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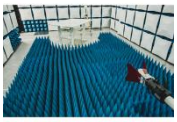

Part 96 MEASUREMENT REPORT

Applicant Name:
GenXComm Inc
10000 Metric Blvd. Suite 200
Austin, Texas 78758
USA

Date of Testing:
1/29/2024 – 7/12/2024
Test Report Issue Date:
7/12/2024
Test Site/Location:
Element Lab., Columbia, MD, USA
Test Report Serial No.:
1M2401260008-01.2AZH6

FCC ID:	**2AZH6GXCMEN002**
APPLICANT:	**GenXComm Inc**

Application Type:	Certification
Model:	GM02
EUT Type:	CBRS CPE
FCC Classification:	Category B Citizens Band Radio Service Devices (CBSD)
FCC Rule Part(s):	96
Test Procedure(s):	ANSI C63.26-2015, KDB 940660 D01 v03

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.

RJ Ortanez
Executive Vice President

ACCREDITED
CERT #2041.01

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MEASUREMENT REPORT
FCC Part 96

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
LTE Band 48	40 MHz	QPSK	3570.0 - 3680.0	0.310	24.91	37M2G7D
		16QAM	3570.0 - 3680.0	0.307	24.87	37M4W7D
		64QAM	3570.0 - 3680.0	0.289	24.61	37M7W7D
		256QAM	3570.0 - 3680.0	0.290	24.62	37M5W7D
	35 MHz	QPSK	3567.5 - 3682.5	0.301	24.79	32M6G7D
		16QAM	3567.5 - 3682.5	0.303	24.81	32M6W7D
		64QAM	3567.5 - 3682.5	0.296	24.71	32M6W7D
		256QAM	3567.5 - 3682.5	0.294	24.69	32M6W7D
	30 MHz	QPSK	3565.0 - 3685.0	0.294	24.69	27M6G7D
		16QAM	3565.0 - 3685.0	0.294	24.68	27M6W7D
		64QAM	3565.0 - 3685.0	0.288	24.59	27M6W7D
		256QAM	3565.0 - 3685.0	0.289	24.61	27M6W7D
	25 MHz	QPSK	3562.5 - 3687.5	0.292	24.66	22M8G7D
		16QAM	3562.5 - 3687.5	0.294	24.69	22M9W7D
		64QAM	3562.5 - 3687.5	0.289	24.61	22M8W7D
		256QAM	3562.5 - 3687.5	0.285	24.55	22M9W7D
	20 MHz	QPSK	3560.0 - 3690.0	3.311	35.20	17M8G7D
		16QAM	3560.0 - 3690.0	2.884	34.60	17M9W7D
		64QAM	3560.0 - 3690.0	2.291	33.60	17M8W7D
		256QAM	3560.0 - 3690.0	1.202	30.80	17M9W7D
	15 MHz	QPSK	3557.5 - 3692.5	3.090	34.90	13M4G7D
		16QAM	3557.5 - 3692.5	2.692	34.30	13M4W7D
		64QAM	3557.5 - 3692.5	2.188	33.40	13M4W7D
		256QAM	3557.5 - 3692.5	1.096	30.40	13M4W7D
	10 MHz	QPSK	3555.0 - 3695.0	3.311	35.20	8M92G7D
		16QAM	3555.0 - 3695.0	2.818	34.50	8M94W7D
		64QAM	3555.0 - 3695.0	2.291	33.60	8M94W7D
		256QAM	3555.0 - 3695.0	1.148	30.60	8M93W7D
	5 MHz	QPSK	3552.5 - 3697.5	3.311	35.20	4M46G7D
		16QAM	3552.5 - 3697.5	2.818	34.50	4M48W7D
		64QAM	3552.5 - 3697.5	2.291	33.60	4M48W7D
		256QAM	3552.5 - 3697.5	1.122	30.50	4M49W7D

EUT Overview

Note: EIRP levels shown in the table above are measured over the full channel bandwidth. These values will appear on the Grant of Authorization.

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.

1.2 Element Test Location

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

1.3 Test Facility / Accreditations

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

- Element Washington DC LLC is a OnGo Alliance Approved Test Lab (ATL)
- Element Washington DC LLC is a WInnForum Approved Test Lab
- Element Washington DC LLC is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.
- 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 (2451B) test laboratory with the site description on file with ISED.
- Element Washington DC LLC is a Recognized U.S. Certification Assessment Body (CAB # US0110) for ISED Canada as designated by NIST under the U.S. and Canada Mutual Recognition Agreement.

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **GenXComm CBRS CPE FCC ID: 2AZH6GXCMEN002**. The test data contained in this report pertains only to the emissions due to the EUT's Band 48 operation in the CBRS band. Per FCC Part 96, this device is evaluated as a Category B CBSD (CBE).

This CPE device includes an integrated module previously certified as equipment class "CBE" under FCC ID: RI7FN990A28. The CPE only supports LTE functionality from the original module. The data from the original RI7 filing is still valid and no changes were made upon integration of the module into this CPE. This CPE is being filed with equipment class "CBD" simply by using a high gain antenna with the original conducted data in the RI7 filing.

Test Device Serial No.: 2332IT00006, 2332IT00007

2.2 Device Capabilities

This device contains the following capabilities:

LTE Band 48 (including 2 carrier ULCA), 2.4GHz WiFi

This device includes a Laird WiFi module with FCC ID: SQG-LWB5PLUS. The RSE section of this report includes emissions testing with both the Laird WiFi and CPE transmitters active simultaneously.

2.3 Test Configuration

The EUT was tested per the guidance of ANSI C63.26-2015. See Section 7.0 of this test report for a description of the radiated and antenna port conducted emissions tests.

2.4 Software and Firmware

Testing was performed on device(s) using software/firmware version 3.0.0 installed on the EUT.

2.5 EMI Suppression Device(s)/Modifications

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

3.0 DESCRIPTION OF TESTS

3.1 Measurement Procedure

The measurement procedures described in the "American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services" (ANSI C63.26-2015) were used in the measurement of the EUT.

Deviation from Measurement Procedure……..……..None

3.2 Radiated Power and Radiated Spurious Emissions

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

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

For radiated power measurements, substitution method is used per the guidance of ANSI C63.26-2015. For emissions below 1GHz, a half-wave dipole is substituted in place of the EUT. For emissions above 1GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer level previously recorded from the spurious emission from the EUT. The power of the emission is calculated using the following formula:

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

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

For radiated spurious emissions measurements, the field strength conversion method is used per the formulas in Section 5.2.7 of ANSI C63.26-2015. Field Strength (EIRP) is calculated using the following formulas:

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

And

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

All radiated measurements are performed in a chamber that meets the site requirements per ANSI C63.4-2014. Additionally, radiated emissions below 30MHz are also validated on an Open Area Test Site to assert correlation with the chamber measurements per the requirements of KDB 414788 D01 v01r01.

Radiated power and radiated spurious emission levels are investigated with the receive antenna horizontally and vertically polarized per ANSI C63.26-2015.

4.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty (±dB)
Conducted Bench Top Measurements	1.13
Radiated Disturbance (<1GHz)	4.98
Radiated Disturbance (>1GHz)	5.07
Radiated Disturbance (>18GHz)	5.09

5.0 TEST EQUIPMENT CALIBRATION DATA

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

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	N9020A	MXA Signal Analyzer	4/11/2024	Annual	4/11/2025	MY54500644
Anritsu	MT8821C	Radio Communication Analyzer	7/5/2023	Annual	7/5/2024	6261500000
ETS Lindgren	3116C	DRG Horn Antenna	2/27/2023	Biennial	2/27/2025	218893
Rohde & Schwarz	FSW67	Signal / Spectrum Analyzer	2/15/2024	Annual	2/15/2025	103200
Sunol	DRH-118	Horn Antenna (1-18 GHz)	3/29/2023	Biennial	3/23/2025	A102416-2
Sunol	JB6	Bi-Log Antenna (30M - 5GHz)	3/2/2023	Biennial	3/2/2025	A082816
Rohde & Schwarz	ESU40	EMI Test Receiver (40GHz)	9/11/2023	Annual	9/11/2024	100348
Keysight Technologies	N9030A	44GHz PXA Signal Analyzer	8/29/2023	Annual	8/29/2024	MY49430494

Table 5-1 Test Equipment

Notes:

1. For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.

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

6.0 SAMPLE CALCULATIONS

Emission Designator

QPSK Modulation

Emission Designator = 8M62G7D

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

QAM Modulation

Emission Designator = 8M45W7D

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

Spurious Radiated Emission – Band 48

Example: Middle Channel 2nd Harmonic (7250 MHz)

The average spectrum analyzer reading at 3 meters with the EUT on the turntable was –81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of –81.0 dBm on the spectrum analzyer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 1564 MHz. So 6.1 dB is added to the signal generator reading of –30.9 dBm yielding –24.80 dBm. The fundamental EIRP was 25.501 dBm so this harmonic was 25.501 dBm – (-24.80).

7.0 TEST RESULTS

7.1 Summary

Company Name:	GenXComm Inc
FCC ID:	2AZH6GXCMEN002
FCC Classification:	Category B Citizens Band Radio Service Devices (CBSD)
Mode(s):	Band 48

	Test Description	FCC Part Section(s)	Test Limit	Test Result	Reference
CONDUCTED	Conducted Power	2.1046(a), 2.1046(c)	N/A	PASS	Section 7.2
	Occupied Bandwidth	2.1049(h)	N/A	PASS	Section 7.3
	Peak-Average Ratio	96.41(g)	≤ 13dB	PASS	Sections 7.6
	Conducted Band Edge / Spurious Emissions (CBSD)	2.1051, 96.41(e)(i)	-13 dBm/MHz at frequencies within 0-10 MHz of above the upper SAS-assigned channel edge and within 0-10MHz below the lower SAS-assigned channel edge -25 dBm/MHz at frequencies greater than 10 MHz above and below channel edge -emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz	PASS	Section 7.7
	Frequency Stability	2.1055	Fundamental emissions stay within authorized frequency block	PASS	Section 7.9
	Category B CBSD Device Additional Requirements (CBSD Protocol)	96.45	Category B CBSDs must be professionally installed. In the 3550-3650MHz band, Category B CBSDs must be authorized consistent with information received from an ESC as described in 96.15. Category B CBSDs are limited to outdoor operations. When registering with a SAS, Category B CBSDs must transmit all information required under 96.39 plus the following information: antenna gain, beamwidth, azimuth, downtilt angle, and antenna height above ground level.	PASS	SAS Protocol Report
Radiated	Equivalent Isotropic Radiated Power (EIRP) (Catogory B CBSD)	96.41(b)	47 dBm/10MHz	PASS	Section 7.4
	Power Spectral Density (PSD) (Catogory B CBSD)	96.41(b)	37 dBm/10MHz	PASS	Section 7.5
	Radiated Spurious Emissions	2.1053, 96.41(e)	-40 dBm/MHz	PASS	Section 7.9

Table 7-1 Summary of Test Results

Notes:

1) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
2) The analyzer plots were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables, directional couplers, and attenuators used as part of the system to maintain a link between the call box and the EUT at all frequencies of interest.

3) All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables, attenuators, and couplers.
4) For conducted spurious emissions, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is EMC Software Tool 2.3 and Chamber Control 1.6.4.
5) The conducted band edge and conducted spurious emissions data from the original RI7FN990A28 filing is leveraged for this application given that no changes were made to the module by the integrator (i.e. the applicant). This report contains conducted band edge spot-check data to justify the data leveraging from the original application given that there are slight differences between the CBE and CBD band edge limits.

7.2 Conducted Output Power/EIRP Data

Test Overview

The EUT is set up to transmit at maximum power for Band 48. All power levels are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst-case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.

Measurement equipment was set up with triggering/gating on the spectrum analyzer such that powers were measured only during the on-time of the signal.

Test Procedure Used

ANSI C63.26-2015 – Section 5.2.4.2

Test Settings

1. A gated average power meter can be used to perform the measurement if the gating parameters can be adjusted such that the power is measured only during active transmission bursts at maximum output power levels.
2. The power meter function of the base station simulator was used to measure the power during max power on-time.

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

1. Conducted power measurements were evaluated using various combinations of modulation and channel bandwidth. Channel bandwidth data is shown in the tables below based only on the channel bandwidths that were supported in this device.

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Ant Gain [dBi]	EIRP [dBm]	EIRP [Watts]
20 MHz	QPSK	55340	3560.0	1 / 1	19.00	16.00	35.00	3.162
		56090	3635.0	1 / 49	19.20	16.00	35.20	3.311
		56640	3690.0	1 / 1	19.17	16.00	35.17	3.289
	16-QAM	55340	3560.0	1 / 49	18.40	16.00	34.40	2.754
		56090	3635.0	1 / 49	18.50	16.00	34.50	2.818
		56640	3690.0	1 / 1	18.60	16.00	34.60	2.884
	64-QAM	55340	3560.0	1 / 49	17.50	16.00	33.50	2.239
		56090	3635.0	1 / 49	17.60	16.00	33.60	2.291
		56640	3690.0	1 / 1	17.60	16.00	33.60	2.291
	256-QAM	55340	3560.0	1 / 49	14.60	16.00	30.60	1.148
		56090	3635.0	1 / 49	14.60	16.00	30.60	1.148
		56640	3690.0	1 / 1	14.80	16.00	30.80	1.202
15 MHz	QPSK	55315	3557.5	1 / 36	18.90	16.00	34.90	3.090
		56090	3635.0	1 / 36	18.90	16.00	34.90	3.090
		56665	3692.5	1 / 1	18.60	16.00	34.60	2.884
	16-QAM	55315	3557.5	1 / 36	18.10	16.00	34.10	2.570
		56090	3635.0	1 / 36	18.30	16.00	34.30	2.692
		56665	3692.5	1 / 1	18.00	16.00	34.00	2.512
	64-QAM	55315	3557.5	1 / 36	17.20	16.00	33.20	2.089
		56090	3635.0	1 / 36	17.40	16.00	33.40	2.188
		56665	3692.5	1 / 1	17.10	16.00	33.10	2.042
	256-QAM	55315	3557.5	1 / 36	14.40	16.00	30.40	1.096
		56090	3635.0	1 / 36	14.40	16.00	30.40	1.096
		56665	3692.5	1 / 1	14.20	16.00	30.20	1.047
10 MHz	QPSK	55290	3555.0	1 / 22	19.00	16.00	35.00	3.162
		56090	3635.0	1 / 22	19.20	16.00	35.20	3.311
		56690	3695.0	1 / 1	18.90	16.00	34.90	3.090
	16-QAM	55290	3555.0	1 / 22	18.30	16.00	34.30	2.692
		56090	3635.0	1 / 22	18.50	16.00	34.50	2.818
		56690	3695.0	1 / 1	18.30	16.00	34.30	2.692
	64-QAM	55290	3555.0	1 / 22	17.40	16.00	33.40	2.188
		56090	3635.0	1 / 22	17.60	16.00	33.60	2.291
		56690	3695.0	1 / 1	17.40	16.00	33.40	2.188
	256-QAM	55290	3555.0	1 / 22	14.30	16.00	30.30	1.072
		56090	3635.0	1 / 22	14.60	16.00	30.60	1.148
		56690	3695.0	1 / 1	14.30	16.00	30.30	1.072
5 MHz	QPSK	55265	3552.5	1 / 9	19.00	16.00	35.00	3.162
		56090	3635.0	1 / 9	19.20	16.00	35.20	3.311
		56715	3697.5	1 / 5	18.80	16.00	34.80	3.020
	16-QAM	55265	3552.5	1 / 9	18.30	16.00	34.30	2.692
		56090	3635.0	1 / 9	18.50	16.00	34.50	2.818
		56715	3697.5	1 / 5	18.20	16.00	34.20	2.630
	64-QAM	55265	3552.5	1 / 9	17.50	16.00	33.50	2.239
		56090	3635.0	1 / 9	17.60	16.00	33.60	2.291
		56715	3697.5	1 / 5	17.10	16.00	33.10	2.042
	256-QAM	55265	3552.5	1 / 9	14.40	16.00	30.40	1.096
		56090	3635.0	1 / 9	14.50	16.00	30.50	1.122
		56715	3697.5	1 / 5	14.00	16.00	30.00	1.000

Table 7-2 Conducted Power / EIRP Measurements

Bandwidth	Modulation	PCC			SCC			Conducted Power [dBm]	Ant Gain [dBi]	EIRP [dBm]	EIRP [Watts]
		Bandwidth [MHz]	Frequency [MHz]	RB / Offset	Bandwidth [MHz]	Frequency [MHz]	RB / Offset				
40 MHz	QPSK	20	3560.0	100 / 0	20	3579.8	100 / 0	8.87	16.00	24.87	0.307
		20	3635.0	100 / 0	20	3654.8	100 / 0	8.70	16.00	24.70	0.295
		20	3690.0	100 / 0	20	3670.2	100 / 0	8.91	16.00	24.91	0.310
35 MHz	QPSK	20	3560.0	100 / 0	15	3577.1	100 / 0	8.79	16.00	24.79	0.301
		20	3635.0	100 / 0	15	3652.1	100 / 0	8.72	16.00	24.72	0.296
		20	3635.0	100 / 0	15	3672.9	100 / 0	8.76	16.00	24.76	0.299
30 MHz	QPSK	20	3560.0	100 / 0	10	3574.5	100 / 0	8.69	16.00	24.69	0.294
		20	3635.0	100 / 0	10	3649.4	100 / 0	8.68	16.00	24.68	0.294
		20	3690.0	100 / 0	10	3675.6	100 / 0	8.61	16.00	24.61	0.289
25 MHz	QPSK	20	3560.0	100 / 0	5	3571.7	100 / 0	8.66	16.00	24.66	0.292
		20	3635.0	100 / 0	5	3646.7	100 / 0	8.59	16.00	24.59	0.288
		20	3690.0	100 / 0	5	3678.3	100 / 0	8.43	16.00	24.43	0.277

Table 7-3 Conducted Power / EIRP Measurements ULCA (Full RB) QPSK

Bandwidth	Modulation	PCC			SCC			Conducted Power [dBm]	Ant Gain [dBi]	EIRP [dBm]	EIRP [Watts]
		Bandwidth [MHz]	Frequency [MHz]	RB / Offset	Bandwidth [MHz]	Frequency [MHz]	RB / Offset				
40 MHz	16QAM	20	3560.0	100 / 0	20	3579.8	100 / 0	8.87	16.00	24.87	0.307
		20	3635.0	100 / 0	20	3654.8	100 / 0	8.70	16.00	24.70	0.295
		20	3690.0	100 / 0	20	3670.2	100 / 0	8.82	16.00	24.82	0.303
35 MHz	16QAM	20	3560.0	100 / 0	15	3577.1	100 / 0	8.81	16.00	24.81	0.303
		20	3635.0	100 / 0	15	3652.1	100 / 0	8.79	16.00	24.79	0.301
		20	3635.0	100 / 0	15	3672.9	100 / 0	8.77	16.00	24.77	0.300
30 MHz	16QAM	20	3560.0	100 / 0	10	3574.5	100 / 0	8.61	16.00	24.61	0.289
		20	3635.0	100 / 0	10	3649.4	100 / 0	8.68	16.00	24.68	0.294
		20	3690.0	100 / 0	10	3675.6	100 / 0	8.66	16.00	24.66	0.292
25 MHz	16QAM	20	3560.0	100 / 0	5	3571.7	100 / 0	8.69	16.00	24.69	0.294
		20	3635.0	100 / 0	5	3646.7	100 / 0	8.59	16.00	24.59	0.288
		20	3690.0	100 / 0	5	3678.3	100 / 0	8.55	16.00	24.55	0.285

Table 7-4 Conducted Power / EIRP Measurements ULCA (Full RB) 16QAM

Bandwidth	Modulation	PCC			SCC			Conducted Power [dBm]	Ant Gain [dBi]	EIRP [dBm]	EIRP [Watts]
		Bandwidth [MHz]	Frequency [MHz]	RB / Offset	Bandwidth [MHz]	Frequency [MHz]	RB / Offset				
40 MHz	64QAM	20	3560.0	100 / 0	20	3579.8	100 / 0	8.61	16.00	24.61	0.289
		20	3635.0	100 / 0	20	3654.8	100 / 0	8.59	16.00	24.59	0.288
		20	3690.0	100 / 0	20	3670.2	100 / 0	8.55	16.00	24.55	0.285
35 MHz	64QAM	20	3560.0	100 / 0	15	3577.1	100 / 0	8.66	16.00	24.66	0.292
		20	3635.0	100 / 0	15	3652.1	100 / 0	8.71	16.00	24.71	0.296
		20	3635.0	100 / 0	15	3672.9	100 / 0	8.61	16.00	24.61	0.289
30 MHz	64QAM	20	3560.0	100 / 0	10	3574.5	100 / 0	8.44	16.00	24.44	0.278
		20	3635.0	100 / 0	10	3649.4	100 / 0	8.59	16.00	24.59	0.288
		20	3690.0	100 / 0	10	3675.6	100 / 0	8.51	16.00	24.51	0.282
25 MHz	64QAM	20	3560.0	100 / 0	5	3571.7	100 / 0	8.61	16.00	24.61	0.289
		20	3635.0	100 / 0	5	3646.7	100 / 0	8.44	16.00	24.44	0.278
		20	3690.0	100 / 0	5	3678.3	100 / 0	8.59	16.00	24.59	0.288

Table 7-5 Conducted Power / EIRP Measurements ULCA (Full RB) 64QAM

Bandwidth	Modulation	PCC			SCC			Conducted Power [dBm]	Ant Gain [dBi]	EIRP [dBm]	EIRP [Watts]
		Bandwidth [MHz]	Frequency [MHz]	RB / Offset	Bandwidth [MHz]	Frequency [MHz]	RB / Offset				
40 MHz	256QAM	20	3560.0	100 / 0	20	3579.8	100 / 0	8.49	16.00	24.49	0.281
		20	3635.0	100 / 0	20	3654.8	100 / 0	8.55	16.00	24.55	0.285
		20	3690.0	100 / 0	20	3670.2	100 / 0	8.62	16.00	24.62	0.290
35 MHz	256QAM	20	3560.0	100 / 0	15	3577.1	100 / 0	8.69	16.00	24.69	0.294
		20	3635.0	100 / 0	15	3652.1	100 / 0	8.65	16.00	24.65	0.292
		20	3635.0	100 / 0	15	3672.9	100 / 0	8.61	16.00	24.61	0.289
30 MHz	256QAM	20	3560.0	100 / 0	10	3574.5	100 / 0	8.61	16.00	24.61	0.289
		20	3635.0	100 / 0	10	3649.4	100 / 0	8.59	16.00	24.59	0.288
		20	3690.0	100 / 0	10	3675.6	100 / 0	8.52	16.00	24.52	0.283
25 MHz	256QAM	20	3560.0	100 / 0	5	3571.7	100 / 0	8.49	16.00	24.49	0.281
		20	3635.0	100 / 0	5	3646.7	100 / 0	8.55	16.00	24.55	0.285
		20	3690.0	100 / 0	5	3678.3	100 / 0	8.48	16.00	24.48	0.281

Table 7-6 Conducted Power / EIRP Measurements ULCA (Full RB) 256QAM

Bandwidth	Modulation	PCC			SCC			Conducted Power [dBm]	Ant Gain [dBi]	EIRP [dBm]	EIRP [Watts]
		Bandwidth [MHz]	Frequency [MHz]	RB / Offset	Bandwidth [MHz]	Frequency [MHz]	RB / Offset				
40 MHz	QPSK	20	3560.0	1 / 99	20	3579.8	1 / 0	-1.92	16.00	14.08	0.026
		20	3625.0	1 / 99	20	3644.8	1 / 0	-1.89	16.00	14.11	0.026
		20	3690.0	1 / 0	20	3670.2	1 / 99	-1.97	16.00	14.03	0.025
	16-QAM	20	3560.0	1 / 99	20	3579.8	1 / 0	-2.11	16.00	13.89	0.024
		20	3625.0	1 / 99	20	3644.8	1 / 0	-1.87	16.00	14.13	0.026
		20	3690.0	1 / 0	20	3670.2	1 / 99	-2.22	16.00	13.78	0.024
	64-QAM	20	3560.0	1 / 99	20	3579.8	1 / 0	-1.92	16.00	14.08	0.026
		20	3625.0	1 / 99	20	3644.8	1 / 0	-2.31	16.00	13.69	0.023
		20	3690.0	1 / 0	20	3670.2	1 / 99	-2.11	16.00	13.89	0.024
	256-QAM	20	3560.0	1 / 99	20	3579.8	1 / 0	-2.41	16.00	13.59	0.023
		20	3625.0	1 / 99	20	3644.8	1 / 0	-1.99	16.00	14.01	0.025
		20	3690.0	1 / 0	20	3670.2	1 / 99	-2.22	16.00	13.78	0.024
35 MHz	QPSK	20	3560.0	1 / 99	15	3577.1	1 / 0	-2.13	16.00	13.87	0.024
		20	3625.0	1 / 99	15	3642.1	1 / 0	-2.41	16.00	13.59	0.023
		20	3690.0	1 / 0	15	3672.9	1 / 74	-2.19	16.00	13.81	0.024
	16-QAM	20	3560.0	1 / 99	15	3577.1	1 / 0	-2.00	16.00	14	0.025
		20	3625.0	1 / 99	15	3642.1	1 / 0	-2.31	16.00	13.69	0.023
		20	3690.0	1 / 0	15	3672.9	1 / 74	-1.97	16.00	14.03	0.025
	64-QAM	20	3560.0	1 / 99	15	3577.1	1 / 0	-2.18	16.00	13.82	0.024
		20	3625.0	1 / 99	15	3642.1	1 / 0	-2.05	16.00	13.95	0.025
		20	3690.0	1 / 0	15	3672.9	1 / 74	-2.03	16.00	13.97	0.025
	256-QAM	20	3560.0	1 / 99	15	3577.1	1 / 0	-1.98	16.00	14.02	0.025
		20	3625.0	1 / 99	15	3642.1	1 / 0	-2.09	16.00	13.91	0.025
		20	3690.0	1 / 0	15	3672.9	1 / 74	-2.32	16.00	13.68	0.023
30 MHz	QPSK	20	3560.0	1 / 99	10	3574.4	1 / 0	-2.22	16.00	13.78	0.024
		20	3625.0	1 / 99	10	3639.4	1 / 0	-2.19	16.00	13.81	0.024
		20	3690.0	1 / 0	10	3675.6	1 / 49	-2.26	16.00	13.74	0.024
	16-QAM	20	3560.0	1 / 99	10	3574.4	1 / 0	-2.16	16.00	13.84	0.024
		20	3625.0	1 / 99	10	3639.4	1 / 0	-2.11	16.00	13.89	0.024
		20	3690.0	1 / 0	10	3675.6	1 / 49	-1.99	16.00	14.01	0.025
	64-QAM	20	3560.0	1 / 99	10	3574.4	1 / 0	-2.13	16.00	13.87	0.024
		20	3625.0	1 / 99	10	3639.4	1 / 0	-2.26	16.00	13.74	0.024
		20	3690.0	1 / 0	10	3675.6	1 / 49	-2.21	16.00	13.79	0.024
	256-QAM	20	3560.0	1 / 99	10	3574.4	1 / 0	-2.00	16.00	14	0.025
		20	3625.0	1 / 99	10	3639.4	1 / 0	-2.41	16.00	13.59	0.023
		20	3690.0	1 / 0	10	3675.6	1 / 49	-2.32	16.00	13.68	0.023
25 MHz	QPSK	20	3560.0	1 / 99	5	3571.7	1 / 0	-1.96	16.00	14.04	0.025
		20	3625.0	1 / 99	5	3636.7	1 / 0	-2.25	16.00	13.75	0.024
		20	3690.0	1 / 0	5	3678.3	1 / 24	-2.16	16.00	13.84	0.024
	16-QAM	20	3560.0	1 / 99	5	3571.7	1 / 0	-2.13	16.00	13.87	0.024
		20	3625.0	1 / 99	5	3636.7	1 / 0	-2.28	16.00	13.72	0.024
		20	3690.0	1 / 0	5	3678.3	1 / 24	-2.31	16.00	13.69	0.023
	64-QAM	20	3560.0	1 / 99	5	3571.7	1 / 0	-2.11	16.00	13.89	0.024
		20	3625.0	1 / 99	5	3636.7	1 / 0	-2.12	16.00	13.88	0.024
		20	3690.0	1 / 0	5	3678.3	1 / 24	-2.27	16.00	13.73	0.024
	256-QAM	20	3560.0	1 / 99	5	3571.7	1 / 0	-2.25	16.00	13.75	0.024
		20	3625.0	1 / 99	5	3636.7	1 / 0	-2.31	16.00	13.69	0.023
		20	3690.0	1 / 0	5	3678.3	1 / 24	-2.34	16.00	13.66	0.023

Table 7-7 Conducted Power / EIRP Measurements ULCA (1 RB)

7.3 Occupied Bandwidth

Test Overview

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

Test Procedure Used

ANSI C63.26-2015 – Section 5.4.4

Test Settings

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

Test Setup

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

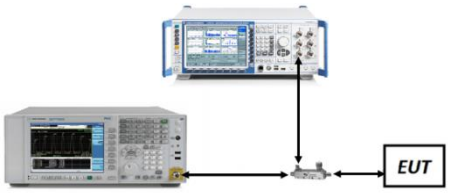


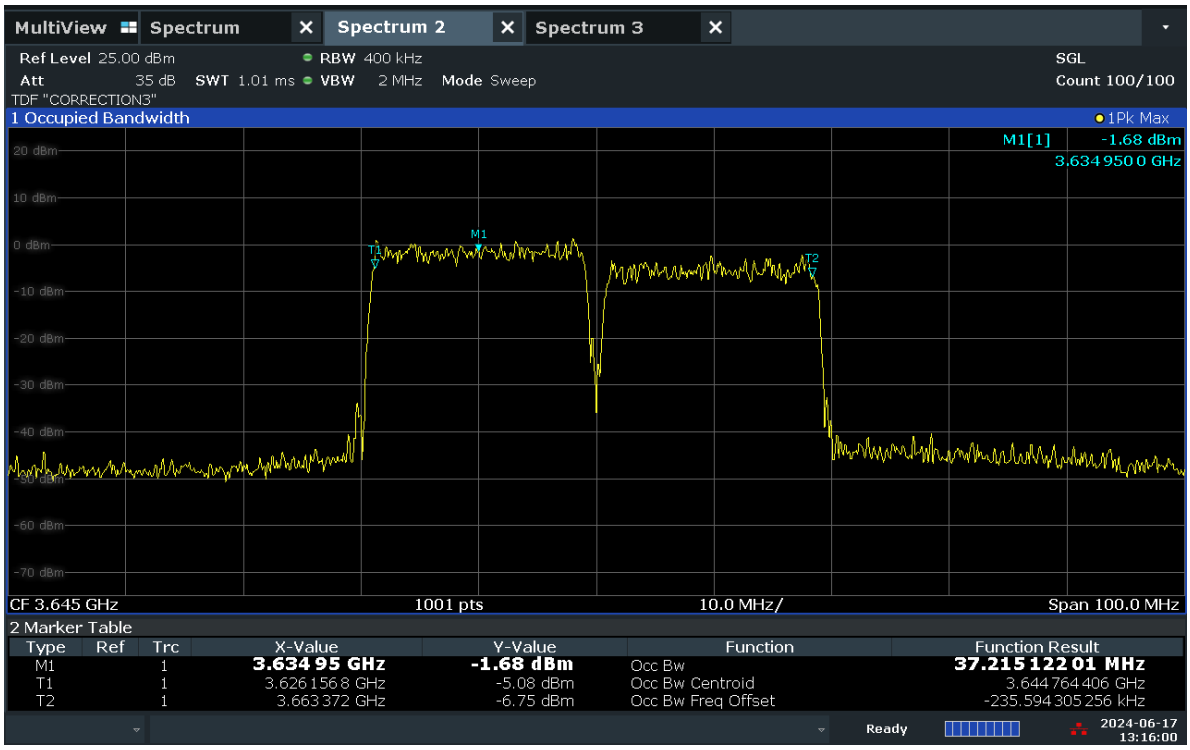
Figure 7-2. Test Instrument & Measurement Setup

Test Notes

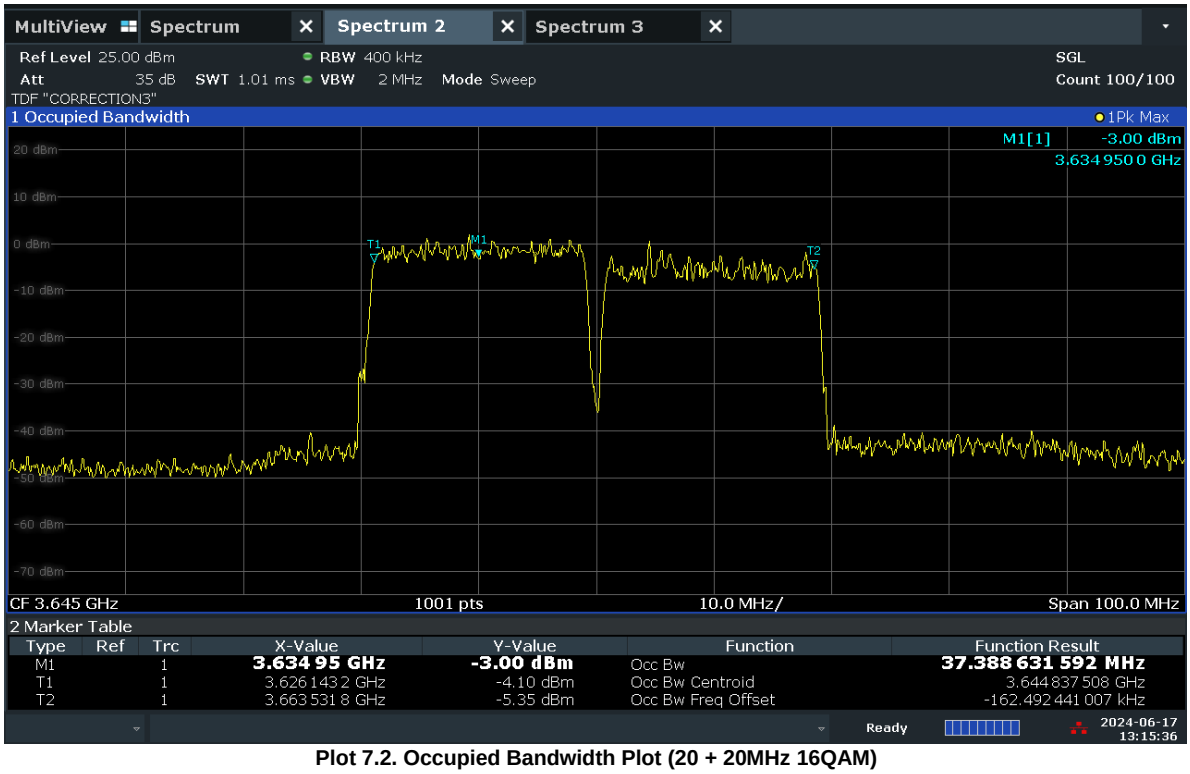
For the QAM modulations, only the worst-case OBW plot is included in this section.

Mode	Bandwidth	Modulation	OBW [MHz]
LTE Band 48	40 MHz	QPSK	37.22
		16QAM	37.39
		64QAM	37.69
		256QAM	37.50
	35 MHz	QPSK	32.59
		16QAM	32.60
		64QAM	32.60
		256QAM	32.61
	30 MHz	QPSK	27.64
		16QAM	27.57
		64QAM	27.56
		256QAM	27.57
	25 MHz	QPSK	22.83
		16QAM	22.85
		64QAM	22.84
		256QAM	22.86
	20 MHz	QPSK	17.84
		16QAM	17.91
		64QAM	17.84
		256QAM	17.85
	15 MHz	QPSK	13.44
		16QAM	13.43
		64QAM	13.44
		256QAM	13.37
	10 MHz	QPSK	8.92
		16QAM	8.94
		64QAM	8.94
		256QAM	8.93
	5 MHz	QPSK	4.46
		16QAM	4.48
		64QAM	4.48
		256QAM	4.49

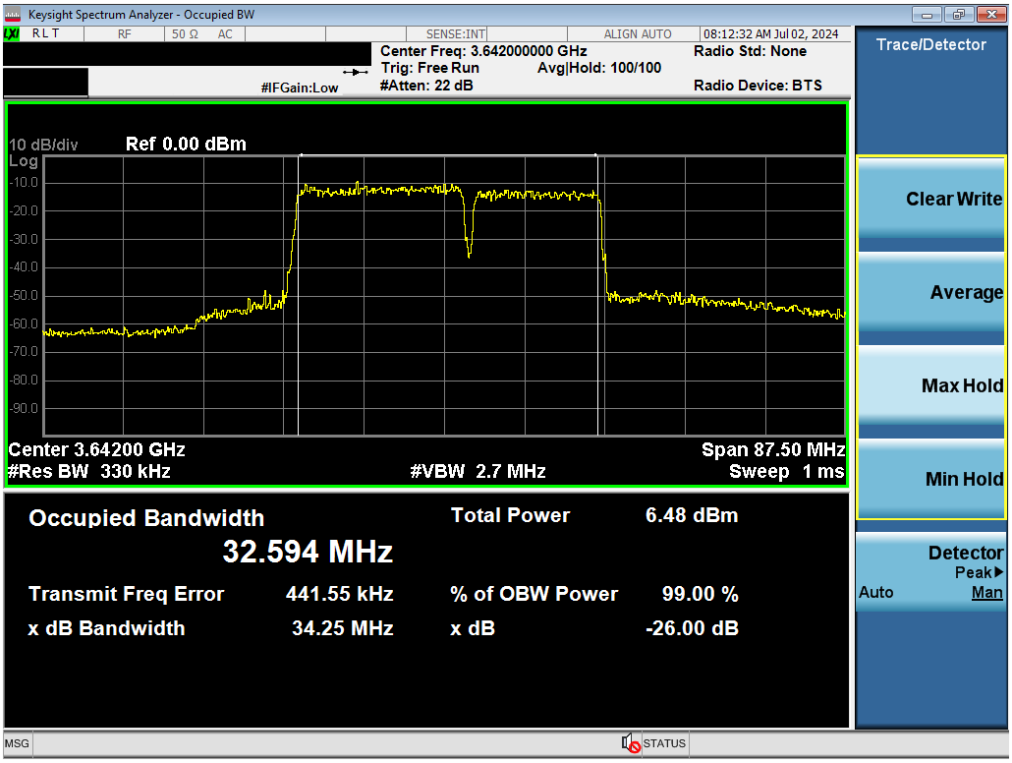
Table 7-8 Occupied Bandwidth Measurements



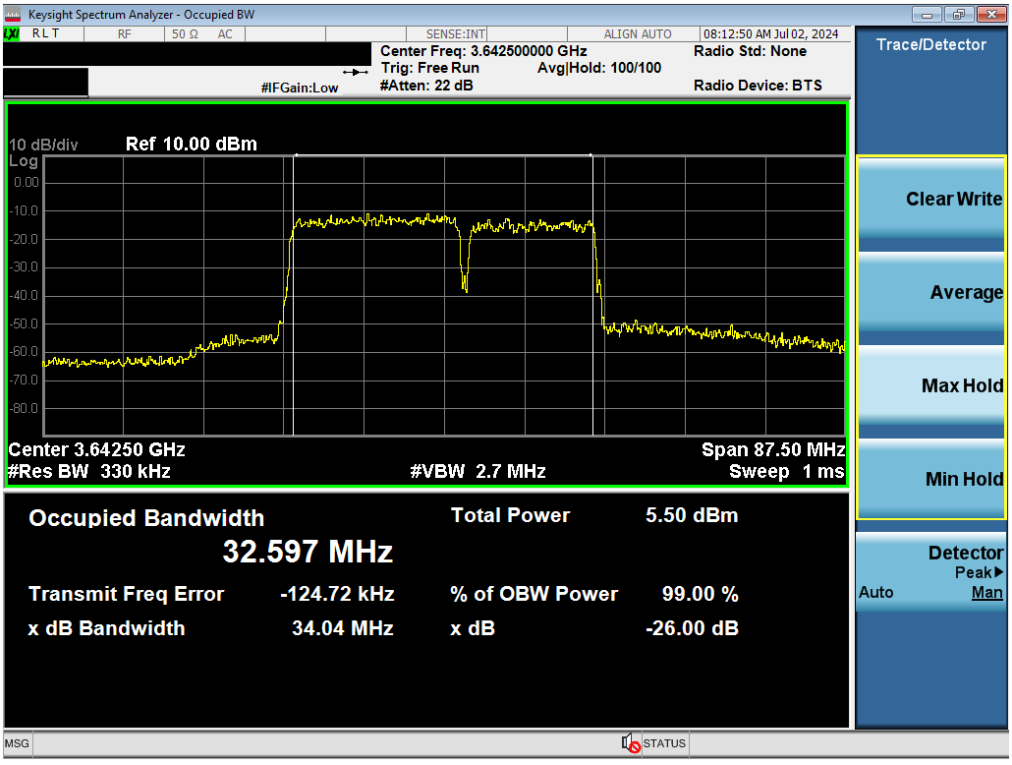
Plot 7.1. Occupied Bandwidth Plot (20 + 20MHz QPSK)



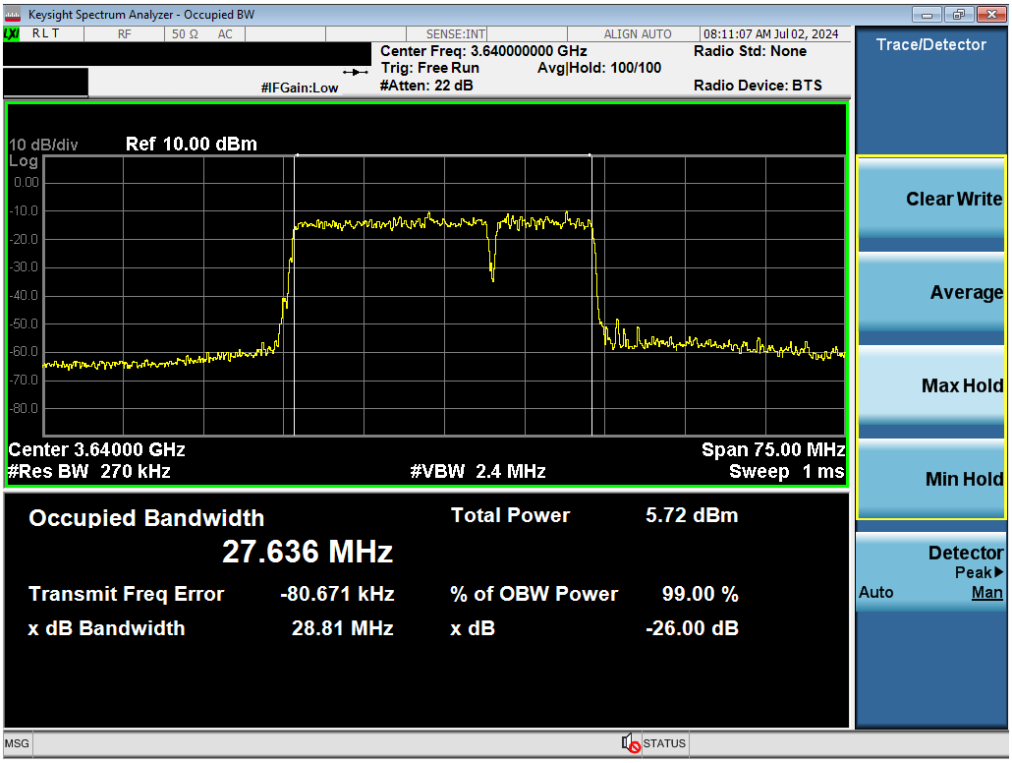
Plot 7.2. Occupied Bandwidth Plot (20 + 20MHz 16QAM)



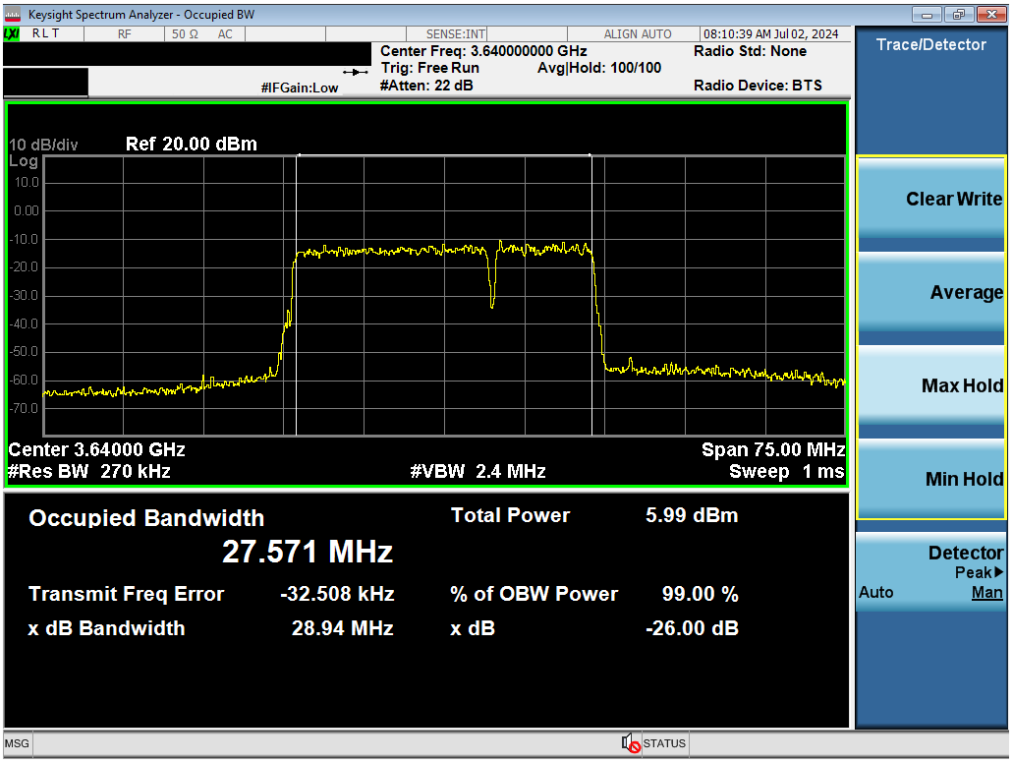
Plot 7.3. Occupied Bandwidth Plot (20 + 15MHz 16QAM)



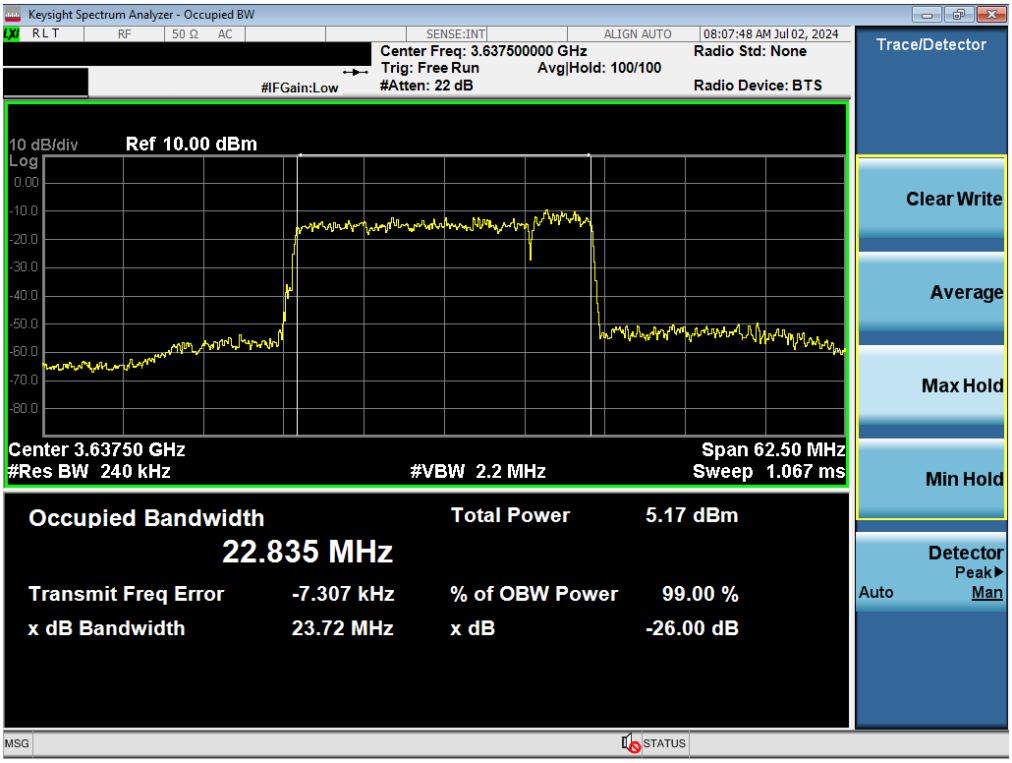
Plot 7.4. Occupied Bandwidth Plot (20 + 15MHz 16QAM)



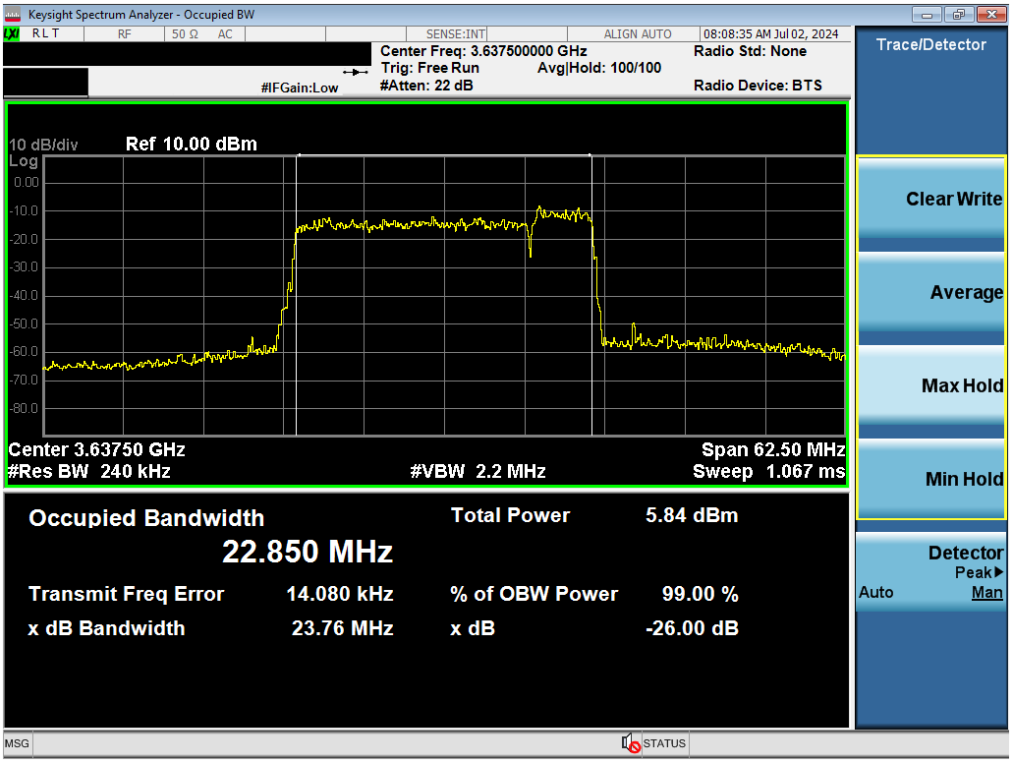
Plot 7.5. Occupied Bandwidth Plot (20 + 10MHz 16QAM)



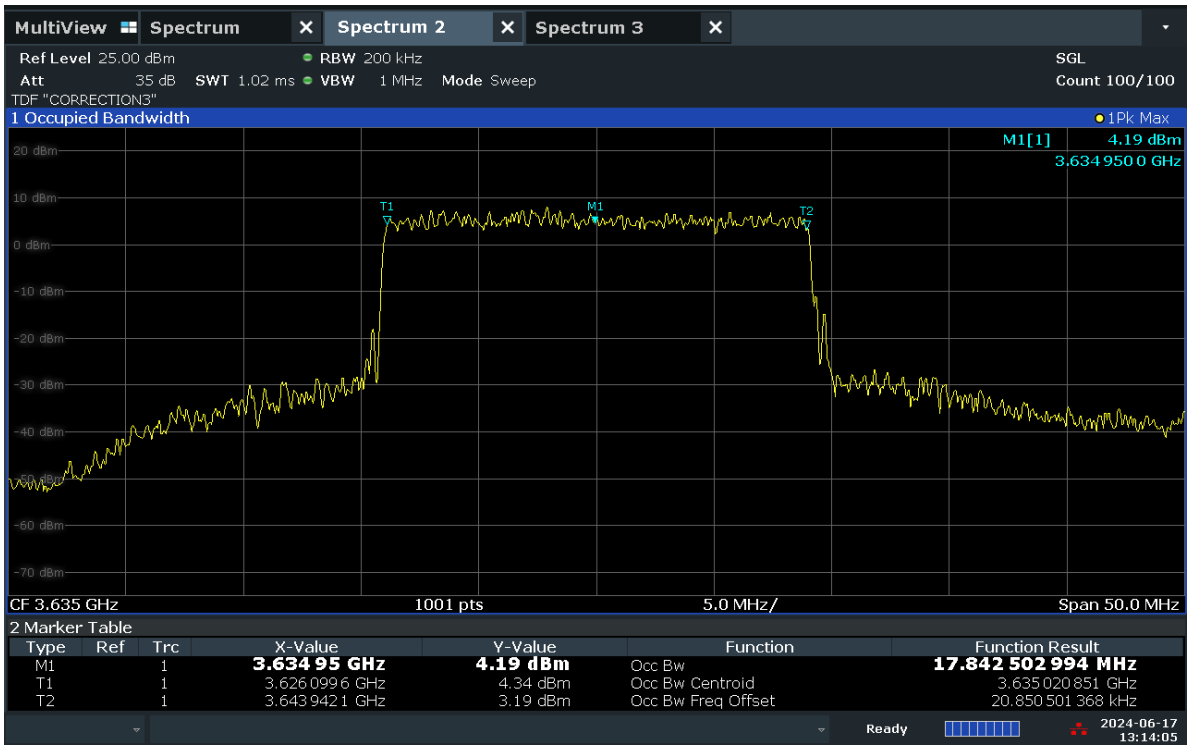
Plot 7.6. Occupied Bandwidth Plot (20 + 10MHz 16QAM)



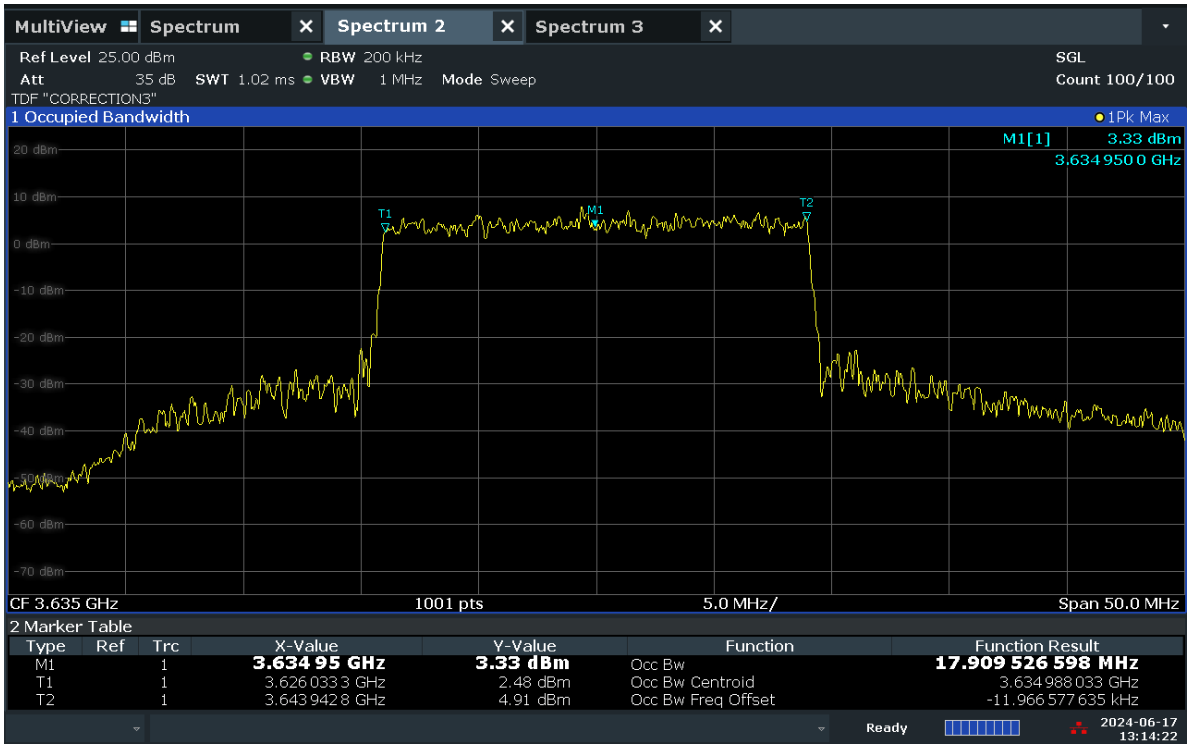
Plot 7.7. Occupied Bandwidth Plot (20 + 5MHz 16QAM)



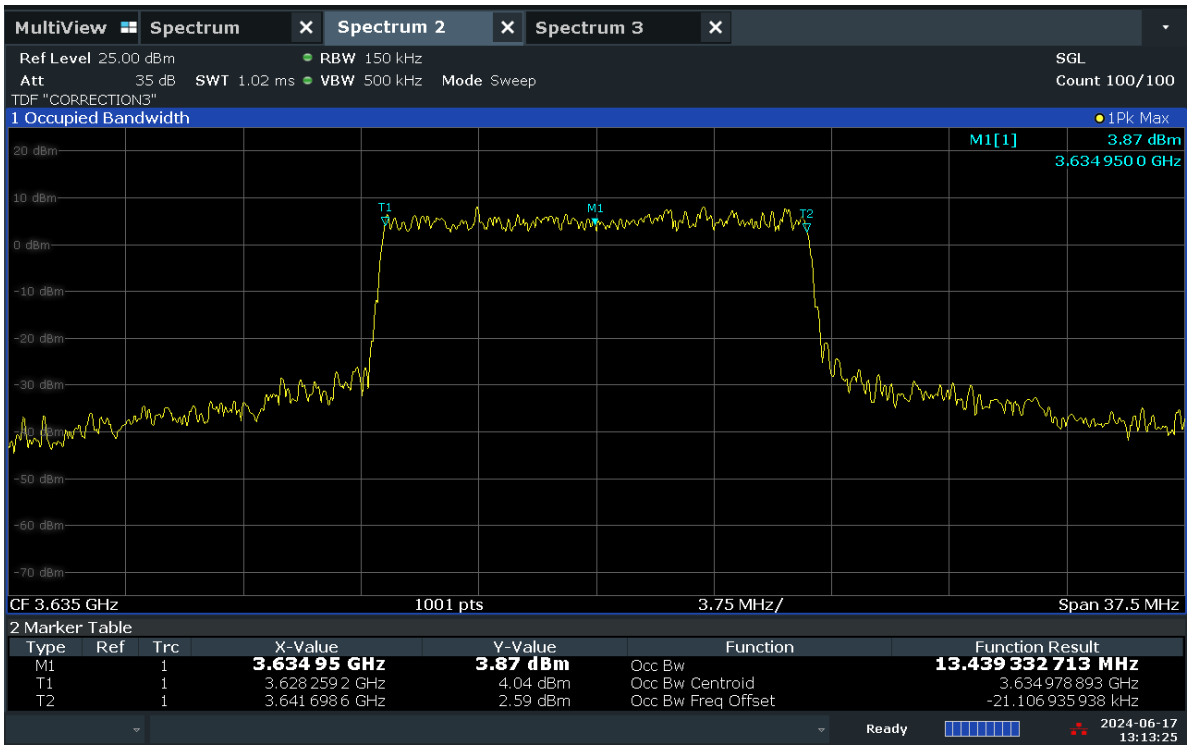
Plot 7.8. Occupied Bandwidth Plot (20 + 5MHz 16QAM)



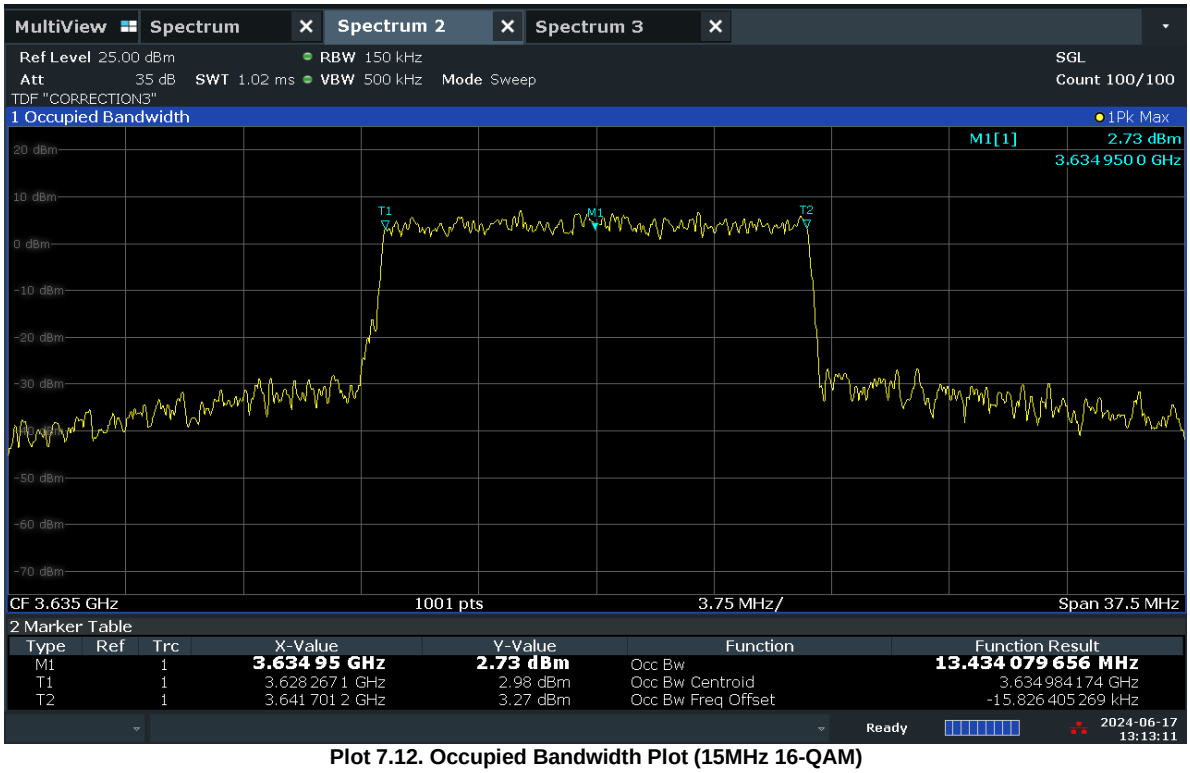
Plot 7.9. Occupied Bandwidth Plot (20MHz QPSK)



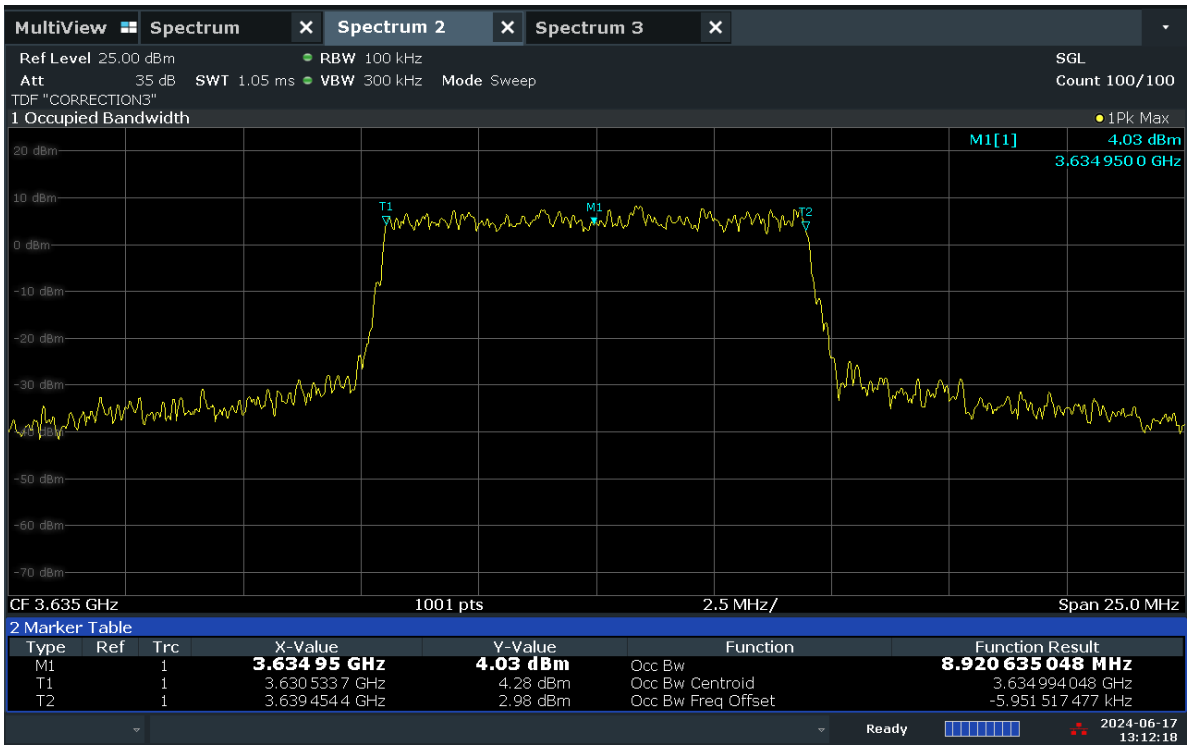
Plot 7.10. Occupied Bandwidth Plot (20MHz 16-QAM)



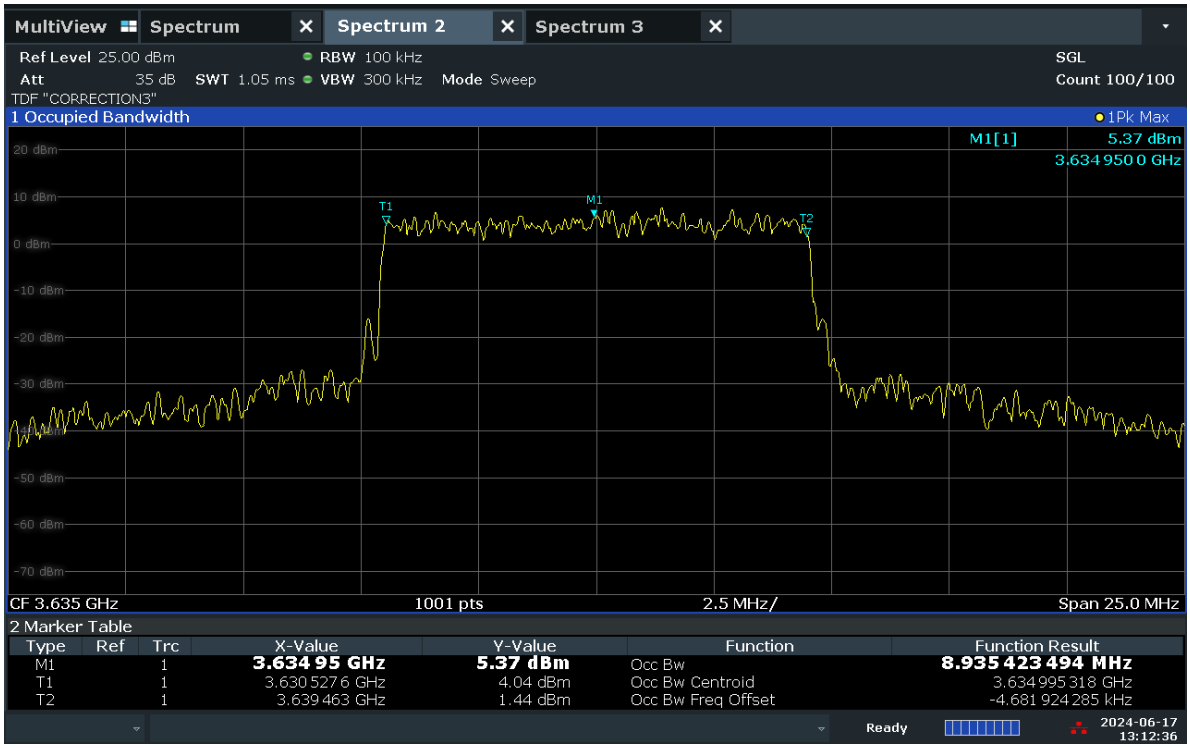
Plot 7.11. Occupied Bandwidth Plot (15MHz QPSK)



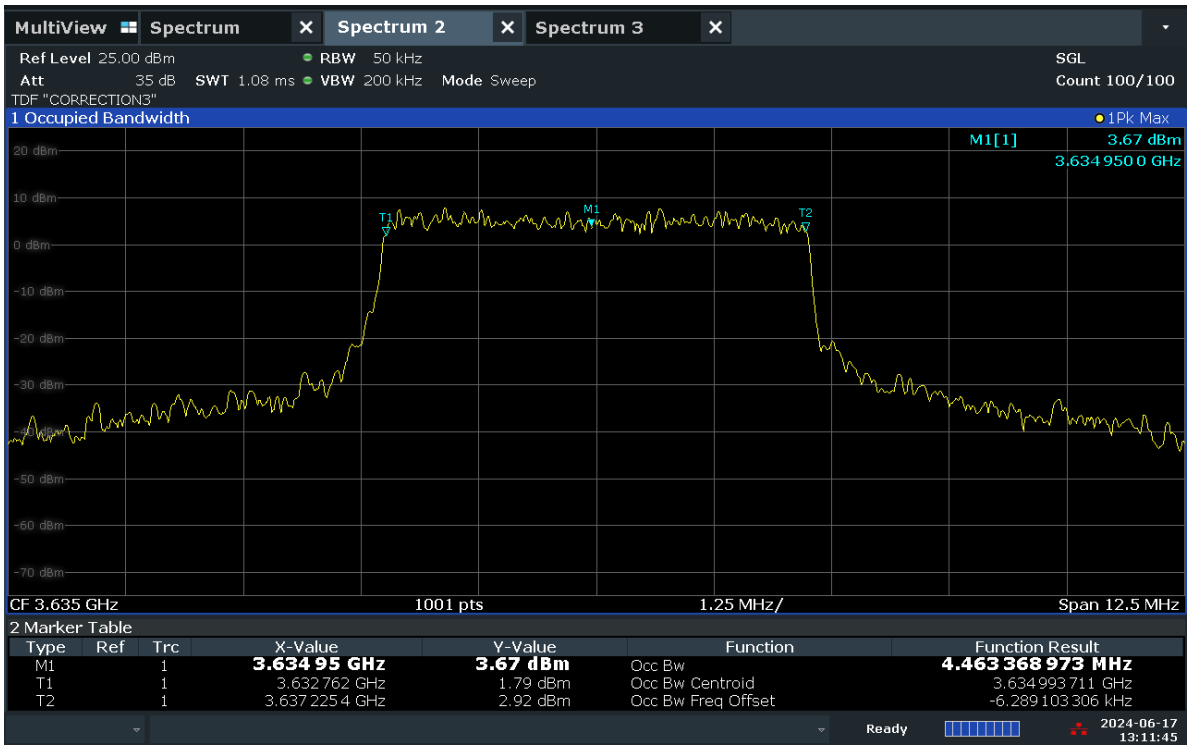
Plot 7.12. Occupied Bandwidth Plot (15MHz 16-QAM)



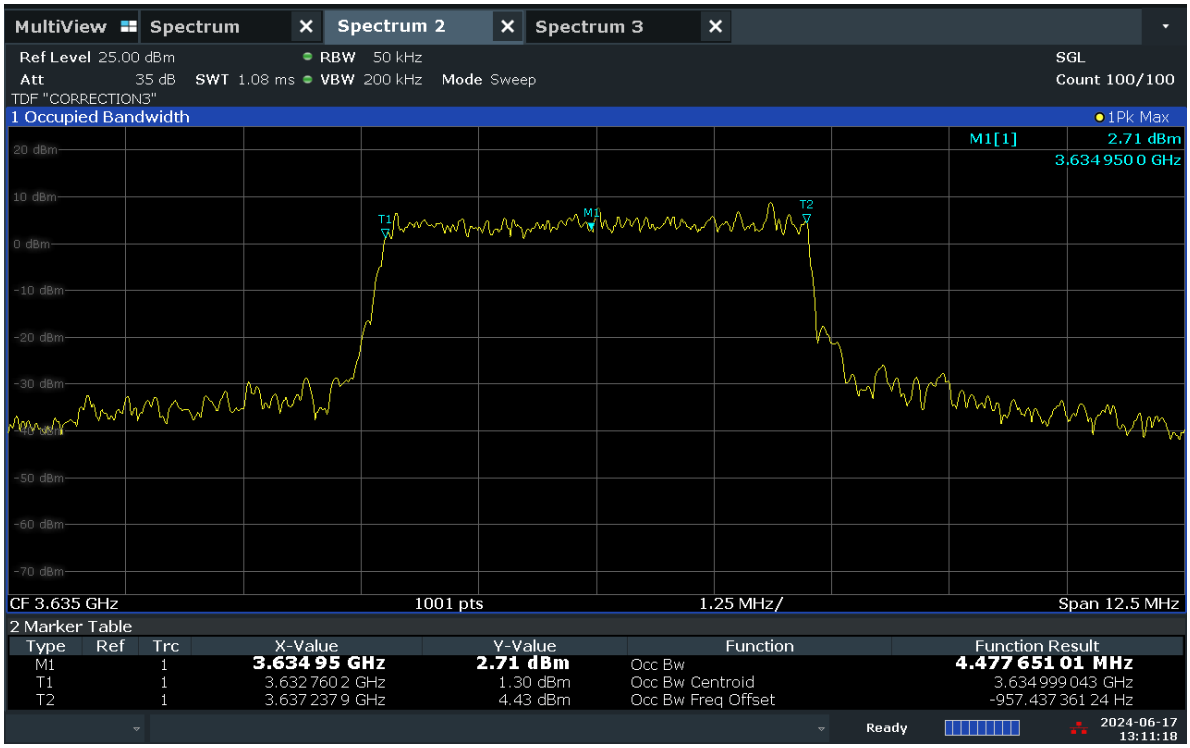
Plot 7.13. Occupied Bandwidth Plot (10MHz QPSK)



Plot 7.14. Occupied Bandwidth Plot (10MHz 16-QAM)



Plot 7.15. Occupied Bandwidth Plot (5MHz QPSK)



Plot 7.16. Occupied Bandwidth Plot (5MHz 16-QAM)

7.4 Conducted Power / EIRP Per 10MHz

Test Overview

The spectrum analyzer was connected to the antenna terminal while the EUT was operating at its maximum power control level, as defined in ANSI C63.26-2015,and at the appropriate frequencies. The spectrum analyzer was set to trigger and gate as to only measure during on periods.

The e.i.r.p./10MHz for a Category B CBSD must be less than 47dBm/10MHz.

Test Procedure Used

ANSI C63.26-2015 – Section 5.2.4.4.1
ANSI C63.26-2015 – Section 5.2.4.5

Test Settings

1. Span = 2x to 3X the OBW
2. RBW = 10MHz
3. VBW ≥ 3 x RBW
4. Set number of sweep points ≥ 2 x span / RBW
5. Sweep Time = auto couple
6. Detector = RMS
7. Trace mode = average
8. Trigger = External from callbox

Test Setup

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

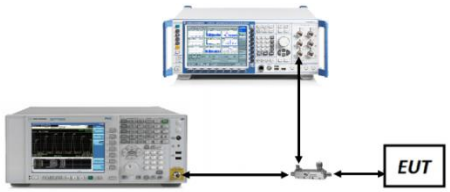


Figure 7-3. Test Instrument & Measurement Setup

Test Notes

1. For ULCA conditions, all bandwidths were investigated and only the worst case bandwidth is included in this report.

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm/10MHz]	Ant Gain [dBi]	EIRP [dBm/10MHz]	EIRP [Watts/10MHz]	EIRP Limit [dBm]	Margin [dB]
20 MHz	QPSK	55340	3560.0	1 / 1	17.95	16.00	33.95	2.483	47.00	-13.05
		56090	3635.0	1 / 49	19.07	16.00	35.07	3.214	47.00	-11.93
		56640	3690.0	1 / 1	19.13	16.00	35.13	3.258	47.00	-11.87
	16-QAM	55340	3560.0	1 / 49	18.07	16.00	34.07	2.553	47.00	-12.93
		56090	3635.0	1 / 49	18.68	16.00	34.68	2.938	47.00	-12.32
		56640	3690.0	1 / 1	18.64	16.00	34.64	2.911	47.00	-12.36
15 MHz	QPSK	55315	3557.5	1 / 36	17.34	16.00	33.34	2.158	47.00	-13.66
		56090	3635.0	1 / 36	18.96	16.00	34.96	3.133	47.00	-12.04
		56665	3692.5	1 / 1	18.85	16.00	34.85	3.055	47.00	-12.15
	16-QAM	55315	3557.5	1 / 36	16.32	16.00	32.32	1.706	47.00	-14.68
		56090	3635.0	1 / 36	18.46	16.00	34.46	2.793	47.00	-12.54
		56665	3692.5	1 / 1	17.80	16.00	33.80	2.399	47.00	-13.20
10 MHz	QPSK	55290	3555.0	1 / 22	16.75	16.00	32.75	1.884	47.00	-14.25
		56090	3635.0	1 / 22	19.17	16.00	35.17	3.289	47.00	-11.83
		56690	3695.0	1 / 1	18.70	16.00	34.70	2.951	47.00	-12.30
	16-QAM	55290	3555.0	1 / 22	17.07	16.00	33.07	2.028	47.00	-13.93
		56090	3635.0	1 / 22	18.65	16.00	34.65	2.917	47.00	-12.35
		56690	3695.0	1 / 1	18.53	16.00	34.53	2.838	47.00	-12.47
5 MHz	QPSK	55265	3552.5	1 / 9	19.19	16.00	35.19	3.304	47.00	-11.81
		56090	3635.0	1 / 9	19.50	16.00	35.50	3.548	47.00	-11.50
		56715	3697.5	1 / 5	19.27	16.00	35.27	3.365	47.00	-11.73
	16-QAM	55265	3552.5	1 / 9	18.64	16.00	34.64	2.911	47.00	-12.36
		56090	3635.0	1 / 9	18.98	16.00	34.98	3.148	47.00	-12.02
		56715	3697.5	1 / 5	18.83	16.00	34.83	3.041	47.00	-12.17

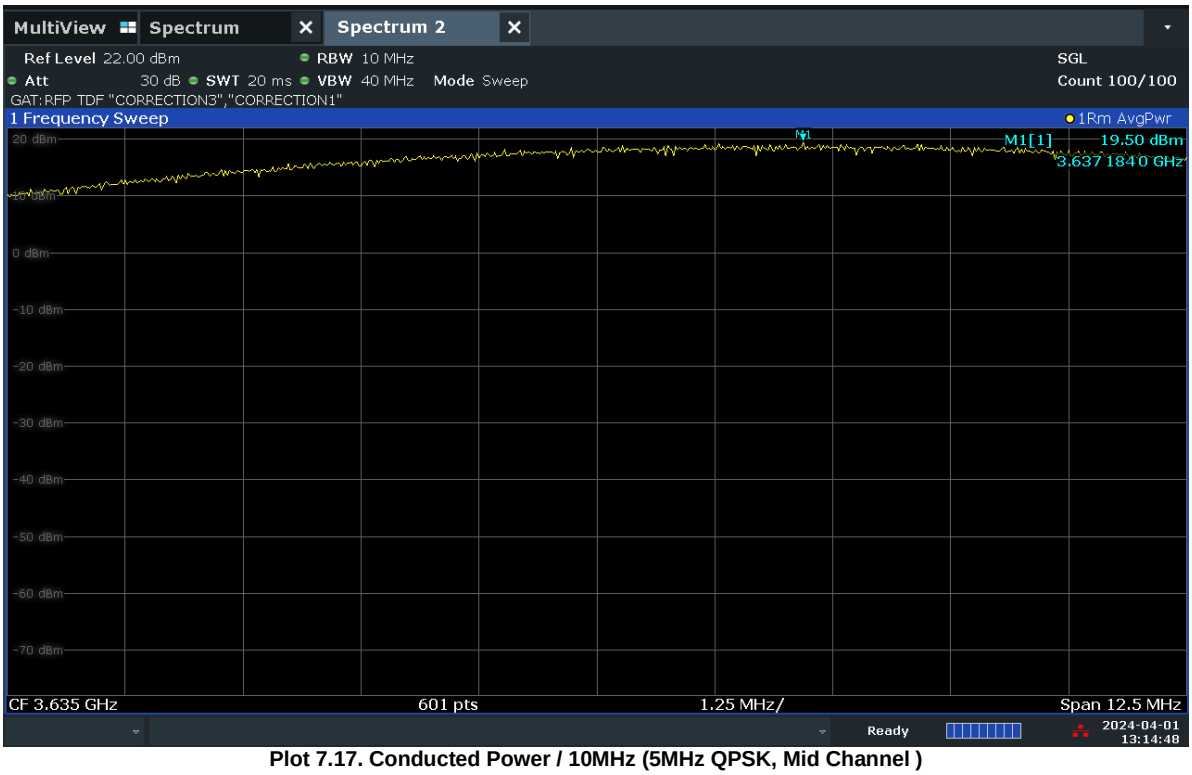
Table 7-9 E.I.R.P. / 10MHz Measurements

Bandwidth	Modulation	PCC			SCC			Conducted Power [dBm/10MHz]	Ant Gain [dBi]	EIRP [dBm/10MHz]	EIRP [Watts/10MHz]	EIRP Limit [dBm/10MHz]	Margin [dB]
		Bandwidth [MHz]	Frequency [MHz]	RB / Offset	Bandwidth [MHz]	Frequency [MHz]	RB / Offset						
40 MHz	QPSK	20	3560.0	100 / 0	20	3579.8	100 / 0	3.57	16.00	19.57	0.091	47.00	-27.43
		20	3625.0	100 / 0	20	3644.8	100 / 0	3.94	16.00	19.94	0.099	47.00	-27.06
		20	3690.0	100 / 0	20	3670.2	100 / 0	3.67	16.00	19.67	0.093	47.00	-27.33

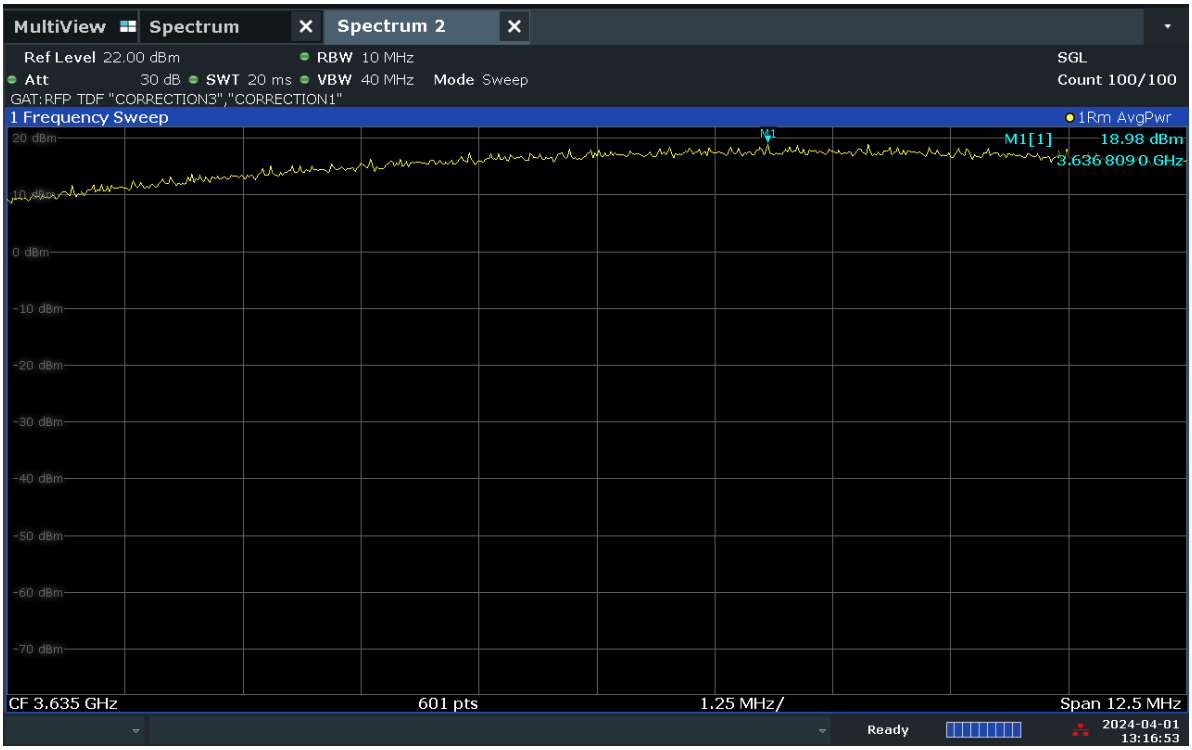
Table 7-10 E.I.R.P. / 10MHz Measurements ULCA (Full RB)

Bandwidth	Modulation	PCC			SCC			Conducted Power [dBm]	Ant Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
		Bandwidth [MHz]	Frequency [MHz]	RB / Offset	Bandwidth [MHz]	Frequency [MHz]	RB / Offset						
40 MHz	QPSK	20	3560.0	1 / 99	20	3579.8	1 / 0	-0.99	16.00	15.01	0.032	47.00	-31.99
		20	3625.0	1 / 99	20	3644.8	1 / 0	1.81	16.00	17.81	0.060	47.00	-29.19
		20	3690.0	1 / 0	20	3670.2	1 / 99	1.92	16.00	17.92	0.062	47.00	-29.08
	16-QAM	20	3560.0	1 / 99	20	3579.8	1 / 0	-1.52	16.00	14.48	0.03	47.00	-32.52
		20	3625.0	1 / 99	20	3644.8	1 / 0	-1.22	16.00	14.78	0.03	47.00	-32.22
		20	3690.0	1 / 0	20	3670.2	1 / 99	-1.10	16.00	14.90	0.03	47.00	-32.10
	64-QAM	20	3560.0	1 / 99	20	3579.8	1 / 0	-1.67	16.00	15.01	0.03	47.00	-31.99
		20	3625.0	1 / 99	20	3644.8	1 / 0	-1.54	16.00	17.81	0.06	47.00	-29.19
		20	3690.0	1 / 0	20	3670.2	1 / 99	-1.54	16.00	17.92	0.06	47.00	-29.08
	256-QAM	20	3560.0	1 / 99	20	3579.8	1 / 0	-1.87	16.00	15.01	0.03	47.00	-31.99
		20	3625.0	1 / 99	20	3644.8	1 / 0	-1.65	16.00	17.81	0.06	47.00	-29.19
		20	3690.0	1 / 0	20	3670.2	1 / 99	-1.84	16.00	17.92	0.06	47.00	-29.08

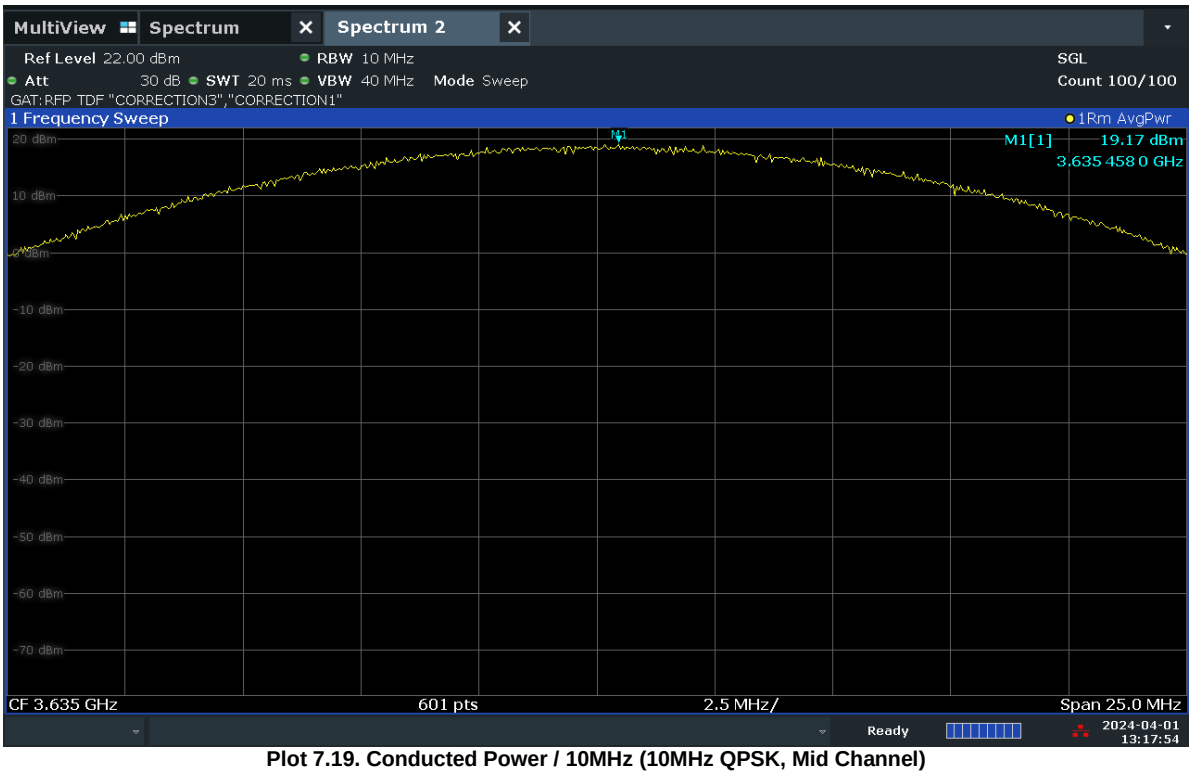
Table 7-11 E.I.R.P. / 10MHz Measurements ULCA (1RB)



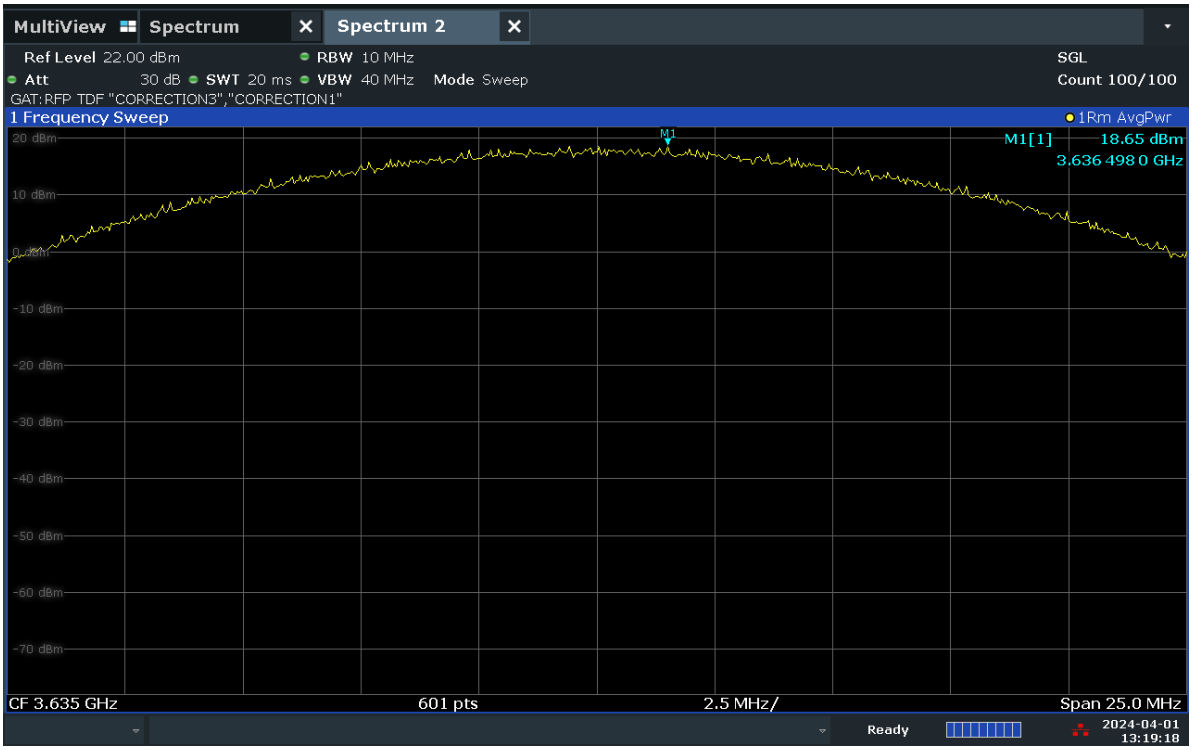
Plot 7.17. Conducted Power / 10MHz (5MHz QPSK, Mid Channel)



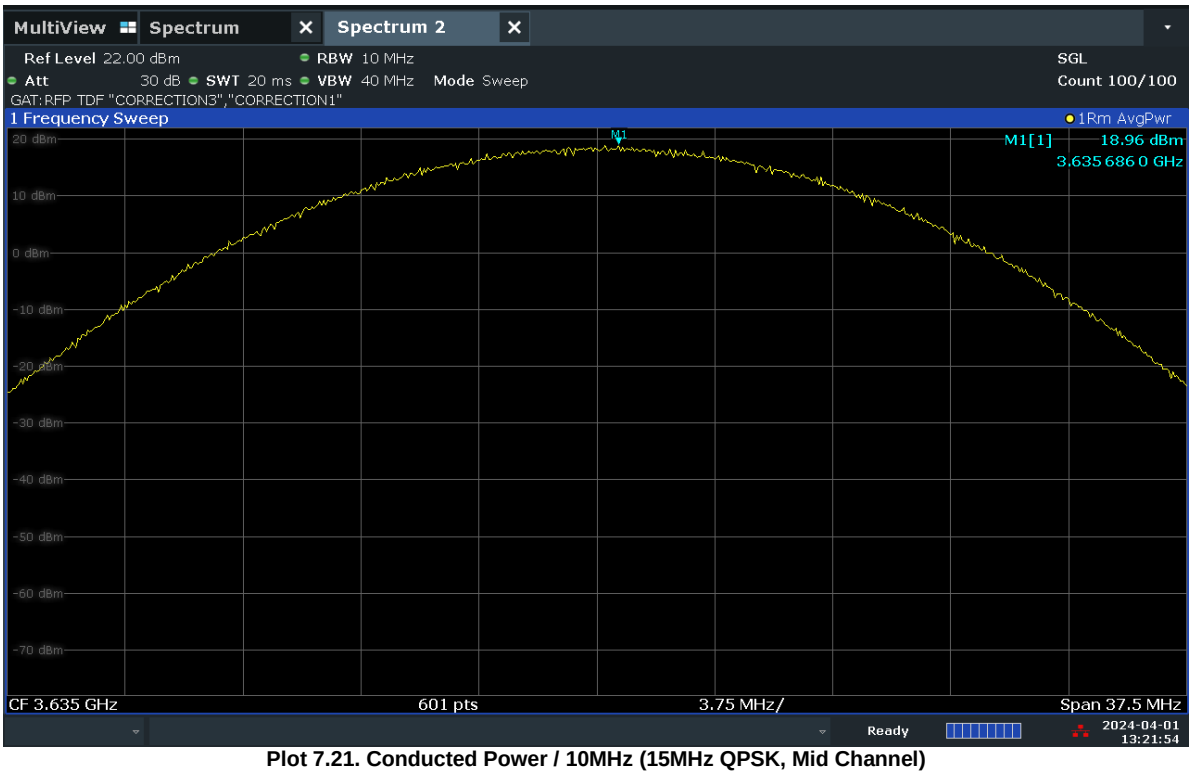
Plot 7.18. Conducted Power / 10MHz (5MHz 16QAM, Mid Channel)



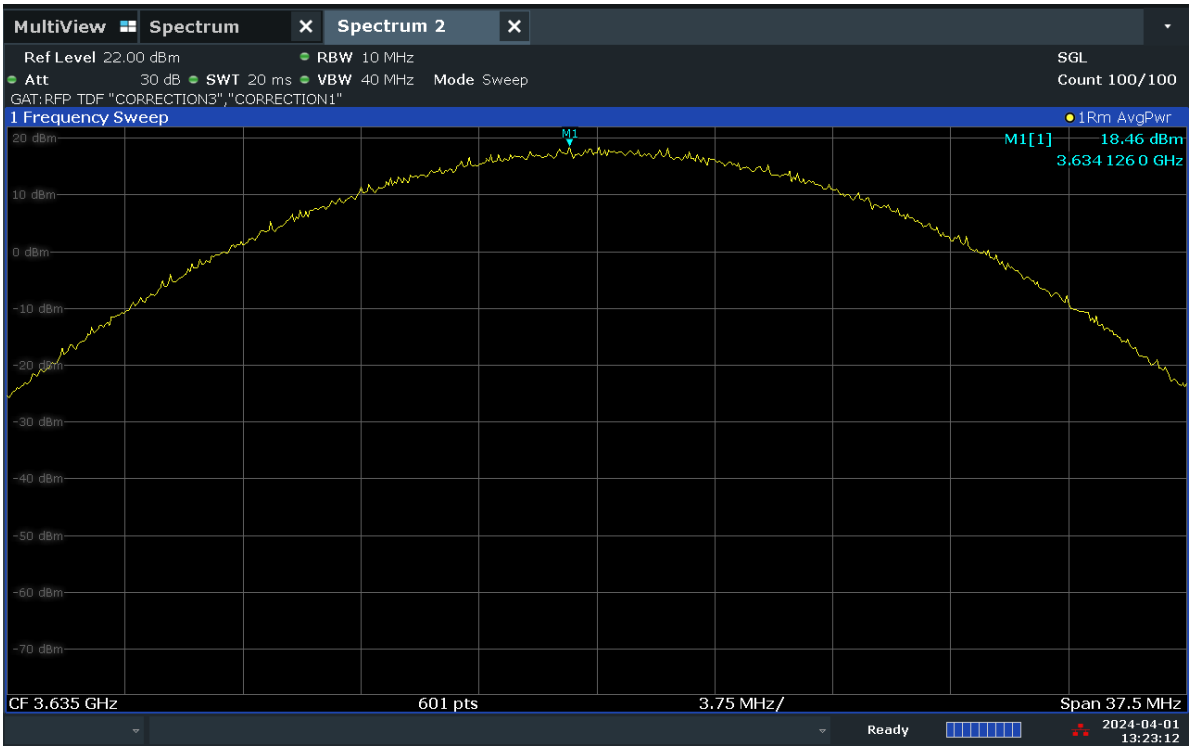
Plot 7.19. Conducted Power / 10MHz (10MHz QPSK, Mid Channel)



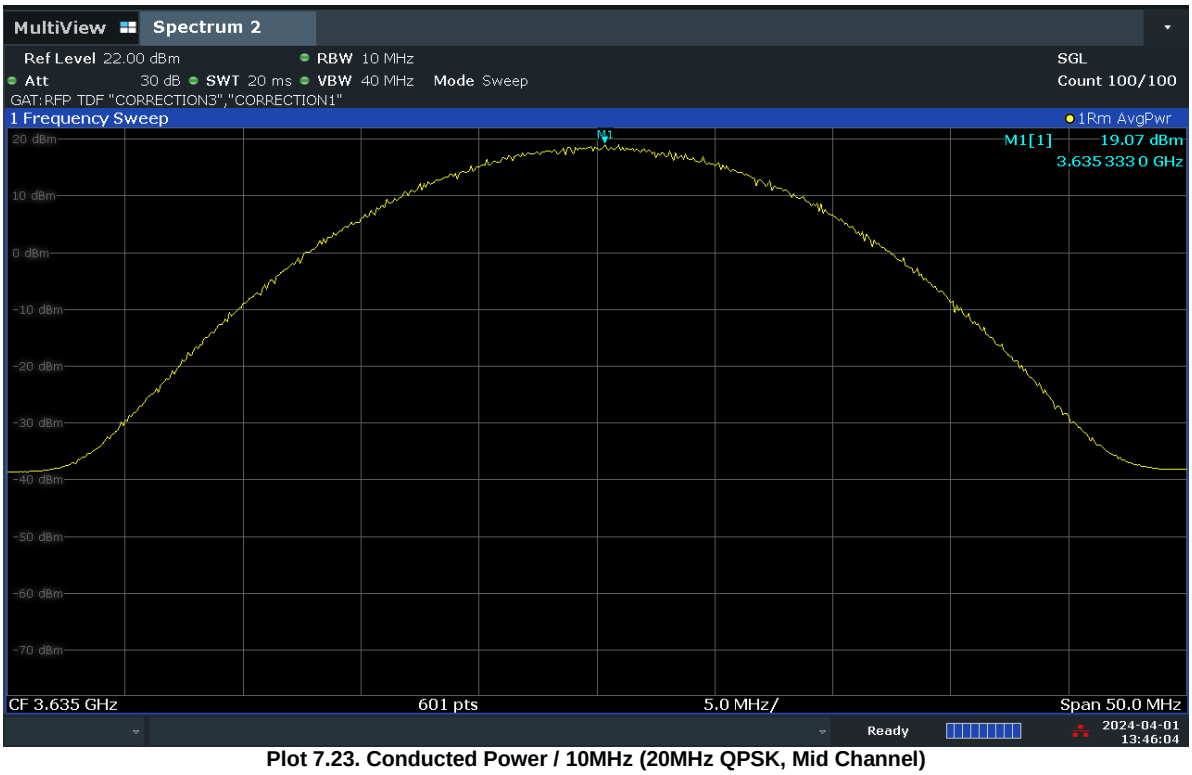
Plot 7.20. Conducted Power / 10MHz (10MHz 16QAM, Mid Channel)



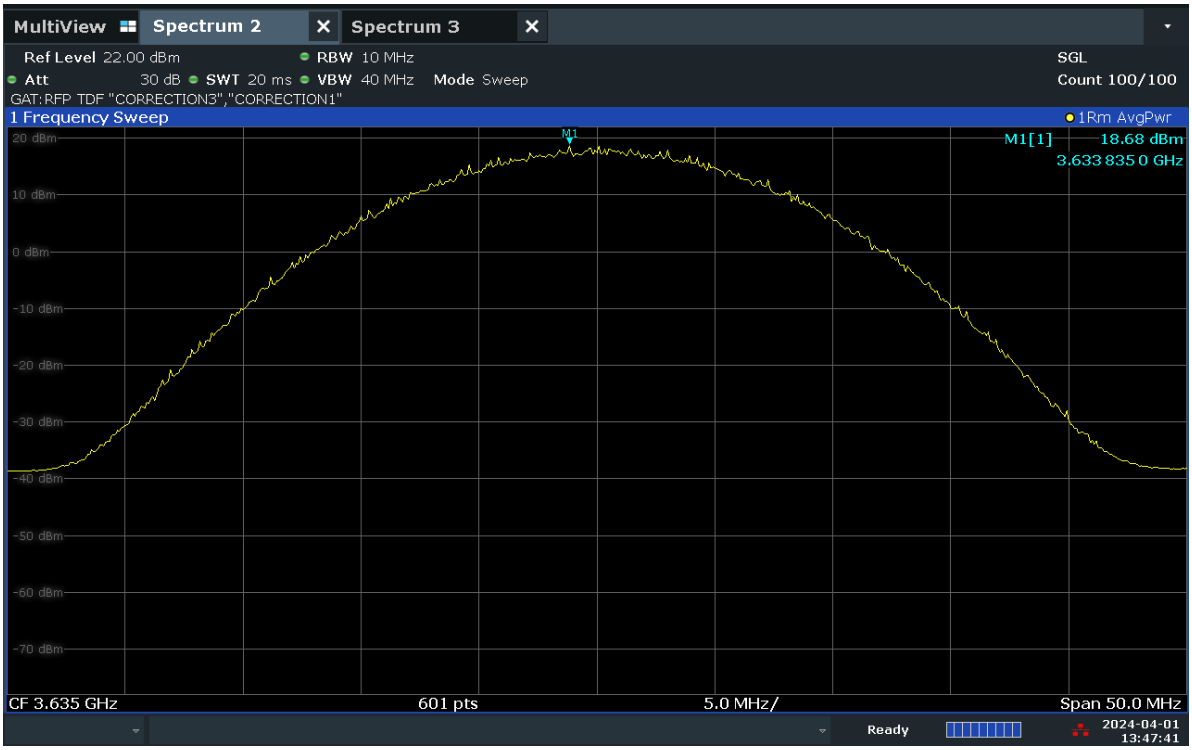
Plot 7.21. Conducted Power / 10MHz (15MHz QPSK, Mid Channel)



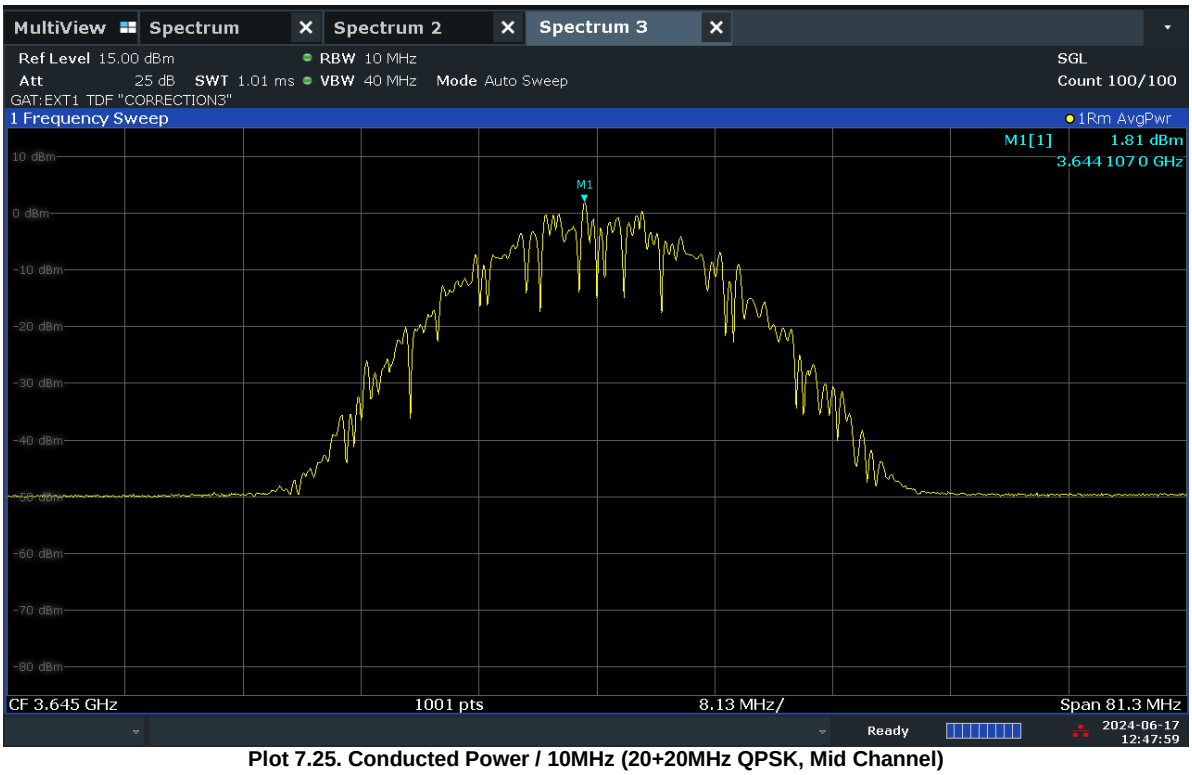
Plot 7.22. Conducted Power / 10MHz (15MHz 16QAM, Mid Channel)



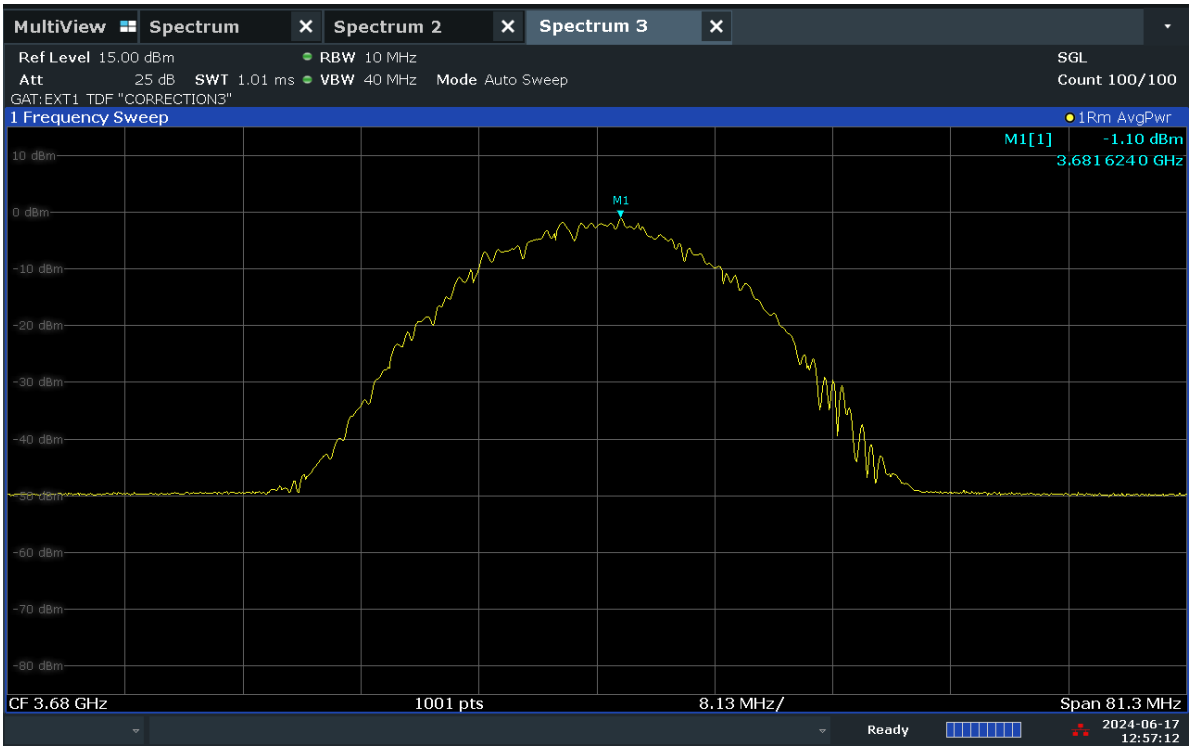
Plot 7.23. Conducted Power / 10MHz (20MHz QPSK, Mid Channel)



Plot 7.24. Conducted Power / 10MHz (20MHz 16QAM, Mid Channel)



Plot 7.25. Conducted Power / 10MHz (20+20MHz QPSK, Mid Channel)



Plot 7.26. Conducted Power / 10MHz (20+20MHz 16QAM, High Channel)

Sample e.i.r.p / 10MHz Calculation:

At 3680 MHz in 16QAM, 20+20MHz BW mode, the average MIMO power density was calculated to be -1.10 dBm with a gain of 16 dBi.

e.i.r.p. Power Spectral Density(dBm) = Power Spectral Density (dBm) + Ant gain (dBi)

-1.10 dBm/10MHz + 16dBi = 14.90 dBm/10MHz

7.5 Power Spectral Density

Test Overview

The spectrum analyzer was connected to the antenna terminal while the EUT was operating at its maximum power control level, as defined in ANSI C63.26-2015,and at the appropriate frequencies. The spectrum analyzer was set to trigger and gate as to only measure during on periods.

The power spectral density for a Category B CBSD must be less than 37dBm/1MHz e.i.r.p.

Test Procedure Used

ANSI C63.26-2015 – Section 5.2.4.4.1
ANSI C63.26-2015 – Section 5.2.4.5

Test Settings

1. Span = 2x to 3X the OBW
2. RBW = 1MHz
3. VBW ≥ 3 x RBW
4. Set number of sweep points ≥ 2 x span / RBW
5. Sweep Time = auto couple
6. Detector = RMS
7. Trace mode = average
8. Trigger = External from callbox

Test Setup

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

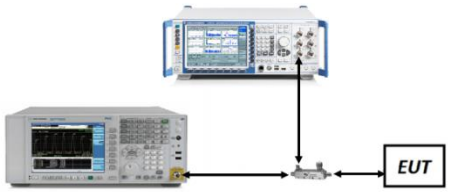


Figure 7-4. Test Instrument & Measurement Setup

Test Notes

1. For ULCA conditions, all bandwidths were investigated and only the worst case bandwidth is included in this report.

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted PSD [dBm/MHz]	Ant Gain [dBi]	EIRP PSD [dBm/MHz]	EIRP PSD [Watts/MHz]	EIRP Limit [dBm/MHz]	Margin [dB]
20 MHz	QPSK	55340	3560.0	1 / 1	16.70	16.00	32.70	1.86	37.00	-4.30
		56090	3635.0	1 / 49	18.44	16.00	34.44	2.78	37.00	-2.56
		56640	3690.0	1 / 1	19.19	16.00	35.19	3.30	37.00	-1.81
	16-QAM	55340	3560.0	1 / 49	17.14	16.00	33.14	2.06	37.00	-3.86
		56090	3635.0	1 / 49	18.49	16.00	34.49	2.81	37.00	-2.51
		56640	3690.0	1 / 1	17.30	16.00	33.3	2.14	37.00	-3.70
15 MHz	QPSK	55315	3557.5	1 / 36	16.42	16.00	32.42	1.75	37.00	-4.58
		56090	3635.0	1 / 36	17.92	16.00	33.92	2.47	37.00	-3.08
		56665	3692.5	1 / 1	18.65	16.00	34.65	2.92	37.00	-2.35
	16-QAM	55315	3557.5	1 / 36	17.01	16.00	33.01	2.00	37.00	-3.99
		56090	3635.0	1 / 36	17.92	16.00	33.92	2.47	37.00	-3.08
		56665	3692.5	1 / 1	17.66	16.00	33.66	2.32	37.00	-3.34
10 MHz	QPSK	55290	3555.0	1 / 22	16.90	16.00	32.9	1.95	37.00	-4.10
		56090	3635.0	1 / 22	18.69	16.00	34.69	2.94	37.00	-2.31
		56690	3695.0	1 / 1	18.92	16.00	34.92	3.10	37.00	-2.08
	16-QAM	55290	3555.0	1 / 22	17.73	16.00	33.73	2.36	37.00	-3.27
		56090	3635.0	1 / 22	17.93	16.00	33.93	2.47	37.00	-3.07
		56690	3695.0	1 / 1	17.70	16.00	33.7	2.34	37.00	-3.30
5 MHz	QPSK	55265	3552.5	1 / 9	19.15	16.00	35.15	3.27	37.00	-1.85
		56090	3635.0	1 / 9	18.87	16.00	34.87	3.07	37.00	-2.13
		56715	3697.5	1 / 5	18.91	16.00	34.91	3.10	37.00	-2.09
	16-QAM	55265	3552.5	1 / 9	17.32	16.00	33.32	2.15	37.00	-3.68
		56090	3635.0	1 / 9	18.54	16.00	34.54	2.84	37.00	-2.46
		56715	3697.5	1 / 5	18.18	16.00	34.18	2.62	37.00	-2.82

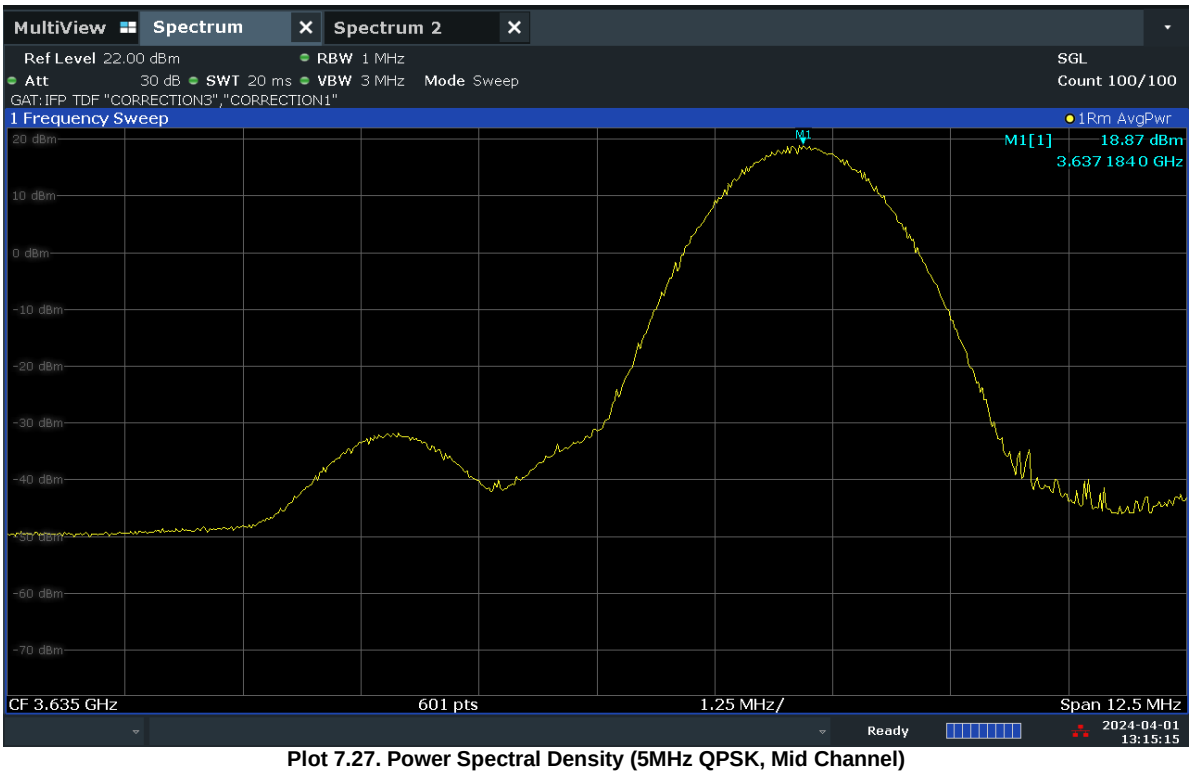
Table 7-12 Power Spectral Density Measurements

Bandwidth	Modulation	PCC			SCC			Conducted PSD [dBm/MHz]	Ant Gain [dBi]	EIRP PSD [dBm/MHz]	EIRP PSD [Watts/MHz]	EIRP Limit [dBm/MHz]	Margin [dB]
		Bandwidth [MHz]	Frequency [MHz]	RB / Offset	Bandwidth [MHz]	Frequency [MHz]	RB / Offset						
40 MHz	QPSK	20	3560.0	100 / 0	20	3579.8	100 / 0	-5.50	16.00	10.50	0.011	37.00	-26.50
		20	3625.0	100 / 0	20	3644.8	100 / 0	-5.16	16.00	10.84	0.012	37.00	-26.16
		20	3690.0	100 / 0	20	3670.2	100 / 0	-5.06	16.00	10.94	0.012	37.00	-26.06

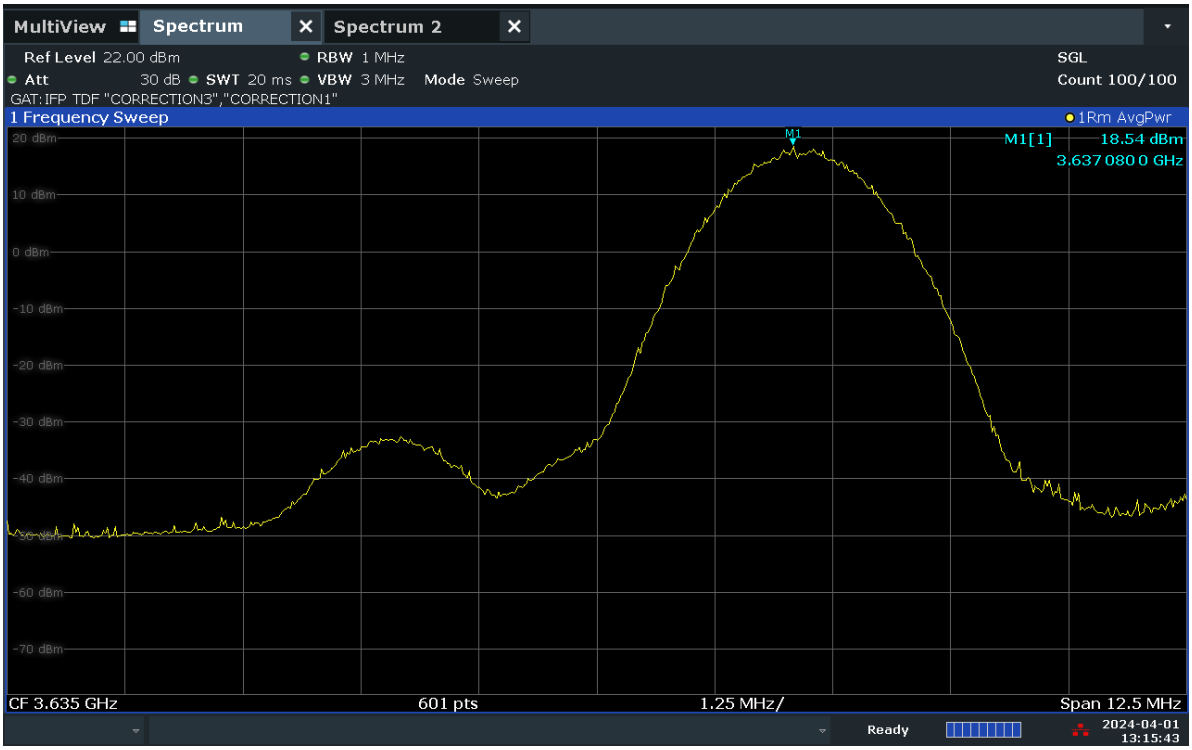
Table 7-13 Power Spectral Density Measurements - ULCA

Bandwidth	Modulation	PCC			SCC			Conducted Power [dBm]	Ant Gain [dBi]	EIRP PSD [dBm/MHz]	EIRP PSD [Watts/MHz]	EIRP Limit [dBm/MHz]	Margin [dB]
		Bandwidth [MHz]	Frequency [MHz]	RB / Offset	Bandwidth [MHz]	Frequency [MHz]	RB / Offset						
40 MHz	QPSK	20	3560.0	1 / 99	20	3579.8	1 / 0	-5.33	16.00	10.67	0.012	37.00	-26.33
		20	3625.0	1 / 99	20	3644.8	1 / 0	-3.04	16.00	12.96	0.020	37.00	-24.04
		20	3690.0	1 / 0	20	3670.2	1 / 99	-2.89	16.00	13.11	0.020	37.00	-23.89
	16-QAM	20	3560.0	1 / 99	20	3579.8	1 / 0	-4.81	16.00	11.19	0.01	37.00	-25.81
		20	3625.0	1 / 99	20	3644.8	1 / 0	-4.03	16.00	11.97	0.02	37.00	-25.03
		20	3690.0	1 / 0	20	3670.2	1 / 99	-4.02	16.00	11.98	0.02	37.00	-25.02
	64-QAM	20	3560.0	1 / 99	20	3579.8	1 / 0	-5.41	16.00	15.01	0.03	37.00	-31.99
		20	3625.0	1 / 99	20	3644.8	1 / 0	-4.81	16.00	17.81	0.06	37.00	-29.19
		20	3690.0	1 / 0	20	3670.2	1 / 99	-4.73	16.00	17.92	0.06	37.00	-29.08
	256-QAM	20	3560.0	1 / 99	20	3579.8	1 / 0	-5.01	16.00	15.01	0.03	37.00	-31.99
		20	3625.0	1 / 99	20	3644.8	1 / 0	-4.29	16.00	17.81	0.06	37.00	-29.19
		20	3690.0	1 / 0	20	3670.2	1 / 99	-5.32	16.00	17.92	0.06	37.00	-29.08

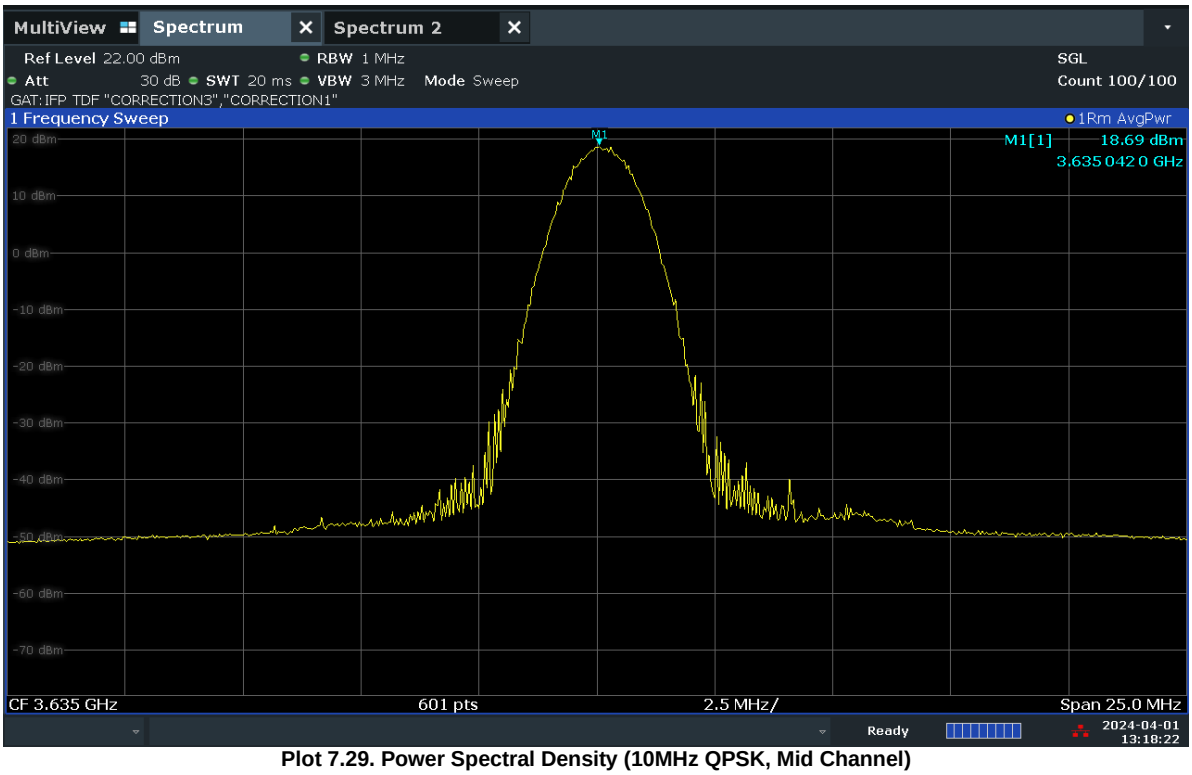
Table 7-14 Power Spectral Density Measurements – ULCA (cont.)



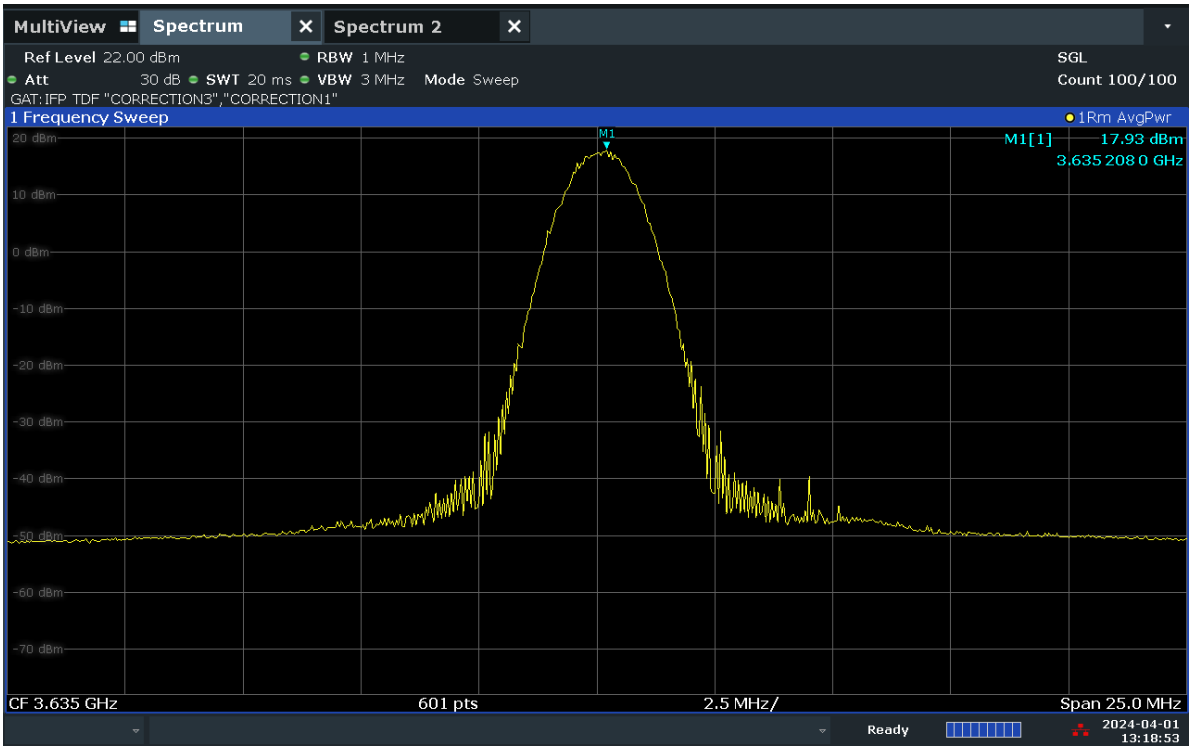
Plot 7.27. Power Spectral Density (5MHz QPSK, Mid Channel)



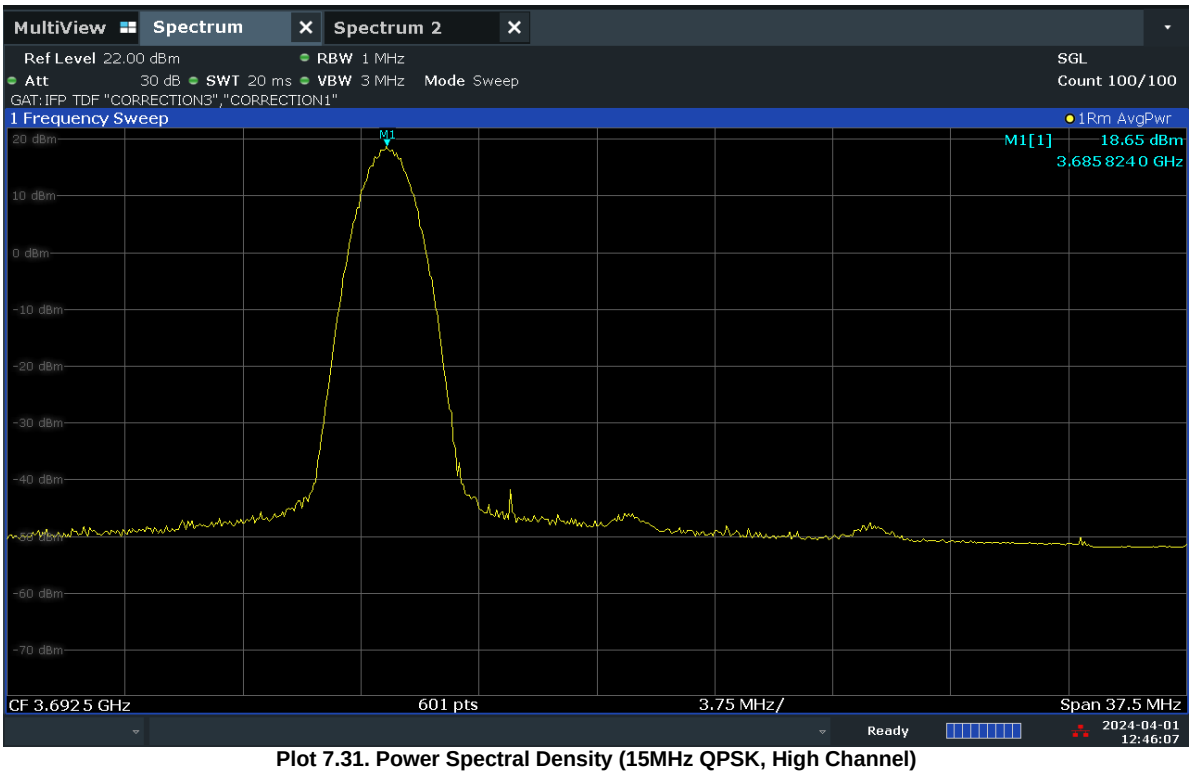
Plot 7.28. Power Spectral Density (5MHz 16QAM, Mid Channel)



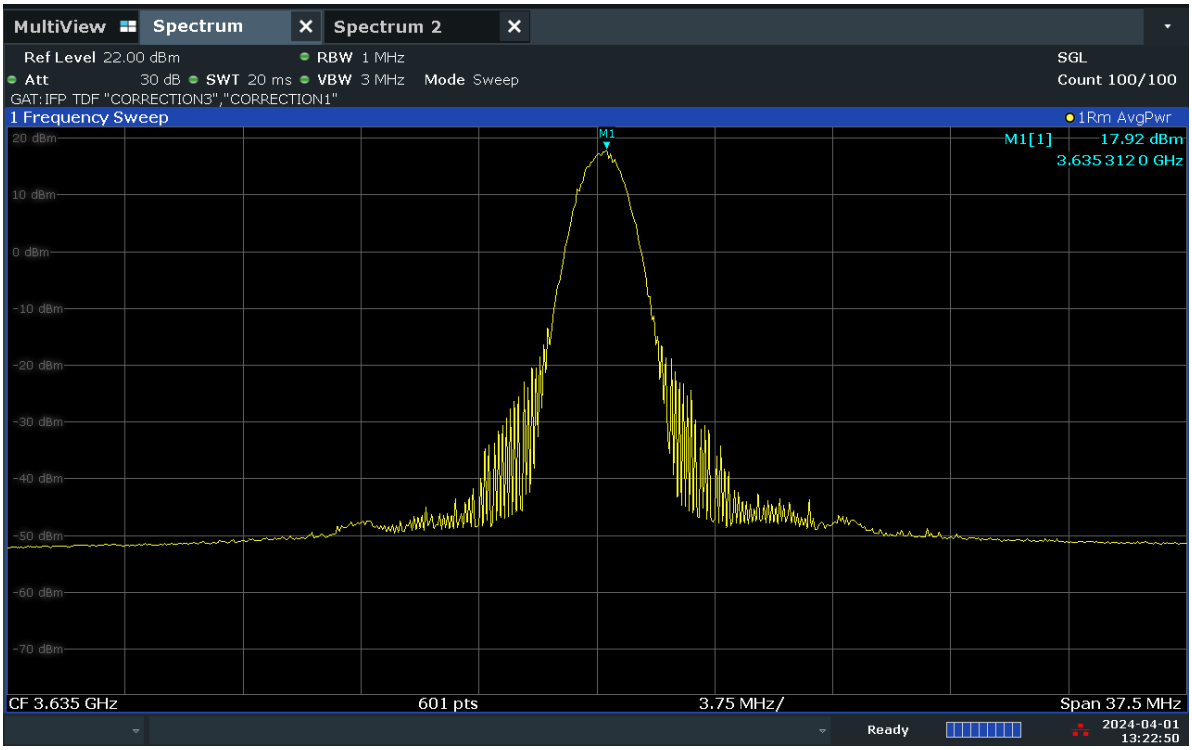
Plot 7.29. Power Spectral Density (10MHz QPSK, Mid Channel)



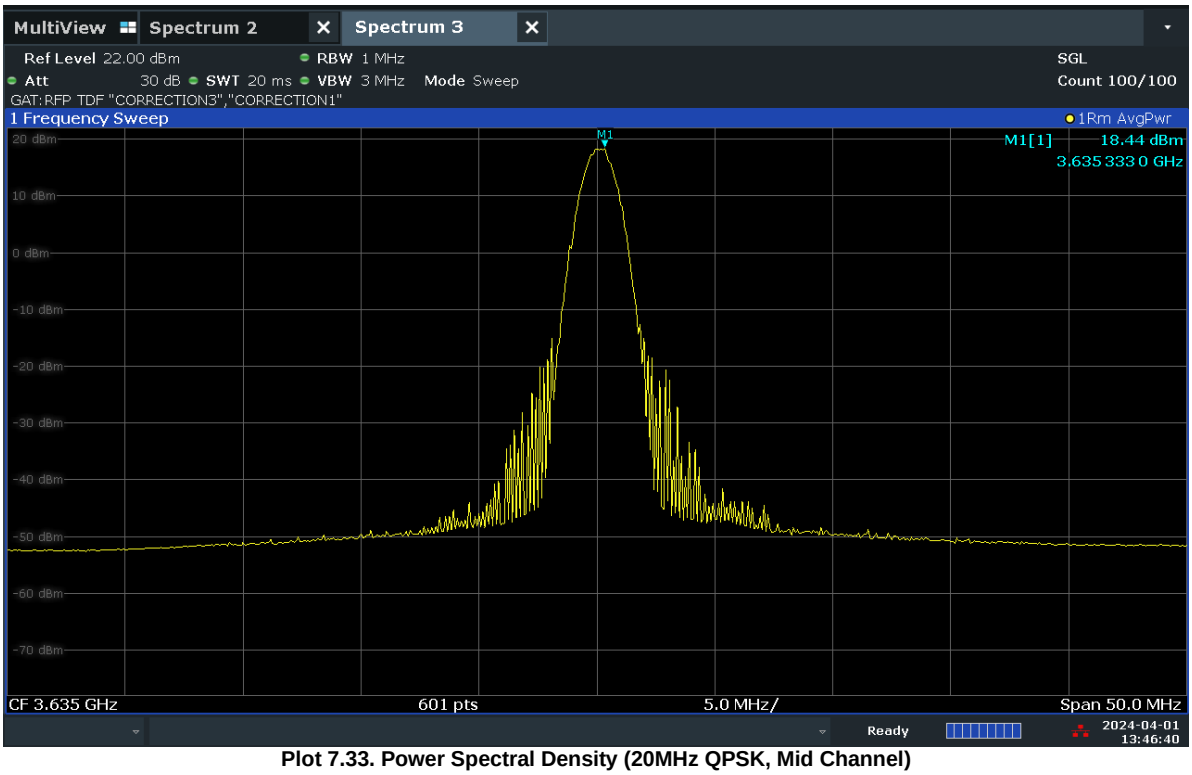
Plot 7.30. Power Spectral Density (10MHz 16QAM, Mid Channel)



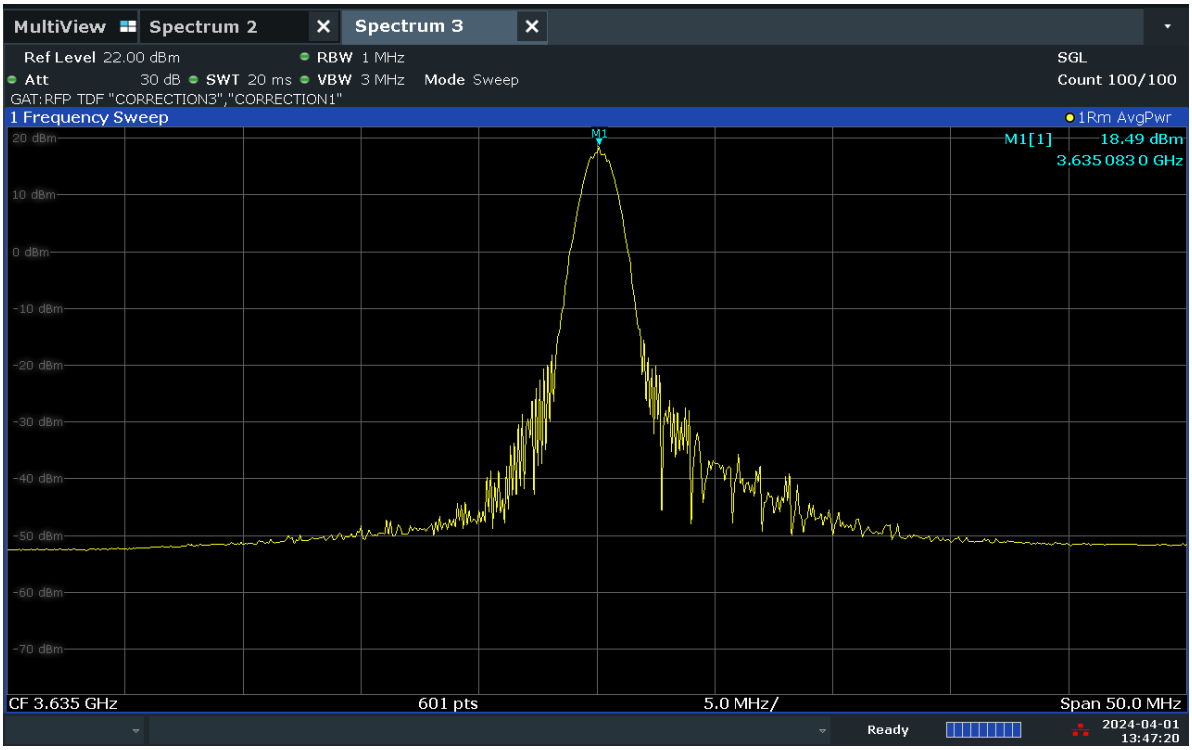
Plot 7.31. Power Spectral Density (15MHz QPSK, High Channel)



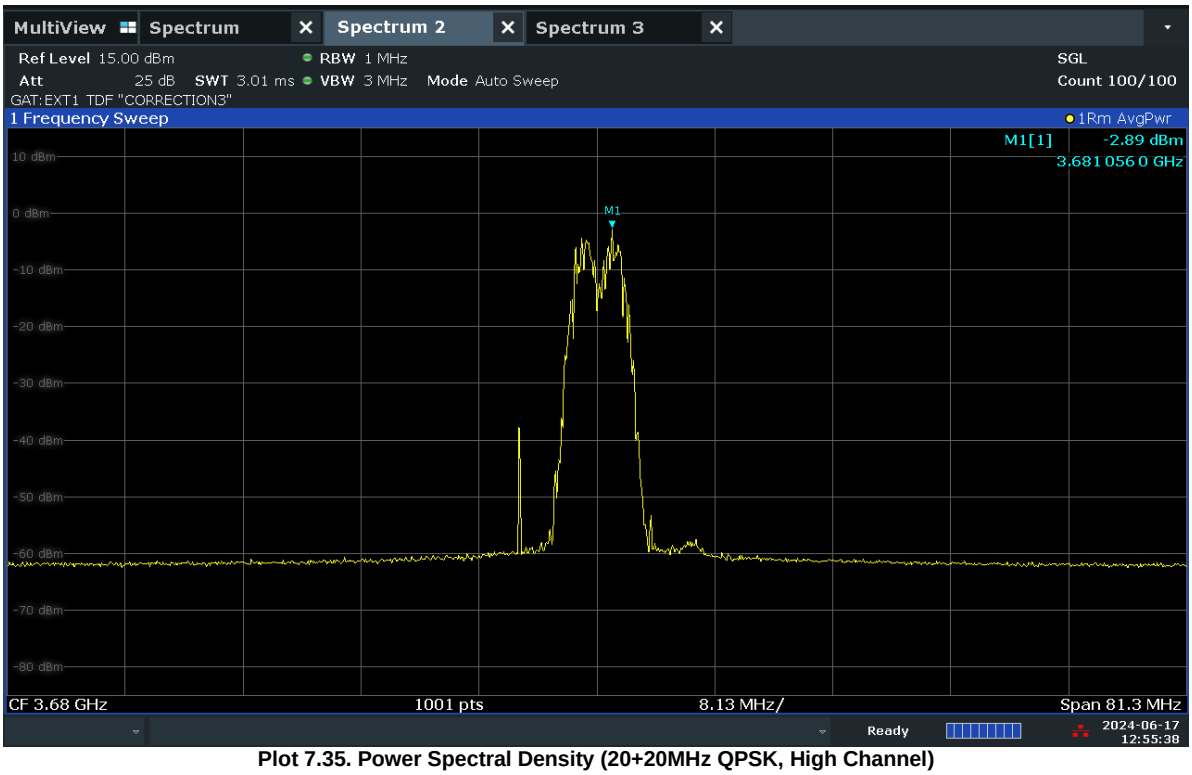
Plot 7.32. Power Spectral Density (15MHz 16QAM, Mid Channel)



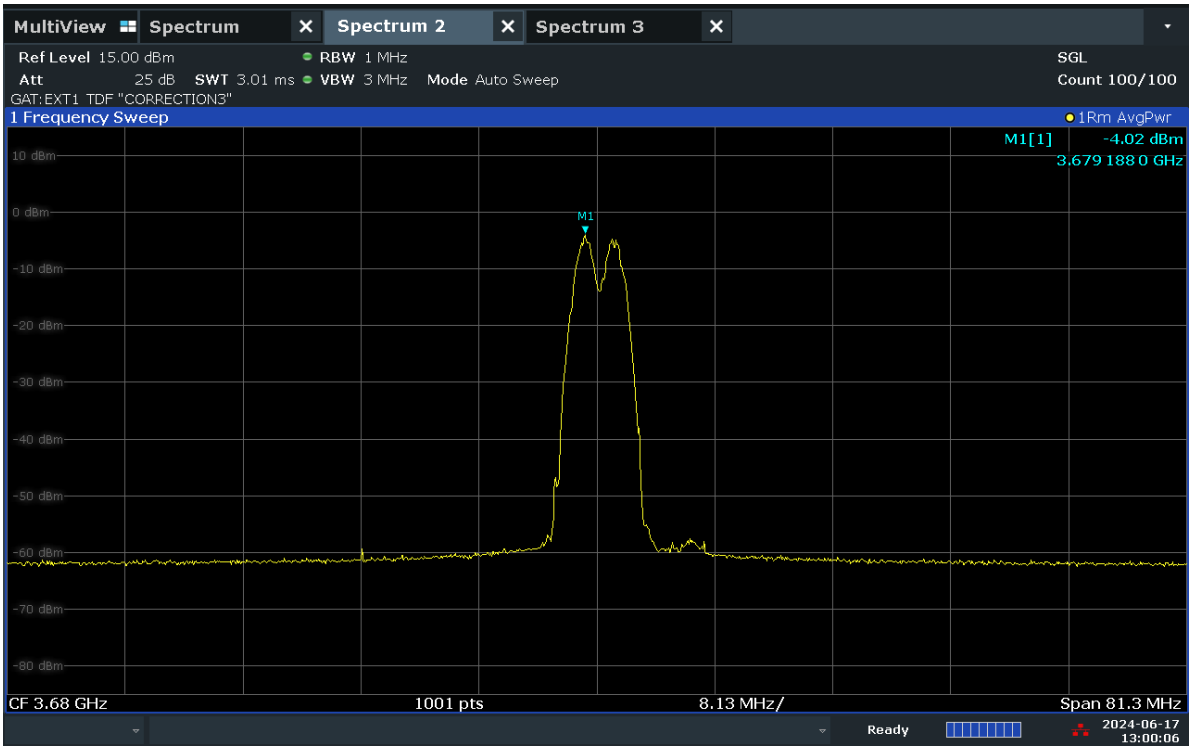
Plot 7.33. Power Spectral Density (20MHz QPSK, Mid Channel)



Plot 7.34. Power Spectral Density (20MHz 16QAM, Mid Channel)



Plot 7.35. Power Spectral Density (20+20MHz QPSK, High Channel)



Plot 7.36. Power Spectral Density (20+20MHz 16QAM, High Channel)

Sample e.i.r.p Power Spectral Density Calculation:

At 3635 MHz in QPSK, 20MHz BW mode, the average MIMO power density was calculated to be 18.44 dBm with a gain of 16 dBi.

e.i.r.p. Power Spectral Density(dBm) = Power Spectral Density (dBm) + Ant gain (dBi)

18.44 dBm + 16.00dBi = 34.44 dBm

7.6 Peak-Average Ratio

Test Overview

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

Test Procedure Used

ANSI C63.26-2015 – Section 5.2.3.4

Test Settings

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW ≥ OBW or specified reference bandwidth
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

Test Setup

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

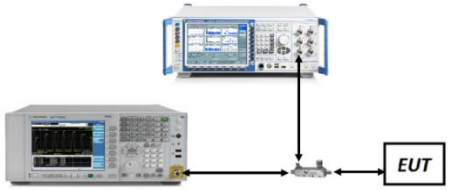


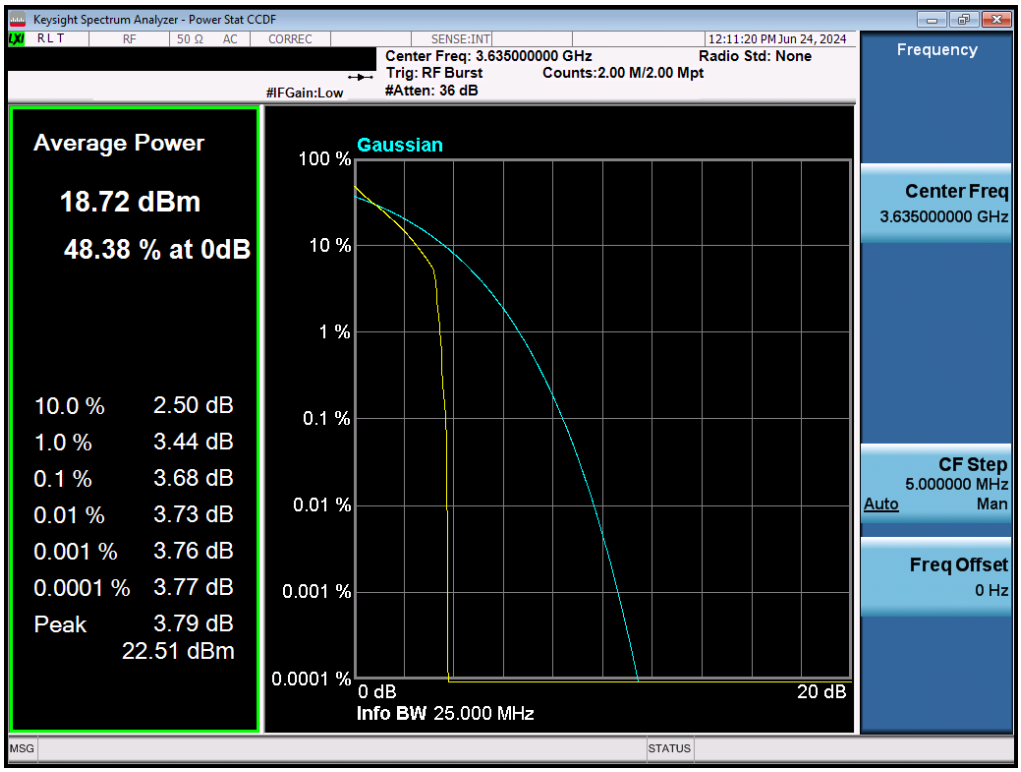
Figure 7-5. Test Instrument & Measurement Setup

Test Notes

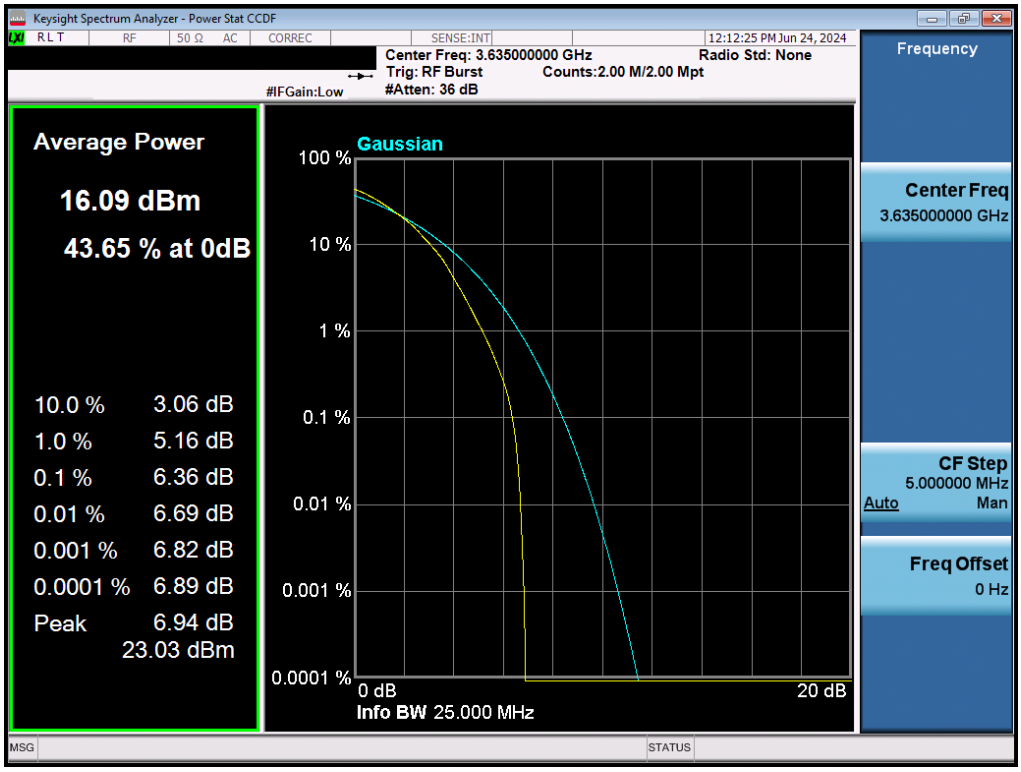
For the QAM modulations, only the PAR plot for the worst-case QAM is included in this section.

PAR					
Mode	**Bandwidth**	**Modulation**	**PAR at 0.1% [dB]**	**PAR Limit [dB]**	**Margin [dB]**
LTE Band 48	20 MHz	QPSK	3.68	13.0	-9.32
		256QAM	6.36	13.0	-6.64
	15 MHz	QPSK	4.91	13.0	-8.09
		256QAM	6.64	13.0	-6.36
	10 MHz	QPSK	4.93	13.0	-8.07
		256QAM	6.42	13.0	-6.58
	5 MHz	QPSK	4.80	13.0	-8.2
		256QAM	6.43	13.0	-6.57

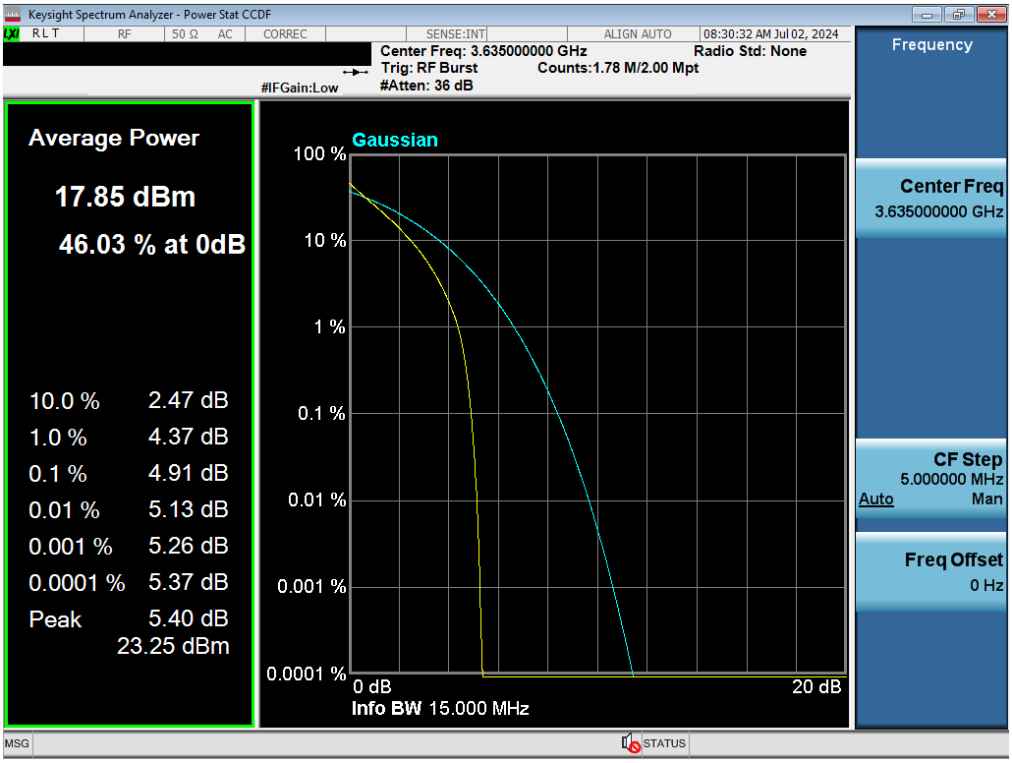
Table 7-15 Peak to Average Power Ratio Measurements



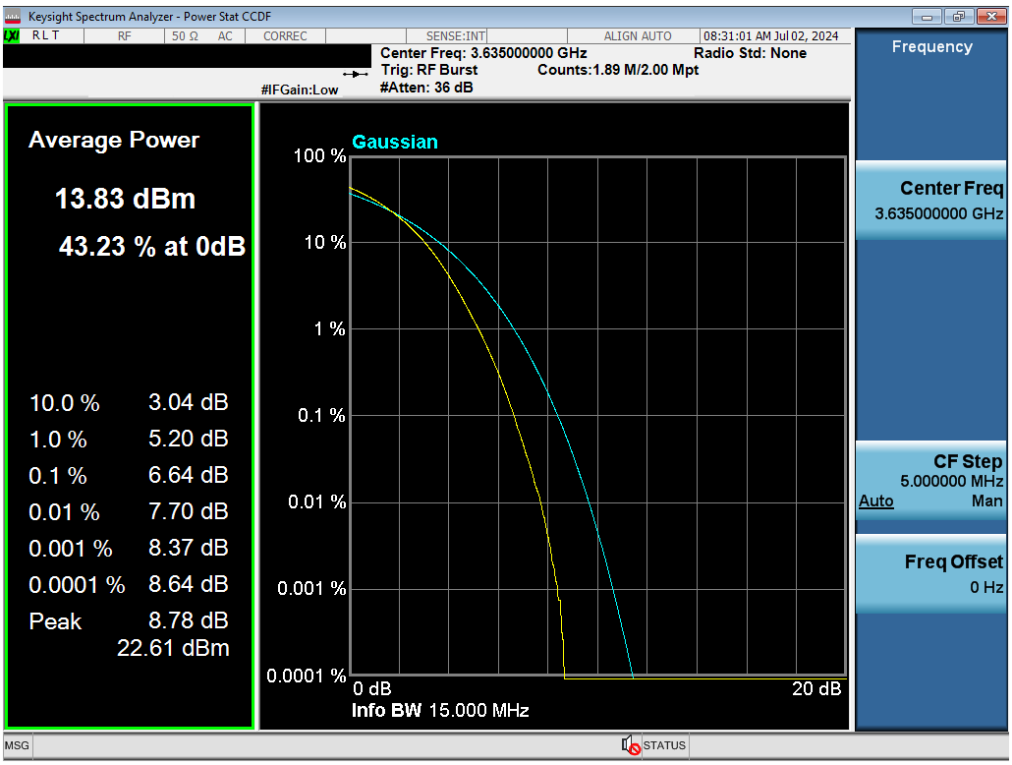
Plot 7.37. Peak to Average Power Ratio Plot (20MHz, QPSK – Mid Channel)



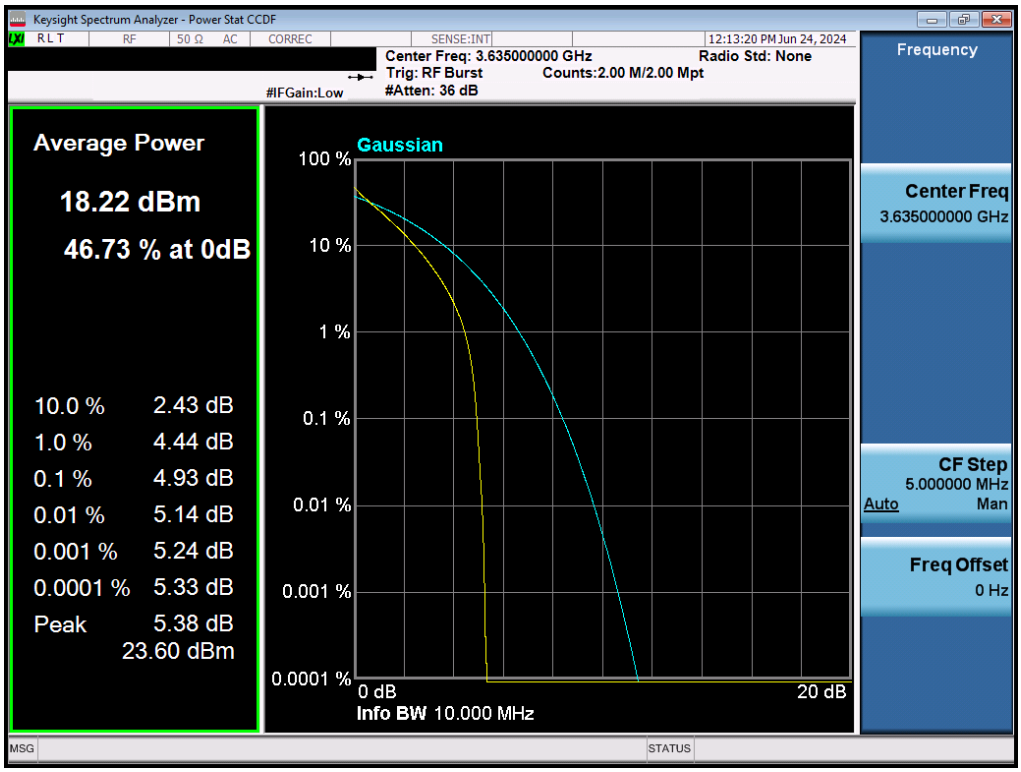
Plot 7.38. Peak to Average Power Ratio Plot (20MHz, 256QAM – Mid Channel)



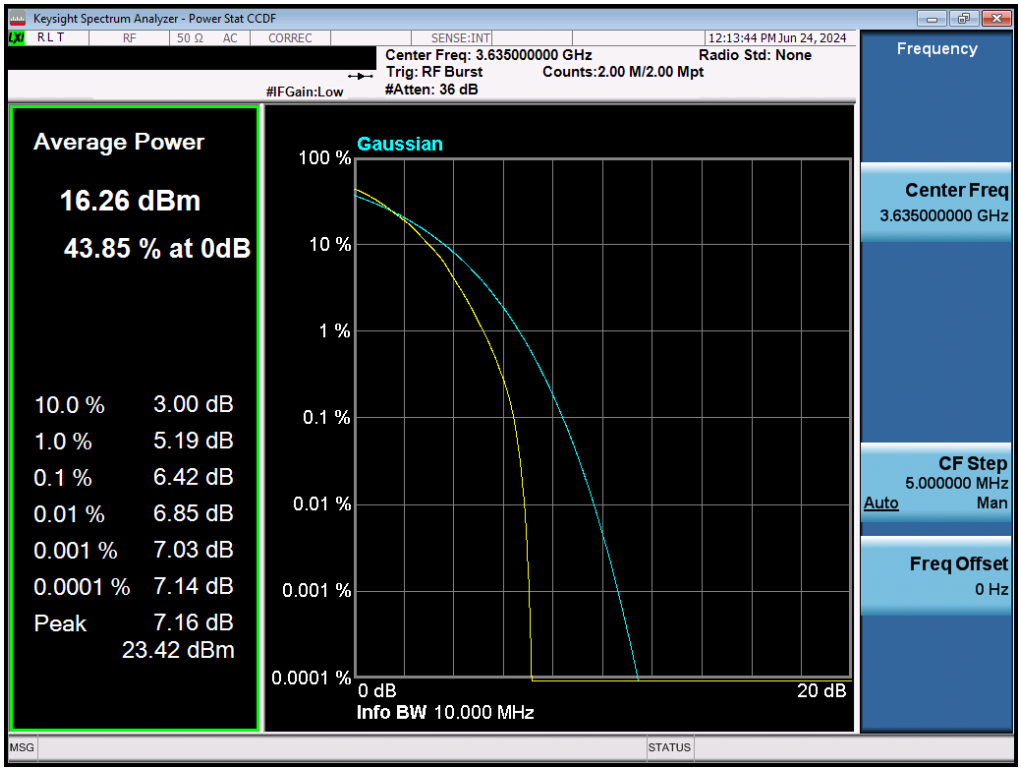
Plot 7.39. Peak to Average Power Ratio Plot (15MHz, QPSK – Mid Channel)



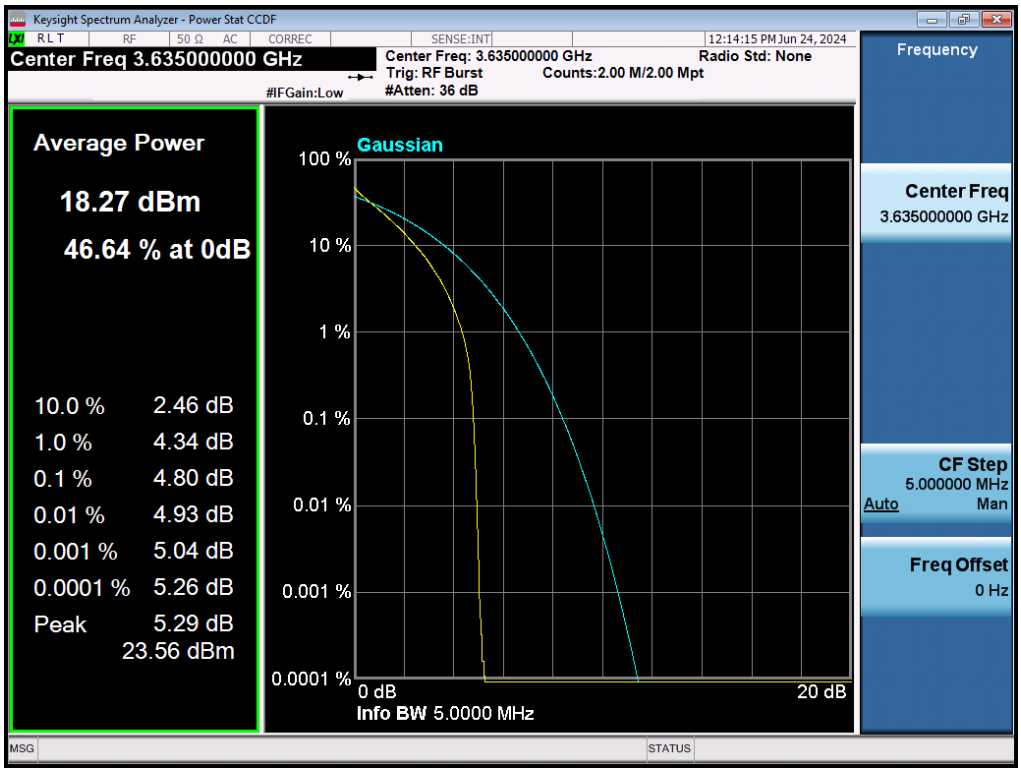
Plot 7.40. Peak to Average Power Ratio Plot (15MHz, 256QAM – Mid Channel)



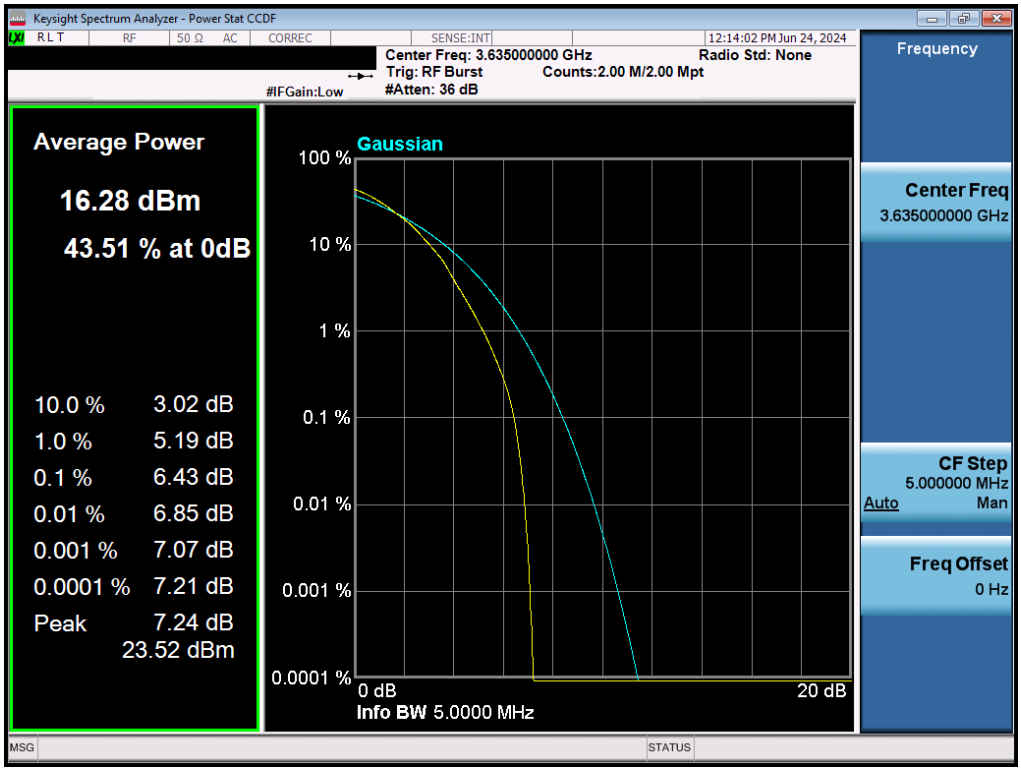
Plot 7.41. Peak to Average Power Ratio Plot (10MHz, QPSK – Mid Channel)



Plot 7.42. Peak to Average Power Ratio Plot (10MHz, 256QAM – Mid Channel)



Plot 7.43. Peak to Average Power Ratio Plot (5MHz, QPSK – Mid Channel)



Plot 7.44. Peak to Average Power Ratio Plot (5MHz, 256QAM – Mid Channel)

7.7 Band Edge Emissions at Antenna Terminal

Test Overview

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst-case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.

For an End User Device, the conducted power of any emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed −13 dBm/MHz within 0 to B MHz (where B is the bandwidth in MHz of the assigned channel or multiple contiguous channels of the End User Device) above the upper CBSD-assigned channel edge and within 0 to B MHz below the lower CBSD-assigned channel edge. At all frequencies greater than B MHz above the upper CBSD assigned channel edge and less than B MHz below the lower CBSD-assigned channel edge, the conducted power of any end user device emission shall not exceed −25 dBm/MHz. The conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.

Test Procedure Used

ANSI C63.26-2015 – Section 5.7.3

Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW ≥ 1% of the emission bandwidth
4. VBW ≥ 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 2 x Span/RBW
7. Trace mode = trace average
8. Sweep time = auto couple
9. The trace was allowed to stabilize
10. Trigger = External from callbox

Test Setup

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

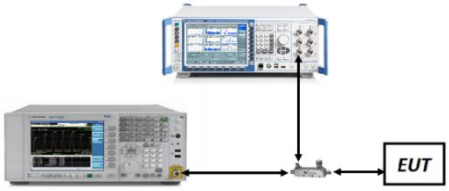
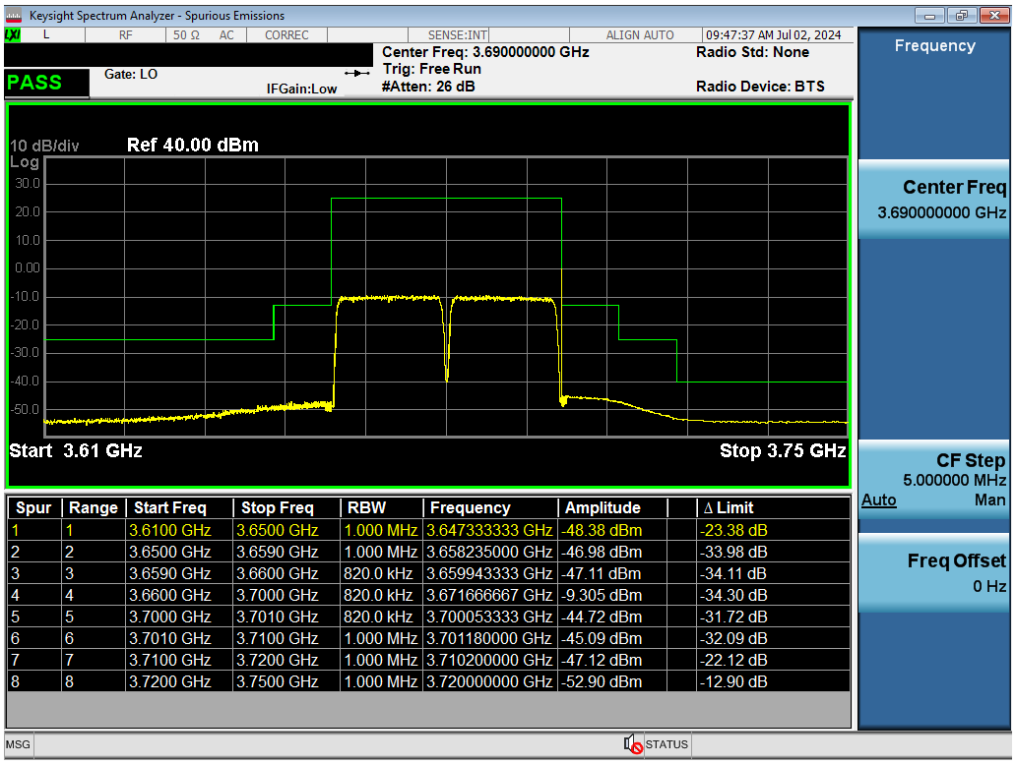


Figure 7-6. Test Instrument & Measurement Setup

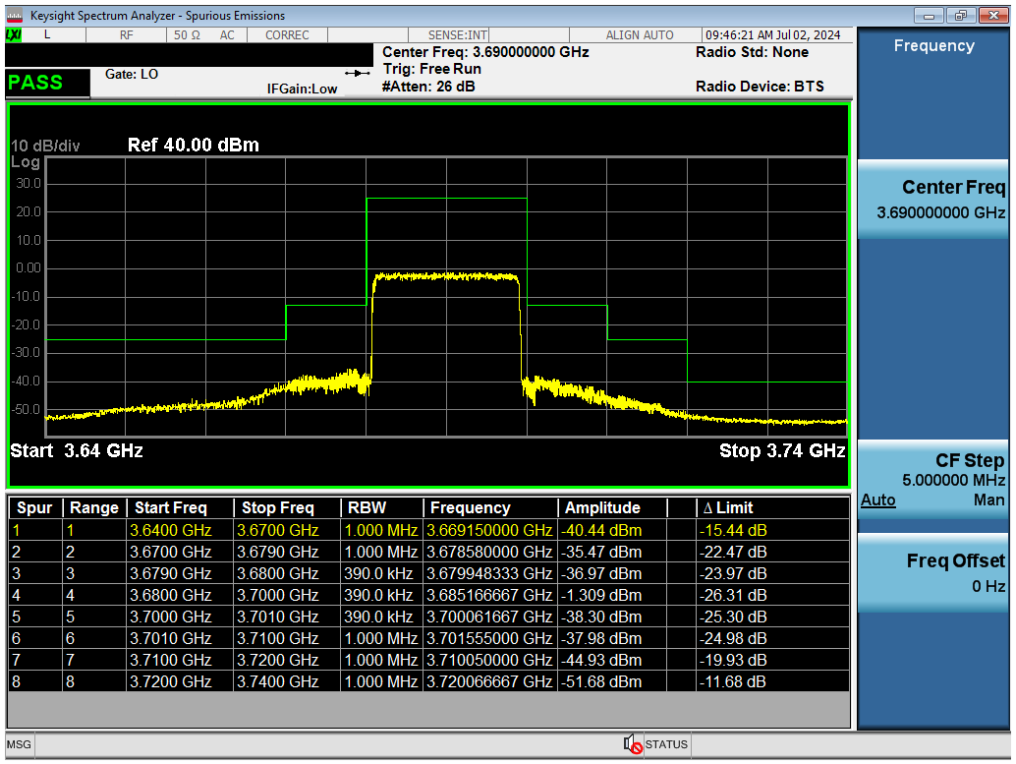
Test Notes

1. Per 96.41(e)(3)(i), compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's authorized frequency channel, a resolution bandwidth of no less than one percent of the fundamental emission bandwidth may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full reference bandwidth (i.e., 1 MHz or 1 percent of emission bandwidth, as specified). The fundamental emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.
2. This section only includes spot-check test data from this EUT to confirm that the conducted data from the original filing is still applicable for this module integration.



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.6100 GHz	3.6500 GHz	1.000 MHz	3.647333333 GHz	-48.38 dBm	-23.38 dB
2	2	3.6500 GHz	3.6590 GHz	1.000 MHz	3.658235000 GHz	-46.98 dBm	-33.98 dB
3	3	3.6590 GHz	3.6600 GHz	820.0 kHz	3.659943333 GHz	-47.11 dBm	-34.11 dB
4	4	3.6600 GHz	3.7000 GHz	820.0 kHz	3.671666667 GHz	-9.305 dBm	-34.30 dB
5	5	3.7000 GHz	3.7010 GHz	820.0 kHz	3.700053333 GHz	-44.72 dBm	-31.72 dB
6	6	3.7010 GHz	3.7100 GHz	1.000 MHz	3.701180000 GHz	-45.09 dBm	-32.09 dB
7	7	3.7100 GHz	3.7200 GHz	1.000 MHz	3.710200000 GHz	-47.12 dBm	-22.12 dB
8	8	3.7200 GHz	3.7500 GHz	1.000 MHz	3.720000000 GHz	-52.90 dBm	-12.90 dB

Plot 7.45. Conducted Band Edge Plot (20+20MHz, QPSK, High Channel)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.6400 GHz	3.6700 GHz	1.000 MHz	3.669150000 GHz	-40.44 dBm	-15.44 dB
2	2	3.6700 GHz	3.6790 GHz	1.000 MHz	3.678580000 GHz	-35.47 dBm	-22.47 dB
3	3	3.6790 GHz	3.6800 GHz	390.0 kHz	3.679948333 GHz	-36.97 dBm	-23.97 dB
4	4	3.6800 GHz	3.7000 GHz	390.0 kHz	3.685166667 GHz	-1.309 dBm	-26.31 dB
5	5	3.7000 GHz	3.7010 GHz	390.0 kHz	3.700061667 GHz	-38.30 dBm	-25.30 dB
6	6	3.7010 GHz	3.7100 GHz	1.000 MHz	3.701555000 GHz	-37.98 dBm	-24.98 dB
7	7	3.7100 GHz	3.7200 GHz	1.000 MHz	3.710050000 GHz	-44.93 dBm	-19.93 dB
8	8	3.7200 GHz	3.7400 GHz	1.000 MHz	3.720066667 GHz	-51.68 dBm	-11.68 dB

Plot 7.46. Conducted Band Edge Plot (20MHz, QPSK, High Channel)

7.8 Radiated Spurious Emissions Measurements

Test Overview

Radiated spurious emissions measurements are performed using the field strength conversion method described in ANSI C63.26-2015 with the EUT transmitting into a 50 ohm load. Measurements on signals operating below 1GHz are performed using hybrid (biconical/log) antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

ANSI C63.26-2015 – Section 5.5.4

Test Settings

1. RBW = 1MHz
2. VBW ≥ 3 x RBW
3. Span = 1.5 times the OBW
4. No. of sweep points ≥ 2 x span / RBW
5. Detector = RMS
6. Trace mode = Max Hold (In cases where the level is within 2dB of the limit, the final measurement is taken using triggering/gating and trace averaging.)
7. The trace was allowed to stabilize

Test Setup

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

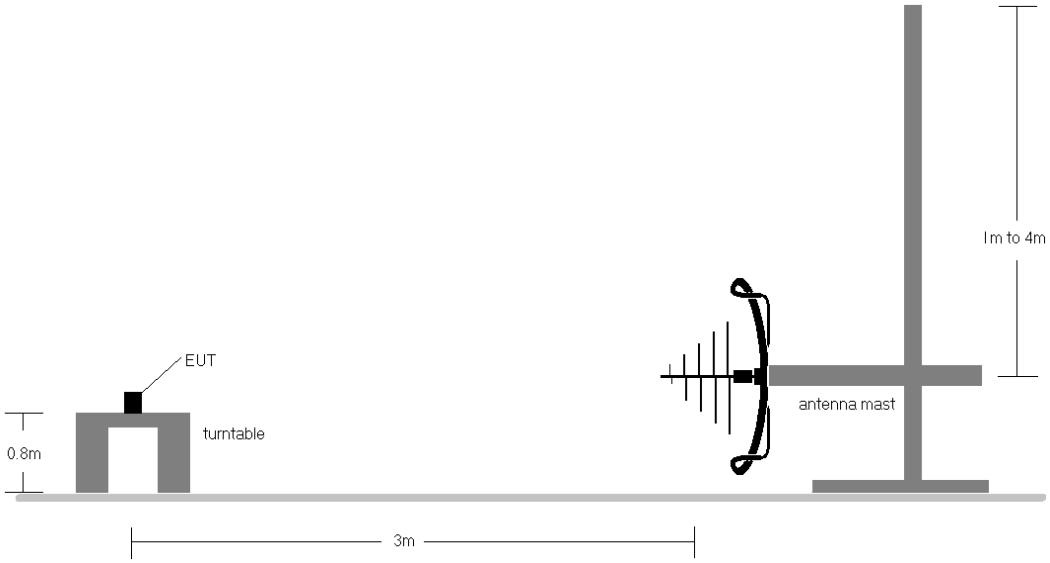


Figure 7-7. Test Instrument & Measurement Setup < 1GHz

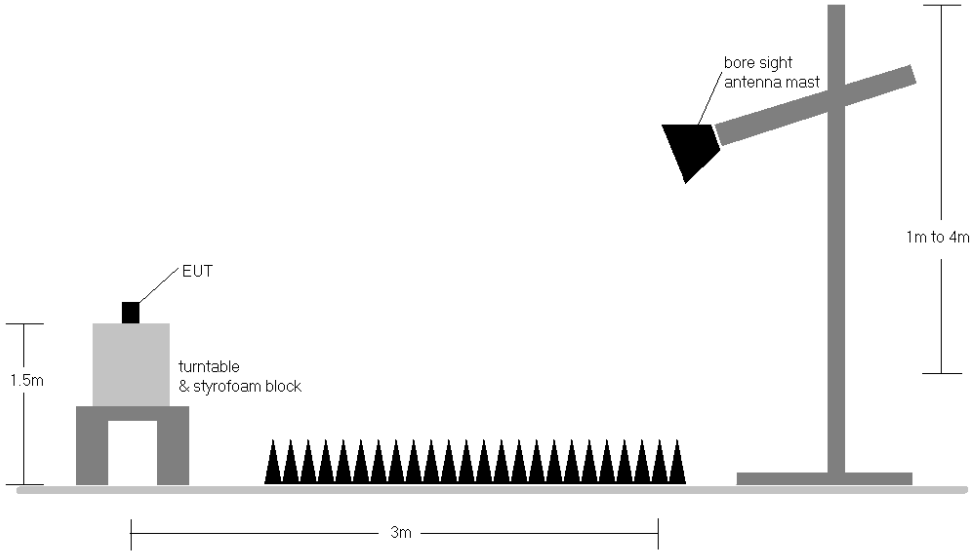


Figure 7-8. Test Instrument & Measurement Setup >1 GHz

Test Notes

1) Field strengths are calculated using the Measurement quantity conversions in ANSI C63.26-2015 Section 5.2.7:
   a) E(dBµV/m) = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m)
   b) EIRP (dBm) = E(dBµV/m) + 20logD – 104.8; where D is the measurement distance in meters.

2) The worst case emissions are reported with the EUT modulations and channel bandwidth configurations shown in the tables below.

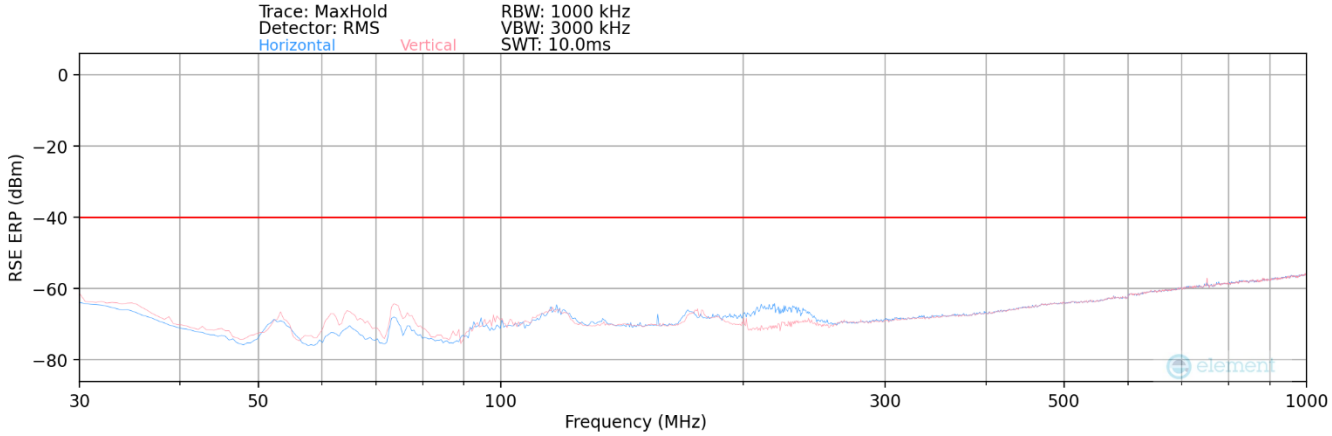
3) The spectrum is measured from 30MHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.

4) Emissions below 18GHz were measured at a 3-meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.

5) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

6) For simultaneous Tx measurements, both the CPE and WiFi radioes were transmitting simultaneously. Intermodulation emissions are evaluated to the higher limit. The WiFi transmitter was operating using 802.11b at 2412MHz. The CPE was transmitting LTE 20MHz, 1RB, at 3635MHz.

LTE B48 Spurious Measurements

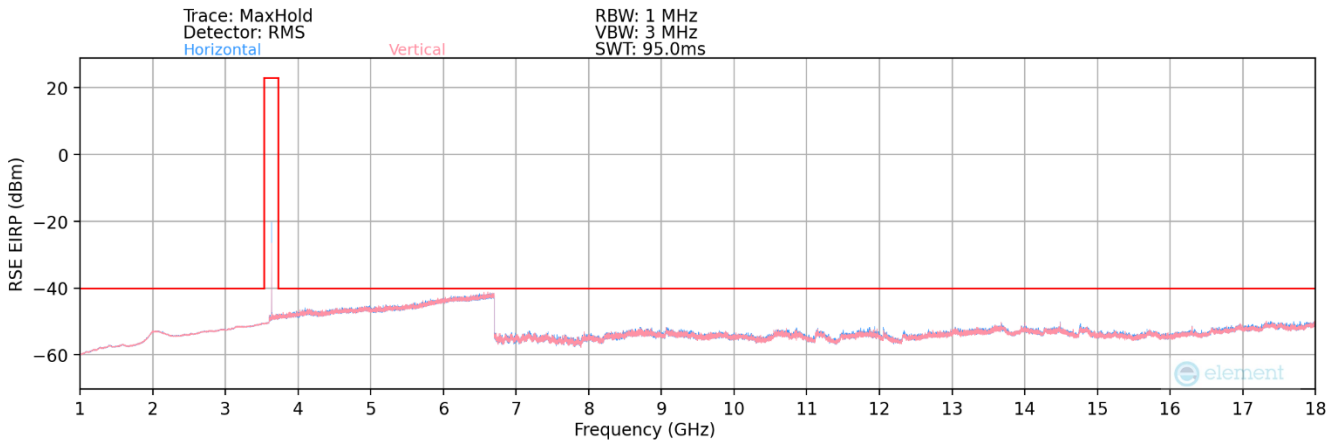


Plot 7.47. Radiated Spurious Plot 30MHz-1GHz

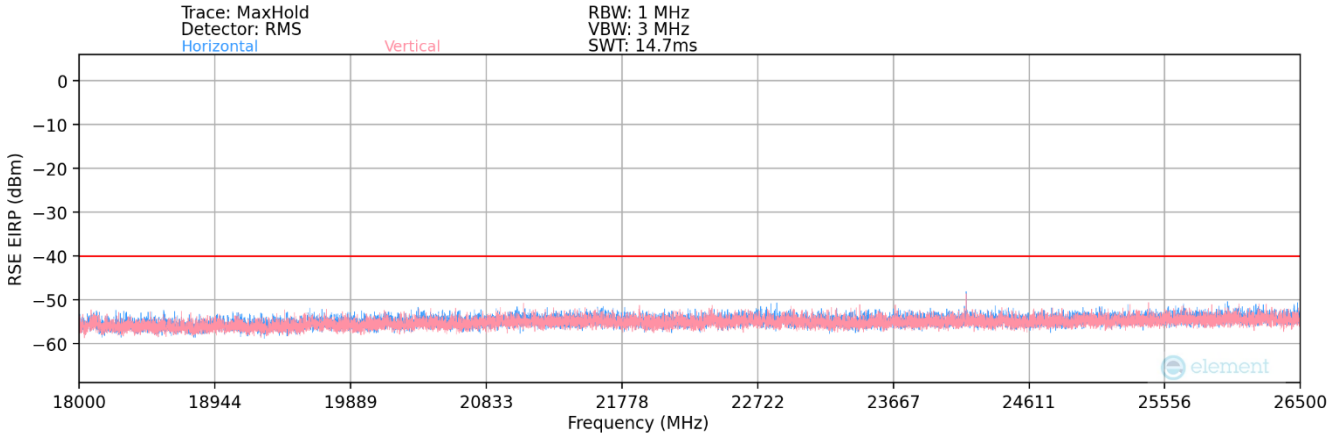
Bandwidth (MHz):	20.0
Frequency (MHz):	3635.0
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 50
Detector / Trace Mode:	RMS / Max Hold
RBW / VBW:	100kHz / 300kHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
53.00	V	171	121	-76.07	14.28	45.21	-52.20	-40.00	-12.20
66.80	V	188	133	-73.22	14.65	48.43	-48.98	-40.00	-8.98
110.00	V	174	101	-76.98	19.45	49.47	-47.94	-40.00	-7.94
177.00	V	190	121	-75.58	18.79	50.21	-47.20	-40.00	-7.20

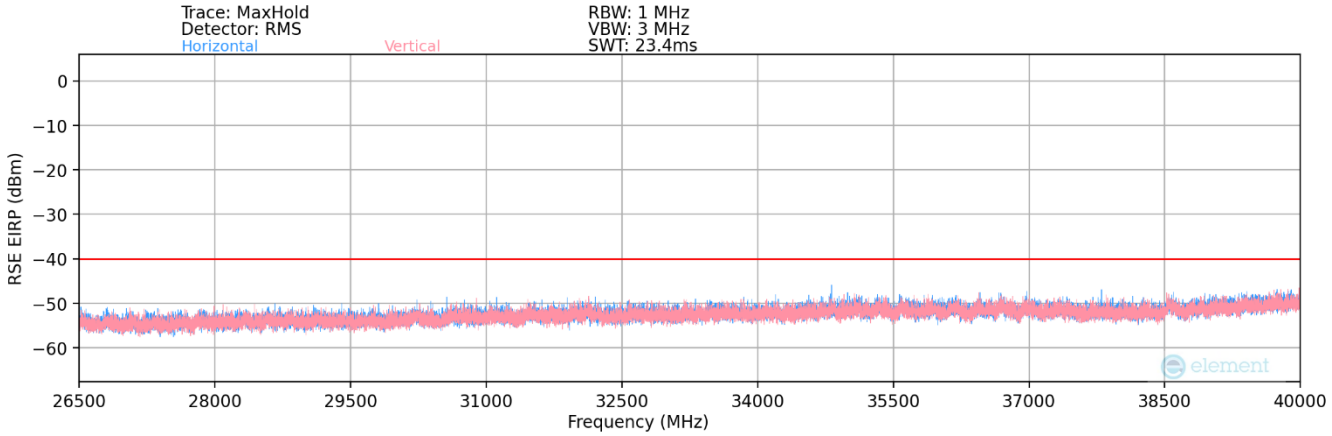
Table 7-16. Radiated Spurious Data 30MHz-1GHz - Mid Channel



Plot 7.48. Radiated Spurious Plot 1-18GHz – Mid Channel



Plot 7.49. Radiated Spurious Plot 18-26.5GHz



Plot 7.50. Radiated Spurious Plot 26.5-40GHz

Bandwidth (MHz):	20
Frequency (MHz):	3560.0
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 50
Detector / Trace Mode:	RMS / Max Hold
RBW / VBW:	1MHz / 3MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
7120.00	H	-	-	-66.53	9.64	50.11	-45.15	-40.00	-5.15
10680.00	H	-	-	-69.50	13.17	50.67	-44.59	-40.00	-4.59
14240.00	H	-	-	-70.51	15.57	52.06	-43.20	-40.00	-3.20

Table 7-17. Radiated Spurious Data – Low Channel

Bandwidth (MHz):	20
Frequency (MHz):	3635.0
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 50
Detector / Trace Mode:	RMS / Max Hold
RBW / VBW:	1MHz / 3MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
7270.00	H	-	-	-67.21	9.58	49.37	-45.88	-40.00	-5.88
10905.00	H	-	-	-68.53	12.84	51.31	-43.95	-40.00	-3.95
14540.00	H	-	-	-70.83	15.45	51.62	-43.64	-40.00	-3.64

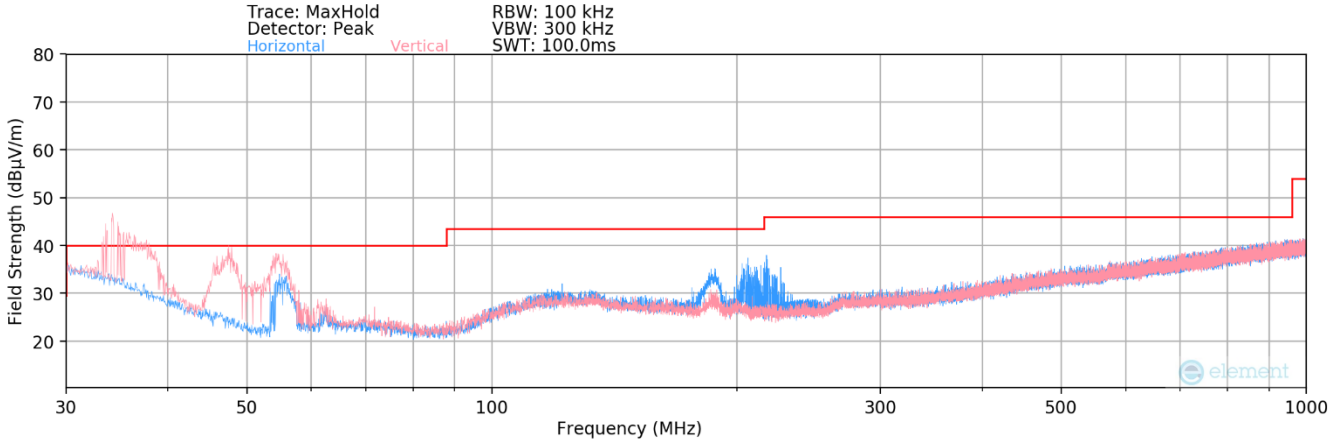
Table 7-18. Radiated Spurious Data – Mid Channel

Bandwidth (MHz):	20
Frequency (MHz):	3690.0
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 50
Detector / Trace Mode:	RMS / Max Hold
RBW / VBW:	1MHz / 3MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
7380.00	H	-	-	-66.84	10.03	50.19	-45.07	-40.00	-5.07
11070.00	H	-	-	-68.69	12.72	51.03	-44.23	-40.00	-4.23
14760.00	H	-	-	-72.70	15.33	49.63	-45.63	-40.00	-5.63

Table 7-19. Radiated Spurious Data – High Channel

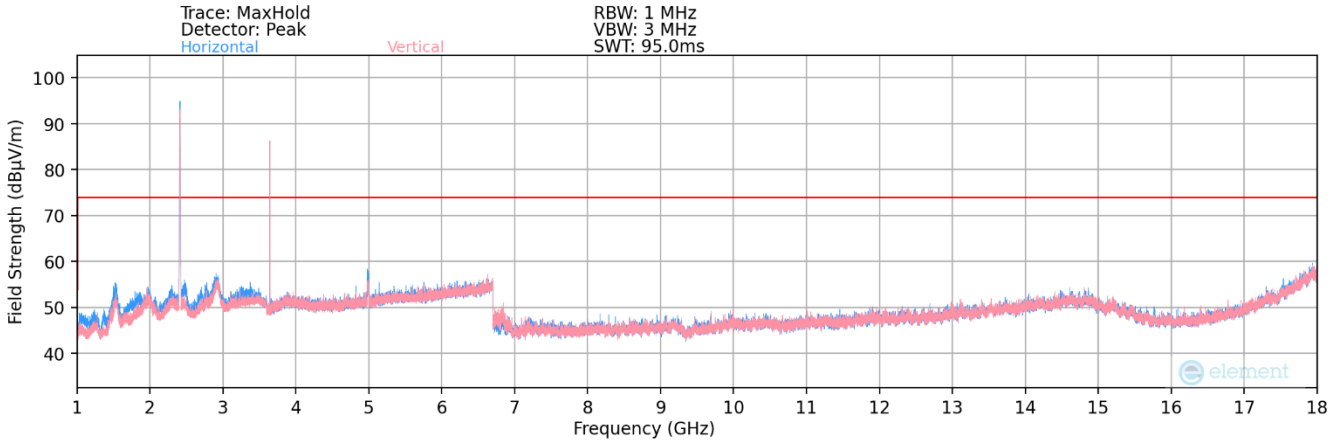
LTE B48 / 802.11b Simultaneous Tx Spurious Measurements



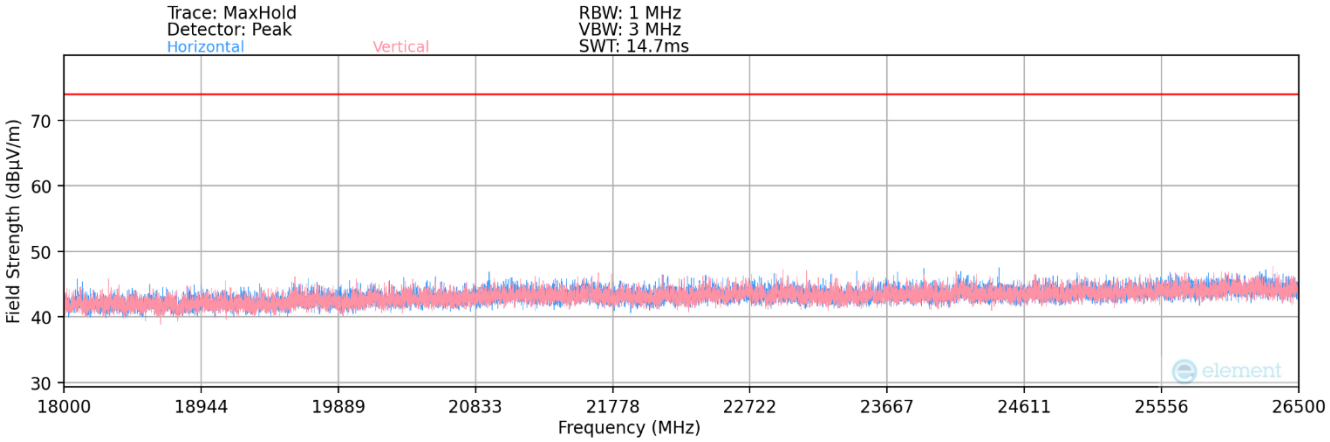
Plot 7.51. Radiated Spurious Plot 30MHz-1GHz

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
37.00	Quasi-Peak	V	122	217	-91.61	22.37	37.76	40.00	-2.24
46.00	Quasi-Peak	V	123	276	-88.01	16.25	35.24	40.00	-4.76
56.00	Quasi-Peak	V	207	327	-85.46	13.90	35.44	40.00	-4.56
185.00	Quasi-Peak	H	173	252	-92.05	18.19	33.14	43.52	-10.38
218.00	Quasi-Peak	H	148	105	-85.13	17.70	39.57	46.02	-6.45

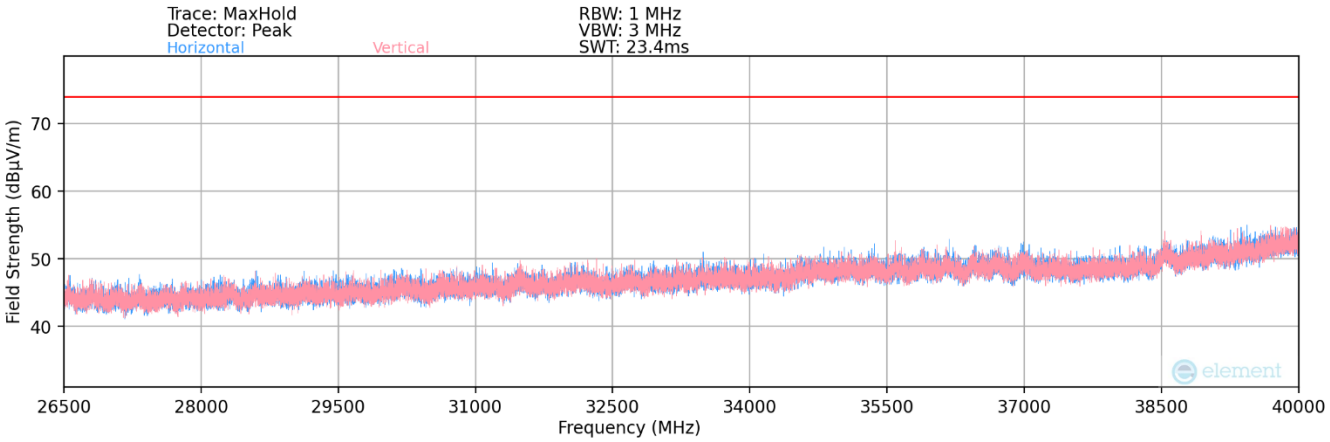
Table 7-20. Radiated Spurious Data 30MHz-1GHz



Plot 7.52. Radiated Spurious Plot 1-18GHz



Plot 7.53. Radiated Spurious Plot 18-26.5GHz



Plot 7.54. Radiated Spurious Plot 26.5-40GHz

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
1515.00	Average	H	263	215	-60.25	-1.78	44.97	53.98	-9.01
1515.00	Peak	H	263	215	-47.14	-1.78	58.08	73.98	-15.90
2915.00	Peak	H	148	220	-52.12	3.32	58.20	73.98	-15.78
4990.00	Average	H	218	300	-68.43	7.73	46.30	53.98	-7.68
4990.00	Peak	H	218	300	-55.48	7.73	59.25	73.98	-14.73
4824.00	Average	H	150	0	-70.14	7.26	44.12	53.98	-9.86
4824.00	Peak	H	150	0	-60.82	7.26	53.44	73.98	-20.54

Table 7-21. Radiated Spurious Data

7.9 Frequency Stability / Temperature Variation

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015. The frequency stability of the transmitter is measured by:

a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.

b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 96, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Procedure Used

ANSI C63.26-2015 – Section 5.6

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Test Setup

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

Test Notes

None

LTE Band 48

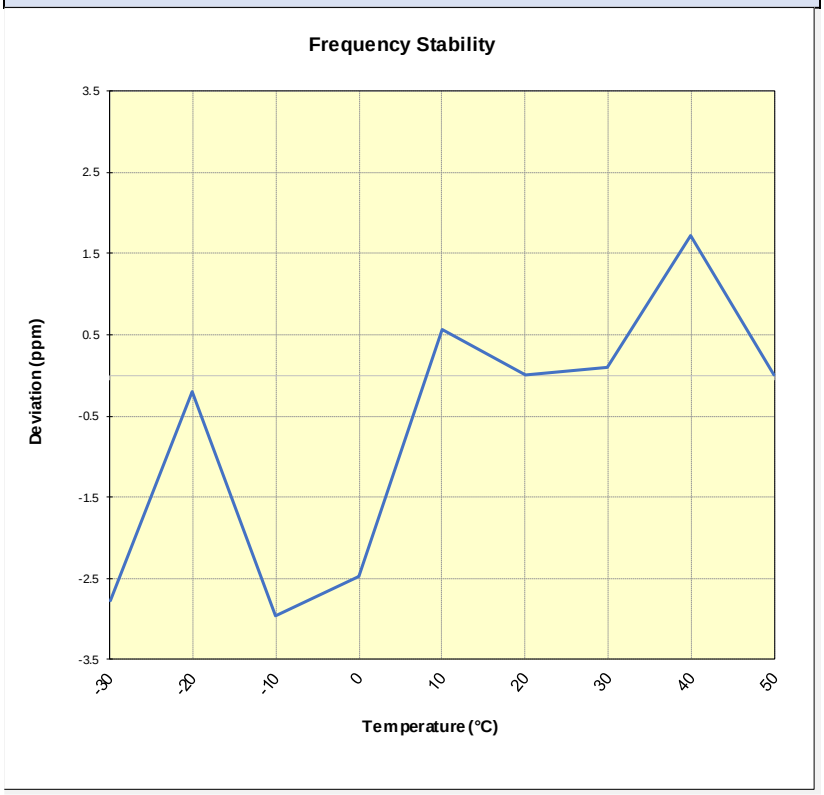
Operating Frequency (Hz):	3,635,000,000
Ref. Voltage (VDC):	0.00

Voltage (%)	Power (VAC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	120.00	- 30	3,635,095,700	-10,079	-0.0002773
		- 20	3,635,105,063	-716	-0.0000197
		- 10	3,635,095,013	-10,766	-0.0002962
		0	3,635,096,753	-9,026	-0.0002483
		+ 10	3,635,107,816	2,037	0.0000560
		+ 20 (Ref)	3,635,105,779	0	0.0000000
		+ 30	3,635,106,150	371	0.0000102
		+ 40	3,635,112,037	6,258	0.0001722
		+ 50	-	-	-
85 %	102.00	+ 20	3,635,109,774	3,995	0.0001099
115 %	138.00	+ 20	3,635,099,151	-6,628	-0.0001823

Table 7-22. Frequency Stability Data

Note: Cells with "-" indicate conditions where the EUT ceased operation.

LTE Band 48



Plot 7.55. Frequency Stability Chart

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **GENXCOMM Inc CBRS CPE FCC ID: 2AZH6GXCMEN002** complies with all of the End User Device requirements of Part 96 of the FCC Rules for Band operation only.