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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:
October 16, 2023

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

Report No.: HCT-RF-2310-FC036

FCC ID:	**A3LSMS926U**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model(s):	SM-S926U
Additional Model(s):	SM-S926U1
EUT Type:	Mobile Phone
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§24

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)

Ant A

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n2 (5)	1852.5 – 1907.5	4M57G7D	PI/2 BPSK	0.157	21.97
		4M58G7D	QPSK	0.152	21.83
		4M61W7D	16QAM	0.121	20.82
		4M61W7D	64QAM	0.084	19.24
		4M63W7D	256QAM	0.050	17.02
Sub6 n2 (10)	1855.0 - 1905.0	8M96G7D	PI/2 BPSK	0.164	22.16
		9M01G7D	QPSK	0.156	21.93
		8M99W7D	16QAM	0.121	20.83
		8M96W7D	64QAM	0.085	19.30
		8M96W7D	256QAM	0.048	16.83
Sub6 n2 (15)	1857.5 – 1902.5	13M5G7D	PI/2 BPSK	0.161	22.06
		13M5G7D	QPSK	0.155	21.91
		13M5W7D	16QAM	0.124	20.94
		13M5W7D	64QAM	0.088	19.46
		13M5W7D	256QAM	0.049	16.88
Sub6 n2 (20)	1860.0 – 1900.0	17M9G7D	PI/2 BPSK	0.164	22.15
		17M9G7D	QPSK	0.161	22.07
		17M9W7D	16QAM	0.121	20.83
		17M9W7D	64QAM	0.090	19.53
		17M9W7D	256QAM	0.049	16.86
Sub6 n2 (25)	1862.5 – 1897.5	22M9G7D	PI/2 BPSK	0.189	22.77
		23M0G7D	QPSK	0.180	22.56
		23M0W7D	16QAM	0.144	21.58
		22M9W7D	64QAM	0.103	20.14
		23M0W7D	256QAM	0.060	17.78
Sub6 n2 (30)	1865.0 – 1895.0	28M6G7D	PI/2 BPSK	0.190	22.78
		28M6G7D	QPSK	0.187	22.71
		28M7W7D	16QAM	0.144	21.58
		28M6W7D	64QAM	0.101	20.04
		28M6W7D	256QAM	0.059	17.71
Sub6 n2 (35)	1867.5 – 1892.5	32M2G7D	PI/2 BPSK	0.185	22.68
		32M3G7D	QPSK	0.176	22.45
		32M2W7D	16QAM	0.141	21.49
		32M2W7D	64QAM	0.102	20.09
		32M2W7D	256QAM	0.060	17.75
Sub6 n2 (40)	1870.0 – 1890.0	38M7G7D	PI/2 BPSK	0.186	22.70
		38M6G7D	QPSK	0.179	22.53
		38M7W7D	16QAM	0.140	21.46
		38M6W7D	64QAM	0.100	19.99
		38M6W7D	256QAM	0.061	17.87

Ant F

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n2 (5)	1852.5 – 1907.5	4M62G7D	PI/2 BPSK	0.119	20.74
		4M60G7D	QPSK	0.117	20.68
		4M49W7D	16QAM	0.094	19.71
		4M51W7D	64QAM	0.064	18.04
		4M61W7D	256QAM	0.038	15.79
Sub6 n2 (10)	1855.0 - 1905.0	8M97G7D	PI/2 BPSK	0.119	20.74
		8M98G7D	QPSK	0.115	20.59
		8M97W7D	16QAM	0.093	19.67
		8M98W7D	64QAM	0.062	17.92
		8M98W7D	256QAM	0.038	15.82
Sub6 n2 (15)	1857.5 – 1902.5	13M4G7D	PI/2 BPSK	0.117	20.70
		13M5G7D	QPSK	0.117	20.68
		13M4W7D	16QAM	0.092	19.62
		13M5W7D	64QAM	0.062	17.90
		13M5W7D	256QAM	0.036	15.62
Sub6 n2 (20)	1860.0 – 1900.0	17M9G7D	PI/2 BPSK	0.115	20.61
		17M9G7D	QPSK	0.111	20.45
		17M9W7D	16QAM	0.086	19.32
		17M9W7D	64QAM	0.060	17.77
		17M9W7D	256QAM	0.036	15.62
Sub6 n2 (25)	1862.5 – 1897.5	22M9G7D	PI/2 BPSK	0.123	20.91
		23M0G7D	QPSK	0.120	20.79
		22M9W7D	16QAM	0.096	19.81
		22M9W7D	64QAM	0.064	18.06
		22M9W7D	256QAM	0.038	15.81
Sub6 n2 (30)	1865.0 – 1895.0	28M7G7D	PI/2 BPSK	0.121	20.83
		28M7G7D	QPSK	0.119	20.74
		28M7W7D	16QAM	0.096	19.82
		28M6W7D	64QAM	0.065	18.16
		28M6W7D	256QAM	0.043	16.36
Sub6 n2 (35)	1867.5 – 1892.5	32M2G7D	PI/2 BPSK	0.145	21.61
		32M2G7D	QPSK	0.138	21.41
		32M2W7D	16QAM	0.106	20.27
		32M3W7D	64QAM	0.076	18.78
		32M2W7D	256QAM	0.045	16.55
Sub6 n2 (40)	1870.0 – 1890.0	38M6G7D	PI/2 BPSK	0.142	21.53
		38M8G7D	QPSK	0.141	21.49
		38M7W7D	16QAM	0.108	20.34
		38M7W7D	64QAM	0.073	18.65
		38M6W7D	256QAM	0.044	16.48

REVIEWED BY

Report prepared by : Jae Ryang Do
Engineer of Telecommunication Testing Center

Report approved by : Jong Seok Lee
Manager of Telecommunication Testing Center

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.
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-2310-FC036	October 16, 2023	- First Approval Report

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:	A3LSMS926U
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§24
EUT Type:	Mobile Phone
Model(s):	SM-S926U
Additional Model(s):	SM-S926U1
SCS(kHz):	15
Bandwidth(MHz):	5, 10, 15, 20, 25, 30, 35, 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 – 1907.5 MHz (Sub6 n2 (5 MHz)) 1855.0 MHz – 1905.0 MHz (Sub6 n2 (10 MHz)) 1857.5 MHz – 1902.5 MHz (Sub6 n2 (15 MHz)) 1860.0 MHz – 1900.0 MHz (Sub6 n2 (20 MHz)) 1862.5 MHz – 1897.5 MHz (Sub6 n2 (25 MHz)) 1865.0 MHz – 1895.0 MHz (Sub6 n2 (30 MHz)) 1867.5 MHz – 1892.5 MHz (Sub6 n2 (35 MHz)) 1870.0 MHz – 1890.0 MHz (Sub6 n2 (40 MHz))
Date(s) of Tests:	August 31, 2023 ~ October 12, 2023
Serial number:	Radiated: R3CW90B4EDB Conducted: R3CW80MBXVP

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

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

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

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;

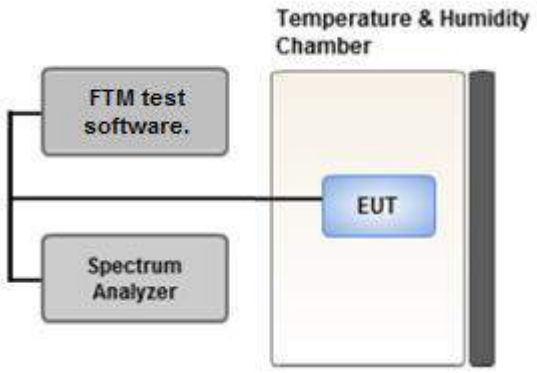
$$Result_{(dBm)} = Pg_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

   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.

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

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)

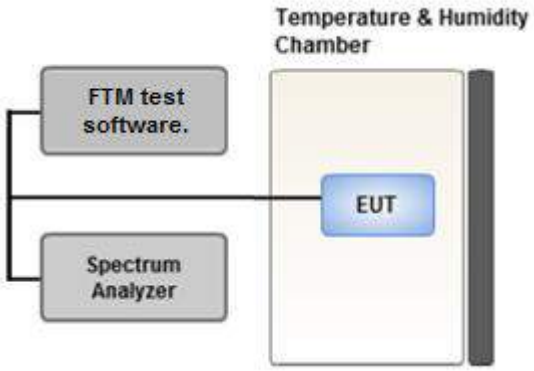
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW ≥ 3 × RBW.

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.

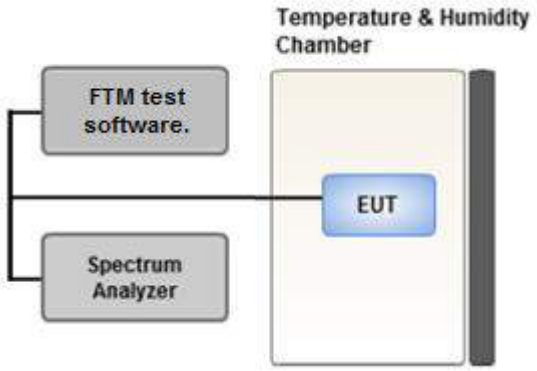
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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

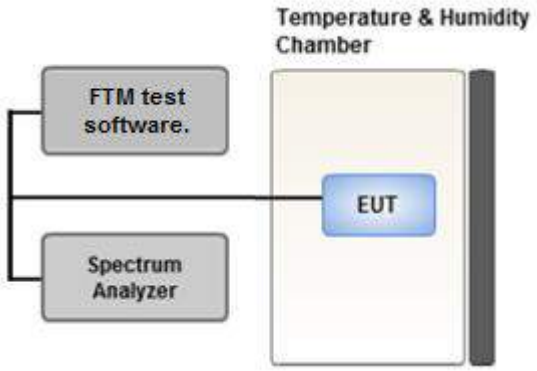
Test Overview

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

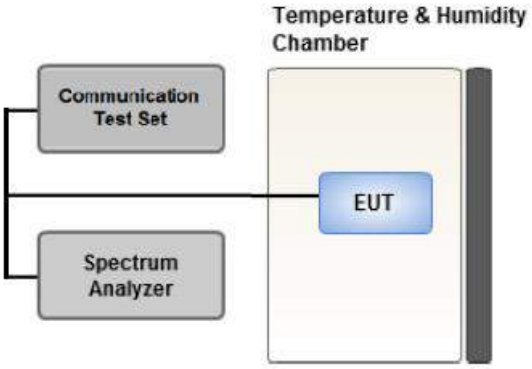
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW > 1 % of the emission bandwidth
4. VBW > 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 2 x Span/RBW
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)
- The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
- All modes of operation were investigated and the worst case configuration results are reported.
  Mode: SA, NSA
  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 : 30 MHz(Ant A), 35 MHz(Ant F))
- SM-S926U & additional models were tested and the worst case results are reported.
  (Worst case : SM-S926U)

[Ant A 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 F 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		Z
Radiated Spurious and Harmonic Emissions	PI/2 BPSK	See Section 8.2		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: SA, NSA
  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.
- SM-S926U & additional models were tested and the worst case results are reported.
  (Worst case : SM-S926U)

[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	03/27/2024	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	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	12/01/2023	Annual
Power Amplifier	CBL26405040	CERNEX	25956	03/02/2024	Annual
DC Power Supply	E3632A	Hewlett Packard	MY40004427	08/25/2024	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	08/10/2024	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_{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(Ant A)

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 n2/ 5 MHz [15 kHz]	PI/2 BPSK	-20.00	13.82	10.00	2.12	H	< 2.00	0.148	21.70	1	12
		QPSK	-20.20	13.62	10.00	2.12	H		0.141	21.50		
		16-QAM	-21.18	12.64	10.00	2.12	H		0.113	20.52		
		64-QAM	-22.67	11.15	10.00	2.12	H		0.080	19.03		
		256-QAM	-24.68	9.14	10.00	2.12	H		0.050	17.02		
1880.0		PI/2 BPSK	-19.62	13.98	10.00	2.21	H		0.150	21.77	1	1
		QPSK	-19.63	13.97	10.00	2.21	H		0.150	21.76		
		16-QAM	-20.75	12.85	10.00	2.21	H		0.116	20.64		
		64-QAM	-22.25	11.35	10.00	2.21	H		0.082	19.14		
		256-QAM	-24.63	8.97	10.00	2.21	H		0.047	16.76		
1907.5		PI/2 BPSK	-19.95	14.07	10.01	2.11	H		0.157	21.97	1	12
		QPSK	-20.09	13.93	10.01	2.11	H		0.152	21.83		
		16-QAM	-21.10	12.92	10.01	2.11	H		0.121	20.82		
		64-QAM	-22.68	11.34	10.01	2.11	H		0.084	19.24		
		256-QAM	-25.25	8.77	10.01	2.11	H		0.046	16.67		

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	Offset
1855.0	Sub6 n2/ 10 MHz [15 kHz]	PI/2 BPSK	-19.47	14.12	10.00	2.15	H	< 2.00	0.157	21.97	1	50
		QPSK	-19.65	13.94	10.00	2.15	H		0.151	21.79		
		16-QAM	-20.61	12.98	10.00	2.15	H		0.121	20.83		
		64-QAM	-22.14	11.45	10.00	2.15	H		0.085	19.30		
		256-QAM	-24.65	8.94	10.00	2.15	H		0.048	16.79		
1880.0		PI/2 BPSK	-19.60	14.00	10.00	2.21	H		0.151	21.79	1	1
		QPSK	-19.72	13.88	10.00	2.21	H		0.147	21.67		
		16-QAM	-20.70	12.90	10.00	2.21	H		0.117	20.69		
		64-QAM	-22.16	11.44	10.00	2.21	H		0.084	19.23		
		256-QAM	-24.82	8.78	10.00	2.21	H		0.045	16.57		
1905.0		PI/2 BPSK	-19.69	14.28	10.01	2.13	H		0.164	22.16	1	1
		QPSK	-19.92	14.05	10.01	2.13	H		0.156	21.93		
		16-QAM	-21.04	12.93	10.01	2.13	H		0.121	20.81		
		64-QAM	-22.80	11.17	10.01	2.13	H		0.080	19.05		
		256-QAM	-25.02	8.95	10.01	2.13	H		0.048	16.83		

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 n2/ 15 MHz [15 kHz]	PI/2 BPSK	-19.61	13.73	10.00	2.17	H	< 2.00	0.143	21.56	1	1
		QPSK	-19.67	13.67	10.00	2.17	H		0.141	21.50		
		16-QAM	-20.85	12.49	10.00	2.17	H		0.108	20.32		
		64-QAM	-22.00	11.34	10.00	2.17	H		0.083	19.17		
		256-QAM	-24.78	8.56	10.00	2.17	H		0.044	16.39		
1880.0		PI/2 BPSK	-19.33	14.27	10.00	2.21	H		0.161	22.06	1	39
		QPSK	-19.48	14.12	10.00	2.21	H		0.155	21.91		
		16-QAM	-20.54	13.06	10.00	2.21	H		0.122	20.85		
		64-QAM	-22.00	11.60	10.00	2.21	H		0.087	19.39		
		256-QAM	-24.51	9.09	10.00	2.21	H		0.049	16.88		
1902.5		PI/2 BPSK	-19.77	14.14	10.01	2.15	H		0.158	22.00	1	1
		QPSK	-19.92	13.99	10.01	2.15	H		0.153	21.85		
		16-QAM	-20.83	13.08	10.01	2.15	H		0.124	20.94		
		64-QAM	-22.31	11.60	10.01	2.15	H		0.088	19.46		
		256-QAM	-24.98	8.93	10.01	2.15	H		0.048	16.79		

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 n2/ 20 MHz [15 kHz]	PI/2 BPSK	-19.53	13.81	10.00	2.17	H	< 2.00	0.146	21.64	1	53
		QPSK	-19.61	13.73	10.00	2.17	H		0.143	21.56		
		16-QAM	-20.45	12.89	10.00	2.17	H		0.118	20.72		
		64-QAM	-22.11	11.23	10.00	2.17	H		0.081	19.06		
		256-QAM	-24.66	8.68	10.00	2.17	H		0.045	16.51		
1880.0		PI/2 BPSK	-19.30	14.30	10.00	2.21	H		0.162	22.09	1	53
		QPSK	-19.32	14.28	10.00	2.21	H		0.161	22.07		
		16-QAM	-20.56	13.04	10.00	2.21	H		0.121	20.83		
		64-QAM	-21.86	11.74	10.00	2.21	H		0.090	19.53		
		256-QAM	-24.53	9.07	10.00	2.21	H		0.049	16.86		
1900.0		PI/2 BPSK	-19.62	14.29	10.01	2.15	H		0.164	22.15	1	1
		QPSK	-19.73	14.18	10.01	2.15	H		0.160	22.04		
		16-QAM	-20.95	12.96	10.01	2.15	H		0.121	20.82		
		64-QAM	-22.32	11.59	10.01	2.15	H		0.088	19.45		
		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
1862.5	Sub6 n2/ 25 MHz [15 kHz]	PI/2 BPSK	-19.48	13.86	10.00	2.17	H	< 2.00	0.148	21.69	1	66
		QPSK	-19.57	13.77	10.00	2.17	H		0.145	21.60		
		16-QAM	-20.59	12.75	10.00	2.17	H		0.114	20.58		
		64-QAM	-22.14	11.20	10.00	2.17	H		0.080	19.03		
		256-QAM	-24.70	8.64	10.00	2.17	H		0.044	16.47		
1880.0		PI/2 BPSK	-19.16	14.44	10.00	2.21	H		0.167	22.23	1	66
		QPSK	-19.32	14.28	10.00	2.21	H		0.161	22.07		
		16-QAM	-20.51	13.09	10.00	2.21	H		0.122	20.88		
		64-QAM	-21.91	11.69	10.00	2.21	H		0.089	19.48		
		256-QAM	-24.59	9.01	10.00	2.21	H		0.048	16.80		
1897.5		PI/2 BPSK	-19.16	14.92	10.01	2.16	H		0.189	22.77	1	1
		QPSK	-19.37	14.71	10.01	2.16	H		0.180	22.56		
		16-QAM	-20.35	13.73	10.01	2.16	H		0.144	21.58		
		64-QAM	-21.79	12.29	10.01	2.16	H		0.103	20.14		
		256-QAM	-24.15	9.93	10.01	2.16	H		0.060	17.78		

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 n2/ 30 MHz [15 kHz]	PI/2 BPSK	-19.40	14.23	10.00	2.19	H	< 2.00	0.160	22.04	1	80
		QPSK	-19.65	13.98	10.00	2.19	H		0.151	21.79		
		16-QAM	-20.55	13.08	10.00	2.19	H		0.123	20.89		
		64-QAM	-22.08	11.55	10.00	2.19	H		0.086	19.36		
		256-QAM	-24.66	8.97	10.00	2.19	H		0.048	16.78		
1880.0		PI/2 BPSK	-19.26	14.34	10.00	2.21	H		0.163	22.13	1	80
		QPSK	-19.40	14.20	10.00	2.21	H		0.158	21.99		
		16-QAM	-20.57	13.03	10.00	2.21	H		0.121	20.82		
		64-QAM	-21.97	11.63	10.00	2.21	H		0.087	19.42		
		256-QAM	-24.48	9.12	10.00	2.21	H		0.049	16.91		
1895.0		PI/2 BPSK	-19.15	14.93	10.01	2.16	H		0.190	22.78	1	80
		QPSK	-19.22	14.86	10.01	2.16	H		0.187	22.71		
		16-QAM	-20.35	13.73	10.01	2.16	H		0.144	21.58		
		64-QAM	-21.89	12.19	10.01	2.16	H		0.101	20.04		
		256-QAM	-24.22	9.86	10.01	2.16	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
1867.5	Sub6 n2/ 35 MHz [15 kHz]	PI/2 BPSK	-19.54	14.09	10.00	2.19	H	< 2.00	0.155	21.90	1	94
		QPSK	-19.57	14.06	10.00	2.19	H		0.154	21.87		
		16-QAM	-20.48	13.15	10.00	2.19	H		0.125	20.96		
		64-QAM	-22.08	11.55	10.00	2.19	H		0.086	19.36		
		256-QAM	-24.56	9.07	10.00	2.19	H		0.049	16.88		
1880.0		PI/2 BPSK	-19.32	14.28	10.00	2.21	H		0.161	22.07	1	94
		QPSK	-19.39	14.21	10.00	2.21	H		0.158	22.00		
		16-QAM	-20.50	13.10	10.00	2.21	H		0.123	20.89		
		64-QAM	-21.94	11.66	10.00	2.21	H		0.088	19.45		
		256-QAM	-24.60	9.00	10.00	2.21	H		0.048	16.79		
1892.5		PI/2 BPSK	-19.25	14.83	10.01	2.16	H		0.185	22.68	1	1
		QPSK	-19.48	14.60	10.01	2.16	H		0.176	22.45		
		16-QAM	-20.44	13.64	10.01	2.16	H		0.141	21.49		
		64-QAM	-21.84	12.24	10.01	2.16	H		0.102	20.09		
		256-QAM	-24.18	9.90	10.01	2.16	H		0.060	17.75		

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 n2/ 40 MHz [15 kHz]	PI/2 BPSK	-19.40	14.51	10.00	2.21	H	< 2.00	0.170	22.30	1	108
		QPSK	-19.54	14.37	10.00	2.21	H		0.164	22.16		
		16-QAM	-20.50	13.41	10.00	2.21	H		0.132	21.20		
		64-QAM	-21.83	12.08	10.00	2.21	H		0.097	19.87		
		256-QAM	-24.48	9.43	10.00	2.21	H		0.053	17.22		
1880.0		PI/2 BPSK	-19.46	14.14	10.00	2.21	H		0.156	21.93	1	108
		QPSK	-19.68	13.92	10.00	2.21	H		0.148	21.71		
		16-QAM	-20.68	12.92	10.00	2.21	H		0.118	20.71		
		64-QAM	-21.91	11.69	10.00	2.21	H		0.089	19.48		
		256-QAM	-24.63	8.97	10.00	2.21	H		0.047	16.76		
1890.0		PI/2 BPSK	-19.39	14.88	10.00	2.18	H		0.186	22.70	1	1
		QPSK	-19.56	14.71	10.00	2.18	H		0.179	22.53		
		16-QAM	-20.63	13.64	10.00	2.18	H		0.140	21.46		
		64-QAM	-22.10	12.17	10.00	2.18	H		0.100	19.99		
		256-QAM	-24.22	10.05	10.00	2.18	H		0.061	17.87		

8.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N2
▣ Bandwidth: 30 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
373000 (1865.0)	3 730.00	-61.40	11.40	-62.42	3.14	V	-54.16	-13.00	1	80
	5 595.00	-62.31	11.90	-57.26	3.80	V	-49.16	-13.00		
	7 460.00	-64.52	10.90	-50.31	4.47	V	-43.88	-13.00		
	9 325.00	-62.57	10.80	-48.01	5.09	V	-42.30	-13.00		
	11 190.00	-63.35	11.50	-44.91	5.60	V	-39.01	-13.00		
376000 (1880.0)	3 760.00	-60.45	11.30	-60.58	3.07	V	-52.35	-13.00	1	80
	5 640.00	-62.53	11.90	-56.93	3.89	V	-48.92	-13.00		
	7 520.00	-64.44	11.10	-50.21	4.51	V	-43.62	-13.00		
	9 400.00	-62.05	10.80	-46.77	5.07	V	-41.04	-13.00		
	11 280.00	-63.62	11.40	-44.32	5.62	V	-38.54	-13.00		
379000 (1890.0)	3 790.00	-61.82	11.30	-62.13	3.17	V	-54.00	-13.00	1	80
	5 685.00	-63.82	11.80	-57.46	3.88	V	-49.54	-13.00		
	7 580.00	-63.70	11.10	-49.91	4.54	V	-43.35	-13.00		
	9 475.00	-62.17	10.90	-46.94	5.09	V	-41.13	-13.00		
	11 370.00	-64.66	11.30	-45.40	5.69	V	-39.79	-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	1880.0	BPSK	25	0	4.12
			QPSK			4.59
			16-QAM			5.37
			64-QAM			5.94
			256-QAM			6.15
	10 MHz		BPSK	50		3.97
			QPSK			4.49
			16-QAM			5.36
			64-QAM			5.87
			256-QAM			6.66
	15 MHz		BPSK	75		3.98
			QPSK			4.45
			16-QAM			5.34
			64-QAM			5.84
			256-QAM			6.48
	20 MHz		BPSK	100		3.81
			QPSK			4.40
			16-QAM			5.46
			64-QAM			5.93
			256-QAM			6.43

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n2	25 MHz	1880.0	BPSK	128	0	3.95
			QPSK			4.49
			16-QAM			5.59
			64-QAM			5.90
			256-QAM			6.68
	30 MHz		BPSK	160		3.94
			QPSK			4.40
			16-QAM			5.53
			64-QAM			5.90
			256-QAM			6.65
	35 MHz		BPSK	180		4.11
			QPSK			4.48
			16-QAM			5.38
			64-QAM			5.78
			256-QAM			6.58
	40 MHz		BPSK	216		3.82
			QPSK			4.39
			16-QAM			5.40
			64-QAM			5.86
			256-QAM			6.61

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 112 ~ 151.

8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n2	5 MHz	1880.0	BPSK	25	0	4.5697
			QPSK			4.5772
			16-QAM			4.6080
			64-QAM			4.6099
			256-QAM			4.6307
	10 MHz		BPSK	50		8.9644
			QPSK			9.0075
			16-QAM			8.9907
			64-QAM			8.9595
			256-QAM			8.9624
	15 MHz		BPSK	75		13.467
			QPSK			13.455
			16-QAM			13.466
			64-QAM			13.467
			256-QAM			13.470
	20 MHz		BPSK	100		17.920
			QPSK			17.937
			16-QAM			17.930
			64-QAM			17.885
			256-QAM			17.871

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n2	25 MHz	1880.0	BPSK	128	0	22.934
			QPSK			22.970
			16-QAM			22.959
			64-QAM			22.942
			256-QAM			22.979
	30 MHz		BPSK	160		28.620
			QPSK			28.611
			16-QAM			28.659
			64-QAM			28.616
			256-QAM			28.635
	35 MHz		BPSK	180		32.178
			QPSK			32.304
			16-QAM			32.240
			64-QAM			32.203
			256-QAM			32.229
	40 MHz		BPSK	216		38.651
			QPSK			38.581
			16-QAM			38.660
			64-QAM			38.640
			256-QAM			38.609

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 72 ~ 111.

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	9.7114	30.815	-81.158	-50.343	-13.00
		1880.0	9.9397	30.815	-80.478	-49.663	
		1907.5	8.0080	30.815	-81.329	-50.514	
	10	1855.0	6.0314	30.815	-80.450	-49.635	
		1880.0	9.6670	30.815	-79.995	-49.180	
		1905.0	3.1940	30.200	-81.385	-51.185	
	15	1857.5	4.5883	30.200	-81.377	-51.177	
		1880.0	8.8948	30.815	-81.331	-50.516	
		1902.5	3.8012	30.200	-80.495	-50.295	
	20	1860.0	8.2921	30.815	-80.577	-49.762	
		1880.0	8.8375	30.815	-80.449	-49.634	
		1900.0	3.7124	30.200	-80.764	-50.564	
	25	1862.5	9.7084	30.815	-80.641	-49.826	
		1880.0	7.2099	30.815	-80.705	-49.890	
		1897.5	8.2797	30.815	-80.291	-49.476	
	30	1865.0	4.9168	30.200	-80.376	-50.176	
		1880.0	3.7922	30.200	-80.467	-50.267	
		1895.0	8.8559	30.815	-80.012	-49.197	
	35	1867.5	8.0474	30.815	-80.575	-49.760	
		1880.0	9.1416	30.815	-80.273	-49.458	
		1892.5	8.2702	30.815	-79.542	-48.727	
	40	1870.0	8.2916	30.815	-80.212	-49.397	
		1880.0	6.0364	30.815	-80.186	-49.371	
		1890.0	5.2304	30.815	-80.732	-49.917	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 200 ~ 247.

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 152 ~ 199.

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. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1852.5	100 %	+20(Ref)	1852 499 997	0.0	0.000 000	0.000
	100 %	-30	1852 499 994	-3.0	0.000 000	-0.002
	100 %	-20	1852 499 994	-3.1	0.000 000	-0.002
	100 %	-10	1852 499 996	-1.1	0.000 000	-0.001
	100 %	0	1852 499 996	-1.8	0.000 000	-0.001
	100 %	+10	1852 499 995	-2.5	0.000 000	-0.001
	100 %	+30	1852 499 996	-1.3	0.000 000	-0.001
	100 %	+40	1852 499 997	-0.3	0.000 000	0.000
	100 %	+50	1852 499 993	-3.9	0.000 000	-0.002
	Batt. Endpoint	+20	1852 499 997	-0.6	0.000 000	0.000
1907.5	100 %	+20(Ref)	1907 500 000	0.0	0.000 000	0.000
	100 %	-30	1907 499 998	-1.8	0.000 000	-0.001
	100 %	-20	1907 500 002	2.4	0.000 000	0.001
	100 %	-10	1907 499 998	-1.6	0.000 000	-0.001
	100 %	0	1907 499 999	-1.1	0.000 000	-0.001
	100 %	+10	1907 499 999	-1.2	0.000 000	-0.001
	100 %	+30	1907 499 998	-1.3	0.000 000	-0.001
	100 %	+40	1907 499 997	-3.0	0.000 000	-0.002
	100 %	+50	1907 499 998	-1.5	0.000 000	-0.001
	Batt. Endpoint	+20	1907 500 000	0.2	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. 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	1855 000 000	-0.5	0.000 000	0.000
	100 %	-20	1854 999 999	-1.2	0.000 000	-0.001
	100 %	-10	1854 999 999	-1.0	0.000 000	-0.001
	100 %	0	1854 999 999	-0.9	0.000 000	0.000
	100 %	+10	1855 000 002	1.5	0.000 000	0.001
	100 %	+30	1855 000 002	1.3	0.000 000	0.001
	100 %	+40	1854 999 999	-1.7	0.000 000	-0.001
	100 %	+50	1855 000 003	2.8	0.000 000	0.002
	Batt. Endpoint	+20	1855 000 000	0.1	0.000 000	0.000
1905.0	100 %	+20(Ref)	1904 999 987	0.0	0.000 000	0.000
	100 %	-30	1904 999 973	-13.5	-0.000 001	-0.007
	100 %	-20	1904 999 974	-13.0	-0.000 001	-0.007
	100 %	-10	1904 999 977	-10.4	-0.000 001	-0.005
	100 %	0	1904 999 974	-12.8	-0.000 001	-0.007
	100 %	+10	1904 999 975	-11.4	-0.000 001	-0.006
	100 %	+30	1904 999 973	-14.2	-0.000 001	-0.007
	100 %	+40	1904 999 972	-14.7	-0.000 001	-0.008
	100 %	+50	1904 999 974	-13.0	-0.000 001	-0.007
	Batt. Endpoint	+20	1904 999 973	-13.7	-0.000 001	-0.007

▣ BandWidth: 15 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 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 500 003	0.0	0.000 000	0.000
	100 %	-30	1857 500 006	3.4	0.000 000	0.002
	100 %	-20	1857 500 006	2.6	0.000 000	0.001
	100 %	-10	1857 500 003	-0.2	0.000 000	0.000
	100 %	0	1857 500 005	2.3	0.000 000	0.001
	100 %	+10	1857 500 006	2.5	0.000 000	0.001
	100 %	+30	1857 500 004	0.9	0.000 000	0.000
	100 %	+40	1857 500 006	2.8	0.000 000	0.002
	100 %	+50	1857 500 003	0.1	0.000 000	0.000
	Batt. Endpoint	+20	1857 500 006	2.8	0.000 000	0.002
1902.5	100 %	+20(Ref)	1902 499 996	0.0	0.000 000	0.000
	100 %	-30	1902 499 990	-5.8	0.000 000	-0.003
	100 %	-20	1902 499 992	-3.8	0.000 000	-0.002
	100 %	-10	1902 499 990	-5.8	0.000 000	-0.003
	100 %	0	1902 499 991	-5.3	0.000 000	-0.003
	100 %	+10	1902 499 991	-5.4	0.000 000	-0.003
	100 %	+30	1902 499 988	-7.6	0.000 000	-0.004
	100 %	+40	1902 499 991	-5.5	0.000 000	-0.003
	100 %	+50	1902 499 990	-6.2	0.000 000	-0.003
	Batt. Endpoint	+20	1902 499 992	-3.9	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. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1860.0	100 %	+20(Ref)	1860 000 008	0.0	0.000 000	0.000
	100 %	-30	1860 000 015	6.8	0.000 000	0.004
	100 %	-20	1860 000 016	7.5	0.000 000	0.004
	100 %	-10	1860 000 020	11.3	0.000 001	0.006
	100 %	0	1860 000 016	7.9	0.000 000	0.004
	100 %	+10	1860 000 017	8.8	0.000 000	0.005
	100 %	+30	1860 000 016	7.8	0.000 000	0.004
	100 %	+40	1860 000 016	8.1	0.000 000	0.004
	100 %	+50	1860 000 019	10.3	0.000 001	0.006
	Batt. Endpoint	+20	1860 000 015	6.4	0.000 000	0.003
1900.0	100 %	+20(Ref)	1899 999 983	0.0	0.000 000	0.000
	100 %	-30	1899 999 967	-16.5	-0.000 001	-0.009
	100 %	-20	1899 999 965	-18.2	-0.000 001	-0.010
	100 %	-10	1899 999 965	-18.0	-0.000 001	-0.009
	100 %	0	1899 999 966	-17.4	-0.000 001	-0.009
	100 %	+10	1899 999 964	-19.0	-0.000 001	-0.010
	100 %	+30	1899 999 966	-17.8	-0.000 001	-0.009
	100 %	+40	1899 999 968	-15.7	-0.000 001	-0.008
	100 %	+50	1899 999 968	-15.0	-0.000 001	-0.008
	Batt. Endpoint	+20	1899 999 966	-17.0	-0.000 001	-0.009

▣ BandWidth: 25 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 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 500 009	0.0	0.000 000	0.000
	100 %	-30	1862 500 017	8.3	0.000 000	0.004
	100 %	-20	1862 500 019	9.9	0.000 001	0.005
	100 %	-10	1862 500 020	11.0	0.000 001	0.006
	100 %	0	1862 500 019	9.8	0.000 001	0.005
	100 %	+10	1862 500 019	10.2	0.000 001	0.005
	100 %	+30	1862 500 016	7.2	0.000 000	0.004
	100 %	+40	1862 500 019	9.7	0.000 001	0.005
	100 %	+50	1862 500 020	10.8	0.000 001	0.006
	Batt. Endpoint	+20	1862 500 018	9.5	0.000 001	0.005
1897.5	100 %	+20(Ref)	1897 500 010	0.0	0.000 000	0.000
	100 %	-30	1897 500 017	7.0	0.000 000	0.004
	100 %	-20	1897 500 017	7.8	0.000 000	0.004
	100 %	-10	1897 500 017	7.3	0.000 000	0.004
	100 %	0	1897 500 018	8.8	0.000 000	0.005
	100 %	+10	1897 500 019	9.3	0.000 000	0.005
	100 %	+30	1897 500 017	7.7	0.000 000	0.004
	100 %	+40	1897 500 019	9.4	0.000 000	0.005
	100 %	+50	1897 500 018	8.2	0.000 000	0.004
	Batt. Endpoint	+20	1897 500 018	7.9	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. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1865.0	100 %	+20(Ref)	1865 000 005	0.0	0.000 000	0.000
	100 %	-30	1865 000 011	5.9	0.000 000	0.003
	100 %	-20	1865 000 011	5.3	0.000 000	0.003
	100 %	-10	1865 000 012	6.6	0.000 000	0.004
	100 %	0	1865 000 011	5.5	0.000 000	0.003
	100 %	+10	1865 000 010	4.6	0.000 000	0.002
	100 %	+30	1865 000 010	5.2	0.000 000	0.003
	100 %	+40	1865 000 013	8.0	0.000 000	0.004
	100 %	+50	1865 000 012	6.9	0.000 000	0.004
	Batt. Endpoint	+20	1865 000 010	5.1	0.000 000	0.003
1895.0	100 %	+20(Ref)	1895 000 009	0.0	0.000 000	0.000
	100 %	-30	1895 000 015	6.5	0.000 000	0.003
	100 %	-20	1895 000 015	6.3	0.000 000	0.003
	100 %	-10	1895 000 016	7.2	0.000 000	0.004
	100 %	0	1895 000 017	7.8	0.000 000	0.004
	100 %	+10	1895 000 015	5.9	0.000 000	0.003
	100 %	+30	1895 000 014	5.3	0.000 000	0.003
	100 %	+40	1895 000 015	5.8	0.000 000	0.003
	100 %	+50	1895 000 017	7.6	0.000 000	0.004
	Batt. Endpoint	+20	1895 000 016	7.5	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. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1867.5	100 %	+20(Ref)	1867 500 000	0.0	0.000 000	0.000
	100 %	-30	1867 500 006	6.1	0.000 000	0.003
	100 %	-20	1867 500 007	7.4	0.000 000	0.004
	100 %	-10	1867 500 005	5.5	0.000 000	0.003
	100 %	0	1867 500 003	3.1	0.000 000	0.002
	100 %	+10	1867 500 004	4.4	0.000 000	0.002
	100 %	+30	1867 499 997	-2.4	0.000 000	-0.001
	100 %	+40	1867 499 994	-5.7	0.000 000	-0.003
	100 %	+50	1867 499 994	-5.5	0.000 000	-0.003
	Batt. Endpoint	+20	1867 499 998	-1.8	0.000 000	-0.001
1892.5	100 %	+20(Ref)	1892 500 007	0.0	0.000 000	0.000
	100 %	-30	1892 500 011	4.1	0.000 000	0.002
	100 %	-20	1892 500 001	-5.4	0.000 000	-0.003
	100 %	-10	1892 500 000	-6.9	0.000 000	-0.004
	100 %	0	1892 500 003	-4.1	0.000 000	-0.002
	100 %	+10	1892 500 004	-2.2	0.000 000	-0.001
	100 %	+30	1892 500 012	5.4	0.000 000	0.003
	100 %	+40	1892 500 012	5.8	0.000 000	0.003
	100 %	+50	1892 500 008	1.6	0.000 000	0.001
	Batt. Endpoint	+20	1892 500 014	7.1	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. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1870.0	100 %	+20(Ref)	1870 000 005	0.0	0.000 000	0.000
	100 %	-30	1870 000 012	7.5	0.000 000	0.004
	100 %	-20	1870 000 010	4.9	0.000 000	0.003
	100 %	-10	1870 000 011	5.9	0.000 000	0.003
	100 %	0	1870 000 011	6.4	0.000 000	0.003
	100 %	+10	1870 000 010	5.5	0.000 000	0.003
	100 %	+30	1870 000 011	6.2	0.000 000	0.003
	100 %	+40	1870 000 011	6.1	0.000 000	0.003
	100 %	+50	1870 000 010	5.2	0.000 000	0.003
	Batt. Endpoint	+20	1870 000 010	5.4	0.000 000	0.003
1890.0	100 %	+20(Ref)	1890 000 007	0.0	0.000 000	0.000
	100 %	-30	1890 000 014	6.8	0.000 000	0.004
	100 %	-20	1890 000 013	6.1	0.000 000	0.003
	100 %	-10	1890 000 013	5.9	0.000 000	0.003
	100 %	0	1890 000 013	6.2	0.000 000	0.003
	100 %	+10	1890 000 013	6.2	0.000 000	0.003
	100 %	+30	1890 000 012	5.7	0.000 000	0.003
	100 %	+40	1890 000 010	3.5	0.000 000	0.002
	100 %	+50	1890 000 014	7.4	0.000 000	0.004
	Batt. Endpoint	+20	1890 000 014	7.7	0.000 000	0.004

9. TEST DATA(Ant F)

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 n2/ 5 MHz [15 kHz]	PI/2 BPSK	-20.96	12.86	10.00	2.12	V	< 2.00	0.119	20.74	1	12
		QPSK	-21.02	12.80	10.00	2.12	V		0.117	20.68		
		16-QAM	-21.99	11.83	10.00	2.12	V		0.094	19.71		
		64-QAM	-23.66	10.16	10.00	2.12	V		0.064	18.04		
		256-QAM	-25.91	7.91	10.00	2.12	V		0.038	15.79		
1880.0		PI/2 BPSK	-20.80	12.80	10.00	2.21	V		0.115	20.59	1	12
		QPSK	-20.87	12.73	10.00	2.21	V		0.113	20.52		
		16-QAM	-21.92	11.68	10.00	2.21	V		0.089	19.47		
		64-QAM	-23.85	9.75	10.00	2.21	V		0.057	17.54		
		256-QAM	-25.91	7.69	10.00	2.21	V		0.035	15.48		
1907.5		PI/2 BPSK	-21.26	12.76	10.01	2.11	V		0.116	20.66	1	23
		QPSK	-21.37	12.65	10.01	2.11	V		0.114	20.55		
		16-QAM	-22.46	11.56	10.01	2.11	V		0.088	19.46		
		64-QAM	-24.22	9.80	10.01	2.11	V		0.059	17.70		
		256-QAM	-26.29	7.73	10.01	2.11	V		0.037	15.63		

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 n2/ 10 MHz [15 kHz]	PI/2 BPSK	-20.70	12.89	10.00	2.15	V	< 2.00	0.119	20.74	1	50
		QPSK	-20.97	12.62	10.00	2.15	V		0.111	20.47		
		16-QAM	-21.77	11.82	10.00	2.15	V		0.093	19.67		
		64-QAM	-23.52	10.07	10.00	2.15	V		0.062	17.92		
		256-QAM	-25.62	7.97	10.00	2.15	V		0.038	15.82		
1880.0		PI/2 BPSK	-20.73	12.87	10.00	2.21	V		0.116	20.66	1	50
		QPSK	-20.80	12.80	10.00	2.21	V		0.115	20.59		
		16-QAM	-21.81	11.79	10.00	2.21	V		0.091	19.58		
		64-QAM	-23.59	10.01	10.00	2.21	V		0.060	17.80		
		256-QAM	-25.86	7.74	10.00	2.21	V		0.036	15.53		
1905.0		PI/2 BPSK	-21.50	12.47	10.01	2.13	V		0.108	20.35	1	26
		QPSK	-21.62	12.35	10.01	2.13	V		0.105	20.23		
		16-QAM	-22.75	11.22	10.01	2.13	V		0.081	19.10		
		64-QAM	-24.50	9.47	10.01	2.13	V		0.054	17.35		
		256-QAM	-26.73	7.24	10.01	2.13	V		0.033	15.12		

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	Offset
1857.5	Sub6 n2/ 15 MHz [15 kHz]	PI/2 BPSK	-21.07	12.27	10.00	2.17	V	< 2.00	0.102	20.10	1	77
		QPSK	-21.23	12.11	10.00	2.17	V		0.099	19.94		
		16-QAM	-22.10	11.24	10.00	2.17	V		0.081	19.07		
		64-QAM	-23.67	9.67	10.00	2.17	V		0.056	17.50		
		256-QAM	-25.78	7.56	10.00	2.17	V		0.035	15.39		
1880.0		PI/2 BPSK	-20.69	12.91	10.00	2.21	V		0.117	20.70	1	77
		QPSK	-20.71	12.89	10.00	2.21	V		0.117	20.68		
		16-QAM	-21.77	11.83	10.00	2.21	V		0.092	19.62		
		64-QAM	-23.49	10.11	10.00	2.21	V		0.062	17.90		
		256-QAM	-25.77	7.83	10.00	2.21	V		0.036	15.62		
1902.5		PI/2 BPSK	-21.49	12.42	10.01	2.15	V		0.107	20.28	1	39
		QPSK	-21.71	12.20	10.01	2.15	V		0.101	20.06		
		16-QAM	-22.53	11.38	10.01	2.15	V		0.084	19.24		
		64-QAM	-24.15	9.76	10.01	2.15	V		0.058	17.62		
		256-QAM	-26.55	7.36	10.01	2.15	V		0.033	15.22		

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 n2/ 20 MHz [15 kHz]	PI/2 BPSK	-20.81	12.53	10.00	2.17	V	< 2.00	0.109	20.36	1	53
		QPSK	-21.07	12.27	10.00	2.17	V		0.102	20.10		
		16-QAM	-21.91	11.43	10.00	2.17	V		0.084	19.26		
		64-QAM	-23.60	9.74	10.00	2.17	V		0.057	17.57		
		256-QAM	-25.77	7.57	10.00	2.17	V		0.035	15.40		
1880.0		PI/2 BPSK	-20.79	12.81	10.00	2.21	V		0.115	20.60	1	104
		QPSK	-21.00	12.60	10.00	2.21	V		0.109	20.39		
		16-QAM	-22.07	11.53	10.00	2.21	V		0.086	19.32		
		64-QAM	-23.67	9.93	10.00	2.21	V		0.059	17.72		
		256-QAM	-26.01	7.59	10.00	2.21	V		0.035	15.38		
1900.0		PI/2 BPSK	-21.16	12.75	10.01	2.15	V		0.115	20.61	1	53
		QPSK	-21.32	12.59	10.01	2.15	V		0.111	20.45		
		16-QAM	-22.49	11.42	10.01	2.15	V		0.085	19.28		
		64-QAM	-24.00	9.91	10.01	2.15	V		0.060	17.77		
		256-QAM	-26.15	7.76	10.01	2.15	V		0.036	15.62		

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 n2/ 25 MHz [15 kHz]	PI/2 BPSK	-20.53	12.81	10.00	2.17	V	< 2.00	0.116	20.64	1	66
		QPSK	-20.58	12.76	10.00	2.17	V		0.115	20.59		
		16-QAM	-21.77	11.57	10.00	2.17	V		0.087	19.40		
		64-QAM	-23.32	10.02	10.00	2.17	V		0.061	17.85		
		256-QAM	-26.72	6.62	10.00	2.17	V		0.028	14.45		
1880.0		PI/2 BPSK	-20.61	12.99	10.00	2.21	V		0.120	20.78	1	131
		QPSK	-20.73	12.87	10.00	2.21	V		0.116	20.66		
		16-QAM	-21.62	11.98	10.00	2.21	V		0.095	19.77		
		64-QAM	-23.35	10.25	10.00	2.21	V		0.064	18.04		
		256-QAM	-25.70	7.90	10.00	2.21	V		0.037	15.69		
1897.5		PI/2 BPSK	-21.02	13.06	10.01	2.16	V		0.123	20.91	1	131
		QPSK	-21.14	12.94	10.01	2.16	V		0.120	20.79		
		16-QAM	-22.12	11.96	10.01	2.16	V		0.096	19.81		
		64-QAM	-23.87	10.21	10.01	2.16	V		0.064	18.06		
		256-QAM	-26.12	7.96	10.01	2.16	V		0.038	15.81		

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 n2/ 30 MHz [15 kHz]	PI/2 BPSK	-20.68	12.95	10.00	2.19	V	< 2.00	0.119	20.76	1	158
		QPSK	-20.76	12.87	10.00	2.19	V		0.117	20.68		
		16-QAM	-21.68	11.95	10.00	2.19	V		0.095	19.76		
		64-QAM	-23.37	10.26	10.00	2.19	V		0.064	18.07		
		256-QAM	-25.82	7.81	10.00	2.19	V		0.036	15.62		
1880.0		PI/2 BPSK	-20.70	12.90	10.00	2.21	V		0.117	20.69	1	158
		QPSK	-20.78	12.82	10.00	2.21	V		0.115	20.61		
		16-QAM	-21.87	11.73	10.00	2.21	V		0.090	19.52		
		64-QAM	-23.45	10.15	10.00	2.21	V		0.062	17.94		
		256-QAM	-25.85	7.75	10.00	2.21	V		0.036	15.54		
1895.0		PI/2 BPSK	-21.10	12.98	10.01	2.16	V		0.121	20.83	1	80
		QPSK	-21.19	12.89	10.01	2.16	V		0.119	20.74		
		16-QAM	-22.11	11.97	10.01	2.16	V		0.096	19.82		
		64-QAM	-23.77	10.31	10.01	2.16	V		0.065	18.16		
		256-QAM	-25.57	8.51	10.01	2.16	V		0.043	16.36		

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
1867.5	Sub6 n2/ 35 MHz [15 kHz]	PI/2 BPSK	-20.65	12.98	10.00	2.19	V	< 2.00	0.120	20.79	1	186
		QPSK	-20.68	12.95	10.00	2.19	V		0.119	20.76		
		16-QAM	-21.73	11.90	10.00	2.19	V		0.094	19.71		
		64-QAM	-23.29	10.34	10.00	2.19	V		0.065	18.15		
		256-QAM	-26.02	7.61	10.00	2.19	V		0.035	15.42		
1880.0		PI/2 BPSK	-20.70	12.90	10.00	2.21	V		0.117	20.69	1	94
		QPSK	-20.75	12.85	10.00	2.21	V		0.116	20.64		
		16-QAM	-21.89	11.71	10.00	2.21	V		0.089	19.50		
		64-QAM	-23.38	10.22	10.00	2.21	V		0.063	18.01		
		256-QAM	-25.85	7.75	10.00	2.21	V		0.036	15.54		
1892.5		PI/2 BPSK	-20.32	13.76	10.01	2.16	V		0.145	21.61	1	94
		QPSK	-20.52	13.56	10.01	2.16	V		0.138	21.41		
		16-QAM	-21.66	12.42	10.01	2.16	V		0.106	20.27		
		64-QAM	-23.15	10.93	10.01	2.16	V		0.076	18.78		
		256-QAM	-25.38	8.70	10.01	2.16	V		0.045	16.55		

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 n2/ 40 MHz [15 kHz]	PI/2 BPSK	-20.79	13.12	10.00	2.21	V	< 2.00	0.123	20.91	1	214
		QPSK	-20.83	13.08	10.00	2.21	V		0.122	20.87		
		16-QAM	-21.93	11.98	10.00	2.21	V		0.095	19.77		
		64-QAM	-23.53	10.38	10.00	2.21	V		0.066	18.17		
		256-QAM	-26.08	7.83	10.00	2.21	V		0.036	15.62		
1880.0		PI/2 BPSK	-20.69	12.91	10.00	2.21	V		0.117	20.70	1	108
		QPSK	-20.78	12.82	10.00	2.21	V		0.115	20.61		
		16-QAM	-21.81	11.79	10.00	2.21	V		0.091	19.58		
		64-QAM	-23.46	10.14	10.00	2.21	V		0.062	17.93		
		256-QAM	-25.73	7.87	10.00	2.21	V		0.037	15.66		
1890.0		PI/2 BPSK	-20.56	13.71	10.00	2.18	V		0.142	21.53	1	108
		QPSK	-20.60	13.67	10.00	2.18	V		0.141	21.49		
		16-QAM	-21.75	12.52	10.00	2.18	V		0.108	20.34		
		64-QAM	-23.44	10.83	10.00	2.18	V		0.073	18.65		
		256-QAM	-25.61	8.66	10.00	2.18	V		0.044	16.48		

9.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N2
▣ Bandwidth: 35 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
373500 (1867.5)	3 735.00	-60.82	11.40	-61.94	3.12	V	-53.66	-13.00	1	186
	5 602.50	-63.21	11.90	-58.21	3.79	V	-50.10	-13.00		
	7 470.00	-64.61	10.90	-50.30	4.49	V	-43.89	-13.00		
	9 337.50	-63.05	10.80	-48.24	5.10	V	-42.54	-13.00		
	11 205.00	-64.67	11.40	-45.80	5.58	V	-39.98	-13.00		
376000 (1880.0)	3 760.00	-60.55	11.30	-60.68	3.07	V	-52.45	-13.00	1	94
	5 640.00	-61.20	11.90	-55.60	3.89	V	-47.59	-13.00		
	7 520.00	-63.82	11.10	-49.59	4.51	V	-43.00	-13.00		
	9 400.00	-63.33	10.80	-48.05	5.07	V	-42.32	-13.00		
	11 280.00	-65.43	11.40	-46.13	5.62	V	-40.35	-13.00		
378500 (1892.5)	3 785.00	-59.25	11.30	-59.47	3.16	V	-51.33	-13.00	1	94
	5 677.50	-62.54	11.80	-56.50	3.87	V	-48.57	-13.00		
	7 570.00	-64.58	11.10	-50.64	4.53	V	-44.07	-13.00		
	9 462.50	-61.16	10.90	-45.81	5.10	V	-40.01	-13.00		
	11 355.00	-64.09	11.30	-45.26	5.68	V	-39.64	-13.00		

9.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n2	5 MHz	1880.0	BPSK	25	0	4.04
			QPSK			4.61
			16-QAM			5.41
			64-QAM			6.02
			256-QAM			6.17
	10 MHz		BPSK	50		3.88
			QPSK			4.46
			16-QAM			5.34
			64-QAM			5.86
			256-QAM			6.33
	15 MHz		BPSK	75		3.98
			QPSK			4.45
			16-QAM			5.30
			64-QAM			5.82
			256-QAM			6.54
	20 MHz		BPSK	100		3.81
			QPSK			4.39
			16-QAM			5.32
			64-QAM			5.78
			256-QAM			6.31

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n2	25 MHz	1880.0	BPSK	128	0	3.85
			QPSK			4.41
			16-QAM			5.55
			64-QAM			5.93
			256-QAM			6.54
	30 MHz		BPSK	160		3.95
			QPSK			4.46
			16-QAM			5.40
			64-QAM			5.88
			256-QAM			6.67
	35 MHz		BPSK	180		4.06
			QPSK			4.52
			16-QAM			5.36
			64-QAM			5.86
			256-QAM			6.48
	40 MHz		BPSK	216		4.01
			QPSK			4.51
			16-QAM			5.42
			64-QAM			5.86
			256-QAM			6.60

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 289 ~ 328.

9.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n2	5 MHz	1880.0	BPSK	25	0	4.6164
			QPSK			4.5982
			16-QAM			4.4884
			64-QAM			4.5114
			256-QAM			4.6076
	10 MHz		BPSK	50		8.9671
			QPSK			8.9759
			16-QAM			8.9647
			64-QAM			8.9795
			256-QAM			8.9835
	15 MHz		BPSK	75		13.430
			QPSK			13.459
			16-QAM			13.377
			64-QAM			13.481
			256-QAM			13.463
	20 MHz		BPSK	100		17.918
			QPSK			17.888
			16-QAM			17.859
			64-QAM			17.911
			256-QAM			17.886

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n2	25 MHz	1880.0	BPSK	128	0	22.918
			QPSK			22.952
			16-QAM			22.914
			64-QAM			22.875
			256-QAM			22.898
	30 MHz		BPSK	160		28.684
			QPSK			28.649
			16-QAM			28.668
			64-QAM			28.640
			256-QAM			28.626
	35 MHz		BPSK	180		32.202
			QPSK			32.174
			16-QAM			32.230
			64-QAM			32.253
			256-QAM			32.192
	40 MHz		BPSK	216		38.620
			QPSK			38.755
			16-QAM			38.647
			64-QAM			38.662
			256-QAM			38.638

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 249 ~ 288.

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 n2	5	1852.5	8.2737	30.815	-80.445	-49.630	-13.00
		1880.0	3.7737	30.200	-80.750	-50.550	
		1907.5	4.0270	30.200	-80.770	-50.570	
	10	1855.0	8.2513	30.815	-80.733	-49.918	
		1880.0	3.7927	30.200	-81.265	-51.065	
		1905.0	7.9816	30.815	-80.353	-49.538	
	15	1857.5	8.2961	30.815	-80.245	-49.430	
		1880.0	8.2712	30.815	-80.238	-49.423	
		1902.5	4.0599	30.200	-80.707	-50.507	
	20	1860.0	4.0674	30.200	-80.988	-50.788	
		1880.0	4.0335	30.200	-80.550	-50.350	
		1900.0	6.0479	30.815	-81.067	-50.252	
	25	1862.5	9.4282	27.494	-67.781	-40.287	
		1880.0	6.0210	27.494	-68.609	-41.115	
		1897.5	8.8335	27.494	-68.061	-40.567	
	30	1865.0	8.5768	27.494	-68.597	-41.103	
		1880.0	4.8974	30.200	-67.306	-37.106	
		1895.0	6.0135	27.494	-68.045	-40.551	
	35	1867.5	8.3206	27.494	-68.939	-41.445	
		1880.0	4.3111	30.200	-68.750	-38.550	
		1892.5	8.8764	27.494	-67.757	-40.263	
	40	1870.0	8.2607	27.494	-68.010	-40.516	
		1880.0	4.0993	30.200	-68.236	-38.036	
		1890.0	8.0259	27.494	-68.050	-40.556	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 377 ~ 424.

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 329 ~ 376.

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. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1852.5	100 %	+20(Ref)	1852 499 999	0.0	0.000 000	0.000
	100 %	-30	1852 499 995	-3.4	0.000 000	-0.002
	100 %	-20	1852 499 994	-4.1	0.000 000	-0.002
	100 %	-10	1852 499 997	-2.1	0.000 000	-0.001
	100 %	0	1852 499 997	-1.5	0.000 000	-0.001
	100 %	+10	1852 499 993	-5.2	0.000 000	-0.003
	100 %	+30	1852 499 997	-2.0	0.000 000	-0.001
	100 %	+40	1852 499 995	-3.9	0.000 000	-0.002
	100 %	+50	1852 499 995	-3.8	0.000 000	-0.002
	Batt. Endpoint	+20	1852 499 995	-3.4	0.000 000	-0.002
1907.5	100 %	+20(Ref)	1907 499 998	0.0	0.000 000	0.000
	100 %	-30	1907 499 996	-2.2	0.000 000	-0.001
	100 %	-20	1907 499 995	-3.7	0.000 000	-0.002
	100 %	-10	1907 499 997	-1.6	0.000 000	-0.001
	100 %	0	1907 499 996	-2.8	0.000 000	-0.001
	100 %	+10	1907 499 994	-4.1	0.000 000	-0.002
	100 %	+30	1907 499 993	-5.0	0.000 000	-0.003
	100 %	+40	1907 499 995	-2.8	0.000 000	-0.001
	100 %	+50	1907 499 992	-6.5	0.000 000	-0.003
	Batt. Endpoint	+20	1907 499 997	-0.9	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. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1855.0	100 %	+20(Ref)	1854 999 996	0.0	0.000 000	0.000
	100 %	-30	1854 999 994	-1.6	0.000 000	-0.001
	100 %	-20	1854 999 996	-0.1	0.000 000	0.000
	100 %	-10	1854 999 992	-3.8	0.000 000	-0.002
	100 %	0	1854 999 995	-0.8	0.000 000	0.000
	100 %	+10	1854 999 993	-2.7	0.000 000	-0.001
	100 %	+30	1854 999 992	-3.6	0.000 000	-0.002
	100 %	+40	1854 999 991	-4.2	0.000 000	-0.002
	100 %	+50	1854 999 992	-3.8	0.000 000	-0.002
	Batt. Endpoint	+20	1854 999 993	-2.6	0.000 000	-0.001
1905.0	100 %	+20(Ref)	1904 999 999	0.0	0.000 000	0.000
	100 %	-30	1904 999 998	-1.1	0.000 000	-0.001
	100 %	-20	1904 999 999	0.4	0.000 000	0.000
	100 %	-10	1904 999 998	-0.5	0.000 000	0.000
	100 %	0	1904 999 997	-1.8	0.000 000	-0.001
	100 %	+10	1904 999 996	-2.5	0.000 000	-0.001
	100 %	+30	1904 999 999	-0.1	0.000 000	0.000
	100 %	+40	1904 999 995	-3.8	0.000 000	-0.002
	100 %	+50	1904 999 994	-4.6	0.000 000	-0.002
	Batt. Endpoint	+20	1905 000 000	1.2	0.000 000	0.001

▣ BandWidth: 15 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 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 500 004	2.1	0.000 000	0.001
	100 %	-20	1857 500 001	-1.0	0.000 000	-0.001
	100 %	-10	1857 500 005	2.9	0.000 000	0.002
	100 %	0	1857 500 005	3.4	0.000 000	0.002
	100 %	+10	1857 500 002	-0.3	0.000 000	0.000
	100 %	+30	1857 500 002	-0.1	0.000 000	0.000
	100 %	+40	1857 500 002	0.3	0.000 000	0.000
	100 %	+50	1857 500 005	3.4	0.000 000	0.002
	Batt. Endpoint	+20	1857 500 002	0.1	0.000 000	0.000
1902.5	100 %	+20(Ref)	1902 500 005	0.0	0.000 000	0.000
	100 %	-30	1902 500 011	5.6	0.000 000	0.003
	100 %	-20	1902 500 011	5.9	0.000 000	0.003
	100 %	-10	1902 500 012	6.8	0.000 000	0.004
	100 %	0	1902 500 012	7.2	0.000 000	0.004
	100 %	+10	1902 500 013	7.7	0.000 000	0.004
	100 %	+30	1902 500 010	4.7	0.000 000	0.002
	100 %	+40	1902 500 010	5.1	0.000 000	0.003
	100 %	+50	1902 500 011	5.3	0.000 000	0.003
	Batt. Endpoint	+20	1902 500 011	5.8	0.000 000	0.003

▣ BandWidth: 20 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 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 999 992	-4.0	0.000 000	-0.002
	100 %	-20	1859 999 992	-4.5	0.000 000	-0.002
	100 %	-10	1859 999 991	-5.3	0.000 000	-0.003
	100 %	0	1859 999 992	-4.6	0.000 000	-0.002
	100 %	+10	1859 999 996	-0.2	0.000 000	0.000
	100 %	+30	1859 999 994	-2.2	0.000 000	-0.001
	100 %	+40	1859 999 995	-1.3	0.000 000	-0.001
	100 %	+50	1859 999 993	-3.6	0.000 000	-0.002
	Batt. Endpoint	+20	1859 999 996	-0.8	0.000 000	0.000
1900.0	100 %	+20(Ref)	1900 000 000	0.0	0.000 000	0.000
	100 %	-30	1899 999 996	-4.3	0.000 000	-0.002
	100 %	-20	1899 999 996	-3.7	0.000 000	-0.002
	100 %	-10	1899 999 997	-3.0	0.000 000	-0.002
	100 %	0	1899 999 997	-3.0	0.000 000	-0.002
	100 %	+10	1899 999 996	-3.4	0.000 000	-0.002
	100 %	+30	1899 999 999	-1.0	0.000 000	-0.001
	100 %	+40	1899 999 998	-2.0	0.000 000	-0.001
	100 %	+50	1899 999 998	-1.4	0.000 000	-0.001
	Batt. Endpoint	+20	1899 999 996	-3.8	0.000 000	-0.002

▣ BandWidth: 25 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 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 499 997	0.0	0.000 000	0.000
	100 %	-30	1862 499 995	-2.7	0.000 000	-0.001
	100 %	-20	1862 499 994	-3.3	0.000 000	-0.002
	100 %	-10	1862 499 996	-1.2	0.000 000	-0.001
	100 %	0	1862 499 995	-1.9	0.000 000	-0.001
	100 %	+10	1862 499 995	-2.4	0.000 000	-0.001
	100 %	+30	1862 499 996	-1.1	0.000 000	-0.001
	100 %	+40	1862 499 996	-0.9	0.000 000	0.000
	100 %	+50	1862 499 993	-4.7	0.000 000	-0.003
	Batt. Endpoint	+20	1862 499 997	-0.8	0.000 000	0.000
1897.5	100 %	+20(Ref)	1897 500 000	0.0	0.000 000	0.000
	100 %	-30	1897 499 999	-1.1	0.000 000	-0.001
	100 %	-20	1897 499 999	-0.4	0.000 000	0.000
	100 %	-10	1897 500 002	1.8	0.000 000	0.001
	100 %	0	1897 500 002	2.1	0.000 000	0.001
	100 %	+10	1897 500 002	2.3	0.000 000	0.001
	100 %	+30	1897 499 998	-1.5	0.000 000	-0.001
	100 %	+40	1897 499 998	-1.7	0.000 000	-0.001
	100 %	+50	1897 499 999	-1.1	0.000 000	-0.001
	Batt. Endpoint	+20	1897 500 000	0.5	0.000 000	0.000

▣ BandWidth: 30 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 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 000 000	0.0	0.000 000	0.000
	100 %	-30	1865 000 001	0.4	0.000 000	0.000
	100 %	-20	1865 000 001	0.7	0.000 000	0.000
	100 %	-10	1865 000 002	1.4	0.000 000	0.001
	100 %	0	1865 000 002	1.9	0.000 000	0.001
	100 %	+10	1865 000 002	1.8	0.000 000	0.001
	100 %	+30	1865 000 001	1.2	0.000 000	0.001
	100 %	+40	1865 000 002	1.5	0.000 000	0.001
	100 %	+50	1865 000 003	2.9	0.000 000	0.002
	Batt. Endpoint	+20	1865 000 001	0.4	0.000 000	0.000
1895.0	100 %	+20(Ref)	1894 999 987	0.0	0.000 000	0.000
	100 %	-30	1894 999 976	-11.1	-0.000 001	-0.006
	100 %	-20	1894 999 975	-11.4	-0.000 001	-0.006
	100 %	-10	1894 999 976	-10.5	-0.000 001	-0.006
	100 %	0	1894 999 975	-12.1	-0.000 001	-0.006
	100 %	+10	1894 999 976	-10.9	-0.000 001	-0.006
	100 %	+30	1894 999 974	-13.1	-0.000 001	-0.007
	100 %	+40	1894 999 973	-13.4	-0.000 001	-0.007
	100 %	+50	1894 999 975	-11.6	-0.000 001	-0.006
	Batt. Endpoint	+20	1894 999 974	-12.6	-0.000 001	-0.007

▣ BandWidth: 35 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1867.5	100 %	+20(Ref)	1867 500 003	0.0	0.000 000	0.000
	100 %	-30	1867 500 007	3.7	0.000 000	0.002
	100 %	-20	1867 500 006	2.5	0.000 000	0.001
	100 %	-10	1867 500 002	-1.1	0.000 000	-0.001
	100 %	0	1867 500 001	-2.4	0.000 000	-0.001
	100 %	+10	1867 499 999	-3.6	0.000 000	-0.002
	100 %	+30	1867 500 003	-0.5	0.000 000	0.000
	100 %	+40	1867 500 002	-1.1	0.000 000	-0.001
	100 %	+50	1867 500 002	-0.8	0.000 000	0.000
	Batt. Endpoint	+20	1867 500 004	1.1	0.000 000	0.001
1892.5	100 %	+20(Ref)	1892 499 996	0.0	0.000 000	0.000
	100 %	-30	1892 499 992	-4.4	0.000 000	-0.002
	100 %	-20	1892 499 991	-4.7	0.000 000	-0.002
	100 %	-10	1892 499 991	-5.5	0.000 000	-0.003
	100 %	0	1892 499 990	-5.6	0.000 000	-0.003
	100 %	+10	1892 499 991	-5.1	0.000 000	-0.003
	100 %	+30	1892 499 990	-6.3	0.000 000	-0.003
	100 %	+40	1892 499 990	-6.1	0.000 000	-0.003
	100 %	+50	1892 499 991	-5.5	0.000 000	-0.003
	Batt. Endpoint	+20	1892 499 991	-5.1	0.000 000	-0.003

▣ BandWidth: 40 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 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 000 015	7.1	0.000 000	0.004
	100 %	-20	1870 000 016	7.4	0.000 000	0.004
	100 %	-10	1870 000 020	11.5	0.000 001	0.006
	100 %	0	1870 000 016	7.8	0.000 000	0.004
	100 %	+10	1870 000 016	8.1	0.000 000	0.004
	100 %	+30	1870 000 015	6.5	0.000 000	0.003
	100 %	+40	1870 000 017	8.4	0.000 000	0.004
	100 %	+50	1870 000 019	10.5	0.000 001	0.006
	Batt. Endpoint	+20	1870 000 014	6.1	0.000 000	0.003
1890.0	100 %	+20(Ref)	1889 999 983	0.0	0.000 000	0.000
	100 %	-30	1889 999 969	-14.3	-0.000 001	-0.008
	100 %	-20	1889 999 968	-15.1	-0.000 001	-0.008
	100 %	-10	1889 999 968	-15.3	-0.000 001	-0.008
	100 %	0	1889 999 967	-16.2	-0.000 001	-0.009
	100 %	+10	1889 999 969	-14.2	-0.000 001	-0.008
	100 %	+30	1889 999 968	-15.3	-0.000 001	-0.008
	100 %	+40	1889 999 968	-15.3	-0.000 001	-0.008
	100 %	+50	1889 999 966	-17.1	-0.000 001	-0.009
	Batt. Endpoint	+20	1889 999 967	-16.6	-0.000 001	-0.009

10. TEST DATA (Ant A, Ant F)

10.1 UPLINK CARRIER AGGREGATION

Test Note

1. All tests were evaluated for the two bands using various combinations of RB size, RB offset, modulation, and channel bandwidth.
2. All modes of operation were investigated and the worst case configuration results are reported in this section. Please refer to the table below.
3. The worst case is reported with the modulations, RB sizes and offsets.
   - N2A(ANT A)-N48A(ANT F)
     (PCC - Modulation: BPSK, RB: 1, RB Offset: 80, SCC - Modulation: BPSK, RB: 1, RB Offset: 76)

Radiated Spurious Emissions

PCC	SCC	PCC		SCC	
		BW(MHz)	Channel	BW(MHz)	Channel
N2A(ANT A)	N48A(ANT F)	30	379000	30	637668

10.1.1 RADIATED SPURIOUS EMISSIONS

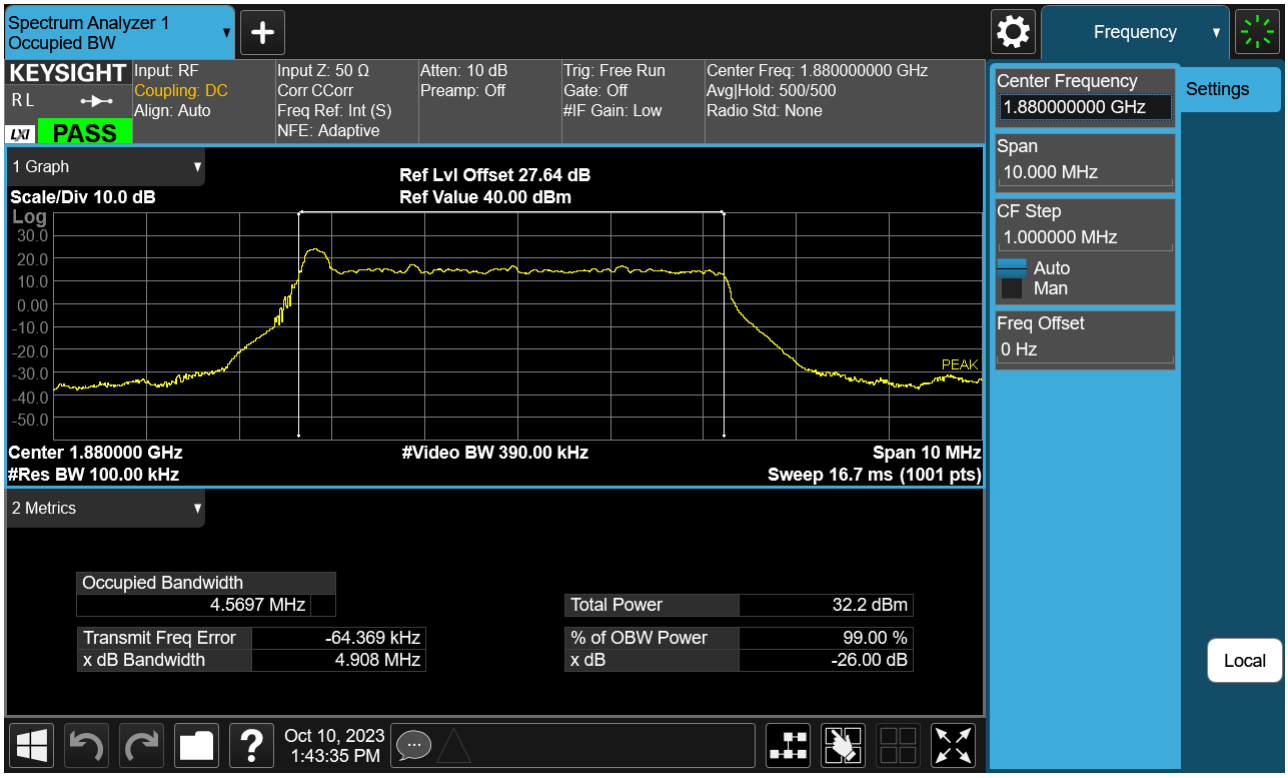
N2A(ANT A)(PCC)- N48A(ANT F)(SCC)

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)	Limit (dBm)
3 790.00	-60.23	11.30	-60.54	3.17	V	-52.41	-13.00
5 685.00	-62.19	11.80	-55.83	3.88	V	-47.91	-13.00
7 580.00	-64.44	11.10	-50.65	4.54	V	-44.09	-13.00

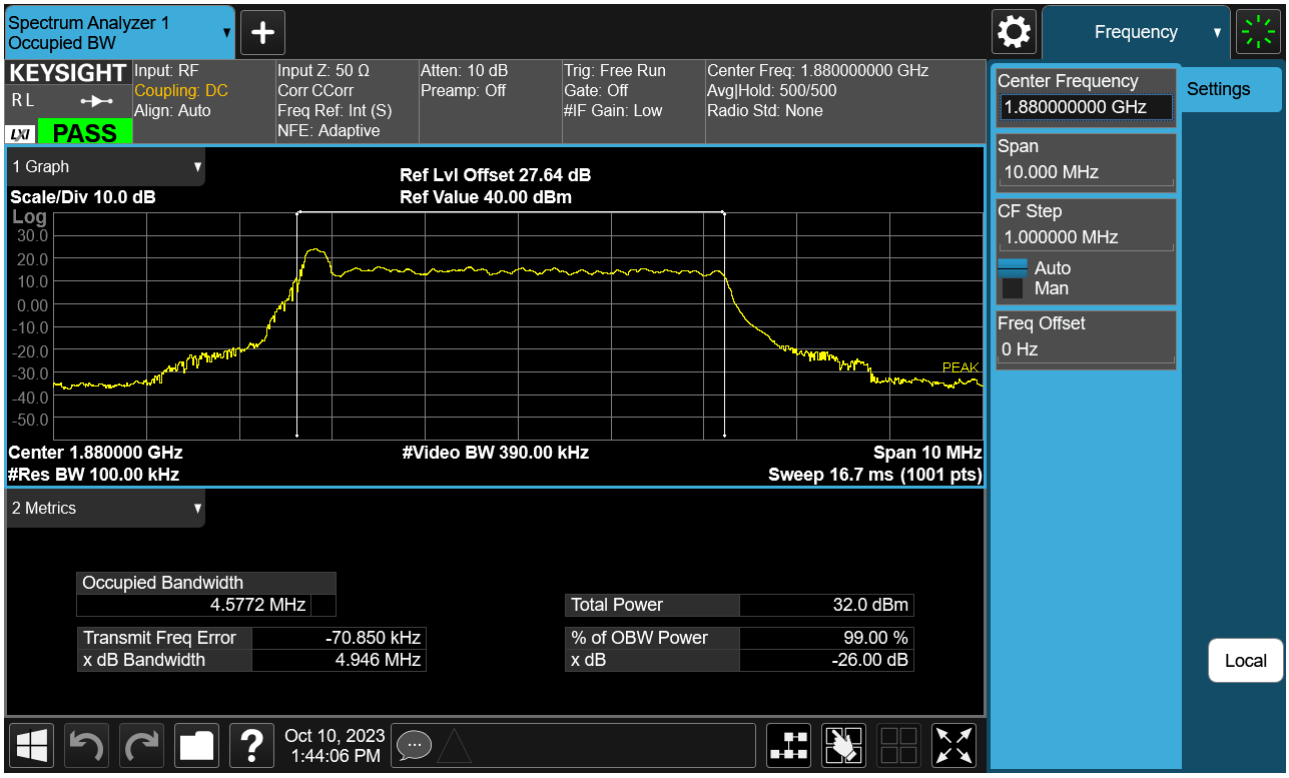
Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)	Limit (dBm)
7 130.04	-62.78	10.50	-55.28	4.40	V	-49.18	-40.00
10 695.06	-62.18	11.10	-51.02	5.48	V	-45.40	-40.00
14 260.08	-57.71	12.50	-49.27	6.44	H	-43.21	-40.00

11. TEST PLOTS(Ant A)

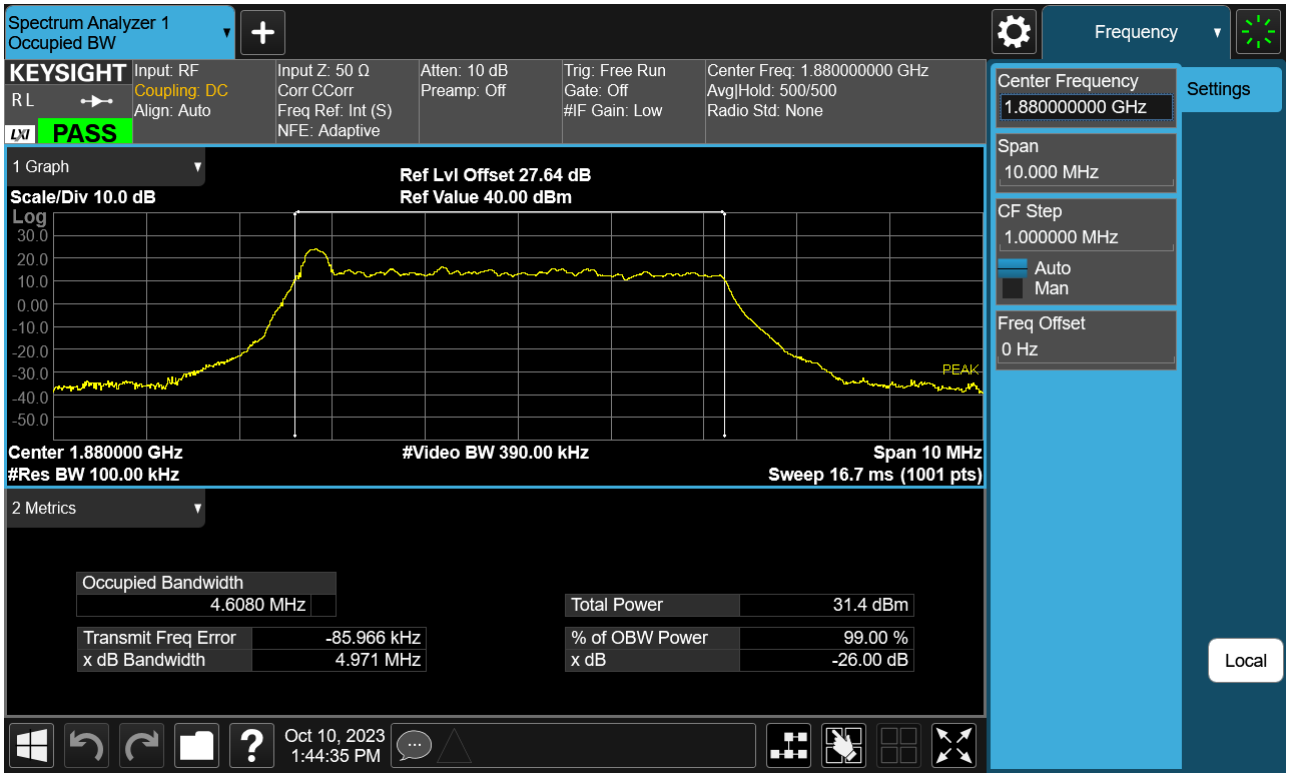
Sub6 n2. Occupied Bandwidth Plot (5 M BW Ch.376000 BPSK RB 25_0)



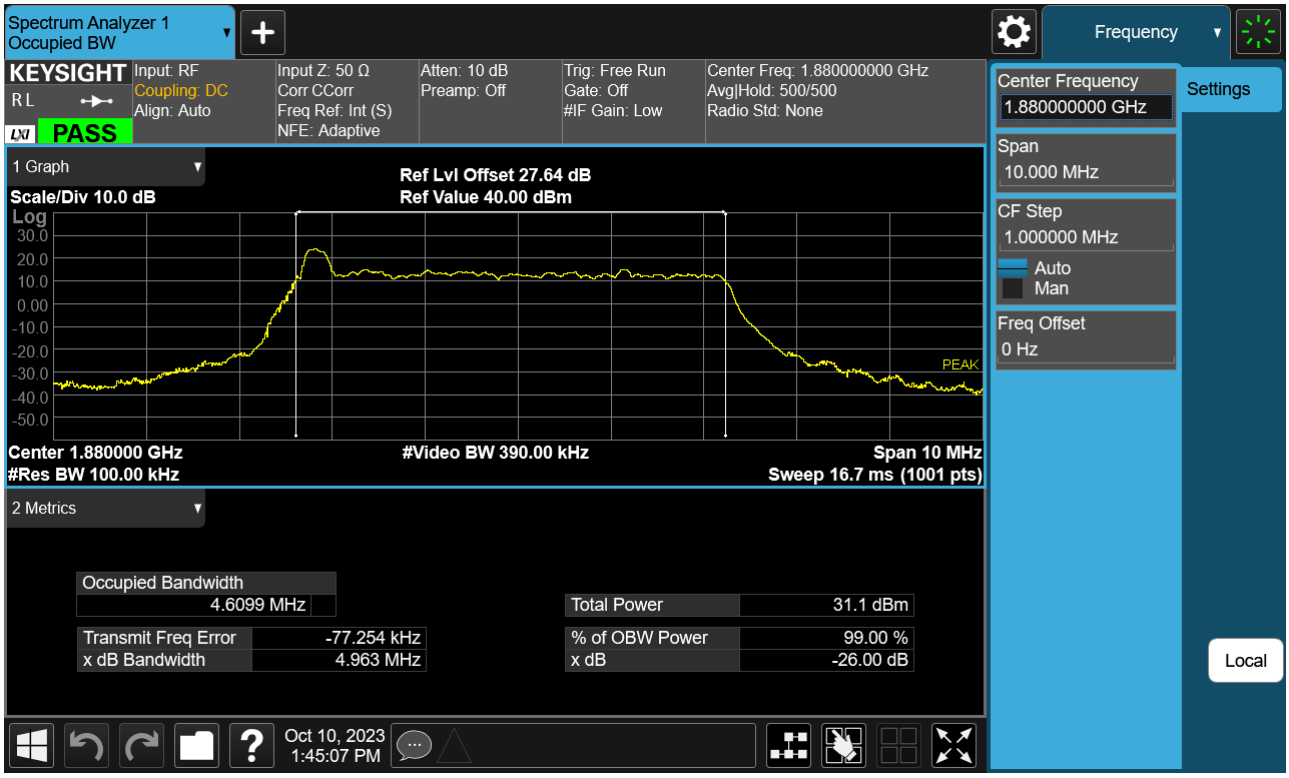
Sub6 n2. Occupied Bandwidth Plot (5 M BW Ch.376000 QPSK RB 25_0)



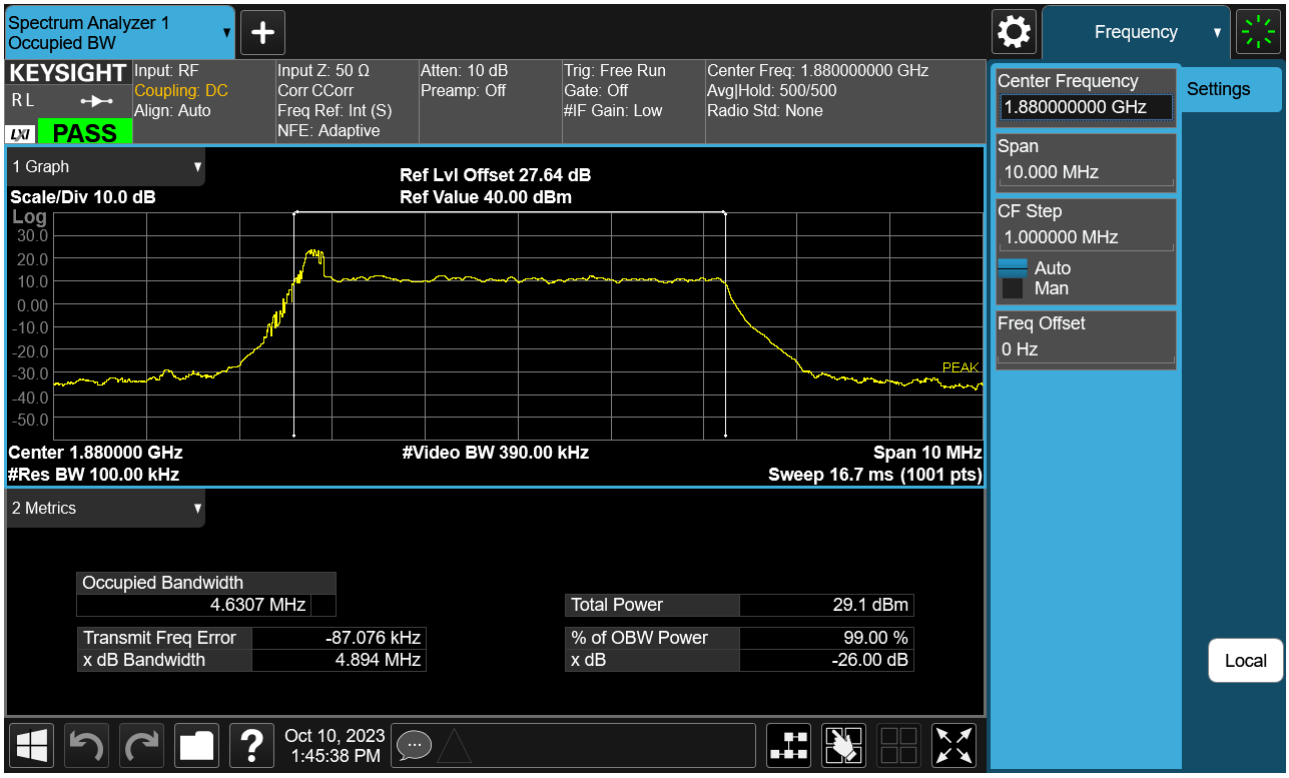
Sub6 n2. Occupied Bandwidth Plot (5 M BW Ch.376000 16QAM RB 25_0)



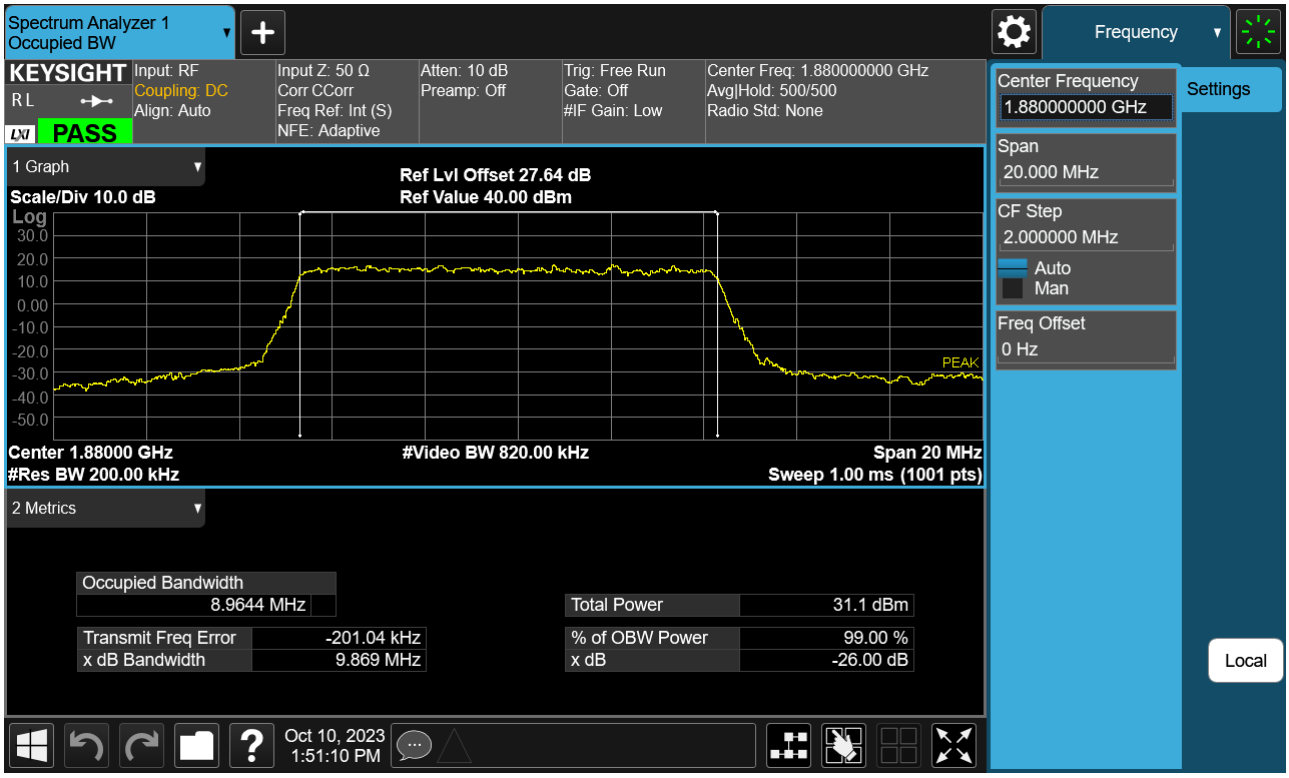
Sub6 n2. Occupied Bandwidth Plot (5 M BW Ch.376000 64QAM RB 25_0)



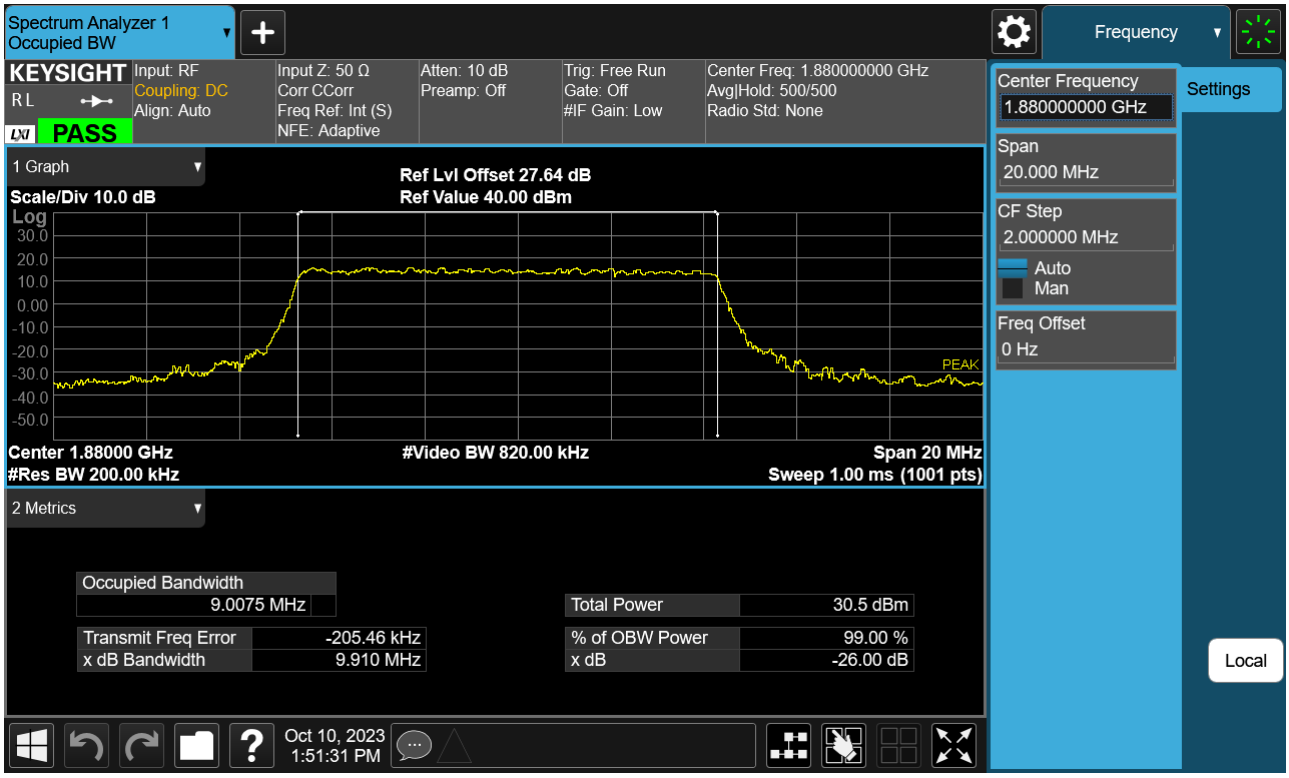
Sub6 n2. Occupied Bandwidth Plot (5 M BW Ch.376000 256QAM RB 25_0)



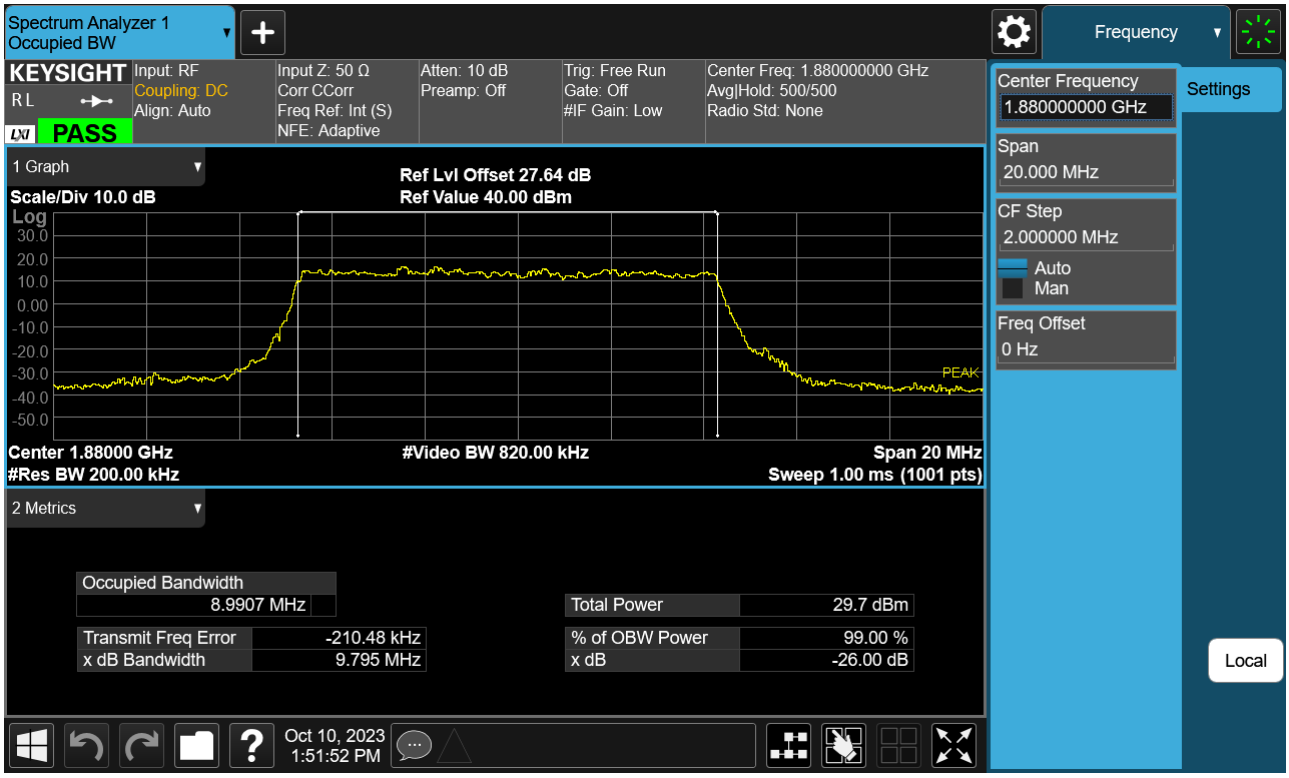
Sub6 n2. Occupied Bandwidth Plot (10 M BW Ch.376000 BPSK RB 50_0)



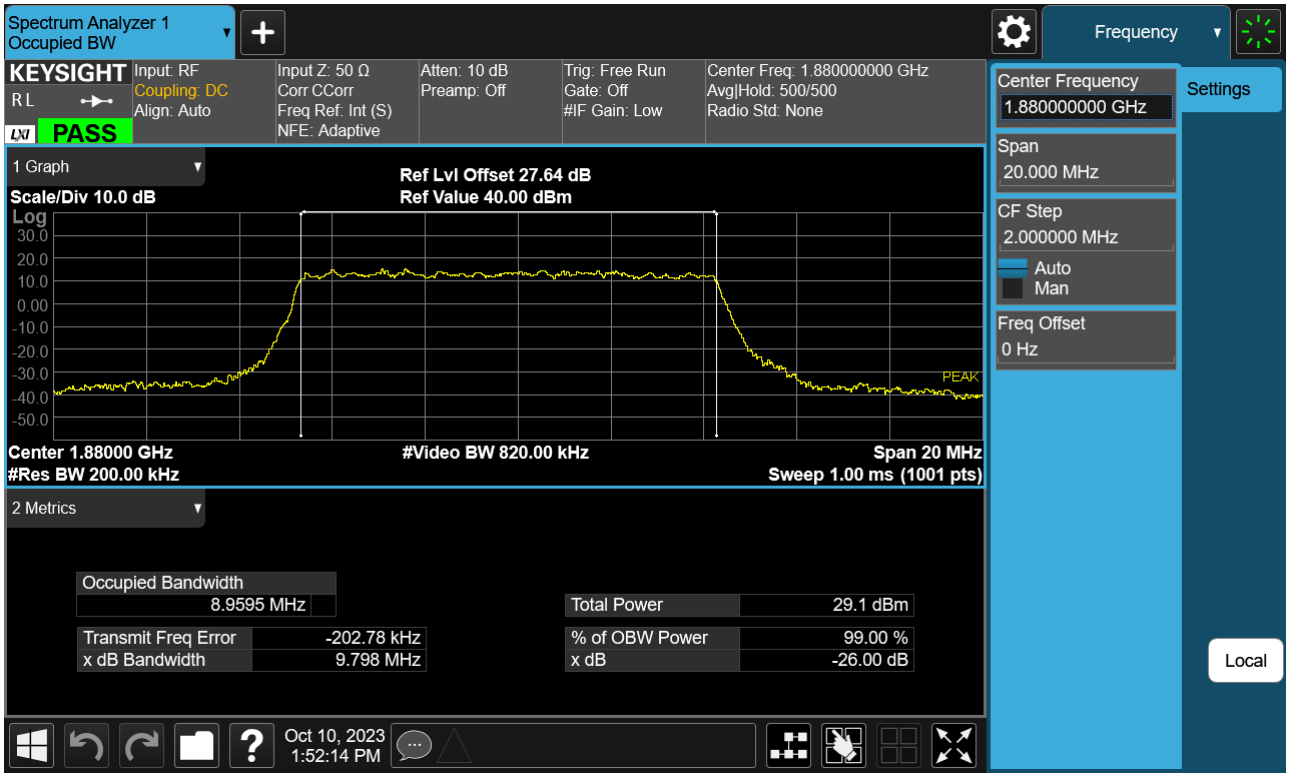
Sub6 n2. Occupied Bandwidth Plot (10 M BW Ch.376000 QPSK RB 50_0)



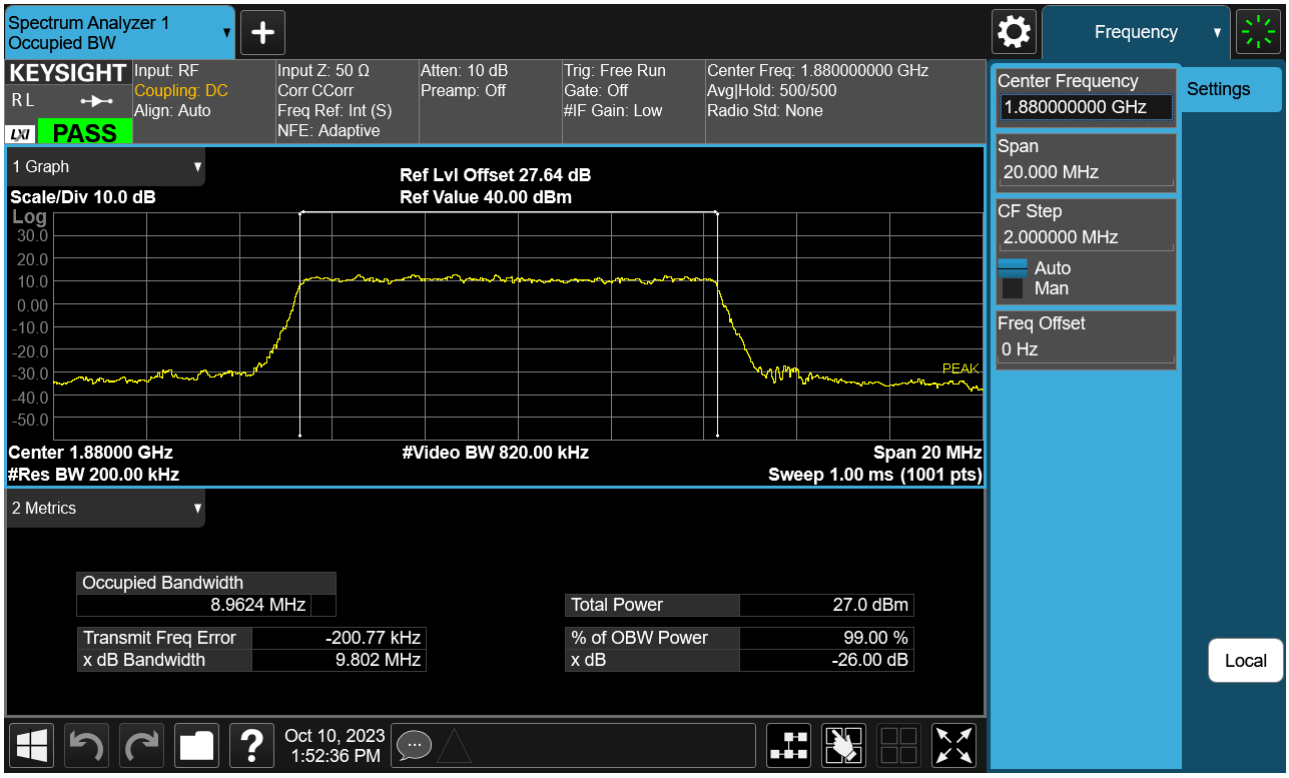
Sub6 n2. Occupied Bandwidth Plot (10 M BW Ch.376000 16QAM RB 50_0)



Sub6 n2. Occupied Bandwidth Plot (10 M BW Ch.376000 64QAM RB 50_0)

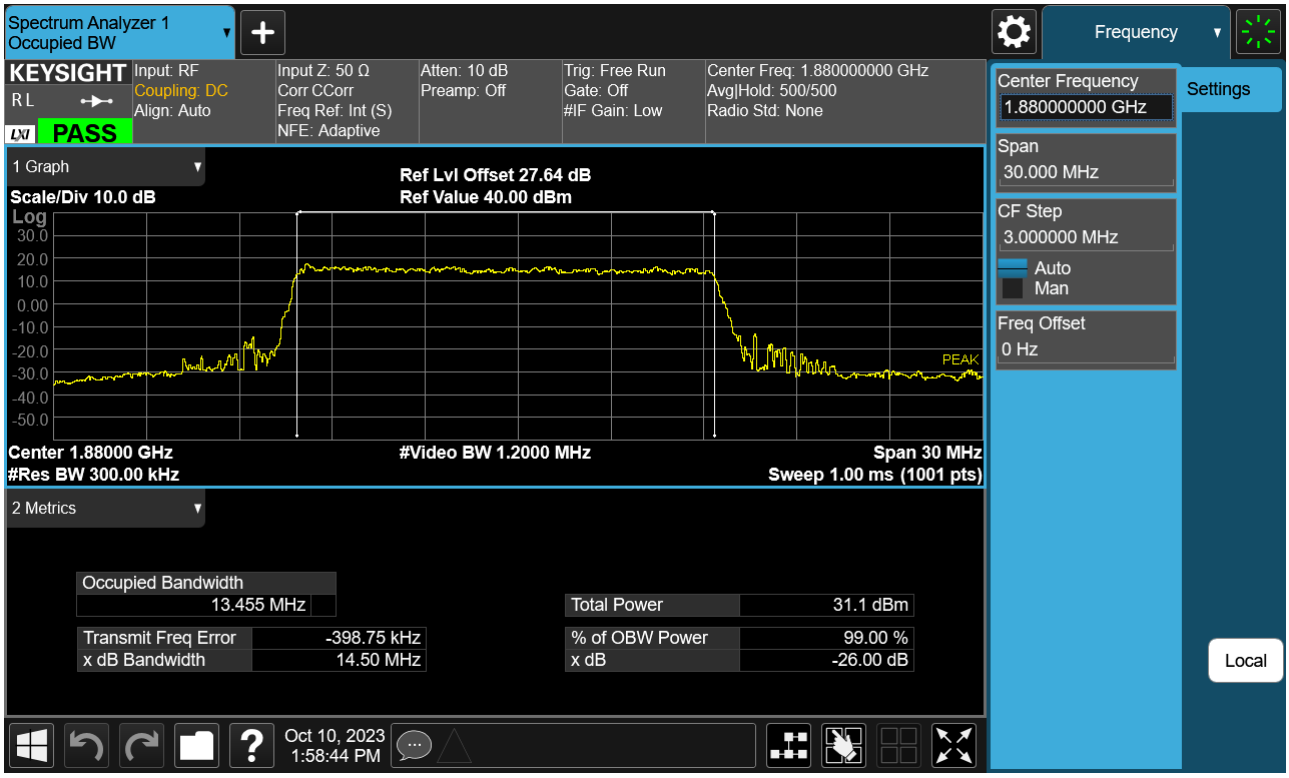


Sub6 n2. Occupied Bandwidth Plot (10 M BW Ch.376000 256QAM RB 50_0)



Sub6 n2. Occupied Bandwidth Plot (15 M BW Ch.376000 BPSK RB 75_0)

Sub6 n2. Occupied Bandwidth Plot (15 M BW Ch.376000 QPSK RB 75_0)



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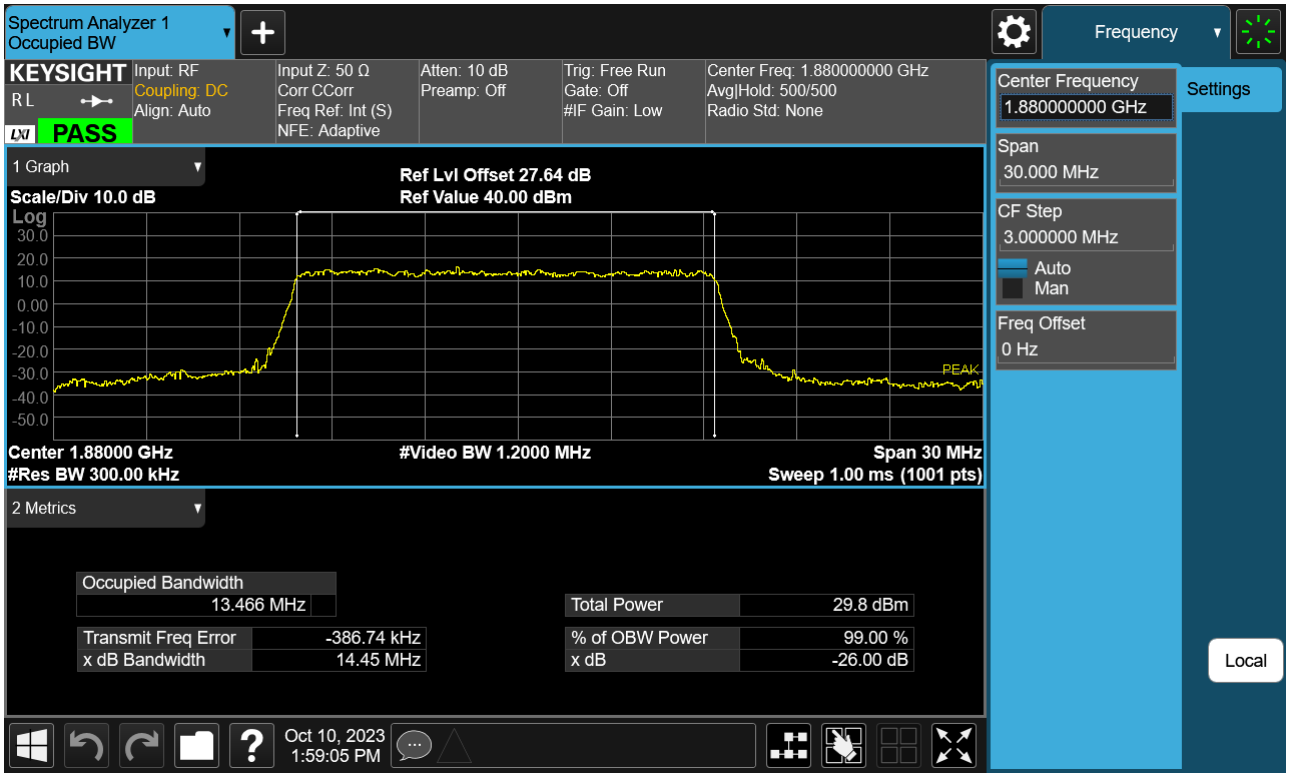
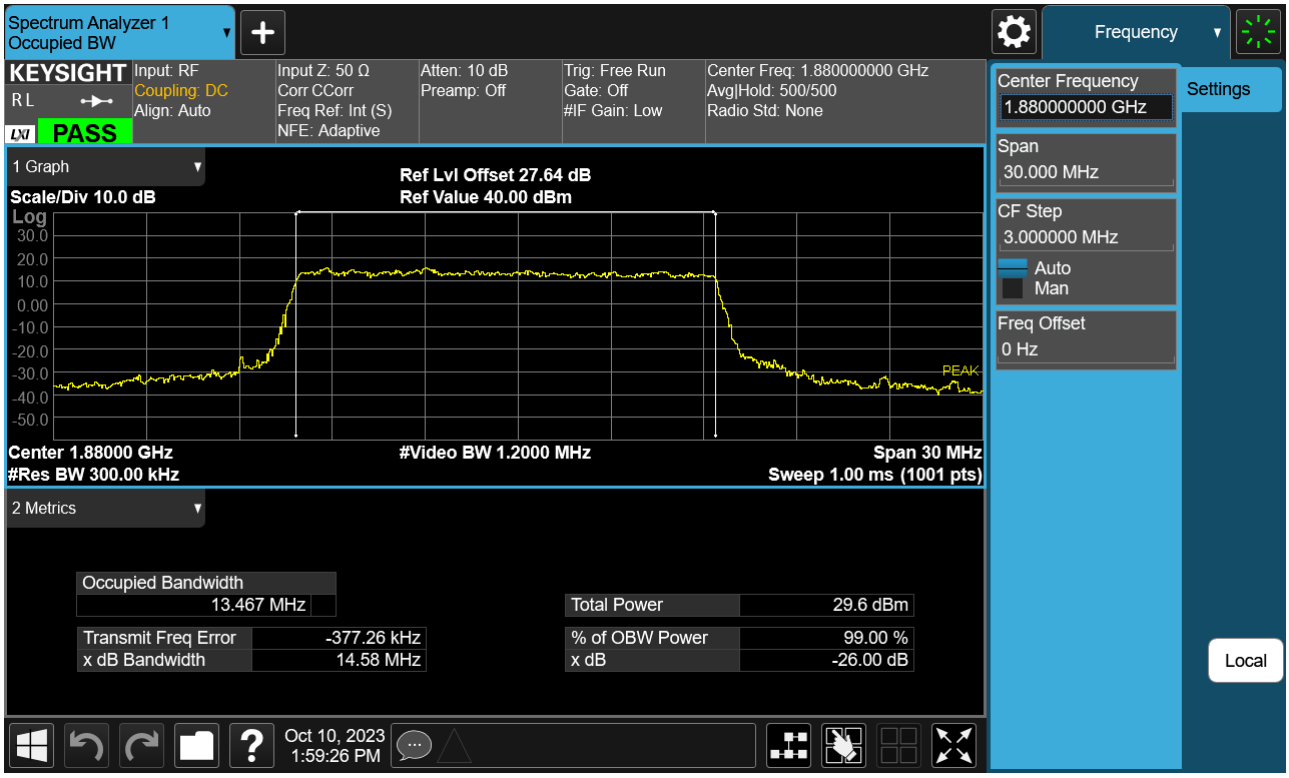
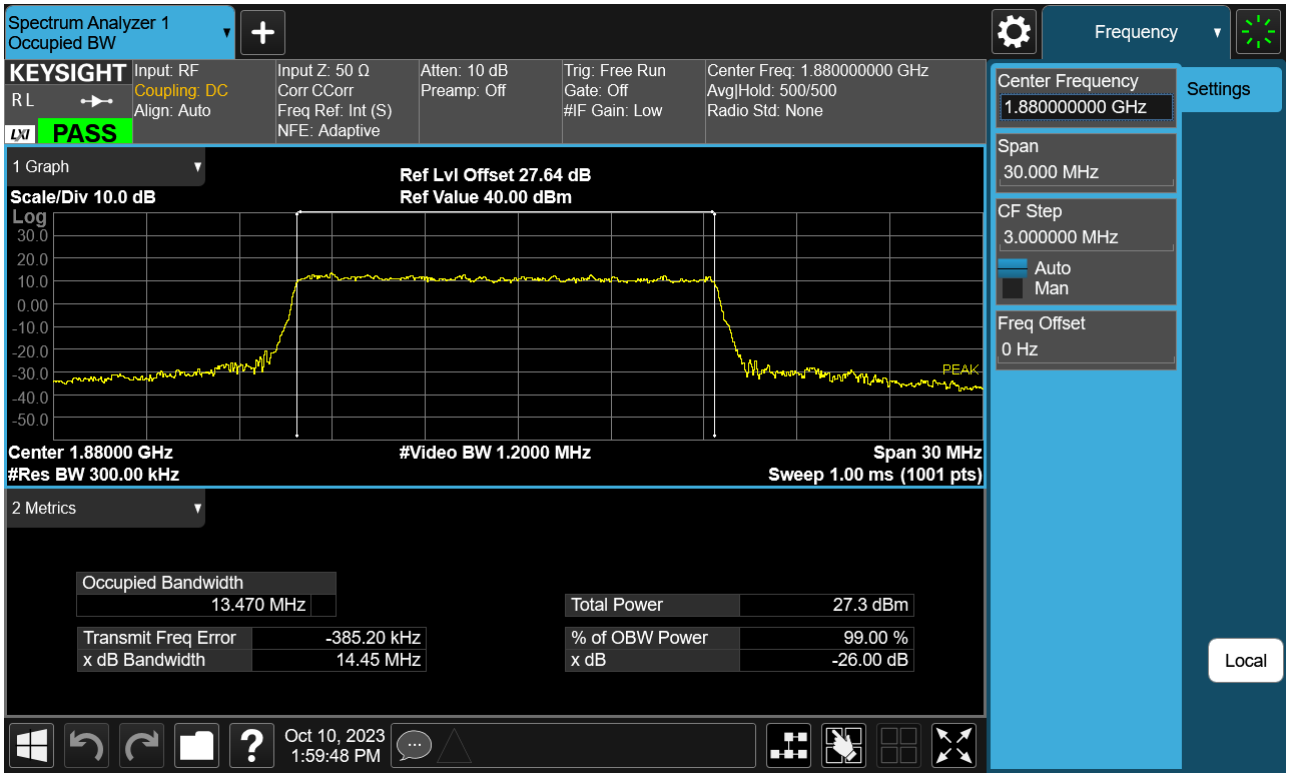


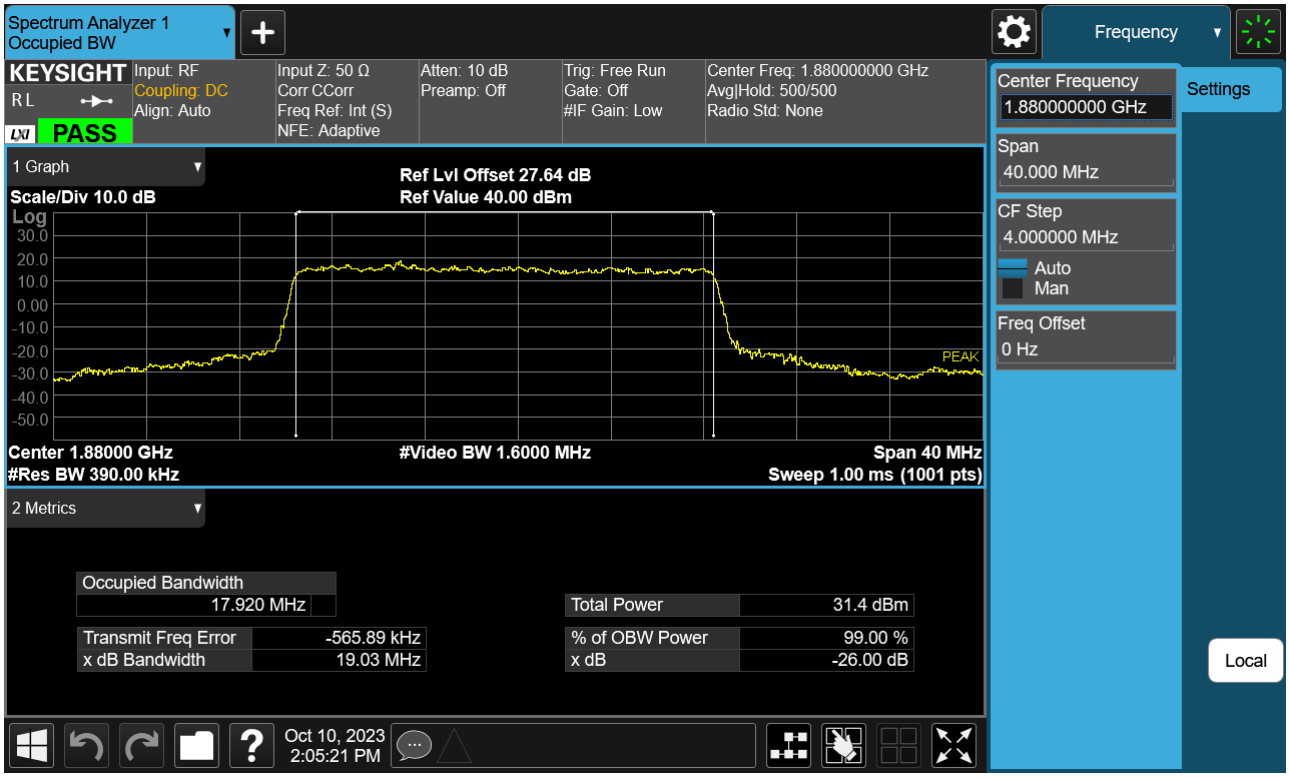
Sub6 n2. Occupied Bandwidth Plot (15 M BW Ch.376000 64QAM RB 75_0)



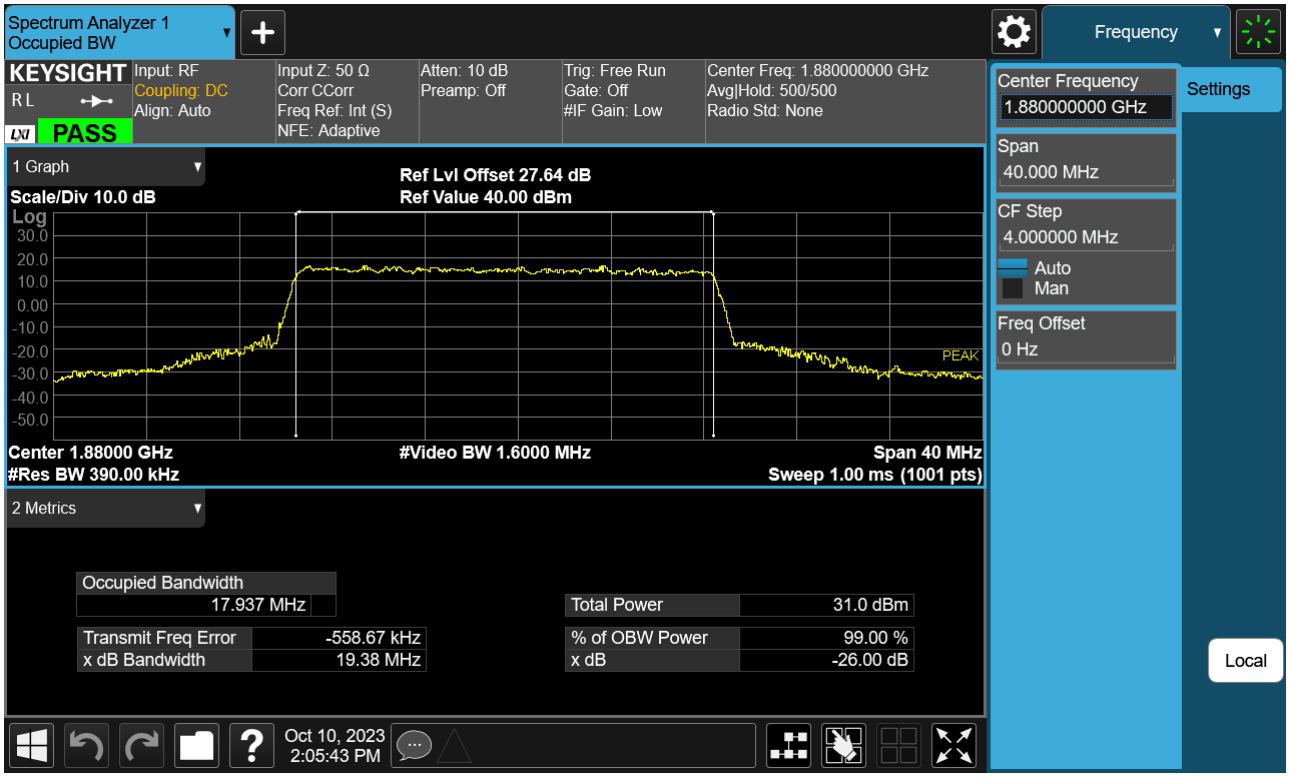
Sub6 n2. Occupied Bandwidth Plot (15 M BW Ch.376000 256QAM RB 75_0)



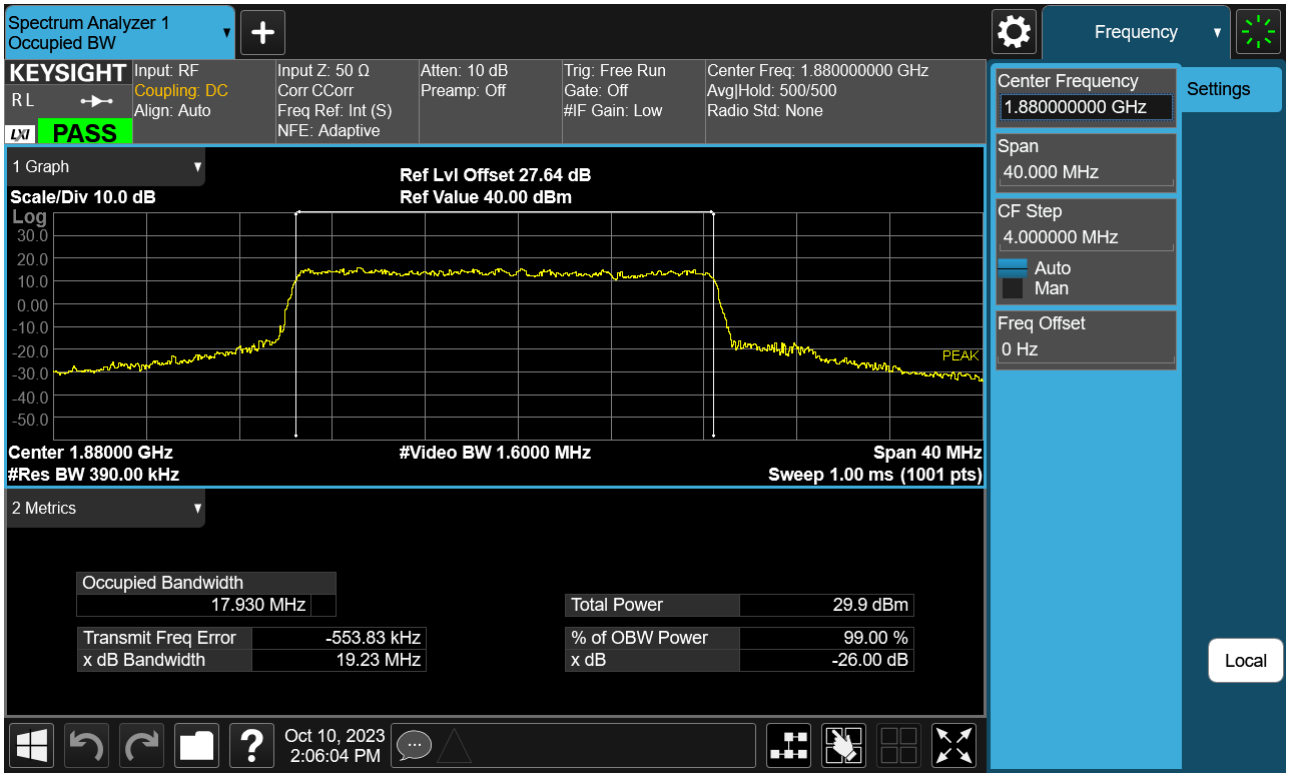
Sub6 n2. Occupied Bandwidth Plot (20 M BW Ch.376000 BPSK RB 100_0)



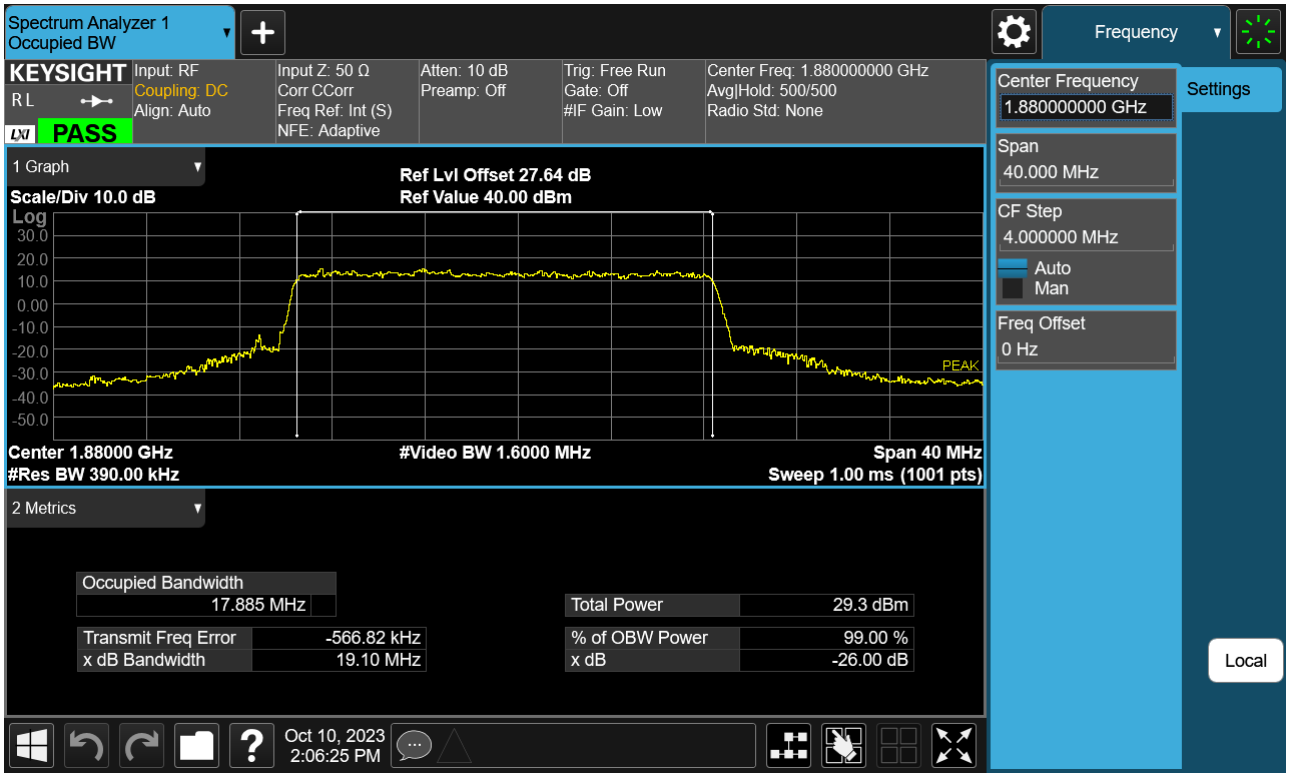
Sub6 n2. Occupied Bandwidth Plot (20 M BW Ch.376000 QPSK RB 100_0)



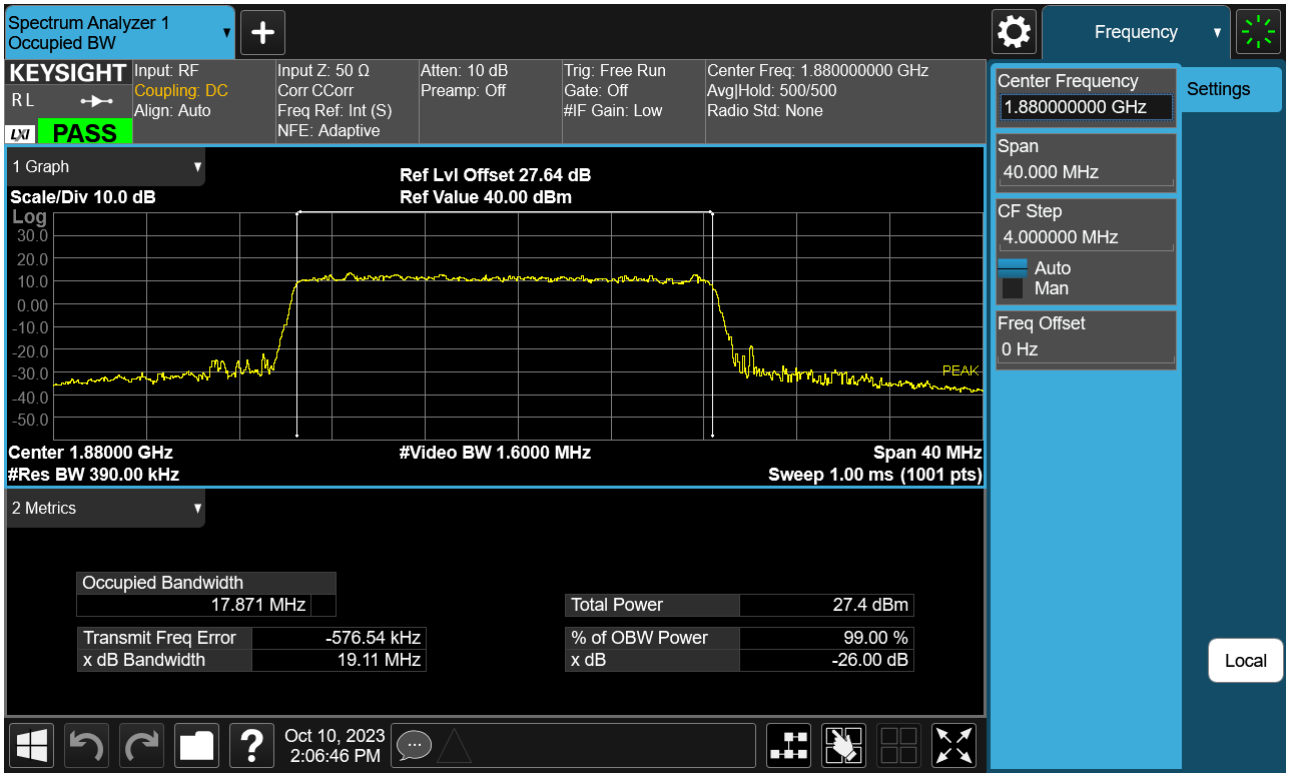
Sub6 n2. Occupied Bandwidth Plot (20 M BW Ch.376000 16QAM RB 100_0)



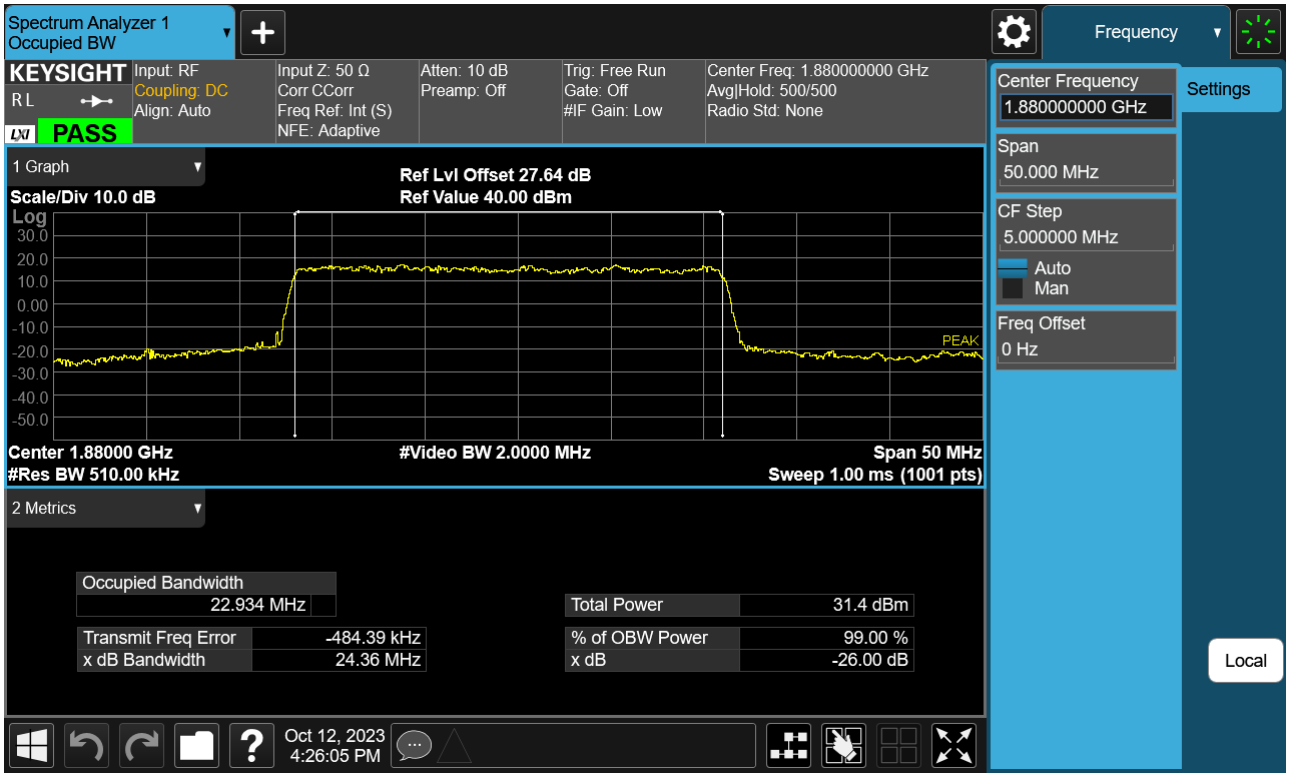
Sub6 n2. Occupied Bandwidth Plot (20 M BW Ch.376000 64QAM RB 100_0)



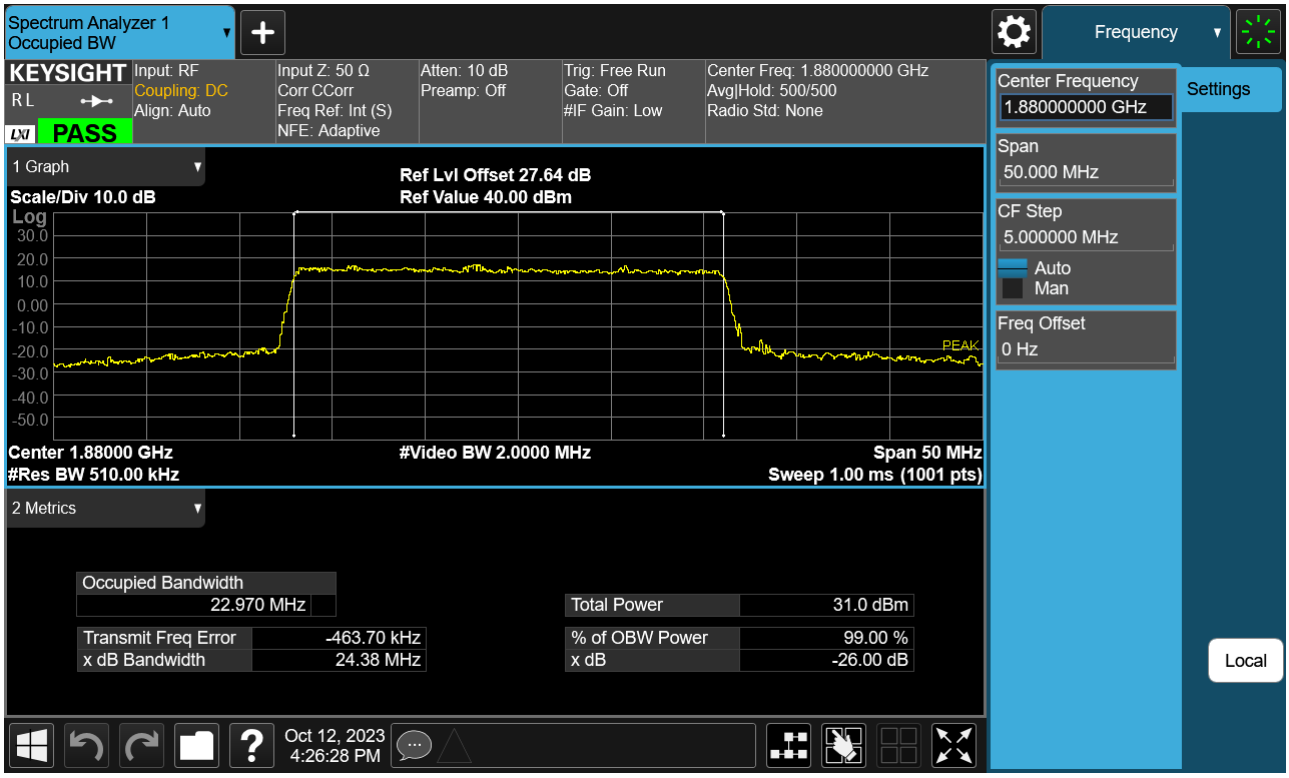
Sub6 n2. Occupied Bandwidth Plot (20 M BW Ch.376000 256QAM RB 100_0)



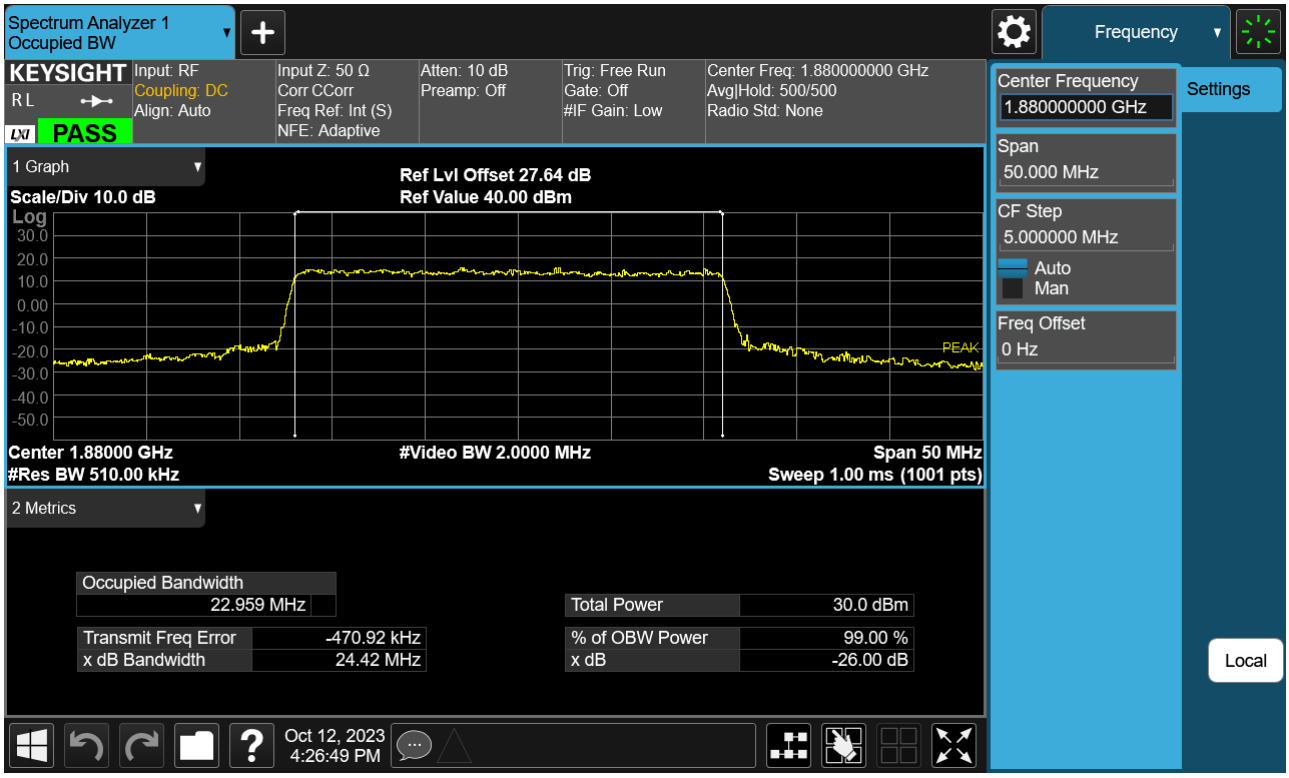
Sub6 n2. Occupied Bandwidth Plot (25 M BW Ch.376000 BPSK RB 25_0)



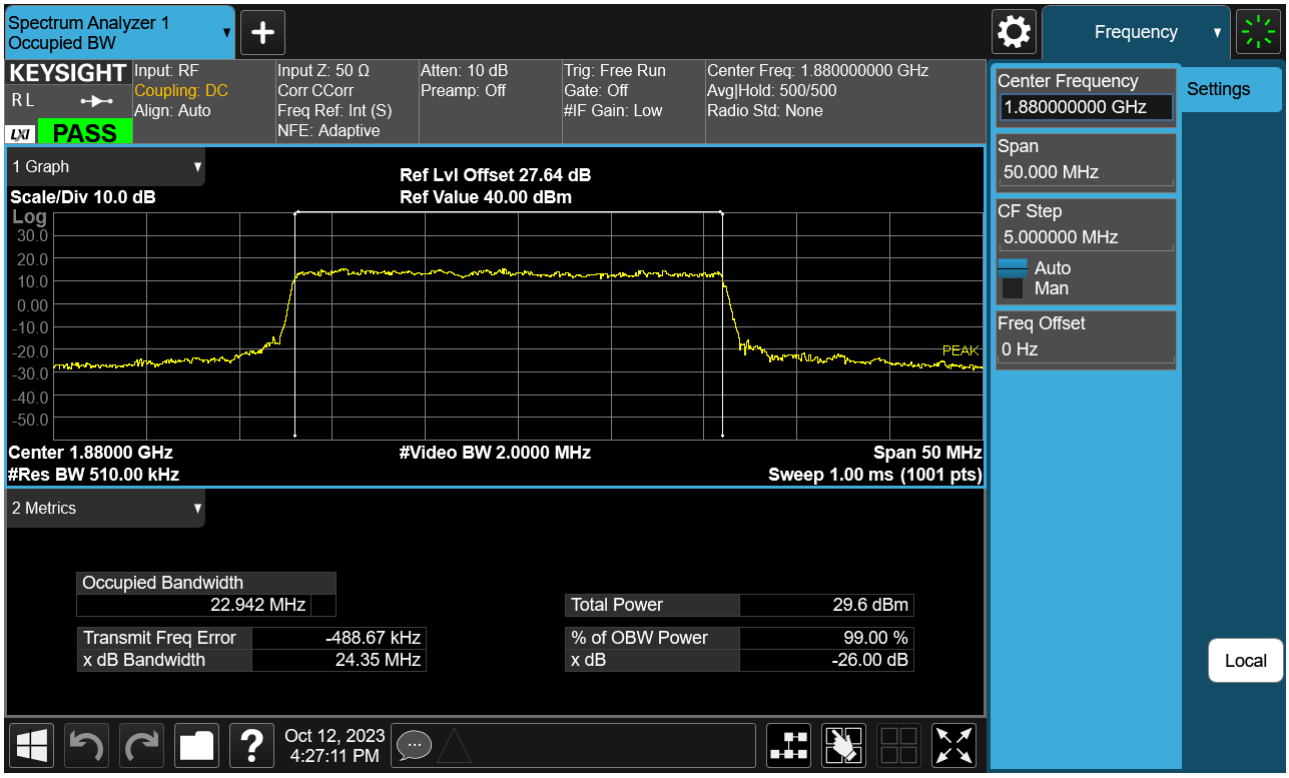
Sub6 n2. Occupied Bandwidth Plot (25 M BW Ch.376000 QPSK RB 25_0)



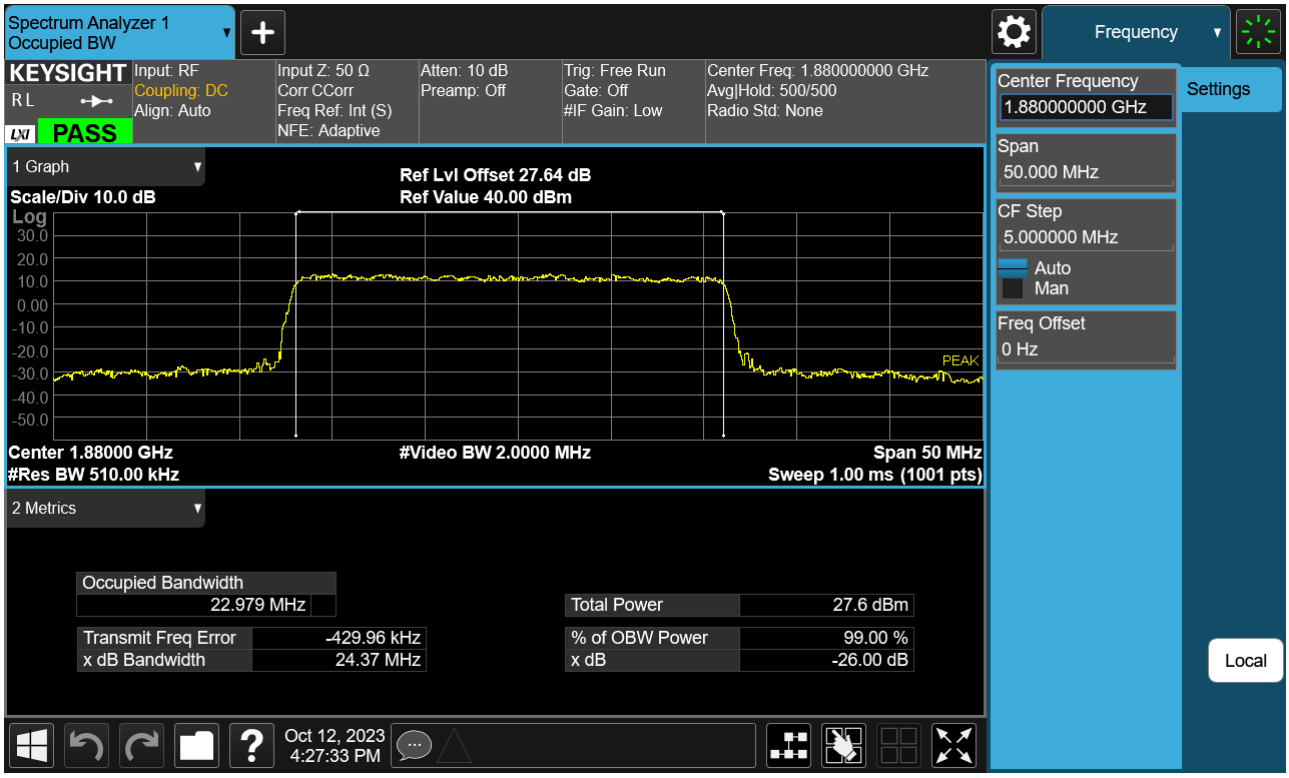
Sub6 n2. Occupied Bandwidth Plot (25 M BW Ch.376000 16QAM RB 25_0)



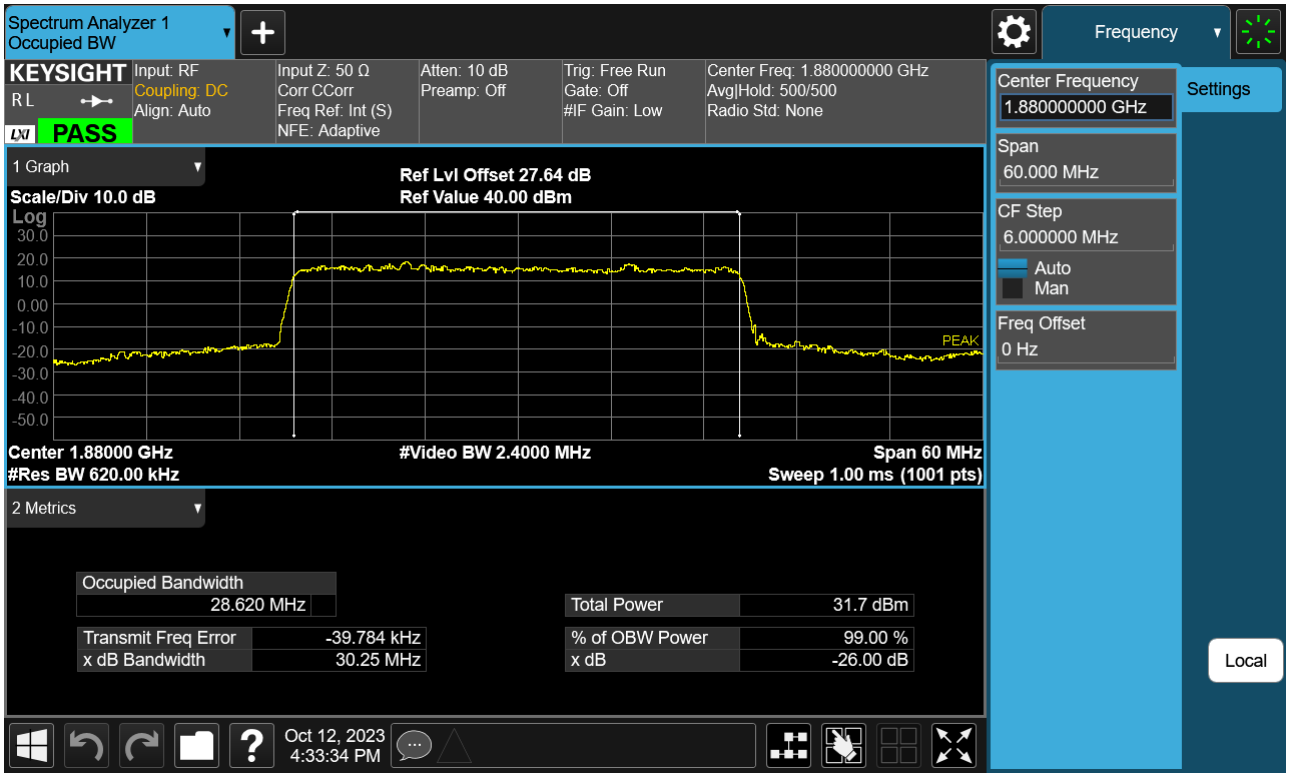
Sub6 n2. Occupied Bandwidth Plot (25 M BW Ch.376000 64QAM RB 25_0)



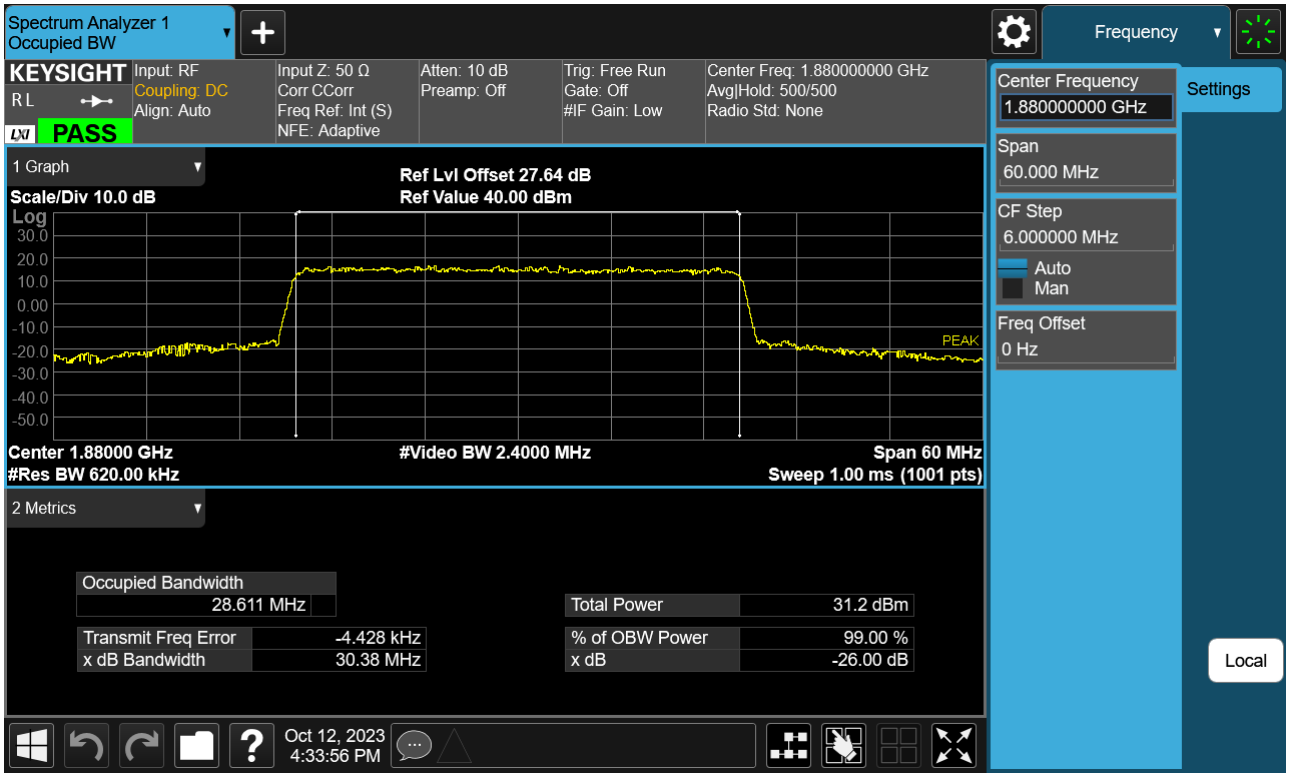
Sub6 n2. Occupied Bandwidth Plot (25 M BW Ch.376000 256QAM RB 25_0)



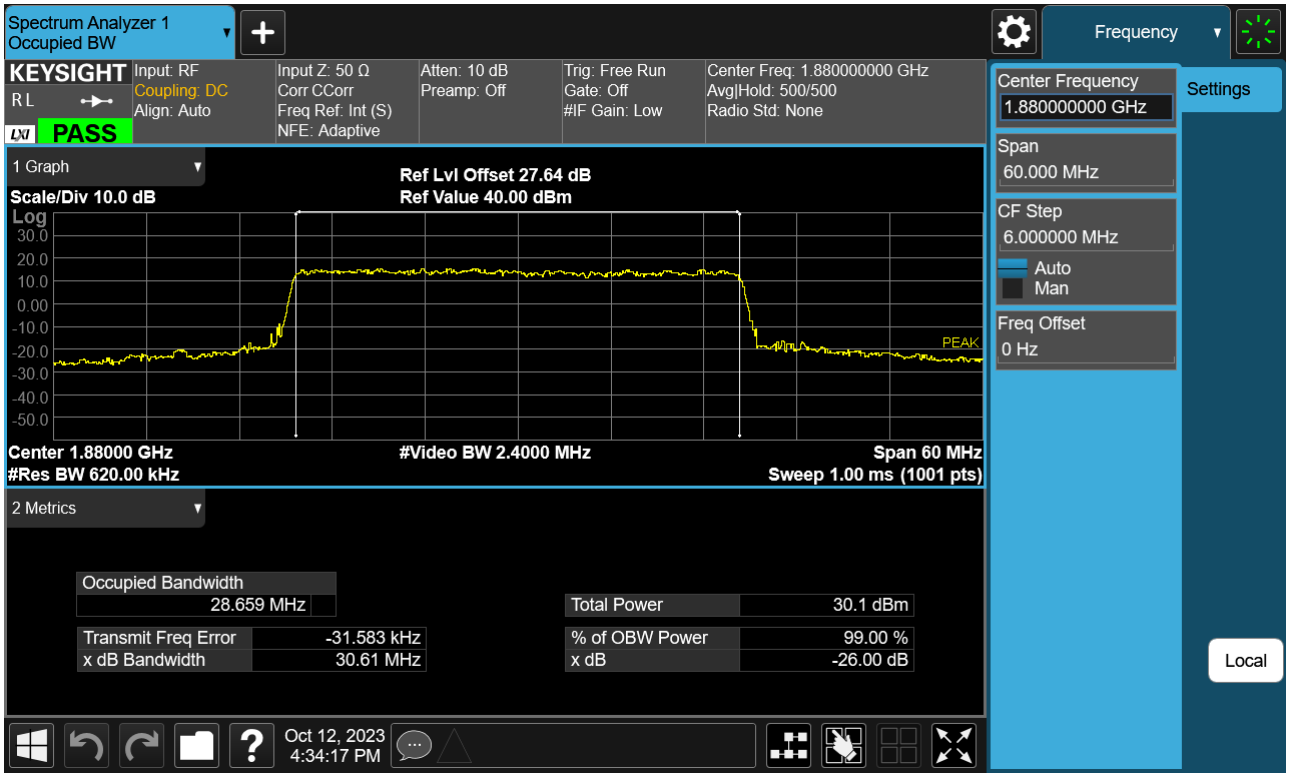
Sub6 n2. Occupied Bandwidth Plot (30 M BW Ch.376000 BPSK RB 50_0)



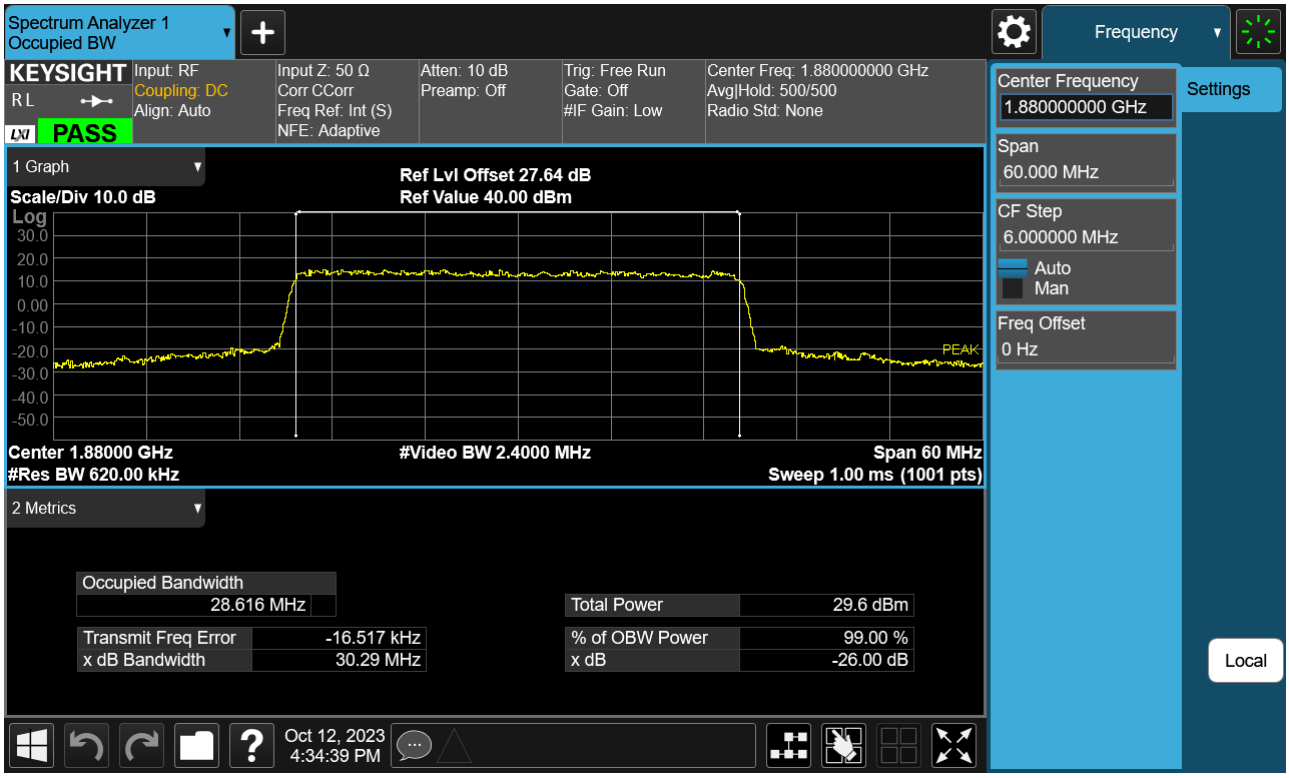
Sub6 n2. Occupied Bandwidth Plot (30 M BW Ch.376000 QPSK RB 50_0)



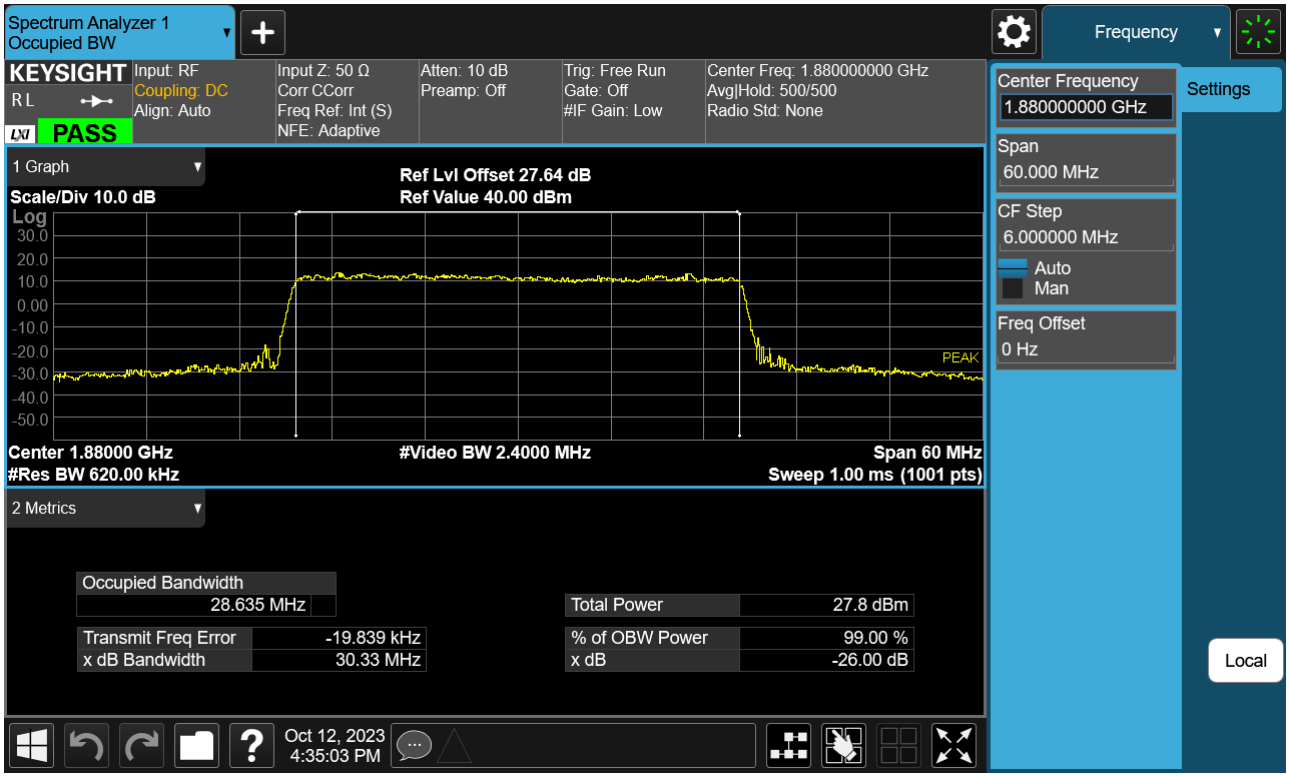
Sub6 n2. Occupied Bandwidth Plot (30 M BW Ch.376000 16QAM RB 50_0)



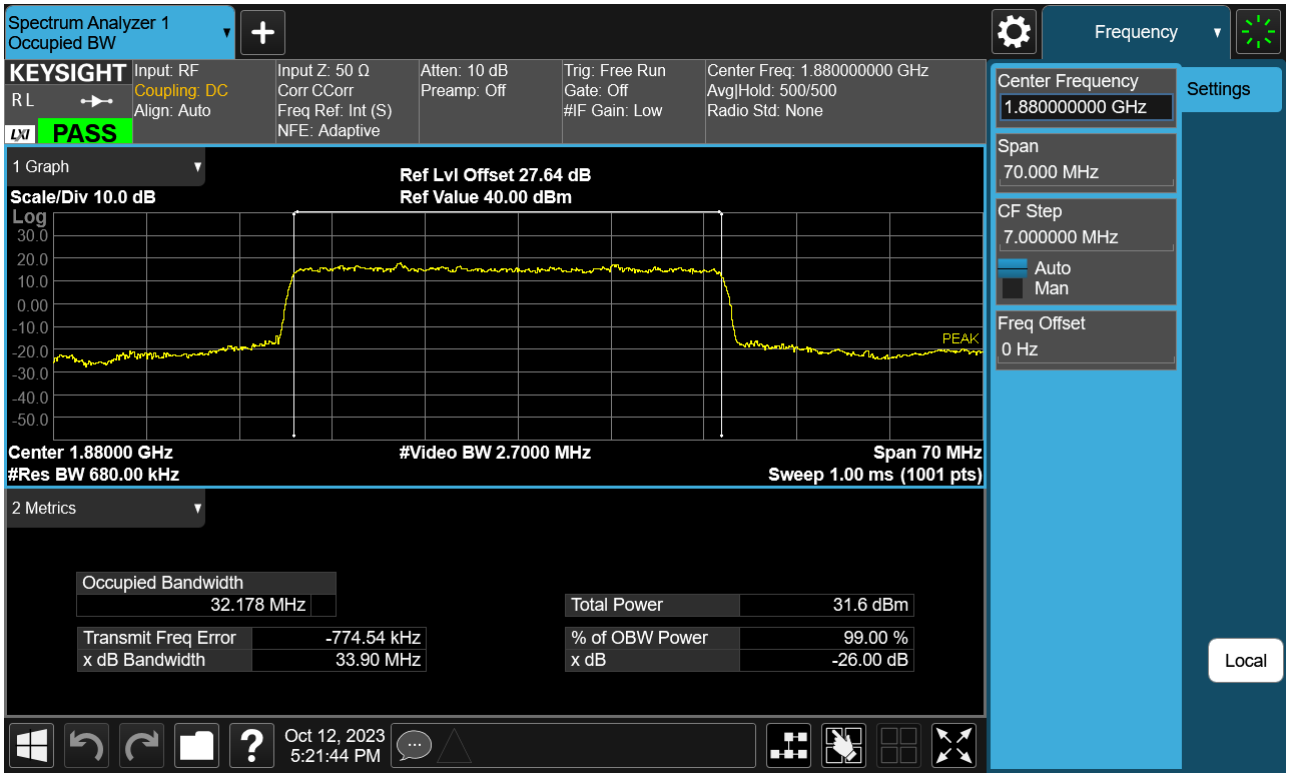
Sub6 n2. Occupied Bandwidth Plot (30 M BW Ch.376000 64QAM RB 50_0)



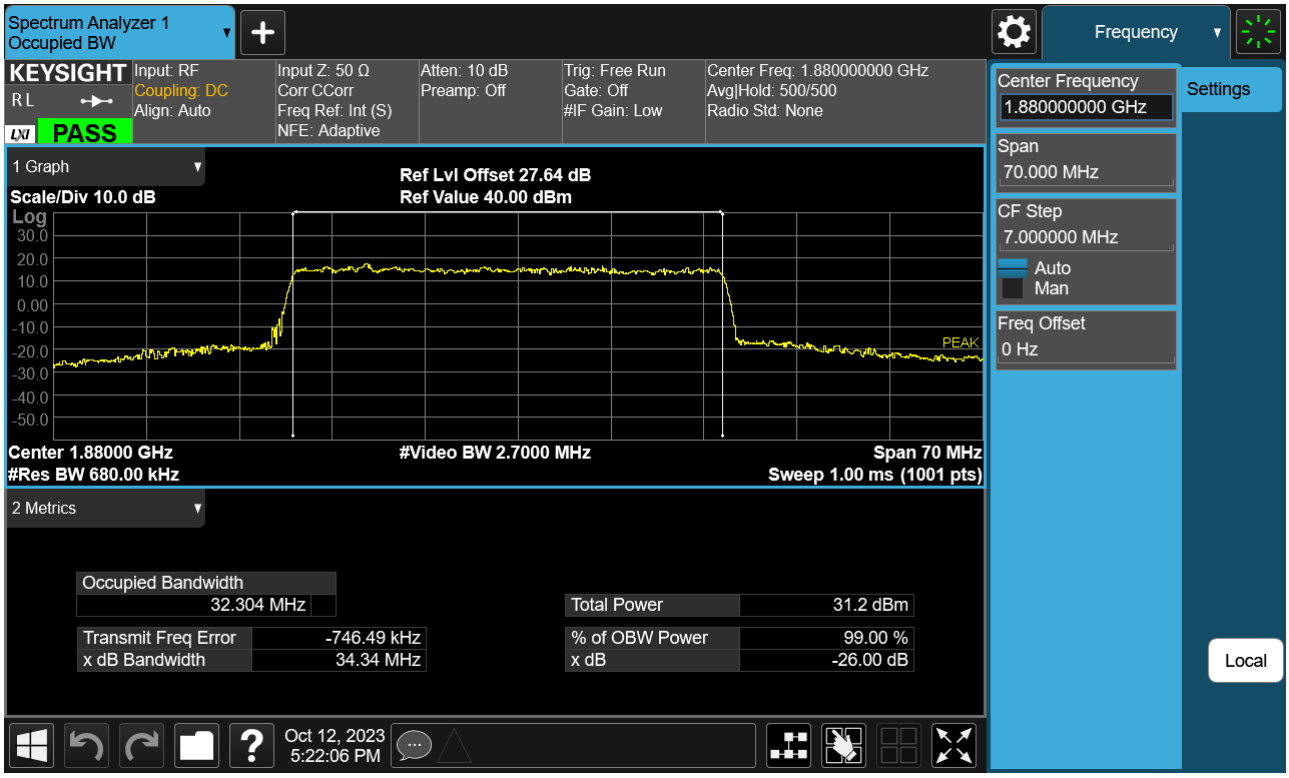
Sub6 n2. Occupied Bandwidth Plot (30 M BW Ch.376000 256QAM RB 50_0)



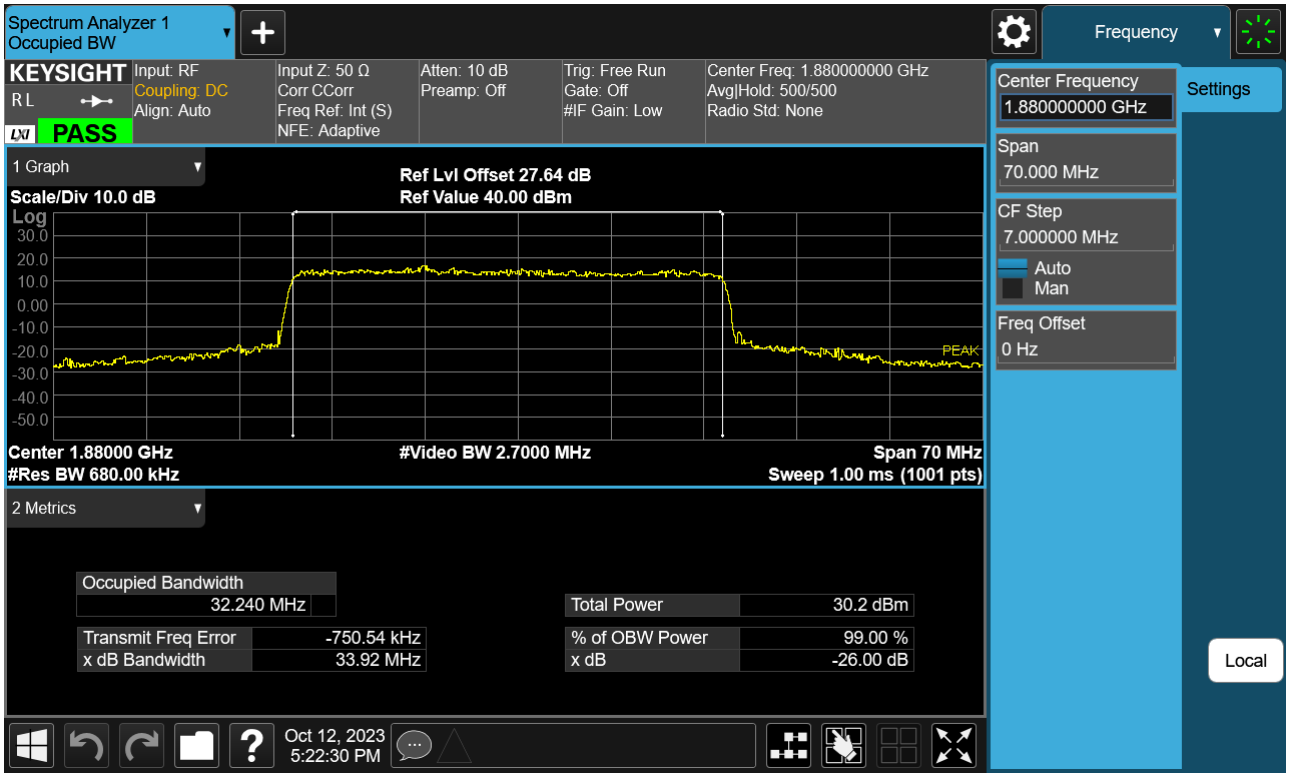
Sub6 n2. Occupied Bandwidth Plot (35 M BW Ch.376000 BPSK RB 75_0)



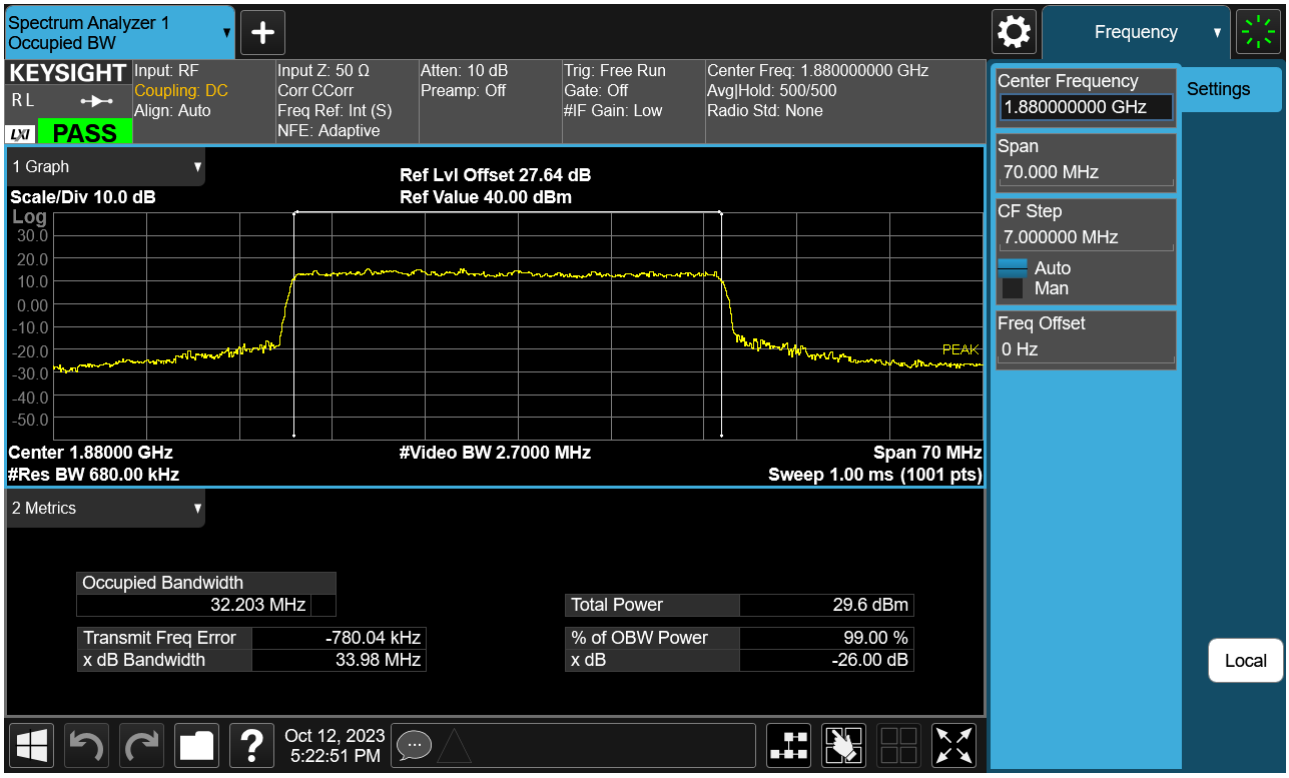
Sub6 n2. Occupied Bandwidth Plot (35 M BW Ch.376000 QPSK RB 75_0)



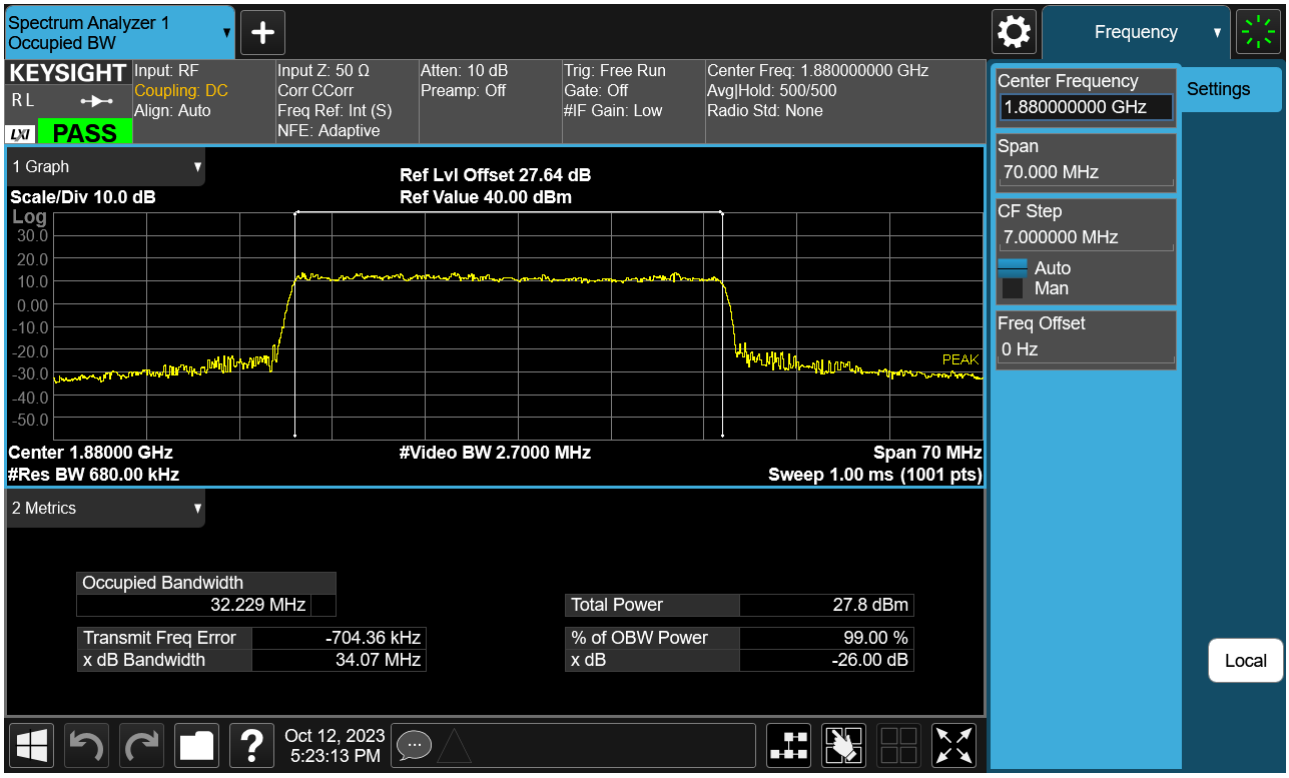
Sub6 n2. Occupied Bandwidth Plot (35 M BW Ch.376000 16QAM RB 75_0)



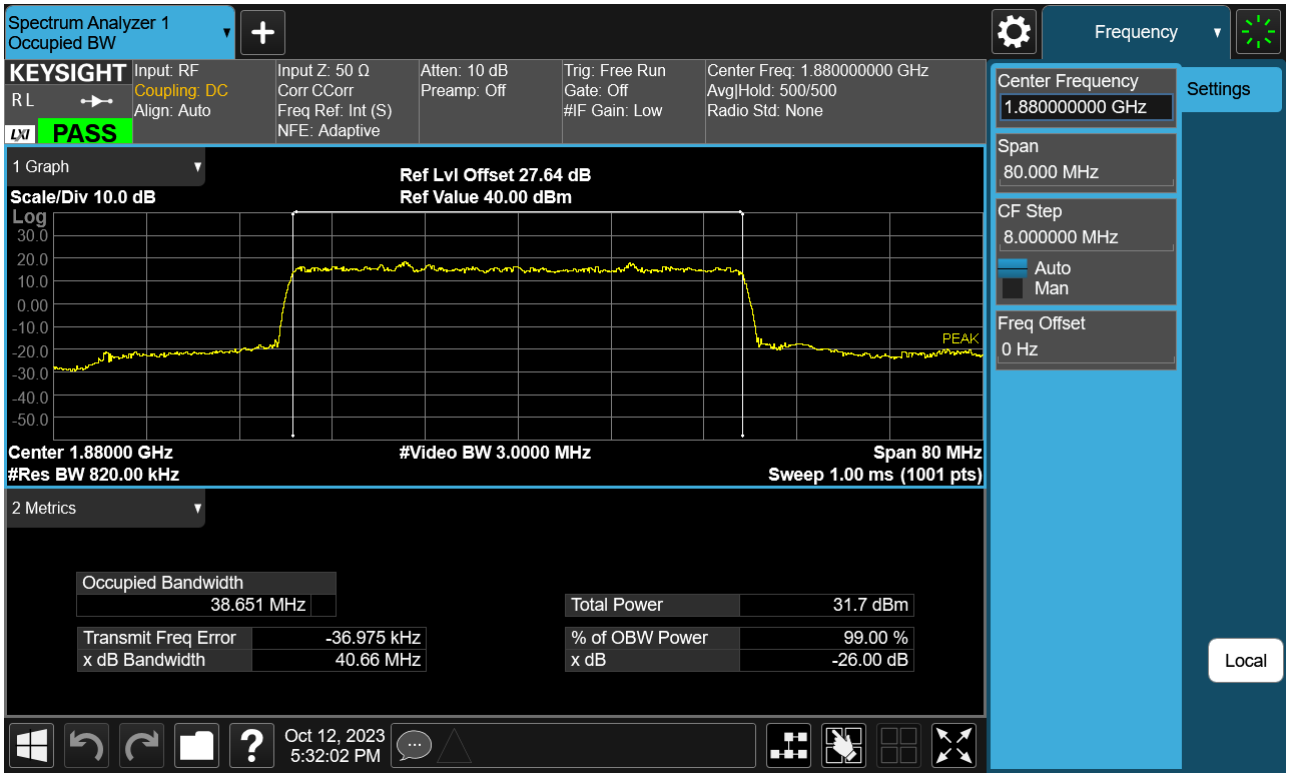
Sub6 n2. Occupied Bandwidth Plot (35 M BW Ch.376000 64QAM RB 75_0)



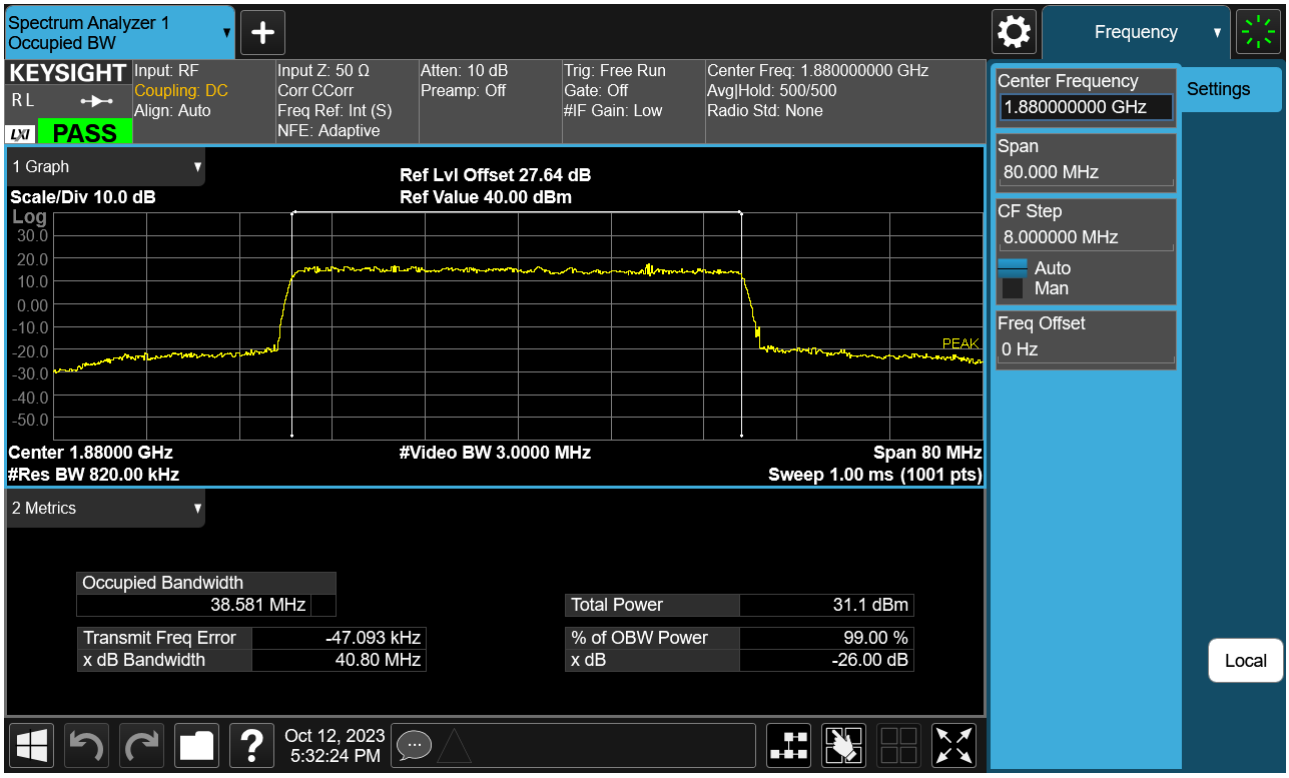
Sub6 n2. Occupied Bandwidth Plot (35 M BW Ch.376000 256QAM RB 75_0)



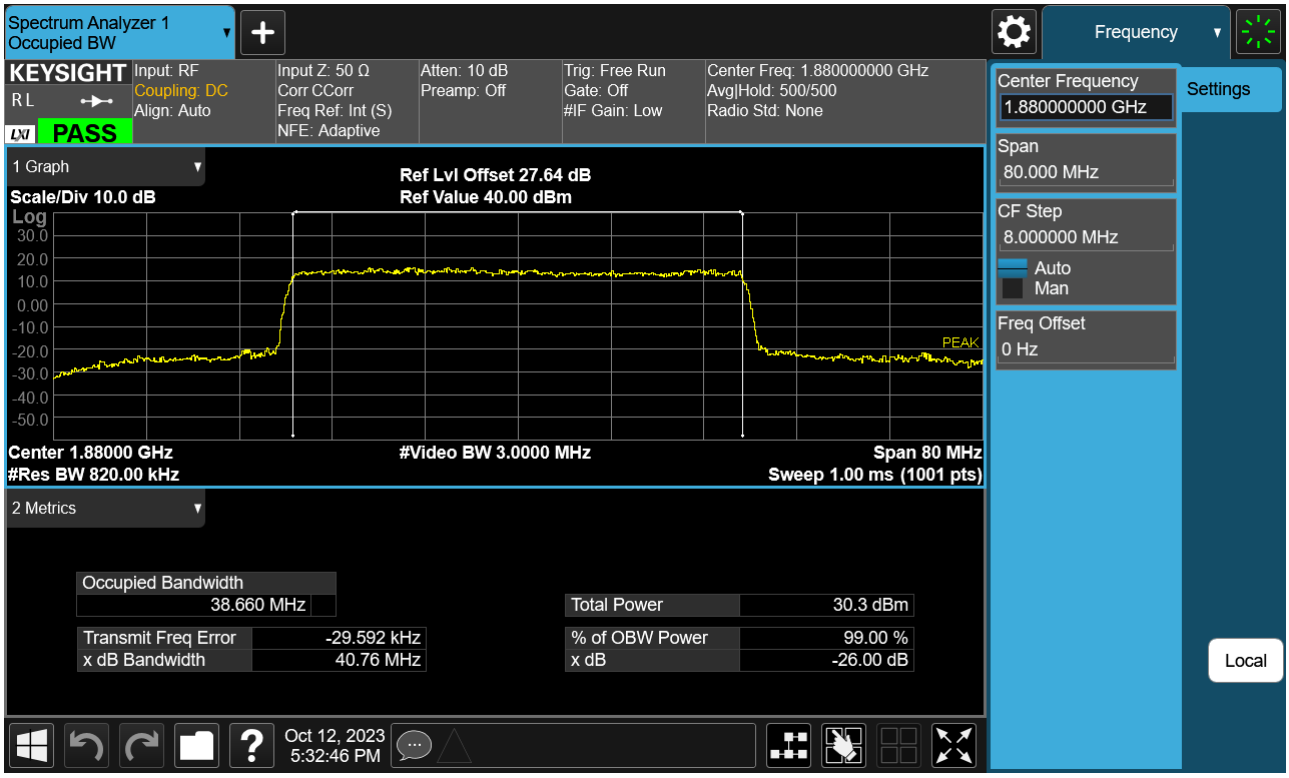
Sub6 n2. Occupied Bandwidth Plot (40 M BW Ch.376000 BPSK RB 100_0)



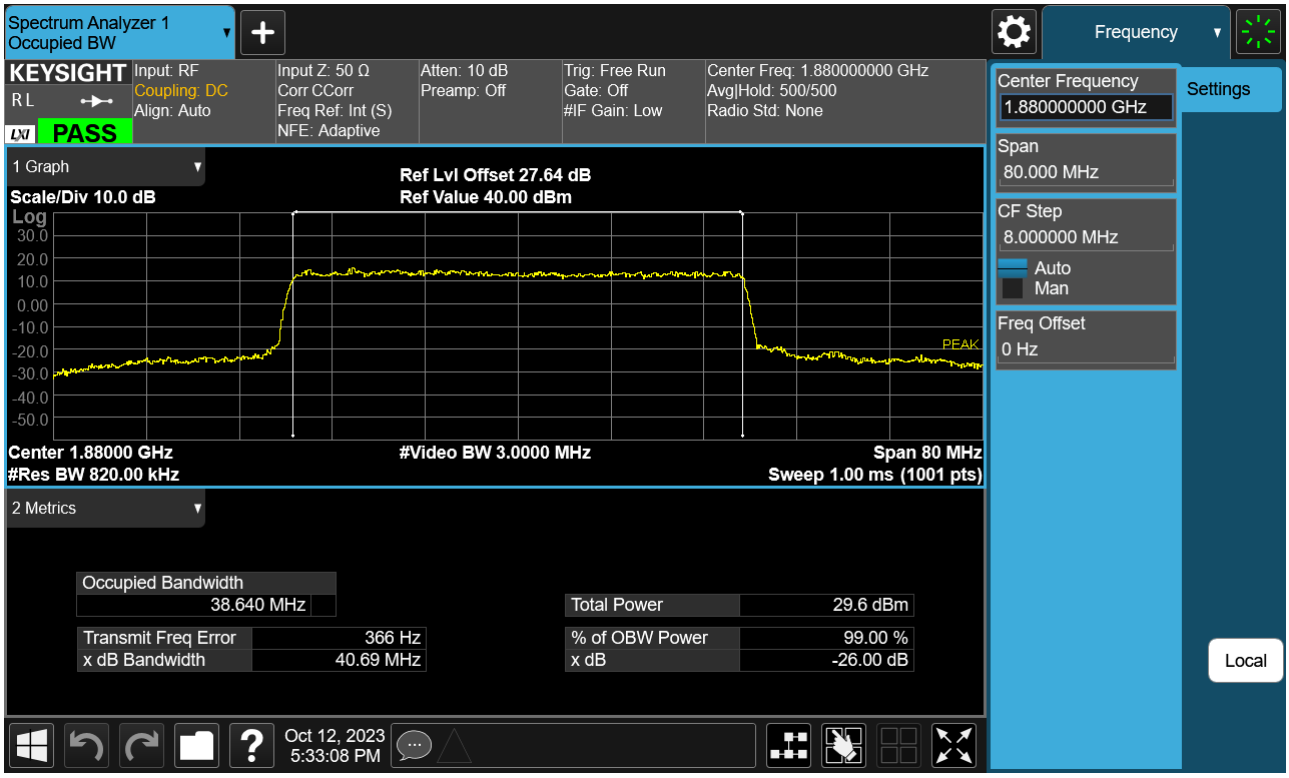
Sub6 n2. Occupied Bandwidth Plot (40 M BW Ch.376000 QPSK RB 100_0)



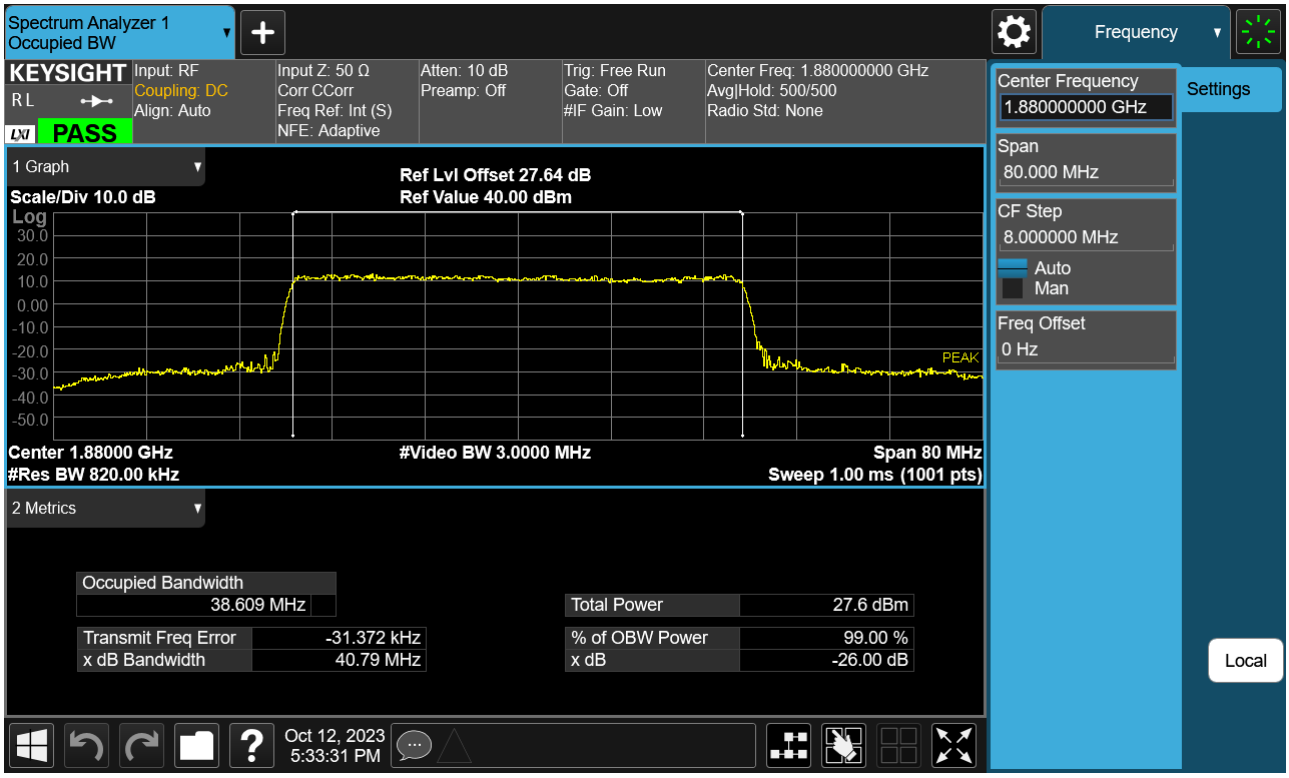
Sub6 n2. Occupied Bandwidth Plot (40 M BW Ch.376000 16QAM RB 100_0)



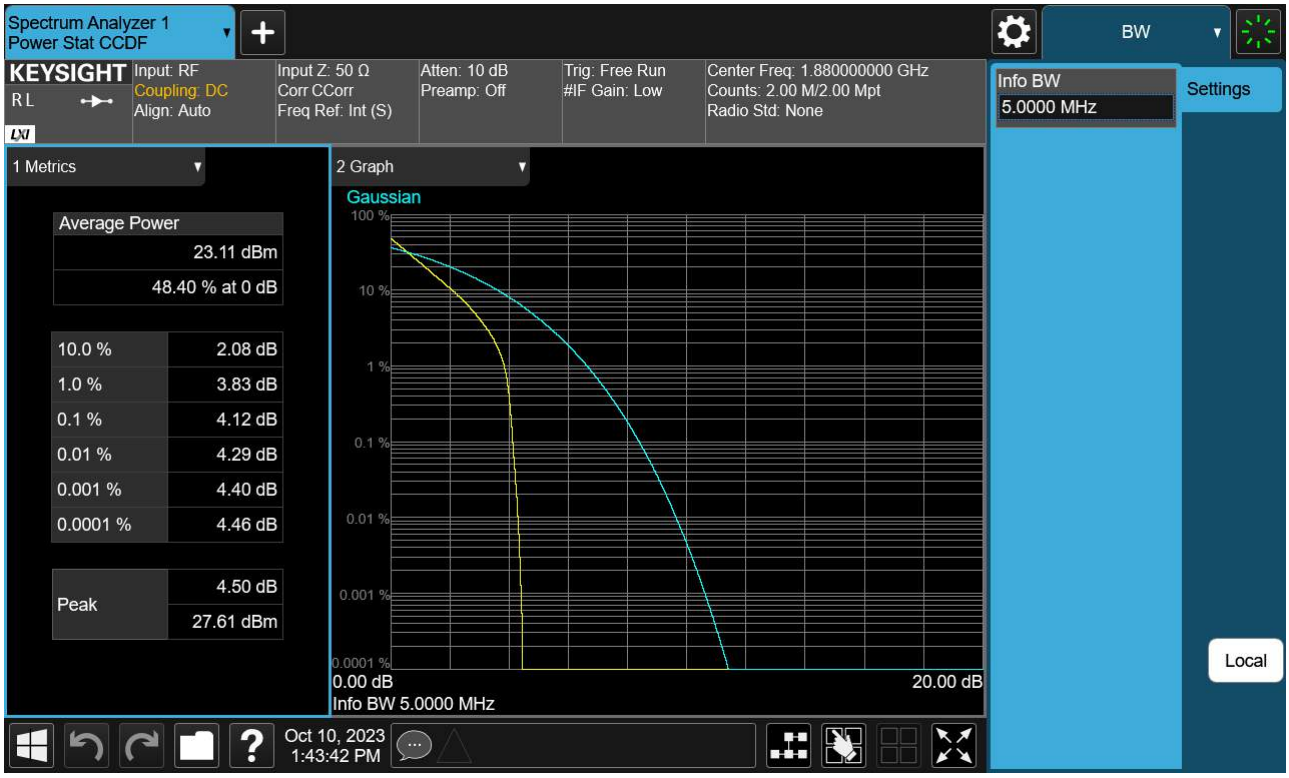
Sub6 n2. Occupied Bandwidth Plot (40 M BW Ch.376000 64QAM RB 100_0)



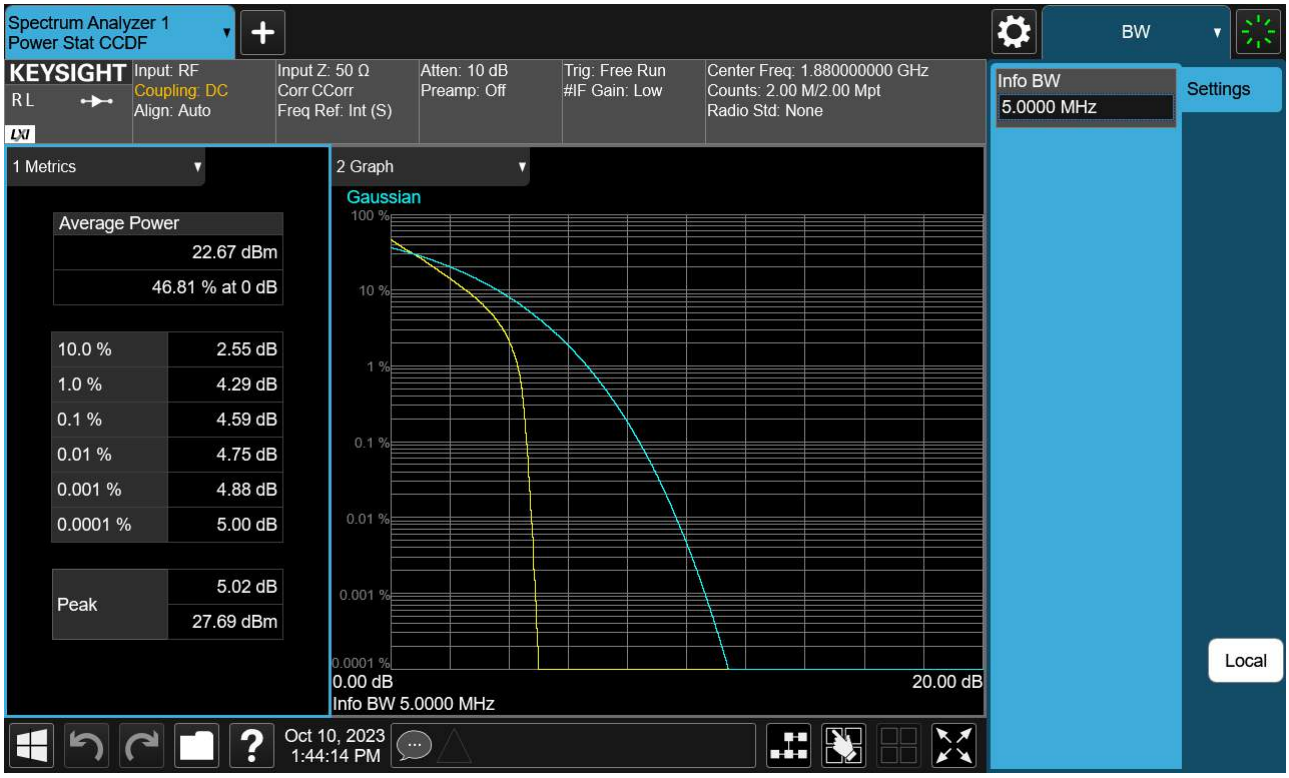
Sub6 n2. Occupied Bandwidth Plot (40 M BW Ch.376000 256QAM RB 100_0)



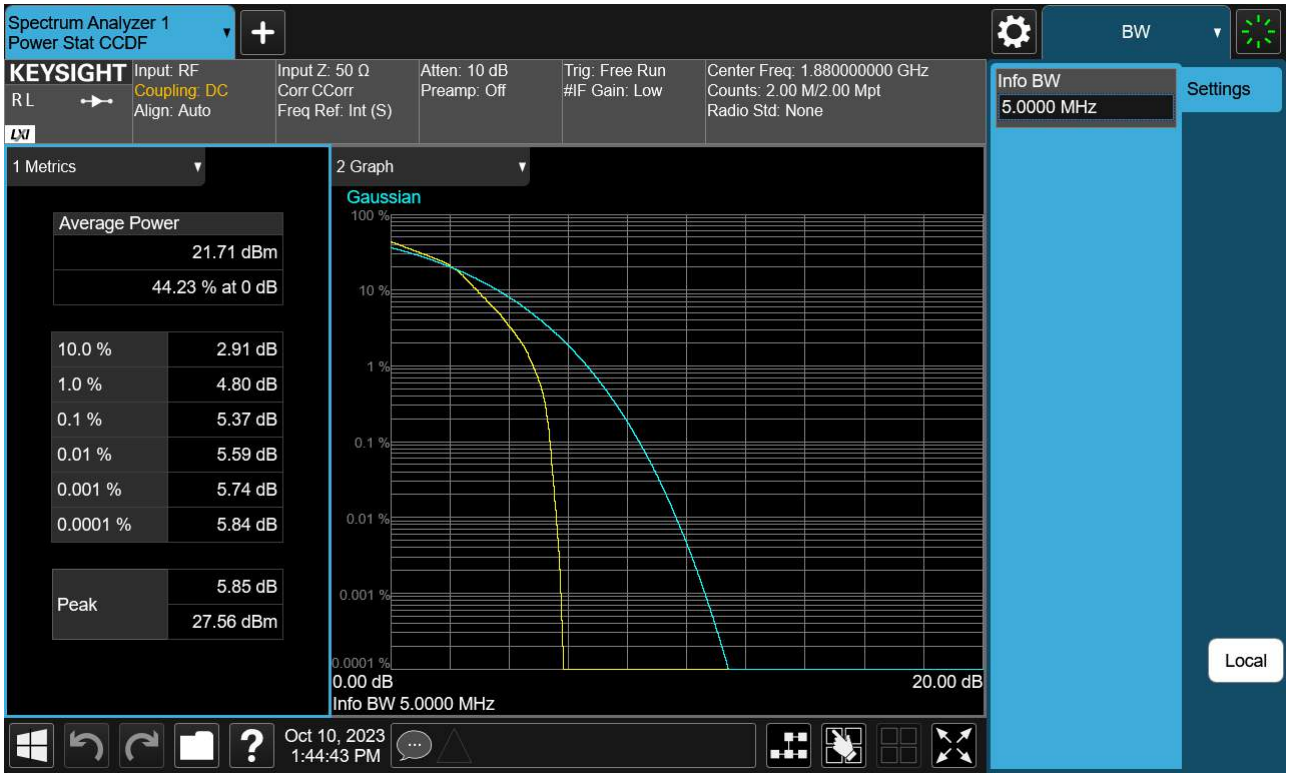
Sub6 n2. PAR Plot (5 M BW Ch.376000 BPSK RB 25_0)



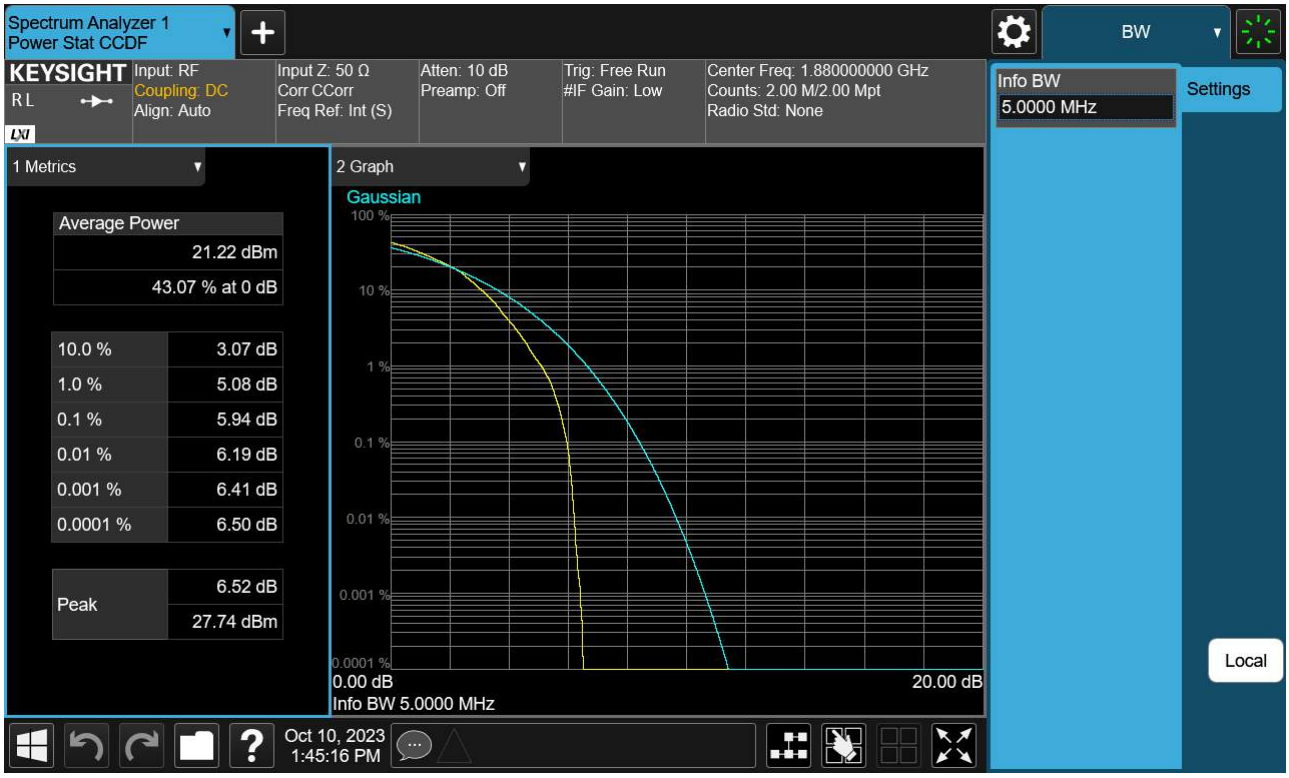
Sub6 n2. PAR Plot (5 M BW Ch.376000 QPSK RB 25_0)



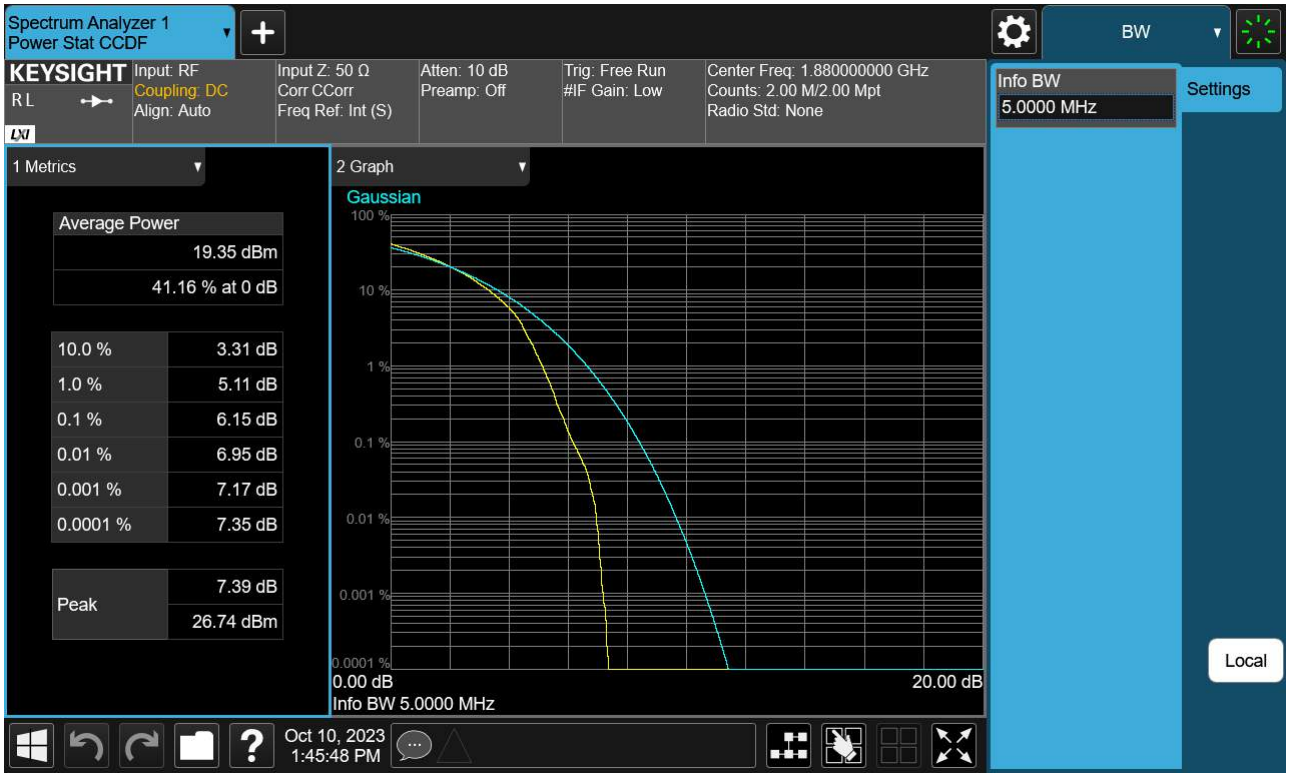
Sub6 n2. PAR Plot (5 M BW Ch.376000 16QAM RB 25_0)



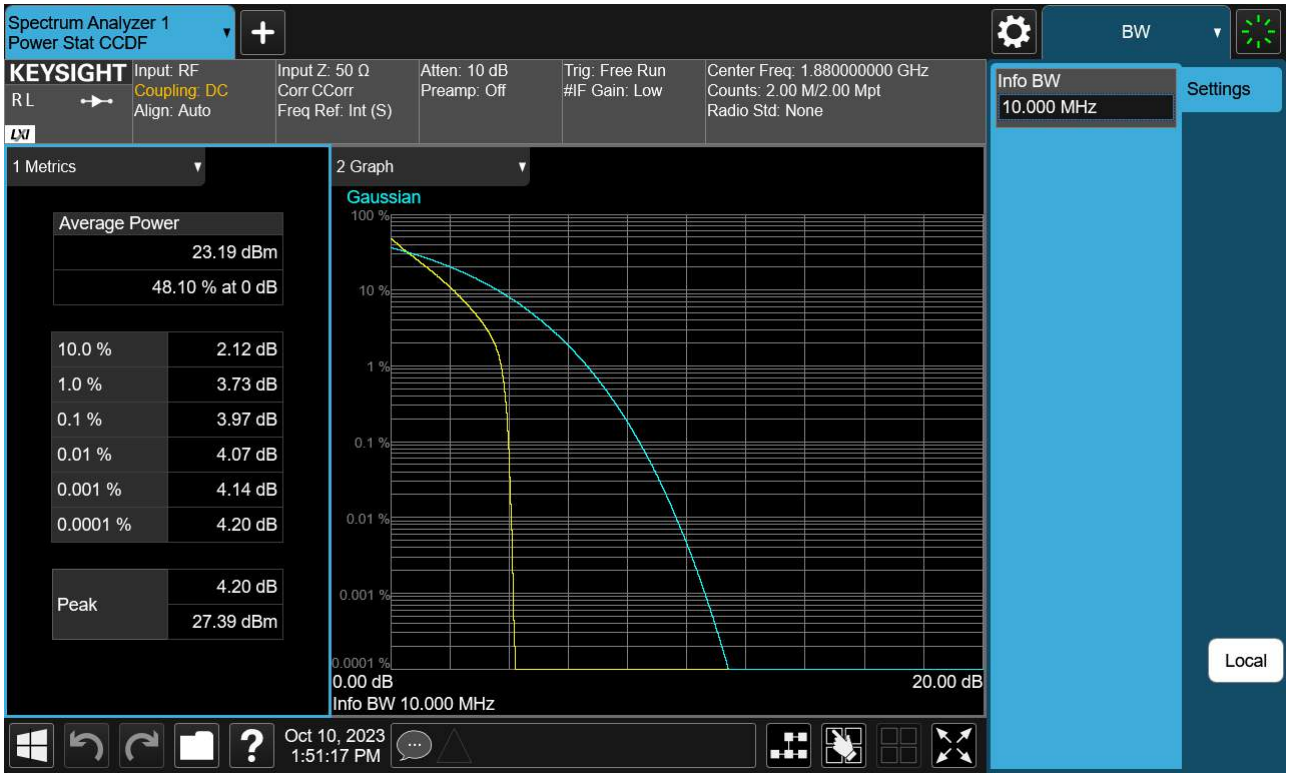
Sub6 n2. PAR Plot (5 M BW Ch.376000 64QAM RB 25_0)



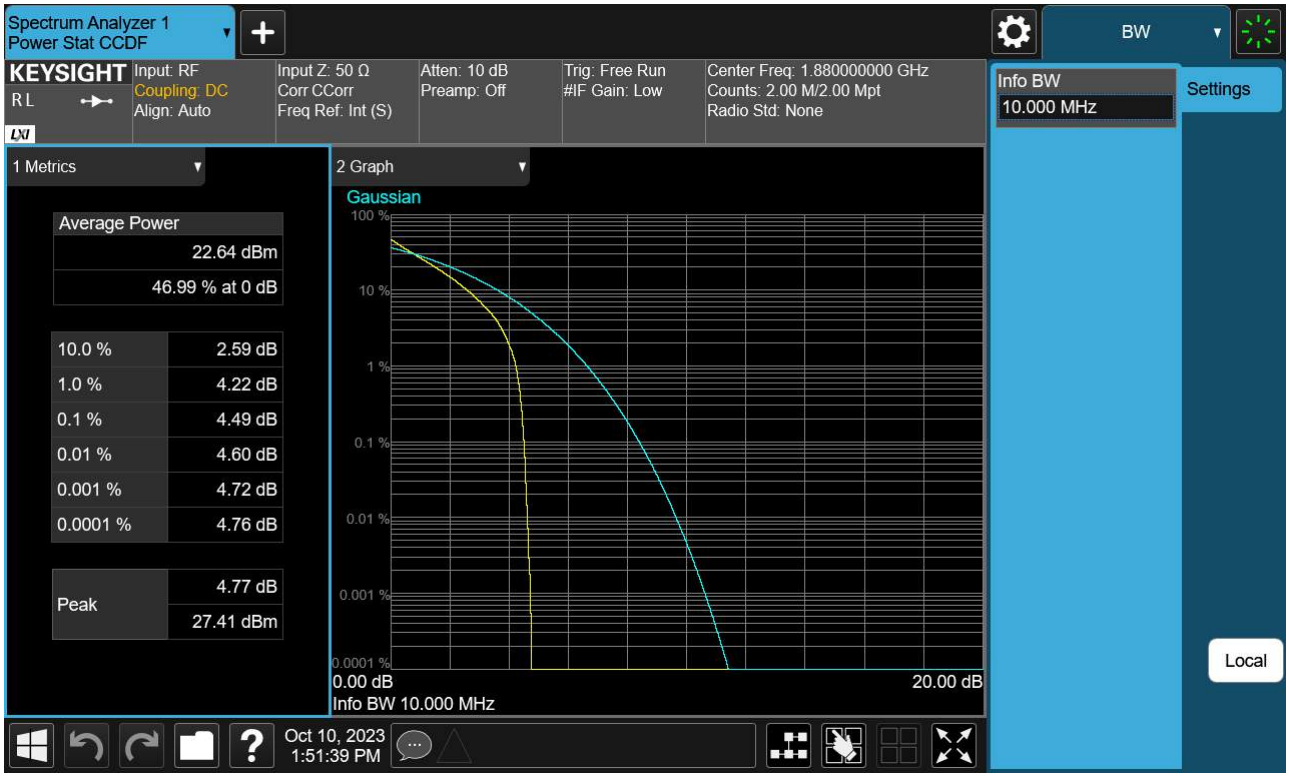
Sub6 n2. PAR Plot (5 M BW Ch.376000 256QAM RB 25_0)



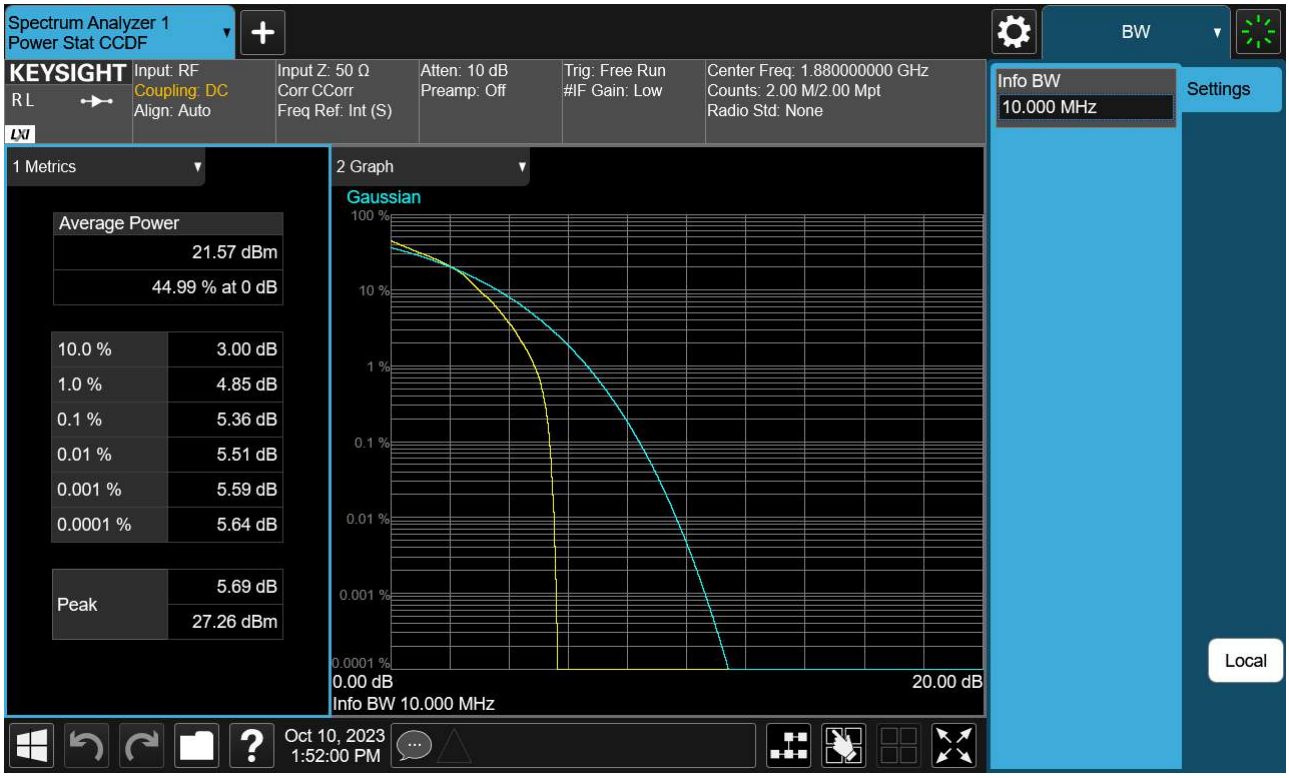
Sub6 n2. PAR Plot (10 M BW Ch.376000 BPSK RB 50_0)



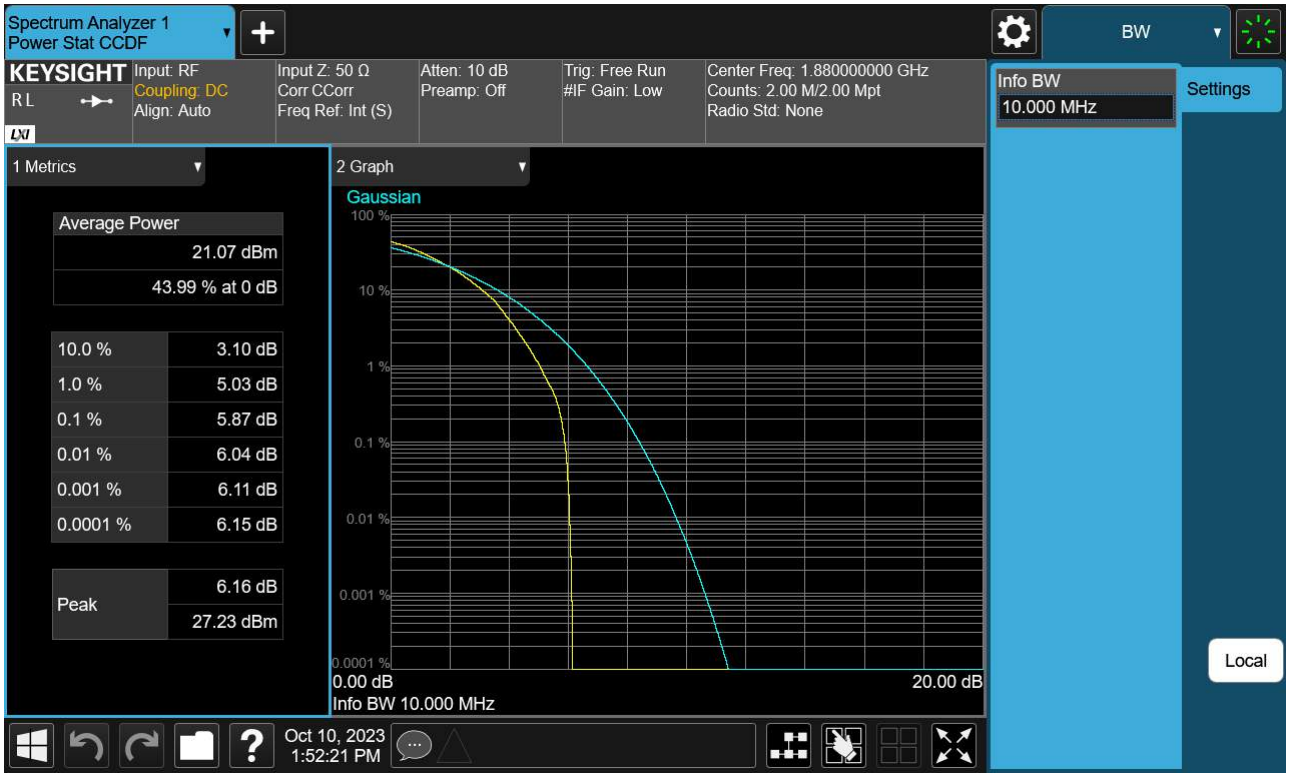
Sub6 n2. PAR Plot (10 M BW Ch.376000 QPSK RB 50_0)



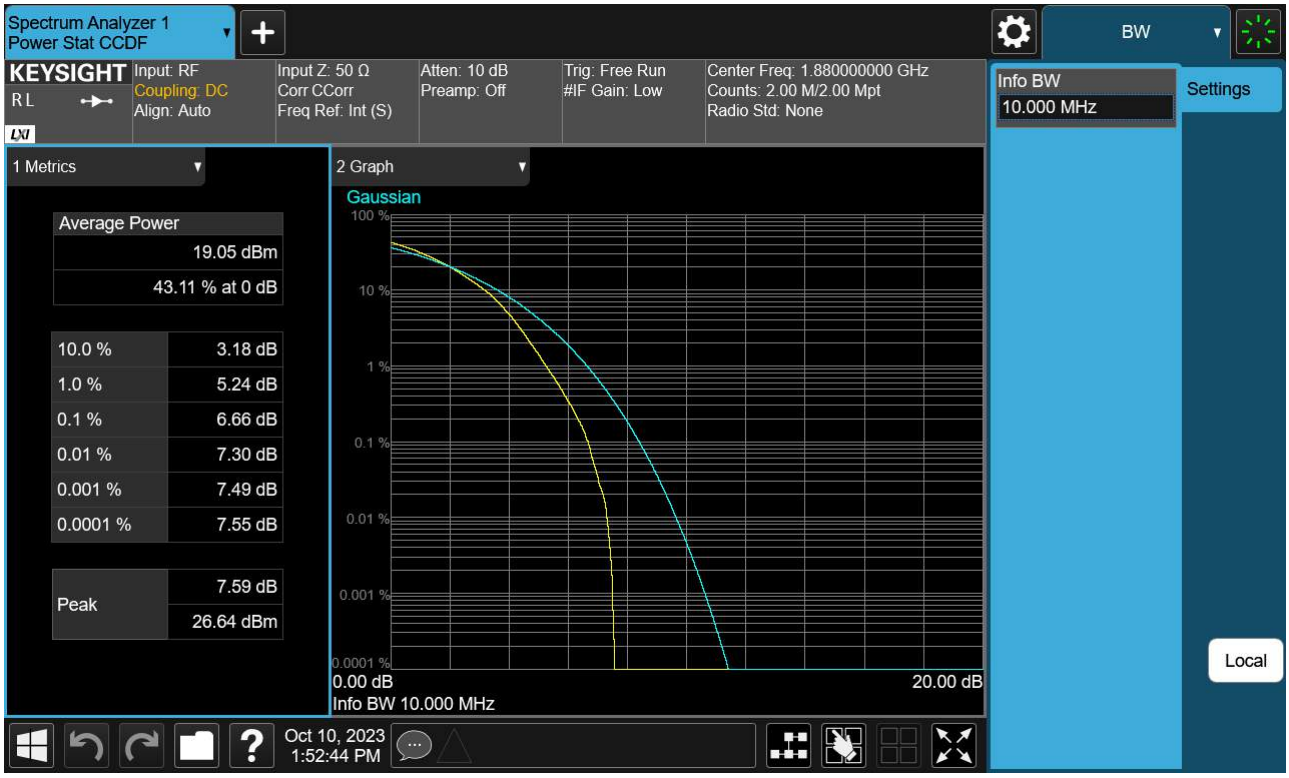
Sub6 n2. PAR Plot (10 M BW Ch.376000 16QAM RB 50_0)



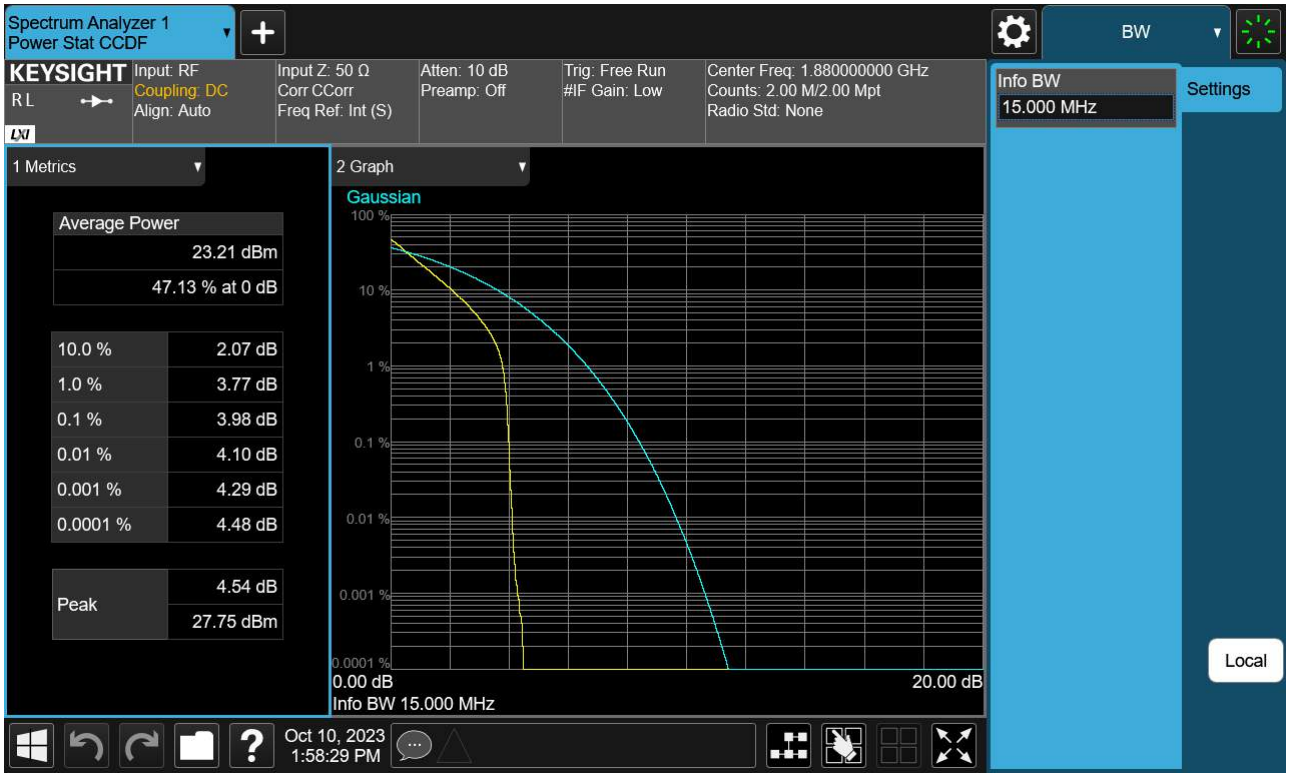
Sub6 n2. PAR Plot (10 M BW Ch.376000 64QAM RB 50_0)



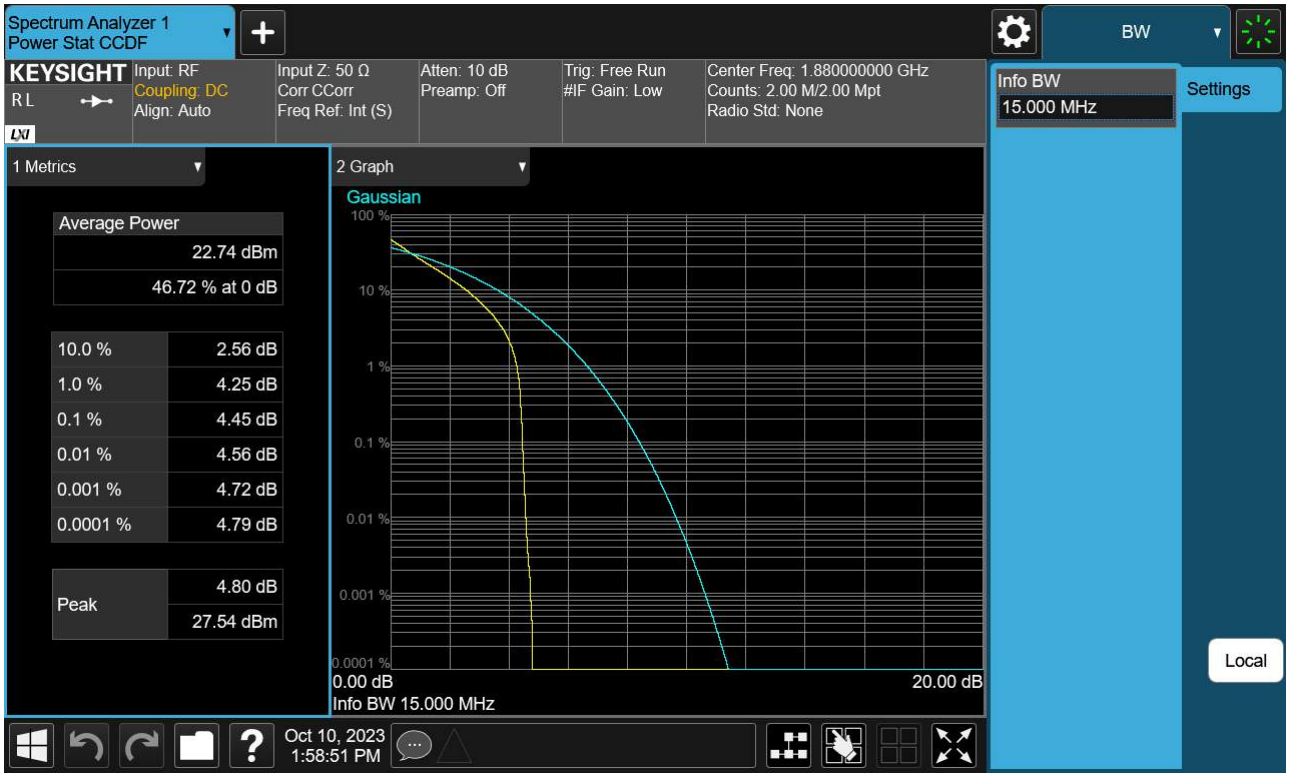
Sub6 n2. PAR Plot (10 M BW Ch.376000 256QAM RB 50_0)



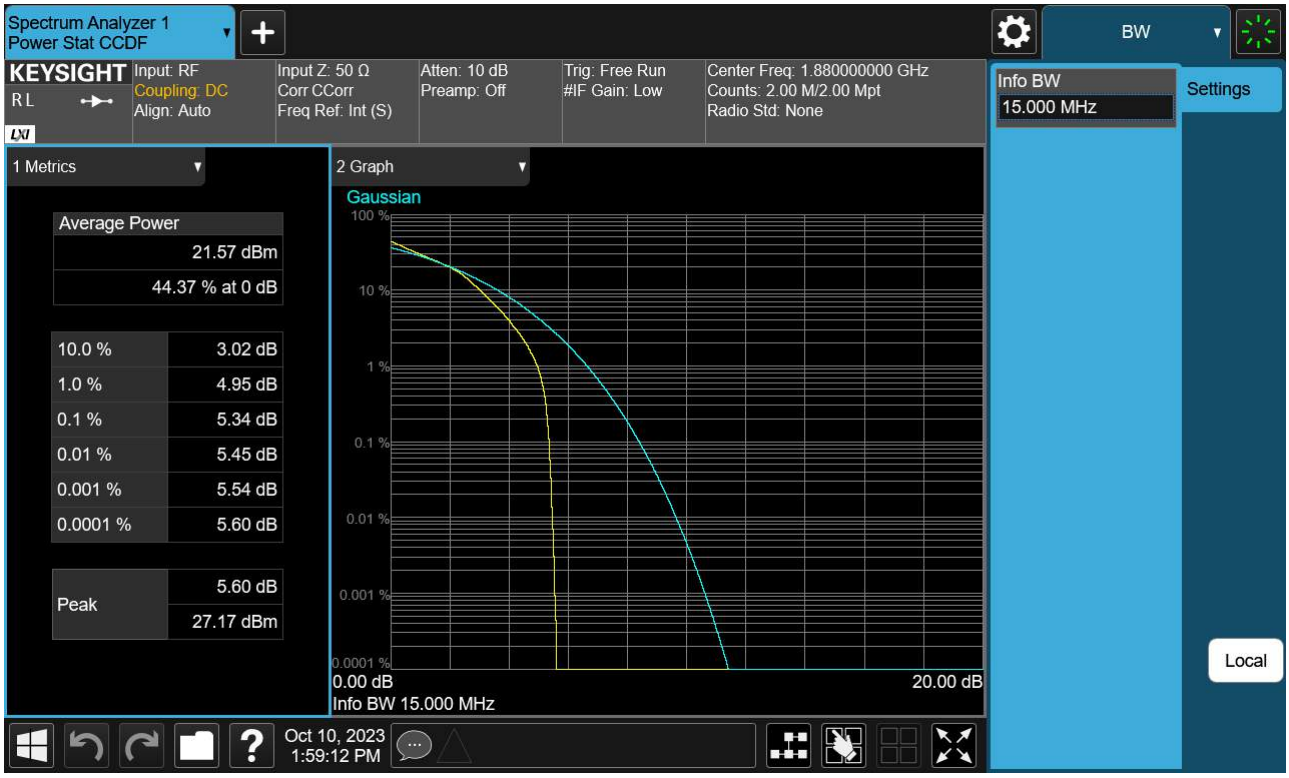
Sub6 n2. PAR Plot (15 M BW Ch.376000 BPSK RB 75_0)



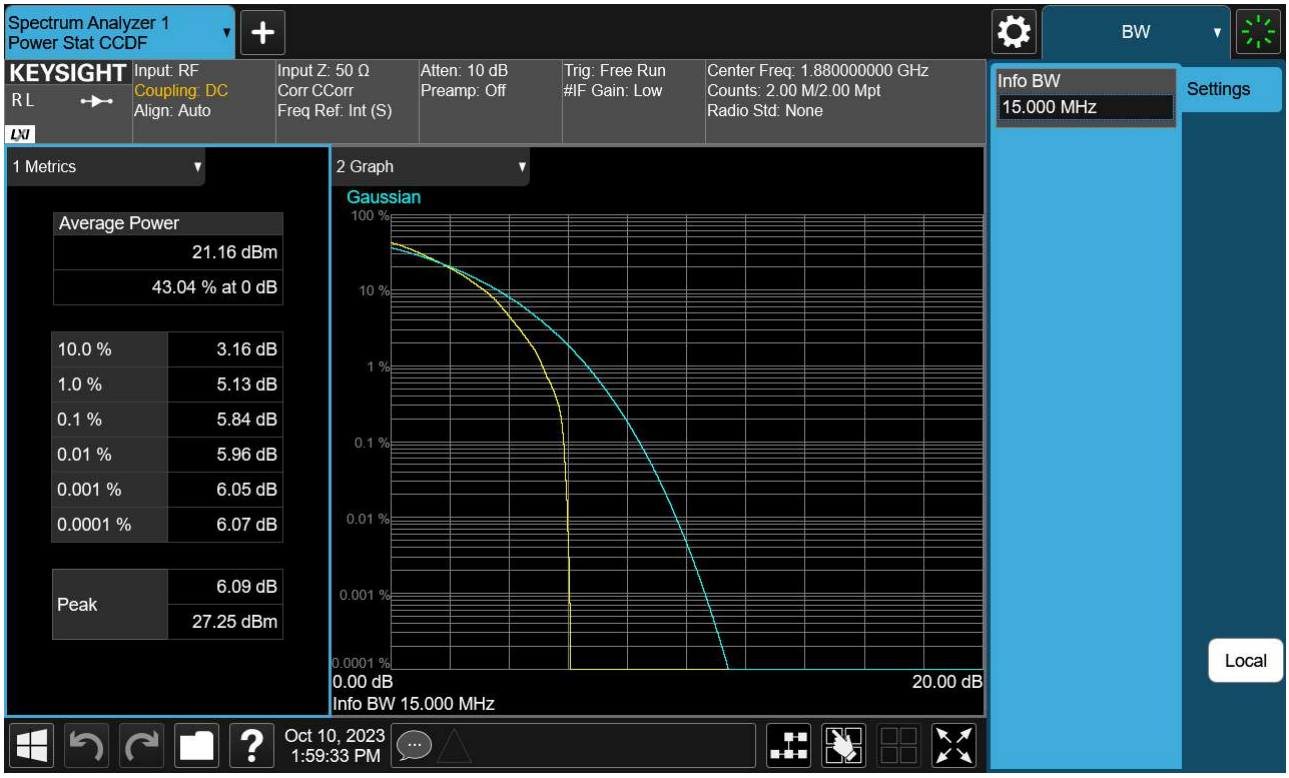
Sub6 n2. PAR Plot (15 M BW Ch.376000 QPSK RB 75_0)



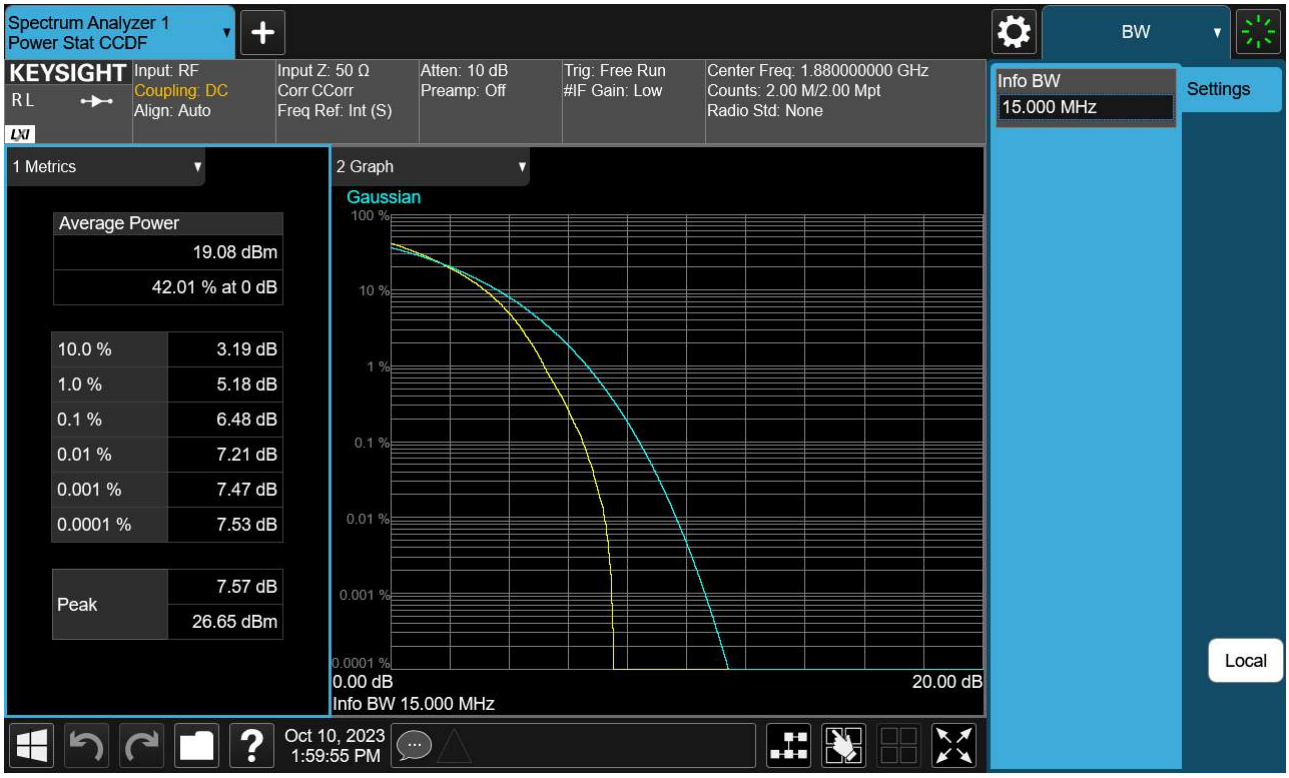
Sub6 n2. PAR Plot (15 M BW Ch.376000 16QAM RB 75_0)



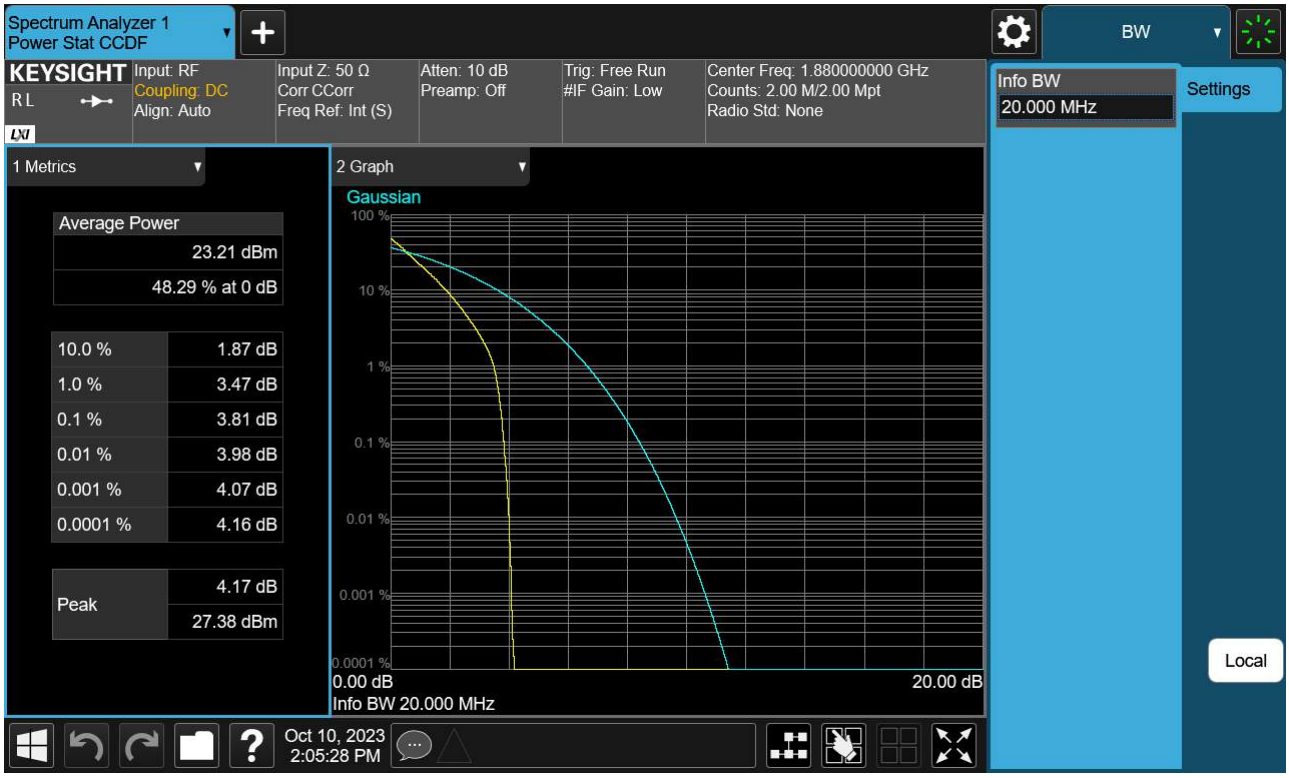
Sub6 n2. PAR Plot (15 M BW Ch.376000 64QAM RB 75_0)



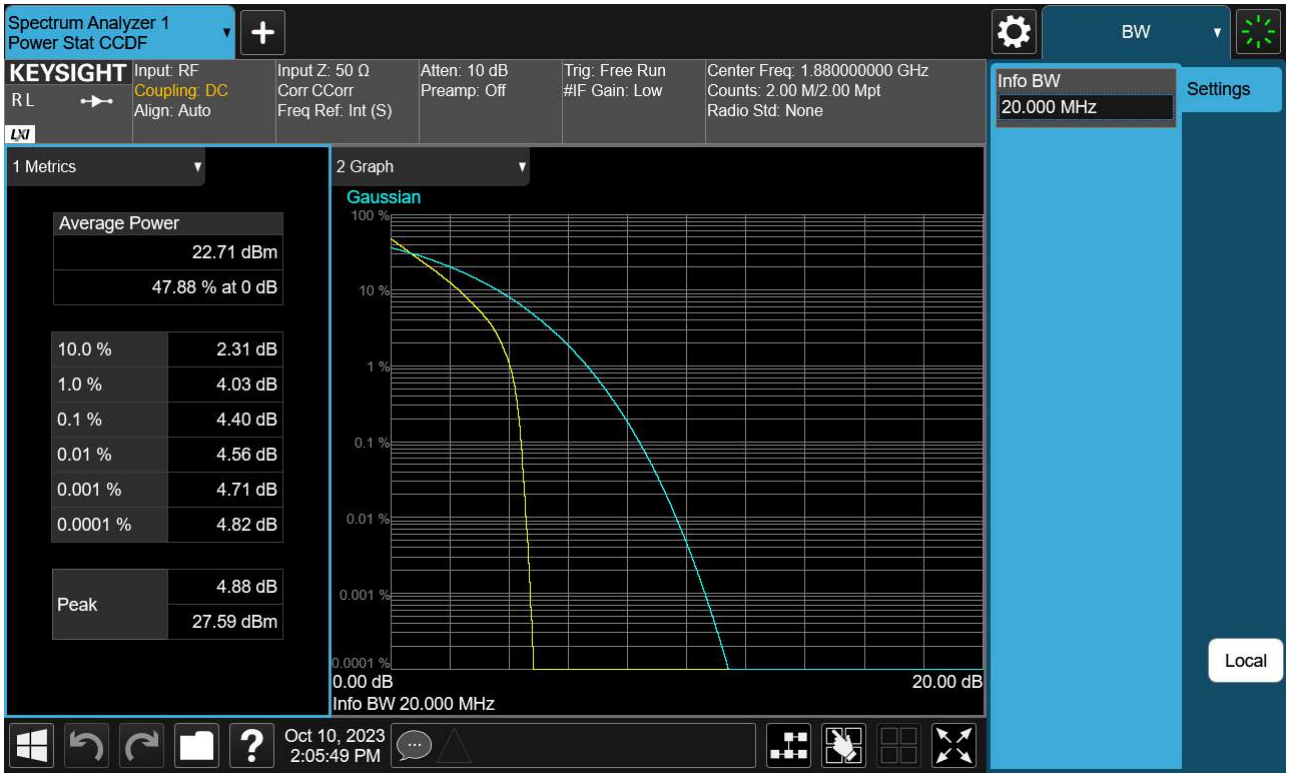
Sub6 n2. PAR Plot (15 M BW Ch.376000 256QAM RB 75_0)



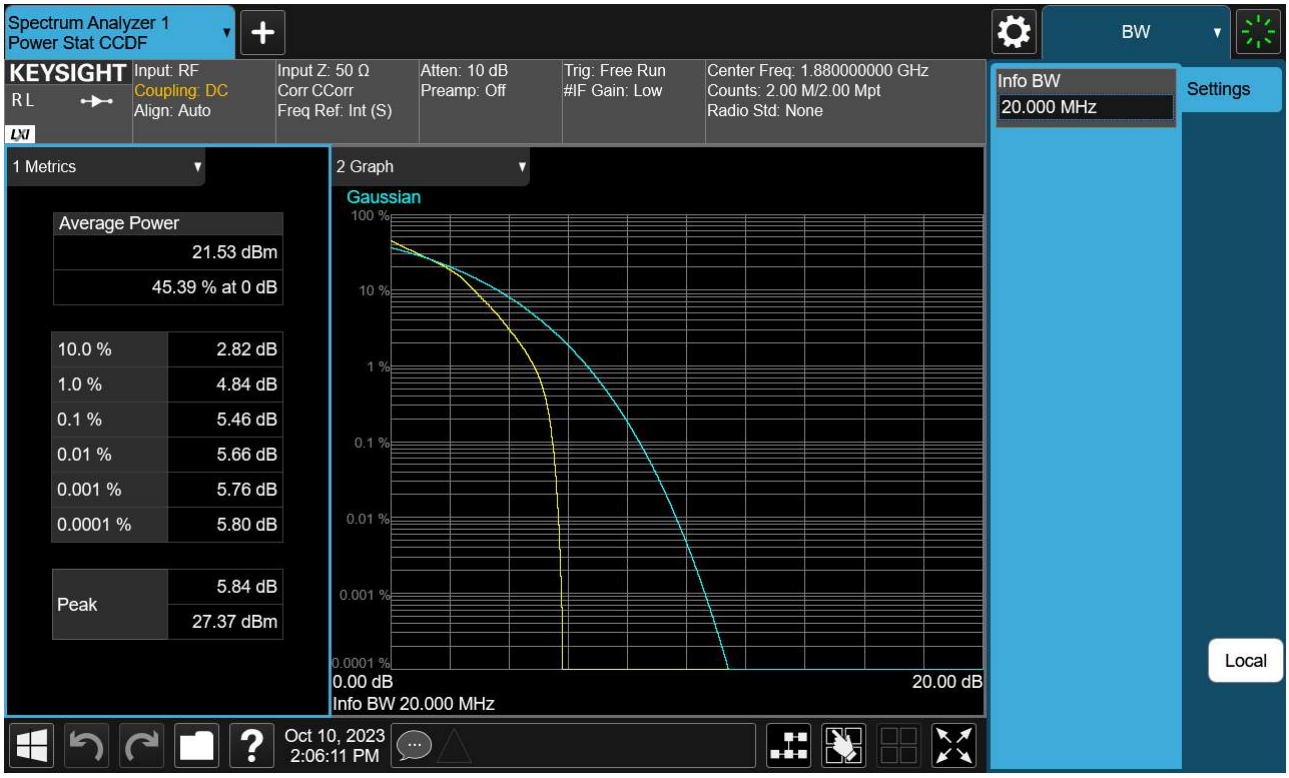
Sub6 n2. PAR Plot (20 M BW Ch.376000 BPSK RB 100_0)



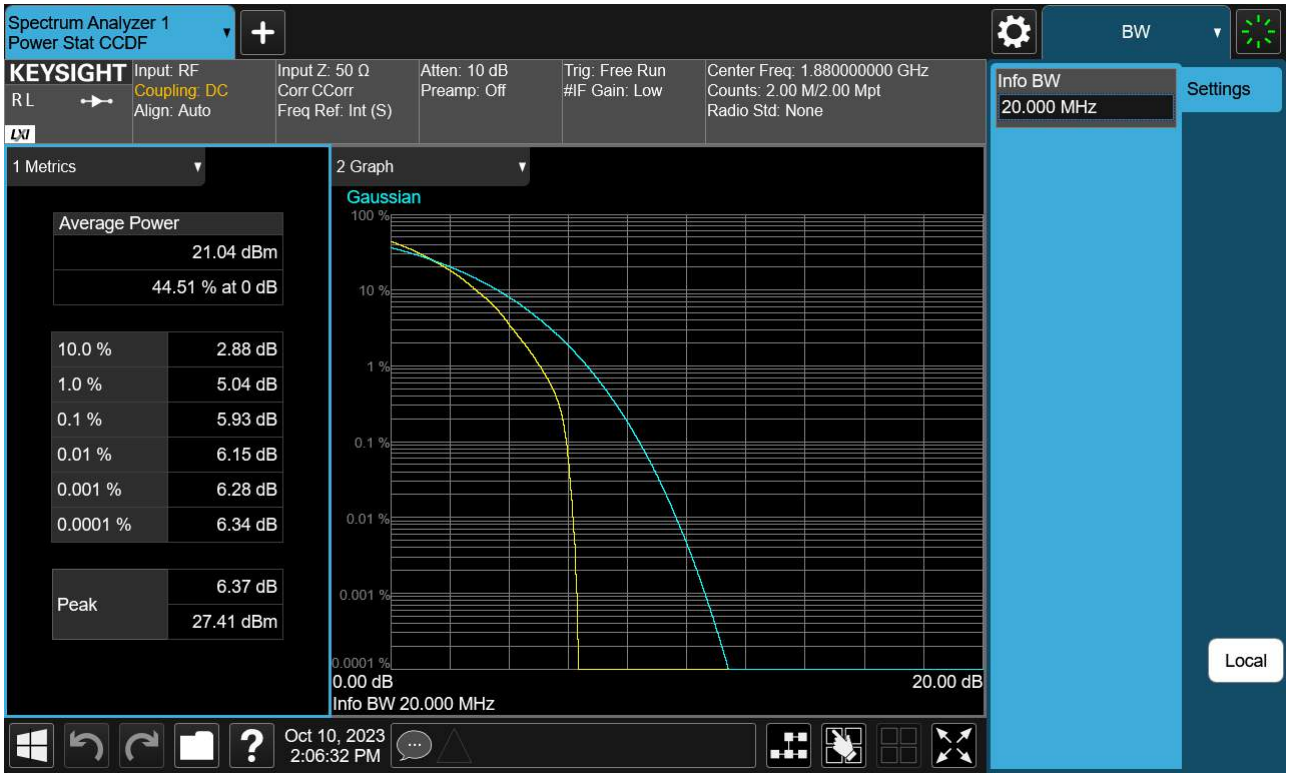
Sub6 n2. PAR Plot (20 M BW Ch.376000 QPSK RB 100_0)



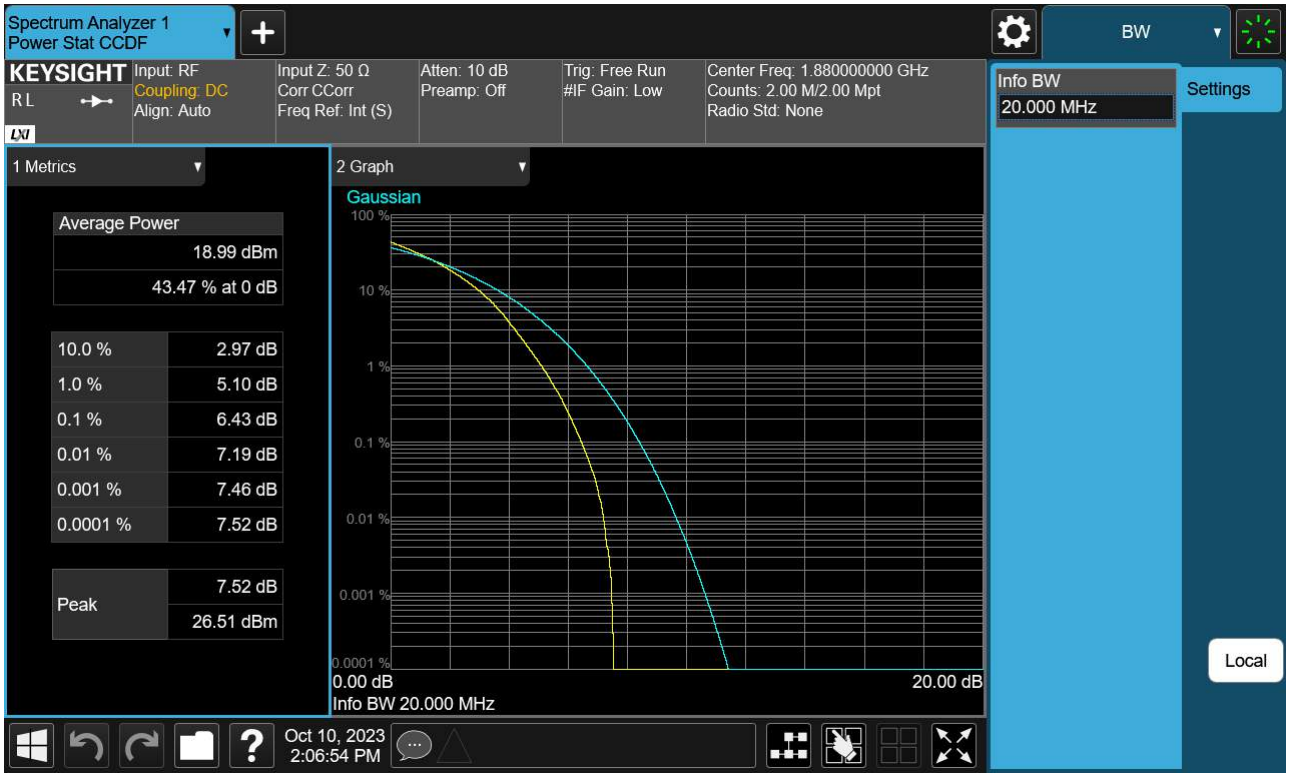
Sub6 n2. PAR Plot (20 M BW Ch.376000 16QAM RB 100_0)



Sub6 n2. PAR Plot (20 M BW Ch.376000 64QAM RB 100_0)



Sub6 n2. PAR Plot (20 M BW Ch.376000 256QAM RB 100_0)



Sub6 n2. PAR Plot (25 M BW Ch.376000 BPSK RB 25_0)