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FCC Sub6 REPORT

Certification

Applicant Name:
SAMSUNG Electronics Co., Ltd.

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

Date of Issue:
October 27, 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-FC049-R1

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):	§27

Ant A

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	ERP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n71 (5)	665.5 - 695.5	4M55G7D	PI/2 BPSK	0.069	18.36
		4M57G7D	QPSK	0.067	18.24
		4M60W7D	16QAM	0.051	17.06
		4M61W7D	64QAM	0.038	15.81
		4M59W7D	256QAM	0.021	13.22
Sub6 n71 (10)	668.0 - 693.0	8M93G7D	PI/2 BPSK	0.072	18.57
		9M00G7D	QPSK	0.070	18.43
		8M95W7D	16QAM	0.052	17.19
		8M99W7D	64QAM	0.039	15.93
		8M96W7D	256QAM	0.022	13.34
Sub6 n71 (15)	670.5 - 690.5	13M5G7D	PI/2 BPSK	0.074	18.67
		13M5G7D	QPSK	0.071	18.51
		13M4W7D	16QAM	0.057	17.54
		13M4W7D	64QAM	0.042	16.20
		13M4W7D	256QAM	0.025	13.92
Sub6 n71 (20)	673.0 - 688.0	17M9G7D	PI/2 BPSK	0.077	18.89
		17M9G7D	QPSK	0.077	18.86
		17M9W7D	16QAM	0.056	17.47
		17M9W7D	64QAM	0.042	16.27
		17M9W7D	256QAM	0.025	13.92

Ant E

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	ERP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n71 (5)	665.5 - 695.5	4M58G7D	PI/2 BPSK	0.055	17.42
		4M59G7D	QPSK	0.053	17.26
		4M59W7D	16QAM	0.044	16.43
		4M61W7D	64QAM	0.030	14.81
		4M61W7D	256QAM	0.017	12.24
Sub6 n71 (10)	668.0 - 693.0	8M96G7D	PI/2 BPSK	0.059	17.68
		9M00G7D	QPSK	0.056	17.51
		9M00W7D	16QAM	0.045	16.55
		8M95W7D	64QAM	0.031	14.94
		8M97W7D	256QAM	0.017	12.36
Sub6 n71 (15)	670.5 - 690.5	13M5G7D	PI/2 BPSK	0.062	17.91
		13M4G7D	QPSK	0.060	17.80
		13M5W7D	16QAM	0.047	16.76
		13M5W7D	64QAM	0.035	15.40
		13M5W7D	256QAM	0.019	12.69
Sub6 n71 (20)	673.0 - 688.0	17M9G7D	PI/2 BPSK	0.064	18.05
		17M9G7D	QPSK	0.062	17.92
		17M9W7D	16QAM	0.049	16.94
		17M9W7D	64QAM	0.035	15.42
		17M9W7D	256QAM	0.019	12.69

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)

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.

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-2310-FC049	October 16, 2023	- First Approval Report
HCT-RF-2310-FC049-R1	October 27, 2023	- Edit typo (Page 29, 37, 49)

Table of Contents

MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	SAMSUNG Electronics Co., Ltd.
Address:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
FCC ID:	A3LSMS926U
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§27
EUT Type:	Mobile phone
Model(s):	SM-S926U
Additional Model(s):	SM-S926U1
SCS(kHz):	15
Bandwidth(MHz):	5, 10, 15, 20
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:	665.5 MHz – 695.5 MHz (Sub6 n71(5 MHz)) 668.0 MHz – 693.0 MHz (Sub6 n71(10 MHz)) 670.5 MHz – 690.5 MHz (Sub6 n71(15 MHz)) 673.0 MHz – 688.0 MHz (Sub6 n71(20 MHz))
Date(s) of Tests:	August 31, 2023 ~ October 11, 2023
Serial number:	Radiated: R3CW90B4EDB Conducted: R3CW80MAK7Y (Ant A), 741c314dee0f7ece (Ant E)

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
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 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;

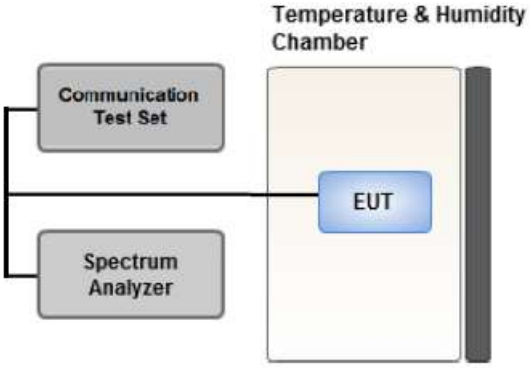
$$\text{Result}_{(dBm)} = \text{Pg}_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

   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:

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

Test Settings(Peak Power)

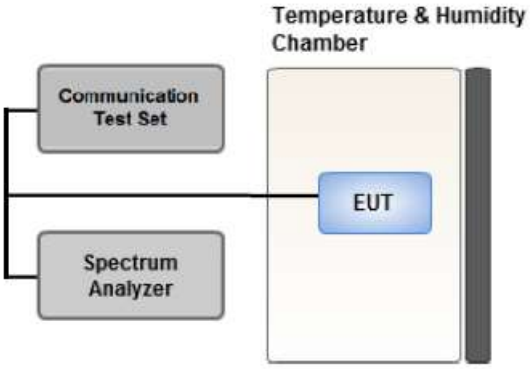
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW ≥ 3 × RBW.

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

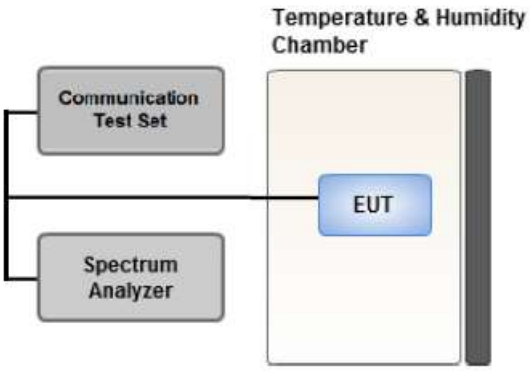
The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

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

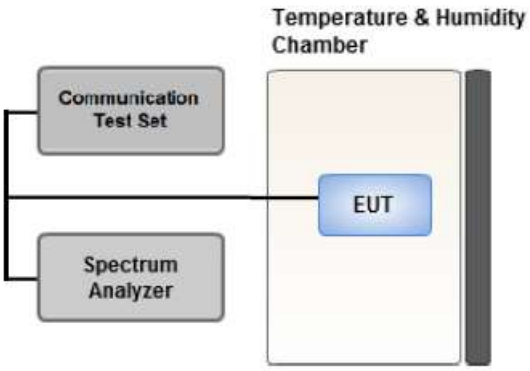
Test Overview

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

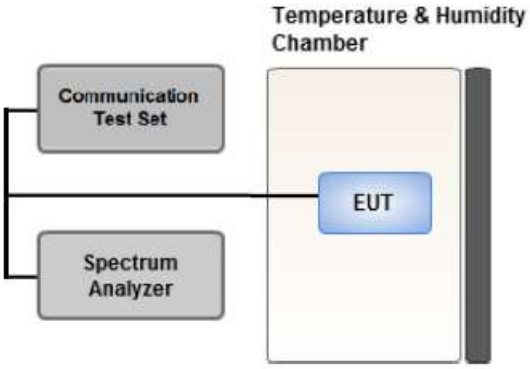
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW > 1 % of the emission bandwidth
4. VBW > 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 2 x Span/RBW
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: 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 : 20 MHz(Ant A), 20 MHz(Ant E))
- 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 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 E Worst case]

Test Description	Modulation	RB size	RB offset	Axis
Effective 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

3.10 WORST CASE(CONDUCTED TEST)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.
  (Worst case: DFT-S-OFDM)
- Modulation : All Modulation of operation were investigated and the worst case configuration results are reported.
  (Worst case: PI/2 BPSK)
- All modes of operation were investigated and the worst case configuration results are reported.
  Mode: SA, NSA
  Worst case: SA
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.
- SM-S926U & additional models were tested and the worst case results are reported.
  (Worst case : SM-S926U)

[Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth Peak- to- Average Ratio	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	5,10,15,20	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
		5,10,15,20	Low, High	Full RB	0
Spurious and Harmonic Emissions at Antenna Terminal	PI/2 BPSK	5,10,15,20	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, §27.53(g)	< 43 + 10log10 (P[Watts]) at Band Edge and for all out-of-band emissions	PASS
Conducted Output Power	§2.1046	N/A	See Note1
Frequency stability / variation of ambient temperature	§2.1055, §27.54	Emission must remain in band	PASS

Note:

1. See SAR Report

2. Conducted tests were tested using 5G Wireless Tester.

6.2 Test Condition: Radiated Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Effective Radiated Power	§27.50(c)(10)	< 3 Watts max. ERP	PASS
Radiated Spurious and Harmonic Emissions	§2.1053, §27.53(g)	< 43 + 10log10 (P[Watts]) for all out-of band emissions	PASS

Note:

1. Radiateded 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 = 4M17F9W

WCDMA BW = 4.17 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

QPSK Modulation

Emission Designator = 4M48G7D

LTE BW = 4.48 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

QAM Modulation

Emission Designator = 4M48W7D

LTE BW = 4.48 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

8. TEST DATA(Ant A)

8.1 EFFECTIVE RADIATED POWER

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
665.5	Sub6 n71/ 5 MHz [15 kHz]	PI/2 BPSK	-29.58	29.31	-9.75	1.26	H	< 3.00	0.068	18.30	1	23
		QPSK	-29.64	29.25	-9.75	1.26	H		0.067	18.24		
		16-QAM	-30.83	28.06	-9.75	1.26	H		0.051	17.05		
		64-QAM	-32.07	26.82	-9.75	1.26	H		0.038	15.81		
		256-QAM	-34.76	24.13	-9.75	1.26	H		0.021	13.12		
680.5		PI/2 BPSK	-30.40	29.29	-9.65	1.28	H		0.069	18.36	1	12
		QPSK	-30.54	29.15	-9.65	1.28	H		0.066	18.22		
		16-QAM	-31.70	27.99	-9.65	1.28	H		0.051	17.06		
		64-QAM	-33.06	26.63	-9.65	1.28	H		0.037	15.70		
		256-QAM	-35.54	24.15	-9.65	1.28	H		0.021	13.22		
695.5		PI/2 BPSK	-30.80	28.13	-9.65	1.28	H		0.052	17.20	1	12
		QPSK	-30.89	28.04	-9.65	1.28	H		0.051	17.11		
		16-QAM	-32.11	26.82	-9.65	1.28	H		0.039	15.89		
		64-QAM	-33.55	25.38	-9.65	1.28	H		0.028	14.45		
		256-QAM	-36.08	22.85	-9.65	1.28	H		0.016	11.92		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
668.0	Sub6 n71/ 10 MHz [15 kHz]	PI/2 BPSK	-29.62	29.58	-9.75	1.26	H	< 3.00	0.072	18.57	1	26
		QPSK	-29.76	29.44	-9.75	1.26	H		0.070	18.43		
		16-QAM	-31.00	28.20	-9.75	1.26	H		0.052	17.19		
		64-QAM	-32.26	26.94	-9.75	1.26	H		0.039	15.93		
		256-QAM	-34.85	24.35	-9.75	1.26	H		0.022	13.34		
680.5		PI/2 BPSK	-30.38	29.31	-9.65	1.28	H		0.069	18.38	1	26
		QPSK	-30.49	29.20	-9.65	1.28	H		0.067	18.27		
		16-QAM	-31.71	27.98	-9.65	1.28	H		0.051	17.05		
		64-QAM	-33.07	26.62	-9.65	1.28	H		0.037	15.69		
		256-QAM	-35.69	24.00	-9.65	1.28	H		0.020	13.07		
693.0		PI/2 BPSK	-30.47	28.68	-9.65	1.27	H		0.060	17.76	1	1
		QPSK	-30.71	28.44	-9.65	1.27	H		0.056	17.52		
		16-QAM	-31.96	27.19	-9.65	1.27	H		0.042	16.27		
		64-QAM	-33.14	26.01	-9.65	1.27	H		0.032	15.09		
		256-QAM	-35.90	23.25	-9.65	1.27	H		0.017	12.33		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
670.5	Sub6 n71/ 15 MHz [15 kHz]	PI/2 BPSK	-29.65	29.68	-9.75	1.26	H	< 3.00	0.074	18.67	1	1
		QPSK	-29.81	29.52	-9.75	1.26	H		0.071	18.51		
		16-QAM	-30.86	28.47	-9.75	1.26	H		0.056	17.46		
		64-QAM	-32.26	27.07	-9.75	1.26	H		0.040	16.06		
		256-QAM	-34.40	24.93	-9.75	1.26	H		0.025	13.92		
680.5		PI/2 BPSK	-30.10	29.59	-9.65	1.28	H		0.073	18.66	1	1
		QPSK	-30.30	29.39	-9.65	1.28	H		0.070	18.46		
		16-QAM	-31.22	28.47	-9.65	1.28	H		0.057	17.54		
		64-QAM	-32.56	27.13	-9.65	1.28	H		0.042	16.20		
		256-QAM	-35.20	24.49	-9.65	1.28	H		0.023	13.56		
690.5		PI/2 BPSK	-30.58	28.79	-9.65	1.27	H		0.061	17.87	1	1
		QPSK	-30.76	28.61	-9.65	1.27	H		0.059	17.69		
		16-QAM	-31.72	27.65	-9.65	1.27	H		0.047	16.73		
		64-QAM	-33.28	26.09	-9.65	1.27	H		0.033	15.17		
		256-QAM	-35.66	23.71	-9.65	1.27	H		0.019	12.79		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
673.0	Sub6 n71/ 20 MHz [15 kHz]	PI/2 BPSK	-29.75	29.63	-9.75	1.26	H	< 3.00	0.073	18.62	1	1
		QPSK	-29.95	29.43	-9.75	1.26	H		0.070	18.42		
		16-QAM	-30.90	28.48	-9.75	1.26	H		0.056	17.47		
		64-QAM	-32.42	26.96	-9.75	1.26	H		0.039	15.95		
		256-QAM	-34.45	24.93	-9.75	1.26	H		0.025	13.92		
680.5		PI/2 BPSK	-29.87	29.82	-9.65	1.28	H		0.077	18.89	1	1
		QPSK	-29.90	29.79	-9.65	1.28	H		0.077	18.86		
		16-QAM	-31.30	28.39	-9.65	1.28	H		0.056	17.46		
		64-QAM	-32.49	27.20	-9.65	1.28	H		0.042	16.27		
		256-QAM	-35.17	24.52	-9.65	1.28	H		0.023	13.59		
688.0		PI/2 BPSK	-30.37	29.08	-9.65	1.27	H		0.065	18.16	1	1
		QPSK	-30.43	29.02	-9.65	1.27	H		0.065	18.10		
		16-QAM	-31.50	27.95	-9.65	1.27	H		0.050	17.03		
		64-QAM	-32.94	26.51	-9.65	1.27	H		0.036	15.59		
		256-QAM	-35.54	23.91	-9.65	1.27	H		0.020	12.99		

8.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N71

▣ 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	Size
134600 (673.0)	1 346.00	-56.62	6.75	-62.68	1.74	V	-57.67	-13.00	1	1
	2 019.00	-58.71	9.40	-64.98	2.15	V	-57.73	-13.00		
	2 692.00	-58.09	10.25	-62.18	2.59	V	-54.52	-13.00		
	3 365.00	-61.14	11.00	-63.43	2.94	V	-55.37	-13.00		
	4 038.00	-59.74	11.00	-58.57	3.20	V	-50.77	-13.00		
	4 711.00	-60.55	11.50	-57.29	3.49	V	-49.28	-13.00		
136100 (680.5)	1 361.00	-56.90	7.00	-63.11	1.80	H	-57.91	-13.00	1	1
	2 041.50	-58.48	9.40	-64.60	2.23	H	-57.43	-13.00		
	2 722.00	-58.54	10.40	-62.88	2.63	H	-55.11	-13.00		
	3 402.50	-59.81	11.10	-62.86	2.91	H	-54.67	-13.00		
	4 083.00	-60.58	11.20	-60.03	3.27	H	-52.10	-13.00		
	4 763.50	-59.13	11.30	-55.45	3.53	H	-47.68	-13.00		
137600 (688.0)	1 376.00	-57.87	7.00	-63.86	1.82	H	-58.68	-13.00	1	1
	2 064.00	-57.85	9.20	-63.59	2.27	H	-56.66	-13.00		
	2 752.00	-59.72	10.30	-63.36	2.66	H	-55.72	-13.00		
	3 440.00	-59.31	11.10	-61.59	2.97	H	-53.46	-13.00		
	4 128.00	-60.22	11.30	-59.81	3.23	H	-51.74	-13.00		
	4 816.00	-60.67	11.20	-56.83	3.53	H	-49.16	-13.00		

8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n71	5 MHz	680.5	BPSK	25	0	3.74
			QPSK			4.48
			16-QAM			5.42
			64-QAM			5.96
			256-QAM			6.28
	10 MHz		BPSK	50		3.93
			QPSK			4.38
			16-QAM			5.33
			64-QAM			5.80
			256-QAM			6.39
	15 MHz		BPSK	75		3.83
			QPSK			4.28
			16-QAM			5.21
			64-QAM			5.76
			256-QAM			6.43
	20 MHz		BPSK	100		3.46
			QPSK			4.24
			16-QAM			4.24
			64-QAM			5.71
			256-QAM			6.56

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 71 ~ 90.

2. Peak- to- Average Ratio is not required. These values are reported for information only.

8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n71	5 MHz	680.5	BPSK	25	0	4.5508
			QPSK			4.5716
			16-QAM			4.5999
			64-QAM			4.6129
			256-QAM			4.5885
	10 MHz		BPSK	50		8.9341
			QPSK			8.9987
			16-QAM			8.9527
			64-QAM			8.9861
			256-QAM			8.9559
	15 MHz		BPSK	75		13.463
			QPSK			13.446
			16-QAM			13.386
			64-QAM			13.426
			256-QAM			13.410
	20 MHz		BPSK	100		17.915
			QPSK			17.878
			16-QAM			17.862
			64-QAM			17.911
			256-QAM			17.878

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 51 ~ 70.

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 n71	5	665.5	5.2084	30.815	-75.111	-44.296	-13.00
		680.5	7.9766	30.815	-75.319	-44.504	
		695.5	7.9910	30.815	-75.200	-44.385	
	10	668.0	4.0793	30.200	-75.032	-44.832	
		680.5	3.7917	30.200	-74.579	-44.379	
		693.0	4.0743	30.200	-75.068	-44.868	
	15	670.5	3.7742	30.200	-74.743	-44.543	
		680.5	8.2657	30.815	-75.000	-44.185	
		690.5	8.2986	30.815	-74.711	-43.896	
	20	673.0	9.9681	30.815	-74.732	-43.917	
		680.5	4.0280	30.200	-74.545	-44.345	
		688.0	5.4676	30.815	-74.497	-43.682	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 123 ~ 134.

2. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)

3. Factor(dB) = Cable Loss + Attenuator + 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 91 ~ 122.

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
665.5	100 %	+20(Ref)	665 499 993	0.0	0.000 000	0.000
	100 %	-30	665 499 985	-7.8	-0.000 001	-0.012
	100 %	-20	665 499 984	-8.5	-0.000 001	-0.013
	100 %	-10	665 499 986	-6.6	-0.000 001	-0.010
	100 %	0	665 499 983	-9.8	-0.000 001	-0.015
	100 %	+10	665 499 985	-8.2	-0.000 001	-0.012
	100 %	+30	665 499 984	-9.2	-0.000 001	-0.014
	100 %	+40	665 499 985	-7.9	-0.000 001	-0.012
	100 %	+50	665 499 985	-8.4	-0.000 001	-0.013
	Batt. Endpoint	+20	665 499 984	-8.8	-0.000 001	-0.013
695.5	100 %	+20(Ref)	695 499 996	0.0	0.000 000	0.000
	100 %	-30	695 499 993	-3.1	0.000 000	-0.004
	100 %	-20	695 499 992	-4.1	-0.000 001	-0.006
	100 %	-10	695 499 991	-4.9	-0.000 001	-0.007
	100 %	0	695 499 990	-6.0	-0.000 001	-0.009
	100 %	+10	695 499 994	-2.2	0.000 000	-0.003
	100 %	+30	695 499 990	-5.8	-0.000 001	-0.008
	100 %	+40	695 499 994	-2.1	0.000 000	-0.003
	100 %	+50	695 499 991	-5.2	-0.000 001	-0.007
	Batt. Endpoint	+20	695 499 992	-4.0	-0.000 001	-0.006

▣ 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
668.0	100 %	+20(Ref)	668 000 004	0.0	0.000 000	0.000
	100 %	-30	668 000 009	5.3	0.000 001	0.008
	100 %	-20	668 000 009	5.2	0.000 001	0.008
	100 %	-10	668 000 009	5.0	0.000 001	0.007
	100 %	0	668 000 008	4.3	0.000 001	0.006
	100 %	+10	668 000 008	4.5	0.000 001	0.007
	100 %	+30	668 000 008	3.7	0.000 001	0.006
	100 %	+40	668 000 010	5.6	0.000 001	0.008
	100 %	+50	668 000 009	5.1	0.000 001	0.008
	Batt. Endpoint	+20	668 000 009	4.9	0.000 001	0.007
693.0	100 %	+20(Ref)	693 000 001	0.0	0.000 000	0.000
	100 %	-30	693 000 004	2.5	0.000 000	0.004
	100 %	-20	693 000 003	1.6	0.000 000	0.002
	100 %	-10	693 000 002	0.9	0.000 000	0.001
	100 %	0	693 000 004	2.4	0.000 000	0.004
	100 %	+10	693 000 003	1.8	0.000 000	0.003
	100 %	+30	693 000 002	1.0	0.000 000	0.001
	100 %	+40	693 000 005	3.5	0.000 001	0.005
	100 %	+50	693 000 004	3.2	0.000 000	0.005
	Batt. Endpoint	+20	693 000 004	3.0	0.000 000	0.004

▣ 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
670.5	100 %	+20(Ref)	670 500 003	0.0	0.000 000	0.000
	100 %	-30	670 500 004	1.8	0.000 000	0.003
	100 %	-20	670 500 004	0.9	0.000 000	0.001
	100 %	-10	670 500 003	0.1	0.000 000	0.000
	100 %	0	670 500 002	-0.6	0.000 000	-0.001
	100 %	+10	670 500 004	1.0	0.000 000	0.001
	100 %	+30	670 500 003	0.2	0.000 000	0.000
	100 %	+40	670 500 004	1.7	0.000 000	0.003
	100 %	+50	670 500 004	1.0	0.000 000	0.001
	Batt. Endpoint	+20	670 500 006	3.0	0.000 000	0.004
690.5	100 %	+20(Ref)	690 500 003	0.0	0.000 000	0.000
	100 %	-30	690 500 007	3.2	0.000 000	0.005
	100 %	-20	690 500 007	3.3	0.000 000	0.005
	100 %	-10	690 500 007	3.5	0.000 001	0.005
	100 %	0	690 500 007	3.7	0.000 001	0.005
	100 %	+10	690 500 005	2.0	0.000 000	0.003
	100 %	+30	690 500 005	2.0	0.000 000	0.003
	100 %	+40	690 500 006	2.6	0.000 000	0.004
	100 %	+50	690 500 006	2.8	0.000 000	0.004
	Batt. Endpoint	+20	690 500 004	0.9	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
673.0	100 %	+20(Ref)	672 999 996	0.0	0.000 000	0.000
	100 %	-30	672 999 994	-2.1	0.000 000	-0.003
	100 %	-20	672 999 991	-5.0	-0.000 001	-0.007
	100 %	-10	672 999 993	-3.2	0.000 000	-0.005
	100 %	0	672 999 992	-3.9	-0.000 001	-0.006
	100 %	+10	672 999 992	-4.6	-0.000 001	-0.007
	100 %	+30	672 999 993	-3.1	0.000 000	-0.005
	100 %	+40	672 999 993	-3.3	0.000 000	-0.005
	100 %	+50	672 999 992	-4.3	-0.000 001	-0.006
	Batt. Endpoint	+20	672 999 991	-5.0	-0.000 001	-0.007
688.0	100 %	+20(Ref)	687 999 995	0.0	0.000 000	0.000
	100 %	-30	687 999 991	-4.5	-0.000 001	-0.006
	100 %	-20	687 999 991	-4.4	-0.000 001	-0.006
	100 %	-10	687 999 992	-3.6	-0.000 001	-0.005
	100 %	0	687 999 992	-3.0	0.000 000	-0.004
	100 %	+10	687 999 991	-4.8	-0.000 001	-0.007
	100 %	+30	687 999 991	-4.7	-0.000 001	-0.007
	100 %	+40	687 999 991	-4.3	-0.000 001	-0.006
	100 %	+50	687 999 991	-4.1	-0.000 001	-0.006
	Batt. Endpoint	+20	687 999 991	-3.9	-0.000 001	-0.006

9. TEST DATA(Ant E)

9.1 EFFECTIVE RADIATED POWER

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
665.5	Sub6 n71/ 5 MHz [15 kHz]	PI/2 BPSK	-31.18	27.71	-9.75	1.26	H	< 3.00	0.047	16.70	1	1
		QPSK	-31.53	27.36	-9.75	1.26	H		0.043	16.35		
		16-QAM	-32.36	26.53	-9.75	1.26	H		0.036	15.52		
		64-QAM	-33.61	25.28	-9.75	1.26	H		0.027	14.27		
		256-QAM	-36.23	22.66	-9.75	1.26	H		0.015	11.65		
680.5		PI/2 BPSK	-31.61	28.08	-9.65	1.28	H		0.052	17.15	1	1
		QPSK	-31.70	27.99	-9.65	1.28	H		0.051	17.06		
		16-QAM	-32.87	26.82	-9.65	1.28	H		0.039	15.89		
		64-QAM	-34.15	25.54	-9.65	1.28	H		0.029	14.61		
		256-QAM	-36.80	22.89	-9.65	1.28	H		0.016	11.96		
695.5		PI/2 BPSK	-30.58	28.35	-9.65	1.28	H		0.055	17.42	1	12
		QPSK	-30.74	28.19	-9.65	1.28	H		0.053	17.26		
		16-QAM	-31.57	27.36	-9.65	1.28	H		0.044	16.43		
		64-QAM	-33.19	25.74	-9.65	1.28	H		0.030	14.81		
		256-QAM	-35.76	23.17	-9.65	1.28	H		0.017	12.24		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
668.0	Sub6 n71/ 10 MHz [15 kHz]	PI/2 BPSK	-30.95	28.25	-9.75	1.26	H	< 3.00	0.053	17.24	1	1
		QPSK	-31.12	28.08	-9.75	1.26	H		0.051	17.07		
		16-QAM	-32.60	26.60	-9.75	1.26	H		0.036	15.59		
		64-QAM	-33.61	25.59	-9.75	1.26	H		0.029	14.58		
		256-QAM	-36.21	22.99	-9.75	1.26	H		0.016	11.98		
680.5		PI/2 BPSK	-31.16	28.53	-9.65	1.28	H		0.058	17.60	1	50
		QPSK	-31.25	28.44	-9.65	1.28	H		0.056	17.51		
		16-QAM	-32.21	27.48	-9.65	1.28	H		0.045	16.55		
		64-QAM	-33.82	25.87	-9.65	1.28	H		0.031	14.94		
		256-QAM	-36.54	23.15	-9.65	1.28	H		0.017	12.22		
693.0		PI/2 BPSK	-30.55	28.60	-9.65	1.27	H		0.059	17.68	1	26
		QPSK	-30.72	28.43	-9.65	1.27	H		0.056	17.51		
		16-QAM	-31.89	27.26	-9.65	1.27	H		0.043	16.34		
		64-QAM	-33.29	25.86	-9.65	1.27	H		0.031	14.94		
		256-QAM	-35.87	23.28	-9.65	1.27	H		0.017	12.36		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
670.5	Sub6 n71/ 15 MHz [15 kHz]	PI/2 BPSK	-31.09	28.24	-9.75	1.26	H	< 3.00	0.053	17.23	1	1
		QPSK	-31.25	28.08	-9.75	1.26	H		0.051	17.07		
		16-QAM	-32.33	27.00	-9.75	1.26	H		0.040	15.99		
		64-QAM	-33.50	25.83	-9.75	1.26	H		0.030	14.82		
		256-QAM	-36.09	23.24	-9.75	1.26	H		0.017	12.23		
680.5		PI/2 BPSK	-31.07	28.62	-9.65	1.28	H		0.059	17.69	1	77
		QPSK	-31.12	28.57	-9.65	1.28	H		0.058	17.64		
		16-QAM	-32.00	27.69	-9.65	1.28	H		0.047	16.76		
		64-QAM	-33.73	25.96	-9.65	1.28	H		0.032	15.03		
		256-QAM	-36.33	23.36	-9.65	1.28	H		0.017	12.43		
690.5		PI/2 BPSK	-30.54	28.83	-9.65	1.27	H		0.062	17.91	1	77
		QPSK	-30.65	28.72	-9.65	1.27	H		0.060	17.80		
		16-QAM	-31.79	27.58	-9.65	1.27	H		0.046	16.66		
		64-QAM	-33.05	26.32	-9.65	1.27	H		0.035	15.40		
		256-QAM	-35.76	23.61	-9.65	1.27	H		0.019	12.69		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
673.0	Sub6 n71/ 20 MHz [15 kHz]	PI/2 BPSK	-30.95	28.43	-9.75	1.26	H	< 3.00	0.055	17.42	1	1
		QPSK	-31.07	28.31	-9.75	1.26	H		0.054	17.30		
		16-QAM	-32.37	27.01	-9.75	1.26	H		0.040	16.00		
		64-QAM	-33.57	25.81	-9.75	1.26	H		0.030	14.80		
		256-QAM	-36.19	23.19	-9.75	1.26	H		0.017	12.18		
680.5		PI/2 BPSK	-30.71	28.98	-9.65	1.28	H		0.064	18.05	1	104
		QPSK	-31.00	28.69	-9.65	1.28	H		0.060	17.76		
		16-QAM	-32.07	27.62	-9.65	1.28	H		0.047	16.69		
		64-QAM	-33.34	26.35	-9.65	1.28	H		0.035	15.42		
		256-QAM	-36.07	23.62	-9.65	1.28	H		0.019	12.69		
688.0		PI/2 BPSK	-30.55	28.90	-9.65	1.27	H		0.063	17.98	1	104
		QPSK	-30.61	28.84	-9.65	1.27	H		0.062	17.92		
		16-QAM	-31.59	27.86	-9.65	1.27	H		0.049	16.94		
		64-QAM	-33.12	26.33	-9.65	1.27	H		0.035	15.41		
		256-QAM	-35.87	23.58	-9.65	1.27	H		0.018	12.66		

9.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N71
▣ 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	Size
134600 (673.0)	1 346.00	-56.60	6.75	-62.66	1.74	H	-57.65	-13.00	1	1
	2 019.00	-59.41	9.40	-65.68	2.15	H	-58.43	-13.00		
	2 692.00	-58.83	10.25	-62.92	2.59	H	-55.26	-13.00		
	3 365.00	-60.04	11.00	-62.33	2.94	H	-54.27	-13.00		
	4 038.00	-59.48	11.00	-58.31	3.20	H	-50.51	-13.00		
	4 711.00	-60.72	11.50	-57.46	3.49	H	-49.45	-13.00		
136100 (680.5)	1 361.00	-56.16	7.00	-62.37	1.80	V	-57.17	-13.00	1	104
	2 041.50	-58.71	9.40	-64.83	2.23	V	-57.66	-13.00		
	2 722.00	-59.59	10.40	-63.93	2.63	V	-56.16	-13.00		
	3 402.50	-59.49	11.10	-62.54	2.91	V	-54.35	-13.00		
	4 083.00	-61.71	11.20	-61.16	3.27	V	-53.23	-13.00		
	4 763.50	-58.76	11.30	-55.08	3.53	V	-47.31	-13.00		
137600 (688.0)	1 376.00	-58.47	7.00	-64.46	1.82	V	-59.28	-13.00	1	104
	2 064.00	-58.72	9.20	-64.46	2.27	V	-57.53	-13.00		
	2 752.00	-58.58	10.30	-62.22	2.66	V	-54.58	-13.00		
	3 440.00	-58.88	11.10	-61.16	2.97	V	-53.03	-13.00		
	4 128.00	-60.65	11.30	-60.24	3.23	V	-52.17	-13.00		
	4 816.00	-61.48	11.20	-57.64	3.53	V	-49.97	-13.00		

9.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n71	5 MHz	680.5	BPSK	25	0	3.99
			QPSK			4.47
			16-QAM			5.29
			64-QAM			5.80
			256-QAM			6.17
	10 MHz		BPSK	50		3.93
			QPSK			4.41
			16-QAM			5.30
			64-QAM			5.81
			256-QAM			6.62
	15 MHz		BPSK	75		3.91
			QPSK			4.37
			16-QAM			5.25
			64-QAM			5.77
			256-QAM			6.39
	20 MHz		BPSK	100		3.74
			QPSK			4.32
			16-QAM			5.35
			64-QAM			5.80
			256-QAM			6.31

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 156 ~ 175.

2. Peak- to- Average Ratio is not required. These values are reported for information only.

9.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n71	5 MHz	680.5	BPSK	25	0	4.5835
			QPSK			4.5859
			16-QAM			4.5894
			64-QAM			4.6121
			256-QAM			4.6088
	10 MHz		BPSK	50		8.9594
			QPSK			9.0022
			16-QAM			9.0041
			64-QAM			8.9510
			256-QAM			8.9688
	15 MHz		BPSK	75		13.466
			QPSK			13.433
			16-QAM			13.449
			64-QAM			13.460
			256-QAM			13.455
	20 MHz		BPSK	100		17.912
			QPSK			17.916
			16-QAM			17.912
			64-QAM			17.878
			256-QAM			17.871

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 136 ~ 155.

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 n71	5	665.5	4.0659	30.200	-74.988	-44.788	-13.00
		680.5	5.2094	30.815	-74.176	-43.361	
		695.5	8.0284	30.815	-74.763	-43.948	
	10	668.0	3.7289	30.200	-74.354	-44.154	
		680.5	3.7867	30.200	-74.726	-44.526	
		693.0	5.1820	30.815	-75.134	-44.319	
	15	670.5	4.0474	30.200	-73.445	-43.245	
		680.5	4.1022	30.200	-75.061	-44.861	
		690.5	5.2209	30.815	-74.243	-43.428	
	20	673.0	4.5893	30.200	-74.624	-44.424	
		680.5	8.2911	30.815	-74.971	-44.156	
		688.0	8.2896	30.815	-74.251	-43.436	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 208 ~ 219.

2. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)

3. Factor(dB) = Cable Loss + Attenuator + 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 176 ~ 207.

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
665.5	100 %	+20(Ref)	665 499 993	0.0	0.000 000	0.000
	100 %	-30	665 499 988	-5.7	-0.000 001	-0.009
	100 %	-20	665 499 988	-4.9	-0.000 001	-0.007
	100 %	-10	665 499 987	-6.4	-0.000 001	-0.010
	100 %	0	665 499 988	-5.7	-0.000 001	-0.009
	100 %	+10	665 499 986	-7.6	-0.000 001	-0.011
	100 %	+30	665 499 984	-9.3	-0.000 001	-0.014
	100 %	+40	665 499 985	-8.2	-0.000 001	-0.012
	100 %	+50	665 499 986	-7.2	-0.000 001	-0.011
	Batt. Endpoint	+20	665 499 986	-6.9	-0.000 001	-0.010
695.5	100 %	+20(Ref)	695 499 995	0.0	0.000 000	0.000
	100 %	-30	695 499 991	-4.3	-0.000 001	-0.006
	100 %	-20	695 499 991	-3.6	-0.000 001	-0.005
	100 %	-10	695 499 992	-3.1	0.000 000	-0.004
	100 %	0	695 499 990	-4.6	-0.000 001	-0.007
	100 %	+10	695 499 991	-4.4	-0.000 001	-0.006
	100 %	+30	695 499 991	-3.5	0.000 000	-0.005
	100 %	+40	695 499 990	-4.8	-0.000 001	-0.007
	100 %	+50	695 499 989	-6.2	-0.000 001	-0.009
	Batt. Endpoint	+20	695 499 992	-2.8	0.000 000	-0.004

▣ 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
668.0	100 %	+20(Ref)	668 000 004	0.0	0.000 000	0.000
	100 %	-30	668 000 008	4.6	0.000 001	0.007
	100 %	-20	668 000 010	6.0	0.000 001	0.009
	100 %	-10	668 000 009	5.0	0.000 001	0.007
	100 %	0	668 000 010	6.2	0.000 001	0.009
	100 %	+10	668 000 009	5.2	0.000 001	0.008
	100 %	+30	668 000 008	4.1	0.000 001	0.006
	100 %	+40	668 000 009	5.7	0.000 001	0.008
	100 %	+50	668 000 008	4.4	0.000 001	0.007
	Batt. Endpoint	+20	668 000 009	5.6	0.000 001	0.008
693.0	100 %	+20(Ref)	693 000 002	0.0	0.000 000	0.000
	100 %	-30	693 000 004	1.3	0.000 000	0.002
	100 %	-20	693 000 005	3.0	0.000 000	0.004
	100 %	-10	693 000 005	2.3	0.000 000	0.003
	100 %	0	693 000 004	1.6	0.000 000	0.002
	100 %	+10	693 000 005	3.1	0.000 000	0.004
	100 %	+30	693 000 003	0.9	0.000 000	0.001
	100 %	+40	693 000 004	2.1	0.000 000	0.003
	100 %	+50	693 000 004	1.5	0.000 000	0.002
	Batt. Endpoint	+20	693 000 006	3.4	0.000 000	0.005

▣ 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
670.5	100 %	+20(Ref)	670 500 000	0.0	0.000 000	0.000
	100 %	-30	670 499 998	-1.4	0.000 000	-0.002
	100 %	-20	670 500 000	0.0	0.000 000	0.000
	100 %	-10	670 499 999	-0.9	0.000 000	-0.001
	100 %	0	670 500 000	0.5	0.000 000	0.001
	100 %	+10	670 499 999	-0.1	0.000 000	0.000
	100 %	+30	670 499 999	-0.9	0.000 000	-0.001
	100 %	+40	670 499 998	-1.7	0.000 000	-0.003
	100 %	+50	670 500 000	0.2	0.000 000	0.000
	Batt. Endpoint	+20	670 499 999	-0.5	0.000 000	-0.001
690.5	100 %	+20(Ref)	690 500 002	0.0	0.000 000	0.000
	100 %	-30	690 500 005	2.5	0.000 000	0.004
	100 %	-20	690 500 007	5.0	0.000 001	0.007
	100 %	-10	690 500 007	4.9	0.000 001	0.007
	100 %	0	690 500 007	4.8	0.000 001	0.007
	100 %	+10	690 500 005	2.5	0.000 000	0.004
	100 %	+30	690 500 005	2.6	0.000 000	0.004
	100 %	+40	690 500 005	2.6	0.000 000	0.004
	100 %	+50	690 500 007	4.8	0.000 001	0.007
	Batt. Endpoint	+20	690 500 005	2.8	0.000 000	0.004

▣ BandWidth: 20 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.300 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
673.0	100 %	+20(Ref)	672 999 998	0.0	0.000 000	0.000
	100 %	-30	672 999 996	-1.9	0.000 000	-0.003
	100 %	-20	672 999 995	-2.6	0.000 000	-0.004
	100 %	-10	672 999 994	-4.2	-0.000 001	-0.006
	100 %	0	672 999 995	-3.1	0.000 000	-0.005
	100 %	+10	672 999 996	-2.3	0.000 000	-0.003
	100 %	+30	672 999 996	-1.8	0.000 000	-0.003
	100 %	+40	672 999 994	-4.2	-0.000 001	-0.006
	100 %	+50	672 999 995	-3.1	0.000 000	-0.005
	Batt. Endpoint	+20	672 999 994	-4.3	-0.000 001	-0.006
688.0	100 %	+20(Ref)	687 999 998	0.0	0.000 000	0.000
	100 %	-30	687 999 993	-4.6	-0.000 001	-0.007
	100 %	-20	687 999 993	-4.4	-0.000 001	-0.006
	100 %	-10	687 999 993	-4.3	-0.000 001	-0.006
	100 %	0	687 999 993	-4.3	-0.000 001	-0.006
	100 %	+10	687 999 994	-4.0	-0.000 001	-0.006
	100 %	+30	687 999 993	-4.2	-0.000 001	-0.006
	100 %	+40	687 999 992	-6.0	-0.000 001	-0.009
	100 %	+50	687 999 994	-4.1	-0.000 001	-0.006
	Batt. Endpoint	+20	687 999 994	-4.1	-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.
   - N71A(ANT A)-N77A(ANT F)
     (PCC - Modulation: BPSK, RB: 1, RB Offset: 1, SCC - Modulation: BPSK, RB: 1, RB Offset: 271)

Radiated Spurious Emissions

PCC	SCC	PCC		SCC	
		BW(MHz)	Channel	BW(MHz)	Channel
N71A(ANT A)	N77A(ANT F)	20	136100	100	650000

10.1.1 RADIATED SPURIOUS EMISSIONS

N71A(ANT A)(PCC)- N77A(ANT F)(SCC)

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)	Limit (dBm)
1 361.00	-59.07	7.00	-65.28	1.80	V	-60.08	-13.00
2 041.50	-60.86	9.40	-66.98	2.23	V	-59.81	-13.00
2 722.00	-60.14	10.40	-67.91	2.63	V	-60.14	-13.00

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)	Limit (dBm)
7 500.00	-64.00	11.10	-56.89	4.50	V	-50.29	-13.00
11 250.00	-63.69	11.40	-53.15	5.64	V	-47.39	-13.00
15 000.00	-59.44	13.80	-52.95	6.65	V	-45.80	-13.00

11. TEST PLOTS(Ant A)

Sub6 n71. Occupied Bandwidth Plot (5 M BW Ch.136100 BPSK_Full RB)

Sub6 n71. Occupied Bandwidth Plot (5 M BW Ch.136100 QPSK_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (5 M BW Ch.136100 16QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (5 M BW Ch.136100 64QAM_ Full RB)

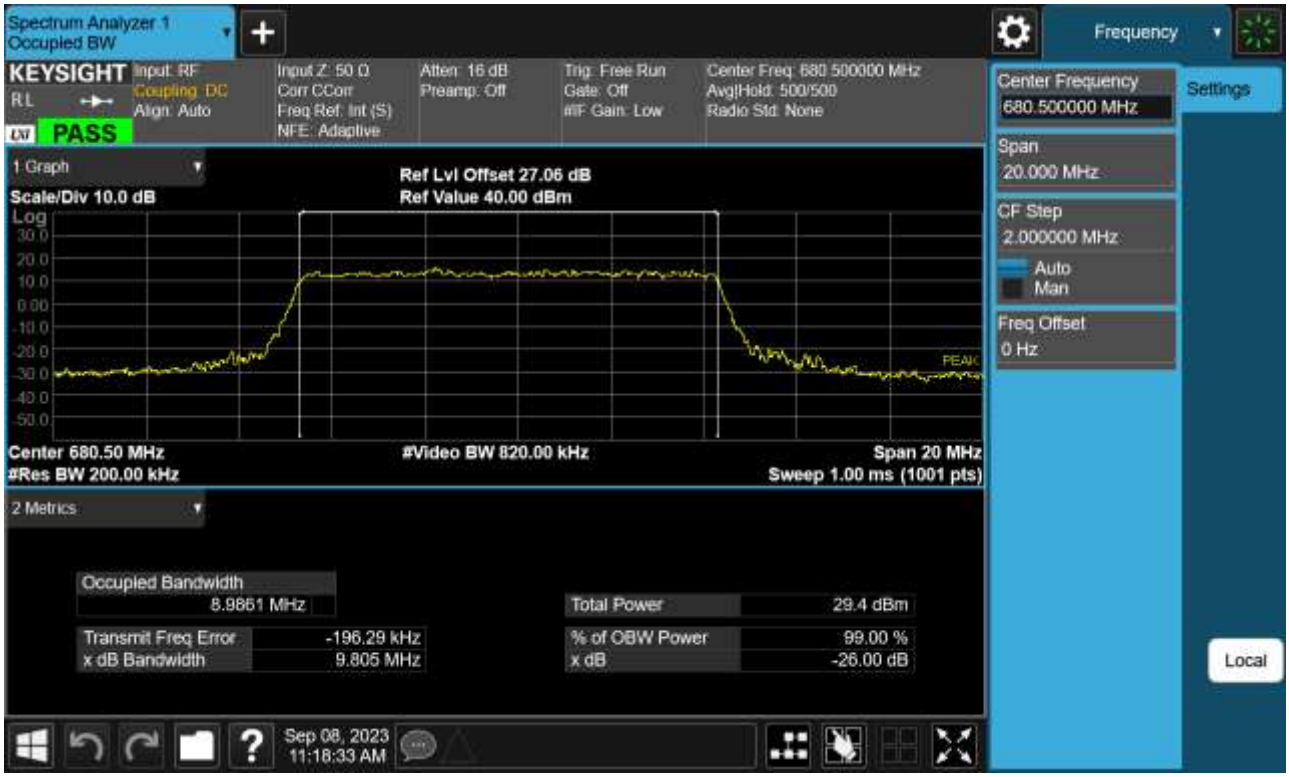
Sub6 n71. Occupied Bandwidth Plot (5 M BW Ch.136100 256QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (10 M BW Ch.136100 BPSK_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (10 M BW Ch.136100 QPSK_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (10 M BW Ch.136100 16QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (10 M BW Ch.136100 64QAM_ Full RB)



Sub6 n71. Occupied Bandwidth Plot (10 M BW Ch.136100 256QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (15 M BW Ch.136100 BPSK_ Full RB

Sub6 n71. Occupied Bandwidth Plot (15 M BW Ch.136100 QPSK_ Full RB

Sub6 n71. Occupied Bandwidth Plot (15 M BW Ch.136100 16QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (15 M BW Ch.136100 64QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (15 M BW Ch.136100 256QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (20 M BW Ch.136100 BPSK_ Full RB)

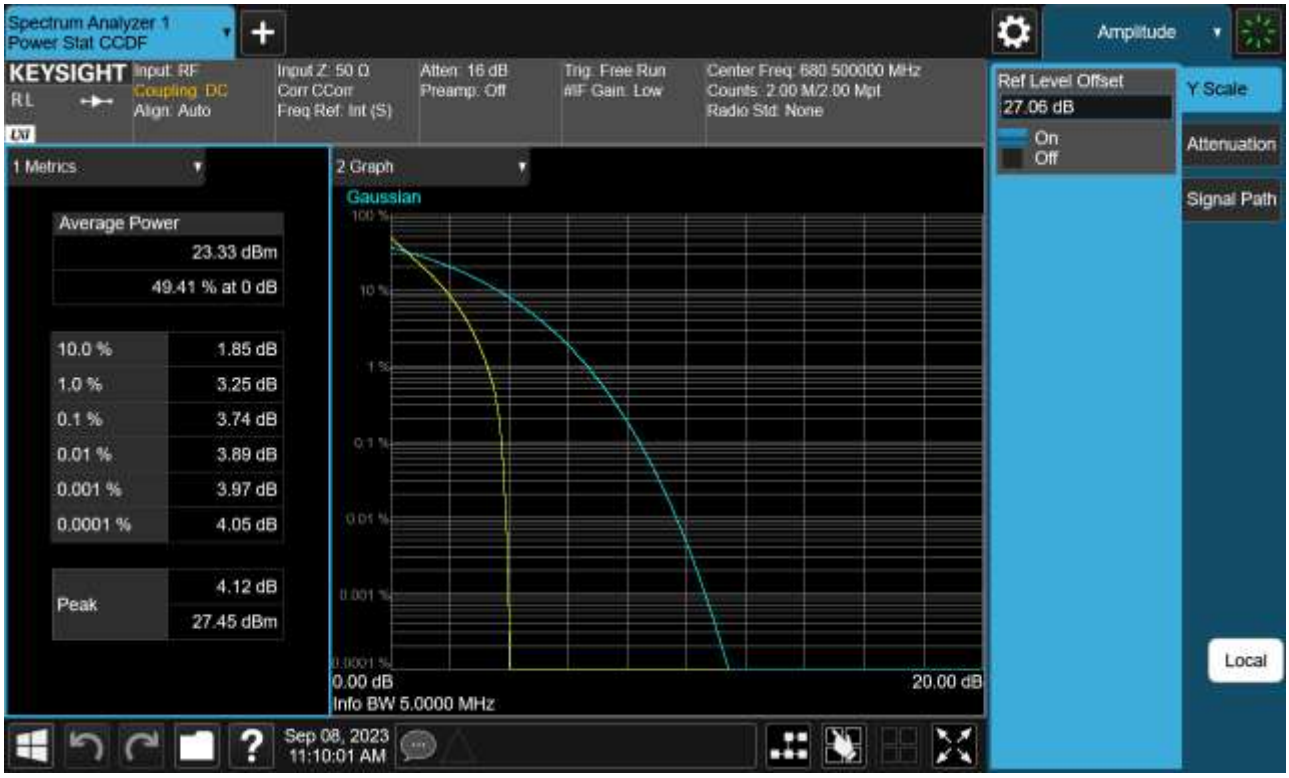
Sub6 n71. Occupied Bandwidth Plot (20 M BW Ch.136100 QPSK_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (20 M BW Ch.136100 16QAM_ Full RB)

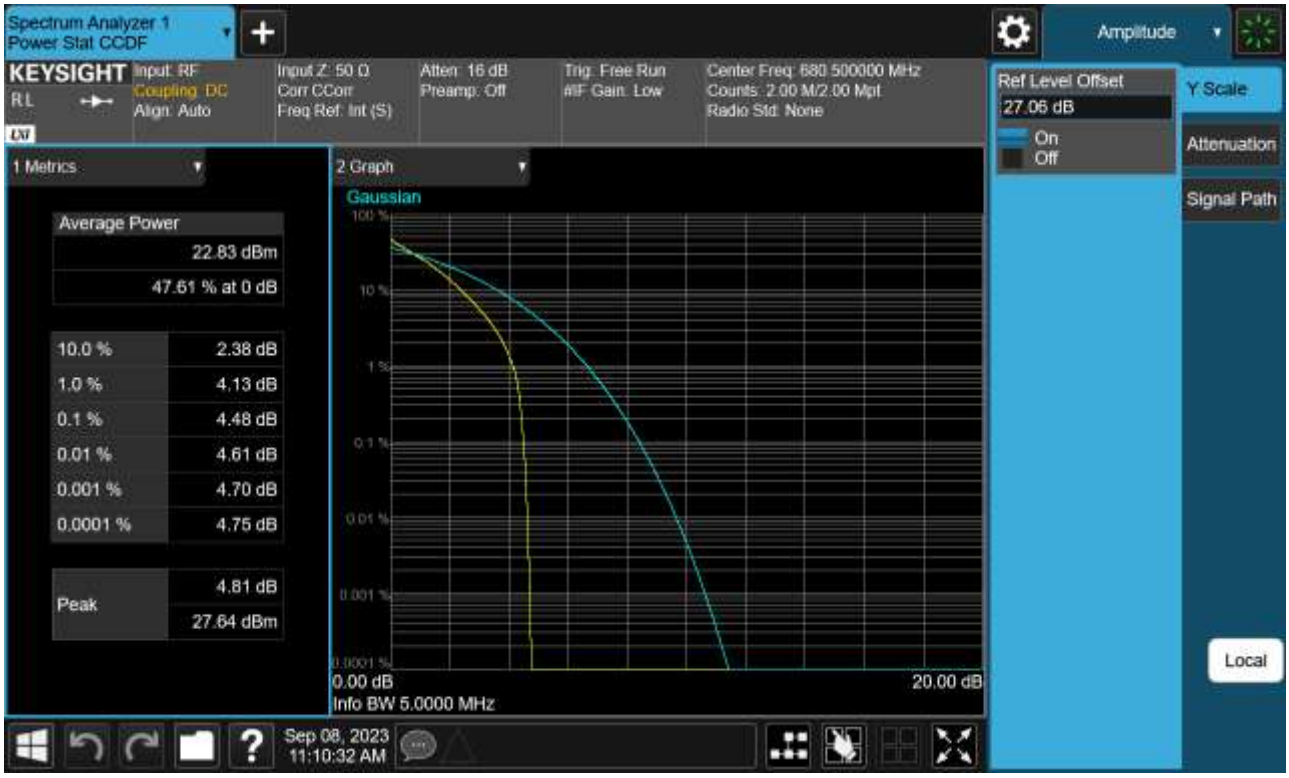
Sub6 n71. Occupied Bandwidth Plot (20 M BW Ch.136100 64QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (20 M BW Ch.136100 256QAM_ Full RB)

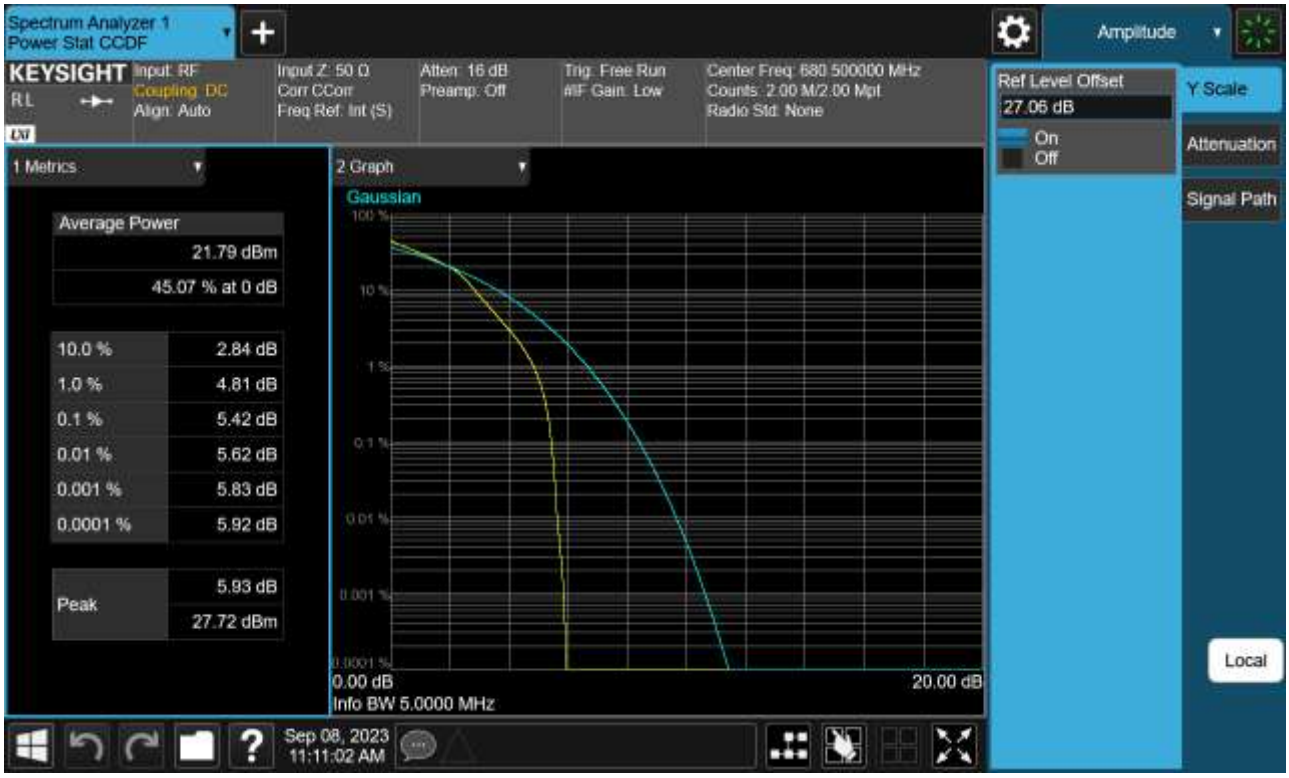
Sub6 n71. PAR Plot (5 M BW_Ch.349000_ BPSK_ Full RB)



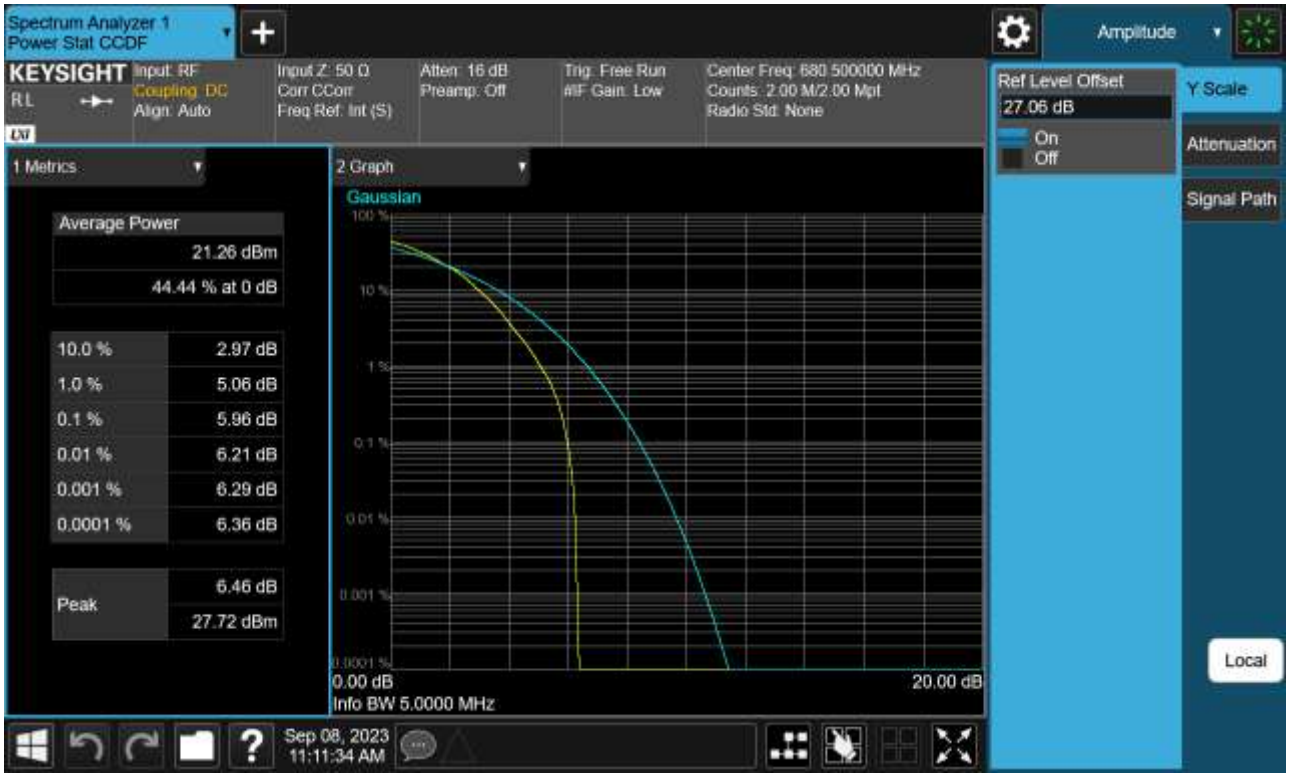
Sub6 n71. PAR Plot (5 M BW_Ch.349000_QPSK_ Full RB)



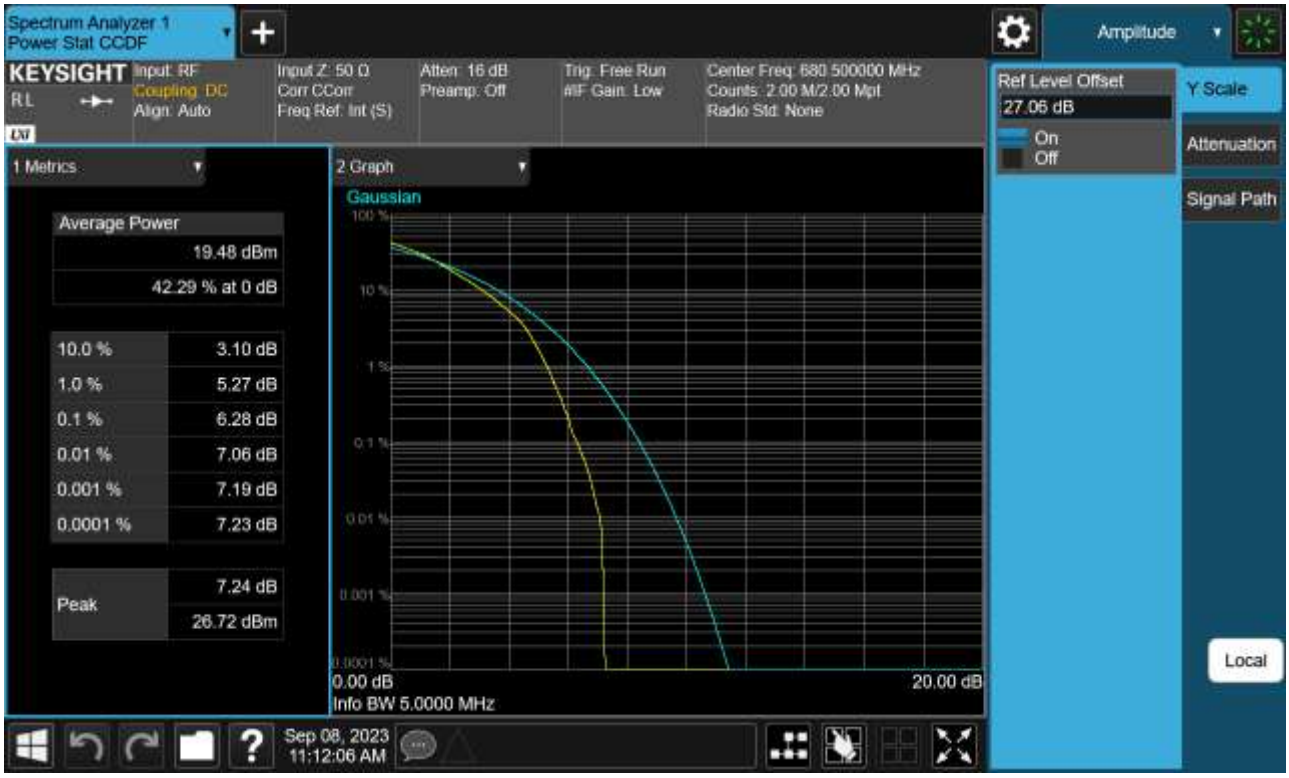
Sub6 n71. PAR Plot (5 M BW_Ch.349000_16QAM_ Full RB)



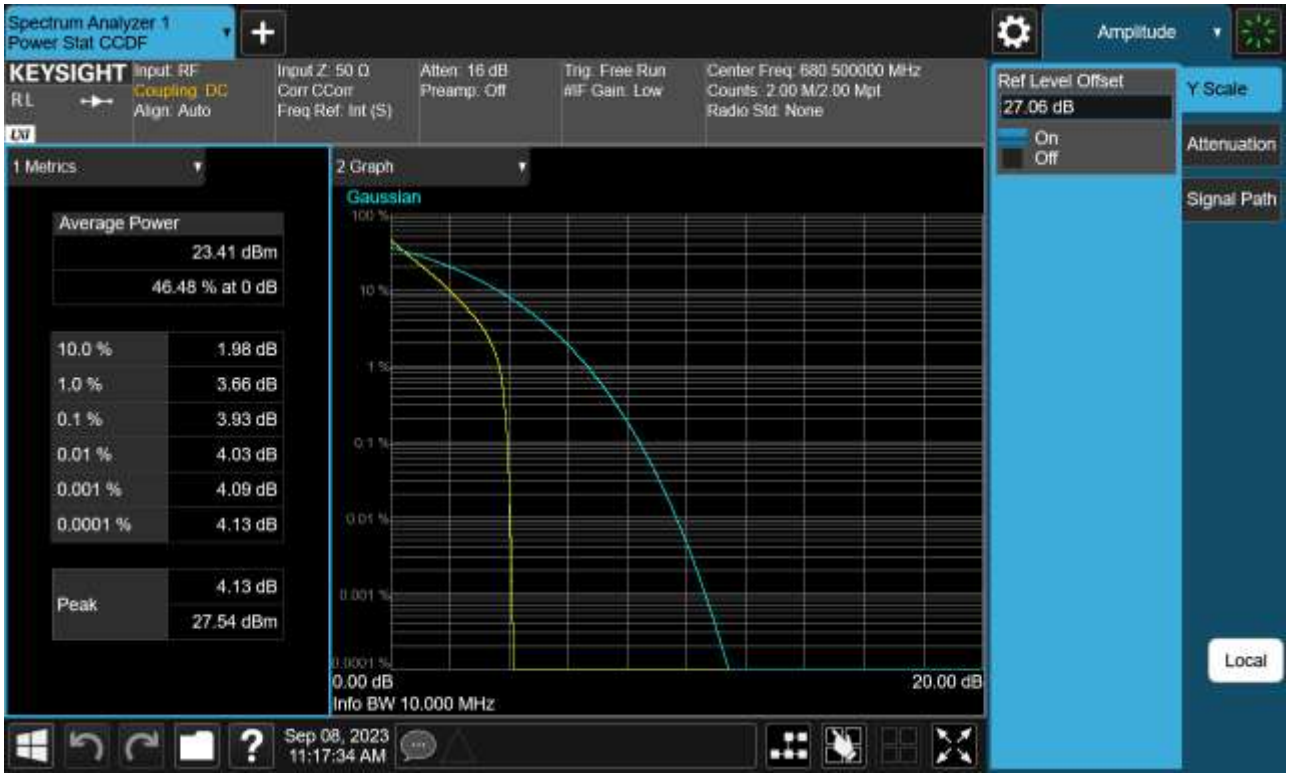
Sub6 n71. PAR Plot (5 M BW_Ch.349000_64QAM_ Full RB)



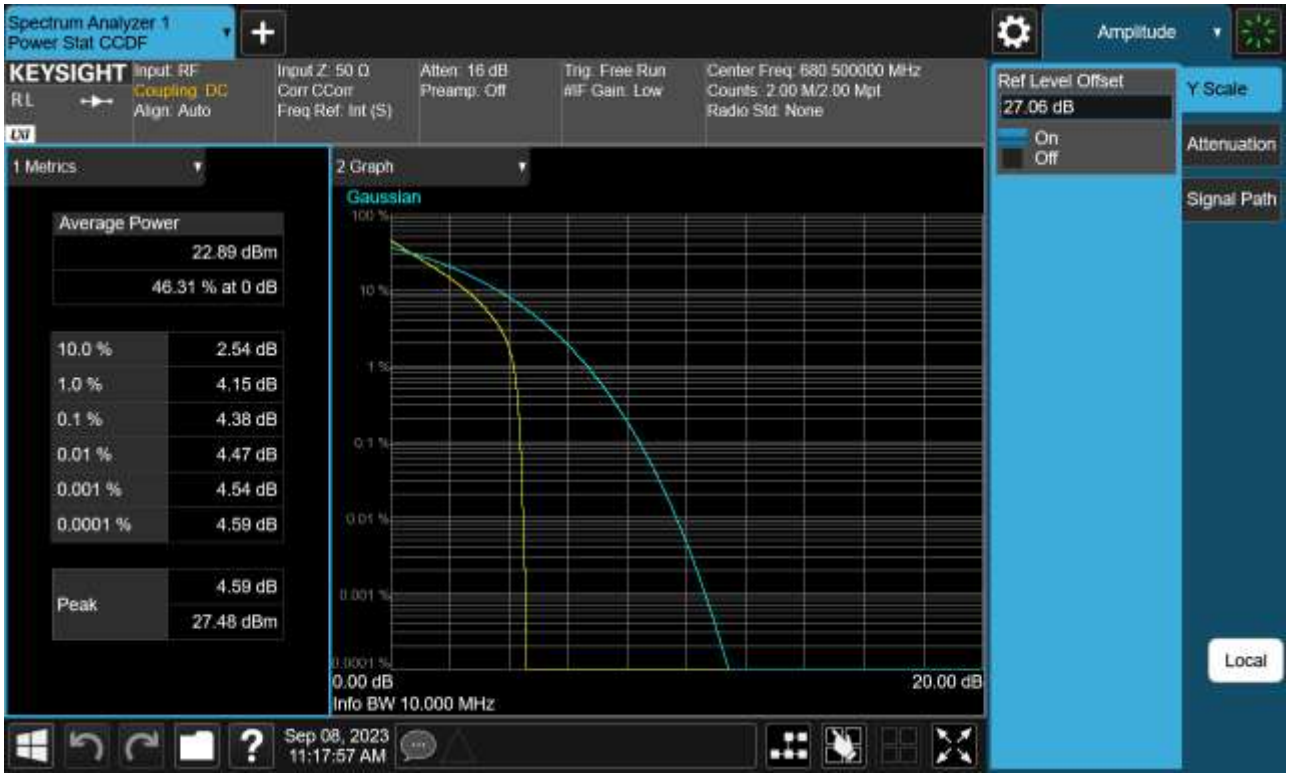
Sub6 n71. PAR Plot (5 M BW_Ch.349000_256QAM_ Full RB)



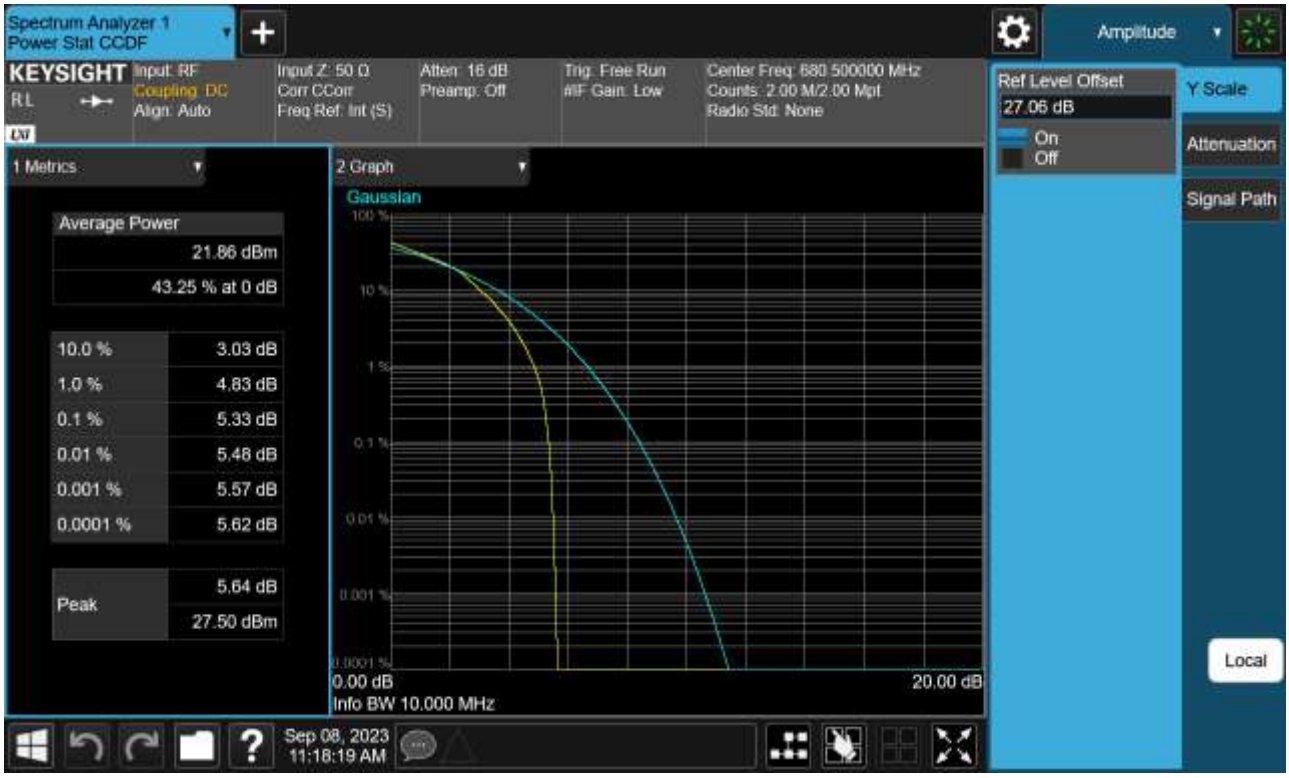
Sub6 n71. PAR Plot (10 M BW_Ch.349000_ BPSK_ Full RB)



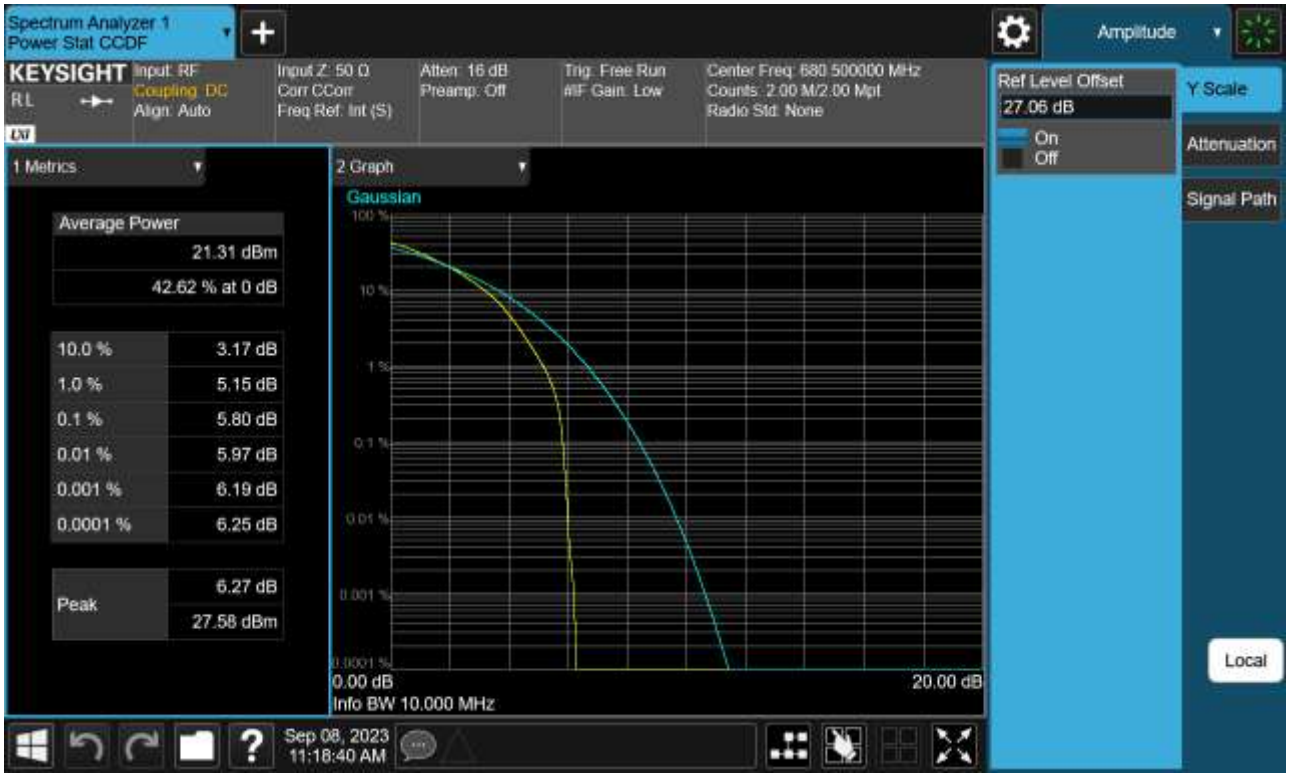
Sub6 n71. PAR Plot (10 M BW_Ch.349000_QPSK_ Full RB)



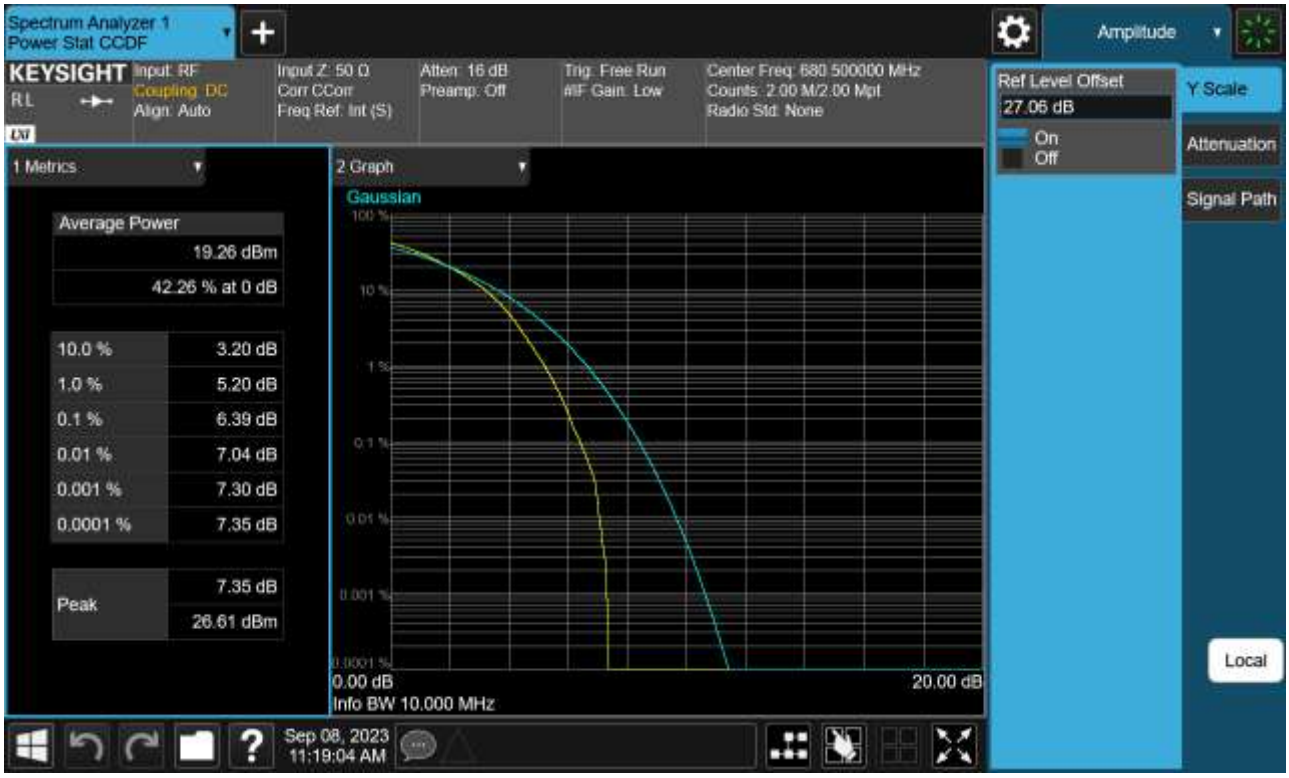
Sub6 n71. PAR Plot (10 M BW_Ch.349000_16QAM_ Full RB)



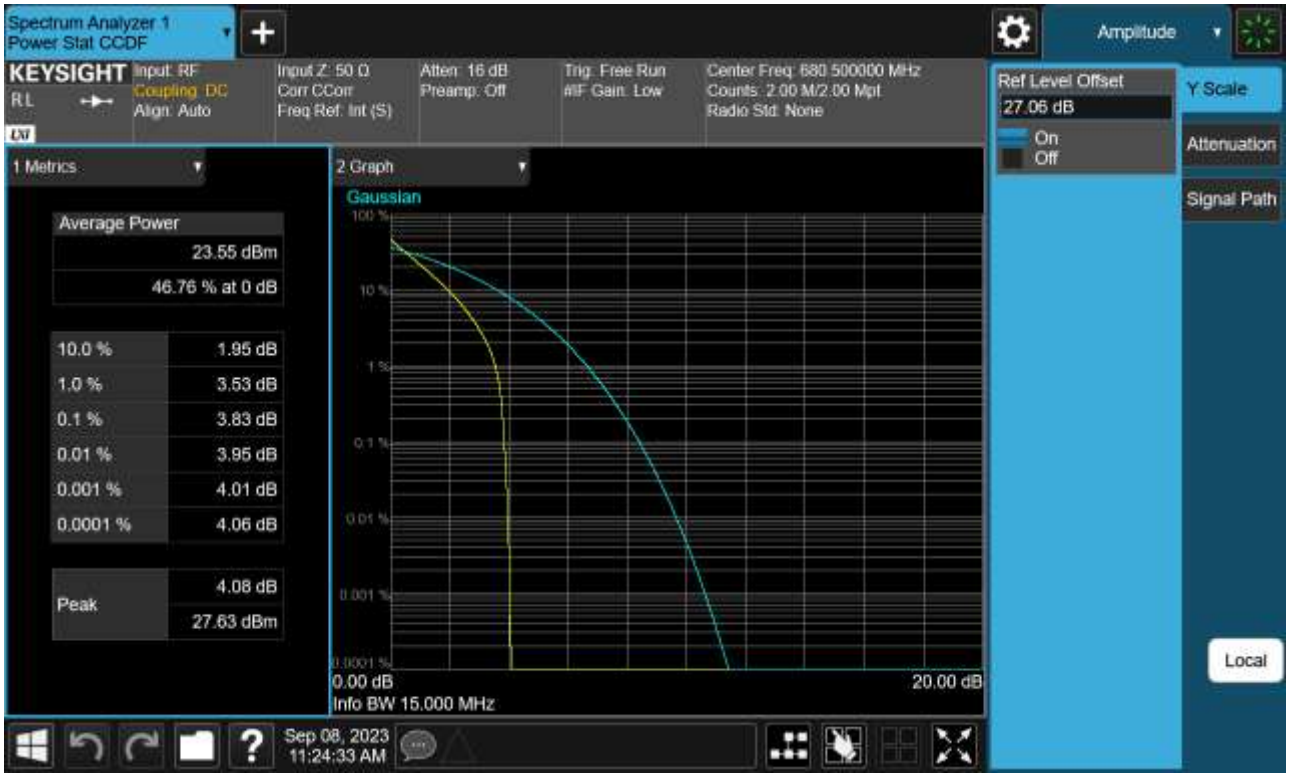
Sub6 n71. PAR Plot (10 M BW_Ch.349000_64QAM_ Full RB)



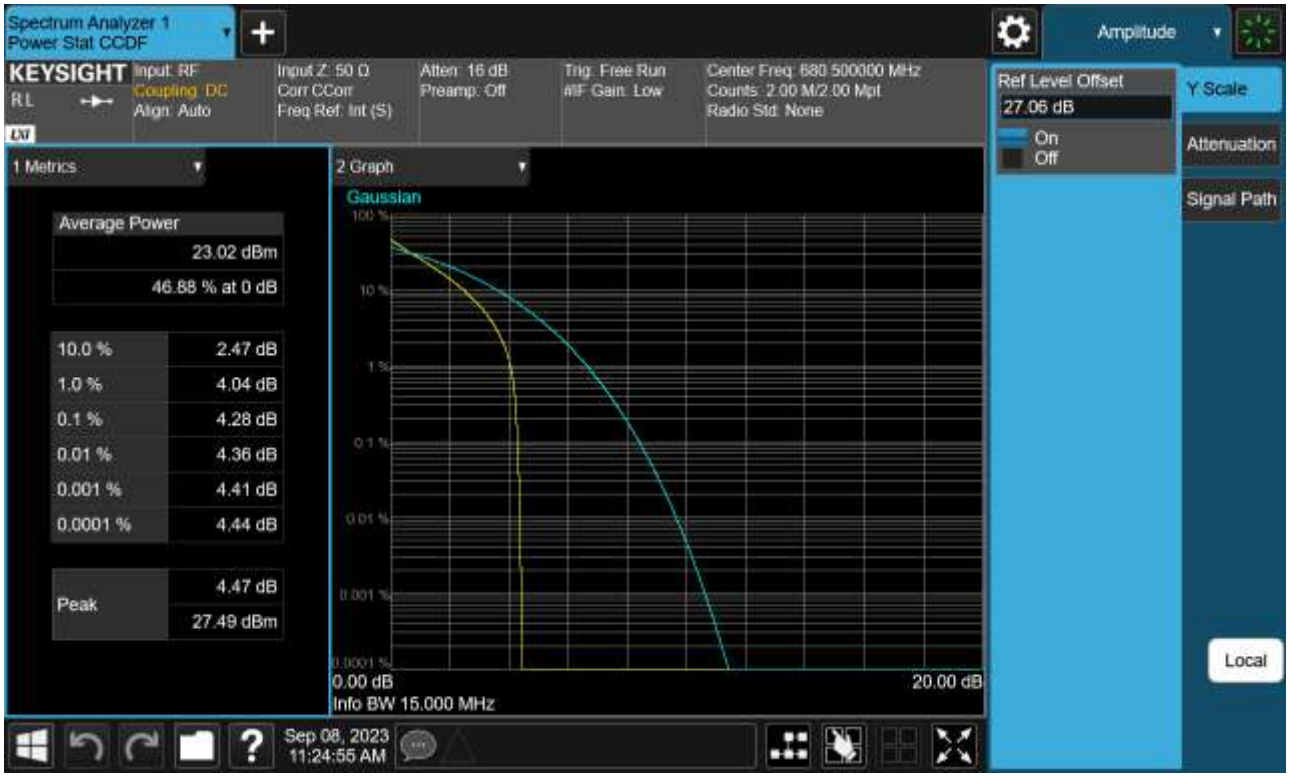
Sub6 n71. PAR Plot (10 M BW_Ch.349000_256QAM_ Full RB)



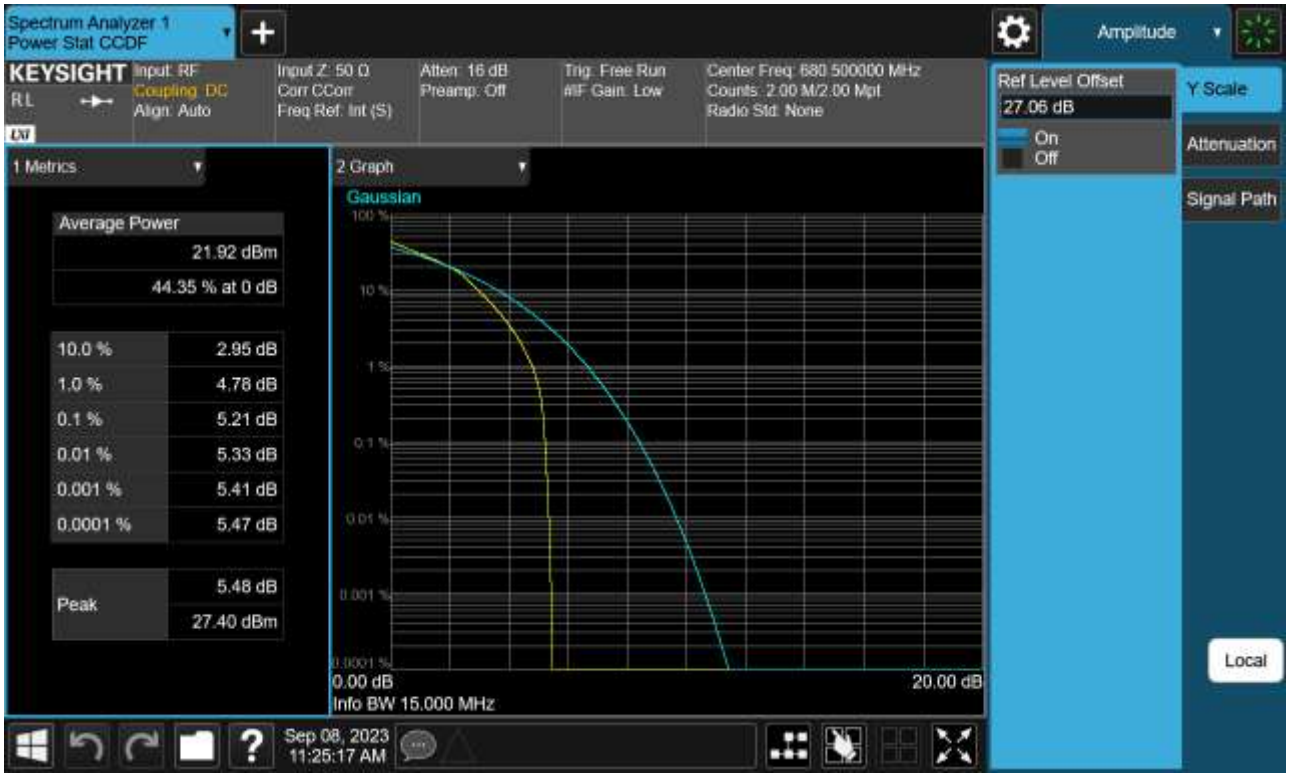
Sub6 n71. PAR Plot (15 M BW_Ch.349000_ BPSK_ Full RB)



Sub6 n71. PAR Plot (15 M BW_Ch.349000_QPSK_ Full RB)



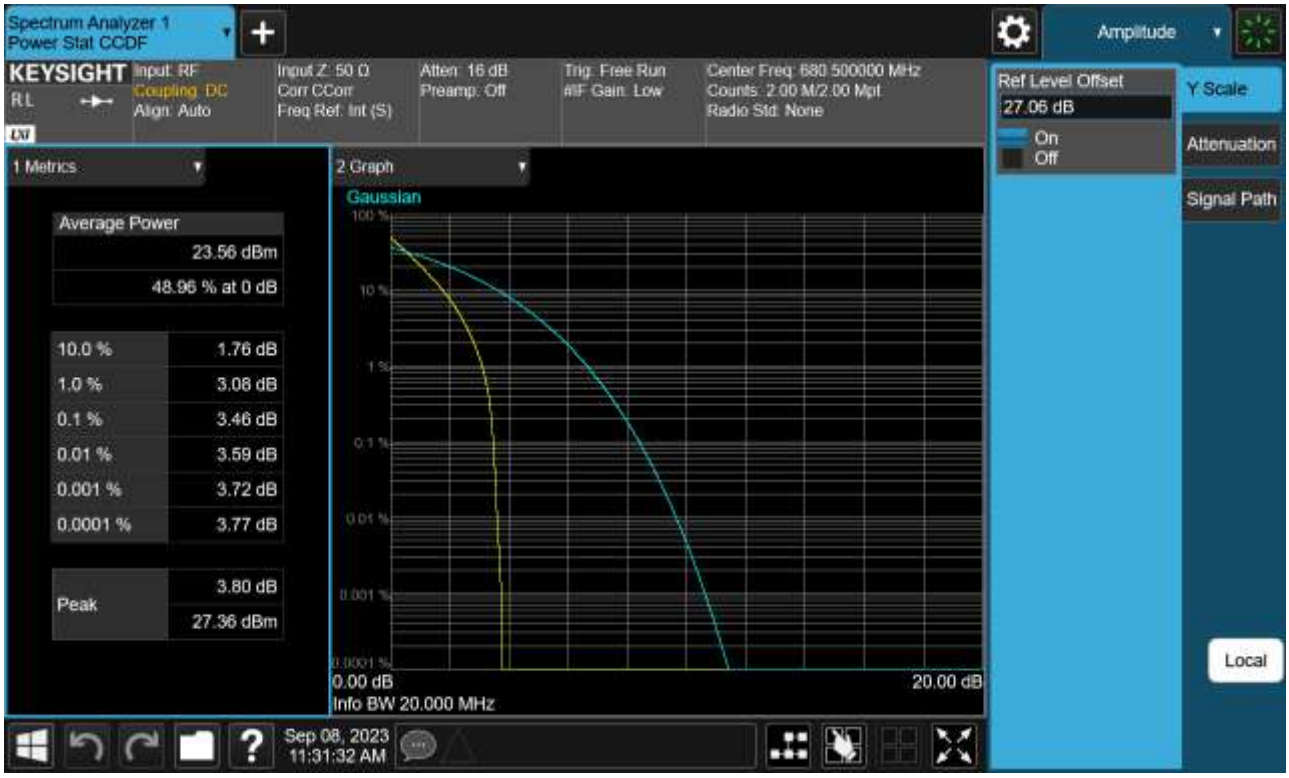
Sub6 n71. PAR Plot (15 M BW_Ch.349000_16QAM_ Full RB)



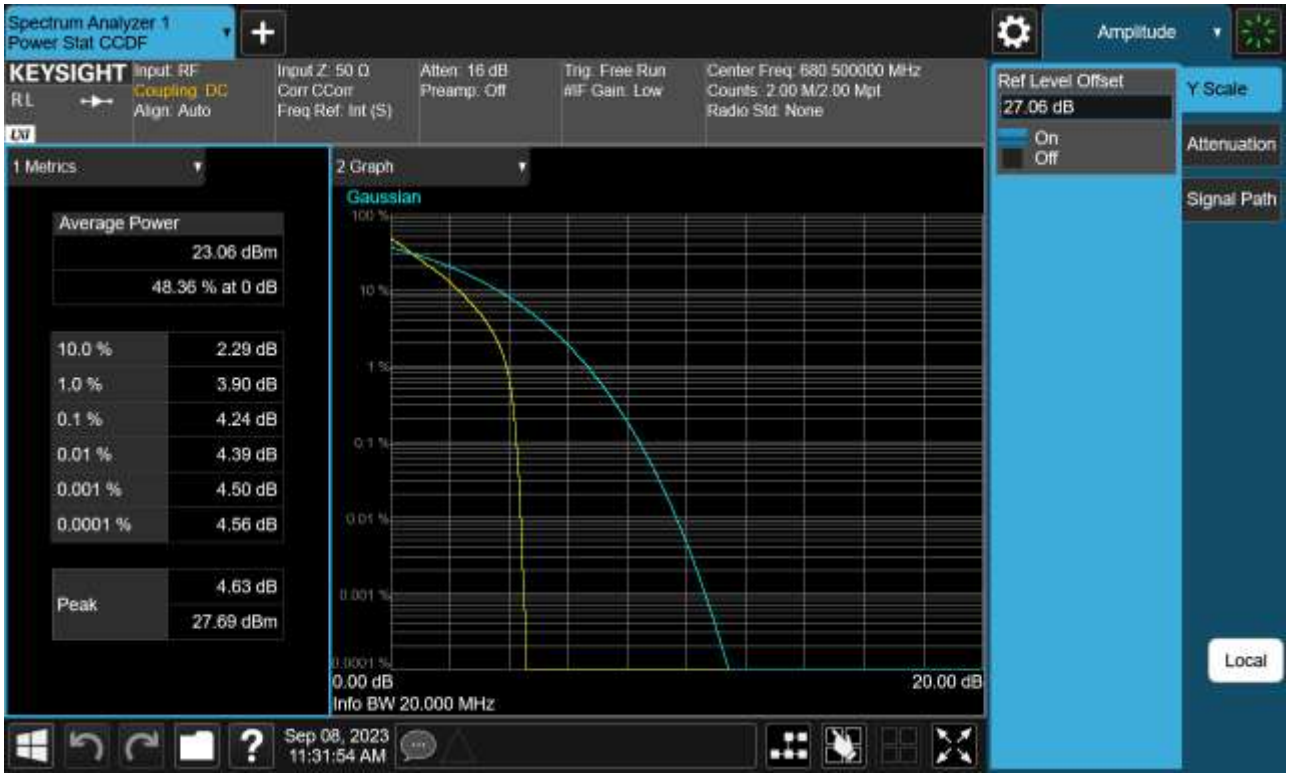
Sub6 n71. PAR Plot (15 M BW_Ch.349000_64QAM_ Full RB)

Sub6 n71. PAR Plot (15 M BW_Ch.349000_256QAM_ Full RB)

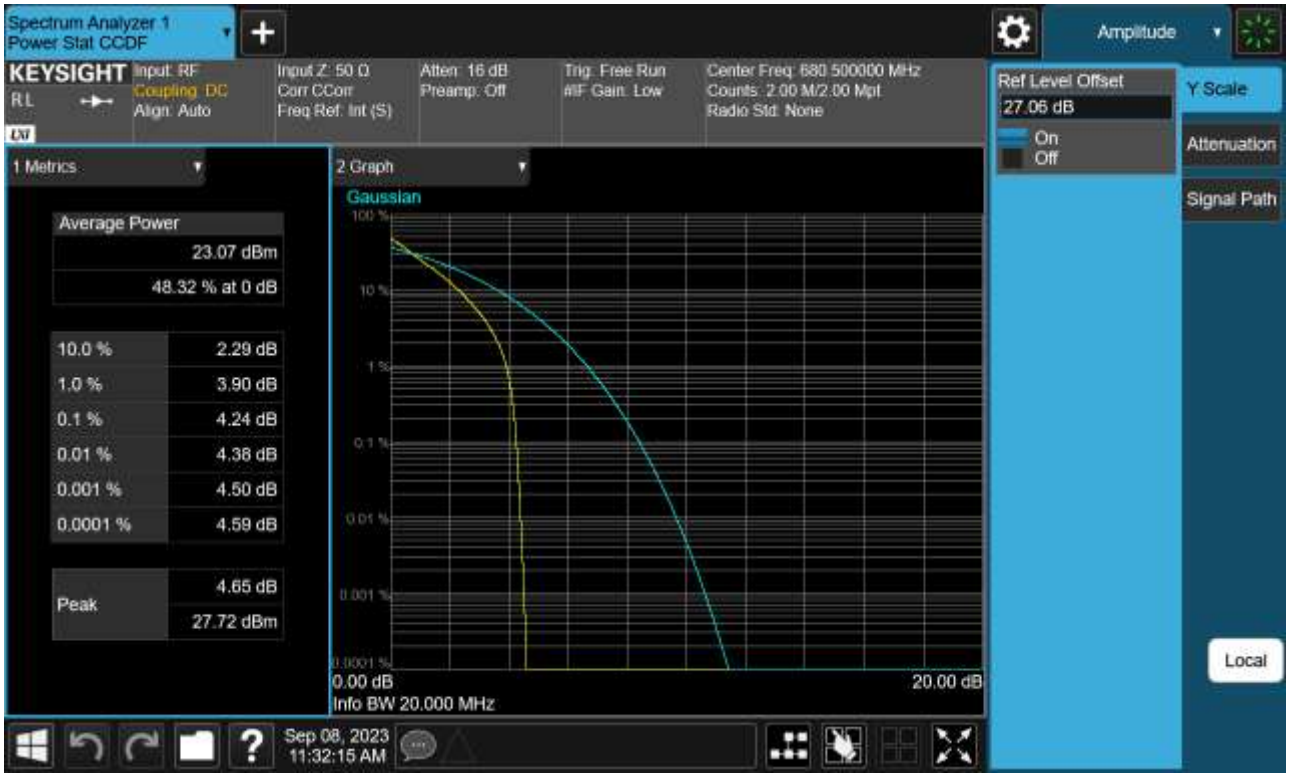
Sub6 n71. PAR Plot (20 M BW_Ch.349000_ BPSK_ Full RB)



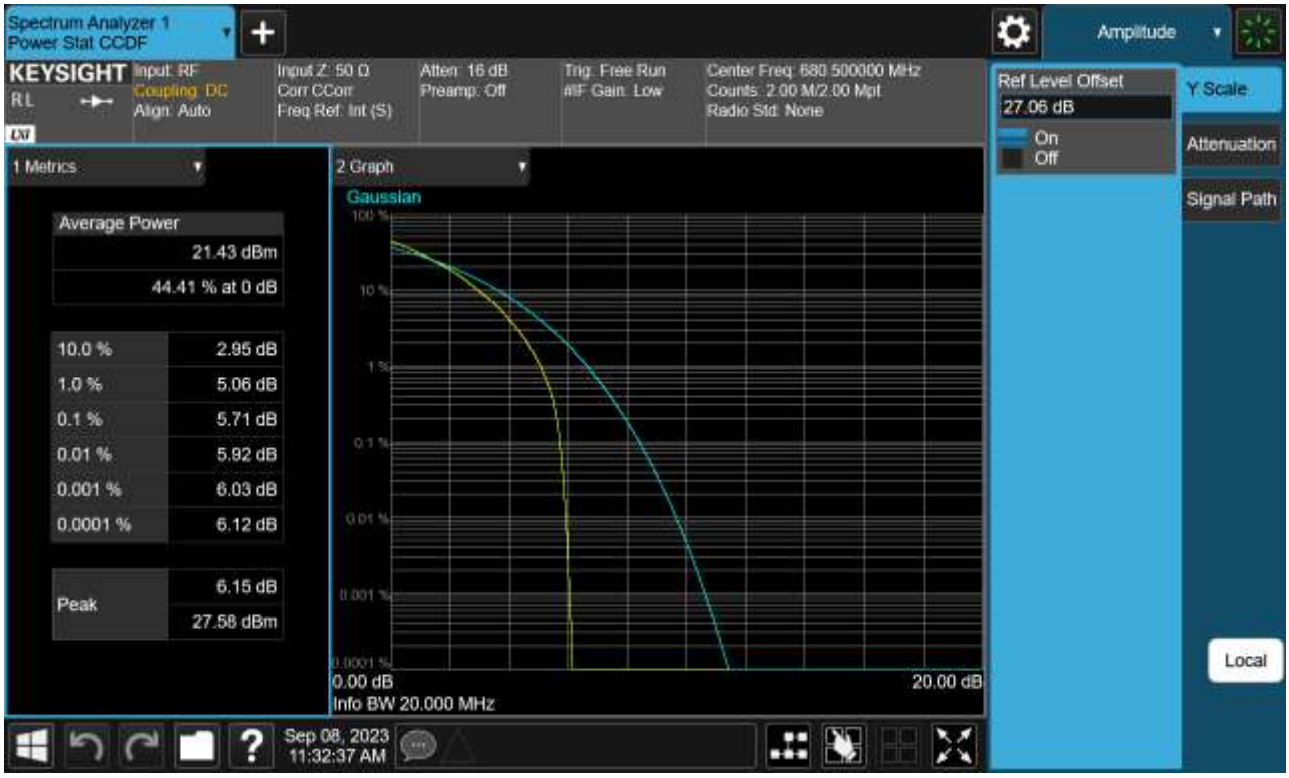
Sub6 n71. PAR Plot (20 M BW_Ch.349000_QPSK_ Full RB)



Sub6 n71. PAR Plot (20 M BW_Ch.349000_16QAM_ Full RB)



Sub6 n71. PAR Plot (20 M BW_Ch.349000_64QAM_ Full RB)



Sub6 n71. PAR Plot (20 M BW_Ch.349000_256QAM_ Full RB)

Sub6 n71. Lower Band Edge Plot (5 M BW Ch.133100 BPSK_RB1_Offset 0)_1

Sub6 n71. Lower Band Edge Plot (5 M BW Ch.133100 BPSK_RB1_Offset 0)_2

Sub6 n71. Lower Band Edge Plot (5 M BW Ch.133100 BPSK_ Full RB)

Sub6 n71. Lower Extended Band Edge Plot (5 M BW Ch.133100 BPSK_ Full RB)

Sub6 n71. Lower Band Edge Plot (10 M BW Ch.133600 BPSK_RB1_Offset 0)_1

Sub6 n71. Lower Band Edge Plot (10 M BW Ch.133600 BPSK_RB1_Offset 0)_2

Sub6 n71. Lower Band Edge Plot (10 M BW Ch.133600 BPSK_ Full RB)

Sub6 n71. Lower Extended Band Edge Plot (10 M BW Ch.133600 BPSK_ Full RB)

Sub6 n71. Lower Band Edge Plot (15 M BW Ch.134100 BPSK_RB1_Offset 0)_1

Sub6 n71. Lower Band Edge Plot (15 M BW Ch.134100 BPSK_RB1_Offset 0)_2

Sub6 n71. Lower Band Edge Plot (15 M BW Ch.134100 BPSK_ Full RB)

Sub6 n71. Lower Extended Band Edge Plot (15 M BW Ch.134100 BPSK_ Full RB)

Sub6 n71. Lower Band Edge Plot (20 M BW Ch.134600 BPSK_RB1_Offset 0)_1

Sub6 n71. Lower Band Edge Plot (20 M BW Ch.134600 BPSK_RB1_Offset 0)_2

Sub6 n71. Lower Band Edge Plot (20 M BW Ch.134600 BPSK_ Full RB)

Sub6 n71. Lower Extended Band Edge Plot (20 M BW Ch.134600 BPSK_ Full RB)

Sub6 n71. Upper Band Edge Plot (5 M BW Ch.139100 BPSK_RB1_Offset 24)_1

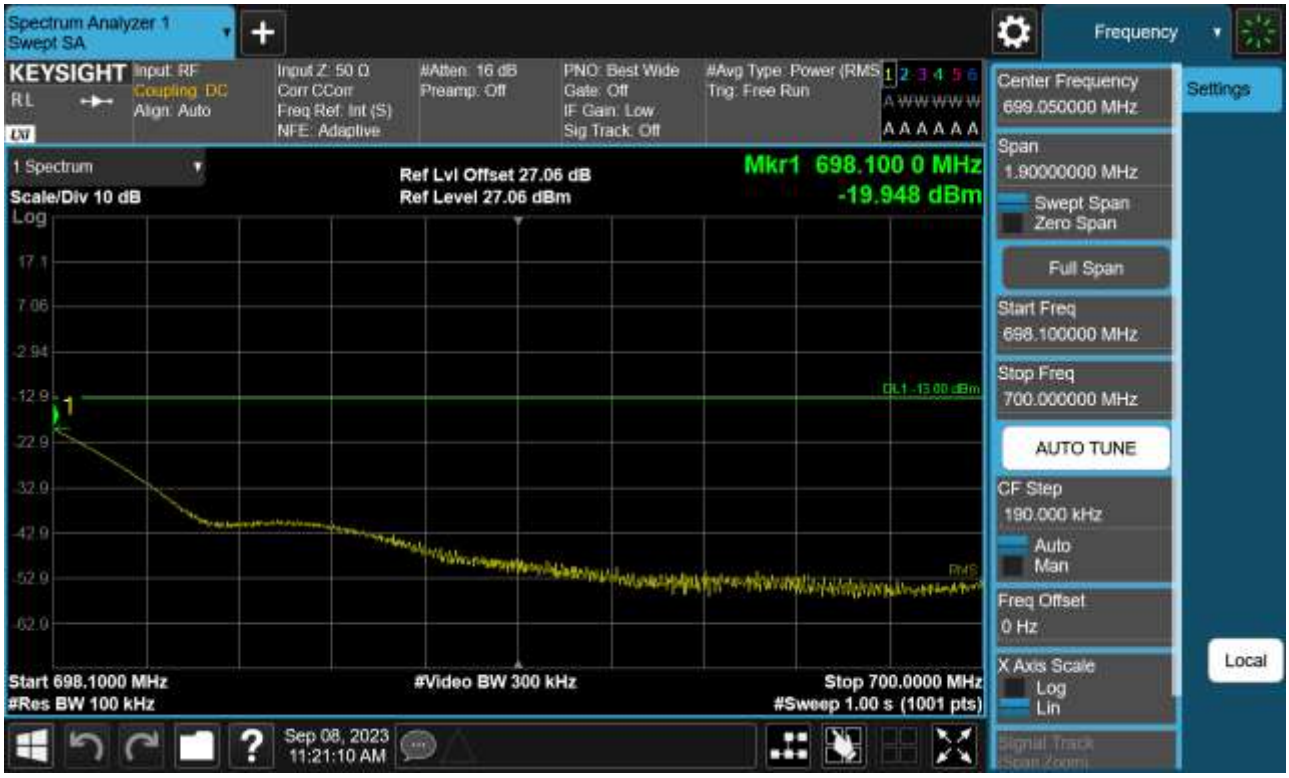
Sub6 n71. Upper Band Edge Plot (5 M BW Ch.139100 BPSK_RB1_Offset 24)_2

Sub6 n71. Upper Band Edge Plot (5 M BW Ch.139100 BPSK_ Full RB)

Sub6 n71. Upper Extended Band Edge Plot (5 M BW Ch.139100 BPSK_ Full RB)

Sub6 n71. Upper Band Edge Plot (10 M BW Ch.138600 BPSK_RB1_Offset 51)-1

Sub6 n71. Upper Band Edge Plot (10 M BW Ch.138600 BPSK_RB1_Offset 51)-2



Sub6 n71. Upper Band Edge Plot (10 M BW Ch.138600 BPSK_ Full RB)

Sub6 n71. Upper Extended Band Edge Plot (10 M BW Ch.138600 BPSK_ Full RB)

Sub6 n71. Upper Band Edge Plot (15 M BW Ch.138100 BPSK_RB1_Offset 78)_1

Sub6 n71. Upper Band Edge Plot (15 M BW Ch.138100 BPSK_RB1_Offset 78)_2

Sub6 n71. Upper Band Edge Plot (15 M BW Ch.138100 BPSK_ Full RB)

Sub6 n71. Upper Extended Band Edge Plot (15 M BW Ch.138100 BPSK_ Full RB)

Sub6 n71. Upper Band Edge Plot (20 M BW Ch.137600 BPSK_RB1_Offset 105)_1

Sub6 n71. Upper Band Edge Plot (20 M BW Ch.137600 BPSK_RB1_Offset 105)_2

Sub6 n71. Upper Band Edge Plot (20 M BW Ch.137600 BPSK_ Full RB)

Sub6 n71. Upper Extended Band Edge Plot (20 M BW Ch.137600 BPSK_ Full RB)

Sub6 n71. Conducted Spurious Plot _ (133100ch_5 MHz_BPSK_RB 1_1)

Sub6 n71. Conducted Spurious Plot _ (136100ch_5 MHz_BPSK_RB 1_1)

Sub6 n71. Conducted Spurious Plot _ (139100ch_5 MHz_BPSK_RB 1_1)

Sub6 n71. Conducted Spurious Plot _ (133600ch_10 MHz_BPSK_RB 1_1)

Sub6 n71. Conducted Spurious Plot _ (136100ch_10 MHz_BPSK_RB 1_1)

Sub6 n71. Conducted Spurious Plot _ (138600ch_10 MHz_BPSK_RB 1_1)

Sub6 n71. Conducted Spurious Plot _ (134100ch_15 MHz_BPSK_RB 1_1)

Sub6 n71. Conducted Spurious Plot _ (136100ch_15 MHz_BPSK_RB 1_1)

Sub6 n71. Conducted Spurious Plot _ (138100ch_15 MHz_BPSK_RB 1_1)

Sub6 n71. Conducted Spurious Plot _ (134600ch_20 MHz_BPSK_RB 1_1)

Sub6 n71. Conducted Spurious Plot _ (136100ch_20 MHz_BPSK_RB 1_1)

Sub6 n71. Conducted Spurious Plot _ (137600ch_20 MHz_BPSK_RB 1_1)

12. TEST PLOTS(Ant E)

Sub6 n71. Occupied Bandwidth Plot (5 M BW Ch.136100 BPSK_Full RB)

Sub6 n71. Occupied Bandwidth Plot (5 M BW Ch.136100 QPSK_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (5 M BW Ch.136100 16QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (5 M BW Ch.136100 64QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (5 M BW Ch.136100 256QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (10 M BW Ch.136100 BPSK_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (10 M BW Ch.136100 QPSK_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (10 M BW Ch.136100 16QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (10 M BW Ch.136100 64QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (10 M BW Ch.136100 256QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (15 M BW Ch.136100 BPSK_ Full RB

Sub6 n71. Occupied Bandwidth Plot (15 M BW Ch.136100 QPSK_ Full RB

Sub6 n71. Occupied Bandwidth Plot (15 M BW Ch.136100 16QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (15 M BW Ch.136100 64QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (15 M BW Ch.136100 256QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (20 M BW Ch.136100 BPSK_ Full RB)

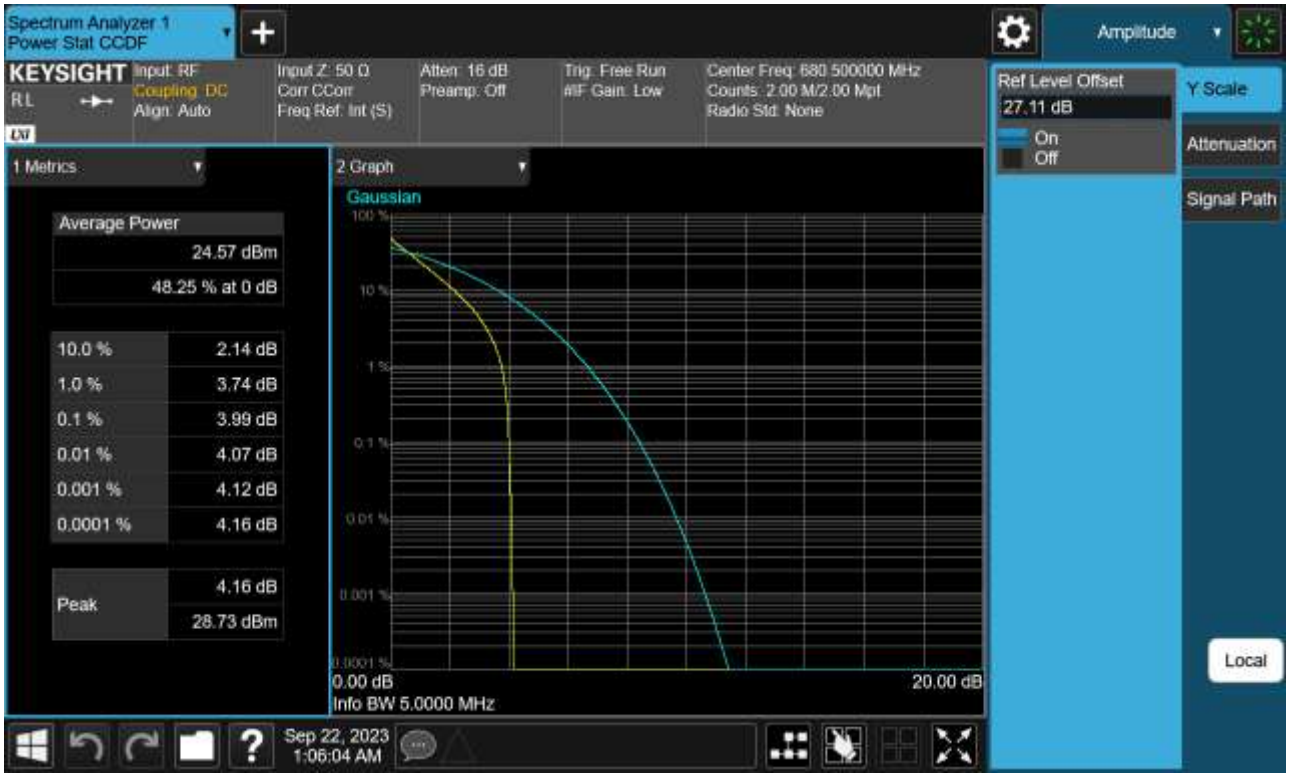
Sub6 n71. Occupied Bandwidth Plot (20 M BW Ch.136100 QPSK_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (20 M BW Ch.136100 16QAM_ Full RB)

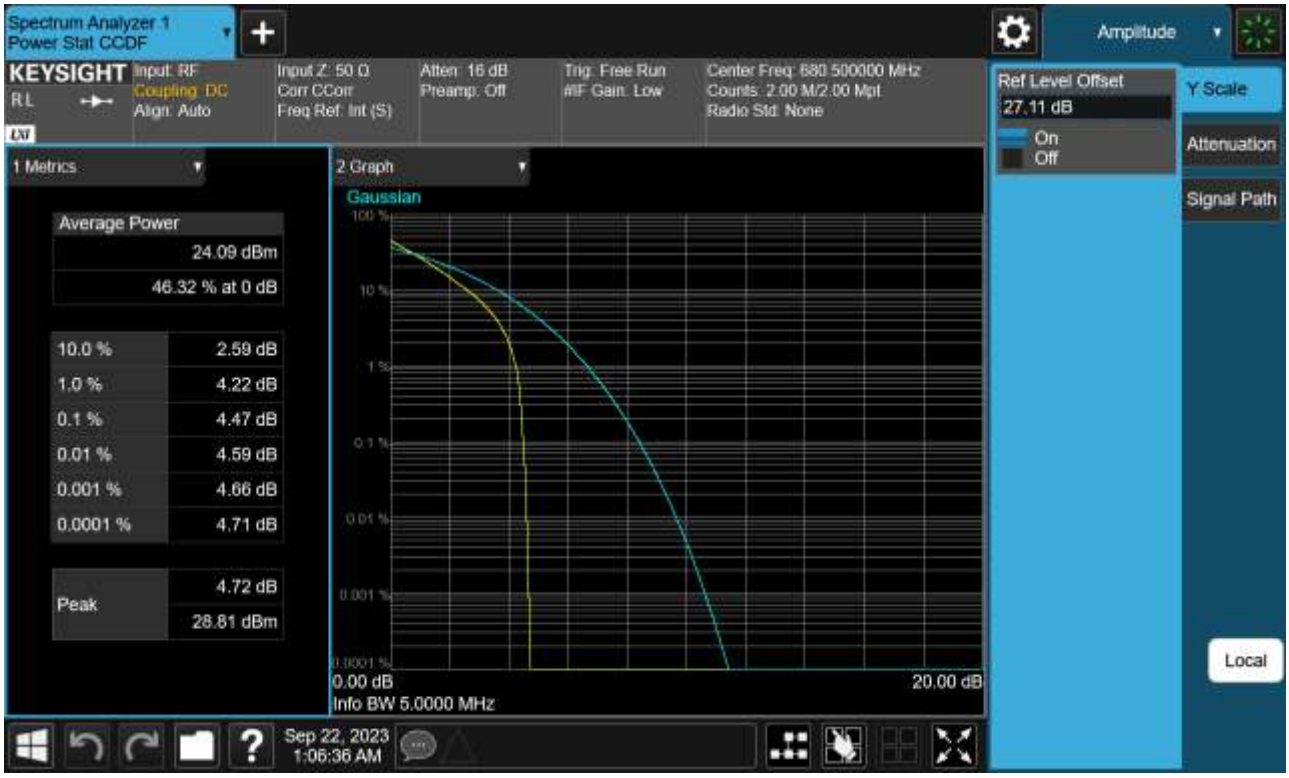
Sub6 n71. Occupied Bandwidth Plot (20 M BW Ch.136100 64QAM_ Full RB)

Sub6 n71. Occupied Bandwidth Plot (20 M BW Ch.136100 256QAM_ Full RB)

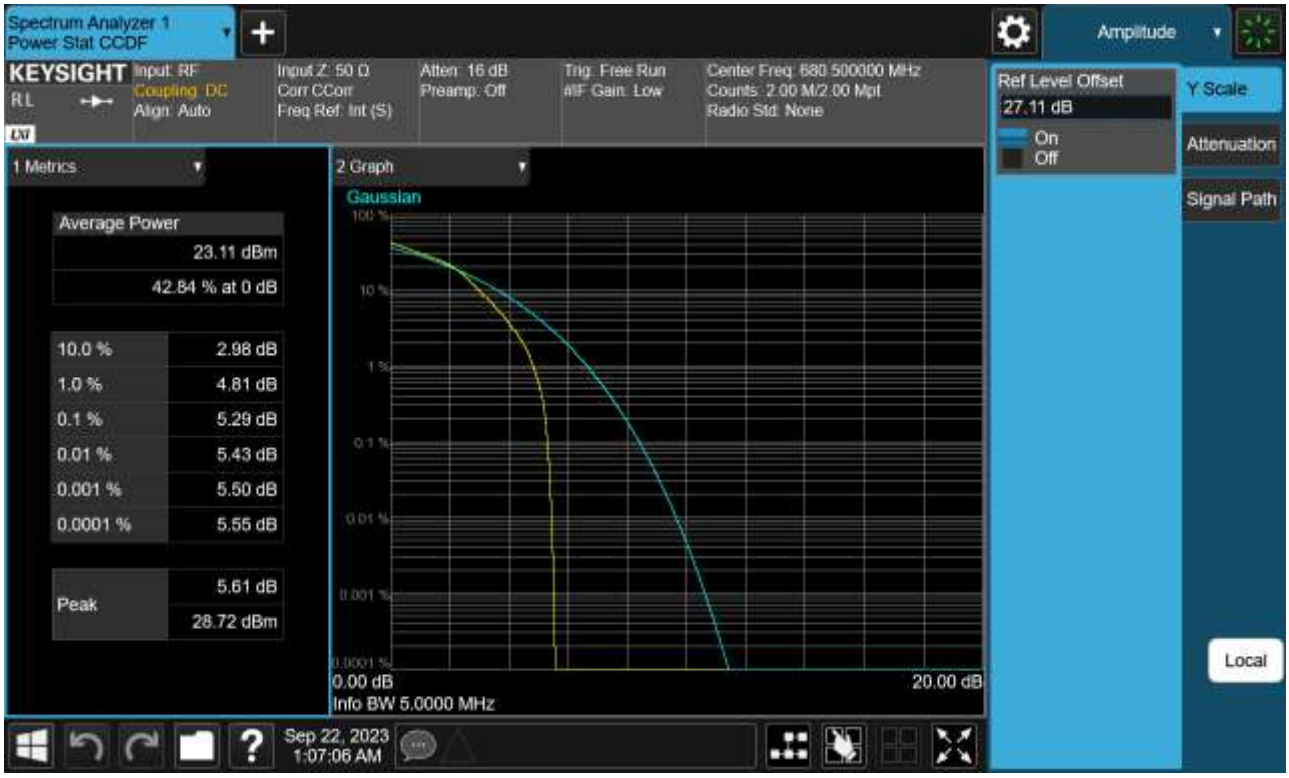
Sub6 n71. PAR Plot (5 M BW_Ch.349000_ BPSK_ Full RB)



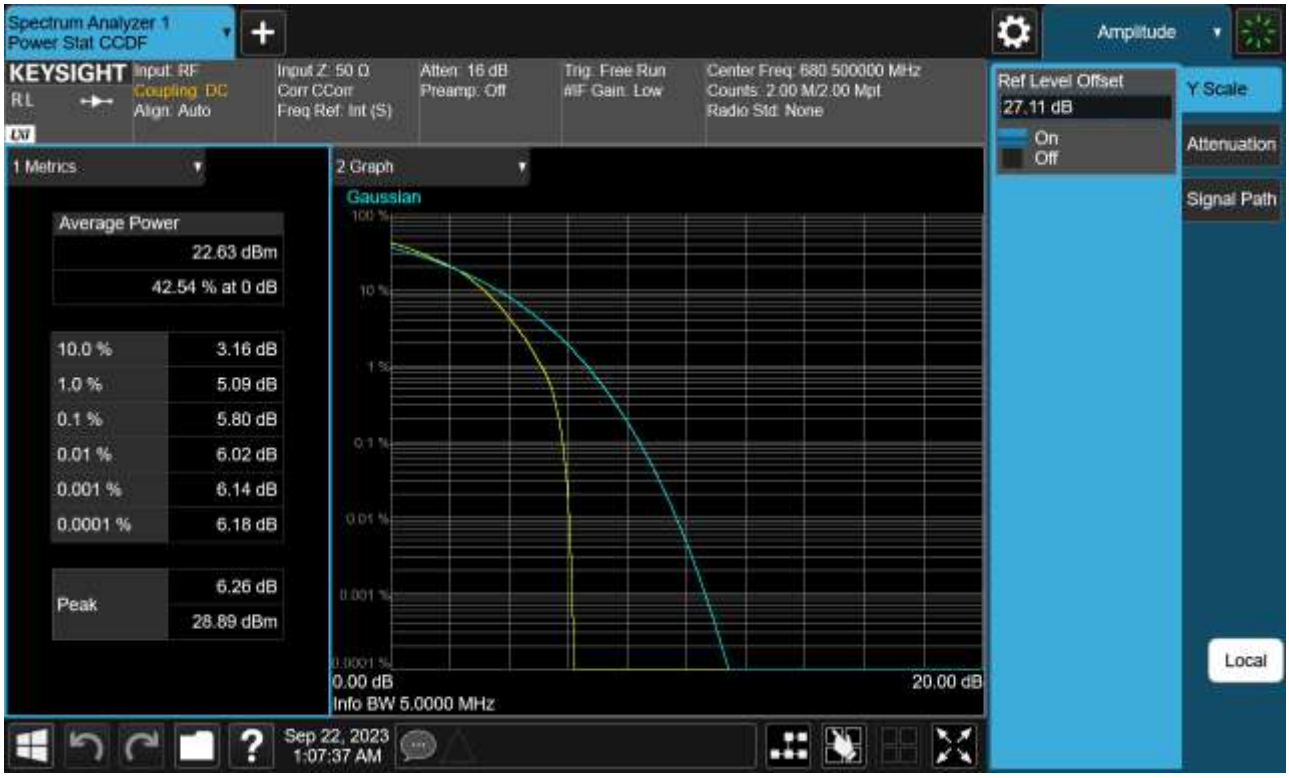
Sub6 n71. PAR Plot (5 M BW_Ch.349000_QPSK_ Full RB)



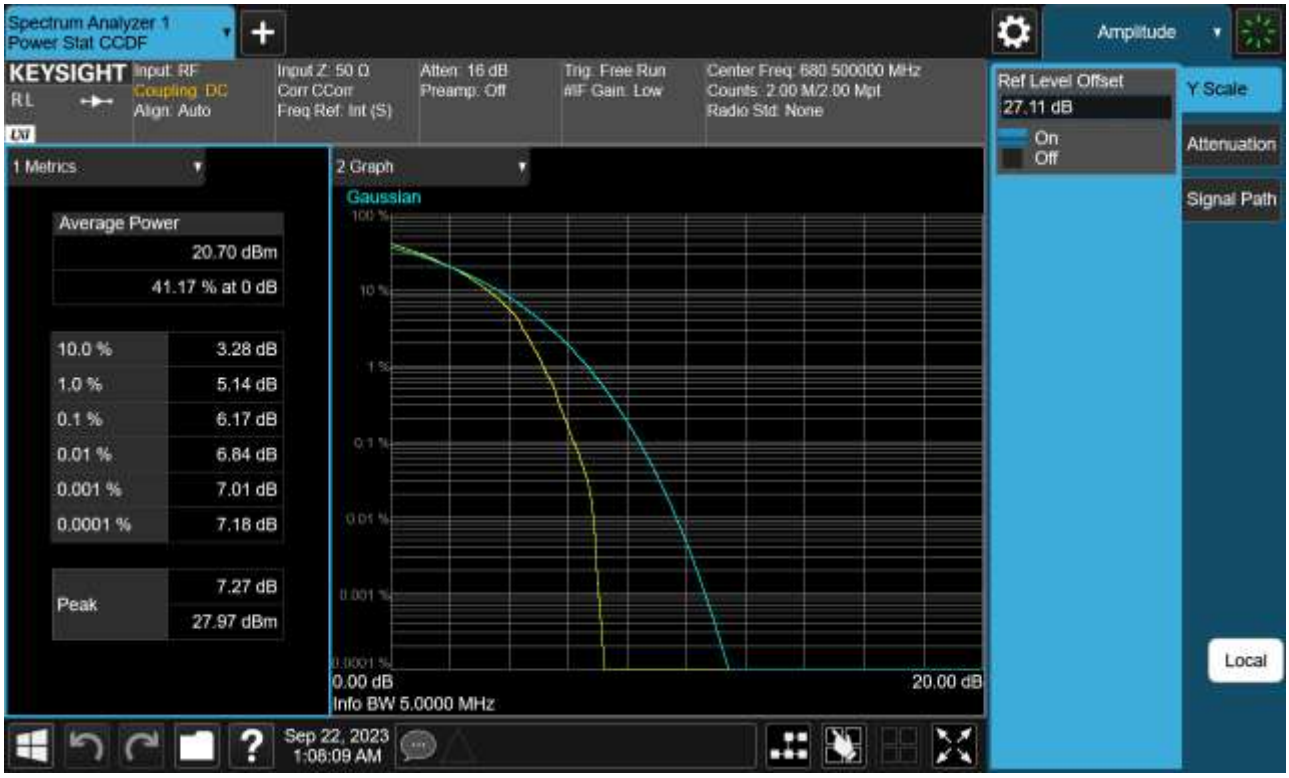
Sub6 n71. PAR Plot (5 M BW_Ch.349000_16QAM_ Full RB)



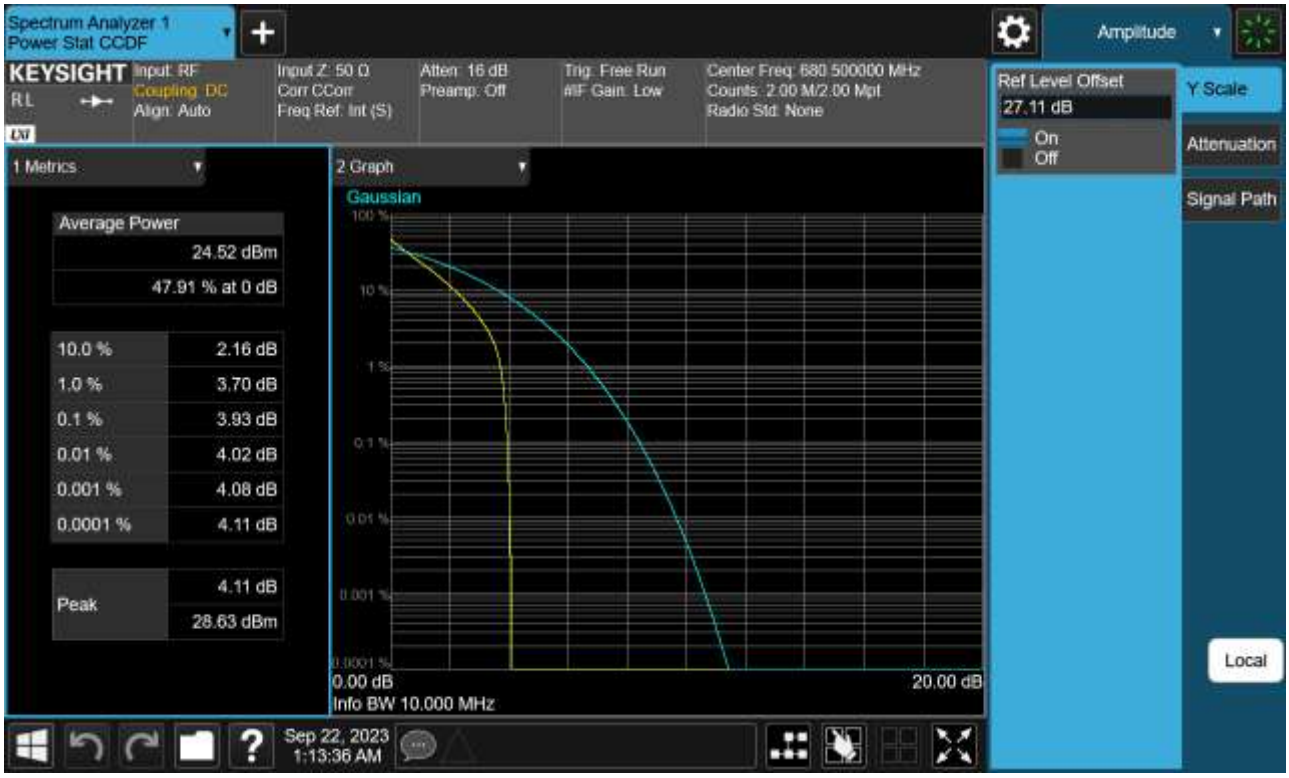
Sub6 n71. PAR Plot (5 M BW_Ch.349000_64QAM_ Full RB)



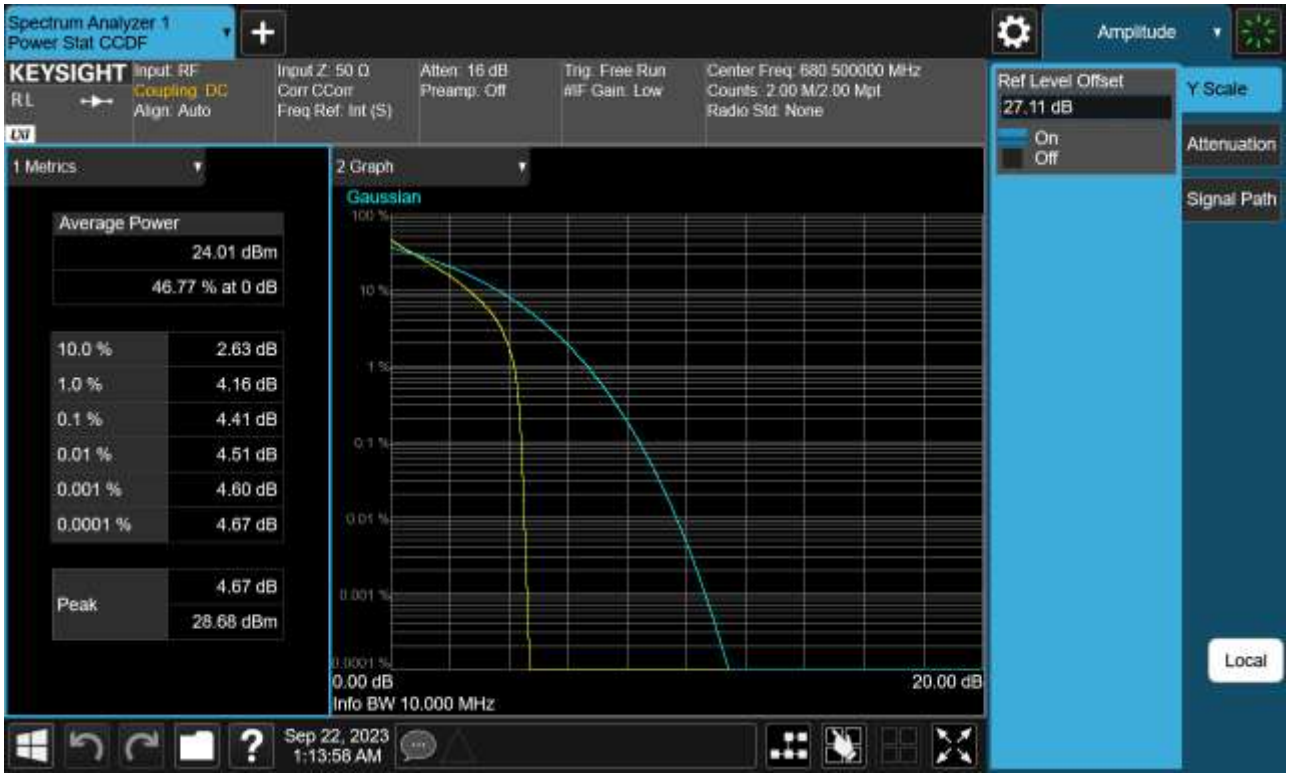
Sub6 n71. PAR Plot (5 M BW_Ch.349000_256QAM_ Full RB)



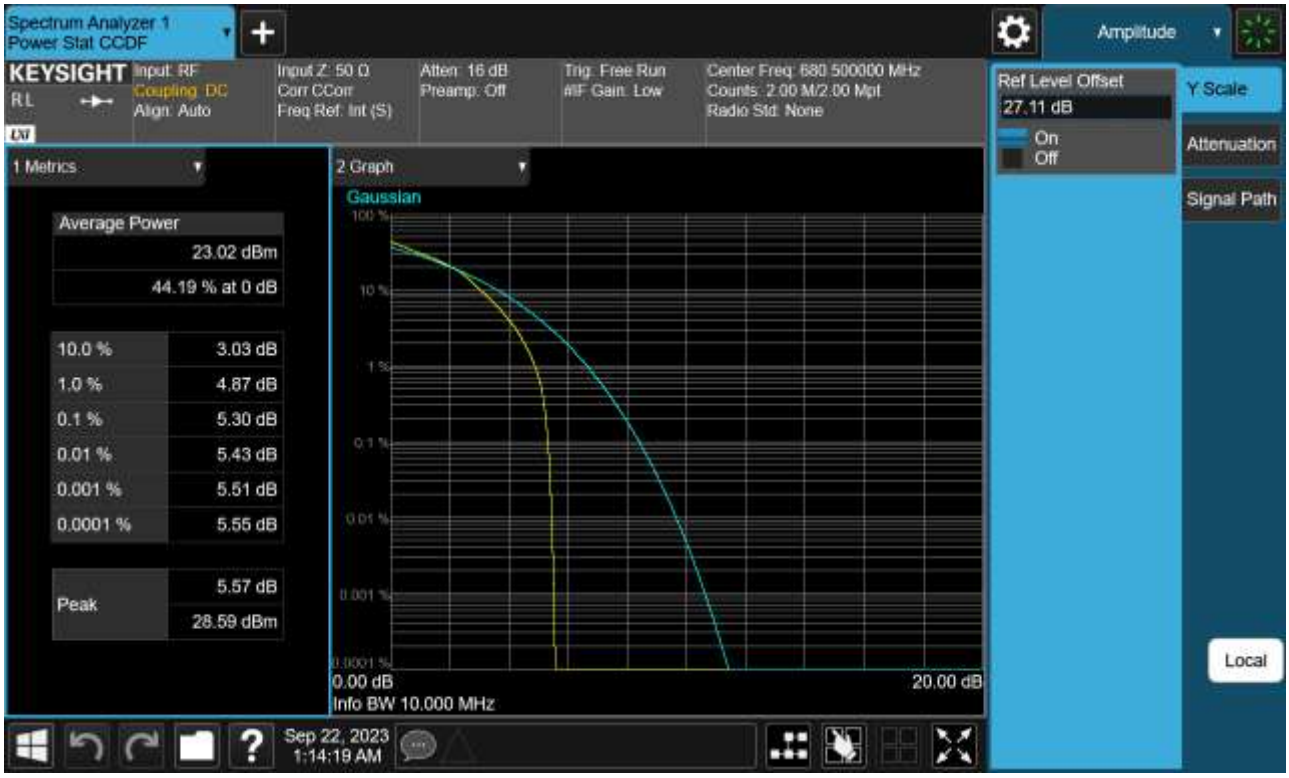
Sub6 n71. PAR Plot (10 M BW_Ch.349000_ BPSK_ Full RB)



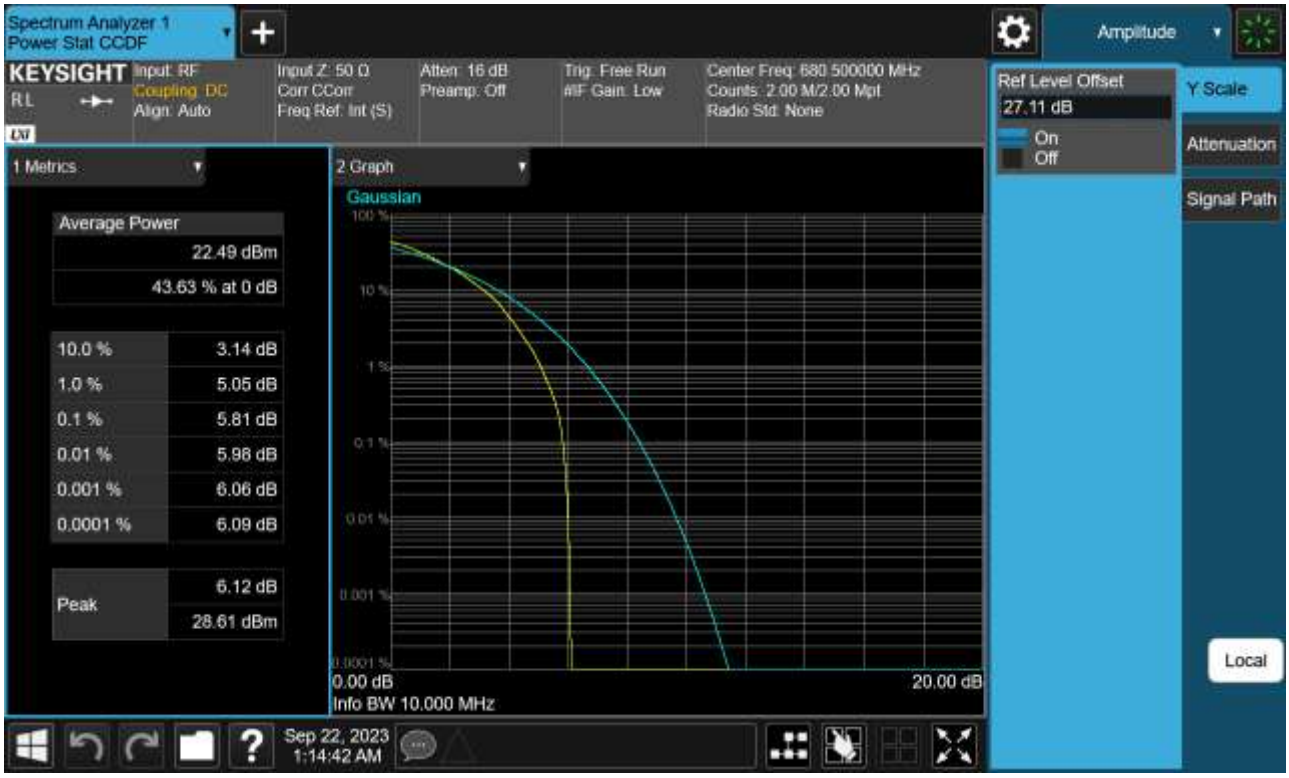
Sub6 n71. PAR Plot (10 M BW_Ch.349000_QPSK_ Full RB)



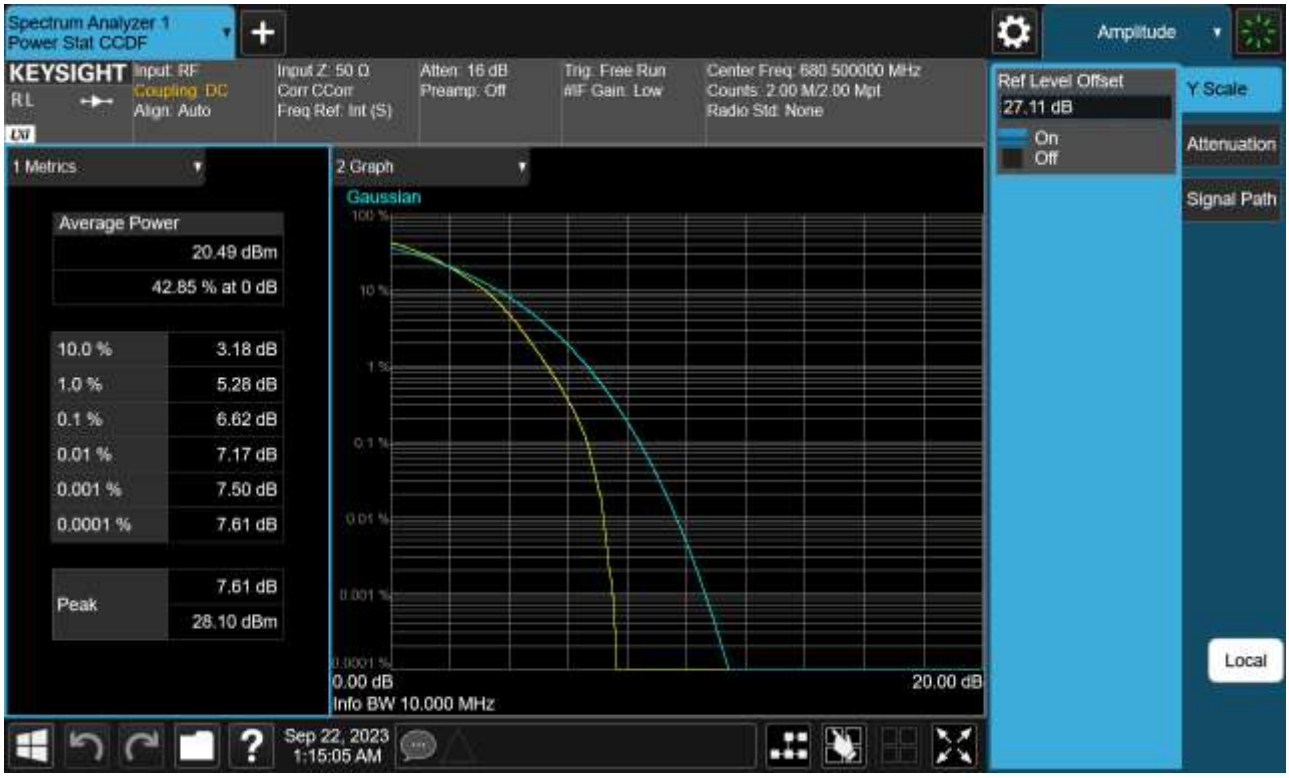
Sub6 n71. PAR Plot (10 M BW_Ch.349000_16QAM_ Full RB)



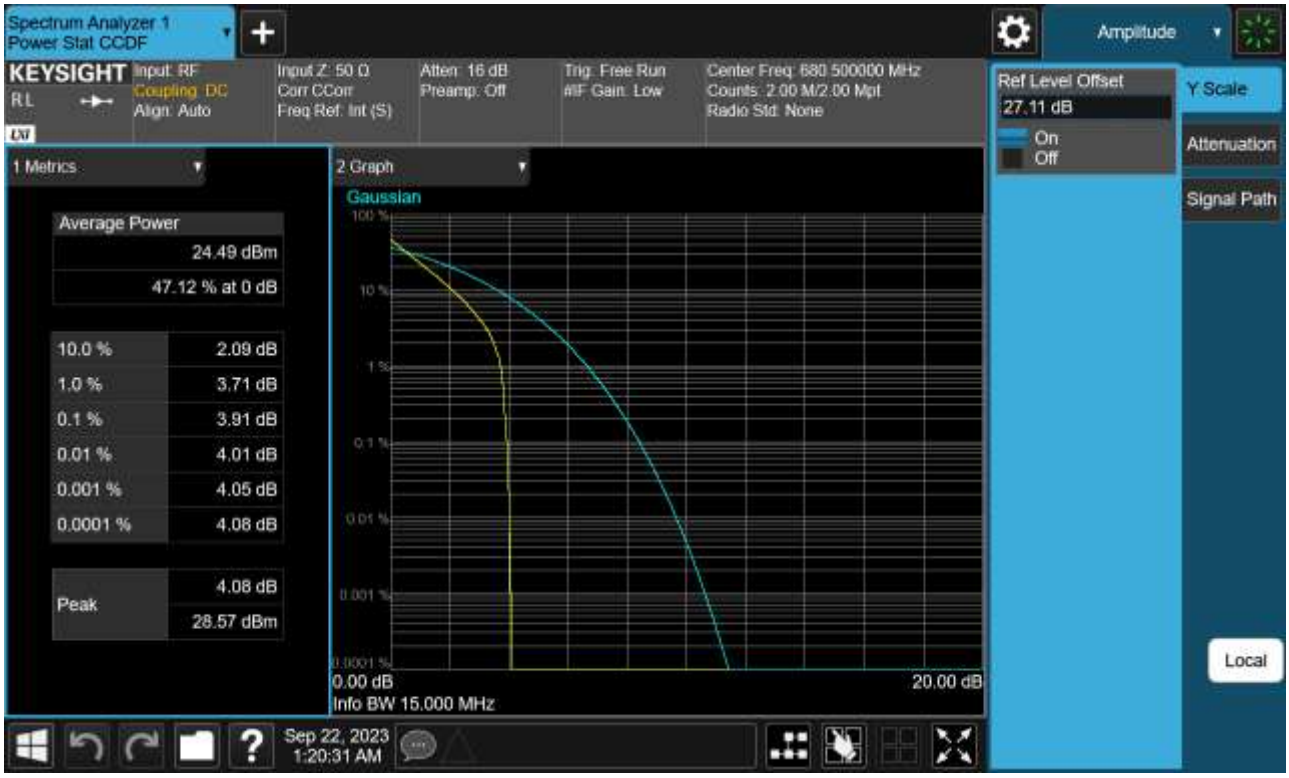
Sub6 n71. PAR Plot (10 M BW_Ch.349000_64QAM_ Full RB)



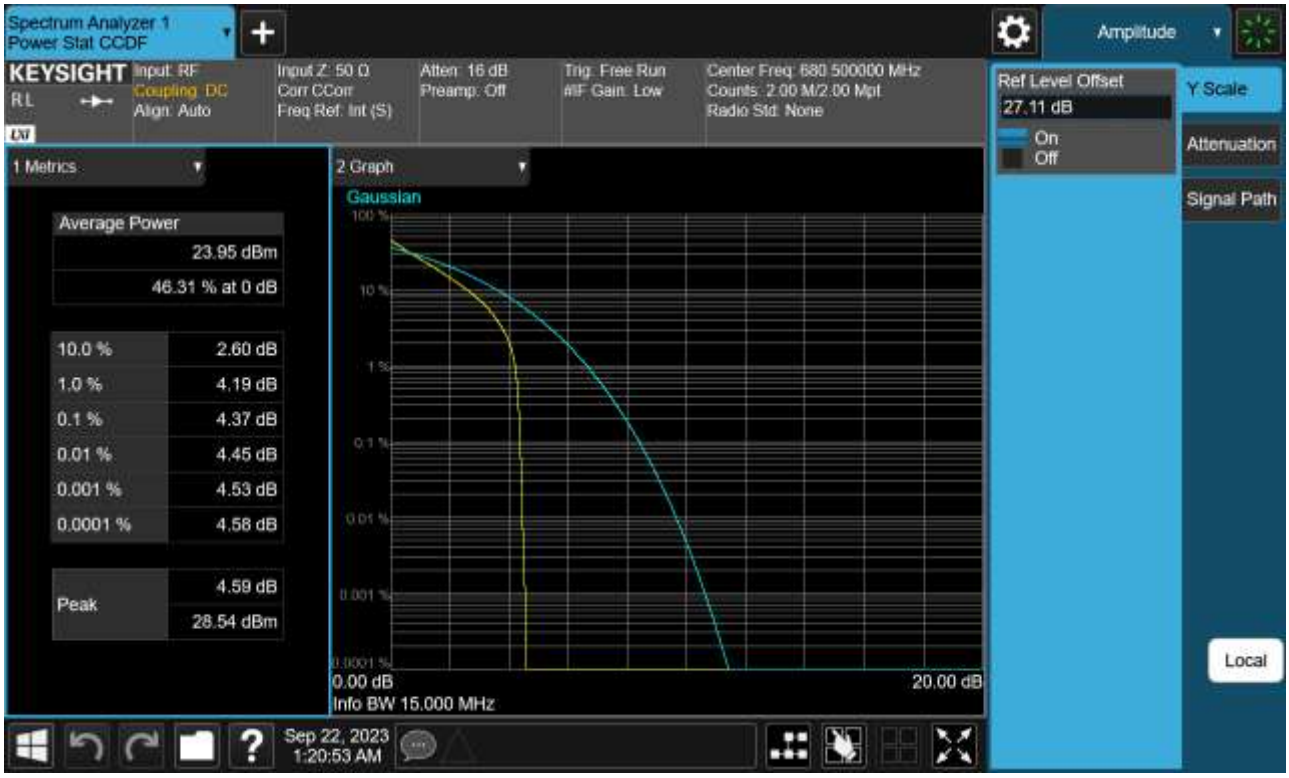
Sub6 n71. PAR Plot (10 M BW_Ch.349000_256QAM_ Full RB)



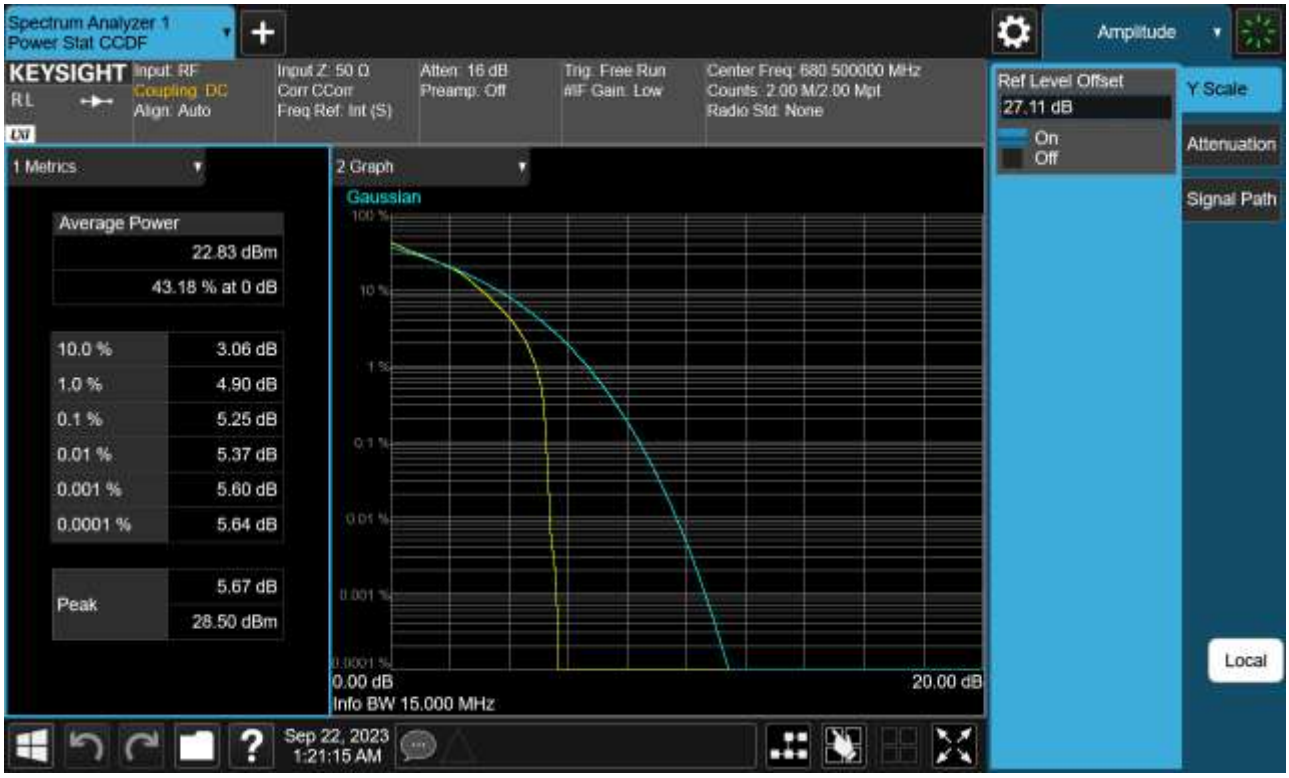
Sub6 n71. PAR Plot (15 M BW_Ch.349000_ BPSK_ Full RB)



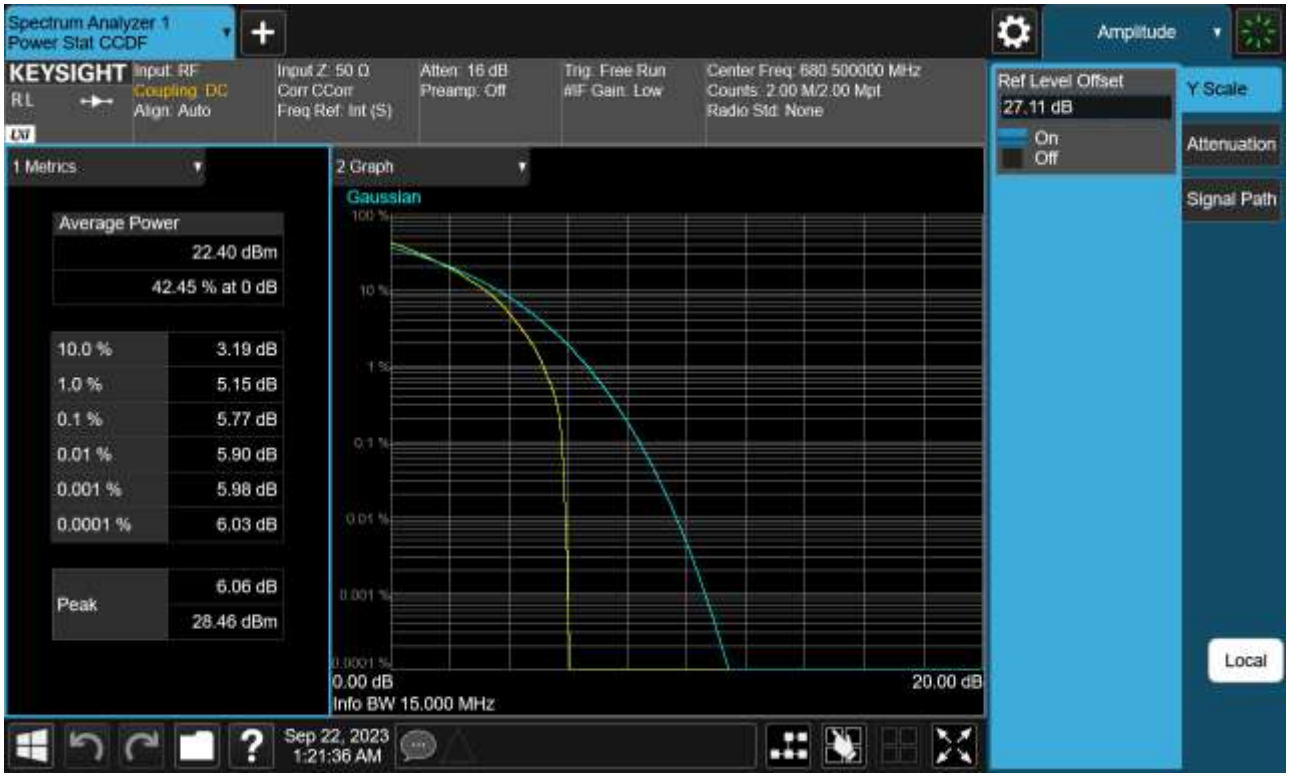
Sub6 n71. PAR Plot (15 M BW_Ch.349000_QPSK_ Full RB)



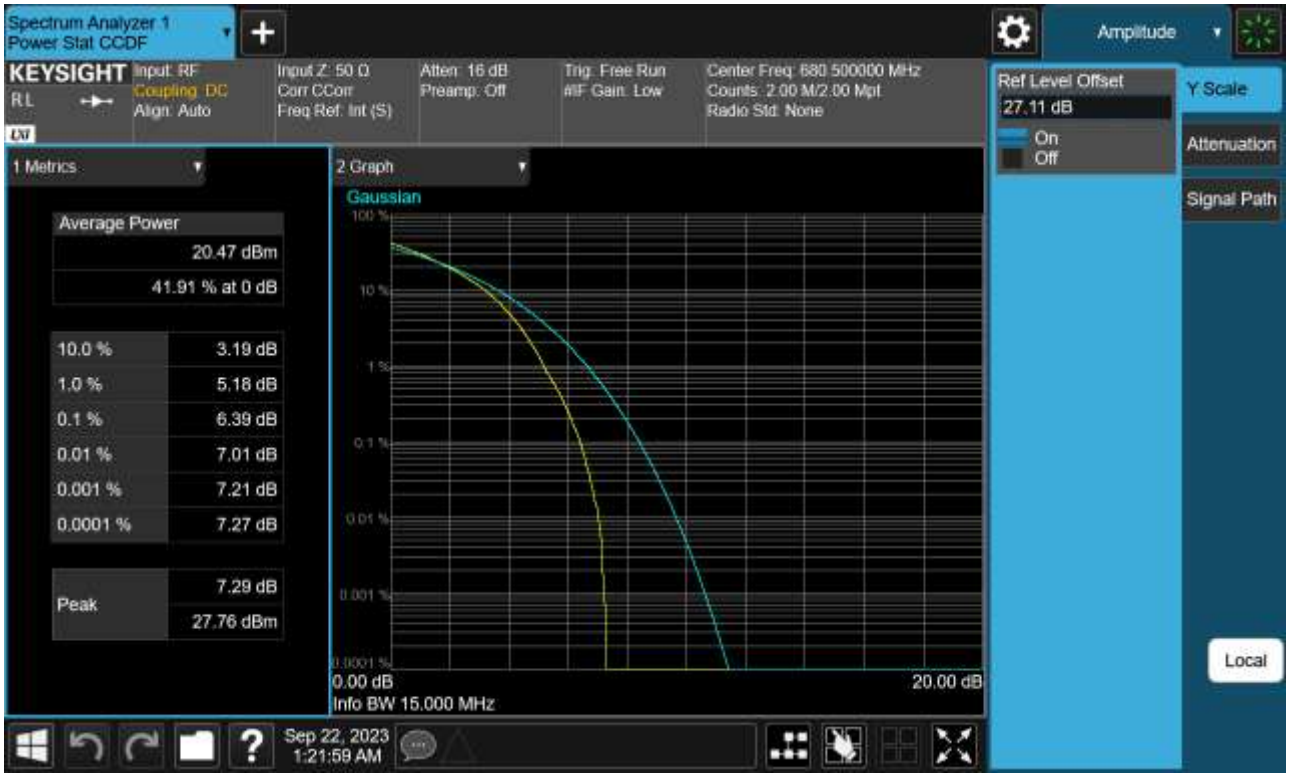
Sub6 n71. PAR Plot (15 M BW_Ch.349000_16QAM_ Full RB)



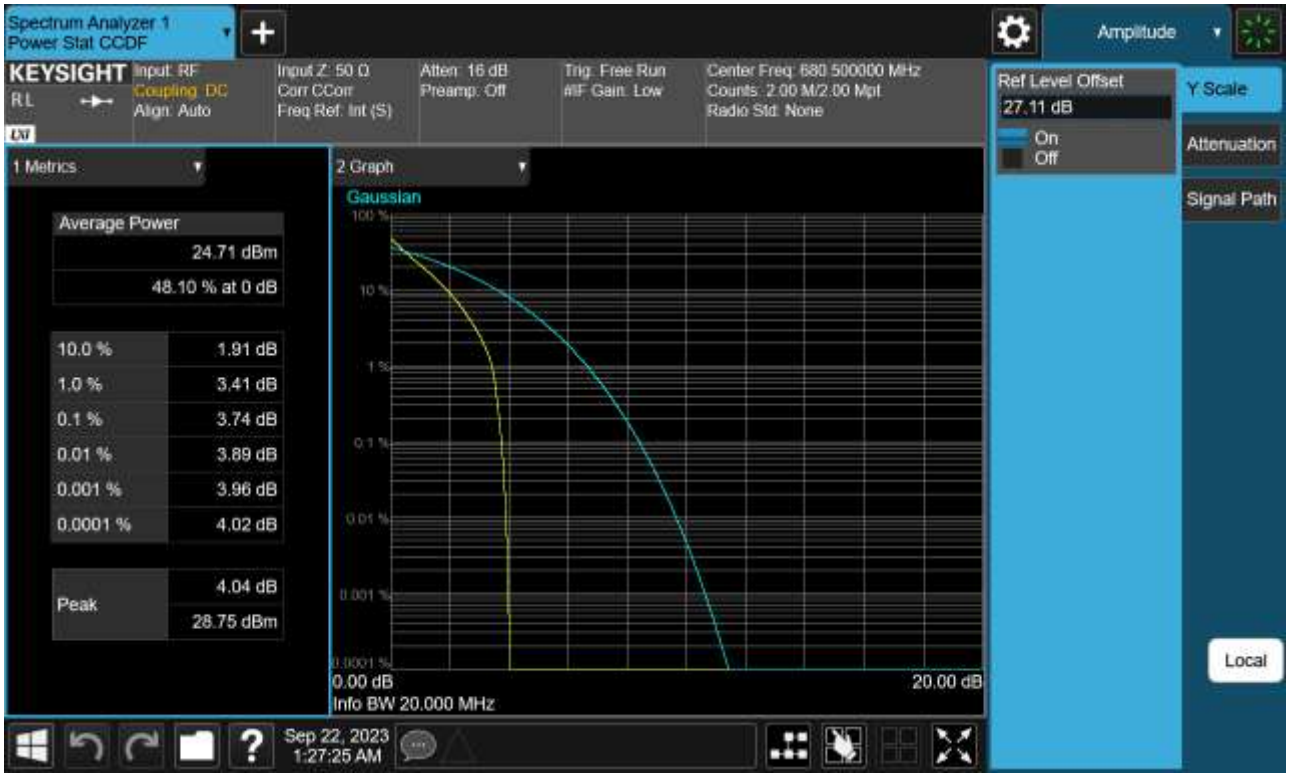
Sub6 n71. PAR Plot (15 M BW_Ch.349000_64QAM_ Full RB)



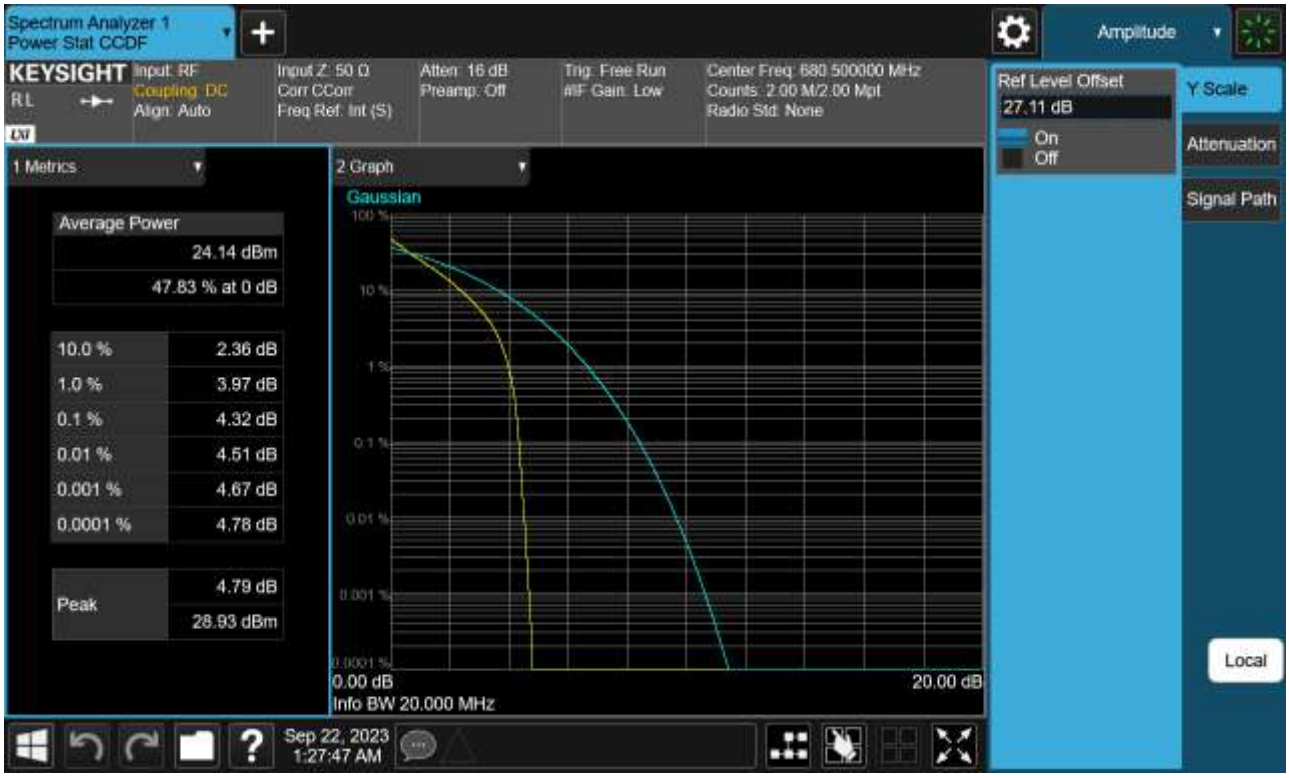
Sub6 n71. PAR Plot (15 M BW_Ch.349000_256QAM_ Full RB)



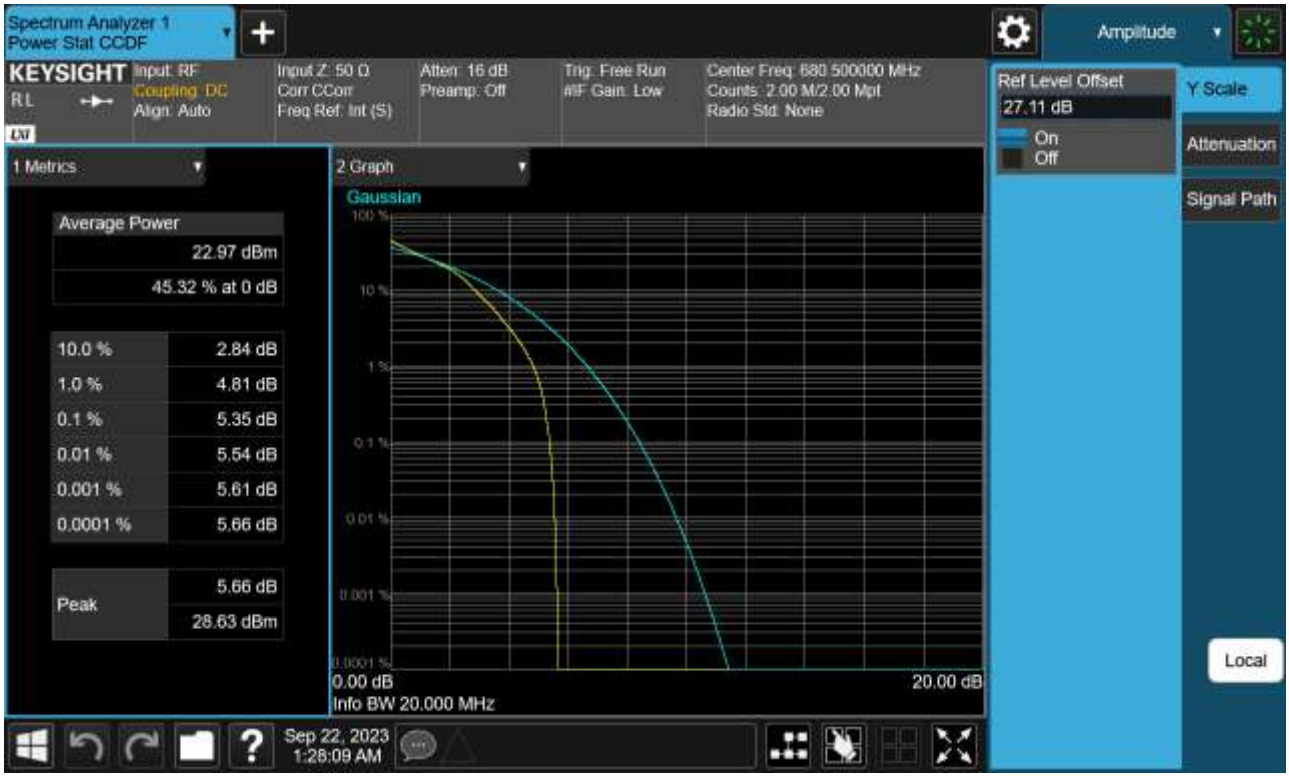
Sub6 n71. PAR Plot (20 M BW_Ch.349000_ BPSK_ Full RB)



Sub6 n71. PAR Plot (20 M BW_Ch.349000_QPSK_ Full RB)



Sub6 n71. PAR Plot (20 M BW_Ch.349000_16QAM_ Full RB)



Sub6 n71. PAR Plot (20 M BW_Ch.349000_64QAM_ Full RB)

Sub6 n71. PAR Plot (20 M BW_Ch.349000_256QAM_ Full RB)