

Part 96 MEASUREMENT REPORT

Applicant Name:
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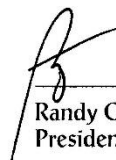
Date of Testing:
09/26 – 01/27/2022
Test Report Issue Date:
01/28/2022
Test Site/Location:
PCTEST Lab. Columbia, MD, USA
Test Report Serial No.:
1M2106010060-02.2AL52

FCC ID:	2AL52CR00LB18
APPLICANT:	Council Rock Enterprises LLC

Application Type: Certification
Model: CR00LB18
EUT Type: Cellular Module
FCC Classification: Citizens Band Category A and B Devices (CBD)
FCC Rule Part(s): 96
Test Procedure(s): ANSI C63.26-2015, KDB 971168 D01 v03r01, KDB 940660 D01 v02, WINNF-TS-0122 v1.0.2

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

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


Randy Ortanez
President






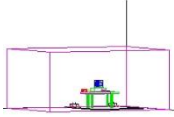
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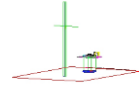
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FCC Part 96



20dBm Power Setting					
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP	
				Max. Power [W]	Max. Power [dBm]
LTE Band 48	20 MHz	QPSK	3560.0 - 3690.0	3.597	35.56
		16QAM	3560.0 - 3690.0	2.917	34.65
		64QAM	3560.0 - 3690.0	2.455	33.90
	15 MHz	QPSK	3557.5 - 3692.5	3.767	35.76
		16QAM	3557.5 - 3692.5	2.985	34.75
		64QAM	3557.5 - 3692.5	2.399	33.80
	10 MHz	QPSK	3555.0 - 3695.0	3.681	35.66
		16QAM	3555.0 - 3695.0	3.141	34.97
		64QAM	3555.0 - 3695.0	2.355	33.72
	5 MHz	QPSK	3552.5 - 3697.5	3.475	35.41
		16QAM	3552.5 - 3697.5	2.972	34.73
		64QAM	3552.5 - 3697.5	2.228	33.48

14dBm Power Setting					
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP	
				Max. Power [W]	Max. Power [dBm]
LTE Band 48	20 MHz	QPSK	3560.0 - 3690.0	2.904	34.63
		16QAM	3560.0 - 3690.0	3.155	34.99
		64QAM	3560.0 - 3690.0	2.972	34.73
	15 MHz	QPSK	3557.5 - 3692.5	2.825	34.51
		16QAM	3557.5 - 3692.5	3.097	34.91
		64QAM	3557.5 - 3692.5	2.924	34.66
	10 MHz	QPSK	3555.0 - 3695.0	2.805	34.48
		16QAM	3555.0 - 3695.0	3.034	34.82
		64QAM	3555.0 - 3695.0	2.924	34.66
	5 MHz	QPSK	3552.5 - 3697.5	2.742	34.38
		16QAM	3552.5 - 3697.5	2.985	34.75
		64QAM	3552.5 - 3697.5	2.844	34.54

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

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1.0 INTRODUCTION

1.1 Scope

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


1.2 PCTEST Test Location

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

1.3 Test Facility / Accreditations

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

- PCTEST is a OnGo Alliance Approved Test Lab (ATL)
- PCTEST is a WinnForum Approved Test Lab
- PCTEST is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for CBRS Alliance Certification Test Plan and WinnForum Conformance and Performance Test Technical Standard.
- PCTEST 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.
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).
- PCTEST facility is a registered (2451B) test laboratory with the site description on file with ISED.

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Council Rock Enterprises Module FCC ID: 2AL52CR00LB18**. This module was originally certified as a Citizens Band End User Device (EUD) under FCC ID: RI7LM960. The same module is being re-certified under the new FCC ID: 2AL52CR00LB18 using two different power settings (20dBm and 14dBm) with different high gain antennas where the EIRP's are still in compliance with the requirements of Part 96 to categorize the module as a CBD. There are no changes made to the RF conducted data of the original module in the high power mode (~20dBm) so the conducted data of the original filing for the RI7LM960 module applies to this application. Additional limited/spot-check data is included at the lower power setting of this module (~14dBm) to show compliance.

The test data contained in this report pertains only to the emissions due to the EUT's LTE Band 48 operation in the CBRS band. Per FCC Part 96, this device is evaluated as a Citizens Band Category B Device (CBD).

Test Device Serial No.: 811924

2.2 Device Capabilities

This device contains the following capabilities:

UMTS/HSPA B2/B4/B5, LTE B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B30/B41/B48/B66/B71

2.3 Test Configuration

The EUT was tested per the guidance of ANSI C63.26-2015, KDB 971168 D01, and KDB 940660 D01. See Section 7.0 of this test report for a description of the radiated and antenna port conducted emissions tests.

Conducted data from the FCC ID: RI7LM960 applies to this filing since this filing is for the exact same module. Specifically, the Occupied Bandwidth, Peak to Average Power Ratio, Out of Band Emissions, Conducted Spurious Emissions, and Frequency Stability data from the original filing directly applies in support of this filing.


The reason for this filing is to certify this module as a CBD. As such, the following test cases are re-tested in support of this filing: Conducted Output Power, EIRP, Maximum Power Spectral Density, and Radiated Spurious Emissions.

2.4 Software and Firmware

The test was conducted with firmware version 32.00.144 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.

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3.0 DESCRIPTION OF TESTS

3.1 Measurement Procedure

The measurement procedures described in the document titled “American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services” (ANSI C63.26-2015), “Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission Systems” (KDB 971168 D01 v03r01), and “Certification and Test Procedures For Citizens Broadband Radio Service Devices Authorized Under Part 96” (KDB 940660 D01 v03) were used in the measurement of the EUT.

3.2 Radiated Power and Radiated Spurious Emissions

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

The equipment under test was transmitting while connected to a base station simulator and is placed on a turntable 3 meters from the receive antenna. The receive antenna height is adjusted between 1 and 4 meter height, the turntable is rotated through 360 degrees, and the EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer. Radiated power (EIRP) levels are determined by adding the maximum antenna gain to the measured conducted powers. The maximized power level is recorded using the spectrum analyzer “Channel Power” function with the integration band set to the emissions’ occupied bandwidth, a RMS detector, RBW = 100kHz, VBW = 300kHz, and a 1 second sweep time over a minimum of 10 sweeps, per the guidelines of KDB 971168 D01 v03r01.



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

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

And

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



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

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4.0 MEASUREMENT UNCERTAINTY

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

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

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5.0 TEST EQUIPMENT CALIBRATION DATA

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

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	ETS	EMC Cable and Switch System	3/4/2021	Annual	3/4/2022	ETS
-	LTX1	Licensed Transmitter Cable Set	3/12/2021	Annual	3/12/2022	LTX1
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	3/12/2020	Biennial	3/12/2022	128337
Anritsu	MT8821C	Radio Communication Analyzer	N/A			6201525694
Agilent	N9030A	50GHz PXA Signal Analyzer	2/20/2021	Annual	2/20/2022	US51350301
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			112347
Keysight Technologies	N9030A	PXA Signal Analyzer (3Hg-26.5GHz)	9/3/2021	Annual	9/3/2022	MY55330128
ETS-Lindgren	3116C	DRG Horn Antenna	5/11/2021	Biennial	5/11/2023	218893

Notes:

1. For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.
2. Equipment with a calibration date of "N/A" shown in this list was not used to make direct calibrated measurements.

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6.0 SAMPLE CALCULATIONS

Emission Designator

QPSK Modulation

Emission Designator = 8M62G7D

LTE BW = 8.62 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

QAM Modulation

Emission Designator = 8M45W7D

LTE BW = 8.45 MHz

W = Amplitude/Angle Modulated



7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

Spurious Radiated Emission – LTE Band

Example: Middle Channel LTE Mode 2nd Harmonic (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 analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 1564 MHz. So 6.1 dB is added to the signal generator reading of -30.9 dBm yielding -24.80 dBm. The fundamental EIRP was 25.501 dBm so this harmonic was 25.501 dBm $- (-24.80)$.

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7.0 TEST RESULTS

7.1 Summary


Company Name: Council Rock Enterprises LLC
 FCC ID: 2AL52CR00LB18
 FCC Classification: Citizens Band Category A and B Devices (CBD)
 Mode(s): LTE

Test Condition	Test Description	FCC Part Section(s)	Test Limit	Test Result	Reference
CONDUCTED	Conducted Power / Equivalent Isotropic Radiated Power (EIRP)	2.1046, 96.41(b)	47 dBm/10MHz (Cat. B CBSD Maximum EIRP)	PASS	Section 7.2
	Maximum Power Spectral Density	96.41(b)	37 dBm/MHz (Cat. B)	PASS	Section 7.3
	Occupied Bandwidth	2.1049	N/A	PASS	Original Filing
	Conducted Band Edge / Spurious Emissions	2.1051, 96.41(e)(1)(i)	-13 dBm/MHz at frequencies within 0-10 MHz of channel edge -25 dBm/MHz at frequencies greater than 10 MHz above and below channel edge -40 dBm/MHz at frequencies below 3530 MHz and above 3720 MHz	PASS	Original Filing
	Peak to Average Power Ratio	96.41(g)	13 dB	PASS	Original Filing
	Frequency Stability	2.1055	Fundamental emissions stay within authorized frequency block	PASS	Original Filing
Radiated	Radiated Spurious Emissions	2.1053, 96.41(e)	-40 dBm/MHz	PASS	Section 7.4

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) 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.

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7.2 Conducted Power / Equivalent Isotropic Radiated Power (EIRP) §2.1046, §96.41(b)

Test Overview

The EUT is set up to transmit at maximum power for LTE. 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 modes of operation were investigated and the worst case configuration results are reported in this section.

This device is intended to operate at higher power (~20dBm) and at a lower power (~14dBm) setting. The higher power setting will use a max antenna gain of 15dBi while the lower power setting will use a max antenna gain of 21dBi. These values are used in this section to demonstrate EIRP compliance for Category B CBSD's.

Test Procedure Used

ANSI C63.26-2015 – Section 5.2.4.4

Test Settings

1. Span = 2 x OBW to 3 x OBW
2. RBW = 1% to 5% of the OBW
3. VBW \geq 3 x RBW
4. Number of measurement points in sweep \geq 2 x span / RBW
5. Sweep = auto-couple (less than transmission burst duration)
6. Detector = RMS (power)
7. Trigger was set to enable power measurements only on full power bursts
8. Trace was allowed to stabilize over 100 sweeps
9. Spectrum analyzer's "Channel Power" function was used to compute the power by integrating the spectrum across the OBW of the signal

Test Setup

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

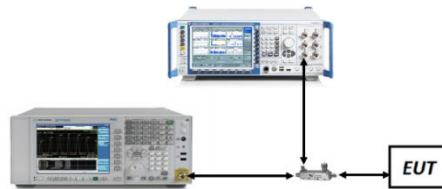



Figure 7-1. Test Instrument & Measurement Setup

Test Note

All measurements are made over the entire channel bandwidth. These measurements are compared to the EIRP dBm/10MHz limit in 96.41(b).


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Bandwidth	Modulation	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Ant Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm/10MHz]	Margin [dB]
20 MHz	QPSK	3560.0	1 / 0	20.56	15.00	35.56	3.597	47.00	-11.44
		3625.0	1 / 0	20.55	15.00	35.55	3.589	47.00	-11.45
		3690.0	1 / 0	20.54	15.00	35.54	3.581	47.00	-11.46
	16-QAM	3560.0	1 / 0	19.65	15.00	34.65	2.917	47.00	-12.35
	64-QAM	3560.0	1 / 0	18.90	15.00	33.9	2.455	47.00	-13.10
15 MHz	QPSK	3557.5	1 / 0	20.76	15.00	35.76	3.767	47.00	-11.24
		3625.0	1 / 0	20.45	15.00	35.45	3.508	47.00	-11.55
		3692.5	1 / 0	20.46	15.00	35.46	3.516	47.00	-11.54
	16-QAM	3557.5	1 / 37	19.75	15.00	34.75	2.985	47.00	-12.25
	64-QAM	3557.5	1 / 0	18.80	15.00	33.8	2.399	47.00	-13.20
10 MHz	QPSK	3555.0	1 / 0	20.66	15.00	35.66	3.681	47.00	-11.34
		3625.0	1 / 0	20.35	15.00	35.35	3.428	47.00	-11.65
		3695.0	1 / 0	20.18	15.00	35.18	3.296	47.00	-11.82
	16-QAM	3555.0	1 / 0	19.97	15.00	34.97	3.141	47.00	-12.03
	64-QAM	3555.0	1 / 0	18.72	15.00	33.72	2.355	47.00	-13.28
5 MHz	QPSK	3552.5	1 / 0	20.41	15.00	35.41	3.475	47.00	-11.59
		3625.0	1 / 0	20.08	15.00	35.08	3.221	47.00	-11.92
		3697.5	1 / 12	20.11	15.00	35.11	3.243	47.00	-11.89
	16-QAM	3552.5	1 / 0	19.73	15.00	34.73	2.972	47.00	-12.27
	64-QAM	3552.5	1 / 0	18.48	15.00	33.48	2.228	47.00	-13.52

Table 7-2. EIRP Data from 20dBm Power Setting (LTE Band 48)

Bandwidth	Modulation	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Ant Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm/10MHz]	Margin [dB]
20 MHz	QPSK	3560.0	1 / 0	13.63	21.00	34.63	2.904	47.00	-12.37
		3625.0	1 / 0	13.32	21.00	34.32	2.704	47.00	-12.68
		3690.0	1 / 0	13.38	21.00	34.38	2.742	47.00	-12.62
	16-QAM	3560.0	1 / 0	13.99	21.00	34.99	3.155	47.00	-12.01
	64-QAM	3560.0	1 / 0	13.73	21.00	34.73	2.972	47.00	-12.27
15 MHz	QPSK	3557.5	1 / 0	13.51	21.00	34.51	2.825	47.00	-12.49
		3625.0	1 / 0	13.16	21.00	34.16	2.606	47.00	-12.84
		3692.5	1 / 0	13.20	21.00	34.2	2.630	47.00	-12.80
	16-QAM	3557.5	1 / 0	13.91	21.00	34.91	3.097	47.00	-12.09
	64-QAM	3557.5	1 / 0	13.66	21.00	34.66	2.924	47.00	-12.34
10 MHz	QPSK	3555.0	1 / 0	13.48	21.00	34.48	2.805	47.00	-12.52
		3625.0	1 / 0	13.11	21.00	34.11	2.576	47.00	-12.89
		3695.0	1 / 0	13.14	21.00	34.14	2.594	47.00	-12.86
	16-QAM	3555.0	1 / 0	13.82	21.00	34.82	3.034	47.00	-12.18
	64-QAM	3555.0	50 / 0	13.66	21.00	34.66	2.924	47.00	-12.34
5 MHz	QPSK	3552.5	1 / 0	13.38	21.00	34.38	2.742	47.00	-12.62
		3625.0	25 / 0	12.97	21.00	33.97	2.495	47.00	-13.03
		3697.5	1 / 0	13.03	21.00	34.03	2.529	47.00	-12.97
	16-QAM	3552.5	1 / 0	13.75	21.00	34.75	2.985	47.00	-12.25
	64-QAM	3552.5	1 / 0	13.54	21.00	34.54	2.844	47.00	-12.46

Table 7-3. EIRP Data from 14dBm Power Setting (LTE Band 48)

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7.3 Maximum Power Spectral Density

§2.1049

Test Overview

The EUT is set up to transmit at maximum power for LTE. All power density 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 modes of operation were investigated and the worst case configuration results are reported in this section.

This device is intended to operate at higher power (~20dBm) and at a lower power (~14dBm) setting. The higher power setting will use a max antenna gain of 15dBi while the lower power setting will use a max antenna gain of 21dBi.

Test Procedure Used

ANSI C63.26-2015 – Section 5.2.4.5

Test Settings

1. Span = 2 x OBW to 3 x OBW
2. RBW = 1MHz
3. VBW \geq 3MHz
4. Number of measurement points in sweep \geq 2 x span / RBW
5. Sweep = auto-couple (less than transmission burst duration)
6. Detector = RMS (power)
7. Trigger was set to enable power measurements only on full power bursts
8. Trace was allowed to stabilize over 100 sweeps

Test Setup

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

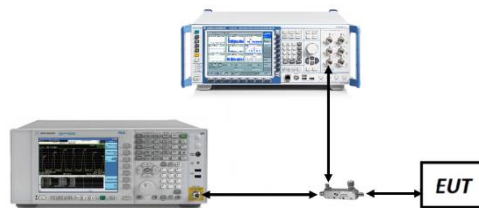



Figure 7-2. Test Instrument & Measurement Setup

Test Note

Worst-case power density measurements are found when operating using 1RB. This is a similar scenario to the full channel EIRP measurements so the full channel EIRP and power density per MHz measurements will be nearly identical.



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Bandwidth	Mod.	Frequency [MHz]	RB Size/Offset	Measured Conducted PSD [dBm]	Ant. Gain [dBi]	PSD [dBm/MHz]	PSD [Watts/MHz]	PSD Limit [dBm/MHz]	Margin [dB]
20 MHz	QPSK	3560.0	1 / 0	21.29	15.00	36.29	4.256	37.00	-0.71
	QPSK	3625.0	1 / 0	20.56	15.00	35.56	3.597	37.00	-1.44
	QPSK	3690.0	1 / 0	20.50	15.00	35.50	3.548	37.00	-1.50
	16-QAM	3560.0	1 / 0	20.62	15.00	35.62	3.648	37.00	-1.38
	64-QAM	3560.0	1 / 0	19.27	15.00	34.27	2.673	37.00	-2.73
15 MHz	QPSK	3557.5	1 / 0	21.19	15.00	36.19	4.159	37.00	-0.81
	QPSK	3625.0	1 / 0	20.49	15.00	35.49	3.540	37.00	-1.51
	QPSK	3692.5	1 / 0	20.46	15.00	35.46	3.516	37.00	-1.54
	16-QAM	3557.5	1 / 0	20.54	15.00	35.54	3.581	37.00	-1.46
	64-QAM	3557.5	1 / 0	19.28	15.00	34.28	2.679	37.00	-2.72
10 MHz	QPSK	3555.0	1 / 0	21.12	15.00	36.12	4.093	37.00	-0.88
	QPSK	3625.0	1 / 0	20.38	15.00	35.38	3.451	37.00	-1.62
	QPSK	3695.0	1 / 0	20.43	15.00	35.43	3.491	37.00	-1.57
	16-QAM	3555.0	1 / 0	20.34	15.00	35.34	3.420	37.00	-1.66
	64-QAM	3555.0	1 / 0	19.22	15.00	34.22	2.642	37.00	-2.78
5 MHz	QPSK	3552.5	1 / 0	20.96	15.00	35.96	3.945	37.00	-1.04
	QPSK	3625.0	1 / 0	20.43	15.00	35.43	3.491	37.00	-1.57
	QPSK	3697.5	1 / 24	20.15	15.00	35.15	3.273	37.00	-1.85
	16-QAM	3552.5	1 / 0	20.27	15.00	35.27	3.365	37.00	-1.73
	64-QAM	3552.5	1 / 0	19.01	15.00	34.01	2.518	37.00	-2.99

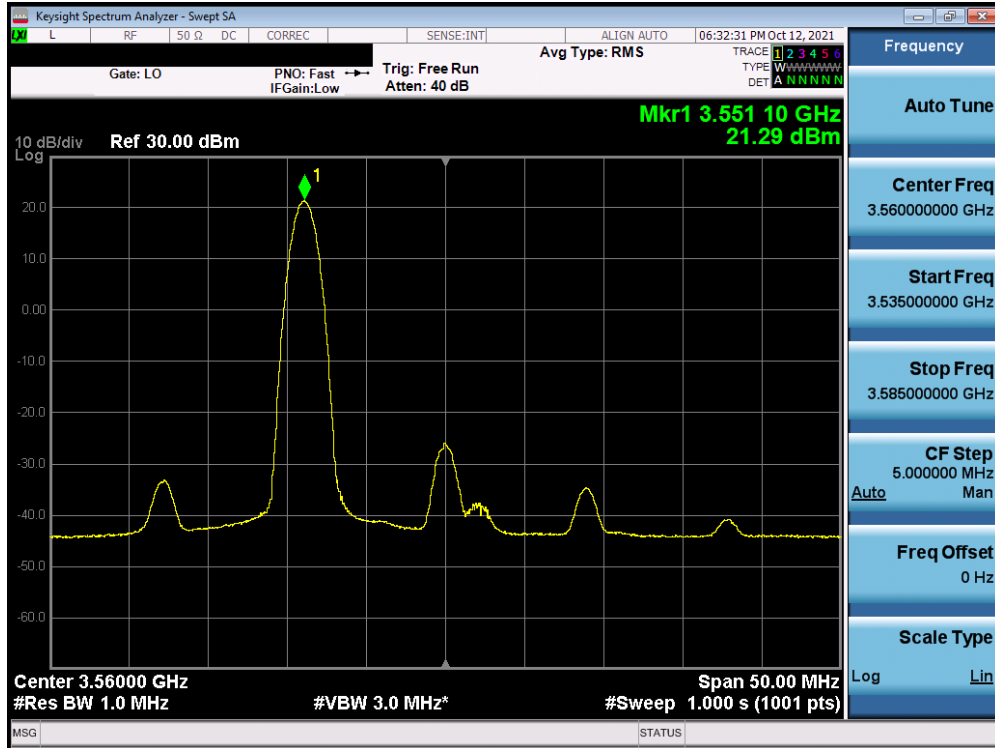
Table 7-4. Power Spectral Density Data from 20dBm Power Setting (LTE Band 48)

Bandwidth	Mod.	Frequency [MHz]	RB Size/Offset	Measured Conducted PSD [dBm]	Ant. Gain [dBi]	PSD [dBm/MHz]	PSD [Watts/MHz]	PSD Limit [dBm/MHz]	Margin [dB]
20 MHz	QPSK	3560.0	1 / 0	13.80	21.00	34.80	3.016	37.00	-2.21
	QPSK	3625.0	1 / 0	13.11	21.00	34.11	2.578	37.00	-2.89
	QPSK	3690.0	1 / 0	13.22	21.00	34.22	2.642	37.00	-2.78
	16-QAM	3560.0	1 / 0	14.24	21.00	35.24	3.345	37.00	-1.76
	64-QAM	3560.0	1 / 0	13.75	21.00	34.75	2.985	37.00	-2.25
15 MHz	QPSK	3557.5	1 / 0	13.73	21.00	34.73	2.972	37.00	-2.27
	QPSK	3625.0	1 / 0	13.17	21.00	34.17	2.611	37.00	-2.83
	QPSK	3692.5	1 / 0	13.18	21.00	34.18	2.619	37.00	-2.82
	16-QAM	3557.5	1 / 0	14.16	21.00	35.16	3.281	37.00	-1.84
	64-QAM	3557.5	1 / 0	13.71	21.00	34.71	2.955	37.00	-2.29
10 MHz	QPSK	3555.0	1 / 0	13.60	21.00	34.60	2.887	37.00	-2.40
	QPSK	3625.0	1 / 0	13.04	21.00	34.04	2.532	37.00	-2.97
	QPSK	3695.0	1 / 0	13.06	21.00	34.06	2.546	37.00	-2.94
	16-QAM	3555.0	1 / 0	14.06	21.00	35.06	3.205	37.00	-1.94
	64-QAM	3555.0	1 / 0	13.67	21.00	34.67	2.934	37.00	-2.33
5 MHz	QPSK	3552.5	1 / 0	13.57	21.00	34.57	2.863	37.00	-2.43
	QPSK	3625.0	1 / 0	12.92	21.00	33.92	2.465	37.00	-3.08
	QPSK	3697.5	1 / 0	12.99	21.00	33.99	2.507	37.00	-3.01
	16-QAM	3552.5	1 / 0	13.92	21.00	34.92	3.102	37.00	-2.08
	64-QAM	3552.5	1 / 50	13.62	21.00	34.62	2.897	37.00	-2.38

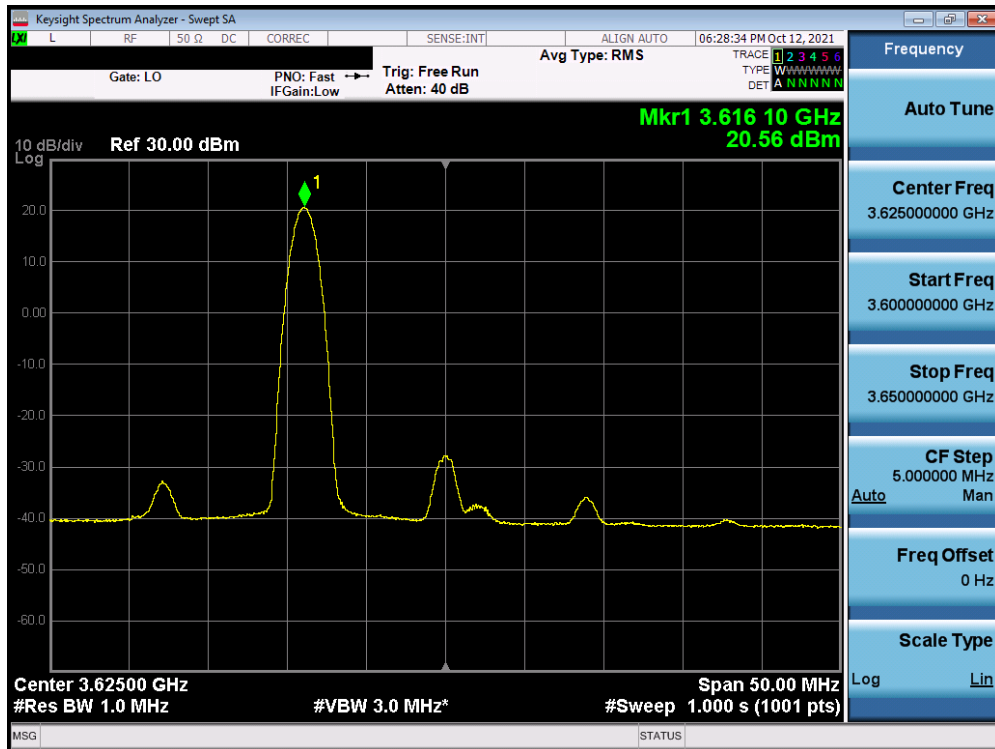
Table 7-5. Power Spectral Density Data from 14dBm Power Setting (LTE Band 48)

FCC ID: 2AL52CR00LB18	 PCTEST Proud to be part of 	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
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Power Spectral Density Measurement (20dBm Power Setting)

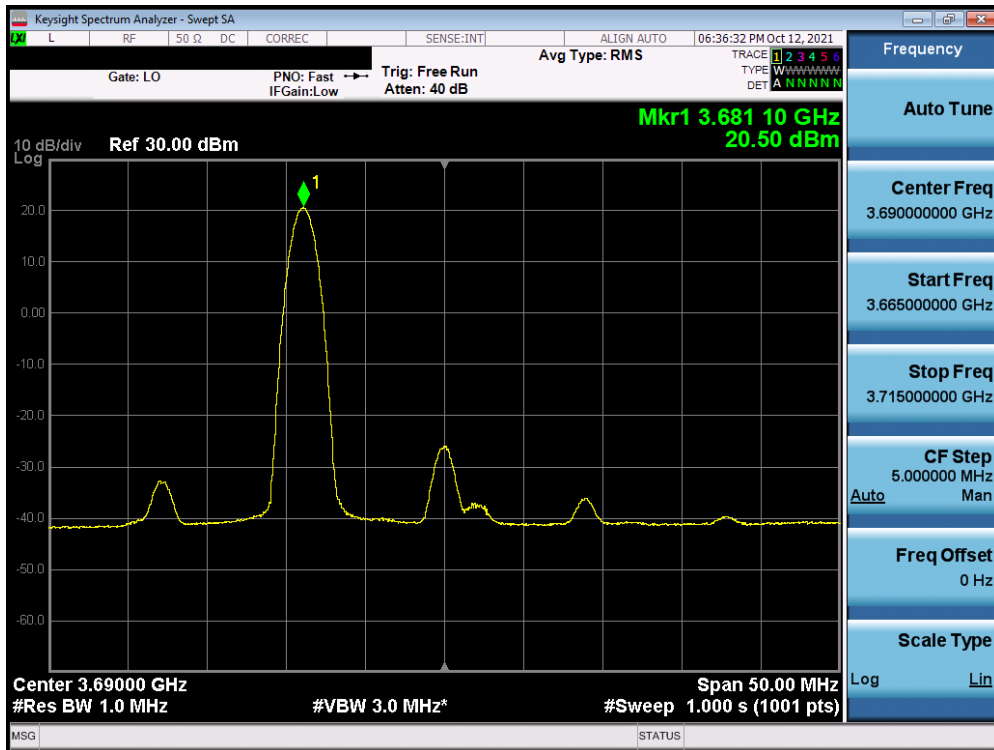


Plot 7-1. Power Spectral Density Plot (LTE B48 – 20MHz QPSK – Low Channel)

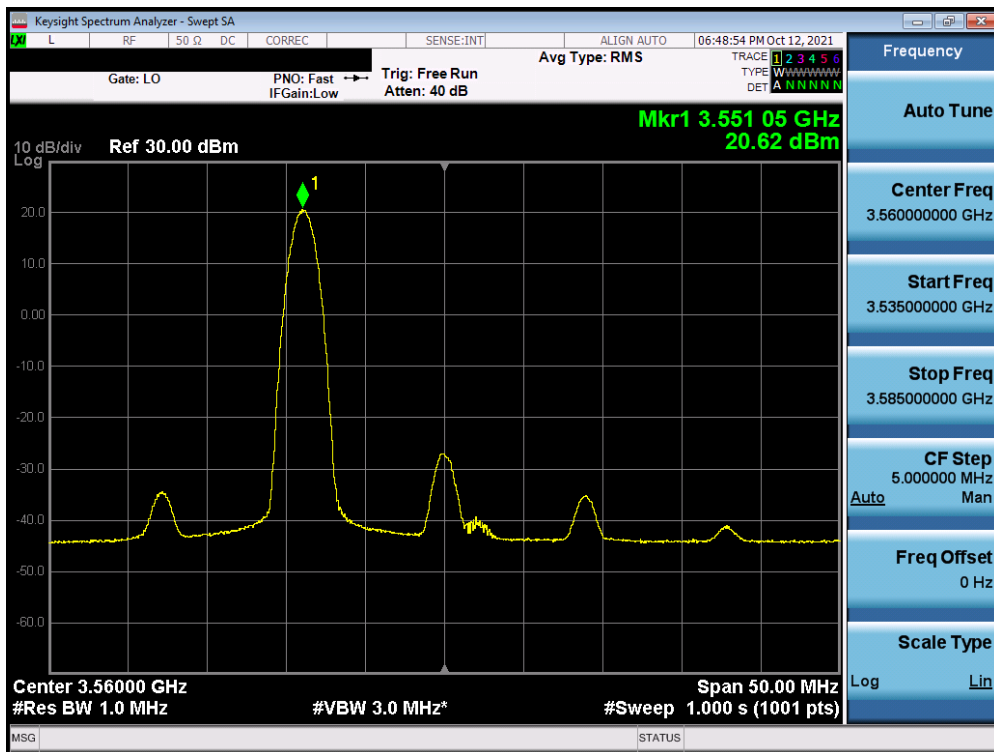


Plot 7-2. Power Spectral Density Plot (LTE B48 – 20MHz QPSK – Mid Channel)

FCC ID: 2AL52CR00LB18	PCTEST Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2106010060-02.2AL52	Test Dates: 09/26 – 01/24/22	EUT Type: Cellular Module	Page 15 of 43

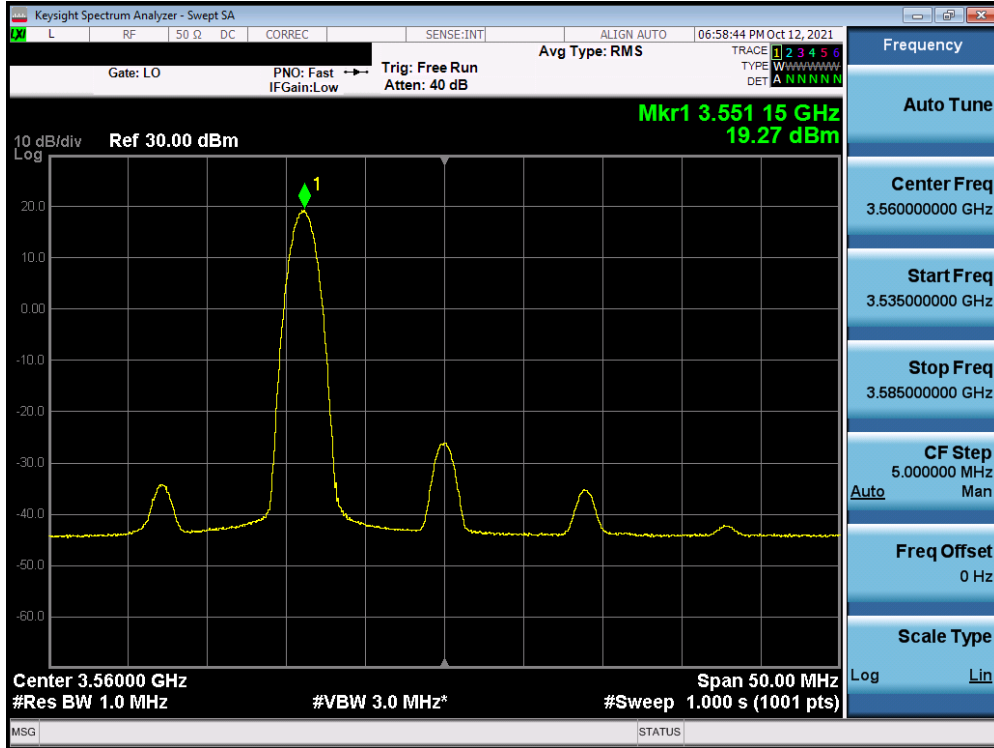


Plot 7-3. Power Spectral Density Plot (LTE B48 – 20MHz QPSK – High Channel)

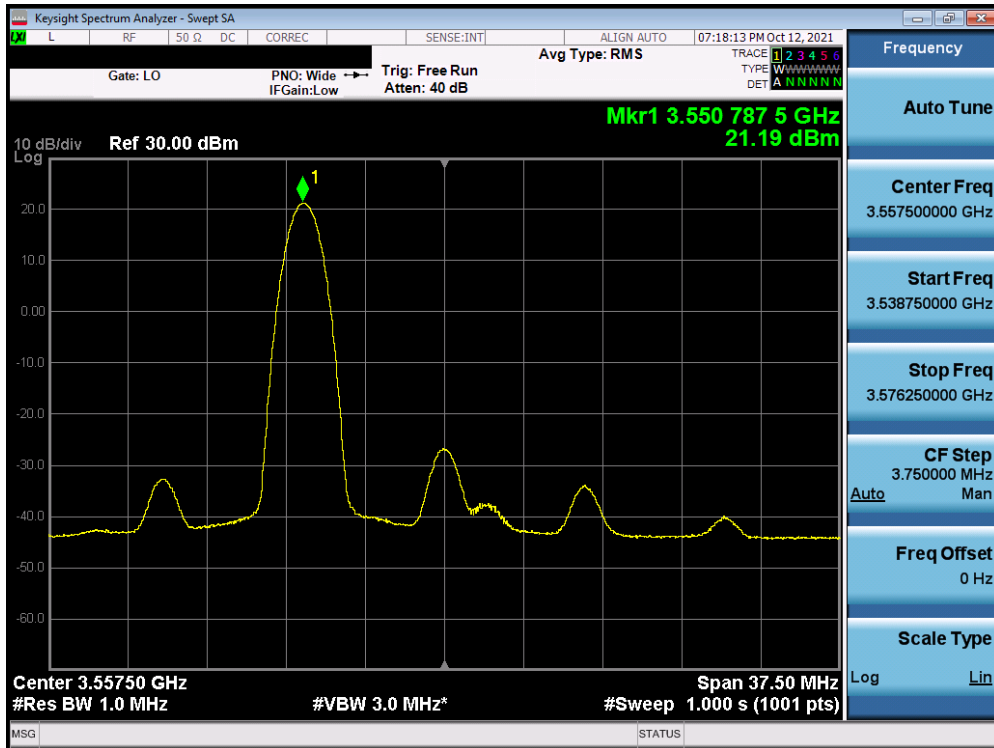


Plot 7-4. Power Spectral Density Plot (LTE B48 – 20MHz 16-QAM – Low Channel)

FCC ID: 2AL52CR00LB18	PCTEST Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2106010060-02.2AL52	Test Dates: 09/26 – 01/24/22	EUT Type: Cellular Module	Page 16 of 43

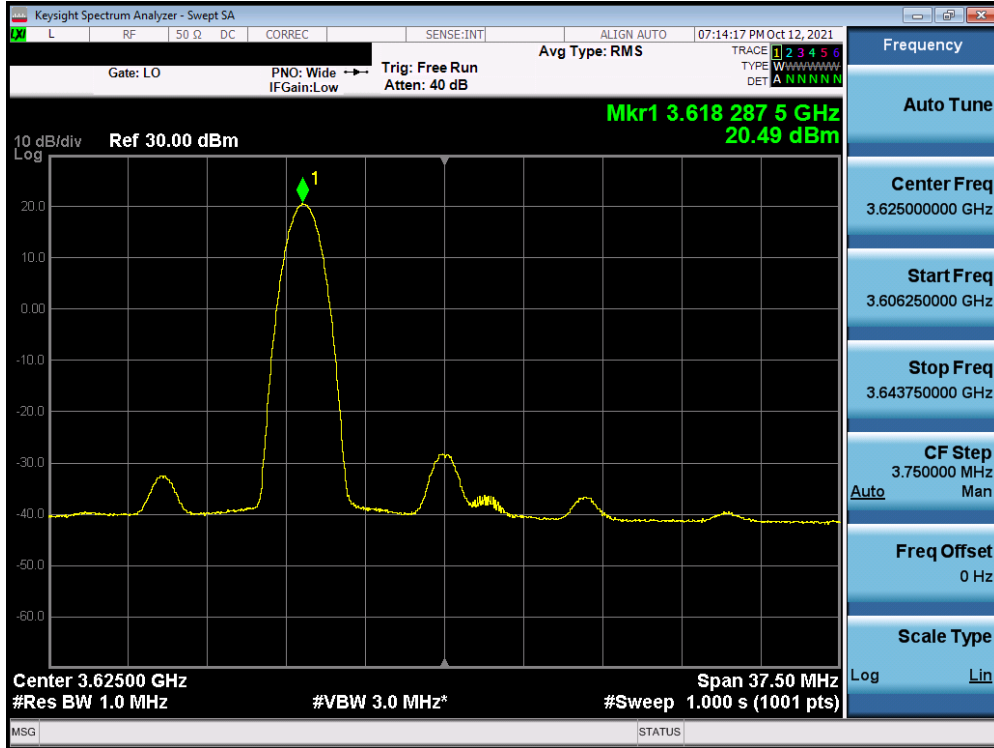


Plot 7-5. Power Spectral Density Plot (LTE B48 – 64-QAM – Low Channel)

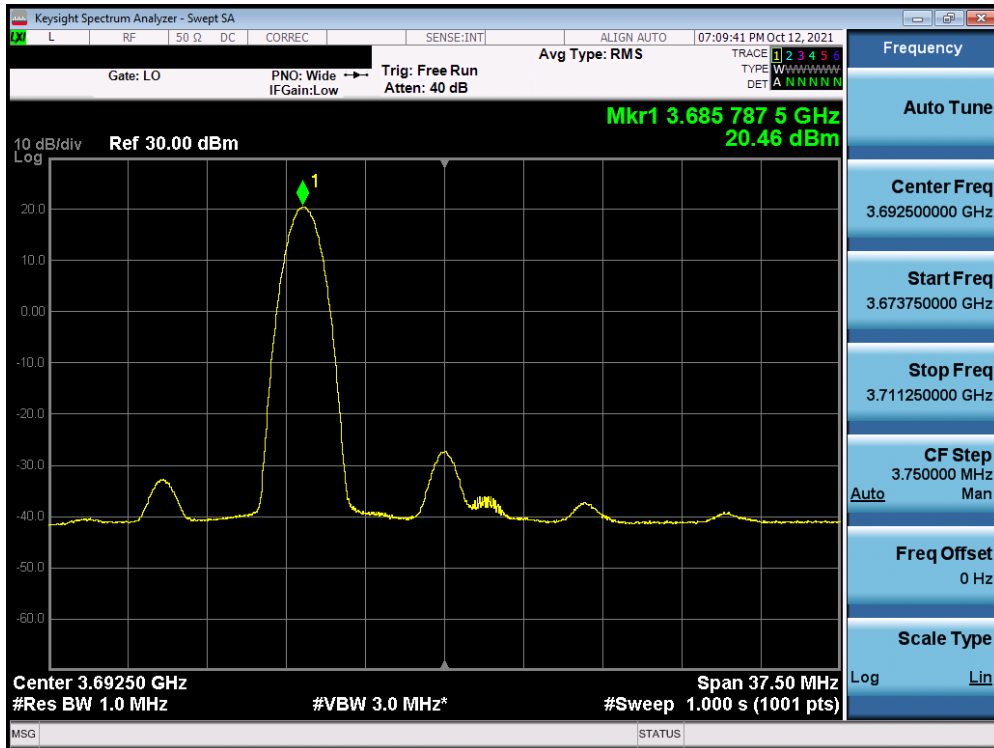


Plot 7-6. Power Spectral Density Plot (LTE B48 – 15MHz QPSK – Low Channel)

FCC ID: 2AL52CR00LB18	PCTEST Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
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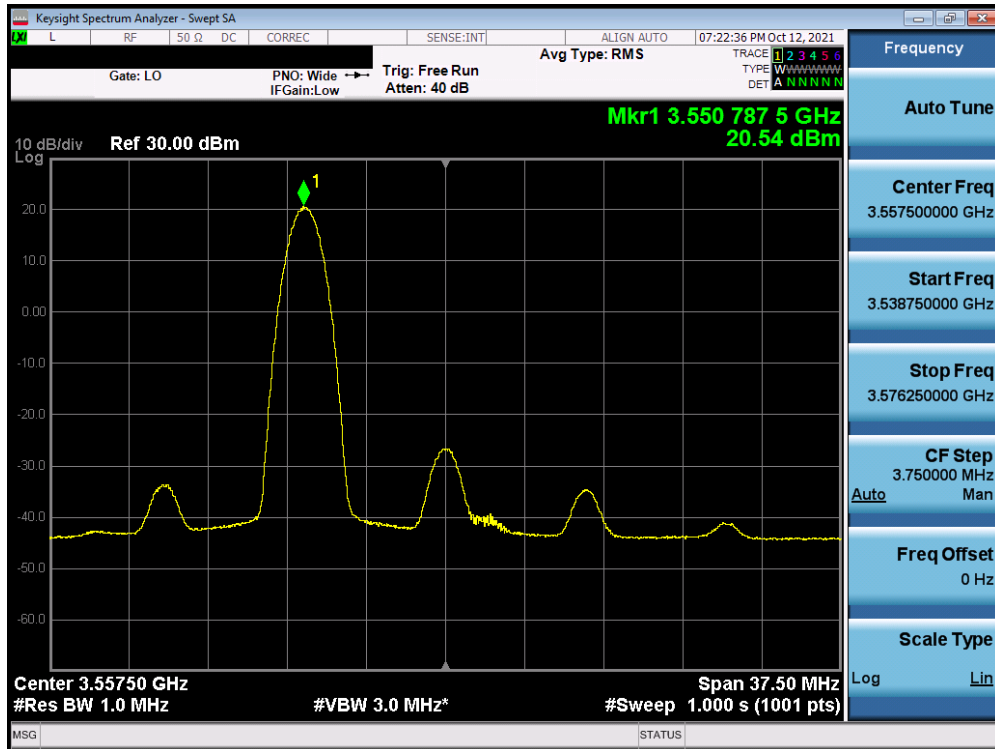


Plot 7-7. Power Spectral Density Plot (LTE B48 – 15MHz QPSK – Mid Channel)

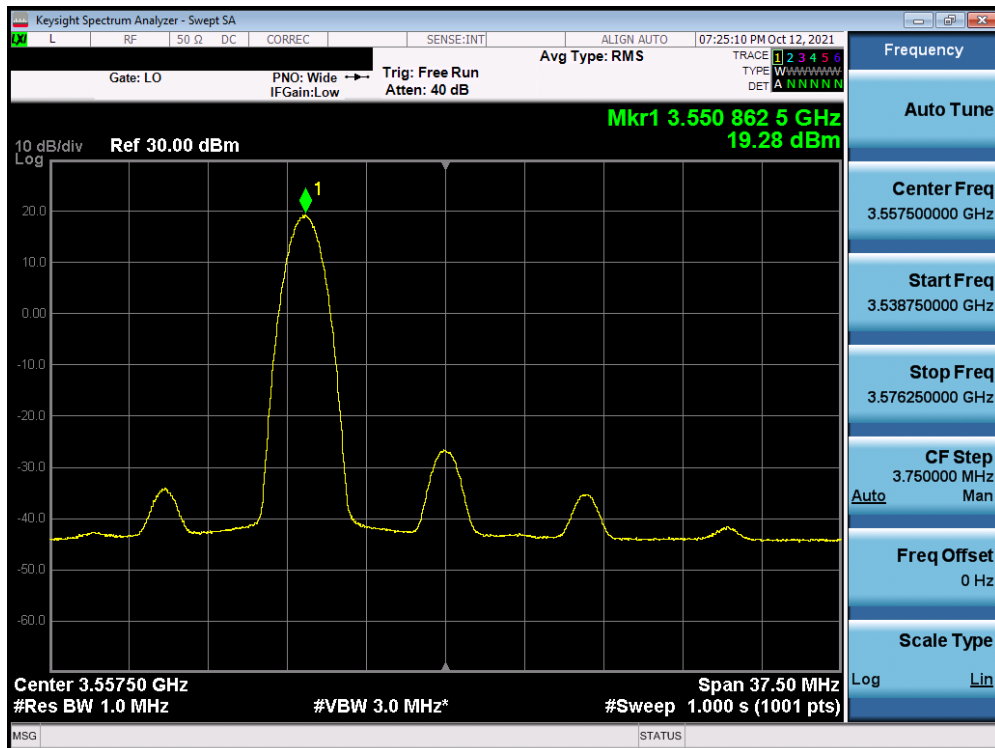


Plot 7-8. Power Spectral Density Plot (LTE B48 – 15MHz QPSK – High Channel)

FCC ID: 2AL52CR00LB18	PCTEST Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
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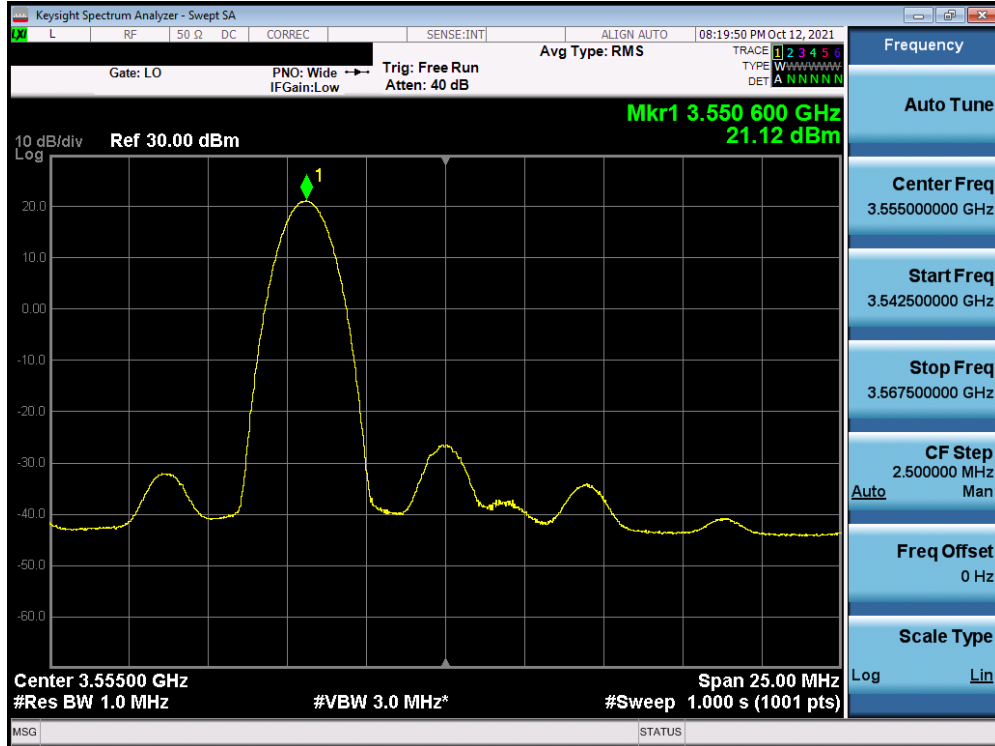


Plot 7-9. Power Spectral Density Plot (LTE B48 – 15MHz 16-QAM – Low Channel)

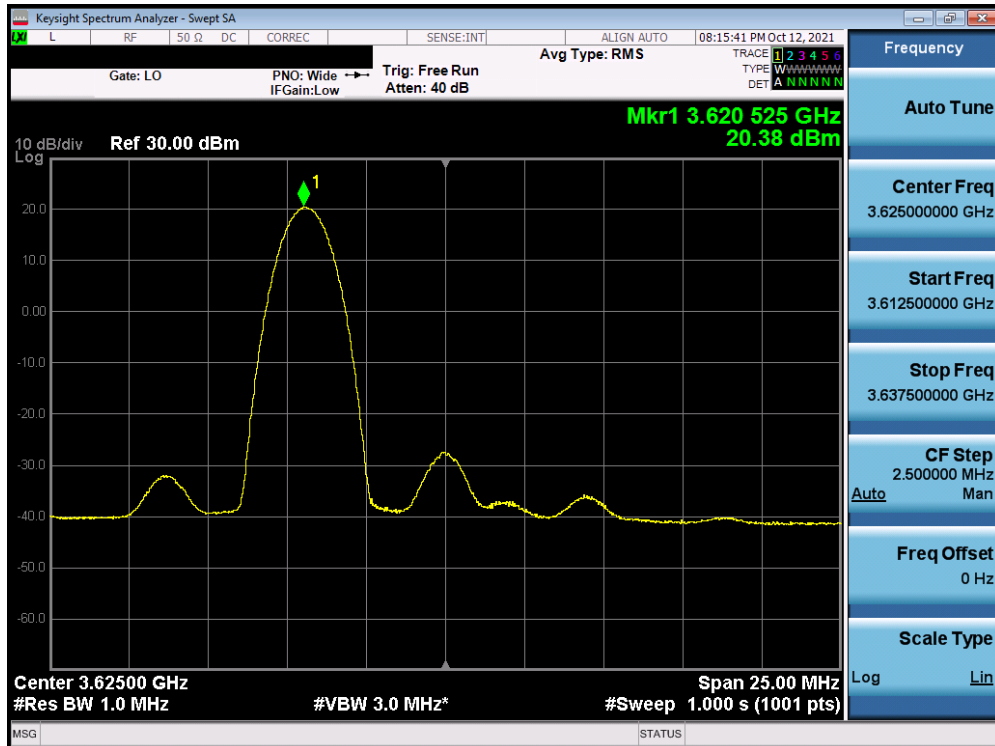


Plot 7-10. Power Spectral Density Plot (LTE B48 – 15MHz 64-QAM – Low Channel)

FCC ID: 2AL52CR00LB18	PCTEST Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
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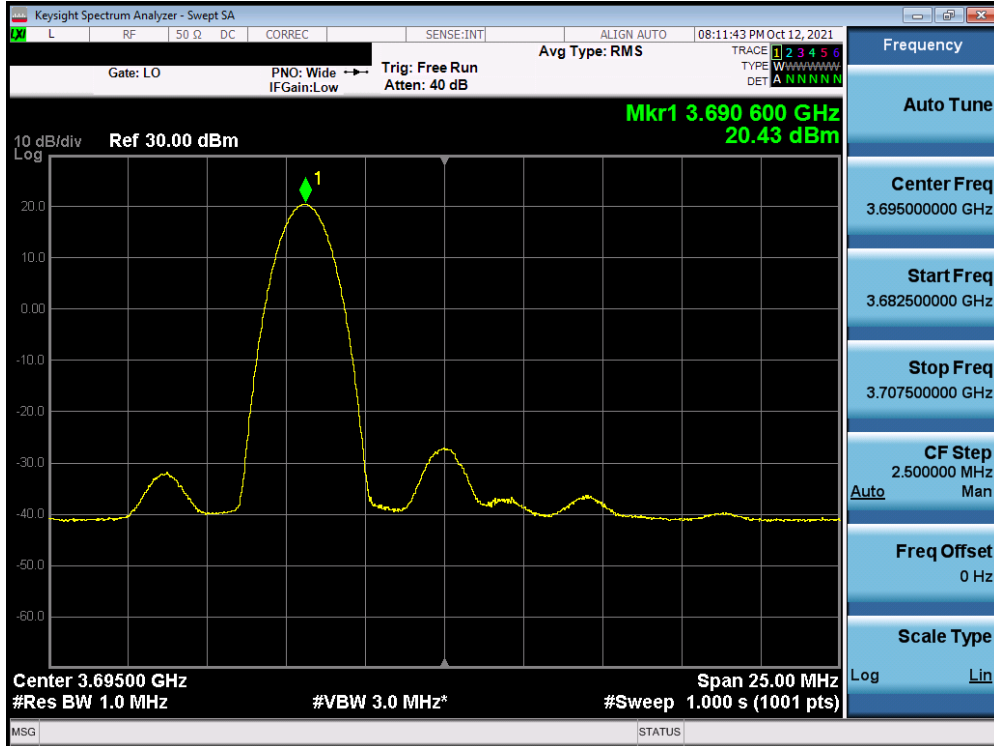


Plot 7-11. Power Spectral Density Plot (LTE B48 – 10MHz QPSK – Low Channel)

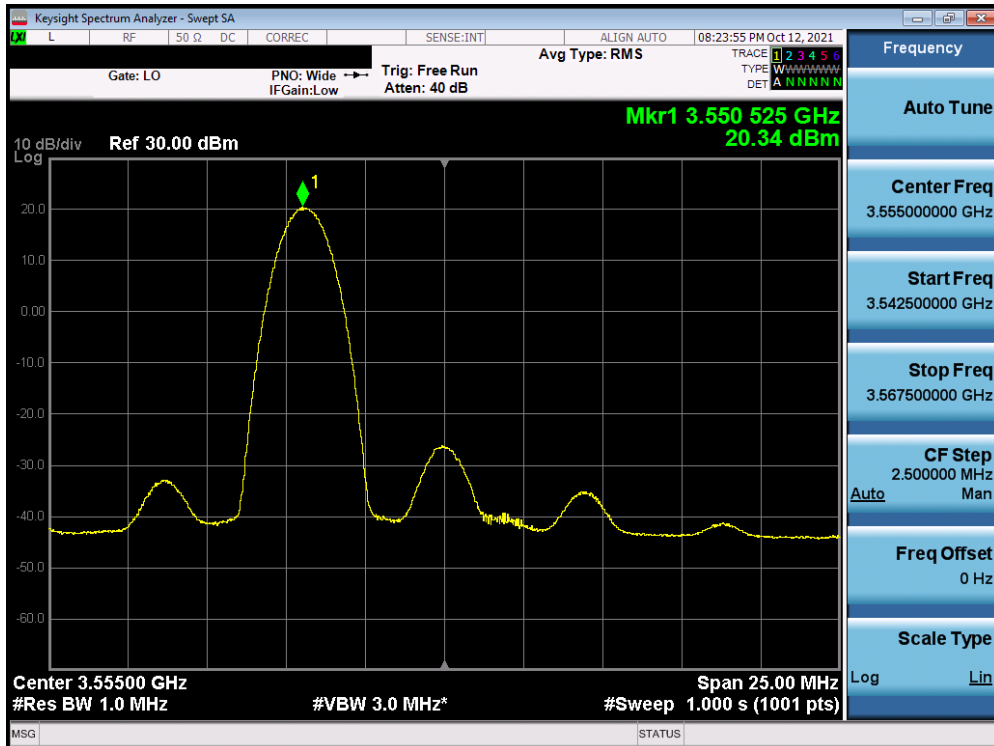


Plot 7-12. Power Spectral Density Plot (LTE B48 – 10MHz QPSK – Mid Channel)

FCC ID: 2AL52CR00LB18	PCTEST Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
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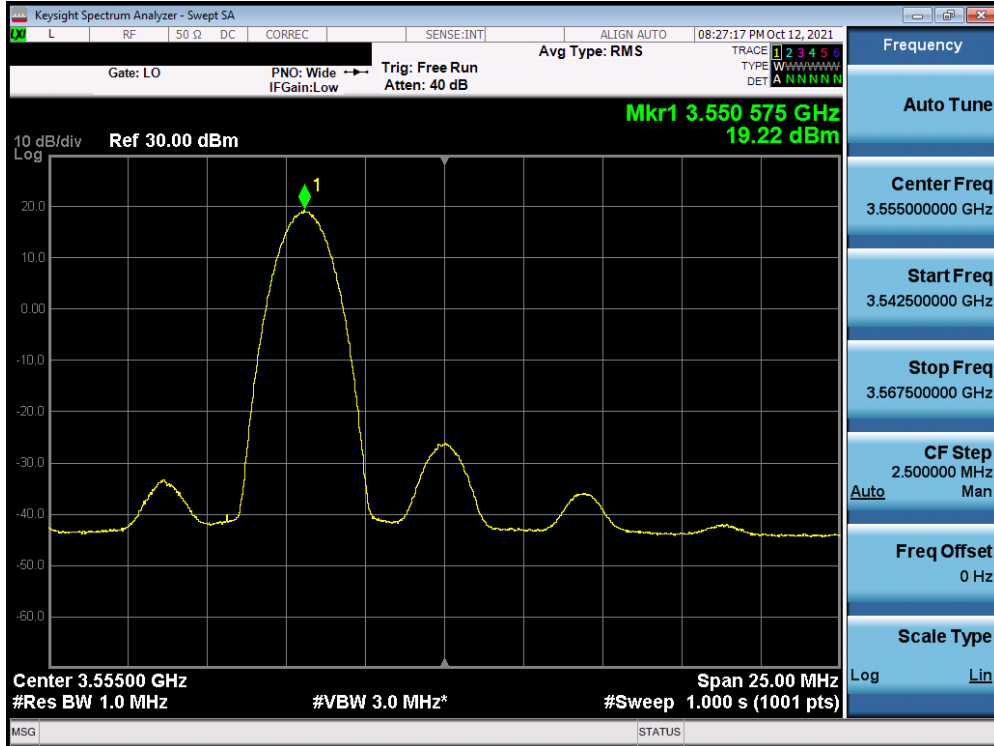


Plot 7-13. Power Spectral Density Plot (LTE B48 – 10MHz QPSK – High Channel)

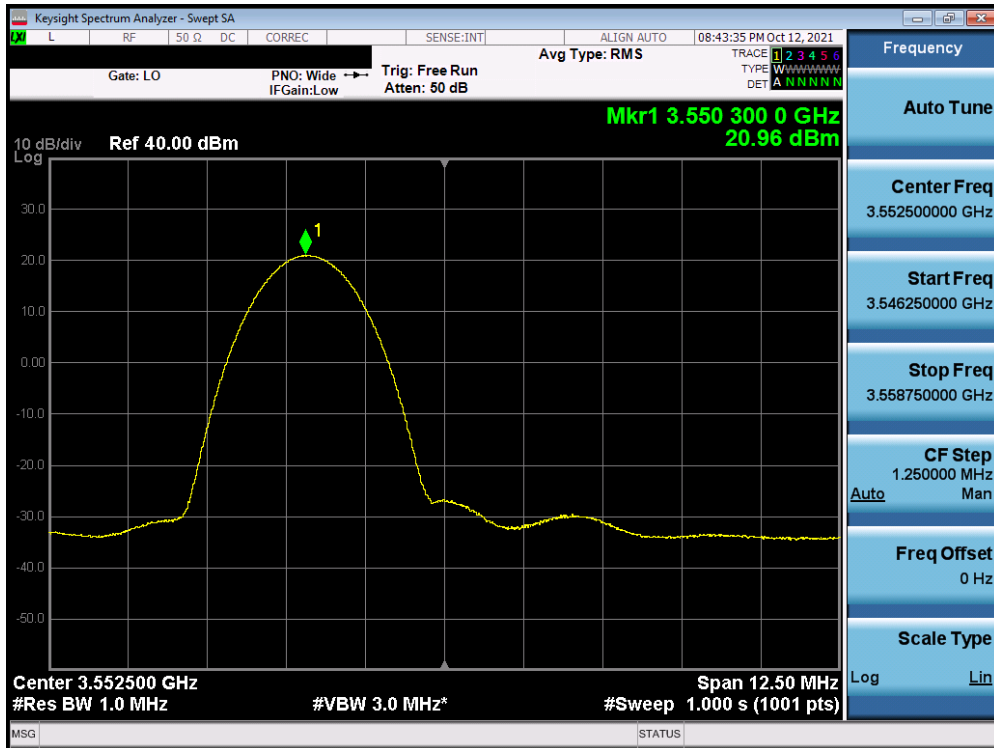


Plot 7-14. Power Spectral Density Plot (LTE B48 – 10MHz 16-QAM – Low Channel)

FCC ID: 2AL52CR00LB18	PCTEST Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
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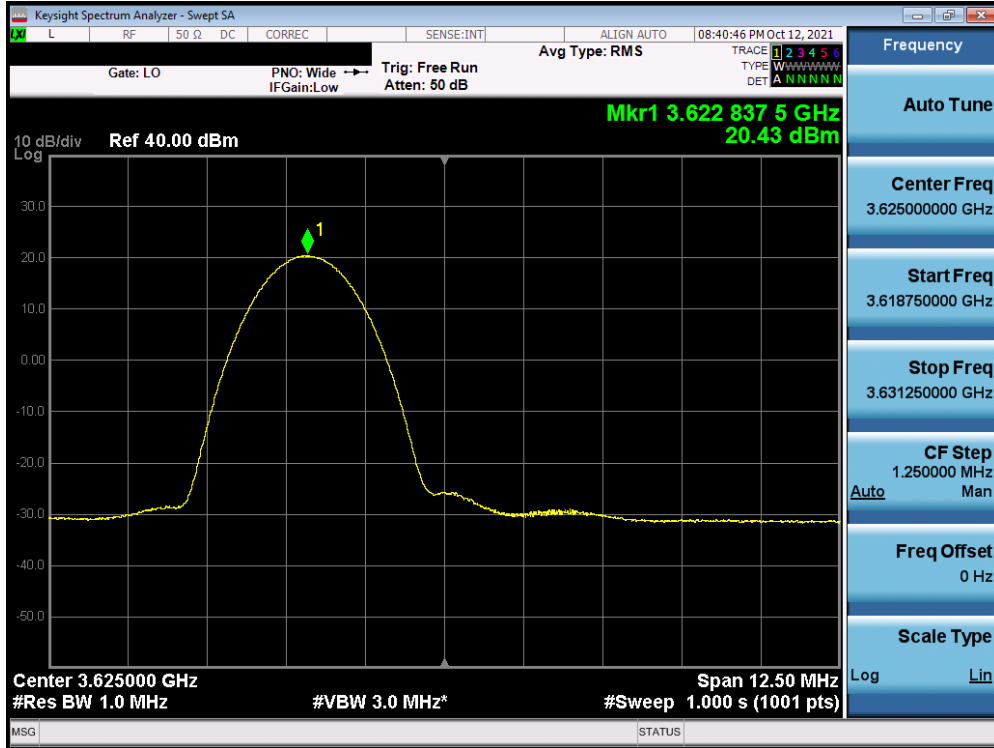


Plot 7-15. Power Spectral Density Plot (LTE B48 – 10MHz 64-QAM – Low Channel)

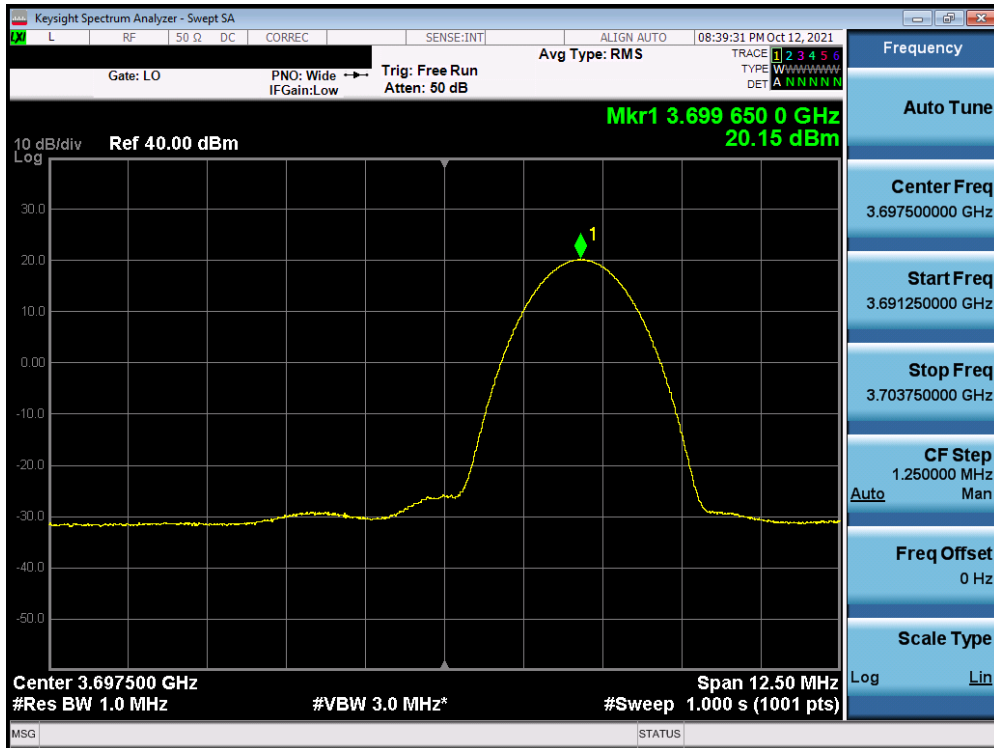


Plot 7-16. Power Spectral Density Plot (LTE B48 – 5MHz QPSK – Low Channel)

FCC ID: 2AL52CR00LB18	PCTEST Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
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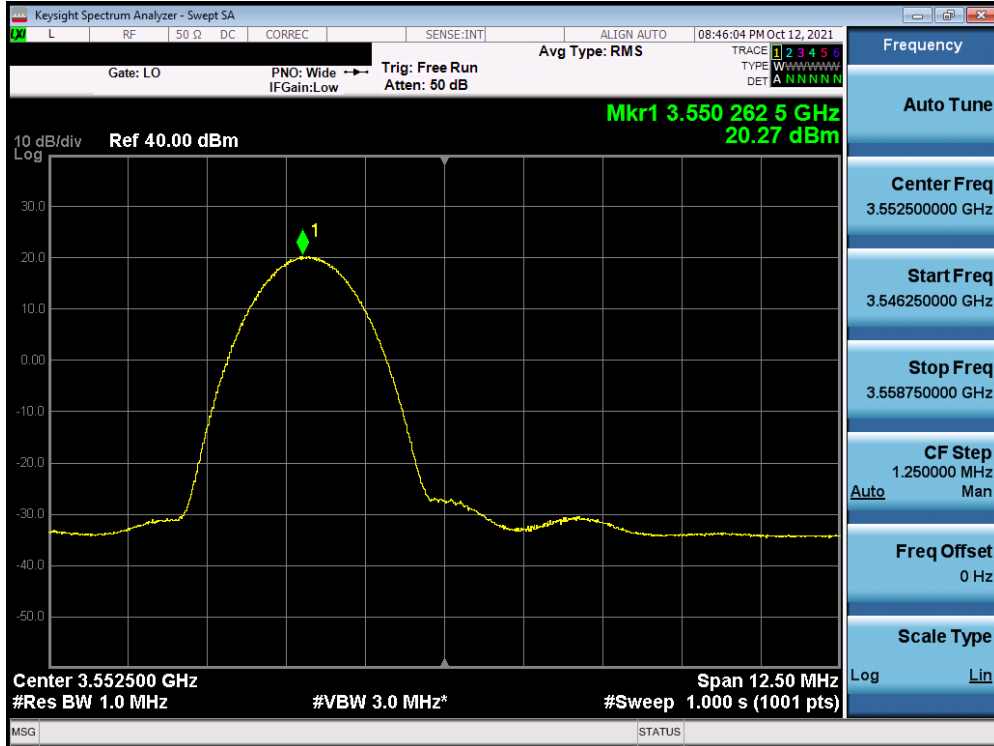


Plot 7-17. Power Spectral Density Plot (LTE B48 – 5MHz QPSL – Mid Channel)

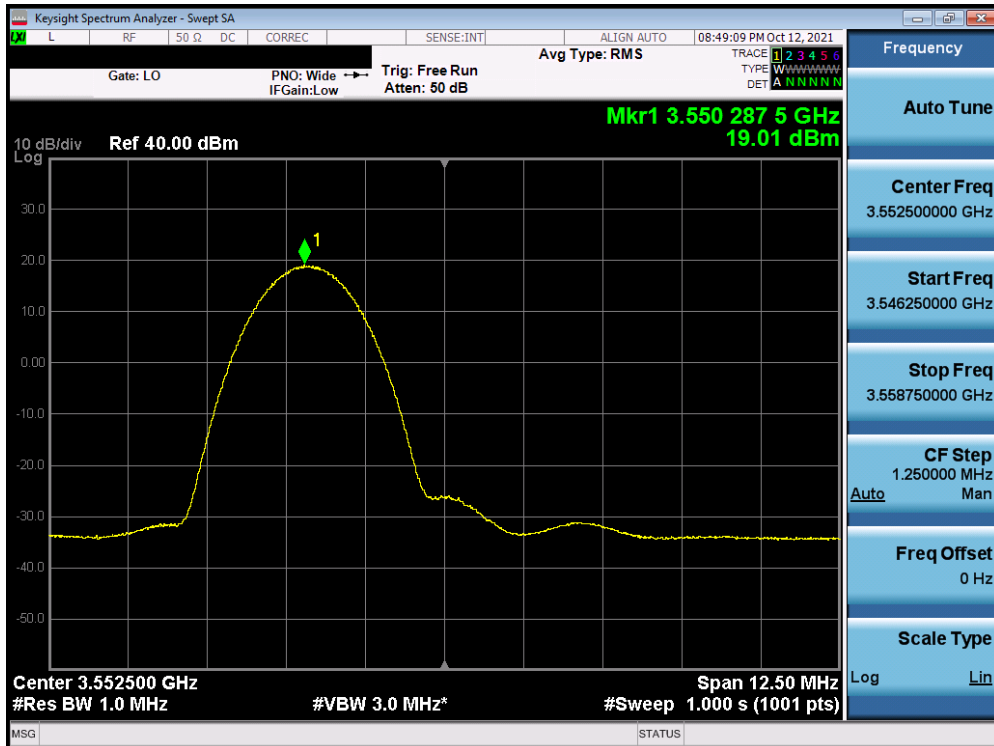


Plot 7-18. Power Spectral Density Plot (LTE B48 – 5MHz QPSK – High Channel)

FCC ID: 2AL52CR00LB18	PCTEST Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
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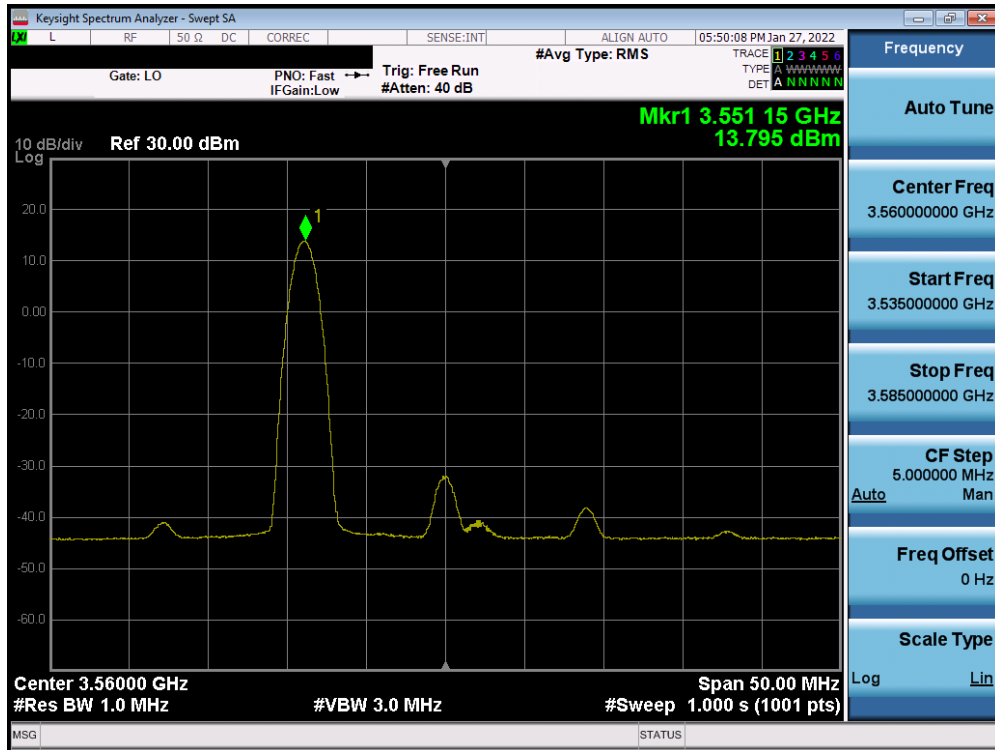
Plot 7-19. Power Spectral Density Plot (LTE B48 – 5MHz 16-QAM – Low Channel)



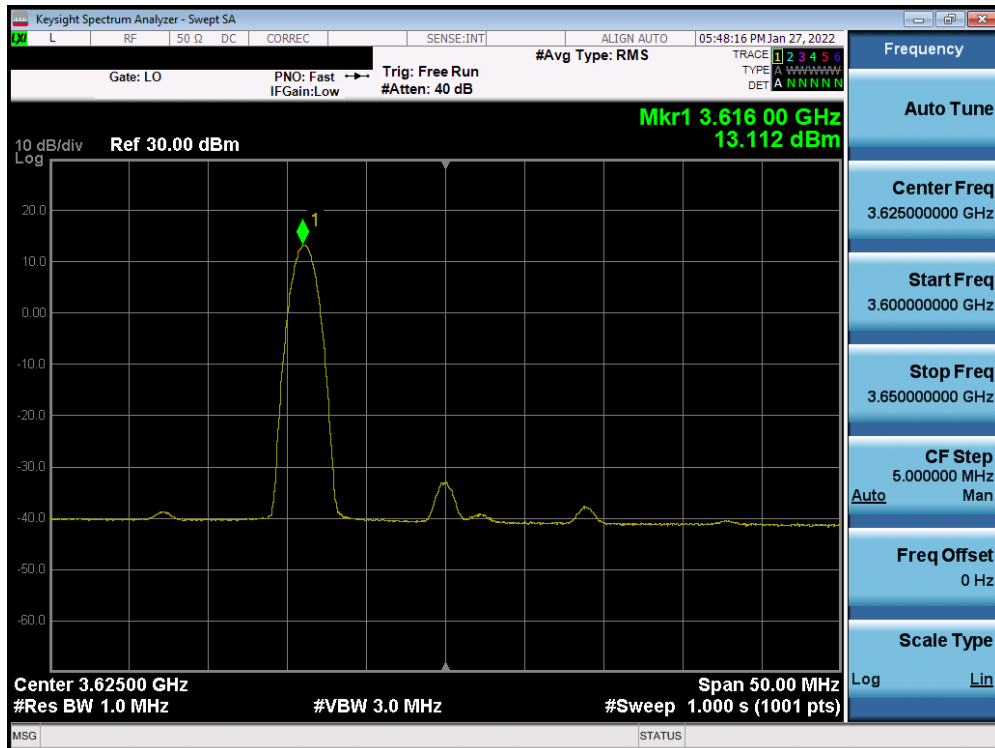
Plot 7-20. Power Spectral Density Plot (LTE B48 – 5MHz 64-QAM – Low Channel)

FCC ID: 2AL52CR00LB18	PCTEST Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
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Power Spectral Density Measurement (14dBm Power Setting)

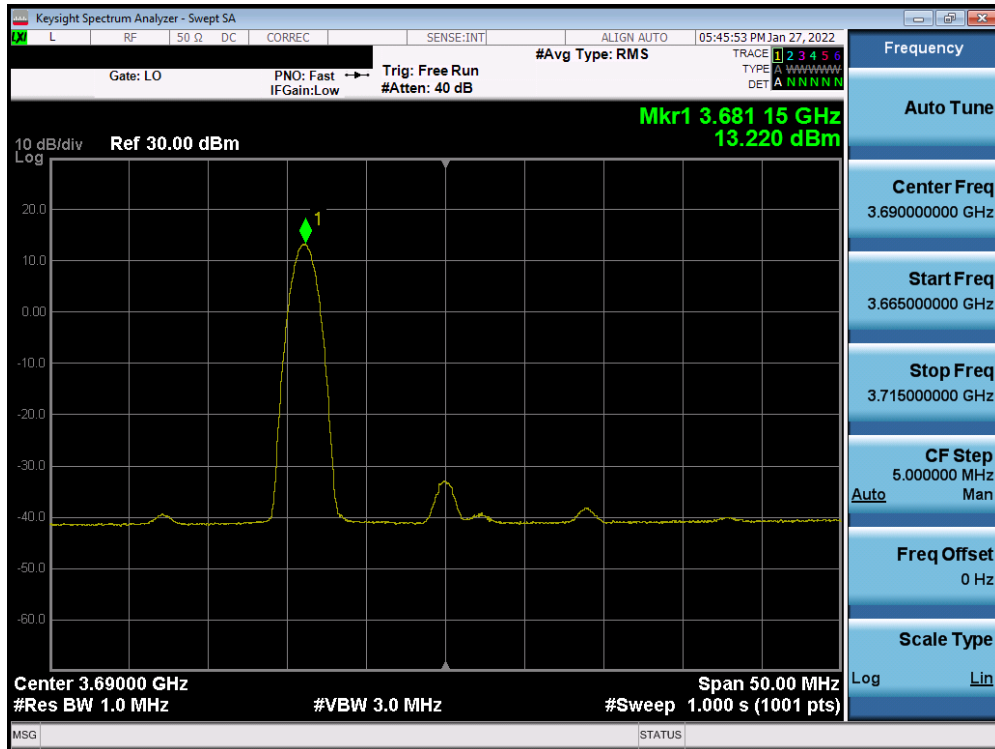


Plot 7-21. Power Spectral Density Plot (LTE B48 – 20MHz QPSK – Low Channel)

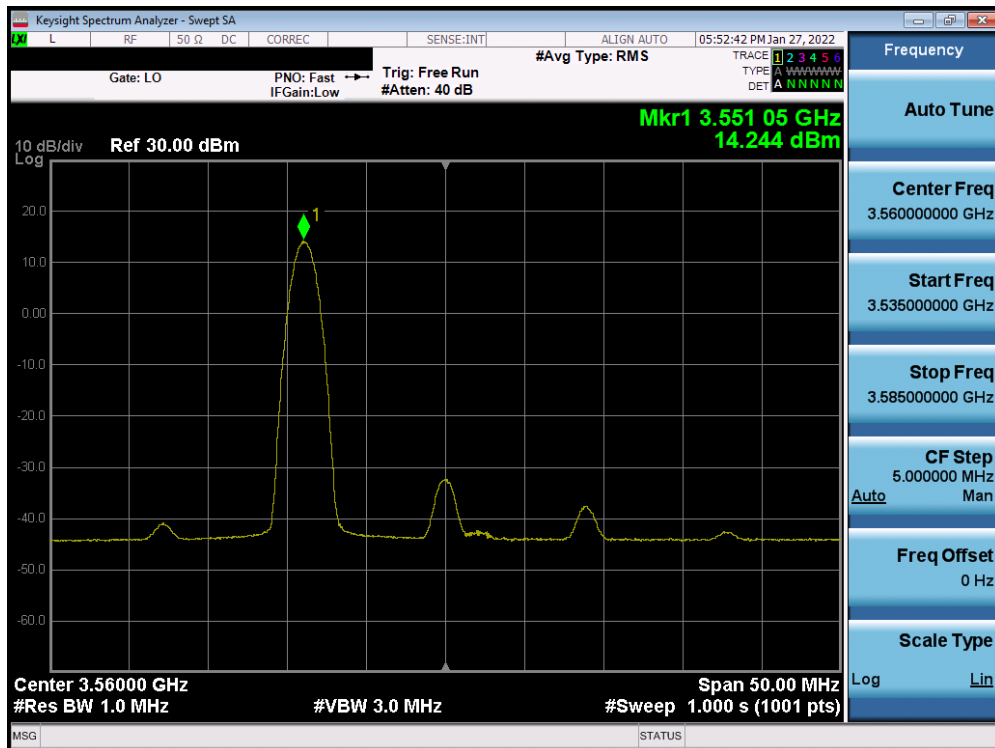


Plot 7-22. Power Spectral Density Plot (LTE B48 – 20MHz QPSK – Mid Channel)

FCC ID: 2AL52CR00LB18	PCTEST Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
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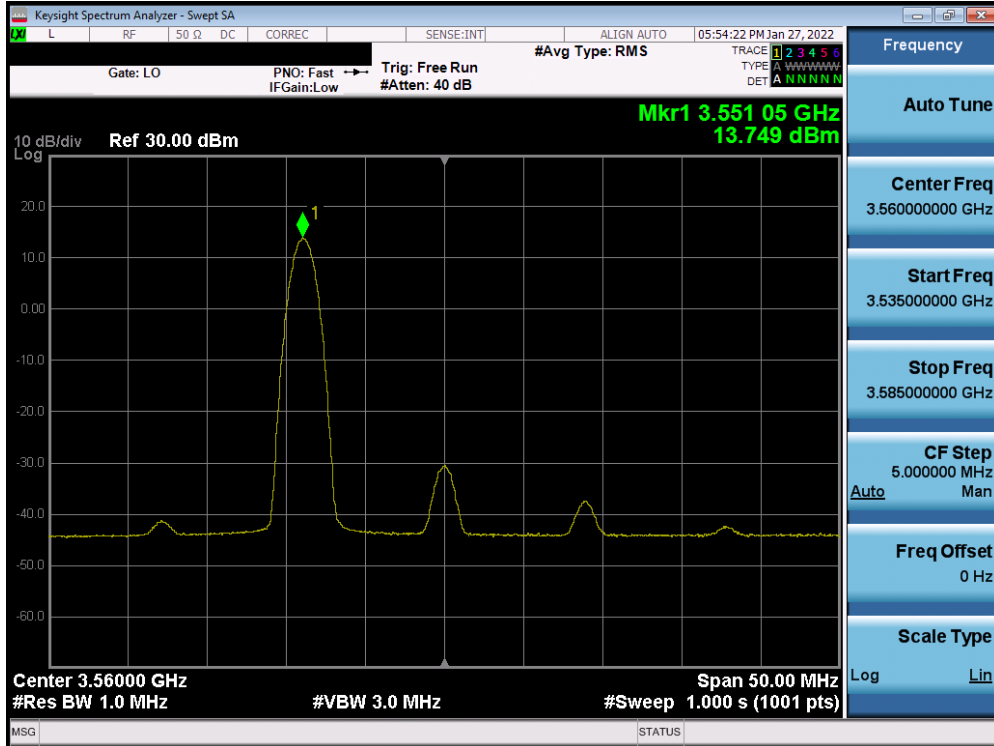


Plot 7-23. Power Spectral Density Plot (LTE B48 – 20MHz QPSK – High Channel)

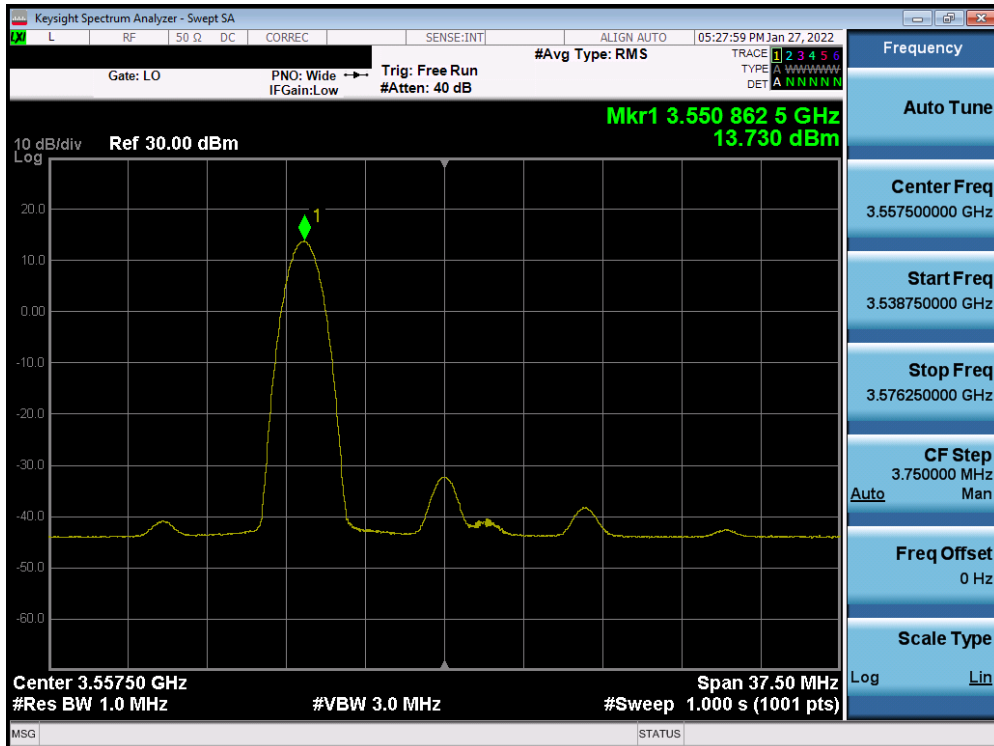


Plot 7-24. Power Spectral Density Plot (LTE B48 – 20MHz 16-QAM – Low Channel)

FCC ID: 2AL52CR00LB18	PCTEST Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
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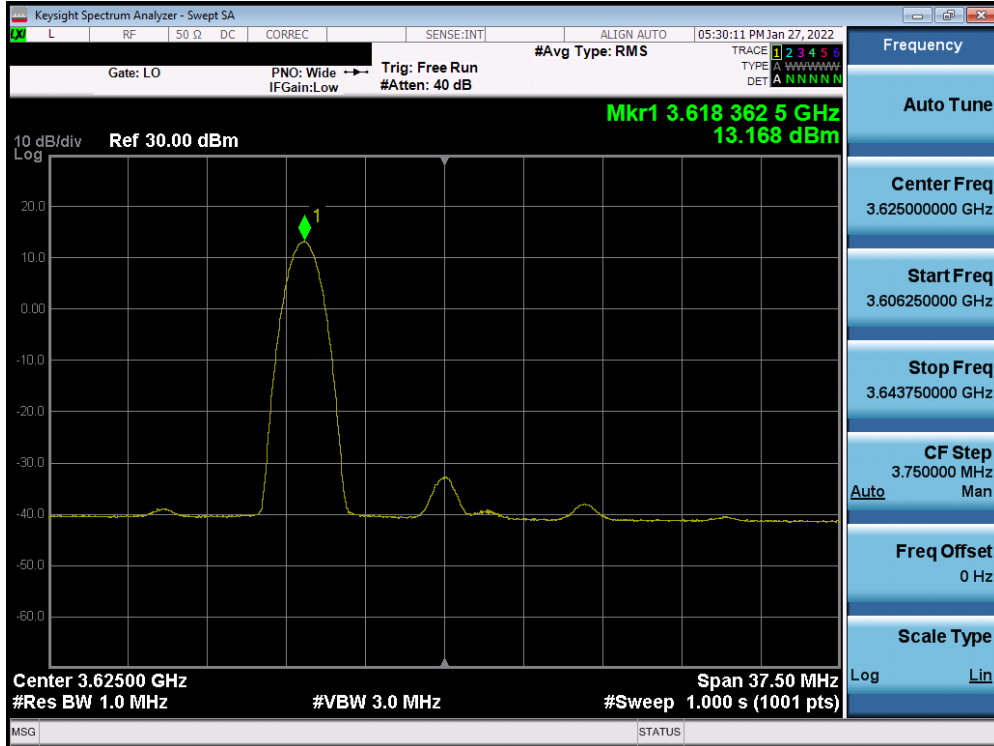


Plot 7-25. Power Spectral Density Plot (LTE B48 – 20MHz 64-QAM – Low Channel)

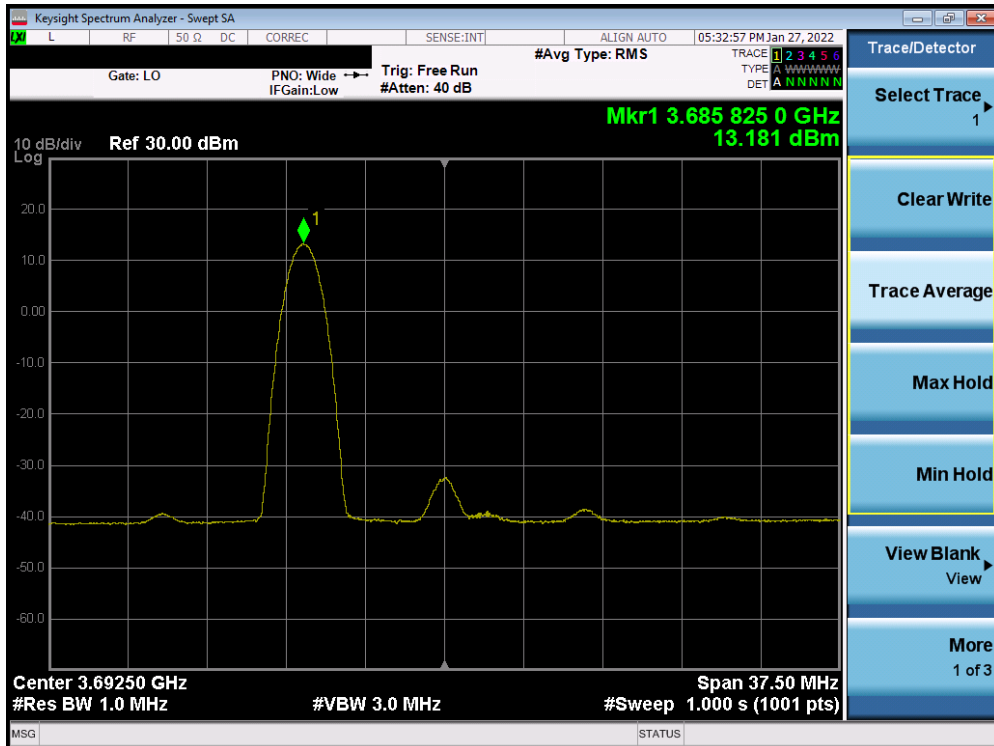


Plot 7-26. Power Spectral Density Plot (LTE B48 – 15MHz QPSK – Low Channel)

FCC ID: 2AL52CR00LB18	PCTEST Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
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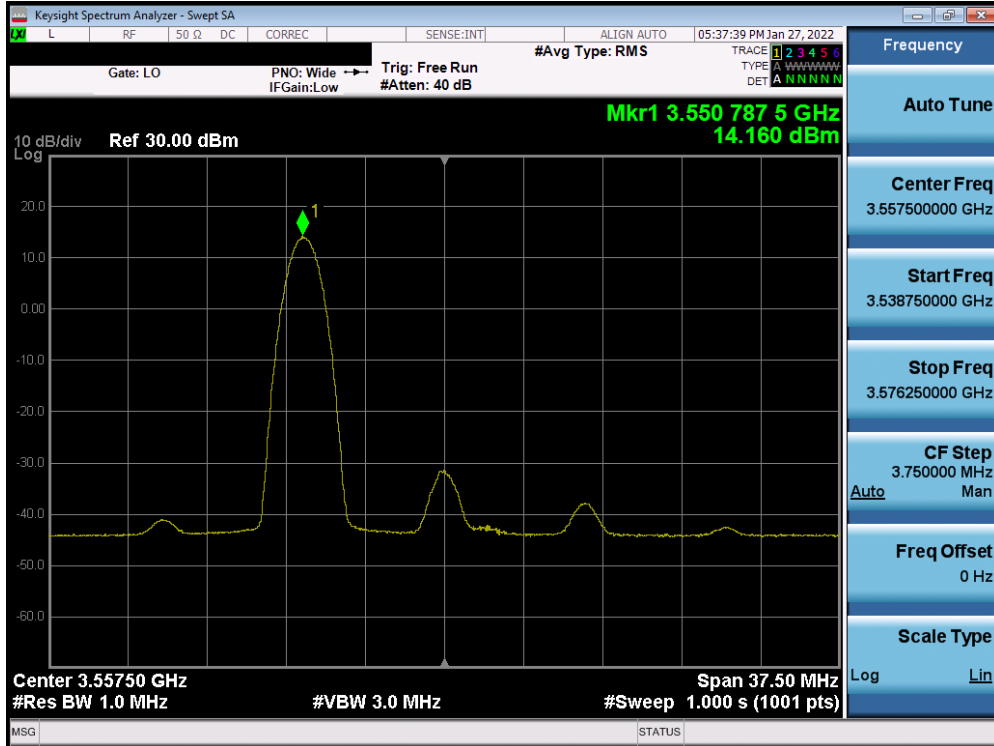


Plot 7-27. Power Spectral Density Plot (LTE B48 – 15MHz QPSK – Mid Channel)

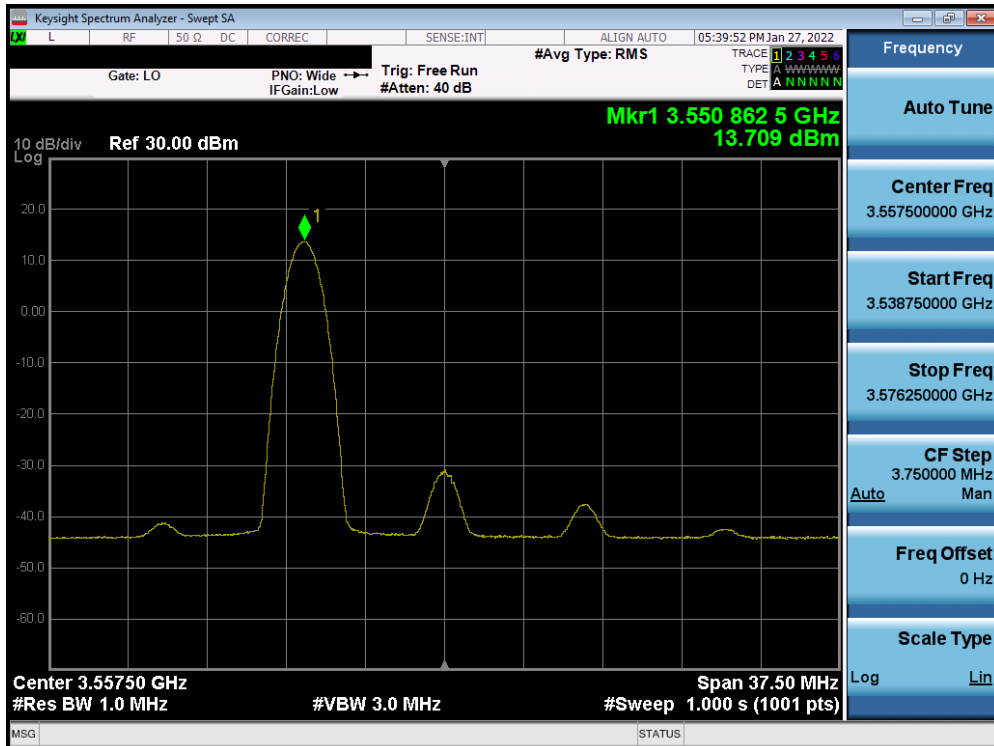


Plot 7-28. Power Spectral Density Plot (LTE B48 – 15MHz QPSK – High Channel)

FCC ID: 2AL52CR00LB18	PCTEST Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
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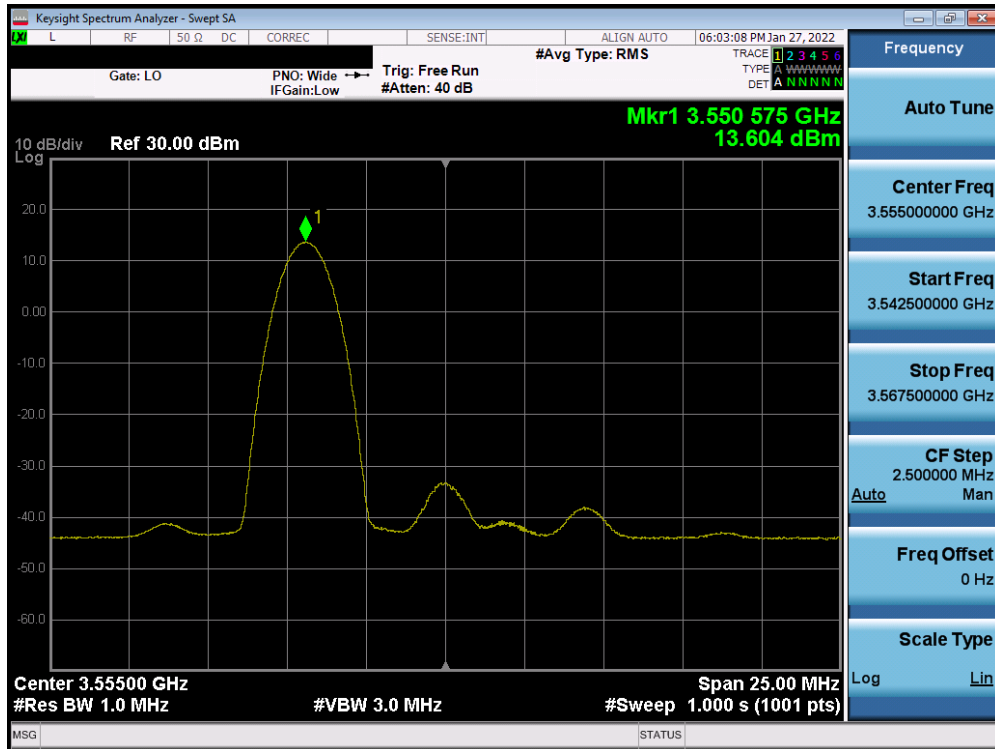


Plot 7-29. Power Spectral Density Plot (LTE B48 – 15MHz 16-QAM – Low Channel)

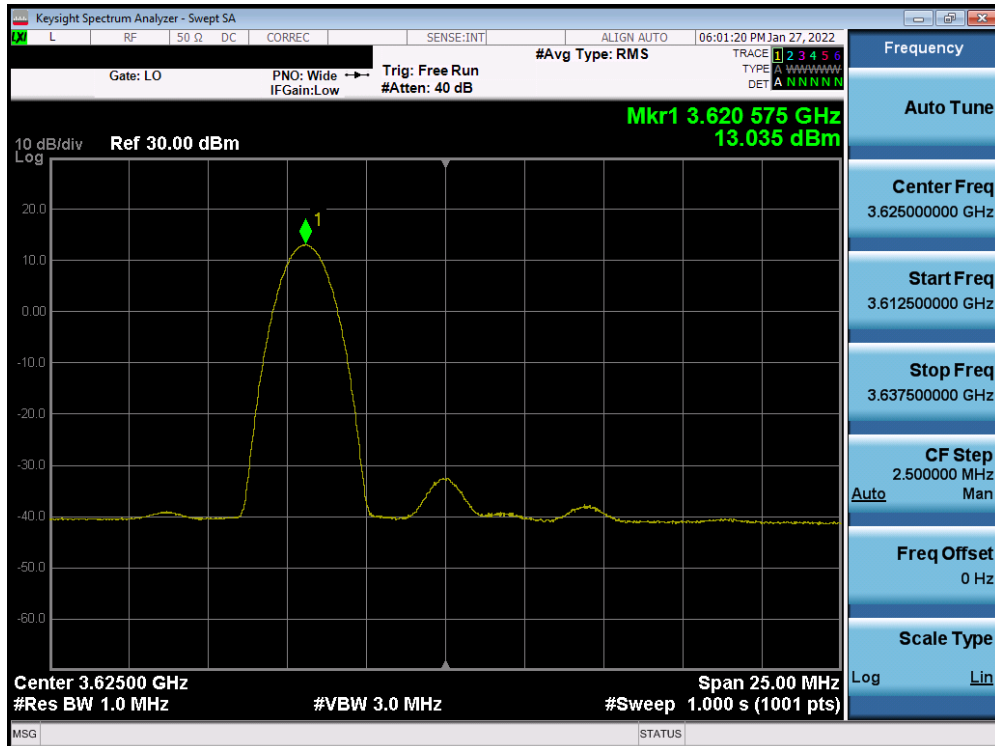


Plot 7-30. Power Spectral Density Plot (LTE B48 – 15MHz 64-QAM – Low Channel)

FCC ID: 2AL52CR00LB18	PCTEST Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2106010060-02.2AL52	Test Dates: 09/26 – 01/24/22	EUT Type: Cellular Module	Page 29 of 43

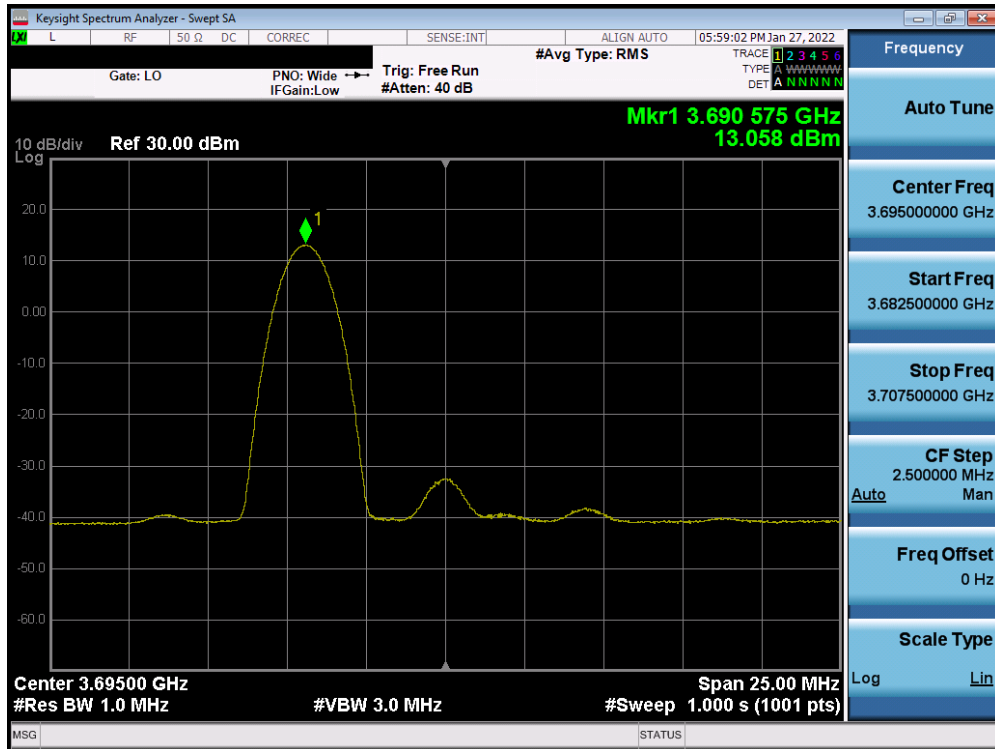


Plot 7-31. Power Spectral Density Plot (LTE B48 – 10MHz QPSK – Low Channel)

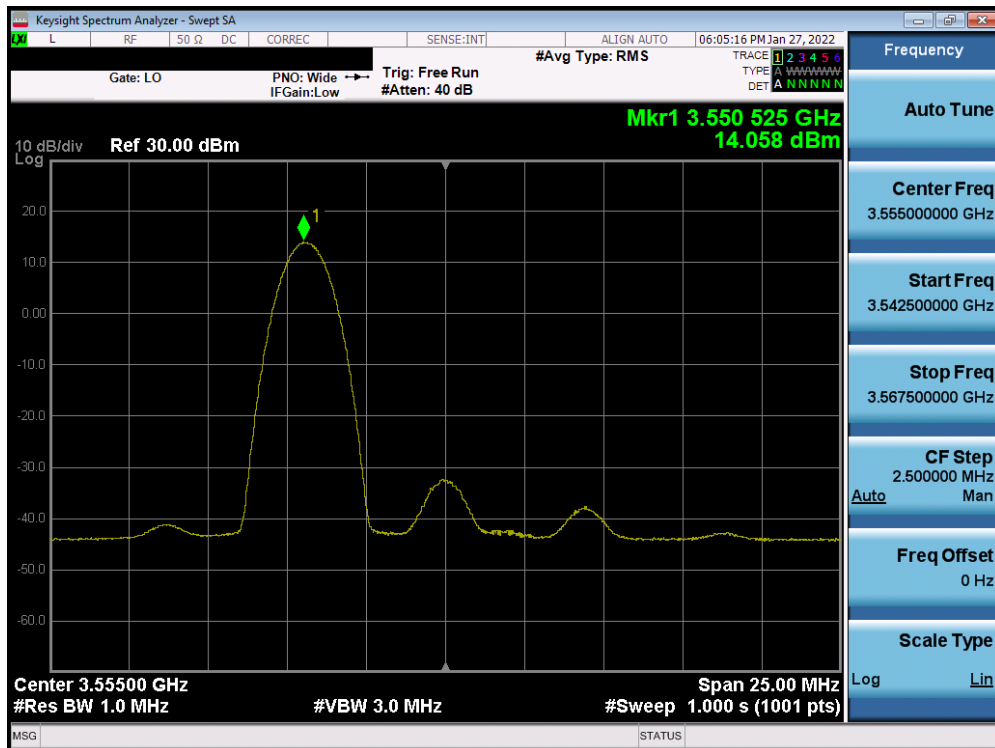


Plot 7-32. Power Spectral Density Plot (LTE B48 – 10MHz QPSK – Mid Channel)

FCC ID: 2AL52CR00LB18	PCTEST Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2106010060-02.2AL52	Test Dates: 09/26 – 01/24/22	EUT Type: Cellular Module	Page 30 of 43

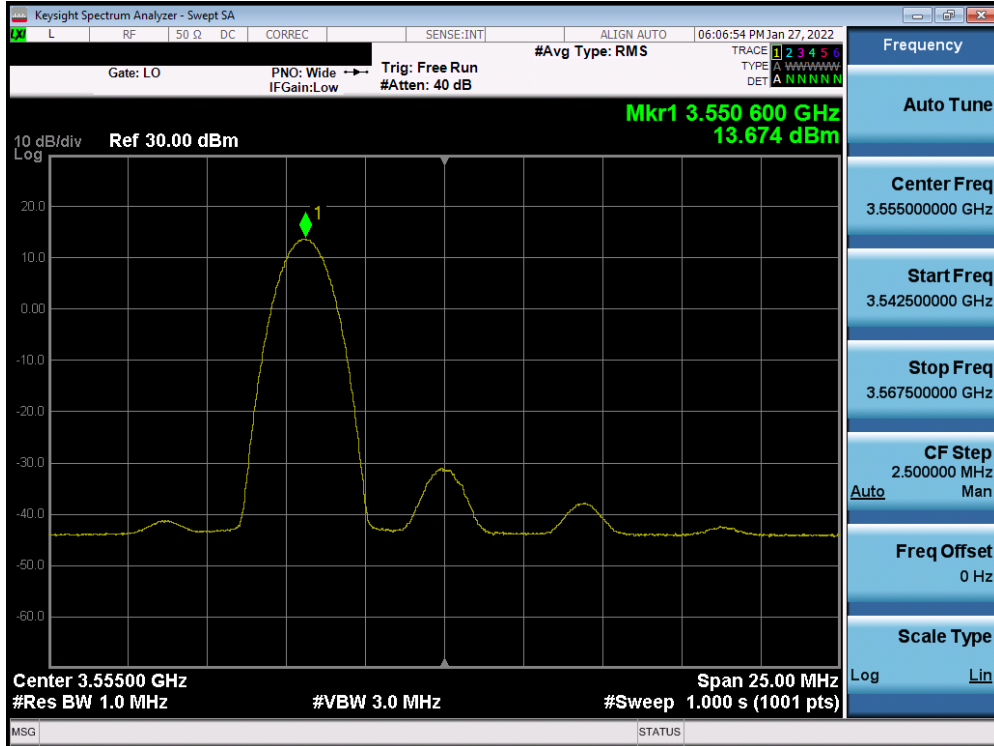


Plot 7-33. Power Spectral Density Plot (LTE B48 – 10MHz QPSK – High Channel)

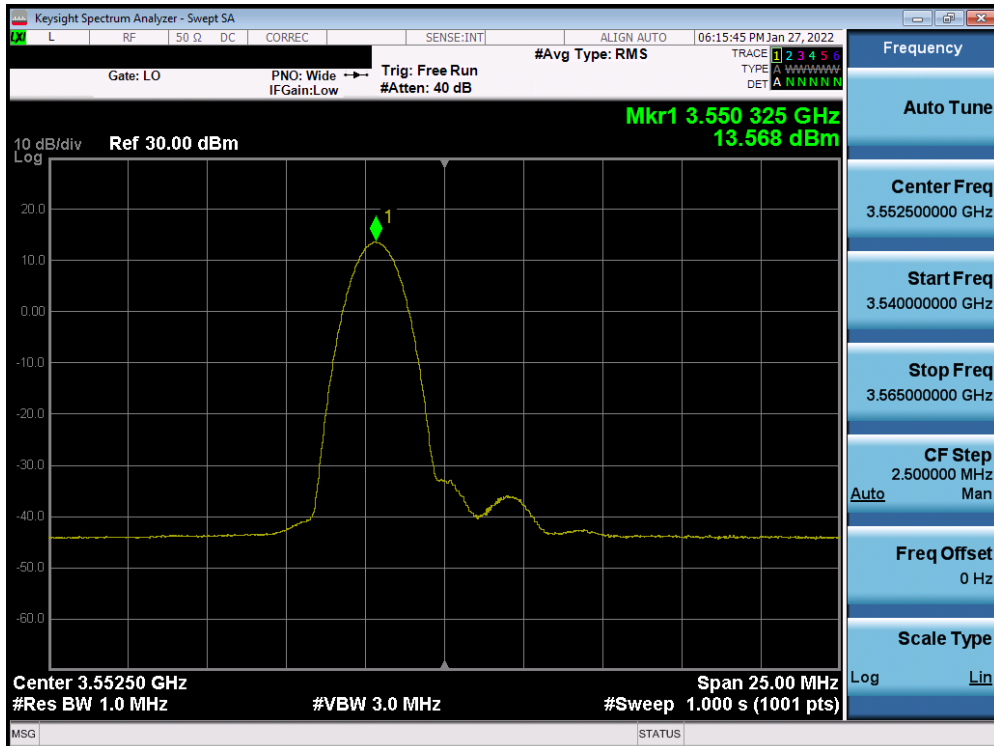


Plot 7-34. Power Spectral Density Plot (LTE B48 – 10MHz 16-QAM – Low Channel)

FCC ID: 2AL52CR00LB18	PCTEST Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2106010060-02.2AL52	Test Dates: 09/26 – 01/24/22	EUT Type: Cellular Module	Page 31 of 43

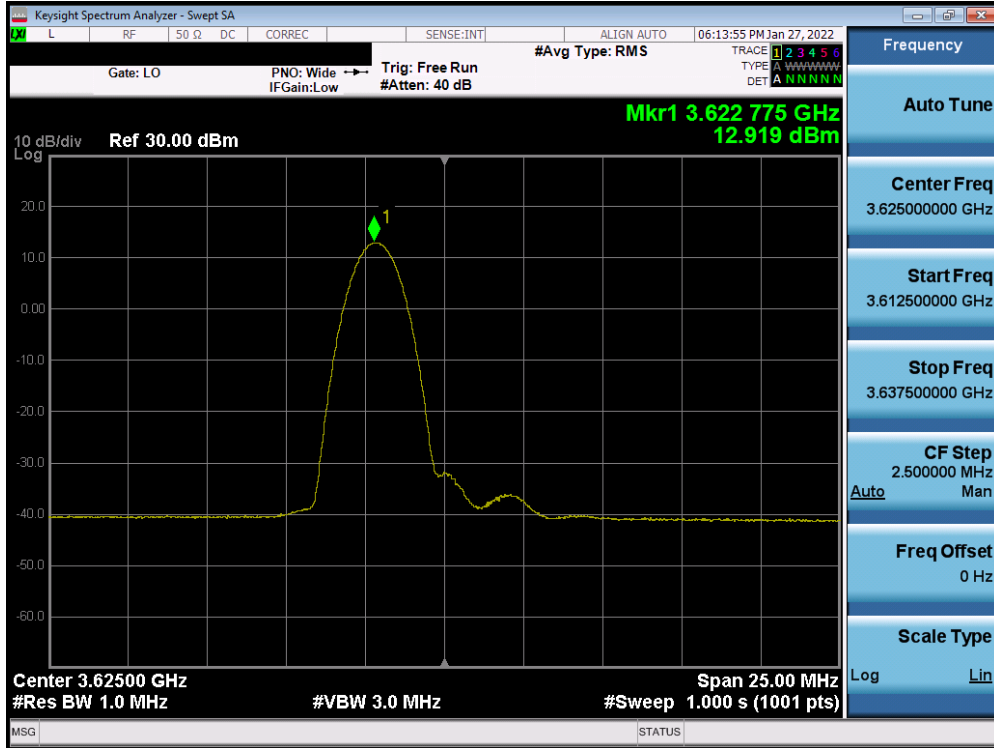


Plot 7-35. Power Spectral Density Plot (LTE B48 – 10MHz 64QAM – Low Channel)

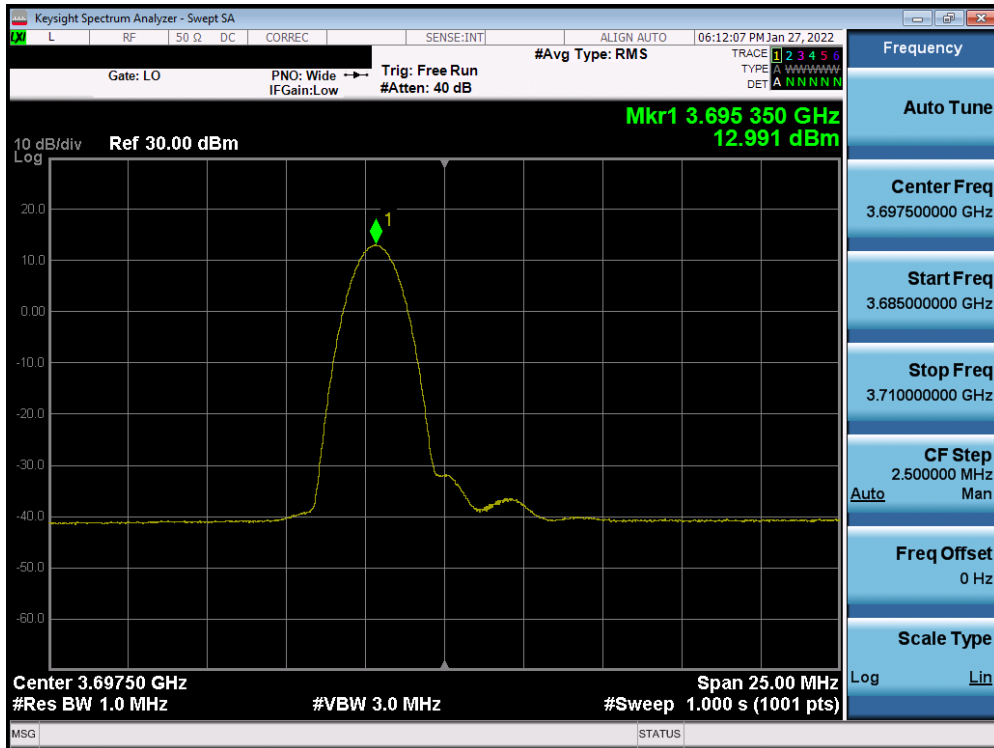


Plot 7-36. Power Spectral Density Plot (LTE B48 – 5MHz QPSK – Low Channel)

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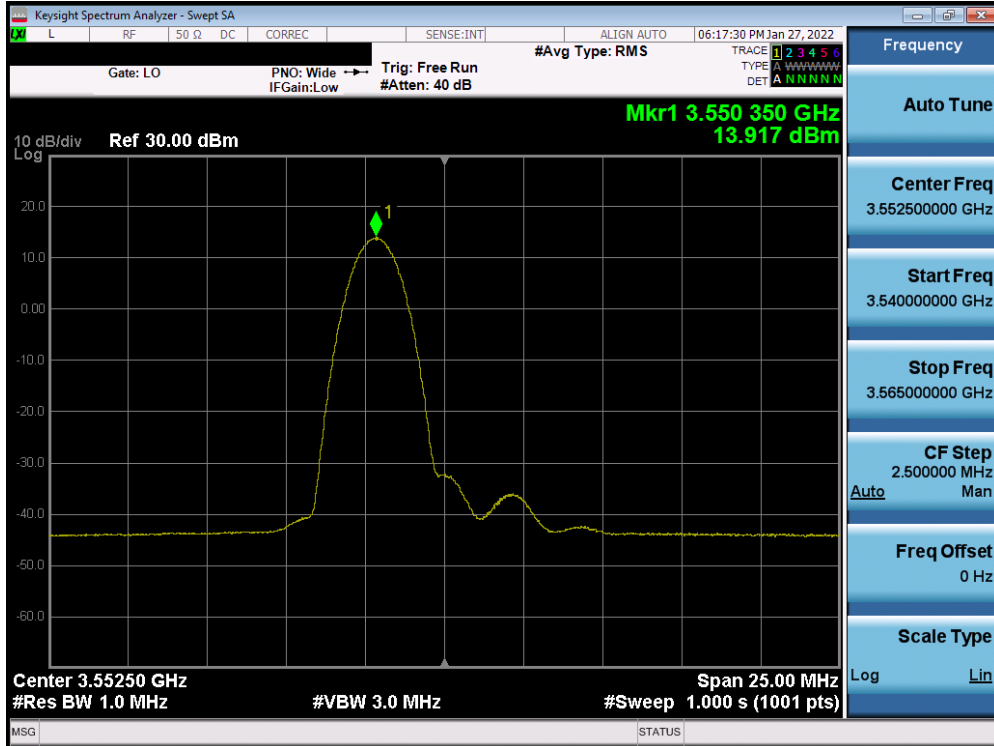


Plot 7-37. Power Spectral Density Plot (LTE B48 – 5MHz QPSK – Mid Channel)

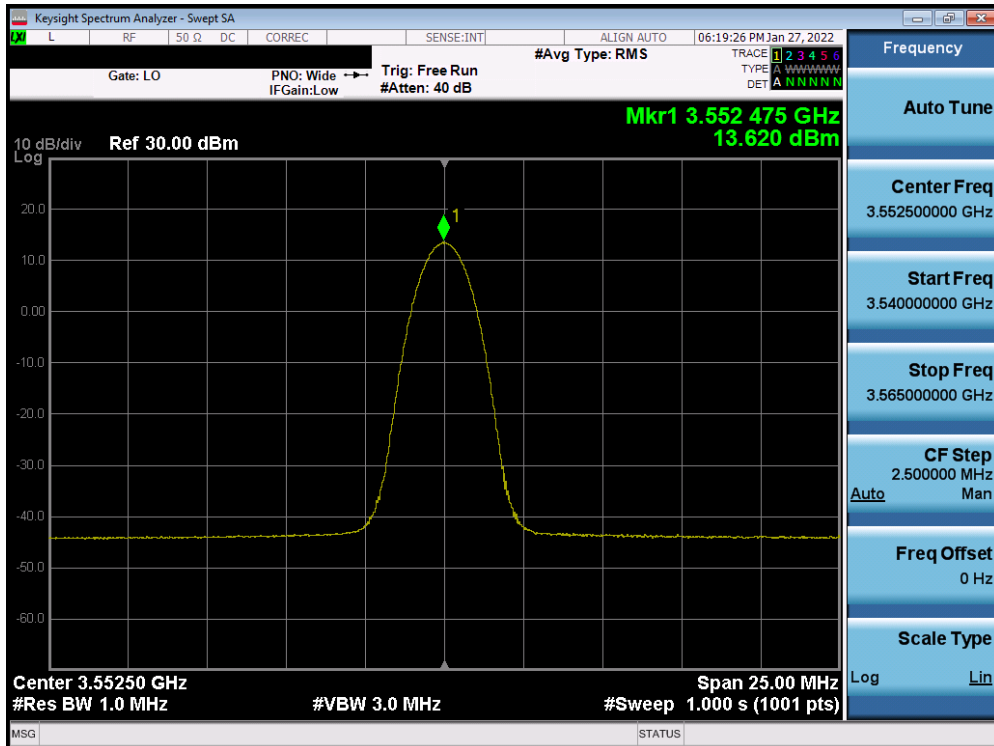


Plot 7-38. Power Spectral Density Plot (LTE B48 – 5MHz QPSK – High Channel)

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Plot 7-39. Power Spectral Density Plot (LTE B48 – 5MHz 16-QAM – Low Channel)



Plot 7-40. Power Spectral Density Plot (LTE B48 – 5MHz 64-QAM – Low Channel)

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7.4 Radiated Spurious Emissions Measurements

§2.1053 §96.41(e)

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 50Ω load. The radiated emissions are measured directly from the EUT and the resulting field strength value is converted to an EIRP value for comparison with the limit.

Test Procedures Used

ANSI C63.26-2015 – Section 5.5.4

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
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

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Test Setup

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

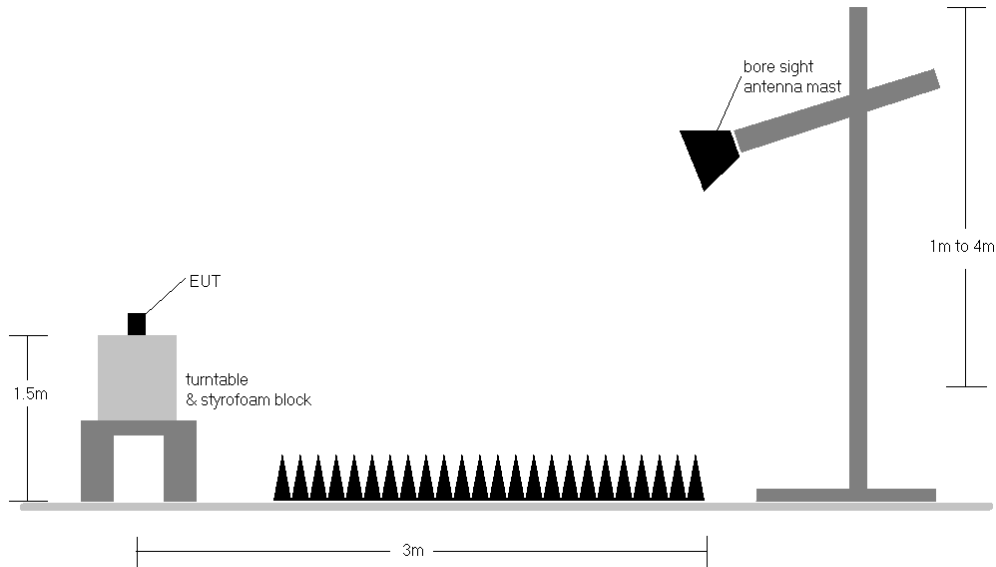



Figure 7-3. Test Instrument & Measurement Setup

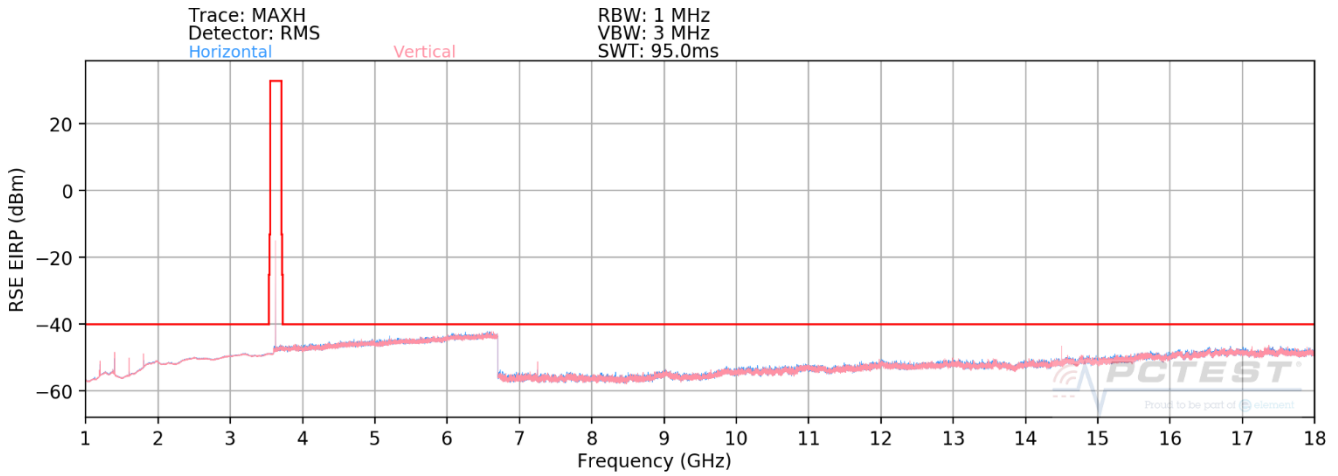
Test Notes

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) The EUT was powered by a DC power source.
- 3) The spectrum is measured from 9kHz 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) Per KDB 971168, Field Strength Level (dBµV/m) is converted to EIRP Spurious Emission Level (dBm) using the formula in Section 5.8.4 (d):

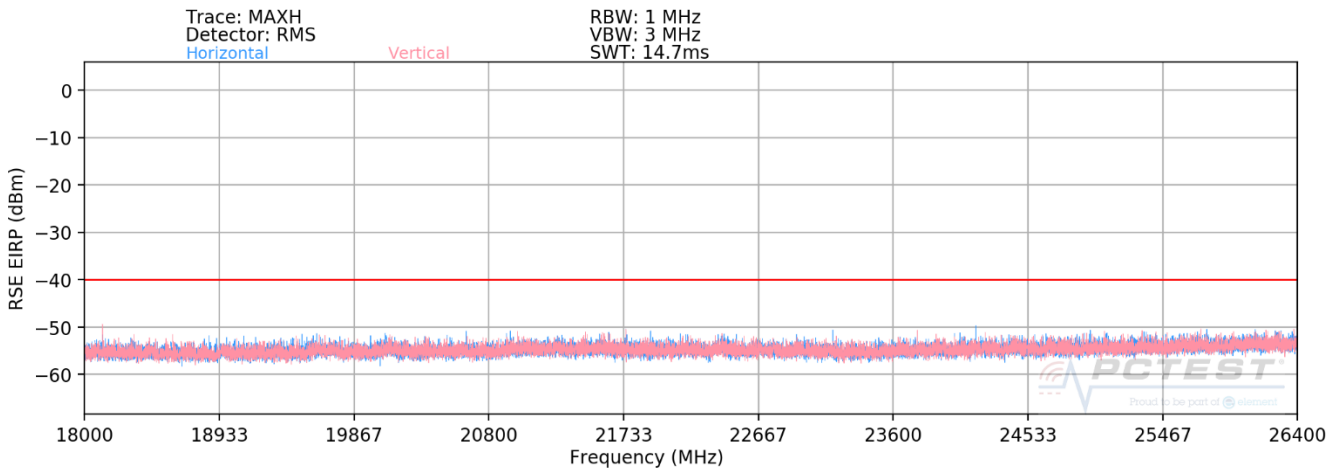
$$\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20 \log D - 104.8; \text{ where } D \text{ is the measurement distance in meters}$$

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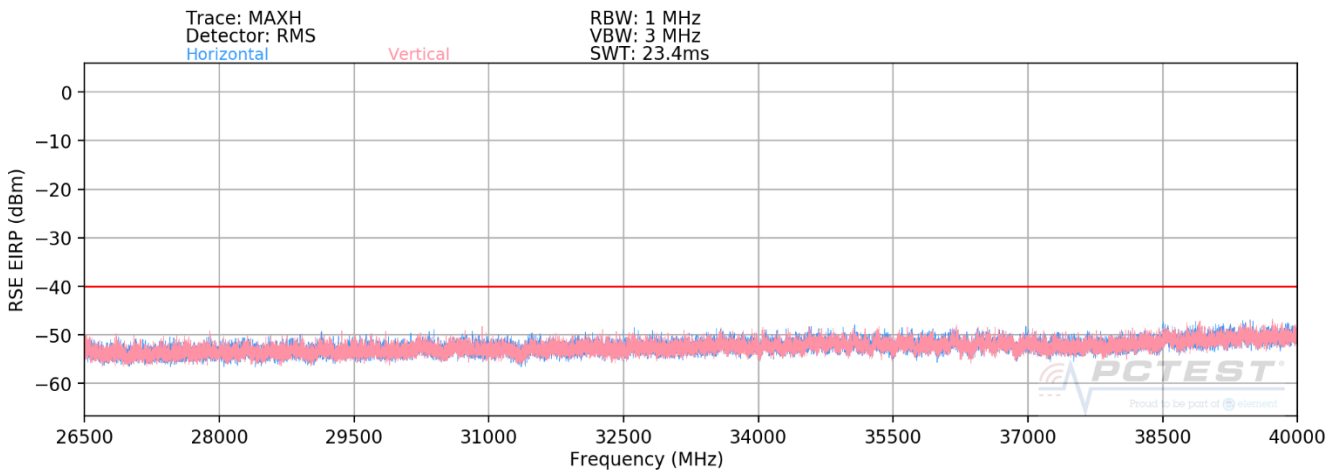
LTE Band 48 (20dBm Power Setting)



Plot 7-41. Radiated Spurious Plot, 1 – 18GHz (LTE Band 48)



Plot 7-42. Radiated Spurious Plot, 18 – 26.5GHz (LTE Band 48)



Plot 7-43. Radiated Spurious Plot, 26.5 – 40GHz (LTE Band 48)

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Sample #:	811924
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]
1400.00	V	119	148	-53.70	-3.65	49.65	-45.60	-40.00	-5.60
7120.00	V	301	139	-73.46	9.24	42.78	-52.48	-40.00	-12.48
10680.00	V	-	-	-79.09	13.42	41.33	-53.92	-40.00	-13.92
14240.00	V	238	137	-76.29	15.28	45.99	-49.27	-40.00	-9.27
17800.00	V	196	130	-74.64	18.07	50.43	-44.83	-40.00	-4.83
21360.00	V	-	-	-59.16	4.99	52.83	-51.97	-40.00	-11.97
24920.00	V	-	-	-57.81	5.26	54.45	-50.35	-40.00	-10.35
28480.00	V	-	-	-58.46	6.25	54.79	-50.01	-40.00	-10.01
32040.00	V	-	-	-58.82	8.28	56.46	-48.34	-40.00	-8.34

Table 7-6. Radiated Spurious Data (LTE Band 48 – Low Channel)

Sample #:	811924
Bandwidth (MHz):	20
Frequency (MHz):	3625.0
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]
1400.00	V	118	148	-53.75	-3.65	49.60	-45.65	-40.00	-5.65
7250.00	V	239	140	-72.05	8.43	43.38	-51.88	-40.00	-11.88
10875.00	V	-	-	-78.90	12.93	41.03	-54.23	-40.00	-14.23
14500.00	V	225	137	-73.82	14.93	48.11	-47.14	-40.00	-7.14
18125.00	V	150	177	-52.88	2.96	57.08	-47.72	-40.00	-7.72
21750.00	V	150	233	-55.57	4.78	56.21	-48.59	-40.00	-8.59
25375.00	V	-	-	-57.87	5.49	54.62	-50.18	-40.00	-10.18
29000.00	V	-	-	-57.86	6.46	55.60	-49.20	-40.00	-9.20
32625.00	V	-	-	-58.06	7.83	56.77	-48.03	-40.00	-8.03



Table 7-7. Radiated Spurious Data (LTE Band 48 – Mid Channel)

FCC ID: 2AL52CR00LB18	 PCTEST [®] Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
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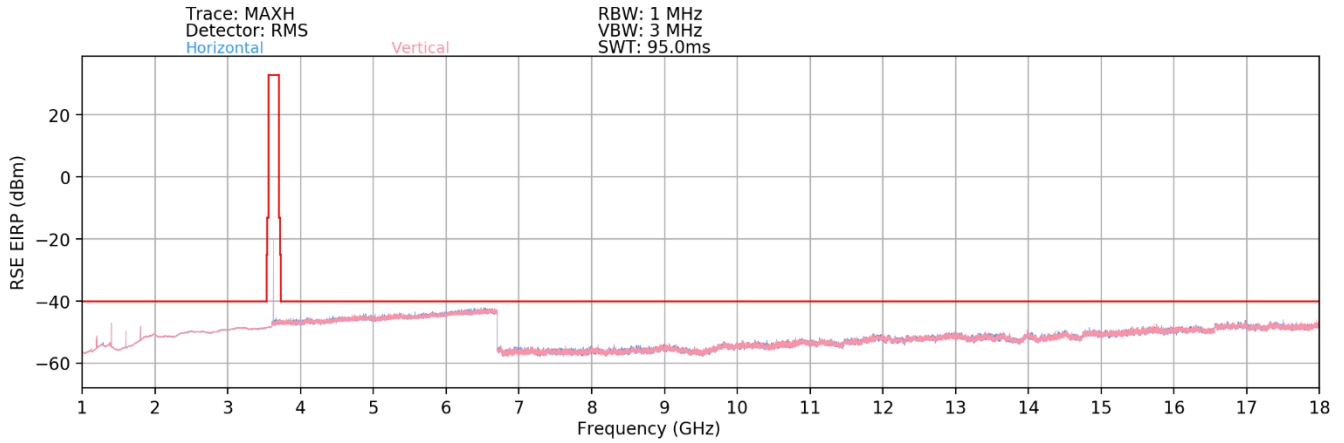
Sample #:	811924
Bandwidth (MHz):	20
Frequency (MHz):	3690.0
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 50
Detector / Trace Mode:	RMS / Max Hold
RBW / VBW:	1MHz / 3MHz

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]
1400.00	V	119	148	-53.72	-3.65	49.63	-45.62	-40.00	-5.62
7380.00	V	302	87	-69.76	9.84	47.08	-48.18	-40.00	-8.18
11070.00	V	-	-	-78.24	12.60	41.36	-53.90	-40.00	-13.90
14760.00	V	234	136	-73.96	16.47	49.51	-45.75	-40.00	-5.75
18450.00	V	150	292	-55.42	3.28	54.86	-49.94	-40.00	-9.94
22140.00	V	150	276	-54.98	4.74	56.76	-48.04	-40.00	-8.04
25830.00	V	-	-	-58.63	5.72	54.09	-50.71	-40.00	-10.71
29520.00	V	-	-	-58.48	7.07	55.59	-49.21	-40.00	-9.21
33210.00	V	-	-	-57.71	7.98	57.27	-47.53	-40.00	-7.53

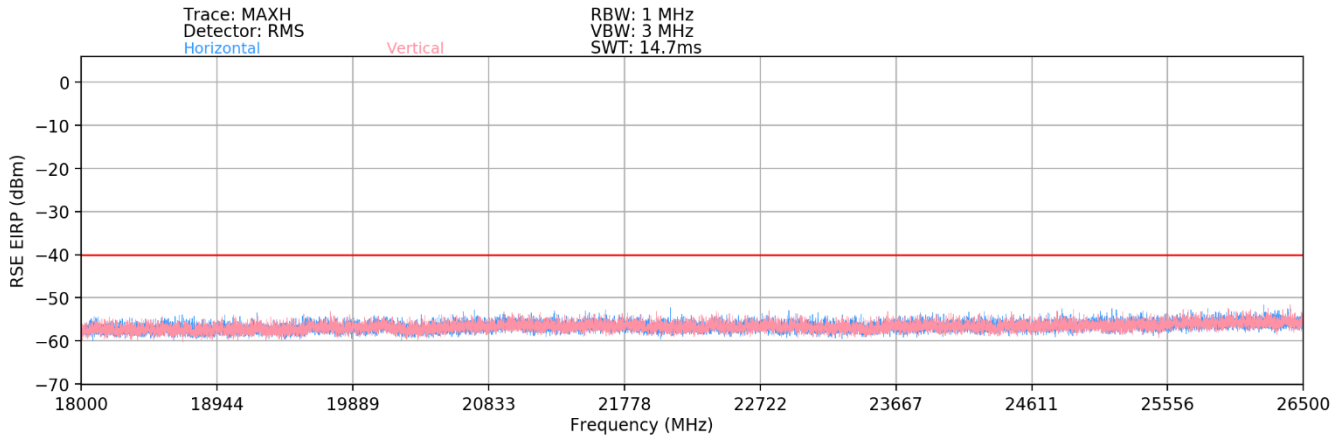
Table 7-8. Radiated Spurious Data (LTE Band 48 – High Channel)

FCC ID: 2AL52CR00LB18	 PCTEST Proud to be part of 	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
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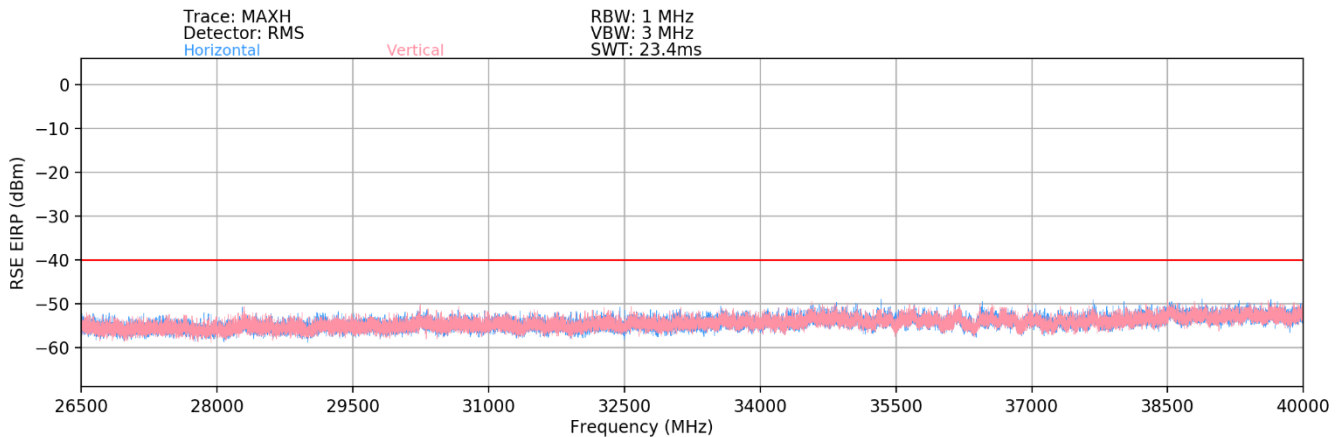
LTE Band 48 (14dBm Power Setting)




Plot 7-44. Radiated Spurious Plot, 1 – 18GHz (LTE Band 48)



Plot 7-45. Radiated Spurious Plot, 18 – 26.5GHz (LTE Band 48)



Plot 7-46. Radiated Spurious Plot, 26.5 – 40GHz (LTE Band 48)

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Sample #:	811924
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]
1400.00	V	119.00	148.00	-53.72	-3.65	49.63	-45.62	-40.00	-5.62
7120.00	V	240.00	101.00	-71.05	8.07	44.02	-51.24	-40.00	-11.24
10680.00	V	-	-	-78.41	12.38	40.97	-54.29	-40.00	-14.29
14240.00	V	208.00	149.00	-78.22	14.78	43.56	-51.70	-40.00	-11.70
17800.00	V	202.00	142.00	-80.21	17.91	44.70	-50.56	-40.00	-10.56
21360.00	V	-	-	-56.06	3.01	53.95	-50.85	-40.00	-10.85
24920.00	V	-	-	-55.91	3.47	54.56	-50.24	-40.00	-10.24
28480.00	V	-	-	-55.97	4.67	55.70	-49.10	-40.00	-9.10
32040.00	V	-	-	-55.84	5.98	57.14	-47.66	-40.00	-7.66

Table 7-9. Radiated Spurious Data (LTE Band 48 – Low Channel)

Sample #:	811924
Bandwidth (MHz):	20
Frequency (MHz):	3625.0
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]
1400.00	V	116.00	146.00	-53.98	-3.65	49.37	-45.88	-40.00	-5.88
7250.00	V	290.00	96.00	-70.29	7.53	44.24	-51.02	-40.00	-11.02
10875.00	V	-	-	-77.63	11.78	41.15	-54.11	-40.00	-14.11
14500.00	V	236.00	29.00	-76.50	14.96	45.46	-49.80	-40.00	-9.80
18125.00	V	150.00	304.00	-53.41	0.91	54.50	-50.30	-40.00	-10.30
21750.00	V	-	-	-54.97	3.22	55.25	-49.55	-40.00	-9.55
25375.00	V	-	-	-55.61	3.59	54.98	-49.82	-40.00	-9.82
29000.00	V	-	-	-55.36	4.28	55.92	-48.88	-40.00	-8.88
32625.00	V	-	-	-55.04	6.28	58.24	-46.56	-40.00	-6.56


Table 7-10. Radiated Spurious Data (LTE Band 48 – Mid Channel)

FCC ID: 2AL52CR00LB18	 PCTEST [®] Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
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Sample #:	811924
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]
1400.00	V	119.00	149.00	-53.54	-3.65	49.81	-45.44	-40.00	-5.44
7380.00	V	285.00	116.00	-69.75	8.00	45.25	-50.00	-40.00	-10.00
11070.00	V	-	-	-77.45	12.12	41.67	-53.59	-40.00	-13.59
14760.00	V	227.00	323.00	-76.19	15.82	46.63	-48.63	-40.00	-8.63
18450.00	V	150.00	309.00	-54.64	1.27	53.63	-51.17	-40.00	-11.17
22140.00	V	-	-	-55.79	2.92	54.13	-50.67	-40.00	-10.67
25830.00	V	-	-	-55.99	3.93	54.94	-49.86	-40.00	-9.86
29520.00	V	-	-	-56.09	5.42	56.33	-48.47	-40.00	-8.47
33210.00	V	-	-	-55.55	6.37	57.82	-46.98	-40.00	-6.98

Table 7-11. Radiated Spurious Data (LTE Band 48 – High Channel)

FCC ID: 2AL52CR00LB18	 PCTEST® Proud to be part of element	PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Council Rock Enterprises LLC Cellular Module FCC ID: 2AL52CR00LB18** complies with all of the Category B CBSD requirements of Part 96 of the FCC Rules for LTE operation only.

FCC ID: 2AL52CR00LB18	 PART 96 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2106010060-02.2AL52	Test Dates: 09/26 – 01/24/22	EUT Type: Cellular Module
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