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FCC Sub6 REPORT

Certification

Applicant Name:
SAMSUNG Electronics Co., Ltd.

Address:
129, Samsung-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

Date of Issue:
May 23, 2023

Location:
HCT CO., LTD.,
74, Seoicheon-ro 578beon-gil, Majang-myeon,
Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA

Report No.: HCT-RF-2305-FC078-R1

FCC ID:	**A3LSMF946B**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model(s):	SM-F946B/DS
Additional Model(s):	SM-F946B
EUT Type:	Mobile phone
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§24, §2

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)

Main 2 Ant

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n25(2) (5)	1852.5 - 1912.5	4M52G7D	PI/2 BPSK	0.140	21.45
		4M55G7D	QPSK	0.137	21.36
		4M50W7D	16QAM	0.113	20.52
		4M51W7D	64QAM	0.079	18.96
		4M50W7D	256QAM	0.045	16.51
Sub6 n25(2) (10)	1855.0 - 1910.0	9M00G7D	PI/2 BPSK	0.142	21.53
		8M99G7D	QPSK	0.139	21.42
		8M98W7D	16QAM	0.116	20.64
		9M00W7D	64QAM	0.080	19.05
		8M96W7D	256QAM	0.044	16.48
Sub6 n25(2) (15)	1857.5 - 1907.5	13M5G7D	PI/2 BPSK	0.141	21.49
		13M5G7D	QPSK	0.137	21.36
		13M5W7D	16QAM	0.116	20.63
		13M5W7D	64QAM	0.080	19.03
		13M5W7D	256QAM	0.044	16.45
Sub6 n25(2) (20)	1860.0 - 1905.0	17M9G7D	PI/2 BPSK	0.138	21.39
		17M9G7D	QPSK	0.135	21.29
		17M9W7D	16QAM	0.113	20.52
		17M9W7D	64QAM	0.080	19.02
		17M9W7D	256QAM	0.043	16.37
Sub6 n25 (25)	1862.5 – 1902.5	23M0G7D	PI/2 BPSK	0.139	21.42
		22M9G7D	QPSK	0.137	21.37
		22M9W7D	16QAM	0.114	20.56
		22M9W7D	64QAM	0.081	19.09
		22M9W7D	256QAM	0.045	16.50
Sub6 n25 (30)	1865.0 – 1900.0	28M7G7D	PI/2 BPSK	0.149	21.73
		28M6G7D	QPSK	0.145	21.60
		28M6W7D	16QAM	0.119	20.76
		28M6W7D	64QAM	0.085	19.30
		28M6W7D	256QAM	0.048	16.77
Sub6 n25 (40)	1870.0 – 1895.0	38M7G7D	PI/2 BPSK	0.151	21.78
		38M7G7D	QPSK	0.150	21.76
		38M7W7D	16QAM	0.121	20.81
		38M8W7D	64QAM	0.087	19.41
		38M8W7D	256QAM	0.048	16.83

Sub 2 Ant

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n25(2) (5)	1852.5 - 1912.5	4M52G7D	PI/2 BPSK	0.178	22.50
		4M52G7D	QPSK	0.173	22.38
		4M51W7D	16QAM	0.137	21.37
		4M51W7D	64QAM	0.102	20.09
		4M52W7D	256QAM	0.056	17.48
Sub6 n25(2) (10)	1855.0 - 1910.0	8M99G7D	PI/2 BPSK	0.177	22.47
		9M00G7D	QPSK	0.172	22.35
		9M00W7D	16QAM	0.139	21.43
		8M95W7D	64QAM	0.102	20.10
		8M98W7D	256QAM	0.055	17.44
Sub6 n25(2) (15)	1857.5 - 1907.5	13M5G7D	PI/2 BPSK	0.188	22.75
		13M4G7D	QPSK	0.185	22.68
		13M5W7D	16QAM	0.147	21.67
		13M4W7D	64QAM	0.106	20.26
		13M5W7D	256QAM	0.059	17.71
Sub6 n25(2) (20)	1860.0 - 1905.0	17M9G7D	PI/2 BPSK	0.175	22.44
		17M9G7D	QPSK	0.170	22.31
		17M9W7D	16QAM	0.136	21.33
		17M9W7D	64QAM	0.099	19.95
		17M9W7D	256QAM	0.054	17.36
Sub6 n25 (25)	1862.5 – 1902.5	22M9G7D	PI/2 BPSK	0.178	22.50
		22M9G7D	QPSK	0.177	22.49
		22M9W7D	16QAM	0.139	21.44
		22M9W7D	64QAM	0.103	20.13
		22M8W7D	256QAM	0.059	17.73
Sub6 n25 (30)	1865.0 – 1900.0	28M5G7D	PI/2 BPSK	0.185	22.66
		28M6G7D	QPSK	0.181	22.57
		28M5W7D	16QAM	0.145	21.62
		28M6W7D	64QAM	0.105	20.21
		28M6W7D	256QAM	0.059	17.72
Sub6 n25 (40)	1870.0 – 1895.0	38M6G7D	PI/2 BPSK	0.194	22.88
		38M6G7D	QPSK	0.193	22.86
		38M6W7D	16QAM	0.152	21.81
		38M6W7D	64QAM	0.112	20.50
		38M5W7D	256QAM	0.062	17.90

REVIEWED BY

Report prepared by : Jung Ki Lim
Engineer of Telecommunication Testing Center

Report approved by : Kwon Jeong
Manager of Telecommunication Testing Center

This test results were applied only to the test methods required by the standard.

This laboratory is not accredited for the test results marked *.
The above Test Report is the accredited test result by (KS Q) ISO/IEC 17025 and KOLAS(Korea Laboratory Accreditation Scheme), which signed the ILAC-MRA. (HCT Accreditation No.: KT197)

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2305-FC078	May 19, 2023	- First Approval Report
HCT-RF-2305-FC078-R1	May 23, 2023	- Revised the Low channel frequency (34 page)

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.

Table of Contents

MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	SAMSUNG Electronics Co., Ltd.
Address:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
FCC ID:	A3LSMF946B
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§24, §2
EUT Type:	Mobile phone
Model(s):	SM-F946B/DS
Additional Model(s):	SM-F946B
SCS(kHz):	15
Bandwidth(MHz):	5, 10, 15, 20, 25, 30, 40
Waveform:	CP-OFDM, DFT-S-OFDM
Modulation:	DFT-S-OFDM: PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM
Tx Frequency:	1852.5 MHz – 1912.5 MHz (Sub6 n25(2) (5 MHz)) 1855.0 MHz – 1910.0 MHz (Sub6 n25(2) (10 MHz)) 1857.5 MHz – 1907.5 MHz (Sub6 n25(2) (15 MHz)) 1860.0 MHz – 1905.0 MHz (Sub6 n25(2) (20 MHz)) 1862.5 MHz – 1902.5 MHz (Sub6 n25 (25 MHz)) 1865.0 MHz – 1900.0 MHz (Sub6 n25 (30 MHz)) 1870.0 MHz – 1895.0 MHz (Sub6 n25 (40 MHz))
Date(s) of Tests:	March 24, 2023 ~ May 10, 2023
Serial number:	Radiated: R3CW30A39XN Conducted: R3CW30A39DD

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

The EUT was a Mobile Phone with GSM/GPRS/EGPRS/UMTS and LTE, Sub6.

It also supports IEEE 802.11 a/b/g/n/ac/ax (20/40/80/160 MHz), WIFI 6E, WPT, AIT, Bluetooth, BT LE, NFC.

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 ≥ 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;

$$P_{d(dBm)} = Pg_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dB)}$$

   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 ≥ 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^{th} 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 1GHz, 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;

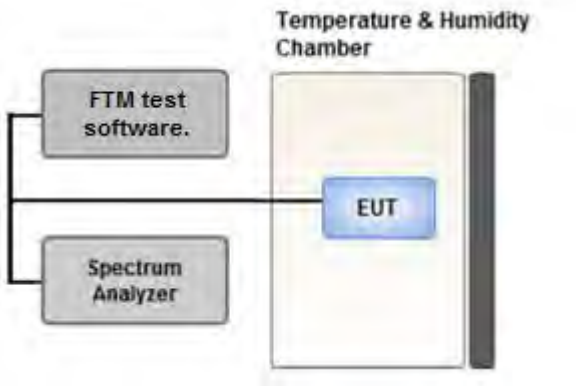
$$Result_{(dBm)} = Pg_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

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

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

$$EIRP_{(dBm)} = ERP_{(dBm)} + 2.15$$

3.4 PEAK- TO- AVERAGE RATIO



Test setup

① CCDF Procedure for PAPR

Test Settings

1. Set resolution/measurement bandwidth ≥ 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:

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

Test Settings(Peak Power)

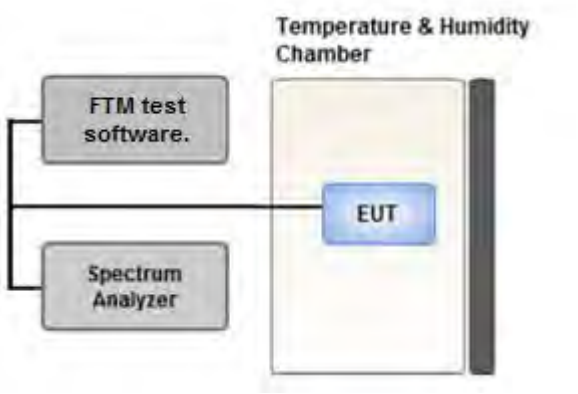
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW ≥ 3 × RBW.

1. Set the RBW ≥ OBW.
2. Set VBW ≥ 3 × RBW.
3. Set span ≥ 2 × OBW.
4. Sweep time ≥ 10 × (number of points in sweep) × (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 × to 3 × the OBW.
2. Set RBW ≥ OBW.
3. Set VBW ≥ 3 × RBW.
4. Set number of measurement points in sweep ≥ 2 × span / RBW.
5. Sweep time:
   Set ≥ [10 × (number of points in sweep) × (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/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.

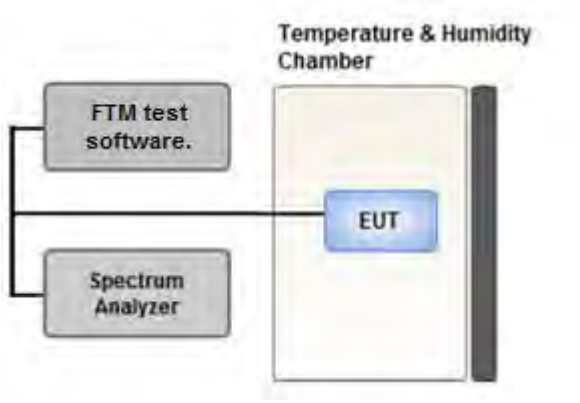
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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

3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test setup

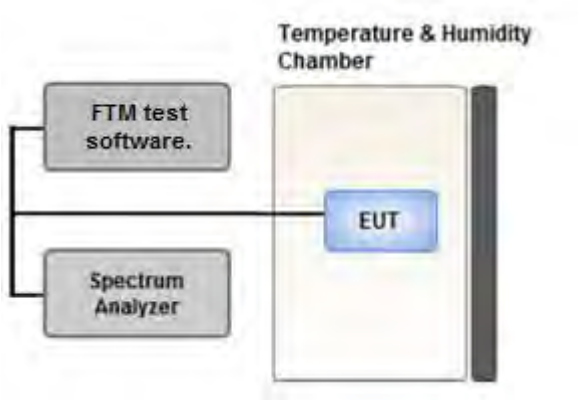
Test Overview

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 ≥ 3 MHz
3. Detector = RMS
4. Trace Mode = Average
5. Sweep time = auto
6. Number of points in sweep ≥ 2 * 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

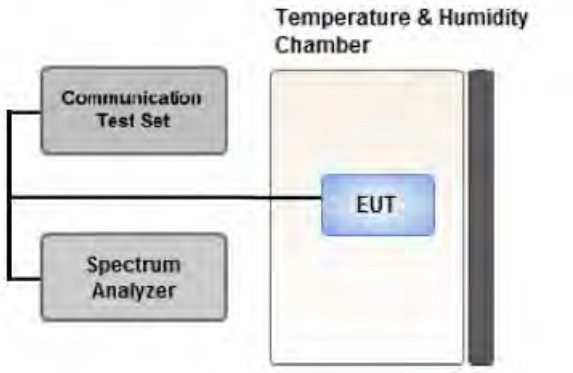
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW > 1 % of the emission bandwidth
4. VBW > 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 2 x Span/RBW
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 MHz/ 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)
- BAND 25 (1850 – 1915 MHz) overlaps the entire frequency range of BAND 2 (1850 - 1910 MHz) and they have the same Tune-up power. Therefore, test data provided in this report covers BAND 2 as well as BAND 25.
- 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: Open mode.
- All modes of operation were investigated and the worst case configuration results are reported.
  Mode: SA, NSA
  Worst case: SA (Main 2 Ant, Sub 2 Ant)
  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 were investigated and the worst case configuration results are reported.
  (Worst case: 12A-n25A(BW 10 MHz))
- 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 were investigated and the worst case bandwidth results are reported.
  (Main 2 Ant Worst case : 10 MHz, 40 MHz)
  (Sub 2 Ant Worst case : 15 MHz, 40 MHz)
- SM-F946B/DS & additional models were tested and the worst case results are reported.
  (Worst case : SM-F946B/DS)

[Main 2 Ant 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		Y
Radiated Spurious and Harmonic Emissions	PI/2 BPSK	See Section 8.2		Y

[Sub 2 Ant 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, Y

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)
- BAND 25 (1850 – 1915 MHz) overlaps the entire frequency range of BAND 2 (1850 - 1910 MHz) and they have the same Tune-up power. Therefore, test data provided in this report covers BAND 2 as well as BAND 25.
- All modes of operation were investigated and the worst case configuration results are reported.
  Mode: SA, NSA
  Worst case: NSA (12A-n25A, Main 2 Ant), SA (Sub 2 Ant)
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.
- SM-F946B/DS & additional models were tested and the worst case results are reported.
  (Worst case : SM-F946B/DS)

[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, 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
		40	Low	1	0
			High	1	215
		5, 10, 15, 20, 25,30, 40	Low, High	Full RB	0
Spurious and Harmonic Emissions at Antenna Terminal	PI/2 BPSK	5, 10, 15, 20, 25,30, 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	03/27/2024	Biennial
Precision Dipole Antenna	UHAP	Schwarzbeck	01274	03/27/2024	Biennial
Horn Antenna(1~18 GHz)	BBHA 9120D	Schwarzbeck	02289	03/21/2024	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	06/04/2023	Biennial
Bilog Antenna	VULB9160	Schwarzbeck	3150	03/09/2025	Biennial
Hybrid Antenna	VULB9160	Schwarzbeck	760	02/24/2025	Biennial
High Pass Filter	WHKX10-900-1000-15000-40SS	Wainwright Instruments	15	05/18/2023	Annual
High Pass Filter	WHKX10-2700-3000-18000-40SS	Wainwright Instruments	145	05/18/2023	Annual
High Pass Filter	WHNX6-4740-6000-26500-40CC	Wainwright Instruments	11	05/18/2023	Annual
LOW NOISE AMP (100 MHz ~ 18 GHz)	CBLU1183540B-01	CERNEX	26822	05/18/2023	Annual
Power Amplifier	CBL18265035	CERNEX	22966	12/01/2023	Annual
Power Amplifier	CBL26405040	CERNEX	25956	03/02/2024	Annual
DC Power Supply	E3632A	Hewlett Packard	MY40004427	09/05/2023	Annual
Power Splitter(DC~26.5 GHz)	11667B	Hewlett Packard	11275	03/02/2024	Annual
Chamber	SU-642	ESPEC	93008124	02/22/2024	Annual
Signal Analyzer(10 Hz~26.5 GHz)	N9020A	Agilent	MY51110063	04/11/2024	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/19/2024	Annual
Spectrum Analyzer(10 Hz~40 GHz)	FSV40	REOHDE & SCHWARZ	101436	02/22/2024	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/18/2023	Annual
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262287700	05/19/2023	Annual
Wideband Radio Communication Tester	MT8000A	Anritsu Corp.	6262302511	05/18/2023	Annual
SIGNAL GENERATOR (100 kHz~40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	07/05/2023	Annual
Signal Analyzer(5 Hz~40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/30/2023	Annual
4-Way Divider	ZC4PD-K1844+	Mini-Circuits	942907	09/27/2023	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_{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 (±dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.90 (Confidence level about 95 %, k=2)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.14 (Confidence level about 95 %, k=2)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.16 (Confidence level about 95 %, k=2)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.57 (Confidence level about 95 %, k=2)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.76 (Confidence level about 95 %, k=2)
Radiated Disturbance (Above 40 GHz)	5.52 (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	**See Note1**
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

ERP = Substitute LEVEL(dBm) + Ant. Gain – 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

EIRP = Substitute LEVEL(dBm) + Ant. Gain – 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 = 4 M17F9W

WCDMA BW = 4.17 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

QPSK Modulation

Emission Designator = 4 M48G7D

LTE BW = 4.48 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

QAM Modulation

Emission Designator = 4 M48W7D

LTE BW = 4.48 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

8. TEST DATA (Main 2 Ant)

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	Offset
1852.5	Sub6 n25(2)/ 5 MHz [15 kHz]	PI/2 BPSK	-20.56	13.03	10.00	2.15	H	< 2.00	0.123	20.88	1	12
		QPSK	-20.60	12.99	10.00	2.15	H		0.121	20.84		
		16-QAM	-21.42	12.17	10.00	2.15	H		0.101	20.02		
		64-QAM	-22.88	10.71	10.00	2.15	H		0.072	18.56		
		256-QAM	-25.45	8.14	10.00	2.15	H		0.040	15.99		
1882.5		PI/2 BPSK	-20.40	13.20	10.00	2.21	H		0.126	20.99	1	23
		QPSK	-20.51	13.09	10.00	2.21	H		0.123	20.88		
		16-QAM	-21.30	12.30	10.00	2.21	H		0.102	20.09		
		64-QAM	-22.80	10.80	10.00	2.21	H		0.072	18.59		
		256-QAM	-25.36	8.24	10.00	2.21	H		0.040	16.03		
1912.5		PI/2 BPSK	-20.47	13.55	10.01	2.11	H		0.140	21.45	1	1
		QPSK	-20.56	13.46	10.01	2.11	H		0.137	21.36		
		16-QAM	-21.40	12.62	10.01	2.11	H		0.113	20.52		
		64-QAM	-22.96	11.06	10.01	2.11	H		0.079	18.96		
		256-QAM	-25.41	8.61	10.01	2.11	H		0.045	16.51		

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
1855.0	Sub6 n25(2)/ 10 MHz [15 kHz]	PI/2 BPSK	-20.36	13.23	10.00	2.15	H	< 2.00	0.128	21.08	1	50
		QPSK	-20.46	13.13	10.00	2.15	H		0.125	20.98		
		16-QAM	-21.26	12.33	10.00	2.15	H		0.104	20.18		
		64-QAM	-22.77	10.82	10.00	2.15	H		0.074	18.67		
		256-QAM	-25.35	8.24	10.00	2.15	H		0.041	16.09		
1882.5		PI/2 BPSK	-20.46	13.14	10.00	2.21	H		0.124	20.93	1	26
		QPSK	-20.56	13.04	10.00	2.21	H		0.121	20.83		
		16-QAM	-21.39	12.21	10.00	2.21	H		0.100	20.00		
		64-QAM	-22.85	10.75	10.00	2.21	H		0.072	18.54		
		256-QAM	-25.42	8.18	10.00	2.21	H		0.040	15.97		
1910.0		PI/2 BPSK	-20.39	13.63	10.01	2.11	H		0.142	21.53	1	1
		QPSK	-20.50	13.52	10.01	2.11	H		0.139	21.42		
		16-QAM	-21.28	12.74	10.01	2.11	H		0.116	20.64		
		64-QAM	-22.87	11.15	10.01	2.11	H		0.080	19.05		
		256-QAM	-25.44	8.58	10.01	2.11	H		0.045	16.48		

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
1857.5	Sub6 n25(2)/ 15 MHz [15 kHz]	PI/2 BPSK	-20.33	13.26	10.00	2.15	H	< 2.00	0.129	21.11	1	77
		QPSK	-20.39	13.20	10.00	2.15	H		0.127	21.05		
		16-QAM	-21.37	12.22	10.00	2.15	H		0.102	20.07		
		64-QAM	-22.63	10.96	10.00	2.15	H		0.076	18.81		
		256-QAM	-25.30	8.29	10.00	2.15	H		0.041	16.14		
1882.5		PI/2 BPSK	-20.20	13.40	10.00	2.21	H		0.132	21.19	1	1
		QPSK	-20.27	13.33	10.00	2.21	H		0.130	21.12		
		16-QAM	-21.16	12.44	10.00	2.21	H		0.106	20.23		
		64-QAM	-22.60	11.00	10.00	2.21	H		0.076	18.79		
		256-QAM	-25.27	8.33	10.00	2.21	H		0.041	16.12		
1907.5		PI/2 BPSK	-20.36	13.61	10.01	2.13	H		0.141	21.49	1	1
		QPSK	-20.49	13.48	10.01	2.13	H		0.137	21.36		
		16-QAM	-21.22	12.75	10.01	2.13	H		0.116	20.63		
		64-QAM	-22.82	11.15	10.01	2.13	H		0.080	19.03		
		256-QAM	-25.40	8.57	10.01	2.13	H		0.044	16.45		

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	Sub6 n25(2)/ 20 MHz [15 kHz]	PI/2 BPSK	-20.11	13.23	10.00	2.17	H	< 2.00	0.128	21.06	1	53
		QPSK	-20.23	13.11	10.00	2.17	H		0.124	20.94		
		16-QAM	-20.94	12.40	10.00	2.17	H		0.106	20.23		
		64-QAM	-22.44	10.90	10.00	2.17	H		0.075	18.73		
		256-QAM	-25.11	8.23	10.00	2.17	H		0.040	16.06		
1882.5		PI/2 BPSK	-20.33	13.27	10.00	2.21	H		0.128	21.06	1	1
		QPSK	-20.45	13.15	10.00	2.21	H		0.124	20.94		
		16-QAM	-21.35	12.25	10.00	2.21	H		0.101	20.04		
		64-QAM	-22.76	10.84	10.00	2.21	H		0.073	18.63		
		256-QAM	-25.29	8.31	10.00	2.21	H		0.041	16.10		
1905.0		PI/2 BPSK	-20.46	13.51	10.01	2.13	H		0.138	21.39	1	1
		QPSK	-20.56	13.41	10.01	2.13	H		0.135	21.29		
		16-QAM	-21.33	12.64	10.01	2.13	H		0.113	20.52		
		64-QAM	-22.83	11.14	10.01	2.13	H		0.080	19.02		
		256-QAM	-25.48	8.49	10.01	2.13	H		0.043	16.37		

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
1862.5	Sub6 n25/ 25 MHz [15 kHz]	PI/2 BPSK	-20.21	13.13	10.00	2.17	H	< 2.00	0.125	20.96	1	66
		QPSK	-20.29	13.05	10.00	2.17	H		0.123	20.88		
		16-QAM	-21.20	12.14	10.00	2.17	H		0.099	19.97		
		64-QAM	-22.58	10.76	10.00	2.17	H		0.072	18.59		
		256-QAM	-25.30	8.04	10.00	2.17	H		0.039	15.87		
1882.5		PI/2 BPSK	-20.27	13.33	10.00	2.21	H		0.130	21.12	1	1
		QPSK	-20.30	13.30	10.00	2.21	H		0.129	21.09		
		16-QAM	-21.32	12.28	10.00	2.21	H		0.102	20.07		
		64-QAM	-22.52	11.08	10.00	2.21	H		0.077	18.87		
		256-QAM	-24.89	8.71	10.00	2.21	H		0.045	16.50		
1902.5		PI/2 BPSK	-20.35	13.56	10.01	2.15	H		0.139	21.42	1	1
		QPSK	-20.40	13.51	10.01	2.15	H		0.137	21.37		
		16-QAM	-21.21	12.70	10.01	2.15	H		0.114	20.56		
		64-QAM	-22.68	11.23	10.01	2.15	H		0.081	19.09		
		256-QAM	-25.40	8.51	10.01	2.15	H		0.043	16.37		

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
1865.0	Sub6 n25/ 30 MHz [15 kHz]	PI/2 BPSK	-20.14	13.49	10.00	2.19	H	< 2.00	0.135	21.30	1	158
		QPSK	-20.22	13.41	10.00	2.19	H		0.132	21.22		
		16-QAM	-21.09	12.54	10.00	2.19	H		0.108	20.35		
		64-QAM	-22.60	11.03	10.00	2.19	H		0.077	18.84		
		256-QAM	-25.15	8.48	10.00	2.19	H		0.043	16.29		
1882.5		PI/2 BPSK	-20.03	13.57	10.00	2.21	H		0.137	21.36	1	1
		QPSK	-20.13	13.47	10.00	2.21	H		0.134	21.26		
		16-QAM	-21.00	12.60	10.00	2.21	H		0.110	20.39		
		64-QAM	-22.45	11.15	10.00	2.21	H		0.078	18.94		
		256-QAM	-25.03	8.57	10.00	2.21	H		0.043	16.36		
1900.0		PI/2 BPSK	-20.04	13.87	10.01	2.15	H		0.149	21.73	1	1
		QPSK	-20.17	13.74	10.01	2.15	H		0.144	21.60		
		16-QAM	-21.01	12.90	10.01	2.15	H		0.119	20.76		
		64-QAM	-22.47	11.44	10.01	2.15	H		0.085	19.30		
		256-QAM	-25.00	8.91	10.01	2.15	H		0.048	16.77		

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	Sub6 n25/ 40 MHz [15 kHz]	PI/2 BPSK	-20.08	13.83	10.00	2.21	H	< 2.00	0.145	21.62	1	108
		QPSK	-20.17	13.74	10.00	2.21	H		0.142	21.53		
		16-QAM	-21.05	12.86	10.00	2.21	H		0.116	20.65		
		64-QAM	-22.53	11.38	10.00	2.21	H		0.083	19.17		
		256-QAM	-25.13	8.78	10.00	2.21	H		0.045	16.57		
1882.5		PI/2 BPSK	-20.12	13.48	10.00	2.21	H		0.134	21.27	1	108
		QPSK	-20.21	13.39	10.00	2.21	H		0.131	21.18		
		16-QAM	-21.06	12.54	10.00	2.21	H		0.108	20.33		
		64-QAM	-22.51	11.09	10.00	2.21	H		0.077	18.88		
		256-QAM	-25.14	8.46	10.00	2.21	H		0.042	16.25		
1895.0		PI/2 BPSK	-20.15	13.93	10.01	2.16	H		0.151	21.78	1	1
		QPSK	-20.17	13.91	10.01	2.16	H		0.150	21.76		
		16-QAM	-21.12	12.96	10.01	2.16	H		0.121	20.81		
		64-QAM	-22.52	11.56	10.01	2.16	H		0.087	19.41		
		256-QAM	-25.10	8.98	10.01	2.16	H		0.048	16.83		

8.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N25(2)
▣ Bandwidth: 10 MHz
▣ Modulation: PI/2 BPSK
▣ Distance: 3 meters
▣ SCS: 15 kHz

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Offset
271000 (1855.0)	3 710.00	-60.13	11.40	-60.51	3.11	H	-52.22	-13.00	1	50
	5 565.00	-59.59	11.90	-53.91	3.85	H	-45.86	-13.00		
	7 420.00	-63.06	10.80	-48.12	4.46	H	-41.78	-13.00		
376500 (1882.5)	3 765.00	-59.90	11.30	-59.97	3.09	V	-51.76	-13.00	1	26
	5 647.50	-61.41	11.85	-55.99	3.89	V	-48.03	-13.00		
	7 530.00	-64.08	11.10	-49.61	4.50	V	-43.01	-13.00		
282000 (1910.0)	3 820.00	-61.19	11.10	-60.27	3.10	H	-52.27	-13.00	1	1
	5 730.00	-59.05	11.70	-52.74	3.85	H	-44.89	-13.00		
	7 640.00	-61.54	11.20	-47.96	4.53	H	-41.29	-13.00		

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

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Offset
37400 (1870.0)	3 740.00	-60.85	11.40	-62.07	3.10	H	-53.77	-13.00	1	108
	5 610.00	-62.71	11.90	-57.63	3.79	H	-49.52	-13.00		
	7 480.00	-60.57	10.90	-46.21	4.49	H	-39.80	-13.00		
	9 350.00	-62.94	10.80	-47.87	5.07	H	-42.14	-13.00		
	11 220.00	-65.20	11.40	-46.47	5.60	H	-40.67	-13.00		
376500 (1882.5)	3 765.00	-61.38	11.30	-61.45	3.09	V	-53.24	-13.00	1	108
	5 647.50	-60.87	11.85	-55.45	3.89	V	-47.49	-13.00		
	7 530.00	-61.58	11.10	-47.11	4.50	H	-40.51	-13.00		
	9 412.50	-63.69	10.80	-48.36	5.07	V	-42.63	-13.00		
	11 295.00	-65.56	11.35	-47.23	5.64	V	-41.52	-13.00		
379000 (1895.0)	3 790.00	-60.47	11.30	-60.78	3.17	H	-52.65	-13.00	1	1
	5 685.00	-62.98	11.80	-56.62	3.88	H	-48.70	-13.00		
	7 580.00	-65.26	11.10	-51.47	4.54	H	-44.91	-13.00		
	9 475.00	-63.47	10.90	-48.24	5.09	H	-42.43	-13.00		
	11 370.00	-65.13	11.30	-45.87	5.69	H	-40.26	-13.00		

▣ ENDC-Mode : 12A(10 MHz)-n25A(40 MHz)

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
23095 (707.5)	1415.00	-59.97	7.61	-66.60	1.87	V	-60.85	-13.00
	2122.50	-60.54	8.98	-66.36	2.31	V	-59.69	-13.00
	2830.00	-62.01	10.52	-66.02	2.73	V	-58.23	-13.00

8.3 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	3.82
			QPSK			4.38
			16-QAM			5.53
			64-QAM			5.94
			256-QAM			6.41
	10 MHz		BPSK	50		4.11
			QPSK			4.62
			16-QAM			5.51
			64-QAM			5.97
			256-QAM			6.58
	15 MHz		BPSK	75		4.02
			QPSK			4.48
			16-QAM			5.43
			64-QAM			5.83
			256-QAM			6.54
	20 MHz		BPSK	100		4.11
			QPSK			4.57
			16-QAM			5.53
			64-QAM			6.02
			256-QAM			6.54

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n25	25 MHz	1882.5	BPSK	128	0	4.13
			QPSK			4.73
			16-QAM			5.67
			64-QAM			6.22
			256-QAM			6.54
	30 MHz		BPSK	160		4.13
			QPSK			4.82
			16-QAM			5.73
			64-QAM			6.30
			256-QAM			6.52
	40 MHz		BPSK	216		4.12
			QPSK			4.65
			16-QAM			5.73
			64-QAM			5.97
			256-QAM			6.50

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 106 ~ 140.

8.4 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	4.5220
			QPSK			4.5521
			16-QAM			4.4982
			64-QAM			4.5076
			256-QAM			4.5010
	10 MHz		BPSK	50		9.0039
			QPSK			8.9861
			16-QAM			8.9799
			64-QAM			8.9983
			256-QAM			8.9593
	15 MHz		BPSK	75		13.543
			QPSK			13.468
			16-QAM			13.469
			64-QAM			13.446
			256-QAM			13.490
	20 MHz		BPSK	100		17.935
			QPSK			17.941
			16-QAM			17.928
			64-QAM			17.903
			256-QAM			17.943

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n25	25 MHz	1882.5	BPSK	128	0	22.967
			QPSK			22.910
			16-QAM			22.869
			64-QAM			22.884
			256-QAM			22.937
	30 MHz		BPSK	160		28.668
			QPSK			28.638
			16-QAM			28.637
			64-QAM			28.608
			256-QAM			28.591
	40 MHz		BPSK	216		38.728
			QPSK			38.733
			16-QAM			38.726
			64-QAM			38.774
			256-QAM			38.816

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 71 ~ 105.

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 n25(2)	5	1852.5	4.0713	30.200	-70.029	-39.829	-13.00
		1882.5	8.0125	30.815	-70.984	-40.169	
		1912.5	9.9746	30.815	-70.221	-39.406	
	10	1855.0	9.6949	30.815	-70.839	-40.024	
		1882.5	9.0882	30.815	-70.749	-39.934	
		1910.0	9.7592	30.815	-70.613	-39.798	
	15	1857.5	9.6914	30.815	-70.779	-39.964	
		1882.5	9.7223	30.815	-71.219	-40.404	
		1907.5	4.0424	30.200	-70.614	-40.414	
	20	1860.0	8.2288	30.815	-70.991	-40.176	
		1882.5	9.6396	30.815	-71.013	-40.198	
		1905.0	9.1157	30.815	-70.385	-39.570	
Sub6 n25	25	1862.5	4.0933	30.200	-70.701	-40.501	
		1882.5	3.7623	30.200	-70.972	-40.772	
		1902.5	3.8156	30.200	-70.517	-40.317	
	30	1865.0	9.1665	30.815	-71.199	-40.384	
		1882.5	3.8007	30.200	-70.512	-40.312	
		1900.0	3.7463	30.200	-70.341	-40.141	
	40	1870.0	8.8619	30.815	-70.665	-39.850	
		1882.5	9.7218	30.815	-70.932	-40.117	
		1895.0	9.6815	30.815	-70.114	-39.299	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 183 ~ 224.

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 141 ~ 182.

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ BandWidth: 5 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1852.5	100 %	+20(Ref)	1852 499 998	0.0	0.000 000	0.000
	100 %	-30	1852 499 993	-4.5	0.000 000	-0.002
	100 %	-20	1852 499 997	-0.8	0.000 000	0.000
	100 %	-10	1852 499 996	-1.8	0.000 000	-0.001
	100 %	0	1852 499 997	-0.8	0.000 000	0.000
	100 %	+10	1852 499 995	-2.5	0.000 000	-0.001
	100 %	+30	1852 499 996	-2.1	0.000 000	-0.001
	100 %	+40	1852 499 997	-1.0	0.000 000	-0.001
	100 %	+50	1852 499 995	-2.5	0.000 000	-0.001
	Batt. Endpoint	+20	1852 499 997	-0.5	0.000 000	0.000
1912.5	100 %	+20(Ref)	1912 499 993	0.0	0.000 000	0.000
	100 %	-30	1912 499 984	-9.3	0.000 000	-0.005
	100 %	-20	1912 499 985	-7.7	0.000 000	-0.004
	100 %	-10	1912 499 985	-8.6	0.000 000	-0.004
	100 %	0	1912 499 985	-7.8	0.000 000	-0.004
	100 %	+10	1912 499 987	-6.5	0.000 000	-0.003
	100 %	+30	1912 499 987	-6.3	0.000 000	-0.003
	100 %	+40	1912 499 985	-7.9	0.000 000	-0.004
	100 %	+50	1912 499 985	-8.6	0.000 000	-0.005
	Batt. Endpoint	+20	1912 499 985	-8.1	0.000 000	-0.004

▣ BandWidth: 10 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1855.0	100 %	+20(Ref)	1855 000 000	0.0	0.000 000	0.000
	100 %	-30	1854 999 999	-0.9	0.000 000	0.000
	100 %	-20	1855 000 000	-0.1	0.000 000	0.000
	100 %	-10	1855 000 000	-0.2	0.000 000	0.000
	100 %	0	1855 000 001	0.4	0.000 000	0.000
	100 %	+10	1855 000 000	0.1	0.000 000	0.000
	100 %	+30	1854 999 999	-1.0	0.000 000	-0.001
	100 %	+40	1854 999 998	-1.9	0.000 000	-0.001
	100 %	+50	1855 000 001	1.0	0.000 000	0.001
	Batt. Endpoint	+20	1854 999 999	-0.7	0.000 000	0.000
1910.0	100 %	+20(Ref)	1910 000 009	0.0	0.000 000	0.000
	100 %	-30	1910 000 019	9.6	0.000 001	0.005
	100 %	-20	1910 000 018	8.6	0.000 000	0.005
	100 %	-10	1910 000 018	8.0	0.000 000	0.004
	100 %	0	1910 000 017	7.7	0.000 000	0.004
	100 %	+10	1910 000 018	8.5	0.000 000	0.004
	100 %	+30	1910 000 018	9.0	0.000 000	0.005
	100 %	+40	1910 000 020	10.1	0.000 001	0.005
	100 %	+50	1910 000 017	7.5	0.000 000	0.004
	Batt. Endpoint	+20	1910 000 018	8.7	0.000 000	0.005

▣ BandWidth: 15 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1857.5	100 %	+20(Ref)	1857 500 002	0.0	0.000 000	0.000
	100 %	-30	1857 500 001	-1.4	0.000 000	-0.001
	100 %	-20	1857 500 004	1.7	0.000 000	0.001
	100 %	-10	1857 500 003	1.3	0.000 000	0.001
	100 %	0	1857 500 003	1.1	0.000 000	0.001
	100 %	+10	1857 500 003	0.8	0.000 000	0.000
	100 %	+30	1857 500 005	2.7	0.000 000	0.001
	100 %	+40	1857 500 003	1.4	0.000 000	0.001
	100 %	+50	1857 500 003	0.5	0.000 000	0.000
	Batt. Endpoint	+20	1857 500 004	1.5	0.000 000	0.001
1907.5	100 %	+20(Ref)	1907 500 006	0.0	0.000 000	0.000
	100 %	-30	1907 500 009	3.0	0.000 000	0.002
	100 %	-20	1907 500 010	3.6	0.000 000	0.002
	100 %	-10	1907 500 010	3.5	0.000 000	0.002
	100 %	0	1907 500 013	6.9	0.000 000	0.004
	100 %	+10	1907 500 011	4.5	0.000 000	0.002
	100 %	+30	1907 500 012	5.1	0.000 000	0.003
	100 %	+40	1907 500 009	2.8	0.000 000	0.001
	100 %	+50	1907 500 012	5.6	0.000 000	0.003
	Batt. Endpoint	+20	1907 500 010	3.2	0.000 000	0.002

▣ BandWidth: 20 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1860.0	100 %	+20(Ref)	1859 999 998	0.0	0.000 000	0.000
	100 %	-30	1859 999 998	-0.5	0.000 000	0.000
	100 %	-20	1859 999 999	1.1	0.000 000	0.001
	100 %	-10	1859 999 997	-1.3	0.000 000	-0.001
	100 %	0	1859 999 997	-1.3	0.000 000	-0.001
	100 %	+10	1859 999 998	0.1	0.000 000	0.000
	100 %	+30	1859 999 998	0.0	0.000 000	0.000
	100 %	+40	1859 999 998	-0.4	0.000 000	0.000
	100 %	+50	1859 999 996	-2.4	0.000 000	-0.001
	Batt. Endpoint	+20	1859 999 999	0.3	0.000 000	0.000
1905.0	100 %	+20(Ref)	1905 000 001	0.0	0.000 000	0.000
	100 %	-30	1905 000 001	0.5	0.000 000	0.000
	100 %	-20	1905 000 000	-0.7	0.000 000	0.000
	100 %	-10	1905 000 001	0.0	0.000 000	0.000
	100 %	0	1904 999 997	-4.1	0.000 000	-0.002
	100 %	+10	1904 999 999	-1.5	0.000 000	-0.001
	100 %	+30	1904 999 999	-1.2	0.000 000	-0.001
	100 %	+40	1904 999 998	-2.5	0.000 000	-0.001
	100 %	+50	1904 999 998	-3.0	0.000 000	-0.002
	Batt. Endpoint	+20	1905 000 001	0.1	0.000 000	0.000

▣ BandWidth: 25 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1862.5	100 %	+20(Ref)	1862 500 006	0.0	0.000 000	0.000
	100 %	-30	1862 500 015	9.0	0.000 000	0.005
	100 %	-20	1862 500 013	6.8	0.000 000	0.004
	100 %	-10	1862 500 013	6.8	0.000 000	0.004
	100 %	0	1862 500 013	7.0	0.000 000	0.004
	100 %	+10	1862 500 011	5.1	0.000 000	0.003
	100 %	+30	1862 500 012	6.1	0.000 000	0.003
	100 %	+40	1862 500 013	6.6	0.000 000	0.004
	100 %	+50	1862 500 012	5.9	0.000 000	0.003
	Batt. Endpoint	+20	1862 500 014	8.3	0.000 000	0.004
1902.5	100 %	+20(Ref)	1902 500 010	0.0	0.000 000	0.000
	100 %	-30	1902 500 018	8.2	0.000 000	0.004
	100 %	-20	1902 500 017	7.1	0.000 000	0.004
	100 %	-10	1902 500 019	9.4	0.000 000	0.005
	100 %	0	1902 500 020	10.5	0.000 001	0.005
	100 %	+10	1902 500 019	8.6	0.000 000	0.005
	100 %	+30	1902 500 020	9.9	0.000 001	0.005
	100 %	+40	1902 500 019	8.6	0.000 000	0.005
	100 %	+50	1902 500 019	8.6	0.000 000	0.005
	Batt. Endpoint	+20	1902 500 018	8.1	0.000 000	0.004

▣ BandWidth: 30 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1865.0	100 %	+20(Ref)	1865 000 007	0.0	0.000 000	0.000
	100 %	-30	1865 000 015	7.7	0.000 000	0.004
	100 %	-20	1865 000 012	5.5	0.000 000	0.003
	100 %	-10	1865 000 013	6.5	0.000 000	0.003
	100 %	0	1865 000 014	7.2	0.000 000	0.004
	100 %	+10	1865 000 014	7.2	0.000 000	0.004
	100 %	+30	1865 000 013	6.1	0.000 000	0.003
	100 %	+40	1865 000 014	7.6	0.000 000	0.004
	100 %	+50	1865 000 014	7.6	0.000 000	0.004
	Batt. Endpoint	+20	1865 000 014	7.0	0.000 000	0.004
1900.0	100 %	+20(Ref)	1900 000 005	0.0	0.000 000	0.000
	100 %	-30	1900 000 011	6.2	0.000 000	0.003
	100 %	-20	1900 000 011	5.8	0.000 000	0.003
	100 %	-10	1900 000 011	5.8	0.000 000	0.003
	100 %	0	1900 000 011	5.5	0.000 000	0.003
	100 %	+10	1900 000 011	5.8	0.000 000	0.003
	100 %	+30	1900 000 011	5.6	0.000 000	0.003
	100 %	+40	1900 000 011	5.9	0.000 000	0.003
	100 %	+50	1900 000 011	5.9	0.000 000	0.003
	Batt. Endpoint	+20	1900 000 011	6.4	0.000 000	0.003

▣ BandWidth: 40 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1870.0	100 %	+20(Ref)	1870 000 008	0.0	0.000 000	0.000
	100 %	-30	1870 000 016	7.8	0.000 000	0.004
	100 %	-20	1870 000 015	7.0	0.000 000	0.004
	100 %	-10	1870 000 014	5.9	0.000 000	0.003
	100 %	0	1870 000 014	5.7	0.000 000	0.003
	100 %	+10	1870 000 016	7.7	0.000 000	0.004
	100 %	+30	1870 000 015	7.0	0.000 000	0.004
	100 %	+40	1870 000 017	8.4	0.000 000	0.004
	100 %	+50	1870 000 017	8.6	0.000 000	0.005
	Batt. Endpoint	+20	1870 000 013	4.8	0.000 000	0.003
1895.0	100 %	+20(Ref)	1895 000 009	0.0	0.000 000	0.000
	100 %	-30	1895 000 020	10.5	0.000 001	0.006
	100 %	-20	1895 000 020	10.7	0.000 001	0.006
	100 %	-10	1895 000 020	10.7	0.000 001	0.006
	100 %	0	1895 000 019	9.8	0.000 001	0.005
	100 %	+10	1895 000 019	9.8	0.000 001	0.005
	100 %	+30	1895 000 020	10.6	0.000 001	0.006
	100 %	+40	1895 000 020	11.1	0.000 001	0.006
	100 %	+50	1895 000 020	11.1	0.000 001	0.006
	Batt. Endpoint	+20	1895 000 018	8.4	0.000 000	0.004

9. TEST DATA (Sub 2 Ant)

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(2)/ 5 MHz [15 kHz]	PI/2 BPSK	-18.94	14.65	10.00	2.15	H	< 2.00	0.178	22.50	1	12
		QPSK	-19.06	14.53	10.00	2.15	H		0.173	22.38		
		16-QAM	-20.07	13.52	10.00	2.15	H		0.137	21.37		
		64-QAM	-21.35	12.24	10.00	2.15	H		0.102	20.09		
		256-QAM	-23.99	9.60	10.00	2.15	H		0.056	17.45		
1882.5		PI/2 BPSK	-19.05	14.55	10.00	2.21	H		0.172	22.34	1	1
		QPSK	-19.06	14.54	10.00	2.21	H		0.171	22.33		
		16-QAM	-20.15	13.45	10.00	2.21	H		0.133	21.24		
		64-QAM	-21.59	12.01	10.00	2.21	H		0.096	19.80		
		256-QAM	-24.18	9.42	10.00	2.21	H		0.053	17.21		
1912.5		PI/2 BPSK	-19.48	14.54	10.01	2.11	H		0.176	22.44	1	1
		QPSK	-19.57	14.45	10.01	2.11	H		0.172	22.35		
		16-QAM	-20.55	13.47	10.01	2.11	H		0.137	21.37		
		64-QAM	-21.92	12.10	10.01	2.11	H		0.100	20.00		
		256-QAM	-24.44	9.58	10.01	2.11	H		0.056	17.48		

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
1855.0	Sub6 n25(2)/ 10 MHz [15 kHz]	PI/2 BPSK	-18.97	14.62	10.00	2.15	H	< 2.00	0.177	22.47	1	50
		QPSK	-19.09	14.50	10.00	2.15	H		0.172	22.35		
		16-QAM	-20.03	13.56	10.00	2.15	H		0.138	21.41		
		64-QAM	-21.34	12.25	10.00	2.15	H		0.102	20.10		
		256-QAM	-24.00	9.59	10.00	2.15	H		0.056	17.44		
1882.5		PI/2 BPSK	-19.02	14.58	10.00	2.21	H		0.173	22.37	1	1
		QPSK	-19.13	14.47	10.00	2.21	H		0.168	22.26		
		16-QAM	-20.10	13.50	10.00	2.21	H		0.135	21.29		
		64-QAM	-21.45	12.15	10.00	2.21	H		0.099	19.94		
		256-QAM	-24.06	9.54	10.00	2.21	H		0.054	17.33		
1910.0		PI/2 BPSK	-19.46	14.56	10.01	2.11	H		0.176	22.46	1	26
		QPSK	-19.59	14.43	10.01	2.11	H		0.171	22.33		
		16-QAM	-20.49	13.53	10.01	2.11	H		0.139	21.43		
		64-QAM	-21.90	12.12	10.01	2.11	H		0.101	20.02		
		256-QAM	-24.53	9.49	10.01	2.11	H		0.055	17.39		

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
1857.5	Sub6 n25(2)/ 15 MHz [15 kHz]	PI/2 BPSK	-18.90	14.69	10.00	2.15	H	< 2.00	0.180	22.54	1	1
		QPSK	-19.00	14.59	10.00	2.15	H		0.175	22.44		
		16-QAM	-20.03	13.56	10.00	2.15	H		0.138	21.41		
		64-QAM	-21.25	12.34	10.00	2.15	H		0.105	20.19		
		256-QAM	-24.03	9.56	10.00	2.15	H		0.055	17.41		
1882.5		PI/2 BPSK	-18.93	14.67	10.00	2.21	H		0.176	22.46	1	1
		QPSK	-19.00	14.60	10.00	2.21	H		0.174	22.39		
		16-QAM	-19.99	13.61	10.00	2.21	H		0.138	21.40		
		64-QAM	-21.37	12.23	10.00	2.21	H		0.101	20.02		
		256-QAM	-24.03	9.57	10.00	2.21	H		0.055	17.36		
1907.5		PI/2 BPSK	-19.10	14.87	10.01	2.13	H		0.188	22.75	1	1
		QPSK	-19.17	14.80	10.01	2.13	H		0.185	22.68		
		16-QAM	-20.18	13.79	10.01	2.13	H		0.147	21.67		
		64-QAM	-21.59	12.38	10.01	2.13	H		0.106	20.26		
		256-QAM	-24.14	9.83	10.01	2.13	H		0.059	17.71		

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	Sub6 n25(2)/ 20 MHz [15 kHz]	PI/2 BPSK	-18.81	14.53	10.00	2.17	H	< 2.00	0.172	22.36	1	53
		QPSK	-18.88	14.46	10.00	2.17	H		0.170	22.29		
		16-QAM	-19.84	13.50	10.00	2.17	H		0.136	21.33		
		64-QAM	-21.22	12.12	10.00	2.17	H		0.099	19.95		
		256-QAM	-23.91	9.43	10.00	2.17	H		0.053	17.26		
1882.5		PI/2 BPSK	-18.95	14.65	10.00	2.21	H		0.176	22.44	1	1
		QPSK	-19.08	14.52	10.00	2.21	H		0.170	22.31		
		16-QAM	-20.06	13.54	10.00	2.21	H		0.136	21.33		
		64-QAM	-21.50	12.10	10.00	2.21	H		0.098	19.89		
		256-QAM	-24.03	9.57	10.00	2.21	H		0.055	17.36		
1905.0		PI/2 BPSK	-19.69	14.28	10.01	2.13	H		0.164	22.16	1	104
		QPSK	-19.75	14.22	10.01	2.13	H		0.162	22.10		
		16-QAM	-20.74	13.23	10.01	2.13	H		0.129	21.11		
		64-QAM	-22.09	11.88	10.01	2.13	H		0.095	19.76		
		256-QAM	-24.75	9.22	10.01	2.13	H		0.051	17.10		

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
1862.5	Sub6 n25/ 25 MHz [15 kHz]	PI/2 BPSK	-18.98	14.36	10.00	2.17	H	< 2.00	0.166	22.19	1	66
		QPSK	-19.05	14.29	10.00	2.17	H		0.163	22.12		
		16-QAM	-20.05	13.29	10.00	2.17	H		0.130	21.12		
		64-QAM	-21.46	11.88	10.00	2.17	H		0.094	19.71		
		256-QAM	-24.13	9.21	10.00	2.17	H		0.051	17.04		
1882.5		PI/2 BPSK	-18.94	14.66	10.00	2.21	H		0.176	22.45	1	1
		QPSK	-18.99	14.61	10.00	2.21	H		0.174	22.40		
		16-QAM	-19.98	13.62	10.00	2.21	H		0.139	21.41		
		64-QAM	-21.28	12.32	10.00	2.21	H		0.103	20.11		
		256-QAM	-23.66	9.94	10.00	2.21	H		0.059	17.73		
1902.5		PI/2 BPSK	-19.27	14.64	10.01	2.15	H		0.178	22.50	1	66
		QPSK	-19.28	14.63	10.01	2.15	H		0.177	22.49		
		16-QAM	-20.33	13.58	10.01	2.15	H		0.139	21.44		
		64-QAM	-21.64	12.27	10.01	2.15	H		0.103	20.13		
		256-QAM	-24.35	9.56	10.01	2.15	H		0.055	17.42		

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
1865.0	Sub6 n25/ 30 MHz [15 kHz]	PI/2 BPSK	-19.02	14.61	10.00	2.19	H	< 2.00	0.175	22.42	1	1
		QPSK	-19.06	14.57	10.00	2.19	H		0.173	22.38		
		16-QAM	-20.10	13.53	10.00	2.19	H		0.136	21.34		
		64-QAM	-21.39	12.24	10.00	2.19	H		0.101	20.05		
		256-QAM	-24.02	9.61	10.00	2.19	H		0.055	17.42		
1882.5		PI/2 BPSK	-18.87	14.73	10.00	2.21	H		0.179	22.52	1	1
		QPSK	-18.99	14.61	10.00	2.21	H		0.174	22.40		
		16-QAM	-19.89	13.71	10.00	2.21	H		0.141	21.50		
		64-QAM	-21.32	12.28	10.00	2.21	H		0.102	20.07		
		256-QAM	-23.93	9.67	10.00	2.21	H		0.056	17.46		
1900.0		PI/2 BPSK	-19.11	14.80	10.01	2.15	H		0.184	22.66	1	1
		QPSK	-19.20	14.71	10.01	2.15	H		0.181	22.57		
		16-QAM	-20.15	13.76	10.01	2.15	H		0.145	21.62		
		64-QAM	-21.56	12.35	10.01	2.15	H		0.105	20.21		
		256-QAM	-24.05	9.86	10.01	2.15	H		0.059	17.72		

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	Sub6 n25/ 40 MHz [15 kHz]	PI/2 BPSK	-18.93	14.98	10.00	2.21	H	< 2.00	0.189	22.77	1	108
		QPSK	-19.00	14.91	10.00	2.21	H		0.186	22.70		
		16-QAM	-19.90	14.01	10.00	2.21	H		0.151	21.80		
		64-QAM	-21.34	12.57	10.00	2.21	H		0.109	20.36		
		256-QAM	-23.93	9.98	10.00	2.21	H		0.060	17.77		
1882.5		PI/2 BPSK	-19.00	14.60	10.00	2.21	H		0.174	22.39	1	108
		QPSK	-19.16	14.44	10.00	2.21	H		0.167	22.23		
		16-QAM	-20.14	13.46	10.00	2.21	H		0.133	21.25		
		64-QAM	-21.50	12.10	10.00	2.21	H		0.098	19.89		
		256-QAM	-24.08	9.52	10.00	2.21	H		0.054	17.31		
1895.0		PI/2 BPSK	-19.05	15.03	10.01	2.16	H		0.194	22.88	1	1
		QPSK	-19.07	15.01	10.01	2.16	H		0.193	22.86		
		16-QAM	-20.12	13.96	10.01	2.16	H		0.152	21.81		
		64-QAM	-21.43	12.65	10.01	2.16	H		0.112	20.50		
		256-QAM	-24.03	10.05	10.01	2.16	H		0.062	17.90		

9.2 RADIATED SPURIOUS EMISSIONS

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

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Offset
371500 (1857.5)	3 715.00	-58.55	11.40	-58.93	3.12	V	-50.65	-13.00	1	1
	5 572.50	-60.80	11.90	-55.04	3.86	V	-47.00	-13.00		
	7 430.00	-63.69	10.80	-48.85	4.46	V	-42.51	-13.00		
376500 (1882.5)	3 765.00	-61.75	11.30	-61.82	3.09	H	-53.61	-13.00	1	1
	5 647.50	-62.09	11.85	-56.67	3.89	H	-48.71	-13.00		
	7 530.00	-62.72	11.10	-48.25	4.50	H	-41.65	-13.00		
381500 (1907.5)	3 815.00	-59.83	11.10	-59.25	3.10	V	-51.25	-13.00	1	1
	5 722.50	-63.02	11.70	-57.00	3.84	V	-49.14	-13.00		
	7 630.00	-63.83	11.20	-50.39	4.52	V	-43.71	-13.00		

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

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	-61.89	11.40	-63.11	3.10	H	-54.81	-13.00	1	108
	5 610.00	-62.50	11.90	-57.42	3.79	H	-49.31	-13.00		
	7 480.00	-64.03	10.90	-49.67	4.49	H	-43.26	-13.00		
	9 350.00	-62.17	10.80	-47.10	5.07	H	-41.37	-13.00		
	11 220.00	-64.36	11.40	-45.63	5.60	H	-39.83	-13.00		
376500 (1882.5)	3 765.00	-60.40	11.30	-60.47	3.09	V	-52.26	-13.00	1	108
	5 647.50	-61.60	11.85	-56.18	3.89	V	-48.22	-13.00		
	7 530.00	-64.82	11.10	-50.35	4.50	V	-43.75	-13.00		
	9 412.50	-63.00	10.80	-47.67	5.07	V	-41.94	-13.00		
	11 295.00	-64.11	11.35	-45.78	5.64	V	-40.07	-13.00		
379000 (1895.0)	3 790.00	-60.73	11.30	-61.04	3.17	H	-52.91	-13.00	1	1
	5 685.00	-62.74	11.80	-56.38	3.88	H	-48.46	-13.00		
	7 580.00	-64.69	11.10	-50.90	4.54	H	-44.34	-13.00		
	9 475.00	-63.78	10.90	-48.55	5.09	H	-42.74	-13.00		
	11 370.00	-65.94	11.30	-46.68	5.69	H	-41.07	-13.00		

▣ ENDC-Mode : 12A(10 MHz)-n25A(40 MHz)

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
23095 (707.5)	1415.00	-60.08	7.61	-66.71	1.87	V	-60.96	-13.00
	2122.50	-60.57	8.98	-66.39	2.31	V	-59.72	-13.00
	2830.00	-62.56	10.52	-66.57	2.73	V	-58.78	-13.00

9.3 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	4.19
			QPSK			5.57
			16-QAM			6.44
			64-QAM			6.62
			256-QAM			6.77
	10 MHz		BPSK	50		4.38
			QPSK			5.57
			16-QAM			6.23
			64-QAM			6.57
			256-QAM			6.63
	15 MHz		BPSK	75		4.40
			QPSK			5.52
			16-QAM			6.28
			64-QAM			6.53
			256-QAM			6.88
	20 MHz		BPSK	100		4.56
			QPSK			5.70
			16-QAM			6.37
			64-QAM			6.60
			256-QAM			6.93

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n25	25 MHz	1882.5	BPSK	128	0	4.08
			QPSK			5.43
			16-QAM			6.29
			64-QAM			6.54
			256-QAM			6.96
	30 MHz		BPSK	160		4.03
			QPSK			5.35
			16-QAM			6.24
			64-QAM			6.56
			256-QAM			6.73
	40 MHz		BPSK	216		4.11
			QPSK			5.31
			16-QAM			6.25
			64-QAM			6.58
			256-QAM			6.74

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 261 ~ 295.

9.4 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	4.5242
			QPSK			4.5232
			16-QAM			4.5142
			64-QAM			4.5087
			256-QAM			4.5169
	10 MHz		BPSK	50		8.9885
			QPSK			8.9961
			16-QAM			9.0011
			64-QAM			8.9513
			256-QAM			8.9831
	15 MHz		BPSK	75		13.463
			QPSK			13.413
			16-QAM			13.449
			64-QAM			13.431
			256-QAM			13.445
	20 MHz		BPSK	100		17.919
			QPSK			17.850
			16-QAM			17.922
			64-QAM			17.894
			256-QAM			17.898

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n25	25 MHz	1882.5	BPSK	128	0	22.896
			QPSK			22.944
			16-QAM			22.901
			64-QAM			22.883
			256-QAM			22.817
	30 MHz		BPSK	160		28.513
			QPSK			28.587
			16-QAM			28.538
			64-QAM			28.577
			256-QAM			28.605
	40 MHz		BPSK	216		38.573
			QPSK			38.580
			16-QAM			38.625
			64-QAM			38.597
			256-QAM			38.503

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 226 ~ 260.

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(2)	5	1852.5	4.0504	30.200	-70.202	-40.002	-13.00
		1882.5	9.7238	30.815	-70.768	-39.953	
		1912.5	3.8136	30.200	-71.135	-40.935	
	10	1855.0	8.8360	30.815	-71.076	-40.261	
		1882.5	4.9806	30.200	-69.794	-39.594	
		1910.0	3.8296	30.200	-70.832	-40.632	
	15	1857.5	9.0997	30.815	-70.821	-40.006	
		1882.5	8.8893	30.815	-70.821	-40.006	
		1907.5	3.8017	30.200	-70.264	-40.064	
	20	1860.0	8.2707	30.815	-70.293	-39.478	
		1882.5	5.2089	30.815	-70.917	-40.102	
		1905.0	9.6999	30.815	-70.825	-40.010	
Sub6 n25	25	1862.5	3.8046	30.200	-70.461	-40.261	
		1882.5	4.5594	30.200	-70.844	-40.644	
		1902.5	9.1062	30.815	-69.567	-38.752	
	30	1865.0	7.1655	30.815	-70.604	-39.789	
		1882.5	8.2283	30.815	-70.790	-39.975	
		1900.0	3.7059	30.200	-70.658	-40.458	
	40	1870.0	4.0055	30.200	-70.984	-40.784	
		1882.5	8.3101	30.815	-69.457	-38.642	
		1895.0	7.9970	30.815	-70.674	-39.859	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 338 ~ 379.

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 296 ~ 337.

9.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ BandWidth: 5 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1852.5	100 %	+20(Ref)	1852 499 995	0.0	0.000 000	0.000
	100 %	-30	1852 499 993	-1.8	0.000 000	-0.001
	100 %	-20	1852 499 991	-4.4	0.000 000	-0.002
	100 %	-10	1852 499 994	-1.3	0.000 000	-0.001
	100 %	0	1852 499 993	-2.1	0.000 000	-0.001
	100 %	+10	1852 499 991	-4.0	0.000 000	-0.002
	100 %	+30	1852 499 992	-2.9	0.000 000	-0.002
	100 %	+40	1852 499 993	-2.2	0.000 000	-0.001
	100 %	+50	1852 499 993	-2.4	0.000 000	-0.001
	Batt. Endpoint	+20	1852 499 991	-4.4	0.000 000	-0.002
1912.5	100 %	+20(Ref)	1912 499 995	0.0	0.000 000	0.000
	100 %	-30	1912 499 992	-2.4	0.000 000	-0.001
	100 %	-20	1912 499 991	-4.1	0.000 000	-0.002
	100 %	-10	1912 499 991	-3.9	0.000 000	-0.002
	100 %	0	1912 499 990	-4.5	0.000 000	-0.002
	100 %	+10	1912 499 989	-5.3	0.000 000	-0.003
	100 %	+30	1912 499 993	-2.1	0.000 000	-0.001
	100 %	+40	1912 499 991	-4.1	0.000 000	-0.002
	100 %	+50	1912 499 991	-3.8	0.000 000	-0.002
	Batt. Endpoint	+20	1912 499 993	-2.1	0.000 000	-0.001

▣ BandWidth: 10 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1855.0	100 %	+20(Ref)	1854 999 994	0.0	0.000 000	0.000
	100 %	-30	1854 999 991	-2.9	0.000 000	-0.002
	100 %	-20	1854 999 991	-3.0	0.000 000	-0.002
	100 %	-10	1854 999 988	-5.9	0.000 000	-0.003
	100 %	0	1854 999 992	-2.7	0.000 000	-0.001
	100 %	+10	1854 999 988	-6.2	0.000 000	-0.003
	100 %	+30	1854 999 991	-3.6	0.000 000	-0.002
	100 %	+40	1854 999 990	-4.8	0.000 000	-0.003
	100 %	+50	1854 999 990	-4.1	0.000 000	-0.002
	Batt. Endpoint	+20	1854 999 992	-2.4	0.000 000	-0.001
1910.0	100 %	+20(Ref)	1910 000 007	0.0	0.000 000	0.000
	100 %	-30	1910 000 012	5.1	0.000 000	0.003
	100 %	-20	1910 000 014	7.4	0.000 000	0.004
	100 %	-10	1910 000 015	7.9	0.000 000	0.004
	100 %	0	1910 000 015	8.2	0.000 000	0.004
	100 %	+10	1910 000 013	6.7	0.000 000	0.004
	100 %	+30	1910 000 013	6.8	0.000 000	0.004
	100 %	+40	1910 000 014	7.3	0.000 000	0.004
	100 %	+50	1910 000 014	6.8	0.000 000	0.004
	Batt. Endpoint	+20	1910 000 013	5.8	0.000 000	0.003

▣ BandWidth: 15 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1857.5	100 %	+20(Ref)	1857 499 999	0.0	0.000 000	0.000
	100 %	-30	1857 499 998	-1.4	0.000 000	-0.001
	100 %	-20	1857 500 002	2.4	0.000 000	0.001
	100 %	-10	1857 499 999	-0.5	0.000 000	0.000
	100 %	0	1857 500 003	3.4	0.000 000	0.002
	100 %	+10	1857 500 001	1.6	0.000 000	0.001
	100 %	+30	1857 500 002	3.2	0.000 000	0.002
	100 %	+40	1857 500 003	3.4	0.000 000	0.002
	100 %	+50	1857 499 999	0.2	0.000 000	0.000
	Batt. Endpoint	+20	1857 500 002	2.9	0.000 000	0.002
1907.5	100 %	+20(Ref)	1907 499 999	0.0	0.000 000	0.000
	100 %	-30	1907 500 001	2.2	0.000 000	0.001
	100 %	-20	1907 500 001	1.8	0.000 000	0.001
	100 %	-10	1907 499 999	0.5	0.000 000	0.000
	100 %	0	1907 499 998	-1.0	0.000 000	-0.001
	100 %	+10	1907 499 996	-2.5	0.000 000	-0.001
	100 %	+30	1907 499 999	-0.2	0.000 000	0.000
	100 %	+40	1907 499 997	-2.0	0.000 000	-0.001
	100 %	+50	1907 500 000	1.2	0.000 000	0.001
	Batt. Endpoint	+20	1907 500 002	3.1	0.000 000	0.002

▣ BandWidth: 20 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1860.0	100 %	+20(Ref)	1859 999 996	0.0	0.000 000	0.000
	100 %	-30	1859 999 996	-0.2	0.000 000	0.000
	100 %	-20	1859 999 997	0.3	0.000 000	0.000
	100 %	-10	1859 999 994	-2.0	0.000 000	-0.001
	100 %	0	1859 999 991	-5.0	0.000 000	-0.003
	100 %	+10	1859 999 992	-3.9	0.000 000	-0.002
	100 %	+30	1859 999 995	-1.0	0.000 000	-0.001
	100 %	+40	1859 999 992	-4.6	0.000 000	-0.002
	100 %	+50	1859 999 994	-2.1	0.000 000	-0.001
	Batt. Endpoint	+20	1859 999 996	0.2	0.000 000	0.000
1905.0	100 %	+20(Ref)	1904 999 997	0.0	0.000 000	0.000
	100 %	-30	1904 999 994	-2.9	0.000 000	-0.002
	100 %	-20	1904 999 993	-3.9	0.000 000	-0.002
	100 %	-10	1904 999 994	-2.9	0.000 000	-0.002
	100 %	0	1904 999 996	-0.8	0.000 000	0.000
	100 %	+10	1904 999 994	-3.0	0.000 000	-0.002
	100 %	+30	1904 999 996	-1.1	0.000 000	-0.001
	100 %	+40	1904 999 995	-1.8	0.000 000	-0.001
	100 %	+50	1904 999 998	1.0	0.000 000	0.001
	Batt. Endpoint	+20	1904 999 996	-1.0	0.000 000	-0.001

▣ BandWidth: 25 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1862.5	100 %	+20(Ref)	1862 500 002	0.0	0.000 000	0.000
	100 %	-30	1862 500 005	2.9	0.000 000	0.002
	100 %	-20	1862 500 004	2.6	0.000 000	0.001
	100 %	-10	1862 500 005	3.5	0.000 000	0.002
	100 %	0	1862 500 005	2.8	0.000 000	0.002
	100 %	+10	1862 500 005	3.0	0.000 000	0.002
	100 %	+30	1862 500 007	5.4	0.000 000	0.003
	100 %	+40	1862 500 005	3.0	0.000 000	0.002
	100 %	+50	1862 500 004	2.1	0.000 000	0.001
	Batt. Endpoint	+20	1862 500 003	1.4	0.000 000	0.001
1902.5	100 %	+20(Ref)	1902 500 011	0.0	0.000 000	0.000
	100 %	-30	1902 500 018	7.3	0.000 000	0.004
	100 %	-20	1902 500 022	10.9	0.000 001	0.006
	100 %	-10	1902 500 019	7.6	0.000 000	0.004
	100 %	0	1902 500 024	12.6	0.000 001	0.007
	100 %	+10	1902 500 025	13.5	0.000 001	0.007
	100 %	+30	1902 500 022	11.1	0.000 001	0.006
	100 %	+40	1902 500 019	8.0	0.000 000	0.004
	100 %	+50	1902 500 025	13.7	0.000 001	0.007
	Batt. Endpoint	+20	1902 500 020	9.3	0.000 000	0.005

▣ BandWidth: 30 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1865.0	100 %	+20(Ref)	1865 000 009	0.0	0.000 000	0.000
	100 %	-30	1865 000 015	6.4	0.000 000	0.003
	100 %	-20	1865 000 015	5.7	0.000 000	0.003
	100 %	-10	1865 000 012	2.6	0.000 000	0.001
	100 %	0	1865 000 016	6.9	0.000 000	0.004
	100 %	+10	1865 000 014	5.3	0.000 000	0.003
	100 %	+30	1865 000 015	5.9	0.000 000	0.003
	100 %	+40	1865 000 015	5.9	0.000 000	0.003
	100 %	+50	1865 000 015	5.9	0.000 000	0.003
	Batt. Endpoint	+20	1865 000 020	10.8	0.000 001	0.006
1900.0	100 %	+20(Ref)	1900 000 005	0.0	0.000 000	0.000
	100 %	-30	1900 000 007	1.7	0.000 000	0.001
	100 %	-20	1900 000 005	0.3	0.000 000	0.000
	100 %	-10	1900 000 005	0.1	0.000 000	0.000
	100 %	0	1900 000 008	3.4	0.000 000	0.002
	100 %	+10	1900 000 006	1.2	0.000 000	0.001
	100 %	+30	1900 000 005	0.1	0.000 000	0.000
	100 %	+40	1900 000 005	0.3	0.000 000	0.000
	100 %	+50	1900 000 006	1.5	0.000 000	0.001
	Batt. Endpoint	+20	1900 000 008	2.6	0.000 000	0.001

▣ BandWidth: 40 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.350 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1870.0	100 %	+20(Ref)	1870 000 003	0.0	0.000 000	0.000
	100 %	-30	1870 000 008	5.6	0.000 000	0.003
	100 %	-20	1870 000 007	4.2	0.000 000	0.002
	100 %	-10	1870 000 006	3.7	0.000 000	0.002
	100 %	0	1870 000 008	5.0	0.000 000	0.003
	100 %	+10	1870 000 008	4.7	0.000 000	0.003
	100 %	+30	1870 000 010	7.2	0.000 000	0.004
	100 %	+40	1870 000 008	5.1	0.000 000	0.003
	100 %	+50	1870 000 007	3.9	0.000 000	0.002
	Batt. Endpoint	+20	1870 000 008	4.7	0.000 000	0.003
1895.0	100 %	+20(Ref)	1895 000 010	0.0	0.000 000	0.000
	100 %	-30	1895 000 019	9.0	0.000 000	0.005
	100 %	-20	1895 000 021	11.2	0.000 001	0.006
	100 %	-10	1895 000 021	11.7	0.000 001	0.006
	100 %	0	1895 000 018	8.0	0.000 000	0.004
	100 %	+10	1895 000 019	9.7	0.000 001	0.005
	100 %	+30	1895 000 018	8.5	0.000 000	0.005
	100 %	+40	1895 000 018	8.7	0.000 000	0.005
	100 %	+50	1895 000 023	13.5	0.000 001	0.007
	Batt. Endpoint	+20	1895 000 018	8.6	0.000 000	0.005

10. TEST PLOTS (Main 2 Ant)

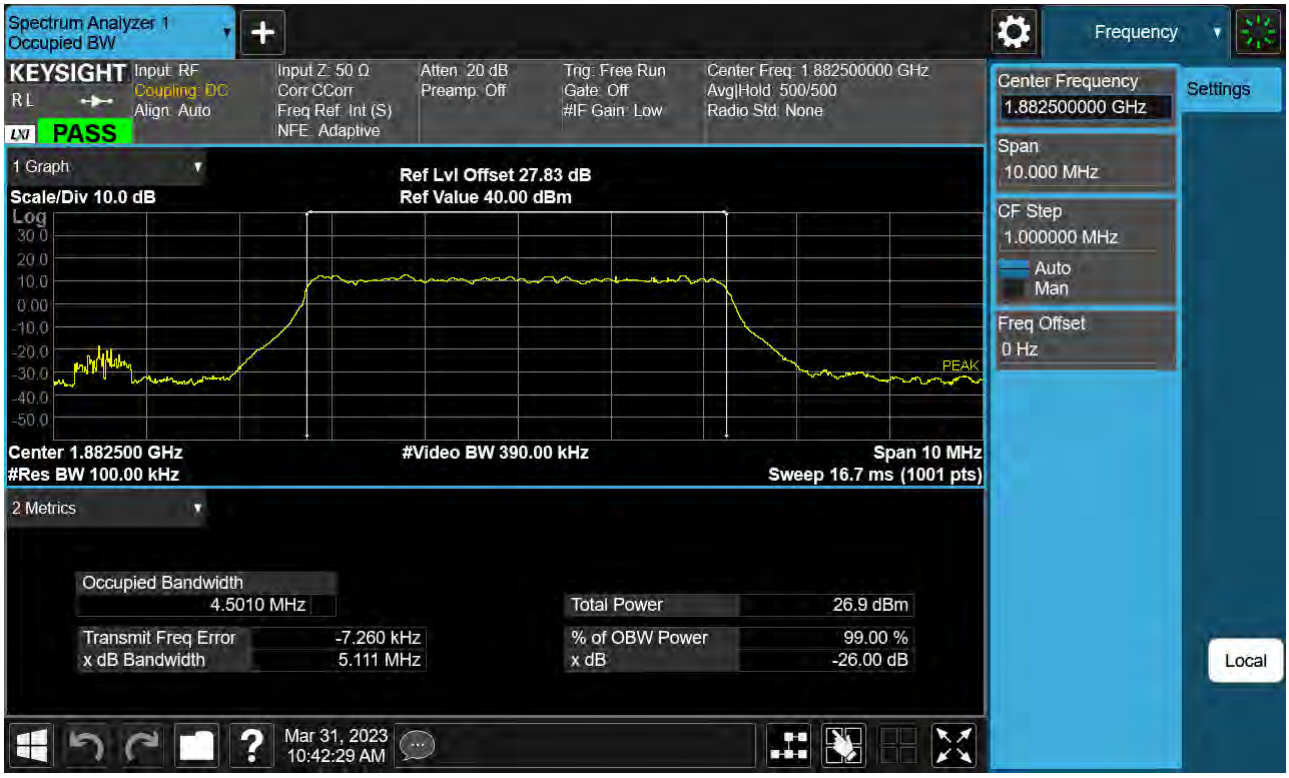
Sub6 n25(2). Occupied Bandwidth Plot (5 M BW Ch.376500 BPSK_ Full RB _0)

Sub6 n25(2). Occupied Bandwidth Plot (5 M BW Ch.376500 QPSK_ Full RB _0)

Sub6 n25(2). Occupied Bandwidth Plot (5 M BW Ch.376500 16QAM _ Full RB _0)

Sub6 n25(2). Occupied Bandwidth Plot (5 M BW Ch.376500 64QAM_ Full RB _0)

Sub6 n25(2). Occupied Bandwidth Plot (5 M BW Ch.376500 256QAM_ Full RB _0)



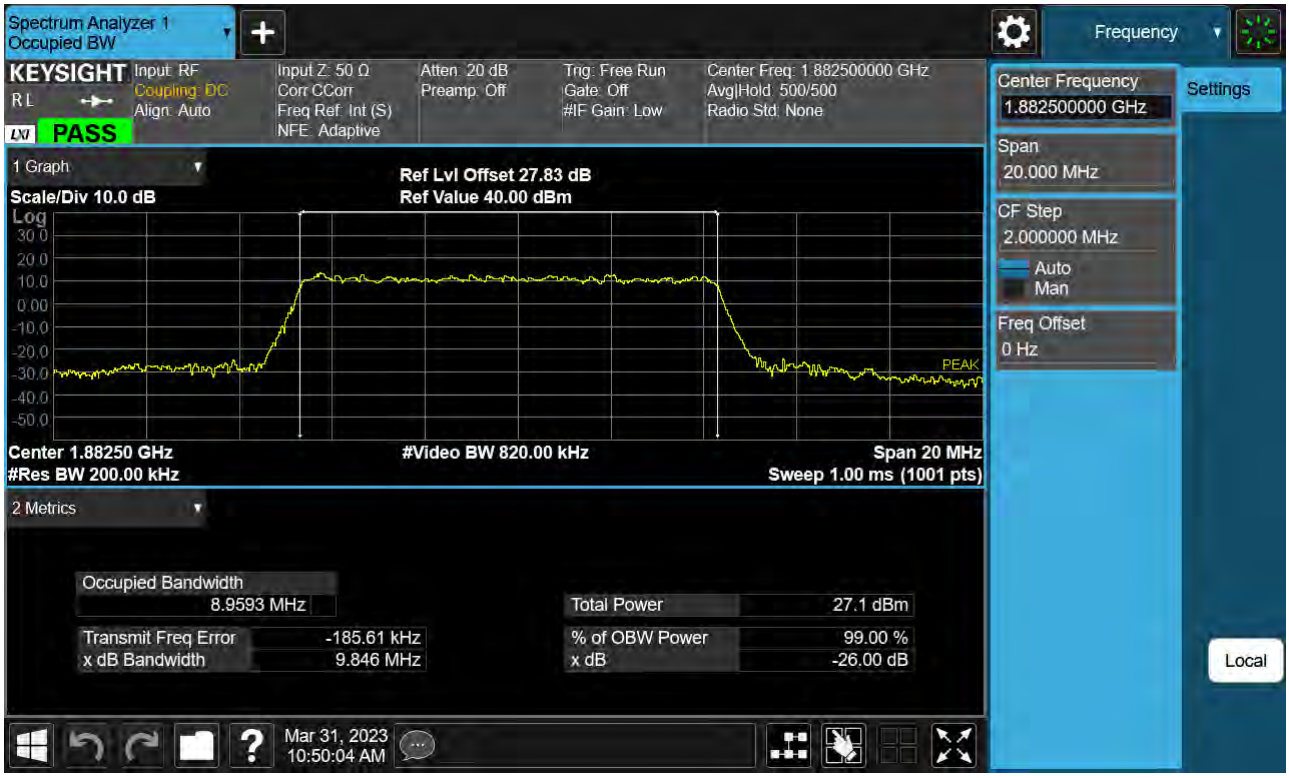
Sub6 n25(2). Occupied Bandwidth Plot (10 M BW Ch.376500 BPSK _ Full RB _0)

Sub6 n25(2). Occupied Bandwidth Plot (10 M BW Ch.376500 QPSK _ Full RB _0)

Sub6 n25(2). Occupied Bandwidth Plot (10 M BW Ch.376500 16QAM _ Full RB _0)

Sub6 n25(2). Occupied Bandwidth Plot (10 M BW Ch.376500 64QAM _ Full RB _0)

Sub6 n25(2). Occupied Bandwidth Plot (10 M BW Ch.376500 256QAM _ Full RB _0)



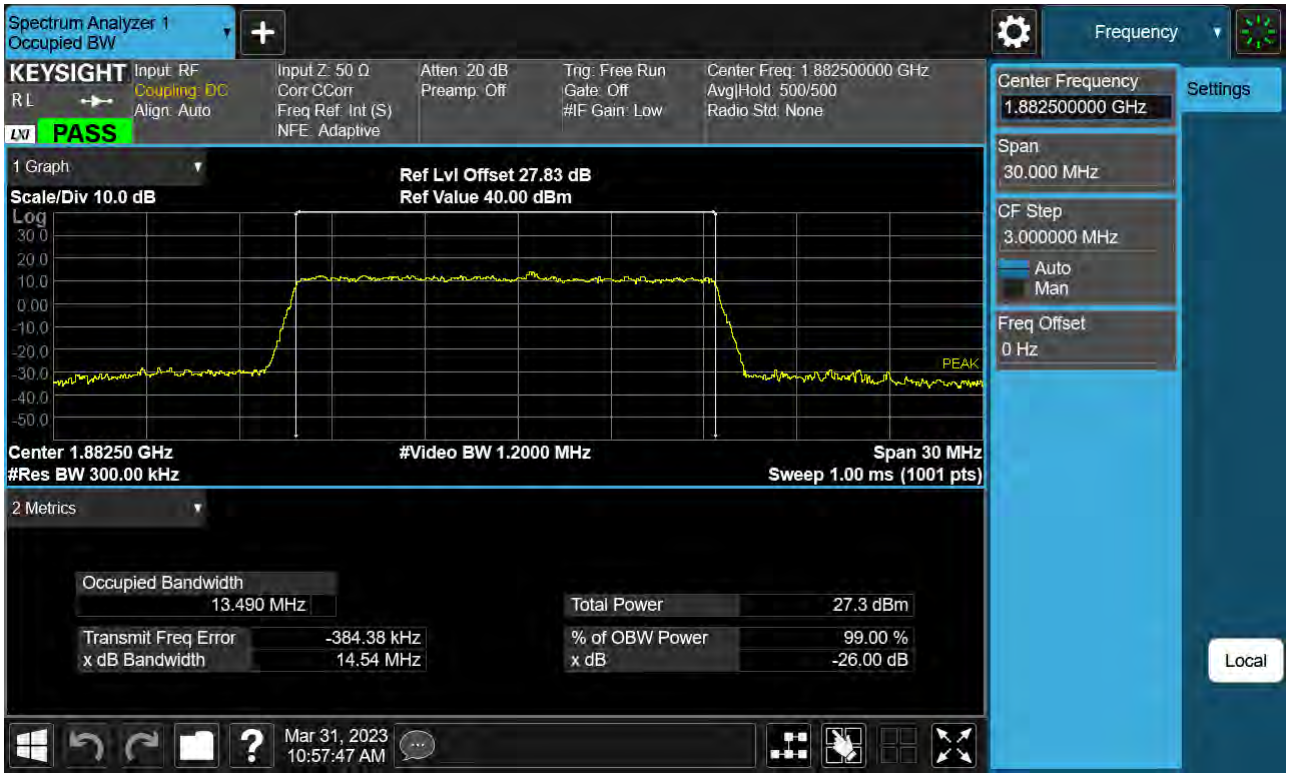
Sub6 n25(2). Occupied Bandwidth Plot (15 M BW Ch.376500 BPSK_ Full RB _0)

Sub6 n25(2). Occupied Bandwidth Plot (15 M BW Ch.376500 QPSK _ Full RB _0)

Sub6 n25(2). Occupied Bandwidth Plot (15 M BW Ch.376500 16QAM _ Full RB _0)

Sub6 n25(2). Occupied Bandwidth Plot (15 M BW Ch.376500 64QAM _ Full RB _0)

Sub6 n25(2). Occupied Bandwidth Plot (15 M BW Ch.376500 256QAM _ Full RB _0

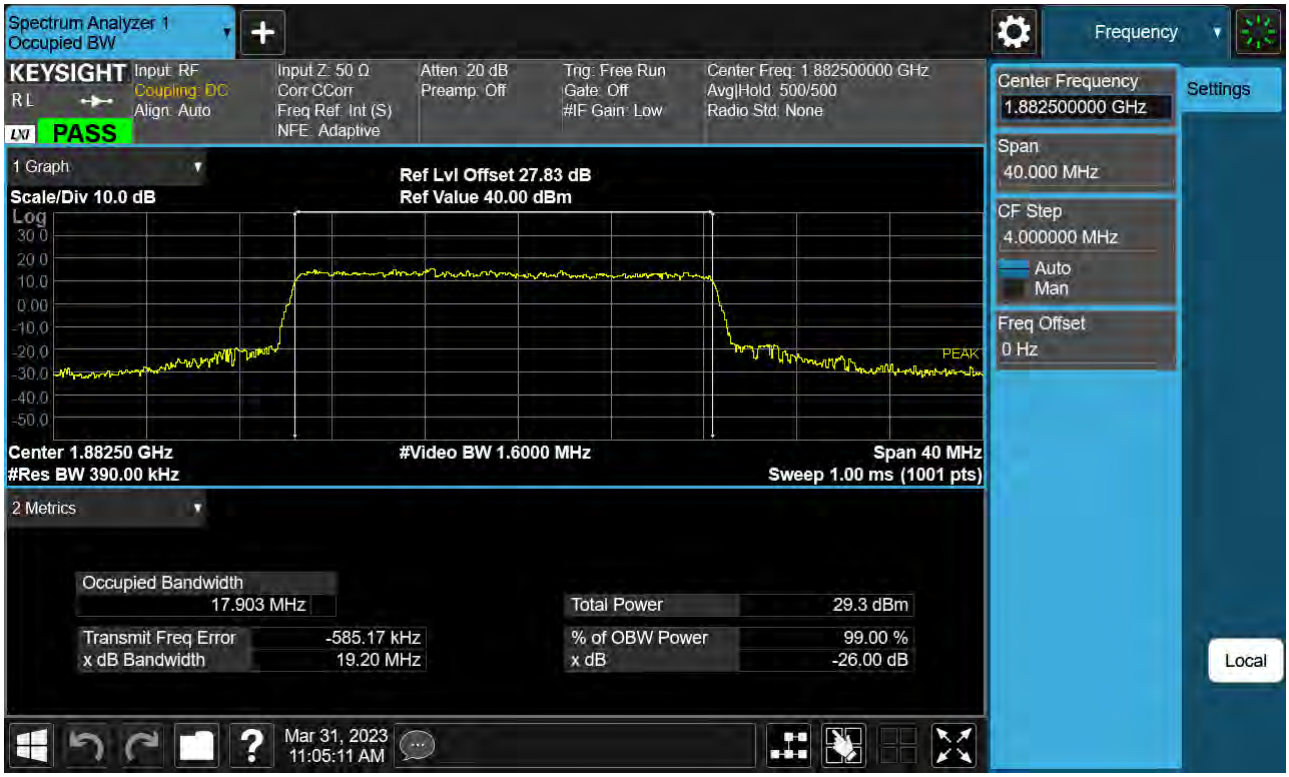


Sub6 n25(2). Occupied Bandwidth Plot (20 M BW Ch.376500 BPSK _ Full RB _0)

Sub6 n25(2). Occupied Bandwidth Plot (20 M BW Ch.376500 QPSK _ Full RB _0)

Sub6 n25(2). Occupied Bandwidth Plot (20 M BW Ch.376500 16QAM _ Full RB _0)

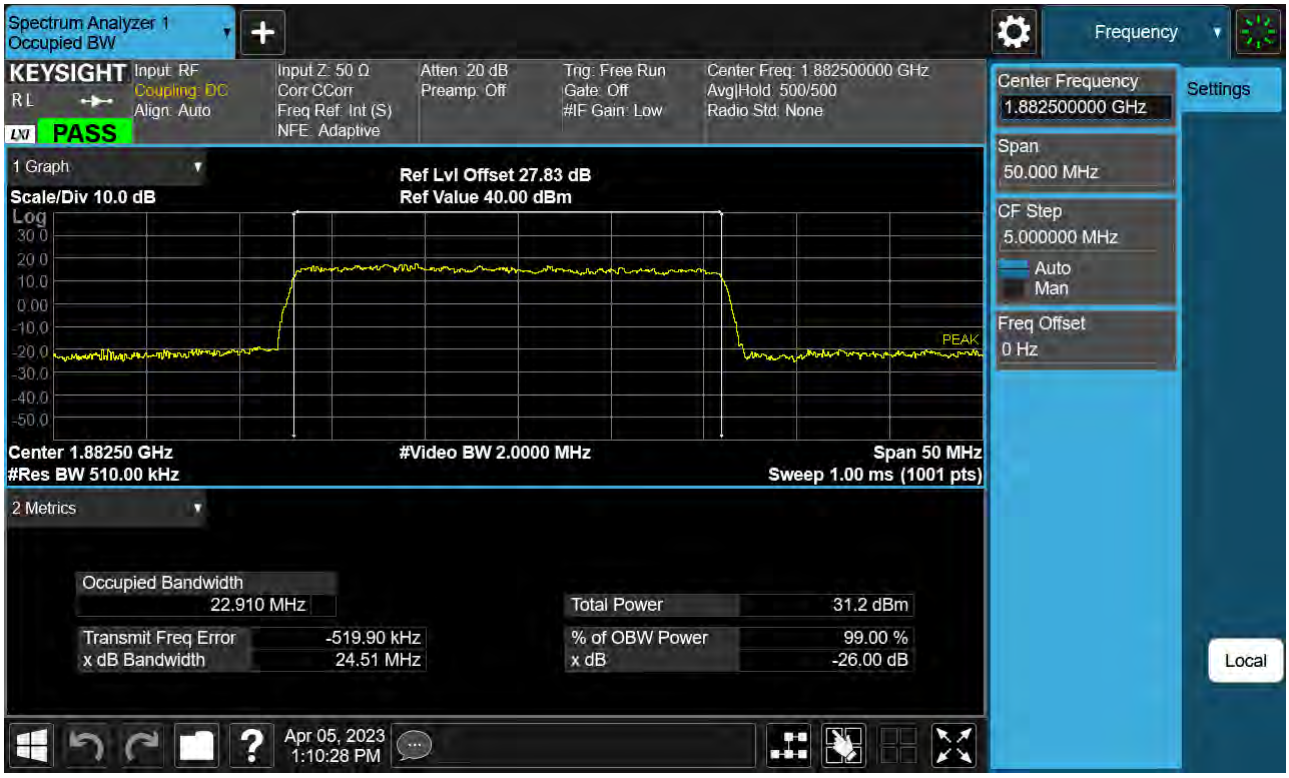
Sub6 n25(2). Occupied Bandwidth Plot (20 M BW Ch.376500 64QAM _ Full RB _0)



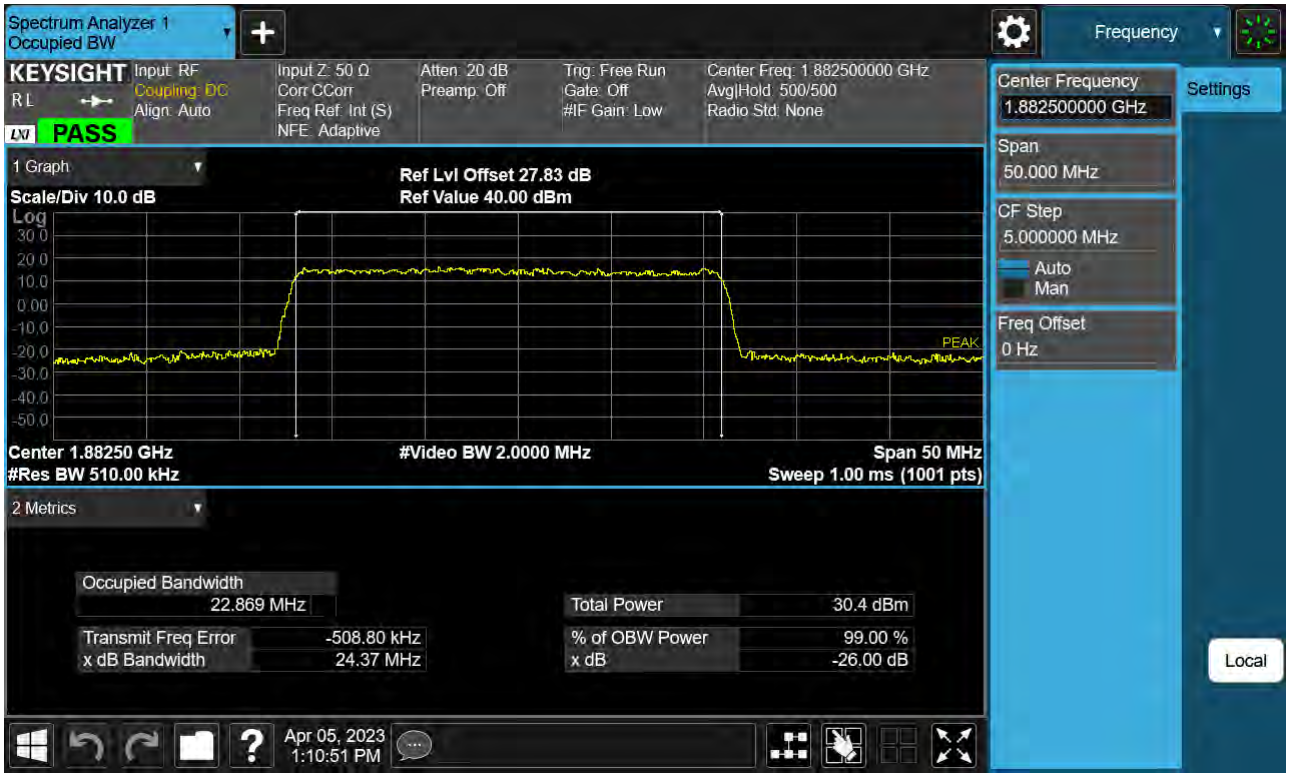
Sub6 n25(2). Occupied Bandwidth Plot (20 M BW Ch.376500 256QAM _ Full RB _0)

Sub6 n25. Occupied Bandwidth Plot (25 M BW Ch.376500 BPSK _ Full RB _0)

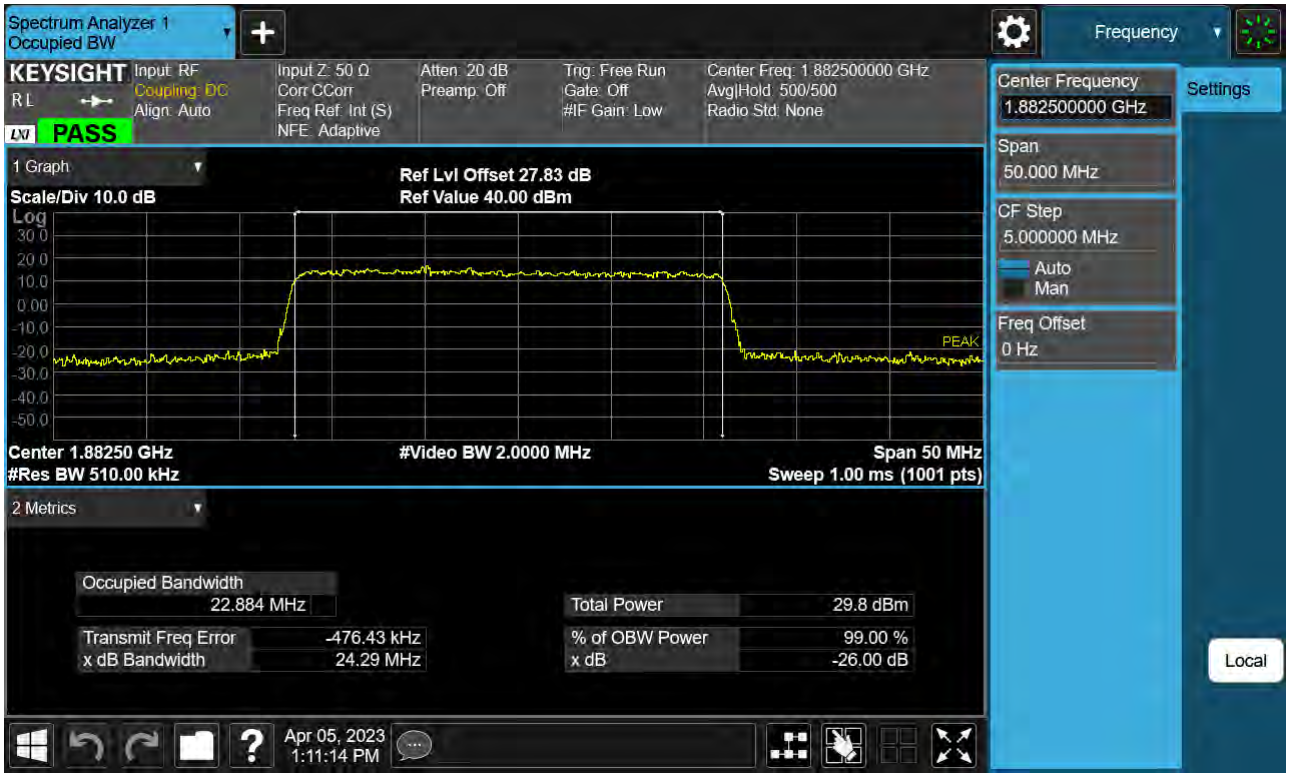
Sub6 n25. Occupied Bandwidth Plot (25 M BW Ch.376500 QPSK _ Full RB _0)



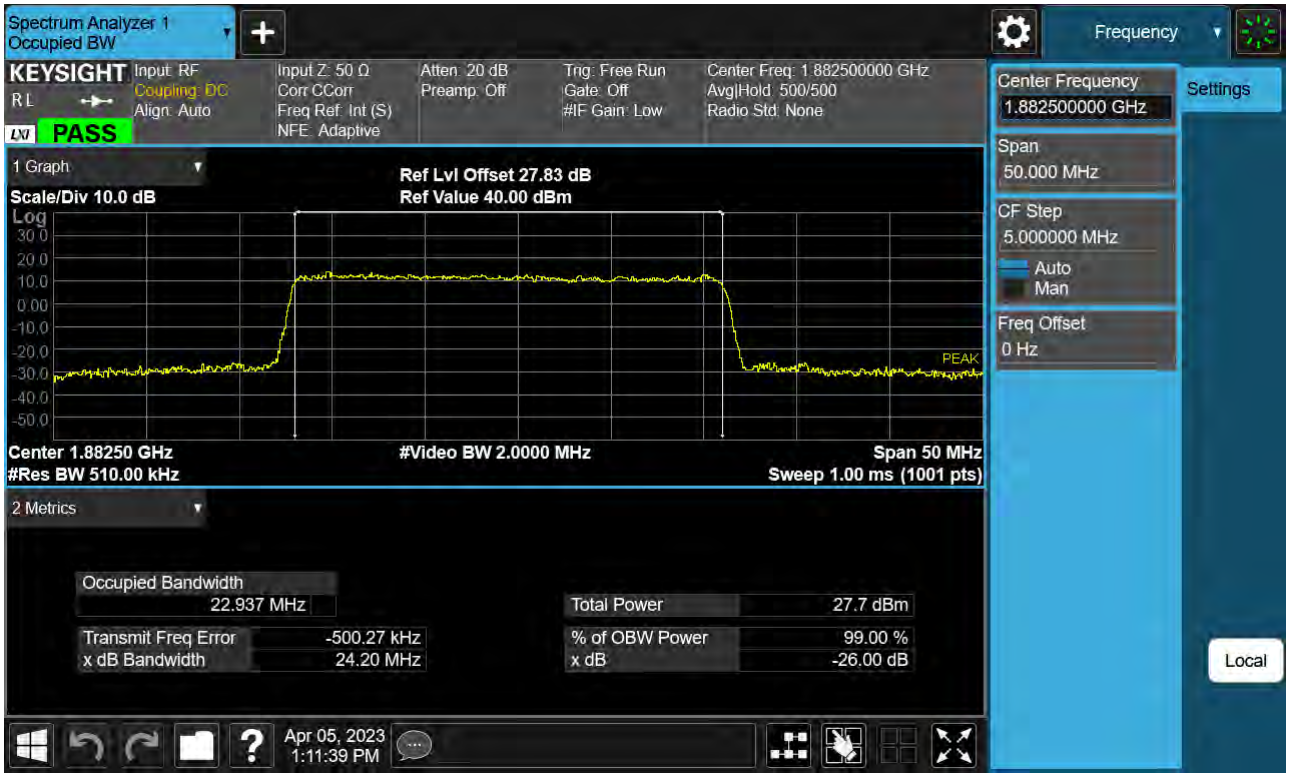
Sub6 n25. Occupied Bandwidth Plot (25 M BW Ch.376500 16QAM _ Full RB _0)



Sub6 n25. Occupied Bandwidth Plot (25 M BW Ch.376500 64QAM _ Full RB _0)

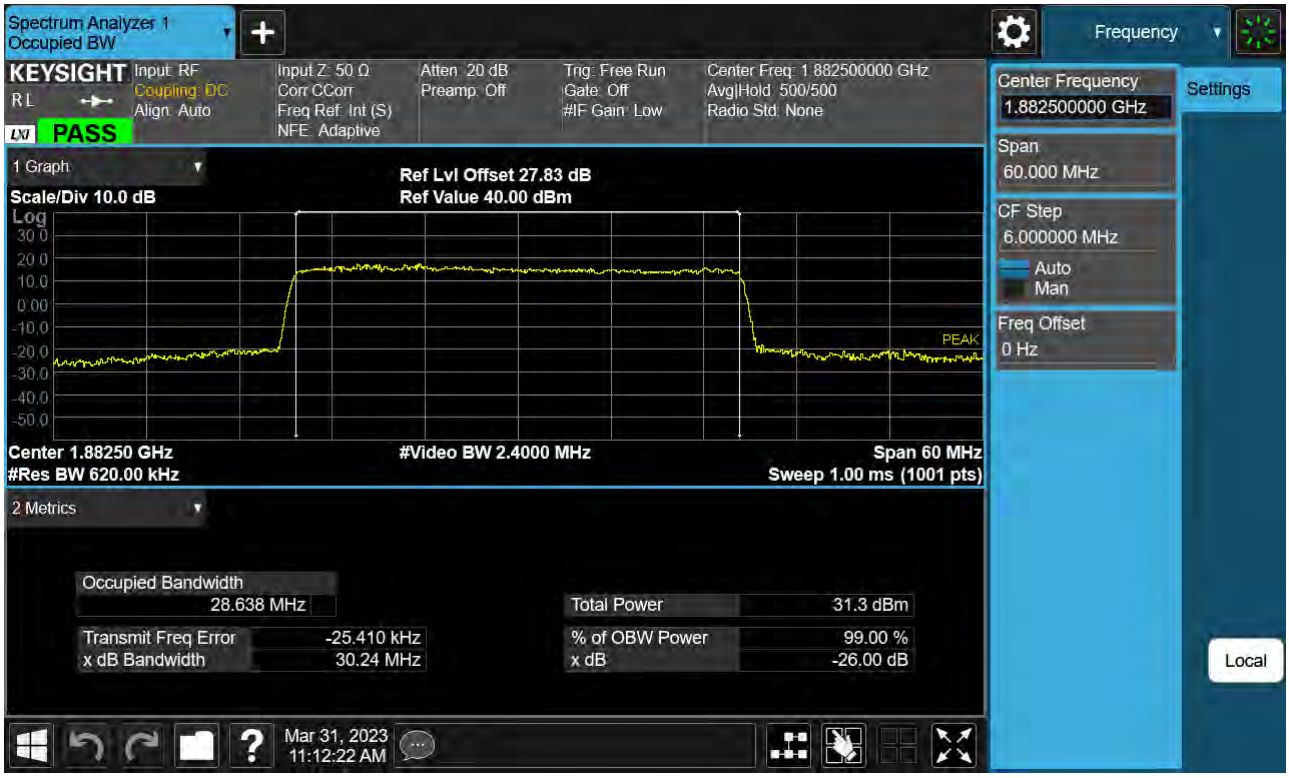


Sub6 n25. Occupied Bandwidth Plot (25 M BW Ch.376500 256QAM _ Full RB _0)

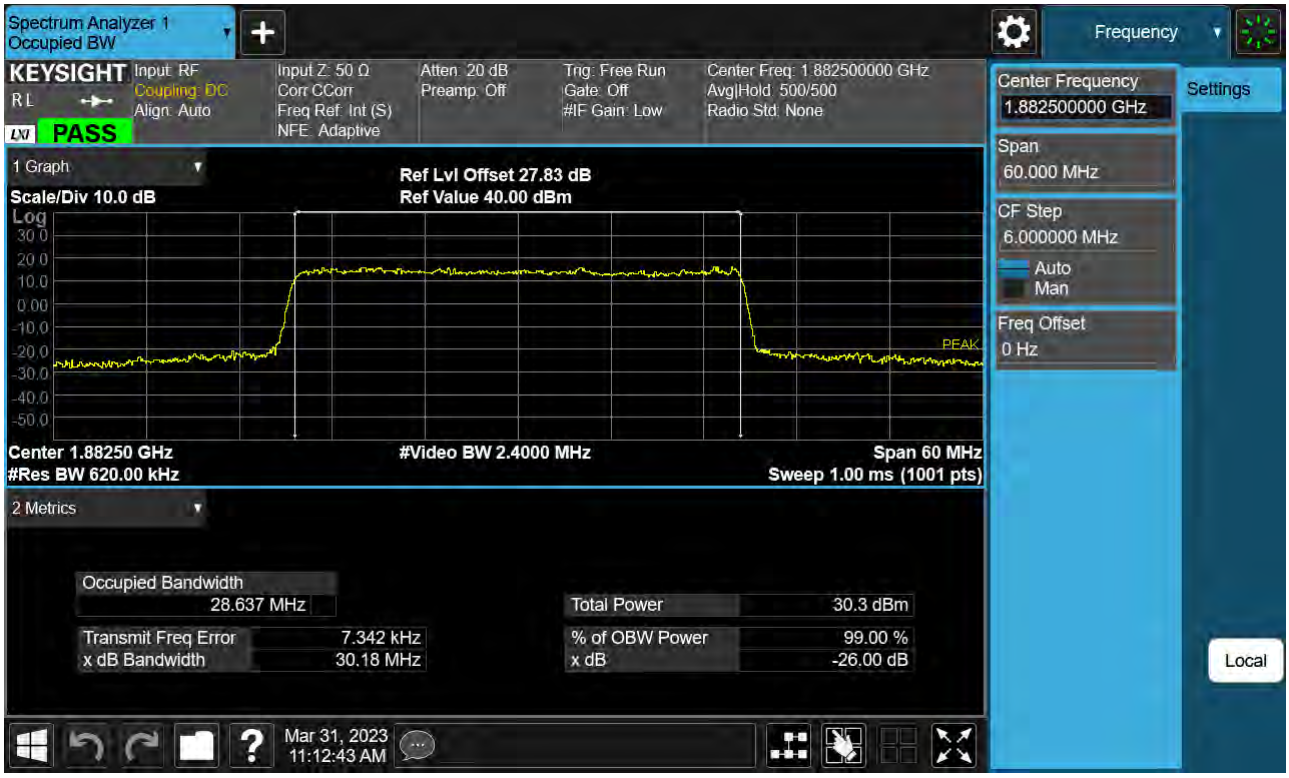


Sub6 n25. Occupied Bandwidth Plot (30 M BW Ch.376500 BPSK_ Full RB _0)

Sub6 n25. Occupied Bandwidth Plot (30 M BW Ch.376500 QPSK_ Full RB _0)

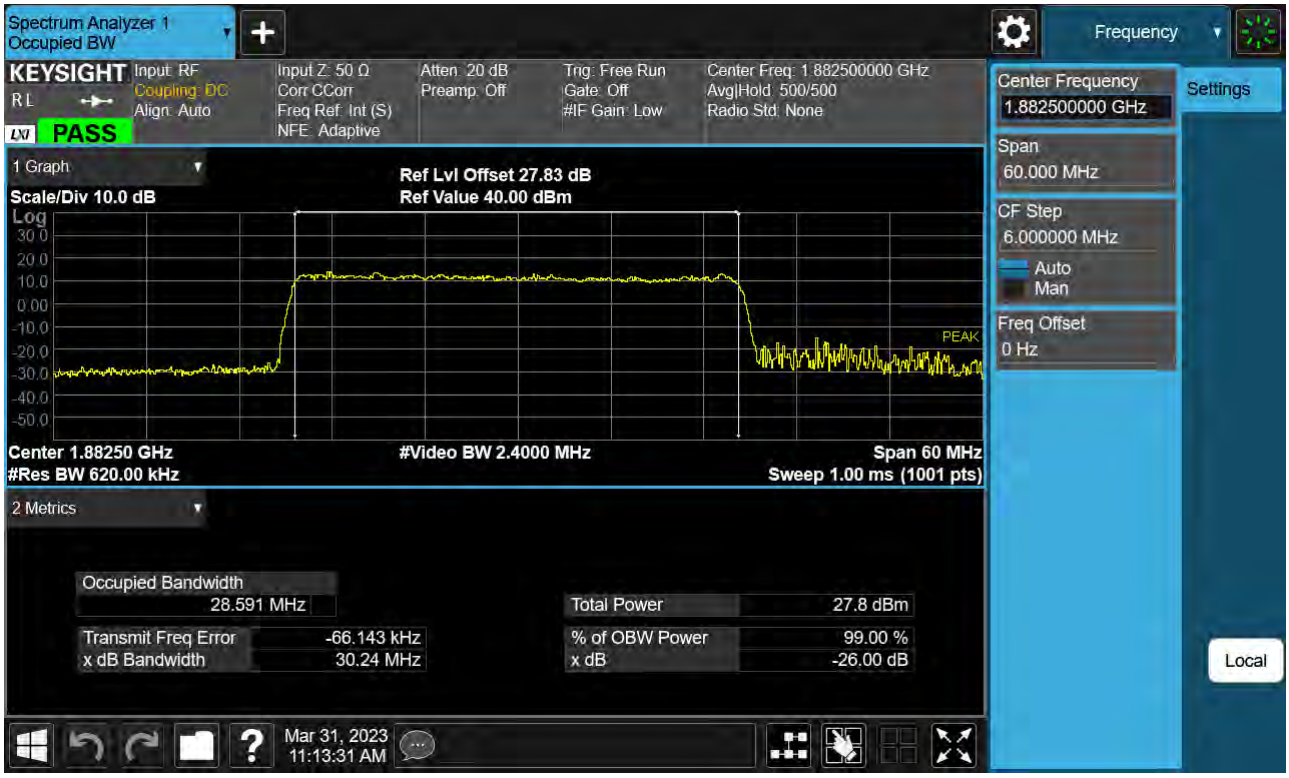


Sub6 n25. Occupied Bandwidth Plot (30 M BW Ch.376500 16QAM _ Full RB _0)



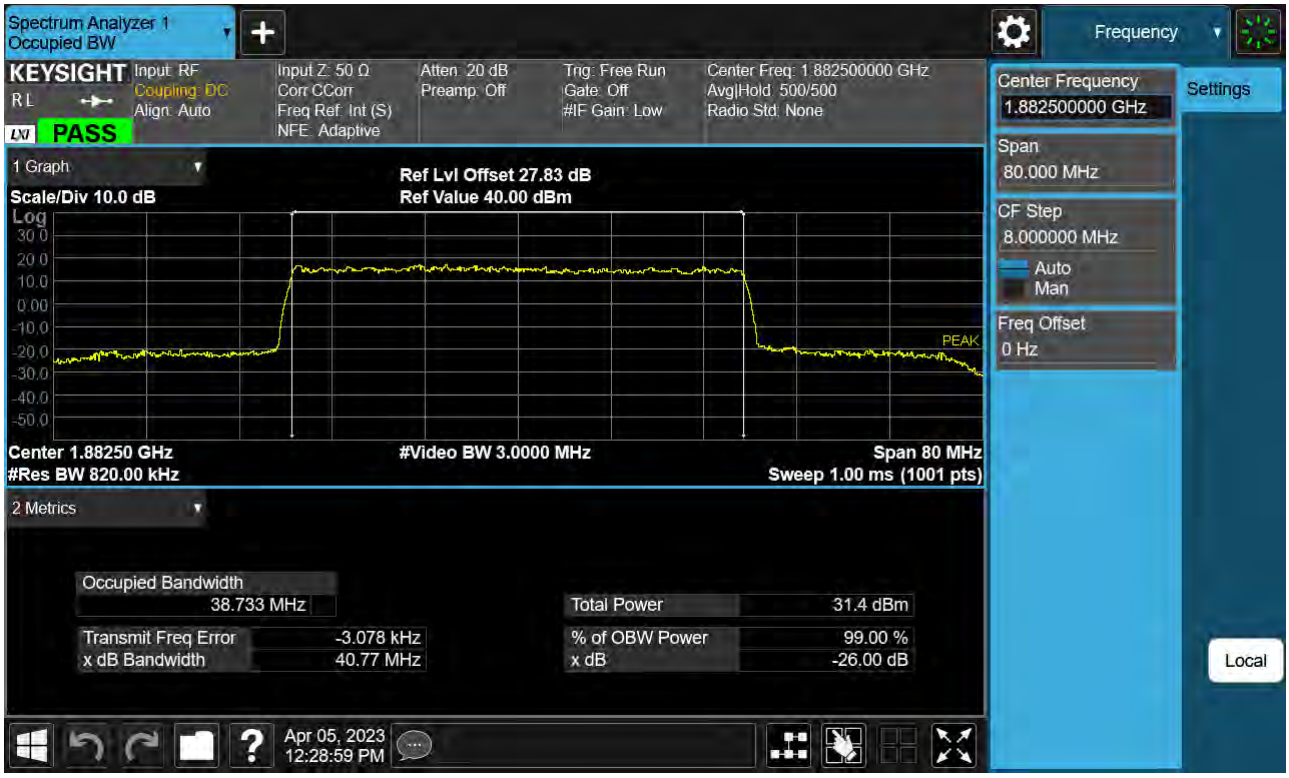
Sub6 n25. Occupied Bandwidth Plot (30 M BW Ch.376500 64QAM_ Full RB _0)

Sub6 n25. Occupied Bandwidth Plot (30 M BW Ch.376500 256QAM_ Full RB _0)



Sub6 n25. Occupied Bandwidth Plot (40 M BW Ch.376500 BPSK_ Full RB _0)

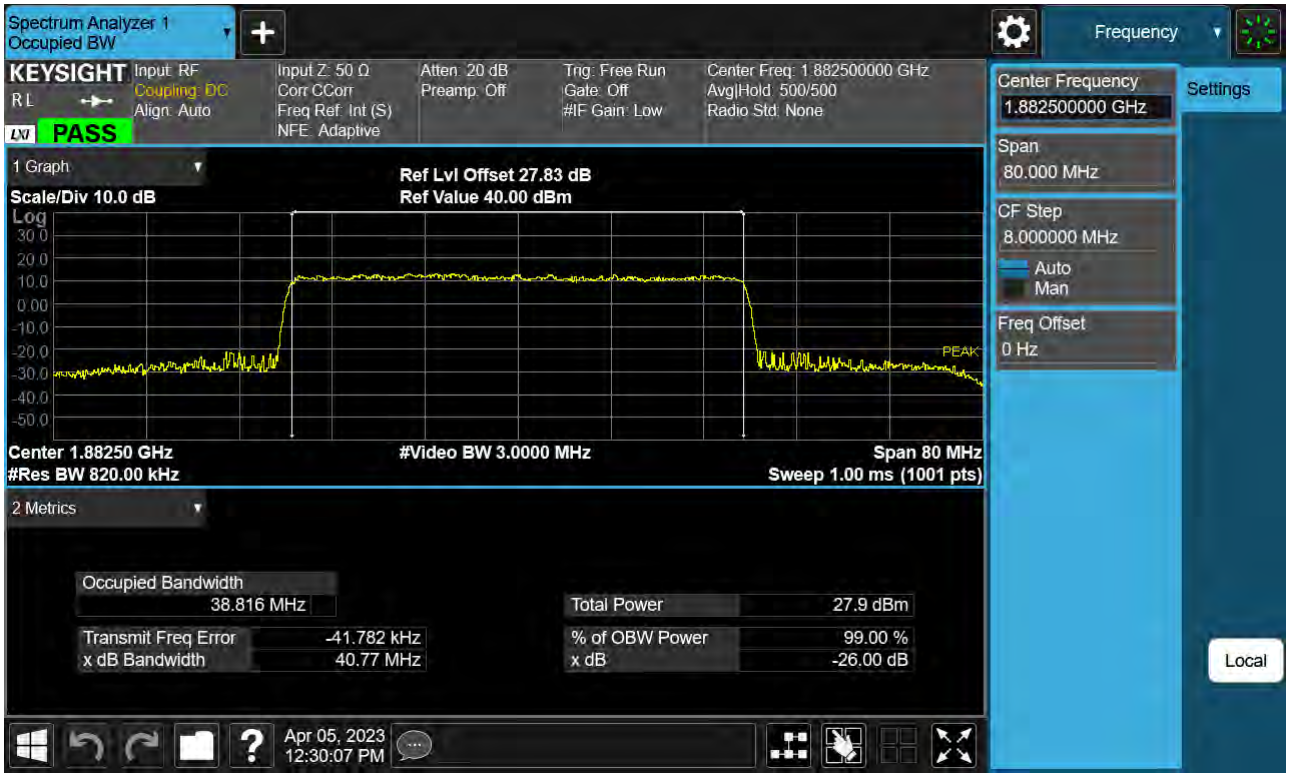
Sub6 n25. Occupied Bandwidth Plot (40 M BW Ch.376500 QPSK_ Full RB _0)



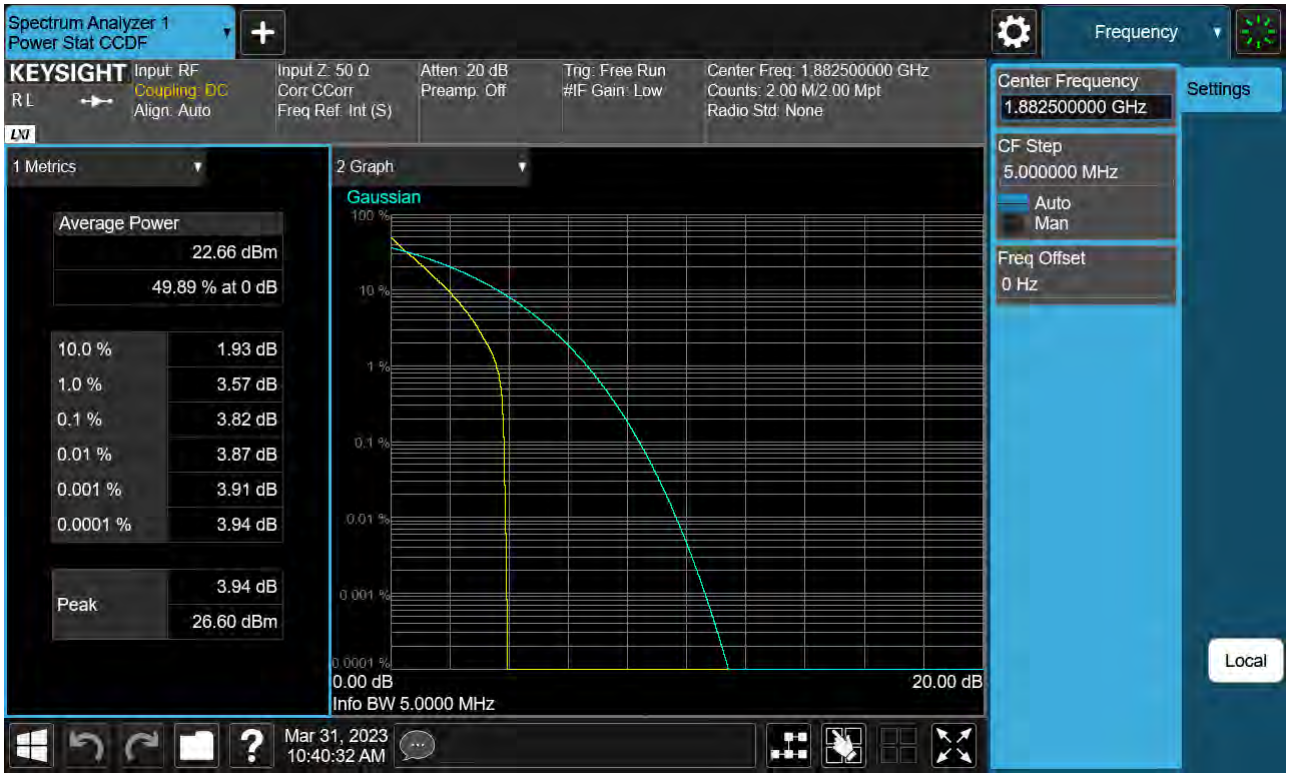
Sub6 n25. Occupied Bandwidth Plot (40 M BW Ch.376500 16QAM_ Full RB _0)

Sub6 n25. Occupied Bandwidth Plot (40 M BW Ch.376500 64QAM_ Full RB _0)

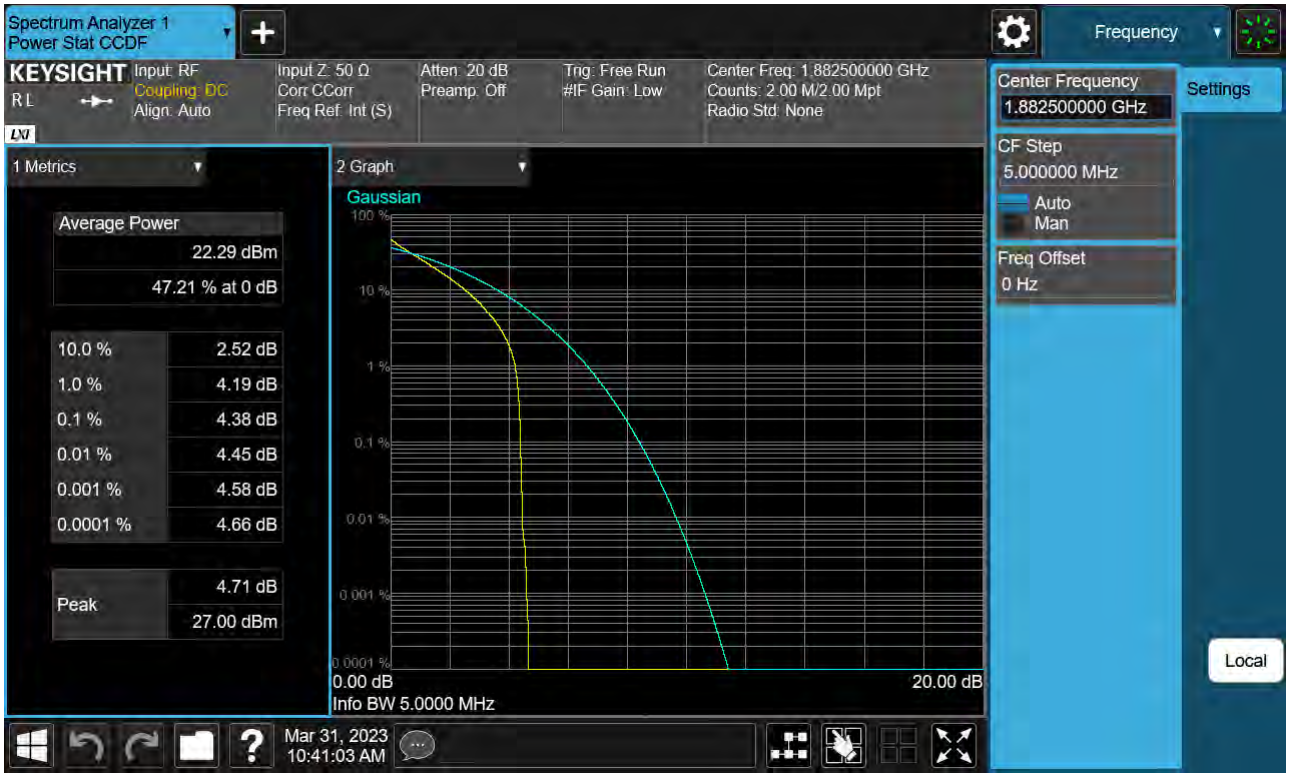
Sub6 n25. Occupied Bandwidth Plot (40 M BW Ch.376500 256QAM_ Full RB _0)



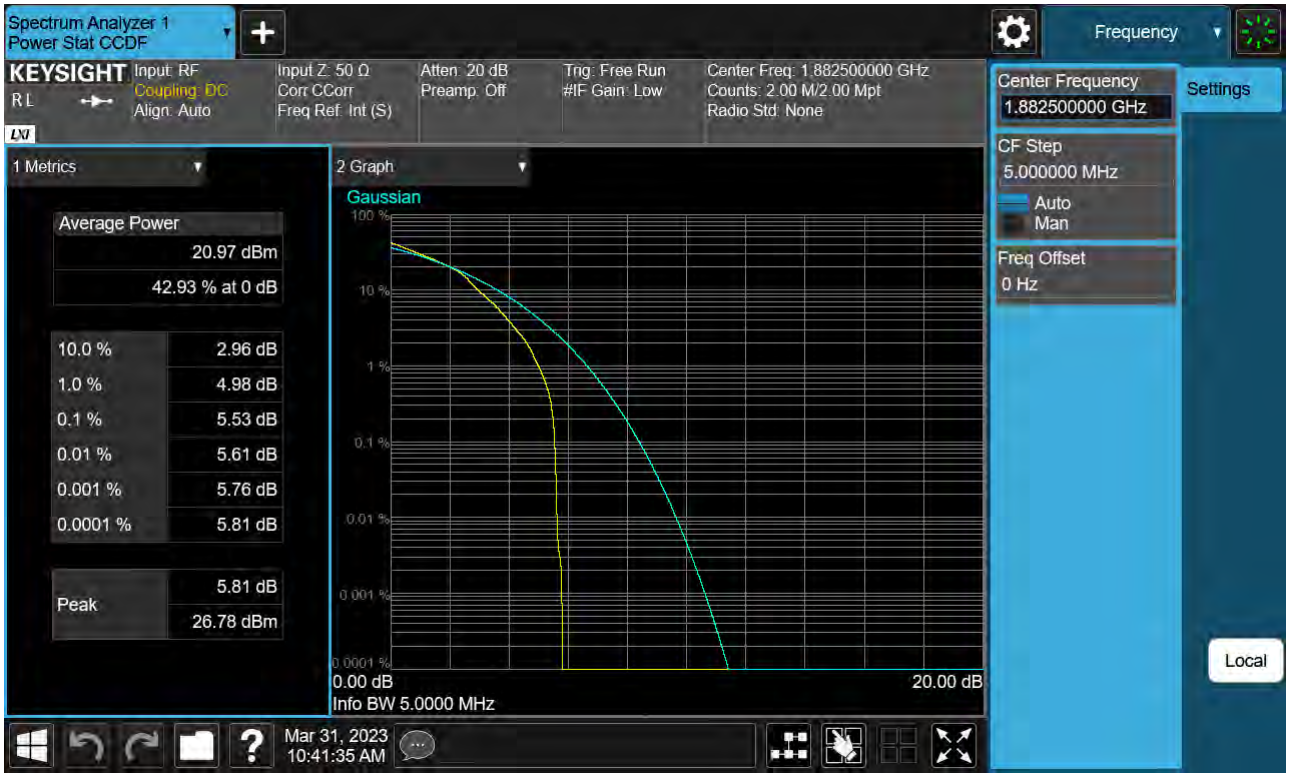
Sub6 n25(2). PAR Plot (5 M BW Ch.376500 BPSK_ Full RB _0)



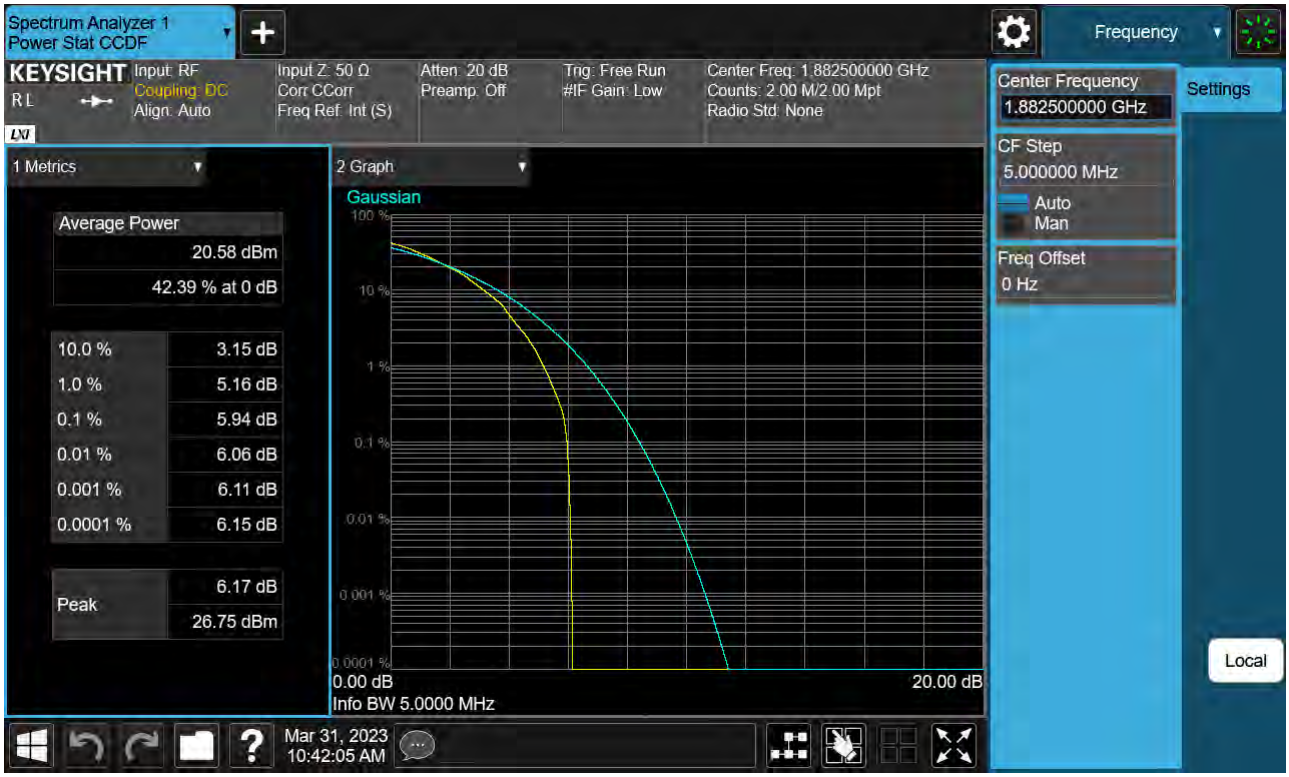
Sub6 n25(2). PAR Plot (5 M BW Ch.376500 QPSK _ Full RB _0)



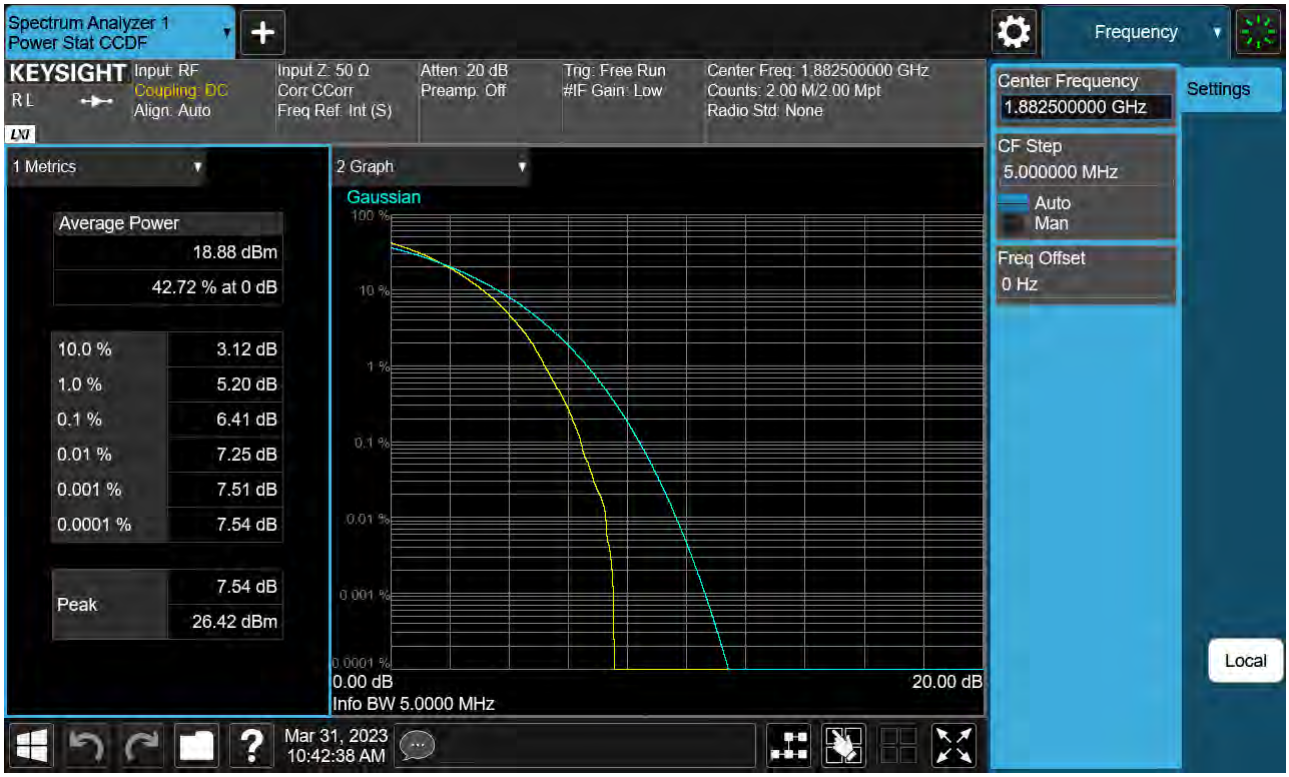
Sub6 n25(2). PAR Plot (5 M BW Ch.376500 16QAM_ Full RB _0)



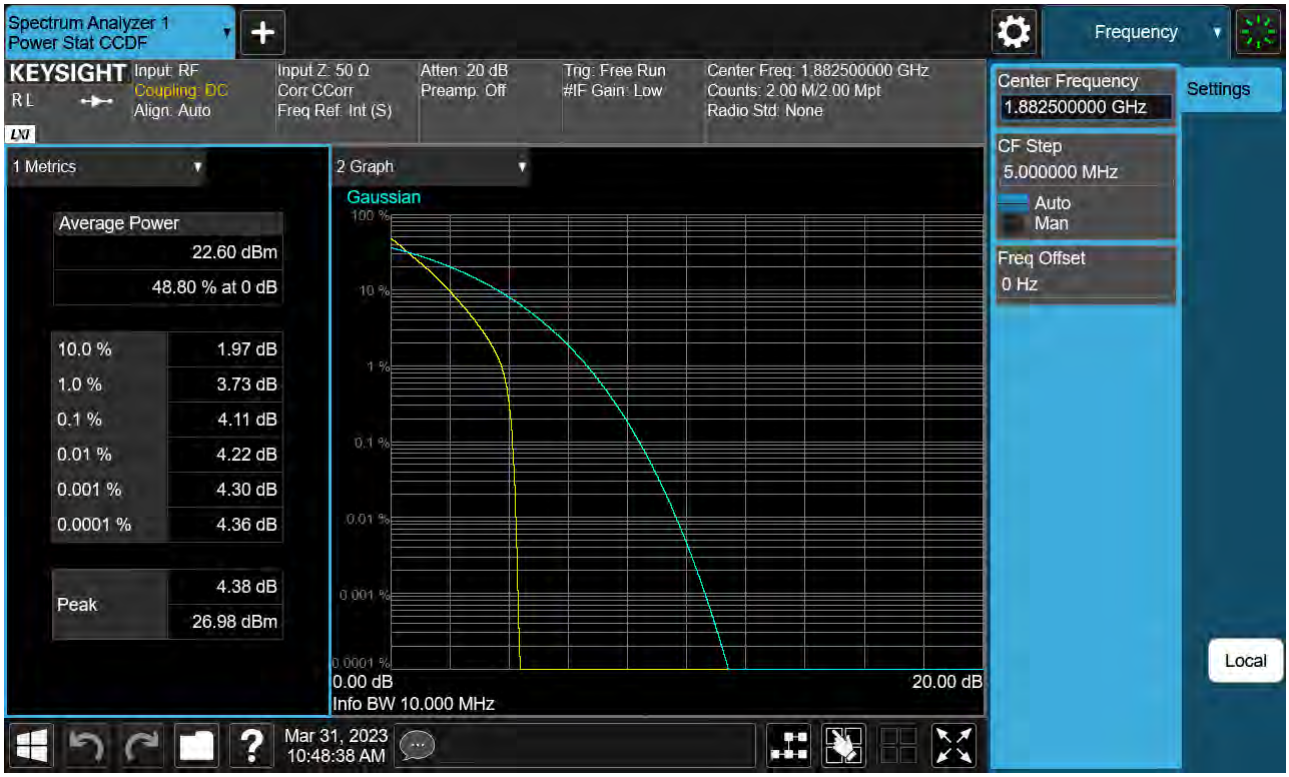
Sub6 n25(2). PAR Plot (5 M BW Ch.376500 64QAM_ Full RB _0)



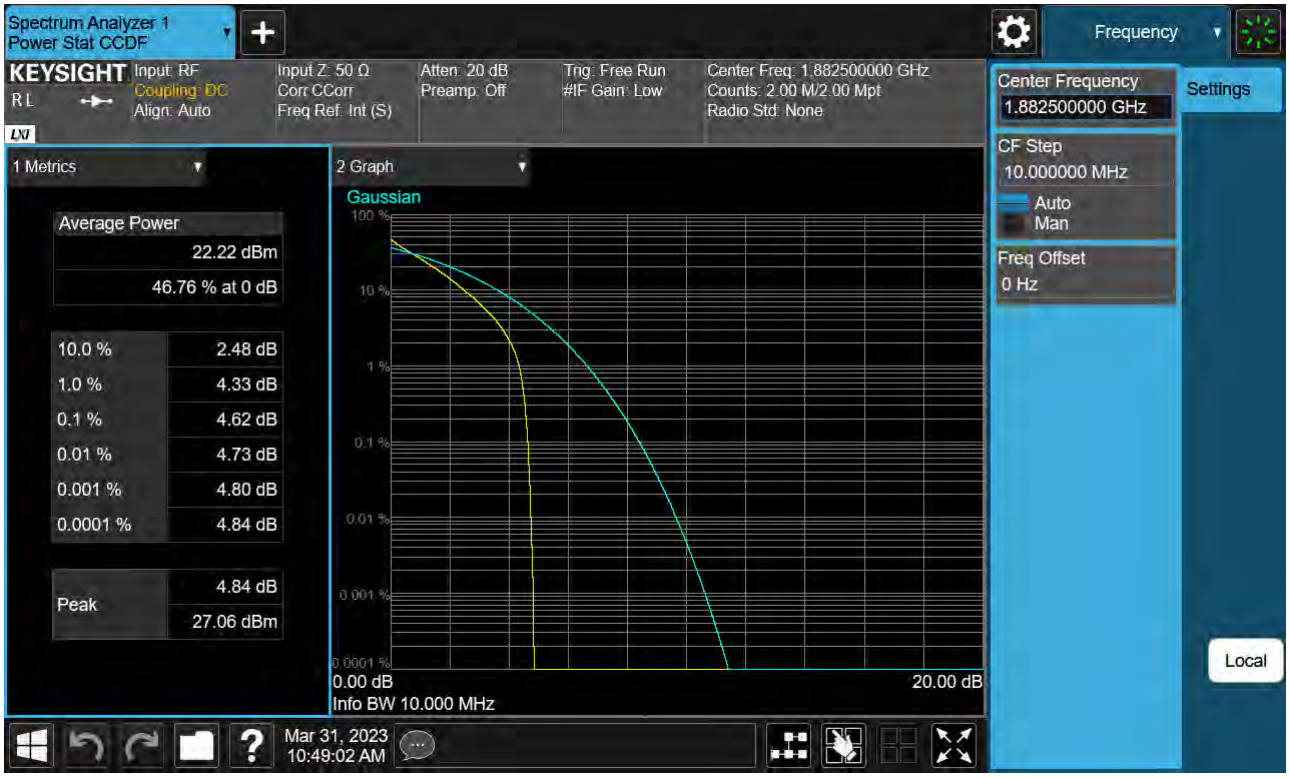
Sub6 n25(2). PAR Plot (5 M BW Ch.376500 256QAM_ Full RB _0)



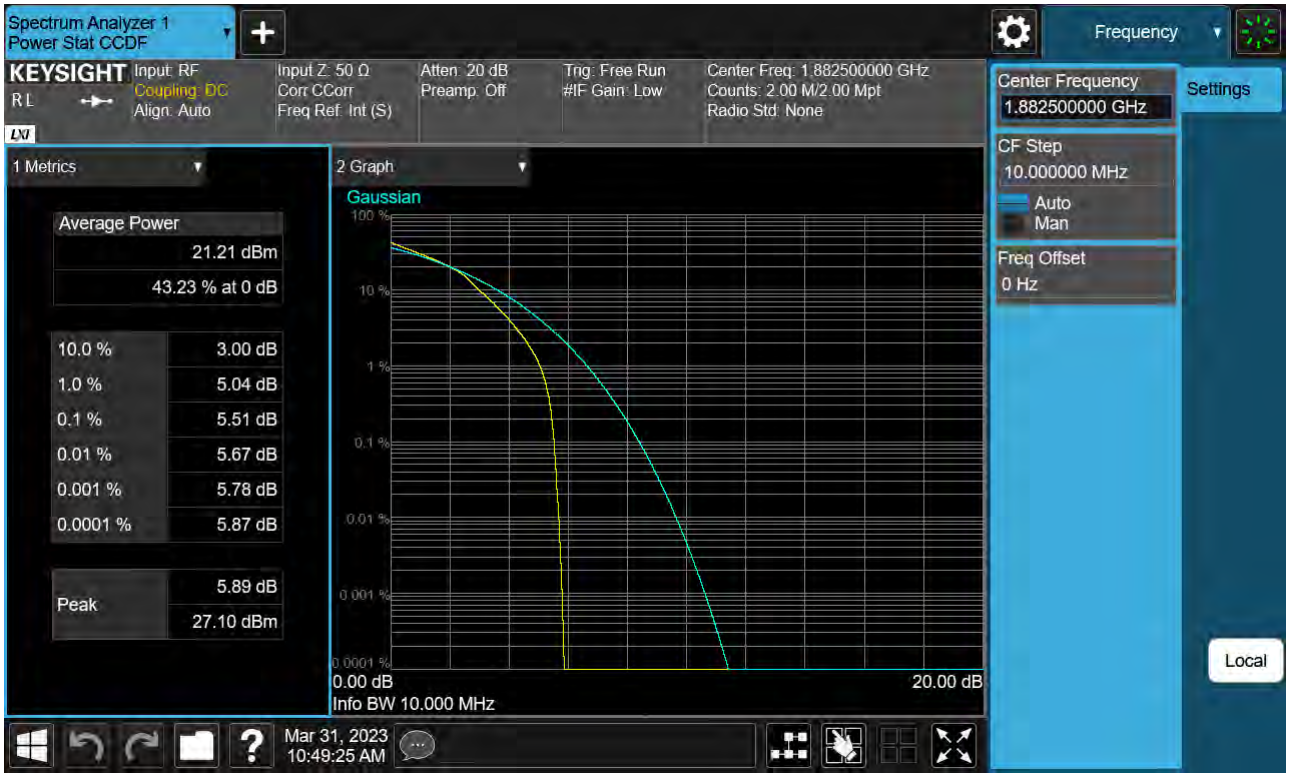
Sub6 n25(2). PAR Plot (10 M BW Ch.376500 BPSK _ Full RB _0)



Sub6 n25(2). PAR Plot (10 M BW Ch.376500 QPSK _ Full RB _0)



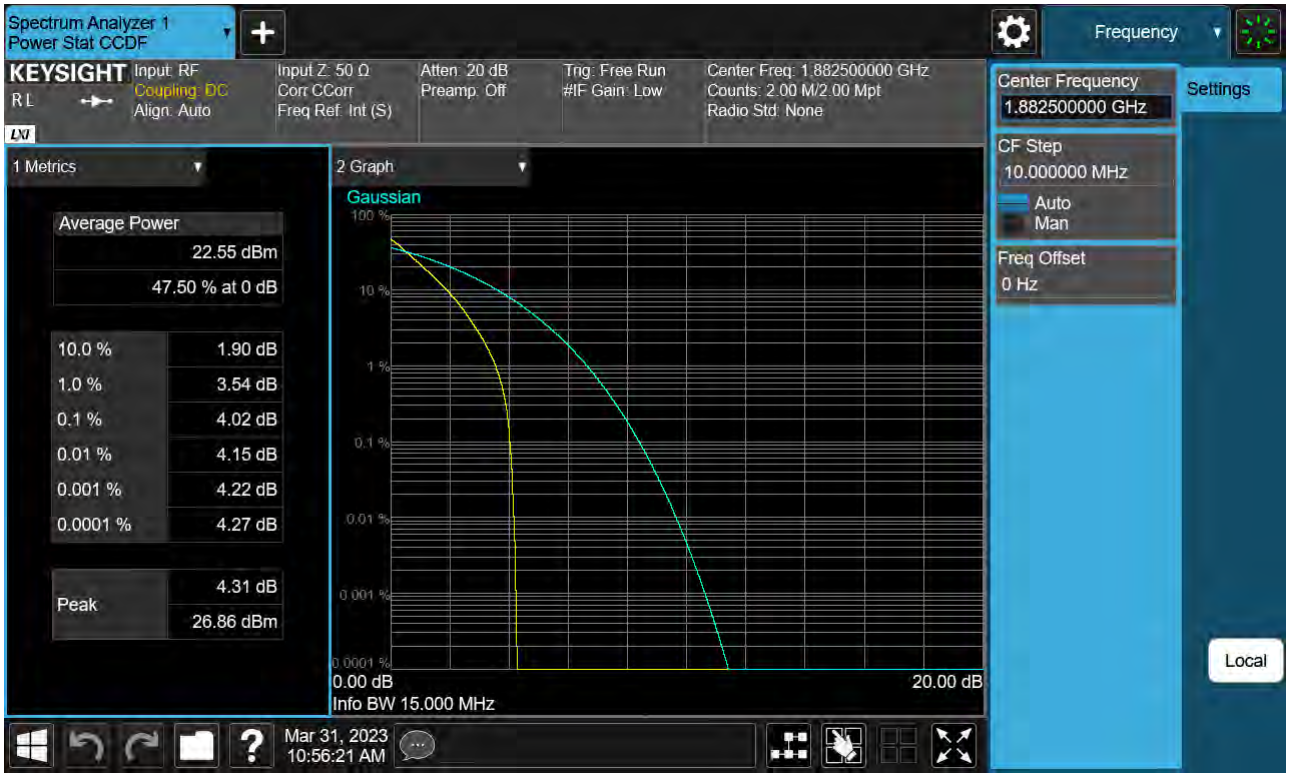
Sub6 n25(2). PAR Plot (10 M BW Ch.376500 16QAM _ Full RB _0)



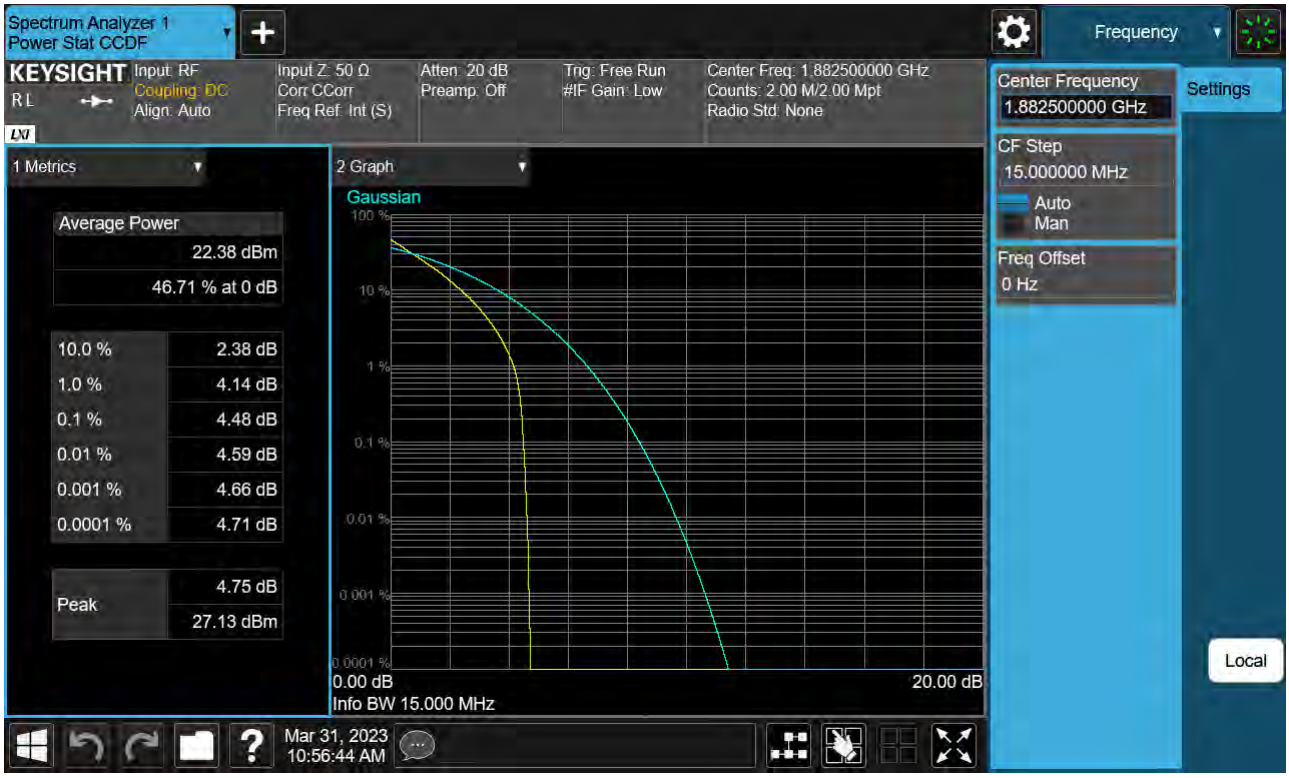
Sub6 n25(2). PAR Plot (10 M BW Ch.376500 64QAM _ Full RB _0)

Sub6 n25(2). PAR Plot (10 M BW Ch.376500 256QAM _ Full RB _0)

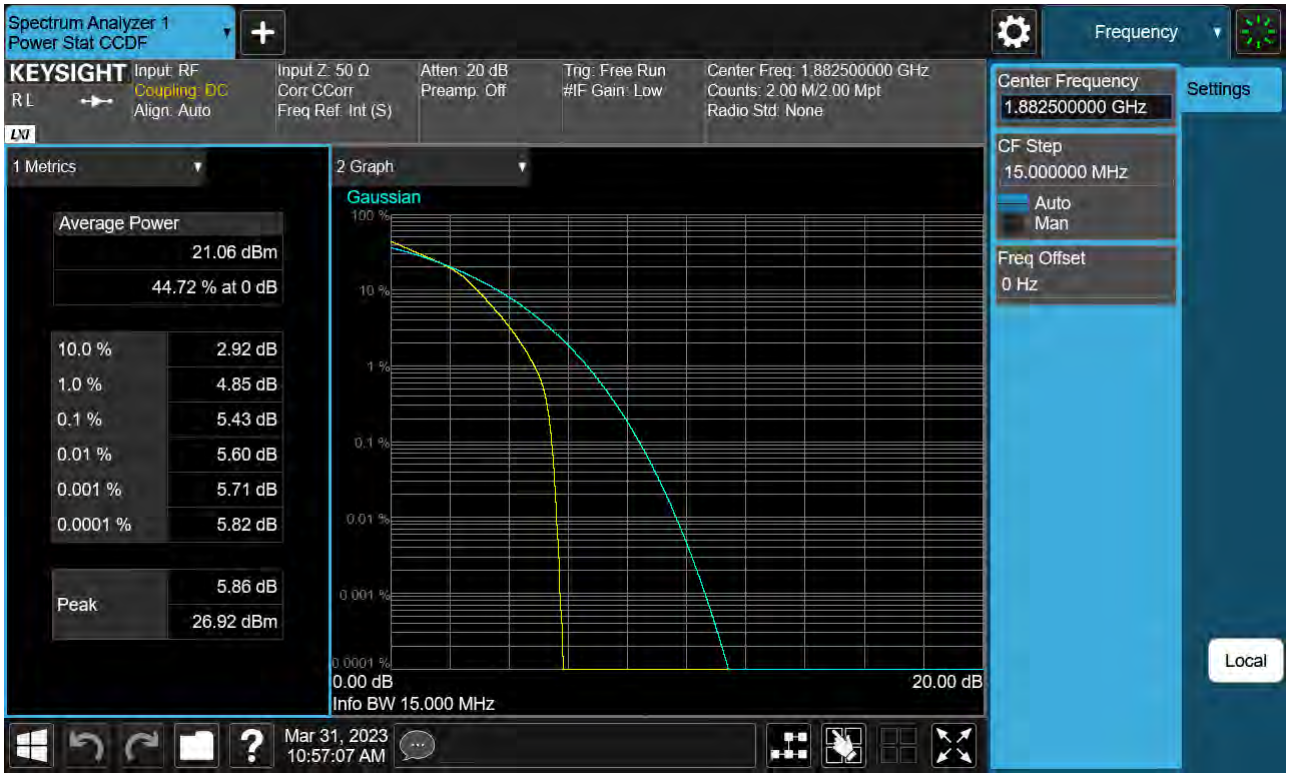
Sub6 n25(2). PAR Plot (15 M BW Ch.376500 BPSK _ Full RB _0)



Sub6 n25(2). PAR Plot (15 M BW Ch.376500 QPSK _ Full RB _0)



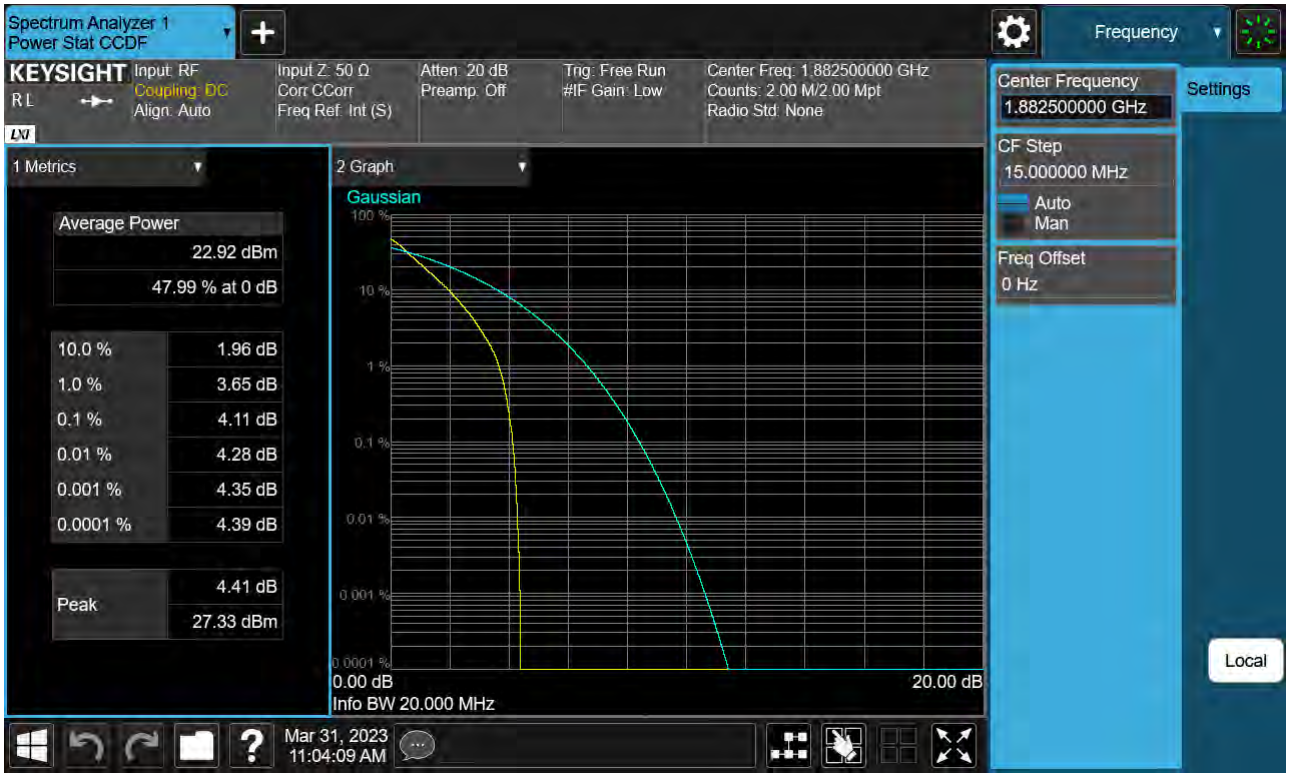
Sub6 n25(2). PAR Plot (15 M BW Ch.376500 16QAM _ Full RB _0)



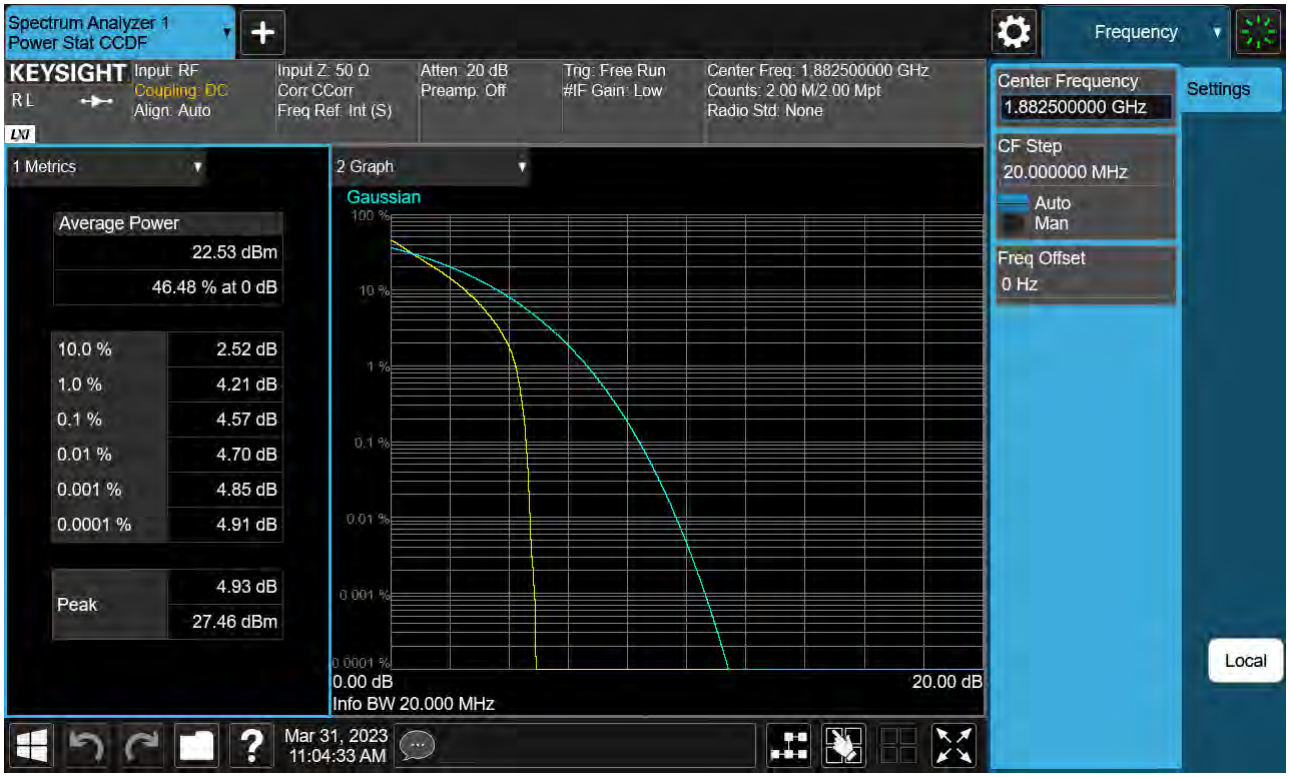
Sub6 n25(2). PAR Plot (15 M BW Ch.376500 64QAM _ Full RB _0)

Sub6 n25(2). PAR Plot (15 M BW Ch.376500 256QAM _ Full RB _0)

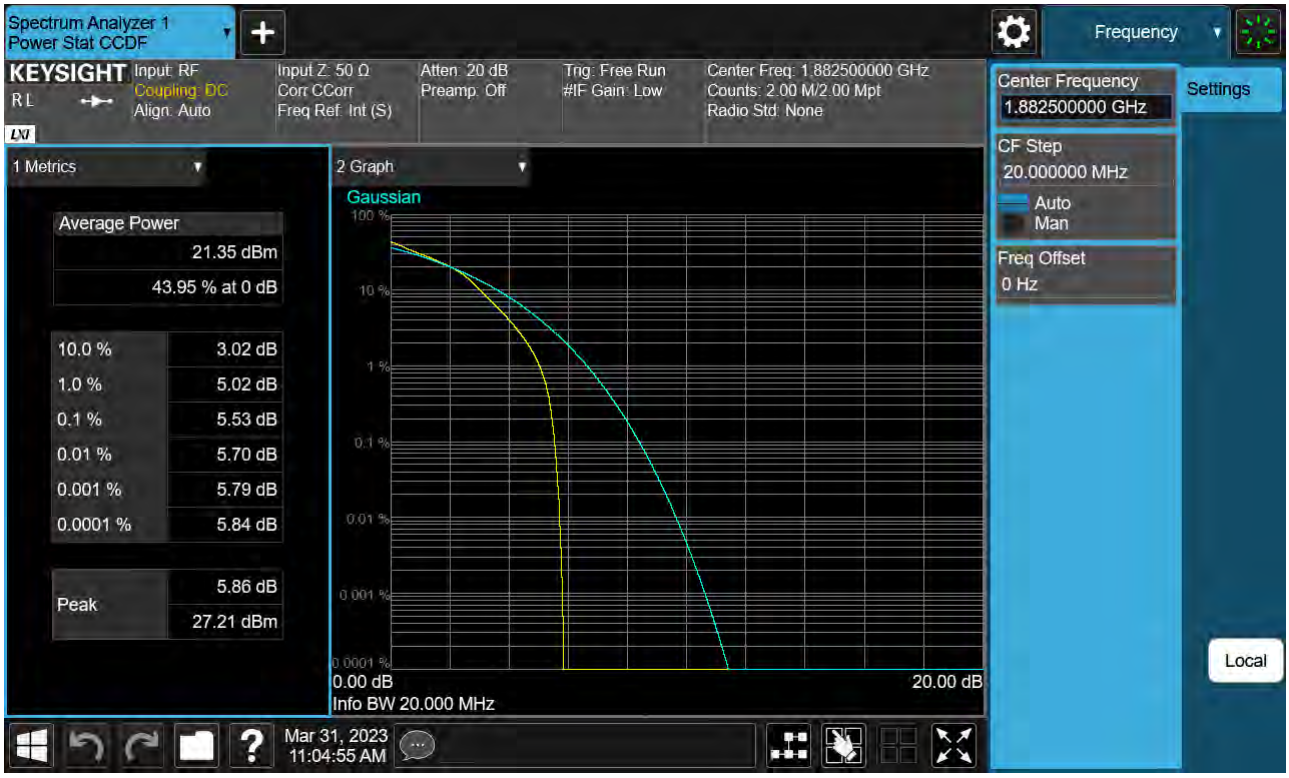
Sub6 n25(2). PAR Plot (20 M BW Ch.376500 BPSK _ Full RB _0)



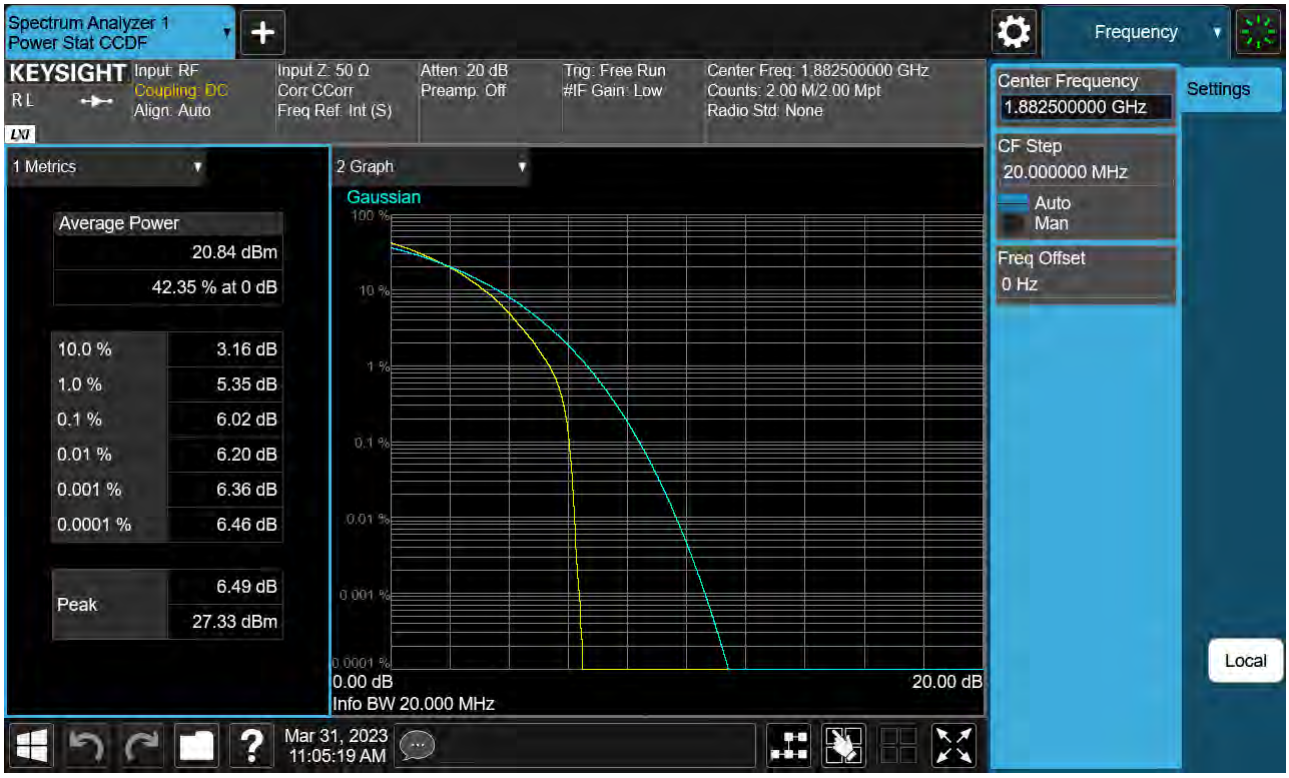
Sub6 n25(2). PAR Plot (20 M BW Ch.376500 QPSK _ Full RB _0)



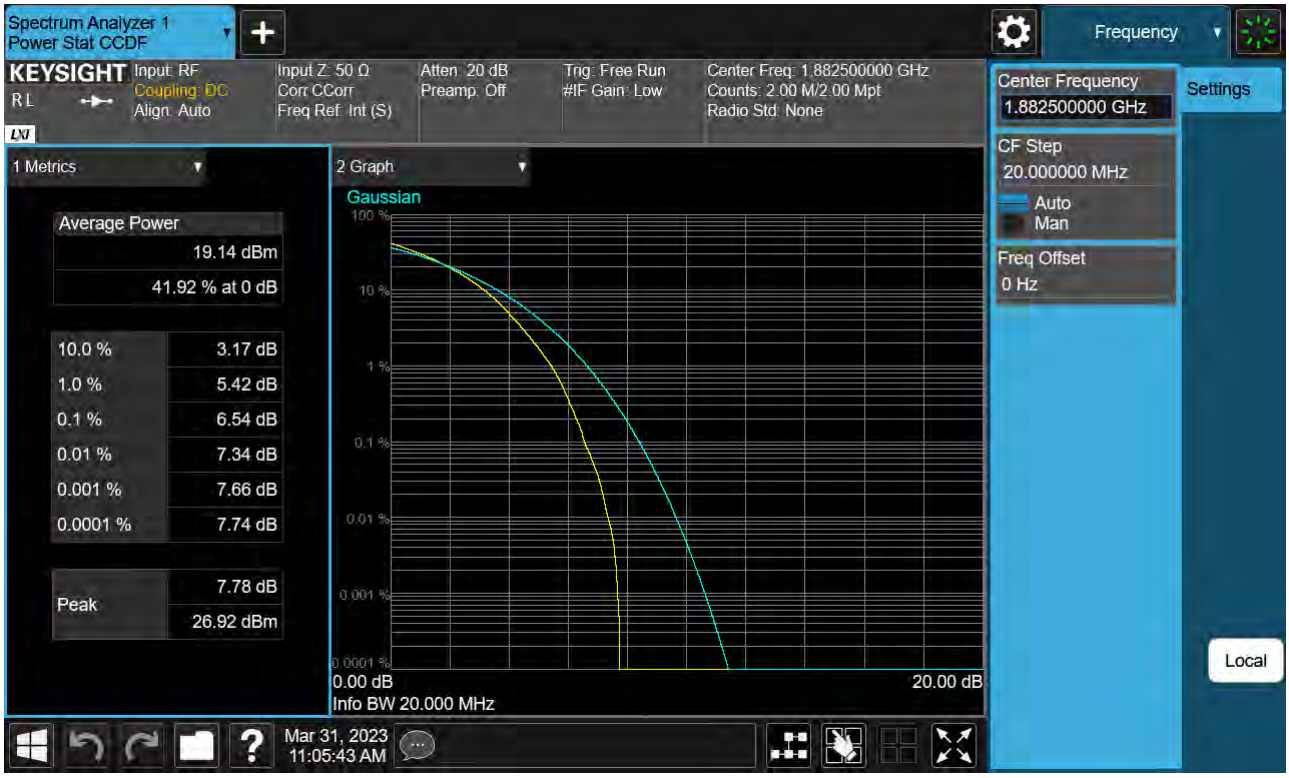
Sub6 n25(2). PAR Plot (20 M BW Ch.376500 16QAM _ Full RB _0)



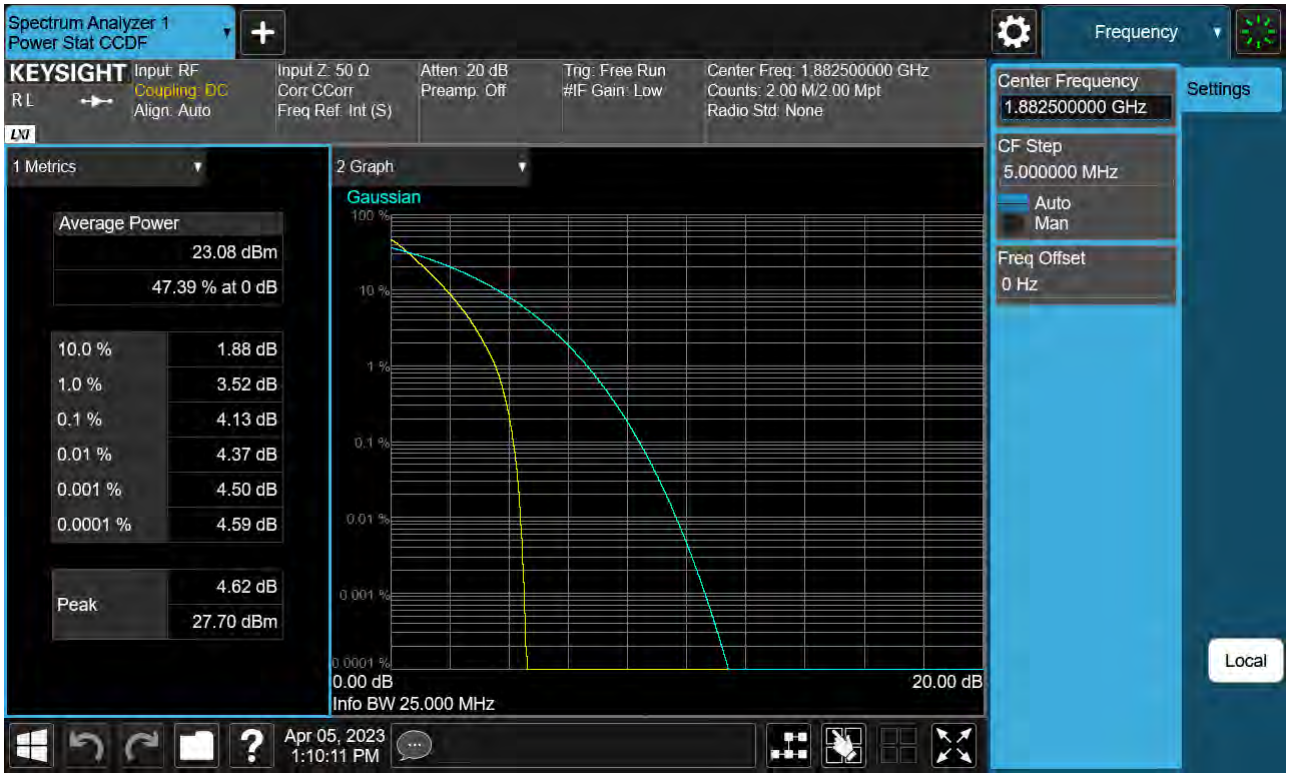
Sub6 n25(2). PAR Plot (20 M BW Ch.376500 64QAM _ Full RB _0)



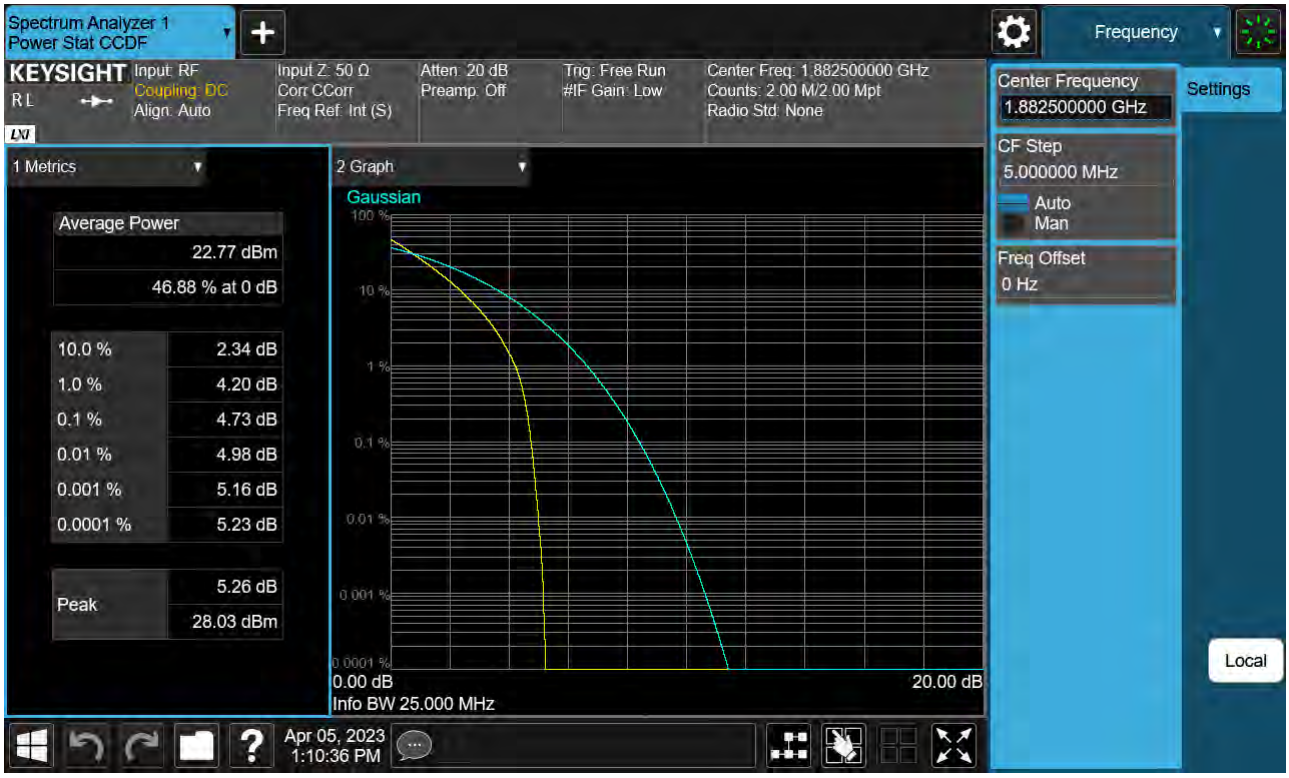
Sub6 n25(2). PAR Plot (20 M BW Ch.376500 256QAM _ Full RB _0)



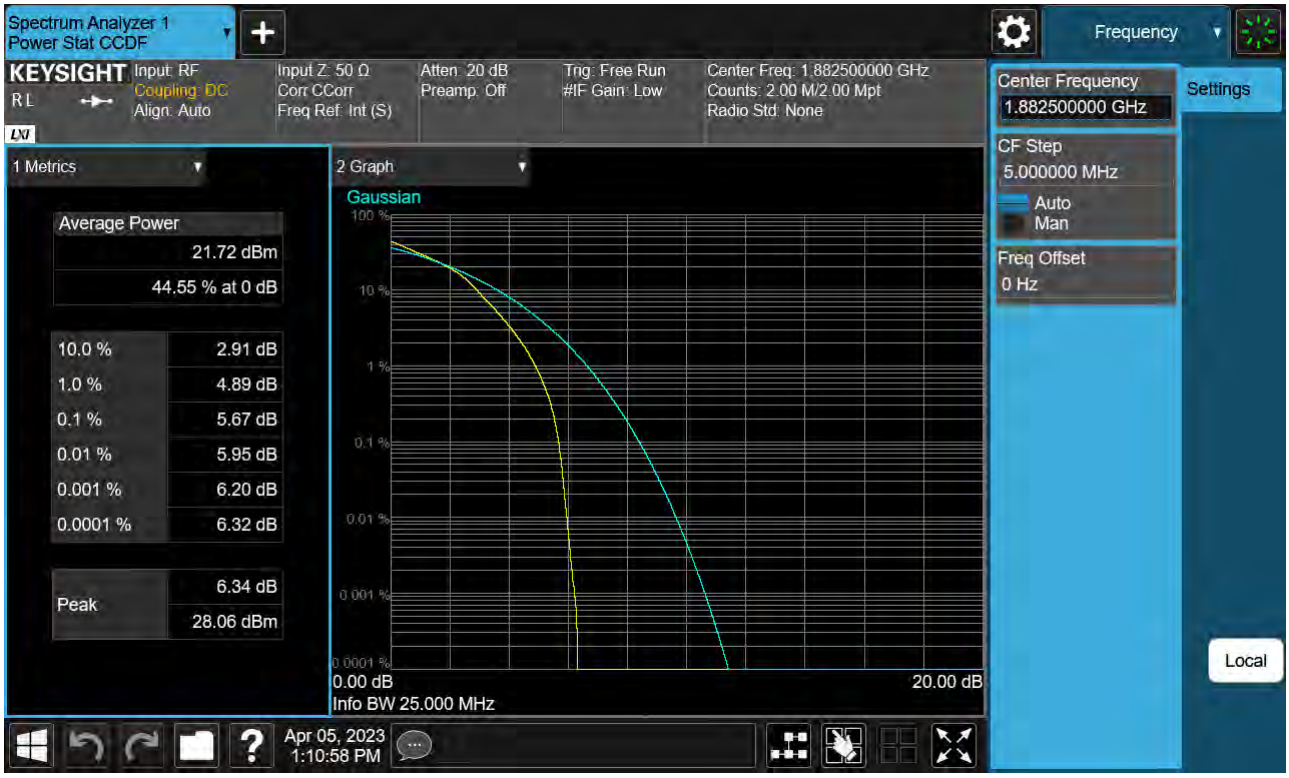
Sub6 n25. PAR Plot (25 M BW Ch.376500 BPSK _ Full RB _0)



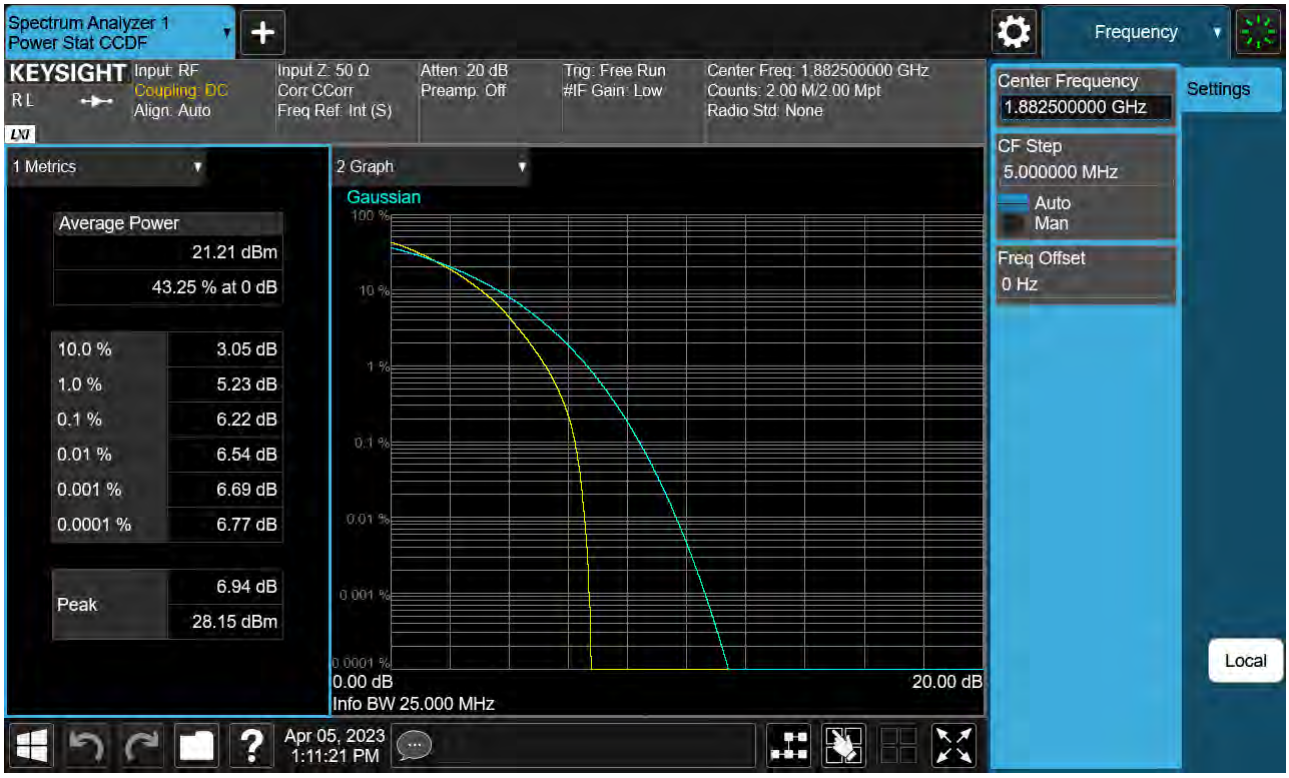
Sub6 n25. PAR Plot (25 M BW Ch.376500 QPSK _ Full RB _0)



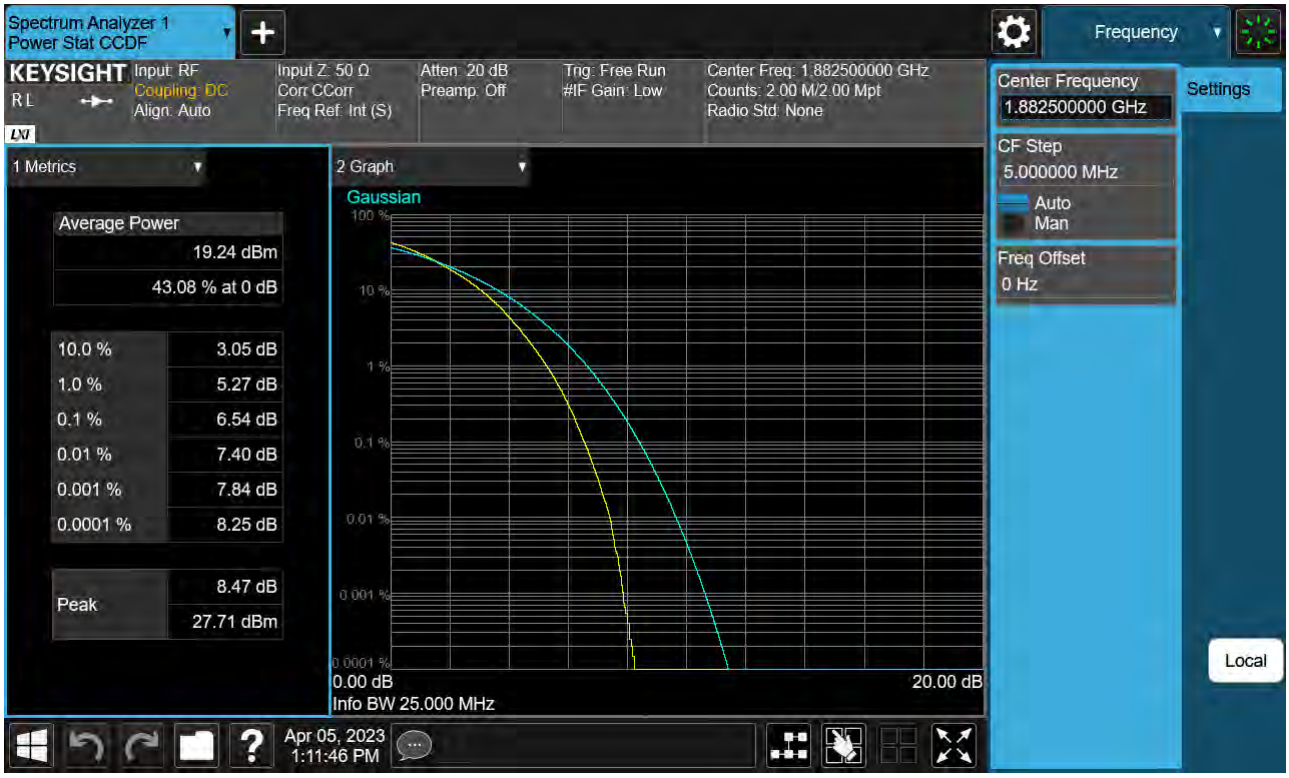
Sub6 n25. PAR Plot (25 M BW Ch.376500 16QAM _ Full RB _0)



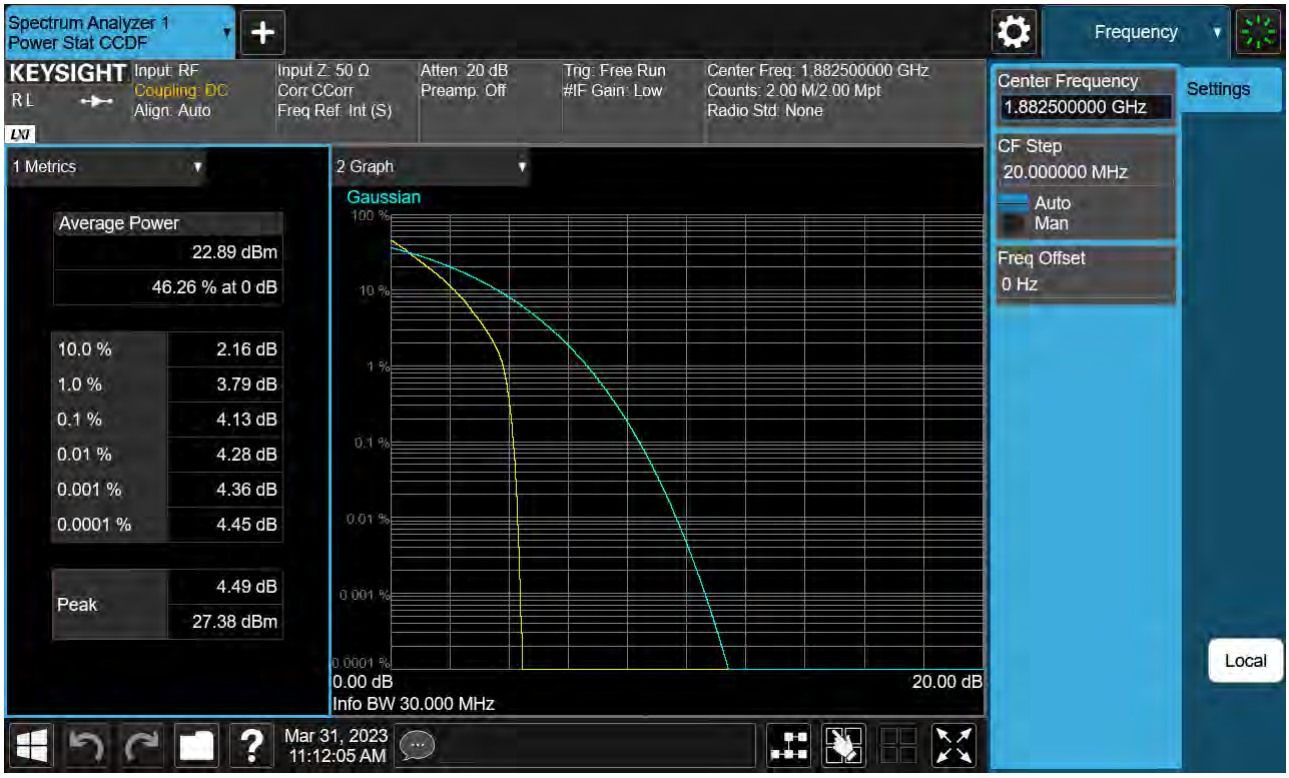
Sub6 n25. PAR Plot (25 M BW Ch.376500 64QAM _ Full RB _0)



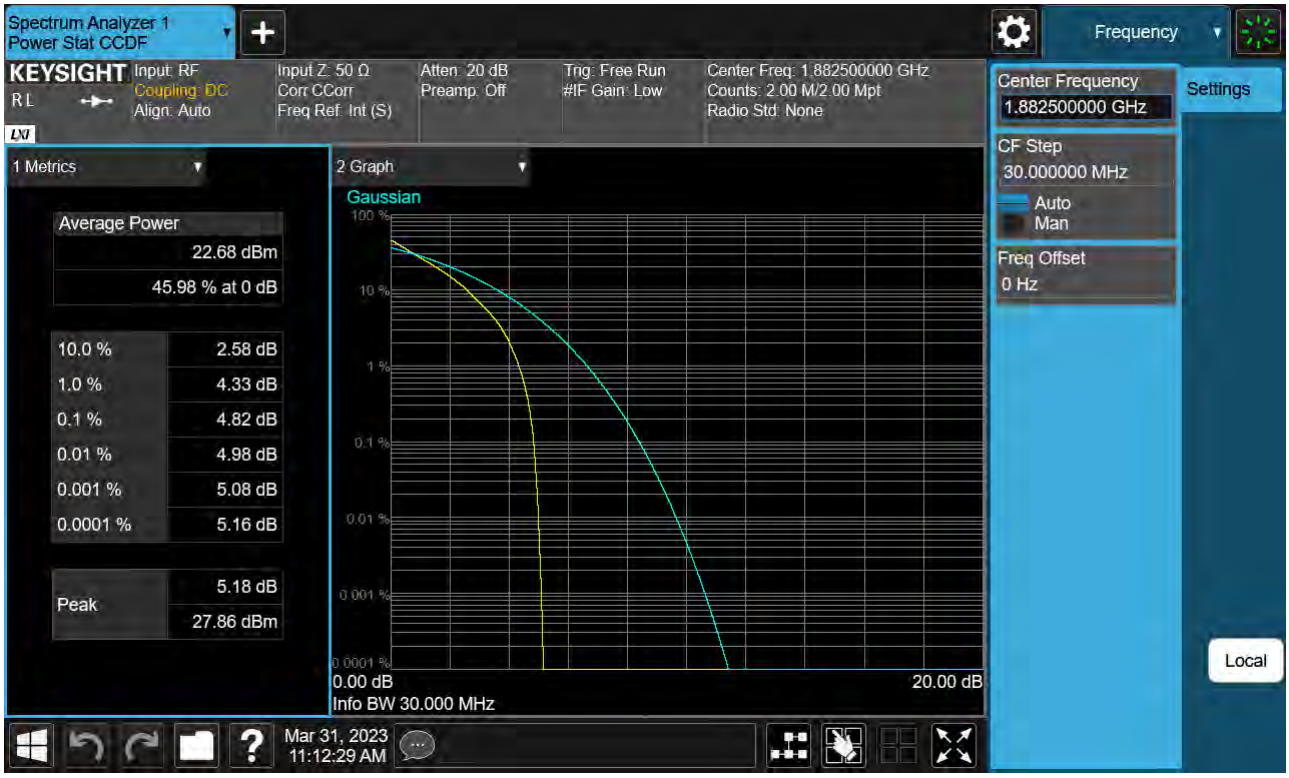
Sub6 n25. PAR Plot (25 M BW Ch.376500 256QAM _ Full RB _0)



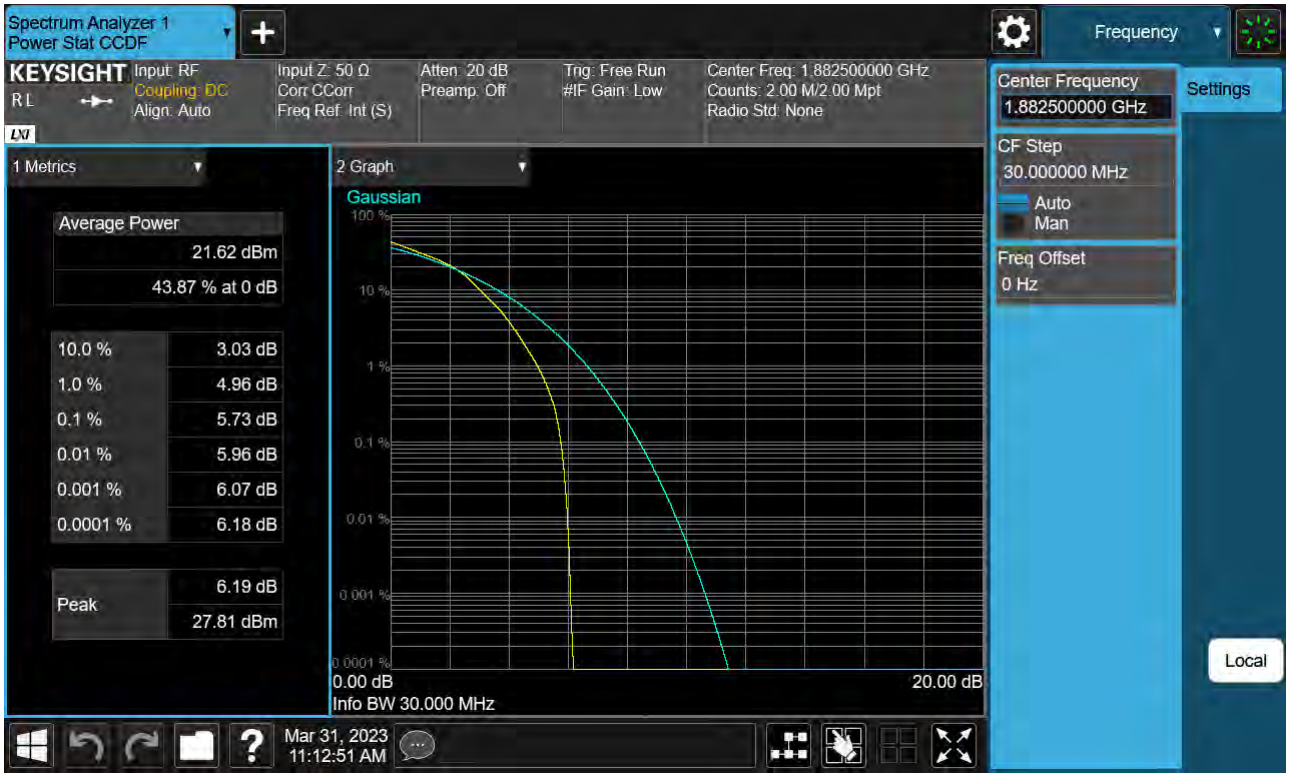
Sub6 n25. PAR Plot (30 M BW Ch.376500 BPSK_ Full RB _0)



Sub6 n25. PAR Plot (30 M BW Ch.376500 QPSK_ Full RB _0)



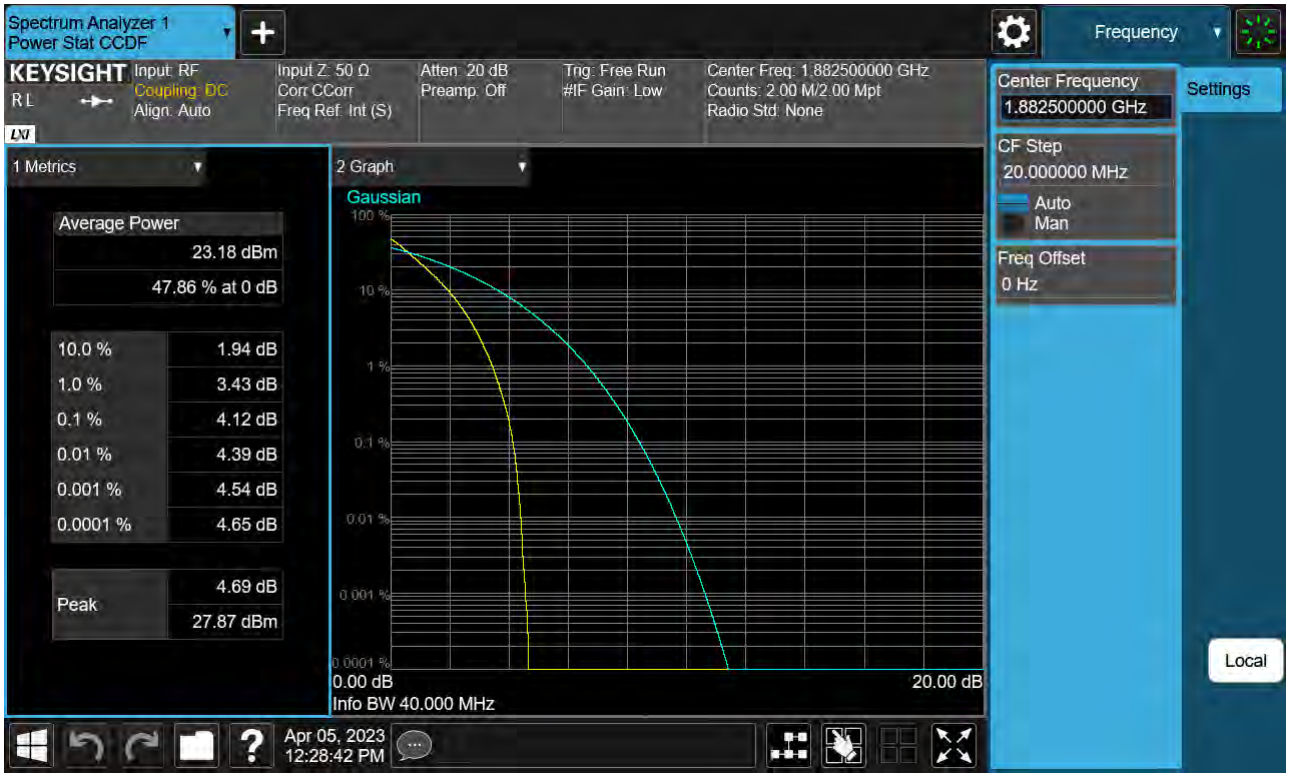
Sub6 n25. PAR Plot (30 M BW Ch.376500 16QAM_ Full RB _0)



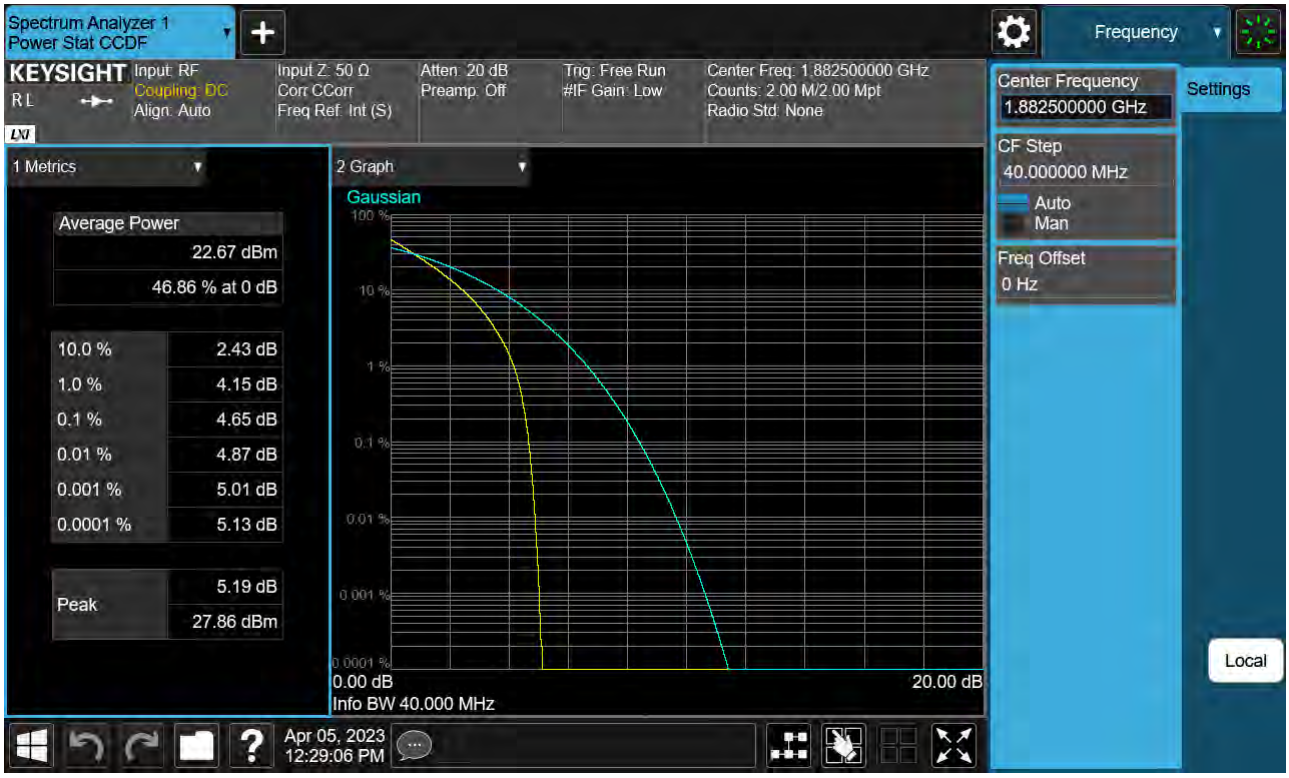
Sub6 n25. PAR Plot (30 M BW Ch.376500 64QAM_ Full RB _0)

Sub6 n25. PAR Plot (30 M BW Ch.376500 256QAM_ Full RB _0)

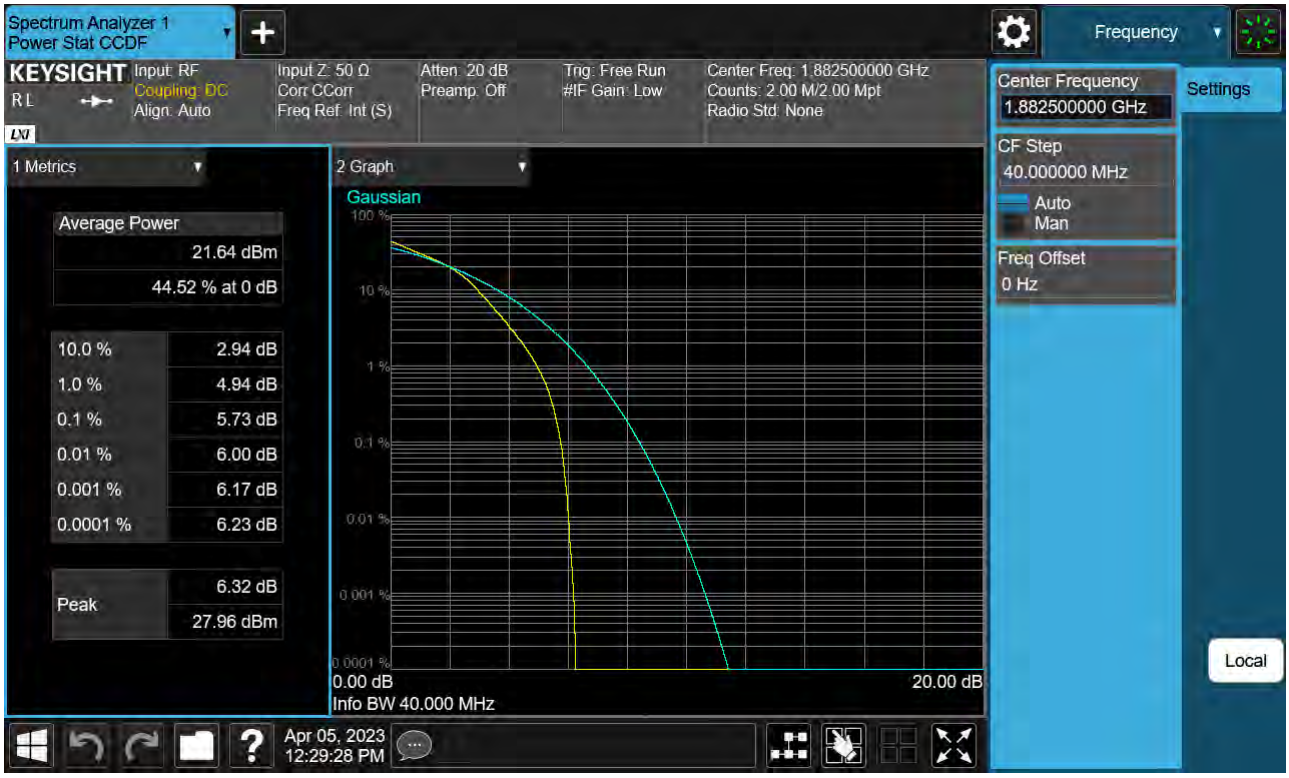
Sub6 n25. PAR Plot (40 M BW Ch.376500 BPSK_ Full RB _0)



Sub6 n25. PAR Plot (40 M BW Ch.376500 QPSK_ Full RB _0)



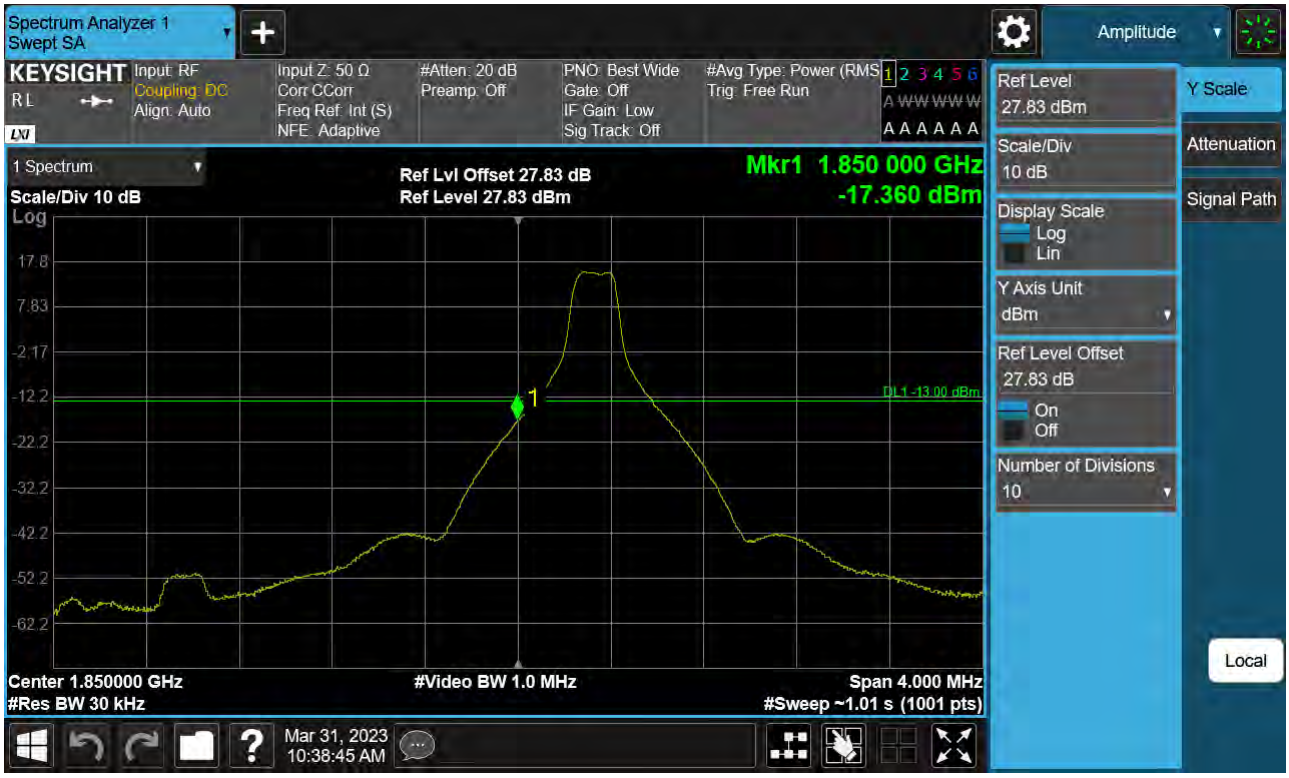
Sub6 n25. PAR Plot (40 M BW Ch.376500 16QAM_ Full RB _0)



Sub6 n25. PAR Plot (40 M BW Ch.376500 64QAM_ Full RB _0)

Sub6 n25. PAR Plot (40 M BW Ch.376500 256QAM_ Full RB _0)

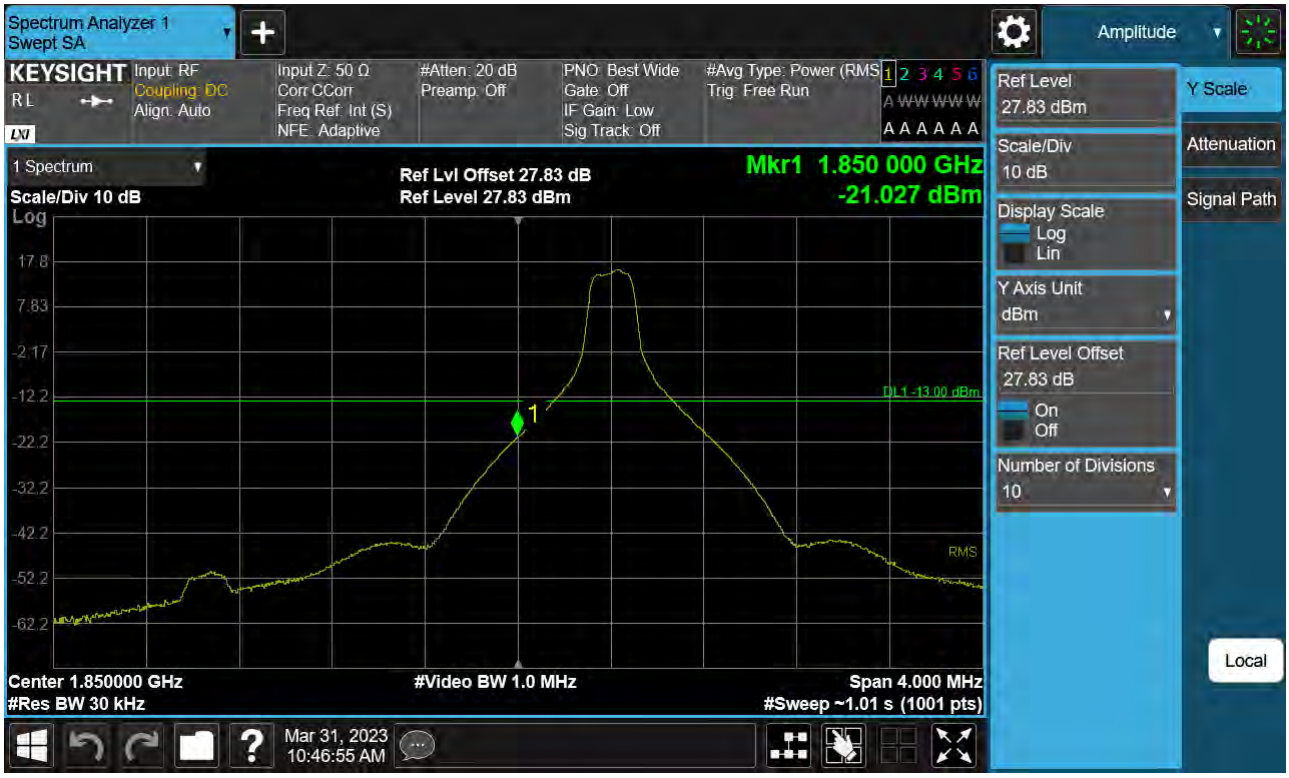
Sub6 n25(2). Lower Band Edge Plot (5 M BW Ch.370500 BPSK_RB1_Offset 0)



Sub6 n25(2). Lower Band Edge Plot (5 M BW Ch.370500 BPSK_RB25_Offset 0) -1

Sub6 n25(2). Lower Extended Band Edge Plot (5 M BW Ch.370500 BPSK_RB25_0) -2

Sub6 n25(2). Lower Band Edge Plot (10 M BW Ch.371000 BPSK_RB1_Offset 0)



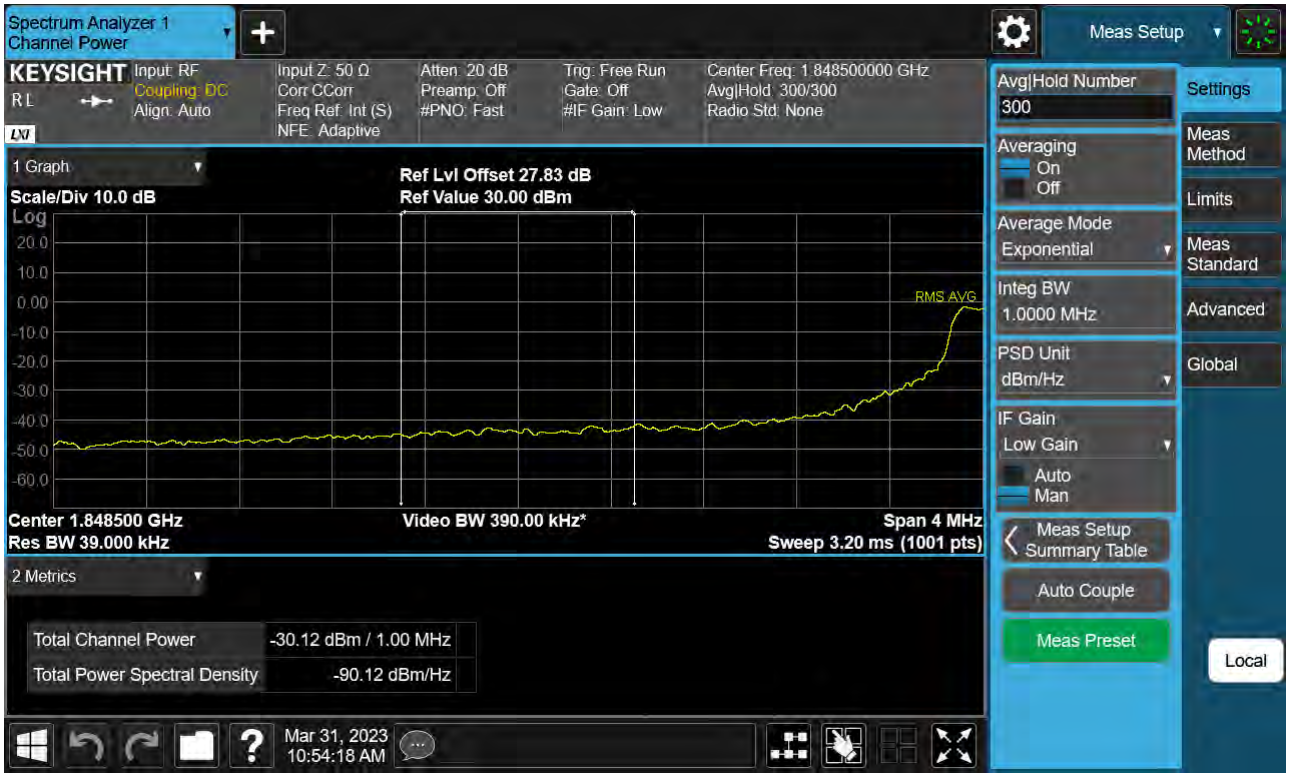
Sub6 n25(2). Lower Band Edge Plot (10 M BW Ch.371000 BPSK_RB50_Offset 0) -1

Sub6 n25(2). Lower Extended Band Edge Plot (10 M BW Ch.371000 BPSK_RB50_0) -2

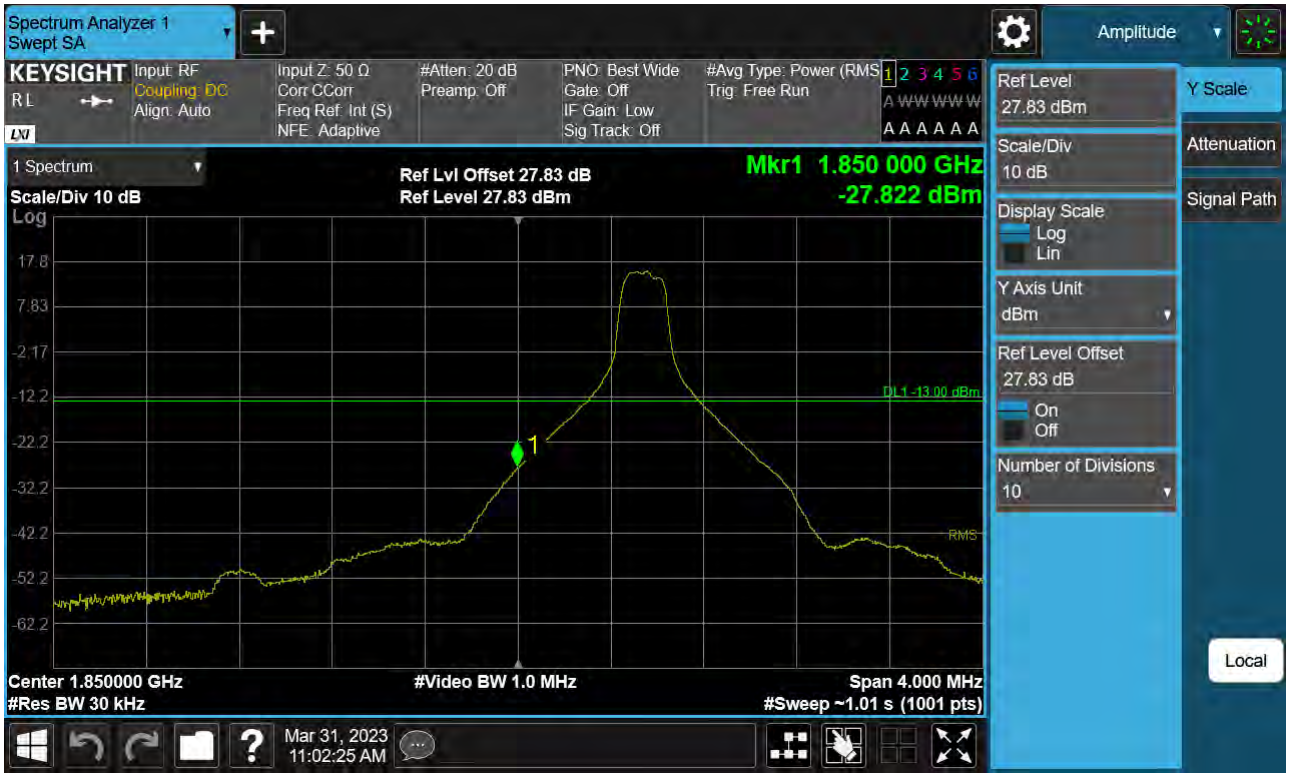
Sub6 n25(2). Lower Band Edge Plot (15 M BW Ch.371500 BPSK_RB1_Offset 0)

Sub6 n25(2). Lower Band Edge Plot (15 M BW Ch.371500 BPSK_RB75_Offset 0) -1

Sub6 n25(2). Lower Extended Band Edge Plot (15 M BW Ch.371500 BPSK_RB75_0) -2

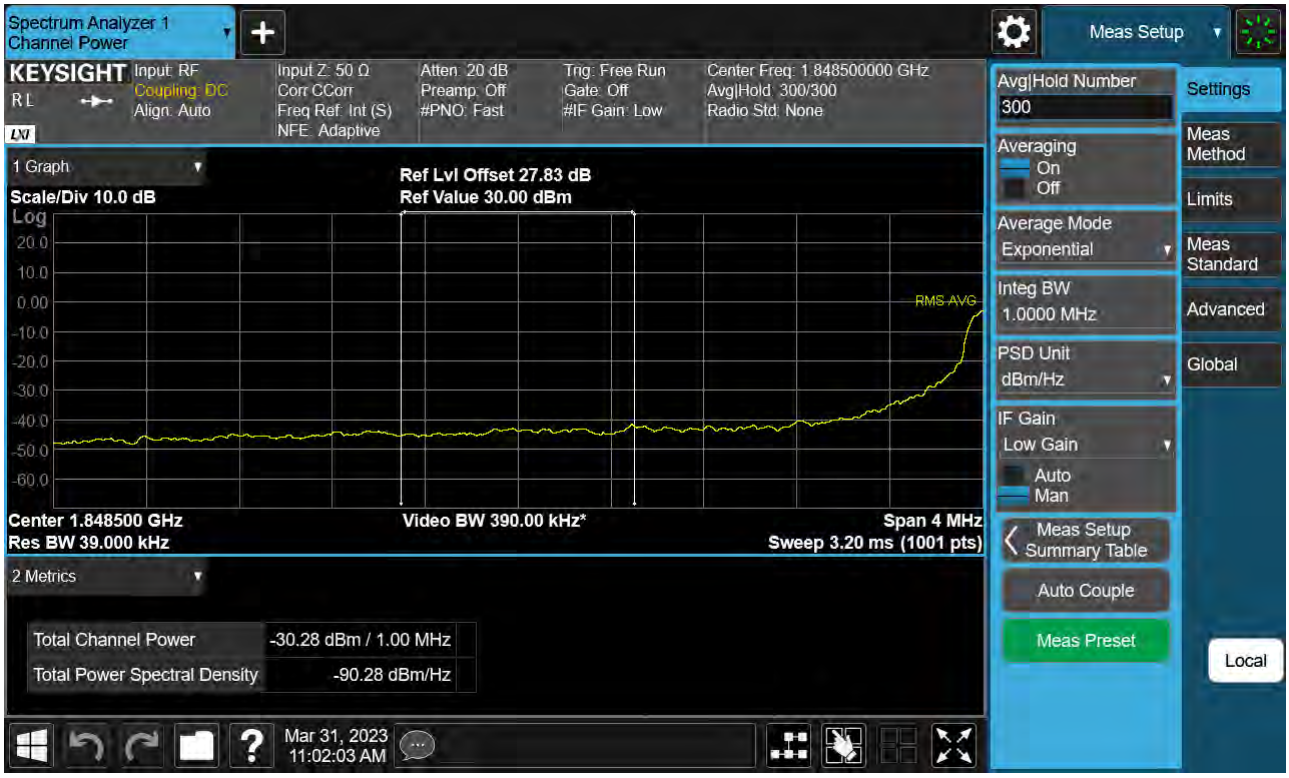


Sub6 n25(2). Lower Band Edge Plot (20 M BW Ch.372000 BPSK_RB1_Offset 0)



Sub6 n25(2). Lower Band Edge Plot (20 M BW Ch.372000 BPSK_RB100_Offset 0) -1

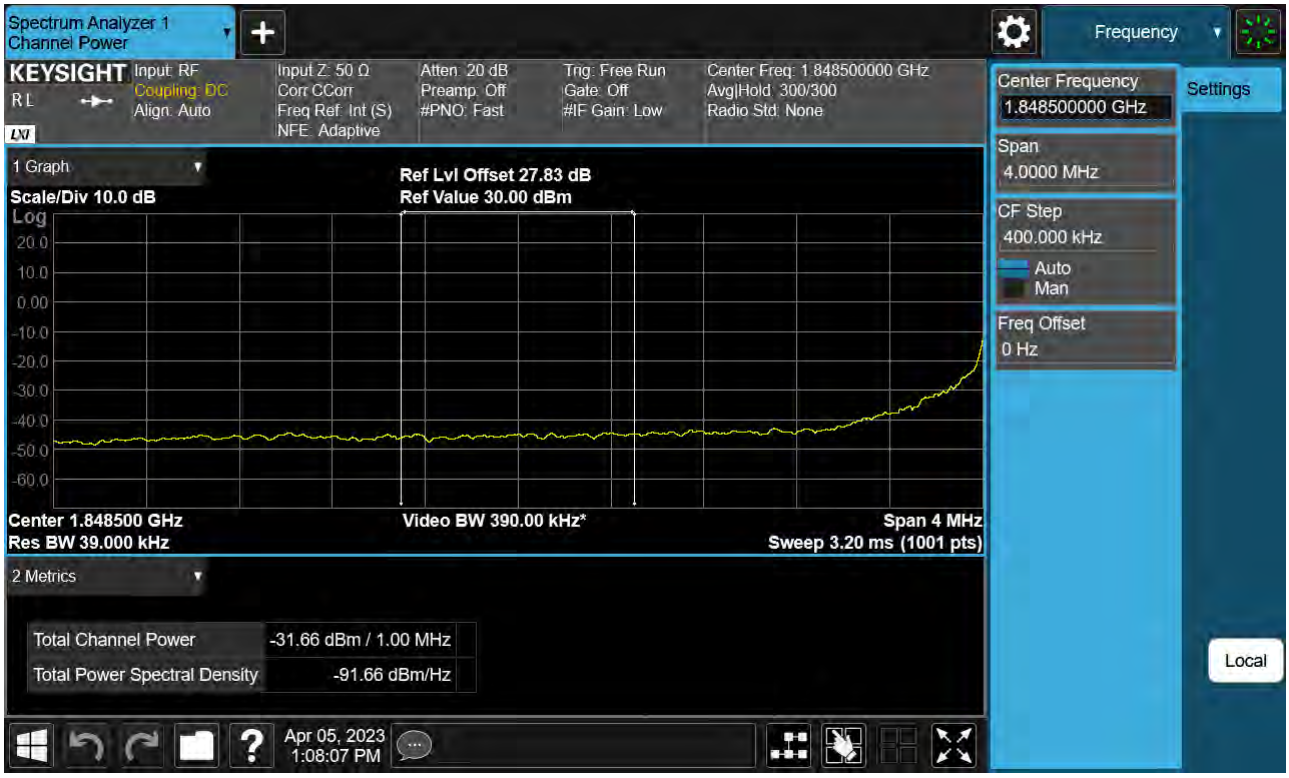
Sub6 n25(2). Lower Extended Band Edge Plot (20 M BW Ch.372000 BPSK_RB100_0) -2



Sub6 n25. Lower Band Edge Plot (25 M BW Ch.372500 BPSK_RB1_Offset 0)

Sub6 n25. Lower Band Edge Plot (25 M BW Ch.372500 BPSK_RB100_Offset 0) -1

Sub6 n25. Lower Extended Band Edge Plot (25 M BW Ch.372500 BPSK_RB100_0) -2



Sub6 n25. Lower Band Edge Plot (30 M BW Ch.373000 BPSK_RB1_Offset 0)

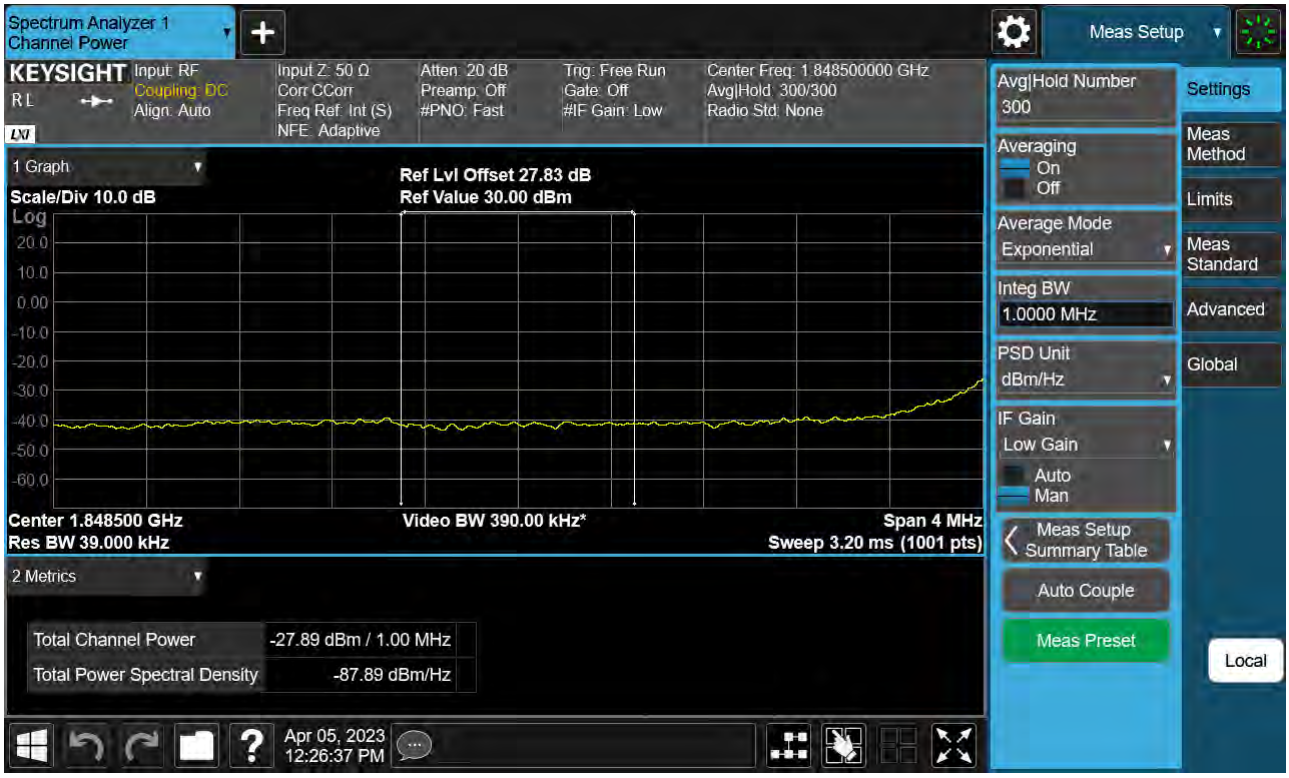
Sub6 n25. Lower Band Edge Plot (30 M BW Ch.373000 BPSK_RB160_Offset 0) -1

Sub6 n25. Lower Extended Band Edge Plot (30 M BW Ch.373000 BPSK_RB160_0) -2

Sub6 n25. Lower Band Edge Plot (40 M BW Ch.374000 BPSK_RB1_Offset 0)

Sub6 n25. Lower Band Edge Plot (40 M BW Ch.374000 BPSK_RB216_Offset 0) -1

Sub6 n25. Lower Extended Band Edge Plot (40 M BW Ch.374000 BPSK_RB216_0) -2



Sub6 n25(2). Upper Band Edge Plot (5 M BW Ch.382500 BPSK_RB1_Offset 24)

Sub6 n25(2). Upper Band Edge Plot (5 M BW Ch.382500 BPSK_RB25_Offset 0) -1

Sub6 n25(2). Upper Extended Band Edge Plot (5 M BW Ch.382500 BPSK_RB25_0) -2

Sub6 n25(2). Upper Band Edge Plot (10 M BW Ch.382000 BPSK_RB1_Offset 49)

Sub6 n25(2). Upper Band Edge Plot (10 M BW Ch.382000 BPSK_RB50_Offset 0) -1

Sub6 n25(2). Upper Extended Band Edge Plot (10 M BW Ch.382000 BPSK_RB50_0) -2