



Element Washington DC LLC

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PART 27 MEASUREMENT REPORT

Applicant Name:

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

Date of Testing:

05/30/2022 - 08/29/2022

Test Site/Location:

Element Washington DC LLC Morgan Hill, CA, USA

Test Report Serial No.:

1C2205090023-05-R1.BCG

FCC ID:

BCGA2757

Applicant Name:

Apple Inc.

Application Type:

Certification

Model:

A2757(A2777)

EUT Type:

Tablet Device

FCC Classification:

PCS Licensed Transmitter (PCB)

FCC Rule Part:

27

Test Procedure(s):

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

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

This revised Test Report (S/N: 1C2205090023-05-R1.BCG) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose 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.

RJ Ortanez
Executive Vice President



FCC ID: BCGA2757	element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 1 of 176

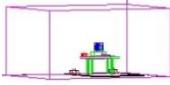
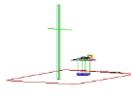
V2.1 11/9/2021

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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	PAR at 0.1% [dB]	EIRP		Emission Designator
						Max. Power [W]	Max. Power [dBm]	
NR Band n77 (PC2) (3450 - 3550MHz)	20 MHz	π/2 BPSK	3460.0 - 3540.0	18.022	4.02	0.794	29.00	18M0G7W
		QPSK	3460.0 - 3540.0	18.329	5.17	0.770	28.87	18M3G7W
		16QAM	3460.0 - 3540.0	18.348	5.95	0.663	28.22	18M3D7W
		64QAM	3460.0 - 3540.0	18.401	6.61	0.528	27.23	18M4D7W
		256QAM	3460.0 - 3540.0	18.323	6.71	0.366	25.64	18M3D7W
	30MHz	π/2 BPSK	3465.0 - 3535.0	26.940	3.90	0.794	29.00	26M9G7W
		QPSK	3465.0 - 3535.0	28.057	5.23	0.754	28.77	28M1G7W
		16QAM	3465.0 - 3535.0	28.039	6.05	0.650	28.13	28M0D7W
		64QAM	3465.0 - 3535.0	28.040	6.48	0.492	26.92	28M0D7W
		256QAM	3465.0 - 3535.0	27.968	6.60	0.327	25.14	28M0D7W
	40 MHz	π/2 BPSK	3470.0 - 3530.0	35.885	4.12	0.763	28.82	35M9G7W
		QPSK	3470.0 - 3530.0	38.026	4.96	0.784	28.94	38M0G7W
		16QAM	3470.0 - 3530.0	37.920	6.02	0.662	28.21	37M9D7W
		64QAM	3470.0 - 3530.0	38.062	6.59	0.531	27.26	38M1D7W
		256QAM	3470.0 - 3530.0	37.959	6.62	0.348	25.42	38M0D7W
	50 MHz	π/2 BPSK	3475.0 - 3525.0	45.857	4.09	0.771	28.87	45M9G7W
		QPSK	3475.0 - 3525.0	47.747	5.22	0.759	28.80	47M7G7W
		16QAM	3475.0 - 3525.0	47.735	6.15	0.659	28.19	47M7D7W
		64QAM	3475.0 - 3525.0	47.845	6.60	0.496	26.95	47M8D7W
		256QAM	3475.0 - 3525.0	47.595	6.74	0.351	25.46	47M6D7W
	60 MHz	π/2 BPSK	3480.0 - 3520.0	58.272	4.37	0.726	28.61	58M3G7W
		QPSK	3480.0 - 3520.0	58.078	5.19	0.759	28.80	58M1G7W
		16QAM	3480.0 - 3520.0	58.360	6.03	0.653	28.15	58M4D7W
		64QAM	3480.0 - 3520.0	58.189	6.35	0.503	27.02	58M2D7W
		256QAM	3480.0 - 3520.0	58.136	6.59	0.351	25.45	58M1D7W
	70 MHz	π/2 BPSK	3485.0 - 3515.0	64.804	4.10	0.763	28.83	64M8G7W
		QPSK	3485.0 - 3515.0	67.792	5.28	0.776	28.90	67M8G7W
		16QAM	3485.0 - 3515.0	67.729	6.08	0.668	28.25	67M7D7W
		64QAM	3485.0 - 3515.0	68.051	6.54	0.556	27.45	68M1D7W
		256QAM	3485.0 - 3515.0	67.626	6.69	0.378	25.78	67M6D7W
	80 MHz	π/2 BPSK	3490.0 - 3510.0	77.432	4.06	0.777	28.90	77M4G7W
		QPSK	3490.0 - 3510.0	77.595	5.23	0.759	28.80	77M6G7W
		16QAM	3490.0 - 3510.0	77.835	6.00	0.659	28.19	77M8D7W
		64QAM	3490.0 - 3510.0	77.904	6.55	0.539	27.32	77M9D7W
		256QAM	3490.0 - 3510.0	77.863	6.73	0.348	25.42	77M9D7W
	90 MHz	π/2 BPSK	3495.0 - 3505.0	85.939	3.74	0.744	28.72	85M9G7W
		QPSK	3495.0 - 3505.0	87.676	5.05	0.759	28.80	87M7G7W
		16QAM	3495.0 - 3505.0	87.911	6.04	0.650	28.13	87M9D7W
		64QAM	3495.0 - 3505.0	87.804	6.37	0.504	27.03	87M8D7W
		256QAM	3495.0 - 3505.0	87.595	6.91	0.351	25.46	87M6D7W
	100 MHz	π/2 BPSK	3500	96.532	4.42	0.802	29.04	96M5G7W
		QPSK	3500	97.971	5.13	0.747	28.73	98M0G7W
		16QAM	3500	97.705	6.09	0.625	27.96	97M7D7W
		64QAM	3500	97.758	6.22	0.469	26.71	97M8D7W
		256QAM	3500	97.878	6.36	0.306	24.86	97M9D7W

EUT Overview

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Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device			

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	PAR at 0.1% [dB]	EIRP		Emission Designator
						Max. Power [W]	Max. Power [dBm]	
NR Band n77 (PC3) (3450 - 3550MHz)	20 MHz	TT/2 BPSK	3460.0 - 3540.0	18.022	4.02	0.676	28.30	18M0G7W
		QPSK	3460.0 - 3540.0	18.329	5.17	0.659	28.19	18M3G7W
		16QAM	3460.0 - 3540.0	18.348	5.95	0.525	27.20	18M4D7W
		64QAM	3460.0 - 3540.0	18.401	6.61	0.364	25.61	18M4D7W
		256QAM	3460.0 - 3540.0	18.323	6.71	0.235	23.70	18M3D7W
	30MHz	TT/2 BPSK	3465.0 - 3535.0	26.940	3.90	0.676	28.30	26M9G7W
		QPSK	3465.0 - 3535.0	28.057	5.23	0.645	28.10	28M1G7W
		16QAM	3465.0 - 3535.0	28.039	6.05	0.479	26.80	28M0D7W
		64QAM	3465.0 - 3535.0	28.040	6.48	0.355	25.50	28M0D7W
		256QAM	3465.0 - 3535.0	27.968	6.60	0.232	23.65	28M0D7W
	40 MHz	TT/2 BPSK	3470.0 - 3530.0	35.885	4.12	0.662	28.21	35M9G7W
		QPSK	3470.0 - 3530.0	38.026	4.96	0.676	28.30	38M0G7W
		16QAM	3470.0 - 3530.0	37.920	6.02	0.544	27.35	37M9D7W
		64QAM	3470.0 - 3530.0	38.062	6.59	0.410	26.13	38M1D7W
		256QAM	3470.0 - 3530.0	37.959	6.62	0.257	24.10	38M0D7W
	50 MHz	TT/2 BPSK	3475.0 - 3525.0	45.857	4.09	0.647	28.11	45M9G7W
		QPSK	3475.0 - 3525.0	47.747	5.22	0.676	28.30	47M7G7W
		16QAM	3475.0 - 3525.0	47.735	6.15	0.525	27.20	47M7D7W
		64QAM	3475.0 - 3525.0	47.845	6.60	0.397	25.98	47M8D7W
		256QAM	3475.0 - 3525.0	47.595	6.74	0.237	23.76	47M6D7W
	60 MHz	TT/2 BPSK	3480.0 - 3520.0	58.272	4.37	0.676	28.30	58M3G7W
		QPSK	3480.0 - 3520.0	58.078	5.19	0.642	28.08	58M1G7W
		16QAM	3480.0 - 3520.0	58.360	6.03	0.541	27.33	58M4D7W
		64QAM	3480.0 - 3520.0	58.189	6.35	0.384	25.84	58M2D7W
		256QAM	3480.0 - 3520.0	58.136	6.59	0.229	23.60	58M1D7W
	70 MHz	TT/2 BPSK	3485.0 - 3515.0	64.804	4.10	0.676	28.30	64M8G7W
		QPSK	3485.0 - 3515.0	67.792	5.28	0.676	28.30	67M8G7W
		16QAM	3485.0 - 3515.0	67.729	6.08	0.539	27.31	67M7D7W
		64QAM	3485.0 - 3515.0	68.051	6.54	0.374	25.73	68M1D7W
		256QAM	3485.0 - 3515.0	67.626	6.69	0.241	23.81	67M6D7W
	80 MHz	TT/2 BPSK	3490.0 - 3510.0	77.432	4.06	0.676	28.30	77M4G7W
		QPSK	3490.0 - 3510.0	77.595	5.23	0.666	28.24	77M6G7W
		16QAM	3490.0 - 3510.0	77.835	6.00	0.547	27.38	77M8D7W
		64QAM	3490.0 - 3510.0	77.904	6.55	0.402	26.05	77M9D7W
		256QAM	3490.0 - 3510.0	77.863	6.73	0.246	23.91	77M9D7W
	90 MHz	TT/2 BPSK	3495.0 - 3505.0	85.939	3.74	0.676	28.30	85M9G7W
		QPSK	3495.0 - 3505.0	87.676	5.05	0.674	28.29	87M7G7W
		16QAM	3495.0 - 3505.0	87.911	6.04	0.537	27.30	87M9D7W
		64QAM	3495.0 - 3505.0	87.804	6.37	0.372	25.70	87M8D7W
		256QAM	3495.0 - 3505.0	87.595	6.91	0.227	23.56	87M6D7W
	100 MHz	TT/2 BPSK	3500	96.532	4.42	0.676	28.30	96M5G7W
		QPSK	3500	97.971	5.13	0.645	28.10	98M0G7W
		16QAM	3500	97.705	6.09	0.532	27.26	97M7D7W
		64QAM	3500	97.758	6.22	0.358	25.54	97M8D7W
		256QAM	3500	97.878	6.36	0.221	23.44	97M9D7W

EUT Overview

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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	PAR at 0.1% [dB]	EIRP		Emission Designator
						Max. Power [W]	Max. Power [dBm]	
NR Band n77 (PC2) (3700 - 3980MHz)	20 MHz	Ti/2 BPSK	3710.0 - 3970.0	19.142	3.95	0.778	28.91	19M1G7W
		QPSK	3710.0 - 3970.0	19.286	4.94	0.794	29.00	19M3G7W
		16QAM	3710.0 - 3970.0	19.306	5.71	0.556	27.45	19M3D7W
		64QAM	3710.0 - 3970.0	19.311	6.10	0.425	26.28	19M3D7W
		256QAM	3710.0 - 3970.0	19.291	6.65	0.304	24.82	19M3D7W
	30MHz	Ti/2 BPSK	3715.0 - 3965.0	27.660	4.19	0.794	29.00	27M7G7W
		QPSK	3715.0 - 3965.0	28.594	4.97	0.749	28.75	28M6G7W
		16QAM	3715.0 - 3965.0	28.636	5.74	0.634	28.02	28M6D7W
		64QAM	3715.0 - 3965.0	28.765	6.11	0.461	26.64	28M8D7W
		256QAM	3715.0 - 3965.0	28.512	6.62	0.349	25.43	28M5D7W
	40 MHz	Ti/2 BPSK	3720.0 - 3960.0	36.212	3.95	0.794	29.00	36M2G7W
		QPSK	3720.0 - 3960.0	38.364	4.95	0.780	28.92	38M4G7W
		16QAM	3720.0 - 3960.0	38.405	5.64	0.527	27.22	38M4D7W
		64QAM	3720.0 - 3960.0	38.471	6.09	0.421	26.24	38M5D7W
		256QAM	3720.0 - 3960.0	38.118	6.64	0.308	24.89	38M1D7W
	50 MHz	Ti/2 BPSK	3725.0 - 3955.0	45.838	3.75	0.781	28.93	45M8G7W
		QPSK	3725.0 - 3955.0	47.683	4.84	0.794	29.00	47M7G7W
		16QAM	3725.0 - 3955.0	47.615	5.73	0.634	28.02	47M6D7W
		64QAM	3725.0 - 3955.0	47.816	6.04	0.501	27.00	47M8D7W
		256QAM	3725.0 - 3955.0	47.470	6.69	0.337	25.28	47M5D7W
	60 MHz	Ti/2 BPSK	3730.0 - 3950.0	57.982	4.21	0.794	29.00	58M0G7W
		QPSK	3730.0 - 3950.0	58.121	5.00	0.783	28.94	58M1G7W
		16QAM	3730.0 - 3950.0	58.108	5.74	0.557	27.46	58M1D7W
		64QAM	3730.0 - 3950.0	57.933	6.11	0.417	26.21	57M9D7W
		256QAM	3730.0 - 3950.0	58.034	6.62	0.315	24.98	58M0D7W
	70 MHz	Ti/2 BPSK	3735.0 - 3945.0	64.529	4.10	0.782	28.93	64M5G7W
		QPSK	3735.0 - 3945.0	67.586	4.98	0.794	29.00	67M6G7W
		16QAM	3735.0 - 3945.0	67.743	5.82	0.553	27.43	67M7D7W
		64QAM	3735.0 - 3945.0	67.975	6.14	0.412	26.15	68M0D7W
		256QAM	3735.0 - 3945.0	67.376	6.63	0.287	24.57	67M4D7W
	80 MHz	Ti/2 BPSK	3740.0 - 3940.0	77.260	4.25	0.771	28.87	77M3G7W
		QPSK	3740.0 - 3940.0	77.544	4.80	0.794	29.00	77M5G7W
		16QAM	3740.0 - 3940.0	77.642	5.74	0.500	26.99	77M6D7W
		64QAM	3740.0 - 3940.0	77.448	6.16	0.404	26.07	77M4D7W
		256QAM	3740.0 - 3940.0	77.493	6.60	0.273	24.37	77M5D7W
	90 MHz	Ti/2 BPSK	3745.0 - 3935.0	85.954	3.97	0.763	28.83	86M0G7W
		QPSK	3745.0 - 3935.0	87.726	4.93	0.794	29.00	87M7G7W
		16QAM	3745.0 - 3935.0	87.807	5.75	0.551	27.41	87M8D7W
		64QAM	3745.0 - 3935.0	87.750	5.99	0.465	26.68	87M8D7W
		256QAM	3745.0 - 3935.0	87.486	6.62	0.305	24.84	87M5D7W
	100 MHz	Ti/2 BPSK	3750.0 - 3930.0	96.537	3.96	0.759	28.80	96M5G7W
		QPSK	3750.0 - 3930.0	97.947	4.97	0.794	29.00	97M9G7W
		16QAM	3750.0 - 3930.0	97.669	5.78	0.514	27.11	97M7D7W
		64QAM	3750.0 - 3930.0	97.593	6.05	0.395	25.97	97M6D7W
		256QAM	3750.0 - 3930.0	97.648	6.56	0.278	24.44	97M6D7W

EUT Overview

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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	PAR at 0.1% [dB]	EIRP		Emission Designator
						Max. Power [W]	Max. Power [dBm]	
NR Band n77 (PC3) (3700 - 3980MHz)	20 MHz	TT/2 BPSK	3710.0 - 3970.0	19.142	3.95	0.676	28.30	19M1G7W
		QPSK	3710.0 - 3970.0	19.286	4.94	0.648	28.12	19M3G7W
		16QAM	3710.0 - 3970.0	19.306	5.71	0.525	27.20	19M3D7W
		64QAM	3710.0 - 3970.0	19.311	6.10	0.379	25.78	19M3D7W
		256QAM	3710.0 - 3970.0	19.291	6.65	0.251	24.00	19M3D7W
	30MHz	TT/2 BPSK	3715.0 - 3965.0	27.660	4.19	0.676	28.30	27M7G7W
		QPSK	3715.0 - 3965.0	28.594	4.97	0.639	28.06	28M6G7W
		16QAM	3715.0 - 3965.0	28.636	5.74	0.521	27.17	28M6D7W
		64QAM	3715.0 - 3965.0	28.765	6.11	0.352	25.46	28M8D7W
		256QAM	3715.0 - 3965.0	28.512	6.62	0.236	23.73	28M5D7W
	40 MHz	TT/2 BPSK	3720.0 - 3960.0	36.212	3.95	0.676	28.30	36M2G7W
		QPSK	3720.0 - 3960.0	38.364	4.95	0.655	28.16	38M4G7W
		16QAM	3720.0 - 3960.0	38.405	5.64	0.537	27.30	38M4D7W
		64QAM	3720.0 - 3960.0	38.471	6.09	0.360	25.56	38M5D7W
		256QAM	3720.0 - 3960.0	38.118	6.64	0.256	24.08	38M1D7W
	50 MHz	TT/2 BPSK	3725.0 - 3955.0	45.838	3.75	0.637	28.04	45M8G7W
		QPSK	3725.0 - 3955.0	47.683	4.84	0.676	28.30	47M7G7W
		16QAM	3725.0 - 3955.0	47.615	5.73	0.506	27.04	47M6D7W
		64QAM	3725.0 - 3955.0	47.816	6.04	0.358	25.54	47M8D7W
		256QAM	3725.0 - 3955.0	47.470	6.69	0.250	23.98	47M5D7W
	60 MHz	TT/2 BPSK	3730.0 - 3950.0	57.982	4.21	0.666	28.23	58M0G7W
		QPSK	3730.0 - 3950.0	58.121	5.00	0.676	28.30	58M1G7W
		16QAM	3730.0 - 3950.0	58.108	5.74	0.555	27.44	58M1D7W
		64QAM	3730.0 - 3950.0	57.933	6.11	0.389	25.90	57M9D7W
		256QAM	3730.0 - 3950.0	58.034	6.62	0.242	23.84	58M0D7W
	70 MHz	TT/2 BPSK	3735.0 - 3945.0	64.529	4.10	0.676	28.30	64M5G7W
		QPSK	3735.0 - 3945.0	67.586	4.98	0.672	28.28	67M6G7W
		16QAM	3735.0 - 3945.0	67.743	5.82	0.504	27.03	67M7D7W
		64QAM	3735.0 - 3945.0	67.975	6.14	0.365	25.62	68M0D7W
		256QAM	3735.0 - 3945.0	67.376	6.63	0.245	23.89	67M4D7W
	80 MHz	TT/2 BPSK	3740.0 - 3940.0	77.260	4.25	0.663	28.22	77M3G7W
		QPSK	3740.0 - 3940.0	77.544	4.80	0.676	28.30	77M5G7W
		16QAM	3740.0 - 3940.0	77.642	5.74	0.544	27.36	77M6D7W
		64QAM	3740.0 - 3940.0	77.448	6.16	0.374	25.73	77M4D7W
		256QAM	3740.0 - 3940.0	77.493	6.60	0.256	24.09	77M5D7W
	90 MHz	TT/2 BPSK	3745.0 - 3935.0	85.954	3.97	0.676	28.30	86M0G7W
		QPSK	3745.0 - 3935.0	87.726	4.93	0.658	28.18	87M7G7W
		16QAM	3745.0 - 3935.0	87.807	5.75	0.504	27.02	87M8D7W
		64QAM	3745.0 - 3935.0	87.750	5.99	0.384	25.84	87M8D7W
		256QAM	3745.0 - 3935.0	87.486	6.62	0.244	23.87	87M5D7W
	100 MHz	TT/2 BPSK	3750.0 - 3930.0	96.537	3.96	0.676	28.30	96M5G7W
		QPSK	3750.0 - 3930.0	97.947	4.97	0.658	28.18	97M9G7W
		16QAM	3750.0 - 3930.0	97.669	5.78	0.519	27.15	97M7D7W
		64QAM	3750.0 - 3930.0	97.593	6.05	0.357	25.53	97M6D7W
		256QAM	3750.0 - 3930.0	97.648	6.56	0.248	23.95	97M6D7W

EUT Overview

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1.0 INTRODUCTION

1.1 Scope

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

1.2 Element Washington DC LLC Test Location

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

1.3 Test Facility / Accreditations

Measurements were performed at Element Washington DC LLC located in Morgan Hill, CA 95037, U.S.A.

- Element Washington DC LLC is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.02 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.
- Element Washington DC LLC TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).
- Element Washington DC LLC facility is a registered (22831) 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 **Apple Tablet Device FCC ID:BCGA2757**. The test data contained in this report pertains only to the emissions due to the EUT's licensed transmitters that operate under the provisions of Part 27.

Test Device Serial No.: YG6YDYXRKQ, F32YWYM00Y, DLX216700E11KXN1M

2.2 Device Capabilities

This device contains the following capabilities:

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

This device supports BT Beamforming

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

Antenna	Simultaneous Tx Config	WiFi 2.4GHz	Bluetooth	WiFi 5GHz	WCDMA / LTE / FR1 NR		
		802.11 b/g/n/ax	BDR, EDR, HDR4/8, LE1/2M	802.11 a/n/ac/ax	Mid Band	High Band	Ultra High Band
3a	Config 1	✗	✓	✓	✗	✗	✗
3a	Config 2	✓	✗	✗	✓	✗	✗
3a	Config 3	✓	✗	✗	✗	✓	✗
3a	Config 4	✗	✓	✓	✓	✗	✗
3a	Config 5	✗	✓	✓	✗	✓	✗
1b	Config 6	✗	✗	✓	✓	✗	✗
1b	Config 7	✗	✗	✓	✗	✓	✗
1a	Config 8	✓	✗	✗	✗	✗	✓
1a	Config 9	✗	✓	✗	✗	✗	✓

Table 2-1. Simultaneous Transmission Configurations

✓ = Support; ✗ = Not Support

Note:

All the above simultaneous transmission configurations have been tested and the worst case configuration was found to be Config 3 and is reported in RF WLAN and RF Part 27b test reports.

Wi-Fi 2.4GHz and Bluetooth 2.4 GHz can transmit simultaneously on separate antennas. Specific 2.4 GHz Wi-Fi antenna that can only transmit simultaneously with 2.4 GHz Bluetooth antenna is listed in the SAR test report. For BT (2.4 GHz) in connected mode and Wi-Fi (2.4 GHz) – Wi-Fi max power will not exceed minimum of (13.5dBm, SAR max cap, Reg max cap) power. For BT (2.4 GHz) in disconnected mode and Wi-Fi (2.4 GHz) – BT will be using iPA only and Wi-Fi max power will not exceed minimum of (SAR max cap, Reg max cap) power.

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2.3 Antenna Description

Following antenna gains provided by manufacturer were used for testing.

Band	Antenna Gain [dBi]			
	Antenna 3B	Antenna 2A	Antenna 4	Antenna 1a
NR Band n77	2.2	1.1	3.6	-0.6

Table 2-2. Highest Antenna Gain

2.4 Test Support Equipment

Test Support Equipment					
1	Apple MacBook Pro w/AC/DC Adapter	Model: A2141 Model: A2166	S/N: C02DV7VKMD6T S/N: N/A		
2	Apple USB-C Cable	Model: Spartan	S/N: 000MKTR02U		
3	USB-C Cable w/ AC Adapter	Model: A246 Model: A2305	S/N: N/A S/N: N/A		
4	DC Power Supply	Model: KPS3010D	S/N: N/A		

Table 2-3. Test Support Equipment

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2.5 Test Configuration

The EUT was tested per the guidance of ANSI C63.26 2015, TIA-603-E-2016 and KDB 971168 D01 v03r01. See Section 7.0 of this test report for a description of the radiated and antenna Antenna 4onduted emissions tests.

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

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

2.6 Software and Firmware

The test was conducted with firmware version 20A32640u installed on the EUT.

2.7 EMI Suppression Device(s)/Modifications

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

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3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

The measurement procedures described in the "Land Mobile FM or PM – Communications Equipment – Measurements and Performance Standards" (ANSI C63.26 2015, TIA-603-E-2016) and "Measurement Guidance for Certification of Licensed Digital Transmitters" (KDB 971168 D01 v03r01) were used in the measurement of the EUT.

Deviation from Measurement Procedure.....None

3.2 Radiated Spurious Emissions

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

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

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

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

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

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

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

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

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4.0 MEASUREMENT UNCERTAINTY

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

Contribution	Expanded Uncertainty (\pm dB)
Conducted Bench Top Measurements	1.77
Radiated Disturbance (<30MHz)	4.38
Radiated Disturbance (30MHz-1GHz)	4.75
Radiated Disturbance (1-18GHz)	5.20
Radiated Disturbance (>18GHz)	4.72

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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
Agilent Technologies	N9030A	3Hz-44GHz PXA Signal Analyzer	6/10/2022	Annual	6/10/2023	MY49430244
Agilent Technologies	N9020A	MXA Signal Analyzer	4/26/2022	Annual	4/26/2023	MY56470202
ATM	180-442A-KF	20dB Nominal Gain Horn Antenna	1/19/2022	Annual	1/19/2023	T058701-02
ETS-Lindgren	3142E	Biconilog Antenna (26-6000MHz)	10/21/2021	Annual	10/21/2022	208204
ETS-Lindgren	3117	Double Ridged Guide Horn Antenna (1-18GHz)	10/25/2021	Annual	10/25/2022	227597
ETS-Lindgren	SU-241	Table Top Temperature Chamber	10/6/2021	Annual	10/6/2022	92009574
Keysight Technology	N9040B	UXA Signal Analyzer	2/8/2022	Annual	2/8/2023	MY57212015
Rohde & Schwarz	TS-PR8	Pre-Amplifier (30MHz-6GHz)	1/6/2022	Annual	1/6/2023	102328
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	10/11/2021	Annual	10/11/2022	161616
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	11/4/2021	Annual	11/4/2022	151888
Rohde & Schwarz	ESW26	EMI Test Receiver	5/19/2022	Annual	5/19/2023	101299
Rohde & Schwarz	ESW44	EMI Test Receiver	12/2/2021	Annual	12/2/2022	101570
Rohde & Schwarz	FSV40	Signal Analyzer (10Hz-40GHz)	3/4/2022	Annual	3/4/2023	101619
Rohde & Schwarz	FSA3044	Signal Analyzer (up to 44 GHz)	5/12/2022	Annual	5/12/2023	101098
Rohde & Schwarz	HFH2-Z2	Loop Antenna	4/3/2022	Annual	4/3/2023	100546
Rohde & Schwarz	TC-TA18	Cross-Polarized Antenna 400MHz-18GHz	1/25/2022	Annual	1/25/2023	101063
Rohde & Schwarz	TS-PR18	Pre-Amplifier (1GHz-18GHz)	1/6/2022	Annual	1/6/2023	101639
Rohde & Schwarz	TS-PR1840	Pre-Amplifier (18GHz-40GHz)	4/18/2022	Annual	4/18/2023	100050

Table 5-1. Test Equipment

Notes:

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.

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6.0 SAMPLE CALCULATIONS

Emission Designator

$\pi/2$ BPSK / QPSK Modulation

Emission Designator = 8M62G7W

BW = 8.62 MHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination of Any

QAM Modulation

Emission Designator = 8M45D7W

BW = 8.45 MHz

D = Amplitude/Angle Modulated

7 = Quantized/Digital Info

W = Combination of Any

Spurious Radiated Emission

Example: Spurious emission at 3700.40 MHz

The receive spectrum analyzer reading at 3 meters with the EUT on the turntable was -81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of -81.0 dBm on the spectrum analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 3700.40 MHz. So 6.1 dB is added to the signal generator reading of -30.9 dBm yielding -24.80 dBm. The fundamental EIRP was 25.50 dBm so this harmonic was 25.50 dBm $- (-24.80) = 50.3$ dBc.

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7.0 TEST RESULTS

7.1 Summary

Company Name: Apple Inc.
 FCC ID: BCGA2757
 FCC Classification: PCS Licensed Transmitter (PCB)
 Mode(s): NR

Test Condition	Test Description	FCC Part Section(s)	Test Limit	Test Result	Reference
CONDUCTED	Occupied Bandwidth	2.1049	N/A	N/A	Section 7.2
	Conducted Band Edge / Spurious Emissions (NR Band n77 - 3450-3550MHz)	2.1051, 27.53(n)(2)	-13 dBm at Band Edge and for all out-of-band emissions	PASS	Sections 7.3, 7.4
	Conducted Band Edge / Spurious Emissions (NR Band n77 - 3700-3980MHz)	2.1051, 27.53(l)(2)		PASS	Sections 7.3, 7.4
	Peak-Average Ratio (NR Band n77 - 3450-3550MHz)	27.50(k)(4)	< 13 dB	PASS	Sections 7.5
	Peak-Average Ratio (NR Band n77 - 3700-3980MHz)	27.50(j)(4)		PASS	Sections 7.5
	Transmitter Conducted Output Power	2.1046	N/A	N/A	See RF Exposure Report
	Effective Radiated Power / Equivalent Isotropic Radiated Power (NR Band n77 - 3450-3550MHz)	27.50(k)(3)	< 1 Watts max. EIRP	PASS	Section 7.6
	Effective Radiated Power / Equivalent Isotropic Radiated Power (NR Band n77 - 3700-3980MHz)	27.50(j)(3)		PASS	Section 7.6
RADIATED	Frequency Stability	2.1055, 27.54	Fundamental emissions stay within authorized frequency block	PASS	Section 7.8
	Radiated Spurious Emissions (NR Band n77 - 3450-3550MHz)	2.1051, 27.53(n)(2)	-13 dBm for all out-of-band emissions	PASS	Section 7.7
	Radiated Spurious Emissions (NR Band n77 - 3700-3980MHz)	2.1051, 27.53(l)(2)		PASS	Section 7.7

Table 7-1. Summary of Test Results

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Notes:

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

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7.2 Occupied Bandwidth

§2.1049

Test Overview

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are reported in this section. All ports were tested and only the worst case data were reported.

Test Procedure Used

KDB 971168 D01 v03r01 – Section 4.2

Test Settings

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

Test Setup

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

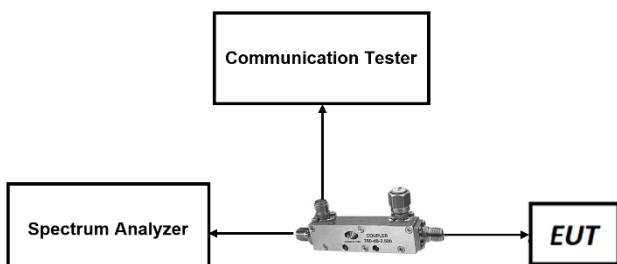


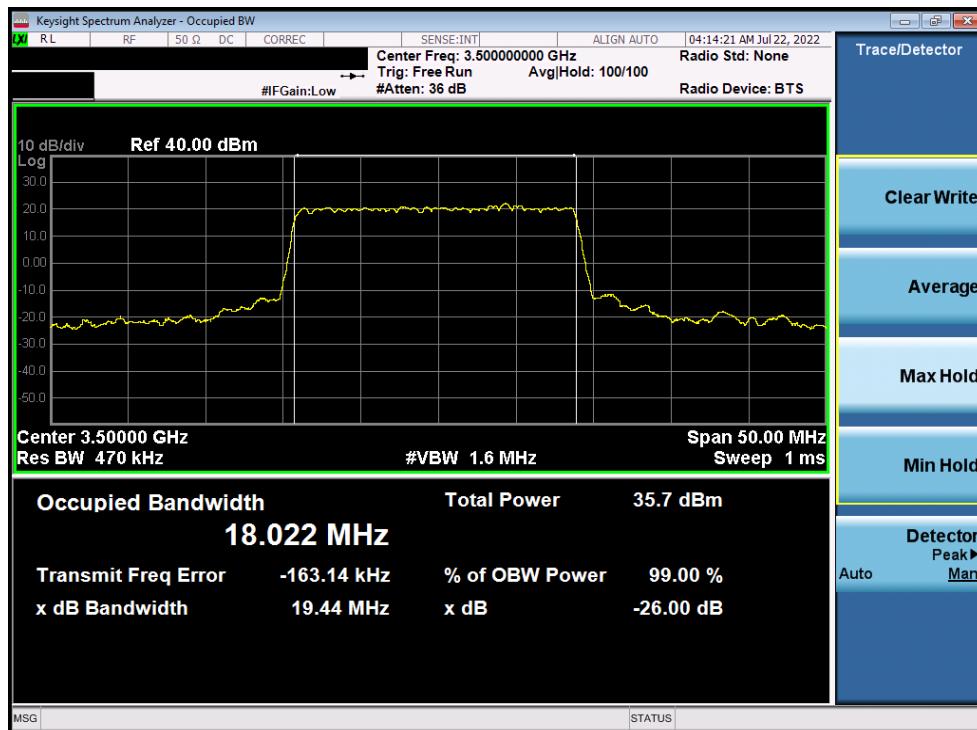
Figure 7-1. Test Instrument & Measurement Setup

Test Notes

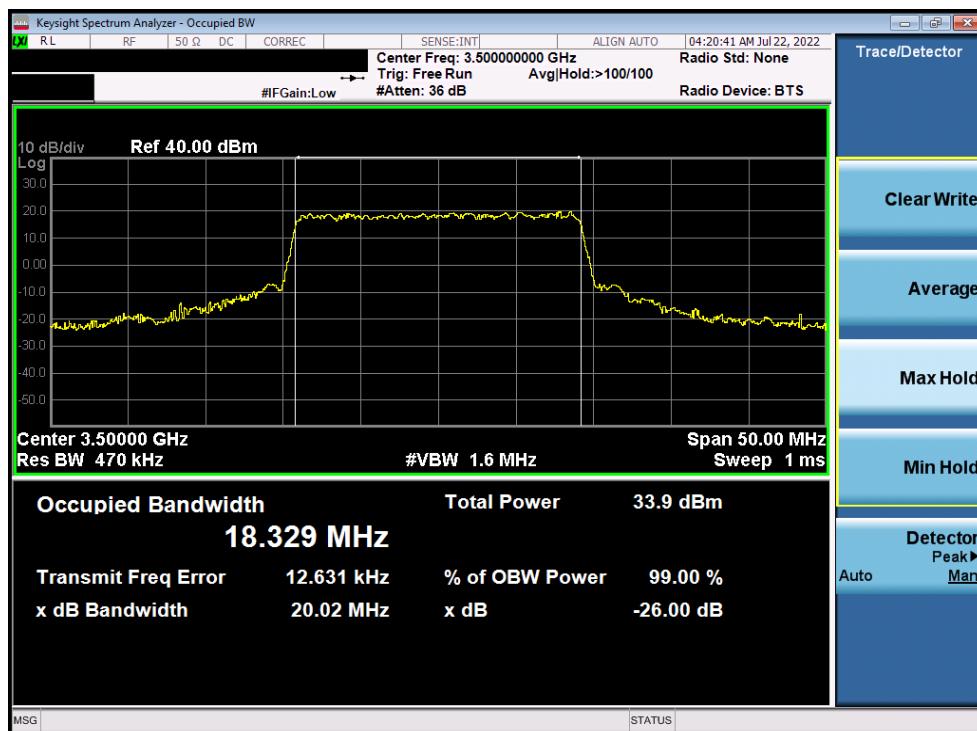
None.

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NR Band n77 DoD-Band

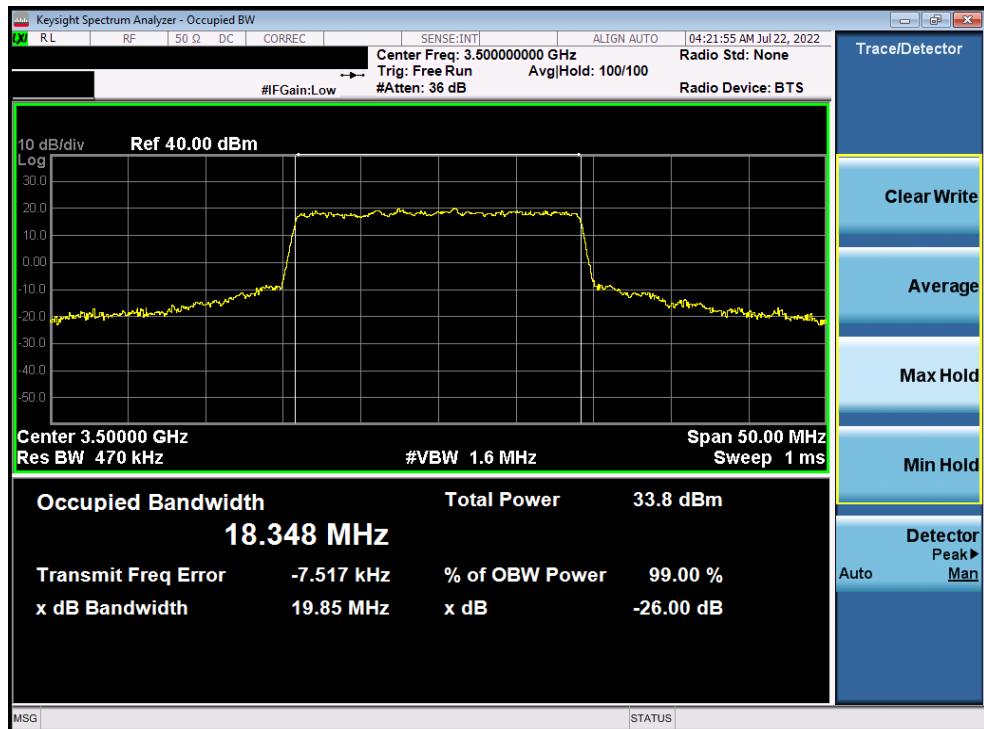


Plot 7-1. Occupied Bandwidth Plot (NR Band n77 DoD Band - 20MHz DFT-s-OFDM $\pi/2$ BPSK - Full RB)

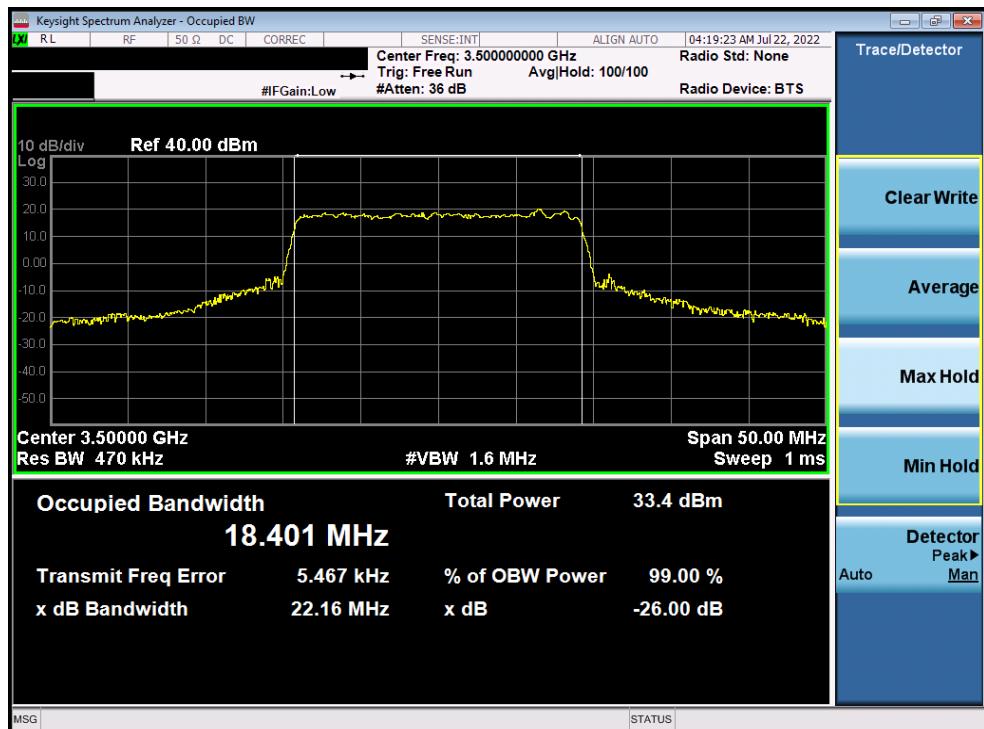


Plot 7-2. Occupied Bandwidth Plot (NR Band n77 DoD Band - 20MHz CP-OFDM QPSK - Full RB)

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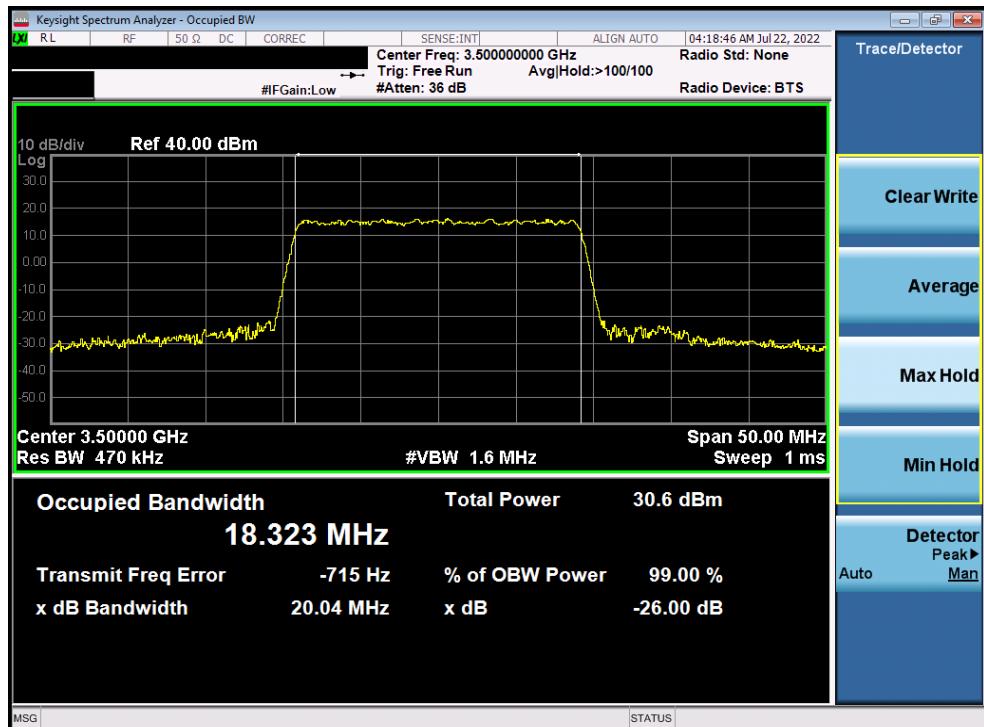


Plot 7-3. Occupied Bandwidth Plot (NR Band n77 DoD Band - 20MHz CP-OFDM 16-QAM - Full RB)

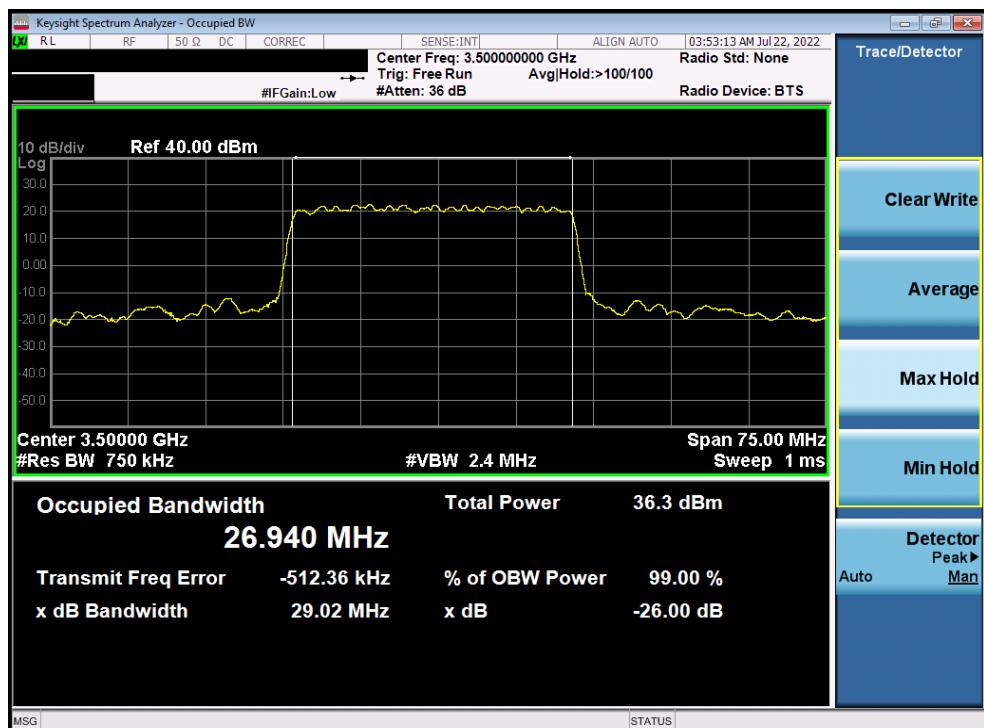


Plot 7-4. Occupied Bandwidth Plot (NR Band n77 DoD Band - 20MHz CP-OFDM 64-QAM - Full RB)

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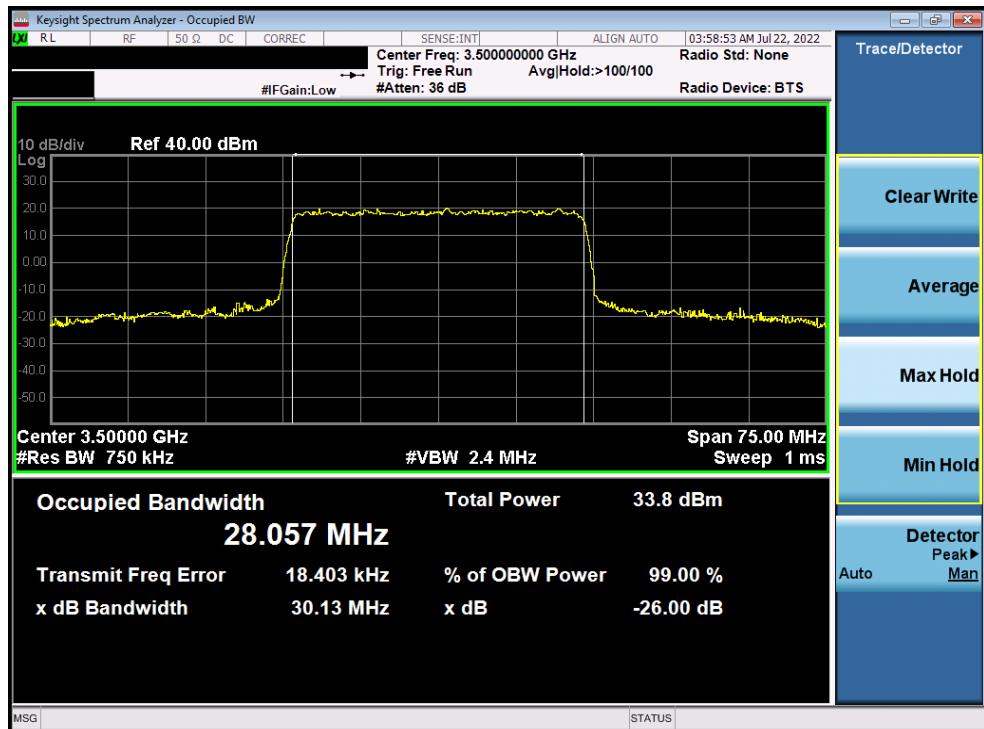


Plot 7-5. Occupied Bandwidth Plot (NR Band n77 DoD Band - 20MHz CP-OFDM 256-QAM - Full RB)

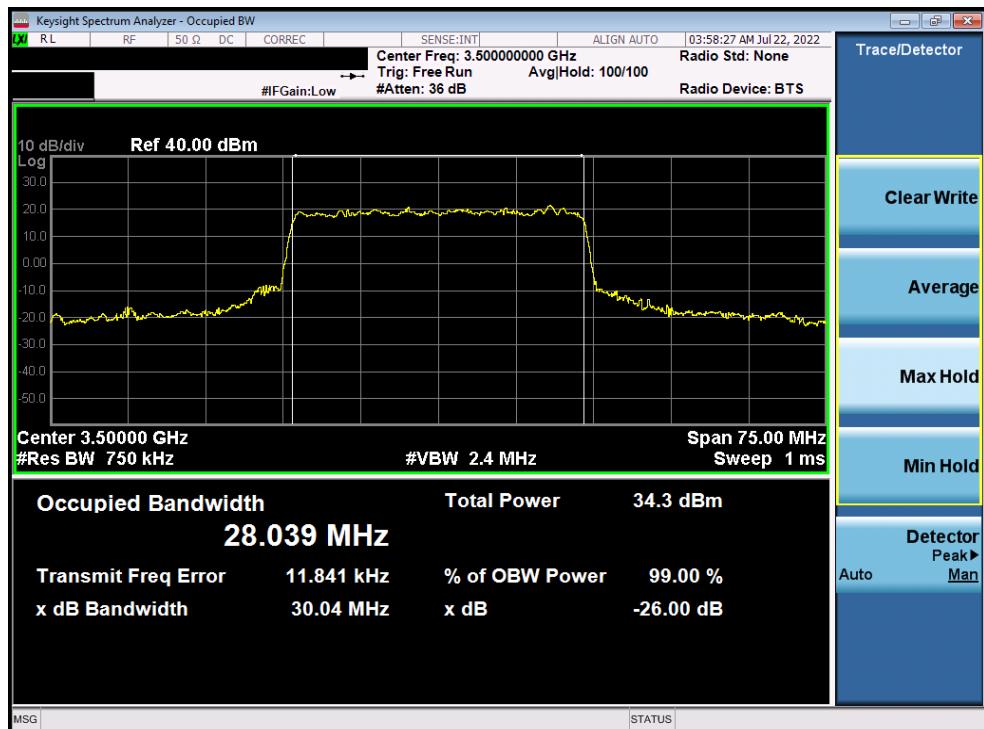


Plot 7-6. Occupied Bandwidth Plot (NR Band n77 DoD Band - 30MHz DFT-s-OFDM π/2 BPSK - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT		
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device	Approved by: Technical Manager

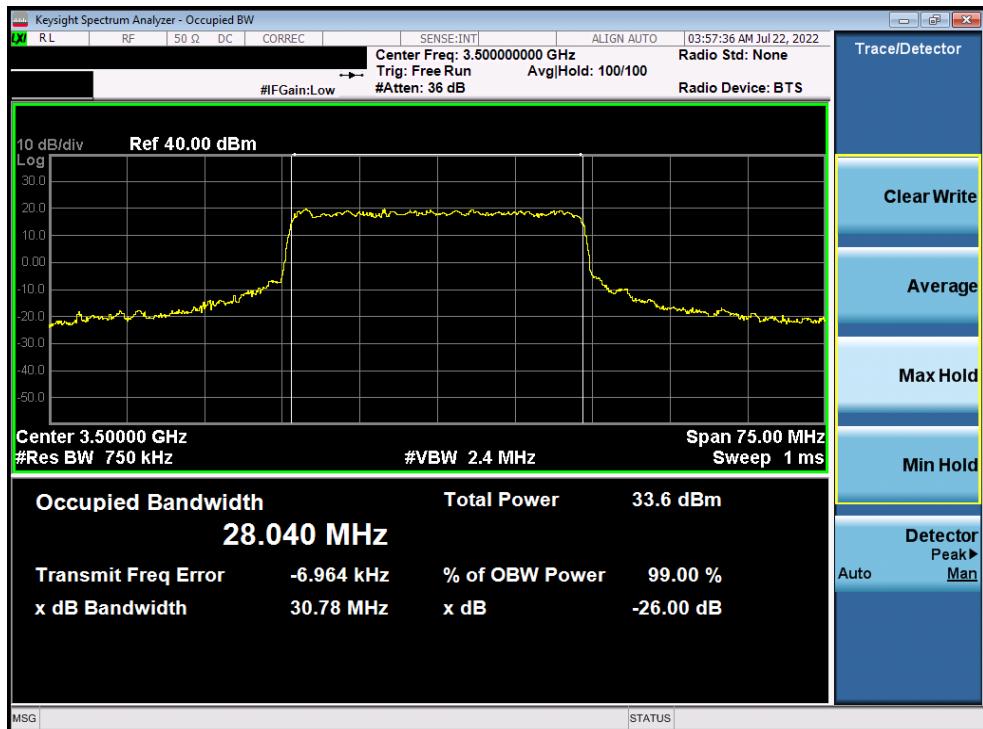


Plot 7-7. Occupied Bandwidth Plot (NR Band n77 DoD Band - 30MHz CP-OFDM QPSK - Full RB)

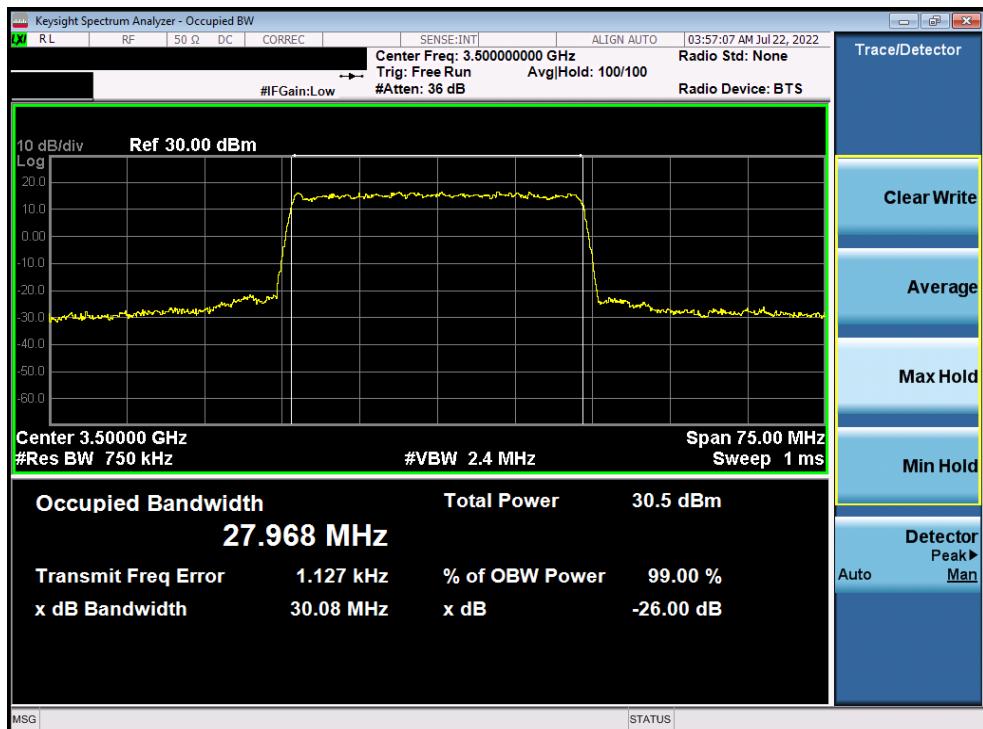


Plot 7-8. Occupied Bandwidth Plot (NR Band n77 DoD Band - 30MHz CP-OFDM 16-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT		
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device	Approved by: Technical Manager

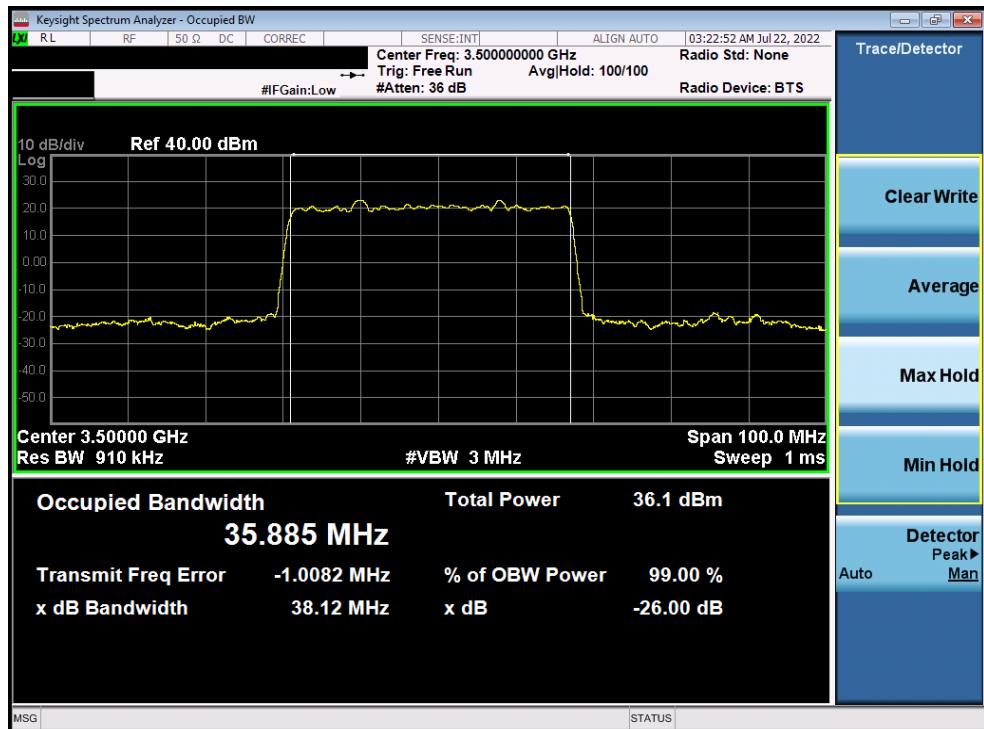


Plot 7-9. Occupied Bandwidth Plot (NR Band n77 DoD Band - 30MHz CP-OFDM 64-QAM - Full RB)

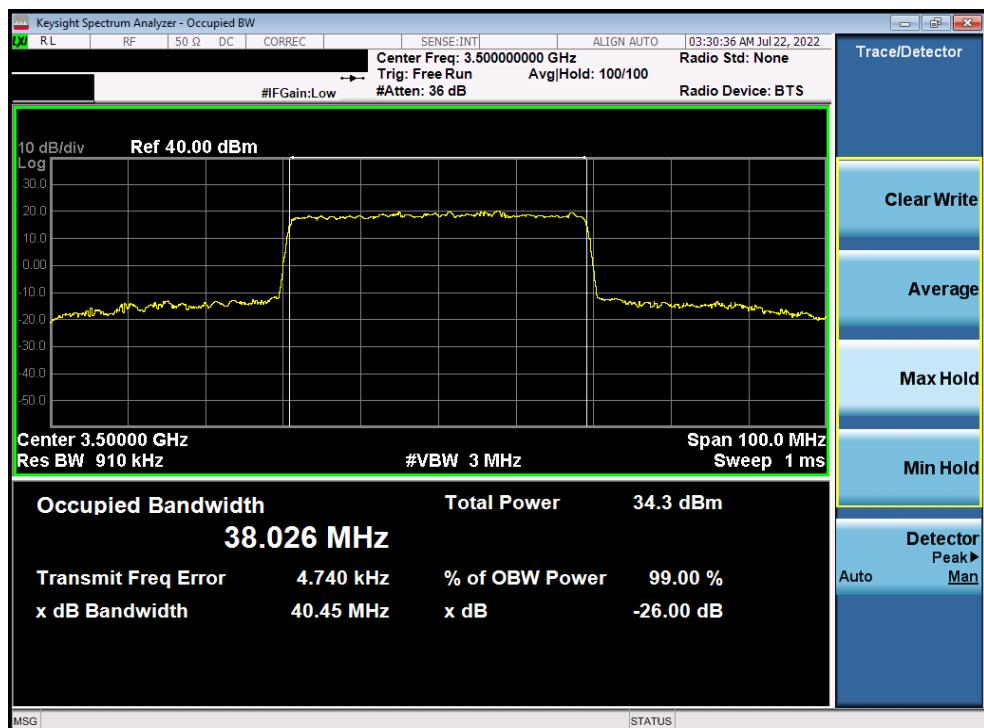


Plot 7-10. Occupied Bandwidth Plot (NR Band n77 DoD Band - 30MHz CP-OFDM 256-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 22 of 176

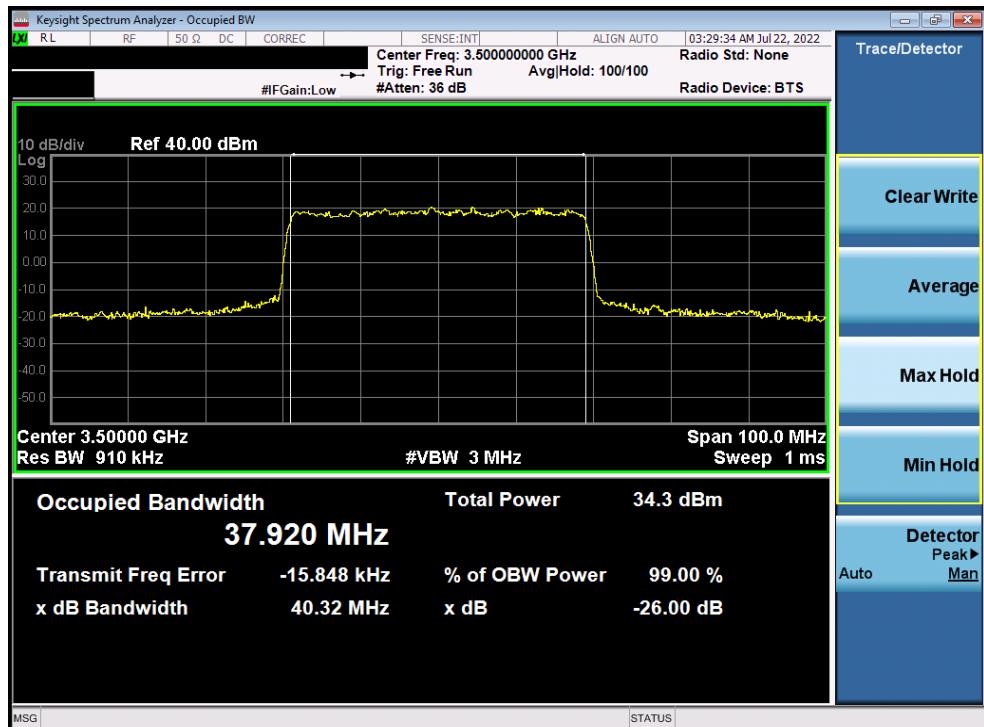


Plot 7-11. Occupied Bandwidth Plot (NR Band n77 DoD Band - 40MHz DFT-s-OFDM $\pi/2$ BPSK - Full RB)

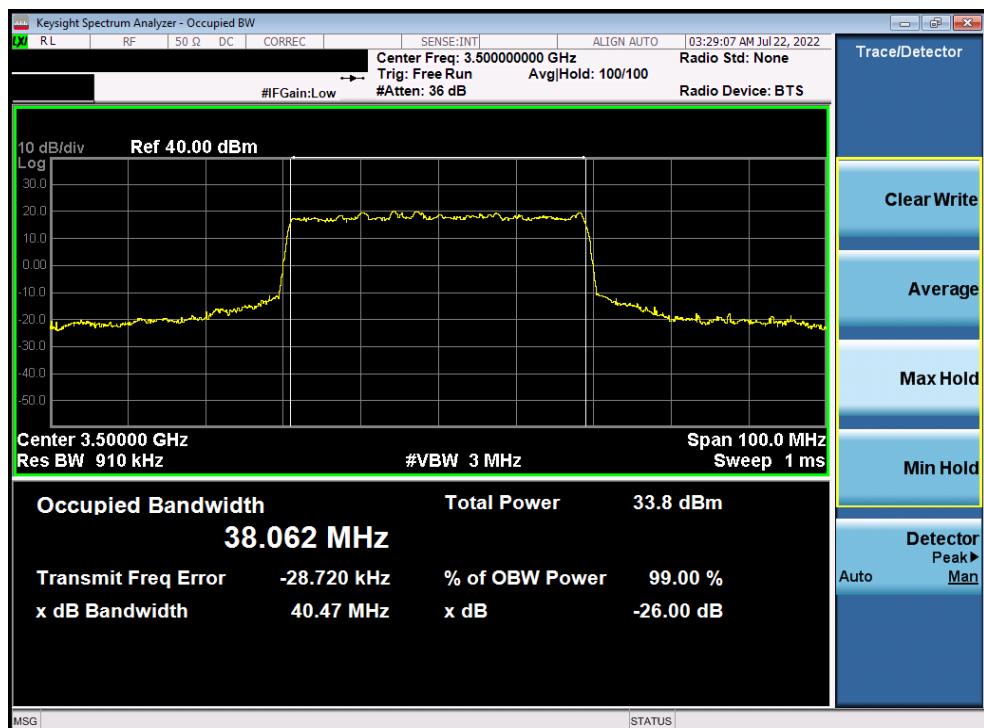


Plot 7-12. Occupied Bandwidth Plot (NR Band n77 DoD Band - 40MHz CP-OFDM QPSK - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 23 of 176



Plot 7-13. Occupied Bandwidth Plot (NR Band n77 DoD Band - 40MHz CP-OFDM 16-QAM - Full RB)

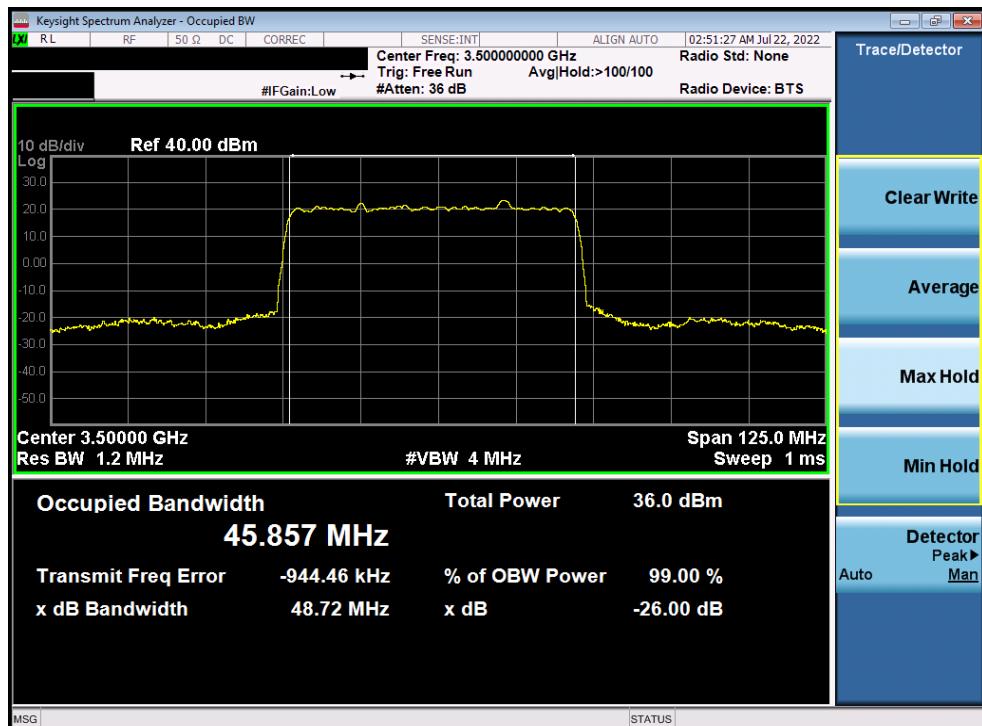


Plot 7-14. Occupied Bandwidth Plot (NR Band n77 DoD Band - 40MHz CP-OFDM 64-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT		
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device	Approved by: Technical Manager

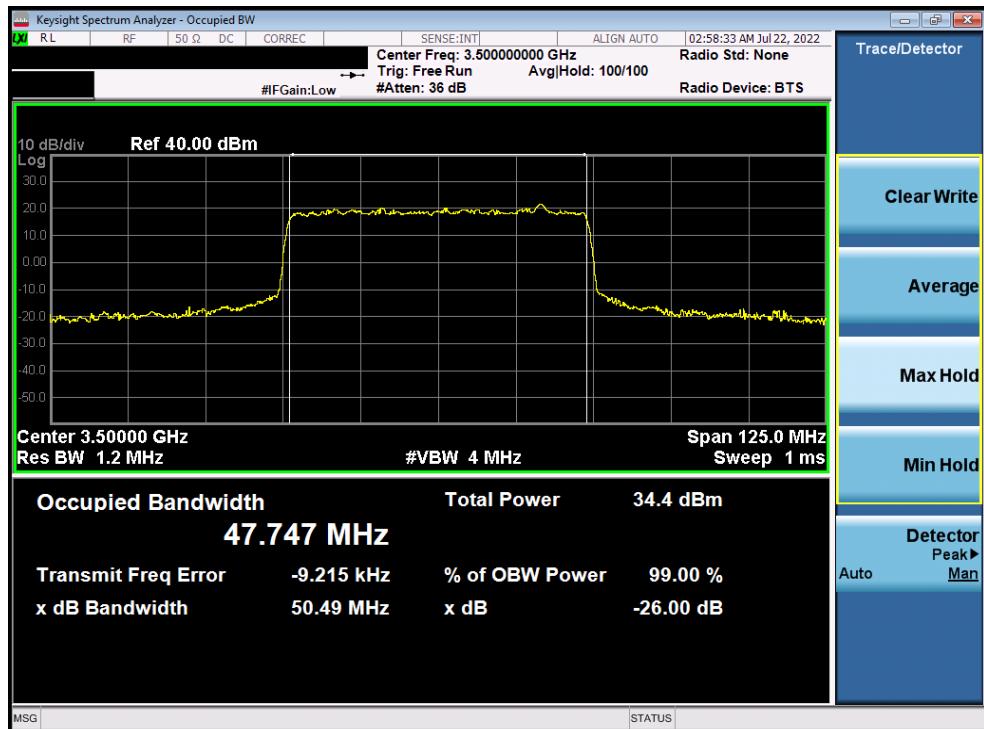


Plot 7-15. Occupied Bandwidth Plot (NR Band n77 DoD Band - 40MHz CP-OFDM 256-QAM - Full RB)

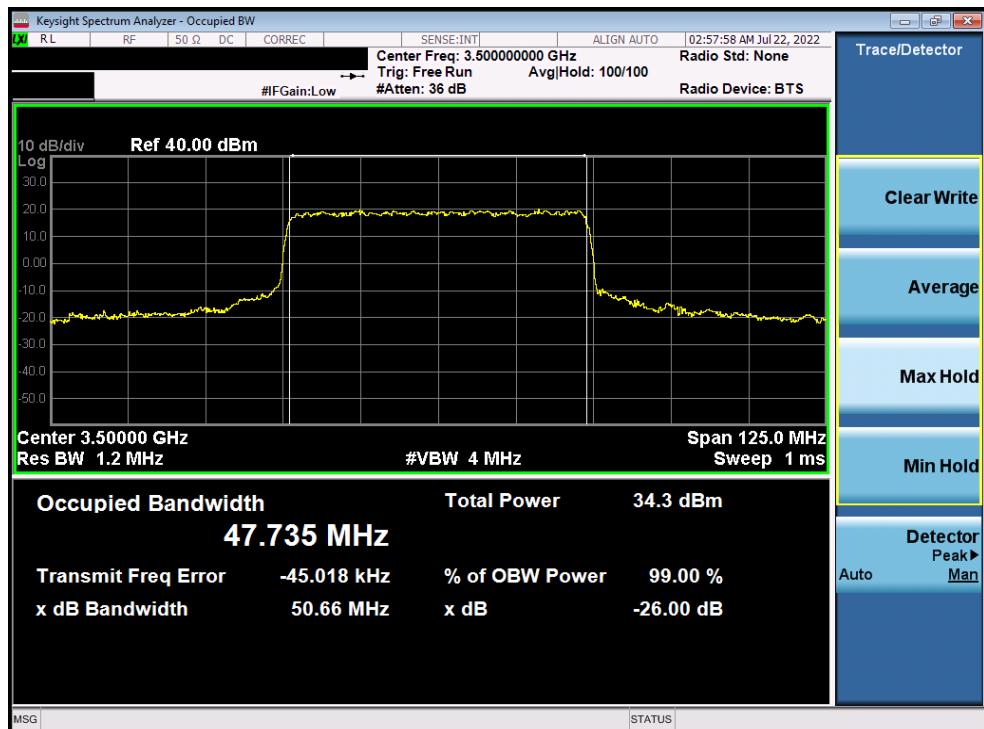


Plot 7-16. Occupied Bandwidth Plot (NR Band n77 DoD Band - 50MHz DFT-s-OFDM $\pi/2$ BPSK - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 25 of 176

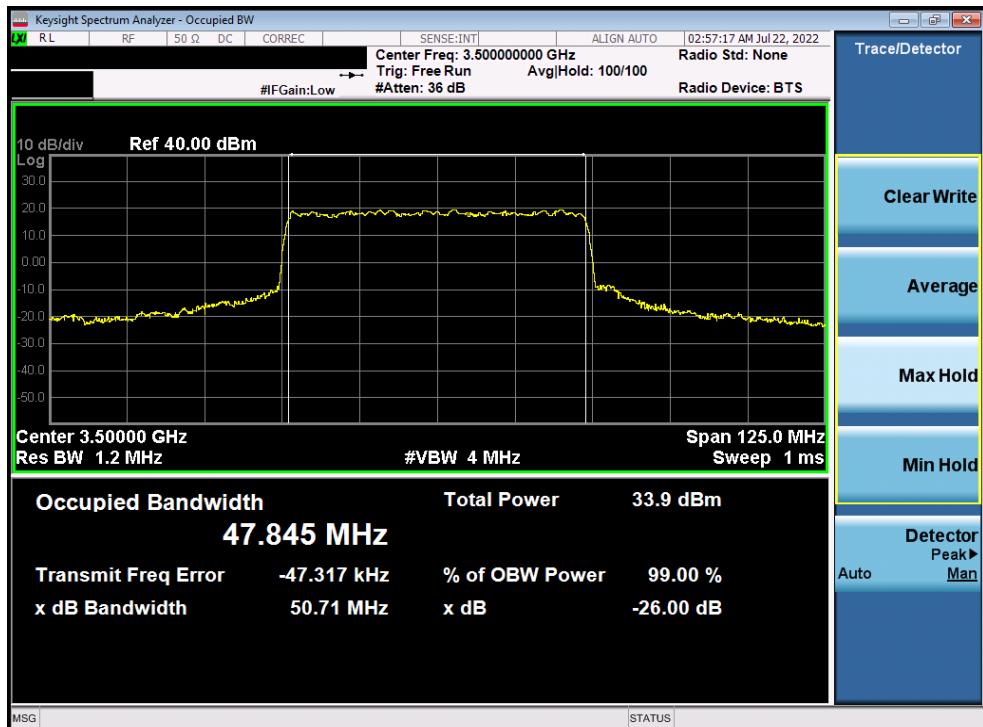


Plot 7-17. Occupied Bandwidth Plot (NR Band n77 DoD Band - 50MHz CP-OFDM QPSK - Full RB)



Plot 7-18. Occupied Bandwidth Plot (NR Band n77 DoD Band - 50MHz CP-OFDM 16-QAM - Full RB)

FCC ID: BCGA2757	 element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 26 of 176

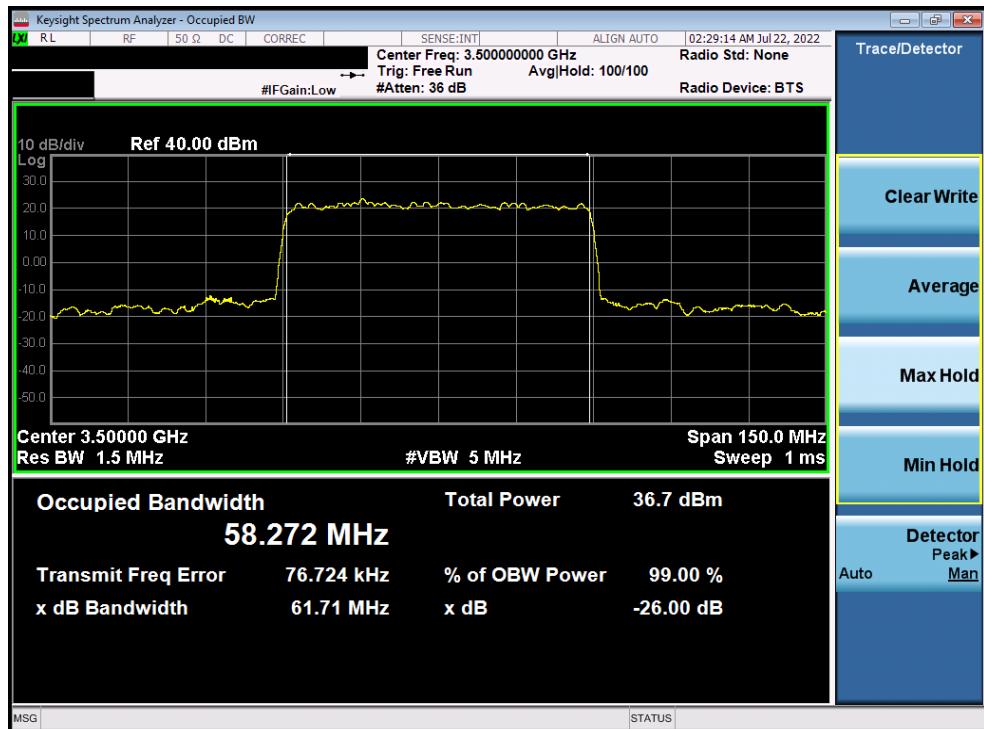


Plot 7-19. Occupied Bandwidth Plot (NR Band n77 DoD Band - 50MHz CP-OFDM 64-QAM - Full RB)

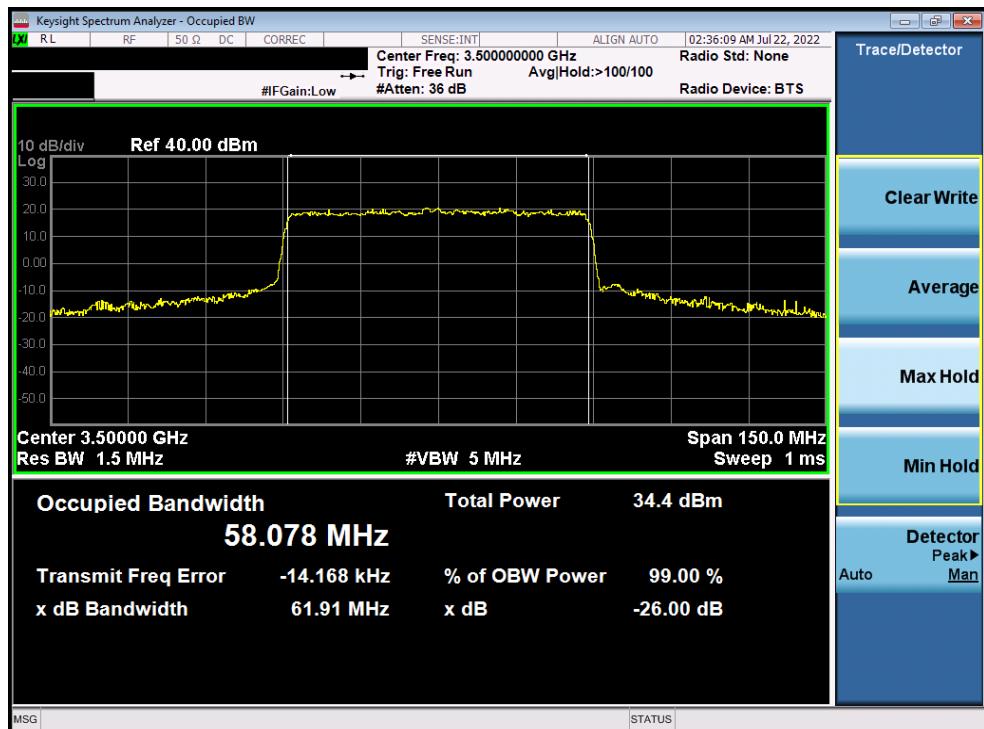


Plot 7-20. Occupied Bandwidth Plot (NR Band n77 DoD Band - 50MHz CP-OFDM 256-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT		
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device	Approved by: Technical Manager

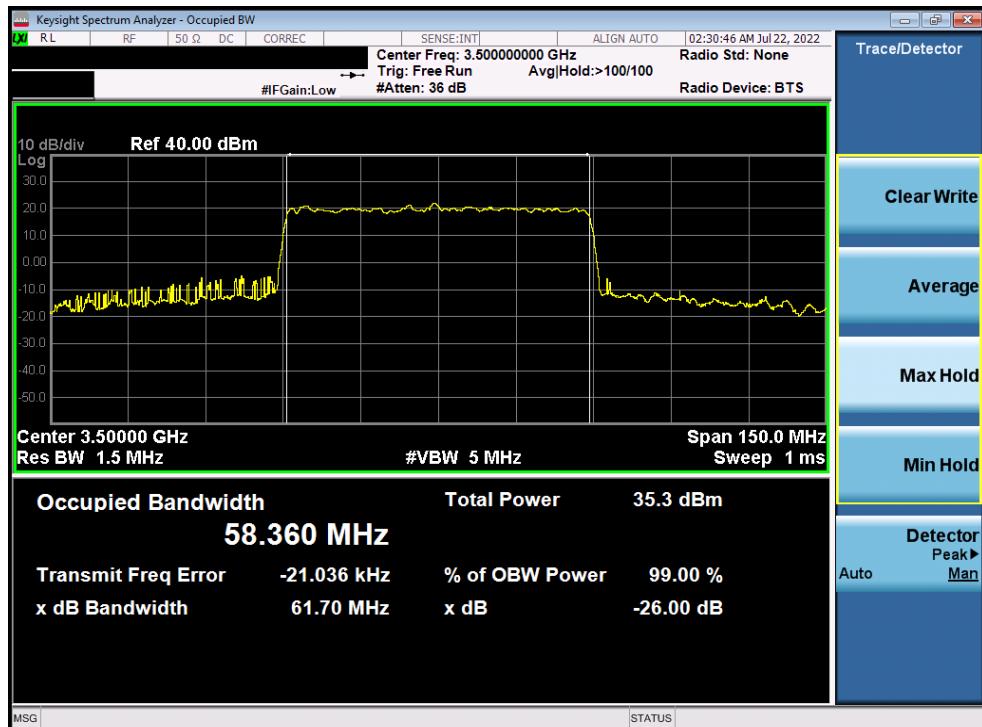


Plot 7-21. Occupied Bandwidth Plot (NR Band n77 DoD Band - 60MHz DFT-s-OFDM $\pi/2$ BPSK - Full RB)

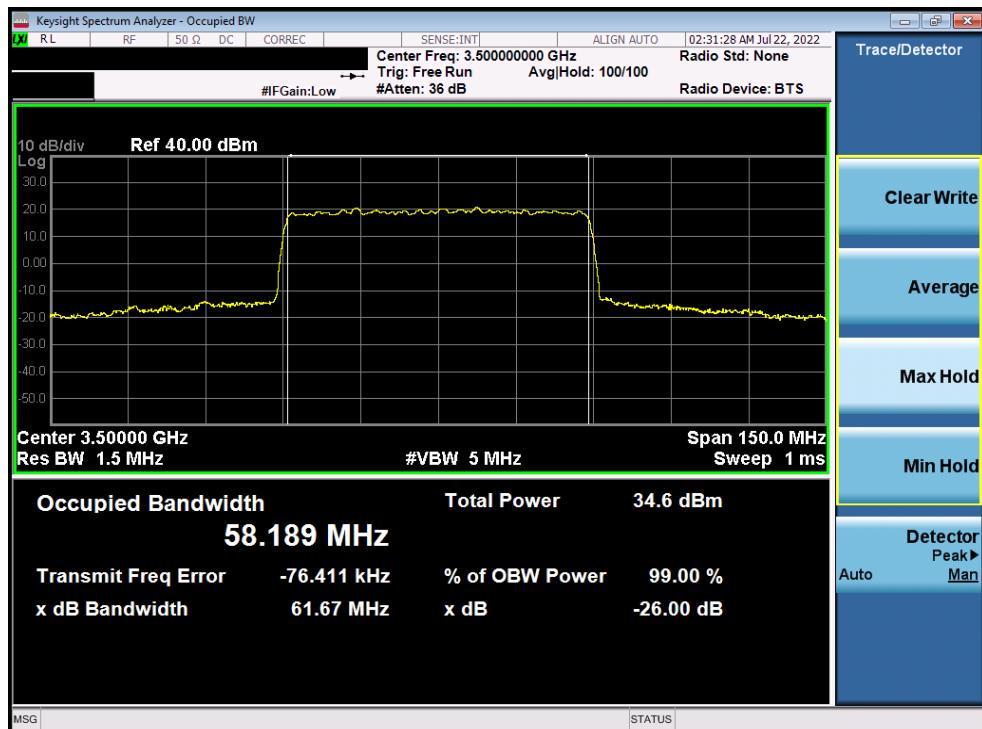


Plot 7-22. Occupied Bandwidth Plot (NR Band n77 DoD Band - 60MHz CP-OFDM QPSK - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT		
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device	Approved by: Technical Manager

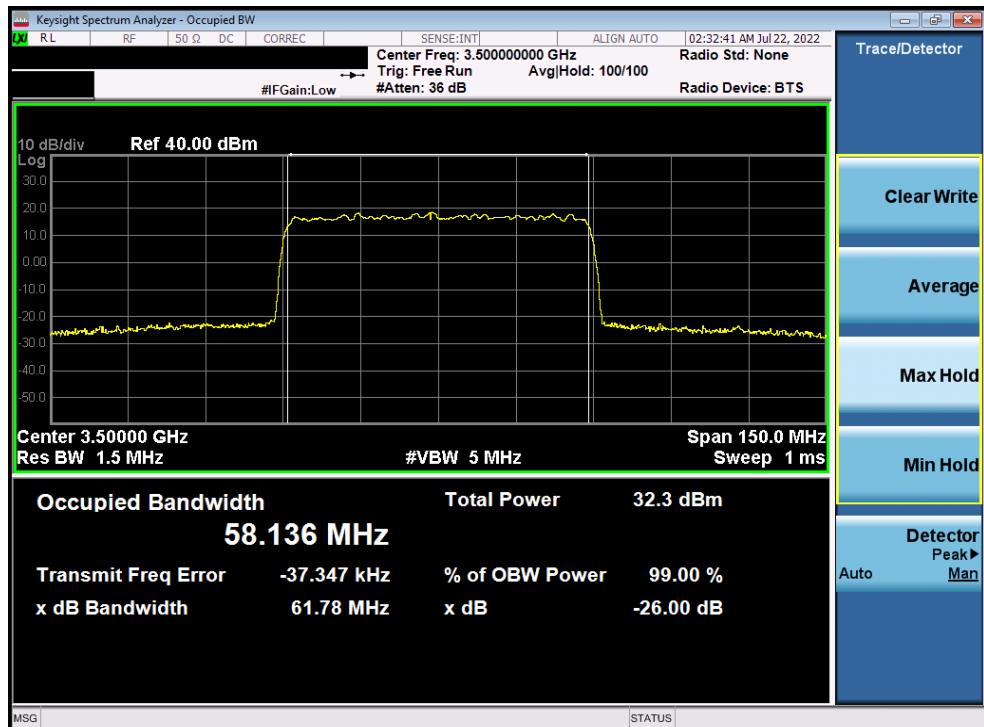


Plot 7-23. Occupied Bandwidth Plot (NR Band n77 DoD Band - 60MHz CP-OFDM 16-QAM - Full RB)

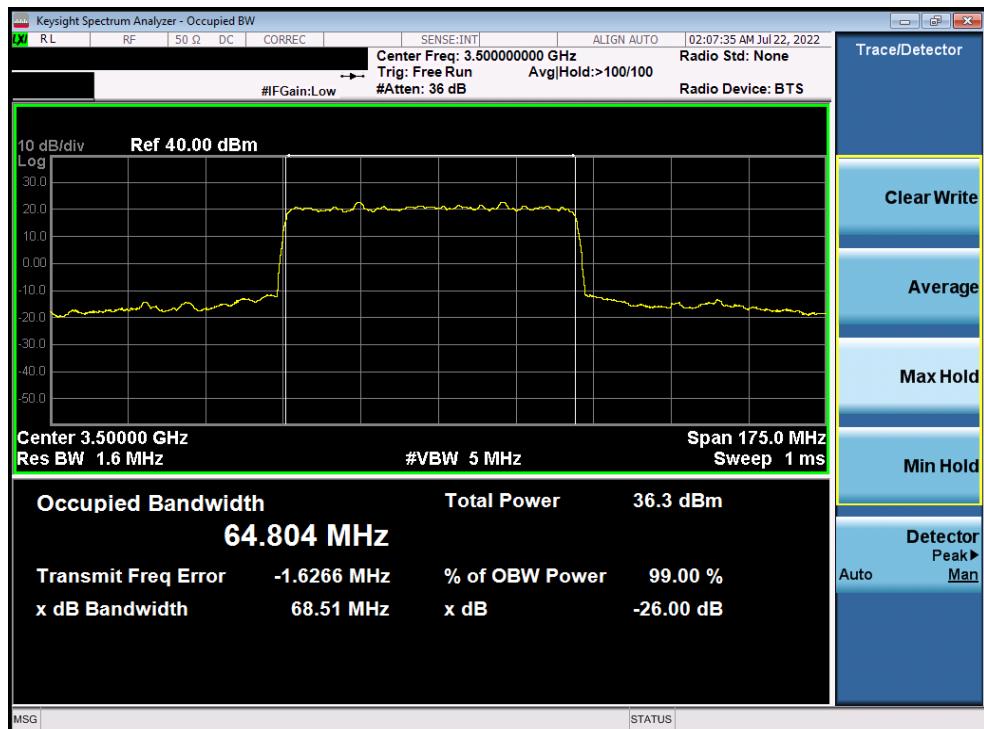


Plot 7-24. Occupied Bandwidth Plot (NR Band n77 DoD Band - 60MHz CP-OFDM 64-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT		
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device	Approved by: Technical Manager

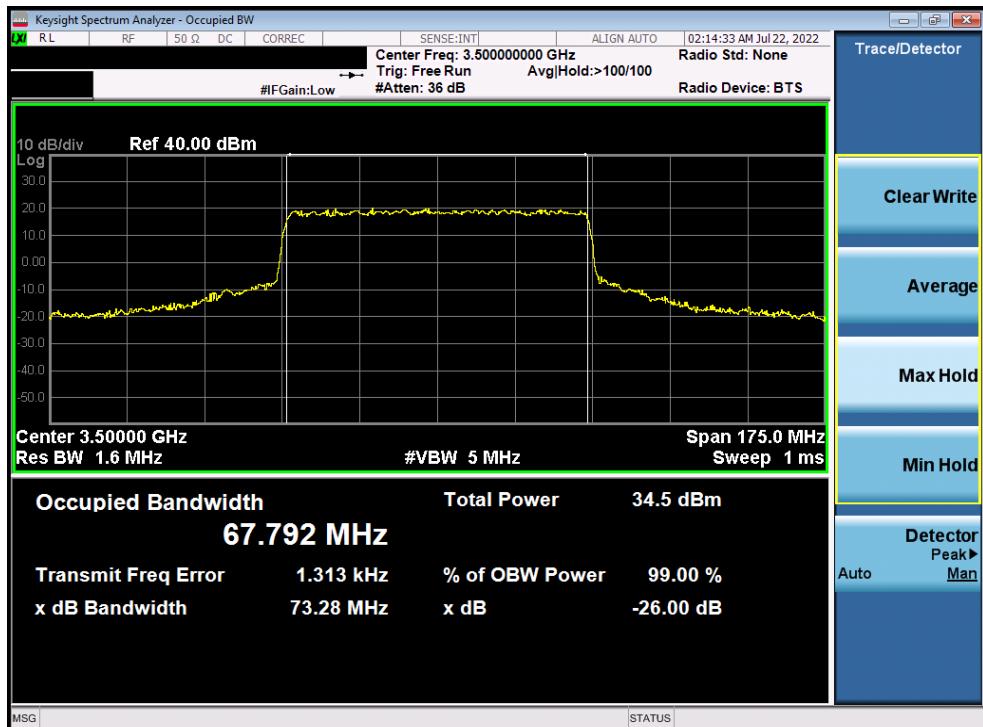


Plot 7-25. Occupied Bandwidth Plot (NR Band n77 DoD Band - 60MHz CP-OFDM 256-QAM - Full RB)

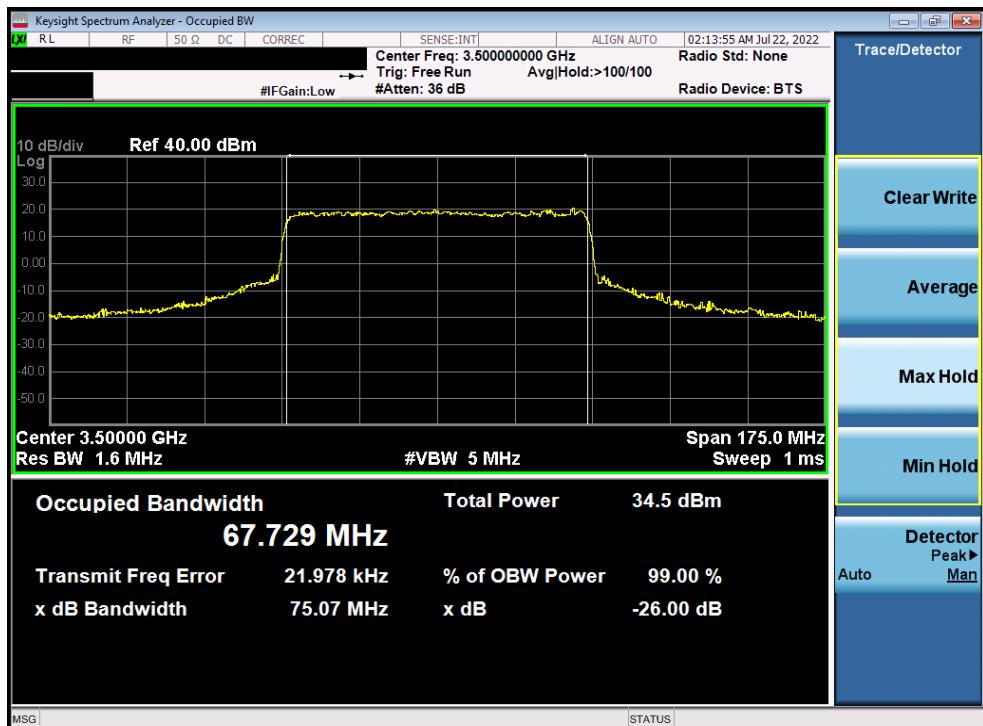


Plot 7-26. Occupied Bandwidth Plot (NR Band n77 DoD Band - 70MHz DFT-s-OFDM π/2 BPSK - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 30 of 176



Plot 7-27. Occupied Bandwidth Plot (NR Band n77 DoD Band - 70MHz CP-OFDM QPSK - Full RB)

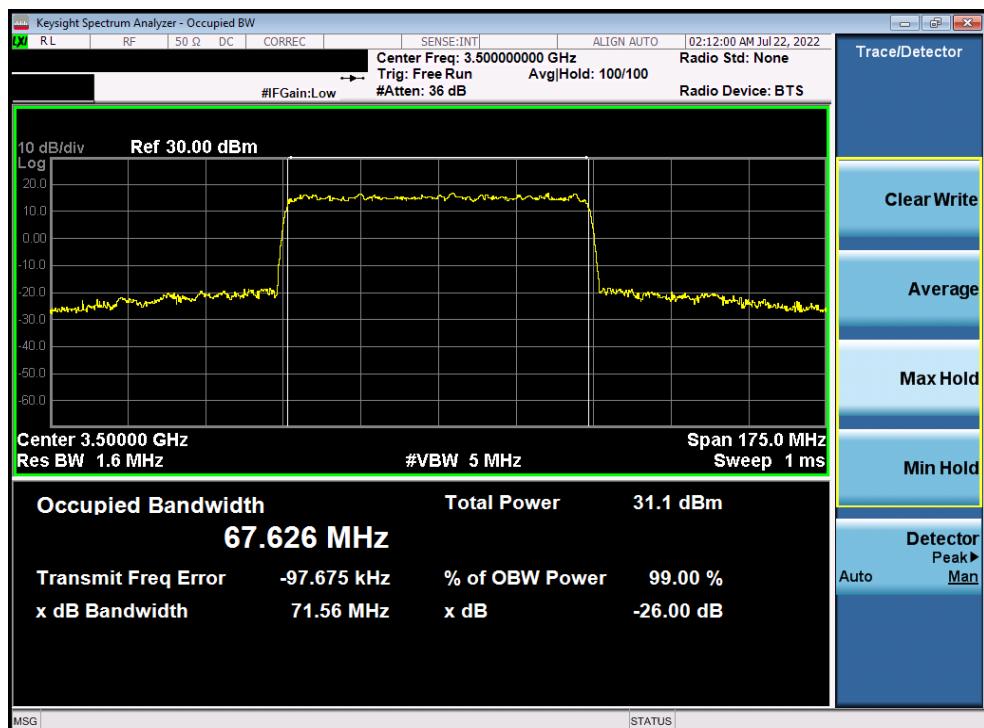


Plot 7-28. Occupied Bandwidth Plot (NR Band n77 DoD Band - 70MHz CP-OFDM 16-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT		
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device	Approved by: Technical Manager

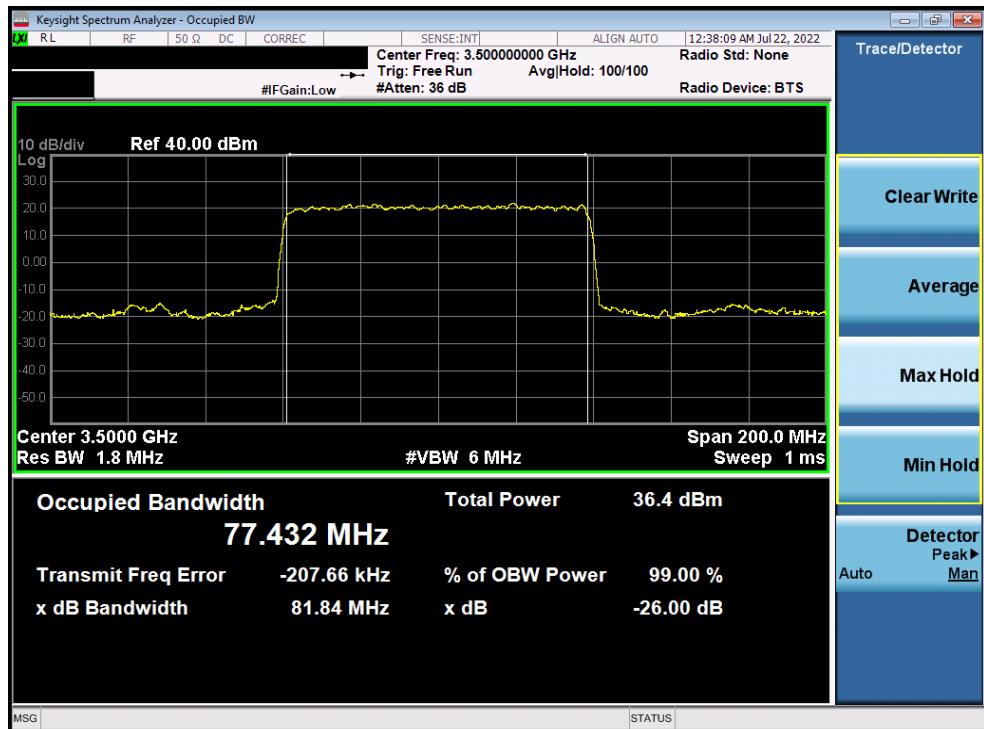


Plot 7-29. Occupied Bandwidth Plot (NR Band n77 DoD Band - 70MHz CP-OFDM 64-QAM - Full RB)

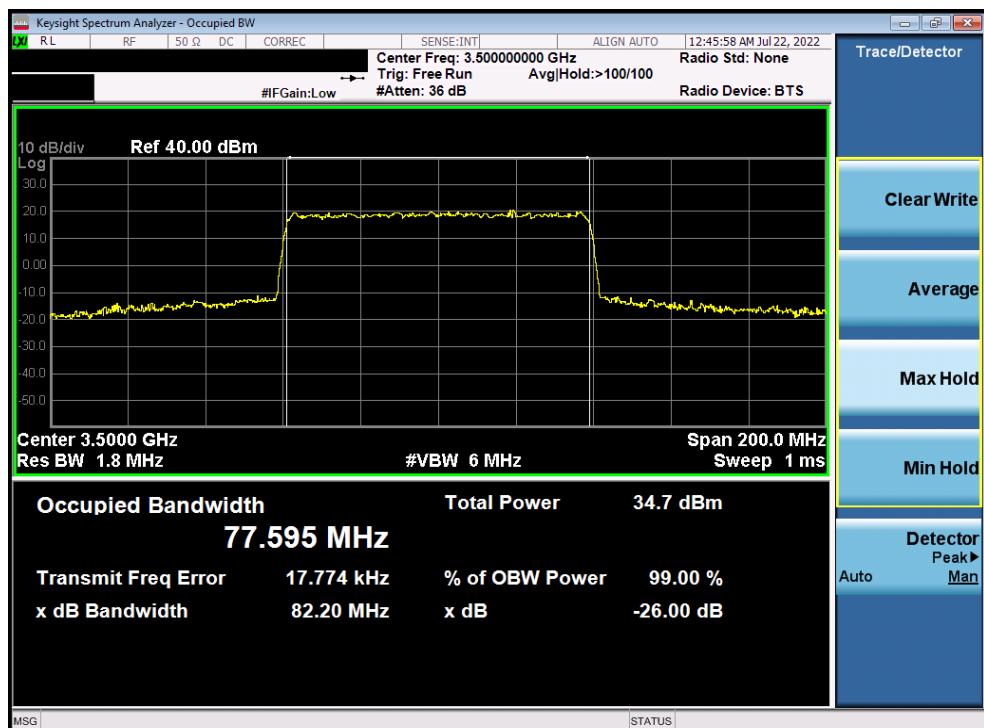


Plot 7-30. Occupied Bandwidth Plot (NR Band n77 DoD Band - 70MHz CP-OFDM 256-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT		
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device	Approved by: Technical Manager

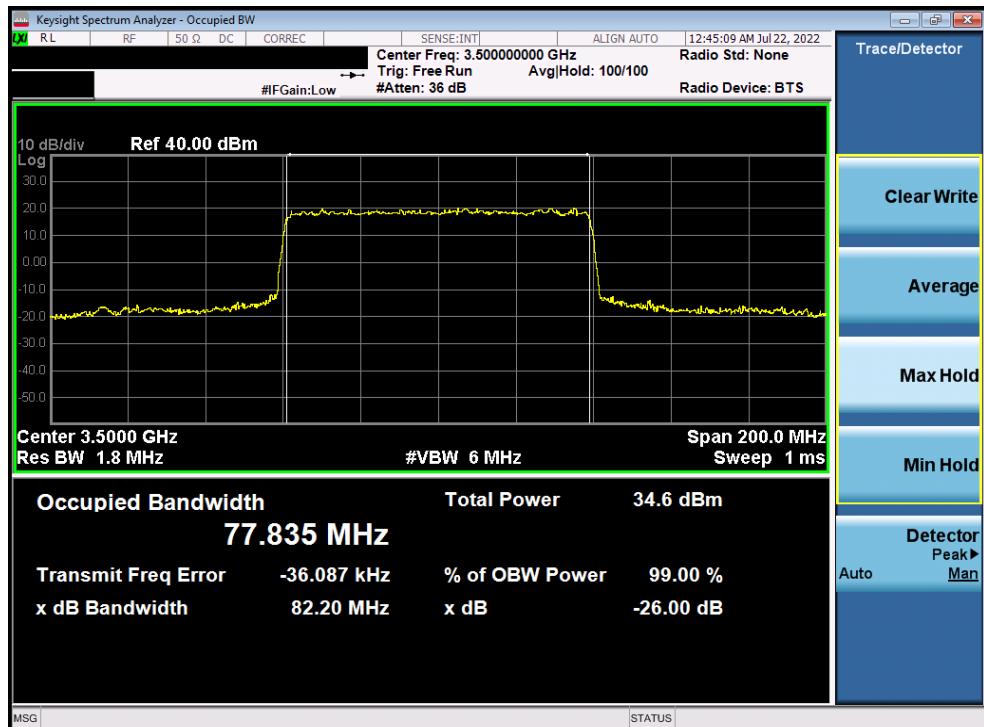


Plot 7-31. Occupied Bandwidth Plot (NR Band n77 DoD Band - 80MHz DFT-s-OFDM $\pi/2$ BPSK - Full RB)

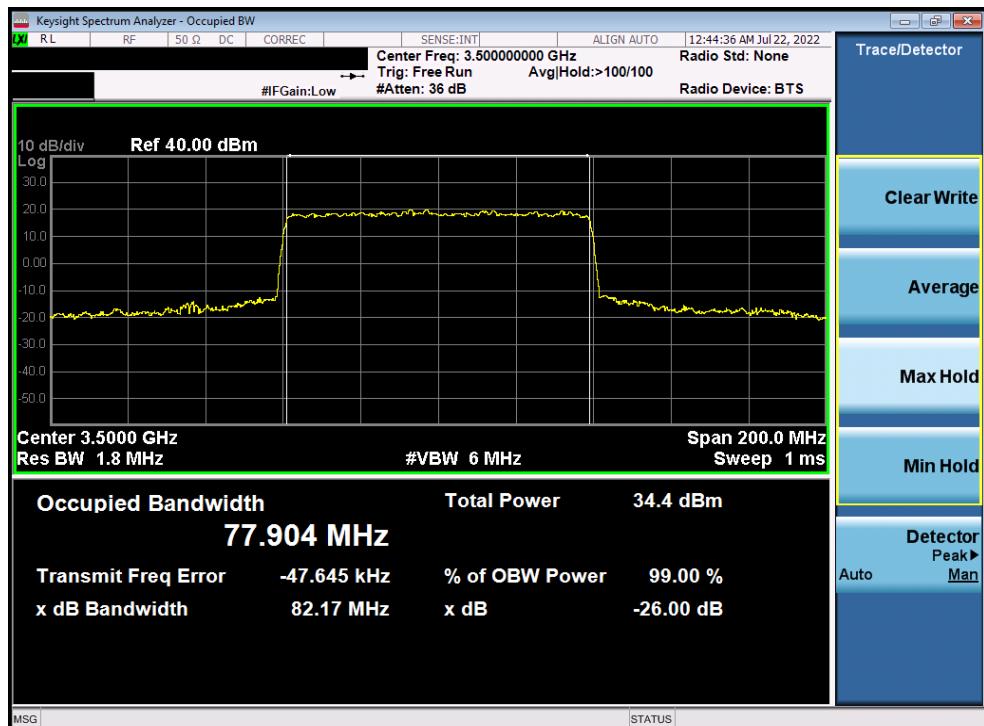


Plot 7-32. Occupied Bandwidth Plot (NR Band n77 DoD Band - 80MHz CP-OFDM QPSK - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 33 of 176

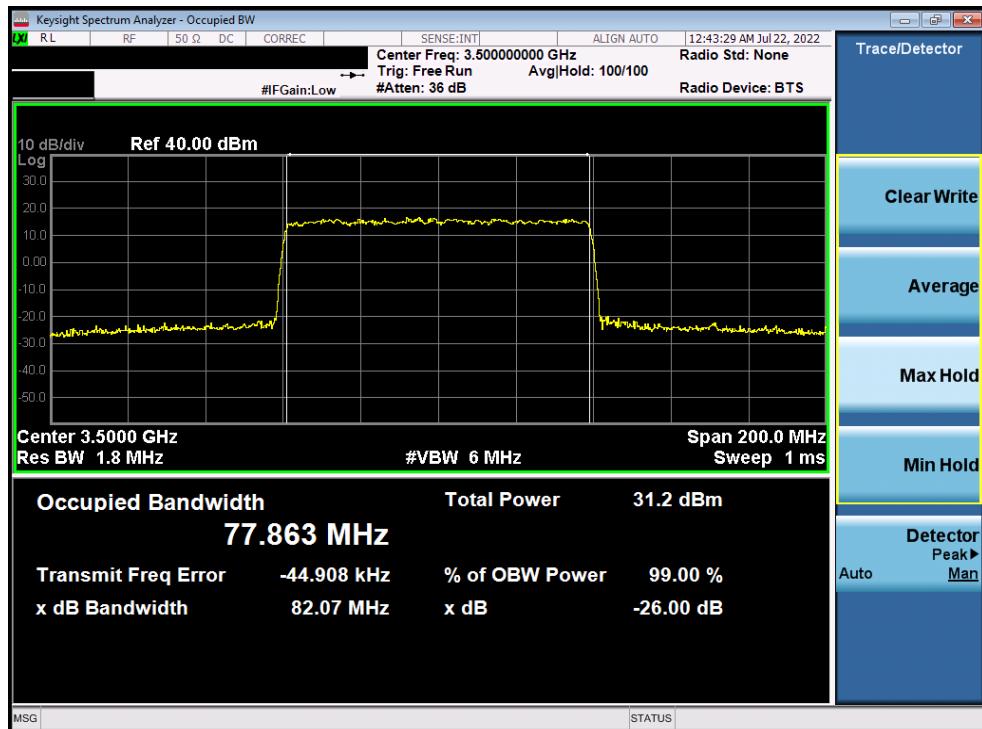


Plot 7-33. Occupied Bandwidth Plot (NR Band n77 DoD Band - 80MHz CP-OFDM 16-QAM - Full RB)

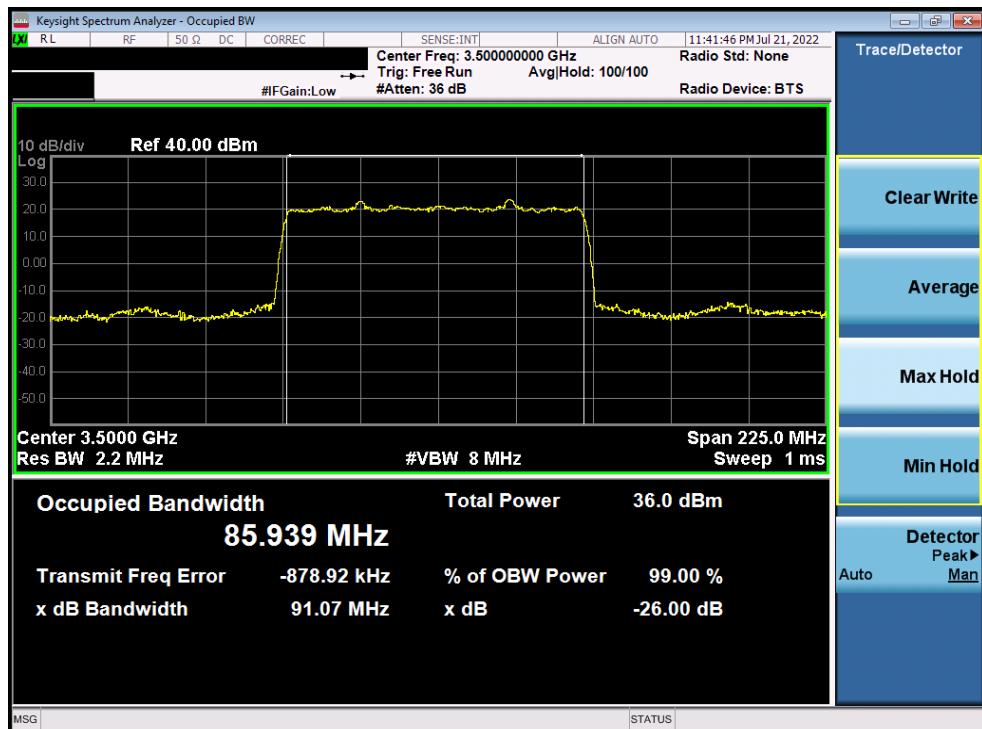


Plot 7-34. Occupied Bandwidth Plot (NR Band n77 DoD Band - 80MHz CP-OFDM 64-QAM - Full RB)

FCC ID: BCGA2757	 element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 34 of 176

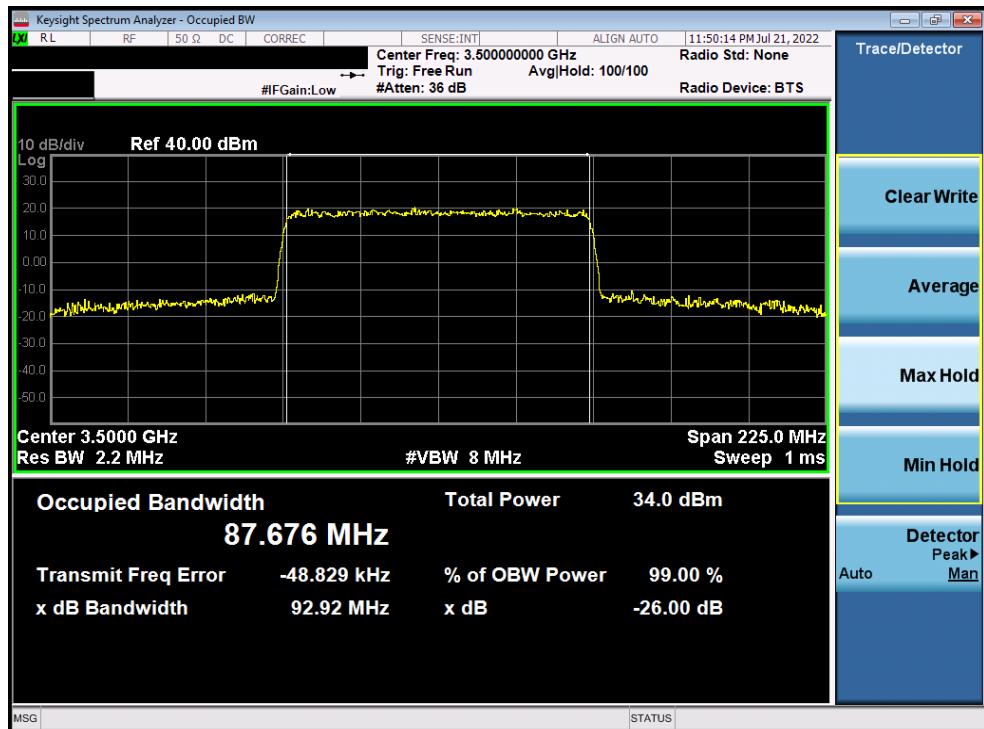


Plot 7-35. Occupied Bandwidth Plot (NR Band n77 DoD Band - 80MHz CP-OFDM 256-QAM - Full RB)

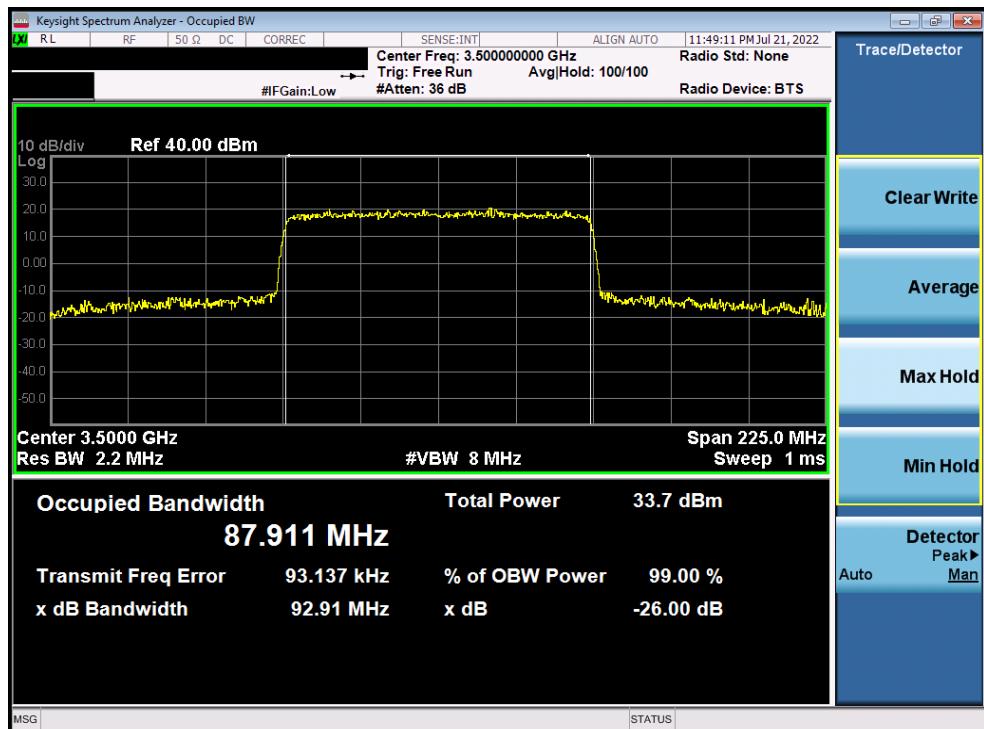


Plot 7-36. Occupied Bandwidth Plot (NR Band n77 DoD Band - 90MHz DFT-s-OFDM $\pi/2$ BPSK - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 35 of 176

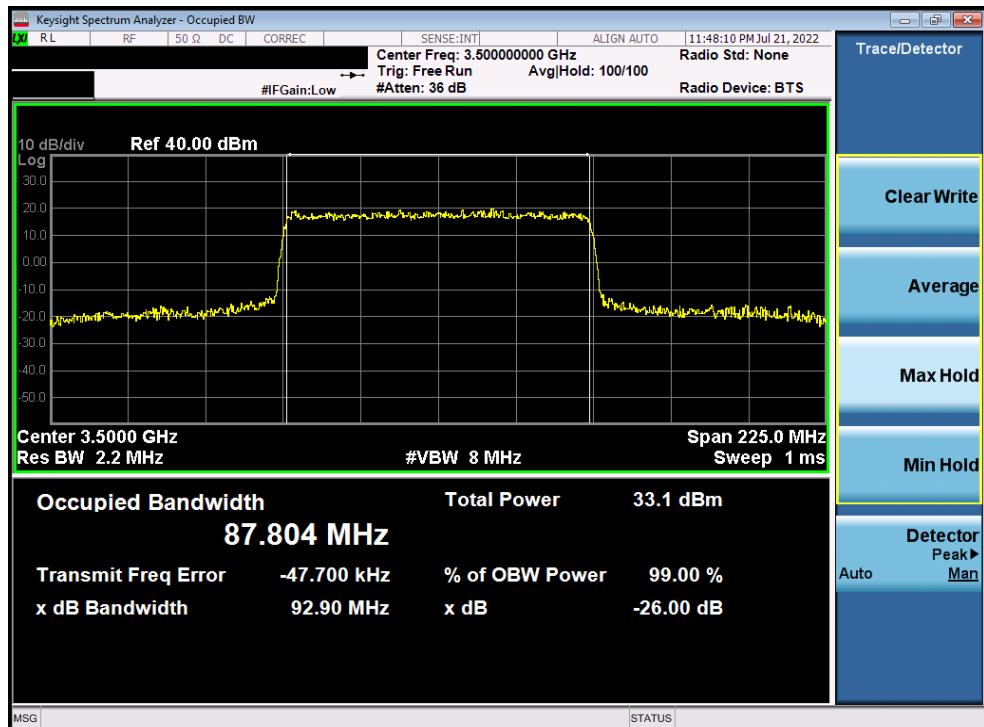


Plot 7-37. Occupied Bandwidth Plot (NR Band n77 DoD Band - 90MHz CP-OFDM QPSK - Full RB)

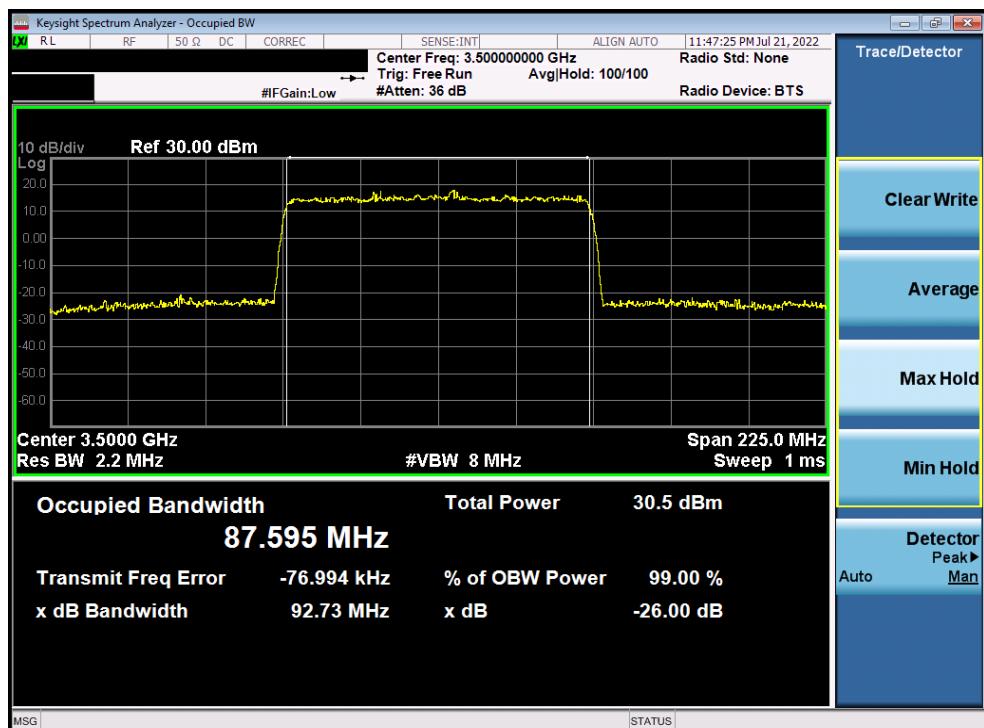


Plot 7-38. Occupied Bandwidth Plot (NR Band n77 DoD Band - 90MHz CP-OFDM 16-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT		
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device	Approved by: Technical Manager

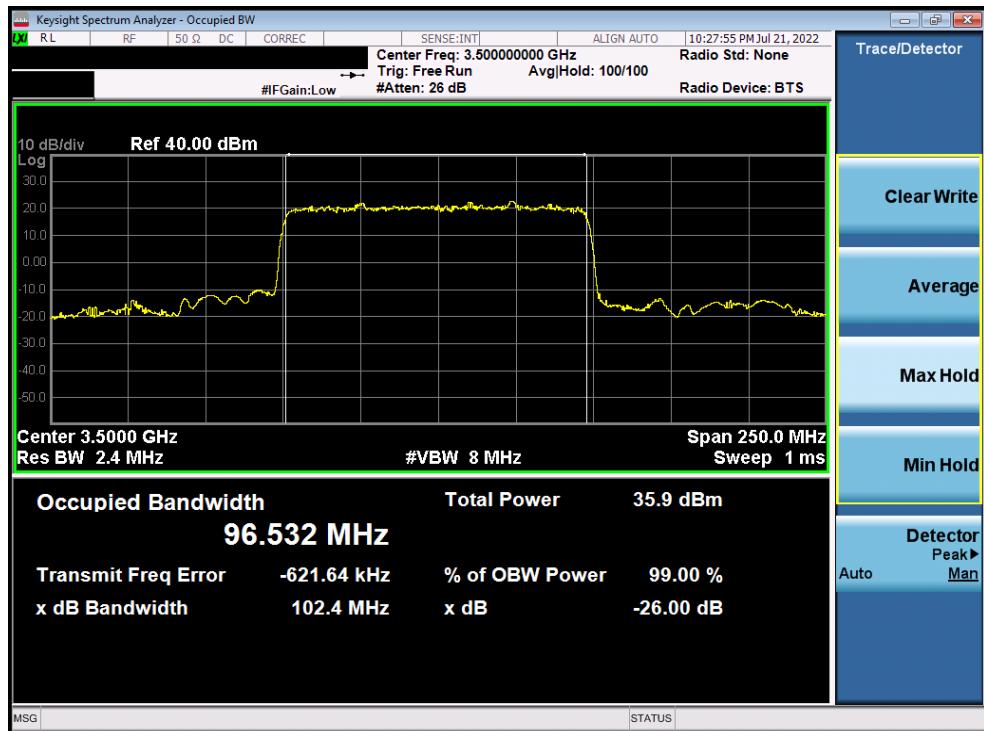


Plot 7-39. Occupied Bandwidth Plot (NR Band n77 DoD Band - 90MHz CP-OFDM 64-QAM - Full RB)



Plot 7-40. Occupied Bandwidth Plot (NR Band n77 DoD Band - 90MHz CP-OFDM 256-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 37 of 176

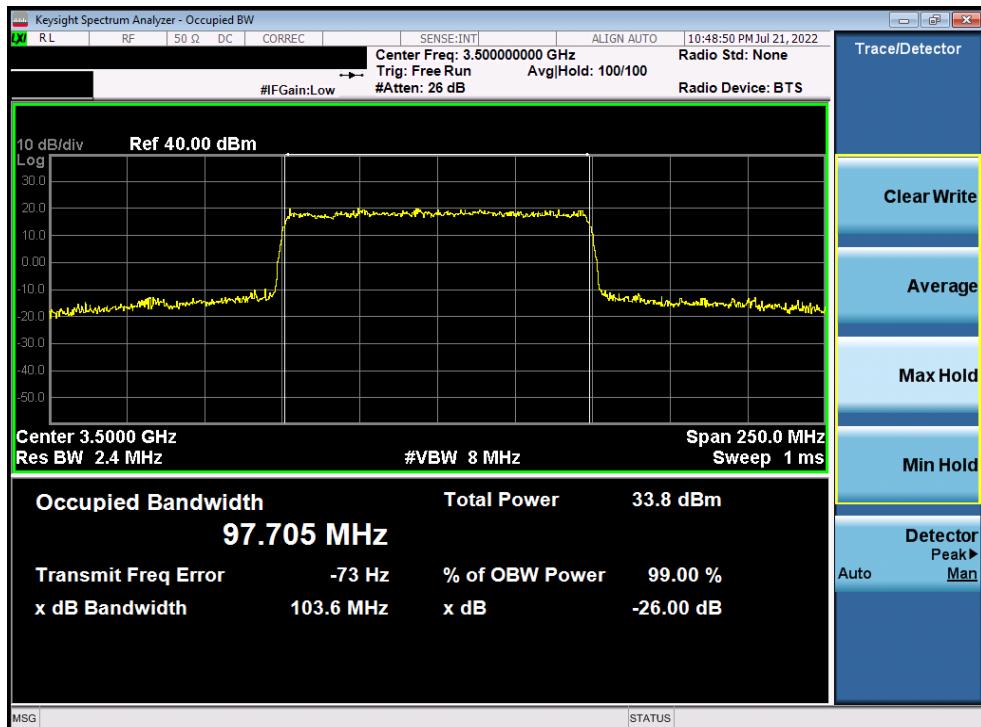


Plot 7-41. Occupied Bandwidth Plot (NR Band n77 DoD Band - 100MHz DFT-s-OFDM $\pi/2$ BPSK - Full RB)

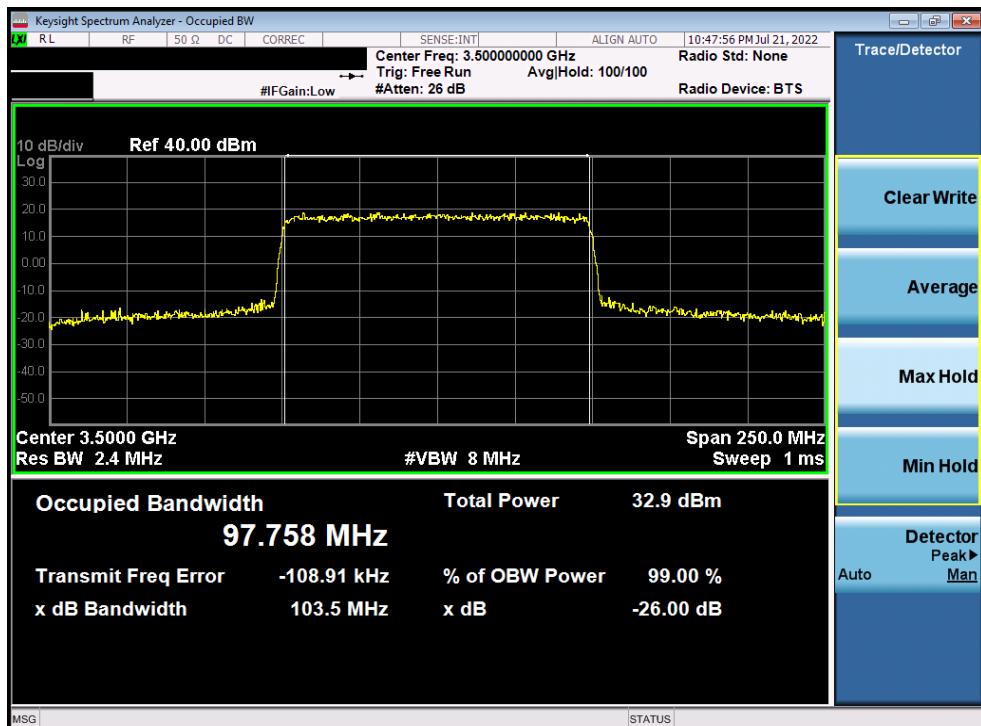


Plot 7-42. Occupied Bandwidth Plot (NR Band n77 DoD Band - 100MHz CP-OFDM QPSK - Full RB)

FCC ID: BCGA2757	 element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device	Page 38 of 176	

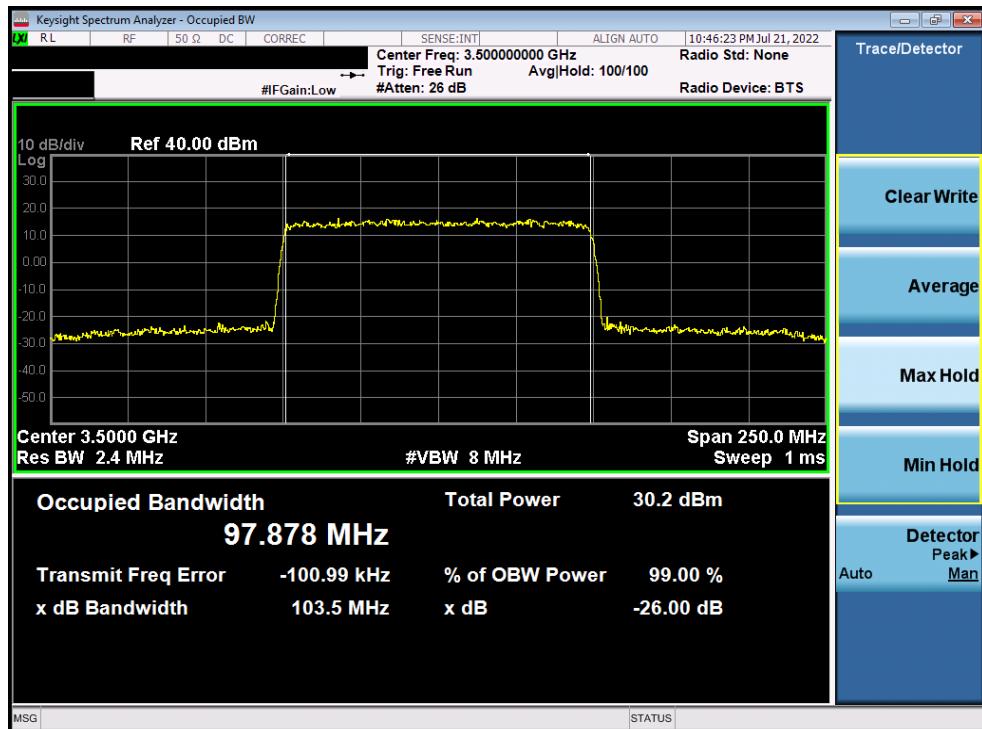


Plot 7-43. Occupied Bandwidth Plot (NR Band n77 DoD Band - 100MHz CP-OFDM 16-QAM - Full RB)



Plot 7-44. Occupied Bandwidth Plot (NR Band n77 DoD Band - 100MHz CP-OFDM 64-QAM - Full RB)

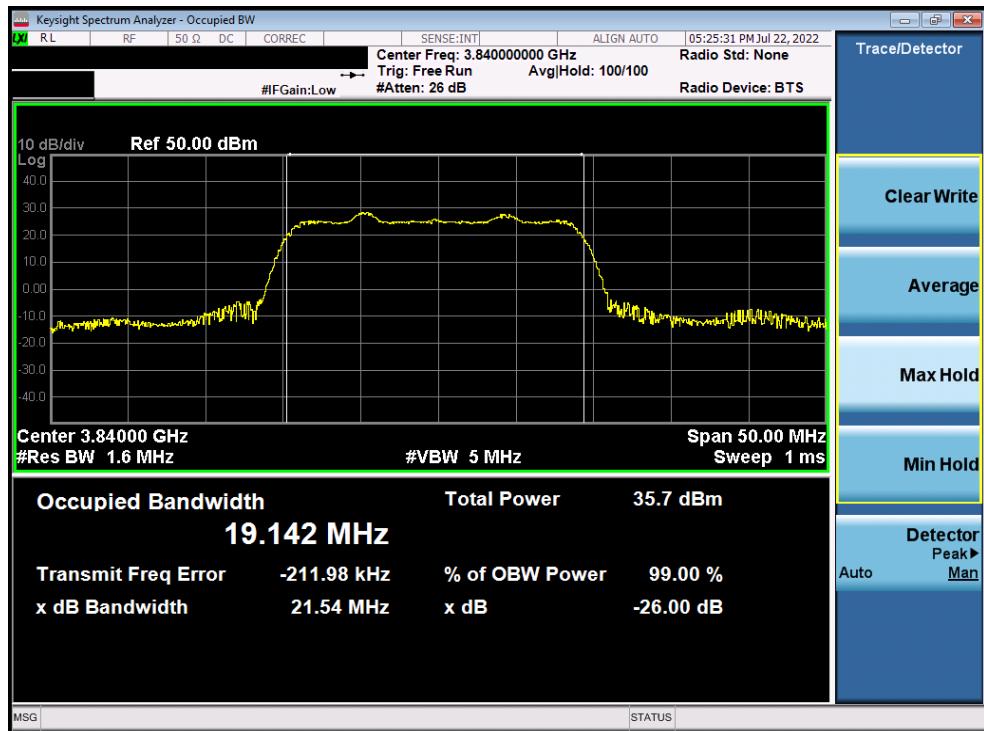
FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 39 of 176



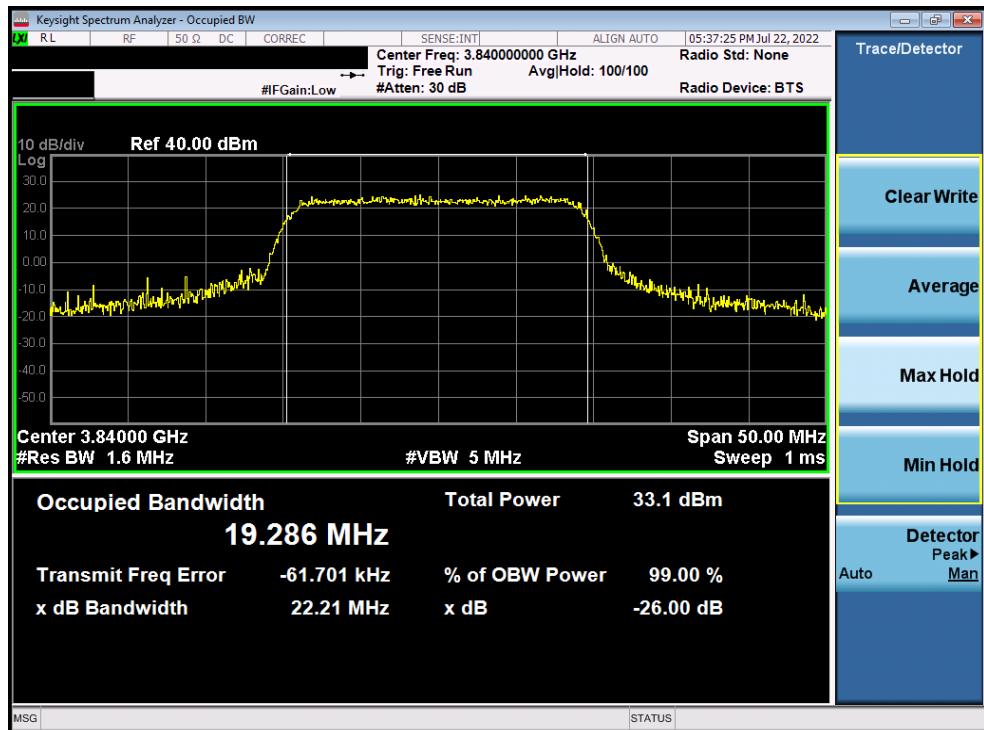
Plot 7-45. Occupied Bandwidth Plot (NR Band n77 DoD Band - 100MHz CP-OFDM 256-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 40 of 176

NR Band n77 C-Band

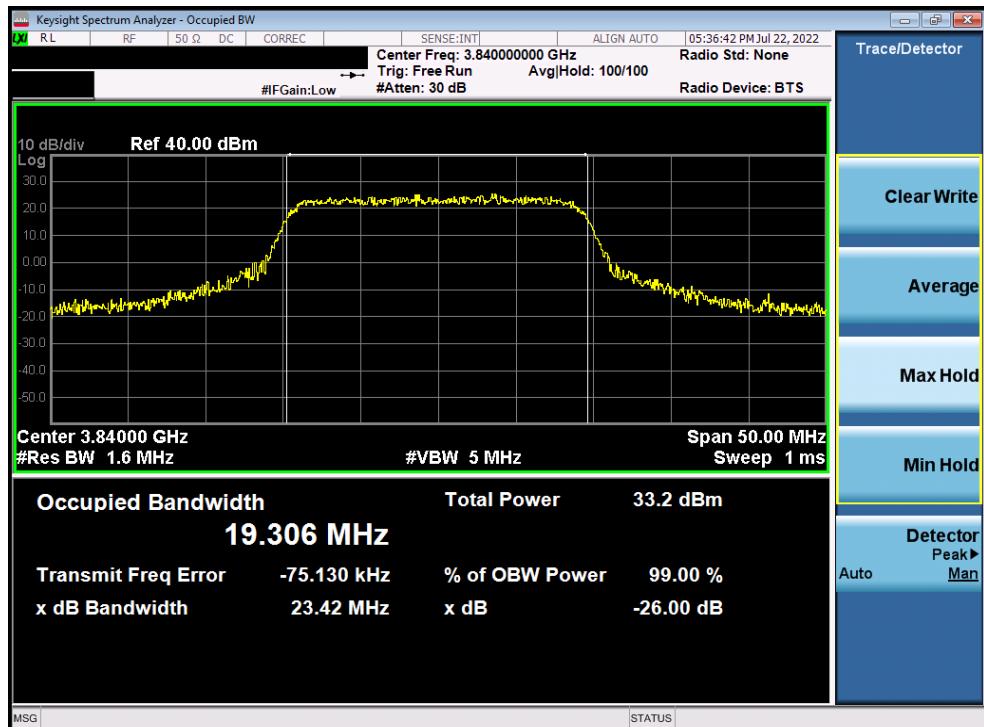


Plot 7-46. Occupied Bandwidth Plot (NR Band n77 C-Band - 20MHz DFT-s-OFDM π/2 BPSK - Full RB)

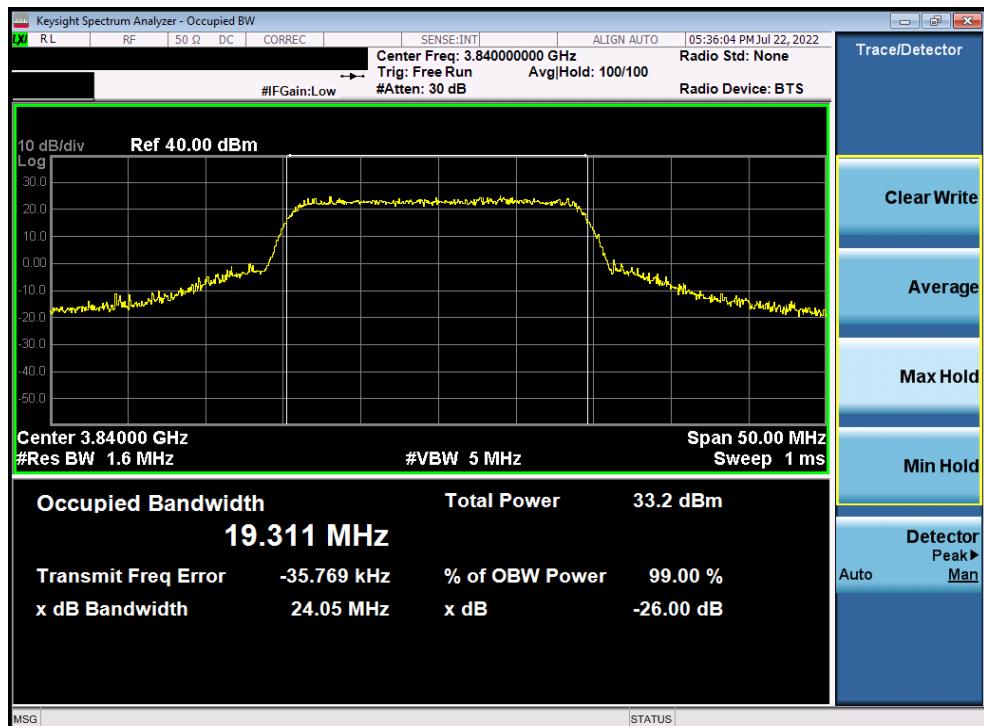


Plot 7-47. Occupied Bandwidth Plot (NR Band n77 C-Band - 20MHz CP-OFDM QPSK - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 41 of 176

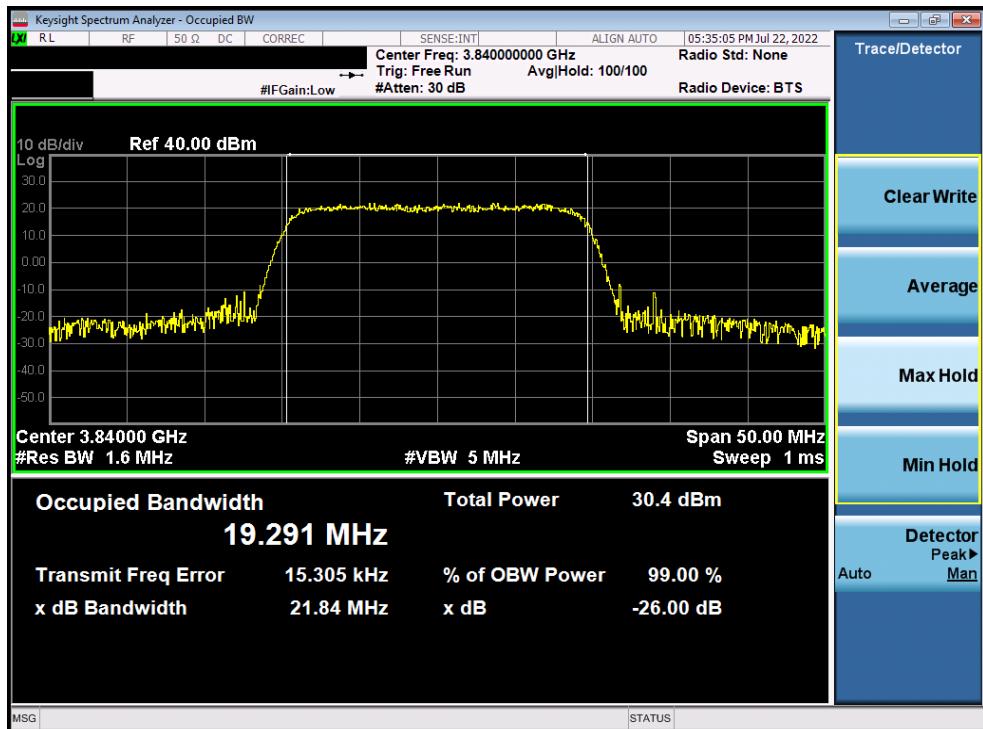


Plot 7-48. Occupied Bandwidth Plot (NR Band n77 C-Band - 20MHz CP-OFDM 16-QAM - Full RB)

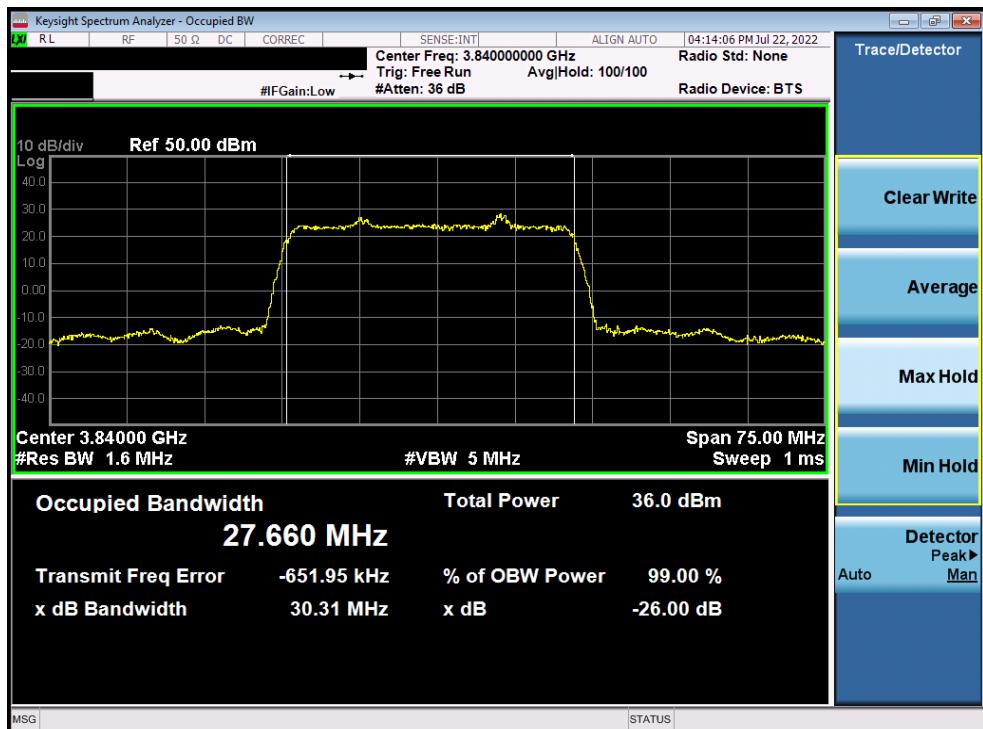


Plot 7-49. Occupied Bandwidth Plot (NR Band n77 C-Band - 20MHz CP-OFDM 64-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 42 of 176

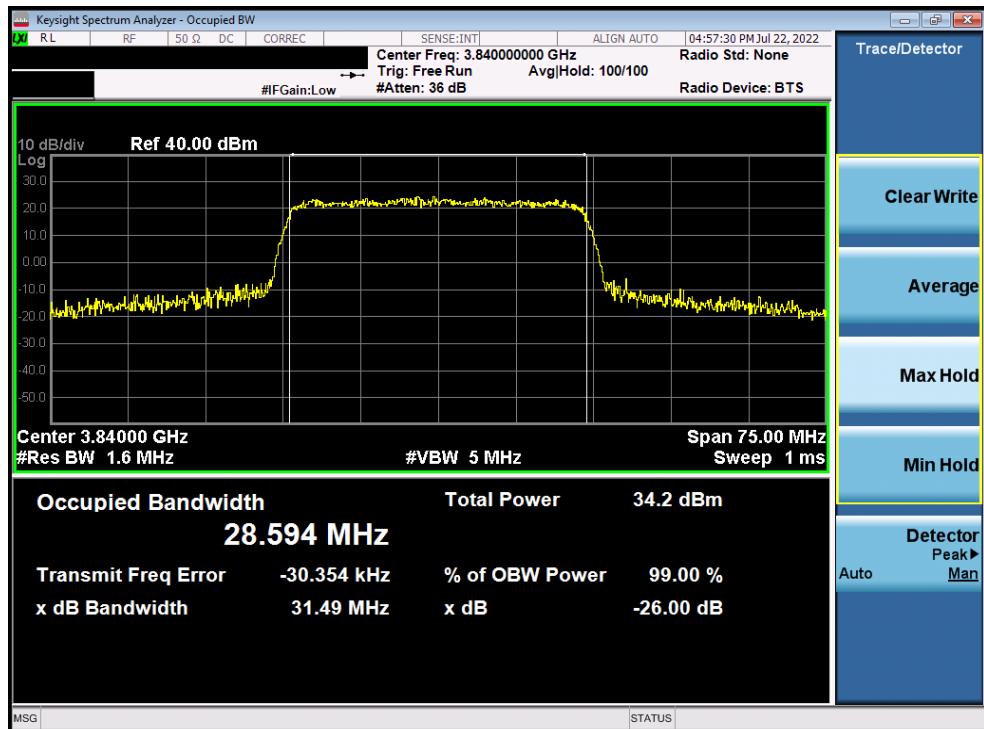


Plot 7-50. Occupied Bandwidth Plot (NR Band n77 C-Band - 20MHz CP-OFDM 256-QAM - Full RB)

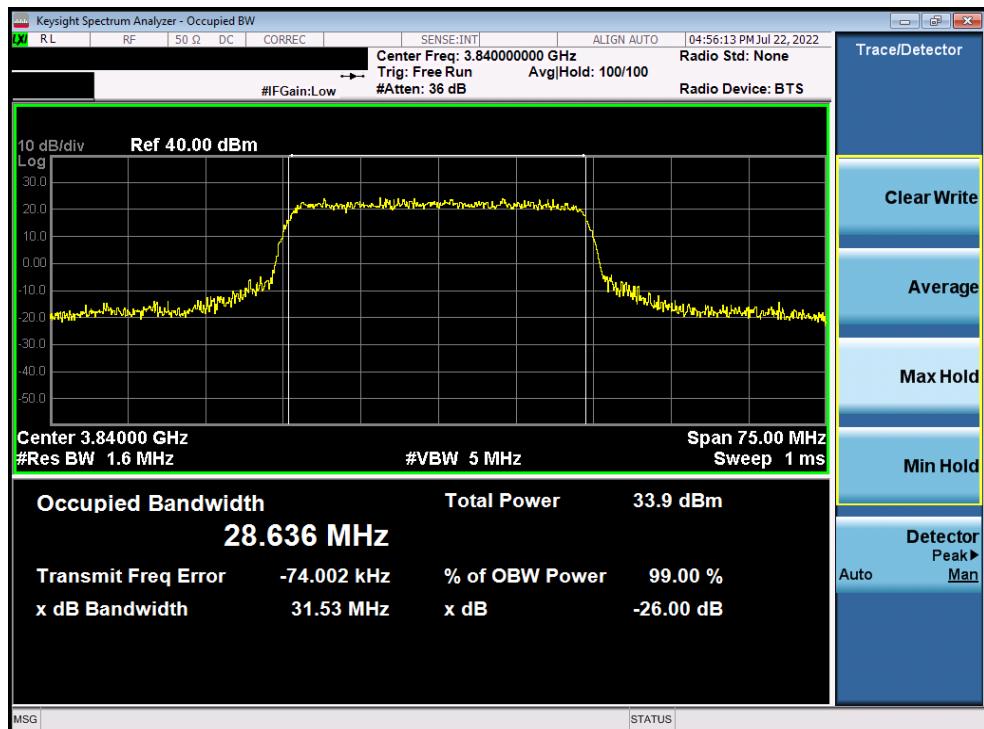


Plot 7-51. Occupied Bandwidth Plot (NR Band n77 C-Band - 30MHz DFT-s-OFDM $\pi/2$ BPSK - Full RB)

FCC ID: BCGA2757	 element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device	Page 43 of 176	

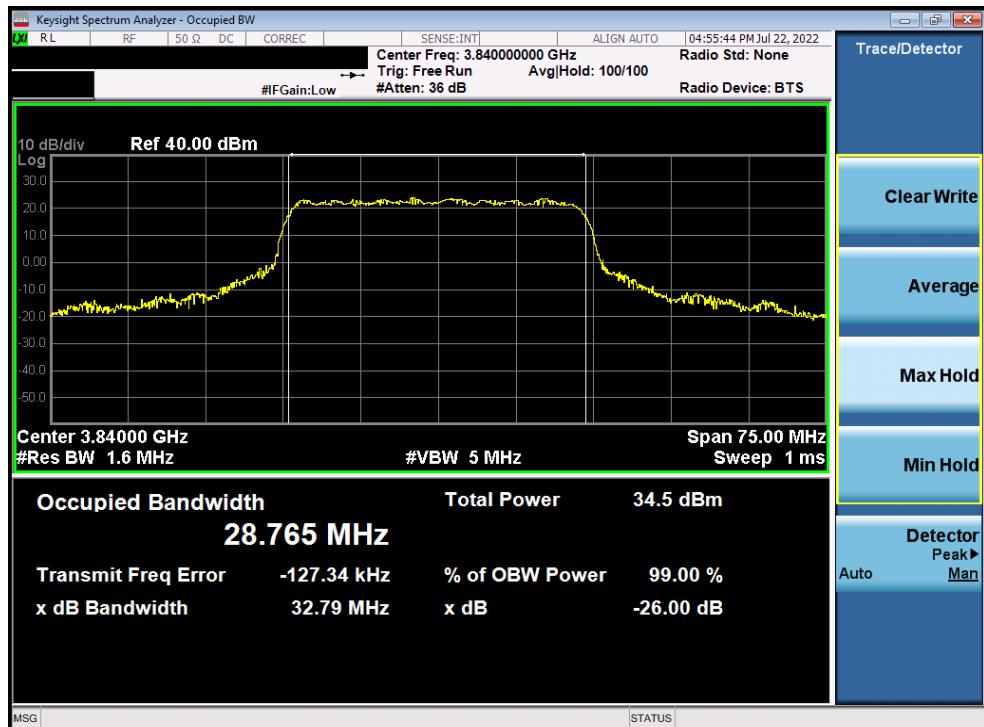


Plot 7-52. Occupied Bandwidth Plot (NR Band n77 C-Band - 30MHz CP-OFDM QPSK - Full RB)

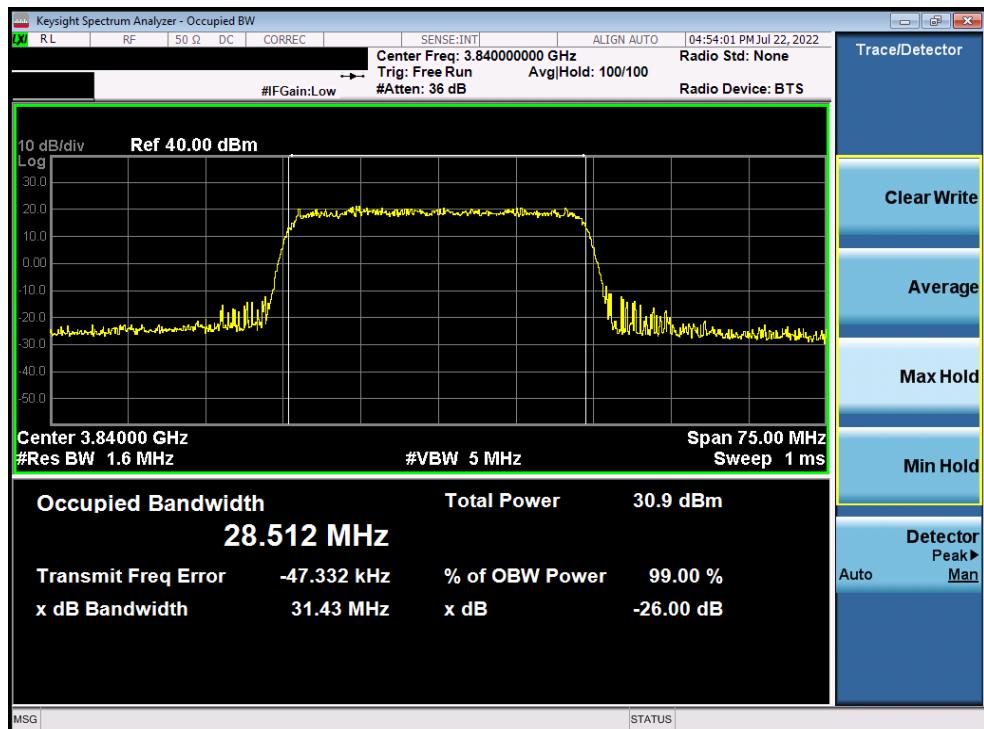


Plot 7-53. Occupied Bandwidth Plot (NR Band n77 C-Band - 30MHz CP-OFDM 16-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 44 of 176

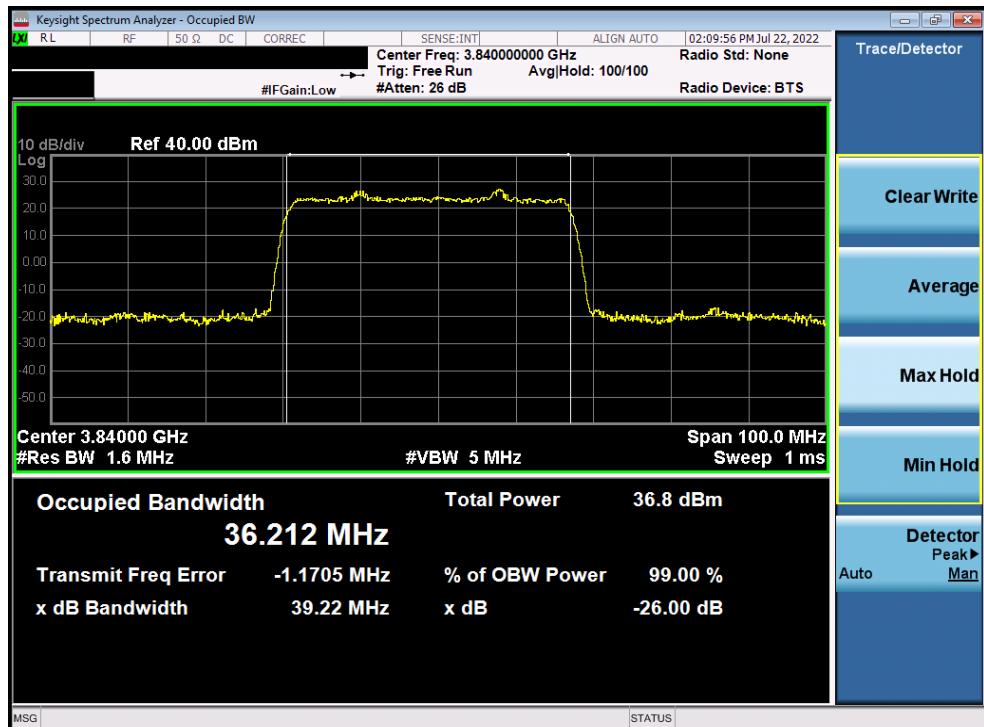


Plot 7-54. Occupied Bandwidth Plot (NR Band n77 C-Band - 30MHz CP-OFDM 64-QAM - Full RB)

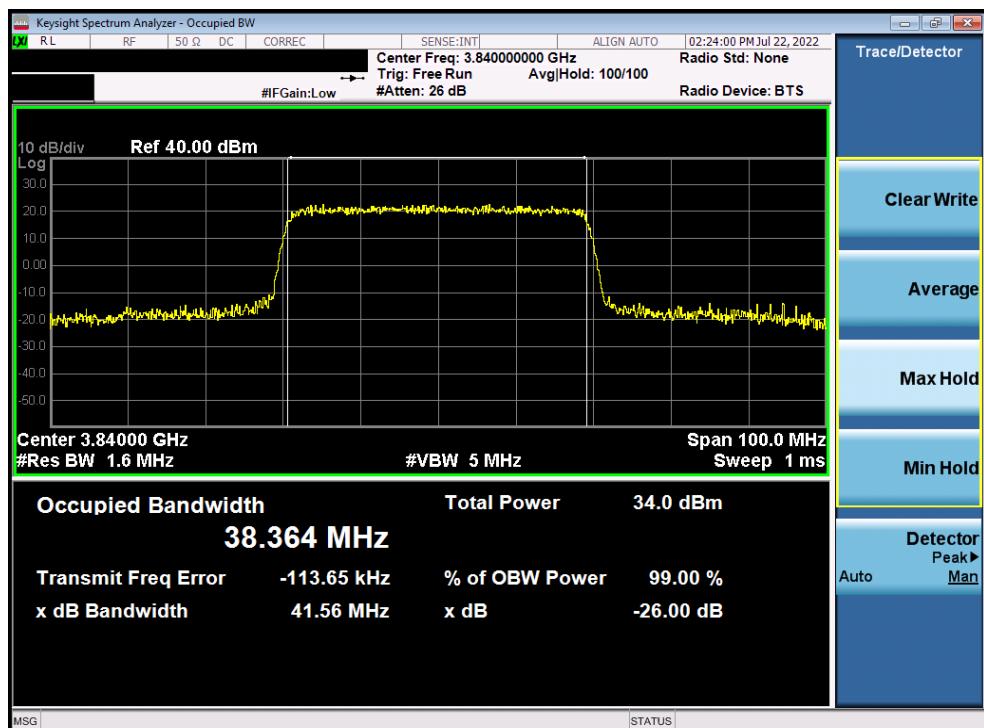


Plot 7-55. Occupied Bandwidth Plot (NR Band n77 C-Band - 30MHz CP-OFDM 256-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 45 of 176



Plot 7-56. Occupied Bandwidth Plot (NR Band n77 C-Band - 40MHz DFT-s-OFDM $\pi/2$ BPSK - Full RB)

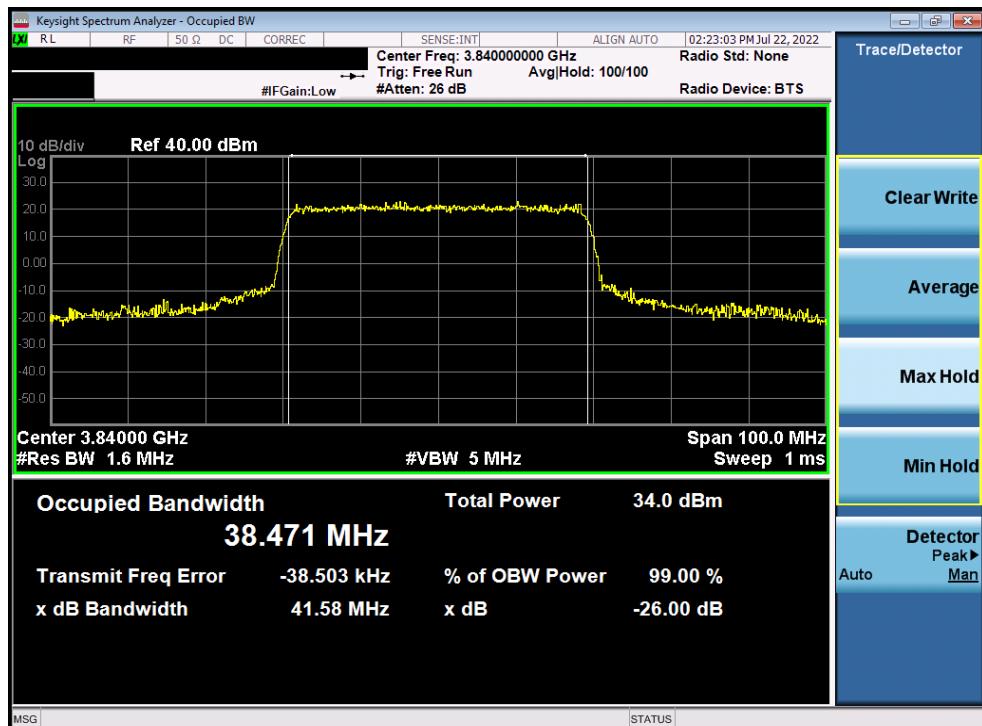


Plot 7-57. Occupied Bandwidth Plot (NR Band n77 C-Band - 40MHz CP-OFDM QPSK - Full RB)

FCC ID: BCGA2757	 element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device	Page 46 of 176	

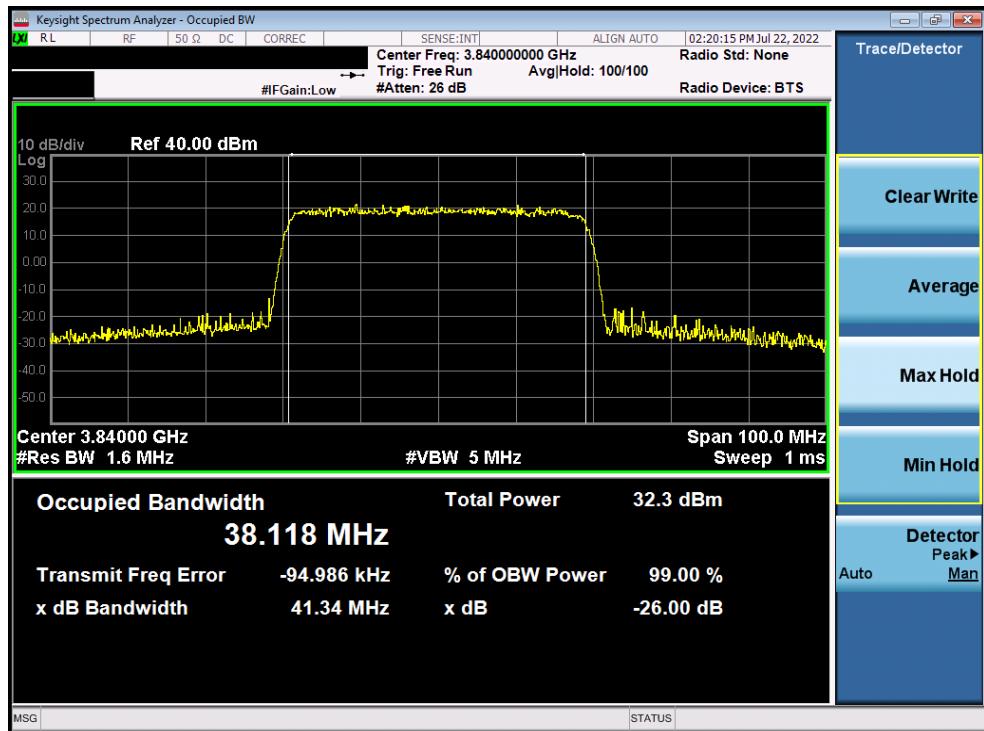


Plot 7-58. Occupied Bandwidth Plot (NR Band n77 C-Band - 40MHz CP-OFDM 16-QAM - Full RB)

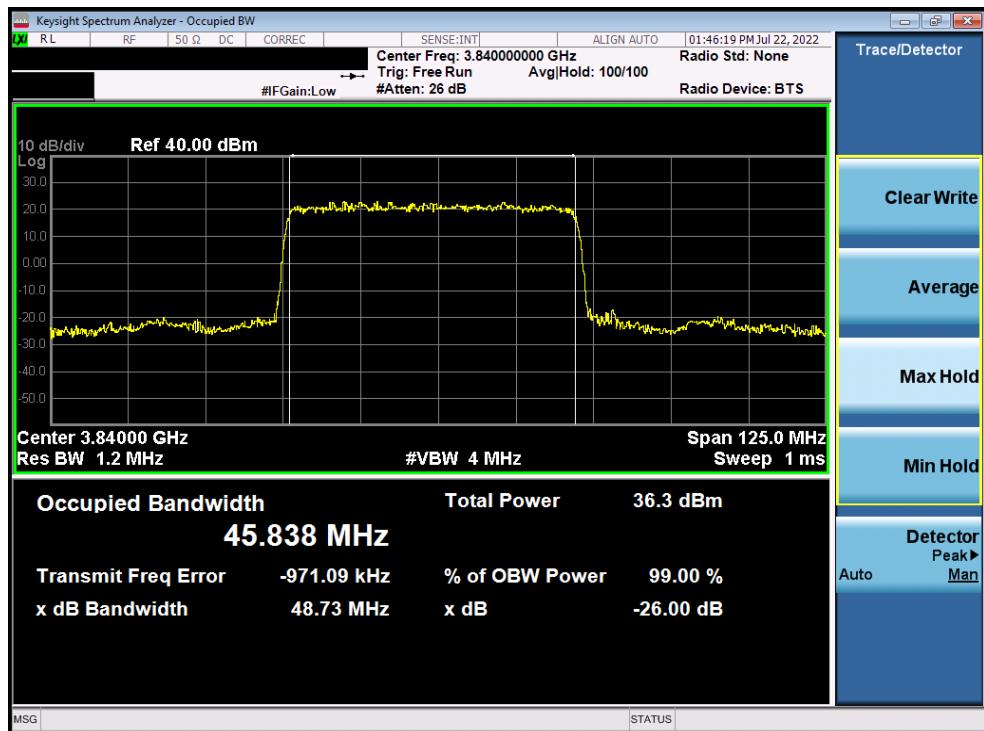


Plot 7-59. Occupied Bandwidth Plot (NR Band n77 C-Band - 40MHz CP-OFDM 64-QAM - Full RB)

FCC ID: BCGA2757	 element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 47 of 176

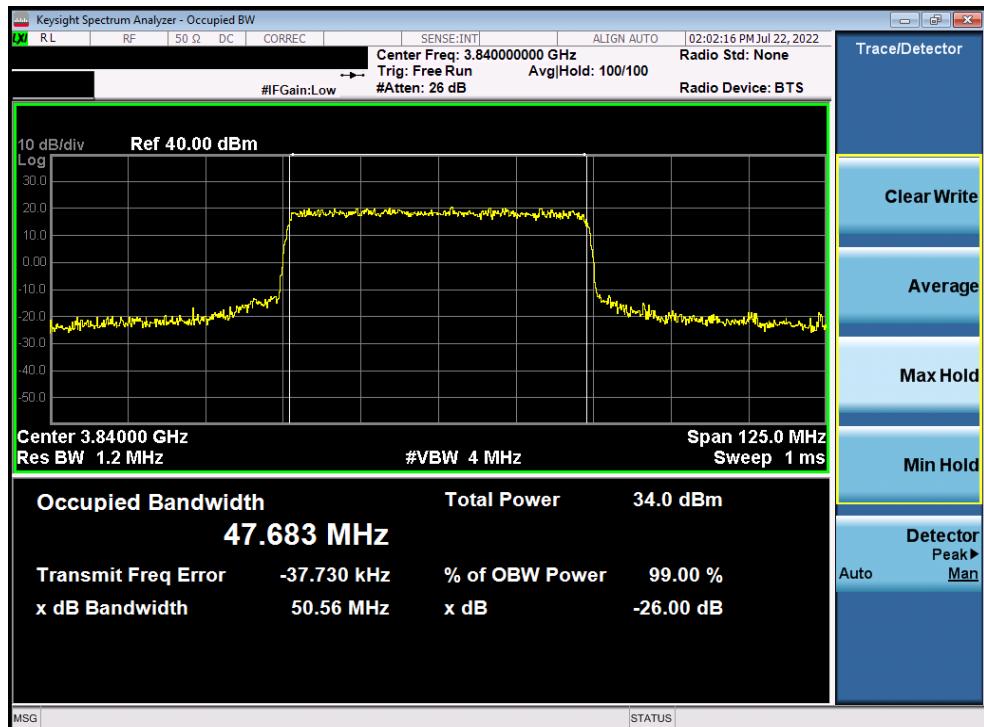


Plot 7-60. Occupied Bandwidth Plot (NR Band n77 C-Band - 40MHz CP-OFDM 256-QAM - Full RB)

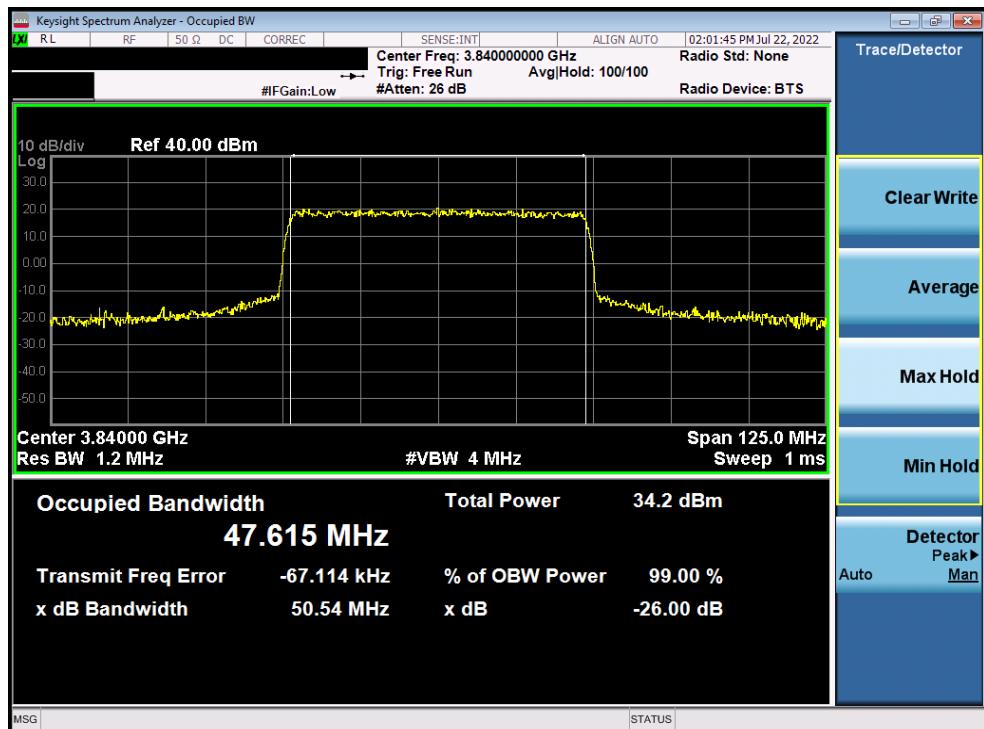


Plot 7-61. Occupied Bandwidth Plot (NR Band n77 C-Band - 50MHz DFT-s-OFDM $\pi/2$ BPSK - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 48 of 176

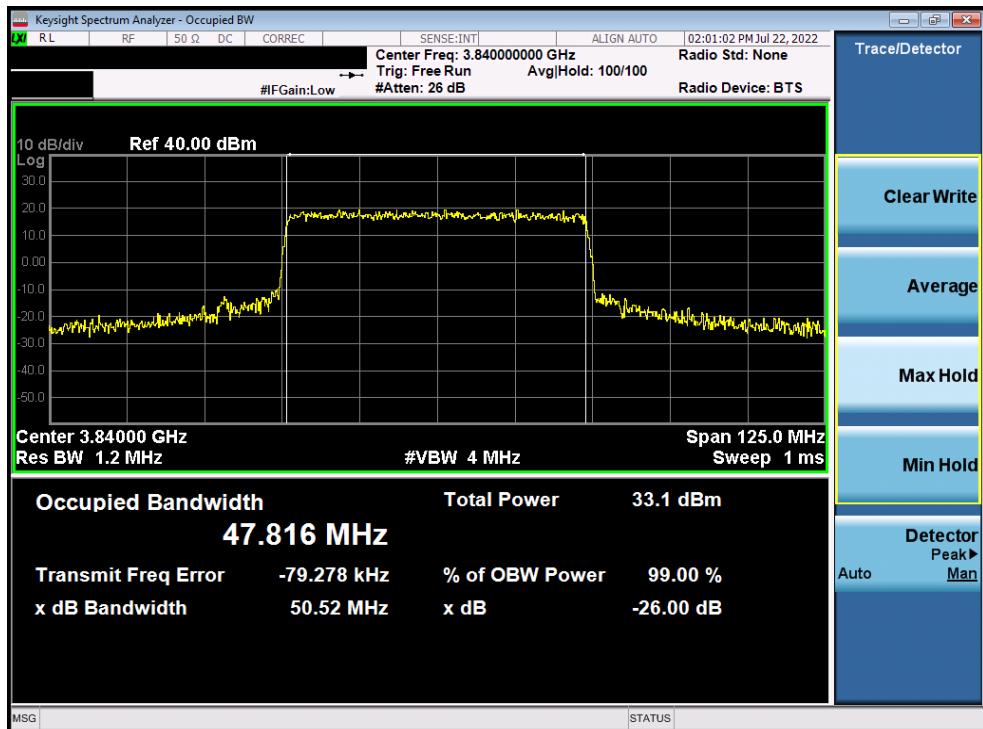


Plot 7-62. Occupied Bandwidth Plot (NR Band n77 C-Band - 50MHz CP-OFDM QPSK - Full RB)

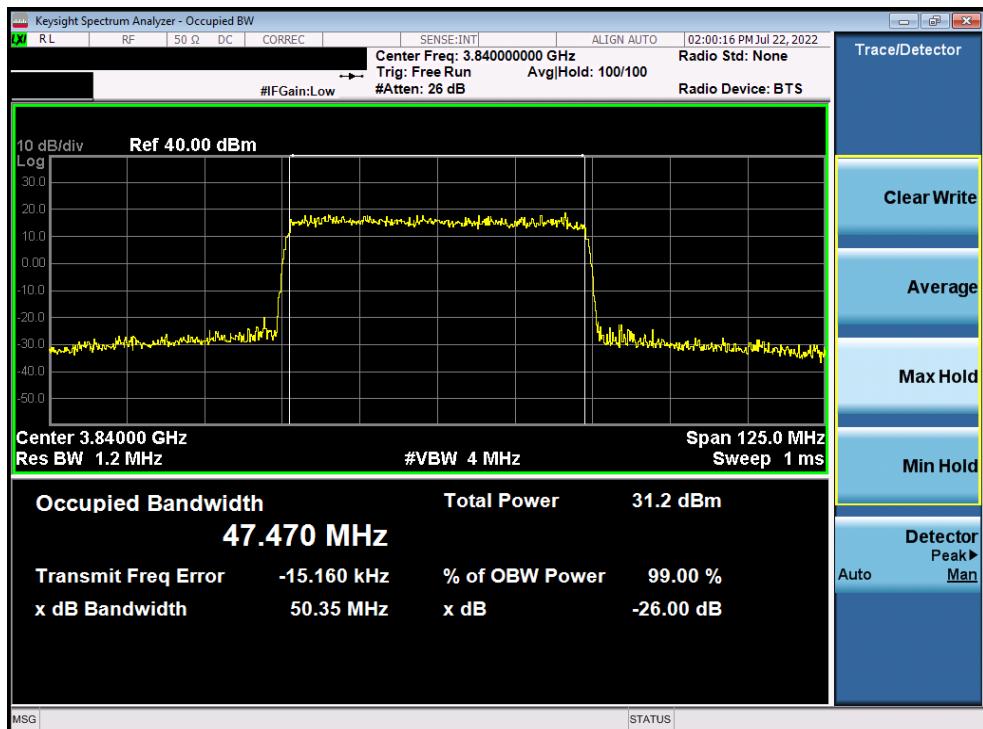


Plot 7-63. Occupied Bandwidth Plot (NR Band n77 C-Band - 50MHz CP-OFDM 16-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 49 of 176

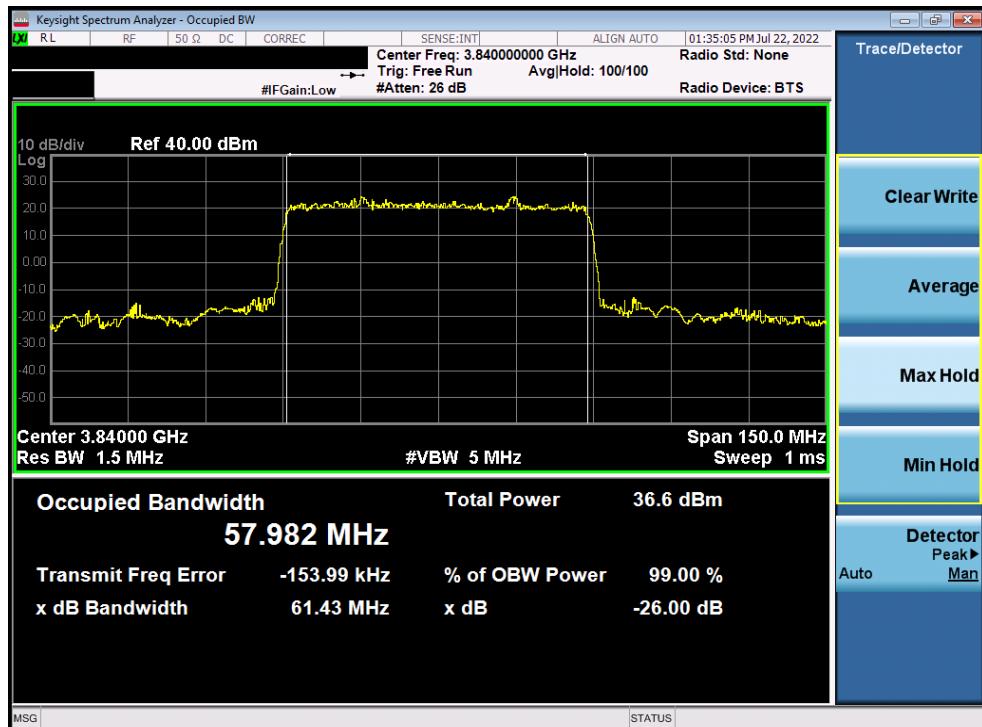


Plot 7-64. Occupied Bandwidth Plot (NR Band n77 C-Band - 50MHz CP-OFDM 64-QAM - Full RB)

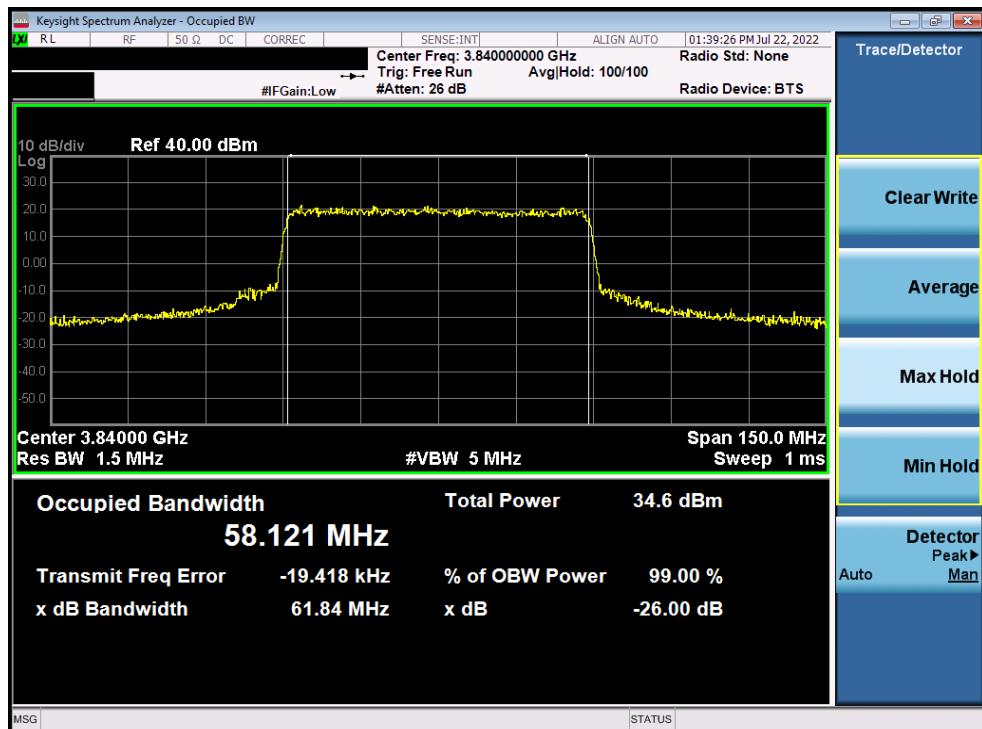


Plot 7-65. Occupied Bandwidth Plot (NR Band n77 C-Band - 50MHz CP-OFDM 256-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 50 of 176

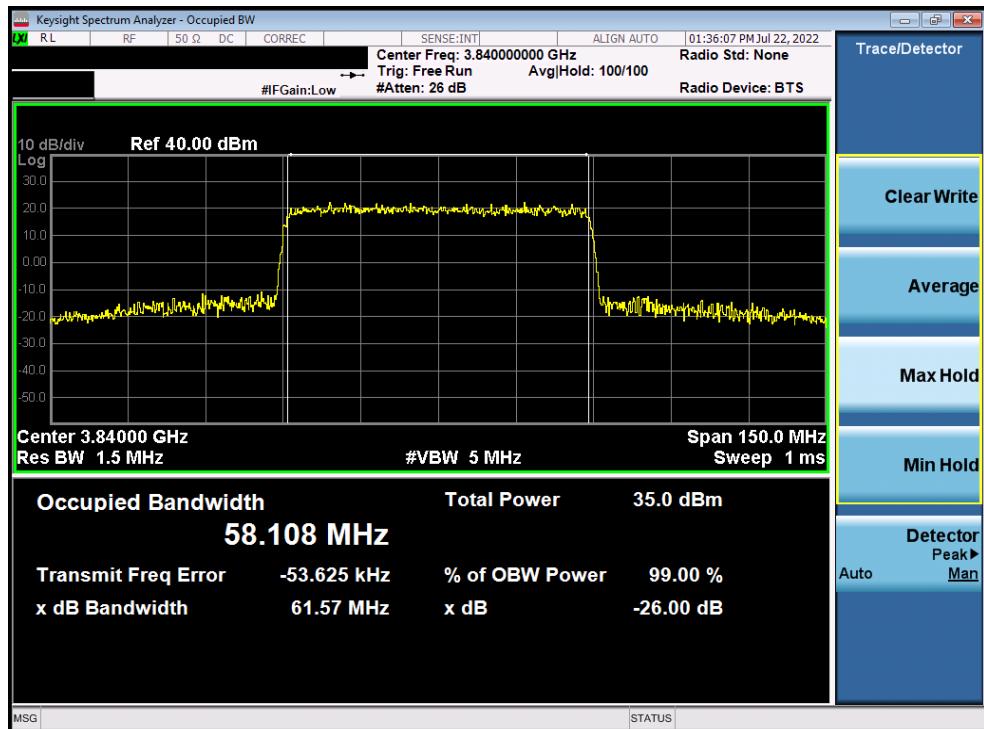


Plot 7-66. Occupied Bandwidth Plot (NR Band n77 C-Band - 60MHz DFT-s-OFDM π/2 BPSK - Full RB)

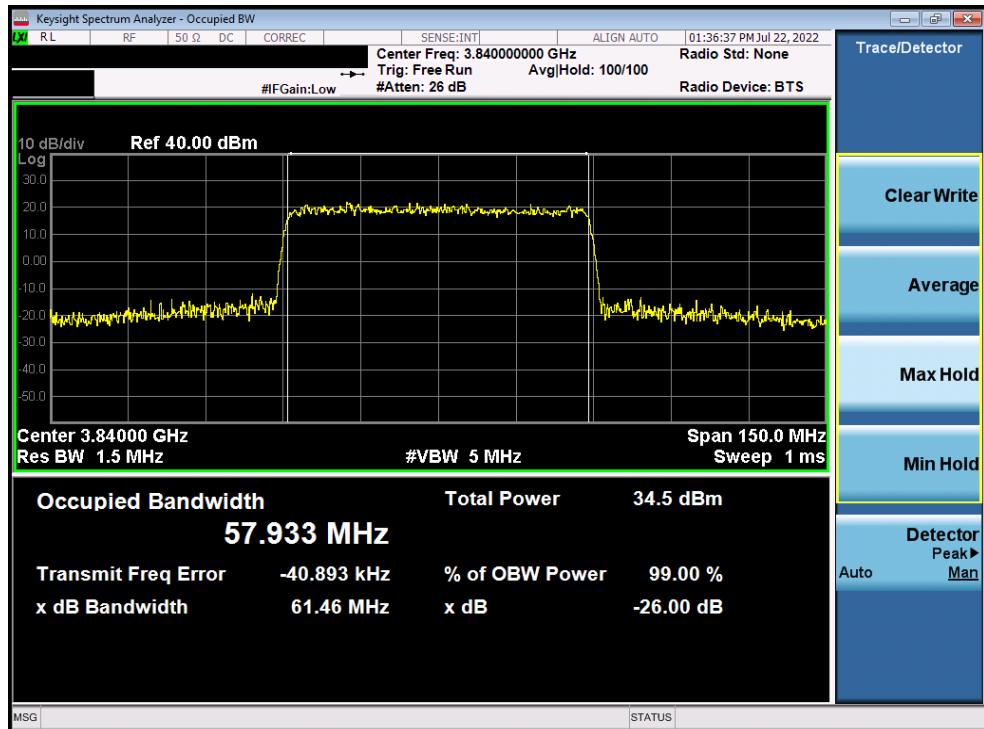


Plot 7-67. Occupied Bandwidth Plot (NR Band n77 C-Band - 60MHz CP-OFDM QPSK - Full RB)

FCC ID: BCGA2757	 element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device	Page 51 of 176	

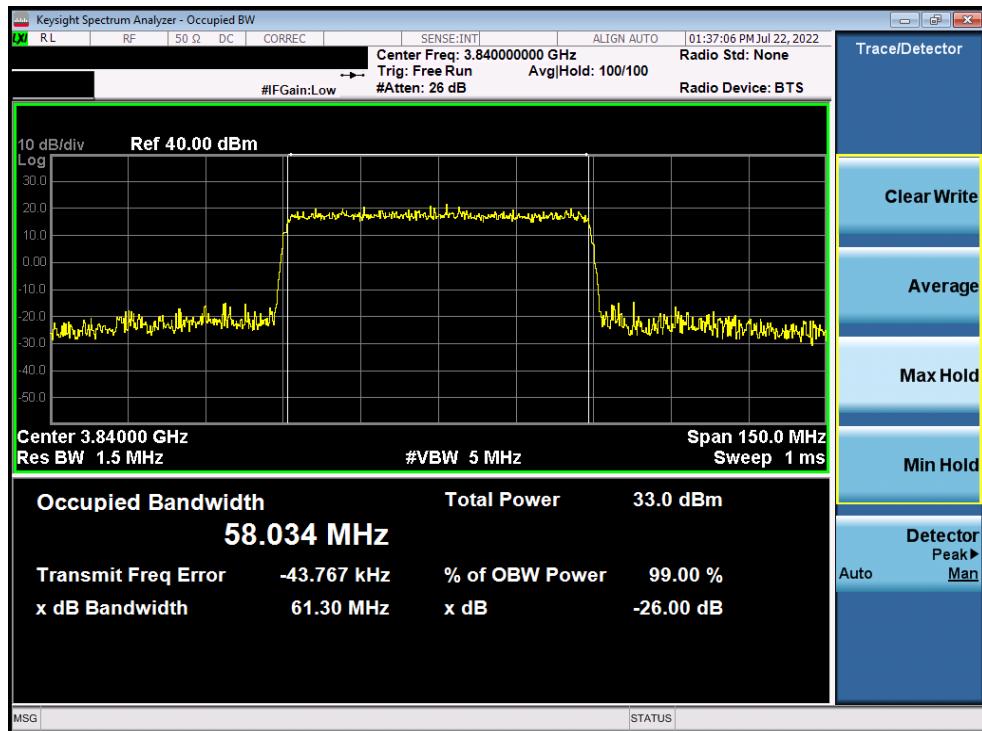


Plot 7-68. Occupied Bandwidth Plot (NR Band n77 C-Band - 60MHz CP-OFDM 16-QAM - Full RB)

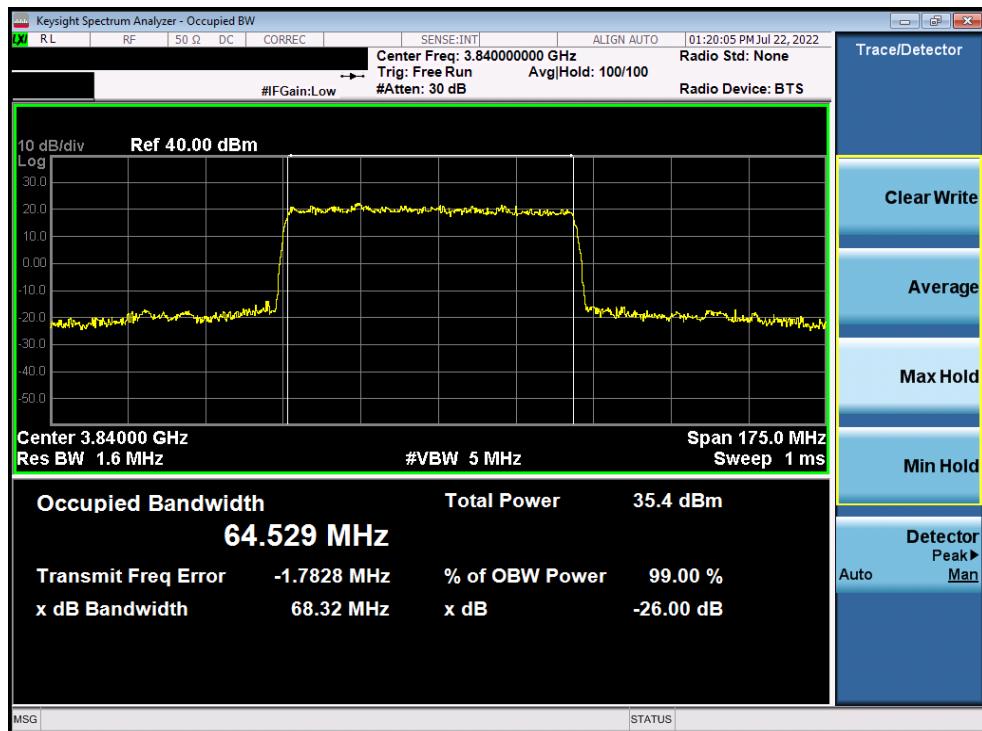


Plot 7-69. Occupied Bandwidth Plot (NR Band n77 C-Band - 60MHz CP-OFDM 64-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 52 of 176

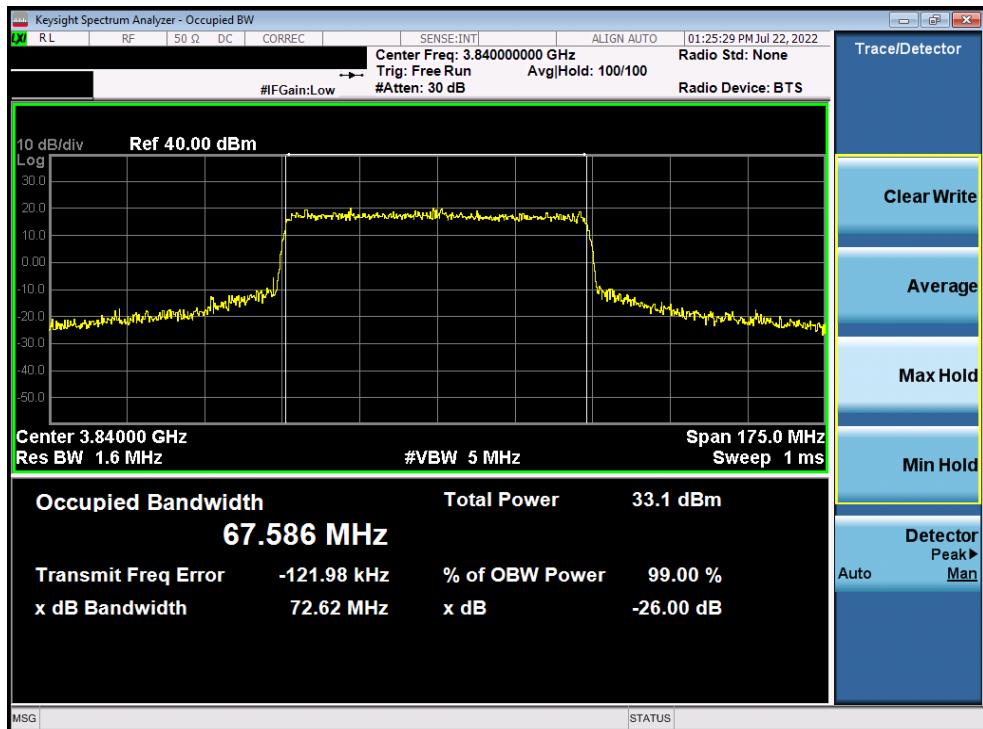


Plot 7-70. Occupied Bandwidth Plot (NR Band n77 C-Band - 60MHz CP-OFDM 256-QAM - Full RB)

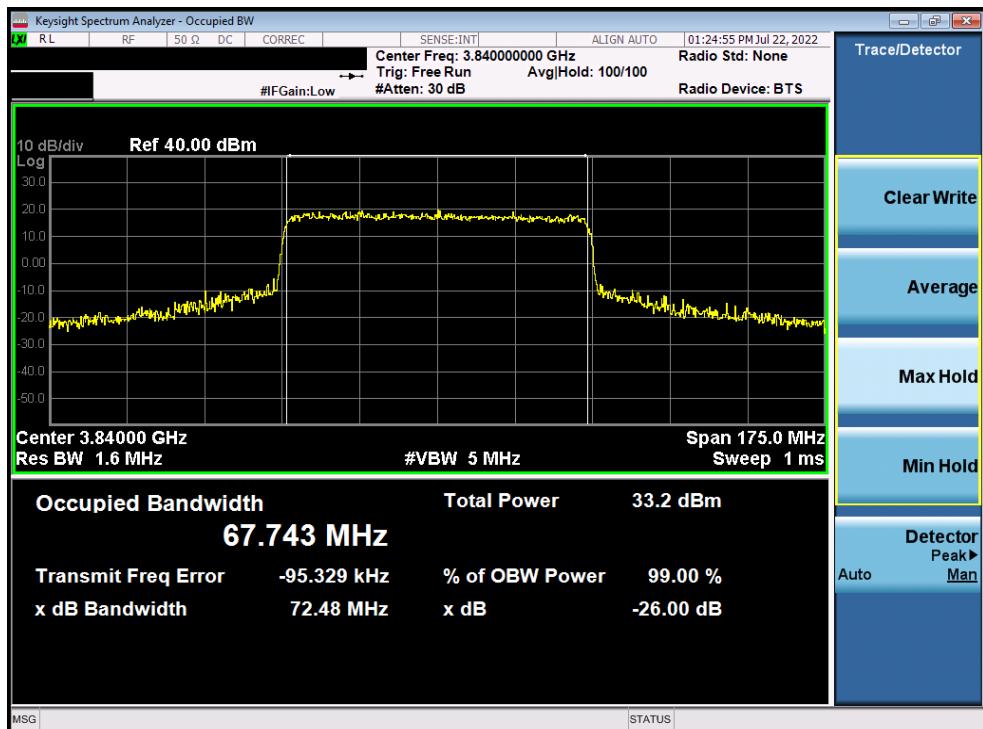


Plot 7-71. Occupied Bandwidth Plot (NR Band n77 C-Band - 70MHz DFT-s-OFDM π/2 BPSK - Full RB)

FCC ID: BCGA2757	 element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device	Page 53 of 176	



Plot 7-72. Occupied Bandwidth Plot (NR Band n77 C-Band - 70MHz CP-OFDM QPSK - Full RB)

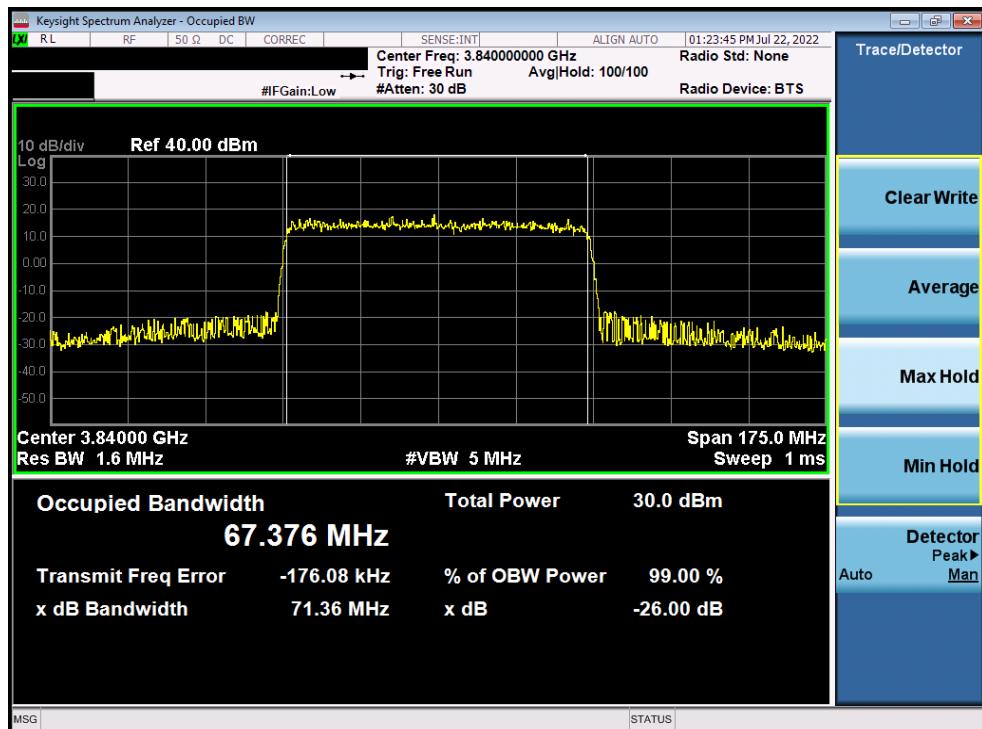


Plot 7-73. Occupied Bandwidth Plot (NR Band n77 C-Band - 70MHz CP-OFDM 16-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 54 of 176

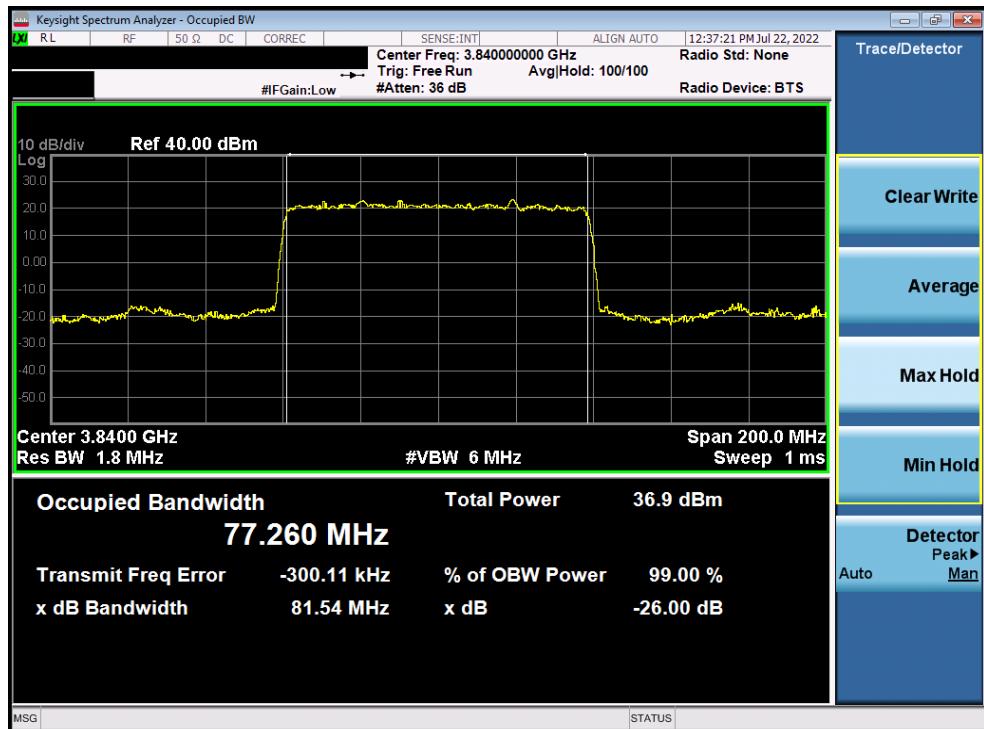


Plot 7-74. Occupied Bandwidth Plot (NR Band n77 C-Band - 70MHz CP-OFDM 64-QAM - Full RB)

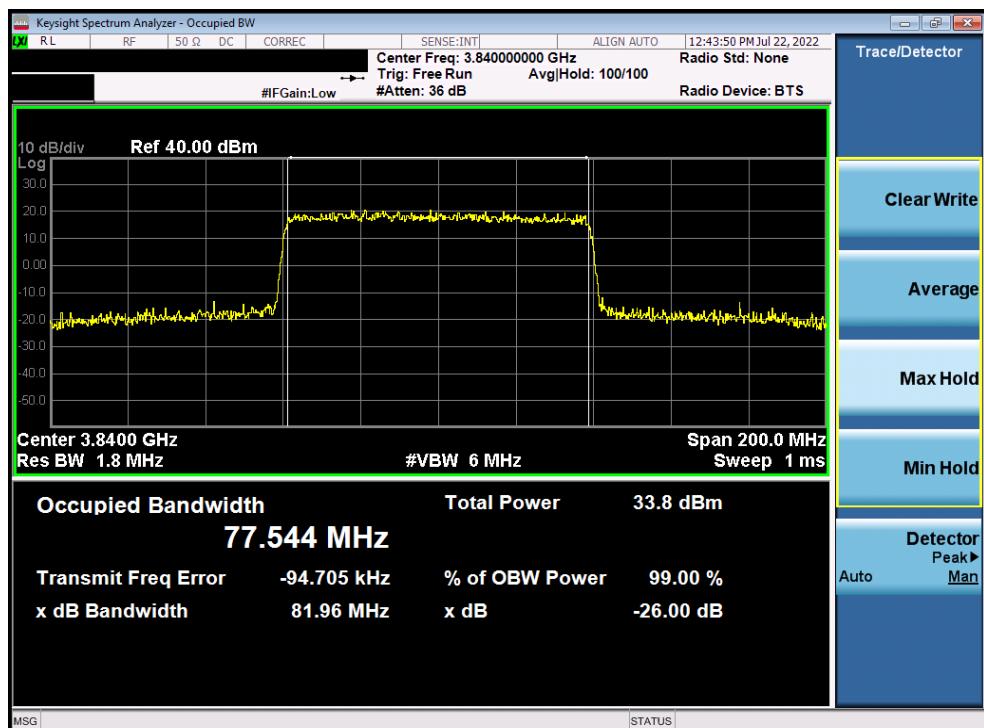


Plot 7-75. Occupied Bandwidth Plot (NR Band n77 C-Band - 70MHz CP-OFDM 256-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 55 of 176

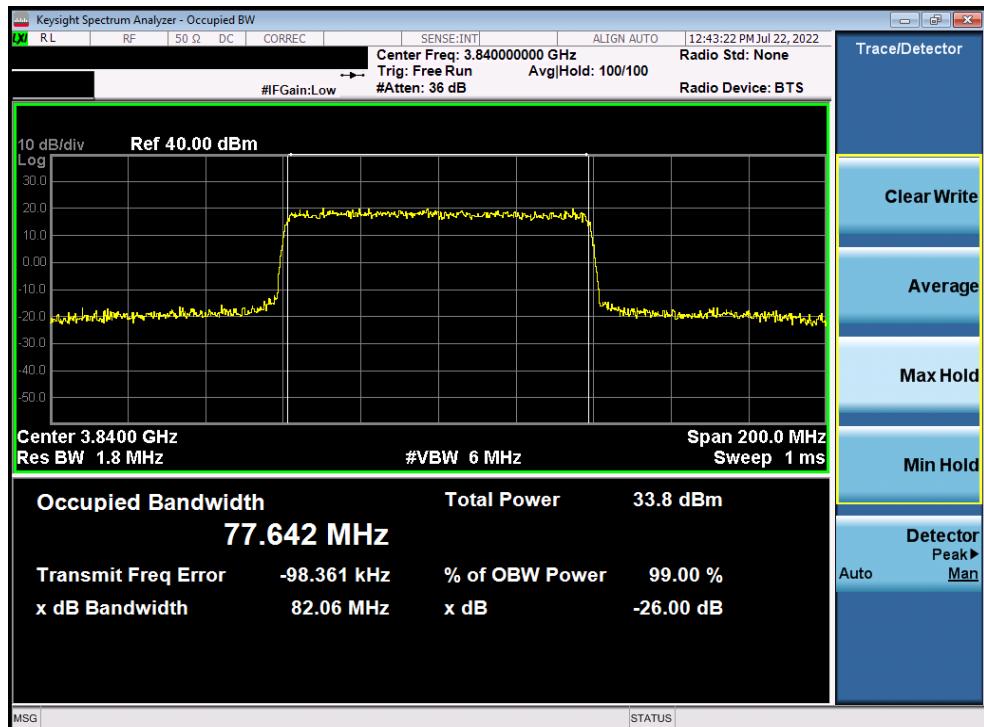


Plot 7-76. Occupied Bandwidth Plot (NR Band n77 C-Band - 80MHz DFT-s-OFDM $\pi/2$ BPSK - Full RB)

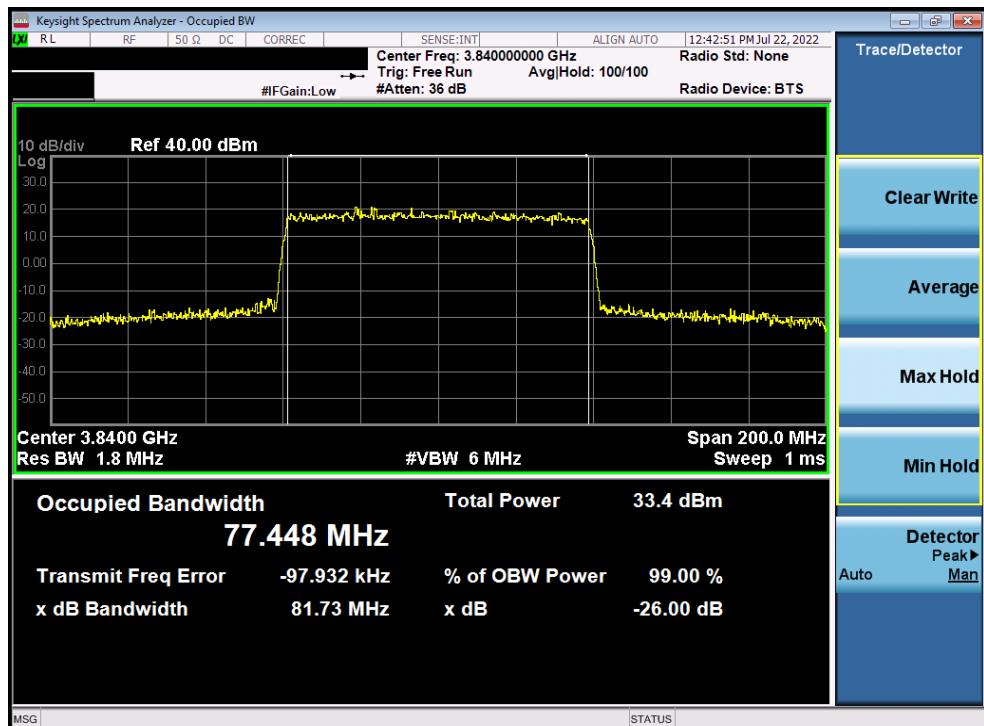


Plot 7-77. Occupied Bandwidth Plot (NR Band n77 C-Band - 80MHz CP-OFDM QPSK - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT		
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device	Approved by: Technical Manager

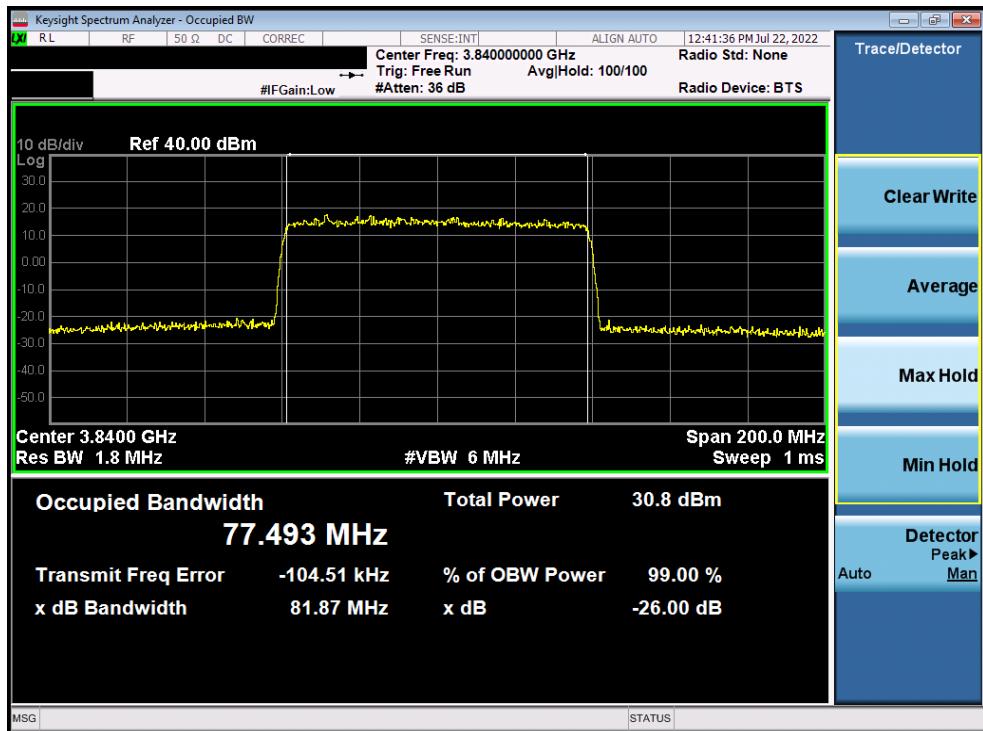


Plot 7-78. Occupied Bandwidth Plot (NR Band n77 C-Band - 80MHz CP-OFDM 16-QAM - Full RB)

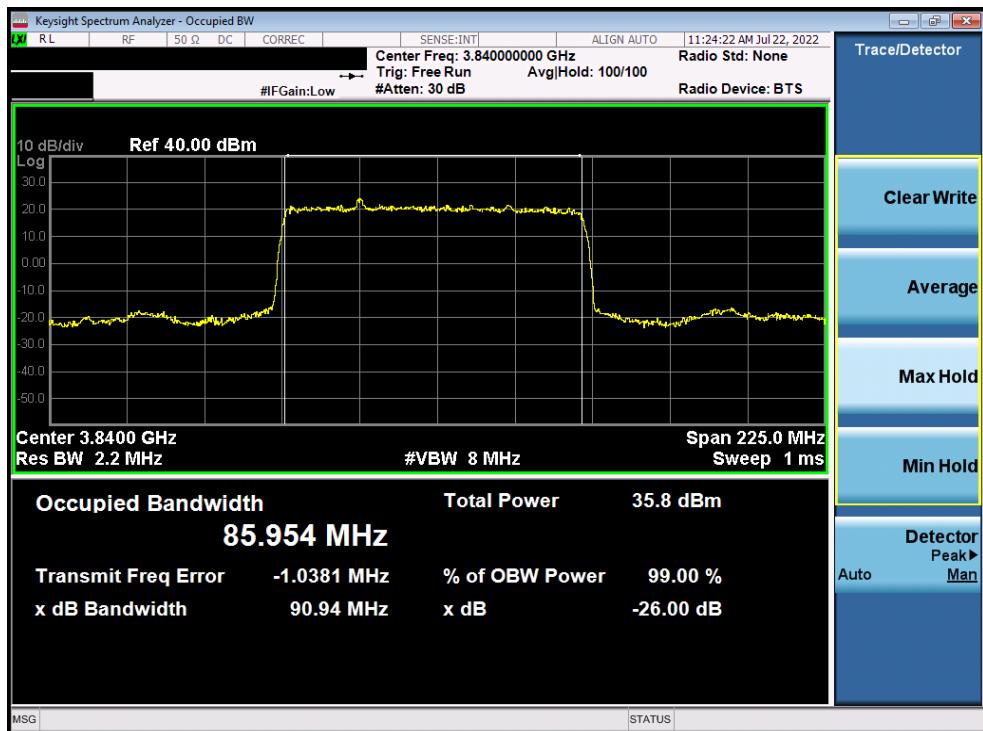


Plot 7-79. Occupied Bandwidth Plot (NR Band n77 C-Band - 80MHz CP-OFDM 64-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT		
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device	Approved by: Technical Manager

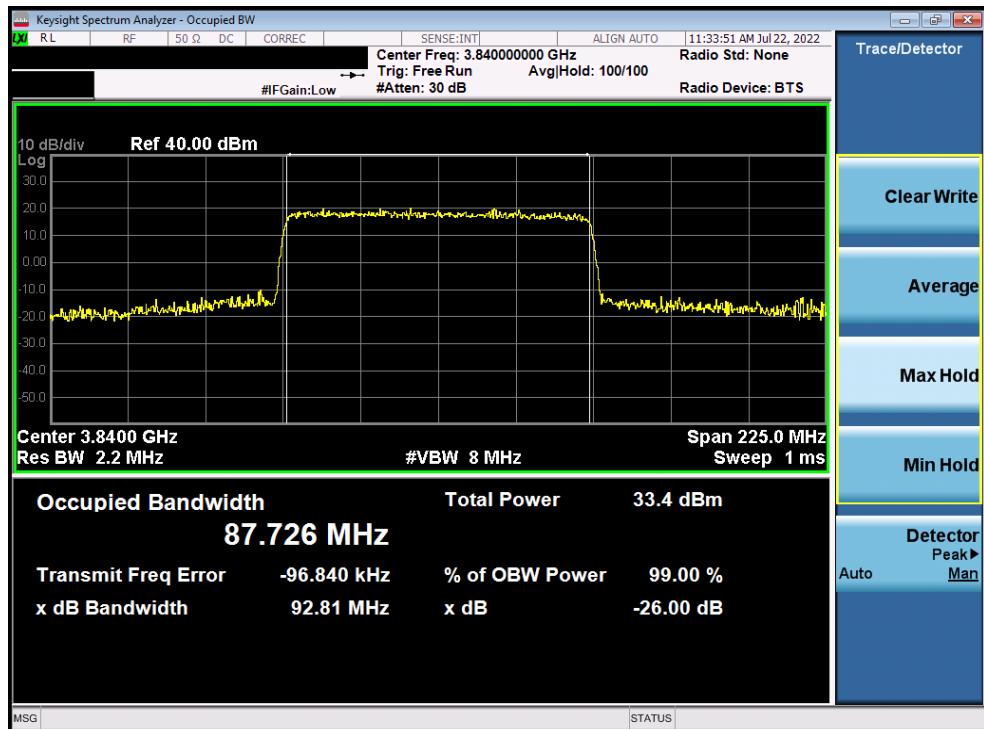


Plot 7-80. Occupied Bandwidth Plot (NR Band n77 C-Band - 80MHz CP-OFDM 256-QAM - Full RB)

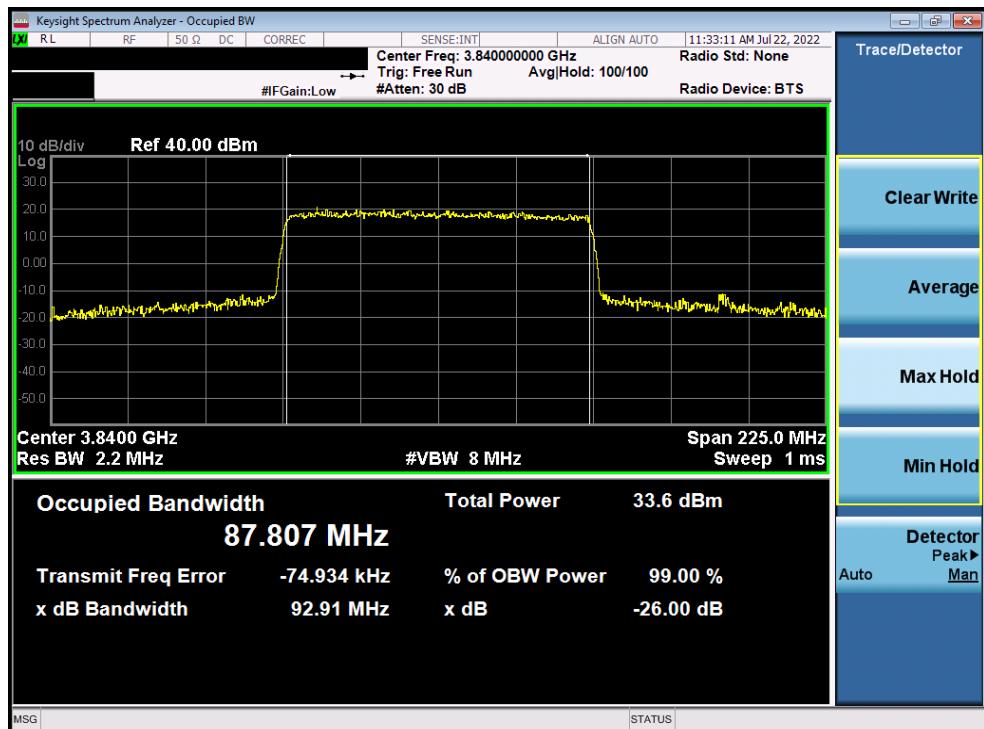


Plot 7-81. Occupied Bandwidth Plot (NR Band n77 C-Band - 90MHz DFT-s-OFDM π/2 BPSK - Full RB)

FCC ID: BCGA2757	 element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-82. Occupied Bandwidth Plot (NR Band n77 C-Band - 90MHz CP-OFDM QPSK - Full RB)



Plot 7-83. Occupied Bandwidth Plot (NR Band n77 C-Band - 90MHz CP-OFDM 16-QAM - Full RB)

FCC ID: BCGA2757	PART 27 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1C2205090023-05-R1.BCG	Test Dates: 05/30/2022 - 08/29/2022	EUT Type: Tablet Device		Page 59 of 176