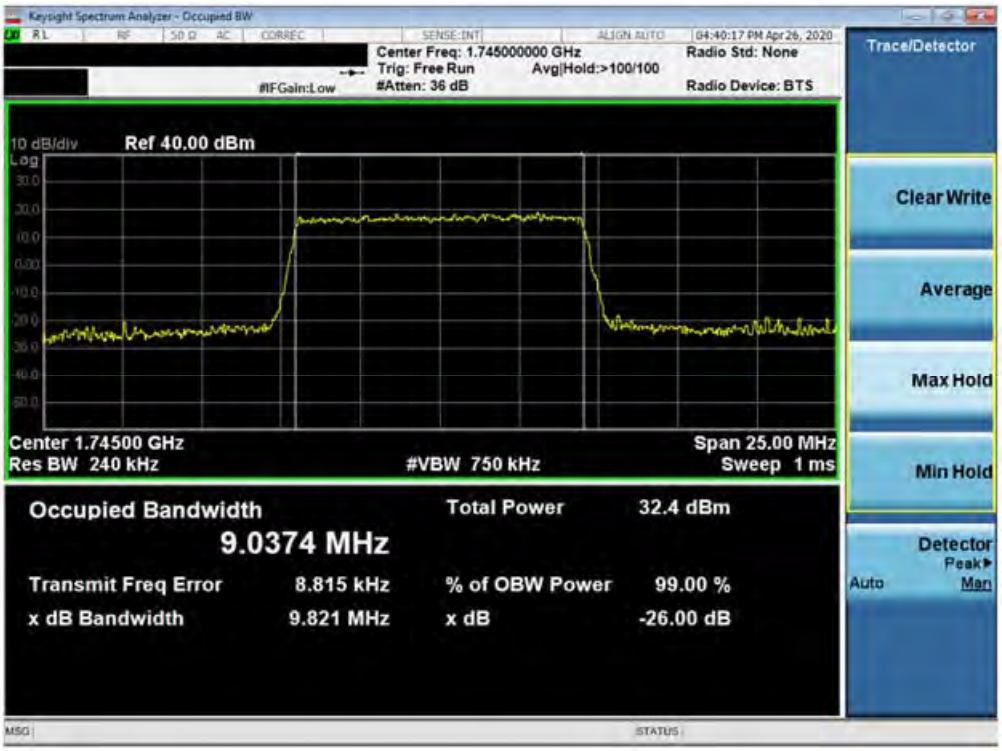

Plot 7-113. Occupied Bandwidth Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)

Plot 7-114. Occupied Bandwidth Plot (Band 66/4 - 10.0MHz 16-QAM - Full RB Configuration)

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Plot 7-115. Occupied Bandwidth Plot (Band 66/4 - 10.0MHz 64-QAM - Full RB Configuration)

Plot 7-116. Occupied Bandwidth Plot (Band 66/4 - 10.0MHz 256-QAM - Full RB Configuration)

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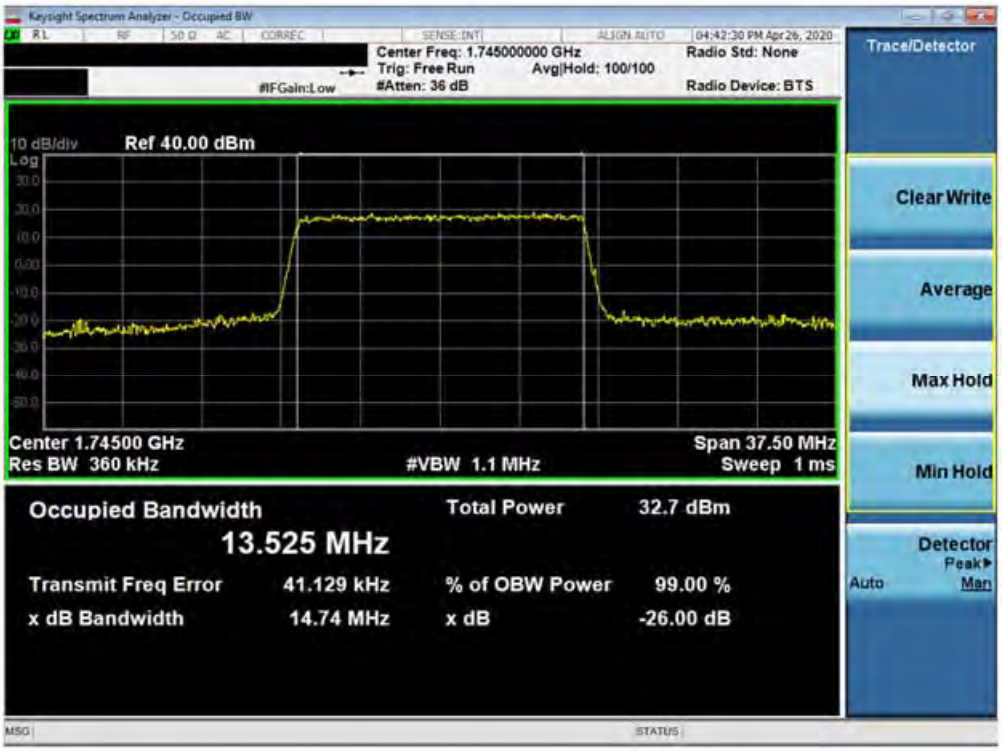
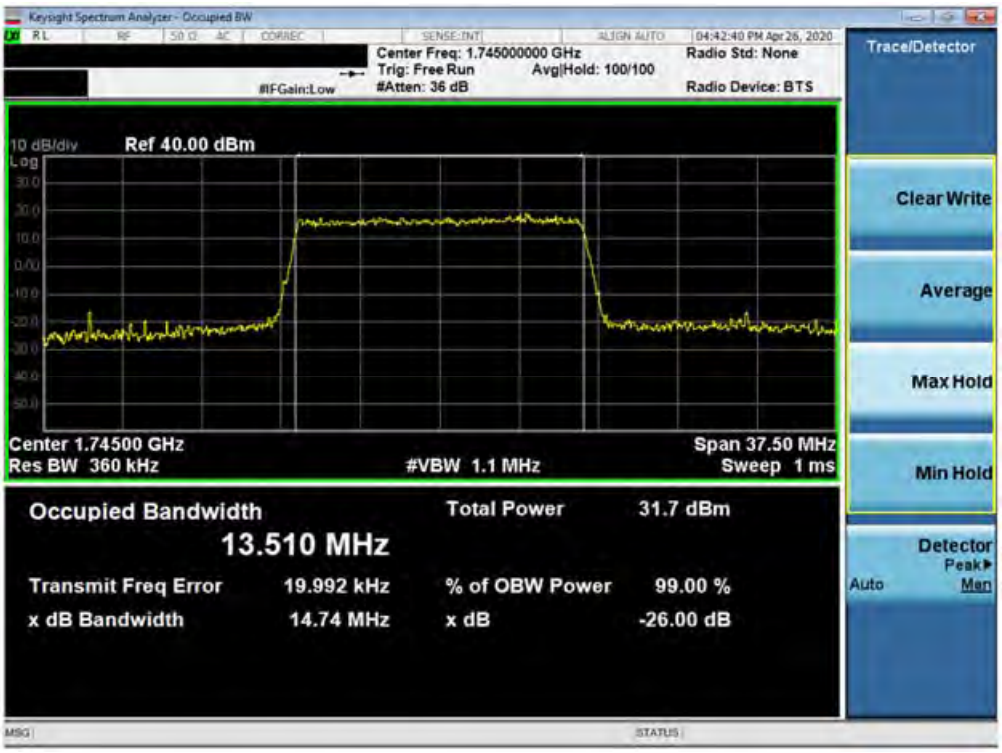


Plot 7-117. Occupied Bandwidth Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-118. Occupied Bandwidth Plot (Band 66/4 - 15.0MHz 16-QAM - Full RB Configuration)

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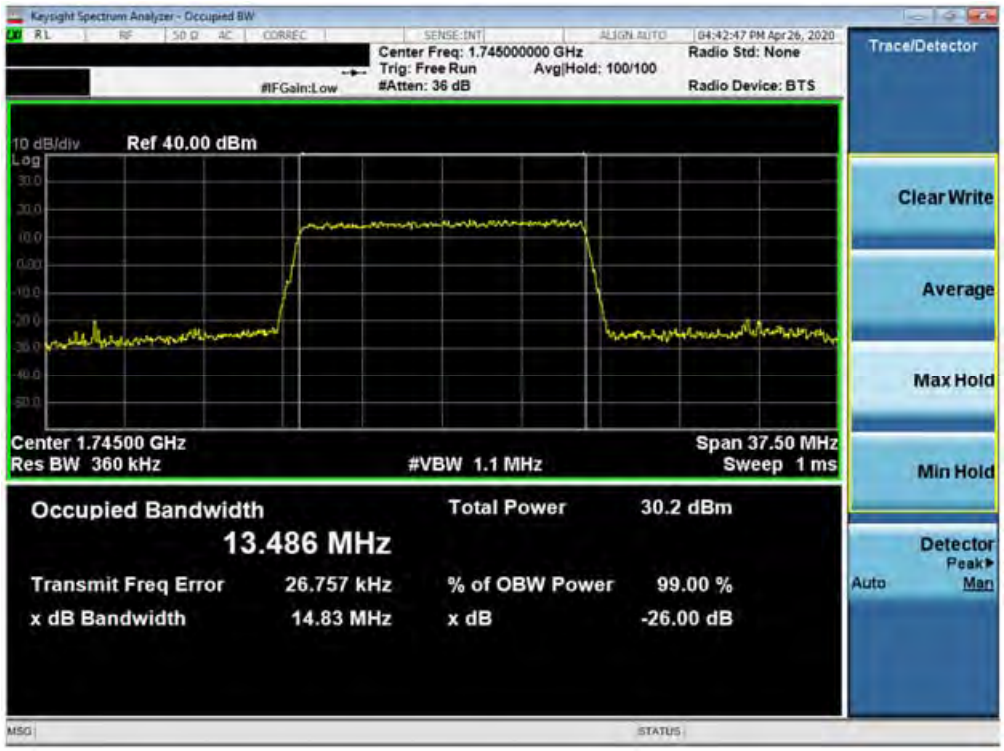
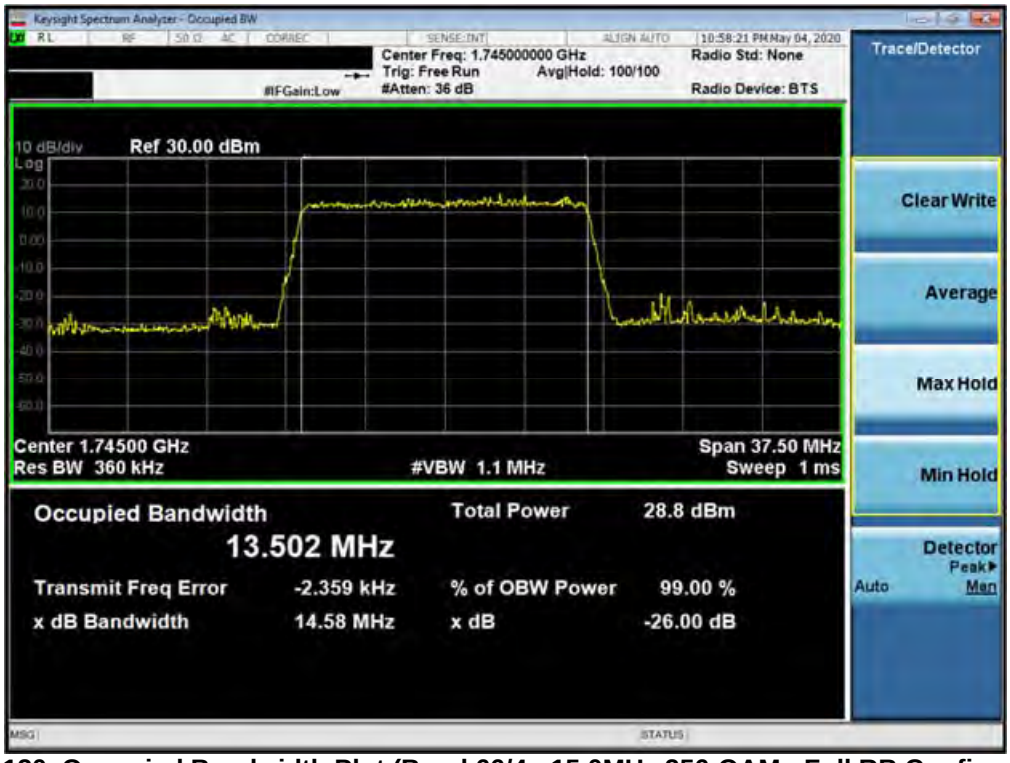


Plot 7-119. Occupied Bandwidth Plot (Band 66/4 - 15.0MHz 64-QAM - Full RB Configuration)



Plot 7-120. Occupied Bandwidth Plot (Band 66/4 - 15.0MHz 256-QAM - Full RB Configuration)

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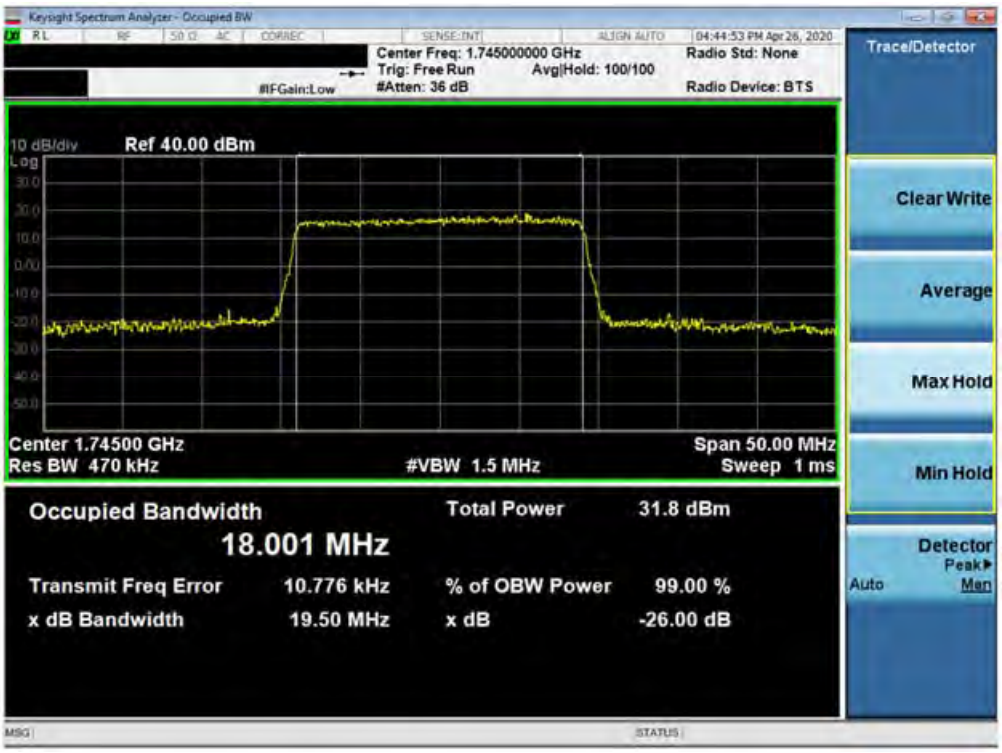
Plot 7-121. Occupied Bandwidth Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-122. Occupied Bandwidth Plot (Band 66/4 - 20.0MHz 16-QAM - Full RB Configuration)

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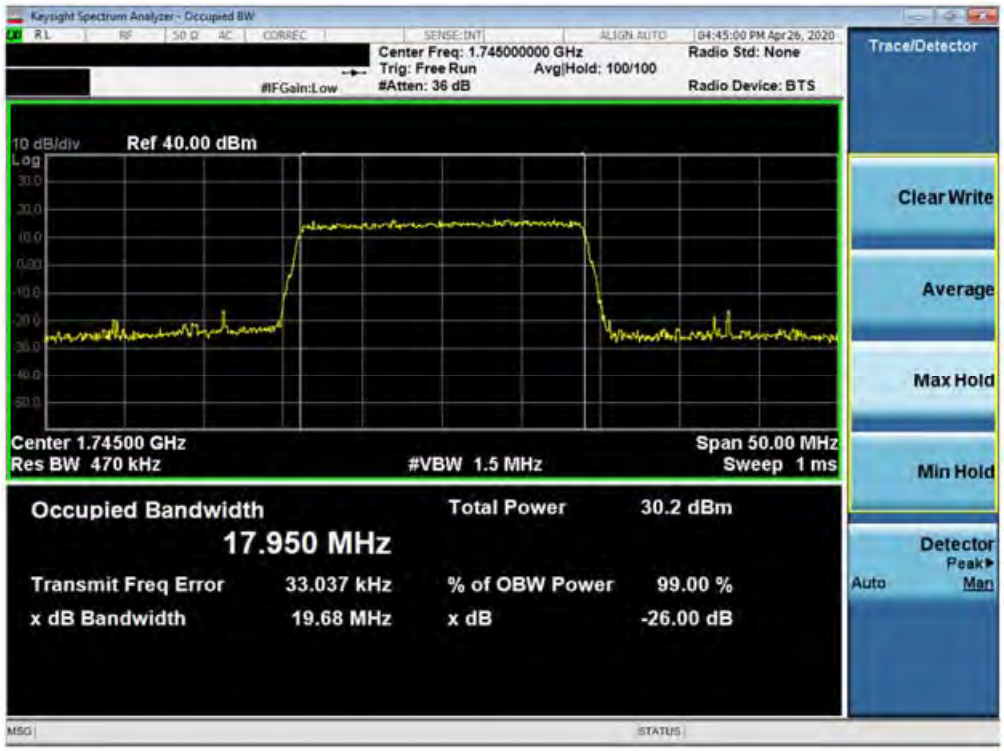
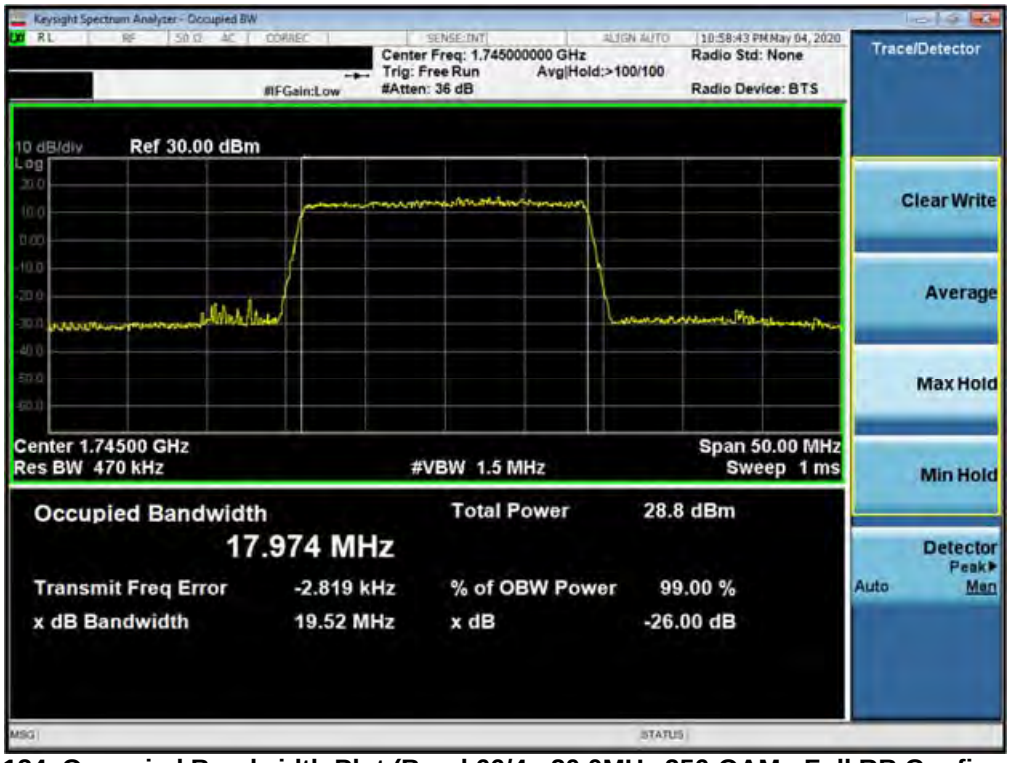


Plot 7-123. Occupied Bandwidth Plot (Band 66/4 - 20.0MHz 64-QAM - Full RB Configuration)



Plot 7-124. Occupied Bandwidth Plot (Band 66/4 - 20.0MHz 256-QAM - Full RB Configuration)

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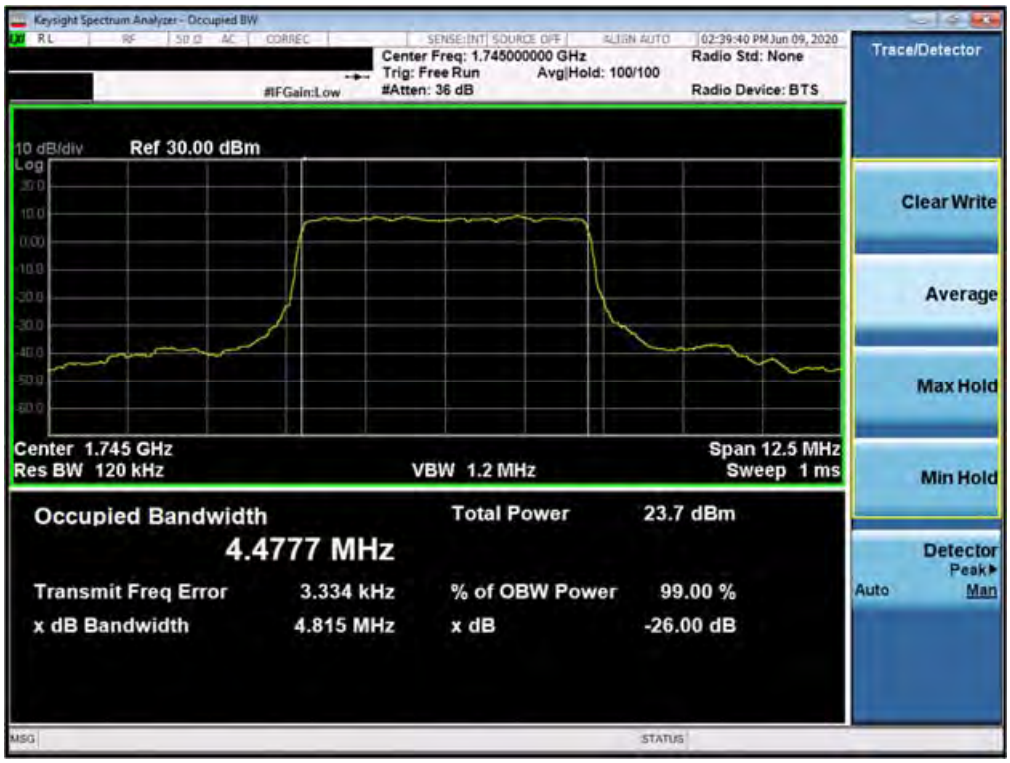
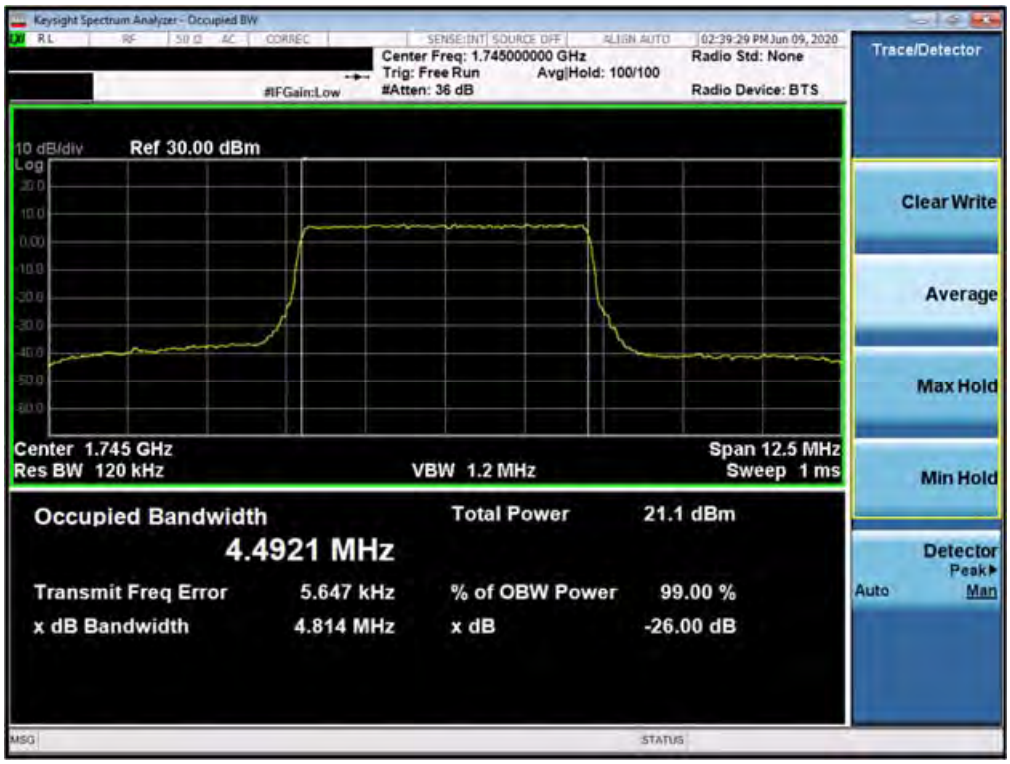
NR Band n66



Plot 7-125. Occupied Bandwidth Plot (n66 5MHz BPSK-DFT-s-OFDM - Full RB Configuration)



Plot 7-126. Occupied Bandwidth Plot (n66 5MHz QPSK-CP-OFDM - Full RB Configuration)

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Plot 7-127. Occupied Bandwidth Plot (n66 5MHz 16QAM-CP-OFDM - Full RB Configuration)

Plot 7-128. Occupied Bandwidth Plot (n66 5MHz 64QAM-CP-OFDM- Full RB Configuration)

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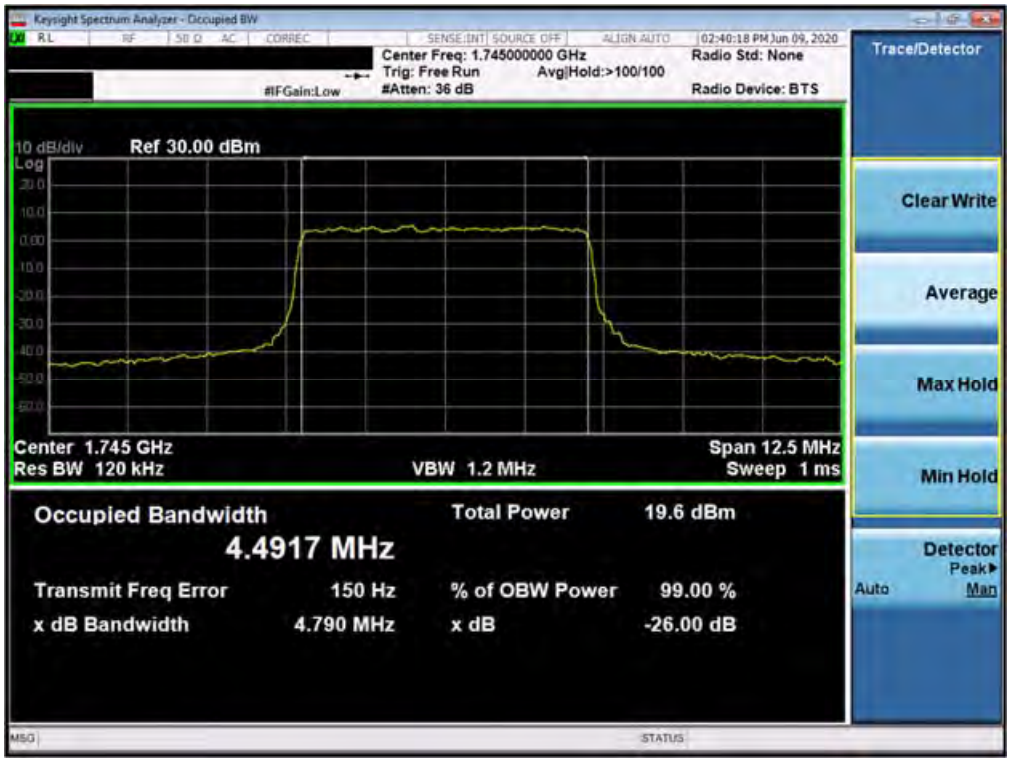

Plot 7-129. Occupied Bandwidth Plot (n66 5MHz 256QAM-CP-OFDM - Full RB Configuration)

Plot 7-130. Occupied Bandwidth Plot (n66 10MHz BPSK-DFT-s-OFDM - Full RB Configuration)

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Plot 7-131. Occupied Bandwidth Plot (n66 10MHz QPSK-CP-OFDM - Full RB Configuration)

Plot 7-132. Occupied Bandwidth Plot (n66 10MHz 16QAM-CP-OFDM - Full RB Configuration)

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Plot 7-133. Occupied Bandwidth Plot (n66 10MHz 64QAM-CP-OFDM- Full RB Configuration)

Plot 7-134. Occupied Bandwidth Plot (n66 10MHz 256QAM-CP-OFDM - Full RB Configuration)

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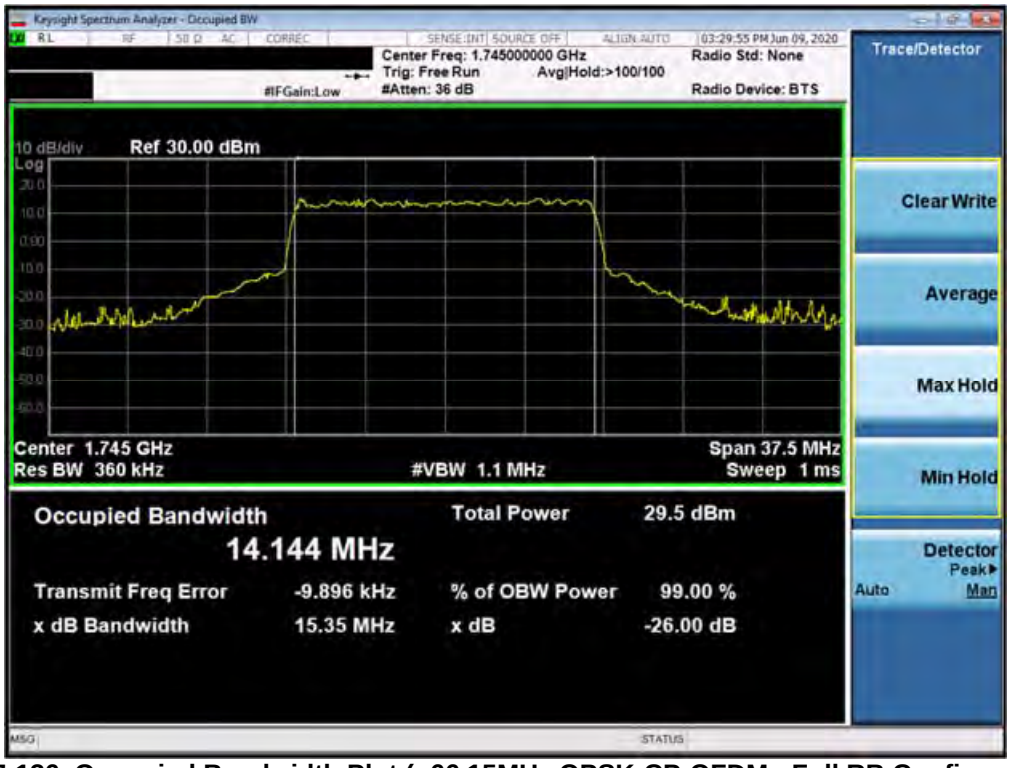
Plot 7-135. Occupied Bandwidth Plot (n66 15MHz BPSK-DFT-s-OFDM - Full RB Configuration)



Plot 7-136. Occupied Bandwidth Plot (n66 15MHz QPSK-CP-OFDM - Full RB Configuration)

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Plot 7-137. Occupied Bandwidth Plot (n66 15MHz 16QAM-CP-OFDM - Full RB Configuration)

Plot 7-138. Occupied Bandwidth Plot (n66 15MHz 64QAM-CP-OFDM- Full RB Configuration)

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Plot 7-139. Occupied Bandwidth Plot (n66 15MHz 256QAM-CP-OFDM - Full RB Configuration)

Plot 7-140. Occupied Bandwidth Plot (n66 20MHz BPSK-DFT-s-OFDM - Full RB Configuration)

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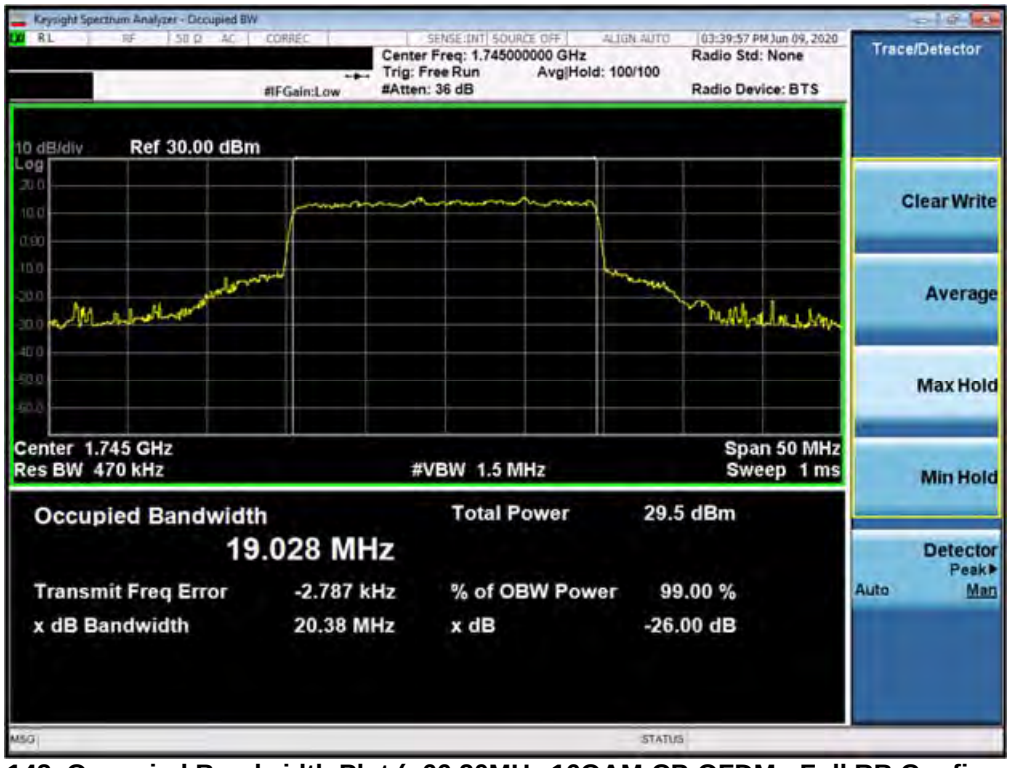
Plot 7-141. Occupied Bandwidth Plot (n66 20MHz QPSK-CP-OFDM - Full RB Configuration)



Plot 7-142. Occupied Bandwidth Plot (n66 20MHz 16QAM-CP-OFDM - Full RB Configuration)

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Plot 7-143. Occupied Bandwidth Plot (n66 20MHz 64QAM-CP-OFDM- Full RB Configuration)

Plot 7-144. Occupied Bandwidth Plot (n66 20MHz 256QAM-CP-OFDM - Full RB Configuration)

Band 25/2

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Plot 7-145. Occupied Bandwidth Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)

Plot 7-146. Occupied Bandwidth Plot (Band 25/2 - 1.4MHz 16-QAM - Full RB Configuration)

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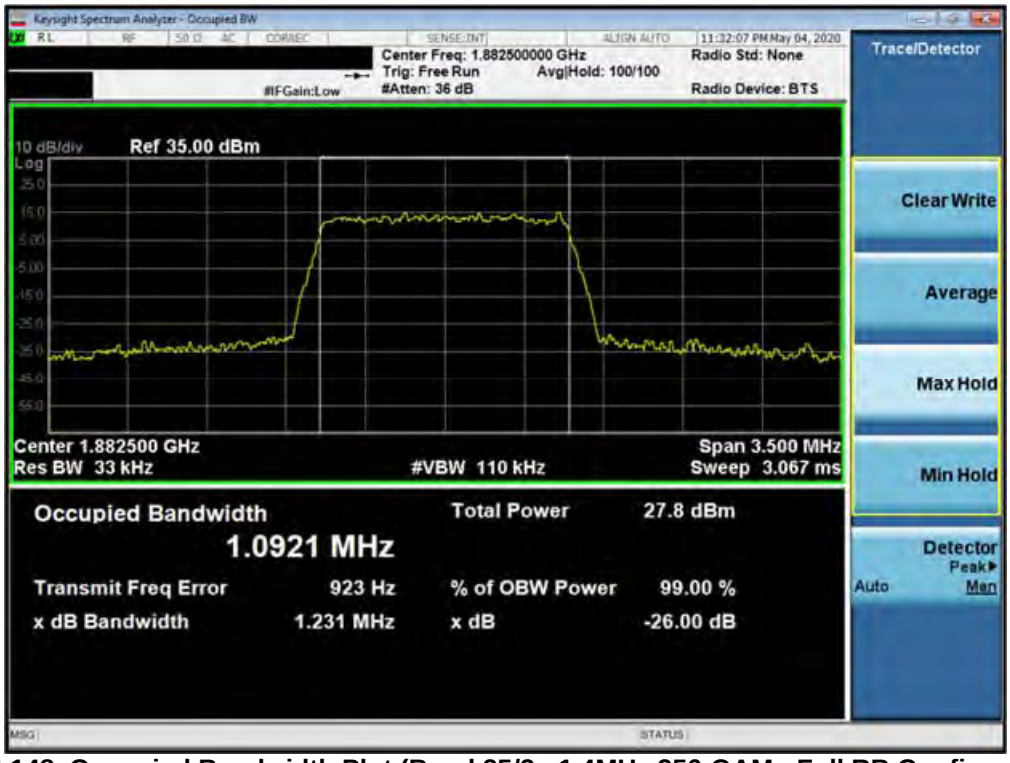
Plot 7-147. Occupied Bandwidth Plot (Band 25/2 - 1.4MHz 64-QAM - Full RB Configuration)



Plot 7-148. Occupied Bandwidth Plot (Band 25/2 - 1.4MHz 256-QAM - Full RB Configuration)

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Plot 7-149. Occupied Bandwidth Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

Plot 7-150. Occupied Bandwidth Plot (Band 25/2 - 3.0MHz 16-QAM - Full RB Configuration)

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Plot 7-151. Occupied Bandwidth Plot (Band 25/2 - 3.0MHz 64-QAM - Full RB Configuration)

Plot 7-152. Occupied Bandwidth Plot (Band 25/2 - 3.0MHz 256-QAM - Full RB Configuration)

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Plot 7-153. Occupied Bandwidth Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

Plot 7-154. Occupied Bandwidth Plot (Band 25/2 - 5.0MHz 16-QAM - Full RB Configuration)

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Plot 7-155. Occupied Bandwidth Plot (Band 25/2 - 5.0MHz 64-QAM - Full RB Configuration)

Plot 7-156. Occupied Bandwidth Plot (Band 25/2 - 5.0MHz 256-QAM - Full RB Configuration)

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Plot 7-157. Occupied Bandwidth Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

Plot 7-158. Occupied Bandwidth Plot (Band 25/2 - 10.0MHz 16-QAM - Full RB Configuration)

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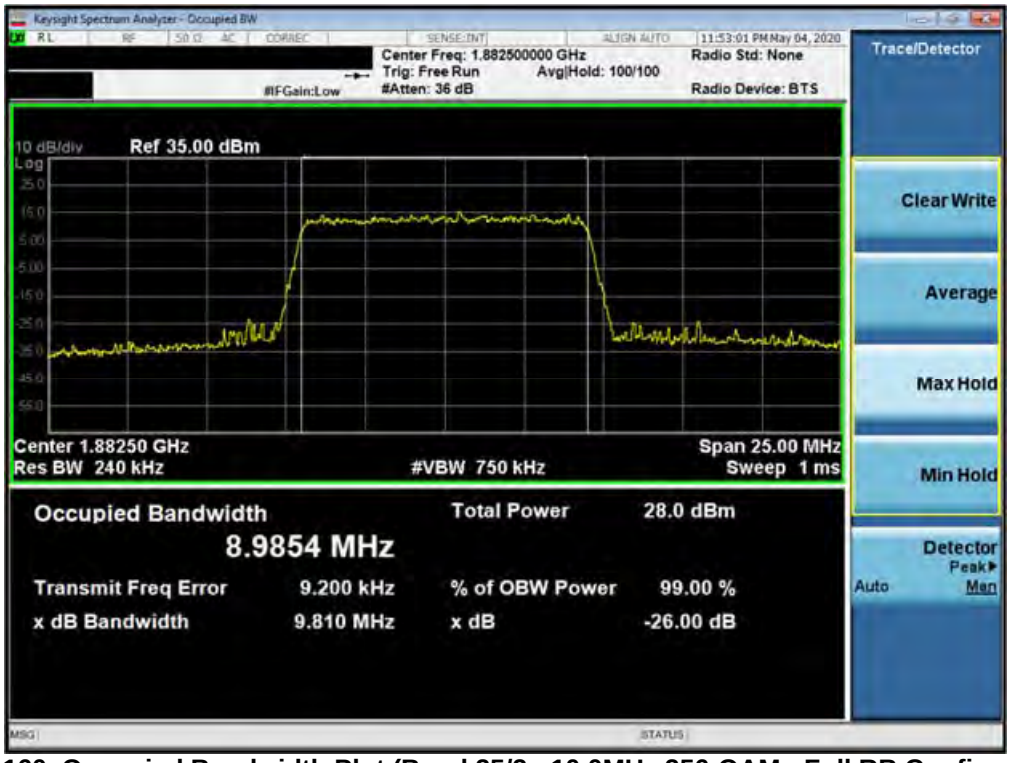
Plot 7-159. Occupied Bandwidth Plot (Band 25/2 - 10.0MHz 64-QAM - Full RB Configuration)



Plot 7-160. Occupied Bandwidth Plot (Band 25/2 - 10.0MHz 256-QAM - Full RB Configuration)

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Plot 7-161. Occupied Bandwidth Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

Plot 7-162. Occupied Bandwidth Plot (Band 25/2 - 15.0MHz 16-QAM - Full RB Configuration)

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Plot 7-163. Occupied Bandwidth Plot (Band 25/2 - 15.0MHz 64-QAM - Full RB Configuration)

Plot 7-164. Occupied Bandwidth Plot (Band 25/2 - 15.0MHz 256-QAM - Full RB Configuration)

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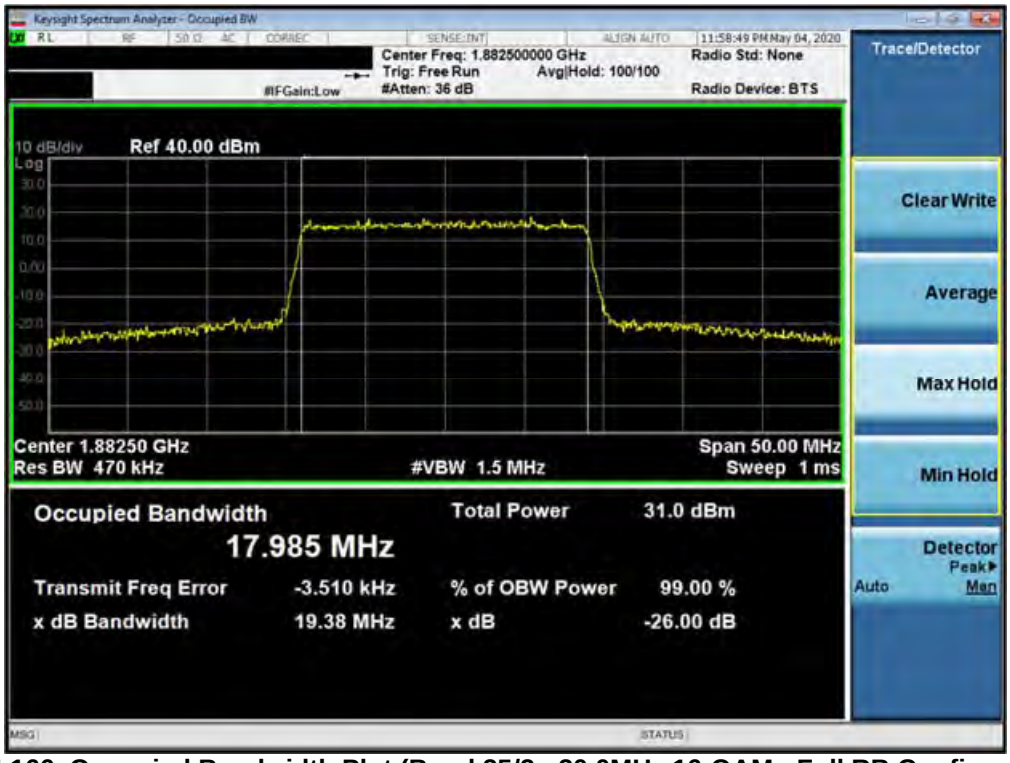
Plot 7-165. Occupied Bandwidth Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-166. Occupied Bandwidth Plot (Band 25/2 - 20.0MHz 16-QAM - Full RB Configuration)

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Plot 7-167. Occupied Bandwidth Plot (Band 25/2 - 20.0MHz 64-QAM - Full RB Configuration)

Plot 7-168. Occupied Bandwidth Plot (Band 25/2 - 20.0MHz 256-QAM - Full RB Configuration)

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