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:
SAMSUNG Electronics Co., Ltd.

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

Date of Issue:
September 26, 2023

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

Report No.: HCT-RF-2309-FC034

FCC ID:	**A3LSMA256U**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model(s):	SM-A256U
Additional Model(s):	SM-A256U1/DS, SM-S256VL
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)

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
Sub6 n41 (10)	2501.010 – 2685.000	8M71G7D	PI/2 BPSK	0.350	25.44
		8M71G7D	QPSK	0.354	25.49
		8M69W7D	16QAM	0.278	24.44
		8M71W7D	64QAM	0.197	22.94
		8M71W7D	256QAM	0.135	21.29
Sub6 n41 (15)	2503.500 – 2682.480	13M0G7D	PI/2 BPSK	0.400	26.02
		13M0G7D	QPSK	0.394	25.95
		13M0W7D	16QAM	0.296	24.72
		13M0W7D	64QAM	0.227	23.56
		13M0W7D	256QAM	0.141	21.49
Sub6 n41 (20)	2506.020 – 2679.990	18M0G7D	PI/2 BPSK	0.399	26.01
		18M0G7D	QPSK	0.394	25.95
		17M9W7D	16QAM	0.308	24.89
		18M0W7D	64QAM	0.217	23.36
		18M0W7D	256QAM	0.138	21.39
Sub6 n41 (30)	2511.000 – 2674.980	27M0G7D	PI/2 BPSK	0.394	25.96
		27M0G7D	QPSK	0.387	25.88
		27M0W7D	16QAM	0.305	24.84
		27M0W7D	64QAM	0.221	23.44
		27M0W7D	256QAM	0.142	21.52
Sub6 n41 (40)	2516.010 – 2670.000	35M9G7D	PI/2 BPSK	0.393	25.94
		36M0G7D	QPSK	0.389	25.90
		36M0W7D	16QAM	0.314	24.97
		35M9W7D	64QAM	0.223	23.49
		36M1W7D	256QAM	0.137	21.37
Sub6 n41 (50)	2521.020 – 2664.990	45M9G7D	PI/2 BPSK	0.395	25.97
		45M9G7D	QPSK	0.393	25.94
		45M9W7D	16QAM	0.312	24.94
		45M9W7D	64QAM	0.218	23.39
		46M0W7D	256QAM	0.142	21.51
Sub6 n41 (60)	2526.000 – 2659.980	58M1G7D	PI/2 BPSK	0.397	25.99
		58M2G7D	QPSK	0.391	25.92
		58M1W7D	16QAM	0.315	24.98
		58M2W7D	64QAM	0.221	23.44
		58M1W7D	256QAM	0.138	21.39
Sub6 n41 (70)	2531.010 – 2655.000	64M8G7D	PI/2 BPSK	0.393	25.94
		65M0G7D	QPSK	0.392	25.93
		64M7W7D	16QAM	0.311	24.93
		64M9W7D	64QAM	0.220	23.42
		64M8W7D	256QAM	0.142	21.51
Sub6 n41 (80)	2536.020 – 2649.990	77M5G7D	PI/2 BPSK	0.392	25.93
		77M6G7D	QPSK	0.386	25.87
		77M4W7D	16QAM	0.305	24.85
		77M6W7D	64QAM	0.218	23.39
		77M6W7D	256QAM	0.139	21.43
Sub6 n41 (90)	2541.000 – 2644.980	87M3G7D	PI/2 BPSK	0.396	25.98
		87M3G7D	QPSK	0.394	25.95
		87M2W7D	16QAM	0.309	24.90
		87M5W7D	64QAM	0.218	23.38
		87M1W7D	256QAM	0.141	21.49
Sub6 n41 (100)	2546.010 – 2640.000	97M0G7D	PI/2 BPSK	0.401	26.03
		96M9G7D	QPSK	0.400	26.02
		96M8W7D	16QAM	0.325	25.12
		97M1W7D	64QAM	0.229	23.59
		97M0W7D	256QAM	0.141	21.49

REVIEWED BY

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

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

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.
This test results were applied only to the test methods required by the standard.

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-2309-FC034	September 26, 2023	- First Approval Report

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:	A3LSMA256U
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-A256U
Additional Model(s):	SM-A256U1/DS, SM-S256VL
SCS(kHz):	30
Bandwidth(MHz):	10, 15, 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(SCS 30kHz):	2501.010 – 2685.000 : 10 MHz 2503.500 – 2682.480 : 15 MHz 2506.020 – 2679.990 : 20 MHz 2511.000 – 2674.980 : 30 MHz 2516.010 – 2670.000 : 40 MHz 2521.020 – 2664.990 : 50 MHz 2526.000 – 2659.980 : 60 MHz 2531.010 – 2655.000 : 70 MHz 2536.020 – 2649.990 : 80 MHz 2541.000 – 2644.980 : 90 MHz 2546.010 – 2640.000 : 100 MHz
Date(s) of Tests:	May 24, 2023 ~ September 15, 2023
Serial number:	Radiated: R3CW50MHDBY Conducted: 74530c340b337ece

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

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

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

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
Channel Edge	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Spurious and Harmonic Emissions at Antenna Terminal	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Conducted Output Power	- N/A (See SAR Report)
Peak- to- Average Ratio	- KDB 971168 D01 v03r01 – Section 5.7 - ANSI C63.26-2015 – Section 5.2.3.4 - ANSI C63.26-2015 – Section 5.2.6(only GSM)
Frequency stability	- ANSI C63.26-2015 – Section 5.6
Effective Radiated Power/ Effective Isotropic Radiated Power	- KDB 971168 D01 v03r01 – Section 5.2 & 5.8 - ANSI/TIA-603-E-2016 – Section 2.2.17
Radiated Spurious and Harmonic Emissions	- KDB 971168 D01 v03r01 – Section 6.2 - ANSI/TIA-603-E-2016 – Section 2.2.12

3.2 RADIATED POWER

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

The equipment under test is placed on a non-conductive table 3-meters away from the receive antenna in accordance with ANSI/TIA-603-E-2016 Clause 2.2.17.

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5 % of the expected OBW, not to exceed 1 MHz
3. VBW ≥ 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points > 2 x span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto".
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

Test Note

1. The turntable is rotated through 360 degrees, and the receiving antenna scans in order to determine the level of the maximized emission.
2. A half wave dipole is then substituted in place of the EUT. For emissions above 1 GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator and the previously recorded signal was duplicated.

   The power is calculated by the following formula;

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

   Where: P_d is the dipole equivalent power and P_g is the generator output power into the substitution antenna.
3. The maximum value is calculated by adding the forward power to the calibrated source plus its appropriate gain value. These steps are repeated with the receiving antenna in both vertical and horizontal polarization. the difference between the gain of the horn and an isotropic antenna are taken into consideration
4. The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
5. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

3.3 RADIATED SPURIOUS EMISSIONS

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA-603-E-2016.

Test Settings

1. RBW = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1 GHz
2. VBW ≥ 3 x RBW
3. Span = 1.5 times the OBW
4. No. of sweep points > 2 x span / RBW
5. Detector = Peak
6. Trace mode = Max Hold
7. The trace was allowed to stabilize
8. Test channel : Low/ Middle/ High
9. Frequency range : We are performed all frequency to 10^{th} harmonics from 9 kHz.

Test Note

1. Measurements value show only up to 3 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
2. The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the test data
3. For spurious emissions above 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;

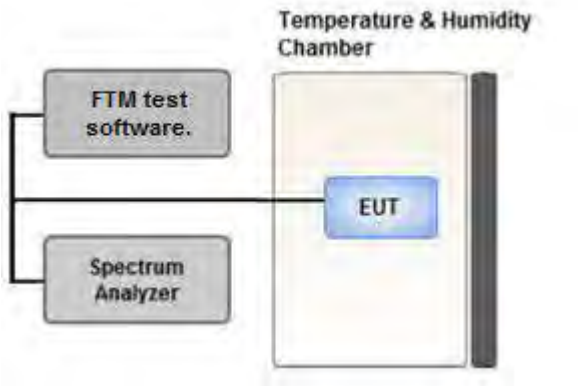
$$\text{Result}_{(dBm)} = \text{Pg}_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

   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)

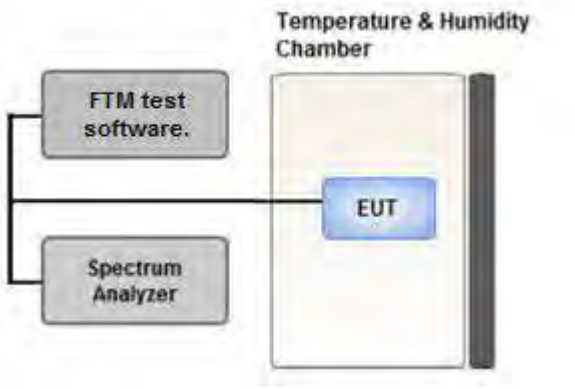
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW ≥ 3 × RBW.

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.

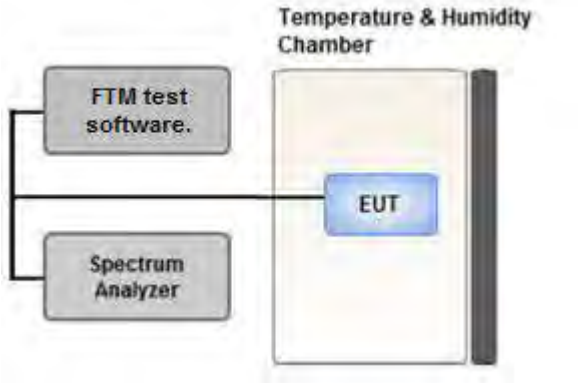
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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

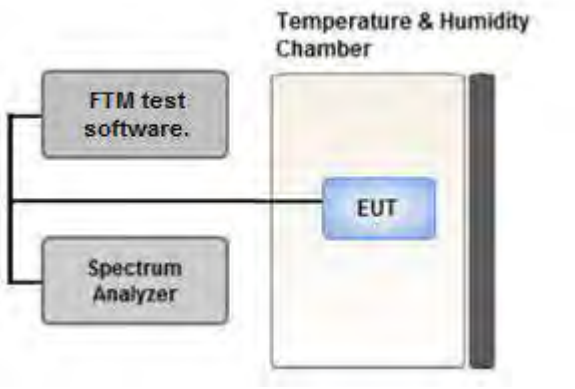
Test Overview

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 CHANNEL 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 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

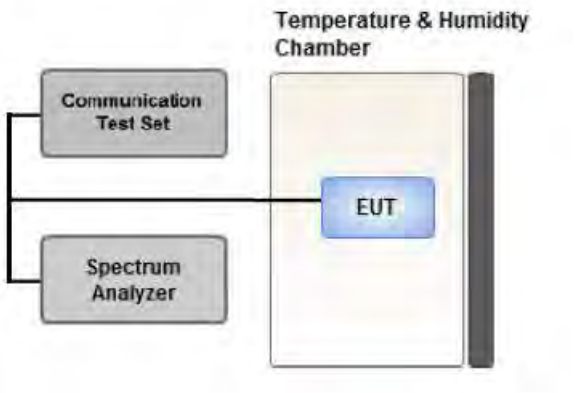
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. Within 1 MHz of the channel edge the RBW should be 2 % of EBW, then 1 MHz after that.
4. VBW > 3 x RBW
5. 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

1. The attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge,
2. 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge.
3. 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge.
4. The attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz.
5. 55 + 10 log (P) dB at or below 2490.5 MHz.
6. X is the greater of 6MHz or the actual emission bandwidth
7. The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer

Where Margin < 1 dB the emission level is either corrected by 10 log(1 MHz/ RB) or the emission is integrated over a 1 MHz bandwidth to determine the final result. When using the integration method the integration window is either centered on the emission or, for emissions at the band edge, centered by an offset of 500 kHz from the block edge so that the integration window is the 1 MHz adjacent to the block edge.

3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE



Test setup

Test Overview

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015.

The frequency stability of the transmitter is measured by:

1. Temperature:

   The temperature is varied from -30 °C to +50 °C in 10 °C increments using an environmental chamber.

2. Primary Supply Voltage:

   .- Unless otherwise specified, vary primary supply voltage from 85 % to 115 % of the nominal value for other than hand carried battery equipment.

   .- For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20 °C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10 °C intervals ranging from -30 °C to +50 °C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

3.9 WORST CASE(RADIATED TEST)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.
  (Worst case: DFT-S-OFDM)
- The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
- All modes of operation were investigated and the worst case configuration results are reported.
  Mode: SA(PC2), NSA(PC3), SRS
  Worst case: SA(PC2)
  Mode : Stand alone, Stand alone + External accessories (Earphone, AC adapter, etc)
  Worst case : Stand alone
- We were performed the RSE test in condition of co-location.
  Mode : Stand alone, Simultaneous transmission scenarios
  Worst case : Stand alone
- Radiated Spurious emissions are measured while operating in EN-DC mode with Sub 6 NR carrier as well as an LTE carrier (anchor).
  All EN-DC mode of operation were investigated and the worst case configuration results are reported.
  (Worst case: 12A-n41A)
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.
- SM-A256U & additional models were tested and the worst case results are reported.
  (Worst case : SM-A256U)

[Worst case]

Test Description	Modulation	RB size	RB offset	Axis
Effective Isotropic Radiated Power	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	See Section 8.1		X
Radiated Spurious and Harmonic Emissions	PI/2 BPSK	See Section 8.2		Z

3.10 WORST CASE(CONDUCTED TEST)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.
  (Worst case: DFT-S-OFDM)
- Modulation : All Modulation of operation were investigated and the worst case configuration results are reported.
  (Worst case: PI/2 BPSK)
- All modes of operation were investigated and the worst case configuration results are reported.
  Mode: SA(PC2), NSA(PC3), SRS
  Worst case: SA(PC2)
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
  Please refer to the table below.
- SM-A256U & additional models were tested and the worst case results are reported.
  (Worst case : SM-A256U)

[Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth, Peak-To-Average Ratio	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	10, 15, 20, 30, 40, 50, 60, 80, 90, 100	Mid	Full RB	0
Channel Edge	PI/2 BPSK	10	Low	1	0
			High	1	23
		15	Low	1	0
			High	1	37
		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
		10, 15, 20, 30, 40, 50, 60, 80, 90, 100	Low, Mid High	Full RB	0
Spurious and Harmonic Emissions at Antenna Terminal	PI/2 BPSK	10, 15, 20, 30, 40, 50, 60, 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(1~18 GHz)	BBHA 9120D	Schwarzbeck	02289	03/21/2024	Biennial
Horn Antenna(1~18 GHz)	BBHA 9120D	Schwarzbeck	9120D-1299	04/27/2025	Biennial
Horn Antenna(15~40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	09/29/2024	Biennial
Horn Antenna(15~40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	03/28/2025	Biennial
Loop Antenna(9 kHz~30 MHz)	FMZB1513	Rohde & Schwarz	1513-175	01/16/2025	Biennial
Bilog Antenna	VULB9160	Schwarzbeck	3150	03/09/2025	Biennial
Hybrid Antenna	VULB9160	Schwarzbeck	760	02/24/2025	Biennial
RF Switching System	FBSR-06B (1G HPF + LNA)	T&M SYSTEM	F3L1	05/22/2024	Annual
RF Switching System	FBSR-06B (3G HPF + LNA)	T&M SYSTEM	F3L2	05/22/2024	Annual
RF Switching System	FBSR-06B (6G HPF + LNA)	T&M SYSTEM	F3L3	05/22/2024	Annual
RF Switching System	FBSR-06B (LNA)	T&M SYSTEM	F3L4	05/22/2024	Annual
Power Amplifier	CBL18265035	CERNEX	22966	12/01/2023	Annual
Power Amplifier	CBL26405040	CERNEX	25956	03/02/2024	Annual
DC Power Supply	E3632A	Hewlett Packard	MY40004427	08/25/2024	Annual
Power Splitter(DC~26.5 GHz)	11667B	Hewlett Packard	11275	03/02/2024	Annual
Chamber	SU-642	ESPEC	93008124	02/22/2024	Annual
Signal Analyzer(10 Hz~26.5 GHz)	N9020A	Agilent	MY51110063	04/11/2024	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/19/2024	Annual
Spectrum Analyzer(10 Hz~40 GHz)	FSV40	REOHDE & SCHWARZ	101436	02/22/2024	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/10/2024	Annual
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262287701	05/22/2024	Annual
Wideband Radio Communication Tester	MT8000A	Anritsu Corp.	6262302511	05/23/2024	Annual
SIGNAL GENERATOR (100 kHz~40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	06/22/2024	Annual
Signal Analyzer(5 Hz~40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/24/2024	Annual
4-Way Divider	ZC4PD-K1844+	Mini-Circuits	942907	09/27/2023	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

Note:

1. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.
2. Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).

5. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4:2014. All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95 % level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty (±dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.90 (Confidence level about 95 %, k=2)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.14 (Confidence level about 95 %, k=2)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.16 (Confidence level about 95 %, k=2)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.57 (Confidence level about 95 %, k=2)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.76 (Confidence level about 95 %, k=2)
Radiated Disturbance (Above 40 GHz)	5.52 (Confidence level about 95 %, k=2)

6. SUMMARY OF TEST RESULTS

6.1 Test Condition : Conducted Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Occupied Bandwidth	§2.1049	N/A	PASS
Band Edge / Spurious and Harmonic Emissions at Antenna Terminal.	§2.1051, §27.53(m)(4)	■ < 40 + 10log10 (P[Watts]) at Channel edges ■ < 43 + 10log10 (P[Watts]) between 5 and X MHz from Channel edges ■ < 55 + 10log10 (P[Watts]) beyond X MHz beyond from Channel edges ■ < 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz	PASS
Conducted Output Power	§2.1046	N/A	See Note1
Frequency stability / variation of ambient temperature	§2.1055, §27.54	Emission must remain in band	PASS

Note:

1. See SAR Report

2. 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(h)(2)	< 2 Watts max. EIRP	PASS
Radiated Spurious and Harmonic Emissions	§2.1053, §27.53(m)(4)	< 55 + 10log10 (P[Watts])	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
518598	2593.0	-15.75	18.45	9.90	1.76	H	0.456	26.59

EIRP = Substitute LEVEL(dBm) + Ant. Gain – CL(Cable Loss)

1) The EUT mounted on a non-conductive turntable is 2.5 meter above test site ground level.

2) During the test , the turn table is rotated until the maximum signal is found.

3) Record the field strength meter's level.

4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.

5) Increase the signal generator output till the field strength meter's level is equal to the item (3).

6) The signal generator output level with Ant. Gain and cable loss are the rating of equivalent isotropic radiated power.

7.3. Emission Designator

GSM Emission Designator

Emission Designator = 249KGXW
GSM BW = 249 kHz
G = Phase Modulation
X = Cases not otherwise covered
W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 249KG7W
GSM BW = 249 kHz
G = Phase Modulation
7 = Quantized/Digital Info
W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M17F9W
WCDMA BW = 4.17 MHz
F = Frequency Modulation
9 = Composite Digital Info
W = Combination (Audio/Data)

QPSK Modulation

Emission Designator = 4M48G7D
LTE BW = 4.48 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data transmission; telemetry; telecommand

QAM Modulation

Emission Designator = 4M48W7D
LTE BW = 4.48 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data transmission; telemetry; telecommand

8. TEST DATA

8.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
2501.010	Sub6 41/ 10 MHz [30 kHz]	PI/2 BPSK	-20.10	16.54	10.30	2.47	H	< 2.00	0.274	24.37	1	12
		QPSK	-20.13	16.51	10.30	2.47	H		0.272	24.34		
		16-QAM	-21.20	15.44	10.30	2.47	H		0.212	23.27		
		64-QAM	-22.55	14.09	10.30	2.47	H		0.156	21.92		
		256-QAM	-24.59	12.05	10.30	2.47	H		0.097	19.88		
2592.990		PI/2 BPSK	-18.41	17.89	10.05	2.50	H		0.350	25.44	1	22
		QPSK	-18.36	17.94	10.05	2.50	H		0.354	25.49		
		16-QAM	-19.41	16.89	10.05	2.50	H		0.278	24.44		
		64-QAM	-20.91	15.39	10.05	2.50	H		0.197	22.94		
		256-QAM	-22.56	13.74	10.05	2.50	H		0.135	21.29		
2685.000		PI/2 BPSK	-20.81	16.65	10.10	2.58	H		0.261	24.17	1	12
		QPSK	-20.93	16.53	10.10	2.58	H		0.254	24.05		
		16-QAM	-21.93	15.53	10.10	2.58	H		0.202	23.05		
		64-QAM	-23.51	13.95	10.10	2.58	H		0.140	21.47		
		256-QAM	-25.31	12.15	10.10	2.58	H		0.093	19.67		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
2503.500	Sub6 41/ 15 MHz [30 kHz]	PI/2 BPSK	-19.51	17.12	10.30	2.48	H	< 2.00	0.312	24.94	1	36
		QPSK	-19.56	17.07	10.30	2.48	H		0.308	24.89		
		16-QAM	-20.55	16.08	10.30	2.48	H		0.245	23.90		
		64-QAM	-21.99	14.64	10.30	2.48	H		0.176	22.46		
		256-QAM	-24.15	12.48	10.30	2.48	H		0.107	20.30		
2592.990		PI/2 BPSK	-17.83	18.47	10.05	2.50	H		0.400	26.02	1	36
		QPSK	-17.90	18.40	10.05	2.50	H		0.394	25.95		
		16-QAM	-19.13	17.17	10.05	2.50	H		0.296	24.72		
		64-QAM	-20.29	16.01	10.05	2.50	H		0.227	23.56		
		256-QAM	-22.36	13.94	10.05	2.50	H		0.141	21.49		
2682.480		PI/2 BPSK	-20.29	17.42	10.10	2.58	H		0.312	24.94	1	1
		QPSK	-20.30	17.41	10.10	2.58	H		0.311	24.93		
		16-QAM	-21.36	16.35	10.10	2.58	H		0.244	23.87		
		64-QAM	-22.86	14.85	10.10	2.58	H		0.173	22.37		
		256-QAM	-24.92	12.79	10.10	2.58	H		0.107	20.31		

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
2506.020	Sub6 41/ 20 MHz [30 kHz]	PI/2 BPSK	-19.14	17.49	10.30	2.48	H	< 2.00	0.340	25.31	1	49
		QPSK	-19.16	17.47	10.30	2.48	H		0.338	25.29		
		16-QAM	-20.06	16.57	10.30	2.48	H		0.275	24.39		
		64-QAM	-21.69	14.94	10.30	2.48	H		0.189	22.76		
		256-QAM	-23.67	12.96	10.30	2.48	H		0.120	20.78		
2592.990		PI/2 BPSK	-17.84	18.46	10.05	2.50	H		0.399	26.01	1	25
		QPSK	-17.90	18.40	10.05	2.50	H		0.394	25.95		
		16-QAM	-18.96	17.34	10.05	2.50	H		0.308	24.89		
		64-QAM	-20.49	15.81	10.05	2.50	H		0.217	23.36		
		256-QAM	-22.46	13.84	10.05	2.50	H		0.138	21.39		
2679.990		PI/2 BPSK	-20.36	17.35	10.10	2.58	H		0.307	24.87	1	1
		QPSK	-20.41	17.30	10.10	2.58	H		0.303	24.82		
		16-QAM	-21.47	16.24	10.10	2.58	H		0.238	23.76		
		64-QAM	-23.01	14.70	10.10	2.58	H		0.167	22.22		
		256-QAM	-24.94	12.77	10.10	2.58	H		0.107	20.29		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP		RB	
								W	W	dBm	Size	Offset
2511.000	Sub6 41/ 30 MHz [30 kHz]	PI/2 BPSK	-18.86	17.76	10.30	2.50	H	< 2.00	0.360	25.56	1	76
		QPSK	-18.88	17.74	10.30	2.50	H		0.358	25.54		
		16-QAM	-19.98	16.64	10.30	2.50	H		0.278	24.44		
		64-QAM	-21.36	15.26	10.30	2.50	H		0.202	23.06		
		256-QAM	-23.46	13.16	10.30	2.50	H		0.125	20.96		
2592.990		PI/2 BPSK	-17.89	18.41	10.05	2.50	H		0.394	25.96	1	39
		QPSK	-17.97	18.33	10.05	2.50	H		0.387	25.88		
		16-QAM	-19.01	17.29	10.05	2.50	H		0.305	24.84		
		64-QAM	-20.41	15.89	10.05	2.50	H		0.221	23.44		
		256-QAM	-22.33	13.97	10.05	2.50	H		0.142	21.52		
2674.980		PI/2 BPSK	-20.31	17.10	10.10	2.58	H		0.290	24.62	1	1
		QPSK	-20.33	17.08	10.10	2.58	H		0.288	24.60		
		16-QAM	-21.41	16.00	10.10	2.58	H		0.225	23.52		
		64-QAM	-22.81	14.60	10.10	2.58	H		0.163	22.12		
		256-QAM	-24.83	12.58	10.10	2.58	H		0.102	20.10		

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
2516.010	Sub6 41/ 40 MHz [30 kHz]	PI/2 BPSK	-18.53	17.96	10.30	2.51	H	< 2.00	0.376	25.75	1	104
		QPSK	-18.57	17.92	10.30	2.51	H		0.372	25.71		
		16-QAM	-19.39	17.10	10.30	2.51	H		0.308	24.89		
		64-QAM	-20.96	15.53	10.30	2.51	H		0.215	23.32		
		256-QAM	-22.91	13.58	10.30	2.51	H		0.137	21.37		
2592.990		PI/2 BPSK	-17.91	18.39	10.05	2.50	H		0.393	25.94	1	53
		QPSK	-17.95	18.35	10.05	2.50	H		0.389	25.90		
		16-QAM	-18.88	17.42	10.05	2.50	H		0.314	24.97		
		64-QAM	-20.36	15.94	10.05	2.50	H		0.223	23.49		
		256-QAM	-22.53	13.77	10.05	2.50	H		0.136	21.32		
2670.000		PI/2 BPSK	-20.17	16.95	10.10	2.58	H		0.280	24.47	1	1
		QPSK	-20.21	16.91	10.10	2.58	H		0.277	24.43		
		16-QAM	-21.18	15.94	10.10	2.58	H		0.222	23.46		
		64-QAM	-22.79	14.33	10.10	2.58	H		0.153	21.85		
		256-QAM	-24.71	12.41	10.10	2.58	H		0.098	19.93		

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
2521.020	Sub6 41/ 50 MHz [30 kHz]	PI/2 BPSK	-18.39	18.28	10.00	2.53	H	< 2.00	0.376	25.75	1	131
		QPSK	-18.41	18.26	10.00	2.53	H		0.374	25.73		
		16-QAM	-19.43	17.24	10.00	2.53	H		0.296	24.71		
		64-QAM	-20.88	15.79	10.00	2.53	H		0.212	23.26		
		256-QAM	-22.96	13.71	10.00	2.53	H		0.131	21.18		
2592.990		PI/2 BPSK	-17.88	18.42	10.05	2.50	H		0.395	25.97	1	66
		QPSK	-17.91	18.39	10.05	2.50	H		0.393	25.94		
		16-QAM	-18.91	17.39	10.05	2.50	H		0.312	24.94		
		64-QAM	-20.46	15.84	10.05	2.50	H		0.218	23.39		
		256-QAM	-22.34	13.96	10.05	2.50	H		0.142	21.51		
2664.990		PI/2 BPSK	-20.01	17.08	10.10	2.60	H		0.287	24.58	1	1
		QPSK	-20.05	17.04	10.10	2.60	H		0.284	24.54		
		16-QAM	-21.03	16.06	10.10	2.60	H		0.227	23.56		
		64-QAM	-22.51	14.58	10.10	2.60	H		0.161	22.08		
		256-QAM	-24.54	12.55	10.10	2.60	H		0.101	20.05		

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
2526.000	Sub6 41/ 60 MHz [30 kHz]	PI/2 BPSK	-18.44	17.82	10.30	2.53	H	< 2.00	0.362	25.59	1	160
		QPSK	-18.46	17.80	10.30	2.53	H		0.361	25.57		
		16-QAM	-19.50	16.76	10.30	2.53	H		0.284	24.53		
		64-QAM	-20.90	15.36	10.30	2.53	H		0.206	23.13		
		256-QAM	-23.01	13.25	10.30	2.53	H		0.126	21.02		
2592.990		PI/2 BPSK	-17.86	18.44	10.05	2.50	H		0.397	25.99	1	81
		QPSK	-17.93	18.37	10.05	2.50	H		0.391	25.92		
		16-QAM	-18.87	17.43	10.05	2.50	H		0.315	24.98		
		64-QAM	-20.41	15.89	10.05	2.50	H		0.221	23.44		
		256-QAM	-22.46	13.84	10.05	2.50	H		0.138	21.39		
2659.980		PI/2 BPSK	-19.34	17.51	10.10	2.61	H		0.316	25.00	1	1
		QPSK	-19.41	17.44	10.10	2.61	H		0.311	24.93		
		16-QAM	-20.41	16.44	10.10	2.61	H		0.247	23.93		
		64-QAM	-21.93	14.92	10.10	2.61	H		0.174	22.41		
		256-QAM	-23.81	13.04	10.10	2.61	H		0.113	20.53		

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
2531.010	Sub6 41/ 70 MHz [30 kHz]	PI/2 BPSK	-18.16	17.96	10.30	2.52	H	< 2.00	0.375	25.74	1	187
		QPSK	-18.26	17.86	10.30	2.52	H		0.366	25.64		
		16-QAM	-19.34	16.78	10.30	2.52	H		0.286	24.56		
		64-QAM	-20.73	15.39	10.30	2.52	H		0.207	23.17		
		256-QAM	-22.66	13.46	10.30	2.52	H		0.133	21.24		
2592.990		PI/2 BPSK	-17.91	18.39	10.05	2.50	H		0.393	25.94	1	94
		QPSK	-17.92	18.38	10.05	2.50	H		0.392	25.93		
		16-QAM	-18.92	17.38	10.05	2.50	H		0.311	24.93		
		64-QAM	-20.43	15.87	10.05	2.50	H		0.220	23.42		
		256-QAM	-22.34	13.96	10.05	2.50	H		0.142	21.51		
2655.000		PI/2 BPSK	-18.61	18.15	10.10	2.63	H		0.365	25.62	1	1
		QPSK	-18.67	18.09	10.10	2.63	H		0.360	25.56		
		16-QAM	-19.75	17.01	10.10	2.63	H		0.281	24.48		
		64-QAM	-21.26	15.50	10.10	2.63	H		0.198	22.97		
		256-QAM	-23.16	13.60	10.10	2.63	H		0.128	21.07		

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
2536.020	Sub6 41/ 80 MHz [30 kHz]	PI/2 BPSK	-18.38	17.86	10.30	2.52	H	< 2.00	0.366	25.64	1	215
		QPSK	-18.45	17.79	10.30	2.52	H		0.361	25.57		
		16-QAM	-19.33	16.91	10.30	2.52	H		0.294	24.69		
		64-QAM	-20.86	15.38	10.30	2.52	H		0.207	23.16		
		256-QAM	-22.81	13.43	10.30	2.52	H		0.132	21.21		
2592.990		PI/2 BPSK	-17.96	18.34	10.05	2.50	H		0.388	25.89	1	108
		QPSK	-17.98	18.32	10.05	2.50	H		0.386	25.87		
		16-QAM	-19.10	17.20	10.05	2.50	H		0.299	24.75		
		64-QAM	-20.61	15.69	10.05	2.50	H		0.211	23.24		
		256-QAM	-22.61	13.69	10.05	2.50	H		0.133	21.24		
2649.990		PI/2 BPSK	-18.19	18.48	10.10	2.65	H		0.392	25.93	1	1
		QPSK	-18.31	18.36	10.10	2.65	H		0.381	25.81		
		16-QAM	-19.27	17.40	10.10	2.65	H		0.305	24.85		
		64-QAM	-20.73	15.94	10.10	2.65	H		0.218	23.39		
		256-QAM	-22.69	13.98	10.10	2.65	H		0.139	21.43		

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
2541.000	Sub6 41/ 90 MHz [30 kHz]	PI/2 BPSK	-18.22	18.14	10.30	2.52	H	< 2.00	0.391	25.92	1	243
		QPSK	-18.25	18.11	10.30	2.52	H		0.388	25.89		
		16-QAM	-19.24	17.12	10.30	2.52	H		0.309	24.90		
		64-QAM	-20.76	15.60	10.30	2.52	H		0.218	23.38		
		256-QAM	-22.66	13.70	10.30	2.52	H		0.141	21.48		
2592.990		PI/2 BPSK	-17.99	18.31	10.05	2.50	H		0.385	25.86	1	122
		QPSK	-18.01	18.29	10.05	2.50	H		0.384	25.84		
		16-QAM	-19.11	17.19	10.05	2.50	H		0.298	24.74		
		64-QAM	-20.56	15.74	10.05	2.50	H		0.213	23.29		
		256-QAM	-22.51	13.79	10.05	2.50	H		0.136	21.34		
2644.980		PI/2 BPSK	-18.17	18.64	10.00	2.66	H		0.396	25.98	1	1
		QPSK	-18.20	18.61	10.00	2.66	H		0.394	25.95		
		16-QAM	-19.26	17.55	10.00	2.66	H		0.308	24.89		
		64-QAM	-20.82	15.99	10.00	2.66	H		0.215	23.33		
		256-QAM	-22.66	14.15	10.00	2.66	H		0.141	21.49		

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
2546.010	Sub6 41/ 100 MHz [30 kHz]	PI/2 BPSK	-18.05	18.32	10.25	2.54	H	< 2.00	0.401	26.03	1	271
		QPSK	-18.06	18.31	10.25	2.54	H		0.400	26.02		
		16-QAM	-18.96	17.41	10.25	2.54	H		0.325	25.12		
		64-QAM	-20.49	15.88	10.25	2.54	H		0.229	23.59		
		256-QAM	-22.59	13.78	10.25	2.54	H		0.141	21.49		
2592.990		PI/2 BPSK	-17.92	18.38	10.05	2.50	H		0.392	25.93	1	136
		QPSK	-17.96	18.34	10.05	2.50	H		0.388	25.89		
		16-QAM	-19.05	17.25	10.05	2.50	H		0.302	24.80		
		64-QAM	-20.73	15.57	10.05	2.50	H		0.205	23.12		
		256-QAM	-22.71	13.59	10.05	2.50	H		0.130	21.14		
2640.000		PI/2 BPSK	-18.21	18.74	9.90	2.67	H		0.395	25.97	1	1
		QPSK	-18.26	18.69	9.90	2.67	H		0.391	25.92		
		16-QAM	-19.20	17.75	9.90	2.67	H		0.315	24.98		
		64-QAM	-20.81	16.14	9.90	2.67	H		0.217	23.37		
		256-QAM	-22.71	14.24	9.90	2.67	H		0.140	21.47		

8.2 RADIATED SPURIOUS EMISSIONS

▣ NR Band: N41

▣ Bandwidth: 10 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
500202 (2501.010)	5 002.02	-47.49	10.70	-48.84	3.63	H	-41.77	-25.00	1	12
	7 503.03	-60.41	11.10	-53.40	4.50	V	-46.80	-25.00		
	10 004.04	-57.36	11.20	-48.90	5.26	V	-42.96	-25.00		
	12 505.05	-62.92	12.10	-53.58	6.04	H	-47.52	-25.00		
	15 006.06	-58.87	13.80	-52.27	6.65	H	-45.12	-25.00		
518598 (2592.990)	5 185.98	-53.75	11.00	-55.25	3.70	V	-47.95	-25.00	1	22
	7 778.97	-59.50	10.90	-52.12	4.61	H	-45.83	-25.00		
	10 371.96	-60.36	11.20	-49.66	5.41	V	-43.87	-25.00		
	12 964.95	-59.32	12.00	-49.39	6.11	H	-43.50	-25.00		
	15 557.94	-57.04	15.40	-51.71	6.77	V	-43.08	-25.00		
537000 (2685.000)	5 370.00	-52.43	11.50	-54.95	3.74	H	-47.19	-25.00	1	12
	8 055.00	-57.01	10.90	-49.80	4.71	H	-43.61	-25.00		
	10 740.00	-62.39	11.10	-51.79	5.50	V	-46.19	-25.00		
	13 425.00	-60.48	11.80	-49.63	6.22	V	-44.05	-25.00		
	16 110.00	-57.35	15.70	-48.21	6.91	V	-39.42	-25.00		

▣ NR Band: N41

▣ Bandwidth: 15 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
500700 (2503.500)	5 007.00	-53.12	10.70	-54.40	3.61	H	-47.31	-25.00	1	36
	7 510.50	-63.19	11.10	-56.12	4.50	V	-49.52	-25.00		
	10 014.00	-59.69	11.20	-51.08	5.27	V	-45.15	-25.00		
	12 517.50	-60.89	12.10	-51.26	6.04	H	-45.20	-25.00		
	15 021.00	-55.36	13.80	-48.88	6.65	V	-41.73	-25.00		
518598 (2592.990)	5 185.98	-53.35	11.00	-54.85	3.70	V	-47.55	-25.00	1	36
	7 778.97	-58.10	10.90	-50.72	4.61	H	-44.43	-25.00		
	10 371.96	-59.89	11.20	-49.19	5.41	V	-43.40	-25.00		
	12 964.95	-58.51	12.00	-48.58	6.11	V	-42.69	-25.00		
	15 557.94	-56.84	15.40	-51.51	6.77	V	-42.88	-25.00		
536496 (2682.480)	5 364.96	-53.66	11.50	-55.95	3.75	H	-48.20	-25.00	1	1
	8 047.44	-56.06	10.85	-48.88	4.69	H	-42.72	-25.00		
	10 729.92	-60.35	11.10	-49.12	5.47	V	-43.49	-25.00		
	13 412.40	-56.77	11.80	-46.10	6.21	V	-40.51	-25.00		
	16 094.88	-56.98	15.60	-47.52	6.91	H	-38.83	-25.00		

▣ NR Band: N41

▣ Bandwidth: 20 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
501204 (2506.020)	5 012.04	-54.89	10.70	-56.10	3.59	H	-48.99	-25.00	1	49
	7 518.06	-63.08	11.10	-55.97	4.51	V	-49.38	-25.00		
	10 024.08	-58.43	11.20	-49.61	5.27	V	-43.68	-25.00		
	12 530.10	-62.02	12.10	-52.20	6.01	V	-46.11	-25.00		
	15 036.12	-58.07	13.80	-51.83	6.65	V	-44.68	-25.00		
518598 (2592.990)	5 185.98	-52.98	11.00	-54.48	3.70	V	-47.18	-25.00	1	25
	7 778.97	-61.93	10.90	-54.55	4.61	V	-48.26	-25.00		
	10 371.96	-60.26	11.20	-49.56	5.41	V	-43.77	-25.00		
	12 964.95	-59.74	12.00	-49.81	6.11	V	-43.92	-25.00		
	15 557.94	-55.61	15.40	-50.28	6.77	V	-41.65	-25.00		
535998 (2679.990)	5 359.98	-53.41	11.50	-55.47	3.76	H	-47.73	-25.00	1	1
	8 039.97	-57.12	10.80	-49.95	4.68	H	-43.83	-25.00		
	10 719.96	-59.15	11.10	-47.52	5.46	V	-41.88	-25.00		
	13 399.95	-58.17	11.80	-47.82	6.22	V	-42.24	-25.00		
	16 079.94	-58.71	15.50	-49.43	6.90	H	-40.83	-25.00		

▣ NR Band: N41

▣ Bandwidth: 30 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
502200 (2511.000)	5 022.00	-55.86	10.70	-57.39	3.55	V	-50.24	-25.00	1	76
	7 533.00	-63.46	11.10	-55.98	4.50	V	-49.38	-25.00		
	10 044.00	-60.14	11.15	-51.29	5.27	V	-45.41	-25.00		
	12 555.00	-60.53	12.10	-51.22	6.00	H	-45.12	-25.00		
	15 066.00	-55.40	14.00	-49.79	6.65	V	-42.44	-25.00		
518598 (2592.990)	5 185.98	-53.68	11.00	-55.18	3.70	V	-47.88	-25.00	1	39
	7 778.97	-59.66	10.90	-52.28	4.61	H	-45.99	-25.00		
	10 371.96	-59.81	11.20	-49.11	5.41	V	-43.32	-25.00		
	12 964.95	-59.81	12.00	-49.88	6.11	H	-43.99	-25.00		
	15 557.94	-57.28	15.40	-51.95	6.77	V	-43.32	-25.00		
534996 (2674.980)	5 349.96	-53.48	11.50	-55.13	3.75	V	-47.38	-25.00	1	1
	8 024.94	-58.93	10.80	-52.22	4.62	H	-46.04	-25.00		
	10 699.92	-60.57	11.10	-48.89	5.48	V	-43.27	-25.00		
	13 374.90	-59.50	11.90	-49.44	6.23	V	-43.77	-25.00		
	16 049.88	-58.85	15.50	-50.00	6.90	V	-41.40	-25.00		

▣ NR Band: N41

▣ Bandwidth: 40 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
503202 (2516.010)	5 032.02	-52.59	10.70	-54.69	3.56	H	-47.55	-25.00	1	104
	7 548.03	-61.36	11.10	-54.02	4.50	V	-47.42	-25.00		
	10 064.04	-60.69	11.10	-51.88	5.28	V	-46.06	-25.00		
	12 580.05	-60.54	12.10	-50.91	6.06	H	-44.87	-25.00		
	15 096.06	-56.94	14.05	-51.61	6.67	V	-44.23	-25.00		
518598 (2592.990)	5 185.98	-53.59	11.00	-55.09	3.70	V	-47.79	-25.00	1	53
	7 778.97	-59.54	10.90	-52.16	4.61	H	-45.87	-25.00		
	10 371.96	-60.60	11.20	-49.90	5.41	V	-44.11	-25.00		
	12 964.95	-58.32	12.00	-48.39	6.11	V	-42.50	-25.00		
	15 557.94	-56.75	15.40	-51.42	6.77	H	-42.79	-25.00		
534000 (2670.000)	5 340.00	-54.04	11.40	-55.74	3.75	H	-48.09	-25.00	1	1
	8 010.00	-59.70	10.80	-52.63	4.62	V	-46.45	-25.00		
	10 680.00	-59.45	11.10	-47.99	5.46	H	-42.35	-25.00		
	13 350.00	-59.64	11.90	-49.59	6.21	V	-43.90	-25.00		
	16 020.00	-58.65	15.20	-50.30	6.68	H	-41.78	-25.00		

▣ NR Band: N41

▣ Bandwidth: 50 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
504204 (2521.020)	5 042.04	-49.36	10.70	-51.33	3.60	H	-44.23	-25.00	1	131
	7 563.06	-62.18	11.10	-55.36	4.52	V	-48.78	-25.00		
	10 084.08	-60.79	11.10	-51.57	5.30	V	-45.77	-25.00		
	12 605.10	-61.14	12.00	-51.64	6.05	V	-45.69	-25.00		
	15 126.12	-58.59	14.10	-52.63	6.67	V	-45.20	-25.00		
518598 (2592.990)	5 185.98	-53.67	11.00	-55.17	3.70	V	-47.87	-25.00	1	66
	7 778.97	-59.25	10.90	-51.87	4.61	H	-45.58	-25.00		
	10 371.96	-58.75	11.20	-48.05	5.41	H	-42.26	-25.00		
	12 964.95	-58.99	12.00	-49.06	6.11	V	-43.17	-25.00		
	15 557.94	-56.78	15.40	-51.45	6.77	V	-42.82	-25.00		
532998 (2664.990)	5 329.98	-53.21	11.40	-55.18	3.71	H	-47.49	-25.00	1	1
	7 994.97	-60.36	10.75	-52.95	4.66	V	-46.86	-25.00		
	10 659.96	-62.14	11.10	-49.98	5.49	V	-44.37	-25.00		
	13 324.95	-59.93	12.00	-49.22	6.19	V	-43.41	-25.00		
	15 989.94	-58.44	15.10	-50.62	6.88	H	-42.40	-25.00		

▣ NR Band: N41

▣ Bandwidth: 60 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
505200 (2526.000)	5 052.00	-50.42	10.70	-52.07	3.63	H	-45.00	-25.00	1	160
	7 578.00	-62.80	11.10	-56.01	4.54	V	-49.45	-25.00		
	10 104.00	-61.31	11.10	-52.47	5.29	V	-46.66	-25.00		
	12 630.00	-60.87	12.00	-51.64	6.02	V	-45.66	-25.00		
	15 156.00	-57.95	14.20	-52.46	6.67	V	-44.93	-25.00		
518598 (2592.990)	5 185.98	-53.24	11.00	-54.74	3.70	V	-47.44	-25.00	1	81
	7 778.97	-59.74	10.90	-52.36	4.61	H	-46.07	-25.00		
	10 371.96	-60.05	11.20	-49.35	5.41	V	-43.56	-25.00		
	12 964.95	-57.97	12.00	-48.04	6.11	V	-42.15	-25.00		
	15 557.94	-57.03	15.40	-51.70	6.77	V	-43.07	-25.00		
531996 (2659.980)	5 319.96	-52.43	11.40	-55.17	3.66	H	-47.43	-25.00	1	1
	7 979.94	-59.36	10.70	-52.11	4.67	V	-46.08	-25.00		
	10 639.92	-59.55	11.20	-48.12	5.49	H	-42.41	-25.00		
	13 299.90	-59.40	12.00	-49.25	6.19	V	-43.44	-25.00		
	15 959.88	-55.94	15.10	-47.28	6.87	H	-39.05	-25.00		

▣ NR Band: N41

▣ Bandwidth: 70 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
506202 (2531.010)	5 062.02	-54.05	10.70	-55.03	3.65	H	-47.98	-25.00	1	187
	7 593.03	-62.36	11.15	-55.32	4.53	V	-48.70	-25.00		
	10 124.04	-60.62	11.10	-51.74	5.30	V	-45.94	-25.00		
	12 655.05	-61.79	11.90	-52.28	6.03	V	-46.41	-25.00		
	15 186.06	-59.04	14.20	-53.79	6.67	V	-46.26	-25.00		
518598 (2592.990)	5 185.98	-53.28	11.00	-54.78	3.70	V	-47.48	-25.00	1	94
	7 778.97	-62.20	10.90	-54.82	4.61	V	-48.53	-25.00		
	10 371.96	-60.99	11.20	-50.29	5.41	V	-44.50	-25.00		
	12 964.95	-60.50	12.00	-50.57	6.11	V	-44.68	-25.00		
	15 557.94	-57.58	15.40	-52.25	6.77	H	-43.62	-25.00		
531000 (2655.000)	5 310.00	-52.92	11.40	-55.16	3.65	H	-47.41	-25.00	1	1
	7 965.00	-58.18	10.70	-51.01	4.65	H	-44.96	-25.00		
	10 620.00	-60.00	11.20	-49.31	5.41	H	-43.52	-25.00		
	13 275.00	-59.95	12.10	-49.62	6.22	H	-43.74	-25.00		
	15 930.00	-57.20	15.00	-48.93	6.88	H	-40.81	-25.00		

▣ NR Band: N41

▣ 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
507204 (2536.020)	5 072.04	-53.54	10.70	-54.82	3.62	V	-47.74	-25.00	1	215
	7 608.06	-61.05	11.20	-54.04	4.52	V	-47.36	-25.00		
	10 144.08	-59.95	11.05	-50.48	5.32	V	-44.75	-25.00		
	12 680.10	-60.22	11.90	-50.01	6.06	V	-44.17	-25.00		
	15 216.12	-59.09	14.40	-54.13	6.69	V	-46.42	-25.00		
518598 (2592.990)	5 185.98	-53.21	11.00	-54.71	3.70	V	-47.41	-25.00	1	108
	7 778.97	-63.61	10.90	-56.23	4.61	V	-49.94	-25.00		
	10 371.96	-60.86	11.20	-50.16	5.41	V	-44.37	-25.00		
	12 964.95	-59.89	12.00	-49.96	6.11	H	-44.07	-25.00		
	15 557.94	-55.56	15.40	-50.23	6.77	V	-41.60	-25.00		
529998 (2649.990)	5 299.98	-53.29	11.40	-55.40	3.69	H	-47.69	-25.00	1	1
	7 949.97	-59.10	10.70	-51.79	4.64	H	-45.73	-25.00		
	10 599.96	-60.19	11.20	-49.00	5.41	V	-43.21	-25.00		
	13 249.95	-60.04	12.10	-49.98	6.18	H	-44.06	-25.00		
	15 899.94	-57.31	15.00	-49.48	6.87	V	-41.35	-25.00		

▣ NR Band: N41

▣ 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)	RB	
									Size	Offset
508200 (2541.000)	5 082.00	-53.36	10.70	-55.00	3.61	H	-47.91	-25.00	1	243
	7 623.00	-61.59	11.20	-55.19	4.52	V	-48.51	-25.00		
	10 164.00	-60.91	11.00	-51.83	5.33	V	-46.16	-25.00		
	12 705.00	-62.89	11.90	-52.37	6.06	V	-46.53	-25.00		
	15 246.00	-59.28	14.50	-53.40	6.73	V	-45.63	-25.00		
518598 (2592.990)	5 185.98	-54.58	11.00	-56.08	3.70	H	-48.78	-25.00	1	122
	7 778.97	-59.48	10.90	-52.10	4.61	H	-45.81	-25.00		
	10 371.96	-60.50	11.20	-49.80	5.41	V	-44.01	-25.00		
	12 964.95	-60.95	12.00	-51.02	6.11	V	-45.13	-25.00		
	15 557.94	-56.15	15.40	-50.82	6.77	H	-42.19	-25.00		
528996 (2644.980)	5 289.96	-54.28	11.30	-55.75	3.73	V	-48.18	-25.00	1	1
	7 934.94	-60.08	10.70	-52.73	4.64	H	-46.67	-25.00		
	10 579.92	-61.79	11.20	-51.34	5.46	V	-45.60	-25.00		
	13 224.90	-60.56	12.10	-50.53	6.16	V	-44.59	-25.00		
	15 869.88	-57.48	14.90	-50.73	6.85	V	-42.68	-25.00		

▣ NR Band: N41

▣ Bandwidth: 100 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
509202 (2546.010)	5 092.02	-53.50	10.70	-55.65	3.64	V	-48.59	-25.00	1	271
	7 638.03	-63.27	11.20	-56.88	4.53	V	-50.21	-25.00		
	10 184.04	-60.39	11.00	-50.93	5.33	V	-45.26	-25.00		
	12 730.05	-60.04	11.90	-49.59	6.02	V	-43.71	-25.00		
	15 276.06	-55.90	14.60	-50.03	6.71	V	-42.14	-25.00		
518598 (2592.990)	5 185.98	-54.05	11.00	-55.55	3.70	V	-48.25	-25.00	1	136
	7 778.97	-62.39	10.90	-55.01	4.61	V	-48.72	-25.00		
	10 371.96	-61.85	11.20	-51.15	5.41	V	-45.36	-25.00		
	12 964.95	-59.28	12.00	-49.35	6.11	V	-43.46	-25.00		
	15 557.94	-56.65	15.40	-51.32	6.77	H	-42.69	-25.00		
528000 (2640.000)	5 280.00	-53.93	11.30	-55.84	3.75	V	-48.29	-25.00	1	1
	7 920.00	-59.53	10.70	-52.35	4.63	H	-46.28	-25.00		
	10 560.00	-59.42	11.20	-49.51	5.45	V	-43.76	-25.00		
	13 200.00	-59.31	12.10	-48.87	6.19	V	-42.96	-25.00		
	15 840.00	-56.72	14.90	-49.61	6.84	H	-41.55	-25.00		

▣ ENDC-Mode : 12A(10 MHz)-n41A_PC3(100 MHz)

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)
23095 (708.0)	1415.00	-59.84	7.61	-66.47	1.87	V	-60.72	-13.00
	2122.50	-59.67	8.98	-65.49	2.31	V	-58.82	-13.00
	2830.00	-59.81	10.52	-63.82	2.73	V	-56.03	-13.00

8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n41	10 MHz	2592.990	BPSK	24	0	4.05
			QPSK			5.06
			16-QAM			5.67
			64-QAM			5.78
			256-QAM			6.25
	15 MHz		BPSK	36		3.89
			QPSK			5.00
			16-QAM			5.58
			64-QAM			5.71
			256-QAM			6.26
	20 MHz		BPSK	50		4.53
			QPSK			5.06
			16-QAM			5.65
			64-QAM			5.74
			256-QAM			6.24
	30 MHz		BPSK	75		4.08
			QPSK			5.14
			16-QAM			5.74
			64-QAM			5.82
			256-QAM			6.36
	40 MHz		BPSK	100		4.12
			QPSK			5.14
			16-QAM			5.73
			64-QAM			5.78
			256-QAM			6.25
	50 MHz		BPSK	128		3.95
			QPSK			5.05
			16-QAM			5.73
			64-QAM			5.79
			256-QAM			6.27
	60 MHz		BPSK	162		4.09
			QPSK			5.11
			16-QAM			5.71
			64-QAM			5.82
			256-QAM			6.24
	70 MHz		BPSK	180		4.30
			QPSK			5.12
			16-QAM			5.73
			64-QAM			5.81
			256-QAM			6.34
	80 MHz		BPSK	216		4.03
			QPSK			5.13
			16-QAM			5.81
			64-QAM			5.86
			256-QAM			6.31
	90 MHz		BPSK	243		4.03
			QPSK			5.11
			16-QAM			5.75
			64-QAM			5.80
			256-QAM			6.28
	100 MHz		BPSK	270		4.47
			QPSK			5.11
			16-QAM			5.73
			64-QAM			5.82
			256-QAM			6.28

Note:
1. Plots of the EUT's Peak- to- Average Ratio are shown Page 122 ~ 176.

8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n41	10 MHz	2592.990	BPSK	24	0	8.7103
			QPSK			8.7104
			16-QAM			8.6920
			64-QAM			8.7140
			256-QAM			8.7093
	15 MHz		BPSK	36		13.009
			QPSK			12.985
			16-QAM			12.995
			64-QAM			13.004
			256-QAM			12.963
	20 MHz		BPSK	50		17.952
			QPSK			17.992
			16-QAM			17.908
			64-QAM			17.960
			256-QAM			17.960
	30 MHz		BPSK	75		27.001
			QPSK			27.007
			16-QAM			26.970
			64-QAM			27.022
			256-QAM			27.001
	40 MHz		BPSK	100		35.936
			QPSK			36.007
			16-QAM			36.028
			64-QAM			35.923
			256-QAM			36.092
	50 MHz		BPSK	128		45.944
			QPSK			45.944
			16-QAM			45.942
			64-QAM			45.879
			256-QAM			45.964
	60 MHz		BPSK	162		58.136
			QPSK			58.196
			16-QAM			58.069
			64-QAM			58.235
			256-QAM			58.064
	70 MHz		BPSK	180		64.791
			QPSK			64.985
			16-QAM			64.671
			64-QAM			64.856
			256-QAM			64.770
	80 MHz		BPSK	216		77.490
			QPSK			77.597
			16-QAM			77.392
			64-QAM			77.612
			256-QAM			77.603
	90 MHz		BPSK	243		87.272
			QPSK			87.274
			16-QAM			87.188
			64-QAM			87.481
			256-QAM			87.081
	100 MHz		BPSK	270		97.001
			QPSK			96.880
			16-QAM			96.779
			64-QAM			97.097
			256-QAM			96.984

Note:
1. Plots of the EUT's Occupied Bandwidth are shown Page 67 ~ 121.

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 n41	10	2501.010	8.0000	37.805	-70.099	-32.294	-25.00
		2592.990	9.9138	37.805	-71.396	-33.591	
		2685.000	9.1246	37.805	-70.639	-32.834	
	15	2503.500	8.3206	37.805	-71.139	-33.334	
		2592.990	8.2682	37.805	-71.134	-33.329	
		2682.480	8.0334	37.805	-71.016	-33.211	
	20	2506.020	8.2792	37.805	-70.587	-32.782	
		2592.990	4.0045	37.190	-70.812	-33.622	
		2679.990	9.9691	37.805	-70.519	-32.714	
	30	2511.000	9.7124	37.805	-70.559	-32.754	
		2592.990	4.0240	37.190	-70.465	-33.275	
		2674.980	5.7438	37.805	-70.754	-32.949	
	40	2516.010	3.8246	37.190	-71.222	-34.032	
		2592.990	3.7872	37.190	-70.146	-32.956	
		2670.000	3.7518	37.190	-71.039	-33.849	
	50	2521.020	4.8804	37.190	-70.868	-33.678	
		2592.990	9.9726	37.805	-70.488	-32.683	
		2664.990	8.8839	37.805	-70.569	-32.764	
	60	2526.000	3.7418	37.190	-70.150	-32.960	
		2592.990	8.8654	37.805	-69.914	-32.109	
		2659.980	5.9936	37.805	-70.358	-32.553	
	70	2531.010	3.7972	37.190	-70.025	-32.835	
		2592.990	7.1910	37.805	-71.100	-33.295	
		2655.000	9.7198	37.805	-71.276	-33.471	
	80	2536.020	7.9960	37.805	-70.672	-32.867	
		2592.990	8.2722	37.805	-71.076	-33.271	
		2649.990	9.1730	37.805	-70.072	-32.267	
	90	2541.000	8.2622	37.805	-70.856	-33.051	
		2592.990	9.6655	37.805	-70.194	-32.389	
		2644.980	4.0419	37.190	-71.036	-33.846	
	100	2546.010	9.9053	37.805	-70.365	-32.560	
		2592.990	8.0195	37.805	-70.399	-32.594	
		2640.000	9.5444	37.805	-70.550	-32.745	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 254 ~ 319.

2. Duty Cycle factor already applied on the factor.

- Duty Cycle Factor(dB) = 6.99

- Factor(dB) = Duty Cycle factor + Cable Loss + Ext. Attenuator + Power 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 CHANNEL EDGE

BW (MHz)	Frequency (MHz)	Mod	RB (Size/ Offset)	2 495 MHz ~ 2 496 MHz	C.E ~ (C.E +1MHz)	2 490.5 MHz ~ 2 495 MHz	(C.E + 1 MHz) ~ (C.E + 5 MHz)	Below 2 490.5 MHz	(C.E + 5 MHz) ~ (C.E + X MHz)	Above (C.E + X MHz)
				Lower	Upper	Lower	Upper	Lower	Upper	Upper
10	2501.010	BPSK	Full RB	-23.73	-23.98	-26.00	-25.46	-31.03	-24.44	-34.95
15	2503.500	BPSK	Full RB	-24.35	-30.14	-29.84	-31.80	-33.21	-30.87	-38.04
20	2506.020	BPSK	Full RB	-27.10	-28.94	-30.87	-31.28	-32.13	-30.77	-37.17
30	2511.000	BPSK	Full RB	-20.74	-23.17	-22.80	-23.52	-26.38	-23.59	-34.96
40	2520.000	BPSK	Full RB	-20.89	-22.48	-23.92	-22.12	-27.29	-22.56	-39.19
50	2525.010	BPSK	Full RB	-20.39	-23.71	-24.29	-25.61	-28.91	-26.27	-38.69
60	2530.020	BPSK	Full RB	-16.07	-15.44	-23.57	-21.50	-27.02	-22.11	-40.89
70	2531.010	BPSK	Full RB	-20.37	-24.80	-24.61	-25.95	-28.12	-27.64	-37.08
80	2540.010	BPSK	Full RB	-20.33	-20.28	-24.43	-23.41	-27.89	-25.90	-37.13
90	2545.020	BPSK	Full RB	-19.05	-21.96	-24.48	-23.61	-27.64	-24.81	-37.08
100	2550.000	BPSK	Full RB	-19.30	-23.04	-24.80	-24.21	-27.78	-26.24	-40.43
Limit				-13.0	-10.0	-13.0	-10.0	-25.0	-13.0	-25.0

Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resoure Block Offset	C.E ~ (C.E ± 1 MHz)		(C.E ± 1 MHz) ~ (C.E ± 5 MHz)	
					Lower	Upper	Lower	Upper
10 MHz	2592.990	BPSK	Full RB	0	-19.47	-19.70	-20.85	-21.17
	2685.000	BPSK	Full RB	0	-18.78	-18.20	-18.69	-18.54
15 MHz	2592.990	BPSK	Full RB	0	-19.28	-25.28	-20.82	-23.00
	2682.480	BPSK	Full RB	0	-17.39	-22.98	-19.54	-22.01
20 MHz	2592.990	BPSK	Full RB	0	-20.81	-23.34	-22.80	-24.82
	2679.990	BPSK	Full RB	0	-19.61	-22.93	-20.91	-22.81
30 MHz	2592.990	BPSK	Full RB	0	-19.47	-21.82	-22.12	-24.00
	2679.990	BPSK	Full RB	0	-18.84	-22.78	-20.43	-22.65
40 MHz	2592.990	BPSK	Full RB	0	-19.49	-25.34	-23.30	-25.94
	2670.000	BPSK	Full RB	0	-18.34	-22.42	-21.07	-22.72
50 MHz	2592.990	BPSK	Full RB	0	-18.68	-24.54	-23.81	-26.23
	2664.990	BPSK	Full RB	0	-17.55	-22.47	-21.25	-23.32
60 MHz	2592.990	BPSK	Full RB	0	-14.93	-16.59	-22.40	-22.64
	2659.980	BPSK	Full RB	0	-14.48	-16.96	-21.80	-21.37
70 MHz	2592.990	BPSK	Full RB	0	-18.42	-24.32	-22.94	-27.87
	2655.000	BPSK	Full RB	0	-19.31	-24.80	-23.70	-25.43
80 MHz	2592.990	BPSK	Full RB	0	-18.71	-21.34	-23.25	-24.11
	2649.990	BPSK	Full RB	0	-17.22	-21.95	-22.64	-24.14
90 MHz	2592.990	BPSK	Full RB	0	-18.26	-22.33	-23.37	-23.46
	2644.980	BPSK	Full RB	0	-18.27	-23.64	-23.91	-26.12
100 MHz	2592.990	BPSK	Full RB	0	-17.16	-22.09	-23.52	-24.14
	2640.000	BPSK	Full RB	0	-17.23	-25.29	-24.42	-26.94
Limit					-10.0		-10.0	

Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resoure Block Offset	(C.E ± 5 MHz) ~ (C.E ± X MHz)		Above (C.E ± X MHz)	
					Lower	Upper	Lower	Upper
10 MHz	2592.990	BPSK	Full RB	0	-21.76	-19.65	-37.71	-38.17
	2685.000	BPSK	Full RB	0	-17.70	-18.77	-37.74	-34.39
15 MHz	2592.990	BPSK	Full RB	0	-21.95	-21.82	-38.05	-38.87
	2682.480	BPSK	Full RB	0	-18.60	-20.65	-39.21	-35.99
20 MHz	2592.990	BPSK	Full RB	0	-24.38	-24.58	-38.31	-38.54
	2679.990	BPSK	Full RB	0	-21.63	-23.95	-39.02	-39.00
30 MHz	2592.990	BPSK	Full RB	0	-24.88	-25.07	-36.19	-35.88
	2679.990	BPSK	Full RB	0	-21.75	-23.88	-36.77	-41.00
40 MHz	2592.990	BPSK	Full RB	0	-25.21	-25.71	-41.50	-41.36
	2670.000	BPSK	Full RB	0	-22.00	-24.32	-41.71	-46.27
50 MHz	2592.990	BPSK	Full RB	0	-26.96	-27.00	-38.77	-39.11
	2664.990	BPSK	Full RB	0	-23.65	-24.81	-38.49	-47.88
60 MHz	2592.990	BPSK	Full RB	0	-24.64	-26.64	-42.69	-41.17
	2659.980	BPSK	Full RB	0	-22.16	-22.73	-39.39	-47.86
70 MHz	2592.990	BPSK	Full RB	0	-27.71	-28.63	-37.59	-37.57
	2655.000	BPSK	Full RB	0	-25.31	-25.60	-35.74	-48.50
80 MHz	2592.990	BPSK	Full RB	0	-25.36	-25.26	-41.63	-39.71
	2649.990	BPSK	Full RB	0	-24.08	-25.22	-36.85	-47.58
90 MHz	2592.990	BPSK	Full RB	0	-25.10	-24.70	-47.80	-43.77
	2644.980	BPSK	Full RB	0	-25.91	-26.75	-37.21	-47.87
100 MHz	2592.990	BPSK	Full RB	0	-25.70	-25.64	-48.02	-47.80
	2640.000	BPSK	Full RB	0	-26.34	-27.52	-40.98	-48.04
Limit					-13.0		-25.0	

Note:

1. C.E = Channel Edge
2. X = X is the greater of 6 MHz or the actual emission bandwidth
3. Duty Cycle factor already applied on the factor.
   - Factor(dB) = Duty Cycle factor + Cable Loss + Ext. Attenuator + Power Splitter
   - Result(dBm) = Reading + Factor
   - Duty Cycle Factor(dB) = 6.99
4. Plots of the EUT's Channel Edge are shown Page 177 ~ 253. (1RB & Full RB)

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ BandWidth: 10 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.550 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2501.010	100 %	+20(Ref)	2501 009 999	0.0	0.000 000	0.000
	100 %	-30	2501 009 998	-0.3	0.000 000	0.000
	100 %	-20	2501 009 997	-1.6	0.000 000	-0.001
	100 %	-10	2501 009 997	-1.1	0.000 000	0.000
	100 %	0	2501 010 000	1.1	0.000 000	0.000
	100 %	+10	2501 009 998	-0.7	0.000 000	0.000
	100 %	+30	2501 009 997	-1.2	0.000 000	0.000
	100 %	+40	2501 009 998	-1.0	0.000 000	0.000
	100 %	+50	2501 009 997	-1.7	0.000 000	-0.001
	Batt. Endpoint	+20	2501 009 997	-1.3	0.000 000	-0.001
2685.000	100 %	+20(Ref)	2684 999 999	0.0	0.000 000	0.000
	100 %	-30	2684 999 997	-1.5	0.000 000	-0.001
	100 %	-20	2684 999 997	-1.9	0.000 000	-0.001
	100 %	-10	2685 000 000	1.5	0.000 000	0.001
	100 %	0	2684 999 996	-2.6	0.000 000	-0.001
	100 %	+10	2684 999 997	-2.2	0.000 000	-0.001
	100 %	+30	2684 999 998	-1.2	0.000 000	0.000
	100 %	+40	2684 999 997	-1.9	0.000 000	-0.001
	100 %	+50	2684 999 997	-1.5	0.000 000	-0.001
	Batt. Endpoint	+20	2684 999 997	-1.8	0.000 000	-0.001

▣ BandWidth: 15 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.550 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2503.500	100 %	+20(Ref)	2503 499 999	0.0	0.000 000	0.000
	100 %	-30	2503 499 999	0.1	0.000 000	0.000
	100 %	-20	2503 499 999	0.6	0.000 000	0.000
	100 %	-10	2503 499 998	-0.7	0.000 000	0.000
	100 %	0	2503 499 999	0.4	0.000 000	0.000
	100 %	+10	2503 499 998	-0.6	0.000 000	0.000
	100 %	+30	2503 499 996	-2.4	0.000 000	-0.001
	100 %	+40	2503 499 996	-2.6	0.000 000	-0.001
	100 %	+50	2503 499 999	-0.1	0.000 000	0.000
	Batt. Endpoint	+20	2503 499 999	0.2	0.000 000	0.000
2682.480	100 %	+20(Ref)	2682 479 999	0.0	0.000 000	0.000
	100 %	-30	2682 479 998	-1.3	0.000 000	0.000
	100 %	-20	2682 479 996	-3.3	0.000 000	-0.001
	100 %	-10	2682 479 996	-3.1	0.000 000	-0.001
	100 %	0	2682 479 996	-3.9	0.000 000	-0.001
	100 %	+10	2682 479 996	-3.3	0.000 000	-0.001
	100 %	+30	2682 479 999	-0.6	0.000 000	0.000
	100 %	+40	2682 479 995	-4.1	0.000 000	-0.002
	100 %	+50	2682 480 000	0.3	0.000 000	0.000
	Batt. Endpoint	+20	2682 479 998	-1.5	0.000 000	-0.001

▣ BandWidth: 20 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.550 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2506.020	100 %	+20(Ref)	2506 019 999	0.0	0.000 000	0.000
	100 %	-30	2506 019 998	-1.6	0.000 000	-0.001
	100 %	-20	2506 019 998	-0.9	0.000 000	0.000
	100 %	-10	2506 019 999	-0.2	0.000 000	0.000
	100 %	0	2506 019 998	-1.2	0.000 000	0.000
	100 %	+10	2506 020 000	1.0	0.000 000	0.000
	100 %	+30	2506 019 999	-0.4	0.000 000	0.000
	100 %	+40	2506 019 998	-1.3	0.000 000	-0.001
	100 %	+50	2506 019 998	-1.2	0.000 000	0.000
	Batt. Endpoint	+20	2506 019 999	0.0	0.000 000	0.000
2679.990	100 %	+20(Ref)	2679 989 998	0.0	0.000 000	0.000
	100 %	-30	2679 989 996	-2.4	0.000 000	-0.001
	100 %	-20	2679 989 995	-3.1	0.000 000	-0.001
	100 %	-10	2679 989 996	-1.6	0.000 000	-0.001
	100 %	0	2679 989 994	-4.1	0.000 000	-0.002
	100 %	+10	2679 989 995	-3.3	0.000 000	-0.001
	100 %	+30	2679 989 996	-1.9	0.000 000	-0.001
	100 %	+40	2679 989 995	-2.6	0.000 000	-0.001
	100 %	+50	2679 989 998	-0.2	0.000 000	0.000
	Batt. Endpoint	+20	2679 989 995	-3.0	0.000 000	-0.001

▣ BandWidth: 30 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.550 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2511.000	100 %	+20(Ref)	2510 999 999	0.0	0.000 000	0.000
	100 %	-30	2511 000 002	2.5	0.000 000	0.001
	100 %	-20	2511 000 000	1.0	0.000 000	0.000
	100 %	-10	2510 999 999	-0.6	0.000 000	0.000
	100 %	0	2510 999 999	-0.4	0.000 000	0.000
	100 %	+10	2511 000 000	0.4	0.000 000	0.000
	100 %	+30	2510 999 999	-0.2	0.000 000	0.000
	100 %	+40	2510 999 996	-2.9	0.000 000	-0.001
	100 %	+50	2510 999 998	-1.6	0.000 000	-0.001
	Batt. Endpoint	+20	2510 999 999	-0.1	0.000 000	0.000
2674.980	100 %	+20(Ref)	2674 979 999	0.0	0.000 000	0.000
	100 %	-30	2674 979 993	-5.9	0.000 000	-0.002
	100 %	-20	2674 979 997	-1.8	0.000 000	-0.001
	100 %	-10	2674 979 998	-0.8	0.000 000	0.000
	100 %	0	2674 980 000	0.6	0.000 000	0.000
	100 %	+10	2674 979 999	-0.7	0.000 000	0.000
	100 %	+30	2674 979 992	-6.7	0.000 000	-0.003
	100 %	+40	2674 979 993	-6.4	0.000 000	-0.002
	100 %	+50	2674 979 997	-2.0	0.000 000	-0.001
	Batt. Endpoint	+20	2674 980 001	1.6	0.000 000	0.001

▣ BandWidth: 40 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.550 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2516.010	100 %	+20(Ref)	2516 009 996	0.0	0.000 000	0.000
	100 %	-30	2516 009 986	-10.0	0.000 000	-0.004
	100 %	-20	2516 009 994	-2.1	0.000 000	-0.001
	100 %	-10	2516 009 993	-3.2	0.000 000	-0.001
	100 %	0	2516 009 994	-1.7	0.000 000	-0.001
	100 %	+10	2516 009 992	-3.6	0.000 000	-0.001
	100 %	+30	2516 009 994	-2.1	0.000 000	-0.001
	100 %	+40	2516 009 998	1.6	0.000 000	0.001
	100 %	+50	2516 009 997	0.7	0.000 000	0.000
	Batt. Endpoint	+20	2516 009 993	-3.1	0.000 000	-0.001
2670.000	100 %	+20(Ref)	2670 000 002	0.0	0.000 000	0.000
	100 %	-30	2670 000 003	0.8	0.000 000	0.000
	100 %	-20	2669 999 998	-3.6	0.000 000	-0.001
	100 %	-10	2669 999 999	-2.4	0.000 000	-0.001
	100 %	0	2670 000 002	-0.1	0.000 000	0.000
	100 %	+10	2670 000 003	1.4	0.000 000	0.001
	100 %	+30	2669 999 999	-2.4	0.000 000	-0.001
	100 %	+40	2670 000 004	2.7	0.000 000	0.001
	100 %	+50	2669 999 999	-2.5	0.000 000	-0.001
	Batt. Endpoint	+20	2669 999 999	-2.5	0.000 000	-0.001

▣ BandWidth: 50 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.550 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2521.020	100 %	+20(Ref)	2521 020 000	0.0	0.000 000	0.000
	100 %	-30	2521 020 001	0.5	0.000 000	0.000
	100 %	-20	2521 019 996	-4.4	0.000 000	-0.002
	100 %	-10	2521 020 002	1.6	0.000 000	0.001
	100 %	0	2521 020 004	3.4	0.000 000	0.001
	100 %	+10	2521 020 001	1.0	0.000 000	0.000
	100 %	+30	2521 020 001	1.1	0.000 000	0.000
	100 %	+40	2521 020 001	1.0	0.000 000	0.000
	100 %	+50	2521 019 999	-1.4	0.000 000	-0.001
	Batt. Endpoint	+20	2521 019 997	-3.7	0.000 000	-0.001
2664.990	100 %	+20(Ref)	2664 989 998	0.0	0.000 000	0.000
	100 %	-30	2664 989 997	-1.5	0.000 000	-0.001
	100 %	-20	2664 990 001	2.9	0.000 000	0.001
	100 %	-10	2664 989 999	0.8	0.000 000	0.000
	100 %	0	2664 989 999	0.6	0.000 000	0.000
	100 %	+10	2664 989 998	-0.4	0.000 000	0.000
	100 %	+30	2664 989 996	-2.5	0.000 000	-0.001
	100 %	+40	2664 989 996	-2.4	0.000 000	-0.001
	100 %	+50	2664 989 999	0.2	0.000 000	0.000
	Batt. Endpoint	+20	2664 990 001	2.8	0.000 000	0.001

▣ BandWidth: 60 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.550 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2526.000	100 %	+20(Ref)	2525 999 997	0.0	0.000 000	0.000
	100 %	-30	2525 999 994	-2.8	0.000 000	-0.001
	100 %	-20	2525 999 999	2.0	0.000 000	0.001
	100 %	-10	2525 999 998	0.6	0.000 000	0.000
	100 %	0	2525 999 993	-3.7	0.000 000	-0.001
	100 %	+10	2525 999 997	-0.4	0.000 000	0.000
	100 %	+30	2525 999 996	-1.5	0.000 000	-0.001
	100 %	+40	2525 999 997	-0.2	0.000 000	0.000
	100 %	+50	2525 999 995	-2.0	0.000 000	-0.001
	Batt. Endpoint	+20	2525 999 999	1.5	0.000 000	0.001
2659.980	100 %	+20(Ref)	2659 979 999	0.0	0.000 000	0.000
	100 %	-30	2659 979 995	-3.6	0.000 000	-0.001
	100 %	-20	2659 979 997	-2.3	0.000 000	-0.001
	100 %	-10	2659 979 996	-2.7	0.000 000	-0.001
	100 %	0	2659 979 998	-1.4	0.000 000	-0.001
	100 %	+10	2659 980 000	1.5	0.000 000	0.001
	100 %	+30	2659 979 994	-5.1	0.000 000	-0.002
	100 %	+40	2659 979 994	-5.1	0.000 000	-0.002
	100 %	+50	2659 979 999	-0.3	0.000 000	0.000
	Batt. Endpoint	+20	2659 979 995	-4.2	0.000 000	-0.002

▣ BandWidth: 70 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.550 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2531.010	100 %	+20(Ref)	2531 010 000	0.0	0.000 000	0.000
	100 %	-30	2531 009 999	-1.2	0.000 000	0.000
	100 %	-20	2531 010 001	0.5	0.000 000	0.000
	100 %	-10	2531 010 001	0.5	0.000 000	0.000
	100 %	0	2531 009 999	-0.9	0.000 000	0.000
	100 %	+10	2531 010 002	1.7	0.000 000	0.001
	100 %	+30	2531 009 999	-1.5	0.000 000	-0.001
	100 %	+40	2531 010 001	1.1	0.000 000	0.000
	100 %	+50	2531 010 003	3.2	0.000 000	0.001
	Batt. Endpoint	+20	2531 009 999	-0.7	0.000 000	0.000
2655.000	100 %	+20(Ref)	2655 000 000	0.0	0.000 000	0.000
	100 %	-30	2654 999 997	-2.5	0.000 000	-0.001
	100 %	-20	2654 999 996	-4.0	0.000 000	-0.001
	100 %	-10	2654 999 994	-5.6	0.000 000	-0.002
	100 %	0	2654 999 994	-6.0	0.000 000	-0.002
	100 %	+10	2654 999 996	-4.1	0.000 000	-0.002
	100 %	+30	2654 999 995	-4.5	0.000 000	-0.002
	100 %	+40	2655 000 002	1.9	0.000 000	0.001
	100 %	+50	2654 999 998	-1.9	0.000 000	-0.001
	Batt. Endpoint	+20	2654 999 998	-1.7	0.000 000	-0.001

▣ BandWidth: 80 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.550 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2536.020	100 %	+20(Ref)	2536 020 001	0.0	0.000 000	0.000
	100 %	-30	2536 020 001	0.8	0.000 000	0.000
	100 %	-20	2536 020 002	1.3	0.000 000	0.001
	100 %	-10	2536 020 001	1.0	0.000 000	0.000
	100 %	0	2536 020 003	2.5	0.000 000	0.001
	100 %	+10	2536 020 003	2.5	0.000 000	0.001
	100 %	+30	2536 020 002	1.1	0.000 000	0.000
	100 %	+40	2536 020 002	1.7	0.000 000	0.001
	100 %	+50	2536 019 999	-1.1	0.000 000	0.000
	Batt. Endpoint	+20	2536 020 000	-0.1	0.000 000	0.000
2649.990	100 %	+20(Ref)	2649 990 001	0.0	0.000 000	0.000
	100 %	-30	2649 990 003	2.3	0.000 000	0.001
	100 %	-20	2649 989 994	-7.3	0.000 000	-0.003
	100 %	-10	2649 990 000	-1.1	0.000 000	0.000
	100 %	0	2649 990 001	0.2	0.000 000	0.000
	100 %	+10	2649 990 000	-1.2	0.000 000	0.000
	100 %	+30	2649 990 001	-0.4	0.000 000	0.000
	100 %	+40	2649 990 001	-0.3	0.000 000	0.000
	100 %	+50	2649 990 001	-0.3	0.000 000	0.000
	Batt. Endpoint	+20	2649 990 001	0.0	0.000 000	0.000

▣ BandWidth: 90 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.550 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2541.000	100 %	+20(Ref)	2541 000 000	0.0	0.000 000	0.000
	100 %	-30	2541 000 001	1.5	0.000 000	0.001
	100 %	-20	2540 999 999	-1.1	0.000 000	0.000
	100 %	-10	2540 999 997	-2.9	0.000 000	-0.001
	100 %	0	2541 000 002	1.8	0.000 000	0.001
	100 %	+10	2541 000 002	1.8	0.000 000	0.001
	100 %	+30	2540 999 999	-1.4	0.000 000	-0.001
	100 %	+40	2540 999 997	-2.6	0.000 000	-0.001
	100 %	+50	2540 999 998	-2.1	0.000 000	-0.001
	Batt. Endpoint	+20	2540 999 999	-0.8	0.000 000	0.000
2644.980	100 %	+20(Ref)	2644 980 002	0.0	0.000 000	0.000
	100 %	-30	2644 980 001	-0.9	0.000 000	0.000
	100 %	-20	2644 980 001	-1.7	0.000 000	-0.001
	100 %	-10	2644 980 001	-1.2	0.000 000	0.000
	100 %	0	2644 979 998	-4.0	0.000 000	-0.002
	100 %	+10	2644 980 002	-0.1	0.000 000	0.000
	100 %	+30	2644 980 000	-2.4	0.000 000	-0.001
	100 %	+40	2644 980 000	-2.4	0.000 000	-0.001
	100 %	+50	2644 980 001	-1.6	0.000 000	-0.001
	Batt. Endpoint	+20	2644 980 002	-0.6	0.000 000	0.000

▣ BandWidth: 100 MHz

▣ Voltage(100 %): 3.880 VDC

▣ Batt. Endpoint: 3.550 VDC

▣ LIMIT: Emission must remain in band

Test. Frequncy (MHz)	Voltage (%)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
2546.010	100 %	+20(Ref)	2546 009 998	0.0	0.000 000	0.000
	100 %	-30	2546 009 996	-1.8	0.000 000	-0.001
	100 %	-20	2546 009 996	-2.4	0.000 000	-0.001
	100 %	-10	2546 009 997	-0.8	0.000 000	0.000
	100 %	0	2546 009 994	-4.4	0.000 000	-0.002
	100 %	+10	2546 009 997	-1.6	0.000 000	-0.001
	100 %	+30	2546 009 997	-1.6	0.000 000	-0.001
	100 %	+40	2546 009 998	-0.6	0.000 000	0.000
	100 %	+50	2546 009 992	-5.7	0.000 000	-0.002
	Batt. Endpoint	+20	2546 009 995	-2.8	0.000 000	-0.001
2640.000	100 %	+20(Ref)	2640 000 000	0.0	0.000 000	0.000
	100 %	-30	2639 999 999	-0.7	0.000 000	0.000
	100 %	-20	2639 999 997	-2.4	0.000 000	-0.001
	100 %	-10	2639 999 997	-2.4	0.000 000	-0.001
	100 %	0	2639 999 998	-1.9	0.000 000	-0.001
	100 %	+10	2639 999 995	-4.4	0.000 000	-0.002
	100 %	+30	2639 999 998	-1.6	0.000 000	-0.001
	100 %	+40	2639 999 999	-0.9	0.000 000	0.000
	100 %	+50	2639 999 997	-3.1	0.000 000	-0.001
	Batt. Endpoint	+20	2640 000 001	0.9	0.000 000	0.000

9. TEST PLOTS

Sub6 n41. Occupied Bandwidth Plot (10 MHz Ch.518598 BPSK)

Sub6 n41. Occupied Bandwidth Plot (10 MHz Ch.518598 QPSK)

Sub6 n41. Occupied Bandwidth Plot (10 MHz Ch.518598 16-QAM)

Sub6 n41. Occupied Bandwidth Plot (10 MHz Ch.518598 64-QAM)

Sub6 n41. Occupied Bandwidth Plot (10 MHz Ch.518598 256-QAM)

Sub6 n41. Occupied Bandwidth Plot (15 MHz Ch.518598 BPSK)

Sub6 n41. Occupied Bandwidth Plot (15 MHz Ch.518598 QPSK)

Sub6 n41. Occupied Bandwidth Plot (15 MHz Ch.518598 16-QAM)

Sub6 n41. Occupied Bandwidth Plot (15 MHz Ch.518598 64-QAM)

Sub6 n41. Occupied Bandwidth Plot (15 MHz Ch.518598 256-QAM)

Sub6 n41. Occupied Bandwidth Plot (20 MHz Ch.518598 BPSK)

Sub6 n41. Occupied Bandwidth Plot (20 MHz Ch.518598 QPSK)

Sub6 n41. Occupied Bandwidth Plot (20 MHz Ch.518598 16-QAM)

Sub6 n41. Occupied Bandwidth Plot (20 MHz Ch.518598 64-QAM)

Sub6 n41. Occupied Bandwidth Plot (20 MHz Ch.518598 256-QAM)

Sub6 n41. Occupied Bandwidth Plot (30 MHz Ch.518598 BPSK)

Sub6 n41. Occupied Bandwidth Plot (30 MHz Ch.518598 QPSK)

Sub6 n41. Occupied Bandwidth Plot (30 MHz Ch.518598 16-QAM)

Sub6 n41. Occupied Bandwidth Plot (30 MHz Ch.518598 64-QAM)

Sub6 n41. Occupied Bandwidth Plot (30 MHz Ch.518598 256-QAM)

Sub6 n41. Occupied Bandwidth Plot (40 MHz Ch.518598 BPSK)

Sub6 n41. Occupied Bandwidth Plot (40 MHz Ch.518598 QPSK)

Sub6 n41. Occupied Bandwidth Plot (40 MHz Ch.518598 16-QAM)

Sub6 n41. Occupied Bandwidth Plot (40 MHz Ch.518598 64-QAM)

Sub6 n41. Occupied Bandwidth Plot (40 MHz Ch.518598 256-QAM)

Sub6 n41. Occupied Bandwidth Plot (50 MHz Ch.518598 BPSK)

Sub6 n41. Occupied Bandwidth Plot (50 MHz Ch.518598 QPSK)

Sub6 n41. Occupied Bandwidth Plot (50 MHz Ch.518598 16-QAM)

Sub6 n41. Occupied Bandwidth Plot (50 MHz Ch.518598 64-QAM)

Sub6 n41. Occupied Bandwidth Plot (50 MHz Ch.518598 256-QAM)

Sub6 n41. Occupied Bandwidth Plot (60 MHz Ch.518598 BPSK)

Sub6 n41. Occupied Bandwidth Plot (60 MHz Ch.518598 QPSK)

Sub6 n41. Occupied Bandwidth Plot (60 MHz Ch.518598 16-QAM)

Sub6 n41. Occupied Bandwidth Plot (60 MHz Ch.518598 64-QAM)

Sub6 n41. Occupied Bandwidth Plot (60 MHz Ch.518598 256-QAM)

Sub6 n41. Occupied Bandwidth Plot (70 MHz Ch.518598 BPSK)

Sub6 n41. Occupied Bandwidth Plot (70 MHz Ch.518598 QPSK)

Sub6 n41. Occupied Bandwidth Plot (70 MHz Ch.518598 16-QAM)

Sub6 n41. Occupied Bandwidth Plot (70 MHz Ch.518598 64-QAM)

Sub6 n41. Occupied Bandwidth Plot (70 MHz Ch.518598 256-QAM)

Sub6 n41. Occupied Bandwidth Plot (80 MHz Ch.518598 BPSK)

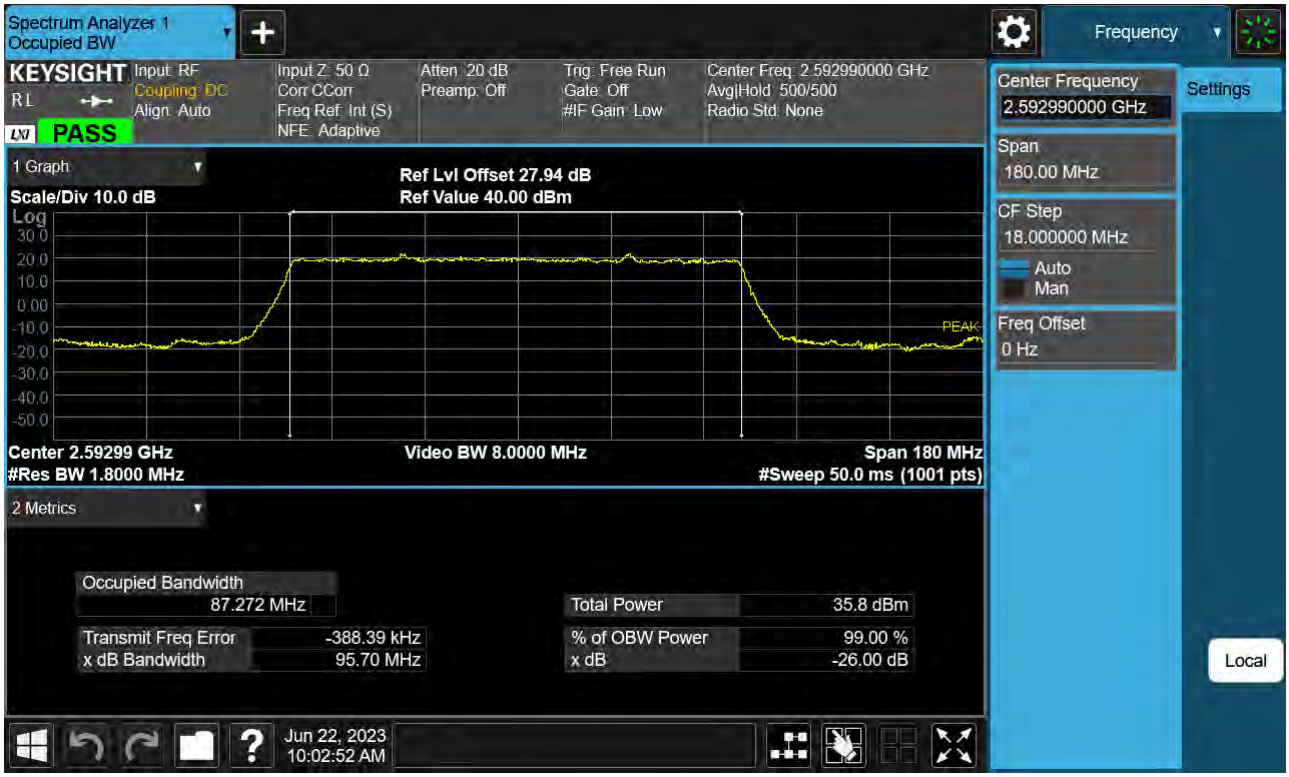
Sub6 n41. Occupied Bandwidth Plot (80 MHz Ch.518598 QPSK)

Sub6 n41. Occupied Bandwidth Plot (80 MHz Ch.518598 16-QAM)

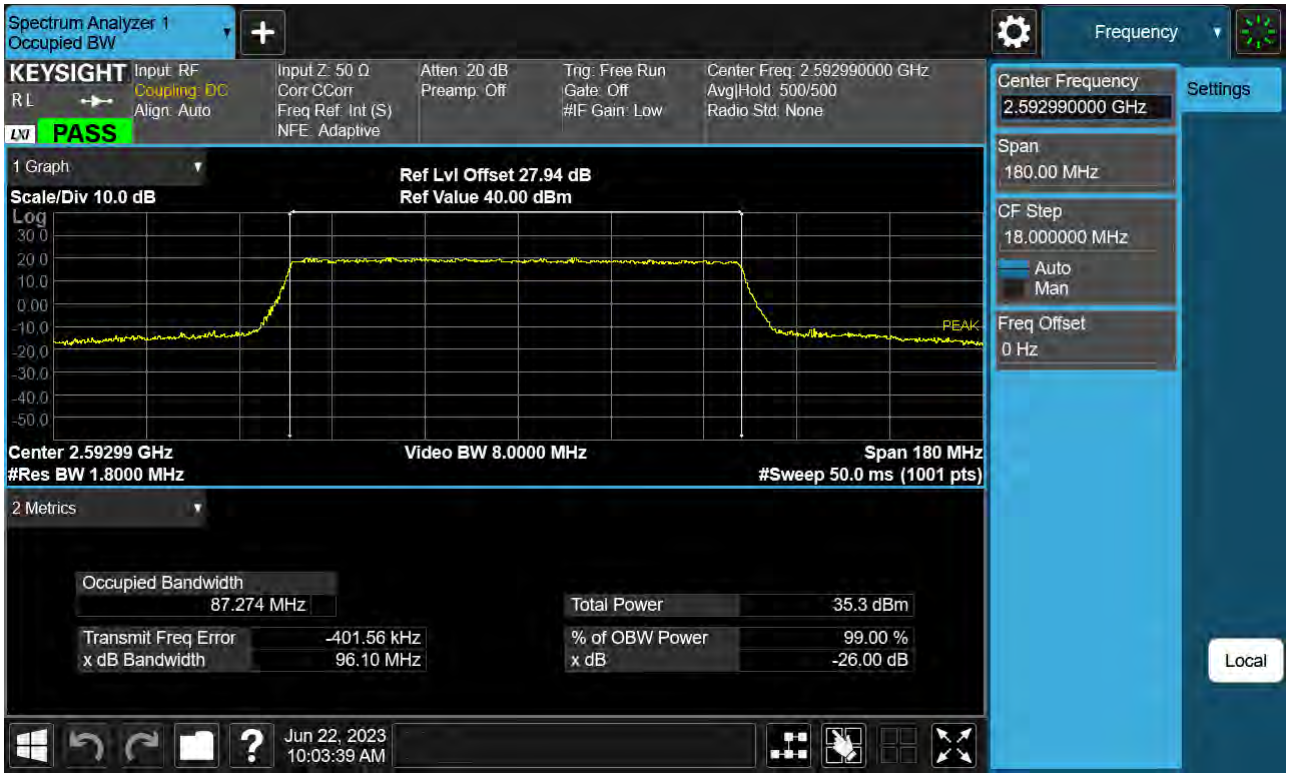
Sub6 n41. Occupied Bandwidth Plot (80 MHz Ch.518598 64-QAM)

Sub6 n41. Occupied Bandwidth Plot (80 MHz Ch.518598 256-QAM)

Sub6 n41. Occupied Bandwidth Plot (90 MHz Ch.518598 BPSK)



Sub6 n41. Occupied Bandwidth Plot (90 MHz Ch.518598 QPSK)



Sub6 n41. Occupied Bandwidth Plot (90 MHz Ch.518598 16-QAM)

Sub6 n41. Occupied Bandwidth Plot (90 MHz Ch.518598 64-QAM)

Sub6 n41. Occupied Bandwidth Plot (90 MHz Ch.518598 256-QAM)

Sub6 n41. Occupied Bandwidth Plot (100 MHz Ch.518598 BPSK)

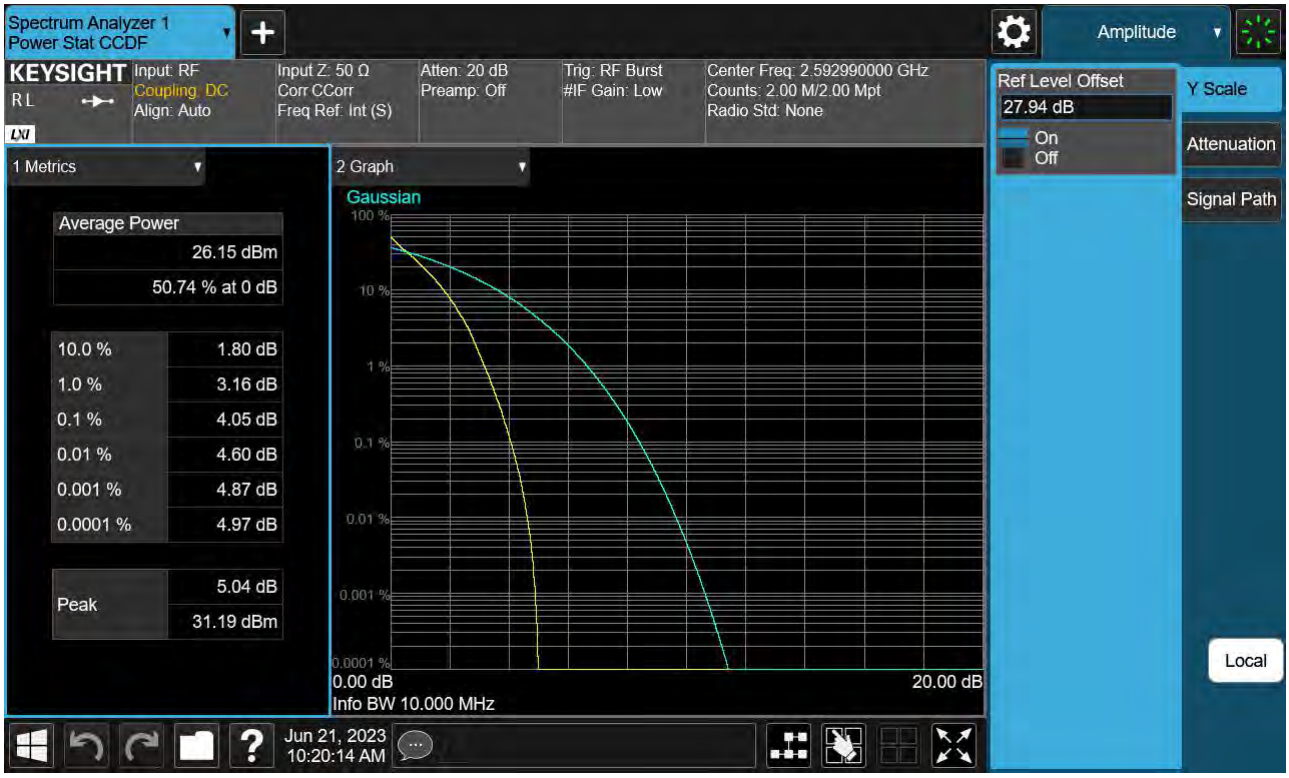
Sub6 n41. Occupied Bandwidth Plot (100 MHz Ch.518598 QPSK)

Sub6 n41. Occupied Bandwidth Plot (100 MHz Ch.518598 16-QAM)

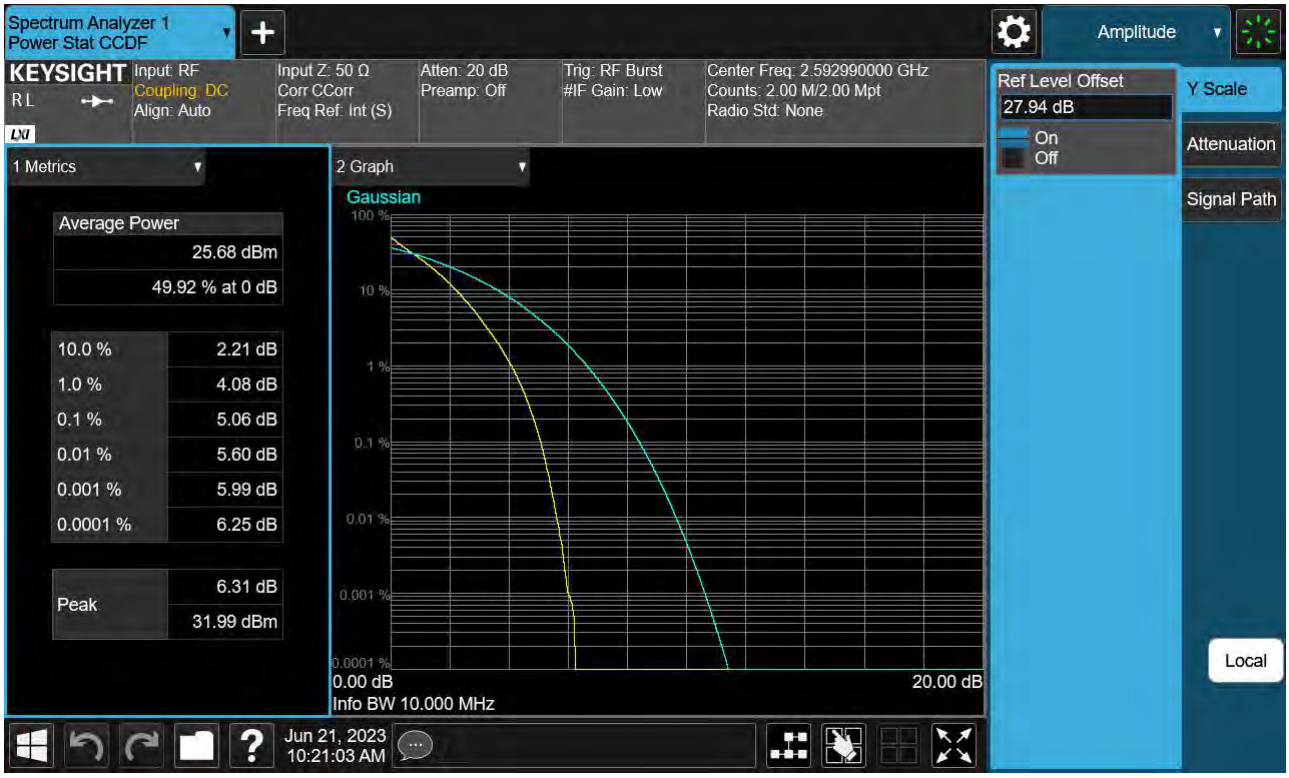
Sub6 n41. Occupied Bandwidth Plot (100 MHz Ch.518598 64-QAM)

Sub6 n41. Occupied Bandwidth Plot (100 MHz Ch.518598 256-QAM)

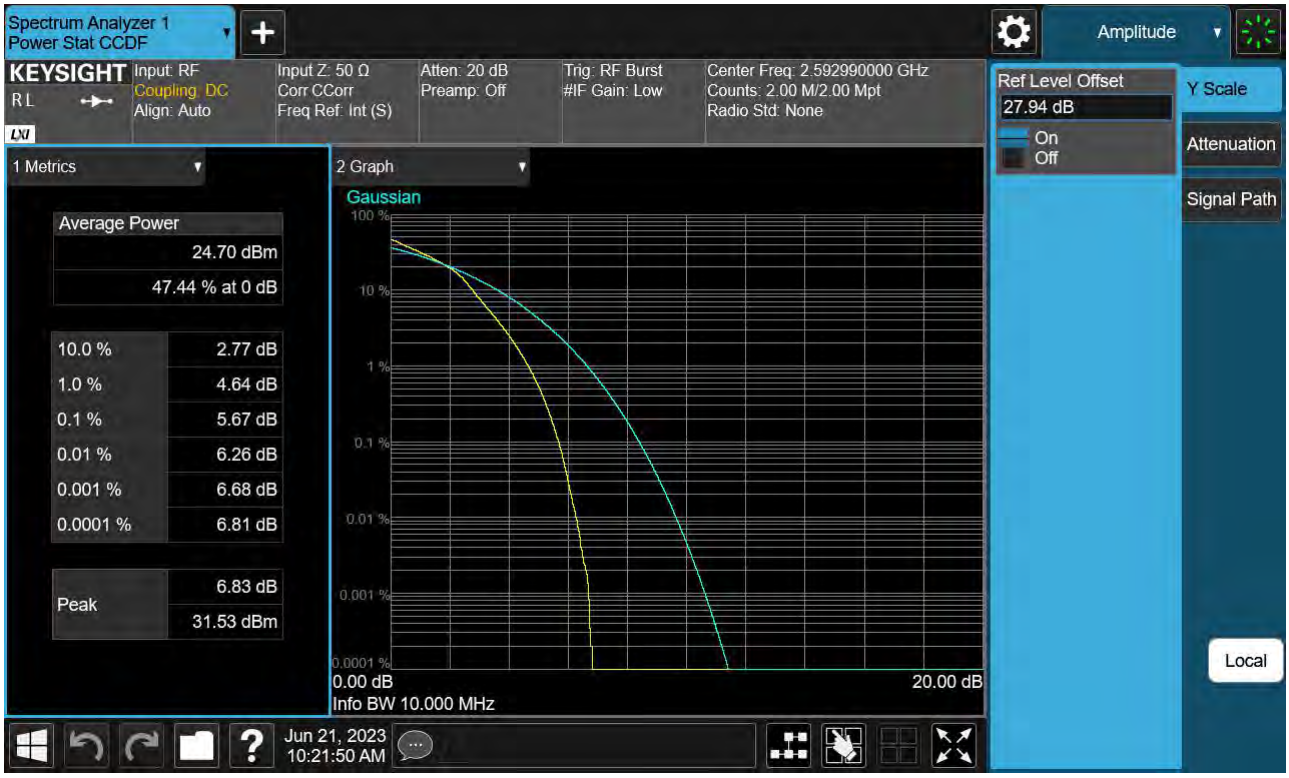
Sub6 n41. PAR Plot (10 M BW_Ch.518598_BPSK)



Sub6 n41. PAR Plot (10 M BW_Ch.518598_QPSK)



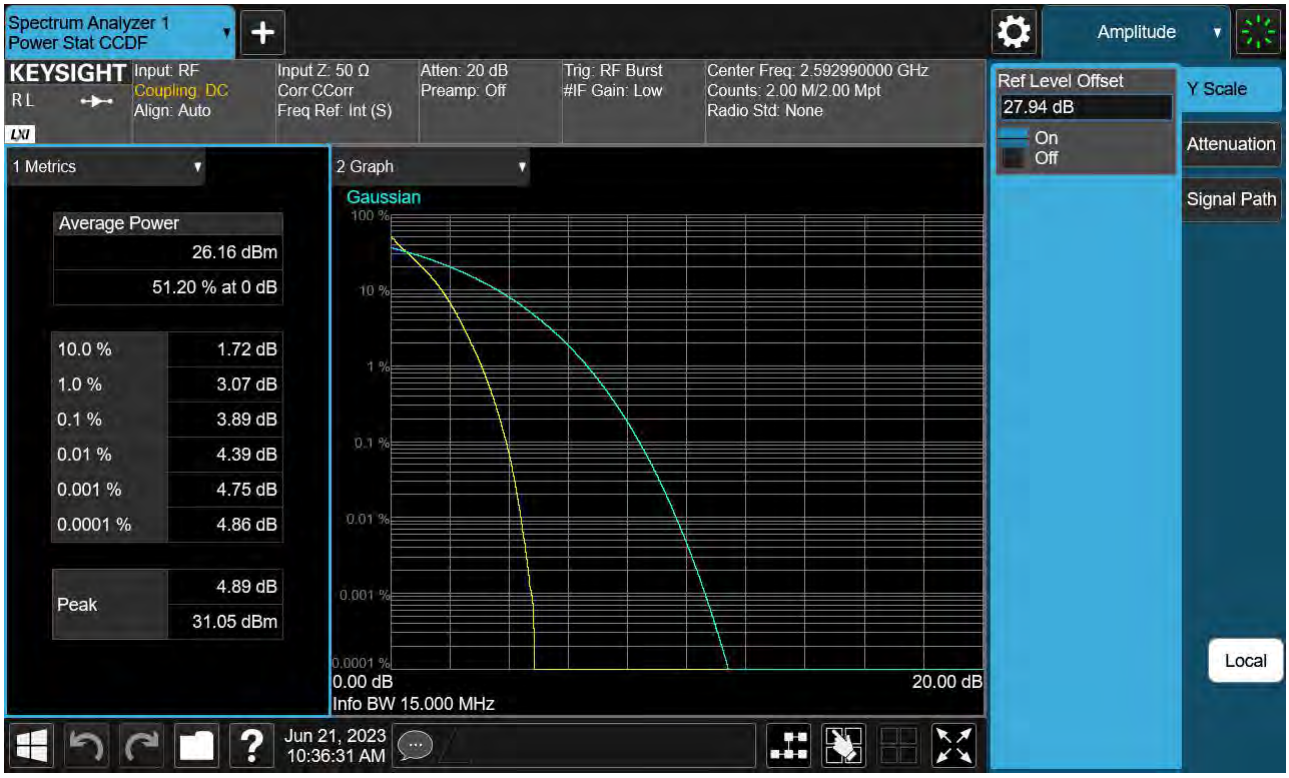
Sub6 n41. PAR Plot (10 M BW_Ch.518598_16QAM)



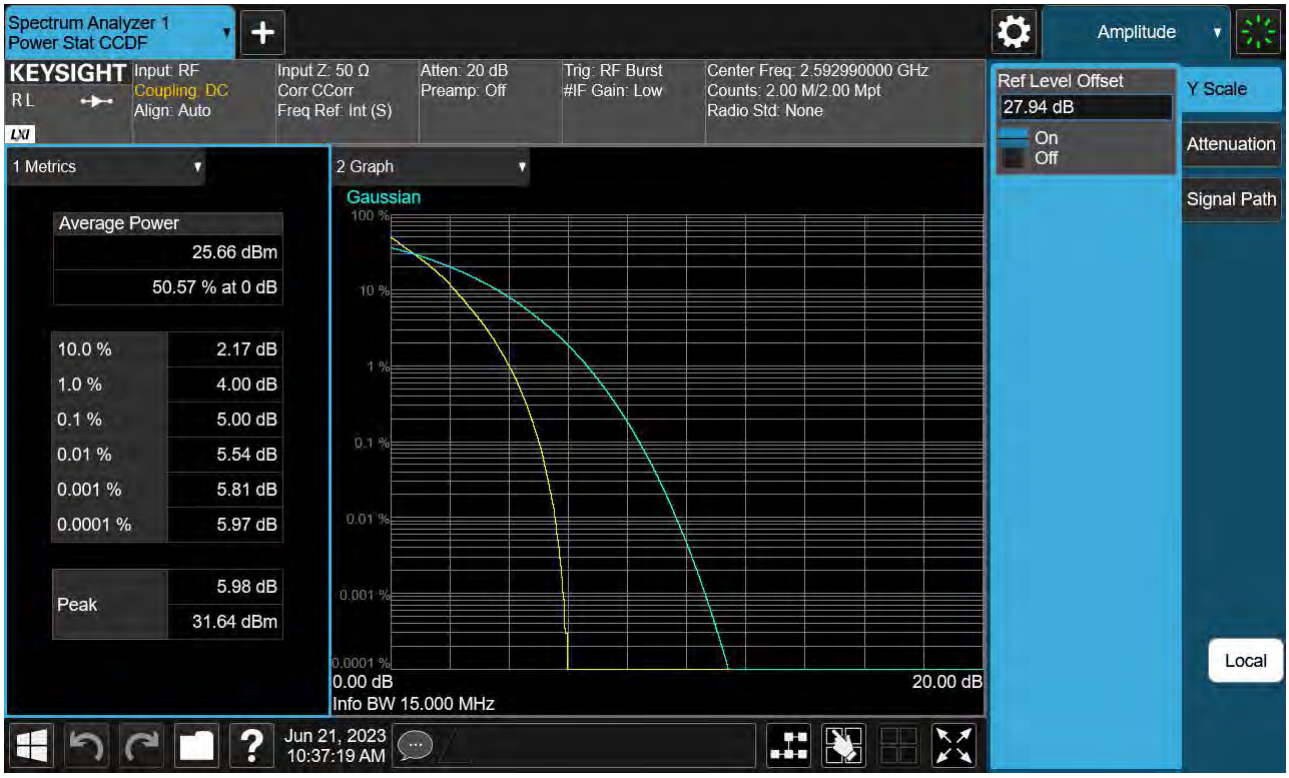
Sub6 n41. PAR Plot (10 M BW_Ch.518598_64QAM)

Sub6 n41. PAR Plot (10 M BW_Ch.518598_256QAM)

Sub6 n41. PAR Plot (15 M BW_Ch.518598_BPSK)



Sub6 n41. PAR Plot (15 M BW_Ch.518598_QPSK)



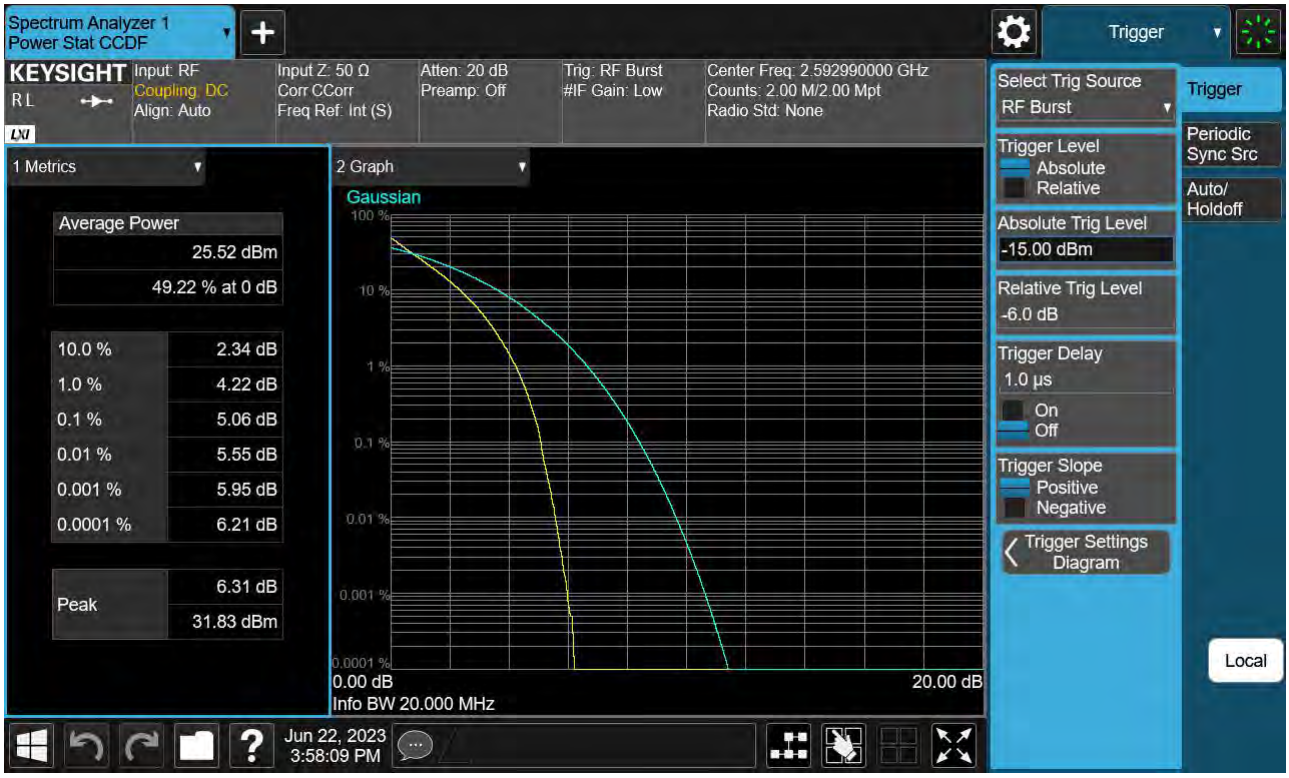
Sub6 n41. PAR Plot (15 M BW_Ch.518598_16QAM)

Sub6 n41. PAR Plot (15 M BW_Ch.518598_64QAM)

Sub6 n41. PAR Plot (15 M BW_Ch.518598_256QAM)

Sub6 n41. PAR Plot (20 M BW_Ch.518598_BPSK)

Sub6 n41. PAR Plot (20 M BW_Ch.518598_QPSK)

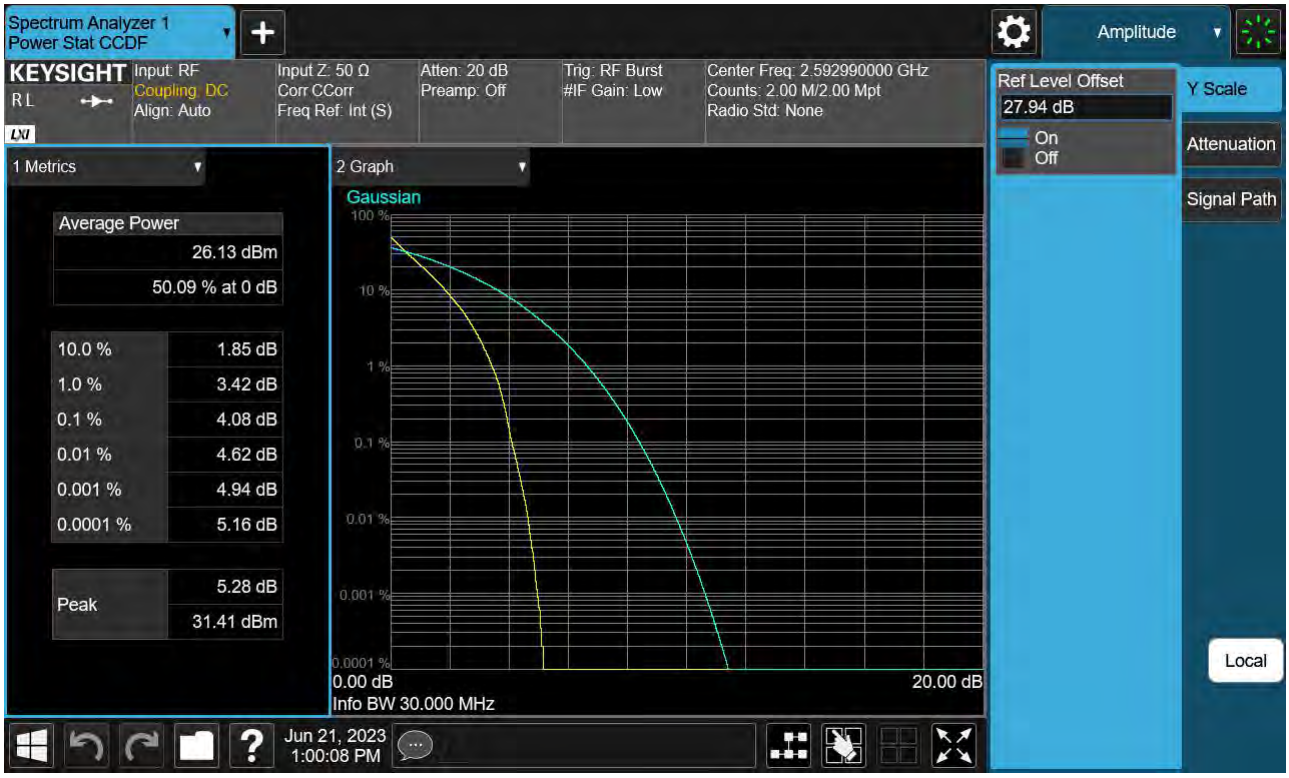


Sub6 n41. PAR Plot (20 M BW_Ch.518598_16QAM)

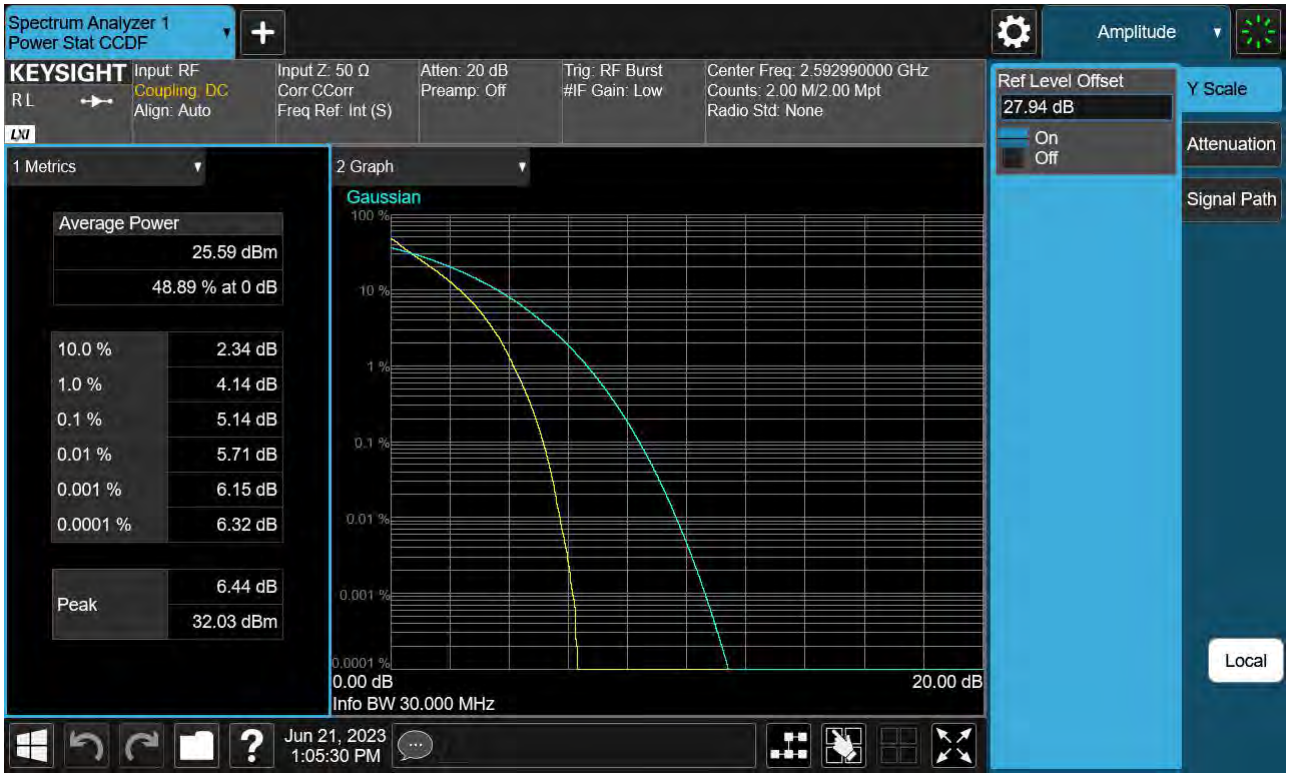
Sub6 n41. PAR Plot (20 M BW_Ch.518598_64QAM)

Sub6 n41. PAR Plot (20 M BW_Ch.518598_256QAM)

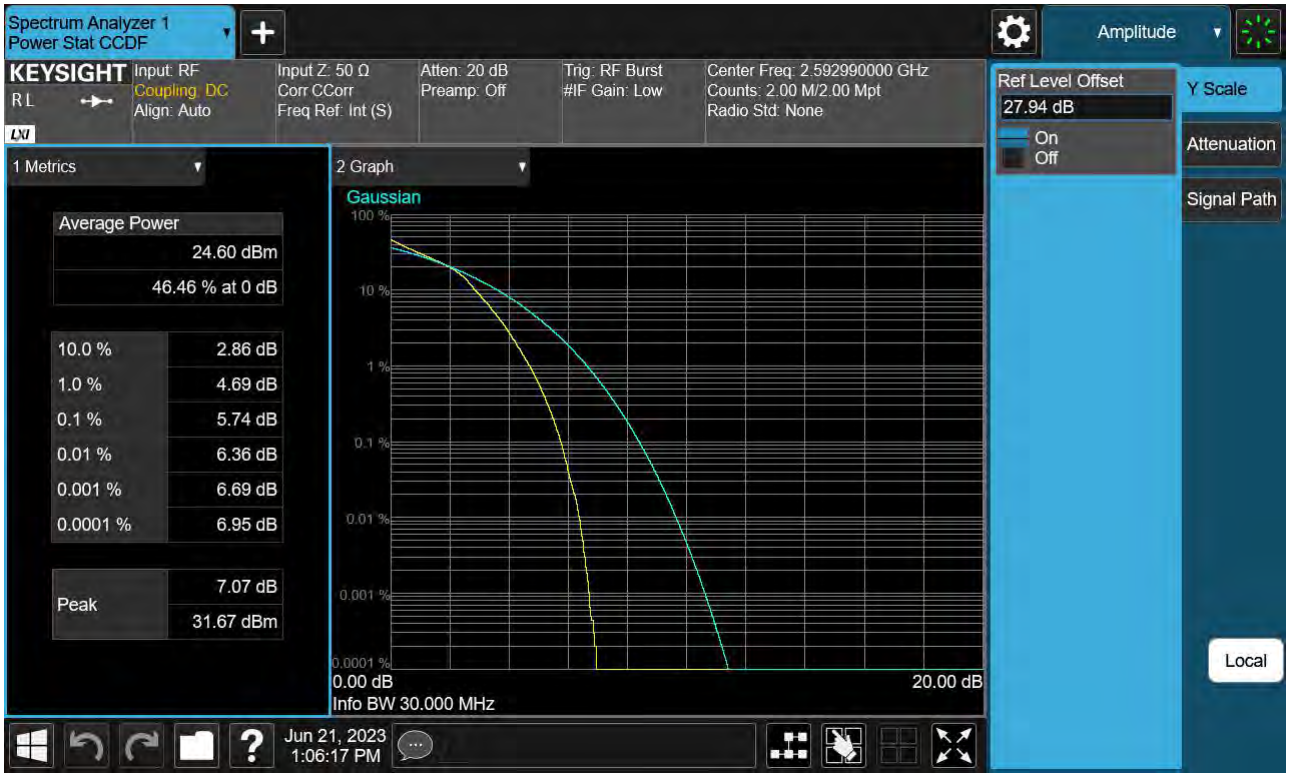
Sub6 n41. PAR Plot (30 M BW_Ch.518598_BPSK)



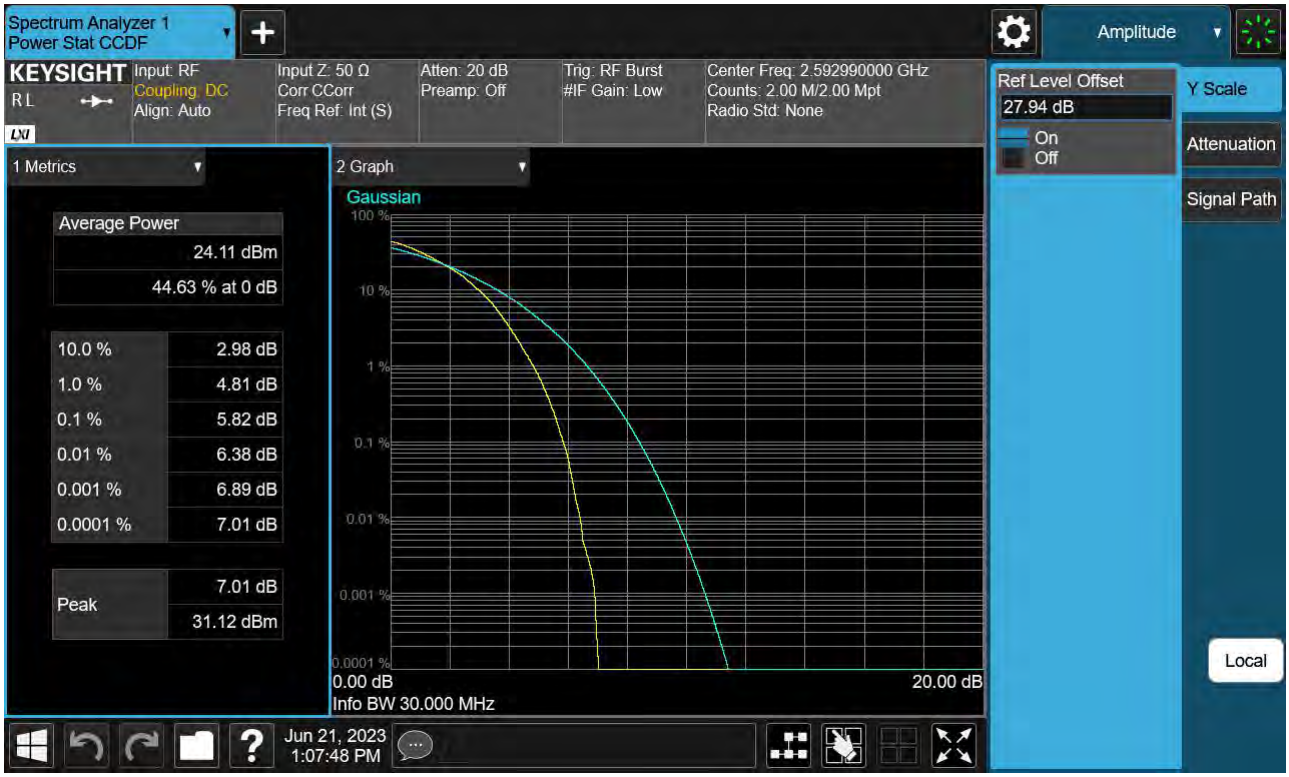
Sub6 n41. PAR Plot (30 M BW_Ch.518598_QPSK)



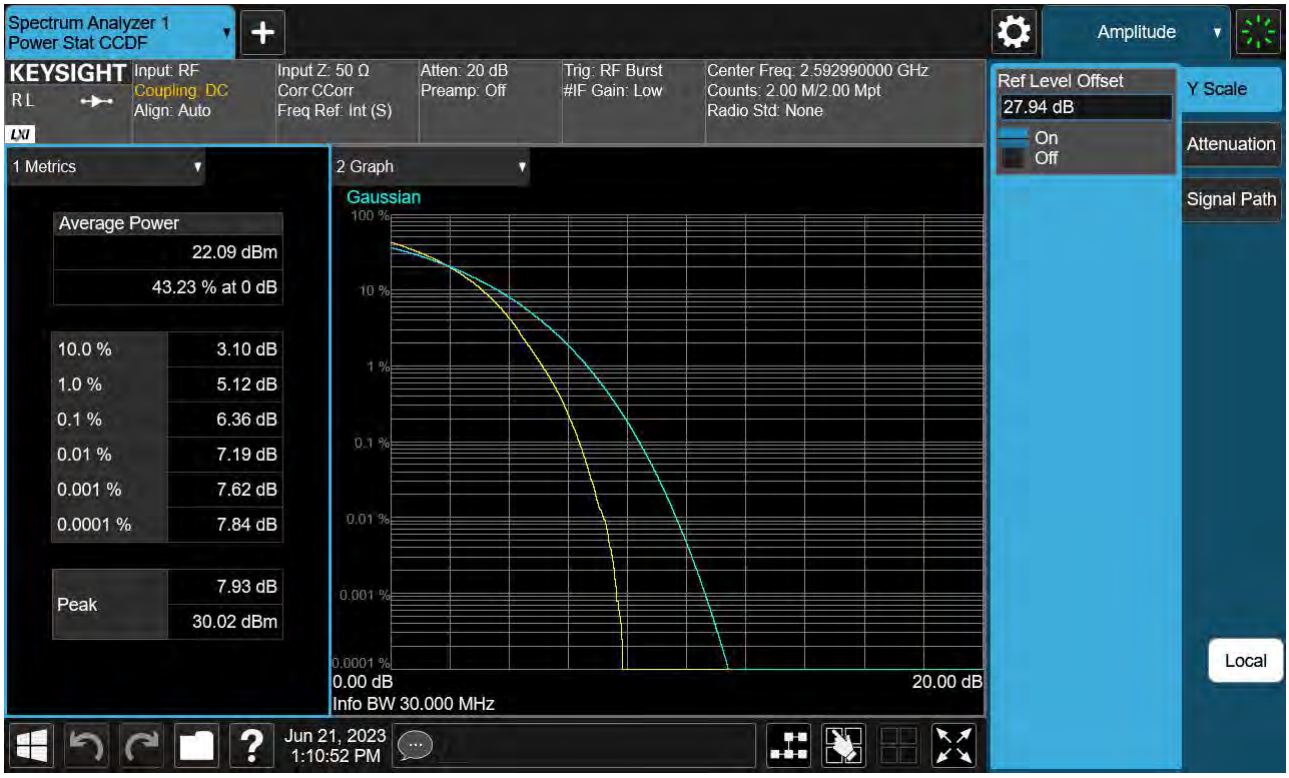
Sub6 n41. PAR Plot (30 M BW_Ch.518598_16QAM)



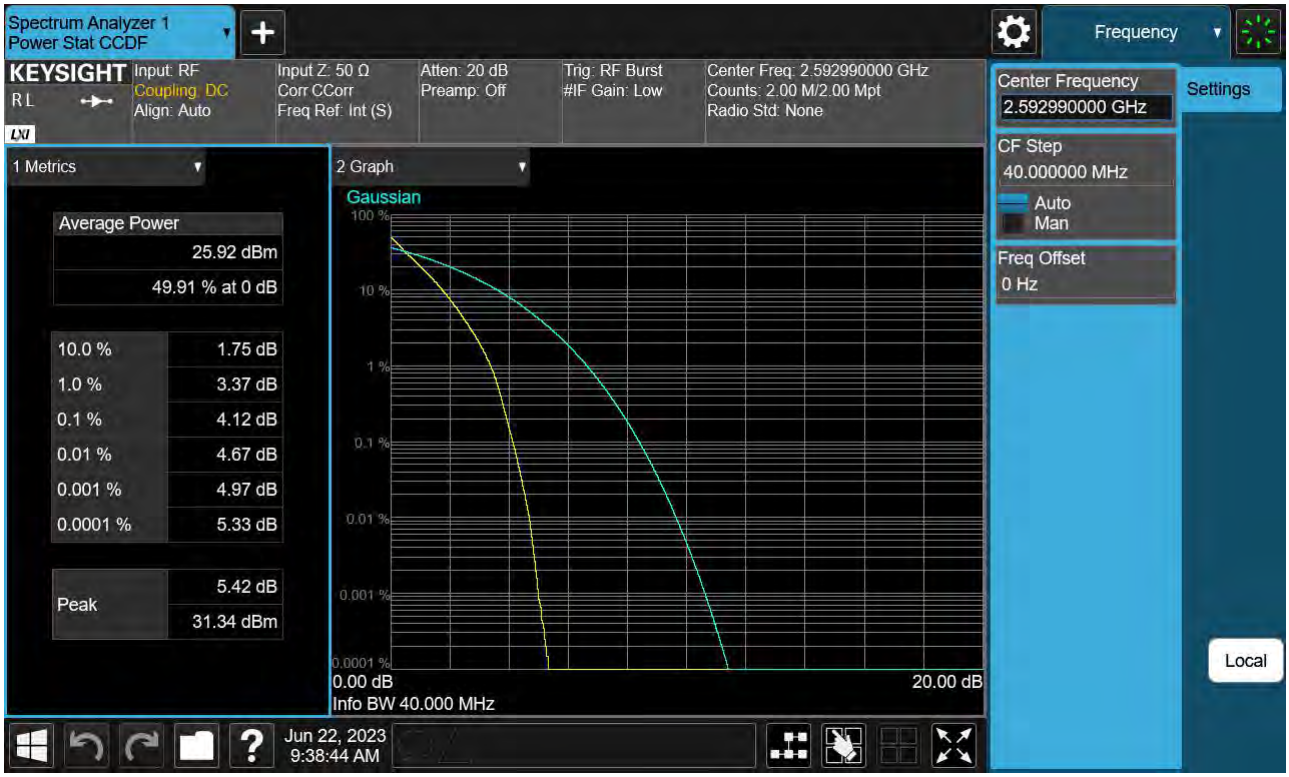
Sub6 n41. PAR Plot (30 M BW_Ch.518598_64QAM)



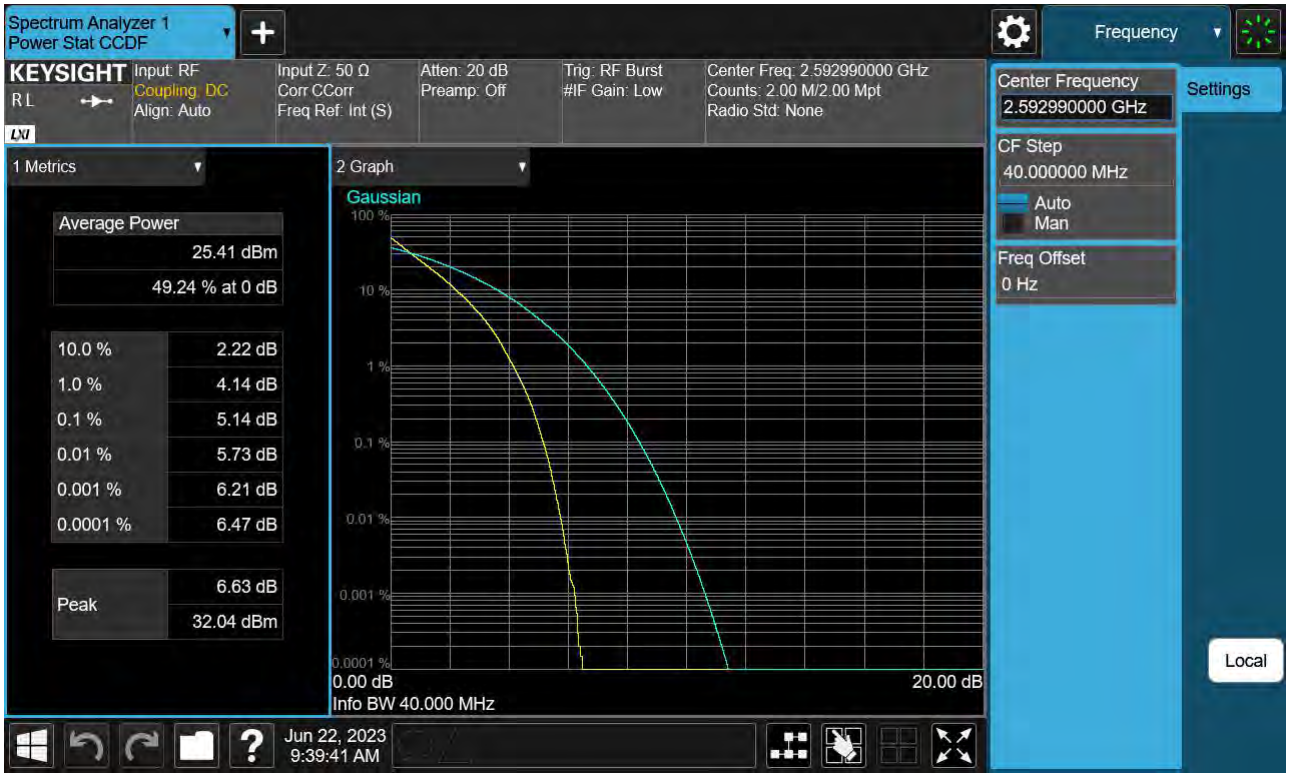
Sub6 n41. PAR Plot (30 M BW_Ch.518598_256QAM)



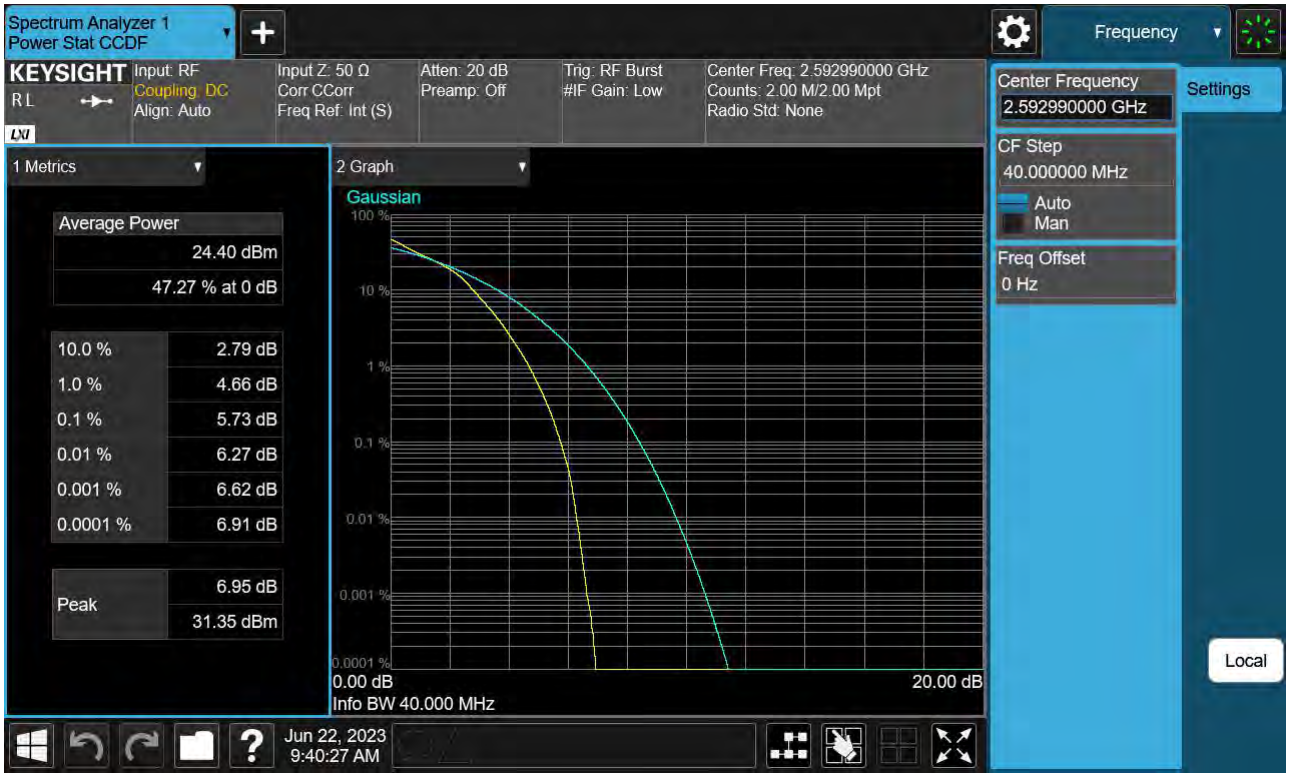
Sub6 n41. PAR Plot (40 M BW_Ch.518598_BPSK)



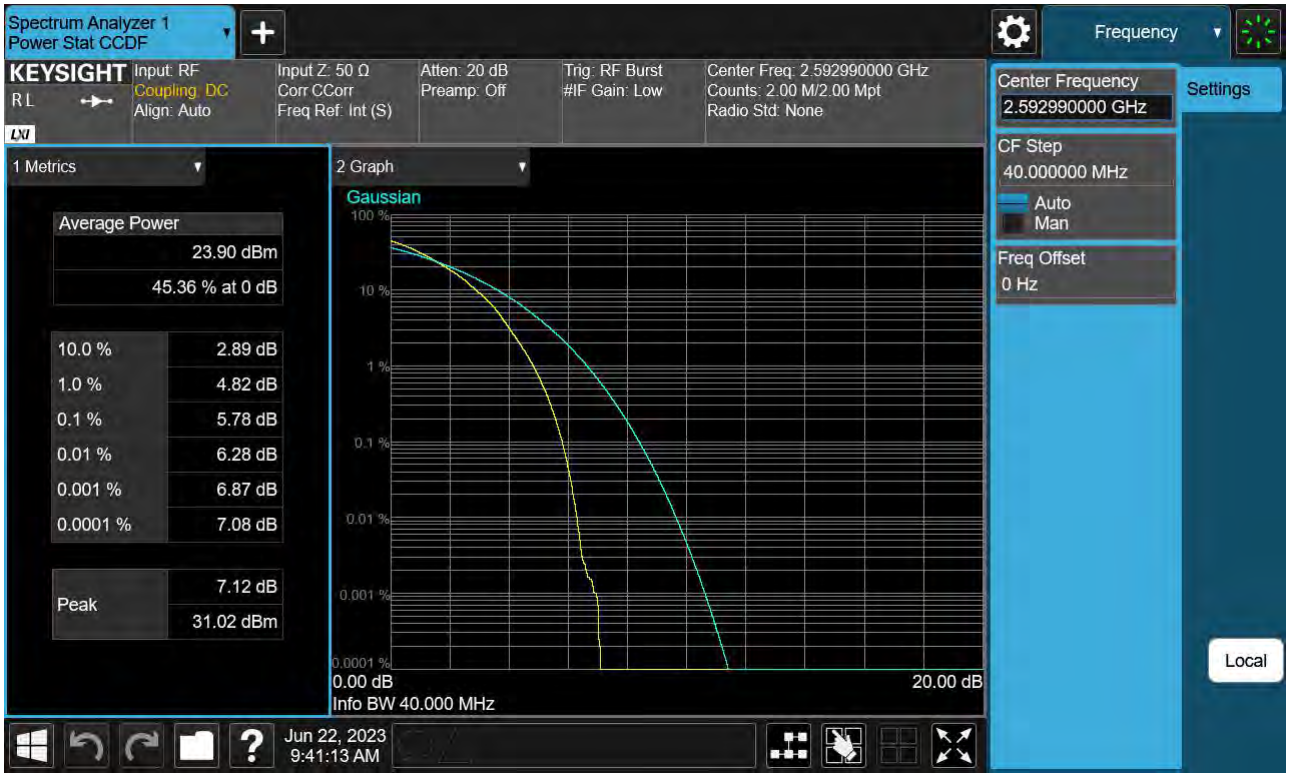
Sub6 n41. PAR Plot (40 M BW_Ch.518598_QPSK)



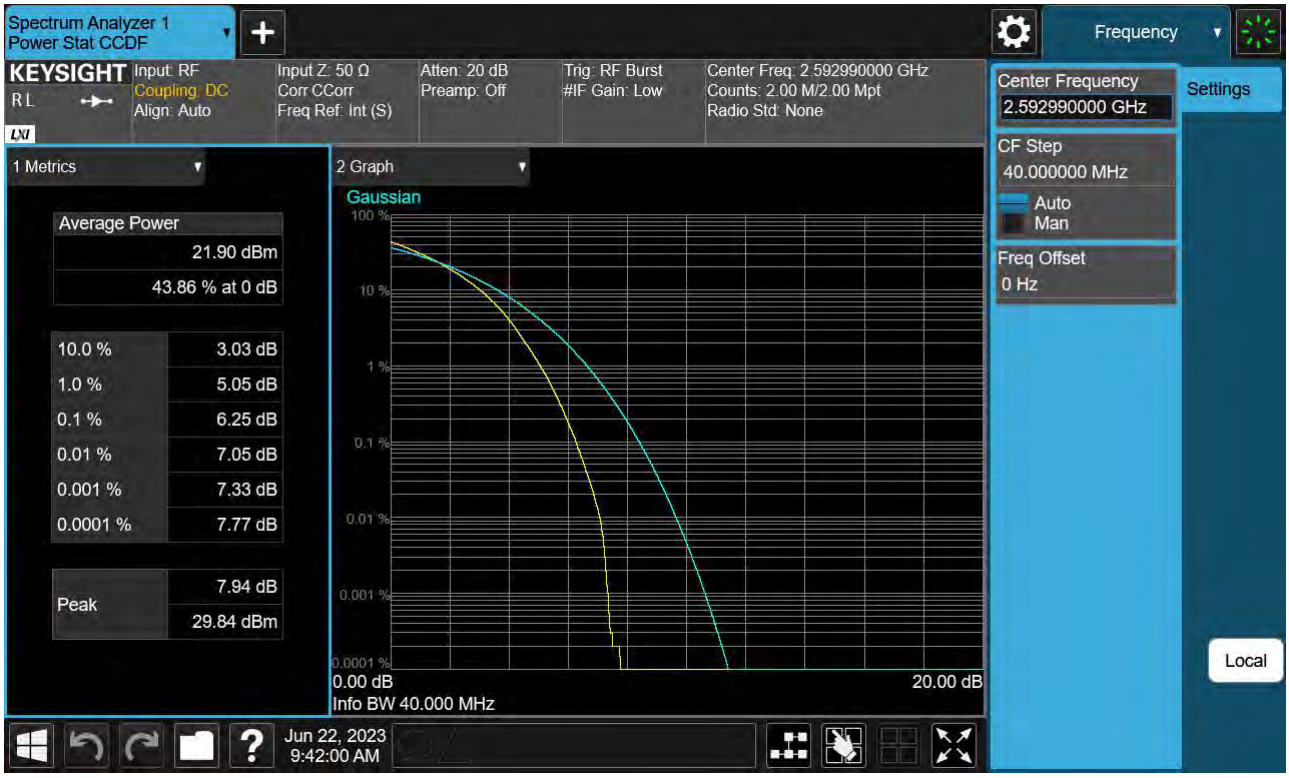
Sub6 n41. PAR Plot (40 M BW_Ch.518598_16QAM)



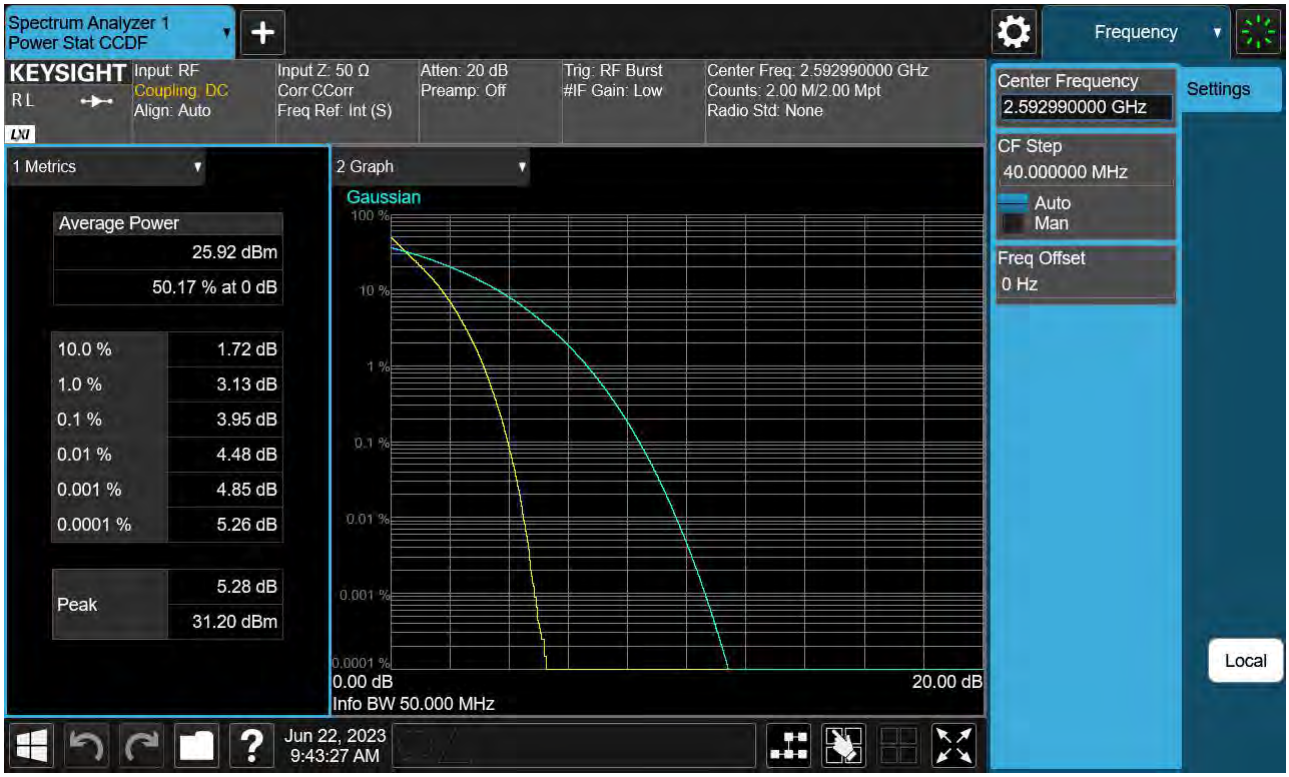
Sub6 n41. PAR Plot (40 M BW_Ch.518598_64QAM)



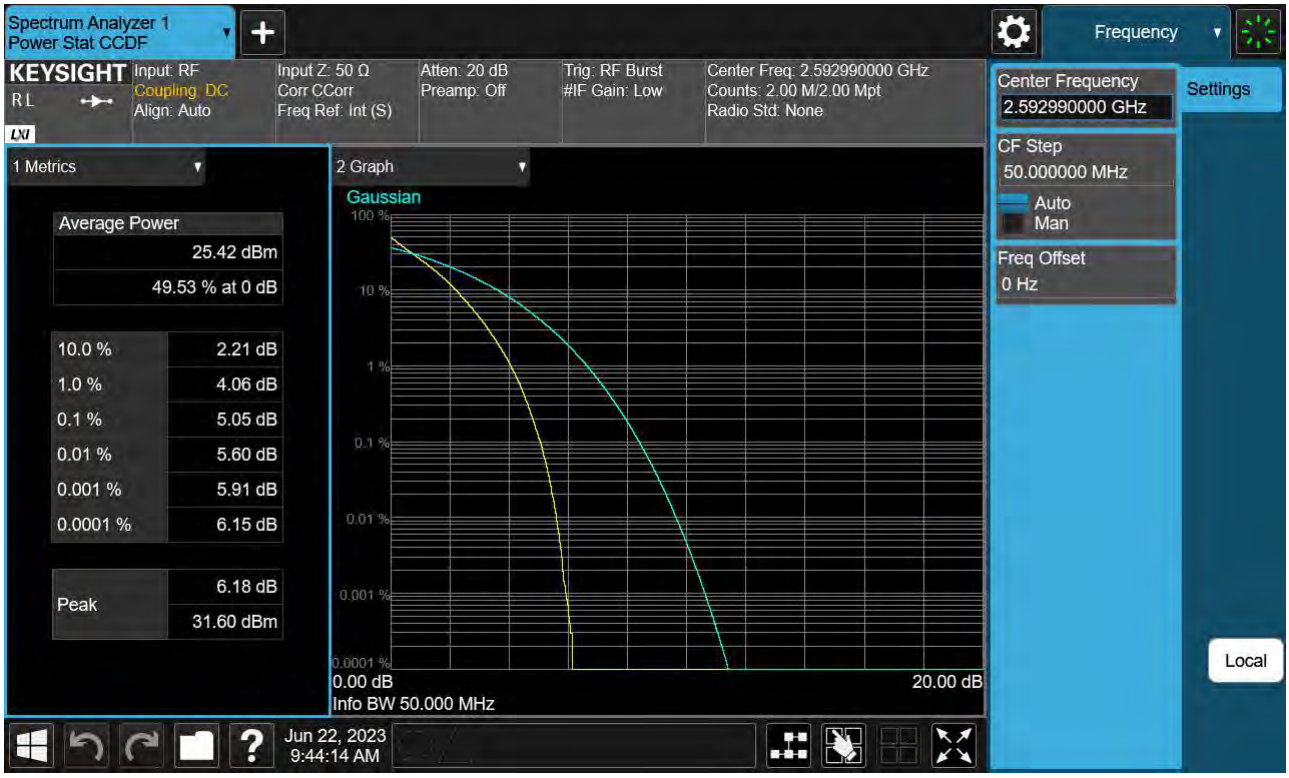
Sub6 n41. PAR Plot (40 M BW_Ch.518598_256QAM)



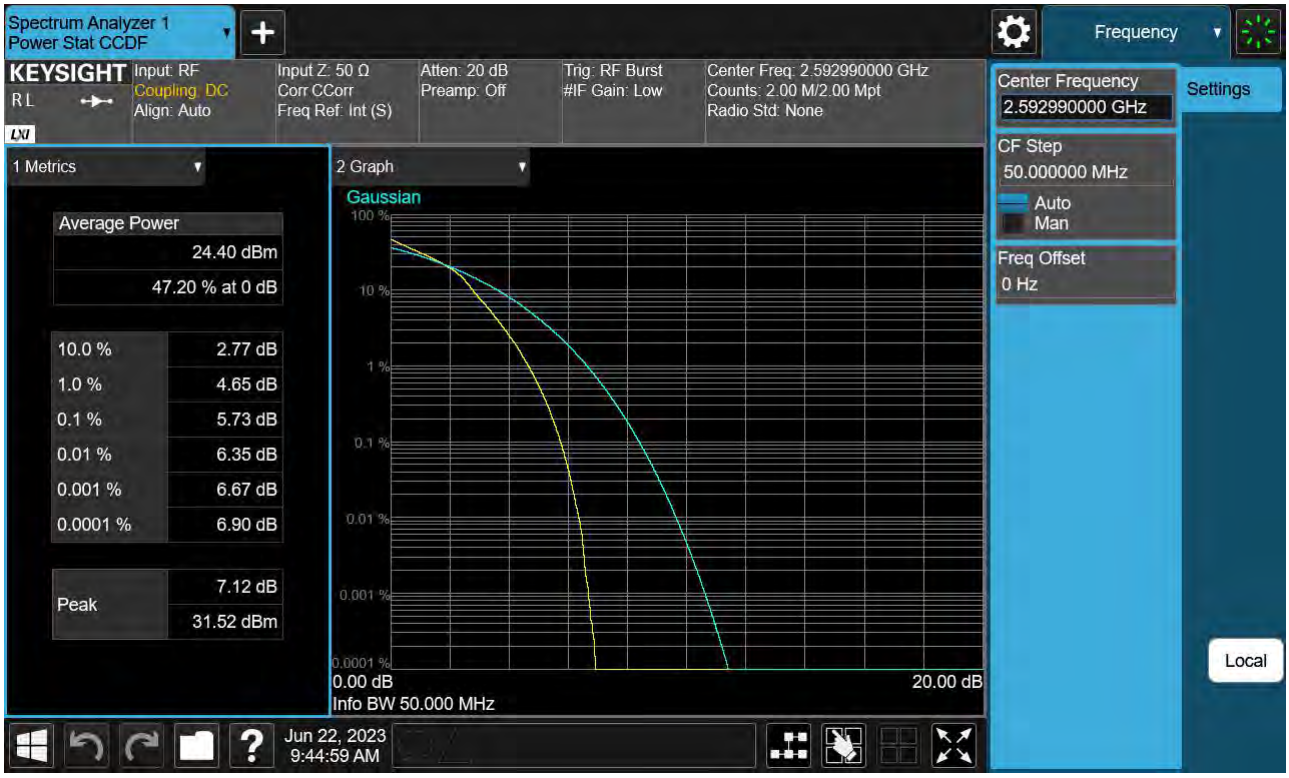
Sub6 n41. PAR Plot (50 M BW_Ch.518598_BPSK)



Sub6 n41. PAR Plot (50 M BW_Ch.518598_QPSK)



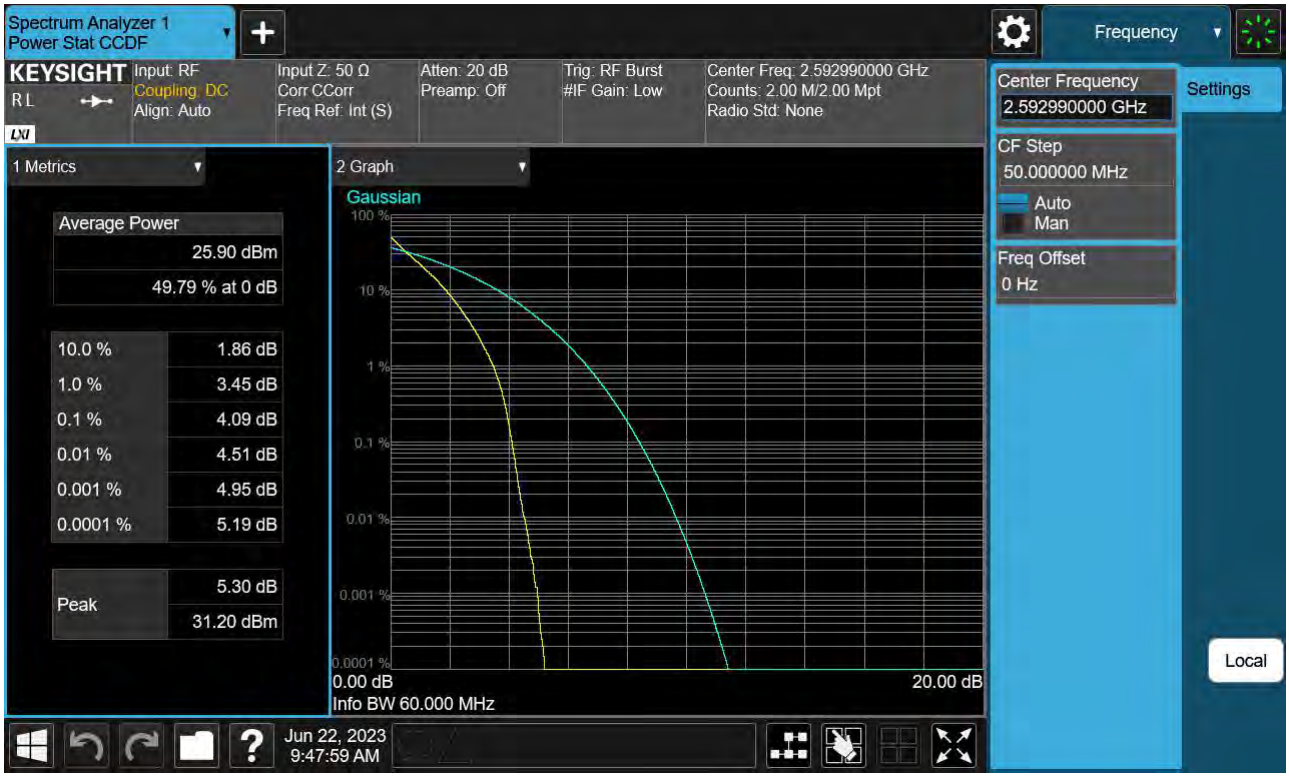
Sub6 n41. PAR Plot (50 M BW_Ch.518598_16QAM)



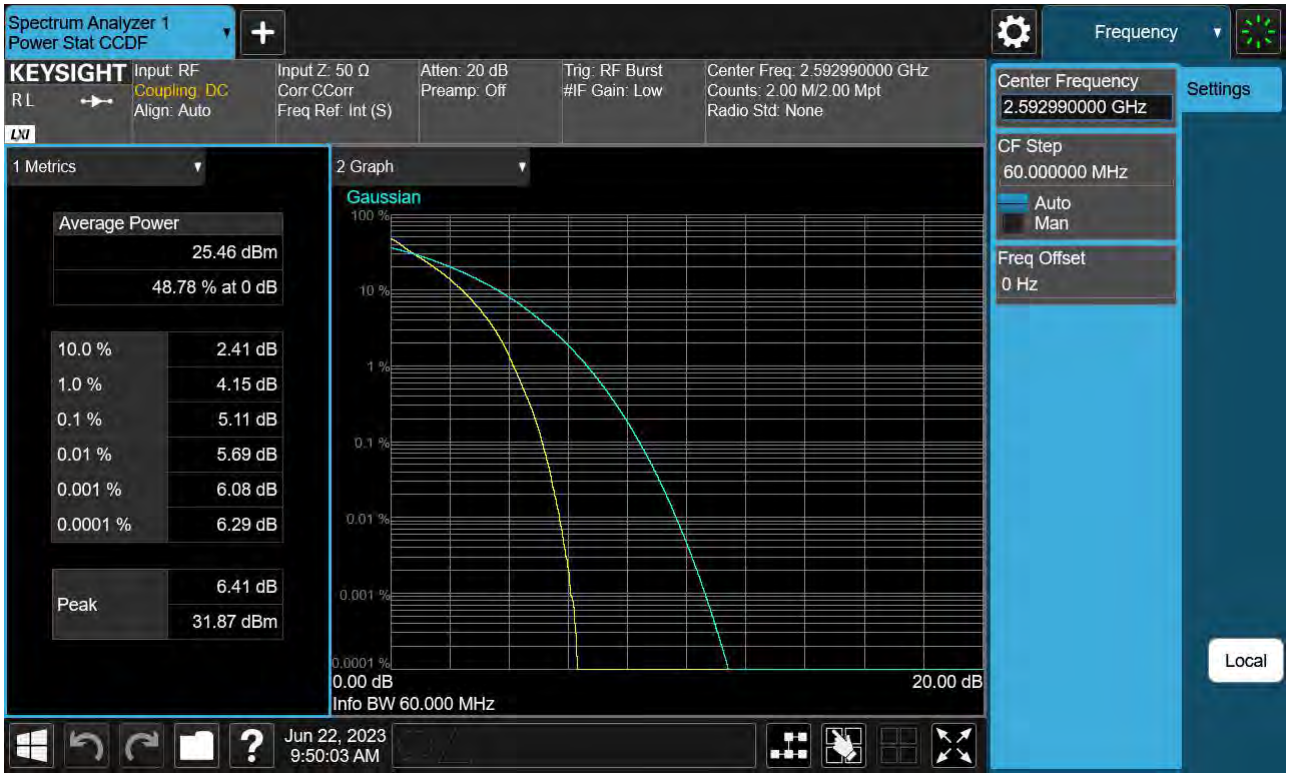
Sub6 n41. PAR Plot (50 M BW_Ch.518598_64QAM)

Sub6 n41. PAR Plot (50 M BW_Ch.518598_256QAM)

Sub6 n41. PAR Plot (60 M BW_Ch.518598_BPSK)

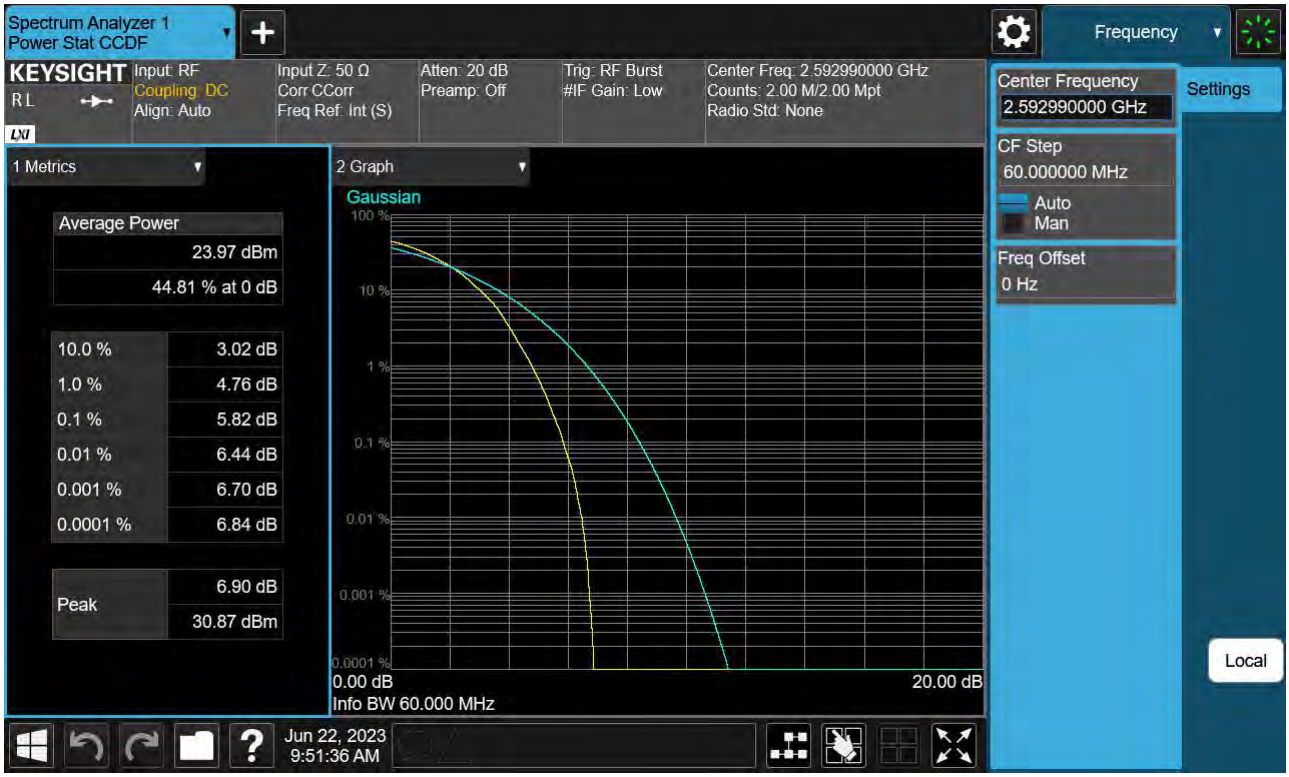


Sub6 n41. PAR Plot (60 M BW_Ch.518598_QPSK)



Sub6 n41. PAR Plot (60 M BW_Ch.518598_16QAM)

Sub6 n41. PAR Plot (60 M BW_Ch.518598_64QAM)



Sub6 n41. PAR Plot (60 M BW_Ch.518598_256QAM)

Sub6 n41. PAR Plot (70 M BW_Ch.518598_BPSK)