



ELEMENT WASHINGTON DC LLC

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PART 22 MEASUREMENT REPORT

Applicant Name:
SONY Corporation
1-7-1 Konan
Minato-ku
Tokyo, 108-0075, Japan

Date of Testing:
3/25/2022 - 5/19/2022
Test Report Issue Date:
5/26/2022
Test Site/Location:
Element Lab. Columbia, MD, USA
Test Report Serial No.:
1M2201200003-03.PY7

FCC ID:	PY7-57325M
Applicant Name:	SONY Corporation

Application Type: Certification
EUT Type: Portable Handset
FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part: 22
Test Procedure(s): ANSI C63.26-2015, KDB 648474 D03 v01r04

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



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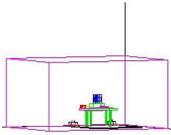
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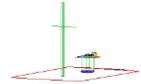
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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	ERP		EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	Max. Power [W]	Max. Power [dBm]	
LTE Band 5 (Main ANT)	10 MHz	QPSK	829.0 - 844.0	0.088	19.44	0.144	21.59	9M03G7D
		16QAM	829.0 - 844.0	0.074	18.69	0.121	20.84	9M04W7D
	5 MHz	QPSK	826.5 - 846.5	0.090	19.54	0.147	21.69	4M55G7D
		16QAM	826.5 - 846.5	0.074	18.68	0.121	20.83	4M54W7D
	3 MHz	QPSK	825.5 - 847.5	0.087	19.39	0.143	21.54	2M72G7D
		16QAM	825.5 - 847.5	0.079	18.95	0.129	21.10	2M73W7D
1.4 MHz	QPSK	824.7 - 848.3	0.089	19.52	0.147	21.67	1M11G7D	
	16QAM	824.7 - 848.3	0.078	18.94	0.128	21.09	1M11W7D	
NR Band n5 (Main ANT)	20 MHz	$\pi/2$ BPSK	834.0 - 839.0	0.062	17.94	0.102	20.09	18M0G7D
		QPSK	834.0 - 839.0	0.064	18.03	0.104	20.18	19M0G7D
		16QAM	834.0 - 839.0	0.050	17.03	0.083	19.18	18M9W7D
	15 MHz	$\pi/2$ BPSK	831.5 - 841.5	0.062	17.91	0.101	20.06	13M5G7D
		QPSK	831.5 - 841.5	0.064	18.09	0.106	20.24	14M2G7D
		16QAM	831.5 - 841.5	0.050	17.01	0.082	19.16	14M2W7D
	10 MHz	$\pi/2$ BPSK	829.0 - 844.0	0.060	17.77	0.098	19.92	9M00G7D
		QPSK	829.0 - 844.0	0.062	17.91	0.101	20.06	9M36G7D
		16QAM	829.0 - 844.0	0.049	16.87	0.080	19.02	9M34W7D
	5 MHz	$\pi/2$ BPSK	826.5 - 846.5	0.059	17.71	0.097	19.86	4M59G7D
		QPSK	826.5 - 846.5	0.061	17.87	0.100	20.02	4M52G7D
		16QAM	826.5 - 846.5	0.049	16.89	0.080	19.04	4M52W7D

EUT Overview (LTE/NR)

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	ERP		EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	Max. Power [W]	Max. Power [dBm]	
LTE Band 5 (Sub ANT)	10 MHz	QPSK	829.0 - 844.0	0.061	17.82	0.099	19.97	9M03G7D
		16QAM	829.0 - 844.0	0.049	16.91	0.081	19.06	9M04W7D
	5 MHz	QPSK	826.5 - 846.5	0.061	17.86	0.100	20.01	4M55G7D
		16QAM	826.5 - 846.5	0.049	16.93	0.081	19.08	4M53W7D
	3 MHz	QPSK	825.5 - 847.5	0.061	17.84	0.100	19.99	2M72G7D
		16QAM	825.5 - 847.5	0.049	16.94	0.081	19.09	2M73W7D
1.4 MHz	QPSK	824.7 - 848.3	0.061	17.89	0.101	20.04	1M11G7D	
	16QAM	824.7 - 848.3	0.049	16.89	0.080	19.04	1M11W7D	
NR Band n5 (Sub ANT)	20 MHz	$\pi/2$ BPSK	834.0 - 839.0	0.054	17.35	0.089	19.50	18M0G7D
		QPSK	834.0 - 839.0	0.054	17.29	0.088	19.44	19M0G7D
		16QAM	834.0 - 839.0	0.045	16.57	0.075	18.72	18M9W7D
	15 MHz	$\pi/2$ BPSK	831.5 - 841.5	0.055	17.43	0.091	19.58	13M5G7D
		QPSK	831.5 - 841.5	0.054	17.29	0.088	19.44	14M2G7D
		16QAM	831.5 - 841.5	0.045	16.57	0.074	18.72	14M2W7D
	10 MHz	$\pi/2$ BPSK	829.0 - 844.0	0.054	17.30	0.088	19.45	9M03G7D
		QPSK	829.0 - 844.0	0.053	17.21	0.086	19.36	9M37G7D
		16QAM	829.0 - 844.0	0.044	16.41	0.072	18.56	9M34W7D
	5 MHz	$\pi/2$ BPSK	826.5 - 846.5	0.054	17.35	0.089	19.50	4M59G7D
		QPSK	826.5 - 846.5	0.052	17.16	0.085	19.31	4M52G7D
		16QAM	826.5 - 846.5	0.044	16.41	0.072	18.56	4M51W7D

EUT Overview (LTE/NR)

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Mode	Modulation	Tx Frequency Range [MHz]	ERP		EIRP		Emission Designator
			Max. Power [W]	Max. Power [dBm]	Max. Power [W]	Max. Power [dBm]	
GSM/GPRS	GMSK	824.2 - 848.8	0.486	26.87	0.798	29.02	245KGXW
EDGE	8-PSK	824.2 - 848.8	0.143	21.54	0.234	23.69	237KG7W
WCDMA	Spread Spectrum	826.4 - 846.6	0.077	18.87	0.127	21.02	4M16F9W

EUT Overview (2G/3G)

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1.0 INTRODUCTION

1.1 Scope

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

1.2 Element 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 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.

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **SONY Portable Handset FCC ID: PY7-57325M**. The test data contained in this report pertains only to the emissions due to the EUT's licensed transmitters that operate under the provisions of Part 22.

Test Device Serial No.: 09823, 09682, 00KC5, 03JC5, 10086

2.2 Device Capabilities

This device contains the following capabilities:

850/1900 GSM/GPRS/EDGE, 850/1700/1900, WCDMA/HSPA, Multi-band LTE, Multi-band 5G NR (FR1 and FR2), 802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII (5 and 6 GHz), Bluetooth (1x, EDR, LE), NFC

2.3 Test Configuration

The EUT was tested per the guidance of ANSI/TIA-603-E-2016 and KDB 971168 D01 v03r01. See Section 3.2 of this test report for a description of the radiated and antenna port conducted emissions tests.

This device supports wireless charging capability and, thus, is subject to the test requirements of KDB 648474 D03 v01r04. Additional radiated spurious emission measurements were performed with the EUT lying flat on an authorized wireless charging pad (WCP) Model: EP-N5100 while operating under normal conditions in a simulated call or data transmission configuration. The worst case radiated emissions data is shown in this report.

2.4 Software and Firmware

Testing was performed on device(s) using software/firmware version 0.1309 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 Evaluation Procedure

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

Deviation from Measurement Procedure.....None

3.2 Radiated 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/TIA-603-E-2016. 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 $P_g [dBm] - \text{cable loss} [dB]$.

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 v01r01.

Radiated power and radiated spurious emission levels are investigated with the receive antenna horizontally and vertically polarized per ANSI/TIA-603-E-2016.

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4.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. 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
-	AP2	EMC Cable and Switch System	1/4/2022	Annual	1/4/2023	AP2
-	ETS	EMC Cable and Switch System	12/9/2021	Annual	12/9/2022	ETS
-	LTx1	Licensed Transmitter Cable Set	12/19/2021	Annual	12/19/2022	LTx1
-	LTx2	Licensed Transmitter Cable Set	12/19/2021	Annual	12/19/2022	LTx2
Anritsu	MT8821C	Radio Communication Analyzer	N/A			6201525694
Emco	3115	Horn Antenna (1-18GHz)	6/18/2020	Biennial	6/18/2022	9704-5182
Keysight Technologies	N9020A	MXA Signal Analyzer	3/15/2022	Annual	3/15/2023	MY54500644
Keysight Technologies	N9030A	PXA Signal Analyzer (44GHz)	7/21/2021	Annual	7/21/2022	MY49430494
Keysight Technologies	N9038A	MXE EMI Receiver	1/21/2022	Annual	1/21/2023	MY51210133
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			112347
Rohde & Schwarz	ESU26	EMI Test Receiver (26.5GHz)	8/3/2021	Annual	8/3/2022	100342
Rohde & Schwarz	ESU40	EMI Test Receiver (40GHz)	5/25/2022	Annual	5/25/2022	100348
Rohde & Schwarz	ESW44	EMI Test Receiver 2Hz to 44 GHz	3/28/2022	Annual	3/28/2023	101716
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	7/27/2020	Biennial	7/27/2022	A051107

Table 5-1. Test Equipment

Notes:

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

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6.0 SAMPLE CALCULATIONS

GSM Emission Designator

Emission Designator = 250KGXW

GSM BW = 250 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 250KG7W

EDGE BW = 250 kHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M16F9W

WCDMA BW = 4.16 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

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

Example: Spurious emission at 3700.40 MHz

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

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7.0 TEST RESULTS

7.1 Summary

Company Name: SONY Corporation
 FCC ID: PY7-57325M
 FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)
 Mode(s): GSM/GPRS/WCDMA/NR/LTE

Test Condition	Test Description	FCC Part Section(s)	RSS Section(s)	Test Limit	Test Result	Reference
CONDUCTED	Transmitter Conducted Output Power	2.1046(a), 2.1046(c)	RSS-Gen(6.12)	N/A	PASS	Section 7.2
	Occupied Bandwidth	2.1049(h)	RSS-Gen(6.7)	N/A	PASS	Section 7.3
	Conducted Band Edge / Spurious Emissions	2.1051, 22.917(a)	RSS-Gen(6.13), RSS-132(5.5)	$\geq 43 + 10 \log (P[\text{Watts}])$ dB of attenuation below transmitter power	PASS	Sections 7.4, 7.5
	Peak-to-Average Ratio	N/A	RSS-132(5.4)	≤ 13 dB	PASS	Section 7.6
	Frequency Stability	2.1055, 22.355	RSS-Gen(6.11), RSS-132(5.3)	The carrier frequency of the transmitter must be maintained within the 2.5ppm	PASS	Section 7.9
RADIATED	Effective Radiated Power / Equivalent Isotropic Radiated Power	22.913(a)(5)	RSS-Gen(6.12), RSS-132(5.4)	< 7 Watts max. ERP	PASS	Section 7.7
	Radiated Spurious Emissions	2.1053, 22.917(a)	RSS-Gen(7.3), RSS-132(5.6)	$> 43 + 10 \log_{10} (P[\text{Watts}])$ for all out-of-band emissions	PASS	Section 7.8

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) All conducted emissions measurements are performed with automated test software to capture the corresponding plots necessary to show compliance. The measurement software utilized is Element EMC Software Tool v1.0.

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7.2 Conducted Power Output Data

Test Overview

The EUT is set up to transmit two contiguous LTE channels. The power level of both carriers is measured by means of a calibrated spectrum analyzer. All 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.

Test Procedure Used

KDB 971168 D01 v03r01 – Section 6.0

Test Settings

1. Detector = RMS
2. Trace mode = trace average for continuous emissions, max hold for pulse emissions
3. Sweep time = auto couple
4. The trace was allowed to stabilize
5. Please see test notes below for RBW and VBW settings

Test Setup

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

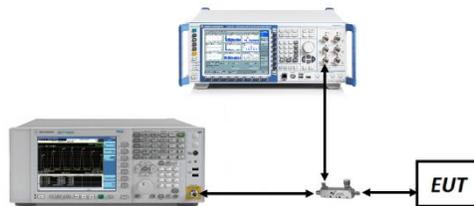


Figure 7-1. Test Instrument & Measurement Setup

Test Notes

1. Conducted power measurements were evaluated for the two contiguous channels using various combinations of RB size, RB offset, 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.
2. Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for frequencies less than 1 GHz and 1 MHz or greater for frequencies greater than 1 GHz.
3. All other conducted power measurements are contained in the RF exposure report for this filing.

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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
10 MHz	QPSK	20450	829.0	1 / 0	24.35
		20525	836.5	1 / 0	24.40
		20600	844.0	1 / 25	24.44
	16-QAM	20450	829.0	1 / 25	23.25
5 MHz	QPSK	20425	826.5	1 / 24	24.39
		20525	836.5	1 / 24	24.48
		20625	846.5	1 / 24	24.33
	16-QAM	20425	826.5	1 / 24	23.27
3 MHz	QPSK	20415	825.5	1 / 0	24.37
		20525	836.5	1 / 14	24.38
		20635	847.5	1 / 7	24.40
	16-QAM	20415	825.5	1 / 0	23.28
1.4 MHz	QPSK	20407	824.7	1 / 3	24.42
		20525	836.5	1 / 3	24.43
		20643	848.3	1 / 3	24.32
	16-QAM	20407	824.7	1 / 3	23.24

Table 7-2. LTE Band 5 (Sub ANT) Conducted Power Output Data

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
20 MHz	π/2 BPSK	166800	834.0	1 / 26	23.58
		167300	836.5	1 / 26	23.68
		167800	839.0	1 / 26	23.61
	QPSK	166800	834.0	1 / 26	23.56
		167300	836.5	1 / 26	23.64
		167800	839.0	1 / 79	23.59
	16-QAM	166800	834.0	1 / 26	23.23
15 MHz	π/2 BPSK	166300	831.5	1 / 39	23.65
		167300	836.5	1 / 39	23.55
		168300	841.5	1 / 20	23.57
	QPSK	166300	831.5	1 / 39	23.56
		167300	836.5	1 / 39	23.64
		168300	841.5	1 / 20	23.62
	16-QAM	166300	831.5	1 / 39	23.23
10 MHz	π/2 BPSK	165800	829.0	1 / 38	23.52
		167300	836.5	1 / 13	23.44
		168800	844.0	1 / 38	23.45
	QPSK	165800	829.0	1 / 38	23.48
		167300	836.5	1 / 13	23.42
		168800	844.0	1 / 38	23.49
	16-QAM	168800	844.0	1 / 38	23.12
5 MHz	π/2 BPSK	165300	826.5	1 / 12	23.58
		167300	836.5	1 / 12	23.48
		169300	846.5	1 / 6	23.44
	QPSK	165300	826.5	1 / 12	23.43
		167300	836.5	1 / 12	23.52
		169300	846.5	1 / 6	23.60
	16-QAM	169300	846.5	1 / 6	23.12

Table 7-3. NR Band n5 (Sub ANT) Conducted Power Output Data

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NR (SCS 15kHz)						LTE						NR Conducted Power [dBm]	LTE Conducted Power [dBm]	EN-DC Total Tx. Power [dBm]
NR Band	NR Bandwidth [MHz]	NR Channel	NR Frequency [MHz]	Mod.	NR RB#/Offset	LTE Band	LTE Bandwidth [MHz]	LTE Channel	LTE Frequency [MHz]	Mod.	LTE RB#/Offset			
n5	20	Mid	836.5	QPSK	100/0	B66	20	Mid	1745	QPSK	100/0	23.88	23.26	26.59
				QPSK	100/0					QPSK	1/50	23.87	23.16	26.54
				QPSK	1/53					QPSK	100/0	24.65	23.21	27.00
				QPSK	1/53					QPSK	1/50	24.91	23.11	27.11
				16Q	1/53					16Q	1/50	23.51	23.02	26.28

Table 7-4. EN-DC n5-B66 Conducted Power Output Data

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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

KDB 971168 D01 v03r01 – Section 4.2

Test Settings

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5% of the expected OBW
3. VBW $\geq 3 \times$ 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.

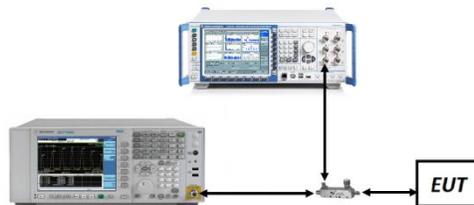


Figure 7-2. Test Instrument & Measurement Setup

Test Notes

None.

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LTE Band 5 – Main Ant

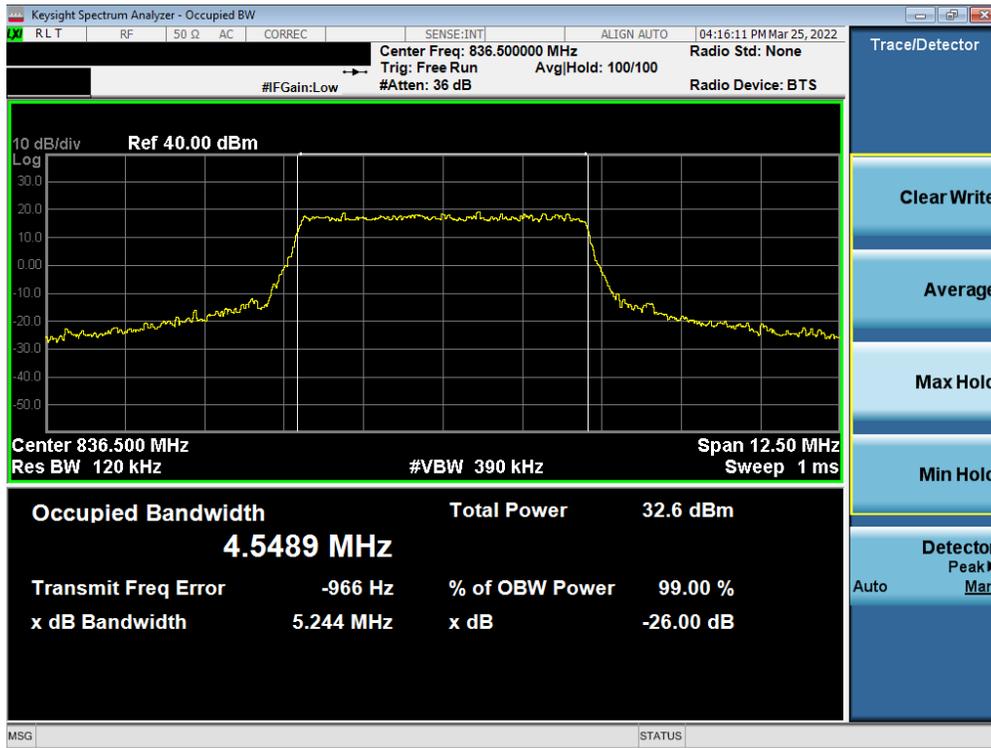


Plot 7-1. Occupied Bandwidth Plot (LTE Band 5 - 10MHz QPSK - Full RB - Main Ant)



Plot 7-2. Occupied Bandwidth Plot (LTE Band 5 - 10MHz 16-QAM - Full RB - Main Ant)

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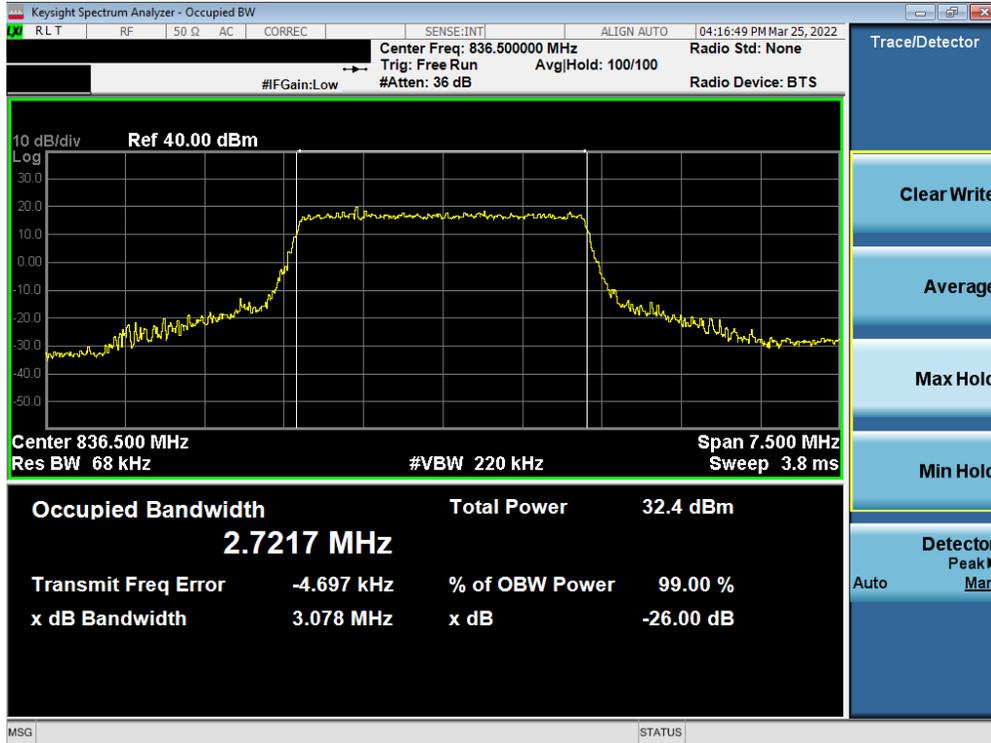


Plot 7-3. Occupied Bandwidth Plot (LTE Band 5 - 5MHz QPSK - Full RB - Main Ant)

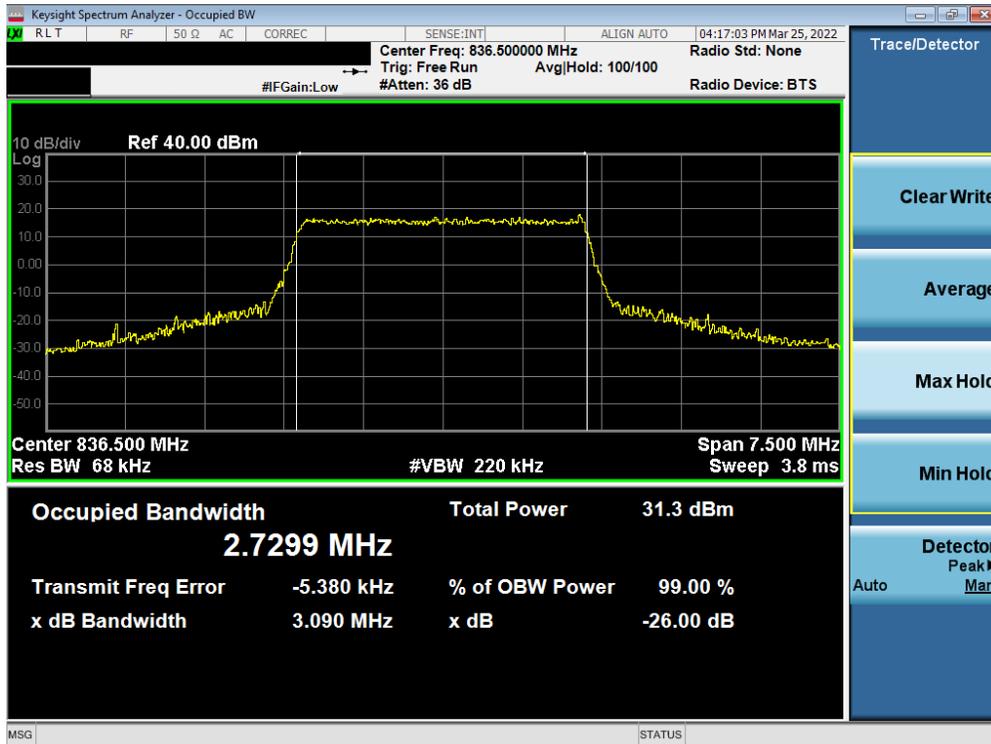


Plot 7-4. Occupied Bandwidth Plot (LTE Band 5 - 5MHz 16-QAM - Full RB - Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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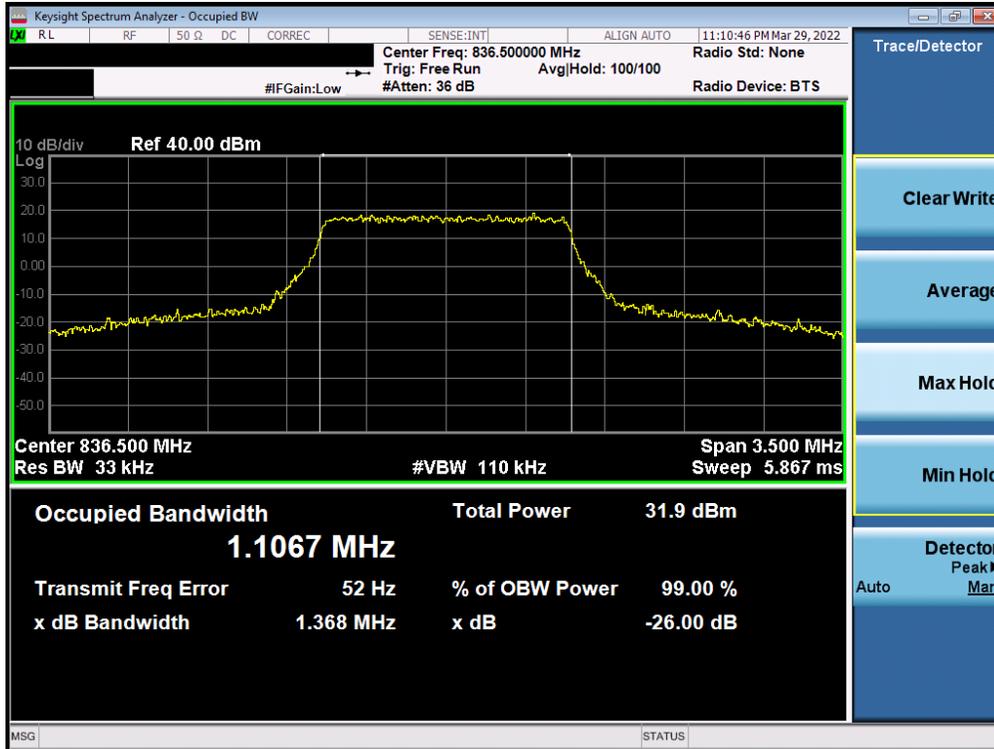


Plot 7-5. Occupied Bandwidth Plot (LTE Band 5 - 3MHz QPSK - Full RB - Main Ant)

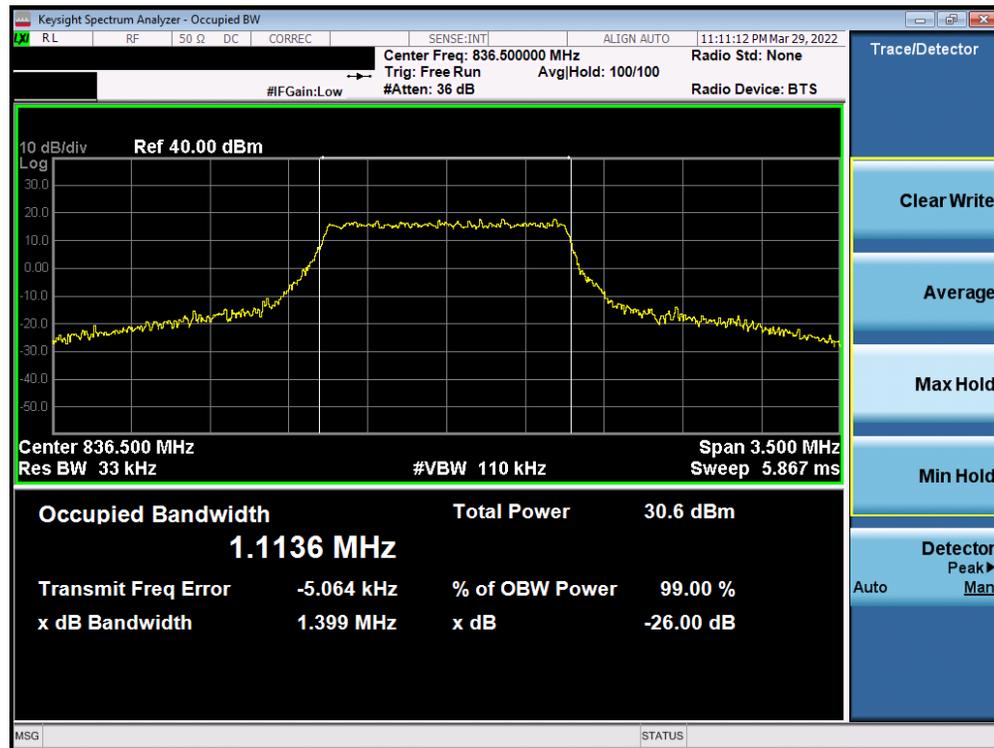


Plot 7-6. Occupied Bandwidth Plot (LTE Band 5 - 3MHz 16-QAM - Full RB - Main Ant)

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Plot 7-7. Occupied Bandwidth Plot (LTE Band 5 - 1.4MHz QPSK - Full RB - Main Ant)



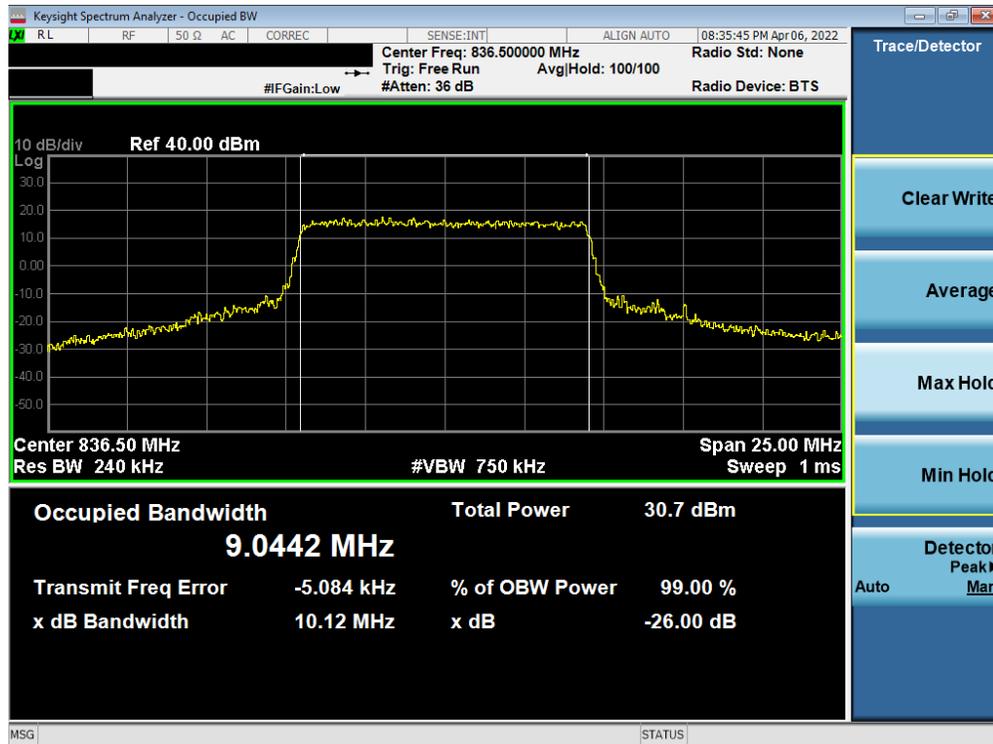
Plot 7-8. Occupied Bandwidth Plot (LTE Band 5 - 1.4MHz 16-QAM - Full RB - Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 5 – Sub ANT

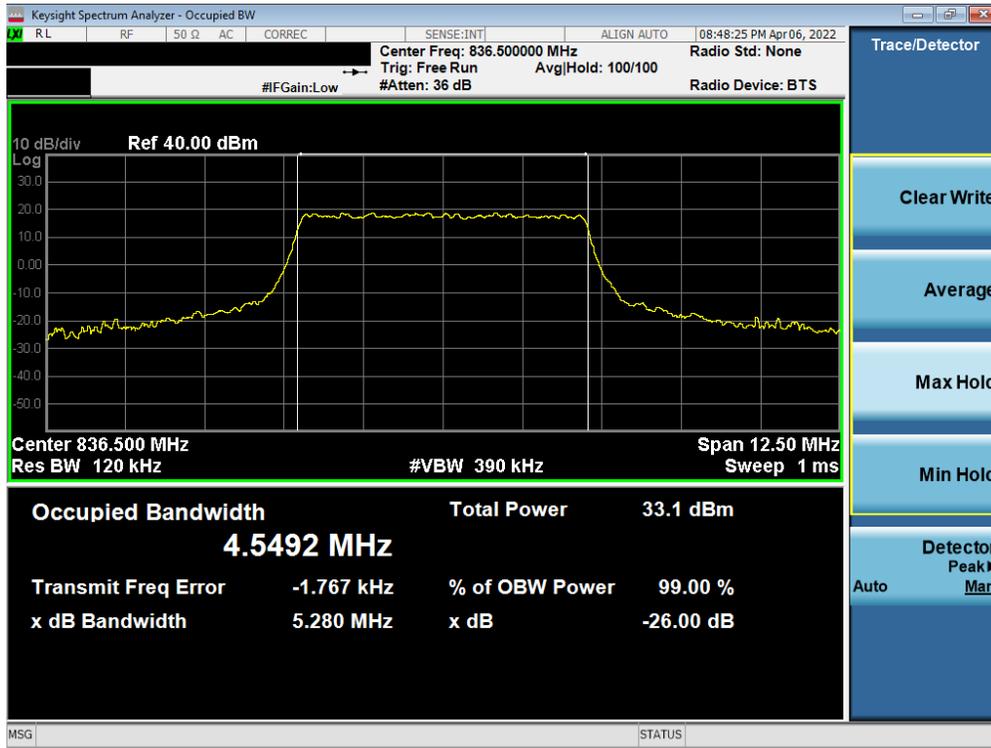


Plot 7-9. Occupied Bandwidth Plot (LTE Band 5 - 10MHz QPSK - Full RB – Sub Ant)

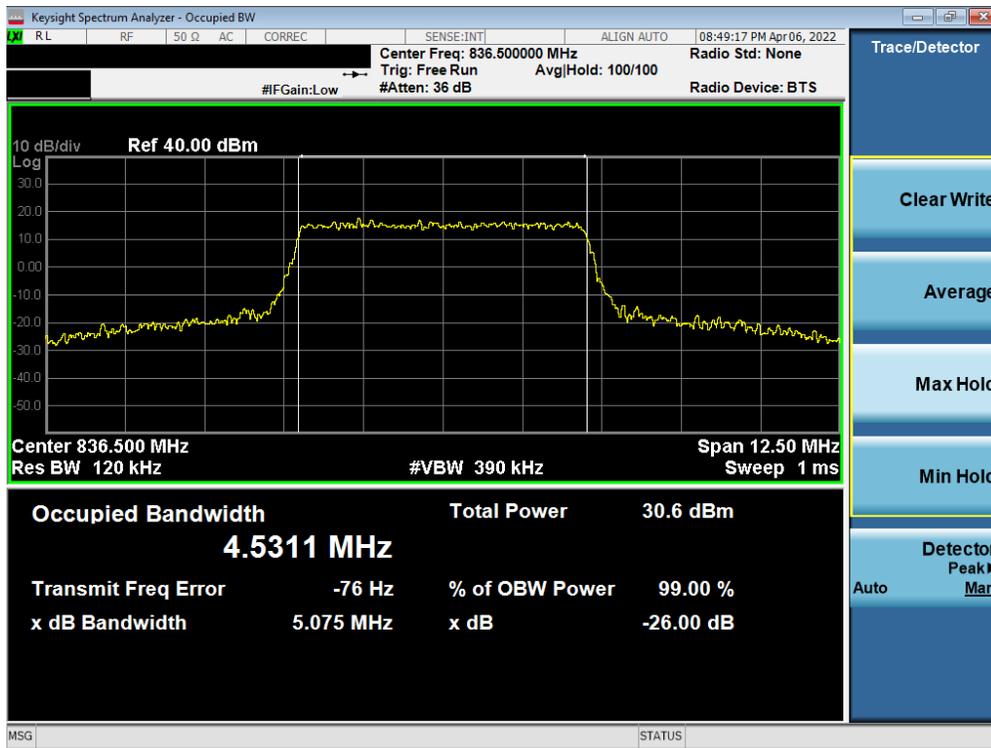


Plot 7-10. Occupied Bandwidth Plot (LTE Band 5 - 10MHz 16-QAM - Full RB - Sub Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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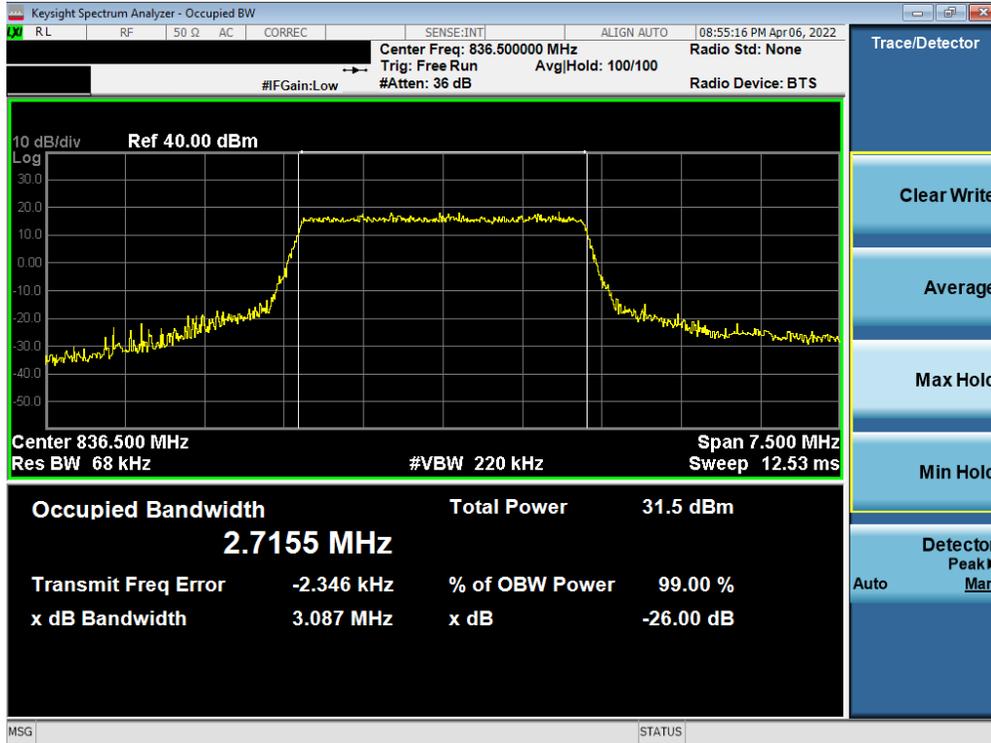


Plot 7-11. Occupied Bandwidth Plot (LTE Band 5 - 5MHz QPSK - Full RB - Sub Ant)



Plot 7-12. Occupied Bandwidth Plot (LTE Band 5 - 5MHz 16-QAM - Full RB - Sub Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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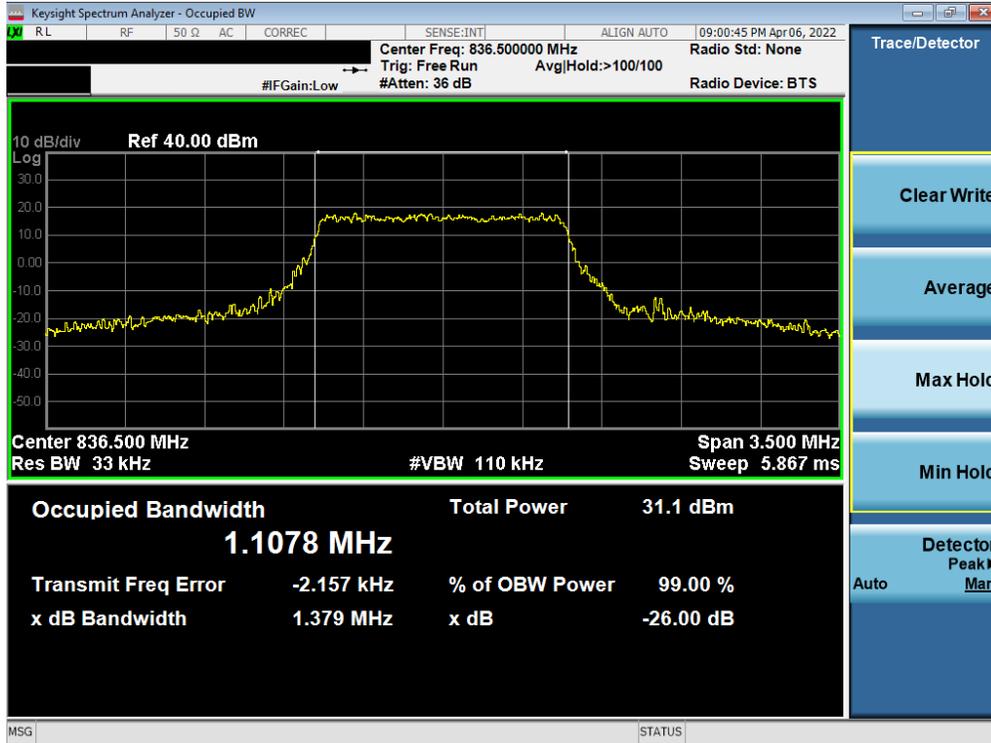


Plot 7-13. Occupied Bandwidth Plot (LTE Band 5 - 3MHz QPSK - Full RB - Sub Ant)

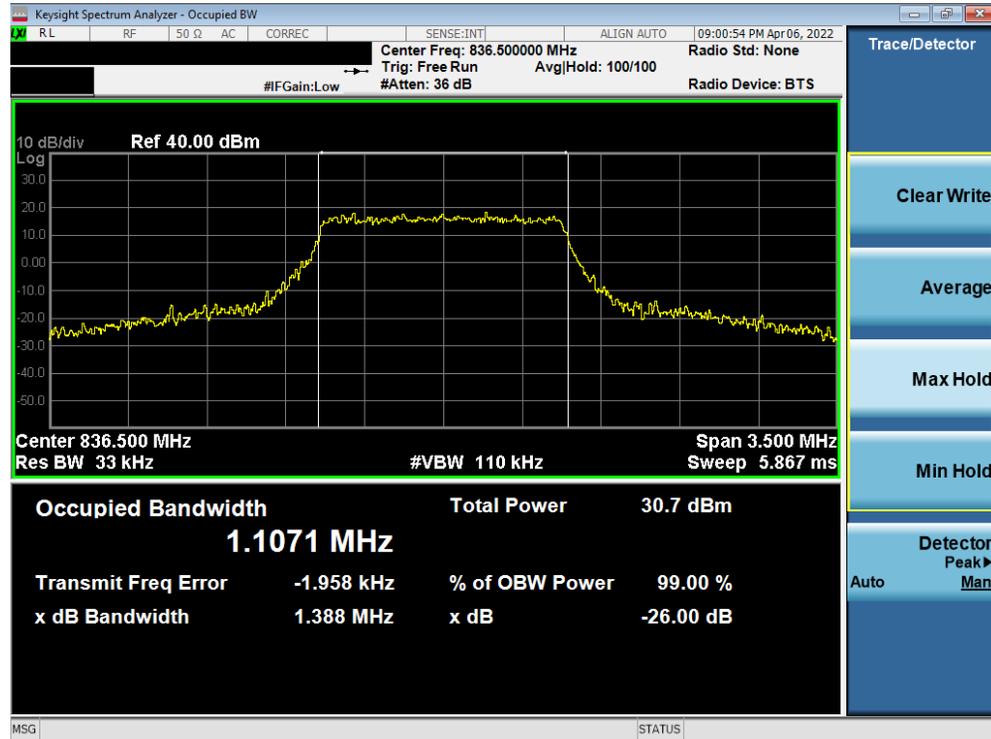


Plot 7-14. Occupied Bandwidth Plot (LTE Band 5 - 3MHz 16-QAM - Full RB - Sub Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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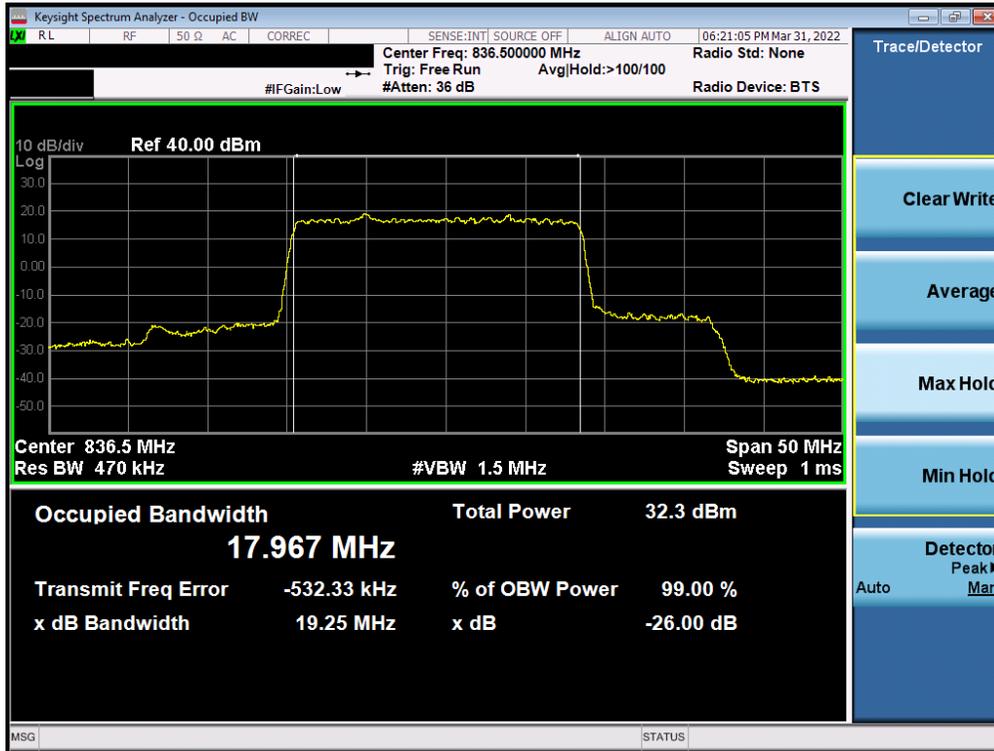
Plot 7-15. Occupied Bandwidth Plot (LTE Band 5 - 1.4MHz QPSK - Full RB - Sub Ant)



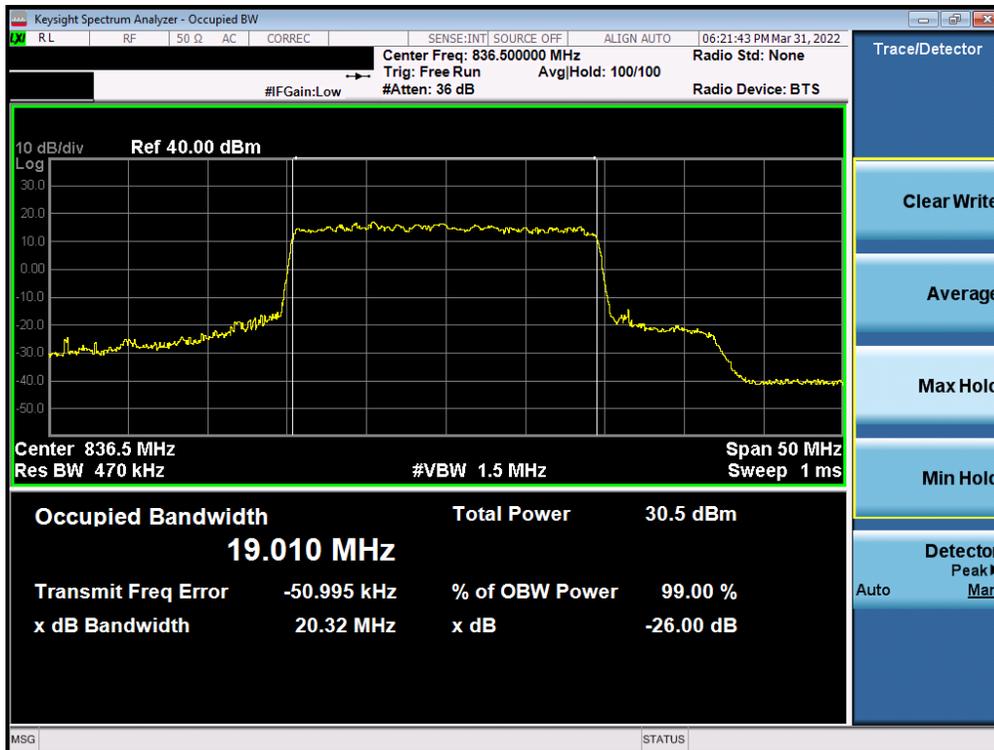
Plot 7-16. Occupied Bandwidth Plot (LTE Band 5 - 1.4MHz 16-QAM - Full RB - Sub Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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NR Band n5 – Main ANT

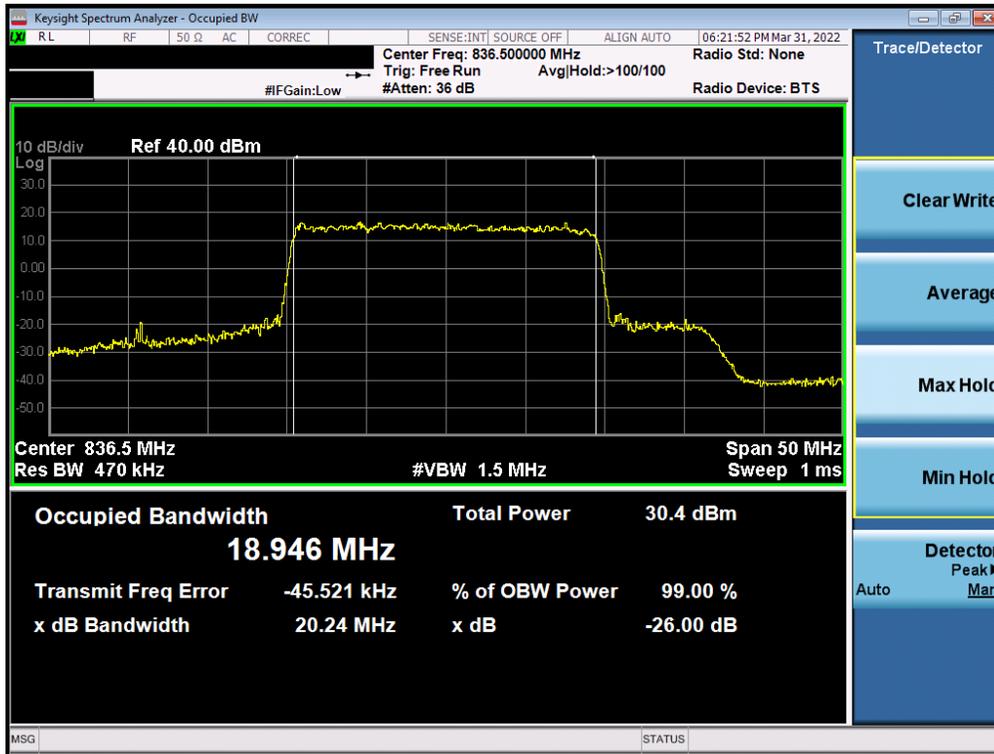


Plot 7-17. Occupied Bandwidth Plot (NR Band n5 - 20MHz $\pi/2$ BPSK - Full RB – Main Ant)



Plot 7-18. Occupied Bandwidth Plot (NR Band n5 - 20MHz QPSK - Full RB - Main Ant)

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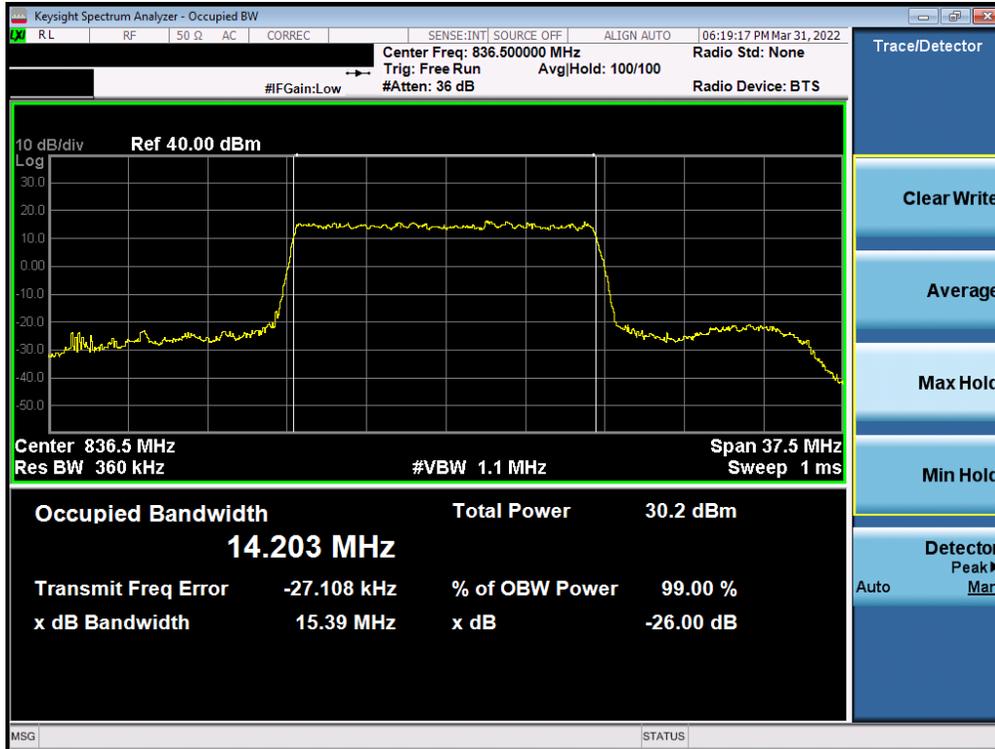


Plot 7-19. Occupied Bandwidth Plot (NR Band n5 - 20MHz 16-QAM - Full RB - Main Ant)

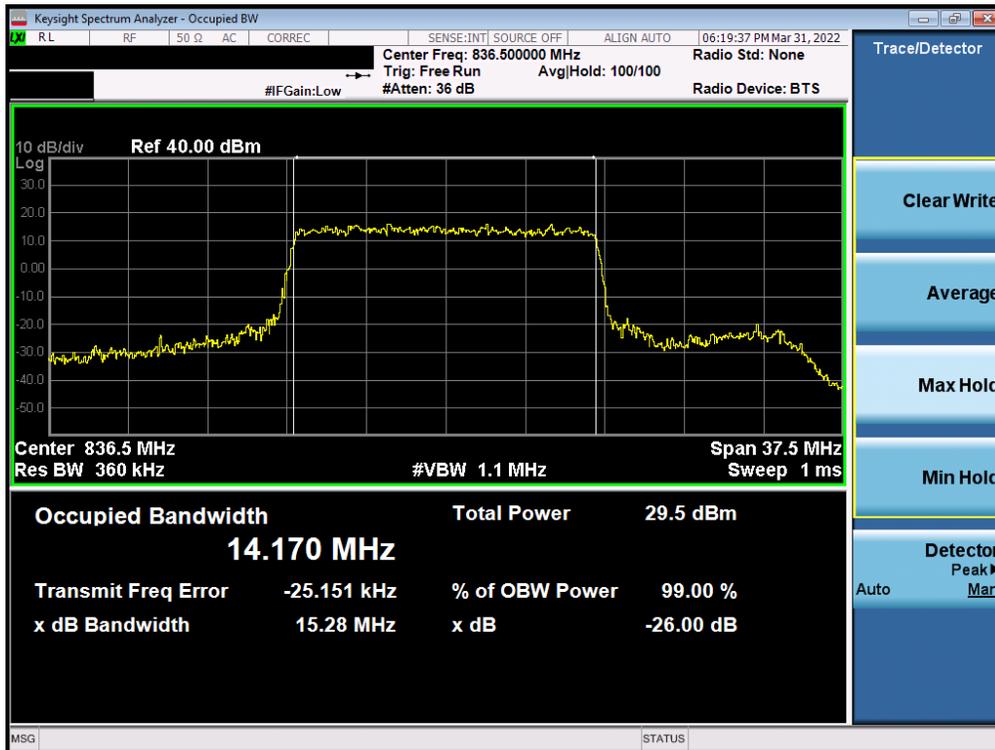


Plot 7-20. Occupied Bandwidth Plot (NR Band n5 - 15MHz $\pi/2$ BPSK - Full RB - Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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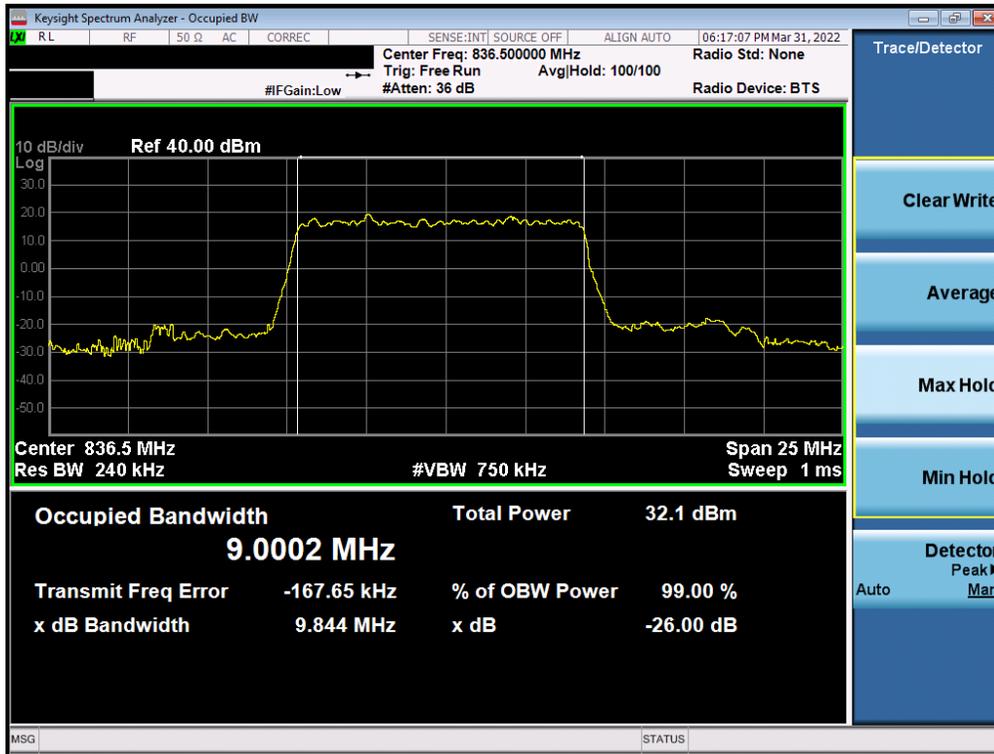


Plot 7-21. Occupied Bandwidth Plot (NR Band n5 - 15MHz QPSK - Full RB - Main Ant)

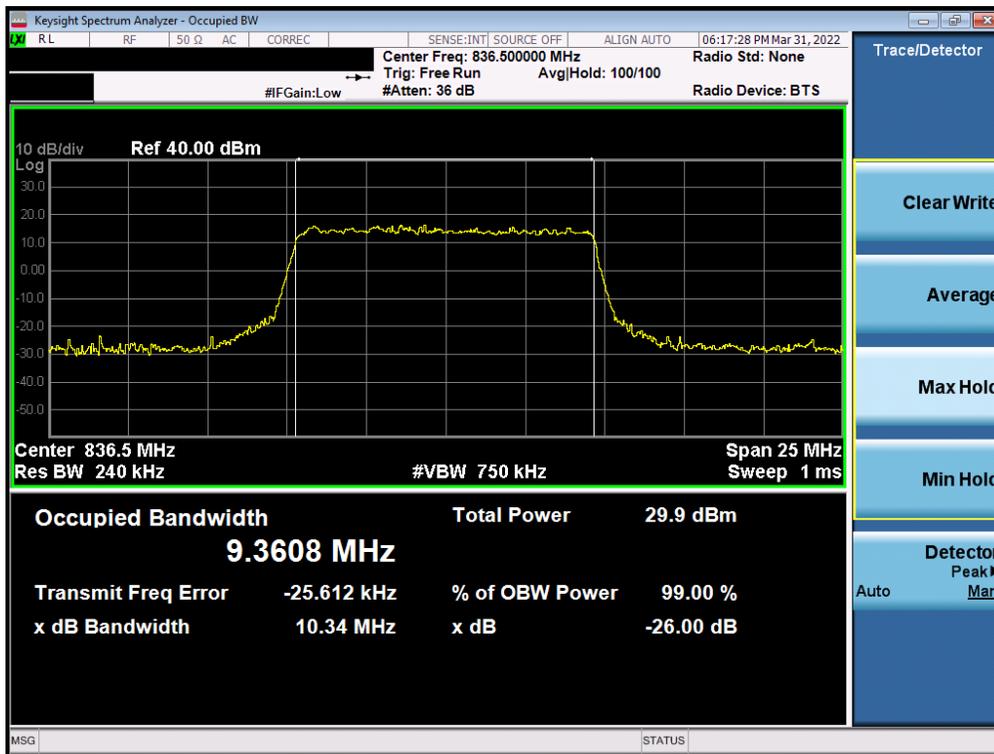


Plot 7-22. Occupied Bandwidth Plot (NR Band n5 - 15MHz 16-QAM - Full RB - Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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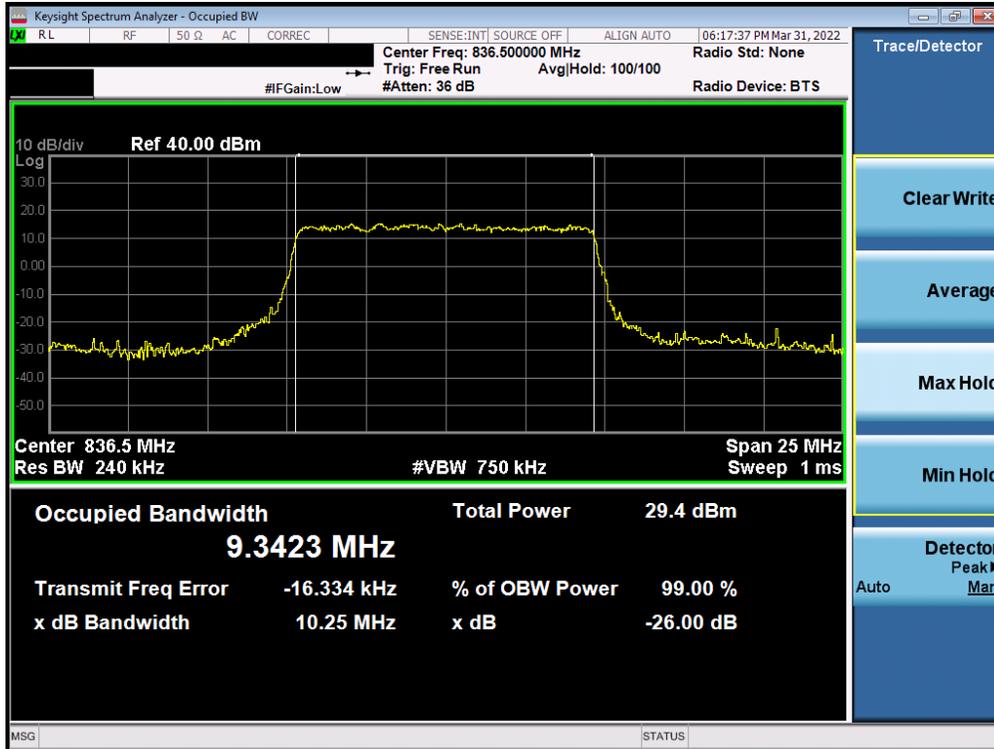


Plot 7-23. Occupied Bandwidth Plot (NR Band n5 - 10MHz $\pi/2$ BPSK - Full RB - Main Ant)

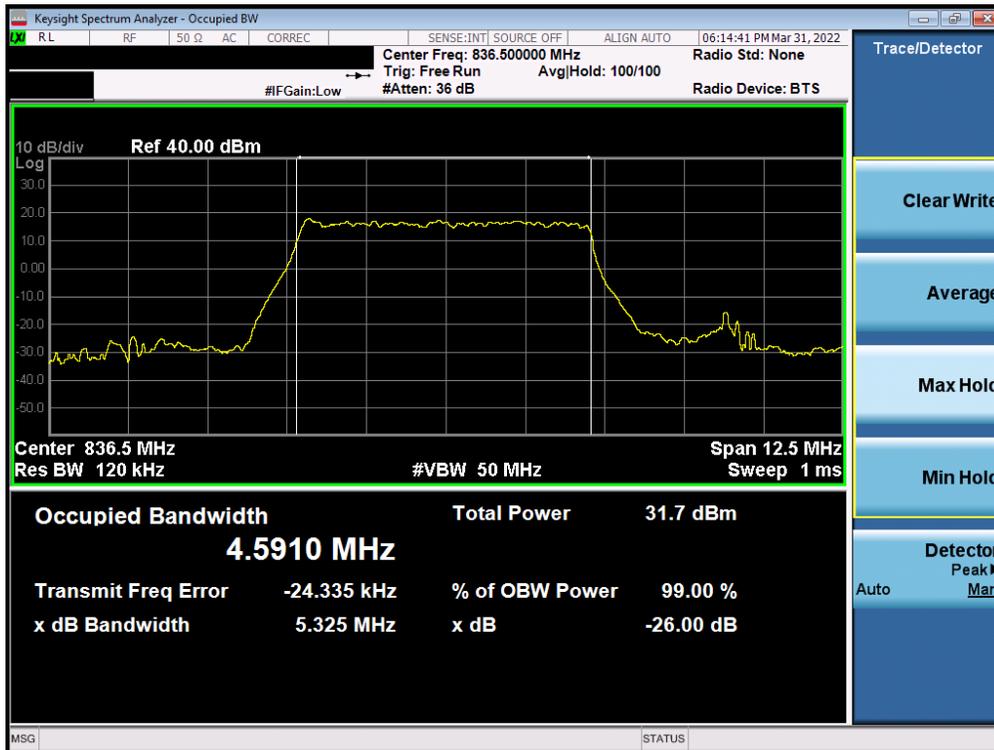


Plot 7-24. Occupied Bandwidth Plot (NR Band n5 - 10MHz QPSK - Full RB - Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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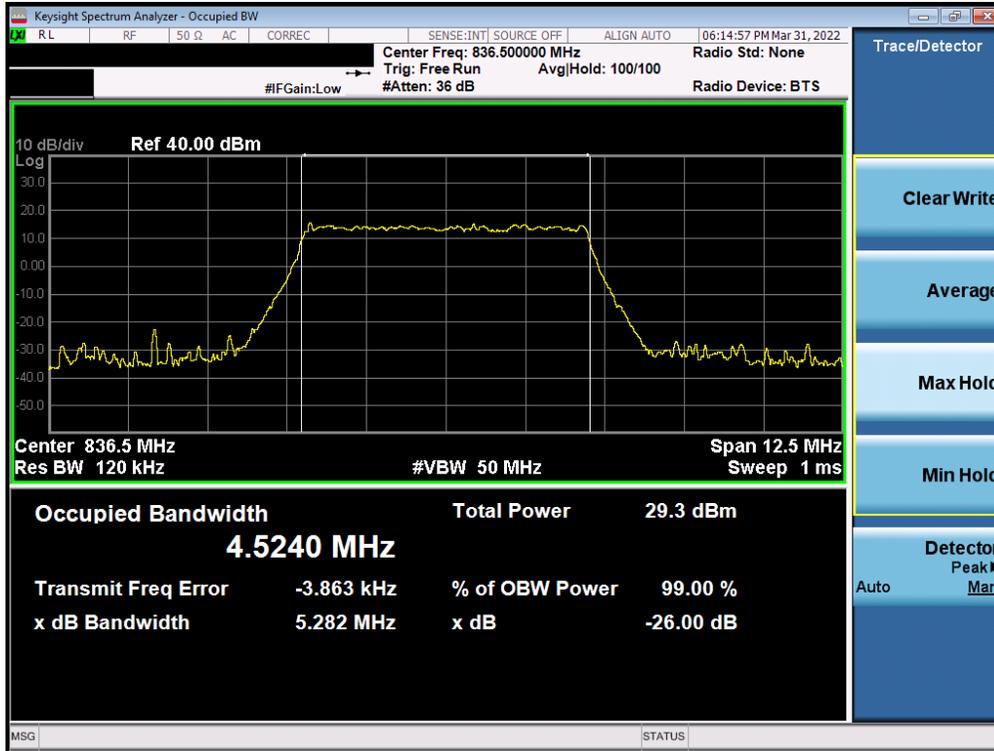


Plot 7-25. Occupied Bandwidth Plot (NR Band n5 - 10MHz 16-QAM - Full RB - Main Ant)

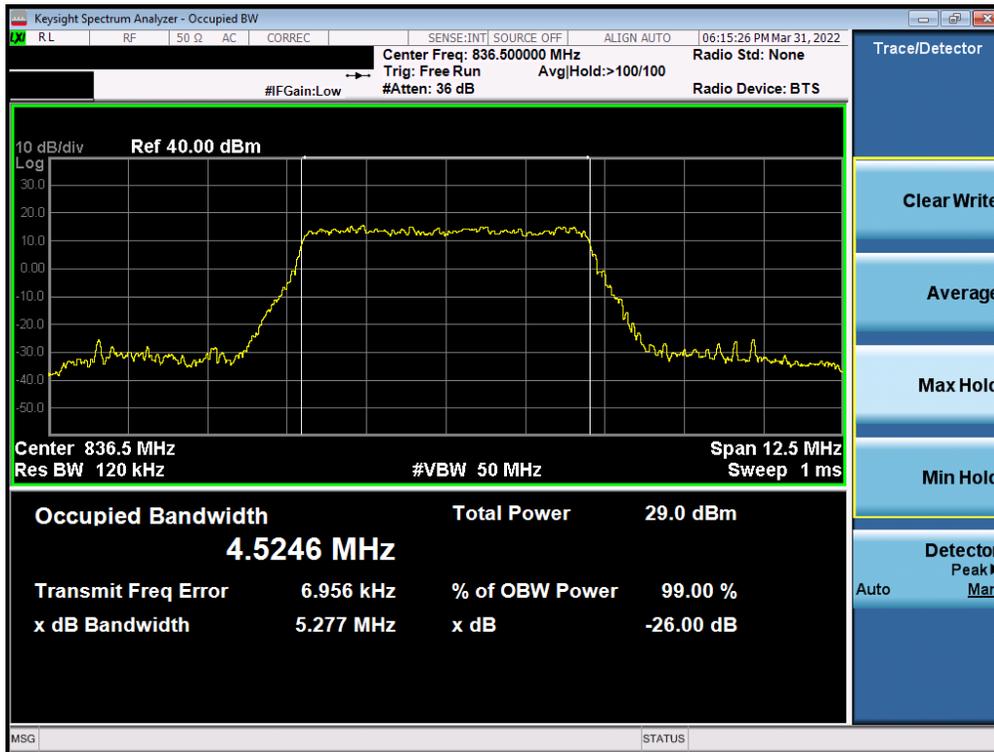


Plot 7-26. Occupied Bandwidth Plot (NR Band n5 - 5MHz $\pi/2$ BPSK - Full RB - Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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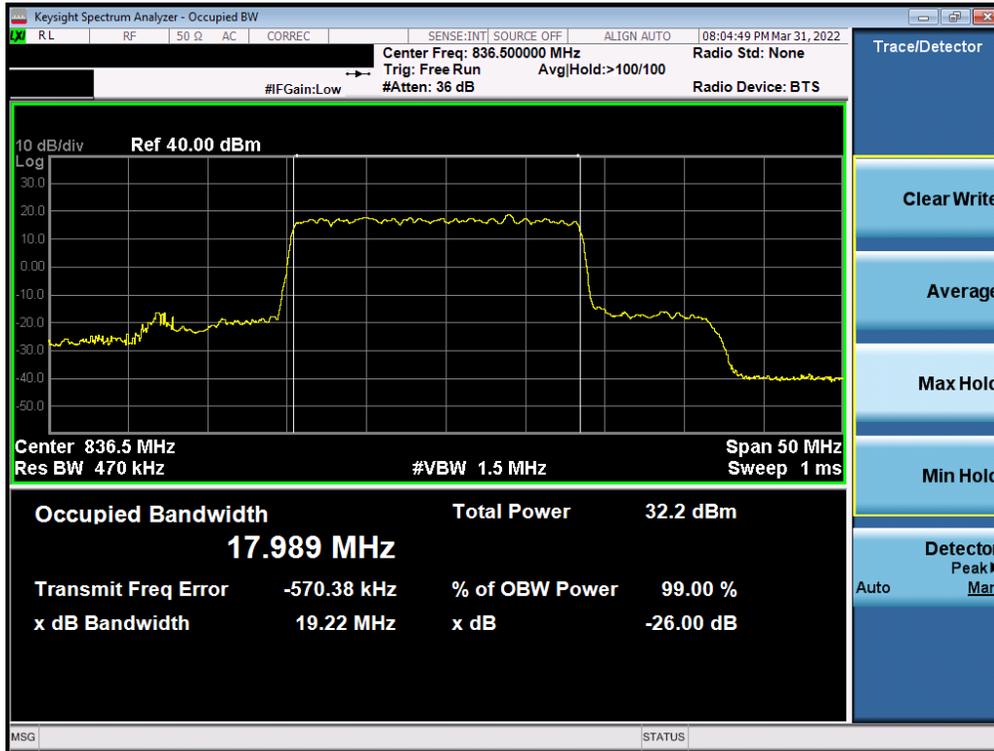
Plot 7-27. Occupied Bandwidth Plot (NR Band n5 - 5MHz QPSK - Full RB - Main Ant)



Plot 7-28. Occupied Bandwidth Plot (NR Band n5 - 5MHz 16-QAM - Full RB - Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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NR Band n5 – Sub ANT

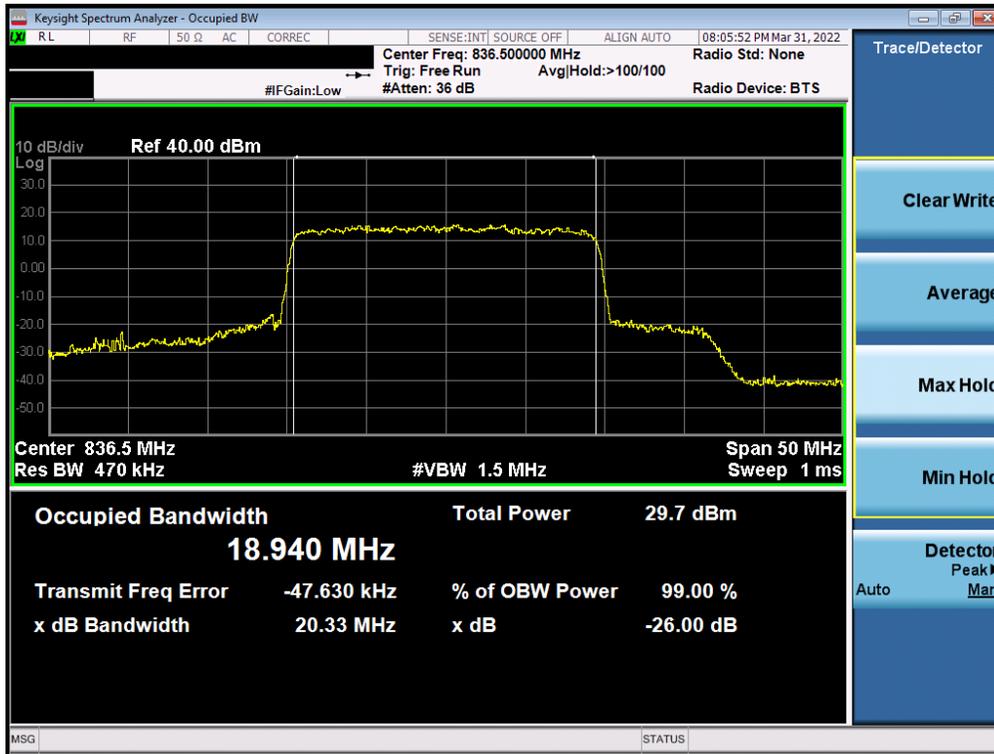


Plot 7-29. Occupied Bandwidth Plot (NR Band n5 - 20MHz $\pi/2$ BPSK - Full RB - Sub Ant)

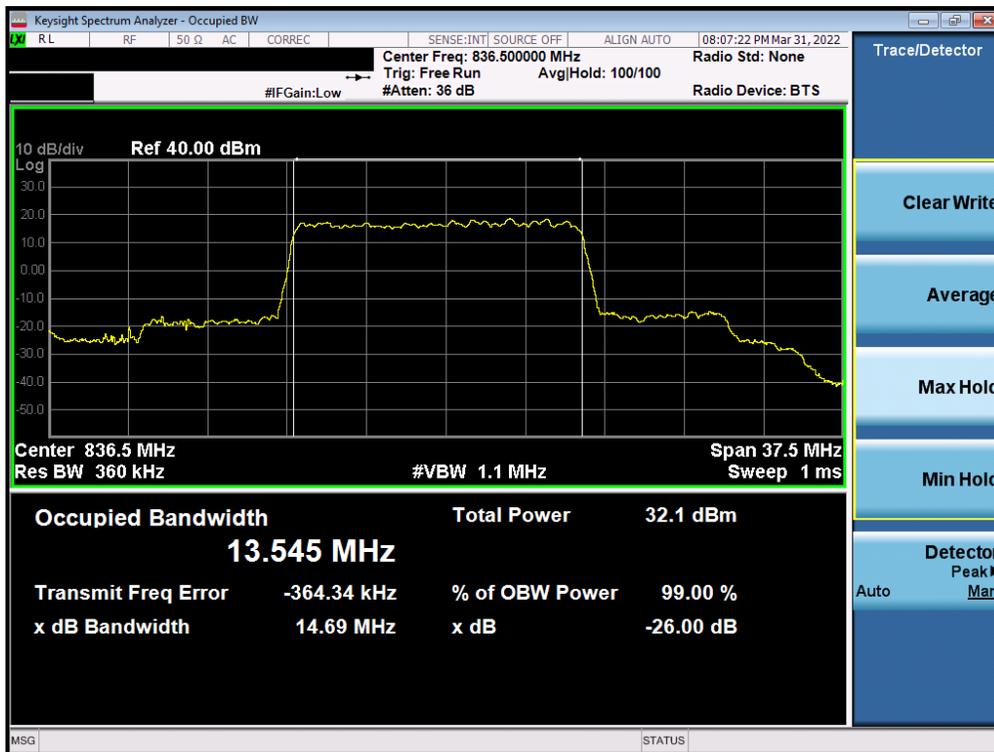


Plot 7-30. Occupied Bandwidth Plot (NR Band n5 - 20MHz QPSK - Full RB - Sub Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-31. Occupied Bandwidth Plot (NR Band n5 - 20MHz 16-QAM - Full RB - Sub Ant)

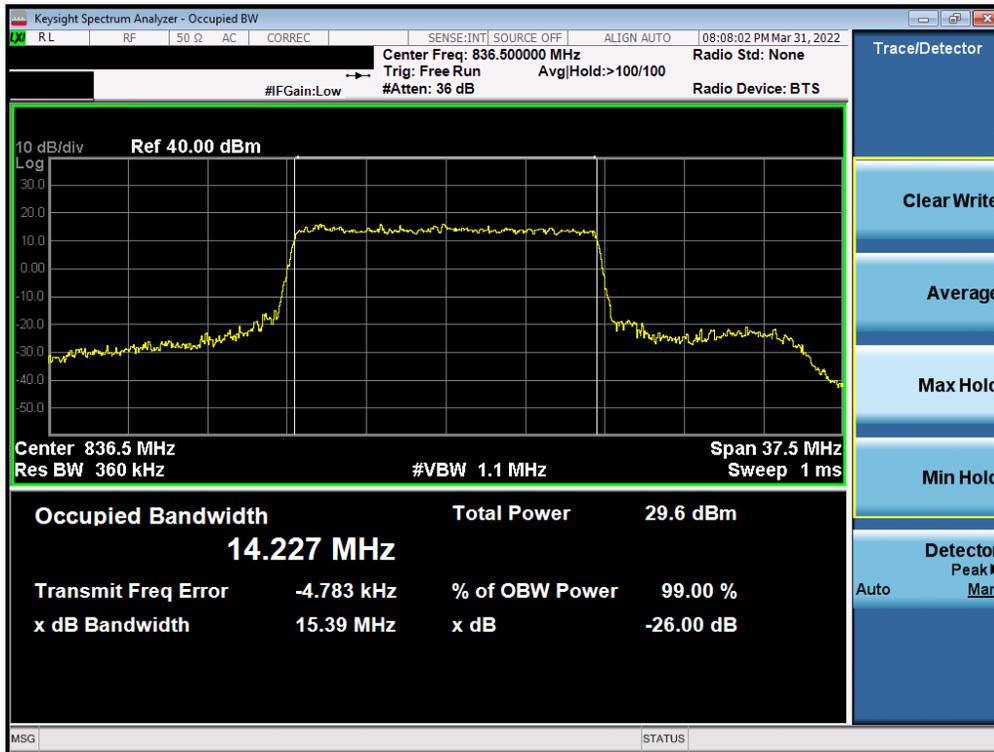


Plot 7-32. Occupied Bandwidth Plot (NR Band n5 - 15MHz $\pi/2$ BPSK - Full RB - Sub Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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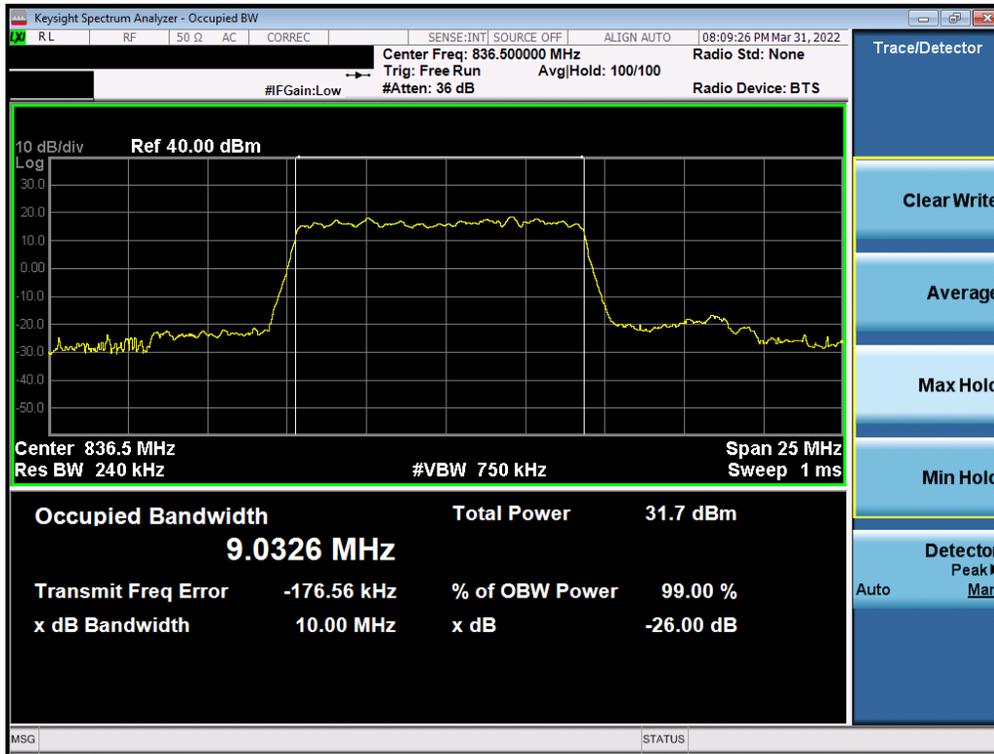


Plot 7-33. Occupied Bandwidth Plot (NR Band n5 - 15MHz QPSK - Full RB - Sub Ant)

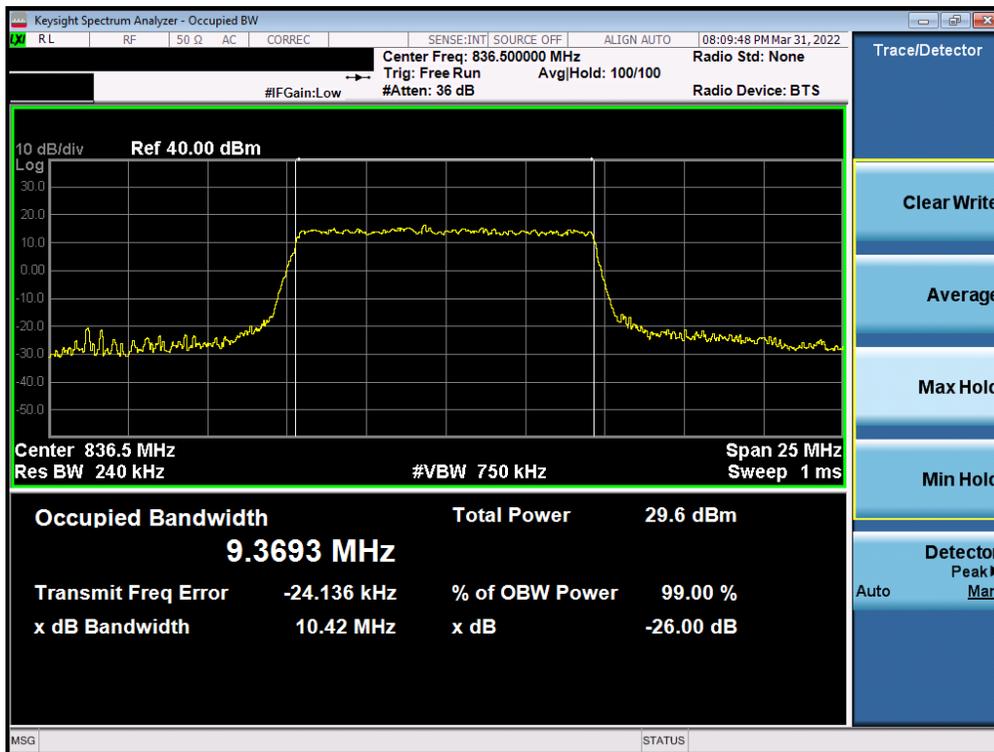


Plot 7-34. Occupied Bandwidth Plot (NR Band n5 - 15MHz 16-QAM - Full RB - Sub Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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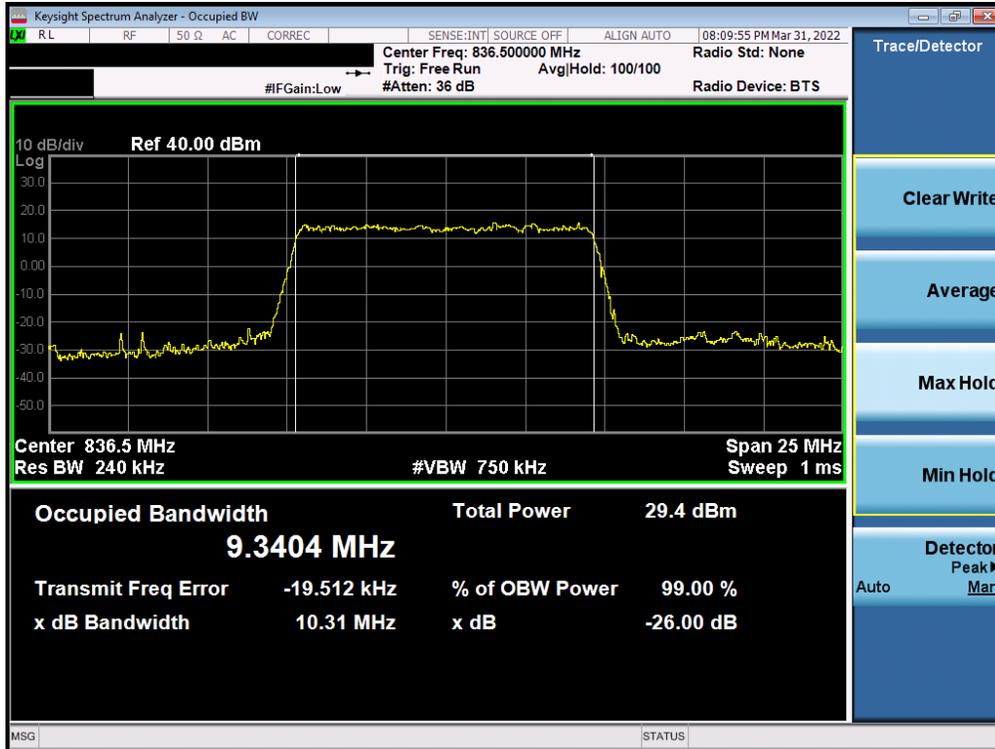


Plot 7-35. Occupied Bandwidth Plot (NR Band n5 - 10MHz $\pi/2$ BPSK - Full RB - Sub Ant)

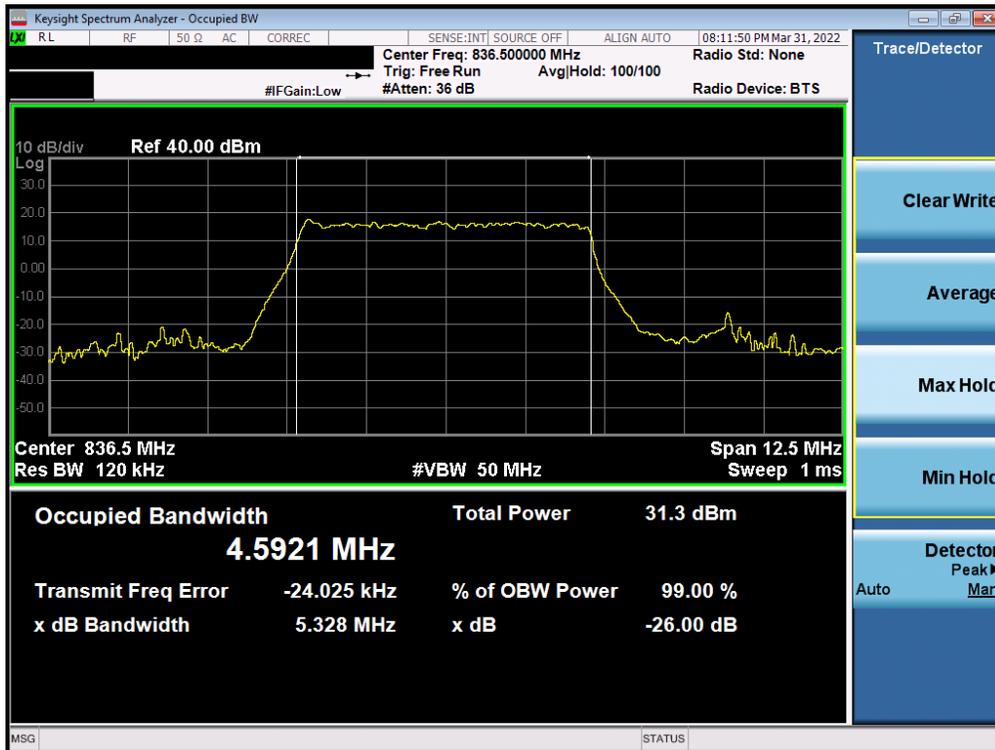


Plot 7-36. Occupied Bandwidth Plot (NR Band n5 - 10MHz QPSK - Full RB - Sub Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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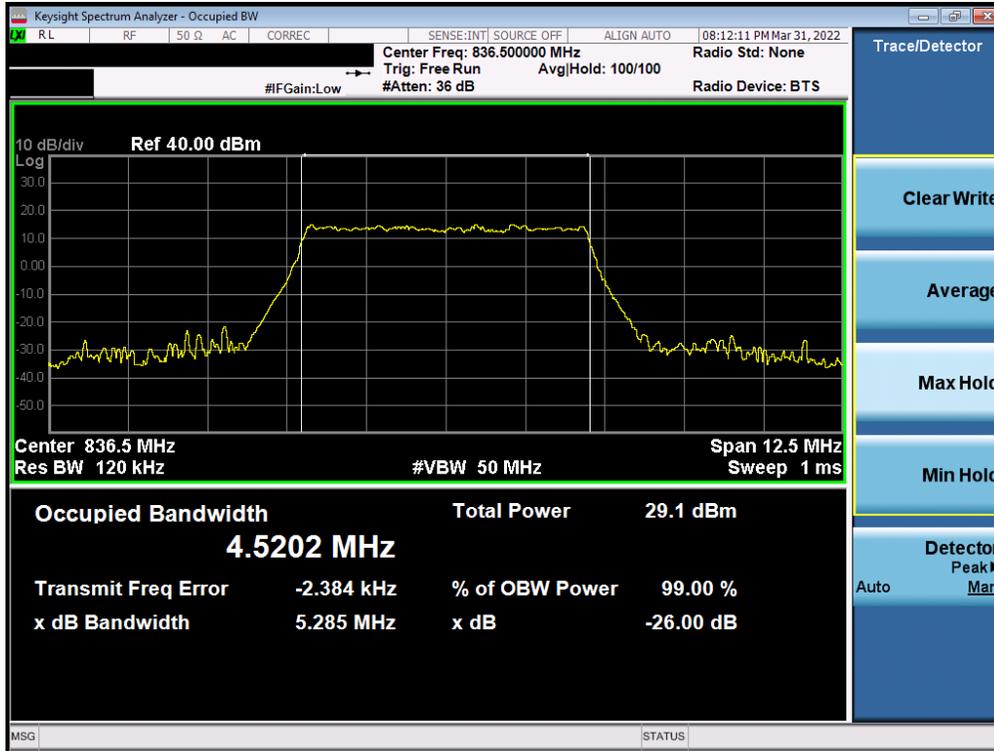


Plot 7-37. Occupied Bandwidth Plot (NR Band n5 - 10MHz 16-QAM - Full RB - Sub Ant)

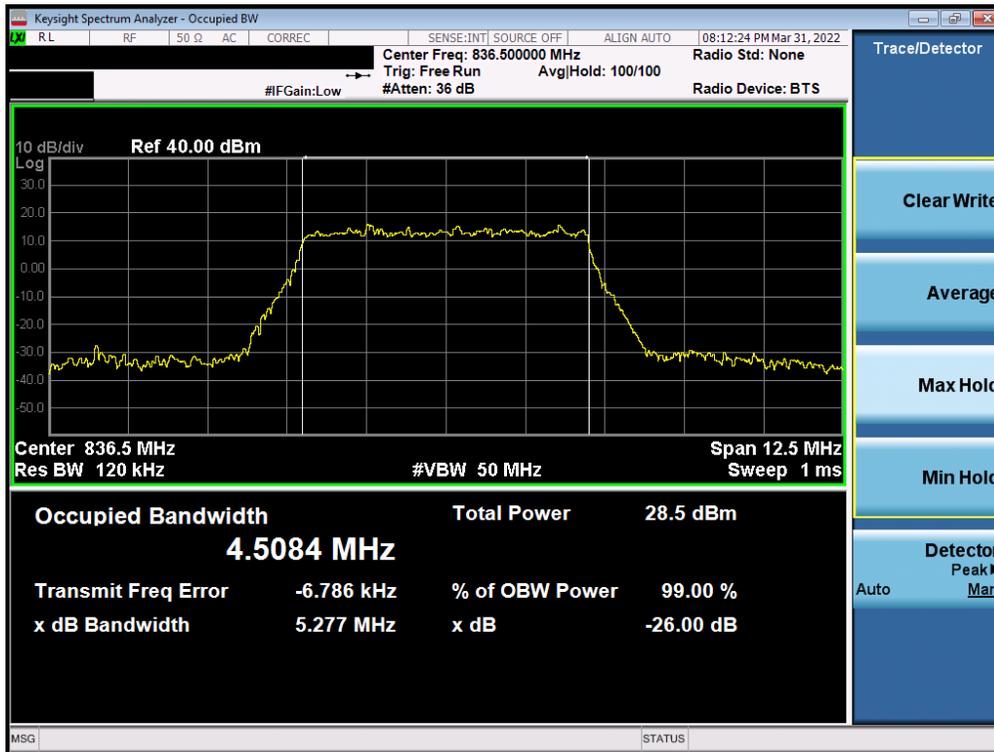


Plot 7-38. Occupied Bandwidth Plot (NR Band n5 - 5MHz $\pi/2$ BPSK - Full RB - Sub Ant)

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Plot 7-39. Occupied Bandwidth Plot (NR Band n5 - 5MHz QPSK - Full RB - Sub Ant)



Plot 7-40. Occupied Bandwidth Plot (NR Band n5 - 5MHz 16-QAM - Full RB - Sub Ant)

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GPRS Cell – Main Ant



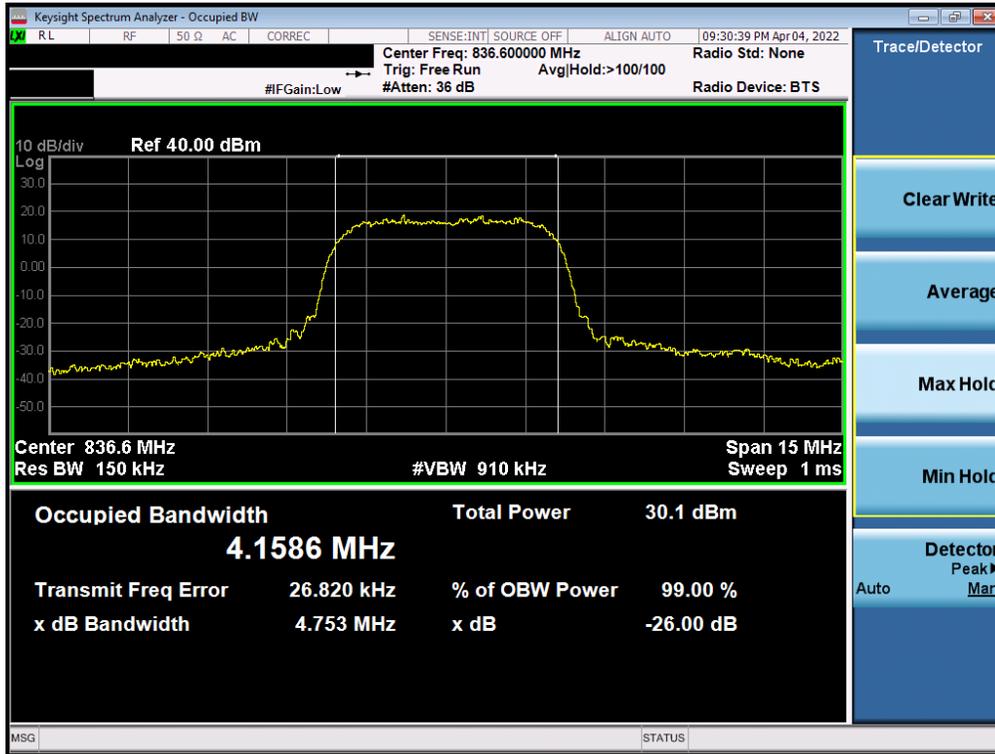
Plot 7-41. Occupied Bandwidth Plot (GPRS, Ch. 190 – Main Ant)



Plot 7-42. Occupied Bandwidth Plot (EDGE, Ch. 190 – Main Ant)

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WCDMA Cell – Main Ant



Plot 7-43. Occupied Bandwidth Plot (WCDMA, Ch. 4183 – Main Ant)

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7.4 Spurious and Harmonic Emissions at Antenna Terminal

Test Overview

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. 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 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.

The minimum permissible attenuation level of any spurious emission is $43 + 10 \log_{10}(P_{\text{Watts}})$, where P is the transmitter power in Watts.

Test Procedure Used

KDB 971168 D01 v03r01 – Section 6.0

Test Settings

1. Start frequency was set to 30MHz and stop frequency was set to 10GHz (separated into at least two plots per channel)
2. Detector = RMS
3. Trace mode = trace average for continuous emissions, max hold for pulse emissions
4. Sweep time = auto couple
5. The trace was allowed to stabilize
6. Please see test notes below for RBW and VBW settings

Test Setup

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

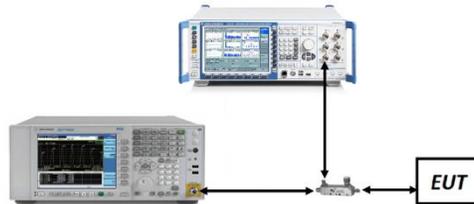


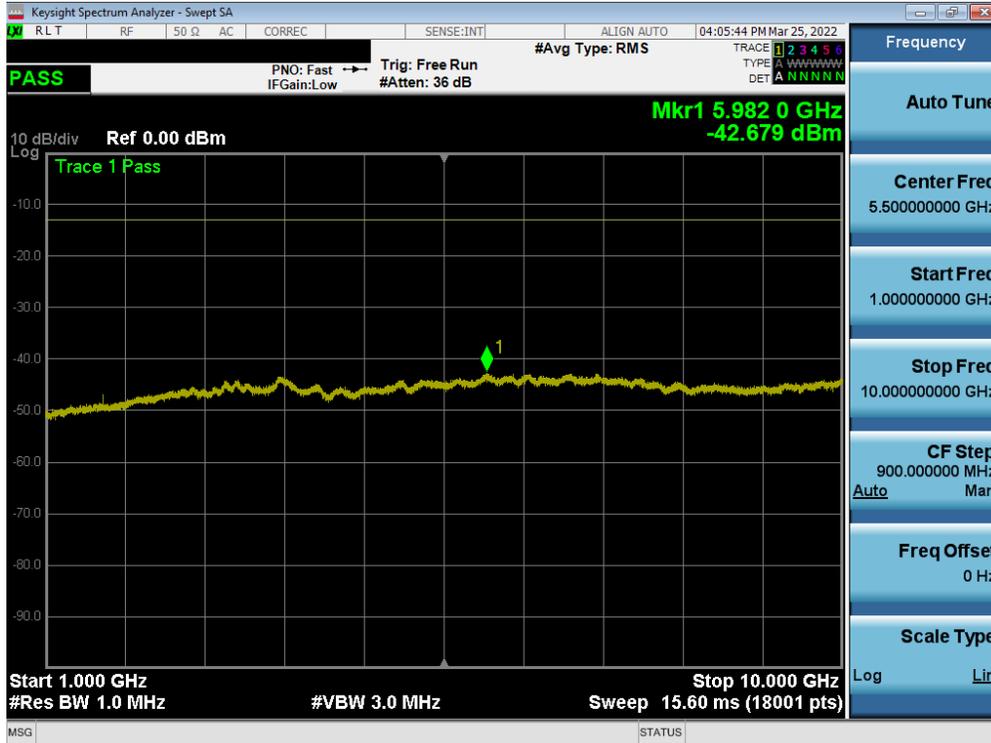
Figure 7-3. Test Instrument & Measurement Setup

Test Notes

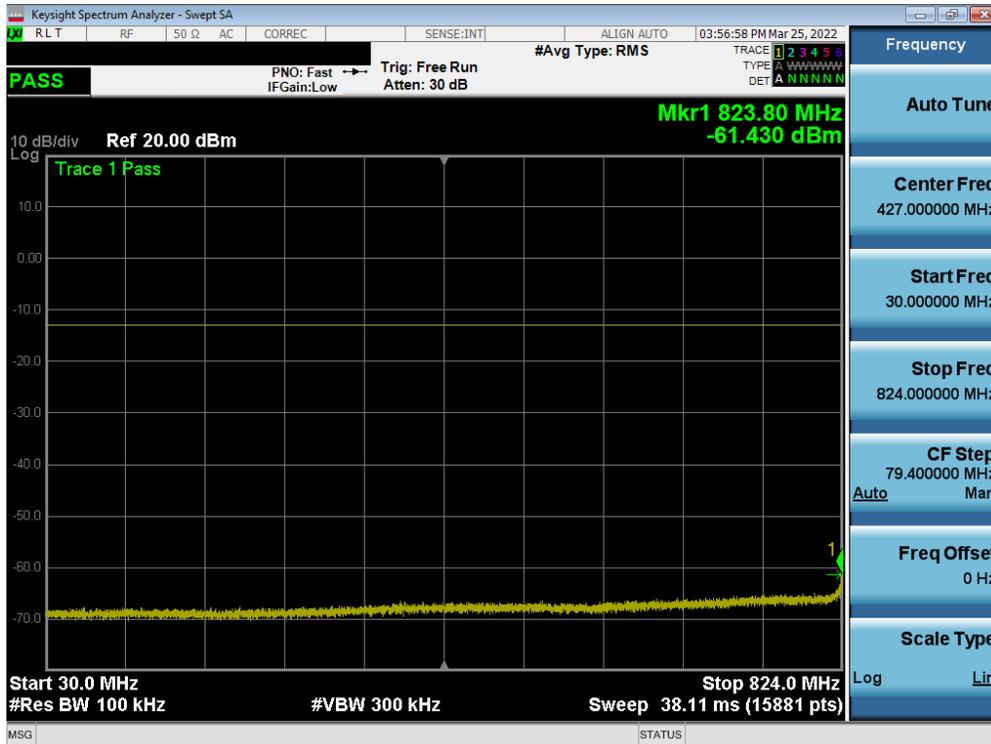
1. Per Part 22 and RSS-132, compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth 100 kHz or greater for measurements below 1GHz. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The 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 emission are attenuated at least 26 dB below the transmitter power.
2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) 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.

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V3.0 1/4/2022

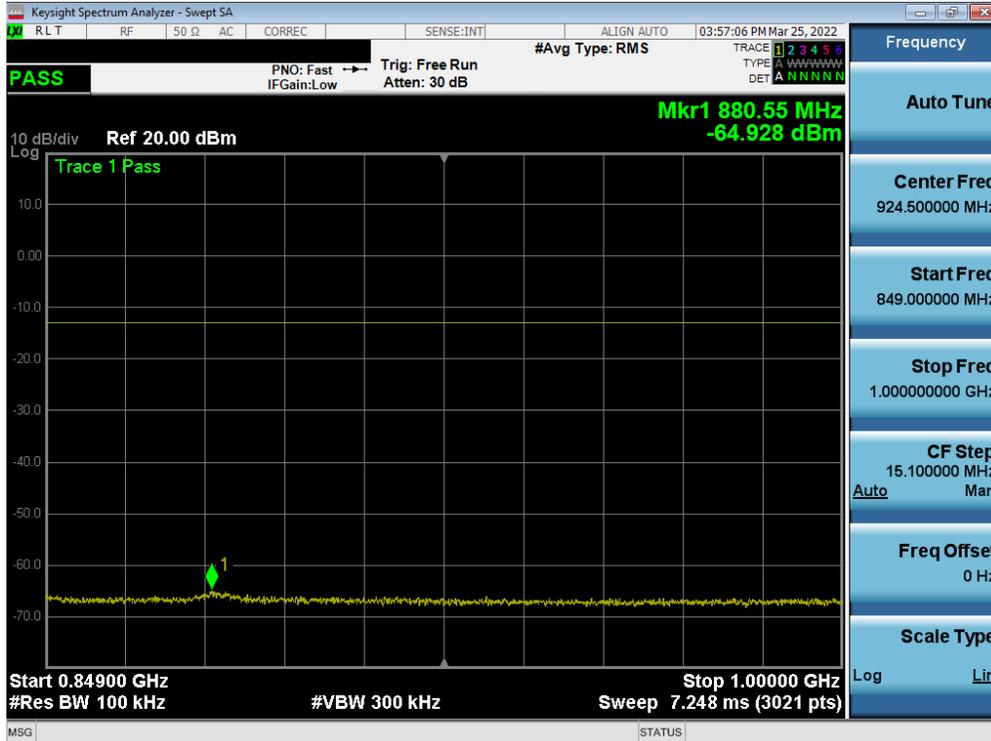


Plot 7-46. Conducted Spurious Plot (LTE Band 5 - 10MHz QPSK - 1 RB - Low Channel - Main Ant)

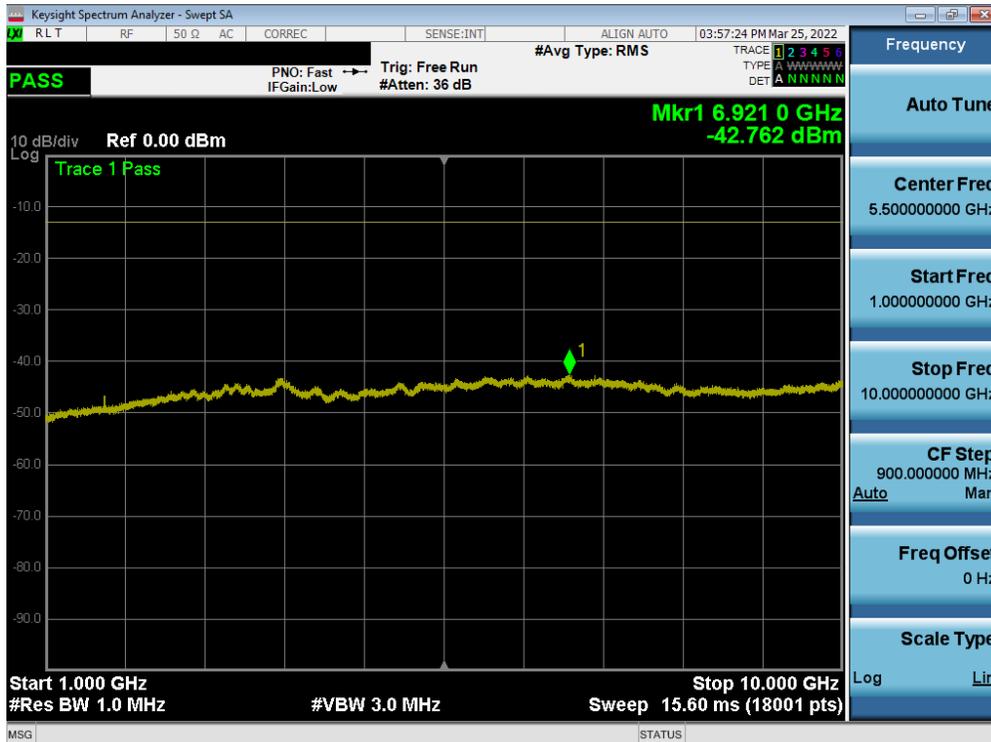


Plot 7-47. Conducted Spurious Plot (LTE Band 5 - 10MHz QPSK - 1 RB - Mid Channel - Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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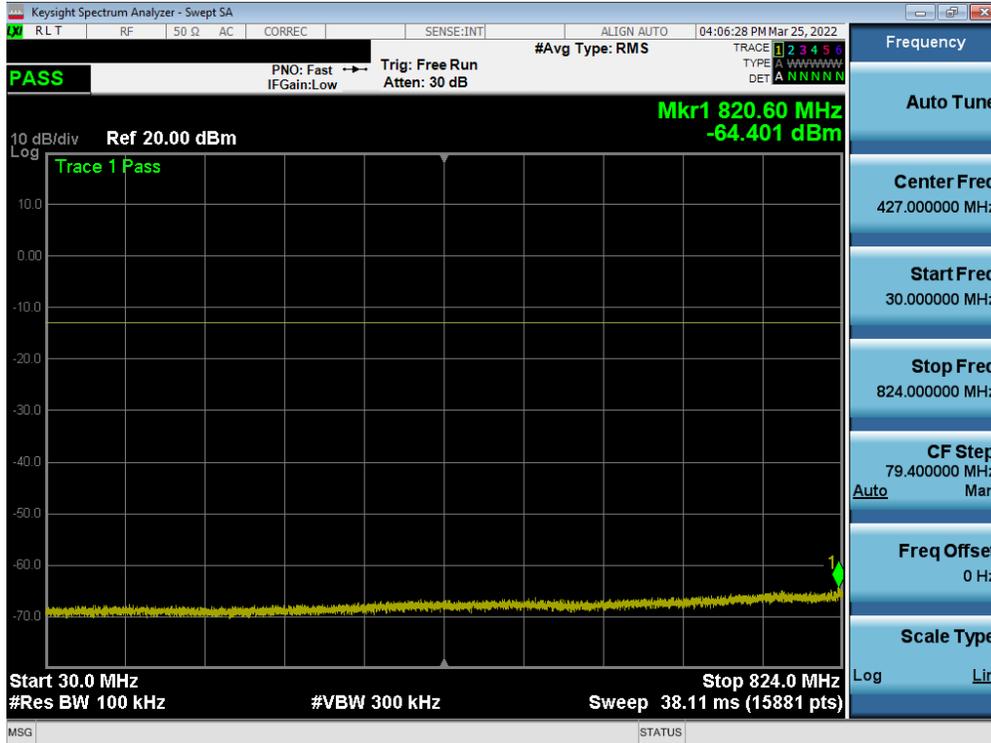


Plot 7-48. Conducted Spurious Plot (LTE Band 5 - 10MHz QPSK - 1 RB - Mid Channel - Main Ant)

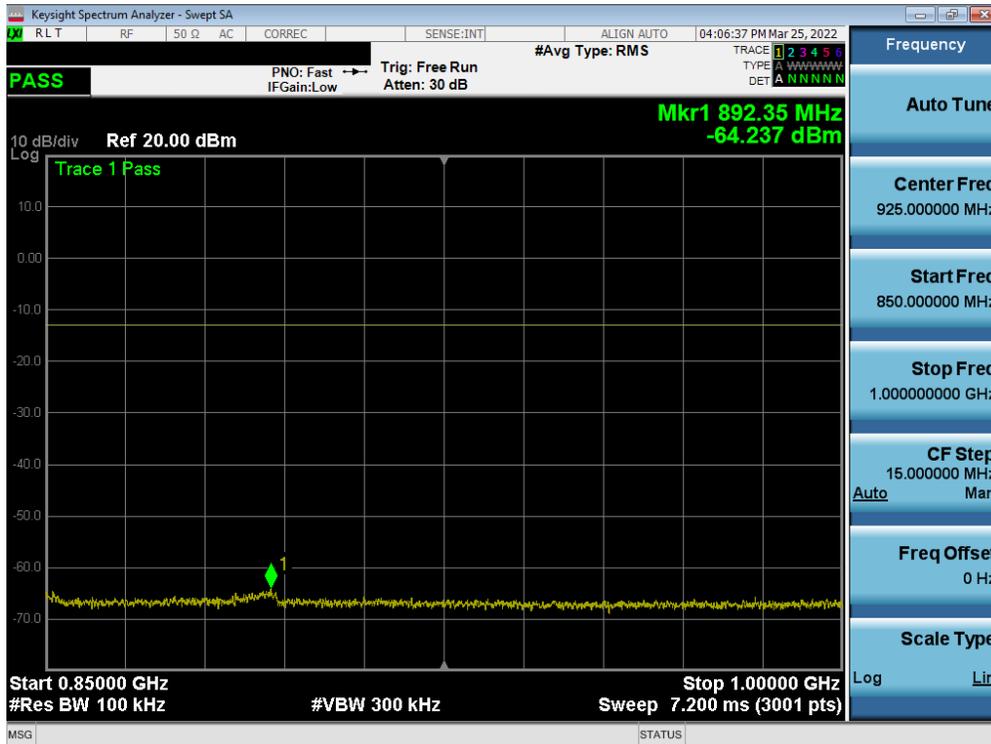


Plot 7-49. Conducted Spurious Plot (LTE Band 5 - 10MHz QPSK - 1 RB - Mid Channel - Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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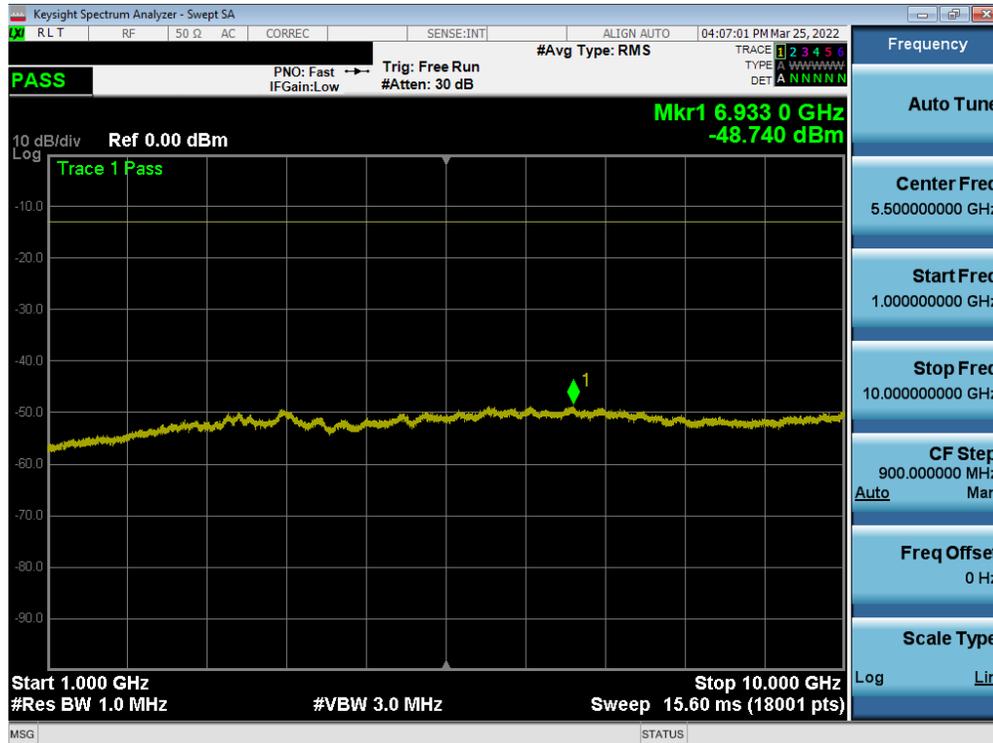


Plot 7-50. Conducted Spurious Plot (LTE Band 5 - 10MHz QPSK - 1 RB - High Channel - Main Ant)



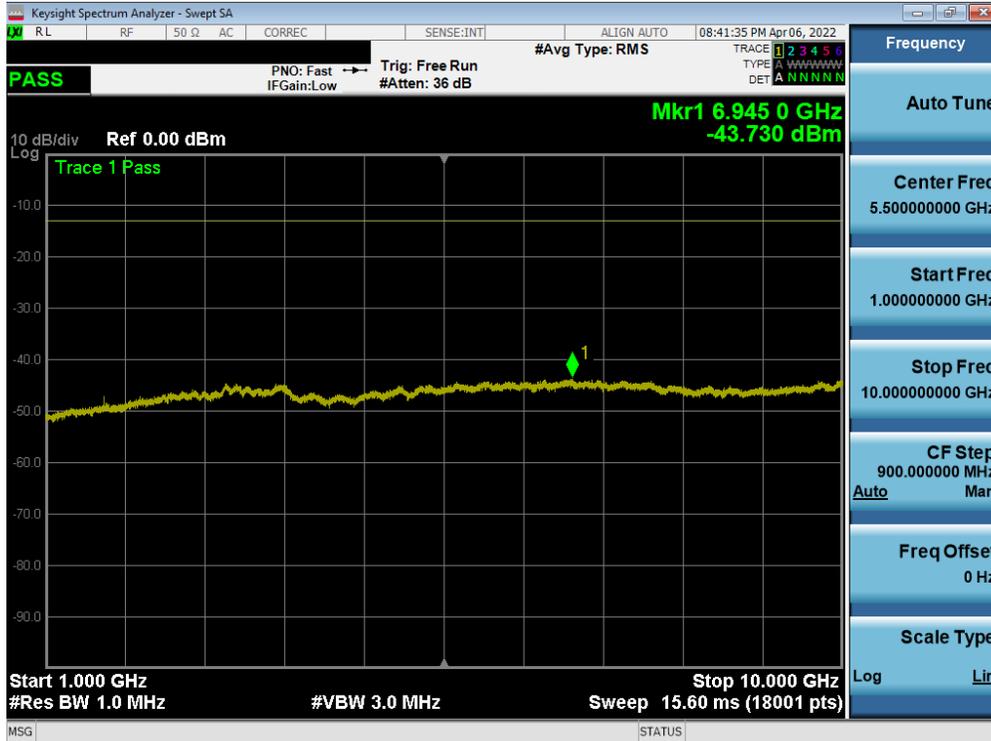
Plot 7-51. Conducted Spurious Plot (LTE Band 5 - 10MHz QPSK - 1 RB - High Channel - Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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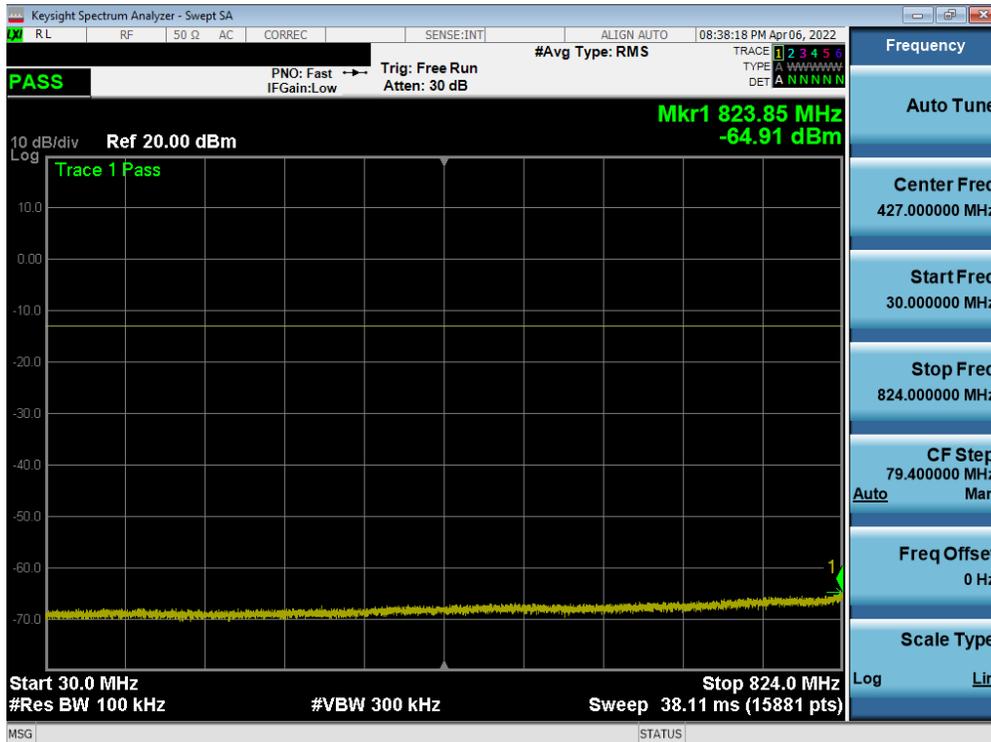


Plot 7-52. Conducted Spurious Plot (LTE Band 5 - 10MHz QPSK - 1 RB - High Channel - Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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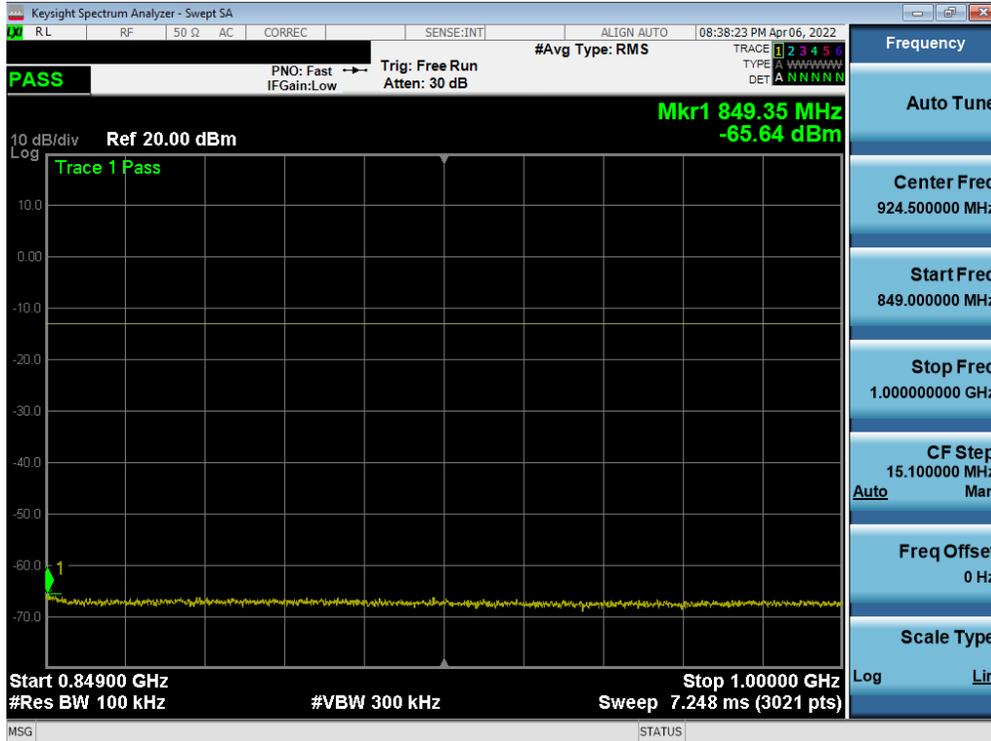


Plot 7-55. Conducted Spurious Plot (LTE Band 5 - 10MHz QPSK - 1 RB - Low Channel - Sub Ant)

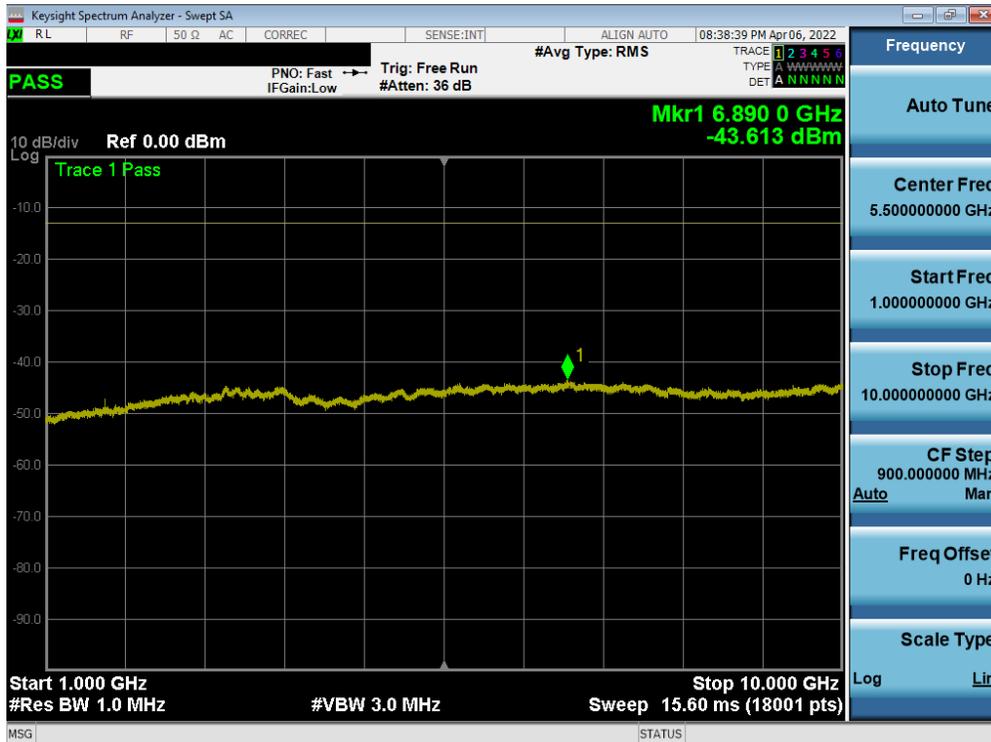


Plot 7-56. Conducted Spurious Plot (LTE Band 5 - 10MHz QPSK - 1 RB - Mid Channel - Sub Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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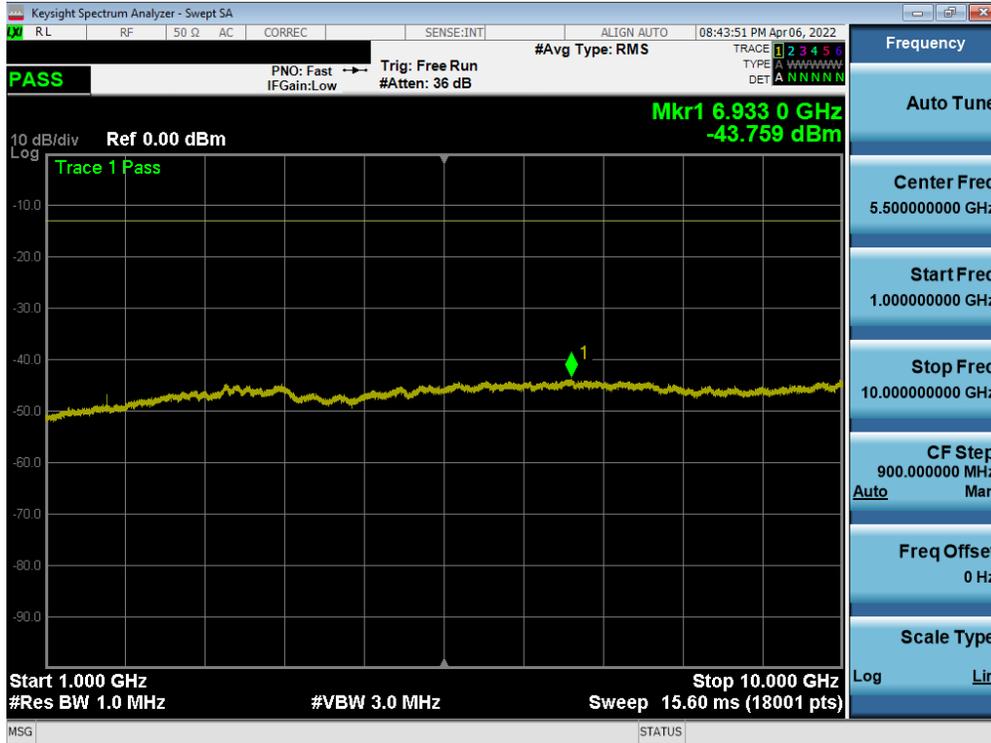


Plot 7-57. Conducted Spurious Plot (LTE Band 5 - 10MHz QPSK - 1 RB - Mid Channel - Sub Ant)



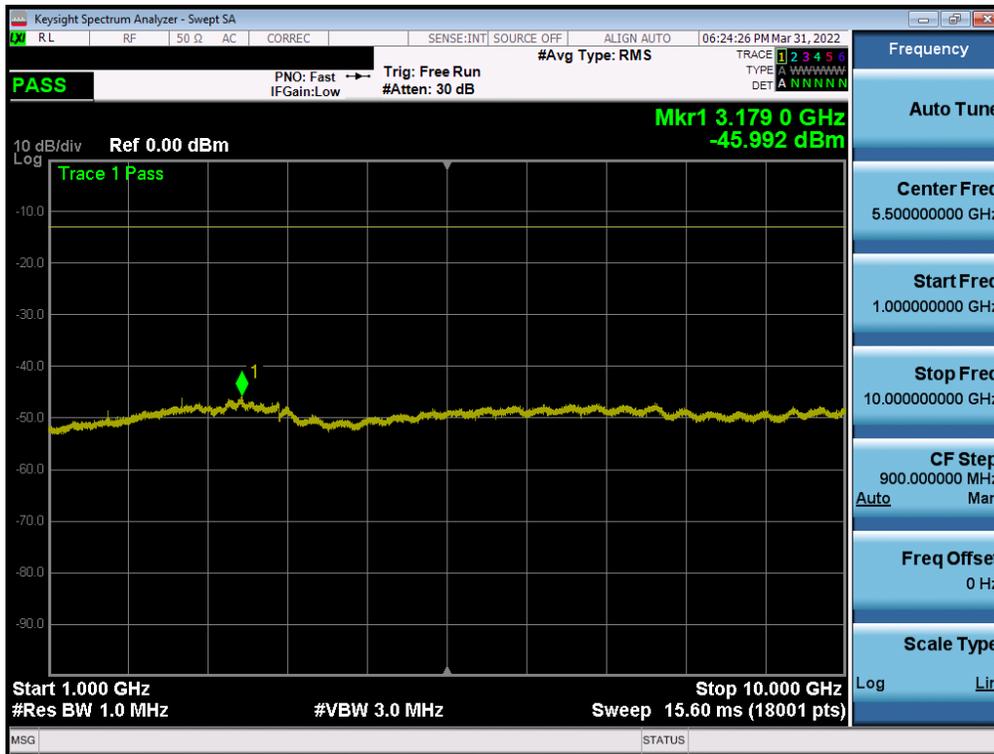
Plot 7-58. Conducted Spurious Plot (LTE Band 5 - 10MHz QPSK - 1 RB - Mid Channel - Sub Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2201200003-03.PY7	Test Dates: 3/25/2022 - 5/19/2022	EUT Type: Portable Handset	Page 46 of 119

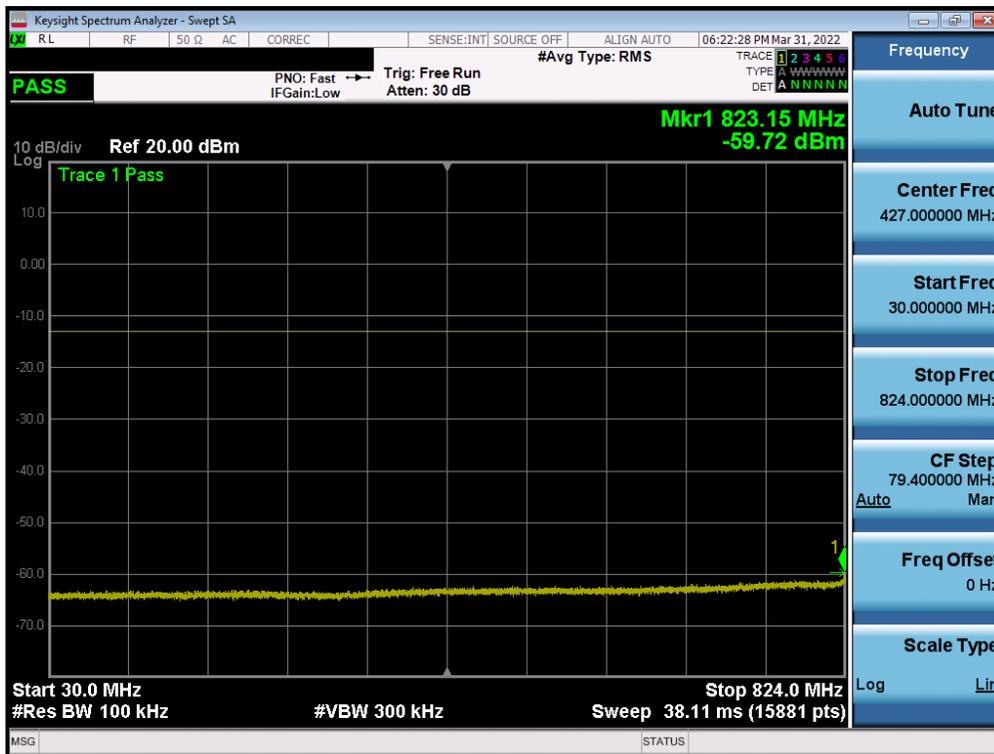


Plot 7-61. Conducted Spurious Plot (LTE Band 5 - 10MHz QPSK - 1 RB - High Channel - Sub Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2201200003-03.PY7	Test Dates: 3/25/2022 - 5/19/2022	EUT Type: Portable Handset	Page 48 of 119

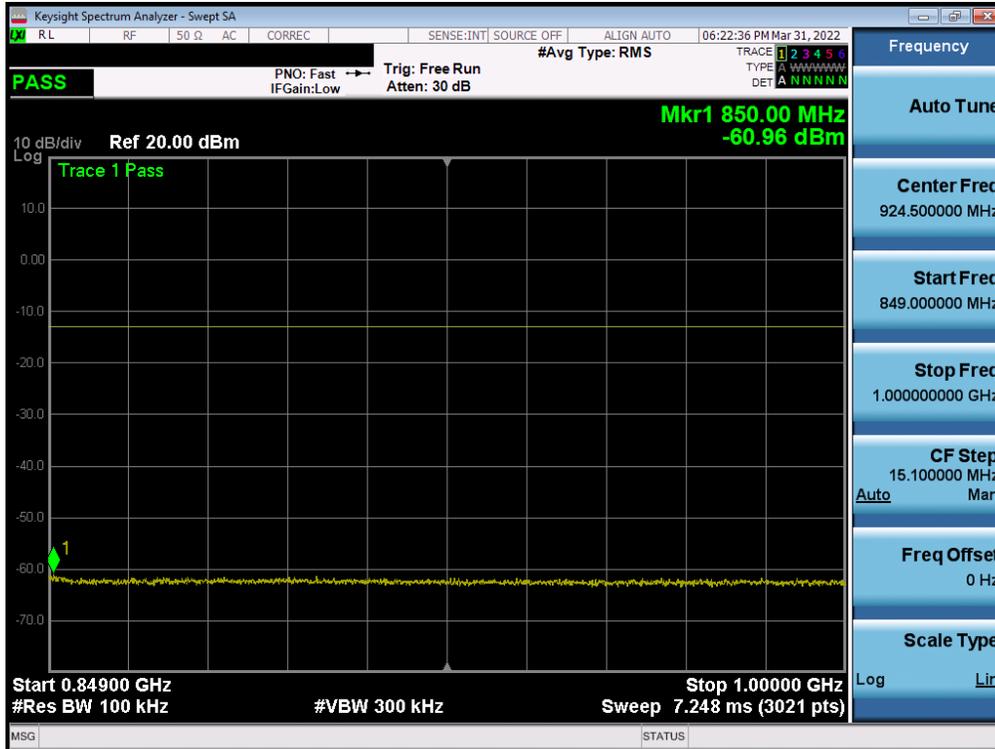


Plot 7-64. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - Low Channel - Main Ant)

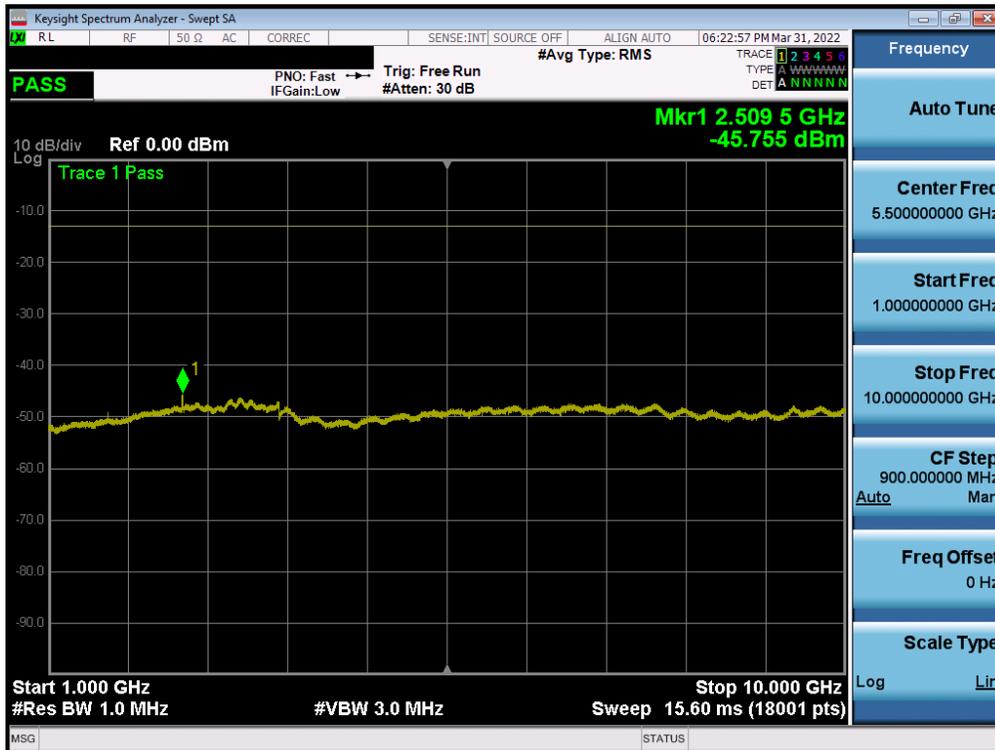


Plot 7-65. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - Mid Channel - Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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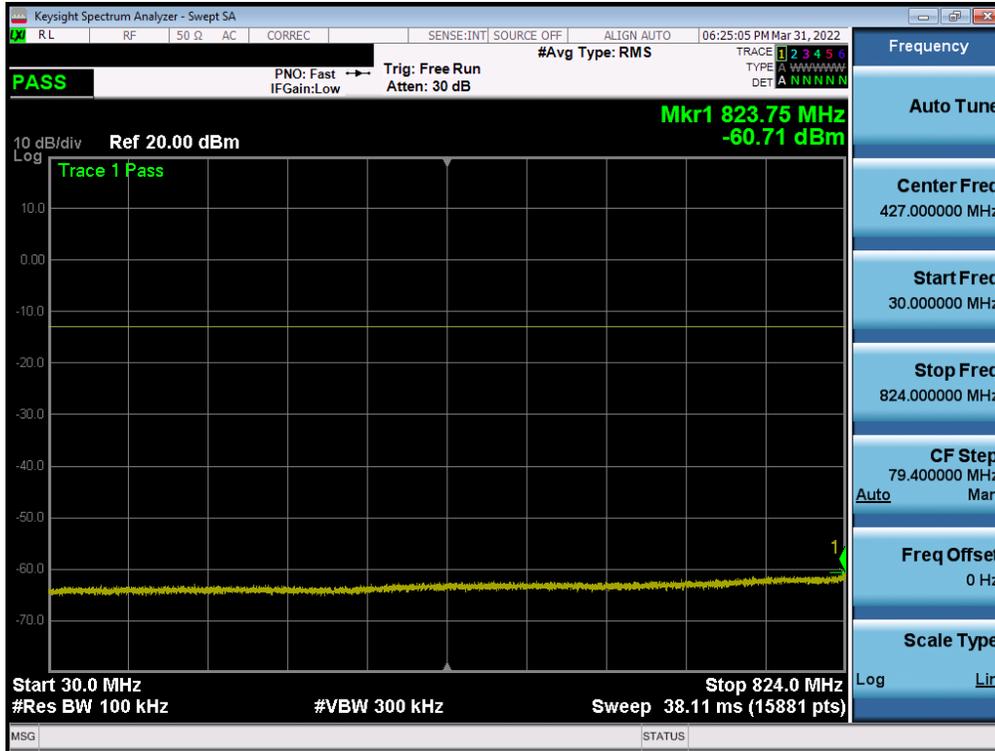


Plot 7-66. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - Mid Channel - Main Ant)

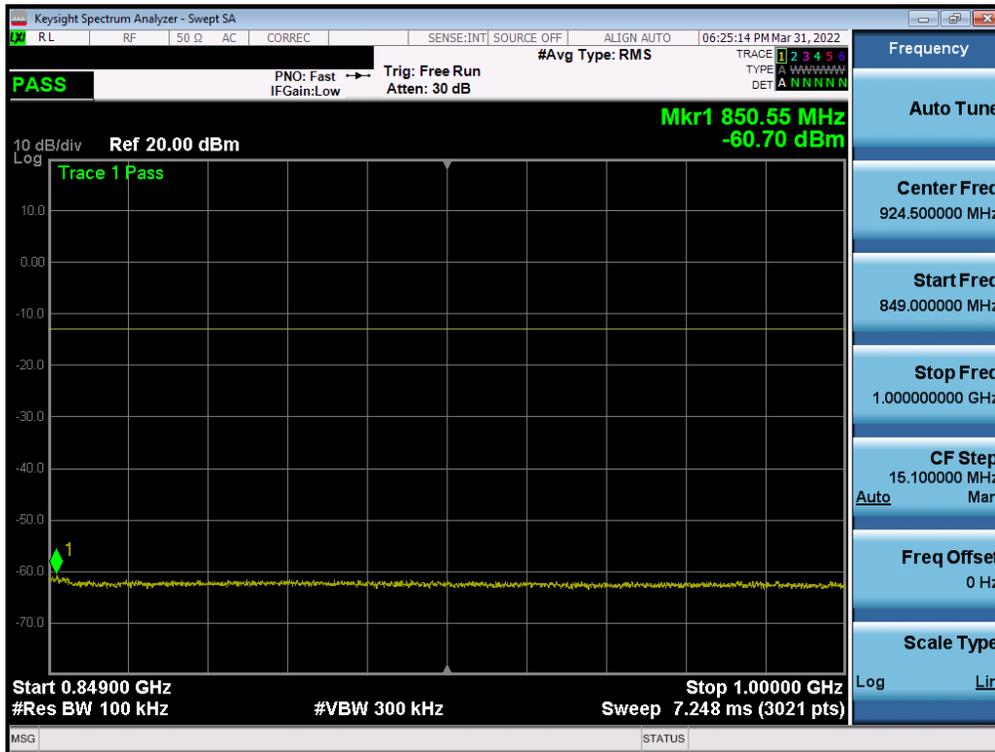


Plot 7-67. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - Mid Channel - Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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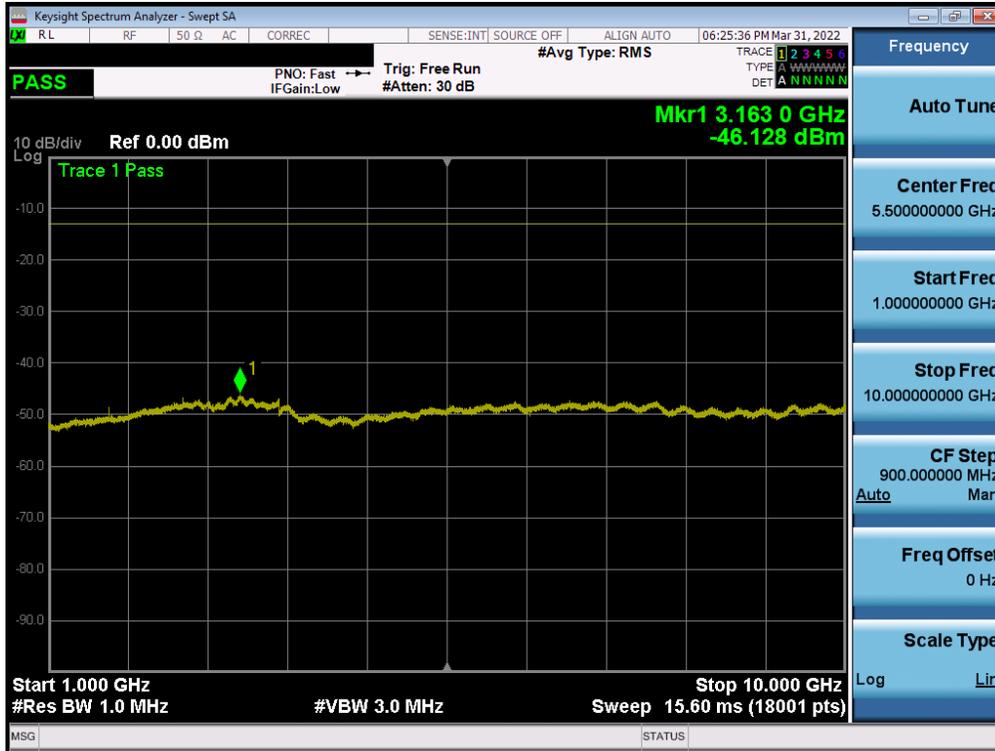


Plot 7-68. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - High Channel - Main Ant)



Plot 7-69. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - High Channel - Main Ant)

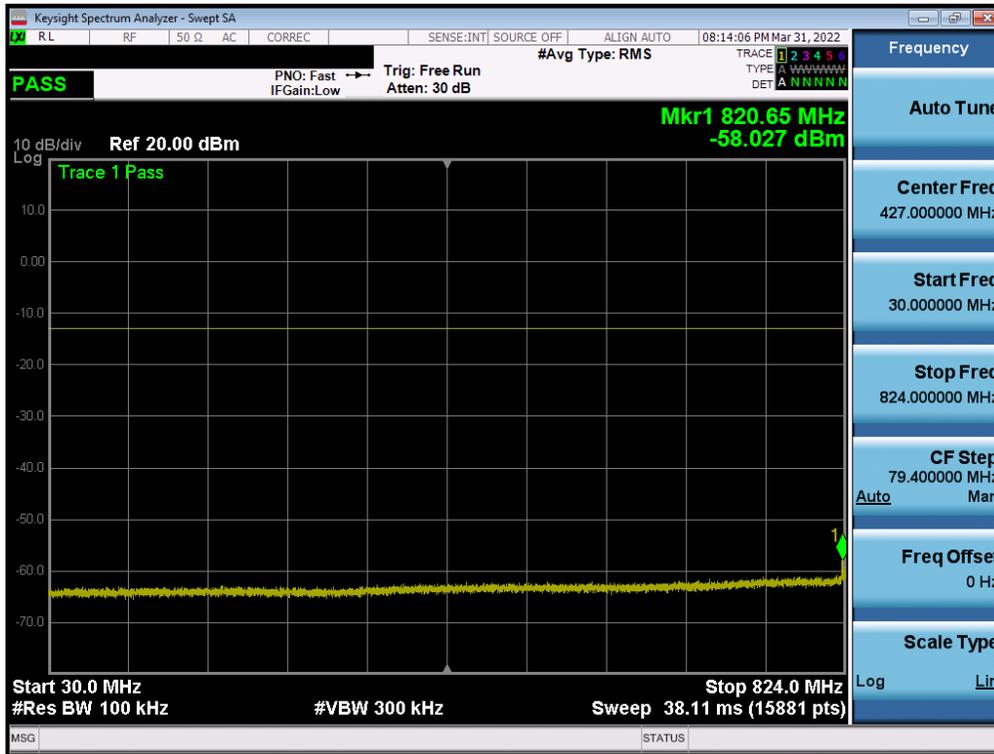
FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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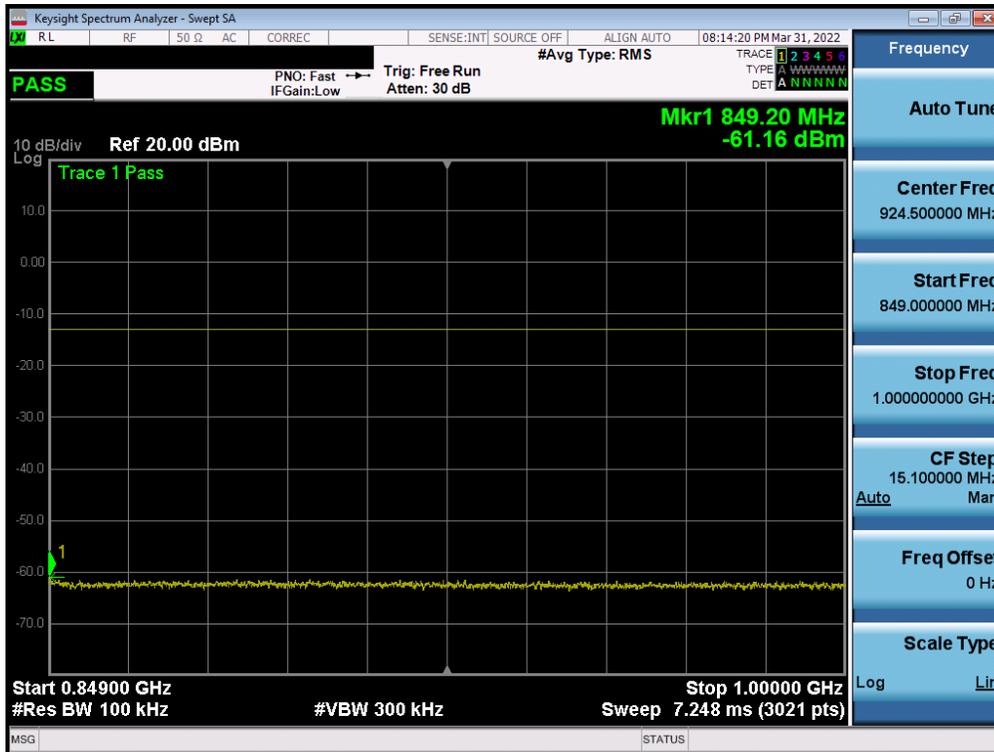
Plot 7-70. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - High Channel - Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2201200003-03.PY7	Test Dates: 3/25/2022 - 5/19/2022	EUT Type: Portable Handset	Page 53 of 119

NR Band n5 – Sub Ant

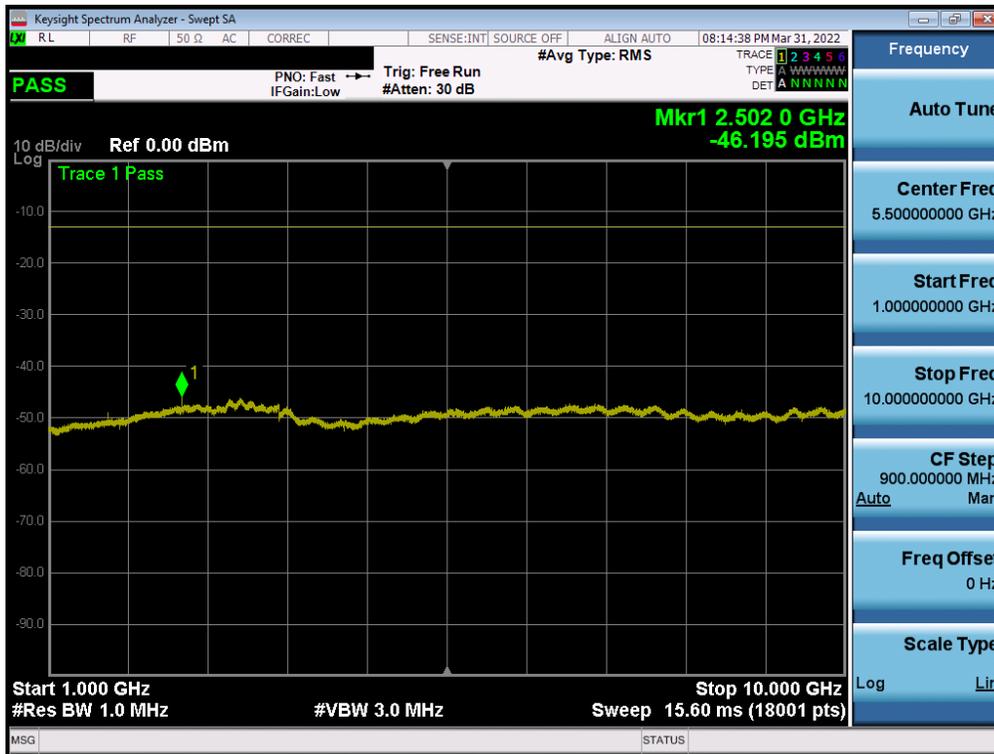


Plot 7-71. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - Low Channel - Sub Ant)

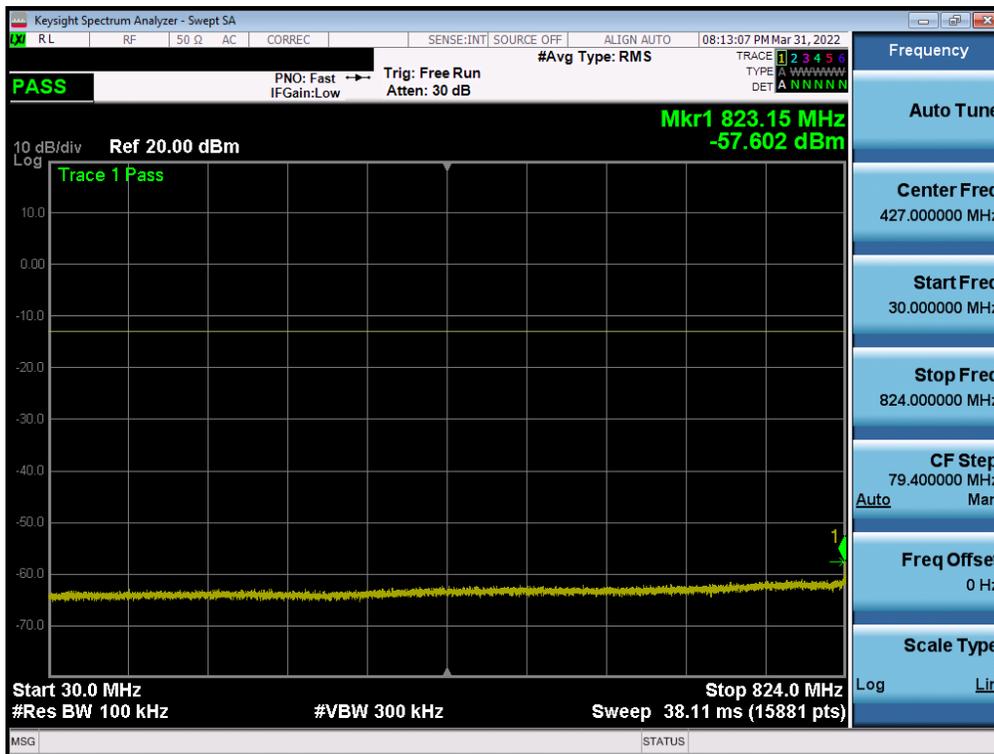


Plot 7-72. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - Low Channel - Sub Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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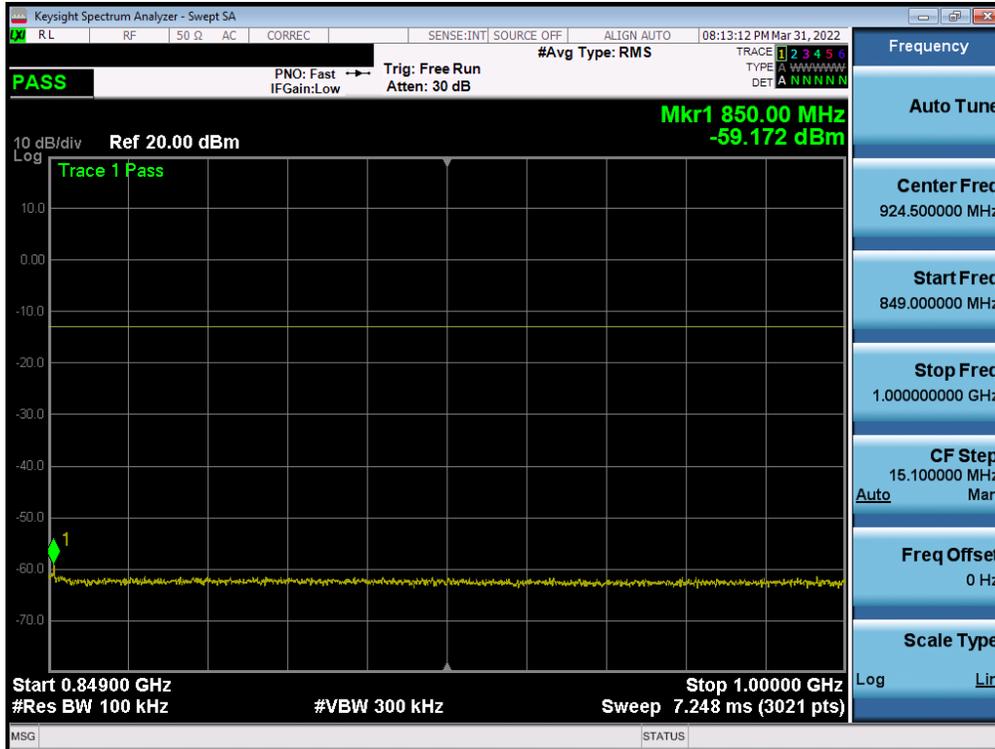


Plot 7-73. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - Low Channel - Sub Ant)

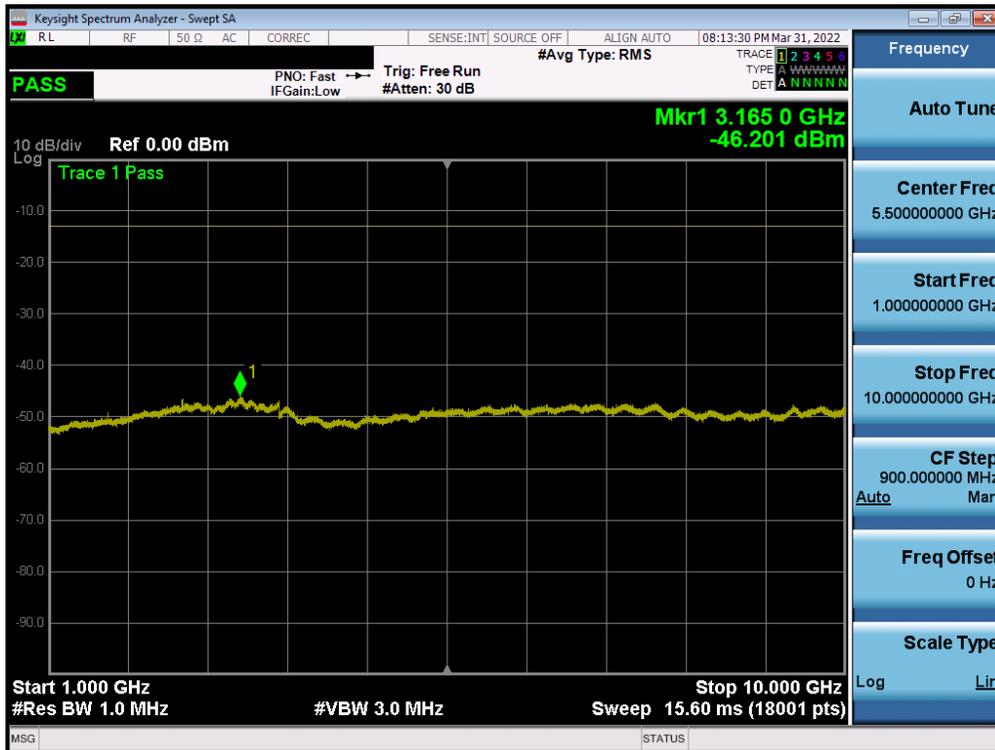


Plot 7-74. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - Mid Channel - Sub Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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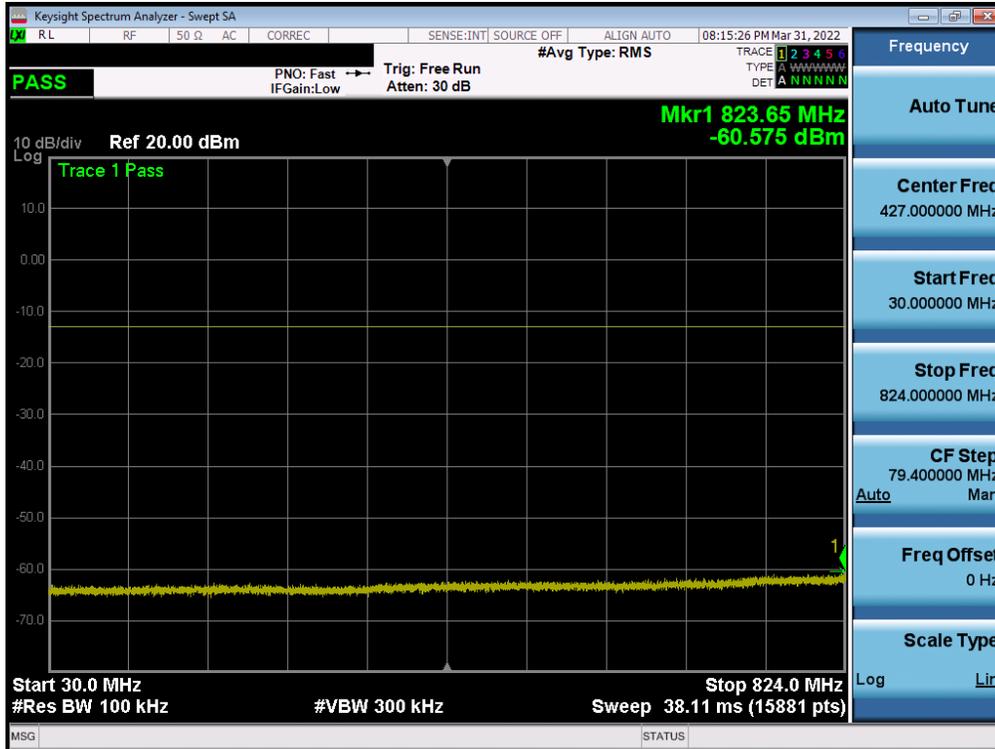


Plot 7-75. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - Mid Channel - Sub Ant)

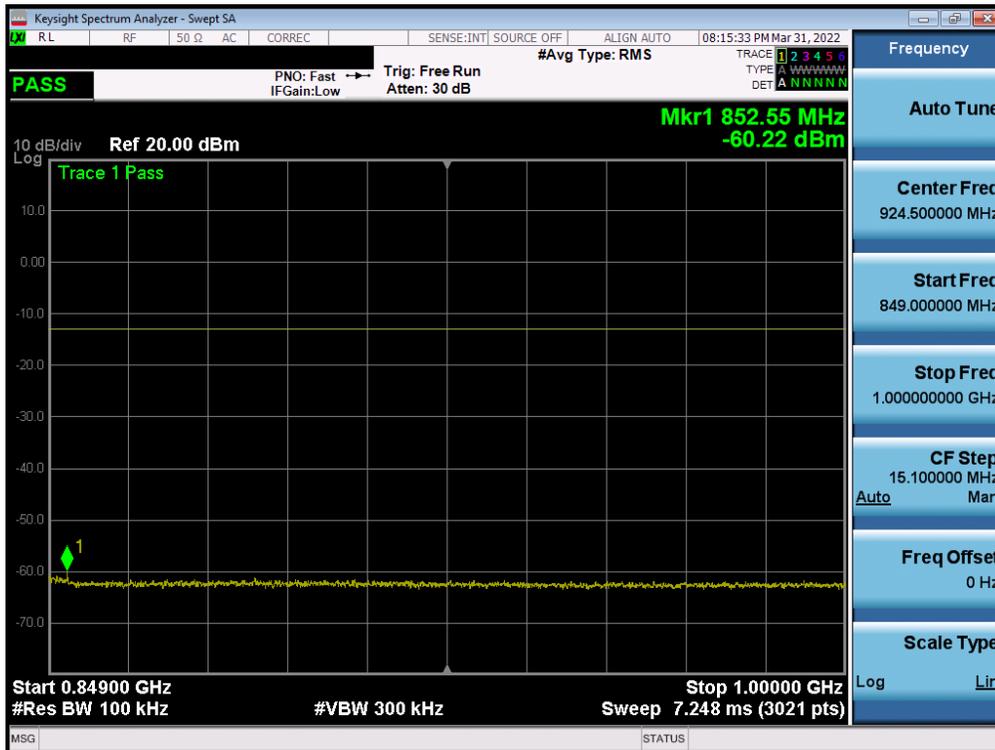


Plot 7-76. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - Mid Channel - Sub Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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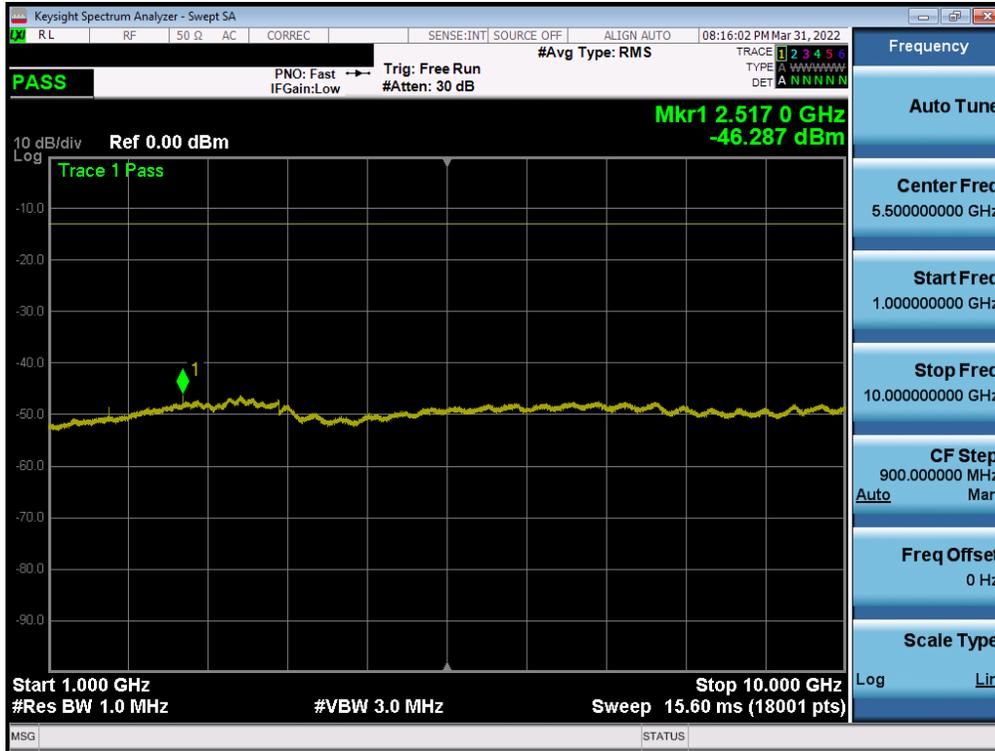


Plot 7-77. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - High Channel - Sub Ant)



Plot 7-78. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - High Channel - Sub Ant)

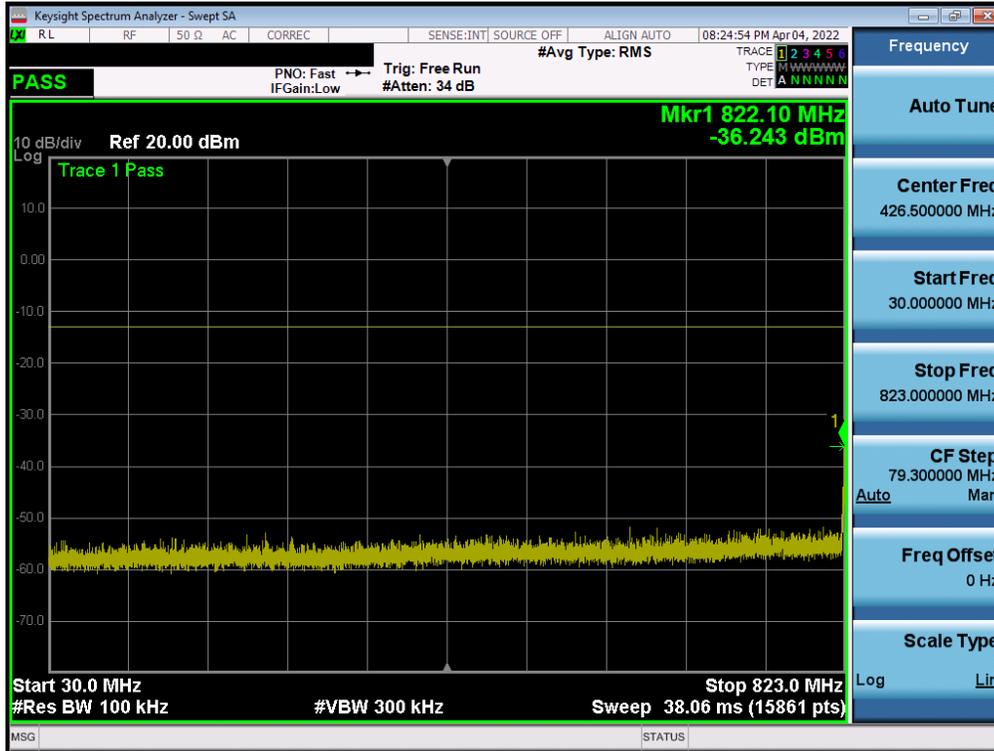
FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2201200003-03.PY7	Test Dates: 3/25/2022 - 5/19/2022	EUT Type: Portable Handset	Page 57 of 119



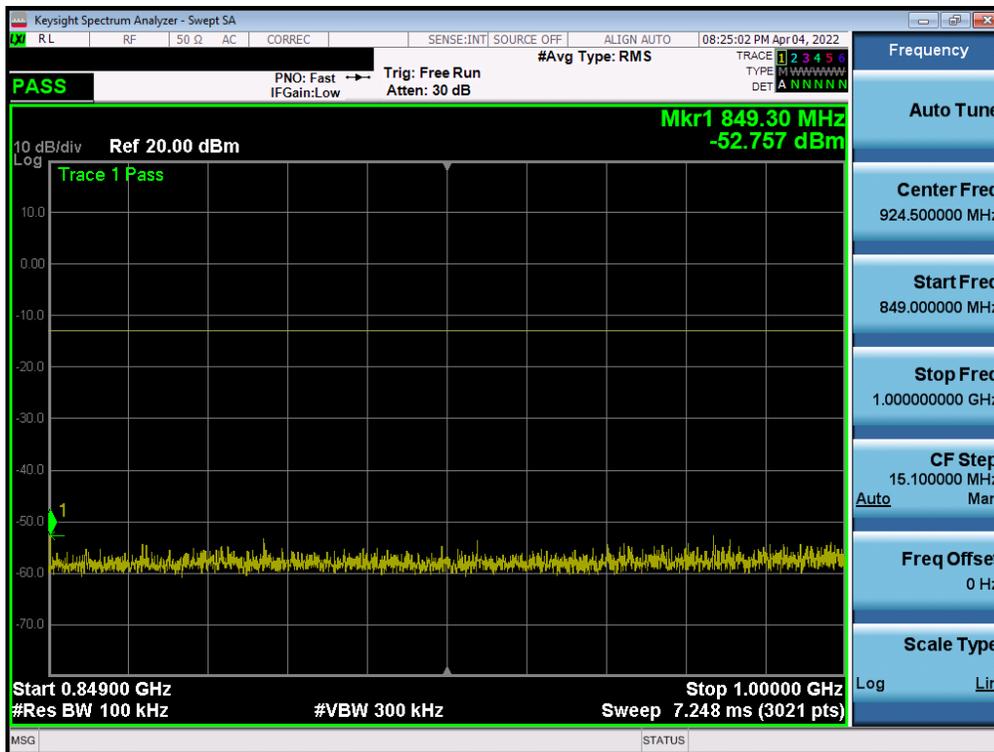
Plot 7-79. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - High Channel - Sub Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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GSM/GPRS Cell – Main Ant

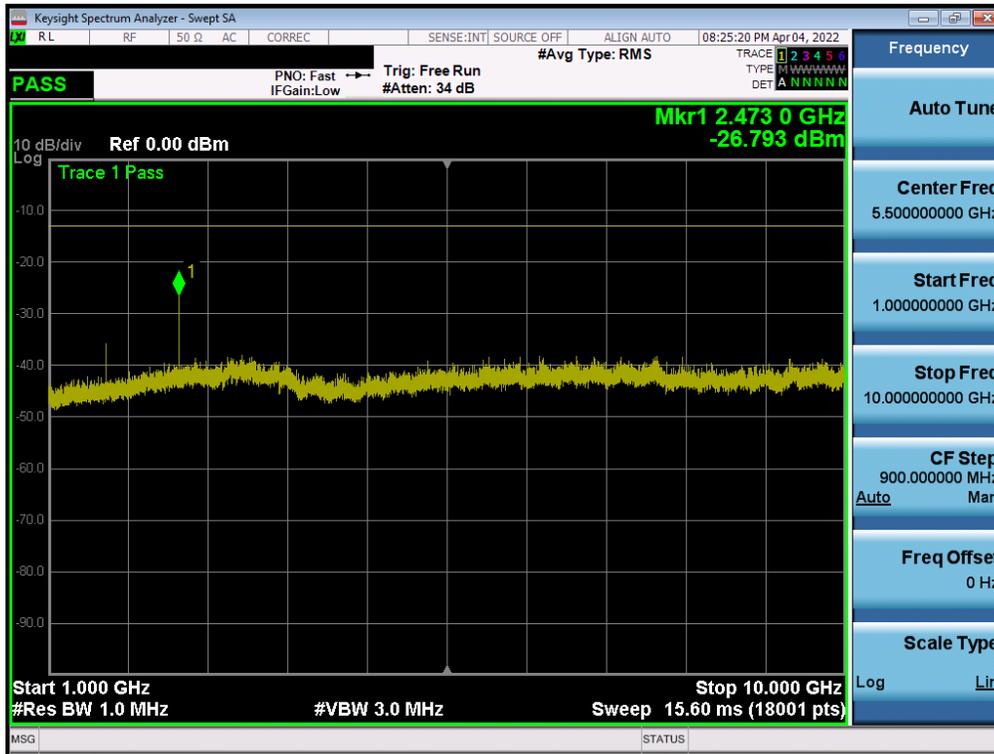


Plot 7-80. Conducted Spurious Plot (GPRS Ch. 128 – Main Ant)

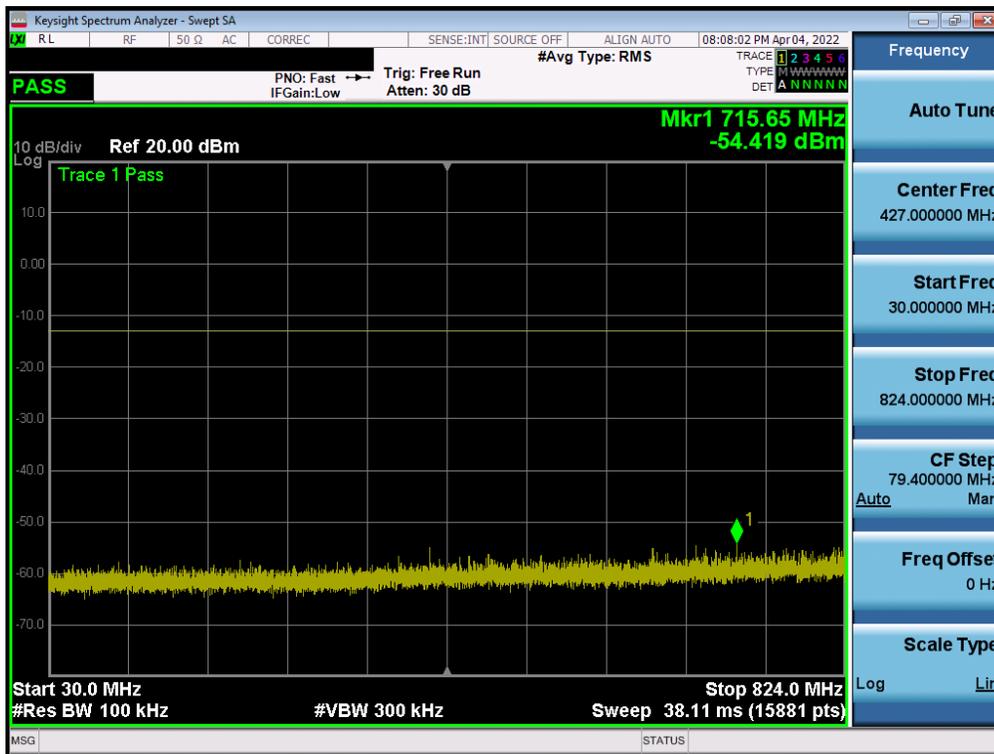


Plot 7-81. Conducted Spurious Plot (GPRS Ch. 128 – Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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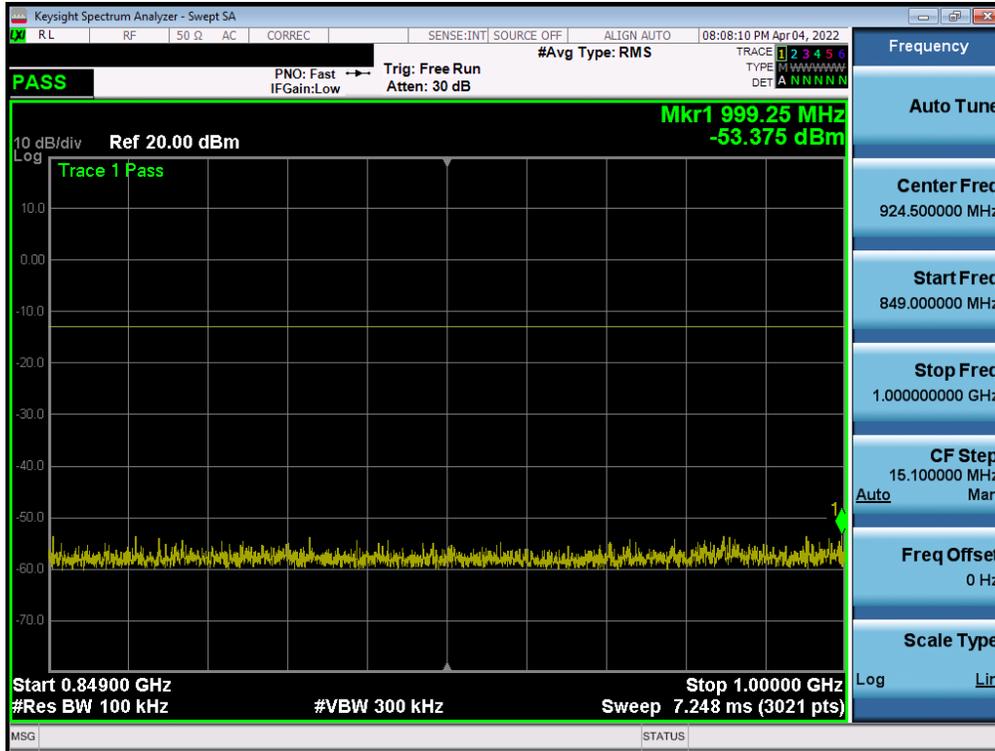


Plot 7-82. Conducted Spurious Plot (GPRS Ch. 128 – Main Ant)

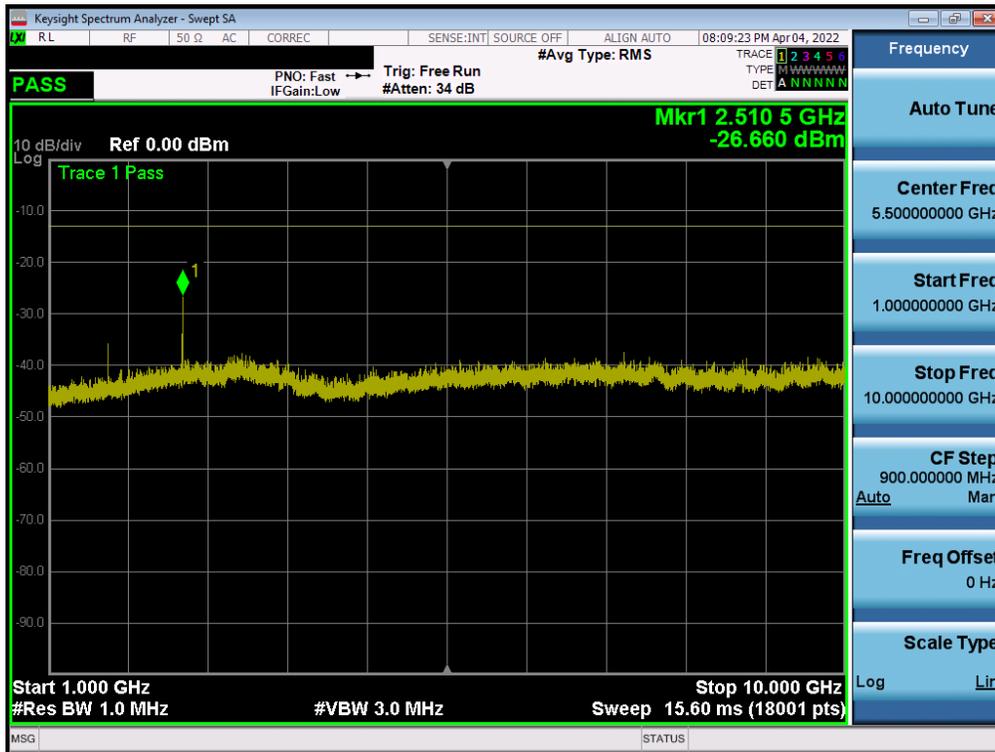


Plot 7-83. Conducted Spurious Plot (GPRS Ch. 190 – Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2201200003-03.PY7	Test Dates: 3/25/2022 - 5/19/2022	EUT Type: Portable Handset	Page 60 of 119

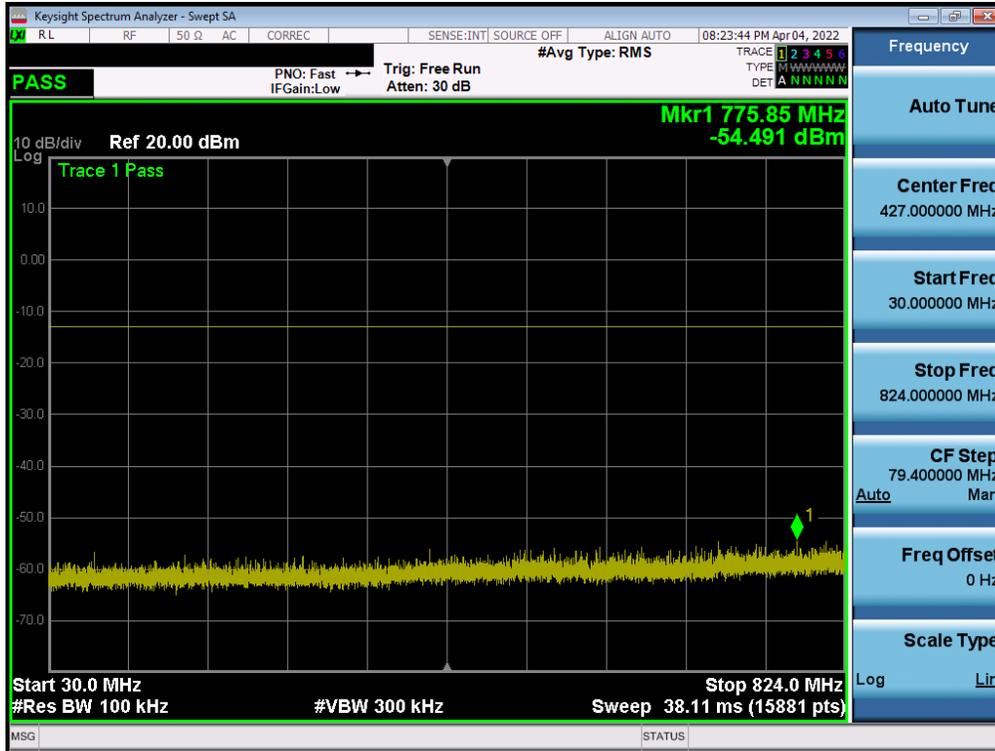


Plot 7-84. Conducted Spurious Plot (GPRS Ch. 190 – Main Ant)

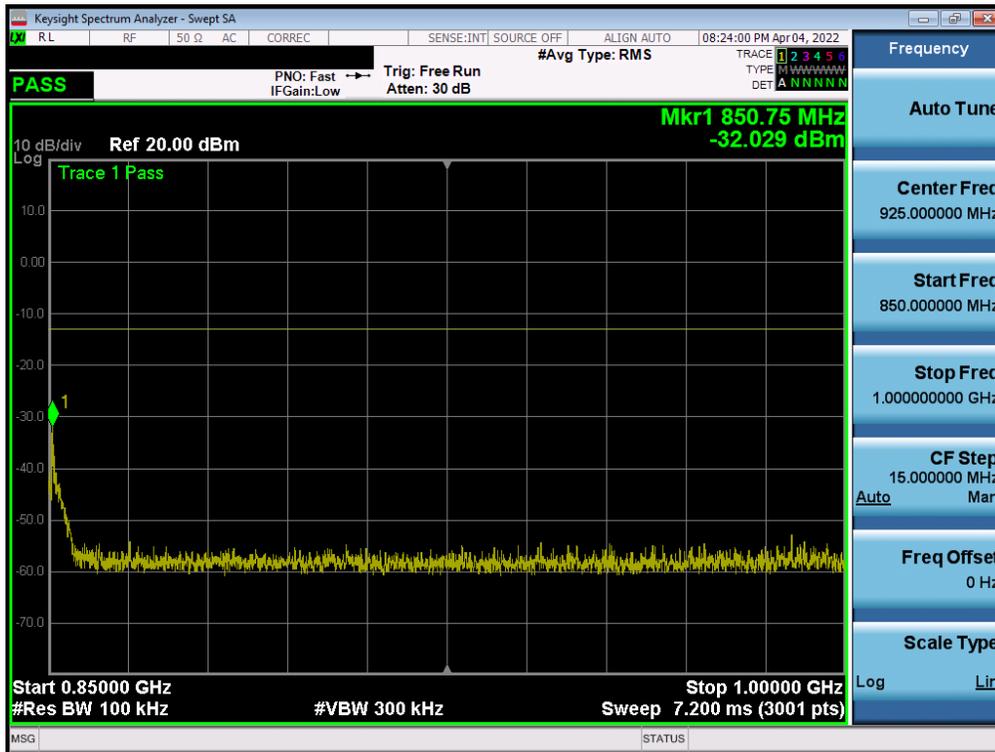


Plot 7-85. Conducted Spurious Plot (GPRS Ch. 190 – Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2201200003-03.PY7	Test Dates: 3/25/2022 - 5/19/2022	EUT Type: Portable Handset	Page 61 of 119

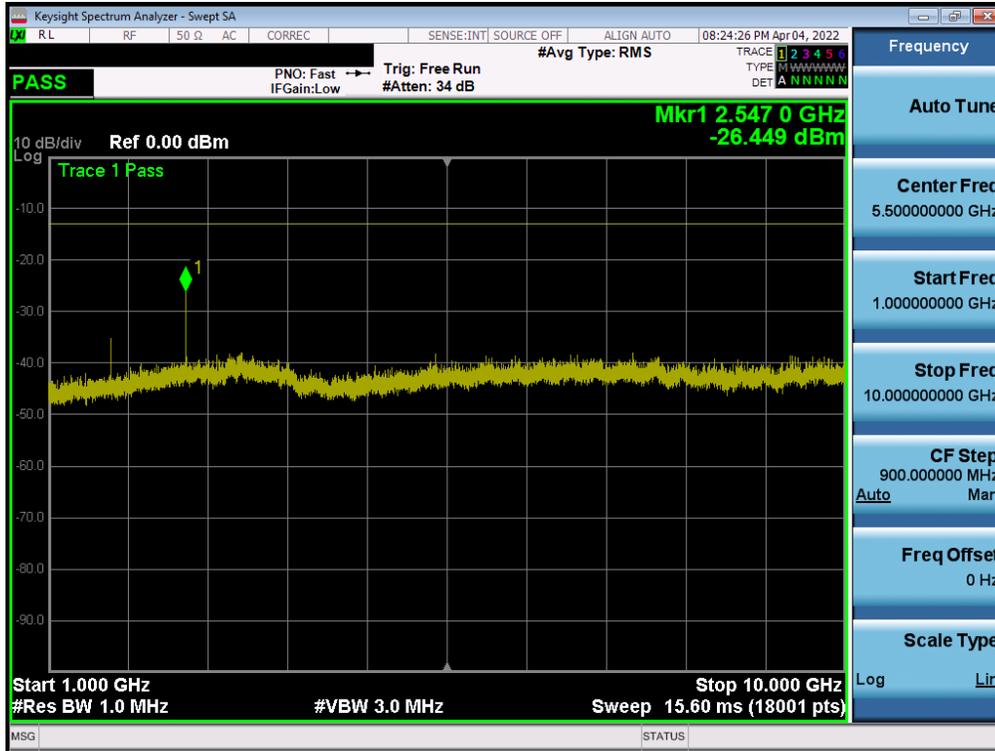


Plot 7-86. Conducted Spurious Plot (GPRS Ch. 251 – Main Ant)



Plot 7-87. Conducted Spurious Plot (GPRS Ch. 251 – Main Ant)

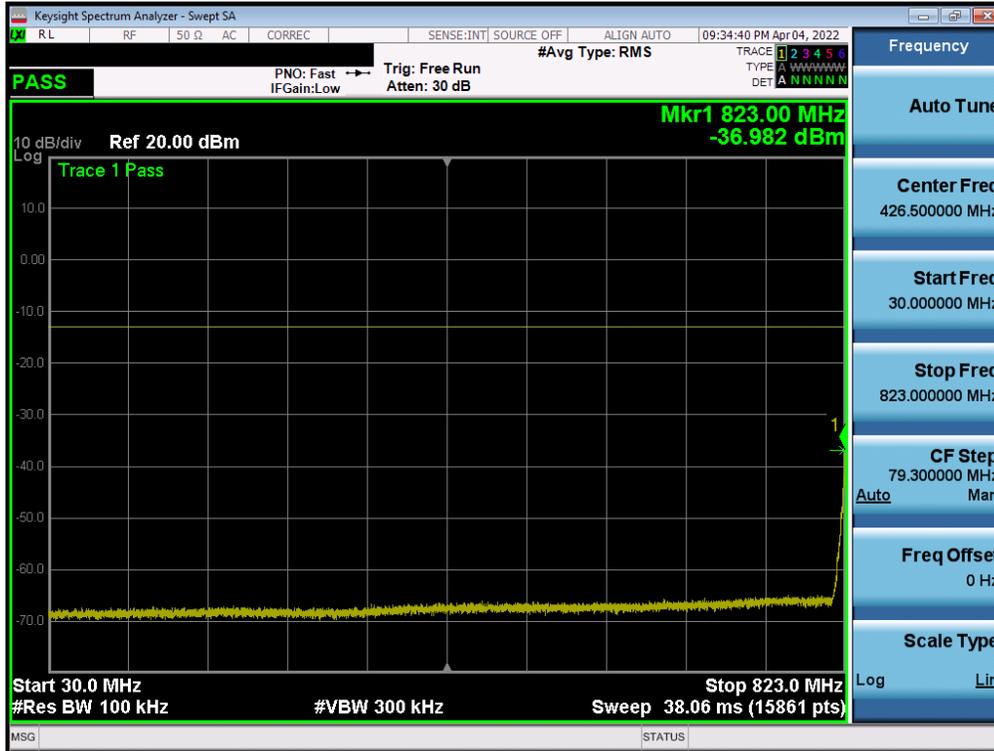
FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2201200003-03.PY7	Test Dates: 3/25/2022 - 5/19/2022	EUT Type: Portable Handset	Page 62 of 119



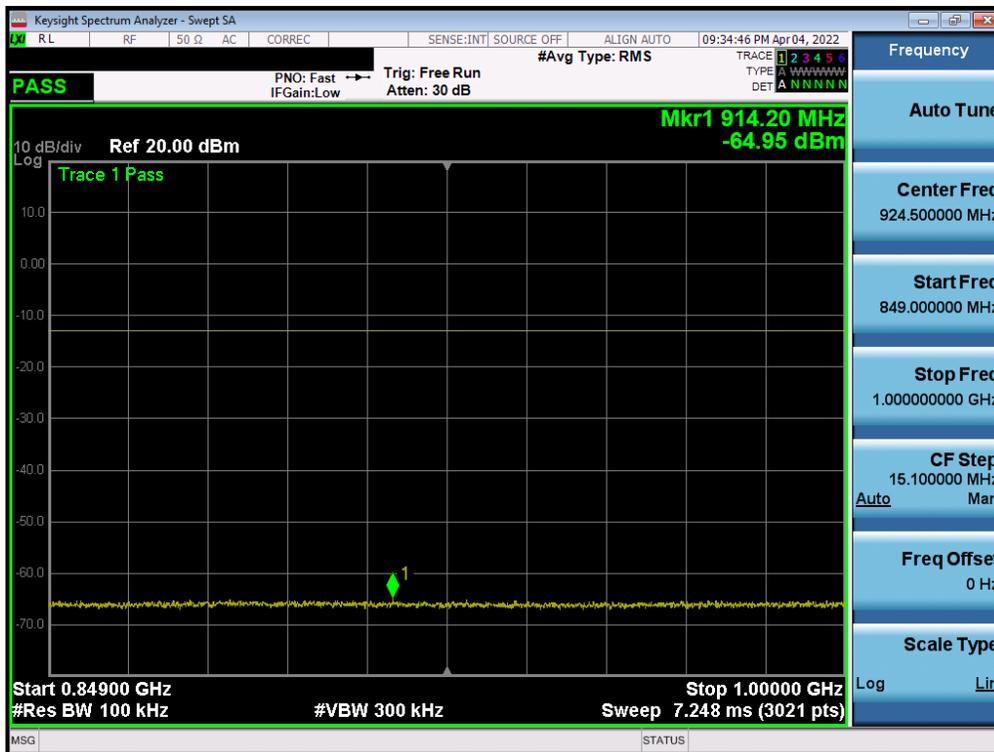
Plot 7-88. Conducted Spurious Plot (GPRS Ch. 251 – Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2201200003-03.PY7	Test Dates: 3/25/2022 - 5/19/2022	EUT Type: Portable Handset	Page 63 of 119

WCDMA Cell – Main Ant



Plot 7-89. Conducted Spurious Plot (WCDMA Ch. 4132 – Main Ant)

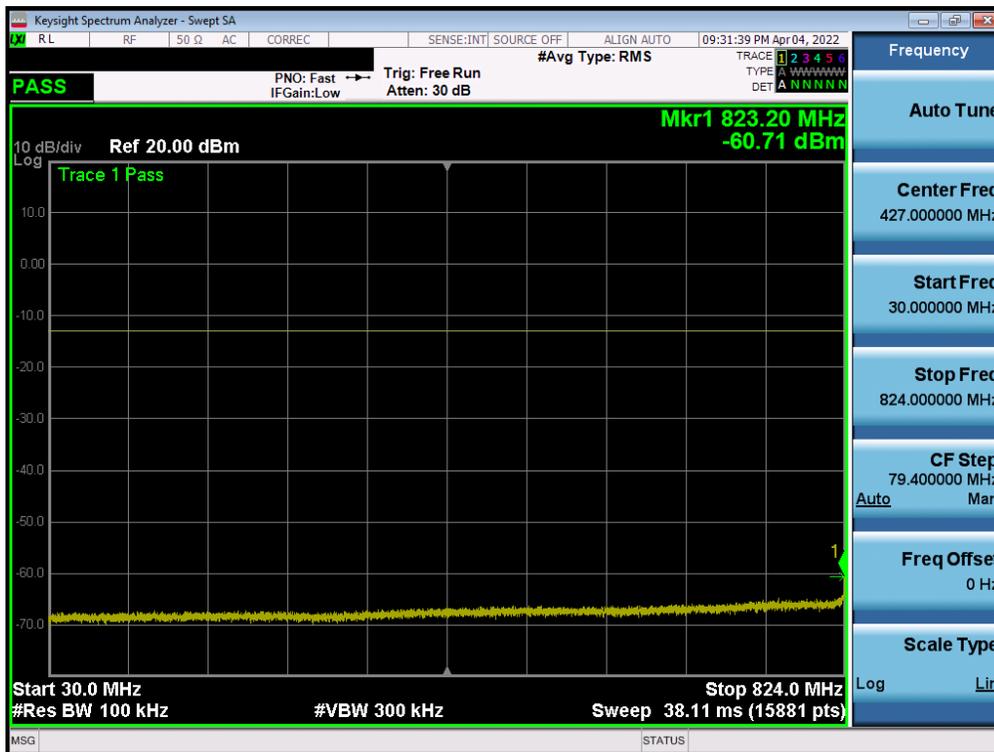


Plot 7-90. Conducted Spurious Plot (WCDMA Ch. 4132 – Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2201200003-03.PY7	Test Dates: 3/25/2022 - 5/19/2022	EUT Type: Portable Handset	Page 64 of 119

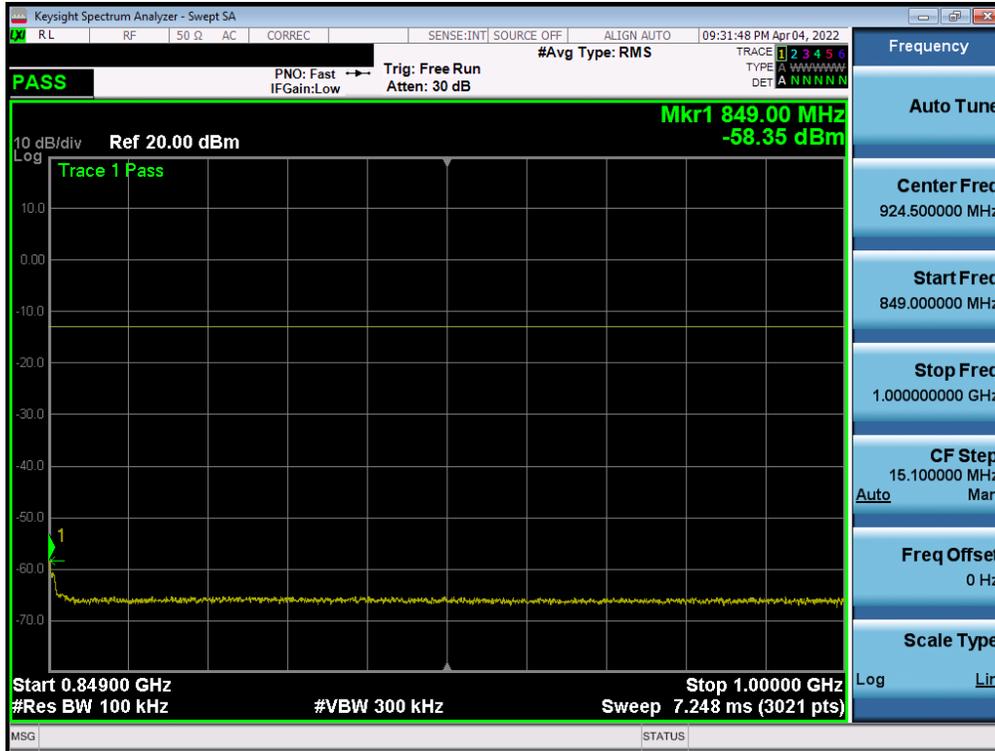


Plot 7-91. Conducted Spurious Plot (WCDMA Ch. 4132 – Main Ant)

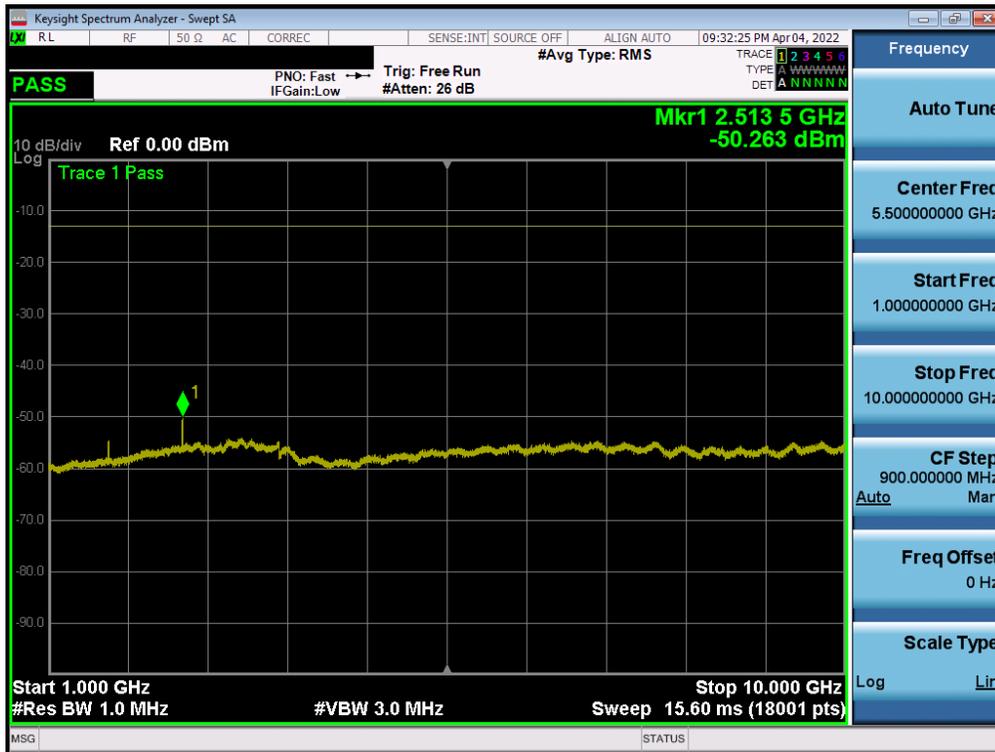


Plot 7-92. Conducted Spurious Plot (WCDMA Ch. 4183 – Main Ant)

FCC ID: PY7-57325M	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2201200003-03.PY7	Test Dates: 3/25/2022 - 5/19/2022	EUT Type: Portable Handset	Page 65 of 119

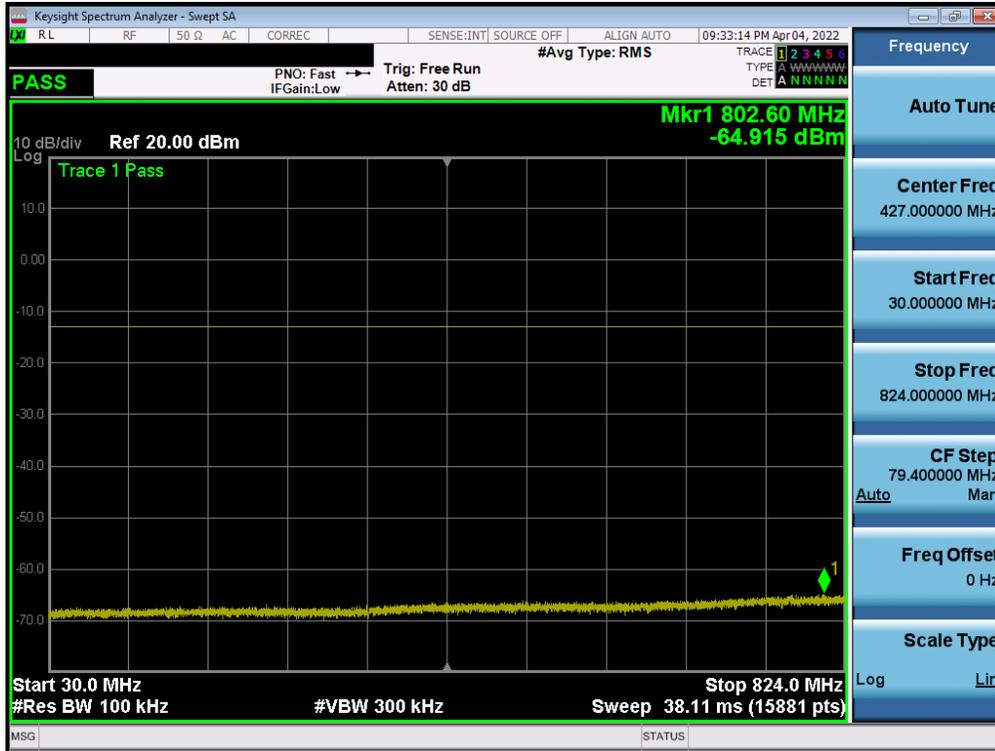


Plot 7-93. Conducted Spurious Plot (WCDMA Ch. 4183 – Main Ant)

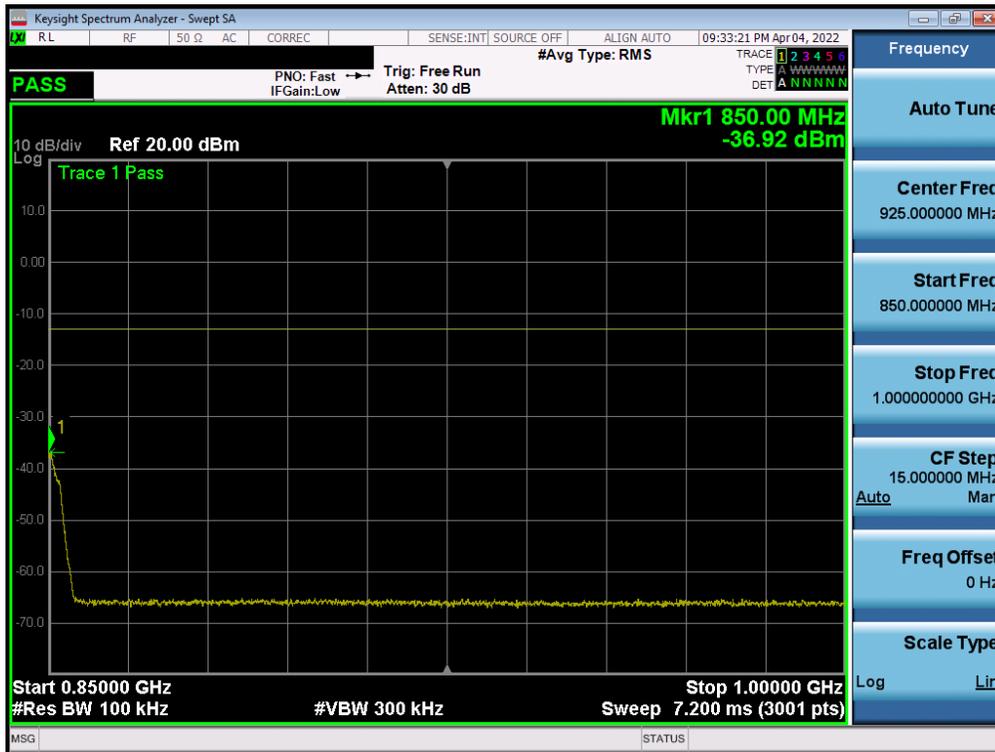


Plot 7-94. Conducted Spurious Plot (WCDMA Ch. 4183 – Main Ant)

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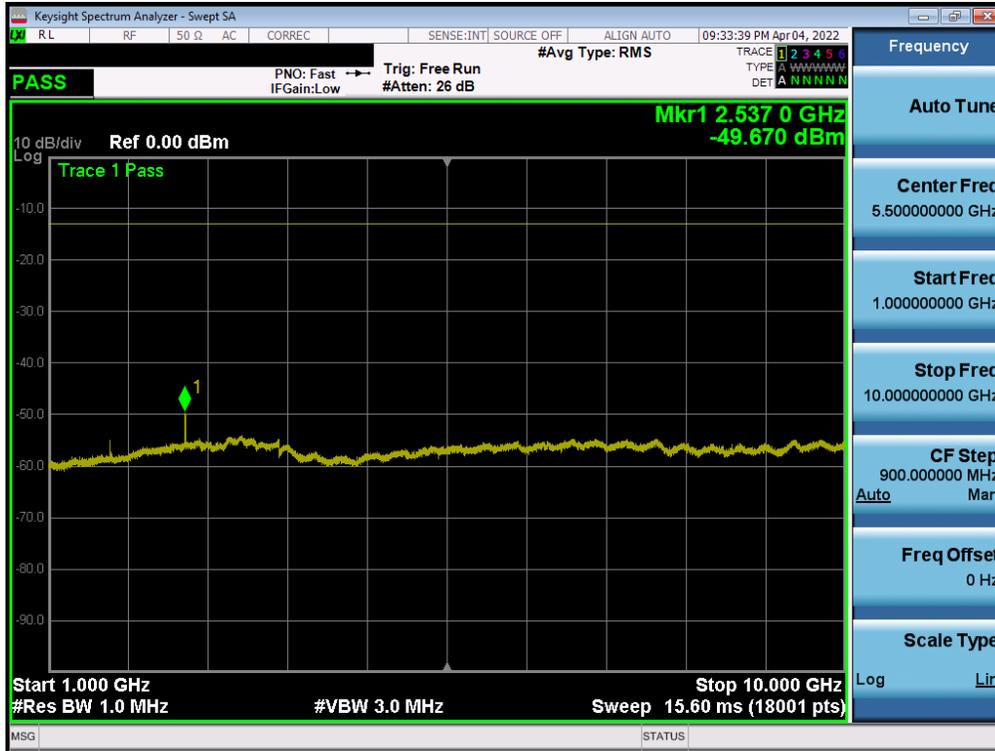


Plot 7-95. Conducted Spurious Plot (WCDMA Ch. 4233 – Main Ant)



Plot 7-96. Conducted Spurious Plot (WCDMA Ch. 4233 – Main Ant)

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Plot 7-97. Conducted Spurious Plot (WCDMA Ch. 4233 – Main Ant)

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7.5 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 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.

The minimum permissible attenuation level of any spurious emission is $43 + 10 \log_{10}(P_{\text{Watts}})$, where P is the transmitter power in Watts.

Test Procedure Used

KDB 971168 D01 v03r01 – Section 6.0

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 \geq 1% of the emission bandwidth
4. VBW \geq 3 x RBW
5. Detector = RMS
6. Number of sweep points \geq 2 x Span/RBW
7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
8. Sweep time = auto couple
9. The trace was allowed to stabilize

Test Setup

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

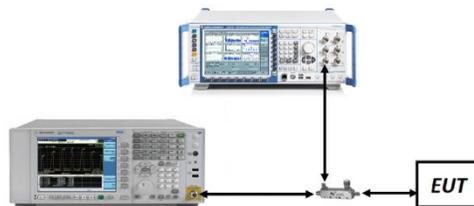


Figure 7-4. Test Instrument & Measurement Setup

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Test Notes

1. Per 22.917(b) and RSS-132(5.5), in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to demonstrate compliance with the out-of-band emissions limit. The 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 emission are attenuated at least 26 dB below the transmitter power.

2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) 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.

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LTE Band 5 – Main Ant

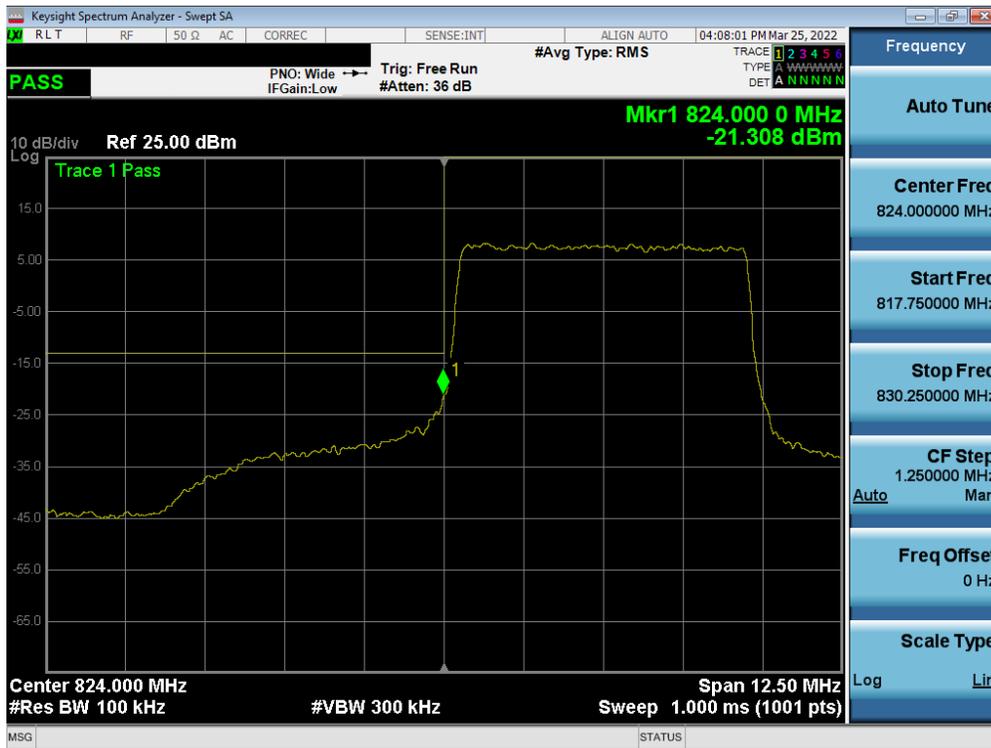


Plot 7-98. Lower Band Edge Plot (LTE Band 5 - 10MHz QPSK – Full RB - Main Ant)



Plot 7-99. Upper Band Edge Plot (LTE Band 5 - 10MHz QPSK – Full RB - Main Ant)

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Plot 7-100. Lower Band Edge Plot (LTE Band 5 - 5MHz QPSK – Full RB - Main Ant)



Plot 7-101. Upper Band Edge Plot (LTE Band 5 - 5MHz QPSK – Full RB - Main Ant)

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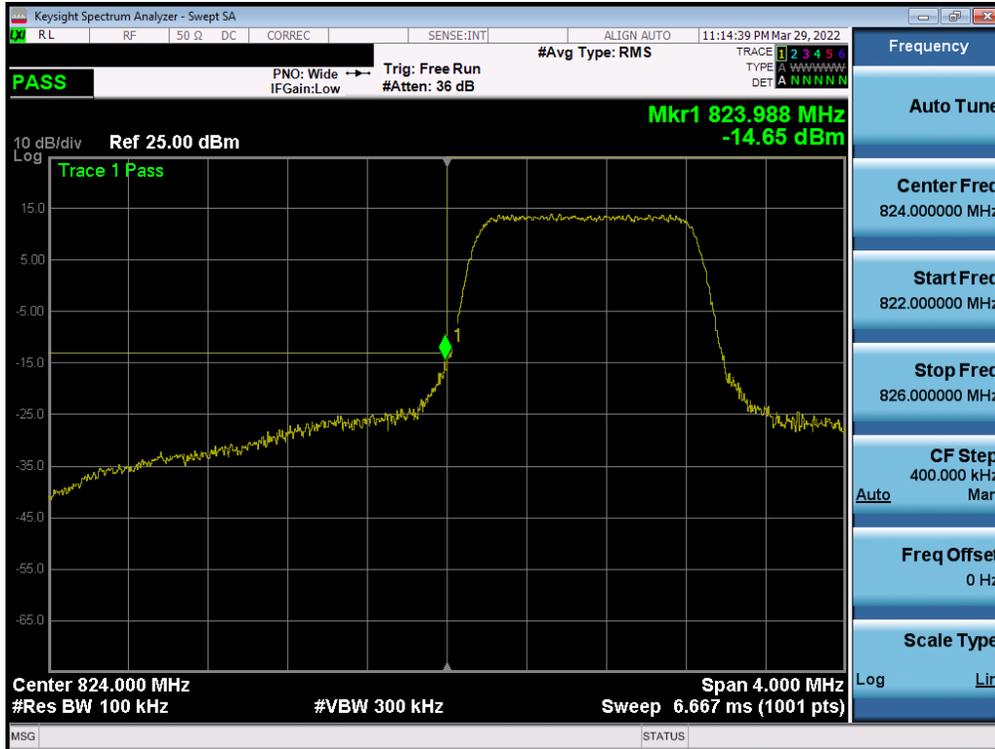


Plot 7-102. Lower Band Edge Plot (LTE Band 5 - 3MHz QPSK – Full RB - Main Ant)

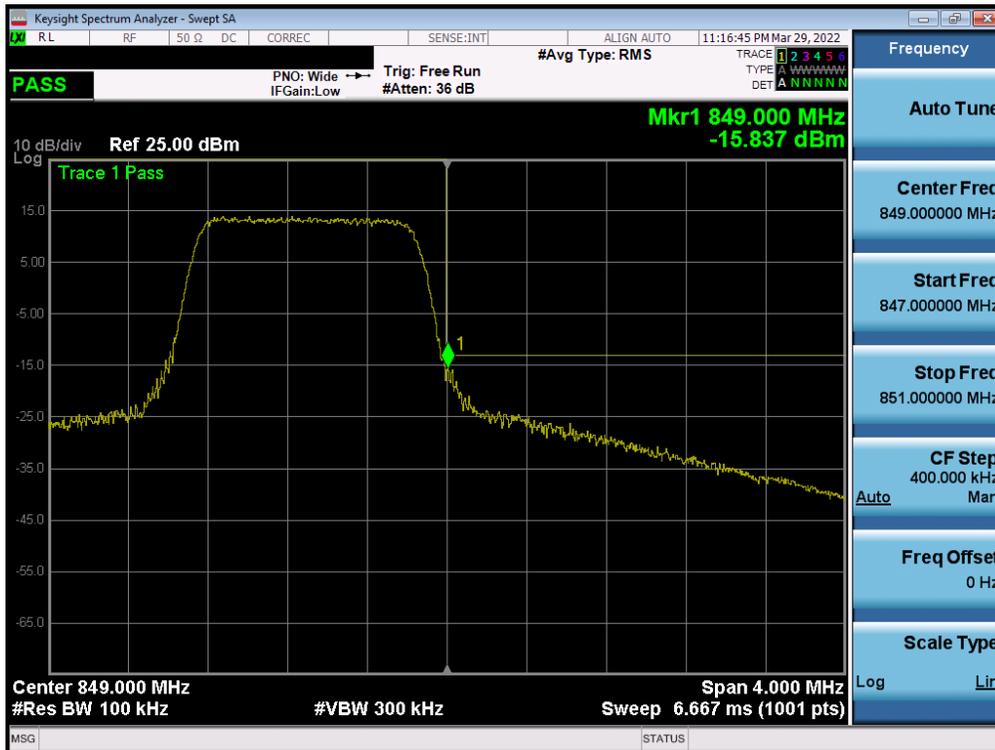


Plot 7-103. Upper Band Edge Plot (LTE Band 5 - 3MHz QPSK – Full RB - Main Ant)

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Plot 7-104. Lower Band Edge Plot (LTE Band 5 – 1.4MHz QPSK – Full RB - Main Ant)



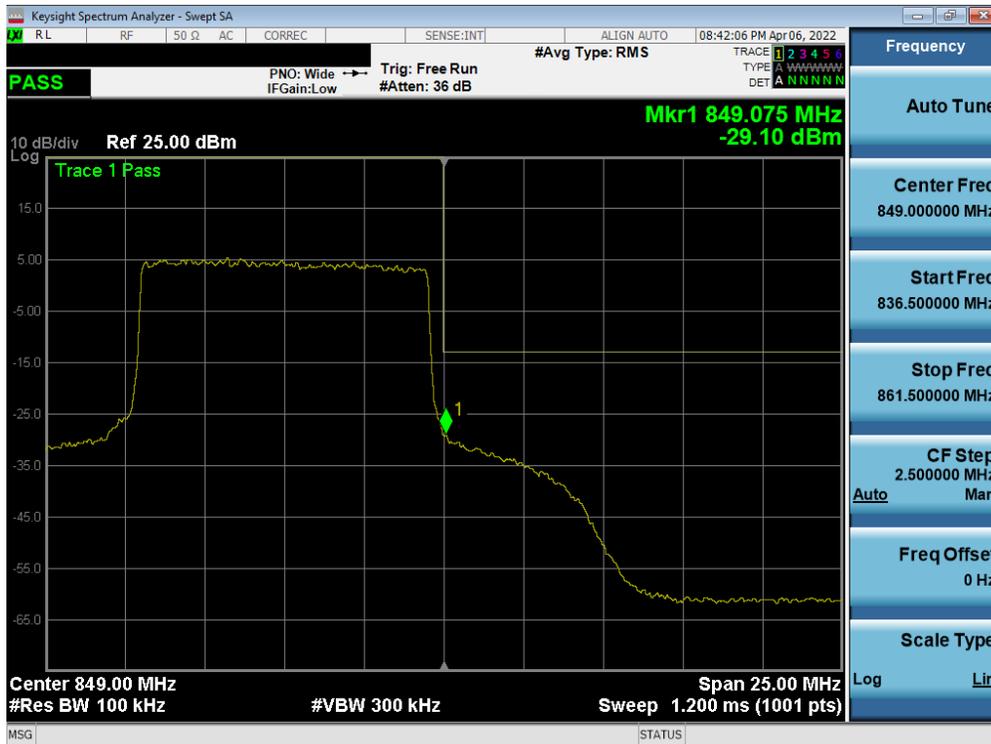
Plot 7-105. Upper Band Edge Plot (LTE Band 5 – 1.4MHz QPSK – Full RB - Main Ant)

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LTE Band 5 – Sub Ant

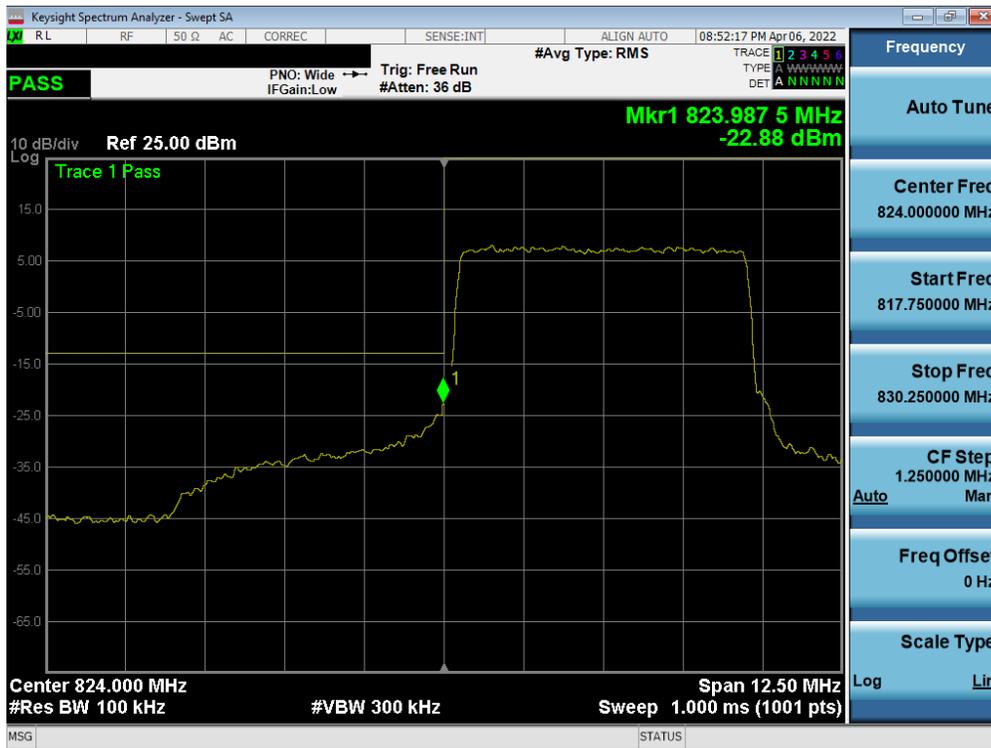


Plot 7-106. Lower Band Edge Plot (LTE Band 5 - 10MHz QPSK – Full RB - Sub Ant)



Plot 7-107. Upper Band Edge Plot (LTE Band 5 - 10MHz QPSK – Full RB - Sub Ant)

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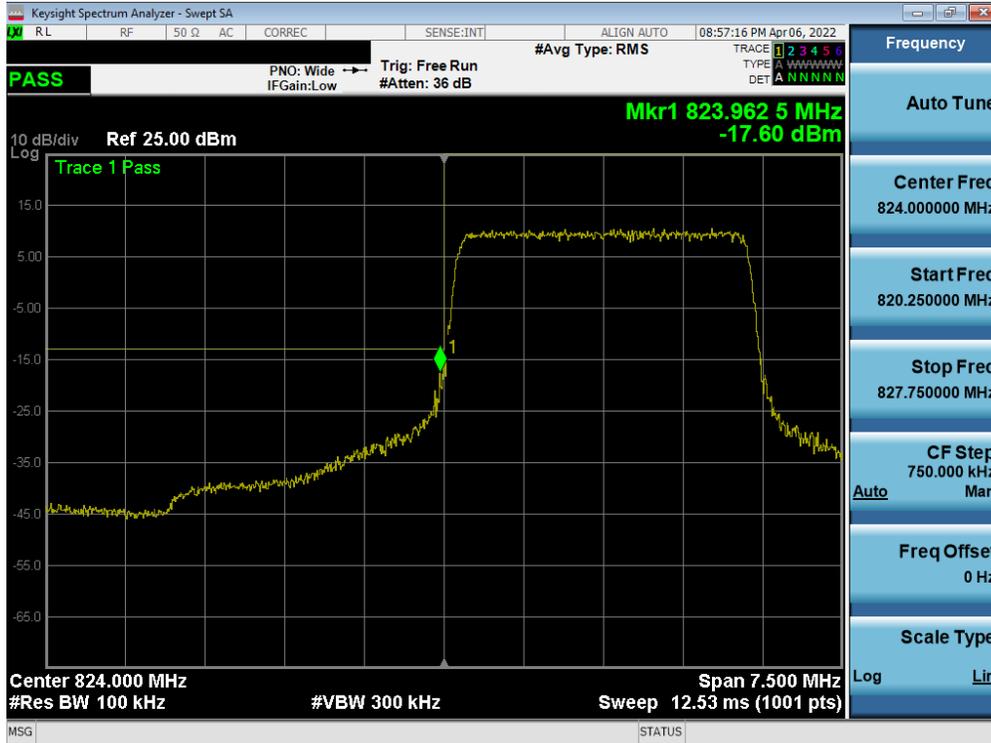


Plot 7-108. Lower Band Edge Plot (LTE Band 5 - 5MHz QPSK – Full RB - Sub Ant)



Plot 7-109. Upper Band Edge Plot (LTE Band 5 - 5MHz QPSK – Full RB - Sub Ant)

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Plot 7-110. Lower Band Edge Plot (LTE Band 5 - 3MHz QPSK – Full RB - Sub Ant)



Plot 7-111. Upper Band Edge Plot (LTE Band 5 - 3MHz QPSK – Full RB - Sub Ant)

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