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FCC Sub6 REPORT

Certification

Applicant Name:
SAMSUNG Electronics Co., Ltd.

Address:
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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-FC040

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 n25 (5)	1852.5 - 1912.5	4M52G7D	PI/2 BPSK	0.136	21.34
		4M52G7D	QPSK	0.132	21.22
		4M51W7D	16QAM	0.104	20.15
		4M50W7D	64QAM	0.074	18.72
		4M51W7D	256QAM	0.041	16.13
Sub6 n25 (10)	1855.0 - 1910.0	8M99G7D	PI/2 BPSK	0.135	21.31
		8M99G7D	QPSK	0.132	21.20
		9M00W7D	16QAM	0.100	20.01
		8M95W7D	64QAM	0.075	18.73
		8M99W7D	256QAM	0.040	16.06
Sub6 n25 (15)	1857.5 - 1907.5	13M5G7D	PI/2 BPSK	0.133	21.24
		13M4G7D	QPSK	0.130	21.14
		13M5W7D	16QAM	0.102	20.08
		13M5W7D	64QAM	0.075	18.74
		13M5W7D	256QAM	0.041	16.14
Sub6 n25 (20)	1860.0 - 1905.0	18M0G7D	PI/2 BPSK	0.128	21.08
		17M9G7D	QPSK	0.122	20.88
		18M0W7D	16QAM	0.095	19.79
		18M0W7D	64QAM	0.071	18.50
		17M9W7D	256QAM	0.038	15.78
Sub6 n25 (25)	1862.5 – 1902.5	23M0G7D	PI/2 BPSK	0.129	21.11
		23M0G7D	QPSK	0.127	21.04
		23M0W7D	16QAM	0.100	19.99
		23M0W7D	64QAM	0.073	18.62
		22M9W7D	256QAM	0.041	16.09
Sub6 n25 (30)	1865.0 – 1900.0	28M7G7D	PI/2 BPSK	0.142	21.51
		28M7G7D	QPSK	0.138	21.40
		28M7W7D	16QAM	0.106	20.24
		28M6W7D	64QAM	0.077	18.84
		28M6W7D	256QAM	0.044	16.39
Sub6 n25 (35)	1867.5 – 1897.5	32M2G7D	PI/2 BPSK	0.147	21.68
		32M2G7D	QPSK	0.144	21.57
		32M3W7D	16QAM	0.113	20.54
		32M2W7D	64QAM	0.080	19.03
		32M3W7D	256QAM	0.046	16.63
Sub6 n25 (40)	1870.0 – 1895.0	38M6G7D	PI/2 BPSK	0.145	21.60
		38M6G7D	QPSK	0.140	21.46
		38M7W7D	16QAM	0.111	20.47
		38M6W7D	64QAM	0.081	19.07
		38M6W7D	256QAM	0.046	16.59

Ant F

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n25 (5)	1852.5 - 1912.5	4M60G7D	PI/2 BPSK	0.103	20.14
		4M60G7D	QPSK	0.100	20.02
		4M58W7D	16QAM	0.081	19.09
		4M59W7D	64QAM	0.055	17.38
		4M58W7D	256QAM	0.037	15.63
Sub6 n25 (10)	1855.0 - 1910.0	8M98G7D	PI/2 BPSK	0.103	20.12
		8M97G7D	QPSK	0.101	20.03
		8M96W7D	16QAM	0.080	19.01
		9M01W7D	64QAM	0.054	17.29
		8M97W7D	256QAM	0.034	15.32
Sub6 n25 (15)	1857.5 - 1907.5	13M4G7D	PI/2 BPSK	0.099	19.95
		13M5G7D	QPSK	0.097	19.85
		13M4W7D	16QAM	0.078	18.90
		13M5W7D	64QAM	0.054	17.32
		13M5W7D	256QAM	0.032	15.07
Sub6 n25 (20)	1860.0 - 1905.0	17M9G7D	PI/2 BPSK	0.113	20.54
		17M9G7D	QPSK	0.109	20.37
		17M9W7D	16QAM	0.087	19.39
		17M9W7D	64QAM	0.059	17.69
		17M9W7D	256QAM	0.035	15.47
Sub6 n25 (25)	1862.5 – 1902.5	22M9G7D	PI/2 BPSK	0.117	20.70
		22M9G7D	QPSK	0.113	20.52
		23M0W7D	16QAM	0.091	19.58
		22M9W7D	64QAM	0.061	17.85
		23M0W7D	256QAM	0.038	15.77
Sub6 n25 (30)	1865.0 – 1900.0	28M6G7D	PI/2 BPSK	0.110	20.41
		28M6G7D	QPSK	0.108	20.35
		28M6W7D	16QAM	0.085	19.27
		28M7W7D	64QAM	0.058	17.60
		28M6W7D	256QAM	0.037	15.71
Sub6 n25 (35)	1867.5 – 1897.5	32M2G7D	PI/2 BPSK	0.121	20.82
		32M2G7D	QPSK	0.118	20.73
		32M2W7D	16QAM	0.097	19.89
		32M2W7D	64QAM	0.066	18.21
		32M2W7D	256QAM	0.041	16.17
Sub6 n25 (40)	1870.0 – 1895.0	38M6G7D	PI/2 BPSK	0.126	21.02
		38M6G7D	QPSK	0.122	20.85
		38M7W7D	16QAM	0.096	19.83
		38M6W7D	64QAM	0.067	18.23
		38M6W7D	256QAM	0.043	16.31

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-FC040	October 16, 2023	- First Approval Report

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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 – 1912.5 MHz (Sub6 n25 (5 MHz)) 1855.0 MHz – 1910.0 MHz (Sub6 n25 (10 MHz)) 1857.5 MHz – 1907.5 MHz (Sub6 n25 (15 MHz)) 1860.0 MHz – 1905.0 MHz (Sub6 n25 (20 MHz)) 1862.5 MHz – 1902.5 MHz (Sub6 n25 (25 MHz)) 1865.0 MHz – 1900.0 MHz (Sub6 n25 (30 MHz)) 1867.5 MHz – 1897.5 MHz (Sub6 n25 (35 MHz)) 1870.0 MHz – 1895.0 MHz (Sub6 n25 (40 MHz))
Date(s) of Tests:	August 31, 2023 ~ October 11, 2023
Serial number:	Radiated: R3CW80MAMQT(Ant A), R3CW90B4EDB(Ant F) Conducted: R3CW80MAK7Y (Ant A), 741c314dee0f7ece(Ant F)

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;

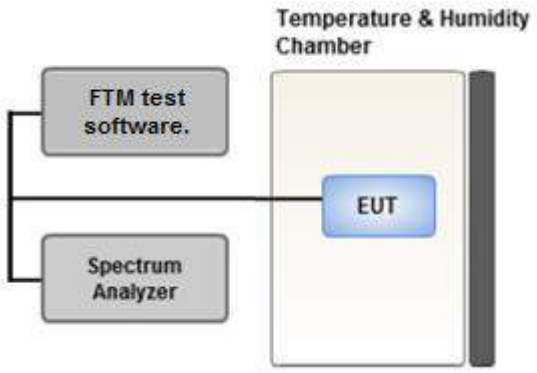
$$Result_{(dBm)} = Pg_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

   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)

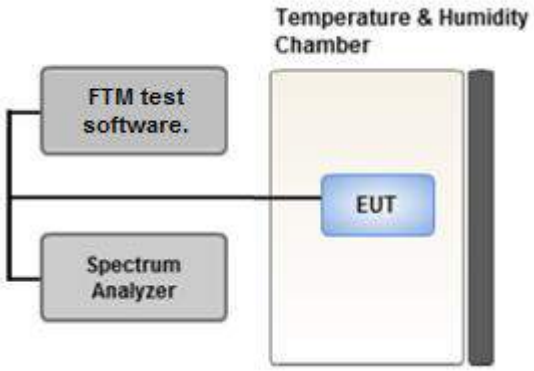
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW ≥ 3 × RBW.

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.

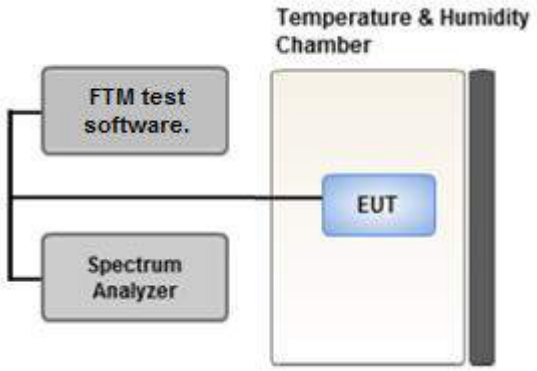
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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

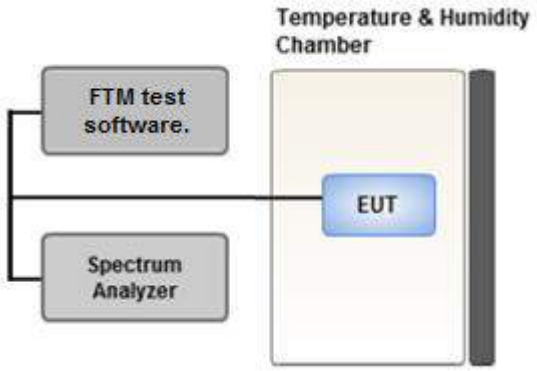
Test Overview

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

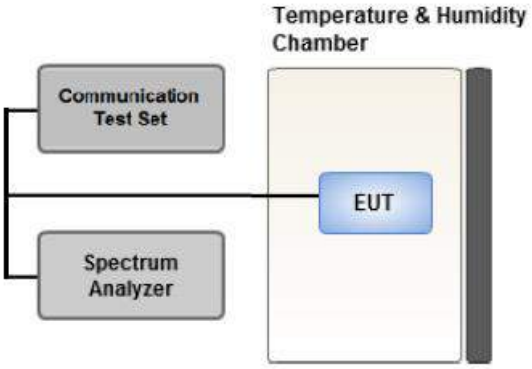
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW > 1 % of the emission bandwidth
4. VBW > 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 2 x Span/RBW
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 : 35 MHz(Ant A), 40 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		Z

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 Modulations 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 n25/ 5 MHz [15 kHz]	PI/2 BPSK	-20.10	13.49	10.00	2.15	H	< 2.00	0.136	21.34	1	12
		QPSK	-20.22	13.37	10.00	2.15	H		0.132	21.22		
		16-QAM	-21.29	12.30	10.00	2.15	H		0.104	20.15		
		64-QAM	-22.72	10.87	10.00	2.15	H		0.074	18.72		
		256-QAM	-25.31	8.28	10.00	2.15	H		0.041	16.13		
1882.5		PI/2 BPSK	-20.79	12.81	10.00	2.21	H		0.115	20.60	1	1
		QPSK	-20.94	12.66	10.00	2.21	H		0.111	20.45		
		16-QAM	-21.87	11.73	10.00	2.21	H		0.090	19.52		
		64-QAM	-23.42	10.18	10.00	2.21	H		0.063	17.97		
		256-QAM	-25.90	7.70	10.00	2.21	H		0.035	15.49		
1912.5		PI/2 BPSK	-22.15	11.87	10.01	2.11	H		0.095	19.77	1	12
		QPSK	-22.30	11.72	10.01	2.11	H		0.092	19.62		
		16-QAM	-23.13	10.89	10.01	2.11	H		0.076	18.79		
		64-QAM	-24.57	9.45	10.01	2.11	H		0.054	17.35		
		256-QAM	-26.97	7.05	10.01	2.11	H		0.031	14.95		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1855.0	Sub6 n25/ 10 MHz [15 kHz]	PI/2 BPSK	-20.13	13.46	10.00	2.15	H	< 2.00	0.135	21.31	1	1
		QPSK	-20.24	13.35	10.00	2.15	H		0.132	21.20		
		16-QAM	-21.43	12.16	10.00	2.15	H		0.100	20.01		
		64-QAM	-22.71	10.88	10.00	2.15	H		0.075	18.73		
		256-QAM	-25.38	8.21	10.00	2.15	H		0.040	16.06		
1882.5		PI/2 BPSK	-20.70	12.90	10.00	2.21	H		0.117	20.69	1	1
		QPSK	-20.83	12.77	10.00	2.21	H		0.114	20.56		
		16-QAM	-21.91	11.69	10.00	2.21	H		0.089	19.48		
		64-QAM	-23.30	10.30	10.00	2.21	H		0.065	18.09		
		256-QAM	-25.85	7.75	10.00	2.21	H		0.036	15.54		
1910.0		PI/2 BPSK	-21.54	12.48	10.01	2.11	H		0.109	20.38	1	26
		QPSK	-21.71	12.31	10.01	2.11	H		0.105	20.21		
		16-QAM	-22.60	11.42	10.01	2.11	H		0.086	19.32		
		64-QAM	-24.22	9.80	10.01	2.11	H		0.059	17.70		
		256-QAM	-26.74	7.28	10.01	2.11	H		0.033	15.18		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1857.5	Sub6 n25/ 15 MHz [15 kHz]	PI/2 BPSK	-20.20	13.39	10.00	2.15	H	< 2.00	0.133	21.24	1	1
		QPSK	-20.30	13.29	10.00	2.15	H		0.130	21.14		
		16-QAM	-21.36	12.23	10.00	2.15	H		0.102	20.08		
		64-QAM	-22.70	10.89	10.00	2.15	H		0.075	18.74		
		256-QAM	-25.30	8.29	10.00	2.15	H		0.041	16.14		
1882.5		PI/2 BPSK	-20.77	12.83	10.00	2.21	H		0.115	20.62	1	1
		QPSK	-20.84	12.76	10.00	2.21	H		0.114	20.55		
		16-QAM	-21.81	11.79	10.00	2.21	H		0.091	19.58		
		64-QAM	-23.15	10.45	10.00	2.21	H		0.067	18.24		
		256-QAM	-25.94	7.66	10.00	2.21	H		0.035	15.45		
1907.5		PI/2 BPSK	-21.14	12.83	10.01	2.13	H		0.118	20.71	1	1
		QPSK	-21.18	12.79	10.01	2.13	H		0.117	20.67		
		16-QAM	-22.27	11.70	10.01	2.13	H		0.091	19.58		
		64-QAM	-23.60	10.37	10.01	2.13	H		0.067	18.25		
		256-QAM	-26.20	7.77	10.01	2.13	H		0.037	15.65		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1860.0	Sub6 n25/ 20 MHz [15 kHz]	PI/2 BPSK	-20.09	13.25	10.00	2.17	H	< 2.00	0.128	21.08	1	1
		QPSK	-20.29	13.05	10.00	2.17	H		0.122	20.88		
		16-QAM	-21.38	11.96	10.00	2.17	H		0.095	19.79		
		64-QAM	-22.67	10.67	10.00	2.17	H		0.071	18.50		
		256-QAM	-25.39	7.95	10.00	2.17	H		0.038	15.78		
1882.5		PI/2 BPSK	-20.54	13.06	10.00	2.21	H		0.122	20.85	1	1
		QPSK	-20.66	12.94	10.00	2.21	H		0.118	20.73		
		16-QAM	-21.72	11.88	10.00	2.21	H		0.093	19.67		
		64-QAM	-23.18	10.42	10.00	2.21	H		0.066	18.21		
		256-QAM	-25.75	7.85	10.00	2.21	H		0.037	15.64		
1905.0		PI/2 BPSK	-20.98	12.99	10.01	2.13	H		0.122	20.87	1	1
		QPSK	-21.02	12.95	10.01	2.13	H		0.121	20.83		
		16-QAM	-22.23	11.74	10.01	2.13	H		0.092	19.62		
		64-QAM	-23.53	10.44	10.01	2.13	H		0.068	18.32		
		256-QAM	-26.21	7.76	10.01	2.13	H		0.037	15.64		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1862.5	Sub6 n25/ 25 MHz [15 kHz]	PI/2 BPSK	-20.06	13.28	10.00	2.17	H	< 2.00	0.129	21.11	1	1
		QPSK	-20.13	13.21	10.00	2.17	H		0.127	21.04		
		16-QAM	-21.18	12.16	10.00	2.17	H		0.100	19.99		
		64-QAM	-22.55	10.79	10.00	2.17	H		0.073	18.62		
		256-QAM	-25.09	8.25	10.00	2.17	H		0.041	16.08		
1882.5		PI/2 BPSK	-20.33	13.27	10.00	2.21	H		0.128	21.06	1	1
		QPSK	-20.55	13.05	10.00	2.21	H		0.121	20.84		
		16-QAM	-21.57	12.03	10.00	2.21	H		0.096	19.82		
		64-QAM	-22.88	10.72	10.00	2.21	H		0.071	18.51		
		256-QAM	-25.44	8.16	10.00	2.21	H		0.039	15.95		
1902.5		PI/2 BPSK	-20.67	13.24	10.01	2.15	H		0.129	21.10	1	1
		QPSK	-20.78	13.13	10.01	2.15	H		0.126	20.99		
		16-QAM	-21.84	12.07	10.01	2.15	H		0.098	19.93		
		64-QAM	-23.20	10.71	10.01	2.15	H		0.072	18.57		
		256-QAM	-25.68	8.23	10.01	2.15	H		0.041	16.09		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1865.0	Sub6 n25/ 30 MHz [15 kHz]	PI/2 BPSK	-19.93	13.70	10.00	2.19	H	< 2.00	0.142	21.51	1	1
		QPSK	-20.04	13.59	10.00	2.19	H		0.138	21.40		
		16-QAM	-21.20	12.43	10.00	2.19	H		0.106	20.24		
		64-QAM	-22.60	11.03	10.00	2.19	H		0.077	18.84		
		256-QAM	-25.05	8.58	10.00	2.19	H		0.044	16.39		
1882.5		PI/2 BPSK	-20.10	13.50	10.00	2.21	H		0.135	21.29	1	1
		QPSK	-20.23	13.37	10.00	2.21	H		0.131	21.16		
		16-QAM	-21.36	12.24	10.00	2.21	H		0.101	20.03		
		64-QAM	-22.86	10.74	10.00	2.21	H		0.071	18.53		
		256-QAM	-25.24	8.36	10.00	2.21	H		0.041	16.15		
1900.0		PI/2 BPSK	-20.41	13.50	10.01	2.15	H		0.137	21.36	1	1
		QPSK	-20.49	13.42	10.01	2.15	H		0.134	21.28		
		16-QAM	-21.66	12.25	10.01	2.15	H		0.103	20.11		
		64-QAM	-23.13	10.78	10.01	2.15	H		0.073	18.64		
		256-QAM	-25.48	8.43	10.01	2.15	H		0.043	16.29		

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 n25/ 35 MHz [15 kHz]	PI/2 BPSK	-20.02	13.89	10.00	2.21	H	< 2.00	0.147	21.68	1	1
		QPSK	-20.13	13.78	10.00	2.21	H		0.144	21.57		
		16-QAM	-21.16	12.75	10.00	2.21	H		0.113	20.54		
		64-QAM	-22.67	11.24	10.00	2.21	H		0.080	19.03		
		256-QAM	-25.07	8.84	10.00	2.21	H		0.046	16.63		
1882.5		PI/2 BPSK	-20.24	13.36	10.00	2.21	H		0.130	21.15	1	1
		QPSK	-20.29	13.31	10.00	2.21	H		0.129	21.10		
		16-QAM	-21.25	12.35	10.00	2.21	H		0.103	20.14		
		64-QAM	-22.76	10.84	10.00	2.21	H		0.073	18.63		
		256-QAM	-25.20	8.40	10.00	2.21	H		0.042	16.19		
1897.5		PI/2 BPSK	-20.57	13.51	10.01	2.16	H		0.137	21.36	1	1
		QPSK	-20.74	13.34	10.01	2.16	H		0.132	21.19		
		16-QAM	-21.75	12.33	10.01	2.16	H		0.104	20.18		
		64-QAM	-23.22	10.86	10.01	2.16	H		0.074	18.71		
		256-QAM	-25.57	8.51	10.01	2.16	H		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
1870.0	Sub6 n25/ 40 MHz [15 kHz]	PI/2 BPSK	-20.10	13.81	10.00	2.21	H	< 2.00	0.145	21.60	1	1
		QPSK	-20.24	13.67	10.00	2.21	H		0.140	21.46		
		16-QAM	-21.23	12.68	10.00	2.21	H		0.111	20.47		
		64-QAM	-22.63	11.28	10.00	2.21	H		0.081	19.07		
		256-QAM	-25.11	8.80	10.00	2.21	H		0.046	16.59		
1882.5		PI/2 BPSK	-20.17	13.43	10.00	2.21	H		0.133	21.22	1	1
		QPSK	-20.28	13.32	10.00	2.21	H		0.129	21.11		
		16-QAM	-21.27	12.33	10.00	2.21	H		0.103	20.12		
		64-QAM	-22.85	10.75	10.00	2.21	H		0.072	18.54		
		256-QAM	-25.11	8.49	10.00	2.21	H		0.043	16.28		
1895.0		PI/2 BPSK	-20.56	13.52	10.01	2.16	H		0.137	21.37	1	1
		QPSK	-20.64	13.44	10.01	2.16	H		0.135	21.29		
		16-QAM	-21.71	12.37	10.01	2.16	H		0.105	20.22		
		64-QAM	-23.01	11.07	10.01	2.16	H		0.078	18.92		
		256-QAM	-25.53	8.55	10.01	2.16	H		0.044	16.40		

8.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N25
▣ 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	-55.66	11.40	-56.78	3.12	H	-48.50	-13.00	1	1
	5 602.50	-57.71	11.90	-52.71	3.79	H	-44.60	-13.00		
	7 470.00	-64.18	10.90	-49.87	4.49	H	-43.46	-13.00		
	9 337.50	-58.95	10.80	-44.14	5.10	H	-38.44	-13.00		
	11 205.00	-64.39	11.40	-45.52	5.58	H	-39.70	-13.00		
376500 (1882.5)	3 765.00	-59.70	11.30	-59.77	3.09	H	-51.56	-13.00	1	1
	5 647.50	-55.54	11.85	-50.12	3.89	H	-42.16	-13.00		
	7 530.00	-64.11	11.10	-49.64	4.50	H	-43.04	-13.00		
	9 412.50	-61.57	10.80	-46.24	5.07	H	-40.51	-13.00		
	11 295.00	-63.61	11.35	-45.28	5.64	H	-39.57	-13.00		
379500 (1897.5)	3 795.00	-59.12	11.20	-59.48	3.14	H	-51.42	-13.00	1	1
	5 692.50	-56.57	11.75	-50.42	3.88	H	-42.55	-13.00		
	7 590.00	-65.10	11.10	-51.20	4.54	H	-44.64	-13.00		
	9 487.50	-63.90	10.90	-48.63	5.11	H	-42.84	-13.00		
	11 385.00	-64.72	11.30	-44.59	5.68	H	-38.97	-13.00		

8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n25	5 MHz	1882.5	BPSK	25	0	4.17
			QPSK			4.66
			16-QAM			5.51
			64-QAM			6.12
			256-QAM			6.61
	10 MHz		BPSK	50		3.98
			QPSK			4.52
			16-QAM			5.49
			64-QAM			5.91
			256-QAM			6.48
	15 MHz		BPSK	75		3.89
			QPSK			4.42
			16-QAM			5.30
			64-QAM			5.84
			256-QAM			6.61
	20 MHz		BPSK	100		3.97
			QPSK			4.50
			16-QAM			5.43
			64-QAM			5.83
			256-QAM			6.71

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n25	25 MHz	1882.5	BPSK	128	0	3.93
			QPSK			4.52
			16-QAM			5.65
			64-QAM			5.99
			256-QAM			6.74
	30 MHz		BPSK	160		4.04
			QPSK			4.56
			16-QAM			5.44
			64-QAM			5.94
			256-QAM			6.60
	35 MHz		BPSK	180		4.12
			QPSK			4.61
			16-QAM			5.45
			64-QAM			5.93
			256-QAM			6.65
	40 MHz		BPSK	216		3.85
			QPSK			4.47
			16-QAM			5.39
			64-QAM			5.87
			256-QAM			6.54

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 n25	5 MHz	1882.5	BPSK	25	0	4.5194
			QPSK			4.5198
			16-QAM			4.5127
			64-QAM			4.5023
			256-QAM			4.5116
	10 MHz		BPSK	50		8.9865
			QPSK			8.9855
			16-QAM			9.0035
			64-QAM			8.9511
			256-QAM			8.9894
	15 MHz		BPSK	75		13.477
			QPSK			13.441
			16-QAM			13.471
			64-QAM			13.449
			256-QAM			13.465
	20 MHz		BPSK	100		17.956
			QPSK			17.901
			16-QAM			17.983
			64-QAM			17.949
			256-QAM			17.939

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n25	25 MHz	1882.5	BPSK	128	0	22.985
			QPSK			23.014
			16-QAM			22.986
			64-QAM			22.979
			256-QAM			22.913
	30 MHz		BPSK	160		28.654
			QPSK			28.688
			16-QAM			28.683
			64-QAM			28.635
			256-QAM			28.644
	35 MHz		BPSK	180		32.215
			QPSK			32.242
			16-QAM			32.290
			64-QAM			32.208
			256-QAM			32.310
	40 MHz		BPSK	216		38.599
			QPSK			38.578
			16-QAM			38.650
			64-QAM			38.626
			256-QAM			38.626

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 n25	5	1852.5	4.0718	30.200	-70.822	-40.622	-13.00
		1882.5	5.7418	30.815	-70.916	-40.101	
		1912.5	4.3171	30.200	-70.574	-40.374	
	10	1855.0	3.7354	30.200	-71.203	-41.003	
		1882.5	3.7558	30.200	-70.610	-40.410	
		1910.0	4.8979	30.200	-70.576	-40.376	
	15	1857.5	7.4427	30.815	-70.835	-40.020	
		1882.5	8.3031	30.815	-70.871	-40.056	
		1907.5	9.1421	30.815	-70.333	-39.518	
	20	1860.0	3.8041	30.200	-70.407	-40.207	
		1882.5	8.2732	30.815	-70.638	-39.823	
		1905.0	8.8679	30.815	-70.353	-39.538	
	25	1862.5	3.7842	30.200	-70.899	-40.699	
		1882.5	9.4158	30.815	-70.605	-39.790	
		1902.5	5.1700	30.815	-71.173	-40.358	
	30	1865.0	3.9731	30.200	-70.263	-40.063	
		1882.5	4.0110	30.200	-70.995	-40.795	
		1900.0	9.6884	30.815	-70.771	-39.956	
	35	1867.5	8.2797	30.815	-70.238	-39.423	
		1882.5	8.2737	30.815	-70.698	-39.883	
		1897.5	8.8799	30.815	-71.457	-40.642	
	40	1870.0	8.0369	30.815	-70.620	-39.805	
		1882.5	9.9427	30.815	-70.469	-39.654	
		1895.0	4.0075	30.200	-70.842	-40.642	

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 499 998	0.0	0.000 000	0.000
	100 %	-30	1852 499 996	-2.4	0.000 000	-0.001
	100 %	-20	1852 499 998	-0.3	0.000 000	0.000
	100 %	-10	1852 499 996	-1.9	0.000 000	-0.001
	100 %	0	1852 499 998	-0.3	0.000 000	0.000
	100 %	+10	1852 499 996	-2.4	0.000 000	-0.001
	100 %	+30	1852 499 993	-5.1	0.000 000	-0.003
	100 %	+40	1852 499 995	-3.0	0.000 000	-0.002
	100 %	+50	1852 499 995	-3.0	0.000 000	-0.002
	Batt. Endpoint	+20	1852 499 994	-3.4	0.000 000	-0.002
1912.5	100 %	+20(Ref)	1912 499 995	0.0	0.000 000	0.000
	100 %	-30	1912 499 992	-3.2	0.000 000	-0.002
	100 %	-20	1912 499 989	-5.7	0.000 000	-0.003
	100 %	-10	1912 499 992	-3.4	0.000 000	-0.002
	100 %	0	1912 499 991	-4.4	0.000 000	-0.002
	100 %	+10	1912 499 993	-2.2	0.000 000	-0.001
	100 %	+30	1912 499 991	-3.6	0.000 000	-0.002
	100 %	+40	1912 499 994	-1.2	0.000 000	-0.001
	100 %	+50	1912 499 993	-2.0	0.000 000	-0.001
	Batt. Endpoint	+20	1912 499 992	-3.1	0.000 000	-0.002

▣ BandWidth: 10 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1855.0	100 %	+20(Ref)	1854 999 998	0.0	0.000 000	0.000
	100 %	-30	1854 999 997	-1.2	0.000 000	-0.001
	100 %	-20	1854 999 993	-5.2	0.000 000	-0.003
	100 %	-10	1854 999 997	-1.4	0.000 000	-0.001
	100 %	0	1854 999 993	-4.6	0.000 000	-0.002
	100 %	+10	1854 999 996	-2.1	0.000 000	-0.001
	100 %	+30	1854 999 993	-5.4	0.000 000	-0.003
	100 %	+40	1854 999 995	-2.6	0.000 000	-0.001
	100 %	+50	1854 999 993	-5.2	0.000 000	-0.003
	Batt. Endpoint	+20	1854 999 993	-5.2	0.000 000	-0.003
1910.0	100 %	+20(Ref)	1910 000 003	0.0	0.000 000	0.000
	100 %	-30	1910 000 007	4.0	0.000 000	0.002
	100 %	-20	1910 000 005	1.8	0.000 000	0.001
	100 %	-10	1910 000 009	5.9	0.000 000	0.003
	100 %	0	1910 000 007	4.0	0.000 000	0.002
	100 %	+10	1910 000 008	4.6	0.000 000	0.002
	100 %	+30	1910 000 008	5.2	0.000 000	0.003
	100 %	+40	1910 000 006	2.9	0.000 000	0.002
	100 %	+50	1910 000 004	1.2	0.000 000	0.001
	Batt. Endpoint	+20	1910 000 008	4.8	0.000 000	0.002

▣ 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 500 003	-0.2	0.000 000	0.000
	100 %	-20	1857 500 005	2.0	0.000 000	0.001
	100 %	-10	1857 500 002	-0.9	0.000 000	0.000
	100 %	0	1857 500 005	2.2	0.000 000	0.001
	100 %	+10	1857 500 001	-1.9	0.000 000	-0.001
	100 %	+30	1857 500 004	0.5	0.000 000	0.000
	100 %	+40	1857 500 003	0.3	0.000 000	0.000
	100 %	+50	1857 500 004	0.6	0.000 000	0.000
	Batt. Endpoint	+20	1857 500 004	0.6	0.000 000	0.000
1907.5	100 %	+20(Ref)	1907 499 999	0.0	0.000 000	0.000
	100 %	-30	1907 500 001	2.4	0.000 000	0.001
	100 %	-20	1907 499 999	0.1	0.000 000	0.000
	100 %	-10	1907 500 000	0.5	0.000 000	0.000
	100 %	0	1907 499 999	-0.6	0.000 000	0.000
	100 %	+10	1907 500 000	1.3	0.000 000	0.001
	100 %	+30	1907 499 999	-0.4	0.000 000	0.000
	100 %	+40	1907 500 000	1.3	0.000 000	0.001
	100 %	+50	1907 499 999	0.1	0.000 000	0.000
	Batt. Endpoint	+20	1907 500 001	1.9	0.000 000	0.001

▣ 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 999 997	0.0	0.000 000	0.000
	100 %	-30	1859 999 993	-3.7	0.000 000	-0.002
	100 %	-20	1859 999 994	-3.1	0.000 000	-0.002
	100 %	-10	1859 999 994	-2.7	0.000 000	-0.001
	100 %	0	1859 999 994	-2.4	0.000 000	-0.001
	100 %	+10	1859 999 993	-3.3	0.000 000	-0.002
	100 %	+30	1859 999 993	-4.0	0.000 000	-0.002
	100 %	+40	1859 999 992	-4.2	0.000 000	-0.002
	100 %	+50	1859 999 996	-1.0	0.000 000	-0.001
	Batt. Endpoint	+20	1859 999 991	-5.5	0.000 000	-0.003
1905.0	100 %	+20(Ref)	1904 999 995	0.0	0.000 000	0.000
	100 %	-30	1904 999 992	-3.2	0.000 000	-0.002
	100 %	-20	1904 999 993	-2.1	0.000 000	-0.001
	100 %	-10	1904 999 991	-4.1	0.000 000	-0.002
	100 %	0	1904 999 992	-2.9	0.000 000	-0.002
	100 %	+10	1904 999 993	-2.8	0.000 000	-0.001
	100 %	+30	1904 999 994	-1.7	0.000 000	-0.001
	100 %	+40	1904 999 993	-2.9	0.000 000	-0.002
	100 %	+50	1904 999 991	-4.2	0.000 000	-0.002
	Batt. Endpoint	+20	1904 999 992	-3.5	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 500 006	0.0	0.000 000	0.000
	100 %	-30	1862 500 013	6.3	0.000 000	0.003
	100 %	-20	1862 500 013	6.9	0.000 000	0.004
	100 %	-10	1862 500 011	4.5	0.000 000	0.002
	100 %	0	1862 500 014	7.8	0.000 000	0.004
	100 %	+10	1862 500 014	7.7	0.000 000	0.004
	100 %	+30	1862 500 014	7.7	0.000 000	0.004
	100 %	+40	1862 500 011	4.7	0.000 000	0.002
	100 %	+50	1862 500 012	5.3	0.000 000	0.003
	Batt. Endpoint	+20	1862 500 012	5.5	0.000 000	0.003
1902.5	100 %	+20(Ref)	1902 500 011	0.0	0.000 000	0.000
	100 %	-30	1902 500 022	11.1	0.000 001	0.006
	100 %	-20	1902 500 022	11.3	0.000 001	0.006
	100 %	-10	1902 500 022	11.6	0.000 001	0.006
	100 %	0	1902 500 022	11.4	0.000 001	0.006
	100 %	+10	1902 500 022	11.8	0.000 001	0.006
	100 %	+30	1902 500 020	9.0	0.000 000	0.005
	100 %	+40	1902 500 019	8.7	0.000 000	0.005
	100 %	+50	1902 500 023	11.9	0.000 001	0.006
	Batt. Endpoint	+20	1902 500 023	12.0	0.000 001	0.006

▣ BandWidth: 30 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1865.0	100 %	+20(Ref)	1865 000 007	0.0	0.000 000	0.000
	100 %	-30	1865 000 015	8.0	0.000 000	0.004
	100 %	-20	1865 000 018	10.5	0.000 001	0.006
	100 %	-10	1865 000 016	8.2	0.000 000	0.004
	100 %	0	1865 000 013	5.7	0.000 000	0.003
	100 %	+10	1865 000 015	7.6	0.000 000	0.004
	100 %	+30	1865 000 015	7.9	0.000 000	0.004
	100 %	+40	1865 000 017	10.0	0.000 001	0.005
	100 %	+50	1865 000 014	7.0	0.000 000	0.004
	Batt. Endpoint	+20	1865 000 011	3.9	0.000 000	0.002
1900.0	100 %	+20(Ref)	1900 000 001	0.0	0.000 000	0.000
	100 %	-30	1900 000 002	1.0	0.000 000	0.001
	100 %	-20	1900 000 003	2.0	0.000 000	0.001
	100 %	-10	1900 000 003	2.6	0.000 000	0.001
	100 %	0	1900 000 001	0.1	0.000 000	0.000
	100 %	+10	1900 000 001	0.7	0.000 000	0.000
	100 %	+30	1899 999 999	-1.8	0.000 000	-0.001
	100 %	+40	1900 000 003	2.4	0.000 000	0.001
	100 %	+50	1900 000 001	0.4	0.000 000	0.000
	Batt. Endpoint	+20	1900 000 001	0.8	0.000 000	0.000

▣ 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 500 006	0.0	0.000 000	0.000
	100 %	-30	1867 500 012	6.0	0.000 000	0.003
	100 %	-20	1867 500 012	6.1	0.000 000	0.003
	100 %	-10	1867 500 010	4.1	0.000 000	0.002
	100 %	0	1867 500 014	7.5	0.000 000	0.004
	100 %	+10	1867 500 014	7.7	0.000 000	0.004
	100 %	+30	1867 500 014	7.7	0.000 000	0.004
	100 %	+40	1867 500 011	4.9	0.000 000	0.003
	100 %	+50	1867 500 011	5.2	0.000 000	0.003
	Batt. Endpoint	+20	1867 500 013	6.9	0.000 000	0.004
1897.5	100 %	+20(Ref)	1897 500 006	0.0	0.000 000	0.000
	100 %	-30	1897 500 014	8.0	0.000 000	0.004
	100 %	-20	1897 500 017	10.7	0.000 001	0.006
	100 %	-10	1897 500 015	9.2	0.000 000	0.005
	100 %	0	1897 500 012	6.0	0.000 000	0.003
	100 %	+10	1897 500 013	7.1	0.000 000	0.004
	100 %	+30	1897 500 014	7.4	0.000 000	0.004
	100 %	+40	1897 500 016	9.4	0.000 000	0.005
	100 %	+50	1897 500 013	6.9	0.000 000	0.004
	Batt. Endpoint	+20	1897 500 016	10.1	0.000 001	0.005

▣ 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 000 004	0.0	0.000 000	0.000
	100 %	-30	1870 000 007	3.0	0.000 000	0.002
	100 %	-20	1870 000 007	3.1	0.000 000	0.002
	100 %	-10	1870 000 007	3.1	0.000 000	0.002
	100 %	0	1870 000 006	2.7	0.000 000	0.001
	100 %	+10	1870 000 006	2.7	0.000 000	0.001
	100 %	+30	1870 000 007	2.9	0.000 000	0.002
	100 %	+40	1870 000 009	5.1	0.000 000	0.003
	100 %	+50	1870 000 005	1.4	0.000 000	0.001
	Batt. Endpoint	+20	1870 000 009	5.1	0.000 000	0.003
1895.0	100 %	+20(Ref)	1895 000 008	0.0	0.000 000	0.000
	100 %	-30	1895 000 016	7.6	0.000 000	0.004
	100 %	-20	1895 000 017	8.6	0.000 000	0.005
	100 %	-10	1895 000 015	6.3	0.000 000	0.003
	100 %	0	1895 000 018	9.4	0.000 000	0.005
	100 %	+10	1895 000 015	6.4	0.000 000	0.003
	100 %	+30	1895 000 016	7.3	0.000 000	0.004
	100 %	+40	1895 000 020	11.9	0.000 001	0.006
	100 %	+50	1895 000 016	7.4	0.000 000	0.004
	Batt. Endpoint	+20	1895 000 017	8.3	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 n25/ 5 MHz [15 kHz]	PI/2 BPSK	-21.56	12.03	10.00	2.15	V	< 2.00	0.097	19.88	1	12
		QPSK	-21.67	11.92	10.00	2.15	V		0.095	19.77		
		16-QAM	-22.50	11.09	10.00	2.15	V		0.078	18.94		
		64-QAM	-24.17	9.42	10.00	2.15	V		0.053	17.27		
		256-QAM	-25.81	7.78	10.00	2.15	V		0.037	15.63		
1882.5		PI/2 BPSK	-21.25	12.35	10.00	2.21	V		0.103	20.14	1	23
		QPSK	-21.37	12.23	10.00	2.21	V		0.100	20.02		
		16-QAM	-22.30	11.30	10.00	2.21	V		0.081	19.09		
		64-QAM	-24.01	9.59	10.00	2.21	V		0.055	17.38		
		256-QAM	-26.26	7.34	10.00	2.21	V		0.033	15.13		
1912.5		PI/2 BPSK	-23.10	10.92	10.01	2.11	V		0.076	18.82	1	1
		QPSK	-23.36	10.66	10.01	2.11	V		0.072	18.56		
		16-QAM	-24.27	9.75	10.01	2.11	V		0.058	17.65		
		64-QAM	-26.05	7.97	10.01	2.11	V		0.039	15.87		
		256-QAM	-27.89	6.13	10.01	2.11	V		0.025	14.03		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1855.0	Sub6 n25/ 10 MHz [15 kHz]	PI/2 BPSK	-21.60	11.99	10.00	2.15	V	< 2.00	0.096	19.84	1	1
		QPSK	-21.84	11.75	10.00	2.15	V		0.091	19.60		
		16-QAM	-22.75	10.84	10.00	2.15	V		0.074	18.69		
		64-QAM	-24.15	9.44	10.00	2.15	V		0.054	17.29		
		256-QAM	-26.12	7.47	10.00	2.15	V		0.034	15.32		
1882.5		PI/2 BPSK	-21.27	12.33	10.00	2.21	V		0.103	20.12	1	50
		QPSK	-21.36	12.24	10.00	2.21	V		0.101	20.03		
		16-QAM	-22.38	11.22	10.00	2.21	V		0.080	19.01		
		64-QAM	-24.12	9.48	10.00	2.21	V		0.053	17.27		
		256-QAM	-26.39	7.21	10.00	2.21	V		0.032	15.00		
1910.0		PI/2 BPSK	-22.34	11.68	10.01	2.11	V		0.091	19.58	1	1
		QPSK	-22.37	11.65	10.01	2.11	V		0.090	19.55		
		16-QAM	-23.48	10.54	10.01	2.11	V		0.070	18.44		
		64-QAM	-25.28	8.74	10.01	2.11	V		0.046	16.64		
		256-QAM	-27.54	6.48	10.01	2.11	V		0.027	14.38		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1857.5	Sub6 n25/ 15 MHz [15 kHz]	PI/2 BPSK	-21.87	11.72	10.00	2.15	V	< 2.00	0.091	19.57	1	1
		QPSK	-22.07	11.52	10.00	2.15	V		0.087	19.37		
		16-QAM	-22.97	10.62	10.00	2.15	V		0.070	18.47		
		64-QAM	-24.53	9.06	10.00	2.15	V		0.049	16.91		
		256-QAM	-26.82	6.77	10.00	2.15	V		0.029	14.62		
1882.5		PI/2 BPSK	-21.44	12.16	10.00	2.21	V		0.099	19.95	1	39
		QPSK	-21.54	12.06	10.00	2.21	V		0.097	19.85		
		16-QAM	-22.49	11.11	10.00	2.21	V		0.078	18.90		
		64-QAM	-24.07	9.53	10.00	2.21	V		0.054	17.32		
		256-QAM	-26.32	7.28	10.00	2.21	V		0.032	15.07		
1907.5		PI/2 BPSK	-22.16	11.81	10.01	2.13	V		0.093	19.69	1	1
		QPSK	-22.21	11.76	10.01	2.13	V		0.092	19.64		
		16-QAM	-23.26	10.71	10.01	2.13	V		0.072	18.59		
		64-QAM	-24.84	9.13	10.01	2.13	V		0.050	17.01		
		256-QAM	-26.94	7.03	10.01	2.13	V		0.031	14.91		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1860.0	Sub6 n25/ 20 MHz [15 kHz]	PI/2 BPSK	-20.63	12.71	10.00	2.17	V	< 2.00	0.113	20.54	1	53
		QPSK	-20.80	12.54	10.00	2.17	V		0.109	20.37		
		16-QAM	-21.78	11.56	10.00	2.17	V		0.087	19.39		
		64-QAM	-23.48	9.86	10.00	2.17	V		0.059	17.69		
		256-QAM	-25.70	7.64	10.00	2.17	V		0.035	15.47		
1882.5		PI/2 BPSK	-21.31	12.29	10.00	2.21	V		0.102	20.08	1	53
		QPSK	-21.32	12.28	10.00	2.21	V		0.102	20.07		
		16-QAM	-22.31	11.29	10.00	2.21	V		0.081	19.08		
		64-QAM	-24.02	9.58	10.00	2.21	V		0.055	17.37		
		256-QAM	-26.28	7.32	10.00	2.21	V		0.033	15.11		
1905.0		PI/2 BPSK	-21.70	12.27	10.01	2.13	V		0.104	20.15	1	1
		QPSK	-21.82	12.15	10.01	2.13	V		0.101	20.03		
		16-QAM	-23.06	10.91	10.01	2.13	V		0.076	18.79		
		64-QAM	-24.64	9.33	10.01	2.13	V		0.053	17.21		
		256-QAM	-26.88	7.09	10.01	2.13	V		0.031	14.97		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1862.5	Sub6 n25/ 25 MHz [15 kHz]	PI/2 BPSK	-21.13	12.21	10.00	2.17	V	< 2.00	0.101	20.04	1	131
		QPSK	-21.18	12.16	10.00	2.17	V		0.100	19.99		
		16-QAM	-22.09	11.25	10.00	2.17	V		0.081	19.08		
		64-QAM	-23.86	9.48	10.00	2.17	V		0.054	17.31		
		256-QAM	-26.22	7.12	10.00	2.17	V		0.031	14.95		
1882.5		PI/2 BPSK	-21.17	12.43	10.00	2.21	V		0.105	20.22	1	66
		QPSK	-21.31	12.29	10.00	2.21	V		0.102	20.08		
		16-QAM	-22.30	11.30	10.00	2.21	V		0.081	19.09		
		64-QAM	-23.96	9.64	10.00	2.21	V		0.055	17.43		
		256-QAM	-26.18	7.42	10.00	2.21	V		0.033	15.21		
1902.5		PI/2 BPSK	-21.07	12.84	10.01	2.15	V		0.117	20.70	1	1
		QPSK	-21.25	12.66	10.01	2.15	V		0.113	20.52		
		16-QAM	-22.19	11.72	10.01	2.15	V		0.091	19.58		
		64-QAM	-23.92	9.99	10.01	2.15	V		0.061	17.85		
		256-QAM	-26.00	7.91	10.01	2.15	V		0.038	15.77		

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
1865.0	Sub6 n25/ 30 MHz [15 kHz]	PI/2 BPSK	-21.10	12.53	10.00	2.19	V	< 2.00	0.108	20.34	1	158
		QPSK	-21.11	12.52	10.00	2.19	V		0.108	20.33		
		16-QAM	-22.17	11.46	10.00	2.19	V		0.085	19.27		
		64-QAM	-23.84	9.79	10.00	2.19	V		0.058	17.60		
		256-QAM	-26.31	7.32	10.00	2.19	V		0.033	15.13		
1882.5		PI/2 BPSK	-21.22	12.38	10.00	2.21	V		0.104	20.17	1	80
		QPSK	-21.27	12.33	10.00	2.21	V		0.103	20.12		
		16-QAM	-22.26	11.34	10.00	2.21	V		0.082	19.13		
		64-QAM	-23.93	9.67	10.00	2.21	V		0.056	17.46		
		256-QAM	-26.15	7.45	10.00	2.21	V		0.033	15.24		
1900.0		PI/2 BPSK	-21.36	12.55	10.01	2.15	V		0.110	20.41	1	1
		QPSK	-21.42	12.49	10.01	2.15	V		0.108	20.35		
		16-QAM	-22.54	11.37	10.01	2.15	V		0.084	19.23		
		64-QAM	-24.37	9.54	10.01	2.15	V		0.055	17.40		
		256-QAM	-26.06	7.85	10.01	2.15	V		0.037	15.71		

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 n25/ 35 MHz [15 kHz]	PI/2 BPSK	-21.00	12.91	10.00	2.21	V	< 2.00	0.118	20.70	1	94
		QPSK	-21.01	12.90	10.00	2.21	V		0.117	20.69		
		16-QAM	-21.96	11.95	10.00	2.21	V		0.094	19.74		
		64-QAM	-23.72	10.19	10.00	2.21	V		0.063	17.98		
		256-QAM	-26.38	7.53	10.00	2.21	V		0.034	15.32		
1882.5		PI/2 BPSK	-21.11	12.49	10.00	2.21	V		0.107	20.28	1	94
		QPSK	-21.12	12.48	10.00	2.21	V		0.107	20.27		
		16-QAM	-22.12	11.48	10.00	2.21	V		0.085	19.27		
		64-QAM	-23.86	9.74	10.00	2.21	V		0.057	17.53		
		256-QAM	-26.03	7.57	10.00	2.21	V		0.034	15.36		
1897.5		PI/2 BPSK	-21.11	12.97	10.01	2.16	V		0.121	20.82	1	1
		QPSK	-21.20	12.88	10.01	2.16	V		0.118	20.73		
		16-QAM	-22.04	12.04	10.01	2.16	V		0.097	19.89		
		64-QAM	-23.72	10.36	10.01	2.16	V		0.066	18.21		
		256-QAM	-25.76	8.32	10.01	2.16	V		0.041	16.17		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1870.0	Sub6 n25/ 40 MHz [15 kHz]	PI/2 BPSK	-21.24	12.67	10.00	2.21	V	< 2.00	0.111	20.46	1	214
		QPSK	-21.45	12.46	10.00	2.21	V		0.106	20.25		
		16-QAM	-22.56	11.35	10.00	2.21	V		0.082	19.14		
		64-QAM	-24.14	9.77	10.00	2.21	V		0.057	17.56		
		256-QAM	-26.65	7.26	10.00	2.21	V		0.032	15.05		
1882.5		PI/2 BPSK	-21.13	12.47	10.00	2.21	V		0.106	20.26	1	1
		QPSK	-21.17	12.43	10.00	2.21	V		0.105	20.22		
		16-QAM	-22.30	11.30	10.00	2.21	V		0.081	19.09		
		64-QAM	-23.95	9.65	10.00	2.21	V		0.056	17.44		
		256-QAM	-25.48	8.12	10.00	2.21	V		0.039	15.91		
1895.0		PI/2 BPSK	-20.91	13.17	10.01	2.16	V		0.126	21.02	1	1
		QPSK	-21.08	13.00	10.01	2.16	V		0.122	20.85		
		16-QAM	-22.10	11.98	10.01	2.16	V		0.096	19.83		
		64-QAM	-23.70	10.38	10.01	2.16	V		0.067	18.23		
		256-QAM	-25.62	8.46	10.01	2.16	V		0.043	16.31		

9.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N25
▣ LTE Band(Anchor): B12
▣ Bandwidth: 40 MHz
▣ Modulation: PI/2 BPSK
▣ Distance: 3 meters
▣ SCS: 15 kHz

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Offset
374000 (1870.0)	3 740.00	-61.51	11.40	-62.73	3.10	H	-54.43	-13.00	1	214
	5 610.00	-64.06	11.90	-58.98	3.79	H	-50.87	-13.00		
	7 480.00	-65.95	10.90	-51.59	4.49	H	-45.18	-13.00		
	9 350.00	-64.29	10.80	-49.22	5.07	H	-43.49	-13.00		
	11 220.00	-65.14	11.40	-46.41	5.60	H	-40.61	-13.00		
376500 (1882.5)	3 765.00	-61.19	11.30	-61.26	3.09	H	-53.05	-13.00	1	1
	5 647.50	-63.10	11.85	-57.68	3.89	H	-49.72	-13.00		
	7 530.00	-64.82	11.10	-50.35	4.50	H	-43.75	-13.00		
	9 412.50	-62.01	10.80	-46.68	5.07	H	-40.95	-13.00		
	11 295.00	-64.44	11.35	-46.11	5.64	H	-40.40	-13.00		
379000 (1895.0)	3 790.00	-61.43	11.30	-61.74	3.17	H	-53.61	-13.00	1	1
	5 685.00	-63.35	11.80	-56.99	3.88	H	-49.07	-13.00		
	7 580.00	-61.97	11.10	-48.18	4.54	H	-41.62	-13.00		
	9 475.00	-62.25	10.90	-47.02	5.09	H	-41.21	-13.00		
	11 370.00	-65.51	11.30	-46.25	5.69	H	-40.64	-13.00		

9.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n25	5 MHz	1882.5	BPSK	25	0	4.03
			QPSK			4.61
			16-QAM			5.43
			64-QAM			6.02
			256-QAM			6.28
	10 MHz		BPSK	50		3.93
			QPSK			4.53
			16-QAM			5.41
			64-QAM			5.92
			256-QAM			6.36
	15 MHz		BPSK	75		3.96
			QPSK			4.47
			16-QAM			5.32
			64-QAM			5.87
			256-QAM			6.59
	20 MHz		BPSK	100		3.88
			QPSK			4.45
			16-QAM			5.38
			64-QAM			5.84
			256-QAM			6.46

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n25	25 MHz	1882.5	BPSK	128	0	4.03
			QPSK			4.53
			16-QAM			5.59
			64-QAM			5.94
			256-QAM			6.65
	30 MHz		BPSK	160		3.98
			QPSK			4.49
			16-QAM			5.39
			64-QAM			5.88
			256-QAM			6.59
	35 MHz		BPSK	180		4.05
			QPSK			4.55
			16-QAM			5.40
			64-QAM			5.88
			256-QAM			6.59
	40 MHz		BPSK	216		3.75
			QPSK			4.44
			16-QAM			5.43
			64-QAM			5.90
			256-QAM			6.63

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 n25	5 MHz	1882.5	BPSK	25	0	4.6004
			QPSK			4.5948
			16-QAM			4.5806
			64-QAM			4.5932
			256-QAM			4.5843
	10 MHz		BPSK	50		8.9800
			QPSK			8.9669
			16-QAM			8.9626
			64-QAM			9.0057
			256-QAM			8.9677
	15 MHz		BPSK	75		13.437
			QPSK			13.460
			16-QAM			13.395
			64-QAM			13.471
			256-QAM			13.474
	20 MHz		BPSK	100		17.917
			QPSK			17.889
			16-QAM			17.881
			64-QAM			17.914
			256-QAM			17.890

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n25	25 MHz	1882.5	BPSK	128	0	22.927
			QPSK			22.933
			16-QAM			22.953
			64-QAM			22.942
			256-QAM			22.985
	30 MHz		BPSK	160		28.584
			QPSK			28.633
			16-QAM			28.615
			64-QAM			28.656
			256-QAM			28.603
	35 MHz		BPSK	180		32.208
			QPSK			32.180
			16-QAM			32.243
			64-QAM			32.173
			256-QAM			32.242
	40 MHz		BPSK	216		38.644
			QPSK			38.605
			16-QAM			38.661
			64-QAM			38.552
			256-QAM			38.630

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 n25	5	1852.5	5.2219	30.815	-71.236	-40.421	-13.00
		1882.5	7.1710	30.815	-70.965	-40.150	
		1912.5	8.0215	30.815	-70.179	-39.364	
	10	1855.0	4.0235	30.200	-70.375	-40.175	
		1882.5	4.9073	30.200	-70.079	-39.879	
		1910.0	3.7643	30.200	-71.289	-41.089	
	15	1857.5	4.0185	30.200	-71.182	-40.982	
		1882.5	4.0524	30.200	-70.824	-40.624	
		1907.5	8.2941	30.815	-71.008	-40.193	
	20	1860.0	8.2572	30.815	-71.091	-40.276	
		1882.5	4.0509	30.200	-69.542	-39.342	
		1905.0	9.3564	30.815	-71.167	-40.352	
	25	1862.5	4.8600	30.200	-70.901	-40.701	
		1882.5	8.2911	30.815	-71.596	-40.781	
		1902.5	7.4581	30.815	-70.924	-40.109	
	30	1865.0	5.9970	30.815	-70.796	-39.981	
		1882.5	4.9527	30.200	-70.886	-40.686	
		1900.0	5.2483	30.815	-70.097	-39.282	
	35	1867.5	4.5798	30.200	-71.283	-41.083	
		1882.5	4.0394	30.200	-71.126	-40.926	
		1897.5	4.0554	30.200	-70.237	-40.037	
	40	1870.0	8.6281	30.815	-70.757	-39.942	
		1882.5	4.0265	30.200	-70.826	-40.626	
		1895.0	4.9208	30.200	-71.452	-41.252	

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 499 996	0.0	0.000 000	0.000
	100 %	-30	1852 499 996	-1.0	0.000 000	-0.001
	100 %	-20	1852 499 996	-0.8	0.000 000	0.000
	100 %	-10	1852 499 992	-5.0	0.000 000	-0.003
	100 %	0	1852 499 993	-3.9	0.000 000	-0.002
	100 %	+10	1852 499 992	-4.0	0.000 000	-0.002
	100 %	+30	1852 499 991	-5.8	0.000 000	-0.003
	100 %	+40	1852 499 991	-5.6	0.000 000	-0.003
	100 %	+50	1852 499 996	-0.9	0.000 000	0.000
	Batt. Endpoint	+20	1852 499 991	-5.1	0.000 000	-0.003
1912.5	100 %	+20(Ref)	1912 500 000	0.0	0.000 000	0.000
	100 %	-30	1912 499 995	-5.0	0.000 000	-0.003
	100 %	-20	1912 499 996	-3.4	0.000 000	-0.002
	100 %	-10	1912 499 995	-4.6	0.000 000	-0.002
	100 %	0	1912 499 993	-6.6	0.000 000	-0.003
	100 %	+10	1912 499 996	-3.9	0.000 000	-0.002
	100 %	+30	1912 499 998	-1.7	0.000 000	-0.001
	100 %	+40	1912 499 997	-2.7	0.000 000	-0.001
	100 %	+50	1912 499 996	-3.7	0.000 000	-0.002
	Batt. Endpoint	+20	1912 499 994	-5.8	0.000 000	-0.003

▣ 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 999 995	0.0	0.000 000	0.000
	100 %	-30	1854 999 991	-4.4	0.000 000	-0.002
	100 %	-20	1854 999 992	-3.8	0.000 000	-0.002
	100 %	-10	1854 999 993	-2.7	0.000 000	-0.001
	100 %	0	1854 999 990	-5.2	0.000 000	-0.003
	100 %	+10	1854 999 990	-5.0	0.000 000	-0.003
	100 %	+30	1854 999 992	-3.7	0.000 000	-0.002
	100 %	+40	1854 999 992	-3.3	0.000 000	-0.002
	100 %	+50	1854 999 989	-6.9	0.000 000	-0.004
	Batt. Endpoint	+20	1854 999 993	-2.1	0.000 000	-0.001
1910.0	100 %	+20(Ref)	1910 000 000	0.0	0.000 000	0.000
	100 %	-30	1910 000 001	0.7	0.000 000	0.000
	100 %	-20	1910 000 004	3.5	0.000 000	0.002
	100 %	-10	1910 000 004	4.1	0.000 000	0.002
	100 %	0	1910 000 001	0.4	0.000 000	0.000
	100 %	+10	1910 000 004	4.0	0.000 000	0.002
	100 %	+30	1910 000 001	1.1	0.000 000	0.001
	100 %	+40	1910 000 004	4.1	0.000 000	0.002
	100 %	+50	1910 000 004	3.8	0.000 000	0.002
	Batt. Endpoint	+20	1910 000 006	5.9	0.000 000	0.003

▣ BandWidth: 15 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1857.5	100 %	+20(Ref)	1857 500 004	0.0	0.000 000	0.000
	100 %	-30	1857 500 004	0.0	0.000 000	0.000
	100 %	-20	1857 500 007	3.9	0.000 000	0.002
	100 %	-10	1857 500 003	-0.2	0.000 000	0.000
	100 %	0	1857 500 003	-0.4	0.000 000	0.000
	100 %	+10	1857 500 006	2.4	0.000 000	0.001
	100 %	+30	1857 500 006	2.2	0.000 000	0.001
	100 %	+40	1857 500 006	2.6	0.000 000	0.001
	100 %	+50	1857 500 006	2.3	0.000 000	0.001
	Batt. Endpoint	+20	1857 500 005	1.9	0.000 000	0.001
1907.5	100 %	+20(Ref)	1907 500 002	0.0	0.000 000	0.000
	100 %	-30	1907 500 001	-0.9	0.000 000	0.000
	100 %	-20	1907 500 005	2.7	0.000 000	0.001
	100 %	-10	1907 500 003	0.3	0.000 000	0.000
	100 %	0	1907 500 004	1.3	0.000 000	0.001
	100 %	+10	1907 500 004	1.3	0.000 000	0.001
	100 %	+30	1907 500 001	-1.6	0.000 000	-0.001
	100 %	+40	1907 500 002	-0.5	0.000 000	0.000
	100 %	+50	1907 500 002	-0.1	0.000 000	0.000
	Batt. Endpoint	+20	1907 500 003	0.6	0.000 000	0.000

▣ 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 999 994	-2.0	0.000 000	-0.001
	100 %	-10	1859 999 994	-2.0	0.000 000	-0.001
	100 %	0	1859 999 993	-2.4	0.000 000	-0.001
	100 %	+10	1859 999 993	-2.9	0.000 000	-0.002
	100 %	+30	1859 999 992	-3.4	0.000 000	-0.002
	100 %	+40	1859 999 993	-2.2	0.000 000	-0.001
	100 %	+50	1859 999 991	-5.0	0.000 000	-0.003
	Batt. Endpoint	+20	1859 999 996	0.0	0.000 000	0.000
1905.0	100 %	+20(Ref)	1904 999 998	0.0	0.000 000	0.000
	100 %	-30	1904 999 997	-0.8	0.000 000	0.000
	100 %	-20	1904 999 996	-2.3	0.000 000	-0.001
	100 %	-10	1904 999 994	-4.4	0.000 000	-0.002
	100 %	0	1904 999 992	-5.8	0.000 000	-0.003
	100 %	+10	1904 999 997	-0.7	0.000 000	0.000
	100 %	+30	1904 999 995	-2.7	0.000 000	-0.001
	100 %	+40	1904 999 997	-1.5	0.000 000	-0.001
	100 %	+50	1904 999 995	-3.4	0.000 000	-0.002
	Batt. Endpoint	+20	1904 999 996	-2.3	0.000 000	-0.001

▣ BandWidth: 25 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1862.5	100 %	+20(Ref)	1862 500 006	0.0	0.000 000	0.000
	100 %	-30	1862 500 010	4.3	0.000 000	0.002
	100 %	-20	1862 500 010	4.5	0.000 000	0.002
	100 %	-10	1862 500 012	6.3	0.000 000	0.003
	100 %	0	1862 500 010	4.1	0.000 000	0.002
	100 %	+10	1862 500 010	4.3	0.000 000	0.002
	100 %	+30	1862 500 010	4.3	0.000 000	0.002
	100 %	+40	1862 500 009	3.6	0.000 000	0.002
	100 %	+50	1862 500 012	6.2	0.000 000	0.003
	Batt. Endpoint	+20	1862 500 012	6.4	0.000 000	0.003
1902.5	100 %	+20(Ref)	1902 500 011	0.0	0.000 000	0.000
	100 %	-30	1902 500 023	11.6	0.000 001	0.006
	100 %	-20	1902 500 024	12.6	0.000 001	0.007
	100 %	-10	1902 500 022	10.3	0.000 001	0.005
	100 %	0	1902 500 024	12.7	0.000 001	0.007
	100 %	+10	1902 500 021	10.0	0.000 001	0.005
	100 %	+30	1902 500 023	12.1	0.000 001	0.006
	100 %	+40	1902 500 022	10.3	0.000 001	0.005
	100 %	+50	1902 500 024	12.4	0.000 001	0.007
	Batt. Endpoint	+20	1902 500 022	10.8	0.000 001	0.006

▣ BandWidth: 30 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1865.0	100 %	+20(Ref)	1865 000 008	0.0	0.000 000	0.000
	100 %	-30	1865 000 016	7.8	0.000 000	0.004
	100 %	-20	1865 000 015	6.9	0.000 000	0.004
	100 %	-10	1865 000 015	6.8	0.000 000	0.004
	100 %	0	1865 000 016	7.6	0.000 000	0.004
	100 %	+10	1865 000 015	7.0	0.000 000	0.004
	100 %	+30	1865 000 019	10.6	0.000 001	0.006
	100 %	+40	1865 000 015	7.0	0.000 000	0.004
	100 %	+50	1865 000 018	9.8	0.000 001	0.005
	Batt. Endpoint	+20	1865 000 015	7.3	0.000 000	0.004
1900.0	100 %	+20(Ref)	1900 000 003	0.0	0.000 000	0.000
	100 %	-30	1900 000 003	0.4	0.000 000	0.000
	100 %	-20	1900 000 004	1.1	0.000 000	0.001
	100 %	-10	1900 000 005	1.9	0.000 000	0.001
	100 %	0	1900 000 005	2.4	0.000 000	0.001
	100 %	+10	1900 000 006	2.9	0.000 000	0.002
	100 %	+30	1900 000 006	3.2	0.000 000	0.002
	100 %	+40	1900 000 004	1.3	0.000 000	0.001
	100 %	+50	1900 000 003	0.7	0.000 000	0.000
	Batt. Endpoint	+20	1900 000 001	-1.9	0.000 000	-0.001

▣ BandWidth: 35 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1867.5	100 %	+20(Ref)	1867 500 006	0.0	0.000 000	0.000
	100 %	-30	1867 500 012	5.4	0.000 000	0.003
	100 %	-20	1867 500 012	5.9	0.000 000	0.003
	100 %	-10	1867 500 009	3.1	0.000 000	0.002
	100 %	0	1867 500 014	7.5	0.000 000	0.004
	100 %	+10	1867 500 013	7.1	0.000 000	0.004
	100 %	+30	1867 500 013	7.0	0.000 000	0.004
	100 %	+40	1867 500 010	4.2	0.000 000	0.002
	100 %	+50	1867 500 013	6.9	0.000 000	0.004
	Batt. Endpoint	+20	1867 500 011	4.4	0.000 000	0.002
1897.5	100 %	+20(Ref)	1897 500 006	0.0	0.000 000	0.000
	100 %	-30	1897 500 017	11.0	0.000 001	0.006
	100 %	-20	1897 500 018	12.1	0.000 001	0.006
	100 %	-10	1897 500 016	9.4	0.000 000	0.005
	100 %	0	1897 500 012	5.8	0.000 000	0.003
	100 %	+10	1897 500 016	9.7	0.000 001	0.005
	100 %	+30	1897 500 016	9.9	0.000 001	0.005
	100 %	+40	1897 500 015	8.4	0.000 000	0.004
	100 %	+50	1897 500 017	11.1	0.000 001	0.006
	Batt. Endpoint	+20	1897 500 017	11.2	0.000 001	0.006

▣ 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 000 004	0.0	0.000 000	0.000
	100 %	-30	1870 000 007	3.7	0.000 000	0.002
	100 %	-20	1870 000 006	2.5	0.000 000	0.001
	100 %	-10	1870 000 006	2.2	0.000 000	0.001
	100 %	0	1870 000 011	7.6	0.000 000	0.004
	100 %	+10	1870 000 007	3.7	0.000 000	0.002
	100 %	+30	1870 000 005	1.6	0.000 000	0.001
	100 %	+40	1870 000 005	1.7	0.000 000	0.001
	100 %	+50	1870 000 008	3.9	0.000 000	0.002
	Batt. Endpoint	+20	1870 000 007	3.2	0.000 000	0.002
1895.0	100 %	+20(Ref)	1895 000 008	0.0	0.000 000	0.000
	100 %	-30	1895 000 016	8.1	0.000 000	0.004
	100 %	-20	1895 000 016	8.0	0.000 000	0.004
	100 %	-10	1895 000 016	7.5	0.000 000	0.004
	100 %	0	1895 000 019	11.2	0.000 001	0.006
	100 %	+10	1895 000 012	3.9	0.000 000	0.002
	100 %	+30	1895 000 015	7.2	0.000 000	0.004
	100 %	+40	1895 000 016	7.7	0.000 000	0.004
	100 %	+50	1895 000 016	8.0	0.000 000	0.004
	Batt. Endpoint	+20	1895 000 019	10.9	0.000 001	0.006

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.
   - N25A(ANT A)-N41A(ANT F)
     (PCC - Modulation: BPSK, RB: 1, RB Offset: 1, SCC - Modulation: BPSK, RB: 1, RB Offset: 39)

Radiated Spurious Emissions

PCC	SCC	PCC		SCC	
		BW(MHz)	Channel	BW(MHz)	Channel
N25A(ANT A)	N41A(ANT F)	35	373500	15	534996

10.1.1 RADIATED SPURIOUS EMISSIONS

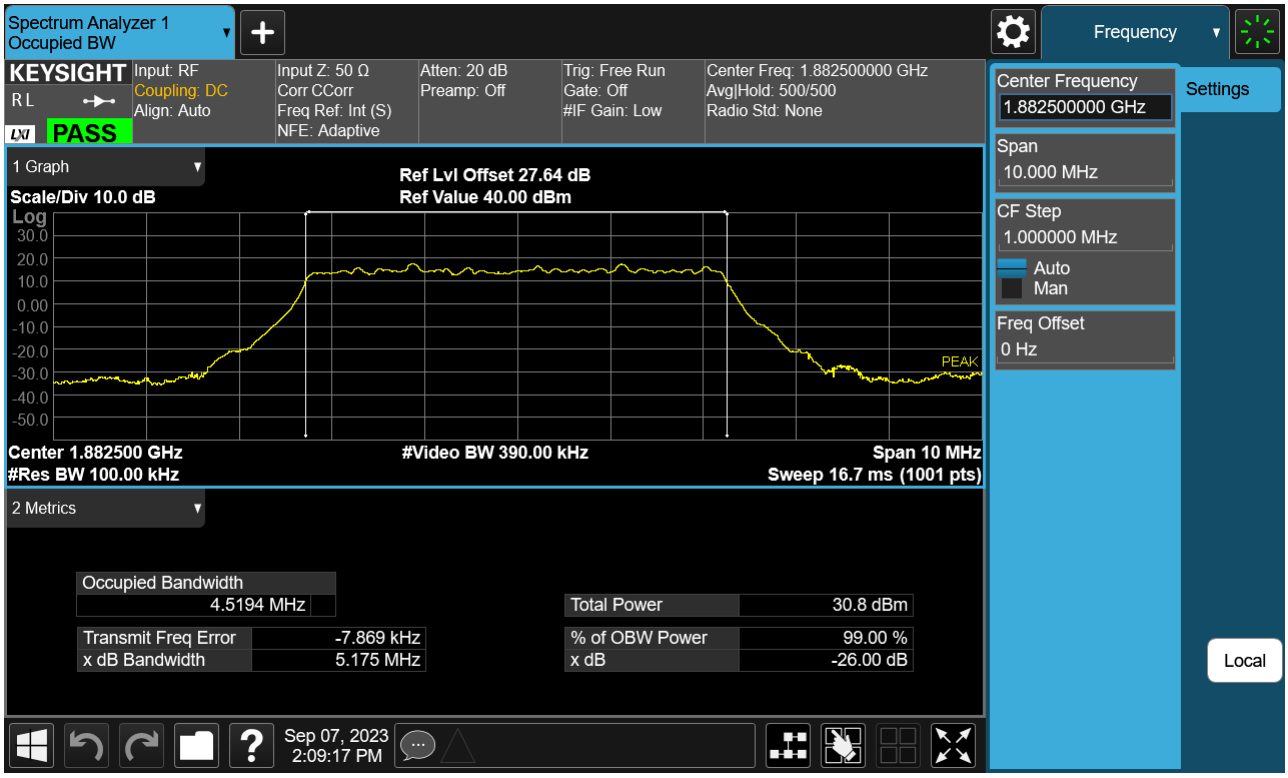
N25A(ANT A)(PCC)- N41A(ANT F)(SCC)

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)	Limit (dBm)
3 735.00	-61.28	11.40	-62.40	3.12	V	-54.12	-13.00
5 602.50	-62.88	11.90	-57.88	3.79	V	-49.77	-13.00
7 470.00	-63.95	10.90	-49.64	4.49	V	-43.23	-13.00

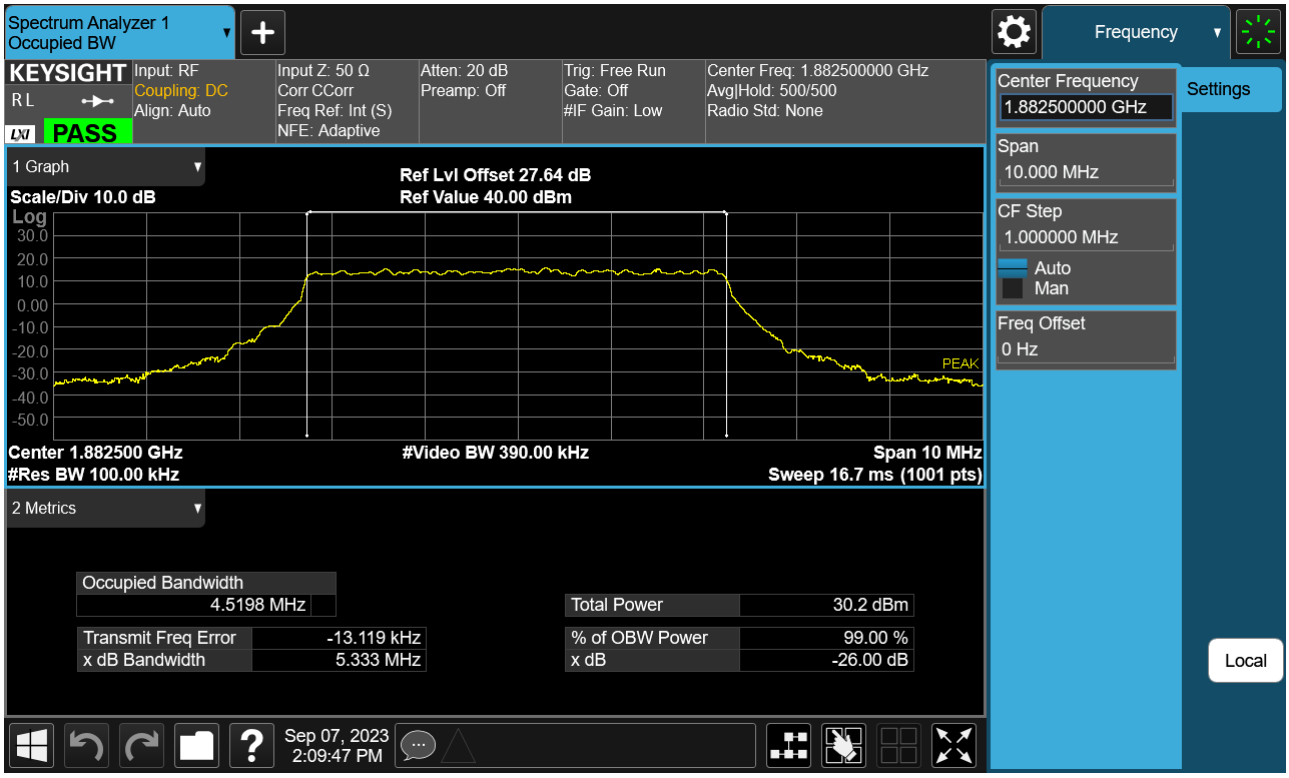
Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)	Limit (dBm)
5 349.96	-62.06	11.50	-63.71	3.75	V	-55.96	-25.00
8 024.94	-62.76	10.80	-56.05	4.62	V	-49.87	-25.00
10 699.92	-65.20	11.10	-53.52	5.48	V	-47.90	-25.00

11. TEST PLOTS(Ant A)

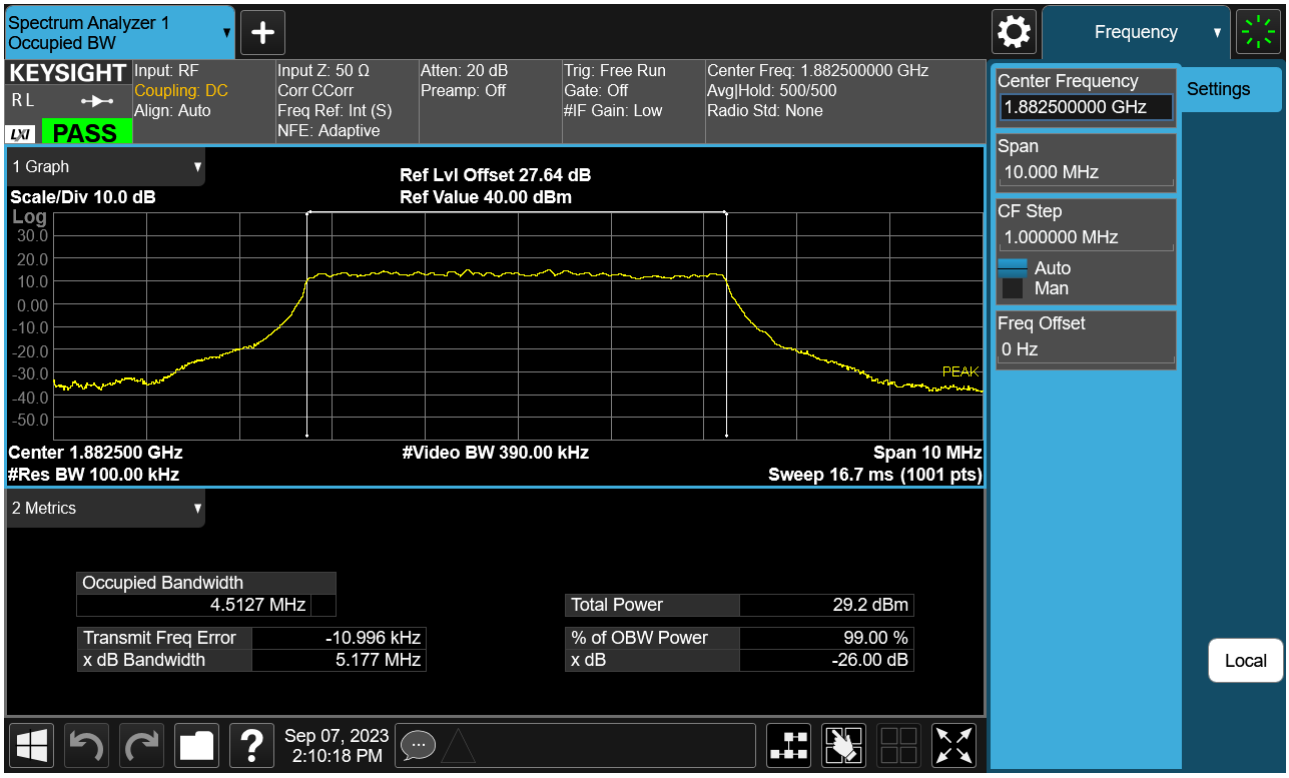
Sub6 n25. Occupied Bandwidth Plot (5 M BW Ch.376500 BPSK_ Full RB _0)



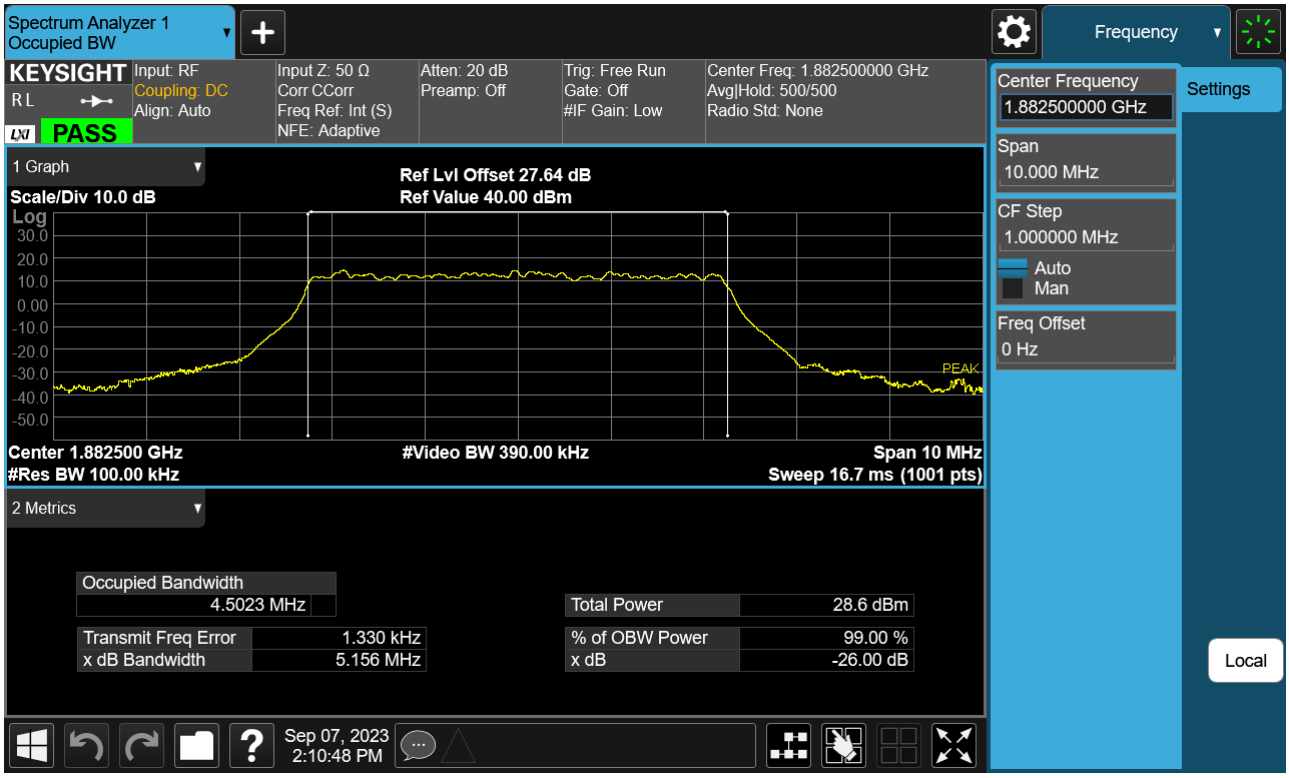
Sub6 n25. Occupied Bandwidth Plot (5 M BW Ch.376500 QPSK_ Full RB _0)



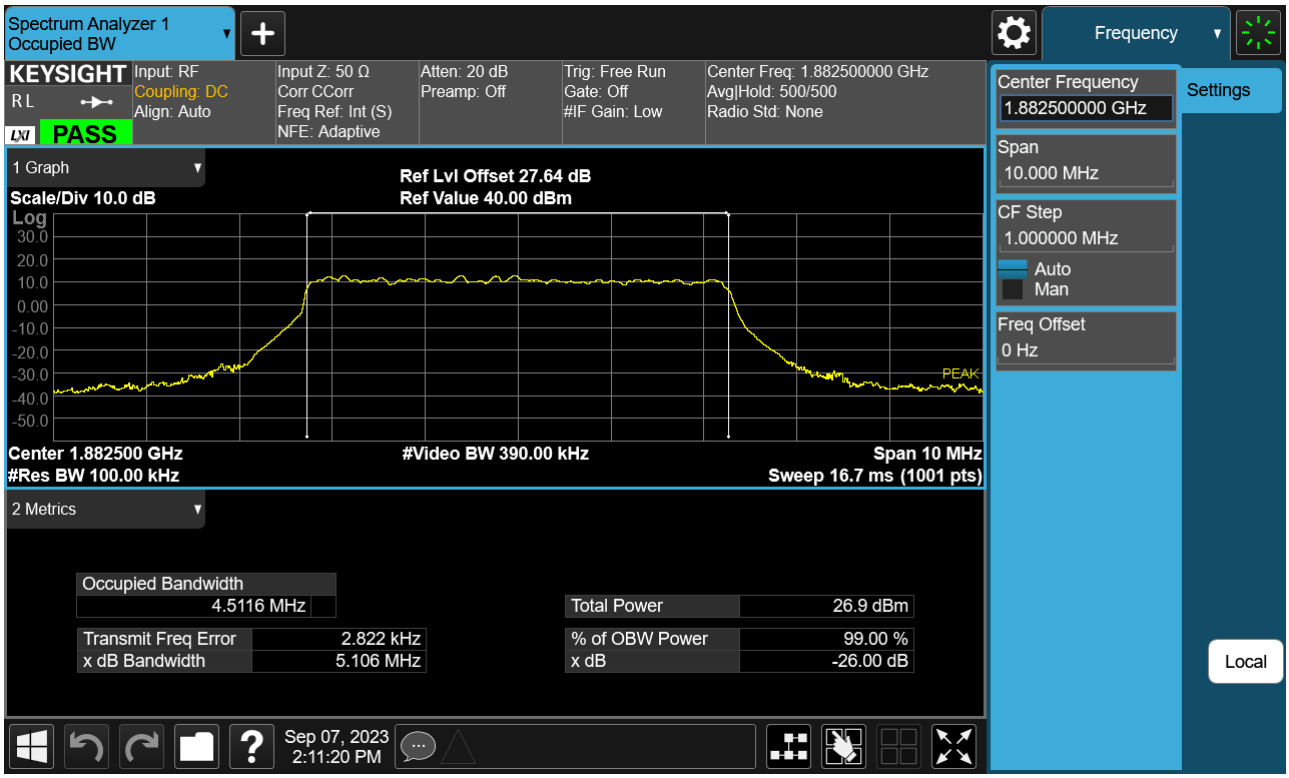
Sub6 n25. Occupied Bandwidth Plot (5 M BW Ch.376500 16QAM _ Full RB _0)



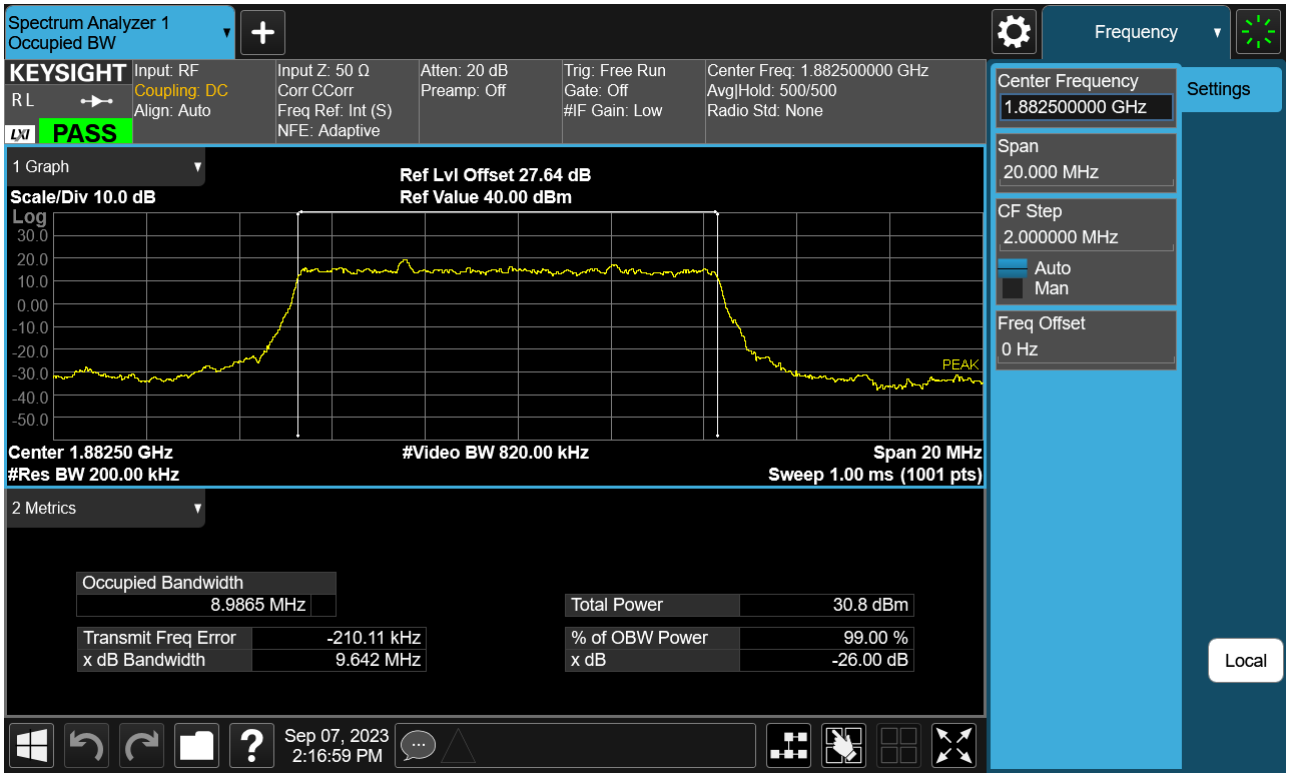
Sub6 n25. Occupied Bandwidth Plot (5 M BW Ch.376500 64QAM_ Full RB _0)



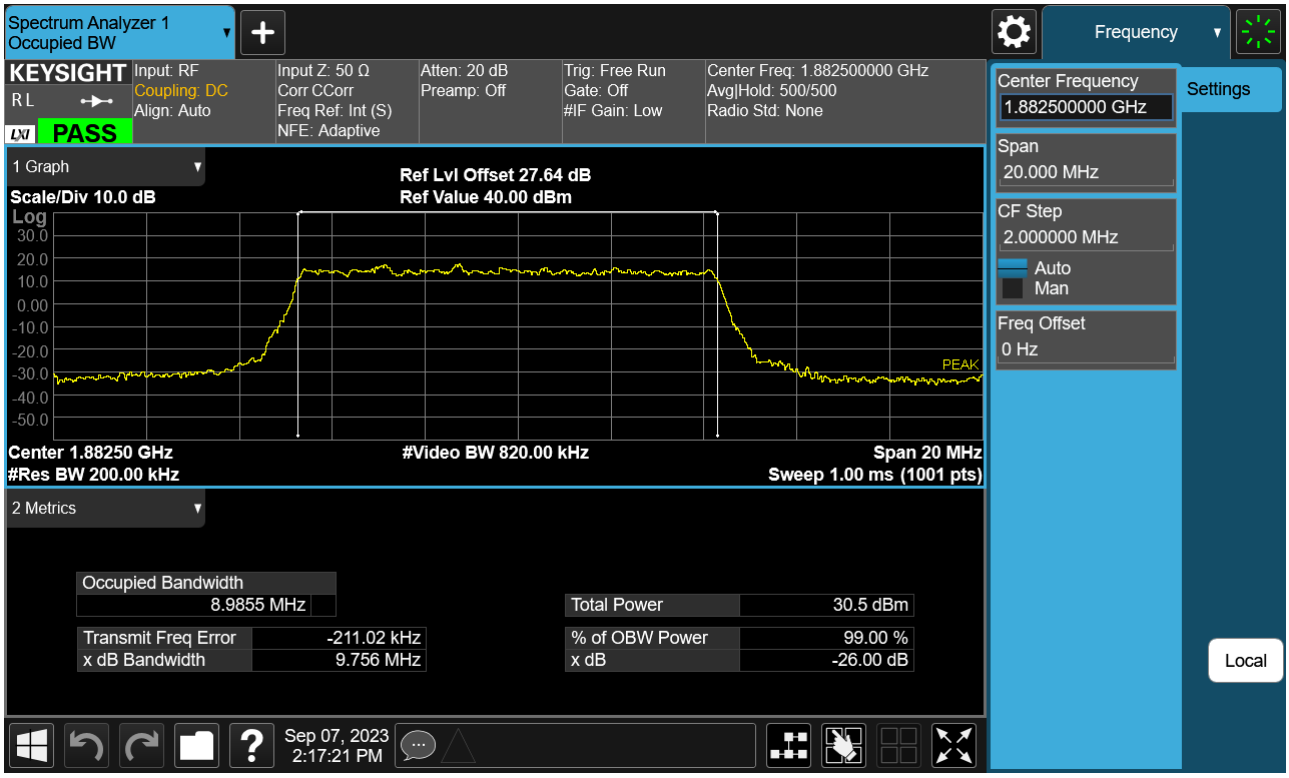
Sub6 n25. Occupied Bandwidth Plot (5 M BW Ch.376500 256QAM_ Full RB _0)



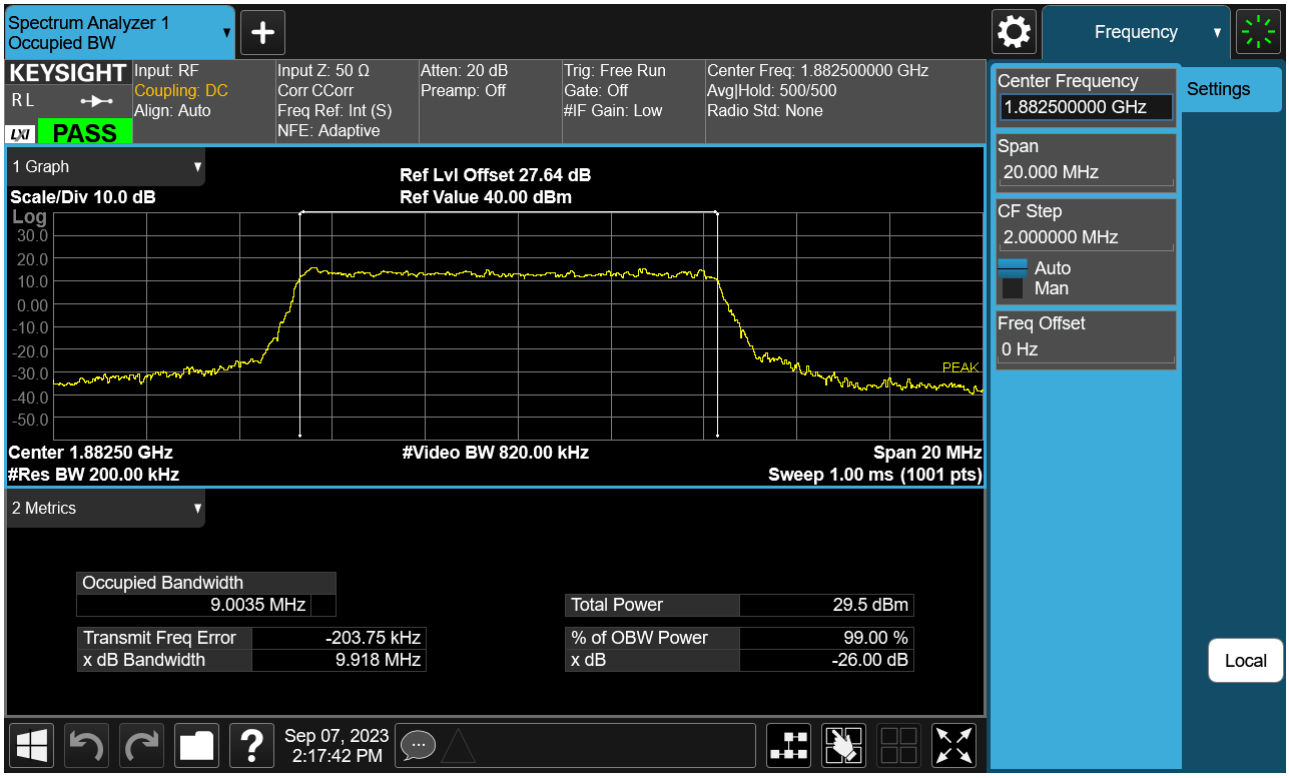
Sub6 n25. Occupied Bandwidth Plot (10 M BW Ch.376500 BPSK _ Full RB _0)



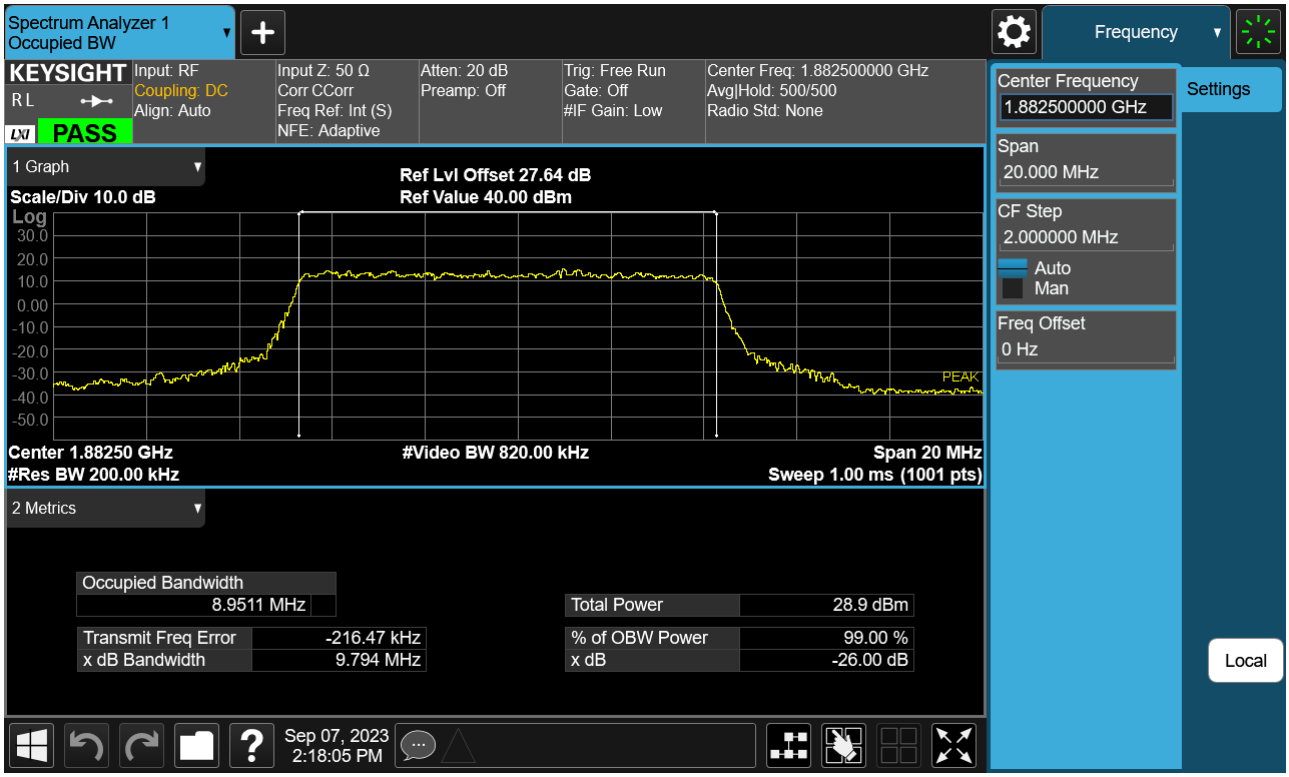
Sub6 n25. Occupied Bandwidth Plot (10 M BW Ch.376500 QPSK _ Full RB _0)



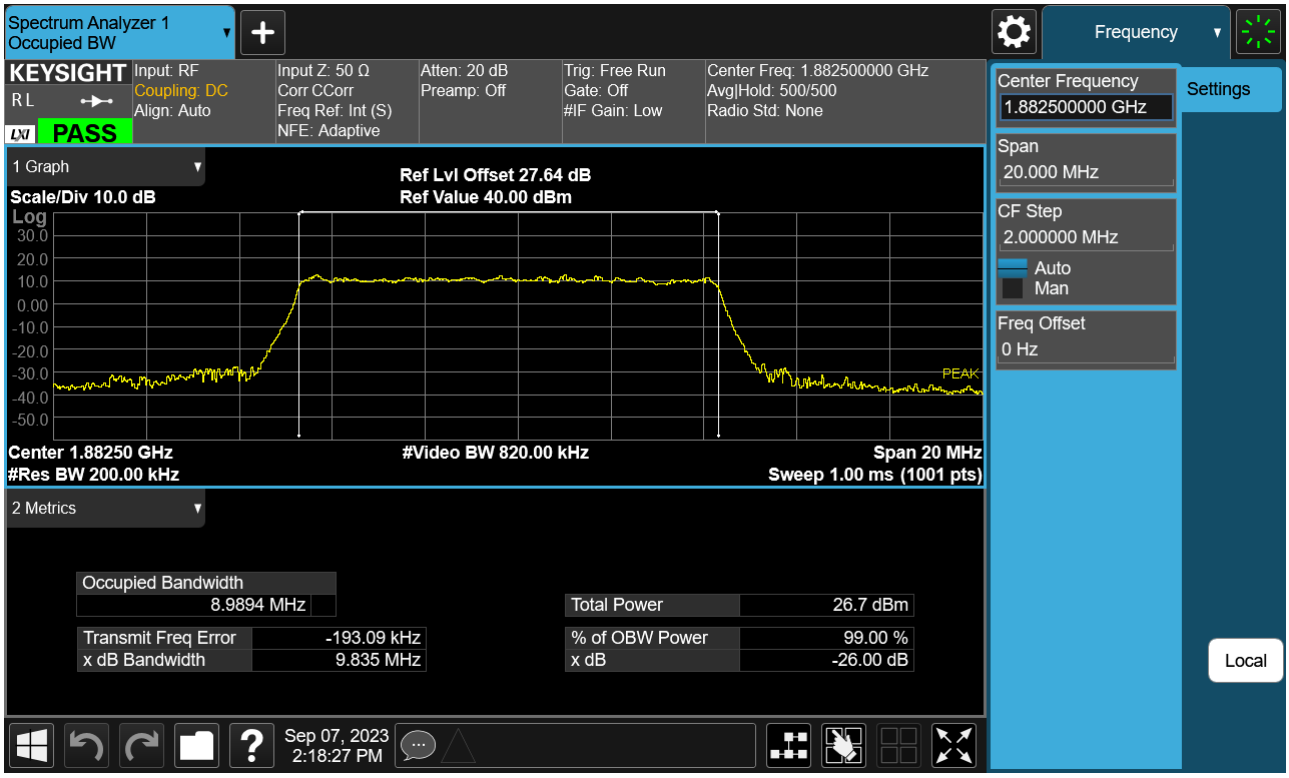
Sub6 n25. Occupied Bandwidth Plot (10 M BW Ch.376500 16QAM _ Full RB _0)



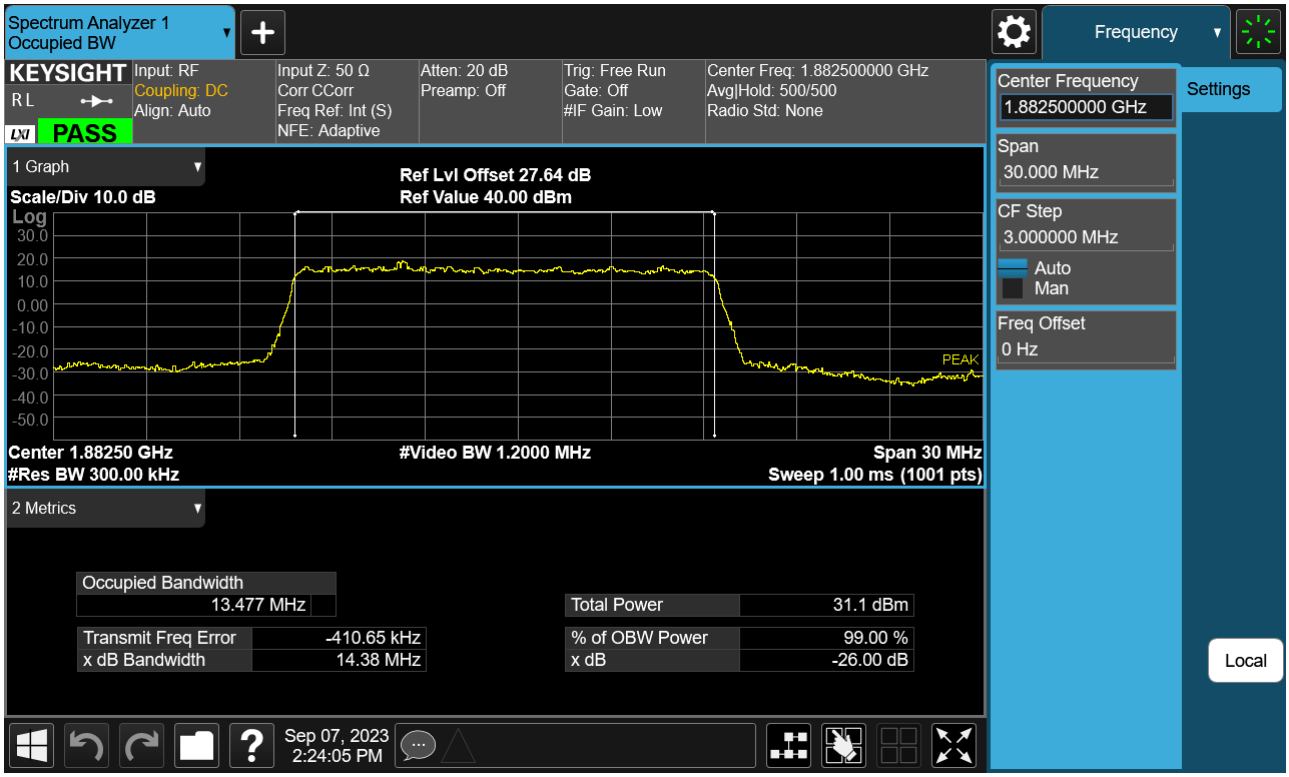
Sub6 n25. Occupied Bandwidth Plot (10 M BW Ch.376500 64QAM _ Full RB _0)



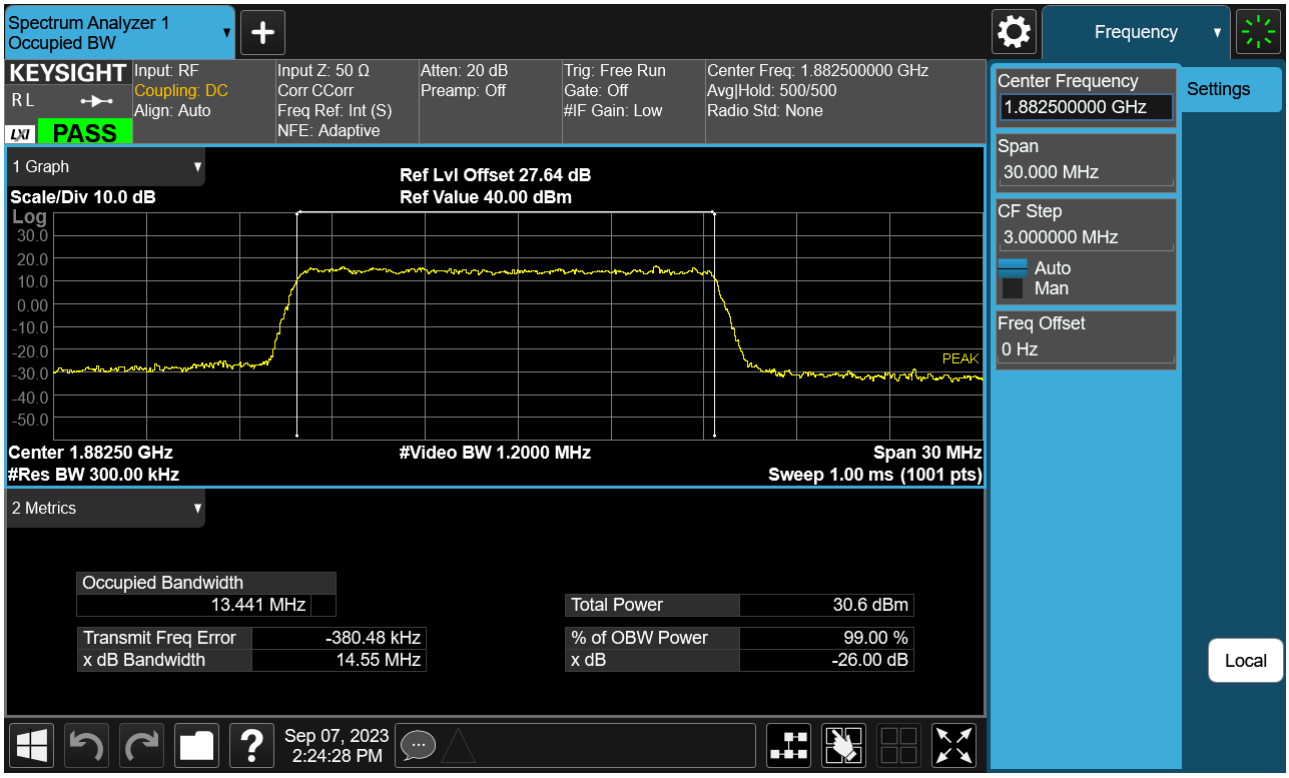
Sub6 n25. Occupied Bandwidth Plot (10 M BW Ch.376500 256QAM _ Full RB _0)



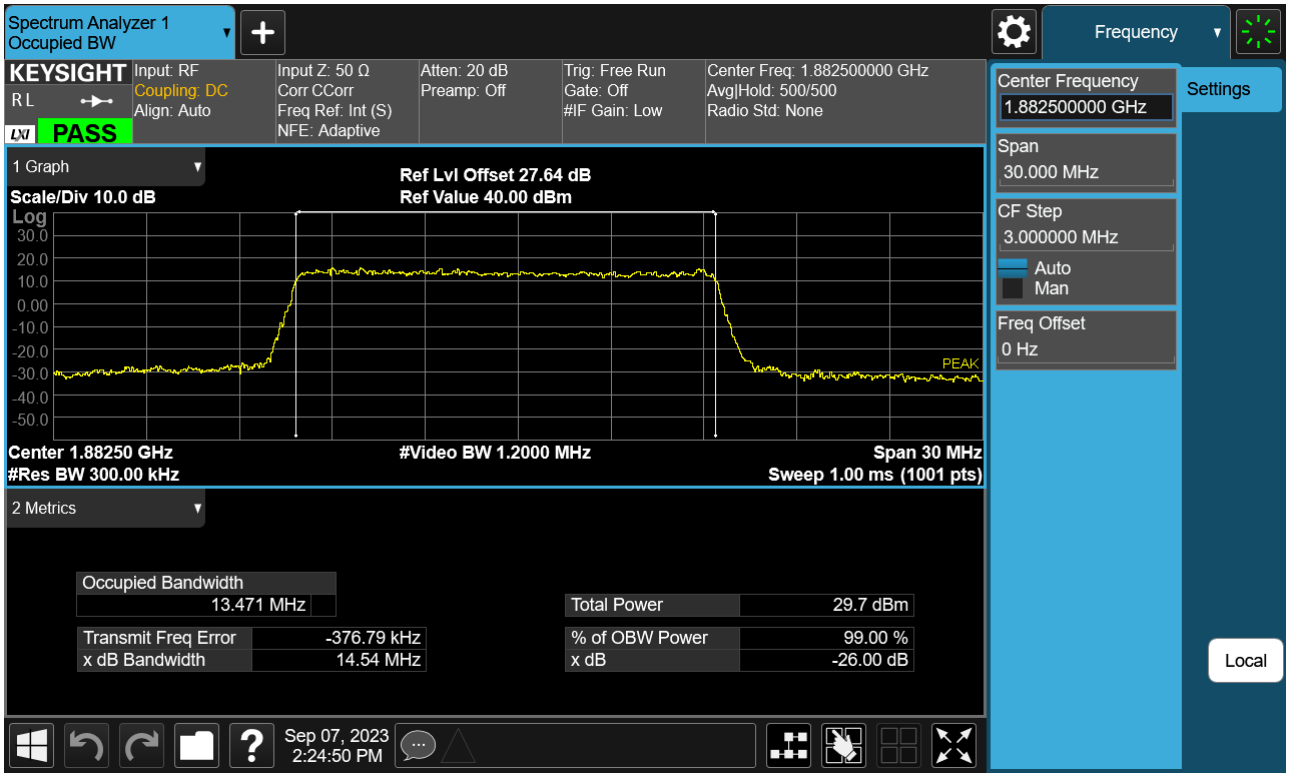
Sub6 n25. Occupied Bandwidth Plot (15 M BW Ch.376500 BPSK_ Full RB _0)



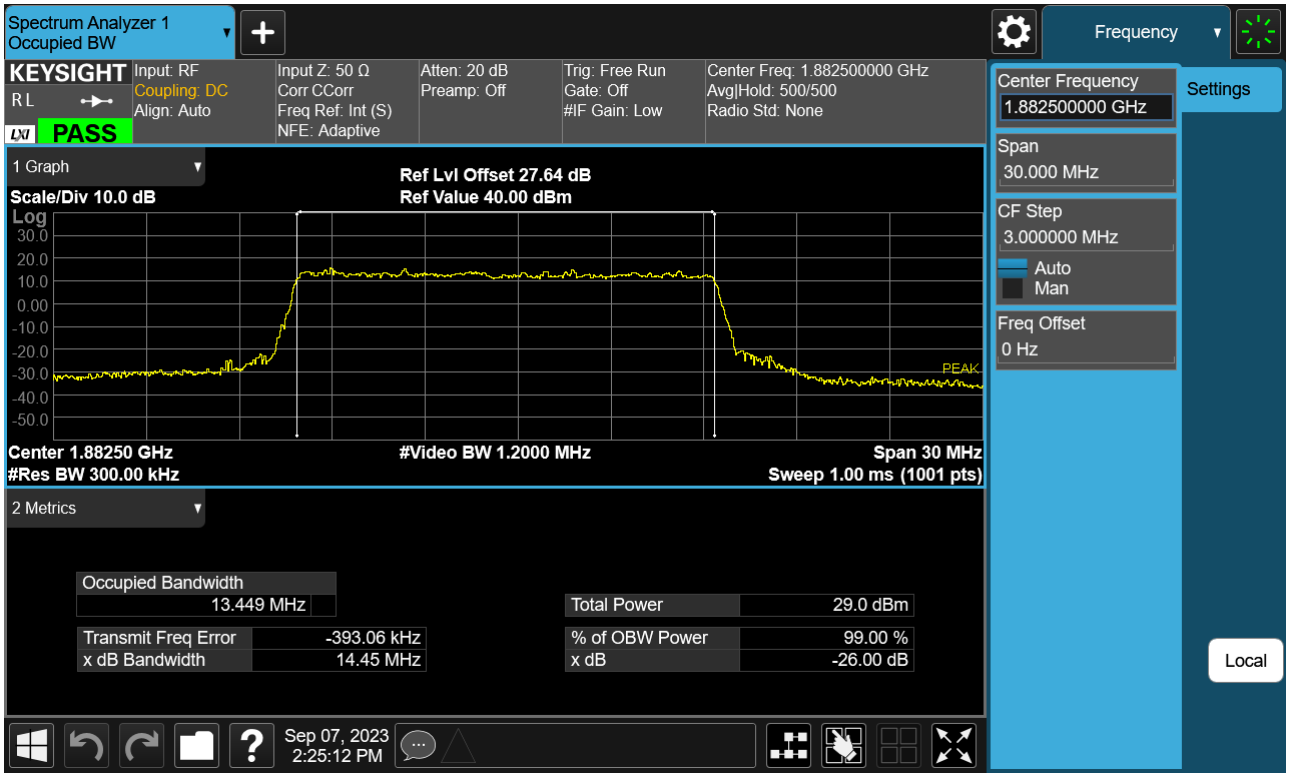
Sub6 n25. Occupied Bandwidth Plot (15 M BW Ch.376500 QPSK _ Full RB _0)



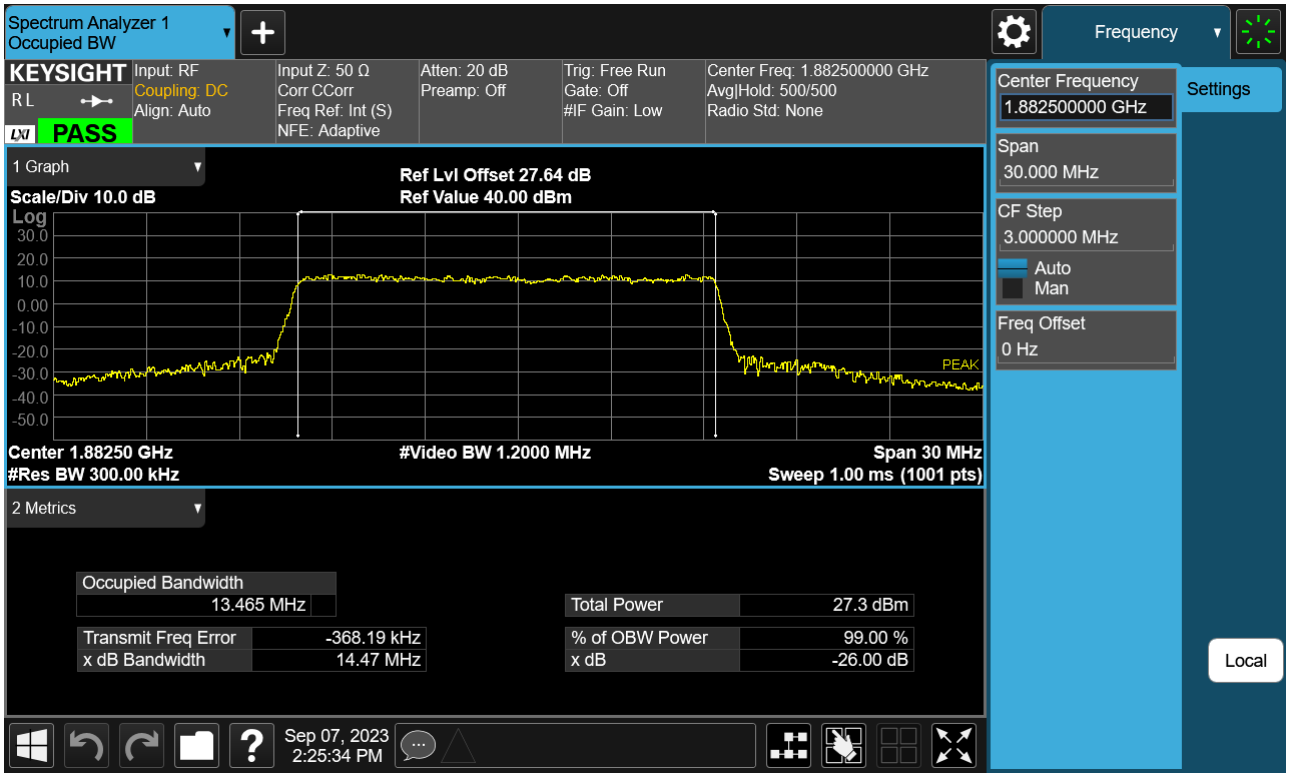
Sub6 n25. Occupied Bandwidth Plot (15 M BW Ch.376500 16QAM _ Full RB _0)



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

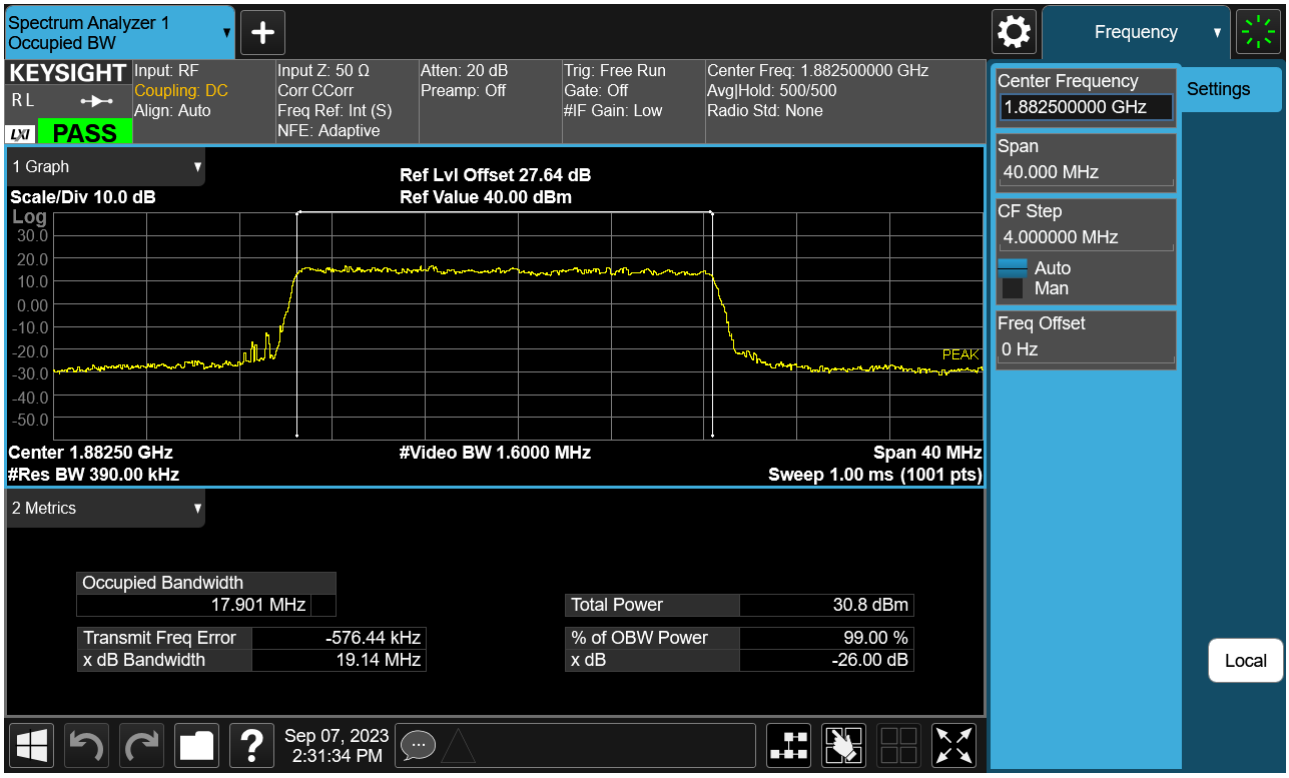


Sub6 n25. Occupied Bandwidth Plot (15 M BW Ch.376500 256QAM _ Full RB _0

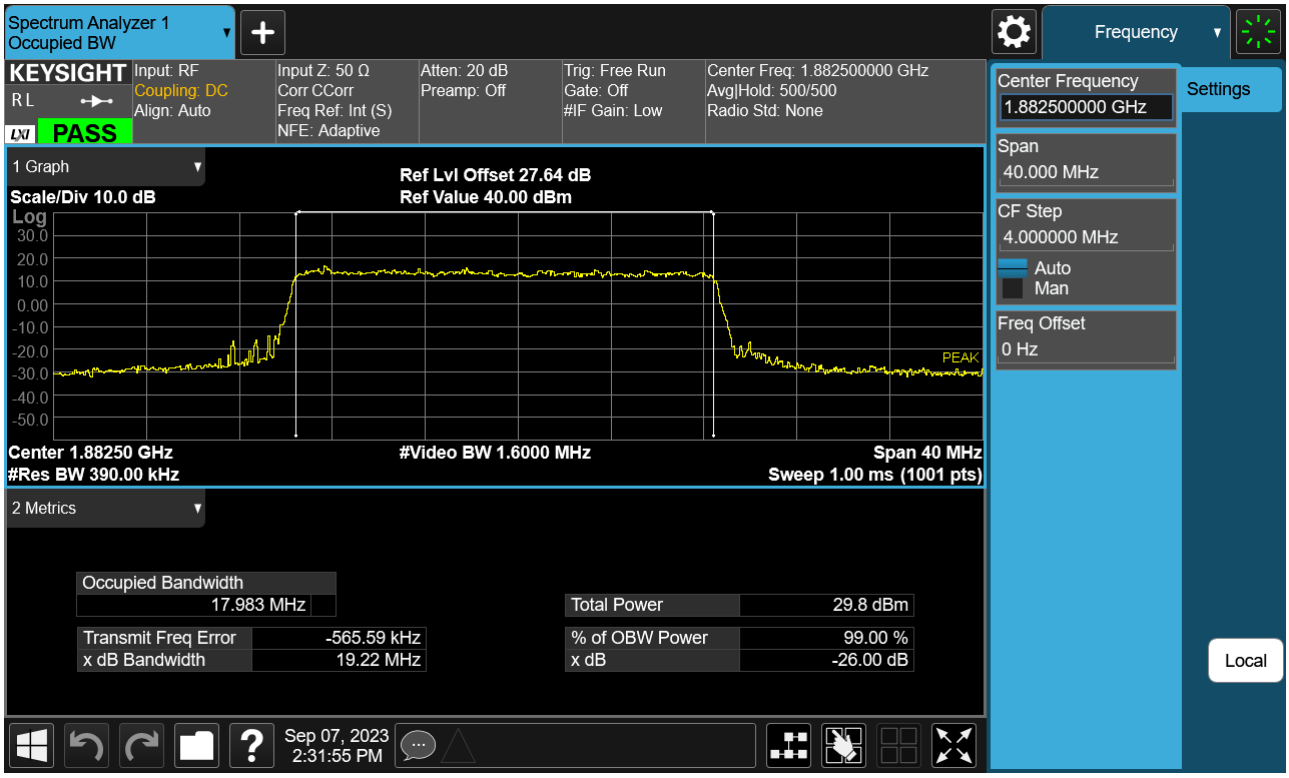


Sub6 n25. Occupied Bandwidth Plot (20 M BW Ch.376500 BPSK _ Full RB _0)

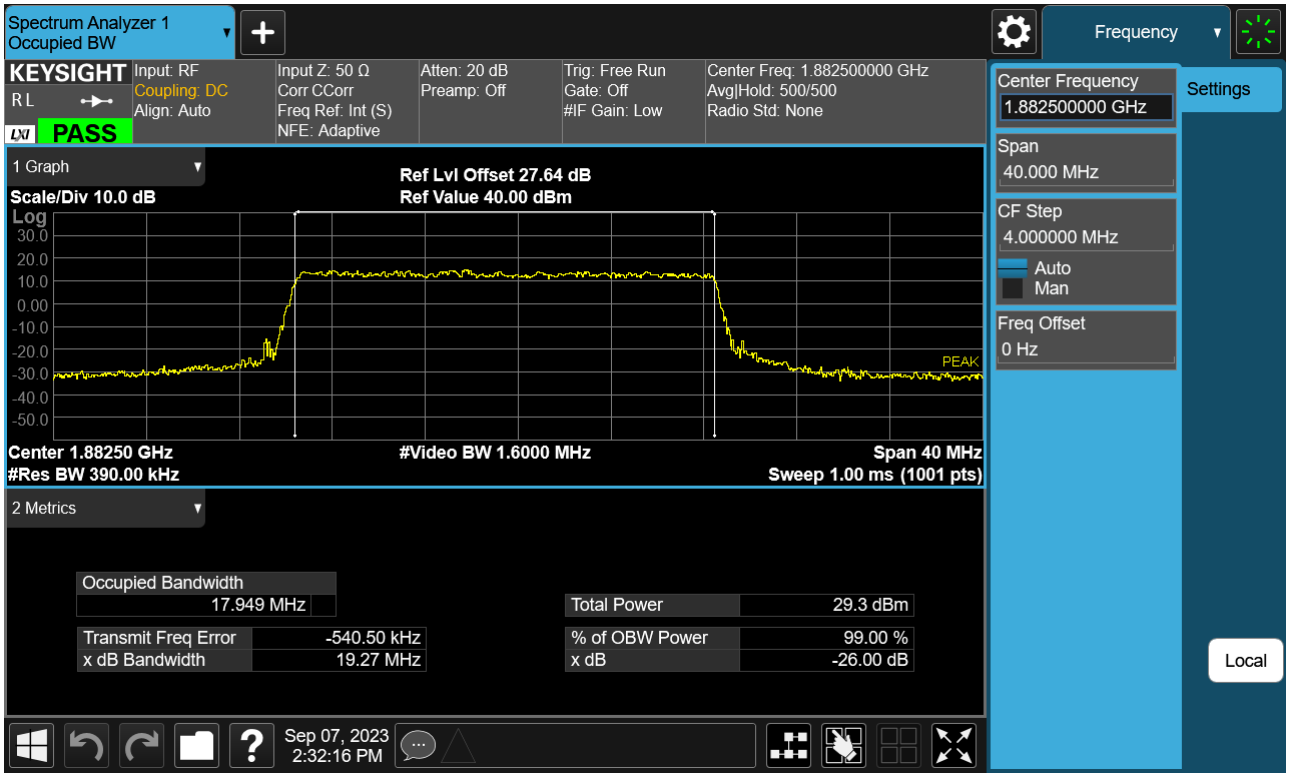
Sub6 n25. Occupied Bandwidth Plot (20 M BW Ch.376500 QPSK _ Full RB _0)



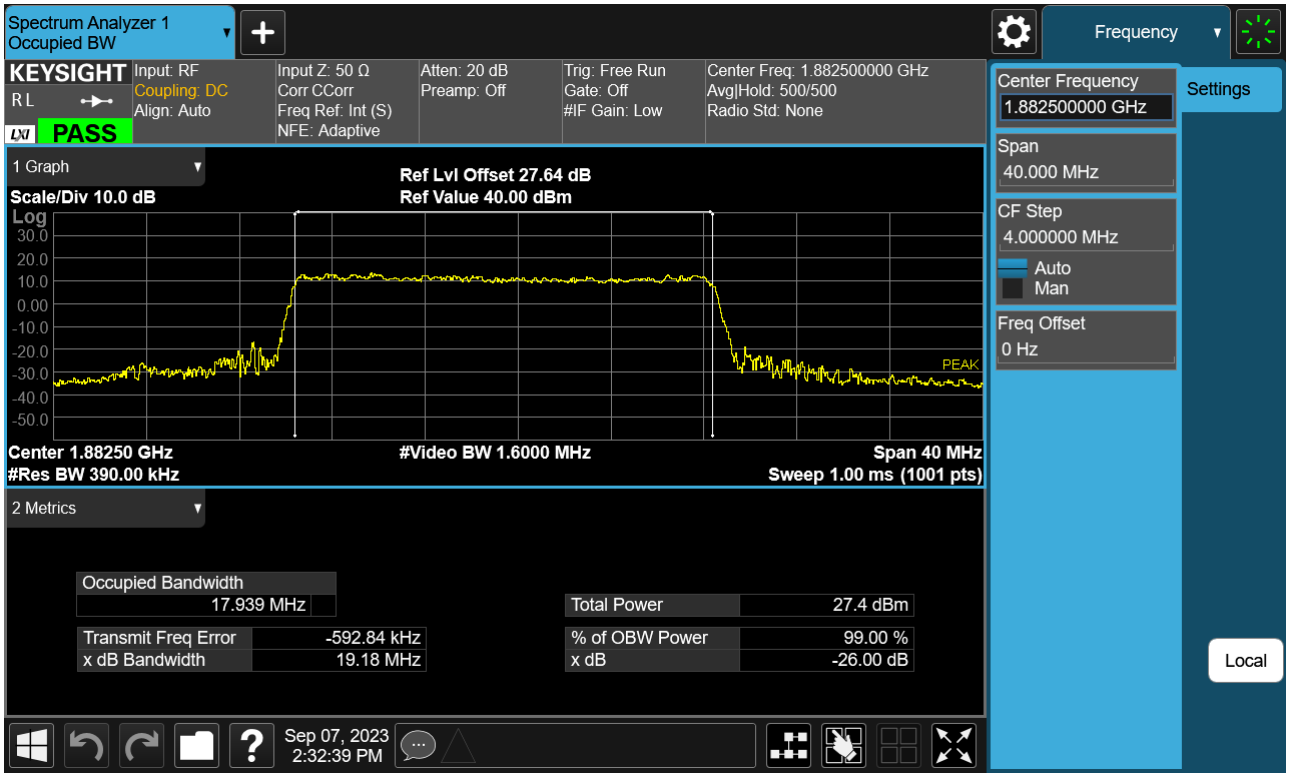
Sub6 n25. Occupied Bandwidth Plot (20 M BW Ch.376500 16QAM _ Full RB _0)



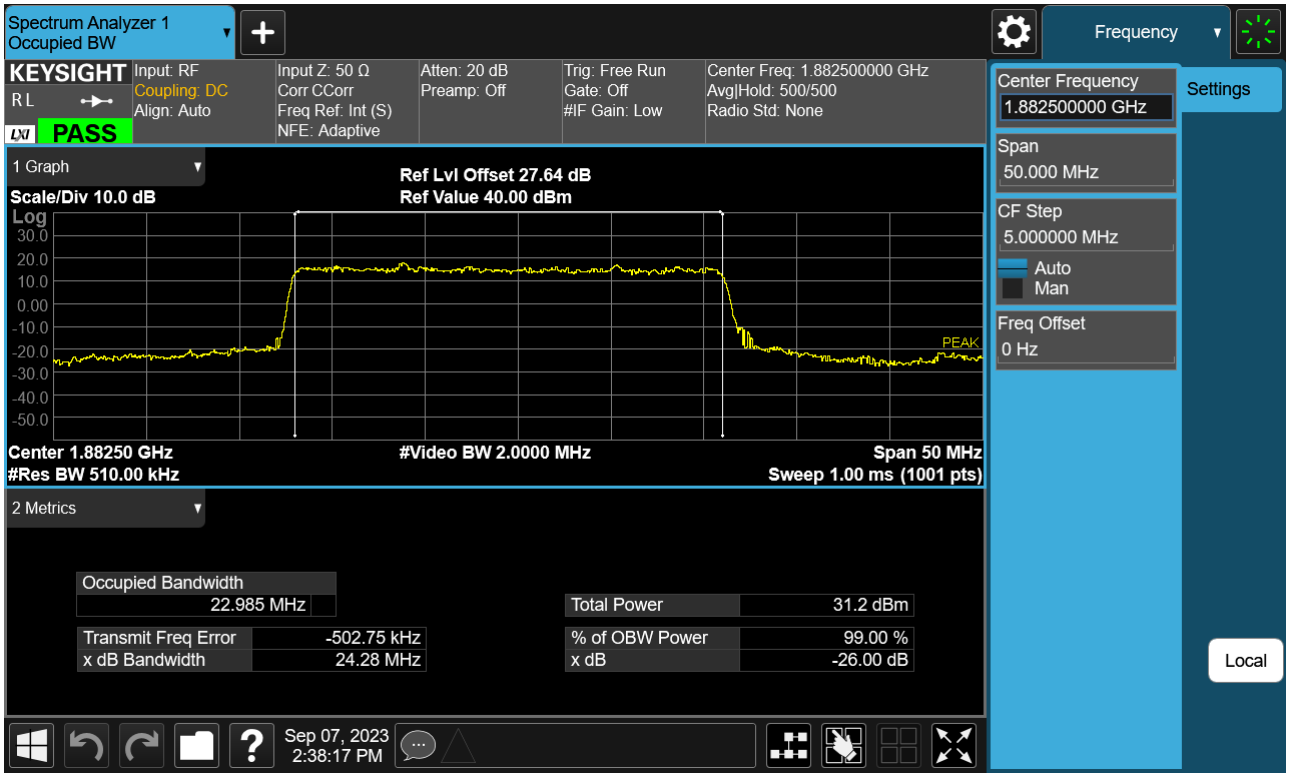
Sub6 n25. Occupied Bandwidth Plot (20 M BW Ch.376500 64QAM _ Full RB _0)



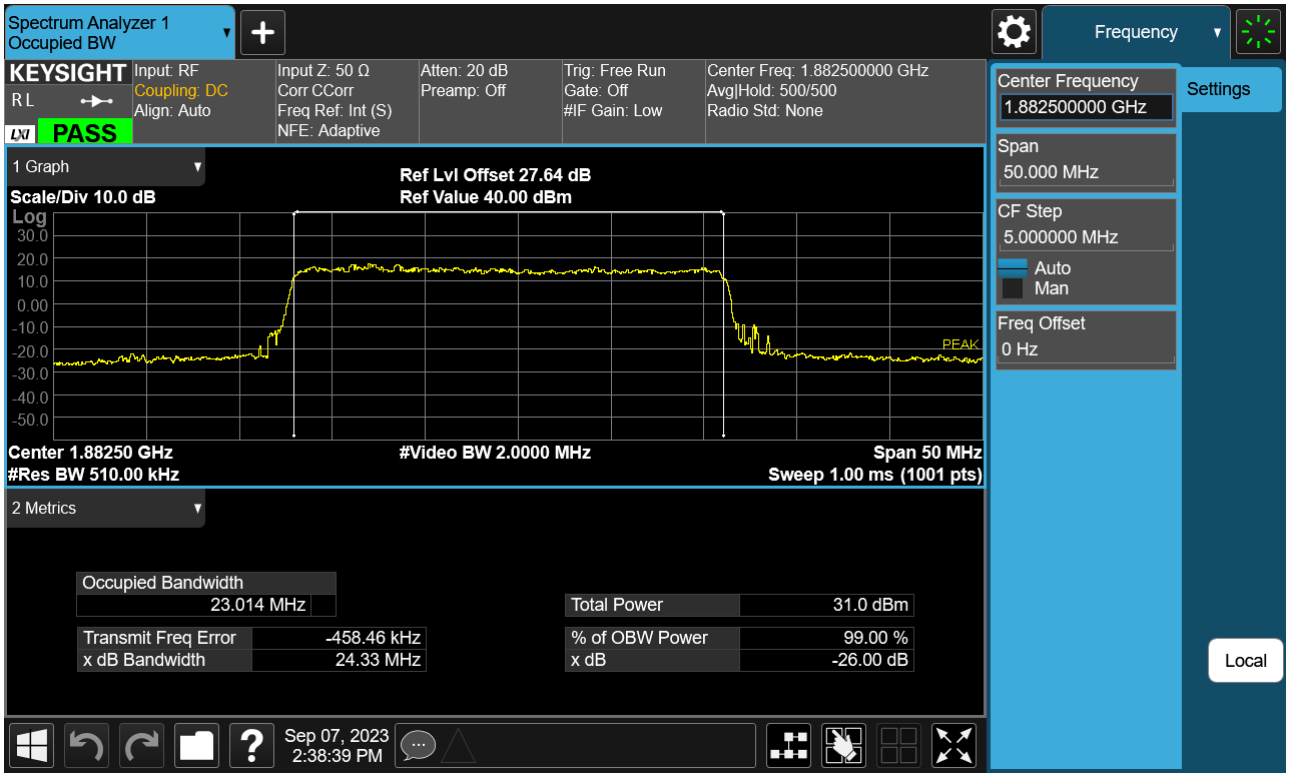
Sub6 n25. Occupied Bandwidth Plot (20 M BW Ch.376500 256QAM _ Full RB _0)



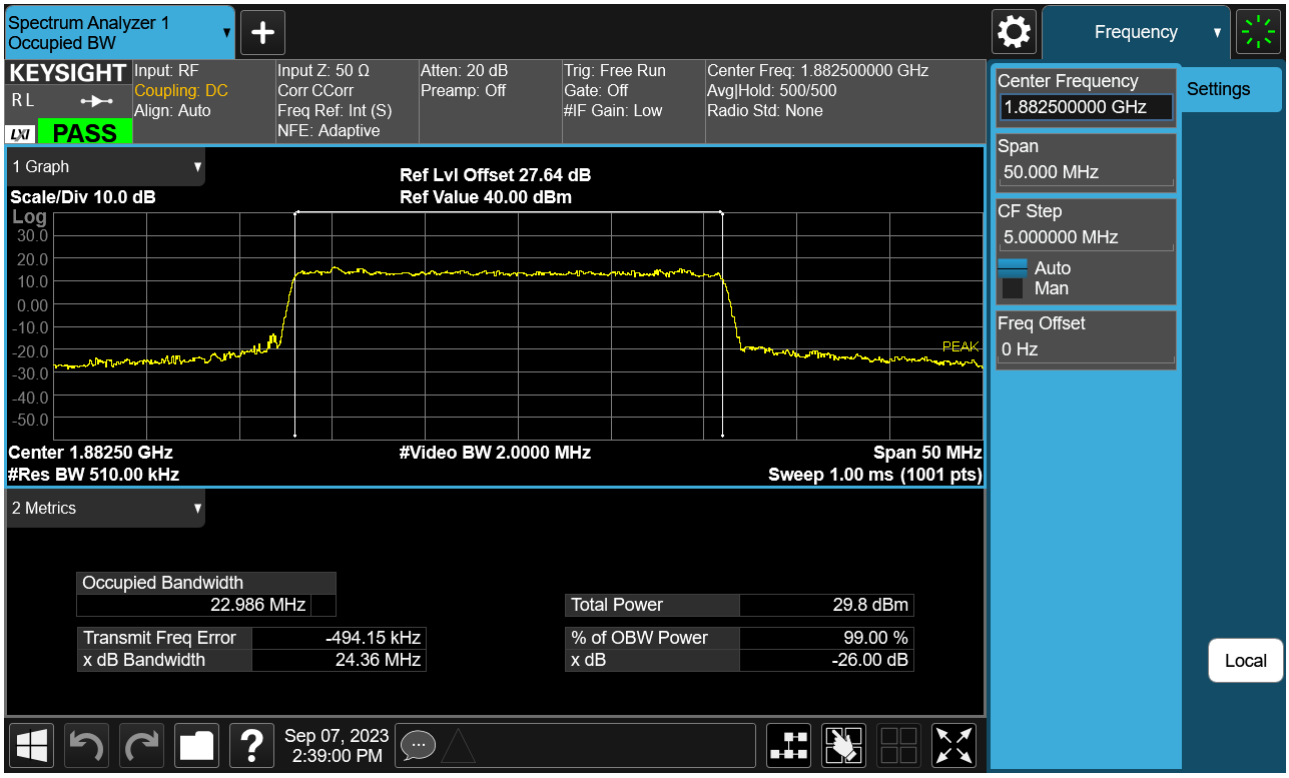
Sub6 n25. Occupied Bandwidth Plot (25 M BW Ch.376500 BPSK _ Full RB _0)



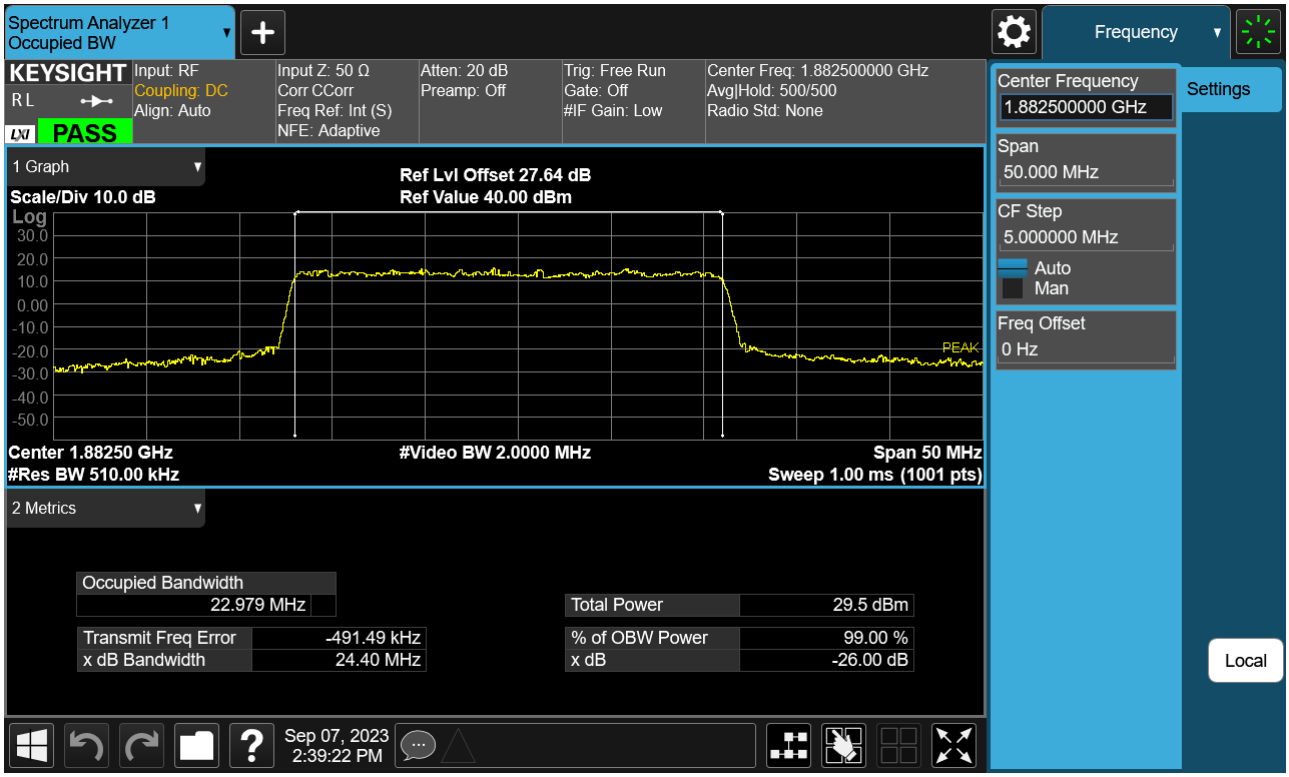
Sub6 n25. Occupied Bandwidth Plot (25 M BW Ch.376500 QPSK _ Full RB _0)



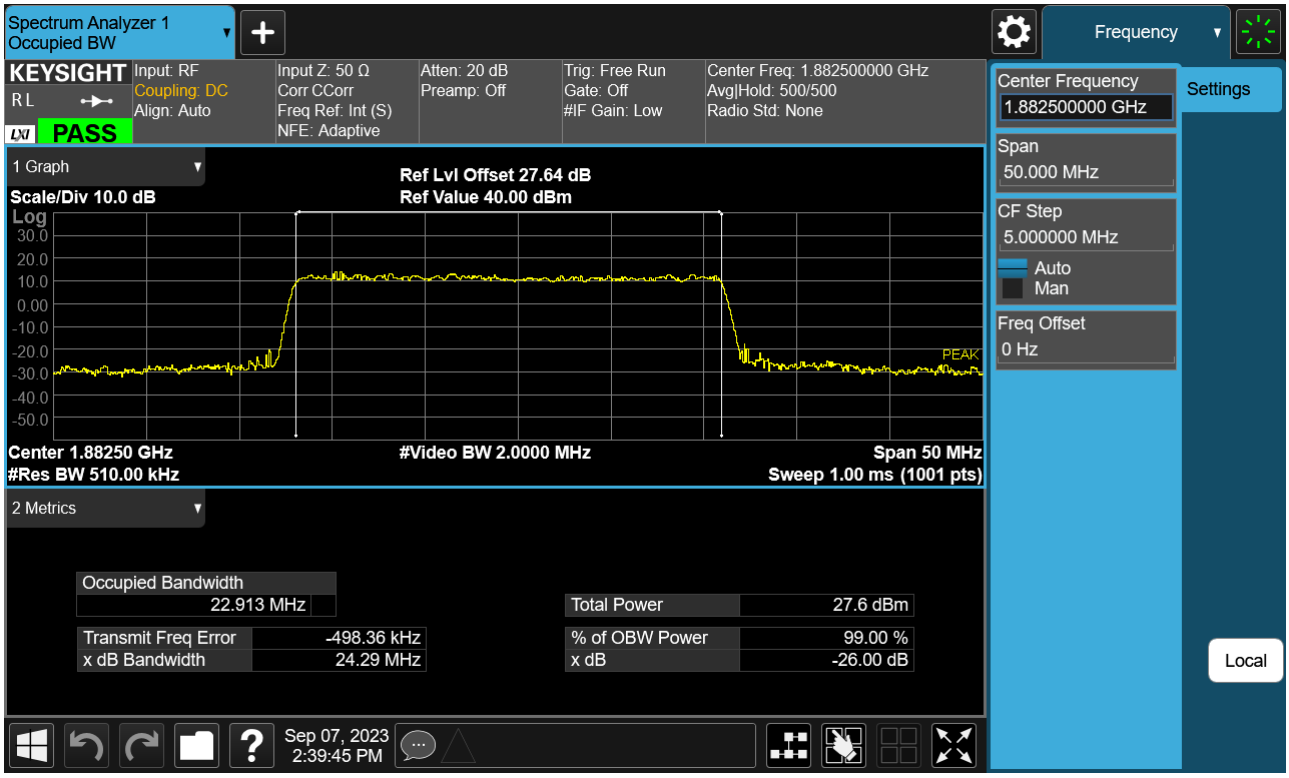
Sub6 n25. Occupied Bandwidth Plot (25 M BW Ch.376500 16QAM _ Full RB _0)



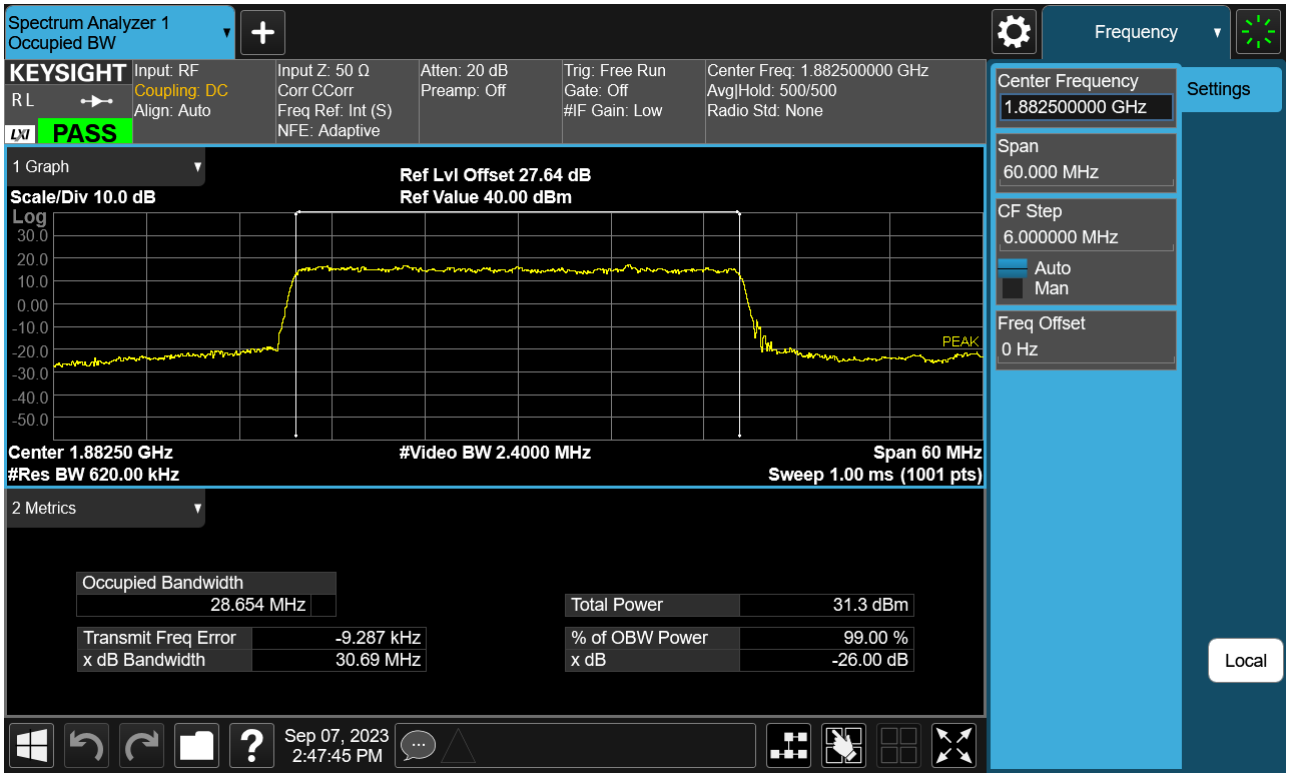
Sub6 n25. Occupied Bandwidth Plot (25 M BW Ch.376500 64QAM _ Full RB _0)



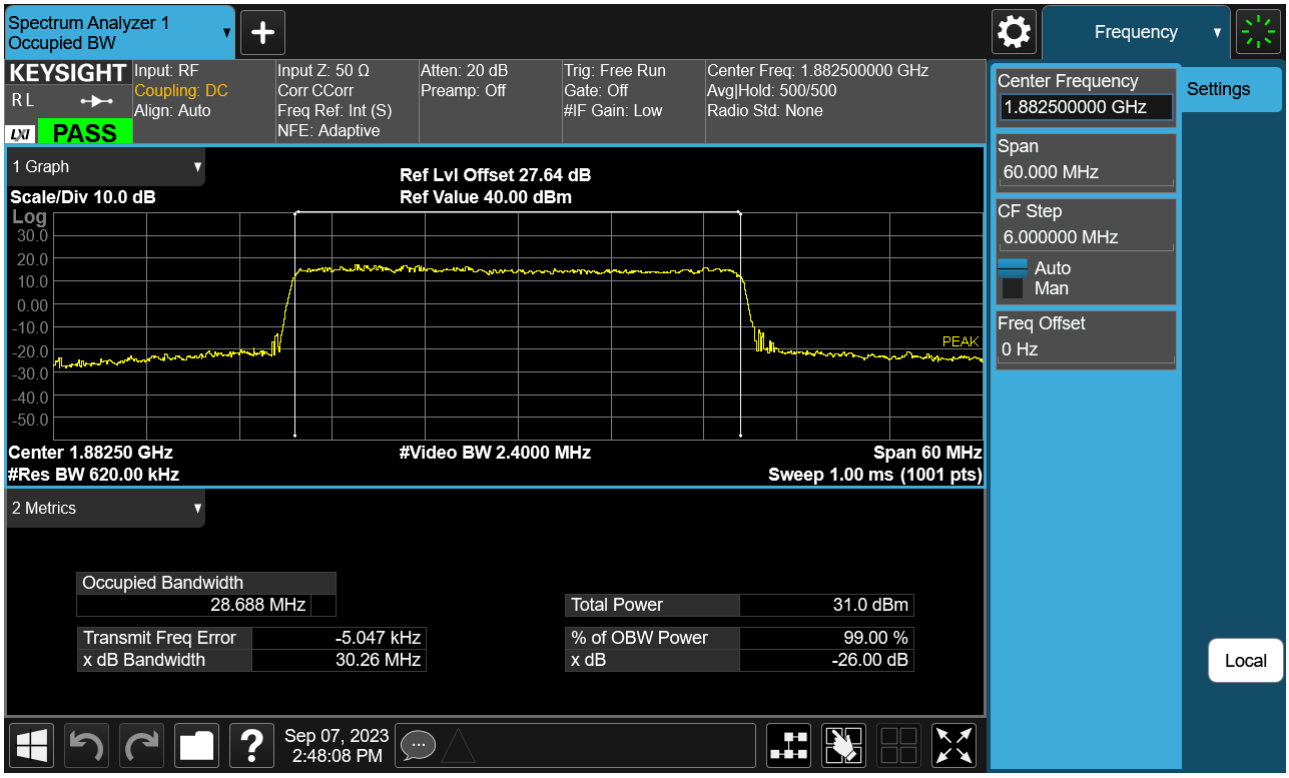
Sub6 n25. Occupied Bandwidth Plot (25 M BW Ch.376500 256QAM _ Full RB _0)



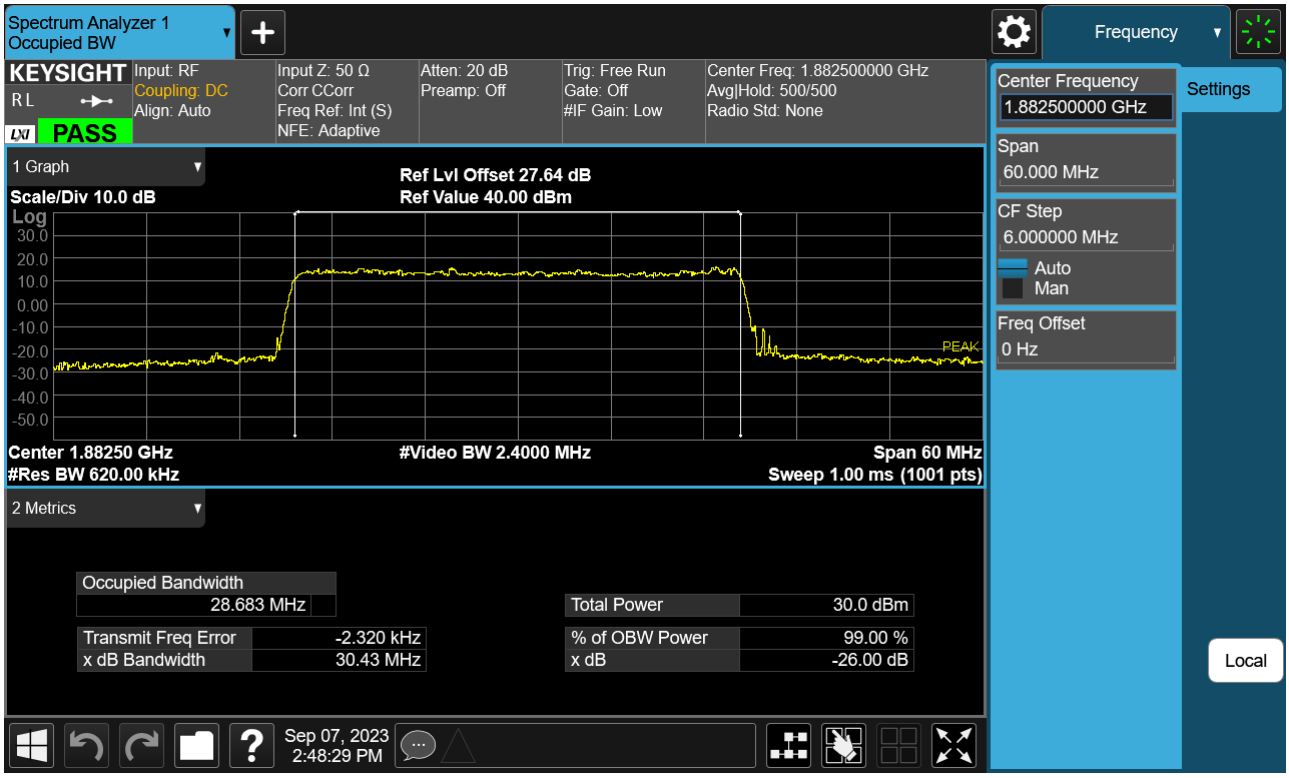
Sub6 n25. Occupied Bandwidth Plot (30 M BW Ch.376500 BPSK_ Full RB _0)



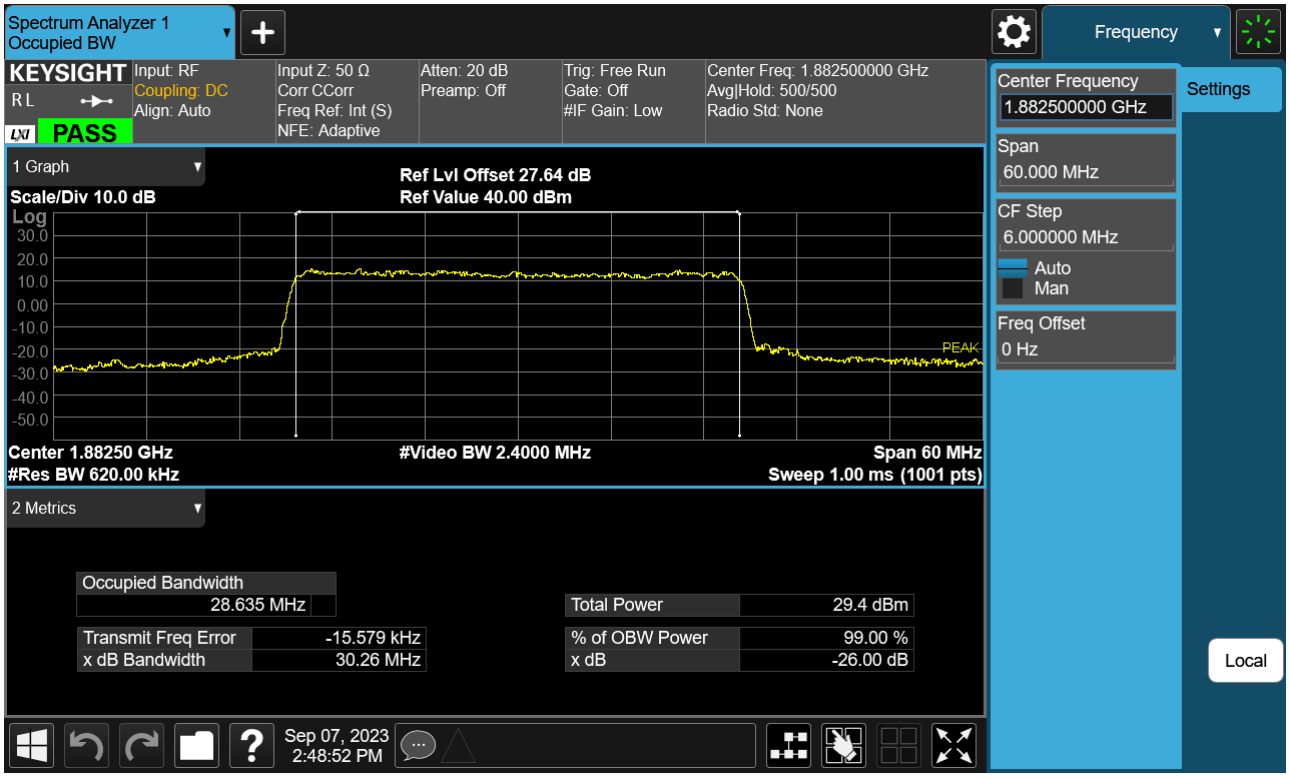
Sub6 n25. Occupied Bandwidth Plot (30 M BW Ch.376500 QPSK_ Full RB _0)



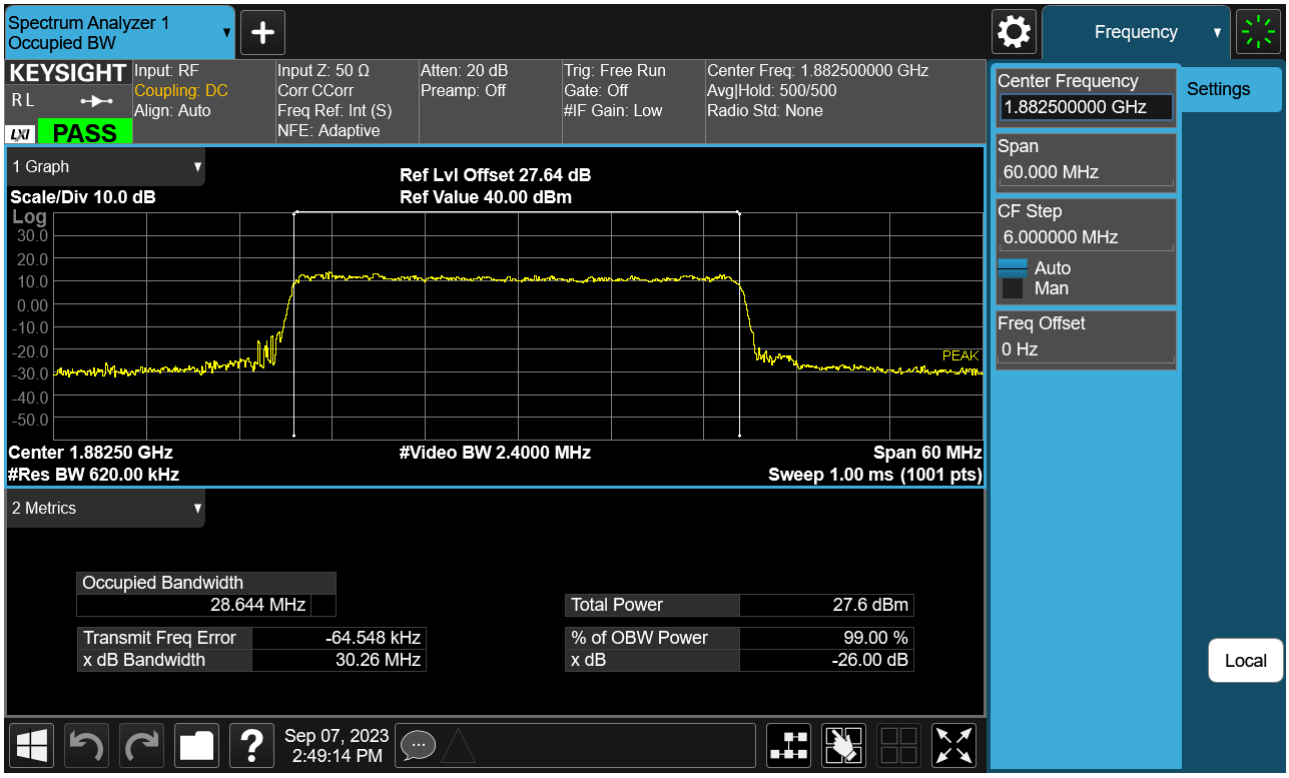
Sub6 n25. Occupied Bandwidth Plot (30 M BW Ch.376500 16QAM _ Full RB _0)



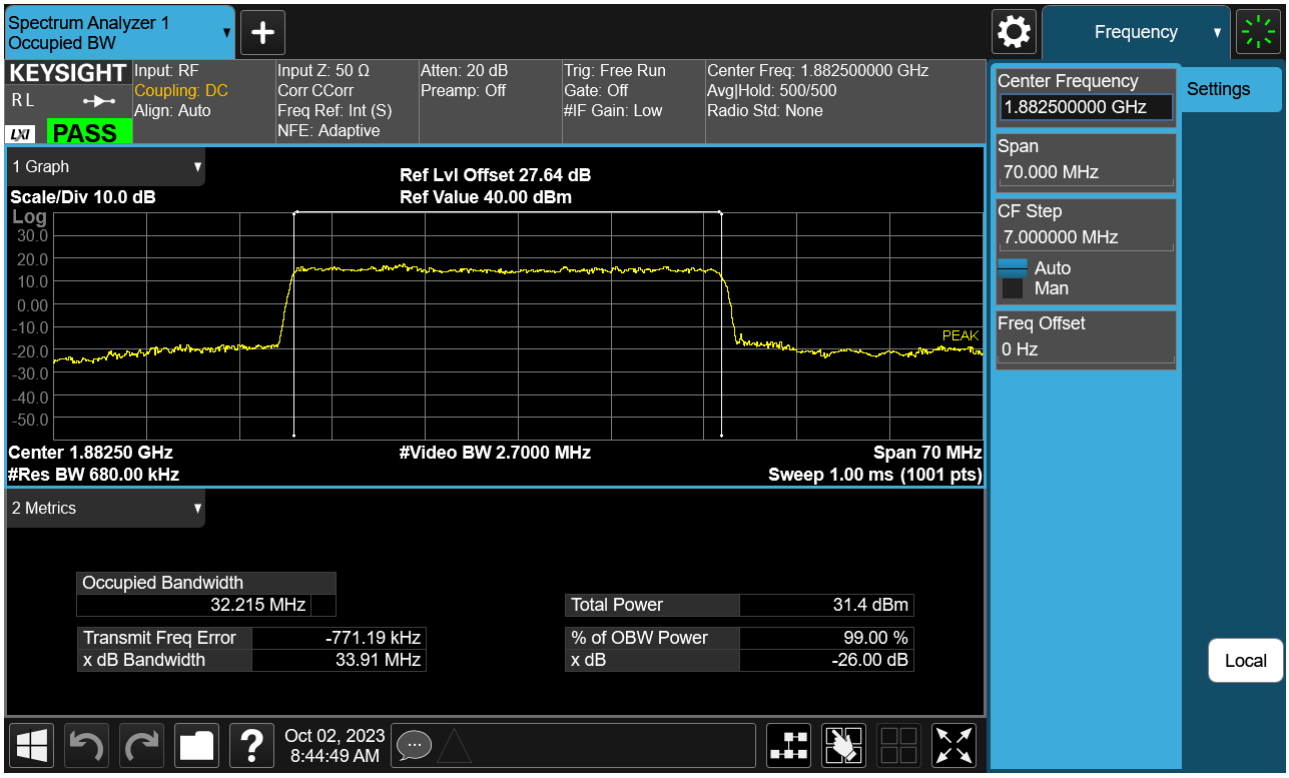
Sub6 n25. Occupied Bandwidth Plot (30 M BW Ch.376500 64QAM_ Full RB _0)



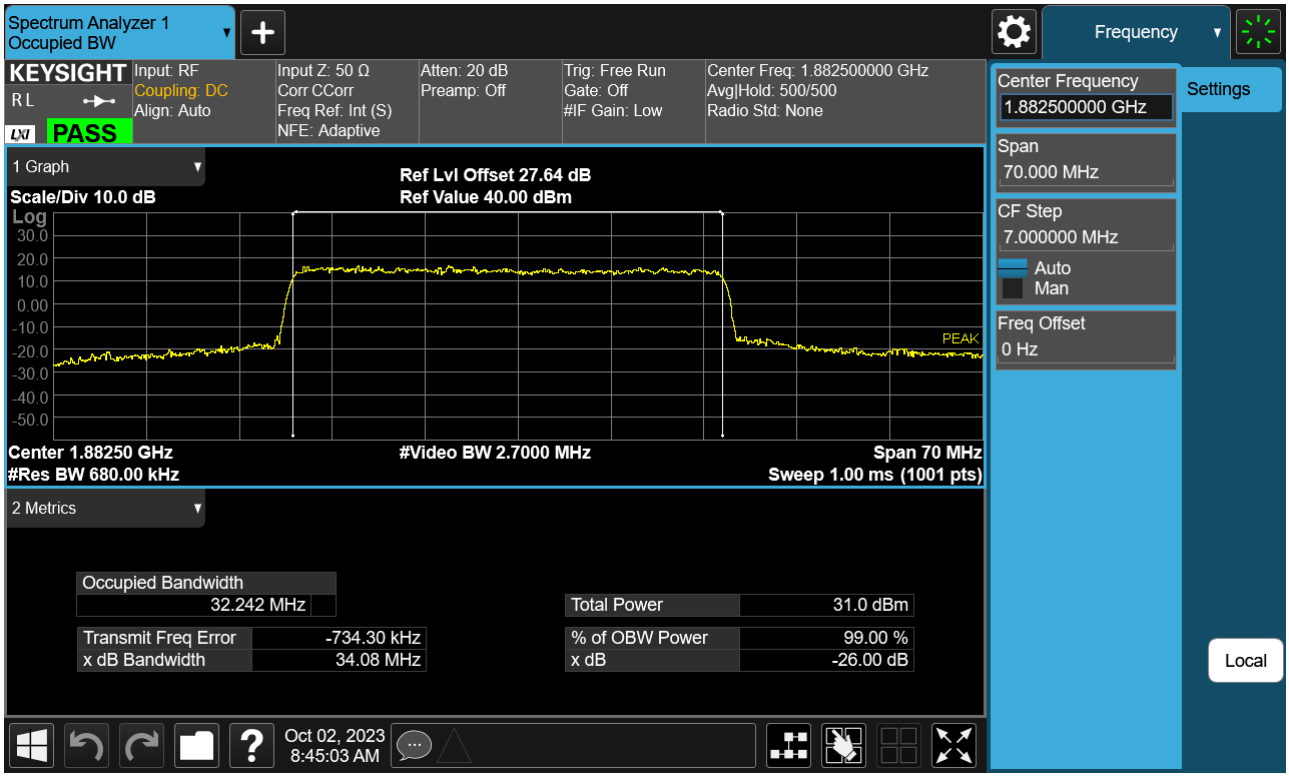
Sub6 n25. Occupied Bandwidth Plot (30 M BW Ch.376500 256QAM_ Full RB _0)



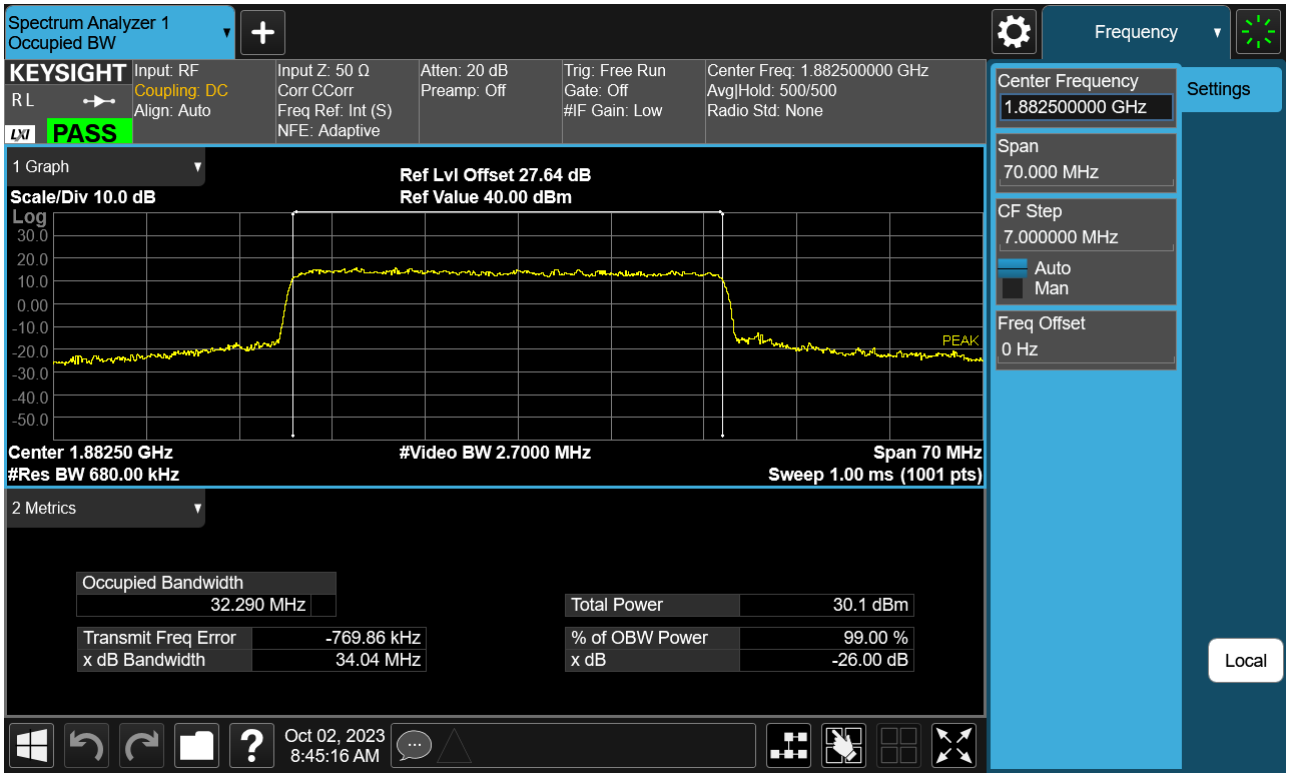
Sub6 n25. Occupied Bandwidth Plot (35 M BW Ch.376500 BPSK_ Full RB _0)



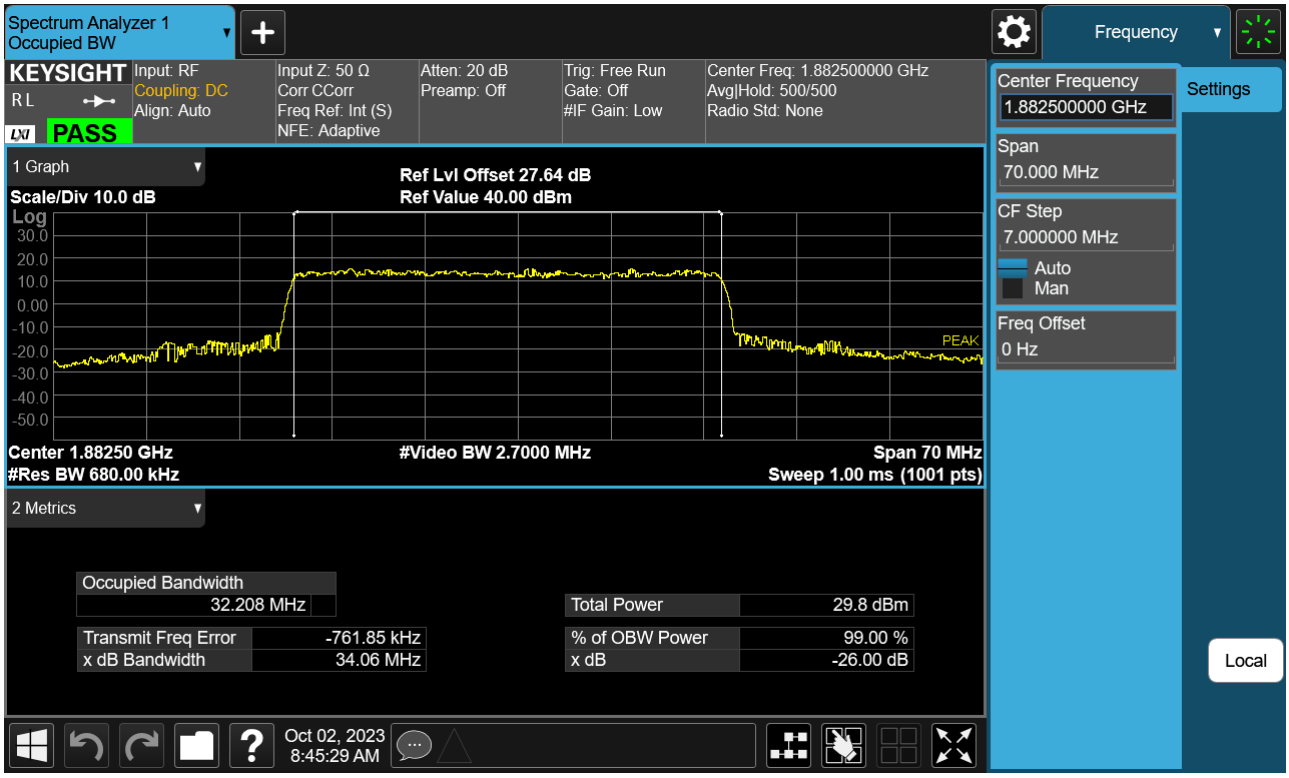
Sub6 n25. Occupied Bandwidth Plot (35 M BW Ch.376500 QPSK_ Full RB _0)



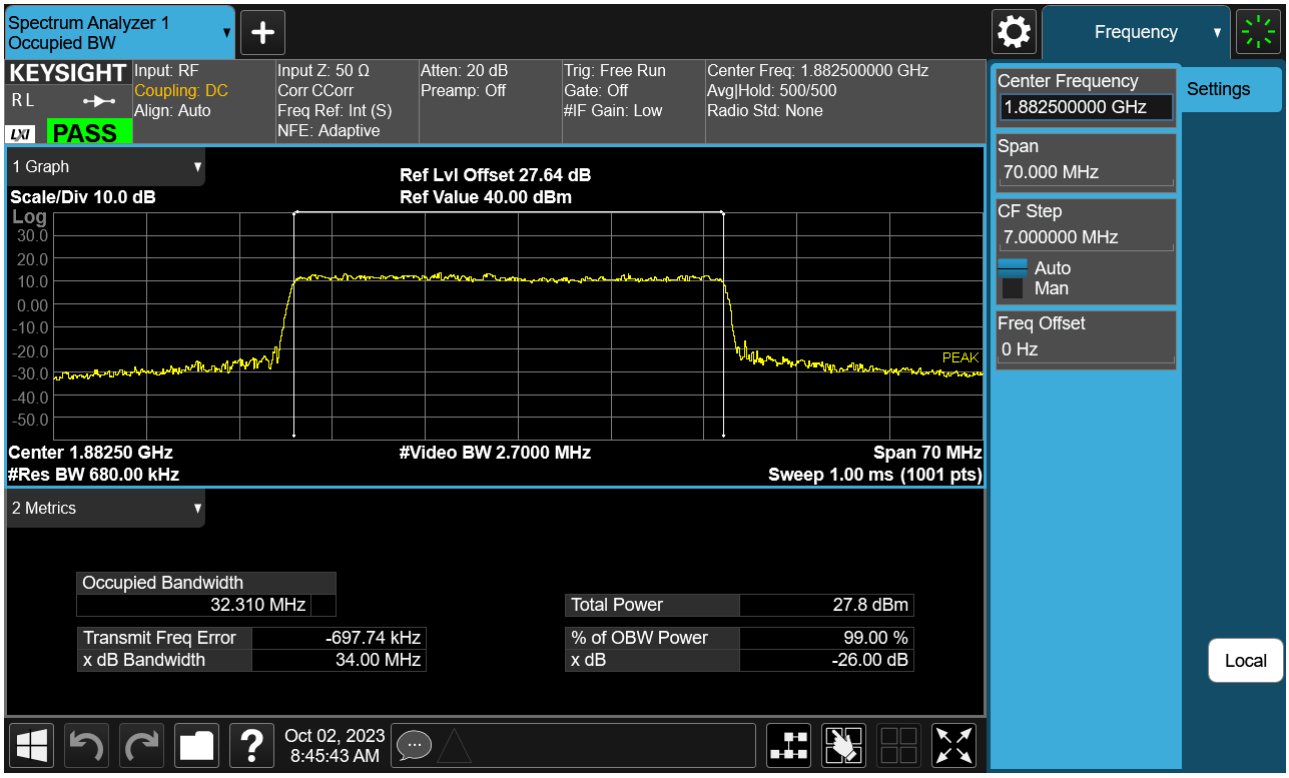
Sub6 n25. Occupied Bandwidth Plot (35 M BW Ch.376500 16QAM _ Full RB _0)



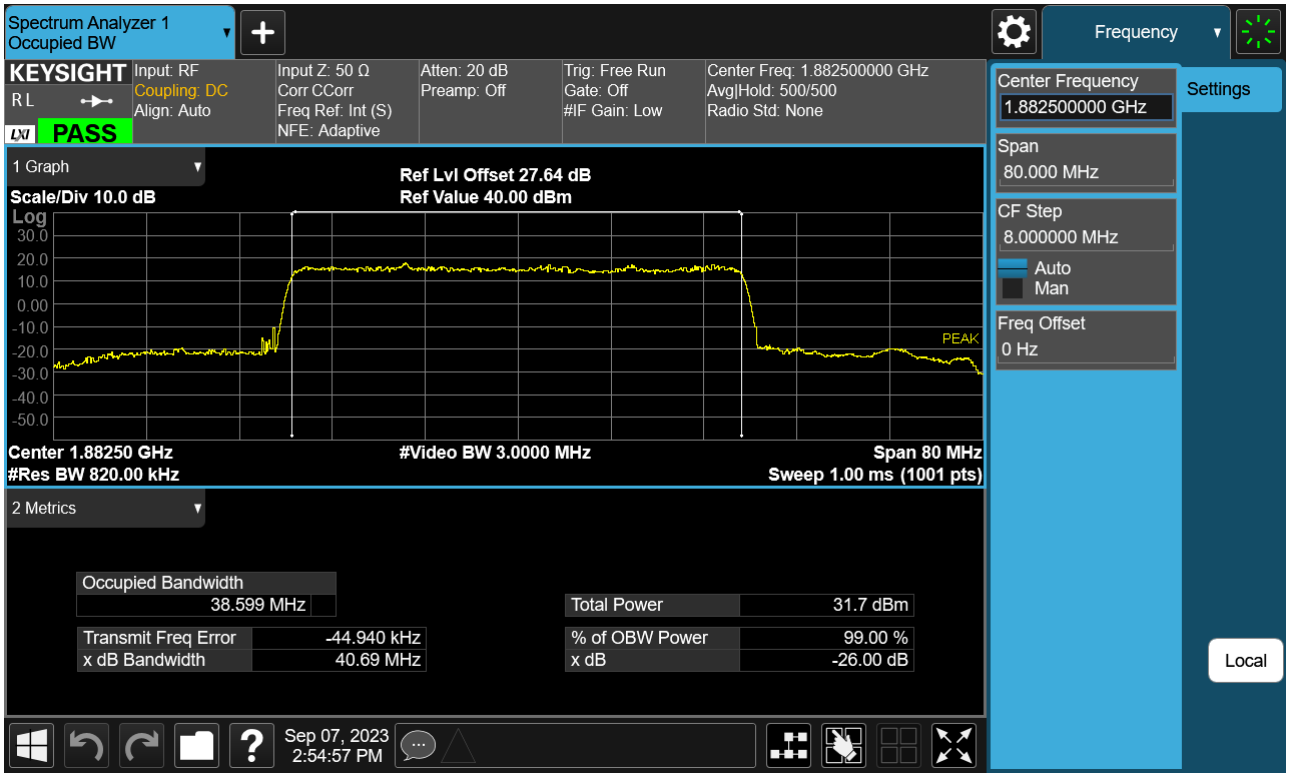
Sub6 n25. Occupied Bandwidth Plot (35 M BW Ch.376500 64QAM_ Full RB _0)



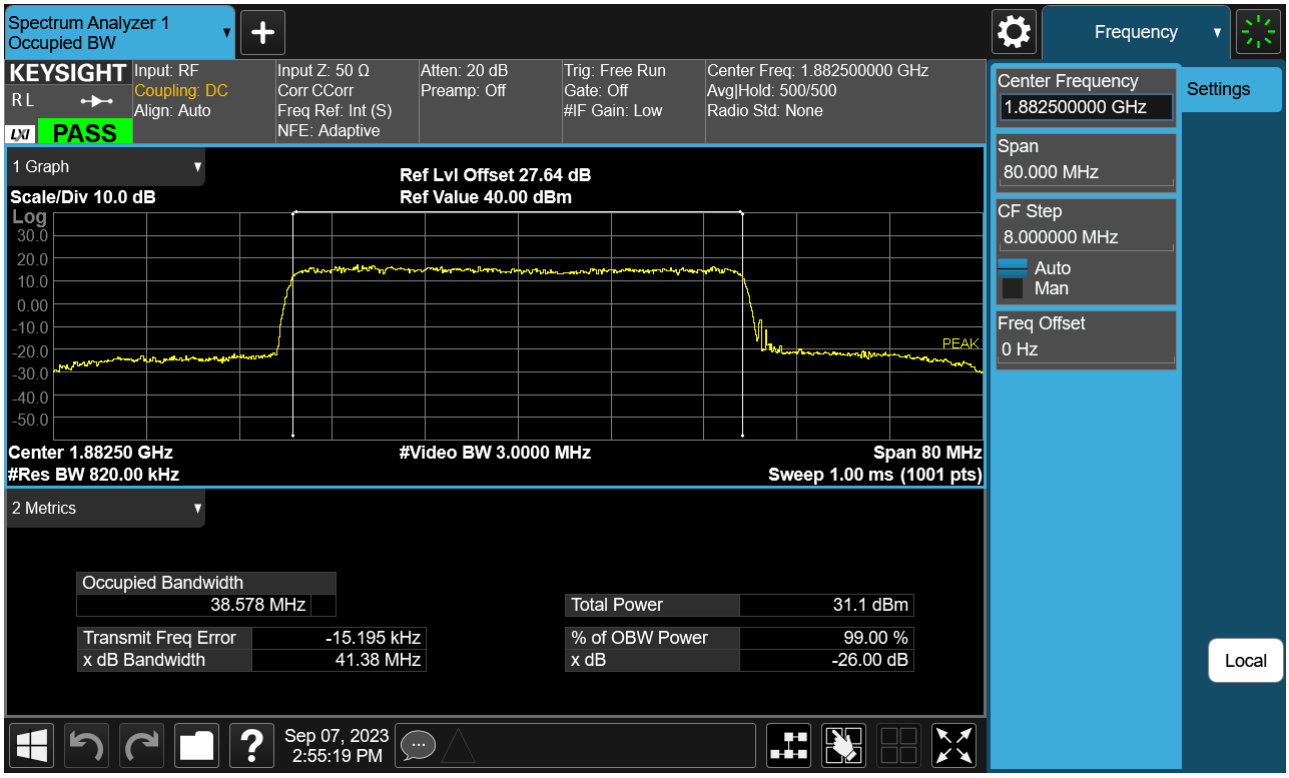
Sub6 n25. Occupied Bandwidth Plot (35 M BW Ch.376500 256QAM_ Full RB _0)



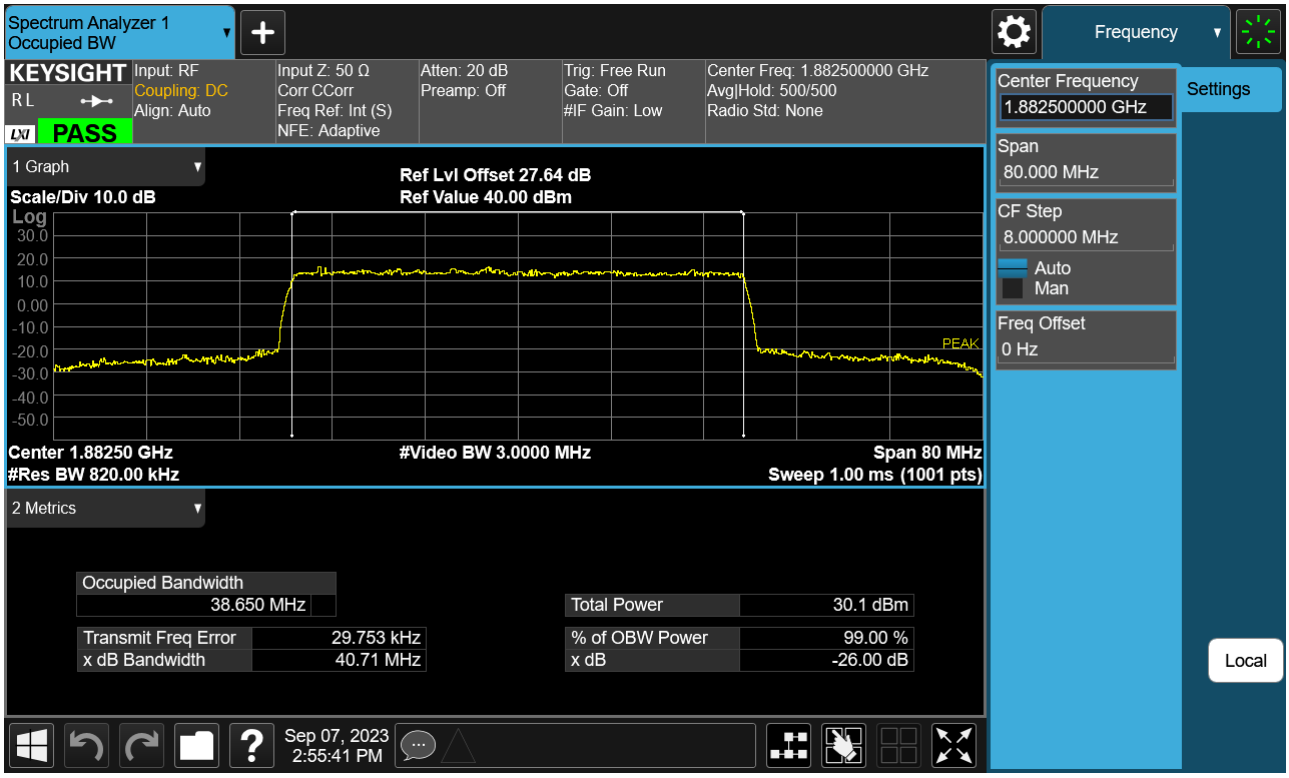
Sub6 n25. Occupied Bandwidth Plot (40 M BW Ch.376500 BPSK_ Full RB _0)



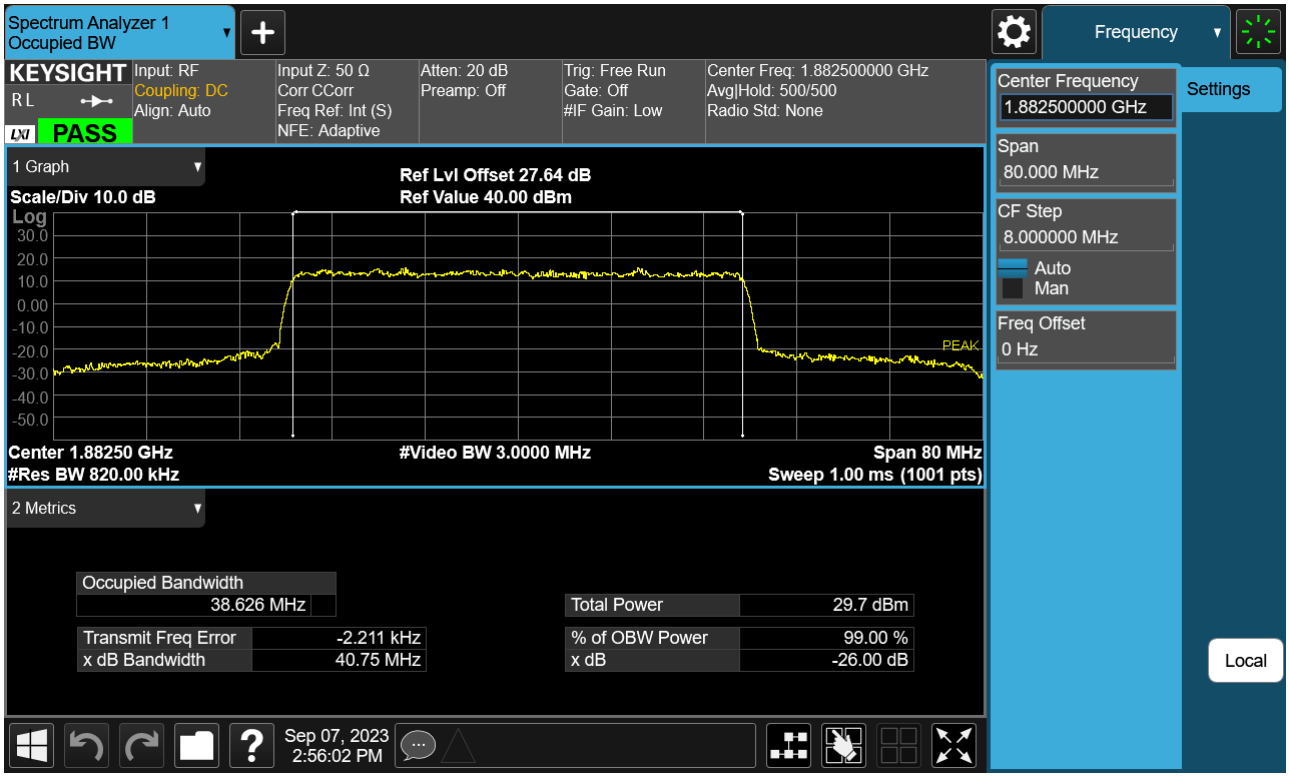
Sub6 n25. Occupied Bandwidth Plot (40 M BW Ch.376500 QPSK_ Full RB _0)



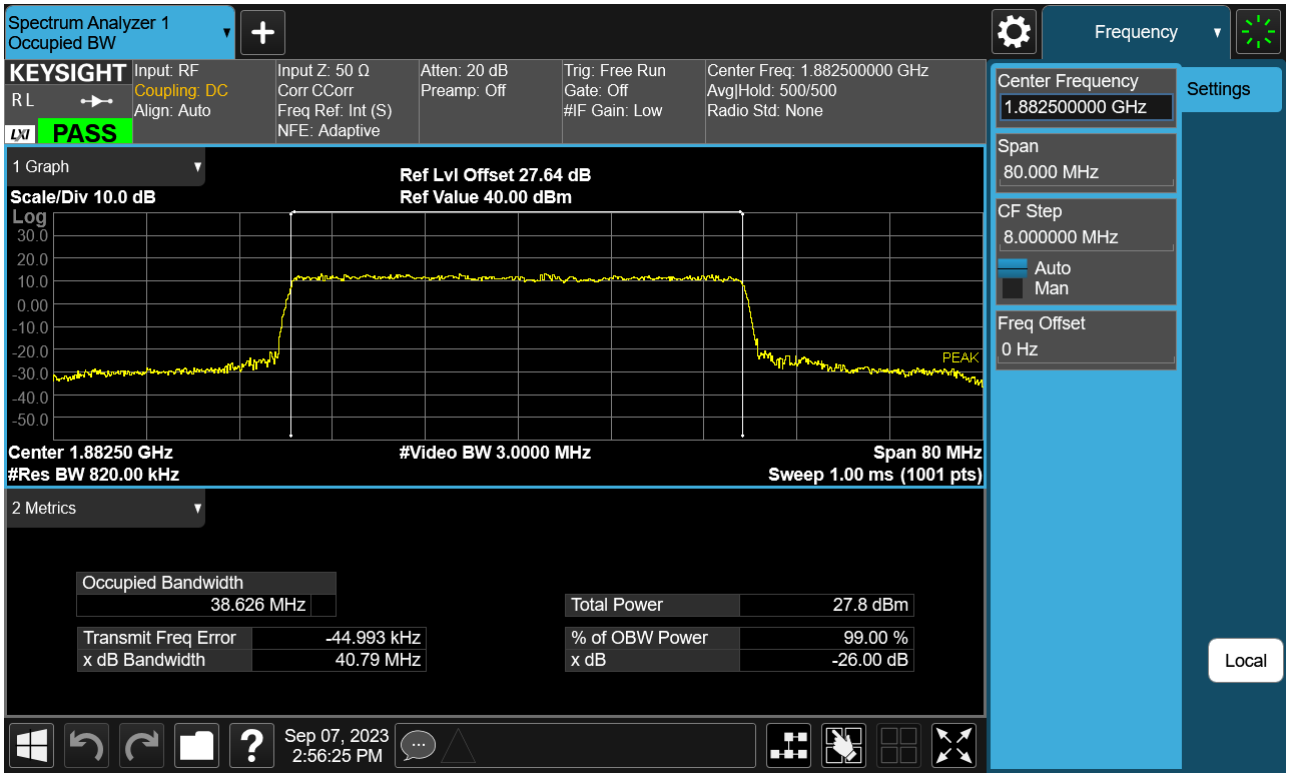
Sub6 n25. Occupied Bandwidth Plot (40 M BW Ch.376500 16QAM_ Full RB _0)



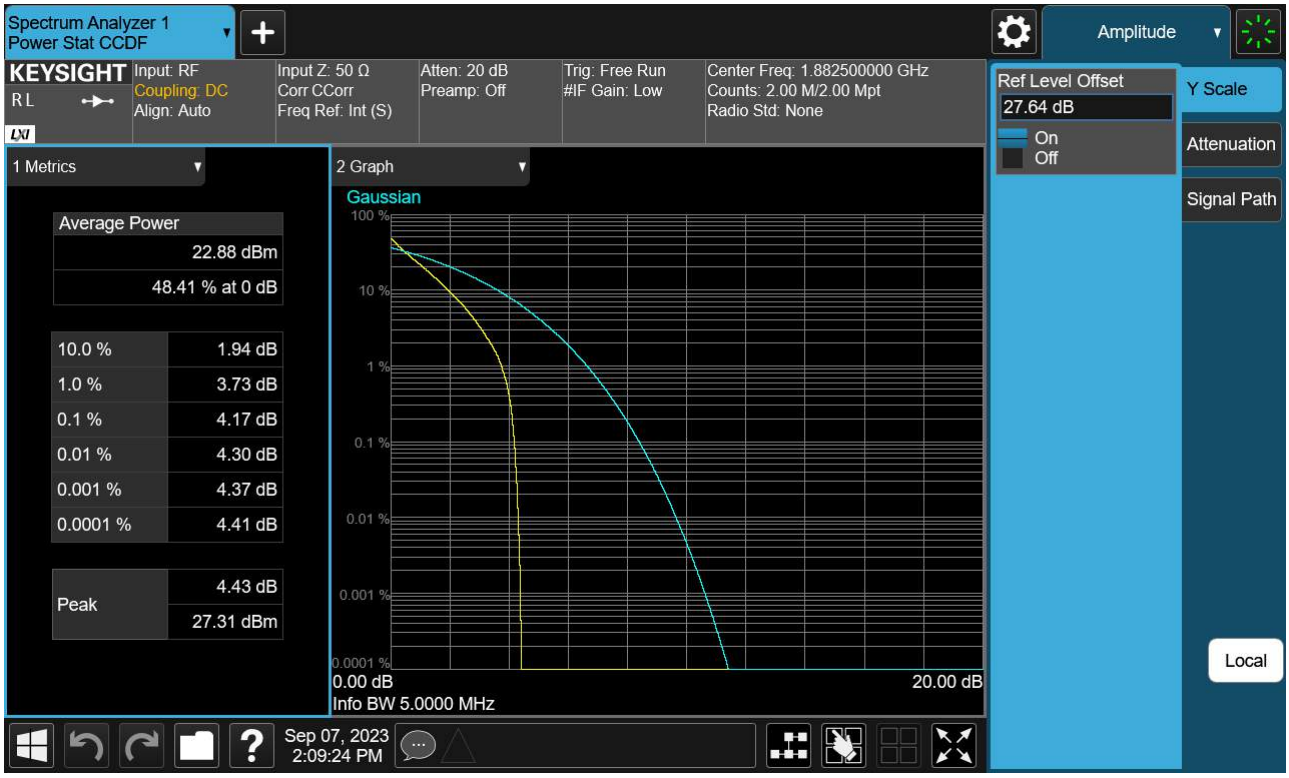
Sub6 n25. Occupied Bandwidth Plot (40 M BW Ch.376500 64QAM_ Full RB _0)



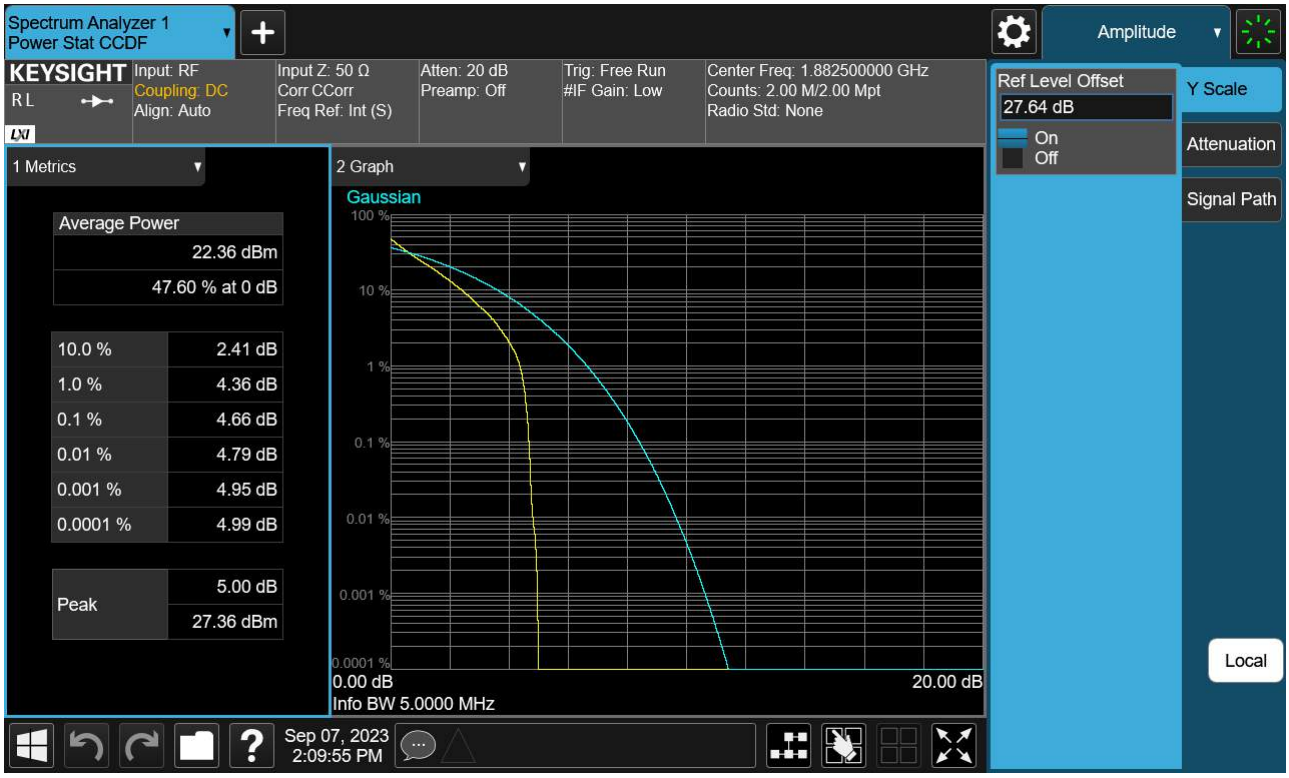
Sub6 n25. Occupied Bandwidth Plot (40 M BW Ch.376500 256QAM_ Full RB _0)



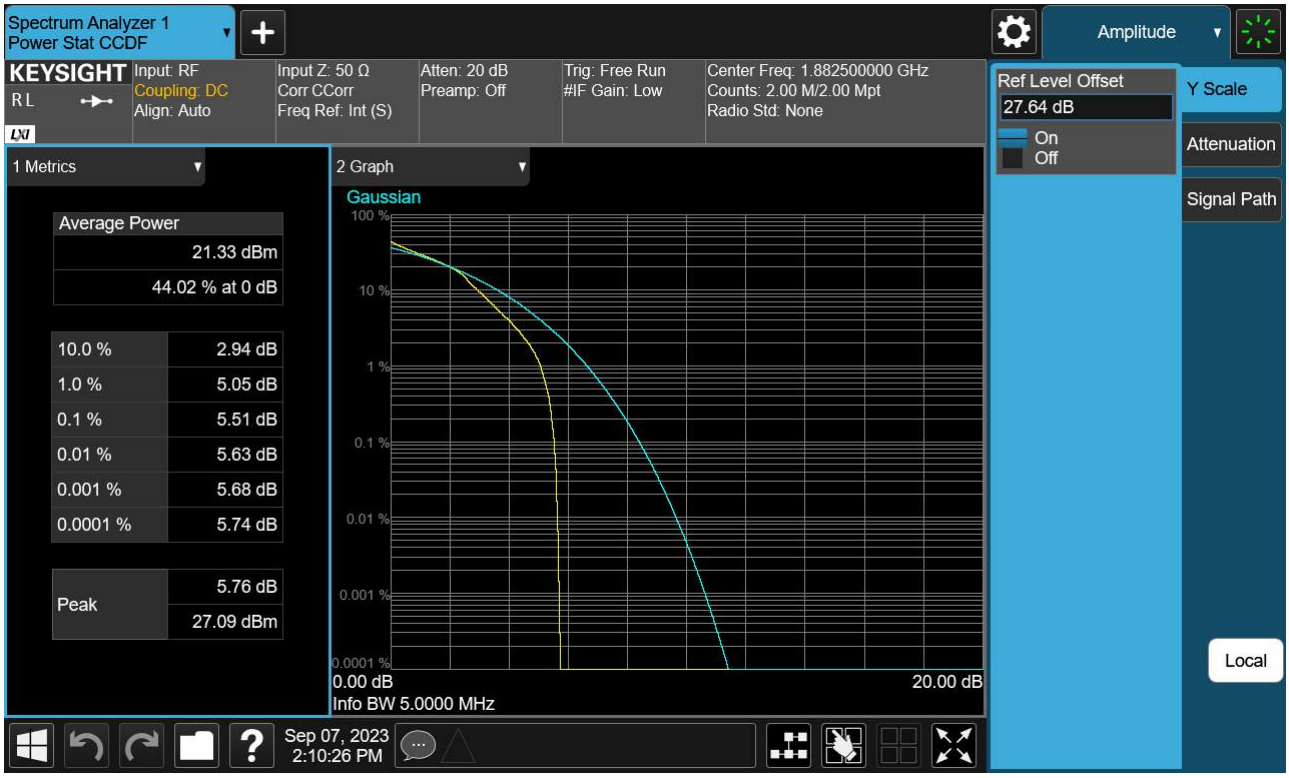
Sub6 n25. PAR Plot (5 M BW Ch.376500 BPSK_ Full RB _0)



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



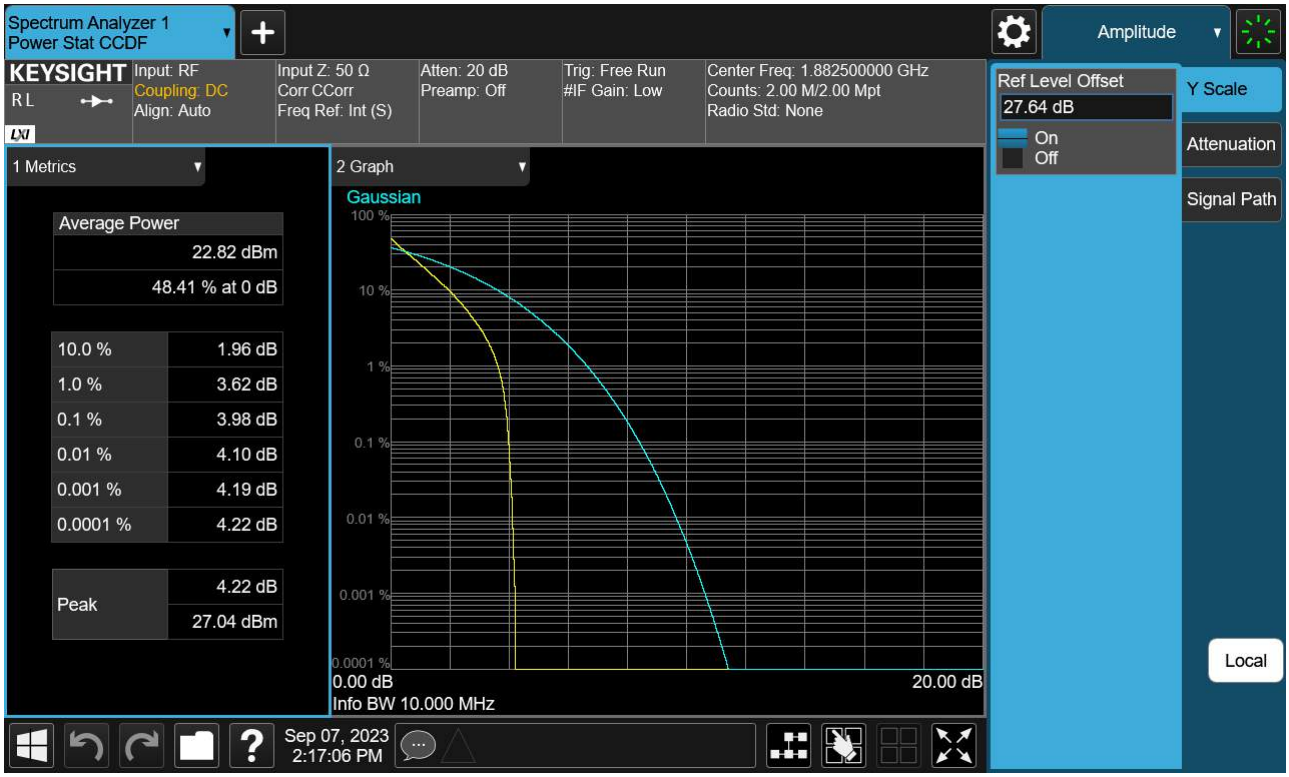
Sub6 n25. PAR Plot (5 M BW Ch.376500 16QAM_ Full RB _0)



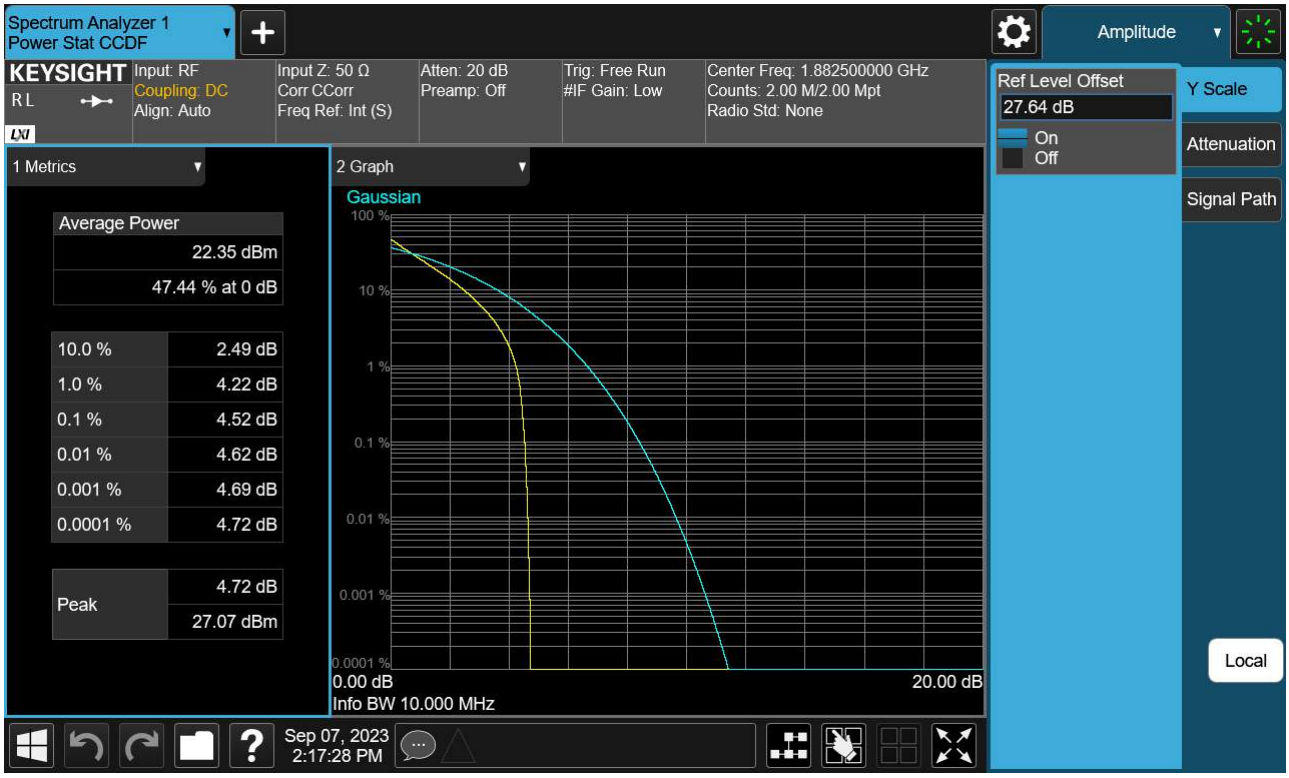
Sub6 n25. PAR Plot (5 M BW Ch.376500 64QAM_ Full RB _0)

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

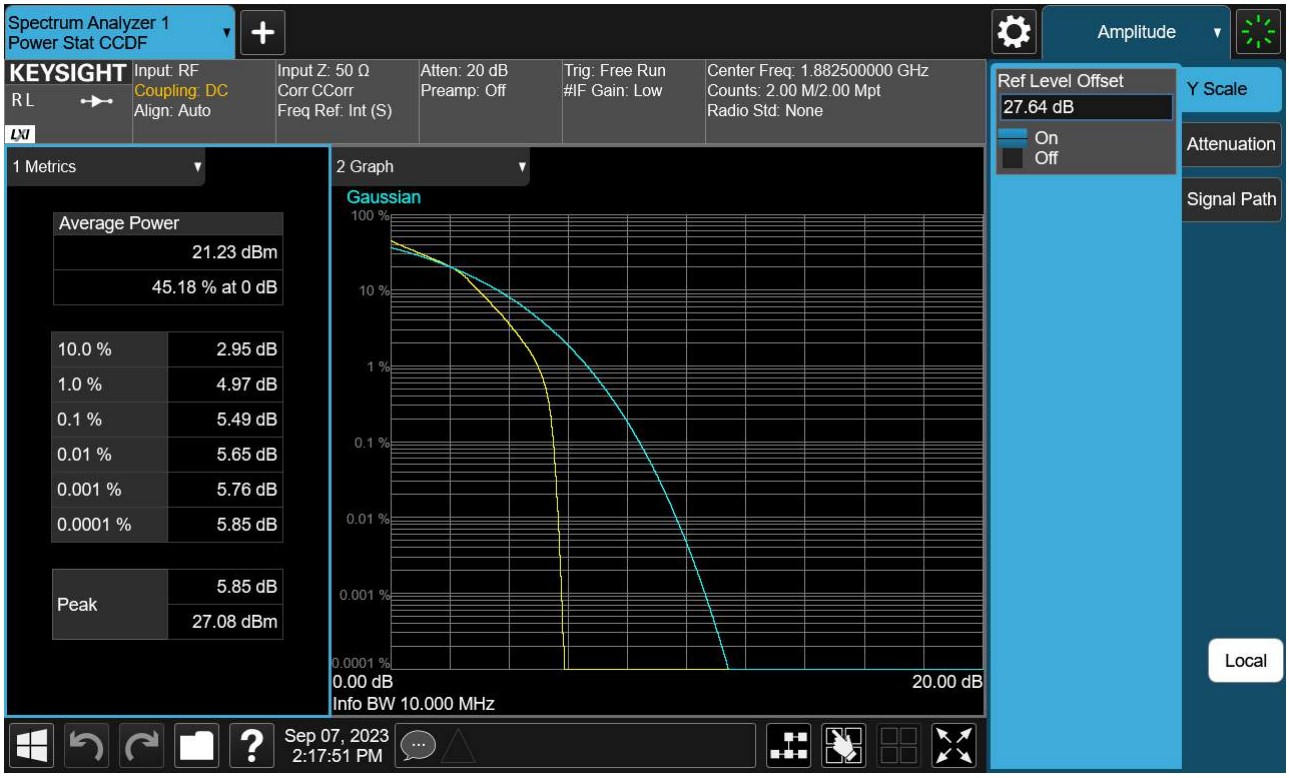
Sub6 n25. PAR Plot (10 M BW Ch.376500 BPSK _ Full RB _0)



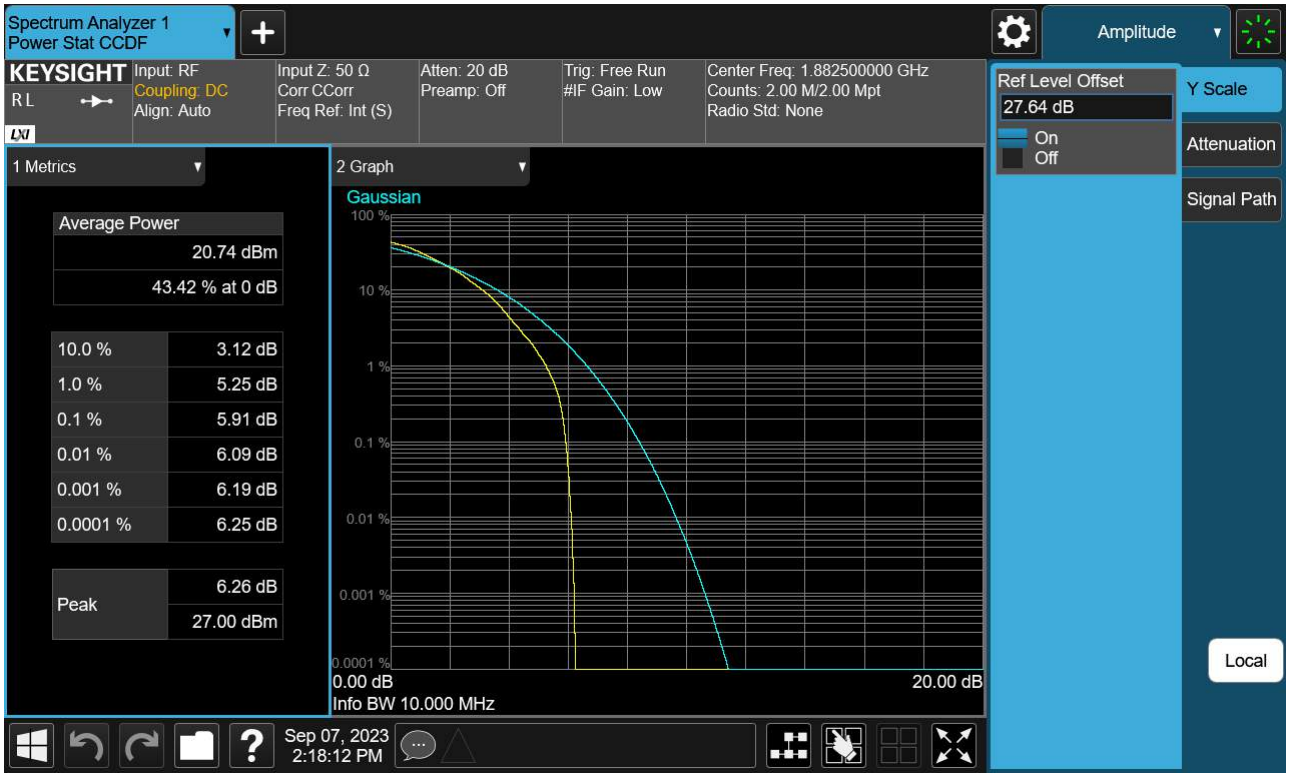
Sub6 n25. PAR Plot (10 M BW Ch.376500 QPSK _ Full RB _0)



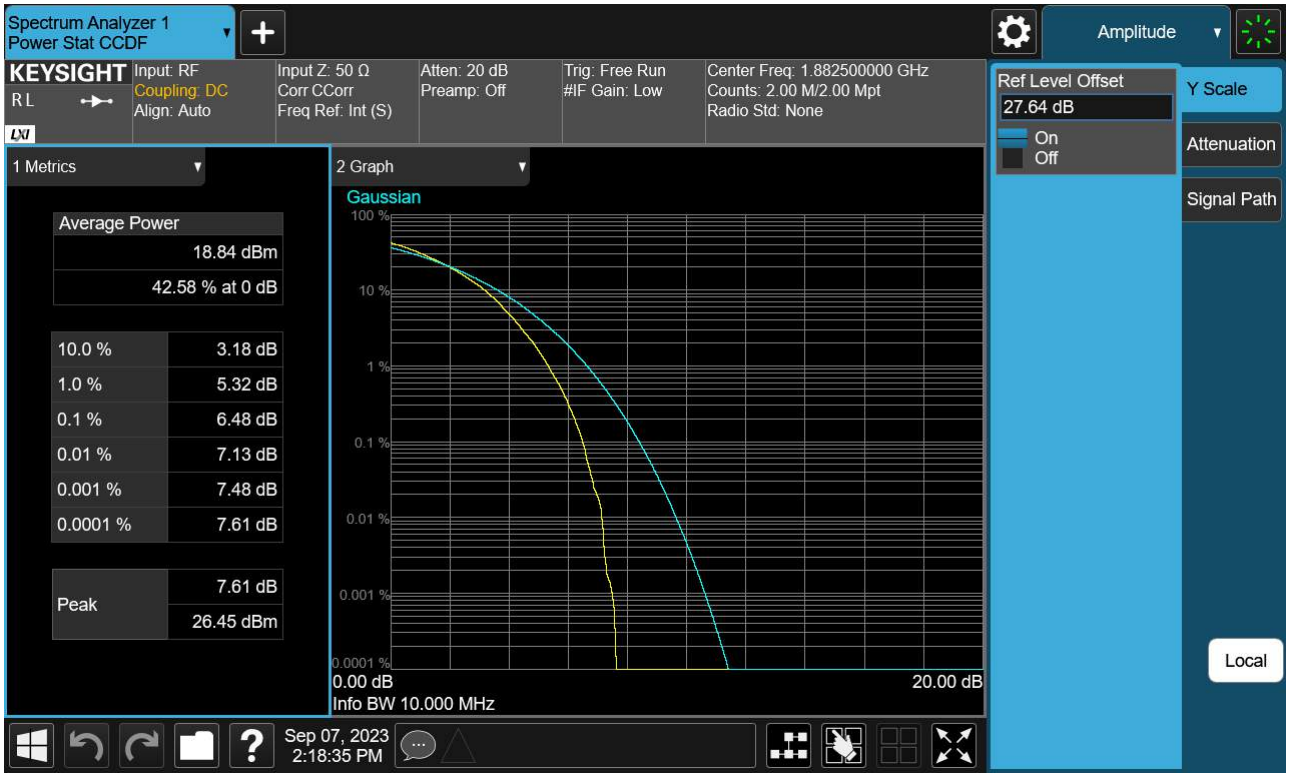
Sub6 n25. PAR Plot (10 M BW Ch.376500 16QAM _ Full RB _0)



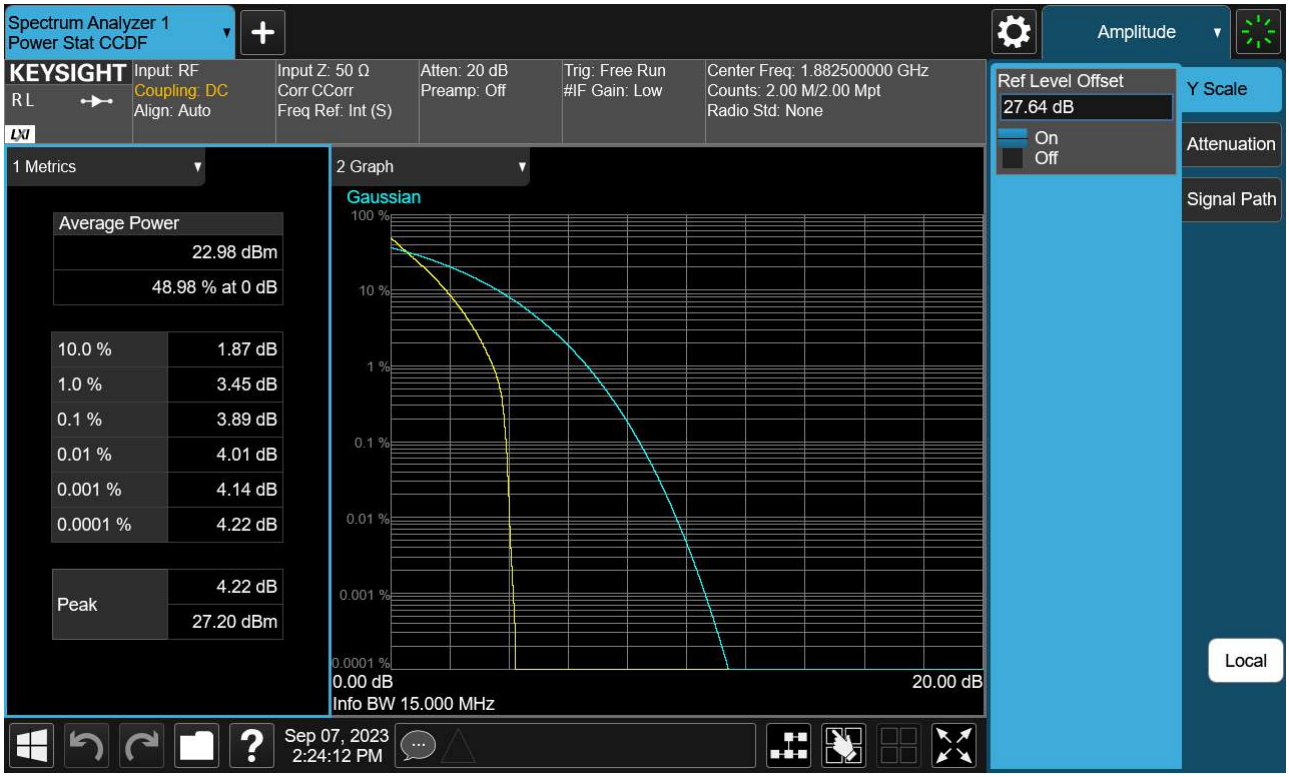
Sub6 n25. PAR Plot (10 M BW Ch.376500 64QAM _ Full RB _0)



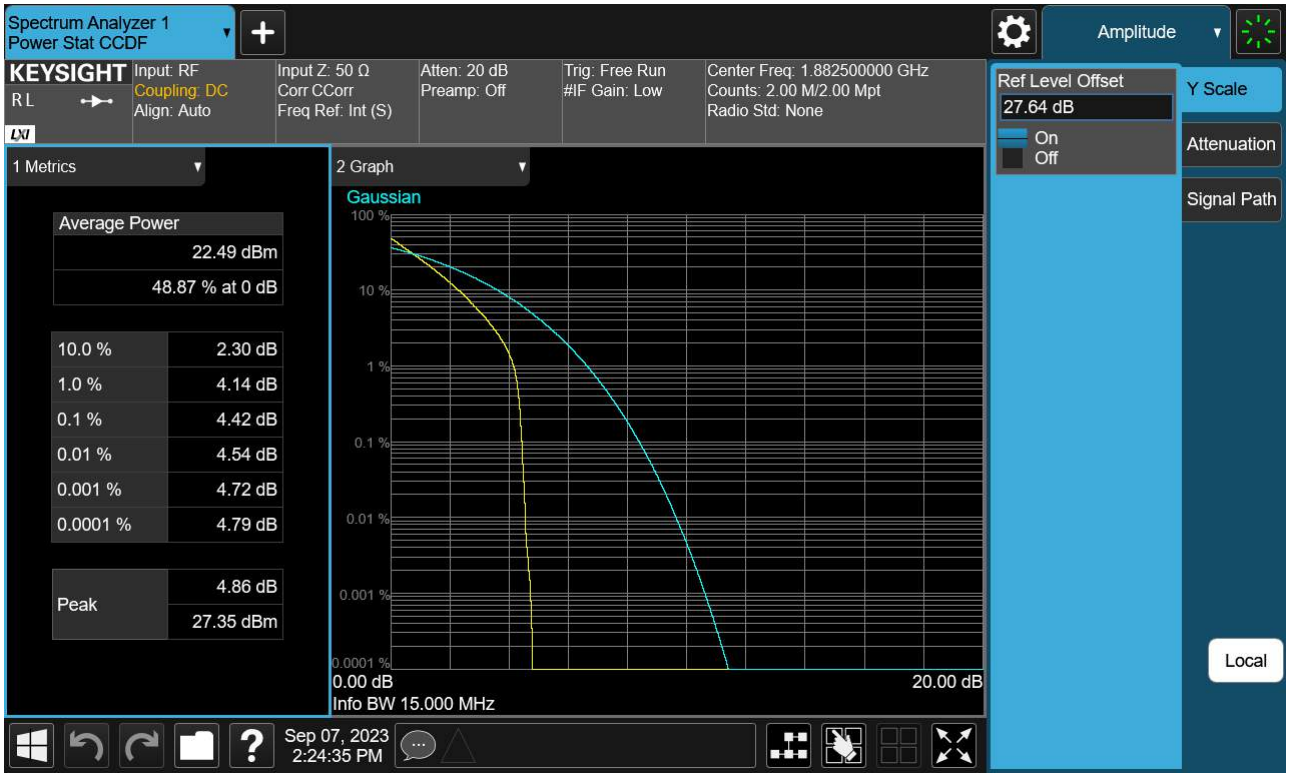
Sub6 n25. PAR Plot (10 M BW Ch.376500 256QAM _ Full RB _0)



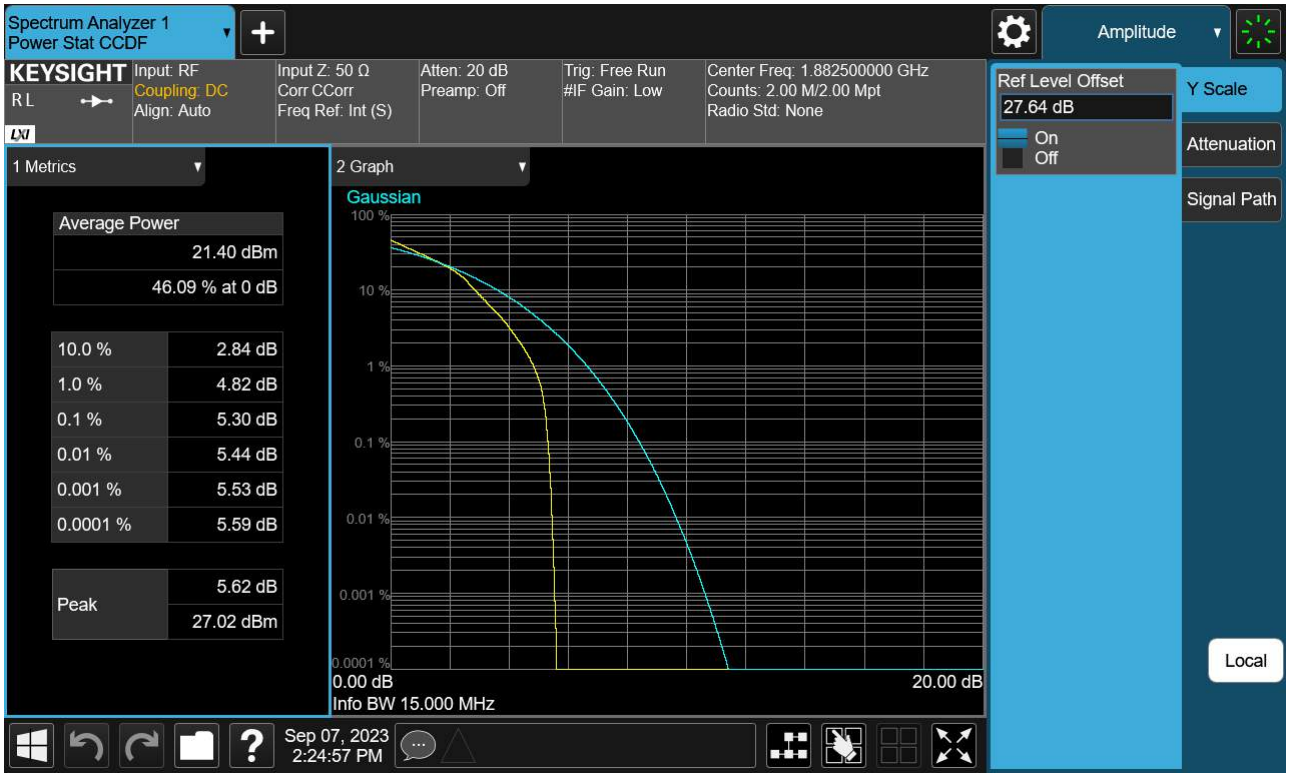
Sub6 n25. PAR Plot (15 M BW Ch.376500 BPSK _ Full RB _0)



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

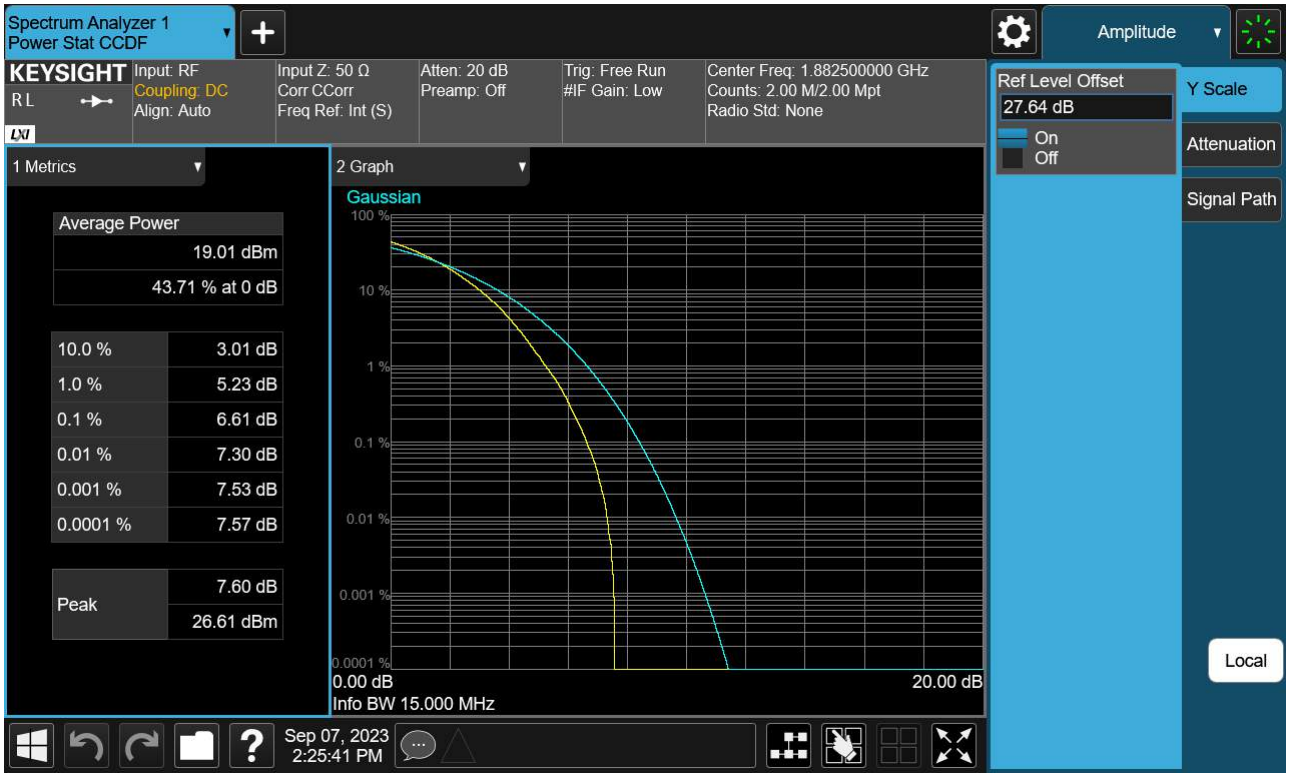


Sub6 n25. PAR Plot (15 M BW Ch.376500 16QAM _ Full RB _0)

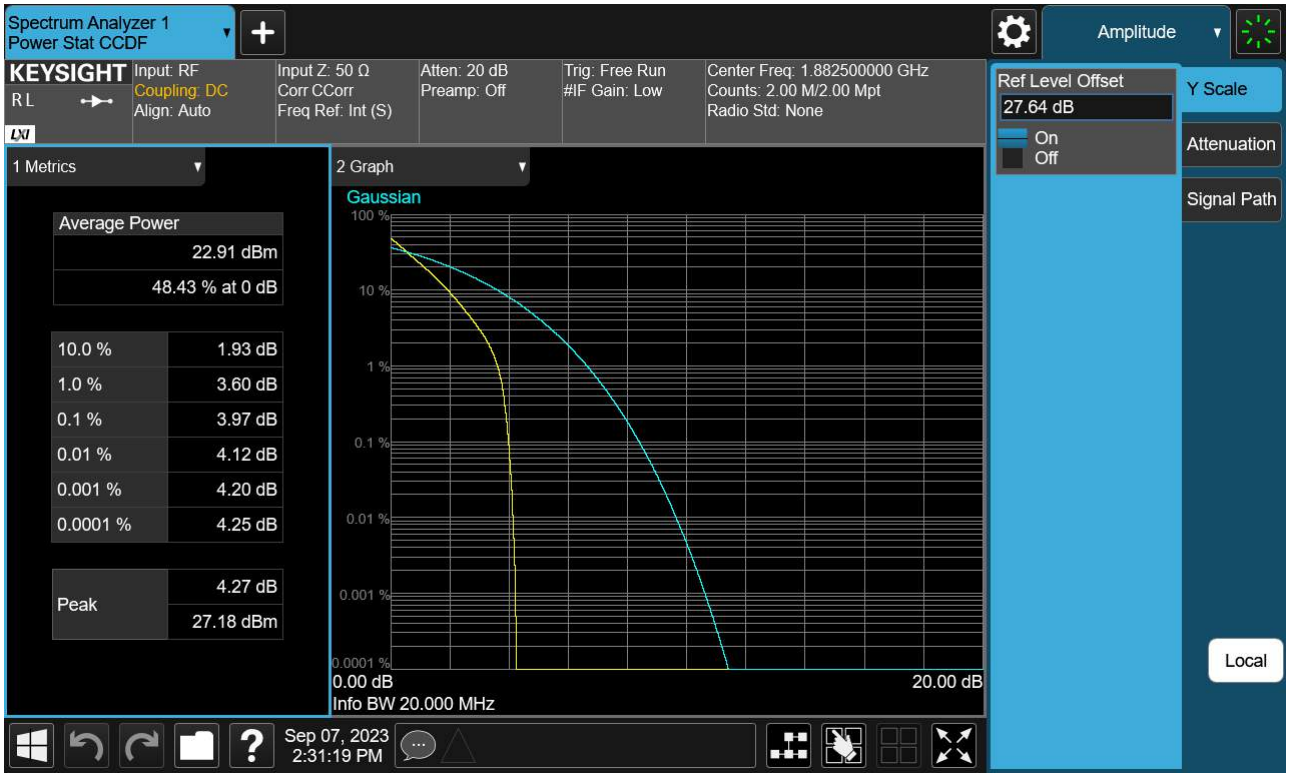


Sub6 n25. PAR Plot (15 M BW Ch.376500 64QAM _ Full RB _0)

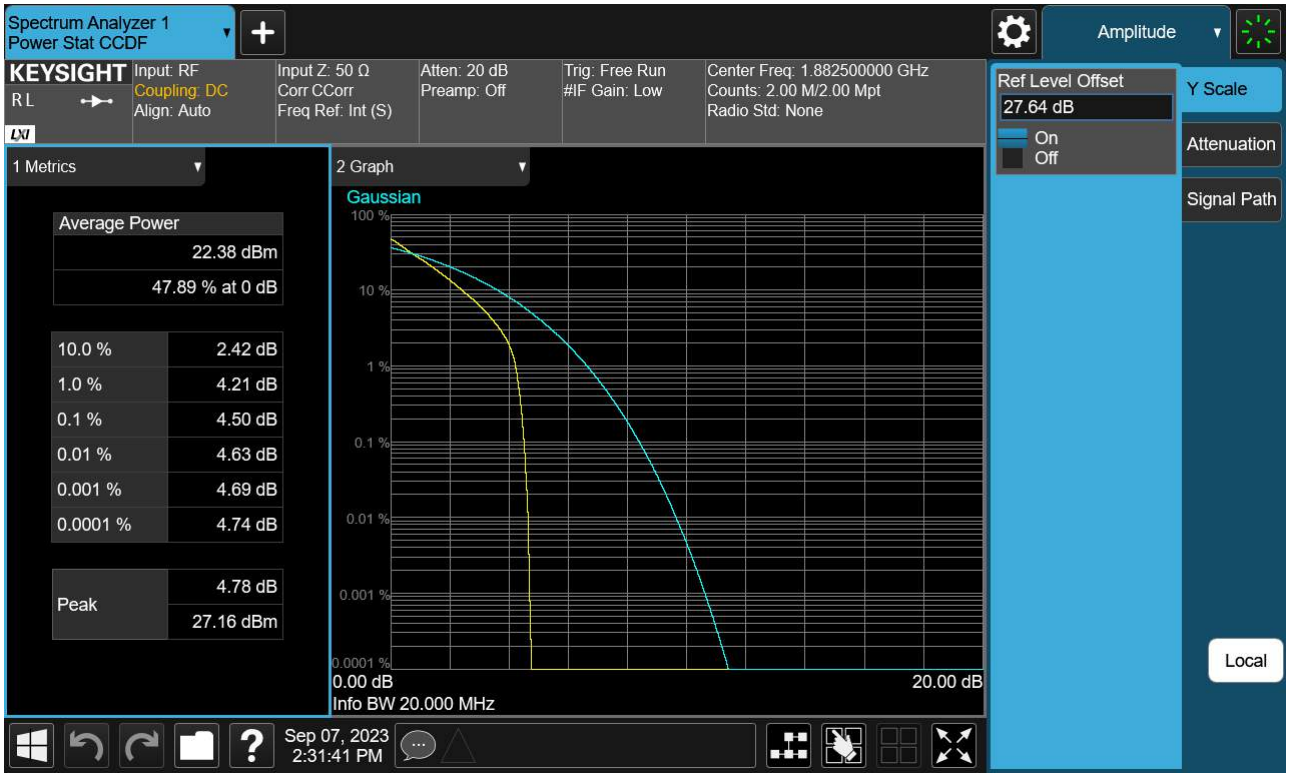
Sub6 n25. PAR Plot (15 M BW Ch.376500 256QAM _ Full RB _0)



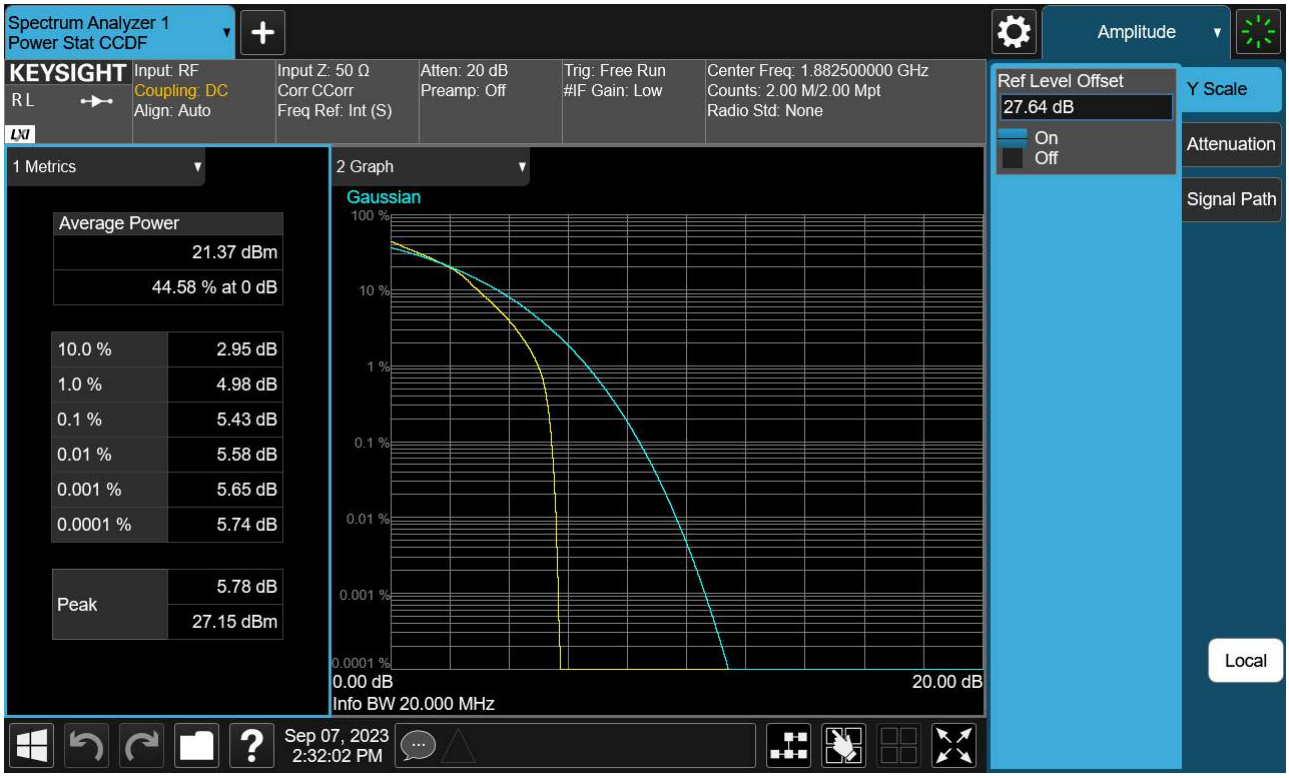
Sub6 n25. PAR Plot (20 M BW Ch.376500 BPSK _ Full RB _0)



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



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



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