

# TEST REPORT

FCC Sub6 n25(2) Test for SM-F741B  
Certification

**APPLICANT**  
SAMSUNG Electronics Co., Ltd.

**REPORT NO.**  
HCT-RF-2405-FC014

**DATE OF ISSUE**  
May 3, 2024

**Tested by**  
Jae Ryang Do



**Technical Manager**  
Jong Seok Lee



**HCT CO., LTD.**  
*Bongjai Huh*  
BongJai Huh / CEO



**HCT CO.,LTD.**

2-6, 73, 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA  
Tel. +82 31 645 6300 Fax. +82 31 645 6401

**TEST  
REPORT**

**REPORT NO.**  
HCT-RF-2405-FC014

**DATE OF ISSUE**  
May 03, 2024

**Additional Model**  
-

**Applicant**      **SAMSUNG Electronics Co., Ltd.**  
129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

**Product Name**      Mobile Phone  
**Model Name**      SM-F741B

**Date of Test**      February 27, 2024 ~ April 30, 2024

**FCC ID**      A3LSMF741B

**Location of Test**       Permanent Testing Lab     On Site Testing  
(Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 Republic of Korea)

**FCC Classification:**      PCS Licensed Transmitter Held to Ear (PCE)

**FCC Rule Part(s):**      § 24

## REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	May 03, 2024	Initial Release

## Notice

---

### Content

---

The measurements shown in this report were made in accordance with the procedures specified in CFR47 section § 2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998,21 U.S.C.853(a)

The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated.

The test results have only been applied with the test methods required by the standard(s).

When confirmation of authenticity of this test report is required, please contact [www.hct.co.kr](http://www.hct.co.kr)

The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).

According to the Evaluation report, all of the data contained herein is reused from the reference FCC ID : A3LSMF741U report.

Note: The test-results of n25\_ANT I are full re-test results.

(Only n2(ANT\_A)& n25(ANT A) reused)

---

## CONTENTS

1. GENERAL INFORMATION .....	6
1.1. MAXIMUM OUTPUT POWER.....	7
2. INTRODUCTION .....	10
2.1. DESCRIPTION OF EUT .....	10
2.2. MEASURING INSTRUMENT CALIBRATION.....	10
2.3. TEST FACILITY .....	10
3. DESCRIPTION OF TESTS.....	11
3.1 TEST PROCEDURE.....	11
3.2 RADIATED POWER .....	12
3.3 RADIATED SPURIOUS EMISSIONS .....	13
3.4 PEAK- TO- AVERAGE RATIO.....	14
3.5 OCCUPIED BANDWIDTH. ....	16
3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL .....	17
3.7 BAND EDGE .....	18
3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE.....	20
3.9 WORST CASE(RADIATED TEST).....	21
3.10 WORST CASE(CONDUCTED TEST) .....	23
4. LIST OF TEST EQUIPMENT .....	24
5. MEASUREMENT UNCERTAINTY .....	25
6. SUMMARY OF TEST RESULTS.....	26
7. SAMPLE CALCULATION .....	27
8. TEST DATA(ANT A_n2).....	29
8.1 EQUIVALENT ISOTROPIC RADIATED POWER .....	29
8.2 RADIATED SPURIOUS EMISSIONS .....	37
8.3 PEAK-TO-AVERAGE RATIO.....	38
8.4 OCCUPIED BANDWIDTH .....	40
8.5 CONDUCTED SPURIOUS EMISSIONS.....	42
8.6 BAND EDGE .....	42
8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE.....	43
9. TEST DATA(ANT A_n25).....	51
9.1 EQUIVALENT ISOTROPIC RADIATED POWER .....	51
9.2 RADIATED SPURIOUS EMISSIONS .....	59
9.3 PEAK-TO-AVERAGE RATIO.....	60
9.4 OCCUPIED BANDWIDTH .....	62
9.5 CONDUCTED SPURIOUS EMISSIONS.....	64
9.6 BAND EDGE .....	64
9.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE.....	65
10. TEST DATA(ANT I_n25(2)).....	73
10.1 EQUIVALENT ISOTROPIC RADIATED POWER .....	73
10.2 RADIATED SPURIOUS EMISSIONS .....	81
10.3 PEAK-TO-AVERAGE RATIO.....	82
10.4 OCCUPIED BANDWIDTH .....	84

10.5 CONDUCTED SPURIOUS EMISSIONS ..... 86  
10.6 BAND EDGE ..... 86  
10.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE ..... 87  
11. TEST PLOTS(ANT A\_n2).....95  
12. TEST PLOTS(ANT A\_n25).....272  
13. TEST PLOTS(ANT I\_n25(2)).....449  
14. ANNEX A\_ TEST SETUP PHOTO .....626

## MEASUREMENT REPORT

### 1. GENERAL INFORMATION

<b>Applicant Name:</b>	SAMSUNG Electronics Co., Ltd.
<b>Address:</b>	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
<b>FCC ID:</b>	A3LSMF741B
<b>Application Type:</b>	Certification
<b>FCC Classification:</b>	PCS Licensed Transmitter Held to Ear (PCE)
<b>FCC Rule Part(s):</b>	§ 24
<b>EUT Type:</b>	Mobile phone
<b>Model(s):</b>	SM-F741B
<b>Additional Model(s)</b>	-
<b>SCS(kHz):</b>	15
<b>Bandwidth(MHz):</b>	5, 10, 15, 20, 25, 30, 35, 40
<b>Waveform:</b>	CP-OFDM, DFT-S-OFDM
<b>Modulation:</b>	DFT-S-OFDM: PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM
<b>Tx Frequency:</b>	1852.5 MHz – 1907.5 MHz (5 MHz) (Sub6 n2) 1855.0 MHz – 1905.0 MHz (10 MHz) (Sub6 n2) 1857.5 MHz – 1902.5 MHz (15 MHz) (Sub6 n2) 1860.0 MHz – 1900.0 MHz (20 MHz) (Sub6 n2) 1862.5 MHz – 1897.5 MHz (25 MHz) (Sub6 n2) 1865.0 MHz – 1895.0 MHz (30 MHz) (Sub6 n2) 1867.5 MHz – 1892.5 MHz (35 MHz) (Sub6 n2) 1870.0 MHz – 1890.0 MHz (40 MHz) (Sub6 n2)  1852.5 MHz – 1912.5 MHz (5 MHz) (Sub6 n25) 1855.0 MHz – 1910.0 MHz (10 MHz) (Sub6 n25) 1857.5 MHz – 1907.5 MHz (15 MHz) (Sub6 n25) 1860.0 MHz – 1905.0 MHz (20 MHz) (Sub6 n25) 1862.5 MHz – 1902.5 MHz (25 MHz) (Sub6 n25) 1865.0 MHz – 1900.0 MHz (30 MHz) (Sub6 n25) 1867.5 MHz – 1897.5 MHz (35 MHz) (Sub6 n25) 1870.0 MHz – 1895.0 MHz (40 MHz) (Sub6 n25)
<b>Date(s) of Tests:</b>	February 27, 2024 ~ April 30, 2024
<b>Serial number:</b>	Radiated : R3CX30N96TE(ANT A), R3CX20KJSJW(ANT I) Conducted : - ANT A (Sub6 n2) : 7B5599BDA1507ECE - ANT A (Sub6 n25) : 7B5599BDA3507ECE - ANT I (Sub6 n25(2)) : R3CX205LS3K

### 1.1. MAXIMUM OUTPUT POWER

#### ANT A (Sub6 n2)

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n2 (5)	1852.5 – 1907.5	4M60G7D	PI/2 BPSK	0.222	23.47
		4M60G7D	QPSK	0.221	23.44
		4M59W7D	16QAM	0.182	22.60
		4M57W7D	64QAM	0.128	21.08
		4M63W7D	256QAM	0.071	18.53
Sub6 n2 (10)	1855.0 – 1905.0	8M95G7D	PI/2 BPSK	0.228	23.57
		9M00G7D	QPSK	0.224	23.50
		8M96W7D	16QAM	0.179	22.52
		8M99W7D	64QAM	0.132	21.20
		8M95W7D	256QAM	0.074	18.67
Sub6 n2 (15)	1857.5 – 1902.5	13M5G7D	PI/2 BPSK	0.221	23.44
		13M5G7D	QPSK	0.216	23.35
		13M4W7D	16QAM	0.185	22.66
		13M5W7D	64QAM	0.130	21.14
		13M5W7D	256QAM	0.073	18.65
Sub6 n2 (20)	1860.0 – 1900.0	17M9G7D	PI/2 BPSK	0.229	23.59
		17M9G7D	QPSK	0.227	23.56
		18M0W7D	16QAM	0.188	22.75
		17M9W7D	64QAM	0.132	21.21
		17M9W7D	256QAM	0.073	18.61
Sub6 n2 (25)	1862.5 – 1897.5	22M9G7D	PI/2 BPSK	0.259	24.13
		23M0G7D	QPSK	0.253	24.03
		22M9W7D	16QAM	0.203	23.07
		23M0W7D	64QAM	0.147	21.68
		23M0W7D	256QAM	0.080	19.04
Sub6 n2 (30)	1865.0 – 1895.0	28M7G7D	PI/2 BPSK	0.260	24.15
		28M8G7D	QPSK	0.254	24.04
		28M7W7D	16QAM	0.201	23.03
		28M7W7D	64QAM	0.146	21.64
		28M7W7D	256QAM	0.082	19.13
Sub6 n2 (35)	1867.5 – 1892.5	32M2G7D	PI/2 BPSK	0.260	24.15
		32M2G7D	QPSK	0.254	24.04
		32M3W7D	16QAM	0.202	23.05
		32M2W7D	64QAM	0.143	21.54
		32M2W7D	256QAM	0.081	19.08
Sub6 n2 (40)	1870.0 – 1890.0	38M7G7D	PI/2 BPSK	0.264	24.21
		38M7G7D	QPSK	0.261	24.16
		38M7W7D	16QAM	0.204	23.09
		38M7W7D	64QAM	0.148	21.69
		38M7W7D	256QAM	0.080	19.05

**ANT A (Sub6 n25)**

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n25 (5)	1852.5 - 1912.5	4M60G7D	PI/2 BPSK	0.207	23.16
		4M59G7D	QPSK	0.206	23.14
		4M59W7D	16QAM	0.163	22.12
		4M59W7D	64QAM	0.119	20.74
		4M60W7D	256QAM	0.066	18.21
Sub6 n25 (10)	1855.0 - 1910.0	8M98G7D	PI/2 BPSK	0.198	22.97
		8M97G7D	QPSK	0.195	22.90
		8M97W7D	16QAM	0.155	21.89
		9M00W7D	64QAM	0.110	20.42
		8M96W7D	256QAM	0.062	17.92
Sub6 n25 (15)	1857.5 - 1907.5	13M4G7D	PI/2 BPSK	0.208	23.19
		13M4G7D	QPSK	0.202	23.06
		13M4W7D	16QAM	0.160	22.03
		13M5W7D	64QAM	0.115	20.60
		13M5W7D	256QAM	0.066	18.17
Sub6 n25 (20)	1860.0 - 1905.0	17M9G7D	PI/2 BPSK	0.199	22.99
		17M9G7D	QPSK	0.197	22.95
		17M9W7D	16QAM	0.158	21.98
		17M9W7D	64QAM	0.116	20.65
		17M9W7D	256QAM	0.063	17.96
Sub6 n25 (25)	1862.5 - 1902.5	22M9G7D	PI/2 BPSK	0.212	23.27
		22M9G7D	QPSK	0.204	23.09
		22M9W7D	16QAM	0.159	22.01
		22M9W7D	64QAM	0.117	20.68
		23M0W7D	256QAM	0.065	18.12
Sub6 n25 (30)	1865.0 - 1900.0	28M6G7D	PI/2 BPSK	0.222	23.46
		28M7G7D	QPSK	0.213	23.29
		28M6W7D	16QAM	0.171	22.32
		28M6W7D	64QAM	0.122	20.86
		28M6W7D	256QAM	0.070	18.47
Sub6 n25 (35)	1867.5 - 1897.5	32M2G7D	PI/2 BPSK	0.224	23.51
		32M3G7D	QPSK	0.218	23.39
		32M3W7D	16QAM	0.176	22.45
		32M2W7D	64QAM	0.125	20.98
		32M4W7D	256QAM	0.070	18.45
Sub6 n25 (40)	1870.0 - 1895.0	38M6G7D	PI/2 BPSK	0.225	23.53
		38M8G7D	QPSK	0.217	23.37
		38M6W7D	16QAM	0.175	22.42
		38M7W7D	64QAM	0.127	21.03
		38M7W7D	256QAM	0.069	18.41



**ANT I (Sub6 n25(2))**

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n25(2) (5)	1852.5 - 1912.5	4M50G7D	PI/2 BPSK	0.201	23.04
		4M51G7D	QPSK	0.194	22.87
		4M50W7D	16QAM	0.153	21.85
		4M54W7D	64QAM	0.115	20.61
		4M51W7D	256QAM	0.064	18.05
Sub6 n25(2) (10)	1855.0 - 1910.0	8M99G7D	PI/2 BPSK	0.201	23.04
		8M99G7D	QPSK	0.198	22.97
		8M96W7D	16QAM	0.155	21.91
		9M01W7D	64QAM	0.110	20.43
		9M03W7D	256QAM	0.061	17.87
Sub6 n25(2) (15)	1857.5 - 1907.5	13M4G7D	PI/2 BPSK	0.215	23.33
		13M5G7D	QPSK	0.213	23.28
		13M4W7D	16QAM	0.163	22.13
		13M5W7D	64QAM	0.118	20.73
		13M5W7D	256QAM	0.066	18.18
Sub6 n25(2) (20)	1860.0 - 1905.0	18M0G7D	PI/2 BPSK	0.202	23.05
		18M0G7D	QPSK	0.199	22.99
		18M0W7D	16QAM	0.155	21.90
		17M9W7D	64QAM	0.116	20.65
		17M9W7D	256QAM	0.062	17.95
Sub6 n25(2) (25)	1862.5 - 1902.5	22M9G7D	PI/2 BPSK	0.205	23.11
		23M0G7D	QPSK	0.202	23.06
		23M0W7D	16QAM	0.157	21.95
		23M0W7D	64QAM	0.119	20.77
		22M9W7D	256QAM	0.064	18.07
Sub6 n25(2) (30)	1865.0 - 1900.0	28M7G7D	PI/2 BPSK	0.219	23.41
		28M7G7D	QPSK	0.215	23.32
		28M6W7D	16QAM	0.169	22.29
		28M7W7D	64QAM	0.123	20.90
		28M7W7D	256QAM	0.071	18.49
Sub6 n25(2) (35)	1867.5 - 1897.5	32M3G7D	PI/2 BPSK	0.217	23.36
		32M3G7D	QPSK	0.214	23.31
		32M3W7D	16QAM	0.172	22.36
		32M3W7D	64QAM	0.130	21.14
		32M3W7D	256QAM	0.071	18.50
Sub6 n25(2) (40)	1870.0 - 1895.0	38M7G7D	PI/2 BPSK	0.221	23.44
		38M8G7D	QPSK	0.218	23.38
		38M6W7D	16QAM	0.169	22.27
		38M8W7D	64QAM	0.127	21.05
		38M7W7D	256QAM	0.069	18.39

## 2. INTRODUCTION

### 2.1. DESCRIPTION OF EUT

The EUT was a Mobile Phone with GSM/GPRS/EGPRS/UMTS and LTE, Sub 6. It also supports IEEE 802.11 a/b/g/n/ac/ax (20/40/80/160 MHz), Bluetooth(iPA, ePA), BT LE(iPA, ePA), NFC, WPT, WIFI 6E.

### 2.2. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

### 2.3. TEST FACILITY

The Fully-anechoic chamber and conducted measurement facility used to collect the radiated data are located at the **74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA.**

### 3. DESCRIPTION OF TESTS

#### 3.1 TEST PROCEDURE

Test Description	Test Procedure Used
Occupied Bandwidth	- KDB 971168 D01 v03r01 – Section 4.3 - ANSI C63.26-2015 – Section 5.4.4
Band Edge	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Spurious and Harmonic Emissions at Antenna Terminal	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Conducted Output Power	- N/A (See SAR Report)
Peak- to- Average Ratio	- KDB 971168 D01 v03r01 – Section 5.7 - ANSI C63.26-2015 – Section 5.2.3.4 - ANSI C63.26-2015 – Section 5.2.6(only GSM)
Frequency stability	- ANSI C63.26-2015 – Section 5.6
Effective Radiated Power/ Effective Isotropic Radiated Power	- KDB 971168 D01 v03r01 – Section 5.2 & 5.8 - ANSI/TIA-603-E-2016 – Section 2.2.17
Radiated Spurious and Harmonic Emissions	- KDB 971168 D01 v03r01 – Section 6.2 - ANSI/TIA-603-E-2016 – Section 2.2.12

## 3.2 RADIATED POWER

### Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

The equipment under test is placed on a non-conductive table 3-meters away from the receive antenna in accordance with ANSI/TIA-603-E-2016 Clause 2.2.17.

### Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5 % of the expected OBW, not to exceed 1 MHz
3. VBW  $\geq$  3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points > 2 x span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto".
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

### Test Note

1. The turntable is rotated through 360 degrees, and the receiving antenna scans in order to determine the level of the maximized emission.
2. A half wave dipole is then substituted in place of the EUT. For emissions above 1 GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator and the previously recorded signal was duplicated.

The power is calculated by the following formula;

$$P_d \text{ (dBm)} = P_g \text{ (dBm)} - \text{cable loss (dB)} + \text{antenna gain (dB)}$$

Where:  $P_d$  is the dipole equivalent power and  $P_g$  is the generator output power into the substitution antenna.

3. The maximum value is calculated by adding the forward power to the calibrated source plus its appropriate gain value.  
These steps are repeated with the receiving antenna in both vertical and horizontal polarization. the difference between the gain of the horn and an isotropic antenna are taken into consideration
4. The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
5. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

### 3.3 RADIATED SPURIOUS EMISSIONS

#### Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA-603-E-2016.

#### Test Settings

1. RBW = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1 GHz
2. VBW  $\geq$  3 x RBW
3. Span = 1.5 times the OBW
4. No. of sweep points  $>$  2 x span / RBW
5. Detector = Peak
6. Trace mode = Max Hold
7. The trace was allowed to stabilize
8. Test channel : Low/ Middle/ High
9. Frequency range : We are performed all frequency to 10<sup>th</sup> harmonics from 9 kHz.

#### Test Note

1. Measurements value show only up to 3 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin  $>$  20 dB from the applicable limit) and considered that's already beyond the background noise floor.
2. The EUT was tested in three orthogonal planes(X, Y, Z) 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 test data
3. For spurious emissions above 1 GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator and the previously recorded signal was duplicated.

The spurious emissions is calculated by the following formula;

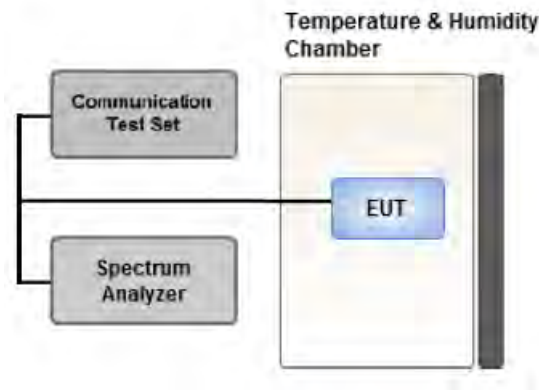
$$\text{Result}_{(dBm)} = P_g_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

Where:  $P_g$  is the generator output power into the substitution antenna.

If the fundamental frequency is below 1 GHz, RF output power has been converted to EIRP.

$$\text{EIRP}_{(dBm)} = \text{ERP}_{(dBm)} + 2.15$$

### 3.4 PEAK- TO- AVERAGE RATIO



Test setup

#### ① CCDF Procedure for PAPR

##### Test Settings

1. Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Set the measurement interval as follows:
  - for continuous transmissions, set to 1 ms,
  - or burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
4. Record the maximum PAPR level associated with a probability of 0.1 %.

#### ② Alternate Procedure for PAPR

Use one of the procedures presented in 5.2(ANSI C63.26-2015) to measure the total peak power and record as  $P_{Pk}$ .

Use one of the applicable procedures presented 5.2(ANSI C63.26-2015) to measure the total average power and record as  $P_{Avg}$ . Determine the P.A.R. from:

$$P.A.R. (dB) = P_{Pk} (dBm) - P_{Avg} (dBm) \quad (P_{Avg} = \text{Average Power} + \text{Duty cycle Factor})$$

### **Test Settings(Peak Power)**

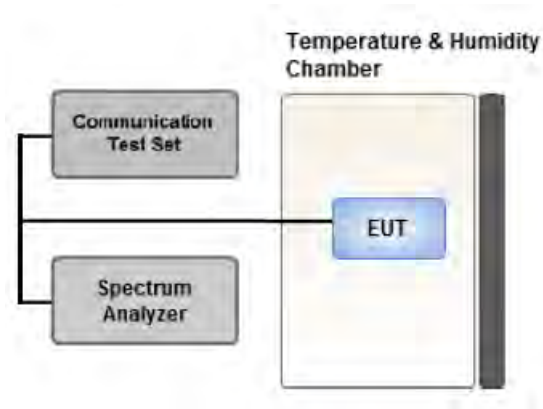
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW  $\geq 3 \times$  RBW.

1. Set the RBW  $\geq$  OBW.
2. Set VBW  $\geq 3 \times$  RBW.
3. Set span  $\geq 2 \times$  OBW.
4. Sweep time  $\geq 10 \times$  (number of points in sweep)  $\times$  (transmission symbol period).
5. Detector = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the peak amplitude level.

### **Test Settings(Average Power)**

1. Set span to  $2 \times$  to  $3 \times$  the OBW.
2. Set RBW  $\geq$  OBW.
3. Set VBW  $\geq 3 \times$  RBW.
4. Set number of measurement points in sweep  $\geq 2 \times$  span / RBW.
5. Sweep time:  
Set  $\geq [10 \times$  (number of points in sweep)  $\times$  (transmission period)] for single sweep (automation-compatible) measurement. The transmission period is the (on + off) time.
6. Detector = power averaging (rms).
7. Set sweep trigger to "free run."
8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. (To accurately determine the average power over the on and off period of the transmitter, it can be necessary to increase the number of traces to be averaged above 100 or, if using a manually configured sweep time, increase the sweep time.)
9. Use the peak marker function to determine the maximum amplitude level.
10. Add  $[10 \log (1/\text{duty cycle})]$  to the measured maximum power level to compute the average power during continuous transmission. For example, add  $[10 \log (1/0.25)] = 6$  dB if the duty cycle is a constant 25 %.

### 3.5 OCCUPIED BANDWIDTH.



#### Test setup

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

The EUT makes a call to the communication simulator.

The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

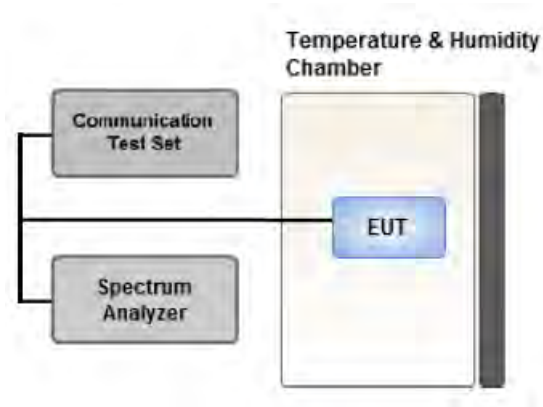
The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth

#### Test Settings

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



### 3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test setup

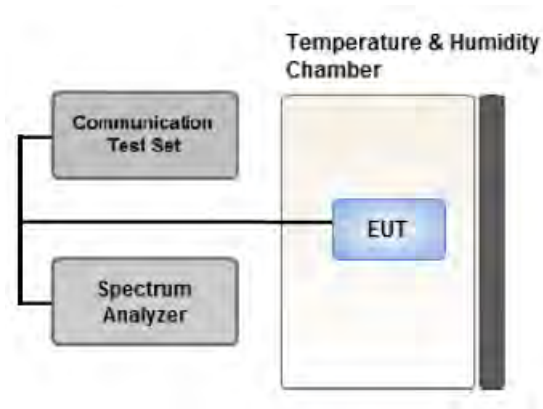
#### Test Overview

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 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 Settings

1. RBW = 1 MHz
2. VBW  $\geq$  3 MHz
3. Detector = RMS
4. Trace Mode = trace average
5. Sweep time = auto
6. Number of points in sweep  $\geq$  2 x Span / RBW

### 3.7 BAND EDGE



#### Test setup

##### Test Overview

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

##### Test Settings

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

### **Test Notes**

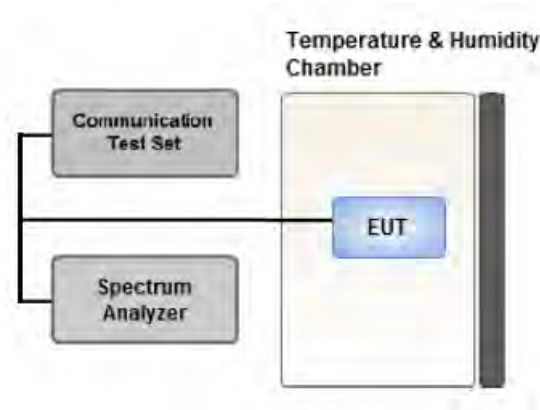
According to FCC 22.917, 24.238, 27.53 specified that power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

All measurements were done at 2 channels (low and high operational frequency range.)

The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

Where Margin < 1 dB the emission level is either corrected by  $10 \log(1 \text{ MHz} / \text{RB})$  or the emission is integrated over a 1 MHz bandwidth to determine the final result. When using the integration method the integration window is either centered on the emission or, for emissions at the band edge, centered by an offset of 500 kHz from the block edge so that the integration window is the 1 MHz adjacent to the block edge.

### 3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE



Test setup

#### Test Overview

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015.

The frequency stability of the transmitter is measured by:

1. Temperature:

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

2. Primary Supply Voltage:

.- Unless otherwise specified, vary primary supply voltage from 85 % to 115 % of the nominal value for other than hand carried battery equipment.

.- For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.

#### Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20 °C to provide a reference).

2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter.

Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.

3. Frequency measurements are made at 10 °C intervals ranging from -30 °C to +50 °C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

### 3.9 WORST CASE(RADIATED TEST)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.  
(Worst case: DFT-S-OFDM)
- The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
- The EUT was tested in three modes(Open, Half-open, Closed), the worst case configuration results are reported.  
Worst case (ANT A) : Half-open mode  
Worst case (ANT I) : Open mode
- All modes of operation were investigated and the worst case configuration results are reported.  
Mode: NSA. SA  
Worst case: SA  
Mode : Stand alone, Stand alone + External accessories (Earphone, AC adapter, etc)  
Worst case : Stand alone
- We were performed the RSE test in condition of co-location.  
Mode : Stand alone, Simultaneous transmission scenarios  
Worst case : Stand alone
- Radiated Spurious emissions are measured while operating in EN-DC mode with Sub 6 NR carrier as well as an LTE carrier (anchor).  
All EN-DC mode of operation (=anchor) were investigated and the test results were measured No Peak Found.  
The test results which are attenuated more than 20 dB below the permissible value, so it was not reported.
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.  
Please refer to the table below.
- In the case of radiated spurious emissions, all bandwidth of operation was investigated and the worst case bandwidth results are reported.  
(Worst case : 40 MHz (ANT A\_n2), 40 MHz (ANT A\_n25), 40 MHz (ANT I\_n25(2)))

[ ANT A\_n2 Worst case ]

Test Description	Modulation	RB size	RB offset	Axis
Effective Isotropic Radiated Power	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	See Section 8.1		X
Radiated Spurious and Harmonic Emissions	PI/2 BPSK	See Section 8.2		X

[ ANT A\_n25 Worst case ]

Test Description	Modulation	RB size	RB offset	Axis
Effective Isotropic Radiated Power	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	See Section 9.1		X
Radiated Spurious and Harmonic Emissions	PI/2 BPSK	See Section 9.2		X

[ ANT I\_n25(2) Worst case ]

Test Description	Modulation	RB size	RB offset	Axis
Effective Isotropic Radiated Power	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	See Section 10.1		X
Radiated Spurious and Harmonic Emissions	PI/2 BPSK	See Section 10.2		X

### 3.10 WORST CASE(CONDUCTED TEST)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.  
(Worst case: DFT-S-OFDM)
- Modulation : All Modulation of operation were investigated and the worst case configuration results are reported.  
(Worst case: PI/2 BPSK)
- All modes of operation were investigated and the worst case configuration results are reported.  
Mode: NSA, SA  
Worst case: SA
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.  
Please refer to the table below.

[ Worst case ]					
Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth, Peak-To-Average Ratio	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	5, 10, 15, 20, 25,30, 35, 40	Mid	Full RB	0
Band Edge	PI/2 BPSK	5	Low	1	0
			High	1	24
		10	Low	1	0
			High	1	51
		15	Low	1	0
			High	1	78
		20	Low	1	0
			High	1	105
		25	Low	1	0
			High	1	132
		30	Low	1	0
			High	1	159
		35	Low	1	0
			High	1	187
40	Low	1	0		
	High	1	215		
		5, 10, 15, 20, 25,30, 35, 40	Low, High	Full RB	0
Spurious and Harmonic Emissions at Antenna Terminal	PI/2 BPSK	5, 10, 15, 20, 25,30, 35, 40	Low, Mid, High	1	1

#### 4. LIST OF TEST EQUIPMENT

Equipment	Model	Manufacture	Serial No.	Due to Calibration	Calibration Interval
Precision Dipole Antenna	UHAP	Schwarzbeck	01273	03/10/2026	Biennial
Precision Dipole Antenna	UHAP	Schwarzbeck	01274	03/10/2026	Biennial
Horn Antenna(1~18 GHz)	BBHA 9120D	Schwarzbeck	02289	02/14/2026	Biennial
Horn Antenna(1~18 GHz)	BBHA 9120D	Schwarzbeck	9120D-1299	04/27/2025	Biennial
Horn Antenna(15~40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	09/29/2024	Biennial
Horn Antenna(15~40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	03/28/2025	Biennial
Loop Antenna(9 kHz~30 MHz)	FMZB1513	Rohde & Schwarz	1513-175	01/16/2025	Biennial
Bilog Antenna	VULB9160	Schwarzbeck	3150	03/09/2025	Biennial
Hybrid Antenna	VULB9160	Schwarzbeck	760	02/24/2025	Biennial
RF Switching System	FBSR-06B (1G HPF + LNA)	T&M SYSTEM	F3L1	05/22/2024	Annual
RF Switching System	FBSR-06B (3G HPF + LNA)	T&M SYSTEM	F3L2	05/22/2024	Annual
RF Switching System	FBSR-06B (6G HPF + LNA)	T&M SYSTEM	F3L3	05/22/2024	Annual
RF Switching System	FBSR-06B (LNA)	T&M SYSTEM	F3L4	05/22/2024	Annual
Power Amplifier	CBL18265035	CERNEX	22966	11/17/2024	Annual
Power Amplifier	CBL26405040	CERNEX	25956	02/26/2025	Annual
DC Power Supply	E3632A	Hewlett Packard	MY40004427	08/25/2024	Annual
Power Splitter(DC~26.5 GHz)	11667B	Hewlett Packard	11275	02/29/2025	Annual
Chamber	SU-642	ESPEC	93008124	02/19/2025	Annual
Signal Analyzer(10 Hz~26.5 GHz)	N9020A	Agilent	MY51110063	04/04/2025	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/17/2025	Annual
Spectrum Analyzer(10 Hz~40 GHz)	FSV40	REOHDE & SCHWARZ	101436	02/13/2025	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/10/2024	Annual
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262287701	05/22/2024	Annual
Wideband Radio Communication Tester	MT8000A	Anritsu Corp.	6262302511	05/23/2024	Annual
SIGNAL GENERATOR (100 kHz~40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	06/22/2024	Annual
Signal Analyzer(5 Hz~40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/24/2024	Annual
4-Way Divider	ZC4PD-K1844+	Mini-Circuits	942907	09/19/2024	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

**Note:**

1. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.
2. Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).



## 5. 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 data shown herein meets or exceeds the  $U_{\text{CISPR}}$  measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty ( $\pm$ dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.98 (Confidence level about 95 %, $k=2$ )
Radiated Disturbance (9 kHz ~ 30 MHz)	4.36 (Confidence level about 95 %, $k=2$ )
Radiated Disturbance (30 MHz ~ 1 GHz)	5.70 (Confidence level about 95 %, $k=2$ )
Radiated Disturbance (1 GHz ~ 18 GHz)	5.52 (Confidence level about 95 %, $k=2$ )
Radiated Disturbance (18 GHz ~ 40 GHz)	5.66 (Confidence level about 95 %, $k=2$ )
Radiated Disturbance (Above 40 GHz)	5.58 (Confidence level about 95 %, $k=2$ )

## 6. SUMMARY OF TEST RESULTS

### 6.1 Test Condition: Conducted Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Occupied Bandwidth	§ 2.1049	N/A	PASS
Band Edge / Spurious and Harmonic Emissions at Antenna Terminal.	§ 2.1051, § 24.238(a)	< 43 + 10log10 (P[Watts]) at Band Edge and for all out-of-band emissions	PASS
Conducted Output Power	§ 2.1046	N/A	<b><u>See Note1</u></b>
Peak- to- Average Ratio	§ 24.232(d)	< 13 dB	PASS
Frequency stability / variation of ambient temperature	§ 24.235	Emission must remain in band	PASS

**Note:**

1. See SAR Report
2. All conducted tests were tested using 5G Wireless Tester.

### 6.2 Test Condition: Radiated Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Equivalent Isotropic Radiated Power	§ 24.232(c)	< 2 Watts max. EIRP	PASS
Radiated Spurious and Harmonic Emissions	§ 2.1053, § 24.238(a)	< 43 + 10log10 (P[Watts]) for all out-of band emissions	PASS

**Note:**

1. Radiated tests were tested using 5G Wireless Tester

## 7. SAMPLE CALCULATION

### 7.1 ERP Sample Calculation

Ch./ Freq.		Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol.	ERP	
channel	Freq.(MHz)						W	dBm
128	824.20	-21.37	38.40	-10.61	0.95	H	0.483	26.84

$$\text{ERP} = \text{Substitute LEVEL(dBm)} + \text{Ant. Gain} - \text{CL(Cable Loss)}$$

- 1) The EUT mounted on a non-conductive turntable is 2.5 meter above test site ground level.
- 2) During the test, the turn table is rotated until the maximum signal is found.
- 3) Record the field strength meter's level.
- 4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.
- 5) Increase the signal generator output till the field strength meter's level is equal to the item (3).
- 6) The signal generator output level with Ant. Gain and cable loss are the rating of effective radiated power.

### 7.2 EIRP Sample Calculation

Ch./ Freq.		Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol.	EIRP	
channel	Freq.(MHz)						W	dBm
20175	1,732.50	-15.75	18.45	9.90	1.76	H	0.456	26.59

$$\text{EIRP} = \text{Substitute LEVEL(dBm)} + \text{Ant. Gain} - \text{CL(Cable Loss)}$$

- 1) The EUT mounted on a non-conductive turntable is 2.5 meter above test site ground level.
- 2) During the test, the turn table is rotated until the maximum signal is found.
- 3) Record the field strength meter's level.
- 4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.
- 5) Increase the signal generator output till the field strength meter's level is equal to the item (3).
- 6) The signal generator output level with Ant. Gain and cable loss are the rating of equivalent isotropic radiated power.

### 7.3. Emission Designator

#### GSM Emission Designator

Emission Designator = 249KGXW

GSM BW = 249 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

#### EDGE Emission Designator

Emission Designator = 249KG7W

GSM BW = 249 kHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination (Audio/Data)

#### WCDMA Emission Designator

Emission Designator = 4M17F9W

WCDMA BW = 4.17 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

#### QPSK Modulation

Emission Designator = 4M48G7D

LTE BW = 4.48 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

#### QAM Modulation

Emission Designator = 4M48W7D

LTE BW = 4.48 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

## 8. TEST DATA(ANT A\_n2)

### 8.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1852.5		PI/2 BPSK	-19.19	14.63	10.00	2.12	H	< 2.00	0.178	22.51	1	12
		QPSK	-19.28	14.54	10.00	2.12	H		0.175	22.42		
		16-QAM	-20.13	13.69	10.00	2.12	H		0.144	21.57		
		64-QAM	-21.57	12.25	10.00	2.12	H		0.103	20.13		
		256-QAM	-23.54	10.28	10.00	2.12	H		0.066	18.16		
1880.0	Sub6 n2/ 5 MHz [15 kHz]	PI/2 BPSK	-18.40	15.20	10.00	2.21	H	< 2.00	0.199	22.99	1	1
		QPSK	-18.47	15.13	10.00	2.21	H		0.196	22.92		
		16-QAM	-19.43	14.17	10.00	2.21	H		0.157	21.96		
		64-QAM	-20.71	12.89	10.00	2.21	H		0.117	20.68		
		256-QAM	-22.99	10.61	10.00	2.21	H		0.069	18.40		
1907.5		PI/2 BPSK	-18.45	15.57	10.01	2.11	H	< 2.00	0.222	23.47	1	12
		QPSK	-18.48	15.54	10.01	2.11	H		0.221	23.44		
		16-QAM	-19.32	14.70	10.01	2.11	H		0.182	22.60		
		64-QAM	-20.84	13.18	10.01	2.11	H		0.128	21.08		
		256-QAM	-23.39	10.63	10.01	2.11	H		0.071	18.53		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1855.0		PI/2 BPSK	-18.39	15.20	10.00	2.15	H	< 2.00	0.202	23.05	1	50
		QPSK	-18.43	15.16	10.00	2.15	H		0.200	23.01		
		16-QAM	-19.52	14.07	10.00	2.15	H		0.156	21.92		
		64-QAM	-20.90	12.69	10.00	2.15	H		0.113	20.54		
		256-QAM	-23.42	10.17	10.00	2.15	H		0.063	18.02		
1880.0	Sub6 n2/ 10 MHz [15 kHz]	PI/2 BPSK	-18.18	15.42	10.00	2.21	H	< 2.00	0.209	23.21	1	26
		QPSK	-18.31	15.29	10.00	2.21	H		0.203	23.08		
		16-QAM	-19.13	14.47	10.00	2.21	H		0.168	22.26		
		64-QAM	-20.60	13.00	10.00	2.21	H		0.120	20.79		
		256-QAM	-23.17	10.43	10.00	2.21	H		0.066	18.22		
1905.0		PI/2 BPSK	-18.28	15.69	10.01	2.13	H	< 2.00	0.228	23.57	1	50
		QPSK	-18.35	15.62	10.01	2.13	H		0.224	23.50		
		16-QAM	-19.33	14.64	10.01	2.13	H		0.179	22.52		
		64-QAM	-20.65	13.32	10.01	2.13	H		0.132	21.20		
		256-QAM	-23.18	10.79	10.01	2.13	H		0.074	18.67		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1857.5		PI/2 BPSK	-18.54	14.80	10.00	2.17	H	< 2.00	0.183	22.63	1	77
		QPSK	-18.64	14.70	10.00	2.17	H		0.179	22.53		
		16-QAM	-19.67	13.67	10.00	2.17	H		0.141	21.50		
		64-QAM	-21.00	12.34	10.00	2.17	H		0.104	20.17		
		256-QAM	-23.54	9.80	10.00	2.17	H		0.058	17.63		
1880.0	Sub6 n2/ 15 MHz [15 kHz]	PI/2 BPSK	-18.16	15.44	10.00	2.21	H	< 2.00	0.210	23.23	1	77
		QPSK	-18.43	15.17	10.00	2.21	H		0.198	22.96		
		16-QAM	-19.32	14.28	10.00	2.21	H		0.161	22.07		
		64-QAM	-20.71	12.89	10.00	2.21	H		0.117	20.68		
		256-QAM	-23.27	10.33	10.00	2.21	H		0.065	18.12		
1902.5		PI/2 BPSK	-18.33	15.58	10.01	2.15	H	< 2.00	0.221	23.44	1	77
		QPSK	-18.42	15.49	10.01	2.15	H		0.216	23.35		
		16-QAM	-19.11	14.80	10.01	2.15	H		0.185	22.66		
		64-QAM	-20.63	13.28	10.01	2.15	H		0.130	21.14		
		256-QAM	-23.12	10.79	10.01	2.15	H		0.073	18.65		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1860.0		PI/2 BPSK	-18.45	14.89	10.00	2.17	H	< 2.00	0.187	22.72	1	104
		QPSK	-18.49	14.85	10.00	2.17	H		0.185	22.68		
		16-QAM	-19.50	13.84	10.00	2.17	H		0.147	21.67		
		64-QAM	-20.79	12.55	10.00	2.17	H		0.109	20.38		
		256-QAM	-23.39	9.95	10.00	2.17	H		0.060	17.78		
1880.0	Sub6 n2/ 20 MHz [15 kHz]	PI/2 BPSK	-18.25	15.35	10.00	2.21	H	< 2.00	0.206	23.14	1	53
		QPSK	-18.41	15.19	10.00	2.21	H		0.199	22.98		
		16-QAM	-19.15	14.45	10.00	2.21	H		0.168	22.24		
		64-QAM	-20.60	13.00	10.00	2.21	H		0.120	20.79		
		256-QAM	-23.19	10.41	10.00	2.21	H		0.066	18.20		
1900.0		PI/2 BPSK	-18.18	15.73	10.01	2.15	H	< 2.00	0.229	23.59	1	104
		QPSK	-18.21	15.70	10.01	2.15	H		0.227	23.56		
		16-QAM	-19.02	14.89	10.01	2.15	H		0.188	22.75		
		64-QAM	-20.56	13.35	10.01	2.15	H		0.132	21.21		
		256-QAM	-23.16	10.75	10.01	2.15	H		0.073	18.61		



Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1862.5		PI/2 BPSK	-18.24	15.10	10.00	2.17	H	< 2.00	0.196	22.93	1	131
		QPSK	-18.39	14.95	10.00	2.17	H		0.190	22.78		
		16-QAM	-19.40	13.94	10.00	2.17	H		0.150	21.77		
		64-QAM	-20.79	12.55	10.00	2.17	H		0.109	20.38		
		256-QAM	-23.42	9.92	10.00	2.17	H		0.060	17.75		
1880.0	Sub6 n2/ 25 MHz [15 kHz]	PI/2 BPSK	-17.88	15.72	10.00	2.21	H	< 2.00	0.224	23.51	1	66
		QPSK	-18.05	15.55	10.00	2.21	H		0.216	23.34		
		16-QAM	-19.12	14.48	10.00	2.21	H		0.169	22.27		
		64-QAM	-20.50	13.10	10.00	2.21	H		0.123	20.89		
		256-QAM	-23.02	10.58	10.00	2.21	H		0.069	18.37		
1897.5		PI/2 BPSK	-17.80	16.28	10.01	2.16	H	< 2.00	0.259	24.13	1	131
		QPSK	-17.90	16.18	10.01	2.16	H		0.253	24.03		
		16-QAM	-18.86	15.22	10.01	2.16	H		0.203	23.07		
		64-QAM	-20.25	13.83	10.01	2.16	H		0.147	21.68		
		256-QAM	-22.89	11.19	10.01	2.16	H		0.080	19.04		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1865.0		PI/2 BPSK	-18.17	15.46	10.00	2.19	H	< 2.00	0.212	23.27	1	159
		QPSK	-18.22	15.41	10.00	2.19	H		0.210	23.22		
		16-QAM	-19.13	14.50	10.00	2.19	H		0.170	22.31		
		64-QAM	-20.65	12.98	10.00	2.19	H		0.120	20.79		
		256-QAM	-23.26	10.37	10.00	2.19	H		0.066	18.18		
1880.0	Sub6 n2/ 30 MHz [15 kHz]	PI/2 BPSK	-18.04	15.56	10.00	2.21	H	< 2.00	0.216	23.35	1	80
		QPSK	-18.07	15.53	10.00	2.21	H		0.215	23.32		
		16-QAM	-19.08	14.52	10.00	2.21	H		0.170	22.31		
		64-QAM	-20.47	13.13	10.00	2.21	H		0.124	20.92		
		256-QAM	-23.10	10.50	10.00	2.21	H		0.068	18.29		
1895.0		PI/2 BPSK	-17.78	16.30	10.01	2.16	H	< 2.00	0.260	24.15	1	159
		QPSK	-17.89	16.19	10.01	2.16	H		0.254	24.04		
		16-QAM	-18.90	15.18	10.01	2.16	H		0.201	23.03		
		64-QAM	-20.29	13.79	10.01	2.16	H		0.146	21.64		
		256-QAM	-22.80	11.28	10.01	2.16	H		0.082	19.13		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1867.5		PI/2 BPSK	-18.26	15.37	10.00	2.19	H	< 2.00	0.208	23.18	1	186
		QPSK	-18.39	15.24	10.00	2.19	H		0.202	23.05		
		16-QAM	-19.34	14.29	10.00	2.19	H		0.162	22.10		
		64-QAM	-20.90	12.73	10.00	2.19	H		0.113	20.54		
		256-QAM	-23.48	10.15	10.00	2.19	H		0.063	17.96		
1880.0	Sub6 n2/ 35 MHz [15 kHz]	PI/2 BPSK	-17.92	15.68	10.00	2.21	H	< 2.00	0.222	23.47	1	94
		QPSK	-18.02	15.58	10.00	2.21	H		0.217	23.37		
		16-QAM	-19.06	14.54	10.00	2.21	H		0.171	22.33		
		64-QAM	-20.51	13.09	10.00	2.21	H		0.123	20.88		
		256-QAM	-23.11	10.49	10.00	2.21	H		0.067	18.28		
1892.5		PI/2 BPSK	-17.78	16.30	10.01	2.16	H	< 2.00	0.260	24.15	1	186
		QPSK	-17.89	16.19	10.01	2.16	H		0.254	24.04		
		16-QAM	-18.88	15.20	10.01	2.16	H		0.202	23.05		
		64-QAM	-20.39	13.69	10.01	2.16	H		0.143	21.54		
		256-QAM	-22.85	11.23	10.01	2.16	H		0.081	19.08		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1870.0		PI/2 BPSK	-18.33	15.58	10.00	2.21	H	< 2.00	0.217	23.37	1	214
		QPSK	-18.39	15.52	10.00	2.21	H		0.214	23.31		
		16-QAM	-19.40	14.51	10.00	2.21	H		0.170	22.30		
		64-QAM	-20.87	13.04	10.00	2.21	H		0.121	20.83		
		256-QAM	-23.55	10.36	10.00	2.21	H		0.065	18.15		
1880.0	Sub6 n2/ 40 MHz [15 kHz]	PI/2 BPSK	-17.97	15.63	10.00	2.21	H	< 2.00	0.220	23.42	1	108
		QPSK	-18.04	15.56	10.00	2.21	H		0.216	23.35		
		16-QAM	-18.98	14.62	10.00	2.21	H		0.174	22.41		
		64-QAM	-20.38	13.22	10.00	2.21	H		0.126	21.01		
		256-QAM	-23.08	10.52	10.00	2.21	H		0.068	18.31		
1890.0		PI/2 BPSK	-17.88	16.39	10.00	2.18	H	< 2.00	0.264	24.21	1	214
		QPSK	-17.93	16.34	10.00	2.18	H		0.261	24.16		
		16-QAM	-19.00	15.27	10.00	2.18	H		0.204	23.09		
		64-QAM	-20.40	13.87	10.00	2.18	H		0.148	21.69		
		256-QAM	-23.04	11.23	10.00	2.18	H		0.080	19.05		

## 8.2 RADIATED SPURIOUS EMISSIONS

▪ NR Band:	<u>N2</u>
▪ Bandwidth:	<u>40 MHz</u>
▪ Modulation:	<u>PI/2 BPSK</u>
▪ Distance:	<u>3 meters</u>
▪ SCS:	<u>15 kHz</u>

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Offset
374000 (1870.0)	3 740.00	-62.00	11.40	-63.22	3.10	V	-54.92	-13.00	1	214
	5 610.00	-61.85	11.90	-56.77	3.79	V	-48.66	-13.00		
	7 480.00	-66.23	10.90	-51.86	4.49	V	-45.45	-13.00		
	9 350.00	-62.36	10.80	-47.29	5.07	V	-41.56	-13.00		
	11 220.00	-65.31	11.40	-46.58	5.60	V	-40.78	-13.00		
376000 (1880.0)	3 760.00	-60.65	11.30	-60.78	3.07	V	-52.55	-13.00	1	108
	5 640.00	-62.11	11.90	-56.51	3.89	V	-48.50	-13.00		
	7 520.00	-65.24	11.10	-51.01	4.51	V	-44.42	-13.00		
	9 400.00	-62.13	10.80	-46.85	5.07	V	-41.12	-13.00		
	11 280.00	-65.41	11.40	-46.11	5.62	V	-40.33	-13.00		
378000 (1890.0)	3 780.00	-61.00	11.30	-61.12	3.15	V	-52.97	-13.00	1	214
	5 670.00	-62.36	11.80	-56.56	3.86	V	-48.62	-13.00		
	7 560.00	-66.27	11.10	-52.15	4.51	V	-45.56	-13.00		
	9 450.00	-63.46	10.90	-48.05	5.14	V	-42.29	-13.00		
	11 340.00	-64.97	11.30	-45.79	5.68	V	-40.17	-13.00		

### 8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n2	5 MHz	1882.5	BPSK	25	0	4.00
			QPSK			4.67
			16-QAM			5.55
			64-QAM			5.96
			256-QAM			6.23
	10 MHz		BPSK	50		4.05
			QPSK			4.57
			16-QAM			5.56
			64-QAM			6.00
			256-QAM			6.39
	15 MHz		BPSK	75		3.85
			QPSK			4.40
			16-QAM			5.28
			64-QAM			5.78
			256-QAM			6.52
	20 MHz		BPSK	100		3.85
			QPSK			4.46
			16-QAM			5.44
			64-QAM			5.87
			256-QAM			6.53

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n2	25 MHz	1882.5	BPSK	128	0	3.98
			QPSK			4.58
			16-QAM			5.68
			64-QAM			6.08
			256-QAM			6.61
	30 MHz		BPSK	160		3.90
			QPSK			4.49
			16-QAM			5.36
			64-QAM			5.78
			256-QAM			6.80
	35 MHz		BPSK	180		3.94
			QPSK			4.45
			16-QAM			5.42
			64-QAM			5.76
			256-QAM			6.78
	40 MHz		BPSK	216		3.86
			QPSK			4.50
			16-QAM			5.45
			64-QAM			5.92
			256-QAM			6.78

**Note:**

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 98 ~ 135.

#### 8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data ( MHz )
Sub6 n2	5 MHz	1882.5	BPSK	25	0	4.6035
			QPSK			4.5983
			16-QAM			4.5852
			64-QAM			4.5713
			256-QAM			4.6322
	10 MHz		BPSK	50		8.9509
			QPSK			8.9981
			16-QAM			8.9634
			64-QAM			8.9867
			256-QAM			8.9513
	15 MHz		BPSK	75		13.464
			QPSK			13.474
			16-QAM			13.397
			64-QAM			13.473
			256-QAM			13.461
	20 MHz		BPSK	100		17.868
			QPSK			17.912
			16-QAM			17.950
			64-QAM			17.895
			256-QAM			17.938



Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data ( MHz )
Sub6 n2	25 MHz	1882.5	BPSK	128	0	22.924
			QPSK			22.978
			16-QAM			22.924
			64-QAM			22.968
			256-QAM			22.976
	30 MHz		BPSK	160		28.739
			QPSK			28.787
			16-QAM			28.653
			64-QAM			28.665
			256-QAM			28.735
	35 MHz		BPSK	180		32.207
			QPSK			32.206
			16-QAM			32.283
			64-QAM			32.208
			256-QAM			32.223
	40 MHz		BPSK	216		38.728
			QPSK			38.729
			16-QAM			38.665
			64-QAM			38.679
			256-QAM			38.736

**Note:**

1. Plots of the EUT's Occupied Bandwidth are shown Page 136 ~ 175.

### 8.5 CONDUCTED SPURIOUS EMISSIONS

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
Sub6 n2	5	1852.5	8.0155	30.815	-79.999	-49.184	-13.00
		1882.5	8.0324	30.815	-80.721	-49.906	
		1912.5	5.2074	30.815	-79.787	-48.972	
	10	1855.0	4.0120	30.200	-79.887	-49.687	
		1882.5	7.4168	30.815	-80.515	-49.700	
		1910.0	8.2642	30.815	-79.934	-49.119	
	15	1857.5	1.9398	30.200	-79.753	-49.553	
		1882.5	4.5918	30.200	-80.332	-50.132	
		1907.5	1.9886	30.200	-80.265	-50.065	
	20	1860.0	1.9477	30.200	-79.613	-49.413	
		1882.5	1.9522	30.200	-78.705	-48.505	
		1905.0	1.9727	30.200	-79.851	-49.651	
	25	1862.5	1.9467	30.200	-80.352	-50.152	
		1882.5	1.9672	30.200	-79.837	-49.637	
		1902.5	1.9746	30.200	-79.499	-49.299	
	30	1865.0	1.9502	30.200	-79.833	-49.633	
		1882.5	1.9482	30.200	-78.814	-48.614	
		1900.0	1.9732	30.200	-80.093	-49.893	
	35	1867.5	8.2553	30.815	-79.680	-48.865	
		1882.5	1.9517	30.200	-79.468	-49.268	
		1897.5	1.9742	30.200	-80.002	-49.802	
	40	1870.0	1.9368	30.200	-79.943	-49.743	
		1882.5	1.9746	30.200	-79.749	-49.549	
		1895.0	1.9722	30.200	-78.866	-48.666	

**Note:**

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 176 ~ 223.
2. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
3. Factor(dB) = Cable Loss + Attenuator + Power Splitter

Frequency Range (GHz)	Factor [dB]
0.03 – 1	27.494
1 – 5	30.200
5 – 10	30.815
10 – 15	31.340
15 – 20	31.713
Above 20	32.355

### 8.6 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 224 ~ 271.

### 8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

- ▣ BandWidth: 5 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency (MHz)	Voltage (%)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1852.5	100 %	+20(Ref)	1852 499 996	0.0	0.000 000	0.000
	100 %	-30	1852 499 994	-2.8	0.000 000	-0.002
	100 %	-20	1852 499 993	-3.4	0.000 000	-0.002
	100 %	-10	1852 499 994	-2.5	0.000 000	-0.001
	100 %	0	1852 499 994	-2.6	0.000 000	-0.001
	100 %	+10	1852 499 994	-2.6	0.000 000	-0.001
	100 %	+30	1852 499 995	-1.6	0.000 000	-0.001
	100 %	+40	1852 499 995	-1.9	0.000 000	-0.001
	100 %	+50	1852 499 994	-2.4	0.000 000	-0.001
	Batt. Endpoint	+20	1852 499 994	-2.1	0.000 000	-0.001
1907.5	100 %	+20(Ref)	1907 499 999	0.0	0.000 000	0.000
	100 %	-30	1907 499 999	-0.1	0.000 000	0.000
	100 %	-20	1907 499 999	-0.1	0.000 000	0.000
	100 %	-10	1907 499 998	-1.1	0.000 000	-0.001
	100 %	0	1907 499 999	-0.5	0.000 000	0.000
	100 %	+10	1907 500 000	0.8	0.000 000	0.000
	100 %	+30	1907 500 001	1.3	0.000 000	0.001
	100 %	+40	1907 500 001	1.1	0.000 000	0.001
	100 %	+50	1907 499 998	-1.0	0.000 000	-0.001
	Batt. Endpoint	+20	1907 499 999	-0.6	0.000 000	0.000

- ▣ BandWidth: 10 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1855.0	100 %	+20(Ref)	1854 999 997	0.0	0.000 000	0.000
	100 %	-30	1854 999 996	-1.1	0.000 000	-0.001
	100 %	-20	1854 999 996	-1.9	0.000 000	-0.001
	100 %	-10	1854 999 997	-0.4	0.000 000	0.000
	100 %	0	1854 999 996	-1.3	0.000 000	-0.001
	100 %	+10	1854 999 997	-0.2	0.000 000	0.000
	100 %	+30	1854 999 997	-0.3	0.000 000	0.000
	100 %	+40	1854 999 997	-0.8	0.000 000	0.000
	100 %	+50	1854 999 998	1.0	0.000 000	0.001
	Batt. Endpoint	+20	1854 999 996	-1.0	0.000 000	-0.001
1905.0	100 %	+20(Ref)	1905 000 000	0.0	0.000 000	0.000
	100 %	-30	1904 999 998	-1.1	0.000 000	-0.001
	100 %	-20	1904 999 999	-0.8	0.000 000	0.000
	100 %	-10	1905 000 001	1.0	0.000 000	0.001
	100 %	0	1905 000 000	0.3	0.000 000	0.000
	100 %	+10	1904 999 999	-0.8	0.000 000	0.000
	100 %	+30	1905 000 000	0.3	0.000 000	0.000
	100 %	+40	1904 999 998	-1.2	0.000 000	-0.001
	100 %	+50	1905 000 000	0.1	0.000 000	0.000
	Batt. Endpoint	+20	1904 999 999	-0.9	0.000 000	0.000

- ▣ BandWidth: 15 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1857.5	100 %	+20(Ref)	1857 500 002	0.0	0.000 000	0.000
	100 %	-30	1857 500 003	0.8	0.000 000	0.000
	100 %	-20	1857 500 004	1.8	0.000 000	0.001
	100 %	-10	1857 500 003	1.0	0.000 000	0.001
	100 %	0	1857 500 004	1.4	0.000 000	0.001
	100 %	+10	1857 500 004	1.1	0.000 000	0.001
	100 %	+30	1857 500 005	2.7	0.000 000	0.001
	100 %	+40	1857 500 004	1.6	0.000 000	0.001
	100 %	+50	1857 500 003	0.3	0.000 000	0.000
	Batt. Endpoint	+20	1857 500 002	-0.7	0.000 000	0.000
1902.5	100 %	+20(Ref)	1902 500 006	0.0	0.000 000	0.000
	100 %	-30	1902 500 013	6.8	0.000 000	0.004
	100 %	-20	1902 500 012	6.6	0.000 000	0.003
	100 %	-10	1902 500 011	5.2	0.000 000	0.003
	100 %	0	1902 500 011	5.4	0.000 000	0.003
	100 %	+10	1902 500 011	5.7	0.000 000	0.003
	100 %	+30	1902 500 013	7.6	0.000 000	0.004
	100 %	+40	1902 500 011	5.0	0.000 000	0.003
	100 %	+50	1902 500 011	5.6	0.000 000	0.003
	Batt. Endpoint	+20	1902 500 012	6.7	0.000 000	0.004

- ▣ BandWidth: 20 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1860.0	100 %	+20(Ref)	1859 999 999	0.0	0.000 000	0.000
	100 %	-30	1859 999 997	-1.9	0.000 000	-0.001
	100 %	-20	1859 999 996	-2.4	0.000 000	-0.001
	100 %	-10	1859 999 996	-2.5	0.000 000	-0.001
	100 %	0	1859 999 996	-2.9	0.000 000	-0.002
	100 %	+10	1859 999 995	-3.4	0.000 000	-0.002
	100 %	+30	1859 999 998	-1.0	0.000 000	-0.001
	100 %	+40	1859 999 998	-1.1	0.000 000	-0.001
	100 %	+50	1859 999 997	-1.5	0.000 000	-0.001
	Batt. Endpoint	+20	1859 999 997	-1.4	0.000 000	-0.001
1900.0	100 %	+20(Ref)	1900 000 000	0.0	0.000 000	0.000
	100 %	-30	1899 999 998	-1.6	0.000 000	-0.001
	100 %	-20	1900 000 000	-0.3	0.000 000	0.000
	100 %	-10	1900 000 002	1.5	0.000 000	0.001
	100 %	0	1899 999 999	-0.7	0.000 000	0.000
	100 %	+10	1899 999 997	-2.7	0.000 000	-0.001
	100 %	+30	1899 999 997	-3.0	0.000 000	-0.002
	100 %	+40	1899 999 999	-1.4	0.000 000	-0.001
	100 %	+50	1899 999 999	-1.2	0.000 000	-0.001
	Batt. Endpoint	+20	1899 999 998	-2.1	0.000 000	-0.001

- ▣ BandWidth: 25 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1862.5	100 %	+20(Ref)	1862 500 006	0.0	0.000 000	0.000
	100 %	-30	1862 500 015	9.1	0.000 000	0.005
	100 %	-20	1862 500 015	8.7	0.000 000	0.005
	100 %	-10	1862 500 017	11.3	0.000 001	0.006
	100 %	0	1862 500 015	9.3	0.000 000	0.005
	100 %	+10	1862 500 016	9.4	0.000 001	0.005
	100 %	+30	1862 500 015	9.3	0.000 000	0.005
	100 %	+40	1862 500 014	8.2	0.000 000	0.004
	100 %	+50	1862 500 014	8.2	0.000 000	0.004
	Batt. Endpoint	+20	1862 500 014	8.0	0.000 000	0.004
1897.5	100 %	+20(Ref)	1897 500 008	0.0	0.000 000	0.000
	100 %	-30	1897 500 015	7.8	0.000 000	0.004
	100 %	-20	1897 500 016	8.1	0.000 000	0.004
	100 %	-10	1897 500 015	7.1	0.000 000	0.004
	100 %	0	1897 500 016	8.4	0.000 000	0.004
	100 %	+10	1897 500 017	9.6	0.000 001	0.005
	100 %	+30	1897 500 016	8.2	0.000 000	0.004
	100 %	+40	1897 500 016	8.6	0.000 000	0.005
	100 %	+50	1897 500 018	10.0	0.000 001	0.005
	Batt. Endpoint	+20	1897 500 016	8.4	0.000 000	0.004

- ▣ BandWidth: 30 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1865.0	100 %	+20(Ref)	1865 000 005	0.0	0.000 000	0.000
	100 %	-30	1865 000 013	7.4	0.000 000	0.004
	100 %	-20	1865 000 012	7.2	0.000 000	0.004
	100 %	-10	1865 000 011	6.3	0.000 000	0.003
	100 %	0	1865 000 011	5.8	0.000 000	0.003
	100 %	+10	1865 000 013	8.2	0.000 000	0.004
	100 %	+30	1865 000 013	7.7	0.000 000	0.004
	100 %	+40	1865 000 012	6.4	0.000 000	0.003
	100 %	+50	1865 000 012	6.4	0.000 000	0.003
	Batt. Endpoint	+20	1865 000 010	5.0	0.000 000	0.003
1895.0	100 %	+20(Ref)	1895 000 006	0.0	0.000 000	0.000
	100 %	-30	1895 000 012	5.3	0.000 000	0.003
	100 %	-20	1895 000 013	6.6	0.000 000	0.003
	100 %	-10	1895 000 011	4.7	0.000 000	0.002
	100 %	0	1895 000 012	5.9	0.000 000	0.003
	100 %	+10	1895 000 014	8.0	0.000 000	0.004
	100 %	+30	1895 000 013	6.4	0.000 000	0.003
	100 %	+40	1895 000 014	7.3	0.000 000	0.004
	100 %	+50	1895 000 012	5.4	0.000 000	0.003
	Batt. Endpoint	+20	1895 000 013	6.8	0.000 000	0.004



- ▣ BandWidth: 35 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1867.5	100 %	+20(Ref)	1867 500 010	0.0	0.000 000	0.000
	100 %	-30	1867 500 019	9.1	0.000 000	0.005
	100 %	-20	1867 500 019	8.7	0.000 000	0.005
	100 %	-10	1867 500 018	7.7	0.000 000	0.004
	100 %	0	1867 500 019	8.6	0.000 000	0.005
	100 %	+10	1867 500 018	7.6	0.000 000	0.004
	100 %	+30	1867 500 020	10.3	0.000 001	0.005
	100 %	+40	1867 500 018	8.2	0.000 000	0.004
	100 %	+50	1867 500 018	7.4	0.000 000	0.004
	Batt. Endpoint	+20	1867 500 020	10.1	0.000 001	0.005
1892.5	100 %	+20(Ref)	1892 500 011	0.0	0.000 000	0.000
	100 %	-30	1892 500 018	7.4	0.000 000	0.004
	100 %	-20	1892 500 019	8.0	0.000 000	0.004
	100 %	-10	1892 500 019	8.3	0.000 000	0.004
	100 %	0	1892 500 019	8.4	0.000 000	0.004
	100 %	+10	1892 500 020	9.1	0.000 000	0.005
	100 %	+30	1892 500 021	9.8	0.000 001	0.005
	100 %	+40	1892 500 019	7.8	0.000 000	0.004
	100 %	+50	1892 500 022	11.4	0.000 001	0.006
	Batt. Endpoint	+20	1892 500 019	7.8	0.000 000	0.004

- ▣ BandWidth: 40 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1870.0	100 %	+20(Ref)	1870 000 006	0.0	0.000 000	0.000
	100 %	-30	1870 000 012	6.1	0.000 000	0.003
	100 %	-20	1870 000 012	5.8	0.000 000	0.003
	100 %	-10	1870 000 015	9.1	0.000 000	0.005
	100 %	0	1870 000 012	6.3	0.000 000	0.003
	100 %	+10	1870 000 012	5.4	0.000 000	0.003
	100 %	+30	1870 000 011	4.7	0.000 000	0.002
	100 %	+40	1870 000 015	8.4	0.000 000	0.004
	100 %	+50	1870 000 011	4.5	0.000 000	0.002
	Batt. Endpoint	+20	1870 000 014	7.7	0.000 000	0.004
1890.0	100 %	+20(Ref)	1890 000 006	0.0	0.000 000	0.000
	100 %	-30	1890 000 012	6.5	0.000 000	0.003
	100 %	-20	1890 000 011	5.7	0.000 000	0.003
	100 %	-10	1890 000 009	3.0	0.000 000	0.002
	100 %	0	1890 000 010	4.3	0.000 000	0.002
	100 %	+10	1890 000 010	4.1	0.000 000	0.002
	100 %	+30	1890 000 011	5.4	0.000 000	0.003
	100 %	+40	1890 000 012	6.0	0.000 000	0.003
	100 %	+50	1890 000 012	6.3	0.000 000	0.003
	Batt. Endpoint	+20	1890 000 009	3.4	0.000 000	0.002

## 9. TEST DATA(ANT A\_n25)

### 9.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1852.5	Sub6 n25/ 5 MHz [15 kHz]	PI/2 BPSK	-18.28	15.31	10.00	2.15	H	< 2.00	0.207	23.16	1	1
		QPSK	-18.30	15.29	10.00	2.15	H		0.206	23.14		
		16-QAM	-19.32	14.27	10.00	2.15	H		0.163	22.12		
		64-QAM	-20.70	12.89	10.00	2.15	H		0.119	20.74		
		256-QAM	-23.23	10.36	10.00	2.15	H		0.066	18.21		
1882.5		PI/2 BPSK	-18.70	14.90	10.00	2.21	H		0.186	22.69	1	1
		QPSK	-18.75	14.85	10.00	2.21	H		0.184	22.64		
		16-QAM	-19.72	13.88	10.00	2.21	H		0.147	21.67		
		64-QAM	-21.12	12.48	10.00	2.21	H		0.107	20.27		
		256-QAM	-23.70	9.90	10.00	2.21	H		0.059	17.69		
1912.5	PI/2 BPSK	-18.97	15.05	10.01	2.11	H	0.197	22.95	1	1		
	QPSK	-19.00	15.02	10.01	2.11	H	0.196	22.92				
	16-QAM	-19.93	14.09	10.01	2.11	H	0.158	21.99				
	64-QAM	-21.27	12.75	10.01	2.11	H	0.116	20.65				
	256-QAM	-23.95	10.07	10.01	2.11	H	0.063	17.97				

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1855.0		PI/2 BPSK	-18.47	15.12	10.00	2.15	H	< 2.00	0.198	22.97	1	1
		QPSK	-18.54	15.05	10.00	2.15	H		0.195	22.90		
		16-QAM	-19.59	14.00	10.00	2.15	H		0.153	21.85		
		64-QAM	-21.02	12.57	10.00	2.15	H		0.110	20.42		
		256-QAM	-23.54	10.05	10.00	2.15	H		0.062	17.90		
1882.5	Sub6 n25/ 10 MHz [15 kHz]	PI/2 BPSK	-18.73	14.87	10.00	2.21	H	< 2.00	0.185	22.66	1	1
		QPSK	-18.87	14.73	10.00	2.21	H		0.179	22.52		
		16-QAM	-19.78	13.82	10.00	2.21	H		0.145	21.61		
		64-QAM	-21.23	12.37	10.00	2.21	H		0.104	20.16		
		256-QAM	-23.68	9.92	10.00	2.21	H		0.059	17.71		
1910.0		PI/2 BPSK	-18.97	15.05	10.01	2.11	H	< 2.00	0.197	22.95	1	26
		QPSK	-19.13	14.89	10.01	2.11	H		0.190	22.79		
		16-QAM	-20.03	13.99	10.01	2.11	H		0.155	21.89		
		64-QAM	-21.62	12.40	10.01	2.11	H		0.107	20.30		
		256-QAM	-24.00	10.02	10.01	2.11	H		0.062	17.92		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1857.5		PI/2 BPSK	-18.42	15.17	10.00	2.15	H	< 2.00	0.201	23.02	1	1
		QPSK	-18.60	14.99	10.00	2.15	H		0.192	22.84		
		16-QAM	-19.45	14.14	10.00	2.15	H		0.158	21.99		
		64-QAM	-20.89	12.70	10.00	2.15	H		0.114	20.55		
		256-QAM	-23.53	10.06	10.00	2.15	H		0.062	17.91		
1882.5	Sub6 n25/ 15 MHz [15 kHz]	PI/2 BPSK	-18.70	14.90	10.00	2.21	H	< 2.00	0.186	22.69	1	1
		QPSK	-18.92	14.68	10.00	2.21	H		0.177	22.47		
		16-QAM	-19.75	13.85	10.00	2.21	H		0.146	21.64		
		64-QAM	-21.19	12.41	10.00	2.21	H		0.105	20.20		
		256-QAM	-23.80	9.80	10.00	2.21	H		0.058	17.59		
1907.5		PI/2 BPSK	-18.66	15.31	10.01	2.13	H	< 2.00	0.208	23.19	1	1
		QPSK	-18.79	15.18	10.01	2.13	H		0.202	23.06		
		16-QAM	-19.82	14.15	10.01	2.13	H		0.160	22.03		
		64-QAM	-21.25	12.72	10.01	2.13	H		0.115	20.60		
		256-QAM	-23.68	10.29	10.01	2.13	H		0.066	18.17		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1860.0		PI/2 BPSK	-18.49	14.85	10.00	2.17	H	< 2.00	0.185	22.68	1	1
		QPSK	-18.52	14.82	10.00	2.17	H		0.184	22.65		
		16-QAM	-19.49	13.85	10.00	2.17	H		0.147	21.68		
		64-QAM	-20.85	12.49	10.00	2.17	H		0.108	20.32		
		256-QAM	-23.56	9.78	10.00	2.17	H		0.058	17.61		
1882.5	Sub6 n25/ 20 MHz [15 kHz]	PI/2 BPSK	-18.78	14.82	10.00	2.21	H	< 2.00	0.183	22.61	1	1
		QPSK	-18.86	14.74	10.00	2.21	H		0.179	22.53		
		16-QAM	-19.74	13.86	10.00	2.21	H		0.146	21.65		
		64-QAM	-21.20	12.40	10.00	2.21	H		0.105	20.19		
		256-QAM	-23.79	9.81	10.00	2.21	H		0.058	17.60		
1905.0		PI/2 BPSK	-18.86	15.11	10.01	2.13	H	< 2.00	0.199	22.99	1	1
		QPSK	-18.90	15.07	10.01	2.13	H		0.197	22.95		
		16-QAM	-19.87	14.10	10.01	2.13	H		0.158	21.98		
		64-QAM	-21.20	12.77	10.01	2.13	H		0.116	20.65		
		256-QAM	-23.89	10.08	10.01	2.13	H		0.063	17.96		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1862.5		PI/2 BPSK	-18.25	15.09	10.00	2.17	H	< 2.00	0.196	22.92	1	1
		QPSK	-18.29	15.05	10.00	2.17	H		0.194	22.88		
		16-QAM	-19.31	14.03	10.00	2.17	H		0.154	21.86		
		64-QAM	-20.80	12.54	10.00	2.17	H		0.109	20.37		
		256-QAM	-23.37	9.97	10.00	2.17	H		0.060	17.80		
1882.5	Sub6 n25/ 25 MHz [15 kHz]	PI/2 BPSK	-18.46	15.14	10.00	2.21	H	< 2.00	0.197	22.93	1	1
		QPSK	-18.67	14.93	10.00	2.21	H		0.187	22.72		
		16-QAM	-19.51	14.09	10.00	2.21	H		0.154	21.88		
		64-QAM	-20.92	12.68	10.00	2.21	H		0.112	20.47		
		256-QAM	-23.50	10.10	10.00	2.21	H		0.062	17.89		
1902.5		PI/2 BPSK	-18.50	15.41	10.01	2.15	H	< 2.00	0.212	23.27	1	1
		QPSK	-18.68	15.23	10.01	2.15	H		0.204	23.09		
		16-QAM	-19.76	14.15	10.01	2.15	H		0.159	22.01		
		64-QAM	-21.09	12.82	10.01	2.15	H		0.117	20.68		
		256-QAM	-23.65	10.26	10.01	2.15	H		0.065	18.12		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1865.0		PI/2 BPSK	-18.23	15.40	10.00	2.19	H	< 2.00	0.209	23.21	1	1
		QPSK	-18.41	15.22	10.00	2.19	H		0.201	23.03		
		16-QAM	-19.16	14.47	10.00	2.19	H		0.169	22.28		
		64-QAM	-20.64	12.99	10.00	2.19	H		0.120	20.80		
		256-QAM	-23.26	10.37	10.00	2.19	H		0.066	18.18		
1882.5	Sub6 n25/ 30 MHz [15 kHz]	PI/2 BPSK	-18.28	15.32	10.00	2.21	H	< 2.00	0.205	23.11	1	1
		QPSK	-18.48	15.12	10.00	2.21	H		0.196	22.91		
		16-QAM	-19.45	14.15	10.00	2.21	H		0.156	21.94		
		64-QAM	-20.94	12.66	10.00	2.21	H		0.111	20.45		
		256-QAM	-23.44	10.16	10.00	2.21	H		0.062	17.95		
1900.0		PI/2 BPSK	-18.31	15.60	10.01	2.15	H	< 2.00	0.222	23.46	1	1
		QPSK	-18.48	15.43	10.01	2.15	H		0.213	23.29		
		16-QAM	-19.45	14.46	10.01	2.15	H		0.171	22.32		
		64-QAM	-20.91	13.00	10.01	2.15	H		0.122	20.86		
		256-QAM	-23.30	10.61	10.01	2.15	H		0.070	18.47		



Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1867.5		PI/2 BPSK	-18.20	15.71	10.00	2.21	H	< 2.00	0.224	23.50	1	1
		QPSK	-18.35	15.56	10.00	2.21	H		0.216	23.35		
		16-QAM	-19.25	14.66	10.00	2.21	H		0.176	22.45		
		64-QAM	-20.77	13.14	10.00	2.21	H		0.124	20.93		
		256-QAM	-23.25	10.66	10.00	2.21	H		0.070	18.45		
1882.5	Sub6 n25/ 35 MHz [15 kHz]	PI/2 BPSK	-18.39	15.21	10.00	2.21	H	< 2.00	0.200	23.00	1	1
		QPSK	-18.51	15.09	10.00	2.21	H		0.194	22.88		
		16-QAM	-19.53	14.07	10.00	2.21	H		0.154	21.86		
		64-QAM	-20.91	12.69	10.00	2.21	H		0.112	20.48		
		256-QAM	-23.55	10.05	10.00	2.21	H		0.061	17.84		
1897.5		PI/2 BPSK	-18.42	15.66	10.01	2.16	H	< 2.00	0.224	23.51	1	1
		QPSK	-18.54	15.54	10.01	2.16	H		0.218	23.39		
		16-QAM	-19.58	14.50	10.01	2.16	H		0.172	22.35		
		64-QAM	-20.95	13.13	10.01	2.16	H		0.125	20.98		
		256-QAM	-23.50	10.58	10.01	2.16	H		0.070	18.43		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1870.0		PI/2 BPSK	-18.24	15.67	10.00	2.21	H	< 2.00	0.222	23.46	1	1
		QPSK	-18.37	15.54	10.00	2.21	H		0.215	23.33		
		16-QAM	-19.29	14.62	10.00	2.21	H		0.174	22.41		
		64-QAM	-20.83	13.08	10.00	2.21	H		0.122	20.87		
		256-QAM	-23.34	10.57	10.00	2.21	H		0.069	18.36		
1882.5	Sub6 n25/ 40 MHz [15 kHz]	PI/2 BPSK	-18.41	15.19	10.00	2.21	H	< 2.00	0.199	22.98	1	1
		QPSK	-18.59	15.01	10.00	2.21	H		0.191	22.80		
		16-QAM	-19.51	14.09	10.00	2.21	H		0.154	21.88		
		64-QAM	-20.98	12.62	10.00	2.21	H		0.110	20.41		
		256-QAM	-23.50	10.10	10.00	2.21	H		0.062	17.89		
1895.0		PI/2 BPSK	-18.40	15.68	10.01	2.16	H	< 2.00	0.225	23.53	1	1
		QPSK	-18.56	15.52	10.01	2.16	H		0.217	23.37		
		16-QAM	-19.51	14.57	10.01	2.16	H		0.175	22.42		
		64-QAM	-20.90	13.18	10.01	2.16	H		0.127	21.03		
		256-QAM	-23.52	10.56	10.01	2.16	H		0.069	18.41		

## 9.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band:	<u>N25</u>
▣ Bandwidth:	<u>40 MHz</u>
▣ Modulation:	<u>PI/2 BPSK</u>
▣ Distance:	<u>3 meters</u>
▣ SCS:	<u>15 kHz</u>

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Offset
374000 (1870.0)	3 740.00	-60.93	11.40	-62.15	3.10	V	-53.85	-13.00	1	1
	5 610.00	-62.88	11.90	-57.80	3.79	V	-49.69	-13.00		
	7 480.00	-64.02	10.90	-49.66	4.49	V	-43.25	-13.00		
	9 350.00	-62.55	10.80	-47.48	5.07	V	-41.75	-13.00		
	11 220.00	-63.26	11.40	-44.53	5.60	V	-38.73	-13.00		
376500 (1882.5)	3 765.00	-60.73	11.30	-60.80	3.09	V	-52.59	-13.00	1	1
	5 647.50	-62.44	11.85	-57.02	3.89	V	-49.06	-13.00		
	7 530.00	-65.37	11.10	-50.90	4.50	V	-44.30	-13.00		
	9 412.50	-61.54	10.80	-46.21	5.07	V	-40.48	-13.00		
	11 295.00	-62.72	11.35	-44.39	5.64	V	-38.68	-13.00		
379000 (1895.0)	3 790.00	-61.17	11.30	-61.48	3.17	V	-53.35	-13.00	1	1
	5 685.00	-63.08	11.80	-56.72	3.88	V	-48.80	-13.00		
	7 580.00	-64.89	11.10	-51.10	4.54	V	-44.54	-13.00		
	9 475.00	-61.93	10.90	-46.70	5.09	V	-40.89	-13.00		
	11 370.00	-63.69	11.30	-44.43	5.69	V	-38.82	-13.00		

## 9.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n25	5 MHz	1882.5	BPSK	25	0	4.06
			QPSK			4.64
			16-QAM			5.49
			64-QAM			5.95
			256-QAM			6.05
	10 MHz		BPSK	50		3.97
			QPSK			4.55
			16-QAM			5.52
			64-QAM			5.95
			256-QAM			6.35
	15 MHz		BPSK	75		4.01
			QPSK			4.49
			16-QAM			5.35
			64-QAM			5.87
			256-QAM			6.55
	20 MHz		BPSK	100		3.86
			QPSK			4.42
			16-QAM			5.31
			64-QAM			5.74
			256-QAM			6.32

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n25	25 MHz	1882.5	BPSK	128	0	4.09
			QPSK			4.52
			16-QAM			5.56
			64-QAM			5.95
			256-QAM			6.54
	30 MHz		BPSK	160		4.04
			QPSK			4.51
			16-QAM			5.35
			64-QAM			5.91
			256-QAM			6.52
	35 MHz		BPSK	180		3.89
			QPSK			4.51
			16-QAM			5.36
			64-QAM			6.11
			256-QAM			6.78
	40 MHz		BPSK	216		3.94
			QPSK			4.50
			16-QAM			5.43
			64-QAM			6.19
			256-QAM			6.88

**Note:**

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 273 ~ 312.

#### 9.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data ( MHz )
Sub6 n25	5 MHz	1882.5	BPSK	25	0	4.6029
			QPSK			4.5927
			16-QAM			4.5906
			64-QAM			4.5874
			256-QAM			4.6003
	10 MHz		BPSK	50		8.9841
			QPSK			8.9684
			16-QAM			8.9662
			64-QAM			8.9995
			256-QAM			8.9641
	15 MHz		BPSK	75		13.440
			QPSK			13.444
			16-QAM			13.402
			64-QAM			13.470
			256-QAM			13.472
	20 MHz		BPSK	100		17.933
			QPSK			17.905
			16-QAM			17.892
			64-QAM			17.916
			256-QAM			17.887

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data ( MHz )
Sub6 n25	25 MHz	1882.5	BPSK	128	0	22.917
			QPSK			22.915
			16-QAM			22.933
			64-QAM			22.937
			256-QAM			22.976
	30 MHz		BPSK	160		28.602
			QPSK			28.682
			16-QAM			28.618
			64-QAM			28.595
			256-QAM			28.614
	35 MHz		BPSK	180		32.244
			QPSK			32.272
			16-QAM			32.316
			64-QAM			32.234
			256-QAM			32.372
	40 MHz		BPSK	216		38.633
			QPSK			38.766
			16-QAM			38.636
			64-QAM			38.674
			256-QAM			38.680

**Note:**

1. Plots of the EUT's Occupied Bandwidth are shown Page 313 ~ 352.

### 9.5 CONDUCTED SPURIOUS EMISSIONS

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
Sub6 n25	5	1852.5	3.7453	30.200	-70.192	-39.992	-13.00
		1882.5	4.0240	30.200	-70.140	-39.940	
		1912.5	9.1321	30.815	-70.710	-39.895	
	10	1855.0	4.9507	30.200	-70.435	-40.235	
		1882.5	9.7024	30.815	-70.373	-39.558	
		1910.0	9.6899	30.815	-70.070	-39.255	
	15	1857.5	9.6785	30.815	-70.873	-40.058	
		1882.5	8.0439	30.815	-70.954	-40.139	
		1907.5	8.6152	30.815	-70.291	-39.476	
	20	1860.0	3.8031	30.200	-70.879	-40.679	
		1882.5	8.2592	30.815	-69.948	-39.133	
		1905.0	5.2049	30.815	-70.165	-39.350	
	25	1862.5	5.7553	30.815	-70.152	-39.337	
		1882.5	9.1695	30.815	-70.548	-39.733	
		1902.5	8.0090	30.815	-70.302	-39.487	
	30	1865.0	9.6959	30.815	-69.567	-38.752	
		1882.5	9.4442	30.815	-70.750	-39.935	
		1900.0	5.1785	30.815	-69.647	-38.832	
	35	1867.5	9.9870	30.815	-70.957	-40.142	
		1882.5	8.2543	30.815	-70.797	-39.982	
		1897.5	4.9332	30.200	-70.911	-40.711	
	40	1870.0	3.8176	30.200	-70.309	-40.109	
		1882.5	8.8719	30.815	-70.141	-39.326	
		1895.0	3.7977	30.200	-70.614	-40.414	

**Note:**

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 355 ~ 402.
2. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
3. Factor(dB) = Cable Loss + Attenuator + Power Splitter

Frequency Range (GHz)	Factor [dB]
0.03 – 1	27.494
1 – 5	30.200
5 – 10	30.815
10 – 15	31.340
15 – 20	31.713
Above 20	32.355

### 9.6 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 401 ~ 448.



### 9.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

- ▣ BandWidth: 5 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency (MHz)	Voltage (%)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1852.5	100 %	+20(Ref)	1852 499 996	0.0	0.000 000	0.000
	100 %	-30	1852 499 993	-2.9	0.000 000	-0.002
	100 %	-20	1852 499 995	-1.6	0.000 000	-0.001
	100 %	-10	1852 499 993	-3.4	0.000 000	-0.002
	100 %	0	1852 499 994	-2.6	0.000 000	-0.001
	100 %	+10	1852 499 994	-2.3	0.000 000	-0.001
	100 %	+30	1852 499 994	-2.0	0.000 000	-0.001
	100 %	+40	1852 499 995	-1.6	0.000 000	-0.001
	100 %	+50	1852 499 994	-2.3	0.000 000	-0.001
	Batt. Endpoint	+20	1852 499 995	-1.8	0.000 000	-0.001
1912.5	100 %	+20(Ref)	1912 499 997	0.0	0.000 000	0.000
	100 %	-30	1912 499 994	-3.2	0.000 000	-0.002
	100 %	-20	1912 499 995	-1.9	0.000 000	-0.001
	100 %	-10	1912 499 995	-2.3	0.000 000	-0.001
	100 %	0	1912 499 993	-4.0	0.000 000	-0.002
	100 %	+10	1912 499 994	-3.2	0.000 000	-0.002
	100 %	+30	1912 499 995	-2.0	0.000 000	-0.001
	100 %	+40	1912 499 995	-2.7	0.000 000	-0.001
	100 %	+50	1912 499 996	-1.2	0.000 000	-0.001
	Batt. Endpoint	+20	1912 499 994	-3.3	0.000 000	-0.002

- ▣ BandWidth: 10 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1855.0	100 %	+20(Ref)	1854 999 998	0.0	0.000 000	0.000
	100 %	-30	1854 999 996	-2.1	0.000 000	-0.001
	100 %	-20	1854 999 997	-1.9	0.000 000	-0.001
	100 %	-10	1854 999 997	-1.5	0.000 000	-0.001
	100 %	0	1854 999 996	-2.5	0.000 000	-0.001
	100 %	+10	1854 999 999	0.6	0.000 000	0.000
	100 %	+30	1854 999 999	0.6	0.000 000	0.000
	100 %	+40	1854 999 998	-0.3	0.000 000	0.000
	100 %	+50	1854 999 995	-3.1	0.000 000	-0.002
		Batt. Endpoint	+20	1854 999 999	0.4	0.000 000
1910.0	100 %	+20(Ref)	1910 000 003	0.0	0.000 000	0.000
	100 %	-30	1910 000 005	1.5	0.000 000	0.001
	100 %	-20	1910 000 008	5.2	0.000 000	0.003
	100 %	-10	1910 000 007	3.4	0.000 000	0.002
	100 %	0	1910 000 006	2.8	0.000 000	0.001
	100 %	+10	1910 000 006	2.7	0.000 000	0.001
	100 %	+30	1910 000 006	2.3	0.000 000	0.001
	100 %	+40	1910 000 005	2.2	0.000 000	0.001
	100 %	+50	1910 000 006	2.4	0.000 000	0.001
		Batt. Endpoint	+20	1910 000 006	2.3	0.000 000

- ▣ BandWidth: 15 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1857.5	100 %	+20(Ref)	1857 500 002	0.0	0.000 000	0.000
	100 %	-30	1857 500 003	1.6	0.000 000	0.001
	100 %	-20	1857 500 004	2.5	0.000 000	0.001
	100 %	-10	1857 500 002	0.6	0.000 000	0.000
	100 %	0	1857 500 003	1.6	0.000 000	0.001
	100 %	+10	1857 500 004	2.6	0.000 000	0.001
	100 %	+30	1857 500 006	4.2	0.000 000	0.002
	100 %	+40	1857 500 002	0.6	0.000 000	0.000
	100 %	+50	1857 500 005	3.7	0.000 000	0.002
	Batt. Endpoint	+20	1857 500 003	1.5	0.000 000	0.001
1907.5	100 %	+20(Ref)	1907 500 005	0.0	0.000 000	0.000
	100 %	-30	1907 500 009	4.3	0.000 000	0.002
	100 %	-20	1907 500 009	4.3	0.000 000	0.002
	100 %	-10	1907 500 009	4.8	0.000 000	0.003
	100 %	0	1907 500 008	3.8	0.000 000	0.002
	100 %	+10	1907 500 009	4.0	0.000 000	0.002
	100 %	+30	1907 500 009	4.1	0.000 000	0.002
	100 %	+40	1907 500 008	3.7	0.000 000	0.002
	100 %	+50	1907 500 009	4.3	0.000 000	0.002
	Batt. Endpoint	+20	1907 500 009	4.2	0.000 000	0.002

- ▣ BandWidth: 20 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1860.0	100 %	+20(Ref)	1859 999 997	0.0	0.000 000	0.000
	100 %	-30	1859 999 994	-3.1	0.000 000	-0.002
	100 %	-20	1859 999 997	-0.3	0.000 000	0.000
	100 %	-10	1859 999 997	-0.7	0.000 000	0.000
	100 %	0	1859 999 996	-1.2	0.000 000	-0.001
	100 %	+10	1859 999 996	-1.4	0.000 000	-0.001
	100 %	+30	1859 999 995	-2.0	0.000 000	-0.001
	100 %	+40	1859 999 995	-2.5	0.000 000	-0.001
	100 %	+50	1859 999 995	-2.5	0.000 000	-0.001
	Batt. Endpoint	+20	1859 999 994	-3.6	0.000 000	-0.002
1905.0	100 %	+20(Ref)	1905 000 000	0.0	0.000 000	0.000
	100 %	-30	1904 999 996	-3.8	0.000 000	-0.002
	100 %	-20	1904 999 999	-0.8	0.000 000	0.000
	100 %	-10	1904 999 997	-3.1	0.000 000	-0.002
	100 %	0	1904 999 999	-0.5	0.000 000	0.000
	100 %	+10	1904 999 998	-2.3	0.000 000	-0.001
	100 %	+30	1904 999 998	-2.1	0.000 000	-0.001
	100 %	+40	1904 999 998	-1.5	0.000 000	-0.001
	100 %	+50	1904 999 998	-1.9	0.000 000	-0.001
	Batt. Endpoint	+20	1904 999 999	-0.6	0.000 000	0.000

- ▣ BandWidth: 25 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1862.5	100 %	+20(Ref)	1862 500 009	0.0	0.000 000	0.000
	100 %	-30	1862 500 018	9.0	0.000 000	0.005
	100 %	-20	1862 500 020	11.5	0.000 001	0.006
	100 %	-10	1862 500 020	11.1	0.000 001	0.006
	100 %	0	1862 500 020	10.7	0.000 001	0.006
	100 %	+10	1862 500 019	10.1	0.000 001	0.005
	100 %	+30	1862 500 019	9.6	0.000 001	0.005
	100 %	+40	1862 500 018	9.4	0.000 001	0.005
	100 %	+50	1862 500 017	8.3	0.000 000	0.004
	Batt. Endpoint	+20	1862 500 018	8.7	0.000 000	0.005
1902.5	100 %	+20(Ref)	1902 500 011	0.0	0.000 000	0.000
	100 %	-30	1902 500 022	11.1	0.000 001	0.006
	100 %	-20	1902 500 023	12.1	0.000 001	0.006
	100 %	-10	1902 500 023	12.3	0.000 001	0.006
	100 %	0	1902 500 020	9.2	0.000 000	0.005
	100 %	+10	1902 500 020	9.2	0.000 000	0.005
	100 %	+30	1902 500 021	10.1	0.000 001	0.005
	100 %	+40	1902 500 021	10.4	0.000 001	0.005
	100 %	+50	1902 500 023	12.0	0.000 001	0.006
	Batt. Endpoint	+20	1902 500 022	10.9	0.000 001	0.006

- ▣ BandWidth: 30 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1865.0	100 %	+20(Ref)	1865 000 007	0.0	0.000 000	0.000
	100 %	-30	1865 000 012	4.9	0.000 000	0.003
	100 %	-20	1865 000 011	4.2	0.000 000	0.002
	100 %	-10	1865 000 013	6.9	0.000 000	0.004
	100 %	0	1865 000 012	5.7	0.000 000	0.003
	100 %	+10	1865 000 015	8.4	0.000 000	0.004
	100 %	+30	1865 000 013	6.1	0.000 000	0.003
	100 %	+40	1865 000 015	8.2	0.000 000	0.004
	100 %	+50	1865 000 011	4.7	0.000 000	0.003
	Batt. Endpoint	+20	1865 000 013	6.1	0.000 000	0.003
1900.0	100 %	+20(Ref)	1900 000 004	0.0	0.000 000	0.000
	100 %	-30	1900 000 011	6.9	0.000 000	0.004
	100 %	-20	1900 000 011	6.7	0.000 000	0.004
	100 %	-10	1900 000 011	7.0	0.000 000	0.004
	100 %	0	1900 000 007	3.2	0.000 000	0.002
	100 %	+10	1900 000 010	6.0	0.000 000	0.003
	100 %	+30	1900 000 010	6.4	0.000 000	0.003
	100 %	+40	1900 000 008	3.8	0.000 000	0.002
	100 %	+50	1900 000 010	6.2	0.000 000	0.003
	Batt. Endpoint	+20	1900 000 009	5.5	0.000 000	0.003

- ▣ BandWidth: 35 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1867.5	100 %	+20(Ref)	1867 500 002	0.0	0.000 000	0.000
	100 %	-30	1867 500 011	9.0	0.000 000	0.005
	100 %	-20	1867 500 009	7.0	0.000 000	0.004
	100 %	-10	1867 500 013	11.1	0.000 001	0.006
	100 %	0	1867 500 009	7.1	0.000 000	0.004
	100 %	+10	1867 500 009	7.5	0.000 000	0.004
	100 %	+30	1867 500 009	7.2	0.000 000	0.004
	100 %	+40	1867 500 009	7.4	0.000 000	0.004
	100 %	+50	1867 500 010	7.9	0.000 000	0.004
	Batt. Endpoint	+20	1867 500 010	8.4	0.000 000	0.005
1897.5	100 %	+20(Ref)	1897 500 004	0.0	0.000 000	0.000
	100 %	-30	1897 500 014	9.6	0.000 001	0.005
	100 %	-20	1897 500 013	9.5	0.000 000	0.005
	100 %	-10	1897 500 013	9.1	0.000 000	0.005
	100 %	0	1897 500 012	8.5	0.000 000	0.004
	100 %	+10	1897 500 012	8.5	0.000 000	0.004
	100 %	+30	1897 500 014	9.6	0.000 001	0.005
	100 %	+40	1897 500 012	8.1	0.000 000	0.004
	100 %	+50	1897 500 012	8.0	0.000 000	0.004
	Batt. Endpoint	+20	1897 500 012	7.7	0.000 000	0.004

- ▣ BandWidth: 40 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1870.0	100 %	+20(Ref)	1870 000 006	0.0	0.000 000	0.000
	100 %	-30	1870 000 012	6.2	0.000 000	0.003
	100 %	-20	1870 000 011	5.6	0.000 000	0.003
	100 %	-10	1870 000 011	5.4	0.000 000	0.003
	100 %	0	1870 000 011	5.8	0.000 000	0.003
	100 %	+10	1870 000 012	6.5	0.000 000	0.003
	100 %	+30	1870 000 013	7.0	0.000 000	0.004
	100 %	+40	1870 000 012	6.0	0.000 000	0.003
	100 %	+50	1870 000 013	7.1	0.000 000	0.004
	Batt. Endpoint	+20	1870 000 013	7.6	0.000 000	0.004
1895.0	100 %	+20(Ref)	1895 000 009	0.0	0.000 000	0.000
	100 %	-30	1895 000 017	8.0	0.000 000	0.004
	100 %	-20	1895 000 017	8.7	0.000 000	0.005
	100 %	-10	1895 000 016	7.7	0.000 000	0.004
	100 %	0	1895 000 016	7.7	0.000 000	0.004
	100 %	+10	1895 000 016	7.6	0.000 000	0.004
	100 %	+30	1895 000 016	7.9	0.000 000	0.004
	100 %	+40	1895 000 017	8.0	0.000 000	0.004
	100 %	+50	1895 000 016	7.0	0.000 000	0.004
	Batt. Endpoint	+20	1895 000 016	7.4	0.000 000	0.004



## 10. TEST DATA(ANT I\_n25(2))

### 10.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1852.5		PI/2 BPSK	-18.61	14.98	10.00	2.15	H	< 2.00	0.192	22.83	1	12
		QPSK	-18.70	14.89	10.00	2.15	H		0.188	22.74		
		16-QAM	-19.71	13.88	10.00	2.15	H		0.149	21.73		
		64-QAM	-21.06	12.53	10.00	2.15	H		0.109	20.38		
		256-QAM	-23.65	9.94	10.00	2.15	H		0.060	17.79		
1882.5	Sub6 n25(2)/ 5 MHz [15 kHz]	PI/2 BPSK	-18.35	15.25	10.00	2.21	H	< 2.00	0.201	23.04	1	12
		QPSK	-18.54	15.06	10.00	2.21	H		0.193	22.85		
		16-QAM	-19.54	14.06	10.00	2.21	H		0.153	21.85		
		64-QAM	-20.78	12.82	10.00	2.21	H		0.115	20.61		
		256-QAM	-23.48	10.12	10.00	2.21	H		0.062	17.91		
1912.5		PI/2 BPSK	-18.99	15.03	10.01	2.11	H	< 2.00	0.196	22.93	1	1
		QPSK	-19.05	14.97	10.01	2.11	H		0.194	22.87		
		16-QAM	-20.11	13.91	10.01	2.11	H		0.152	21.81		
		64-QAM	-21.42	12.60	10.01	2.11	H		0.112	20.50		
		256-QAM	-23.87	10.15	10.01	2.11	H		0.064	18.05		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1855.0		PI/2 BPSK	-18.58	15.01	10.00	2.15	H	< 2.00	0.193	22.86	1	50
		QPSK	-18.67	14.92	10.00	2.15	H		0.189	22.77		
		16-QAM	-19.89	13.70	10.00	2.15	H		0.143	21.55		
		64-QAM	-21.11	12.48	10.00	2.15	H		0.108	20.33		
		256-QAM	-23.63	9.96	10.00	2.15	H		0.060	17.81		
1882.5	Sub6 n25(2)/ 10 MHz [15 kHz]	PI/2 BPSK	-18.35	15.25	10.00	2.21	H	< 2.00	0.201	23.04	1	50
		QPSK	-18.42	15.18	10.00	2.21	H		0.198	22.97		
		16-QAM	-19.48	14.12	10.00	2.21	H		0.155	21.91		
		64-QAM	-20.96	12.64	10.00	2.21	H		0.110	20.43		
		256-QAM	-23.53	10.07	10.00	2.21	H		0.061	17.86		
1910.0		PI/2 BPSK	-18.98	15.04	10.01	2.11	H	< 2.00	0.197	22.94	1	26
		QPSK	-19.05	14.97	10.01	2.11	H		0.194	22.87		
		16-QAM	-20.18	13.84	10.01	2.11	H		0.149	21.74		
		64-QAM	-21.50	12.52	10.01	2.11	H		0.110	20.42		
		256-QAM	-24.05	9.97	10.01	2.11	H		0.061	17.87		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1857.5		PI/2 BPSK	-18.62	14.97	10.00	2.15	H	< 2.00	0.191	22.82	1	1
		QPSK	-18.69	14.90	10.00	2.15	H		0.188	22.75		
		16-QAM	-19.89	13.70	10.00	2.15	H		0.143	21.55		
		64-QAM	-21.17	12.42	10.00	2.15	H		0.106	20.27		
		256-QAM	-23.63	9.96	10.00	2.15	H		0.060	17.81		
1882.5	Sub6 n25(2)/ 15 MHz [15 kHz]	PI/2 BPSK	-18.45	15.15	10.00	2.21	H	< 2.00	0.197	22.94	1	1
		QPSK	-18.50	15.10	10.00	2.21	H		0.195	22.89		
		16-QAM	-19.60	14.00	10.00	2.21	H		0.151	21.79		
		64-QAM	-20.94	12.66	10.00	2.21	H		0.111	20.45		
		256-QAM	-23.52	10.08	10.00	2.21	H		0.061	17.87		
1907.5		PI/2 BPSK	-18.52	15.45	10.01	2.13	H	< 2.00	0.215	23.33	1	1
		QPSK	-18.57	15.40	10.01	2.13	H		0.213	23.28		
		16-QAM	-19.72	14.25	10.01	2.13	H		0.163	22.13		
		64-QAM	-21.12	12.85	10.01	2.13	H		0.118	20.73		
		256-QAM	-23.67	10.30	10.01	2.13	H		0.066	18.18		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1860.0		PI/2 BPSK	-18.62	14.72	10.00	2.17	H	< 2.00	0.180	22.55	1	53
		QPSK	-18.67	14.67	10.00	2.17	H		0.178	22.50		
		16-QAM	-19.72	13.62	10.00	2.17	H		0.140	21.45		
		64-QAM	-21.02	12.32	10.00	2.17	H		0.104	20.15		
		256-QAM	-23.60	9.74	10.00	2.17	H		0.057	17.57		
1882.5	Sub6 n25(2)/ 20 MHz [15 kHz]	PI/2 BPSK	-18.52	15.08	10.00	2.21	H	< 2.00	0.194	22.87	1	53
		QPSK	-18.61	14.99	10.00	2.21	H		0.190	22.78		
		16-QAM	-19.68	13.92	10.00	2.21	H		0.148	21.71		
		64-QAM	-20.99	12.61	10.00	2.21	H		0.110	20.40		
		256-QAM	-23.63	9.97	10.00	2.21	H		0.060	17.76		
1905.0		PI/2 BPSK	-18.80	15.17	10.01	2.13	H	< 2.00	0.202	23.05	1	1
		QPSK	-18.86	15.11	10.01	2.13	H		0.199	22.99		
		16-QAM	-19.95	14.02	10.01	2.13	H		0.155	21.90		
		64-QAM	-21.20	12.77	10.01	2.13	H		0.116	20.65		
		256-QAM	-23.90	10.07	10.01	2.13	H		0.062	17.95		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1862.5		PI/2 BPSK	-18.33	15.01	10.00	2.17	H	< 2.00	0.192	22.84	1	131
		QPSK	-18.50	14.84	10.00	2.17	H		0.185	22.67		
		16-QAM	-19.48	13.86	10.00	2.17	H		0.148	21.69		
		64-QAM	-20.87	12.47	10.00	2.17	H		0.107	20.30		
		256-QAM	-23.36	9.98	10.00	2.17	H		0.060	17.81		
1882.5	Sub6 n25(2)/ 25 MHz [15 kHz]	PI/2 BPSK	-18.28	15.32	10.00	2.21	H	< 2.00	0.205	23.11	1	131
		QPSK	-18.33	15.27	10.00	2.21	H		0.202	23.06		
		16-QAM	-19.44	14.16	10.00	2.21	H		0.157	21.95		
		64-QAM	-20.80	12.80	10.00	2.21	H		0.115	20.59		
		256-QAM	-23.40	10.20	10.00	2.21	H		0.063	17.99		
1902.5		PI/2 BPSK	-18.69	15.22	10.01	2.15	H	< 2.00	0.203	23.08	1	66
		QPSK	-18.73	15.18	10.01	2.15	H		0.201	23.04		
		16-QAM	-19.90	14.01	10.01	2.15	H		0.154	21.87		
		64-QAM	-21.00	12.91	10.01	2.15	H		0.119	20.77		
		256-QAM	-23.70	10.21	10.01	2.15	H		0.064	18.07		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1865.0		PI/2 BPSK	-18.20	15.43	10.00	2.19	H	< 2.00	0.211	23.24	1	158
		QPSK	-18.39	15.24	10.00	2.19	H		0.202	23.05		
		16-QAM	-19.39	14.24	10.00	2.19	H		0.160	22.05		
		64-QAM	-20.75	12.88	10.00	2.19	H		0.117	20.69		
		256-QAM	-23.24	10.39	10.00	2.19	H		0.066	18.20		
1882.5	Sub6 n25(2)/ 30 MHz [15 kHz]	PI/2 BPSK	-18.35	15.25	10.00	2.21	H	< 2.00	0.201	23.04	1	80
		QPSK	-18.51	15.09	10.00	2.21	H		0.194	22.88		
		16-QAM	-19.55	14.05	10.00	2.21	H		0.153	21.84		
		64-QAM	-20.89	12.71	10.00	2.21	H		0.112	20.50		
		256-QAM	-23.26	10.34	10.00	2.21	H		0.065	18.13		
1900.0		PI/2 BPSK	-18.36	15.55	10.01	2.15	H	< 2.00	0.219	23.41	1	1
		QPSK	-18.45	15.46	10.01	2.15	H		0.215	23.32		
		16-QAM	-19.48	14.43	10.01	2.15	H		0.169	22.29		
		64-QAM	-20.87	13.04	10.01	2.15	H		0.123	20.90		
		256-QAM	-23.28	10.63	10.01	2.15	H		0.071	18.49		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
									W	W	dBm	Size
1867.5		PI/2 BPSK	-18.50	15.41	10.00	2.21	H	< 2.00	0.209	23.20	1	94
		QPSK	-18.56	15.35	10.00	2.21	H		0.206	23.14		
		16-QAM	-19.66	14.25	10.00	2.21	H		0.160	22.04		
		64-QAM	-20.81	13.10	10.00	2.21	H		0.123	20.89		
		256-QAM	-23.33	10.58	10.00	2.21	H		0.069	18.37		
1882.5	Sub6 n25(2)/ 35 MHz [15 kHz]	PI/2 BPSK	-18.43	15.17	10.00	2.21	H	< 2.00	0.198	22.96	1	94
		QPSK	-18.50	15.10	10.00	2.21	H		0.195	22.89		
		16-QAM	-19.52	14.08	10.00	2.21	H		0.154	21.87		
		64-QAM	-20.90	12.70	10.00	2.21	H		0.112	20.49		
		256-QAM	-23.32	10.28	10.00	2.21	H		0.064	18.07		
1897.5		PI/2 BPSK	-18.57	15.51	10.01	2.16	H	< 2.00	0.217	23.36	1	1
		QPSK	-18.62	15.46	10.01	2.16	H		0.214	23.31		
		16-QAM	-19.57	14.51	10.01	2.16	H		0.172	22.36		
		64-QAM	-20.79	13.29	10.01	2.16	H		0.130	21.14		
		256-QAM	-23.43	10.65	10.01	2.16	H		0.071	18.50		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1870.0		PI/2 BPSK	-18.41	15.50	10.00	2.21	H	< 2.00	0.213	23.29	1	108
		QPSK	-18.52	15.39	10.00	2.21	H		0.208	23.18		
		16-QAM	-19.43	14.48	10.00	2.21	H		0.169	22.27		
		64-QAM	-20.80	13.11	10.00	2.21	H		0.123	20.90		
		256-QAM	-23.31	10.60	10.00	2.21	H		0.069	18.39		
1882.5	Sub6 n25(2)/ 40 MHz [15 kHz]	PI/2 BPSK	-18.33	15.27	10.00	2.21	H	< 2.00	0.202	23.06	1	214
		QPSK	-18.39	15.21	10.00	2.21	H		0.200	23.00		
		16-QAM	-19.53	14.07	10.00	2.21	H		0.153	21.86		
		64-QAM	-20.87	12.73	10.00	2.21	H		0.113	20.52		
		256-QAM	-23.59	10.01	10.00	2.21	H		0.060	17.80		
1895.0		PI/2 BPSK	-18.49	15.59	10.01	2.16	H	< 2.00	0.221	23.44	1	1
		QPSK	-18.55	15.53	10.01	2.16	H		0.218	23.38		
		16-QAM	-19.66	14.42	10.01	2.16	H		0.169	22.27		
		64-QAM	-20.88	13.20	10.01	2.16	H		0.127	21.05		
		256-QAM	-23.57	10.51	10.01	2.16	H		0.069	18.36		



## 10.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band:	<u>N25(2)</u>
▣ Bandwidth:	<u>40 MHz</u>
▣ Modulation:	<u>PI/2 BPSK</u>
▣ Distance:	<u>3 meters</u>
▣ SCS:	<u>15 kHz</u>

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Offset
374000 (1870.0)	3 740.00	-62.19	11.40	-63.41	3.10	H	-55.11	-13.00	1	108
	5 610.00	-56.85	11.90	-51.77	3.79	H	-43.66	-13.00		
	7 480.00	-65.31	10.90	-50.95	4.49	H	-44.54	-13.00		
	9,350.00	-61.10	10.80	-46.03	5.07	H	-40.30	-13.00		
	11 220.00	-63.92	11.40	-45.19	5.60	H	-39.39	-13.00		
376500 (1882.5)	3 765.00	-61.49	11.30	-61.56	3.09	V	-53.35	-13.00	1	214
	5 647.50	-56.89	11.85	-51.47	3.89	H	-43.51	-13.00		
	7 530.00	-63.64	11.10	-49.17	4.50	V	-42.57	-13.00		
	9 412.50	-63.73	10.80	-48.40	5.07	V	-42.67	-13.00		
	11 295.00	-65.85	11.35	-47.52	5.64	V	-41.81	-13.00		
379000 (1895.0)	3 790.00	-60.99	11.30	-61.30	3.17	H	-53.17	-13.00	1	1
	5 685.00	-56.85	11.80	-50.49	3.88	H	-42.57	-13.00		
	7 580.00	-63.84	11.10	-50.05	4.54	H	-43.49	-13.00		
	9 475.00	-62.80	10.90	-47.57	5.09	H	-41.76	-13.00		
	11 370.00	-64.76	11.30	-45.50	5.69	H	-39.89	-13.00		

## 10.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n25(2)	5 MHz	1882.5	BPSK	25	0	3.95
			QPSK			5.04
			16-QAM			5.82
			64-QAM			6.29
			256-QAM			6.09
	10 MHz		BPSK	50		4.10
			QPSK			5.25
			16-QAM			5.83
			64-QAM			6.22
			256-QAM			6.47
	15 MHz		BPSK	75		3.81
			QPSK			5.19
			16-QAM			5.82
			64-QAM			6.26
			256-QAM			6.33
	20 MHz		BPSK	100		3.88
			QPSK			5.20
			16-QAM			5.89
			64-QAM			6.21
			256-QAM			6.55

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n25(2)	25 MHz	1882.5	BPSK	128	0	3.99
			QPSK			5.28
			16-QAM			5.99
			64-QAM			6.16
			256-QAM			6.46
	30 MHz		BPSK	160		3.92
			QPSK			5.01
			16-QAM			5.84
			64-QAM			6.19
			256-QAM			6.48
	35 MHz		BPSK	180		4.13
			QPSK			5.07
			16-QAM			5.79
			64-QAM			6.06
			256-QAM			6.34
	40 MHz		BPSK	216		4.23
			QPSK			5.14
			16-QAM			5.71
			64-QAM			6.09
			256-QAM			6.43

**Note:**

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 450 ~ 489.

## 10.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data ( MHz )
Sub6 n25(2)	5 MHz	1882.5	BPSK	25	0	4.4956
			QPSK			4.5061
			16-QAM			4.4951
			64-QAM			4.5387
			256-QAM			4.5084
	10 MHz		BPSK	50		8.9874
			QPSK			8.9888
			16-QAM			8.9550
			64-QAM			9.0142
			256-QAM			9.0320
	15 MHz		BPSK	75		13.439
			QPSK			13.507
			16-QAM			13.413
			64-QAM			13.485
			256-QAM			13.482
	20 MHz		BPSK	100		17.957
			QPSK			17.952
			16-QAM			17.968
			64-QAM			17.920
			256-QAM			17.939

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data ( MHz )
Sub6 n25(2)	25 MHz	1882.5	BPSK	128	0	22.921
			QPSK			23.008
			16-QAM			22.954
			64-QAM			22.984
			256-QAM			22.929
	30 MHz		BPSK	160		28.688
			QPSK			28.651
			16-QAM			28.612
			64-QAM			28.732
			256-QAM			28.721
	35 MHz		BPSK	180		32.281
			QPSK			32.262
			16-QAM			32.257
			64-QAM			32.287
			256-QAM			32.245
	40 MHz		BPSK	216		38.690
			QPSK			38.803
			16-QAM			38.618
			64-QAM			38.756
			256-QAM			38.648

**Note:**

1. Plots of the EUT's Occupied Bandwidth are shown Page 490 ~ 529.

### 10.5 CONDUCTED SPURIOUS EMISSIONS

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
Sub6 n25(2)	5	1852.5	7.9656	30.815	-70.885	-40.070	-13.00
		1882.5	4.0743	30.200	-70.102	-39.902	
		1912.5	9.7049	30.815	-70.609	-39.794	
	10	1855.0	4.0300	30.200	-69.503	-39.303	
		1882.5	8.8275	30.815	-70.551	-39.736	
		1910.0	6.0599	30.815	-70.553	-39.738	
	15	1857.5	8.2318	30.815	-70.867	-40.052	
		1882.5	8.0085	30.815	-70.808	-39.993	
		1907.5	6.0384	30.815	-70.789	-39.974	
	20	1860.0	4.5673	30.200	-70.757	-40.557	
		1882.5	3.8007	30.200	-70.674	-40.474	
		1905.0	9.0892	30.815	-71.177	-40.362	
	25	1862.5	8.2727	30.815	-70.380	-39.565	
		1882.5	6.0190	30.815	-70.613	-39.798	
		1902.5	6.0449	30.815	-70.615	-39.800	
	30	1865.0	8.2358	30.815	-70.574	-39.759	
		1882.5	7.9631	30.815	-70.614	-39.799	
		1900.0	8.8495	30.815	-70.307	-39.492	
	35	1867.5	5.1880	30.815	-70.280	-39.465	
		1882.5	3.7408	30.200	-70.590	-40.390	
		1897.5	9.6825	30.815	-70.114	-39.299	
	40	1870.0	9.6884	30.815	-70.313	-39.498	
		1882.5	7.9950	30.815	-70.222	-39.407	
		1895.0	5.2264	30.815	-70.309	-39.494	

**Note:**

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 530 ~ 577.
2. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
3. Factor(dB) = Cable Loss + Attenuator + Power Splitter

Frequency Range (GHz)	Factor [dB]
0.03 – 1	27.494
1 – 5	30.200
5 – 10	30.815
10 – 15	31.340
15 – 20	31.713
Above 20	32.355

### 10.6 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 578 ~ 625.

### 10.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

- ▣ BandWidth: 5 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency (MHz)	Voltage (%)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1852.5	100 %	+20(Ref)	1852 499 996	0.0	0.000 000	0.000
	100 %	-30	1852 499 993	-3.0	0.000 000	-0.002
	100 %	-20	1852 499 993	-3.6	0.000 000	-0.002
	100 %	-10	1852 499 992	-3.8	0.000 000	-0.002
	100 %	0	1852 499 993	-3.2	0.000 000	-0.002
	100 %	+10	1852 499 994	-1.9	0.000 000	-0.001
	100 %	+30	1852 499 994	-2.2	0.000 000	-0.001
	100 %	+40	1852 499 993	-3.2	0.000 000	-0.002
	100 %	+50	1852 499 993	-3.2	0.000 000	-0.002
	Batt. Endpoint	+20	1852 499 993	-2.7	0.000 000	-0.001
1912.5	100 %	+20(Ref)	1912 499 997	0.0	0.000 000	0.000
	100 %	-30	1912 499 994	-2.5	0.000 000	-0.001
	100 %	-20	1912 499 993	-4.3	0.000 000	-0.002
	100 %	-10	1912 499 993	-4.3	0.000 000	-0.002
	100 %	0	1912 499 994	-2.6	0.000 000	-0.001
	100 %	+10	1912 499 995	-2.1	0.000 000	-0.001
	100 %	+30	1912 499 994	-3.0	0.000 000	-0.002
	100 %	+40	1912 499 997	-0.3	0.000 000	0.000
	100 %	+50	1912 499 994	-2.9	0.000 000	-0.002
	Batt. Endpoint	+20	1912 499 994	-2.8	0.000 000	-0.001

- ▣ BandWidth: 10 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1855.0	100 %	+20(Ref)	1855 000 001	0.0	0.000 000	0.000
	100 %	-30	1855 000 000	-0.7	0.000 000	0.000
	100 %	-20	1855 000 001	0.0	0.000 000	0.000
	100 %	-10	1855 000 001	0.1	0.000 000	0.000
	100 %	0	1855 000 000	-0.8	0.000 000	0.000
	100 %	+10	1855 000 000	-0.5	0.000 000	0.000
	100 %	+30	1854 999 999	-1.4	0.000 000	-0.001
	100 %	+40	1855 000 002	1.4	0.000 000	0.001
	100 %	+50	1855 000 001	0.8	0.000 000	0.000
	Batt. Endpoint	+20	1855 000 001	0.0	0.000 000	0.000
1910.0	100 %	+20(Ref)	1910 000 001	0.0	0.000 000	0.000
	100 %	-30	1910 000 004	3.5	0.000 000	0.002
	100 %	-20	1910 000 003	1.8	0.000 000	0.001
	100 %	-10	1910 000 001	0.4	0.000 000	0.000
	100 %	0	1910 000 003	2.5	0.000 000	0.001
	100 %	+10	1910 000 003	1.9	0.000 000	0.001
	100 %	+30	1910 000 003	2.3	0.000 000	0.001
	100 %	+40	1910 000 001	0.4	0.000 000	0.000
	100 %	+50	1910 000 004	2.8	0.000 000	0.001
	Batt. Endpoint	+20	1910 000 006	5.3	0.000 000	0.003



- ▣ BandWidth: 15 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1857.5	100 %	+20(Ref)	1857 500 000	0.0	0.000 000	0.000
	100 %	-30	1857 500 003	2.2	0.000 000	0.001
	100 %	-20	1857 500 004	3.2	0.000 000	0.002
	100 %	-10	1857 500 001	0.4	0.000 000	0.000
	100 %	0	1857 500 000	-0.1	0.000 000	0.000
	100 %	+10	1857 500 001	1.0	0.000 000	0.001
	100 %	+30	1857 500 000	-0.6	0.000 000	0.000
	100 %	+40	1857 500 002	1.9	0.000 000	0.001
	100 %	+50	1857 500 003	2.8	0.000 000	0.002
	Batt. Endpoint	+20	1857 500 000	0.0	0.000 000	0.000
1907.5	100 %	+20(Ref)	1907 500 003	0.0	0.000 000	0.000
	100 %	-30	1907 500 007	4.4	0.000 000	0.002
	100 %	-20	1907 500 007	4.4	0.000 000	0.002
	100 %	-10	1907 500 007	4.0	0.000 000	0.002
	100 %	0	1907 500 007	4.1	0.000 000	0.002
	100 %	+10	1907 500 006	2.9	0.000 000	0.002
	100 %	+30	1907 500 004	1.5	0.000 000	0.001
	100 %	+40	1907 500 006	3.4	0.000 000	0.002
	100 %	+50	1907 500 007	4.3	0.000 000	0.002
	Batt. Endpoint	+20	1907 500 006	3.2	0.000 000	0.002

- ▣ BandWidth: 20 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1860.0	100 %	+20(Ref)	1859 999 998	0.0	0.000 000	0.000
	100 %	-30	1859 999 996	-2.2	0.000 000	-0.001
	100 %	-20	1859 999 998	-0.5	0.000 000	0.000
	100 %	-10	1859 999 999	0.6	0.000 000	0.000
	100 %	0	1859 999 995	-3.2	0.000 000	-0.002
	100 %	+10	1859 999 994	-3.9	0.000 000	-0.002
	100 %	+30	1859 999 997	-0.9	0.000 000	0.000
	100 %	+40	1859 999 995	-3.2	0.000 000	-0.002
	100 %	+50	1859 999 997	-1.3	0.000 000	-0.001
		Batt. Endpoint	+20	1859 999 995	-3.2	0.000 000
1905.0	100 %	+20(Ref)	1904 999 999	0.0	0.000 000	0.000
	100 %	-30	1904 999 997	-1.6	0.000 000	-0.001
	100 %	-20	1904 999 997	-2.2	0.000 000	-0.001
	100 %	-10	1904 999 996	-2.4	0.000 000	-0.001
	100 %	0	1904 999 998	-0.5	0.000 000	0.000
	100 %	+10	1904 999 996	-3.4	0.000 000	-0.002
	100 %	+30	1904 999 995	-3.6	0.000 000	-0.002
	100 %	+40	1904 999 996	-2.8	0.000 000	-0.001
	100 %	+50	1904 999 997	-1.9	0.000 000	-0.001
		Batt. Endpoint	+20	1904 999 996	-2.8	0.000 000

- ▣ BandWidth: 25 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1862.5	100 %	+20(Ref)	1862 500 008	0.0	0.000 000	0.000
	100 %	-30	1862 500 018	9.7	0.000 001	0.005
	100 %	-20	1862 500 018	10.4	0.000 001	0.006
	100 %	-10	1862 500 016	8.5	0.000 000	0.005
	100 %	0	1862 500 019	10.8	0.000 001	0.006
	100 %	+10	1862 500 016	8.2	0.000 000	0.004
	100 %	+30	1862 500 017	9.4	0.000 001	0.005
	100 %	+40	1862 500 015	7.1	0.000 000	0.004
	100 %	+50	1862 500 016	8.1	0.000 000	0.004
	Batt. Endpoint	+20	1862 500 016	7.8	0.000 000	0.004
1902.5	100 %	+20(Ref)	1902 500 012	0.0	0.000 000	0.000
	100 %	-30	1902 500 023	10.6	0.000 001	0.006
	100 %	-20	1902 500 023	10.7	0.000 001	0.006
	100 %	-10	1902 500 024	11.2	0.000 001	0.006
	100 %	0	1902 500 024	11.4	0.000 001	0.006
	100 %	+10	1902 500 023	10.8	0.000 001	0.006
	100 %	+30	1902 500 022	9.7	0.000 001	0.005
	100 %	+40	1902 500 021	8.3	0.000 000	0.004
	100 %	+50	1902 500 022	10.0	0.000 001	0.005
	Batt. Endpoint	+20	1902 500 024	11.3	0.000 001	0.006

- ▣ BandWidth: 30 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1865.0	100 %	+20(Ref)	1865 000 005	0.0	0.000 000	0.000
	100 %	-30	1865 000 010	5.3	0.000 000	0.003
	100 %	-20	1865 000 011	6.4	0.000 000	0.003
	100 %	-10	1865 000 010	5.0	0.000 000	0.003
	100 %	0	1865 000 012	7.9	0.000 000	0.004
	100 %	+10	1865 000 011	6.8	0.000 000	0.004
	100 %	+30	1865 000 012	7.6	0.000 000	0.004
	100 %	+40	1865 000 012	7.3	0.000 000	0.004
	100 %	+50	1865 000 010	5.0	0.000 000	0.003
	Batt. Endpoint	+20	1865 000 009	4.6	0.000 000	0.002
1900.0	100 %	+20(Ref)	1900 000 006	0.0	0.000 000	0.000
	100 %	-30	1900 000 012	6.1	0.000 000	0.003
	100 %	-20	1900 000 009	3.3	0.000 000	0.002
	100 %	-10	1900 000 010	3.8	0.000 000	0.002
	100 %	0	1900 000 011	4.9	0.000 000	0.003
	100 %	+10	1900 000 012	6.0	0.000 000	0.003
	100 %	+30	1900 000 014	7.9	0.000 000	0.004
	100 %	+40	1900 000 010	4.1	0.000 000	0.002
	100 %	+50	1900 000 010	4.2	0.000 000	0.002
	Batt. Endpoint	+20	1900 000 008	2.7	0.000 000	0.001

- ▣ BandWidth: 35 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1870.0	100 %	+20(Ref)	1870 000 005	0.0	0.000 000	0.000
	100 %	-30	1870 000 010	5.0	0.000 000	0.003
	100 %	-20	1870 000 012	7.1	0.000 000	0.004
	100 %	-10	1870 000 010	5.2	0.000 000	0.003
	100 %	0	1870 000 010	4.6	0.000 000	0.002
	100 %	+10	1870 000 012	7.3	0.000 000	0.004
	100 %	+30	1870 000 010	5.1	0.000 000	0.003
	100 %	+40	1870 000 011	5.6	0.000 000	0.003
	100 %	+50	1870 000 011	6.1	0.000 000	0.003
	Batt. Endpoint	+20	1870 000 013	7.8	0.000 000	0.004
1895.0	100 %	+20(Ref)	1895 000 008	0.0	0.000 000	0.000
	100 %	-30	1895 000 015	6.7	0.000 000	0.004
	100 %	-20	1895 000 015	6.4	0.000 000	0.003
	100 %	-10	1895 000 018	9.2	0.000 000	0.005
	100 %	0	1895 000 017	8.2	0.000 000	0.004
	100 %	+10	1895 000 014	5.6	0.000 000	0.003
	100 %	+30	1895 000 016	7.7	0.000 000	0.004
	100 %	+40	1895 000 015	6.6	0.000 000	0.003
	100 %	+50	1895 000 016	7.9	0.000 000	0.004
	Batt. Endpoint	+20	1895 000 018	9.3	0.000 000	0.005

- ▣ BandWidth: 40 MHz
- ▣ Voltage(100 %): 3.880 VDC
- ▣ Batt. Endpoint: 3.300 VDC
- ▣ LIMIT: Emission must remain in band

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
1867.5	100 %	+20(Ref)	1867 500 009	0.0	0.000 000	0.000
	100 %	-30	1867 500 018	8.2	0.000 000	0.004
	100 %	-20	1867 500 017	7.5	0.000 000	0.004
	100 %	-10	1867 500 018	8.1	0.000 000	0.004
	100 %	0	1867 500 017	8.0	0.000 000	0.004
	100 %	+10	1867 500 018	8.9	0.000 000	0.005
	100 %	+30	1867 500 018	8.2	0.000 000	0.004
	100 %	+40	1867 500 015	5.5	0.000 000	0.003
	100 %	+50	1867 500 019	9.5	0.000 001	0.005
	Batt. Endpoint	+20	1867 500 017	7.4	0.000 000	0.004
1897.5	100 %	+20(Ref)	1897 500 007	0.0	0.000 000	0.000
	100 %	-30	1897 500 014	7.1	0.000 000	0.004
	100 %	-20	1897 500 015	8.0	0.000 000	0.004
	100 %	-10	1897 500 015	8.5	0.000 000	0.004
	100 %	0	1897 500 016	9.2	0.000 000	0.005
	100 %	+10	1897 500 014	6.8	0.000 000	0.004
	100 %	+30	1897 500 016	8.6	0.000 000	0.005
	100 %	+40	1897 500 011	4.5	0.000 000	0.002
	100 %	+50	1897 500 014	7.1	0.000 000	0.004
	Batt. Endpoint	+20	1897 500 014	7.2	0.000 000	0.004

## 11. TEST PLOTS(ANT A\_n2)

Sub6 n2\_5 M\_PAR\_Mid\_BPSK\_FullRB





Sub6 n2\_5 M\_PAR\_Mid\_QPSK\_FullRB



Sub6 n2\_5 M\_PAR\_Mid\_16QAM\_FullRB



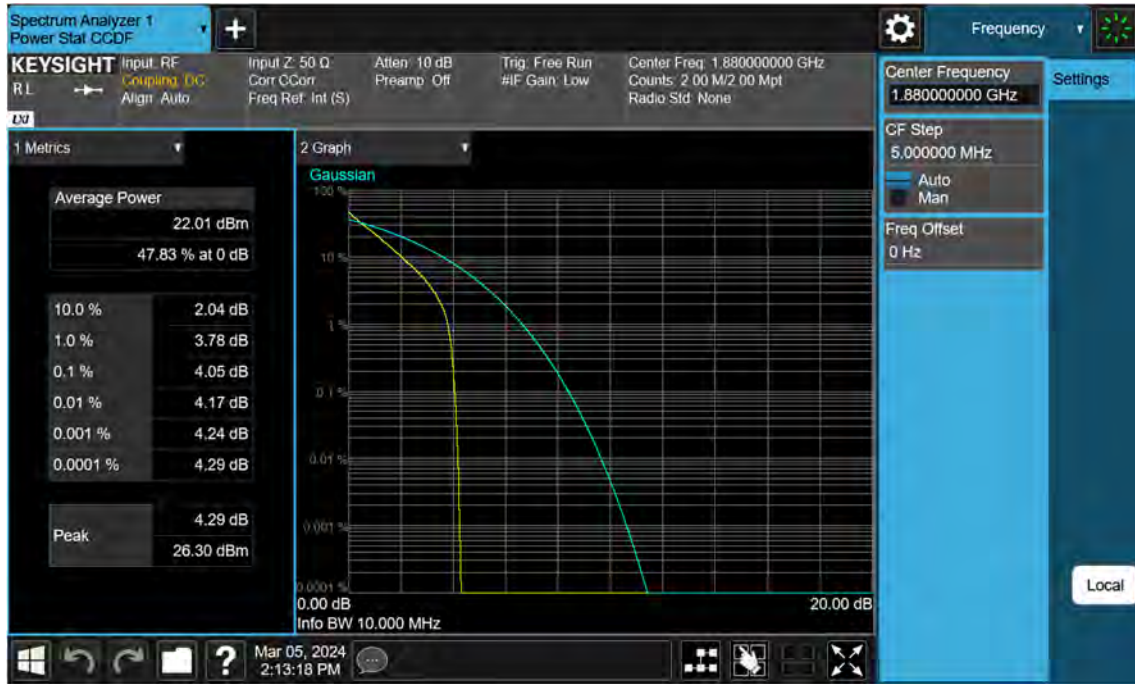
Sub6 n2\_5 M\_PAR\_Mid\_64QAM\_FullRB



Sub6 n2\_5 M\_PAR\_Mid\_256QAM\_FullRB



Sub6 n2\_10 M\_PAR\_Mid\_BPSK\_FullRB



Sub6 n2\_10 M\_PAR\_Mid\_QPSK\_FullRB



Sub6 n2\_10 M\_PAR\_Mid\_16QAM\_FullRB



Sub6 n2\_10 M\_PAR\_Mid\_64QAM\_FullRB





Sub6 n2\_10 M\_PAR\_Mid\_256QAM\_FullRB



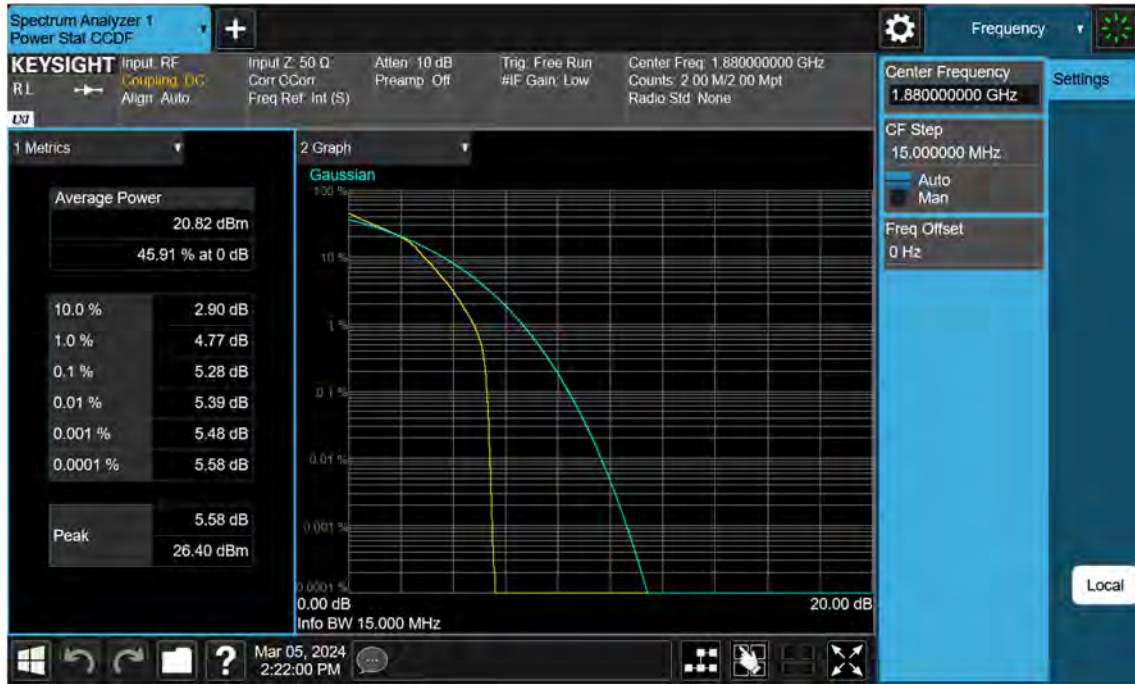
Sub6 n2\_15 M\_PAR\_Mid\_BPSK\_FullRB



Sub6 n2\_15 M\_PAR\_Mid\_QPSK\_FullRB



Sub6 n2\_15 M\_PAR\_Mid\_16QAM\_FullRB



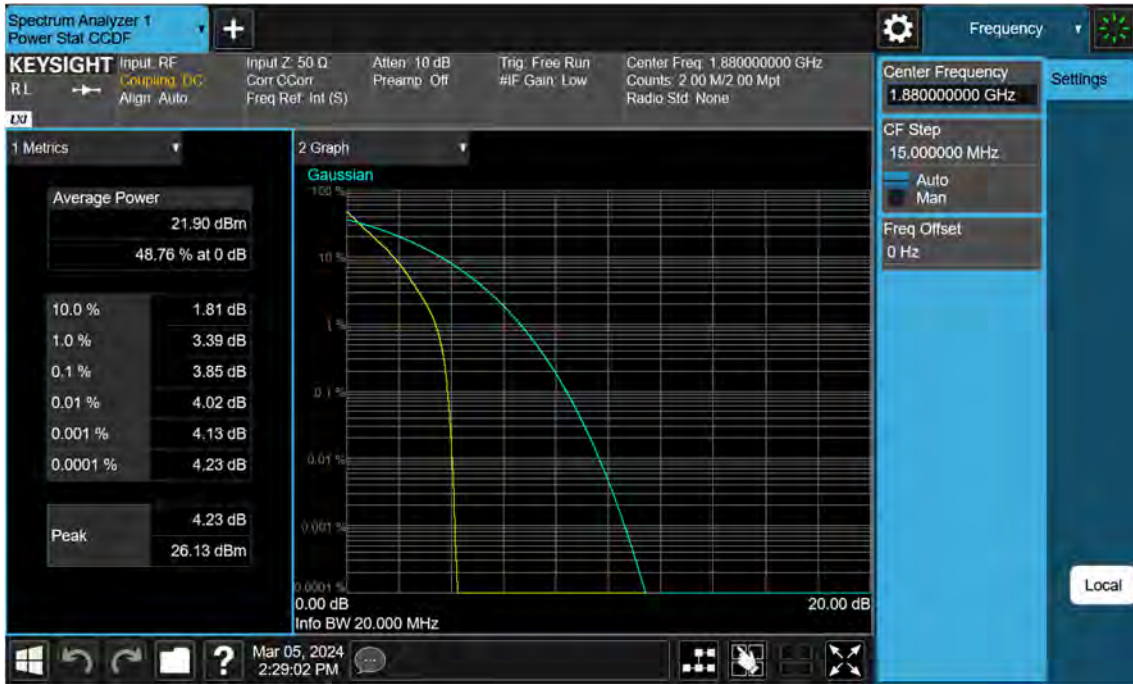
Sub6 n2\_15 M\_PAR\_Mid\_64QAM\_FullRB



Sub6 n2\_15 M\_PAR\_Mid\_256QAM\_FullRB



Sub6 n2\_20 M\_PAR\_Mid\_BPSK\_FullRB



Sub6 n2\_20 M\_PAR\_Mid\_QPSK\_FullRB





Sub6 n2\_20 M\_PAR\_Mid\_16QAM\_FullRB



Sub6 n2\_20 M\_PAR\_Mid\_64QAM\_FullRB



Sub6 n2\_20 M\_PAR\_Mid\_256QAM\_FullRB



Sub6 n2\_25 M\_PAR\_Mid\_BPSK\_FullRB



Sub6 n2\_25 M\_PAR\_Mid\_QPSK\_FullRB



Sub6 n2\_25 M\_PAR\_Mid\_16QAM\_FullRB



Sub6 n2\_25 M\_PAR\_Mid\_64QAM\_FullRB



Sub6 n2\_25 M\_PAR\_Mid\_256QAM\_FullRB

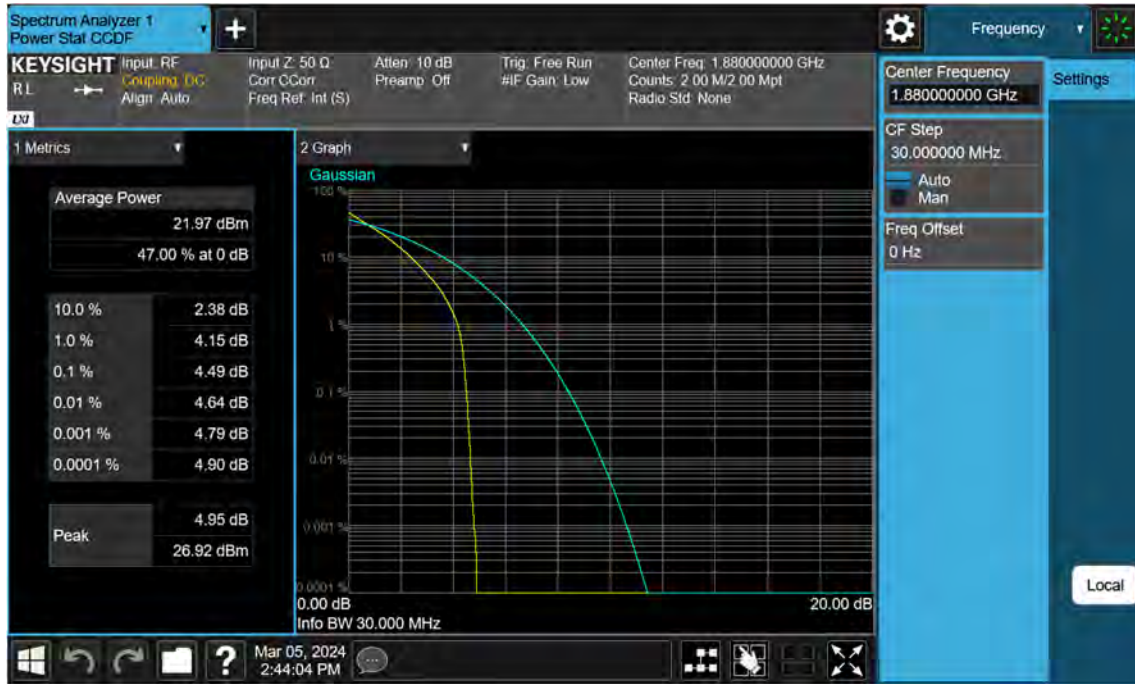




Sub6 n2\_30 M\_PAR\_Mid\_BPSK\_FullRB



Sub6 n2\_30 M\_PAR\_Mid\_QPSK\_FullRB



Sub6 n2\_30 M\_PAR\_Mid\_16QAM\_FullRB



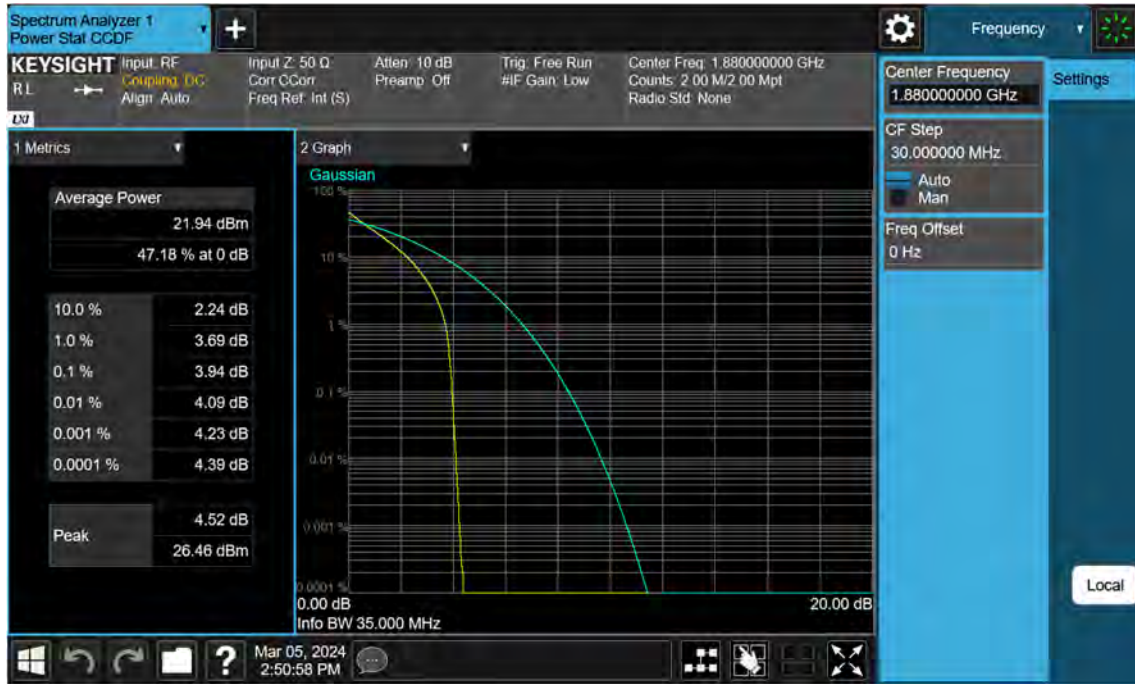
Sub6 n2\_30 M\_PAR\_Mid\_64QAM\_FullRB



Sub6 n2\_30 M\_PAR\_Mid\_256QAM\_FullRB



Sub6 n2\_35 M\_PAR\_Mid\_BPSK\_FullRB



Sub6 n2\_35 M\_PAR\_Mid\_QPSK\_FullRB



Sub6 n2\_35 M\_PAR\_Mid\_16QAM\_FullRB





Sub6 n2\_35 M\_PAR\_Mid\_64QAM\_FullRB



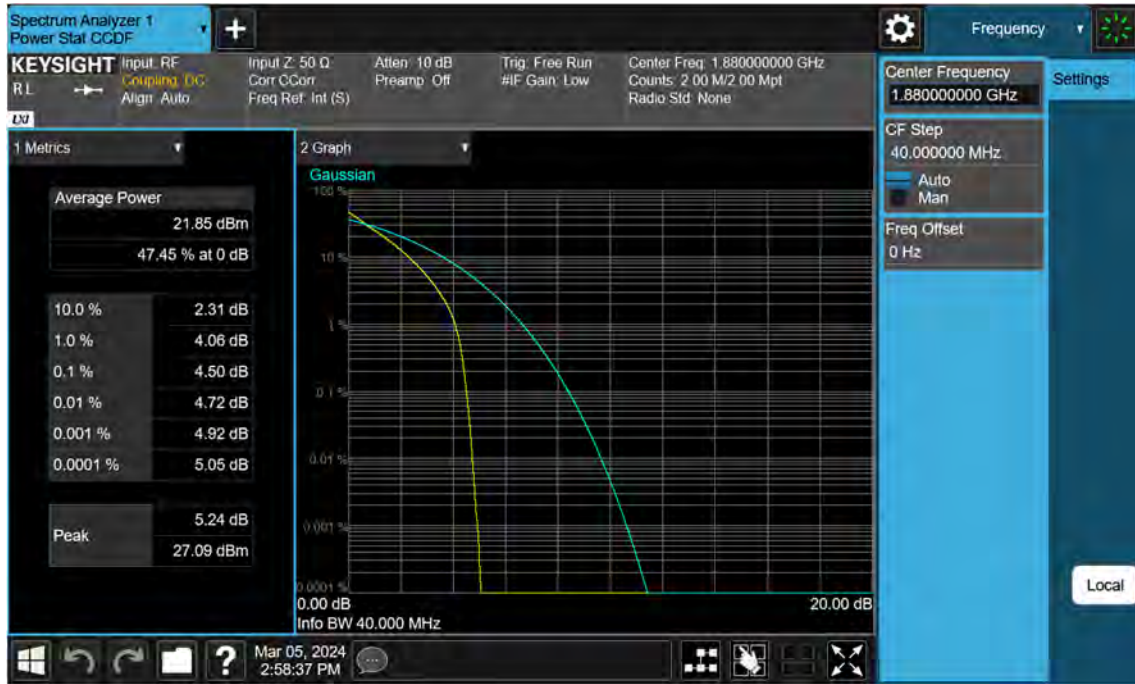
Sub6 n2\_35 M\_PAR\_Mid\_256QAM\_FullRB



Sub6 n2\_40 M\_PAR\_Mid\_BPSK\_FullRB



Sub6 n2\_40 M\_PAR\_Mid\_QPSK\_FullRB



Sub6 n2\_40 M\_PAR\_Mid\_16QAM\_FullRB



Sub6 n2\_40 M\_PAR\_Mid\_64QAM\_FullRB



Sub6 n2\_40 M\_PAR\_Mid\_256QAM\_FullRB



Sub6 n2\_5 M\_OBW\_Mid\_BPSK\_FullRB





Sub6 n2\_5 M\_OBW\_Mid\_QPSK\_FullRB



Sub6 n2\_5 M\_OBW\_Mid\_16QAM\_FullRB



Sub6 n2\_5 M\_OBW\_Mid\_64QAM\_FullRB



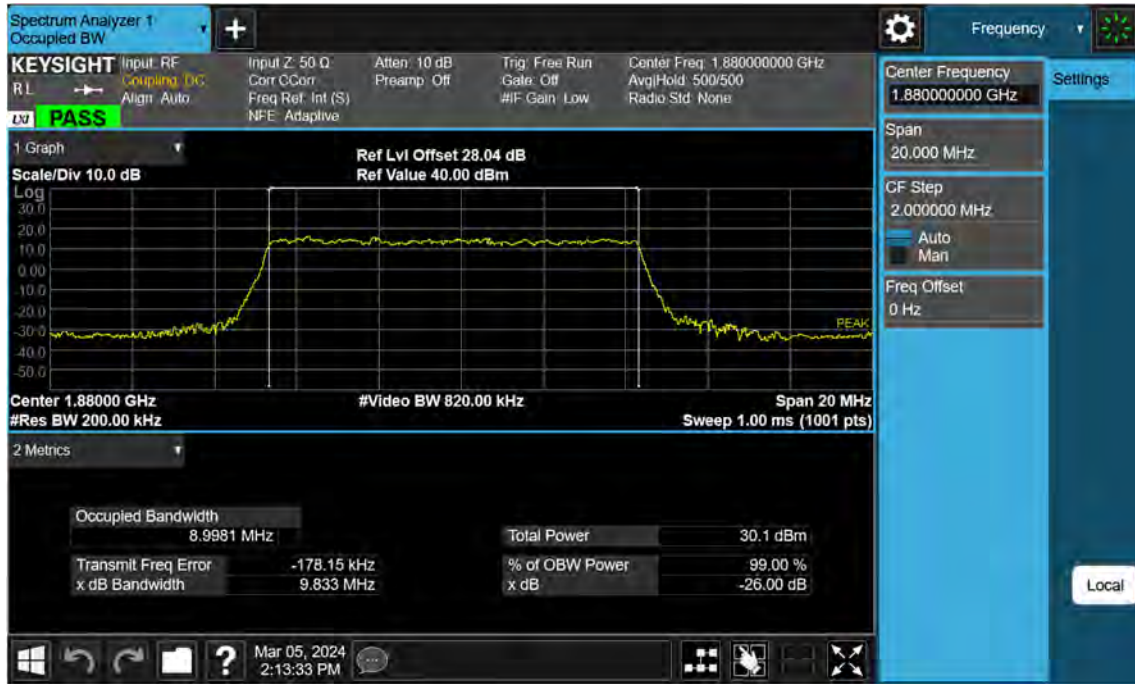
Sub6 n2\_5 M\_OBW\_Mid\_256QAM\_FullRB



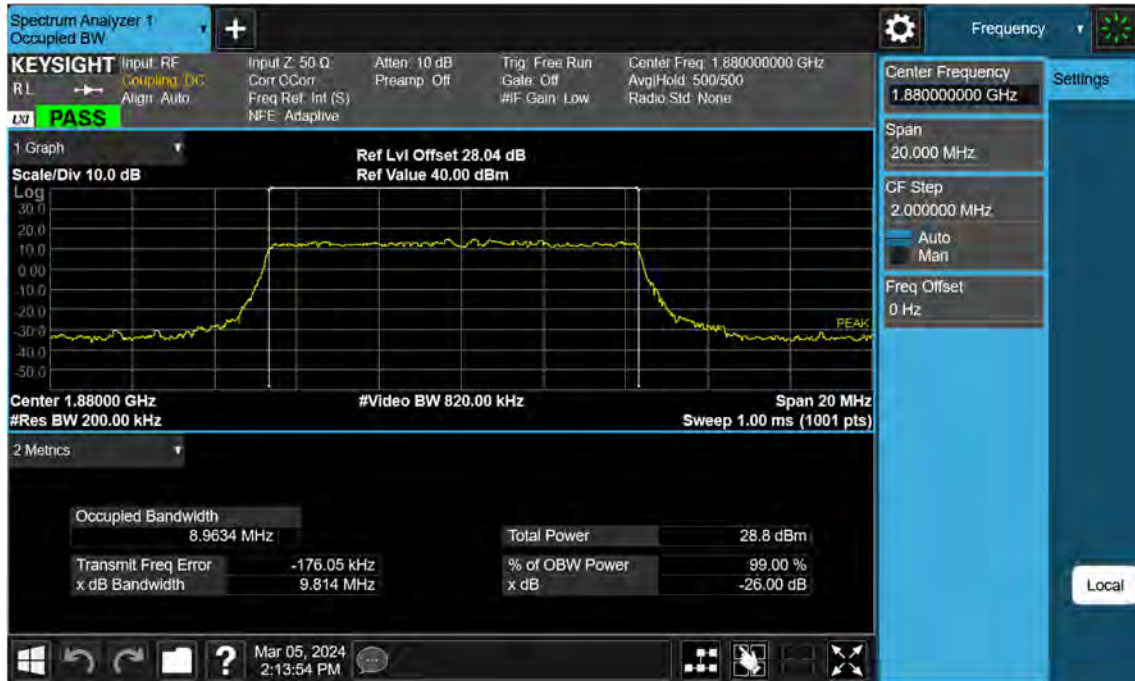
Sub6 n2\_10 M\_OBW\_Mid\_BPSK\_FullRB



Sub6 n2\_10 M\_OBW\_Mid\_QPSK\_FullRB



Sub6 n2\_10 M\_OBW\_Mid\_16QAM\_FullRB



Sub6 n2\_10 M\_OBW\_Mid\_64QAM\_FullRB





Sub6 n2\_10 M\_OBW\_Mid\_256QAM\_FullRB



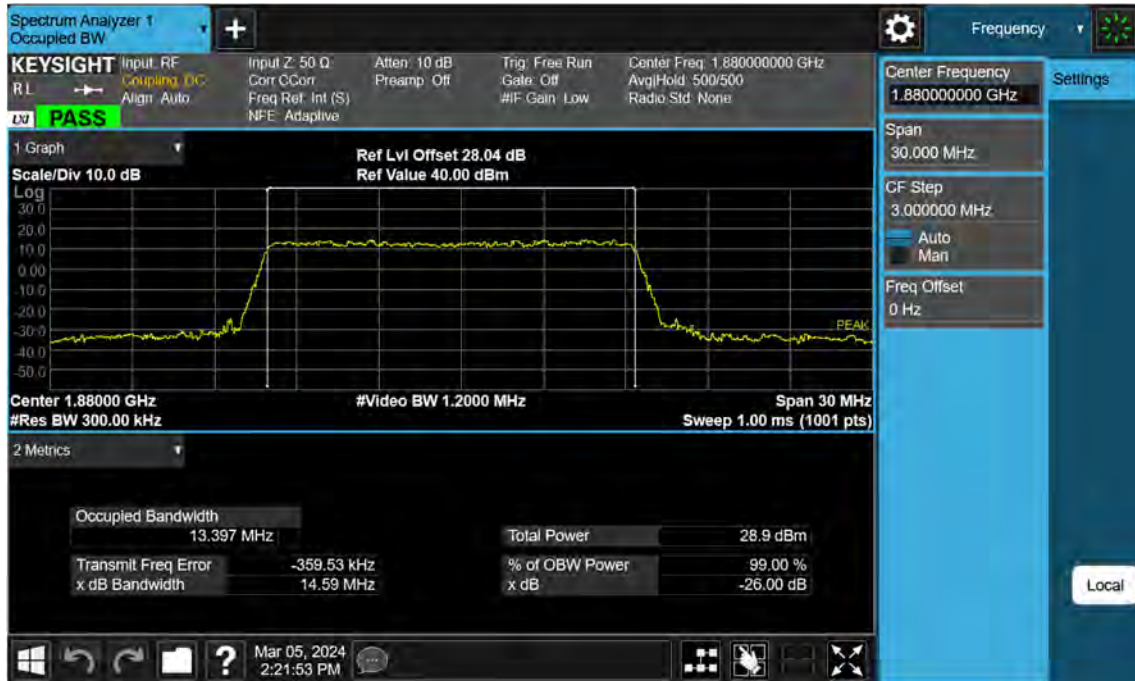
Sub6 n2\_15 M\_OBW\_Mid\_BPSK\_FullRB



Sub6 n2\_15 M\_OBW\_Mid\_QPSK\_FullRB



Sub6 n2\_15 M\_OBW\_Mid\_16QAM\_FullRB



Sub6 n2\_15 M\_OBW\_Mid\_64QAM\_FullRB



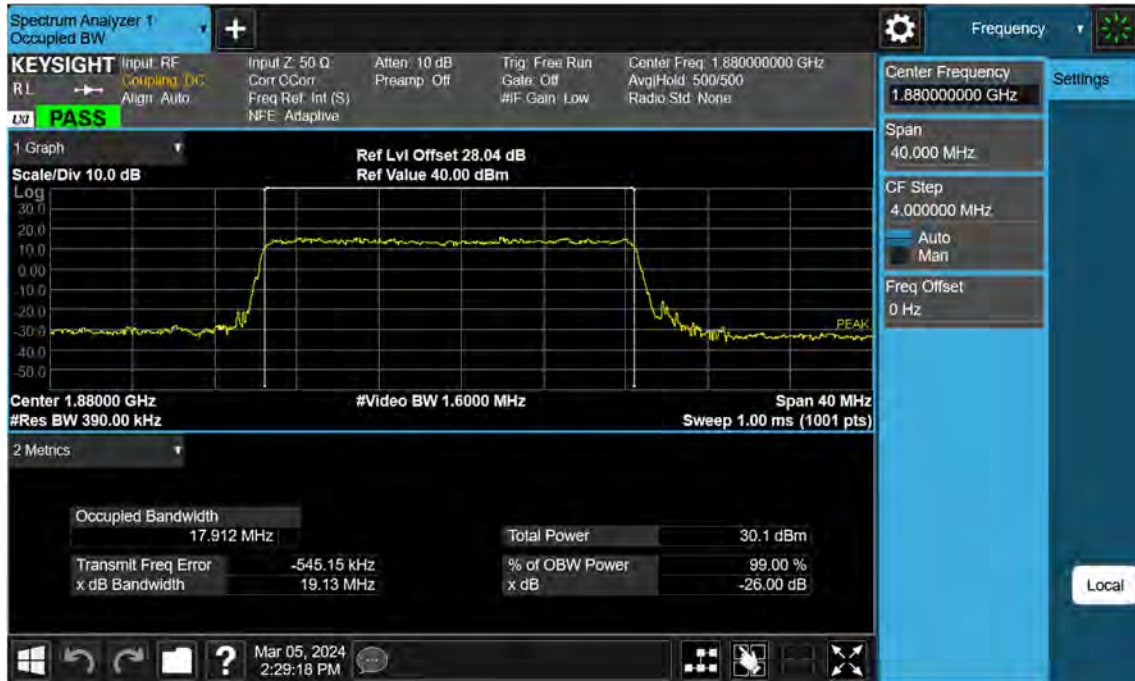
Sub6 n2\_15 M\_OBW\_Mid\_256QAM\_FullRB



Sub6 n2\_20 M\_OBW\_Mid\_BPSK\_FullRB

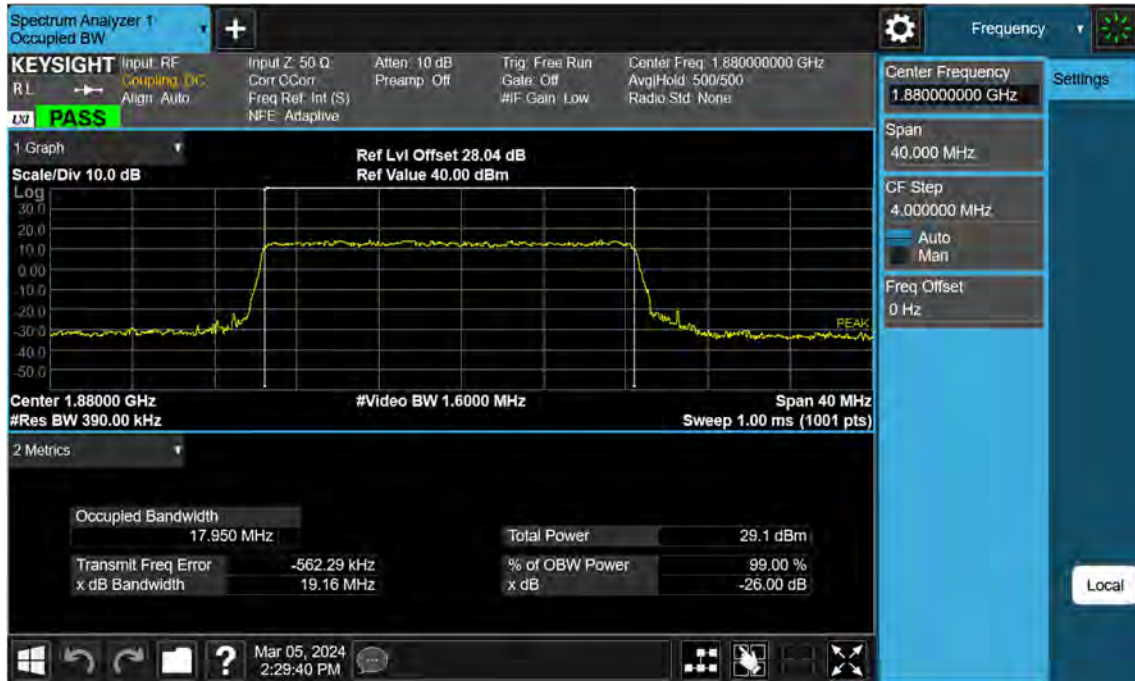


Sub6 n2\_20 M\_OBW\_Mid\_QPSK\_FullRB

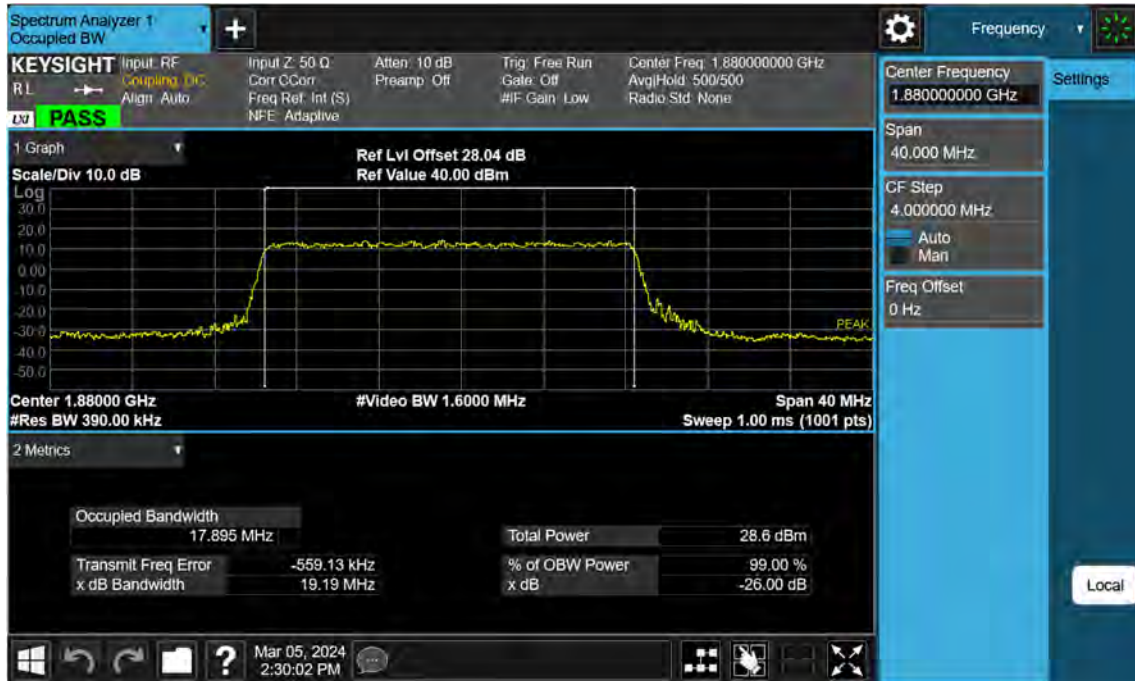




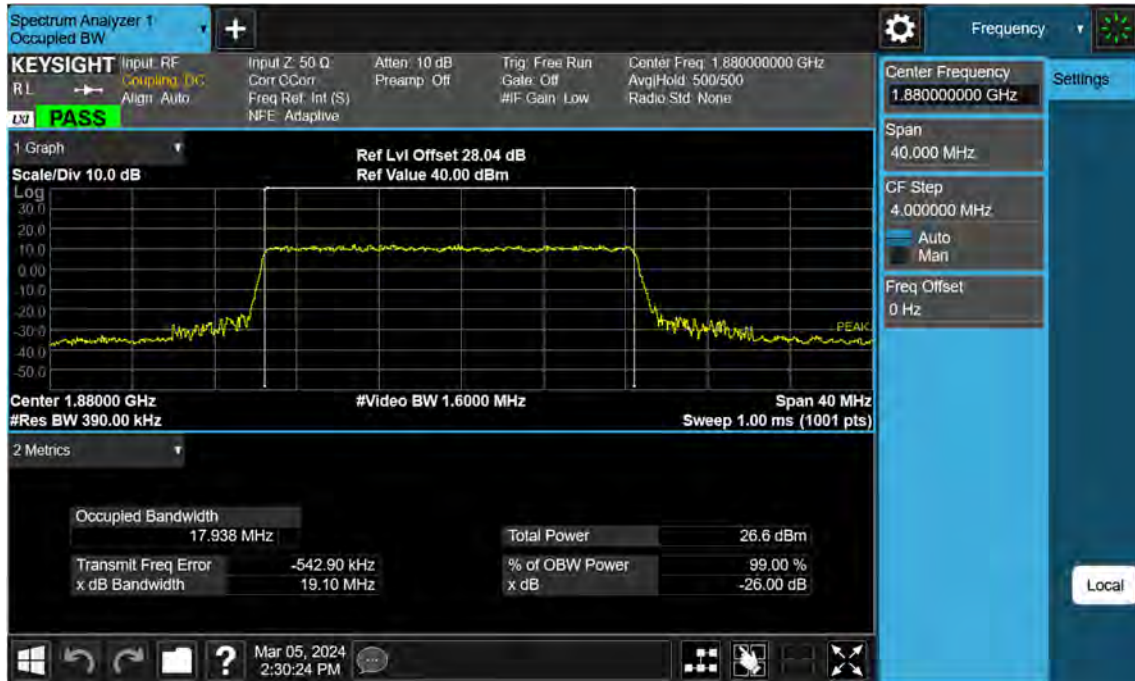
Sub6 n2\_20 M\_OBW\_Mid\_16QAM\_FullRB



Sub6 n2\_20 M\_OBW\_Mid\_64QAM\_FullRB



Sub6 n2\_20 M\_OBW\_Mid\_256QAM\_FullRB



Sub6 n2\_25 M\_OBW\_Mid\_BPSK\_FullRB



Sub6 n2\_25 M\_OBW\_Mid\_QPSK\_FullRB



Sub6 n2\_25 M\_OBW\_Mid\_16QAM\_FullRB



Sub6 n2\_25 M\_OBW\_Mid\_64QAM\_FullRB

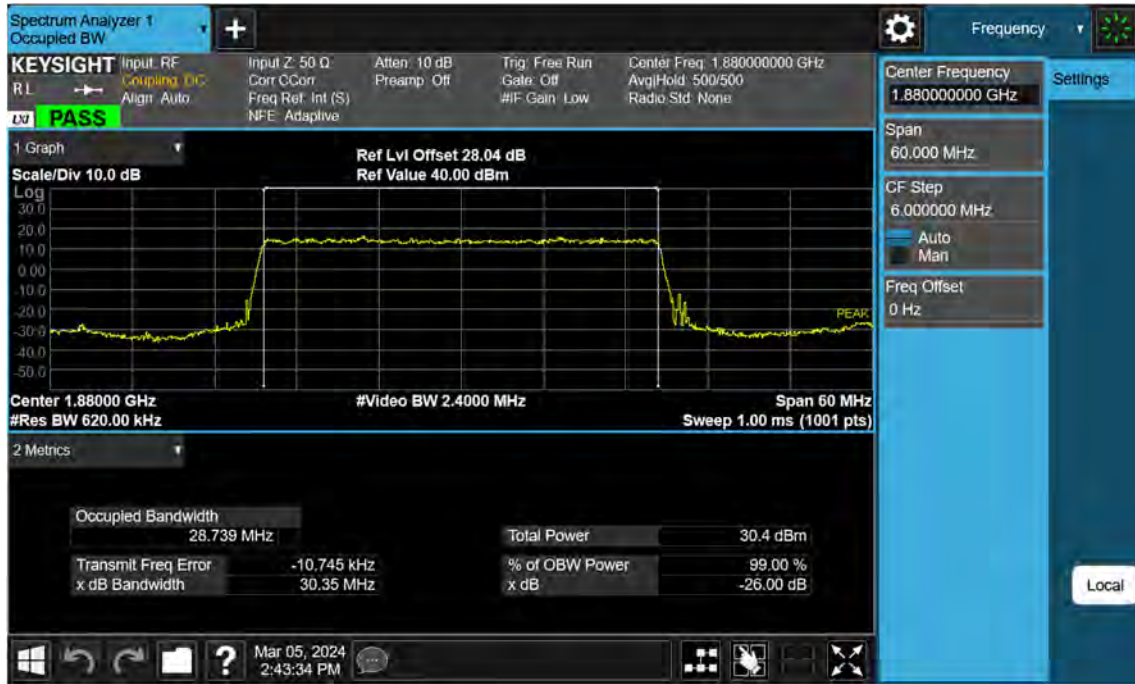


Sub6 n2\_25 M\_OBW\_Mid\_256QAM\_FullRB





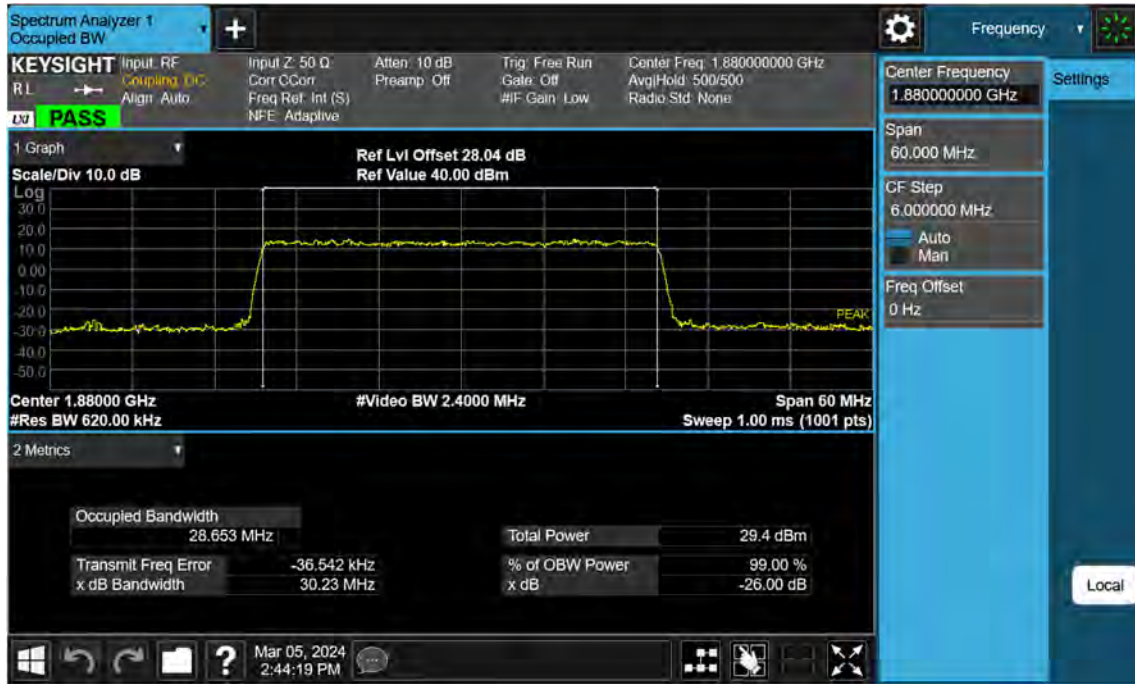
Sub6 n2\_30 M\_OBW\_Mid\_BPSK\_FullRB



Sub6 n2\_30 M\_OBW\_Mid\_QPSK\_FullRB



Sub6 n2\_30 M\_OBW\_Mid\_16QAM\_FullRB



Sub6 n2\_30 M\_OBW\_Mid\_64QAM\_FullRB



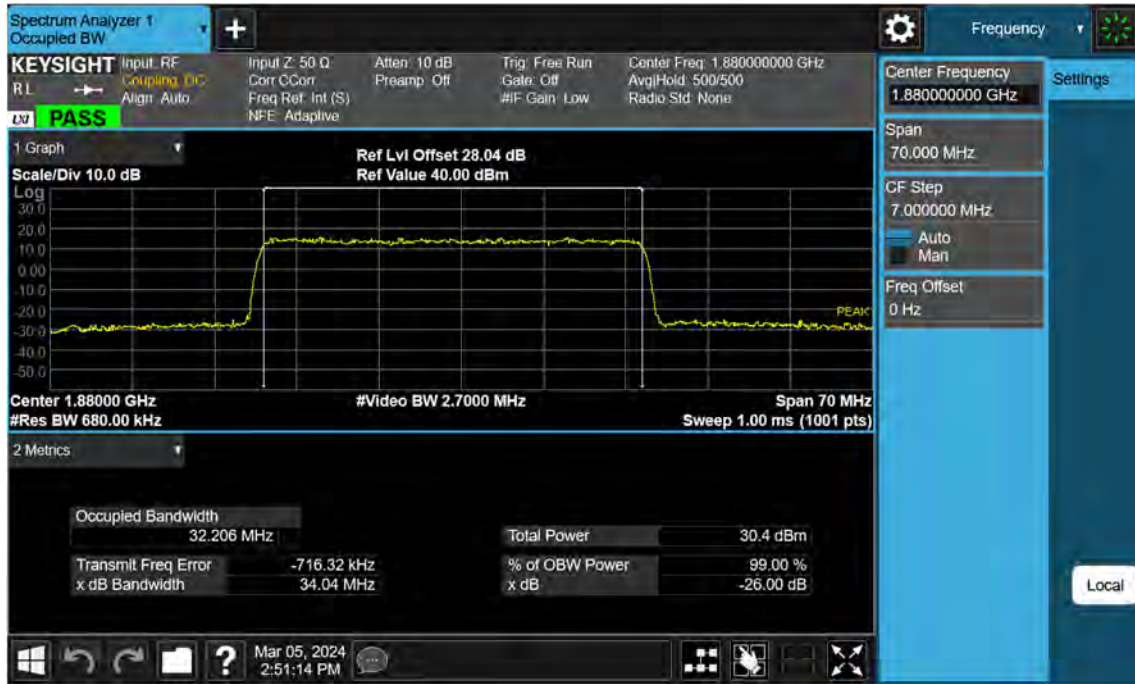
Sub6 n2\_30 M\_OBW\_Mid\_256QAM\_FullRB



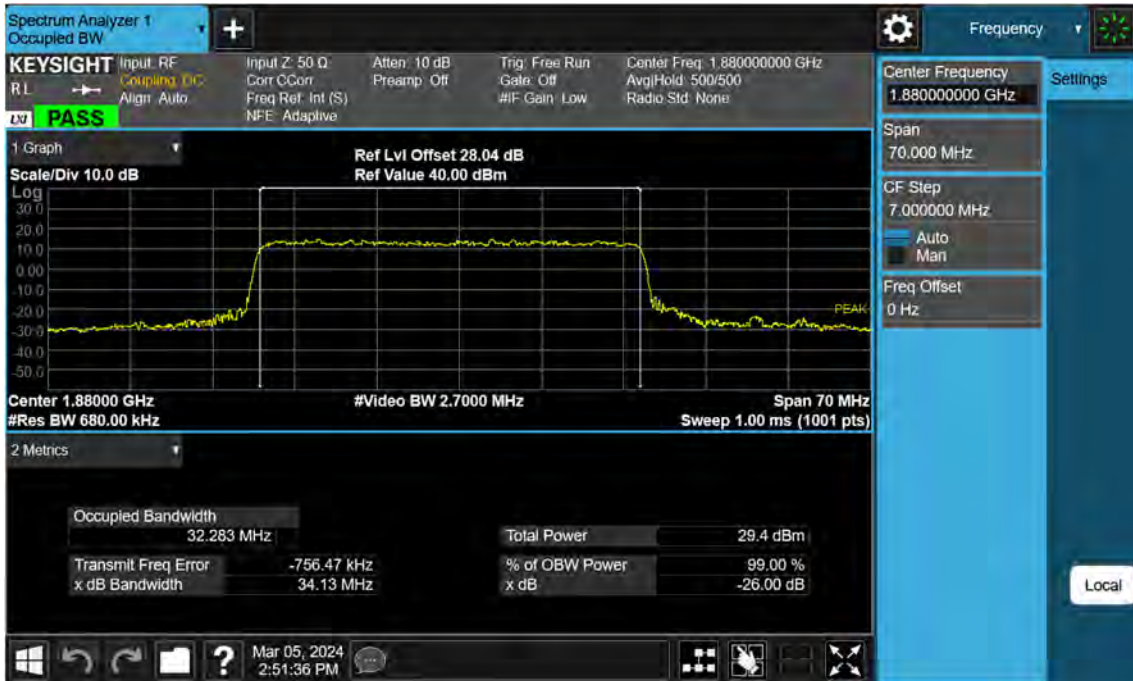
Sub6 n2\_35 M\_OBW\_Mid\_BPSK\_FullRB



Sub6 n2\_35 M\_OBW\_Mid\_QPSK\_FullRB



Sub6 n2\_35 M\_OBW\_Mid\_16QAM\_FullRB





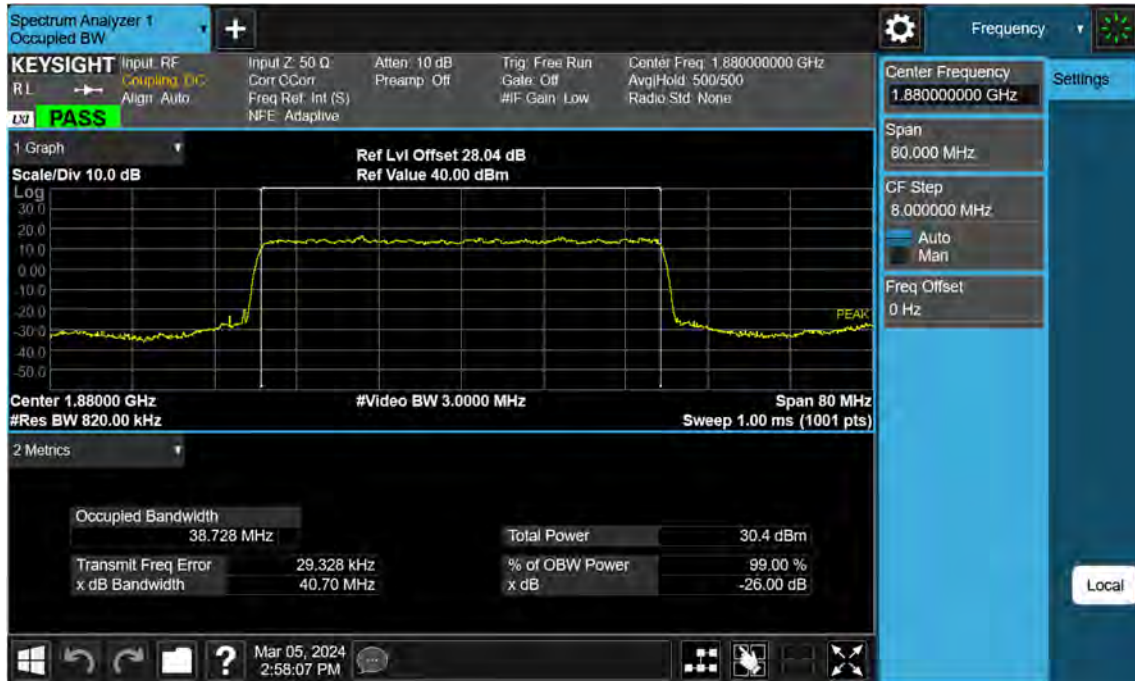
Sub6 n2\_35 M\_OBW\_Mid\_64QAM\_FullRB



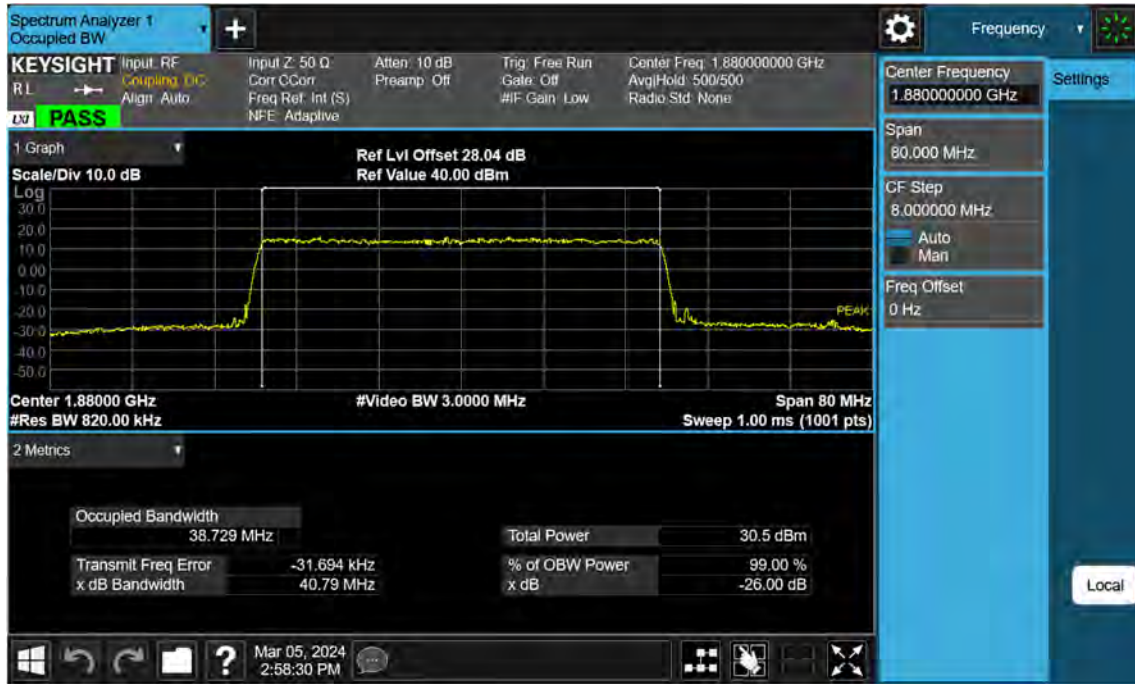
Sub6 n2\_35 M\_OBW\_Mid\_256QAM\_FullRB



Sub6 n2\_40 M\_OBW\_Mid\_BPSK\_FullRB



Sub6 n2\_40 M\_OBW\_Mid\_QPSK\_FullRB



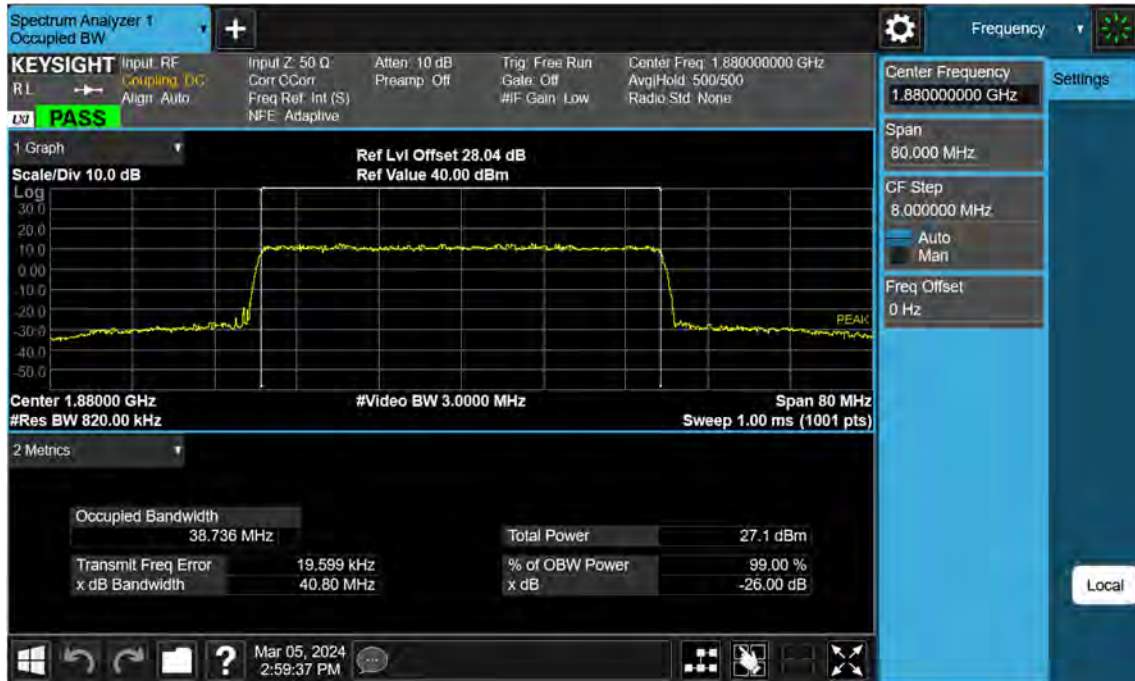
Sub6 n2\_40 M\_OBW\_Mid\_16QAM\_FullRB



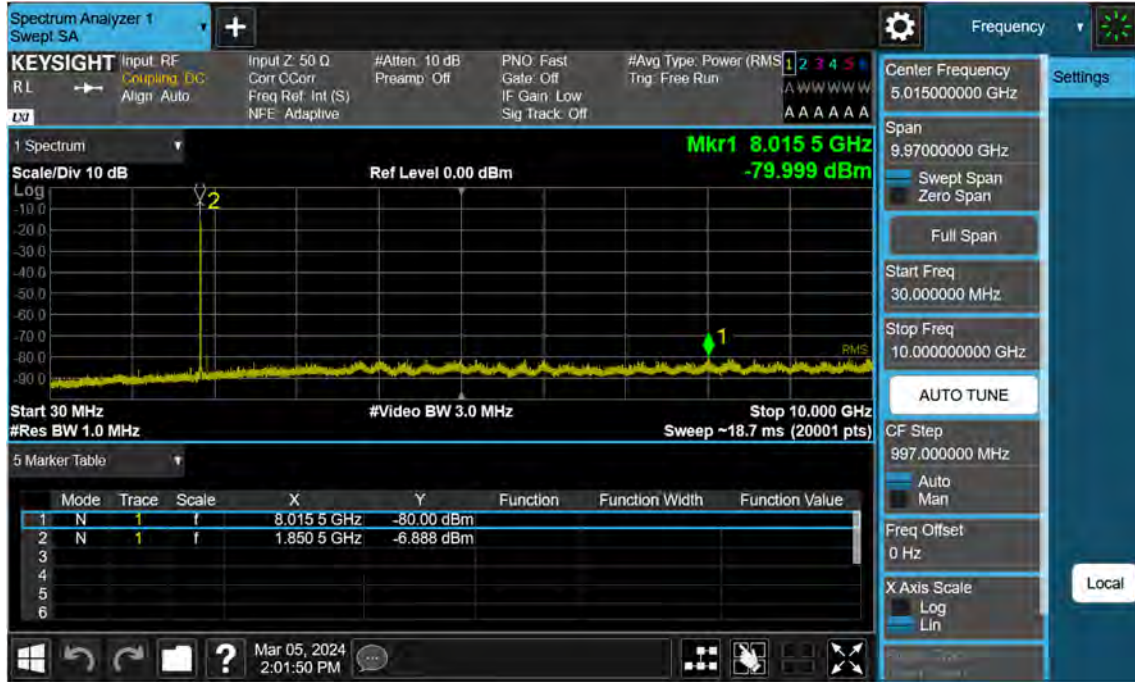
Sub6 n2\_40 M\_OBW\_Mid\_64QAM\_FullRB



Sub6 n2\_40 M\_OBW\_Mid\_256QAM\_FullRB

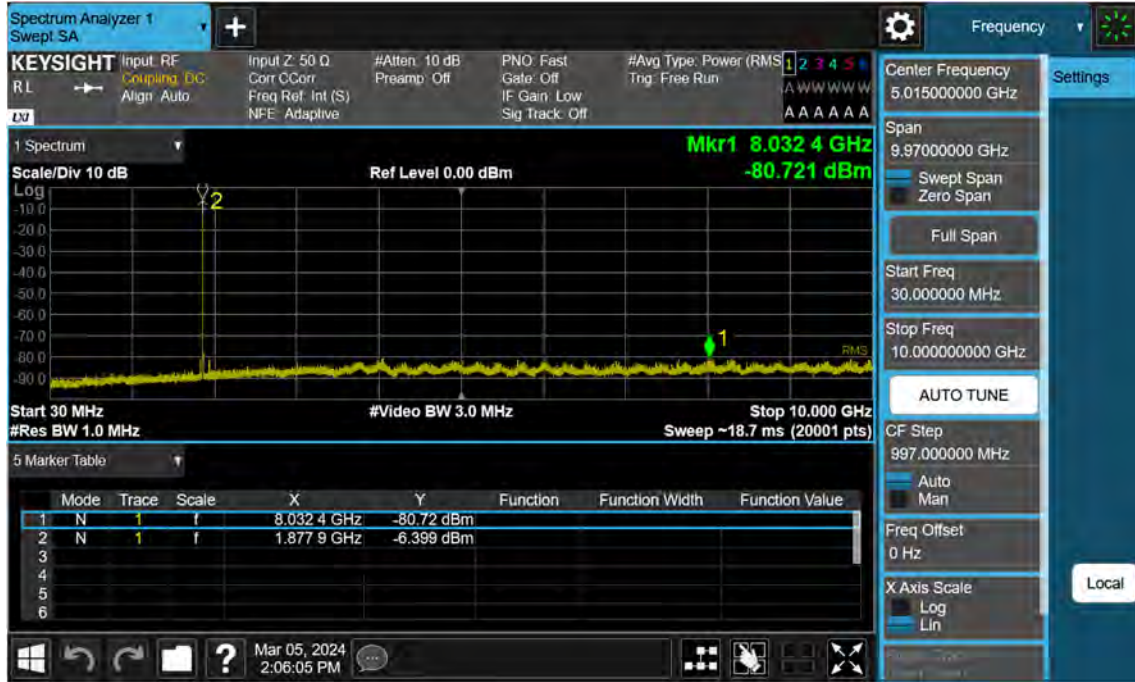


Sub6 n2\_5 M\_Conducted Spurious(30 M-10 G)\_Low\_BPSK\_1RB

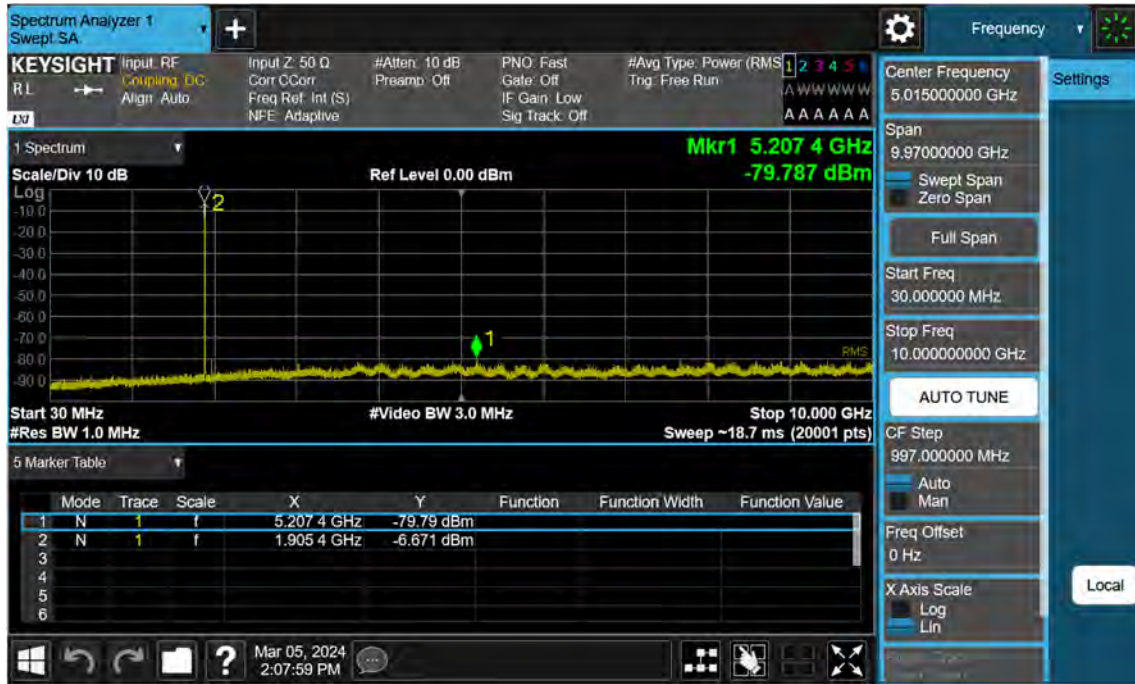




Sub6 n2\_5 M\_Conducted Spurious(30 M-10 G)\_Mid\_BPSK\_FullRB



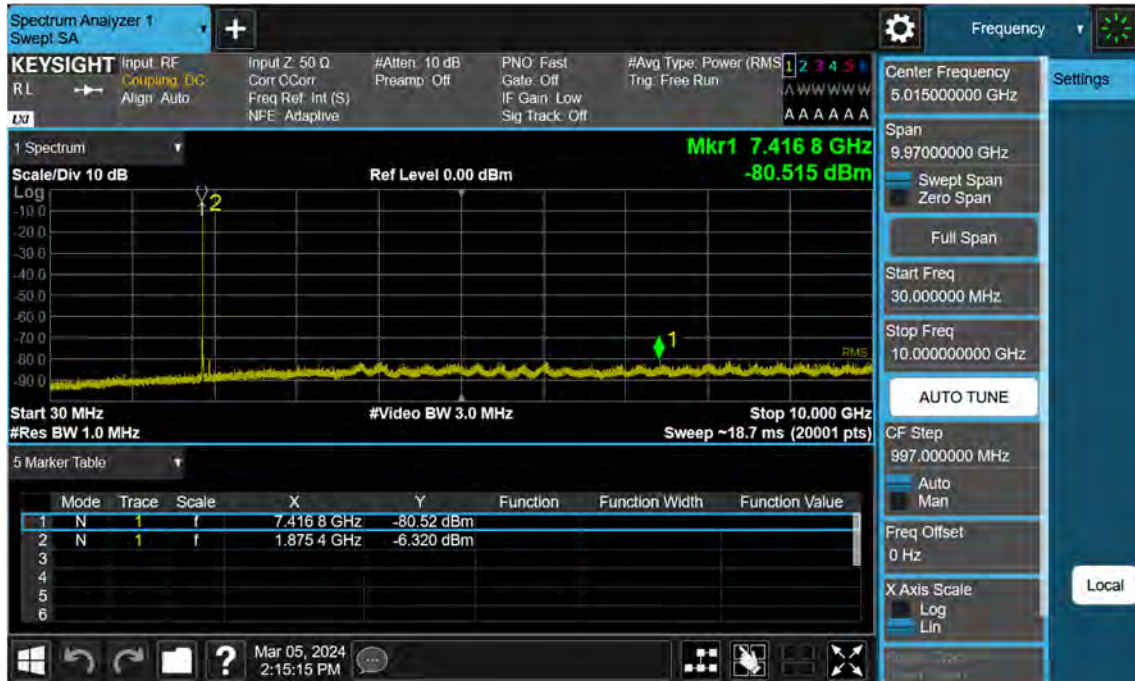
Sub6 n2\_5 M\_Conducted Spurious(30 M-10 G)\_High\_BPSK\_1RB



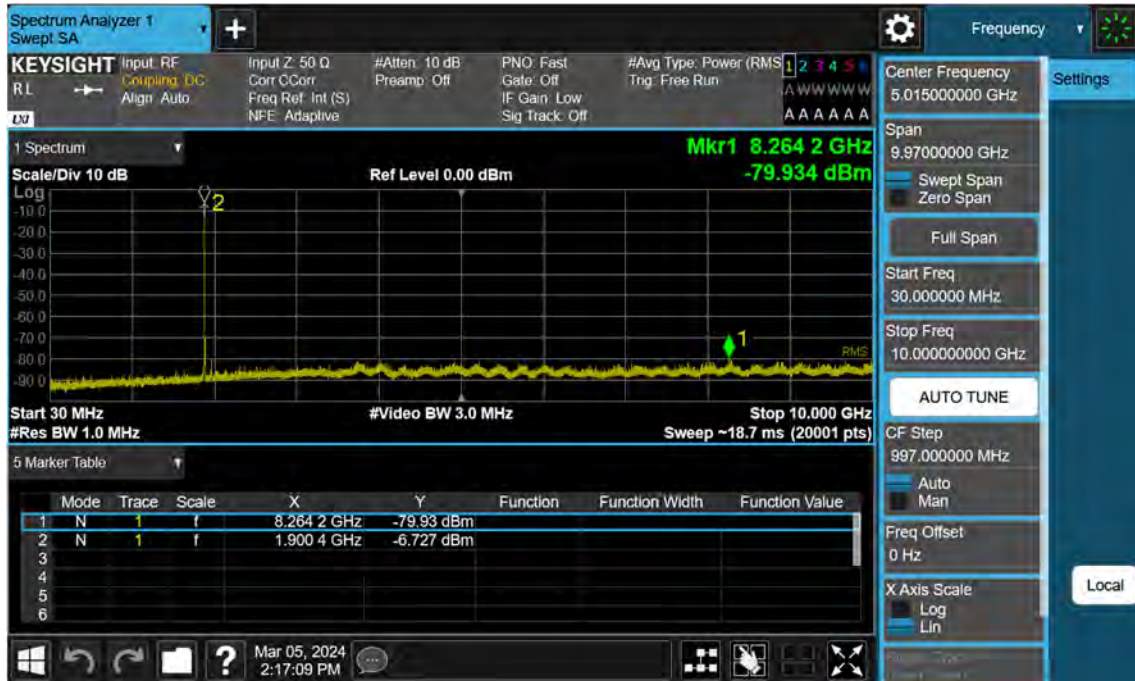
Sub6 n2\_10 M\_Conducted Spurious(30 M-10 G)\_Low\_BPSK\_1RB



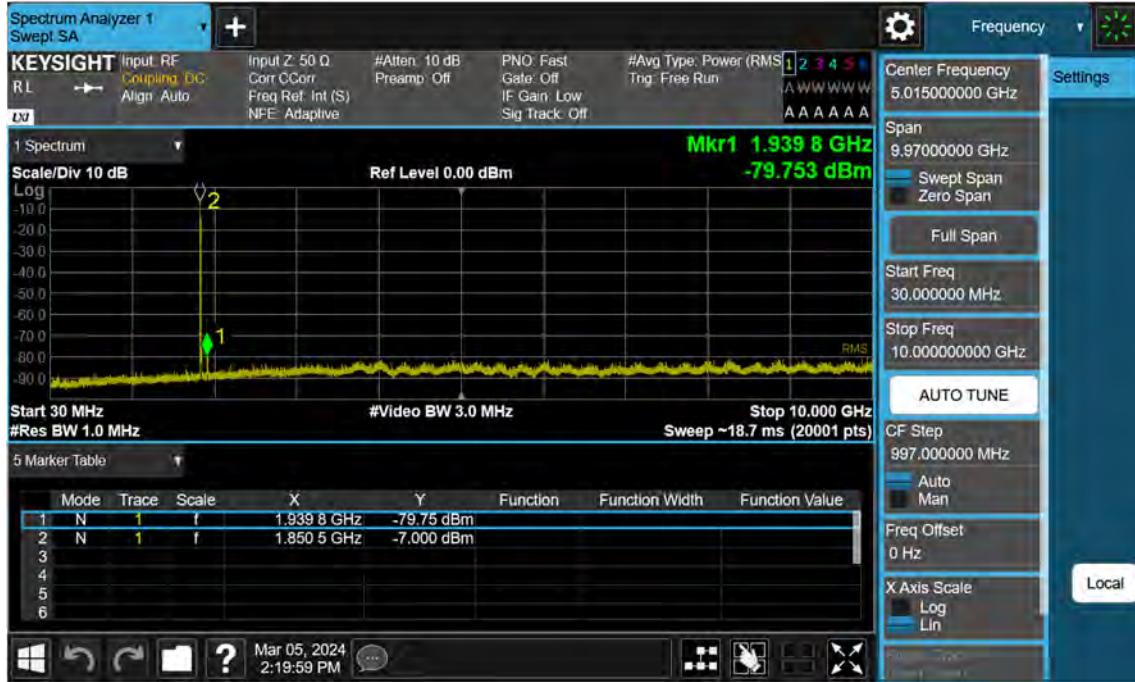
Sub6 n2\_10 M\_Conducted Spurious(30 M-10 G)\_Mid\_BPSK\_FullRB



Sub6 n2\_10 M\_Conducted Spurious(30 M-10 G)\_High\_BPSK\_1RB



Sub6 n2\_15 M\_Conducted Spurious(30 M-10 G)\_Low\_BPSK\_1RB



Sub6 n2\_15 M\_Conducted Spurious(30 M-10 G)\_Mid\_BPSK\_FullRB

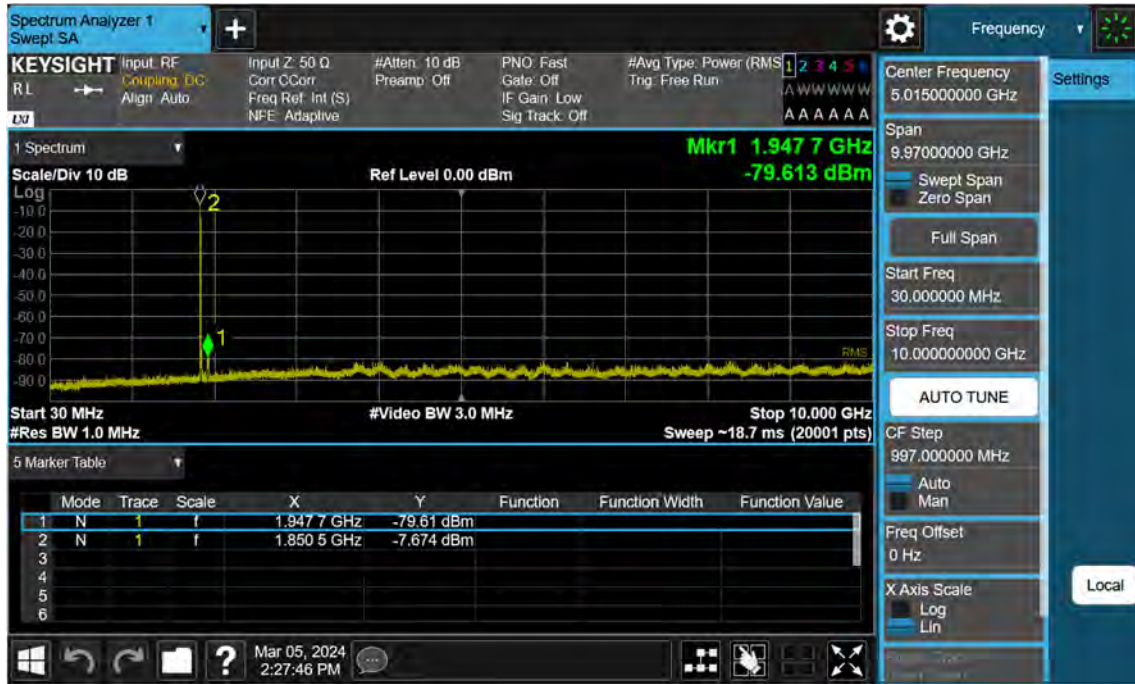


Sub6 n2\_15 M\_Conducted Spurious(30 M-10 G)\_High\_BPSK\_1RB





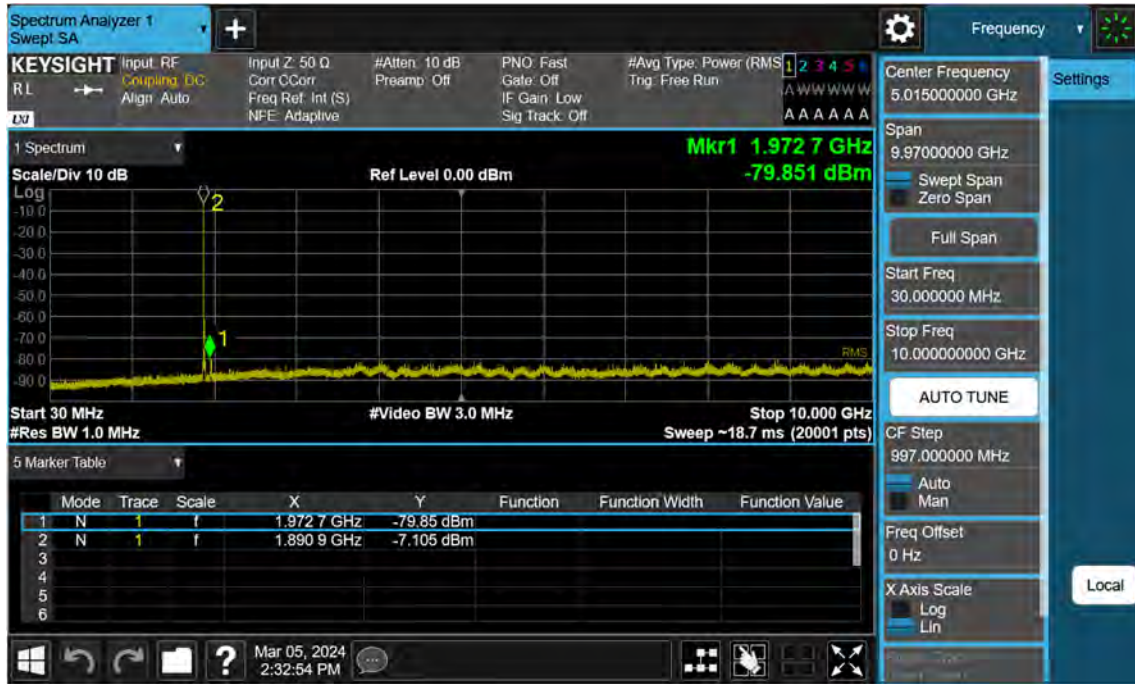
Sub6 n2\_20 M\_Conducted Spurious(30 M-10 G)\_Low\_BPSK\_1RB



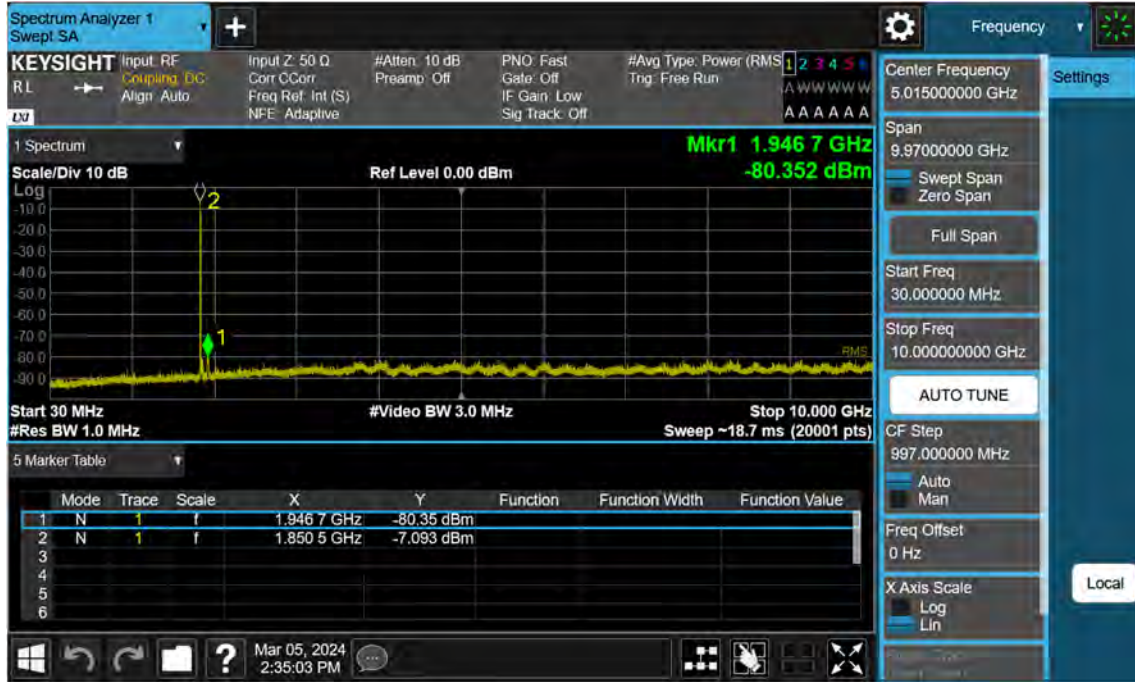
Sub6 n2\_20 M\_Conducted Spurious(30 M-10 G)\_Mid\_BPSK\_FullRB



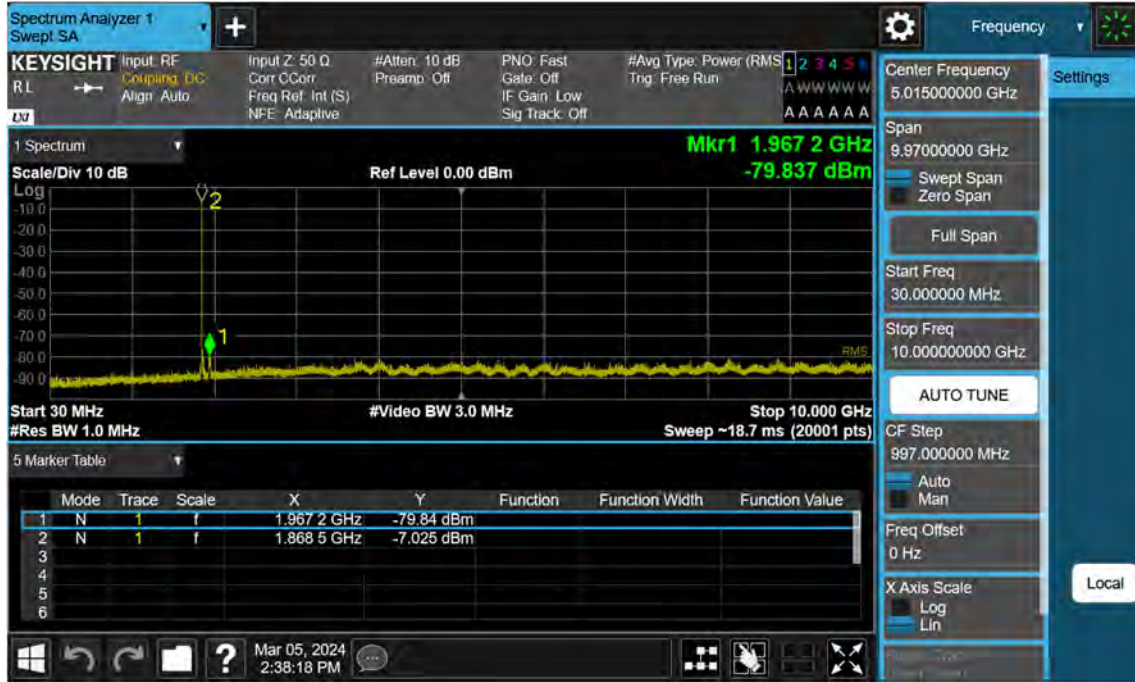
Sub6 n2\_20 M\_Conducted Spurious(30 M-10 G)\_High\_BPSK\_1RB



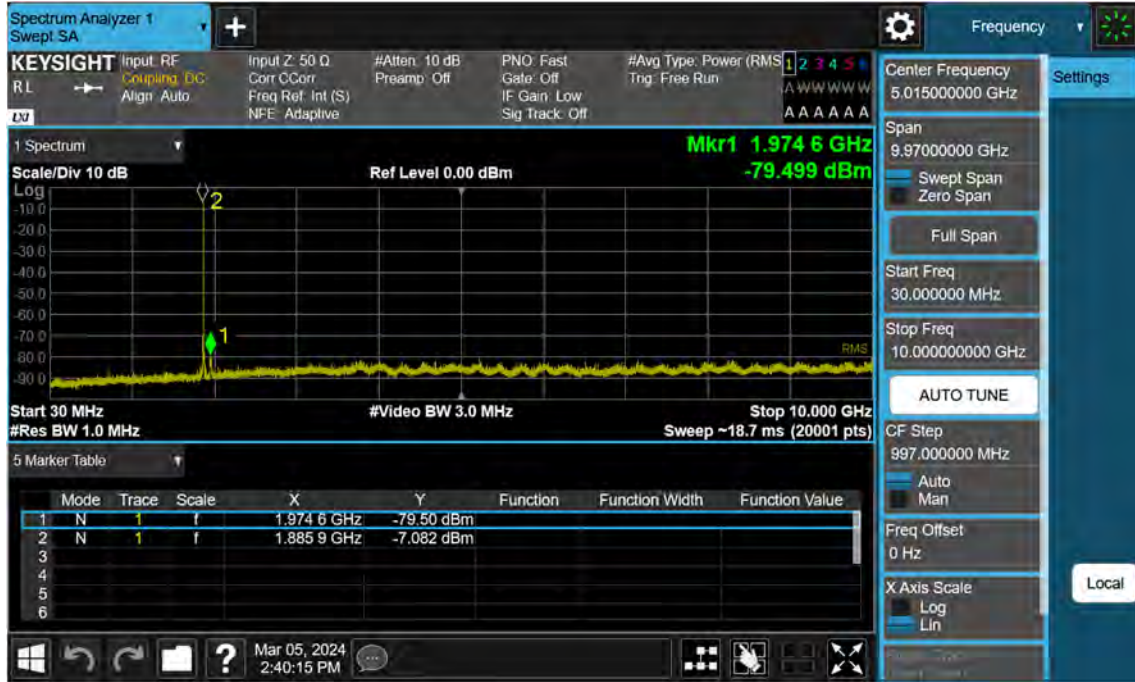
Sub6 n2\_25 M\_Conducted Spurious(30 M-10 G)\_Low\_BPSK\_1RB



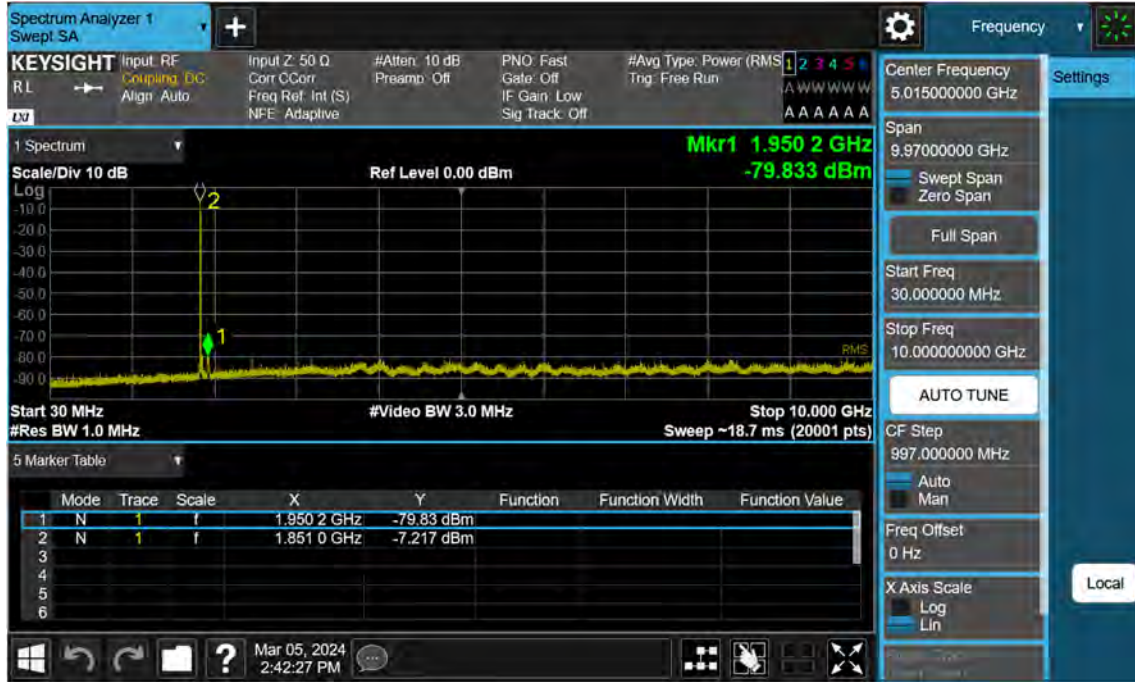
Sub6 n2\_25 M\_Conducted Spurious(30 M-10 G)\_Mid\_BPSK\_FullRB



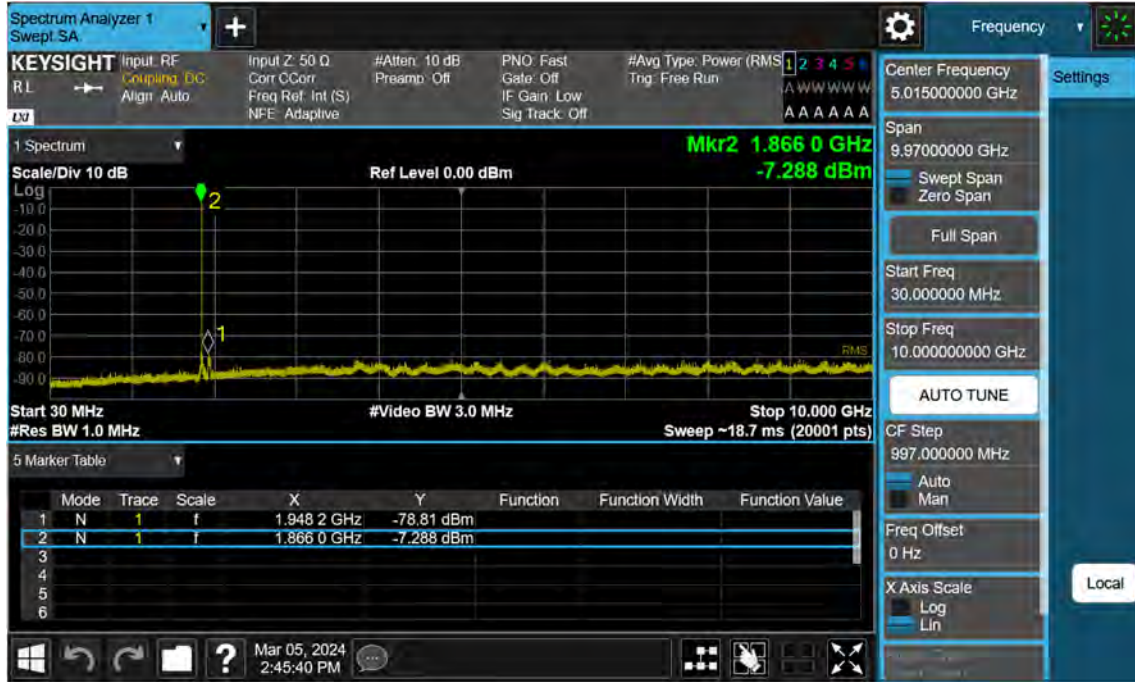
Sub6 n2\_25 M\_Conducted Spurious(30 M-10 G)\_High\_BPSK\_1RB



Sub6 n2\_30 M\_Conducted Spurious(30 M-10 G)\_Low\_BPSK\_1RB

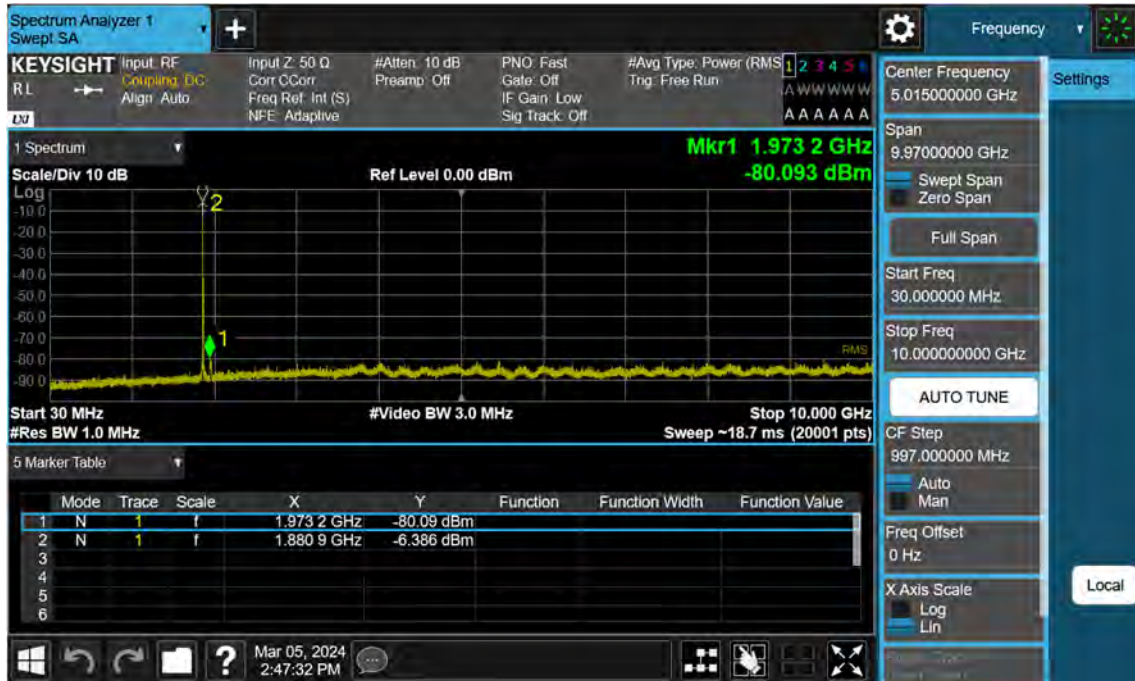


Sub6 n2\_30 M\_Conducted Spurious(30 M-10 G)\_Mid\_BPSK\_FullRB





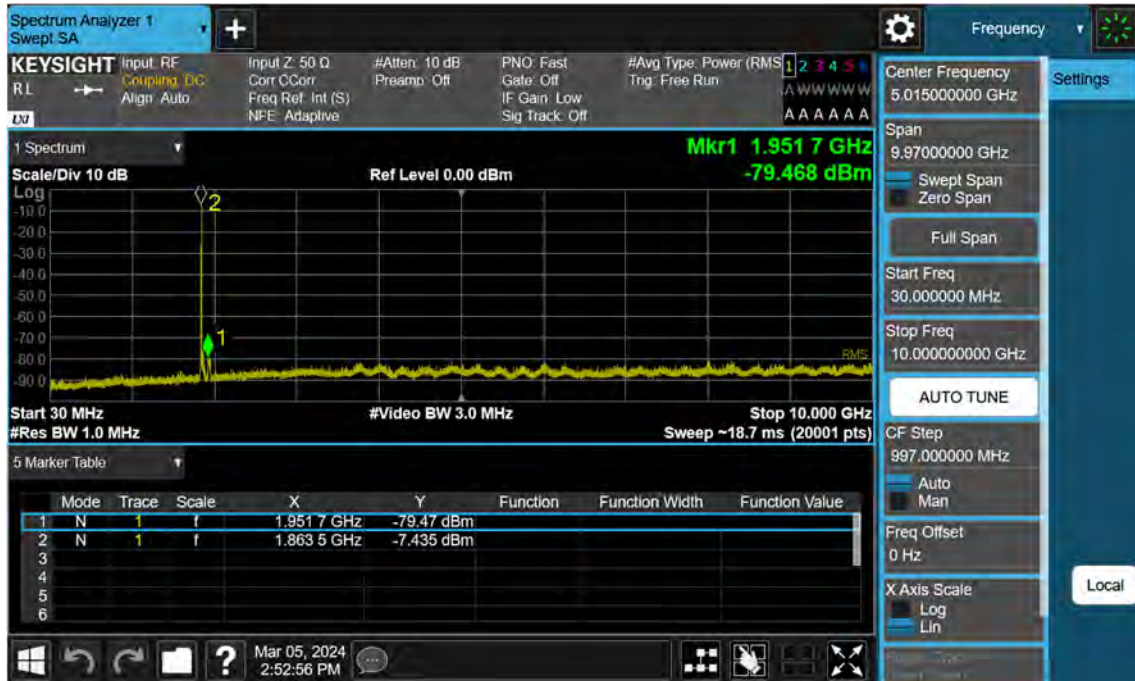
Sub6 n2\_30 M\_Conducted Spurious(30 M-10 G)\_High\_BPSK\_1RB



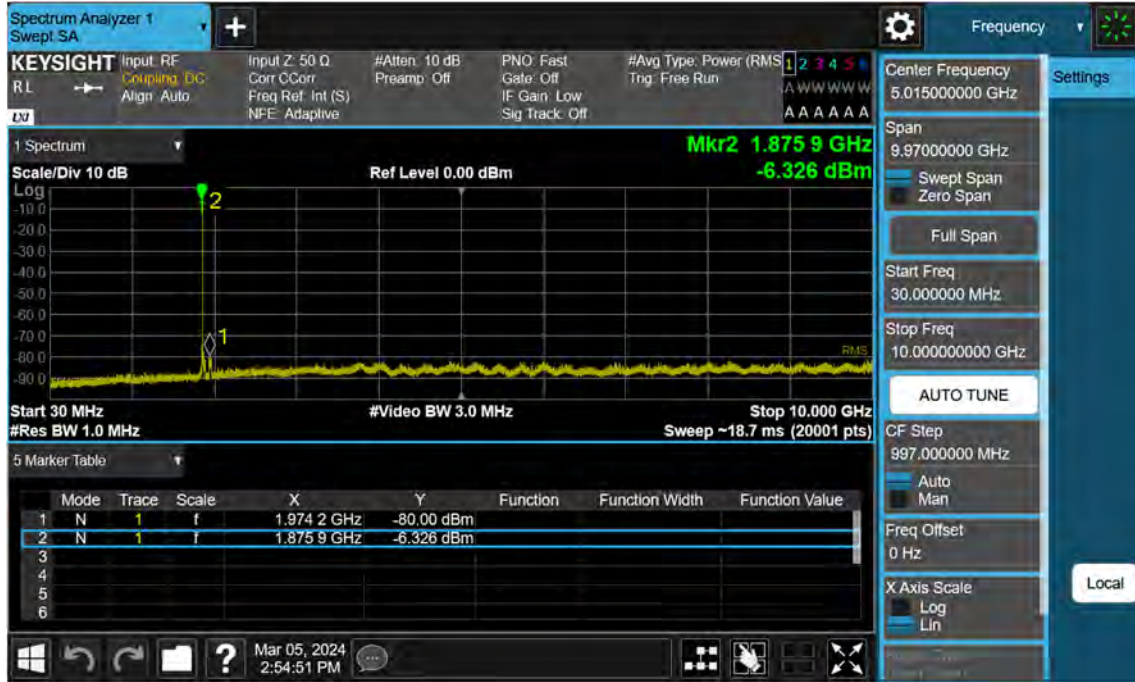
Sub6 n2\_35 M\_Conducted Spurious(30 M-10 G)\_Low\_BPSK\_1RB



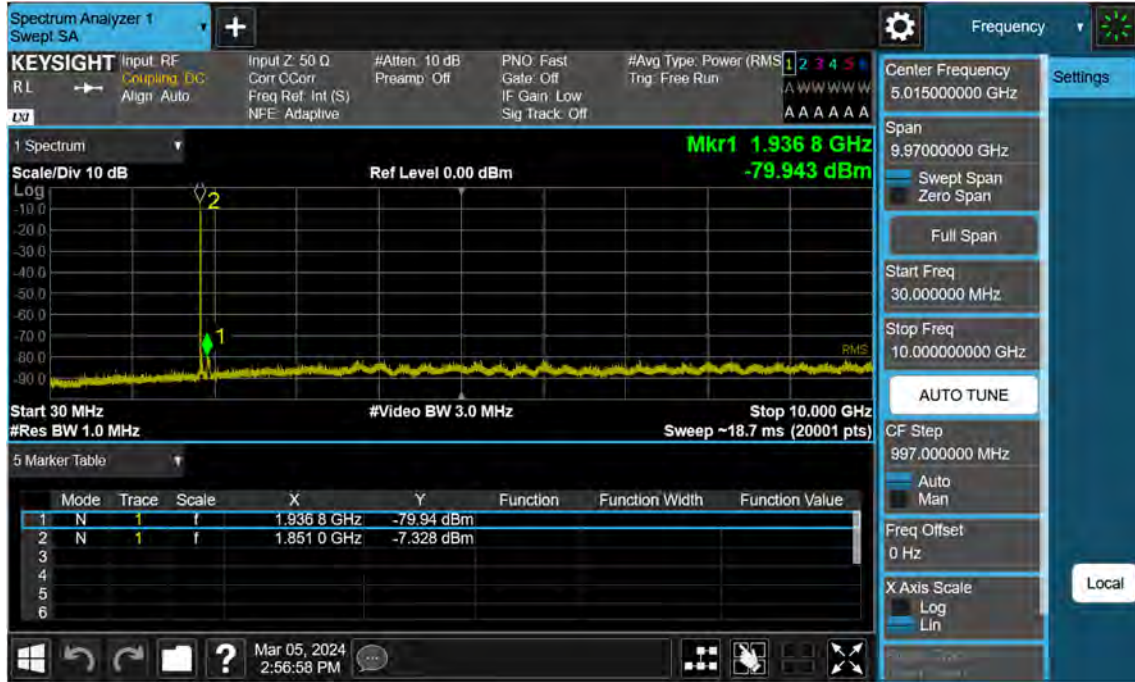
Sub6 n2\_35 M\_Conducted Spurious(30 M-10 G)\_Mid\_BPSK\_FullRB



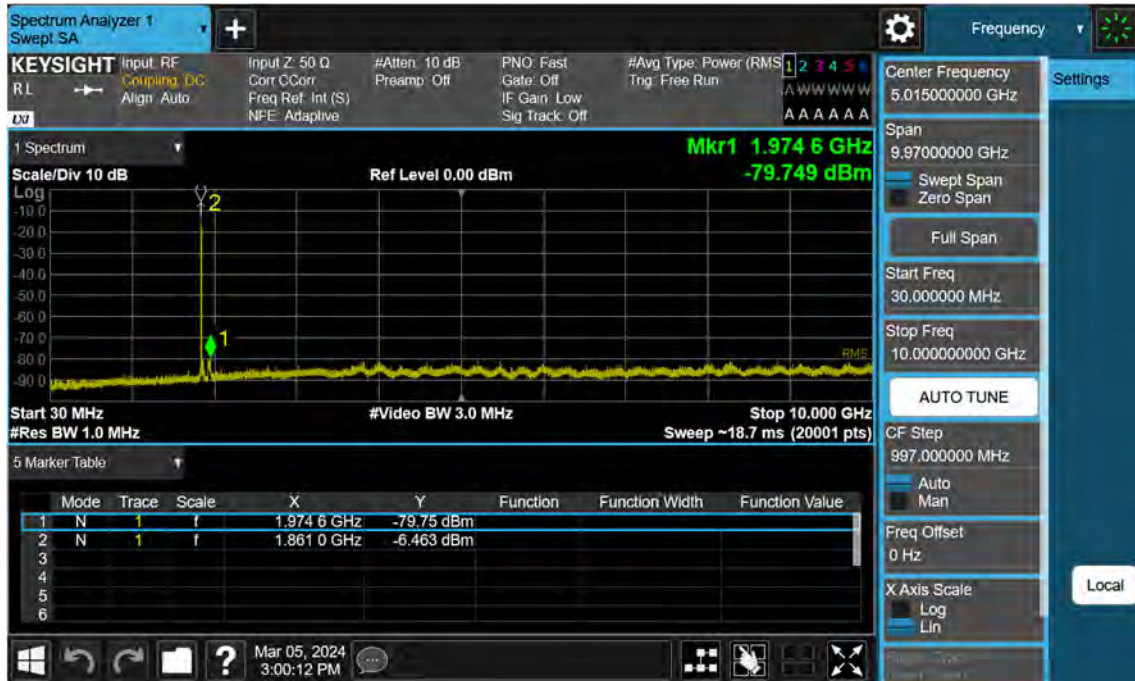
Sub6 n2\_35 M\_Conducted Spurious(30 M-10 G)\_High\_BPSK\_1RB



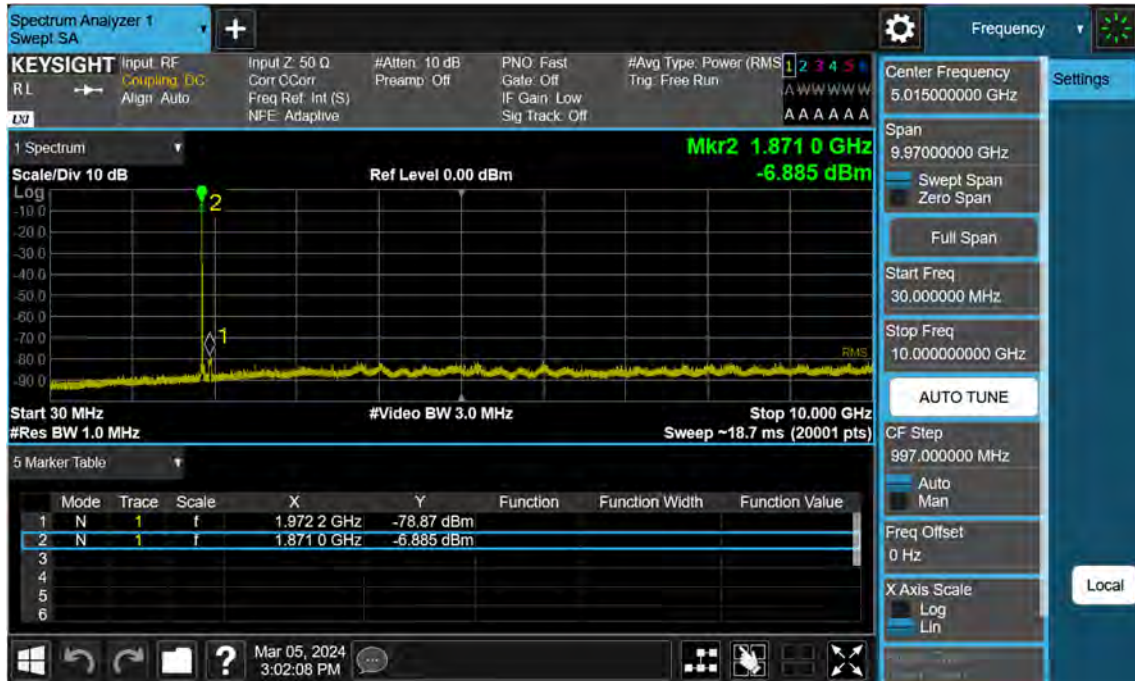
Sub6 n2\_40 M\_Conducted Spurious(30 M-10 G)\_Low\_BPSK\_1RB



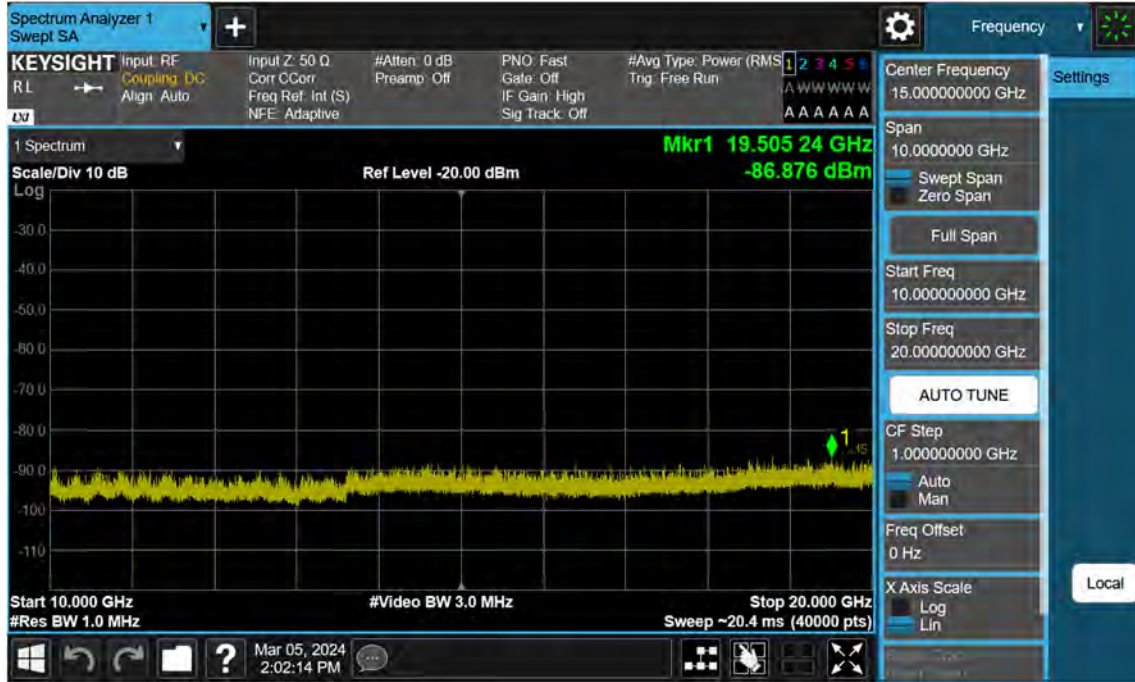
Sub6 n2\_40 M\_Conducted Spurious(30 M-10 G)\_Mid\_BPSK\_FullRB



Sub6 n2\_40 M\_Conducted Spurious(30 M-10 G)\_High\_BPSK\_1RB

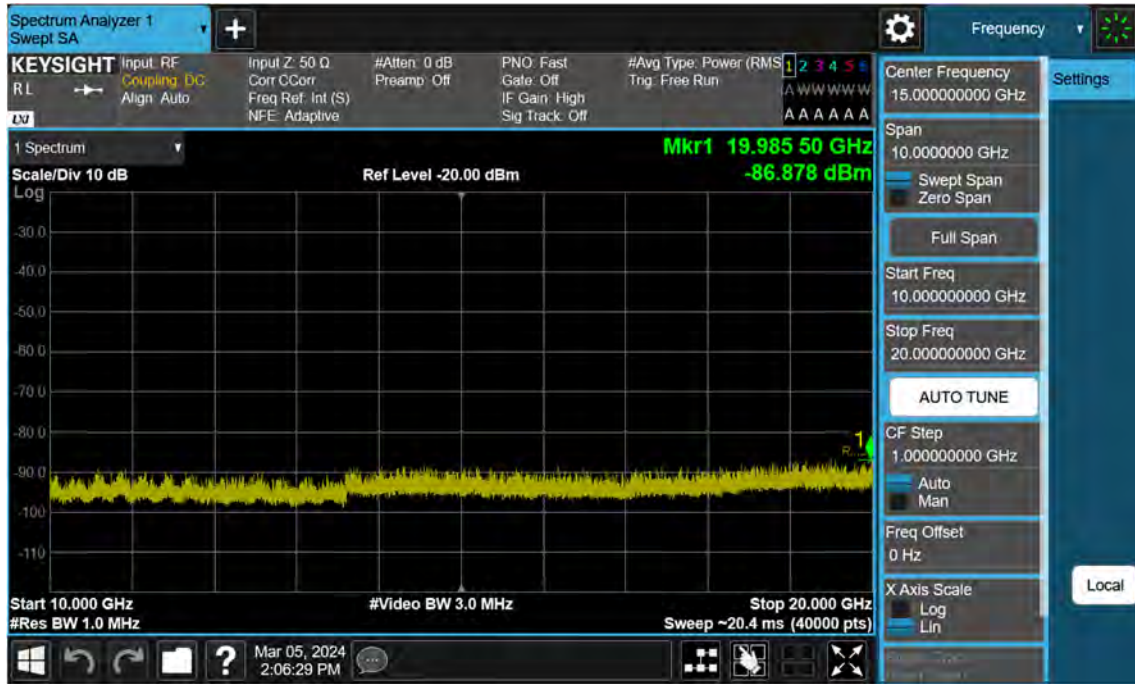


Sub6 n2\_5 M\_Conducted Spurious(Above10 G)\_Low\_BPSK\_1RB

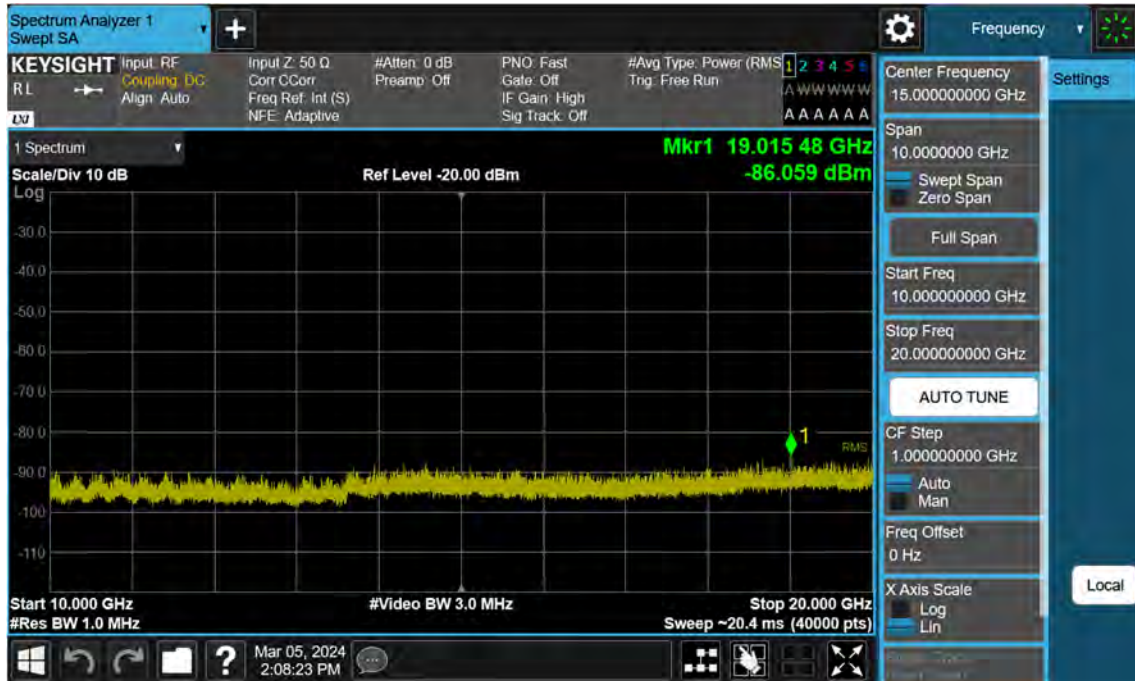




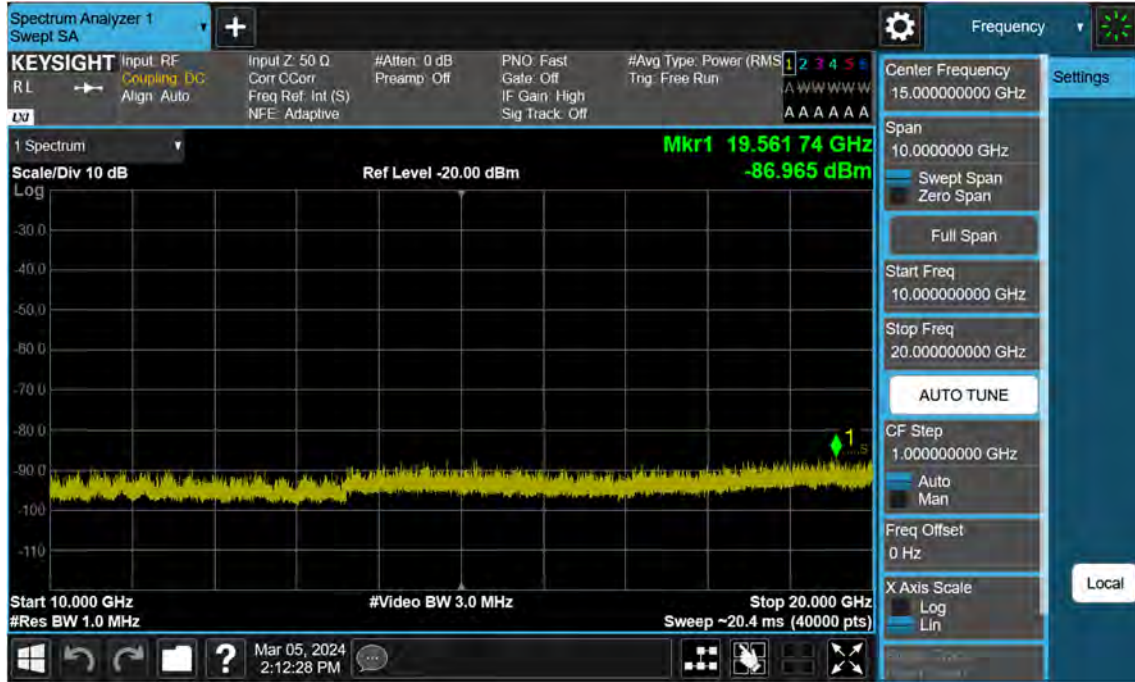
Sub6 n2\_5 M\_Conducted Spurious(Above10 G)\_Mid\_BPSK\_FullRB



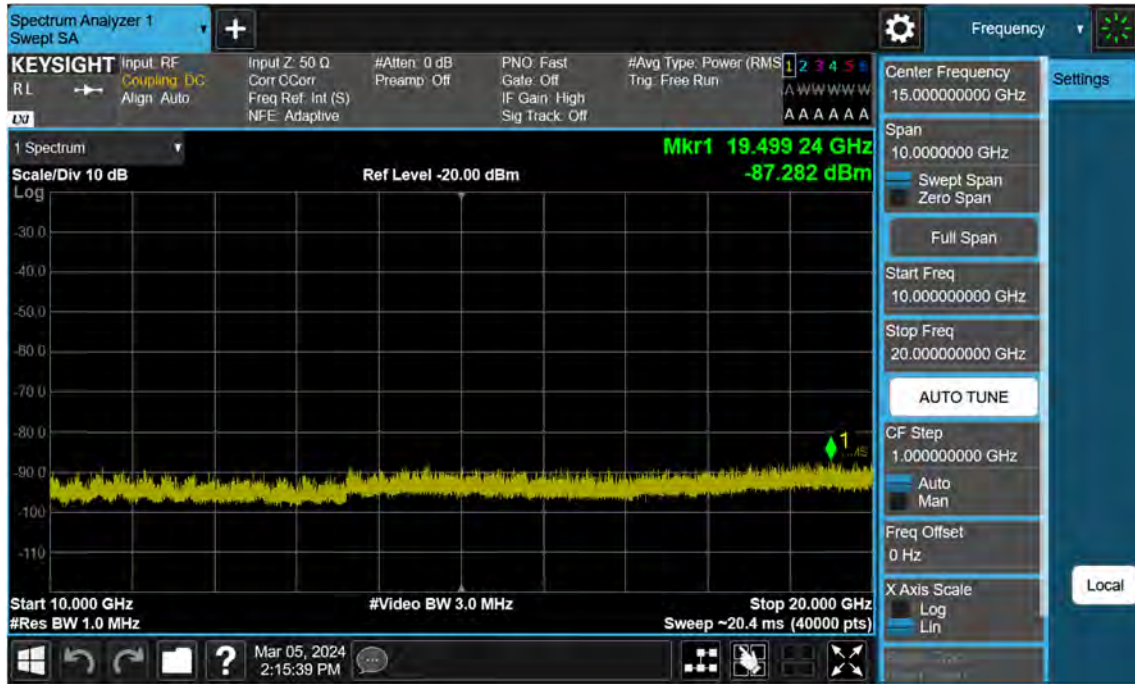
Sub6 n2\_5 M\_Conducted Spurious(Above10 G)\_High\_BPSK\_1RB



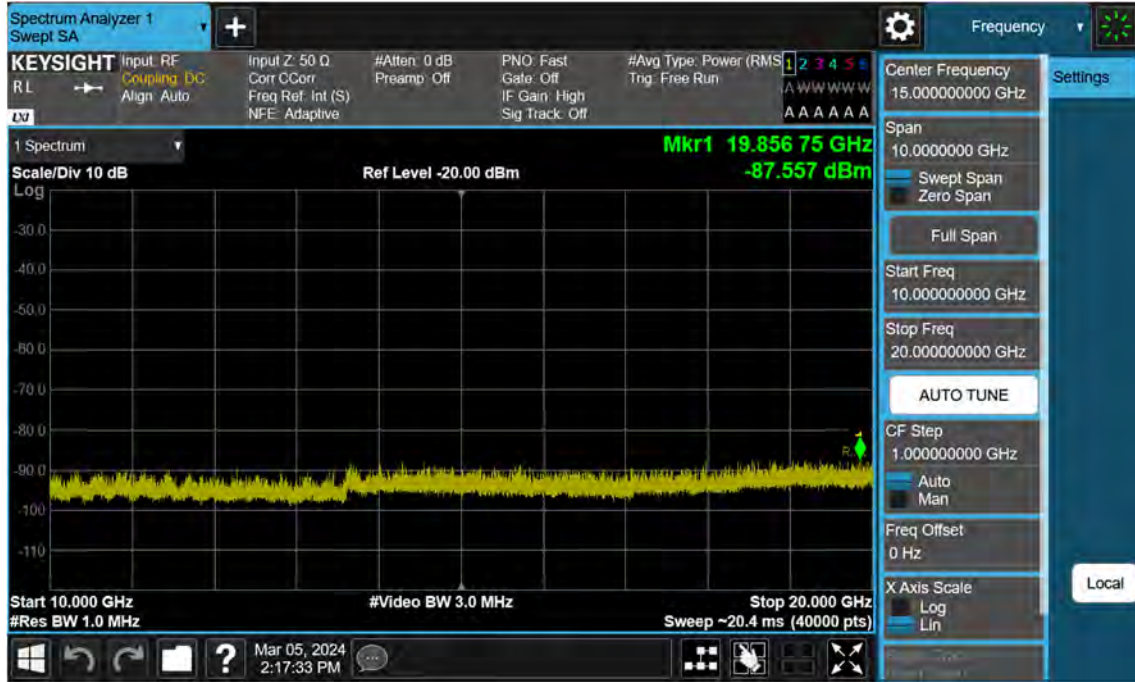
Sub6 n2\_10 M\_Conducted Spurious(Above10 G)\_Low\_BPSK\_1RB



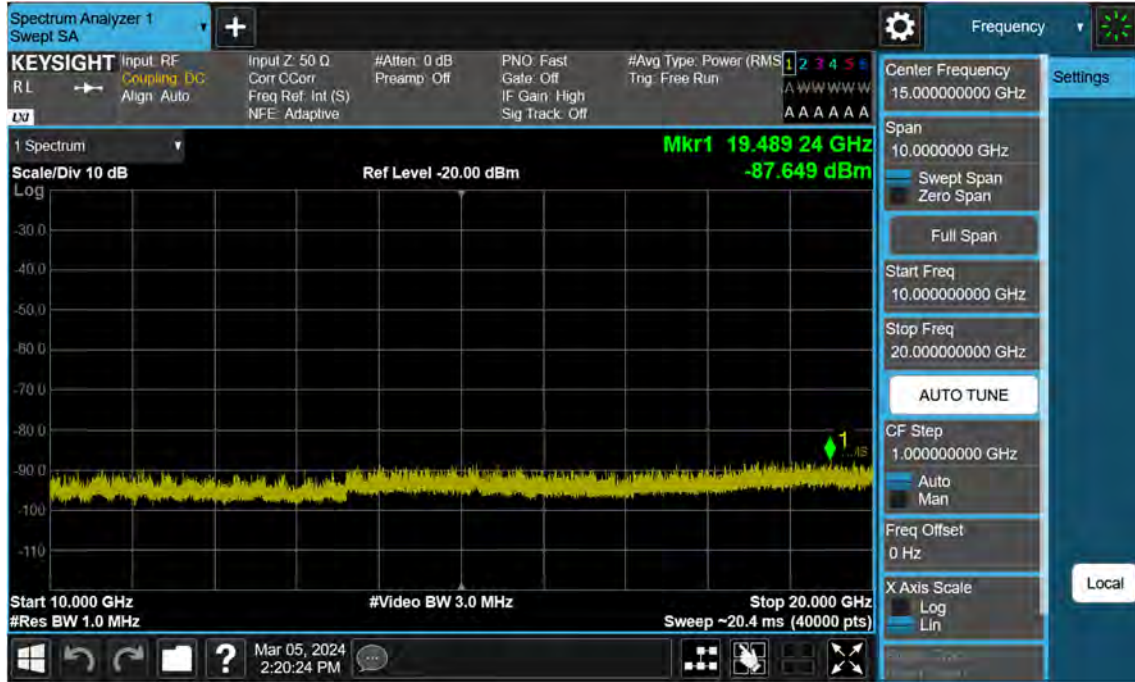
Sub6 n2\_10 M\_Conducted Spurious(Above10 G)\_Mid\_BPSK\_FullRB



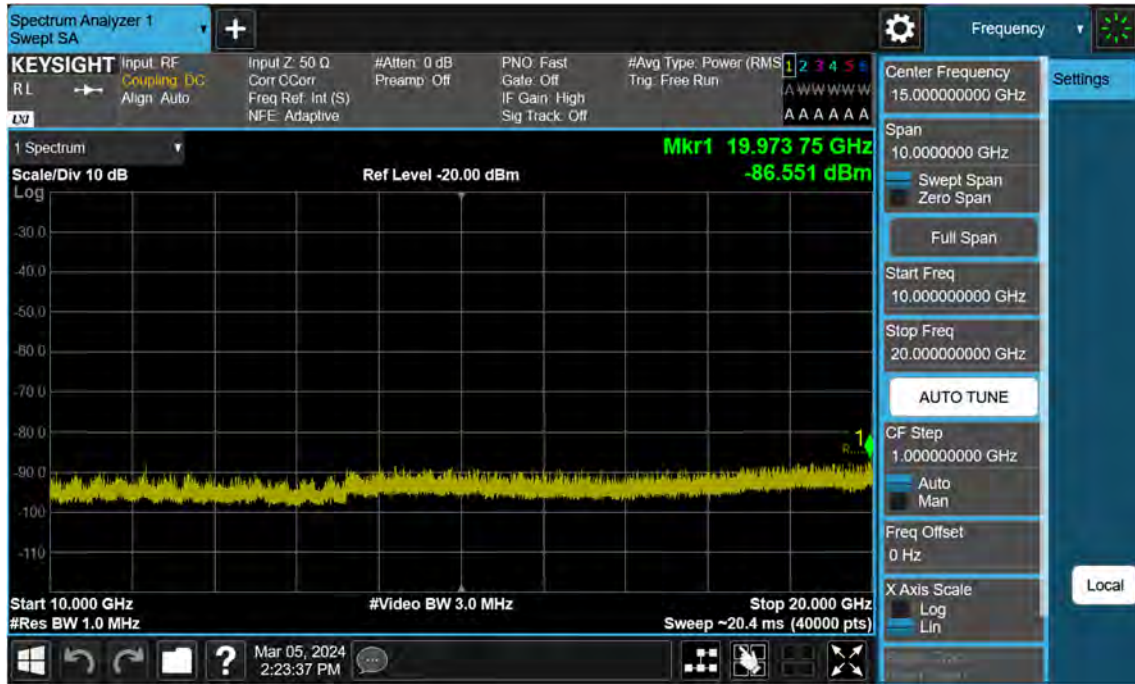
Sub6 n2\_10 M\_Conducted Spurious(Above10 G)\_High\_BPSK\_1RB



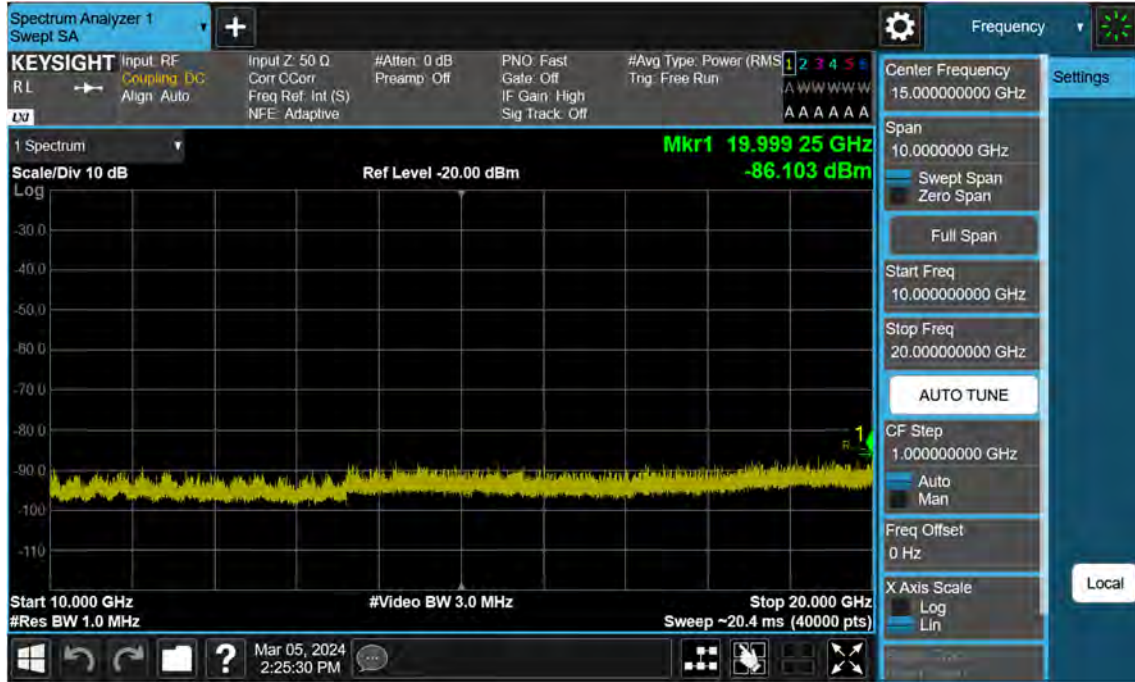
Sub6 n2\_15 M\_Conducted Spurious(Above10 G)\_Low\_BPSK\_1RB



Sub6 n2\_15 M\_Conducted Spurious(Above10 G)\_Mid\_BPSK\_FullRB

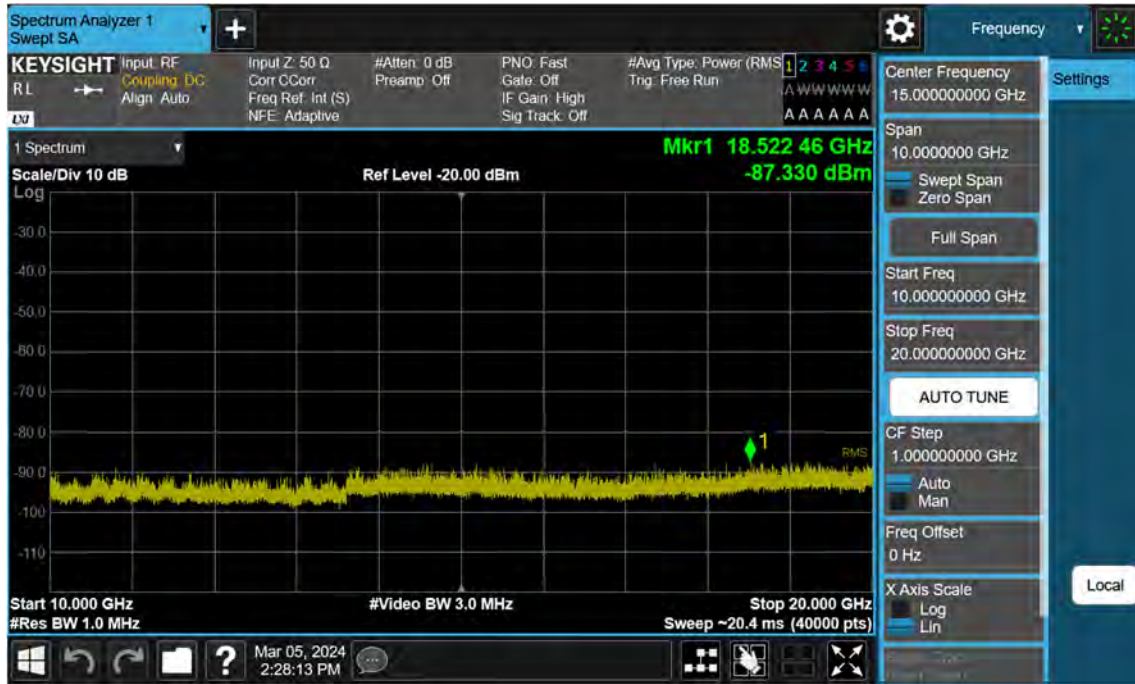


Sub6 n2\_15 M\_Conducted Spurious(Above10 G)\_High\_BPSK\_1RB

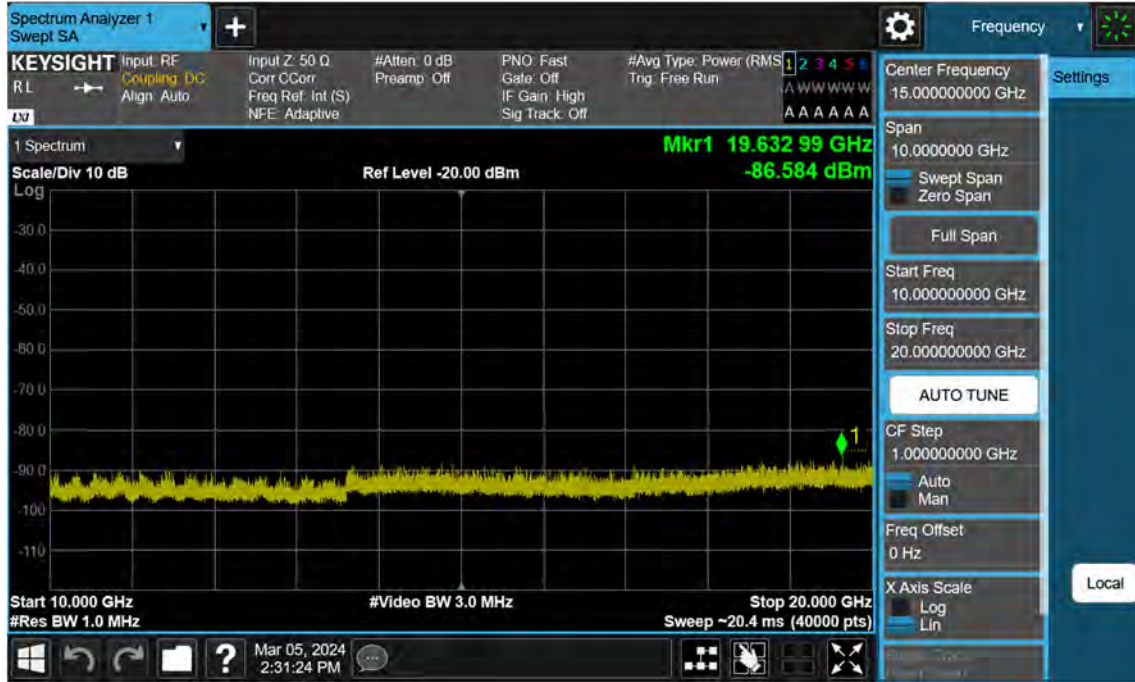




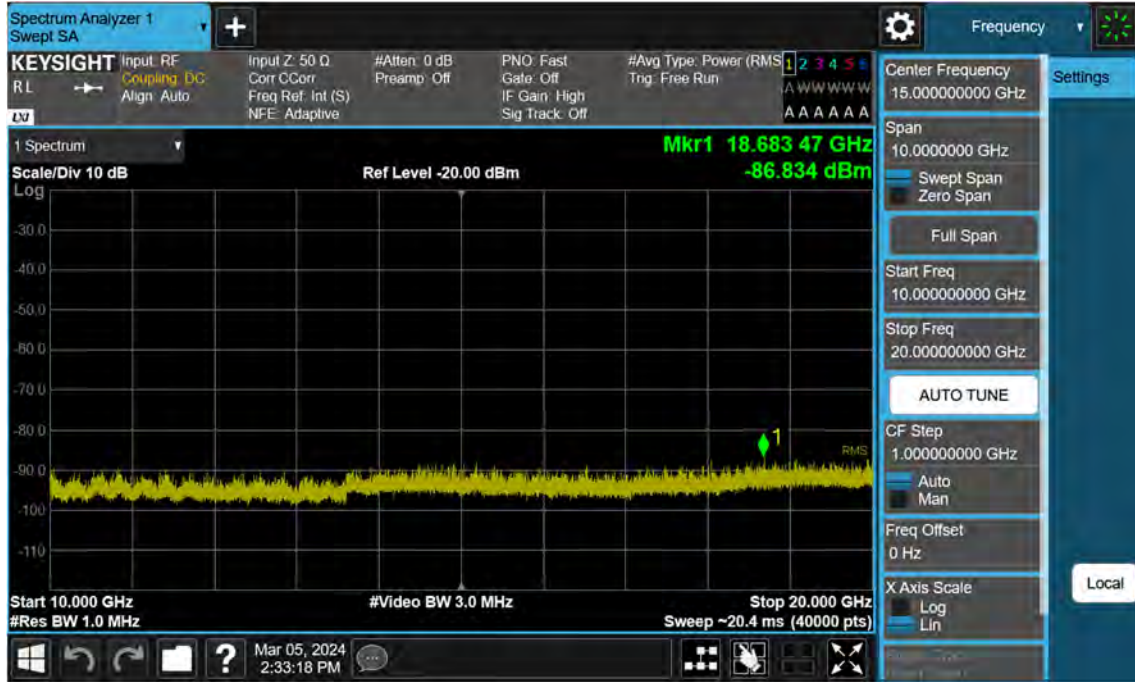
Sub6 n2\_20 M\_Conducted Spurious(Above10 G)\_Low\_BPSK\_1RB



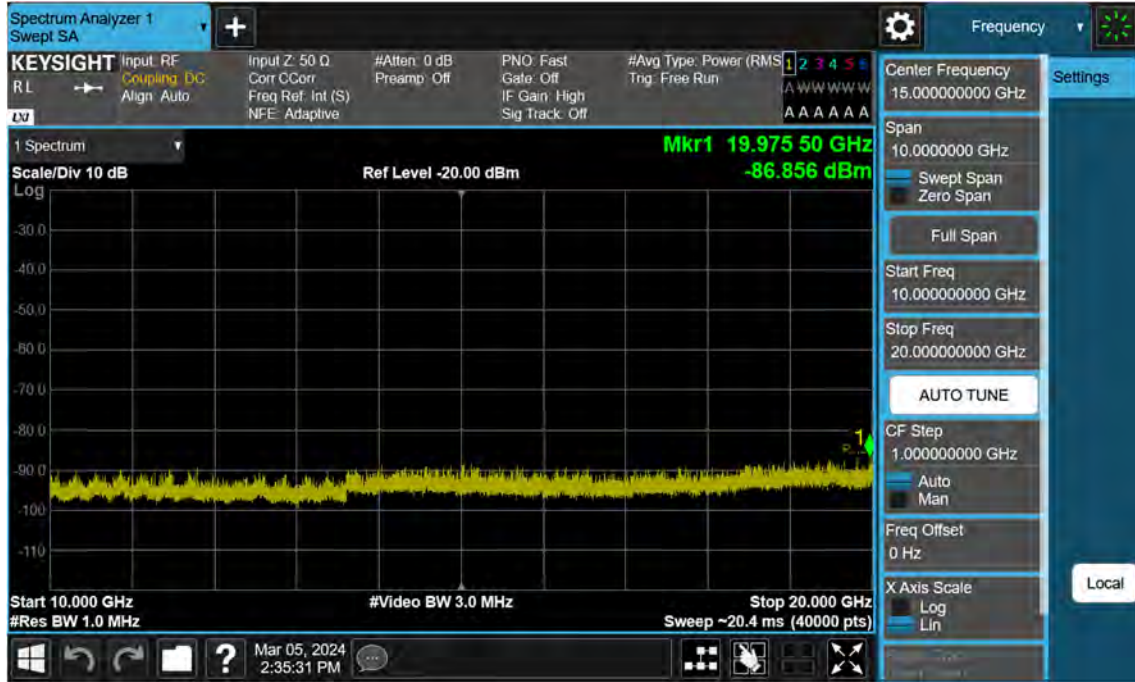
Sub6 n2\_20 M\_Conducted Spurious(Above10 G)\_Mid\_BPSK\_FullRB



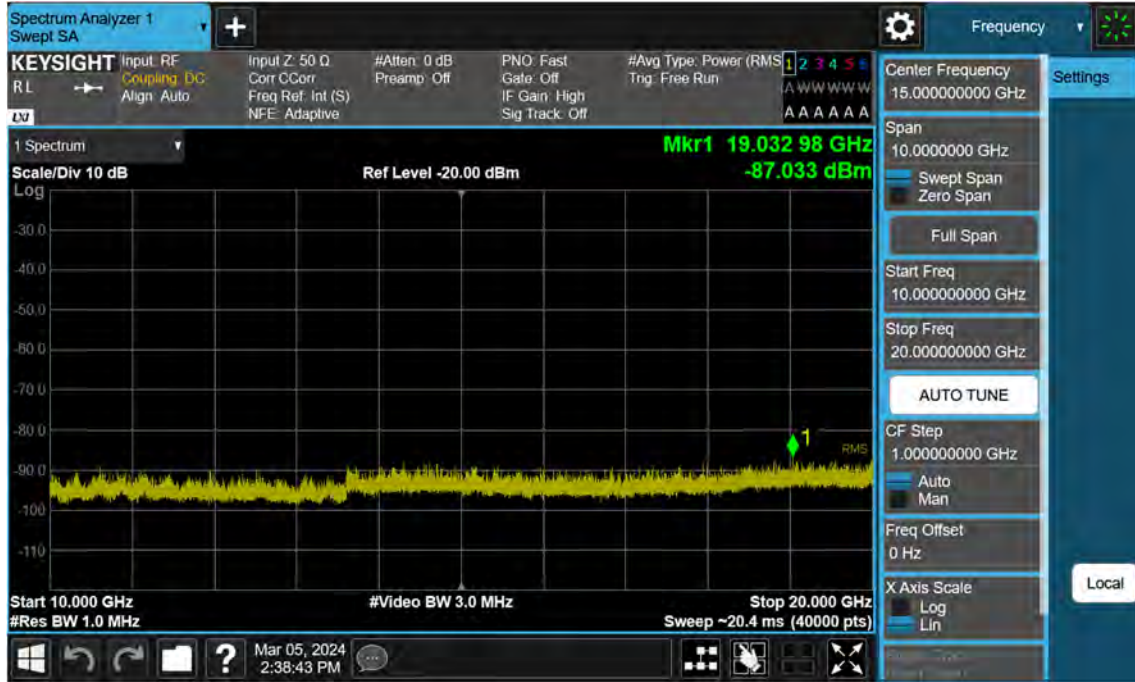
Sub6 n2\_20 M\_Conducted Spurious(Above10 G)\_High\_BPSK\_1RB



Sub6 n2\_25 M\_Conducted Spurious(Above10 G)\_Low\_BPSK\_1RB



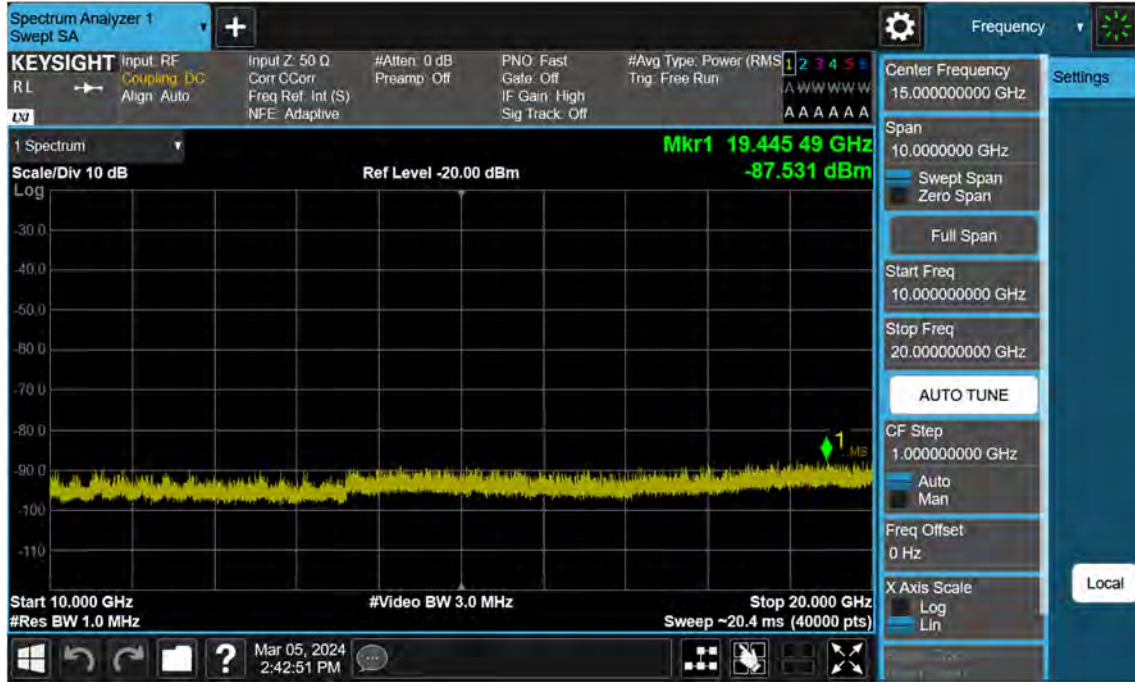
Sub6 n2\_25 M\_Conducted Spurious(Above10 G)\_Mid\_BPSK\_FullRB



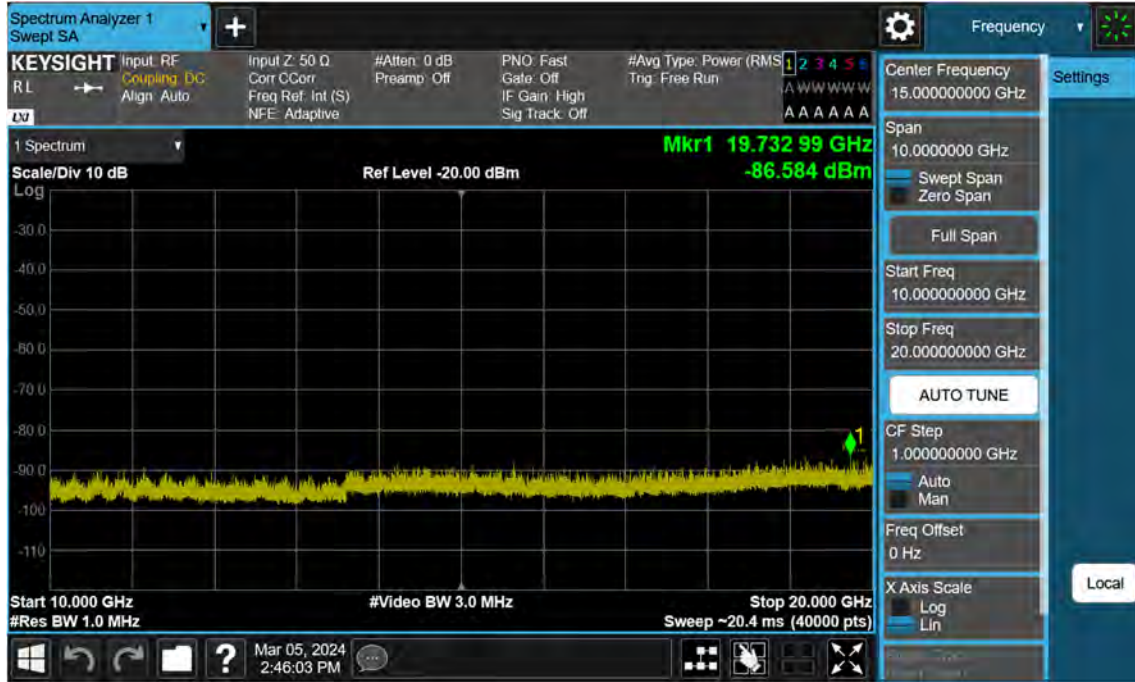
Sub6 n2\_25 M\_Conducted Spurious(Above10 G)\_High\_BPSK\_1RB



Sub6 n2\_30 M\_Conducted Spurious(Above10 G)\_Low\_BPSK\_1RB

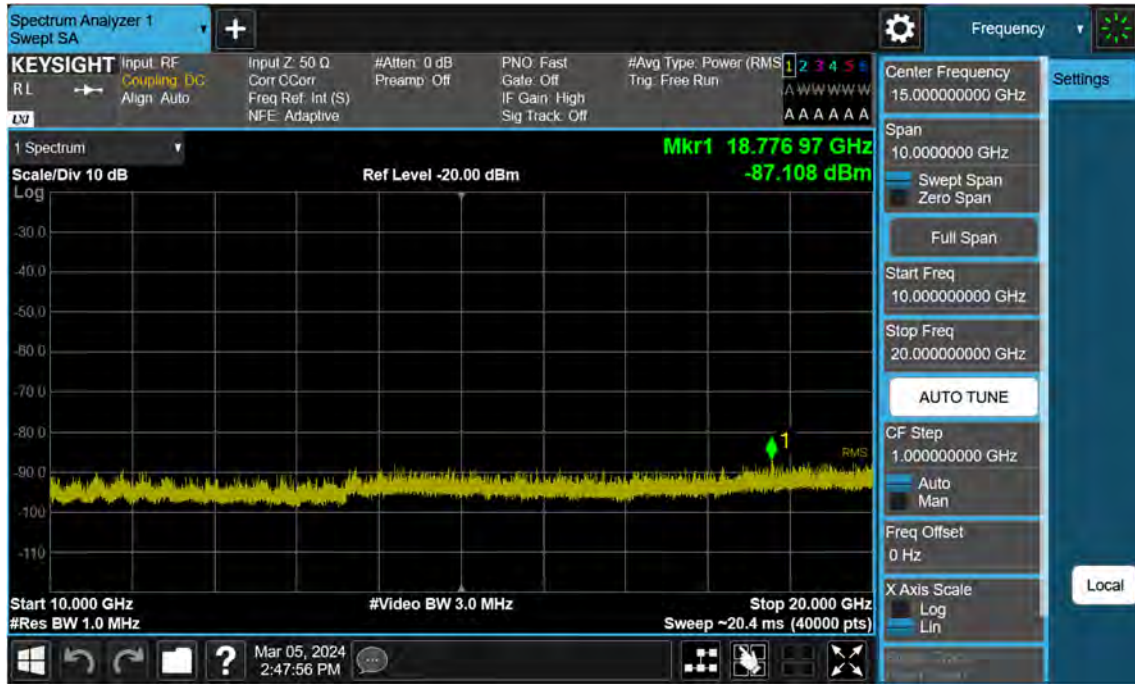


Sub6 n2\_30 M\_Conducted Spurious(Above10 G)\_Mid\_BPSK\_FullRB





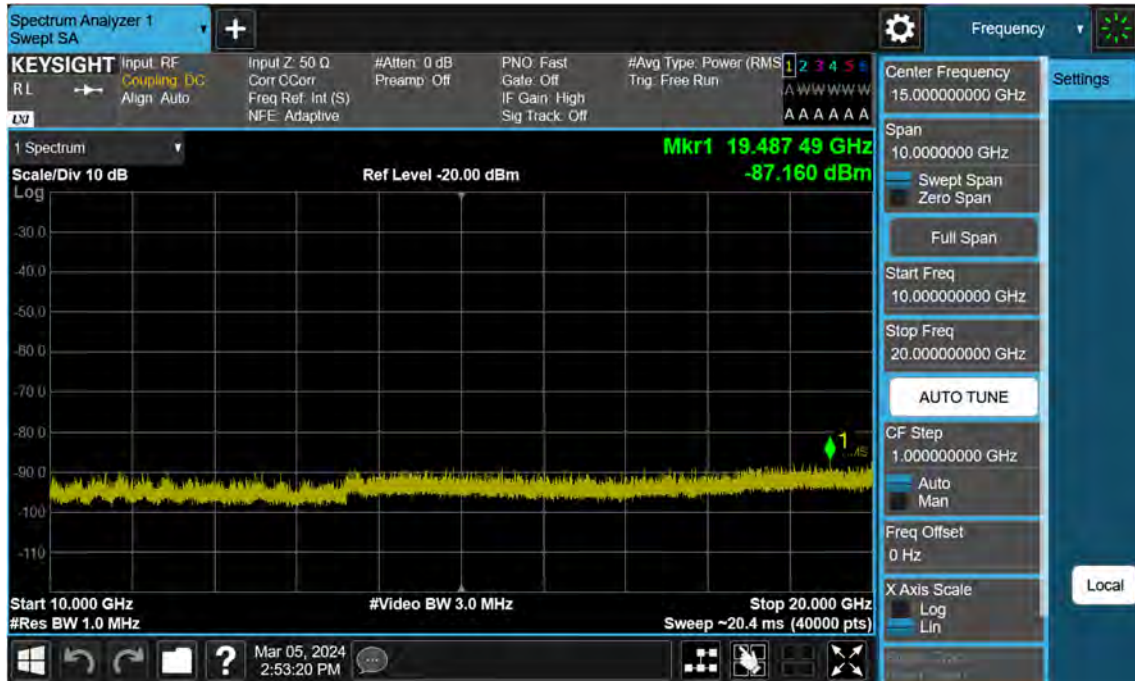
Sub6 n2\_30 M\_Conducted Spurious(Above10 G)\_High\_BPSK\_1RB



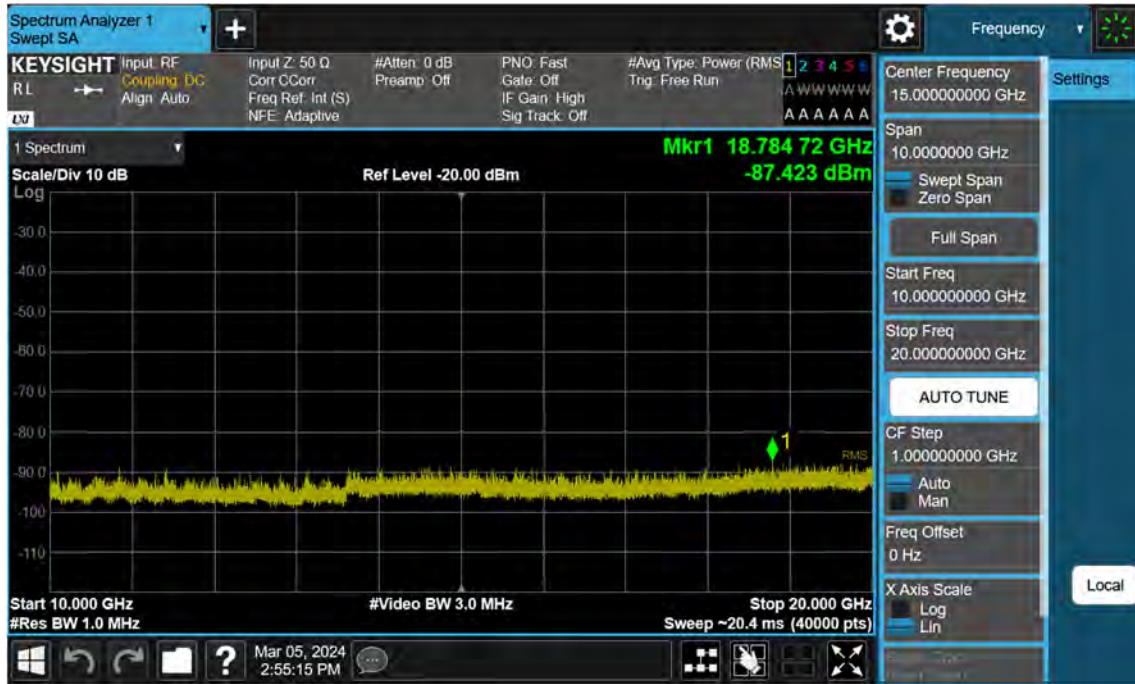
Sub6 n2\_35 M\_Conducted Spurious(Above10 G)\_Low\_BPSK\_1RB



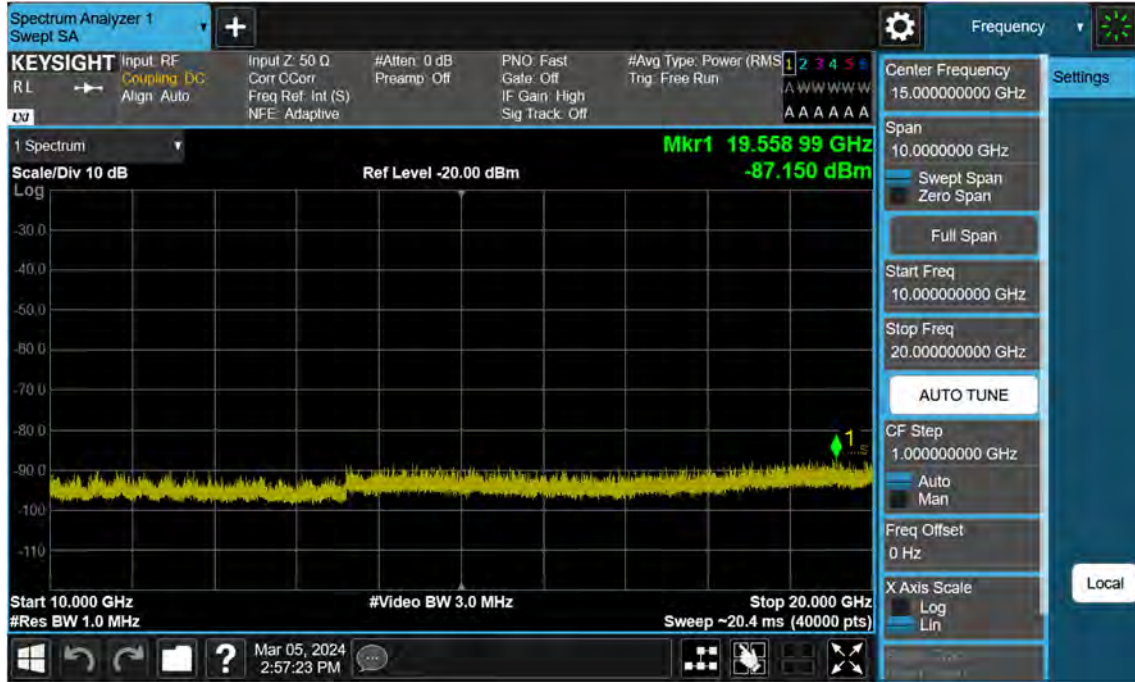
Sub6 n2\_35 M\_Conducted Spurious(Above10 G)\_Mid\_BPSK\_FullRB



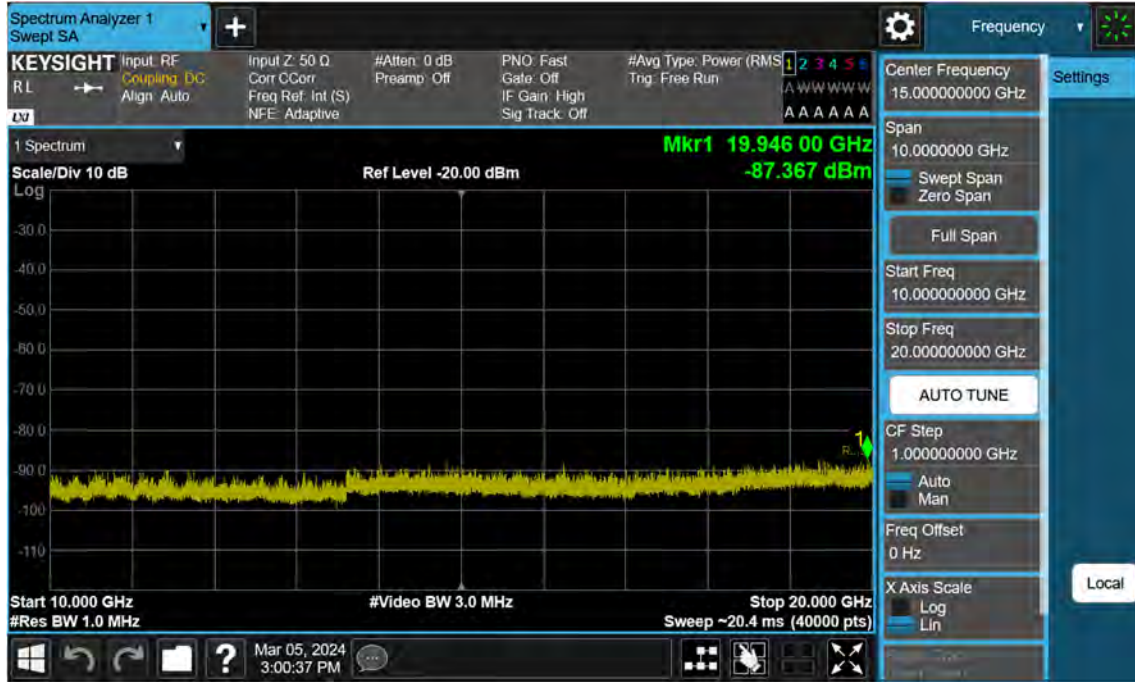
Sub6 n2\_35 M\_Conducted Spurious(Above10 G)\_High\_BPSK\_1RB



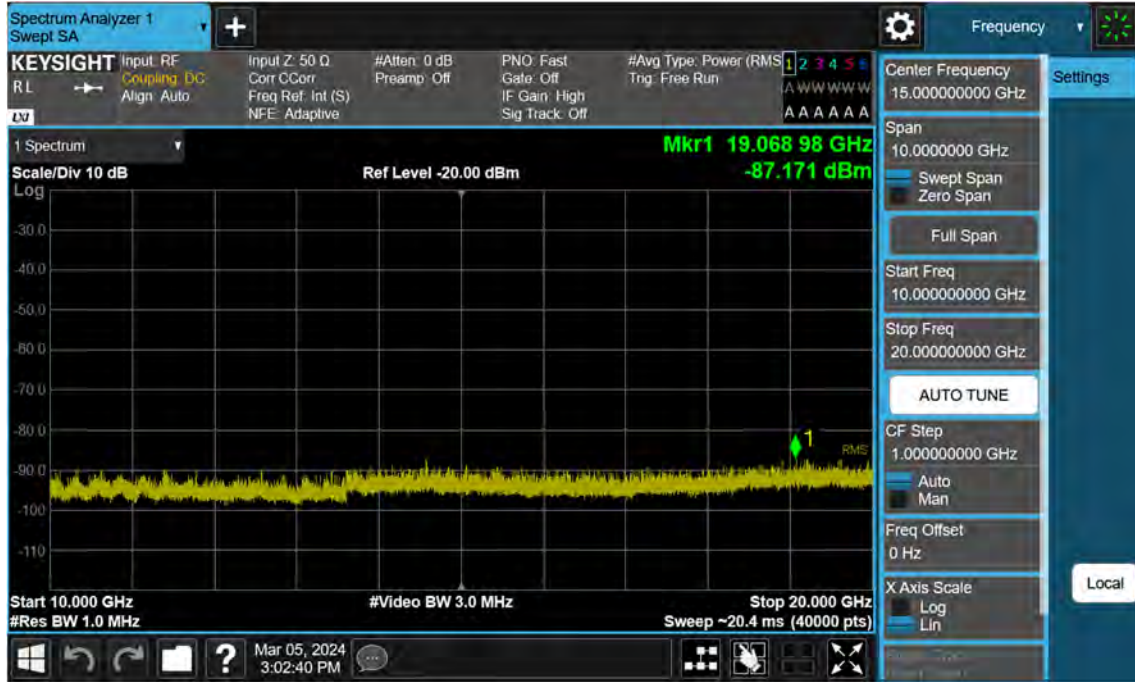
Sub6 n2\_40 M\_Conducted Spurious(Above10 G)\_Low\_BPSK\_1RB



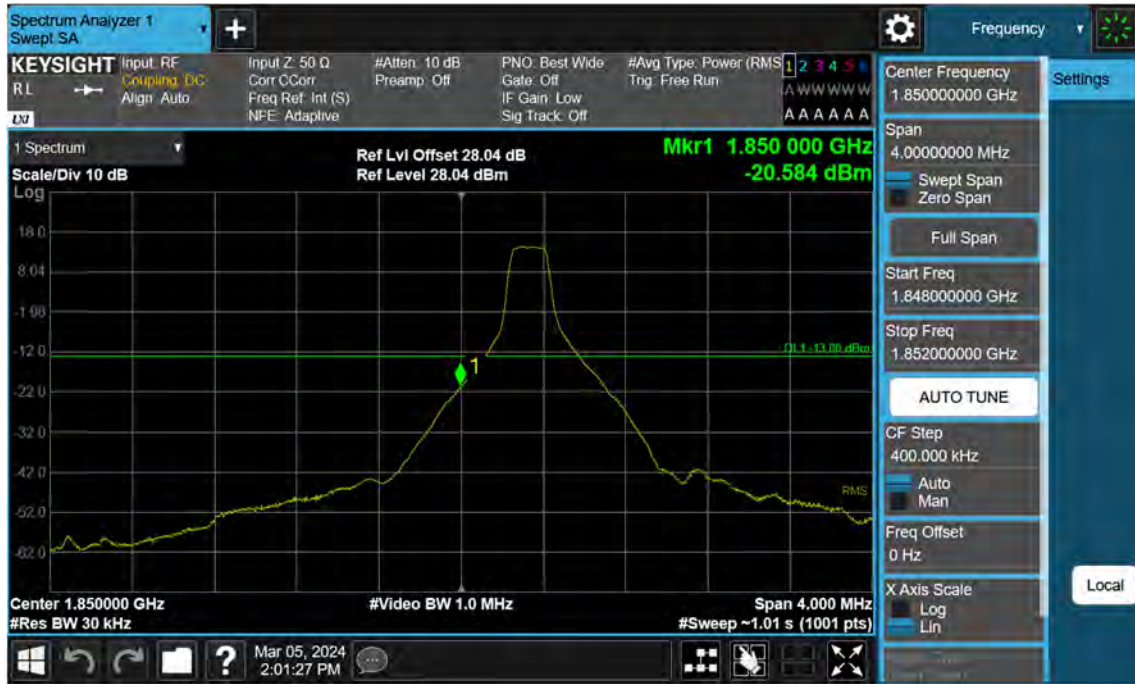
Sub6 n2\_40 M\_Conducted Spurious(Above10 G)\_Mid\_BPSK\_FullRB



Sub6 n2\_40 M\_Conducted Spurious(Above10 G)\_High\_BPSK\_1RB



Sub6 n2\_5 M\_Band Edge\_Low\_BPSK\_1RB





Sub6 n2\_5 M\_Band Edge\_Low\_BPSK\_FullRB



Sub6 n2\_5 M\_Extended Band Edge\_Low\_BPSK\_FullIRB



Sub6 n2\_5 M\_Band Edge\_High\_BPSK\_1RB



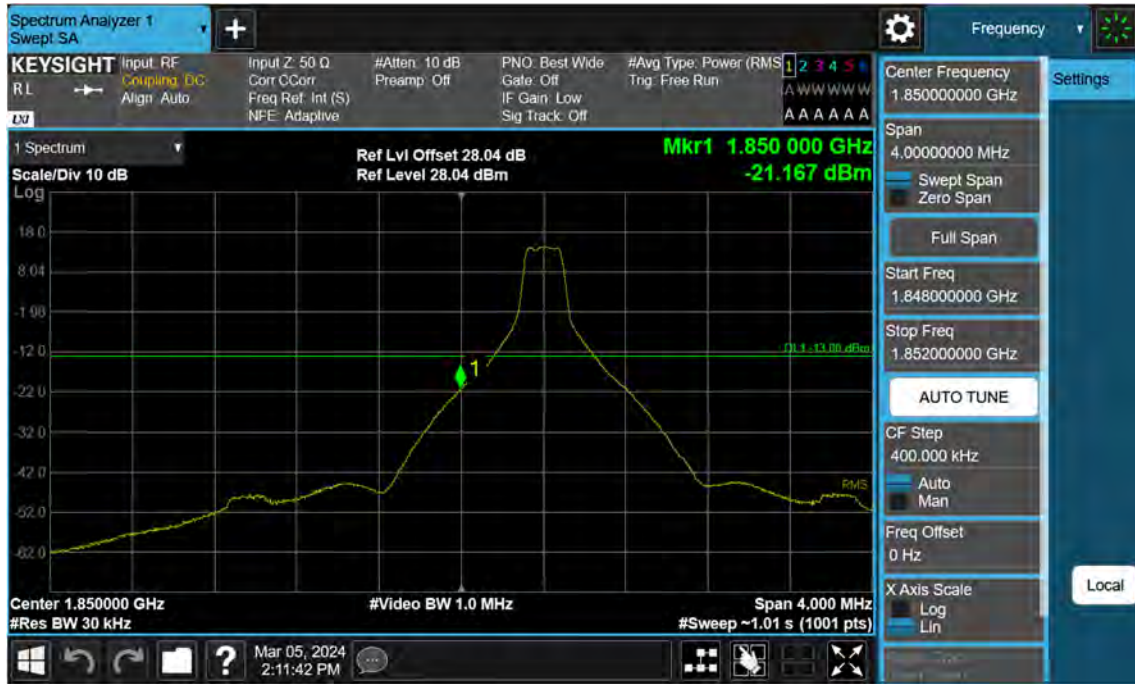
Sub6 n2\_5 M\_Band Edge\_High\_BPSK\_FullRB



Sub6 n2\_5 M\_Extended Band Edge\_High\_BPSK\_FullRB



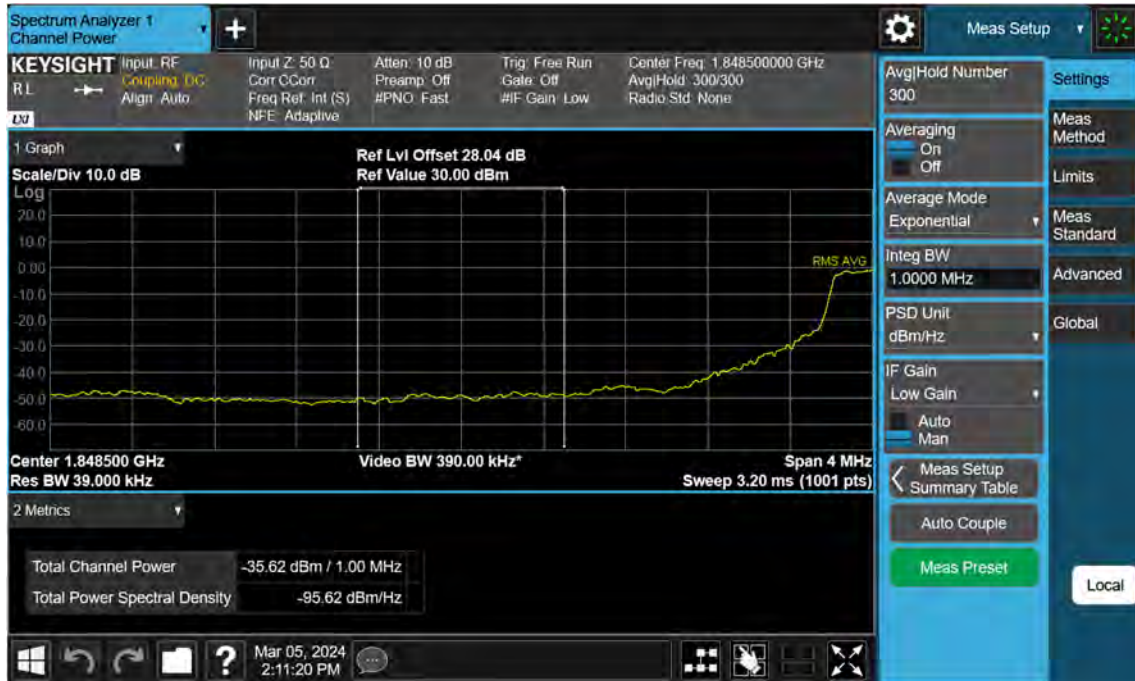
Sub6 n2\_10 M\_Band Edge\_Low\_BPSK\_1RB



Sub6 n2\_10 M\_Band Edge\_Low\_BPSK\_FullRB

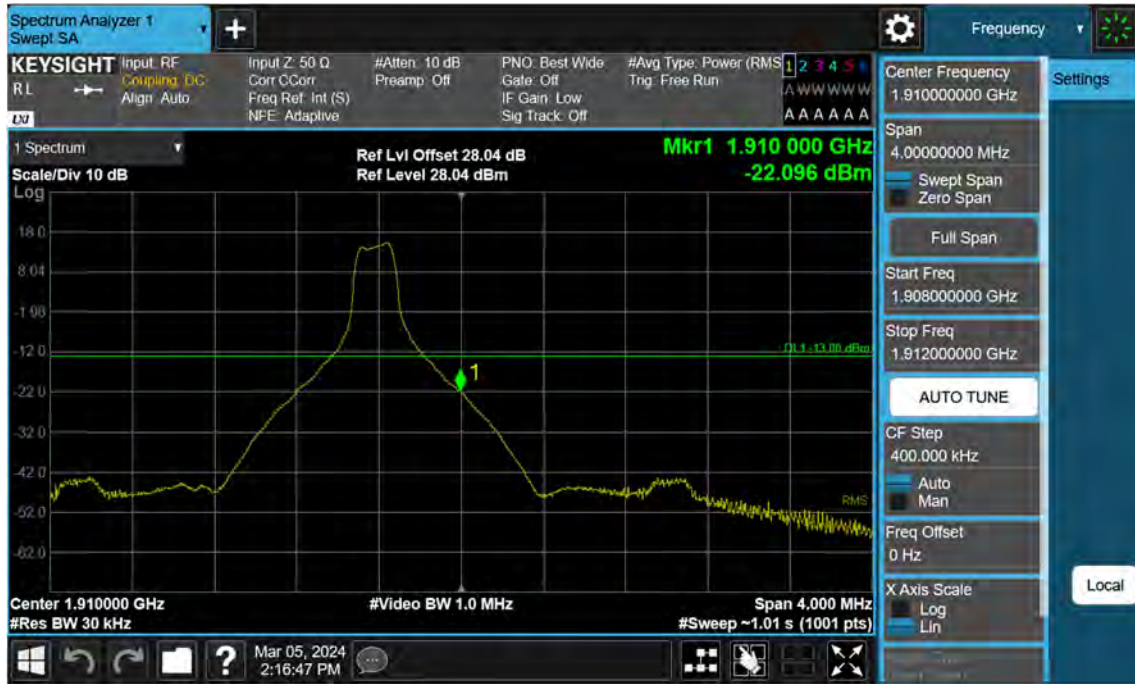


Sub6 n2\_10 M\_Extended Band Edge\_Low\_BPSK\_FullRB





Sub6 n2\_10 M\_Band Edge\_High\_BPSK\_1RB



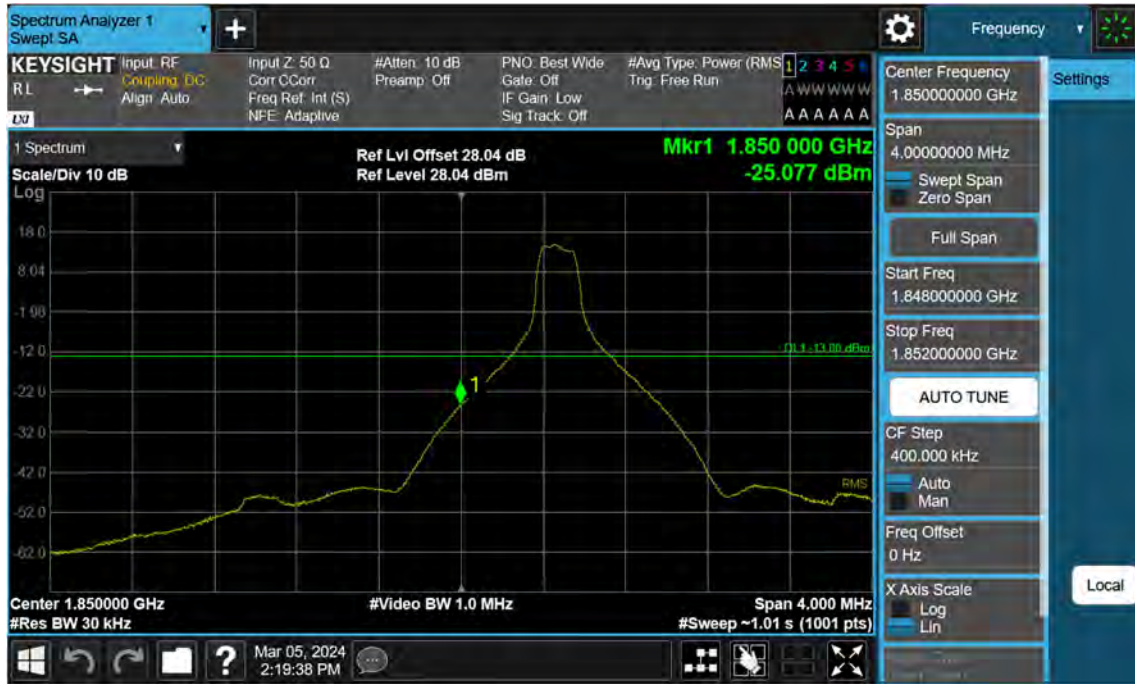
Sub6 n2\_10 M\_Band Edge\_High\_BPSK\_FullRB



Sub6 n2\_10 M\_Extended Band Edge\_High\_BPSK\_FullRB



Sub6 n2\_15 M\_Band Edge\_Low\_BPSK\_1RB



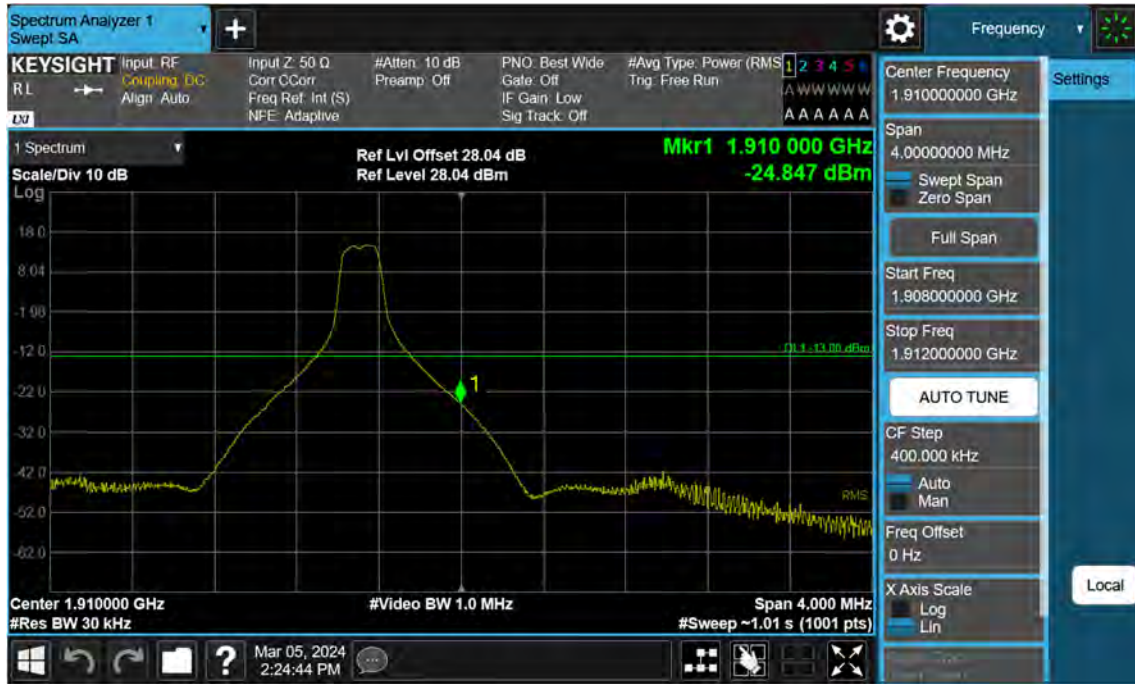
Sub6 n2\_15 M\_Band Edge\_Low\_BPSK\_FullRB



Sub6 n2\_15 M\_Extended Band Edge\_Low\_BPSK\_FullRB



### Sub6 n2\_15 M\_Band Edge\_High\_BPSK\_1RB



Sub6 n2\_15 M\_Band Edge\_High\_BPSK\_FullRB





Sub6 n2\_15 M\_Extended Band Edge\_High\_BPSK\_FullRB

