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FCC Sub6 REPORT

Certification

Applicant Name:
SAMSUNG Electronics Co., Ltd.

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

Date of Issue:
January 12, 2024

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

Report No.: HCT-RF-2312-FC009

FCC ID:	**A3LSMM156B**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model(s):	SM-M156B/DSN
EUT Type:	Mobile phone
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§27

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)

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n66 (5)	1712.5 – 1777.5	4M48G7D	PI/2 BPSK	0.141	21.50
		4M48G7D	QPSK	0.139	21.44
		4M49W7D	16QAM	0.120	20.78
		4M49W7D	64QAM	0.085	19.30
		4M51W7D	256QAM	0.060	17.79
Sub6 n66 (10)	1715.0 – 1775.0	8M95G7D	PI/2 BPSK	0.145	21.62
		8M99G7D	QPSK	0.145	21.60
		8M95W7D	16QAM	0.121	20.81
		8M95W7D	64QAM	0.084	19.25
		8M98W7D	256QAM	0.059	17.73
Sub6 n66 (15)	1717.5 – 1772.5	13M4G7D	PI/2 BPSK	0.145	21.61
		13M5G7D	QPSK	0.143	21.55
		13M4W7D	16QAM	0.123	20.90
		13M4W7D	64QAM	0.086	19.37
		13M4W7D	256QAM	0.061	17.84
Sub6 n66 (20)	1720.0 – 1770.0	18M0G7D	PI/2 BPSK	0.150	21.75
		17M9G7D	QPSK	0.148	21.69
		17M9W7D	16QAM	0.126	21.02
		17M9W7D	64QAM	0.088	19.45
		17M9W7D	256QAM	0.064	18.03
Sub6 n66 (25)	1722.5 – 1767.5	23M0G7D	PI/2 BPSK	0.142	21.53
		23M0G7D	QPSK	0.139	21.43
		22M9W7D	16QAM	0.117	20.70
		22M9W7D	64QAM	0.083	19.20
		23M0W7D	256QAM	0.060	17.79
Sub6 n66 (30)	1725.0 – 1765.0	28M7G7D	PI/2 BPSK	0.142	21.53
		28M7G7D	QPSK	0.139	21.44
		28M6W7D	16QAM	0.121	20.81
		28M6W7D	64QAM	0.084	19.23
		28M6W7D	256QAM	0.060	17.76
Sub6 n66 (40)	1730.0 – 1760.0	38M6G7D	PI/2 BPSK	0.139	21.42
		38M6G7D	QPSK	0.138	21.41
		38M5W7D	16QAM	0.114	20.55
		38M6W7D	64QAM	0.079	19.00
		38M7W7D	256QAM	0.057	17.54

REVIEWED BY

Report prepared by : Jung Ki Lim
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.

Test Report Statement:
The above Test Report is not related to the accredited test result by (KS Q) ISO/IEC 17025 and KOLAS(Korea Laboratory Accreditation Scheme), which signed the ILAC-MRA.

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2312-FC009	January 12, 2024	- First Approval Report

Table of Contents

MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	SAMSUNG Electronics Co., Ltd.
Address:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
FCC ID:	A3LSMM156B
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§27
EUT Type:	Mobile phone
Model(s):	SM-M156B/DSN
SCS(kHz):	15
Bandwidth(MHz):	5, 10, 15, 20, 25, 30, 40
Waveform:	CP-OFDM, DFT-S-OFDM
Modulation:	DFT-S-OFDM: PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM
Tx Frequency:	1712.5 MHz – 1777.5 MHz (Sub6 n66(5 MHz)) 1715.0 MHz – 1775.0 MHz (Sub6 n66(10 MHz)) 1717.5 MHz – 1772.5 MHz (Sub6 n66(15 MHz)) 1720.0 MHz – 1770.0 MHz (Sub6 n66(20 MHz)) 1722.5 MHz – 1767.5 MHz (Sub6 n66(25 MHz)) 1725.0 MHz – 1765.0 MHz (Sub6 n66(30 MHz)) 1730.0 MHz – 1760.0 MHz (Sub6 n66(40 MHz))
Date(s) of Tests:	December 05, 2023 ~ December 18, 2023
Serial number:	Radiated: R3CWB0E8S8B Conducted: R3CWB0E8C0Z

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

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

It also supports IEEE 802.11 a/b/g/n/ac (20/40/80 MHz), Bluetooth, BT LE, NFC, iPA.

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 = 100kHz 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 1 GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator and the previously recorded signal was duplicated.
   The spurious emissions is calculated by the following formula;

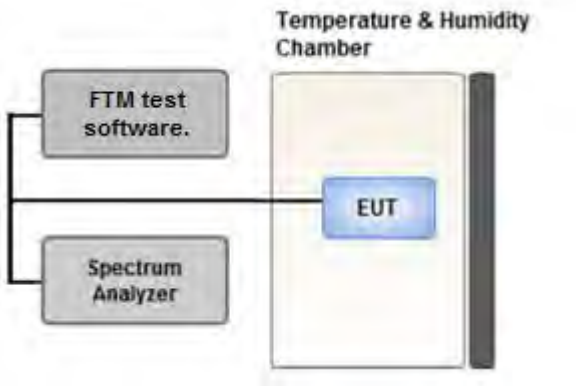
$$\text{Result}_{(dBm)} = \text{Pg}_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

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

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

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

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)

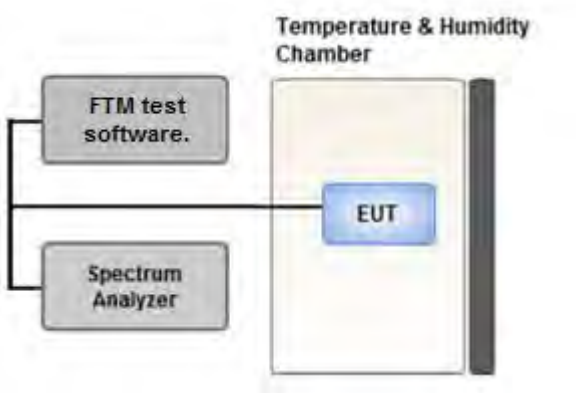
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW ≥ 3 × RBW.

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.

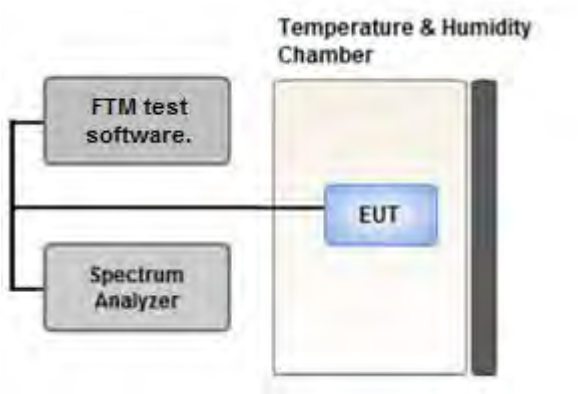
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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 26 dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5 % of the expected OBW
3. VBW ≥ 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.

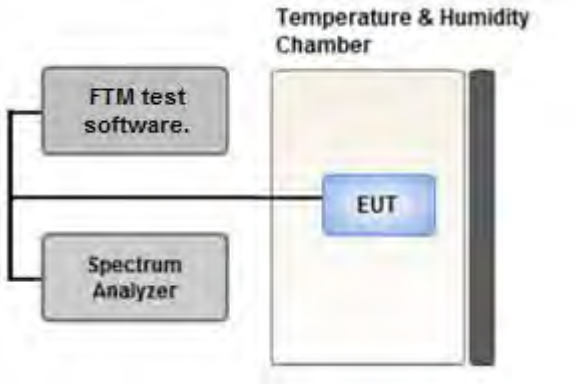
All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

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 = trace average
5. Sweep time = auto
6. Number of points in sweep ≥ 2 x Span / RBW

3.7 BAND EDGE



Test setup

Test Overview

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

Test Settings

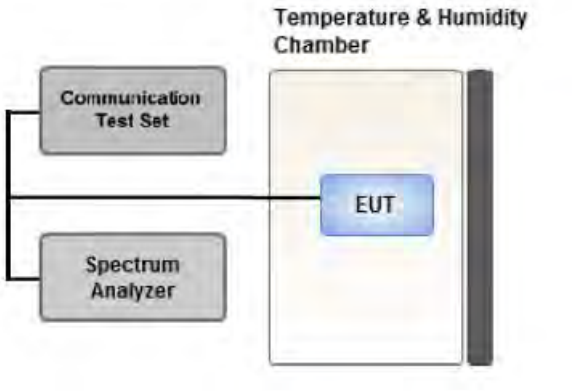
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW > 1 % of the emission bandwidth
4. VBW > 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 2 x Span/RBW
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 : Stand alone, Stand alone + External accessories (Earphone, AC adapter, etc)

  Worst case : Stand alone
  Mode : NSA, SA
  Worst case: SA
- 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 : 20 MHz)

[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		Y

3.10 WORST CASE(CONDUCTED TEST)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.

  (Worst case: DFT-S-OFDM)

- Modulation : All Modulation of operation were investigated and the worst case configuration results are reported.

  (Worst case: PI/2 BPSK)

- All modes of operation were investigated and the worst case configuration results are reported.

  Mode : NSA, SA

  Worst case: SA

- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.

  Please refer to the table below.

[Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth, Peak-To-Average Ratio	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	5, 10, 15, 20, 25, 30, 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
		5, 10, 15, 20, 25, 30, 40	Low, High	Full RB	0
Spurious and Harmonic Emissions at Antenna Terminal	PI/2 BPSK	5, 10, 15, 20, 25, 30, 40	Low, Mid, High	1	1

4. LIST OF TEST EQUIPMENT

Equipment	Model	Manufacture	Serial No.	Due to Calibration	Calibration Interval
Precision Dipole Antenna	UHAP	Schwarzbeck	01273	03/27/2024	Biennial
Precision Dipole Antenna	UHAP	Schwarzbeck	01274	03/27/2024	Biennial
Horn Antenna(1~18 GHz)	BBHA 9120D	Schwarzbeck	02289	03/21/2024	Biennial
Horn Antenna(1~18 GHz)	BBHA 9120D	Schwarzbeck	9120D-1299	04/27/2025	Biennial
Horn Antenna(15~40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	09/29/2024	Biennial
Horn Antenna(15~40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	03/28/2025	Biennial
Loop Antenna(9 kHz~30 MHz)	FMZB1513	Rohde & Schwarz	1513-175	01/16/2025	Biennial
Bilog Antenna	VULB9160	Schwarzbeck	3150	03/09/2025	Biennial
Hybrid Antenna	VULB9160	Schwarzbeck	760	02/24/2025	Biennial
RF Switching System	FBSR-06B (1G HPF + LNA)	T&M SYSTEM	F3L1	05/22/2024	Annual
RF Switching System	FBSR-06B (3G HPF + LNA)	T&M SYSTEM	F3L2	05/22/2024	Annual
RF Switching System	FBSR-06B (6G HPF + LNA)	T&M SYSTEM	F3L3	05/22/2024	Annual
RF Switching System	FBSR-06B (LNA)	T&M SYSTEM	F3L4	05/22/2024	Annual
Power Amplifier	CBL18265035	CERNEX	22966	11/17/2024	Annual
Power Amplifier	CBL26405040	CERNEX	25956	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, §27.53(h)	< 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	§27.50(d)(5)	< 13 dB	PASS
Frequency stability / variation of ambient temperature	§2.1055, §27.54	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	§27.50(d)(4)	< 1 Watts max. EIRP	PASS
Radiated Spurious and Harmonic Emissions	§2.1053, §27.53(h)	< 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
349000	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 = 4M17F9W

WCDMA BW = 4.17 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

PSK Modulation

Emission Designator = 4M48G7D

LTE BW = 4.48 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

QAM Modulation

Emission Designator = 4M48W7D

LTE BW = 4.48 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

8. TEST DATA

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
1712.5	Sub6 n66/ 5 MHz [15 kHz]	PI/2 BPSK	-20.60	12.76	9.60	2.00	V	< 1.00	0.109	20.36	1	23
		QPSK	-20.66	12.70	9.60	2.00	V		0.107	20.30		
		16-QAM	-21.48	11.88	9.60	2.00	V		0.089	19.48		
		64-QAM	-22.98	10.38	9.60	2.00	V		0.063	17.98		
		256-QAM	-24.41	8.95	9.60	2.00	V		0.045	16.55		
1745.0		PI/2 BPSK	-19.86	13.74	9.75	2.04	V		0.140	21.45	1	1
		QPSK	-19.87	13.73	9.75	2.04	V		0.139	21.44		
		16-QAM	-20.75	12.85	9.75	2.04	V		0.114	20.56		
		64-QAM	-22.22	11.38	9.75	2.04	V		0.081	19.09		
		256-QAM	-23.66	9.94	9.75	2.04	V		0.058	17.65		
1777.5		PI/2 BPSK	-19.86	13.68	9.90	2.08	V		0.141	21.50	1	23
		QPSK	-19.94	13.60	9.90	2.08	V		0.139	21.42		
		16-QAM	-20.58	12.96	9.90	2.08	V		0.120	20.78		
		64-QAM	-22.06	11.48	9.90	2.08	V		0.085	19.30		
		256-QAM	-23.57	9.97	9.90	2.08	V		0.060	17.79		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1715.0	Sub6 n66/ 10 MHz [15 kHz]	PI/2 BPSK	-20.25	13.11	9.60	2.00	V	< 1.00	0.118	20.71	1	50
		QPSK	-20.28	13.08	9.60	2.00	V		0.117	20.68		
		16-QAM	-21.11	12.25	9.60	2.00	V		0.097	19.85		
		64-QAM	-22.57	10.79	9.60	2.00	V		0.069	18.39		
		256-QAM	-24.11	9.25	9.60	2.00	V		0.048	16.85		
1745.0		PI/2 BPSK	-19.75	13.85	9.75	2.04	V		0.143	21.56	1	1
		QPSK	-19.81	13.79	9.75	2.04	V		0.141	21.50		
		16-QAM	-20.62	12.98	9.75	2.04	V		0.117	20.69		
		64-QAM	-22.06	11.54	9.75	2.04	V		0.084	19.25		
		256-QAM	-23.58	10.02	9.75	2.04	V		0.059	17.73		
1775.0		PI/2 BPSK	-19.74	13.80	9.90	2.08	V		0.145	21.62	1	1
		QPSK	-19.76	13.78	9.90	2.08	V		0.145	21.60		
		16-QAM	-20.55	12.99	9.90	2.08	V		0.121	20.81		
		64-QAM	-22.14	11.40	9.90	2.08	V		0.084	19.22		
		256-QAM	-23.63	9.91	9.90	2.08	V		0.059	17.73		

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
1717.5	Sub6 n66/ 15 MHz [15 kHz]	PI/2 BPSK	-20.15	13.21	9.60	2.00	V	< 1.00	0.121	20.81	1	77
		QPSK	-20.17	13.19	9.60	2.00	V		0.120	20.79		
		16-QAM	-21.02	12.34	9.60	2.00	V		0.099	19.94		
		64-QAM	-22.64	10.72	9.60	2.00	V		0.068	18.32		
		256-QAM	-24.14	9.22	9.60	2.00	V		0.048	16.82		
1745.0		PI/2 BPSK	-19.89	13.71	9.75	2.04	V		0.139	21.42	1	39
		QPSK	-19.90	13.70	9.75	2.04	V		0.138	21.41		
		16-QAM	-20.66	12.94	9.75	2.04	V		0.116	20.65		
		64-QAM	-22.21	11.39	9.75	2.04	V		0.081	19.10		
		256-QAM	-23.75	9.85	9.75	2.04	V		0.057	17.56		
1772.5		PI/2 BPSK	-19.75	13.79	9.90	2.08	V		0.145	21.61	1	77
		QPSK	-19.81	13.73	9.90	2.08	V		0.143	21.55		
		16-QAM	-20.46	13.08	9.90	2.08	V		0.123	20.90		
		64-QAM	-21.99	11.55	9.90	2.08	V		0.086	19.37		
		256-QAM	-23.52	10.02	9.90	2.08	V		0.061	17.84		

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
1720.0	Sub6 n66/ 20 MHz [15 kHz]	PI/2 BPSK	-20.27	13.23	9.60	2.00	V	< 1.00	0.121	20.83	1	104
		QPSK	-20.29	13.21	9.60	2.00	V		0.121	20.81		
		16-QAM	-21.08	12.42	9.60	2.00	V		0.101	20.02		
		64-QAM	-22.58	10.92	9.60	2.00	V		0.071	18.52		
		256-QAM	-24.03	9.47	9.60	2.00	V		0.051	17.07		
1745.0		PI/2 BPSK	-19.86	13.74	9.75	2.04	V		0.140	21.45	1	1
		QPSK	-19.88	13.72	9.75	2.04	V		0.139	21.43		
		16-QAM	-20.68	12.92	9.75	2.04	V		0.116	20.63		
		64-QAM	-22.22	11.38	9.75	2.04	V		0.081	19.09		
		256-QAM	-23.65	9.95	9.75	2.04	V		0.058	17.66		
1770.0		PI/2 BPSK	-19.70	13.94	9.90	2.09	V		0.150	21.75	1	104
		QPSK	-19.76	13.88	9.90	2.09	V		0.148	21.69		
		16-QAM	-20.43	13.21	9.90	2.09	V		0.126	21.02		
		64-QAM	-22.00	11.64	9.90	2.09	V		0.088	19.45		
		256-QAM	-23.42	10.22	9.90	2.09	V		0.064	18.03		

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
1722.5	Sub6 n66/ 25 MHz [15 kHz]	PI/2 BPSK	-20.10	13.46	9.60	2.01	V	< 1.00	0.127	21.05	1	131
		QPSK	-20.14	13.42	9.60	2.01	V		0.126	21.01		
		16-QAM	-20.88	12.68	9.60	2.01	V		0.106	20.27		
		64-QAM	-22.39	11.17	9.60	2.01	V		0.075	18.76		
		256-QAM	-23.89	9.67	9.60	2.01	V		0.053	17.26		
1745.0		PI/2 BPSK	-19.82	13.78	9.75	2.04	V		0.141	21.49	1	1
		QPSK	-19.88	13.72	9.75	2.04	V		0.139	21.43		
		16-QAM	-20.76	12.84	9.75	2.04	V		0.114	20.55		
		64-QAM	-22.25	11.35	9.75	2.04	V		0.081	19.06		
		256-QAM	-23.71	9.89	9.75	2.04	V		0.058	17.60		
1767.5		PI/2 BPSK	-19.76	13.72	9.90	2.09	V		0.142	21.53	1	131
		QPSK	-19.87	13.61	9.90	2.09	V		0.139	21.42		
		16-QAM	-20.59	12.89	9.90	2.09	V		0.117	20.70		
		64-QAM	-22.09	11.39	9.90	2.09	V		0.083	19.20		
		256-QAM	-23.50	9.98	9.90	2.09	V		0.060	17.79		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
1725.0	Sub6 n66/ 30 MHz [15 kHz]	PI/2 BPSK	-20.00	13.56	9.60	2.01	V	< 1.00	0.130	21.15	1	158
		QPSK	-20.05	13.51	9.60	2.01	V		0.129	21.10		
		16-QAM	-20.85	12.71	9.60	2.01	V		0.107	20.30		
		64-QAM	-22.36	11.20	9.60	2.01	V		0.076	18.79		
		256-QAM	-23.83	9.73	9.60	2.01	V		0.054	17.32		
1745.0		PI/2 BPSK	-19.78	13.82	9.75	2.04	V		0.142	21.53	1	80
		QPSK	-19.92	13.68	9.75	2.04	V		0.138	21.39		
		16-QAM	-20.74	12.86	9.75	2.04	V		0.114	20.57		
		64-QAM	-22.15	11.45	9.75	2.04	V		0.082	19.16		
		256-QAM	-23.63	9.97	9.75	2.04	V		0.059	17.68		
1765.0		PI/2 BPSK	-19.80	13.68	9.90	2.09	V		0.141	21.49	1	158
		QPSK	-19.85	13.63	9.90	2.09	V		0.139	21.44		
		16-QAM	-20.48	13.00	9.90	2.09	V		0.121	20.81		
		64-QAM	-22.06	11.42	9.90	2.09	V		0.084	19.23		
		256-QAM	-23.53	9.95	9.90	2.09	V		0.060	17.76		

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
1730.0	Sub6 n66/ 40 MHz [15 kHz]	PI/2 BPSK	-19.83	13.78	9.60	2.01	V	< 1.00	0.137	21.37	1	214
		QPSK	-19.85	13.76	9.60	2.01	V		0.136	21.35		
		16-QAM	-20.73	12.88	9.60	2.01	V		0.111	20.47		
		64-QAM	-22.22	11.39	9.60	2.01	V		0.079	18.98		
		256-QAM	-23.66	9.95	9.60	2.01	V		0.057	17.54		
1745.0		PI/2 BPSK	-19.89	13.71	9.75	2.04	V		0.139	21.42	1	214
		QPSK	-19.90	13.70	9.75	2.04	V		0.138	21.41		
		16-QAM	-20.76	12.84	9.75	2.04	V		0.114	20.55		
		64-QAM	-22.31	11.29	9.75	2.04	V		0.079	19.00		
		256-QAM	-23.79	9.81	9.75	2.04	V		0.057	17.52		
1760.0		PI/2 BPSK	-19.76	13.56	9.90	2.09	V		0.137	21.37	1	1
		QPSK	-19.79	13.53	9.90	2.09	V		0.136	21.34		
		16-QAM	-20.59	12.73	9.90	2.09	V		0.113	20.54		
		64-QAM	-22.18	11.14	9.90	2.09	V		0.079	18.95		
		256-QAM	-23.61	9.71	9.90	2.09	V		0.057	17.52		

8.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N66
▣ Bandwidth: 20 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
344000 (1720.0)	3 440.00	-56.49	11.10	-57.44	2.97	H	-49.31	-13.00	1	104
	5 160.00	-55.38	11.00	-50.55	3.69	V	-43.24	-13.00		
	6 880.00	-48.21	10.80	-36.52	4.28	H	-30.00	-13.00		
	8 600.00	-50.69	10.40	-37.14	4.80	H	-31.54	-13.00		
	10 320.00	-57.57	11.10	-39.80	5.34	V	-34.04	-13.00		
349000 (1745.0)	3 490.00	-55.70	11.20	-57.14	3.00	H	-48.94	-13.00	1	1
	5 235.00	-55.23	11.10	-50.30	3.70	H	-42.90	-13.00		
	6 980.00	-50.24	10.90	-37.53	4.30	H	-30.93	-13.00		
	8 725.00	-47.65	10.30	-33.29	4.88	H	-27.87	-13.00		
	10 470.00	-59.08	11.30	-41.35	5.43	V	-35.48	-13.00		
354000 (1770.0)	3 540.00	-56.39	11.30	-58.19	3.02	H	-49.91	-13.00	1	104
	5 310.00	-53.16	11.40	-48.80	3.65	H	-41.05	-13.00		
	7 080.00	-50.68	10.70	-36.80	4.34	H	-30.44	-13.00		
	8 850.00	-47.76	10.50	-33.67	4.95	H	-28.12	-13.00		
	10 620.00	-56.67	11.20	-38.15	5.41	V	-32.36	-13.00		

8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n66	5 MHz	1745.0	BPSK	25	0	5.58
			QPSK			5.88
			16-QAM			6.52
			64-QAM			6.74
			256-QAM			7.01
	10 MHz		BPSK	50		5.12
			QPSK			5.53
			16-QAM			6.22
			64-QAM			6.52
			256-QAM			6.90
	15 MHz		BPSK	75		4.43
			QPSK			5.43
			16-QAM			6.34
			64-QAM			6.48
			256-QAM			6.95
	20 MHz		BPSK	100		5.41
			QPSK			5.73
			16-QAM			6.27
			64-QAM			6.52
			256-QAM			6.95
	25 MHz		BPSK	128		4.28
			QPSK			5.43
			16-QAM			6.36
			64-QAM			6.51
			256-QAM			6.83
	30 MHz		BPSK	160		4.37
			QPSK			5.43
			16-QAM			6.23
			64-QAM			6.51
			256-QAM			6.88
	40 MHz		BPSK	216		4.41
			QPSK			5.41
			16-QAM			6.26
			64-QAM			6.47
			256-QAM			6.93

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 78 ~ 112.

8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n66	5 MHz	1745.0	BPSK	25	0	4.4794
			QPSK			4.4798
			16-QAM			4.4943
			64-QAM			4.4854
			256-QAM			4.5075
	10 MHz		BPSK	50		8.9533
			QPSK			8.9906
			16-QAM			8.9520
			64-QAM			8.9469
			256-QAM			8.9837
	15 MHz		BPSK	75		13.410
			QPSK			13.464
			16-QAM			13.426
			64-QAM			13.432
			256-QAM			13.421
	20 MHz		BPSK	100		17.954
			QPSK			17.890
			16-QAM			17.851
			64-QAM			17.935
			256-QAM			17.902
	25 MHz		BPSK	128		22.955
			QPSK			22.947
			16-QAM			22.900
			64-QAM			22.875
			256-QAM			22.972
	30 MHz		BPSK	160		28.684
			QPSK			28.717
			16-QAM			28.580
			64-QAM			28.578
			256-QAM			28.631
	40 MHz		BPSK	216		38.586
			QPSK			38.604
			16-QAM			38.520
			64-QAM			38.626
			256-QAM			38.704

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 43 ~ 77.

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 n66	5	1712.5	3.8181	30.200	-70.868	-40.668	-13.00
		1745.0	6.0120	30.815	-70.404	-39.589	
		1777.5	8.2911	30.815	-70.516	-39.701	
	10	1715.0	8.9003	30.815	-70.966	-40.151	
		1745.0	8.2468	30.815	-71.064	-40.249	
		1775.0	8.2941	30.815	-70.922	-40.107	
	15	1717.5	5.2289	30.815	-70.534	-39.719	
		1745.0	9.6630	30.815	-71.213	-40.398	
		1772.5	8.0040	30.815	-70.445	-39.630	
	20	1720.0	3.8171	30.200	-70.584	-40.384	
		1745.0	8.8769	30.815	-70.200	-39.385	
		1770.0	9.6825	30.815	-69.815	-39.000	
	25	1722.5	9.4482	30.815	-71.072	-40.257	
		1745.0	4.9457	30.200	-70.004	-39.804	
		1767.5	4.0444	30.200	-69.687	-39.487	
	30	1725.0	8.0140	30.815	-70.688	-39.873	
		1745.0	8.3121	30.815	-71.039	-40.224	
		1765.0	5.1989	30.815	-71.171	-40.356	
	40	1730.0	5.2139	30.815	-71.322	-40.507	
		1745.0	7.9876	30.815	-70.670	-39.855	
		1760.0	9.6765	30.815	-69.895	-39.080	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 155 ~ 196.
2. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
3. Factor(dB) = Cable Loss + Ext. 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 113 ~ 154.

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ BandWidth: 5 MHz

▣ Voltage(100 %): 4.200 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1712.5	100 %	+20(Ref)	1712 499 998	0.0	0.000 000	0.000
	100 %	-30	1712 499 997	-0.8	0.000 000	0.000
	100 %	-20	1712 499 998	0.3	0.000 000	0.000
	100 %	-10	1712 499 998	0.0	0.000 000	0.000
	100 %	0	1712 499 998	0.3	0.000 000	0.000
	100 %	+10	1712 499 998	0.0	0.000 000	0.000
	100 %	+30	1712 500 000	1.5	0.000 000	0.001
	100 %	+40	1712 499 998	-0.1	0.000 000	0.000
	100 %	+50	1712 499 999	1.0	0.000 000	0.001
	Batt. Endpoint	+20	1712 499 997	-0.8	0.000 000	0.000
1777.5	100 %	+20(Ref)	1777 499 998	0.0	0.000 000	0.000
	100 %	-30	1777 499 998	0.0	0.000 000	0.000
	100 %	-20	1777 499 999	1.0	0.000 000	0.001
	100 %	-10	1777 499 997	-0.7	0.000 000	0.000
	100 %	0	1777 499 997	-1.0	0.000 000	-0.001
	100 %	+10	1777 499 998	-0.3	0.000 000	0.000
	100 %	+30	1777 499 997	-1.0	0.000 000	-0.001
	100 %	+40	1777 499 998	-0.3	0.000 000	0.000
	100 %	+50	1777 499 996	-1.7	0.000 000	-0.001
	Batt. Endpoint	+20	1777 499 998	0.3	0.000 000	0.000

▣ BandWidth: 10 MHz

▣ Voltage(100 %): 4.200 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1715.0	100 %	+20(Ref)	1715 000 000	0.0	0.000 000	0.000
	100 %	-30	1714 999 999	-0.9	0.000 000	-0.001
	100 %	-20	1714 999 999	-0.9	0.000 000	-0.001
	100 %	-10	1715 000 000	0.4	0.000 000	0.000
	100 %	0	1714 999 999	-1.0	0.000 000	-0.001
	100 %	+10	1714 999 999	-0.9	0.000 000	-0.001
	100 %	+30	1714 999 997	-2.6	0.000 000	-0.002
	100 %	+40	1714 999 999	-1.0	0.000 000	-0.001
	100 %	+50	1715 000 000	0.5	0.000 000	0.000
	Batt. Endpoint	+20	1715 000 000	0.2	0.000 000	0.000
1775.0	100 %	+20(Ref)	1774 999 997	0.0	0.000 000	0.000
	100 %	-30	1774 999 995	-2.5	0.000 000	-0.001
	100 %	-20	1774 999 994	-3.1	0.000 000	-0.002
	100 %	-10	1774 999 993	-4.0	0.000 000	-0.002
	100 %	0	1774 999 995	-2.3	0.000 000	-0.001
	100 %	+10	1774 999 995	-2.6	0.000 000	-0.001
	100 %	+30	1774 999 995	-2.0	0.000 000	-0.001
	100 %	+40	1774 999 995	-1.8	0.000 000	-0.001
	100 %	+50	1774 999 993	-3.8	0.000 000	-0.002
	Batt. Endpoint	+20	1774 999 995	-2.4	0.000 000	-0.001

▣ BandWidth: 15 MHz

▣ Voltage(100 %): 4.200 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1717.5	100 %	+20(Ref)	1717 500 000	0.0	0.000 000	0.000
	100 %	-30	1717 500 001	1.0	0.000 000	0.001
	100 %	-20	1717 500 000	0.1	0.000 000	0.000
	100 %	-10	1717 500 002	1.7	0.000 000	0.001
	100 %	0	1717 500 001	0.5	0.000 000	0.000
	100 %	+10	1717 500 001	0.6	0.000 000	0.000
	100 %	+30	1717 500 001	1.2	0.000 000	0.001
	100 %	+40	1717 500 001	0.9	0.000 000	0.001
	100 %	+50	1717 499 999	-0.9	0.000 000	-0.001
	Batt. Endpoint	+20	1717 500 000	-0.4	0.000 000	0.000
1772.5	100 %	+20(Ref)	1772 499 998	0.0	0.000 000	0.000
	100 %	-30	1772 499 995	-3.1	0.000 000	-0.002
	100 %	-20	1772 499 994	-4.2	0.000 000	-0.002
	100 %	-10	1772 499 994	-3.8	0.000 000	-0.002
	100 %	0	1772 499 994	-3.9	0.000 000	-0.002
	100 %	+10	1772 499 995	-3.1	0.000 000	-0.002
	100 %	+30	1772 499 995	-2.6	0.000 000	-0.001
	100 %	+40	1772 499 994	-4.3	0.000 000	-0.002
	100 %	+50	1772 499 994	-3.5	0.000 000	-0.002
	Batt. Endpoint	+20	1772 499 993	-5.0	0.000 000	-0.003

▣ BandWidth: 20 MHz

▣ Voltage(100 %): 4.200 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1720.0	100 %	+20(Ref)	1719 999 998	0.0	0.000 000	0.000
	100 %	-30	1719 999 997	-0.9	0.000 000	-0.001
	100 %	-20	1719 999 997	-1.1	0.000 000	-0.001
	100 %	-10	1719 999 998	-0.3	0.000 000	0.000
	100 %	0	1719 999 999	0.1	0.000 000	0.000
	100 %	+10	1719 999 999	0.5	0.000 000	0.000
	100 %	+30	1719 999 998	-0.2	0.000 000	0.000
	100 %	+40	1719 999 997	-1.4	0.000 000	-0.001
	100 %	+50	1719 999 998	-0.6	0.000 000	0.000
	Batt. Endpoint	+20	1719 999 998	-0.5	0.000 000	0.000
1770.0	100 %	+20(Ref)	1769 999 994	0.0	0.000 000	0.000
	100 %	-30	1769 999 988	-6.1	0.000 000	-0.003
	100 %	-20	1769 999 989	-5.5	0.000 000	-0.003
	100 %	-10	1769 999 989	-5.2	0.000 000	-0.003
	100 %	0	1769 999 988	-6.5	0.000 000	-0.004
	100 %	+10	1769 999 990	-4.2	0.000 000	-0.002
	100 %	+30	1769 999 990	-4.5	0.000 000	-0.003
	100 %	+40	1769 999 989	-5.6	0.000 000	-0.003
	100 %	+50	1769 999 992	-2.5	0.000 000	-0.001
	Batt. Endpoint	+20	1769 999 990	-4.4	0.000 000	-0.003

▣ BandWidth: 25 MHz

▣ Voltage(100 %): 4.200 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1722.5	100 %	+20(Ref)	1722 500 000	0.0	0.000 000	0.000
	100 %	-30	1722 500 001	1.6	0.000 000	0.001
	100 %	-20	1722 500 001	1.7	0.000 000	0.001
	100 %	-10	1722 500 002	2.7	0.000 000	0.002
	100 %	0	1722 500 001	1.7	0.000 000	0.001
	100 %	+10	1722 500 000	0.5	0.000 000	0.000
	100 %	+30	1722 500 002	2.5	0.000 000	0.001
	100 %	+40	1722 500 000	0.5	0.000 000	0.000
	100 %	+50	1722 500 003	3.0	0.000 000	0.002
	Batt. Endpoint	+20	1722 500 000	0.7	0.000 000	0.000
1767.5	100 %	+20(Ref)	1767 499 999	0.0	0.000 000	0.000
	100 %	-30	1767 499 998	-1.3	0.000 000	-0.001
	100 %	-20	1767 499 997	-2.3	0.000 000	-0.001
	100 %	-10	1767 499 997	-2.1	0.000 000	-0.001
	100 %	0	1767 499 998	-0.7	0.000 000	0.000
	100 %	+10	1767 499 998	-0.8	0.000 000	0.000
	100 %	+30	1767 499 998	-1.0	0.000 000	-0.001
	100 %	+40	1767 499 998	-0.7	0.000 000	0.000
	100 %	+50	1767 499 997	-2.0	0.000 000	-0.001
	Batt. Endpoint	+20	1767 499 997	-1.9	0.000 000	-0.001

▣ BandWidth: 30 MHz

▣ Voltage(100 %): 4.200 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1725.0	100 %	+20(Ref)	1724 999 996	0.0	0.000 000	0.000
	100 %	-30	1724 999 992	-3.9	0.000 000	-0.002
	100 %	-20	1724 999 992	-4.0	0.000 000	-0.002
	100 %	-10	1724 999 992	-3.7	0.000 000	-0.002
	100 %	0	1724 999 992	-3.8	0.000 000	-0.002
	100 %	+10	1724 999 993	-3.1	0.000 000	-0.002
	100 %	+30	1724 999 992	-4.3	0.000 000	-0.002
	100 %	+40	1724 999 991	-4.7	0.000 000	-0.003
	100 %	+50	1724 999 992	-3.9	0.000 000	-0.002
	Batt. Endpoint	+20	1724 999 993	-3.0	0.000 000	-0.002
1765.0	100 %	+20(Ref)	1765 000 001	0.0	0.000 000	0.000
	100 %	-30	1765 000 001	0.5	0.000 000	0.000
	100 %	-20	1765 000 001	0.3	0.000 000	0.000
	100 %	-10	1765 000 001	0.4	0.000 000	0.000
	100 %	0	1765 000 001	0.7	0.000 000	0.000
	100 %	+10	1765 000 002	1.4	0.000 000	0.001
	100 %	+30	1765 000 002	1.4	0.000 000	0.001
	100 %	+40	1765 000 002	1.2	0.000 000	0.001
	100 %	+50	1764 999 999	-1.5	0.000 000	-0.001
	Batt. Endpoint	+20	1765 000 002	1.1	0.000 000	0.001

▣ BandWidth: 40 MHz

▣ Voltage(100 %): 4.200 VDC

▣ Batt. Endpoint: 3.400 VDC

▣ LIMIT: Emission must remain in band

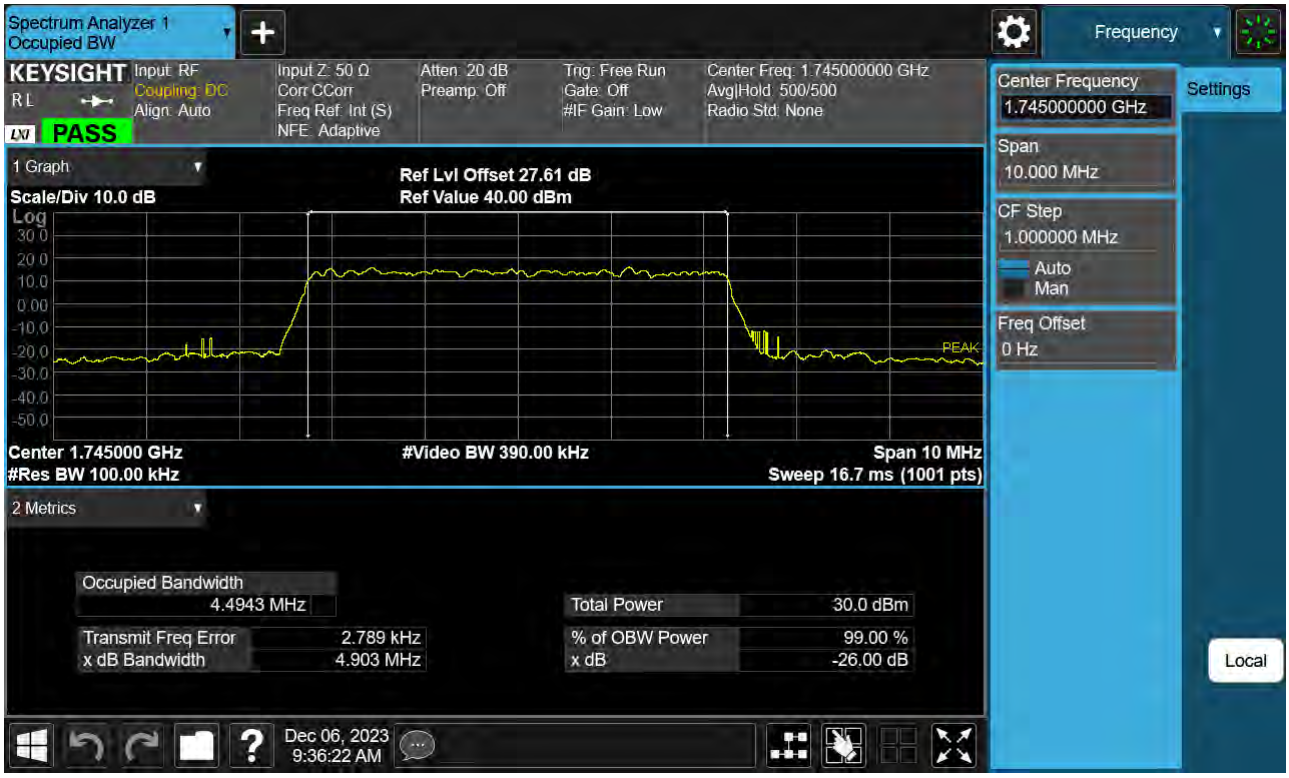
Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
1730.0	100 %	+20(Ref)	1729 999 998	0.0	0.000 000	0.000
	100 %	-30	1729 999 997	-1.8	0.000 000	-0.001
	100 %	-20	1729 999 996	-1.8	0.000 000	-0.001
	100 %	-10	1729 999 998	-0.7	0.000 000	0.000
	100 %	0	1729 999 997	-1.4	0.000 000	-0.001
	100 %	+10	1729 999 998	-0.3	0.000 000	0.000
	100 %	+30	1729 999 998	-0.1	0.000 000	0.000
	100 %	+40	1729 999 998	-0.5	0.000 000	0.000
	100 %	+50	1729 999 997	-0.9	0.000 000	0.000
	Batt. Endpoint	+20	1729 999 997	-1.2	0.000 000	-0.001
1760.0	100 %	+20(Ref)	1759 999 996	0.0	0.000 000	0.000
	100 %	-30	1759 999 992	-4.6	0.000 000	-0.003
	100 %	-20	1759 999 993	-2.9	0.000 000	-0.002
	100 %	-10	1759 999 995	-1.2	0.000 000	-0.001
	100 %	0	1759 999 994	-2.0	0.000 000	-0.001
	100 %	+10	1759 999 994	-1.9	0.000 000	-0.001
	100 %	+30	1759 999 995	-1.3	0.000 000	-0.001
	100 %	+40	1759 999 996	-0.5	0.000 000	0.000
	100 %	+50	1759 999 996	-0.3	0.000 000	0.000
	Batt. Endpoint	+20	1759 999 996	-0.5	0.000 000	0.000

9. TEST PLOTS

Sub6 n66. Occupied Bandwidth Plot (5 M BW Ch.349000 BPSK Full RB)

Sub6 n66. Occupied Bandwidth Plot (5 M BW Ch.349000 QPSK Full RB)

Sub6 n66. Occupied Bandwidth Plot (5 M BW Ch.349000 16QAM Full RB)

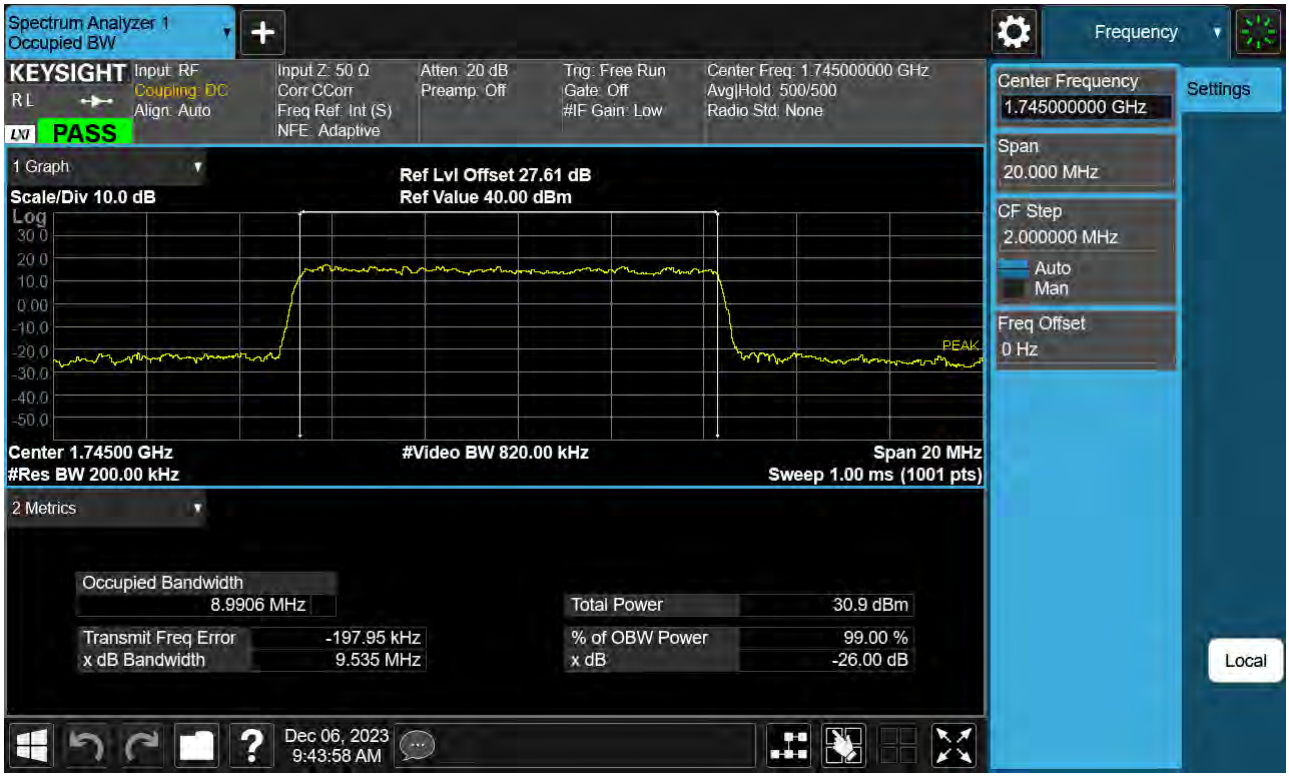


Sub6 n66. Occupied Bandwidth Plot (5 M BW Ch.349000 64QAM Full RB)

Sub6 n66. Occupied Bandwidth Plot (5 M BW Ch.349000 256QAM Full RB)

Sub6 n66. Occupied Bandwidth Plot (10 M BW Ch.349000 BPSK Full RB)

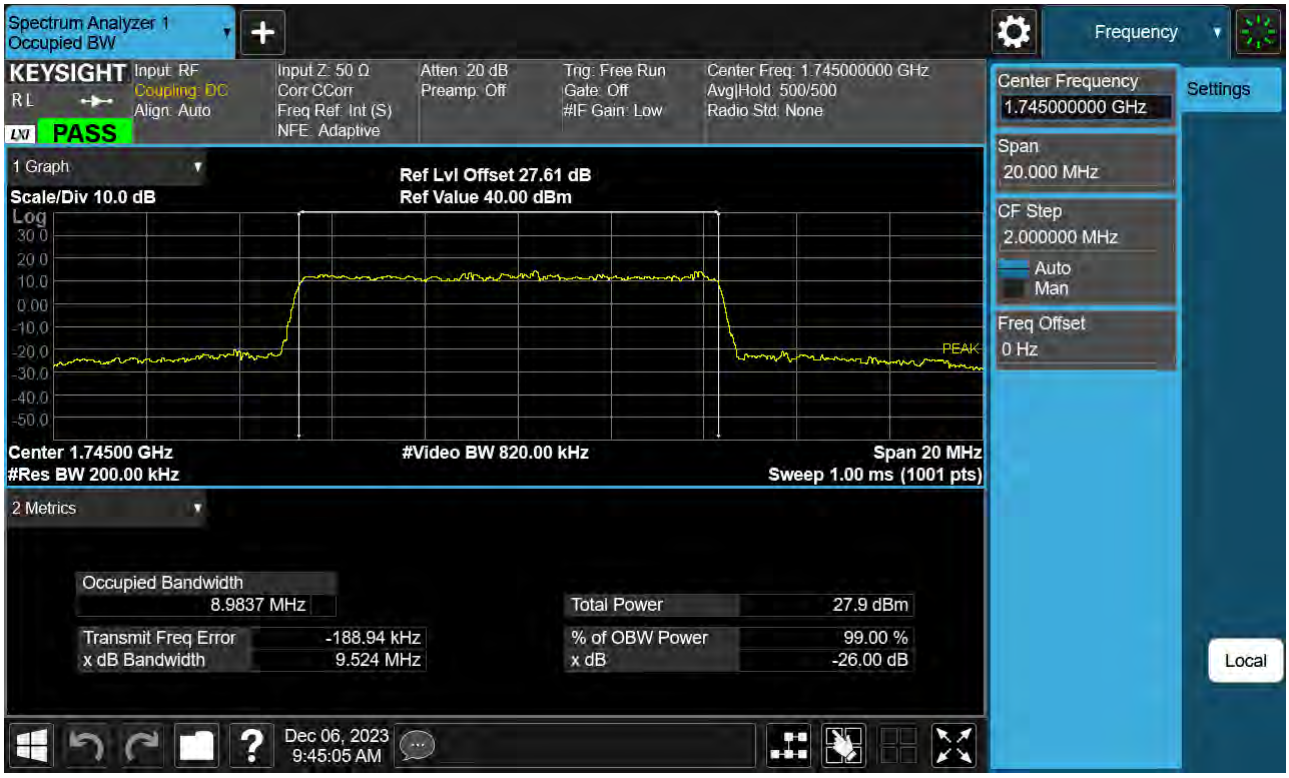
Sub6 n66. Occupied Bandwidth Plot (10 M BW Ch.349000 QPSK Full RB)



Sub6 n66. Occupied Bandwidth Plot (10 M BW Ch.349000 16QAM Full RB)

Sub6 n66. Occupied Bandwidth Plot (10 M BW Ch.349000 64QAM Full RB)

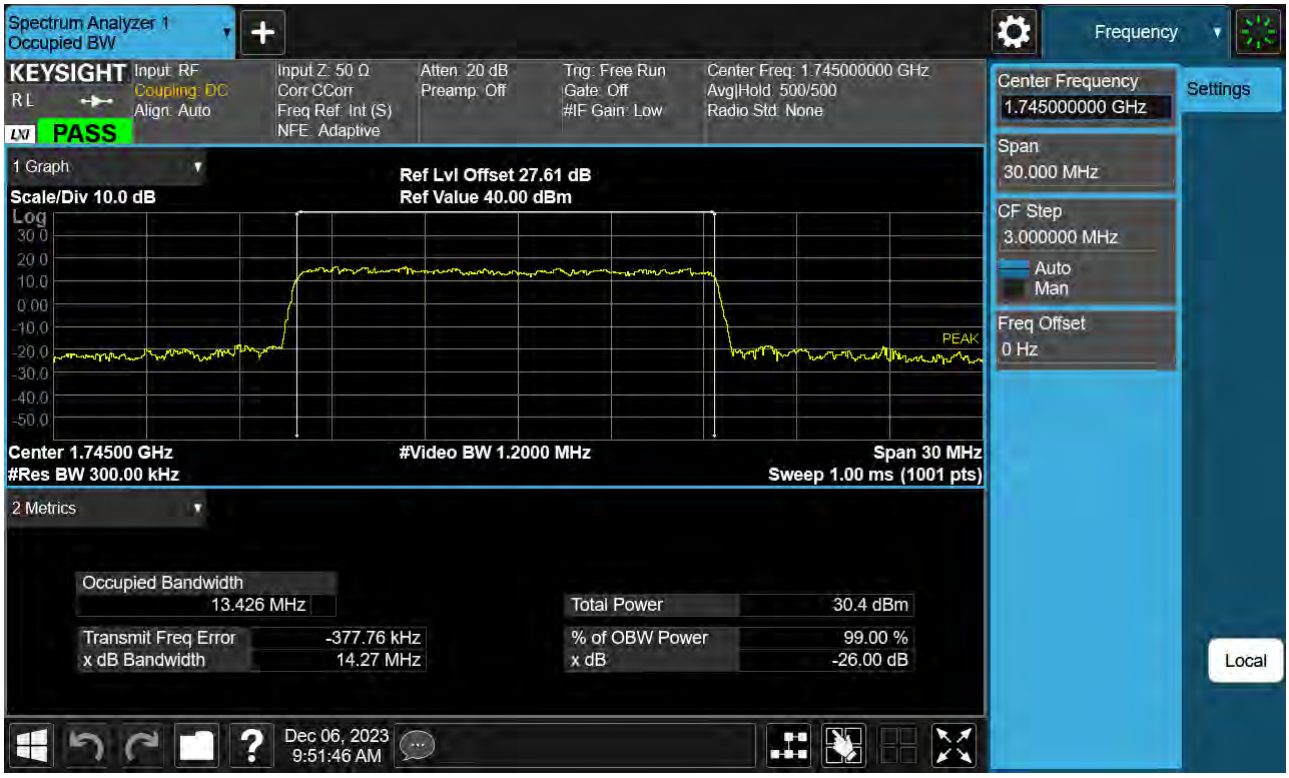
Sub6 n66. Occupied Bandwidth Plot (10 M BW Ch.349000 256QAM Full RB)



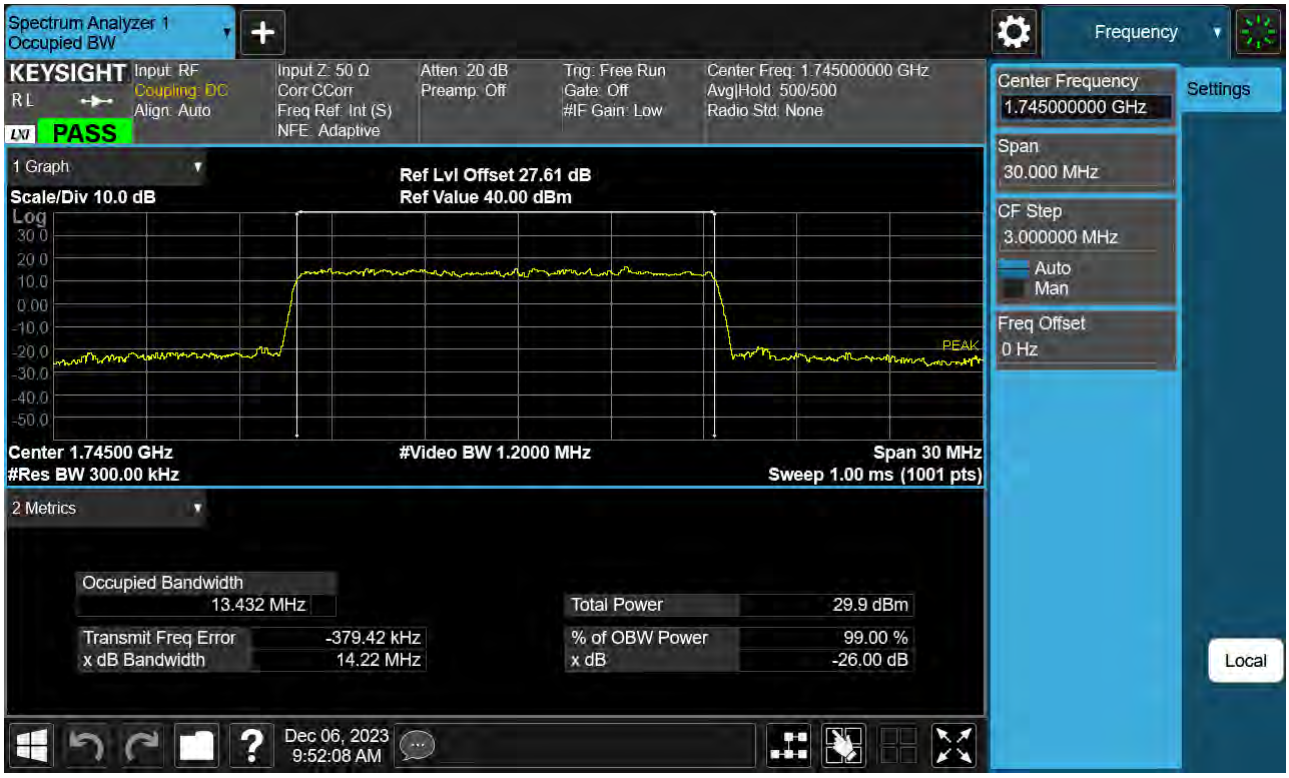
Sub6 n66. Occupied Bandwidth Plot (15 M BW Ch.349000 BPSK Full RB)

Sub6 n66. Occupied Bandwidth Plot (15 M BW Ch.349000 QPSK Full RB)

Sub6 n66. Occupied Bandwidth Plot (15 M BW Ch.349000 16QAM Full RB)



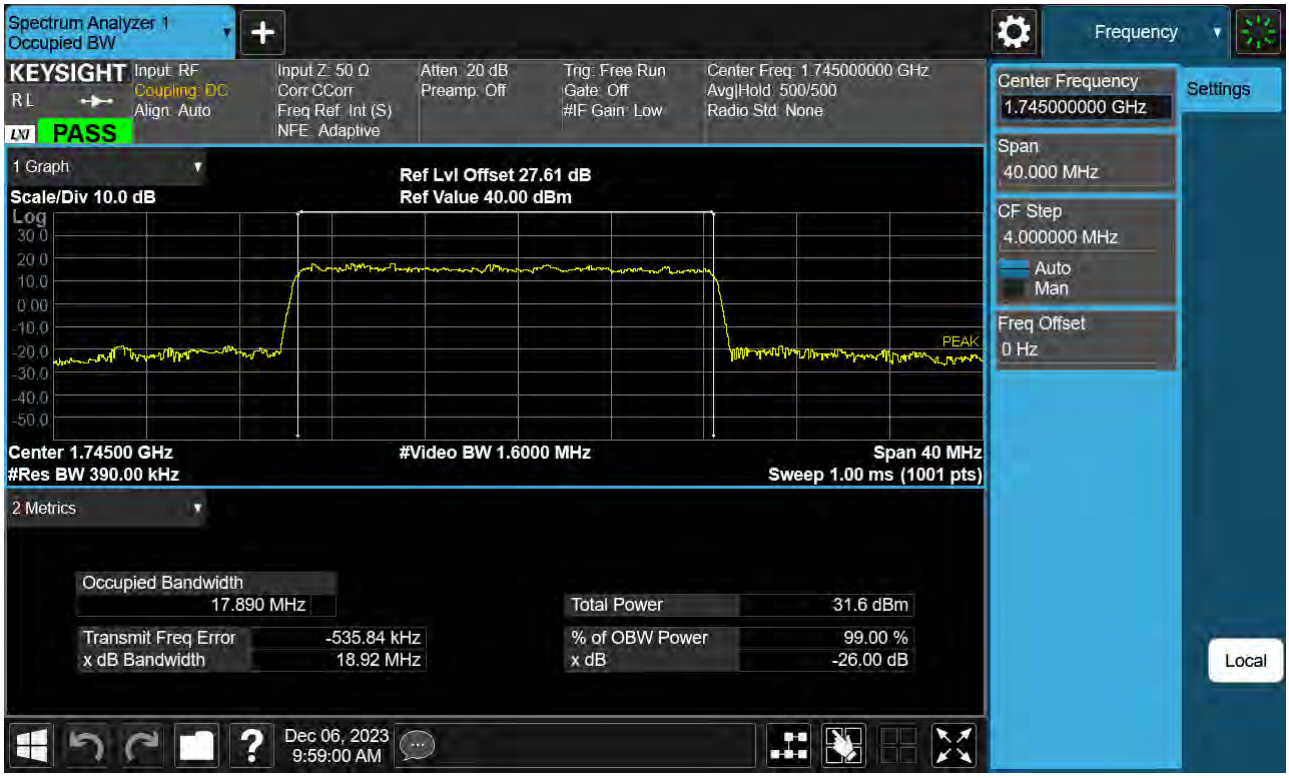
Sub6 n66. Occupied Bandwidth Plot (15 M BW Ch.349000 64QAM Full RB)



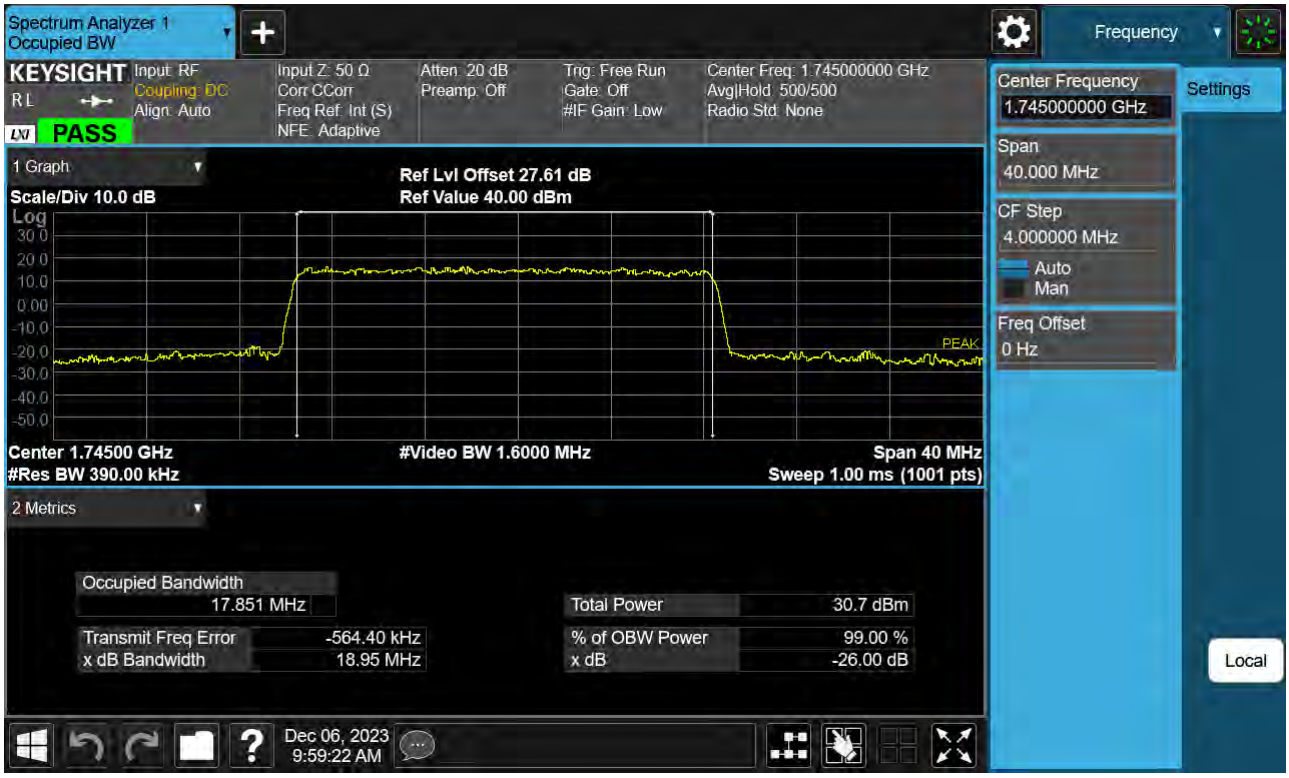
Sub6 n66. Occupied Bandwidth Plot (15 M BW Ch.349000 256QAM Full RB)

Sub6 n66. Occupied Bandwidth Plot (20 M BW Ch.349000 BPSK Full RB)

Sub6 n66. Occupied Bandwidth Plot (20 M BW Ch.349000 QPSK Full RB)

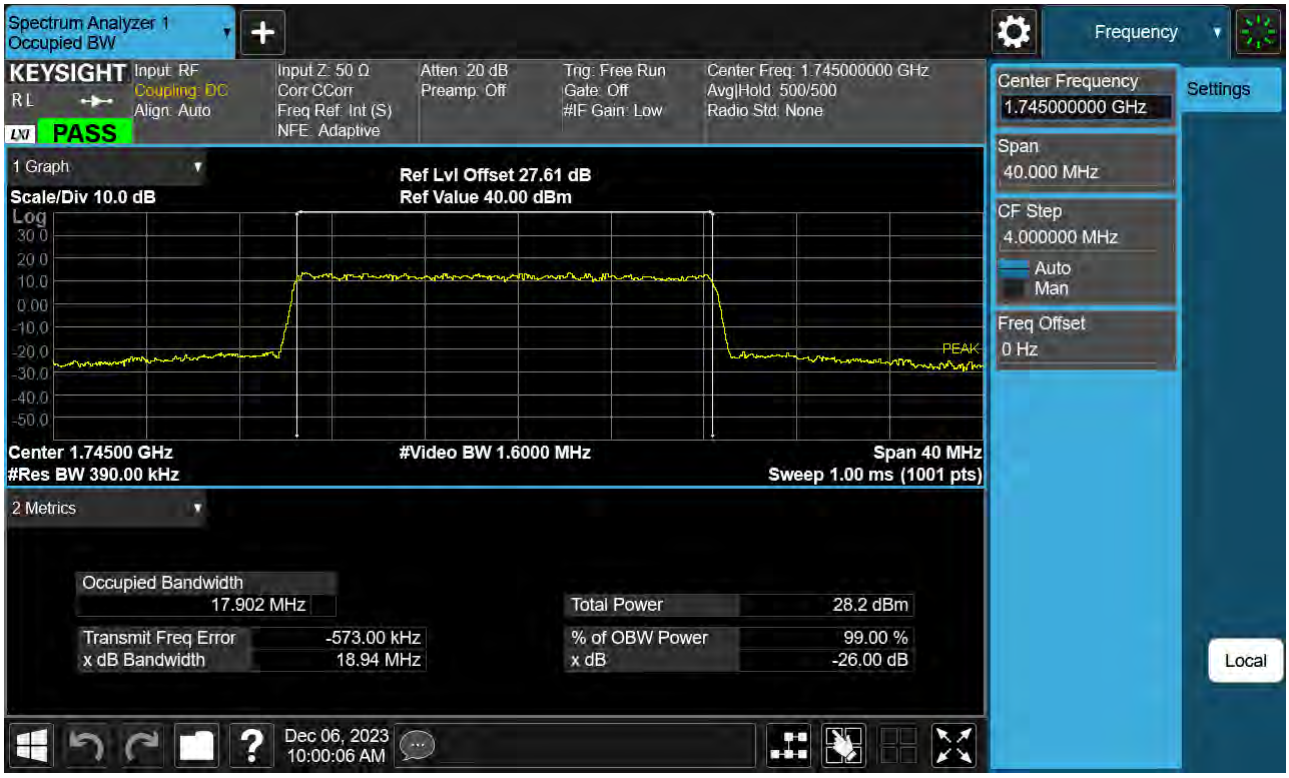


Sub6 n66. Occupied Bandwidth Plot (20 M BW Ch.349000 16QAM Full RB)



Sub6 n66. Occupied Bandwidth Plot (20 M BW Ch.349000 64QAM Full RB)

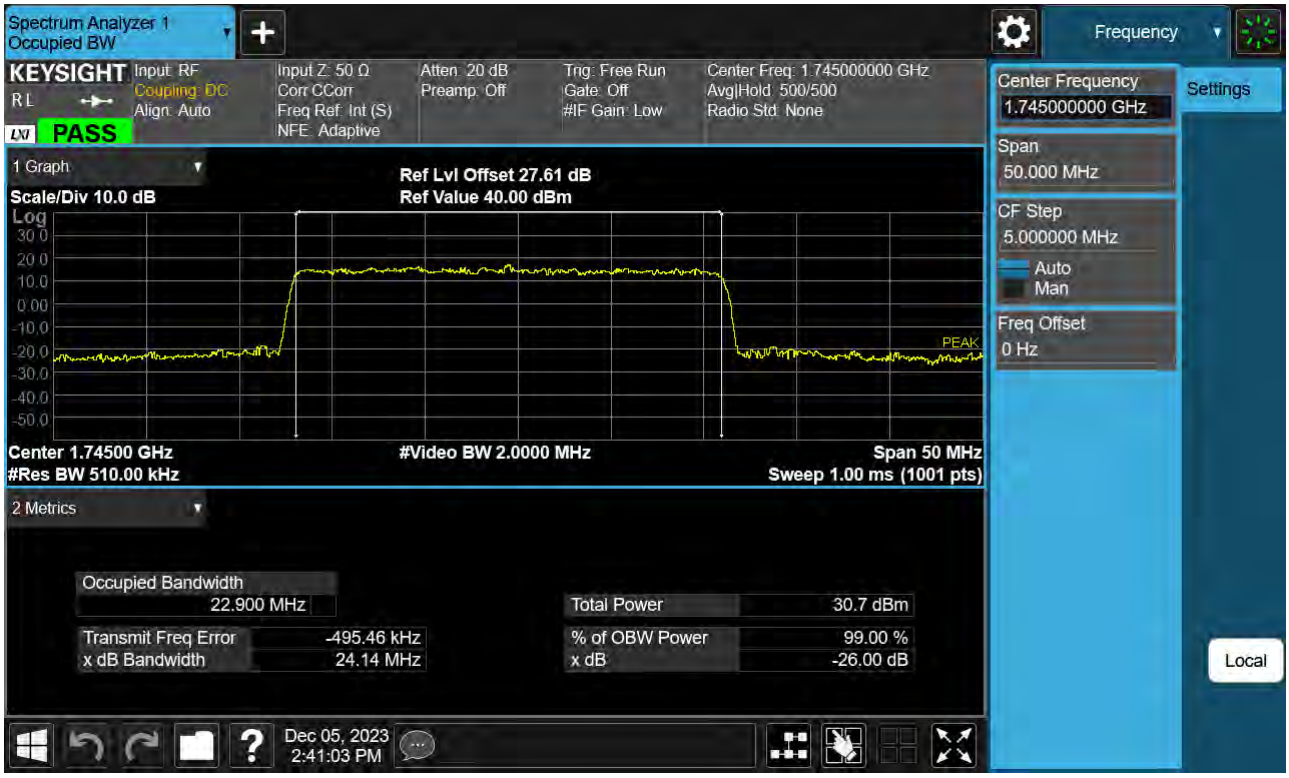
Sub6 n66. Occupied Bandwidth Plot (20 M BW Ch.349000 256QAM Full RB)



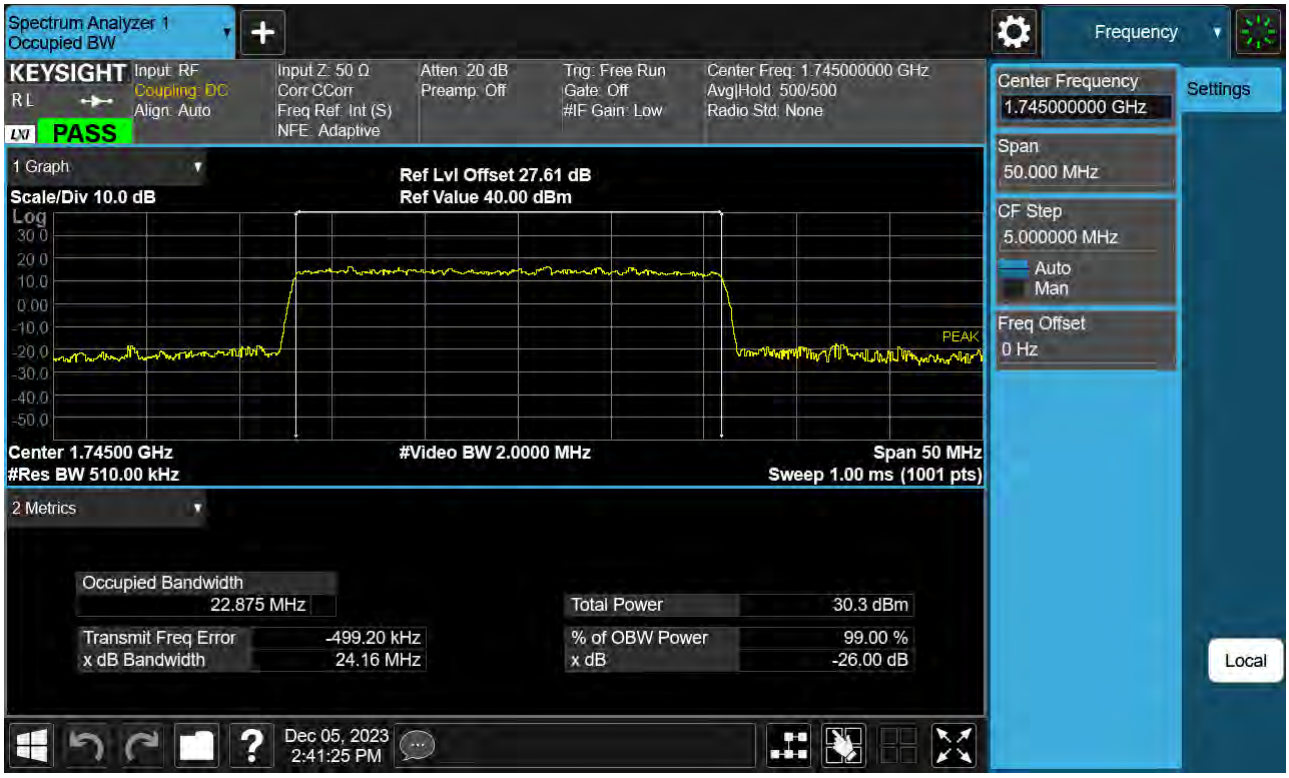
Sub6 n66. Occupied Bandwidth Plot (25 M BW Ch.349000 BPSK Full RB)

Sub6 n66. Occupied Bandwidth Plot (25 M BW Ch.349000 QPSK Full RB)

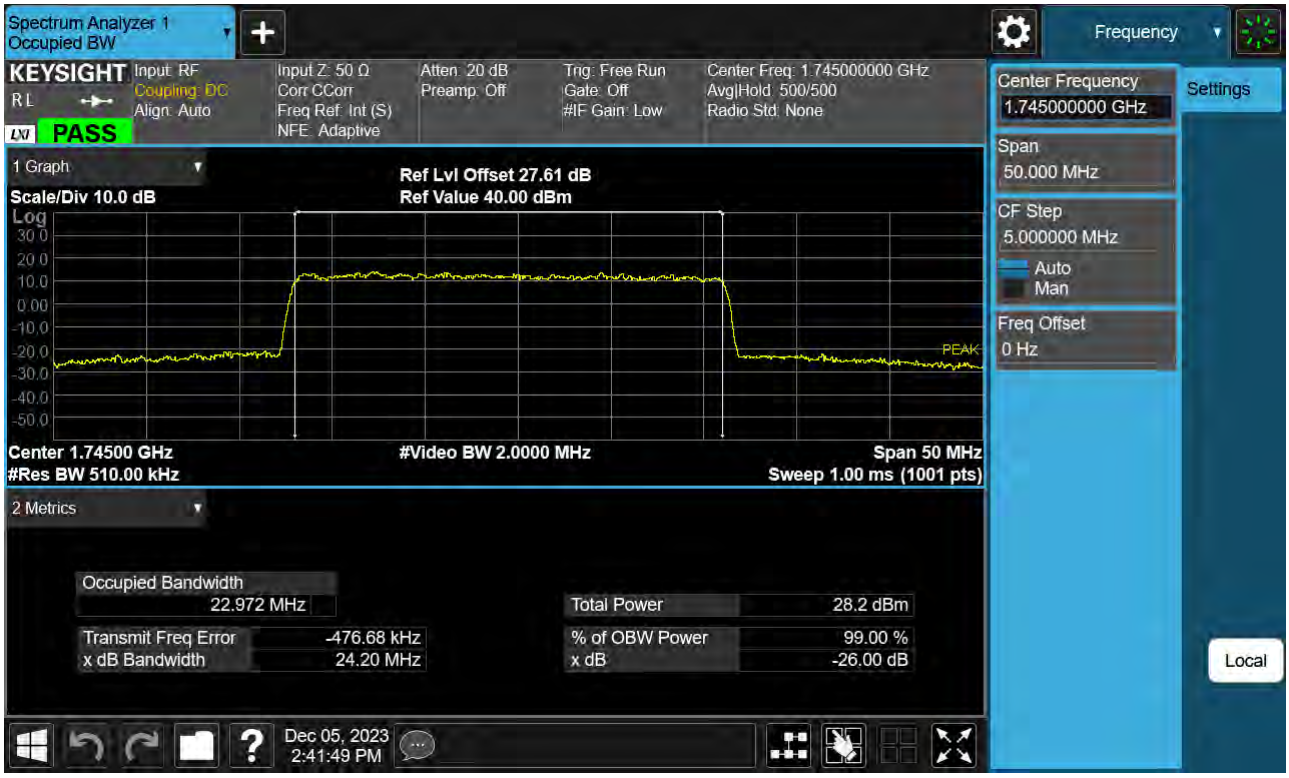
Sub6 n66. Occupied Bandwidth Plot (25 M BW Ch.349000 16QAM Full RB)



Sub6 n66. Occupied Bandwidth Plot (25 M BW Ch.349000 64QAM Full RB)

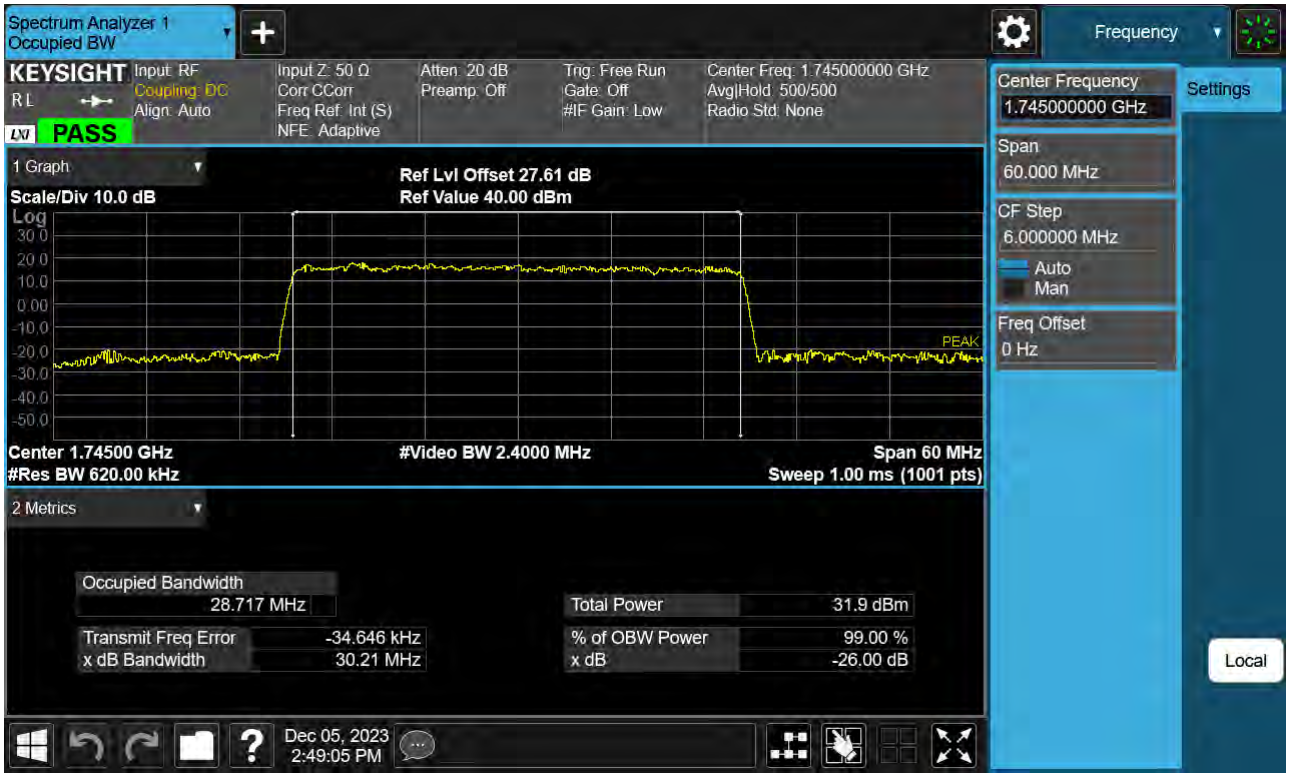


Sub6 n66. Occupied Bandwidth Plot (25 M BW Ch.349000 256QAM Full RB)

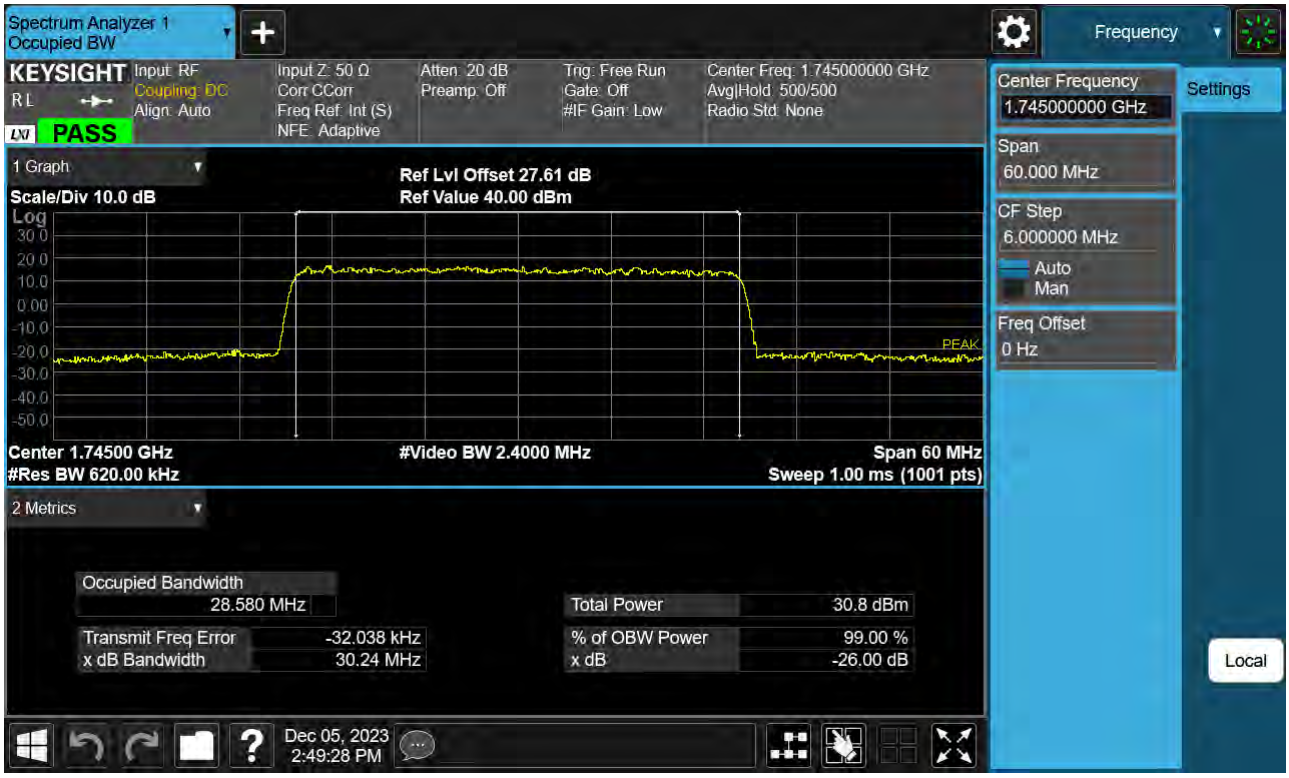


Sub6 n66. Occupied Bandwidth Plot (30 M BW Ch.349000 BPSK Full RB)

Sub6 n66. Occupied Bandwidth Plot (30 M BW Ch.349000 QPSK Full RB)



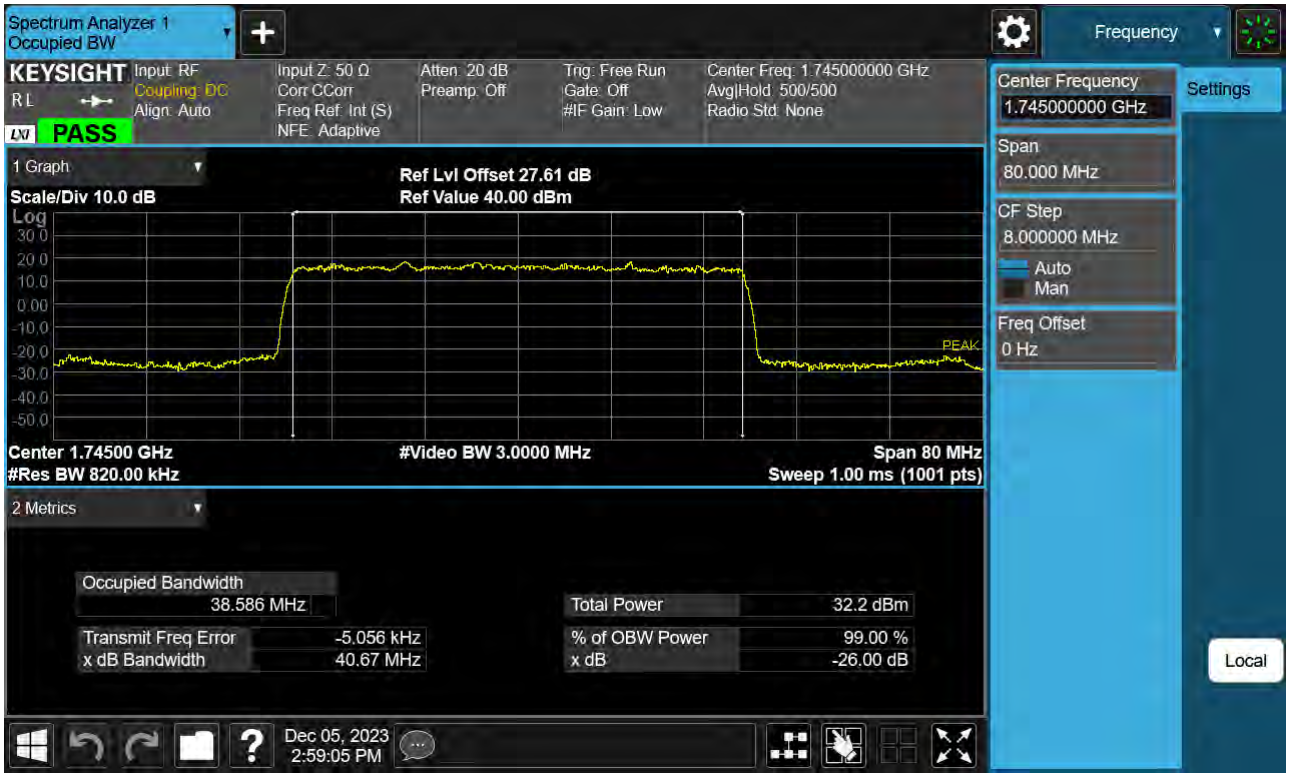
Sub6 n66. Occupied Bandwidth Plot (30 M BW Ch.349000 16QAM Full RB)



Sub6 n66. Occupied Bandwidth Plot (30 M BW Ch.349000 64QAM Full RB)

Sub6 n66. Occupied Bandwidth Plot (30 M BW Ch.349000 256QAM Full RB)

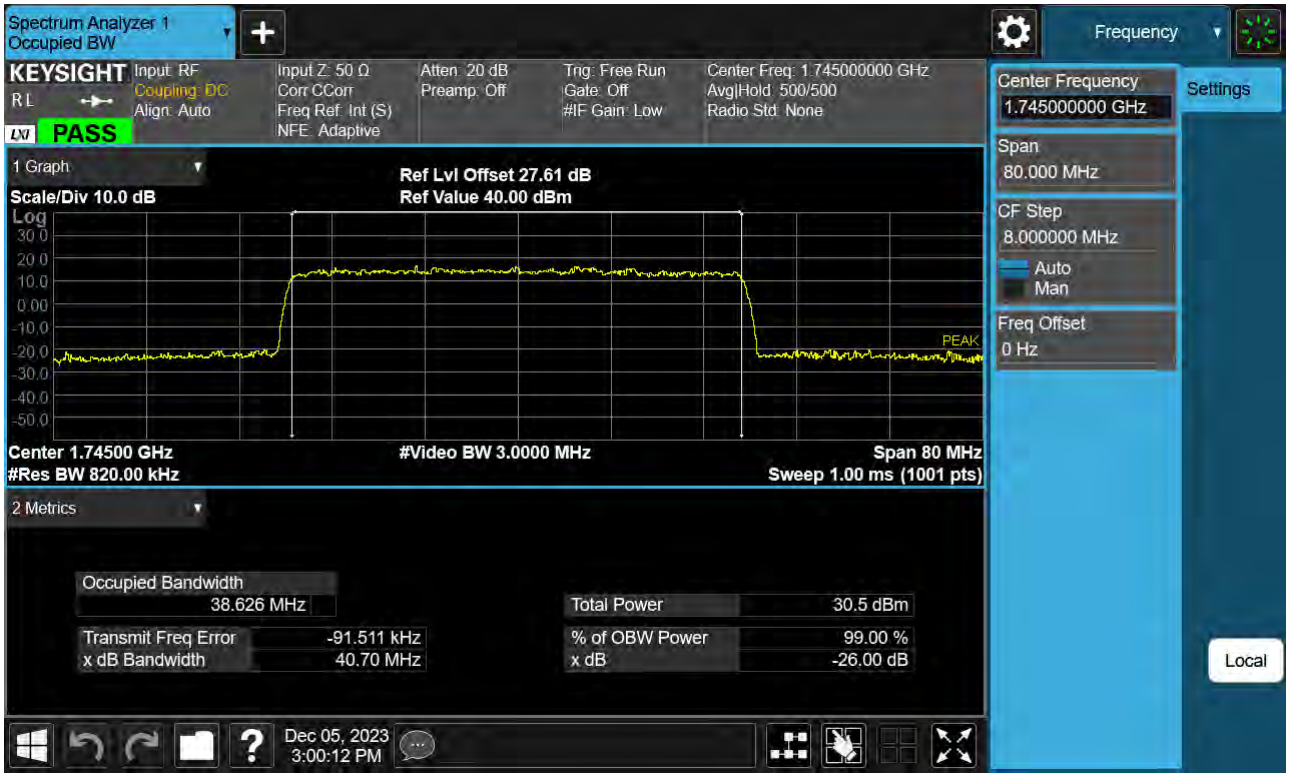
Sub6 n66. Occupied Bandwidth Plot (40 M BW Ch.349000 BPSK Full RB)



Sub6 n66. Occupied Bandwidth Plot (40 M BW Ch.349000 QPSK Full RB)

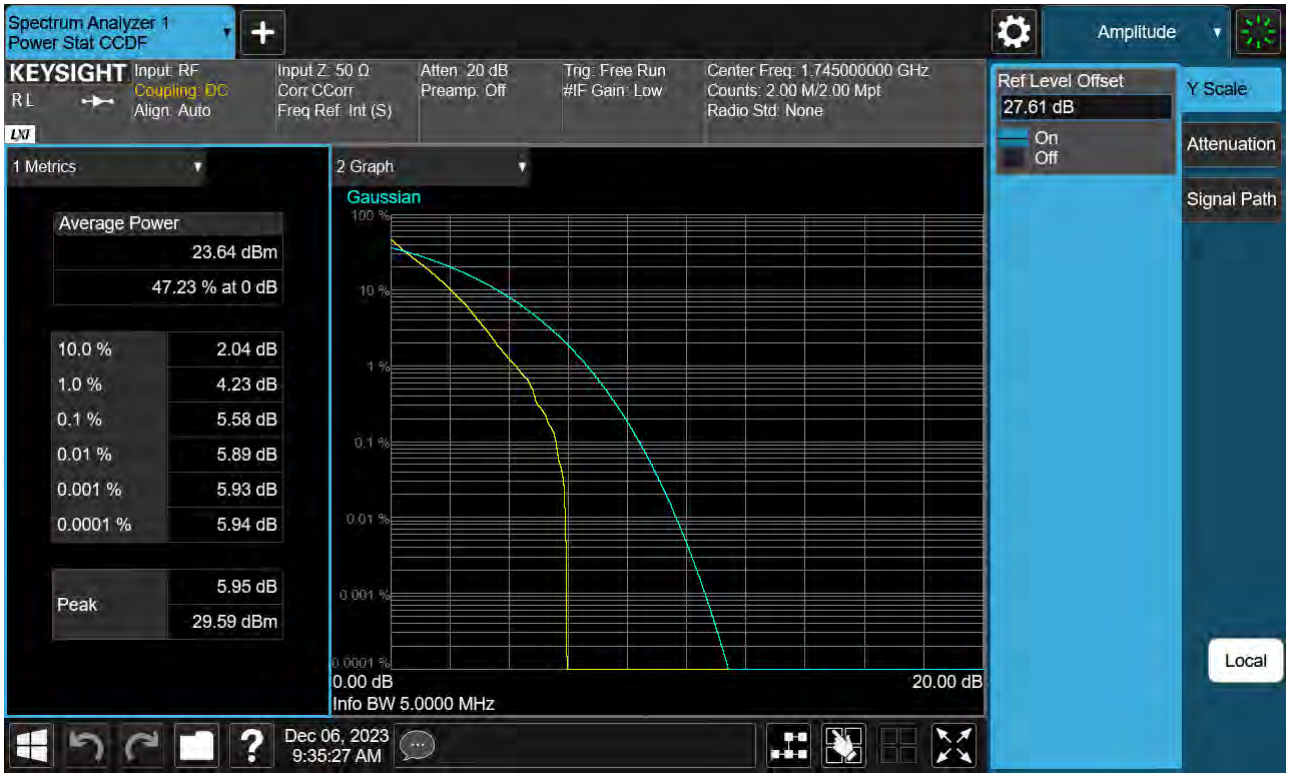
Sub6 n66. Occupied Bandwidth Plot (40 M BW Ch.349000 16QAM Full RB)

Sub6 n66. Occupied Bandwidth Plot (40 M BW Ch.349000 64QAM Full RB)

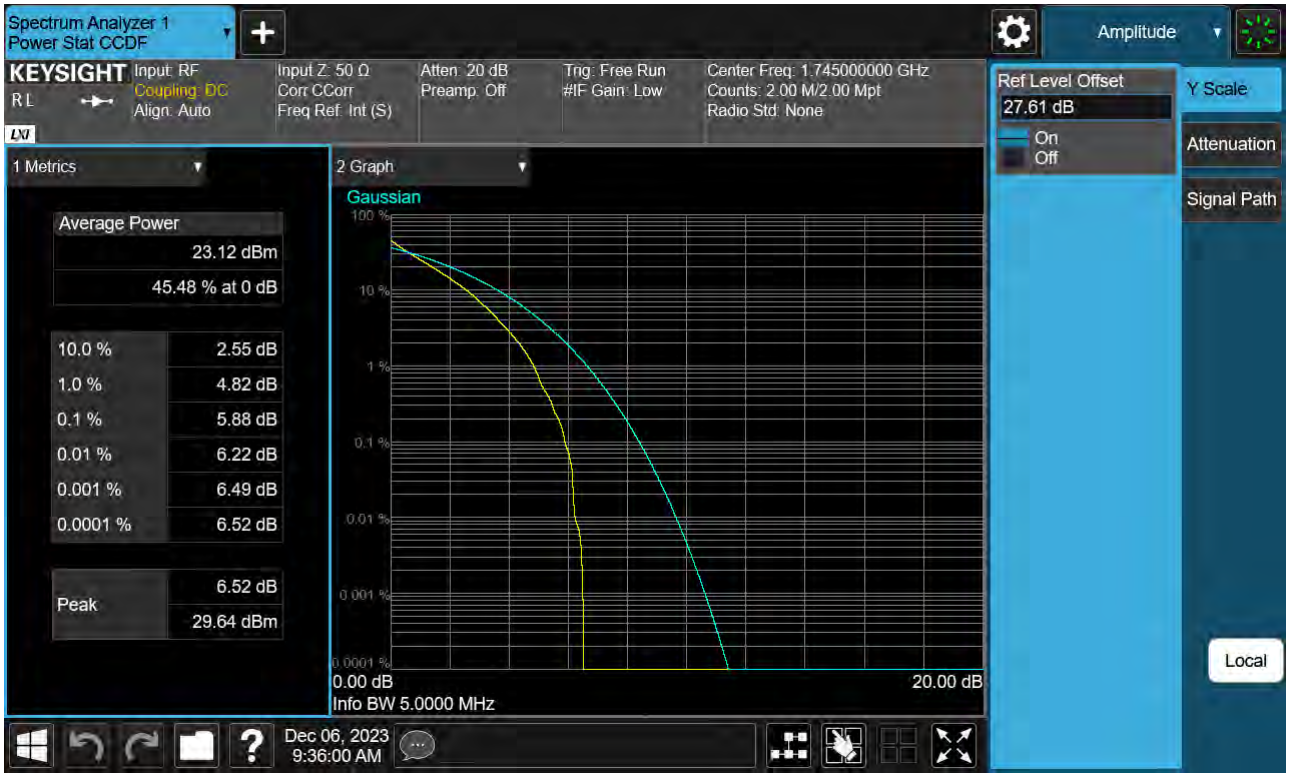


Sub6 n66. Occupied Bandwidth Plot (40 M BW Ch.349000 256QAM Full RB)

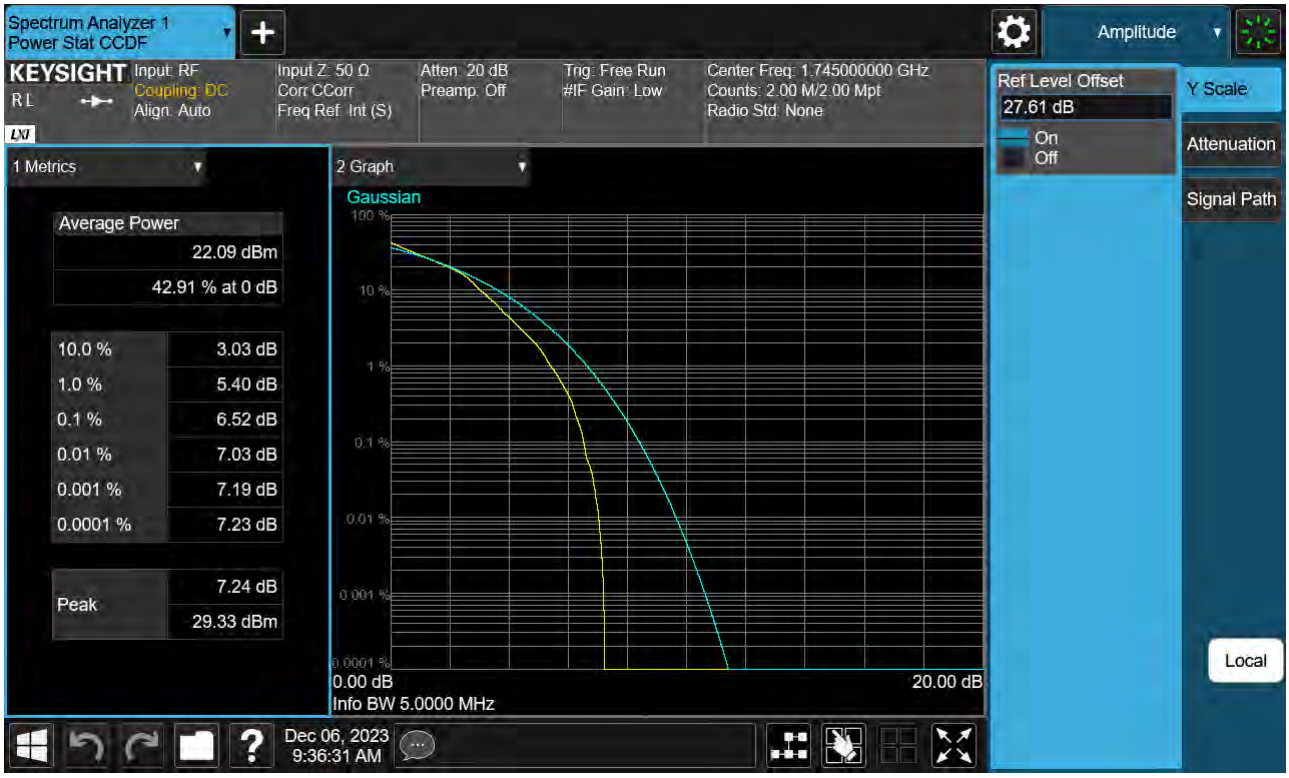
Sub6 n66. PAR Plot (5 M BW_Ch.349000_ BPSK_ Full RB)



Sub6 n66. PAR Plot (5 M BW_Ch.349000_QPSK_ Full RB)

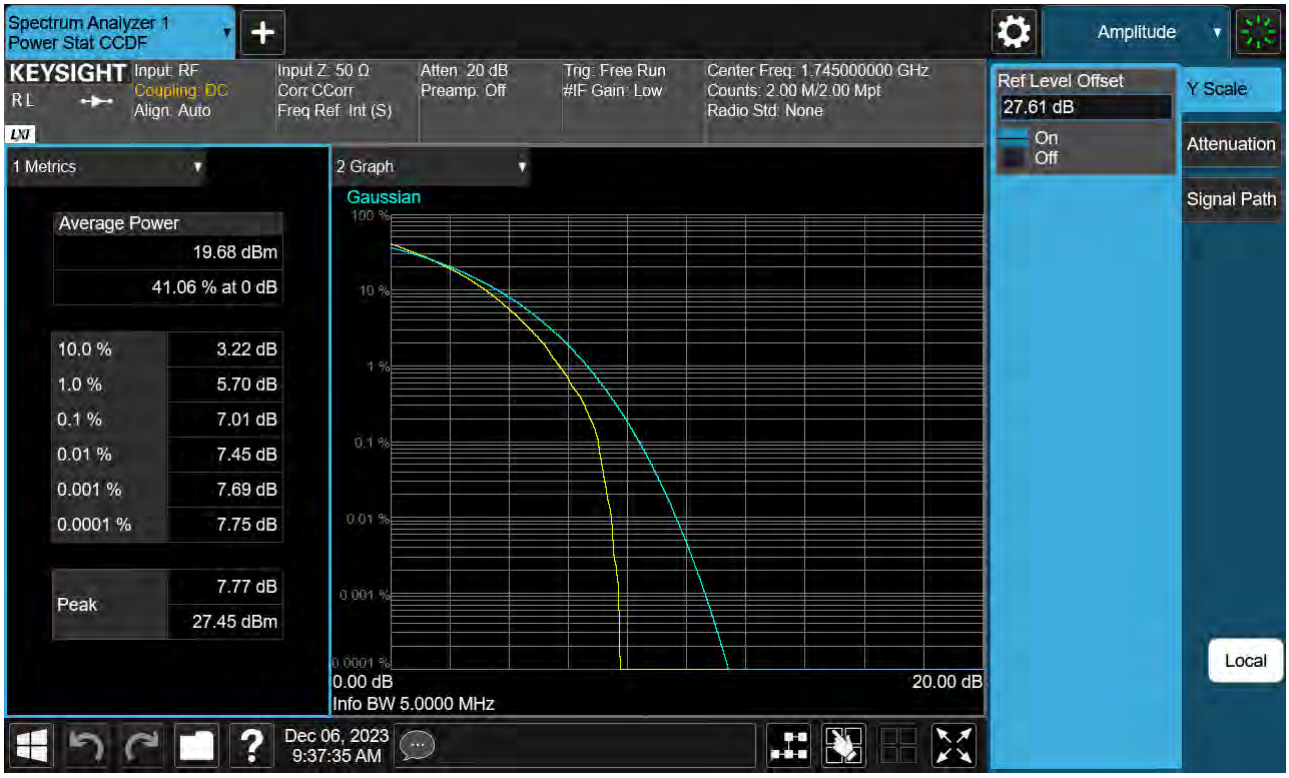


Sub6 n66. PAR Plot (5 M BW_Ch.349000_16QAM_ Full RB)

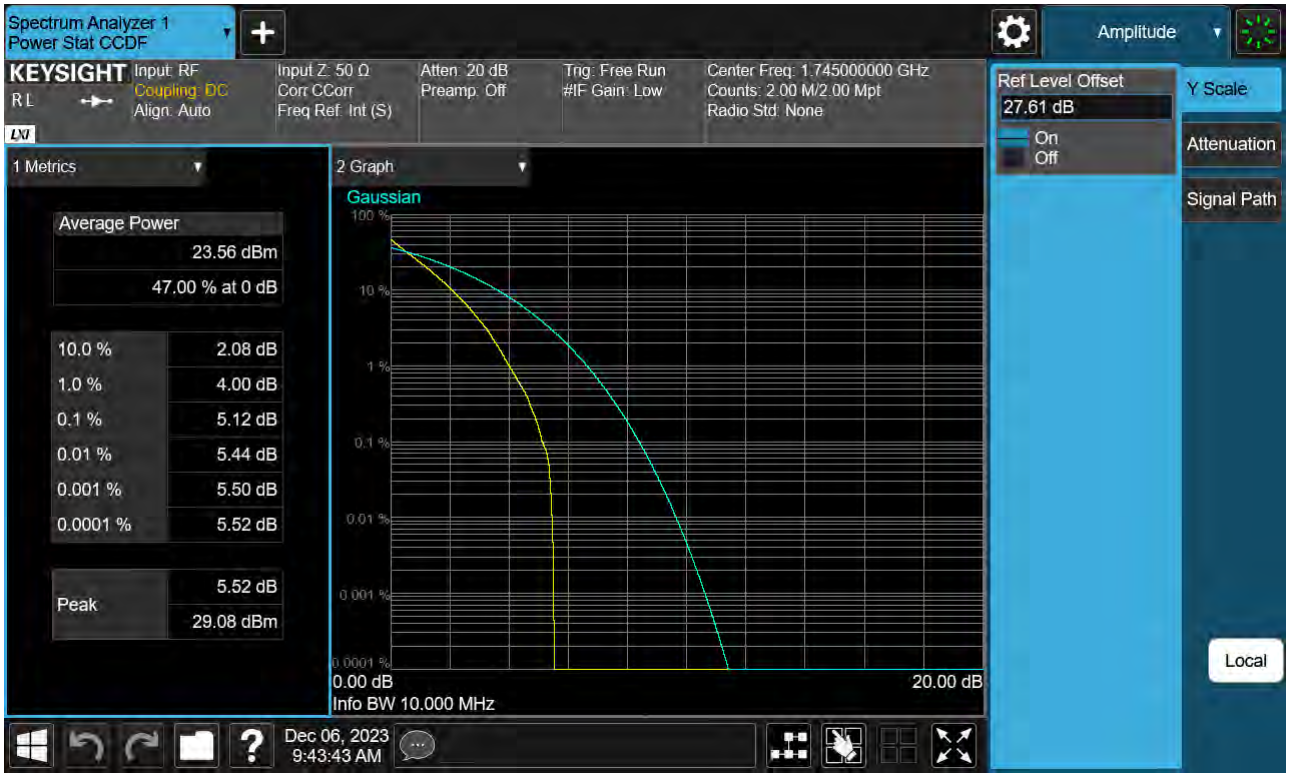


Sub6 n66. PAR Plot (5 M BW_Ch.349000_64QAM_ Full RB)

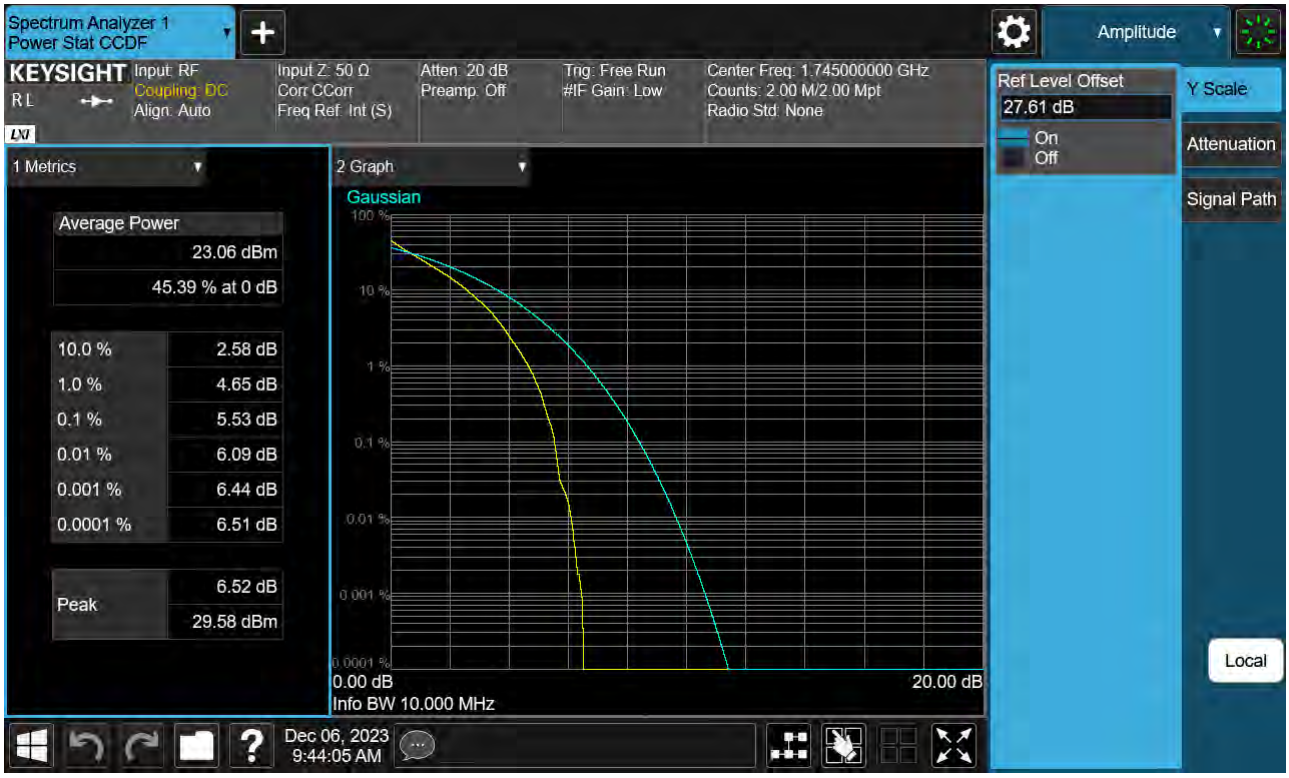
Sub6 n66. PAR Plot (5 M BW_Ch.349000_256QAM_ Full RB)



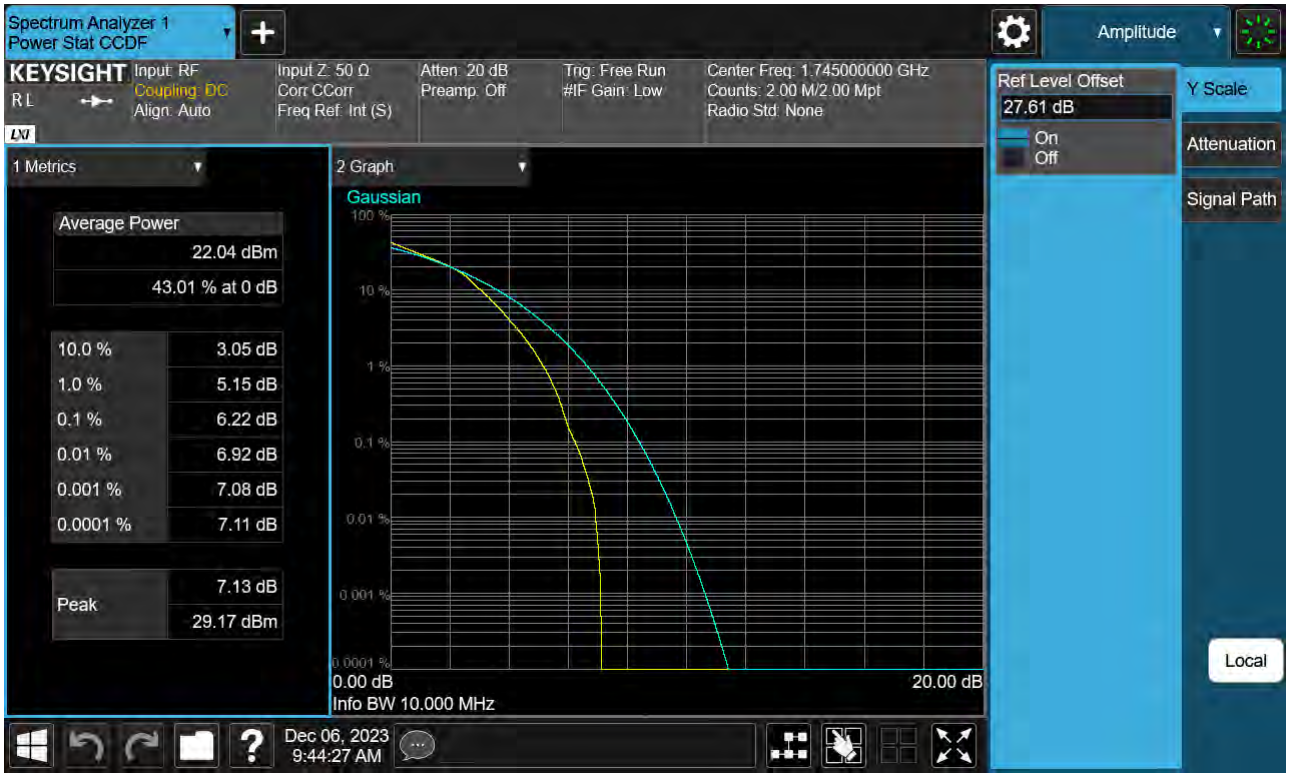
Sub6 n66. PAR Plot (10 M BW_Ch.349000_ BPSK_ Full RB)



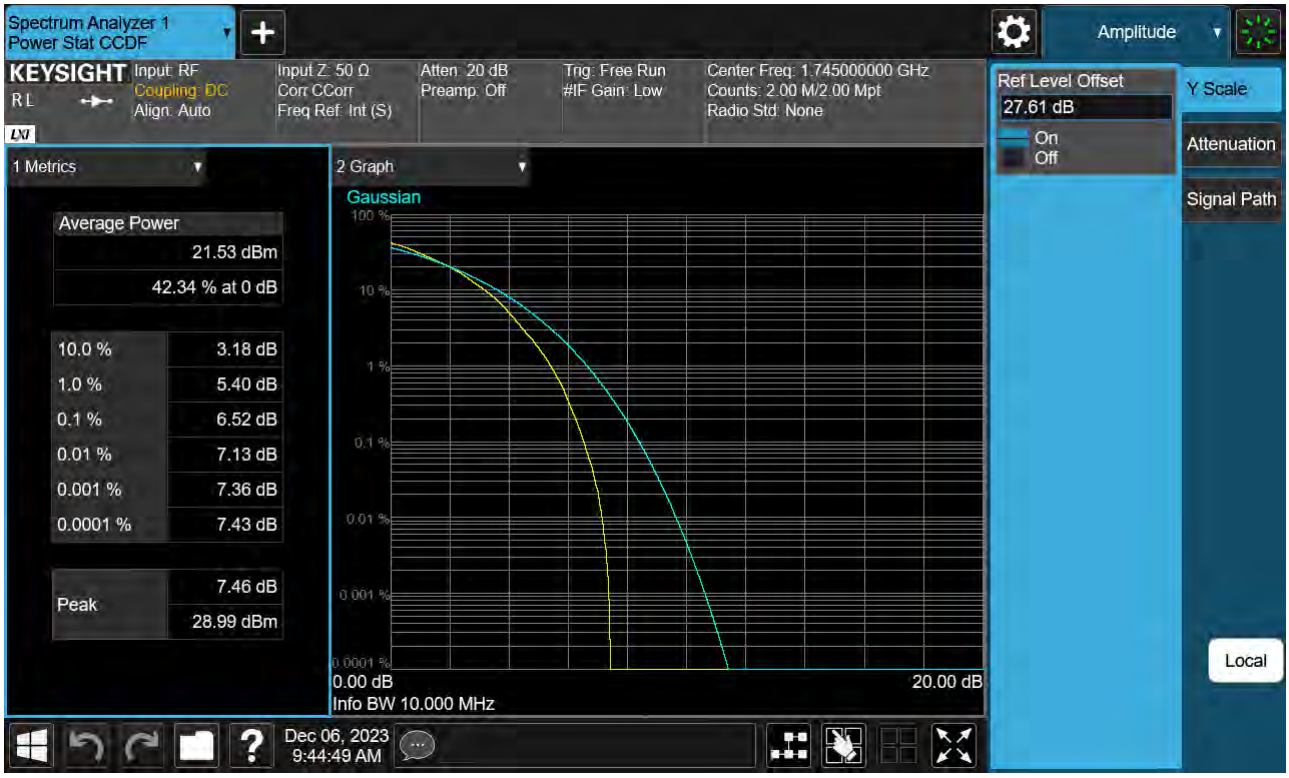
Sub6 n66. PAR Plot (10 M BW_Ch.349000_QPSK_ Full RB)



Sub6 n66. PAR Plot (10 M BW_Ch.349000_16QAM_ Full RB)

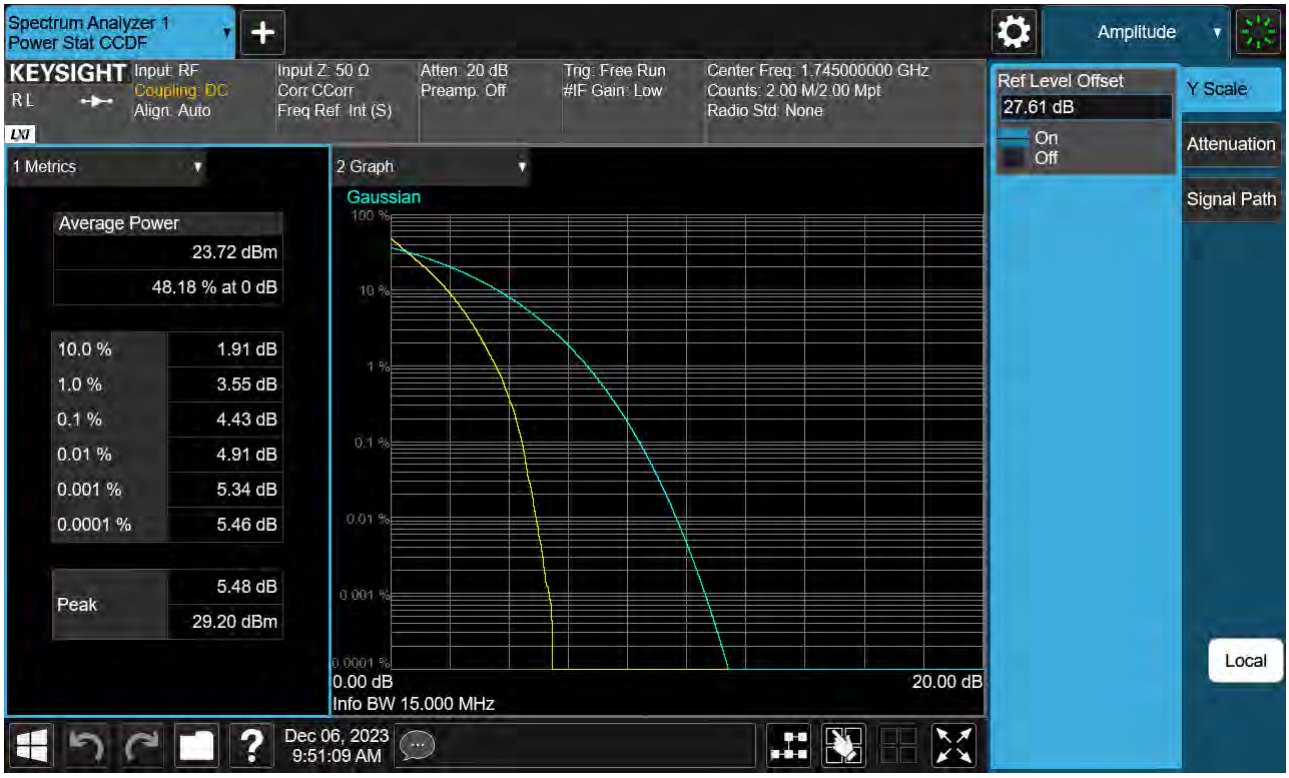


Sub6 n66. PAR Plot (10 M BW_Ch.349000_64QAM_ Full RB)

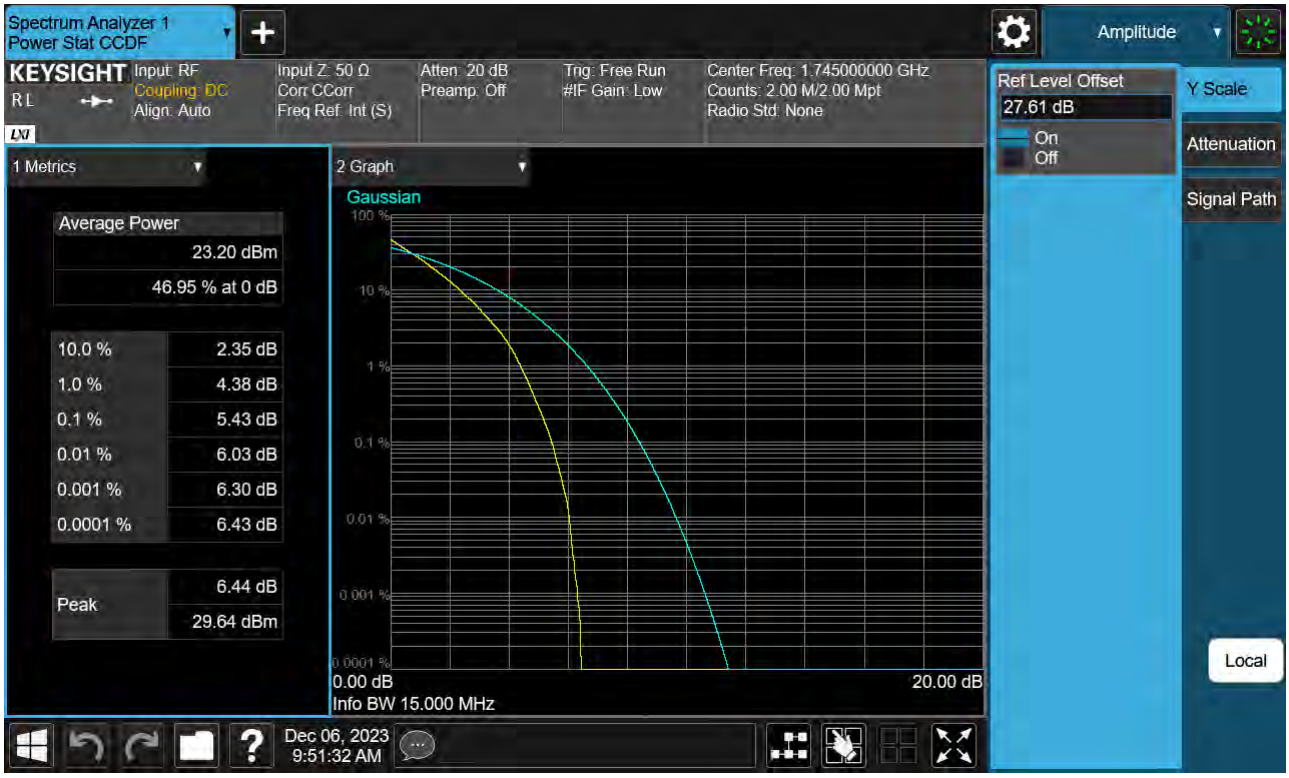


Sub6 n66. PAR Plot (10 M BW_Ch.349000_256QAM_ Full RB)

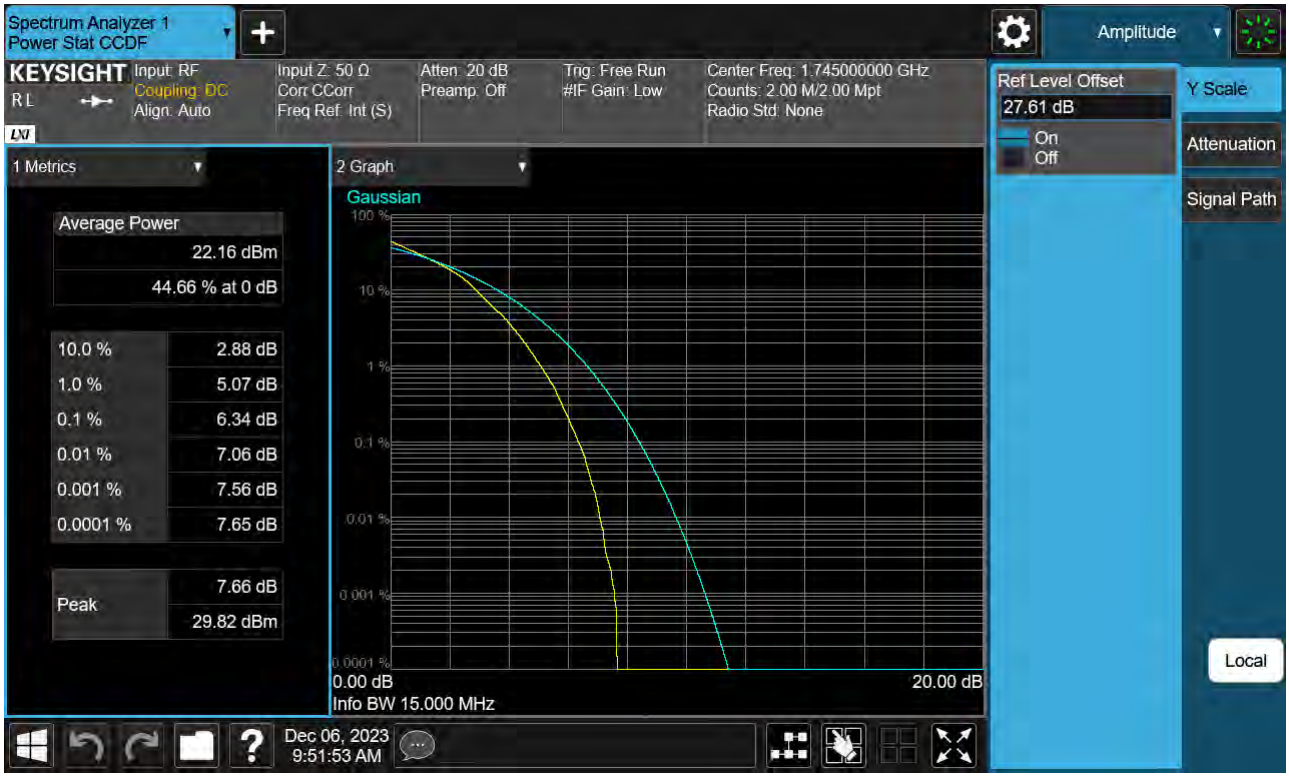
Sub6 n66. PAR Plot (15 M BW_Ch.349000_ BPSK_ Full RB)



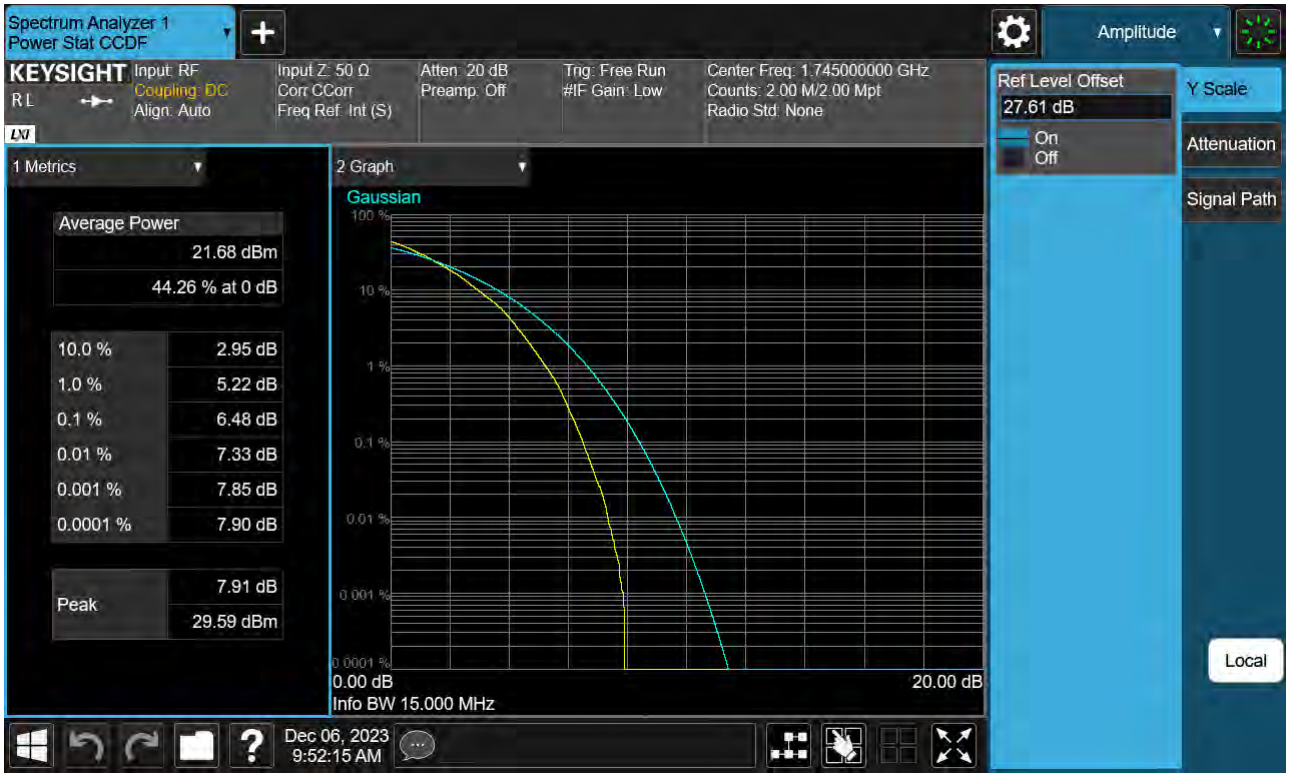
Sub6 n66. PAR Plot (15 M BW_Ch.349000_QPSK_ Full RB)



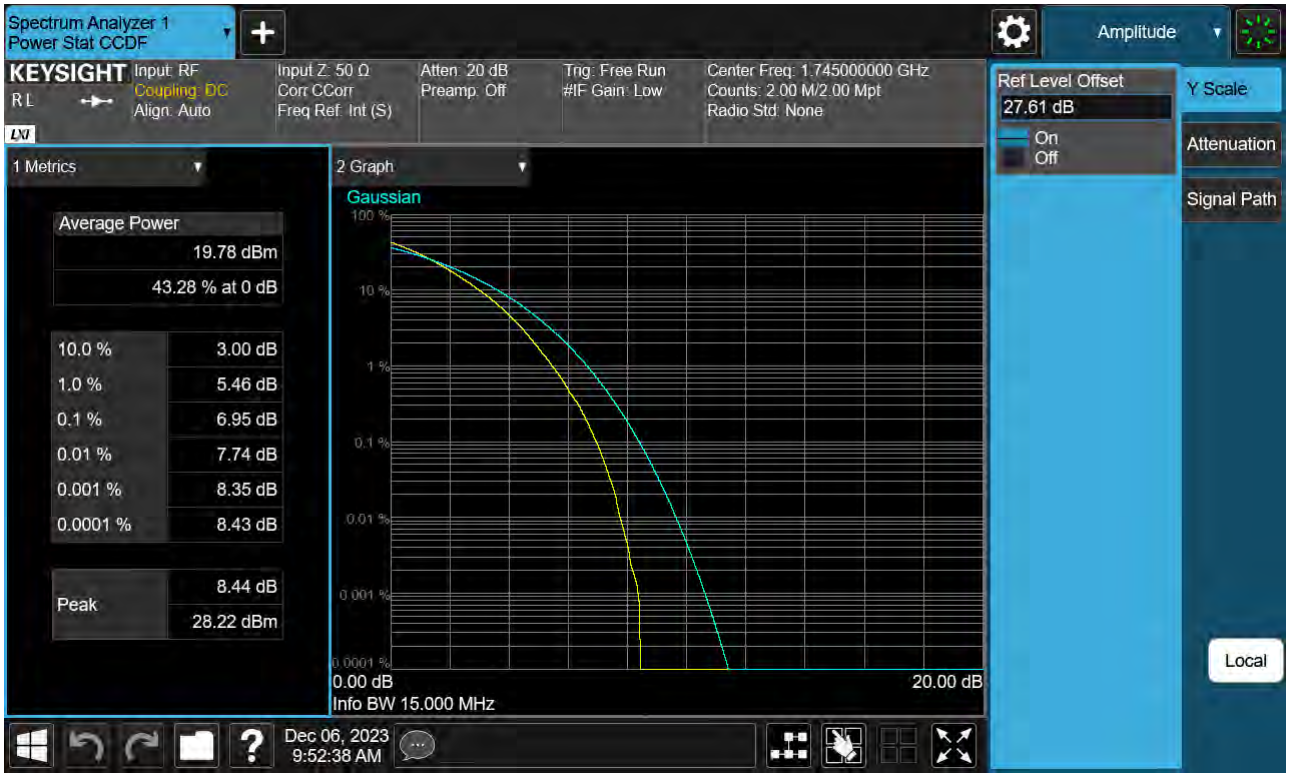
Sub6 n66. PAR Plot (15 M BW_Ch.349000_16QAM_ Full RB)



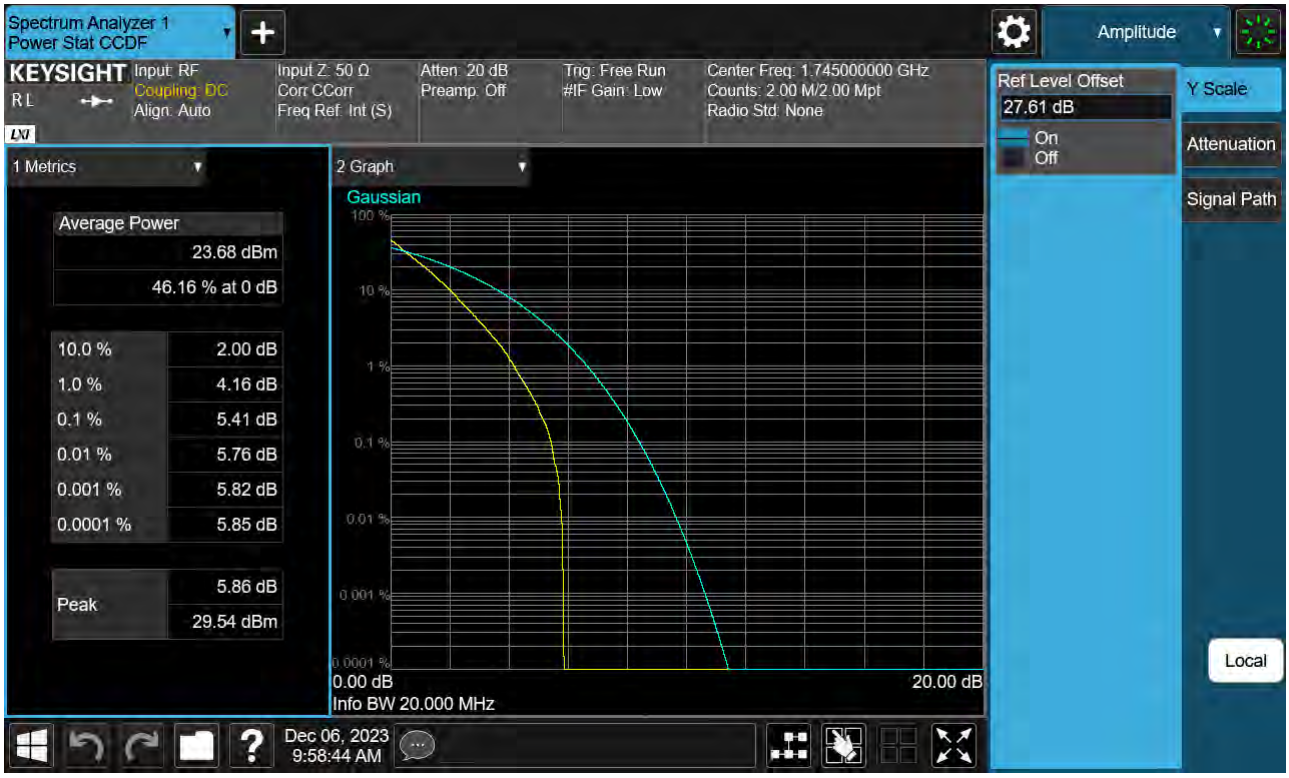
Sub6 n66. PAR Plot (15 M BW_Ch.349000_64QAM_ Full RB)



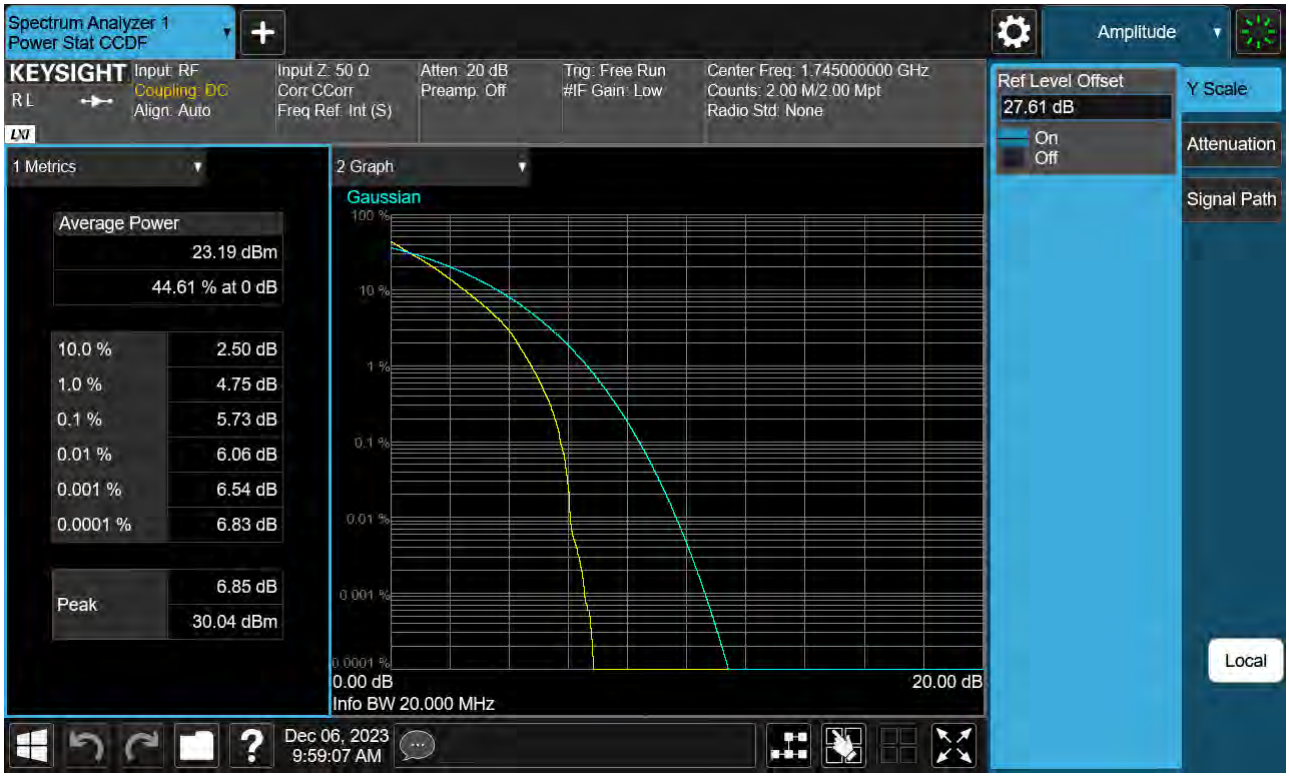
Sub6 n66. PAR Plot (15 M BW_Ch.349000_256QAM_ Full RB)



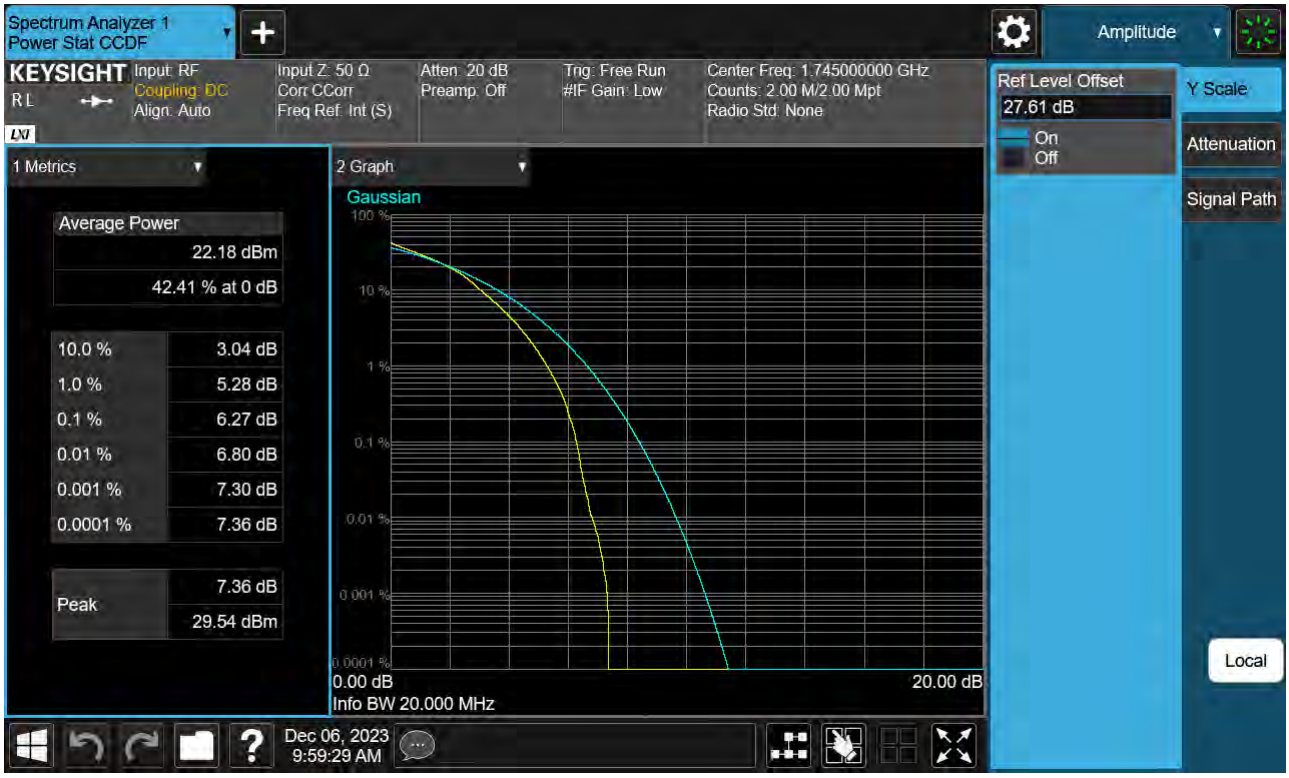
Sub6 n66. PAR Plot (20 M BW_Ch.349000_ BPSK_ Full RB)



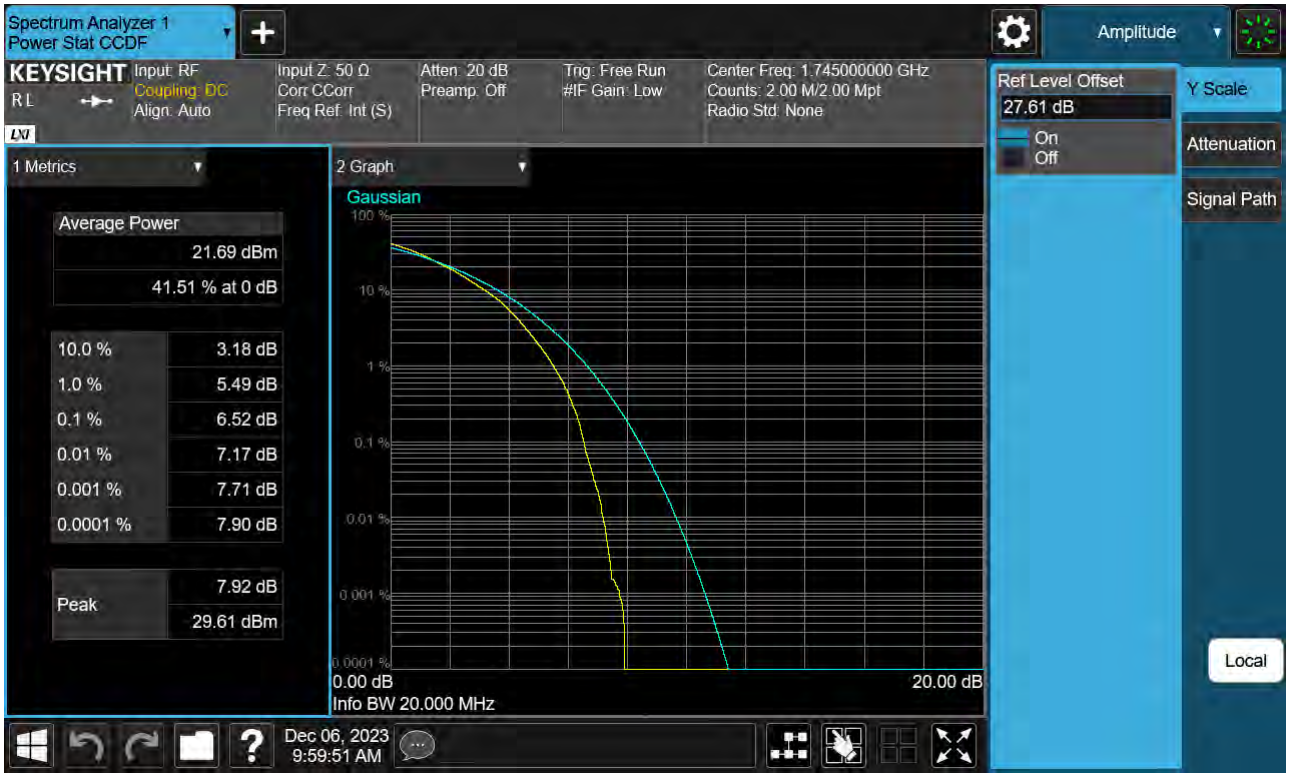
Sub6 n66. PAR Plot (20 M BW_Ch.349000_QPSK_ Full RB)



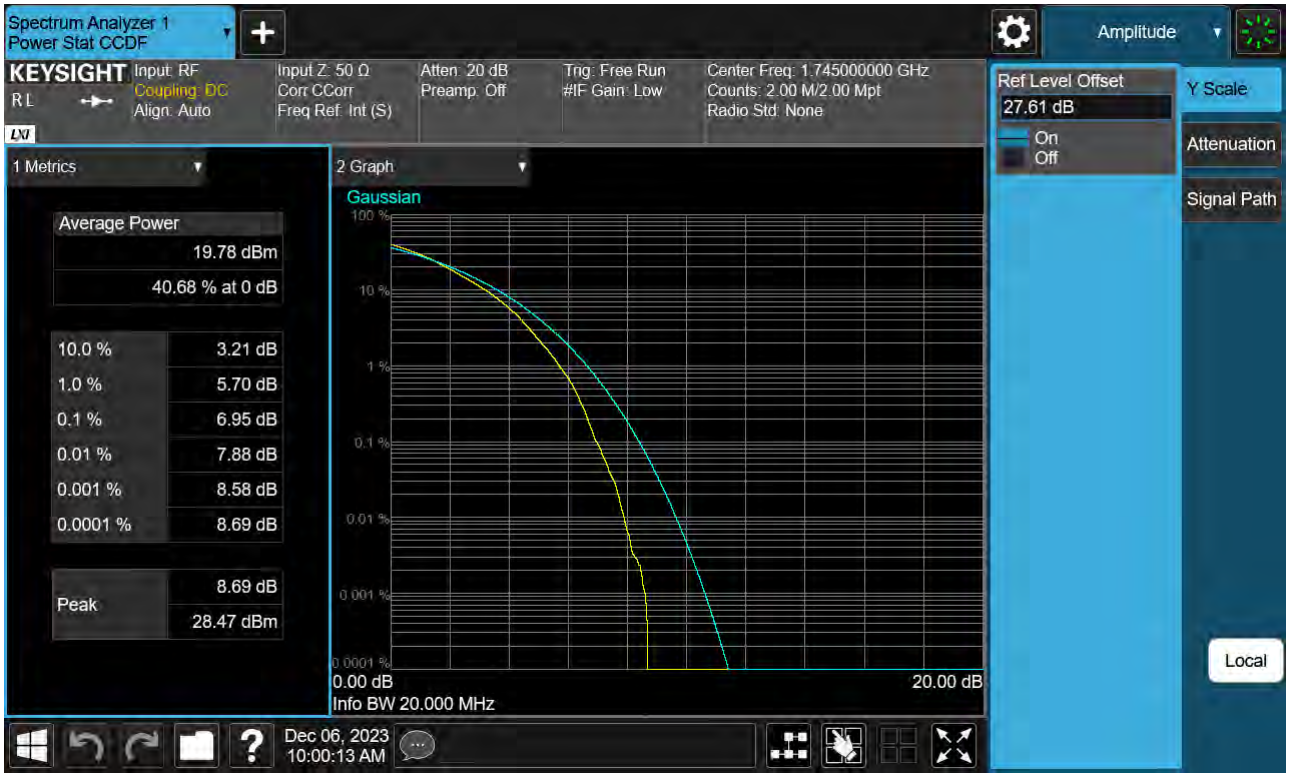
Sub6 n66. PAR Plot (20 M BW_Ch.349000_16QAM_ Full RB)



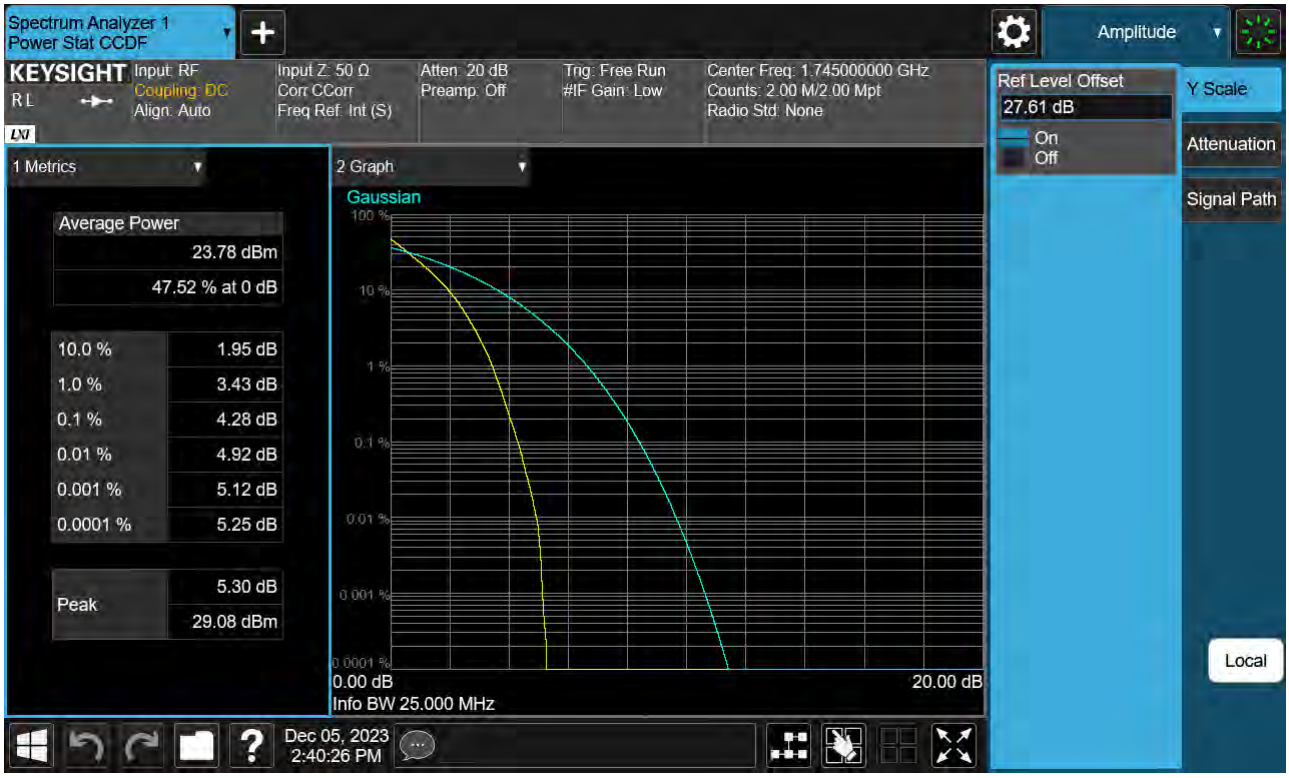
Sub6 n66. PAR Plot (20 M BW_Ch.349000_64QAM_ Full RB)



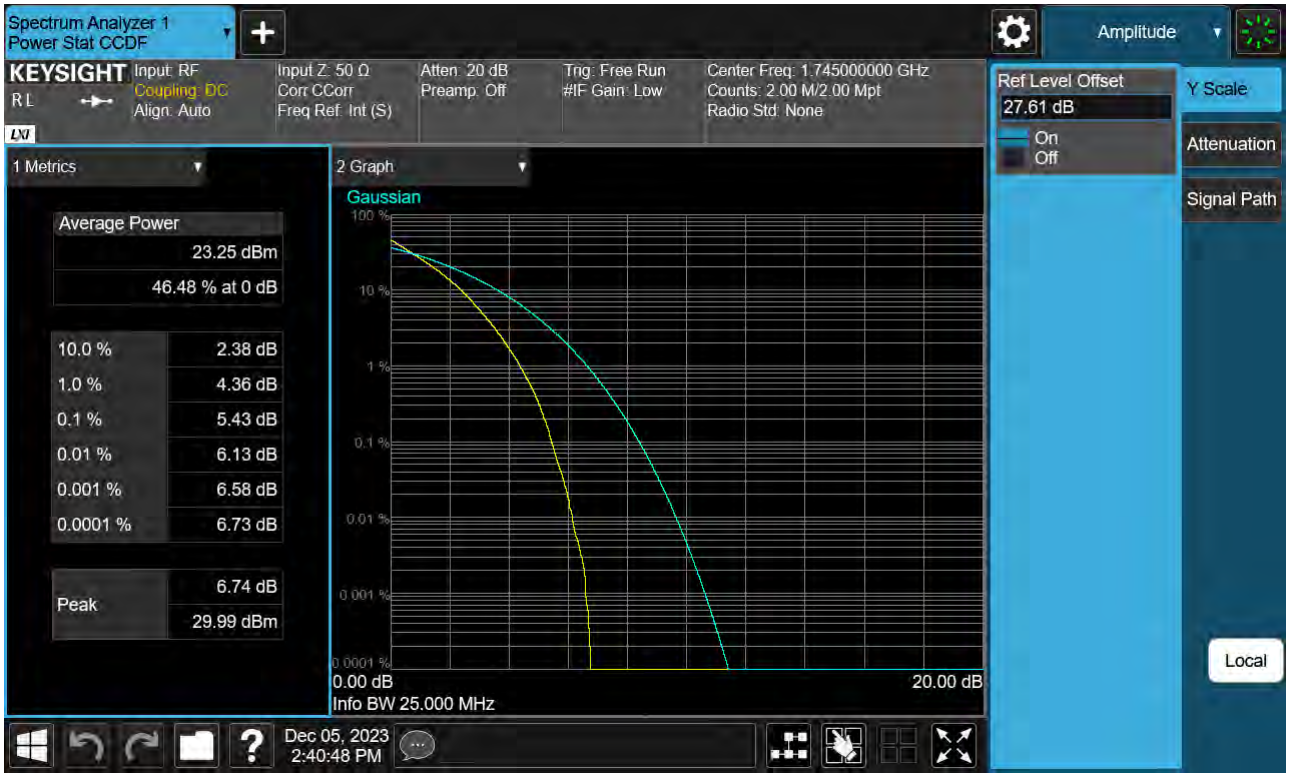
Sub6 n66. PAR Plot (20 M BW_Ch.349000_256QAM_ Full RB)



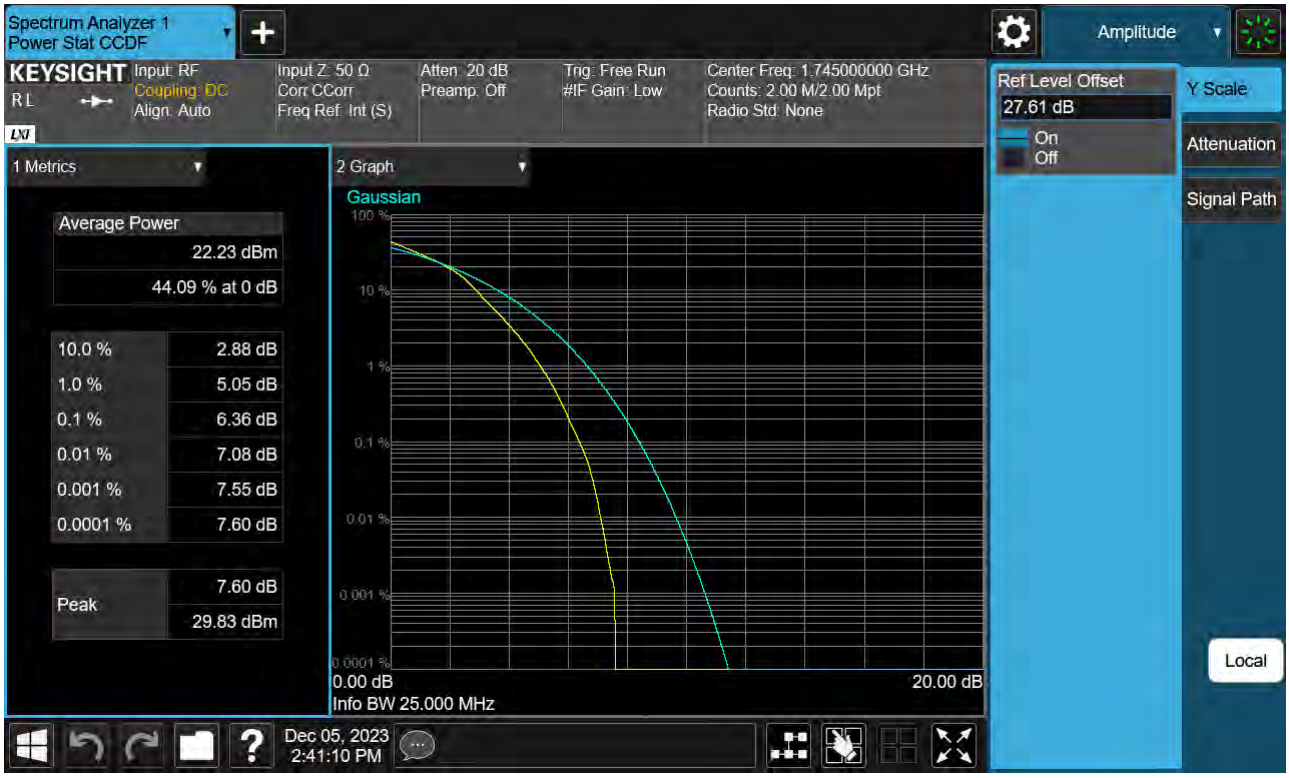
Sub6 n66. PAR Plot (25 M BW_Ch.349000_ BPSK_ Full RB)



Sub6 n66. PAR Plot (25 M BW_Ch.349000_QPSK_ Full RB)

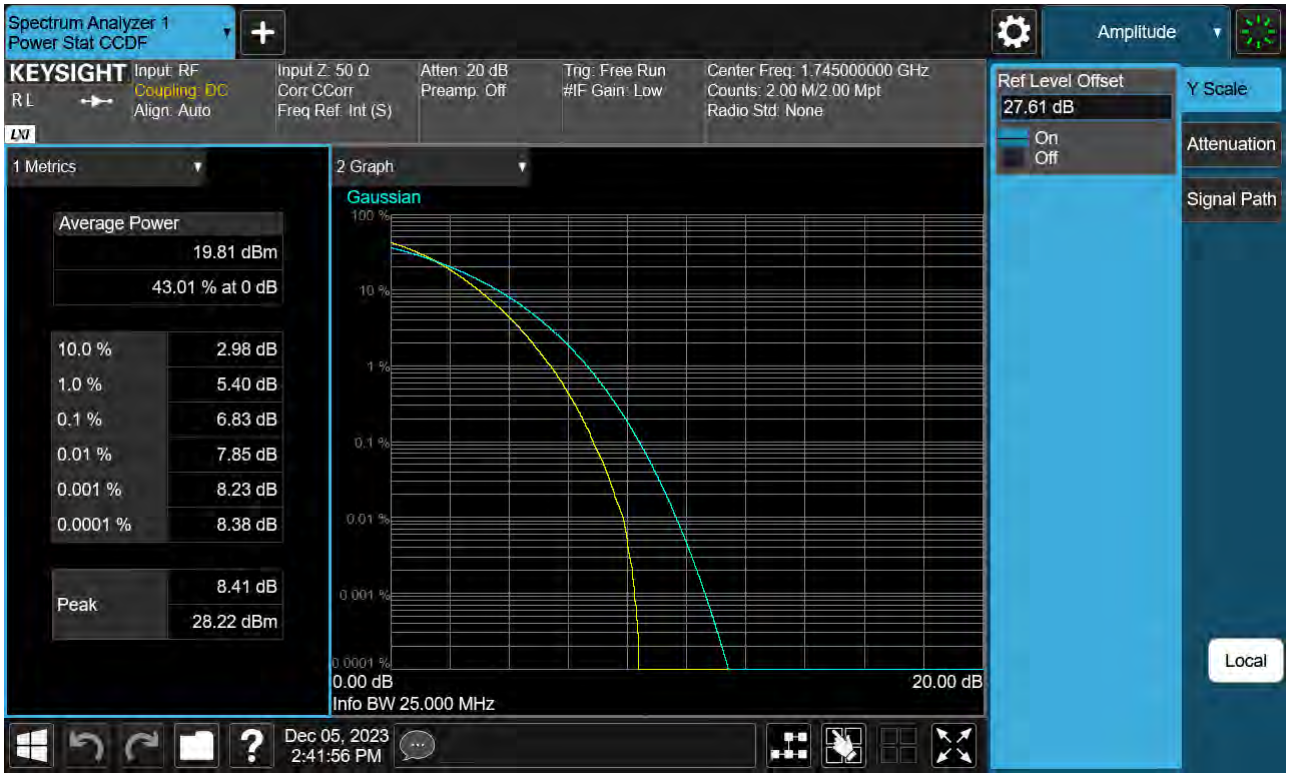


Sub6 n66. PAR Plot (25 M BW_Ch.349000_16QAM_ Full RB)

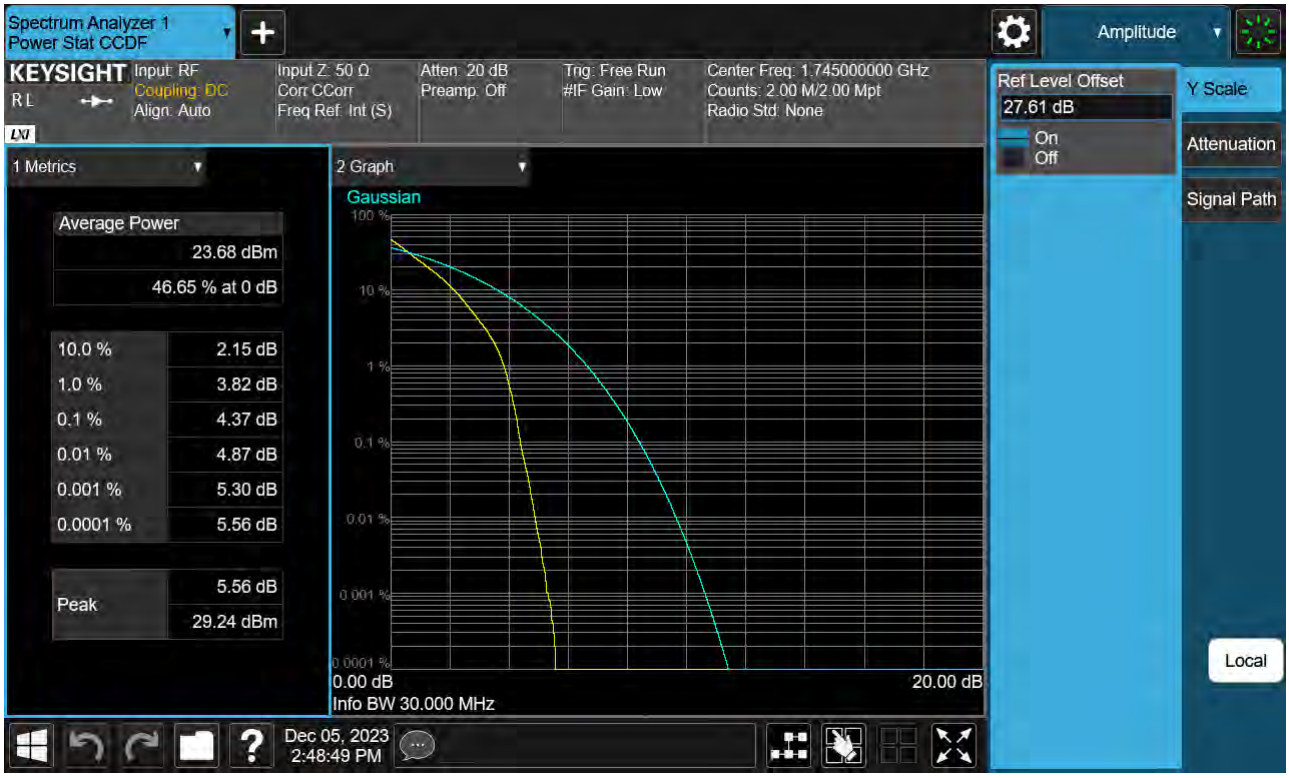


Sub6 n66. PAR Plot (25 M BW_Ch.349000_64QAM_ Full RB)

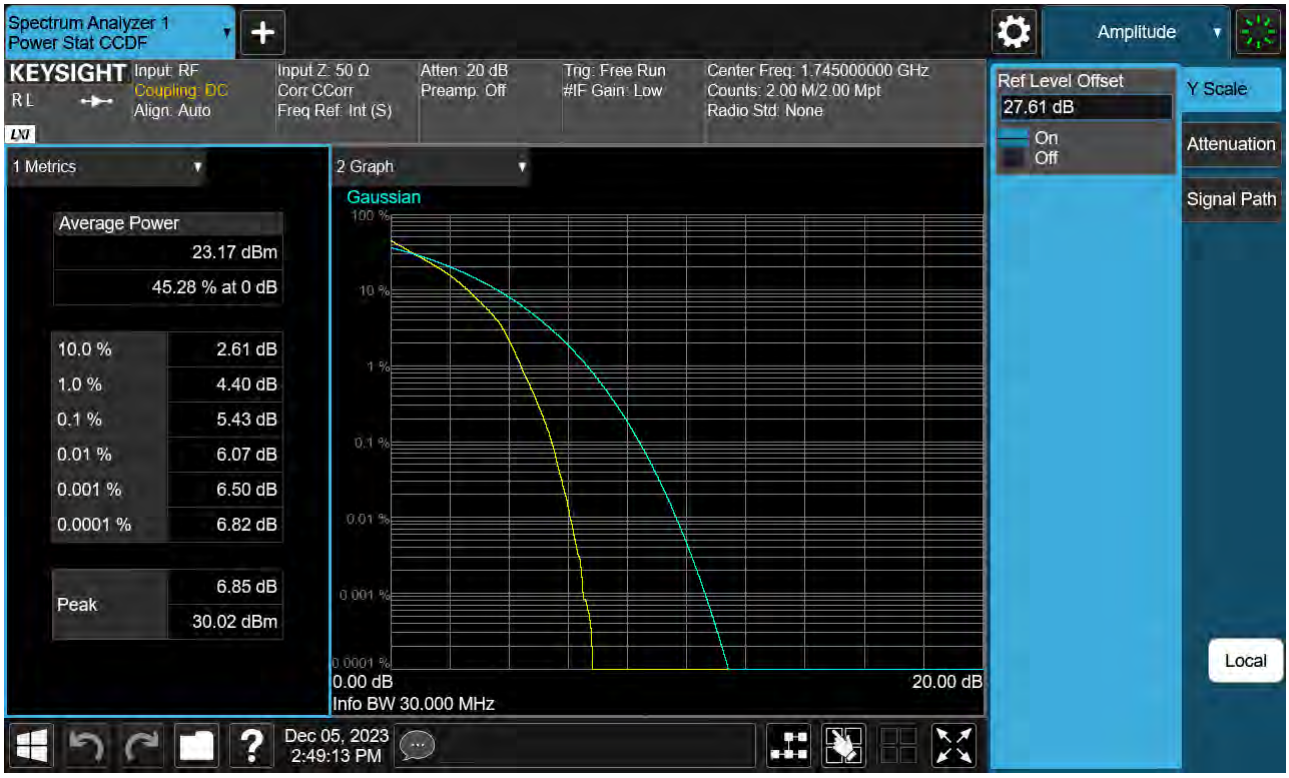
Sub6 n66. PAR Plot (25 M BW_Ch.349000_256QAM_ Full RB)



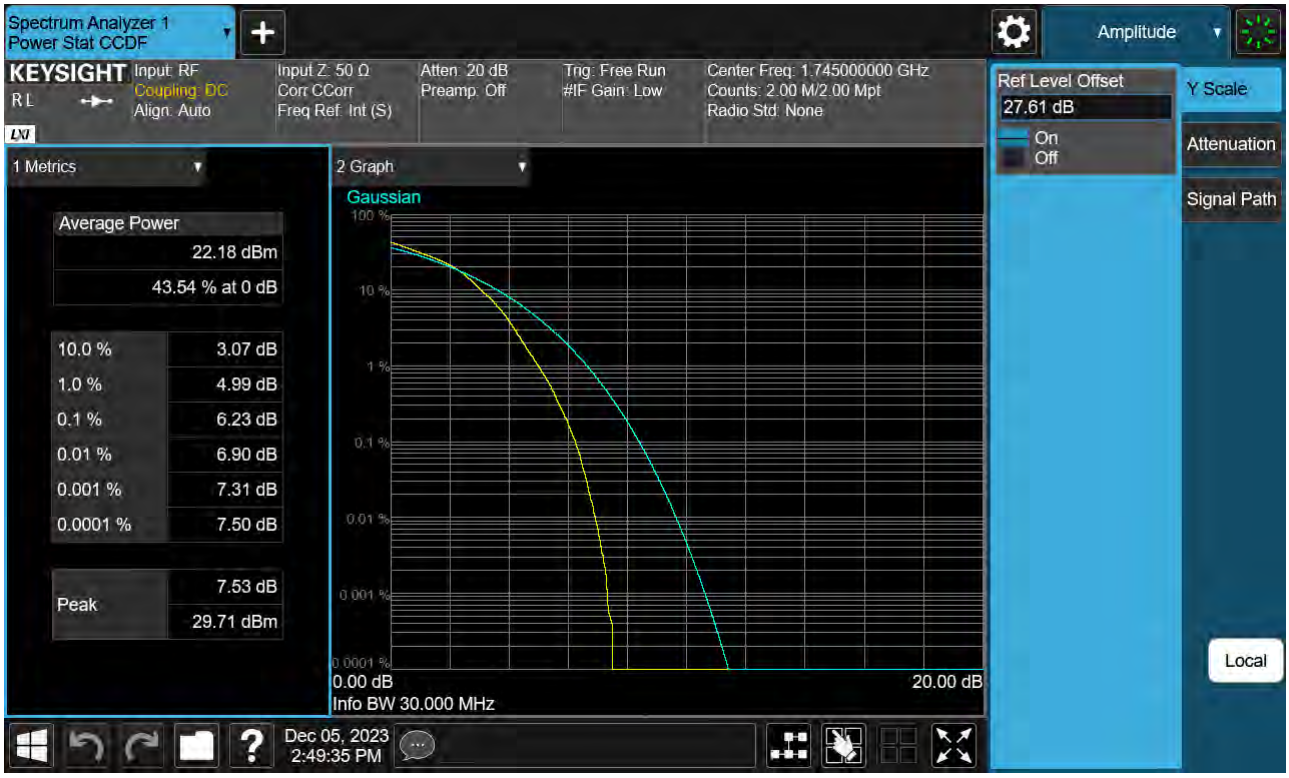
Sub6 n66. PAR Plot (30 M BW_Ch.349000_ BPSK_ Full RB)



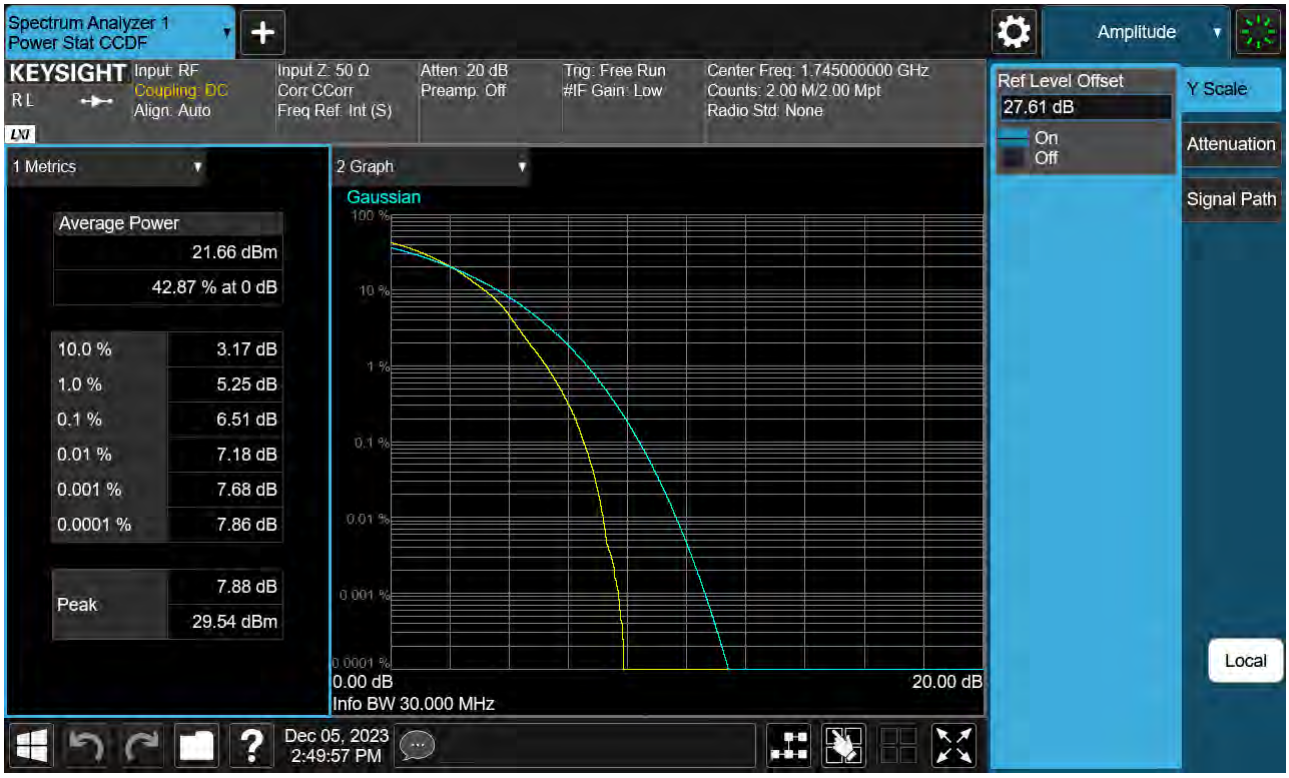
Sub6 n66. PAR Plot (30 M BW_Ch.349000_QPSK_ Full RB)



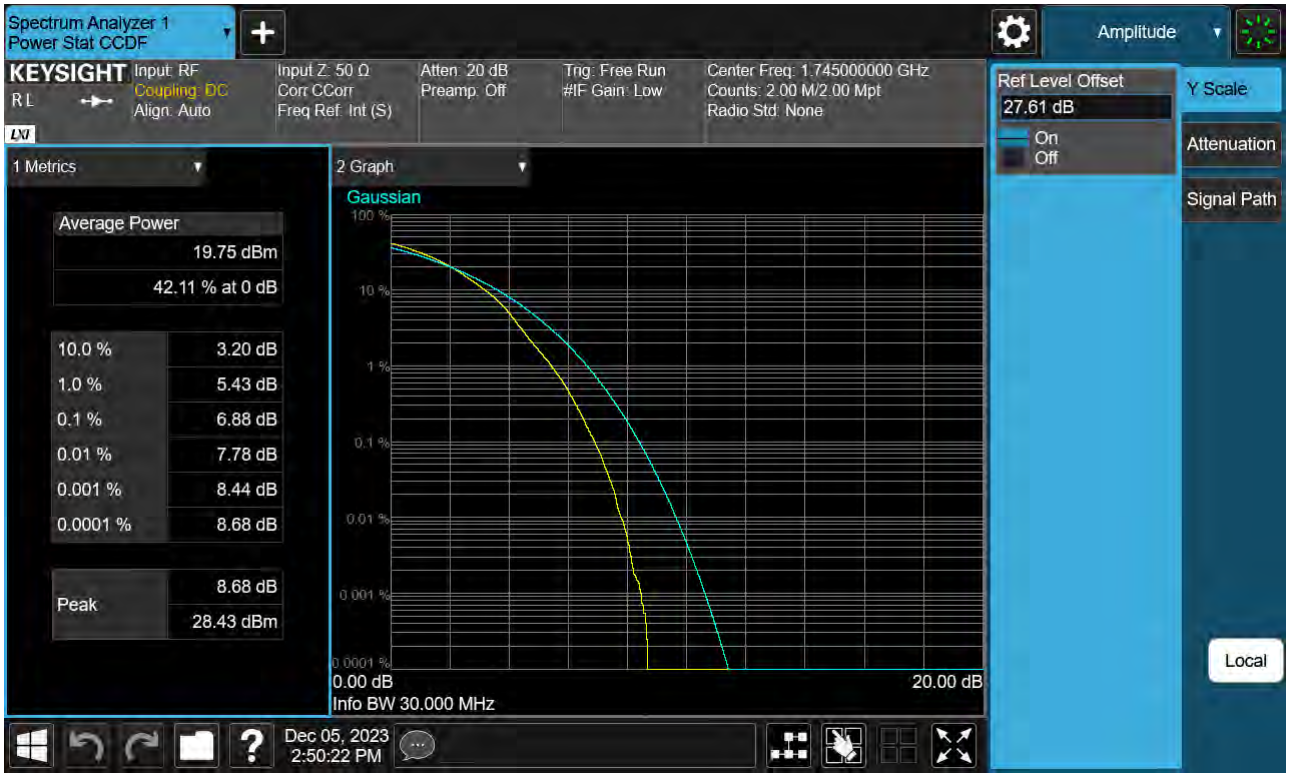
Sub6 n66. PAR Plot (30 M BW_Ch.349000_16QAM_ Full RB)



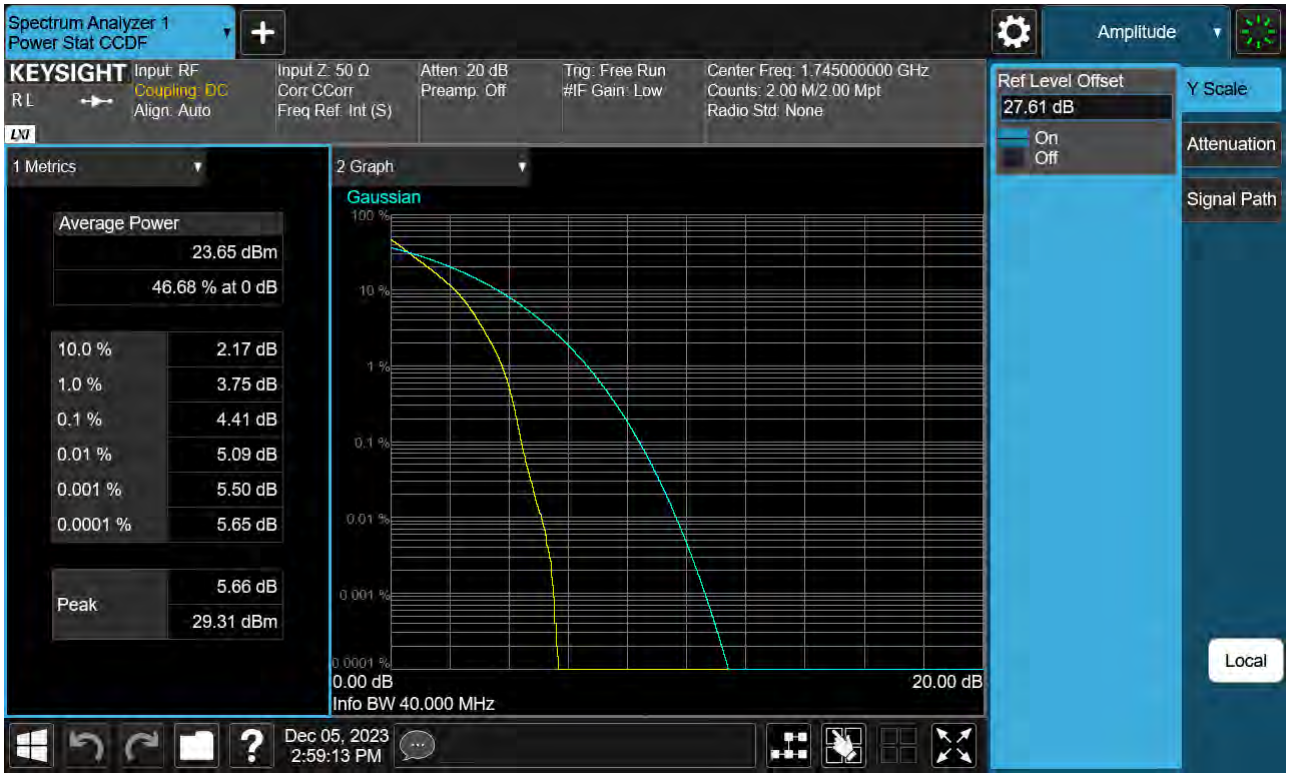
Sub6 n66. PAR Plot (30 M BW_Ch.349000_64QAM_ Full RB)



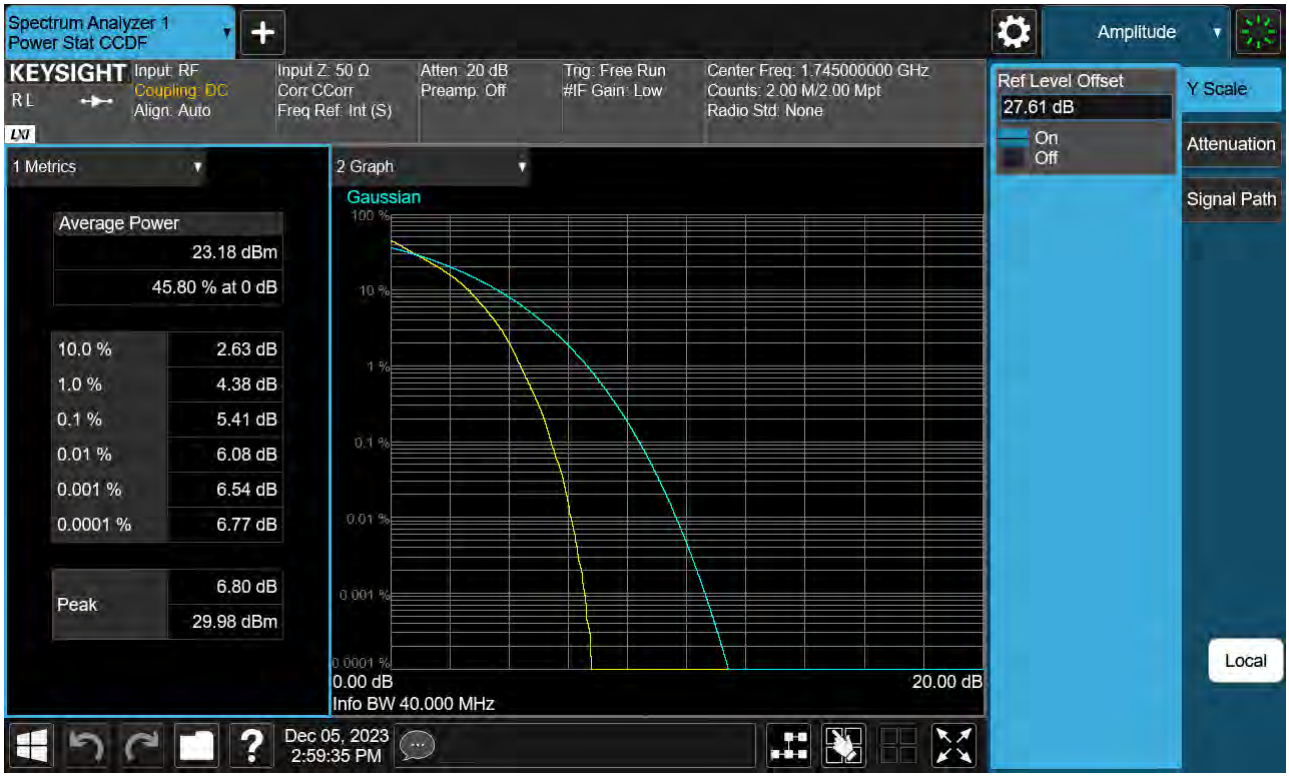
Sub6 n66. PAR Plot (30 M BW_Ch.349000_256QAM_ Full RB)



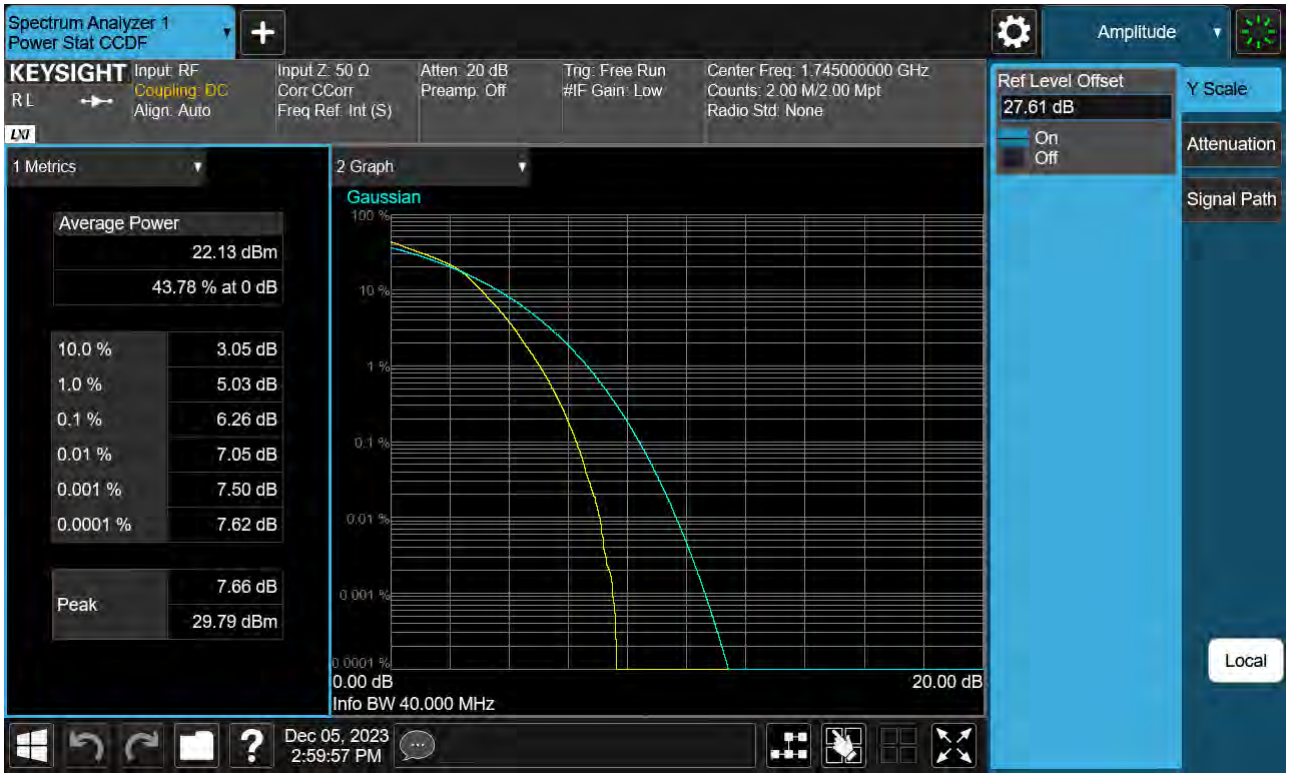
Sub6 n66. PAR Plot (40 M BW_Ch.349000_ BPSK_ Full RB)



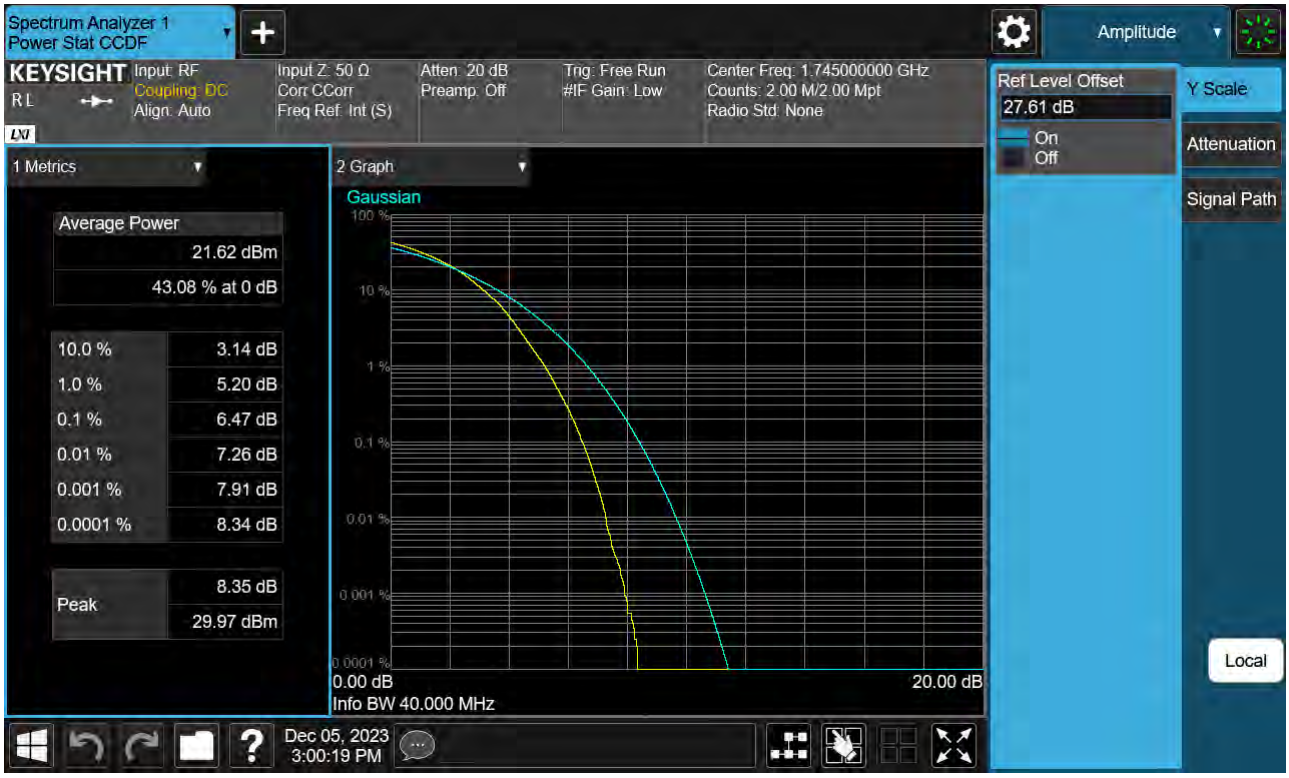
Sub6 n66. PAR Plot (40 M BW_Ch.349000_QPSK_ Full RB)



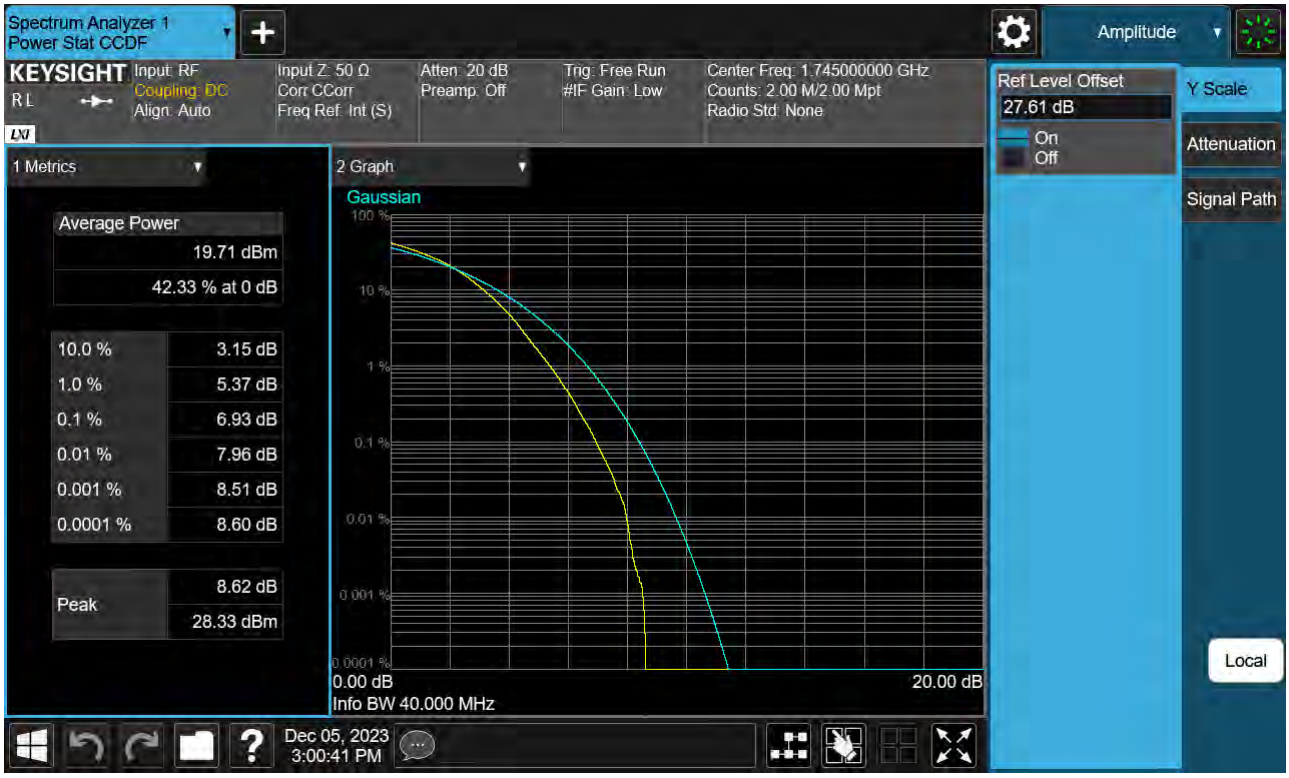
Sub6 n66. PAR Plot (40 M BW_Ch.349000_16QAM_ Full RB)



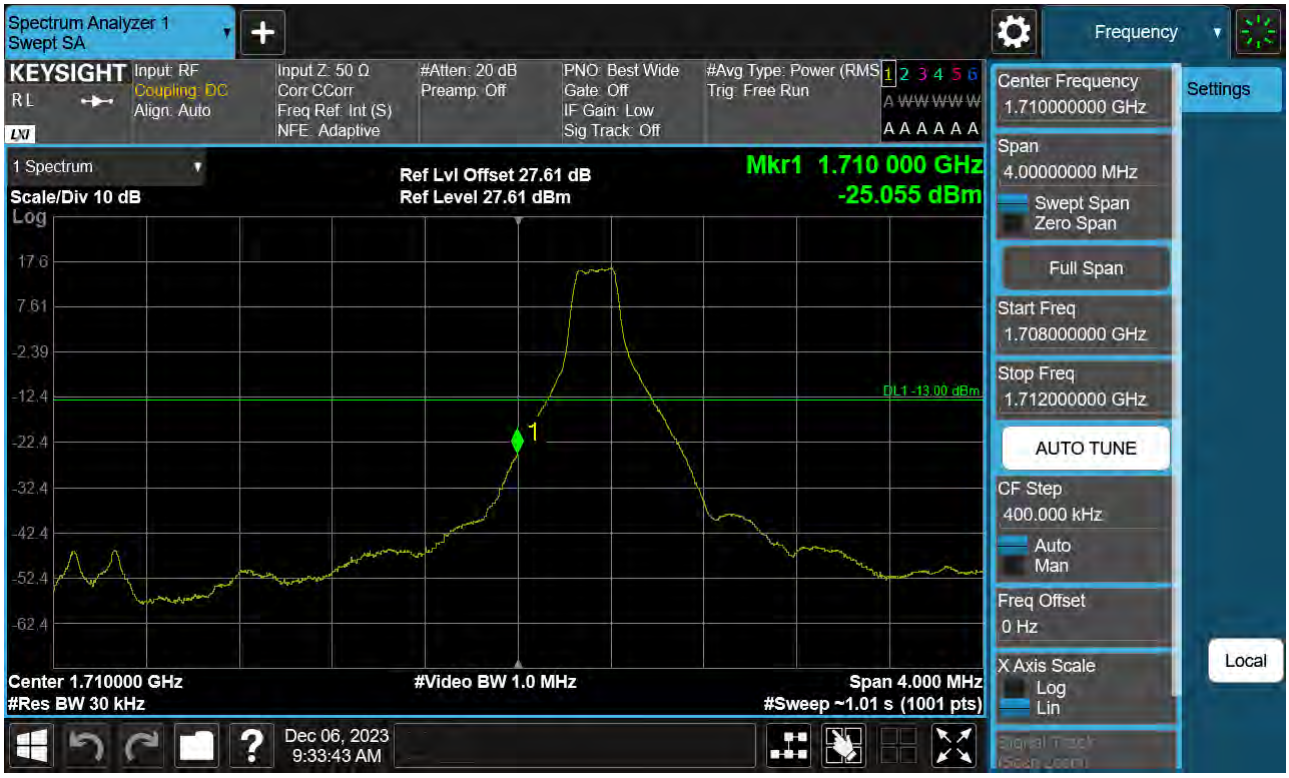
Sub6 n66. PAR Plot (40 M BW_Ch.349000_64QAM_ Full RB)



Sub6 n66. PAR Plot (40 M BW_Ch.349000_256QAM_ Full RB)

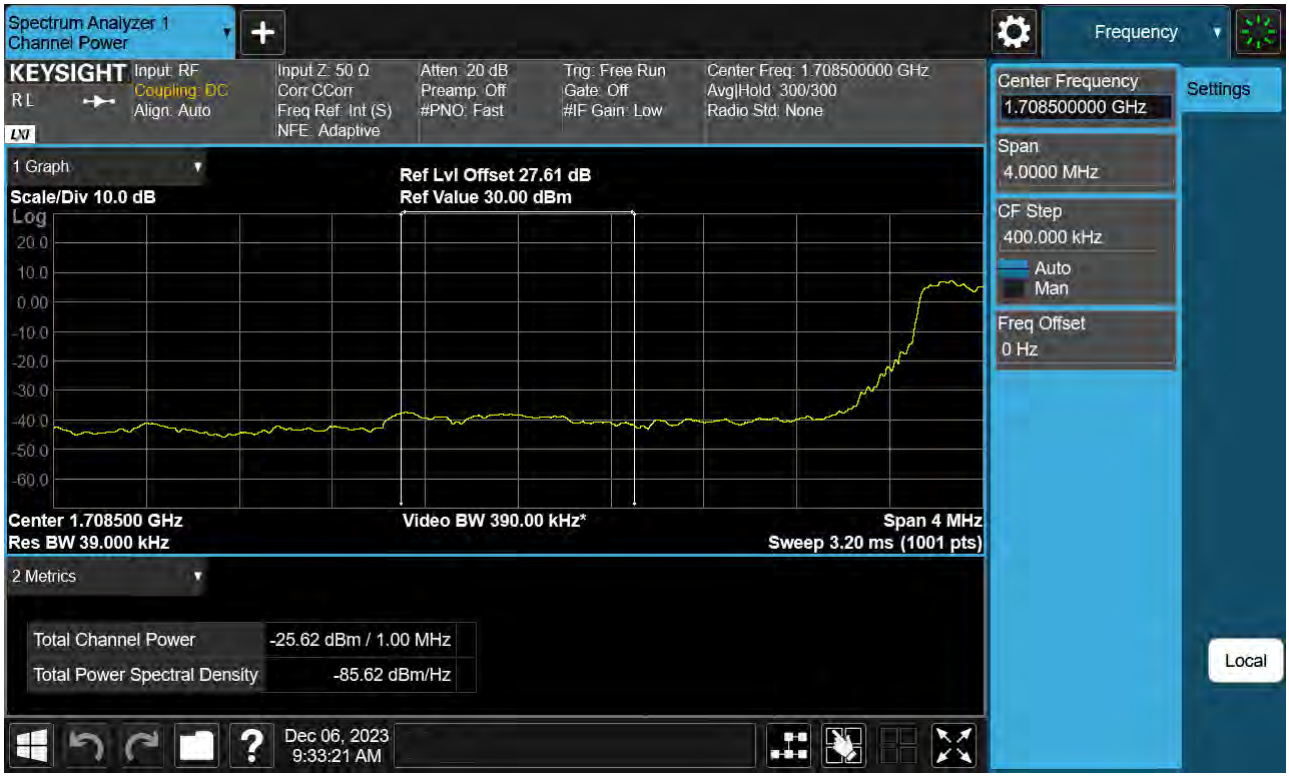


Sub6 n66. Lower Band Edge Plot (5 M BW Ch.342500 BPSK RB 1, Offset 0) -1

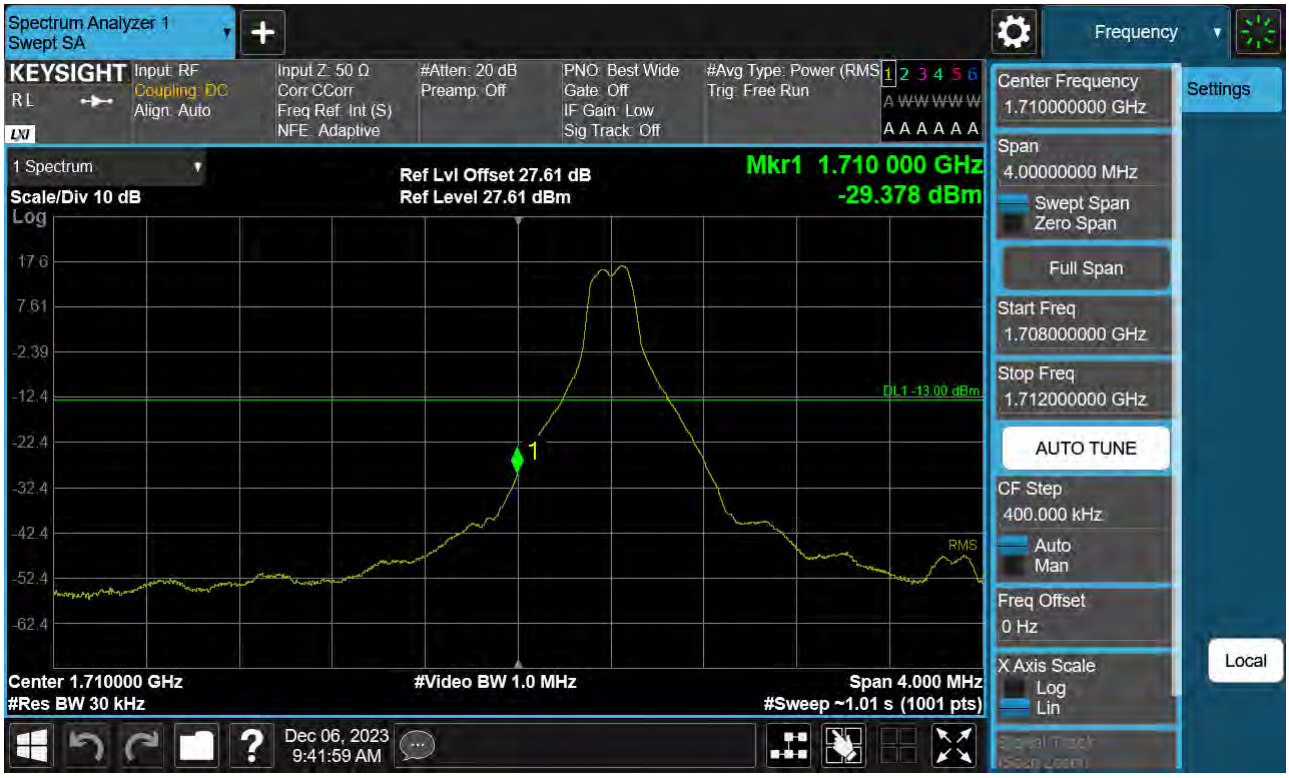


Sub6 n66. Lower Band Edge Plot (5 M BW Ch.342500 BPSK Full RB) -2

Sub6 n66. Lower Extended Band Edge Plot (5 M BW Ch.342500 BPSK_ Full RB) -3

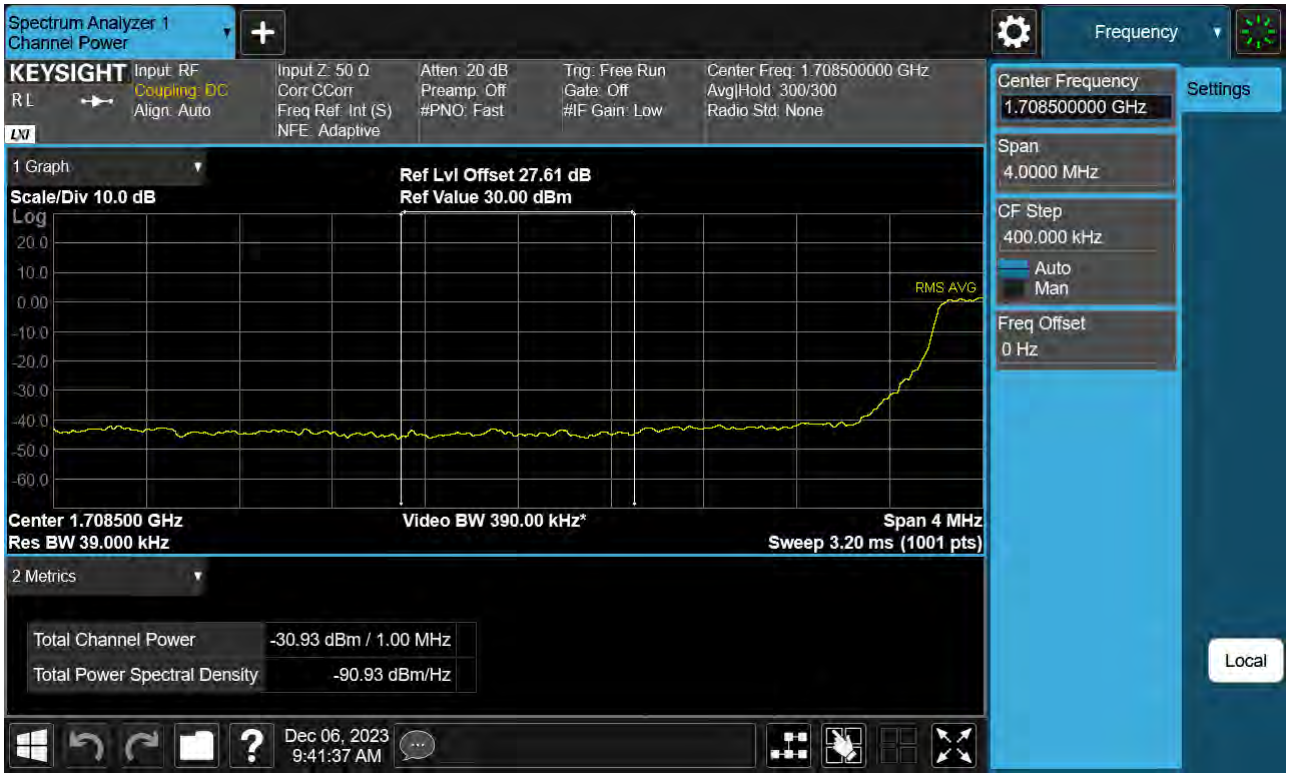


Sub6 n66. Lower Band Edge Plot (10 M BW Ch.343000 BPSK RB 1, Offset 0) -1

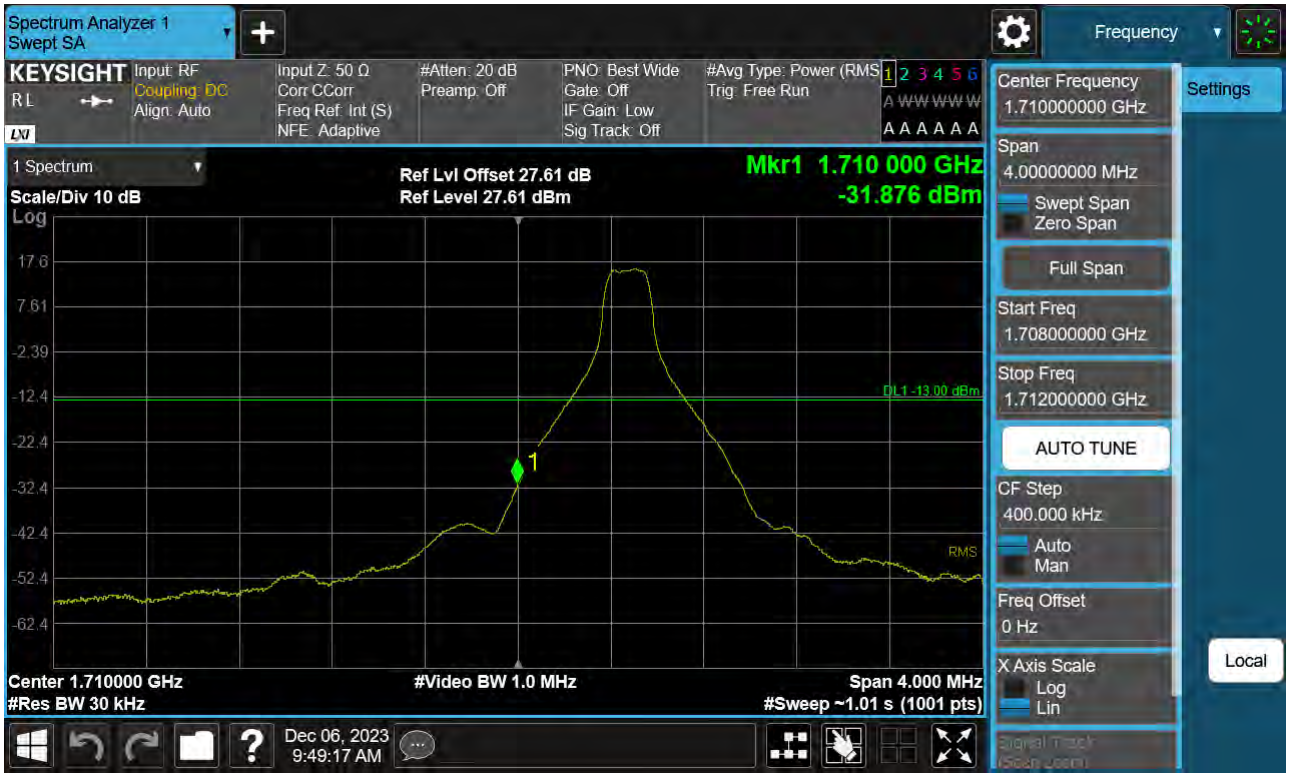


Sub6 n66. Lower Band Edge Plot (10 M BW Ch.343000 BPSK Full RB) -2

Sub6 n66. Lower Extended Band Edge Plot (10 M BW Ch.343000 BPSK_ Full RB) -3

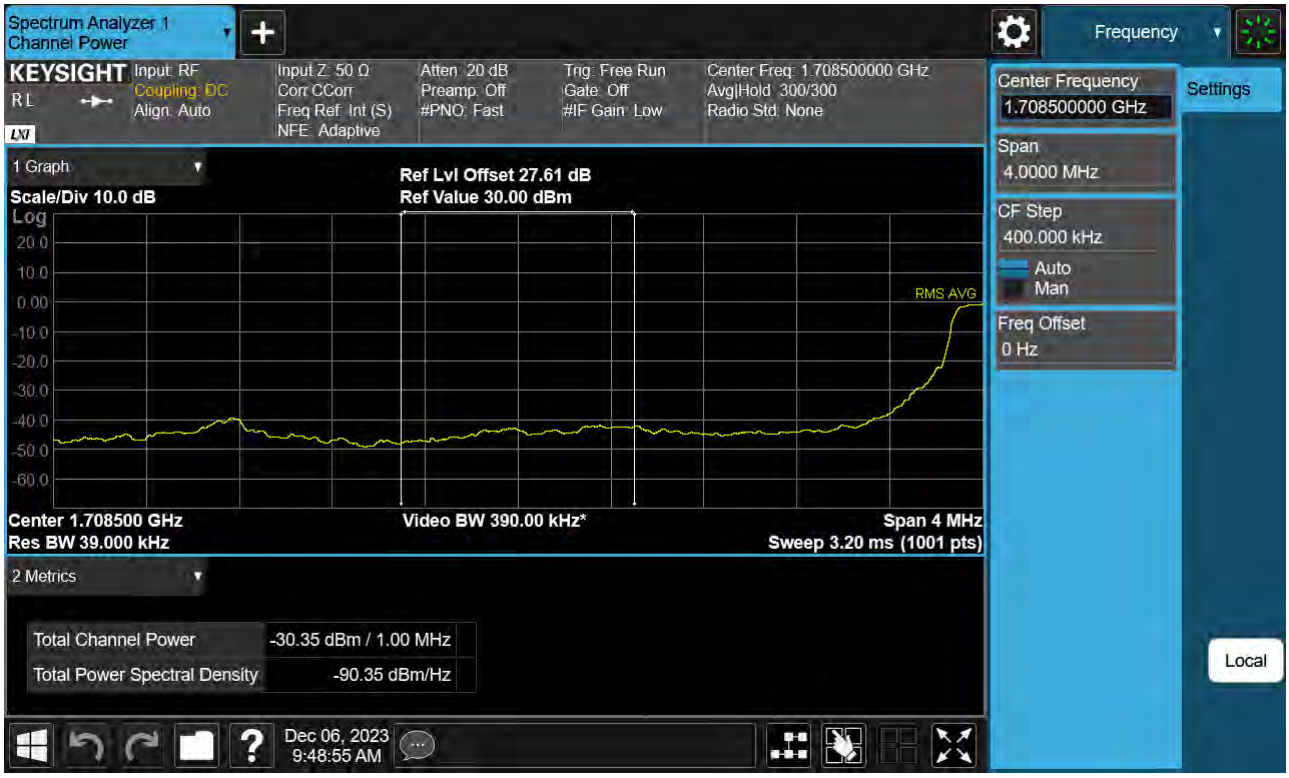


Sub6 n66. Lower Band Edge Plot (15 M BW Ch.343500 BPSK RB 1, Offset 0) -1



Sub6 n66. Lower Band Edge Plot (15 M BW Ch.343500 BPSK Full RB) -2

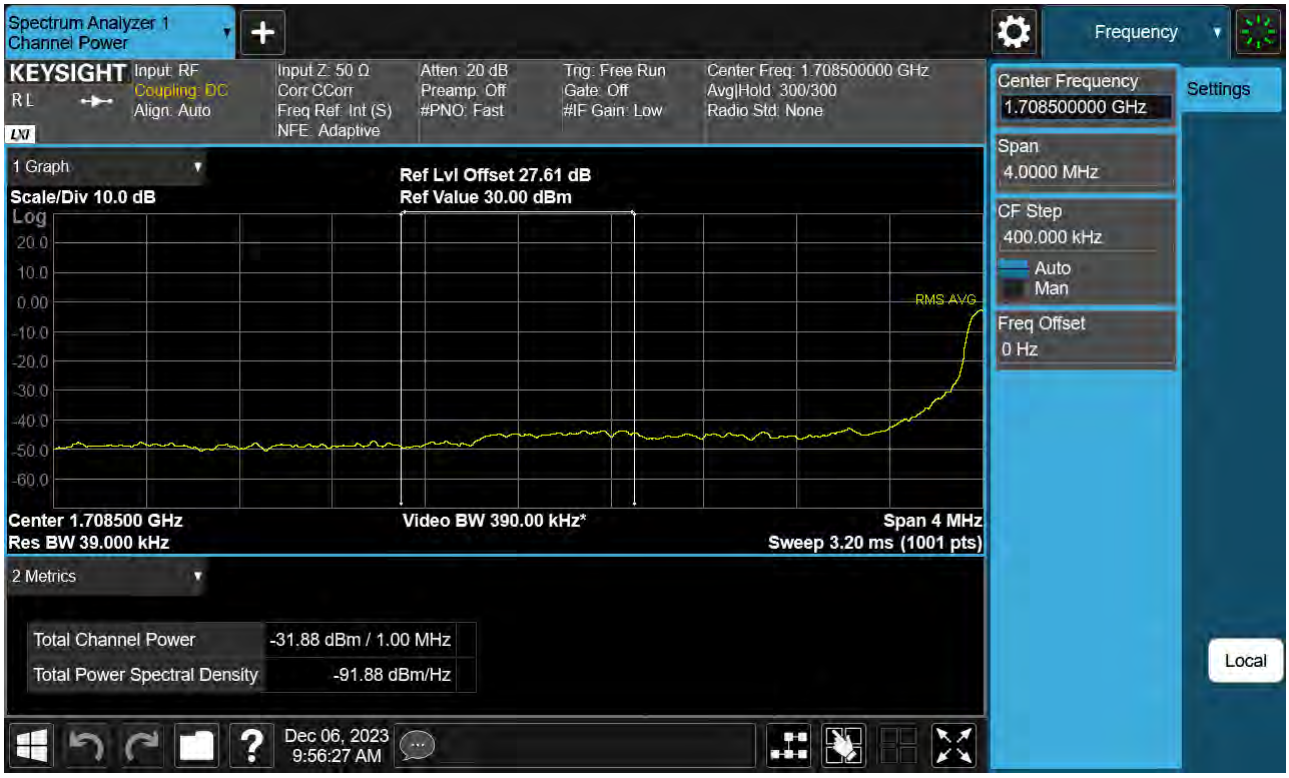
Sub6 n66. Lower Extended Band Edge Plot (15 M BW Ch.343500 BPSK_ Full RB) -3



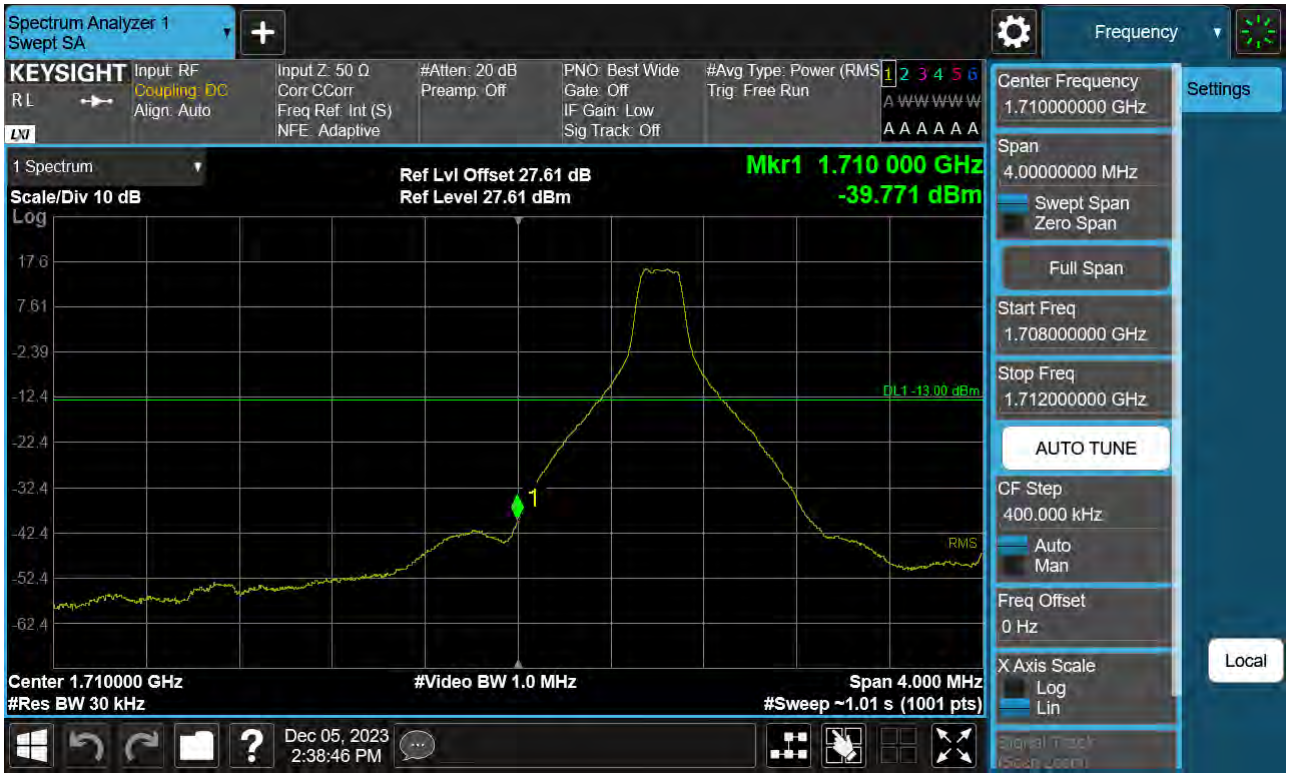
Sub6 n66. Lower Band Edge Plot (20 M BW Ch.344000 BPSK RB 1, Offset 0) -1

Sub6 n66. Lower Band Edge Plot (20 M BW Ch.344000 BPSK Full RB) -2

Sub6 n66. Lower Extended Band Edge Plot (20 M BW Ch.344000 BPSK_ Full RB) -3



Sub6 n66. Lower Band Edge Plot (25 M BW Ch.344500 BPSK RB 1, Offset 0) -1



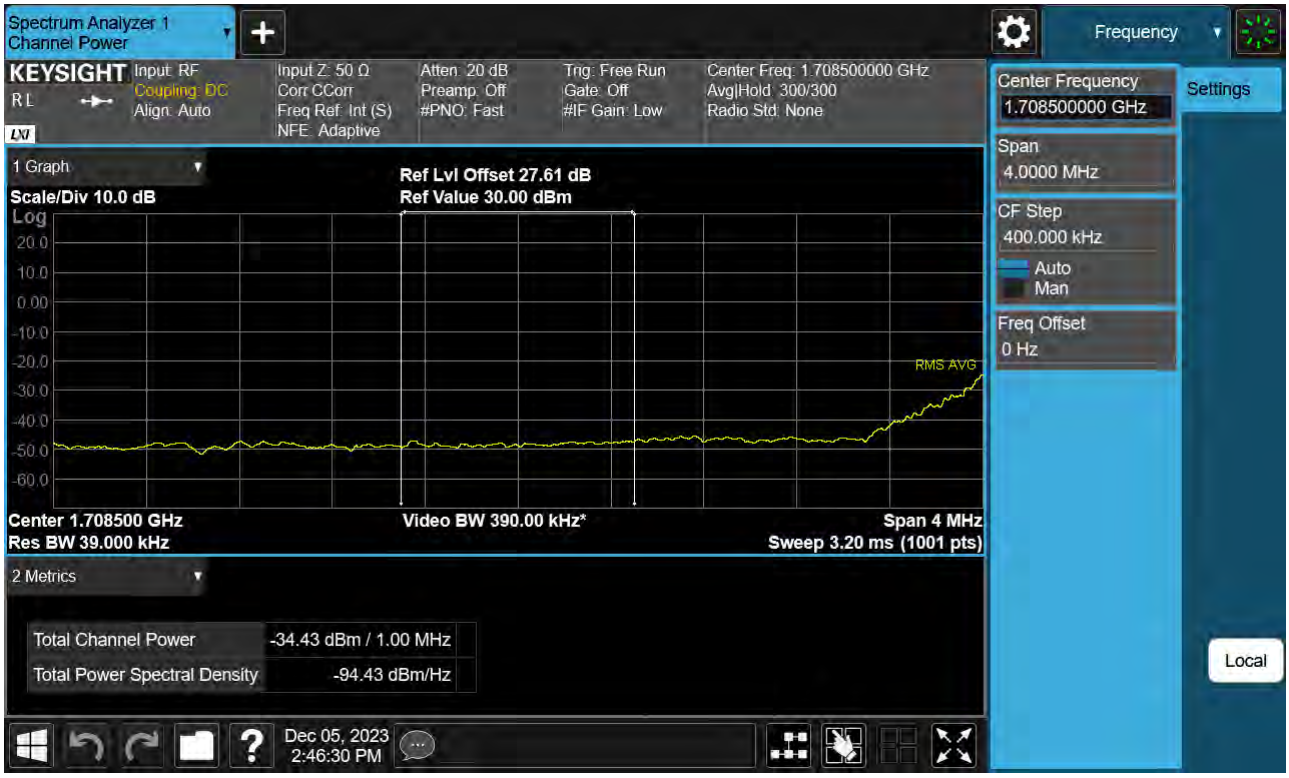
Sub6 n66. Lower Band Edge Plot (25 M BW Ch.344500 BPSK Full RB) -2

Sub6 n66. Lower Extended Band Edge Plot (25 M BW Ch.344500 BPSK_ Full RB) -3

Sub6 n66. Lower Band Edge Plot (30 M BW Ch.345000 BPSK RB 1, Offset 0) -1

Sub6 n66. Lower Band Edge Plot (30 M BW Ch.345000 BPSK Full RB) -2

Sub6 n66. Lower Extended Band Edge Plot (30 M BW Ch.345000 BPSK_ Full RB) -3



Sub6 n66. Lower Band Edge Plot (40 M BW Ch.346000 BPSK RB 1, Offset 0) -1

Sub6 n66. Lower Band Edge Plot (40 M BW Ch.346000 BPSK Full RB) -2

Sub6 n66. Lower Extended Band Edge Plot (40 M BW Ch.346000 BPSK_ Full RB) -3

Sub6 n66. Upper Band Edge Plot (5 M BW Ch.355500 BPSK_RB1_Offset 24) -1

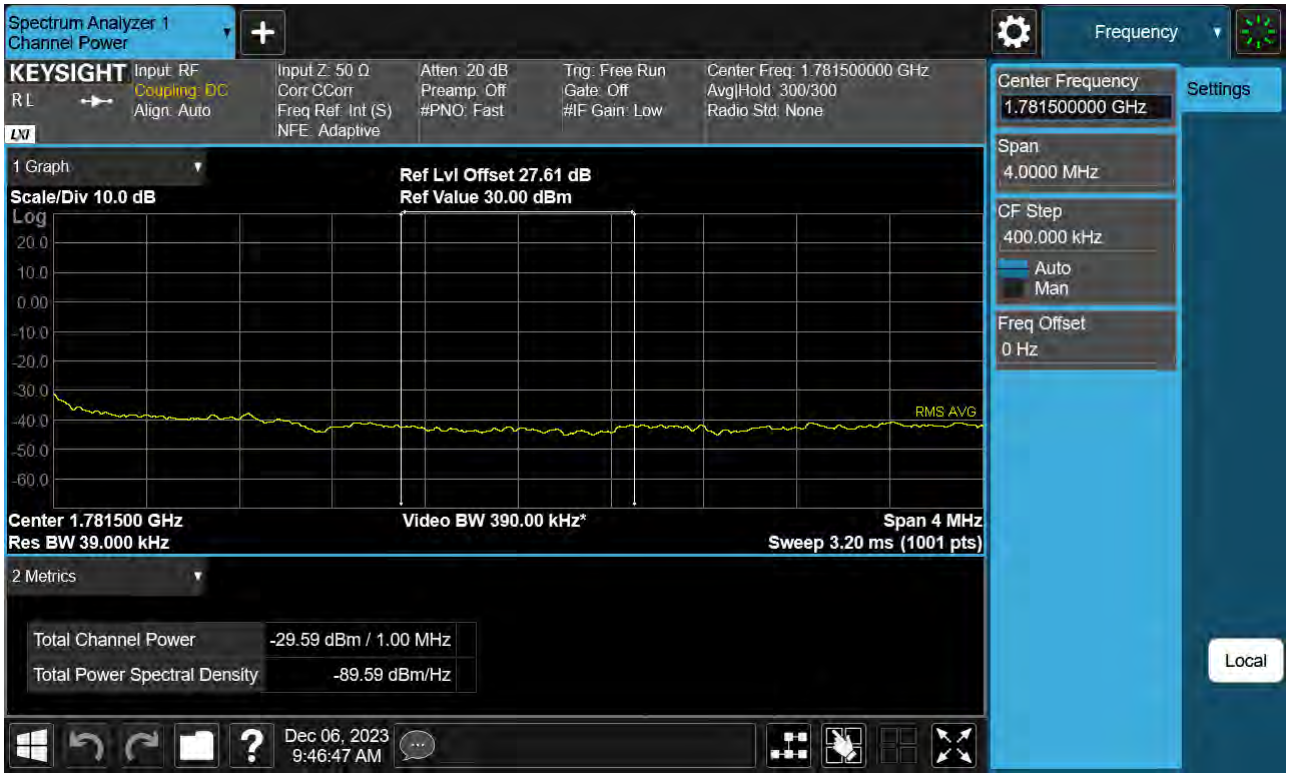
Sub6 n66. Upper Band Edge Plot (5 M BW Ch.355500 BPSK_ Full RB) -2

Sub6 n66. Upper Extended Band Edge Plot (5 M BW Ch.355500 BPSK_ Full RB) -3

Sub6 n66. Upper Band Edge Plot (10 M BW Ch.355000 BPSK_RB1_Offset 51) -1

Sub6 n66. Upper Band Edge Plot (10 M BW Ch.355000 BPSK_ Full RB) -2

Sub6 n66. Upper Extended Band Edge Plot (10 M BW Ch.355000 BPSK_ Full RB) -3



Sub6 n66. Upper Band Edge Plot (15 M BW Ch.354500 BPSK_RB1_Offset 78) -1

Sub6 n66. Upper Band Edge Plot (15 M BW Ch.354500 BPSK_ Full RB) -2

Sub6 n66. Upper Extended Band Edge Plot (15 M BW Ch.354500 BPSK_ Full RB) -3

Sub6 n66. Upper Band Edge Plot (20 M BW Ch.354000 BPSK_RB1_Offset 105) -1