74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA
TEL: +82-31-645-6300 FAX: +82-31-645-6401

FCC Sub6 REPORT

Certification

Applicant Name:	**Date of Issue:**
SAMSUNG Electronics Co., Ltd.	May 19, 2022
	Location:
Address:	HCT CO., LTD.,
129, Samsung-ro, Yeongtong-gu,	74, Seoicheon-ro 578beon-gil, Majang-myeon,
Suwon-si, Gyeonggi-do, 16677, Rep. of Korea	Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA
	Report No.: HCT-RF-2205-FC040-R2

FCC ID:	**A3LSMG990U2**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model(s):	SM-G990U2
Additional Model(s):	SM-G990U3/DS
EUT Type:	Mobile Phone
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§27, §2

The measurements shown in this report were made in accordance with the procedures specified in CFR47 section §2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998,21 U.S. C.853(a)

1. 3450 MHz - 3550 MHz

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n77 (20)	3460.02 – 3540.00	18M0G7D	PI/2 BPSK	0.247	23.93
		18M0G7D	QPSK	0.242	23.83
		18M0W7D	16QAM	0.200	23.00
		17M9W7D	64QAM	0.141	21.48
		17M9W7D	256QAM	0.083	19.18
Sub6 n77 (30)	3465.00 – 3534.99	26M9G7D	PI/2 BPSK	0.237	23.74
		26M9G7D	QPSK	0.235	23.71
		27M0W7D	16QAM	0.190	22.78
		27M0W7D	64QAM	0.133	21.23
		26M9W7D	256QAM	0.079	18.96
Sub6 n77 (40)	3470.01 – 3529.98	35M8G7D	PI/2 BPSK	0.240	23.81
		35M8G7D	QPSK	0.234	23.70
		36M0W7D	16QAM	0.195	22.90
		35M9W7D	64QAM	0.134	21.27
		35M9W7D	256QAM	0.079	19.00
Sub6 n77 (50)	3475.02 – 3525.00	45M9G7D	PI/2 BPSK	0.243	23.85
		45M9G7D	QPSK	0.237	23.74
		46M0W7D	16QAM	0.191	22.82
		45M9W7D	64QAM	0.138	21.40
		45M8W7D	256QAM	0.080	19.05
Sub6 n77 (60)	3480.00 – 3519.99	57M8G7D	PI/2 BPSK	0.245	23.90
		57M9G7D	QPSK	0.244	23.88
		58M0W7D	16QAM	0.195	22.91
		57M9W7D	64QAM	0.140	21.46
		57M8W7D	256QAM	0.083	19.21
Sub6 n77 (70)	3485.01 – 3514.98	64M3G7D	PI/2 BPSK	0.258	24.12
		64M6G7D	QPSK	0.252	24.02
		64M5W7D	16QAM	0.205	23.12
		64M4W7D	64QAM	0.143	21.55
		64M4W7D	256QAM	0.085	19.27
Sub6 n77 (80)	3490.02 – 3510.00	77M2G7D	PI/2 BPSK	0.264	24.22
		77M3G7D	QPSK	0.264	24.21
		77M2W7D	16QAM	0.213	23.28
		77M4W7D	64QAM	0.148	21.70
		77M2W7D	256QAM	0.087	19.42
Sub6 n77 (90)	3495.00 – 3504.99	86M7G7D	PI/2 BPSK	0.271	24.33
		86M8G7D	QPSK	0.266	24.25
		86M8W7D	16QAM	0.213	23.28
		86M8W7D	64QAM	0.152	21.81
		87M1W7D	256QAM	0.089	19.48
Sub6 n77 (100)	3500.01	97M3G7D	PI/2 BPSK	0.259	24.14
		96M5G7D	QPSK	0.258	24.12
		96M5W7D	16QAM	0.202	23.06
		96M4W7D	64QAM	0.145	21.62
		96M3W7D	256QAM	0.085	19.28

2. 3700 MHz - 3980 MHz

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n77 (20)	3710.01 – 3969.99	18M0G7D	PI/2 BPSK	0.161	22.06
		17M9G7D	QPSK	0.160	22.04
		18M0W7D	16QAM	0.128	21.06
		17M9W7D	64QAM	0.100	19.99
		17M9W7D	256QAM	0.059	17.70
Sub6 n77 (30)	3715.02 – 3964.98	26M9G7D	PI/2 BPSK	0.161	22.08
		26M9G7D	QPSK	0.158	21.98
		26M9W7D	16QAM	0.126	20.99
		26M9W7D	64QAM	0.096	19.81
		27M0W7D	256QAM	0.056	17.48
Sub6 n77 (40)	3720.00 – 3960.00	35M8G7D	PI/2 BPSK	0.180	22.56
		35M9G7D	QPSK	0.179	22.53
		35M6W7D	16QAM	0.144	21.58
		35M8W7D	64QAM	0.112	20.48
		35M8W7D	256QAM	0.066	18.19
Sub6 n77 (50)	3725.10 – 3954.99	45M8G7D	PI/2 BPSK	0.180	22.55
		45M9G7D	QPSK	0.179	22.53
		45M8W7D	16QAM	0.141	21.49
		45M9W7D	64QAM	0.108	20.32
		46M0W7D	256QAM	0.063	17.99
Sub6 n77 (60)	3730.02 – 3949.98	58M1G7D	PI/2 BPSK	0.194	22.88
		57M8G7D	QPSK	0.191	22.80
		57M8W7D	16QAM	0.153	21.85
		58M2W7D	64QAM	0.115	20.60
		58M1W7D	256QAM	0.067	18.27
Sub6 n77 (70)	3735.00 – 3945.00	64M3G7D	PI/2 BPSK	0.198	22.96
		64M4G7D	QPSK	0.197	22.94
		64M4W7D	16QAM	0.158	22.00
		64M5W7D	64QAM	0.121	20.83
		64M4W7D	256QAM	0.071	18.51
Sub6 n77 (80)	3740.01 – 3939.99	77M2G7D	PI/2 BPSK	0.201	23.03
		77M3G7D	QPSK	0.197	22.95
		77M3W7D	16QAM	0.159	22.02
		77M3W7D	64QAM	0.124	20.95
		77M1W7D	256QAM	0.072	18.58
Sub6 n77 (90)	3745.02 – 3934.98	86M7G7D	PI/2 BPSK	0.195	22.91
		87M0G7D	QPSK	0.191	22.81
		86M6W7D	16QAM	0.152	21.81
		86M6W7D	64QAM	0.121	20.81
		86M7W7D	256QAM	0.071	18.51
Sub6 n77 (100)	3750.00 – 3930.00	96M5G7D	PI/2 BPSK	0.190	22.78
		96M3G7D	QPSK	0.189	22.76
		96M2W7D	16QAM	0.151	21.79
		96M5W7D	64QAM	0.117	20.70
		96M4W7D	256QAM	0.070	18.42

REVIEWED BY

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

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

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

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

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2205-FC040	May 13, 2022	- First Approval Report
HCT-RF-2205-FC040-R1	May 17, 2022	- Added the Title for EN-DC 7A-n77A data. (Page 36,62.)
HCT-RF-2205-FC040-R2	May 19, 2022	- Revised the Section 3.9. (Page 19.)

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

Table of Contents

MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	SAMSUNG Electronics Co., Ltd.
Address:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
FCC ID:	A3LSMG990U2
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§27, §2
EUT Type:	Mobile phone
Model(s):	SM-G990U2
Additional Model(s):	SM-G990U3/DS
SCS(kHz):	30
Bandwidth(MHz):	20, 30, 40, 50, 60, 70, 80, 90, 100
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: **(3450 MHz - 3550 MHz)**	3460.02 MHz – 3540.00 MHz (Sub6 n77(20 MHz)) 3465.00 MHz – 3534.99 MHz (Sub6 n77(30 MHz)) 3470.01 MHz – 3529.98 MHz (Sub6 n77(40 MHz)) 3475.02 MHz – 3525.00 MHz (Sub6 n77(50 MHz)) 3480.00 MHz – 3519.99 MHz (Sub6 n77(60 MHz)) 3485.01 MHz – 3514.98 MHz (Sub6 n77(70 MHz)) 3490.02 MHz – 3510.00 MHz (Sub6 n77(80 MHz)) 3495.00 MHz – 3504.99 MHz (Sub6 n77(90 MHz)) 3500.01 MHz (Sub6 n77(100 MHz))
Tx Frequency: **(3700 MHz - 3980 MHz)**	3710.01 MHz – 3969.99 MHz (Sub6 n77(20 MHz)) 3715.02 MHz – 3964.98 MHz (Sub6 n77(30 MHz)) 3720.00 MHz – 3960.00 MHz (Sub6 n77(40 MHz)) 3725.10 MHz – 3954.99 MHz (Sub6 n77(50 MHz)) 3730.02 MHz – 3949.98 MHz (Sub6 n77(60 MHz)) 3735.00 MHz – 3945.00 MHz (Sub6 n77(70 MHz)) 3740.01 MHz – 3939.99 MHz (Sub6 n77(80 MHz)) 3745.02 MHz – 3934.98 MHz (Sub6 n77(90 MHz)) 3750.00 MHz – 3930.00 MHz (Sub6 n77(100 MHz))
Date(s) of Tests:	April 08, 2022 ~ May 04, 2022
Serial number:	Radiated: R3CT30Q0QVR Conducted: R3CT30Q0RQT

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

The EUT was a Mobile Phone with GSM/GPRS/EGPRS/UMTS, CDMA(BC0, 1, 10) and LTE, Sub6.

It also supports IEEE 802.11 a/b/g/n/ac/ax (20/40/80), Bluetooth, BT LE, NFC, AIT, WPT, mmWave(n260/261).

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;

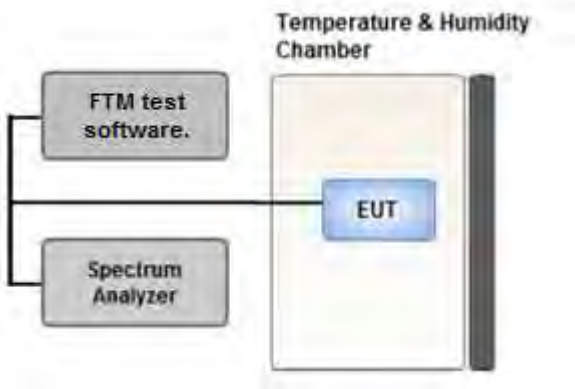
$$\text{Result}_{(dBm)} = \text{Pg}_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

   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.

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

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)

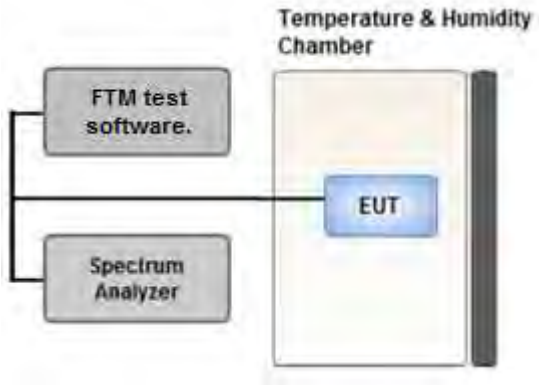
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW ≥ 3 × RBW.

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.

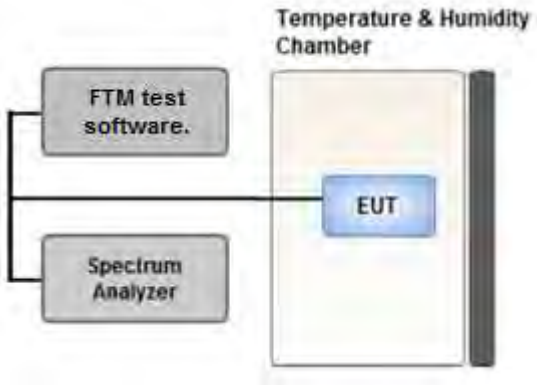
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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.

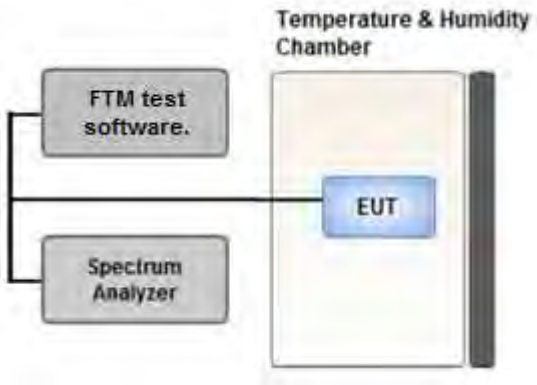
All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

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

For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

Compliance with this paragraph is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater.

However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz.

In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz.

The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

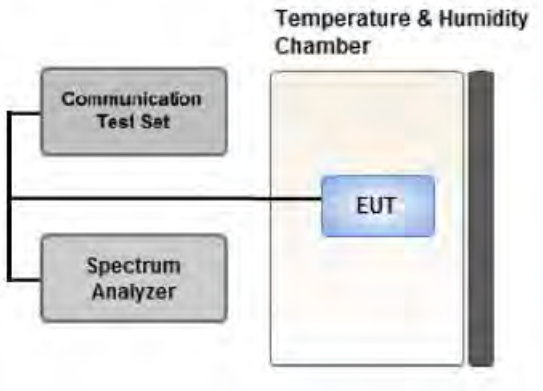
Measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater.

However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz.

In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz.

The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. .

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: Power Class 2(SA/ NSA), Power Class 3(SA/ NSA), SRS
  Worst case: Power Class 2(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).
  (Worst case: 7A - n77A(PC2) (10 MHz))
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.

-In the case of radiated spurious emissions, all bandwidth of operation were investigated and the worst case bandwidth results are reported.
(Worst case : 90 MHz(3450 MHz – 3550 MHz), 80 MHz(3700 MHz – 3980 MHz))

- SM-G990U2 & additional models were tested and the worst case results are reported.
  (Worst case : SM-G990U2)

[3450 MHz - 3550 MHz Worst case]

Test Description	Modulation	RB size	RB offset	Axis
Effective Isotropic Radiated Power	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	1	1	Z
Radiated Spurious and Harmonic Emissions	PI/2 BPSK	1	1	Z

[3700 MHz - 3980 MHz Worst case]

Test Description	Modulation	RB size	RB offset	Axis
Effective Isotropic Radiated Power	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	See Section 9.1		Z
Radiated Spurious and Harmonic Emissions	PI/2 BPSK	See Section 9.2		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: Power Class 2(SA/ NSA), Power Class 3(SA/ NSA), SRS
  Worst case: Power Class 2(SA)
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.
- SM-G990U2 & additional models were tested and the worst case results are reported.
  (Worst case : SM-G990U2)

[Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth,	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	20, 30, 40, 50, 60, 70, 80, 90, 100	Mid	Full RB	0
Peak-To-Average Ratio	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	20, 30, 40, 50, 60, 70, 80, 90, 100	Mid	Full RB	0
Band Edge	PI/2 BPSK	20	Low	1	0
			High	1	50
		30	Low	1	0
			High	1	77
		40	Low	1	0
			High	1	105
		50	Low	1	0
			High	1	132
		60	Low	1	0
			High	1	161
		70	Low	1	0
			High	1	188
		80	Low	1	0
			High	1	216
		90	Low	1	0
			High	1	244
		100	Low	1	0
			High	1	272
		20, 30, 40, 50, 60, 70, 80, 90, 100	Low, High	Full RB	0
Spurious and Harmonic Emissions at Antenna Terminal	PI/2 BPSK	20, 30, 40, 50, 60, 70, 80, 90, 100	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(1~18GHz)	BBHA 9120D	Schwarzbeck	02289	03/21/2024	Biennial
Horn Antenna(1~18GHz)	BBHA 9120D	Schwarzbeck	9120D-1299	05/04/2023	Biennial
Horn Antenna(15~40GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	10/13/2022	Biennial
Horn Antenna(15~40GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	04/12/2023	Biennial
Loop Antenna(9kHz~30 MHz)	FMZB1513	Rohde & Schwarz	1513-175	06/04/2023	Biennial
Bilog Antenna	VULB9160	Schwarzbeck	3150	03/03/2023	Biennial
Hybrid Antenna	VULB9160	Schwarzbeck	760	02/22/2023	Biennial
High Pass Filter	WHKX10-900-1000-15000-40SS	Wainwright Instruments	15	06/15/2022	Annual
High Pass Filter	WHKX10-2700-3000-18000-40SS	Wainwright Instruments	145	06/15/2022	Annual
High Pass Filter	WHNX6-4740-6000-26500-40CC	Wainwright Instruments	11	06/15/2022	Annual
LOW NOISE AMP (100 MHz ~ 18GHz)	CBLU1183540B-01	CERNEX	26822	06/15/2022	Annual
Power Amplifier	CBL18265035	CERNEX	22966	12/02/2022	Annual
Power Amplifier	CBL26405040	CERNEX	25956	03/11/2023	Annual
DC Power Supply	E3632A	Hewlett Packard	MY40004427	09/15/2022	Annual
Power Splitter(DC~26.5 GHz)	11667B	Hewlett Packard	11275	03/11/2023	Annual
Chamber	SU-642	ESPEC	93008124	03/04/2023	Annual
Signal Analyzer(10Hz~26.5GHz)	N9020A	Agilent	MY51110063	04/19/2023	Annual
ATTENUATOR(20dB)	8493C	Hewlett Packard	17280	06/01/2022	Annual
Spectrum Analyzer(10Hz~40GHz)	FSV40	REOHDE & SCHWARZ	101436	02/25/2023	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/18/2022	Annual
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262287700	05/25/2022	Annual
Wideband Radio Communication Tester	MT8000A	Anritsu Corp.	6262302511	05/26/2022	Annual
SIGNAL GENERATOR (100kHz~40GHz)	SMB100A	REOHDE & SCHWARZ	177633	07/05/2022	Annual
Signal Analyzer(5Hz~40.0GHz)	N9030B	KEYSIGHT	MY55480167	06/02/2022	Annual
4-Way Divider	ZC4PD-K1844+	Mini-Circuits	942907	09/27/2022	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)	2.00 (Confidence level about 95 %, k=2)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.40 (Confidence level about 95 %, k=2)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.74 (Confidence level about 95 %, k=2)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.51 (Confidence level about 95 %, k=2)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.92 (Confidence level about 95 %, k=2)
Radiated Disturbance (Above 40 GHz)	5.48 (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(n)(2), §27.53(l)(2)	< -13 dBm	PASS
Conducted Output Power	§2.1046	N/A	**See Note1**
Peak- to- Average Ratio	§27.50(k)(4), §27.50(j)(4)	< 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(k)(3), §27.50(j)(3)	< 1 Watts max. EIRP	PASS
Radiated Spurious and Harmonic Emissions	§2.1051, §27.53(n)(2), §27.53(l)(2)	< -13 dBm	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 (3450 MHz - 3550 MHz)

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	
								W	W	dBm
3460.02	Sub6 n77/ 20 MHz [30 kHz]	PI/2 BPSK	-22.34	15.62	11.34	3.03	H	< 1.00	0.247	23.93
		QPSK	-22.44	15.52	11.34	3.03	H		0.242	23.83
		16-QAM	-23.35	14.61	11.34	3.03	H		0.196	22.92
		64-QAM	-24.81	13.15	11.34	3.03	H		0.140	21.46
		256-QAM	-27.09	10.87	11.34	3.03	H		0.083	19.18
3500.01		PI/2 BPSK	-22.76	15.41	11.50	3.06	H		0.243	23.85
		QPSK	-22.78	15.39	11.50	3.06	H		0.242	23.83
		16-QAM	-23.61	14.56	11.50	3.06	H		0.200	23.00
		64-QAM	-25.13	13.04	11.50	3.06	H		0.141	21.48
		256-QAM	-27.51	10.66	11.50	3.06	H		0.081	19.10
3540.00		PI/2 BPSK	-22.78	15.28	11.66	3.07	H		0.244	23.87
		QPSK	-22.89	15.17	11.66	3.07	H		0.238	23.76
		16-QAM	-23.71	14.35	11.66	3.07	H		0.197	22.94
		64-QAM	-25.30	12.76	11.66	3.07	H		0.136	21.35
		256-QAM	-27.53	10.53	11.66	3.07	H		0.082	19.12

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3465.00	Sub6 n77/ 30 MHz [30 kHz]	PI/2 BPSK	-22.53	15.34	11.36	3.02	H	< 1.00	0.233	23.68
		QPSK	-22.56	15.31	11.36	3.02	H		0.232	23.65
		16-QAM	-23.50	14.37	11.36	3.02	H		0.187	22.71
		64-QAM	-25.01	12.86	11.36	3.02	H		0.132	21.20
		256-QAM	-27.33	10.54	11.36	3.02	H		0.077	18.88
3500.01		PI/2 BPSK	-22.87	15.30	11.50	3.06	H		0.237	23.74
		QPSK	-22.90	15.27	11.50	3.06	H		0.235	23.71
		16-QAM	-23.98	14.19	11.50	3.06	H		0.183	22.63
		64-QAM	-25.41	12.76	11.50	3.06	H		0.132	21.20
		256-QAM	-27.65	10.52	11.50	3.06	H		0.079	18.96
3534.99		PI/2 BPSK	-22.90	15.15	11.64	3.06	H		0.237	23.74
		QPSK	-22.99	15.06	11.64	3.06	H		0.232	23.65
		16-QAM	-23.86	14.19	11.64	3.06	H		0.190	22.78
		64-QAM	-25.41	12.64	11.64	3.06	H		0.133	21.23
		256-QAM	-27.76	10.29	11.64	3.06	H		0.077	18.88

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3470.01	Sub6 n77/ 40 MHz [30 kHz]	PI/2 BPSK	-22.46	15.31	11.38	3.00	H	< 1.00	0.234	23.69
		QPSK	-22.80	14.97	11.38	3.00	H		0.216	23.35
		16-QAM	-23.73	14.04	11.38	3.00	H		0.175	22.42
		64-QAM	-25.17	12.60	11.38	3.00	H		0.125	20.98
		256-QAM	-27.34	10.43	11.38	3.00	H		0.076	18.81
3500.01		PI/2 BPSK	-22.80	15.37	11.50	3.06	H		0.240	23.81
		QPSK	-22.91	15.26	11.50	3.06	H		0.234	23.70
		16-QAM	-23.71	14.46	11.50	3.06	H		0.195	22.90
		64-QAM	-25.34	12.83	11.50	3.06	H		0.134	21.27
		256-QAM	-27.61	10.56	11.50	3.06	H		0.079	19.00
3529.98		PI/2 BPSK	-23.00	15.05	11.62	3.04	H		0.231	23.63
		QPSK	-23.24	14.81	11.62	3.04	H		0.218	23.39
		16-QAM	-24.17	13.88	11.62	3.04	H		0.176	22.46
		64-QAM	-25.55	12.50	11.62	3.04	H		0.128	21.08
		256-QAM	-27.73	10.32	11.62	3.04	H		0.078	18.90

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3475.02	Sub6 n77/ 50 MHz [30 kHz]	PI/2 BPSK	-22.40	15.35	11.40	3.01	H	< 1.00	0.237	23.74
		QPSK	-22.56	15.19	11.40	3.01	H		0.228	23.58
		16-QAM	-23.41	14.34	11.40	3.01	H		0.187	22.73
		64-QAM	-24.94	12.81	11.40	3.01	H		0.132	21.20
		256-QAM	-27.40	10.35	11.40	3.01	H		0.075	18.74
3500.01		PI/2 BPSK	-22.76	15.41	11.50	3.06	H		0.243	23.85
		QPSK	-22.87	15.30	11.50	3.06	H		0.237	23.74
		16-QAM	-23.79	14.38	11.50	3.06	H		0.191	22.82
		64-QAM	-25.21	12.96	11.50	3.06	H		0.138	21.40
		256-QAM	-27.56	10.61	11.50	3.06	H		0.080	19.05
3525.00		PI/2 BPSK	-23.00	15.11	11.60	3.05	H		0.232	23.66
		QPSK	-23.01	15.10	11.60	3.05	H		0.232	23.65
		16-QAM	-23.91	14.20	11.60	3.05	H		0.188	22.75
		64-QAM	-25.44	12.67	11.60	3.05	H		0.132	21.22
		256-QAM	-27.79	10.32	11.60	3.05	H		0.077	18.87

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3480.00	Sub6 n77/ 60 MHz [30 kHz]	PI/2 BPSK	-22.51	15.21	11.42	3.02	H	< 1.00	0.230	23.61
		QPSK	-22.66	15.06	11.42	3.02	H		0.222	23.46
		16-QAM	-23.50	14.22	11.42	3.02	H		0.183	22.62
		64-QAM	-24.93	12.79	11.42	3.02	H		0.132	21.19
		256-QAM	-27.24	10.48	11.42	3.02	H		0.077	18.88
3500.01		PI/2 BPSK	-22.71	15.46	11.50	3.06	H		0.245	23.90
		QPSK	-22.73	15.44	11.50	3.06	H		0.244	23.88
		16-QAM	-23.70	14.47	11.50	3.06	H		0.195	22.91
		64-QAM	-25.23	12.94	11.50	3.06	H		0.137	21.38
		256-QAM	-27.46	10.71	11.50	3.06	H		0.082	19.15
3519.99		PI/2 BPSK	-22.86	15.31	11.58	3.05	H		0.242	23.84
		QPSK	-22.98	15.19	11.58	3.05	H		0.236	23.72
		16-QAM	-23.79	14.38	11.58	3.05	H		0.195	22.91
		64-QAM	-25.24	12.93	11.58	3.05	H		0.140	21.46
		256-QAM	-27.49	10.68	11.58	3.05	H		0.083	19.21

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3485.01	Sub6 n77/ 70 MHz [30 kHz]	PI/2 BPSK	-22.36	15.46	11.44	3.04	H	< 1.00	0.244	23.87
		QPSK	-22.46	15.36	11.44	3.04	H		0.238	23.77
		16-QAM	-23.41	14.41	11.44	3.04	H		0.191	22.82
		64-QAM	-24.96	12.86	11.44	3.04	H		0.134	21.27
		256-QAM	-27.26	10.56	11.44	3.04	H		0.079	18.97
3500.01		PI/2 BPSK	-22.49	15.68	11.50	3.06	H		0.258	24.12
		QPSK	-22.59	15.58	11.50	3.06	H		0.252	24.02
		16-QAM	-23.49	14.68	11.50	3.06	H		0.205	23.12
		64-QAM	-25.06	13.11	11.50	3.06	H		0.143	21.55
		256-QAM	-27.34	10.83	11.50	3.06	H		0.085	19.27
3514.98		PI/2 BPSK	-22.77	15.55	11.52	3.06	H		0.252	24.02
		QPSK	-22.91	15.41	11.52	3.06	H		0.244	23.88
		16-QAM	-23.71	14.61	11.52	3.06	H		0.203	23.08
		64-QAM	-25.24	13.08	11.52	3.06	H		0.143	21.55
		256-QAM	-27.61	10.71	11.52	3.06	H		0.083	19.18

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3490.02	Sub6 n77/ 80 MHz [30 kHz]	PI/2 BPSK	-22.36	15.56	11.46	3.05	H	< 1.00	0.249	23.97
		QPSK	-22.56	15.36	11.46	3.05	H		0.238	23.77
		16-QAM	-23.46	14.46	11.46	3.05	H		0.194	22.87
		64-QAM	-24.95	12.97	11.46	3.05	H		0.137	21.38
		256-QAM	-27.31	10.61	11.46	3.05	H		0.080	19.02
3500.01		PI/2 BPSK	-22.39	15.78	11.50	3.06	H		0.264	24.22
		QPSK	-22.56	15.61	11.50	3.06	H		0.254	24.05
		16-QAM	-23.44	14.73	11.50	3.06	H		0.207	23.17
		64-QAM	-24.94	13.23	11.50	3.06	H		0.147	21.67
		256-QAM	-27.30	10.87	11.50	3.06	H		0.085	19.31
3510.00		PI/2 BPSK	-22.65	15.74	11.54	3.06	H		0.264	24.22
		QPSK	-22.66	15.73	11.54	3.06	H		0.264	24.21
		16-QAM	-23.59	14.80	11.54	3.06	H		0.213	23.28
		64-QAM	-25.17	13.22	11.54	3.06	H		0.148	21.70
		256-QAM	-27.45	10.94	11.54	3.06	H		0.087	19.42

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3495.00	Sub6 n77/ 90 MHz [30 kHz]	PI/2 BPSK	-22.48	15.57	11.48	3.06	H	< 1.00	0.251	23.99
		QPSK	-22.49	15.56	11.48	3.06	H		0.250	23.98
		16-QAM	-23.43	14.62	11.48	3.06	H		0.201	23.04
		64-QAM	-25.01	13.04	11.48	3.06	H		0.140	21.46
		256-QAM	-27.36	10.69	11.48	3.06	H		0.081	19.11
3500.01		PI/2 BPSK	-22.47	15.70	11.50	3.06	H		0.259	24.14
		QPSK	-22.48	15.69	11.50	3.06	H		0.259	24.13
		16-QAM	-23.37	14.80	11.50	3.06	H		0.211	23.24
		64-QAM	-24.84	13.33	11.50	3.06	H		0.150	21.77
		256-QAM	-27.19	10.98	11.50	3.06	H		0.087	19.42
3504.99		PI/2 BPSK	-22.41	15.87	11.52	3.06	H		0.271	24.33
		QPSK	-22.49	15.79	11.52	3.06	H		0.266	24.25
		16-QAM	-23.46	14.82	11.52	3.06	H		0.213	23.28
		64-QAM	-24.93	13.35	11.52	3.06	H		0.152	21.81
		256-QAM	-27.26	11.02	11.52	3.06	H		0.089	19.48

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
3500.01	Sub6 n77/ 100 MHz [30 kHz]	PI/2 BPSK	-22.47	15.70	11.50	3.06	H	< 1.00	0.259	24.14
		QPSK	-22.49	15.68	11.50	3.06	H		0.258	24.12
		16-QAM	-23.55	14.62	11.50	3.06	H		0.202	23.06
		64-QAM	-24.99	13.18	11.50	3.06	H		0.145	21.62
		256-QAM	-27.33	10.84	11.50	3.06	H		0.085	19.28

8.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N77

▣ Bandwidth: 90 MHz

▣ Modulation: PI/2 BPSK

▣ Distance: 1 meters

▣ SCS: 30 kHz

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
633000 (3495.00)	6 990.00	-62.83	11.18	-54.35	4.44	V	-47.61	-13.00
	10 485.00	-49.50	11.80	-36.53	5.48	V	-30.21	-13.00
	13 980.00	-54.48	12.94	-41.87	6.44	H	-35.37	-13.00
	17 475.00	-64.02	16.15	-42.96	7.35	V	-34.16	-13.00
633334 (3500.01)	7 000.02	-58.92	11.20	-50.30	4.38	V	-43.48	-13.00
	10 500.03	-48.43	11.80	-35.01	5.49	V	-28.70	-13.00
	14 000.04	-54.08	12.90	-41.64	6.48	V	-35.22	-13.00
	17 500.05	-64.79	16.10	-43.75	7.30	V	-34.95	-13.00
636666 (3504.99)	7 009.98	-58.49	11.20	-50.26	4.33	V	-43.39	-13.00
	10 514.97	-49.23	11.77	-36.34	5.45	V	-30.02	-13.00
	14 019.96	-53.11	12.86	-40.53	6.49	H	-34.16	-13.00
	17 524.95	-65.84	16.00	-43.36	7.37	V	-34.73	-13.00

▣ ENDC-Mode : 7A(10 MHz)-n77A(90 MHz) , PC2

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
21400 (2565.0)	5070.00	-59.24	11.08	-58.85	3.73	V	-51.50	-25.00
	7605.00	-62.15	11.60	-53.16	4.55	V	-46.11	-25.00
	10140.00	-61.17	11.60	-49.54	5.32	V	-43.26	-25.00

8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n77	20 MHz	3500.01	BPSK	Full RB	0	4.23
			QPSK			4.95
			16-QAM			5.81
			64-QAM			6.21
			256-QAM			6.50
	30 MHz		BPSK			3.65
			QPSK			4.79
			16-QAM			5.63
			64-QAM			5.92
			256-QAM			6.41
	40 MHz		BPSK			3.78
			QPSK			4.76
			16-QAM			5.66
			64-QAM			5.98
			256-QAM			6.32
	50 MHz		BPSK			4.04
			QPSK			4.75
			16-QAM			5.53
			64-QAM			5.92
			256-QAM			6.35
	60 MHz		BPSK			3.83
			QPSK			4.90
			16-QAM			5.69
			64-QAM			6.02
			256-QAM			6.42
	70 MHz		BPSK			3.96
			QPSK			4.91
			16-QAM			5.66
			64-QAM			5.99
			256-QAM			6.36

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
	80 MHz		BPSK			3.89
			QPSK			4.76
			16-QAM			5.61
			64-QAM			5.96
			256-QAM			6.37
	90 MHz		BPSK			3.92
			QPSK			4.85
			16-QAM			5.71
			64-QAM			6.01
			256-QAM			6.34
	100 MHz		BPSK			3.81
			QPSK			4.87
			16-QAM			5.75
			64-QAM			6.00
			256-QAM			6.47

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 125 ~ 169.

8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n77	20 MHz	3500.01	BPSK	Full RB	0	17.974
			QPSK			17.948
			16-QAM			17.953
			64-QAM			17.882
			256-QAM			17.858
	30 MHz		BPSK			26.935
			QPSK			26.893
			16-QAM			26.969
			64-QAM			26.970
			256-QAM			26.943
	40 MHz		BPSK			35.761
			QPSK			35.787
			16-QAM			36.009
			64-QAM			35.893
			256-QAM			35.930
	50 MHz		BPSK			45.909
			QPSK			45.867
			16-QAM			45.954
			64-QAM			45.849
			256-QAM			45.836
	60 MHz		BPSK			57.768
			QPSK			57.864
			16-QAM			57.950
			64-QAM			57.899
			256-QAM			57.778
	70 MHz		BPSK			64.298
			QPSK			64.594
			16-QAM			64.519
			64-QAM			64.380
			256-QAM			64.418

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
	80 MHz		BPSK			77.170
			QPSK			77.256
			16-QAM			77.198
			64-QAM			77.377
			256-QAM			77.242
	90 MHz		BPSK			86.698
			QPSK			86.831
			16-QAM			86.783
			64-QAM			86.760
			256-QAM			87.131
	100 MHz		BPSK			97.297
			QPSK			96.448
			16-QAM			96.476
			64-QAM			96.392
			256-QAM			96.292

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 80 ~ 124.

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 n77	20	3460.02	9.1251	37.805	-70.320	-32.515	-13.00
		3500.01	4.5983	37.190	-70.294	-33.104	
		3540.00	7.9990	37.805	-70.182	-32.377	
	30	3465.00	5.2029	37.805	-69.667	-31.862	
		3500.01	4.9607	37.190	-70.613	-33.423	
		3534.99	8.8500	37.805	-70.151	-32.346	
	40	3470.01	9.1316	37.805	-70.568	-32.763	
		3500.01	8.5424	37.805	-70.832	-33.027	
		3529.98	8.2567	37.805	-70.888	-33.083	
	50	3475.02	9.9487	37.805	-70.309	-32.504	
		3500.01	9.1157	37.805	-70.221	-32.416	
		3525.00	6.0474	37.805	-70.910	-33.105	
	60	3480.00	9.9741	37.805	-70.332	-32.527	
		3500.01	9.9641	37.805	-70.272	-32.467	
		3519.99	8.6012	37.805	-70.772	-32.967	
	70	3485.01	9.1630	37.805	-70.754	-32.949	
		3500.01	7.7647	37.805	-70.547	-32.742	
		3514.98	8.8240	37.805	-70.726	-32.921	
	80	3490.02	9.9826	37.805	-70.662	-32.857	
		3500.01	9.1899	37.805	-70.641	-32.836	
		3510.00	9.1271	37.805	-69.986	-32.181	
	90	3495.00	9.7004	37.805	-70.203	-32.398	
		3500.01	8.9143	37.805	-70.529	-32.724	
		3504.99	6.0399	37.805	-70.025	-32.220	
	100	3500.01	9.1630	37.805	-70.045	-32.240	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 278 ~ 327.
2. Duty Cycle factor already applied on the factor.
   - Duty Cycle Factor(dB) = 6.990

   - Factor(dB) = Duty Cycle factor + Cable Loss + Ext. Attenuator + Splitter
   - Result(dBm) = Reading + Factor

3. Factor(dB)

Frequency Range (GHz)	Factor [dB]
0.03 – 1	34.484
1 – 5	37.190
5 – 10	37.805
10 – 15	38.330
15 – 20	38.703
Above 20	39.345

8.6 BAND EDGE

1. Plots of the EUT's Band Edge are shown Page 170 ~ 277.
2. Duty Cycle factor already applied on the factor.
   - Factor(dB) = Duty Cycle factor + Cable Loss + Ext. Attenuator + Power Divider
   - Result(dBm) = Reading + Factor
   - Duty Cycle Factor(dB) = 6.990

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ BandWidth: 20 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3460.020	100 %	+20(Ref)	3460 020 007	0.0	0.000 000	0.000
	100 %	-30	3460 020 015	8.3	0.000 000	0.002
	100 %	-20	3460 020 014	6.8	0.000 000	0.002
	100 %	-10	3460 020 020	13.0	0.000 000	0.004
	100 %	0	3460 020 015	7.7	0.000 000	0.002
	100 %	+10	3460 020 011	4.1	0.000 000	0.001
	100 %	+30	3460 020 011	4.4	0.000 000	0.001
	100 %	+40	3460 020 018	10.9	0.000 000	0.003
	100 %	+50	3460 020 014	7.0	0.000 000	0.002
	Batt. Endpoint	+20	3460 020 011	4.4	0.000 000	0.001
3540.000	100 %	+20(Ref)	3540 000 007	0.0	0.000 000	0.000
	100 %	-30	3540 000 021	14.6	0.000 000	0.004
	100 %	-20	3540 000 019	12.1	0.000 000	0.003
	100 %	-10	3540 000 010	3.1	0.000 000	0.001
	100 %	0	3540 000 011	4.5	0.000 000	0.001
	100 %	+10	3540 000 011	3.7	0.000 000	0.001
	100 %	+30	3540 000 022	14.7	0.000 000	0.004
	100 %	+40	3540 000 024	17.0	0.000 000	0.005
	100 %	+50	3540 000 013	6.5	0.000 000	0.002
	Batt. Endpoint	+20	3540 000 023	15.9	0.000 000	0.004

▣ BandWidth: 30 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3465.000	100 %	+20(Ref)	3465 000 006	0.0	0.000 000	0.000
	100 %	-30	3465 000 022	15.8	0.000 000	0.005
	100 %	-20	3465 000 018	11.8	0.000 000	0.003
	100 %	-10	3465 000 022	15.7	0.000 000	0.005
	100 %	0	3465 000 013	7.2	0.000 000	0.002
	100 %	+10	3465 000 016	9.2	0.000 000	0.003
	100 %	+30	3465 000 018	11.9	0.000 000	0.003
	100 %	+40	3465 000 009	3.1	0.000 000	0.001
	100 %	+50	3465 000 010	4.0	0.000 000	0.001
	Batt. Endpoint	+20	3465 000 021	14.3	0.000 000	0.004
3534.990	100 %	+20(Ref)	3534 990 016	0.0	0.000 000	0.000
	100 %	-30	3534 990 028	12.0	0.000 000	0.003
	100 %	-20	3534 990 025	8.4	0.000 000	0.002
	100 %	-10	3534 990 028	11.7	0.000 000	0.003
	100 %	0	3534 990 030	14.1	0.000 000	0.004
	100 %	+10	3534 990 022	5.5	0.000 000	0.002
	100 %	+30	3534 990 023	6.4	0.000 000	0.002
	100 %	+40	3534 990 022	5.5	0.000 000	0.002
	100 %	+50	3534 990 021	5.1	0.000 000	0.001
	Batt. Endpoint	+20	3534 990 033	16.9	0.000 000	0.005

▣ BandWidth: 40 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3470.010	100 %	+20(Ref)	3470 010 009	0.0	0.000 000	0.000
	100 %	-30	3470 010 023	13.7	0.000 000	0.004
	100 %	-20	3470 010 018	8.4	0.000 000	0.002
	100 %	-10	3470 010 020	10.9	0.000 000	0.003
	100 %	0	3470 010 015	5.6	0.000 000	0.002
	100 %	+10	3470 010 018	8.9	0.000 000	0.003
	100 %	+30	3470 010 013	3.9	0.000 000	0.001
	100 %	+40	3470 010 021	11.4	0.000 000	0.003
	100 %	+50	3470 010 020	10.9	0.000 000	0.003
	Batt. Endpoint	+20	3470 010 022	12.7	0.000 000	0.004
3529.980	100 %	+20(Ref)	3529 980 011	0.0	0.000 000	0.000
	100 %	-30	3529 980 022	11.5	0.000 000	0.003
	100 %	-20	3529 980 024	13.0	0.000 000	0.004
	100 %	-10	3529 980 023	11.9	0.000 000	0.003
	100 %	0	3529 980 025	14.4	0.000 000	0.004
	100 %	+10	3529 980 027	16.2	0.000 000	0.005
	100 %	+30	3529 980 022	11.3	0.000 000	0.003
	100 %	+40	3529 980 026	14.8	0.000 000	0.004
	100 %	+50	3529 980 016	4.9	0.000 000	0.001
	Batt. Endpoint	+20	3529 980 024	13.5	0.000 000	0.004

▣ BandWidth: 50 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3475.020	100 %	+20(Ref)	3475 020 003	0.0	0.000 000	0.000
	100 %	-30	3475 020 016	13.0	0.000 000	0.004
	100 %	-20	3475 020 012	8.7	0.000 000	0.003
	100 %	-10	3475 020 017	13.8	0.000 000	0.004
	100 %	0	3475 020 006	3.4	0.000 000	0.001
	100 %	+10	3475 020 014	10.8	0.000 000	0.003
	100 %	+30	3475 020 013	9.8	0.000 000	0.003
	100 %	+40	3475 020 013	10.4	0.000 000	0.003
	100 %	+50	3475 020 011	8.4	0.000 000	0.002
	Batt. Endpoint	+20	3475 020 019	16.1	0.000 000	0.005
3525.000	100 %	+20(Ref)	3525 000 005	0.0	0.000 000	0.000
	100 %	-30	3525 000 019	14.3	0.000 000	0.004
	100 %	-20	3525 000 019	14.1	0.000 000	0.004
	100 %	-10	3525 000 019	14.5	0.000 000	0.004
	100 %	0	3525 000 014	9.4	0.000 000	0.003
	100 %	+10	3525 000 021	16.4	0.000 000	0.005
	100 %	+30	3525 000 009	4.0	0.000 000	0.001
	100 %	+40	3525 000 020	14.7	0.000 000	0.004
	100 %	+50	3525 000 021	15.8	0.000 000	0.004
	Batt. Endpoint	+20	3525 000 020	15.4	0.000 000	0.004

▣ BandWidth: 60 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3480.000	100 %	+20(Ref)	3480 000 003	0.0	0.000 000	0.000
	100 %	-30	3480 000 018	15.1	0.000 000	0.004
	100 %	-20	3480 000 012	8.7	0.000 000	0.003
	100 %	-10	3480 000 007	3.5	0.000 000	0.001
	100 %	0	3480 000 013	9.9	0.000 000	0.003
	100 %	+10	3480 000 011	7.5	0.000 000	0.002
	100 %	+30	3480 000 009	5.5	0.000 000	0.002
	100 %	+40	3480 000 010	6.5	0.000 000	0.002
	100 %	+50	3480 000 013	9.8	0.000 000	0.003
	Batt. Endpoint	+20	3480 000 016	12.3	0.000 000	0.004
3519.990	100 %	+20(Ref)	3519 990 007	0.0	0.000 000	0.000
	100 %	-30	3519 990 022	14.8	0.000 000	0.004
	100 %	-20	3519 990 013	6.0	0.000 000	0.002
	100 %	-10	3519 990 019	11.6	0.000 000	0.003
	100 %	0	3519 990 013	5.4	0.000 000	0.002
	100 %	+10	3519 990 022	14.1	0.000 000	0.004
	100 %	+30	3519 990 024	16.6	0.000 000	0.005
	100 %	+40	3519 990 024	16.4	0.000 000	0.005
	100 %	+50	3519 990 023	15.7	0.000 000	0.004
	Batt. Endpoint	+20	3519 990 017	9.3	0.000 000	0.003

▣ BandWidth: 70 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3485.010	100 %	+20(Ref)	3485 010 014	0.0	0.000 000	0.000
	100 %	-30	3485 010 029	14.7	0.000 000	0.004
	100 %	-20	3485 010 027	12.2	0.000 000	0.003
	100 %	-10	3485 010 022	7.7	0.000 000	0.002
	100 %	0	3485 010 029	15.0	0.000 000	0.004
	100 %	+10	3485 010 021	6.6	0.000 000	0.002
	100 %	+30	3485 010 028	13.4	0.000 000	0.004
	100 %	+40	3485 010 030	15.6	0.000 000	0.004
	100 %	+50	3485 010 031	16.6	0.000 000	0.005
	Batt. Endpoint	+20	3485 010 024	9.4	0.000 000	0.003
3514.980	100 %	+20(Ref)	3514 980 011	0.0	0.000 000	0.000
	100 %	-30	3514 980 019	8.0	0.000 000	0.002
	100 %	-20	3514 980 016	5.4	0.000 000	0.002
	100 %	-10	3514 980 027	16.8	0.000 000	0.005
	100 %	0	3514 980 014	3.2	0.000 000	0.001
	100 %	+10	3514 980 017	6.8	0.000 000	0.002
	100 %	+30	3514 980 023	12.2	0.000 000	0.003
	100 %	+40	3514 980 014	3.7	0.000 000	0.001
	100 %	+50	3514 980 023	12.9	0.000 000	0.004
	Batt. Endpoint	+20	3514 980 016	6.0	0.000 000	0.002

▣ BandWidth: 80 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3490.020	100 %	+20(Ref)	3490 020 014	0.0	0.000 000	0.000
	100 %	-30	3490 020 031	17.0	0.000 000	0.005
	100 %	-20	3490 020 017	3.2	0.000 000	0.001
	100 %	-10	3490 020 019	4.9	0.000 000	0.001
	100 %	0	3490 020 026	12.5	0.000 000	0.004
	100 %	+10	3490 020 024	10.2	0.000 000	0.003
	100 %	+30	3490 020 024	10.5	0.000 000	0.003
	100 %	+40	3490 020 027	13.3	0.000 000	0.004
	100 %	+50	3490 020 021	7.7	0.000 000	0.002
	Batt. Endpoint	+20	3490 020 023	8.9	0.000 000	0.003
3510.000	100 %	+20(Ref)	3510 000 011	0.0	0.000 000	0.000
	100 %	-30	3510 000 020	9.1	0.000 000	0.003
	100 %	-20	3510 000 016	5.6	0.000 000	0.002
	100 %	-10	3510 000 022	11.3	0.000 000	0.003
	100 %	0	3510 000 016	5.0	0.000 000	0.001
	100 %	+10	3510 000 018	7.4	0.000 000	0.002
	100 %	+30	3510 000 019	8.3	0.000 000	0.002
	100 %	+40	3510 000 027	16.0	0.000 000	0.005
	100 %	+50	3510 000 016	5.7	0.000 000	0.002
	Batt. Endpoint	+20	3510 000 023	12.0	0.000 000	0.003

▣ BandWidth: 90 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3495.000	100 %	+20(Ref)	3495 000 003	0.0	0.000 000	0.000
	100 %	-30	3495 000 018	14.9	0.000 000	0.004
	100 %	-20	3495 000 016	12.3	0.000 000	0.004
	100 %	-10	3495 000 010	6.5	0.000 000	0.002
	100 %	0	3495 000 020	16.4	0.000 000	0.005
	100 %	+10	3495 000 011	7.9	0.000 000	0.002
	100 %	+30	3495 000 013	9.3	0.000 000	0.003
	100 %	+40	3495 000 012	8.8	0.000 000	0.003
	100 %	+50	3495 000 019	16.1	0.000 000	0.005
	Batt. Endpoint	+20	3495 000 019	16.2	0.000 000	0.005
3504.990	100 %	+20(Ref)	3504 990 007	0.0	0.000 000	0.000
	100 %	-30	3504 990 018	11.0	0.000 000	0.003
	100 %	-20	3504 990 015	8.2	0.000 000	0.002
	100 %	-10	3504 990 019	12.1	0.000 000	0.003
	100 %	0	3504 990 020	13.0	0.000 000	0.004
	100 %	+10	3504 990 017	9.9	0.000 000	0.003
	100 %	+30	3504 990 020	13.3	0.000 000	0.004
	100 %	+40	3504 990 014	7.5	0.000 000	0.002
	100 %	+50	3504 990 011	4.8	0.000 000	0.001
	Batt. Endpoint	+20	3504 990 012	5.3	0.000 000	0.002

▣ BandWidth: 100 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3500.010	100 %	+20(Ref)	3500 010 013	0.0	0.000 000	0.000
	100 %	-30	3500 010 021	7.8	0.000 000	0.002
	100 %	-20	3500 010 019	6.0	0.000 000	0.002
	100 %	-10	3500 010 017	4.4	0.000 000	0.001
	100 %	0	3500 010 019	6.0	0.000 000	0.002
	100 %	+10	3500 010 020	6.9	0.000 000	0.002
	100 %	+30	3500 010 020	6.5	0.000 000	0.002
	100 %	+40	3500 010 020	7.3	0.000 000	0.002
	100 %	+50	3500 010 020	6.8	0.000 000	0.002
	Batt. Endpoint	+20	3500 010 019	5.7	0.000 000	0.002

9. TEST DATA (3700 MHz - 3980 MHz)

9.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3710.01	Sub6 n77/ 20 MHz [30 kHz]	PI/2 BPSK	-24.78	13.51	11.70	3.15	H	< 1.00	0.161	22.06	1	25
		QPSK	-24.80	13.49	11.70	3.15	H		0.160	22.04		
		16-QAM	-25.78	12.51	11.70	3.15	H		0.128	21.06		
		64-QAM	-26.85	11.44	11.70	3.15	H		0.100	19.99		
		256-QAM	-29.14	9.15	11.70	3.15	H		0.059	17.70		
3840.00		PI/2 BPSK	-26.81	13.11	11.24	3.21	H		0.130	21.14	1	1
		QPSK	-26.93	12.99	11.24	3.21	H		0.126	21.02		
		16-QAM	-27.86	12.06	11.24	3.21	H		0.102	20.09		
		64-QAM	-29.33	10.59	11.24	3.21	H		0.073	18.62		
		256-QAM	-31.56	8.36	11.24	3.21	H		0.044	16.39		
3969.99		PI/2 BPSK	-26.45	13.20	11.18	3.23	H		0.130	21.15	1	1
		QPSK	-26.46	13.19	11.18	3.23	H		0.130	21.14		
		16-QAM	-27.45	12.20	11.18	3.23	H		0.104	20.15		
		64-QAM	-28.84	10.81	11.18	3.23	H		0.075	18.76		
		256-QAM	-30.98	8.67	11.18	3.23	H		0.046	16.62		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3715.02	Sub6 n77/ 30 MHz [30 kHz]	PI/2 BPSK	-24.86	13.56	11.70	3.18	H	< 1.00	0.161	22.08	1	39
		QPSK	-24.96	13.46	11.70	3.18	H		0.158	21.98		
		16-QAM	-25.95	12.47	11.70	3.18	H		0.126	20.99		
		64-QAM	-27.13	11.29	11.70	3.18	H		0.096	19.81		
		256-QAM	-29.46	8.96	11.70	3.18	H		0.056	17.48		
3840.00		PI/2 BPSK	-26.83	13.09	11.24	3.21	H		0.129	21.12	1	1
		QPSK	-26.85	13.07	11.24	3.21	H		0.129	21.10		
		16-QAM	-27.94	11.98	11.24	3.21	H		0.100	20.01		
		64-QAM	-29.30	10.62	11.24	3.21	H		0.073	18.65		
		256-QAM	-31.51	8.41	11.24	3.21	H		0.044	16.44		
3964.98		PI/2 BPSK	-26.00	13.67	11.16	3.23	H		0.145	21.60	1	1
		QPSK	-26.01	13.66	11.16	3.23	H		0.144	21.59		
		16-QAM	-27.03	12.64	11.16	3.23	H		0.114	20.57		
		64-QAM	-28.54	11.13	11.16	3.23	H		0.081	19.06		
		256-QAM	-30.68	8.99	11.16	3.23	H		0.049	16.92		

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
3720.00	Sub6 n77/ 40 MHz [30 kHz]	PI/2 BPSK	-24.48	14.06	11.70	3.20	H	< 1.00	0.180	22.56	1	53
		QPSK	-24.51	14.03	11.70	3.20	H		0.179	22.53		
		16-QAM	-25.46	13.08	11.70	3.20	H		0.144	21.58		
		64-QAM	-26.56	11.98	11.70	3.20	H		0.112	20.48		
		256-QAM	-28.85	9.69	11.70	3.20	H		0.066	18.19		
3840.00		PI/2 BPSK	-26.41	13.51	11.24	3.21	H		0.143	21.54	1	1
		QPSK	-26.43	13.49	11.24	3.21	H		0.142	21.52		
		16-QAM	-27.43	12.49	11.24	3.21	H		0.113	20.52		
		64-QAM	-28.78	11.14	11.24	3.21	H		0.083	19.17		
		256-QAM	-31.17	8.75	11.24	3.21	H		0.048	16.78		
3960.00		PI/2 BPSK	-25.86	13.83	11.14	3.23	H		0.149	21.74	1	1
		QPSK	-25.91	13.78	11.14	3.23	H		0.148	21.69		
		16-QAM	-26.76	12.93	11.14	3.23	H		0.121	20.84		
		64-QAM	-28.09	11.60	11.14	3.23	H		0.089	19.51		
		256-QAM	-30.29	9.40	11.14	3.23	H		0.054	17.31		

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
3725.10	Sub6 n77/ 50 MHz [30 kHz]	PI/2 BPSK	-24.55	14.07	11.70	3.22	H	< 1.00	0.180	22.55	1	66
		QPSK	-24.57	14.05	11.70	3.22	H		0.179	22.53		
		16-QAM	-25.61	13.01	11.70	3.22	H		0.141	21.49		
		64-QAM	-26.78	11.84	11.70	3.22	H		0.108	20.32		
		256-QAM	-29.11	9.51	11.70	3.22	H		0.063	17.99		
3840.00		PI/2 BPSK	-26.57	13.35	11.24	3.21	H		0.137	21.38	1	1
		QPSK	-26.59	13.33	11.24	3.21	H		0.137	21.36		
		16-QAM	-27.50	12.42	11.24	3.21	H		0.111	20.45		
		64-QAM	-28.80	11.12	11.24	3.21	H		0.082	19.15		
		256-QAM	-31.06	8.86	11.24	3.21	H		0.049	16.89		
3954.99		PI/2 BPSK	-25.71	14.00	11.12	3.23	H		0.155	21.89	1	1
		QPSK	-25.74	13.97	11.12	3.23	H		0.153	21.86		
		16-QAM	-26.81	12.90	11.12	3.23	H		0.120	20.79		
		64-QAM	-28.29	11.42	11.12	3.23	H		0.085	19.31		
		256-QAM	-30.53	9.18	11.12	3.23	H		0.051	17.07		

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
3730.02	Sub6 n77/ 60 MHz [30 kHz]	PI/2 BPSK	-24.28	14.42	11.70	3.24	H	< 1.00	0.194	22.88	1	82
		QPSK	-24.36	14.34	11.70	3.24	H		0.191	22.80		
		16-QAM	-25.31	13.39	11.70	3.24	H		0.153	21.85		
		64-QAM	-26.56	12.14	11.70	3.24	H		0.115	20.60		
		256-QAM	-28.89	9.81	11.70	3.24	H		0.067	18.27		
3840.00		PI/2 BPSK	-26.16	13.76	11.24	3.21	H		0.151	21.79	1	1
		QPSK	-26.27	13.65	11.24	3.21	H		0.147	21.68		
		16-QAM	-27.19	12.73	11.24	3.21	H		0.119	20.76		
		64-QAM	-28.51	11.41	11.24	3.21	H		0.088	19.44		
		256-QAM	-30.80	9.12	11.24	3.21	H		0.052	17.15		
3949.98		PI/2 BPSK	-25.63	14.10	11.10	3.23	H		0.157	21.97	1	82
		QPSK	-26.31	13.42	11.10	3.23	H		0.135	21.29		
		16-QAM	-27.31	12.42	11.10	3.23	H		0.107	20.29		
		64-QAM	-28.49	11.24	11.10	3.23	H		0.081	19.11		
		256-QAM	-30.23	9.50	11.10	3.23	H		0.055	17.37		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
3735.00	Sub6 n77/ 70 MHz [30 kHz]	PI/2 BPSK	-24.26	14.50	11.70	3.24	H	< 1.00	0.198	22.96	1	94
		QPSK	-24.28	14.48	11.70	3.24	H		0.197	22.94		
		16-QAM	-25.22	13.54	11.70	3.24	H		0.158	22.00		
		64-QAM	-26.39	12.37	11.70	3.24	H		0.121	20.83		
		256-QAM	-28.71	10.05	11.70	3.24	H		0.071	18.51		
3840.00		PI/2 BPSK	-25.96	13.96	11.24	3.21	H		0.158	21.99	1	1
		QPSK	-26.01	13.91	11.24	3.21	H		0.156	21.94		
		16-QAM	-26.96	12.96	11.24	3.21	H		0.126	20.99		
		64-QAM	-28.34	11.58	11.24	3.21	H		0.091	19.61		
		256-QAM	-30.65	9.27	11.24	3.21	H		0.054	17.30		
3945.00		PI/2 BPSK	-25.78	13.96	11.09	3.23	H		0.152	21.82	1	94
		QPSK	-26.11	13.63	11.09	3.23	H		0.141	21.49		
		16-QAM	-26.99	12.75	11.09	3.23	H		0.115	20.61		
		64-QAM	-28.31	11.43	11.09	3.23	H		0.085	19.29		
		256-QAM	-30.16	9.58	11.09	3.23	H		0.055	17.44		

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
3740.01	Sub6 n77/ 80 MHz [30 kHz]	PI/2 BPSK	-24.26	14.56	11.70	3.23	H	< 1.00	0.201	23.03	1	108
		QPSK	-24.34	14.48	11.70	3.23	H		0.197	22.95		
		16-QAM	-25.27	13.55	11.70	3.23	H		0.159	22.02		
		64-QAM	-26.34	12.48	11.70	3.23	H		0.124	20.95		
		256-QAM	-28.71	10.11	11.70	3.23	H		0.072	18.58		
3840.00		PI/2 BPSK	-25.66	14.26	11.24	3.21	H		0.169	22.29	1	1
		QPSK	-25.76	14.16	11.24	3.21	H		0.166	22.19		
		16-QAM	-26.68	13.24	11.24	3.21	H		0.134	21.27		
		64-QAM	-28.06	11.86	11.24	3.21	H		0.097	19.89		
		256-QAM	-30.45	9.47	11.24	3.21	H		0.056	17.50		
3939.99		PI/2 BPSK	-25.58	14.17	11.08	3.23	H		0.159	22.02	1	108
		QPSK	-25.86	13.89	11.08	3.23	H		0.149	21.74		
		16-QAM	-26.78	12.97	11.08	3.23	H		0.121	20.82		
		64-QAM	-28.06	11.69	11.08	3.23	H		0.090	19.54		
		256-QAM	-30.26	9.49	11.08	3.23	H		0.054	17.34		

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
3745.02	Sub6 n77/ 90 MHz [30 kHz]	PI/2 BPSK	-24.41	14.43	11.70	3.22	H	< 1.00	0.195	22.91	1	122
		QPSK	-24.51	14.33	11.70	3.22	H		0.191	22.81		
		16-QAM	-25.51	13.33	11.70	3.22	H		0.152	21.81		
		64-QAM	-26.51	12.33	11.70	3.22	H		0.121	20.81		
		256-QAM	-28.81	10.03	11.70	3.22	H		0.071	18.51		
3840.00		PI/2 BPSK	-25.61	14.31	11.24	3.21	H		0.171	22.34	1	1
		QPSK	-25.66	14.26	11.24	3.21	H		0.169	22.29		
		16-QAM	-26.51	13.41	11.24	3.21	H		0.139	21.44		
		64-QAM	-27.96	11.96	11.24	3.21	H		0.100	19.99		
		256-QAM	-30.26	9.66	11.24	3.21	H		0.059	17.69		
3934.98		PI/2 BPSK	-25.66	14.10	11.07	3.23	H		0.156	21.94	1	122
		QPSK	-25.87	13.89	11.07	3.23	H		0.149	21.73		
		16-QAM	-26.71	13.05	11.07	3.23	H		0.123	20.89		
		64-QAM	-28.12	11.64	11.07	3.23	H		0.089	19.48		
		256-QAM	-30.41	9.35	11.07	3.23	H		0.052	17.19		

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
3750.00	Sub6 n77/ 100 MHz [30 kHz]	PI/2 BPSK	-24.58	14.28	11.70	3.20	H	< 1.00	0.190	22.78	1	136
		QPSK	-24.60	14.26	11.70	3.20	H		0.189	22.76		
		16-QAM	-25.57	13.29	11.70	3.20	H		0.151	21.79		
		64-QAM	-26.66	12.20	11.70	3.20	H		0.117	20.70		
		256-QAM	-28.94	9.92	11.70	3.20	H		0.070	18.42		
3840.00		PI/2 BPSK	-25.41	14.51	11.24	3.21	H		0.179	22.54	1	1
		QPSK	-25.43	14.49	11.24	3.21	H		0.179	22.52		
		16-QAM	-26.43	13.49	11.24	3.21	H		0.142	21.52		
		64-QAM	-27.77	12.15	11.24	3.21	H		0.104	20.18		
		256-QAM	-30.14	9.78	11.24	3.21	H		0.060	17.81		
3930.00		PI/2 BPSK	-26.13	13.46	11.24	3.23	H		0.140	21.47	1	136
		QPSK	-26.31	13.28	11.24	3.23	H		0.135	21.29		
		16-QAM	-27.14	12.45	11.24	3.23	H		0.111	20.46		
		64-QAM	-28.49	11.10	11.24	3.23	H		0.081	19.11		
		256-QAM	-30.67	8.92	11.24	3.23	H		0.049	16.93		

9.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N77(PC2)

▣ Bandwidth: 80 MHz

▣ Modulation: PI/2 BPSK

▣ Distance: 1 meters

▣ SCS: 30 kHz

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Offset
649334 (3740.01)	7 480.02	-64.01	11.46	-55.28	4.57	V	-48.39	-13.00	1	108
	11 220.03	-46.10	12.26	-33.03	5.63	V	-26.40	-13.00		
	14 960.04	-57.76	14.24	-49.46	6.70	V	-41.92	-13.00		
656000 (3840.00)	7 680.00	-63.70	11.54	-53.93	4.60	V	-46.99	-13.00	1	1
	11 520.00	-47.98	12.44	-34.04	5.72	H	-27.32	-13.00		
	15 360.00	-59.98	15.54	-51.85	6.81	V	-43.12	-13.00		
662666 (3939.99)	7 879.98	-63.04	11.00	-53.90	4.66	V	-47.56	-13.00	1	108
	11 819.97	-46.01	12.86	-33.21	5.81	V	-26.16	-13.00		
	15 759.96	-61.92	16.40	-52.19	6.91	V	-42.70	-13.00		

▣ ENDC-Mode : 7A(10 MHz)-n77A(80 MHz) , PC2

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
21400 (2565.0)	5070.00	-59.11	11.08	-58.72	3.73	H	-51.37	-25.00
	7605.00	-61.98	11.60	-52.99	4.55	H	-45.94	-25.00
	10140.00	-61.05	11.60	-49.42	5.32	H	-43.14	-25.00

9.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n77	20 MHz	3840.00	BPSK	Full RB	0	4.12
			QPSK			5.29
			16-QAM			6.04
			64-QAM			6.33
			256-QAM			6.67
	30 MHz		BPSK			4.12
			QPSK			5.38
			16-QAM			6.20
			64-QAM			6.50
			256-QAM			6.75
	40 MHz		BPSK			4.00
			QPSK			5.30
			16-QAM			6.11
			64-QAM			6.29
			256-QAM			6.47
	50 MHz		BPSK			4.36
			QPSK			5.29
			16-QAM			6.16
			64-QAM			6.69
			256-QAM			6.63
	60 MHz		BPSK			4.07
			QPSK			5.22
			16-QAM			6.14
			64-QAM			6.27
			256-QAM			6.78
	70 MHz		BPSK			4.21
			QPSK			5.22
			16-QAM			5.96
			64-QAM			6.23
			256-QAM			6.64

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
	80 MHz		BPSK			3.95
			QPSK			5.12
			16-QAM			5.99
			64-QAM			6.19
			256-QAM			6.44
	90 MHz		BPSK			3.94
			QPSK			5.12
			16-QAM			5.97
			64-QAM			6.27
			256-QAM			6.52
	100 MHz		BPSK			3.95
			QPSK			5.03
			16-QAM			5.89
			64-QAM			6.16
			256-QAM			6.48

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 374 ~ 418.

9.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n77	20 MHz	3840.00	BPSK	Full RB	0	17.963
			QPSK			17.901
			16-QAM			18.023
			64-QAM			17.935
			256-QAM			17.936
	30 MHz		BPSK			26.863
			QPSK			26.853
			16-QAM			26.897
			64-QAM			26.860
			256-QAM			26.954
	40 MHz		BPSK			35.782
			QPSK			35.858
			16-QAM			35.559
			64-QAM			35.773
			256-QAM			35.837
	50 MHz		BPSK			45.785
			QPSK			45.892
			16-QAM			45.820
			64-QAM			45.856
			256-QAM			45.999
	60 MHz		BPSK			58.058
			QPSK			57.829
			16-QAM			57.824
			64-QAM			58.177
			256-QAM			58.067
	70 MHz		BPSK			64.333
			QPSK			64.421
			16-QAM			64.372
			64-QAM			64.523
			256-QAM			64.411

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
	80 MHz		BPSK			77.240
			QPSK			77.320
			16-QAM			77.344
			64-QAM			77.282
			256-QAM			77.133
	90 MHz		BPSK			86.697
			QPSK			87.025
			16-QAM			86.573
			64-QAM			86.550
			256-QAM			86.667
	100 MHz		BPSK			96.464
			QPSK			96.253
			16-QAM			96.176
			64-QAM			96.472
			256-QAM			96.400

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 329 ~ 373.

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 n77	20	3710.01	9.9826	37.805	-70.774	-32.969	-13.00
		3840.00	4.9422	37.190	-70.650	-33.460	
		3969.99	9.3594	37.805	-70.113	-32.308	
	30	3715.02	6.0599	37.805	-70.247	-32.442	
		3840.00	8.2577	37.805	-70.343	-32.538	
		3964.98	9.9646	37.805	-70.353	-32.548	
	40	3720.00	8.3405	37.805	-70.750	-32.945	
		3840.00	8.2727	37.805	-70.909	-33.104	
		3960.00	5.4761	37.805	-69.811	-32.006	
	50	3725.10	6.0509	37.805	-70.550	-32.745	
		3840.00	8.8769	37.805	-70.385	-32.580	
		3954.99	9.7064	37.805	-70.372	-32.567	
	60	3730.02	4.9726	37.190	-70.485	-33.295	
		3840.00	9.6934	37.805	-68.981	-31.176	
		3949.98	9.1206	37.805	-70.174	-32.369	
	70	3735.00	5.4791	37.805	-70.380	-32.575	
		3840.00	9.9581	37.805	-69.906	-32.101	
		3945.00	8.2468	37.805	-70.465	-32.660	
	80	3740.01	8.2373	37.805	-70.669	-32.864	
		3840.00	9.1919	37.805	-70.272	-32.467	
		3939.99	6.0409	37.805	-70.535	-32.730	
	90	3745.02	9.1381	37.805	-70.457	-32.652	
		3840.00	9.0798	37.805	-70.696	-32.891	
		3934.98	8.0239	37.805	-69.899	-32.094	
	100	3750.00	8.3011	37.805	-71.418	-33.613	
		3840.00	7.9985	37.805	-71.098	-33.293	
		3930.00	4.8984	37.190	-71.160	-33.970	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 527 ~ 580.
2. Duty Cycle factor already applied on the factor.
   - Duty Cycle Factor(dB) = 6.990

   - Factor(dB) = Duty Cycle factor + Cable Loss + Ext. Attenuator + Splitter
   - Result(dBm) = Reading + Factor

3. Factor(dB)

Frequency Range (GHz)	Factor [dB]
0.03 – 1	34.484
1 – 5	37.190
5 – 10	37.805
10 – 15	38.330
15 – 20	38.703
Above 20	39.345

9.6 BAND EDGE

1. Plots of the EUT's Band Edge are shown Page 419 ~ 526.
2. Duty Cycle factor already applied on the factor.
   - Factor(dB) = Duty Cycle factor + Cable Loss + Ext. Attenuator + Power Divider
   - Result(dBm) = Reading + Factor
   - Duty Cycle Factor(dB) = 6.990

9.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ BandWidth: 20 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3710.010	100 %	+20(Ref)	3710 010 013	0.0	0.000 000	0.000
	100 %	-30	3710 010 022	8.6	0.000 000	0.002
	100 %	-20	3710 010 019	6.3	0.000 000	0.002
	100 %	-10	3710 010 025	12.3	0.000 000	0.003
	100 %	0	3710 010 018	5.1	0.000 000	0.001
	100 %	+10	3710 010 017	3.9	0.000 000	0.001
	100 %	+30	3710 010 025	11.8	0.000 000	0.003
	100 %	+40	3710 010 020	7.5	0.000 000	0.002
	100 %	+50	3710 010 025	12.2	0.000 000	0.003
	Batt. Endpoint	+20	3710 010 017	4.1	0.000 000	0.001
3969.990	100 %	+20(Ref)	3969 990 003	0.0	0.000 000	0.000
	100 %	-30	3969 990 015	11.8	0.000 000	0.003
	100 %	-20	3969 990 017	13.2	0.000 000	0.003
	100 %	-10	3969 990 013	9.7	0.000 000	0.002
	100 %	0	3969 990 010	6.4	0.000 000	0.002
	100 %	+10	3969 990 019	16.0	0.000 000	0.004
	100 %	+30	3969 990 012	8.9	0.000 000	0.002
	100 %	+40	3969 990 010	6.5	0.000 000	0.002
	100 %	+50	3969 990 011	8.0	0.000 000	0.002
	Batt. Endpoint	+20	3969 990 011	7.5	0.000 000	0.002

▣ BandWidth: 30 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3715.020	100 %	+20(Ref)	3715 020 006	0.0	0.000 000	0.000
	100 %	-30	3715 020 015	8.9	0.000 000	0.002
	100 %	-20	3715 020 021	15.2	0.000 000	0.004
	100 %	-10	3715 020 010	4.1	0.000 000	0.001
	100 %	0	3715 020 016	10.1	0.000 000	0.003
	100 %	+10	3715 020 016	9.4	0.000 000	0.003
	100 %	+30	3715 020 013	7.1	0.000 000	0.002
	100 %	+40	3715 020 012	5.3	0.000 000	0.001
	100 %	+50	3715 020 017	10.9	0.000 000	0.003
	Batt. Endpoint	+20	3715 020 014	8.0	0.000 000	0.002
3964.980	100 %	+20(Ref)	3964 980 008	0.0	0.000 000	0.000
	100 %	-30	3964 980 021	13.0	0.000 000	0.003
	100 %	-20	3964 980 022	14.2	0.000 000	0.004
	100 %	-10	3964 980 023	14.8	0.000 000	0.004
	100 %	0	3964 980 022	13.9	0.000 000	0.004
	100 %	+10	3964 980 015	7.4	0.000 000	0.002
	100 %	+30	3964 980 020	11.6	0.000 000	0.003
	100 %	+40	3964 980 021	13.4	0.000 000	0.003
	100 %	+50	3964 980 018	9.7	0.000 000	0.002
	Batt. Endpoint	+20	3964 980 020	12.3	0.000 000	0.003

▣ BandWidth: 40 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3720.000	100 %	+20(Ref)	3720 000 006	0.0	0.000 000	0.000
	100 %	-30	3720 000 010	3.8	0.000 000	0.001
	100 %	-20	3720 000 011	5.2	0.000 000	0.001
	100 %	-10	3720 000 009	3.3	0.000 000	0.001
	100 %	0	3720 000 011	4.7	0.000 000	0.001
	100 %	+10	3720 000 019	12.7	0.000 000	0.003
	100 %	+30	3720 000 023	17.0	0.000 000	0.005
	100 %	+40	3720 000 018	11.7	0.000 000	0.003
	100 %	+50	3720 000 022	15.6	0.000 000	0.004
	Batt. Endpoint	+20	3720 000 021	14.9	0.000 000	0.004
3960.000	100 %	+20(Ref)	3960 000 009	0.0	0.000 000	0.000
	100 %	-30	3960 000 022	13.2	0.000 000	0.003
	100 %	-20	3960 000 022	13.3	0.000 000	0.003
	100 %	-10	3960 000 018	9.6	0.000 000	0.002
	100 %	0	3960 000 019	10.0	0.000 000	0.003
	100 %	+10	3960 000 020	11.8	0.000 000	0.003
	100 %	+30	3960 000 017	8.5	0.000 000	0.002
	100 %	+40	3960 000 023	14.3	0.000 000	0.004
	100 %	+50	3960 000 016	7.7	0.000 000	0.002
	Batt. Endpoint	+20	3960 000 015	6.2	0.000 000	0.002

▣ BandWidth: 50 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3725.010	100 %	+20(Ref)	3725 010 008	0.0	0.000 000	0.000
	100 %	-30	3725 010 017	9.5	0.000 000	0.003
	100 %	-20	3725 010 019	11.4	0.000 000	0.003
	100 %	-10	3725 010 017	9.5	0.000 000	0.003
	100 %	0	3725 010 016	7.7	0.000 000	0.002
	100 %	+10	3725 010 025	16.9	0.000 000	0.005
	100 %	+30	3725 010 021	13.1	0.000 000	0.004
	100 %	+40	3725 010 015	7.0	0.000 000	0.002
	100 %	+50	3725 010 016	7.7	0.000 000	0.002
	Batt. Endpoint	+20	3725 010 017	9.5	0.000 000	0.003
3954.990	100 %	+20(Ref)	3954 990 004	0.0	0.000 000	0.000
	100 %	-30	3954 990 013	9.0	0.000 000	0.002
	100 %	-20	3954 990 009	5.5	0.000 000	0.001
	100 %	-10	3954 990 020	16.2	0.000 000	0.004
	100 %	0	3954 990 011	7.5	0.000 000	0.002
	100 %	+10	3954 990 015	11.5	0.000 000	0.003
	100 %	+30	3954 990 016	12.6	0.000 000	0.003
	100 %	+40	3954 990 012	8.5	0.000 000	0.002
	100 %	+50	3954 990 016	12.5	0.000 000	0.003
	Batt. Endpoint	+20	3954 990 014	10.2	0.000 000	0.003

▣ BandWidth: 60 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3730.020	100 %	+20(Ref)	3730 020 013	0.0	0.000 000	0.000
	100 %	-30	3730 020 016	3.0	0.000 000	0.001
	100 %	-20	3730 020 027	13.8	0.000 000	0.004
	100 %	-10	3730 020 018	5.1	0.000 000	0.001
	100 %	0	3730 020 029	16.1	0.000 000	0.004
	100 %	+10	3730 020 020	7.2	0.000 000	0.002
	100 %	+30	3730 020 018	5.3	0.000 000	0.001
	100 %	+40	3730 020 029	15.6	0.000 000	0.004
	100 %	+50	3730 020 024	10.5	0.000 000	0.003
	Batt. Endpoint	+20	3730 020 018	4.7	0.000 000	0.001
3949.995	100 %	+20(Ref)	3949 995 008	0.0	0.000 000	0.000
	100 %	-30	3949 995 023	15.1	0.000 000	0.004
	100 %	-20	3949 995 011	3.7	0.000 000	0.001
	100 %	-10	3949 995 023	15.0	0.000 000	0.004
	100 %	0	3949 995 022	14.4	0.000 000	0.004
	100 %	+10	3949 995 023	15.3	0.000 000	0.004
	100 %	+30	3949 995 014	6.3	0.000 000	0.002
	100 %	+40	3949 995 024	16.3	0.000 000	0.004
	100 %	+50	3949 995 018	10.6	0.000 000	0.003
	Batt. Endpoint	+20	3949 995 021	13.6	0.000 000	0.003

▣ BandWidth: 70 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3735.000	100 %	+20(Ref)	3735 000 005	0.0	0.000 000	0.000
	100 %	-30	3735 000 010	4.8	0.000 000	0.001
	100 %	-20	3735 000 009	4.0	0.000 000	0.001
	100 %	-10	3735 000 010	4.7	0.000 000	0.001
	100 %	0	3735 000 018	12.5	0.000 000	0.003
	100 %	+10	3735 000 013	7.6	0.000 000	0.002
	100 %	+30	3735 000 018	12.7	0.000 000	0.003
	100 %	+40	3735 000 014	8.6	0.000 000	0.002
	100 %	+50	3735 000 011	5.4	0.000 000	0.001
	Batt. Endpoint	+20	3735 000 019	13.7	0.000 000	0.004
3945.000	100 %	+20(Ref)	3945 000 003	0.0	0.000 000	0.000
	100 %	-30	3945 000 011	7.8	0.000 000	0.002
	100 %	-20	3945 000 020	16.6	0.000 000	0.004
	100 %	-10	3945 000 009	5.3	0.000 000	0.001
	100 %	0	3945 000 010	6.7	0.000 000	0.002
	100 %	+10	3945 000 016	13.0	0.000 000	0.003
	100 %	+30	3945 000 009	5.7	0.000 000	0.001
	100 %	+40	3945 000 014	10.9	0.000 000	0.003
	100 %	+50	3945 000 015	12.2	0.000 000	0.003
	Batt. Endpoint	+20	3945 000 011	7.4	0.000 000	0.002

▣ BandWidth: 80 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3740.010	100 %	+20(Ref)	3740 010 009	0.0	0.000 000	0.000
	100 %	-30	3740 010 022	12.7	0.000 000	0.003
	100 %	-20	3740 010 014	5.3	0.000 000	0.001
	100 %	-10	3740 010 015	6.2	0.000 000	0.002
	100 %	0	3740 010 025	16.6	0.000 000	0.004
	100 %	+10	3740 010 018	8.7	0.000 000	0.002
	100 %	+30	3740 010 014	4.8	0.000 000	0.001
	100 %	+40	3740 010 016	6.9	0.000 000	0.002
	100 %	+50	3740 010 016	7.2	0.000 000	0.002
	Batt. Endpoint	+20	3740 010 013	4.2	0.000 000	0.001
3939.990	100 %	+20(Ref)	3939 990 015	0.0	0.000 000	0.000
	100 %	-30	3939 990 027	12.1	0.000 000	0.003
	100 %	-20	3939 990 019	4.0	0.000 000	0.001
	100 %	-10	3939 990 026	10.8	0.000 000	0.003
	100 %	0	3939 990 029	14.0	0.000 000	0.004
	100 %	+10	3939 990 028	12.9	0.000 000	0.003
	100 %	+30	3939 990 026	10.7	0.000 000	0.003
	100 %	+40	3939 990 024	9.1	0.000 000	0.002
	100 %	+50	3939 990 023	8.2	0.000 000	0.002
	Batt. Endpoint	+20	3939 990 030	14.7	0.000 000	0.004

▣ BandWidth: 90 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3745.020	100 %	+20(Ref)	3745 020 016	0.0	0.000 000	0.000
	100 %	-30	3745 020 033	16.5	0.000 000	0.004
	100 %	-20	3745 020 029	13.1	0.000 000	0.004
	100 %	-10	3745 020 020	3.7	0.000 000	0.001
	100 %	0	3745 020 021	5.3	0.000 000	0.001
	100 %	+10	3745 020 024	8.4	0.000 000	0.002
	100 %	+30	3745 020 020	3.6	0.000 000	0.001
	100 %	+40	3745 020 027	11.1	0.000 000	0.003
	100 %	+50	3745 020 026	9.6	0.000 000	0.003
	Batt. Endpoint	+20	3745 020 029	12.9	0.000 000	0.003
3934.980	100 %	+20(Ref)	3934 980 009	0.0	0.000 000	0.000
	100 %	-30	3934 980 023	13.5	0.000 000	0.003
	100 %	-20	3934 980 013	3.6	0.000 000	0.001
	100 %	-10	3934 980 023	13.5	0.000 000	0.003
	100 %	0	3934 980 025	15.8	0.000 000	0.004
	100 %	+10	3934 980 013	3.2	0.000 000	0.001
	100 %	+30	3934 980 014	4.4	0.000 000	0.001
	100 %	+40	3934 980 022	12.9	0.000 000	0.003
	100 %	+50	3934 980 023	13.4	0.000 000	0.003
	Batt. Endpoint	+20	3934 980 015	5.3	0.000 000	0.001

▣ BandWidth: 100 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.650 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
3750.000	100 %	+20(Ref)	3750 000 010	0.0	0.000 000	0.000
	100 %	-30	3750 000 024	14.0	0.000 000	0.004
	100 %	-20	3750 000 022	12.0	0.000 000	0.003
	100 %	-10	3750 000 022	12.0	0.000 000	0.003
	100 %	0	3750 000 023	13.1	0.000 000	0.003
	100 %	+10	3750 000 018	8.0	0.000 000	0.002
	100 %	+30	3750 000 014	4.3	0.000 000	0.001
	100 %	+40	3750 000 023	13.7	0.000 000	0.004
	100 %	+50	3750 000 015	5.6	0.000 000	0.001
	Batt. Endpoint	+20	3750 000 025	15.6	0.000 000	0.004
3930.000	100 %	+20(Ref)	3930 000 008	0.0	0.000 000	0.000
	100 %	-30	3930 000 024	15.6	0.000 000	0.004
	100 %	-20	3930 000 017	8.6	0.000 000	0.002
	100 %	-10	3930 000 017	8.9	0.000 000	0.002
	100 %	0	3930 000 015	6.6	0.000 000	0.002
	100 %	+10	3930 000 012	4.1	0.000 000	0.001
	100 %	+30	3930 000 013	4.7	0.000 000	0.001
	100 %	+40	3930 000 020	11.6	0.000 000	0.003
	100 %	+50	3930 000 016	7.5	0.000 000	0.002
	Batt. Endpoint	+20	3930 000 025	16.6	0.000 000	0.004

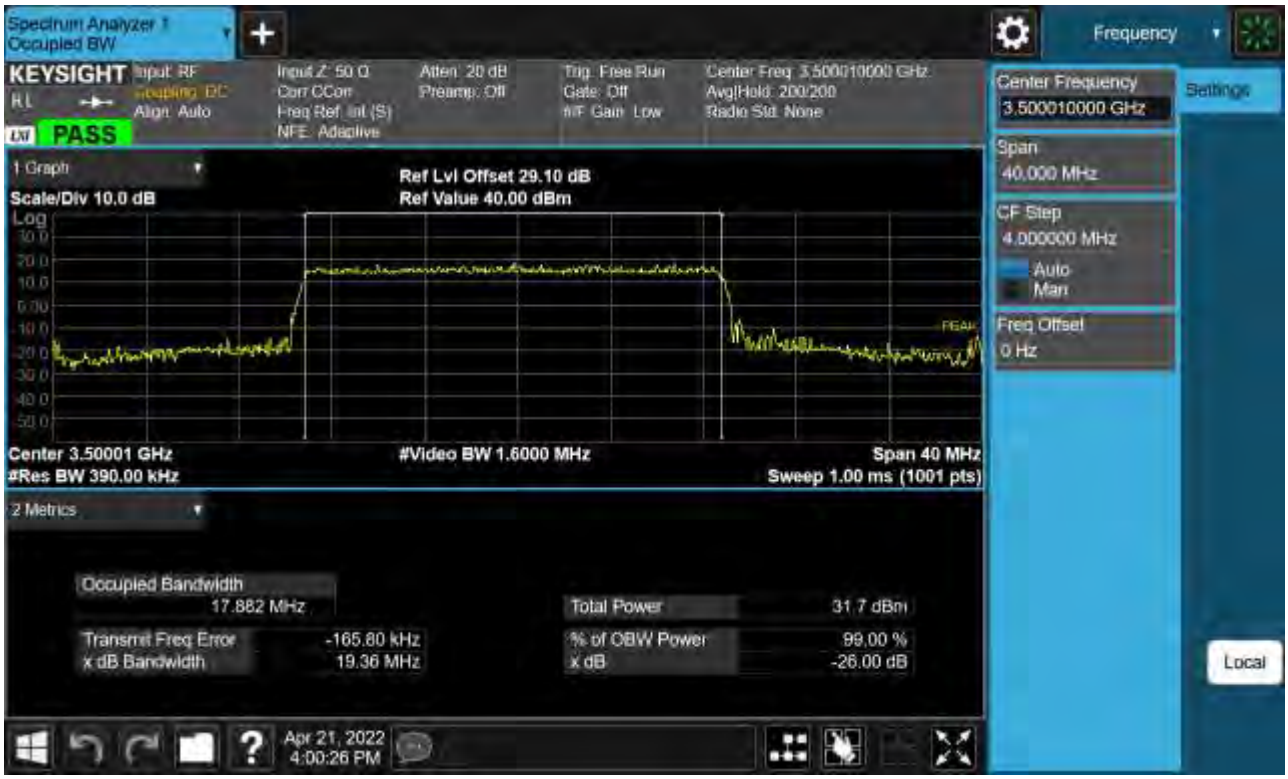
10. TEST PLOTS(3450 MHz - 3550 MHz)

Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 BPSK)

Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 QPSK)

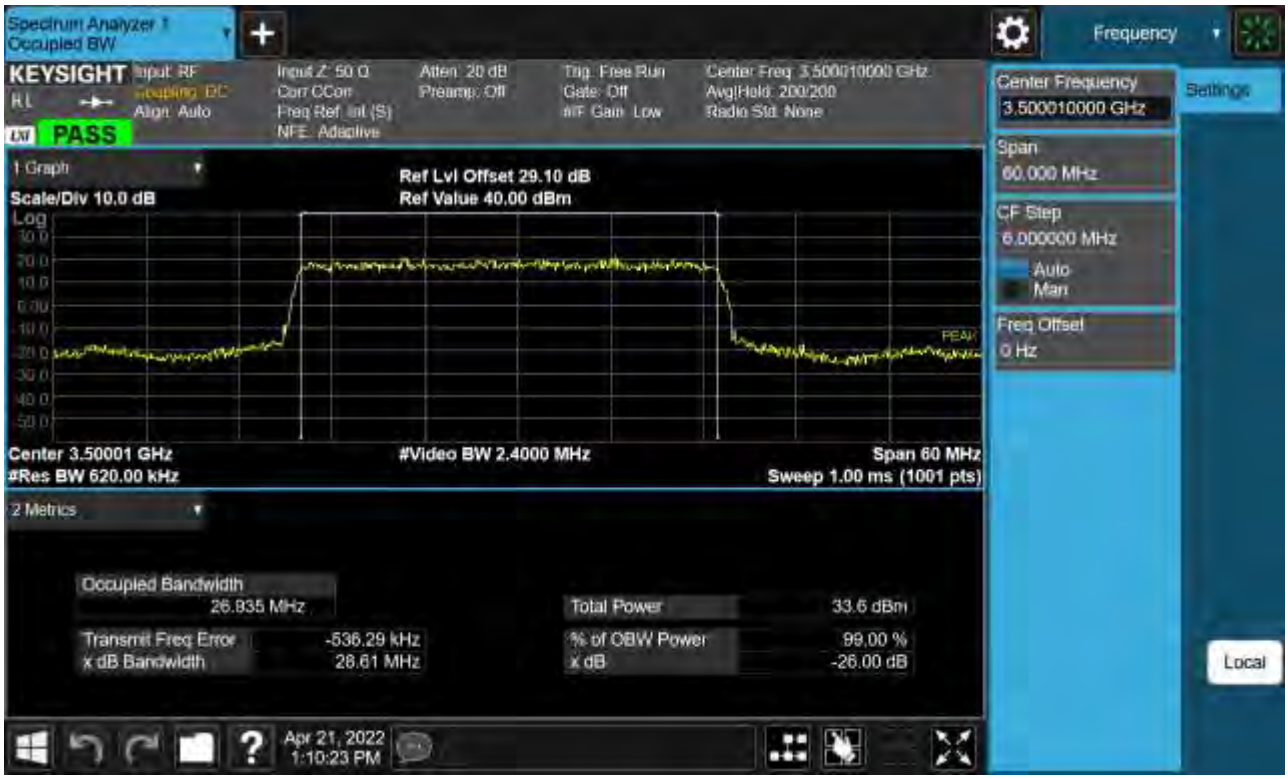
Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 16QAM)

Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 64QAM)



Sub6 n77. Occupied Bandwidth Plot (20 M BW Ch.633334 256QAM)

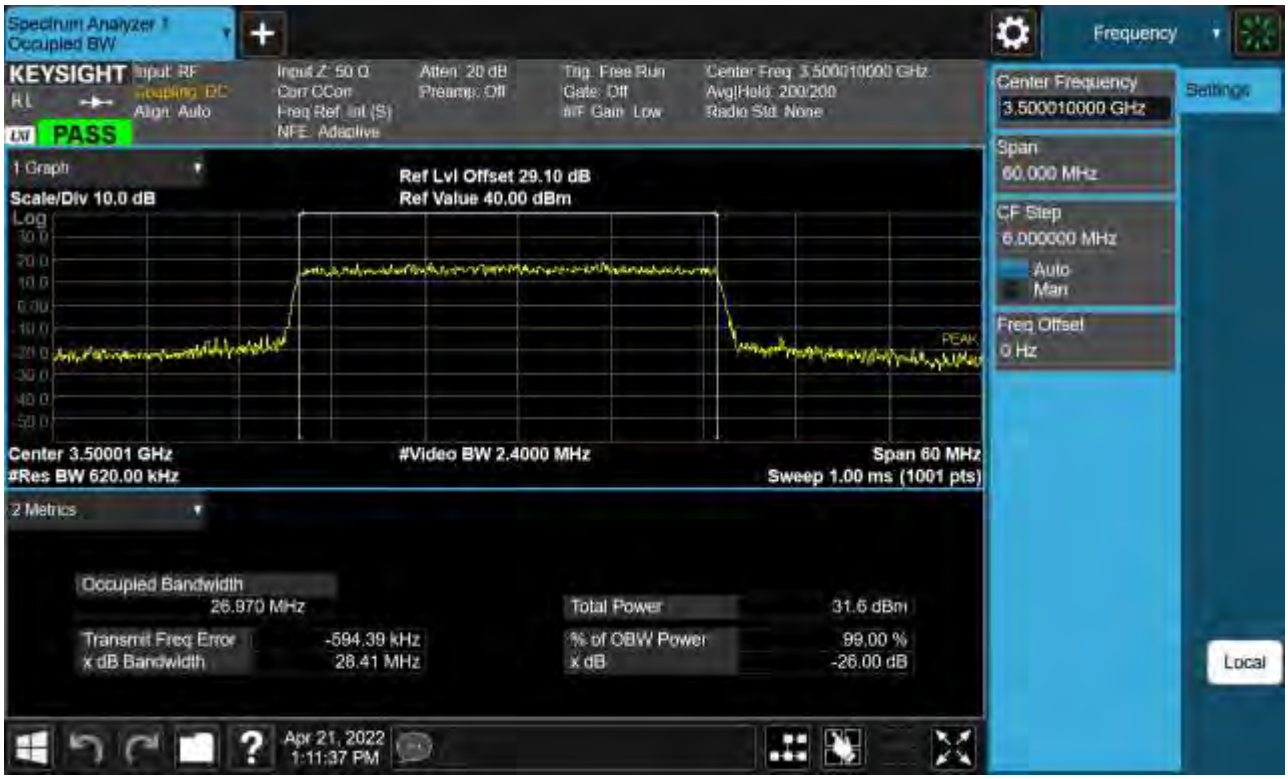
Sub6 n77. Occupied Bandwidth Plot (30 M BW Ch.633334 BPSK)



Sub6 n77. Occupied Bandwidth Plot (30 M BW Ch.633334 QPSK)

Sub6 n77. Occupied Bandwidth Plot (30 M BW Ch.633334 16QAM)

Sub6 n77. Occupied Bandwidth Plot (30 M BW Ch.633334 64QAM)



Sub6 n77. Occupied Bandwidth Plot (30 M BW Ch.633334 256QAM)

Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 BPSK)

Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 QPSK)

Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 16QAM)

Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 64QAM)

Sub6 n77. Occupied Bandwidth Plot (40 M BW Ch.633334 256QAM)

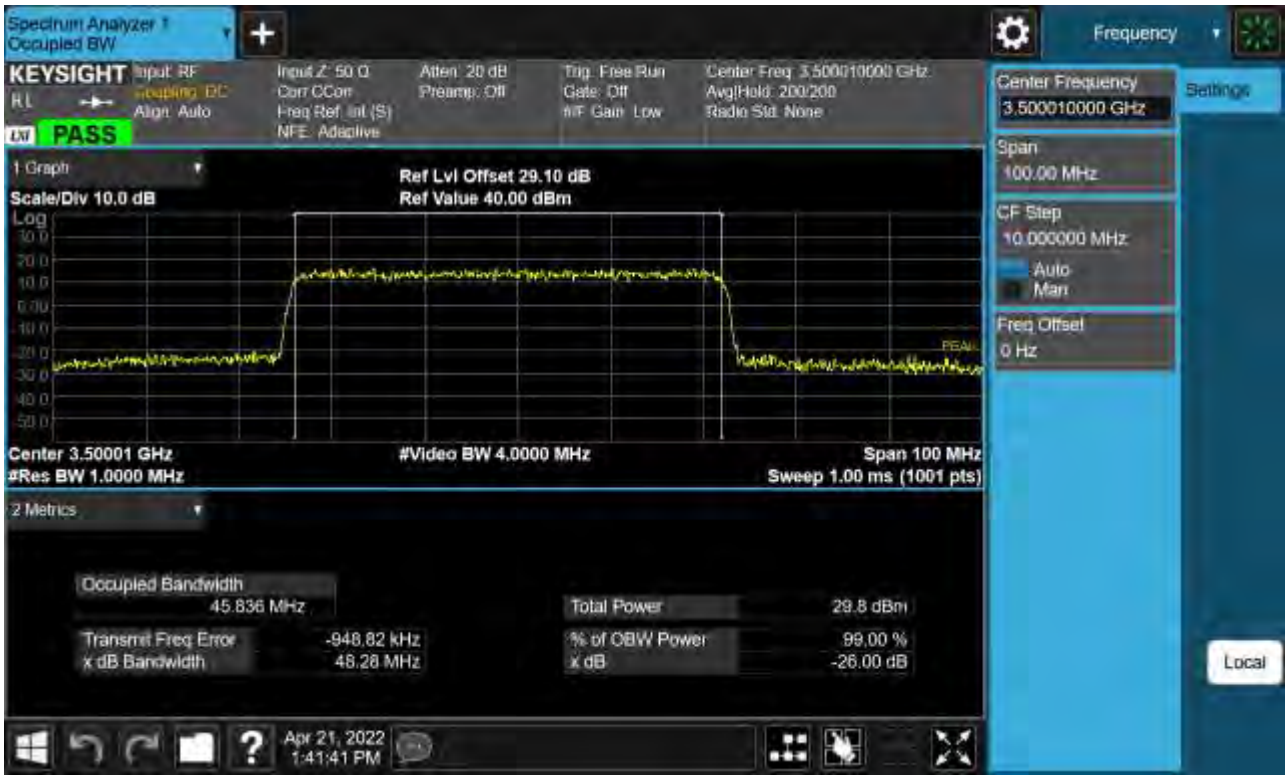
Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 BPSK)

Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 QPSK)

Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 16QAM)

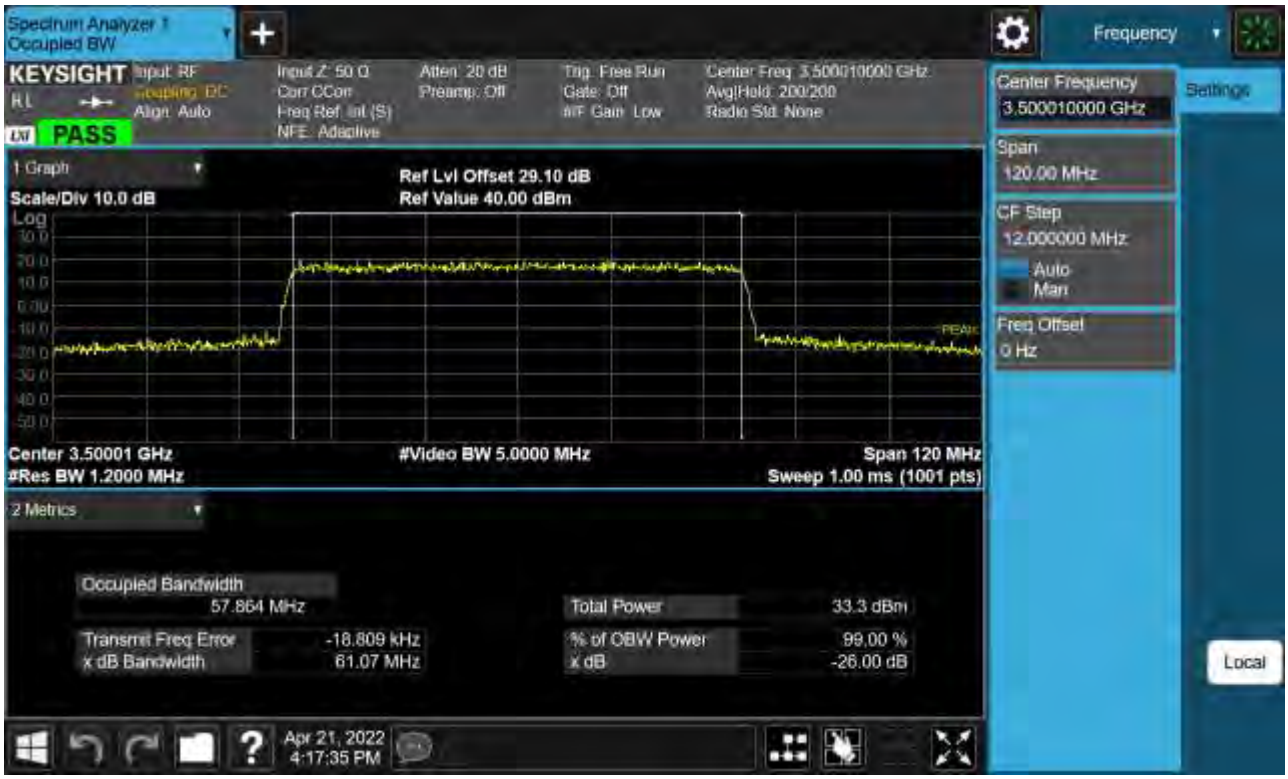
Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 64QAM)

Sub6 n77. Occupied Bandwidth Plot (50 M BW Ch.633334 256QAM)



Sub6 n77. Occupied Bandwidth Plot (60 M BW Ch.633334 BPSK)

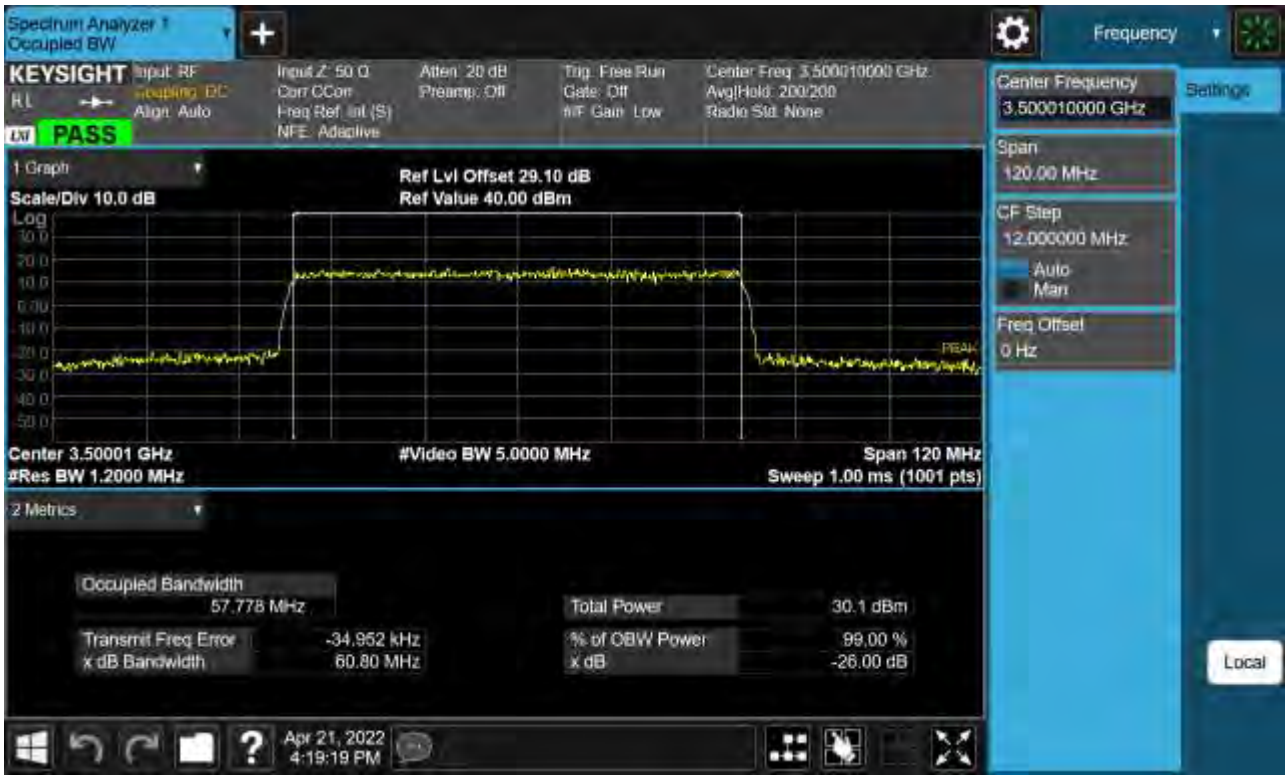
Sub6 n77. Occupied Bandwidth Plot (60 M BW Ch.633334 QPSK)



Sub6 n77. Occupied Bandwidth Plot (60 M BW Ch.633334 16QAM)

Sub6 n77. Occupied Bandwidth Plot (60 M BW Ch.633334 64QAM)

Sub6 n77. Occupied Bandwidth Plot (60 M BW Ch.633334 256QAM)



Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 BPSK)

Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 QPSK)

Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 16QAM)

Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 64QAM)

Sub6 n77. Occupied Bandwidth Plot (70 M BW Ch.633334 256QAM)

Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 BPSK)

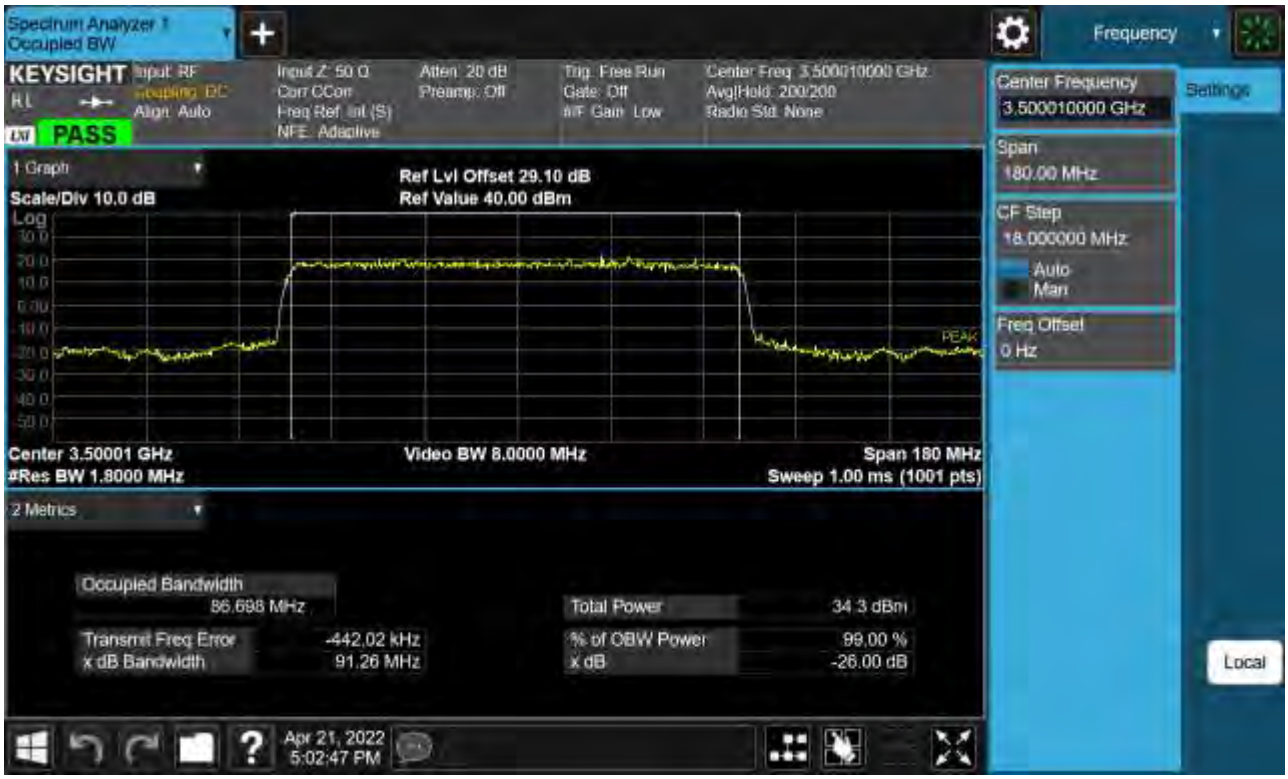
Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 QPSK)

Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 16QAM)

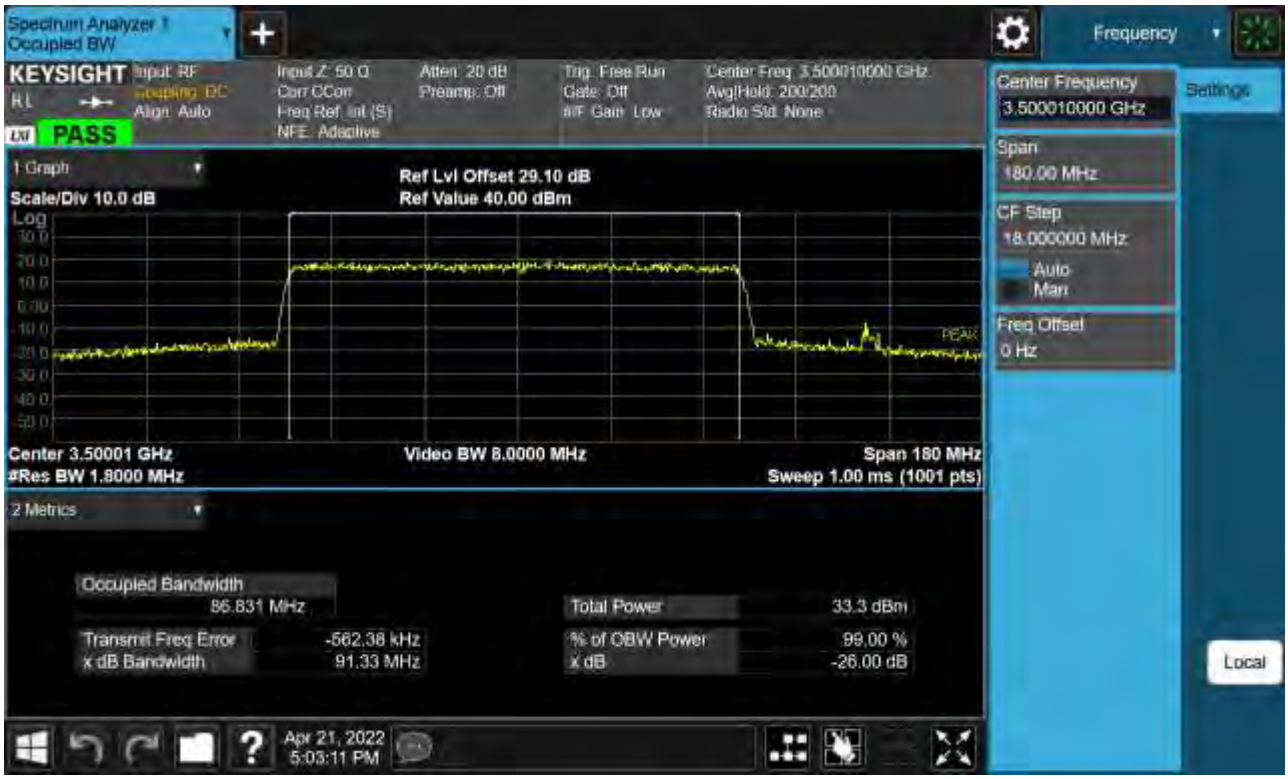
Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 64QAM)

Sub6 n77. Occupied Bandwidth Plot (80 M BW Ch.633334 256QAM)

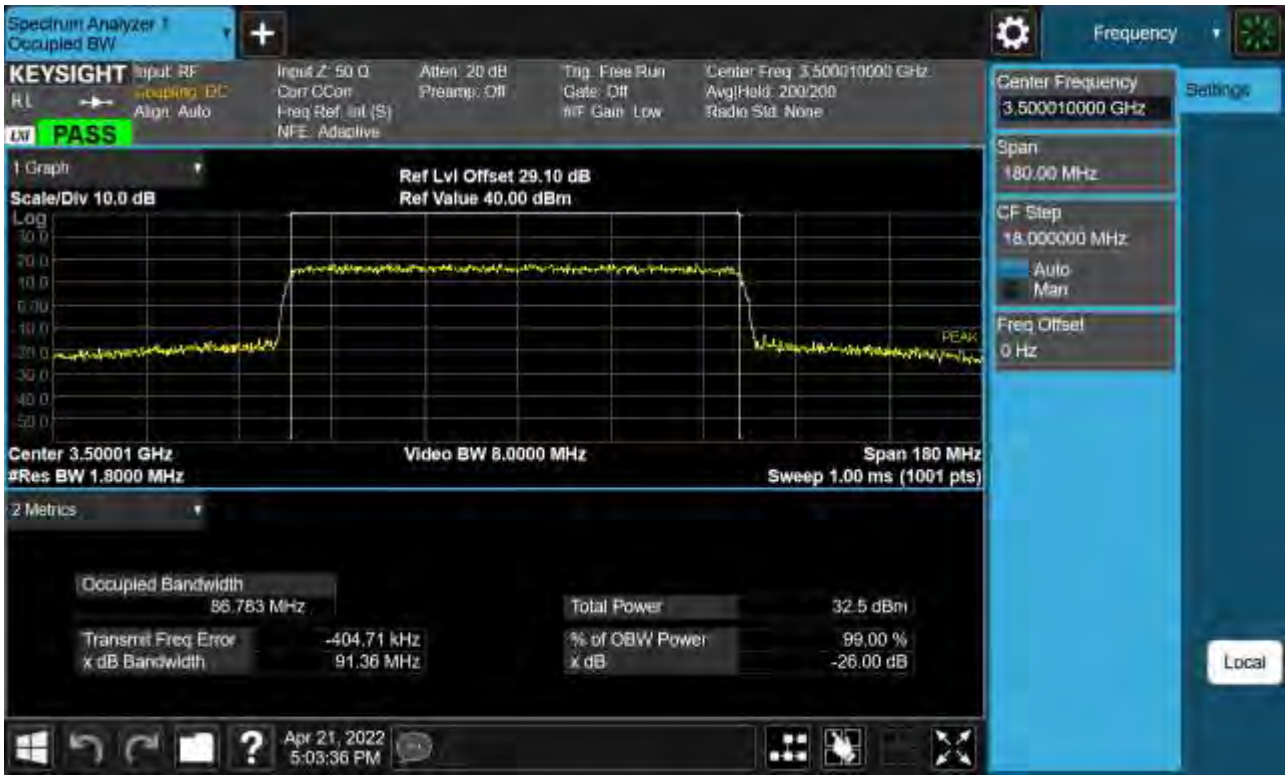
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 BPSK)



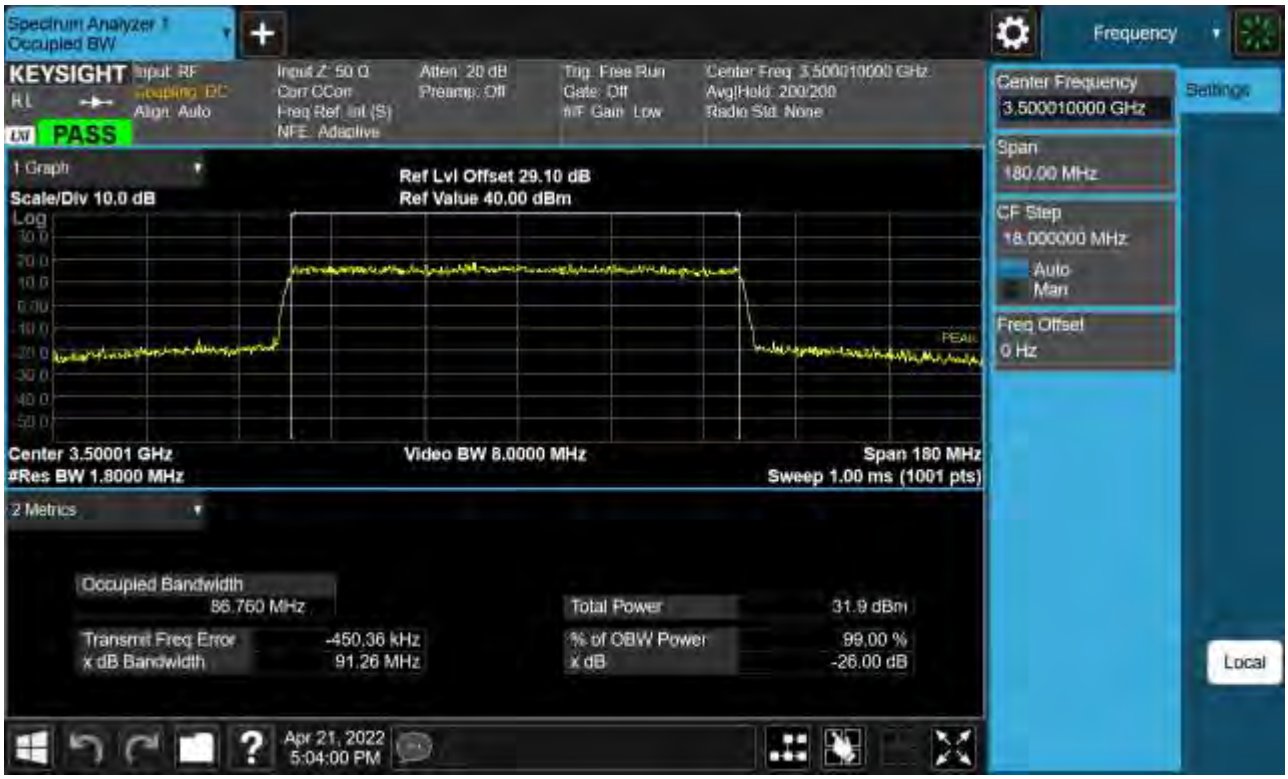
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 QPSK)



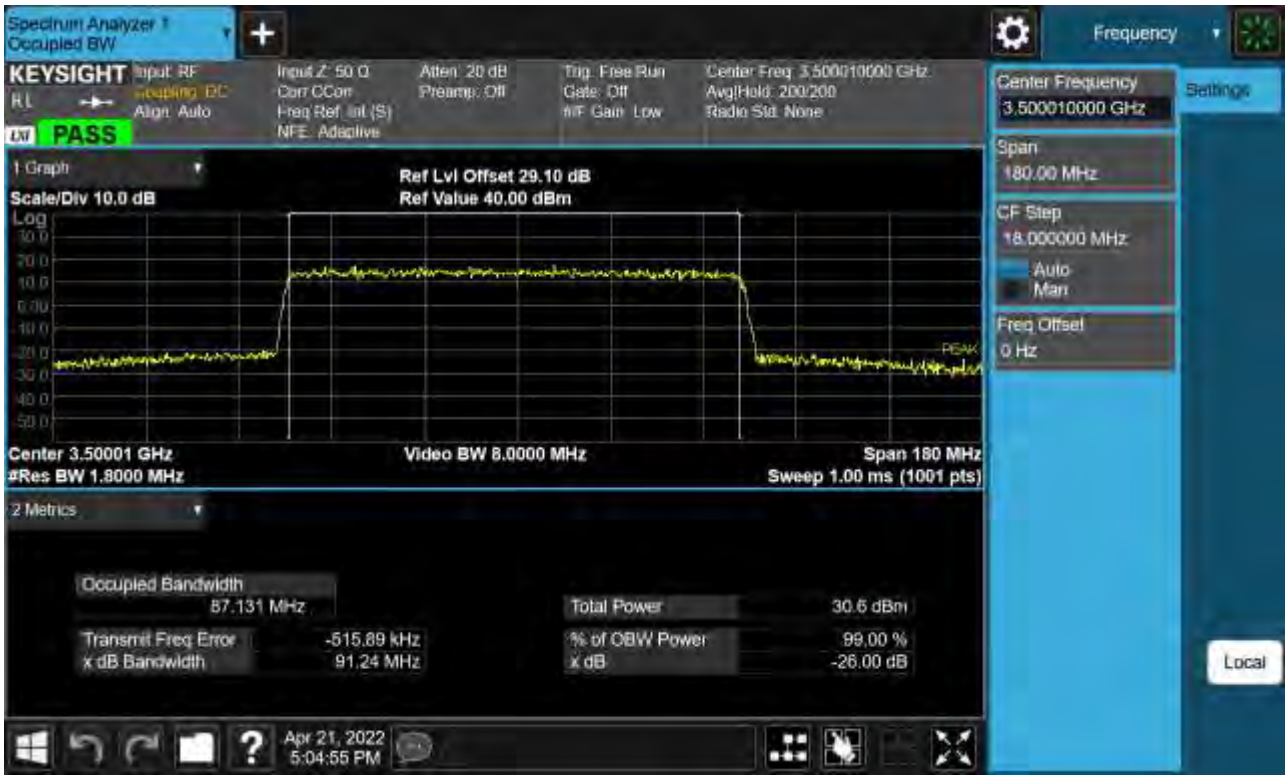
Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 16QAM)



Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 64QAM)



Sub6 n77. Occupied Bandwidth Plot (90 M BW Ch.633334 256QAM)



Sub6 n77. Occupied Bandwidth Plot (100 M BW Ch.633334 BPSK)

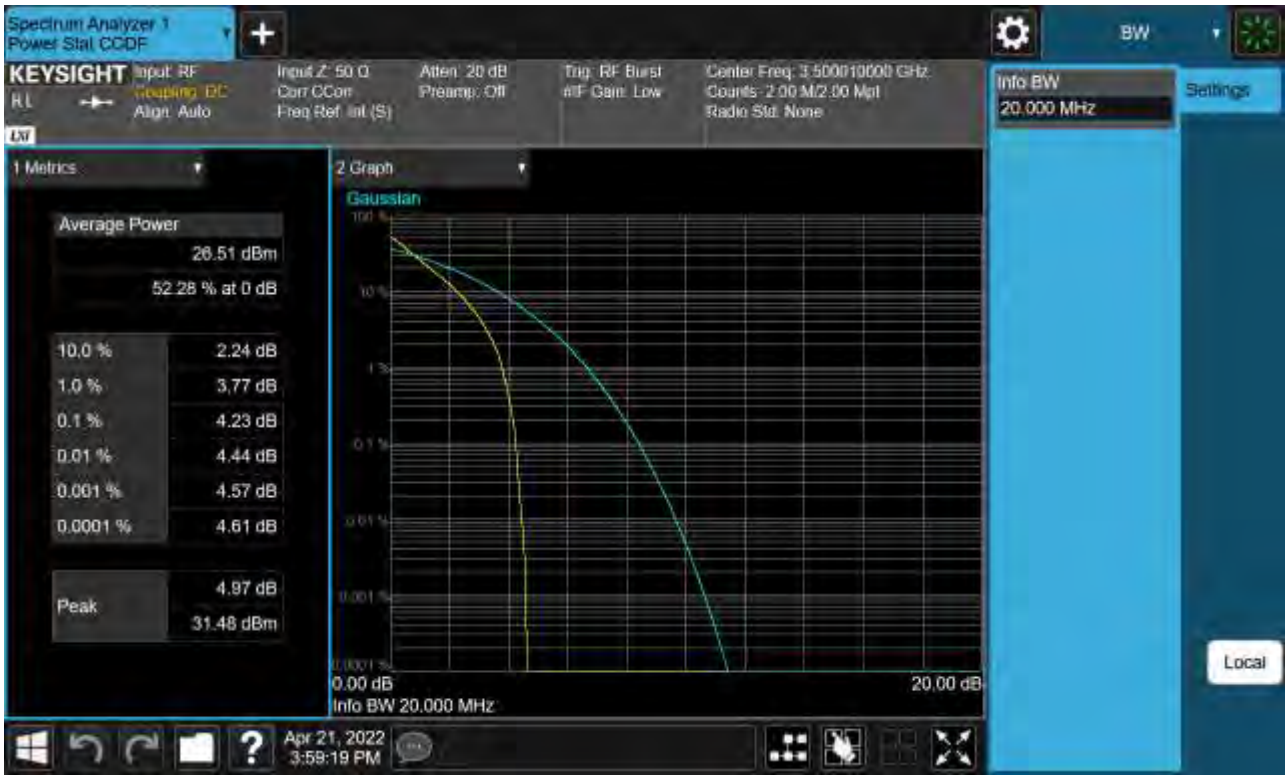
Sub6 n77. Occupied Bandwidth Plot (100 M BW Ch.633334 QPSK)

Sub6 n77. Occupied Bandwidth Plot (100 M BW Ch.633334 16QAM)

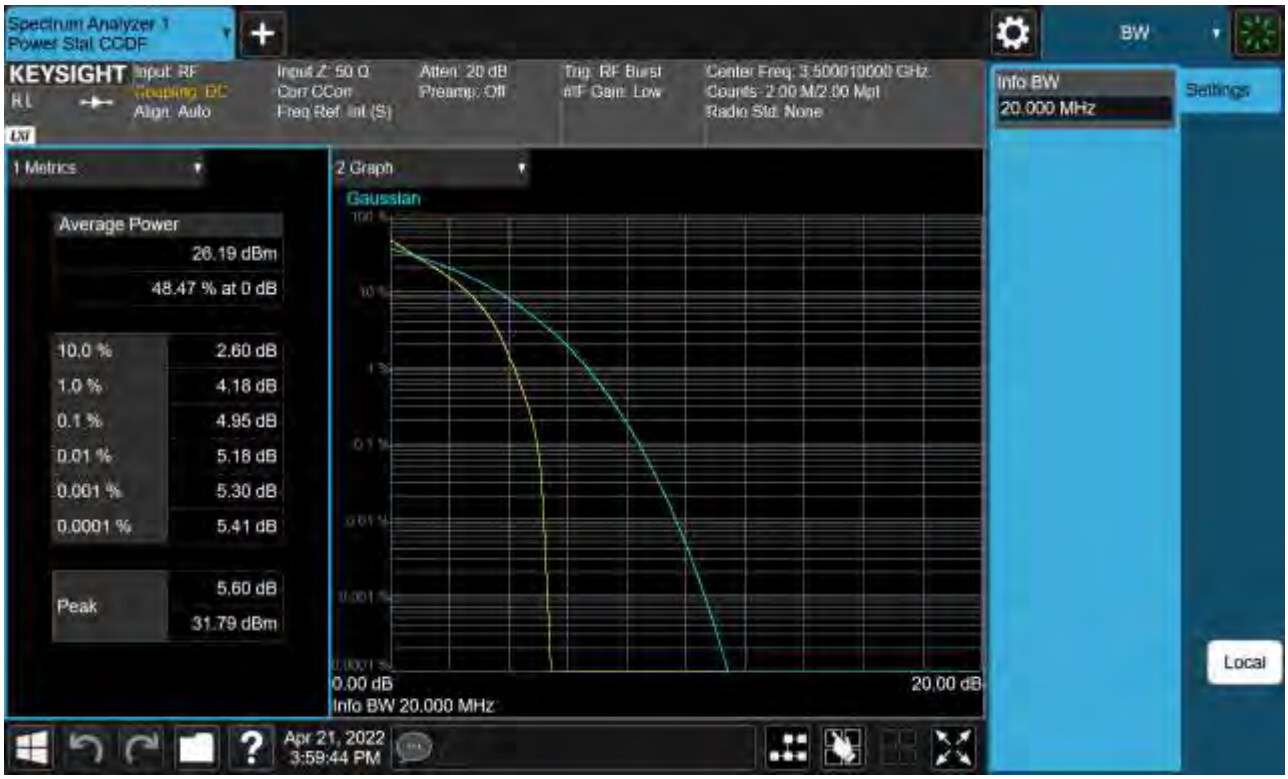
Sub6 n77. Occupied Bandwidth Plot (100 M BW Ch.633334 64QAM)

Sub6 n77. Occupied Bandwidth Plot (100 M BW Ch.633334 256QAM)

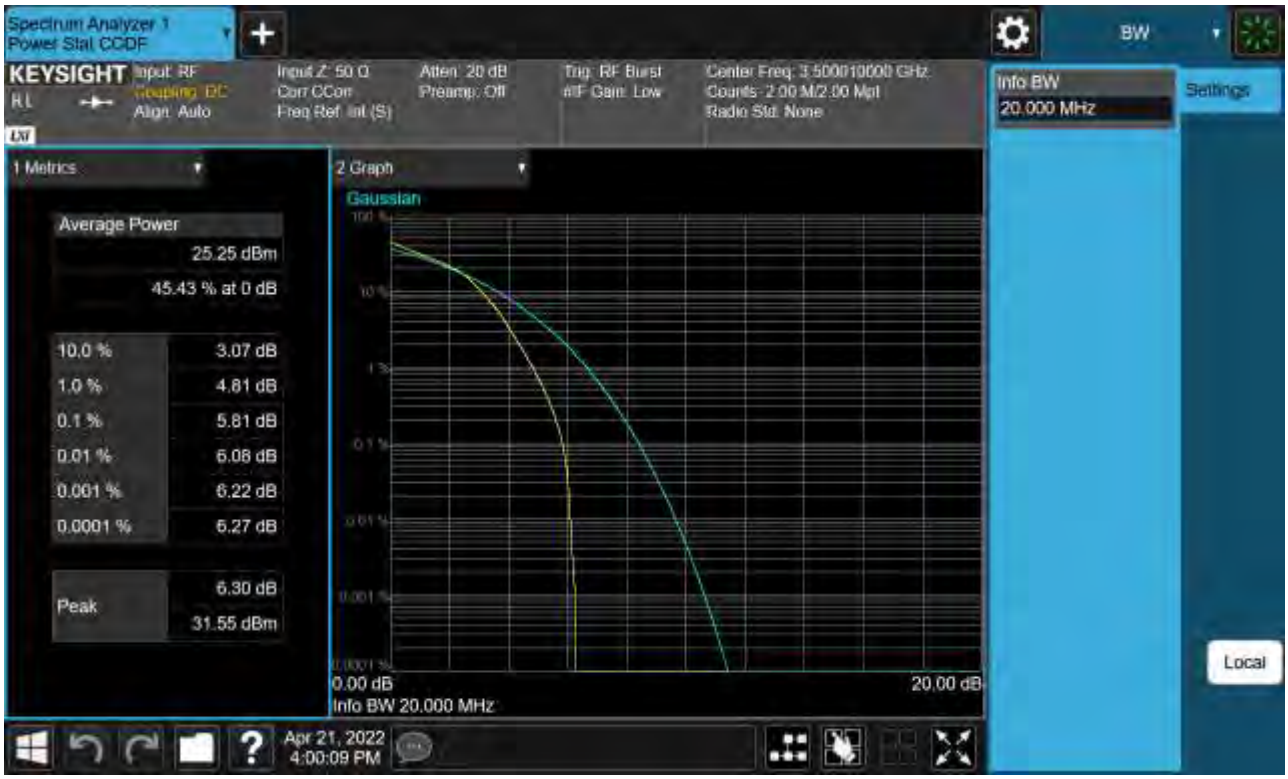
Sub6 n77. PAR Plot (20 M BW_Ch.633334_ BPSK)



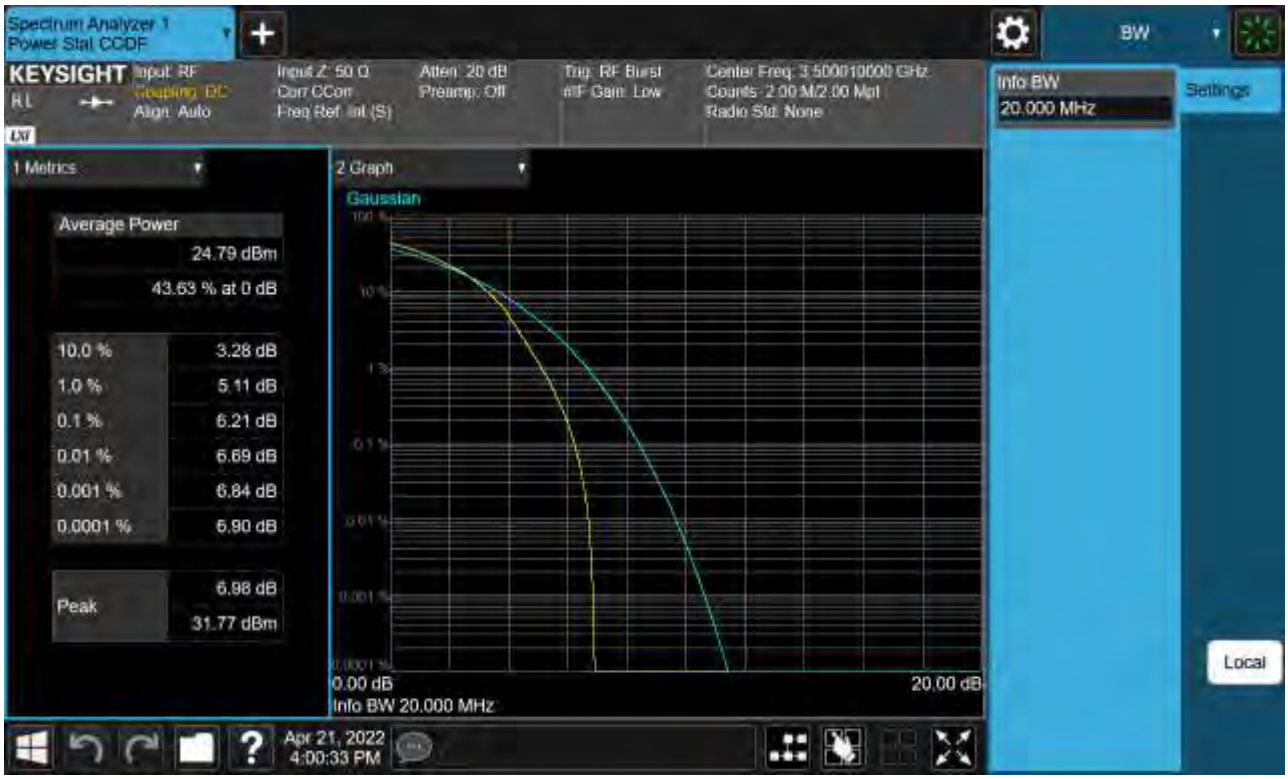
Sub6 n77. PAR Plot (20 M BW_Ch.633334_QPSK)



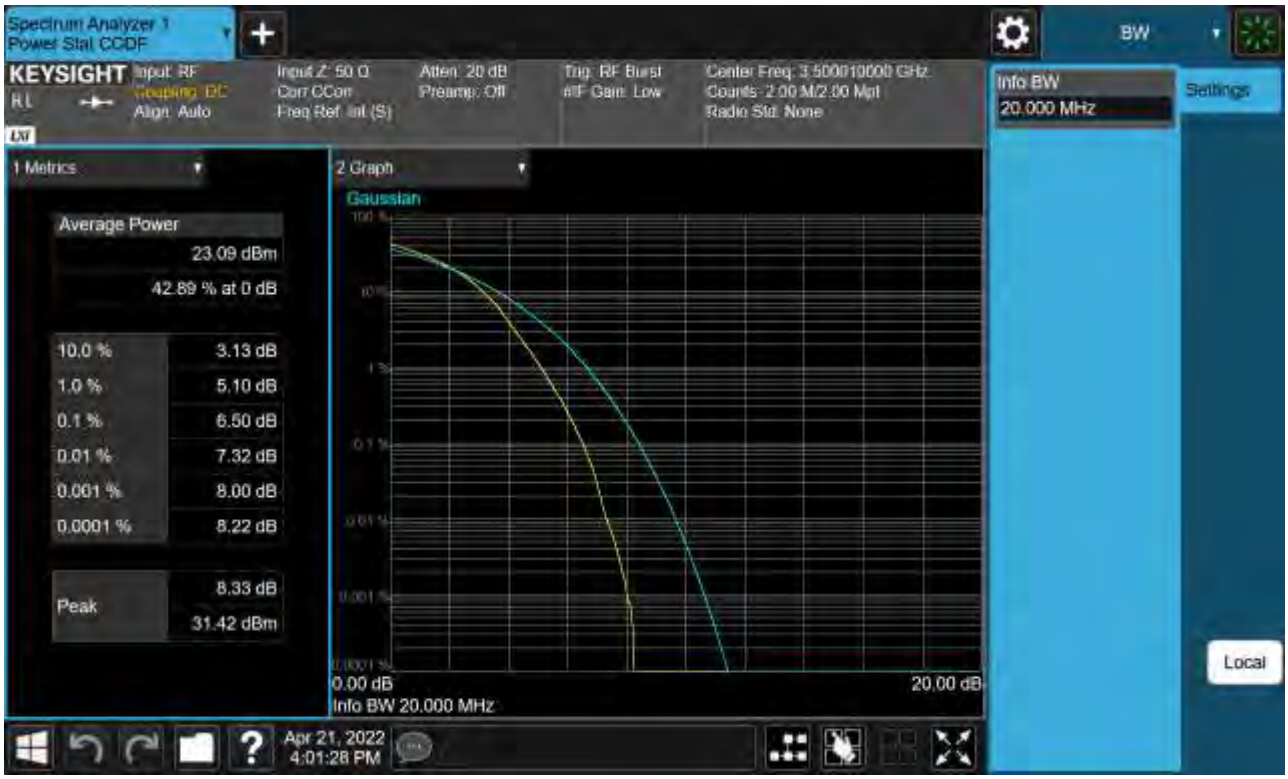
Sub6 n77. PAR Plot (20 M BW_Ch.633334_16QAM)



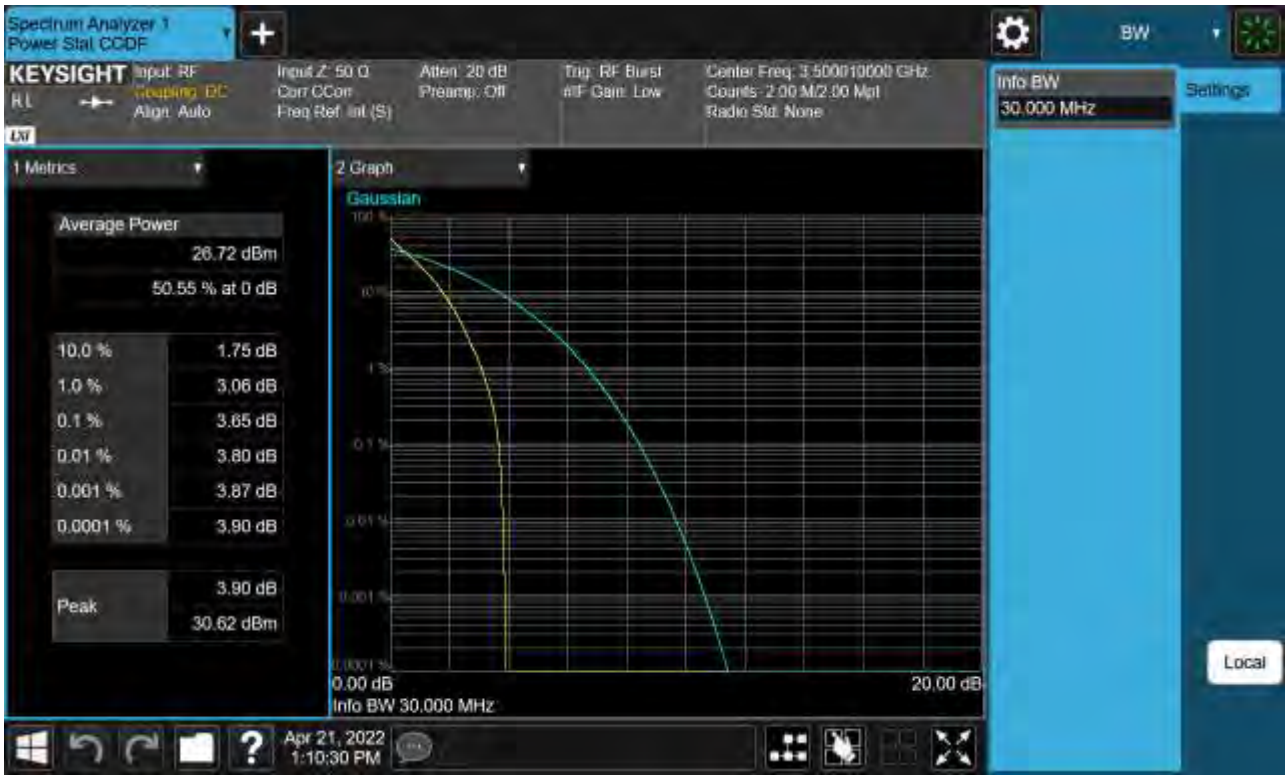
Sub6 n77. PAR Plot (20 M BW_Ch.633334_64QAM)



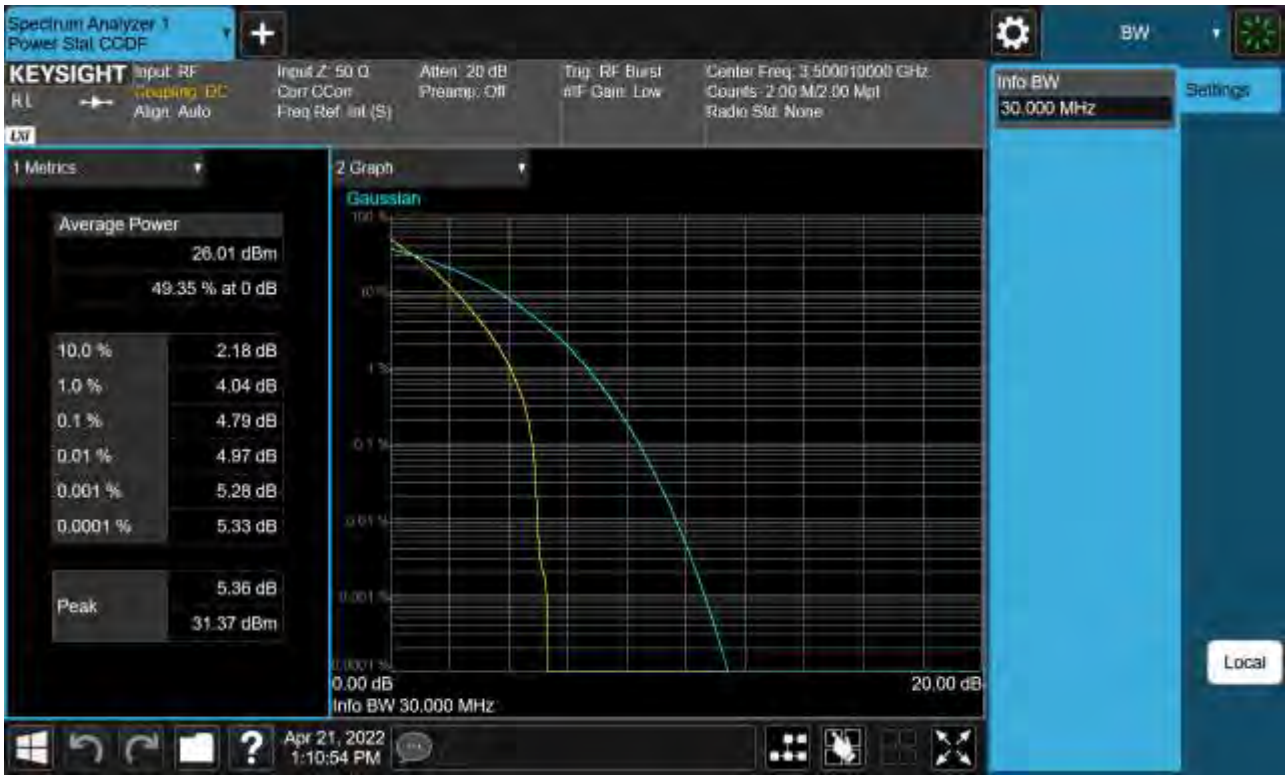
Sub6 n77. PAR Plot (20 M BW_Ch.633334_256QAM)



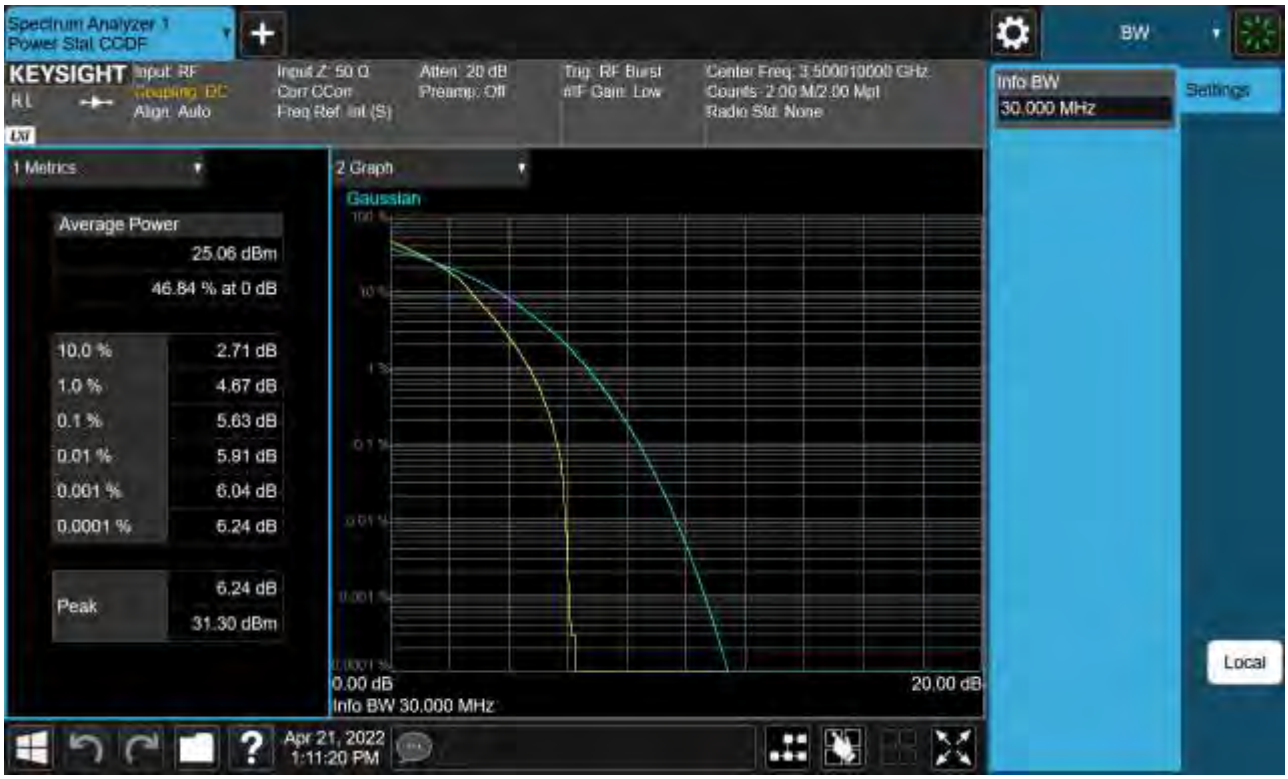
Sub6 n77. PAR Plot (30 M BW_Ch.633334_ BPSK)



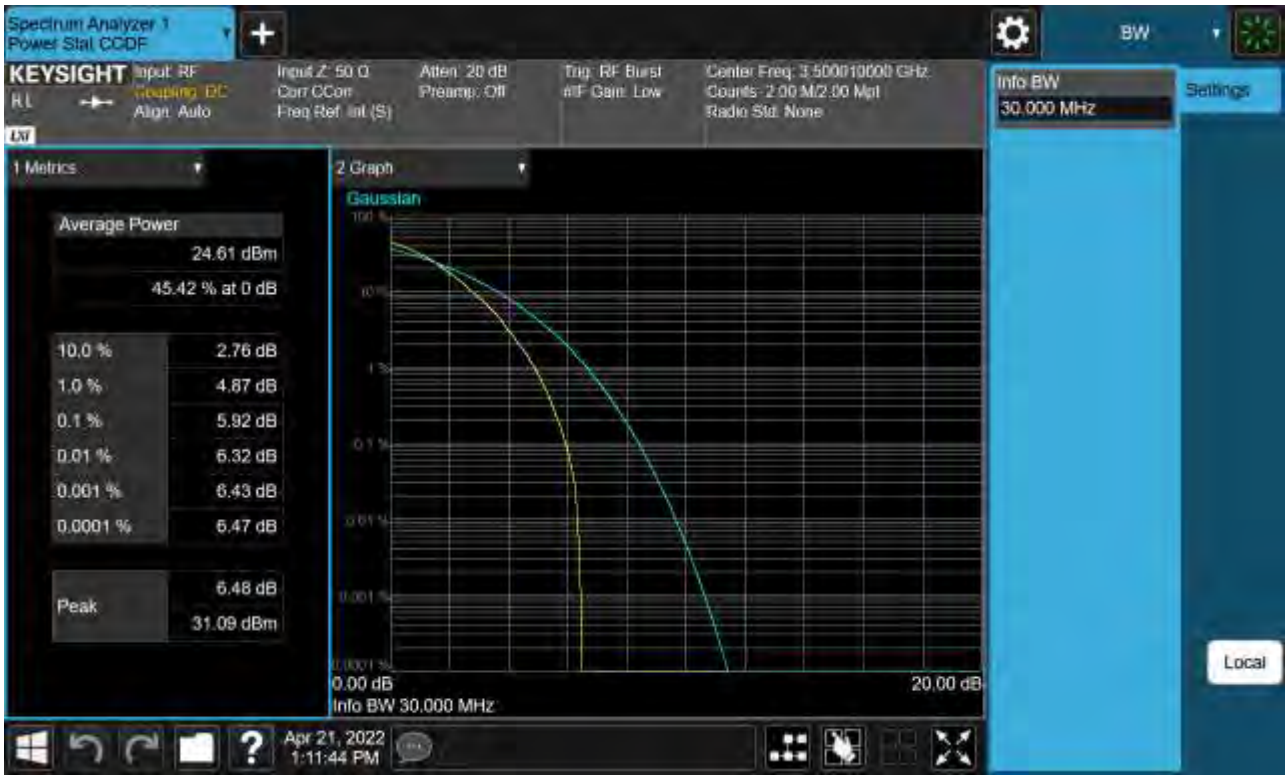
Sub6 n77. PAR Plot (30 M BW_Ch.633334_QPSK)



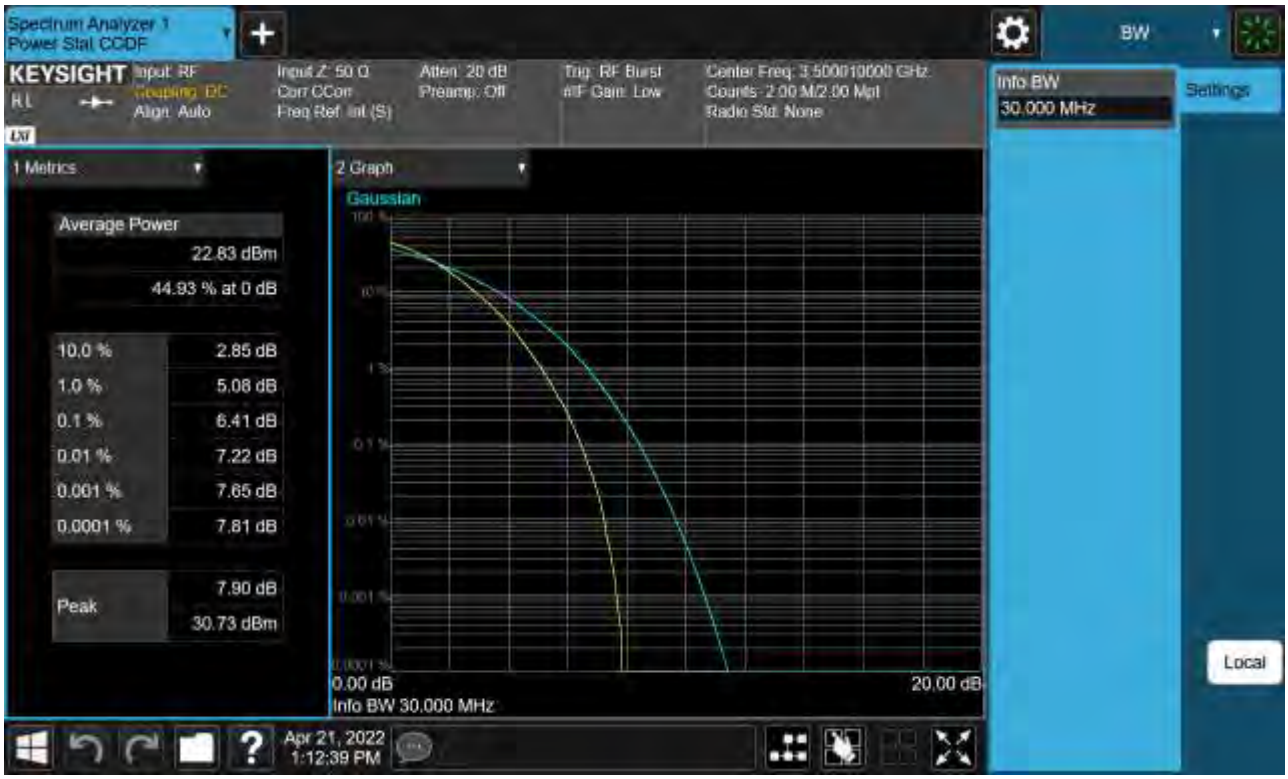
Sub6 n77. PAR Plot (30 M BW_Ch.633334_16QAM)



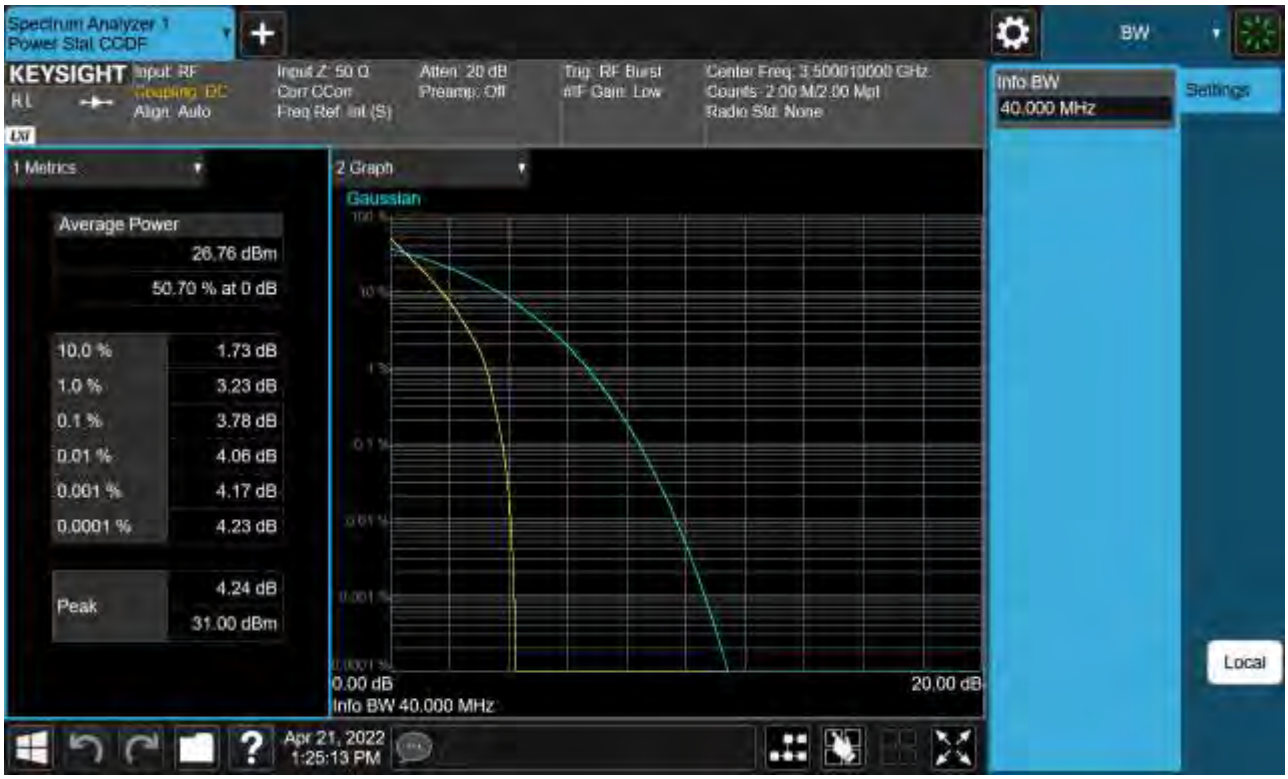
Sub6 n77. PAR Plot (30 M BW_Ch.633334_64QAM)



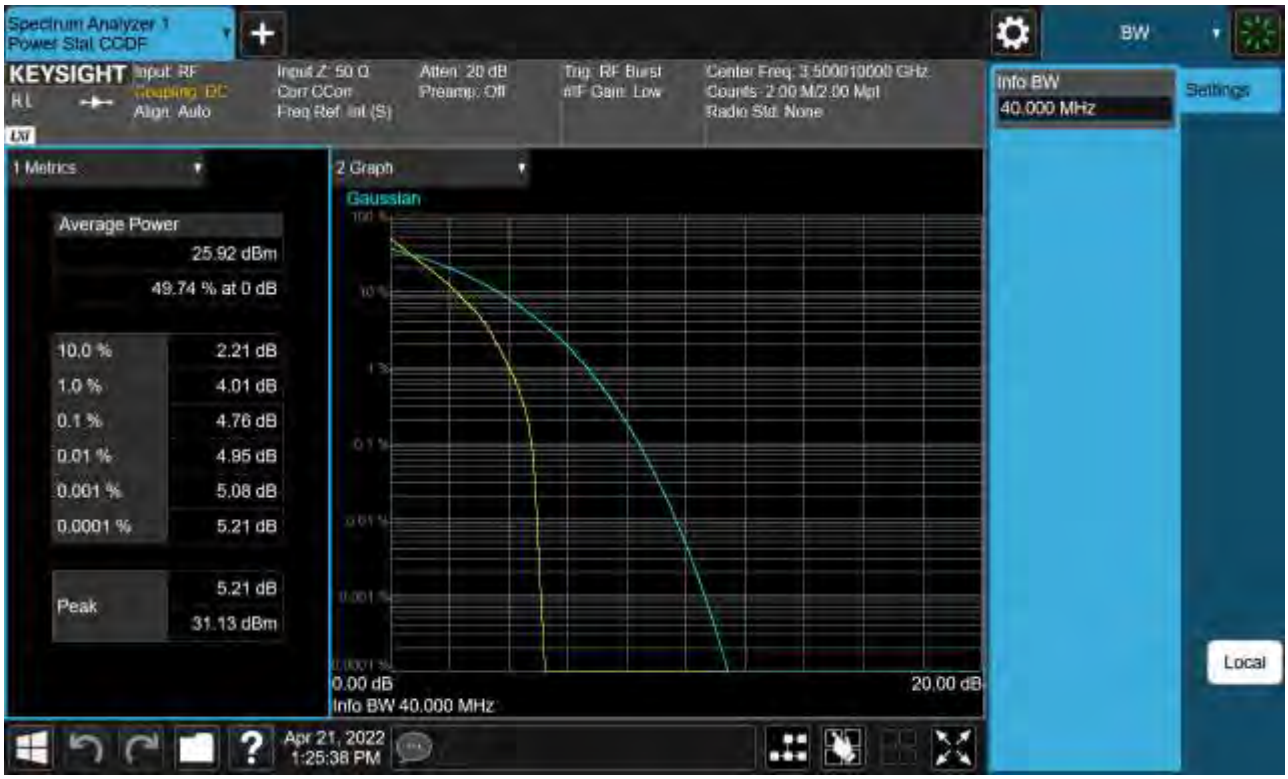
Sub6 n77. PAR Plot (30 M BW_Ch.633334_256QAM)



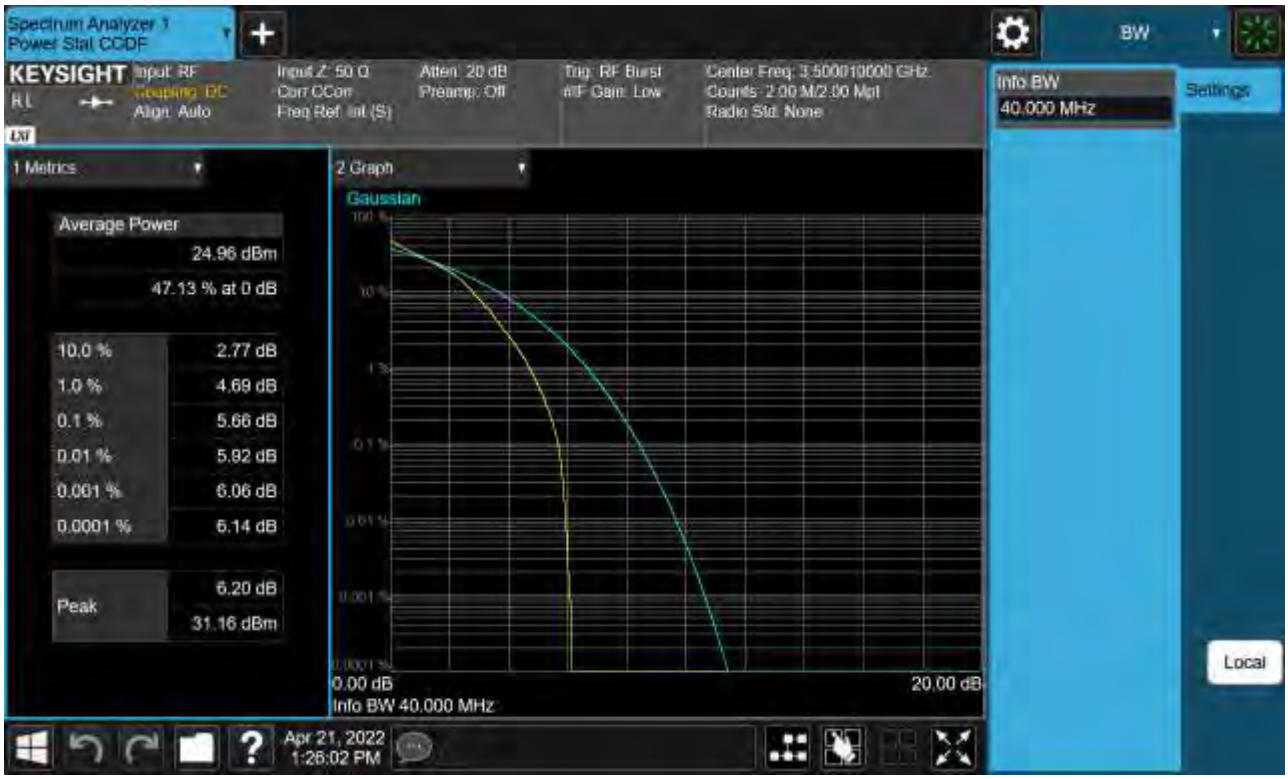
Sub6 n77. PAR Plot (40 M BW_Ch.633334_ BPSK)



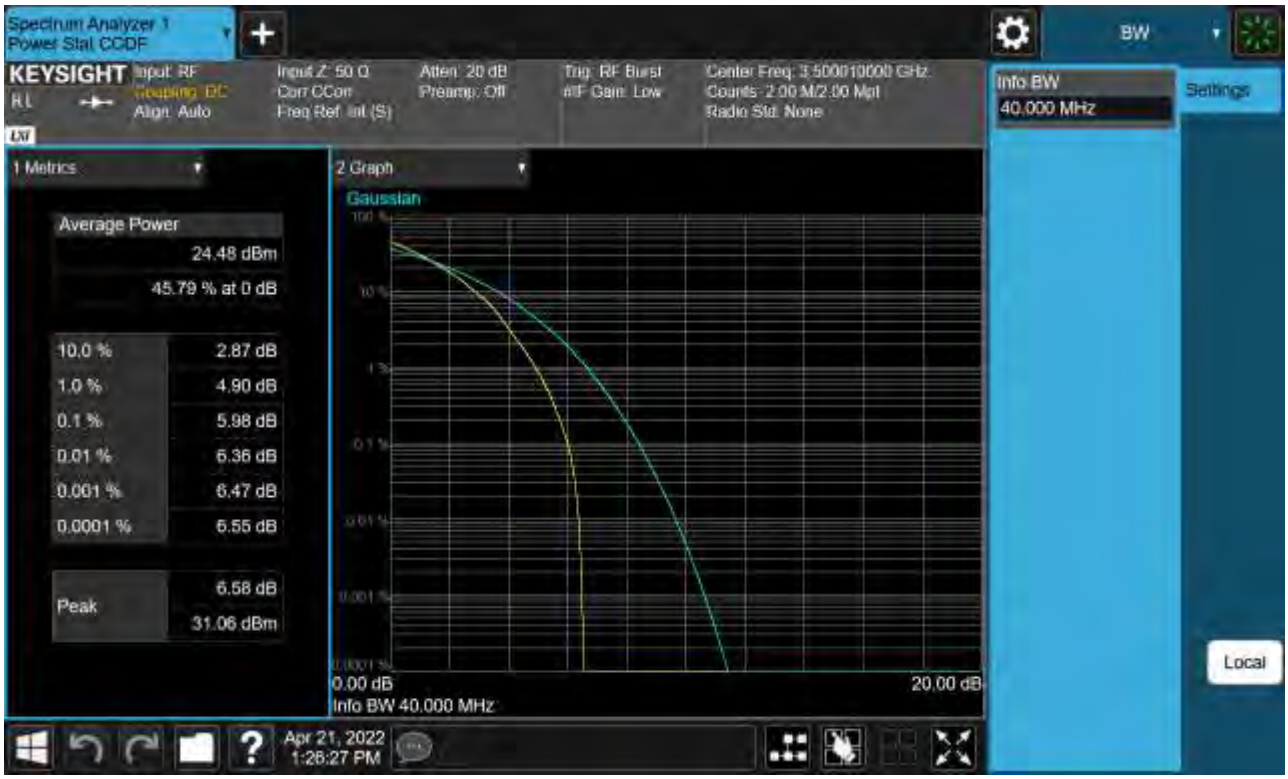
Sub6 n77. PAR Plot (40 M BW_Ch.633334_QPSK)



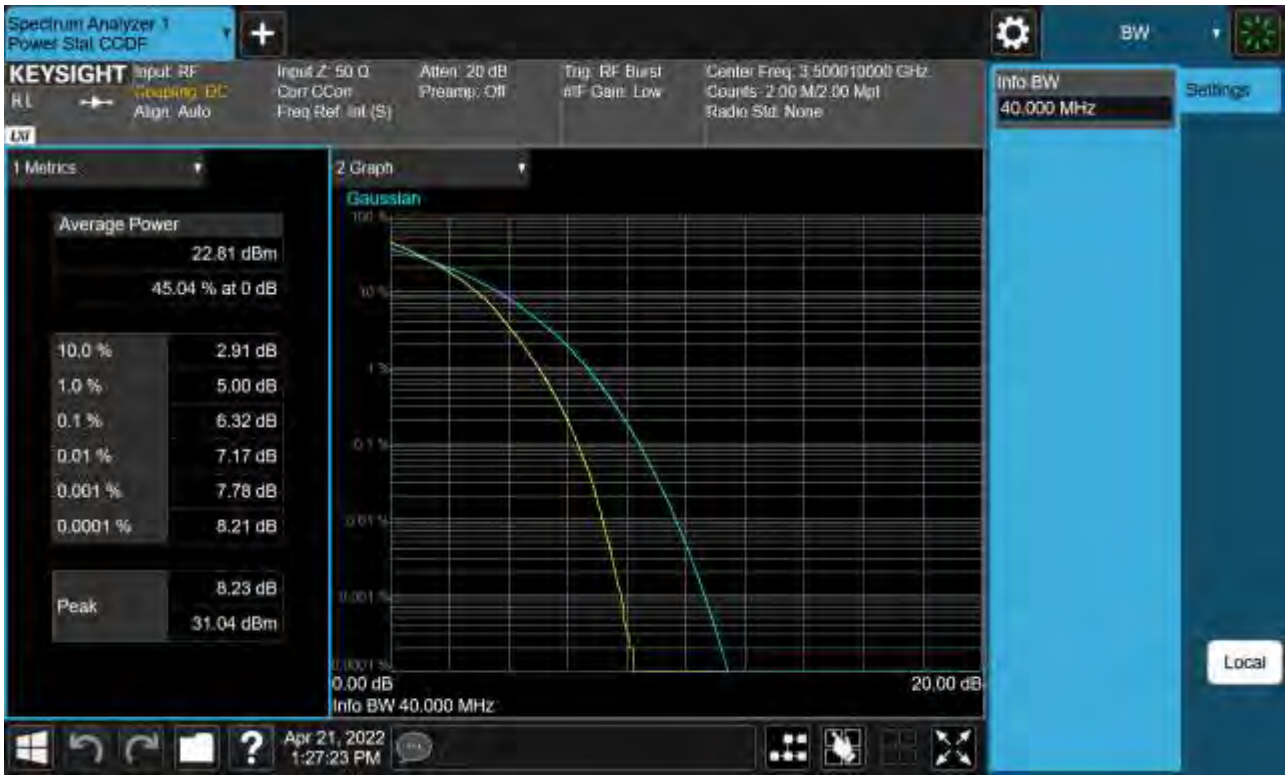
Sub6 n77. PAR Plot (40 M BW_Ch.633334_16QAM)



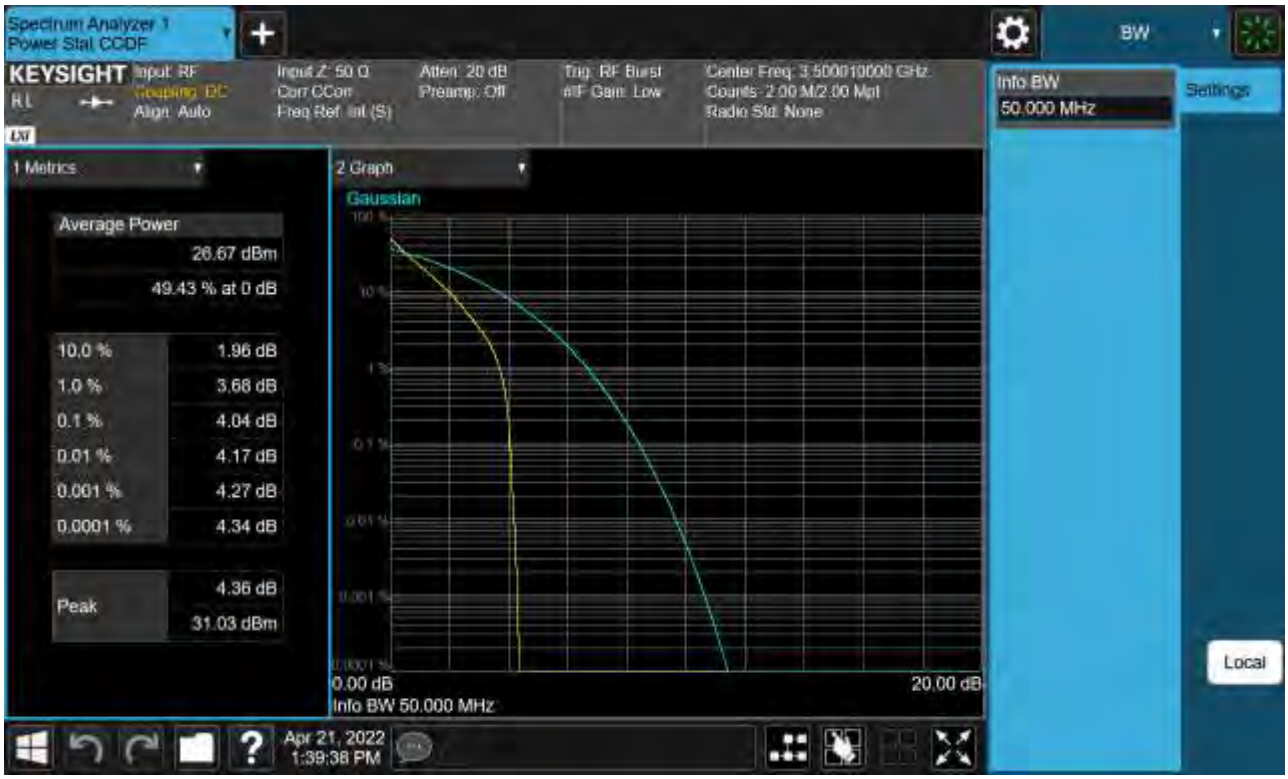
Sub6 n77. PAR Plot (40 M BW_Ch.633334_64QAM)



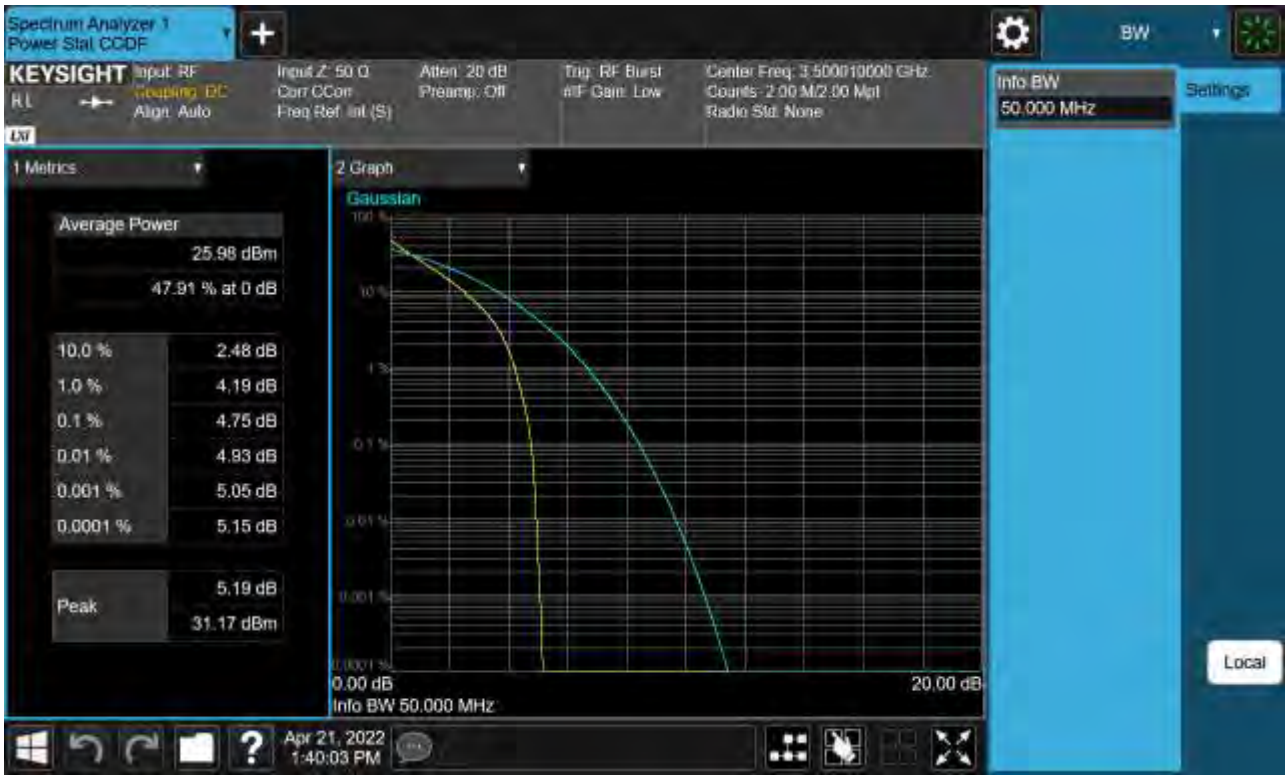
Sub6 n77. PAR Plot (40 M BW_Ch.633334_256QAM)



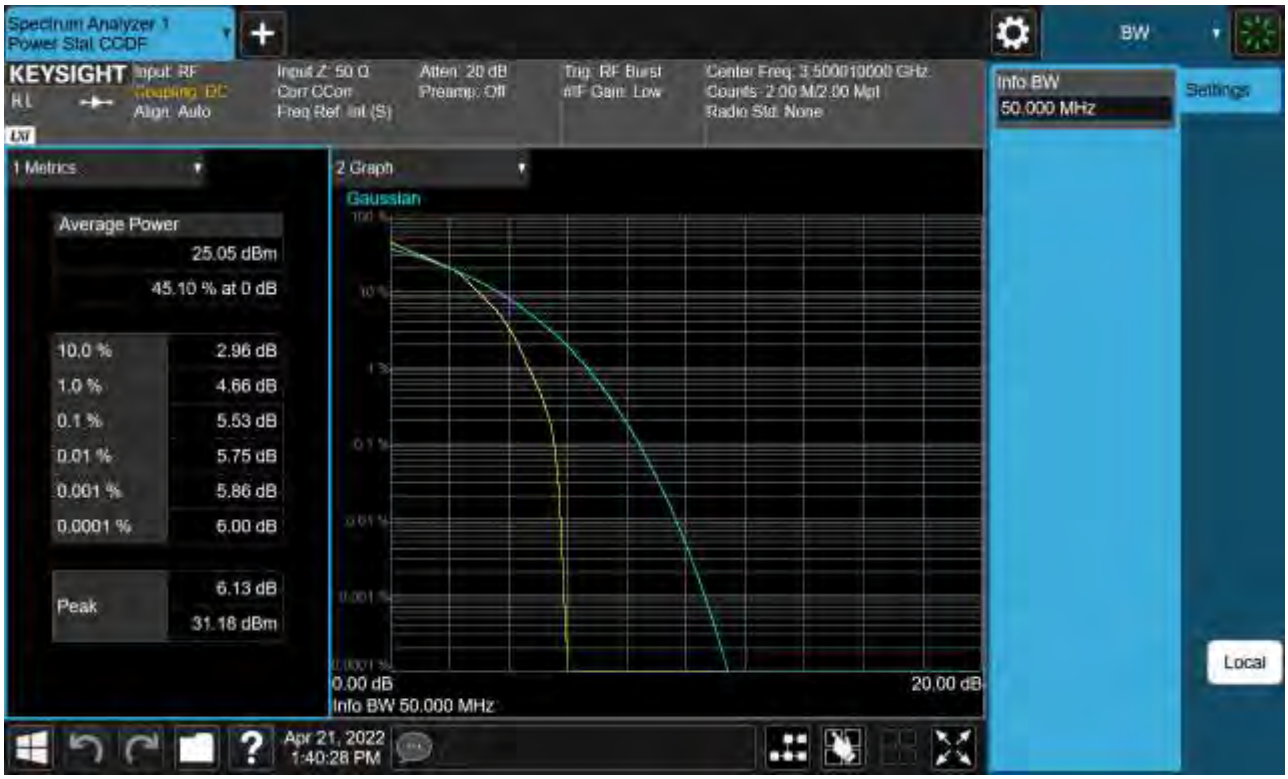
Sub6 n77. PAR Plot (50 M BW_Ch.633334_ BPSK)



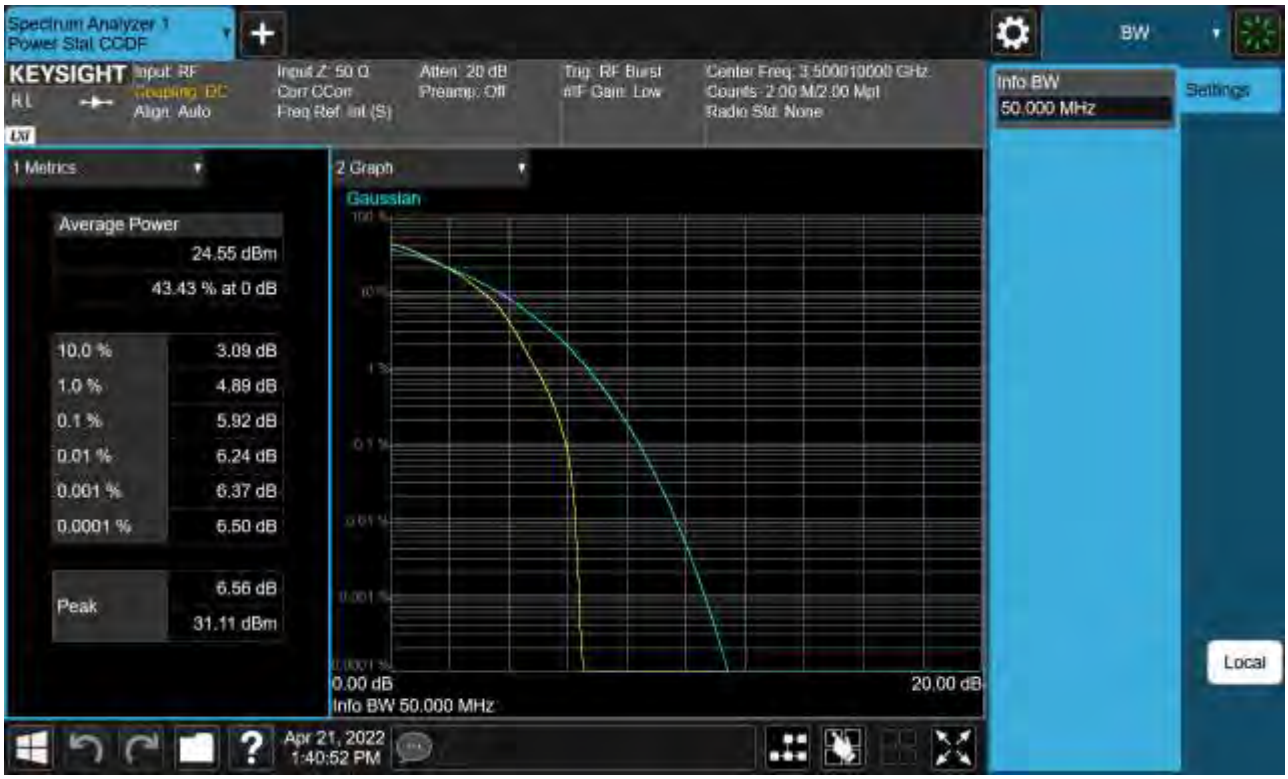
Sub6 n77. PAR Plot (50 M BW_Ch.633334_QPSK)



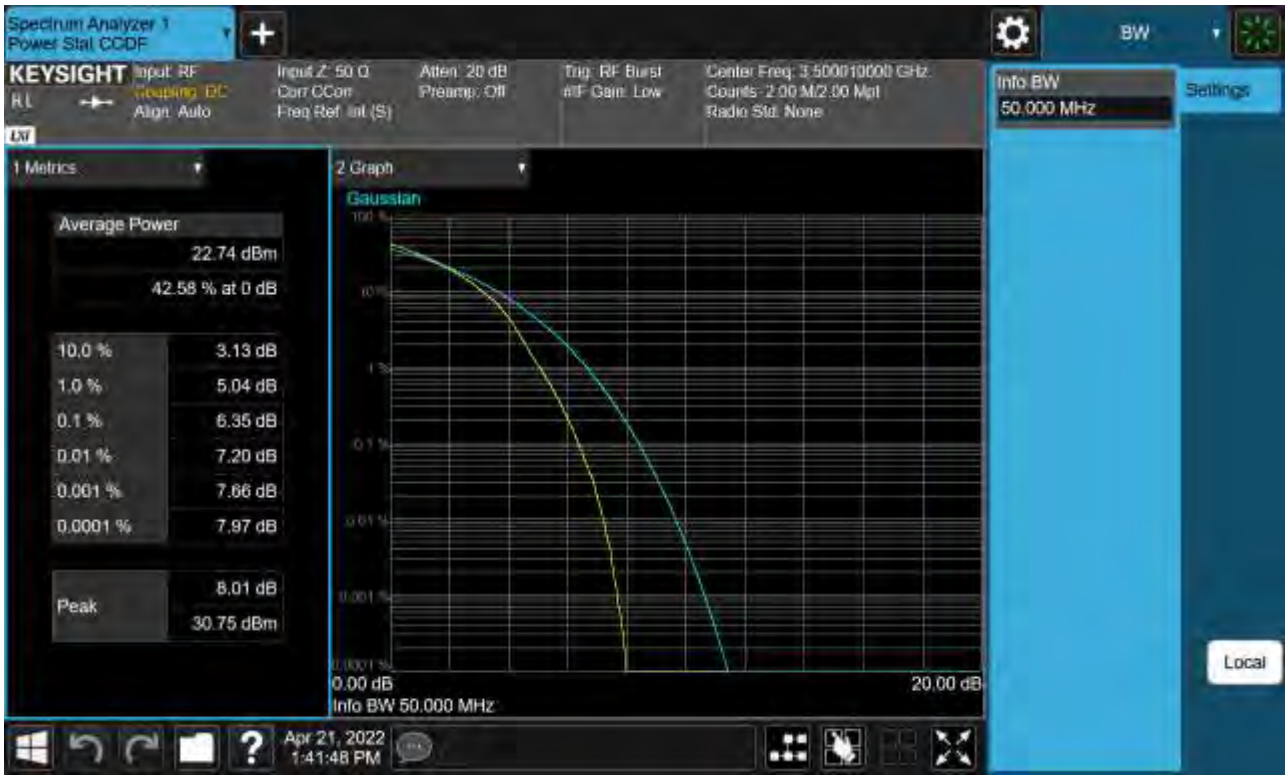
Sub6 n77. PAR Plot (50 M BW_Ch.633334_16QAM)



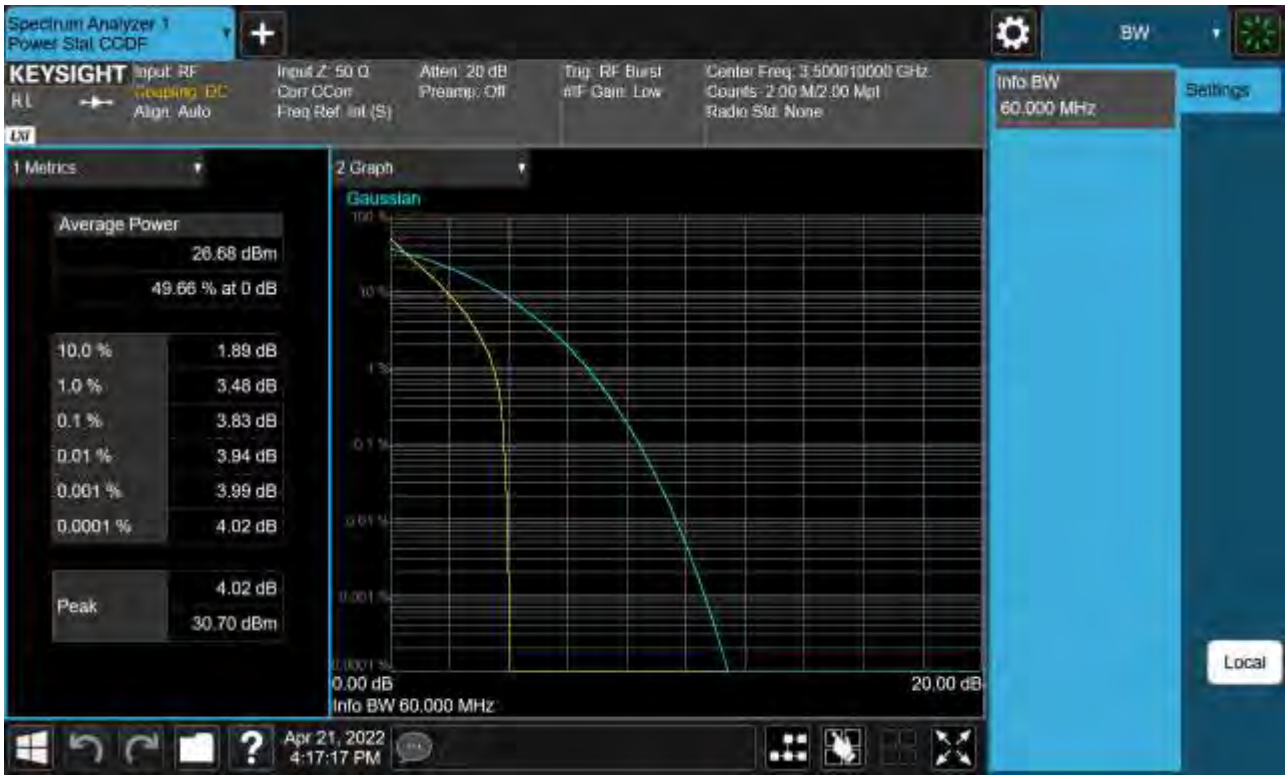
Sub6 n77. PAR Plot (50 M BW_Ch.633334_64QAM)



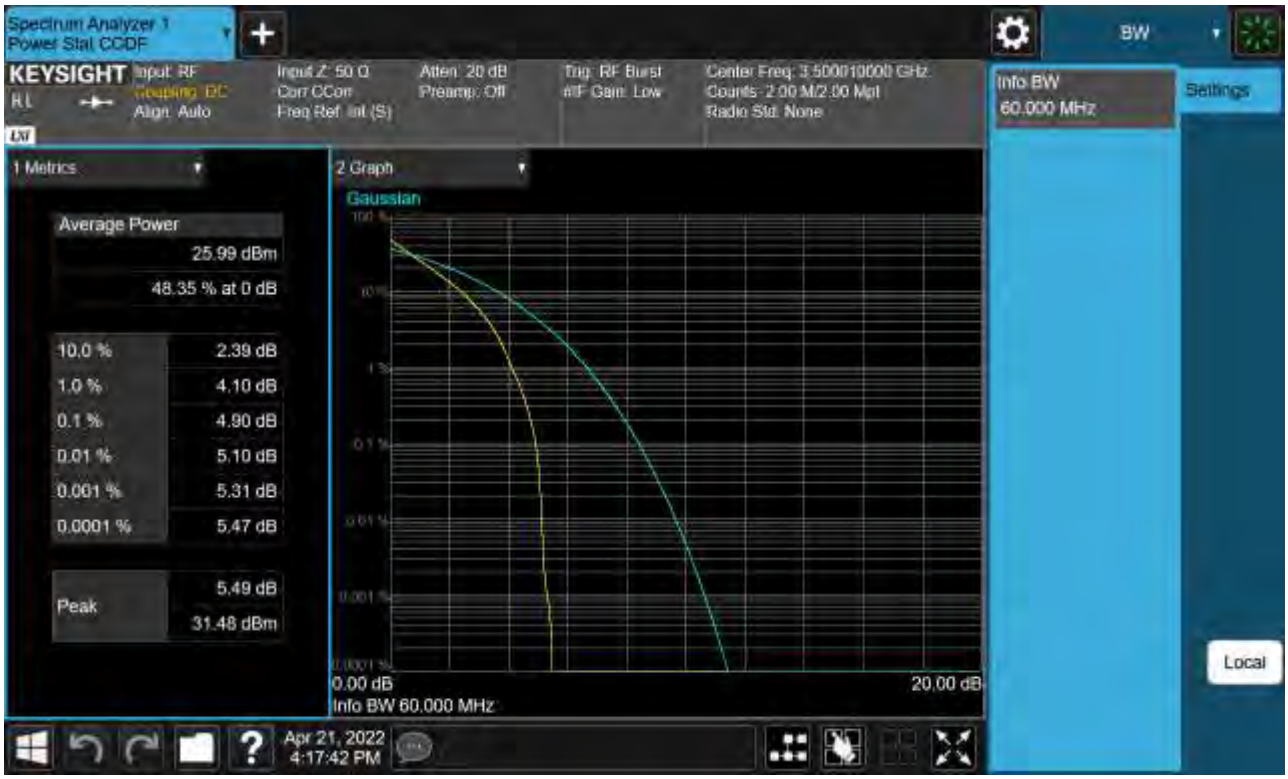
Sub6 n77. PAR Plot (50 M BW_Ch.633334_256QAM)



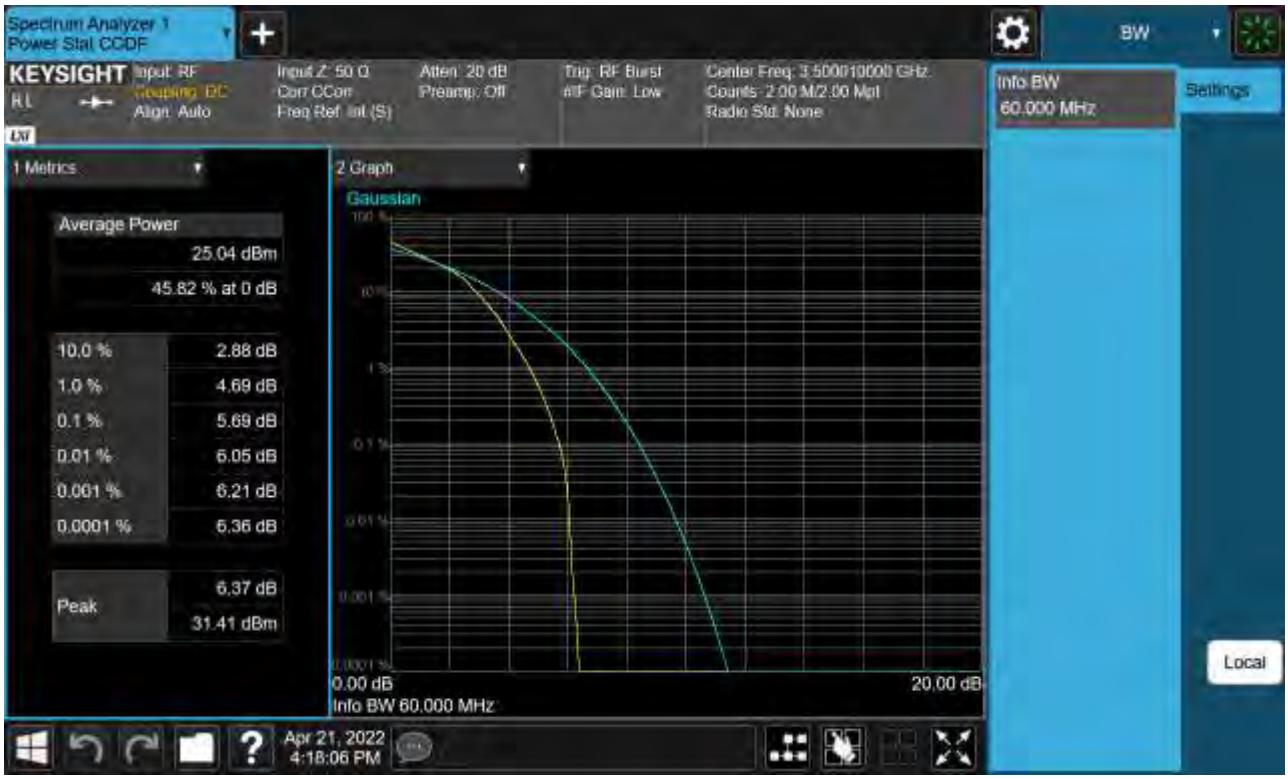
Sub6 n77. PAR Plot (60 M BW_Ch.633334_ BPSK)



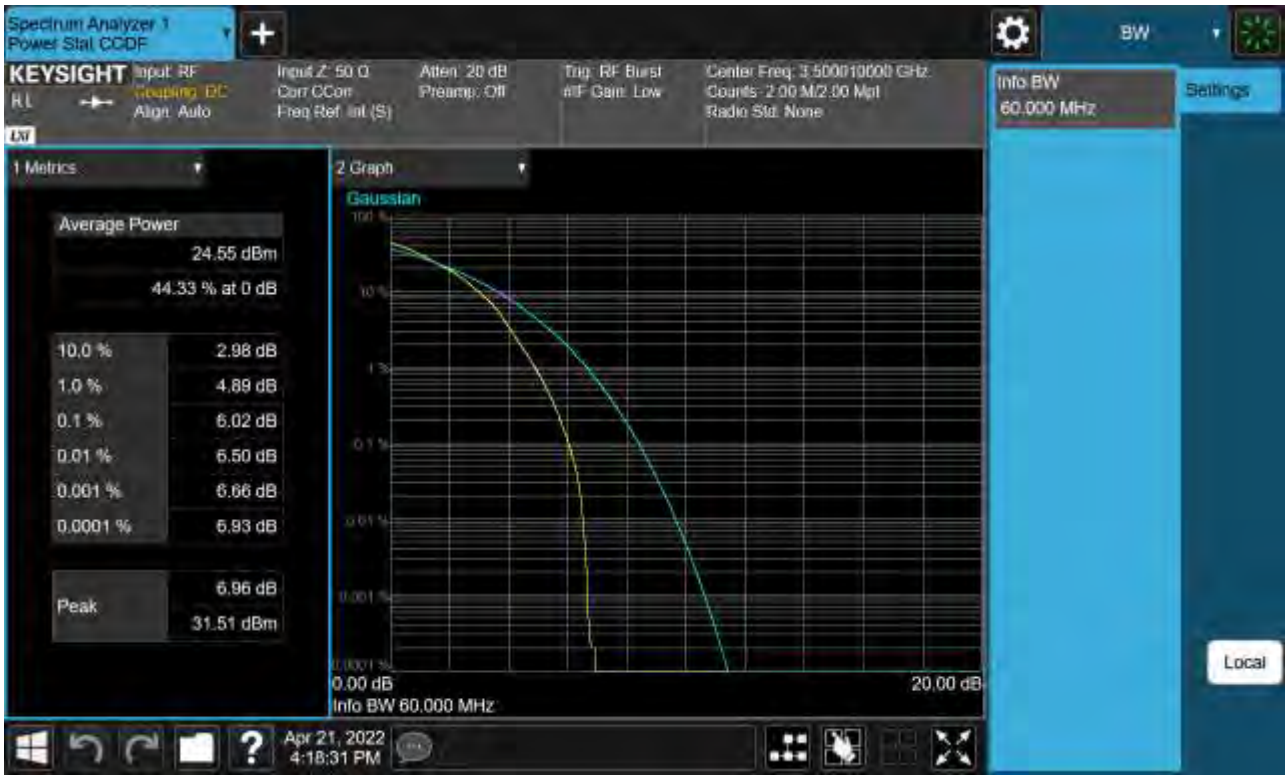
Sub6 n77. PAR Plot (60 M BW_Ch.633334_QPSK)



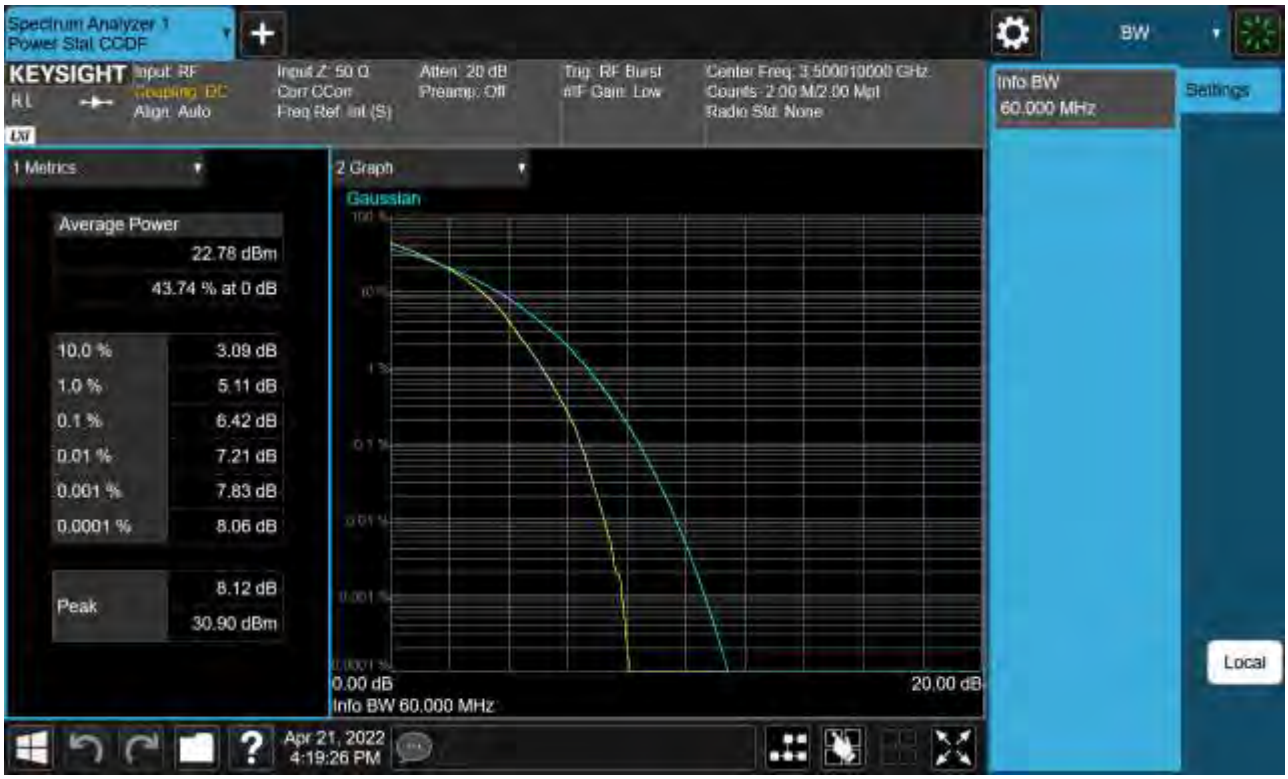
Sub6 n77. PAR Plot (60 M BW_Ch.633334_16QAM)



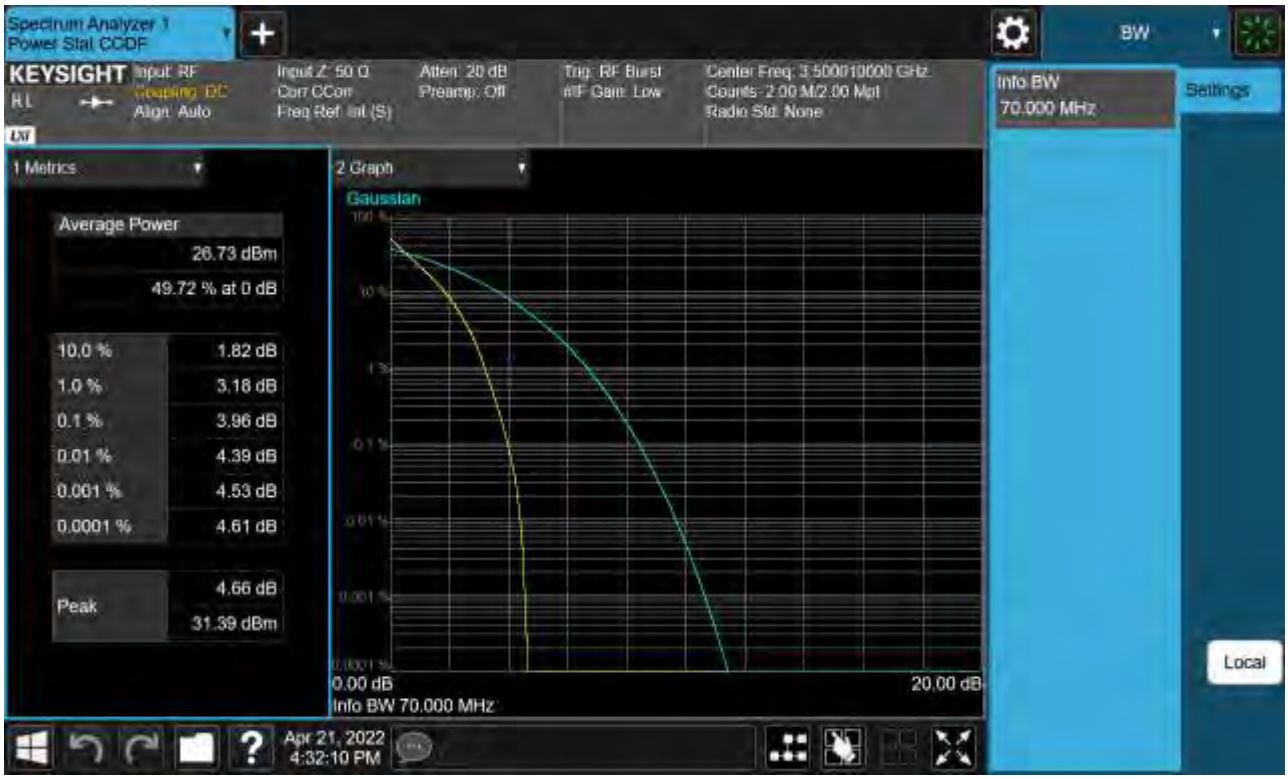
Sub6 n77. PAR Plot (60 M BW_Ch.633334_64QAM)



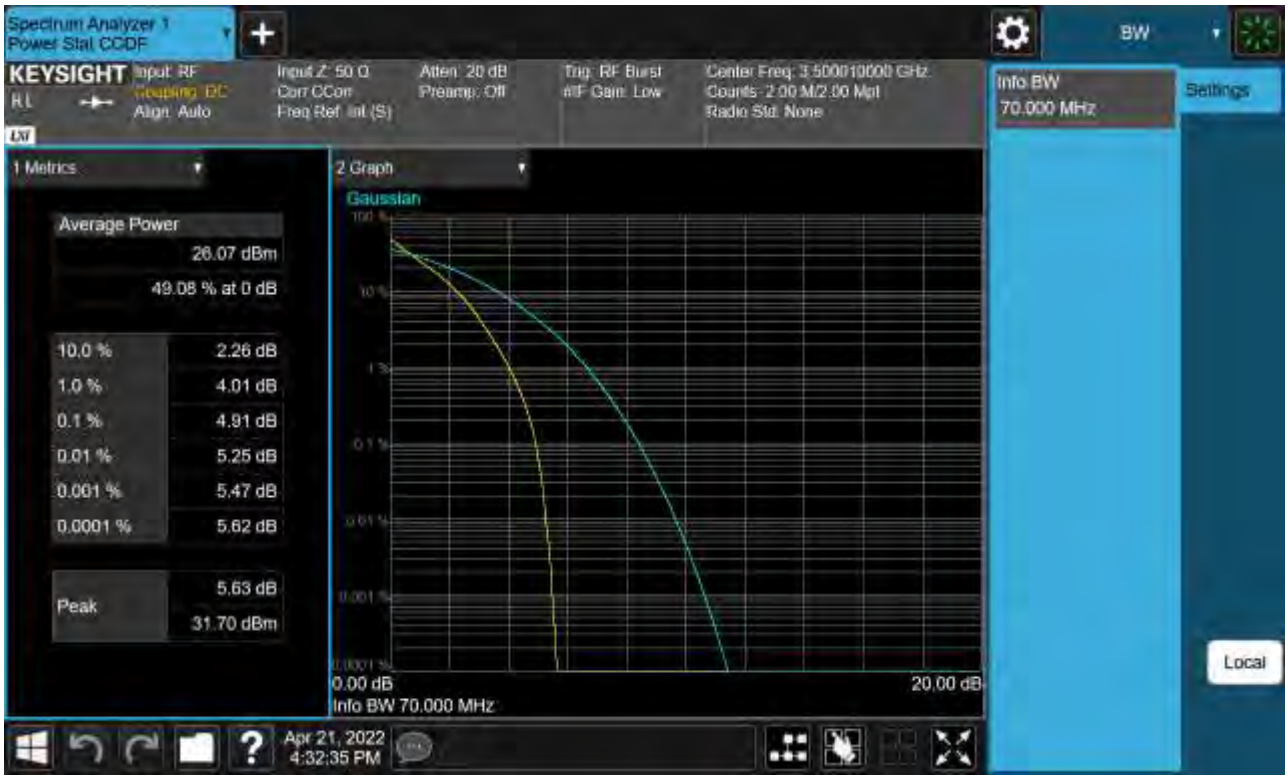
Sub6 n77. PAR Plot (60 M BW_Ch.633334_256QAM)



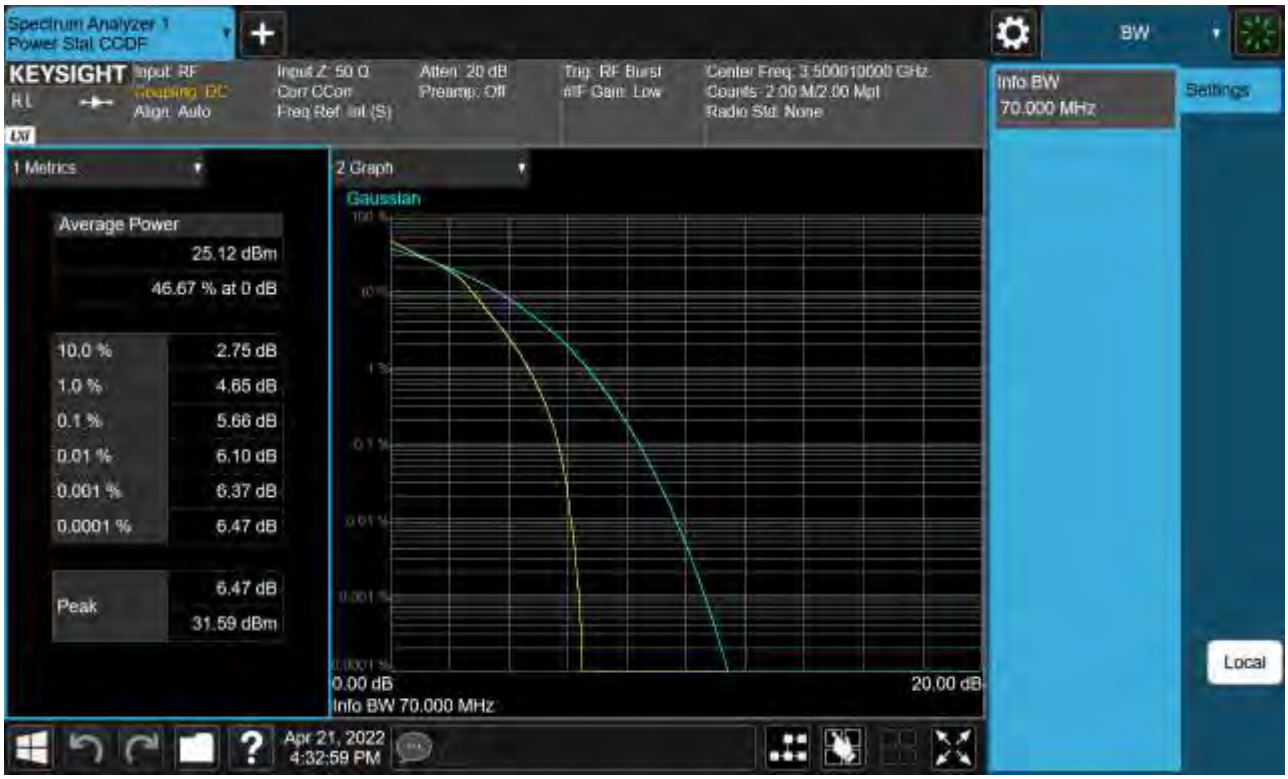
Sub6 n77. PAR Plot (70 M BW_Ch.633334_ BPSK)



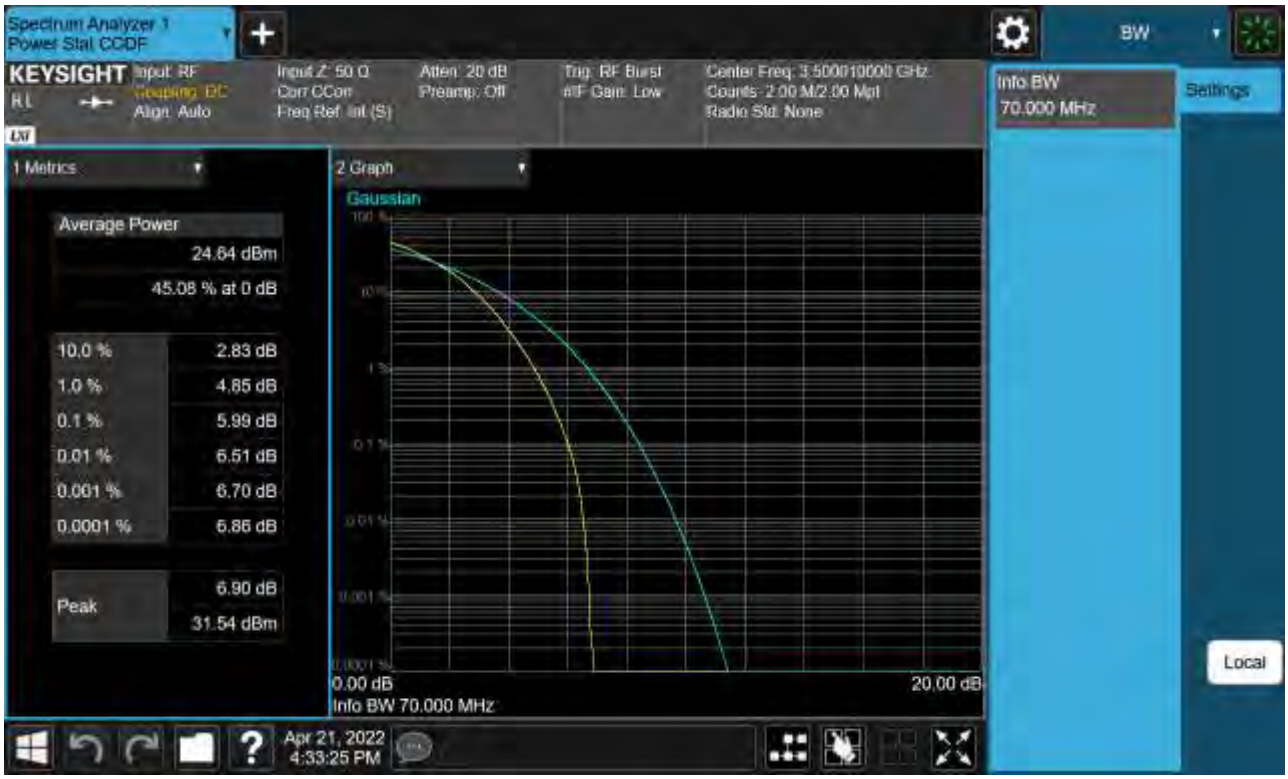
Sub6 n77. PAR Plot (70 M BW_Ch.633334_QPSK)



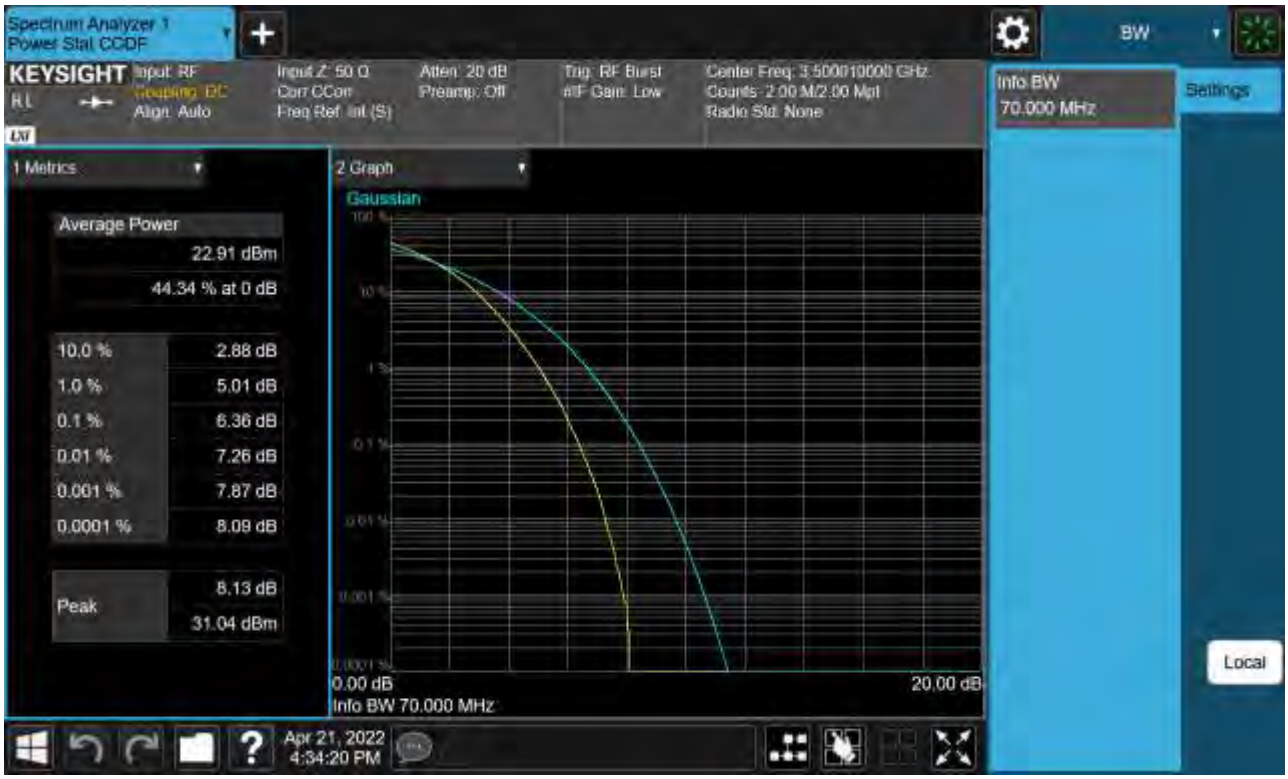
Sub6 n77. PAR Plot (70 M BW_Ch.633334_16QAM)



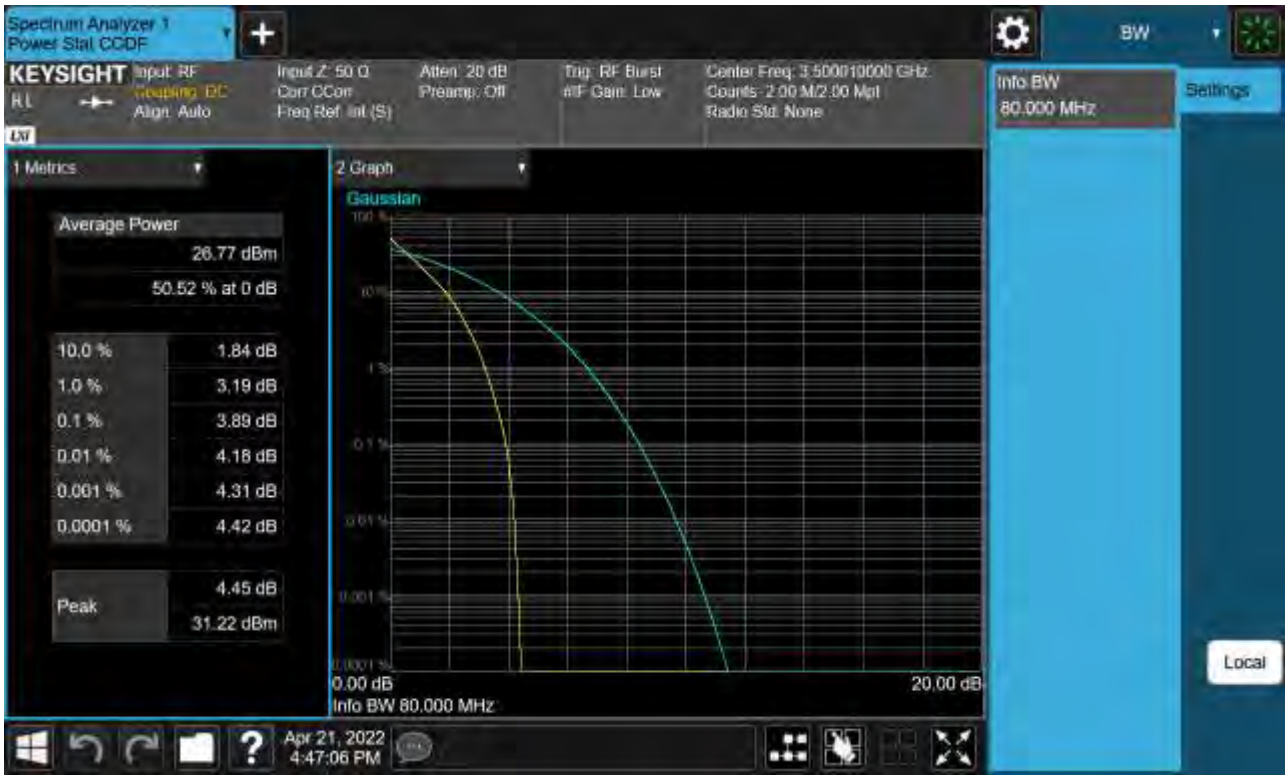
Sub6 n77. PAR Plot (70 M BW_Ch.633334_64QAM)



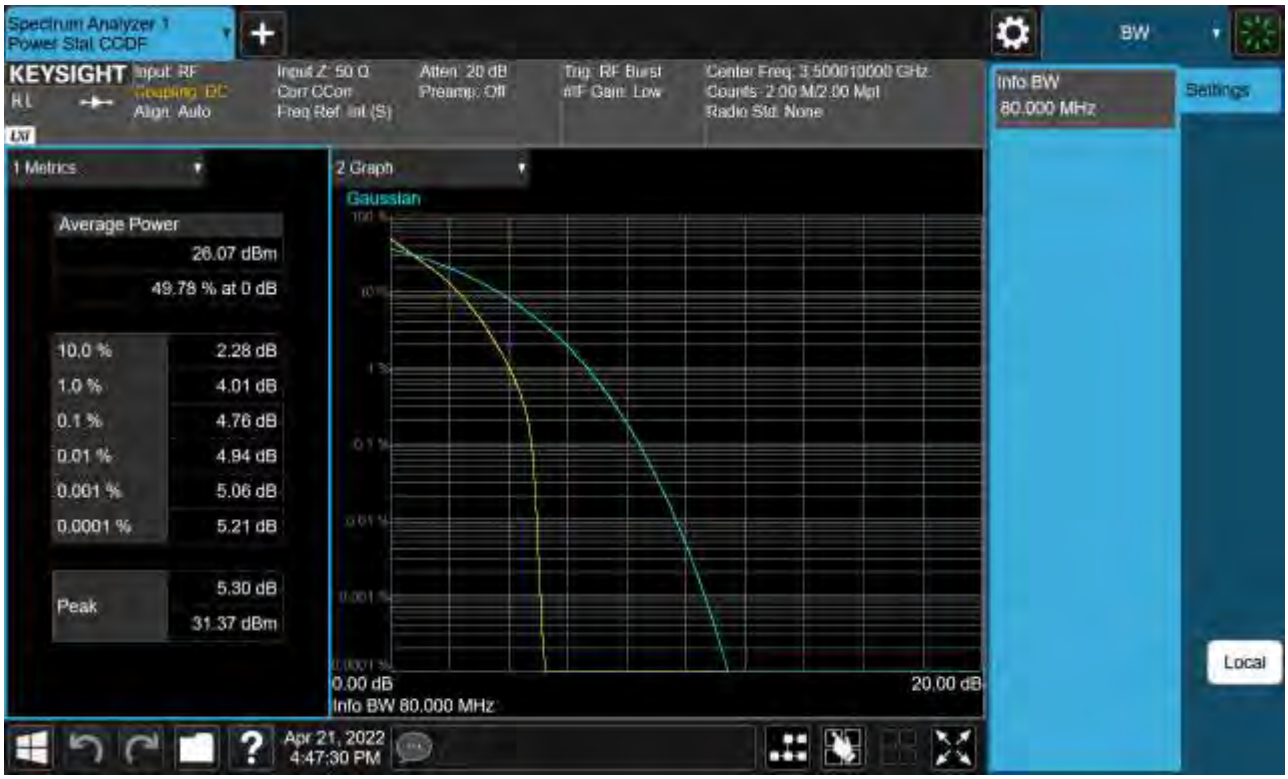
Sub6 n77. PAR Plot (70 M BW_Ch.633334_256QAM)



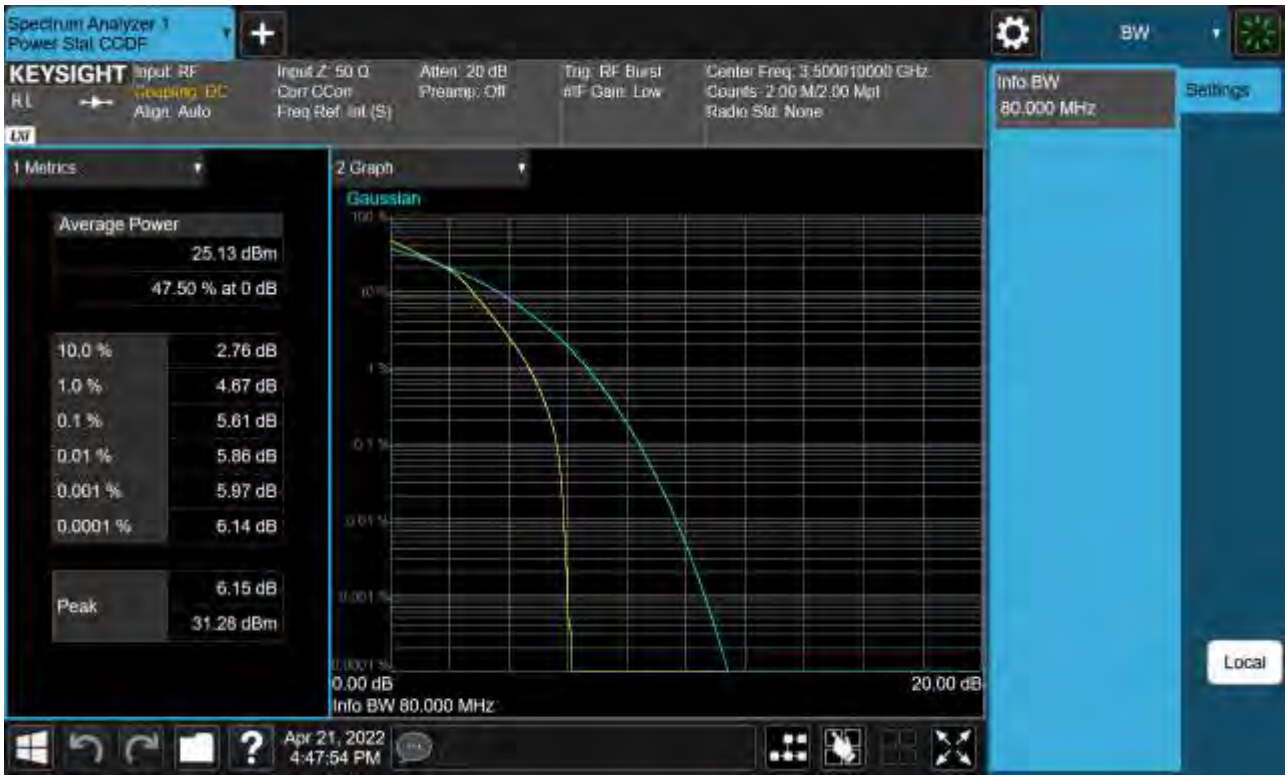
Sub6 n77. PAR Plot (80 M BW_Ch.633334_ BPSK)



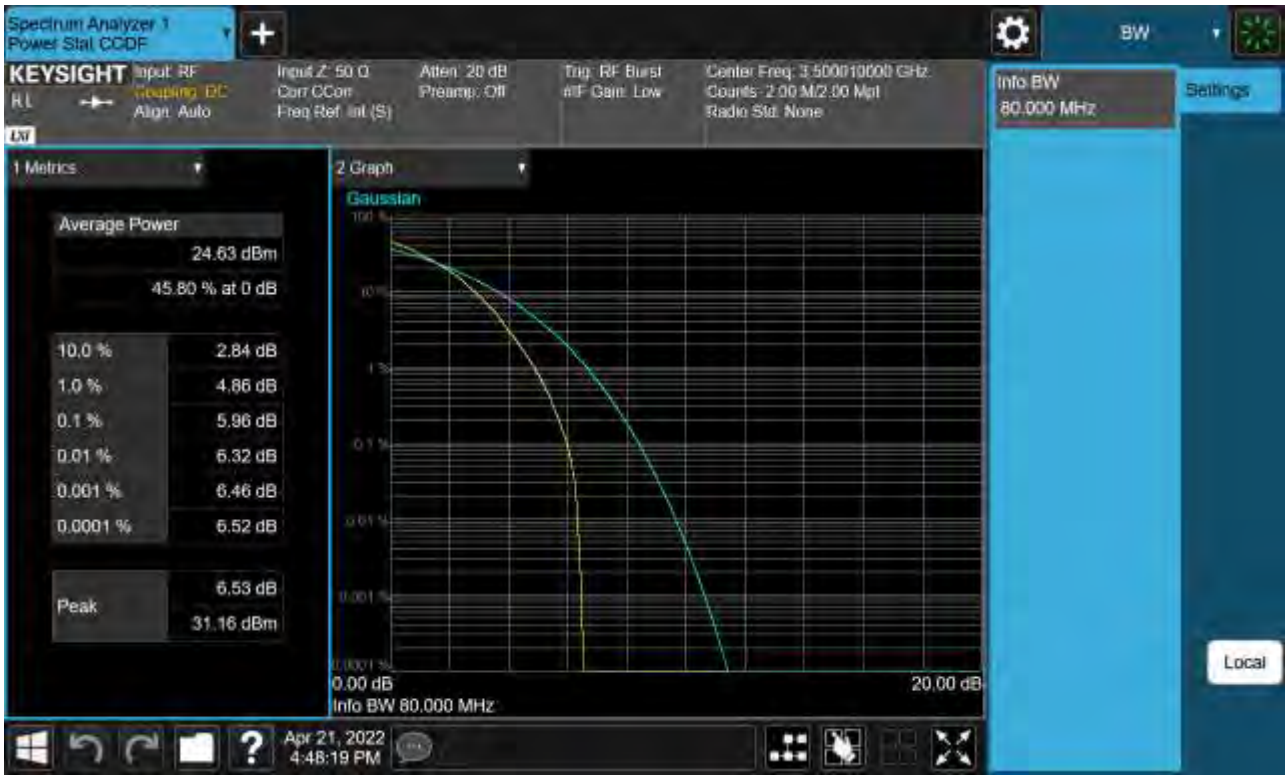
Sub6 n77. PAR Plot (80 M BW_Ch.633334_QPSK)



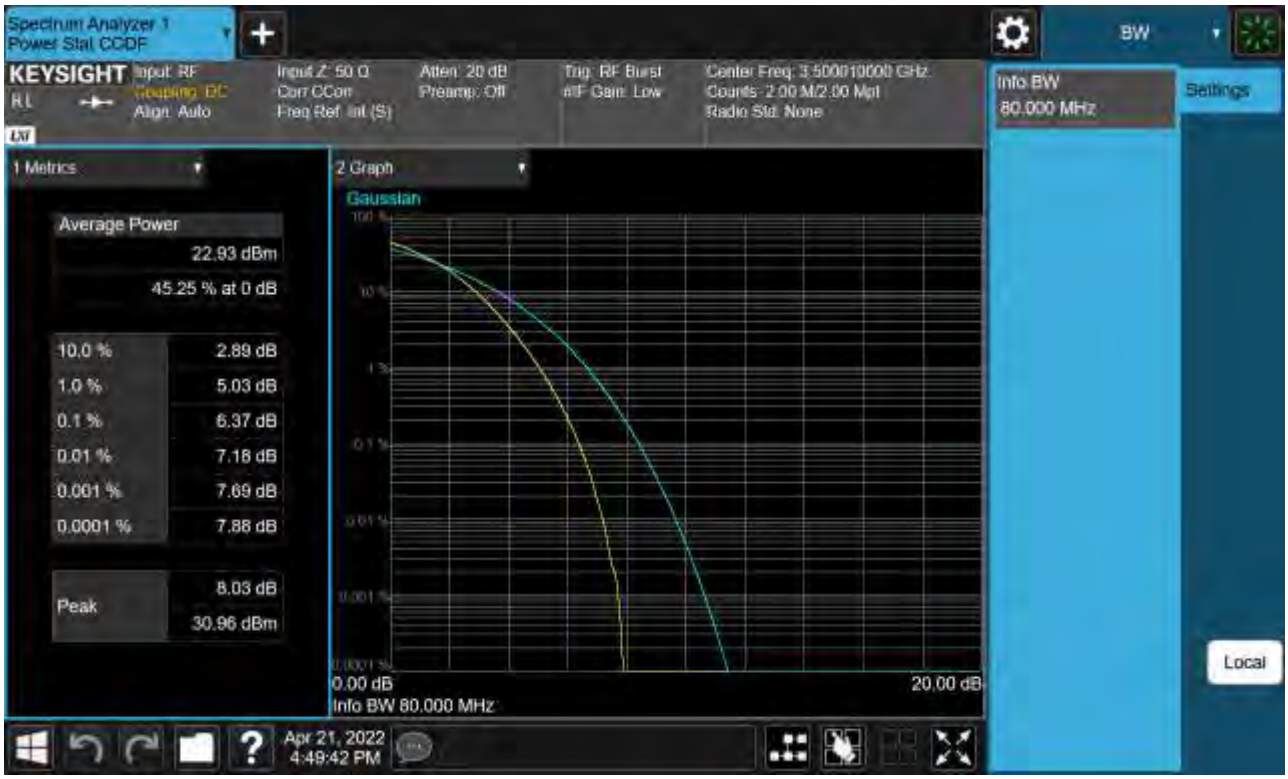
Sub6 n77. PAR Plot (80 M BW_Ch.633334_16QAM)



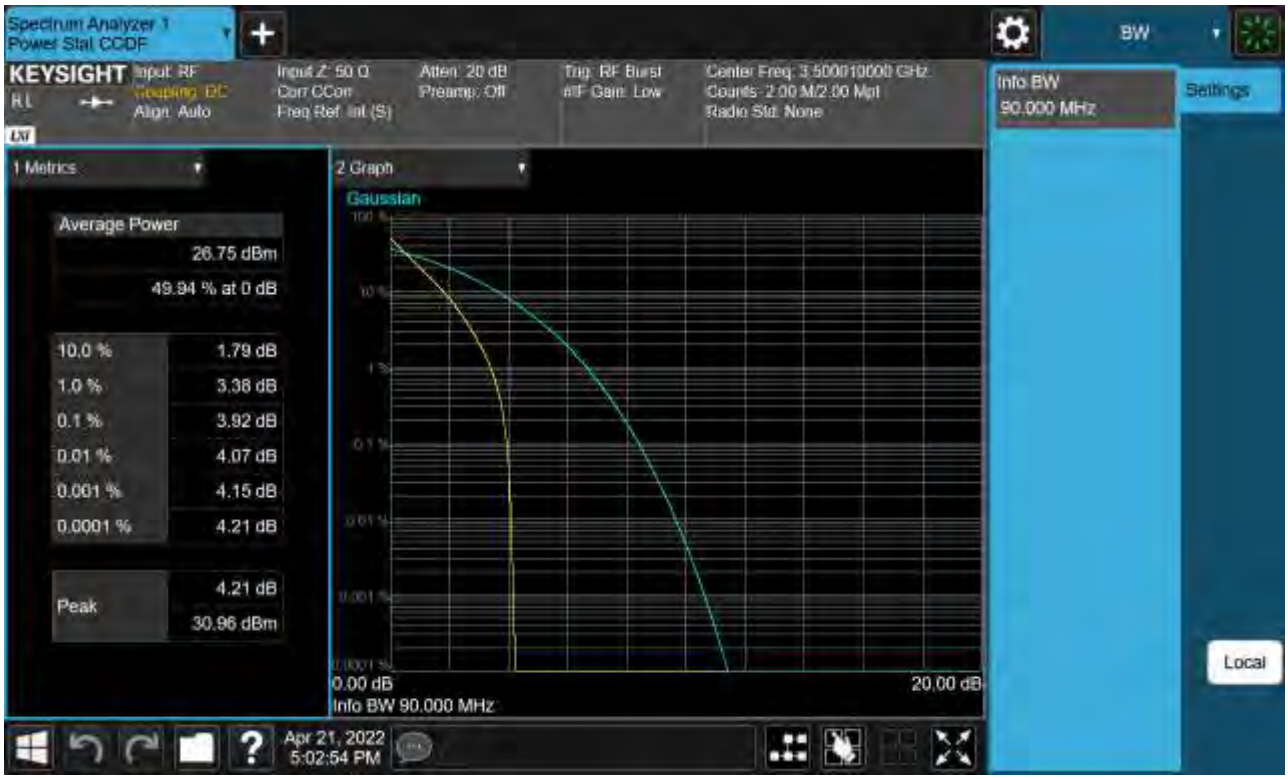
Sub6 n77. PAR Plot (80 M BW_Ch.633334_64QAM)



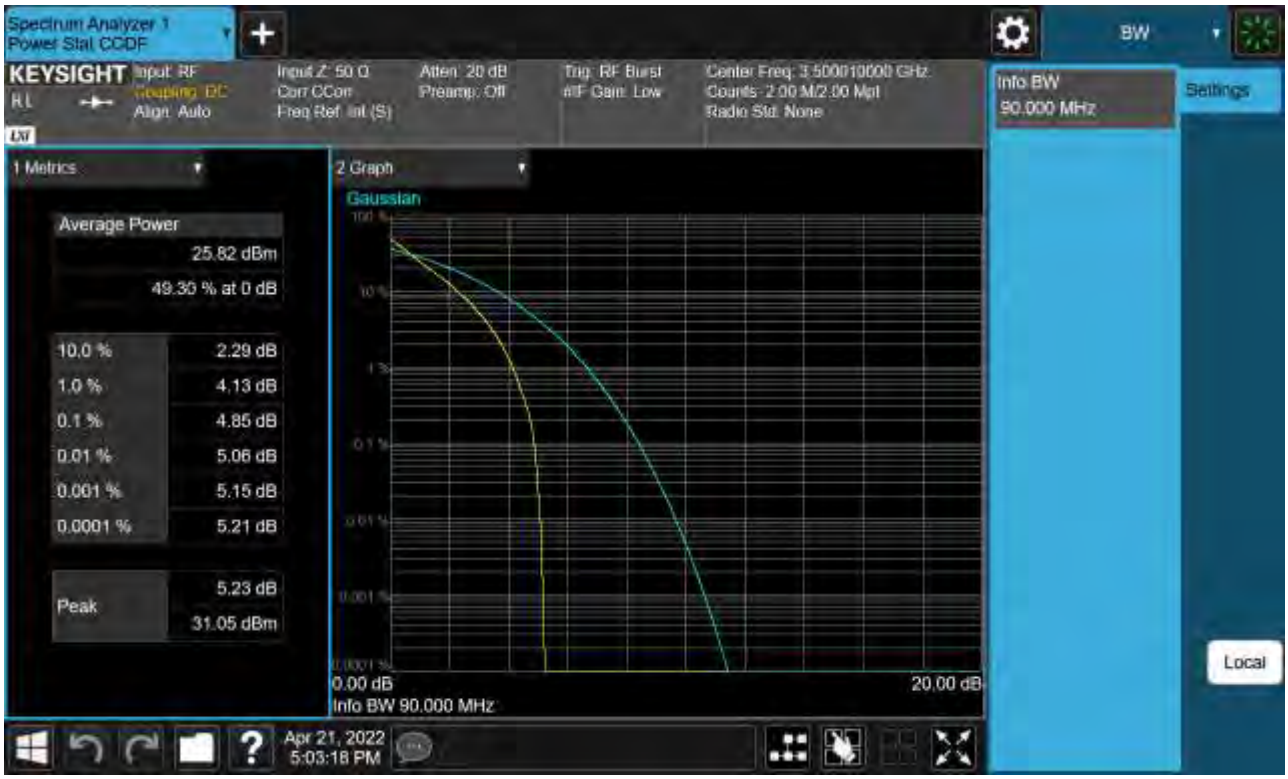
Sub6 n77. PAR Plot (80 M BW_Ch.633334_256QAM)



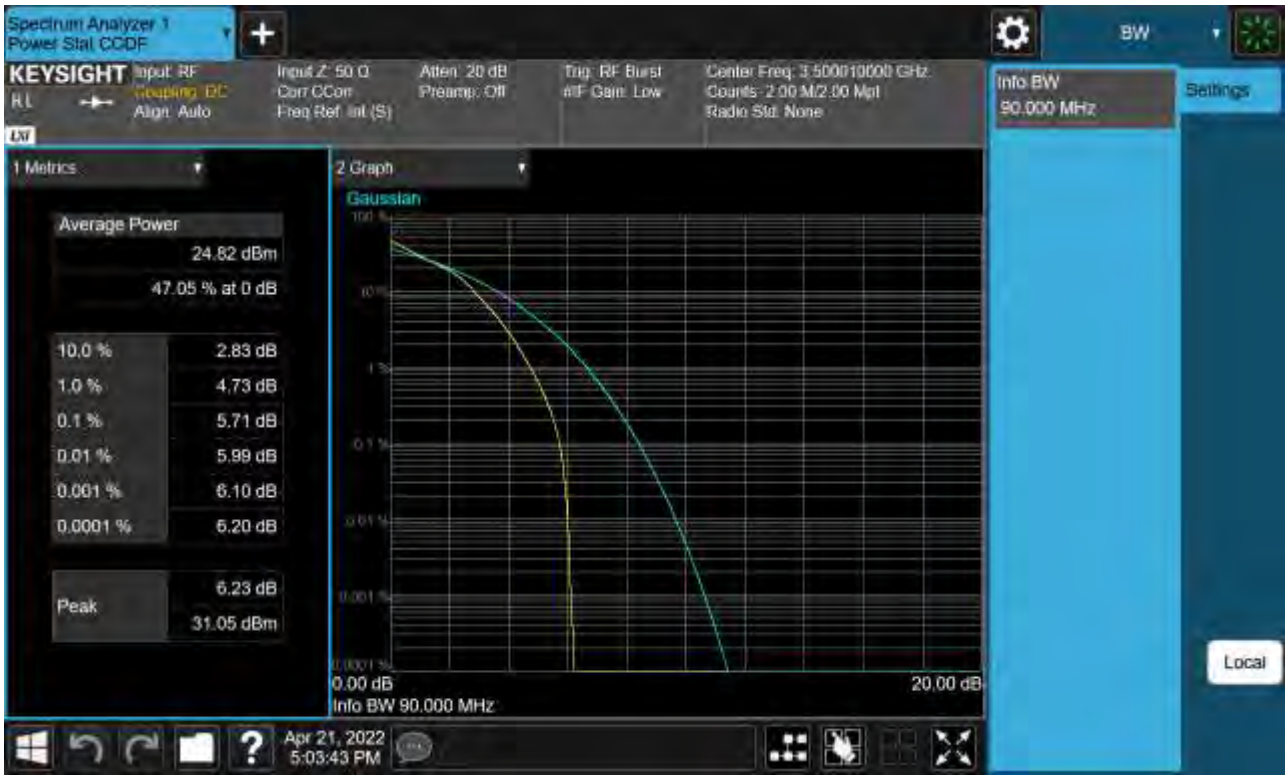
Sub6 n77. PAR Plot (90 M BW_Ch.633334_ BPSK)



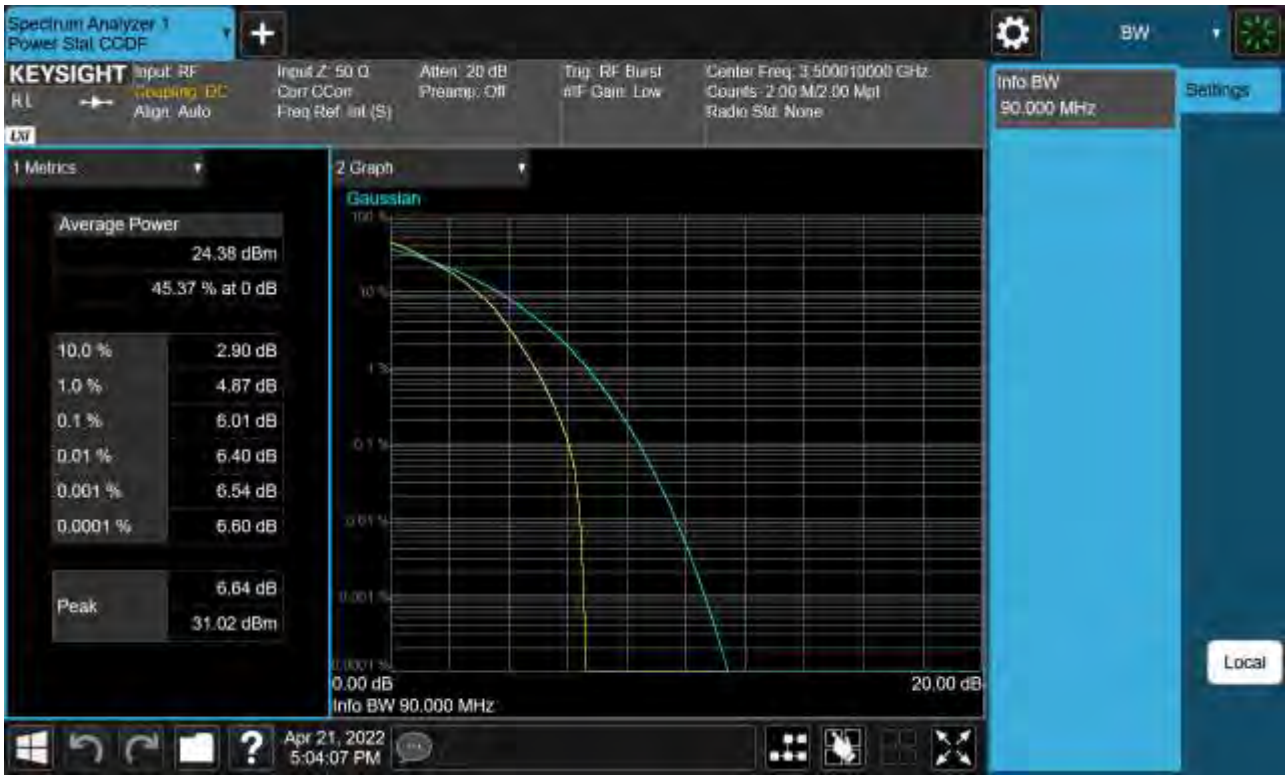
Sub6 n77. PAR Plot (90 M BW_Ch.633334_QPSK)



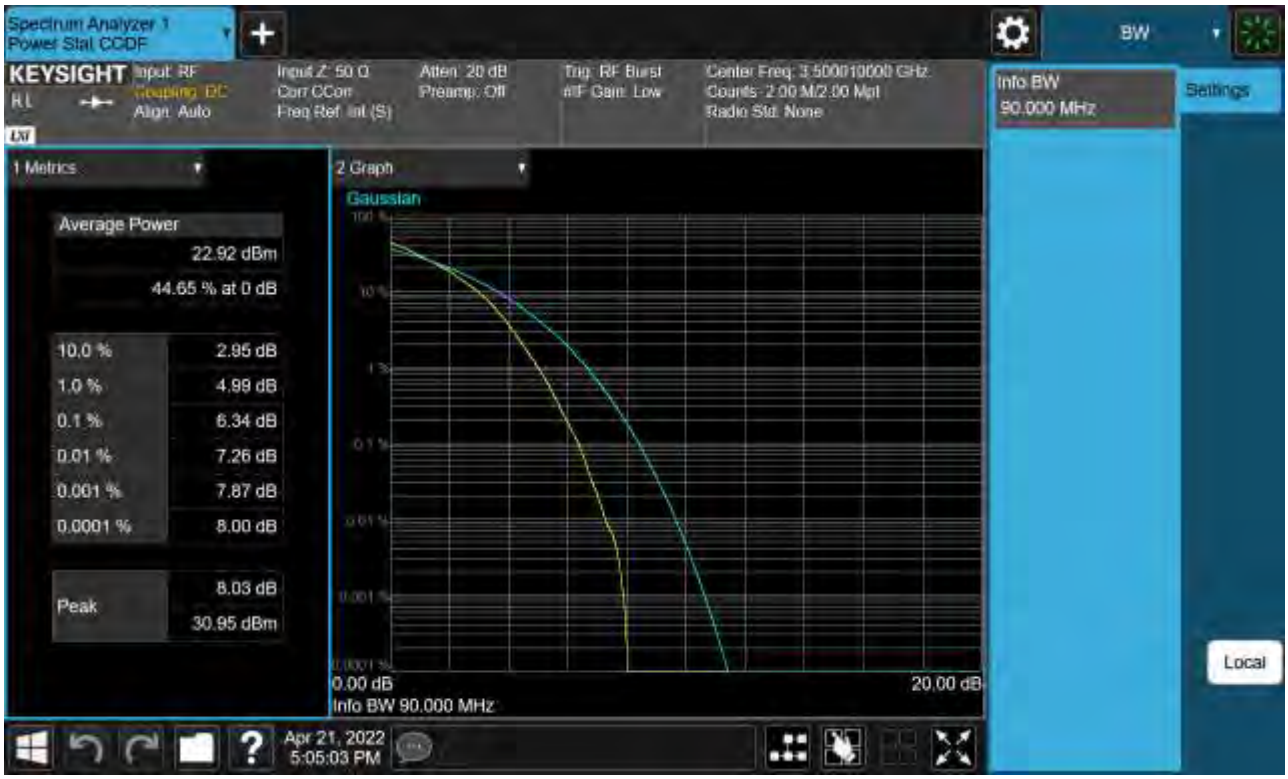
Sub6 n77. PAR Plot (90 M BW_Ch.633334_16QAM)



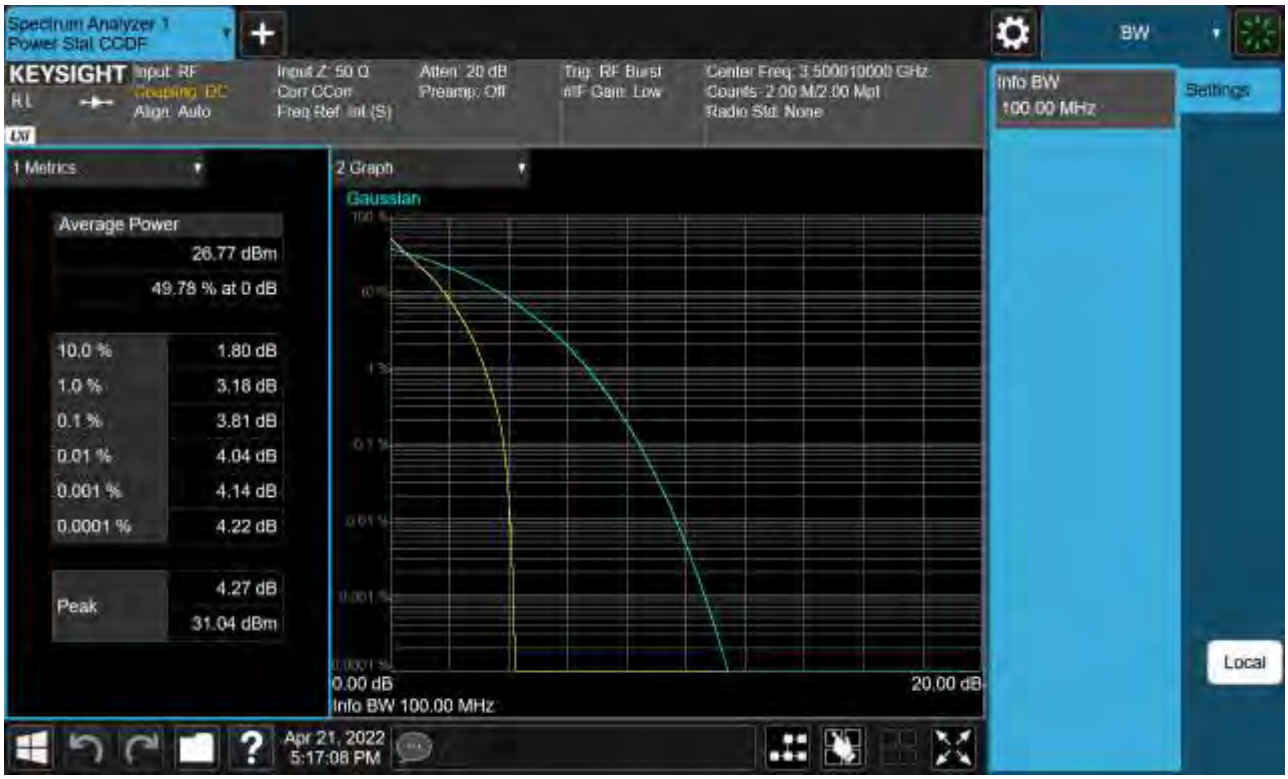
Sub6 n77. PAR Plot (90 M BW_Ch.633334_64QAM)



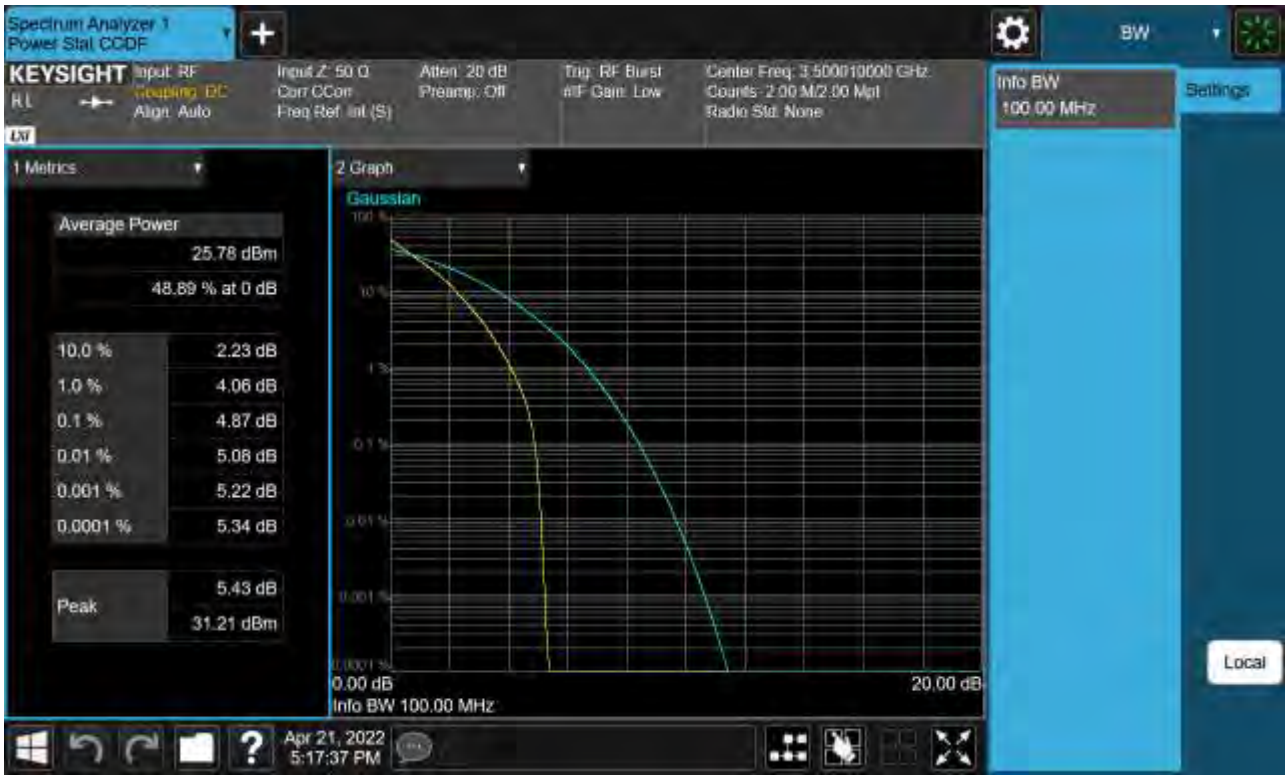
Sub6 n77. PAR Plot (90 M BW_Ch.633334_256QAM)



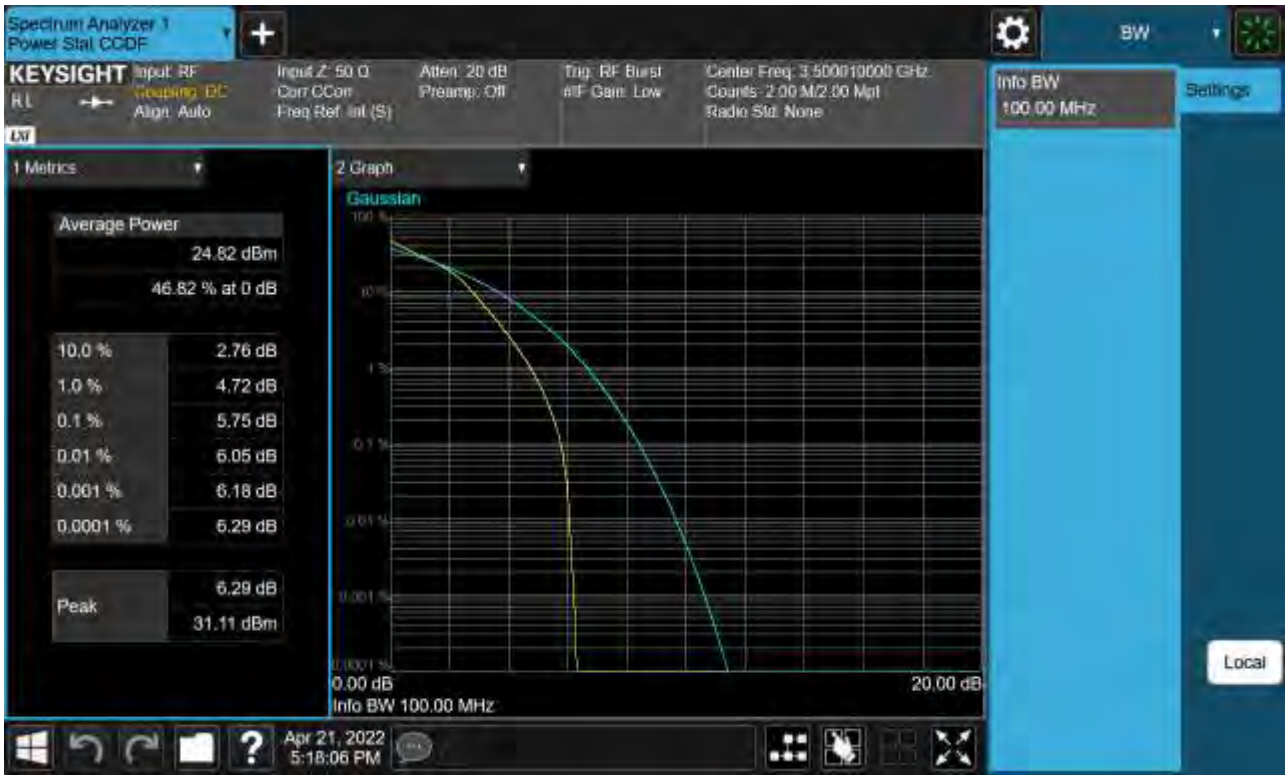
Sub6 n77. PAR Plot (100 M BW_Ch.633334_ BPSK)



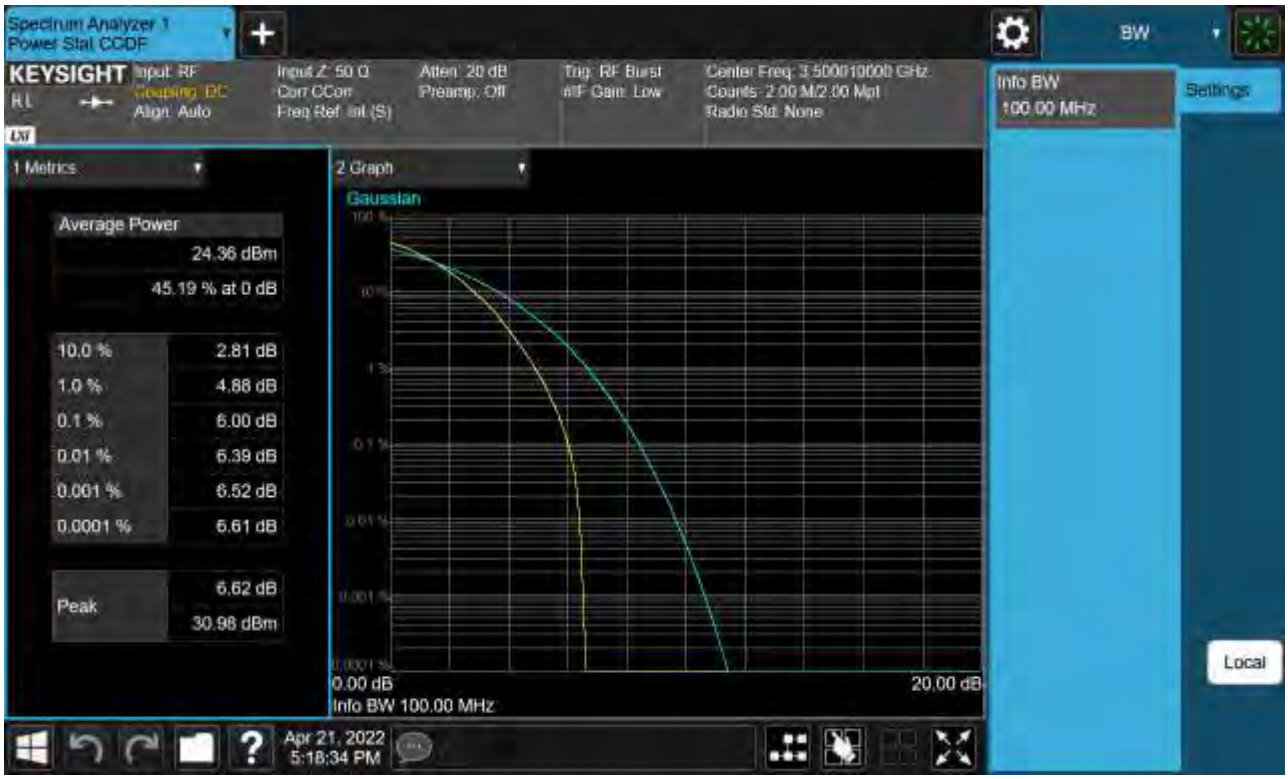
Sub6 n77. PAR Plot (100 M BW_Ch.633334_QPSK)



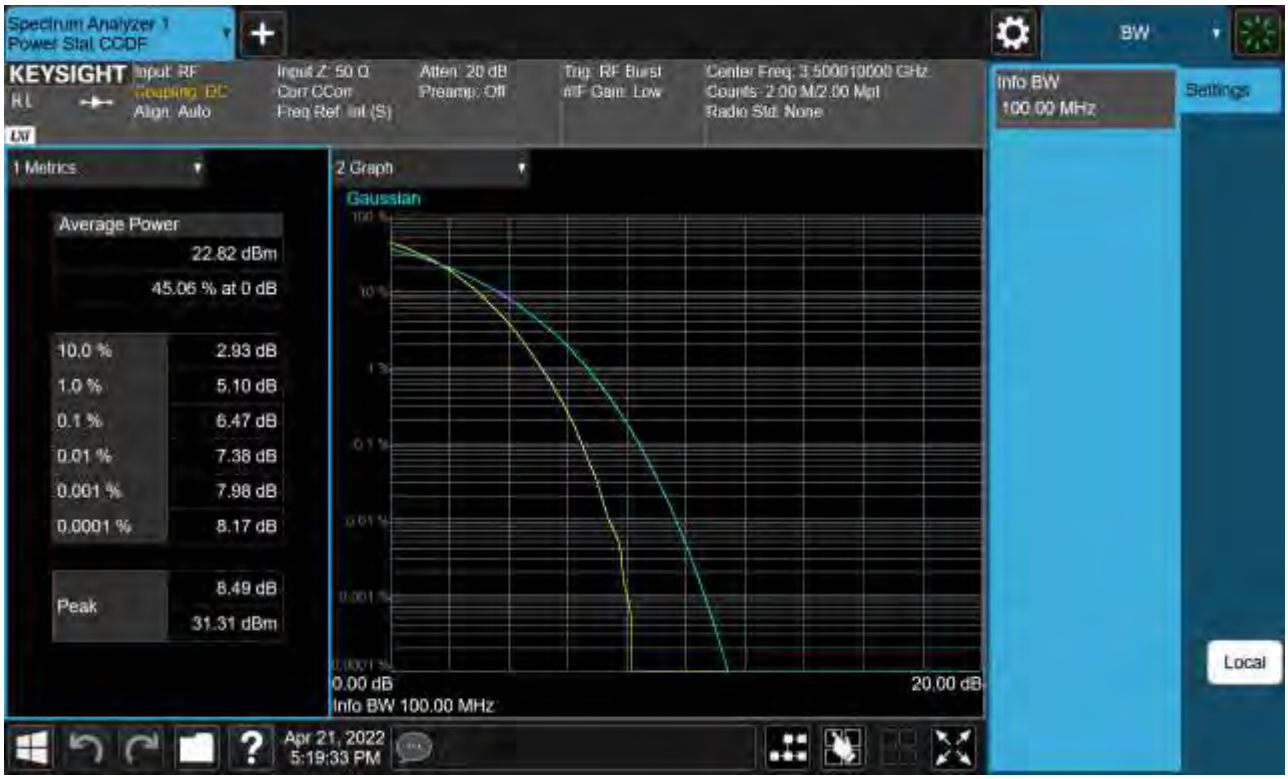
Sub6 n77. PAR Plot (100 M BW_Ch.633334_16QAM)



Sub6 n77. PAR Plot (100 M BW_Ch.633334_64QAM)



Sub6 n77. PAR Plot (100 M BW_Ch.633334_256QAM)



Sub6 n77. Low Band Edge Plot (20 M BW Ch.630668 BPSK 1RB)(1)

Sub6 n77. Low Band Edge Plot (20 M BW Ch.630668 BPSK FullRB)(1)

Sub6 n77. Low Band Edge Plot (20 M BW Ch.630668 BPSK 1RB)(2)

Sub6 n77. Low Band Edge Plot (20 M BW Ch.630668 BPSK FullRB)(2)

Sub6 n77. Low Band Edge Plot (20 M BW Ch.630668 BPSK 1RB)(3)

Sub6 n77. Low Band Edge Plot (20 M BW Ch.630668 BPSK FullRB)(3)

Sub6 n77. High Band Edge Plot (20 M BW Ch.636000 BPSK 1RB)(1)

Sub6 n77. High Band Edge Plot (20 M BW Ch.636000 BPSK FullRB)(1)

Sub6 n77. High Band Edge Plot (20 M BW Ch.636000 BPSK 1RB)(2)

Sub6 n77. High Band Edge Plot (20 M BW Ch.636000 BPSK FullRB)(2)

Sub6 n77. High Band Edge Plot (20 M BW Ch.636000 BPSK 1RB)(3)

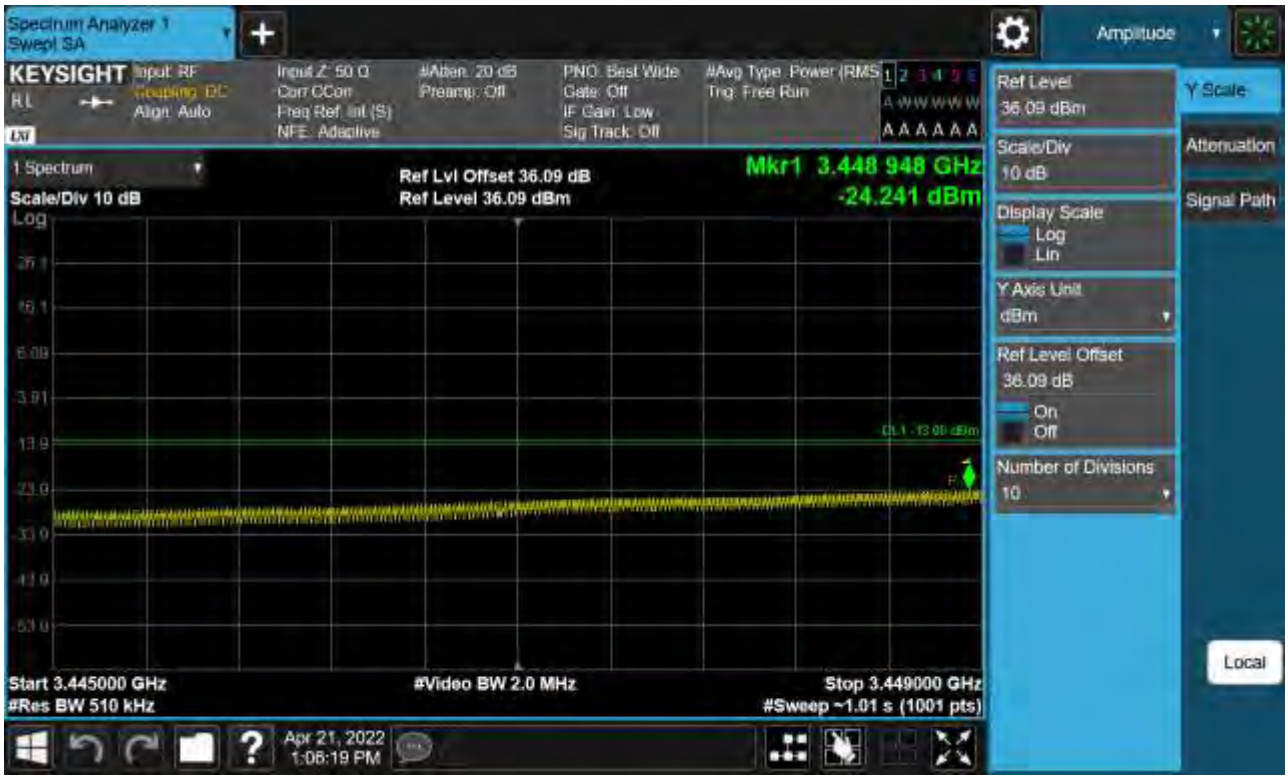
Sub6 n77. High Band Edge Plot (20 M BW Ch.636000 BPSK FullRB)(3)

Sub6 n77. Low Band Edge Plot (30 M BW Ch.631000 BPSK 1RB)(1)

Sub6 n77. Low Band Edge Plot (30 M BW Ch.631000 BPSK FullRB)(1)

Sub6 n77. Low Band Edge Plot (30 M BW Ch.631000 BPSK 1RB)(2)

Sub6 n77. Low Band Edge Plot (30 M BW Ch.631000 BPSK FullRB)(2)



Sub6 n77. Low Band Edge Plot (30 M BW Ch.631000 BPSK 1RB)(3)

Sub6 n77. Low Band Edge Plot (30 M BW Ch.631000 BPSK FullRB)(3)

Sub6 n77. High Band Edge Plot (30 M BW Ch.635666 BPSK 1RB)(1)

Sub6 n77. High Band Edge Plot (30 M BW Ch.635666 BPSK FullRB)(1)

Sub6 n77. High Band Edge Plot (30 M BW Ch.635666 BPSK 1RB)(2)

Sub6 n77. High Band Edge Plot (30 M BW Ch.635666 BPSK FullRB)(2)

Sub6 n77. High Band Edge Plot (30 M BW Ch.635666 BPSK 1RB)(3)

Sub6 n77. High Band Edge Plot (30 M BW Ch.635666 BPSK FullRB)(3)

Sub6 n77. Low Band Edge Plot (40 M BW Ch.631334 BPSK 1RB)(1)

Sub6 n77. Low Band Edge Plot (40 M BW Ch.631334 BPSK FullRB)(1)

Sub6 n77. Low Band Edge Plot (40 M BW Ch.631334 BPSK 1RB)(2)

Sub6 n77. Low Band Edge Plot (40 M BW Ch.631334 BPSK FullRB)(2)

Sub6 n77. Low Band Edge Plot (40 M BW Ch.631334 BPSK 1RB)(3)

Sub6 n77. Low Band Edge Plot (40 M BW Ch.631334 BPSK FullRB)(3)

Sub6 n77. High Band Edge Plot (40 M BW Ch.635332 BPSK 1RB)(1)

Sub6 n77. High Band Edge Plot (40 M BW Ch.635332 BPSK FullRB)(1)

Sub6 n77. High Band Edge Plot (40 M BW Ch.635332 BPSK 1RB)(2)

Sub6 n77. High Band Edge Plot (40 M BW Ch.635332 BPSK FullRB)(2)

Sub6 n77. High Band Edge Plot (40 M BW Ch.635332 BPSK 1RB)(3)

Sub6 n77. High Band Edge Plot (40 M BW Ch.635332 BPSK FullRB)(3)

Sub6 n77. Low Band Edge Plot (50 M BW Ch.631668 BPSK 1RB)(1)

Sub6 n77. Low Band Edge Plot (50 M BW Ch.631668 BPSK FullRB)(1)

Sub6 n77. Low Band Edge Plot (50 M BW Ch.631668 BPSK 1RB)(2)

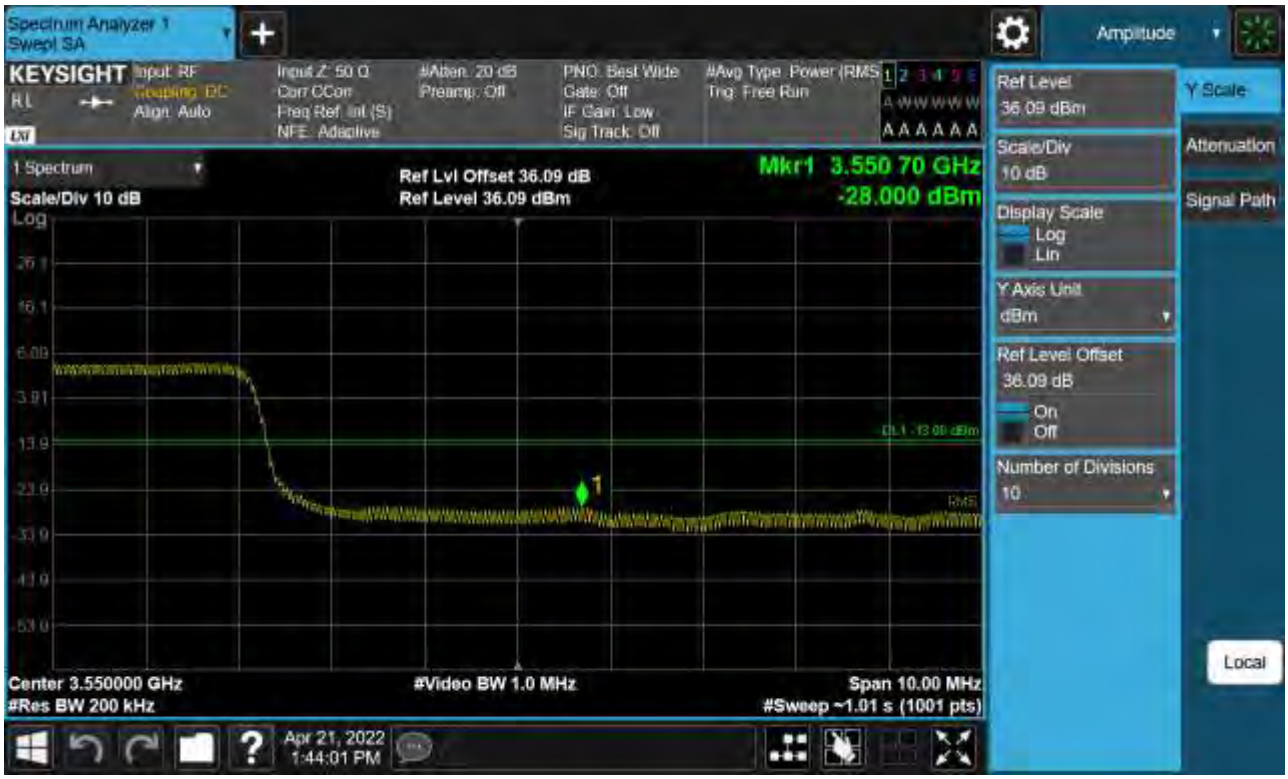
Sub6 n77. Low Band Edge Plot (50 M BW Ch.631668 BPSK FullRB)(2)

Sub6 n77. Low Band Edge Plot (50 M BW Ch.631668 BPSK 1RB)(3)

Sub6 n77. Low Band Edge Plot (50 M BW Ch.631668 BPSK FullRB)(3)

Sub6 n77. High Band Edge Plot (50 M BW Ch.635000 BPSK 1RB)(1)

Sub6 n77. High Band Edge Plot (50 M BW Ch.635000 BPSK FullRB)(1)



Sub6 n77. High Band Edge Plot (50 M BW Ch.635000 BPSK 1RB)(2)

Sub6 n77. High Band Edge Plot (50 M BW Ch.635000 BPSK FullRB)(2)

Sub6 n77. High Band Edge Plot (50 M BW Ch.635000 BPSK 1RB)(3)

Sub6 n77. High Band Edge Plot (50 M BW Ch.635000 BPSK FullRB)(3)

Sub6 n77. Low Band Edge Plot (60 M BW Ch.632000 BPSK 1RB)(1)

Sub6 n77. Low Band Edge Plot (60 M BW Ch.632000 BPSK FullRB)(1)

Sub6 n77. Low Band Edge Plot (60 M BW Ch.632000 BPSK 1RB)(2)

Sub6 n77. Low Band Edge Plot (60 M BW Ch.632000 BPSK FullRB)(2)

Sub6 n77. Low Band Edge Plot (60 M BW Ch.632000 BPSK 1RB)(3)

Sub6 n77. Low Band Edge Plot (60 M BW Ch.632000 BPSK FullRB)(3)

Sub6 n77. High Band Edge Plot (60 M BW Ch.634666 BPSK 1RB)(1)

Sub6 n77. High Band Edge Plot (60 M BW Ch.634666 BPSK FullRB)(1)

Sub6 n77. High Band Edge Plot (60 M BW Ch.634666 BPSK 1RB)(2)

Sub6 n77. High Band Edge Plot (60 M BW Ch.634666 BPSK FullRB)(2)

Sub6 n77. High Band Edge Plot (60 M BW Ch.634666 BPSK 1RB)(3)

Sub6 n77. High Band Edge Plot (60 M BW Ch.634666 BPSK FullRB)(3)

Sub6 n77. Low Band Edge Plot (70 M BW Ch.632334 BPSK 1RB)(1)

Sub6 n77. Low Band Edge Plot (70 M BW Ch.632334 BPSK FullRB)(1)

Sub6 n77. Low Band Edge Plot (70 M BW Ch.632334 BPSK 1RB)(2)

Sub6 n77. Low Band Edge Plot (70 M BW Ch.632334 BPSK FullRB)(2)

Sub6 n77. Low Band Edge Plot (70 M BW Ch.632334 BPSK 1RB)(3)

Sub6 n77. Low Band Edge Plot (70 M BW Ch.632334 BPSK FullRB)(3)

Sub6 n77. High Band Edge Plot (70 M BW Ch.634332 BPSK 1RB)(1)

Sub6 n77. High Band Edge Plot (70 M BW Ch.634332 BPSK FullRB)(1)

Sub6 n77. High Band Edge Plot (70 M BW Ch.634332 BPSK 1RB)(2)

Sub6 n77. High Band Edge Plot (70 M BW Ch.634332 BPSK FullRB)(2)

Sub6 n77. High Band Edge Plot (70 M BW Ch.634332 BPSK 1RB)(3)

Sub6 n77. High Band Edge Plot (70 M BW Ch.634332 BPSK FullRB)(3)

Sub6 n77. Low Band Edge Plot (80 M BW Ch.632668 BPSK 1RB)(1)

Sub6 n77. Low Band Edge Plot (80 M BW Ch.632668 BPSK FullRB)(1)

Sub6 n77. Low Band Edge Plot (80 M BW Ch.632668 BPSK 1RB)(2)

Sub6 n77. Low Band Edge Plot (80 M BW Ch.632668 BPSK FullRB)(2)

Sub6 n77. Low Band Edge Plot (80 M BW Ch.632668 BPSK 1RB)(3)

Sub6 n77. Low Band Edge Plot (80 M BW Ch.632668 BPSK FullRB)(3)

Sub6 n77. High Band Edge Plot (80 M BW Ch.634000 BPSK 1RB)(1)

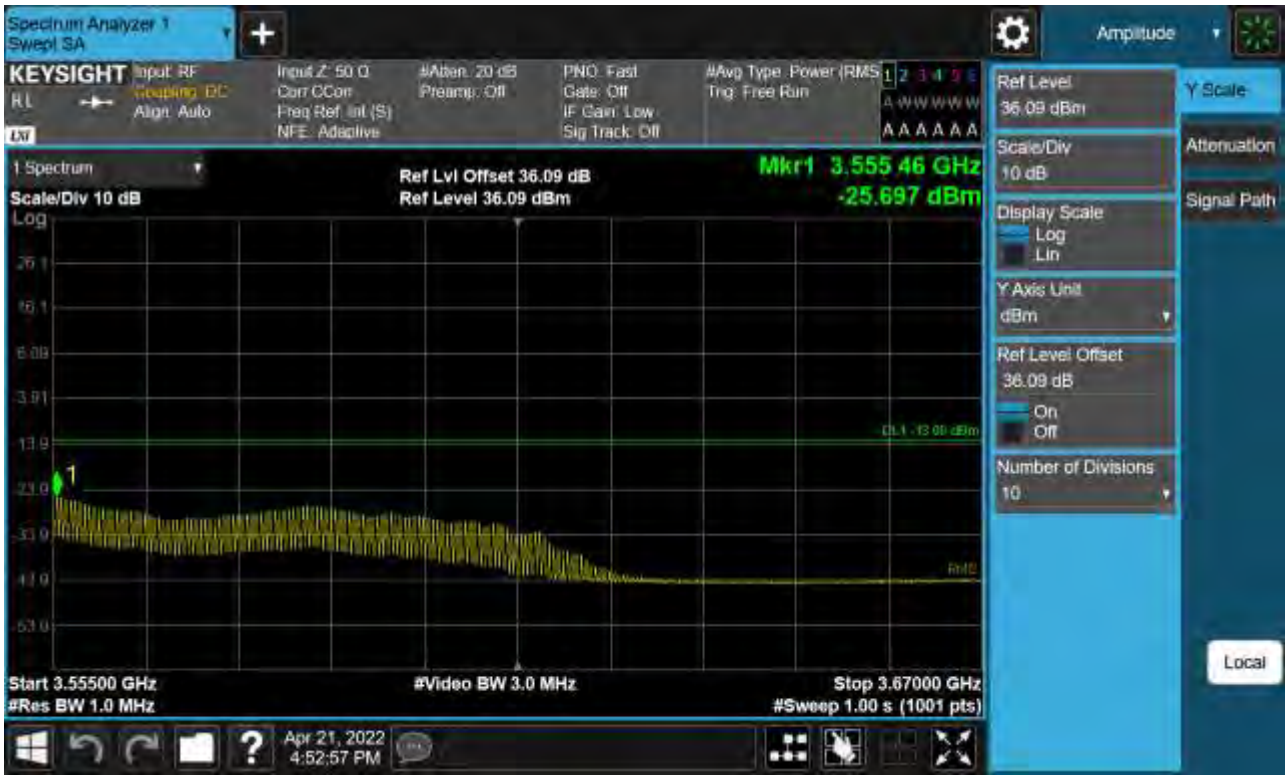
Sub6 n77. High Band Edge Plot (80 M BW Ch.634000 BPSK FullRB)(1)

Sub6 n77. High Band Edge Plot (80 M BW Ch.634000 BPSK 1RB)(2)

Sub6 n77. High Band Edge Plot (80 M BW Ch.634000 BPSK FullRB)(2)

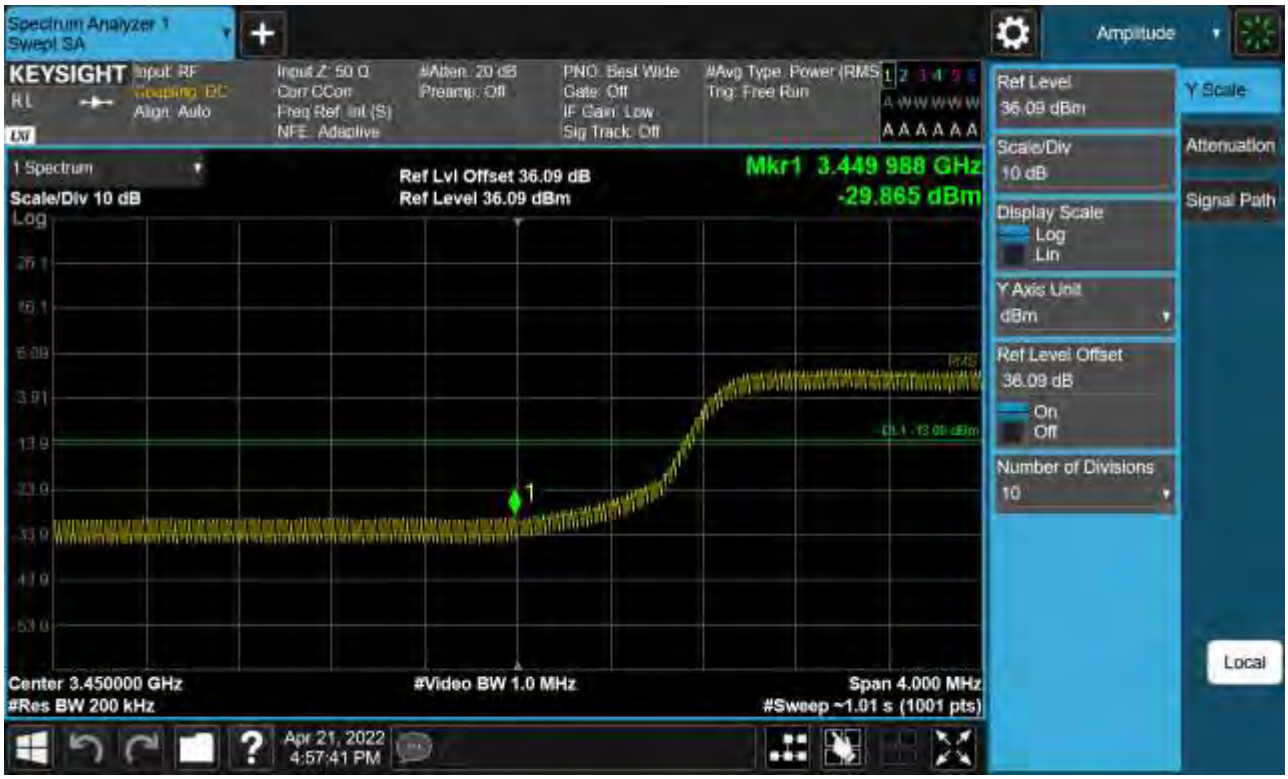
Sub6 n77. High Band Edge Plot (80 M BW Ch.634000 BPSK 1RB)(3)

Sub6 n77. High Band Edge Plot (80 M BW Ch.634000 BPSK FullRB)(3)



Sub6 n77. Low Band Edge Plot (90 M BW Ch.633000 BPSK 1RB)(1)

Sub6 n77. Low Band Edge Plot (90 M BW Ch.633000 BPSK FullRB)(1)



Sub6 n77. Low Band Edge Plot (90 M BW Ch.633000 BPSK 1RB)(2)

Sub6 n77. Low Band Edge Plot (90 M BW Ch.633000 BPSK FullRB)(2)

Sub6 n77. Low Band Edge Plot (90 M BW Ch.633000 BPSK 1RB)(3)

Sub6 n77. Low Band Edge Plot (90 M BW Ch.633000 BPSK FullRB)(3)

Sub6 n77. High Band Edge Plot (90 M BW Ch.633666 BPSK 1RB)(1)

Sub6 n77. High Band Edge Plot (90 M BW Ch.633666 BPSK FullRB)(1)

Sub6 n77. High Band Edge Plot (90 M BW Ch.633666 BPSK 1RB)(2)

Sub6 n77. High Band Edge Plot (90 M BW Ch.633666 BPSK FullRB)(2)

Sub6 n77. High Band Edge Plot (90 M BW Ch.633666 BPSK 1RB)(3)

Sub6 n77. High Band Edge Plot (90 M BW Ch.633666 BPSK FullRB)(3)

Sub6 n77. Low Band Edge Plot (100 M BW Ch.633334 BPSK 1RB)(1)

Sub6 n77. Low Band Edge Plot (100 M BW Ch.633334 BPSK FullRB)(1)

Sub6 n77. Low Band Edge Plot (100 M BW Ch.633334 BPSK 1RB)(2)

Sub6 n77. Low Band Edge Plot (100 M BW Ch.633334 BPSK FullRB)(2)

Sub6 n77. Low Band Edge Plot (100 M BW Ch.633334 BPSK 1RB)(3)

Sub6 n77. Low Band Edge Plot (100 M BW Ch.633334 BPSK FullRB)(3)

Sub6 n77. High Band Edge Plot (100 M BW Ch.633334 BPSK 1RB)(1)