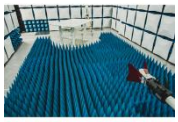
Element Materials Technology Suwon. Ltd.
(#1407) 13, Heungdeok 1-ro, Giheung-gu,
Yongin-si, Gyeonggi-do 16954, Korea
Tel. +82 31.660.7319 / Fax +82 31.660.7918
http://www.element.com



TEST REPORT
PART 24, 27 MEASUREMENT REPORT

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

Date of Testing:
04/25/2022 - 07/01/2022
Test Site/Location:
Element Lab., Suwon,
Yongin-si, Gyeonggi-do, Korea
Test Report Serial No.:
8K22040101-00-R3.A3L

FCC ID:	**A3LRFV01U-D1A**
APPLICANT:	**Samsung Electronics Co., Ltd.**

Application Type:	Class II Permissive Change
Model:	RFV01U-D1A
EUT Type:	RRU(RFV01U)
FCC Classification:	PCS Licensed Transmitter
FCC Rule Part(s):	24 & 27
Test Procedure(s):	ANSI C63.26-2015, ANSI/TIA-603-E-2016, KDB 971168 D01 v03r01, KDB 662911 D01 v02r01

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

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

ACCREDITED
CERT #2041.04

Prepared by DuJin Kim
Test Engineer

Reviewed by Charles.Shin
Technical Manager

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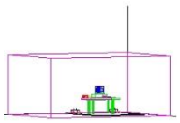
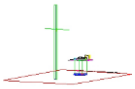


MEASUREMENT REPORT
FCC Part 24E & 27



Mode	Tx Frequency (MHz)	Total Conducted output power				Max Emission Designator	Modulation
		2 TX		4 TX			
		Max. Power (dBm)	Max. Power (W)	Max. Power (dBm)	Max. Power (W)		
NR_1C_5M	1930 – 1990	48.69	73.90	48.73	74.63	4M47G7D	QPSK
		48.76	75.21	48.77	75.40	4M50W7D	QAM
NR_1C_10M		50.62	115.44	51.88	154.22	9M31G7D	QPSK
		50.62	115.41	51.89	154.60	9M32W7D	QAM
NR_2C_5M+5M		50.43	110.39	51.59	144.10	9M44G7D	QPSK
		50.44	110.63	51.63	145.44	9M45W7D	QAM
NR_1C_5M+LTE_1C_5M		50.31	107.45	52.08	161.44	9M45G7D	QPSK
		50.40	109.67	52.09	161.84	9M43W7D	QAM
NR_1C_15M		50.46	111.09	51.73	148.83	14M1G7D	QPSK
		50.46	111.23	51.76	149.87	14M1W7D	QAM
DSS_1C_15M		50.57	114.04	51.87	153.80	14M1G7D	QPSK
		50.56	113.78	51.87	153.87	14M1W7D	QAM
DSS_1C_10M+NR_1C_5M		50.63	115.53	51.87	153.94	14M3G7D	QPSK
		50.71	117.64	51.91	155.25	14M2W7D	QAM
NR_1C_20M		50.49	111.84	51.69	147.54	19M0G7D	QPSK
		50.58	114.20	51.75	149.60	19M0W7D	QAM
DSS_1C_20M		50.63	115.49	51.90	155.04	18M9G7D	QPSK
		50.67	116.57	51.93	155.99	19M0W7D	QAM
DSS_2C_10M+10M		50.65	116.02	51.74	149.25	19M1G7D	QPSK
		50.68	116.84	51.62	145.11	19M0W7D	QAM
DSS_2C_10M+15M		50.45	110.80	51.91	155.09	24M0G7D	QPSK
		50.51	112.47	51.92	155.63	24M0W7D	QAM
NR_2C_10M+15M		50.49	111.86	51.89	154.49	24M1G7D	QPSK
		50.61	114.97	51.94	156.36	24M2W7D	QAM
DSS_1C_20M+LTE_1C_5M		50.59	114.57	51.77	150.15	24M1G7D	QPSK
		50.66	116.44	51.79	151.11	24M2W7D	QAM
DSS_1C_20M+NR_1C_5M		50.65	116.16	51.88	154.15	24M1G7D	QPSK
		50.75	118.86	51.94	156.42	24M1W7D	QAM
NR_1C_20M+LTE_1C_5M		50.77	119.31	51.93	156.10	24M1G7D	QPSK
		50.82	120.70	52.00	158.37	24M2W7D	QAM

FCC Rule Part 24E EUT Overview

Mode	Tx Frequency (MHz)	Total Conducted output power				Max Emission Designator	Modulation
		2 TX		4 TX			
		Max. Power (dBm)	Max. Power (W)	Max. Power (dBm)	Max. Power (W)		
NR_1C_5M	2110 - 2180	48.46	70.15	48.87	77.17	4M48G7D	QPSK
		48.45	69.91	48.89	77.45	4M49W7D	QAM
NR_1C_10M		51.60	114.56	51.75	149.61	9M30G7D	QPSK
		51.62	145.06	51.74	149.35	9M32W7D	QAM
NR_2C_5M+5M_		50.58	114.18	51.92	155.63	9M43G7D	QPSK
		50.55	113.53	51.91	155.22	9M46W7D	QAM
NR_1C_5M+LTE_1C_5M		50.49	111.96	52.00	158.35	9M44G7D	QPSK
		50.52	112.75	51.82	151.88	9M44W7D	QAM
NR_1C_15M		52.20	165.80	53.59	228.59	14M1G7D	QPSK
		52.21	166.21	53.59	228.56	14M2W7D	QAM
DSS_1C_15M		52.50	177.71	53.62	230.23	14M1G7D	QPSK
		52.51	178.14	53.43	220.17	14M1W7D	QAM
DSS_1C_10M+NR_1C_5M		52.26	168.28	53.51	224.51	14M3G7D	QPSK
		52.28	168.94	53.53	225.53	14M3W7D	QAM
NR_1C_20M		52.08	161.52	53.48	223.05	19M0G7D	QPSK
		52.16	164.51	53.63	230.89	19M0W7D	QAM
DSS_1C_20M		52.05	160.18	53.38	217.58	19M0G7D	QPSK
		52.08	161.29	53.41	219.45	19M0W7D	QAM
DSS_2C_10M+10M		52.19	165.42	53.45	221.53	19M2G7D	QPSK
		52.27	168.71	53.47	222.30	19M0W7D	QAM
DSS_1C_10M+NR_1C_5M + LTE_1C_5M		52.11	162.47	53.53	225.64	19M4G7D	QPSK
		52.16	164.31	53.59	228.60	19M3W7D	QAM
NR_3C_10M+10M+15M		51.88	154.03	53.38	217.56	34M0G7D	QPSK
		51.87	153.67	53.33	215.28	34M0W7D	QAM
DSS_3C_10M+10M+15M		51.95	156.78	53.68	233.42	34M0G7D	QPSK
		51.96	157.13	53.62	229.88	33M8W7D	QAM
DSS_1C_20M+NR_1C_10 M+ LTE_1C_5M		52.02	159.10	53.36	216.68	34M2G7D	QPSK
		52.05	160.18	53.39	218.43	33M9W7D	QAM
DSS_2C_10M+10M+ LTE_1C_15M		52.20	166.03	53.73	235.79	34M0G7D	QPSK
		52.11	162.62	53.81	240.33	33M9W7D	QAM
DSS_1C_20M+NR_2C_10 M+ 5M		52.09	161.83	53.48	223.10	34M1G7D	QPSK
		52.15	163.91	53.51	224.44	33M9W7D	QAM
NR_2C_5M+10M+ LTE_1C_20M		51.93	155.98	53.57	227.56	34M2G7D	QPSK
		51.88	154.29	53.57	227.40	34M0W7D	QAM

FCC Rule Part 27 EUT Overview

Notes:

Total Power shown in the table above are the full conducted average output power that will appear on the Grant of Authorization.

1.0 REVISION RECORD

Issue Number	Issued Date	Revision History
8K22040101-00.A3L	07/05/2022	Initial Issue
8K22040101-00-R1.A3L	07/08/2022	Revision due to updated EUT Overview table
8K22040101-00-R2.A3L	07/11/2022	Revision due to updated additional EUT Overview table
8K22040101-00-R3.A3L	07/12/2022	Revision due to updated Device capabilities

2.0 INTRODUCTION

2.1 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.

2.2 Element Materials Technology Suwon Test Location

These measurement tests were conducted at the Element Materials Technology Suwon. Ltd. facility located at (#1407) 13, Heungdeok 1-ro, Giheung-gu, Yongin-si, Gyeonggi-do 16954, Korea.

2.3 Test Facility / Accreditation

Measurements were performed at Element Materials Technology Suwon Lab located in Yongin-si, Gyeonggi, Korea.

- Element Materials Technology Suwon is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation(A2LA) with Certificate number 2041.04 for Specific Absorption Rate (SAR), where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.

- Element Materials Technology Suwon facility is accredited, designated, and recognized in accordance with the provision of Radio Wave Act and International Standard ISO/IEC 17025:2017 under the National Radio Research Agency.

  - Designation Number / CABID: KR0169
  - Test Firm Registration Number of FCC: 417945
  - Test Firm Registration Number of IC: 26168

3.0 PRODUCT INFORMATION

3.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung RRU(RFV01U) FCC ID: A3LRFV01U-D1A**. The test data contained in this report pertains only to the emissions due to the EUT's licensed transmitters that perate under the provisions of Part 24 and 27.

A class II permissive change on the original filing is being pursued to enable Channel Bandwidth and modulation without hardware modification.

3.2 Device Capabilities

This device supports the following conditional features and filter information:

EUT Type:	RRU (RFV01U)	
Model Name:	RFV01U-D1A	
Test Device Serial No.:	S525215083, S516C35760	
Device Capabilities:	LTE, DSS, NR	
Operating Band/Frequency Range:	Band / Tx (Downlink) / Rx (Uplink)	
	B2: 1930 MHz to 1990 MHz	1850 MHz to 1910 MHz
	B66: 2110 MHz to 2180 MHz	1710 MHz to 1780 MHz
Supported Modulation:	QPSK, 16QAM, 64QAM, 256QAM	
PCS Band 2 Supported Number of Carriers and Channel Bandwidth:	# LTE: 5, 10, 15, 20MHz bandwidth modes for LTE Band 2 with up to 2CC aggregated of Max. Bandwidth 25 MHz # NR: 5, 10, 15, 20MHz bandwidth modes for 5G NR Band n2 with up to 2CC aggregated of Max. Bandwidth 25 MHz # DSS: 10, 15, 20MHz bandwidth modes for DSS Band 2 with up to 2CC aggregated of Max. Bandwidth 25 MHz # Multi-RAT: DSS and 5G NR and LTE with up to 2CC aggregated of Bandwidth 25 MHz	
AWS Band 66 Supported Number of Carriers and Channel Bandwidth:	# LTE: 5, 10, 15, 20MHz bandwidth modes for LTE Band 66 with up to 3CC aggregated of Max. Bandwidth 35 MHz # NR: 5, 10, 15, 20MHz bandwidth modes for 5G NR Band 66 with up to 3CC aggregated of Max. Bandwidth 35 MHz # DSS: 10, 15, 20MHz bandwidth modes for DSS Band 66 with up to 3CC aggregated of Max. Bandwidth 35 MHz # Multi-RAT: DSS and 5G NR and LTE with up to 3CC aggregated of Max. Bandwidth 35 MHz	
Maximum Output Power	PCS Band 2	Total 160 W
	AWS Band 66	Total 240 W
Number of Antenna ports	2TX, 4TX Configuration	
Supported Configurations:	Single carrier, Multi-carrier, Multi-RAT	
Input Voltage:	-48 VDC	
Antenna:	Antenna is not provided by manufacture	

3.3 Test Configuration

The setup is as follows:

a) The EUT ("RRU(RFV01U)") and a Data Unit (DU) are each powered by -48V DC power supply.
b) The DU is connected to a test laptop via an ethernet cable acting as backhaul.
c) DU connects to the EUT through a fiber optic cable.
d) An RF cable connects the signal analyzer and the EUT Ports for respective measurement.

The EUT was tested per the guidance of ANSI C63.26-2015 and KDB 971168 D01 v03r01. See Section 8.0 of this test report for a description of the radiated and antenna port conducted emissions tests.

For DSS radio configuration, the DSS ratio worst case was found while operating with 9:1 and 5:5 and 2:8 mode based on the verification results and this report only the worst-case data were reported.

For multi carriers configuration, the QAM modulation worst case was found while operating with 16QAM mode and only the worst-case data were reported.

The following information is about configurations of carrier frequency and output power per port declared by the manufacturer.

PCS band Single and Multi Carriers Configuration	No. of Carriers	Carrier Bandwidth (MHz)	Carrier Frequency Configuration (MHz)			Rated Power (W/path)	
			Lowest	Middle	Highest	2 Tx	4 Tx
NR_1C_5M	1	5	1932.5	1960.0	1987.5	40	20
NR_1C_10M	1	10	1935.0	1960.0	1985.0	60	40
NR_2C_5M+5M	2	5+5	1935.0	1960.0	1985.0		
Non-Contiguous			1932.5 + 1987.5				
NR_1C_15M	1	15	1937.5	1960.0	1982.5		
DSS_1C_15M	1	15	1937.5	1960.0	1982.5		
NR_1C_20M	1	20	1940.0	1960.0	1980.0		
DSS_1C_20M	1	20	1940.0	1960.0	1980.0		
DSS_2C_10M+10M	2	10+10	1940.0	1960.0	1980.0		
Non-Contiguous			1935.0 + 1985.0				
DSS_2C_10M+15M	2	10+15	1942.5	1960.0	1977.5		
Non-Contiguous			1935.0 + 1982.5				
NR_2C_10M+15M	2	10+15	1942.5	1960.0	1977.5		
Non-Contiguous			1935.0 + 1982.5				

PCS band Multi-RAT Configuration	No. of Carriers	Carrier Bandwidth (MHz)	Carrier Frequency Configuration (MHz)			Rated Power (W/path)	
			Lowest	Middle	Highest	2 Tx	4 Tx
NR_1C_5M + LTE_1C_5M	2	5+5	1935.0	1960.0	1985.0	60	40
Non-Contiguous			1932.5 + 1987.5				
DSS_1C_10M + NR_1C_5M	2	10+5	1937.5	1960.0	1982.5		
Non-Contiguous			1935.0 + 1987.5				
DSS_1C_20M + LTE_1C_5M	2	20+5	1942.5	1960.0	1977.5		
Non-Contiguous			1940.0 + 1987.5				
DSS_1C_20M + NR_1C_5M	2	20+5	1942.5	1960.0	1977.5		
Non-Contiguous			1940.0 + 1987.5				
NR_1C_20M + LTE_1C_5M	2	20+5	1942.5	1960.0	1977.5		
Non-Contiguous			1940.0 + 1987.5				

AWS band Single and Multi Carriers Configuration	No. of Carriers	Carrier Bandwidth (MHz)	Carrier Frequency Configuration (MHz)			Rated Power (W/path)	
			Lowest	Middle	Highest	2 Tx	4 Tx
NR_1C_5M	1	5	2112.5	2145.0	2177.5	40	20
NR_1C_10M	1	10	2115.0	2145.0	2175.0	80	40
NR_2C_5M+5M	2	5+5	2115.0	2145.0	2175.0	60	40
Non-Contiguous			2112.5 + 2177.5				
NR_1C_15M	1	15	2117.5	2145.0	2172.5	90	60
DSS_1C_15M	1	15	2117.5	2145.0	2172.5		
NR_1C_20M	1	20	2120.0	2145.0	2170.0		
DSS_1C_20M	1	20	2120.0	2145.0	2170.0		
DSS_2C_10M+10M	2	10+10	2120.0	2145.0	2170.0		
Non-Contiguous			2115.0 + 2175.0				
NR_3C_10M + 10M +15M	2	10+10+15	2127.5	2145.0	2162.5		
Non-Contiguous			2115.0 + 2145.0 + 2172.5				
DSS_3C_10M + 10M +15M	2	10+10+15	2127.5	2145.0	2162.5		
Non-Contiguous			2115.0 + 2145.0 + 2172.5				

AWS band Multi-RAT Configuration	No. of Carriers	Carrier Bandwidth (MHz)	Carrier Frequency Configuration (MHz)			Rated Power (W/path)	
			Lowest	Middle	Highest	2 Tx	4 Tx
NR_1C_5M + LTE_1C_5M	2	5+5	2115.0	2145.0	2175.0	60	40
Non-Contiguous			2112.5 + 2177.5				
DSS_1C_10M + NR_1C_5M	2	10+5	2117.5	2145.0	2172.5	90	60
Non-Contiguous			2115.0 + 2177.5				
DSS_1C_10M + NR_1C_5M + LTE_1C_5M	3	10+5+5	2120.0	2145.0	2170.0		
Non-Contiguous			2115.0 + 2145.0 +2177.5				
DSS_1C_20M + NR_2C_10M + 5M	2	20+10+5	2127.5	2145.0	2162.5		
Non-Contiguous			2120.0 + 2145.0 + 2175.0				
DSS_1C_20M + NR_1C_10M + LTE_1C_5M	3	20+10+5	2127.5	2145.0	2162.5		
Non-Contiguous			2120.0 + 2145.0 + 2175.0				
DSS_2C_10M + 10M + LTE_1C_15M	3	10+10+15	2127.5	2145.0	2162.5		
Non-Contiguous			2115.0 + 2145.0 + 2172.5				
NR_2C_5M + 10M + LTE_1C_20M	3	5+10+20	2127.5	2145.0	2162.5		
Non-Contiguous			2112.5 + 2145.0 + 2170.0				

3.4 EMI Suppression Device(s)/Modifications

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

4.0 DESCRIPTION OF TESTS

4.1 Measurement Procedure

The measurement procedures described in the document titled “American National Standard for Compliance Testing of Transmitter Used in Licensed Radio Service” (ANSI C63.26-2015) and the guidance provided in KDB 842590 D01 v01r01 were used in the measurement of the EUT.

Occupied Bandwidth:
KDB 971168 D01 v03r01 – Section 4.3
ANSI C63.26-2015 – Section 5.4.4

Conducted Power Measurement and EIRP and PSD
KDB 971168 D01 v03r01 – Section 5.3
KDB 971168 D01 v03r01 – Section 5.4
KDB 662911 D01 v02r01 – Section E)1) In-Band Power Measurements
ANSI C63.26-2015 – Section 5.2.5
ANSI C63.26-2015 – Section 5.2.4

Peak-to-Average Power Ratio:
KDB 971168 D01 v03r01 – Section 5.7
ANSI C63.26-2015 – Section 5.2.3.4

Channel Edge Emissions at Antenna Terminal
KDB 971168 D01 v03r01 – Section 6
KDB 662911 D01 v02r01 – Section E)3) Out-of-Band and Spurious Emission Measurements
a) Absolute Emission Limits
iii) Measure and add 10 log(N_{ANT}) dB
ANSI C63.26-2015 – Section 5.7

Spurious and Harmonic Emissions at Antenna Terminal
KDB 971168 D01 v03r01 – Section 6
KDB 662911 D01 v02r01 – Section E)3) Out-of-Band and Spurious Emission Measurements
a) Absolute Emission Limits
iii) Measure and add 10 log(N_{ANT}) dB
ANSI C63.26-2015 – Section 5.7

Radiated unwanted emission
KDB 971168 D01 v03r01 – Section 7
ANSI C63.26-2015 – Section 5.8

Frequency Stability / Temperature Variation
KDB 971168 D01 v03r01 – Section 9
ANSI C63.26-2015 – Section 5.6

4.2 Measurement Software

Test item	Name	Version
Conducted Measurement	Node B automation	1.0

5.0 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	1.37
Radiated Disturbance (<1GHz)	3.94
Radiated Disturbance (>1GHz)	4.75
Radiated Disturbance (>18GHz)	4.84

6.0 TEST EQUIPMENT CALIBRATION DATA

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

Manufacture	Model	Description	Cal Date	Cal interval	Cal Due	Serial Number
KEYSIGHT	N9030B	MXA Signal Analyzer	05/09/2022	Annual	05/08/2023	MY57142018
KEYSIGHT	N9020B	MXA Signal Analyzer	10/22/2021	Annual	10/21/2022	MY55470135
Rohde & Schwarz	ESW	EMI Test Receiver	07/06/2021	Annual	07/05/2022	101761
AC POWER KOREA	ACPD-60150	DC Power Supply	01/18/2022	Annual	01/17/2023	DC-1
SUKSAN TECHNOLOGY	SE-CT-10	Temperature Chamber	09/15/2021	Annual	09/14/2022	191021
Rohde & Schwarz	TS-SFUNIT-Rx	Shielded Filter Unit	03/02/2022	Annual	03/01/2023	102131
Schwarzbeck	VULB9162	Broadband TRILOG Antenna	07/13/2021	Biennial	07/12/2023	9162-217
Sunol sciences	DRH-118	Horn Antenna	07/14/2021	Biennial	07/13/2023	A102416-1
Schwarzbeck	BBHA 9170	Horn Antenna	01/27/2022	Biennial	01/26/2024	1037
RF One	RFH1820NA250-D	Attenuator	07/07/2021	Annual	07/06/2022	PG0504
RF One	RFH1820NA250-D	Attenuator	07/07/2021	Annual	07/06/2022	PG0503
RF One	RFH1840NA250-D	Attenuator	07/07/2021	Annual	07/06/2022	PG0502
Weinschel	290-40-33	Attenuator	07/06/2021	Annual	07/05/2022	CL4563
Weinschel	290-40-33	Attenuator	07/06/2021	Annual	07/05/2022	CL4564

Table 6-1. 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. All testing was performed before the calibration due date.

7.0 SAMPLE CALCULATIONS

Emission Designator

QPSK Modulation

Emission Designator = 4M47G7D

Occupied Bandwidth = 4.47 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data transmission, telemetry, telecommand

QAM Modulation

Emission Designator = 4M50W7D

Occupied Bandwidth = 4.50 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data transmission, telemetry, telecommand

8.0 TEST RESULTS

8.1 Summary

Company Name: SAMSUNG Electronics Co., Ltd.

FCC ID: A3LRFV01U-D1A

FCC Classification: PCS Licensed Transmitter

Mode(s): LTE, NR, DSS

FCC Part Section(s)	Test Description	Limit	Test Condition	Test Result	Reference
§ 2.1046	Conducted Average Output Power	N/A	CONDUCTED	PASS	Annex 1
§ 2.1049	Occupied Bandwidth	N/A		PASS	Section 8.2
§ 2.1046, § 24.232, § 27.50(d)	Equivalent Isotropic Radiated Power (Power Spectral Density)	< 1640 W/MHz		PASS	Section 8.3 (Note 4)
§ 2.1046, § 24.232, § 27.50(d)	Peak-to-average ratio	≤ 13 dB		PASS	Section 8.4
§ 2.1051, § 24.238, § 27.53(h)	Band Edge Emissions at Antenna Terminal	< 43 + log10(P[Watts]) at Band Edge and all out-of-band emissions		PASS	Section 8.5
§ 2.1051, § 24.238, § 27.53(h)	Spurious and Harmonic Emissions at Antenna Terminal			PASS	Section 8.6
§ 2.1055 § 24.235 § 27.54	Frequency Stability	Fundamental emissions stay within authorized frequency block		N/A	(Note 5)
§ 2.1055, § 24.238, § 27.53(h)	Radiated unwanted emission	< 43 + log10(P[Watts]) at Band Edge and all out-of-band emissions	RADIATED	PASS	Section 8.7

Table 8-1. Summary of Test Results

Notes:

1) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.

2) The analyzer plots were all taken with a correction table loaded into the analyzer.

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 and attenuators.

4) The antenna gain and EIRP will be addressed at the time of licensing depend on antenna heights in each install place.

5) This is a variant report for channel bandwidth and modulation enabled by software without hardware change. The test item does not affect those operation. And it was performed in original report.

8.2 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 Procedures Used

KDB 971168 D01 v03r01 – Section 4.3

ANSI C63.26-2015 – Section 5.4.4

Test Setting

The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The spectrum analyzer setting were as follows:

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.

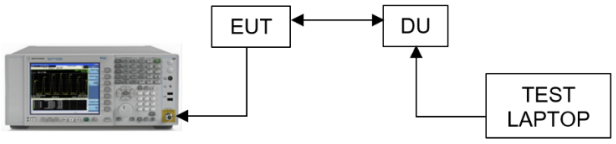


Figure 8-1. Test Instrument & Measurement Setup

Test Notes

None

Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	**4.47**	4.49	4.48	4.49
	1	4.47	**4.50**	4.47	4.48
Middle	0	4.47	4.48	4.48	4.48
	1	4.47	4.49	4.48	4.48
High	0	4.47	4.49	4.48	4.47
	1	4.47	4.48	4.48	4.48

Table 8-2. Occupied Bandwidth Summary Data (PCS_NR_1C_5M_2TX)

Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	4.47	4.49	4.48	4.48
	1	4.47	4.49	4.48	4.49
	2	4.47	4.49	4.48	4.48
	3	4.47	4.49	4.48	4.48
Middle	0	4.47	4.48	4.48	4.48
	1	4.47	4.49	4.48	4.48
	2	4.47	4.48	4.47	4.48
	3	4.47	4.48	4.48	4.48
High	0	4.47	4.48	4.47	4.47
	1	4.48	4.49	4.48	4.48
	2	4.48	4.48	4.48	4.47
	3	4.47	4.49	4.47	4.48

Table 8-3. Occupied Bandwidth Summary Data (PCS_NR_1C_5M_4TX)

Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	9.28	9.24	9.29	9.29
	1	**9.31**	9.22	9.30	9.29
Middle	0	9.29	9.23	9.29	9.30
	1	9.29	9.23	9.29	9.30
High	0	9.28	9.20	9.30	**9.32**
	1	9.30	9.23	9.31	9.29

Table 8-4. Occupied Bandwidth Summary Data (PCS_NR_1C_10M_2TX)

Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	9.29	9.23	9.29	9.28
	1	9.30	9.24	9.30	9.29
	2	9.29	9.22	9.29	9.28
	3	9.30	9.24	9.30	9.32
Middle	0	9.28	9.23	9.30	9.29
	1	9.30	9.24	9.31	9.29
	2	9.29	9.23	9.31	9.31
	3	9.30	9.25	9.31	9.32
High	0	9.28	9.22	9.28	9.29
	1	9.29	9.23	9.28	9.28
	2	9.29	9.24	9.31	9.29
	3	9.28	9.23	9.31	9.30

Table 8-5. Occupied Bandwidth Summary Data (PCS_NR_1C_10M_4TX)

Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	14.11	14.13	14.10	14.13
	1	**14.13**	14.13	14.09	14.13
Middle	0	14.10	14.12	14.10	14.15
	1	14.11	14.13	14.11	14.15
High	0	14.10	**14.15**	14.11	14.13
	1	14.09	14.13	14.10	14.13

Table 8-6. Occupied Bandwidth Summary Data (PCS_NR_1C_15M_2TX)

Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	14.11	14.12	14.12	14.13
	1	14.09	14.13	14.10	14.10
	2	14.08	14.12	14.12	14.14
	3	14.10	14.14	14.11	14.12
Middle	0	14.11	14.13	14.11	14.14
	1	14.11	14.13	14.11	14.14
	2	14.13	14.14	14.12	14.12
	3	14.09	14.15	14.12	14.14
High	0	14.09	14.13	14.10	14.12
	1	14.10	14.13	14.10	14.14
	2	14.08	14.13	14.12	14.12
	3	14.12	14.12	14.09	14.11

Table 8-7. Occupied Bandwidth Summary Data (PCS_NR_1C_15M_4TX)

Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	18.90	18.96	18.94	18.91
	1	18.90	18.95	18.95	18.96
Middle	0	18.91	**18.98**	18.91	18.92
	1	18.93	18.96	18.94	18.94
High	0	18.90	18.96	18.94	18.92
	1	18.90	18.95	18.91	18.94

Table 8-8. Occupied Bandwidth Summary Data (PCS_NR_1C_20M_2TX)

Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	18.94	18.97	18.92	18.95
	1	18.92	18.94	18.92	18.91
	2	18.92	18.94	18.90	18.93
	3	18.91	18.96	18.90	18.96
Middle	0	18.92	18.94	18.92	18.93
	1	**18.95**	18.96	18.97	18.96
	2	18.92	18.97	18.92	18.96
	3	18.93	18.97	18.93	18.94
High	0	18.93	18.97	18.93	18.96
	1	18.94	18.96	18.90	18.93
	2	18.93	18.95	18.92	18.93
	3	18.91	18.94	18.94	18.93

Table 8-9. Occupied Bandwidth Summary Data (PCS_NR_1C_20M_4TX)

Channel	Ratio	Port	OBW (MHz)			
			QPSK	16QAM	64QAM	256QAM
Low	LTE: 9 NR: 1	0	14.00	14.02	13.98	14.03
		1	14.01	13.97	14.06	14.02
Middle		0	14.02	13.99	13.99	14.00
		1	14.00	13.92	13.99	14.01
High		0	13.98	13.97	13.93	13.99
		1	14.02	14.00	13.95	13.94
Low	LTE: 5 NR: 5	0	14.07	14.08	14.06	14.08
		1	14.09	14.05	14.09	14.11
Middle		0	14.09	14.05	14.11	14.06
		1	14.06	14.08	14.09	14.11
High		0	14.08	14.07	14.07	14.09
		1	14.07	14.08	14.10	14.08
Low	LTE: 2 NR: 8	0	**14.11**	14.10	14.10	**14.14**
		1	14.10	14.09	14.11	14.08
Middle		0	14.07	14.09	14.11	14.11
		1	14.10	14.12	14.08	14.11
High		0	14.09	14.09	14.09	14.12
		1	14.08	14.10	14.08	14.12

Table 8-10. Occupied Bandwidth Summary Data (PCS_DSS_1C_15M_2TX)

Channel	Ratio	Port	OBW (MHz)			
			QPSK	16QAM	64QAM	256QAM
Low	LTE: 5 NR: 5	0	14.07	14.08	14.06	14.08
		1	14.07	14.08	14.08	14.10
		2	14.08	14.06	14.05	14.07
		3	14.06	14.06	14.10	14.09
Middle		0	14.06	14.08	14.07	14.12
		1	14.08	14.04	14.06	14.07
		2	14.08	14.07	14.06	14.11
		3	14.08	14.03	14.11	14.08
High		0	14.06	14.06	14.11	14.06
		1	14.08	14.07	14.07	14.08
		2	14.04	14.07	14.10	14.12
		3	14.05	14.07	14.06	14.07

Table 8-11. Occupied Bandwidth Summary Data (PCS_DSS_1C_15M_4TX)

Channel	DSS Ratio	Port	OBW (MHz)			
			QPSK	16QAM	64QAM	256QAM
Low	LTE: 9 NR: 1	0	18.78	18.85	18.72	18.87
		1	18.83	18.76	18.80	18.77
Middle		0	18.85	18.76	18.81	18.82
		1	18.82	18.79	18.74	18.77
High		0	18.78	18.83	18.78	18.77
		1	18.78	18.86	18.84	18.72
Low	LTE: 5 NR: 5	0	18.89	18.89	18.90	18.89
		1	18.91	18.87	18.89	18.89
Middle		0	18.88	18.91	18.92	18.90
		1	18.90	18.88	18.90	18.92
High		0	18.86	18.86	18.88	18.93
		1	18.89	18.89	18.86	18.87
Low	LTE: 2 NR: 8	0	**18.92**	**18.95**	18.95	18.94
		1	18.89	18.91	18.91	18.89
Middle		0	18.91	18.93	18.91	18.92
		1	18.90	18.94	18.90	18.89
High		0	18.89	18.95	18.91	18.89
		1	18.92	18.93	18.93	18.93

Table 8-12. Occupied Bandwidth Summary Data (PCS_DSS_1C_20M_2TX)

Channel	Ratio	Port	OBW (MHz)			
			QPSK	16QAM	64QAM	256QAM
Low	LTE: 5 NR: 5	0	18.90	18.89	18.85	18.89
		1	18.90	18.89	18.90	18.93
		2	18.85	18.85	18.93	18.88
		3	18.90	18.86	18.90	18.92
Middle		0	18.92	18.90	18.90	18.91
		1	18.90	18.89	18.88	18.90
		2	18.89	18.89	18.91	18.92
		3	18.90	18.92	18.93	18.88
High		0	18.85	18.90	18.86	18.94
		1	18.90	18.88	18.85	18.90
		2	18.88	18.89	18.94	18.88
		3	18.92	18.89	18.87	18.85

Table 8-13. Occupied Bandwidth Summary Data (PCS_DSS_1C_20M_4TX)

Channel	OBW (MHz)		
	Configuration	QPSK	16QAM
Middle	NR_2C_5M + 5M	9.44	9.45
	NR_1C_5M + LTE_1C_5M	9.45	9.43
	DSS_1C_10M + NR_1C_5M	14.32	14.20
	DSS_2C_10M + 10M	19.14	19.03
	DSS_2C_10M + 15M	24.04	23.99
	NR_2C_10M + 15M	24.07	24.17
	DSS_1C_20M + LTE_1C_5M	24.06	24.24
	DSS_1C_20M + NR_1C_5M	24.06	24.08
	NR_1C_20M + LTE_1C_5M	24.09	24.17

Table 8-14. Occupied Bandwidth Summary Data (PCS_Multi Carrier)

Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	4.46	4.48	4.47	4.49
	1	4.45	4.47	4.47	4.46
Middle	0	4.47	**4.49**	4.48	4.48
	1	4.47	4.48	4.47	4.48
High	0	4.47	4.48	4.48	4.48
	1	4.47	4.48	4.48	4.48

Table 8-15. Occupied Bandwidth Summary Data (AWS_NR_1C_5M_2TX)

Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	4.47	4.48	4.47	4.48
	1	4.46	4.47	4.47	4.47
	2	4.47	4.47	4.47	4.48
	3	4.47	4.48	4.47	4.47
Middle	0	4.47	4.49	4.48	4.47
	1	4.47	4.49	4.48	4.47
	2	4.47	4.49	4.49	4.48
	3	4.47	4.49	4.47	4.47
High	0	**4.48**	4.48	4.47	4.47
	1	4.47	4.48	4.48	4.48
	2	4.48	4.48	4.48	4.48
	3	4.47	4.48	4.48	4.48

Table 8-16. Occupied Bandwidth Summary Data (AWS_NR_1C_5M_4TX)

Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	9.29	9.22	9.30	9.27
	1	9.26	9.23	9.30	9.26
Middle	0	9.29	9.26	**9.32**	9.27
	1	9.28	9.24	9.30	9.28
High	0	9.29	9.24	9.29	9.29
	1	9.27	9.24	9.28	9.29

Table 8-17. Occupied Bandwidth Summary Data (AWS_NR_1C_10M_2TX)

Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	9.26	9.23	9.31	9.28
	1	9.27	9.23	9.27	9.27
	2	9.29	9.22	9.28	9.27
	3	9.28	9.22	9.28	9.28
Middle	0	9.28	9.24	9.29	9.30
	1	9.29	9.23	9.29	9.30
	2	**9.30**	9.24	9.29	9.30
	3	9.30	9.24	9.28	9.28
High	0	9.30	9.26	9.30	9.30
	1	9.30	9.23	9.29	9.28
	2	9.30	9.24	9.29	9.31
	3	9.29	9.25	9.29	9.29

Table 8-18. Occupied Bandwidth Summary Data (AWS_NR_1C_10M_4TX)

Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	14.09	14.13	14.11	14.09
	1	14.10	14.12	14.10	14.08
Middle	0	14.12	**14.18**	14.13	14.11
	1	14.09	14.17	14.11	14.12
High	0	14.11	14.14	14.13	14.12
	1	14.10	14.15	14.11	14.08

Table 8-19. Occupied Bandwidth Summary Data (AWS_NR_1C_15M_2TX)

Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	**14.13**	14.12	14.11	14.08
	1	14.10	14.12	14.12	14.09
	2	14.11	14.16	14.09	14.08
	3	14.09	14.14	14.07	14.06
Middle	0	14.10	14.15	14.10	14.12
	1	14.11	14.15	14.11	14.11
	2	14.13	14.15	14.14	14.12
	3	14.11	14.15	14.11	14.11
High	0	14.12	14.14	14.12	14.13
	1	14.12	14.14	14.11	14.10
	2	14.11	14.13	14.12	14.11
	3	14.12	14.15	14.08	14.11

Table 8-20. Occupied Bandwidth Summary Data (AWS_NR_1C_15M_4TX)

Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	18.93	18.98	18.94	18.93
	1	18.89	18.95	18.97	18.90
Middle	0	18.94	18.99	18.97	18.98
	1	**18.97**	18.99	18.93	18.97
High	0	18.95	18.98	18.95	18.95
	1	18.96	18.96	18.94	18.91

Table 8-21. Occupied Bandwidth Summary Data (AWS_NR_1C_20M_2TX)

Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	18.89	18.95	18.94	18.91
	1	18.88	18.95	18.91	18.90
	2	18.94	18.98	18.93	18.91
	3	18.94	18.99	18.94	18.93
Middle	0	18.93	18.96	18.94	18.96
	1	18.95	18.97	**19.00**	18.94
	2	18.90	18.98	18.97	18.96
	3	18.96	18.99	18.95	18.96
High	0	18.91	18.96	18.96	18.94
	1	18.94	18.98	18.98	18.92
	2	18.89	18.96	18.89	18.94
	3	18.93	18.97	18.94	18.90

Table 8-22. Occupied Bandwidth Summary Data (AWS_NR_1C_20M_4TX)

Channel	Ratio	Port	OBW (MHz)			
			QPSK	16QAM	64QAM	256QAM
Low	LTE: 9 NR: 1	0	13.94	13.93	14.02	13.99
		1	13.96	13.95	14.01	14.06
Middle		0	14.06	14.02	14.10	13.95
		1	14.04	14.01	14.01	14.07
High		0	14.04	13.99	14.07	13.98
		1	14.04	14.00	14.07	14.04
Low	LTE: 5 NR: 5	0	14.08	14.02	14.05	14.06
		1	14.05	14.07	14.09	14.05
Middle		0	14.09	14.07	14.09	14.07
		1	14.10	14.06	14.12	14.09
High		0	14.06	14.10	14.08	14.09
		1	14.08	14.09	14.10	14.12
Low	LTE: 2 NR: 8	0	14.09	14.11	14.09	14.12
		1	14.08	14.06	14.07	14.08
Middle		0	14.10	14.11	14.12	14.12
		1	**14.11**	14.09	14.10	14.12
High		0	14.10	14.11	14.10	**14.14**
		1	14.10	14.08	14.08	14.12

Table 8-23. Occupied Bandwidth Summary Data (AWS_DSS_1C_15M_2TX)

Channel	Ratio	Port	OBW (MHz)			
			QPSK	16QAM	64QAM	256QAM
Low	LTE: 5 NR: 5	0	14.05	14.08	14.06	14.10
		1	14.06	14.05	14.05	14.05
		2	14.08	14.07	14.08	14.06
		3	14.09	14.07	14.11	14.07
Middle		0	14.11	14.10	14.10	14.06
		1	14.07	14.09	14.09	14.09
		2	14.08	14.09	14.12	14.10
		3	14.10	14.04	14.10	14.10
High		0	14.10	14.06	14.08	14.09
		1	14.10	14.07	14.10	14.09
		2	14.09	14.06	14.08	14.07
		3	14.10	14.08	14.10	14.12

Table 8-24. Occupied Bandwidth Summary Data (AWS_DSS_1C_15M_4TX)

Channel	Ratio	Port	OBW (MHz)			
			QPSK	16QAM	64QAM	256QAM
Low	LTE: 9 NR: 1	0	18.74	18.80	18.78	18.74
		1	18.77	18.75	18.77	18.73
Middle		0	18.80	18.77	18.82	18.82
		1	18.82	18.78	18.76	18.84
High		0	18.84	18.85	18.78	18.80
		1	18.80	18.80	18.85	18.83
Low	LTE: 5 NR: 5	0	18.88	18.86	18.87	18.91
		1	18.86	18.87	18.86	18.89
Middle		0	18.93	18.93	18.93	18.88
		1	18.94	18.90	18.93	**18.97**
High		0	18.88	18.86	18.88	18.91
		1	**18.96**	18.90	18.91	18.88
Low	LTE: 2 NR: 8	0	18.87	18.89	18.91	18.96
		1	18.87	18.90	18.86	18.95
Middle		0	18.90	18.94	18.91	18.94
		1	18.88	18.96	18.92	18.94
High		0	18.91	18.91	18.90	18.90
		1	18.91	18.93	18.92	18.91

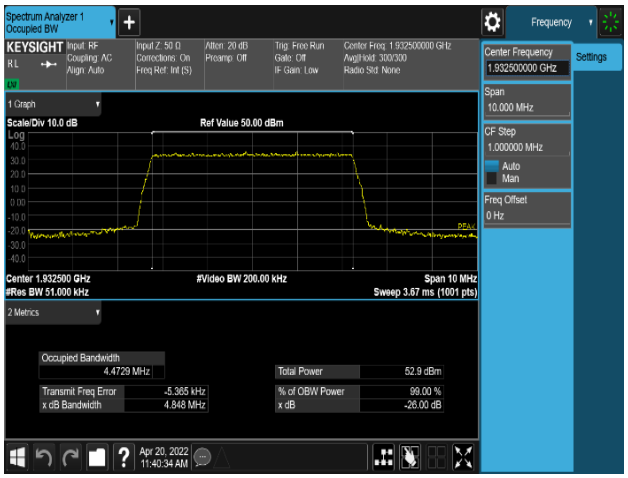
Table 8-25. Occupied Bandwidth Summary Data (AWS_DSS_1C_20M_2TX)

Channel	Ratio	Port	OBW (MHz)			
			QPSK	16QAM	64QAM	256QAM
Low	LTE: 5 NR: 5	0	18.87	18.86	18.86	18.90
		1	18.88	18.85	18.89	18.89
		2	18.86	18.87	18.85	18.88
		3	18.90	18.87	18.86	18.94
Middle		0	18.89	18.89	18.89	18.90
		1	18.89	18.90	18.88	18.92
		2	18.89	18.86	18.86	18.92
		3	18.88	18.89	18.88	18.85
High		0	18.96	18.86	18.89	18.90
		1	18.93	18.90	18.92	18.86
		2	18.92	18.89	18.89	18.87
		3	18.90	18.88	18.90	18.84

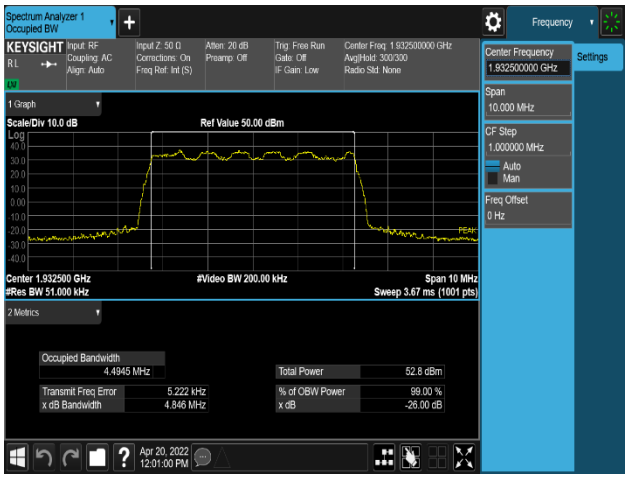
Table 8-26. Occupied Bandwidth Summary Data (AWS_DSS_1C_20M_4TX)

Channel	OBW (MHz)		
	Configuration	QPSK	16QAM
Middle	NR_2C_5M + 5M	9.43	9.46
	NR_1C_5M + LTE_1C_5M	9.44	9.44
	DSS_1C_10M + NR_1C_5M	14.33	14.32
	DSS_2C_10M + 10M	19.21	19.04
	DSS_1C_10M + NR_1C_5M + LTE_1C_5M	19.35	19.31
	NR_3C_10M + 10M +15M	34.04	33.93
	DSS_3C_10M + 10M +15M	34.00	33.78
	DSS_1C_20M + NR_1C_10M + LTE_1C_5M	34.15	33.92
	DSS_2C_10M + 10M + LTE_1C_15M	33.97	33.86
	DSS_1C_20M + NR_2C_10M + 5M	34.14	33.93
	NR_2C_5M + 10M + LTE_1C_20M	34.17	33.95

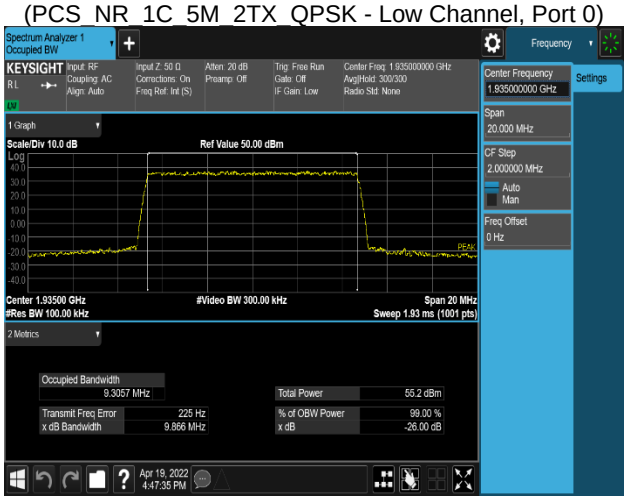
Table 8-27. Occupied Bandwidth Summary Data (AWS_Multi Carrier)



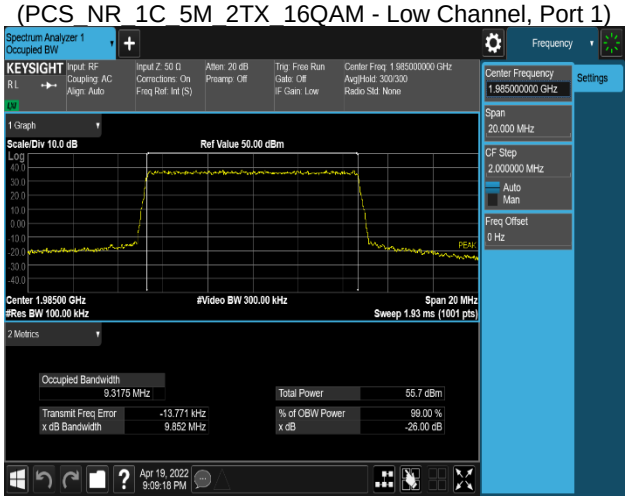
Plot 8-1. Occupied Bandwidth Plot
(PCS_NR_1C_5M_2TX_QPSK - Low Channel, Port 0)



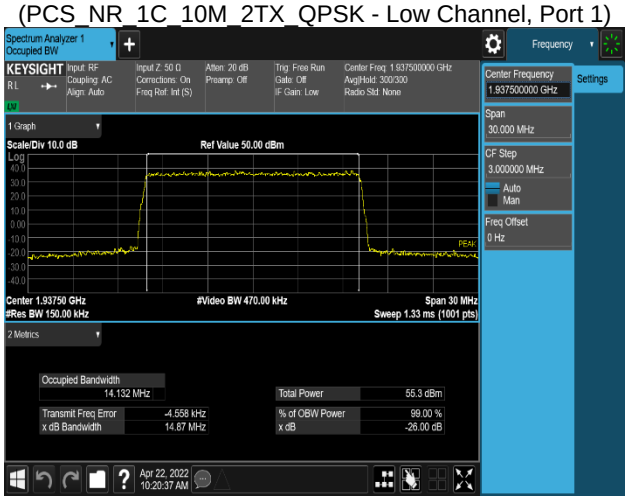
Plot 8-2. Occupied Bandwidth Plot
(PCS_NR_1C_5M_2TX_16QAM - Low Channel, Port 1)



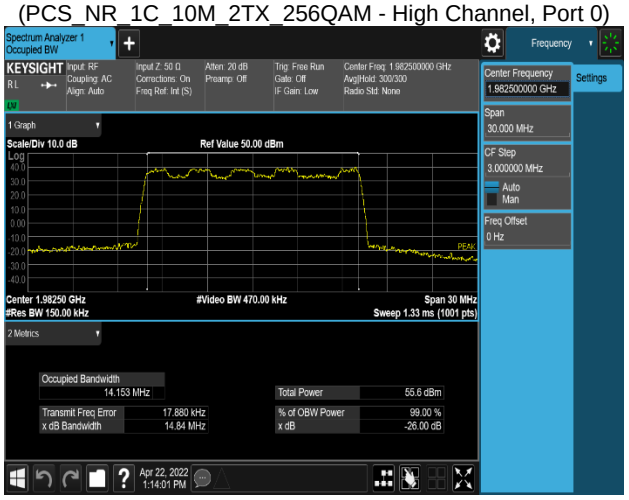
Plot 8-3. Occupied Bandwidth Plot
(PCS_NR_1C_10M_2TX_QPSK - Low Channel, Port 1)



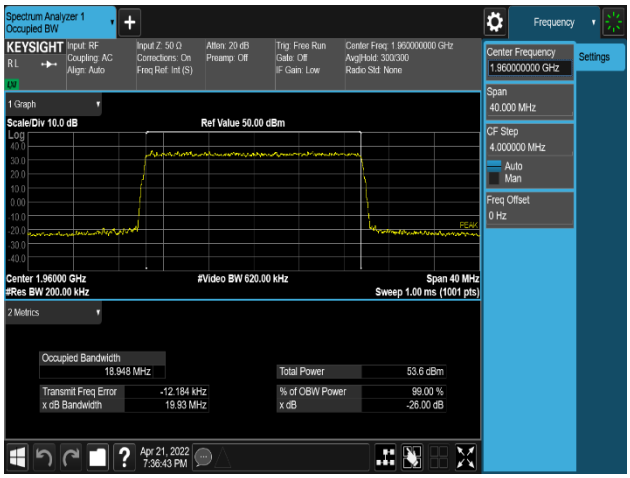
Plot 8-4. Occupied Bandwidth Plot
(PCS_NR_1C_10M_2TX_256QAM - High Channel, Port 0)



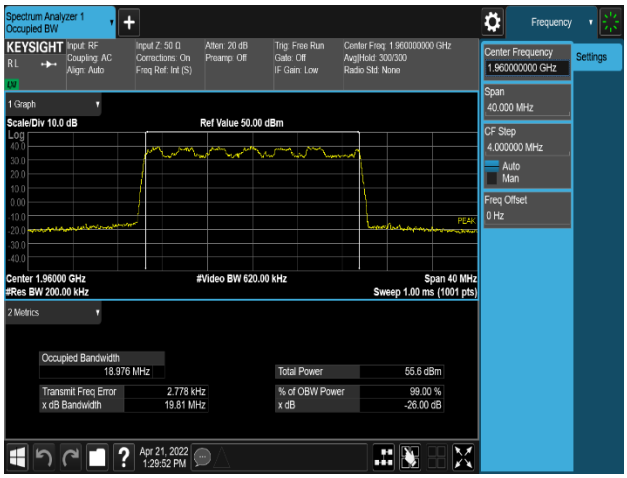
Plot 8-5. Occupied Bandwidth Plot
(PCS_NR_1C_15M_2TX_QPSK - Low Channel, Port 1)



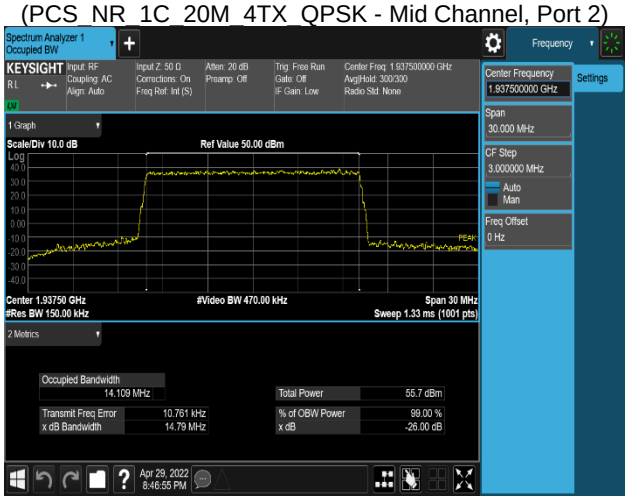
Plot 8-6. Occupied Bandwidth Plot
(PCS_NR_1C_15M_2TX_16QAM - High Channel, Port 0)



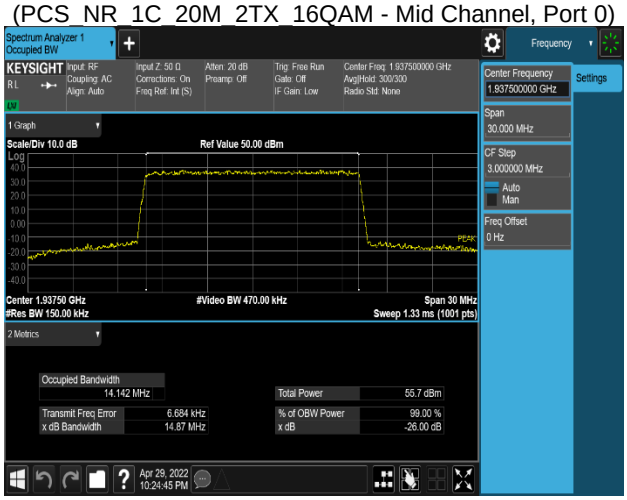
Plot 8-7. Occupied Bandwidth Plot
(PCS_NR_1C_20M_4TX_QPSK - Mid Channel, Port 2)



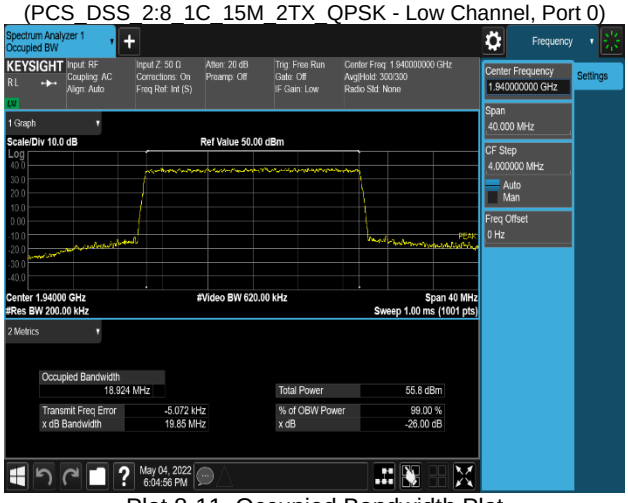
Plot 8-8. Occupied Bandwidth Plot
(PCS_NR_1C_20M_2TX_16QAM - Mid Channel, Port 0)



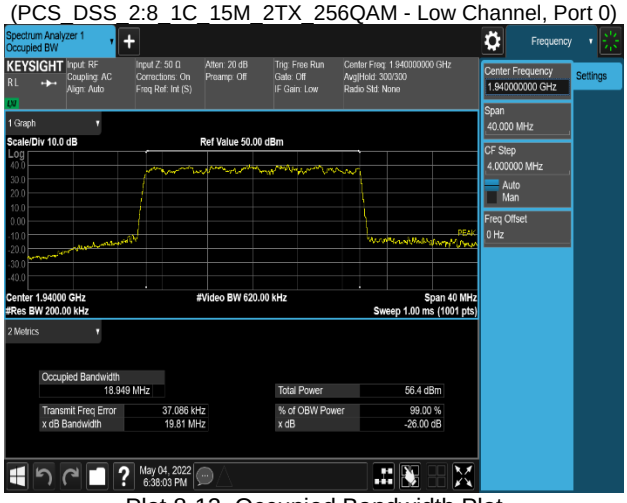
Plot 8-9. Occupied Bandwidth Plot
(PCS_DSS_2:8_1C_15M_2TX_QPSK - Low Channel, Port 0)



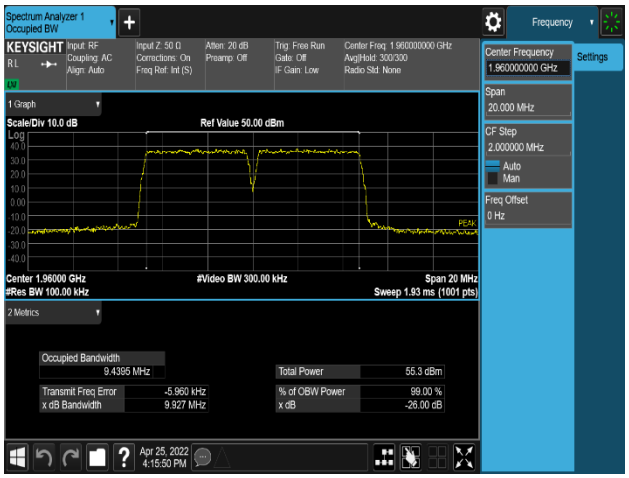
Plot 8-10. Occupied Bandwidth Plot
(PCS_DSS_2:8_1C_15M_2TX_256QAM - Low Channel, Port 0)



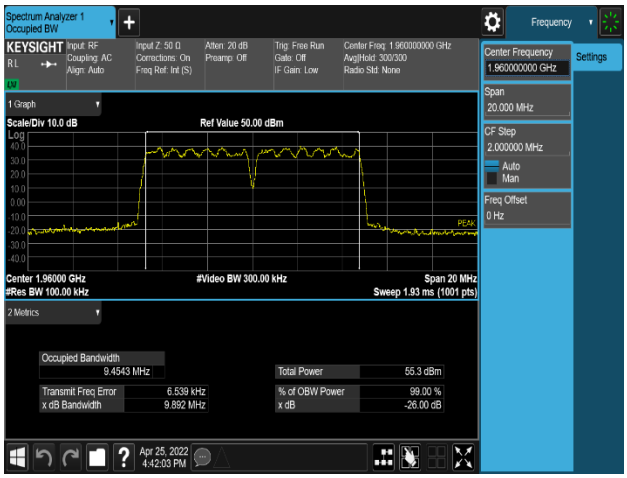
Plot 8-11. Occupied Bandwidth Plot
(PCS_DSS_2:8_1C_20M_2TX_QPSK - Low Channel, Port 0)



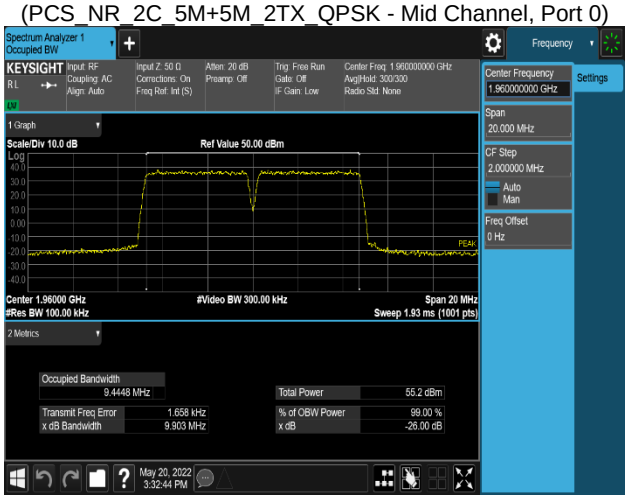
Plot 8-12. Occupied Bandwidth Plot
(PCS_DSS_2:8_1C_20M_2TX_16QAM - Low Channel, Port 0)



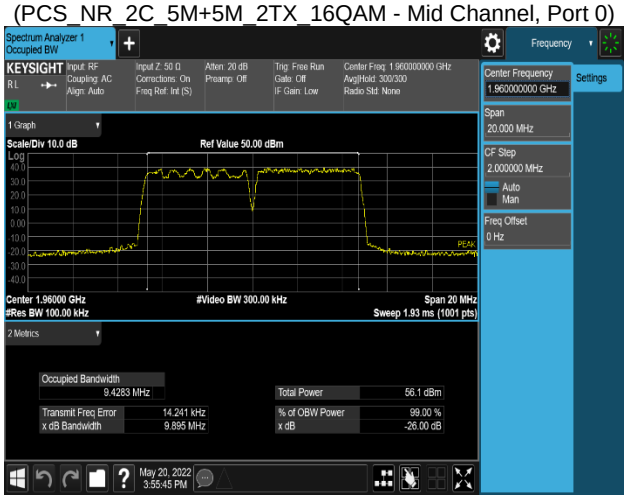
Plot 8-13. Occupied Bandwidth Plot
(PCS_NR_2C_5M+5M_2TX_QPSK - Mid Channel, Port 0)



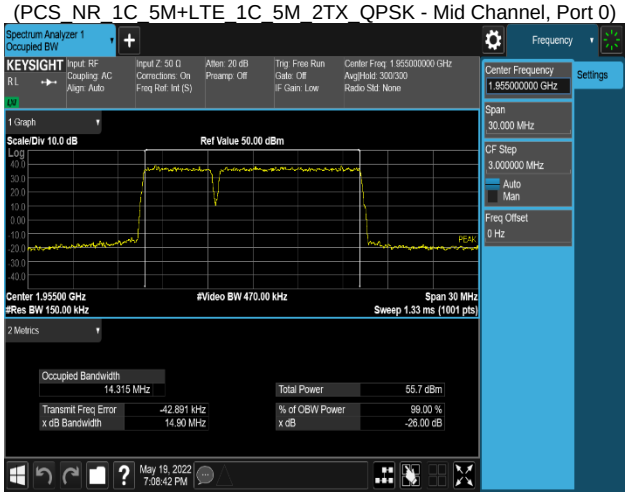
Plot 8-14. Occupied Bandwidth Plot
(PCS_NR_2C_5M+5M_2TX_16QAM - Mid Channel, Port 0)



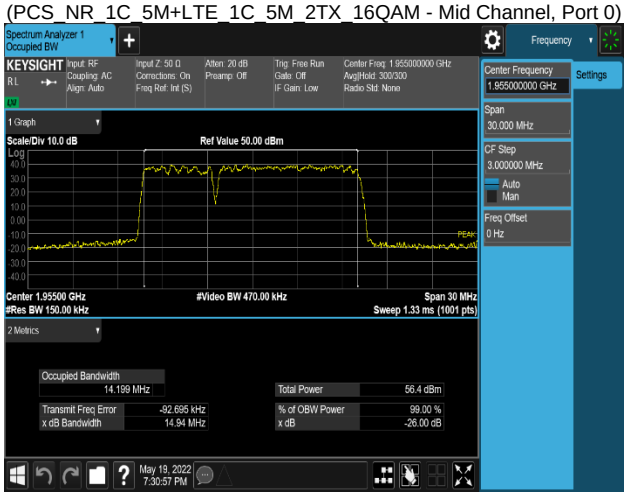
Plot 8-15. Occupied Bandwidth Plot
(PCS_NR_1C_5M+LTE_1C_5M_2TX_QPSK - Mid Channel, Port 0)



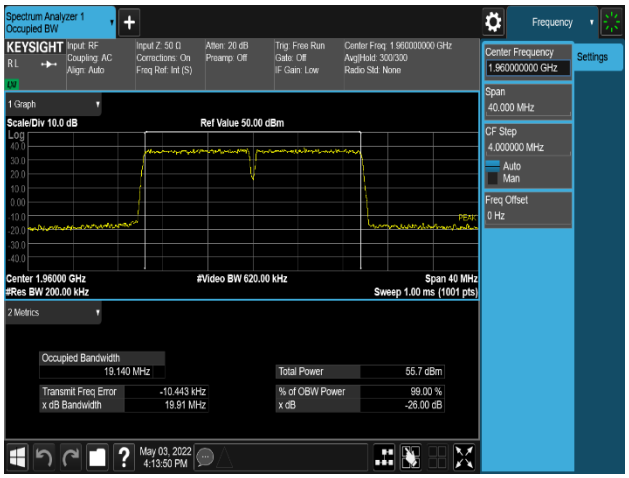
Plot 8-16. Occupied Bandwidth Plot
(PCS_NR_1C_5M+LTE_1C_5M_2TX_16QAM - Mid Channel, Port 0)



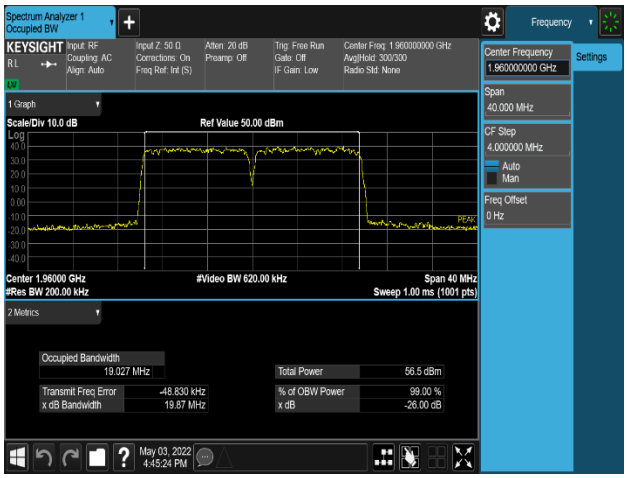
Plot 8-17. Occupied Bandwidth Plot
(PCS_DSS_1C_10M+NR_1C_5M_2TX_QPSK - Mid Channel, Port 0)



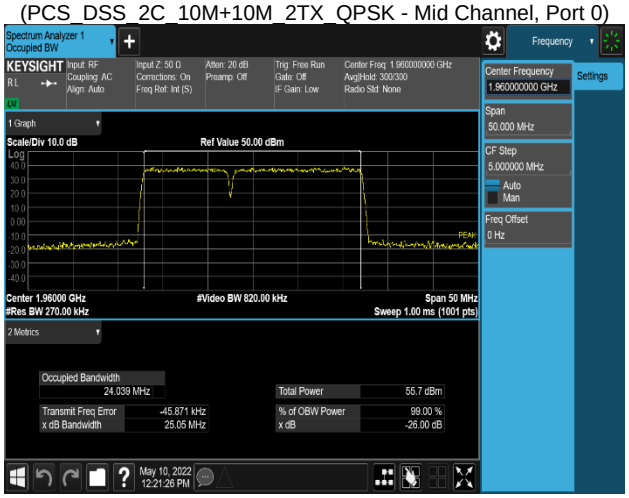
Plot 8-18. Occupied Bandwidth Plot
(PCS_DSS_1C_10M+NR_1C_5M_2TX_16QAM - Mid Channel, Port 0)



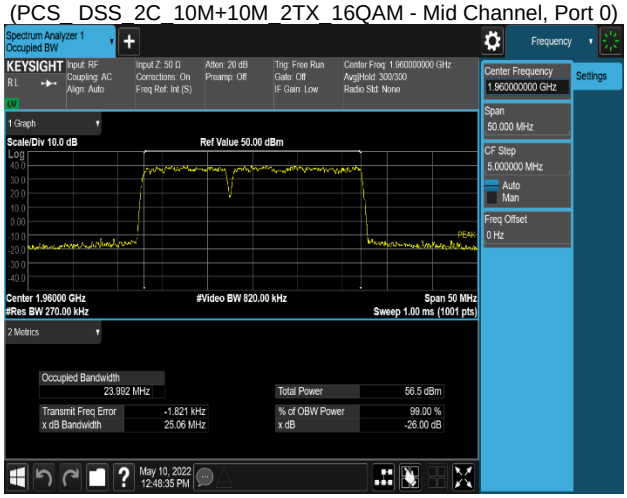
Plot 8-19. Occupied Bandwidth Plot
(PCS_DSS_2C_10M+10M_2TX_QPSK - Mid Channel, Port 0)



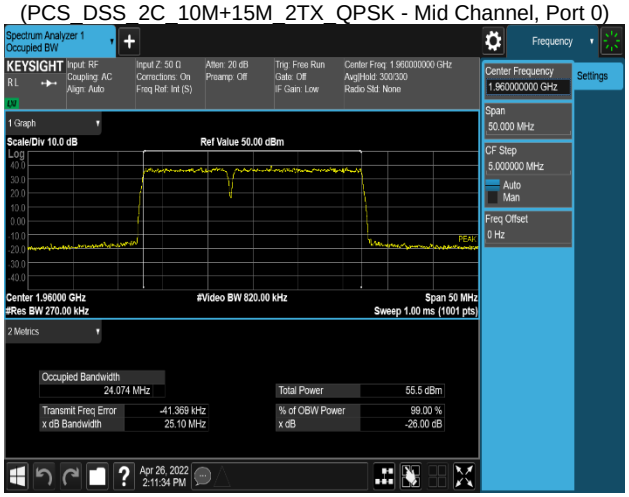
Plot 8-20. Occupied Bandwidth Plot
(PCS_DSS_2C_10M+10M_2TX_16QAM - Mid Channel, Port 0)



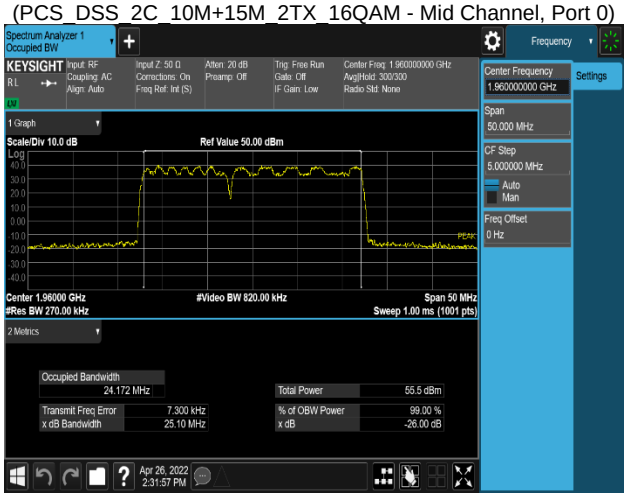
Plot 8-21. Occupied Bandwidth Plot
(PCS_DSS_2C_10M+15M_2TX_QPSK - Mid Channel, Port 0)



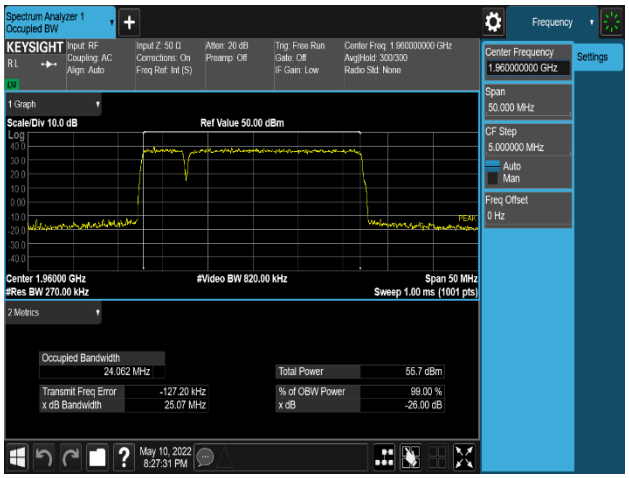
Plot 8-22. Occupied Bandwidth Plot
(PCS_DSS_2C_10M+15M_2TX_16QAM - Mid Channel, Port 0)



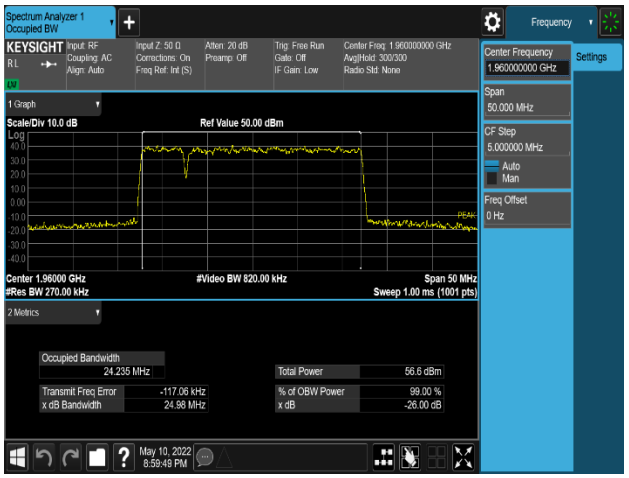
Plot 8-23. Occupied Bandwidth Plot
(PCS_NR_2C_10M+15M_2TX_QPSK - Mid Channel, Port 0)



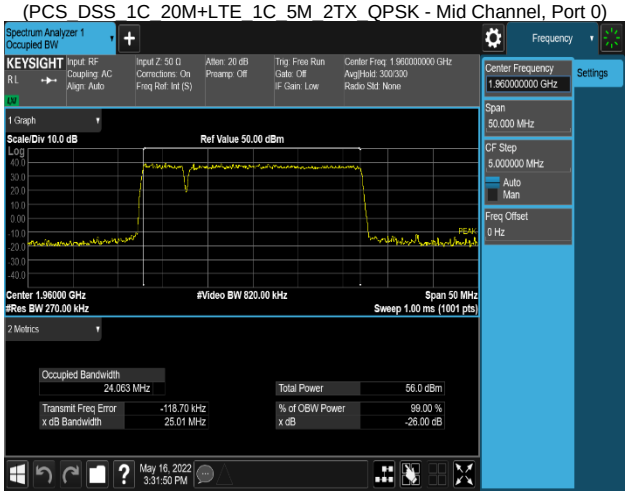
Plot 8-24. Occupied Bandwidth Plot
(PCS_NR_2C_10M+15M_2TX_16QAM - Mid Channel, Port 0)



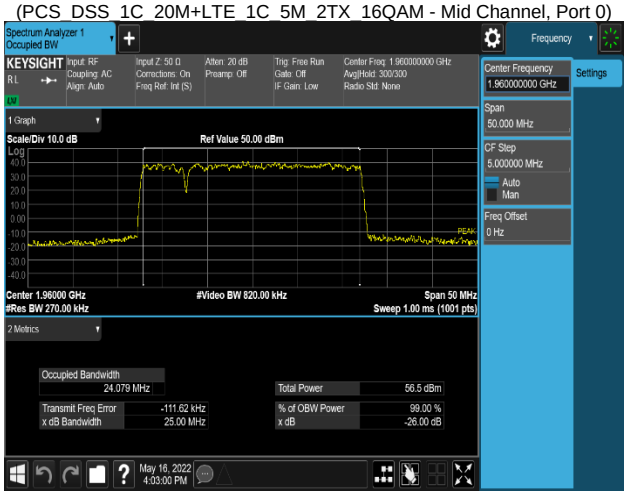
Plot 8-25. Occupied Bandwidth Plot
(PCS_DSS_1C_20M+LTE_1C_5M_2TX_QPSK - Mid Channel, Port 0)



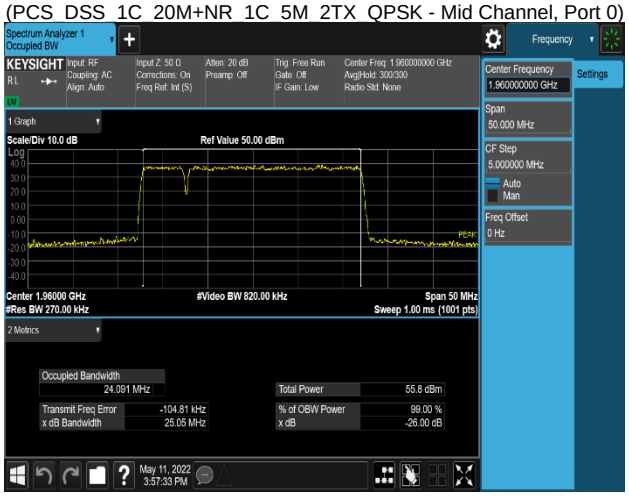
Plot 8-26. Occupied Bandwidth Plot
(PCS_DSS_1C_20M+LTE_1C_5M_2TX_16QAM - Mid Channel, Port 0)



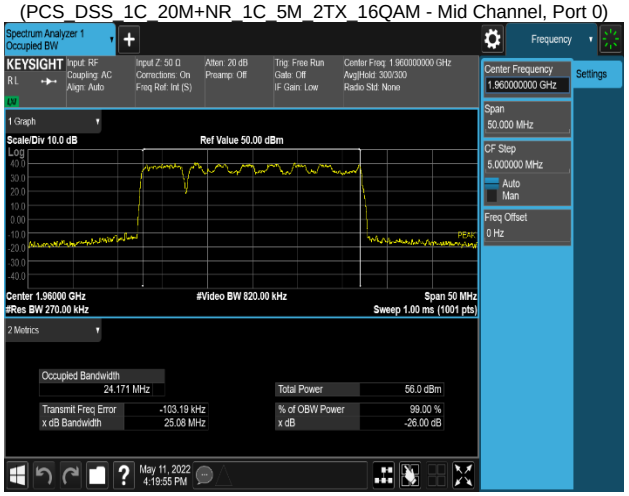
Plot 8-27. Occupied Bandwidth Plot
(PCS_DSS_1C_20M+NR_1C_5M_2TX_QPSK - Mid Channel, Port 0)



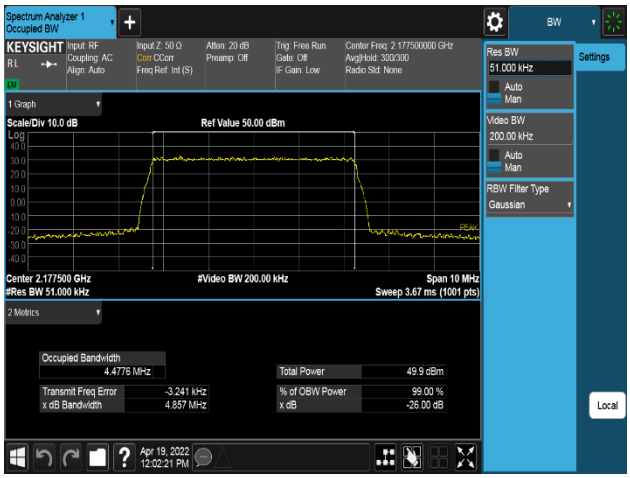
Plot 8-28. Occupied Bandwidth Plot
(PCS_DSS_1C_20M+NR_1C_5M_2TX_16QAM - Mid Channel, Port 0)



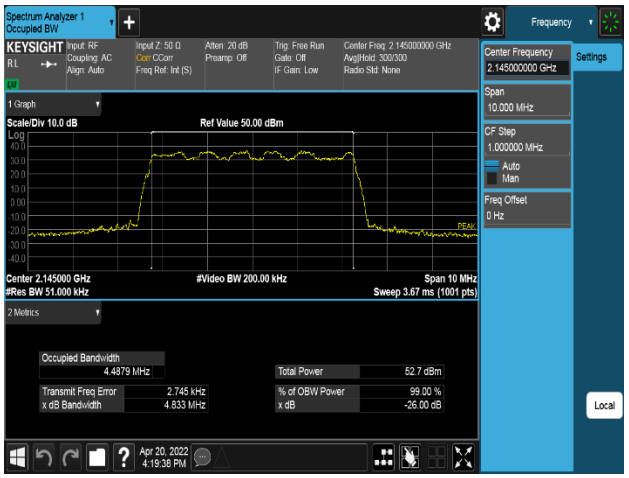
Plot 8-29. Occupied Bandwidth Plot
(PCS_NR_1C_20M+LTE_1C_5M_2TX_QPSK - Mid Channel, Port 0)



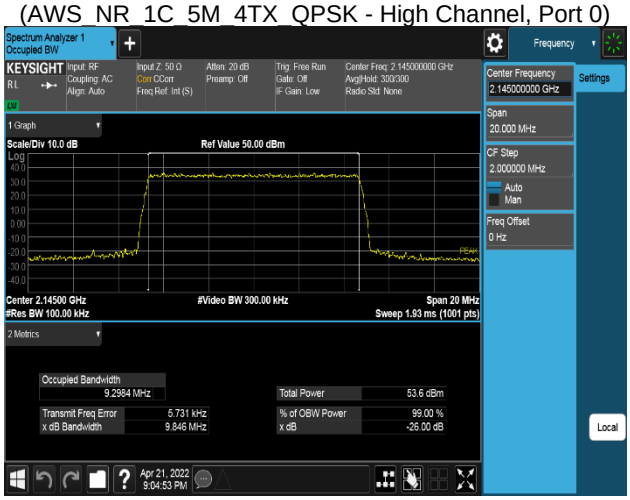
Plot 8-30. Occupied Bandwidth Plot
(PCS_NR_1C_20M+LTE_1C_5M_2TX_16QAM - Mid Channel, Port 0)



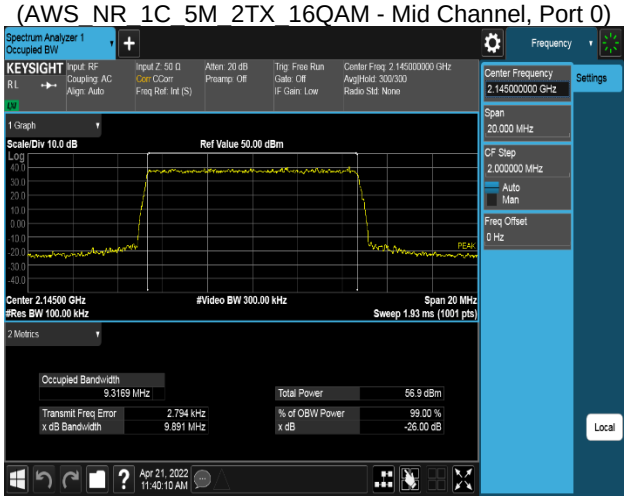
Plot 8-31. Occupied Bandwidth Plot
(AWS_NR_1C_5M_4TX_QPSK - High Channel, Port 0)



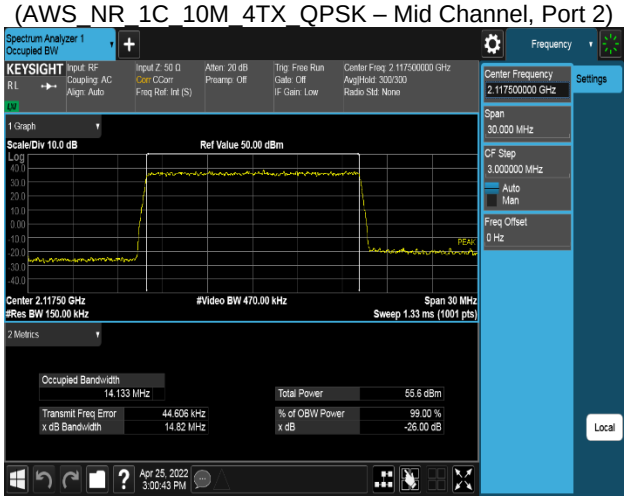
Plot 8-32. Occupied Bandwidth Plot
(AWS_NR_1C_5M_2TX_16QAM - Mid Channel, Port 0)



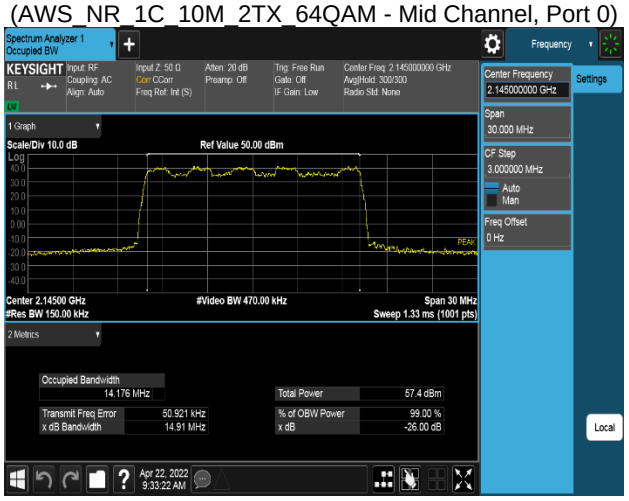
Plot 8-33. Occupied Bandwidth Plot
(AWS_NR_1C_10M_4TX_QPSK – Mid Channel, Port 2)



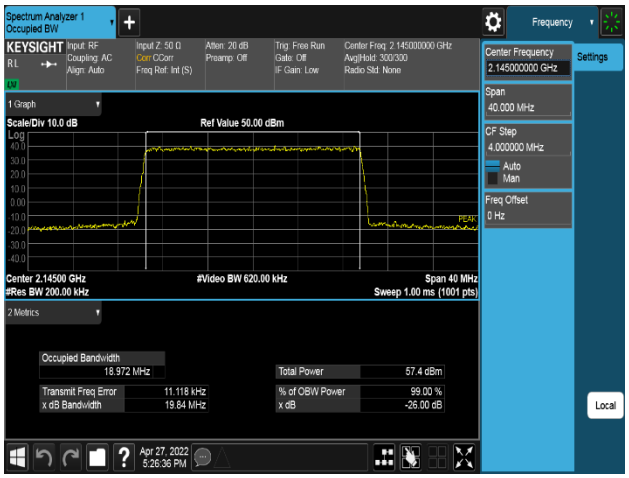
Plot 8-34. Occupied Bandwidth Plot
(AWS_NR_1C_10M_2TX_64QAM - Mid Channel, Port 0)



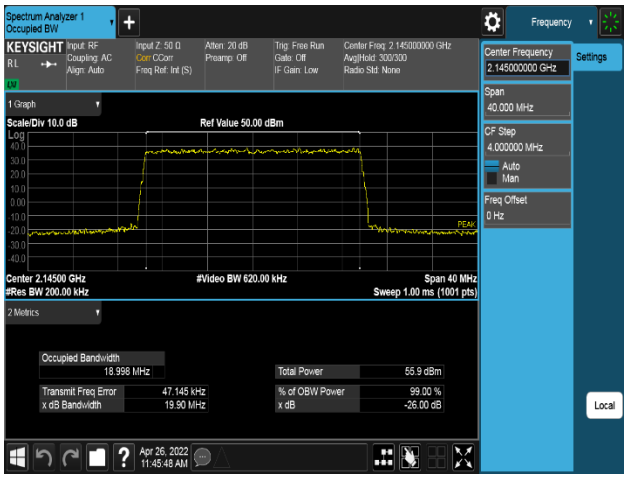
Plot 8-35. Occupied Bandwidth Plot
(AWS_NR_1C_15M_4TX_QPSK – Low Channel, Port 0)



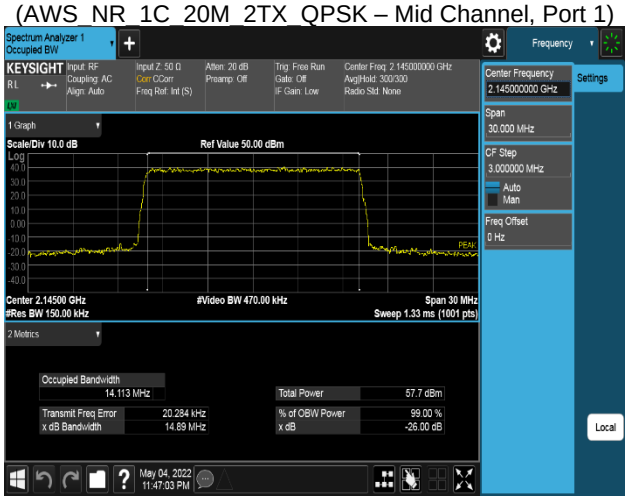
Plot 8-36. Occupied Bandwidth Plot
(AWS_NR_1C_15M_2TX_16QAM - Mid Channel, Port 0)



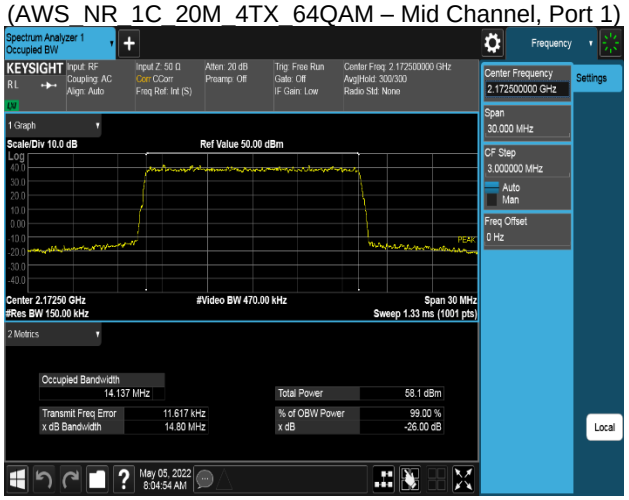
Plot 8-37. Occupied Bandwidth Plot
(AWS_NR_1C_20M_2TX_QPSK – Mid Channel, Port 1)



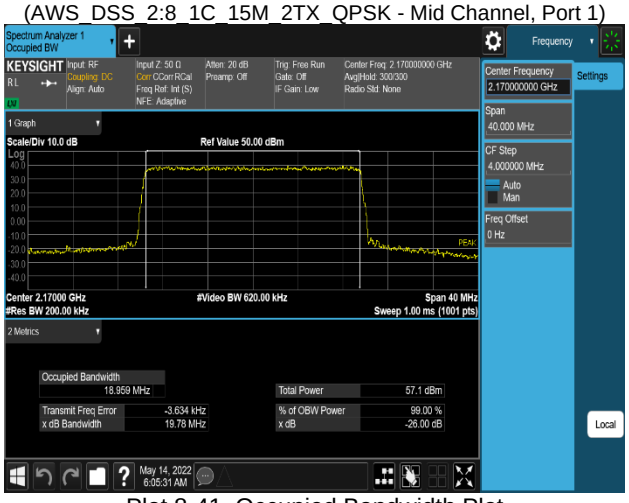
Plot 8-38. Occupied Bandwidth Plot
(AWS_NR_1C_20M_4TX_64QAM – Mid Channel, Port 1)



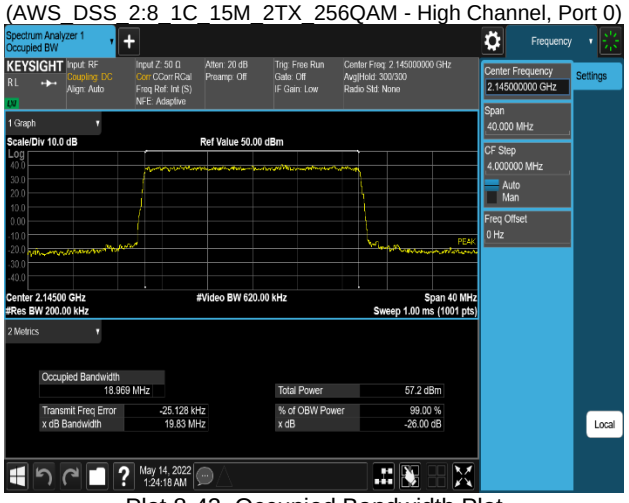
Plot 8-39. Occupied Bandwidth Plot
(AWS_DSS_2:8_1C_15M_2TX_QPSK - Mid Channel, Port 1)



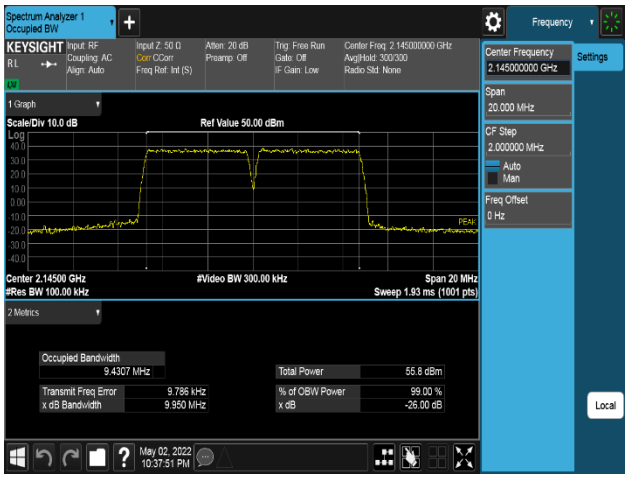
Plot 8-40. Occupied Bandwidth Plot
(AWS_DSS_2:8_1C_15M_2TX_256QAM - High Channel, Port 0)



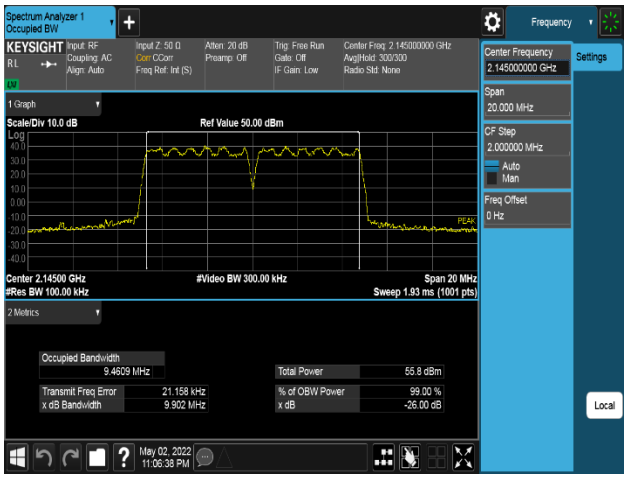
Plot 8-41. Occupied Bandwidth Plot
(AWS_DSS_5:5_1C_20M_2TX_QPSK - High Channel, Port 1)



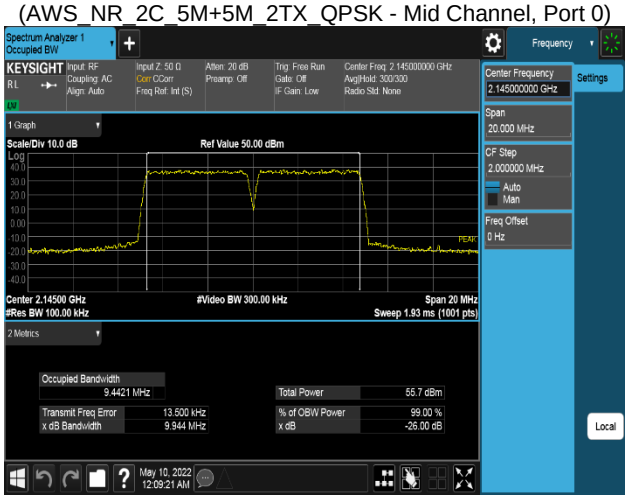
Plot 8-42. Occupied Bandwidth Plot
(AWS_DSS_5:5_1C_20M_2TX_QPSK - Mid Channel, Port 1)



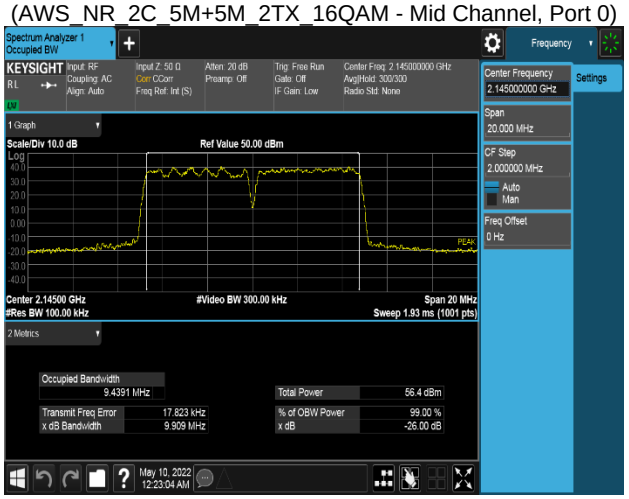
Plot 8-43. Occupied Bandwidth Plot
(AWS_NR_2C_5M+5M_2TX_QPSK - Mid Channel, Port 0)



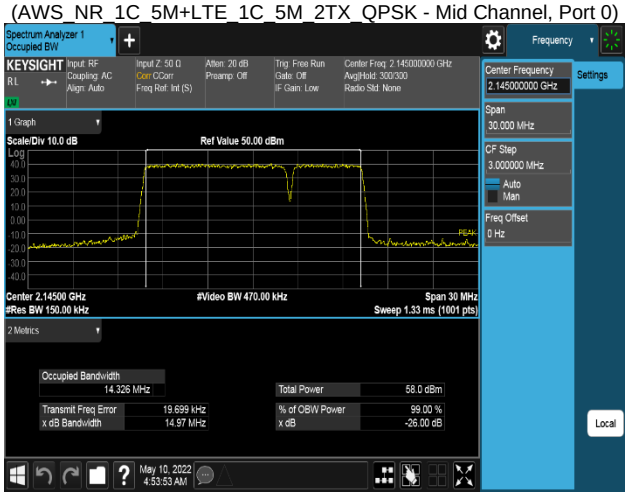
Plot 8-44. Occupied Bandwidth Plot
(AWS_NR_2C_5M+5M_2TX_16QAM - Mid Channel, Port 0)



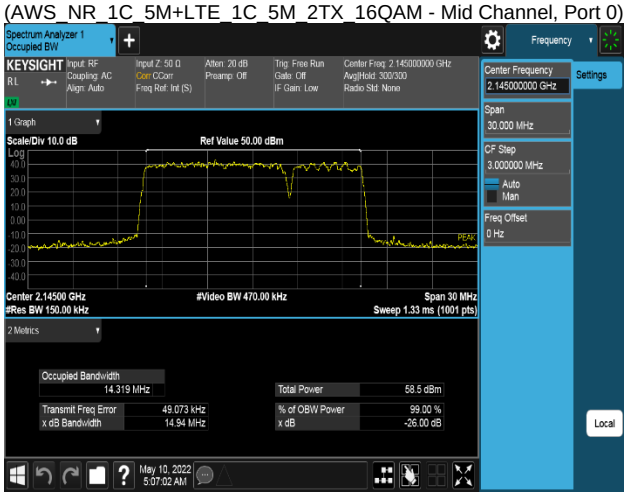
Plot 8-45. Occupied Bandwidth Plot
(AWS_NR_1C_5M+LTE_1C_5M_2TX_QPSK - Mid Channel, Port 0)



Plot 8-46. Occupied Bandwidth Plot
(AWS_NR_1C_5M+LTE_1C_5M_2TX_16QAM - Mid Channel, Port 0)



Plot 8-47. Occupied Bandwidth Plot
(AWS_DSS_1C_10M+NR_1C_5M_2TX_QPSK - Mid Channel, Port 0)



Plot 8-48. Occupied Bandwidth Plot
(AWS_DSS_1C_10M+NR_1C_5M_2TX_16QAM - Mid Channel, Port 0)